

2007

PRIMARY 6 SCIENCE

1.	ACS (BAKER)	-	SA1	SA2
2.	AI TONG	-	SA1	SA2
3.	HENRY PARK	-	SA1	SA2
4.	MAHA BODHI SCHOOL	-	-	SA2
5.	NAN HUA	CA1	SA1	SA2
6.	NANYANG	CA1	SA1	SA2
7.	PEI CHUN	CA1	SA1	SA2
8.	PEI HWA	CA1	SA1	SA2
9.	RAFFLES GIRL	-	SA1	SA2
10.	ROSYTH	CA1	SA1	SA2
11.	SCGS	-	SA1	SA2

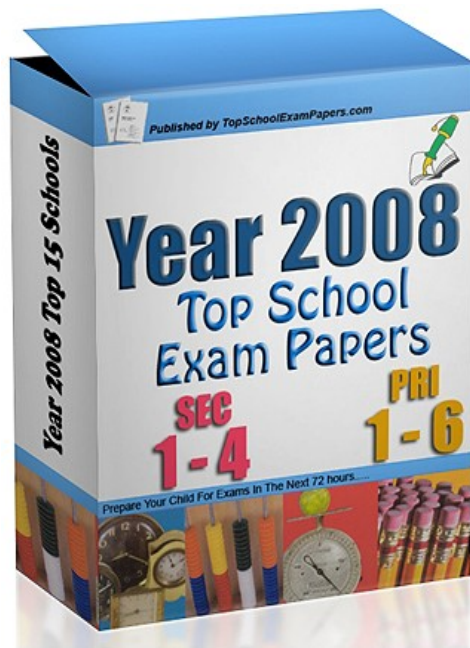
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**ANGLO-CHINESE SCHOOL
(PRIMARY)
MID-YEAR EXAMINATION 2007
SCIENCE
BOOKLET A**

Name: _____ ()

Class: Primary 6 _____

Date: 9th May 2007

Duration of paper: 1 h 45 min

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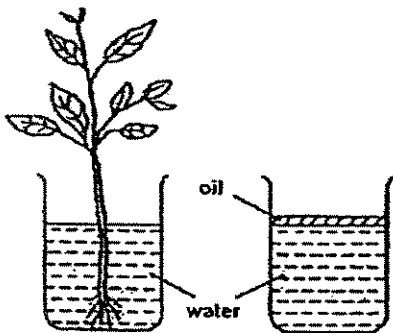
PART I

For each of the following questions from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

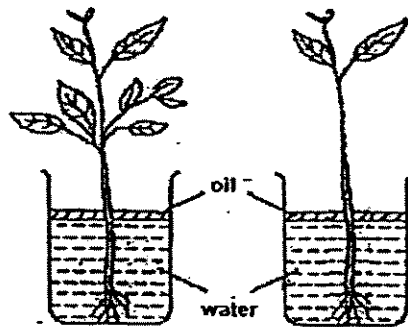
(30 x 2 marks)

1. Mark wants to investigate whether plants take in water. Which of the following set-ups should he use to ensure a fair test?

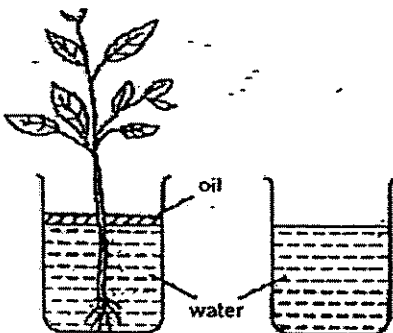
(1)



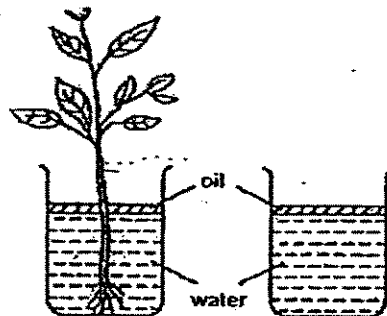
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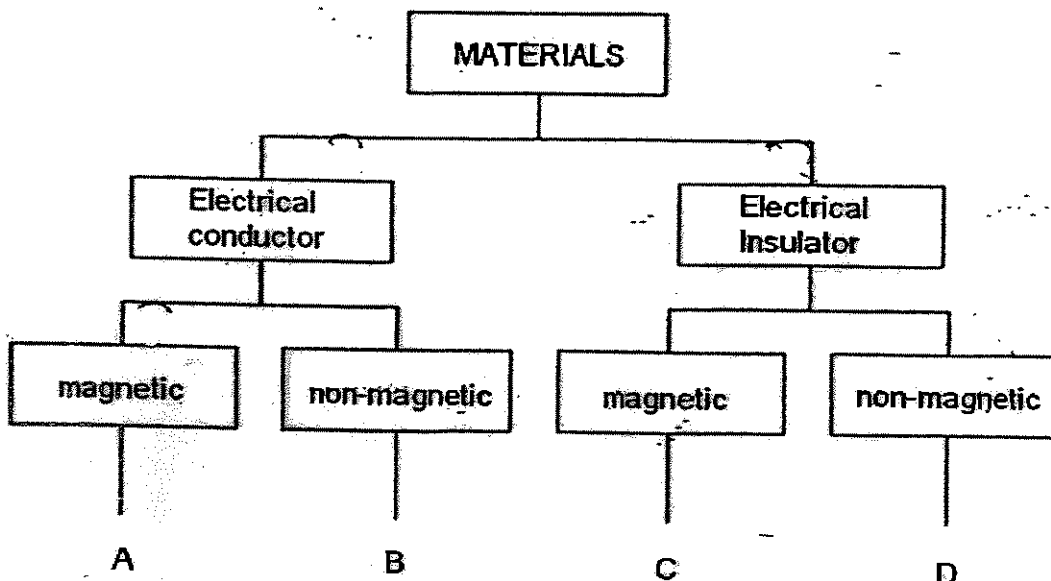
(4)



2. The following table describes the properties of three materials, P, Q and R. A tick (✓) shows that the material has the property.

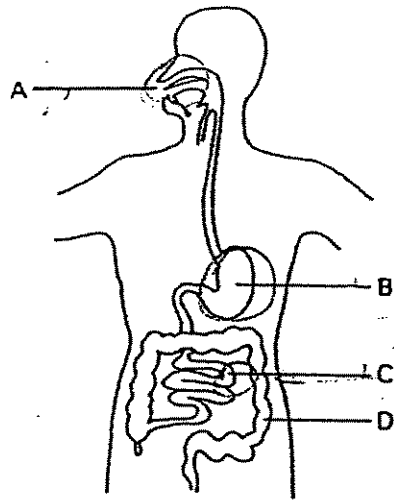
Characteristics	Materials	P	Q	R
Electrical conductor		✓		✓
Magnetic				✓

From the information above, where do materials P, Q and R belong in the following classification table?



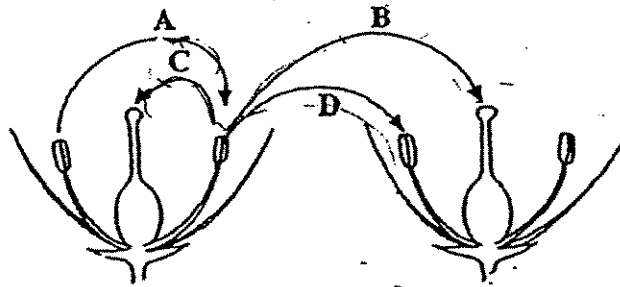
	Material P	Material Q	Material R
(1)	A	D	B
(2)	A	D	C
(3)	B	C	A
(4)	B	D	A

3. The diagram below shows the human digestive system.



In which part(s) of the body does digestion take place?

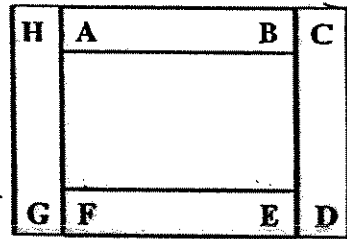
- (1) B only
 - (2) A and C only
 - (3) A, B and C only
 - (4) B, C and D only
4. The diagram below shows two flowers of the same species.



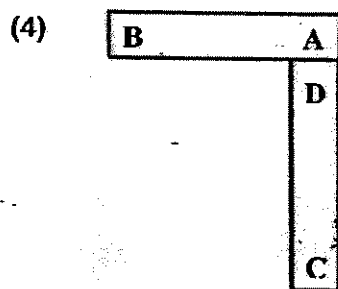
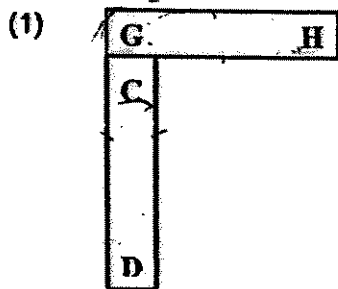
If the arrows were to indicate pollination, which arrows correctly show the process taking place?

- (1) A and B
- (2) A and D
- (3) B and C
- (4) C and D

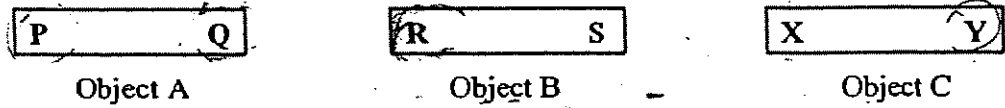
5. The diagram below shows 4 bar magnets that are attracted to each other.



Which one of the following arrangements below will result in the poles repelling each other?



6. The diagram below shows three objects that are made of steel. P, Q, R, S, X and Y are the ends.

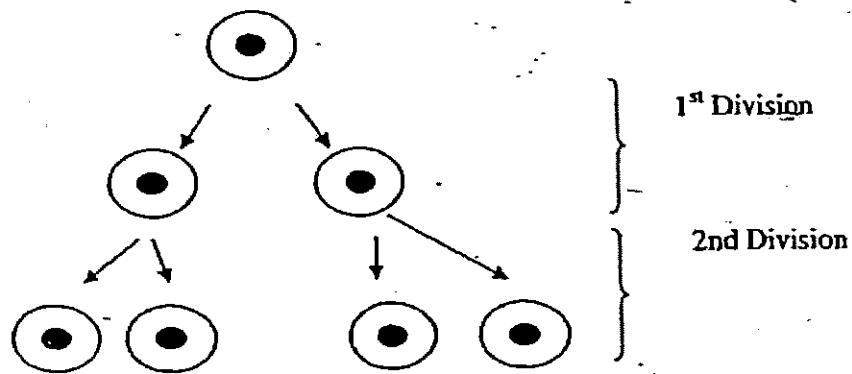


Objects B and C are magnets. Which of the following is/are possible?

- A ~~R repels Q.~~
- B R attracts P.
- C S repels X.
- D Y attracts Q.

- (1) B only
- (2) A and B only
- (3) B, C and D only
- (4) A, C and D only

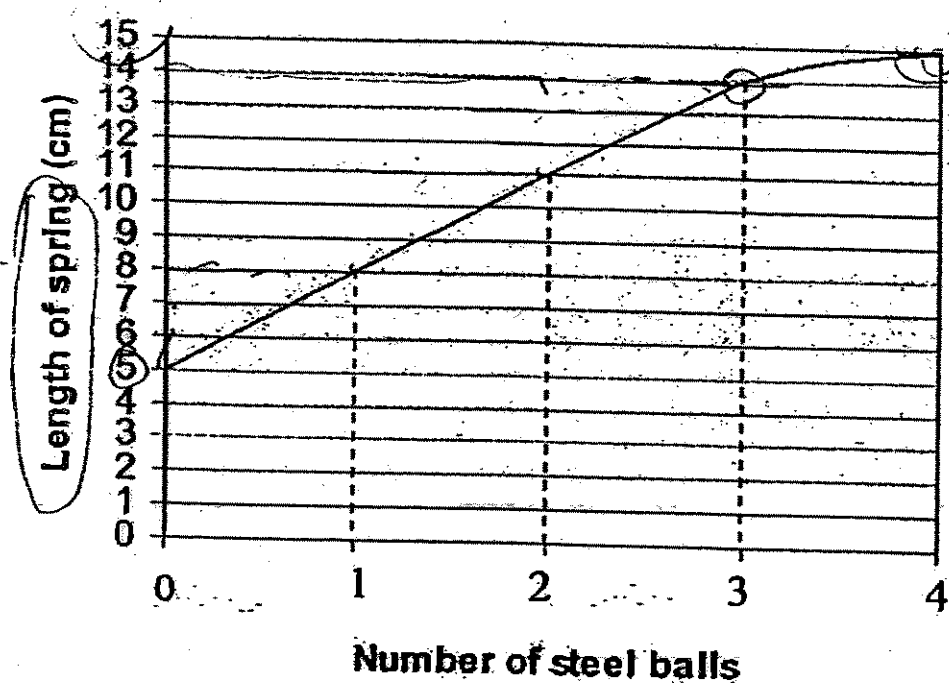
7. The diagram below shows the cell division of a unicellular organism.



What is the number of daughter cells produced from the single parent cell just after the 6th division?

- (1) 12
- (2) 32
- (3) 64
- (4) 128

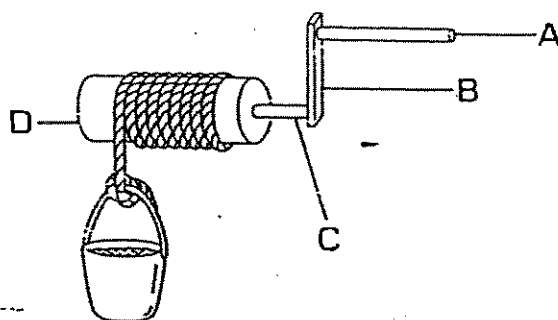
8. Donovan carried out an experiment to find out if the length of a spring is affected by the number of steel balls hung on it. He carried out the experiment using four steel balls of the same mass and plotted the line graph below to show the result of his experiment.



What information can be derived from the line graph above?

- A The spring has an initial length of 5 cm.
 B When 3 steel balls were hung on the spring, the extension of the spring was 14 cm.
 C When 4 steel balls were hung on the spring, the extension of the spring was 10 cm.
 D For the first 3 steel balls, every steel ball hung on the spring increased its length by 3 cm.
- (1) A and B only
 (2) B and C only
 (3) A, C and D only
 (4) A, B and D only

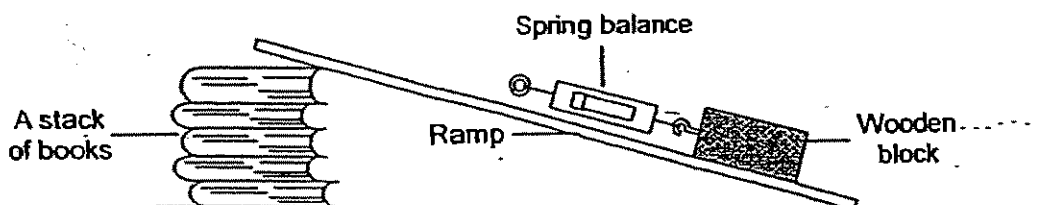
9. The diagram below shows a simple machine that is used to draw water from a well.



A windlass

What must be done to reduce the amount of effort required to move the load?

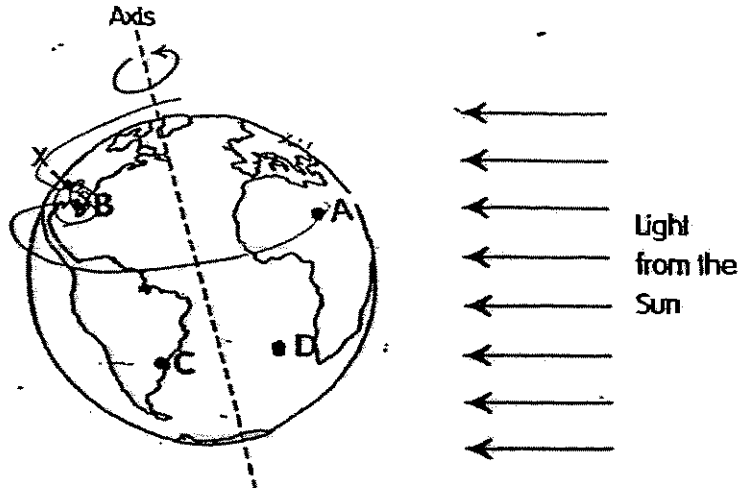
- (1) Decrease the length of A.
 - (2) Increase the length of B.
 - (3) Decrease the diameter of C.
 - (4) Increase the diameter of D.
10. Rachel wanted to find out if the surface of an inclined plane affects the amount of force needed to move an object up the inclined plane. She set up the experiment as shown below.



Which of the following must she keep the same to ensure a fair test?

- A Spring balance
 - ~~B~~ Mass of wooden block
 - ~~C~~ Angle of elevation of the ramp
 - D Type of material used for the ramp
- (1) A and B only
 - (2) B and D only
 - (3) B and C only
 - (4) A and D only

11. The diagram below shows how the Earth rotates about its axis.

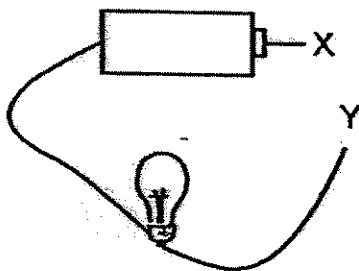


From the diagram, which location on Earth, A, B, C or D would be next to experience night after point 'X'?

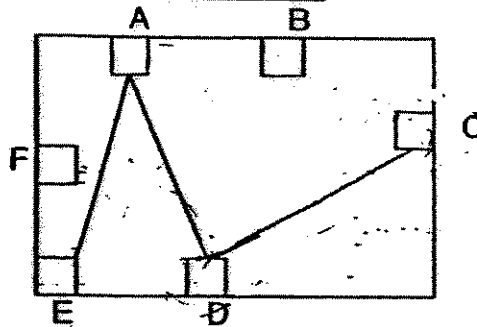
- ~~(1)~~ A
- ~~(2)~~ B
- ~~(3)~~ C
- ~~(4)~~ D

12. The following diagram shows a circuit tester and a circuit card. At which two points of the circuit card could points X and Y be connected to light up the bulb?

Circuit Tester

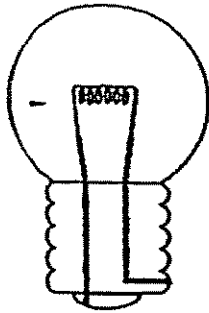


Circuit Card

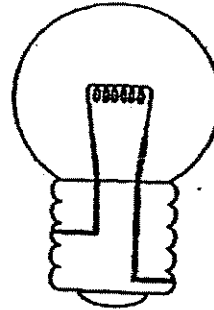


- (1) A and B
- (2) B and C
- (3) C and D
- (4) D and F

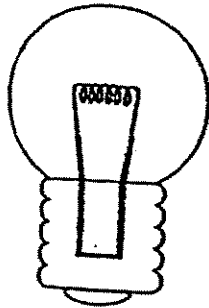
13. Which of the following correctly shows how the filament is connected in a light bulb?



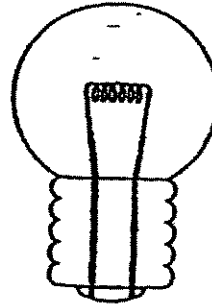
(1)



(2)

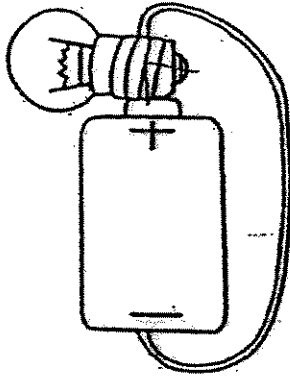


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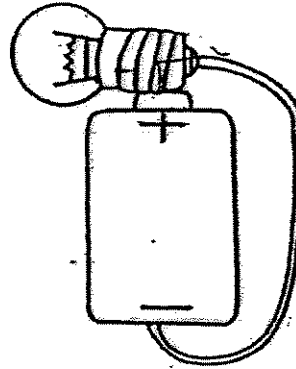


(4)

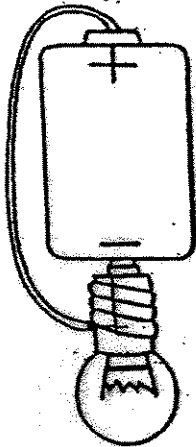
14. The diagram below shows how a light bulb could be connected to a dry cell and a piece of wire to form a simple electrical circuit. Which of the following light bulb(s) will light up?



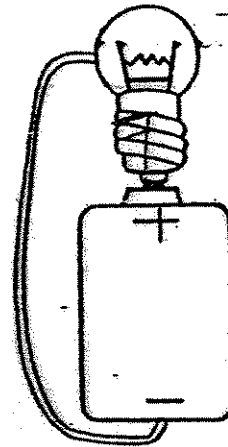
A



B



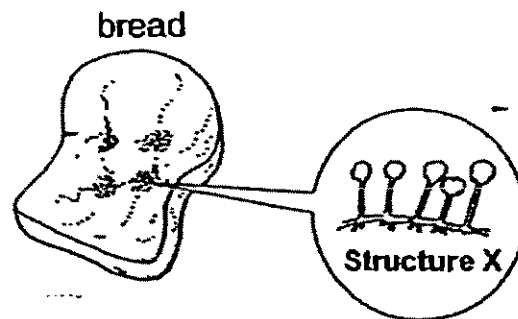
C



D

- (1) A only
- (2) B only
- (3) B and C only
- (4) C and D only

15. The diagram below shows structure X which grows on mouldy bread.



Which of the following about structure X is correct?

	Method of reproduction	Method of dispersal
(1)	By seeds	By explosive action
(2)	By pollen grains	By water
(3)	By spores	By wind
(4)	By spores	By animals

16. Which of the tables below correctly classifies the materials according to their heat conductivity?

(1)

Conducts heat	Insulates heat
<ul style="list-style-type: none"> • Copper • Iron • Steel 	<ul style="list-style-type: none"> • Wood • Plastic • Gold

(2)

Good conductor of heat	Non-conductor of heat
<ul style="list-style-type: none"> • Iron • Nickel • Steel 	<ul style="list-style-type: none"> • Styrofoam • Cotton • Wool

(3)

Conducts heat	Does not conduct heat
<ul style="list-style-type: none"> • Gold • Silver • Bronze 	<ul style="list-style-type: none"> • Glass • Air • Water

(4)

Good conductor of heat	Insulator of heat
<ul style="list-style-type: none"> • Brass • Silver • Copper 	<ul style="list-style-type: none"> • <u>Wood</u> • <u>Cotton</u> • <u>Cork</u>

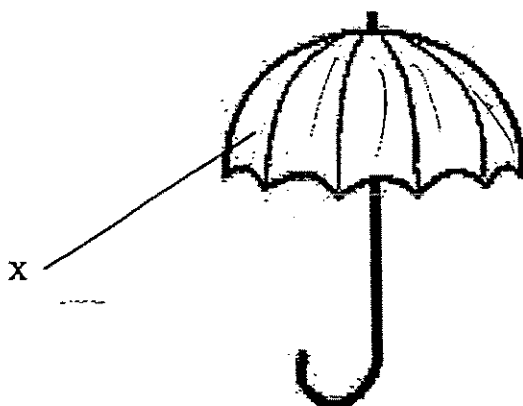
17. Study the classification table below.

Group A	Group B
Gold Fish	Cow
Butterfly	Dolphin

The animals cannot be classified according to _____

- (1) their habitat
- (2) their body covering
- (3) the way they breathe
- (4) their method of reproduction

18. The diagram below shows an umbrella with a part marked X.



Based on the information given below, which material will be most suitable for making part X of the umbrella for both rainy and sunny day use?

	Materials	Waterproof	Transparent	Insulates heat	Flexible
(1)	S	Yes	Yes	Yes	No
(2)	T	Yes	No	No	No
(3)	U	Yes	No	Yes	Yes
(4)	V	No	No	No	Yes

19. The table shows how fruits can be grouped according to their characteristics.

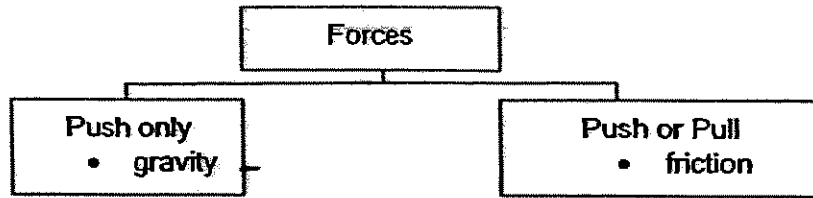
	One seed	Many seeds
Smooth skin	P	Q
Rough skin	R	S

In which group, P, Q, R or S, would the watermelon belong to?

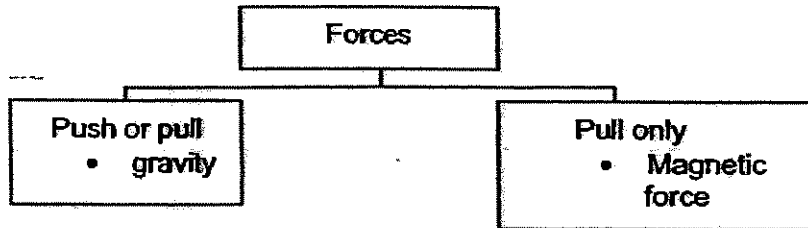
- (1) P
- (2) Q
- (3) R
- (4) S

20. Which of the following classification charts on forces is correct?

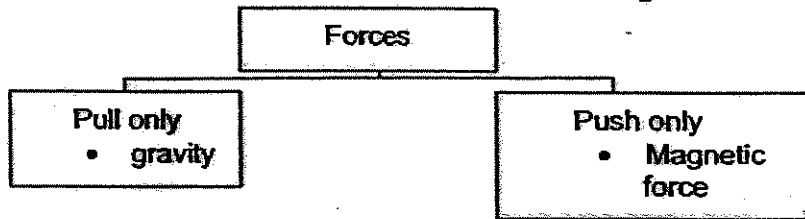
(1)



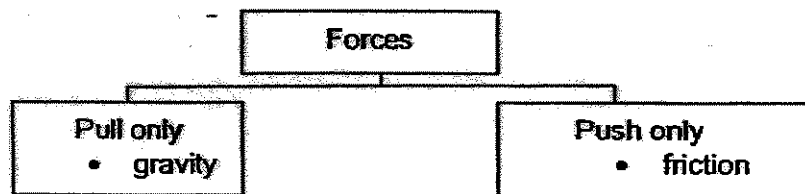
(2)



(3)

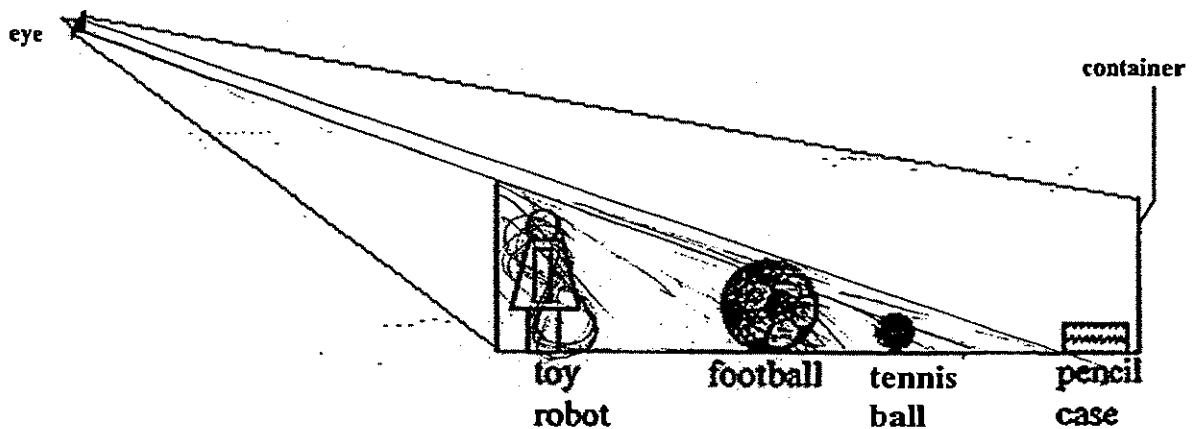


(4)



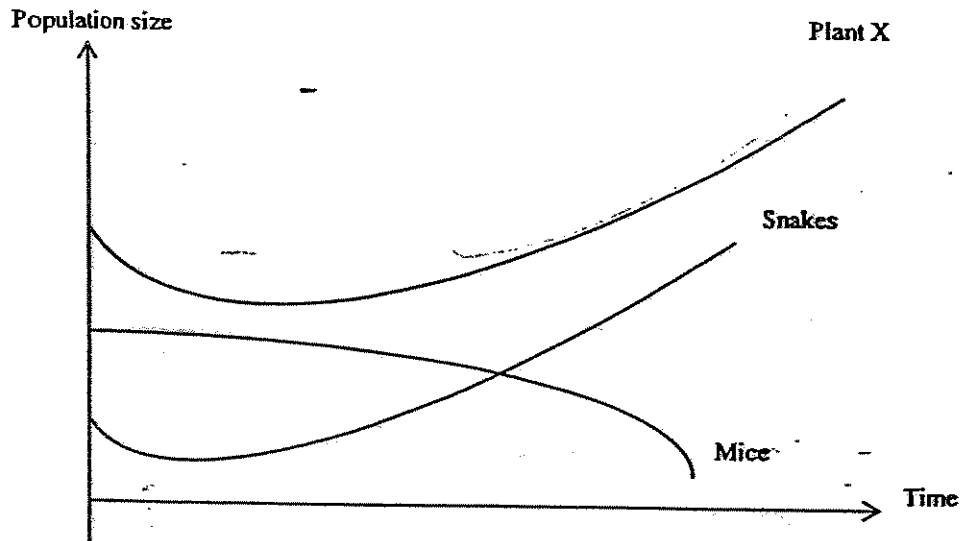
21. In his pot of healthy plant, Peter noticed that a kind of insect had established a colony there. He successfully got rid of these by applying pesticide to the colony. Shortly after, his plant began to grow weak and died. Which of the following is a possible reason why this happened?
- (A) The pesticide had affected the plant.
 - (B) The insect had already weakened vital parts of the plant.
 - (C) The insect was feeding on a pest that was attacking the plant.
- (1) A only
 - (2) A and B only
 - (3) B and C only
 - (4) A, B and C

22. In the diagram below, which of the objects in the container would the eye be able to see if the container is opaque?



- (1) pencil case only
- (2) pencil case and football only
- (3) pencil case, football and ~~square box~~ tennis ball only
- (4) none of the objects

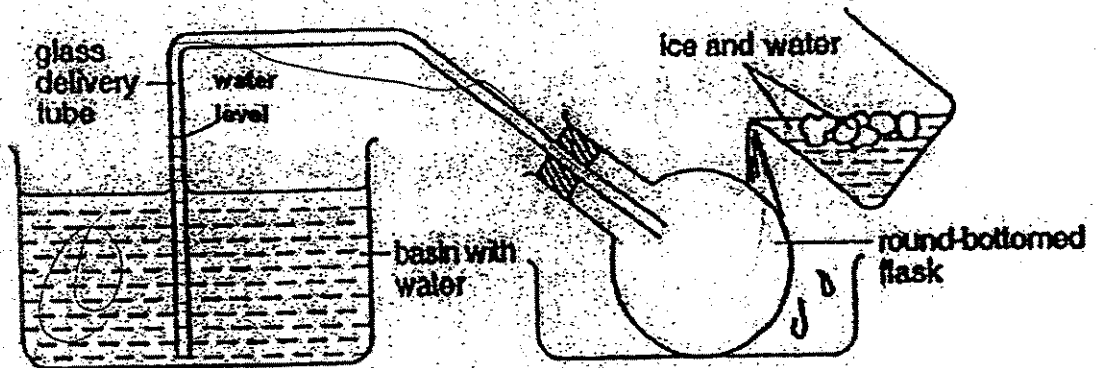
23. The graph below shows the population of mice, snakes and plant X on a piece of grassland over a period of time.



The statements below explain the interdependence of these organisms in the habitat they live in. Which of these statements cannot be inferred from the graph above?

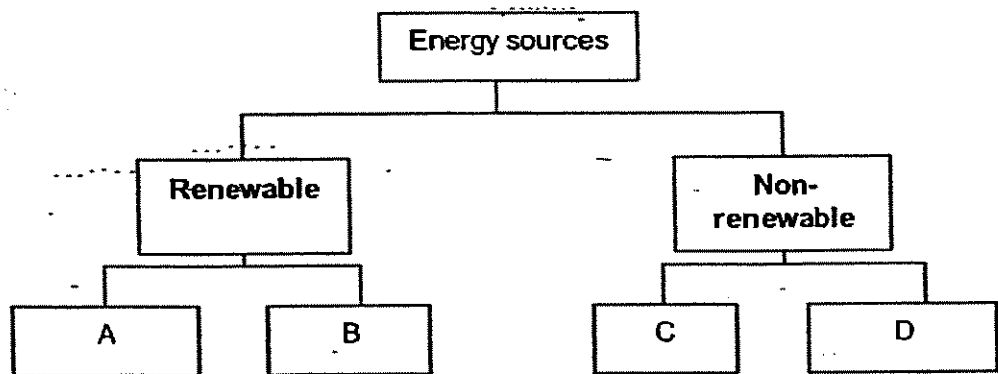
- (A) The mice feed on Plant X
 (B) The snakes feed on the mice
 (C) The mice enrich the soil for the plants with their droppings
 (D) The mice hide between the plants to escape from the snakes
- (1) A and B only
 (2) B and C only
 (3) C and D only
 (4) A and D only

24. In the experiment below, cold water is being poured onto the round-bottom flask over a period of time. The water level in the glass delivery tube is observed.



What can this set-up show us?

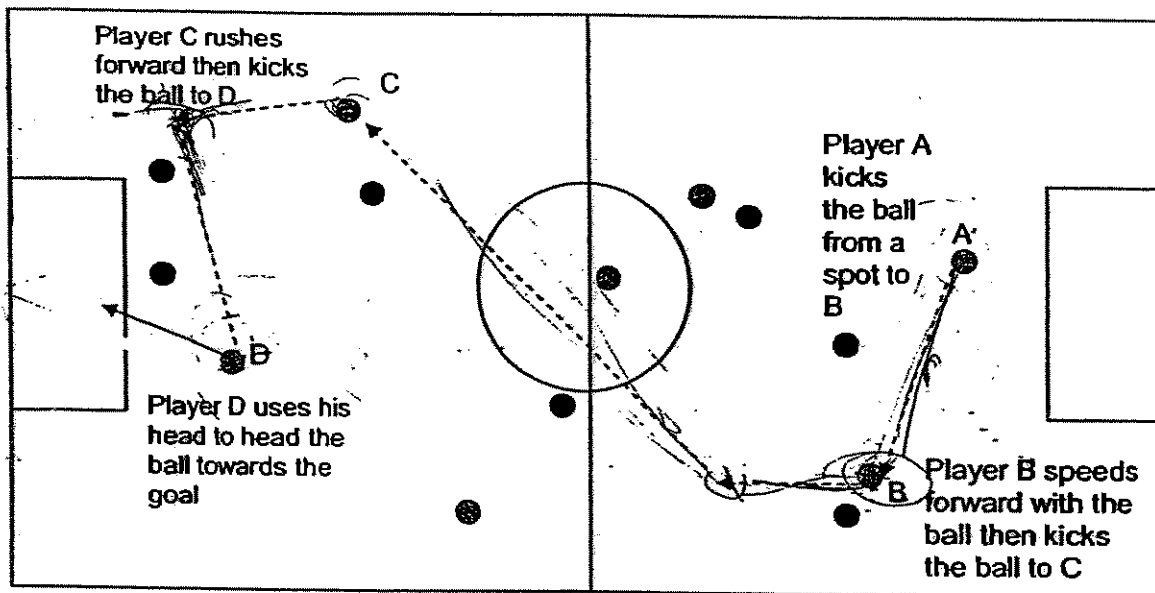
- (1) Air contracts when cooled
 - (2) Water expands when heated
 - (3) Water contracts when cooled
 - (4) Air increases in mass when heated
25. Study the classification chart below.



Which of the following would match A, B, C and D above?

	A	B	C	D
(1)	Waves	Petroleum	Kerosene	Wood
(2)	Wind	Wood	Petroleum	Sun
(3)	Sun	Wind	Coal	Petroleum
(4)	Wood	Waves	Kerosene	Wind

The diagram below charts how a goal is being scored during a soccer match, the dots represent the players from the two teams. Study the diagram and answer the questions 26 and 27 below.



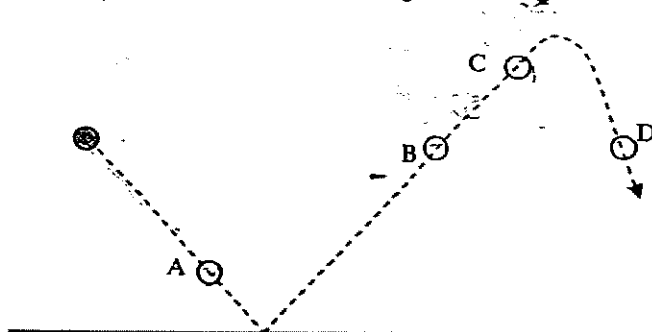
26. In which of the following does a force not lead to a change in the direction of the ball?

- (1) A to B
- (2) B to C
- (3) C to D
- (4) D towards goal

27. In which of the following is a force involved in reducing the speed of the ball?

- (1) A to B
- (2) B to C
- (3) C to D
- (4) All of the above

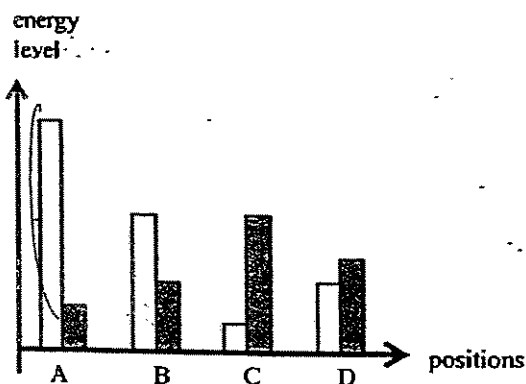
28. A ball is being bounced from waist high to a height as shown below.



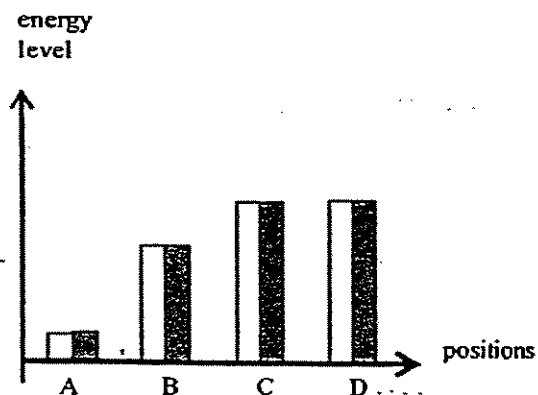
Based on the motion of the ball through the air, which of the graphs best represents the amount of kinetic energy and gravitational potential energy the ball possesses at each point A, B, C and D?

Kinetic energy
 Gravitational potential energy

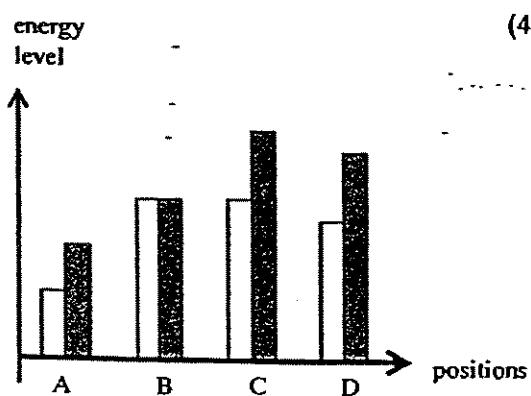
(1)



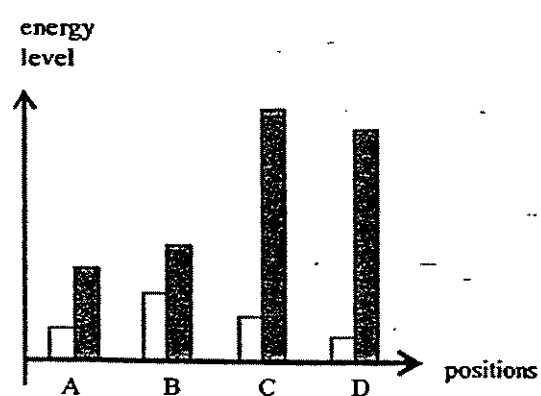
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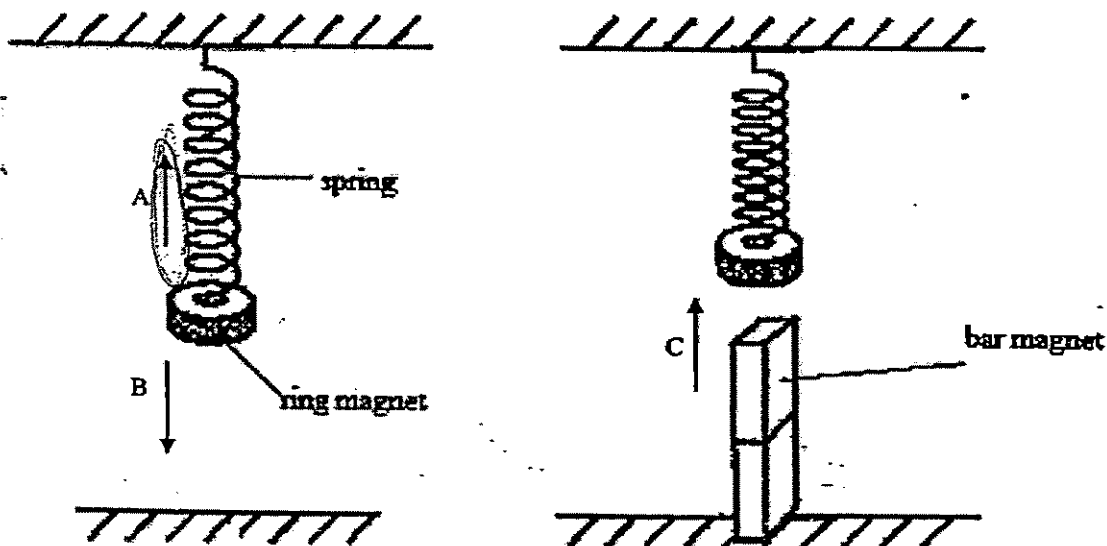
(3)



(4)



29. Diagram 1 below shows a ring magnet hanging freely from a spring. When a bar magnet was placed under the ring magnet, a different observation was made (see diagram 2).



Which of the following correctly identifies the main forces A, B and C?

	A	B	C
(1)	Air resistance	Gravity	Gravity
(2)	Gravity	Elastic Spring Force	Magnetic Force
(3)	Elastic Spring Force	Magnetic Force	Magnetic Force
(4)	Elastic Spring Force	Gravity	Magnetic Force

30. In which of the following examples is heat energy generated as a useful form of energy?

- (1) Heat from the computer
- (2) Heat from the bread toaster
- (3) Heat generated by the traffic lights
- (4) Heat from the photocopier machine

**ANGLO-CHINESE SCHOOL
(PRIMARY)**

MID-YEAR EXAMINATION 2007

SCIENCE

BOOKLET B

Name: _____ ()

Class: Primary 6 _____

Date: 9th May 2007

Duration of paper: 1 h 45 min

Parent's Signature

Booklet	Maximum marks	Marks obtained
A	60	
B	40	
Total	100	

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PART II

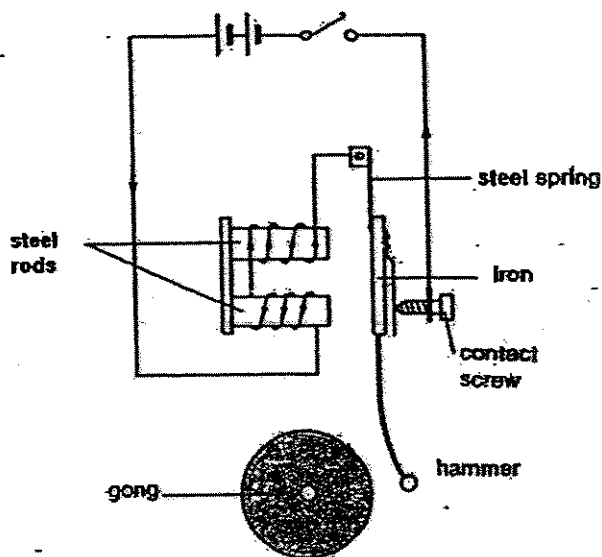
For questions 31 to 46, write your answers in this booklet.

The number of marks available is shown in brackets [] at the end of each question or part

question.

(40 marks)

31. The diagram below shows the electric circuit of an electric bell.

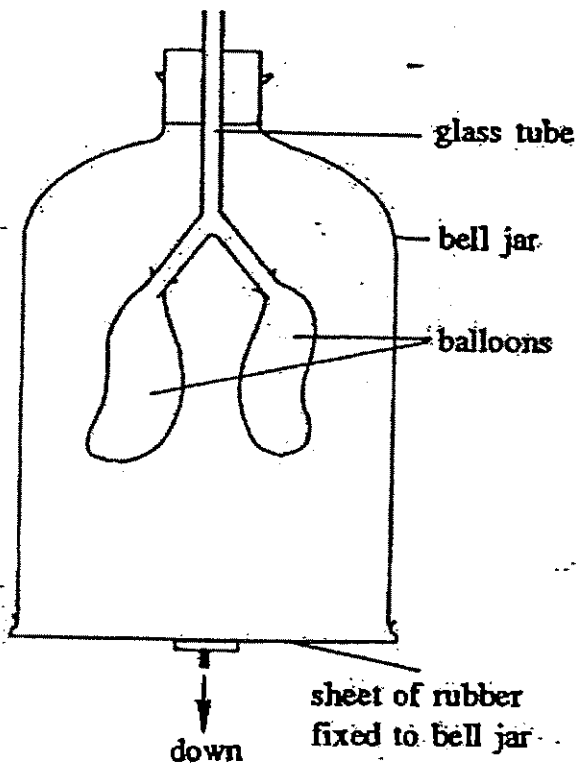


(a) What happens to the iron and the hammer when the switch is closed? [1]

(b) What happens to the circuit when the hammer hits the gong? [1]

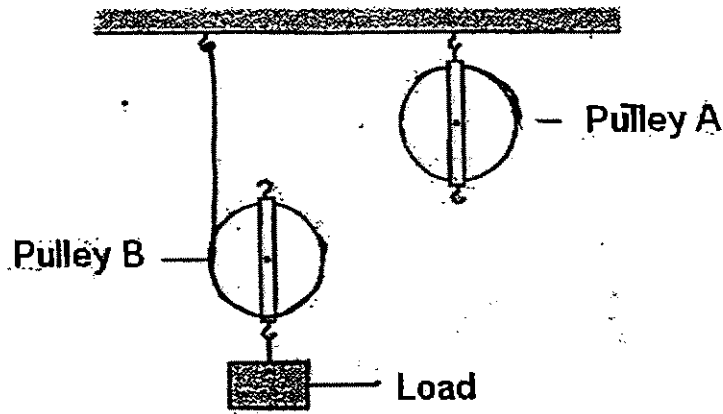
(c) If the contact screw is made of plastic, what will happen to the electric bell when the switch is closed and why? [1]

32. The diagram below shows the apparatus that is used to demonstrate an important process in mammals.



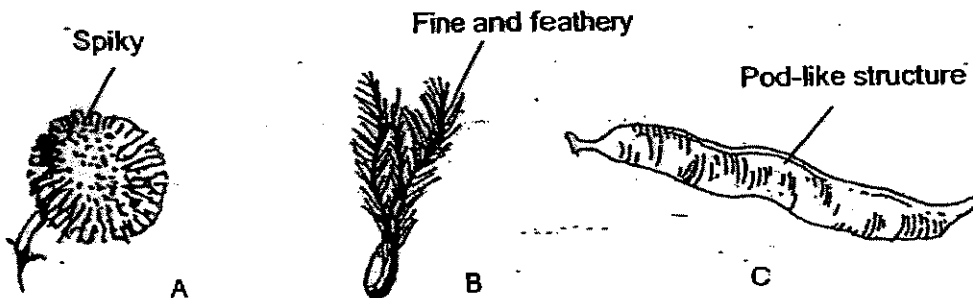
- (a) State the important process that the above apparatus demonstrates. [1]
-
- (b) Which organ of a mammal do the balloons represent? [1]
-
- (c) What will happen to the balloons when the sheet of rubber is pulled down and then released? [1/2]
-
-

33. Sandy would like to lift up a load using the pulley system as shown in the diagram below.



- (a) Draw the rope around the two pulleys in order to lift up the load. [1]
 (b) Explain the purpose of pulley A in lifting the load. [1]

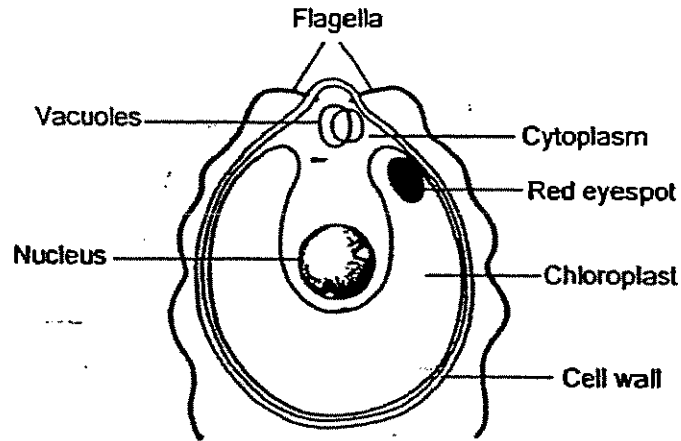
34. The diagram below shows the fruits of three different plants, not drawn to scale.



Based on their physical characteristics, identify the method of dispersal of each plant. [1 1/2]

Plant	Method of Dispersal
A	
B	
C	

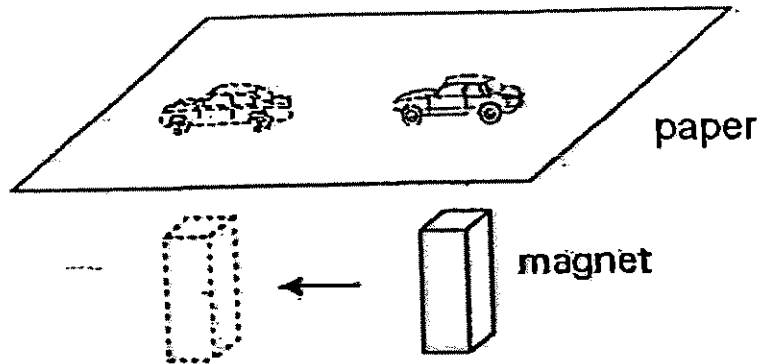
35. The following diagram shows a single-celled organism known as Chlamydomonas that is found in lakes, ponds and streams.



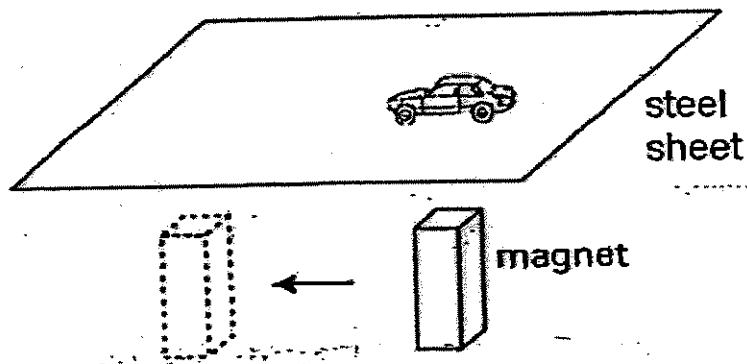
(a) Is this single-celled organism a plant or an animal? Give a reason to justify your answer. [1]

(b) What are the two main functions of the nucleus? [1]

36. Malik placed a toy car made of iron on a sheet of paper and held a magnet 2cm away under the sheet of paper as shown in the diagram,



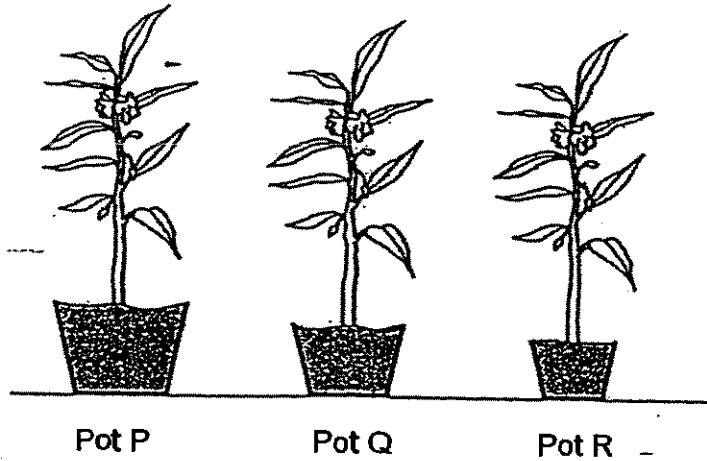
She observed that when she moved the magnet, the toy car would also move in the same direction as the magnet. She then repeated the experiment with a sheet of steel as shown below.



- (a) What will she observe when the magnet is moved. [1]

- (b) Explain your observation in (a). [1]

37. Ahmad wanted to find out which type of soil was suitable for growing balsam plants. He planted 3 balsam plants of the same size in three pots P, Q and R as shown in the diagram below.

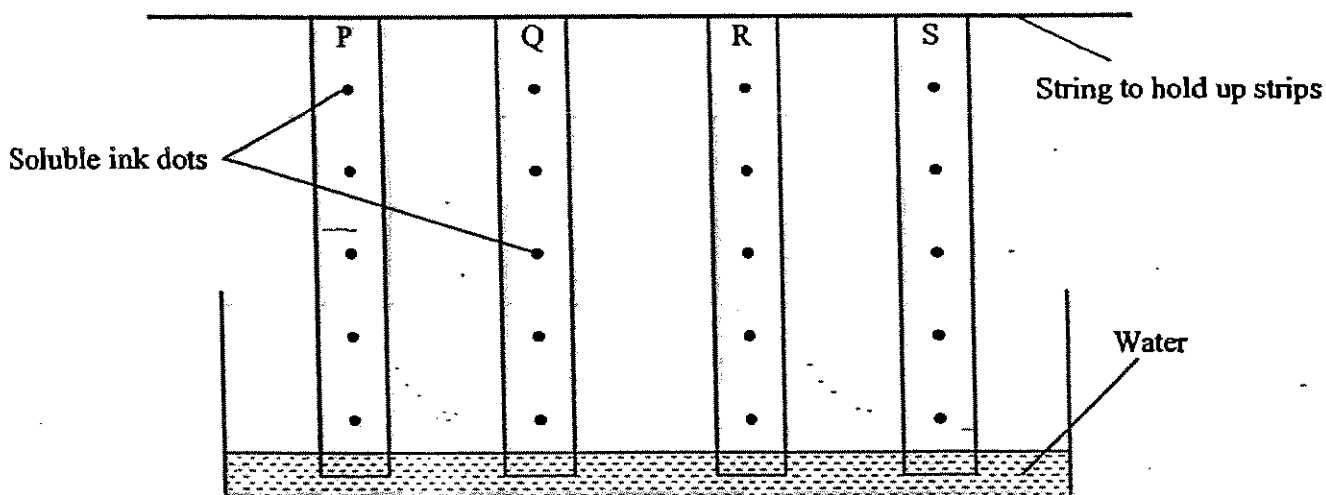


	Pot P	Pot Q	Pot R
Material of pot	plastic	plastic	plastic
Type of soil	sand	clay	garden soil
Size of pot	1200 cm ³	900 cm ³	600 cm ³
Amount of water used daily	150 cm ³	150 cm ³	150 cm ³

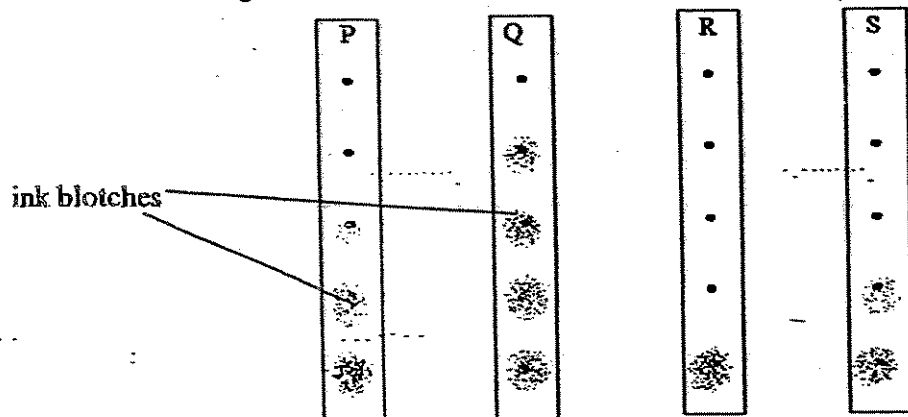
- (a) Explain why the experiment was not a fair one. [1]

- (b) State one more condition which he must keep the same to ensure that the experiment is a fair one. [1]

38. An experiment was set up to find out which material is most suitable for making a towel. Strips of materials P, Q, R and S were all dotted with a water soluble ink and left to hang in a trough of water. As the water was absorbed by the materials, they would smudge the dots along the length of each strip creating blotches of ink.



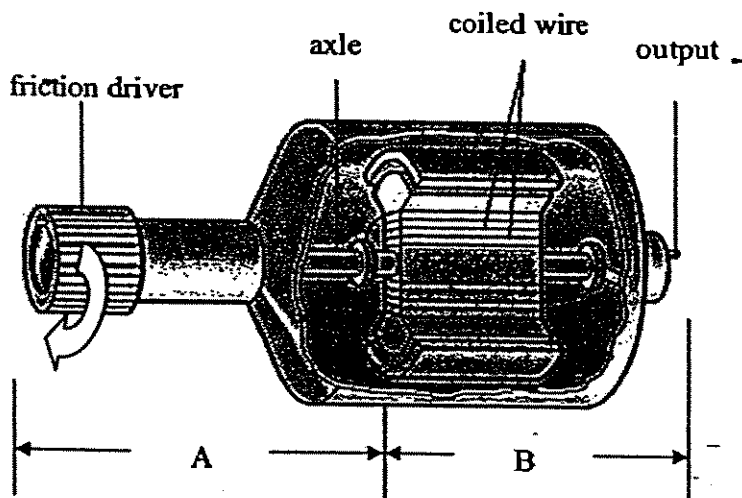
The diagrams below shows what was observed after a period of time.



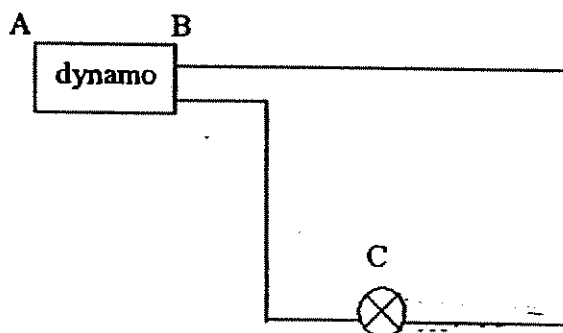
- (a) Based on the observation, which material (P, Q, R or S) will be most suitable for making a towel? [1]
-
- (b) If a strip is made of plastic with ink dots on it, what will be observed of the ink dots after some time? [1]
-
- (c) Explain your answer in (b). [1]
-

39.

The diagram below shows a bicycle dynamo. It is used to generate electricity. The friction driver is attached to the wheel of the bicycle which will rotate the driver when it is in motion. This produces electricity as an output.



The circuit below uses a dynamo to power a light bulb.

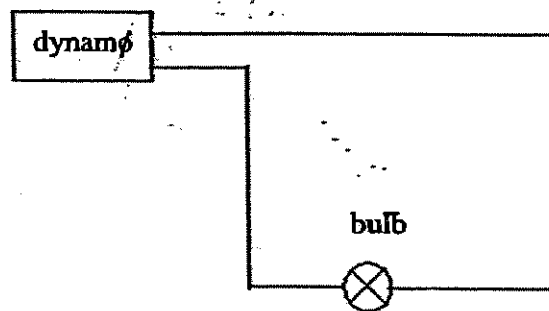


- (a) In the circuit, what is the energy conversion from point A to B to C? [1]

- (b) In what way is the light generated different in the set up above as compared to one using a battery? [1]

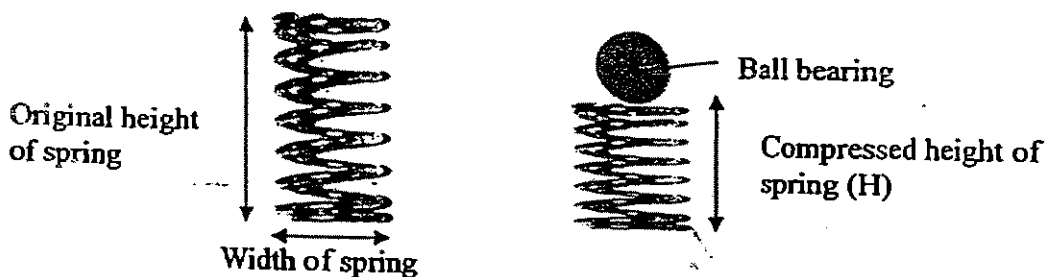
- (c) Whenever a dynamo is used to generate electricity, an additional power source is often used as a form of back up should the dynamo fail.

The diagram below shows part of a simple circuit where a single light bulb is powered by a dynamo. Complete the circuit by adding in the necessary components such that a battery can be used as a backup form of energy. Your circuit must contain one switch only that can be used to change the source of power from the dynamo to the battery in the event the dynamo fails. Label clearly. [2]

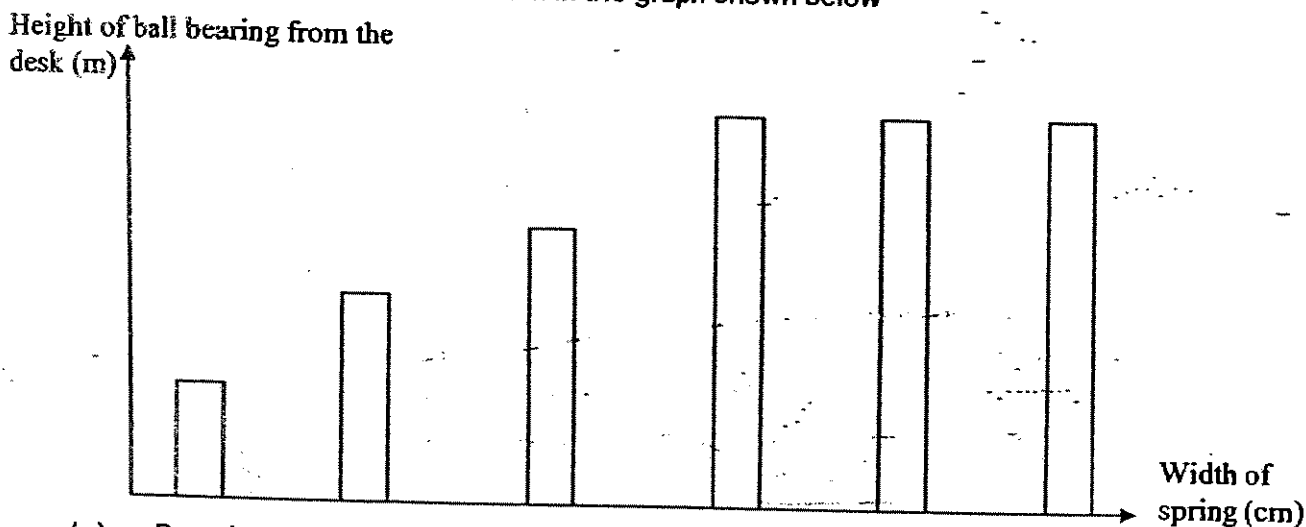


40.

Peter wanted to find out if the width of a spring affects the amount of elastic potential energy it can store. He conducted an experiment on a desk in his room. He compressed a spring to a certain height(H) as shown below and placed a ball bearing on it. Next he released the spring which shot the ball bearing upwards. He then measured how high the ball bearing went. He repeated the experiment with a few springs of different width.



Peter recorded his observation in the graph shown below



(a) Based on the first 3 bars above, what can Peter conclude? [1]

(b) Given that the last 3 observations were wrong because he had made a mistake, suggest a possible mistake he could have made to lead to the 3 observations being the same. [1]

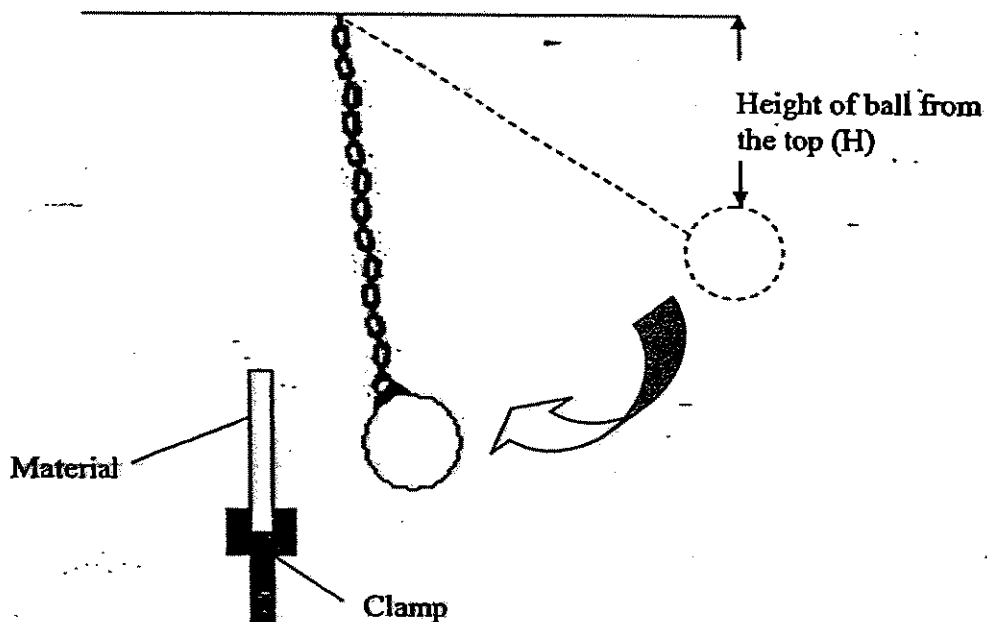
(c) Name 2 other variables to keep constant for his experiment to be a fair one. [1]

Variable 1: _____

Variable 2: _____

41.

A metal ball is hung from a support with a chain. It is then raised to a certain level as shown below and allowed to drop. As the metal swings downwards, it hits a piece of material that is put in its path. The height of the ball from the top is varied till the downward swing of the ball breaks the piece of material. The process is repeated with different types of materials.



Types of materials	H (cm)
W	12
X	20
Y	5
Z	28

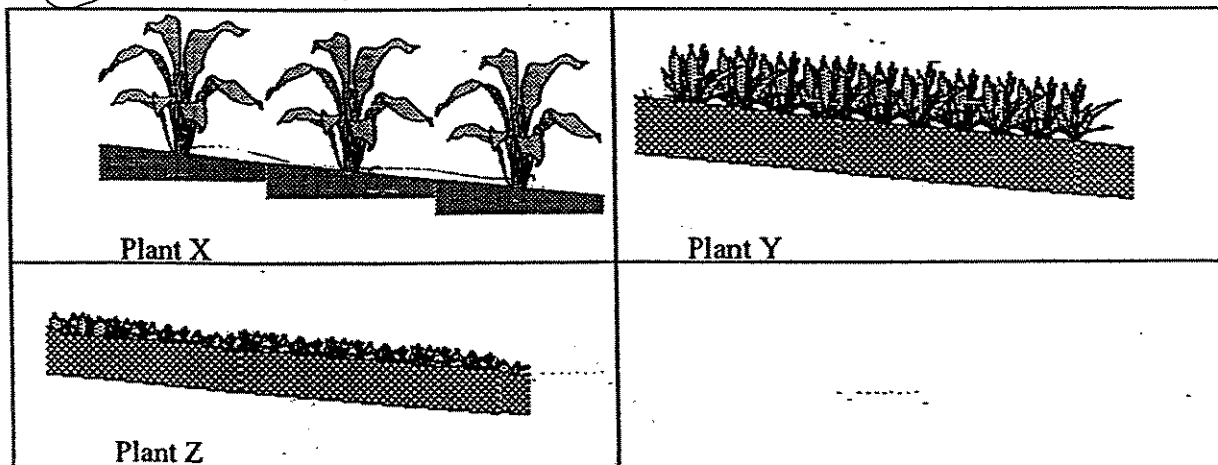
(a) Which material (W, X, Y or Z) has the greatest strength? [1]

(b) How does the mass of the metal ball affect the value of H in the experiment above? [1]

42. In the table below, tick (✓) in the relevant boxes to indicate whether the main force is a "PUSH" or a "PULL". [2]

Action	Push	Pull
i. A man opening the door outwards		
ii. A boy dragging a box across the room		
iii. A boy picking up litter on the floor		
iv. A spring being compressed		

43. 3 different types of plants X, Y and Z were planted on a sloping plot of land as shown below.



(a) Which of these plants is least effective in preventing soil erosion? [1]

(b) Based on what can be observed above, give a reason for your answer in (a). [1]

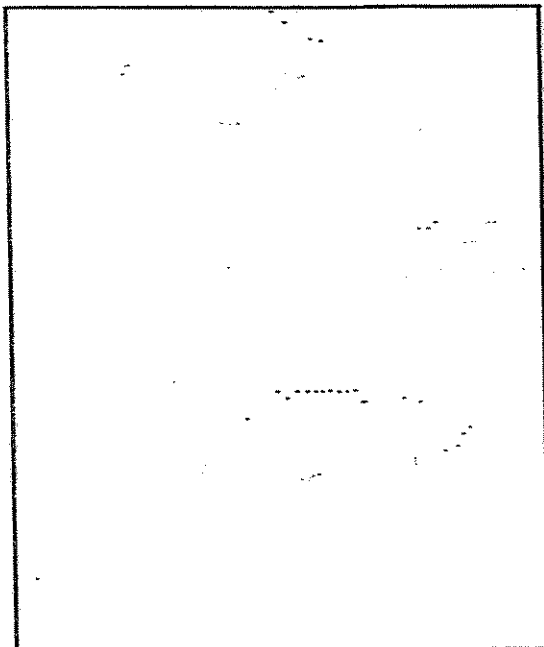
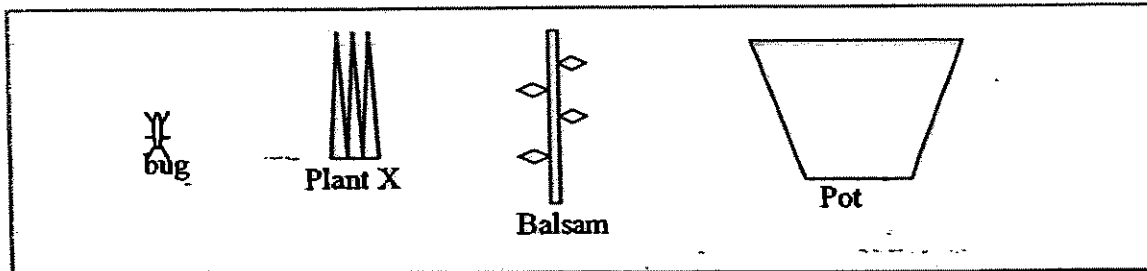
(c) Give 2 reasons how the planting of trees can help prevent soil erosion. [1]

Reason 1: _____

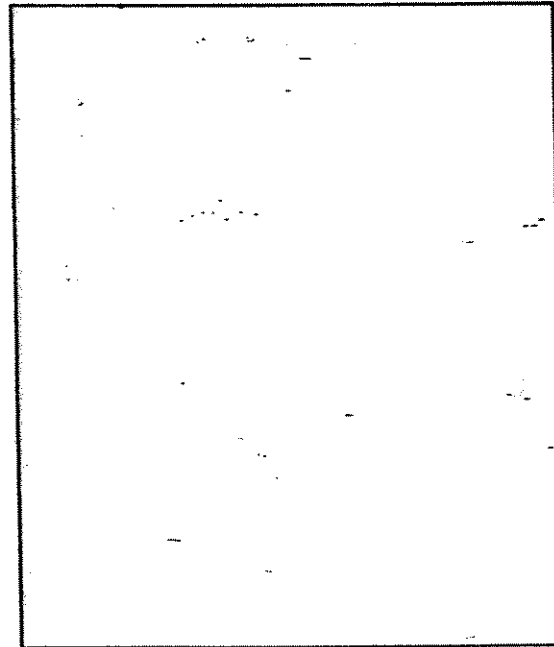
Reason 2: _____

44. The balsam plants in Mr. Tan's garden are infested with a type of bugs. He was advised to grow some Plant X in his garden as this will keep the bugs away. Before he does so, Mr. Tan wants to find out if this is true.

(a) In the space below, draw two set-ups that Mr. Tan can set up to conduct a fair test. In your diagram, use the symbols shown below. [2]



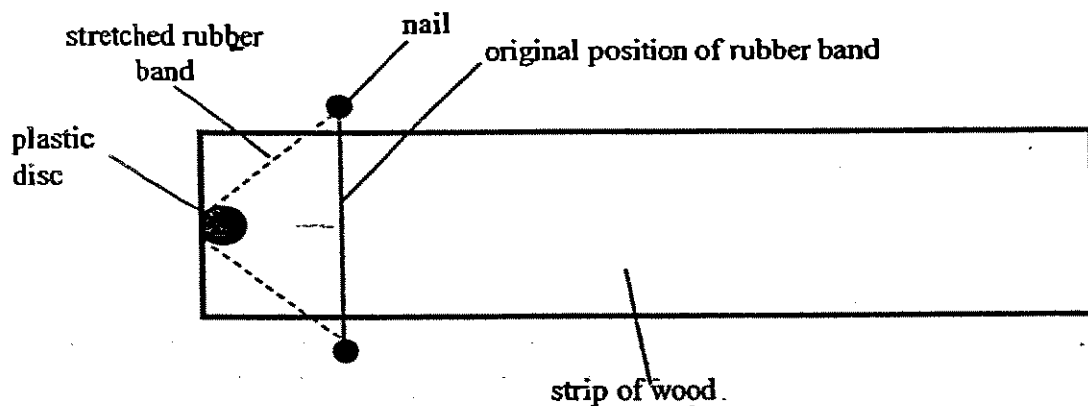
Set-up 1



Set-up 2

(b) What should Mr. Tan be observing in the experiment? [1]

45. A rubber band was stretched across a strip of wood and a plastic disc was then placed in the middle of this rubber band. The disc was then pulled backwards to stretch the rubber band before it was released as shown below. The distance traveled by the disc across the wooden surface was then recorded. The experiment was repeated with different number of rubber bands.

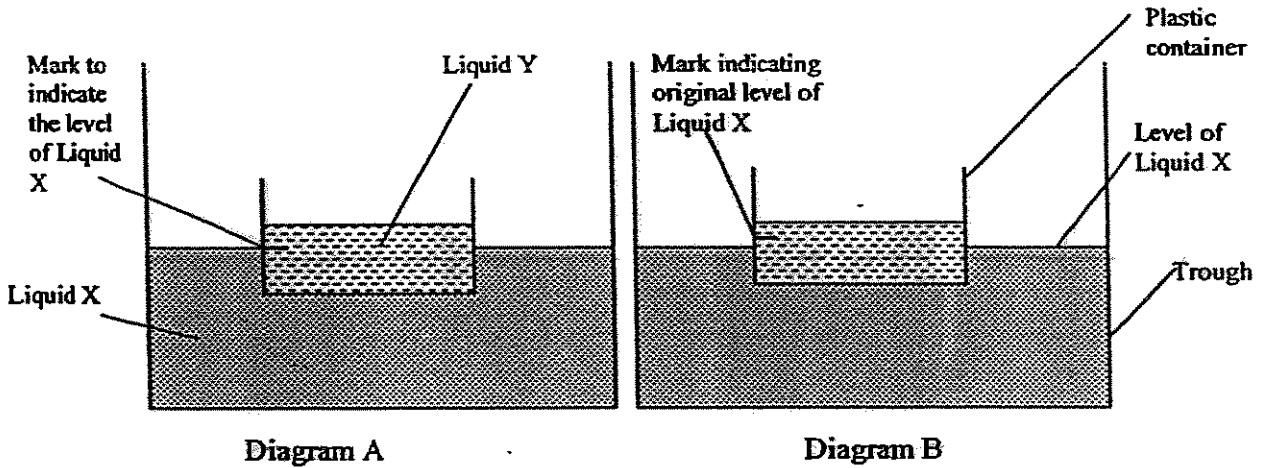


- (a) What is likely to be the relationship between the number of rubber bands used and the distance traveled by the disc? [1]

- (b) Explain your answer above. [1]

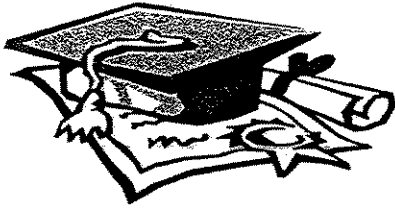
- (c) It was discovered that by sprinkling powder on the wooden strip, the disc could travel a longer distance. Why is this so? [1]

46. A plastic container was floated in a trough filled with liquid X. Liquid Y was then poured into the container. The level liquid X made on the container was marked on the side of the container as shown in diagram A. The set up was then left in a room. It was noticed that after a few days, the mark on the outside of the container had risen above the level in the trough as shown in diagram B.



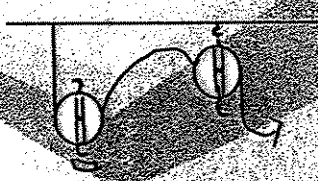
If nothing else had been added to the set up, explain why the mark "floated" above the level of liquid X after a few days. [2]

END OF PAPER



ANSWER SHEET

ACS PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
MID-YEAR EXAMINATION

1. 4 31) a) The iron would get attracted to the steel rod and the hammer hits the gong.
2. 4 b) Electricity would not flow through the circuit.
3. 3 c) Nothing would happen. A plastic is a insulator of electricity.
4. 3
5. 1
6. 3
7. 3
8. 3 32) a) Breathing
9. 2 b) The lungs
10. 3 c) The balloons will get inflated with air.
11. 1
12. 3 33) a) 
13. 1 b) It changes the direction of the effort.
14. 3
15. 3
16. 4
17. 1 34) A) By animals B) By wind
18. 3 C) By explosive action
19. 2
20. 4
21. 4
22. 2 35) a) It has a cell wall.
23. 3 b) Firstly to control the activities within the cell and it contains DNA, that is passed down from one generation of the next
24. 1
25. 3
26. 1
27. 4
28. 1 36) a) Nothing would happen to the car.
29. 4 b) The steel sheet is a magnetic material so it prevented the attraction between the magnet and the iron toy car.
30. 2

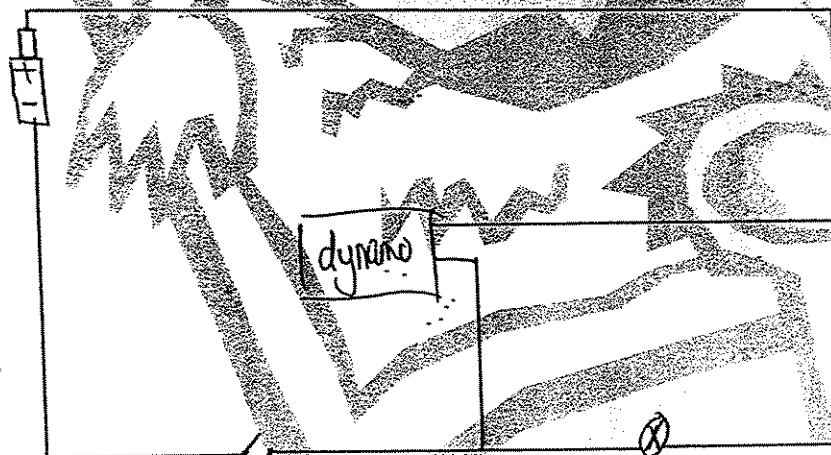
- 37) a) The size of all the three pots are different.
 b) The place where they are left under the sun.

- 38) a) Material Q
 b) The ink dots will get washed away into the water.
 c) Plastic is waterproof.

- 39) a) Kinetic energy \rightarrow electrical energy \rightarrow light energy + Heat energy

b) When we use a battery to light a bulb, we cannot adjust the brightness of the bulb. In the above set-up we can adjust the brightness of the bulb by adjust the speed of the dynamo.

c)



- 40) a) The greater the width of the spring, the greater the height of the ball bearing from the desk.

b) He used springs with different original length/height.

c) 1: comprehend height of the spring.

2: The original height of the spring.

- 41) a) Material Y

b) The greater the mass of the metal ball, the lesser the value of H.

42) i) Push ii) Pull iii) Pull iv) Push

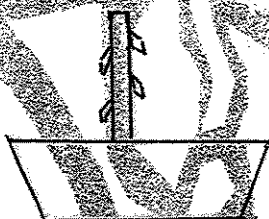
43) a) Plant X

b) The more plants the more roots they have to grip on the soil.

c) 1) Trees have strong roots to hold ground.

2) The leaves pervert rain water from hitting the soil directly.

44) a) set-up 1



set-up 2



b) Whether plant X will keep the bugs away.

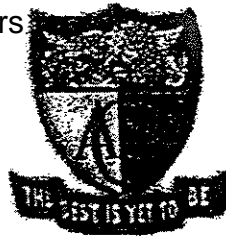
45) a) The more rubber bands used, the further the distance traveled by the disc.

b) When more rubber bands are used, their elastic potential energy is larger.

c) By sprinkling powder, it reduces the friction of the wooden surface.

46) Some of the liquid y has evaporated and therefore the plastic container is lighter.

---end---



Anglo-Chinese School (Primary)

P6 SCIENCE 2007

PRELIMINARY EXAMINATION

BOOKLET A

Name: _____ () **Class:** Primary 6 _____

Date: 24 August 2007





Duration of paper: 1h 45 min

Parent's/Guardian's signature

**THIS BOOKLET CONTAINS 19 PAGES.
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

For each of the following questions from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.

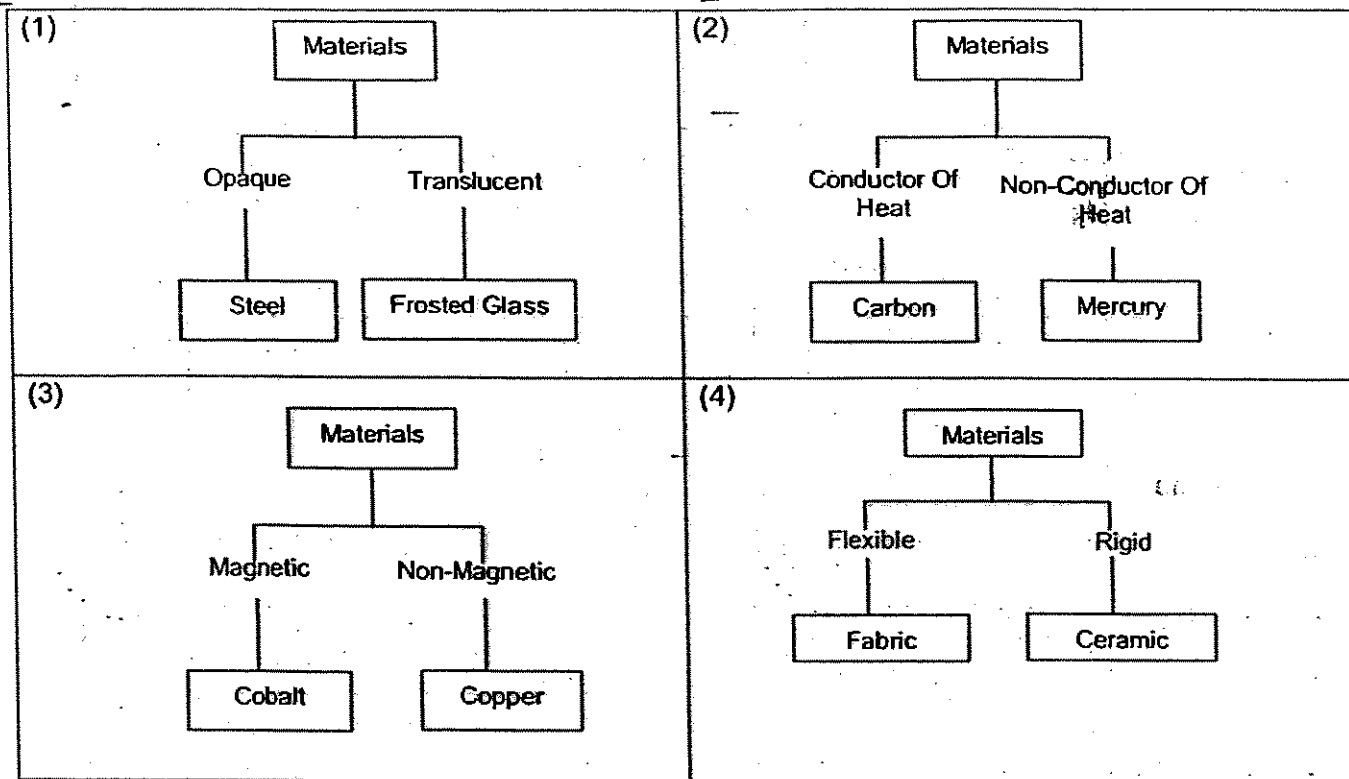
1 Which one of the following is not a mammal?

(1) shark 	(2) platypus 
(3) man 	(4) whale 

2 An object is said to be _____ when it does not break easily.

- (1) hard
- (2) brittle
- (3) strong
- (4) flexible

3 Which one of the following classification charts is incorrect?



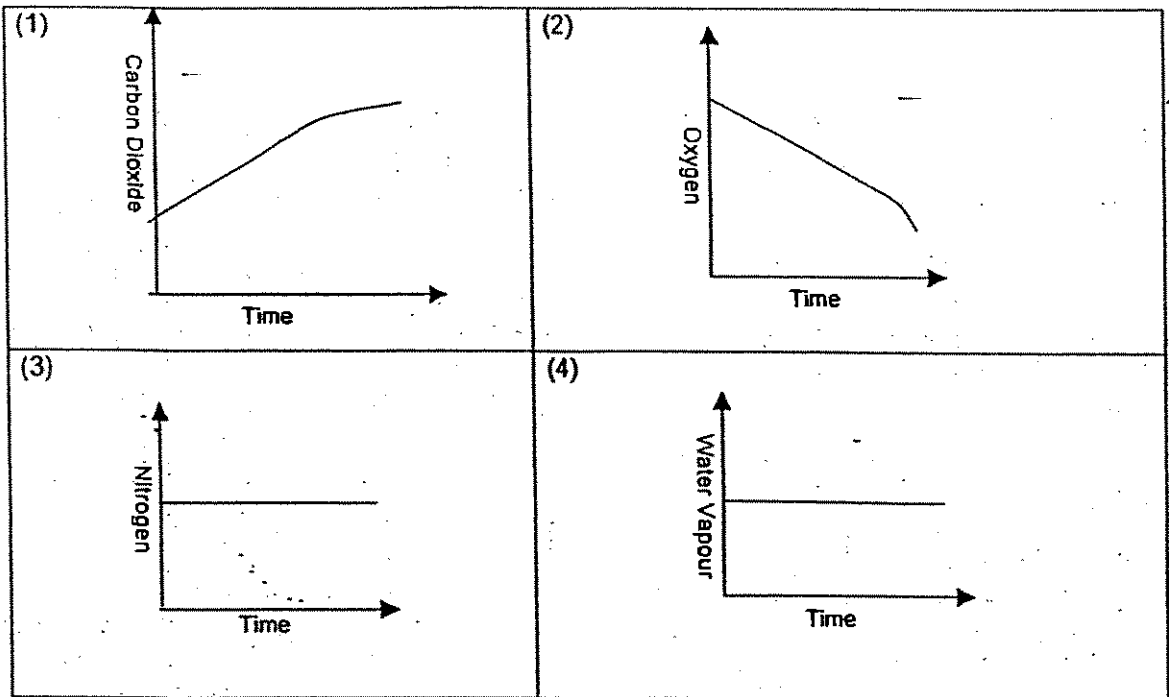
4 Mohan fully dipped 4 different materials of the same size into 4 containers each containing a certain amount of tap water. He recorded the amount of water in each container both before and after dipping the materials into the container. The table below shows his results.

	Container For Material A	Container For Material B	Container For Material C	Container For Material D
<i>Amount of water in container at first</i>	55 ml	145 ml	70 ml	60 ml
<i>Amount of water in container at the end</i>	45 ml	115 ml	35 ml	30 ml

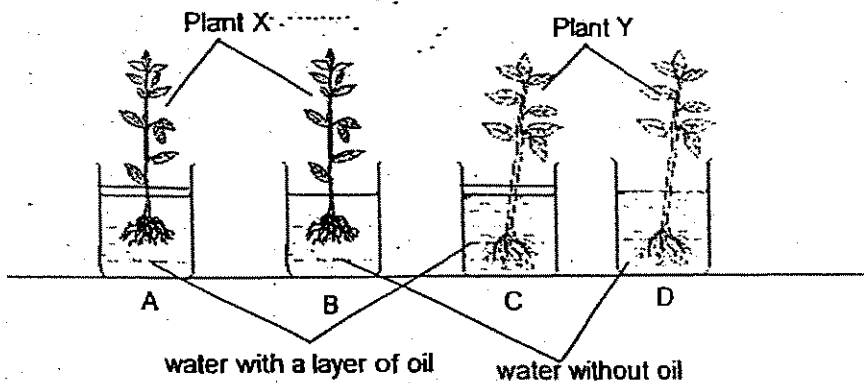
Based on the results above, if Mohan wants to choose one of 4 materials above to make towels, which is the best material he should choose?

- (1) Material A
- (2) Material B
- (3) Material C
- (4) Material D

- 5 A group of people was trapped in a lift. The following graphs show the changes in the amount of gases in the lift. Which one is most likely to be incorrect?



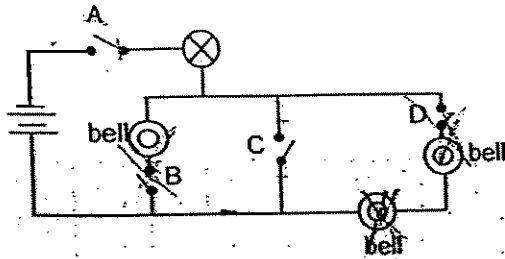
- 6 Bala wants to conduct an experiment to find out whether Plant X or Plant Y takes in more water.



Which pair of the above set-ups is the most suitable for him to conduct the experiment?

- (1) A and B
- (2) C and D
- (3) A and C
- (4) A and D

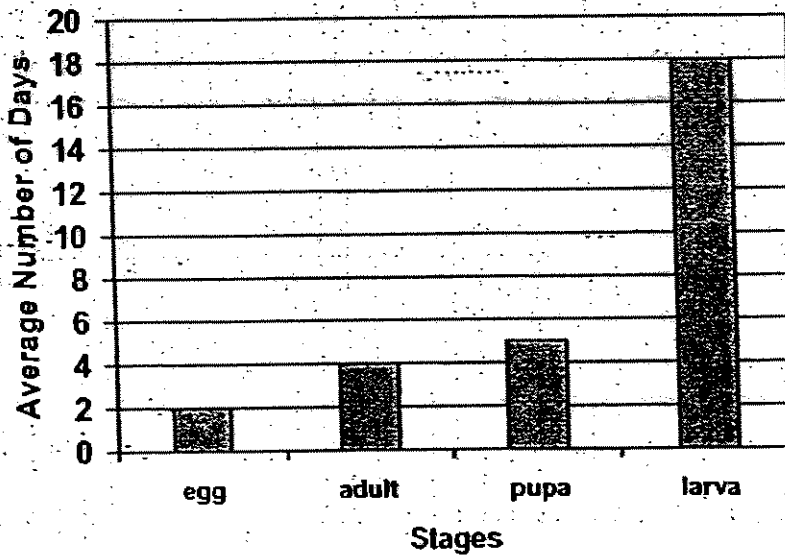
7 Study the circuit diagram shown below.



Which of the switches must be closed in order to light up only the bulb but not ring any bell?

- (1) A and D
- (2) B and C
- (3) A and C
- (4) B and D

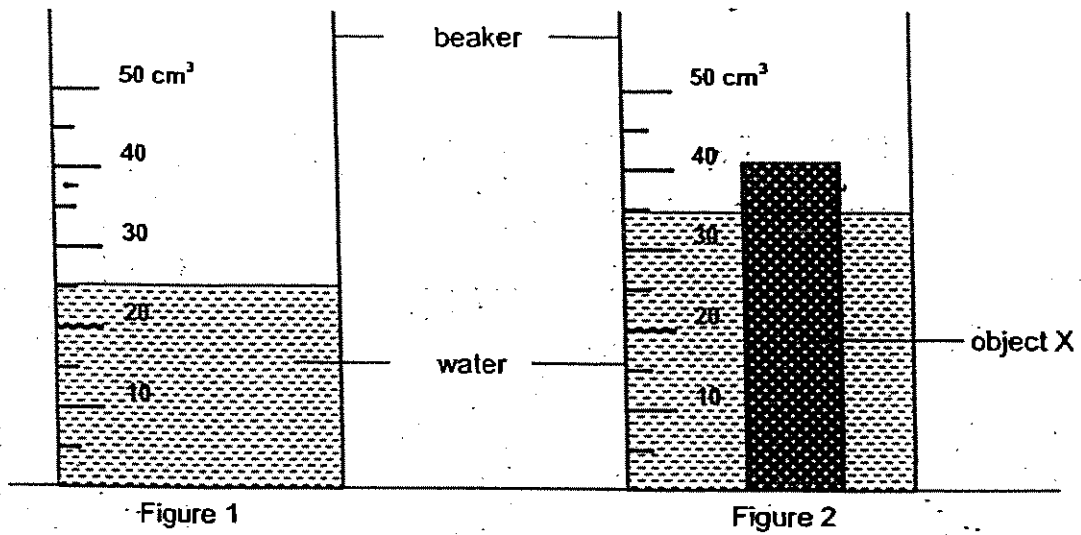
8 The graph below shows the stages in the life cycle of a certain insect and the length of time the insect remains at these stages.



How many days does it take for the insect to become a pupa after the egg has been laid?

- (1) 2
- (2) 7
- (3) 18
- (4) 20

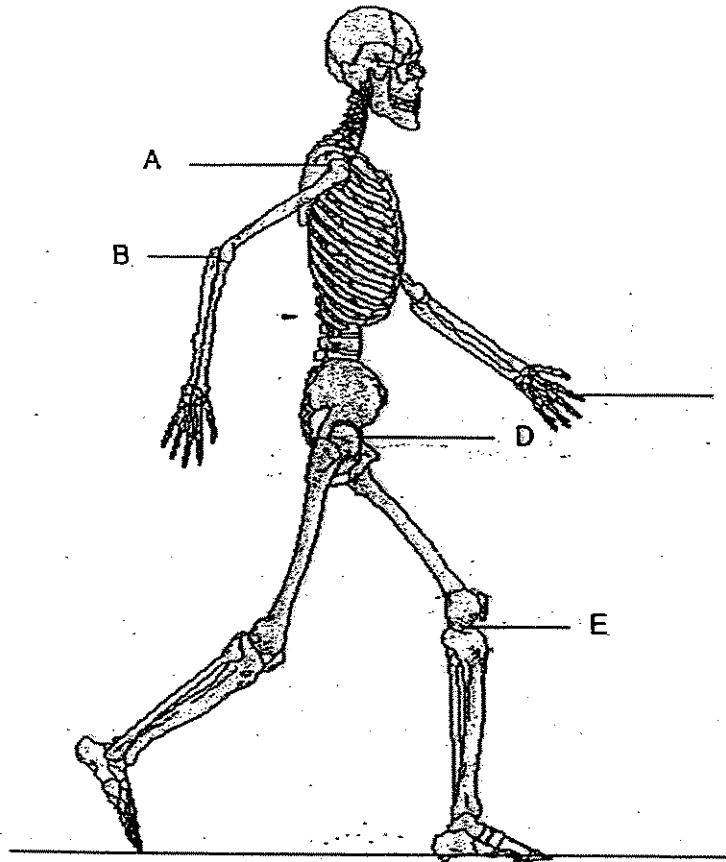
- 9 Figure 1 shows a beaker containing a certain amount of water. Figure 2 shows the same beaker of water when an object X is placed into it.



From the diagram, the volume of the object X is _____.

- (1) 10 cm³
- (2) 35 cm³
- (3) between 10 cm³ and 20 cm³
- (4) between 25 cm³ and 35 cm³

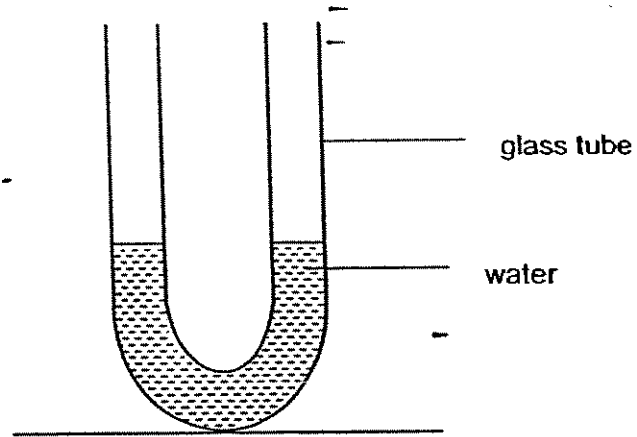
10 A, B, C, D and E, are joints in the human skeletal system.



Which one of the following pairs of joints is most similar in their movement?

- (1) A and B
- (2) A and C
- (3) B and E
- (4) C and D

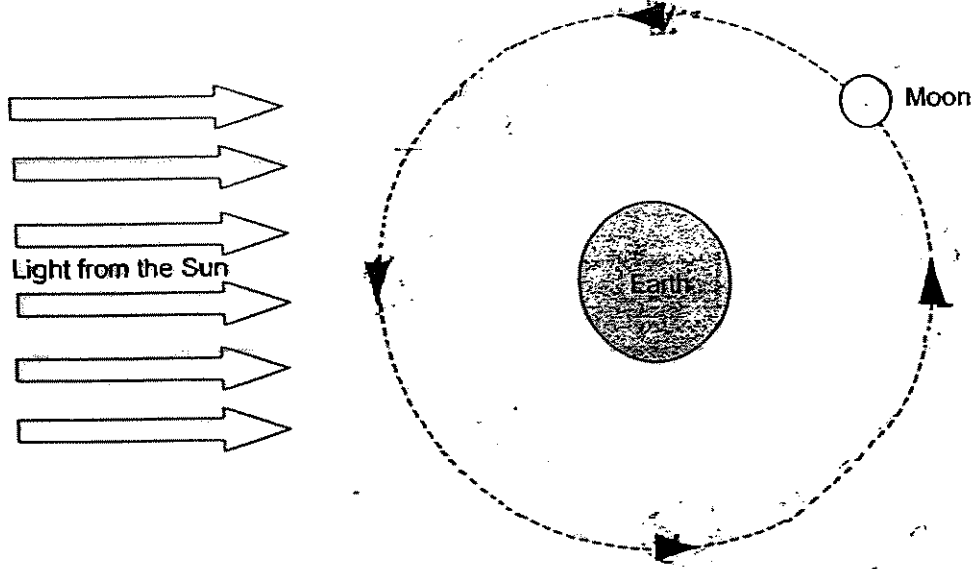
11 The diagram below shows a U-shaped glass tube containing some water.



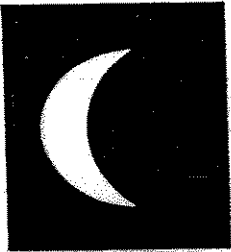
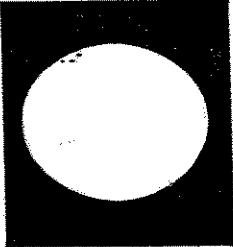
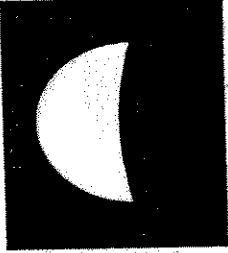
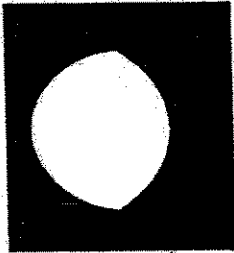
Which one of the following diagrams shows how the water in the tube would look like when the glass tube was tilted?

<p>(1)</p> <p>Diagram (1) shows a U-tube tilted to the right. The water level in the right arm is higher than the water level in the left arm.</p>	<p>(2)</p> <p>Diagram (2) shows a U-tube tilted to the right. The water level in the left arm is higher than the water level in the right arm.</p>
<p>(3)</p> <p>Diagram (3) shows a U-tube tilted to the right. The water level is the same in both arms.</p>	<p>(4)</p> <p>Diagram (4) shows a U-tube tilted to the right. The water level in the right arm is higher than the water level in the left arm.</p>

12 The diagram below shows the position of the Moon as it orbits around the Earth.



When the Moon is at the position shown above, which one of the following phases of the Moon would be observed by someone on Earth?

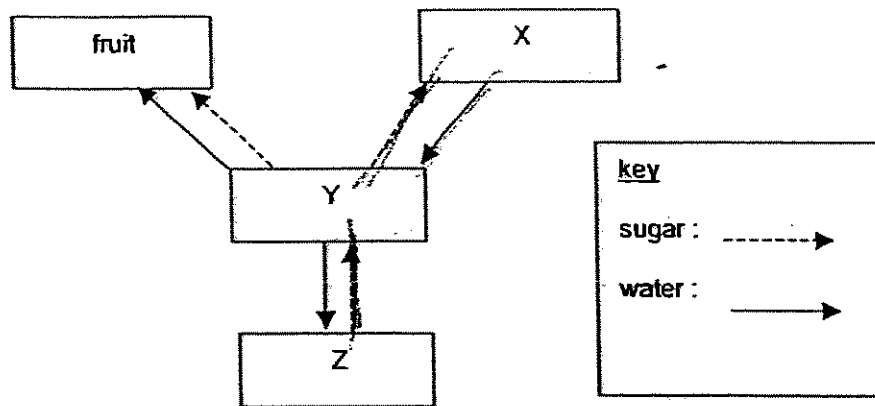
(1) 	(2) 
(3) 	(4) 

- 13 Peter planned an experiment to investigate the effect of temperature on the rate at which seeds germinate. He labeled 4 similar plastic plates as A, B, C and D and put a moist paper towel into each of them. 10 green bean seeds were then placed on the paper towel in each plate. The plates were placed in the dark at different temperatures. The total number of germinated seeds in each plate was counted each day for two weeks.

Which one of the following tables is best for recording the results of the investigation?

<p>(1)</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2">Plate</th> <th colspan="4">Temperature of Surroundings</th> </tr> <tr> <th>20°C</th> <th>25°C</th> <th>30°C</th> <th>35°C</th> </tr> </thead> <tbody> <tr><td>A</td><td></td><td></td><td></td><td></td></tr> <tr><td>B</td><td></td><td></td><td></td><td></td></tr> <tr><td>C</td><td></td><td></td><td></td><td></td></tr> <tr><td>D</td><td></td><td></td><td></td><td></td></tr> </tbody> </table>	Plate	Temperature of Surroundings				20°C	25°C	30°C	35°C	A					B					C					D					<p>(2)</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2">Plate</th> <th colspan="2">Number of seeds germinated</th> </tr> <tr> <th>Dark</th> <th>Light</th> </tr> </thead> <tbody> <tr><td>A</td><td></td><td></td></tr> <tr><td>B</td><td></td><td></td></tr> <tr><td>C</td><td></td><td></td></tr> <tr><td>D</td><td></td><td></td></tr> </tbody> </table>	Plate	Number of seeds germinated		Dark	Light	A			B			C			D																																																																																
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- 14 The diagram below shows how sugar and water are transported to and from different parts of a plant.



Which one of the following shows correctly the parts of the plant that are represented by X, Y and Z?

(1)
(2)
(3)
(4)

X	Y	Z
leaves	stems	roots
stems	roots	leaves
roots	stems	leaves
roots	leaves	stem

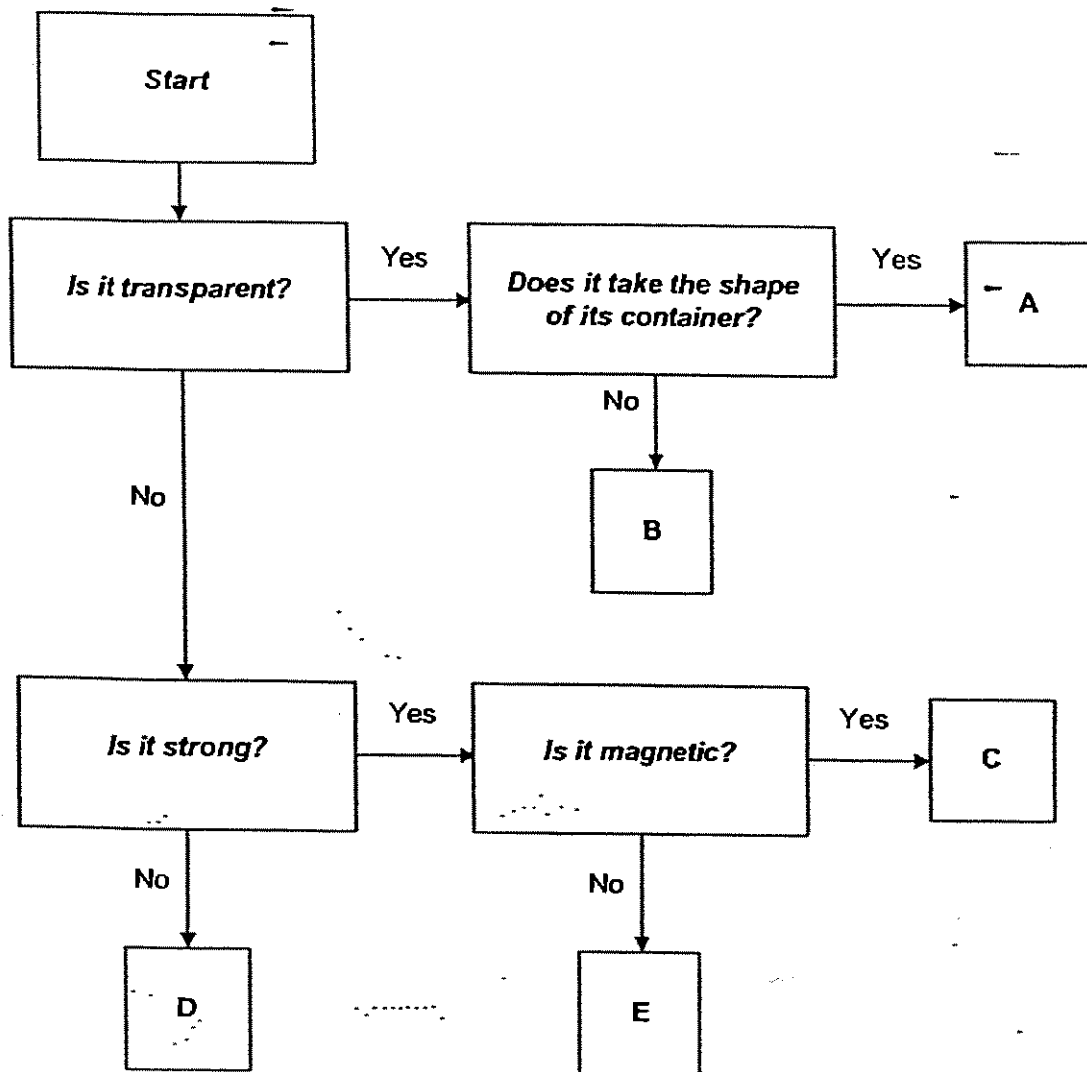
- 15 The table below provides some information on 3 types of cells, X, Y and Z. A tick (✓) indicates the presence of the part of the cell.

Parts of Cell	Cell X	Cell Y	Cell Z
cell wall	✓		✓
nucleus	✓	✓	✓
chloroplast			✓

Which of the cell(s) is/are most likely to be found in the root of a plant?

- (1) X only
 (2) Z only
 (3) X and Y only
 (4) Y and Z only

16 The branching key shows how some things can be classified.



Which of the following could be things A, B, C, D and E?

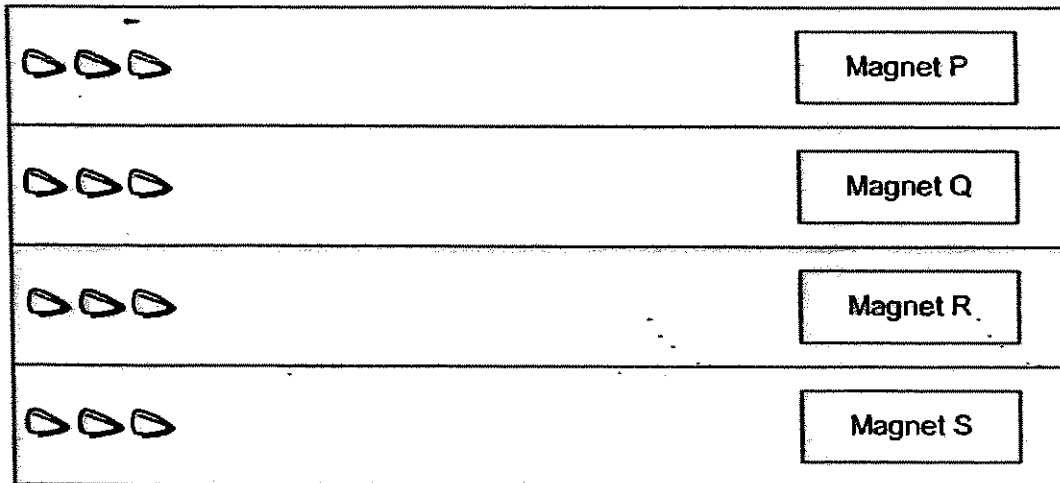
	A	B	C	D	E
(1)	clear plastic	frosted glass	steel pin	clay pot	iron rod
(2)	tissue paper	water	zinc rooftop	frosted glass	copper wire
(3)	water	window pane	iron rod	tissue paper	zinc rooftop
(4)	water	clear plastic	iron rod	clay pot	steel pin

17

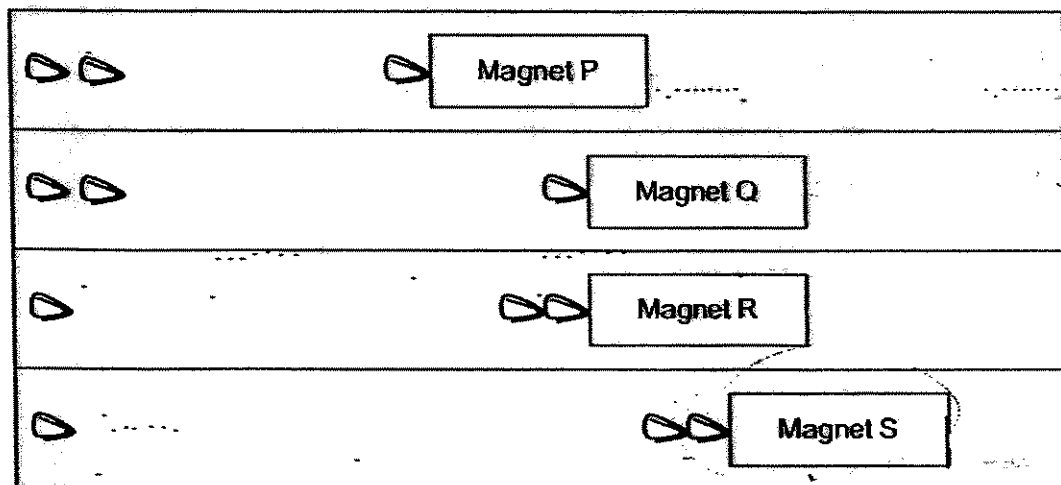
Sarah set up an experiment to find out the magnetic strength of 4 magnets. She first placed the magnets at equal distances away from the steel paper clips. She then moved each magnet slowly towards the paper clips and measured the greatest distance between the paper clips and each of the magnets at the instance when the magnets were first able to attract the paper clips.

The diagrams below show the start and the end of the experiment.

At the beginning of the experiment



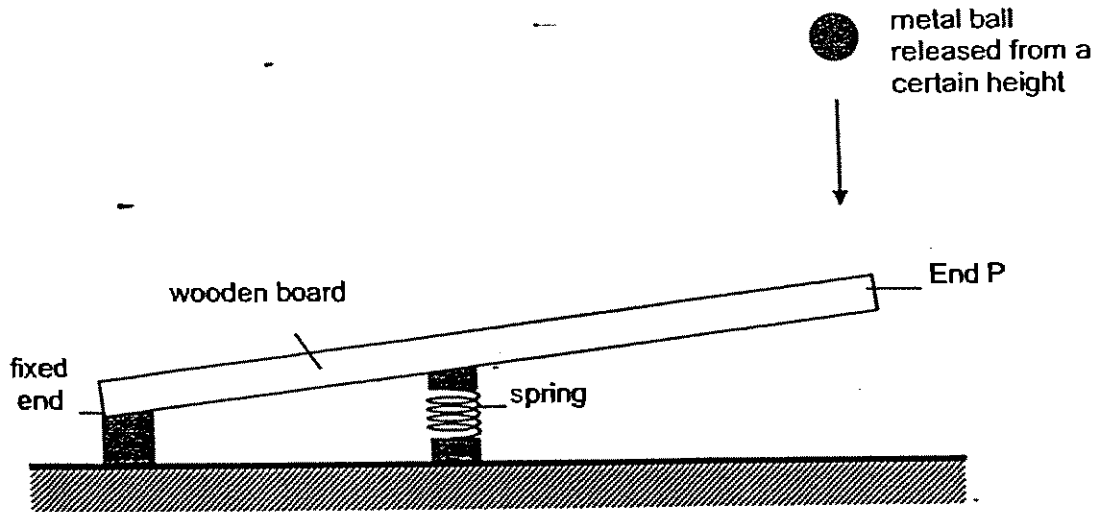
At the end of the experiment



Which of the following shows the correct sequence of magnetic strength of the 4 magnets from the weakest to the strongest?

- (1) P, Q, R, S
- (2) Q, S, R, P
- (3) R, S, P, Q
- (4) S, R, Q, P

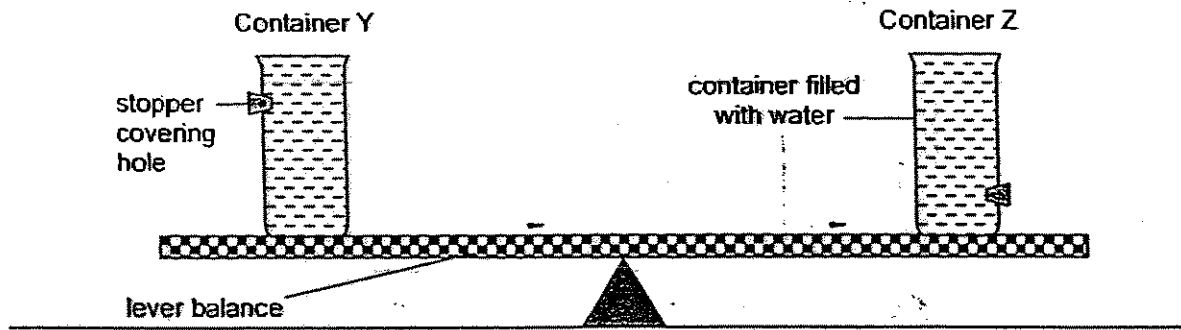
- 18 Terrence set up the experiment shown below. He released a metal ball from a certain height above End P. He recorded the height at which the ball was released and the maximum height to which the ball jumped. He repeated the experiment several times using the same ball but changed one of the variables each time.



Which of the following shows a possible aim of the experiment and the variables, which should be kept constant? A tick (✓) indicates that the variable is kept constant.

Aim of experiment	Position of spring	Length of wooden board	Distance between metal ball and End P at the point of release
(1) How the position of the spring affects how high the ball jumped	✓		✓
(2) How the position of the spring affects how high the ball jumped	✓	✓	
(3) How the height of release affects how high the ball jumped	✓	✓	
(4) How the height of release affects how high the ball jumped		✓	✓

- 19 Melissa balanced 2 containers of water on a lever balance. The containers were of the same capacity but each had a similar hole positioned at different parts of the container. The holes were covered by stoppers. She filled the 2 containers completely with water.

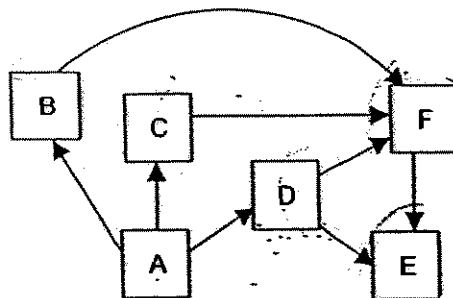


She then removed the stoppers and observed that the water flowed out. This resulted in an imbalance in the lever balance when the water stopped flowing. How would she be able to rebalance the lever balance?

- A Move the fulcrum towards Container Y
- B Move the fulcrum towards Container Z
- C Move Container Y away from the fulcrum
- D Move Container Z away from the fulcrum

- (1) C only
- (2) D only
- (3) A and D only
- (4) B and C only

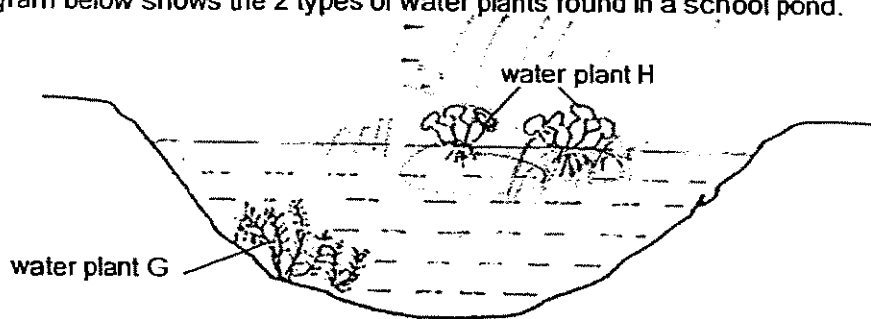
- 20 Gary drew the food web below.



Which one of the following statements is true?

- (1) Organisms E and F depend directly on Organism A.
- (2) There is a predator, which is also a prey to other organisms.
- (3) 3 of the organisms are herbivores and 2 of the organisms are omnivores.
- (4) The populations of all the organisms will increase if Organism A becomes extinct.

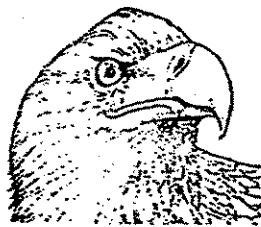
21 The diagram below shows the 2 types of water plants found in a school pond.



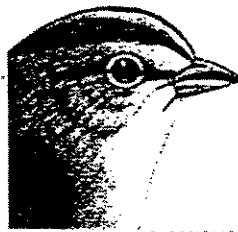
Ashvin observed that the number of water plant G decreased when the number of water plant H increased tremendously. Which one of the following factors has the greatest impact that has led to the decrease in the number of water plant G?

- (1) space
- (2) sunlight
- (3) nutrients
- (4) dissolved oxygen

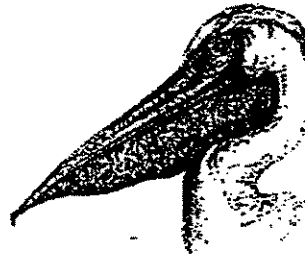
22 The diagrams below show the beaks of 3 birds, J, K and L and their feet, W, X and Y.



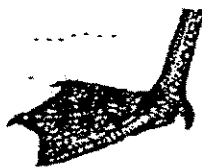
Bird J



Bird K



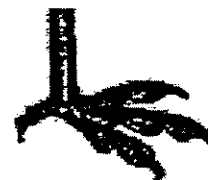
Bird L



Foot W



Foot X

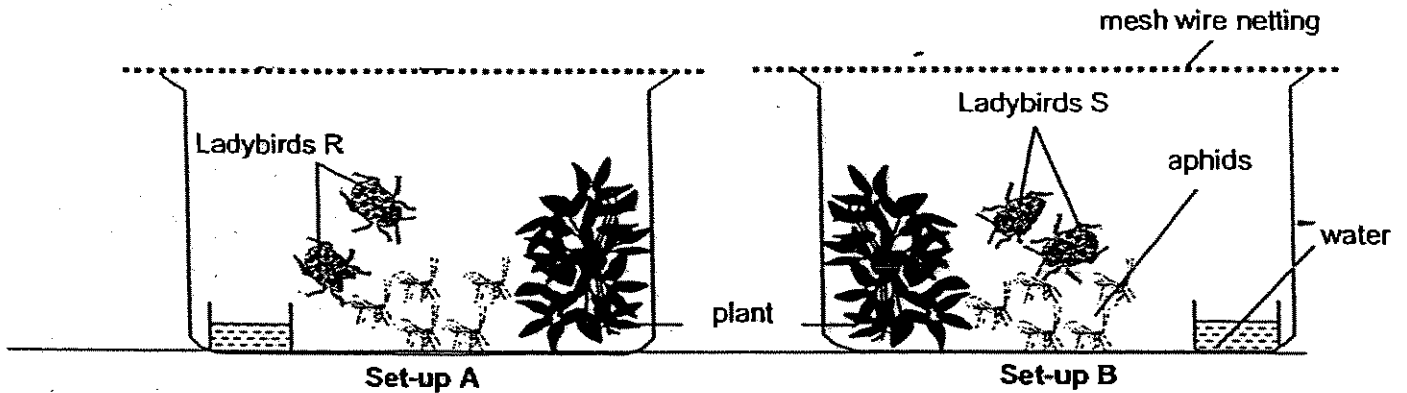


Foot Y

Match the birds to their correct feet.

	Bird J	Bird K	Bird L
(1)	W	X	Y
(2)	X	Y	W
(3)	X	W	Y
(4)	Y	W	X

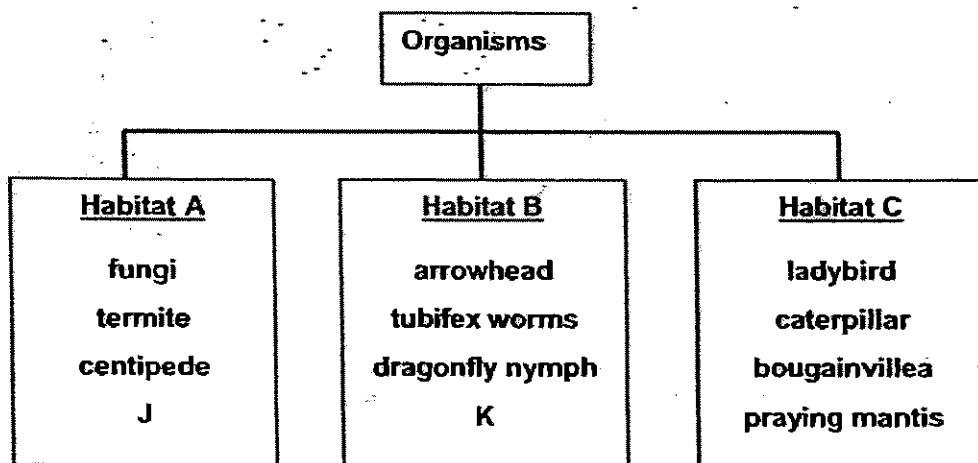
Farmer Ronnie conducted an experiment to find out which species of ladybird, R or S, can better control the population of aphids in his plantation. He put 2 Ladybirds R in Set-up A and 2 Ladybirds S in Set-up B. He also put in 5 aphids in each set-up and left them undisturbed for 2 hours.



How would he decide which species of ladybird to use to control the aphids after the experiment?

- (1) The set-up which has the most amount of water left.
- (2) The set-up which has the least amount of leaves left.
- (3) The set-up which has the least number of aphids left.
- (4) The set-up which has the most number of ladybirds left.

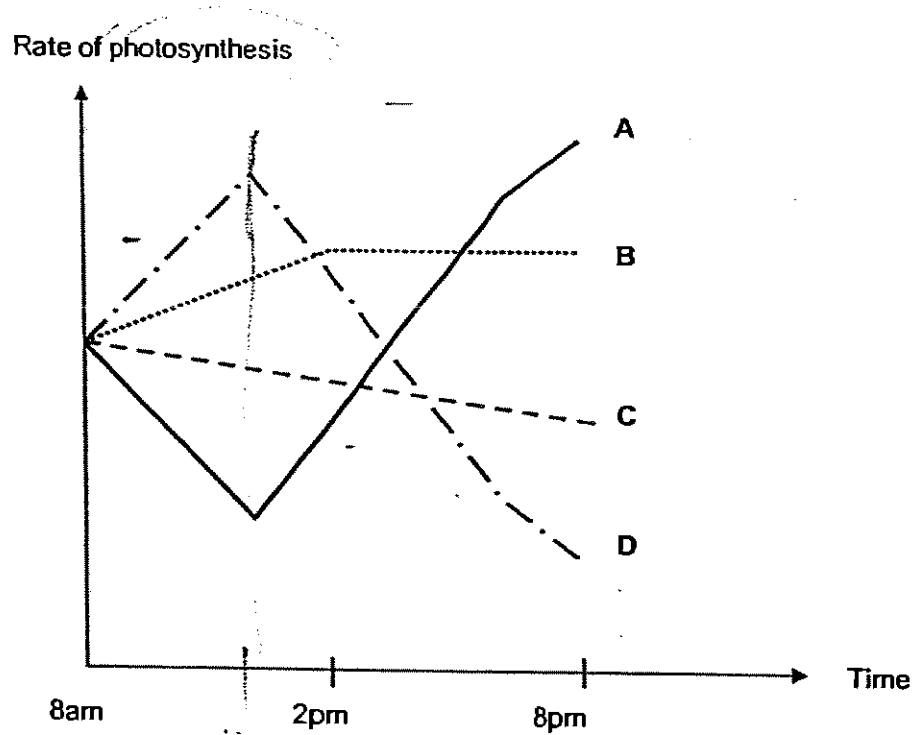
24 The classification chart below groups some organisms according to their habitats.



Which one of the following could be Organisms J and K?

- | | |
|---|---|
| <p><u>J</u></p> <ul style="list-style-type: none"> (1) hydrilla (2) butterfly (3) earthworm (4) woodlouse | <p><u>K</u></p> <ul style="list-style-type: none"> wiggler woodlouse balsam backswimmer |
|---|---|

25 Bao Long placed a green plant outdoors on a sunny day. Which graph correctly represents the plant's rate of photosynthesis?



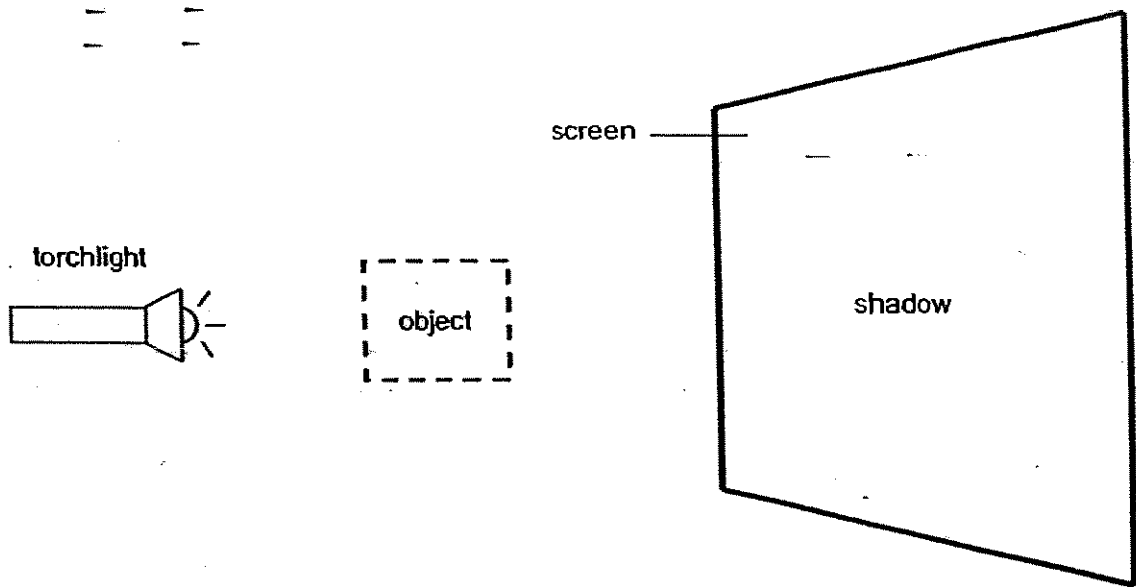
- (1) A
- (2) B
- (3) C
- (4) D

26 Which of the following statements is/are true?

- A Food is stored as starch in the seeds, leaves and roots of plants.
- B Chlorophyll is needed for photosynthesis and respiration to take place in plants.
- C Photosynthesis takes place only in the day while respiration takes place only in the night.
- D Carbon dioxide is produced by plants during respiration and taken in by plants during photosynthesis.

- (1) C only
- (2) D only
- (3) A and D only
- (4) B and C only

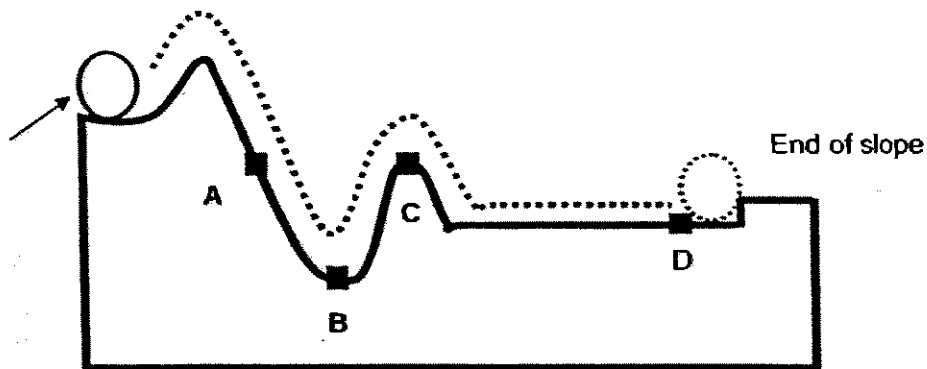
27 The diagram below shows a torchlight shining at an object.



Which one of the following objects would cast the darkest shadow when a torchlight is shown at it?

- (1) glass beaker
- (2) frosted glass
- (3) tracing paper
- (4) five-cent coin

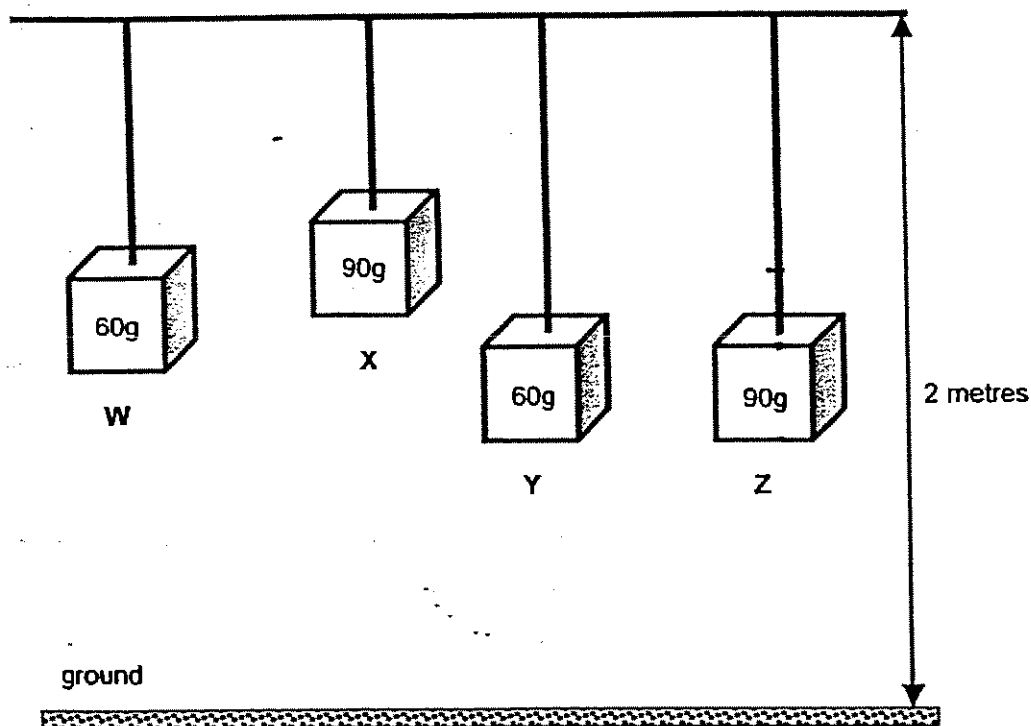
28 Gopal pushed a ball in the direction shown and it rolled towards the end of the slope.



At which point on the slope does the ball have the **greatest** amount of kinetic energy?

- (1) A
- (2) B
- (3) C
- (4) D

29 The diagram shows 4 objects which are hung from the ceiling.



Which of the following statements is/are true?

- A Object X has more gravitational potential energy than Object Z.
- B Object Z has more gravitational potential energy than Object Y.
- C Object W and Object Y have the same amount of gravitational potential energy.
- D When the strings are cut and all the objects fall onto the ground, all the gravitational potential energy of the objects will change into kinetic energy.

- (1) B only
- (2) A and B only
- (3) A and D only
- (4) C and D only

30 Which of the following statements is/are true?

- ~~A~~ The Sun is the source of food for all living things.
- ~~B~~ All living things depend directly on plants for food.
- ~~C~~ Energy is transferred from the Sun to plants during photosynthesis.
- ~~D~~ Oxygen, water and sunlight are combined in a green leaf to make food.

- (1) C only
- (2) B and C only
- (3) A, B and D only
- (4) A, B, C and D

END OF SECTION A. PLEASE GO ON TO SECTION B



Anglo-Chinese School (Primary)

P6 SCIENCE 2007

PRELIMINARY EXAMINATION

BOOKLET B

Name: _____ () Class: Primary 6 ____

Date: 24 August 2007

Duration of paper: 1h 45 min

Parent's/Guardian's signature

	Maximum Marks	Marks Obtained
Section A / Booklet A	60	
Section B / Booklet B	40	
Total	100	

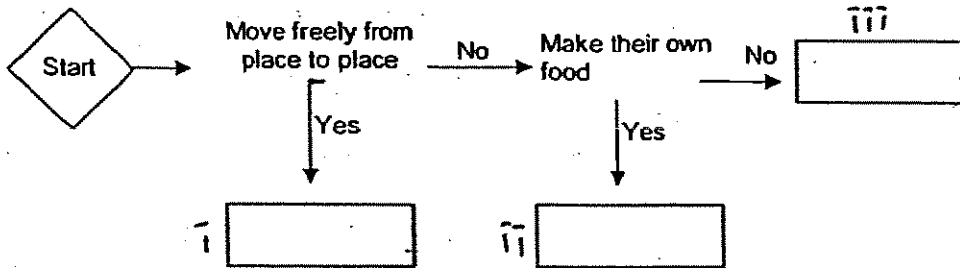
**THIS BOOKLET CONTAINS 14 PAGES.
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

Section B (40 marks):

For questions 31 to 46, write your answers in this booklet.

The number of marks available is shown in brackets [] at the end of each question or part question.

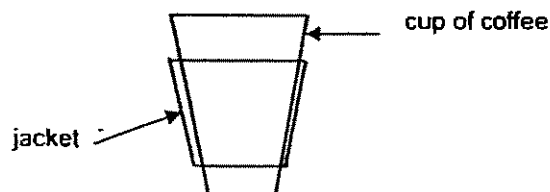
31 Study the flow chart below carefully and use it to answer the following questions.



(a) Fill in the appropriate boxes above with the organism "fern" and "mushroom". [1]

(b) State 2 ways in which the above organisms are classified. [1]

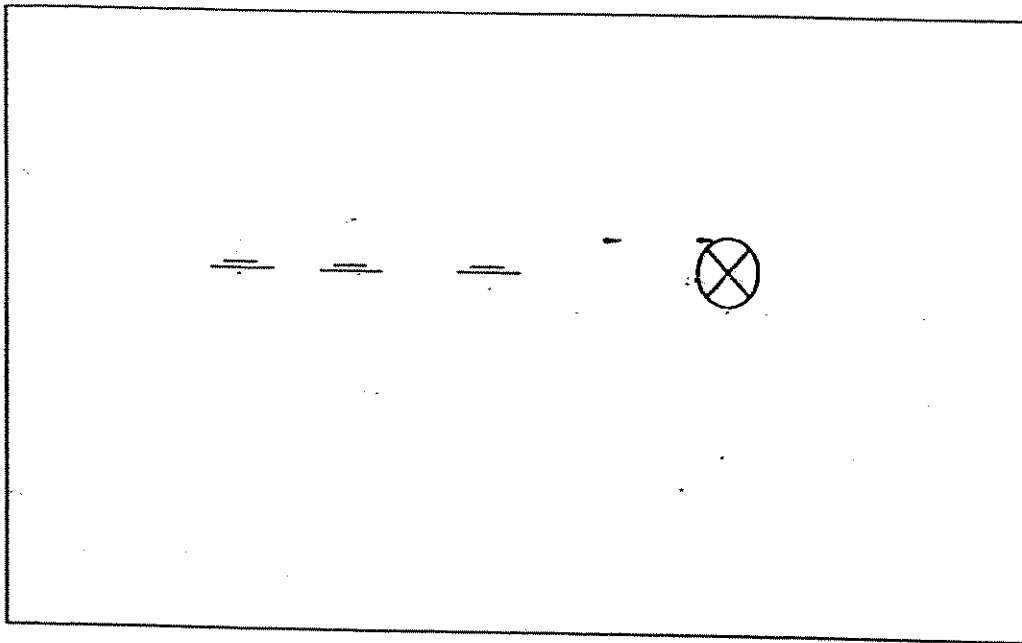
32 A coffee outlet wrapped a layer of cardboard jacket around the cup of coffee for their customers to take away as shown below.



(a) What was the purpose of the cardboard jacket? [1]

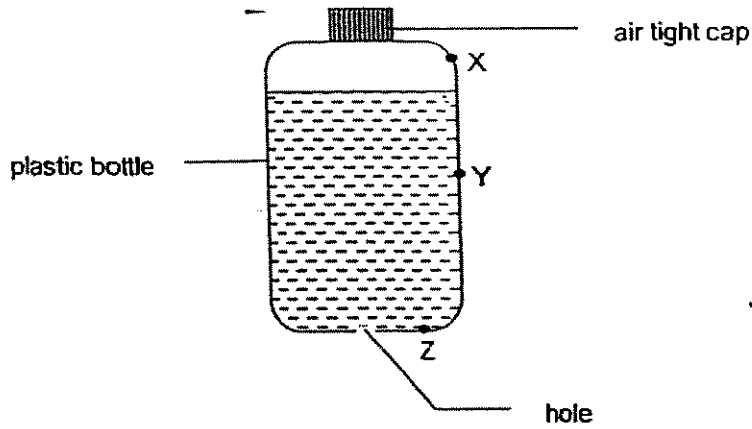
(b) Without using the same property mentioned in (a), suggest why cardboard instead of other material was chosen to make the jacket? [1]

33 The box below shows the symbols in a circuit diagram representing 3 batteries and a bulb.



- (a) In the box above, draw lines representing wires to construct a closed circuit so that the bulb will give out the brightest light. [1]
- (b) When a 4th battery was added into the circuit above, the bulb shone brightly for a short while and then blacked out. Explain what had happened. [1]

34 John made a hole at the bottom of a plastic bottle containing water. However, he noticed that the water did not flow out from the hole.

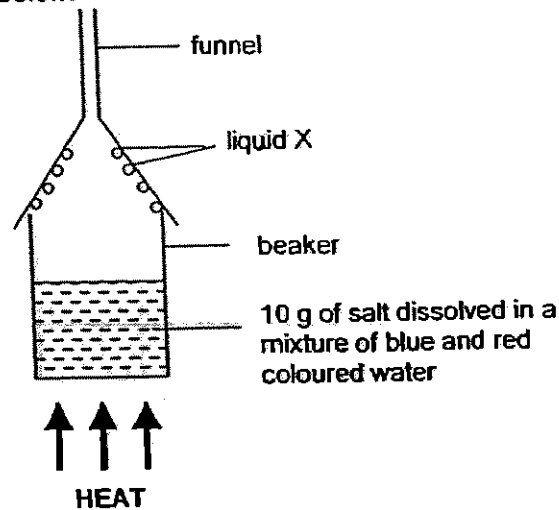


(a) Explain why the water could not flow out of the bottle. [1]

(b) To make the water flow out more easily, his teacher suggested making another hole. At which position - X, Y or Z, should he make the 2nd hole in order for the water to flow out the fastest? [1]

(c) Explain your answer in (b). [1]

- 35 200 ml of blue coloured water was mixed with 200 ml of red coloured water. 10 g of common salt was then dissolved into the mixture. The mixture was then heated as shown below.



Droplets of liquid X were formed on the sides of the funnel during the heating.

- (a) How was this liquid formed?

[1]

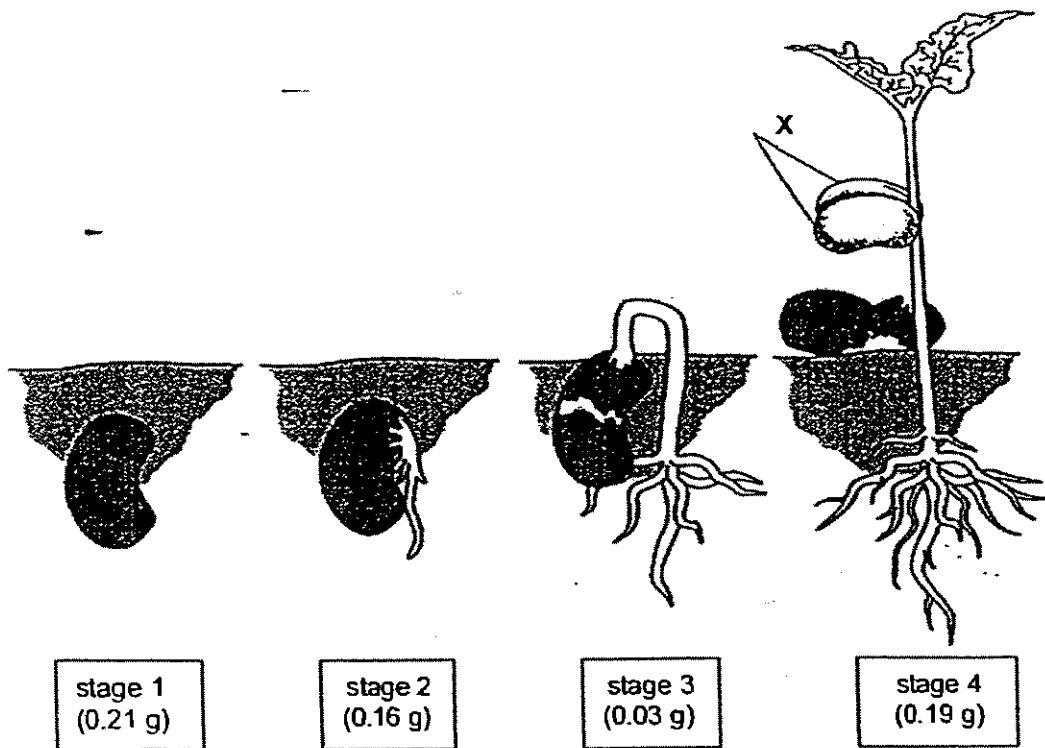
- (b) What is the colour and taste of this liquid X?

[1]

- (c) After heating the mixture for 10 minutes, there was only 200 ml of the mixture left in the beaker. What is the mass of the salt in the beaker now?

[1]

36 The diagram below shows the stages in the growth of a seedling and the mass of starch present at each stage.



(a) Identify the parts labeled X. [1]

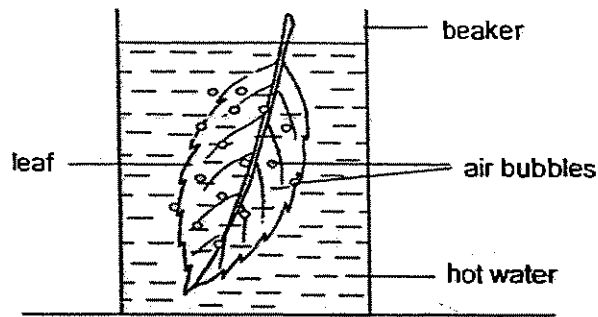
(b) What is a possible reason for

- (i) the decrease in mass from stage 1 to stage 3? [1]
- (ii) the increase in mass from stage 3 to stage 4? [1]

Reason for (i) _____

Reason for (ii) _____

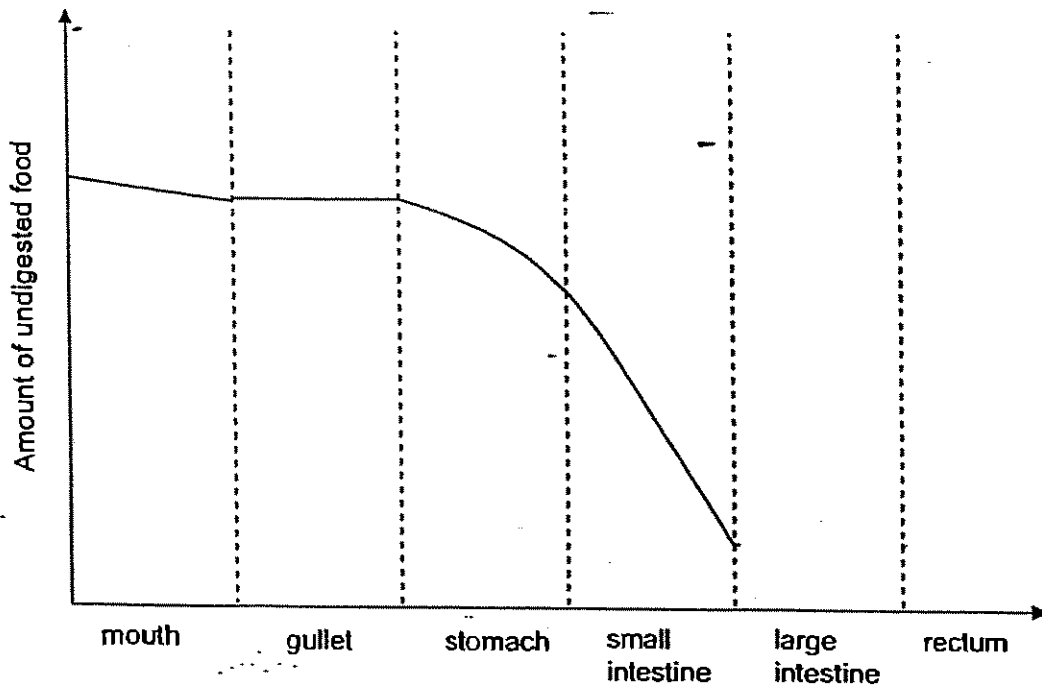
- 37 When a freshly plucked leaf was immersed into a beaker of hot water, bubbles appeared on the surfaces of the leaf.



- (a) Explain the formation of the bubbles on the leaf. [2]

- (b) More bubbles appeared on the under surface of the leaf than on the upper surface of the leaf. What is a possible reason for this observation? [1]

- 38 John ate a hamburger for lunch. The graph below shows how the amount of undigested food in the hamburger changes as it passes through his digestive system.

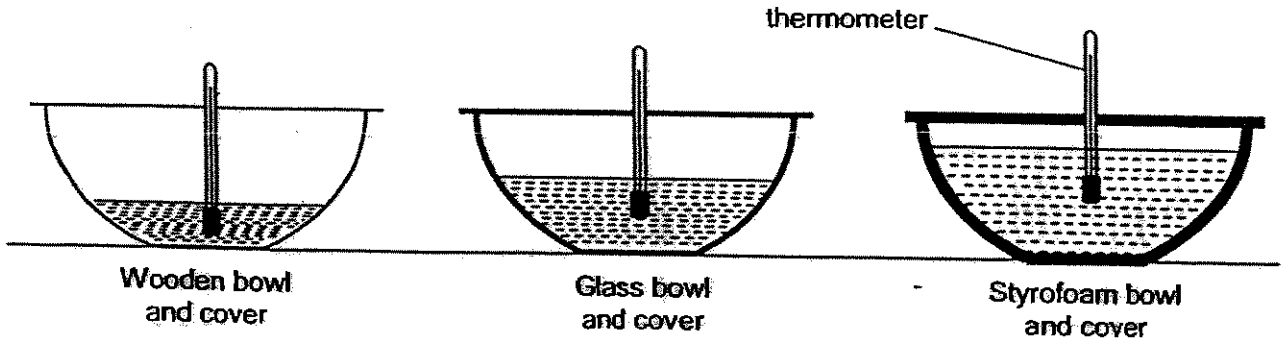


- (a) Based on the graph, at which part of the digestive system would the greatest amount of food be digested? [1]

- (b) Complete the graph above to show what happens to the amount of undigested food at the large intestine and the rectum. [1]

39

Randall wanted to compare the heat conductivity among 3 different materials - glass, styrofoam and wood. He set up the apparatus as shown below. The temperature of the soup at the beginning in each bowl was the same.



- (a) Randall's friend, Ian, told him that the set-ups have 2 inconsistent variables. State the 2 variables which Randall needs to keep the same to make the test fair.

[1]

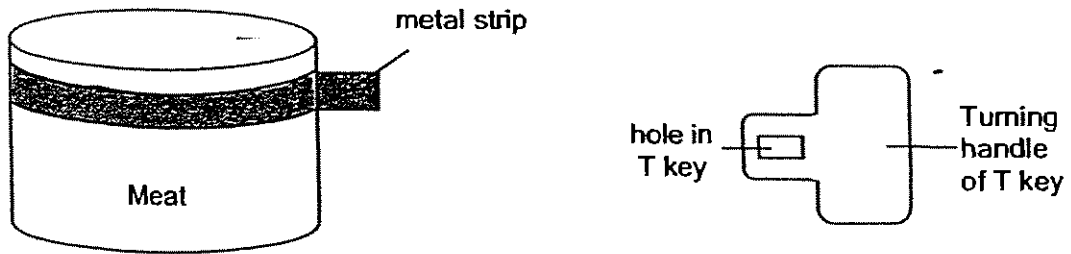
1: _____

2: _____

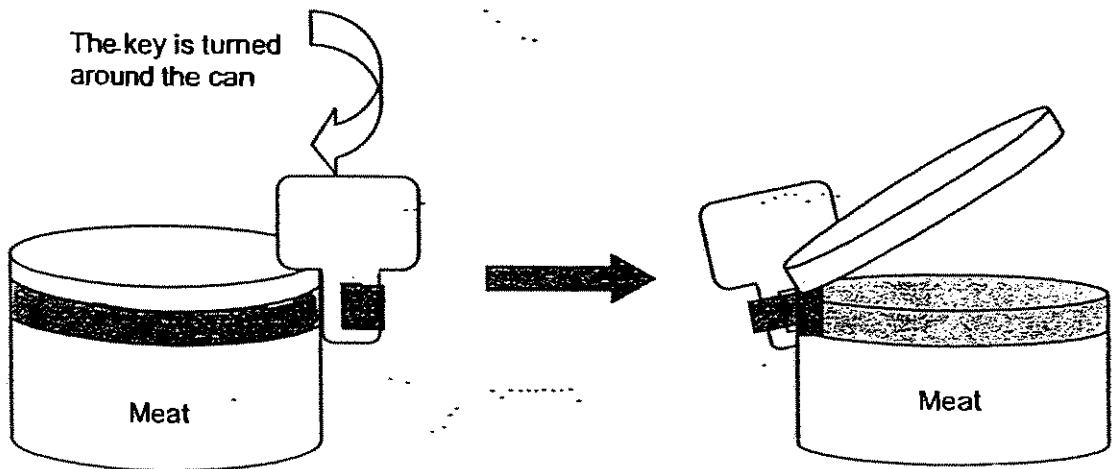
- (b) Randall conducted his test for 20 minutes. How would he be able to tell which material is the most suitable for keeping soup hot?

[1]

40 Melissa used a "T" key to open a can of meat.



She inserted the metal strip into the hole at the bottom of the key and turned the key. As she turned the key, the metal strip wound around the key and the can of meat was opened.



(a) Melissa felt that it was still difficult to open the can using the key provided. Suggest how she can improve the design of the key to reduce the effort used. [1]

(b) Briefly explain how your suggestion in (a) can help to open the can more easily. [1]

41 Gary investigated the effects of carbon dioxide on the organisms living in a pond over a period of 6 months. He recorded his observations in the table below.

Concentration of carbon dioxide (mg/l)	Size of population			
	Organism E	Organism F	Organism G	Organism H
1	210	98	106	75
5	248	71	51	48
10	265	50	24	22
15	282	35	11	9

(a) Which one of the following could Organism E be? Circle your answer.

[1]

Omnivorous animals

Camivorous animals

Water plants

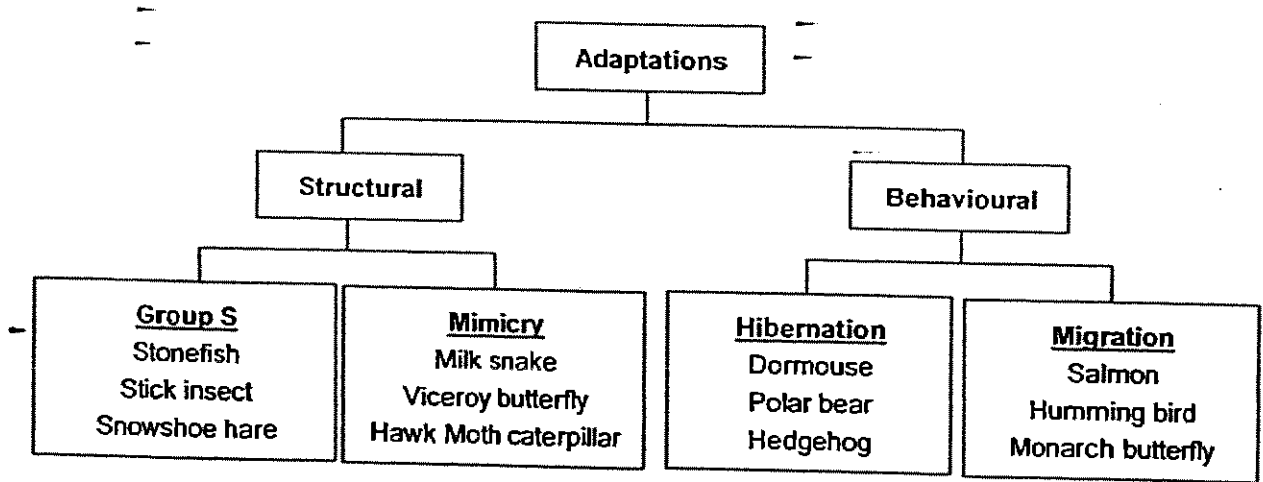
Herbivorous animals

(b) Using the information above, state how the concentration of carbon dioxide affected the population size of each organism.

[1]

(c) Which organism was most affected by the increase in carbon dioxide in the pond? Explain the data from the table which shows this.

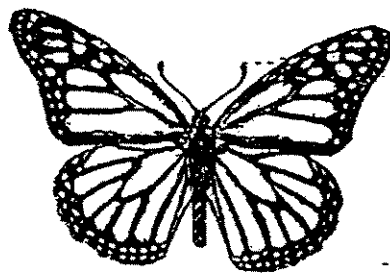
[1]



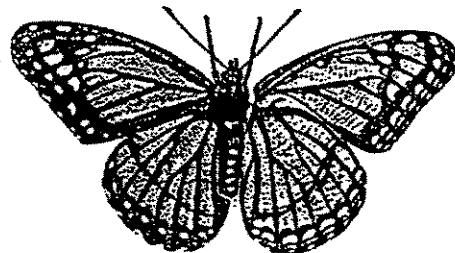
(a) Give a suitable heading for Group S. [1]

(b) Suggest a reason why animals migrate. [1]

(c) The Viceroy butterfly is said to mimic the Monarch butterfly which is known to taste bad.



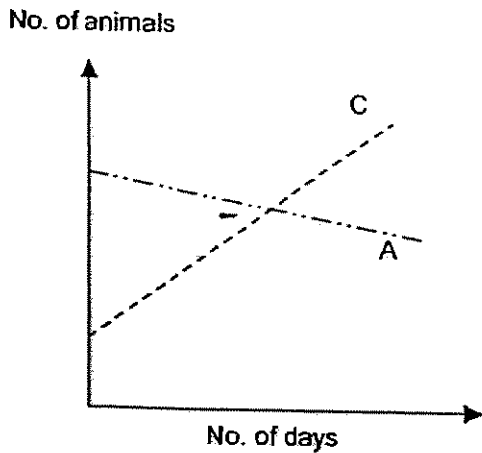
Monarch butterfly



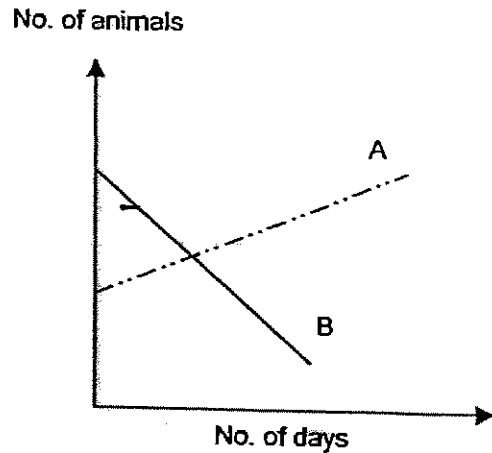
Viceroy butterfly

How does this adaptation help the Viceroy butterfly? [1]

- 43 Nora caught 3 types of animals from her garden. She put them in 2 tanks and observed how they interacted for a period of time. She gave them sufficient water and air. She recorded the changes in their populations and plotted the results in the 2 graphs below.



Tank 1

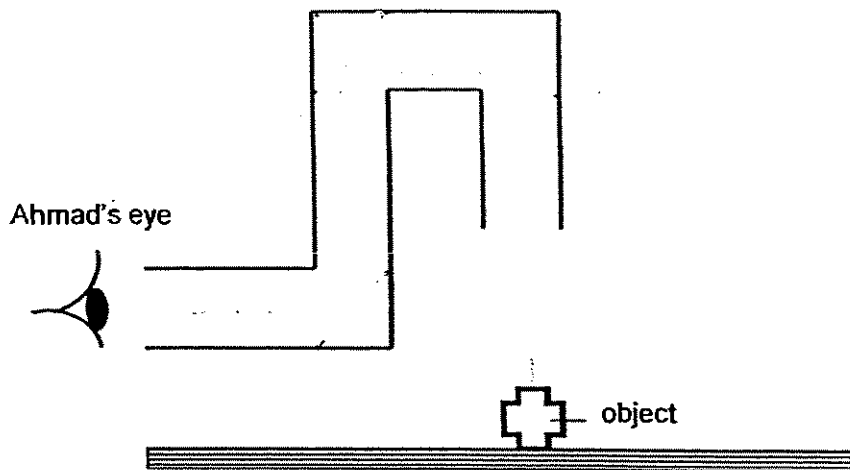


Tank 2

- (a) Using the above information, construct a possible food chain if the 3 animals were placed in one tank together with a plant. [1]

- (b) How would the population of Organism C be affected if the population of Organism B faces extinction? [1]

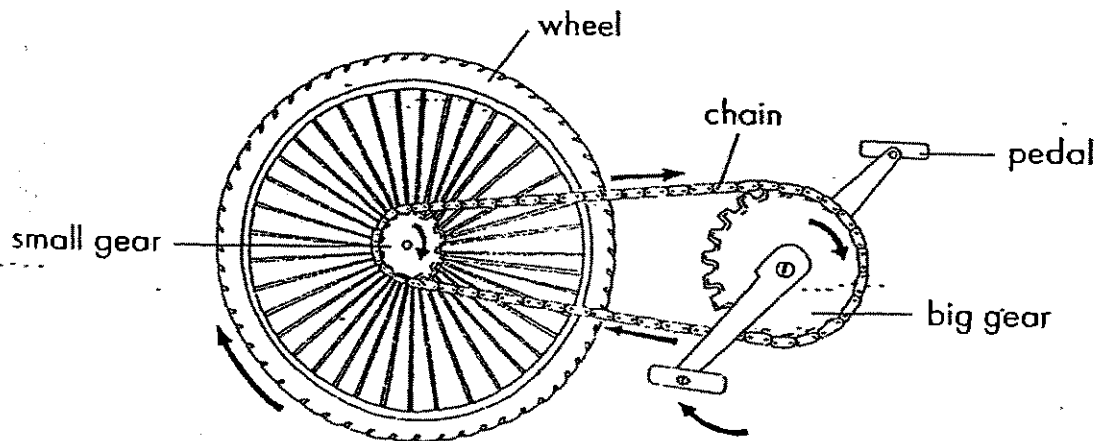
- 44 Ahmad designed and built an unusual periscope as shown below. He placed 3 mirrors inside the periscope so that he would be able to see the object.



In the diagram, draw the:

- (a) positions of the 3 mirrors [1]
 (b) arrows to show the pathway of light, so that Ahmad is able to see the object. [1]

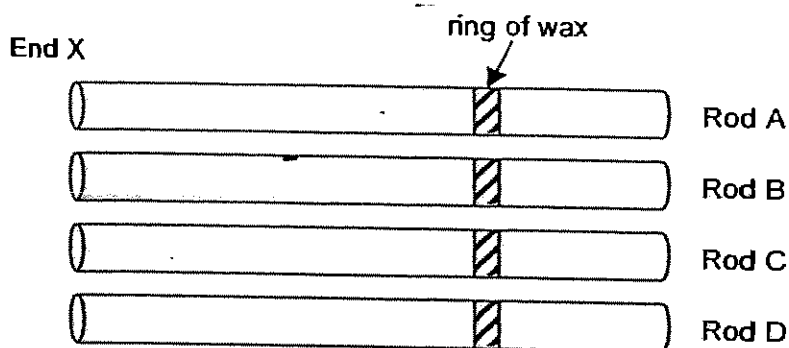
45. The diagram below shows the gears of a bicycle.



Fill in each blank below with a suitable word that will complete the sentences. [3]

Gears can be found on a bicycle. The two gears are connected by a chain which enables the small gear to move in the same (i) _____ as the big gear. To enable the bicycle to move (ii) _____, we pedal to rotate the big gear. Sometimes, the surfaces between the gear and the chain become rusty, making it harder to pedal. This increases (iii) _____ between the two surfaces, thus increasing the effort needed by the cyclist. A lubricant can be applied to the gears to solve the problem.

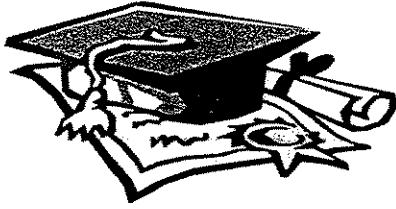
- 46 Kenny used 4 rods of identical diameters and lengths for an experiment. The rods were made of different materials. He put a ring of wax around each of them and heated each rod at End X. He recorded the time it took for each ring of wax to melt off.



Rod	Time taken for wax to melt off (minutes)
A	15
B	27
C	6
D	34

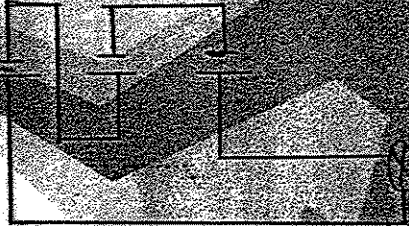
- (a) What was Kenny trying to test? [1]
-
- (b) Compare the results for Rod C and Rod D. Which rod is a better conductor of heat? [1]
-
- (c) If he increased the thickness of Rod C and repeated the experiment, would the time taken for the ring of wax to melt be longer or shorter? [1]
-

END OF PAPER



ANSWER SHEET

A C S PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
PRELIMINARY EXAMINATION

1. 1 31) a) ii) Fern iii) Mushroom
 2. 3 b) whether they can move freely from
 3. 2 place to place and whether they can
 4. 3 make their own food.
 5. 1
 6. 3 32) a) It is a poor conductor of heat and
 7. 3 therefore the customers can hold the
 8. 4 cup without being scalded.
 9. 3 b) Cardboard is flexible.
 10. 3
 11. 3 33) a) 
 12. 4
 13. 3
 14. 3
 15. 1
 16. 3
 17. 1
 18. 3
 19. 3
 20. 2 b) When the 4th battery was added, the
 21. 2 wire in the bulb melted causing the
 22. 2 bulb to black out.
 23. 3
 24. 4 34) a) There is no pressure pushing the
 25. 4 water out as the air above the water
 26. 3 cannot escape.
 27. 4 b) Position X
 28. 2 c) When the hole is added, the air
 29. 2 around the bottle will rush in and
 30. 1 push the water out from inside.

- 35) a) By evaporation and condensation.
 b) The liquid is colourless and tasteless.
 c) 10g

- 36) a) The seed leaves.
 b) i) The food in the leaves has been used up by the seeds during germination.
 ii) The seedling has leaves to make its own food.

- 37) a) The breathing of leaf causes the formation of the bubbles.
 b) Most of the stomata is on the under surface of the leaf.

- 38) a) The small intestine.
 b) 

- 39) a) 1) The amount of soup in each bowl.
 2) The thickness of each bowl.
 b) The material with the highest temperature at the end of the experiment is the most suitable.

- 40) a) Lengthen the turning handle of T key.
 b) The greater the effort distance, the smaller is the effort used.

- 41) a) water plants.
 b) As the amount of concentrated carbon dioxide in the pond increases, organism E increases while the other organisms decrease.



AI TONG SCHOOL

2007 SEMESTRAL ASSESSMENT (1)

PRIMARY SIX SCIENCE

DURATION : 1hr 45 min

DATE: 15th May 2007

INSTRUCTIONS

Do not open the booklet until you are told to do so.

Follow all instructions.

Answer all questions.

Name : _____ ()

Class : Primary _____

Parent's Signature : _____

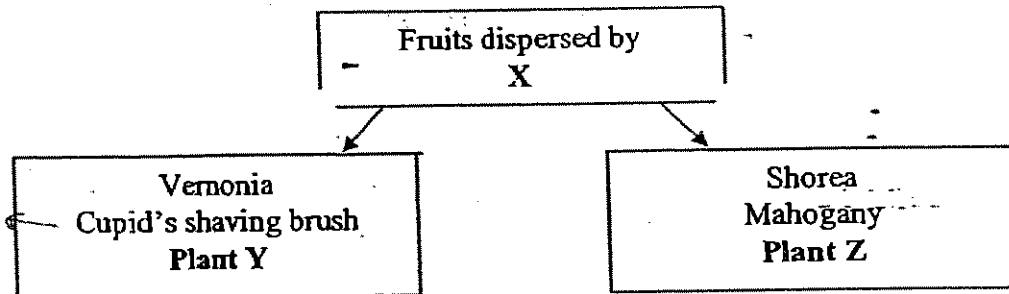
Date : _____

MARKS	1
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Section A (30 x 2 marks)

For each question from 1 to 30, four options are given: - One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

1. The classification table below shows how some fruits are dispersed.



Which of the following can be X, Y and Z?

	X	Y	Z
(1)	Wind	Lallang	Angsana
(2)	Water	Nipah	Mangrove
(3)	Wind	Angsana	Lallang
(4)	Water	Mangrove	Nipah

2. The table shows 2 groups of objects.

Group A

paper plate
leather jacket
tyre

Group B

key
plastic bottle
spectacles

How are they classified?

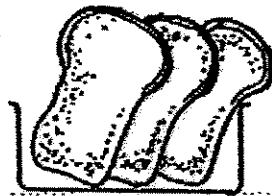
	Group A	Group B
(1)	Insulator of heat	Conductor of heat
(2)	Natural	Man-made
(3)	Transparent	Opaque
(4)	Magnetic	Non-magnetic

3. Which of the following statements about inhaled air and exhaled air are true?

		Inhaled air	Exhaled air
✓A	Oxygen	More	Less
✓B	Temperature	Lower	Higher
✓C	Carbon dioxide	Less	More
✗D	Water vapour	More	Less

- ~~(1) A and C only~~
~~(2) B and D only~~
~~(3) A, B and C only~~
~~(4) B, C and D only~~
4. Roy wants to find out what causes bread to decay. He prepares 2 set-ups, A and B, as shown below.

Kept in cupboard



Set-Up A

Kept in cupboard



Set-Up B

After a few days, he discovered that black dots appeared on the bread in Set-up A but not for the bread in Set-up B.

From the result of his experiment, he can conclude that _____ is needed for decomposition to take place.

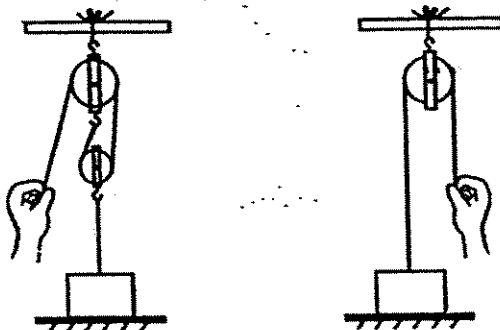
- (1) water
 (2) heat
 (3) light
 (4) air

5. Which of the following changes are caused by heat energy?

- A ice changing to water.
- B clouds changing to rain.
- C water changing to water vapour *evaporation*
- D water vapour changing to dew on leaves

- ~~(1) A and C only~~
- ~~(2) B and C only~~
- ~~(3) A, B and C only~~
- ~~(4) A, B and D only~~

6. Study the two types of pulley systems shown below.

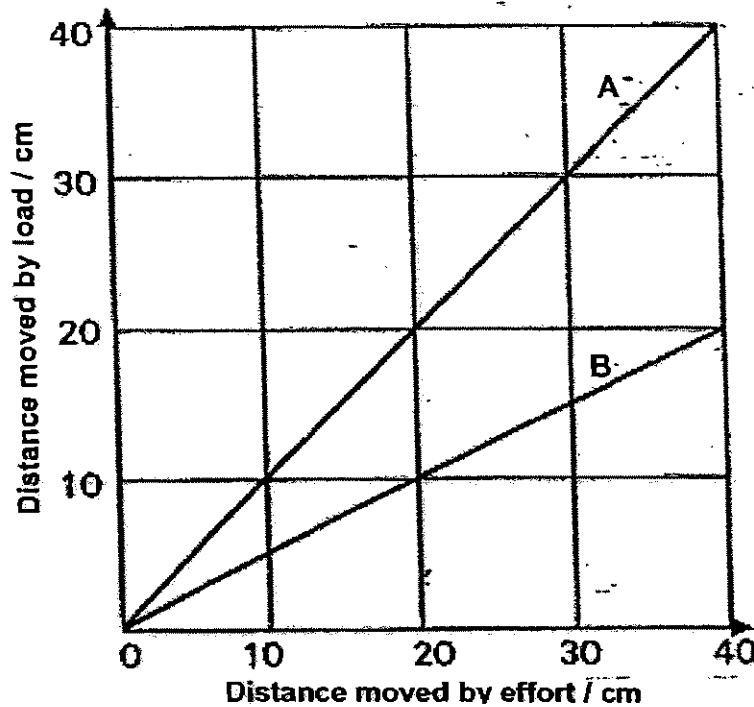


Which of the following statements about both machines are true?

- A Both contain a fixed pulley.
- B The effort and the load move in opposite directions for both machines.
- C The effort needed to lift the same load are the same for both machines.
- D The effort moves over a greater distance than the load for both machines.

- ~~(1) A and B only~~
- ~~(2) A and C only~~
- ~~(3) B, C and D only~~
- ~~(4) A, B, C and D~~

7. In the graph shown below, Lines A and B, show the relationship between the distance moved by the effort and the distance moved by the load.

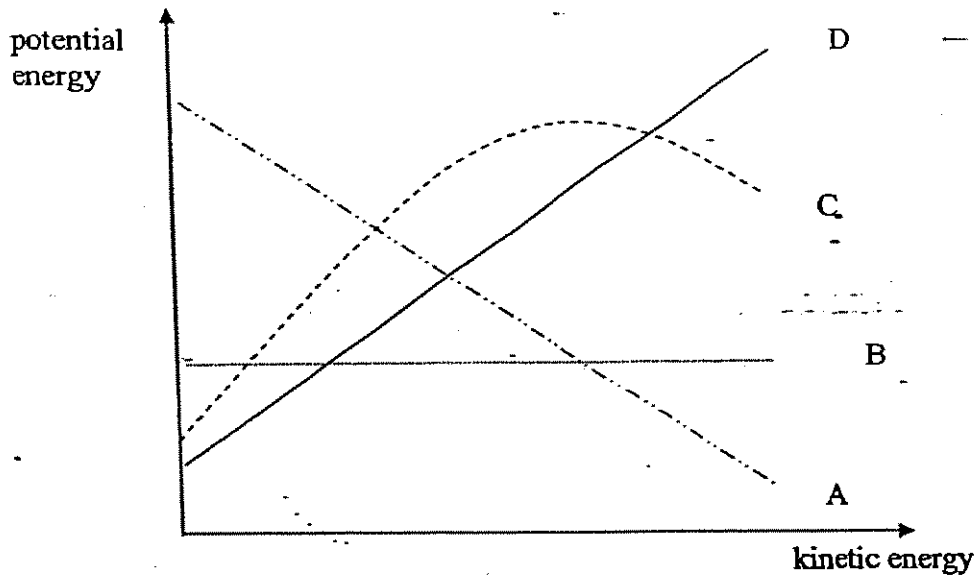


Which types of pulley systems, do Lines A and B represent?

	A	B
(1)	fixed pulley	fixed pulley
(2)	fixed pulley	movable pulley
(3)	movable pulley	fixed pulley
(4)	movable pulley	movable pulley

8.

A ball rolls down a hill slope. The energy change is plotted on a graph as shown below.



Which line, A, B, C or D in the graph shows the correct change in the potential energy and kinetic energy of the ball as it rolls to the foot of the hill?

- (1) A
- (2) B
- (3) C
- (4) D

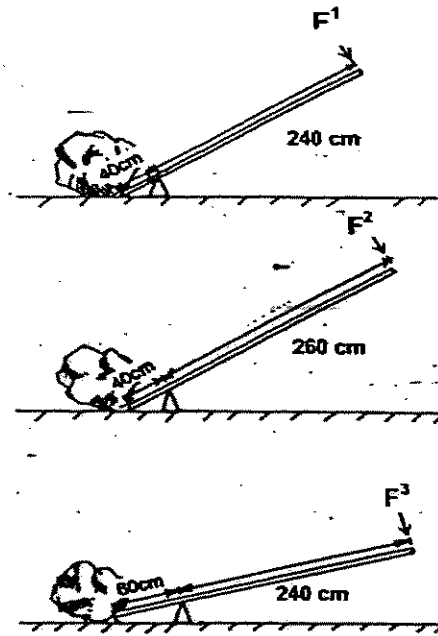
9.

Which two characteristics given below show that a camel is adapted to live in a desert? It has _____.

- A large ears
- B a hump that helps to store water
- C a thin body covering
- D the ability to retain water in its body

- (1) A and B only
- (2) B and C only
- (3) A and C only
- (4) C and D only

10. The diagrams show 3 levers used to move the same stone. The efforts used are labelled F^1 , F^2 and F^3 on each lever.



Which of the following comparisons about F^1 , F^2 and F^3 are correct?

- (1) F^1 is smaller than F^2
 (2) F^1 is greater than F^3
 (3) F^2 is smaller than F^3
 (4) F^2 is greater than F^3

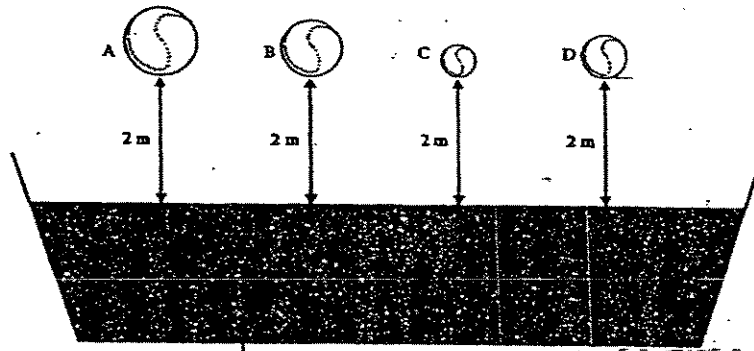
11. The events listed below took place when hunters killed most of the tigers in a grassland.

- A The grass population decreased.
 B The deer population quickly increased.
 C The deer population slowly decreased.
 D There was insufficient food for the deer.

Which of the following shows the correct sequence of events?

- (1) A B D C
 (2) A D C B
 (3) B A D C
 (4) B D C A

12. Four balls of different sizes and mass are dropped from the same height into a large container filled with sand.



The imprint in the sand made by the balls were measured and recorded.

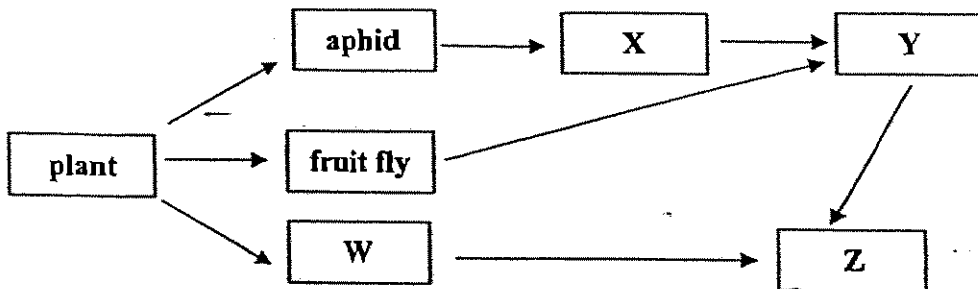
Ball	Depth of imprint in sand
A	12 cm
B	5 cm
C	8 cm
D	12 cm

Which of the following observations are correct?

- A Ball C has a greater mass than Ball B.
- B Ball A has the same mass as Ball D
- C The bigger the ball, the deeper the imprint.
- D The greater the mass, the deeper the imprint.

- (1) A and B only
- (2) A and C only
- (3) A, B and D only
- (4) B, C and D only

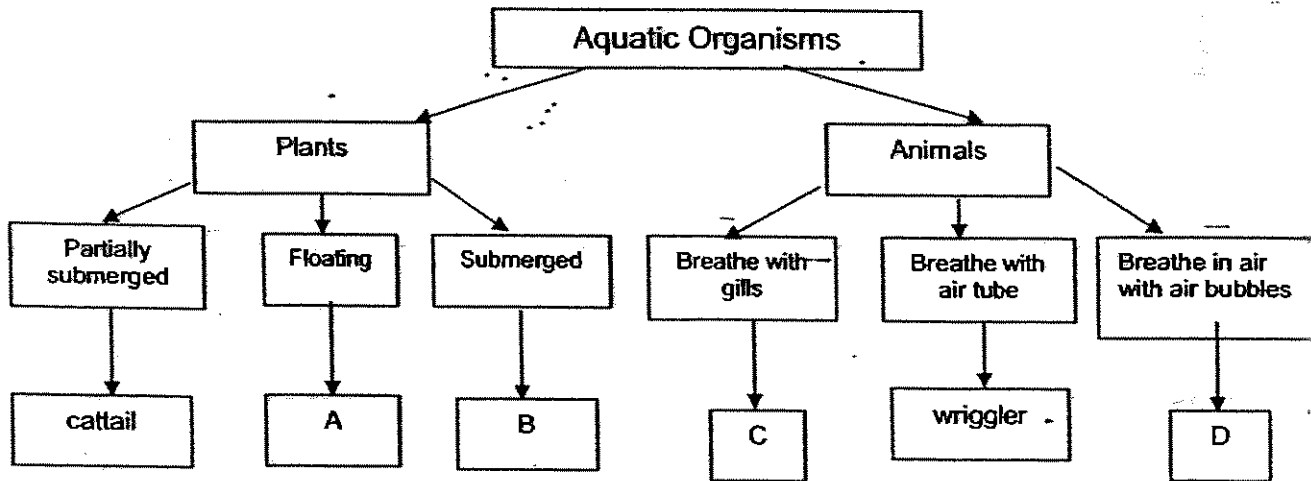
13. The diagram below shows a food web.



Choose the set of organisms from the following table that can be correctly used to complete the food web.

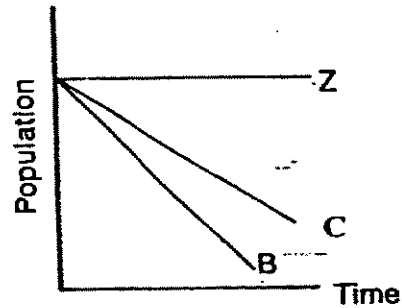
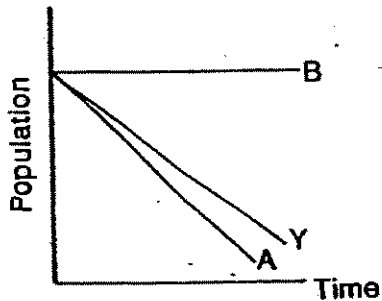
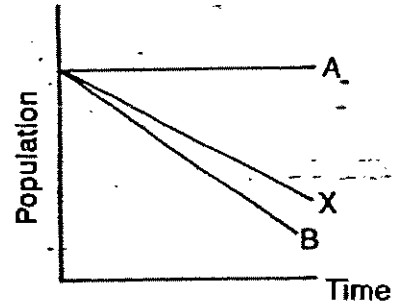
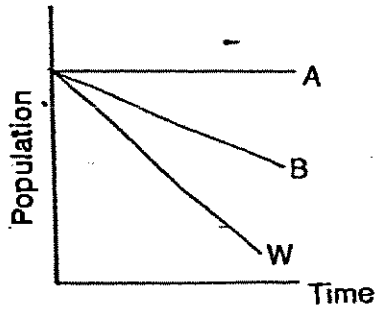
	W	X	Y	Z
(1)	grasshopper	frog	lizard	woodlouse
(2)	earthworm	caterpillar	frog	mynah
(3)	caterpillar	ladybird	spider	sparrow
(4)	grasshopper	ladybird	millipede	praying mantis

14. Study the classification table below. What would be a suitable organism to put in Boxes A, B, C and D?

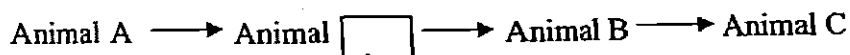


	A	B	C	D
(1)	Water moss fern	Elodea	Blood worm	Damselfly
(2)	Mosquito fern	Arrowhead	Snail	Water stick insect
(3)	Duckweed	Hydrilla	Dragonfly-nymph	Backswimmer
(4)	Water lily	Water lettuce	Tadpole	Water boatman

15. Jack placed equal numbers of seven different organisms, A, B, C, W, X, Y and Z, in four separate containers.
- He recorded the number of organisms in each container for a week. His results are shown in the graphs below.

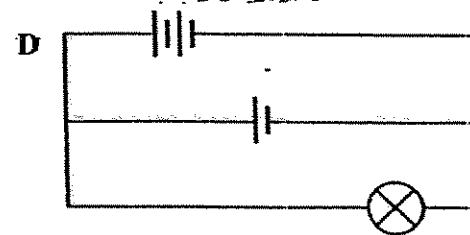
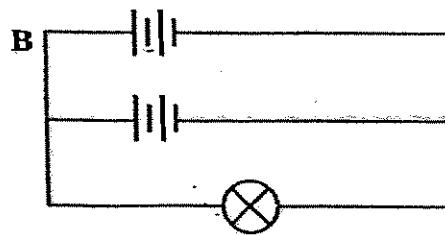
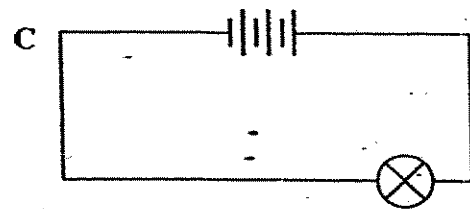
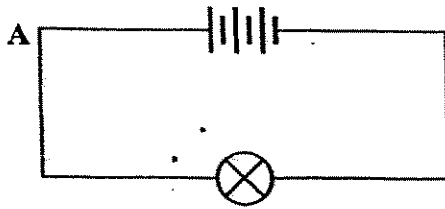


Which one of the following animals can most likely be put in the food chain shown below.



- (1) W
- (2) X
- (3) Y
- (4) Z

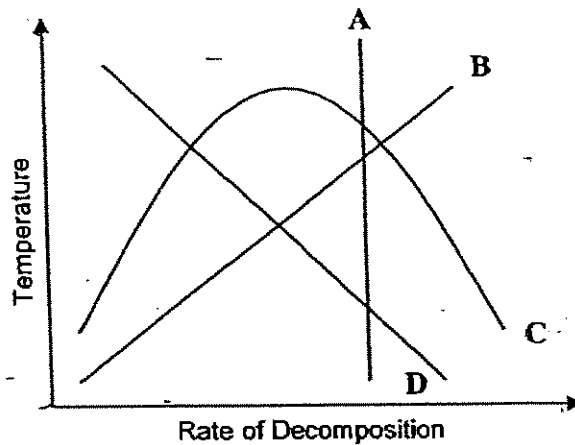
16. Bryan wanted to find how the arrangement of batteries would affect the brightness of the bulb.



Which of the two circuits shown above would allow him to make a fair comparison?

- (1) A and B
- (2) A and D
- (3) B and C
- (4) C and D

17. Study the graphs below.



Which one of the graphs shows the most likely relation between the temperature and the rate of decomposition?

- (1) A
- (2) B
- (3) C
- (4) D

18. Which of the following conditions would affect a population of woodlice in a community?

- A Absence of water
- B Presence of strong sunlight
- C Increase in the population of centipede
- D Clearing the leaf litter

- (1) A and D only
- (2) B and C only
- (3) A, B and C only
- (4) A, B, C and D

19. Frogs have the ability to live both on land and in water. Which of the adaptations enable them to do so?

- A They can trap air bubbles in their throat.
- B They have gills to help them breathe in water.
- C They have lungs to help them breathe when they are on land.
- D Their skin, when kept moist, can take in the air dissolved in the water.

- (1) A and B only
- (2) B and C only
- (3) A and C only
- (4) C and D only

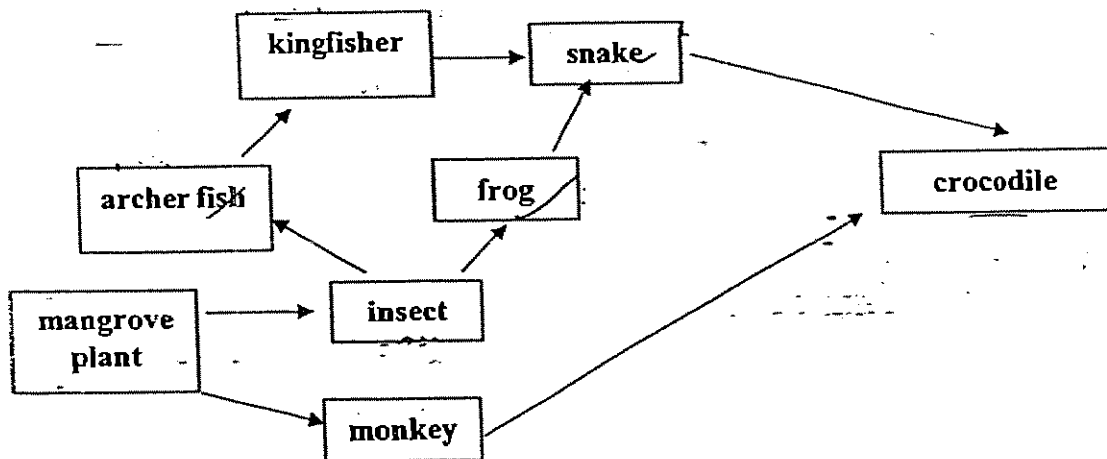
20. Alice wanted to find out how the weather would affect the number of snails in her school garden. She counted the number of snails for four days and recorded her observations in the table shown below.

Day	Type of weather	Number of snails
Thursday	Sunny	75
Friday	Cloudy	120
Saturday	Rainy	135
Sunday	Sunny	60

What can be concluded from her observations?

- (1) The number of snails observed was not affected by the weather.
- (2) The hotter the weather, the greater the number of snails observed.
- (3) The wetter the weather, the greater the number of snails observed.
- (4) The drier the weather, the greater the number of snails observed.

21. Study the food web of a mangrove swamp community shown below.



Which of the animals are both predators as well as prey?

- (1) insect, monkey, archer fish and crocodile
- (2) mangrove plant, frog, archer fish and snake
- (3) archer fish, frog, snake and kingfisher
- (4) insect, frog, snake and crocodile

22. Lucy wants to find out the effect of overcrowding on the growth of the balsam plant.

She set up an experiment as shown in the table below.

Pot	Number of balsam seeds	Type of soil	Size of pot
A	12	garden soil	big
B	7	garden soil	small
C	7	loamy soil	medium
D	7	garden soil	medium
E	7	garden soil	big
F	5	loamy soil	small

Which three pots given below should she base her observation on?

- (1) A, B and D
- (2) A, C and F
- (3) B, C and E
- (4) B, D and E

23. The roots of the plant shown in the picture below are adapted to _____.



- (1) store food for the plant
- (2) hold the plant firmly to the ground
- (3) enable the plant to transpire
- (4) help the plant to climb up for support.

24. Plants and animals exchange gases that they need for survival. This exchange takes place _____.

- (1) all the time
- (2) at night only
- (3) during daytime only
- (4) only when necessary

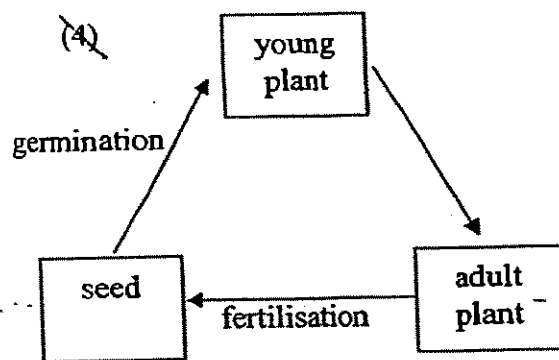
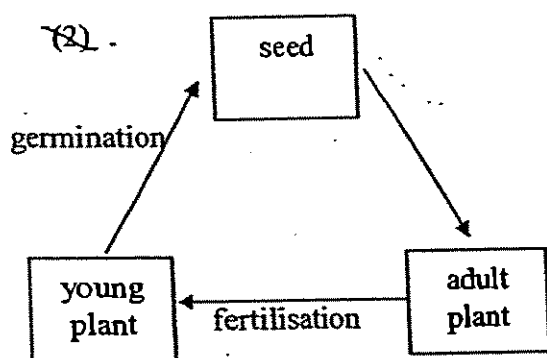
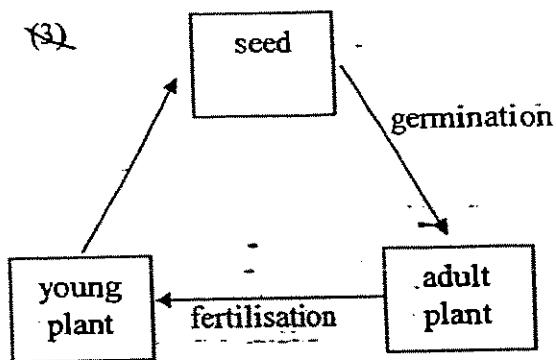
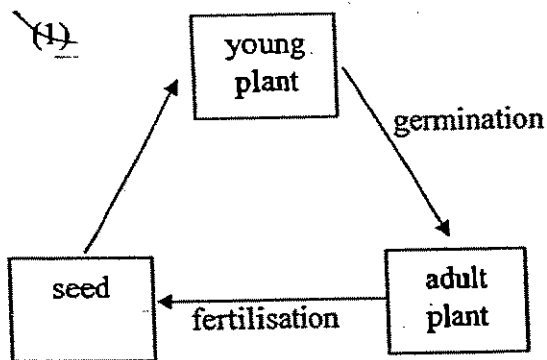
25. Study the table below.

	Sandy soil	Clayey soil
A	Has many remains of organisms	No remains of organisms
B	Has large particles and big air spaces in between	Has small air spaces in between particles
C	Mostly dry	Mostly wet

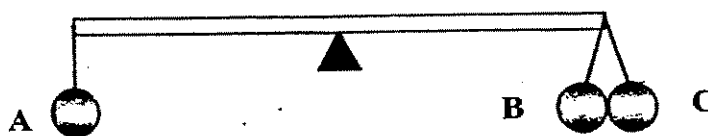
Which of the above comparisons are true?

- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) A, B and C

26. Which one of the following diagrams shows the order of stages and processes in the life cycle of a flowering plant?



27. Three iron balls A, B and C are balanced on a rod as shown below. The fulcrum is in the middle of the rod.

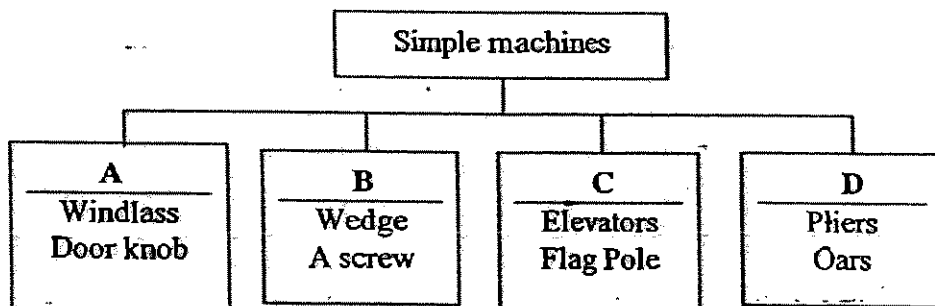


Which of the following statements are correct?

- A: Ball B has a smaller mass than Ball C.
- B: Ball A has a greater mass than Ball B.
- C: Ball A has the same mass as the combined mass of Balls B and C.
- D: If Ball B is moved nearer to the fulcrum, the rod will stay balanced.

- (1) A and B only
- (2) B and C only
- (3) C and D only
- (4) B, C and D only

28 The diagram below shows how simple machines have been classified.



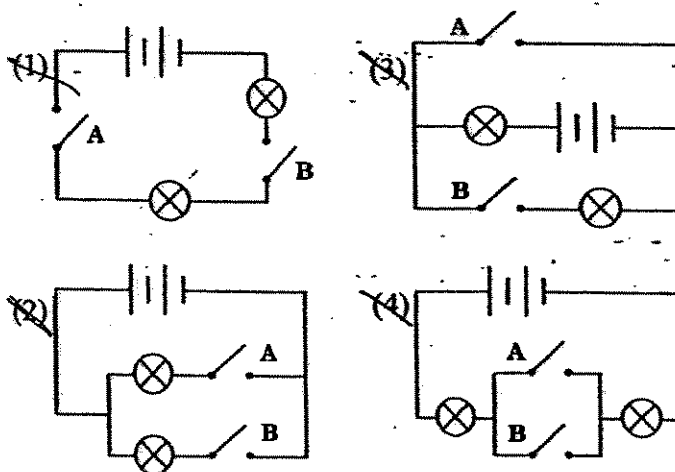
Which one of the following is the appropriate sub-heading for A, B, C and D?

	A	B	C	D
(1)	Wheel and axle	Inclined plane	Pulley	Lever
(2)	Wheel and axle	Pulley	Inclined plane	Lever
(3)	Gears	Inclined plane	Pulley	Wheel and axle
(4)	Gears	Pulley	Lever	Inclined plane

29. Alvin set up and tested an electric circuit. He recorded the results in the table as shown below.

Switch A	Switch B	Number of Bulbs Lighted
OFF	OFF	0
ON	OFF	1
OFF	ON	1
ON	ON	2

Which one of the circuits will match the results recorded?

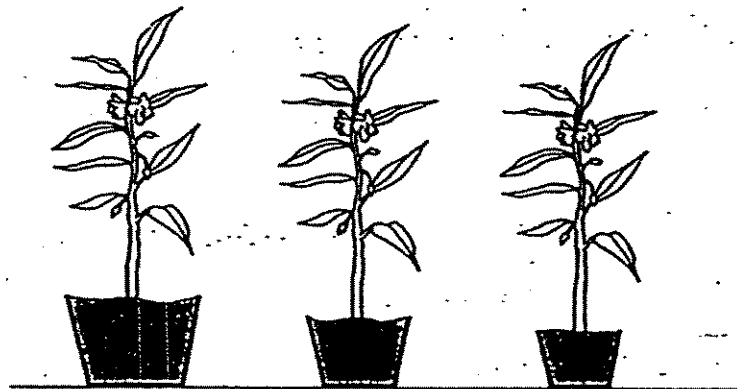


30. Mrs Khoo wanted to find out what type of soil was suitable for growing balsam plants.

She planted 3 balsam plants of similar size in three pots, A, B and C.

	Pot A	Pot B	Pot C
Material of pot	Plastic	Plastic	Plastic
Type of soil	Garden soil	Sand	Clay
Size of soil	1200 cm ³	800 cm ³	500 cm ³
Amount of water used every day	150 cm ³	150 cm ³	150 cm ³

The three plants were placed in the garden as shown below.



Why was the experiment **NOT** a fair one?

- (1) The amount of soil in each pot was different.
- (2) The type of soil used in each pot was different.
- (3) The three pots were given the same amount of water.
- (4) The balsam plant in Pot A obtained more sunlight than the others.

Name: _____ ()

Class P6 ()

Section B: 40 marks

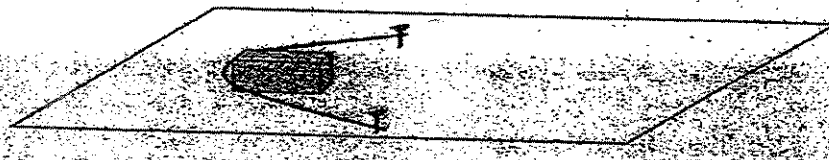
Read the questions carefully and write down your answers in the spaces provided.

31 In the past, most shopping bags were made of paper. Nowadays they are mostly made of plastic.

(a) State an advantage of using plastic instead of paper? [1]

(b) Besides paper and plastic, what other material can we use to make shopping bags? In what way is this material better than plastic? [2]

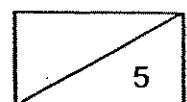
32. A piece of rubber band was attached to two nails as shown in the diagram below. A wooden block was placed in front of the rubber band. The rubber band was pulled back and released.



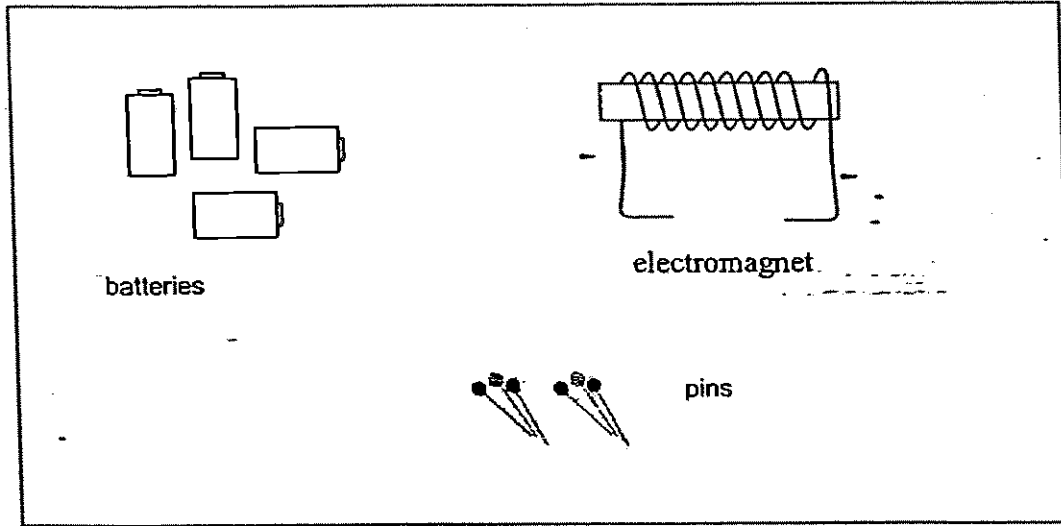
(a) Fill in the boxes to show the energy change that took place. [1]

→ + +

(b) How would you make the wooden block move further without changing the set-up? [1]

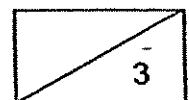


33. The diagram below shows some materials that can be used to conduct a science investigation.

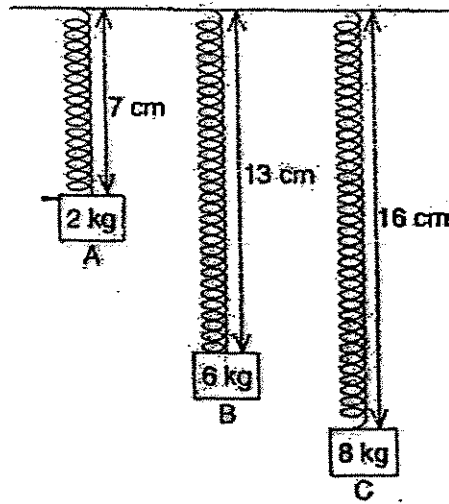


- (a) Leon wanted to investigate whether increasing the power will cause an electromagnet to become stronger. Describe how he should carry out the experiment. [2]

- (b) What conclusion could Leon draw from the experiment? [1]



34. The diagram below shows the length of a spring when three different objects A, B and C, are hung on them.

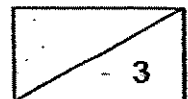


- (a) What is the original length of the spring? [1]

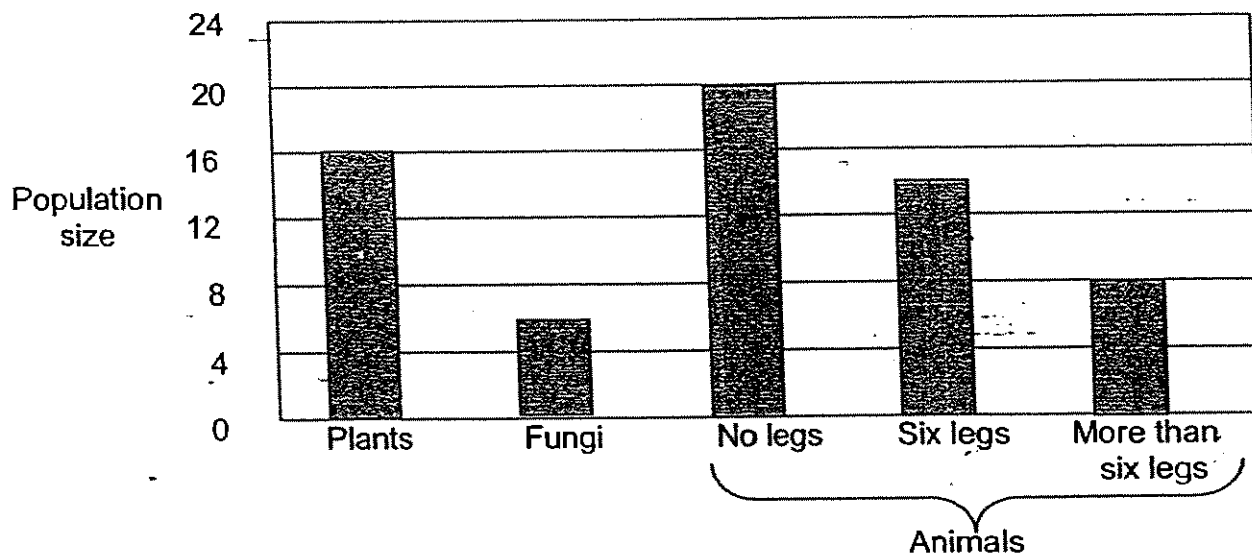
- (b) Name the force acting on each of the three objects. [1]

- (c) The table below shows the mass of the objects and the extension of the spring. Fill in the empty boxes to complete the table. [1]

Mass of objects (kg)	0	2	8
Extension (cm)	0		

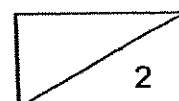


35. For a Science project, a group of pupils counted the organisms found on a rotting log and recorded the results in a bar graph shown below.

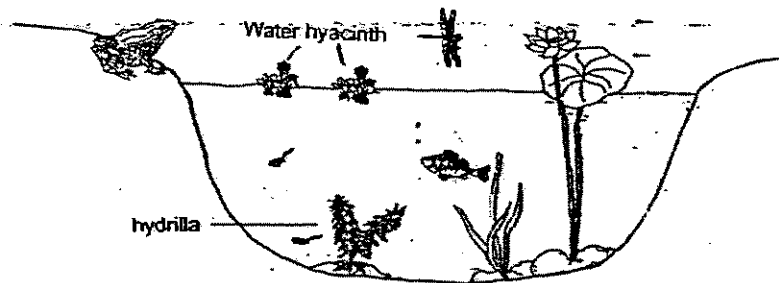


Based on the graph above, put a tick in the correct column to indicate if each of the following statements is 'True', 'False' or 'Not possible to tell' [2]

	Statements	True	False	Not possible to tell
1.	All the animals with no legs belong to one population.			
2.	There are at least 3 populations of food consumers.			
3.	The animals feed more on fungi than on plants.			
4.	The total number of plants is half the total number of animals.			



36. The diagram below shows a pond community.



(a) State an example of interdependence in this pond community. [1]

(b) How will a sudden great increase in the population of water hyacinth affect the population of hydrilla? [1]

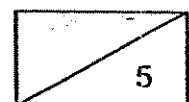
37. The table below shows some populations of animals on a lime plant and what they feed on.

Animals	Food
beetle larva	roots of lime plant
caterpillars	leaves of lime plant
mealy bugs and aphids	plant sap
lady bugs	aphids
stink bugs	seeds inside the fruit

(a) How many populations of plant eaters are there on the lime plant? [1]

(b) From the information given, name one animal which is useful to the plant. [1]

(c) Explain why it is useful. [1]



38. A class of pupils was investigating how a certain factor affected the growth of plants. The table below shows how their experiment was set up.

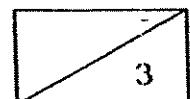
	Location of pot	Soil	Water	Number of seeds in each pot	Number of earthworms in the soil
Pot A	Window ledge	Garden soil	500ml	2	10
Pot B	Window ledge	Garden soil	500ml	12	10

- (a) Which factor affecting the growth of plants were the pupils studying? [1]

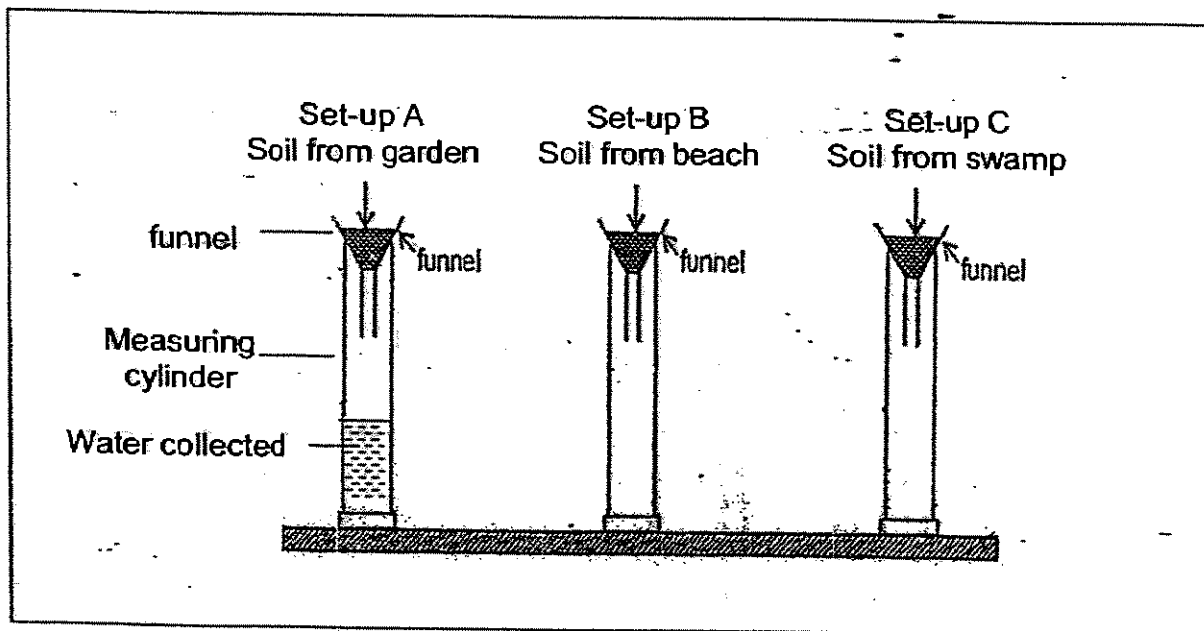
- (b) List two characteristics of the seedlings that the pupils could observe to tell which pot of plants was growing better. [2]

(i) _____

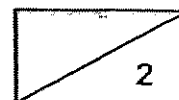
(ii) _____



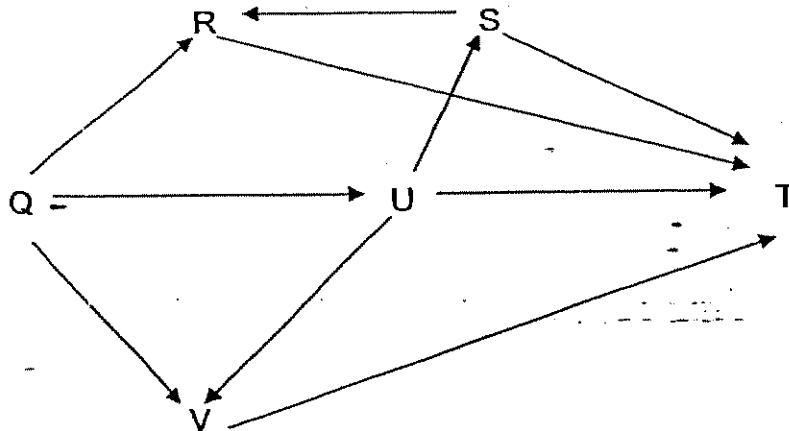
39. Agnes collected some soil samples from the garden, beach and swamp. She set up an experiment to find out how porous each type of soil was. Agnes poured an equal amount of water into each funnel which contained an equal amount of the different soil samples. She then measured the amount of water collected in each measuring cylinder after 1 minute.



- (a) The amount of water collected in Set-up A is drawn above. Draw the likely water levels for Set-up B and Set-up C in the diagrams above. [1]
- (b) Agnes found some bits of dead leaves and animals in the garden soil sample. Explain why their presence in the soil is important to plants? [1]

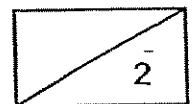


40. Study the food web below.

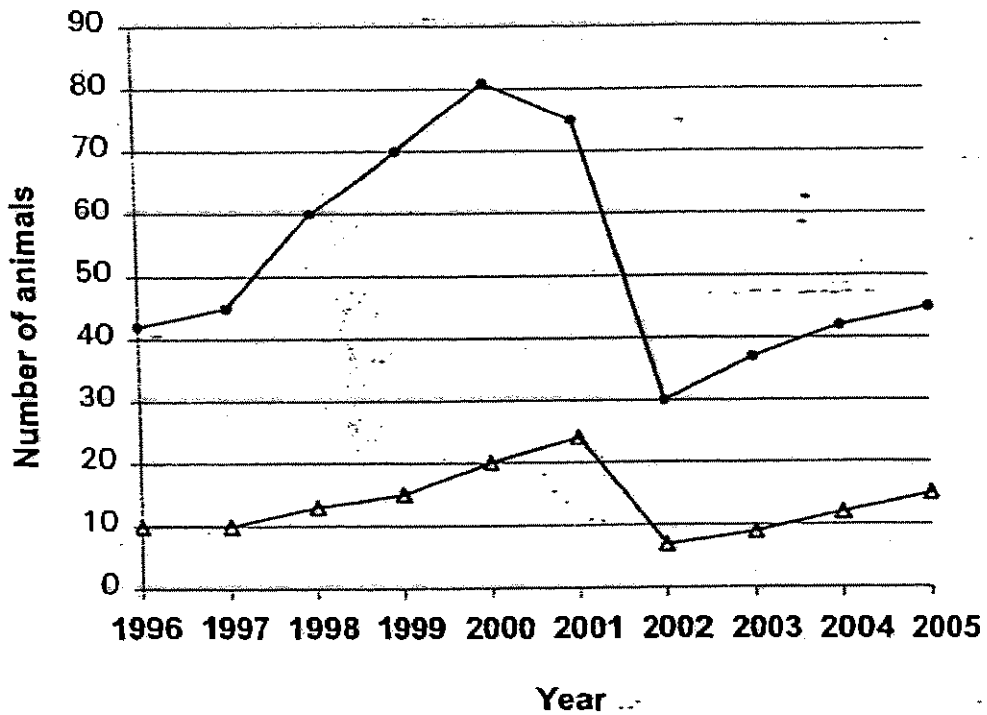


(a) How many food chains can we construct based on the food web given above? [1]

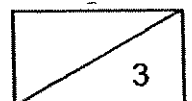
(b) Name the omnivore(s) found in the given food web. [1]



41. The graph below shows the number of predators and their prey in a community over a period of 10 years. Their numbers were recorded yearly.



- (a) What was the number of prey recorded in 2000? [1]
-
- (b) Although the population of predator increased from 1997 to 2000, the population of prey also increased. State one likely reason for this. [1]
-
- (c) There was a sudden plunge in the population of both prey and predator between 2001 and 2002. What could be a possible reason for this to happen? [1]
-



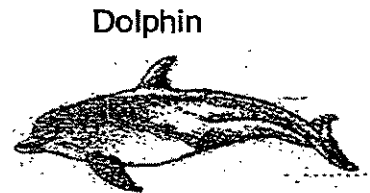
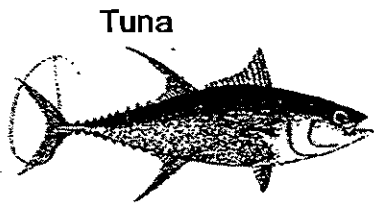
42 Animals like the crab and frog can live both on land and in water.

(a) How are these animals adapted to breathing? [2]

	Adaptation for breathing	
	In Water	On Land
Crab		
Frog		

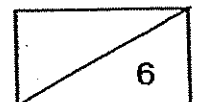
(b) Name one other animal which has the same adaptations as the crab for breathing in water and on land. [1]

43. The pictures below show a tuna and a dolphin.

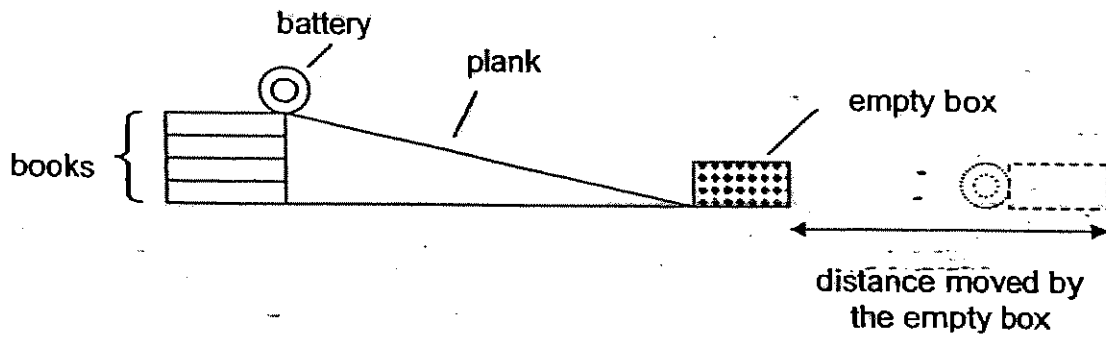


Write down two similarities and one difference in the spaces provided with regards to their structural adaptation for life in water. [3]

Two similarities	
One difference	
Tuna	Dolphin

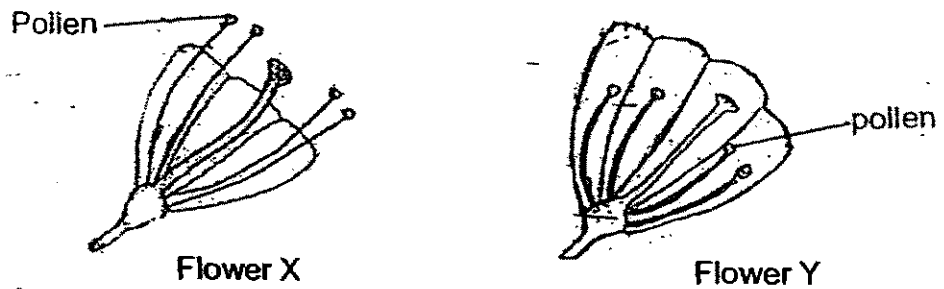


44. Paul rolls a battery down a ramp. The battery collides with an empty box and the box moves. He wants to find out if the amount of potential energy of the battery affects the distance moved by the empty box.

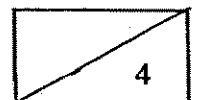


- (a) Which variable must he change to obtain the result he wants? [1]
-
- (b) What is the relationship between the potential energy of the battery and the distance moved by the empty box. [1]
-
-

45. The diagrams below show two flowers. One is wind-pollinated and the other is insect pollinated.

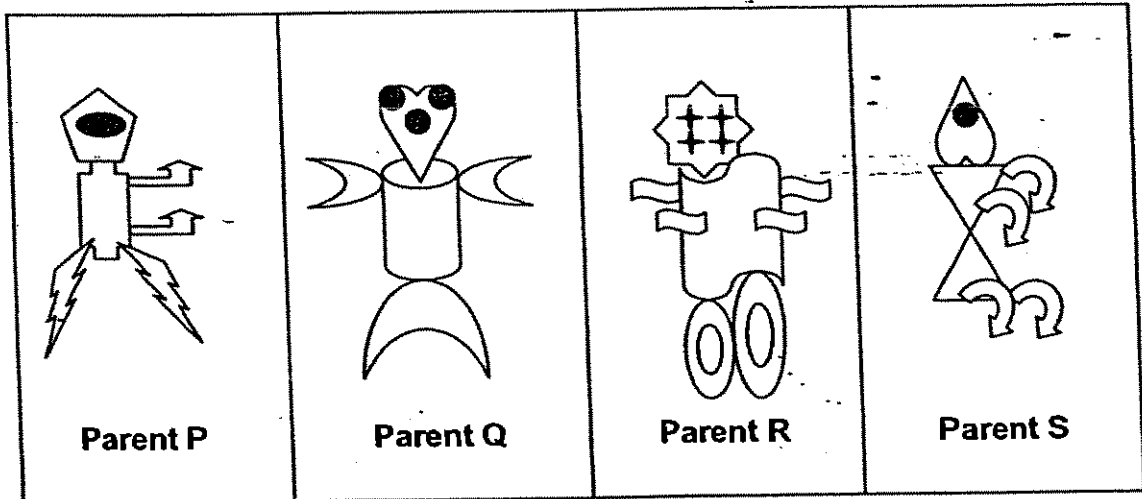


- (a) Which flower X or Y is wind pollinated? [1]
-
- (b) Why do you think so? [1]
-

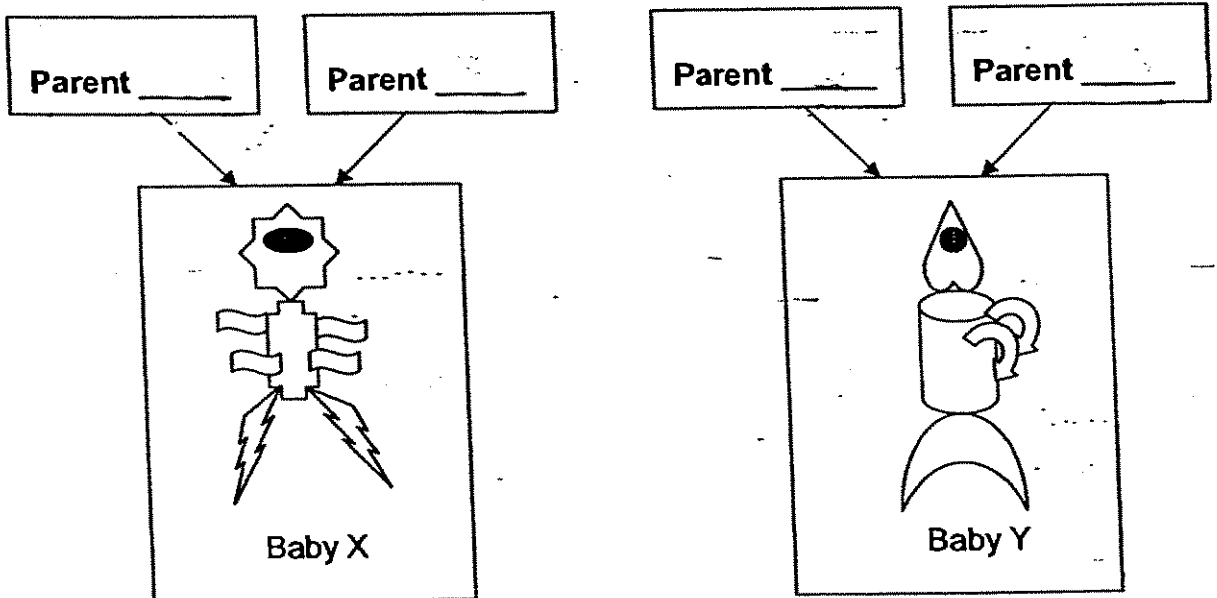


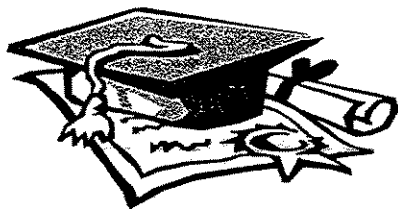
46. Parents on Planet Yabar pass on some of their own characteristics to their babies just like human beings. At the Yabar General Hospital, two babies were mixed up at birth accidentally.

The diagrams below show the four parents.



Help the parents find their own baby by writing the correct letter in the boxes below. [2]





ANSWER SHEET

AI TONG PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
SEMESTRAL ASSESSMENT (1)

1. 3 31) a) Plastic is not easily teared apart
and is durable.
2. 2 b) Cloth. It does not harm the environwent
3. 3
4. 1
5. 1 32) a) Potential → Kinetic + Sound + Heat
6. 1 b) Repeat the steps but pull the rubber
7. 2 band further away.
8. 4
9. 4 33) a) 1) Make a closed circuit with two
10. 3 batteries and the electromagnet.
11. 3 2) After that, try to pick up the pins
12. 3 using the electromagnet. Record the
13. 3 number of pins
14. 3 3) Repeat step B and 2) but now use 4
15. 3 batteries. Record the number of pins
16. 2 picked up.
17. 4 The step that could make the
18. 4 electromagnet pick up more means that
19. 3 increasing the power will cause it
20. 3 to be stronger compare them.
21. 4
22. 4 34) a) 4cm
23. 3 b) Gravity force
24. 3 c) 3, 12
25. 3
26. 4 35) 1) Not 2) True 3) Not 4) False
27. 2
28. 1 36) a) The fish depend on the plants for
29. 2 food and oxygen, the plant depend
30. 1 on the fish for carbon dioxide to
Photosynthesis.
b) The water hyacinth will take up the
space on the water surface, so little sunlight will be
able to reach the hydrilla so they can not make food and
photosynthesis, they die, the population will decrease.

37) a) 5

b) lady bugs

c) Lady bugs eat aphids and aphids are harmful to the plant by eating the plant sap and spreading diseases to the plant.

38) a) Overcrowding

b) i) The colour of the leave

ii) The height of the seedling

39) a)



b) These things help to give nutrients to the soil for plants so that the plants can grow well when they decompose.

40) a) 6

b) R and V

41) a) 80

b) They prey reproduces at a faster rate than the predator.

c) There might have been deforestation and their home place was burnt down.

42) a) Crab = gills, gill chambers

Frog = moist skin, lungs

b) mudskipper

43) i) Both have a streamlined body for swimming.

ii) Both have fins swimming.

Tuna = It has gills to breathe in water.

Dolphin = It has a blowhole.

44) a) The height of the ramp.

b) The higher the potential energy of the box, the further the distance moved by the empty box.

45) a) X

b) The anthers are hanging out of the flower petals so the wind can carry the pollen grains away.

46) P, R, Q, S



新加坡福建会馆属下五校小六统一考试

道南·爱同·崇福·南侨·光华

SINGAPORE HOKKIEN HUAY KUAN

5-SCHOOL COMBINED PRIMARY 6 PRELIMINARY EXAMINATION

TAO NAN · AI TONG · CHONGFU · NAN CHIAU · KONG HWA

2007

科学 SCIENCE

BOOKLET A

Total Time For Booklets A and B: 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

- ✓ Do not open this booklet until you are told to do so.
- ✓ Follow all instructions carefully.
- ✓ Answer all questions.

This booklet consists of 25 printed and 3 blank pages.

School : _____

Name : _____ ()

Class : _____

Date : 30 August 2007

TOTAL	60
-	
-	

Section A (30 x 2 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

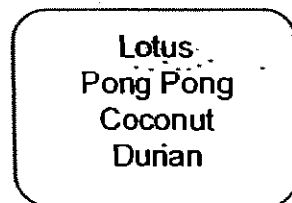
1. John fed 100 grams of maize and 100 grams of meat to 4 different animals. After one hour, he measured the amount of food left and recorded the results of his investigation in the table below.

Animals	Maize left (g)	Meat left (g)
A	100	0
B	80	50
C	100	50
D	0	100

Which animal(s) in John's investigation is likely to be an omnivore?

- (1) A only
 (2) B only
 (3) B and C only
 (4) A and D only

2.

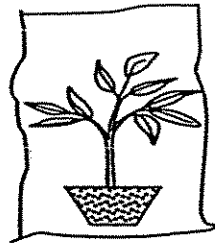


Which of the following characteristics can be used to classify the plants above into two groups?

- A: Flowering and non-flowering
~~B: Edible and non-edible~~
 C: Grow in water and grow on land
 D: Dispersed by water and dispersed by wind

- ~~(1) A and B only~~
~~(2) A and C only~~
~~(3) B and C only~~
~~(4) C and D only~~

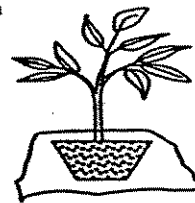
3. Three similar pots of plants, P, Q and R, of the same mass are used in the experiment shown below. They are placed in an airy and sunny place. Each pot is given 300ml of water.



Plant P



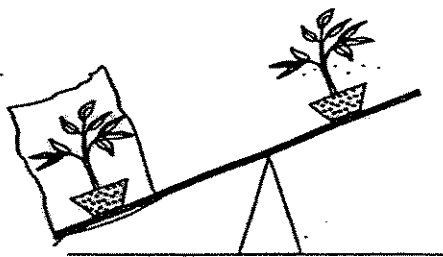
Plant Q



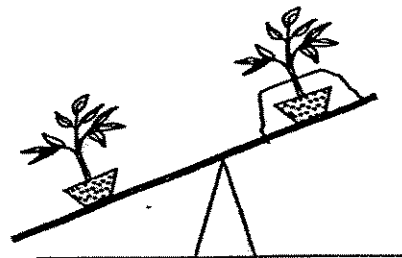
Plant R

Which of the following set-ups is most likely to be correct after a day?

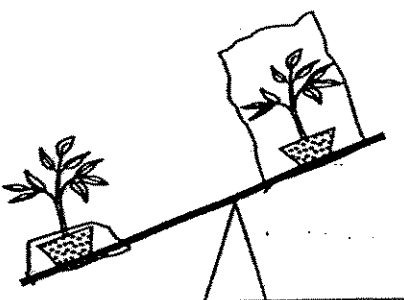
Setup A



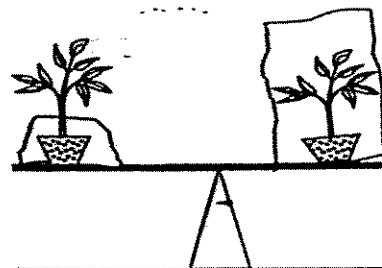
Setup B



Setup C

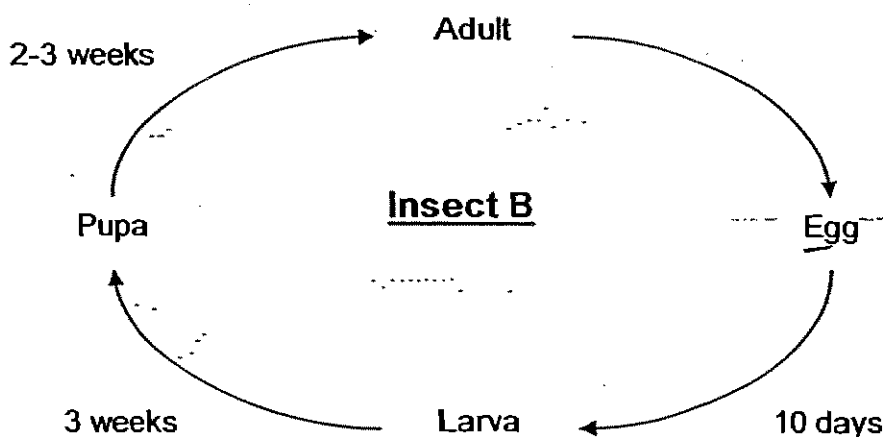
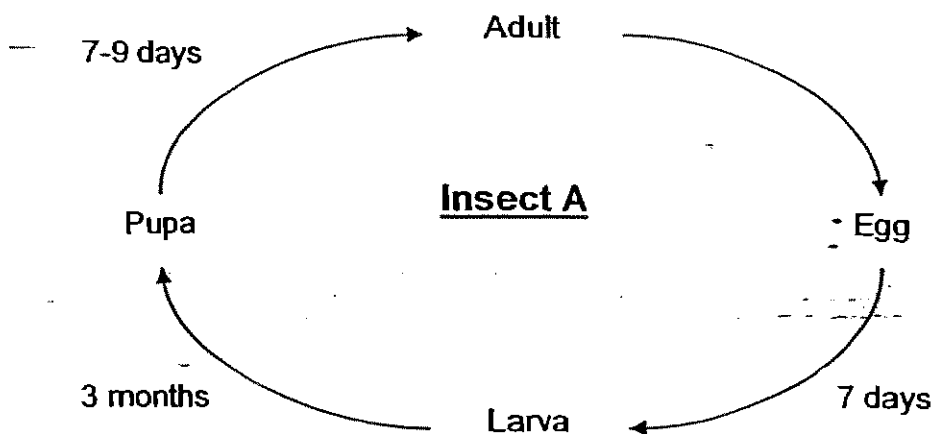


Setup D



- (1) Setup A
- (2) Setup B
- (3) Setup C
- (4) Setup D

4. The diagrams show the life cycle of 2 insects.



The diagrams cannot be used to compare _____

- (1) the lifespan of the 2 insects
- ~~(2) how the insects reproduce~~
- ~~(3) the length of time it takes the eggs to hatch~~
- ~~(4) the number of stages in the life cycle~~

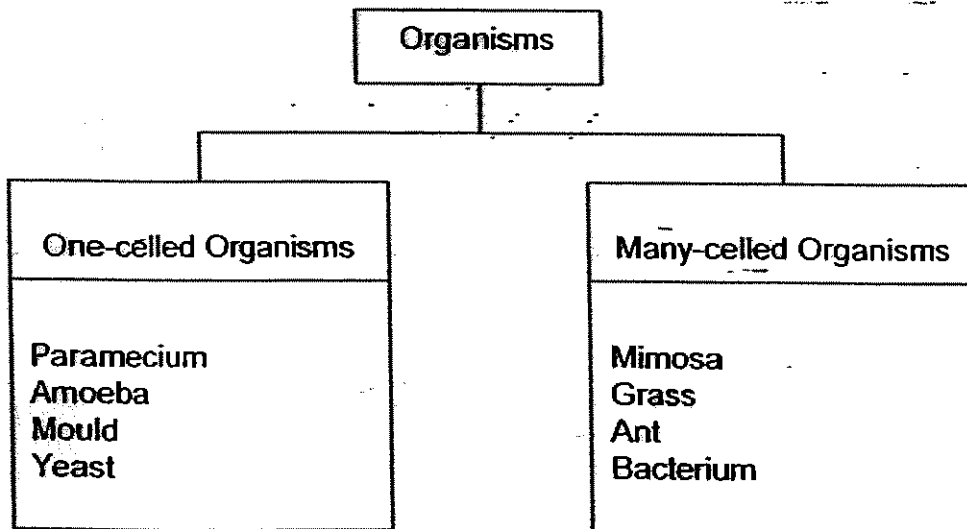
5. A pupil germinated some seeds and recorded his observations in a table as shown below.

OBSERVATION	DAY
Seed becomes swollen	2
Seed coat breaks	5
Root appears	7
Shoot starts to appear	10
Shrivelled seed leaves drop off	17

On which day will the seedling most probably be able to photosynthesize?

- (1) 5
- (2) 7
- (3) 10
- (4) 15

6. Study the classification below.



Which of the following organisms have been classified incorrectly?

- (1) Yeast and Mimosa
- (2) Amoeba and Grass
- (3) Mould and Bacterium
- (4) Paramecium and Ant

7. The table below shows four plants and their reproductive plant parts. Which plant is **not** matched correctly with its reproductive parts?

	Plants	Plant parts
A	Banana	Sucker
B	Hibiscus	Leaf
C	Bird's nest fern	Spore
D	Water chestnut	Underground Stem

- (1) A
 (2) B
 (3) C
 (4) D

8. The table below shows how two animals are classified.

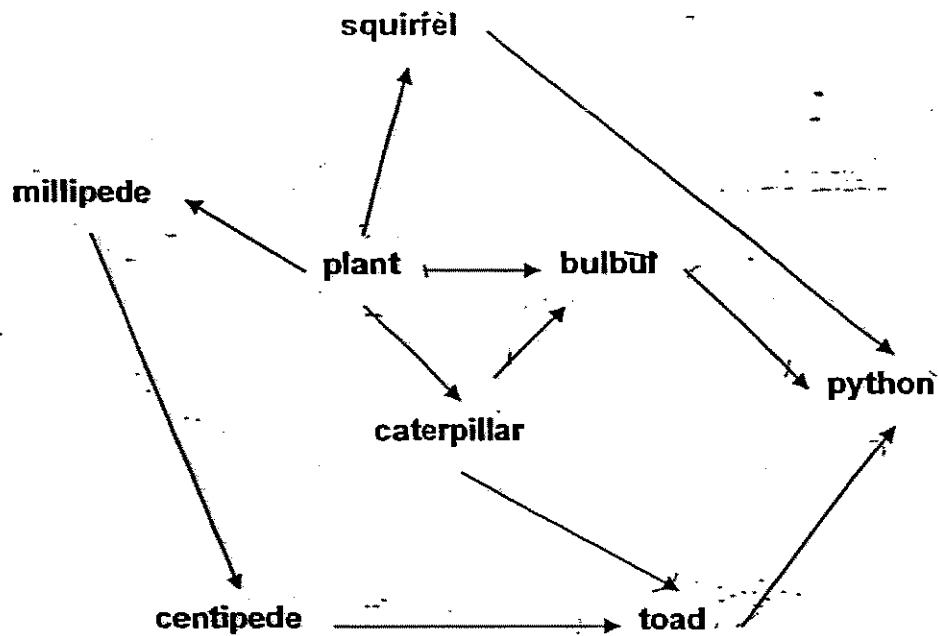
With Hair			
With wings		Without wings	
Lay eggs	Do not lay eggs	Lay eggs	Do not lay Eggs
-	R	S	-

Which of the following are differences between animals, R and S, according to the way they are classified in the table above?

- A. R is a mammal but S is not.
 B. R gives birth but S does not.
 C. R has wings but S does not.
 D. S cannot fly while R can.

- (1) A only
 (2) B only
 (3) A and D only
 (4) B and C only

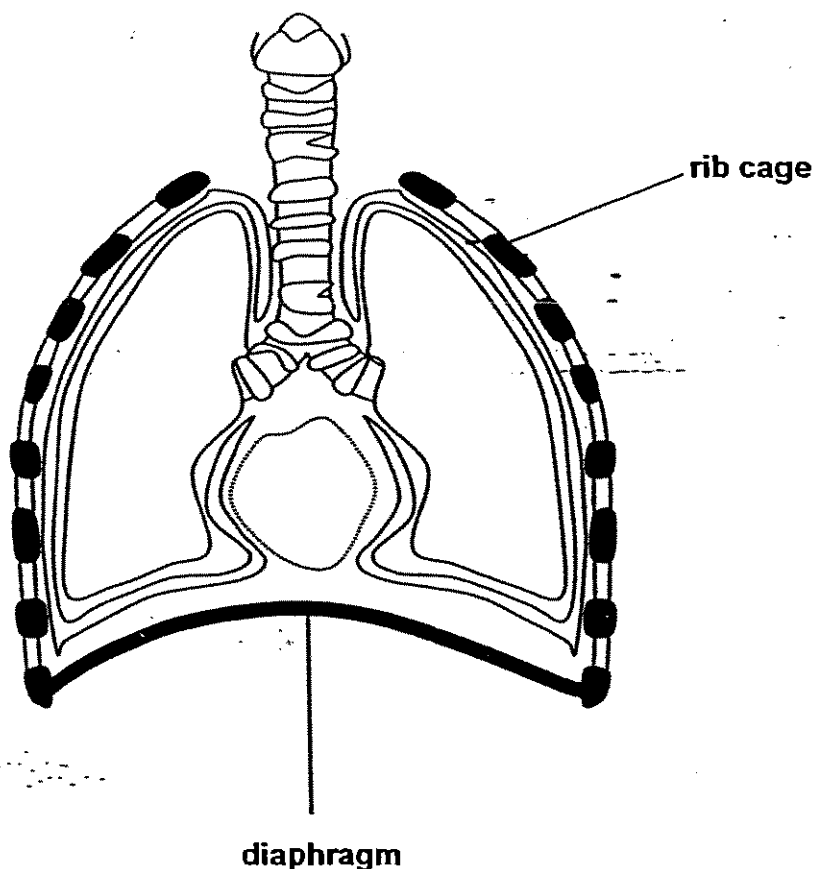
9. The food web shows the food relationship between animals in a forest.



How many organisms are predators as well as prey?

- (1) 2
- (2) 3
- (3) 4
- (4) 5

10. The diagram below shows the human respiratory system.



Which of the following shows the correct movements of the diaphragm and ribs during inhalation and exhalation?

	Diaphragm		Ribs	
	Inhalation	Exhalation	Inhalation	Exhalation
(1)	relaxes	contracts	down and inwards	up and outwards
(2)	relaxes	contracts	up and outwards	down and inwards
(3)	contracts	relaxes	down and inwards	up and outwards
(4)	contracts	relaxes	up and outwards	down and inwards

11. Our blood can be classified into four groups – A, B, AB and O.

The table below shows how the blood types of blood donors and recipients are matched.

Blood Type	Blood type of person donating blood			
	A	B	AB	O
Blood type of person receiving blood				
A	Yes	No	No	Yes
B	No	Yes	No	Yes
AB	Yes	Yes	Yes	Yes
O	No	No	No	Yes

Michael's family members have the following blood types:

Father - B
Mother - A
Brother - AB
Sister - O
Michael - B

If Michael needs a blood transfusion, who can he receive blood from?

- (1) His father only
- (2) His mother and brother only
- (3) His father and his sister only
- (4) His father, brother and sister only

12. Andrew set up an experiment to find out which conditions were most suitable for plants to live. The set-up consisted of five bell-jars containing a plant each. Each plant was given a different set of conditions. All the plants were identical and healthy at the start of the experiment.

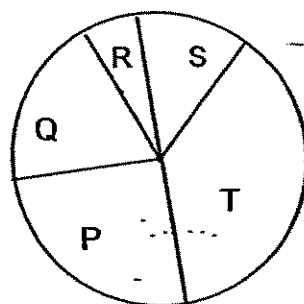
The table below shows the conditions given to the five plants.

Bell-jar	A	B	C	D	E
Water	X	X	✓	X	✓
Oxygen	✓	✓	✓	✓	✓
Sunlight	X	✓	✓	✓	✓
Fertilizer	✓	X	X	✓	X
Carbon dioxide	✓	✓	X	✓	✓

✓ - present
X - not present

Which 2 bell-jars of plants would be suitable to show that water is needed for the plant to make food?

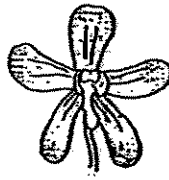
- (1) A and C
 - (2) B and E
 - (3) C and D
 - (4) D and E
13. The pie chart below shows the proportion of five populations of organisms in a garden community. These five populations form a food chain.



Which of the food chains below illustrates the relationship between these five organisms?

- (1) Q → R → S → T → P
- (2) R → S → Q → P → T
- (3) P → T → Q → R → S
- (4) T → P → Q → S → R

14. Two plants crossed pollinated and produced a plant with the flower shown below.



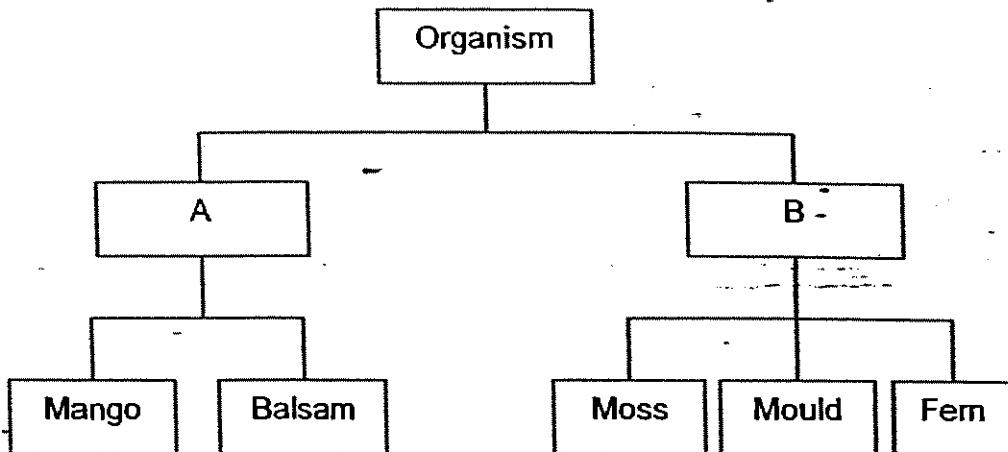
Purple and White Flower

Which of the following pair(s) of flowers is/are likely to be from the parent plants?

	Colour of Parent Flowers	
	Male	Female
<input checked="" type="checkbox"/> A	Purple	White
<input type="checkbox"/> B	White	White
<input checked="" type="checkbox"/> C	Purple and white	Purple
<input type="checkbox"/> D	Purple	Purple

- (1) A only
(2) D only
(3) A and C only
(4) B and D only

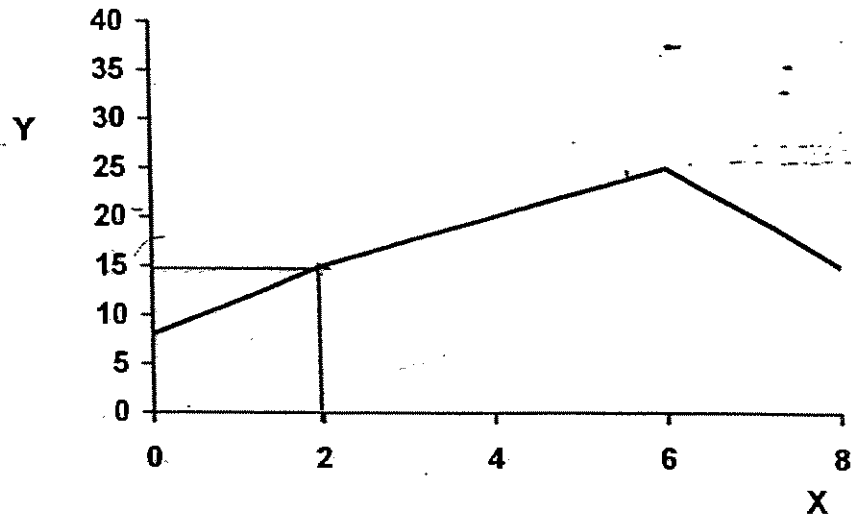
15. A classification chart is shown below.



What could A & B be?

	A	B
(1)	Non-Flowering Plants	Flowering Plants
(2)	Able to Photosynthesize	Unable to Photosynthesize
(3)	Reproduce from Seeds	Reproduce from Spores
(4)	Insect Pollinated	Wind Pollinated

16. Some Science Club members observed a goldfish in a tank. They kept a record of the number of times the gill covers open and close. The graph below shows the results of their observation.



X: Number of days

Y: Number of times gill covers open and close in 30 seconds

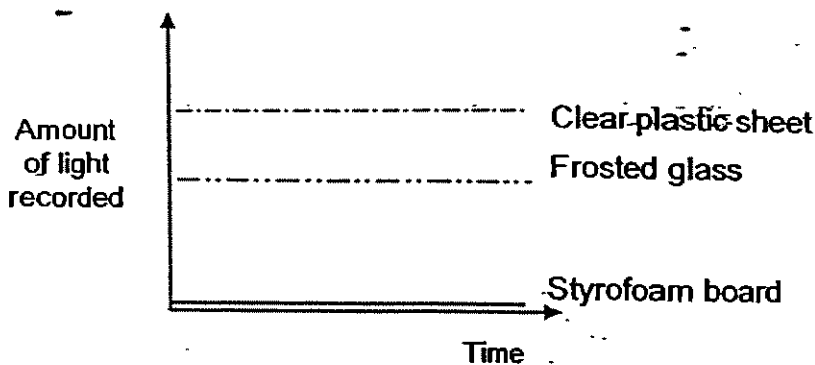
What could the Science Club members have done at the end of the sixth day to cause the results shown in the graph above?

- (1) They put in another fish.
- (2) They provided the fish with food.
- (3) They added aquatic plants.
- (4) They moved the tank to another location.

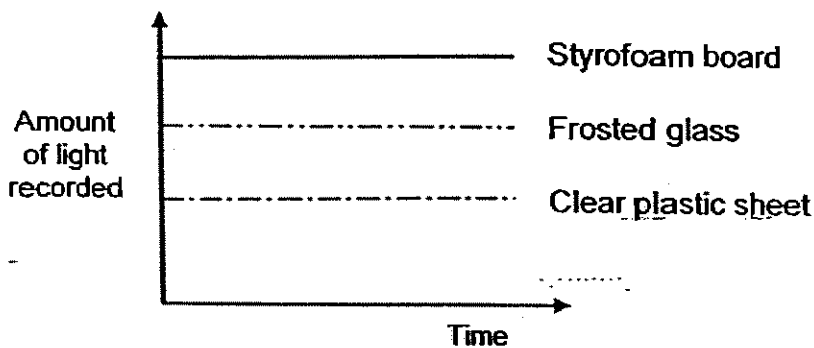
17. George conducted an experiment to investigate the amount of light that can pass through three materials of the same thickness. The materials he used were frosted glass, clear plastic sheet and styrofoam board. He shone a torch through the three materials. He used a light sensor to measure how much light has passed through each of them.

He drew a graph to show the amount of light recorded by the light sensor. Which of the following graphs is the correct one?

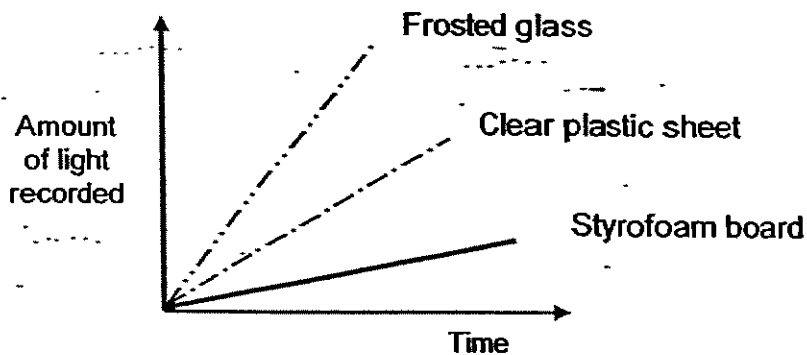
(1)



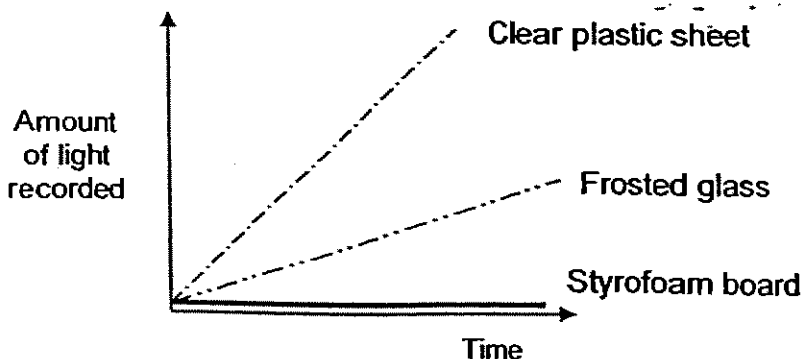
(2)



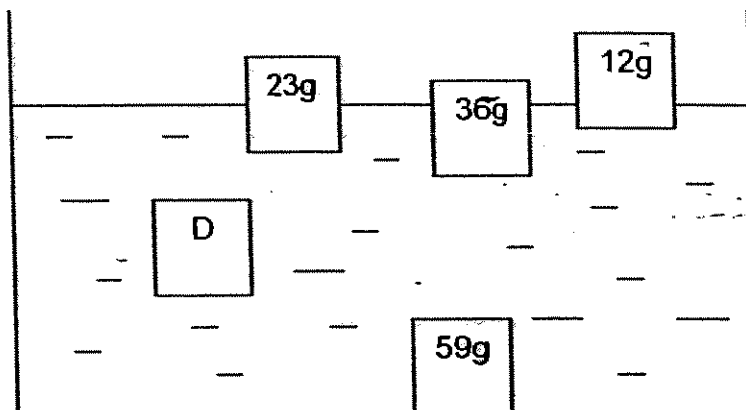
(3)



(4)



18. Five objects of the same size but different masses, are put into a tank of water. The diagram shows what happens when they are in the water. Study the diagram and answer the question below.



Which one of the following is the mass of object D?

- ~~(1)~~ 25g
~~(2)~~ 32g
~~(3)~~ 42g
~~(4)~~ 60g

19. Keric wants to find out whether stirring makes salt dissolve faster in water. Besides using the same amount of salt, which of the following variables should he keep the same?

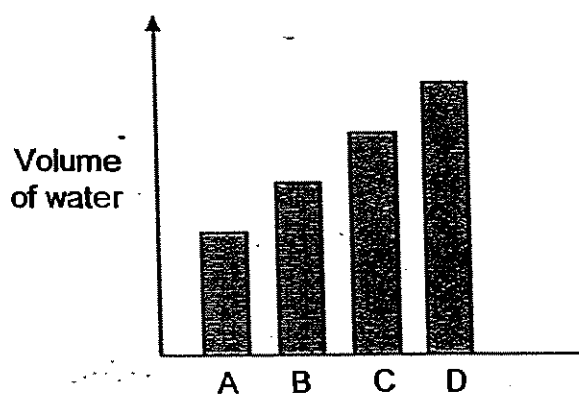
- ~~A~~ Type of salt
~~B~~ Amount of water
~~C~~ Temperature of the water
~~D~~ Number of times the water was stirred

- (1) A and B only
 (2) C and D only
 (3) A, B and C only
 (4) B, C and D only

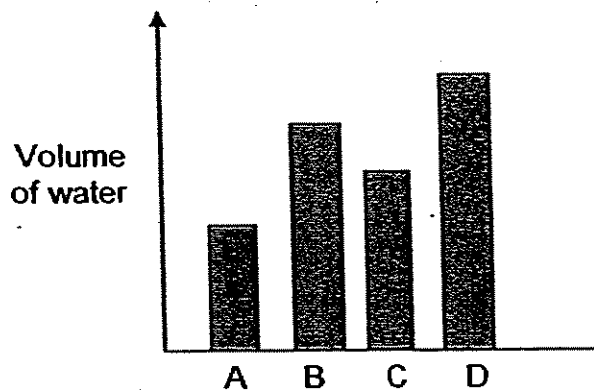
20. Four identical beakers, A, B, C and D, were filled with the same volume of water. They were left in four places with different conditions for 10 hours as shown in the table below.

Containers	A	B	C	D
Conditions	Sunny Windy	Sunny Not windy	Cloudy Not windy	Cloudy Windy

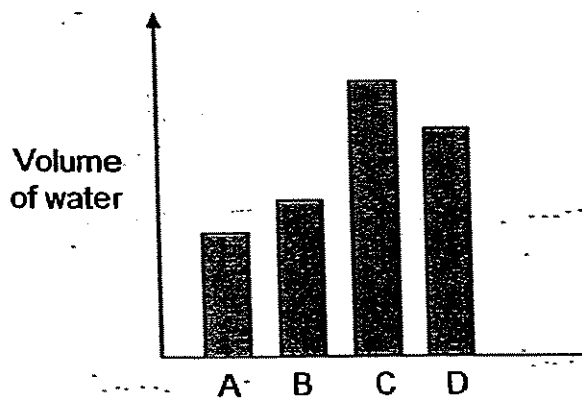
Which one of the following graphs correctly shows the volume of the water left in A, B, C and D after 10 hours?



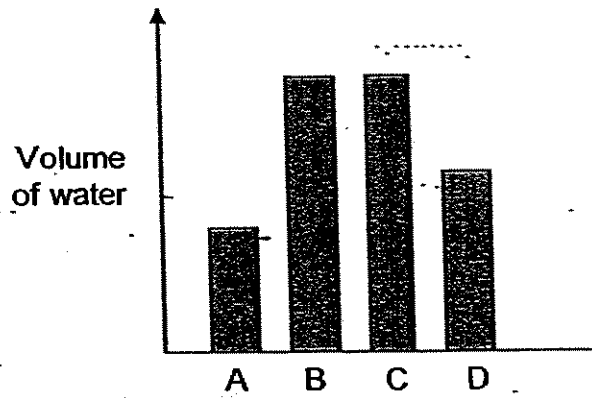
(1)



(2)

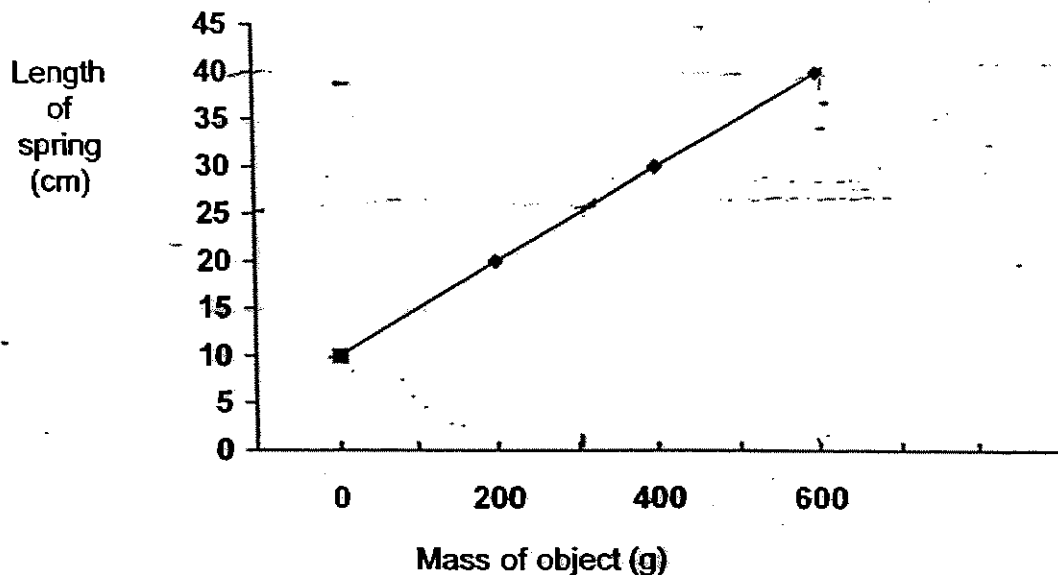


(3)



(4)

21. John carried out an experiment to determine the effects of objects of different masses on a spring. A line graph was plotted as shown below after the experiment.

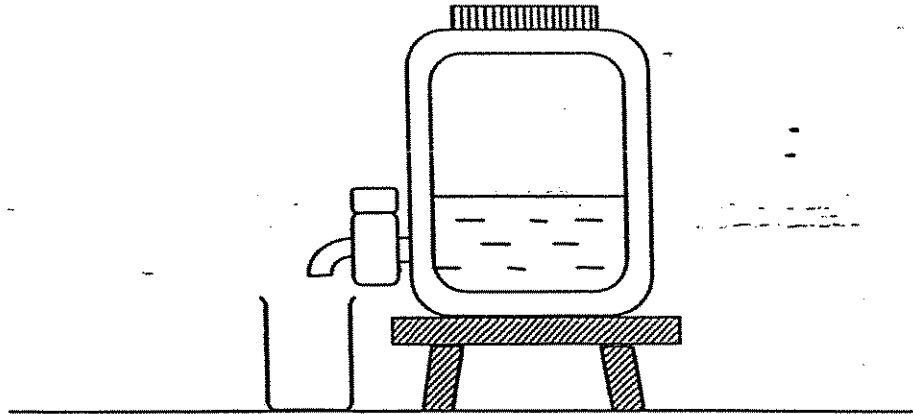


What can John conclude from the line graph above?

- A: The length of the spring increases proportionately.
 B: Doubling the mass will double the length of the spring.
 C: When a 600g object is hung on the spring, the length of the spring is 30cm.
 D: The extension of the spring is 15cm when a 300g object is hung on it.

- (1) A only
 (2) A and D only
 (3) A, B and D only
 (4) All of the above

22. The diagram below shows a water container filled with 3000 cm^3 of water. The capacity of the container is 8000 cm^3 .

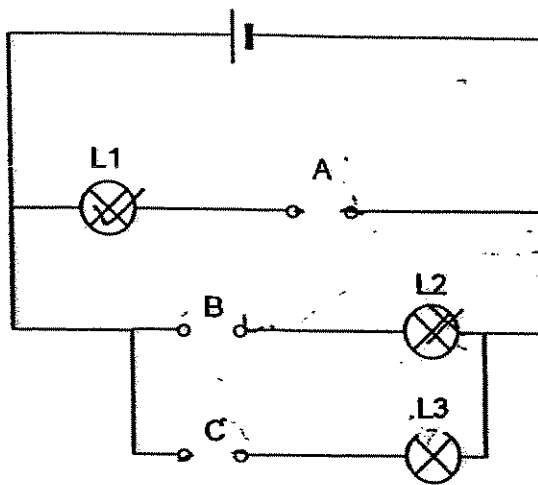


When the tap of the container is turned on and off, 500 cm^3 of water is released into the beaker.

What is the final volume of the air in the container?

- (1) 4500 cm^3
- (2) 5000 cm^3
- (3) 5500 cm^3
- (4) 7500 cm^3

23. Aileen had three rods, P, Q and R, of unknown materials. She placed them in various positions, A, B and C, as shown in the circuit below.



The results of the experiment were shown in the table below.

Position	A	B	C
Rod	P	Q	R
Lamp	L1	L2	L3
Bulb lights up?	No	Yes	Yes

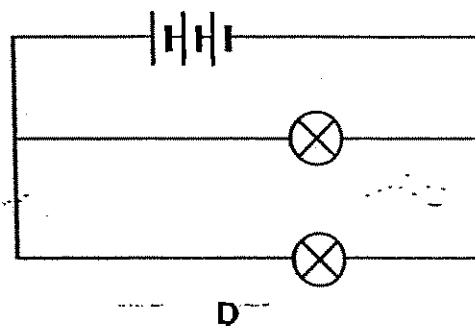
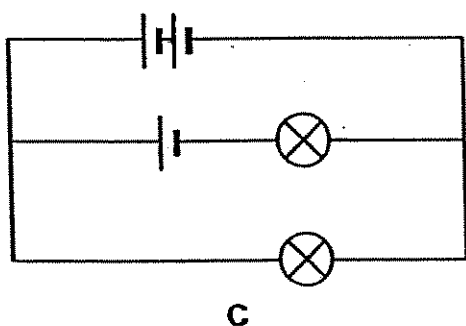
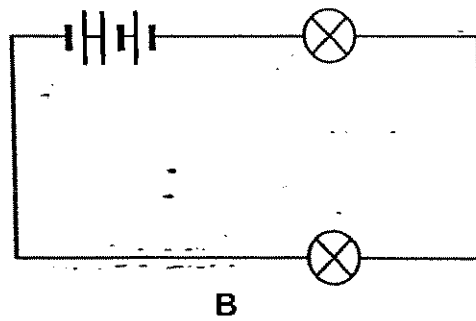
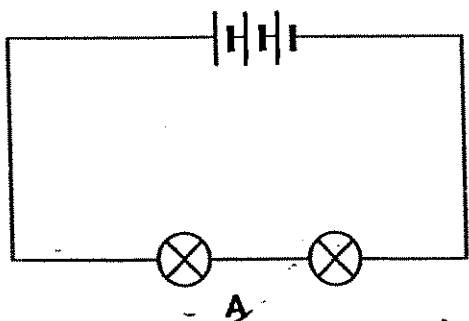
She repeated the experiment by placing the rods at different positions as shown in the table below.

Position where rods were placed		
A	B	C
Q	P	R

Which one of the following would show the correct result?

	Lamp		
	L1	L2	L3
(1)	Yes	Yes	No
(2)	Yes	No	Yes
(3)	Yes	Yes	Yes
(4)	No	Yes	Yes

24. Janet was told to investigate if the arrangement of the bulbs in a circuit affects their brightness. She set up four circuits as shown in the diagrams below.



Which of the two circuits shown above should be used to ensure a fair test?

- (1) A and C
- (2) A and D
- (3) B and C
- (4) B and D

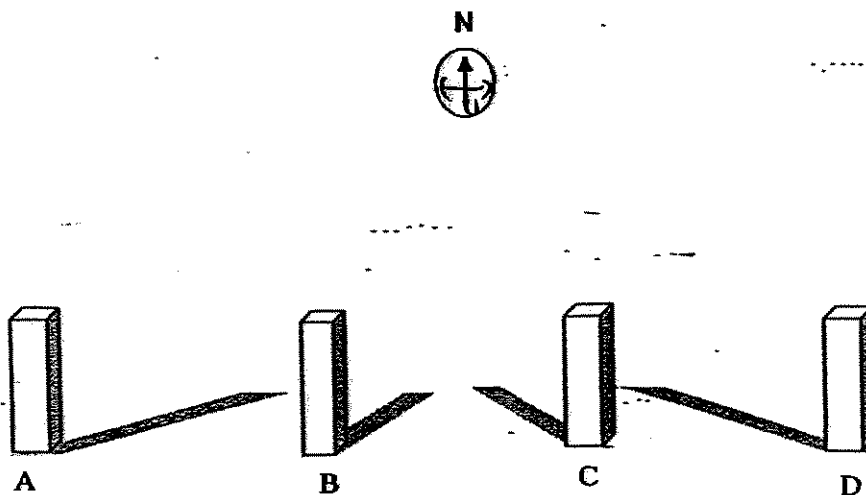
25. Janet carried out an investigation with 4 beakers of water. The volume of water in each beaker was recorded at the start and end of the investigation. The results are shown in the table below.

Beaker	Amount of water at the start of the investigation (ml)	Amount of water at the end of the investigation (ml)
A	70	24
B	60	30
C	50	40
D	40	25

What can you infer from the results shown in the table?

- (1) Beaker C has the biggest exposed surface area.
 (2) Evaporation was the slowest in Beaker A.
 (3) More water evaporated from Beaker B than Beaker D.
 (4) The least amount of water evaporated from Beaker D.

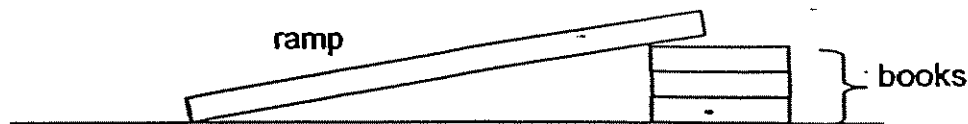
26. The diagram below shows the position of the shadow cast by a stick at 4 different times during a day.



Which diagram shows a shadow cast at 6.00pm?

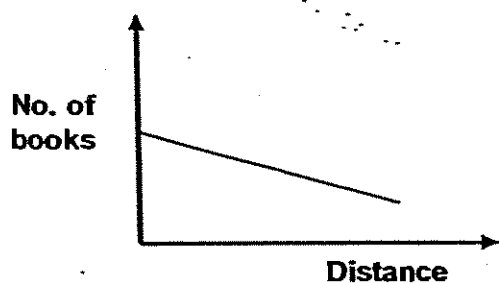
- (1) A
 (2) B
 (3) C
 (4) D

27. Ming Li set up an experiment to find out the relationship between the height of a ramp and the distance travelled by a toy car.

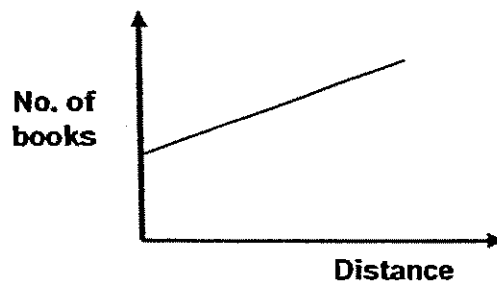


Which one of the following graphs shows the correct result of the experiment?

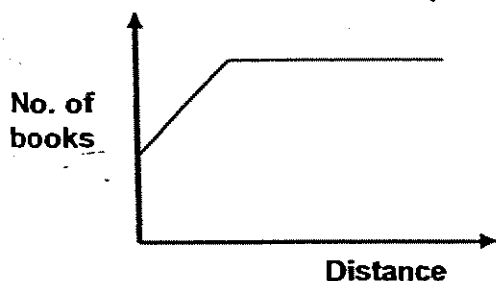
(1)



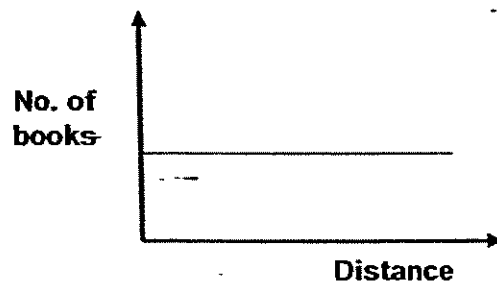
(2)



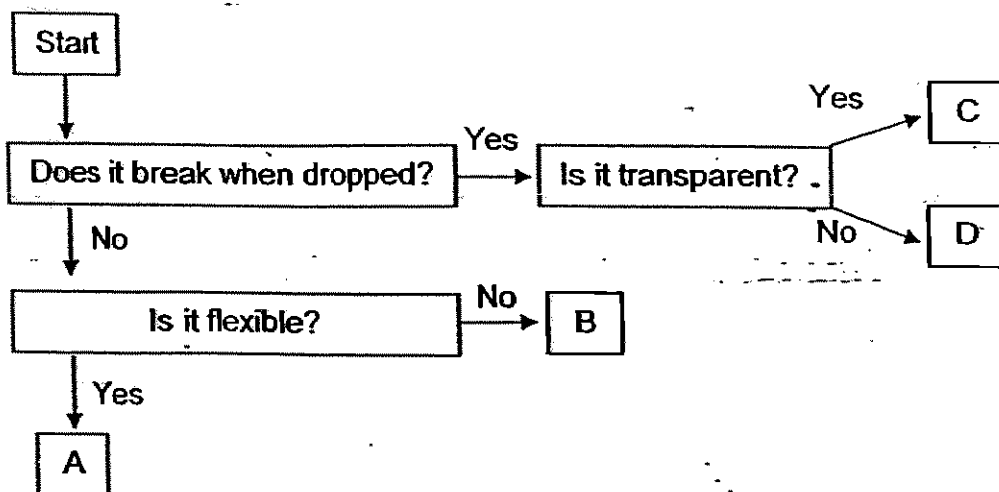
(3)



(4)



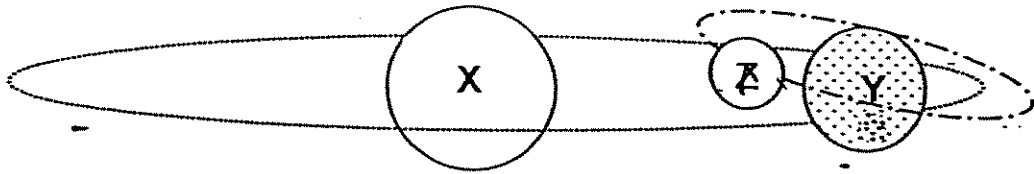
28. The flow chart below shows the properties of 4 different materials A, B, C and D.



Which materials A, B, C or D are suitable for making the objects shown in the table below?

	A	B	C	D
(1)	Nylon socks	Wine glass	Clay figurine	Plastic spoon
(2)	Plastic spoon	Clay figurine	Nylon socks	Wine Glass
(3)	Nylon socks	Plastic spoon	Wine Glass	Clay figurine
(4)	Clay figurine	Wine glass	Plastic spoon	Nylon socks

29. The diagram below shows 3 objects X, Y and Z in the Solar System. The lines indicate the paths moved by Objects Y and Z.



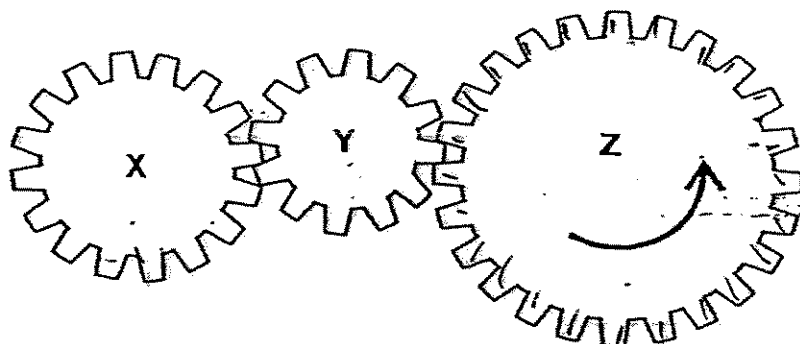
The following are descriptions of Objects X, Y and Z.

- X is a star.
- Y supports life.
- Z is a natural satellite of Y.

Which one of the following statements is incorrect?

- ~~(1)~~ The rotation of Y causes day and night.
~~(2)~~ X ensures that the water cycle on Y continues.
~~(3)~~ We can see Z because it reflects light from X.
~~(4)~~ When Z revolves round Y, it causes the four seasons.

30. The diagram shows three gears, X, Y and Z.



The number of teeth in each of the gears is shown in the table below.

Gear	Number of teeth
X	16
Y	12
Z	24

Which one of the following shows the correct number of turns for gears X, Y and Z?

	Gear X	Gear Y	Gear Z
(1)	32	24	16
(2)	24	32	16
(3)	16	12	24
(4)	12	16	24



新加坡福建会馆属下五校小六统一考试

道南·爱同·崇福·南侨·光华

SINGAPORE HOKKIEN HUAY KUAN

5-SCHOOL COMBINED PRIMARY 6 PRELIMINARY EXAMINATION

TAO NAN · AI TONG · CHONGFU · NAN CHIAU · KONG HWA

2007

科学 SCIENCE

BOOKLET B

Total Time For Booklets A and B: 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

- ✓ Do not open this booklet until you are told to do so.
- ✓ Follow all instructions carefully.
- ✓ Answer all questions.

This booklet consists of 17 printed and 3 blank pages.

School : _____

Name : _____ ()

Class : _____

Date : 30 August 2007

TOTAL	40
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Section B: 40 marks

Read the questions carefully and write down your answers in the spaces provided.

31. The table gives us some information on 5 animals.

Animals	Life cycle	Habitat	Diet	Legs
Housefly	4 stages	Rubbish dump	Omnivore	6 legs
Grasshopper	3 stages	Field	Herbivore	6 legs
Rhinoceros beetle	4 stages	Tree	Herbivore	6 legs
Cockroach	3 stages	House	Omnivore	6 legs
Butterfly	4 stages	Garden	Herbivore	6 legs

Janet selected one characteristic and classified the animals into 2 groups as shown in the table below.

Janet's table:

Group A	Group B
Housefly	Grasshopper
Rhinoceros beetle	Cockroach
Butterfly	

Jill selected another characteristic for her classification as shown in the table below.

Jill's table:

Group A	Group B
Housefly	Grasshopper
Cockroach	Rhinoceros beetle
	Butterfly

(a) Based on the information given, what characteristics did Janet and Jill use to classify the animals? [1]

Janet: _____

Jill: _____

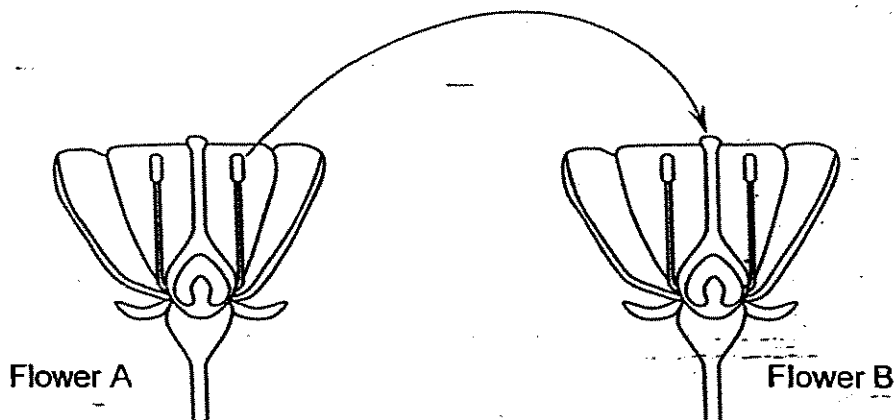
(b) Why are the other 2 characteristics given in the table not suitable for use to classify the animals? [2]

(i) _____

(ii) _____

	3
--	---

32. The diagram shows the process of pollination that occurs in the life cycle of a flowering plant.



(a) Describe the process that is shown above. [1]

(b) State one observable change in the flower following this process. [1]

33. A substance has to pass through various parts of a plant cell before reaching the nucleus.

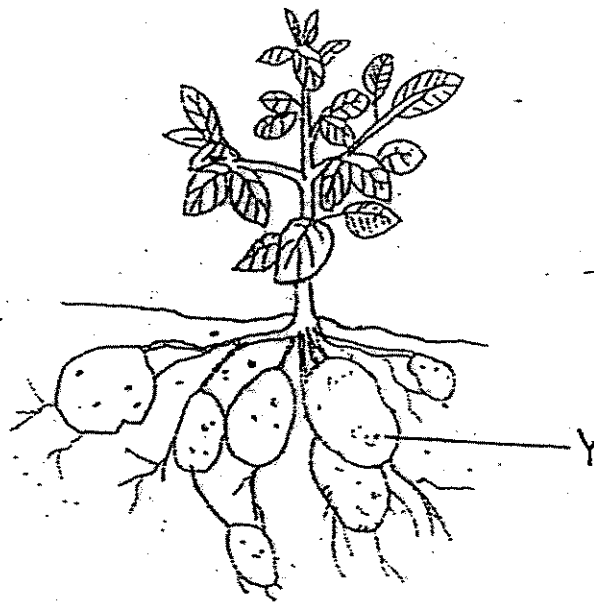
(a) Use the words given below to write the correct order in which the substance has to pass through. [1]

Cell membrane	Cytoplasm	Cell wall
---------------	-----------	-----------



(b) What is the function of the cytoplasm? [1]

34. The picture below shows a potato plant.



(a) Which part of the plant is Y?

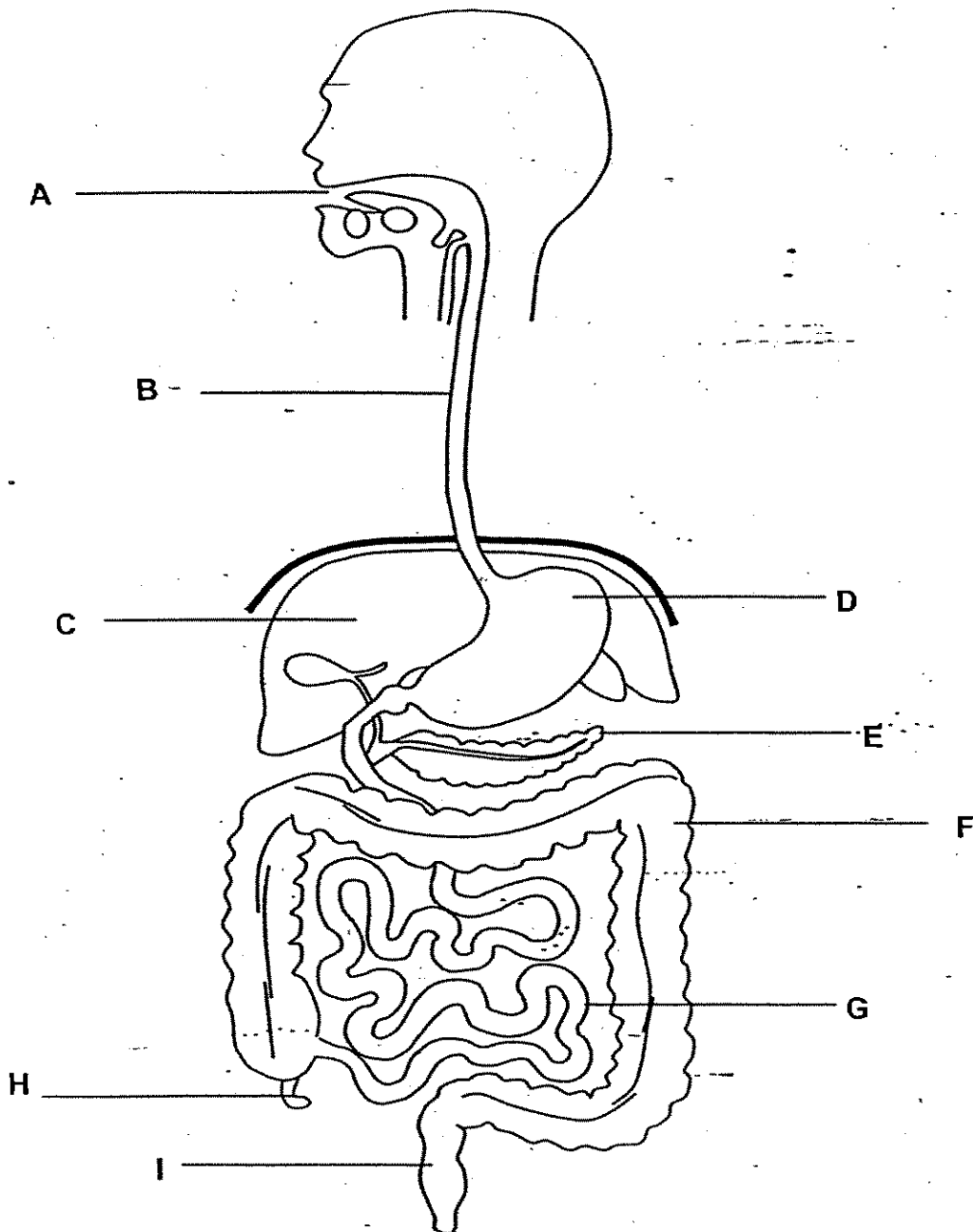
[1]

(b) How is Y useful to the plant?

[1]

	2
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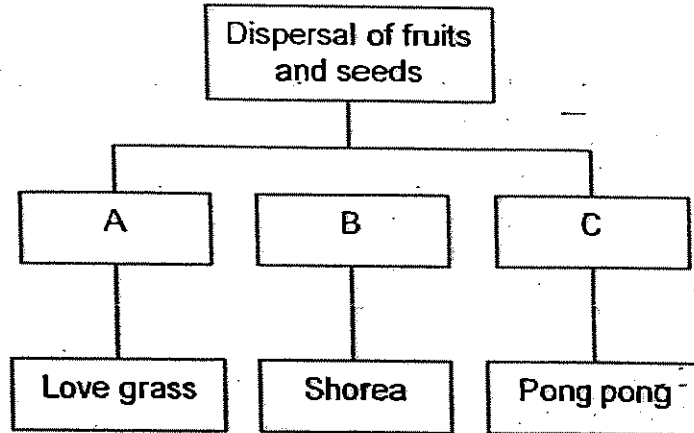
35. The diagram below shows parts of the human body.



Using the appropriate letters (A to I) from the diagram above, list, in order, the organs each mouthful of food or drink passes through on its way through the digestive system. [2]

	2
--	---

36. The chart below shows the grouping of the dispersal methods of some fruits and seeds.

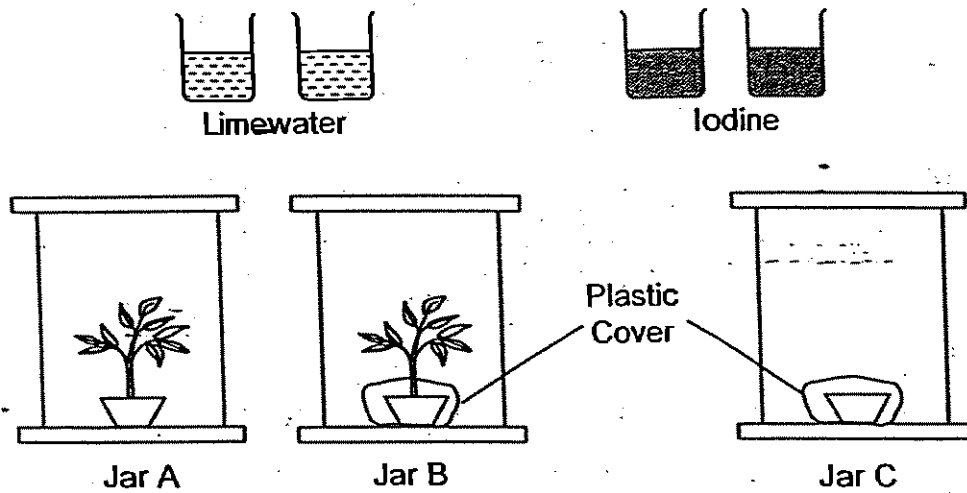


Based on the chart above, write down the method of seed dispersal and state how each of the plants adapts itself to the way its seeds are dispersed. [3]

	Method of dispersal	Adaptation
A		
B		
C		

	3
--	---

37. Daniel wanted to show that plants produce carbon dioxide when they respire. The diagram below shows the materials which may be useful for his experiment.



- (a) Which items should he choose to conduct his experiment?
Put a tick [✓] against the items chosen.

[2]

Jar A	
Jar B	
Jar C	
Limewater	
Iodine	

- (b) Explain the purpose of the plastic cover.

[1]

	3
--	---

38. Amy, Belinda and Carol were trying to make yoghurt in a home economics class using some milk and bacteria. They recorded their procedures and the results in the table below.

	Amy	Belinda	Carol
Step 1	a) Warm 50ml of milk at 75°C for 30 seconds.	a) Warm 50ml of milk at 75°C for 30 seconds. b) Cool the milk at 35°C	a) Warm 50ml of milk at 75°C for 30 seconds. b) Cool the milk at 35°C
Step 2	a) Add 1 portion of bacteria. b) Keep the mixture at 75°C for 3h.	a) Add 1 portion of bacteria. b) Keep the mixture at 35°C for 3h.	a) Add 1 portion of bacteria. b) Keep the mixture at room temperature for 3 days.
End Product	The final product taste like milk.	The final product is creamy and tastes slightly sour.	The final product is creamy and has many grey spots on the surface.

(a) Name the process that took place in Belinda's mixture.

[1]

(b) Give a possible reason to explain why the bacteria in Amy's milk was not effective.

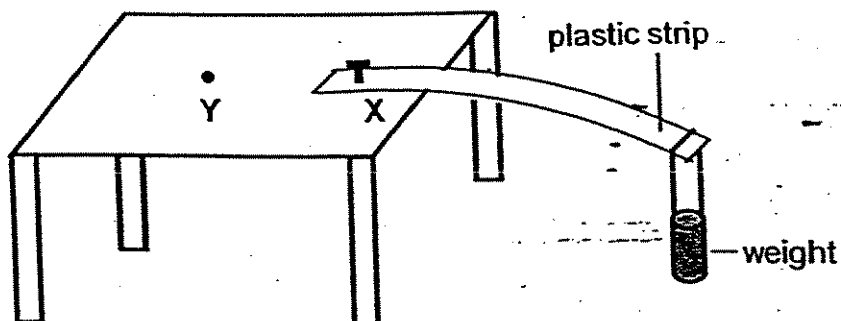
[1]

(c) Give a possible reason to explain why there are grey spots on the surface of Carol's end product.

[1]

	3
--	---

39. Kok Beng used the set up below to investigate the flexibility of 2 different types of plastic strips, A and B. He secured one end of each type of plastic strips on top of a table at point X and put a weight on the other end.

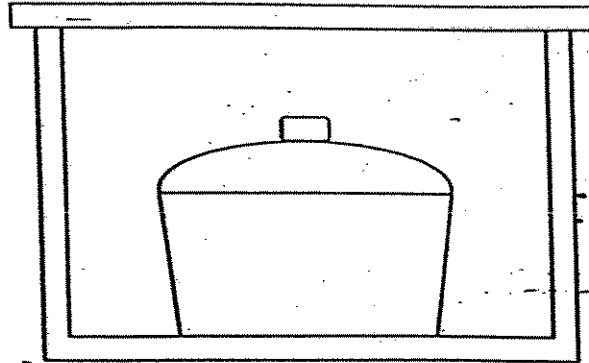


- (a) At the end of the investigation, he concluded that Plastic Strip B was more flexible than A. What observation enabled him to reach the conclusion? [1]

- (b) How would the results be different if Plastic Strip B was secured at position Y as compared to when it was in the original position? [1]

	2
--	---

40. The picture below shows a method sometimes used for keeping food warm. The food is heated in the metal pot which is then placed in a styrofoam box. When the metal pot is removed from the styrofoam box, the food is still warm.

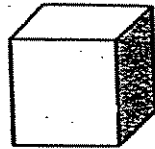


- (a) Explain how the styrofoam box reduces heat loss from the food. [1]

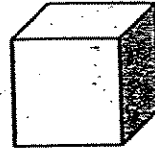
- (b) What other material could the pot be made of if you want to heat it over a flame as well as keep the food warm for a longer period of time? [1]

	2
--	---

41. Alan carried out the following activity. He used 2 solid metal blocks of the same shape and size as shown in the diagram below. The mass of Block A was 50g but the mass of Block B was 80g.

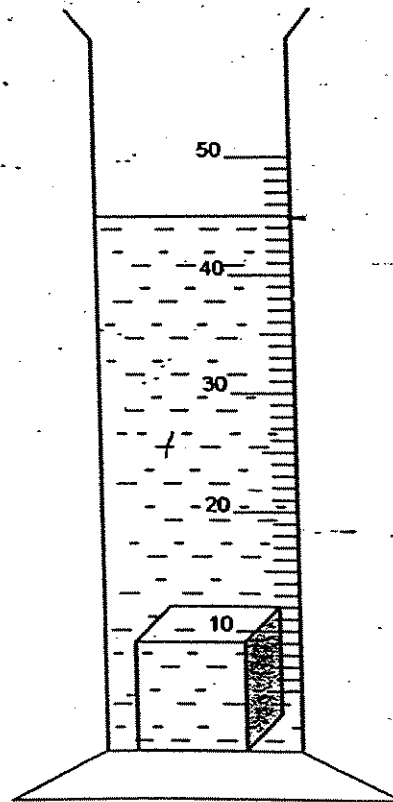


Block A



Block B

When he lowered Block A gently into a measuring cylinder containing 30ml of water, the water level rose as shown in the diagram below.



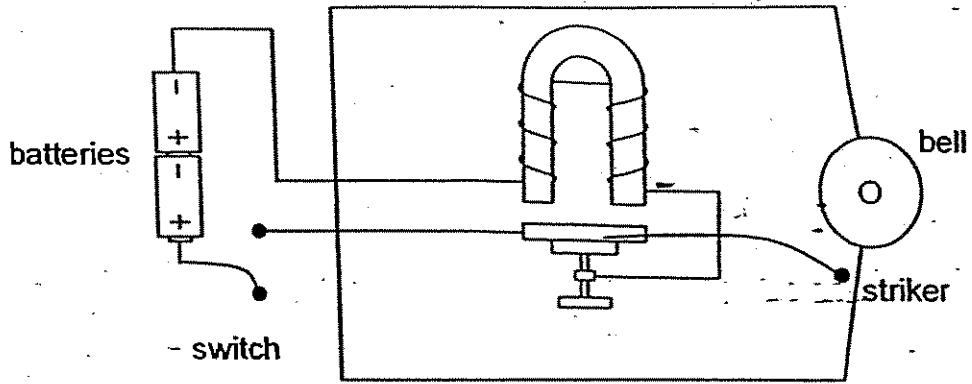
(a) What is the volume of Block A? [1]

(b) Alan then took out Block A and put Block B into the water.
Will the water level be the same, higher or lower than when Block A
was put into the water? [1]

(c) What is the reason for your answer in (b)? [1]

	3
--	---

42. The diagram below shows a simple door bell.



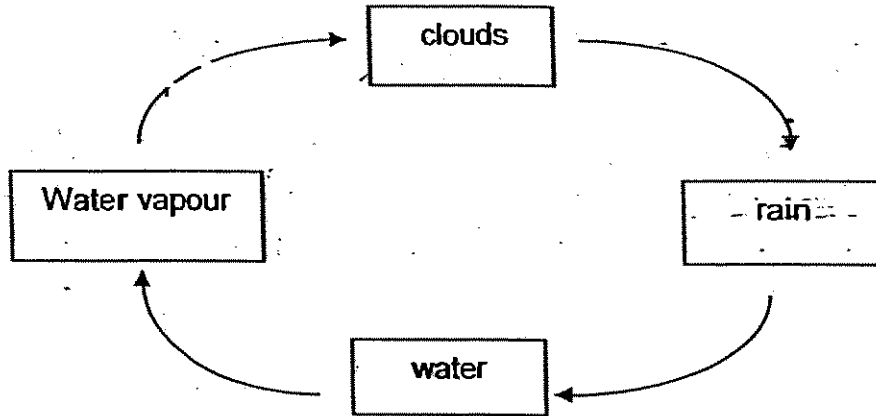
In the boxes below, write the energy changes that take place when the switch is closed.

[2]

- in batteries
- ↓
- in circuit
- ↓
- of striker
- ↓
- from bell

	2
--	---

43. The diagram below shows how the water cycle recycles the water from the earth. The arrows show the different stages of water in motion. Study the diagram carefully and answer the questions below.



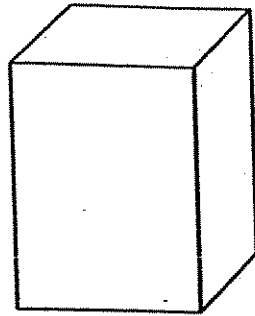
- (a) What causes the water to evaporate? [1]

- (b) Put a cross [X] on the correct arrow to show where condensation takes place. [1]

- (c) How is acid rain formed? [1]

	3
--	---

44. A pupil was told to conduct an investigation to find out if plants grow towards sunlight using the items shown.



A styrofoam box with a cover

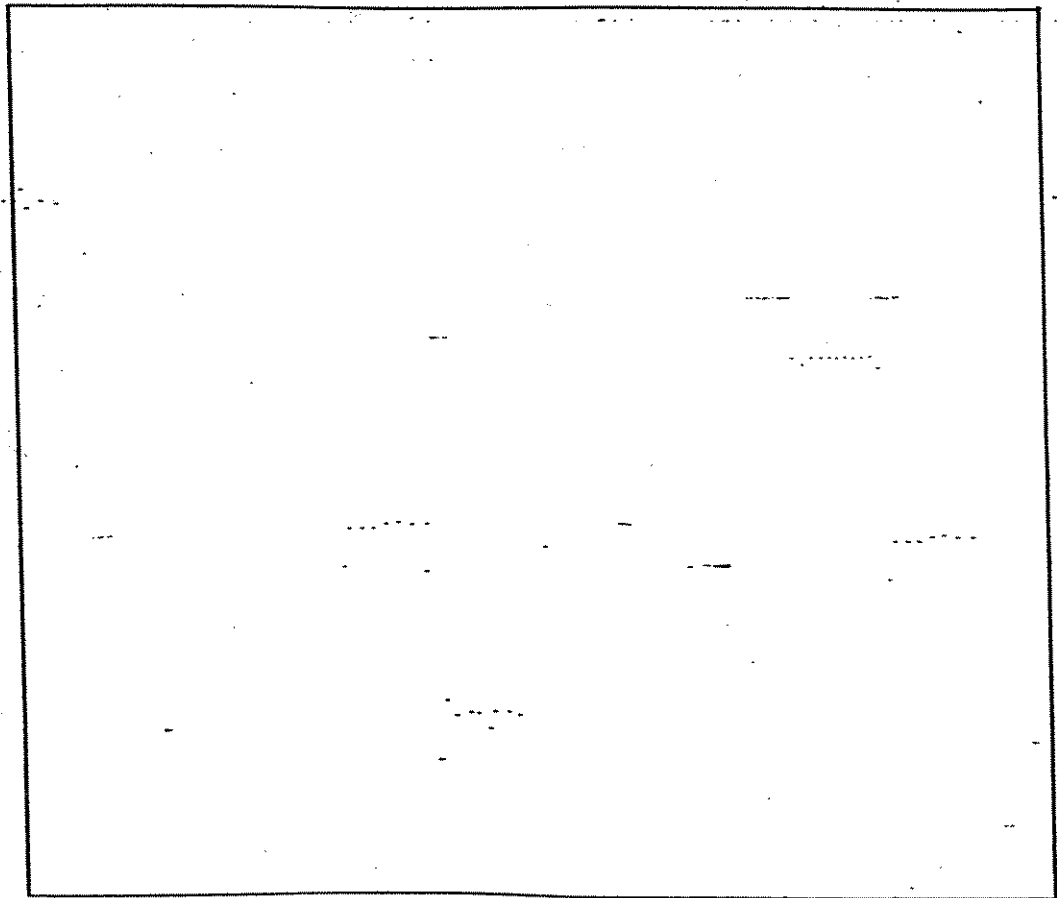


A pair of scissors

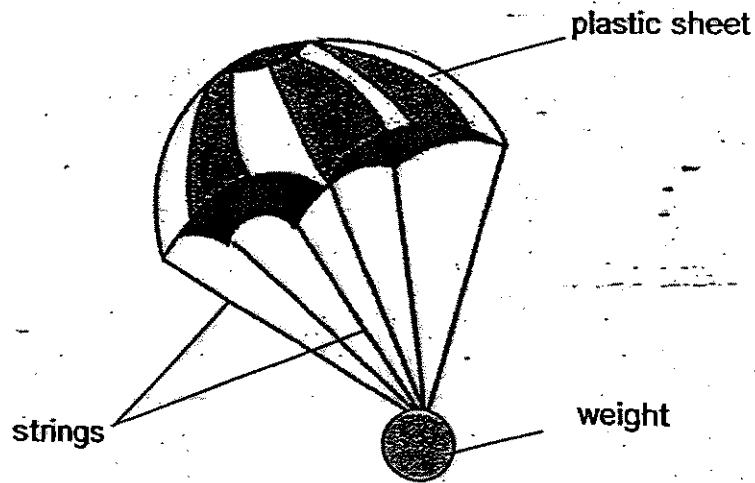


A potted plant

Draw a diagram to show the set-up at the end of the investigation. [2]



45. A boy threw a toy parachute from the top of the roof. Within seconds, it fell to the ground.



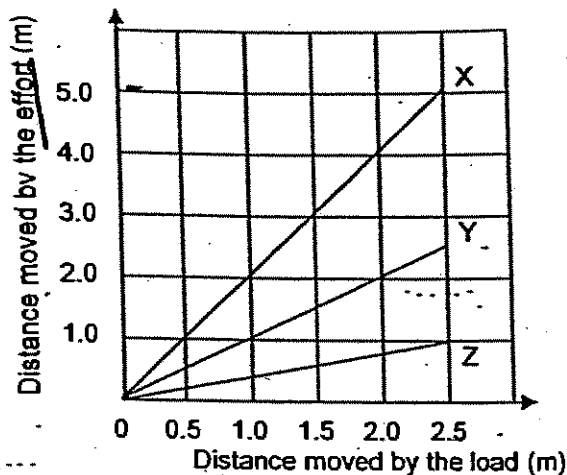
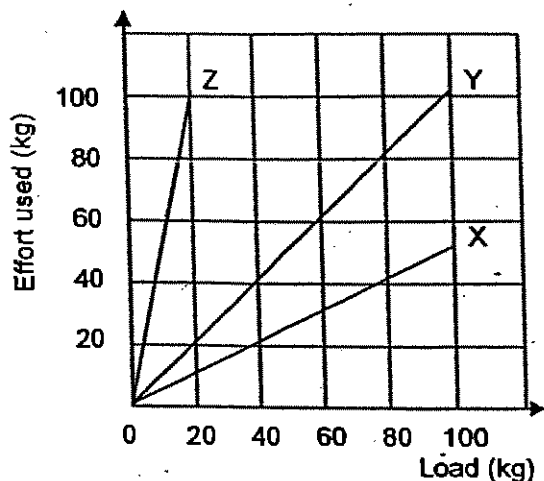
(a) What was the force acting on it?

[1]

(b) Give one method to keep the parachute in the air for a longer time. [1]

	2
--	---

46. Matthew conducted an experiment with three different simple machines X, Y and Z. Using the information he collected from the experiment, he plotted the two graphs as shown below.



- (a) What could simple machine Y possibly be? [1]

- (b) What advantage and disadvantage did Matthew face when he used simple machine Z as compared to the other two machines? [2]

Advantage:

Disadvantage:

- (c) Which of the above simple machines should Matthew use if he has to carry heavy loads? [1]

	4
--	---

37) a) Jar B ✓

Jar C ✓

Limewater ✓

b) It is to prevent carbon dioxide from the soil from escaping into the jar.

38) a) Fermentation.

b) She did not cool the mixture at step 1 but continued with step 2 immediately. She also kept the mixture at 75°C so the bacteria may have died and become useless.

c) When Carol kept the mixture at room temperature for 3 days, the bacteria and the yoghurt may have gone bad and some other micro-organisms in the air might have went into the mixture.

39) a) Plastic strip A snapped into two but plastic strip B did not.

b) Plastic strip B would not bend as much as it did as compared to when it was in the original position.

40) a) The Styrofoam box is a poor conductor of heat so it traps heat by not allowing it to go out but cold air is not able to get in.

b) Glass.

41) a) 15 cm³

b) The water level would be the same.

c) Although Block B has a bigger mass than Block A, the volume is still the same and it still covers the same area. In this case mass does not matter.

42) Chemical energy

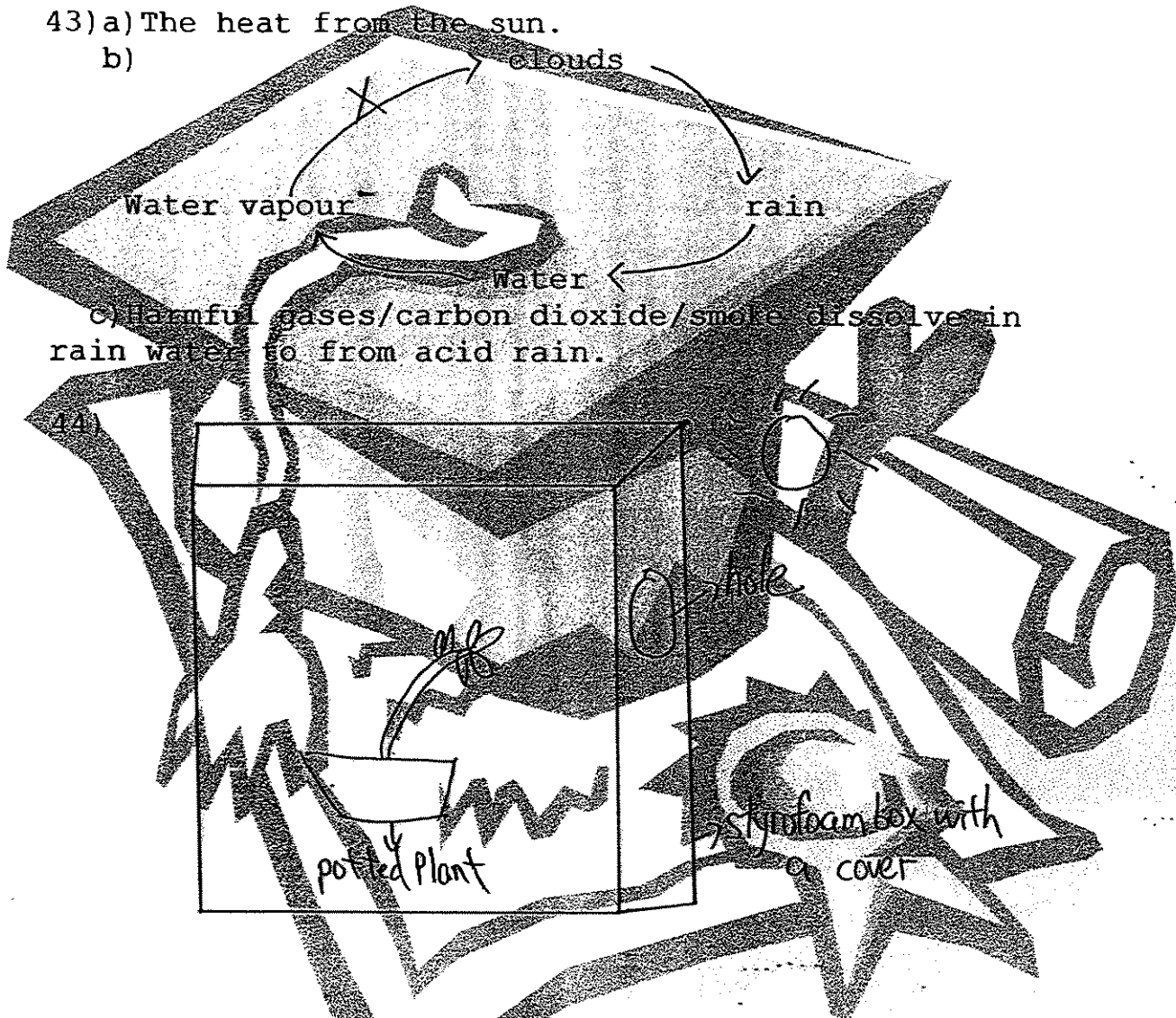
Electrical energy

Kinetic energy

Sound energy

43) a) The heat from the sun.

b)



c) Harmful gases/carbon dioxide/smoke dissolve in rain water to form acid rain.

44)

45) a) Gravitational force/Air resistance.

b) Use a bigger plastic sheet.

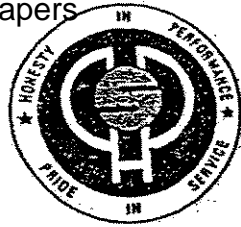
46) a) A fixed pulley.

b) Advantage: The distance moved by the load is greater than / The distance moved by the effort.

Disadvantage: The effort used is greater than the load.

c) Simple machine X.

---end---



HENRY PARK PRIMARY SCHOOL

SEMESTRAL EXAMINATION 1

2007

SCIENCE

PRIMARY 6

BOOKLET A

Name: _____ ()

Class: Primary 6 ()

**30 Questions
60 Marks**

Total Time for Booklets A and B: 1 h 45 min

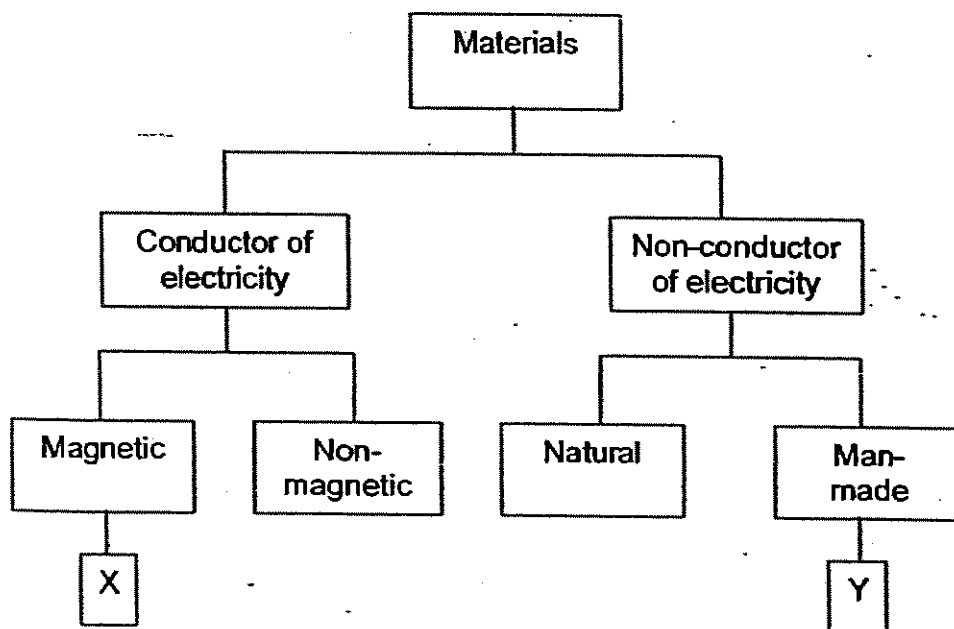
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

READ AND FOLLOW INSTRUCTIONS CAREFULLY.

PART 1 (60 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1,2, 3 or 4). Shade the correct oval (1,2,3 or 4) on the Optical Answer Sheet.

1 Study the classification chart below.



	X	Y
(1)	Steel	Wood
(2)	Gold	Silk
(3)	Nickel	Plastic
(4)	Silver	Wool

- 2 The table below shows the amount of light that has passed through ^{four} three different materials and the clarity of the object seen through them.

Material	Amount of light that passed through the materials (lux)	Description of object seen
A	200	sharp
B	30	sharp
C	70	blurred
D	5	blurred

Mrs. Lee wants to renovate her house. She wants to change the windows in her house facing the corridor. She doesn't want people to see what is happening in her house but she wants some sunlight into her house.

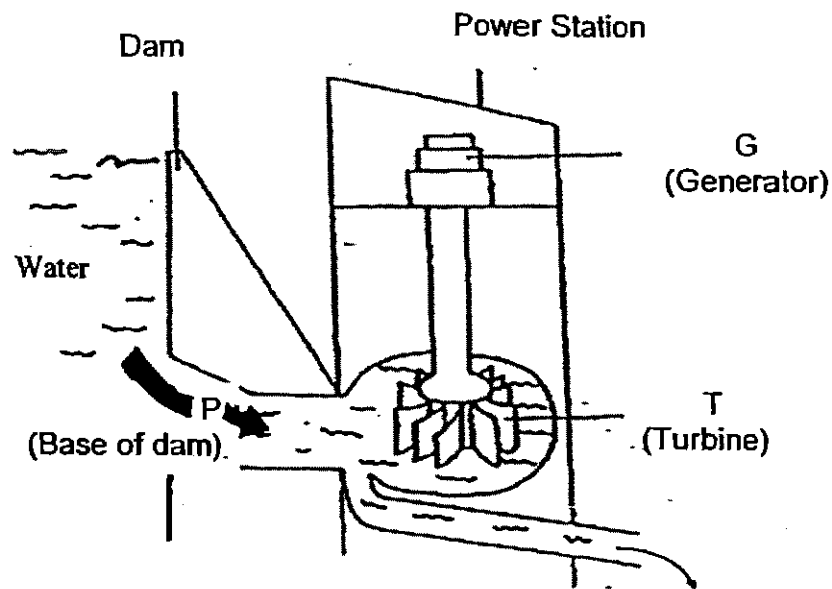
Which type of material should she use for her window?

- (1) A
 (2) B
 (3) C
 (4) D
- 3 Study the table and determine what R and S are respectively.

R	S
Cannot move freely from place to place on its own	Cannot move freely from place to place on its own
Can make food on its own	Cannot make its own food

	R	S
(1)	Rose Plant	Eel
(2)	Moss	Bird's nest fern
(3)	Mushroom	Bacteria
(4)	Moss	Toadstool

- 4 The diagram below shows a hydroelectric power station.

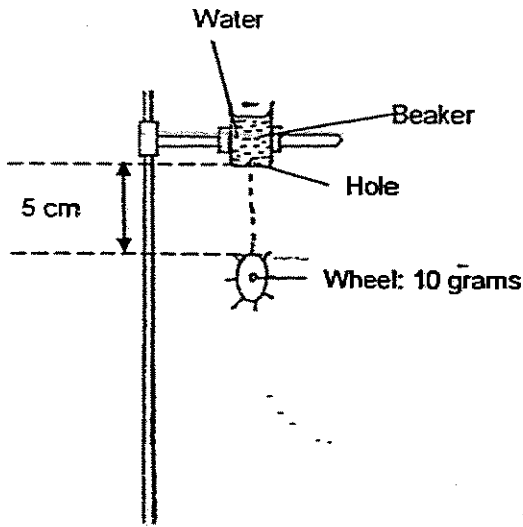


Which of the following statement is true?

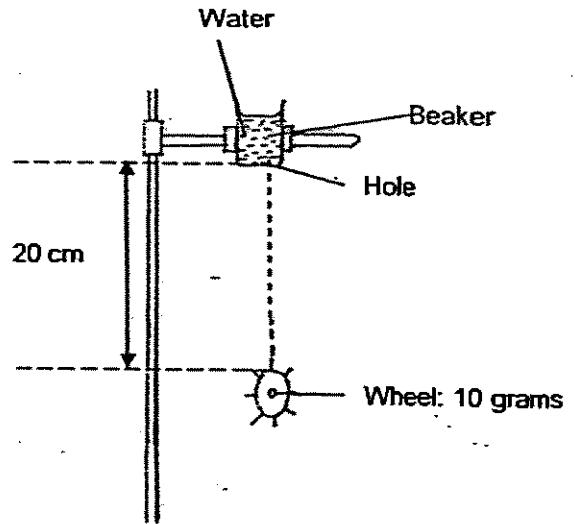
- A: Gravitational potential energy is converted to kinetic energy at Point P
- B: Kinetic energy is converted to electrical energy at Point T
- C: Kinetic energy is converted to electrical energy at Point G
- (1) B only
- (2) C only
- (3) A and C only
- (4) B and C only

5 Jeromē carried out the experiment as shown below.
Which wheel will turn the fastest?

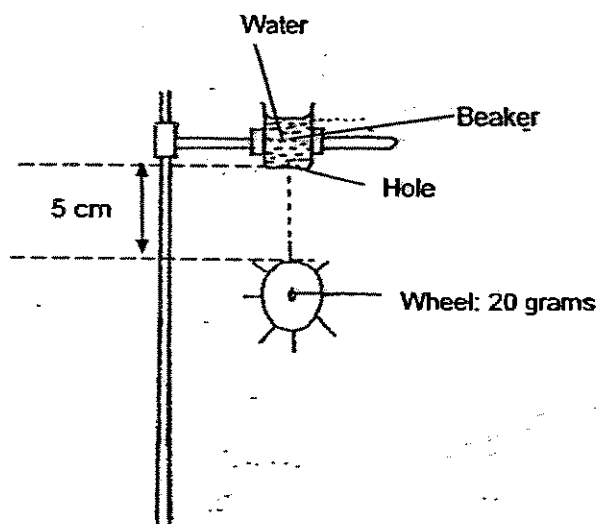
(1)



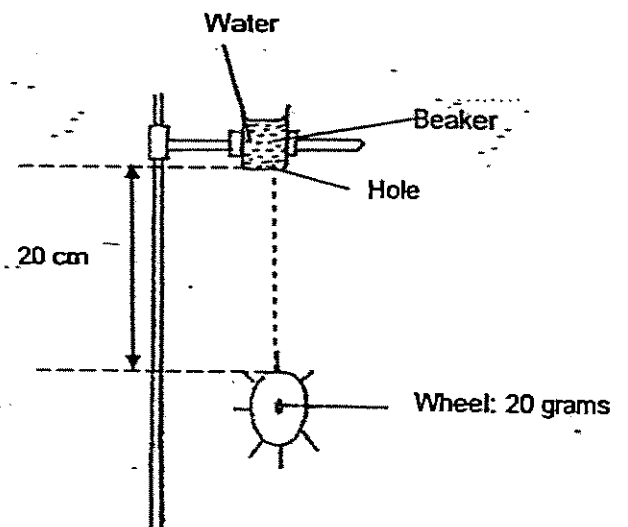
(2)



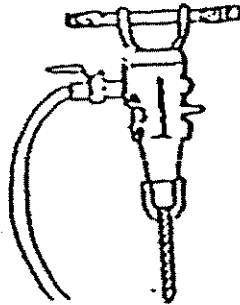
(3)



(4)



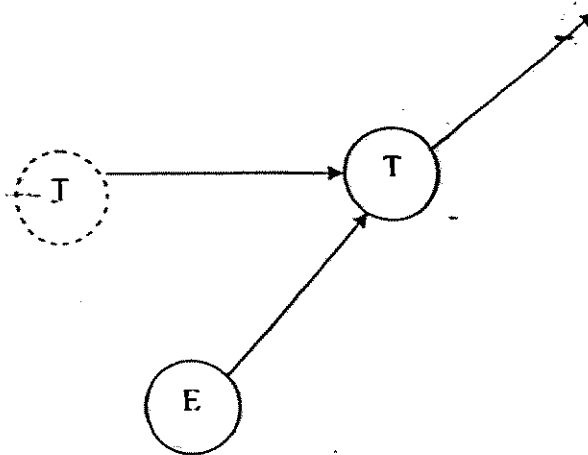
- 6 A drill is filled with compressed air. Driven by the compressed air, it spins and drills a hole.



Which one of the following energy conversion takes place when a hole is drilled in the wall?

- (1) Potential energy \longrightarrow Kinetic energy
- (2) Potential energy \longrightarrow Kinetic energy + Heat energy
- (3) Potential energy \longrightarrow Kinetic energy + Sound energy
- (4) Potential energy \longrightarrow Kinetic + Sound + Heat energy

- 7 Marble T is rolling forward when Marble E hits it. The diagram below shows what happens when marble E hits marble T.

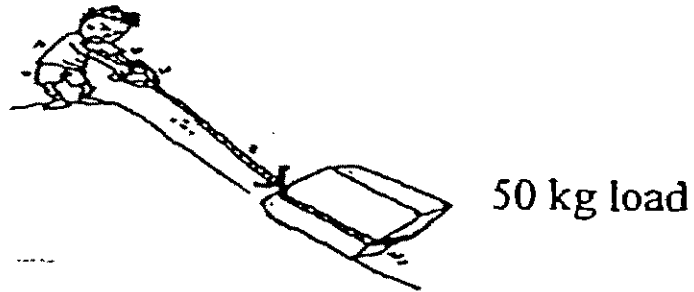


Which effect of force does this show?

- A: Force changes the shape of an object.
B: Force makes an object move faster.
C: Force changes the direction of the movement of an object.

- (1) A and B
(2) A and C
(3) B and C
(4) A, B and C

- 8 The picture below shows Shaun pulling a 50 kg load up a slope.



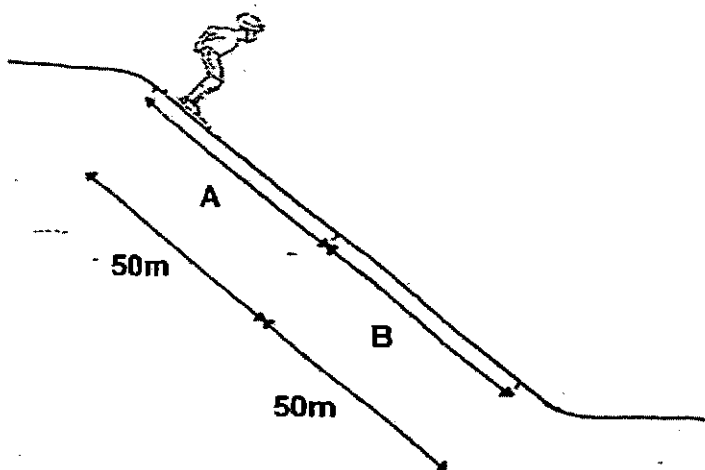
Apart from the pulling force, what are the other two types of forces acting on the 50 kg load?

- A: Friction
- B: Magnetic force
- C: Gravity
- D: Elastic spring force

- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) C and D only

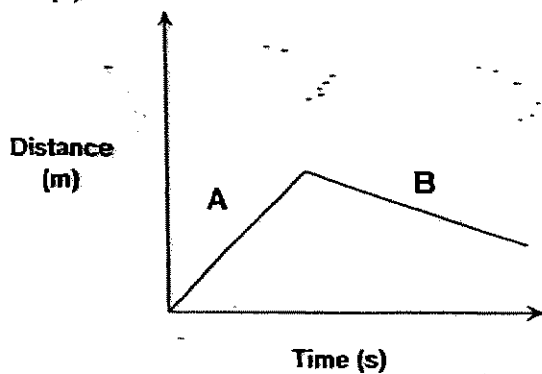
Study the diagram below carefully and answer questions 9 and 10.

The diagram shows a skier travelling downhill. As he passes snow surfaces, A and B, he discovers that his speed is faster on A than on B.

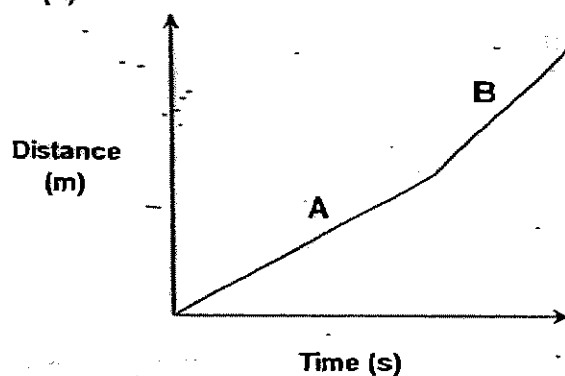


9 Which one of the following graphs correctly describes the distance the skier covers when he passes snow surfaces A and B?

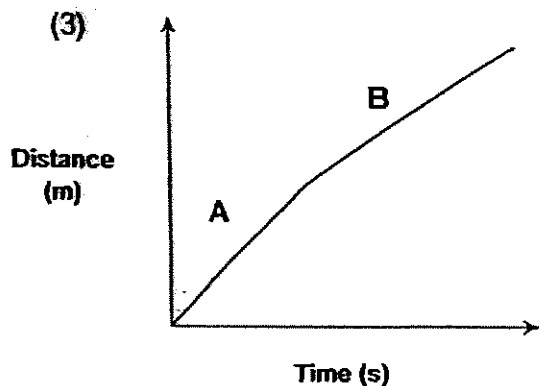
(1)



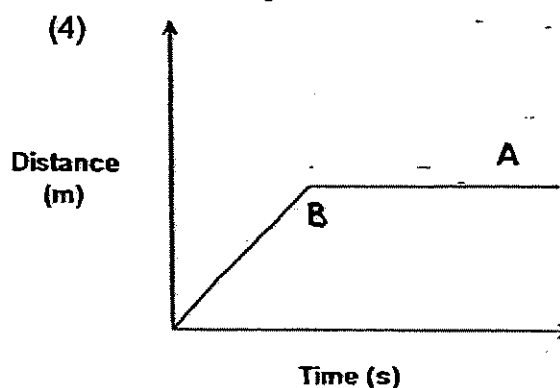
(2)



(3)



(4)

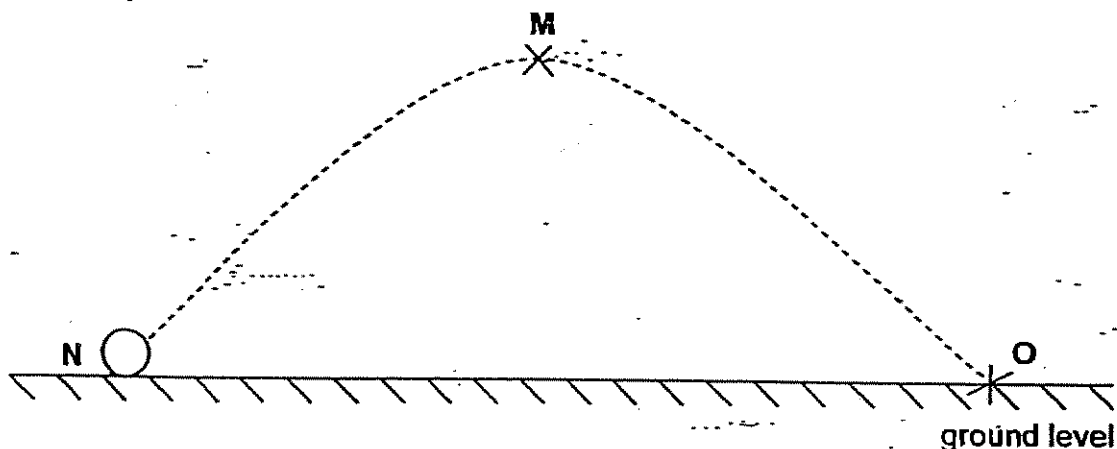


10 Which one of the following statements explains why the skier's speed is faster on snow surface A than on snow surface B?

- A: Snow surface A is rougher than snow surface B.
- B: Snow surface A is smoother than snow surface B.
- C: Snow surface A is stronger than snow surface B.

- (1) A only
- (2) B only
- (3) A and C only
- (4) B and C only

11 The diagram shows a ball that is being kicked at N. The dotted line shows the path of motion it takes from N to O.

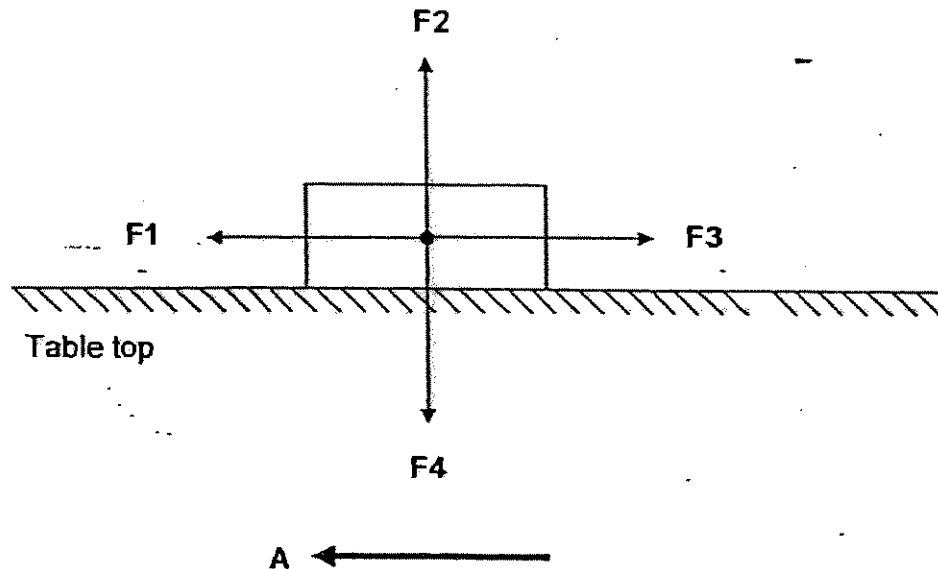


Which of the following statements about the ball is/are true?

- A: Gravity begins acting on the ball only when it reaches M.
- B: There are 2 forces acting on the ball at any one time.
- C: The speed of the ball increases from N to M and then decreases from M to O.

- (1) B only
- (2) A and B only
- (3) B and C only
- (4) A, B and C

- 12 The diagram below shows 4 forces F_1 , F_2 , F_3 and F_4 acting on a box.



For the box to move forward on the table top in the direction of A, which of the following about the 4 forces acting on the box are correct?

A: F_1 is greater than F_3 .

B: F_2 is greater than F_4 .

C: F_3 is equal to F_1 .

D: F_4 is equal to F_2 .

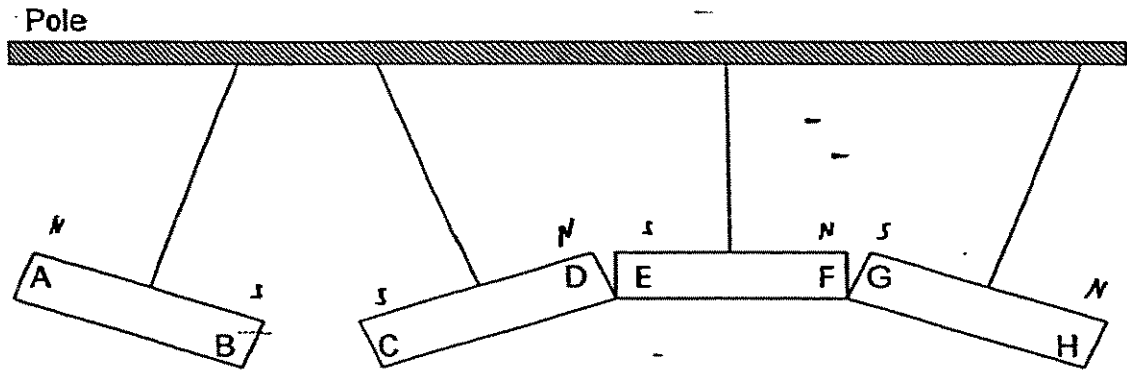
(1) A and B only

(2) A and D only

(3) B and C only

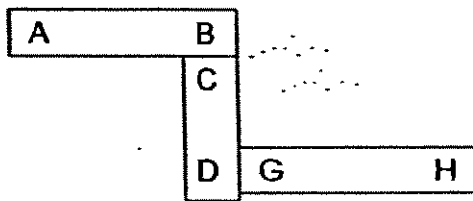
(4) C and D only

- 13 The diagram shows what happens to 4 identical bar magnets when they are hung on a pole. The ends of the bar magnets are marked A to H.

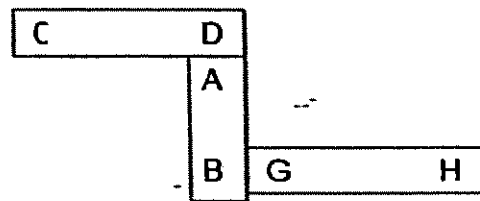


Which one of the following diagrams shows a possible arrangement of three of the magnets?

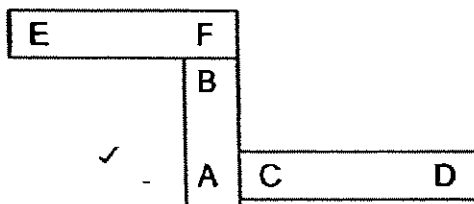
(1)



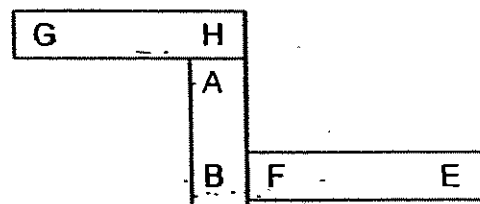
(2)



(3)



(4)



- 14 Which of the following comparisons show correctly the differences between the mass of an object and the weight of an object?

	– Mass of an object	Weight of an object
A:	• is measured in kg	• is measured in N
B:	• is the force of gravity acting on the object	• is the amount of matter in the object
C:	• is the same wherever the object is	• is different at different places

- (1) A and B only
 (2) A and C only
 (3) B and C only
 (4) A, B and C
- 15 Tabitha counted the number of trees in her school and recorded the information on a piece of paper. However, part of the paper was torn and the remaining part is shown below.

Total number of population : 10	
Trees	No. of trees
Angsana	1
Mango	3
Rain	4

Which one of the following statements about the information above is definitely correct?

- (1) There were at least 10 trees in Tabitha's school.
 (2) There were at least 15 trees in Tabitha's school.
 (3) There were at least 18 trees in Tabitha's school.
 (4) There were 4 types of trees in Tabitha's school.

- 16 After a walk at a seashore, Alan, Ben, Charles and Dan shared their experiences with their classmates.

Alan : I saw some barnacles on some of the rocks.

Ben : The seashore is dark and humid most of the time.

Charles : There are some crabs and starfish in the shallow water.

Dan : The surrounding temperature remains constant throughout the day.

Which of the boys shared their experiences with their classmates correctly?

- (1) Alan and Charles only
 - (2) Ben and Dan only
 - (3) Alan, Charles and Dan only
 - (4) Ben, Charles and Dan only
- 17 Which of the following characteristics would be different for a field and a leaf-litter?

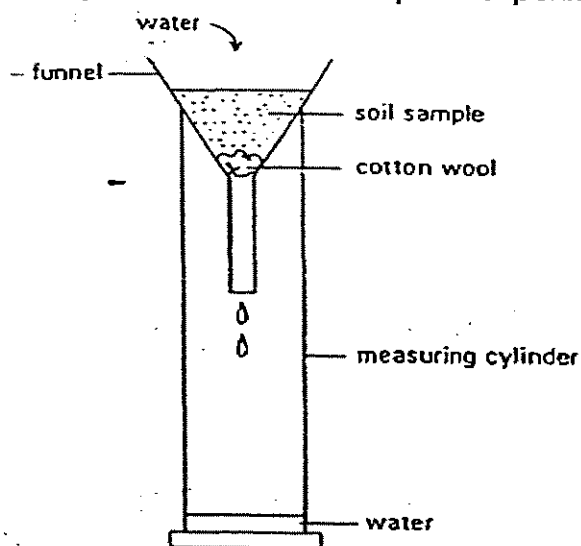
A: Humidity

B: Amount of light

C: Surrounding temperature

- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) A, B and C only

- 19 Grace carried out an experiment to find out how fast water can pass through four different samples of soil. She set up this experiment :



After pouring water into the funnel, she measured the time taken for the water to pass through each soil sample and then recorded the results in the table below.

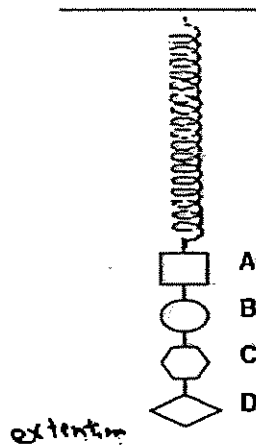
Soil sample	W	X	Y	Z
Time taken (s)	25	43	32	16

Plant P grows well in moist garden soil and Plant Q grows well in dry and sandy soil.

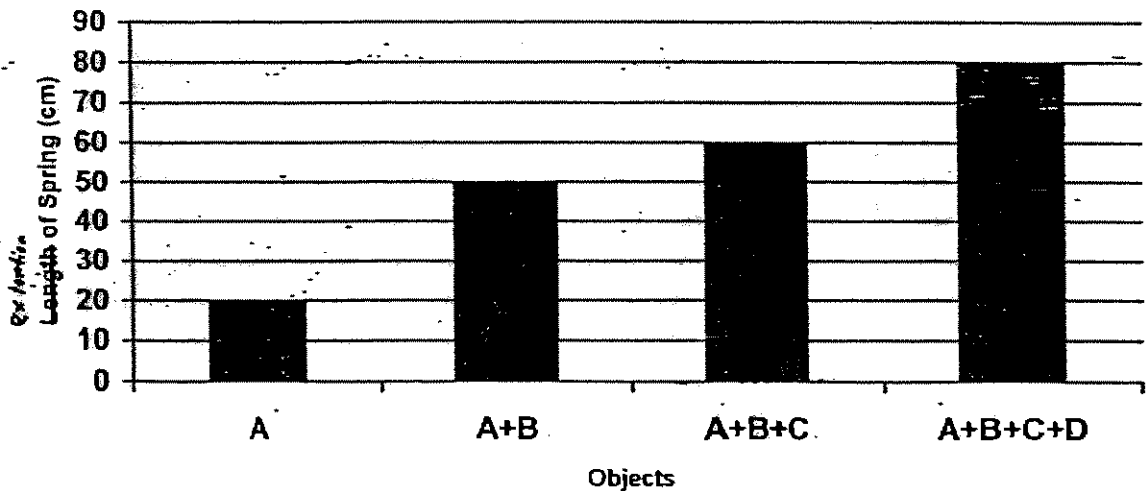
Which two soil samples are most suitable for Plants P and Q respectively?

	Plant P	Plant Q
(1)	W	Y
(2)	W	Z
(3)	X	Y
(4)	X	Z

20 An experiment was carried out with 4 objects A, B, C and D and a spring. When each of the objects was hung on the spring, the length of the stretched spring was measured.



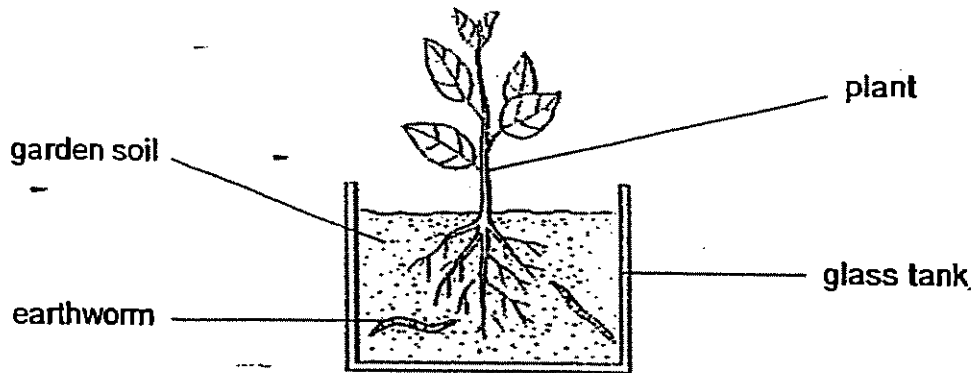
The graph below shows the length of the spring after each object is hung on it.



If the elasticity of the spring is constant throughout the experiment, which one of the following objects is the lightest?

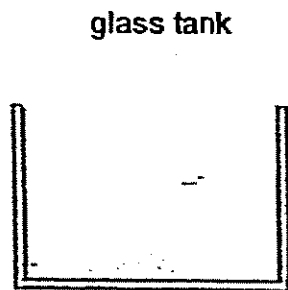
- (1) A
- (2) B
- (3) C
- (4) D

21 Gerald wanted to find out if earthworms help plants grow better. He set up an experiment as shown below.

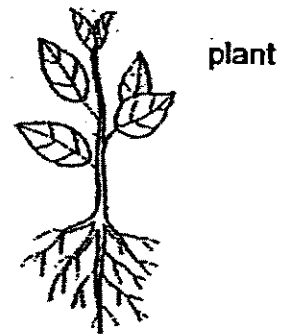


Which of the following materials would Gerald need to set up a control experiment?

(A)



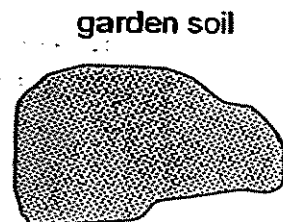
(B)



(C)



(D)



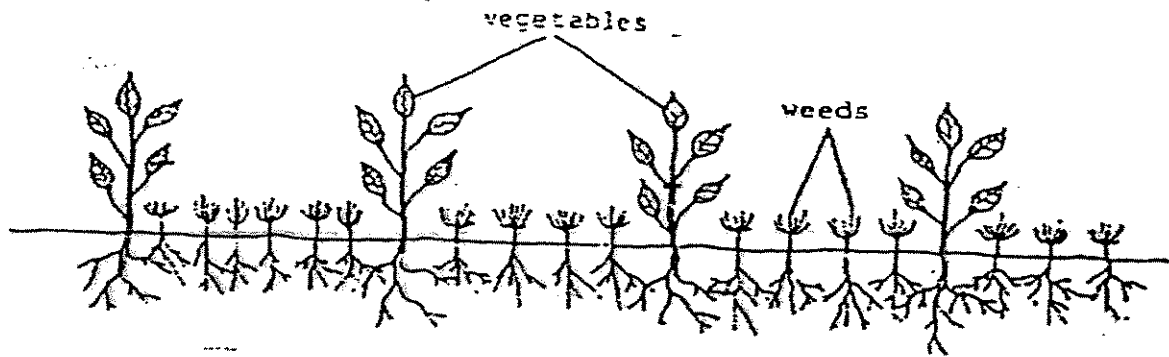
(1) A, B and C only

(2) A, B and D only

(3) A, C and D only

(4) A, B, C and D

- 22 The diagram below shows some vegetables and weeds growing in a plot of land.



Due to the presence of weeds, the vegetables are not able to grow healthily because they receive less of _____.

- A: air
B: water
C: sunlight
D: nutrients
- (1) A and C only
(2) B and D only
(3) A, C and D only
(4) B, C and D only

- 23 Nelson wanted to find out whether fruit flies are attracted to ripe or unripe bananas.

He put 2 similar size bananas, a ripe one and an unripe one, in his garden.

However, after a period of time, he observed that 2 different types of fruit flies were attracted to the bananas.

He recorded his observations in a table as shown below.

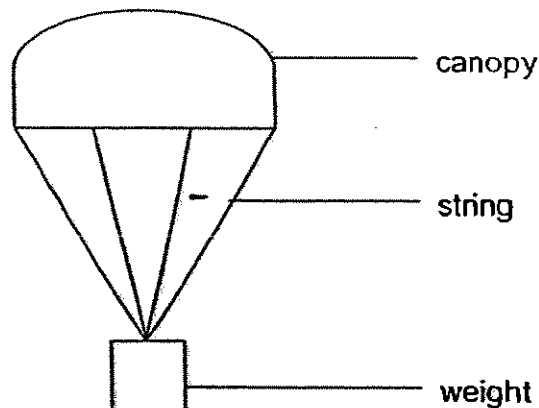
Type of fruit flies	Number of fruit flies found on the ripe banana	Number of fruit flies found on the unripe banana
green eyes	11	7
red eyes	5	9

Which of the following conclusions could Nelson make from his observations?

- A: Less fruit flies were attracted to unripe than ripe bananas. X
- B: Different types of fruit flies were attracted to ripe and unripe bananas.
- C: More red-eyed fruit flies were attracted to unripe than ripe bananas.
- D: More green-eyed fruit flies were attracted to ripe than unripe bananas.

- (1) A and B only
- (2) B and C only
- (3) B, C and D only
- (4) A, B, C and D

- 24 A group of pupils wanted to find out which materials A, B or C is the best for making the canopy of a parachute.



They carried out the experiment and recorded the results in a table as shown below.

Experiment	Material used in canopy	Diameter of canopy (cm)	Length of string (cm)	Time taken to fall 10 m (s)
1	A	30	40	28
2	A	30	30	30
3	A	20	30	25
4	B	30	30	28
5	B	20	30	18
6	B	20	30	25
7	C	30	30	30
8	C	30	40	23
9	C	20	40	25

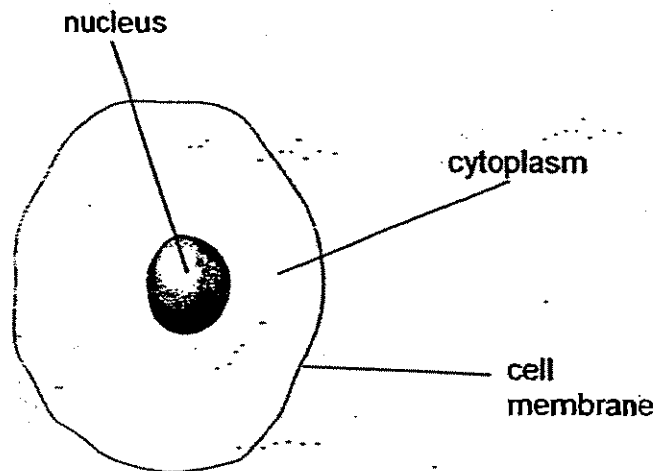
Which of the above experiments could the pupils use to make a fair comparison?

- (1) 1, 4 and 8 only
 (2) 2, 4 and 7 only
 (3) 3, 5 and 7 only
 (4) 3, 6 and 9 only

25 Which one of the following plant parts has the similar function as the sperm of animals?

- (1) stigma
- (2) ovule
- (3) anther
- (4) pollen

26 Nancy was observing a specimen W under the microscope. She saw only a nucleus, cytoplasm and cell membrane as shown in the diagram below.



Specimen W is likely to be a cell taken from a/an _____.

- (1) onion
- (2) elodea
- (3) cat
- (4) hydrilla

- 27 Eric observed that all the lamps in the classroom remained lit when one of the lamps was fused.

Which one of the following explains why this is possible?

- (1) The lamps were connected in series.
- (2) The lamps were connected in parallel.
- (3) The switches to the lamps were connected in series.
- (4) The switches to the lamps were connected in parallel.

- 28 What is the function of the circulatory system in a plant?

- A: It transports food to all parts of the plant.
- B: It transports water to all parts of the plant.
- C: It transports chlorophyll to all parts of the plant.

- (1) B only
- (2) A and B only
- (3) A and C only
- (4) B and C only

29 Which two of the following systems work together to get rid of carbon dioxide produced in our body?

- A: circulatory system
- B: muscular system
- C: respiratory system
- D: skeletal system

- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) B and D only

30 In which of the following part of the digestive system is food completely digested?

- (1) mouth
- (2) stomach
- (3) small intestine
- (4) large intestine



HENRY PARK PRIMARY SCHOOL

SEMESTRAL EXAMINATION 1

2007

SCIENCE

PRIMARY 6

BOOKLET B

Name: _____ ()

Class: Primary 6 ()

**16 Questions
40 Marks**

Total Time for Booklets A and B: 1 h 45 min

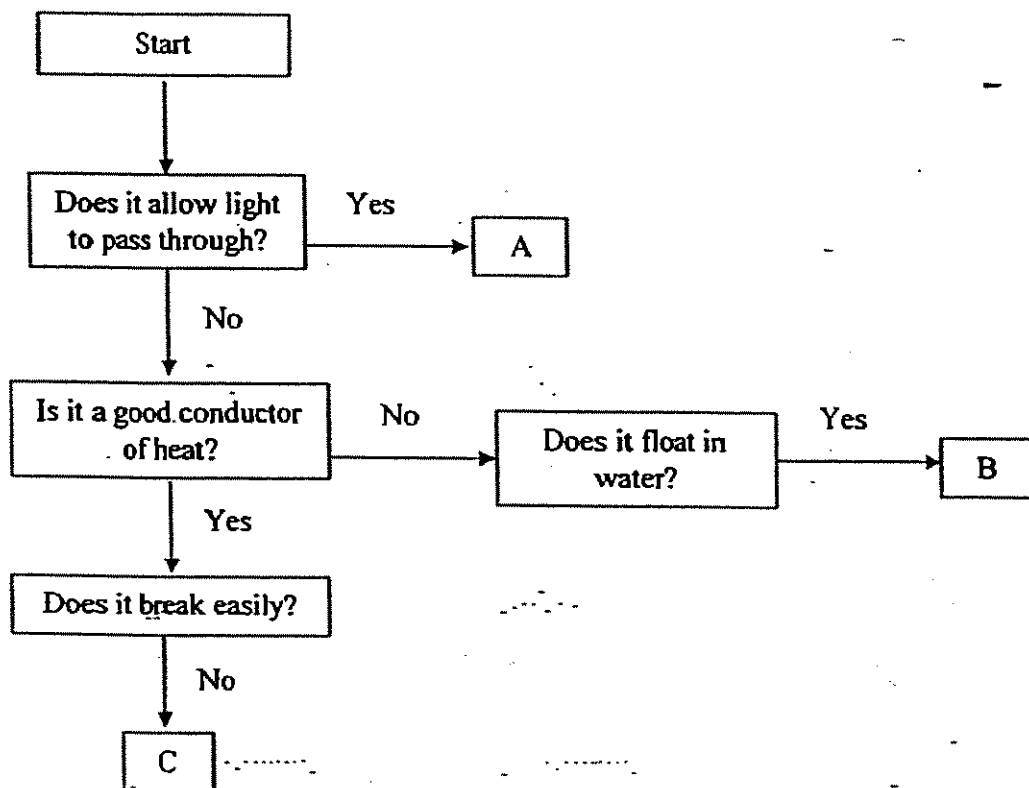
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

READ AND FOLLOW INSTRUCTIONS CAREFULLY.

PART 2 (40 marks)

Write your answers to questions 31 to 46 in the spaces given.

31 Study the flow chart below and answer the questions.

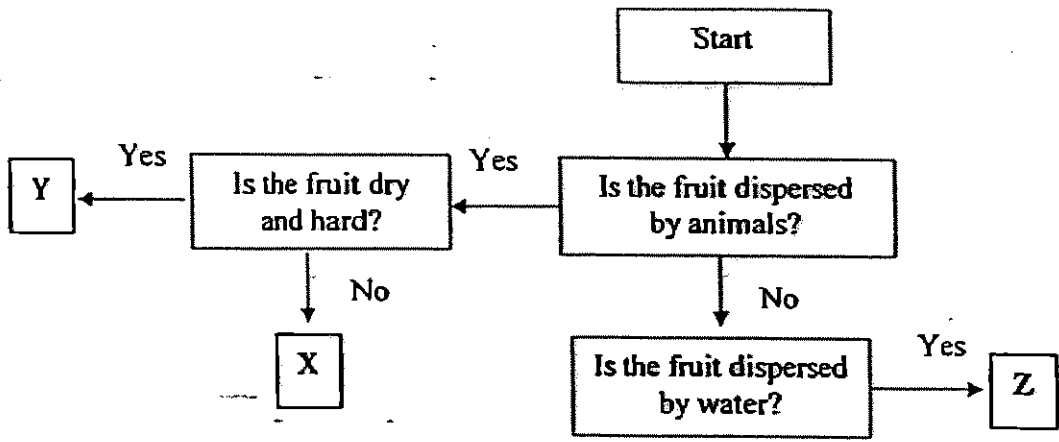


(a) State one difference between Material A and Material B. [1]

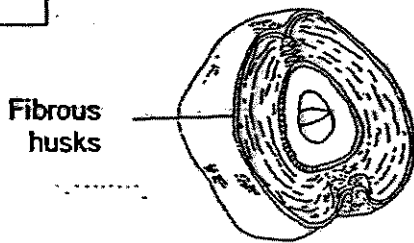
(b) State two properties of Material B. [1]

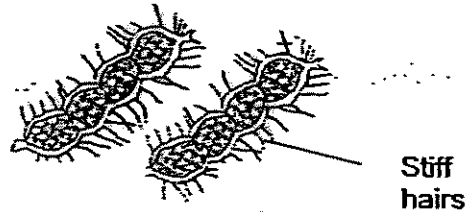
(c) What material is C? [1]

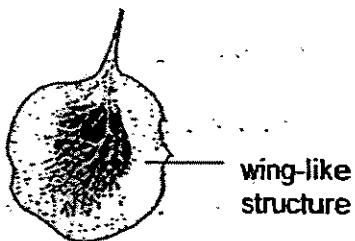
32 Study the chart carefully and answer the questions.

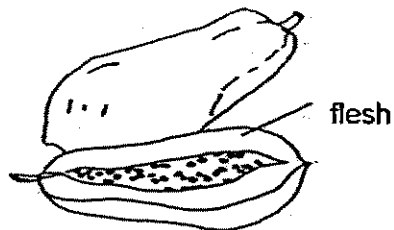


The diagrams below show the pictures of 4 fruits. Which of them match with X, Y or Z in the chart above? Write X, Y or Z in the boxes below. [3]





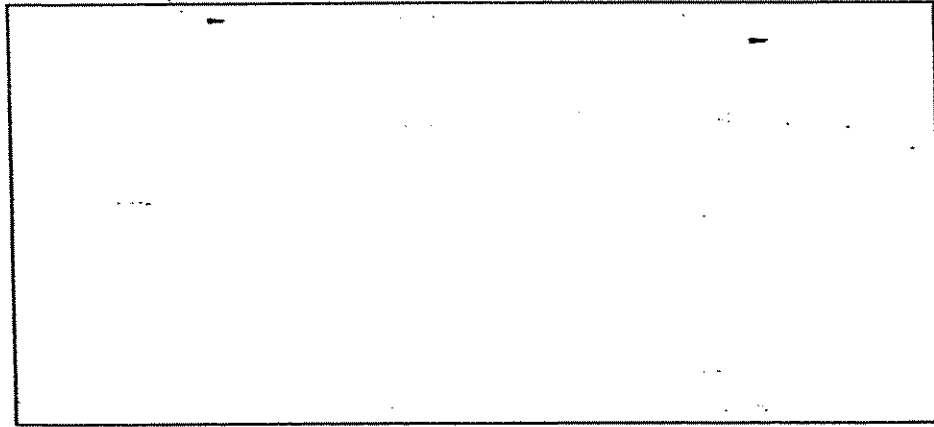




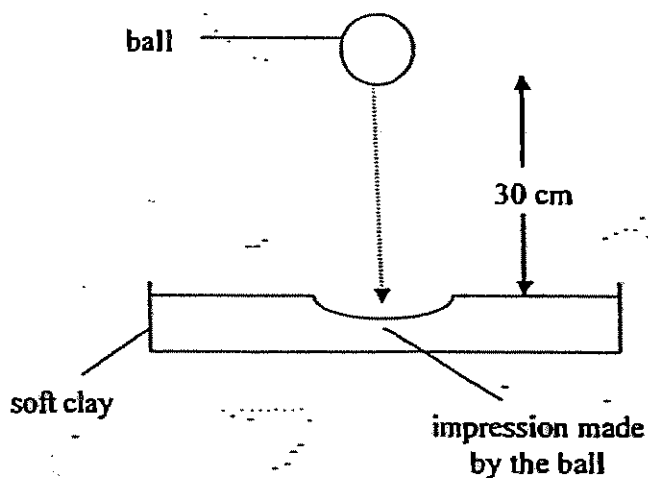
33 Draw a food chain in the box with the organisms given.

[2]

deer	grass	lion
------	-------	------



- 34 Douglas conducted an experiment as shown in the diagram below. He carried out the experiment to find out if the mass of an object will affect the amount of kinetic energy it has.
- He dropped different types of ball vertically into a basin of soft clay from a height of 30 cm. Each time, he evened out the clay in the basin after he had measured the depth of the impression made in the clay by a particular type of ball. The balls are of the same size but are of different material and mass.

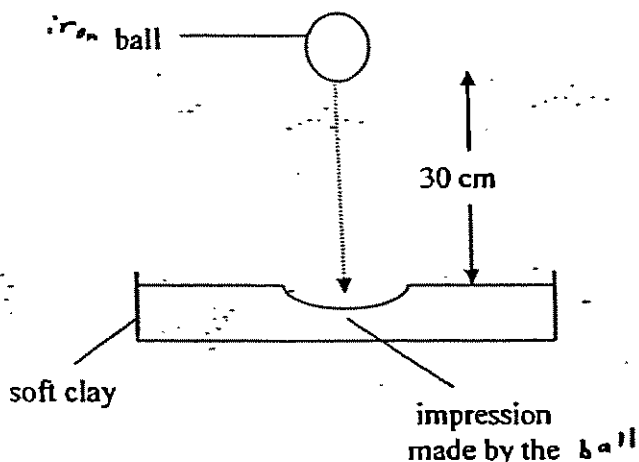


He recorded the findings in the table below.

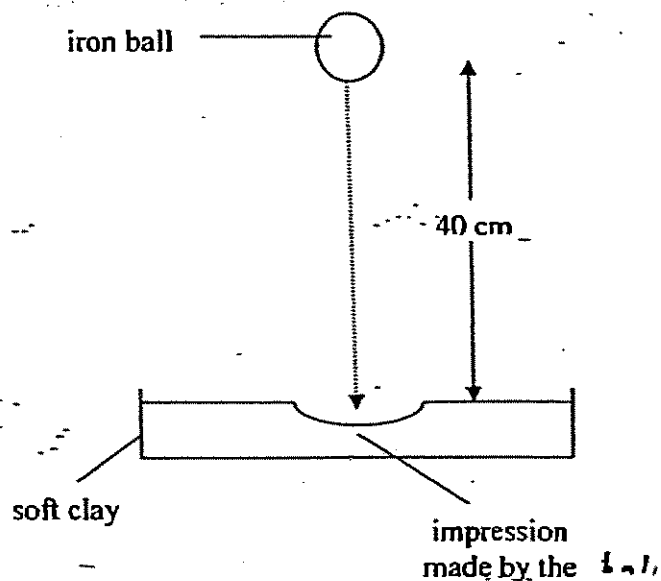
Type of ball	Mass of ball (g)	Depth of the impression made in the clay (cm)
Polystyrene	15	7
Glass	35	9
Iron	50	11

- (a) What could Douglas conclude about the mass of an object and the amount of kinetic energy it has? [1]

Douglas repeated the same experiment using an iron ball but now he dropped the iron ball from a height of 40cm as shown in the diagram (Set up 2) below.



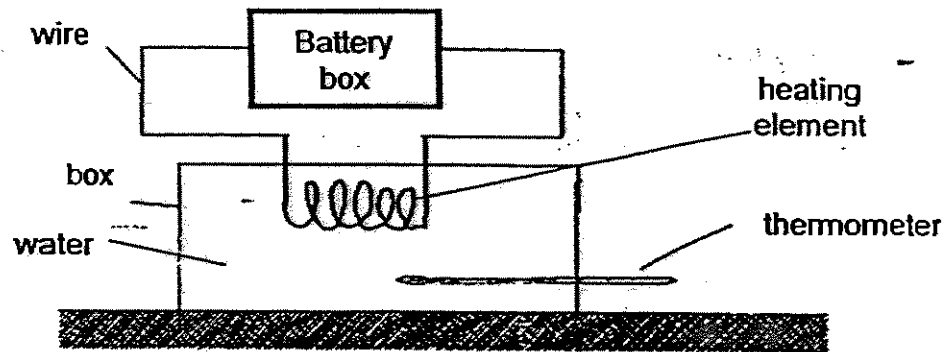
Set-up 1



Set-up 2

- (b) Do you expect the depth of the impression made in the clay for set-up 2 to be more than or less than 11cm? [1]
 Explain your answer.

- 35 Shahirah carried out an experiment to find out which material would be the best for making a heating element (conducts heat the best). She set up the following experiment to measure the change in temperature over ten minutes using four types of heating coil.

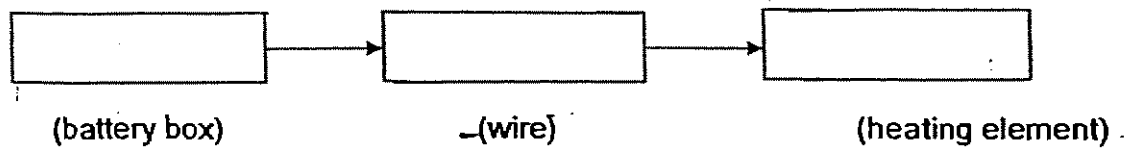


The table below shows the results that she obtained.

Temperature of water before the start of the experiment was 30 °C.

Material of Heating Coil	Temperature (°C)	
	0 minute	10 minutes
A	30	45
B	30	65
C	30	33
D	30	32

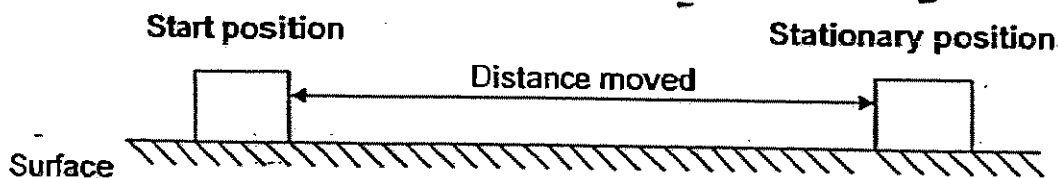
- (a) In the boxes below, state the main energy changes that take place from the battery box to the heating element. [1]



- (b) (i) Based on the results, which material is best suited to be used as a heating element in a water heater? [1]

- (ii) Explain your answer in b(i). [1]

- 36 In the experiment as shown below, Dominic pushed an object over a surface applied with a liquid D. When the object came to a stationary position, he measured the distance it had moved. He carried out the experiment 2 more times.



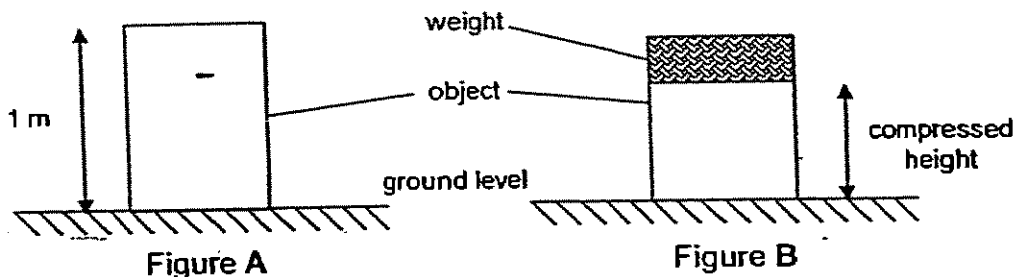
He repeated the experiment with liquids E, F and G, and recorded the results in a table as shown below.

Types of liquid	Distance moved by the object (cm)			
	1 st Reading	2 nd Reading	3 rd Reading	Average
D	15.3	15.8	16.0	15.7
E	41.4	41.9	41.5	41.6
F	36.7	35.9	36.6	36.4
G	25.7	25.1	25.4	25.4

- (a) What was Dominic trying to find out from his experiment? [1]

- (b) Which liquid helps to reduce wear and tear most? Using information from the table, explain your answer. [1]

- 37 Figure A shows an object which is flexible and elastic. It measures 1 metre from the ground level.
 Figure B shows the compressed height of the same object when a weight is put on top of it.

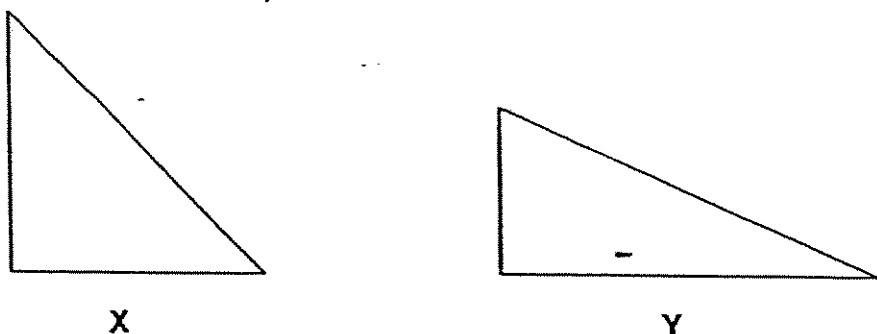


When the weight is removed, the object returns to its original height. Different weights are added and their respective compressed heights are recorded in a table as shown below.

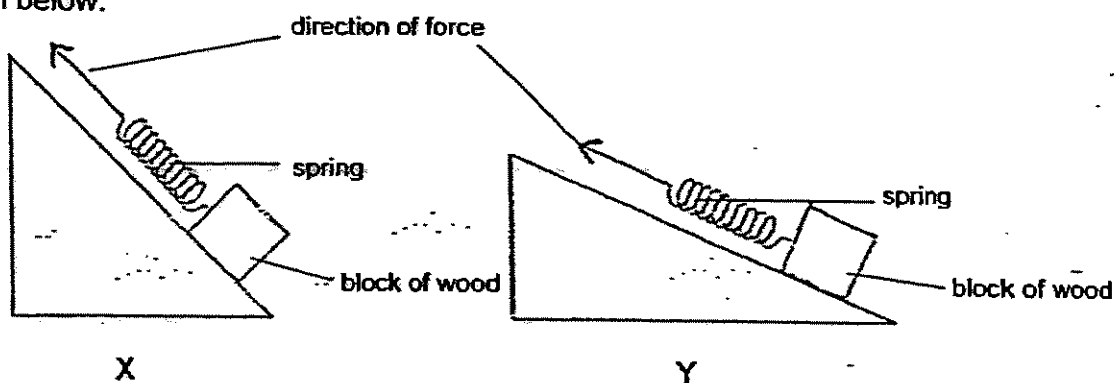
Weights (kg)	Compressed Height of the Object (m)
1	0.95
2	0.85
3	0.75
4	0.65
5	0.55
6	0.45
7	0.45
8	0.45

Based on the information given in the table, what is the relationship between the weights and the compressed heights of the object? [2]

38 The diagram shows 2 ramps X and Y.



Ali carried out an experiment to find out the amount of force needed to pull a block of wood up ramps X and Y. He attached a spring to a block of wood. He pulled the block of wood up to the top of each of the two ramps shown in the diagram below.



The experiment was repeated a few times for each ramp.

(a) Why was there a need for Ali to repeat the experiment a few times for each ramp?

[1]

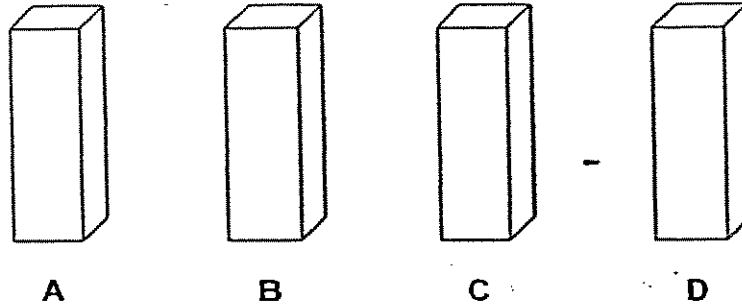
(b) Ali made the following hypothesis about the experiment:

[1]

'More force is needed to pull the block of wood up ramp X than ramp Y.'

What must Ali measure to confirm his hypothesis?

39 Gabriel wanted to compare the strength of 4 magnets A, B, C and D.



He was given these materials :

- a ruler
- a marker
- some iron pins

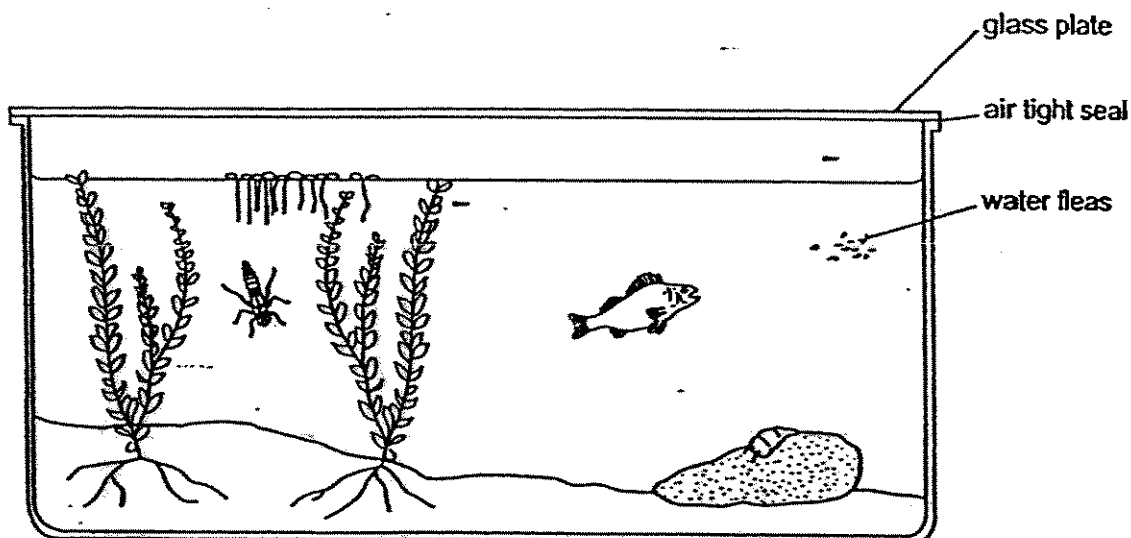
With the given materials, describe, in 3 steps, how Gabriel should carry out this experiment accurately. [3]

Step 1 : _____

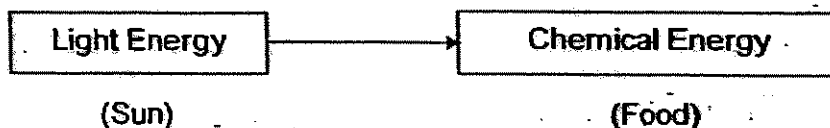
Step 2 : _____

Step 3 : _____

40 The diagram below shows a sealed aquarium with some animals and green plants.



Plants are capable of carrying out the following conversion through Process X:



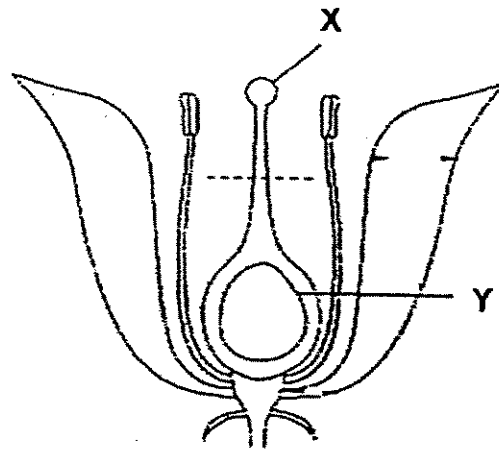
(a) State the Process X?

[1]

(b) Describe how Process X enables animals to survive in the aquarium.

[1]

41 The diagram shows a cross-section of a flower.



Will the part labelled Y develop into a fruit if the part labelled X is cut off as indicated by the dotted line? Explain your answer. [2]

42 Figure A shows a diagram of a cross-section of an apparatus used in an experiment to investigate the behaviour of some small organisms.

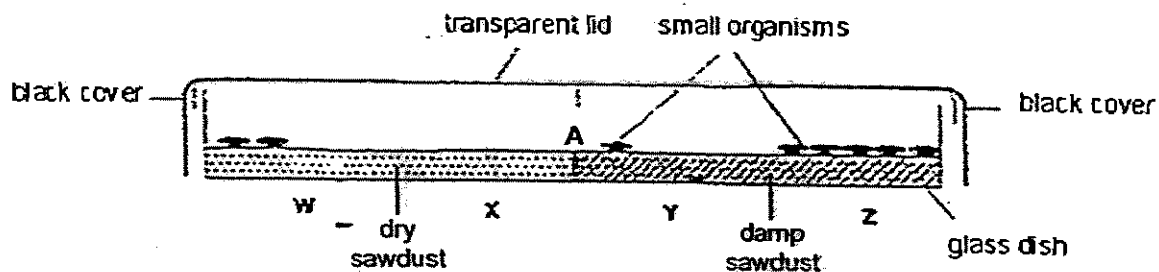
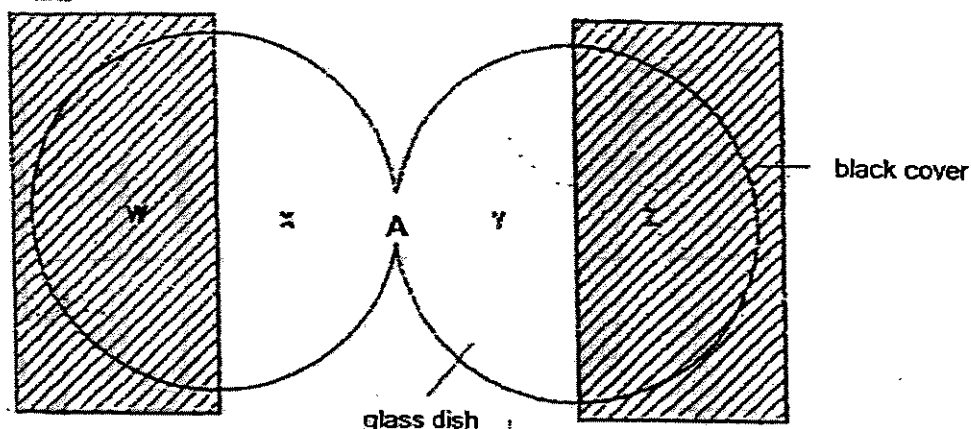


Figure B shows the top surface view of the same apparatus.



At the start of the experiment, 20 small organisms were placed in the part marked A. After 30 minutes, the number of small organisms in each of the regions, W, X, Y and Z was counted. The experiment was repeated 5 times and the results are shown in the table below.

Experiment	Number of small organisms in each region			
	W	X	Y	Z
1	1	1	2	16
2	2	1	4	13
3	0	3	3	14
4	2	0	4	14
5	5	0	7	8
Average number of small organisms	2	1	4	13

(a) Which one of the regions has the most small organisms? [1]

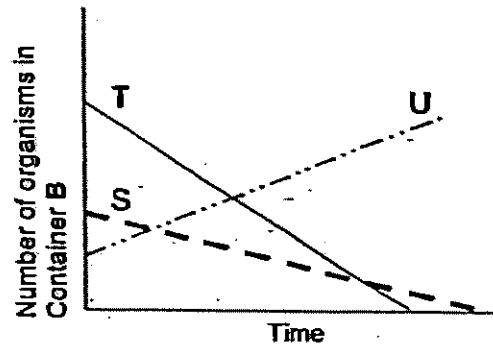
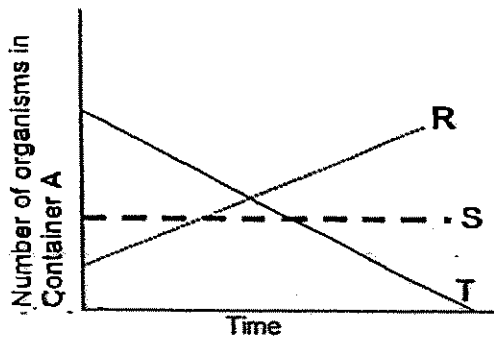
(b) Why were the small organisms counted only after 30 minutes for each experiment? [1]

(c) Based on the results of the experiment, describe the suitable living conditions needed for these small organisms to thrive and multiply. [1]

- 43 Jason had 2 containers, A and B. He put organisms R, S and T in container A and organisms S, T and U in container B.

He counted the number of organisms in each container over a period of time and recorded the results as shown in the graphs below.

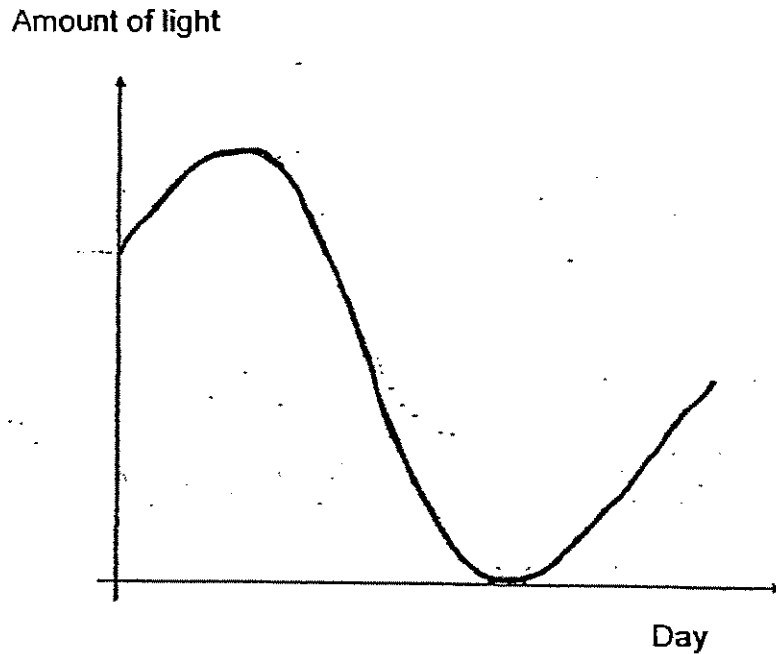
He did not see any dead organisms lying around in the 2 containers.



Explain why the number of organism S remains the same in Container A but decreases in Container B.

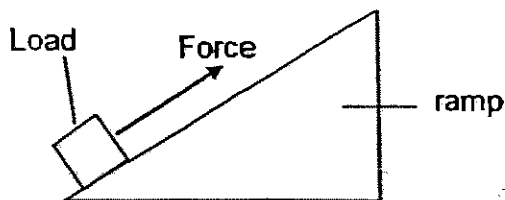
[2]

- 44 Gregory used a datalogger to detect the amount of moonlight received in the month of April. The datalogger recorded the results shown below.



- (a) (i) On the curve, mark a cross (X) to indicate the day when there was full moon. Label the cross (X) with a "F". [1]
- (ii) On the curve, mark a cross (X) to indicate the day when there was new moon. Label the cross (X) with a "N". [1]
- (b) On April 1, Gregory was not able to see any moon. After at least how many days would he expect to see a full moon? [1]
-

- 45 The diagram below shows a set-up for an experiment to find out how the height of a ramp affects the force used to pull up the load.



- (a) Give two variables which must be kept constant to ensure a fair test.

Variable 1 : _____ [1]

Variable 2 : _____ [1]

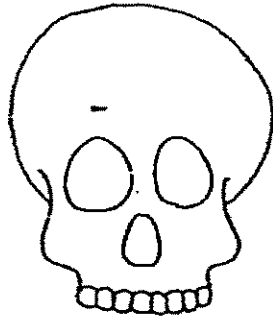
- (b) What energy is gained by the load as it is pulled up the ramp? [1]

- (c) The experiment was repeated on two different surfaces, X and Y. The table below shows the result of the experiment.

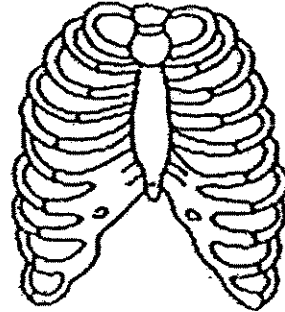
	Surface X	Surface Y
Force used to pull the load	10 N	15 N

- Suggest a possible reason why more force is used to pull up the load in Surface Y. [1]

46 Look at the pictures of the 'skull' and the ^{Tib-cye} 'joint' and answer the questions.



skull

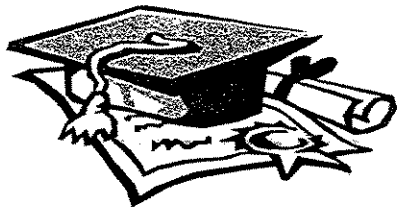


ribcage

(a) State one similarity in the structure of the skull and the ribcage. [1]

(b) State one difference between the structure of the skull and the ribcage. [1]

Setters: Mrs Venkatesh Shanthi & Mr. Tan Joo Nam



ANSWER SHEET

HENRY PARK PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
SEMESTRAL ASSESSMENT (1)

1. 3 31) a) Material A allow light to pass
2. 3 through while material B do not
3. 4 allow light to pass through.
4. 3 b) It is opaque and it floats on water.
5. 2 c) Metal
6. 4
7. 3 32) Z Y
8. 2 X
9. 3
10. 2 33) grass → deer → ; ion
11. 1
12. 2 34) a) He could conclude that the mass of
13. 3 an object is greater the amount of
14. 2 kinetic energy is greater when it was
15. 2 dropped.
16. 1 b) Yes. it will be more than 11cm because
17. 4 at a greater higher more GPE is
18. 3 converted to move
19. 4
20. 3 35) a) Chemical potential energy → electricity
21. 2 energy → heat energy
22. 2 b) i) Material B
23. 3 ii) Material B is temperature is 30°
24. 2 in 0 minutes and after 10 minutes,
25. 4 Material B is 65° and this show that
26. 3 Material B is a best suited to be
27. 2 used as a heating element in a water
28. 2 heater.
29. 2
30. 3 36) a) He is trying to find out which types of
 liquid helps to reduce the friction of
 the surface.
 b) E. The liquid allows the object to
 move the greatest distance.

37) However, when the weight 5 kg, the compressed heights of the object remain constant through out.

38) a) To ensure that the result are reliable.

b) He measure the extension of the spring.

39) Step:1: Draw a line and place the 4 magnets behind the line. Ensure that the magnets are placed at distance apart.

Step:2: Use a ruler to measure the distance the iron pins are placed away from the magnets.

Step:3: Record the results. The magnet which is able to attract iron pins placed furthest from it is the strongest.

40) a) photos thesis.

b) During photos thesis, the plant would take in carbon dioxide that the animal breath out and the plant would give out oxygen for the animal to breathe.

41) No. That is where the pollen grain lands in and go to the ovary so it could develop into a fruits.

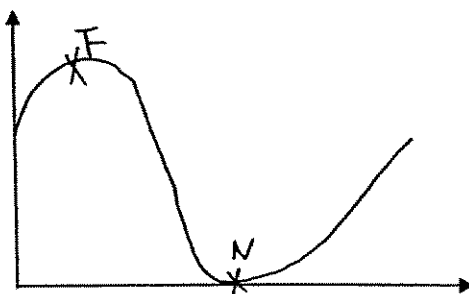
42) a) Z

b)

c) Dark and damp.

43) In container A, organism S is not a prey of organism R or T. In container B, organism S is a prey of organism U. Hence the population organism S decreased in container B.

44) a)



44)b)14 days.

45)a)1)The mass of the load.

2)The surface of the ramp.

b)gravitational potential energy.

c)As the surface of the ramp is rougher, the remain will be move friction.

46)a)They are both curved bones.

b)The skull is made of one piece of bone but the ribcage is made up of many bone.

---end---



HENRY PARK PRIMARY SCHOOL

P6 PRELIMINARY EXAMINATION

2007

SCIENCE

PRIMARY 6

BOOKLET A

Name: _____ ()

Class: Primary 6 _____

**30 Questions
60 Marks**

Total Time for Booklets A and B: 1 h 45 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

READ AND FOLLOW INSTRUCTIONS CAREFULLY.

PART 1 (60 marks)

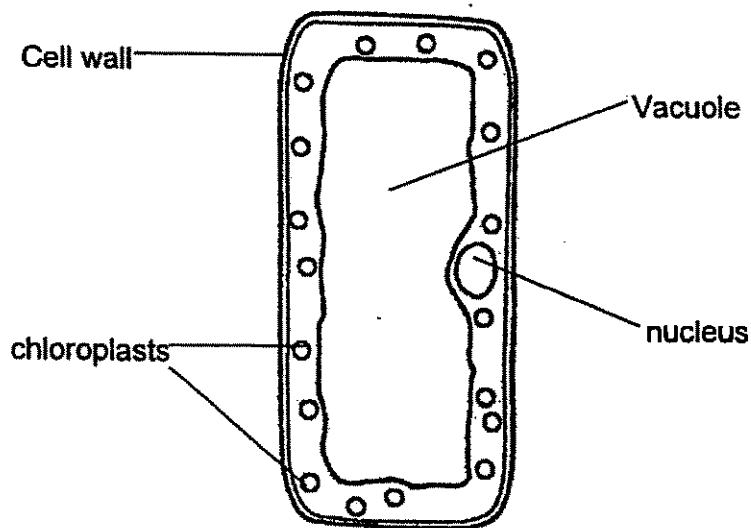
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1 At which stage of the life cycle of a mosquito can it be killed by spraying oil on the surface of the water?

- A egg stage
- B larval stage
- C pupal stage
- D adult stage

- (1) A and B only
- (2) B and C only
- (3) A, B and C only
- (4) A, B, C and D

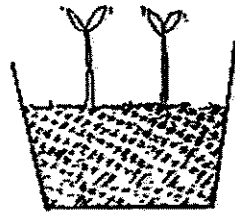
2 The diagram below shows a plant cell.



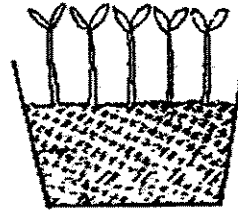
Which one of the following parts of a plant is the above cell likely to be found?

- (1) flower
- (2) fruit
- (3) leaf
- (4) root

3 Melissa planted some green bean seeds in Pot A and Pot B as shown in the diagram below. The pots are placed in the open space so that the pots are exposed to the same amount of sunlight. The same amount of water and soil are also given to each pot.



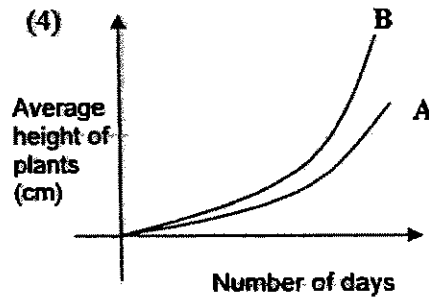
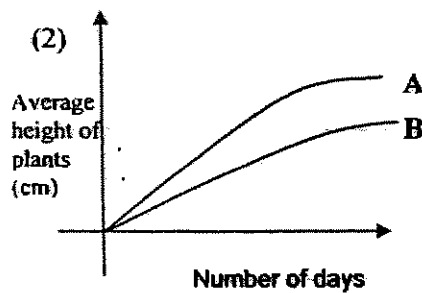
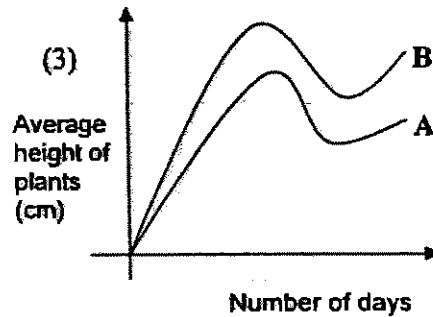
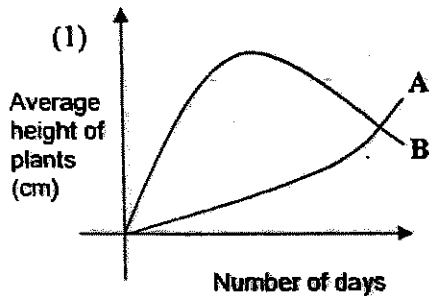
Pot A



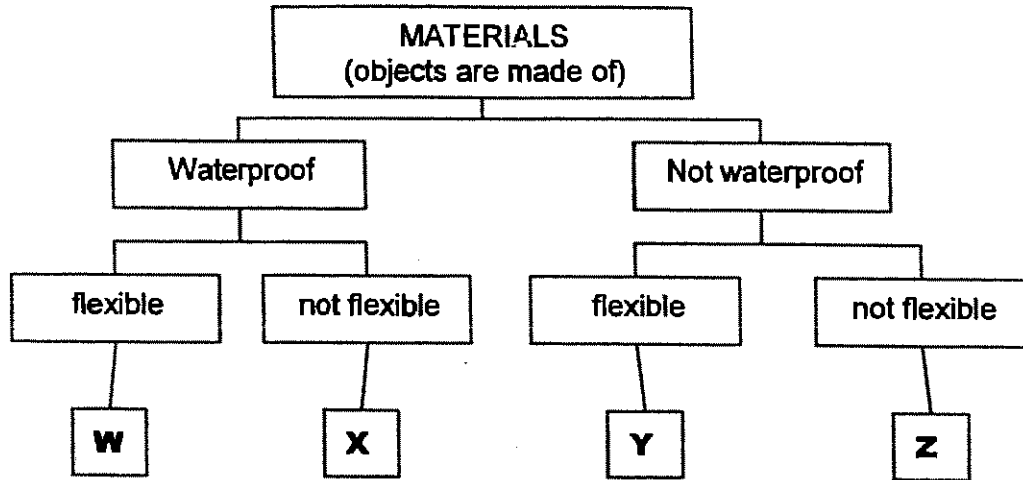
Pot B

Each day she recorded the average height of the plants in each pot and plotted the heights of the plants on a graph.

Which one of the following graphs shows the likely average heights of the plants in Pot A and Pot B correctly ?



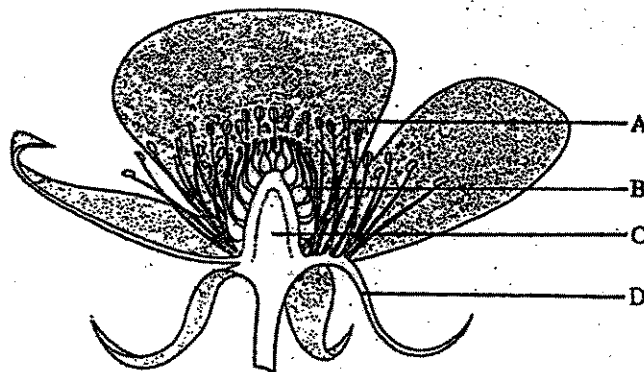
4 Each group of pupils were given several objects to classify. The chart below shows how Group 4 had classified their objects.



What materials are W, X, Y and Z likely to be?

	W	X	Y	Z
(1)	rubber	glass	wool	wood
(2)	plastic	wood	cloth	metal
(3) ♀	clay	metal	wood	cloth
(4) †	wool	ceramic	plastic	clay

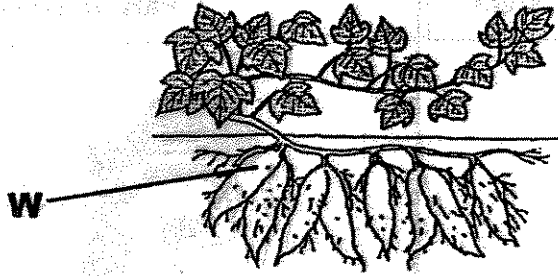
5 The diagram below shows the cross section of a flower



Which two letters show the male and female parts of the flowers respectively ?

	MALE PART	FEMALE PART
(1)	A	B
(2)	A	D
(3)	B	D
(4)	B	C

6 The diagram below shows a sweet potato plant



What are the functions of the swollen part marked W ?

- A To help the plant reproduce
- B To take in water for the plant
- C To store excess food made by the plant

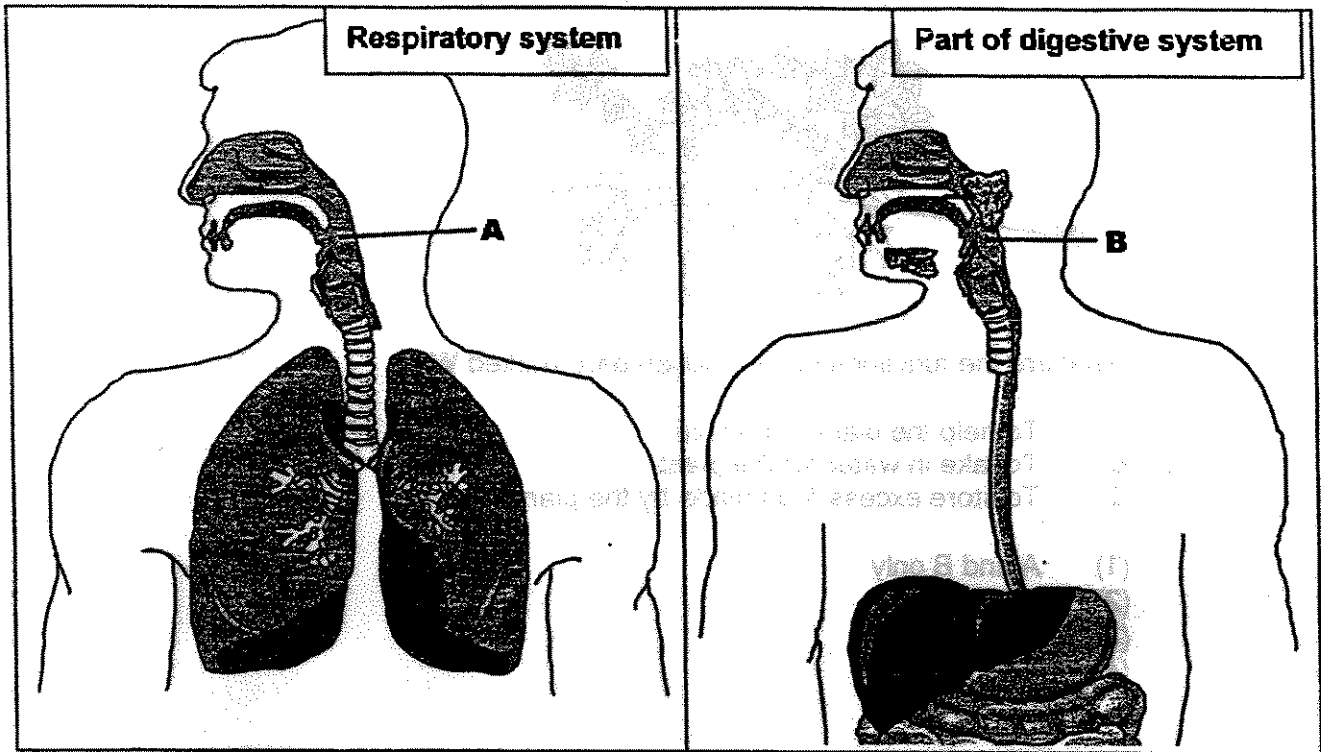
- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) A, B and C

7 What does blood carry to the lungs ?

- A Carbon dioxide
- B Food
- C Oxygen

- (1) A only
- (2) C only
- (3) A and C only
- (4) A, B and C

8 The diagrams below shows our respiratory system and part of our digestive system.



Which of the following statements is/are true for the part marked A in the respiratory system and B in the digestive system?

- A Air passes through A but not through B.
- B Food passes through B but not through A.
- C Food and air passes through both A and B.

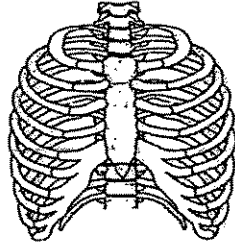
- (1) A only
- (2) B only
- (3) C only
- (4) A and B only

A Carbon dioxide
 B Food
 C Oxygen
 (1)
 (2)
 (3)
 (4)

9

The diagram shows a ribcage.

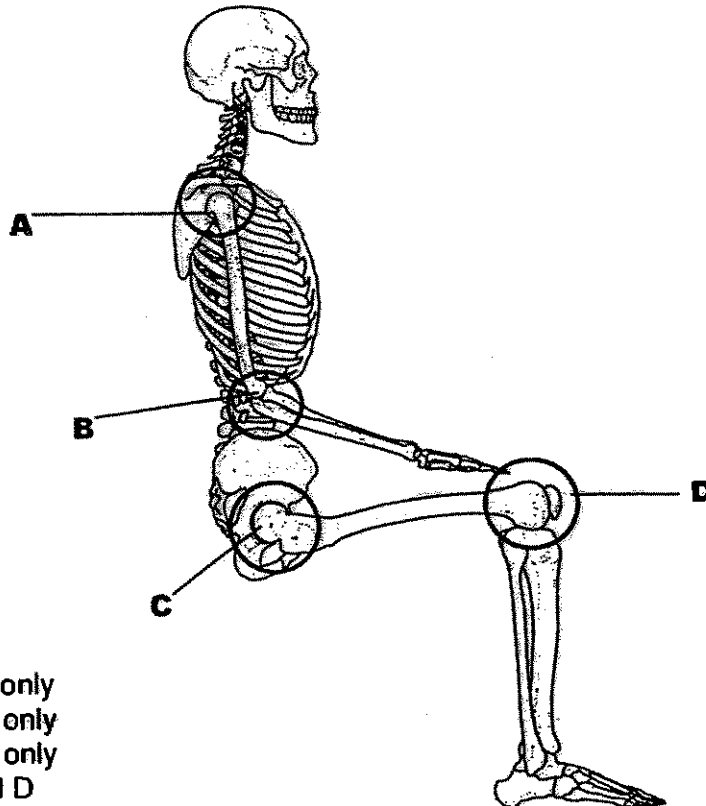
Which vital organ(s) of the body does the ribcage protect?



- A heart
- B lungs
- C liver
- D stomach

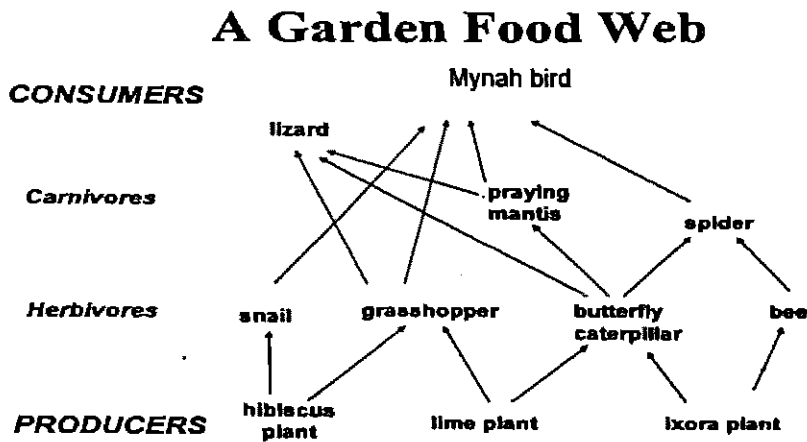
- (1) B only
- (2) A and B only
- (3) A, B and C only
- (4) A, B C and D

10 The diagram shows a skeleton in a sitting position. Which letters show the ball and socket joints?



- (1) A and B only
- (2) A and C only
- (3) B and D only
- (4) A, C and D

11 Study the garden food web below.



Which one of the following statements is not true about the above food web?

- (1) All the herbivores are preys.
- (2) There are more preys than predators
- (3) There are four food chains with only three organisms in each.
- (4) If the mynah bird population is removed, the plant population will eventually decrease

12 The diagram shows a cross section of a pond .



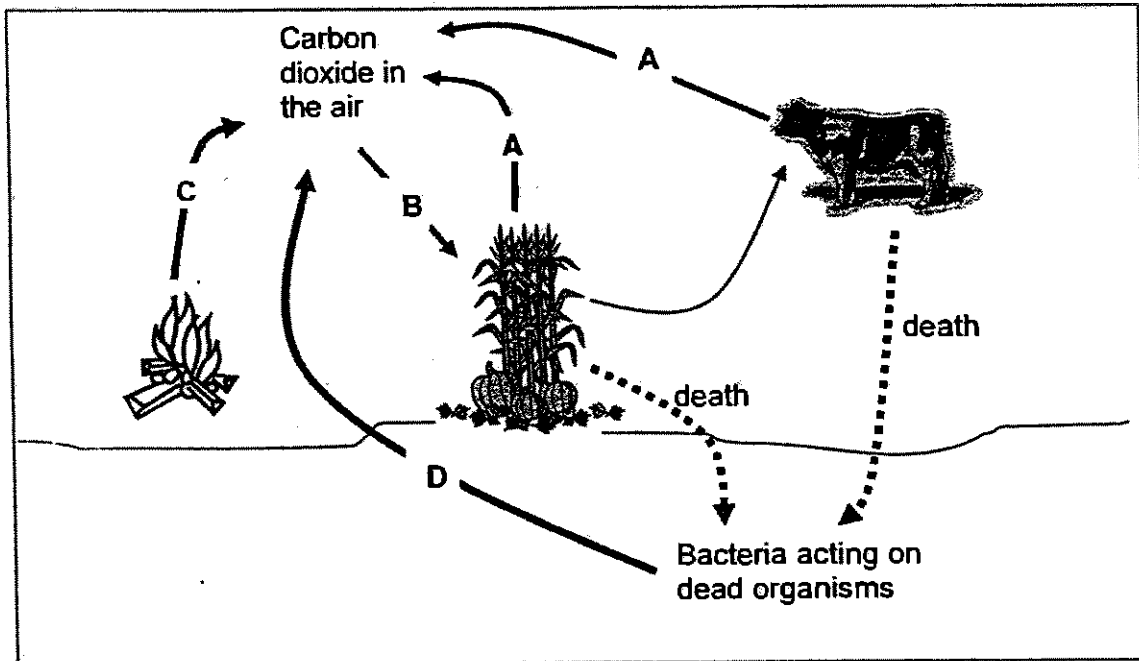
How many populations of aquatic plants are there?

- (1) 6
- (2) 9
- (3) 12
- (4) 15

13. Which one of the following characteristics is not passed on from parents to child?

- (1) Rolling tongue into a U-shape
- (2) Sleeping pattern
- (3) Colour of hair
- (4) Shape of ears

14. The diagram below shows carbon dioxide being taken in or given out during some processes .

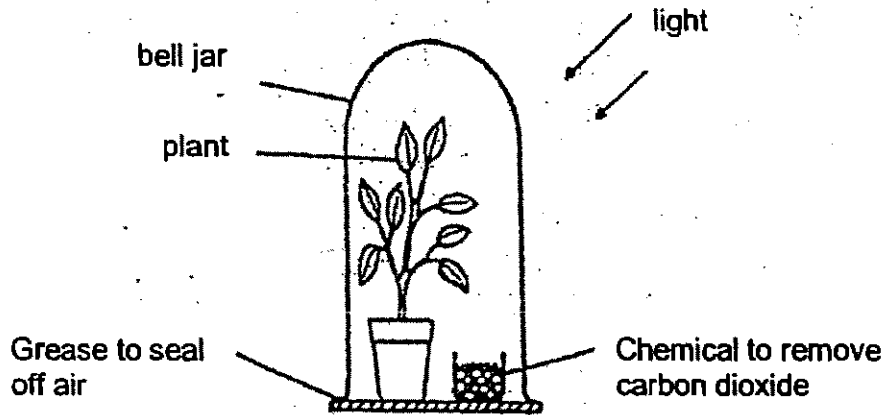


A,B,C and D are four different processes.

Which one of the following options in the table below identifies the Processes A, B, C and D correctly?

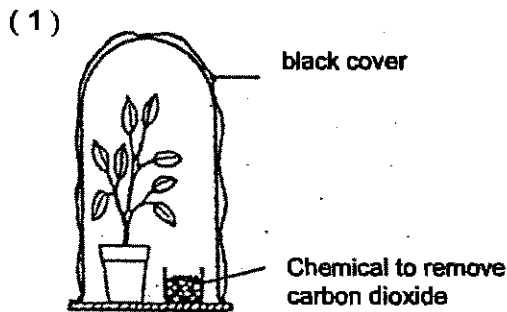
	A	B	C	D
(1)	Photosynthesis	Respiration	Burning	Decomposition
(2)	Respiration	Photosynthesis	Burning	Decomposition
(3)	Photosynthesis	Burning	Decomposition	Respiration
(4)	Decomposition	Respiration	Photosynthesis	Burning

15 An experiment is set as shown in the diagram to find out whether carbon dioxide is needed for photosynthesis.

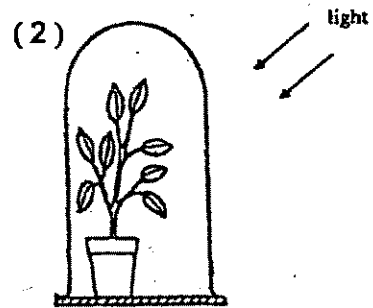


Temperature of surrounding : 29°C

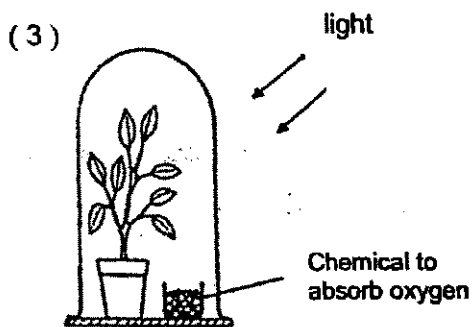
Which one of the following set-ups is the most suitable control for the above experiment ?



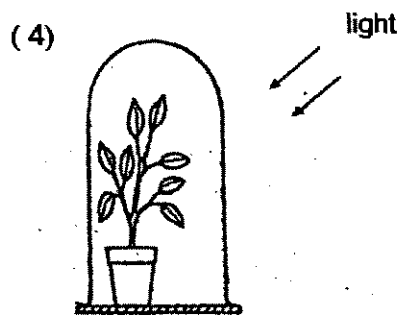
Temperature of surrounding : 29°C



Temperature of surrounding : 29°C



Temperature of surrounding : 29°C



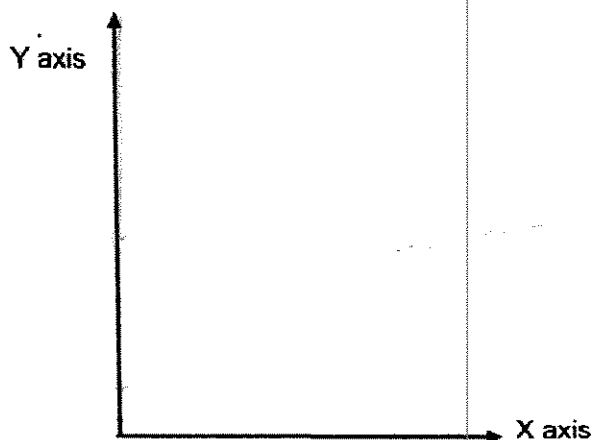
Temperature of surrounding : 32°C

16. The table below shows the melting points and boiling points of substances X, Y and Z respectively.

Substance	Melting point / °C	Boiling point / °C
X	41	83
Y	27	66
Z	58	95

At which one of the following temperatures are the three substances X, Y and Z, in the same state?

- (1) 32 °C
 - (2) 49 °C
 - (3) 60 °C
 - (4) 81 °C
17. Mary dried three identical towels containing the same amount of water in the balcony. Each towel was folded to expose a different amount of surface area. After five hours, each towel was weighed. She recorded her results and plotted them on a graph.



Which one of the following pairs of labels is most suitable for the x and y axis of the graph she plotted with her results?

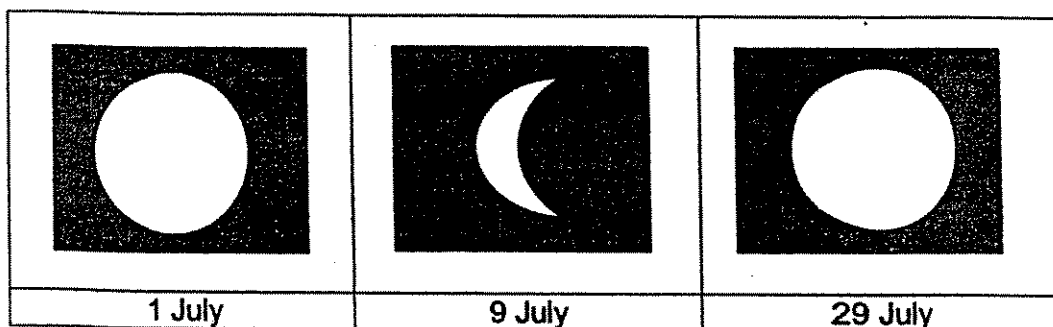
	Y axis	X axis
(1)	Mass of towels	Surface area of towels
(2)	Time taken	Surface area of towels
(3)	Surface area of towels	Time taken
(4)	Mass of towels	Time taken

18. Which of the following statements about the Earth is/are correct?

- A The Earth is a natural satellite of the Moon.
- B The four seasons are caused by the Earth spinning about its axis.
- C The Earth takes about 365 days to orbit around the Sun.

- (1) B only
- (2) C only
- (3) A and C only
- (4) A,B and C only

19. Paul looked at the Moon on different nights and recorded what he saw below.



The moon most probably could not be seen on _____.

- (1) 2 July
- (2) 10 July
- (3) 15 July
- (4) 30 July

20. Darren used two ramps, P and Q, to push an identical box up to the same height. He observed that the effort needed to push the box up ramp Q was greater than the effort needed for ramp P.

What possible conclusions can he make about ramps P and Q?

- A Ramp Q is shorter than ramp P
- B Ramp P is steeper than ramp Q.
- C Ramp P has a smoother surface than ramp Q.

- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) A, B and C

21. The table below compares Planet V and Planet W.

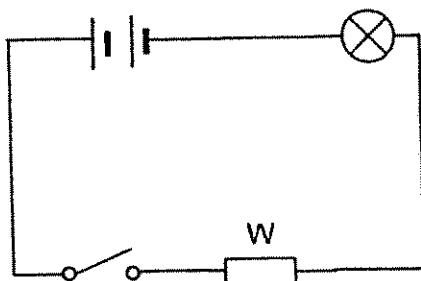
	Planet V	Planet W
Time taken to complete 1 rotation about its axis	243 days	1 day
Time taken to complete 1 revolution	225 days	365 days
Direction of spin around axis	Clockwise	Anticlockwise

Based on the information above, which of the following statements is/are definitely true?

- A Planet V has a shorter year than Planet W.
- B Planet V spins faster than Planet W on its axis.
- C Planet W has a longer day than Planet V

- (1) A only
- (2) C only
- (3) A and B only
- (4) A, B and C

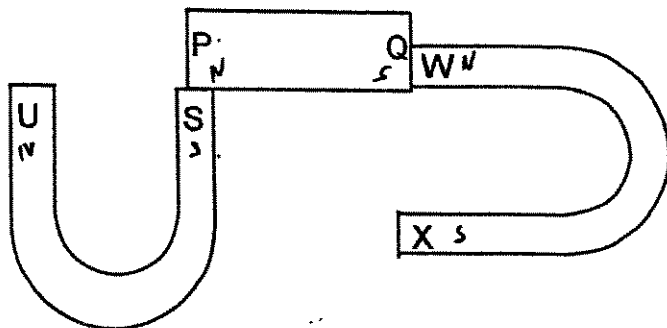
22. Tom set up the following circuit. W is a 7-cm iron rod. He closed the circuit and observed the brightness of the bulb. He repeated using an iron rod of 10 cm, 15 cm and 20 cm.



Which one of the following is likely to be Tom's aim of experiment?

- (1) ✗ To find out if the presence of the switch affect the flow of electricity
- (2) ✗ To find out how the number of batteries affect the flow of electricity
- (3) ✓ To find out how the material of the rod affect the brightness of the bulb
- (4) To find out how the length of the rod affects the brightness of the bulb in the circuit

23. The diagram below shows three magnets.



Based on the diagram above, which of the following statements about the poles of the magnets is/are false?

- A S and W are similar poles.
- B X will repel Q and be attracted to P.
- C W will repel P and be attracted to S.

- (1) A only
- (2) B only
- (3) A and C only
- (4) B and C only

24. James carried out an experiment to find out the effort needed to lift a 600N load using four different wheel and axle, A, B, C and D. He recorded his results in the table below.

Wheel and axle	Diameter (cm)		Effort (N)
	Wheel	Axle	
A	20	10	300
B	20	5	150
C	30	30	600
D	30	?	300

Which one of the following diameters of axle when used with a wheel of 30cm in diameter would require an effort of 300g?

- (1) 6 cm
- (2) 8 cm
- (3) 12 cm
- (4) 15 cm

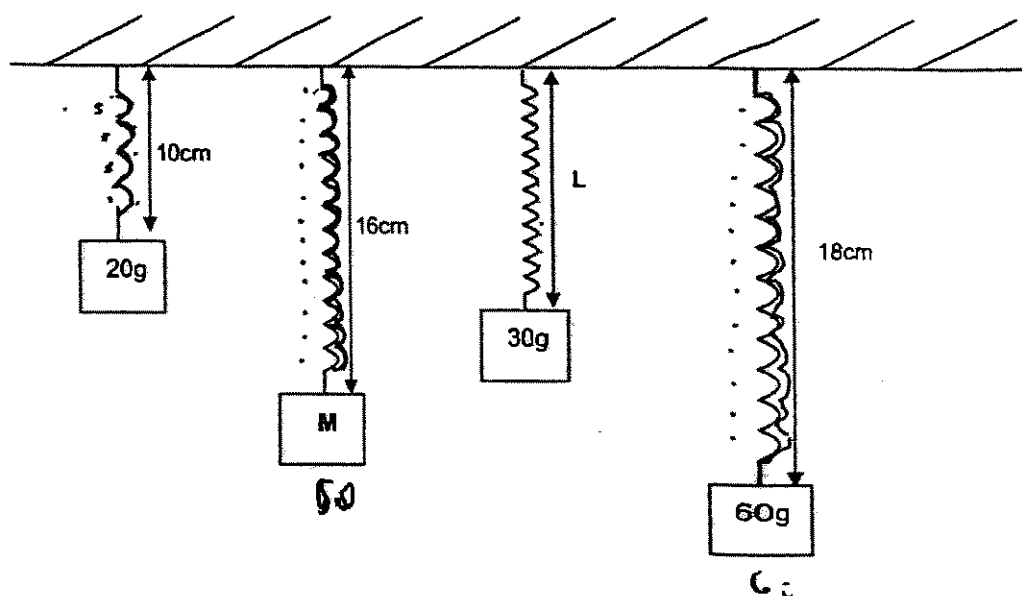
25. Which of the following operate by using a renewable source of energy?

- A windmill
- B solar heater
- C kerosene lamp
- D hydroelectric power station

- (1) A and B only
- (2) B and C only
- (3) A, B and D only
- (4) A, B, C and D

26. The diagram below shows the length of the same spring suspending different loads.

(Diagrams are not drawn to scale)



Which one of the following sets of values for "M" and "L" is correct?

	M (g)	L (cm)
(1)	40	12
(2)	40	14
(3)	50	12
(4)	50	14

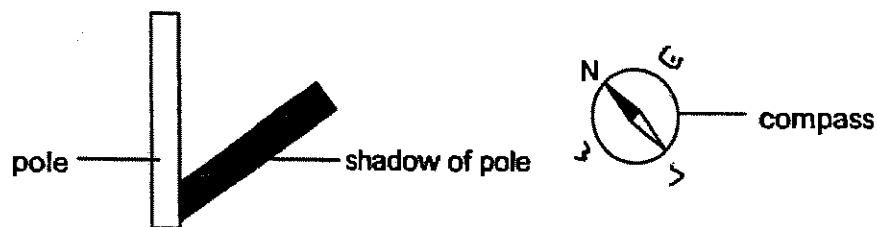
27. Amy wants to find out the pollution level of five different locations in the school.
She smeared a layer of oil on five pieces of glass slides and placed them at the five different locations in the school.
After some time, she collected the slides and checked the amount of dust particles trapped.

To ensure a fair test, which of the following variables must Amy keep the same?

- A size of glass slides
- B amount of oil used
- C duration of experiment
- D location where slides are placed

- (1) A and B only
- (2) C and D only
- (3) A, B and C only
- (4) A, B, C and D

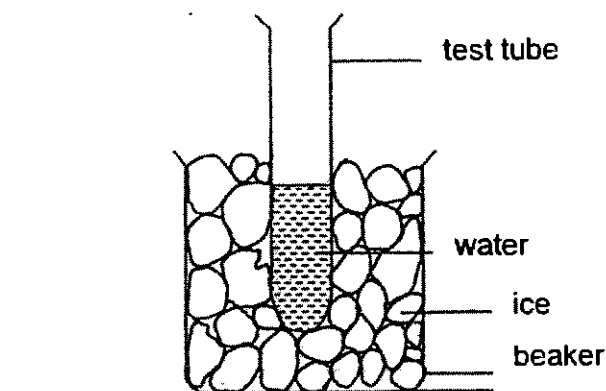
28. The diagram below shows the shadow cast by a pole.



At what time of the day is the shadow likely to be formed?

- (1) 7 am
- (2) 11 am
- (3) 2 pm
- (4) 5 pm

29. Sally set up an experiment as shown below in the laboratory.

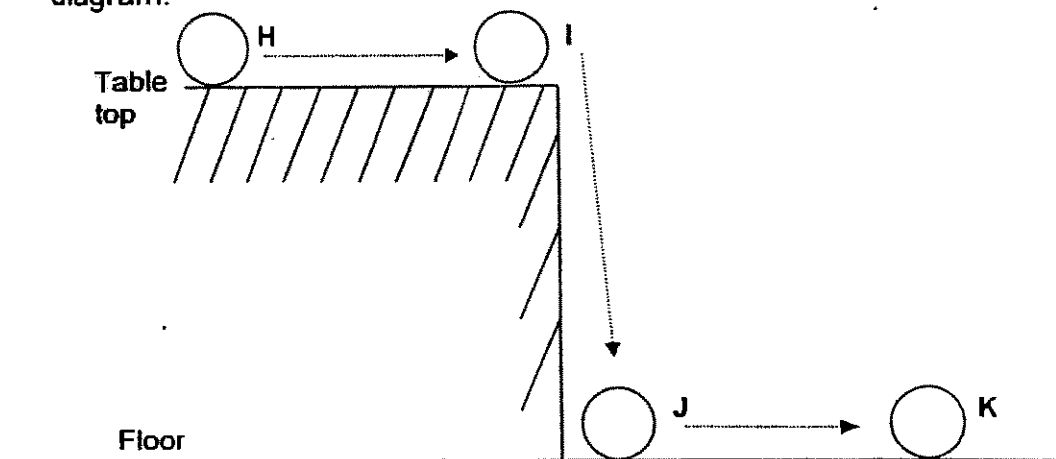


After ten minutes, which of the following are likely to have changed?

- A State of ice in the beaker
- B State of water in the test tube
- C Temperature of ice in beaker
- D Temperature of water in the test tube

- (1) A and D only
- (2) B and C only
- (3) A, C and D only
- (4) A, B, C and D

30. A ball at position H on a table is set in motion as shown below. It rolls to position I, down from the table and lands at position J on the floor. It then continues to roll till it comes to a stop at position K, as shown in the diagram.



Which of the following conclusions are correct based on the diagram above?

- A The ball gains kinetic energy between J and K.
- B The ball has kinetic energy and potential energy at I.
- C The potential energy of the ball decreases from I to J.

- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) A, B and C



HENRY PARK PRIMARY SCHOOL

P6 PRELIMINARY Examination
~~SEMESTRAL EXAMINATION I~~

2007

SCIENCE

PRIMARY 6

BOOKLET B

Name: _____ ()

Class: Primary 6 _____

16 Questions
40 Marks

Total Time for Booklets A and B: 1 h 45 min

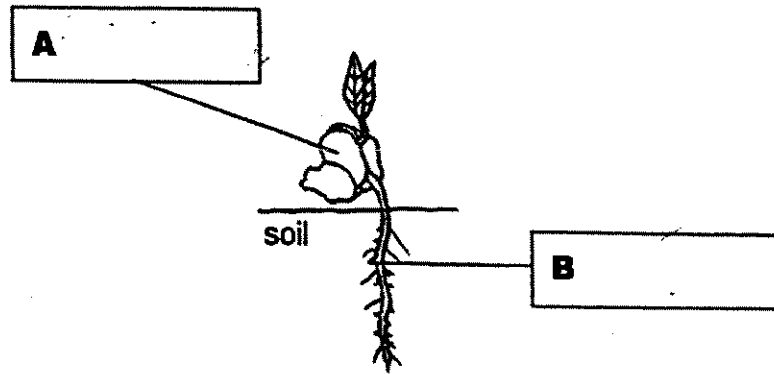
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

READ AND FOLLOW INSTRUCTIONS CAREFULLY.

PART 2 (40 marks)

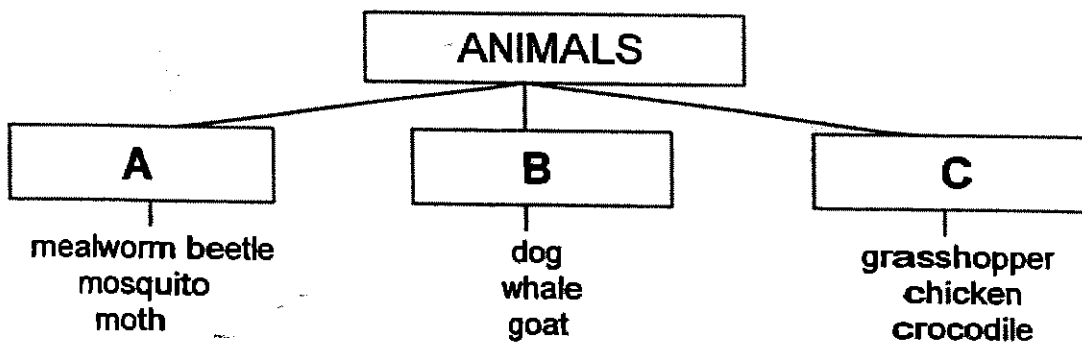
Write your answers to questions 31 to 46 in the spaces given.

- 31 The diagram below shows a young plant growing from a bean seed.
 (a) Name the parts of the seedling marked A and B in the boxes provided. [1]



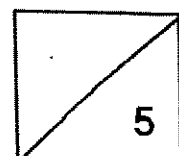
- (b) What is the function of the part marked A ? [1]

- 32 The classification chart shows how some animals are grouped .

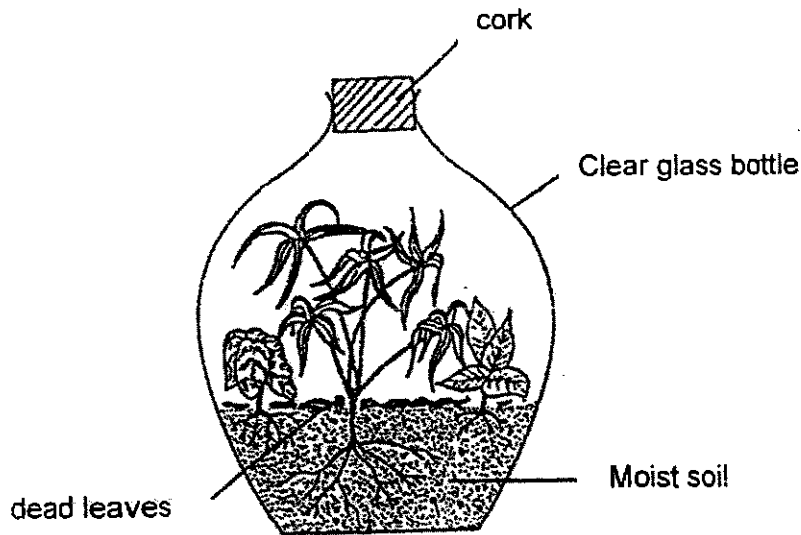


- a) How is the method of reproduction of the animals in Group A and C different from B ? [2]

- b) Under which heading will you put "cockroach" ? [1]



33 The diagram shows a bottle garden.

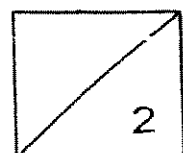


(a) The plants in the bottle do not require fertilizer and yet, with little attention, they can remain healthy for a few years.

Explain why this is so. [1]

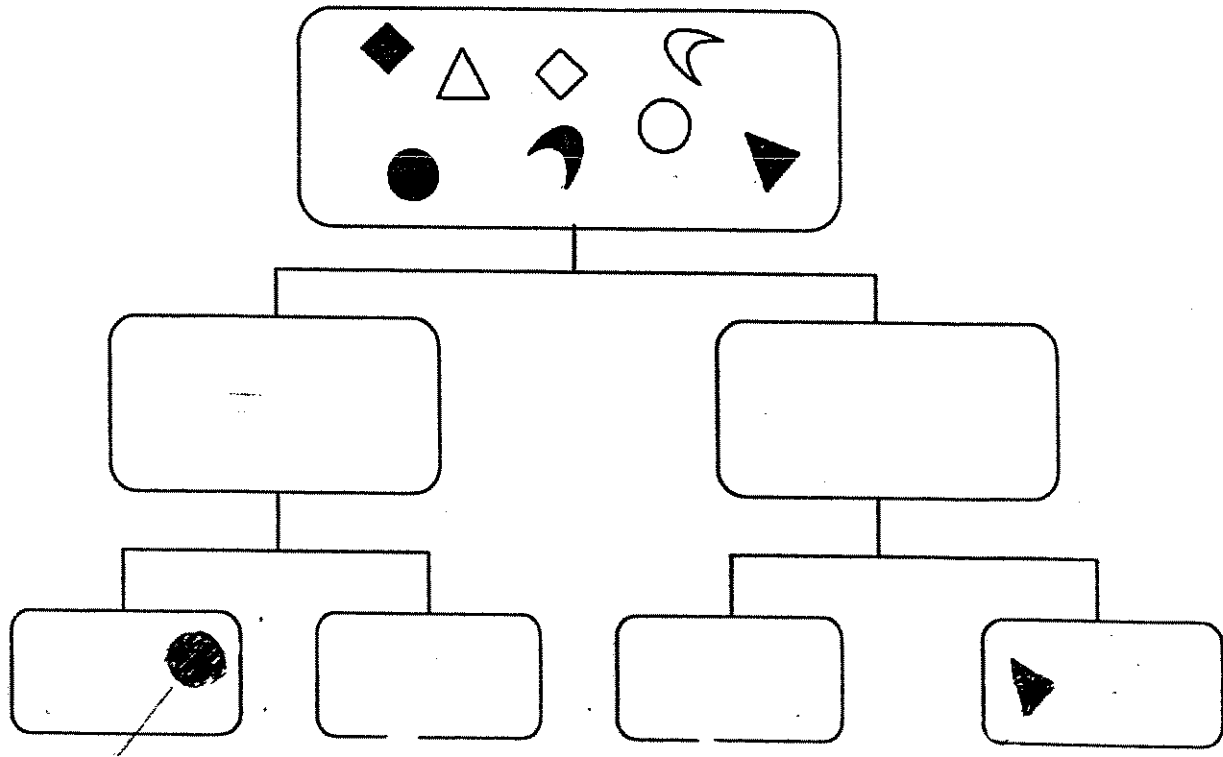
(b) Suggest a possible reason why the bottle garden should **not** be put in a place where it is exposed to direct sunlight. [1]

π.

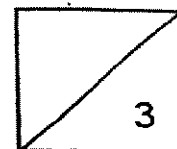


34 Jack was asked to classify 8 objects into a classification chart . First he classified the 8 objects into two groups of 4 each. Then he further classified each group into two smaller groups of 2 objects each.

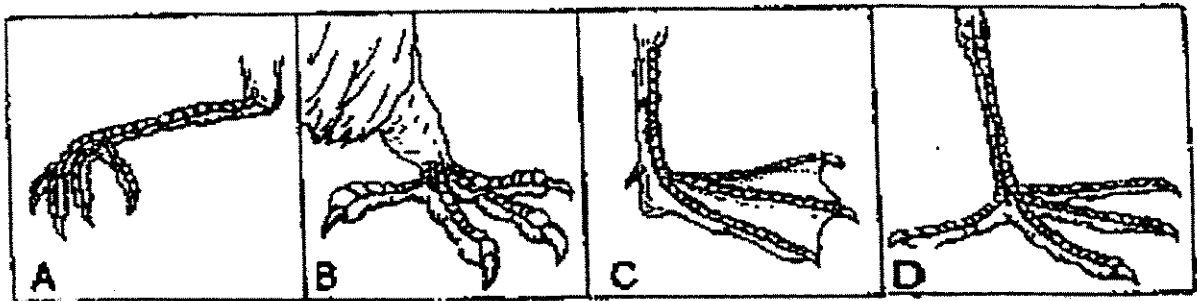
(a) Complete Jack's chart by drawing in the rest of the missing objects. [2]



(b) State the property that you have used to classify the objects into the last four boxes. [1]



35



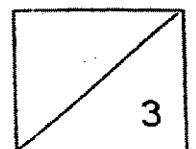
(a) The diagrams above shows the feet of a group of animals. Which group of animals do they belong to? [1]

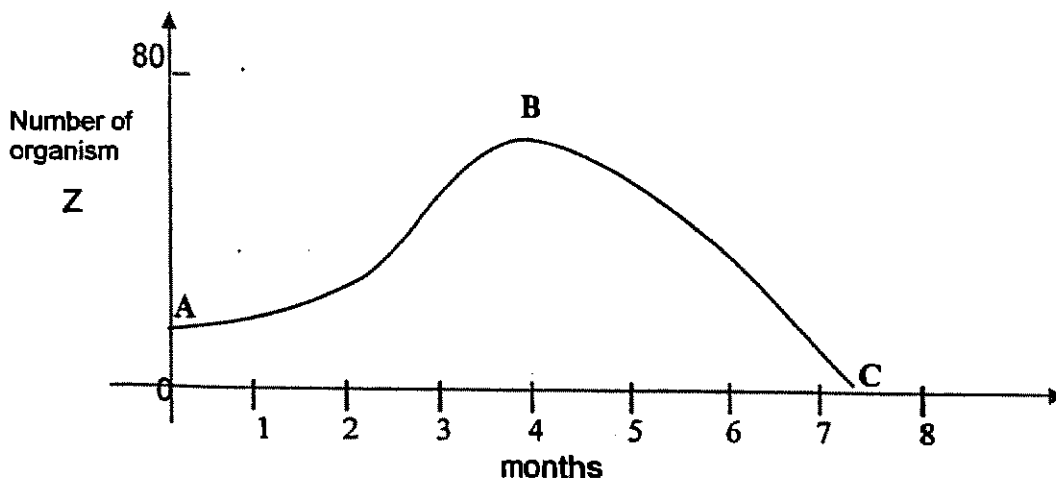
(b) The diagram below shows the foot of Animal X. Which one of the above feet : A, B, C or D belongs to an animal that can move in the same way as Animal X? [1]



(b) _____

(c) Which part of the feet enables both animals (X and the animal you have named in (b)) to move in this way? [1]





The above graph shows the population of Organism Z over a period of 7 ½ months.

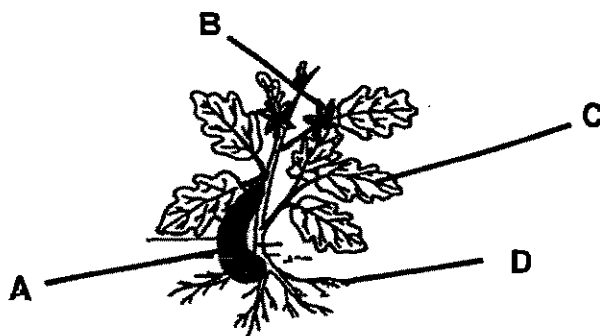
(a) Describe what happens to the population of Organism Z in the first four months. [1]

(b) List two possible reasons for the fall in the number of Organism Z from B to C. [2]

Reason 1: _____

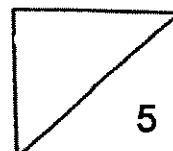
Reason 2: _____

37 The diagram below shows a brinjal plant.

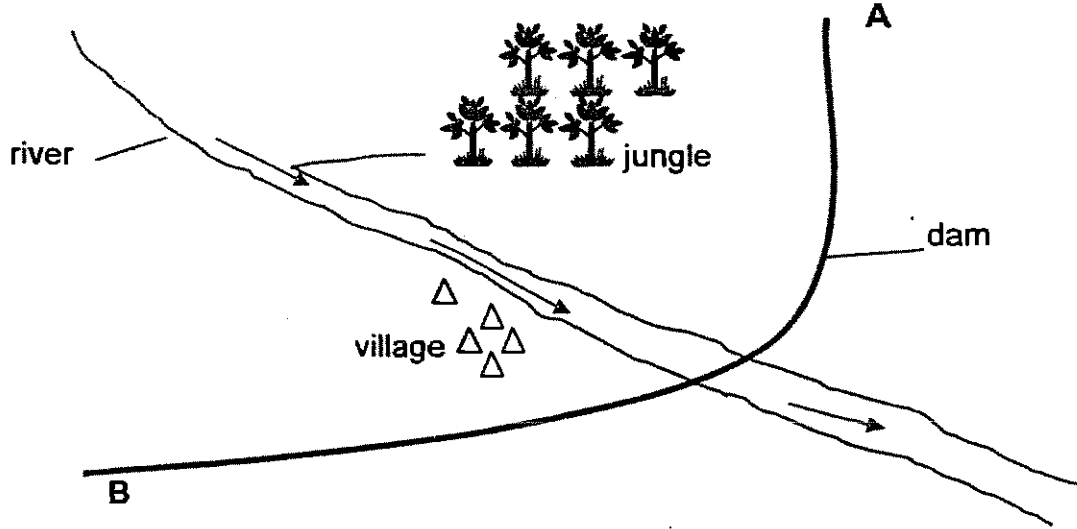


a) Which part of the plant will enable it to ensure the survival of its kind? Give a reason for your answer. [1]

b) State and explain what may happen to the plant if half of the leaves are eaten by caterpillars? [1]



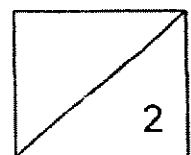
38



The diagram above shows a river flowing between a village and a jungle. When a dam is built across the river at AB, the flow of the river water is blocked.

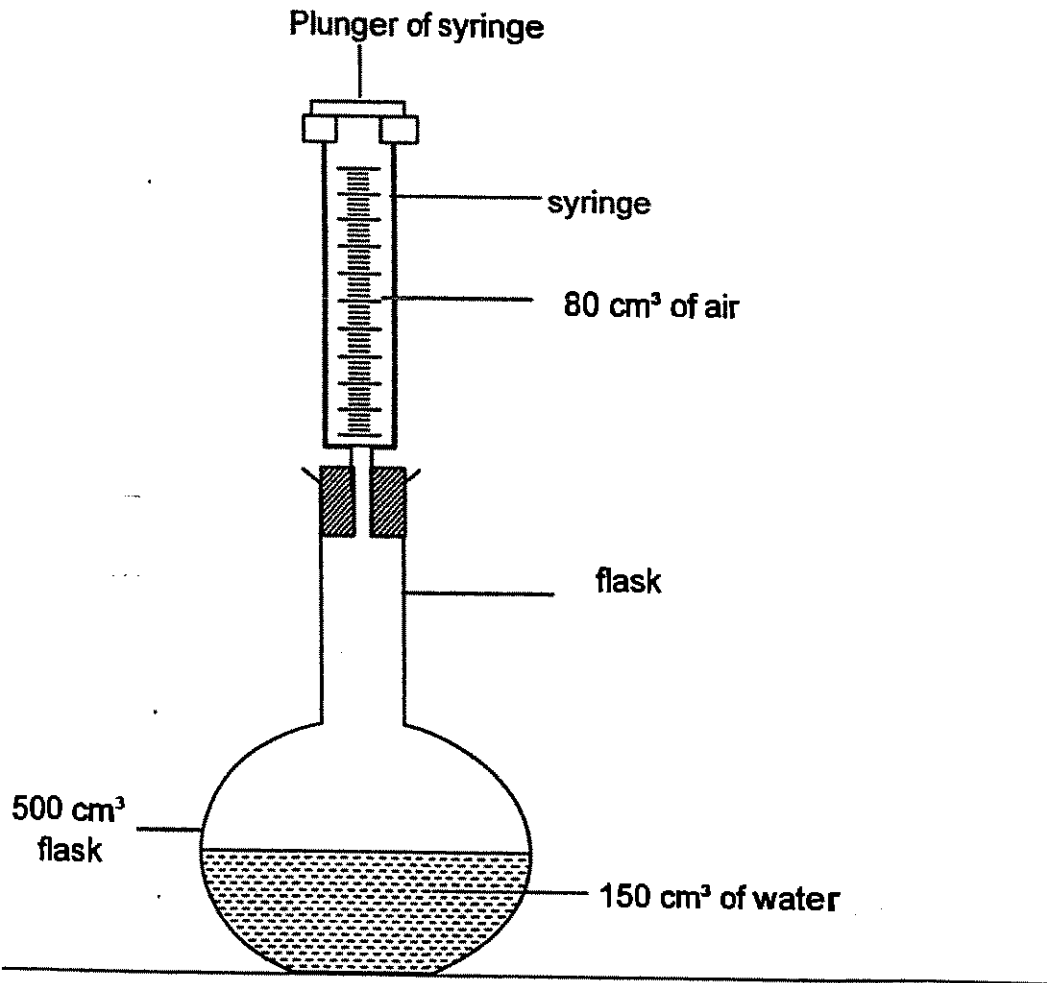
(a) Give one negative impact of building the dam has on the environment. [1]

(b) Give one advantage of building the dam. [1]



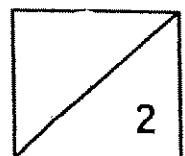
39. The diagram below shows a 500 cm^3 flask which contains 150 cm^3 of water and a syringe which contains 80 cm^3 of air.

When the syringe is pushed all the way down, all the air in it entered the jar.



(a) What is the final volume of air in the flask when the syringe is pushed all the way down twice? [1]

(b) From the experiment and results in (a), list the property of air shown. [1]



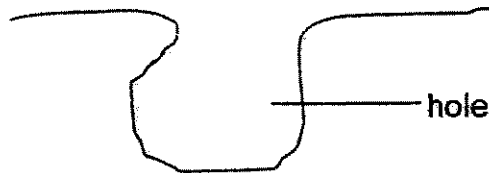
40. Susan breathed into a mirror and noticed a "mist" forming on the surface of the mirror.

(a) Explain how the "mist" is formed. [2]

(b) As Susan continues to breathe repeatedly onto the mirror, Susan observed that the "mist" could no longer be formed.

Explain her observation. [1]

41. Jimmy wants to find out the volume of the hole as shown in the diagram below.

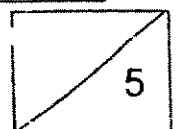


He is given a beaker of water and a measuring cylinder only.

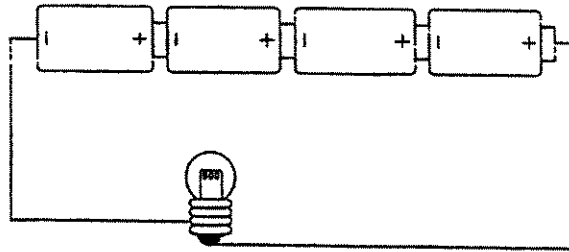
List four steps he should take in order to determine the volume of the hole above.

[2]

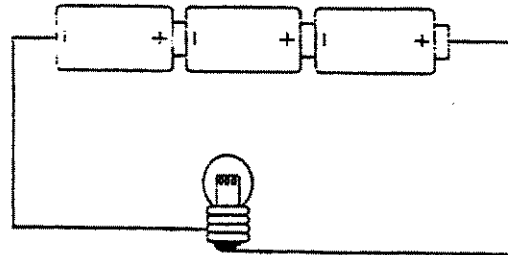
Step	What Jimmy should do:
1	
2	
3	
4	



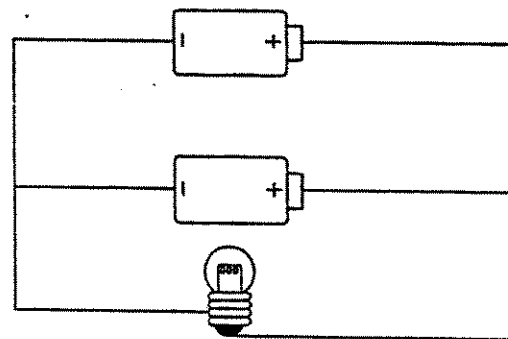
Circuit A



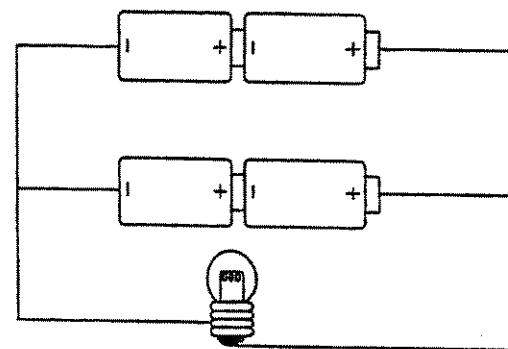
Circuit B



Circuit C



Circuit D

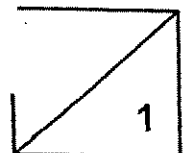


Similar bulbs and batteries were used.

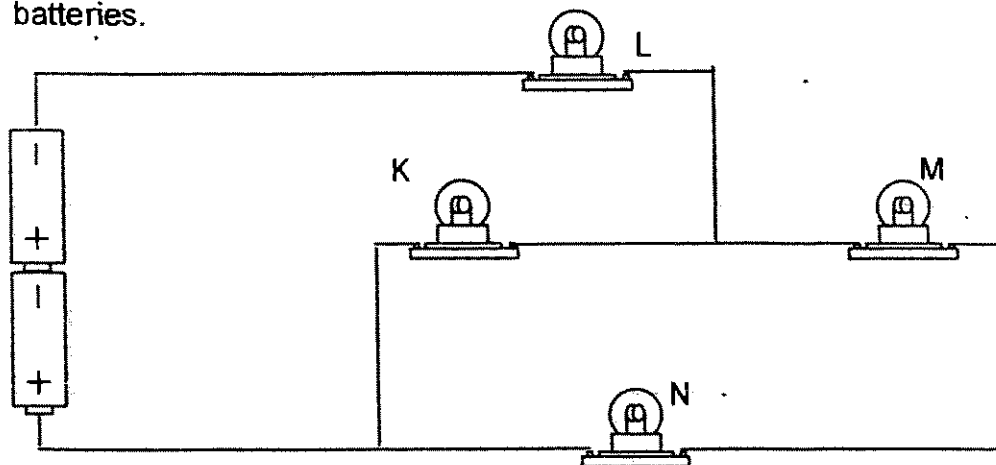
When the circuits were connected, each of the bulb in the circuit lit up.

Arrange the circuits, A, B, C and D, in ascending order (from the dimmest to the brightest) of the brightness of the bulbs.

[1]



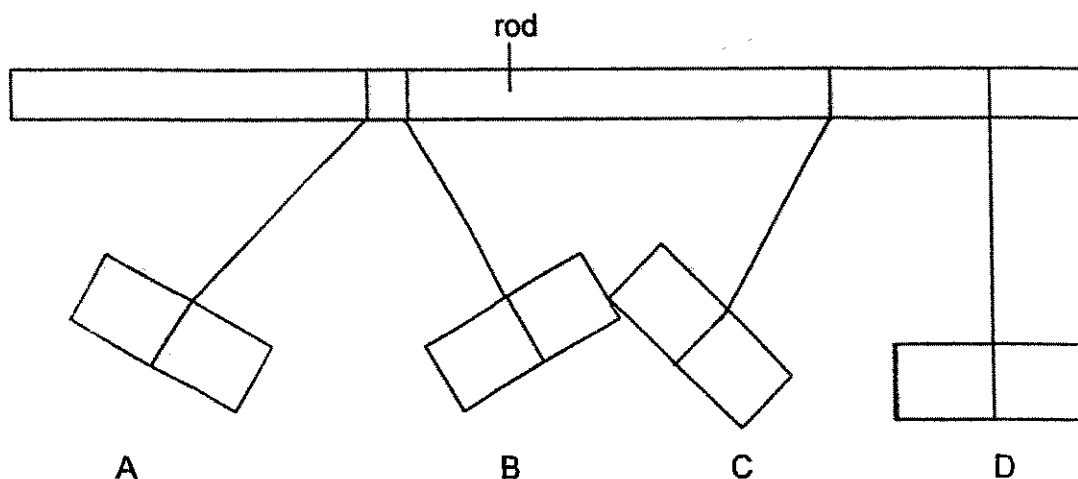
42(b) The diagram below shows four bulbs, K, L, M and N connected to two batteries.



Identify the remaining bulbs which stay lit when one other bulb blows. [2]

Bulb which blows	Bulb(s) which remain lit
K	
L	
M	
N	

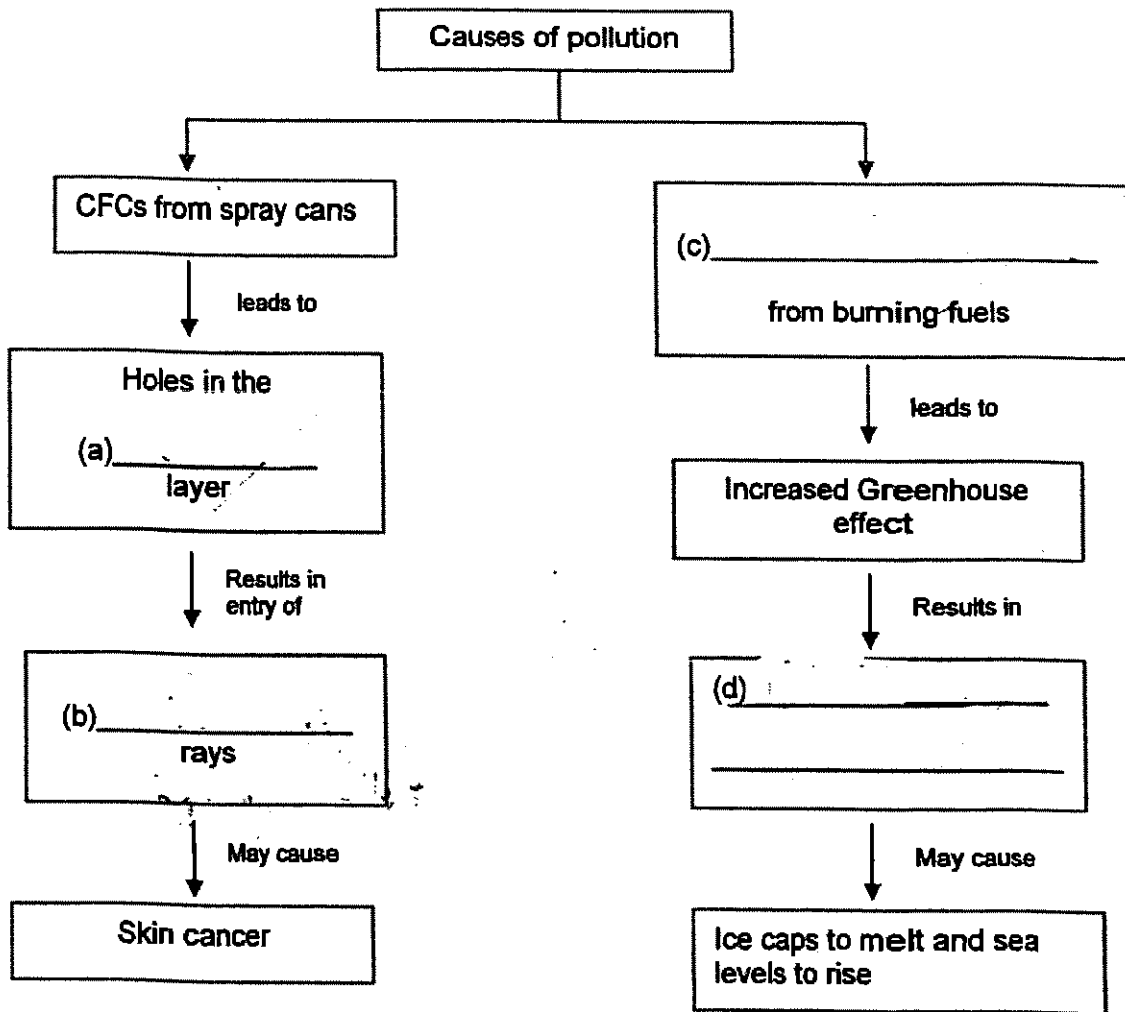
43. When four metal bars A, B, C and D, were hung from a piece of rod, they moved in different directions as shown in the diagram below.



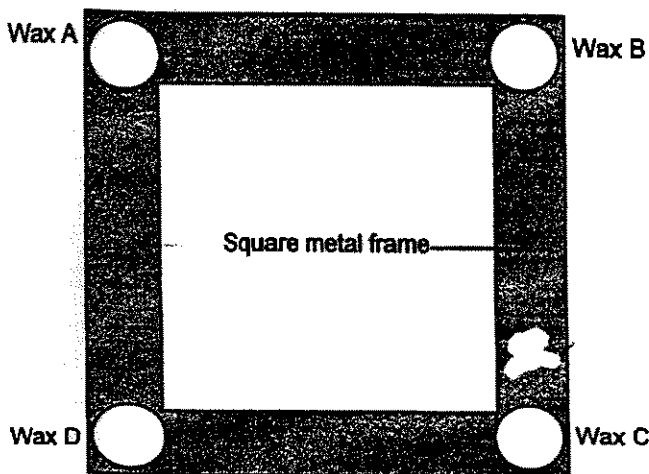
(a) If two of the metal bars are magnets, which two metal bars (A, B, C, D) are most likely to be magnets? [1]

(b) Give a reason for your answer in (a). [1]

44. Complete the flowchart below by filling in the blanks labelled (a) to (d). [2]

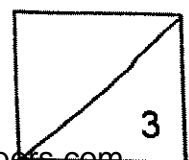


45(a) Tom placed four drops of wax at the four corners of a square metal frame as shown in the diagram below.

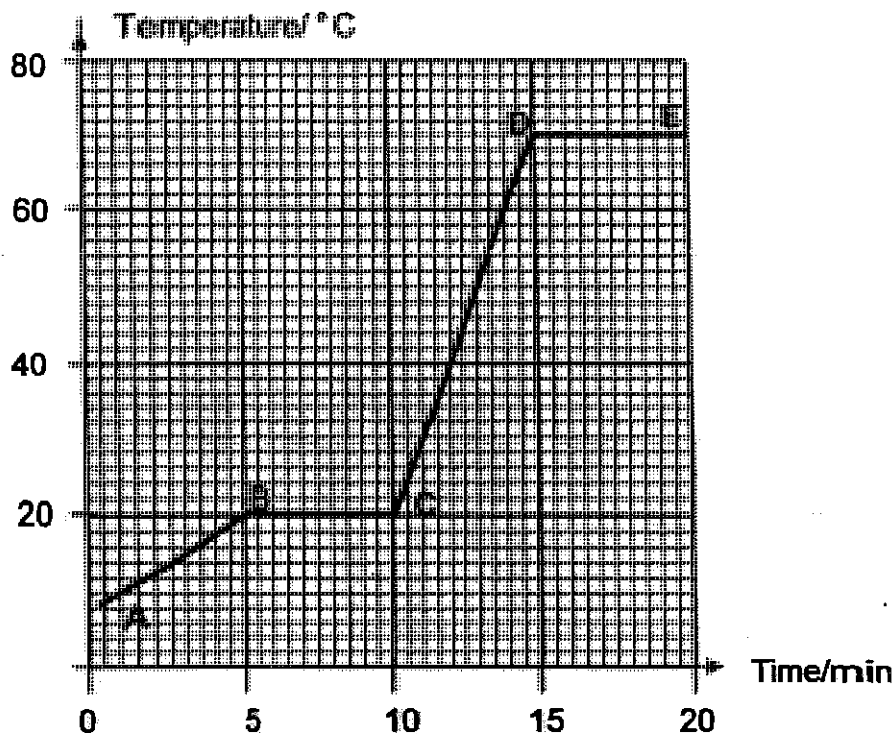


When Tom heated the square metal frame with a bunsen burner, the drops of wax melted in the following order: C, B, D, A.

On the diagram, mark "X" on the spot where Tom is likely to have heated the metal frame. [1]

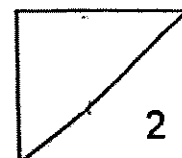


45(b) The graph below shows the temperature changes of a substance Q when it is heated.

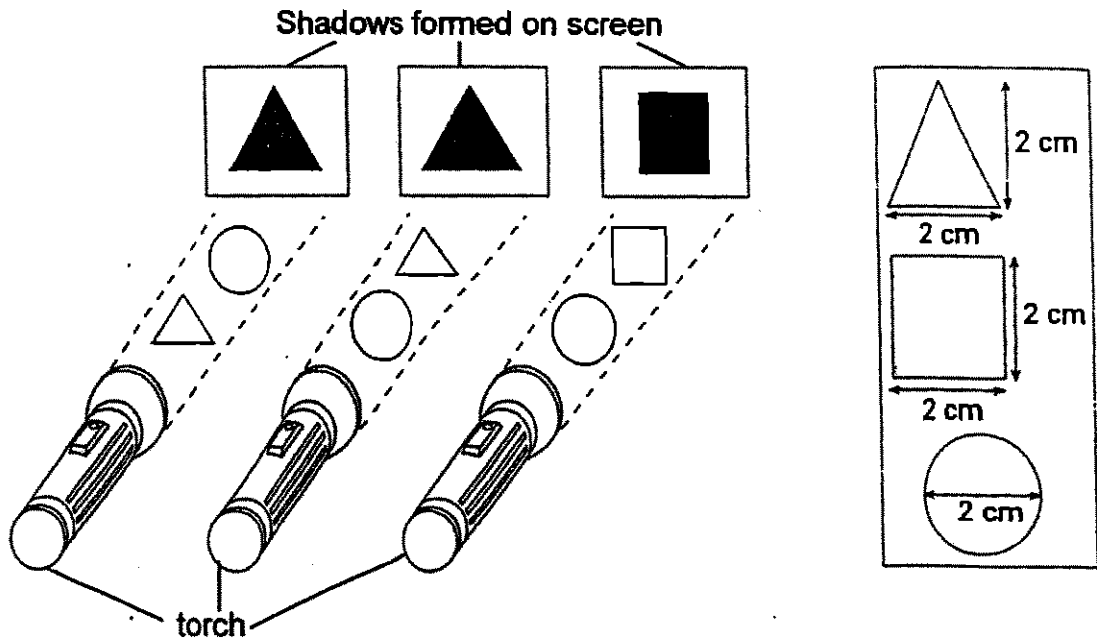


(i) Which part(s) of the graph, AB, BC, CD, DE represent(s) a change in the state of substance Q? [1]

(ii) What is the state of substance Q at 40° C? [1]

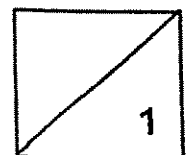
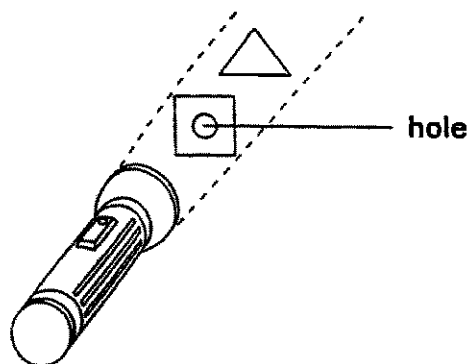
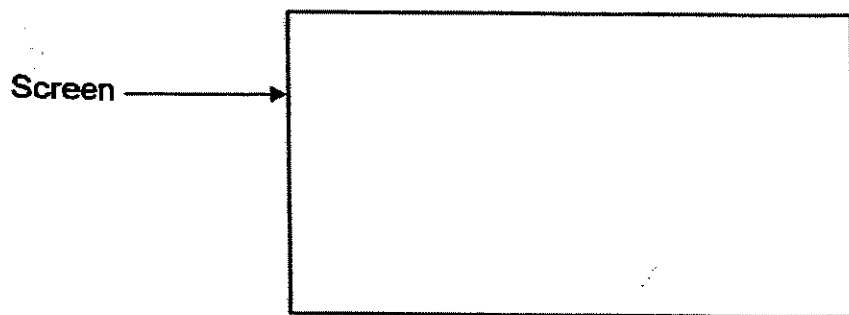


46(a) The diagram below shows the shapes of the shadows produced when two different objects were placed between a screen and a torchlight. The dimensions of the objects are shown the box on the right.

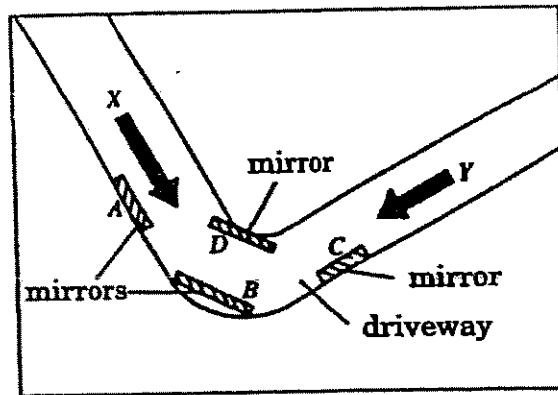


A hole was made in the centre of the square object and it was then placed in front of the screen together with the triangular object, as shown below.

Draw the shadow produced on the screen when the torch is switched on. [1]



(b) Study the diagram below.



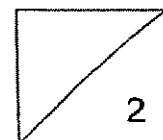
(i) Identify the mirror(s) (A, B, C, D) which enable(s) the drivers at X and Y to see each other. [1]

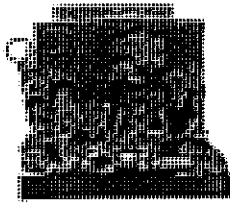
(ii) State two properties of light which enable drivers at X and Y to see each other. [1]

- 1. _____
- 2. _____

-END OF PAPER-

Setters: Mrs J F Siregar
Mrs Seow Jian Jian





ExamSutra 考试圣经

Answer Sheets

Henry Park / Pri 6 SA2/2007 Science

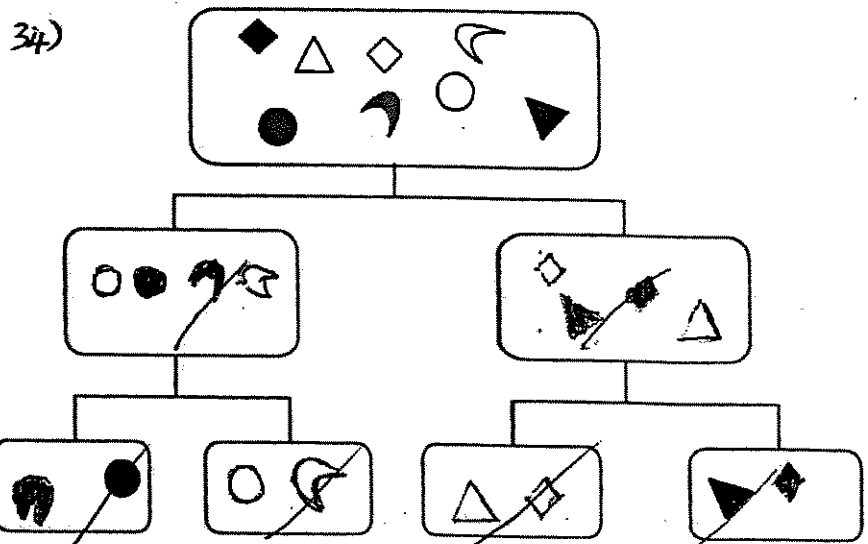
- | | | | | | |
|------|------|------|------|------|------|
| 1)3 | 2)3 | 3)4 | 4)1 | 5)1 | 6)2 |
| 7)4 | 8)3 | 9)2 | 10)2 | 11)3 | 12)1 |
| 13)2 | 14)2 | 15)2 | 16)3 | 17)1 | 18)2 |
| 19)3 | 20)2 | 21)1 | 22)4 | 23)1 | 24)4 |
| 25)3 | 26)3 | 27)3 | 28)4 | 29)1 | 30)3 |

31)a. Seed leaves b. roots b) It is to give the seeding food until it grow its first leaf.

32)a. The animal in Group A and C lay eggs while the animals in Group B give birth to young. 32)b. C.

33)a. The dead leaves are broken down by decompose into simple substance which are absorbed as nutrients by the plant.

33)b. The glass bottle will trap heat which will kill the plant.



34)b. I classify them whether they are shaded or non-shaded.

35)a. Bird b. C c) The Webbed skin between the toes enable them to swim.

36)a. The population of Organism Z increase.

36)b. Reason 1: An animal that eats organisms is introduced at B

Reason 2: A diseases in killing the organism

37)a. The part is A. Inside part A is the seeds of the brinjal plant and part A is the fruit of the plant

37)b. It may not produce Fruits. Plant will not be able to make enough food to enable to grow normally.

38)a. The organism living after the dam has no water to drink and they would die.

38)b. The villagers can collect water from the rivers easily.

39)a. 350cm^3 39)b. Air can be compressed.

40)a. The water vapour which came out from our mouth condense on cool surface which formed mist.

40)b. As the surface at the mirror becomes warmer, less and less water vapour condenses on it.

41)1. Fill the measuring cylinder with water and record the initial volume.
2. He should pour the same amount of water in the hole until it was full.
3. Record the final volume of water left in measuring cylinder.

4. Calculate the difference between the initial and final volume of water in measuring cylinder

42)a. C,D,B,A

42)b. K:-L,N,M

L:- M:-L,k

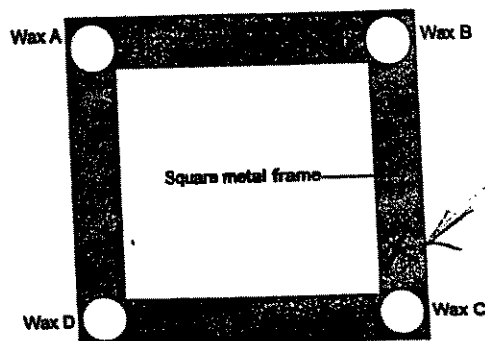
N:-L,K

43)a. A and B.

43)b. metal bars A and B seen to repelled from each other meaning to say it was like pole facing each other.

44)a. ozan b. ultra-voilet c. carbon dioxide d. Global warming

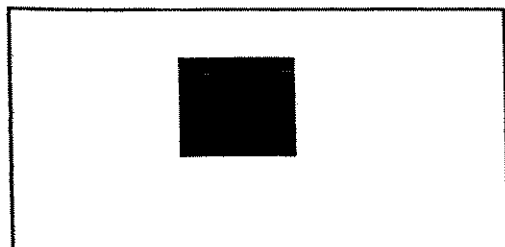
45)a.



45)b. i. BC and DE

ii. liquid.

46)a.



46)b. B

ii. Light travels in a straight line.



Maha Bodhi School
2007 Preliminary Examination
Science

Name : _____ ()

Date : 23 August 2007

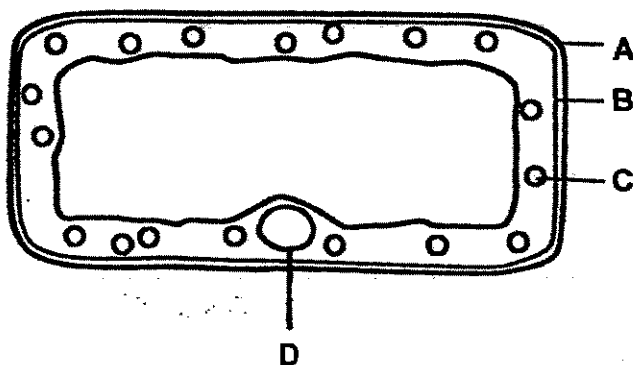
Class : P 6 (_____)

Duration : 1 h 45 min (Parts I & II)

Part I: (60 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Mark Sheet (OMS).

1. The diagram shows a cell from the leaf of a plant.



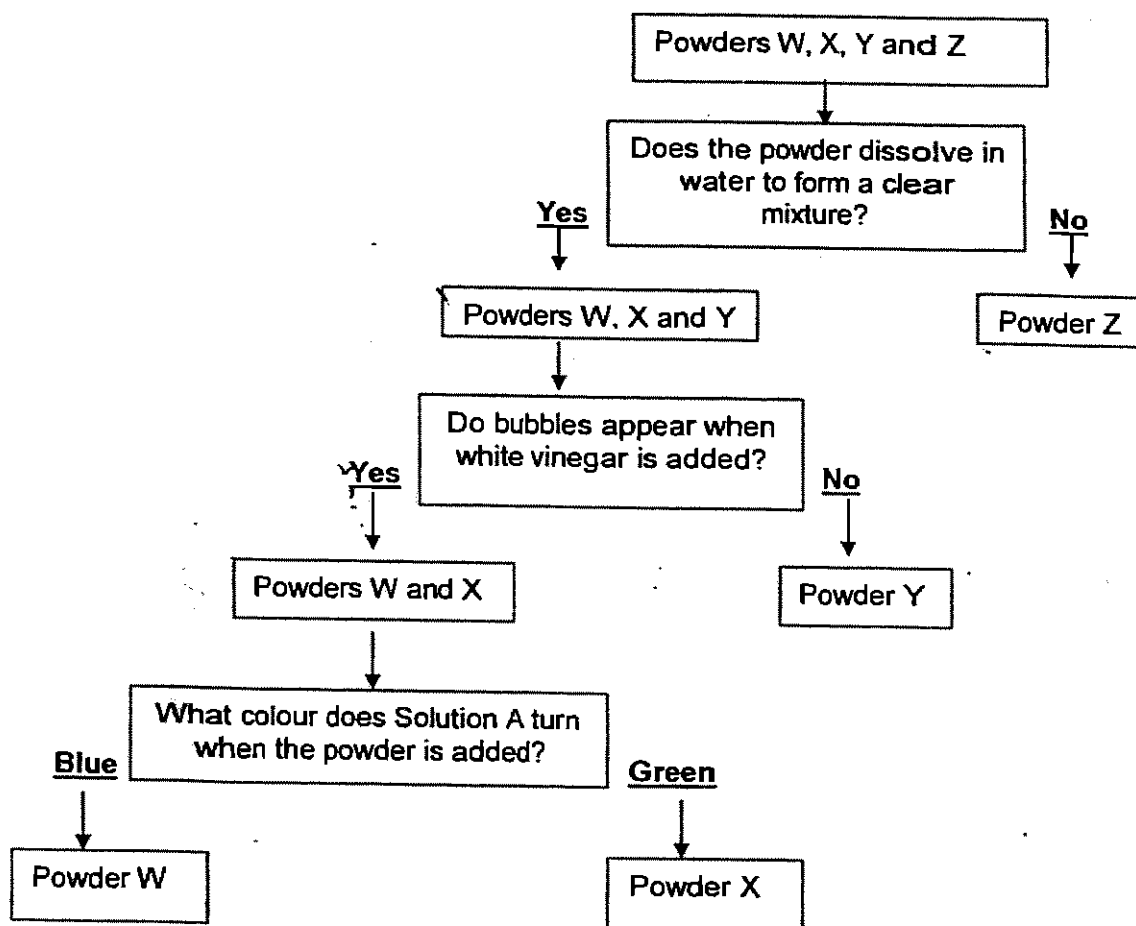
Which part of the cell controls substances that move in and out of the cell?

- (1) A
- (2) B
- (3) C
- (4) D

2. Yi Jing tested 4 white powders and recorded her results in the table below.

Powder	TEST		
	Do the powder and the water form a clear mixture?	Solution A turns _____ when the powder is added.	Do bubbles appear when white vinegar is added?
Cornflour	No	blue	No
Baking powder	Yes	blue	Yes
Washing powder	Yes	green	Yes
Fruit salt	Yes	blue	No

She constructed a flow chart to identify the 4 powders using the tests above.



Which substance is Powder W?

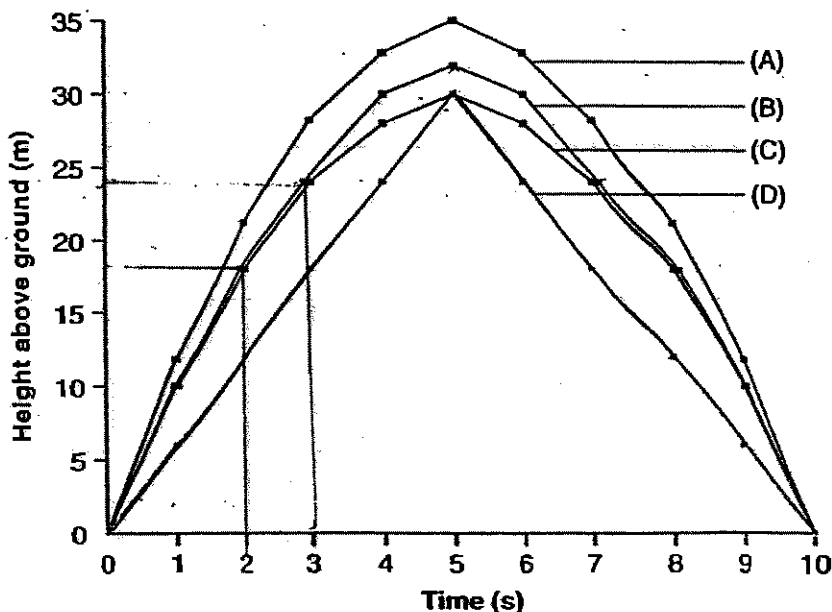
- (1) Cornflour
- (2) Baking powder
- (3) Washing powder
- (4) Fruit salt

3. Which one of the differences between wind-pollinated flowers and insect-pollinated flowers is incorrect?

	Wind-pollinated flower	Insect-pollinated flower
(1)	Petals usually small and dull	Petals usually large and colourful
(2)	Nectar absent	Nectar present
(3)	Produces less pollen	Produces more pollen
(4)	No smell	Usually has smell

4. Benjamin recorded the flight time and height of an arrow that Kenneth shot into the air and plotted his results on the graph below.

Time (s)	Height above the ground (m)
0	0
1	10
2	18
3	24
4	28
5	30
6	28
7	24
8	18
9	10
10	0

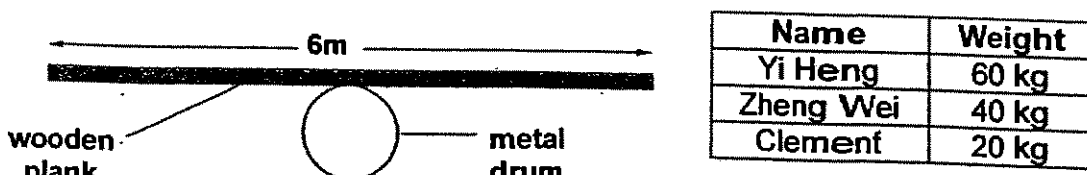


Which one of the graphs shows Benjamin's results?

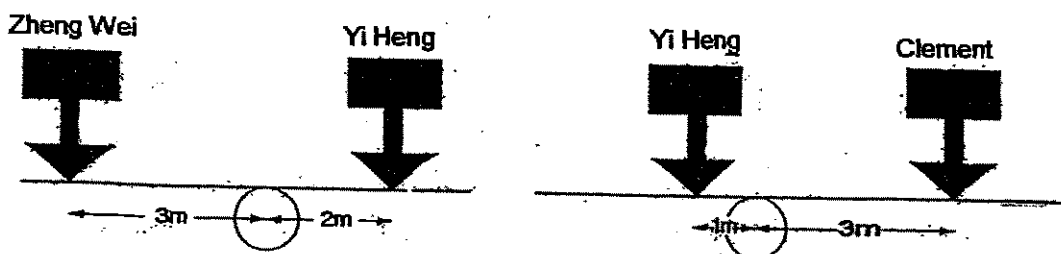
- (1) A
 (2) B
 (3) C
 (4) D
5. When the Earth has travelled round the Sun once, the Earth would have turned _____ time(s) about its own axis.

- (1) 1
 (2) 24
 (3) 28
 (4) 365

6. Three children made a seesaw from a plank of wood and a metal drum. The seesaw is balanced with no children on it as shown in the diagram below.



Although the children weigh differently as shown in the table above, they could balance each other by changing the position they sat on the plank.



If the seesaw was balanced with Zheng Wei on one end and Clement on the other, what distances were Clement and Zheng Wei from the centre of the metal drum?

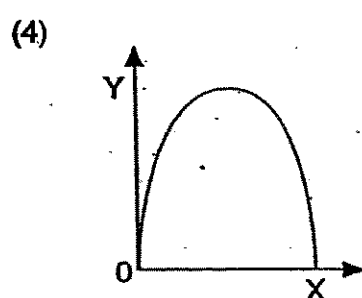
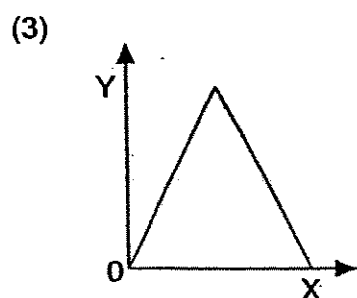
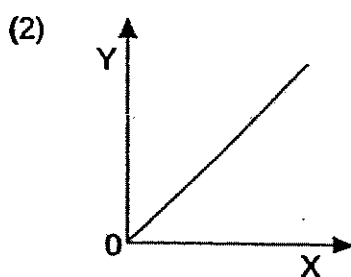
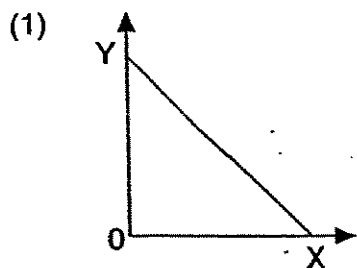
	Clement	Zheng Wei
(1)	1m	2m
(2)	1m	3m
(3)	2m	1m
(4)	2m	3m

7. Which of the following statements about gravity are true?

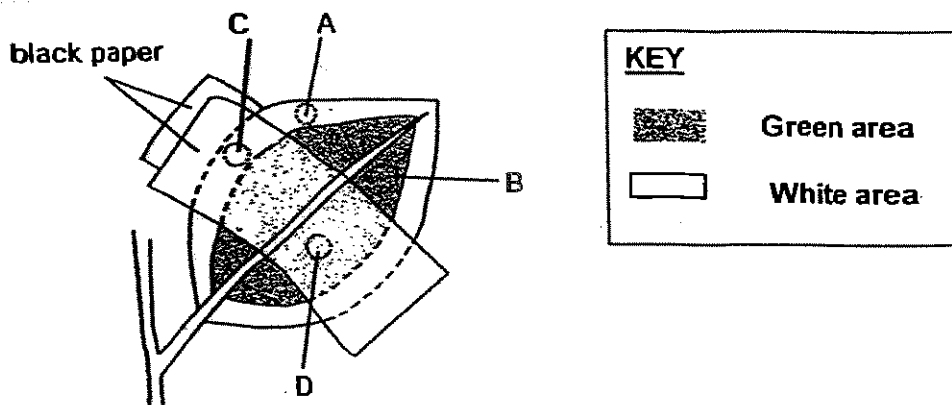
- (A) Gravity is a force that can act at a distance.
- (B) Gravity causes objects on Earth to have mass.
- (C) Gravity makes things in the air fall to the ground.
- (D) Gravity varies with the distance the object is from the Earth.

- (1) A and B only
- (2) C and D only
- (3) A, C and D only
- (4) All of the above

8. Which one of the graphs below shows correctly the relationship between the amount of gravitational potential energy of an object (Y) and the height of the object above the ground (X)?



9. Yee Thien carried out an experiment on a leaf as shown in the diagram below.



There was no starch in the leaf at the start of the experiment. She placed the plant in bright sunlight for several hours. Then she cut out 4 discs from the leaf in the positions shown and tested each disc for the presence of starch.

Which disc(s) contained starch?

- (1) B only
- (2) A and C only
- (3) B and D only
- (4) C and D only

10. Hanna compared the properties of 4 objects in the table below.

Property	Objects			
	A	B	C	D
Non-metal	Yes	No	Yes	Yes
Magnetic	No	Yes	No	No
Definite shape	Yes	Yes	Yes	No
Conduct electricity	No	Yes	No	Yes

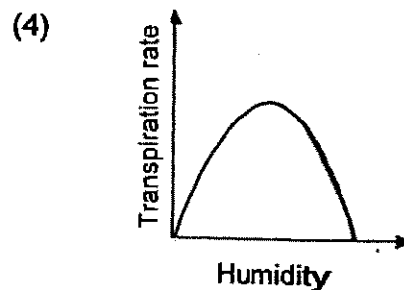
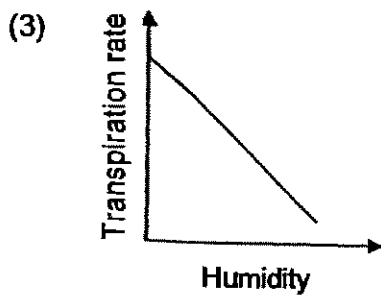
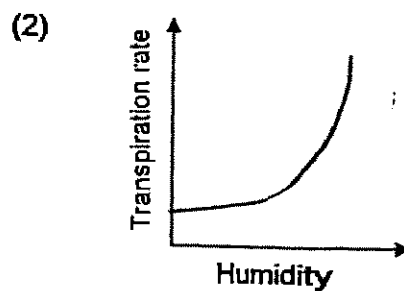
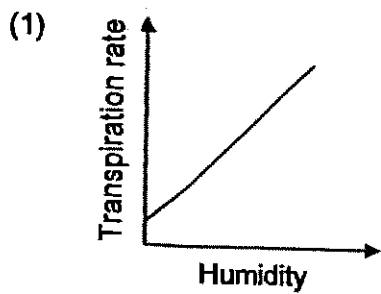
Which of the following can A, B, C and D be?

	A	B	C	D
(1)	Ceramic mug	Copper wire	Mercury	Rainwater
(2)	Wooden chopsticks	Steel screw	Kerosene	Air
(3)	Glass bowl	Iron nail	Plasticine	Sea water
(4)	Styrofoam container	Aluminium foil	Apple juice	Oxygen

water

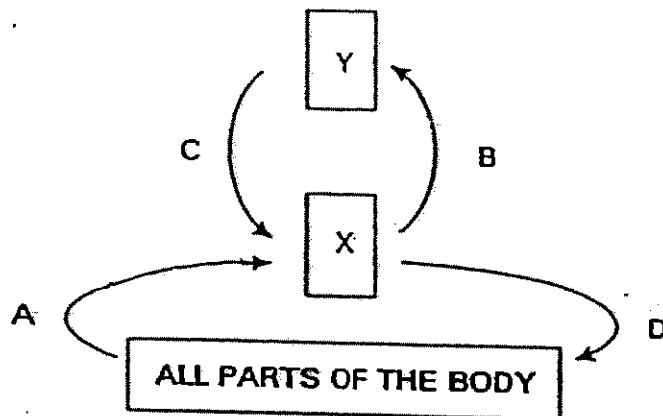
11. Humidity measures the amount of water vapour in the air.
Transpiration is the process by which plants lose water to the air.

Which one of the following graphs shows what happens to the rate of transpiration as humidity is increased?



12. The diagram below shows our circulatory system.

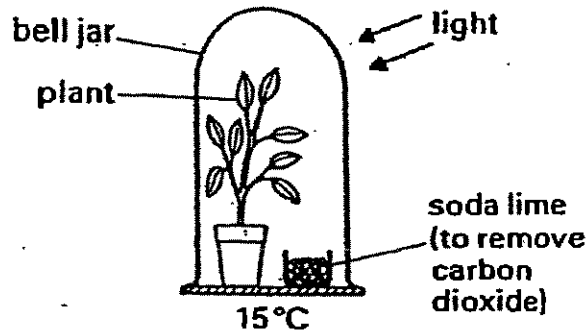
X and Y represent organs. A, B, C and D represent blood vessels.



Which one of the following about our circulatory system is correct?

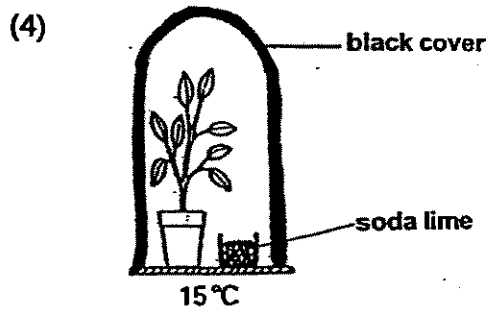
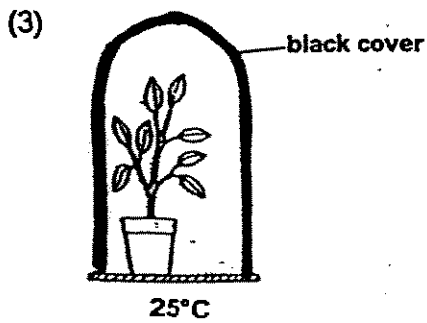
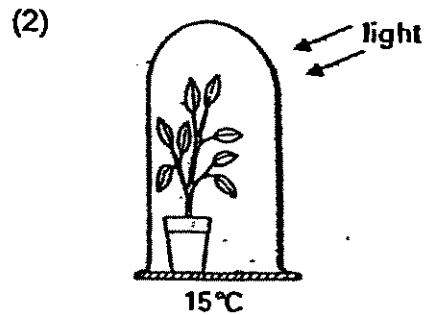
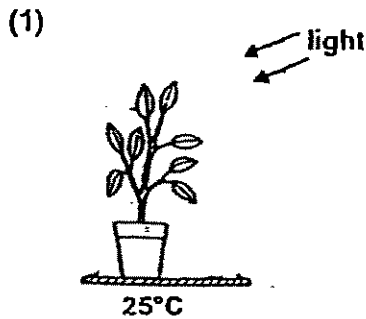
	Organ X	Organ Y	Type of Blood in			
			A	B	C	D
(1)	Heart	Lungs	Rich in Carbon dioxide	Rich in Carbon dioxide	Rich in oxygen	Rich in oxygen
(2)	Heart	Lungs	Rich in oxygen	Rich in oxygen	Rich in Carbon dioxide	Rich in Carbon dioxide
(3)	Lungs	Heart	Rich in oxygen	Rich in Carbon dioxide	Rich in oxygen	Rich in Carbon dioxide
(4)	Lungs	Heart	Rich in Carbon dioxide	Rich in oxygen	Rich in Carbon dioxide	Rich in oxygen

13.

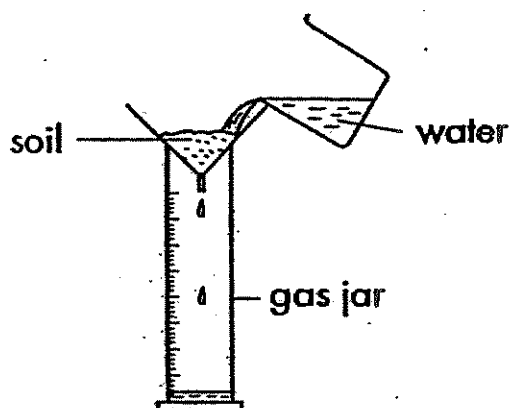


Tiffany set up an experiment to find out if carbon dioxide is needed for photosynthesis. She forgot to include a control for her experiment.

Which one of the following is most suitable as a control?



14. Which one of the following are used to make yoghurt?
- (1) Milk and bacteria
 - (2) Sugar and bacteria
 - (3) Soya beans and mould
 - (4) Milk, bacteria and mould
15. Si Ying wants to conduct an experiment using the set-up below to see (which type of soil allows the most amount of water to pass through it.)



Which of the following variable(s) must Si Ying keep the same for a fair test?

- (A) Type of soil used
 - (B) Amount of soil used
 - (C) Amount of water poured on each type of soil
 - (D) Time taken for the water to pass through the soil
- (1) A only
 - (2) A and C only
 - (3) B, C and D only
 - (4) All of the above
16. Which of the following statements about decomposers is/are true?
- (A) Bacteria and maggots are decomposers.
 - (B) Decomposers break down dead matter and animal waste.
 - (C) Decomposers enrich the soil with nutrients for plants to grow.
- (1) A only
 - (2) B and C only
 - (3) A and C only
 - (4) All of the above

17. The food chain shown below is observed in a pond.



A large population of herbivores which feed on X is introduced into the pond where they do not have any predators.

Which of the following would happen in the pond after 3 weeks?

- (A) Population of X would decrease.
 (B) Population of Y would increase.
 (C) Population of Z would decrease.

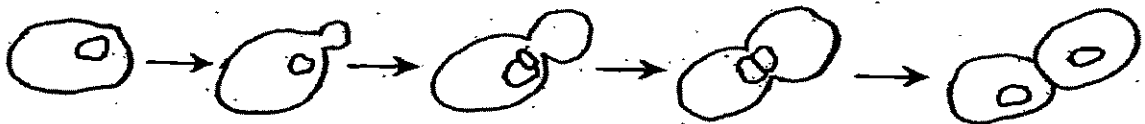
- (1) A only
 (2) A and C only
 (3) B and C only
 (4) All of the above

18. Which of the following are characteristics of sandy soil?

- (A) Is usually wet
 (B) Has large air spaces
 (C) Made up of large particles

- (1) A and B only
 (2) B and C only
 (3) A and C only
 (4) All of the above

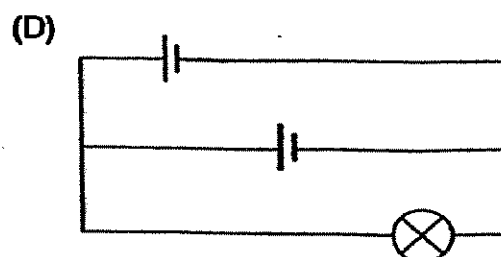
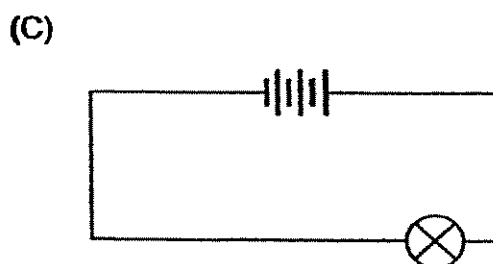
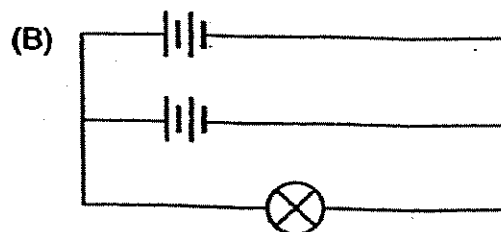
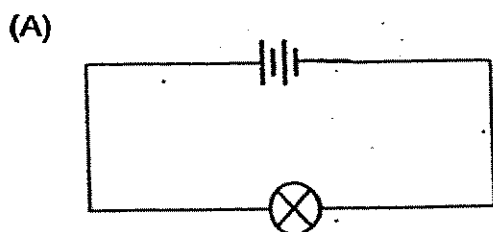
- 19.



The above diagram shows the stages when a yeast cell reproduces.
 Which one of the following statements about reproduction of yeast is not true?

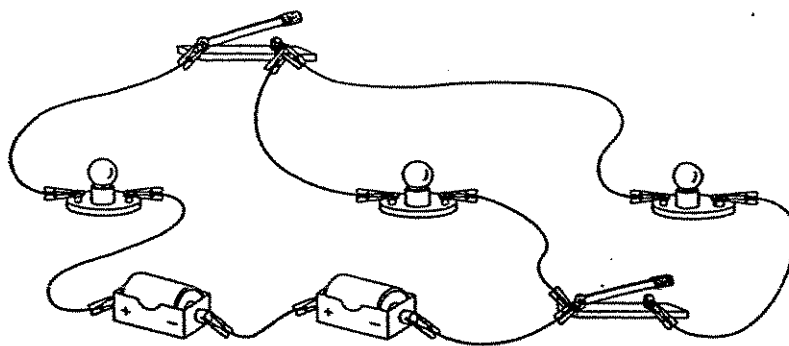
- (1) The new cell is identical to the original cell.
 (2) The new cell and the original cell share the same nucleus.
 (3) Part of the cytoplasm of the new cell comes from the original cell.
 (4) The new cell increases in size and breaks away from the original cell.

20. Miss Tan wasted a lot of time removing the iron filings that were stuck to the bar magnets at the end of her lesson. What do you think she should do to prevent the iron filings from getting stuck directly to the bar magnets?
- (1) Wet the magnets.
 - (2) Smear a layer of oil on each magnet.
 - (3) Wrap the magnets with aluminium foil.
 - (4) Sprinkle the iron filings some distance away from the magnets.
21. Which one of the following statements about reproduction in flowering plants is incorrect?
- (1) Pollination occurs before fertilisation.
 - (2) Pollen grains are produced in the pollen sac.
 - (3) The male cell fuses with the egg cell in the ovule.
 - (4) The pollen grain moves down the style to reach the ovules.
22. Which 2 circuits shown below can be used to show how the arrangement of batteries affect the brightness of the bulb?

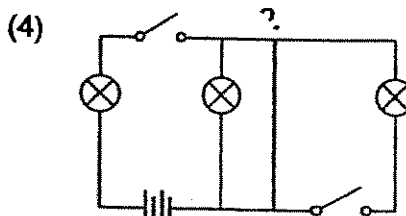
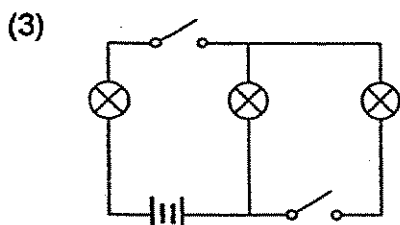
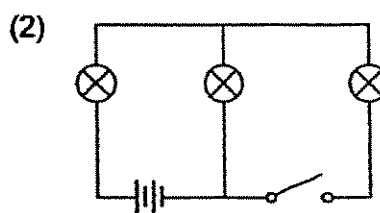
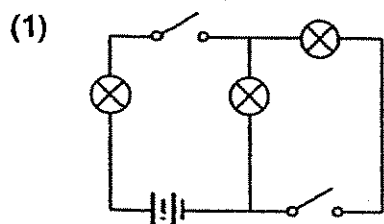


- (1) A and C
- (2) B and C
- (3) A and D
- (4) B and D

23.



Which one of the following circuit diagrams represents the circuit above?



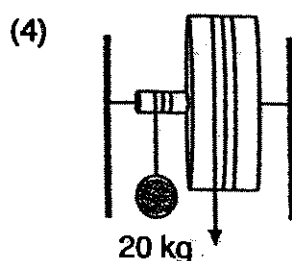
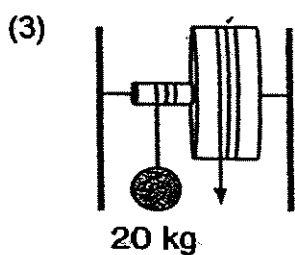
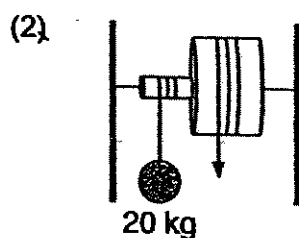
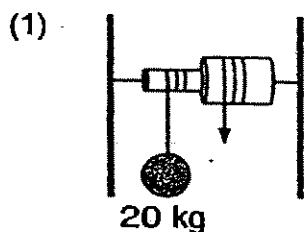
24.

	Papaya	Fern
(A)	Has flowers	No flowers
(B)	A food producer	A decomposer ×
(C)	Produces seeds	Produces spores
(D)	Part of a food chain	Not part of a food chain

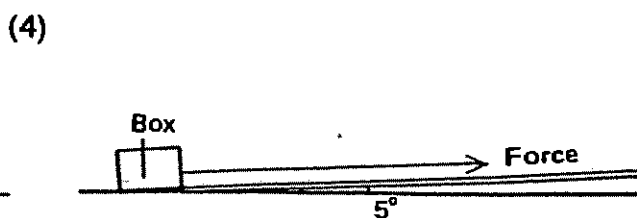
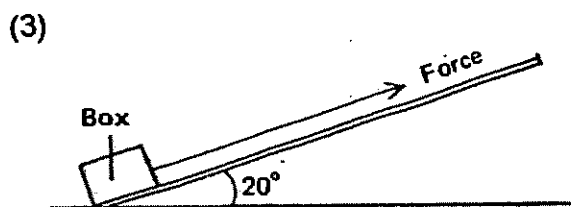
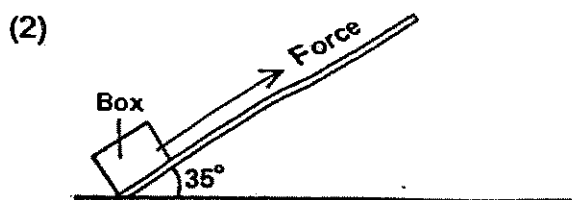
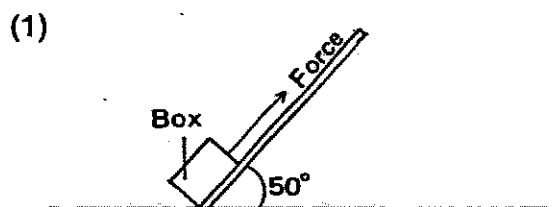
Jolene compared some characteristics of the papaya and the fern in the table above. Which of the comparisons are true?

- (1) A and C only
- (2) B and D only
- (3) A, B and C only
- (4) A, C and D only

25. Shi Wei carried out an experiment to lift the same load using 4 types of wheel and axle. The wheels are of different diameters. Which one of the following would require the greatest effort to lift the load?

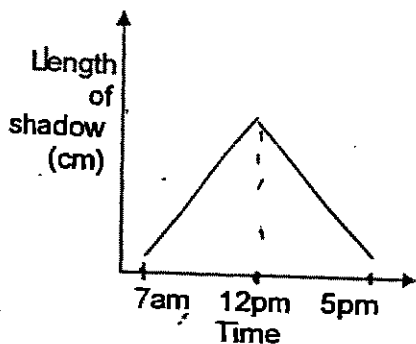


26. Which one of the following requires the least effort to move the box up the inclined plane?

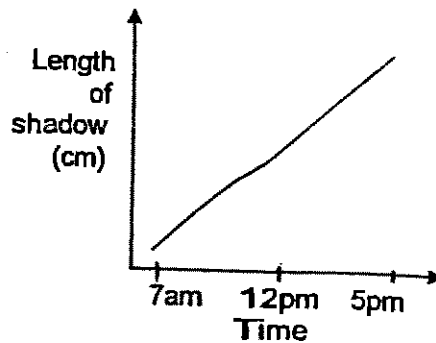


27. Yan Qing measured the length of the shadow of a lamp post at hourly intervals from 7 am to 5 pm. Which one of the following graphs shows correctly the results that Yan Qing obtained?

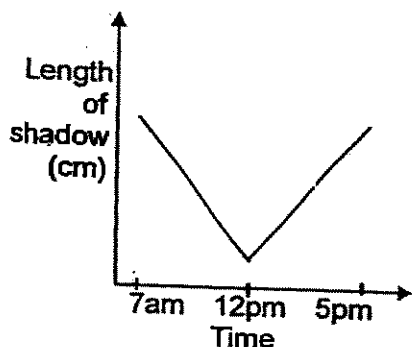
(1)



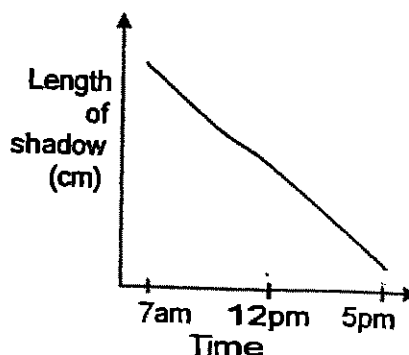
(2)



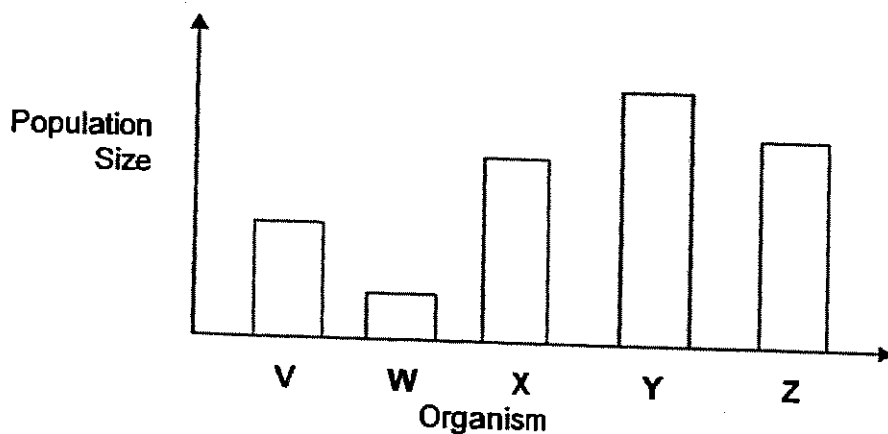
(3)



(4)



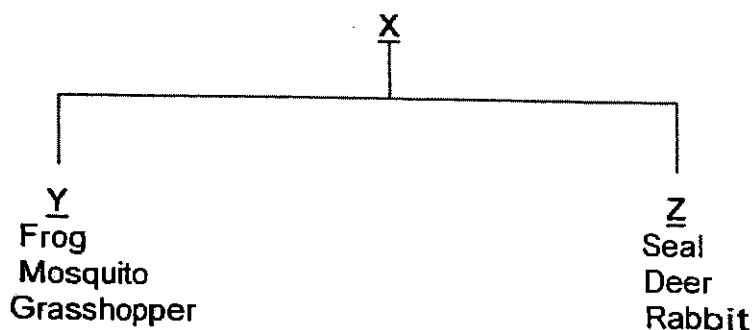
28. The bar graph below shows the populations of 5 organisms, V, W, X, Y and Z, in a food chain in a field community.



Which one of the following is a predator of organism X?

- (1) V
- (2) W
- (3) Y
- (4) Z

29. Study the chart below.



Which one of the following shows how the organisms are grouped?

	X	Y	Z
(1)	Animals	Have wings	Do not have wings
(2)	Number of legs	Has 6 legs	Has 4 legs
(3)	Number of stages in life cycle	4 stages	3 stages
(4)	Methods of reproduction	Lay eggs	Give birth to young

30. Shixuan carried out an experiment to compare the amount of water in 4 different vegetables, A, B, C and D. Firstly, she weighed the vegetables. Then she dried the vegetables in the sun for a few days and weighed them again. She recorded her results in the table below.

Vegetable	Weight before drying (g)	Weight after drying (g)	Difference in weight (g)
A	160	40	120
B	120	48	72
C	120	56	64
D	80	16	64

Which of the following statements is/are true for her experiment?

- (A) Vegetable D has the highest water content.
- (B) Vegetable B has more water than vegetable C.
- (C) Vegetable C has as much water as vegetable D.
- (D) Vegetable A and B have more water than vegetable C and D.

- (1) B only
- (2) A and B only
- (3) C and D only
- (4) A, C and D only

END OF PART 1



Maha Bodhi School
2007 Preliminary Examination
Science

Name : _____ ()

Class : P 6 (_____)

Duration : 1 h 45 min (Parts I & II)

Date : 23 August 2007

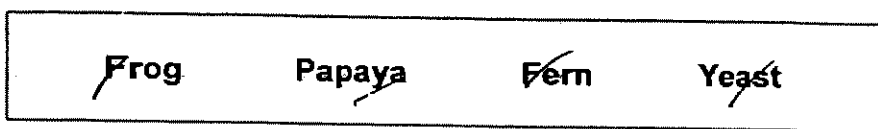
Parent's Signature : _____

Part I (60 marks)	
Part II (40 marks)	
Total (100 marks)	

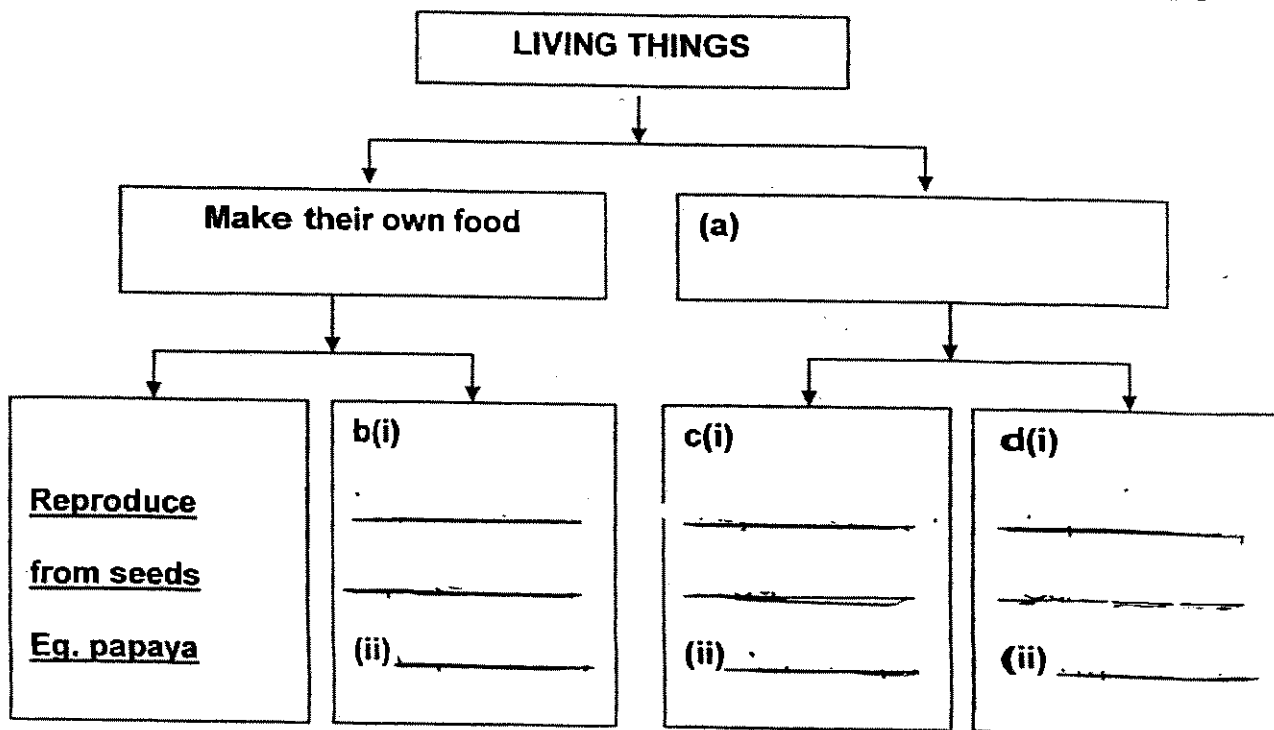
Part II: (40 marks)

Write your answers to questions 31 to 46 in this script.

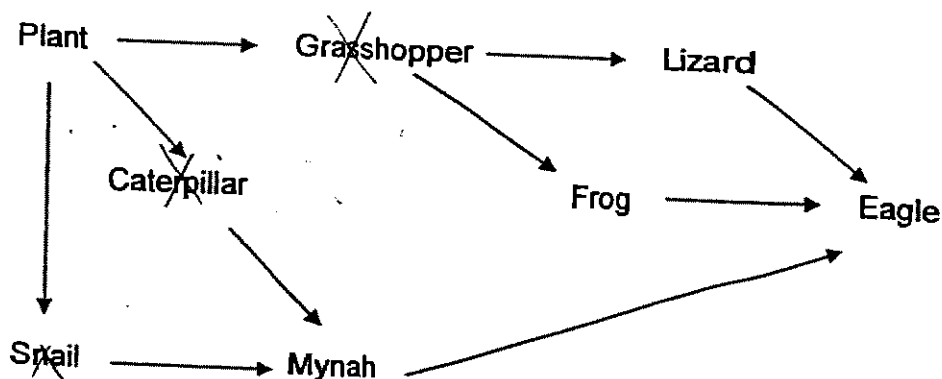
31. Use the chart below to classify the following organisms into 4 groups.
Give an appropriate heading for each group.



[2]



32. Study the food web shown below.



(a) If all the herbivores in the food web were killed, state two possible outcomes for the carnivores. Give a reason for each outcome.

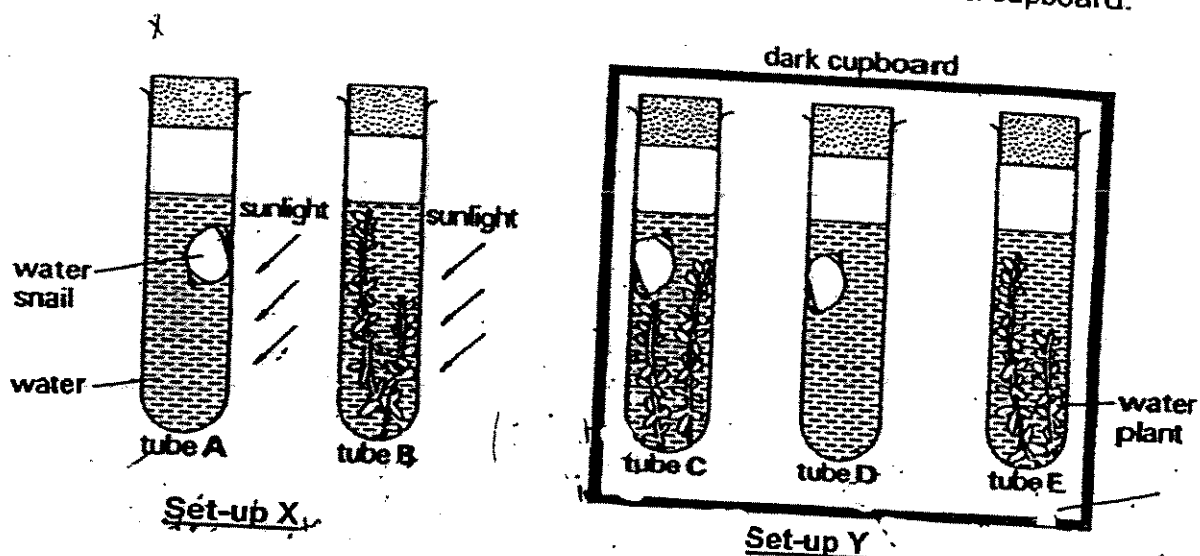
(i) _____

[1,1]

(b) If the different populations in the food web are kept in balance, are there likely to be more lizards or more grasshoppers? Give a reason for your answer.

[½, ½]

33. Ker Shen set up the experiment below. He put Tubes A and B in bright sunlight and Tubes C, D and E in a cupboard.



Three hours later, he measured the amount of carbon dioxide in the water in each tube.

(a) Which tube had the least amount of carbon dioxide? Explain your answer.

[½, ½]

(b) Which tube had the highest amount of carbon dioxide? Explain your answer.

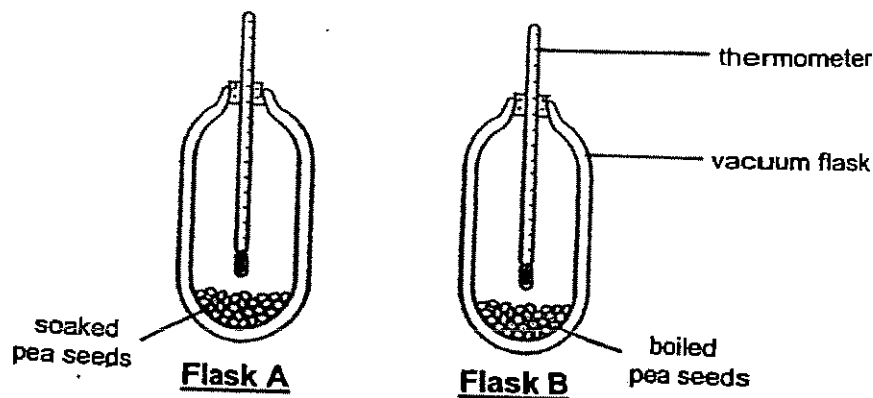
[½, ½]

(c) Ker Shen did not set up any control for his experiment. If he wants to conclude that the change in carbon dioxide in the water is due to the organisms, what kind of control should he have for

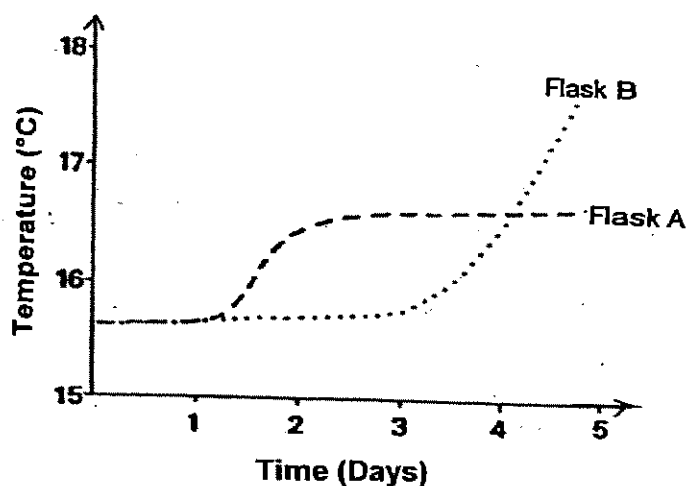
- (i) Set-up X: _____
- (ii) Set-up Y: _____

[½, ½]

34.



Tyne set up an experiment to show that heat is produced when seeds germinate. She recorded the change in temperature in Flask A and B for 5 days and plotted the graphs below.



(a) In which flask did the seeds germinate?

_____ [½]

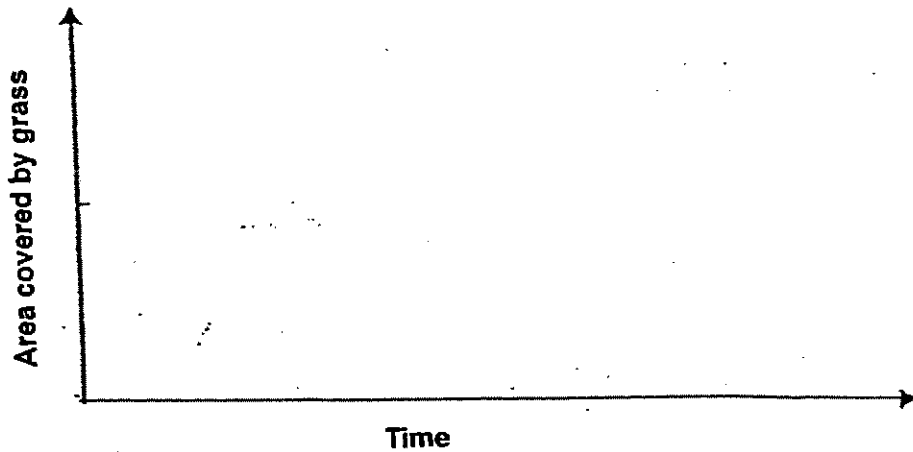
(b) Why did the temperature in Flask B increase after Day 3?

 _____ [1]

(c) Tyne expected a larger increase in temperature in Flask A. Suggest one way she could improve her set-up to obtain a larger increase in temperature after 5 days, without changing the apparatus and the amount of peas used.

 _____ [1]

35. The graph below shows the areas covered by grass in a field.



(a) Mark with an 'X' on the graph above to show when a new animal population was introduced into the field community. [½]

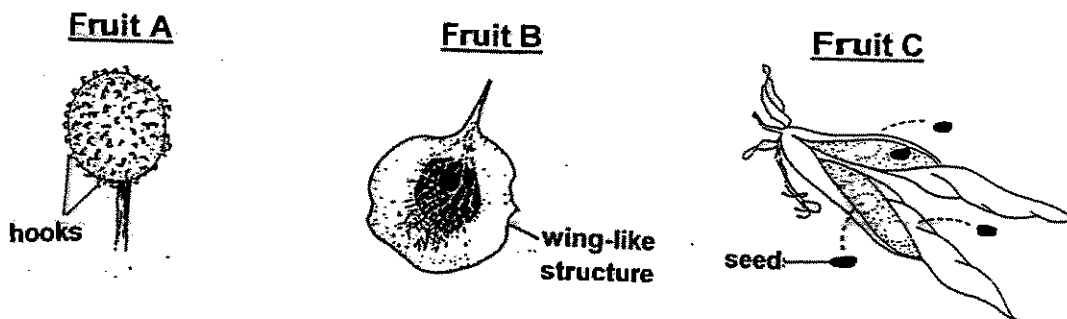
(b) What type of animal do you think was introduced into the field community?

[½]

(c) Explain how this type of animal in (b) could cause the change in the area covered by grass.

[1]

36. The diagrams below show the fruits of 3 different plants.



(a) State how the seeds are dispersed;

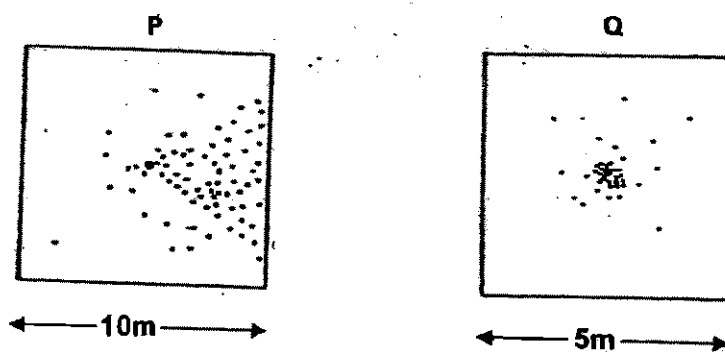
Fruit A: _____

Fruit B: _____

Fruit C: _____

[1½]

The dispersal patterns P and Q, of the seeds are shown below.



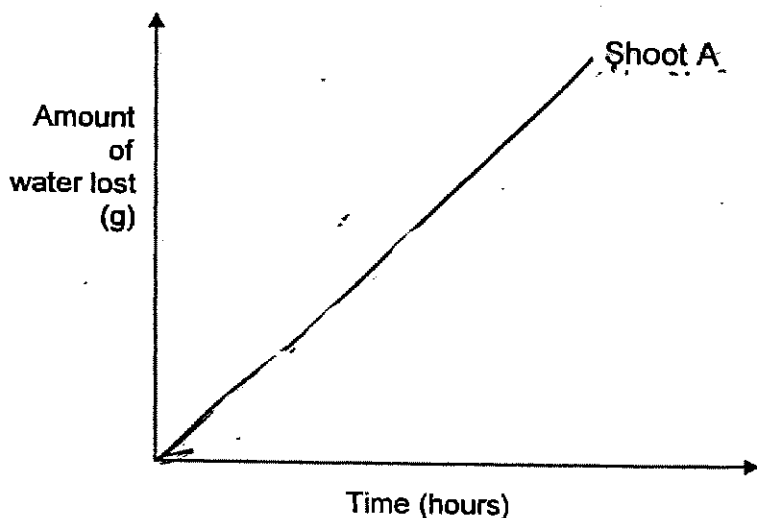
(b) Complete the table below to show which dispersal pattern relates to the seeds of Fruits B and C above and give a reason for each answer.

Seeds of fruit	Dispersal Pattern	Reason
B		
C		

[2]

37. Eileen carried out an experiment to investigate loss of water from 3 similar leafy shoots placed in the same room. The leafy shoots were treated as follows:

Shoot	Treatment
A	Upper leaf surface covered with waterproof vaseline
B	Lower leaf surface covered with waterproof vaseline
C	Untreated



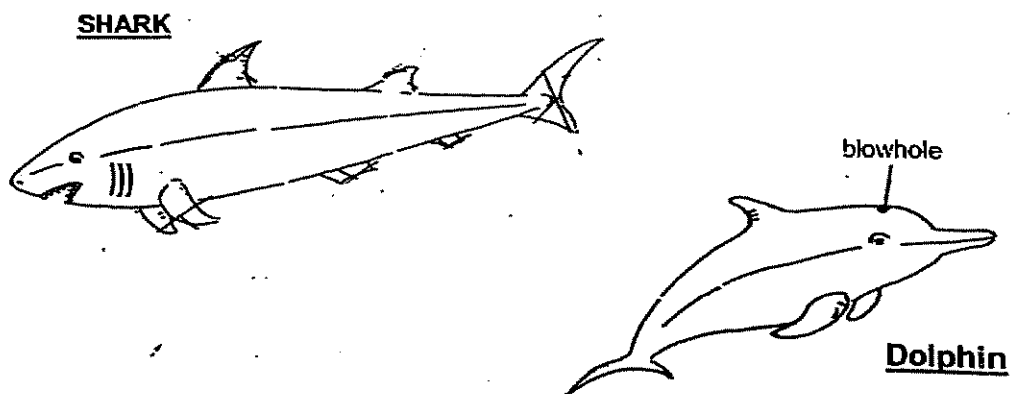
- (a) The graph above shows the water loss from Shoot A. Use the same axes above to draw and label the graphs for water loss from Shoot B and Shoot C. [2]

- (b) Eileen observed that there was no significant difference in loss of water in shoots A and C. Explain Eileen's observation.

- (c) A similar shoot D that was untreated was left in another room. Eileen observed that the amount of water lost was much higher than shoots A, B or C. Give one possible reason for her observation.

[1]

38.



(a) Mark 'X' on all the parts of the shark's body that help it to keep balance and move forward. [2]

(b) In the diagram above, the nostril of the dolphin (blowhole) is located at the top of its head.
What is the advantage of having the nostril at this position?

[1]

39. Priscilla wants to find out the least number of batteries that would cause the bulb in a circuit to fuse.

She is given 5 new batteries of the same type, some wires and a bulb.

She suggests the method below to carry out this investigation.

Priscilla's Method	
Step 1	Connect 5 batteries to the circuit
Step 2	Remove one battery from the circuit
Step 3	Observe whether the bulb lights up
Step 4	Repeat steps 2 and 3 until the bulb fuses

(a) Her teacher said that her method is not correct. Explain why her method is not correct.

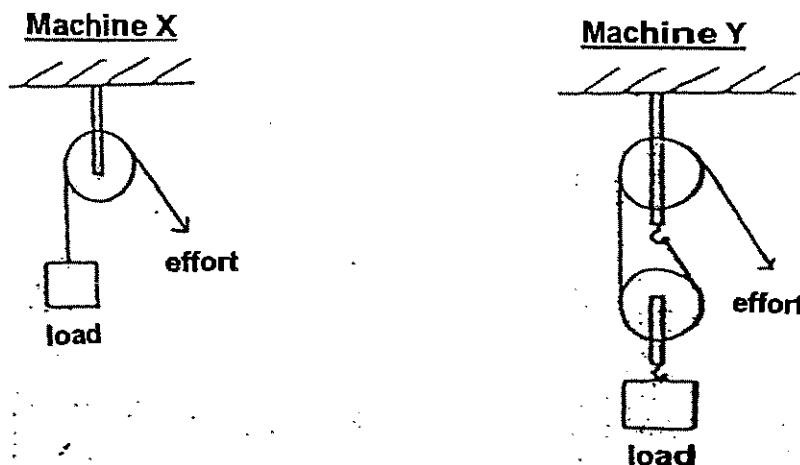
[1]

(b) How could you improve on her method? Write down the steps for your investigation in the table below. The number of steps is not fixed.

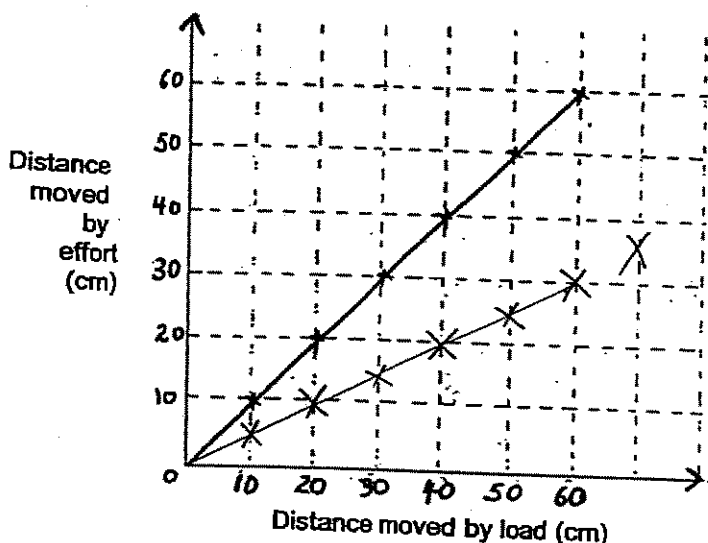
YOUR METHOD	
Step 1	

[1]

40.



The graph below shows the distance moved by the load and effort of one of the machines above.



(a)(i) Which one of the machines, X or Y, would produce the result shown on the graph?

_____ [½]

(ii) How does the machine in (a) make work easier?

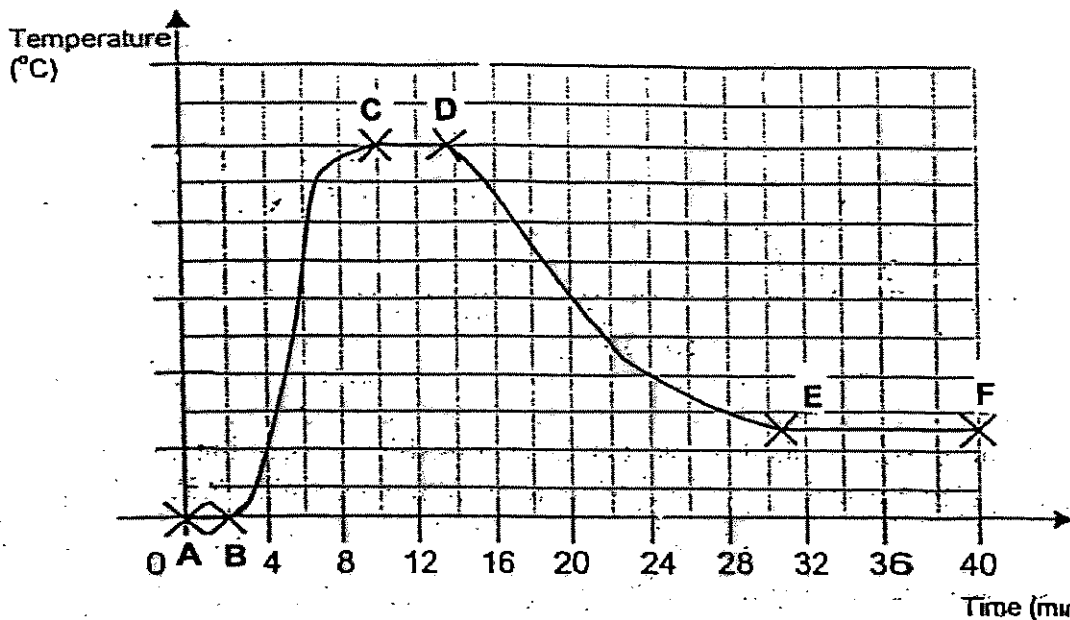
 _____ [½]

(b) Use the same axes above to plot and label the graph for the other machine not named in (a) above.

[1]

41. Richard heated a container of ice cubes until boiling occurs. He turned off the flame and left the contents in the container to cool in the room.

He measured the temperature in the container at 2-minute intervals for 40 minutes and plotted the graph shown below.



- (a) Mark 100° C on the axis of the graph. [½]

- (b) Why does the temperature of water remain constant at EF?

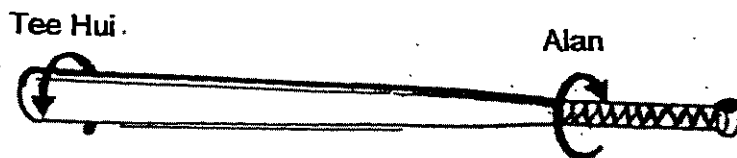
_____ [½]

- (c) Determine the heat change at each section of the graph by putting a tick (✓) in the appropriate boxes in the table below.

	Heat Lost	Heat gained	Heat is neither lost nor gained
AB			
BC			
DE			
EF			

[2]

42. Tee Hui and Alan applied equal amount of force to twist the bat in the direction shown.



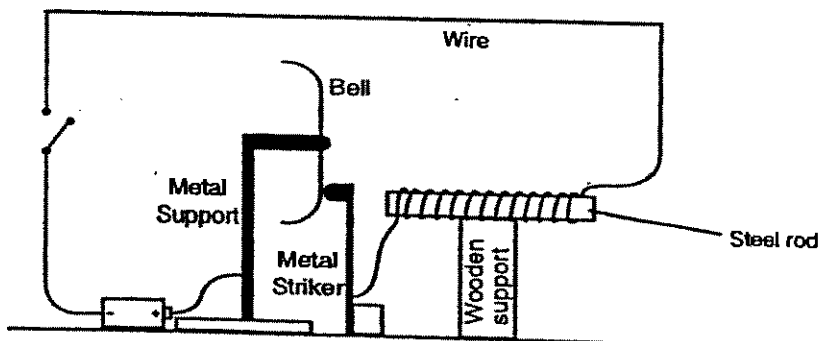
- (a) Who is likely to make the bat turn more?

_____ [½]

- (b) Explain your answer in (a) above.

 _____ [1]

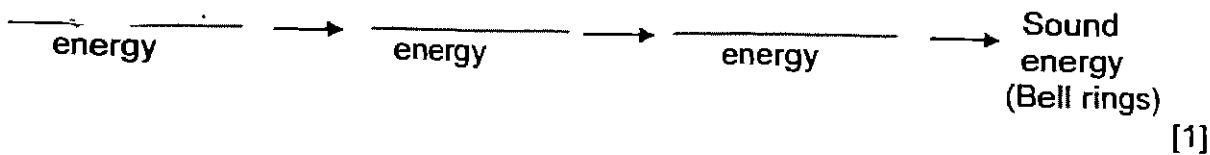
43. Study the set-up carefully.



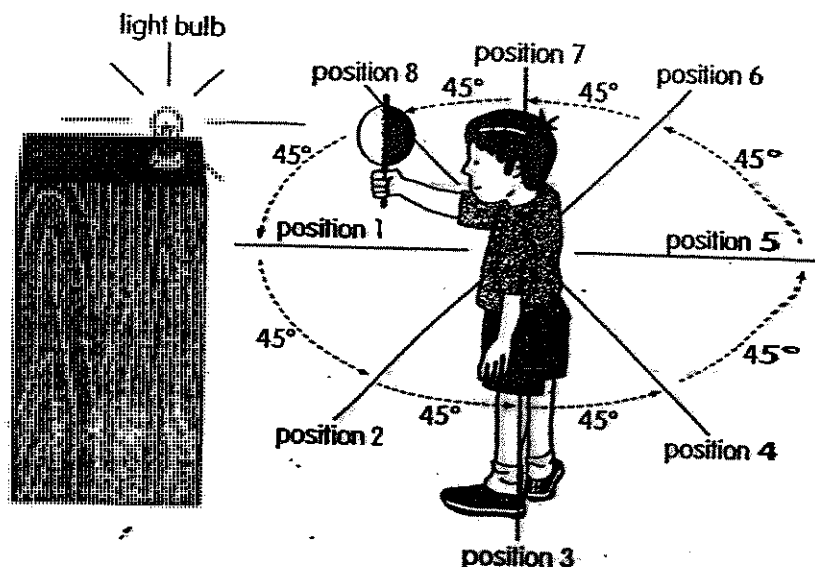
- (a) Explain why the metal striker is pulled towards the steel rod when the switch is closed.

 _____ [1]

- (b) Trace the energy change that should occur for the bell to ring.



44.



The diagram above shows an experiment that Ryan carried out in a dark room to simulate the phases of the moon. He used a light bulb to represent the Sun and a styrofoam ball mounted on a stick to represent the Moon.

At Position 1, he observed the half of the ball that is facing him. Then he turned to Position 2. Again he observed the half of the ball that is facing him. He repeated his observation as he moved to each position.

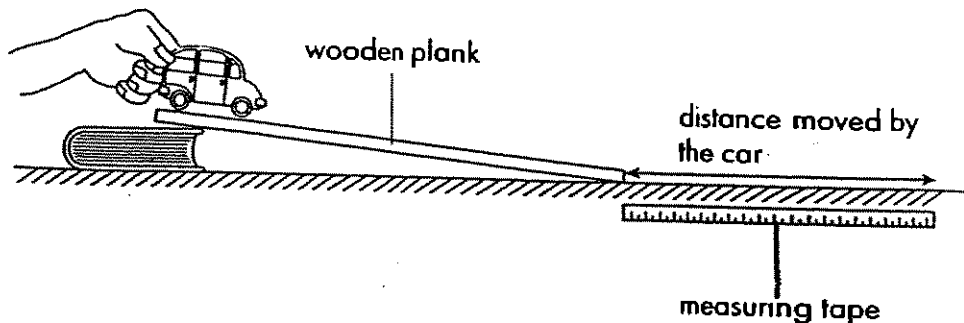
- (a) Complete the table below to show the lighted part of the ball in each position. The lighted part of the ball in Position 2 has been drawn for you. Your drawing must be of proportionate size as in the given example. [1]

Position	Draw the lighted part of the ball
2	
5	
7	

- (b) Which position represents the phase when the Moon cannot be seen on Earth?

[½]

45.



Mathew set up the experiment above to find out if (the height of the ramp affects the distance a toy car moved along the ground.)

He used the same toy car and released it in the same way from a fixed starting point on the ramp. He recorded the distance moved by the toy car along the ground using a measuring tape in the table below.

Height of ramp (cm)	Distance moved by toy car along the ground (cm)			
	1 st try	2 nd try	3 rd try	Average
10	34	33	38	35
15	48	52	53	51
25	89	84	88	87

(a) Why did Mathew take 3 readings for each height?

[½]

(b) Keith said that Mathew did not conduct a fair test?

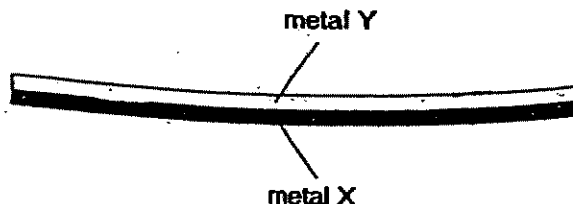
(i) What is meant by a fair test?

[1]

(ii) Was Keith correct? Give a reason for your answer.

[½, ½]

46. Dun Jie joined 2 metal strips of the same size together to form a bar. He heated the metal bar for 2 minutes. He observed that it bent as shown below.



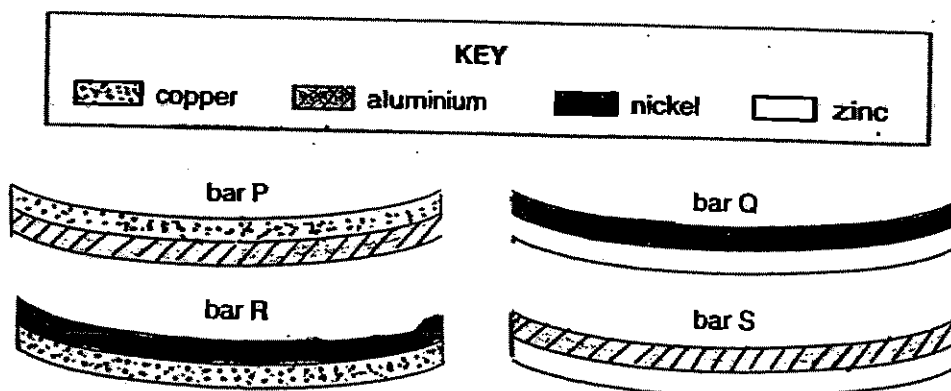
- (a) Which metal strip, X or Y, expanded more? Explain your answer.

[½, ½]

- (b) What conclusion can Dun Jie make about the expansion of metals when heated?

[1]

Next Dun Jie heated 4 of the metal bars below for 2 minutes each. His results are shown below.



- (c) Arrange the metals in order, starting from the metal that expands the least to the metal that expands the most when heated.

END OF PAPER

[1]



ExamSutra 考试圣经

Answer Sheets

Maha Bodhi / Pri 6 SA2/2007 Science

1)2	2)2	3)3	4)3	5)4	6)3
7)3	8)2	9)1	10)3	11)3	12)1
13)2	14)1	15)3	16)2	17)2	18)2
19)2	20)3	21)4	22)3	23)1	24)1
25)1	26)4	27)3	28)1	29)4	30)2

31)a. cannot make their own food.

31)b.i.Reproduce from spores ii.eg.fern

31)c.iReproduce from eggs ii.eg.frog

31)d.i.Reproduce by budding ii.eg.yeast.

32)a.i.The carnivores will die as they do not have any food to eat, when the herbivore are killed.

32)a.ii.The carnivores may eat each other or turn to eat other sources of food in an attempt to survive as they do not have any food left to eat when the herbivore are killed.

32)b.There are likely to be more grasshoppers. The grasshoppers are the prey of the lizards and if there are more lizards than grasshoppers, the grasshoppers will extinct as they will be eaten up by the lizards quickly.

33)a.Tube B. As Tube B only had plants in the tube and was left in the sunlight, the plant photosynthesize to take in carbon dioxide and give out oxygen, while the other living things in the other tubes respire and give out carbon dioxide, so Tube B had the least amount of carbon dioxide.

33)b.Tube C. Tube C had two living organisms inside that ewere respiring to take in oxygen and give out carbon dioxide while the other test tubes had only one living organism. As both organisms were giving out carbon dioxide, the carbon dioxide in the test-tube will be higher than the rest.

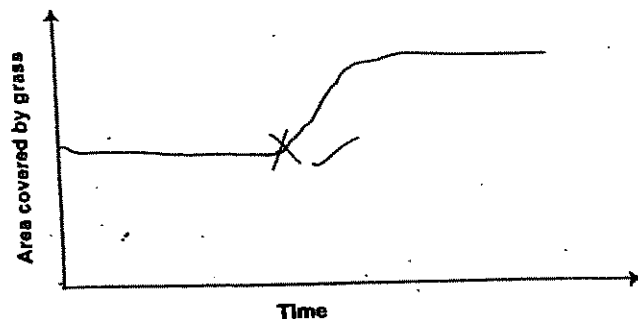
33)c.i.Tube with water only (In sunlight)

33)cii.Tube with water only (in dark)

34)a. Flask A 34)b. It started to decompose and heat is produced.

34)c. Invert the flask and put the bulb of the thermometer near where the seeds are.

35)



35)b. A predator of the herbivore.

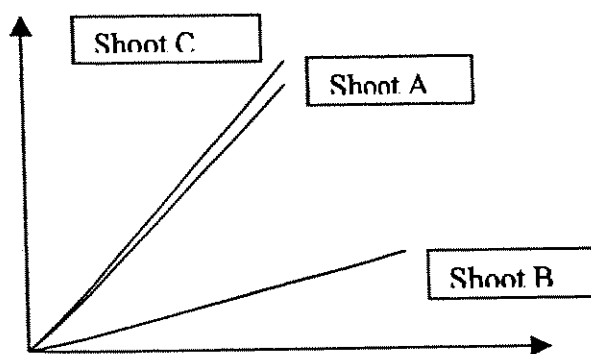
35)c. The predator of the herbivore will feed on the herbivore, decreasing its population. This will mean there will be less herbivores to feed on the grass, causing the area covered by grass to increase.

36)a. Fruit A: by animals Fruit B: by Wind Fruit C: By Splitting

36)b. Seeds of Fruit B (Reason): The seeds are dispersed in general wind direction with the wind blowing from the left to the right.

Seeds of Fruit C (Reason): The seeds are not dispersed in any general direction but just spread out randomly when the fruit splits.

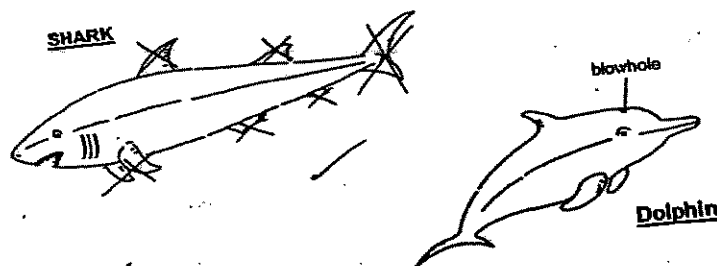
Q37a)



Q37b) The upper leaf surface only contains very little stomata as compared to the underside. Thus, in shoot A where the Vaseline is applied only on the

upper side, the Vaseline only reduced the amount of water loss by a little as compared to the untreated Shoot C.

Q37c) The temperature that shoot D was placed in was much higher than that of the room where shoots A, B and C are placed in. The leaves of shoot D try to cool down rapidly by losing water through the stomata.

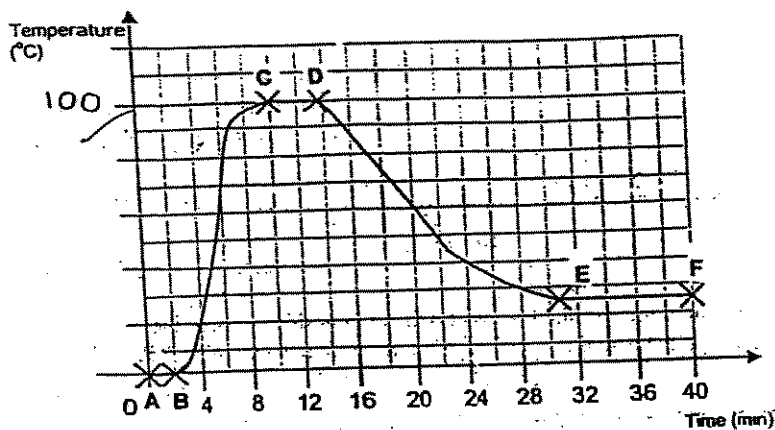


38) It can breathe in the atmospheric air without having to surface entirely as the dolphin can just stick the blowhole out of the water.

39a) Her method is not correct as the bulb would have fused immediately when she started the experiment with the maximum number of 5 batteries.

- 39)b. step 1: connect 1 battery to the circuit
 step 2: Observe if the bulb lights up.
 step 3: If yes, add one more battery to the circuit.
 Step 4: observe again if the bulb lights up.
 Step 5: Repeat Steps 3 and 4 until the bulb fuses.

40)a.i. Machine X ii. It changes the direction of the effort.
 41)



41)b. The water has cooled down to room temperature.

- 41)c. AB - Heat gained.
 BC - heat gained
 DE - heat lost
 EF - heat is neither lost nor gained

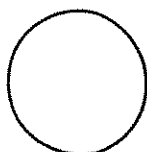
42)a. Tee Hui

42b) Tee Hui is holding onto the larger side of the bat (wheel of the wheel and axle). As such Tee Hui is able to do more work with less effort as he exerts strength on his side, turning the bat more.

43)a. When the switch is closed, there is electric current in the circuit and the steel rod which is wrapped with wire will be a temporary magnet, so it will attract the metal striker.

43)b. Chemical energy → electrical energy → kinetic energy → sound energy (bell rings)

44a) Position 5:



Position 7:



44b) Position 1

45 a) He wanted to make sure that his results were reliable.

45 b) (i) A fair test would mean that all the variables are kept the same except for the variables that the experiment was testing for.

45 b) (ii) No. Keith had kept only the variable to be tested, the height of the ramp, different. Throughout the experiment, other variables such as the wooden plank, way of release and starting point on the ramp were all kept the same throughout.

46 (a) Metal X. Greater expansion of metal X caused the strip to bend away from metal X, bending towards metal Y.

46(b) Different metals expand at different rates upon heating.

46(c) nickel, copper, aluminium, zinc

**NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 1 2007
SCIENCE
PRIMARY SIX**

Name : _____ ()

Section A: _____ / 60

Class : Primary 6 _____

Section B: _____ / 40

Date : 1 March 2007

Total Marks: _____ / 100

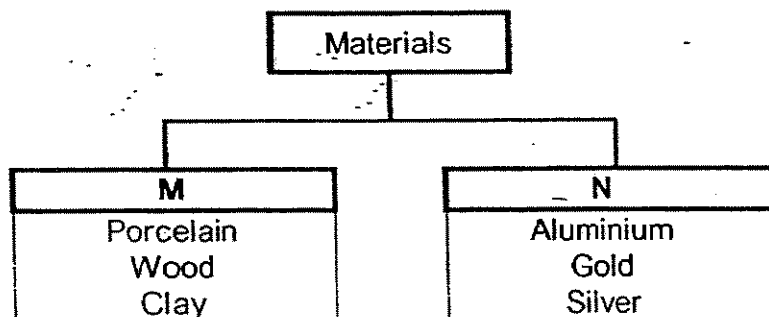
Duration : 1 hr 45min

Parent's Signature:

Section A: (30 X 2 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

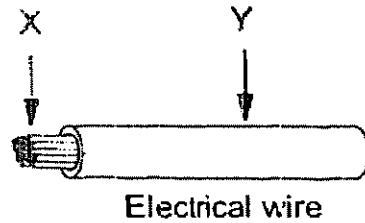
1. Look at the classification table below.



Which one of the following correctly shows the properties of materials M and N?

	M	N
(1)	Electrical insulators	Electrical conductors
(2)	Flexible	Non-flexible
(3)	Transparent	Opaque
(4)	Non-magnetic	Magnetic

-2.



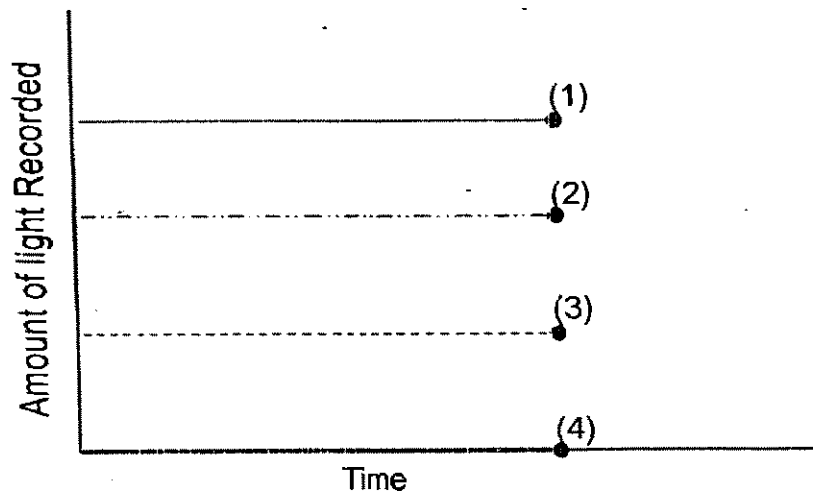
- The diagram above shows an electrical wire with parts labelled X and Y. Which of the following are suitable properties of X and Y?

	X	Y
(1)	Opaque	Transparent
(2)	Heat insulator	Heat conductor
(3)	Electrical conductor	Electrical insulator
(4)	Non-magnetic	Magnetic

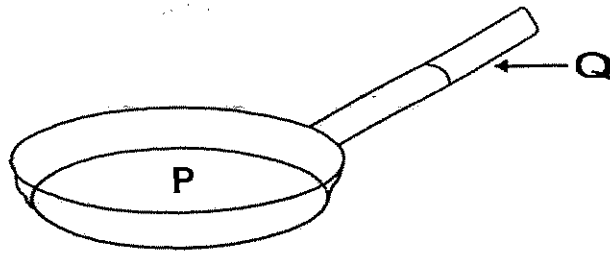
- 3. John conducted an experiment to investigate the amount of light that passes through four materials, A, B, C and D. A light meter is used to measure how much light has passed through the materials.

Item	A	B	C	D
Material	Spectacle lens	Aluminum Foil	Tracing paper	Frosted Glass

The graph below shows the amount of light recorded by the light meter. Which line shows the result for item B.



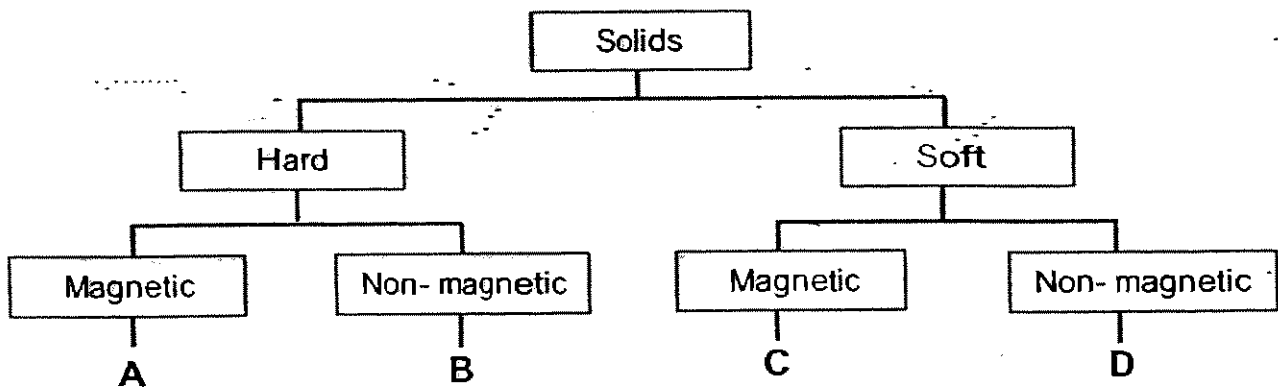
- 4. Mrs Tan wants a rust-proof frying pan which is able to conduct heat quickly. She
- also wants to be able to hold the frying pan without burning her hand.



What should the parts, P and Q of the frying pan be made of?

	P	Q
(1)	Steel	Plastic
(2)	Iron	Steel
(3)	Ceramic	Rubber
(4)	Copper	Iron

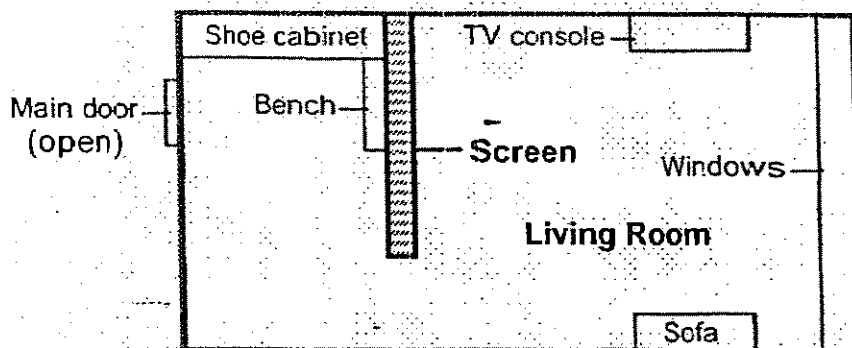
5. Look at the classification table below.



Where should 'diamond' be placed?

- (1) A
- (2) B
- (3) C
- (4) D

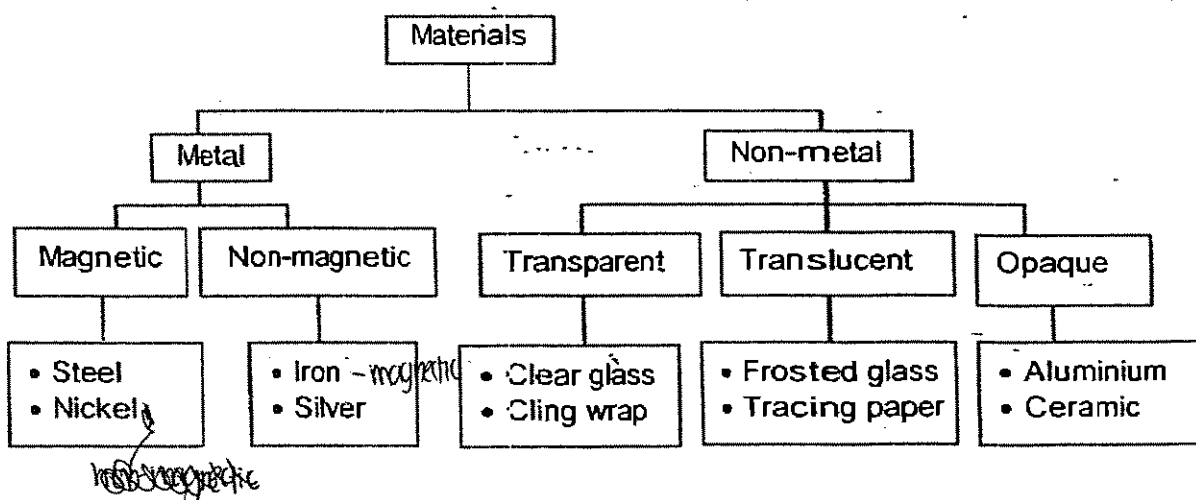
6. Mr Sim wants to construct a screen in his living room to ensure that he can have some privacy in the living room while leaving the main door open. He also wants to ensure that the area where the shoe cabinet and bench are placed is able to receive ample light from the living room.



Which of the following properties should the screen have in order to meet Mr Sim's requirements?

Properties of material used to make the screen					
	Transparent	Translucent	Opaque	Fragile	Strong
(1)	✓			✓	
(2)	✓				✓
(3)			✓		✓
(4)		✓			✓

7. Study the classification chart below carefully.



Which of the above materials are classified wrongly?

- (1) Iron and silver.
- (2) Silver and aluminium
- (3) Nickel and frosted glass
- (4) Iron and aluminium

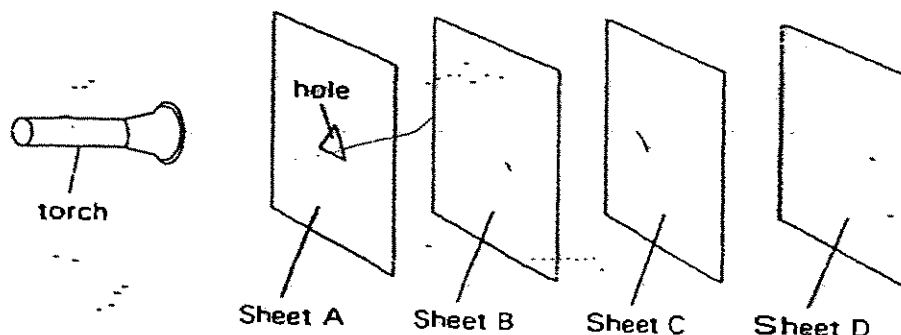
8. The table below shows living things X, Y and Z and their characteristics.

Living things	Characteristics
X	Absorbs food from dead organisms
Y	Able to make its own food
Z	Able to move freely from place to place

Which one of the following best classify the three living things?

	X	Y	Z
(1)	Plant	Animal	Fungi
(2)	Fungi	Plant	Animal
(3)	Animal	Fungi	Plant
(4)	Animal	Plant	Fungi

9. The experiment shown below is carried out in a dark room.

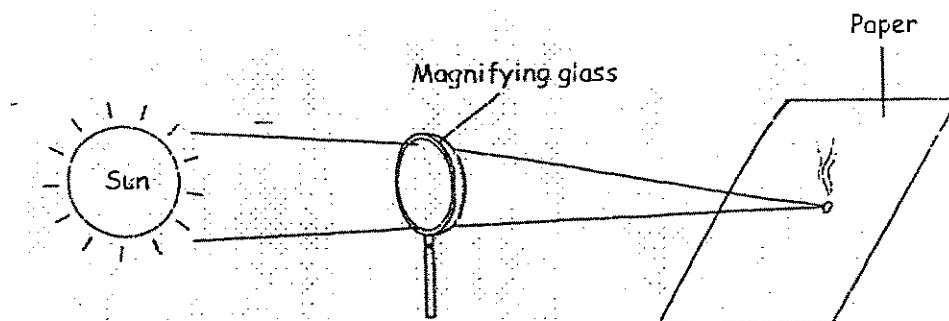


Sheets A, B, C and D are arranged in a straight line. When the torch is switched on, a bright triangular patch of light is seen on Sheet C only.

Which one of the following correctly describes the properties of the materials that sheets A, B, C and D are made of?

	Allows light to pass through	Does not allow light to pass through	Not possible to tell
(1)	A and B	D	C
(2)	A and D	C	B
(3)	B	C	A and D
(4)	B	A and C	D

10.



In the setup above, the magnifying glass is used to set the paper on fire. What energy conversion occurred in this experiment?

- (1) Solar energy to light energy.
- (2) Light energy to heat energy.
- (3) Heat energy to light energy
- (4) Light energy to chemical potential energy.

11. Which one of the following energy changes take place when a metal spoon is rubbed on the table?

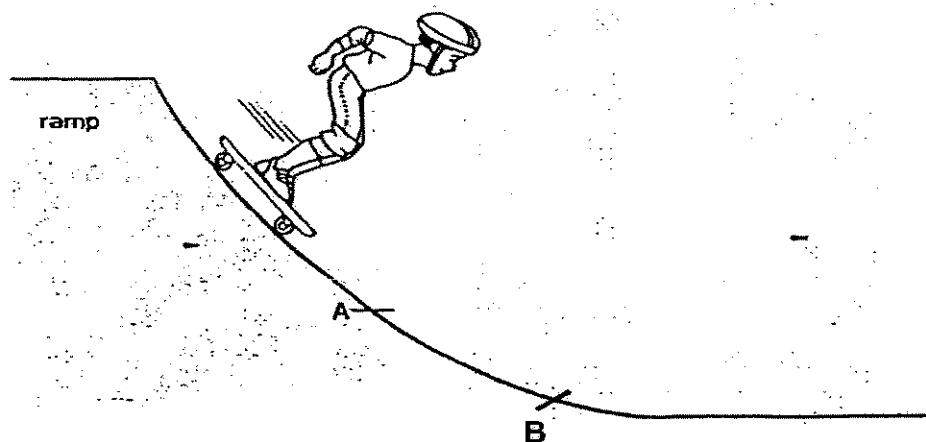
- (1) kinetic energy \longrightarrow sound energy
- (2) kinetic energy \longrightarrow heat energy + sound energy
- (3) potential energy \longrightarrow heat energy
- (4) potential energy \longrightarrow heat energy + sound energy

12. Which of the following possess potential energy?

- A : Compressed air in a rifle
 B : A piece of coal
 C : Water in the rooftop tank

- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) A, B and C

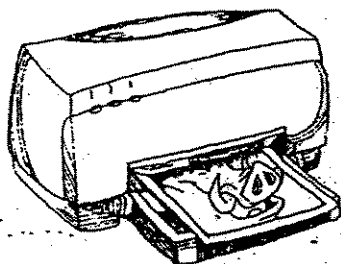
13. Raimie rode a skateboard down a ramp as shown in the diagram below.



Which one of the following describes the changes in the potential and kinetic energy from A to B?

	Potential Energy	Kinetic Energy
(1)	Decreases	Decreases
(2)	Decreases	Increases
(3)	Increases	Increases
(4)	Increases	Decreases

14. The picture shows a colour printer.

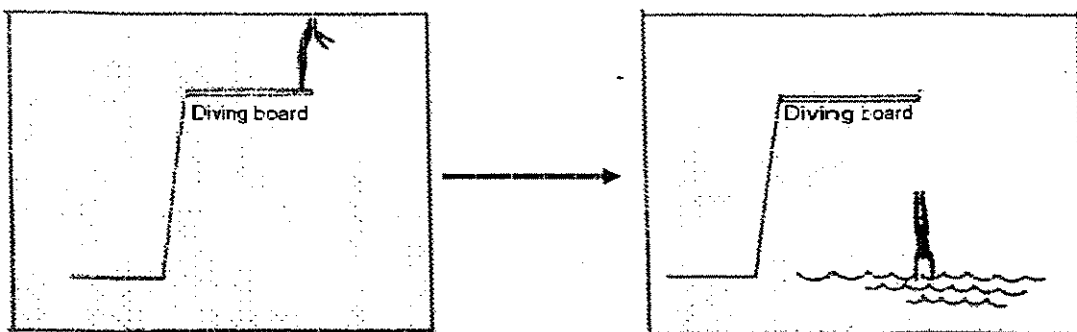


When this machine is working, it converts electrical energy into _____.

- A Sound energy
- B Heat energy
- C Kinetic energy

- (1) A and B only
- (2) B and C only
- (3) A and C only
- (4) A, B and C

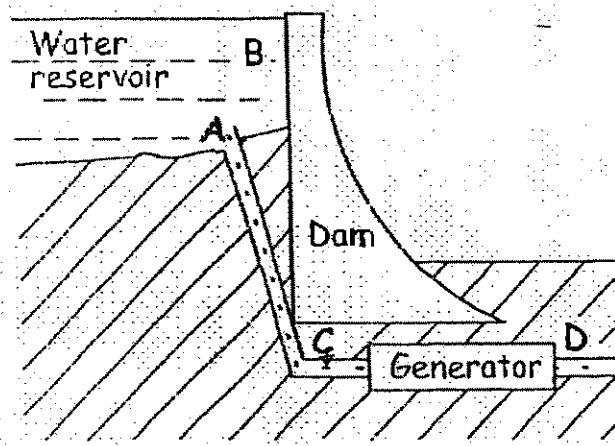
15. The diagrams below show Marcus diving off the diving board into the water.



Which one of the following options below best indicates the energy conversions that take place when Marcus dives off the diving board into the water?

- (1) Gravitational potential energy \longrightarrow Kinetic energy \longrightarrow Sound energy
- (2) Kinetic energy \longrightarrow Gravitational potential energy \longrightarrow Sound energy
- (3) Kinetic energy \longrightarrow Sound energy \longrightarrow Gravitational potential energy
- (4) Kinetic energy \longrightarrow Chemical potential energy \longrightarrow Sound energy

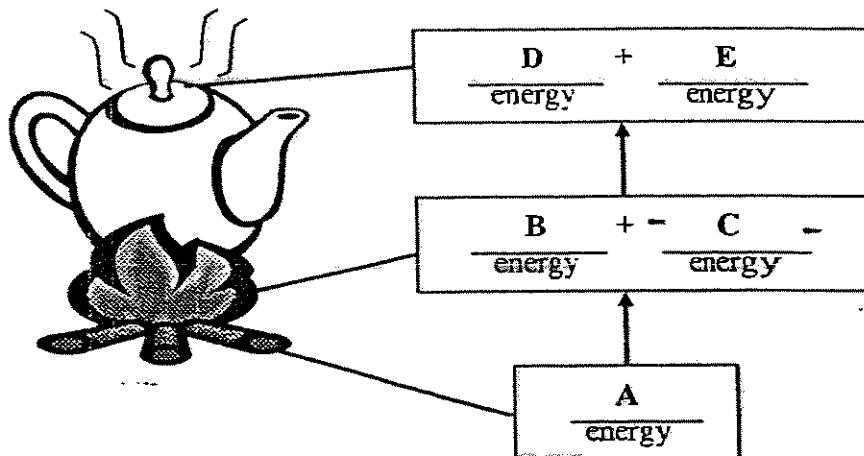
16.



The above diagram shows the cross-section of a water dam. At which point is the kinetic energy the greatest?

- (1) A
- (2) B
- (3) C
- (4) D

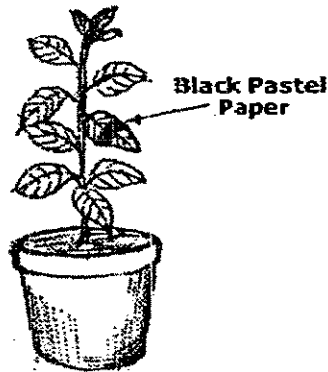
17. Jane put a pot of water over some burning wood. After some time, the water began to boil and she heard the lid of the pot rattling.



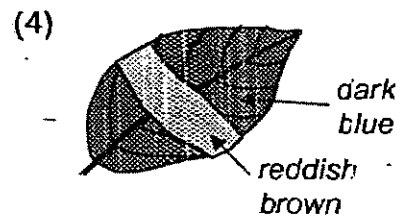
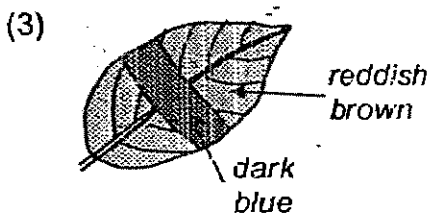
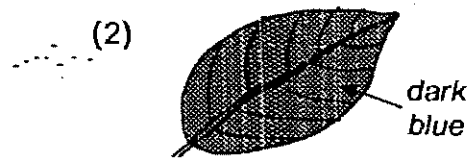
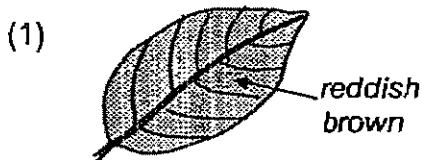
Which one of the following shows the correct conversion of energy?

	A	B	C	D	E
(1)	kinetic	heat	light	potential	sound
(2)	kinetic	potential	sound	heat	light
(3)	potential	heat	light	kinetic	sound
(4)	potential	kinetic	sound	heat	light

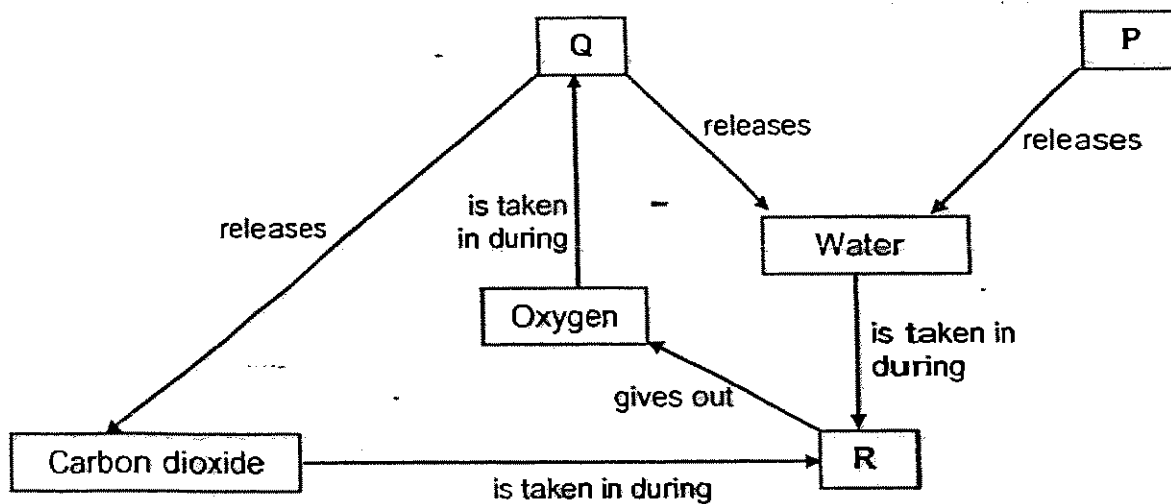
18. Siva covered one of the leaves of his green plant shown below with black pastel paper. He then kept the plant in a dark place for 2 days. After 2 days of darkness, he put the plant in a bright sunny place for a day. At the end of the day, Siva conducted an iodine test on the leaf.



Which one of the diagrams below shows the result of the test?



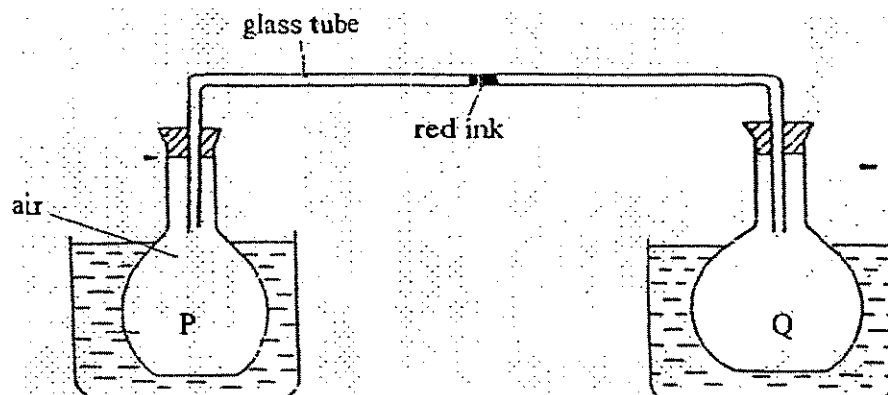
19. Study the diagram below carefully. P, Q and R describe three processes carried out by plants.



Which of the following processes represents P, Q and R as shown in the diagram?

	P	Q	R
(1)	Photosynthesis	Respiration	Transpiration
(2)	Transpiration	Photosynthesis	Respiration
(3)	Transpiration	Respiration	Photosynthesis
(4)	Respiration	Transpiration	Photosynthesis

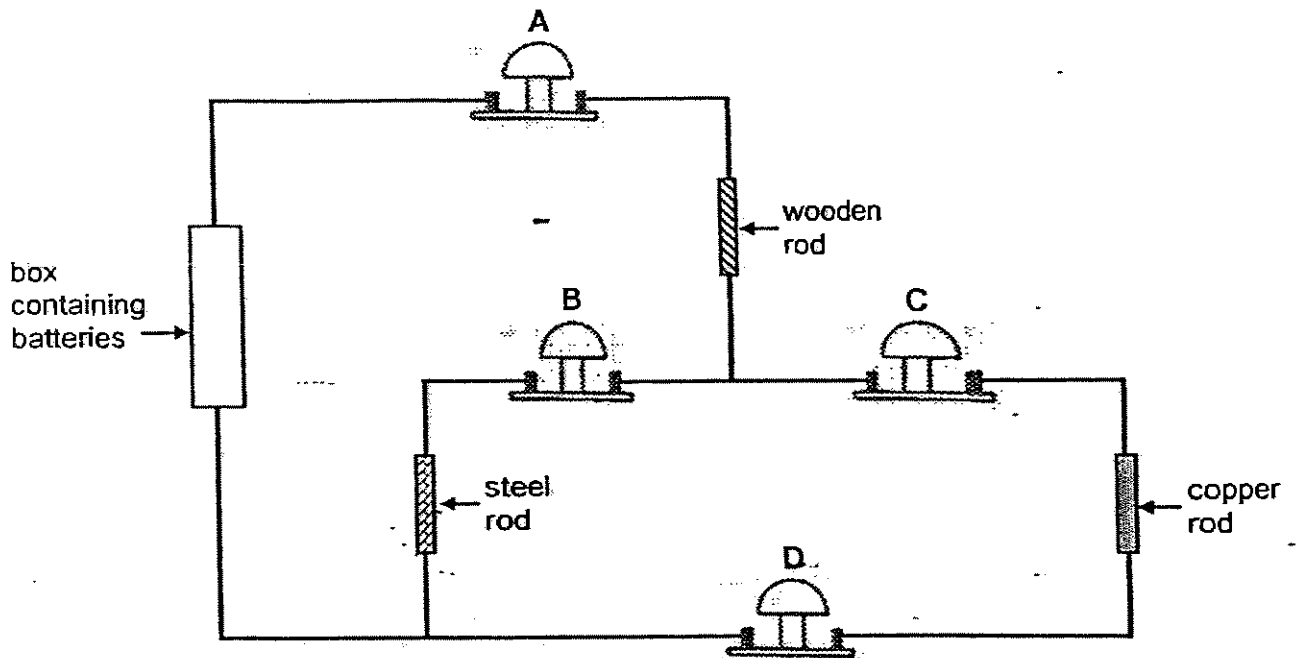
20. In the following setup, a drop of red ink is placed in the glass tube connecting the two flasks, P and Q.



Each flask is placed in a basin of water. Which arrangement will make the drop of ink move by the longest distance towards Flask P?

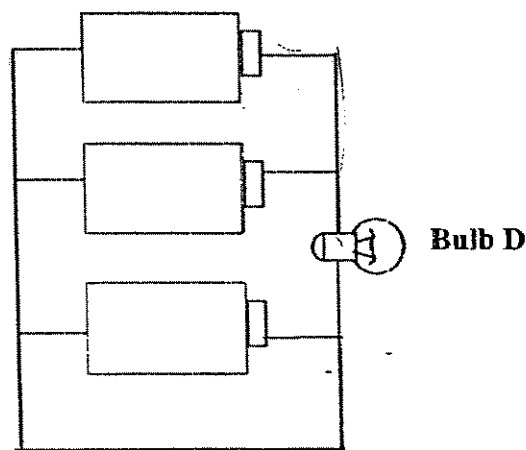
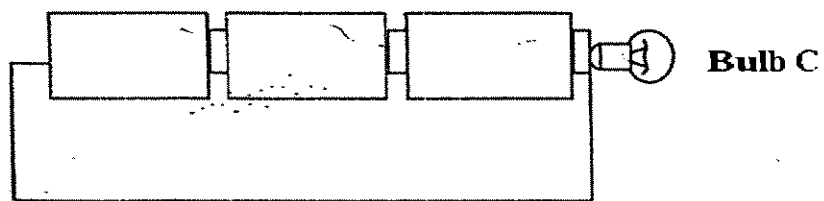
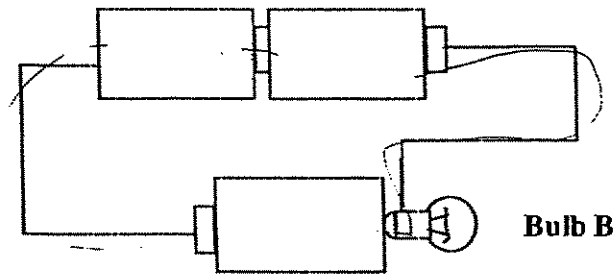
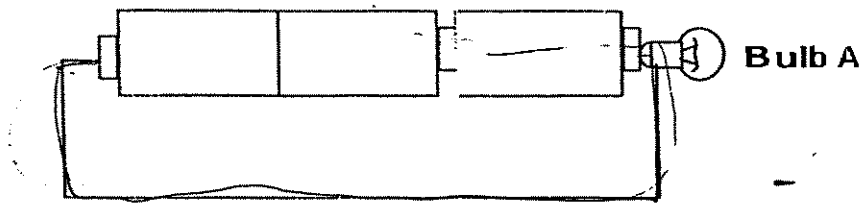
	P placed in a basin of...	Q placed in a basin of...
(1)	Ice water	Water at 90°C
(2)	Ice water	Water at room temperature
(3)	Water at room temperature	Ice water
(4)	Water at 90°C	Ice water

21. The diagram below shows 4 bells A, B, C and D in a circuit that is connected correctly. Which of these bells will ring?



- (1) A, C and D only
- (2) B, C and D only
- (3) All of the bells
- (4) None of the bells

22. Three new batteries and a new bulb are used to form the following circuits.

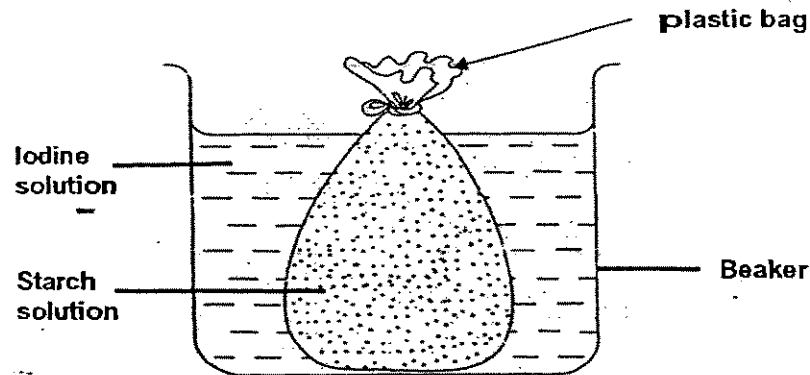


Which of the above bulbs will light up?

- (1) A and B only
- (3) B and D only

- (2) B and C only
- (4) C and D only

23. Amy set up an experiment as shown below. She filled a plastic bag with starch solution. The bag is placed into a beaker containing water with some brown iodine solution.



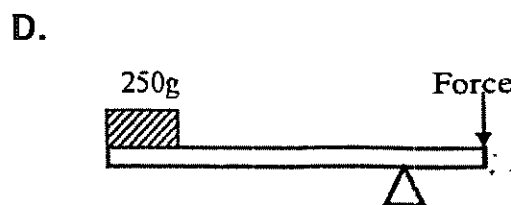
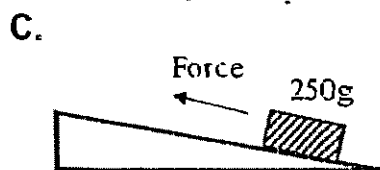
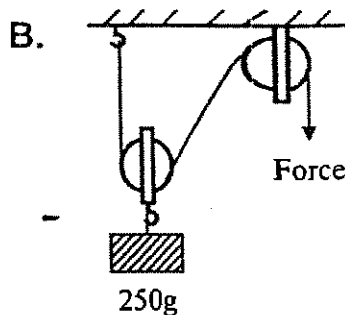
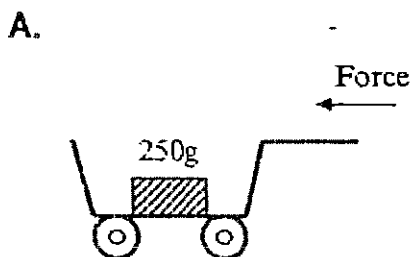
An hour later, Amy observed that the starch solution in the plastic bag had turned dark blue.

Which statements below correctly explain the experiment above?

- A: The starch had entered the beaker and turned dark blue when it interacted with the iodine solution.
- B: The iodine had entered the plastic bag and turned dark blue when it interacted with the starch solution.
- C: The plastic bag is semi-permeable and allowed both the iodine and starch to pass through.
- D: The plastic bag represents one of the functions of the cell membrane.

- (1) A and C only
- (2) B and C only
- (3) B and D only
- (4) C and D only

24. Which of the machines require less than 250g ^{move} to lift the load?



- (1) A and B only
- (2) C and D only
- (3) A, B and C only
- (4) A, B, C and D

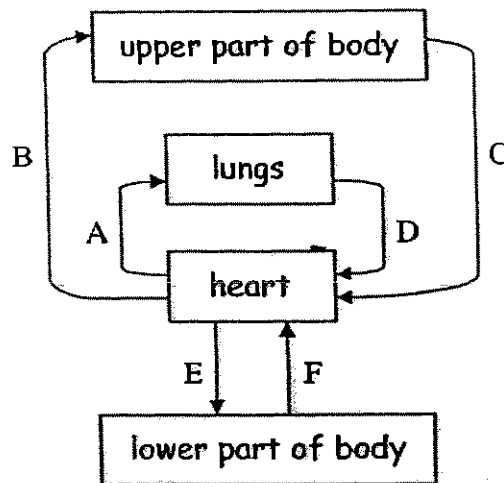
25. Peter studied the Solar System and recorded the characteristics of some objects in the table below.

Characteristics	Object W	Object X	Object Y	Object Z
Gives out light	No	No	Yes	No
Revolves around the Sun	Yes	No	No	Yes
Revolves around other planets	No	Yes	No	No
Has a great diversity of life	No	No	No	Yes
Man-made	No	Yes	No	No

Which of the following are objects W, X, Y and Z likely to be?

	Object W	Object X	Object Y	Object Z
(1)	Earth	Moon	Sun	Neptune
(2)	Jupiter	Weather satellite	Earth	Sun
(3)	Mars	Moon	Sun	Earth
(4)	Venus	Communication satellite	Sun	Earth

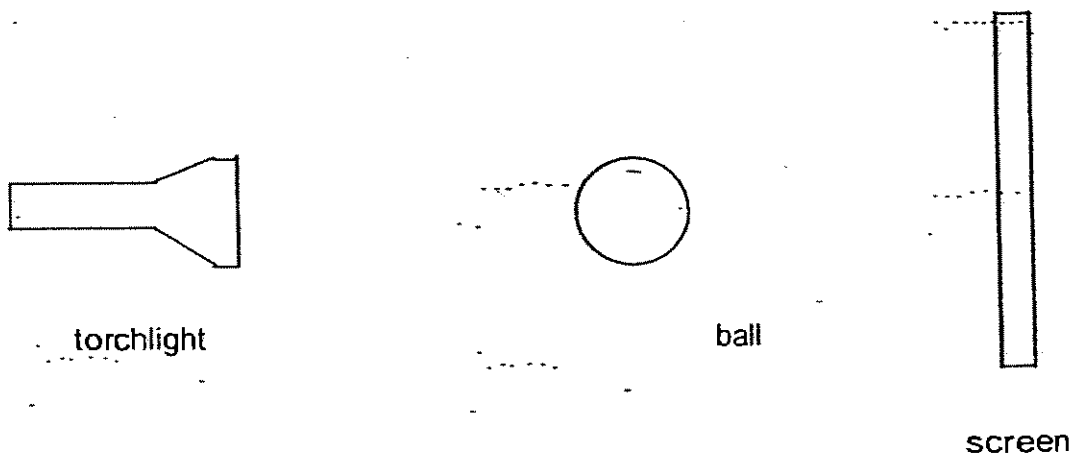
26. The diagram shows the circulatory system in Man.



Arteries that carry oxygen-rich blood are indicated by arrows

- (1) A, B and E
- (2) B, D and E
- (3) A, C and F
- (4) C, D and F

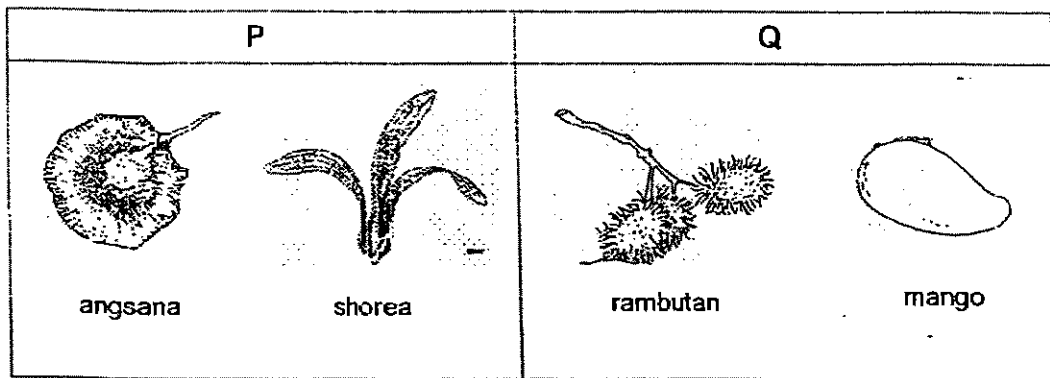
27. Ali conducted an experiment to find out how he could get the biggest shadow of the ball on the screen.



Which one of the following ways will help him achieve his aim?

- (1) Move the ball nearer to the screen.
- (2) Move the torchlight nearer to the ball.
- (3) Move the torchlight away from the ball.
- (4) Move the torchlight and the ball an equal distance towards the screen.

28. The diagram below shows the fruit of some plants.



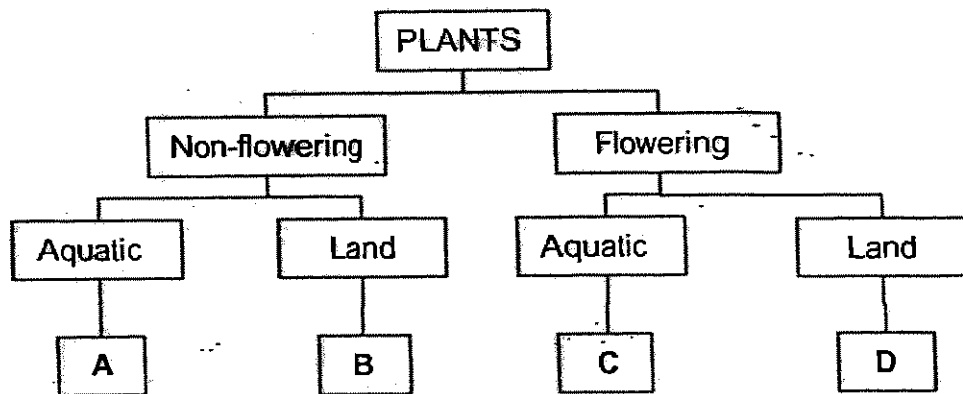
How are the fruits in P and Q dispersed?

	P	Q
(1)	Water	Animals
(2)	Wind	Splitting action
(3)	Water	Splitting action
(4)	Wind	Animals

29. The following table gives information on two plants X and Y, based on three characteristics. A tick (✓) shows that the plant has the characteristic.

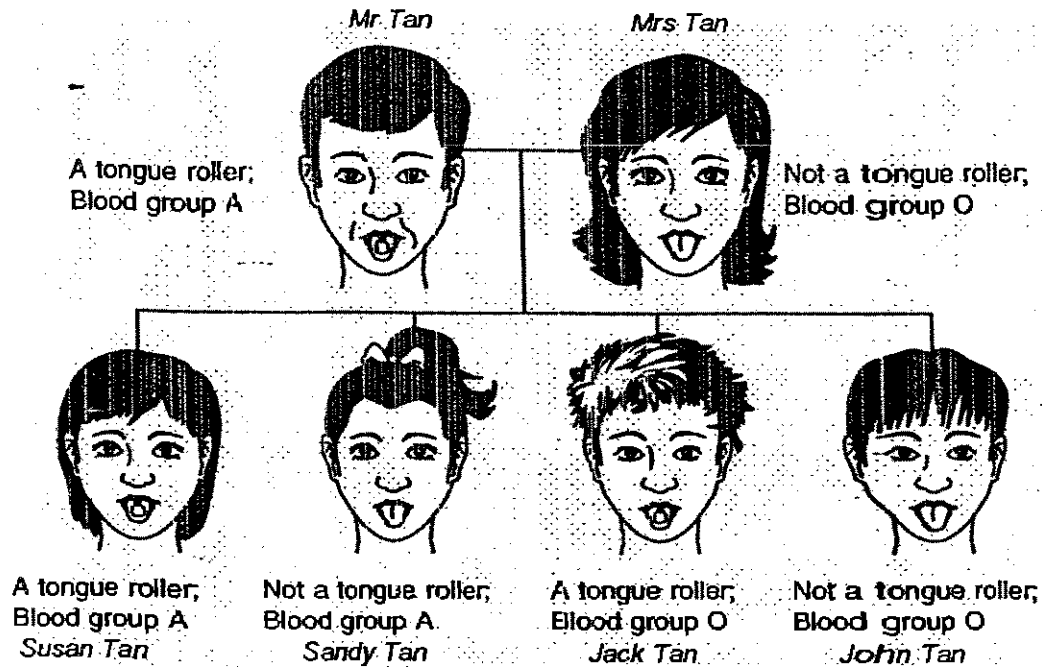
Characteristics	X	Y
Bears Fruit	✓	
Have spores		✓
Grows in water	✓	

From the information above, where do plants X and Y belong in the following classification table?



	Plant X	Plant Y
(1)	A	C
(2)	B	D
(3)	C	B
(4)	D	A

30. Mr and Mrs Tan have two daughters, Susan and Sandy, and two sons, Jack and John. The chart below shows the Tan's family tree.



Which of the following conclusions is true?

- (1) One can inherit traits from both parents.
- (2) Only females can inherit the trait of tongue rolling.
- (3) A female parent cannot pass her traits to a male child.
- (4) A male parent cannot pass his traits to a female child.

NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 1 2007
SCIENCE
PRIMARY SIX

Name : _____ ()

Class : Primary 6 _____

Date : 1 March 2007

Duration : 1 hr 45min

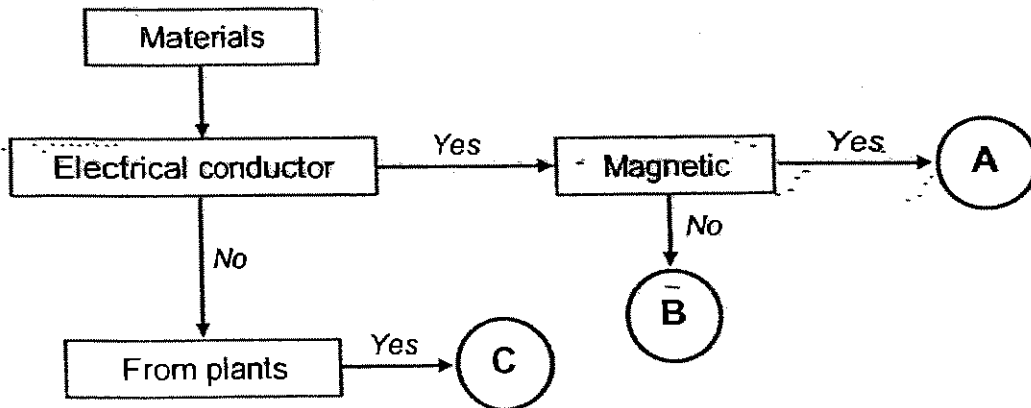
Marks
40

Section B: (40 marks)

Write your answers to question 31 to 46.

The number of marks available is shown in brackets [] at the end of each question or part question.

31. Study the flowchart carefully.

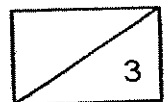


Name one material that A, B and C represent. [3]

A: _____

B: _____

C: _____



32. Study the objects given below.

Cotton blouse	Plastic ruler	Paper
Magnet	Eraser	

John and Mary were asked to group the above objects into two groups.

John grouped the objects in the following way:

Group A	Group B
Paper Cotton blouse	Magnet Eraser Plastic ruler

Mary grouped the objects in the following way:

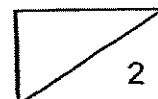
Group X	Group Y
Paper Eraser..... Cotton blouse	Magnet Plastic ruler

a) What property or characteristic of the objects has John used to classify them into Group A and Group B? [1]

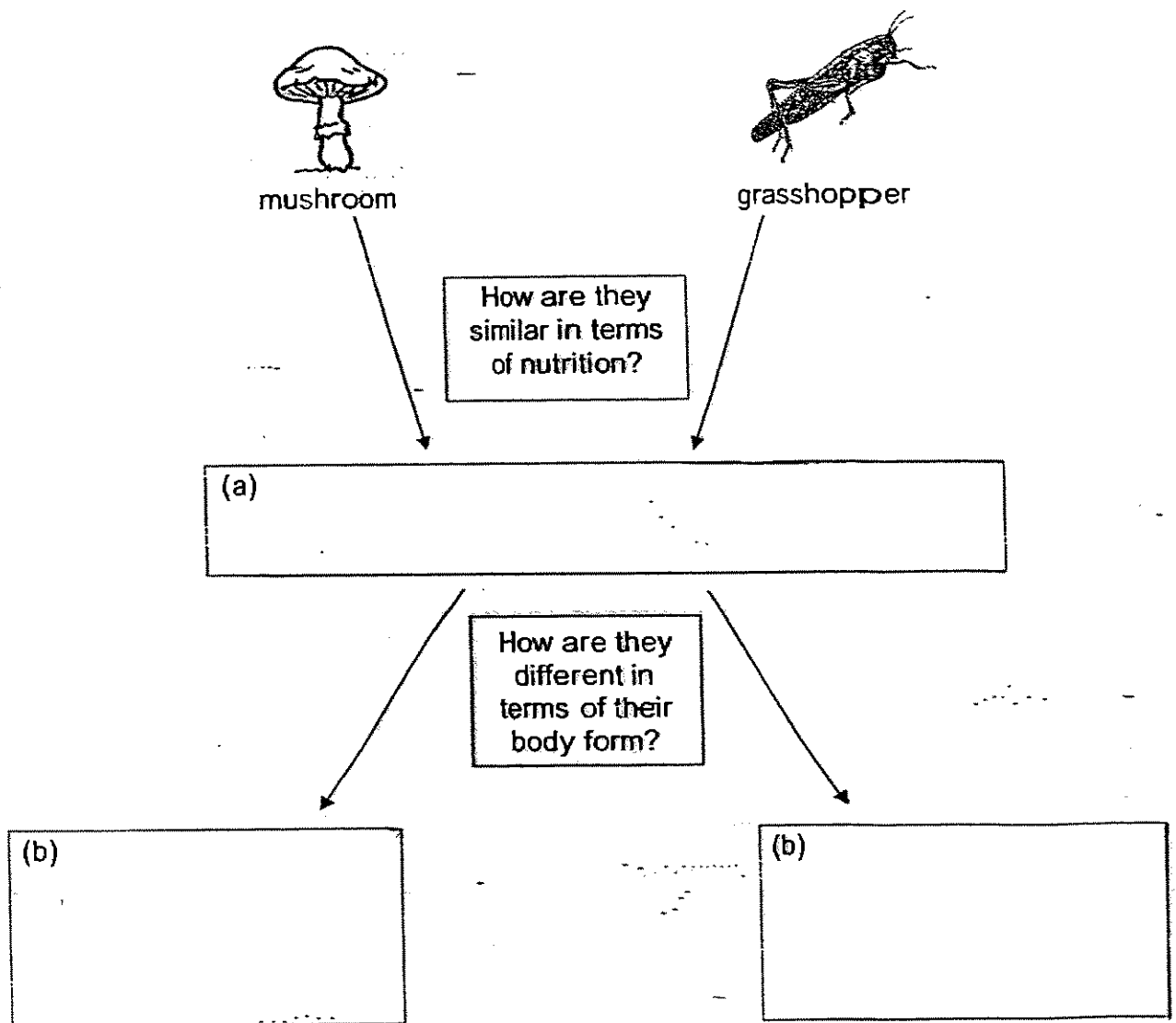
b) How has Mary grouped the objects? Identify her Group headings. [1]

Group X: _____

Group Y: _____

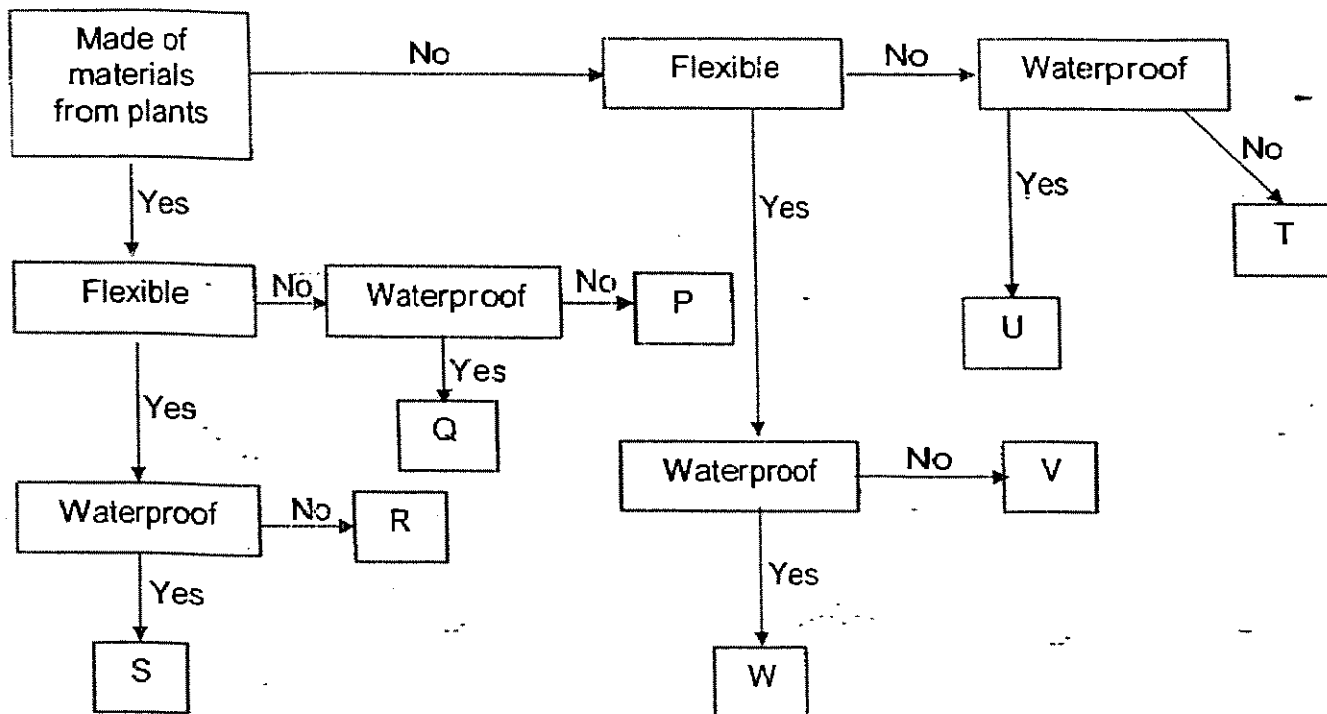


33. Joseph drew a graphic organizer as shown below. [2]



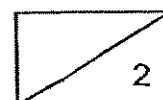
34. The chart below shows the characteristics of eight different objects represented by the letters P, Q, R, S, T, U, V and W.

Refer to the chart below and answer the following questions.



(a) What characteristic(s) does/do S and V have in common? [1]

(b) Which object represented by the letters P, Q, R, S, T, U, V and W best describes a plastic raincoat? [1]



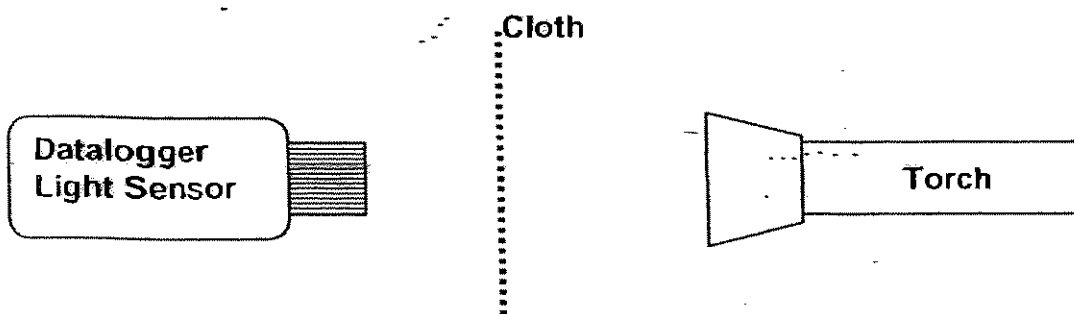
35. The table below shows some properties of materials A and B.

Properties	Material	
	A	B
Electrical conductor	No	Yes
Flexible	No	No
Magnetic	No	Yes
Waterproof	Yes	Yes
Transparent	Yes	No

a) Based on the information given in the above table, would material A or material B be more suitable in the making of windows? [1m]

b) Give a reason for your choice in (a). [1m]

36. A group of Science Club students set up an experiment as shown below.

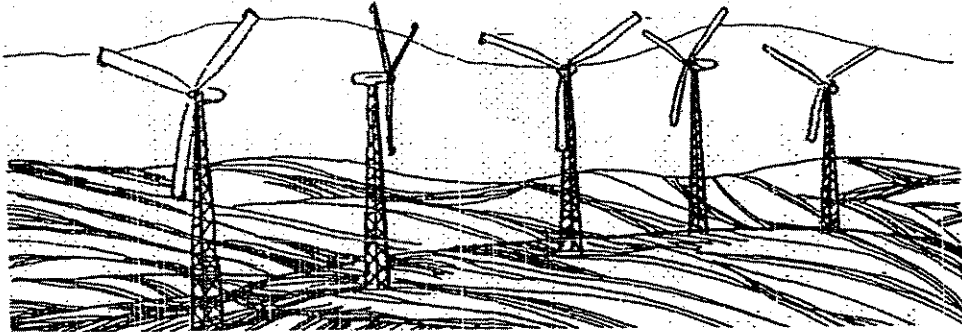


By shining a beam of light on one side of a cloth, they took readings from a datalogger light sensor on the other side. They did the same using different types of cloth.

What were the club members trying to find out in this experiment? [2m]

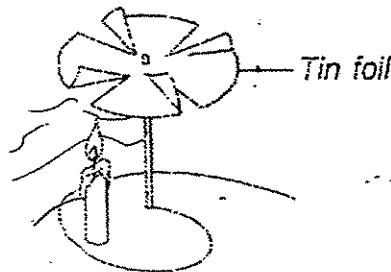
37.

- a) The diagram below shows wind turbines erected on a piece of land to generate electricity.

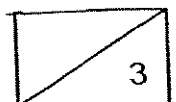
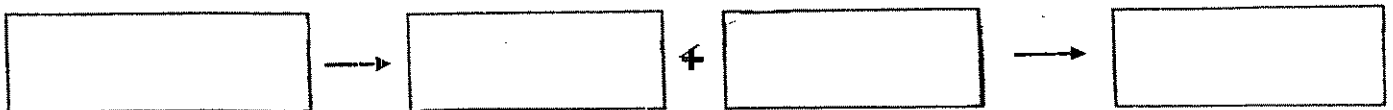


Name the energy that is being used to generate electricity. [1m]


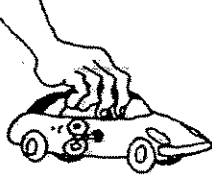


- b) When the candle was lighted, the hot air moved upwards and made the tin foil spin.



What energy conversion took place that enabled the tin foil to spin? [2m]

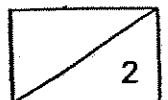
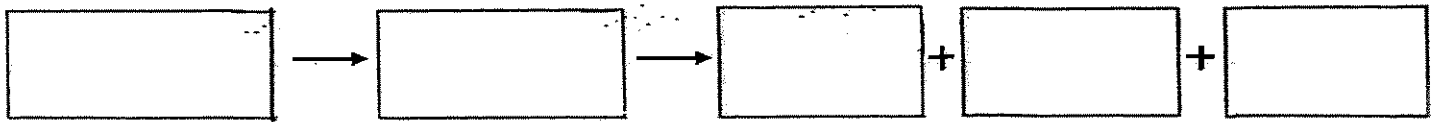


38. The diagrams below show a toy car being wound up and released.

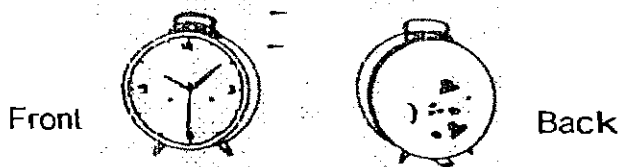
			
Winding up the toy car.	Just wound up, ready to go.	Moving along.	Stops moving.

a) At which stage would the toy car possess the most potential energy? [1m]

b) What energy conversion took place in the entire process shown above? [1m]



39.



The diagram above shows the front and back of a wind-up clock that Jessica used for an experiment. Below are the notes she made of her experiment. The clock was wound each morning at 8 am.

Days	Number of turns given to the key	When did the clock stop moving ?
Monday	3	5 pm
Tuesday	7	5am the next morning
Wednesday	*	8 pm
Thursday	9	1 1am on Friday

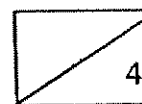
a) Jessica then presented her results in a table as shown below. She had left out the results for one of the days. Complete the table by writing the missing information for that day in the boxes provided. [1m]

Days	Number of turns	How long the clock ran (in hours)
Monday	3	9
Tuesday	<input type="text"/>	<input type="text"/>
Wednesday	*	12
Thursday	9	27

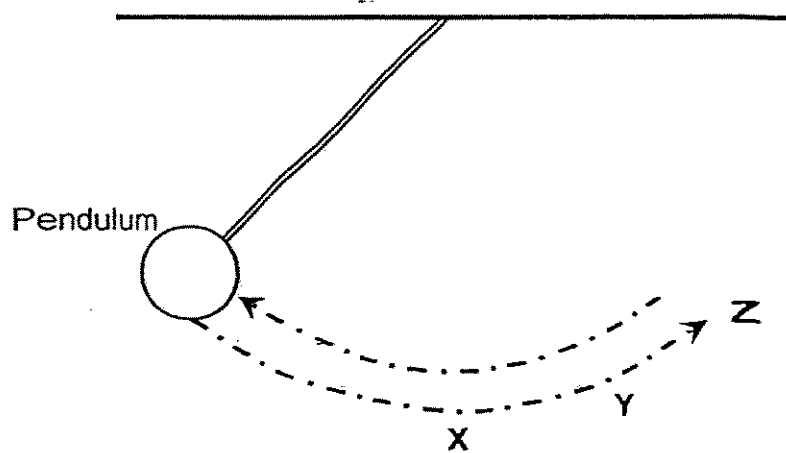
b) How many turns of the key did Jessica most probably give to the clock on Wednesday? [1m]

c) What pattern can be observed between the number of turns of the key and how long the clock will run? [1m]

d) Complete the energy changes after the key was being turned. [1m]



40. The diagram below shows a simple pendulum that swings left and right just like a Grandfather's clock.



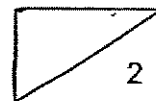
The dotted lines show the path the pendulum takes as it swings.

- a) At which point, X, Y or Z, did the pendulum possess the highest kinetic energy and at which point did it possess no kinetic energy? [1m]

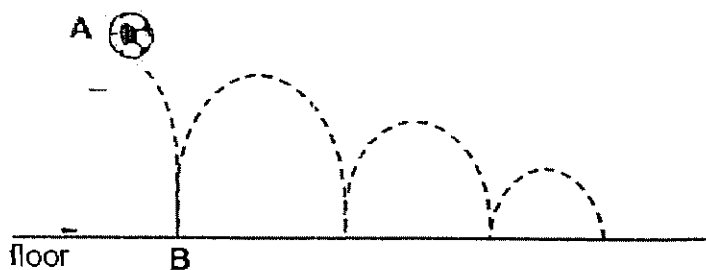
Highest Kinetic Energy: _____

No Kinetic Energy: _____

- b) After leaving it to swing for a while, the pendulum eventually stops. Since energy cannot be made or destroyed, explain why the pendulum still stopped. [1m]

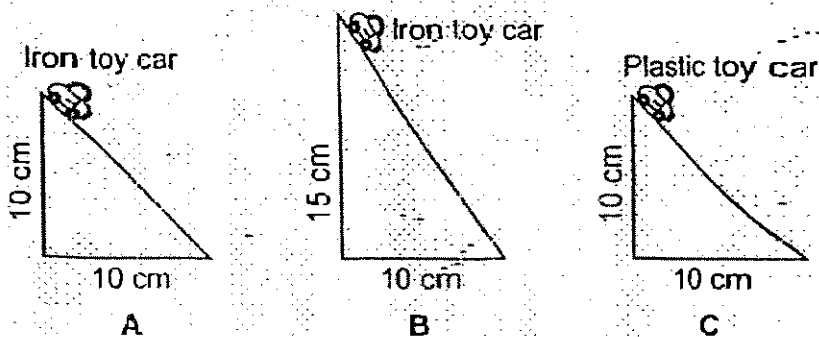


41. The diagram shows a ball dropping from a height.



What energy conversion took place as the ball was dropped from A to the floor at point B? [2m]

42. Study the setups below carefully.



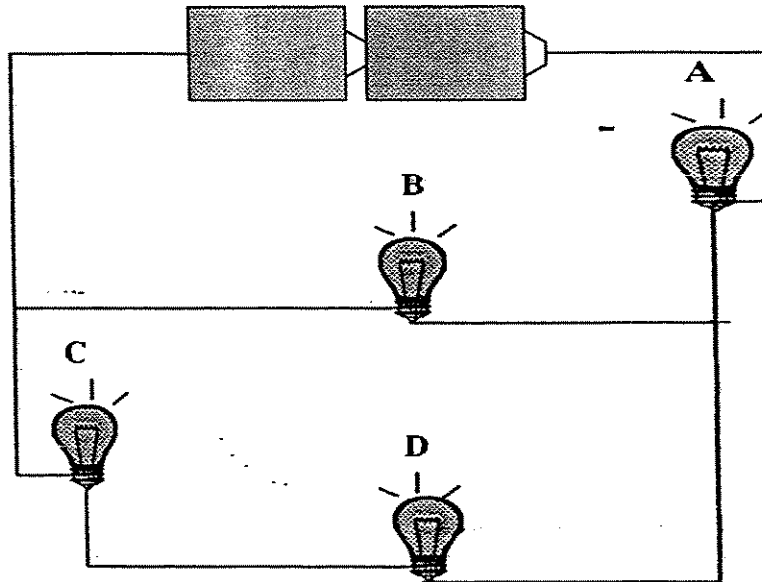
All the toy cars are of the same size. The iron toy car is twice as heavy as the plastic toy car.

a) Arrange the toy cars, in setups A, B and C, starting from the one that possesses the greatest gravitational potential energy to the one that possesses the least? [1m]

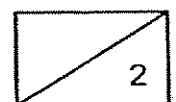
b) The toy cars in setups A and C were released from the top of the ramp and the time taken for the car to travel down the ramp was recorded. What is the aim of the experiment if setups A and C were used for the investigation? [2m]

43. The diagram shows four lighted bulbs A, B, C and D in a circuit. A switch is to be installed so that only a particular bulb can be switched on or off while the other three remain lighted.

a) Mark an 'X' on the circuit to show where the switch should be connected. [1m]

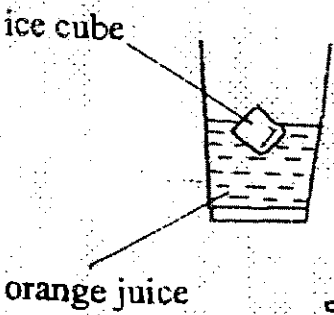
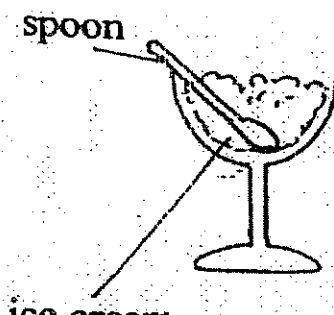


b) State which bulb (A, B, C or D) the switch controls. [1m]

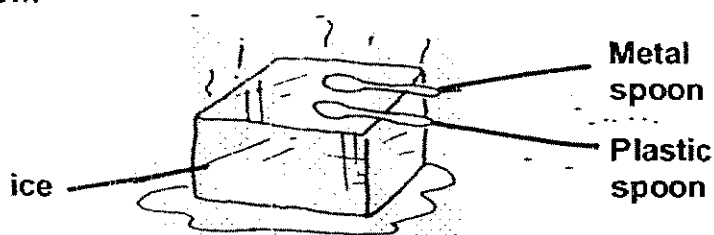


44.

- a) For each of the following setups A and B, identify the object that gained or lost heat [2m]
 (Note: Identify the objects that are labelled.)

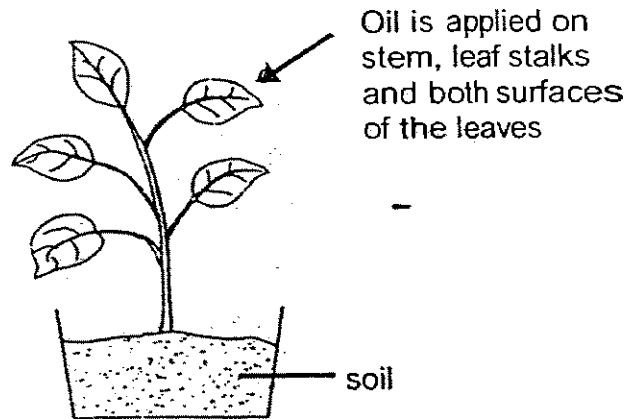
Example	Object that gained heat	Object that lost heat
 <p style="text-align: right;">Setup A</p>		
 <p style="text-align: right;">Setup B</p>		

- b) A metal spoon and a plastic spoon are both placed on a block of ice as shown in the diagram below.



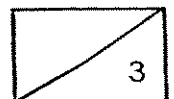
Why does the metal spoon feel colder than the plastic spoon? [1m]

45. Jean spread a layer of oil on the stem, leaf stalks and both surfaces of the leaves of the plant. The plant was then placed in the sun and watered every day.

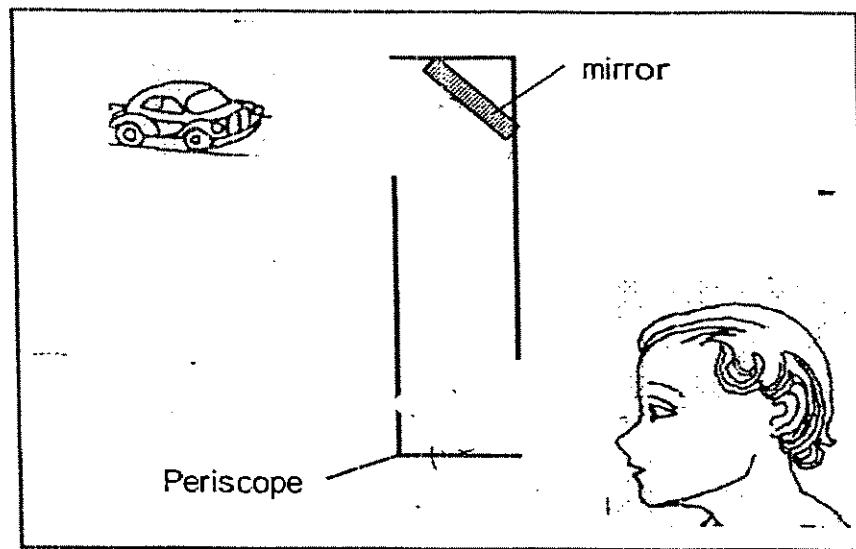


- a) What happens to the plant after a week? [1m]

- b) Give an explanation to your answer in (a). [2m]

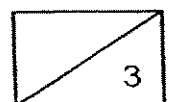


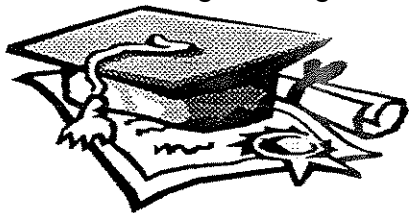
46. In a Science practical lesson, Jimmy made a periscope to study a property of light. The diagram below shows a simplified model of a periscope.



- a) In order for Jimmy to be able to see the car, add another mirror to the periscope and draw arrows to show the path of light. [2m]
- b) What property of light does this experiment demonstrate? [1m]

End of Paper





ANSWER SHEET

NAN HUA PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
CONTINUAL ASSESSMENT (1)

1. 1 31)A:Steel
 2. 3 B:Gold
 3. 4 C:Rubber
 4. 1
 5. 2 32)a)According to whether they are water
 6. 4 proof or not.
 7. 4 b)X: Biodegradable
 8. 2 Y: Non-biodegradable
 9. 4
 10. 2 33)a)Unable to make their own food.
 11. 2 b)Mushroom has a cap and a stalk.
 12. 4 c)Grasshoppers have six legs, a head,
 13. 2 thorax and abdomen and a pair of feelers.
 14. 4
 15. 1 34)a)They are both flexible.
 16. 3 b)W.
 17. 3
 18. 4 35)a)A would be the most suitable material.
 19. 3 b)A cannot be an electrical conductor
 20. 1 as we might get electrocuted in the
 21. 4 event of a thunder storm, it cannot be
 22. 1 flexible as it would bend too much.
 23. 2 It cannot be magnetic as all steel,
 24. 3 iron , nickel and cobalt objects would
 25. 4 be attracted. It must be transparent to
 26. 2 allow light to pass through and water
 27. 2 proof to keep out rain.
 28. 4
 29. 3 36)The club members were trying to find out
 30. 1 if different types of cloth affect the
 amount of light that is able to pass
 through.

37) a) Kinetic energy is used to generate electricity.

b) Chemical potential Energy \rightarrow Heat Energy + Light energy \rightarrow Kinetic energy.

38) a) When the toy is wound up and ready to go.

b) Kinetic Energy \rightarrow Elastic Energy \rightarrow Kinetic Energy + Sound Energy + Heat Energy.

39) a) 7, 21

b) 4 turns

c) The greater the number of turns, the longer the clock will run.

d) Elastic potential Energy \rightarrow Sound Energy + Kinetic Energy.

40) a) X, Z

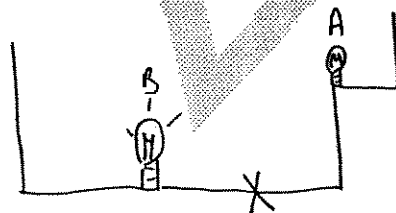
b) There was a force acting against the pendulum, and the kinetic energy was also converted to other forms of energy.

41) Gravitational Potential Energy \rightarrow Kinetic Energy \rightarrow Heat energy + Sound energy.

42) a) B, A, C

b) To find out if the mass of the toy car affects the speed of travels down the ramp.

43) a)



b) B

44) a) Ice tube, Orange juice.

Ice-cream, Spoon.

b) Metal spoons are able to conduct heat faster and hence, metal spoons will feel colder than the plastic spoons.

45)a)The plant will die.

b)The oil blocked the stomata of the plant, preventing exchange of gases from taking place. This prevents the plant from carrying out photosynthesis and respiration.

46)a)



b)Light travels in a straight line.

---end---

**NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1, 2007
PRIMARY 6
SCIENCE**

Sect A	
Sect B	
Total:	

Name : _____ ()

Marks:

Class : Primary 6 _____

Date : 10 May 2007

Duration : 1 hr 45min

Parent's Signature

Section A (30 x 2) marks

Choose the most suitable answer and shade the corresponding oval in the Optical Answer Sheet (OAS) provided.

1. All the living things listed below can be classified in different ways.

lalang	bracket fungus	orchid	goat	ladybird
mould	frog	dog	lettuce	fern

Which ways of classification are correct ?

- (A) They can be classified as plants, animals or fungi.
- (B) They can be classified as feed on living things or feed on decaying matter.
- (C) They can be classified as being able to move freely from one place to another or cannot move freely from one place to another.
- (D) They can be classified as being able to make their own food or do not make their own food.

(1) A and D only

(2) B and C only

(3) A, C and D only

(4) A, B, C and D

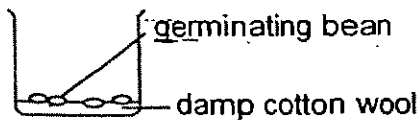
2. Which one of the following is a living thing ?



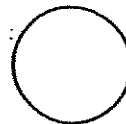
(1) an extracted tooth



(2) a dried leaf



(3) germinating beans



(4) the Moon

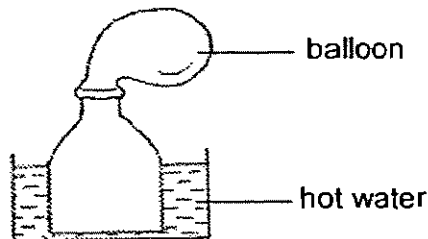
3. A test was conducted on a material. A hard steel object is used to push into the material. The dent on the material is measured with a powered microscope.



The result of the test shows that the dent on the material is shallow. What property of the material is being tested ?

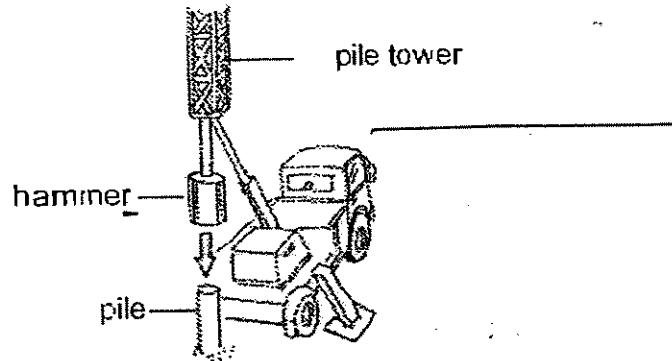
- | | |
|-----------------|---------------|
| (1) Flexibility | (2) Fragility |
| (3) Elasticity | (4) Hardness |

4. What energy is being used to inflate the balloon ?



- | | |
|------------------|-----------------------|
| (1) Heat energy | (2) Potential energy |
| (3) Light energy | (4) Electrical energy |

5. The picture shows a piling machine. The hammer falls and drives the pile into the ground.



Which one of the following shows the correct sequence of energy changes when the hammer falls and drives the pile into the ground ?

- (1) Gravitational Potential energy → Electrical energy → Kinetic energy
- (2) Gravitational Potential energy → Kinetic energy ✓
- (3) Chemical Potential energy → Kinetic energy → Gravitational potential energy
- (4) Chemical Potential energy → Gravitational potential energy

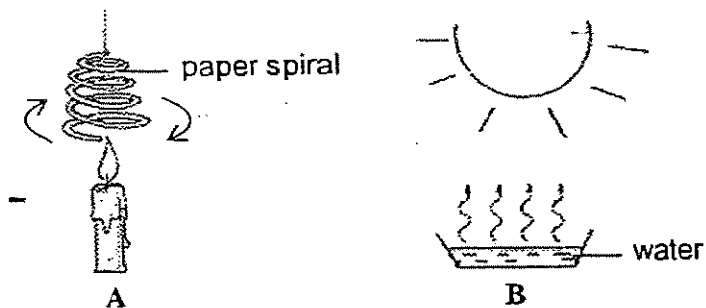
6. The following appliances are classified according to the useful forms of energy they are converted into:

<u>Group A</u>	<u>Group B</u>	<u>Group C</u>	<u>Group D</u>
oven	washing machine	camera	radio
bread toaster	electric fan	calculator	telephone
electric iron	cake mixer	torchlight	doorbell

In which 2 **most appropriate** groupings can the hair-dryer be classified?

- (1) Groups A and B ...
- (2) Groups C and D
- (3) Groups B and C ...
- (4) Groups A and D

7. Study the two diagrams below.



Which one of the following (can be deduced)?

- (1) Light energy enables the paper spiral in A to turn and the water in B to evaporate.
 (2) Heat energy enables the paper spiral in A to turn and the water in B to evaporate.
 (3) Light and heat energy enable the paper spiral in A to turn and the water in B to evaporate.
 (4) Heat energy enables the paper spiral in A to turn and light energy enables the water in B to evaporate.

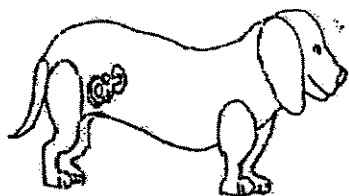
8. Which one of the following is **not** a force ?

- (1) Mass (2) Weight
 (3) Gravity (4) Friction

9. Sally's bicycle was making a lot of squeaking noise because some parts were rubbing against one another. What was causing the squeaking noise ?

- (1) Gravity (2) Elastic spring force
 (3) Magnetic force (4) Friction

10. The diagram below shows a wound-up toy.

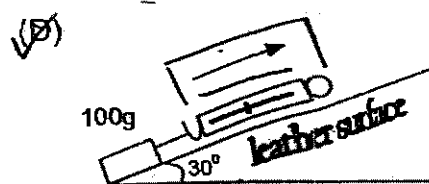
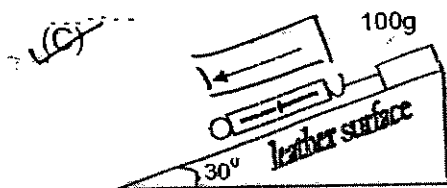
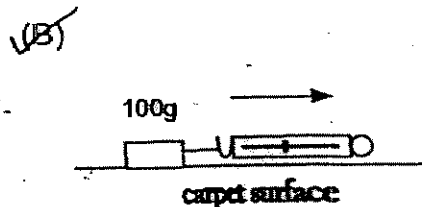
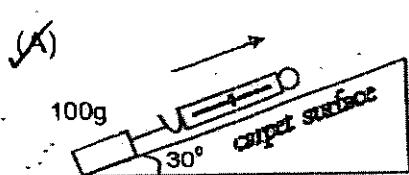


Which of the following statement(s) is/are true?

- (A) When it moves, a frictional force acts against its movement.
- (B) When the toy moved, chemical potential energy is changed into kinetic energy.
- (C) As the key is turned, elastic potential energy is stored in the wound-up spring before it is released.

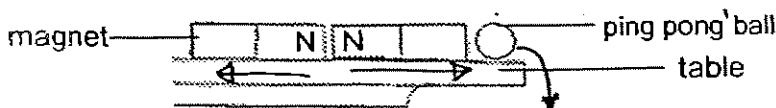
- (1) A only
- (2) B and C only
- (3) A and C only
- (4) A, B and C

11. Susan wants to find out if an object produces greater friction when moved over a carpet surface or a leather surface. Which two setups should she use for her experiment?



- (1) A and C
- (2) B and D
- (3) A and D
- (4) B and C

12.

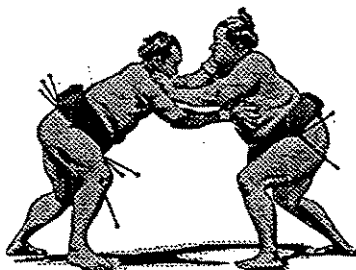


Which statement(s) is/are correct ?

- (A) The magnets will push against each other.
- (B) The magnets will pull towards each other.
- (C) The ping pong ball will be pushed off the table.
- (D) The ping pong ball will be attracted by the magnet.

- ping pong balls are*
- (1) A only
 - (2) B only
 - (3) B and D only
 - (4) A and C only

13.



Two Sumo wrestlers are pushing each other but both of them are unable to move forward or backward. Why is this so?

- (1) There is no frictional force acting on them.
- (2) There is no gravitational force acting on them.
- (3) A magnetic force is attracting them to the ground.
- (4) The wrestlers are using the same amount of force to push each other.

14. Which of the following forces are in action in the activity below ?

- (A) Frictional force
- (B) Magnetic force
- (C) Gravitational force
- (D) Elastic spring force

- (1) D only
- (2) B and C only
- (3) A, C and D only
- (4) A, B, C and D



15. The Singapore Zoological Gardens has established an indoor tropical rainforest. Which one of the following explains why this enclosed forest is good for the animals ?
- (1) The animals can come closer to human contact.
 - (2) The enclosed forest has more natural food sources than the real environment.
 - (3) The animals have more freedom of space than in the real environment.
 - (4) The living conditions of the enclosed forest are very much like the real environment.
16. Which of the following helps a population of organisms to increase in number ?
- (1) There is a flood in the habitat.
 - (2) There is disease in the habitat.
 - (3) There is lack of water in the habitat.
 - (4) The predator of the organism decrease in number.
17. If all the plants and trees in a forest die, which of the following animals will be affected ?
- (A) lion
 - (B) giraffe
 - (C) squirrel
- (1) A only
 - (2) A and B only
 - (3) B and C only
 - (4) A, B and C
18. Some green beans were planted in four different containers with different types of materials – sandy soil, clayey soil, garden soil and pebbles. They were watered regularly and the height of the seedlings in the four containers was recorded as shown in the table below.

Container \ Day	1	3	5	7	9	11
A	0 cm	0 cm	0 cm	0 cm	0 cm	0 cm
B	0 cm	3 cm	5 cm	7 cm	9 cm	15 cm
C	0 cm	0 cm	1 cm	1 cm	2 cm	2 cm
D	0 cm	2 cm	4 cm	6 cm	8 cm	10 cm

Which container most likely contains garden soil ?

- (1) A
- (2) B
- (3) C
- (4) D

22. Study the food chain below.

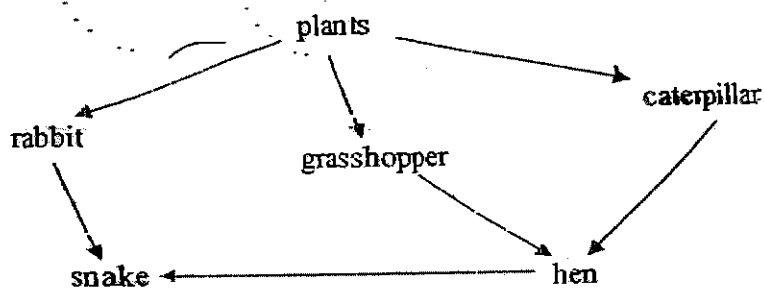


Which of the following best describes the wolf ?

- (A) Prey
- (B) Predator
- (C) Carnivore

- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) A, B and C

23. Study the food web shown below.



What are the effects of a large increase in the number of grasshopper?

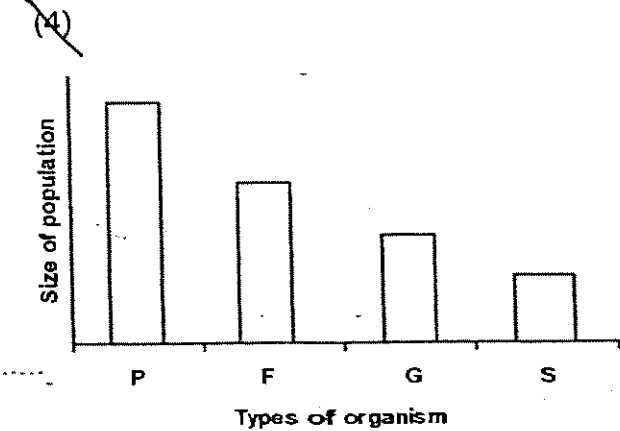
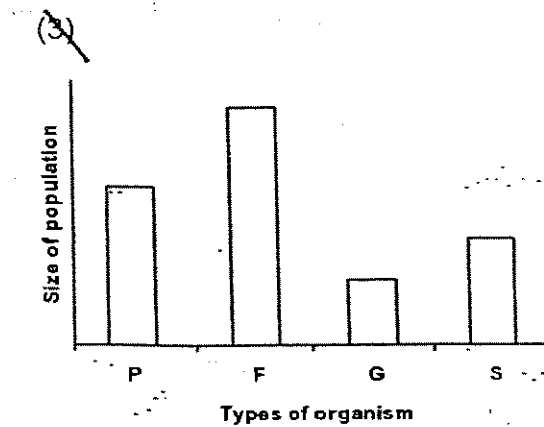
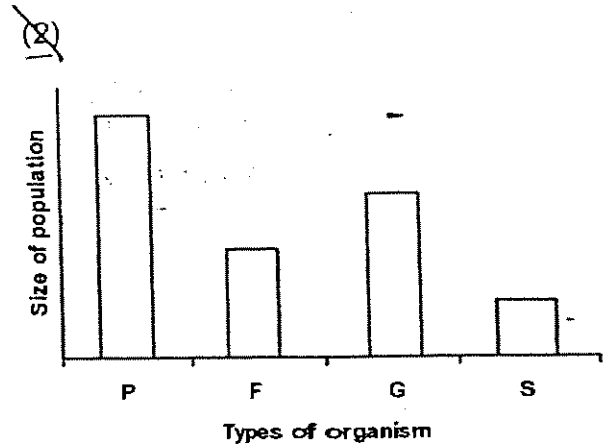
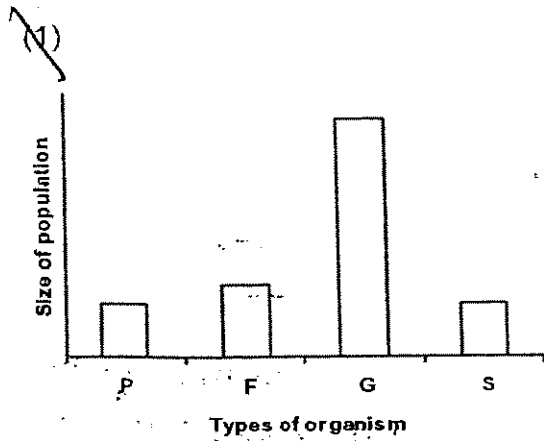
- A : The caterpillar population will decrease.
- B : Snakes will have more rabbits to eat.
- C : There is an increase in the number of plants.
- D : Rabbits will have less food to eat.

- (1) A and B
- (2) A and D
- (3) B and C
- (4) C and D

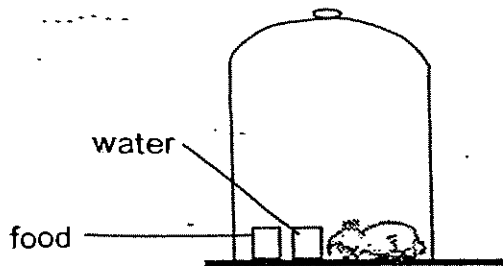
24.



Based on the food chain above, which one of the graphs below best describes the population of the various organisms in a field community?



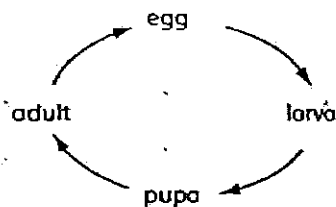
25. A mouse was put in an air-tight container with water and food.



Which one of the following statements is true ?

- (1) The mouse will survive for two weeks only.
- (2) The mouse will die due to lack of air.
- (3) The mouse will die due to lack of food.
- (4) The mouse will die due to lack of water.

26. Study the life cycle below.



Which one of the following statements is true ?

- (1) The young looks different from the parent.
- (2) Only insects go through the four stage life cycle.
- (3) The pupa is also called a nymph.
- (4) The cells of the young do not contain genetic information passed on by their parents.

27. Three organisms are shown below.



Which of the following is the best way to group them ?

	Bacteria	Moss	Pine tree
(1)	Fungi	Plants	Flowering plants
(2)	Micro-organisms	Fungi	Non-flowering plants
(3)	Micro-organisms	Plants	Non-flowering plants ✓
(4)	Fungi	Non-flowering plants	Flowering plants

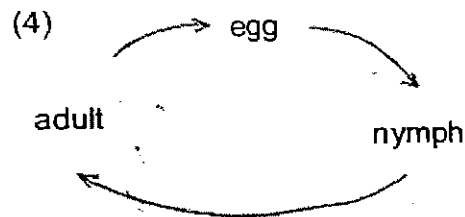
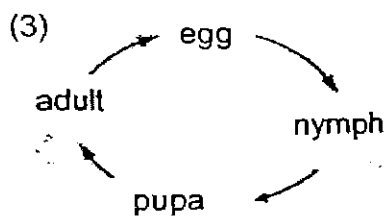
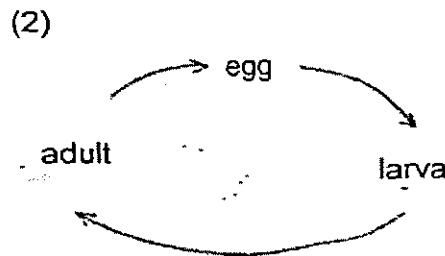
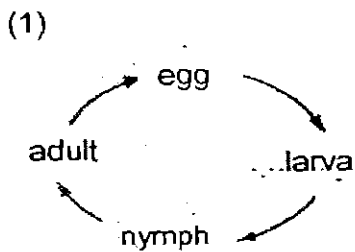
28. Ravi conducted several tests on materials A, B, C and D, and tabulated the results.

Characteristics \ Material	A	B	C	D
Bend	No	Yes	No	Yes
Stretch	No	Yes	No	No
Breaks when dropped	Yes	No	No	No
Waterproof	Yes	No	Yes	Yes

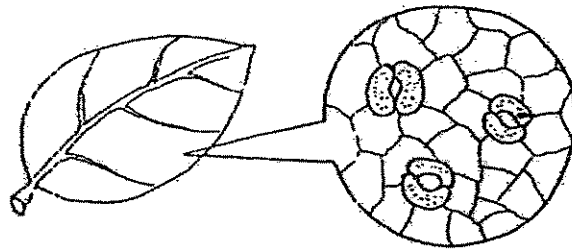
Which material should he use to make a T-shirt ?

- (1) A
- (2) B
- (3) C
- (4) D

29. Which one of the following correctly represents the life cycle of the dragonfly ?



30. Study the diagram carefully.

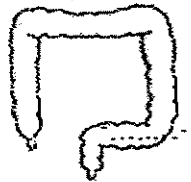


Which one of the following parts in the human body performs a function most similar to the stomata in the plants as shown above?

(1)



(2)



(3)



(4)



NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 2007
SCIENCE
PRIMARY SIX

Name : _____ ()

Class : Primary 6 _____

Date : 10 May 2007

Duration : 1 hr 45min

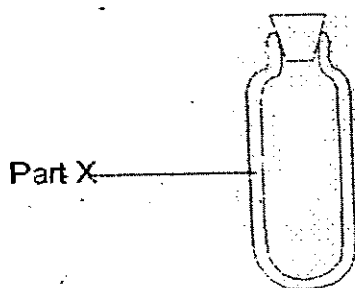
Marks	
40	

Section B: (40 marks)

Write your answers to question 31 to 46.

The number of marks available is shown in brackets [] at the end of each question or part question.

31. A manufacturer wanted to produce a flask for storing cold drinks. He was given steel, styrofoam and glass to make the wall of the flask (Part X).

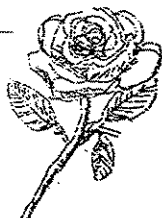


- (a) Which one of the materials (steel, styrofoam or glass) can keep the drinks cold for the longest period of time? (1m)

- (b) Give a reason for your answer to (a). (1m)

2	
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32. Different flowers are different in many ways.



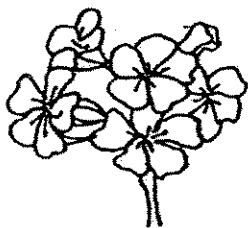
Rose



Golden Banner



Ixora



Frangipanni

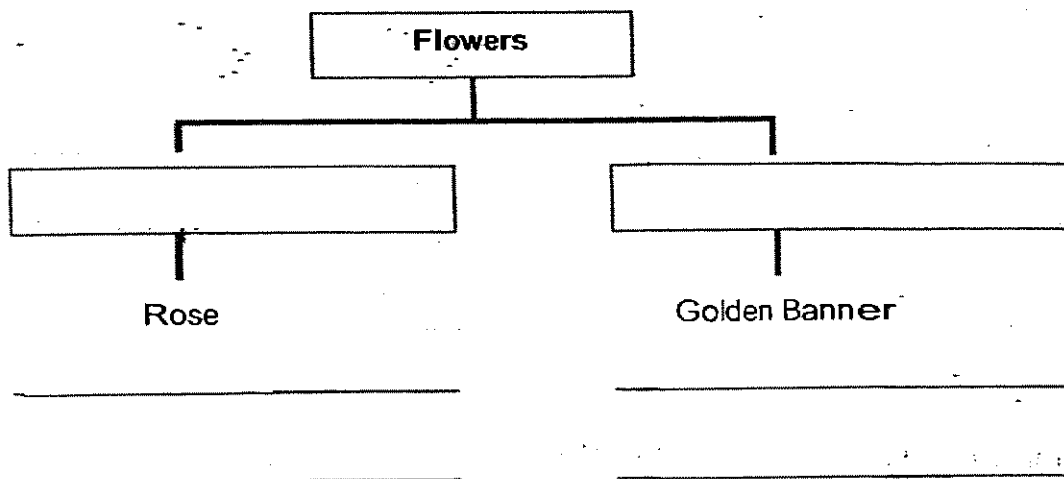


Hibiscus



Sunflower

Look at the flowers above. 2 of the flowers have been grouped for you. Group the rest of the flowers in the classification chart below and give each group a suitable heading. Do not group them according to their size and shape. (3m)



33. 4 acrobats and their mass are given below.



Acrobat A with a mass of 45 kg



Acrobat B with a mass of 50 kg

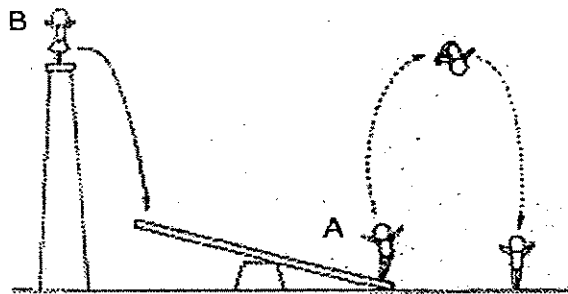


Acrobat C with a mass of 60 kg



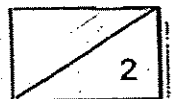
Acrobat D with a mass of 48 kg

Acrobat A performs a somersault before he lands safely on the floor as shown in the picture below.



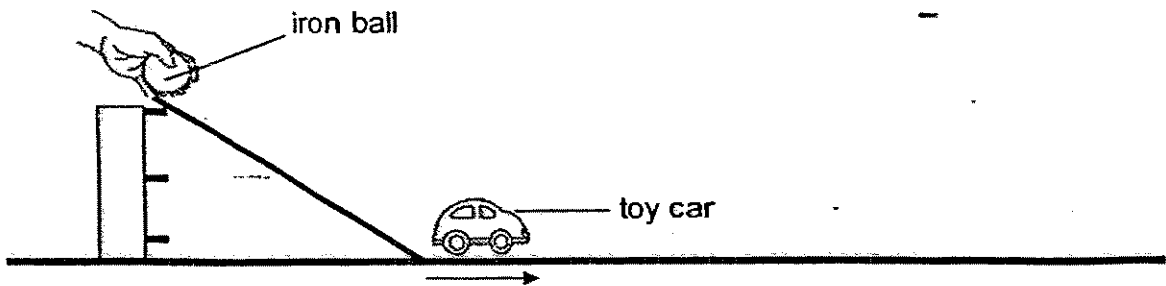
(a) From the diagram above, where did Acrobat A get his energy to somersault? (1m)

(b) Without changing any of the equipment, what can be done to make Acrobat A somersault higher? (1m)

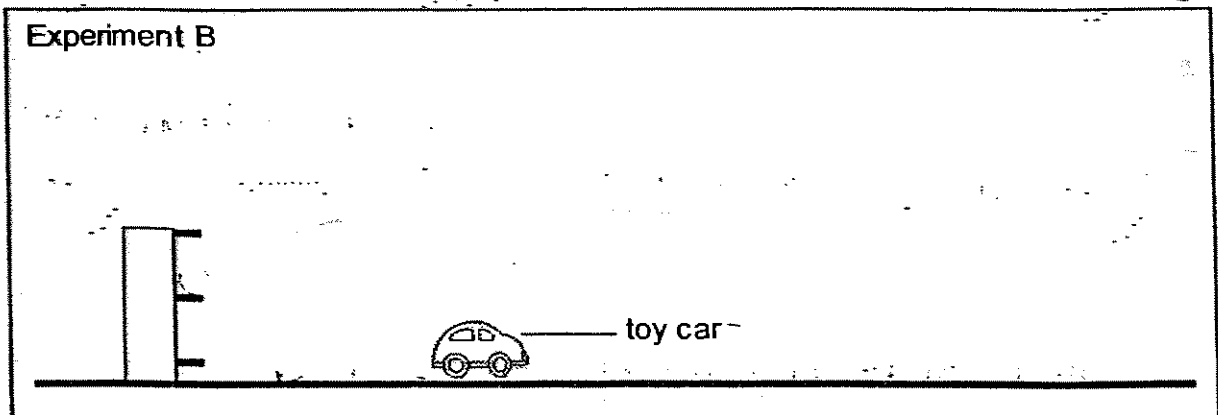


34. Tom wanted to find out if the height of the iron ball would affect the energy present in the ball.
He had set up Experiment A as shown below and he rolled the ball from the top of the ramp.

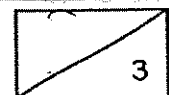
Experiment A



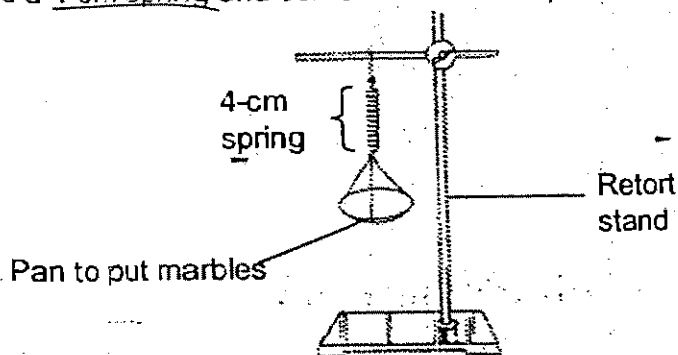
- (a) If he had to roll the ball from the top of the ramp, how should he set up Experiment B to show that height affects the amount of energy in the ball?
Complete the diagram by **drawing a ramp** in the box below to show how he should conduct his experiment. (1m)



- (b) Name the type of energy present in the iron ball when it was at the top of the ramp. (1m)
- _____
- (c) When the ball was released, what should Tom record in order to get relevant data for his experiment? (1m)
- _____
- _____



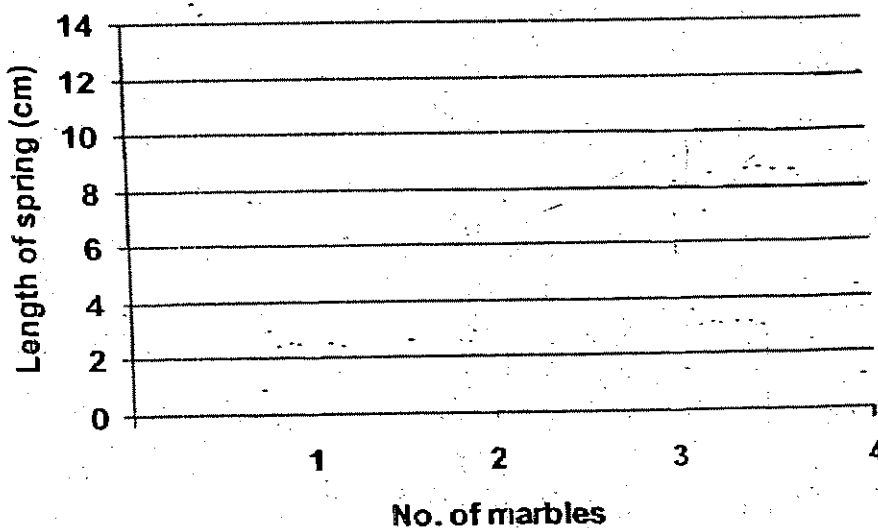
35. Joyce conducted an experiment. She used a 4-cm spring and some marbles of equal mass.



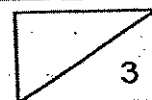
Results of the experiment were shown in the table.

Number of marbles	Extension of spring (cm)
0	0
1	2
2	4
3	6

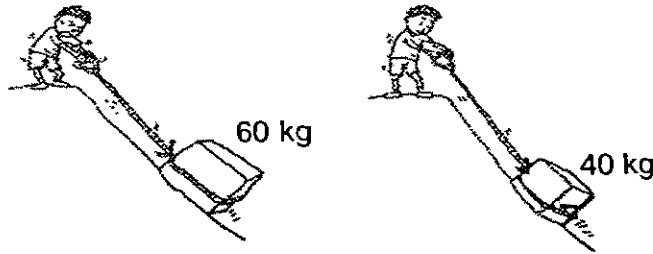
- (a) Draw a line graph with the data given in the table. (2m)



- (b) What is the aim of the experiment? (1m)



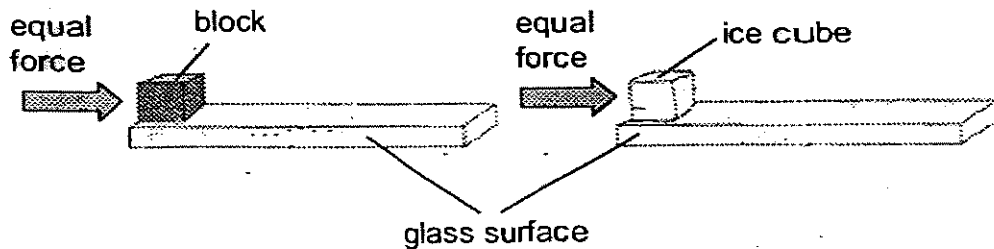
36. The picture shows Suman pulling a 60 kg load and then a 40 kg load up the same slope.



(a) Name the forces acting on the load. (2m)

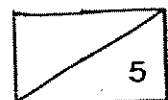
(b) Suman used a greater force to pull up the 60 kg load. Explain why he used more force ? (1m)

37. A wooden block and an ice cube with the **same type of texture, dimensions and mass** were pushed along a glass surface at room temperature. An **equal amount of force** is applied separately to push the wooden block and the ice cube.



(a) Which object will travel further? (1m)

(b) Explain your answer in part (a). (1m)

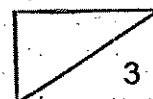


38. Some pupils went to the eco-garden to conduct an experiment. They collected some data at the same location with a datalogger and recorded the readings in the table below.

Measuring ()	
Time from start (mins)	Readings taken ($^{\circ}\text{C}$)
0	30
60	32
120	34

Measuring ()	
Time from start (mins)	Readings taken (lux)
0	80 000
60	88 000
120	100 000

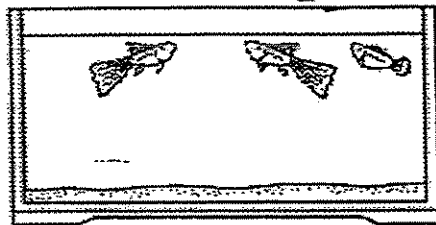
- (a) What characteristics of the environment did the pupils measure?
Write the correct characteristic **in the table above**. (2m)
- (b) Based on the data collected, what is the relationship between the characteristics mentioned in part (a)? (1m)
-
-



39. A tank was set up and placed near the window. Adequate amount of food was given to the fish.

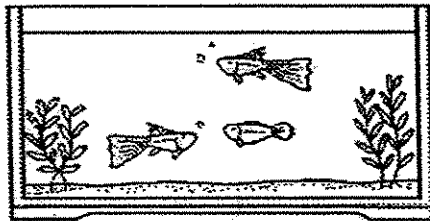
Before

The fish swam near the surface of the water.



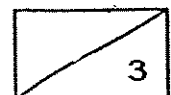
After

Water plants were added and the fish swam freely in the tank.



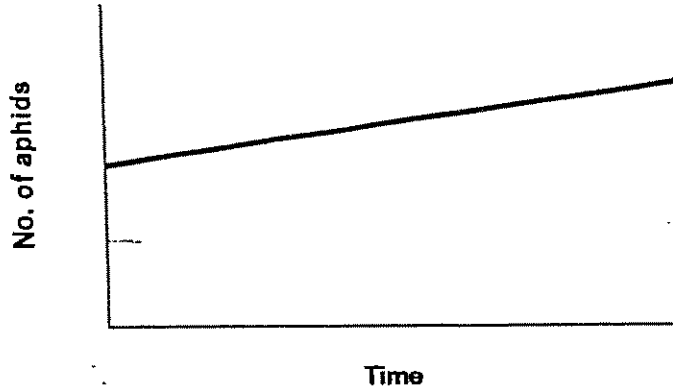
- (a) What environmental characteristic caused the fish to swim near the surface of the water? (1m)

- (b) How did introducing the water plants help the fish? (2m)

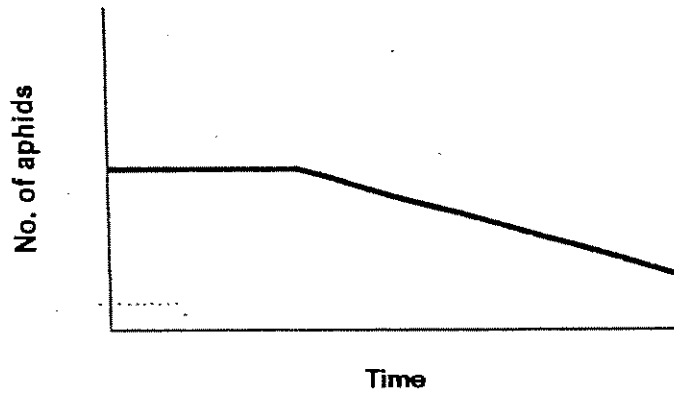


40. A withering plant was examined and it was found that there were aphids on it. The farmer introduced ladybirds to the plant. The graphs below shows the number of aphids before and after the ladybirds were introduced to the plant.

Graph A

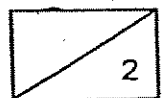


Graph B

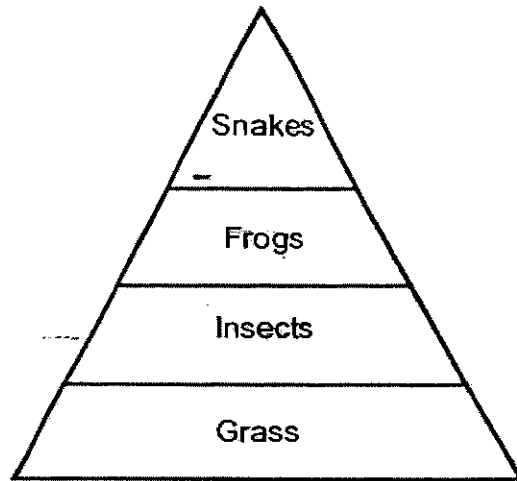


- (a) Which graph shows the number of aphids after the ladybirds were introduced to the plant? (1m)

- (b) Why did the number of aphids decrease in Graph B? (1m)

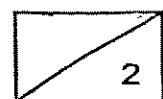


41. The diagram shows a food pyramid of organisms for a certain community.

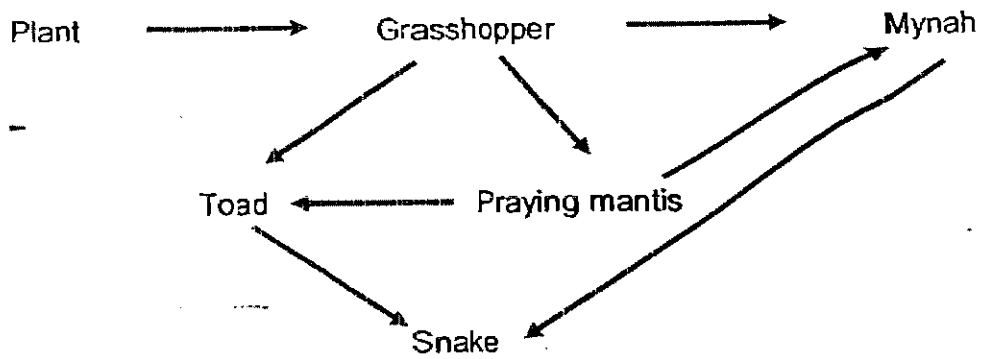


(a) Name the main source of energy for all the organisms in the above food pyramid. (1m)

(b) Name the animal which is a prey as well as a predator. (1m)



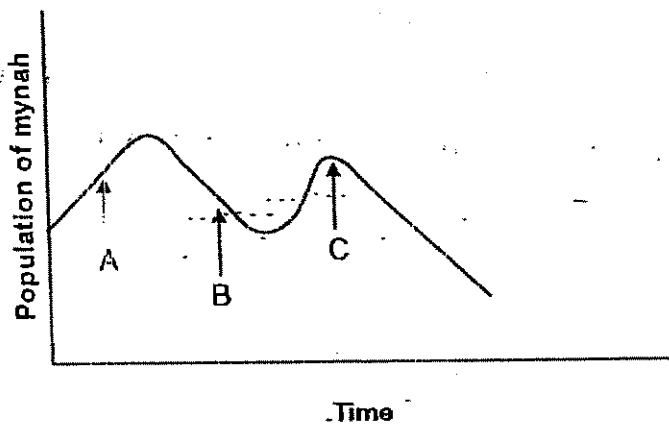
42. Study the food web shown below.



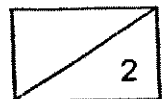
(a) Construct a food chain consisting of 5 organisms from the above food web. (1m)



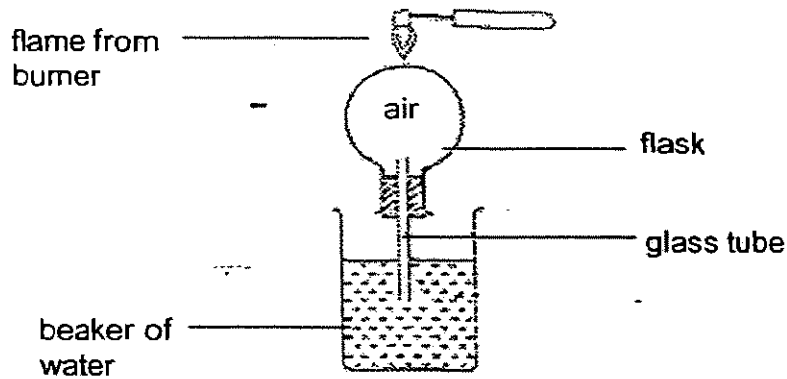
(b) The graph below shows the population of mynah over a period of time.



At which point, A, B or C, was the monitor lizard introduced into the habitat? (1m)

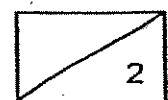


43. Study the diagram below carefully.

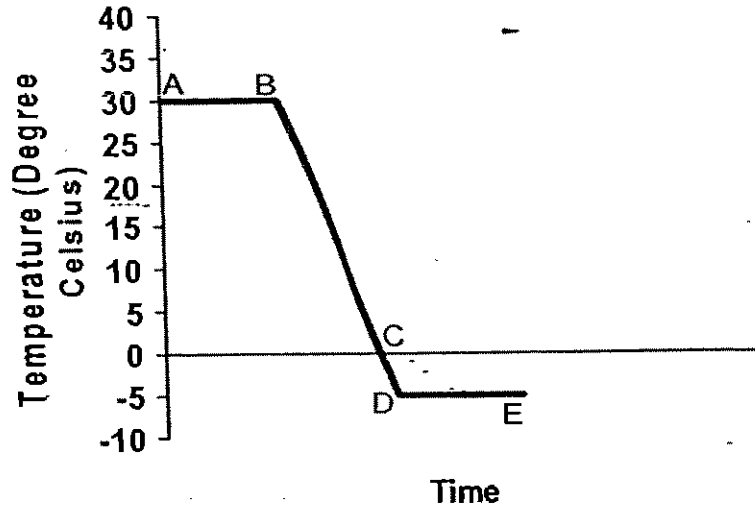


(a) What will you see when the heating stops and the flask is allowed to cool? (1m)

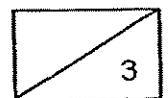
(b) Explain your answer for part (a). (1m)



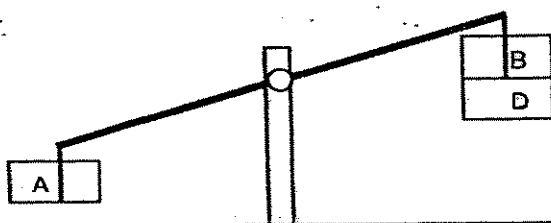
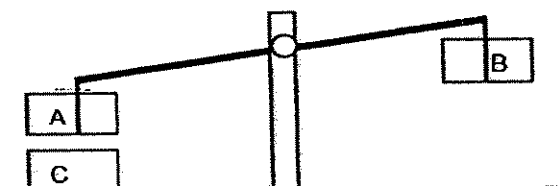
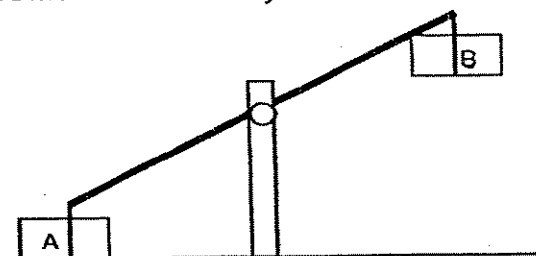
44. The graph below shows the temperature of a container of water below. The container was placed in the freezer at point B.



- (a) What happens to the water at BC ? (1m)
-
- (b) What is the state of water at DE ? (1m)
-
- (c) Why did the freezing point go below 0°C ? (1m)
-
-



45. Study the diagrams below carefully.

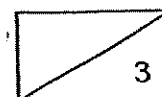


(a) Based on the diagrams, indicate whether each of the following statements is "True", "False" or "Not possible to tell".

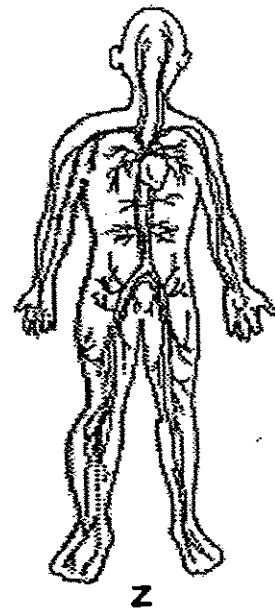
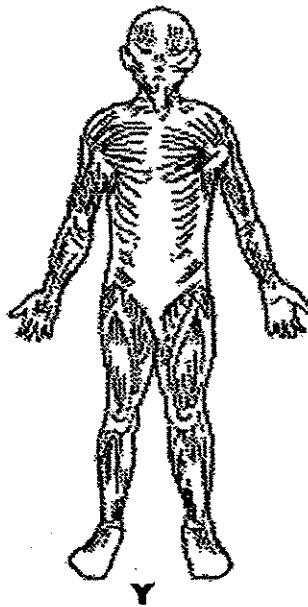
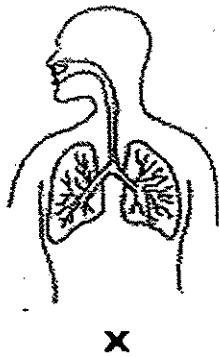
Put a tick (✓) in the correct box. (2m)

	Statements	True	False	Not possible to tell.
(i)	Both A and C are magnets			
(ii)	B is not a magnet			

(b) Explain your answer in (a) (i). (1m)



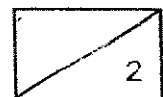
46. Study the diagrams below carefully.

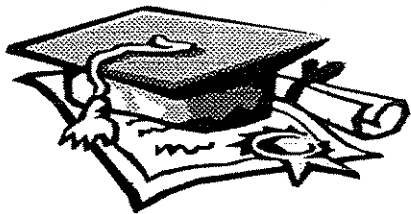


(a) Which one of the following has a similar function as the plant transport system? (1m)

(b) Which other system in the body is required to work with system Y in order to allow for movements, for example hands movements. (1m)

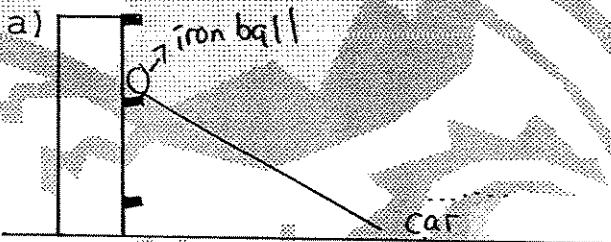
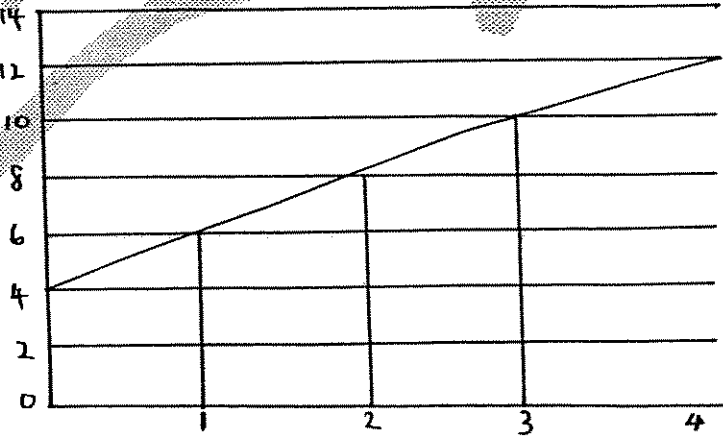
END OF PAPER





ANSWER SHEET

NAN HUA PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
SEMESTRAL ASSESSMENT (1)

- 1.3
 - 2.3
 - 3.4
 - 4.1
 - 5.2
 - 6.1
 - 7.2
 - 8.1
 - 9.4
 - 10.3
 - 11.3
 - 12.4
 - 13.4
 - 14.3
 - 15.4
 - 16.4
 - 17.4
 - 18.2
 - 19.4
 - 20.2
 - 21.4
 - 22.4
 - 23.2
 - 24.2
 - 25.2
 - 26.1
 - 27.3
 - 28.2
 - 29.4
 - 30.4
- 31) a) He should use Styrofoam.
b) Styrofoam is a bad conductor of heat ($\frac{1}{2}$ m), thus it takes the longest period of time to gain heat ($\frac{1}{2}$ m)
- 32) One flower per stalk many flowers per stalks
sunflower lxora
Hibiscus Frangipanni
- 33) a) He got the energy from Acrobat B when he jumped on to the opposite side of the see-saw.
b) They could change Acrobat B to Acrobat C.
- 34) a) 
- b) It posses gravitational potential energy.
c) The distance traveled by the car.
- 35) a) 

35)b) It is to find out if the number of marbles affect the length of the spring.

36)a) Pulling Force, frictional force, Gravitational force.

b) As the load was heavier, more effort was needed to pull up the load.

37)a) The ice cube.

b) As the ice cube is the solid form of water, when it is pushed forward, there will be small amount of water and water reduces friction, hence, the ice cube will move farther than the block.

38)a) the temperature at the eco-garden

The amount of light in the eco-garden

b) The more the amount of light is present, the higher the temperature.

39)a) There was not enough oxygen in the water, hence, they have to swim near the surface.

b) When the plants carried out photosynthesis (1m), oxygen ($\frac{1}{2}$ m) was provided for the fish to respire ($\frac{1}{2}$ m).

40)a) Graph B.

b) As lady birds feed on aphids, the number of aphids in Graph B decreased.

41)a) The sun.

b) Frogs.

42)a) Plant → Grasshopper → Praying Mantis → Mynan → Snake.

b) C.

43)a) The water level in the beaker dropped (1m).

b) The volume of air in the flask contracts ($\frac{1}{2}$) when lod and water rushed in to take up space ($\frac{1}{2}$ m).

44)a) The water cools down.

b) Solid.

c) Salt was added into the water.

45) a) i) True

ii) Not

b) The like poles of magnet A/C are facing each other ($\frac{1}{2}$ m), so they repel ($\frac{1}{2}$ m)

46) a) Z

b) Skeletal system.

Index
No.

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**NAN HUA PRIMARY SCHOOL
PRELIMINARY EXAMINATION 2007
PRIMARY 6**

**SCIENCE
(BOOKLET A)**

Name: _____ ()

Class: Pr. 6 _____

Date: 23 August 2007

Booklet A	/ 60
Booklet B	/ 40
TOTAL	/ 100

Parent's Signature & Date

Total Time for Booklets A and B: 1 hour 45 minutes

INSTRUCTION TO CANDIDATES

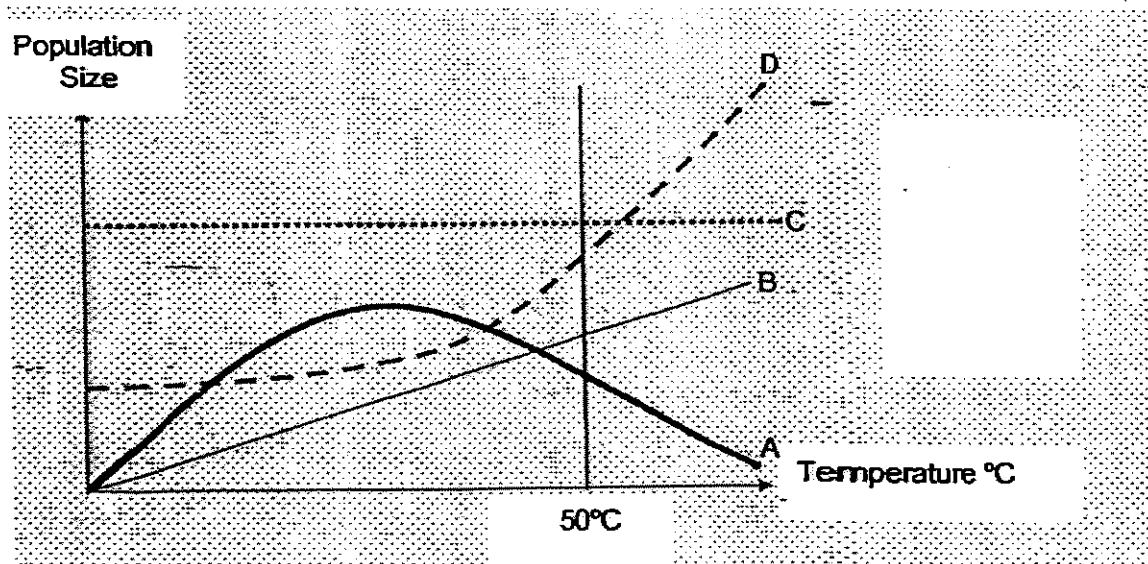
1. Write your Index Number in the boxes at the top right-hand corner.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers in the Optical Answer Sheet (OAS) provided.

Section A: (30 x 2marks = 60marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Which of the following factors below will lead to an increase in the size of an organism's population?
- (A) Abundance of food
 - (B) Predation
 - (C) Diseases
 - (D) High birth rate
 - (E) Sufficient water
- (1) A and D only
 - (2) B and C only
 - (3) A, D and E only
 - (4) A, B, C, D and E

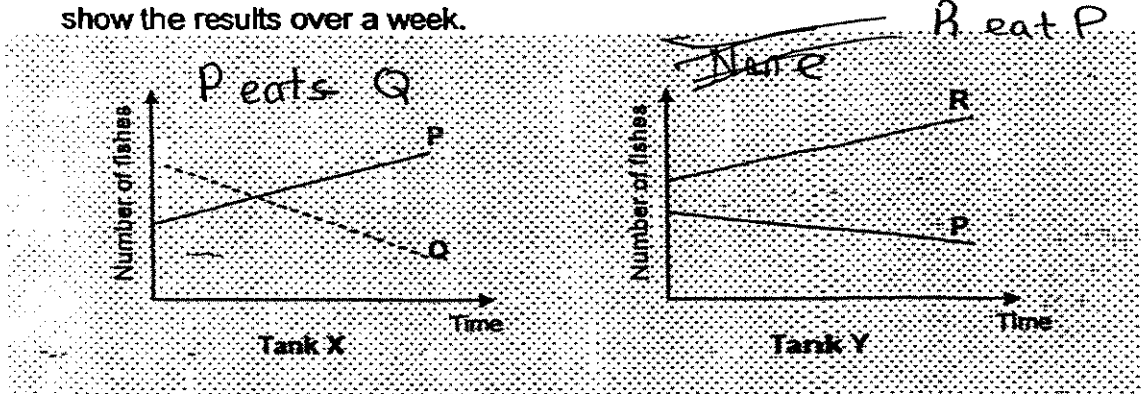
2. The graph below shows the effect of temperature on the populations of 4 different organisms, A, B, C and D.



Which organism(s) will not thrive if the temperature of the environment is above 50°C?

- (1) A only
- (2) C only
- (3) C and D only
- (4) A, B and C only

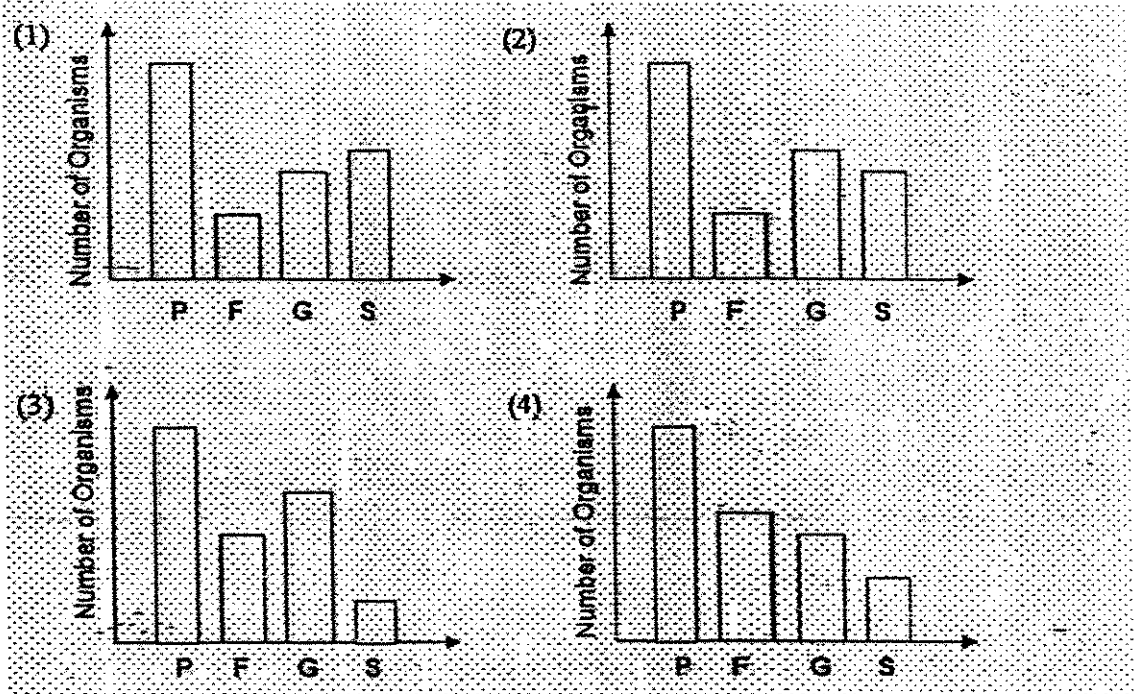
3. Matthew bought 3 different kinds of fishes, P, Q and R and put them into two tanks, X and Y. He put P and Q into tank X, and P and R into tank Y. He recorded the number of fishes in each tank everyday. No dead fishes were found in either tanks when he checked them. The graphs below show the results over a week.



Which one of the following food chains shows the predator-prey relationship between the 3 fishes?

- (1) P → Q → R
- (2) Q → P → R
- (3) R → P → Q
- (4) Q → R → P

4. Which one of the graphs best shows the population of each organism in the community?



Key:

P	Plant
F	Frog
G	Grasshopper
S	Snake

5. The following predator-prey relationships were observed among four living things W, X, Y and Z.

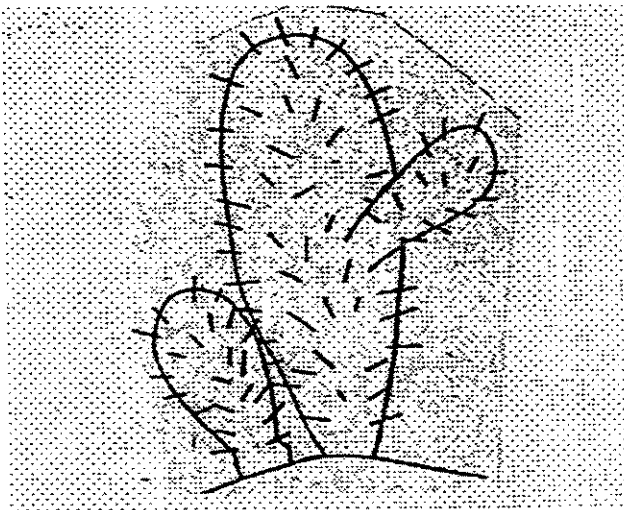
W is eaten by Z
 W feeds on Y
 Z feeds on Y but not X
 Y gets its food from X

Which one of the following is the correct classification of the living things?

	Food producer	Prey	Prey/Predator	Predator
(1)	Y	X	Z	W
(2)	X	Y	W	Z
(3)	Z	Y	W	X
(4)	X	Z	Y	W

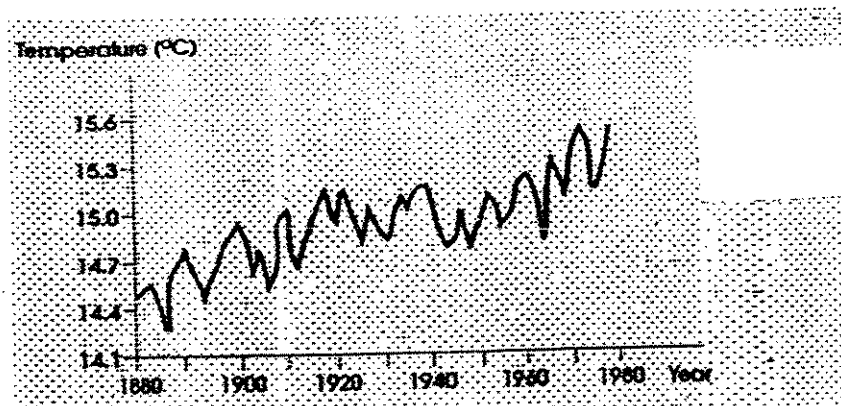
6. Which of the following statement(s) about the adaptation of the polar bear is/are true?
- (A) The polar bear has white fur for camouflage.
 (B) The polar bear's fur is waterproof, thus allowing it to easily shake free of water and any ice that may form after swimming.
 (C) The polar bear has a thick layer of fat to keep it warm.
 (D) The polar bear has stiff hairs on the bottom of its feet to prevent it from slipping in the Artic snow.
- (1) A and B only
 (2) C and D only
 (3) A, B and C only
 (4) A, B, C and D

7. The camel has adapted itself to survival in the desert environment. These adaptations are _____.
- (A) having humps to store water
 - (B) having long eyelashes to block out sand
 - (C) having thick fur to protect against sand storms
 - (D) sweating and urinating very little in order to retain as much water as possible
- (1) B only
 - (2) A and B only
 - (3) B and D only
 - (4) B, C and D only
8. The needle-like spines of the cactus plant are actually the leaves modified into such shape for its adaptation to its natural habitat. What are some advantages of such leaves?



- (A) They help to reduce transpiration.
 - (B) They help to beautify the plant.
 - (C) They help the plant to photosynthesise.
 - (D) They protect the plants against grazing animals.
- (1) A only
 - (2) C only
 - (3) A and D only
 - (4) A, C and D only

9. The graph shows the average global temperature in degrees Celcius.



Which of the following are reasons for the above graphical representation?

- (A) Deforestation
- (B) Melting of the polar ice caps
- (C) Production of greenhouse gases
- (D) Increase in the number of motor vehicles

- (1) A and C only
- (2) B and D only
- (3) A, C and D only
- (4) A, B, C and D

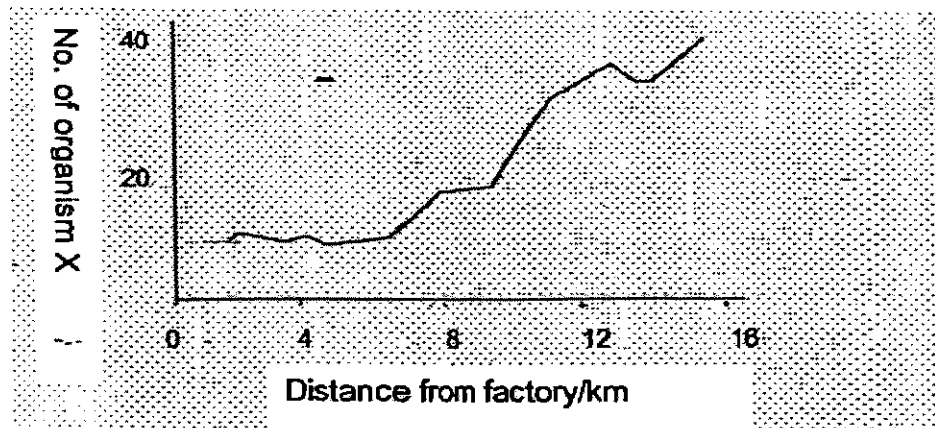
10. Study the statements below carefully.

- (A) Coal is a renewable resource.
- (B) Greenhouse effect will cause skin cancer.
- (C) The main cause of acid rain is deforestation.
- (D) The burning of fuels causes the greenhouse effect.

Which of the statements above are false?

- (1) A and B only
- (2) A and C only
- (3) B and D only
- (4) A, B and C only

11. Organism X is very sensitive to air pollution. The graph shows how the distance from a factory affects the number of organism X.



Which one of the following conclusions can be drawn from the graph?

- (1) Organism X grows more quickly near the factory.
 - (2) The number of organism X increases as the distance from the factory decreases.
 - (3) The number of organism X decreases as the distance from the factory increases.
 - (4) The number of organism X increases as the distance from the factory increases.
12. Which of the following organs are wrongly matched to their functions?

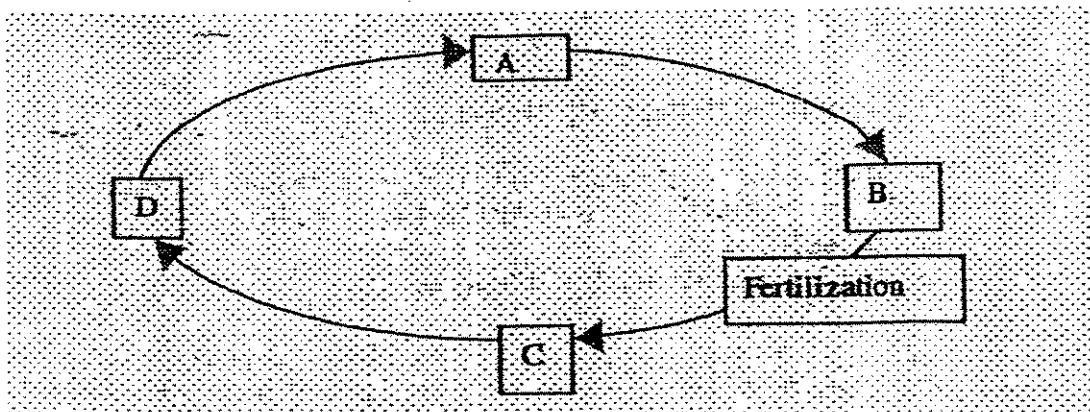
Organs	Functions
A: Heart	It pumps blood to all parts of our body.
B: Lungs	They transport oxygen around our body.
C: Stomach	It chums food into smaller pieces.
D: Small intestine	It completes the digestion of food.
E: Large intestine	It removes water from the undigested food.
F: Windpipe	It transports food from the mouth to the stomach.

- (1) A and B
- (2) C and E
- (3) D and E
- (4) B and F

13. How are birds and insects similar?

- (1) They lay eggs.
- (2) They have feelers.
- (3) They have two legs.
- (4) They have feathers.

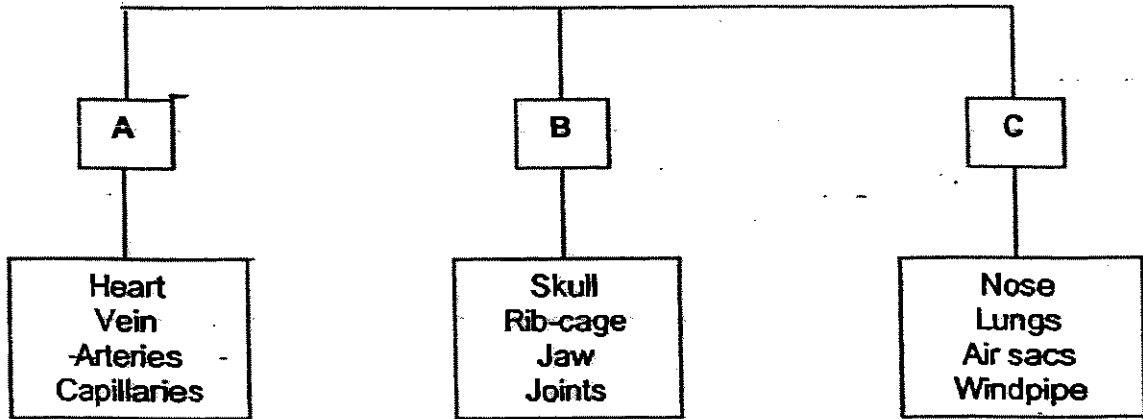
14.



The diagram shows the life cycle of a butterfly and the point at which fertilization occurs. Which of the following correctly shows the different stages of its life cycle?

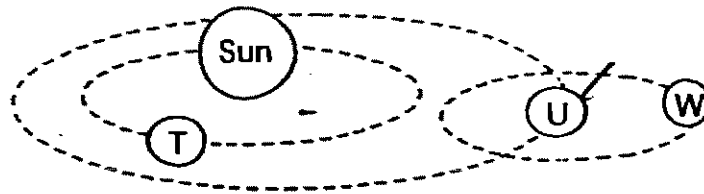
	A	B	C	D
(1)	Egg	Larva	Pupa	Adult
(2)	Larva	Pupa	Adult	Egg
(3)	Pupa	Adult	Egg	Larva
(4)	Adult	Egg	Larva	Pupa

15. How has the table below been classified? What systems do A, B and C belong to?



	A	B	C
(1)	Circulatory	Respiratory	Skeletal
(2)	Respiratory	Circulatory	Skeletal
(3)	Circulatory	Skeletal	Respiratory
(4)	Skeletal	Respiratory	Circulatory

16. The diagram below shows the orbits of some objects.



Which of the following statements can you infer based on the diagram only?

- A T, U and W revolve around the Sun.
- B T will have a higher surface temperature than U.
- C W is kept in orbit, due to the gravitational pull exerted on it by U.
- D When T completes one revolution around the Sun, U would have completed two revolutions.

- (1) A and B only
- (2) A and D only
- (3) B and C only
- (4) B, C and D only

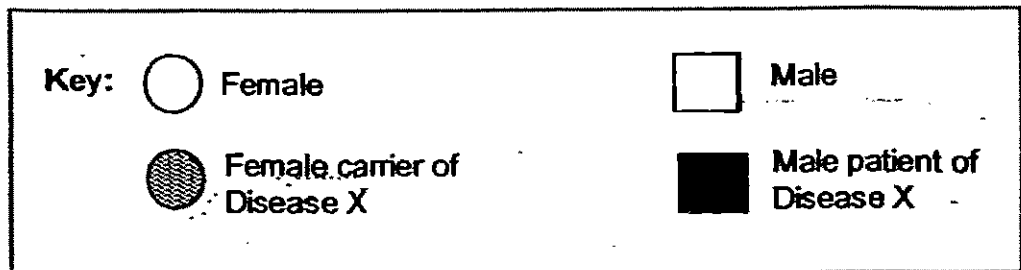
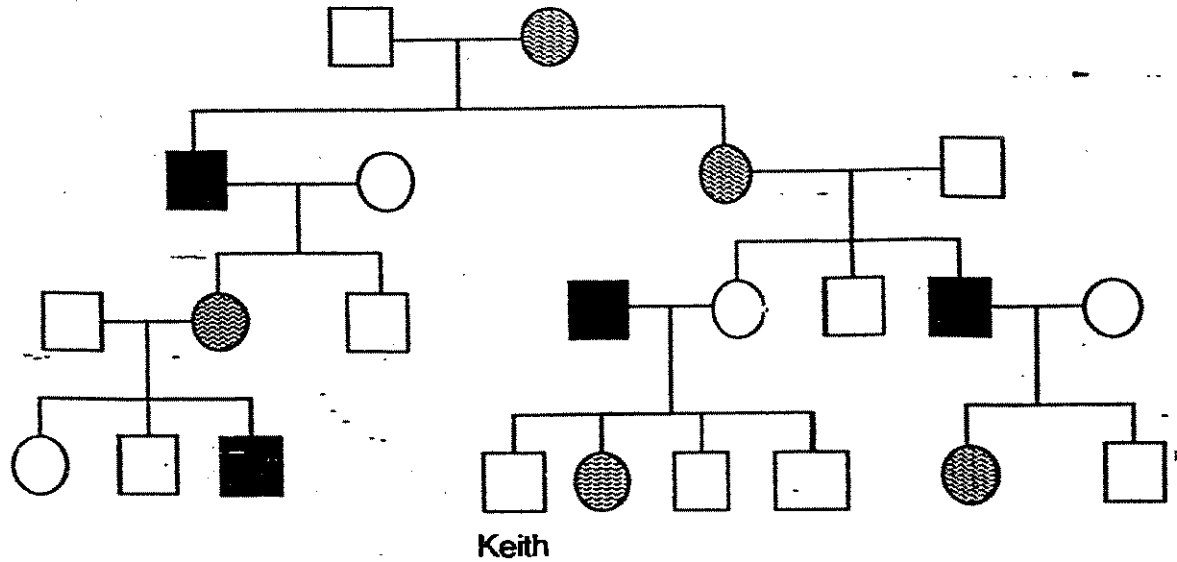
17. Five pupils observed some plant and animal cells under the microscope. They recorded their observations and conclusions in the table below.

Name of pupil	Observation on cell parts seen	Conclusion on type of cell
Alfi /	Cytoplasm, nucleus, cell membrane	Animal
Marshal /	Nucleus, cell wall, cell membrane, chloroplasts	Plant
Emily	Cell membrane, nucleus, chloroplasts	Animal
Ben	Cell membrane, cell wall, nucleus	Animal
Nathan /	Cell membrane, cell wall, nucleus, cytoplasm	Plant

Which pupils made the correct conclusion?

- (1) Alfi, Emily and Ben
- (2) Emily, Ben and Nathan
- (3) Marshal, Emily and Ben
- (4) Alfi, Marshal and Nathan

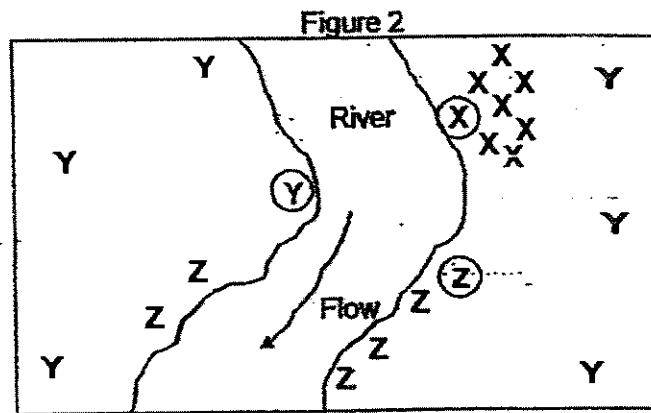
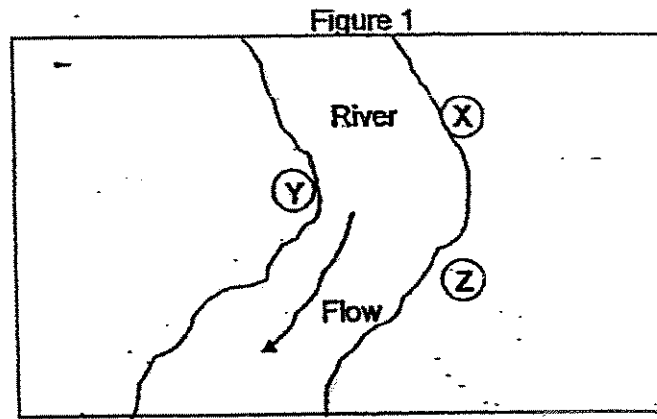
18. The diagram below shows Keith's family tree of 4 generations that carry the genetic trait for Disease X. Study the family tree carefully and answer the following question.



Which of the following statements can you conclude with the above family tree?

- A There is a possibility of Keith's sister bearing a son with the disease.
 - B The genes of Disease X is passed on to only the male members of the family.
 - C The daughter of a male patient with Disease X will be a carrier of the disease.
 - D Keith's mother inherited the genes of Disease X from her maternal grandfather.
- (1) A and C only
 (2) A and D only
 (3) B and D only
 (4) A, B and C only

19. Three different types of plants, X, Y and Z were identified on some empty land as shown in Figure 1. All of them bear fruits. A few years later, as a result of dispersal, more of the plants were found as shown in figure 2.

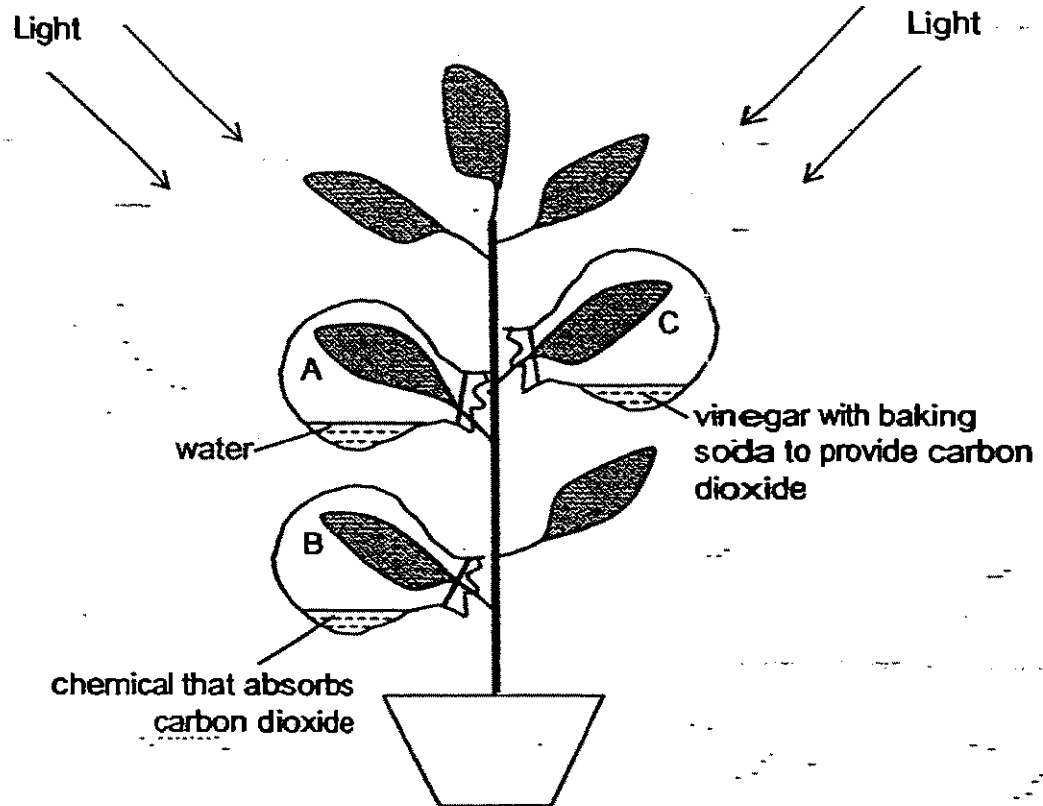


Based on what you observe from figure 2, what are the likely characteristics of the fruits of plants X, Y and Z, which helped them to disperse their seeds?

	Plant X	Plant Y	Plant Z
(1)	Has a water-proof outer covering	Has air spaces	Has thorns
(2)	Splits open when dry	Is hairy and light	Has a fibrous husk
(3)	Has wing-like structures	Is fleshy and edible	Has a water-proof outer covering
(4)	Is fleshy and edible	Splits open when dry	Has hook-like structure

20. Ke Ai wanted to conduct an experiment on photosynthesis. Before she started her investigation, she left the plant in a dark cupboard for 48 hours.

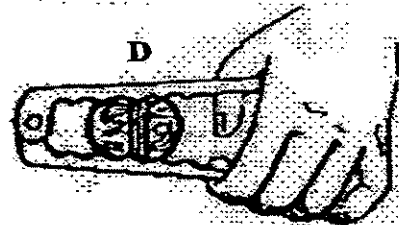
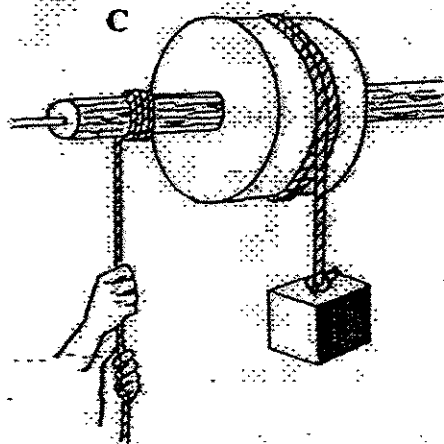
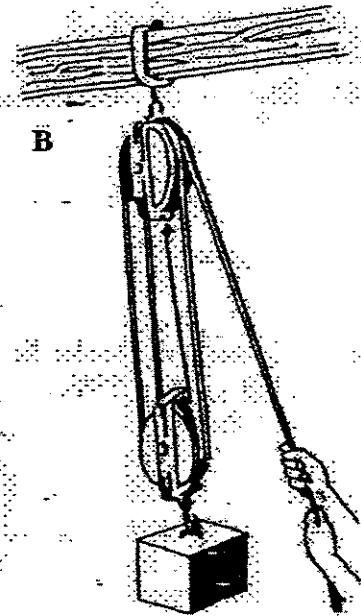
She set up her experiment in the garden as shown in the diagram below.



After four hours, Ke Ai removed leaves A, B and C, and conducted a starch test on the leaves. Which one of the following sets of results would she most likely obtain?

	Results of starch test		
	Leaf A	Leaf B	Leaf C
(1)	It turned dark blue.	It turned dark blue.	It remained brown.
(2)	It turned dark blue.	It remained brown.	It turned dark blue.
(3)	It remained brown.	It turned dark blue.	It remained brown.
(4)	It remained brown.	It remained brown.	It turned dark blue.

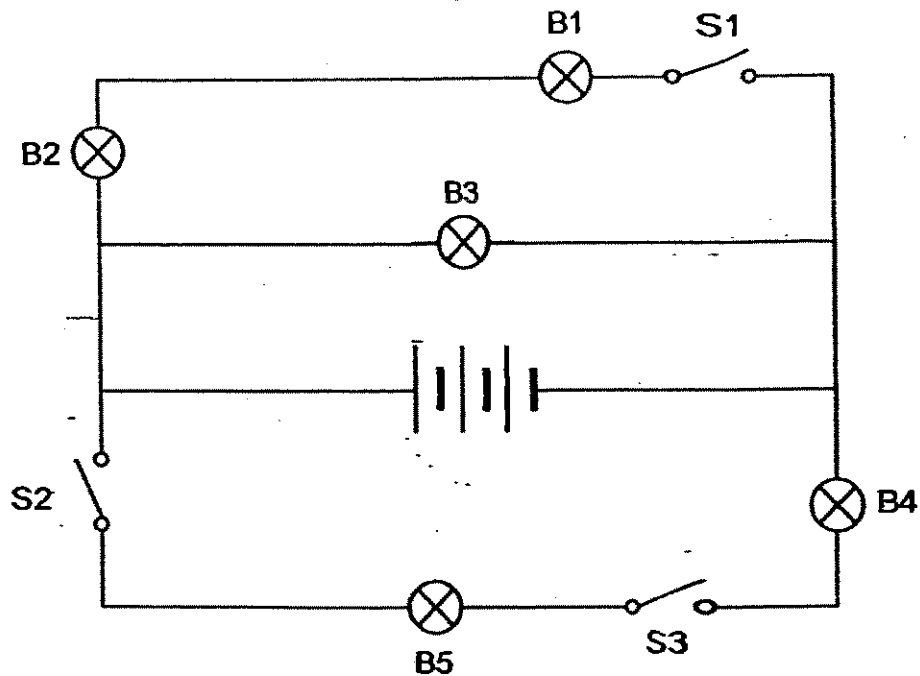
21. Four simple machines A, B, C and D are shown in the diagram below.



In which of the above simple machines, does the applied effort move over a longer distance than the load?

- (1) A and B only
- (2) B and D only
- (3) C and D only
- (4) A, B and C only

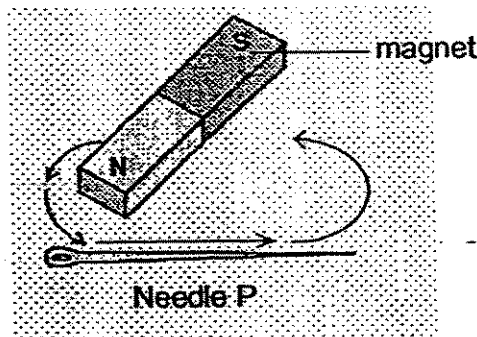
22. The circuit diagram shown below consists of five bulbs, three switches and three dry cells.



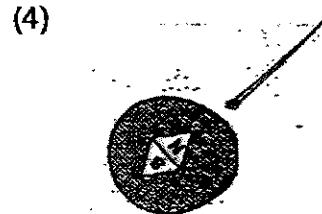
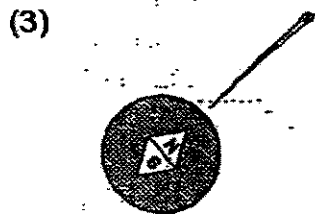
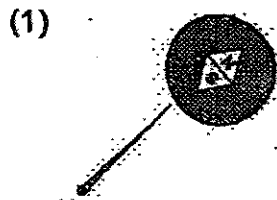
Which one of the following statements about the circuit shown above is correct?

- (1) When S1 and S2 are open and S3 is closed, only B4 and B5 would light up.
- (2) When S1 and S2 are closed and S3 is open, only B1, B2 and B3 would light up.
- (3) When S2 and S3 are open and S1 is closed, only B2 and B3 would light up.
- (4) When S2 and S3 are closed and S1 is open, only B4 and B5 would light up.

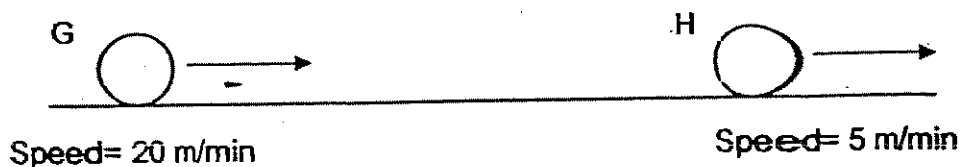
23. Needle P is made into a temporary magnet by using the stroking method.



The needle is then placed near a compass. Which one of the needles shown is needle P?



24. Two identical tennis balls, G and H are moving on a marble floor at different speeds in the direction as shown in the diagram below.



What will happen to balls G and H after some time?

- A G will hit H and G will travel in the same direction.
 B G will hit H and G will travel in the opposite direction.
 C After being hit by G, H will travel faster in the same direction.
 D After being hit by G, H will travel slower in the opposite direction.
- (1) A and C only
 (2) A and D only
 (3) B and C only
 (4) B and D only

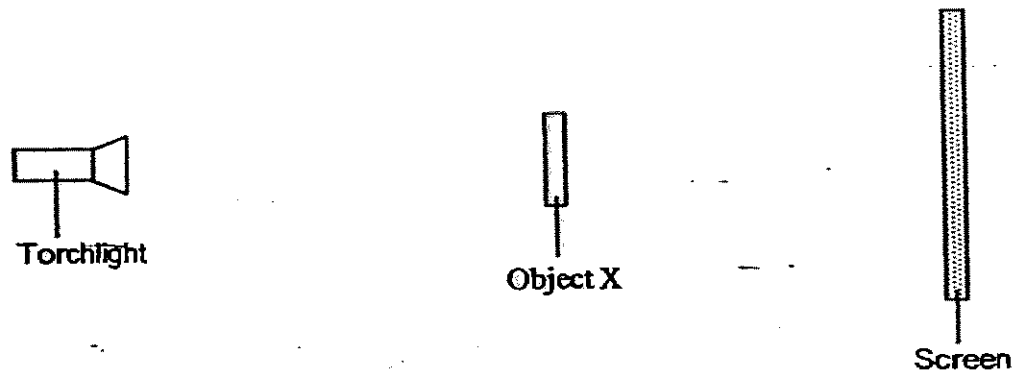
25. A marble was pushed with the same amount of force across four different types of surfaces, Q, R, S and T. The table below shows the distance travelled by the marble before it came to a stop.

Surface	Q	R	S	T
Distance traveled (cm)	78	19	28	55

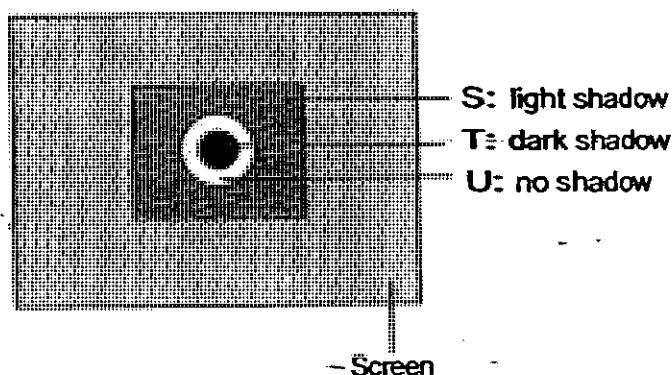
Which one of the following sets of surfaces best matches the distances recorded above?

	Q	R	S	T
(1)	Sandpaper	Wood	Glass	Carpet
(2)	Glass	Carpet	Sandpaper	Wood
(3)	Carpet	Glass	Wood	Sandpaper
(4)	Wood	Sandpaper	Glass	Carpet

26. Sherman carried out an experiment to find out more about shadows and the properties of light. He set up the experiment as shown in the diagram below.



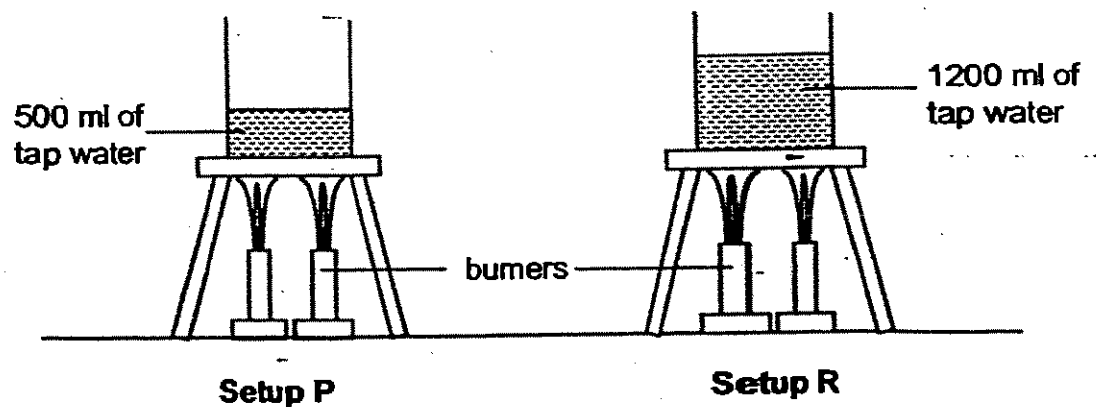
When he shone the torchlight at object X, he obtained a shadow as shown on the screen below.



Which one of the following materials would parts S, T and U be most likely made of?

	Part S	Part T	Part U
(1)	Cardboard	Tissue paper	Clear glass
(2)	Tissue paper	White paper	Frosted glass
(3)	Clear plastic	Tracing paper	Tissue paper
(4)	Tracing paper	Cardboard	Clear plastic

27. An experiment is set up as shown in the diagram below.

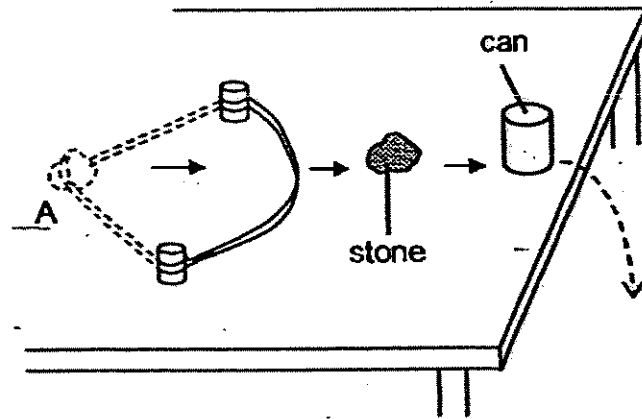


The experiment was stopped after the water in both setups was heated for 30 minutes. Which of the following statement(s) is/are true about the above experiment?

- A The water in both setups will start to boil at the same time.
- B The water in setup P has more heat energy than the water in setup R.
- C The water in both setups is at the same temperature when it is boiling.
- D The water in setup R is at a higher temperature than the water in setup P when it is boiling.

- (1) C only
- (2) A and B
- (3) A and C
- (4) B and D

28. Rahman conducted an experiment as shown in the diagram below.

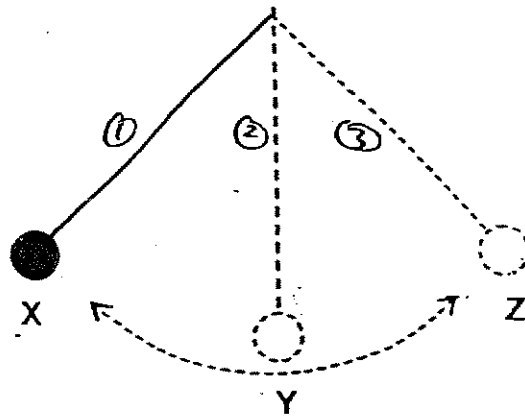


He pulled the rubber band backwards together with a stone to position A. When he released the stone, it moved forward and hit the can. The can fell off the table and hit the ground.

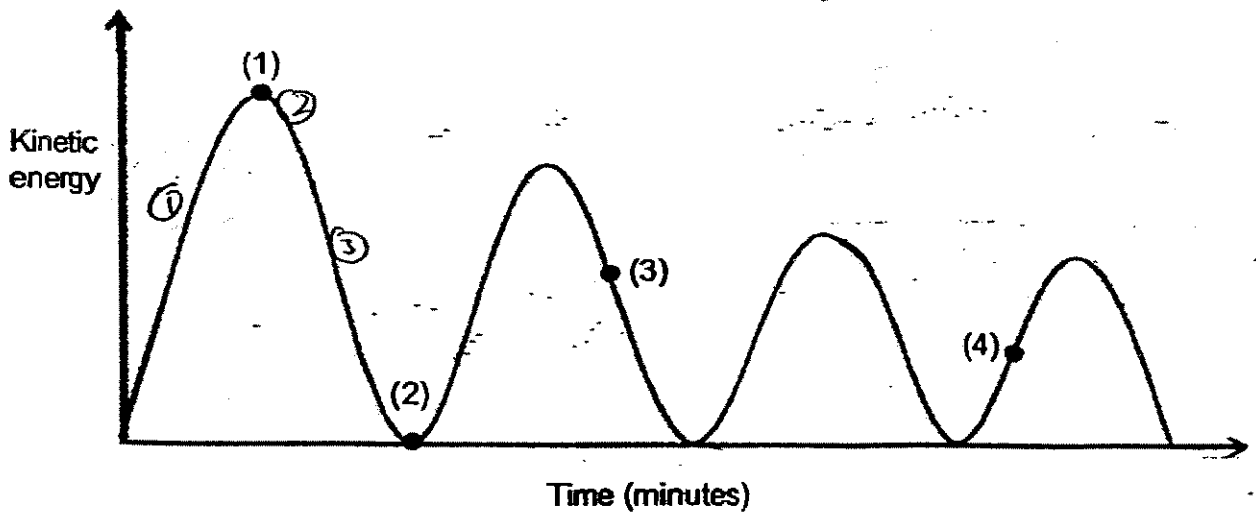
Which one of the following shows the correct energy conversion that took place from the moment Rahman released the rubber band till the can hit the ground?

- (1) Kinetic energy \longrightarrow Heat energy + Sound energy
- (2) Kinetic energy \longrightarrow Potential energy \longrightarrow Heat energy + Sound energy
- (3) Potential energy \longrightarrow Kinetic energy \longrightarrow Potential energy + Heat energy + Sound energy
- (4) Potential energy \longrightarrow Kinetic energy \longrightarrow Kinetic energy \longrightarrow Heat energy + Sound energy

29. A pendulum was released at point X as shown in the diagram below.

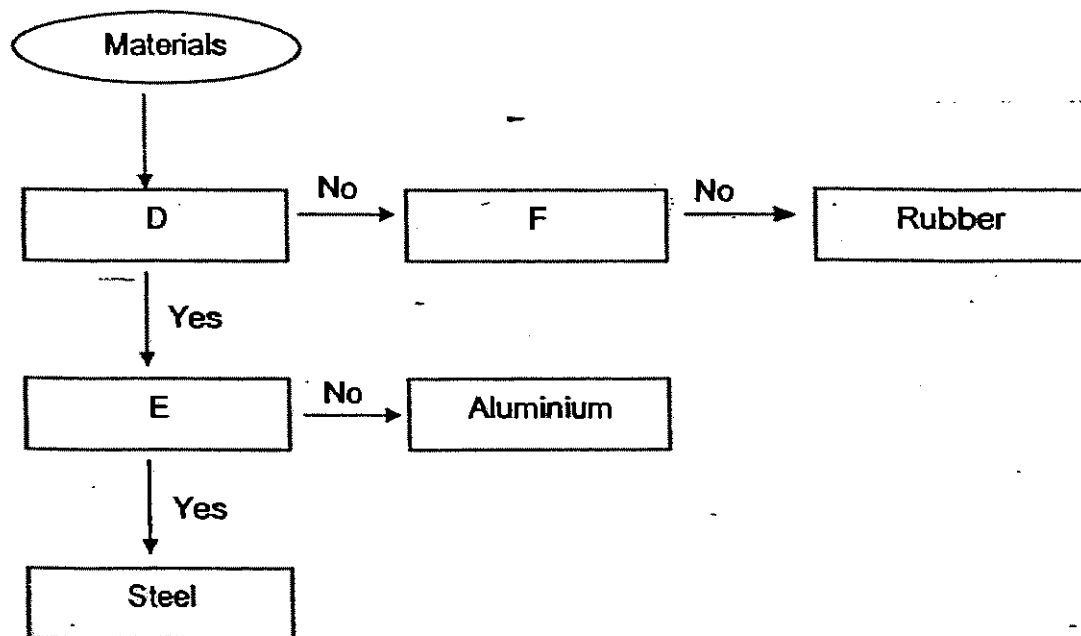


As the pendulum swung from point X to Z, its kinetic energy was calculated and plotted on the graph below.



Which point on the graph best represents the kinetic energy of the pendulum when it was at point Y?

30. The flow chart below shows the classification of some materials.



Which one of the following properties correctly describes D, E and F in the chart above?

	D	E	F
(1)	Allows light to pass through	Non-magnetic	Electrical insulator
(2)	Flexible	Conducts heat	Non-magnetic
(3)	Conducts electricity	Magnetic	Allows light to pass through
(4)	Conducts heat	Allows light to pass through	Heat insulator



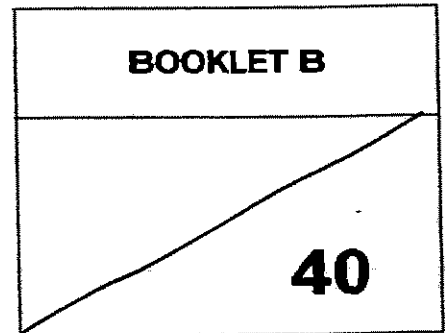
**NAN HUA PRIMARY SCHOOL
PRELIMINARY EXAMINATION 2007
PRIMARY 6**

**SCIENCE
(BOOKLET B)**

Name: _____ ()

Class: Pr. 6 _____

Date: 23 August 2007



Parent's Signature & Date

Total Time for Booklets A and B: 1 hour 45 minutes

Section B: (40marks)

Write your answers to question 31 to 46.

The number of marks available is shown in brackets [] at the end of each question or part question.

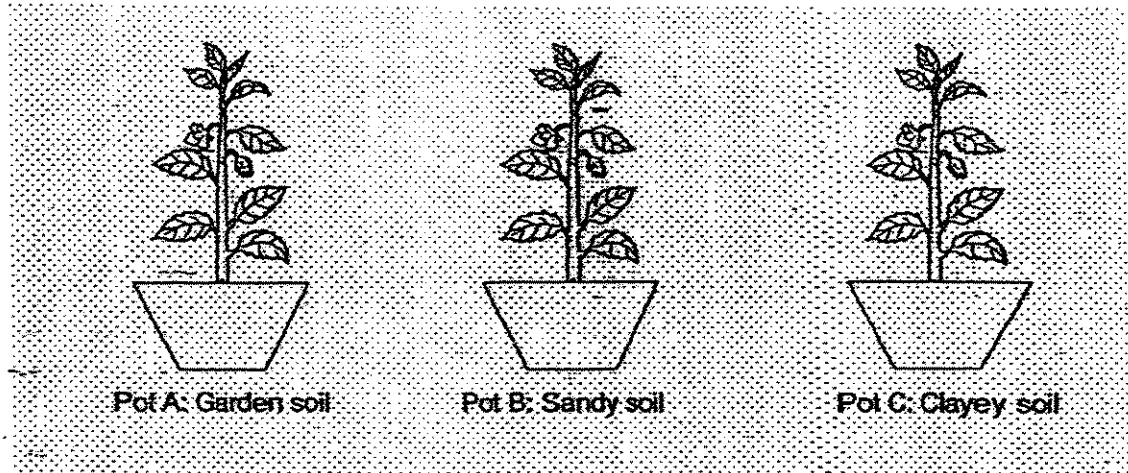
31. The table below shows the number of organisms in a habitat.

Organism	Number of organisms
Caterpillar	3
Snail	7
Earthworm	10
Butterfly	2
Ant	8
Sparrow	4

(a) In which community can the above organisms be found? [1]

(b) How many populations of organisms are there? [1]

32. Amy filled 3 pots with the same amount of soil as shown in the diagram below.

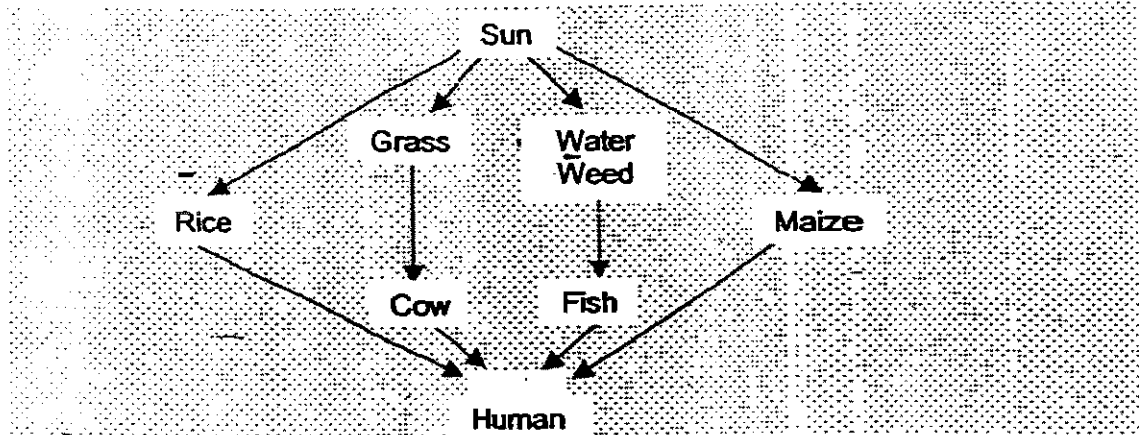


She planted the same kind of plants in each pot and placed them side-by-side on a table near the window. She watered each plant with the same amount of water every morning.

- (a) What was the aim of the experiment? [1]

- (b) Which pot of plant will grow the best after some time?
(1) Why is this so? [2]

33. The figure below shows a food web.



(a) Name one group of organism that is not shown in the diagram but is very important in maintaining the food web. [1]

(b) How does this group of organism help to maintain the above food web in a balanced state? [1]

34. The table below shows some aquatic plants found in a pond.

Group A	Group B	Group C
Cabomba	Duckweed	Arrowhead
Elodea	Water Hyacinth	Cattail
Hydrilla	Water Lettuce	Sedge

- (a) Give suitable headings for groups A, B and C. [2]

(i) Group A: _____

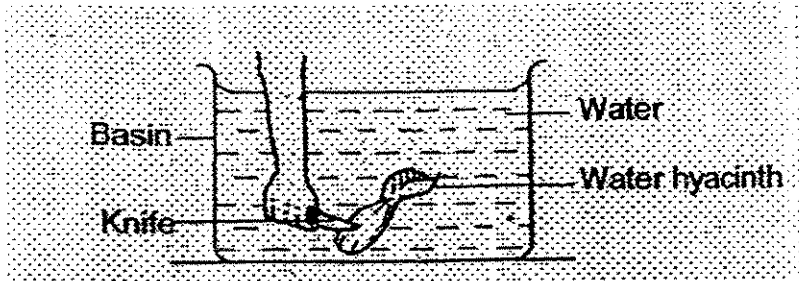
(ii) Group B: _____

(iii) Group C: _____

- (b) If Group B grows uncontrolled throughout the pond, which group of plants would be affected the most? [1]

- (c) Give a reason for your answer in (b). [1]

35.

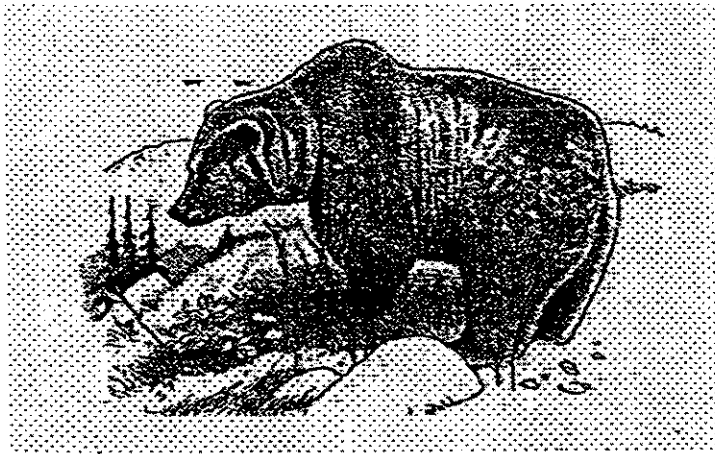


Tim cut a leaf stalk of a water hyacinth plant in a basin of water.

(a) What will he observe in the basin of water after cutting the leaf stalk of the water hyacinth? [1]

(b) Explain how the answer mentioned in part (a) helps the water hyacinth to adapt to its environment? [2]

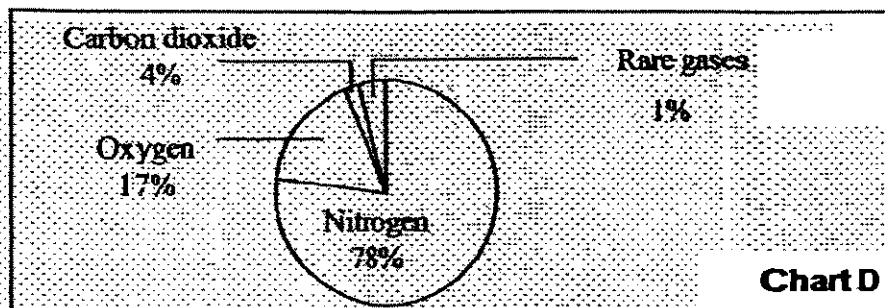
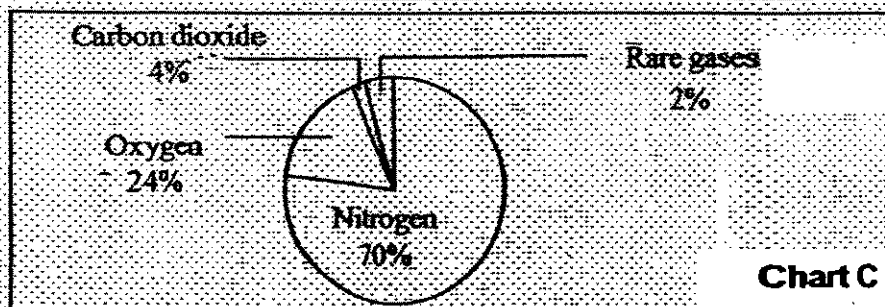
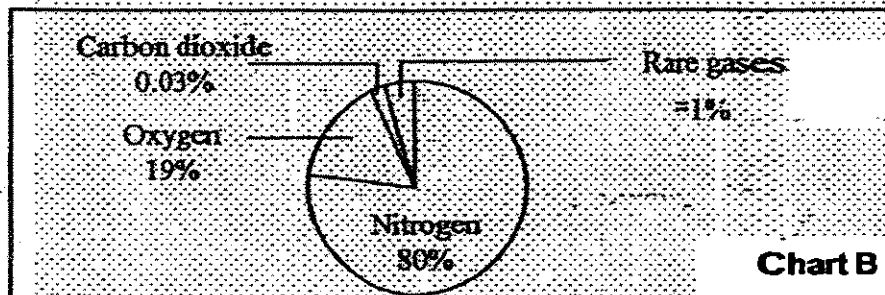
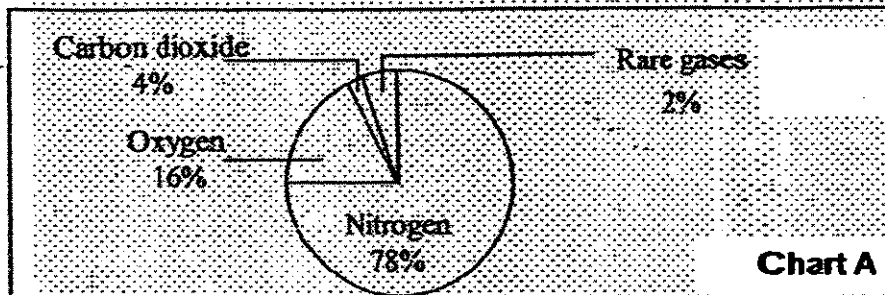
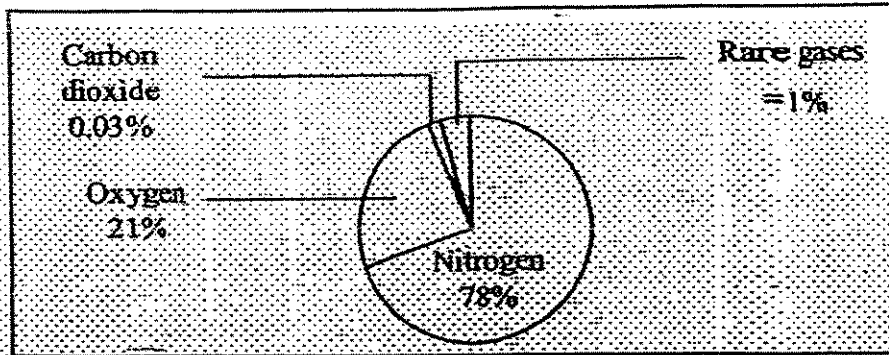
36. Grizzly bears are well-adapted to the seasonal changes of a temperate forest. How has the Grizzly Bear adapted itself to spend the winter season? (Give one structural adaptation and one behavioural adaptation)



(a) Structural adaptation [1]

(b) Behavioural adaptation [1]

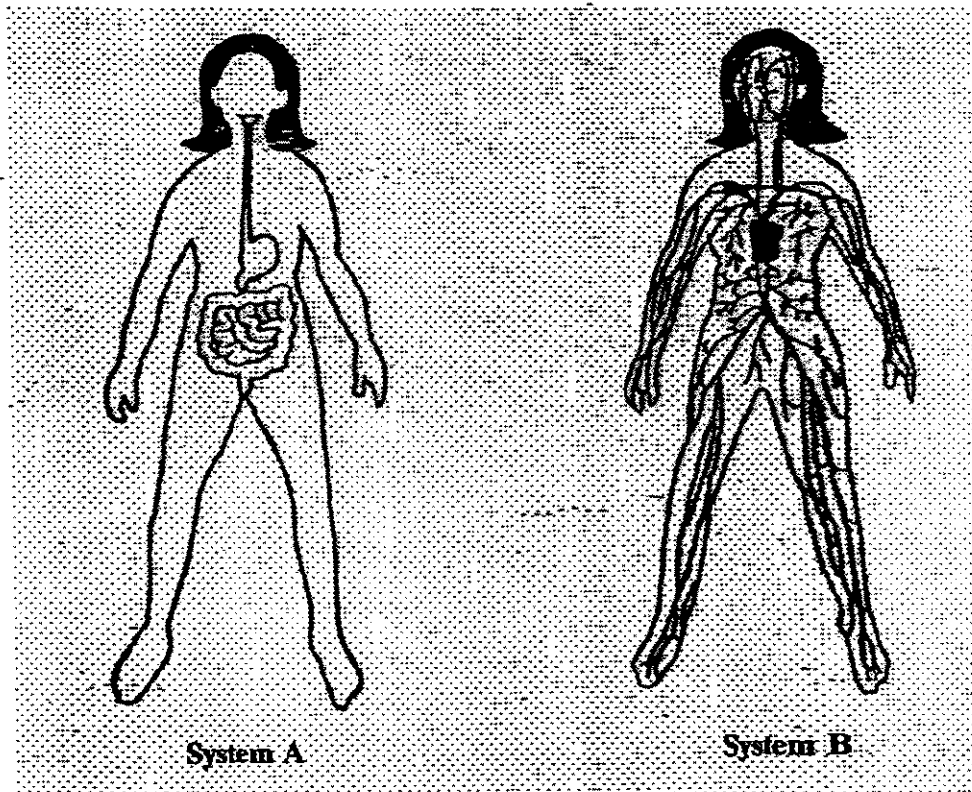
37. The first pie chart below shows the composition of air that we breathe in.



(a) Which of the following pie charts (A, B, C or D) best shows the composition of air that we breathe out? [1]

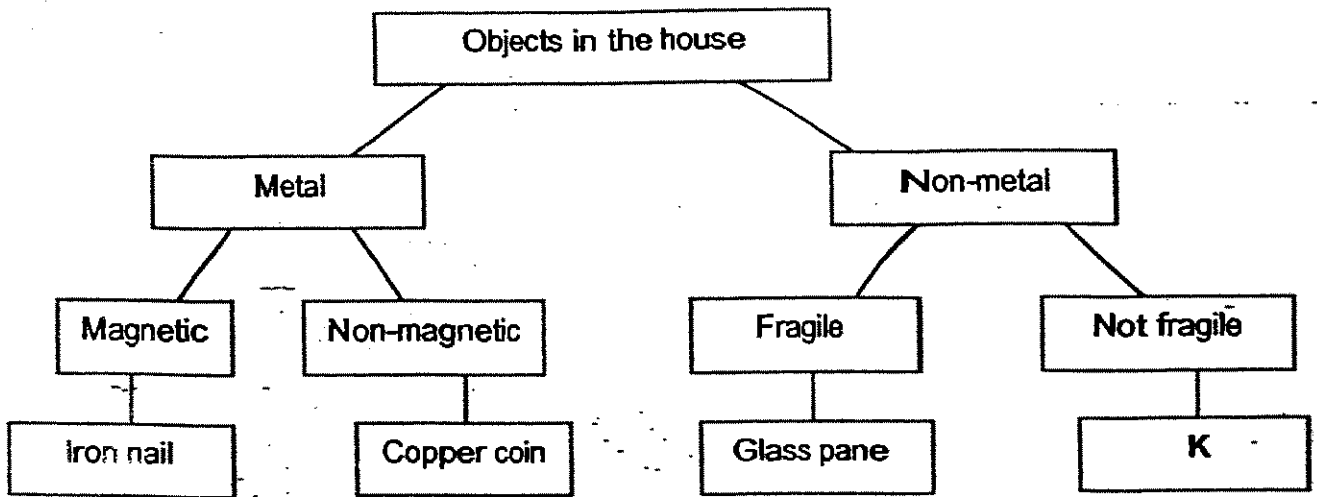
(b) Give a reason for your answer in (a). [1]

38. The diagram below shows 2 important systems in the human body.



How do these two systems work together? [2]

39. Kegan classified four objects in his house. He presented his classification in the chart below.



(a) State the properties that describe the "Copper coin" in the chart above. [1]

(b) Give an example of "K". [1]

40. The classification table below shows the classification of some animals by their outer covering:

Animals			
Group W	Group X	Group Y	Group Z
Lobster Tortoise Snail	Penguin Eagle Platypus	Cat Tiger Polar bear	Guppy Lizard Seahorse

- (a) Identify the animal that has been classified wrongly in the classification table above. [1]
- _____
- (b) In which group X, Y or Z should this animal be classified? [1]
- _____
- (c) Write an appropriate heading for animals in Group Z. [1]
- Group Z- _____

41. Yasmin wanted to investigate how the speed of wind would affect the rate of evaporation of water. She poured equal amounts of water into three containers, Q, R and S. Each of the containers was placed in 3 separate rooms. An identical fan was placed in front of each container and switched on at the beginning of the investigation.

She measured the volume of water in each container after eight hours and recorded the results in the table below.

Container	Volume of water left in the container (ml)
Q	54
R	21
S	32

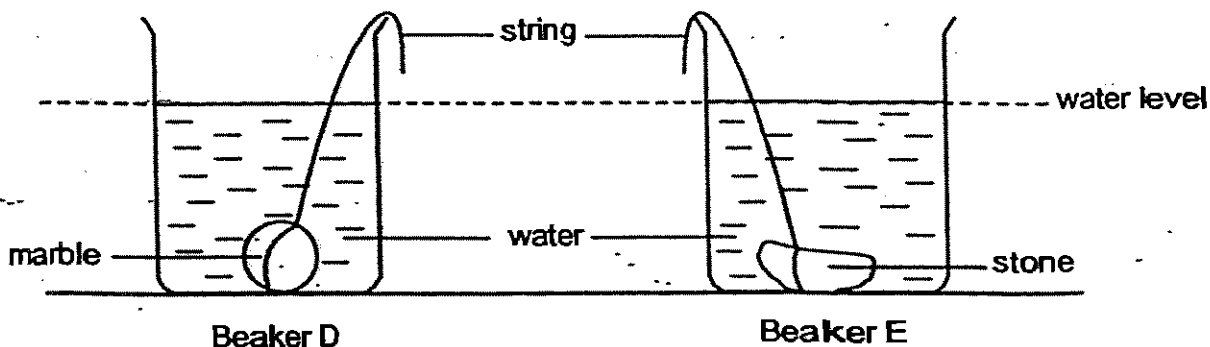
- (a) Arrange the rate of evaporation of water in the three containers in ascending order. [1]

- (b) Put a tick (✓) in the box beside the variable(s) that should be kept the constant for the investigation to be fair. [1]

Variables	Kept constant
Exposed surface area of container.	
Starting time of the experiment.	
The time that the fan was switched off.	
Fan speed when it was switched on.	
Distance between the fan and the container.	

42. The diagram below shows two identical beakers D and E.

A marble tied with a string was lowered into the empty beaker D and a stone tied with a string was lowered into the empty beaker E. Then, water was poured into both beakers D and E, until they have the same water level.



(a) What will you do, if you want to find out whether the marble or the stone has a larger volume? [1]

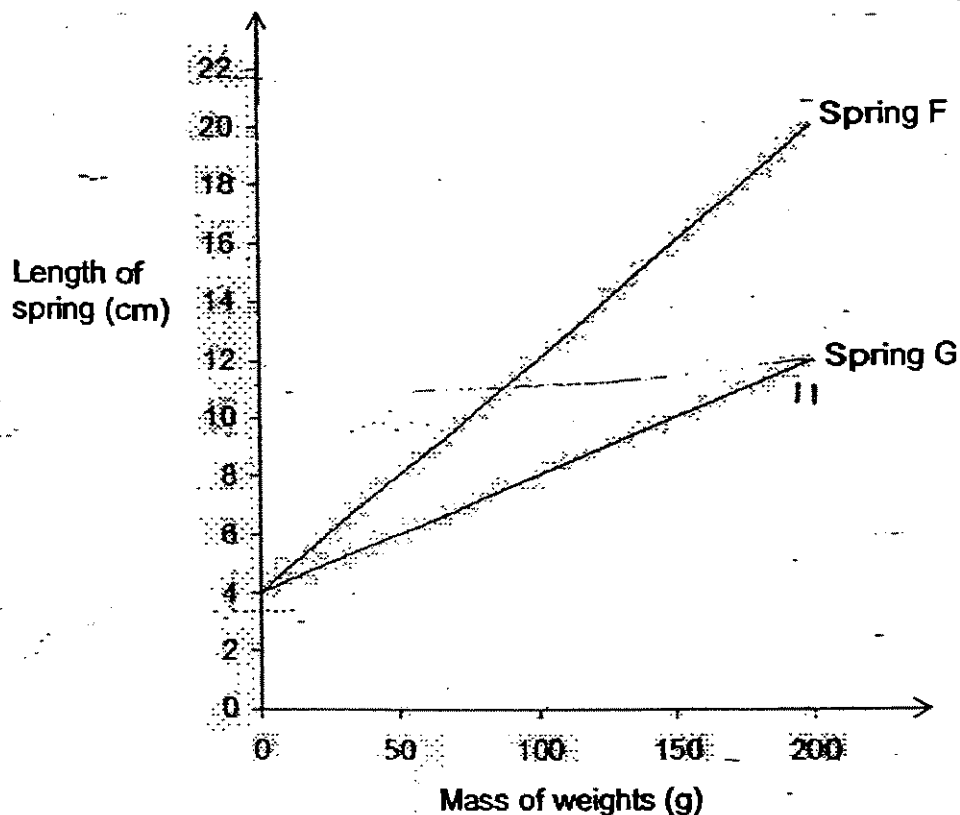
You are **NOT** allowed to:

- use any other apparatus or equipment.
- pour water into or out of the beakers.

(b) After what you have done in (a), what observation tells you that the marble has a greater volume than the stone? [1]

43. Ismail and Han Wei has two springs F and G. They carried out an experiment to find out the elasticity of each of the spring. They hung different weights to each of the spring and measured the new lengths of each spring.

The results of their experiment are plotted in the graph below.

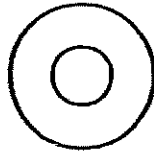


Based on the graph, the following statements were made about springs F and G.

Put a tick (\checkmark) in the correct boxes to indicate which of the statement is True, False or Not possible to tell. [2]

	Statements	True	False	Not possible to tell
(a)	The original length of each of the two springs is 4 cm.			
(b)	The extension of Spring G will be 16cm when a mass of 300g is hung on it.			
(c)	Spring G will be permanently stretched when a mass of 600g is hung on it, whereas Spring F will not be.			
(d)	The extension of Spring F is less than Spring G when the mass of the weights increased from 100g to 200g.			

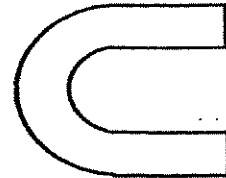
44. Shi Yee wanted to conduct an experiment to find out the strength of different types of magnets. She found the following materials in the laboratory:



ring magnet



rod magnet



horse shoe magnet



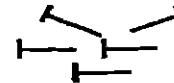
bar magnet



paper clips



30cm ruler

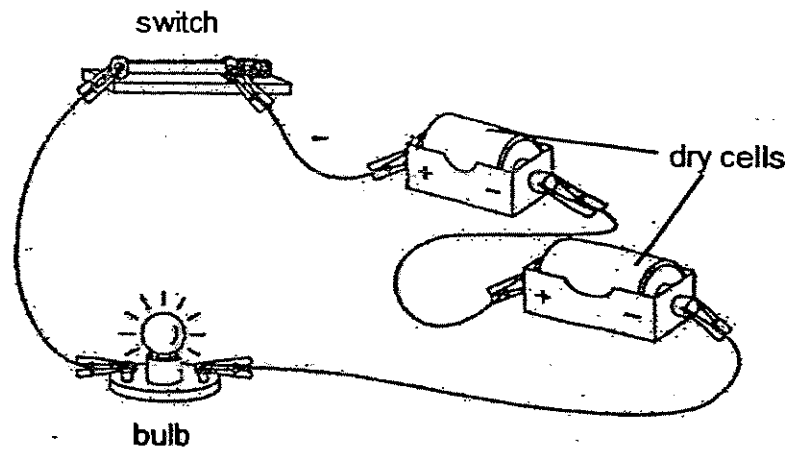


pins

(a) Without using any other materials than those listed above, list the materials Shi Yee would require to conduct the experiment. [1]

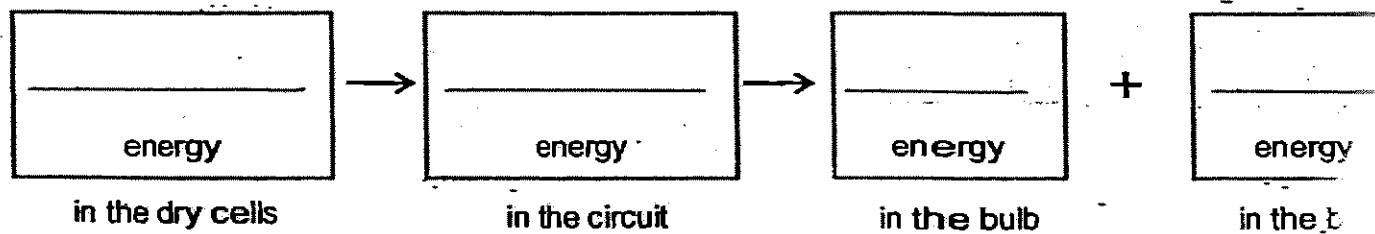
(b) Describe how Shi Yee would conduct the experiment for it to be a fair test to obtain reliable results. List the steps. [3]

45.(a) The diagram below shows an electrical circuit.

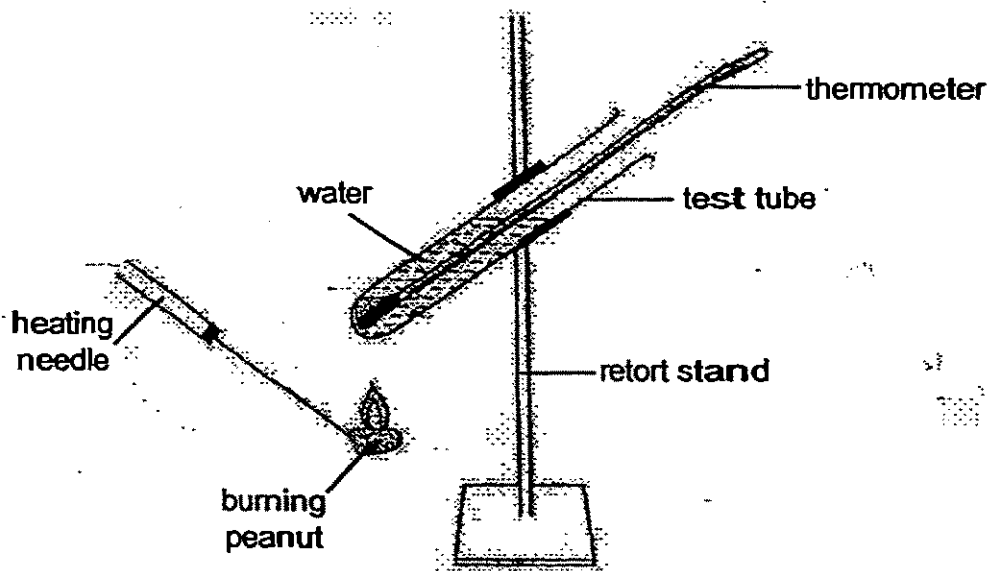


State the main energy conversion when the switch is closed and the bulb lights up.

[1]

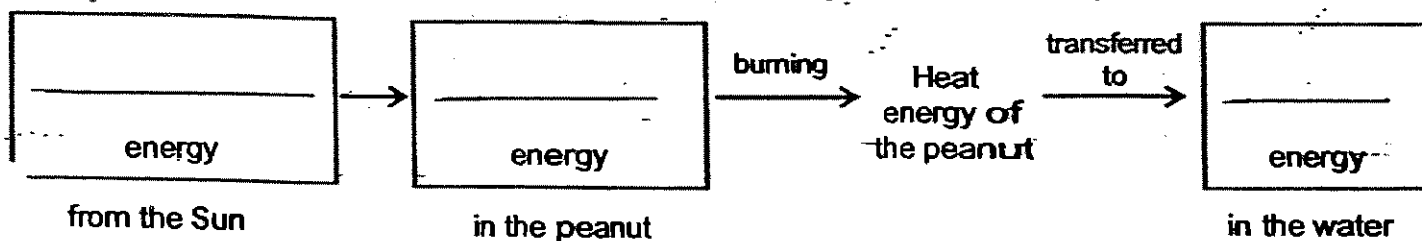


- (b) The diagram below shows an experimental setup that could be used to find out the amount of energy released when food such as the peanut is burnt.

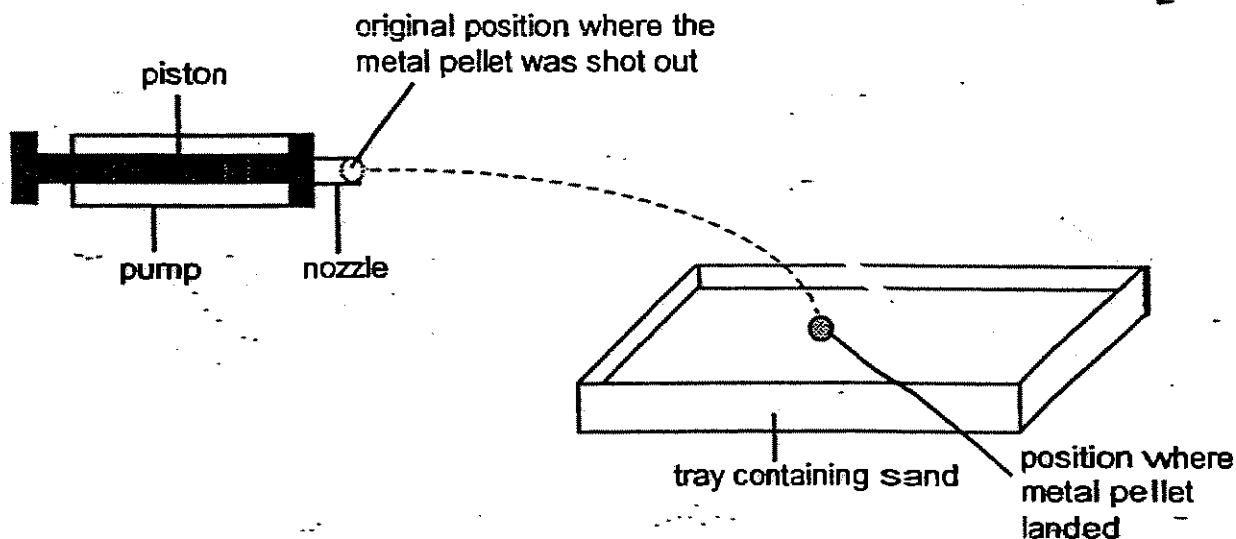


State the main energy conversion to show the transfer of energy from the Sun to the peanut and lastly to the water in the above experiment.

[1]



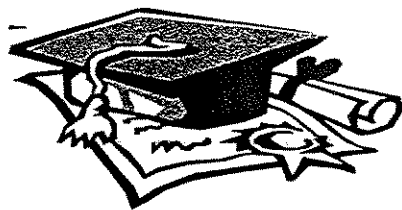
46. Leonard wanted to find out if the mass of a pellet would affect the path it travels when it was shot out from a pump. He placed a metal pellet in the nozzle of the pump and pushed the piston all the way into the pump. The pellet landed on a tray of sand placed a distance away. The path travelled by the metal pellet is represented by the dotted curve (—).



- (a) Leonard's friend, James repeated the experiment with a lighter plastic pellet of a similar size. The plastic pellet landed in the tray of sand. Draw in the diagram above the likely path travelled by the plastic pellet and put a mark (X) in the tray of sand where it would probably land. [1]

- (b) Identify two variables James must keep the same when repeating the experiment to ensure a fair test. [2]

END OF PAPER



ANSWER SHEET

NAN HUA PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
SEMESTRAL ASSESSMENT (2)

- 1.3 31) a) Garden community.
2.1 b) 5 populations.
3.2
4.3 32) a) To find out which soil can a plant
5.2 survive.
6.4 b) Garden soil provides the plant with
7.3 sufficient air and water.
8.3
9.2 33) a) Decomposers.
10.4 b) They decompose waste matter and dead
11.1 organisms into simpler substances
12.4 which are nutrients for plants.
13.1
14.1 34) a) i) Submerged
15.3 ii) Float
16.3 iii) Half submerged
17.1 b) Group A.
18.1 c) Group B prevents Group A from receiving
19.2 sufficient sunlight for photosynthesis.
20.2
21.2 35) a) He will observe air bubbles.
22.2 b) The air spaces in the leaf stalk of
23.3 the water hyacinth help it to float.
24.1
25.2 36) a) It has a thick layer of fat to keep
26.4 it warm.
27.1 b) The grizzly bear hibernates during
28.4 the winter season.
29.1
30.2 37) a) Chart A.
b) The percentage of carbon dioxide
increases while the percentage of
oxygen decreases and the rest of the
gases remain unchanged.

38) System A digests the food we eat while system B transports the digested food around the body.

39) a) Metal and non-magnetic.
b) Cloth like curtain.

40) a) Platypus.
b) Group Y.
c) Scales.

41) a) O, S, R

b) ✓
✓
✓

42) a) Using the string remove the marble and the stone from the beaker.
b) The water level in Beaker B is lower than the water level in Beaker E.

43) a) True b) False c) Not d) false

44) a) The greater the rod magnet, horseshoe magnet, bar magnet and paper clips pulling distance, the stronger magnet.

b) 1) Place a pin at the 0 cm mark of the ruler.
2) Place a magnet at the 10 cm mark of the ruler.

3) Move the magnet nearer to the pin until it attracts the pin.

4) Record the pulling distance of the magnet.

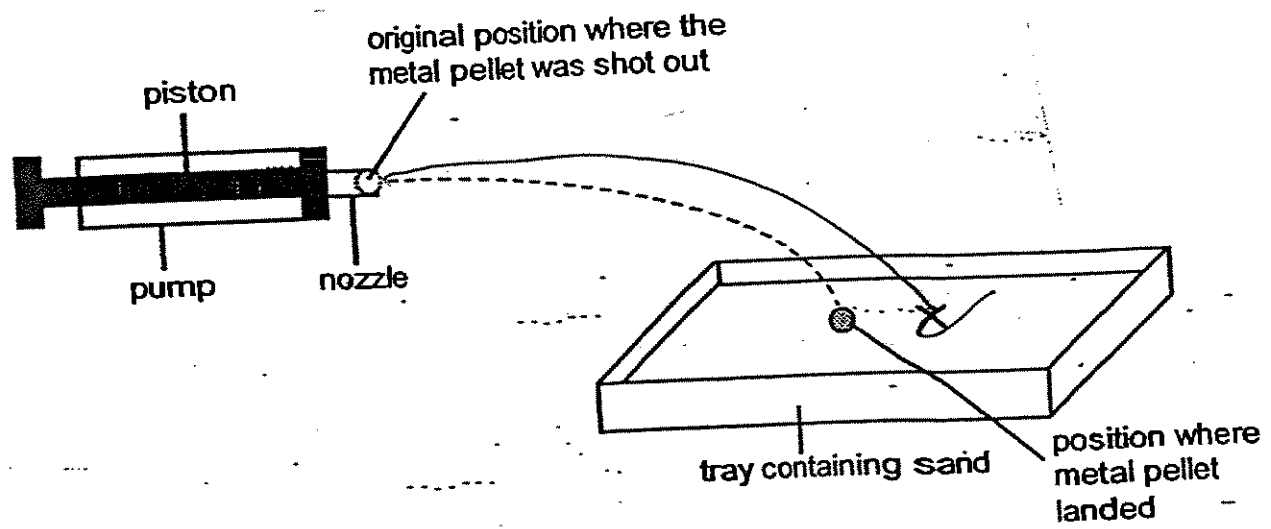
5) Repeat the experiment twice.

6) Repeat steps 1 to 5, using a different type of magnet.

45) a) Potential → electrical → light + heat.

b) Solar energy → chemical potential energy → heat

46) a)



b) He must keep the angle of projection the same.

---end---

NANYANG PRIMARY SCHOOL
PRIMARY 6 SCIENCE
FIRST CONTINUAL ASSESSMENT 2007

Name : _____ () Date : _____

Class : Primary 6 () Duration : 1 h 45 min

Parent's signature: _____

Score :



Section A (30 x 2 marks = 60 marks)

For each question from 1 to 20, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.

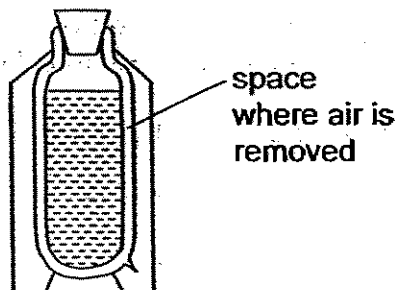
1. Study the classification table below.

A	B
duck, penguin, frog, platypus	tortoise, hen, man, tiger

How are the animals in Group A and B classified?

	A	B
(1)	Carnivore	Omnivore
(2)	Lay eggs	Give birth to young alive
(3)	Webbed feet	Non-webbed feet
(4)	Live on land	Live in water

2. The diagram shows a thermo flask.



Which one of the following statements best explains why there is a space in the thermo flask where air is removed.

- (1) The space is a good conductor of heat, so it can keep hot water warm only for a long period of time.
- (2) There is nothing to allow heat to travel through, so it can keep hot water warm only for a long period of time.
- (3) The space is a poor conductor of heat, so it can keep hot water warm and cold water cool for a long period of time.
- (4) There is nothing to allow heat to travel through, so it can keep hot water warm and cold water cool for a long period of time.

3. Michelle was given a list of materials. She grouped them into 2 groups, X and Y, as shown below.

X	Y
Mirror Glass Polished wood Aluminium foil	Carpet Sandpaper Tracing paper Concrete floor

Which one of the following properties did Michelle use to group the materials?

- (1) Texture
- (2) Transparency
- (3) Heat Conductivity
- (4) Surface Lustre

4. A class of pupils was asked to explain why tin was used to can luncheon meat instead of paper. Below are responses given by some pupils in the class.

Jin Yi : Tin is stronger than paper so tin cans will not break easily.

Najib : Tin is a better conductor of heat than paper so the luncheon meat will remain fresh longer.

Mike : Tin can will not be dented as easily as paper packaging so the luncheon meat will maintain its shape and texture.

Which of the following pupil(s) gave the correct answers?

- (1) Jin Yi only
- (2) Jin Yi and Najib
- (3) Najib and Mike
- (4) Jin Yi and Mike

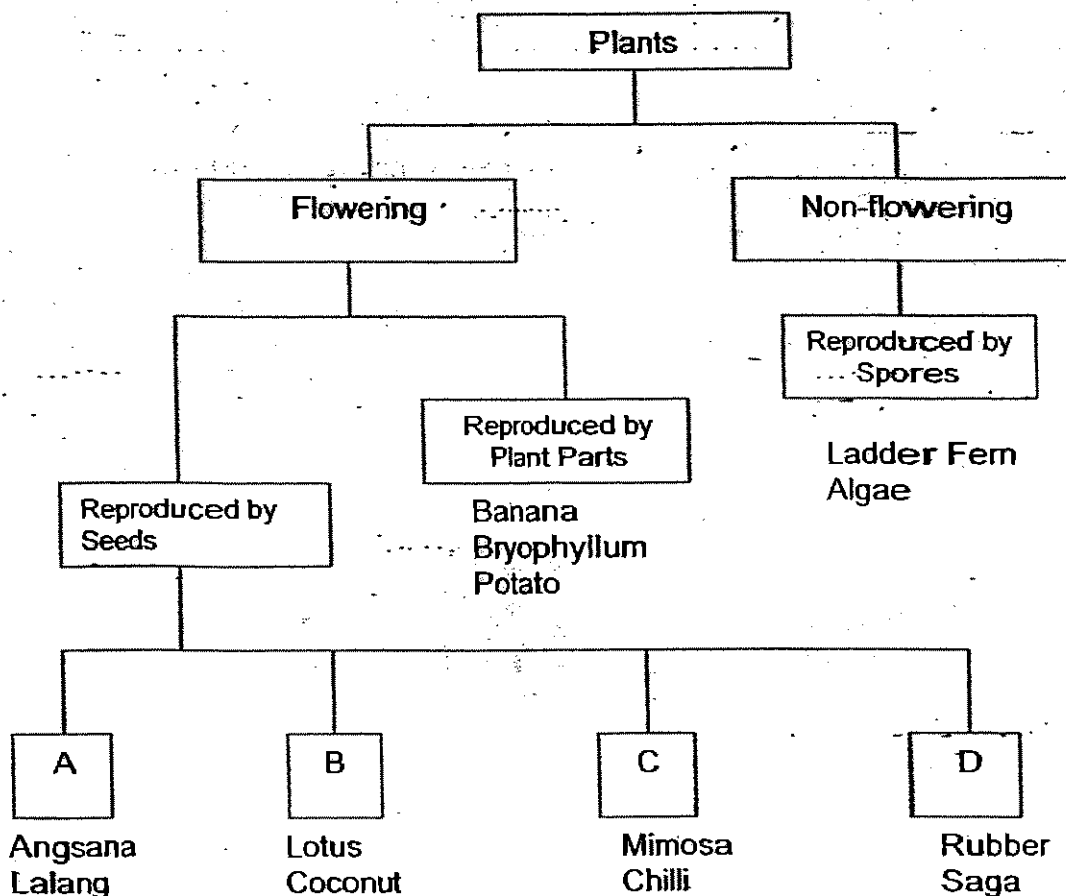
5. Ali made these statements.
Ice floats on water. Solid oil, such as butter, sinks in cooking oil.
What should his friends do to prove these statements?

- (1) Put ice and solid oil into water.
- (2) Put ice and solid oil into cooking oil.
- (3) Put ice into cooking oil and solid oil into water
- (4) Put ice into water and solid oil into cooking oil

6. Gary tried to classify some liquid products based on their transparency. He did not add any water to these liquid products. Which one of the following shows the correct classification?

	Transparent	Translucent	Opaque
(1)	Rice vinegar	Milk	Milo
(2)	Rice vinegar	Milo	Barley
(3)	Water	Rice vinegar	Milo
(4)	Water	Barley	Milk

7. Study the classification chart below carefully.



Groups A, B, C and D are grouped based on _____.

- (1) seed size
- (2) plant size
- (3) seed dispersal
- (4) where they are found

8. Which of the following statements about reproduction in animals are incorrect?

- A. Fertilisation can only take place within the female body.
- B. Traits of the mother are passed to the offsprings through the egg.
- C. Traits of the father are passed to the offsprings through the sperm.
- D. Male animals will only inherit the father's traits and female animals will only inherit the mother's traits.

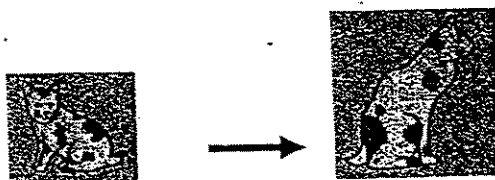
- (1) A and D only
- (2) B and C only
- (3) A, B and C only
- (4) B, C and D only

9. Which of the following statements about the solar system are correct?

- A. The Sun is made up of hot gases.
- B. Mercury cannot support life because it is too cold.
- C. The Earth is a planet because it revolves around the Sun.
- D. 70% of Earth is covered with water hence atmospheric temperature is maintained.

- (1) A and C only
- (2) B and D only
- (3) A, B and C only
- (4) B, C and D only

10. Which of the following will have taken place when the kitten grows into a cat?



- A Cell growth
- B Cell division
- C Death of cells

- (1) A only
- (2) A and B only
- (3) B and C only
- (4) A, B and C

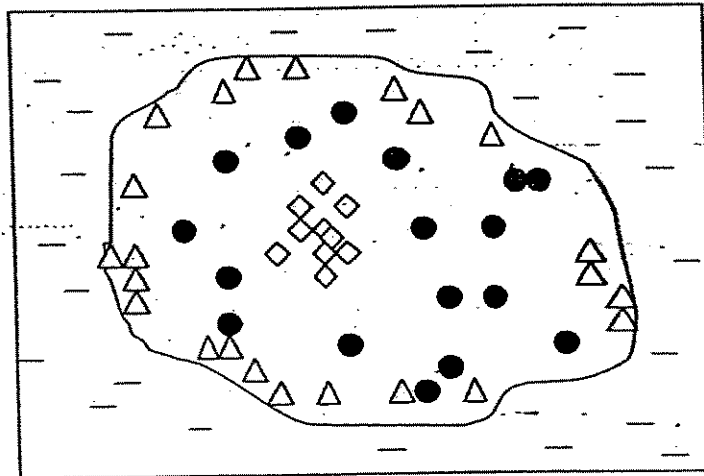
11. At a scene of crime, a strand of hair was found. The diagram below shows the DNA fingerprinting of the hair.



Based on the above DNA fingerprinting, which suspect's hair was found at the scene of crime?

	Suspect	DNA fingerprinting of suspect
(1)	Chua Eng Ling	
(2)	Jane Cheng	
(3)	Sim Yoke Choo	
(4)	Belinda Yong	

12. The diagram below shows the locations of 3 prominent plants on a deserted island.



Which one of the following shows correctly how the 3 plants are dispersed?

	By animals	By water	By splitting
(1)	●	△	◇
(2)	●	◇	△
(3)	◇	△	●
(4)	△	●	◇

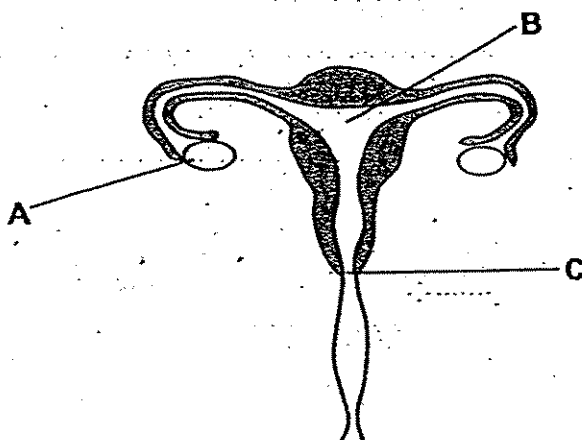
13. The table below shows the characteristics of 4 different fruits.

Fruit	Flesh	Size - hardness	Feature
A	fleshy	big hard	thorny
B	juicy and fleshy	hard	fibrous husk
C	juicy and fleshy	small hard	brightly coloured
D	dry	hard	pod-like

In which of the following options are all the fruits classified correctly according to their method of dispersal?

	Animals	Water	Splitting
(1)	A	B	C
(2)	B	A	D
(3)	C	B	D
(4)	D	C	A

14. The diagram below shows the female reproductive organs.



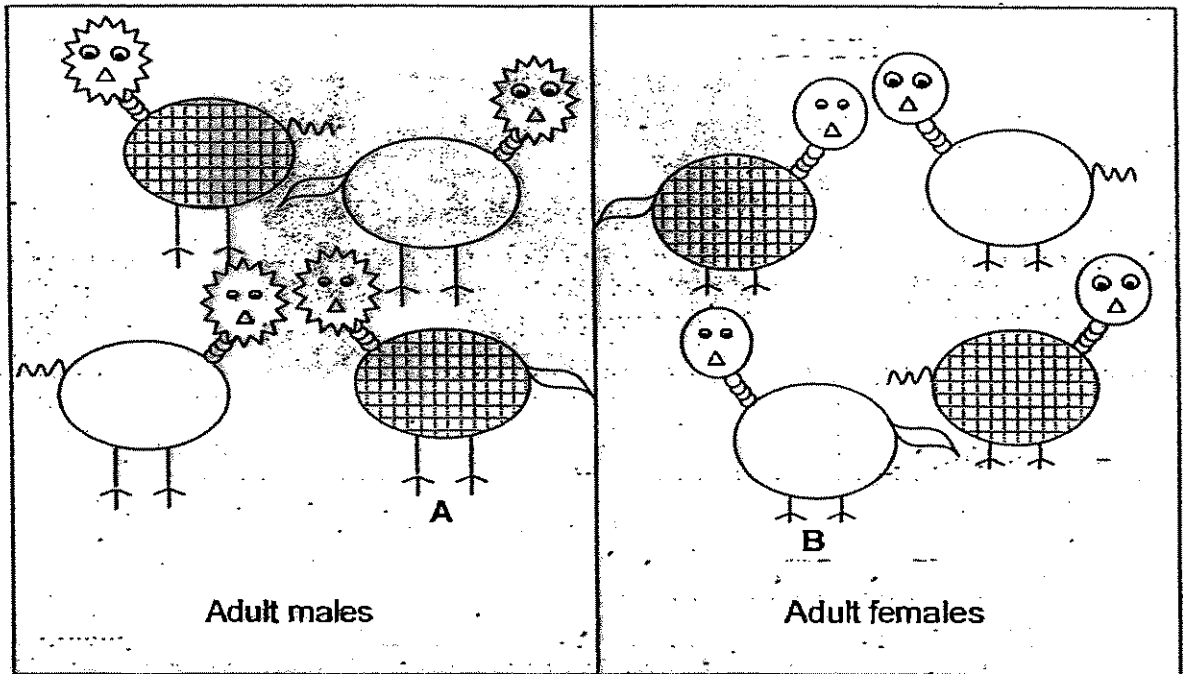
Which one of the following best describes the function of Parts A, B and C?

	A	B	C
(1)	produces eggs	where fertilised egg develops	receives sperm
(2)	produces eggs	stores eggs	fertilisation occurs
(3)	stores eggs	fertilisation occurs	receives sperm
(4)	stores eggs	where fertilised egg develops	fertilization occurs

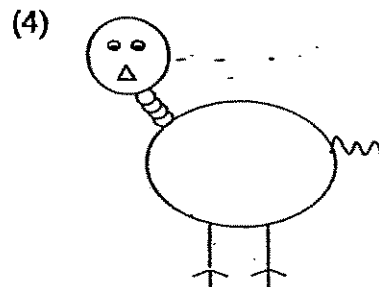
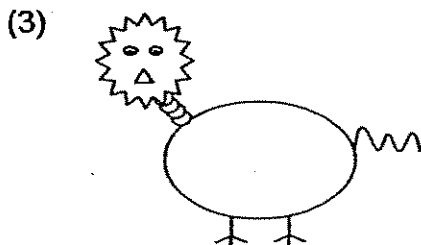
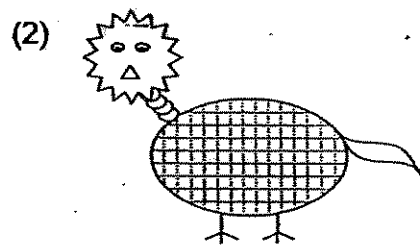
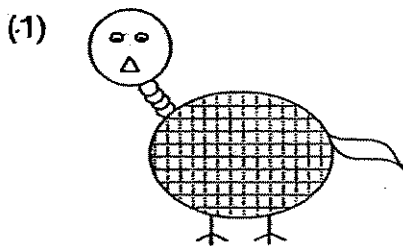
15. Which one of the following groups of animals goes through a two-stage life cycle?

- (1) chicken, dog and whale
- (2) cat, kangaroo and dolphin
- (3) butterfly, tiger and penguin
- (4) bat, bear and spiny anteater

16. Study the characteristics of the group of imaginary creatures shown below.



Male creature A then mated with female B and produced a young female C. Which one of the following creatures could be female C?

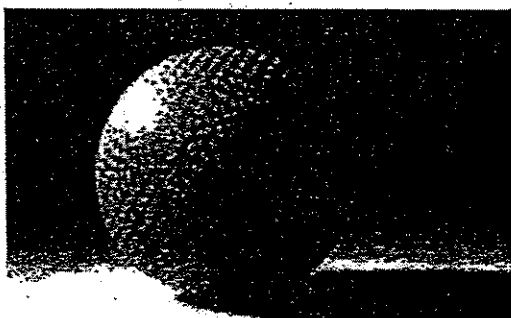


17. Which of the following describe the similarities between ferns and fungi?

- A They show movement
- B They photosynthesise
- C They reproduce by spores
- D They cannot grow on other living plants

- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) C and D only

18. Study the photograph below.



Daniel saw the photograph of the ball and made the following conclusions.

- A The light source is coloured
- B The light source is very weak
- C The light could not pass through the ball
- D The light source is on the opposite side of the shadow

Which of his statement(s) can be determined from the photograph?

- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) C and D only

19. Mei Yan received a sun visor when she attended a show at the National stadium last year. Her friend, Angel, brought her own sun visor. They compared the visors and made the following observation.



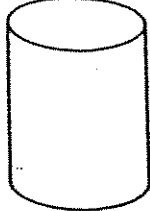

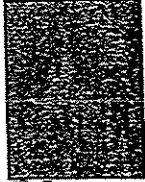
sun visor

	Description
Angel's visor	Soft, blue-coloured, transparent plastic
Mei Yan's visor	Hard cardboard covered with white cloth

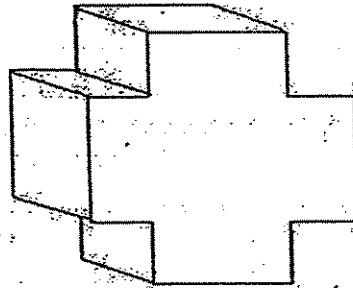
After a few hours of wearing their visors, they realised that Mei Yan's visor was more effective. Which property of light helped her visor to work better than Angel's?

- (1) Light can be reflected
- (2) Light can be absorbed
- (3) Light travels in straight lines
- (4) Light cannot pass through opaque objects

20: An object could form several different shadows depending on the position of the light source. For example, the cylinder below could form at least two different shadows.

Object	Light source from the top	Light source from the side
		

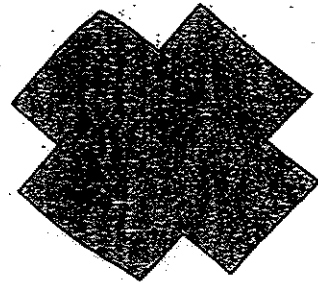
Which of the following shadows can be formed by the object below?



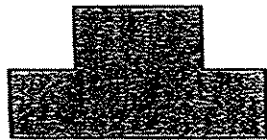
A



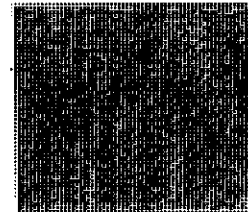
B



C



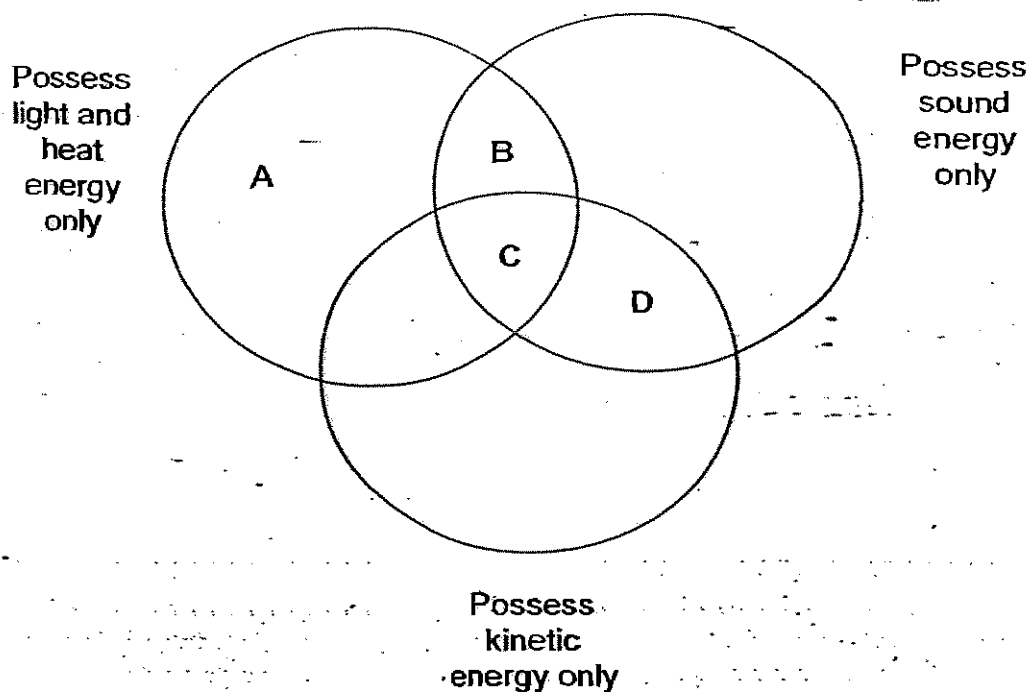
D



- (1) A and B only
- (3) B and C only

- (2) A and C only
- (4) C and D only

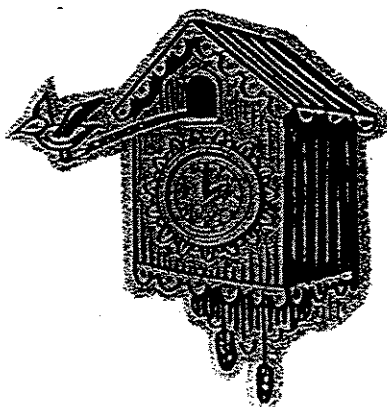
Study the diagram below and answer questions 21 and 22.



21. Which of the following best represent A, B, C and D?

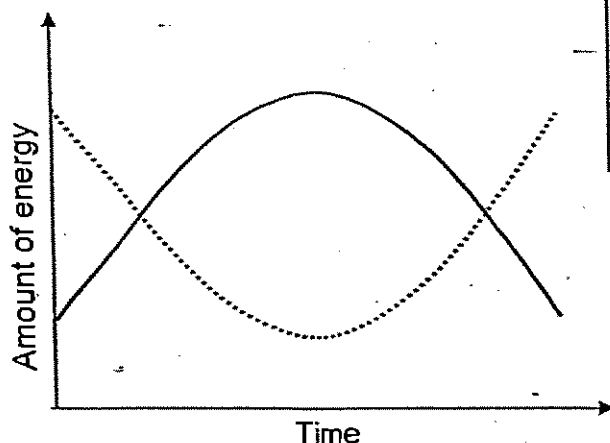
	A	B	C	D
(1)	Lamp	Television set	Microwave oven	Bicycle bell
(2)	Camera	Radio	Toaster	Table Fan
(3)	Torchlight	Computer	Photocopier	Firecracker
(4)	Digital alarm clock	Electric cooker	Cellphone	Food blender

22. Which letter correctly represents the clock shown below?



- | | | | |
|-----|---|-----|---|
| (1) | A | (2) | B |
| (3) | C | (4) | D |

23. Study the graph shown below.



Key:

— Gravitational potential energy

..... Kinetic energy

In which of the following actions can the energy conversion in the graph above be observed?

- (1) A car moving up a slope
- (2) A bean bag falling off a table
- (3) A tennis ball bouncing on the court
- (4) A rubber band being stretched and released

24. Which one of the following groups of appliances shows a conversion of electrical energy to kinetic energy?

- (1) hair dryer, iron and kettle
- (2) kettle, refrigerator and ink-jet printer
- (3) refrigerator, washing machine and iron
- (4) ink-jet printer, washing machine and hair dryer

25. The following equipment are paired with the useful energy that they possess.

- A Visualiser – light energy only
 B Doorbell – sound energy only
 C MP3 player – light and sound energy only

Which equipment had been correctly paired?

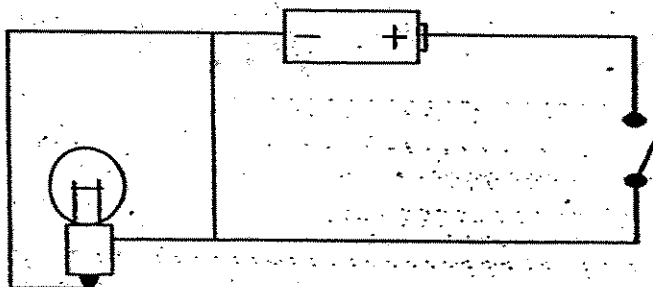
- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) A, B and C

26. Which energy is involved when a scanner is used to print a page from the computer?

- A Light energy
- B Sound energy
- C Kinetic energy
- D Electrical energy
- E Chemical potential energy

- (1) A, B and C only (2) A, C and D only
 (3) A, B, C and D only (4) A, B, C, D and E

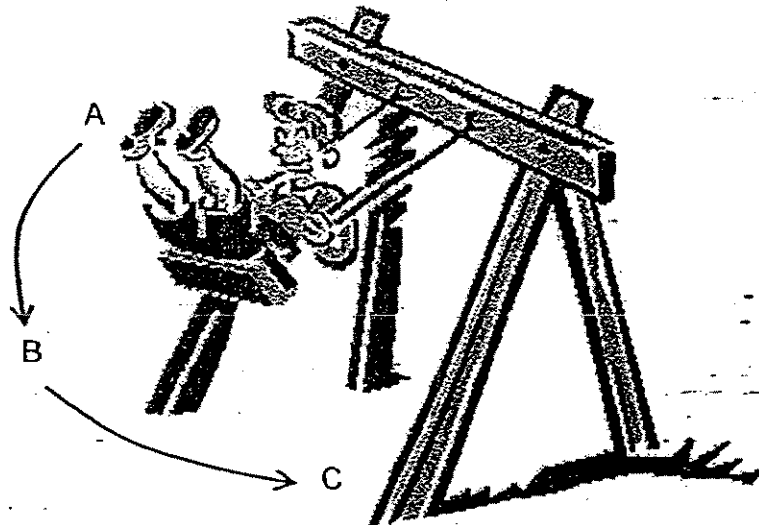
27. The diagram below shows an open electrical circuit.



Which one of the following shows the correct energy conversion that takes place when the switch is closed?

- (1) chemical potential energy → light energy + heat energy
- (2) chemical potential energy → electrical energy → heat energy
- (3) chemical potential energy → electrical energy + light energy → heat energy
- (4) chemical potential energy → electrical energy → heat energy → light energy

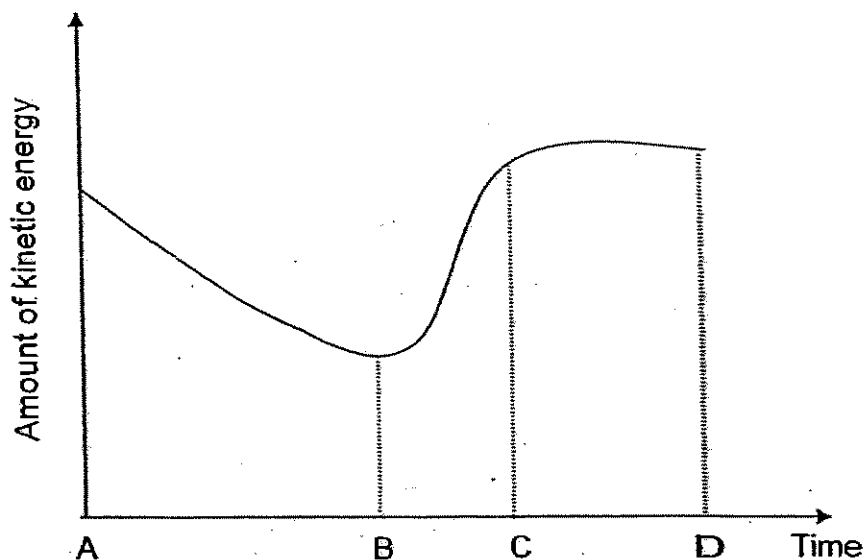
28. The diagram below shows a child playing on a swing.



Which of one of the following correctly shows the energy possessed by the swing at points A, B and C?

	A	B	C
(1)	Chemical potential energy	Kinetic energy + gravitational potential energy	Gravitational potential energy
(2)	Gravitational potential energy	Kinetic energy + gravitational potential energy	Kinetic energy
(3)	Elastic potential energy	Gravitational potential energy	Chemical potential energy
(4)	Gravitational potential energy	Kinetic energy + gravitational potential energy	Kinetic energy + gravitational potential energy

The graph below shows the amount of kinetic energy that a girl has as she cycles. Study the graph and answer questions 29 and 30.



29. Which of the following statements correctly describes what happens from part A to part B in the graph above?

- A The girl is slowing her bicycle down.
- B The girl has no more energy to cycle.
- C Kinetic energy had been lost to the environment.
- D Kinetic energy had been converted to other forms of energy.

- (1) A and C only
- (3) B and C only

- (2) A and D only
- (4) B and D only

30. Which part of the graph shows the kinetic energy of the bicycle when it was going down a slope?

- (1) AB
- (3) CD

- (2) BC
- (4) BD

Name : _____ () Date - _____

Class : Primary 6 ()

Section B (40 marks)

Write your answers to questions 31 to 46 in the spaces provided.
Marks will be deducted for misspelt key words.

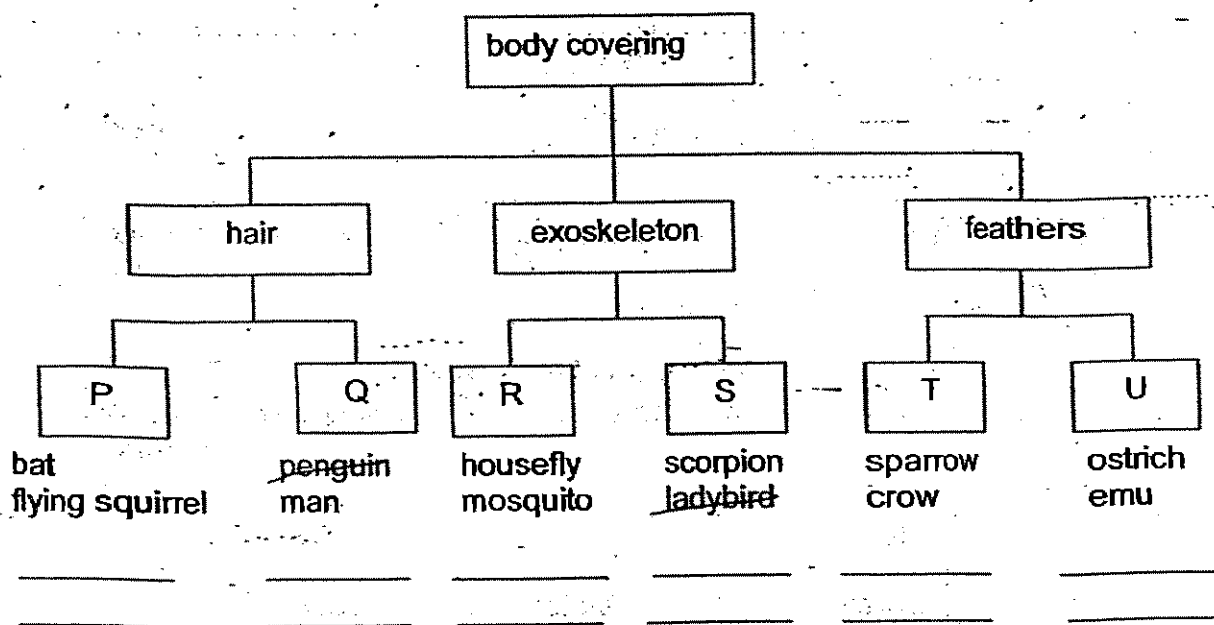
31. While helping the teacher to pack the Science Room, Kumar discovered that most of the apparatus such as the beakers, conical flasks and test-tubes are made of glass.

Give 2 reasons why most apparatus are made of glass. (2 marks)

(i) _____

(ii) _____

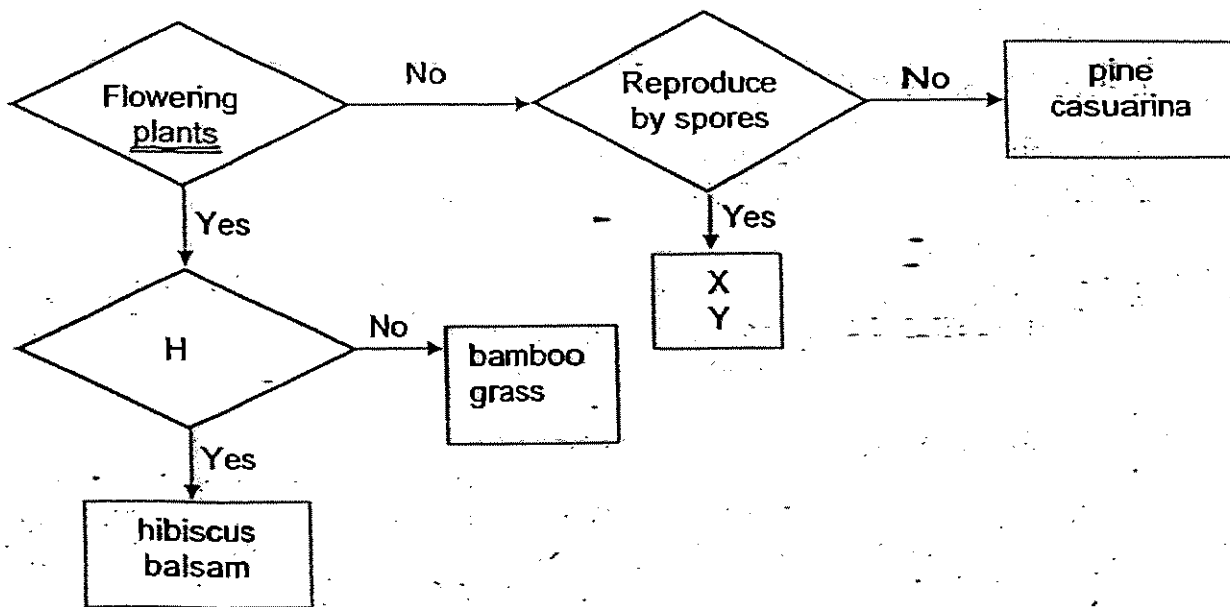
32. Study the chart below.



(a) Identify 2 animals which are grouped wrongly and cross them out. Regroup them in the chart above by writing their name in the correct blanks provided. (1 mark)

(b) Name another animal that can be placed under Group S. (1 mark)

33. Study the chart below.



(a) Give an example of plants which are represented by the letters X and Y.

(i) X - _____

(ii) Y - _____

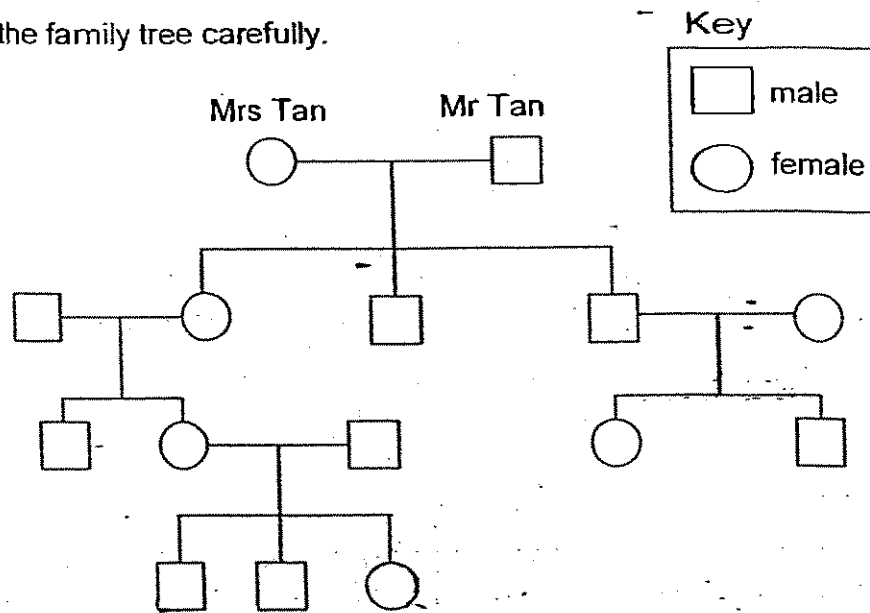
(1 mark)

(b) Write down the characteristics represented by letter H. (1 mark)

34. Create a classification table and group the following objects into two groups. (2 marks)

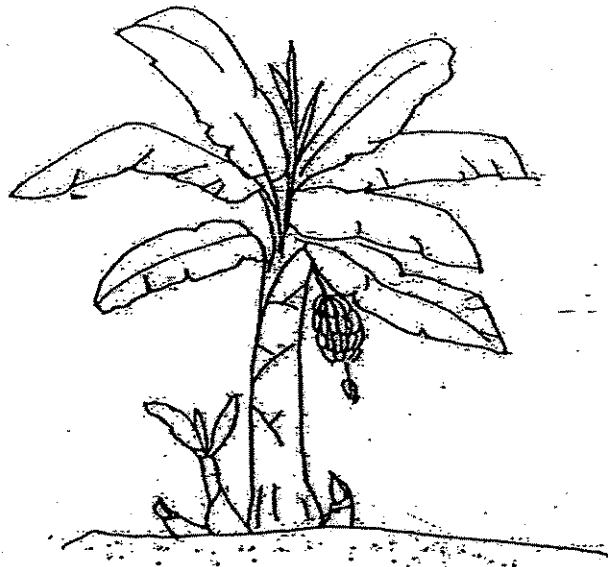
Moon	Sun	Star
Earth	Jupiter	Saturn

35. Study the family tree carefully.



- (a) Lee Xiao Yen is Mr Tan's great granddaughter. Identify and shade her in the family tree. (1 mark)
- (b) How many cousins does Xiao Yen has? (1 mark)
-

36. The diagram below shows a banana plant.



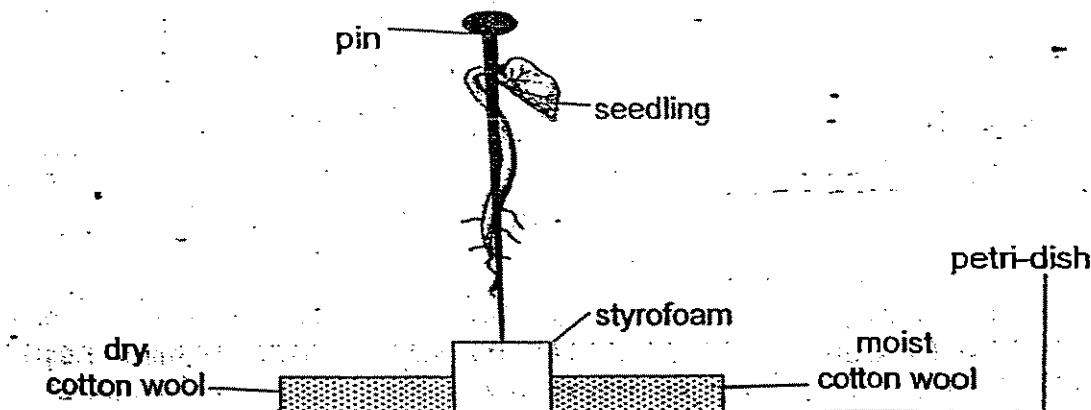
- (a) Circle the part(s) of the plant which will grow into a new plant. (1 mark)
- (b) The young of the banana plant usually grows near the parent plant. Give an advantage and a disadvantage for the young to grow so near its parent plant. (2 marks)

Advantage : _____

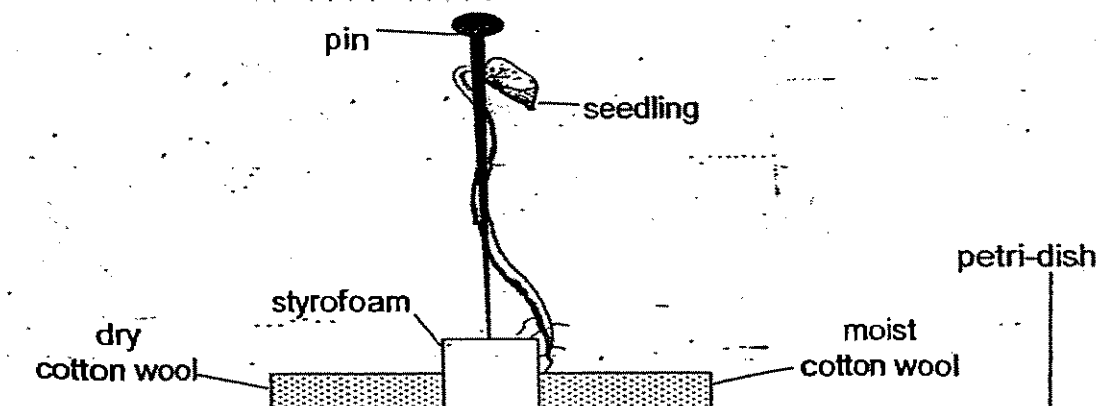
Disadvantage : _____

37. Suria carried out an experiment using a seedling with a short root, a pin, a styrofoam and some cotton wool. She set up her experiment in a petri-dish as shown in the diagram below.

At the start of the experiment



At the end of the experiment



She then left the petri dish aside for five days. After two days, she observed that the root of the seedling had grown longer in the direction of the moist cotton wool.

- (a) What conclusion can she most likely make from her observation at the end of the experiment? (1 mark)

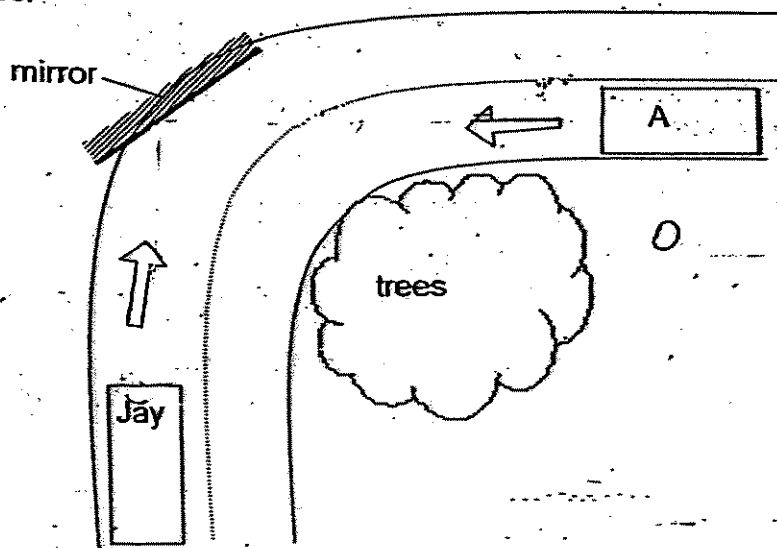
- (b) Her sister argued that the result of her experiment was not reliable.

State two ways that Suria could conduct her experiment in order to get reliable results. (2 marks)

- (i) _____

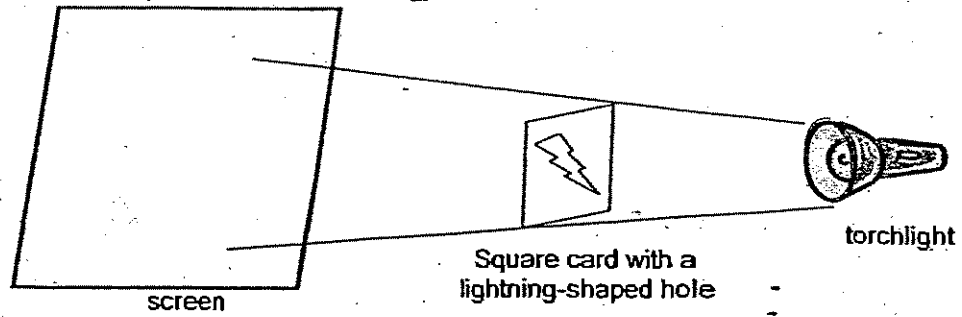
- (ii) _____

38. On the way to school, Jay noticed that a mirror had been placed near a road bend at a certain angle. His father explained that the mirror helps drivers to see on-coming vehicles that are blocked from their view by the trees.

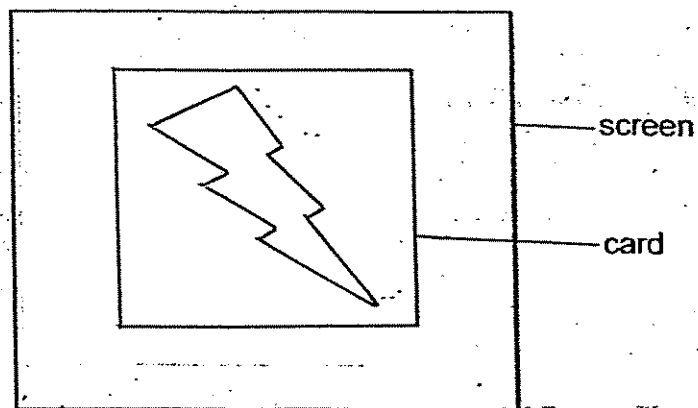


- (a) Using straight lines to indicate the path of light from one vehicle to the other, show how the mirror helps Jay's father see vehicle A that is blocked from his view. Draw your answer on the diagram above. (1 mark)
- (b) Explain why a piece of glass with similar shape and size is an unsuitable material to replace the mirror at the same spot. (1 mark)

39. Jiawen performed an experiment using the set-up below.

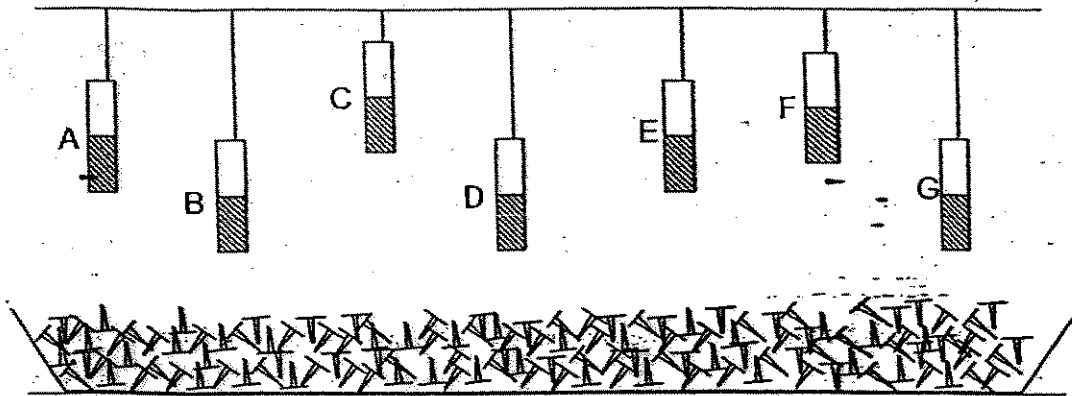


(a) Shade the diagram below to show the shadow formed on the screen. (1 mark)



(b) She then moved the ^{torchlight} lamp closer to the square card. What change of the shadow would she see on the screen? (1 mark)

40. Alicia hung seven magnets of the same size and shape a certain distance above a container of nails to find out which magnet had a stronger magnetic pull. She set up her experiment as shown below.



(a) What should have been done to the set-up to make it a fair test? (1 mark)

At the end of her experiment, she tabulated her results as follows

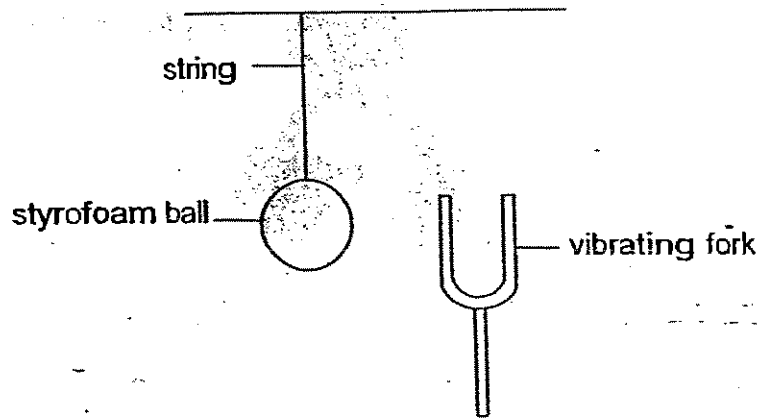
Magnet	A	B	C	D	E	F	G
Number of nails attracted	10	5	5	9	15	8	15

(b) State 2 reasons why Alicia concluded that magnet E is the strongest magnet. (2 marks)

(i) _____

(ii) _____

41. An experiment was conducted using a pair of vibrating fork as shown below. When the fork vibrates, it was observed that the styrofoam ball started to swing.



In the boxes below, state the energy conversion that has taken place. (2 marks)

+

energy of vibrating fork

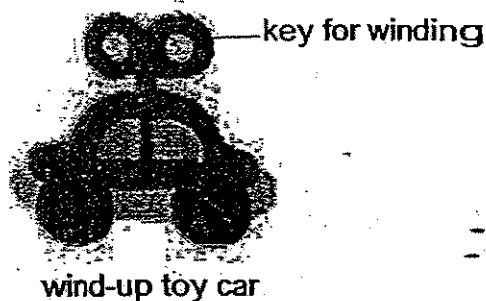


energy of surrounding air



energy of styrofoam ball

42. Jason played with a wind-up toy car. He observed the distance that the car travelled and recorded his observation in the table below.



Number of turns of the key	2	4	6	8
Distance travelled by the car (cm)	9	18	26	0

(a) What is the relationship between the number of turns of the key and the distance travelled by the toy car? (1 mark)

(b) Explain why the car did not move when he turned the key 8 times? (1 mark)

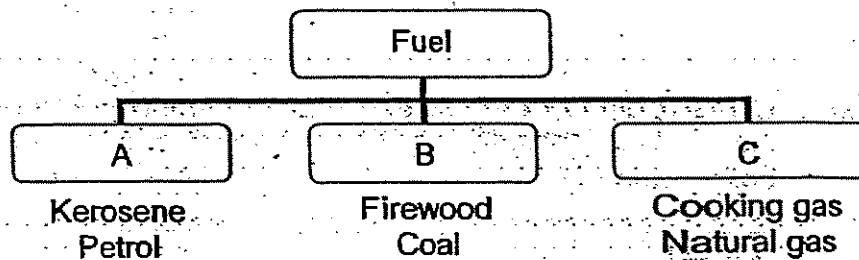
(c) State the conversion of energy that has taken place. (1 mark)

(d) State one variable which he must keep constant in order to make this a fair test. (1 mark)

43. Fill in the blanks below with the appropriate word. (2 marks)

A windmill uses _____ as its source of energy. When it turns, _____ energy is present at the blades. The blades are attached to a generator which produces _____ energy. The _____ the speed of the blade, the greater the amount of energy produced at the generator.

44. Study the classification chart shown below.



- (a) Give a suitable heading for A, B and C. (1 ½ marks)

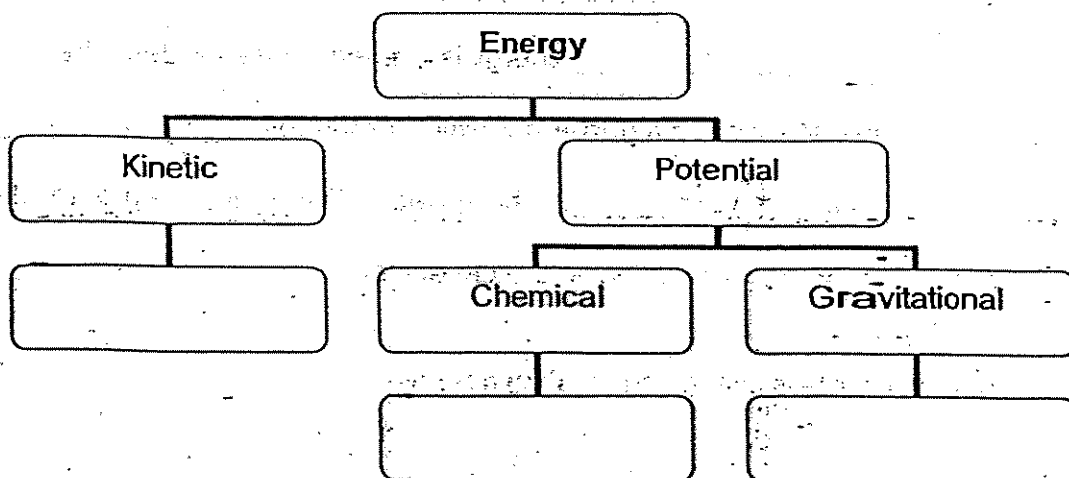
A: _____

B: _____

C: _____

- (b) In which group would you classify cooking oil? (½ mark)

45. Study the classification chart below

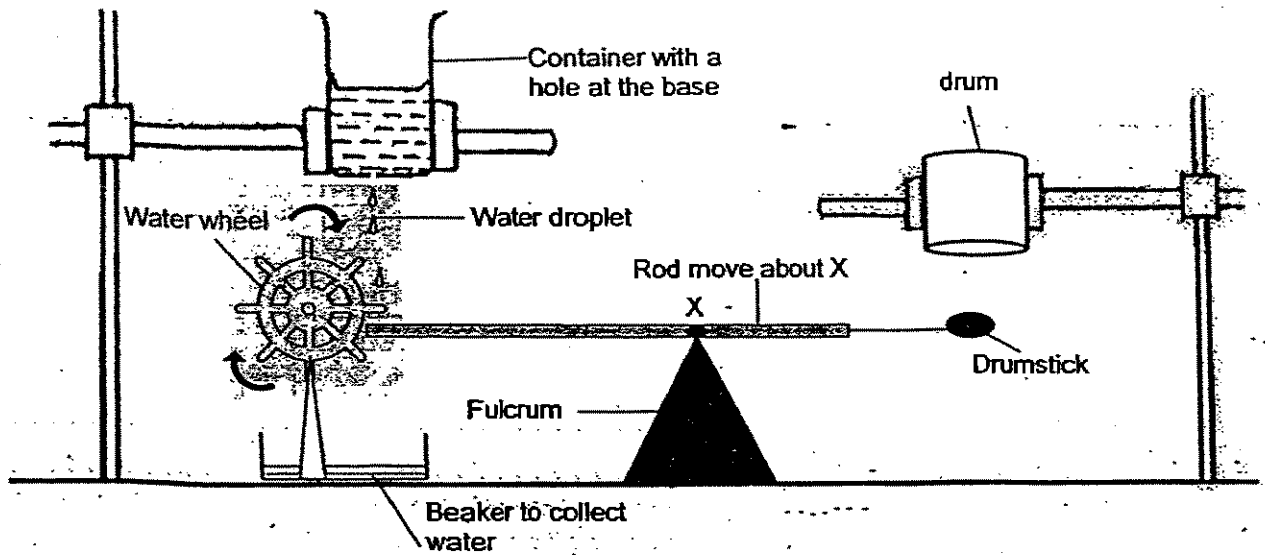


- (a) Classify the following objects based on the type of energy they have. Write the letters representing them in the appropriate boxes above. (2 marks)

Letter	Object
A	Kite on a tree
B	Ball rolling on the ground.
C	Dynamite
D	Candle

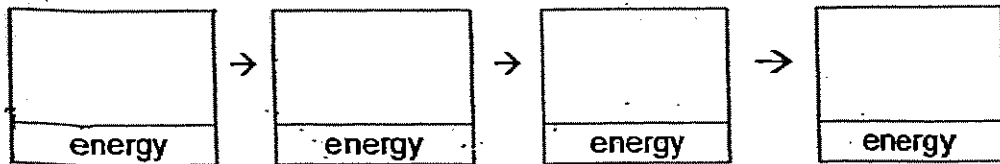
- (b) Two children argued that a stretched rubber band would not fit in the chart above. Jenny said that it belongs under 'Gravitational potential energy'. Explain why Nora does not agree with her. (1 mark)

46. The diagram below shows a plastic container with a hole made at the bottom. It drips a drop of water every minute which spins the water wheel below it.



- (a) What would happen when the wheel is turned? (1 mark)

- (b) State the energy change that is observed in the above set-up (1 mark)



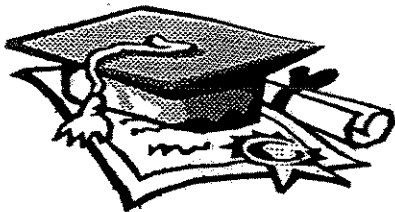
- (c) State two changes that can be made in order to turn the wheel faster. (2 marks)

i) _____

ii) _____

~ End of Paper ~


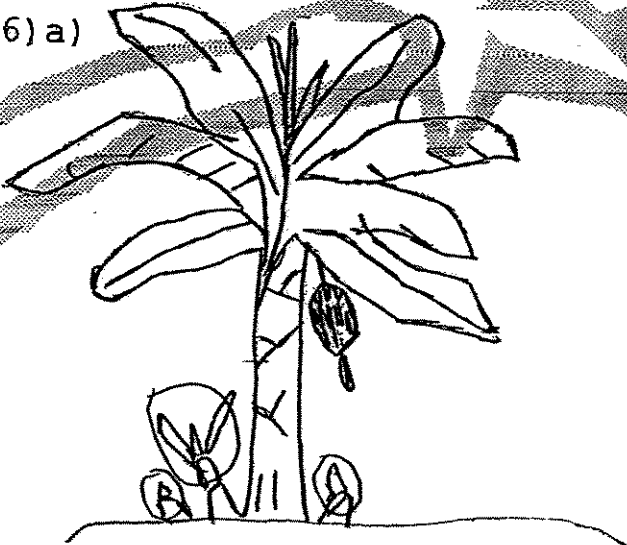
Setters: Mdm Chia Li Hoon
 Ms Yasmeen Mohamad



ANSWER SHEET

NANYANG PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
CONTINUAL ASSESSMENT (1)

1. 3
2. 4
3. 4
4. 4
5. 4
6. 4
7. 3
8. 1
9. 1
10. 4
11. 2
12. 1
13. 3
14. 1
15. 2
16. 1
17. 2
18. 4
19. 4
20. 1
21. 1
22. 4
23. 3
24. 4
25. 4
26. 3
27. 2
28. 4
29. 2
30. 2
- 31) i) Glass is transparent and allows us to see reaction taking place in the apparatus.
ii) Glass does not interact with most chemicals.
- 32) a) R=lady bird U=penguin
b) It is a crab
- 33) a) i) Bird's nest fern
ii) Stag horn fern
b) Tooth-edge leaves./Network veins.
- 34)

<u>Produces</u>	<u>Does not produce light</u>
Sun	Moon
Star	Earth
	Jupiter
	Saturn
- 35) a) 
b) She does not have any cousins.
- 36) a) 

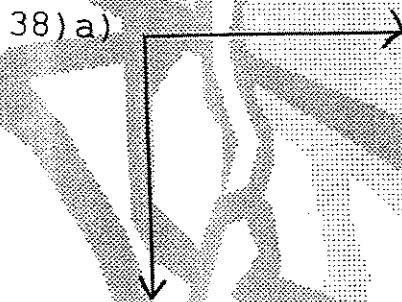
36)b) Advantage: The young plants can use the dead part of parents plants for nutrients.

Disadvantage: The young plants have to compete with the parent plant for water, nutrients space and Sunlight.

37)a) The root of a seedling would grow towards a water source.

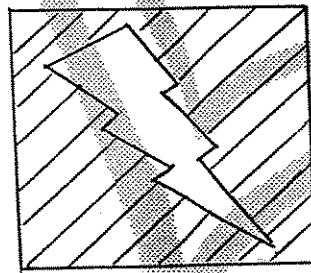
b)i) She could do the experiment a few times in the same environment.

ii) Use more seedling in each plate.



b) As the mirror reflects light from while A into our eyes, we can see vehicle A. However light can pass through a piece of glass not allowing us to see vehicle A.

39)a)



b) She would see a larger shadow made by the card and a larger lighted part shaped like a lightning.

40) a) She should have hung all the magnets at the same height.

b) i) Although both Magnets E and G attracted the most nails, Magnet E was further away from the nails.

ii) Although some magnets were closer to the nails Magnet E, it managed to attract the most number of nails.

41) Kinetic + sound

Kinetic

Kinetic

42) a) The greater the number of turns of the key, the greater the distance traveled by the car.

b) He could have broken the mechanism which allows the toy car to move.

c) Chemical potential energy in our bodies is converted to elastic potential energy in the spring and then to kinetic energy of the car.

d) The same wind-up toy car must be used.

43) wind, kinetic, electrical, faster

44) a) A: Liquid

B: Solid

C: Gaseous

b) It is group A

45) a) kinetic = B

Chemical = C, D

Gravitational = A

b) The stretched rubber band had elastic potential energy but might not have gravitational potential energy.

46) a) The blades of the water wheel would hit the left side of the rod, making the drumstick move upwards and hit the drum. This pattern would keep repeating when water drips from the container.

b) Gravitational potential \rightarrow kinetic \rightarrow kinetic \rightarrow sound.

- c) i) Make the hole at the base of the container bigger making the water drip out faster.
- ii) Add more water to the container.

---end---



南洋小学

NANYANG PRIMARY SCHOOL

PRIMARY 6 SCIENCE

SEMESTRAL ASSESSMENT 1

2007

BOOKLET A

Date : 7th May 2007

Duration : 1 h 45 min

Name : _____ ()

Class: Primary _____ ()

Marks Scored:

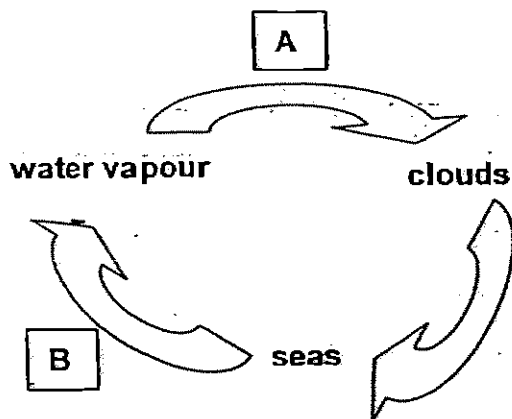
Booklet A :		60
Booklet B :		40
Total :		100

Parent's signature:

**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

Booklet A consists of 16 printed pages including this cover page.

4. The diagram below shows part of the water cycle.



Which one of the following correctly identifies the processes taking place at A and B?

	A	B
(1)	Condensation	Evaporation
(2)	Evaporation	Condensation
(3)	Respiration	Melting
(4)	Freezing	Melting

5. The table below shows the melting points and the boiling points of 4 substances W, X, Y and Z.

Substances	Melting point (°C)	Boiling point (°C)
W	-12	54
X	0	100
Y	10	138
Z	-8	150

Which one of the following substances is a solid at 3°C?

- (1) W
- (2) X
- (3) Y
- (4) Z

6. A lighted candle with wax dripping from it was held over a basin of water. When the wax touched the water surface, it solidified. Which of the following statements explained what had happened?

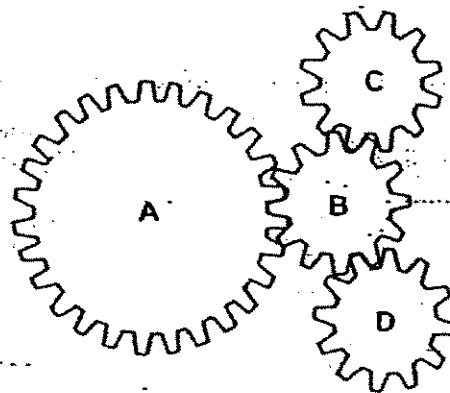
- A The wax lost heat to the water
- B The water lost heat to the wax
- C The wax gained heat from the water
- D The wax had frozen when it touched the water

- (1) A only
- (2) B only
- (3) A and D only
- (4) B and C only

7. How does the saliva in the mouth help to digest food?

- (1) The food is softened
- (2) We can taste the food
- (3) Digested food is absorbed by the saliva
- (4) The food is broken down into simpler substances

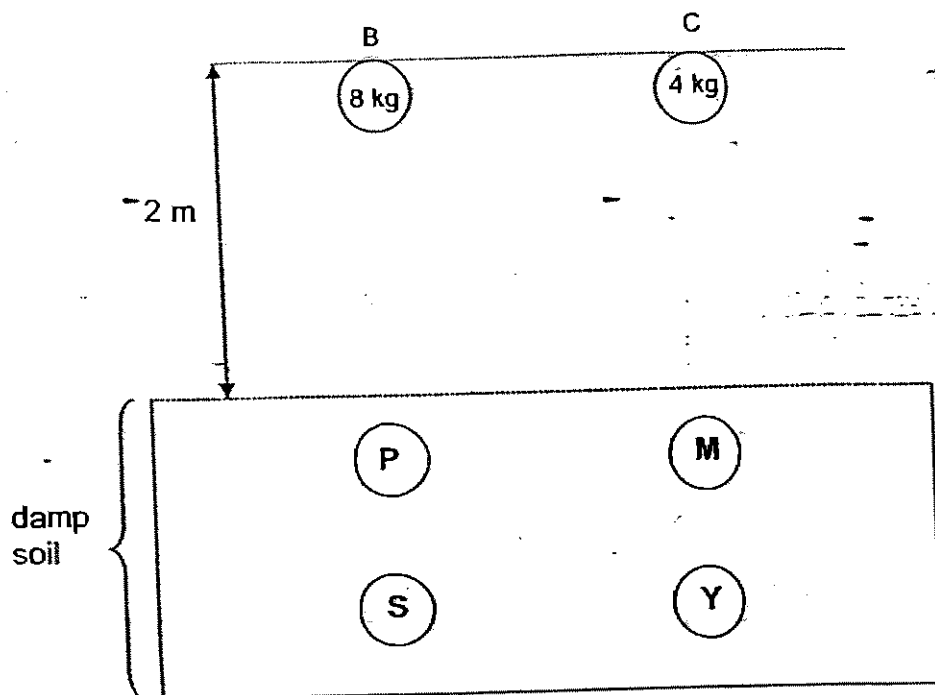
8. The diagram below shows a system of 4 gears, A, B, C and D.



When the gears start moving together, which gear moves in a direction that is different from the other three gears?

- (1) A
- (2) B
- (3) C
- (4) D

9. 2 balls, B and C, were dropped from the heights shown in the diagram below.



At which one of the following positions would balls B and C be?

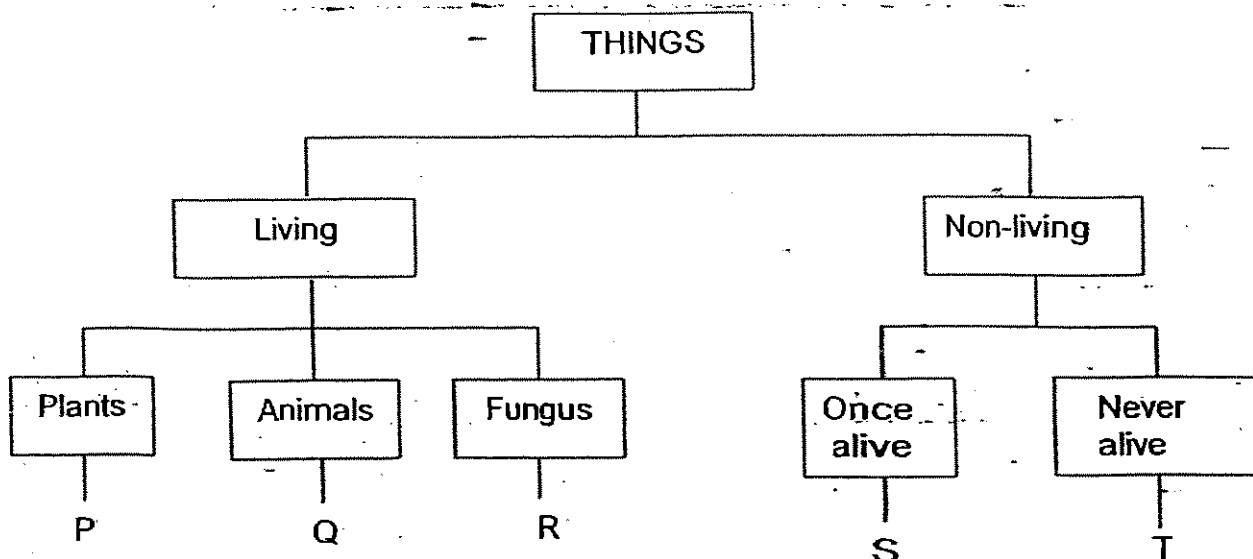
	Ball B	Ball C
(1)	P	Y
(2)	S	M
(3)	P	M
(4)	S	Y

10. Jia Hao applied a force to an inflated balloon placed on a table. Which of the following are possible observations after he had applied the force?

- A The balloon burst
- B The mass of the balloon increased
- C The balloon dropped onto the floor from the table
- D The balloon remained at the same position on the table

- (1) A and C only
- (2) B and D only
- (3) A, C and D only
- (4) A, B, C and D

11. Study the classification chart below.



Which one of the following letters correctly represents "coal", "guppy" and "yeast"?

	coal	guppy	yeast
(1)	T	P	Q
(2)	S	Q	R
(3)	S	P	R
(4)	T	Q	P

12. Tom classified the following objects into 2 groups, A and B. There are only 2 objects in Group A and 4 objects in Group B.

gold chain	drinking straw	cotton thread
steel rod	plastic spoon	iron pipe

Which one of the following correctly represents the headings for groups A and B?

	Group A	Group B
(1)	Good conductors of heat	Poor conductors of heat
(2)	Metals	Non-metals
(3)	Magnetic	Non-magnetic
(4)	Conductors of electricity	Non-conductors of electricity

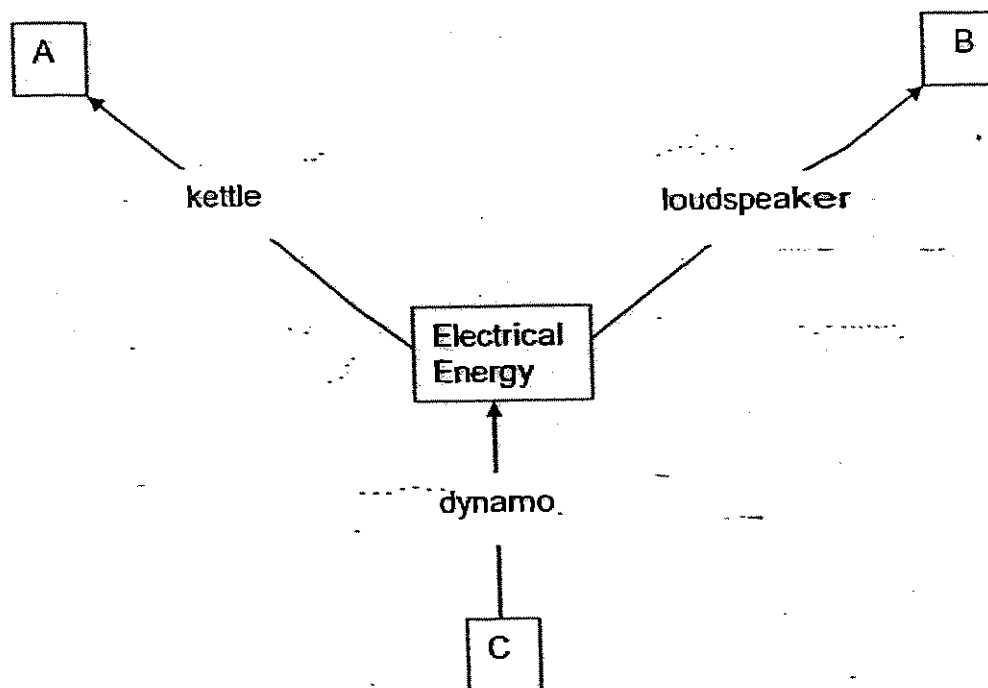
13. Study the classification table below.

S	T
cooking oil	solar energy
charcoal	wind
natural gas	running water

Which one of the following correctly represents the headings S and T?

	S	T
(1)	Solid	Liquid
(2)	Non-renewable	Renewable
(3)	Kinetic	Potential
(4)	Cheap	Expensive

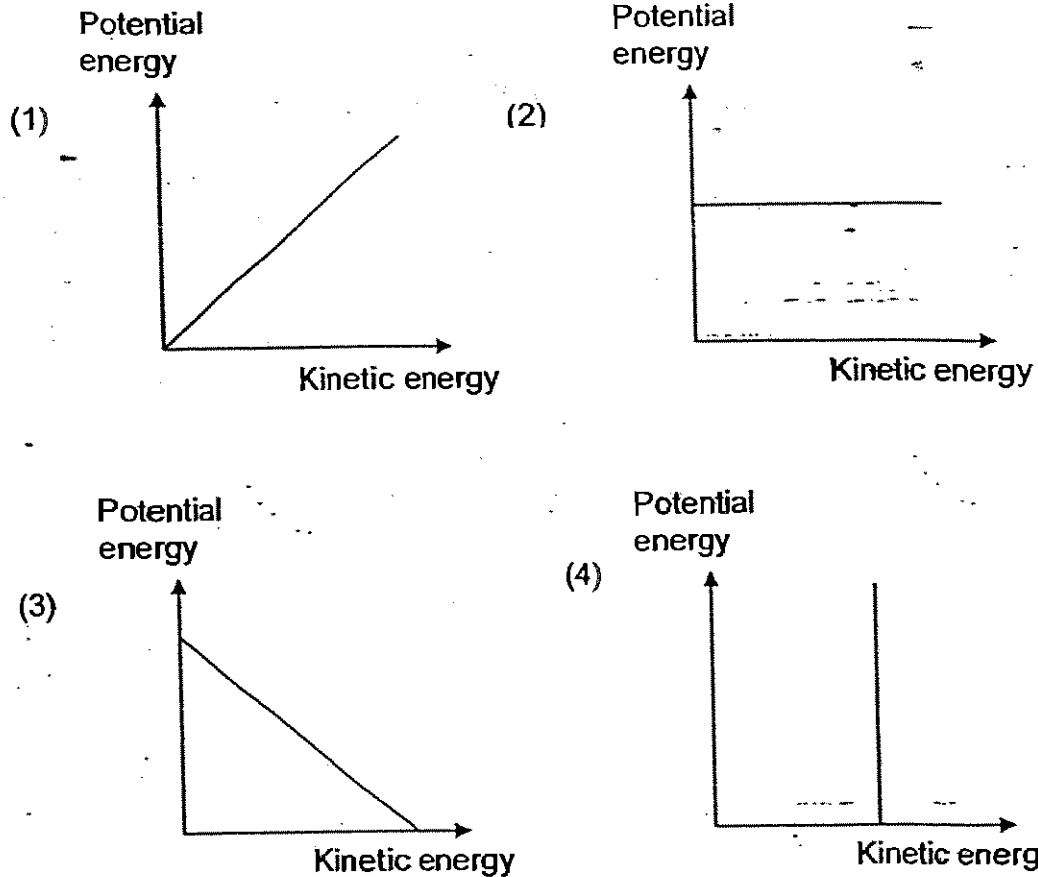
14. Study the diagram below.



Which one of the following correctly identifies the forms of energy, A, B and C?

	A	B	C
(1)	Potential energy	Sound energy	Heat energy
(2)	Kinetic energy	Magnetic energy	Light energy
(3)	Heat energy	Light energy	Sound energy
(4)	Heat energy	Sound energy	Kinetic energy

15. Gavin accidentally knocked a cup down from the dining table. Which one of the following graphs below represents the major energy changes of the cup as it fell from the table to the ground?



16. Which of the following electrical appliances produce(s) useful heat energy?

- A An iron
- B A radio
- C A hairdryer
- D An electric fan

- (1) A only
- (2) A and B only
- (3) A and C only
- (4) A, B and C only

17. - Which of the following underlined objects have forces acting on them?

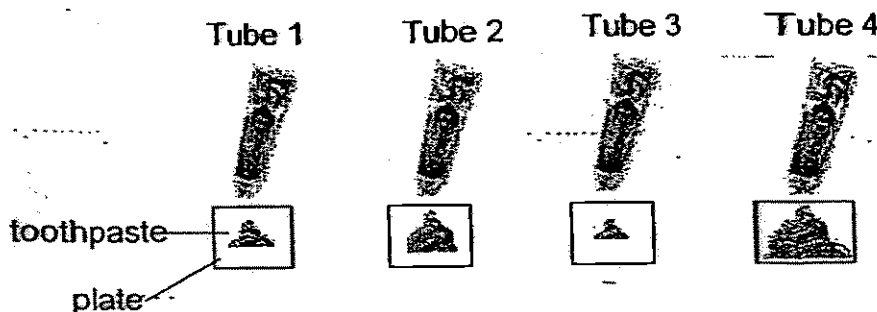
- A An apple on a tree
 B The Moon orbiting round the Earth
 C A book placed on the floor
 D An aeroplane flying in the sky

- (1) A and B only (2) C and D only
 (3) A, B and D only (4) A, B, C and D

18. Which one of the following actions involves both a push and a pull force?

- (1) Pedalling on a bicycle
 (2) Lifting a book from the ground
 (3) Hitting a golf ball with a golf club
 (4) Chopping a piece of meat into fine pieces

19. Tom squeezed 4 identical tubes of toothpaste from the same height above 4 different plates as shown below. The initial amount of toothpaste in each tube was the same.

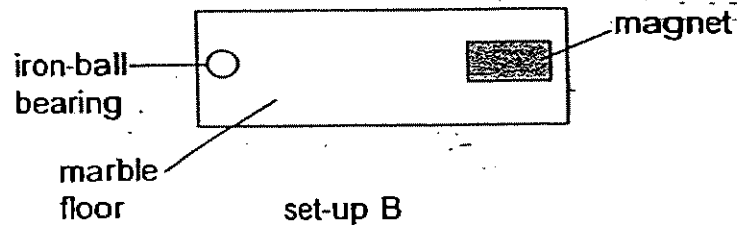
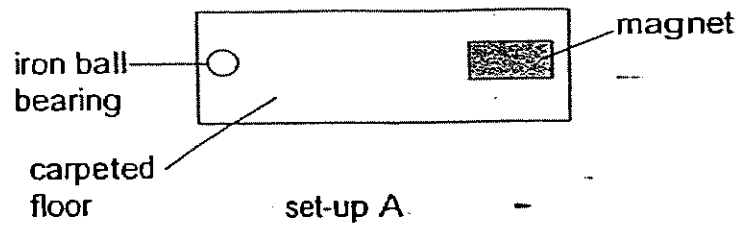


If Tom squeezed each tube only once, which of the following statements are true?

- A More gravity acted on tube 4 compared to tube 1
 B More force was applied on tube 1 compared to tube 3
 C There was more toothpaste left in tube 3 compared to tube 2
 D The toothpaste in tube 2 possessed more gravitational potential energy compared to the toothpaste in tube 3

- (1) A and D only (2) B and C only
 (3) B and D only (4) A, B, and C only

20. Lynn set up the experiment as shown below. The iron ball bearing was placed 5 cm away from the magnet in both set-ups A and B.



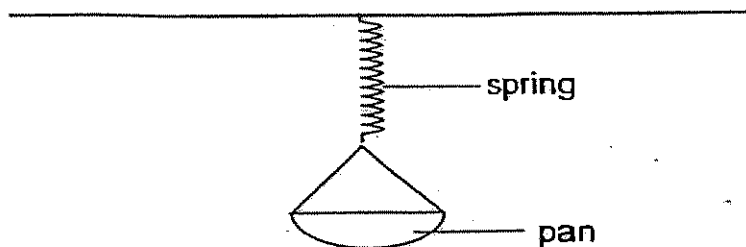
She recorded her observations in the table below.

	Time taken for iron ball bearing to be attracted to magnet (seconds)		
	1 st try	2 nd try	3 rd try
Set up A	2	3	2
Set up B	4	4	3

Based on her results, which one of the following best explains her observations?

- (1) A stronger magnet was used in set-up A
- (2) The magnet in set-up A has a bigger mass
- (3) The iron ball in set-up B had a smaller mass
- (4) More frictional force acted on the iron ball in set-up A

Study the diagram below and answer questions 21 and 22.



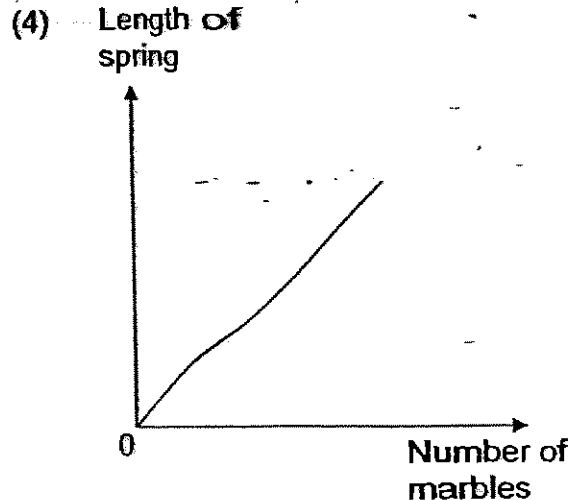
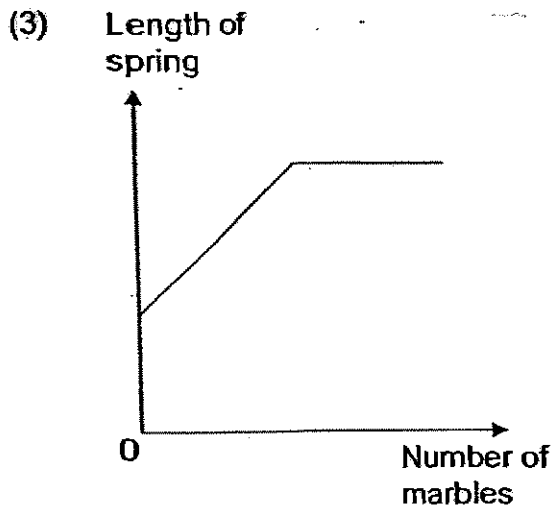
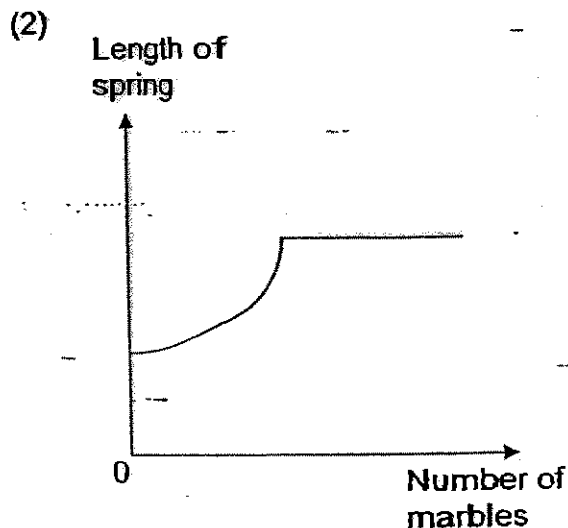
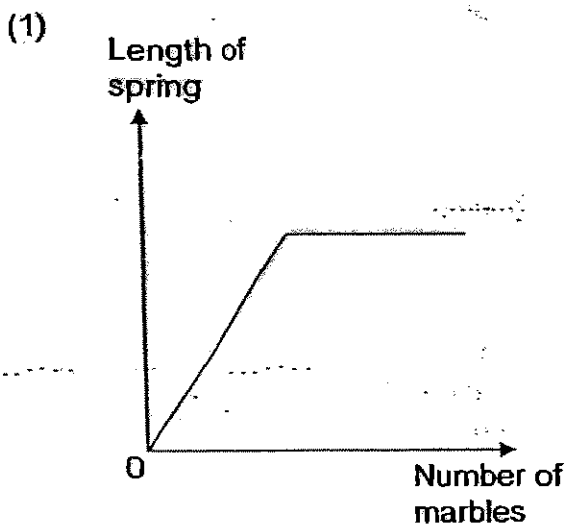
Identical marbles were placed on the pan, one by one, and the following results were recorded.

Number of marbles on pan	1	2	3	4	5	6	7
Length of spring (cm)	9	11	13	15	17	17	17

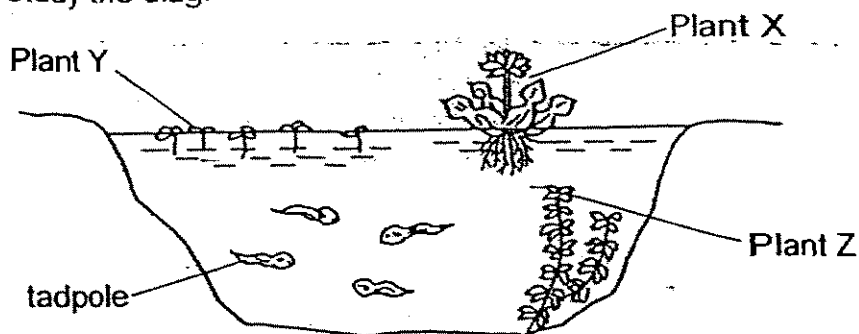
21. What is the original length of the spring when the pan is empty?

- (1) 5 cm
- (2) 6 cm
- (3) 7 cm
- (4) 9 cm

22. Which one of the following graphs shows the results as recorded?



23. Study the diagram below.



Which of the following would be observed after some time if Plant X increased in number rapidly and covered the surface of the pond completely?

- A Plant Z will die
- B A decrease in the number of Plant Y
- C An increase in the number of tadpoles
- D An increase in the amount of oxygen in the water

- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) B, C, and D only

24. Which of the following factors will affect the survival of deer in a wild jungle?

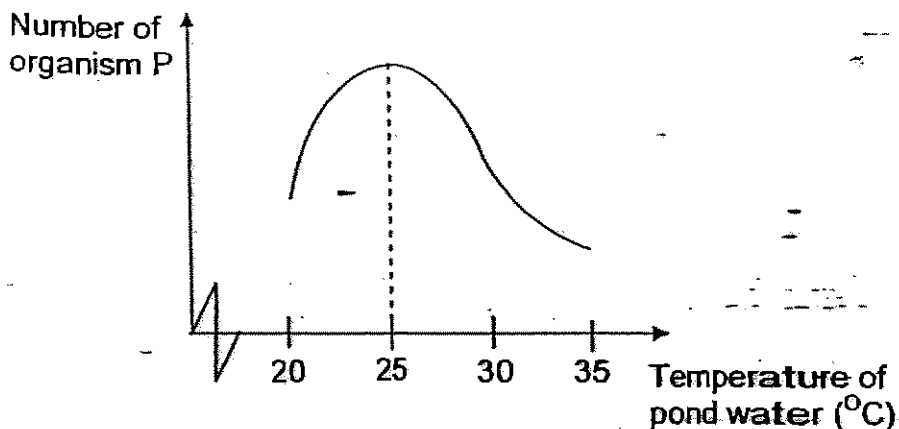
- A Deforestation
- B Long period of drought
- C Increase in number of tigers in the wild jungle
- D Increase in number of horses in the wild jungle

- (1) A and D only
- (2) B and C only
- (3) A, B and C only
- (4) A, B, C, and D

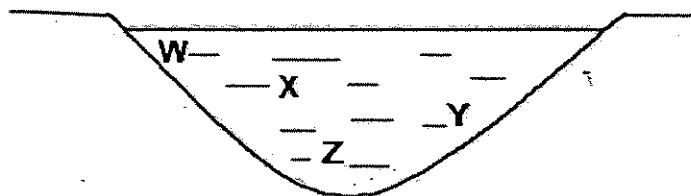
25. Organisms exhibit different behaviours in response to the amount of light in their surroundings. Which one of the following statements about such behaviour of organisms is false?

- (1) Tigers hunt during the day
- (2) Eagles are more active in the dark
- (3) Earthworms prefer to be in the dark
- (4) Grass does not grow well in the shade

26. The graph below shows how the temperature of pond water affects the number of Organism P found in it. The number of organism P found in the pond below 20°C is not shown in the graph.



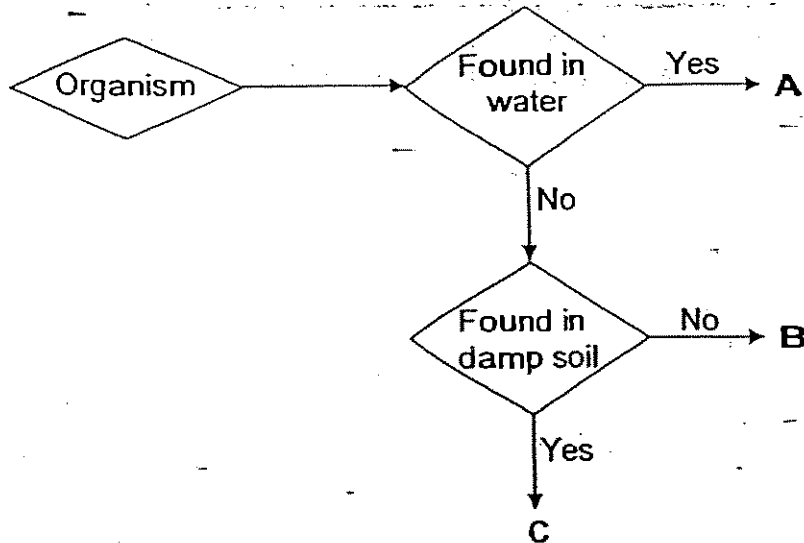
The temperature of regions W, X, Y and Z in the pond is indicated in the key. Which part of the pond would most number of Organism P be found?



Key	
Temperature Range (°C):	
Region W :	30 to 35
Region X :	28 to 30
Region Y :	26 to 28
Region Z :	24 to 26

- | | |
|-------|-------|
| (1) W | (2) X |
| (3) Y | (4) Z |

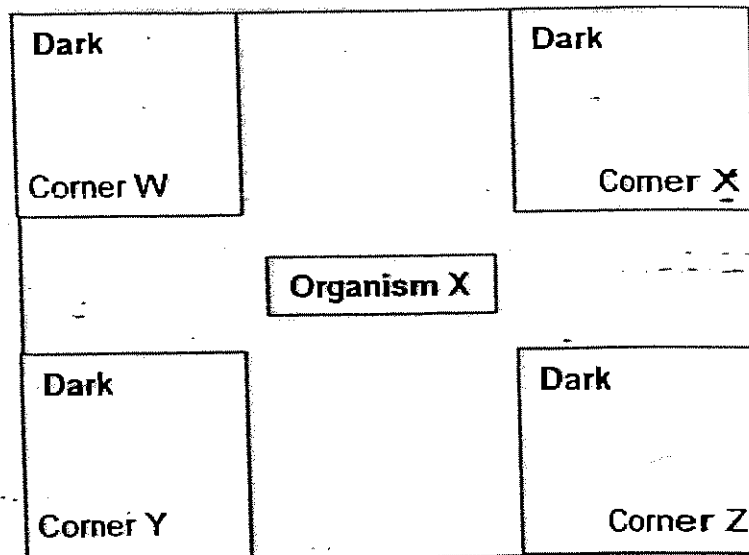
27. The flowchart below is used to classify organisms A, B and C.



Which one of the following correctly represents organisms A, B and C?

	A	B	C
(1)	dragonfly nymph	grasshopper	earthworm
(2)	spider	mynah	bee
(3)	great diving beetle	tadpole	millipede
(4)	seaweed	butterfly	ladybird

28. Abby knew that Organism X prefers to be in dark places. She wanted to find out if Organism X thrives in a dry or damp environment. She set up four corners in a cardboard box and placed Organism X in the centre as shown below.



Which of the following are possible combinations of corners that she should place moist cotton wool to make this experiment a fair one?

- A Corner W
- B Corner X
- C Corners W and Y
- D Corners X and Z
- E Corners X, Y and Z

- (1) A only
- (3) C and D only

- (2) B and E only
- (4) A, D and E only



南洋小學

NANYANG PRIMARY SCHOOL

PRIMARY 6 SCIENCE
SEMESTRAL ASSESSMENT 1
2007

BOOKLET B

Date : 7th May 2007

Duration : 1 h 45 min

Name : _____ ()

Class: Primary _____ ()

Marks Scored:

Booklet A :		60
Booklet B :		40
Total :		100

Parent's signature:

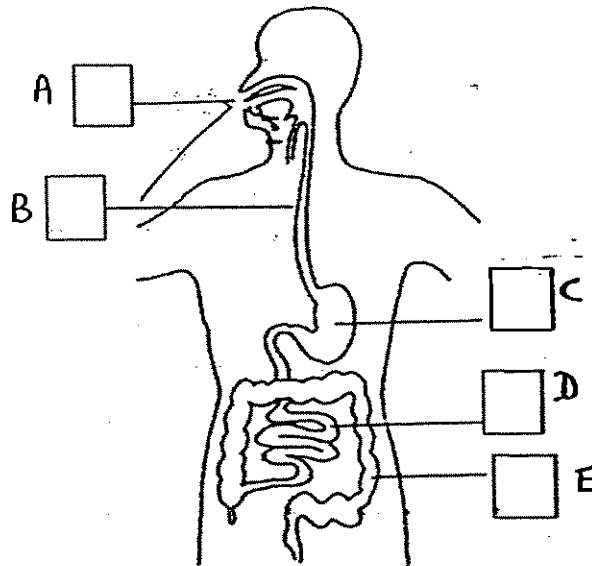
**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

Booklet B consists of 16 printed pages including this cover page.

Section B (40 marks)

Write your answers to questions 31 to 46 in the spaces provided.
Marks will be deducted for misspelt key words.

31. The diagram below shows the human digestive system.



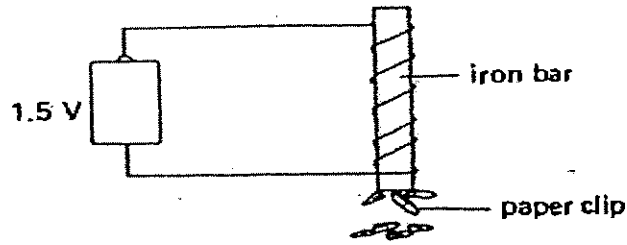
(a) Put a tick in the boxes above to indicate the organs where digestion takes place. (1 mark)

(b) State the functions of the small intestine and the large intestine. (1 mark)

Small intestine: _____

Large intestine: _____

32. Weiliang set up the experiment below and he observed that three paper clips were attracted to the iron bar.



- (a) Explain why the iron bar was able to attract the paper clips. (1 mark)

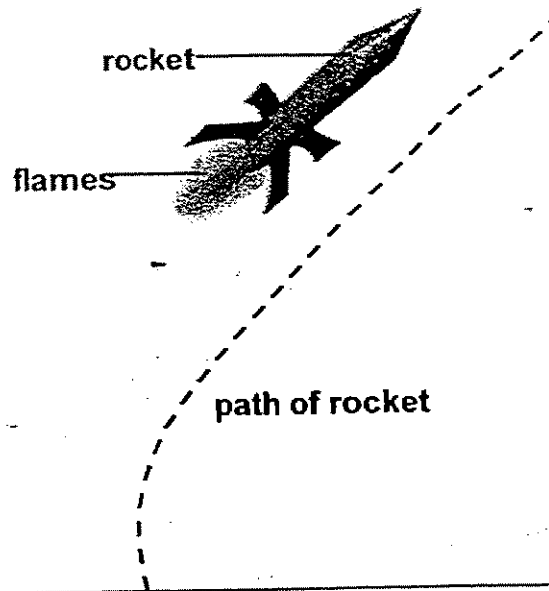
- (b) What change should Weiliang make to the set-up to attract more than three paper clips? (1 mark)

33. Ferns and mushrooms are living organisms. They can reproduce and they also need food to grow.

- (a) State one similarity in their method of reproduction. (1 mark)

- (b) State one difference in the way they obtain their food. (1 mark)

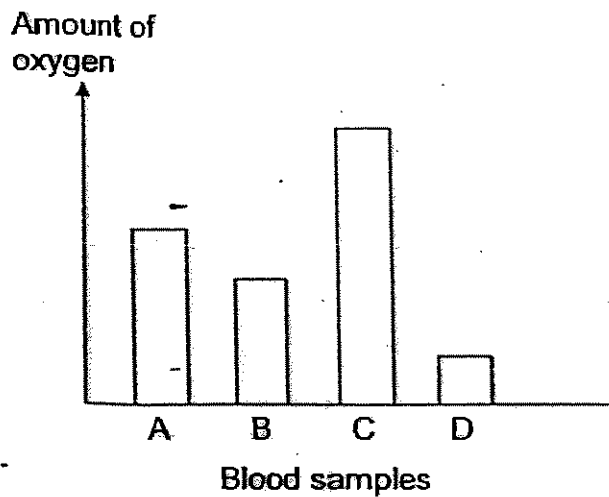
34. The diagram above shows a rocket. When it was launched, flames and smoke was seen coming out at its base.



- (a) State the source of energy that the rocket uses. (1 mark)

- (b) The rocket moved in the direction as indicated by the dotted lines. Write down the energy changes that occur when the rocket is launched. (1 mark)

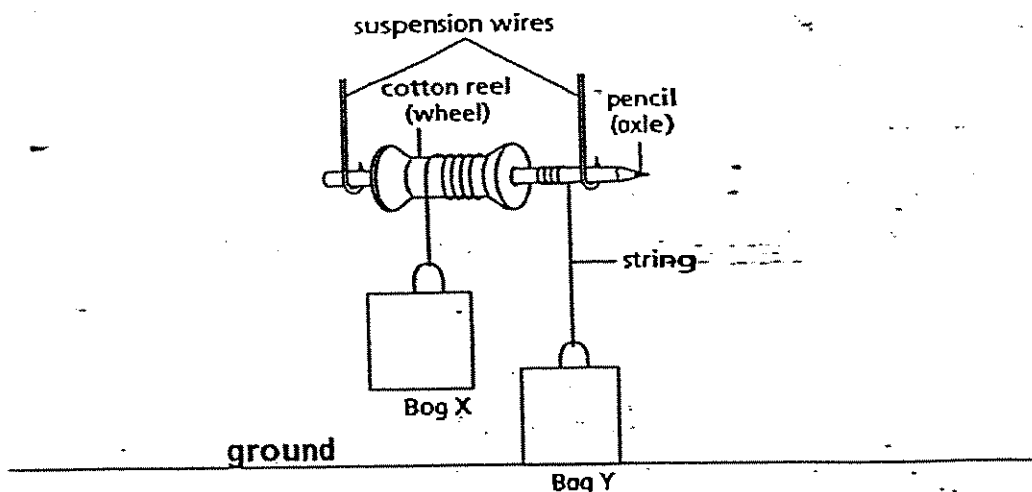
35. The bar graph below shows the amount of oxygen in four blood samples taken from four different blood vessels of the circulatory system.



- (a) One of the blood samples was taken from a vessel that carries blood from the lungs to the heart. Which blood sample, A, B, C or D is most likely to be the one? (1 mark)

- (b) Explain your answer in (a). (1 mark)

36. Meimei and Renjie each conducted an experiment as shown below to find out the relationship between load and effort. They started by placing marbles in Bag Y which represents the load. They then placed marbles in Bag X and stopped adding when Bag Y was lifted off the ground.



They repeated the experiment by placing different number of marbles in Bag Y. They recorded their results in the tables below.

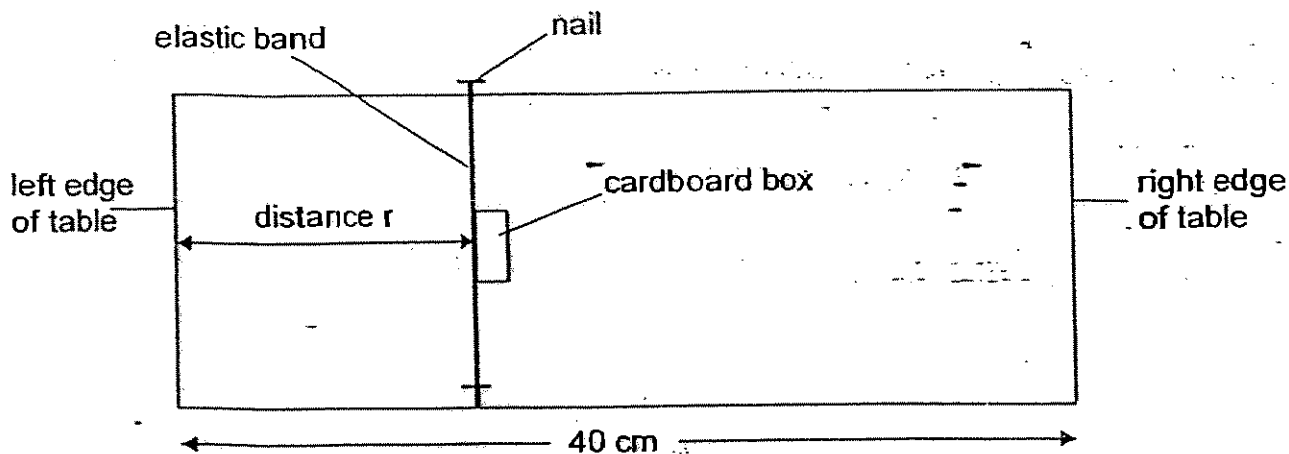
Meimei's readings	
Load (number of marbles)	Effort (number of marbles)
4	2
6	4
8	5
10	6
12	7

Renjie's readings	
Load (number of marbles)	Effort (number of marbles)
4	9
6	13
8	16
10	21
12	26

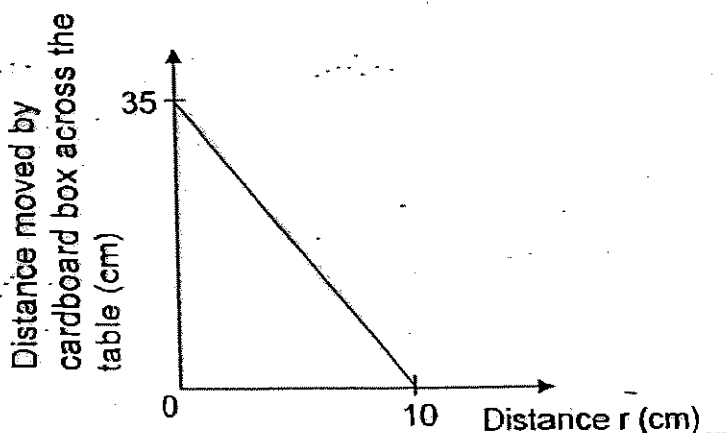
- (a) Their teacher told them that only Meimei's results were correct. Explain why their teacher made this conclusion. (1 mark)

- (b) Meimei then modified her setup. She placed 12 marbles in bag Y and observed that she needed only 4 marbles in bag X. State the change that she could have made to her experiment. (1 mark)

37. Mariam set up the experiment below to find out the relationship between distance r and the distance moved by the cardboard box across the table. Distance r is the distance between the centre of the elastic band and the left edge of the table.



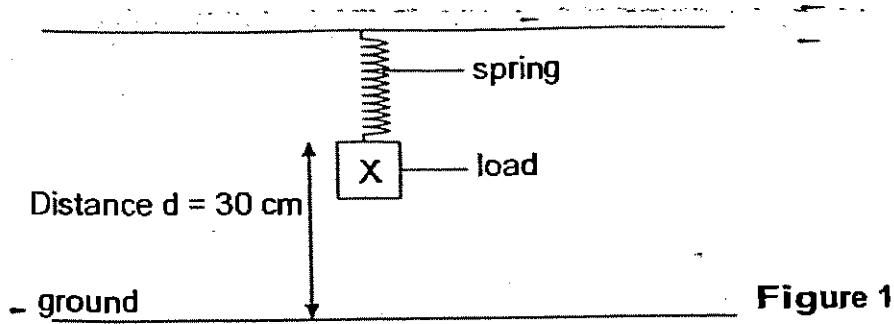
Mariam carried out the experiment by stretching the elastic band before releasing it to slide the cardboard box across the table. She then plotted her results in the graph below.



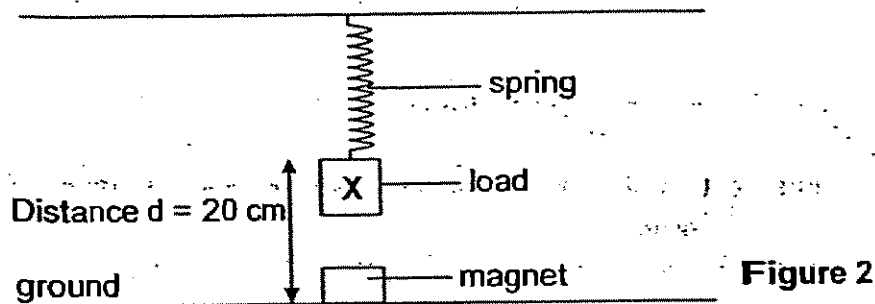
- (a) Based on the graph above, explain why the cardboard box did not move when distance r is 10 cm? (1 mark)

- (b) Using the same setup, describe what Mariam could do to make the cardboard box slide off from the right edge of the table. (1 mark)

38. Ahmad hung a load, X, on a spring as shown below.



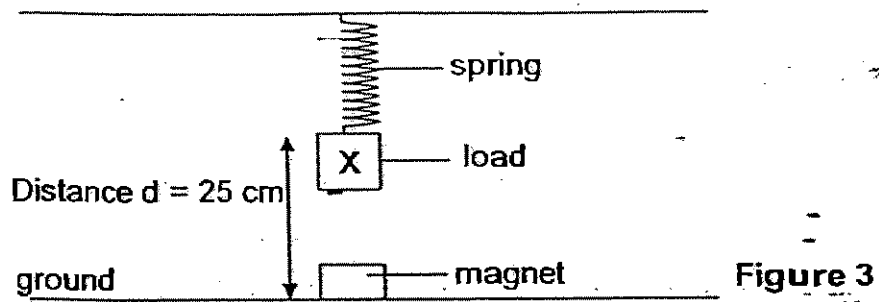
Ahmad then placed a magnet directly below load X and the following was observed.



(a) Ahmad placed Object S in between the load and the magnet and observed that distance d became 30 cm. again. What could Object S be? (1 mark)

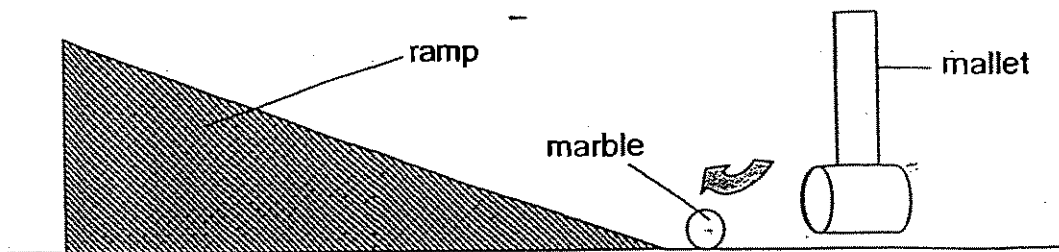
(b) Explain your answer in (a). (1 mark)

Ahmad repeated the experiment using another spring but kept all other apparatus the same.



- (c) Explain why distance d was different from the previous experiment in Figure 2. (1 mark)

39. A glass marble of 50 g was hit by a mallet at the bottom of the ramp as shown below.



The marble travelled 15 cm up the ramp before it slides back to the ground.

- (a) Name two forces that are acting on the marble as it was travelling up the ramp. (1 mark)

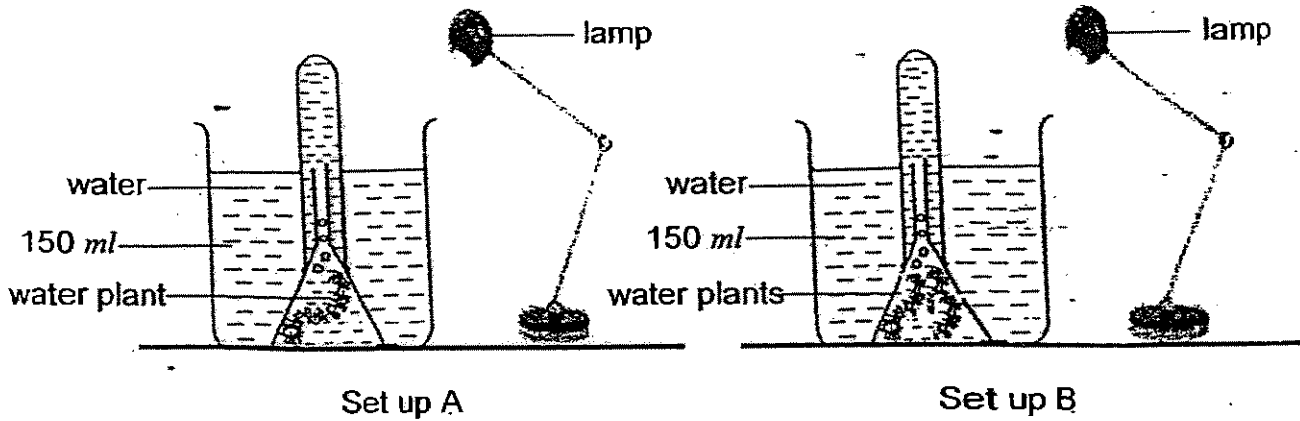
- (b) The experiment was repeated using another glass marble of 70 g. The same force was applied to the mallet to hit the 70 g marble. Predict the distance that the marble would travel on the ramp before it slides down to the ground. (1 mark)

- (c) Explain your answer in (b) in terms of energy conversion. (1 mark)

40. Yao Hui carried out an experiment to find out what type of soil is suitable for growing balsam plants. Before the experiment, he drew up a table to record the materials used. Fill in the blanks in his table below to help Yao Hui carry out a fair experiment. (3 marks)

	Size of pot (cm ³)	Type of soil	Amount of water used to water the plants daily (cm ³)
Pot 1		Garden	
Pot 2	600		
Pot 3			150

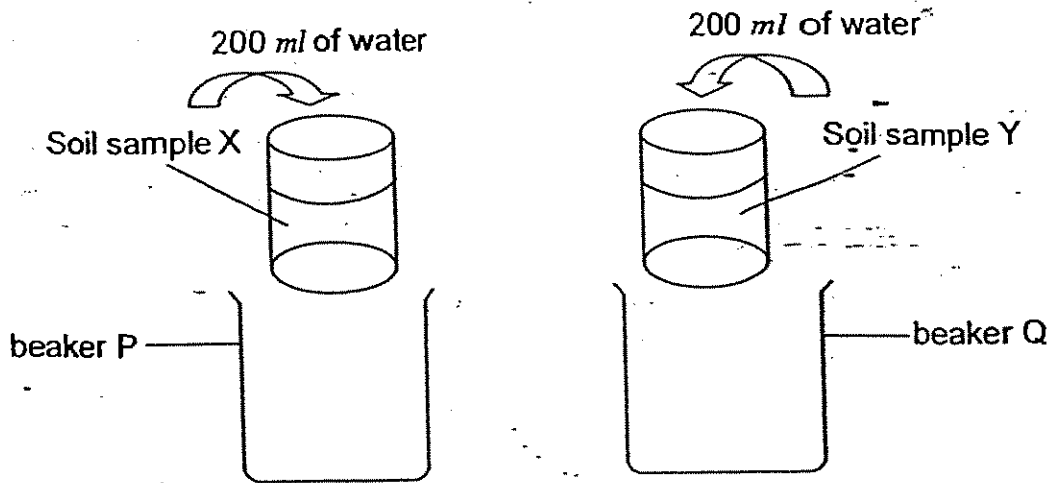
41. Sam set up the experiment below. His aim was to find out the effect of the intensity of light on the amount of oxygen produced by water plants. The lamps used were identical and the intensity of light for both setups A and B was the same.



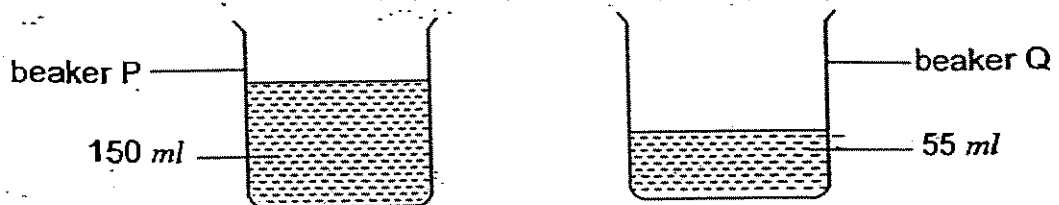
Sam was told that he had set up the experiment wrongly. State two changes that Sam needs to make to set up B to ensure that he can make the correct conclusion. (2 marks)

- (i) _____
- (ii) _____

42. Jenny placed two soil samples, X and Y, each in a container with many tiny holes at the bottom which the soil sample cannot pass through. She poured 200 ml of water into each container and collected the amount of water flowing out of the tiny holes as shown below. She started a stopwatch the moment she poured the water into the containers.



After 40 seconds, she removed the containers away from the beakers. The diagram below shows the results.



- (a) What was the aim of Jenny's experiment? (1 mark)

- (b) Based on the results, which soil sample is suitable for growing a cactus plant? (1 mark)

43. Yi Hong placed 20 duckweeds into two beakers of water, P and Q. He dripped Solution A into both beakers. He then placed the beakers near the window.

Start of experiment

Beaker	Number of duckweeds that are alive	Number of drops of Solution A
P	20	2
Q	20	5

After one week, Yi Hong recorded his observations in the table below.

End of experiment

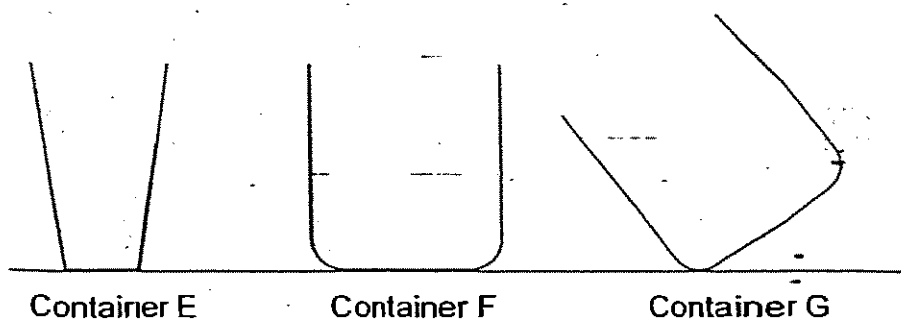
Beaker	Number of duckweeds that are alive
P	15
Q	8

- (a) What is the relationship between the number of drops of Solution A and the number of duckweeds alive? (1 mark)

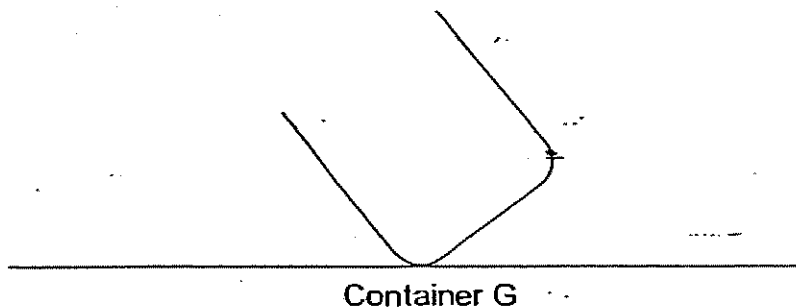
- (b) Name one variable that has to be kept constant in this experiment. (1 mark)

- (c) Yi Hong has a pond with many organisms and water plants living in it. The surface of the pond is covered completely with duckweeds. State one disadvantage of adding Solution A into the pond to control the population of duckweeds. (1 mark)

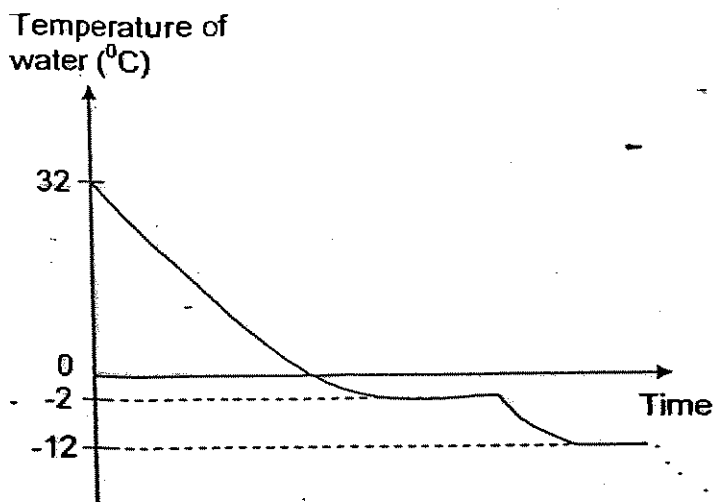
44. Liping poured 300-ml of water into each of the 3 containers, E, F and G. Containers F and G are of the same size.



- (a) Draw the water levels in the 3 containers above after Liping had poured in the water. (2 marks)
- (b) If Liping poured the same volume of rice into Container G instead, draw the level of the rice in the diagram below. (1 mark)



45. Gopal wanted to find out how adding substances to water can affect the freezing point of water. He added salt to a beaker of water and he placed the beaker in a freezer. He recorded his observation in the graph below.



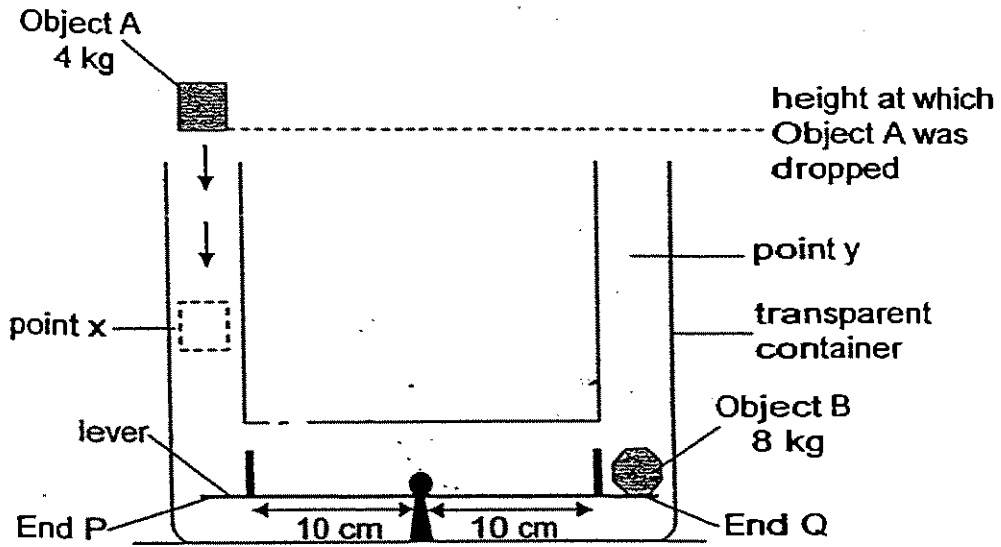
The temperature of the freezer was set at -12°C .

- (a) What was the state of the water when the temperature is 0°C ? (1 mark)

- (b) Gopal decided to make ice cream by mixing water and other necessary ingredients together. He then placed the mixture in the freezer. At what temperature should he set the freezer at? (1 mark)

- (c) Explain your answer in (b). (1 mark)

46. In the experimental setup below, Ali dropped Object A down one side of a transparent container. Object B did not rise beyond the original height of Object A.



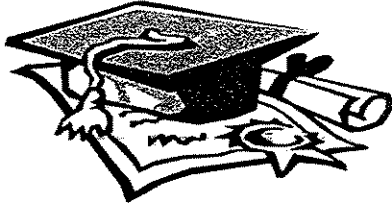
- (a) When Object A landed on the lever, Object B rose to point y before falling down. What should Ali do to the lever such that Object B can rise higher than point y? (1 mark)

- (b) Explain your answer in (a). (2 marks)

- (c) State the form(s) of energy that Object A possessed at point x. (1 mark)

—————END OF PAPER—————

Setters : Mrs Lily Lee
Ms Tan Si Ming



ANSWER SHEET

NANYANG PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
SEMESTRAL ASSESSMENT (1)

1. 3
 2. 1
 3. 4
 4. 1
 5. 3
 6. 3
 7. 4
 8. 2
 9. 2
 10. 3
 11. 2
 12. 3
 13. 2
 14. 4
 15. 3
 16. 3
 17. 4
 18. 4
 19. 2
 20. 1
 21. 3
 22. 3
 23. 1
 24. 4
 25. 2
 26. 4
 27. 1
 28. 3
 29. 1
 30. 4
- 31) a) A=√ C=√ D=√
b) Small intestine: Breaks down the food into even simpler substances.
Large intestine: Absorbs water and nutrients from the undigested food.
- 32) a) The iron bar became an electromagnet.
b) He should increase the number of coils around the iron bar.
- 33) a) Both reproduce by spores.
b) Ferns can photosynthesize but mushrooms cannot.
- 34) a) It used fuel.
b) Chemical potential Energy → Heat Energy + Kinetic Energy + Sound Energy + Gravitational Potential Energy.
- 35) a) It is most likely C.
b) Blood that flows through lungs is oxygenated when a person inhales and sample C had the most oxygen.
- 36) a) The effort moves a greater distance than the load so the effort must be less than the load as show in Meimei's readings.
b) She could have changed the cotton reel for a larger one.

37) a) The elastic band was not stretched towards the left edge of the table.

b) She could have sprinkled powder on the table to reduce friction.

38) a) It could have been an iron sheet.

b) The iron sheet is made of magnetic material and do not allow magnetism to pass through them.

c) The new spring could have been shorter.

39) a) Gravitational potential Energy + Frictional Energy.

b) It would be around 10.5cm

c) The same amount of force is applied to the marble, so the amount of kinetic energy that is given to the marble of greater mass is the same, Therefore, the mark of a greater mass has less kinetic energy to move up the slope.

40) Pot 1: 600, 150

Pot 2: Sandy, 150

Pot 3: 600, clayey

41) i) Only one water plant should be present in set-up B.

ii) The intensity of light in set-up B should be higher.

42) a) It was to find out how much water each soil sample could absorb.

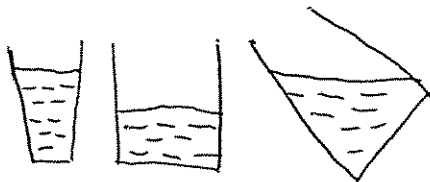
b) It is soil sample X.

43) a) The greater the number of drops of solution A, the smaller the number of duck weeds that are alive.

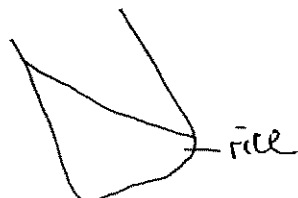
b) It is the size of the drops of solution A.

c) Solution A might kill the other organisms living in the pond too.

44) a)



b)



45) a) It was in liquid form.

b) He should set the temperature at -15°C

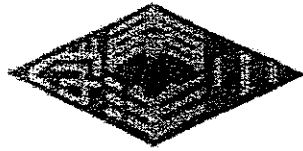
c) The presence of ingredients in water lowers the freezing point of water.

46) a) Move the fulcrum towards End Q.

b) Effort distance is increased so less effort is needed to effort object B. Same amount will raise object B higher.

c) It possessed Kinetic Energy and Gravitational potential Energy.

---end---



NANYANG PRIMARY SCHOOL
PRELIMINARY EXAMINATION
2007

PRIMARY 6
SCIENCE

BOOKLET A

30 questions

60 marks

Duration : 1 h 45 mins

Name : _____ ()

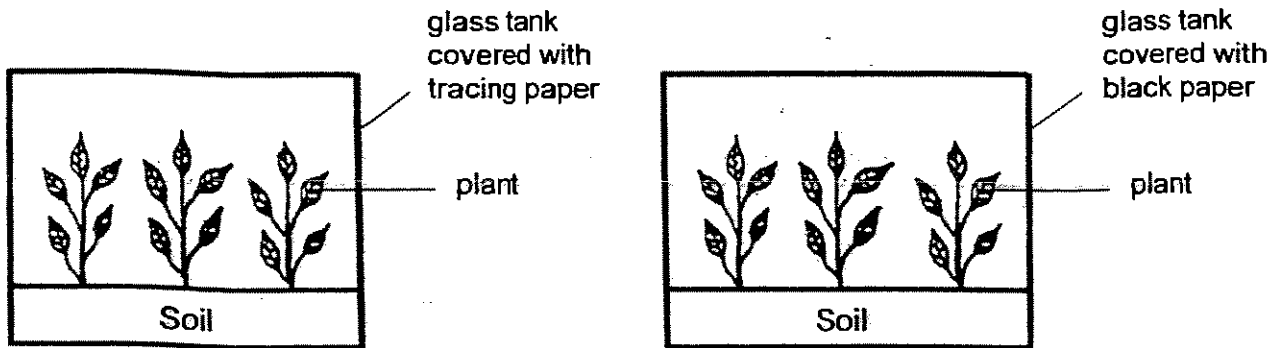
Class : Primary 6 ()

Parent's Signature : _____

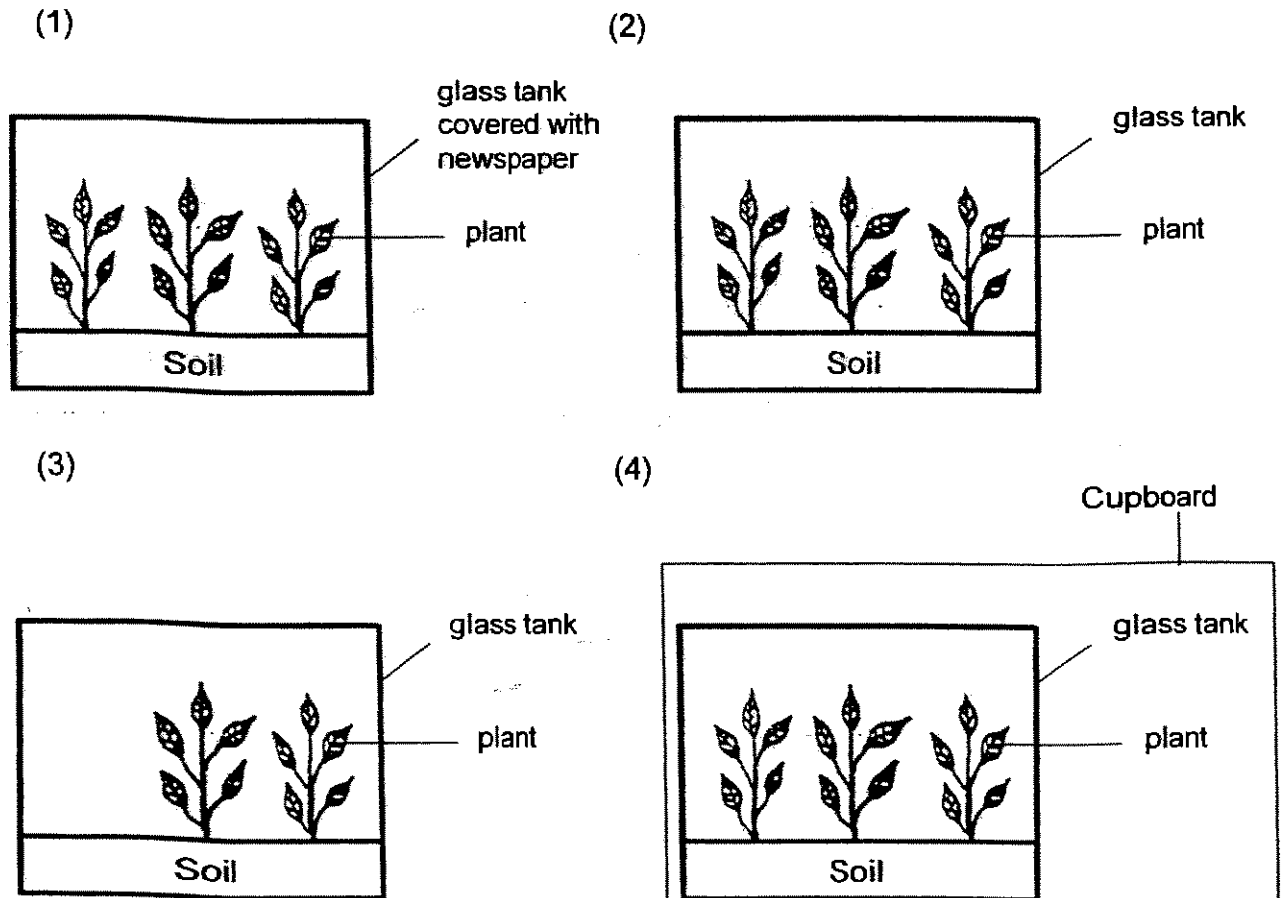
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

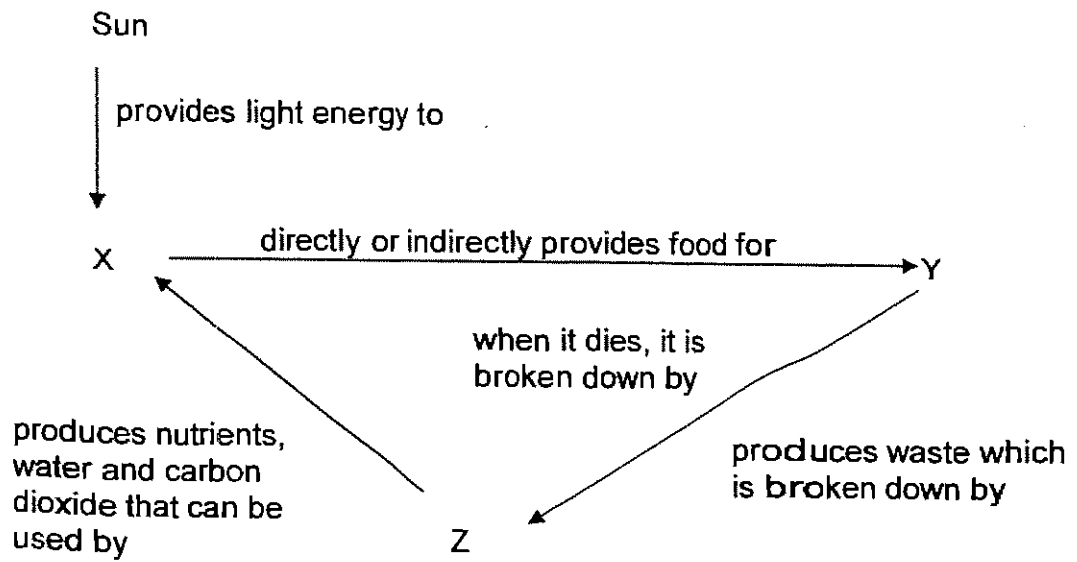
1. Joshua used the two setups below to investigate how the amount of light affects the growth of a type of plant. He wrapped one of the glass tanks with tracing paper and the other with black paper and placed them together in a classroom.



Which one of the following setups should he use as a control for his experiment?



6. The following diagram shows how the energy from the Sun is transferred to organisms X, Y and Z.



Which of the following correctly represent X, Y and Z?

	X	Y	Z
(1)	Goat	Woodlouse	Grass
(2)	Seaweed	Earthworm	Cat
(3)	Grass	Ox	Mushroom
(4)	Bacteria	Rice	Wolf

7. The teeth in the jawbone can determine the diet of an animal. Canines are found in carnivores while molars are found in herbivores. The diagram below shows a canine and a molar.



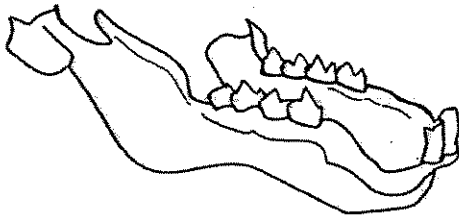
Canine



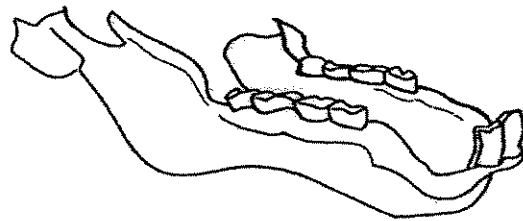
Molar

The arrangement of teeth on the upper and lower jaws is the same. Which one of the following jaw bones is most likely that of an omnivore?

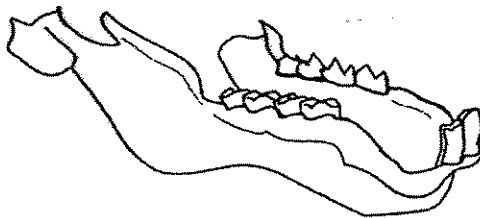
(1)



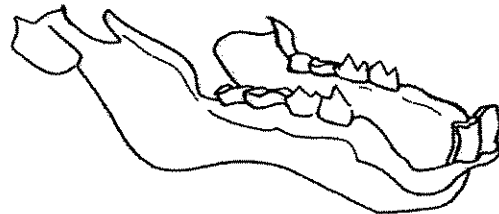
(2)



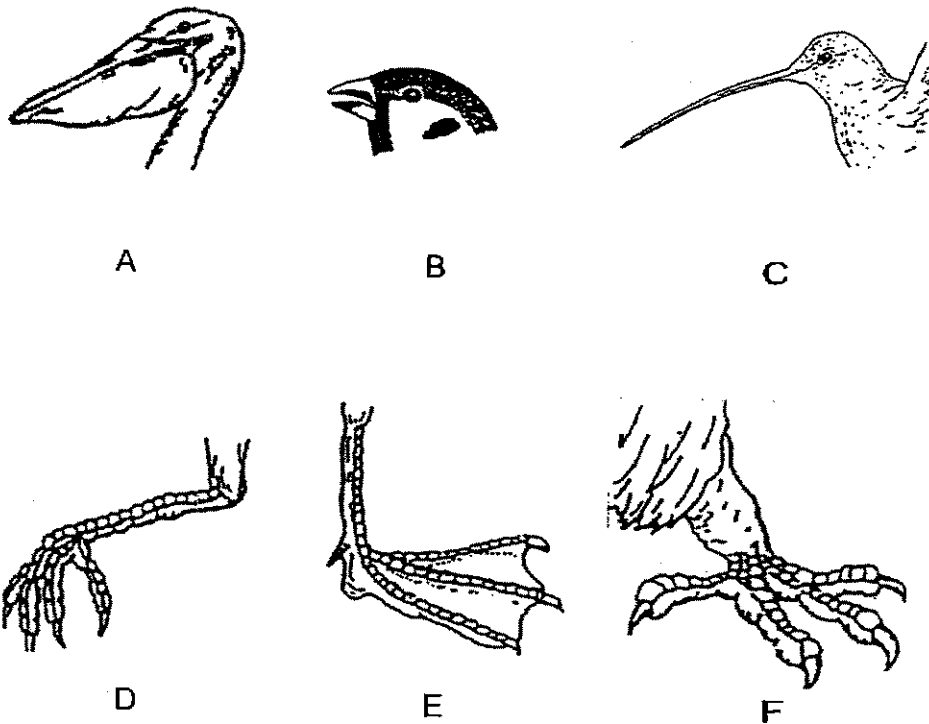
(3)



(4)



8. The diagram below shows the different types of beaks and feet that birds have to help them survive in different environments.



Which one of the following beaks and feet belongs to a bird that can swim in water and feed on fish?

	Beak	Foot
(1)	A	D
(2)	B	F
(3)	C	F
(4)	A	E

11. Three plants Q, R and S were planted on a piece of land as shown in Figure 1. Figure 2 shows the same piece of land a few years later.

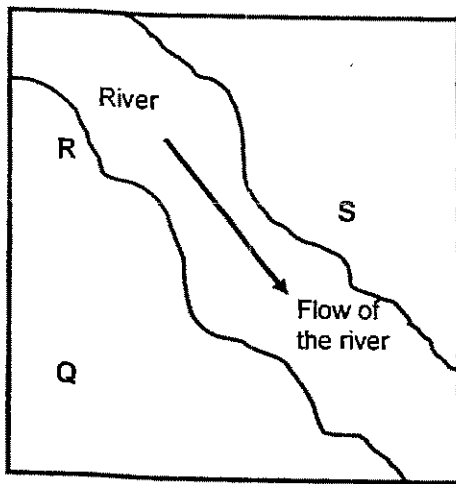


Figure 1

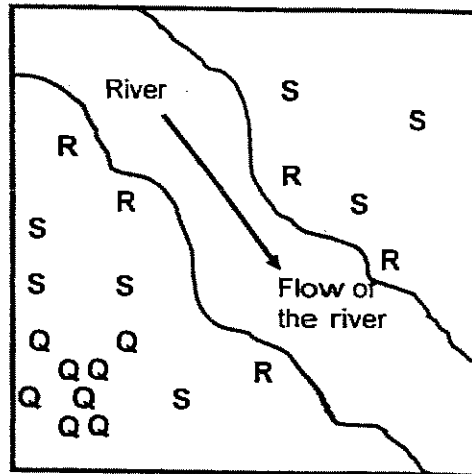
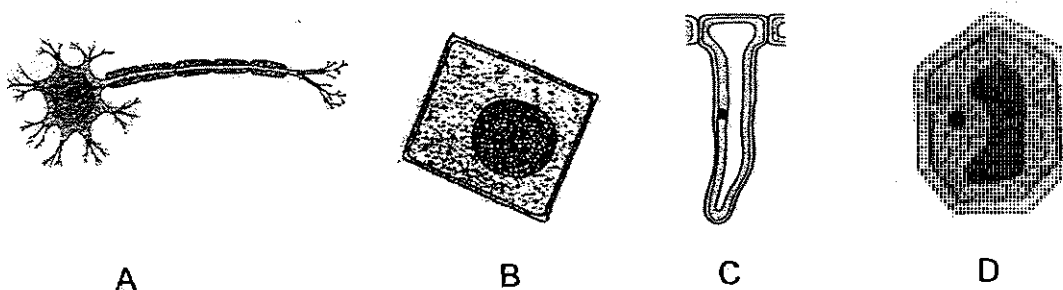


Figure 2

How are the fruits of plant Q, R and S most likely dispersed?

	Q	R	S
(1)	Wind	Splitting action	Water
(2)	Splitting action	Water	Wind
(3)	Splitting action	Wind	Water
(4)	Wind	Water	Splitting action

12. The following diagrams show different types of cells.



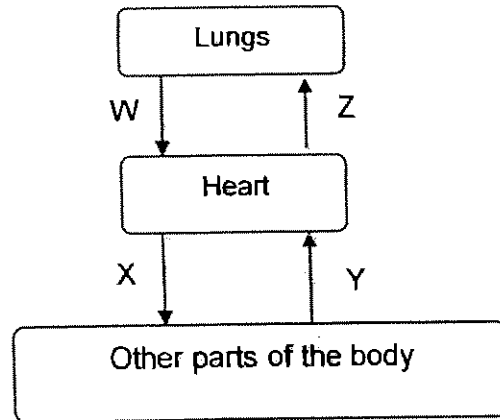
Which one of the following shows the correct classification for cells A, B, C and D ?

	Plant cells	Animal cells
(1)	A, C	B, D
(2)	A, B	C, D
(3)	B, C, D	A
(4)	A, C, D	B

13. Which one of the following comparisons between respiration and photosynthesis in plants is true?

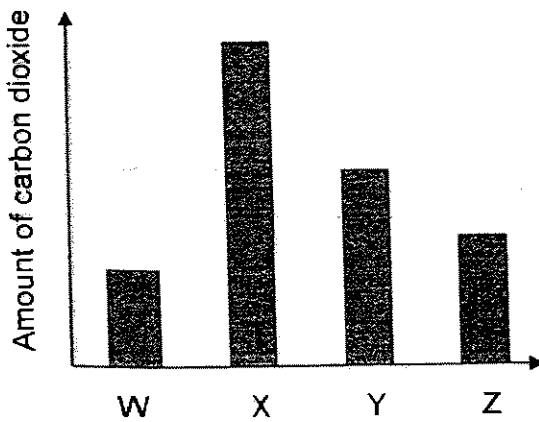
	Respiration	Photosynthesis
(1)	Takes place only at night	Takes place only in the day
(2)	Takes place in all cells	Takes place in the leaves only
(3)	Takes place all the time	Takes place only when there is light
(4)	Requires food and produces energy	Requires oxygen and produces carbon dioxide

15. The diagram below shows a simple representation of blood circulation in a human body. Arrows W, X, Y and Z represent the flow of blood to different parts of the body.

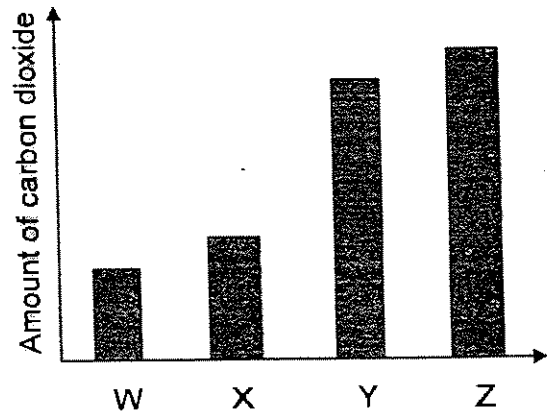


Which one of the following graphs correctly represents the amount of carbon dioxide in W, X, Y and Z?

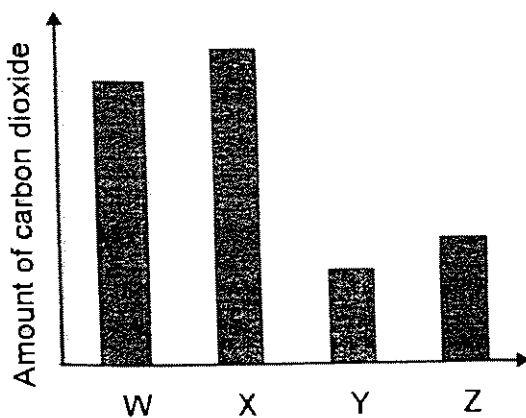
(1)



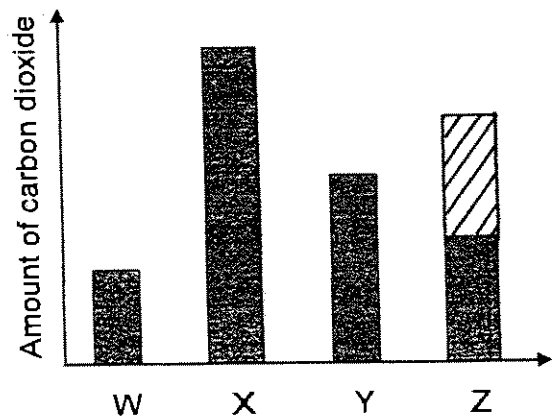
(2)



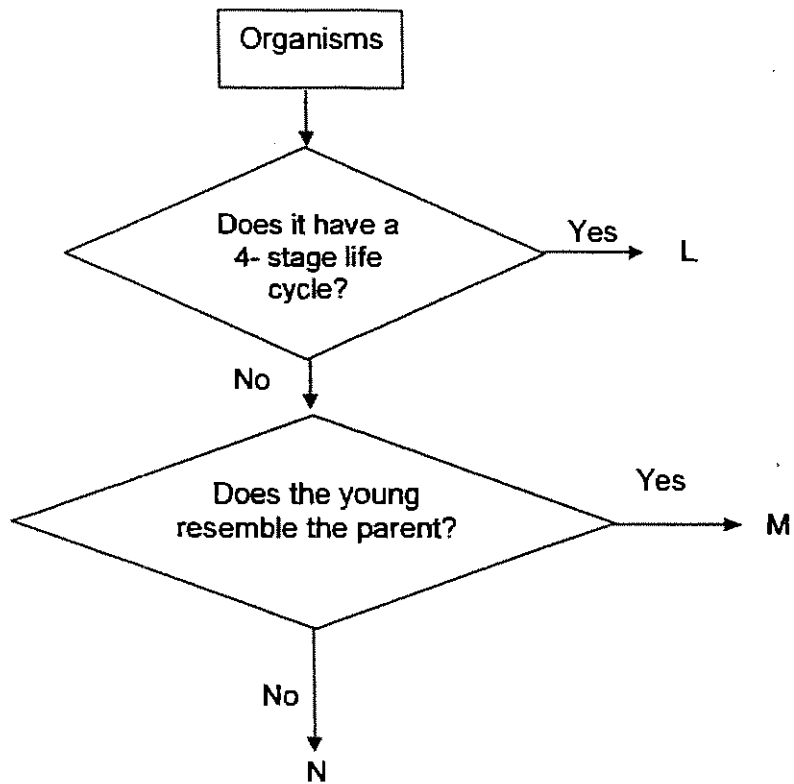
(3)



(4)



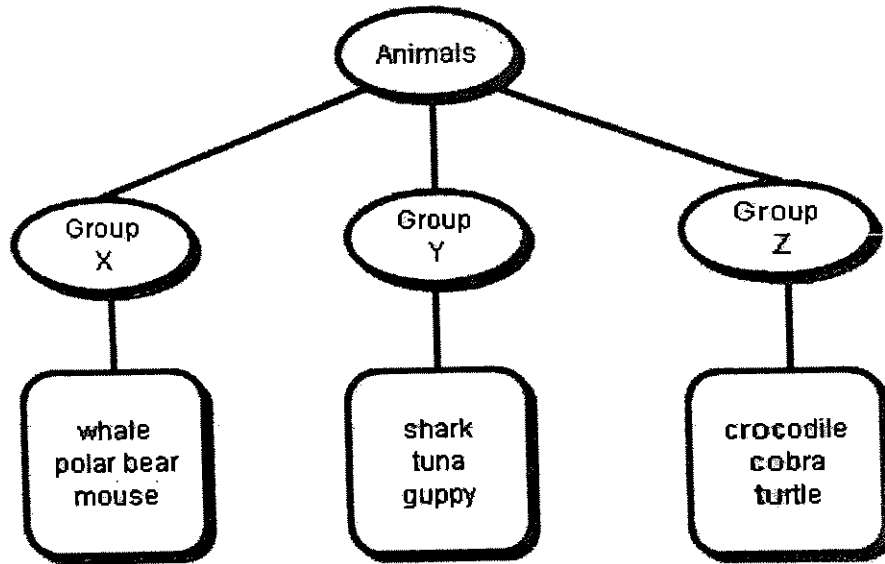
16. Study the following flow chart.



Which one of the following represents L, M and N correctly?

	L	M	N
(1)	Dragonfly	Toad	Butterfly
(2)	Grasshopper	Dog	Mosquito
(3)	Butterfly	Chicken	Frog
(4)	Moth	Frog	Housefly

17. Study the following classification table.

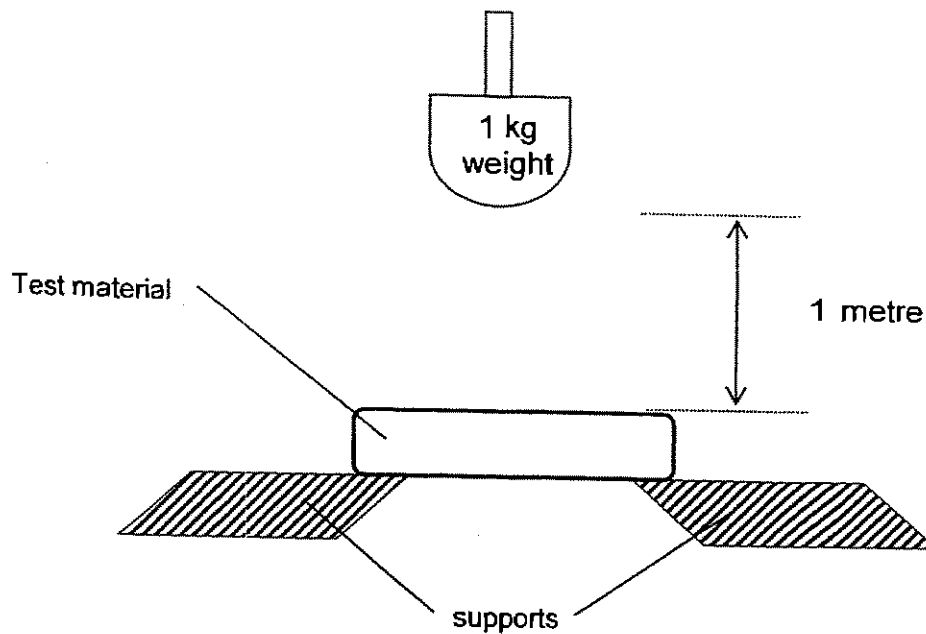


Which of the following statements are correct?

- A There is at least an animal in each group that can swim
- B Only the animals in Group X give birth to their young alive.
- C The animals are classified according to their animal groups
- D Animals in Group Y and Z share at least one common characteristic.

- | | |
|---------------------|---------------------|
| (1) A, B and D only | (2) A, B and C only |
| (3) A, C and D only | (4) B, C and D only |

18. Study the following diagram.




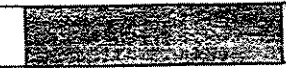
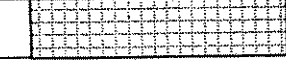
Wei Kai tested the strength of 5 materials by dropping a 1 kg weight from a height of 1 metre. He ensured that the materials had the same size and shape. He noted the number of times the weight was dropped before the materials broke into two pieces. His results were shown below.

Material	Number of Hits
P	48
Q	37
R	64
S	23
T	51

Based on the results in the table, which one of the following describes the materials correctly ?

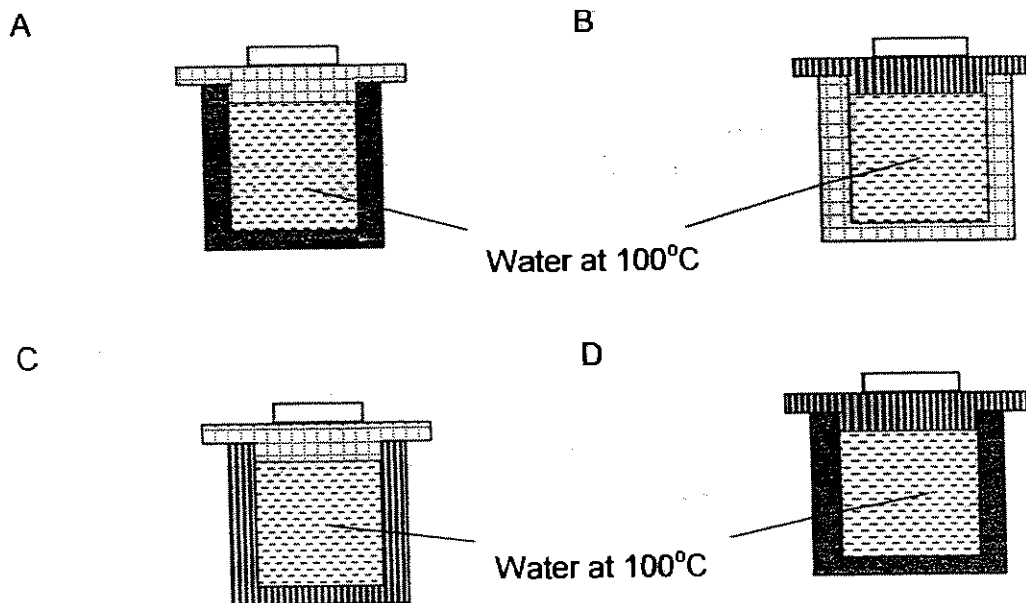
- (1) Material T is metal.
- (2) Material P is stronger than Material R.
- (3) Material T is hard enough to scratch material Q.
- (4) Material S is the first one to break if a 2-kg weight is used to repeat the experiment.

19. Study the following results that show the expansion of certain metals when heated to 100°C.

Key	Metal	Amount of Expansion at 100°C
	K	5 mm
	L	1 mm
	M	10 mm

Four similar containers with covers were made with metals K, L and M. Water at 100°C were poured into the containers before they were covered and left standing for 10 minutes. None of the covers was observed to have bent at the end of 10 minutes.

In which three of the containers is it most difficult to remove the cover after 10 minutes?

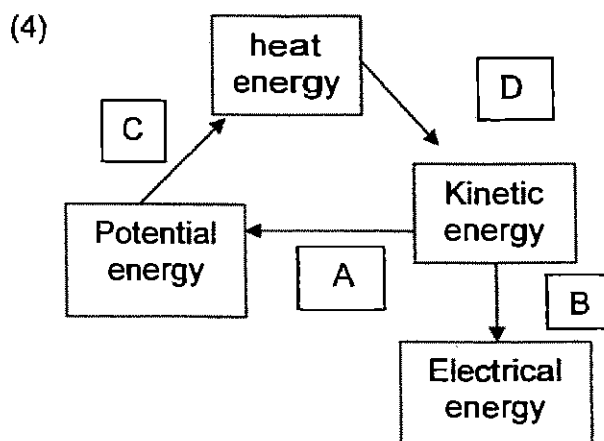
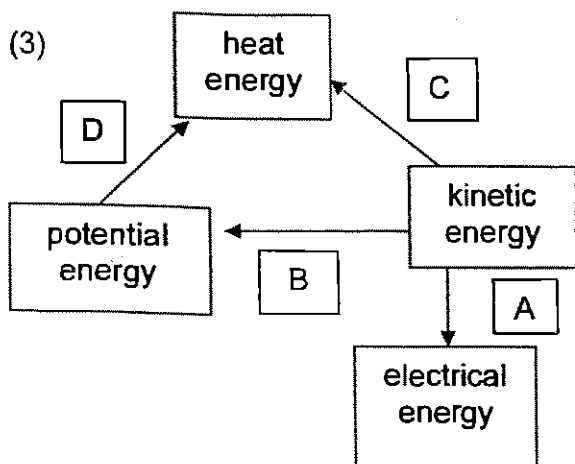
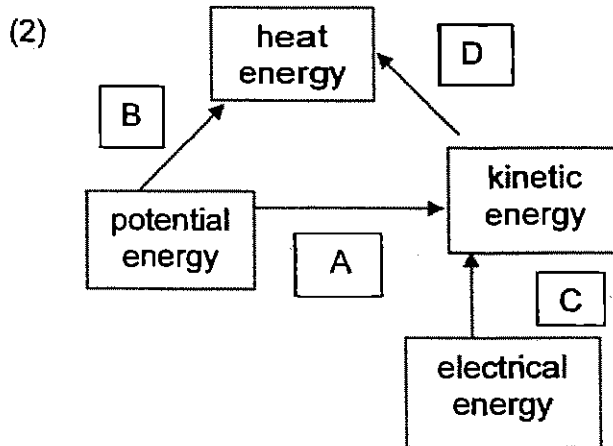
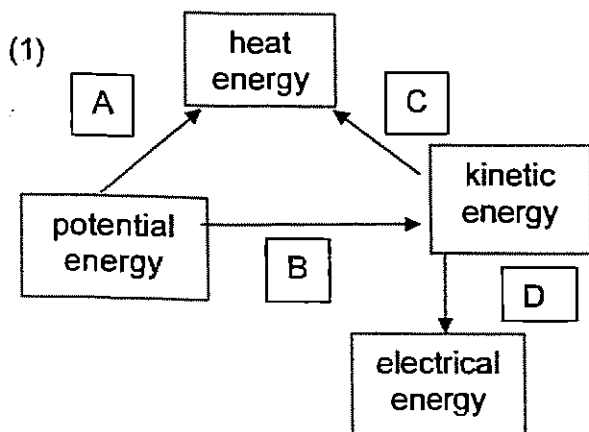


- (1) A, B and C only (2) A, B and D only
 (3) A, C and D only (4) B, C and D only

20. Some processes involving energy changes are listed below.

- A Burning of firewood.
- B Dropping a ball from a tower.
- C Rubbing of two hands together.
- D Using running water to spin a water wheel connected to a electric generator.

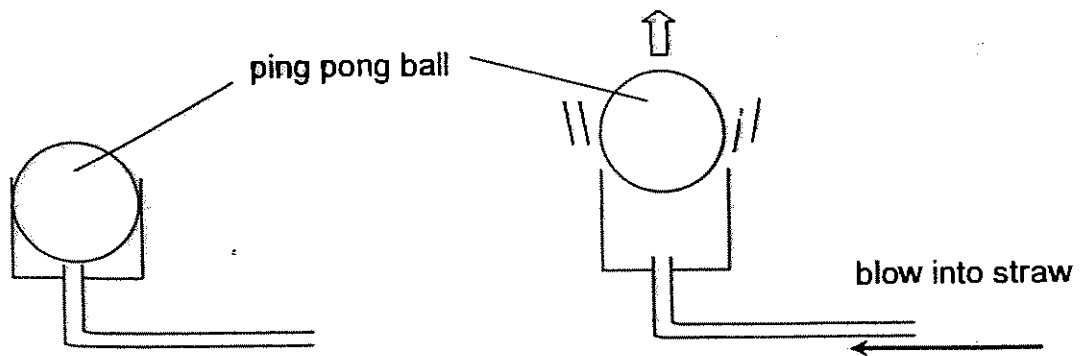
Which one of these diagrams correctly shows the energy changes in the processes above ?



21. Which one of the following consists of renewable energy sources only ?

- (1) solar, natural gas, wood (2) wind, geothermal, coal
(3) oil, natural gas, nuclear (4) wood, geothermal, solar

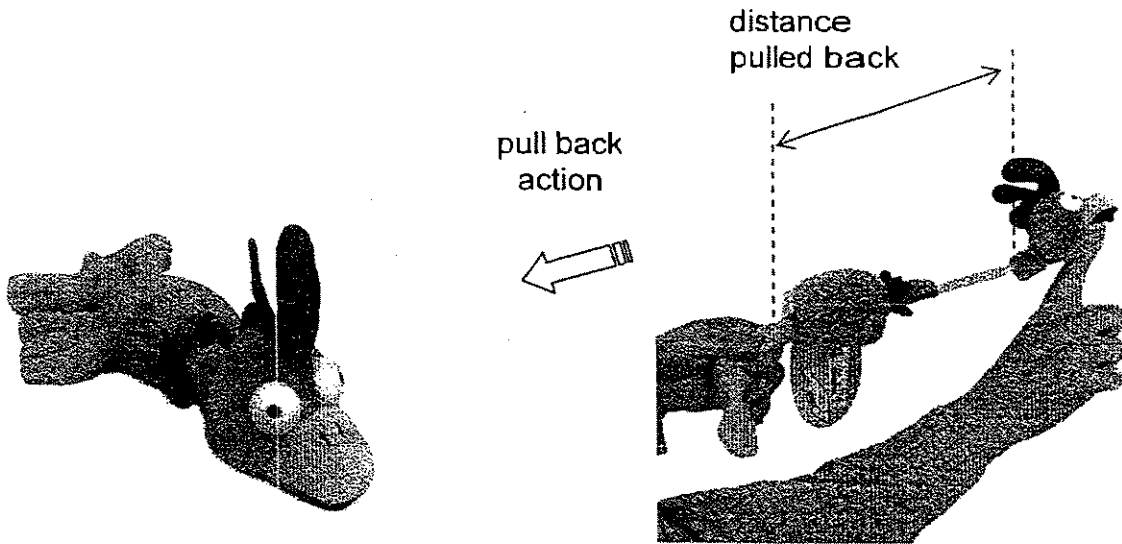
22. Study the diagram below.



Which one of the following statements explains the result of blowing air into the straw ?

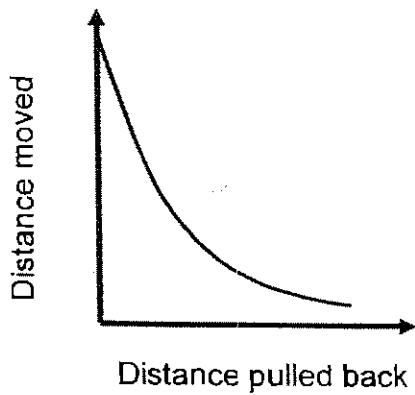
- (1) The amount of moving air is lesser than the weight of the ping pong ball.
(2) The hot air from the mouth heated the ping pong ball and causes it to rise.
(3) The force exerted by the moving air is able to support the weight of the ping pong ball.
(4) The amount of gravity acting on the ping pong ball is lesser because of the moving air.

23. The following pictures show a toy and how it can be played.

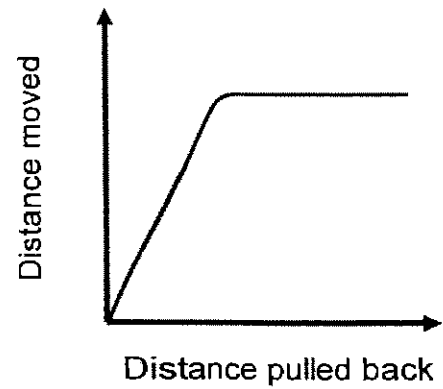


Which one of the following graphs best describe the relationship between the distance moved by the toy and the distance it is pulled back ?

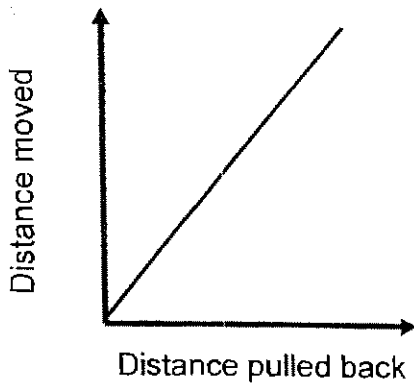
(1)



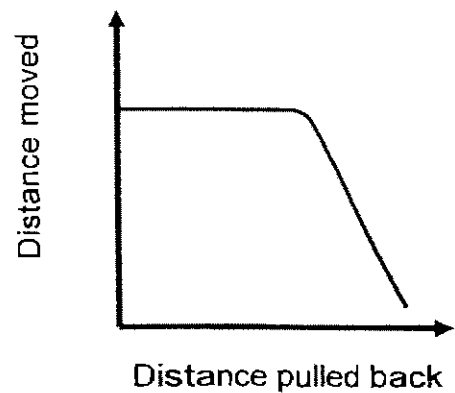
(2)



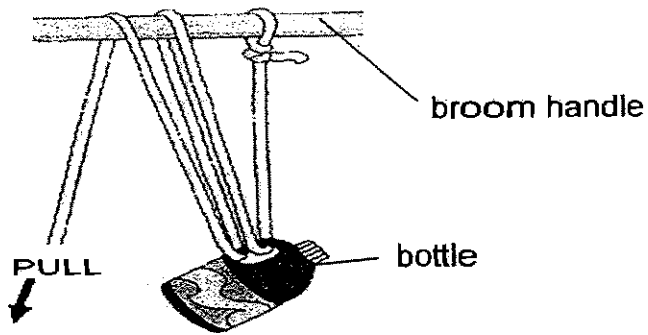
(3)



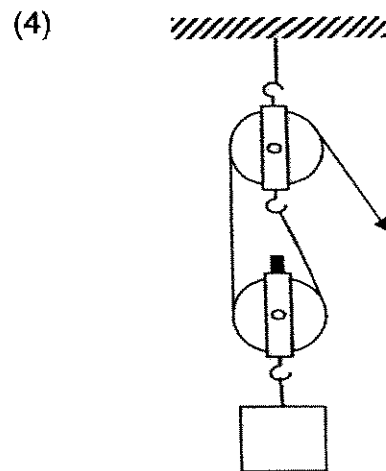
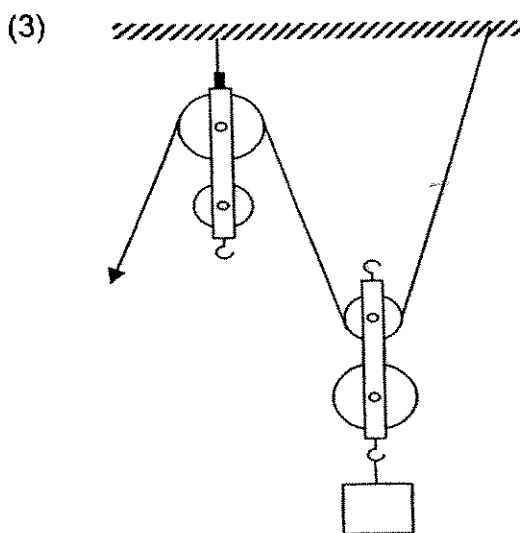
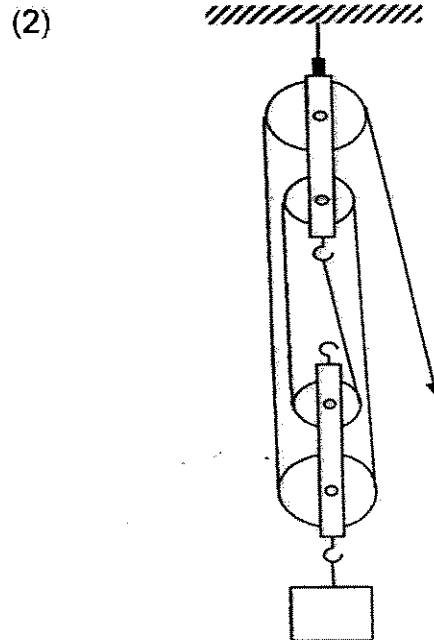
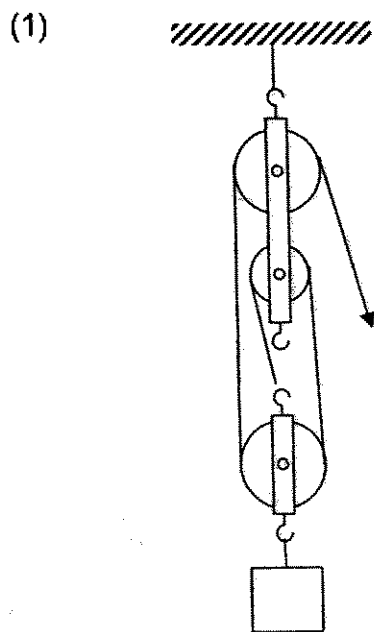
(4)



24. The diagram below shows a broom handle with ropes looped around it in order to lift the bottle filled with liquid detergent by pulling on one side of the rope.



Which one of the following diagrams shows a pulley system that best matches the system shown in the diagram above?



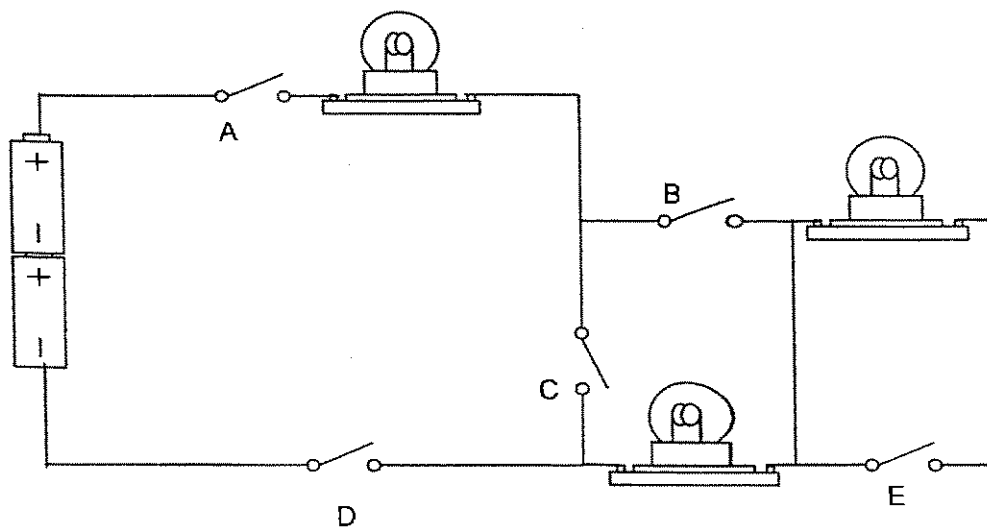
25. Study the table below.

X	Y	Z
iron	rubber	bronze
copper	plastic	mercury
saltwater	wood	alcohol

Which one of the following consists of suitable headings for the table ?

	X	Y	Z
(1)	poor conductors of heat	conductors of electricity	good conductors of electricity
(2)	conductors of electricity	poor conductors of heat	insulators of electricity
(3)	conductors of electricity	insulators of electricity	good conductors of heat
(4)	good conductors of heat	insulators of electricity	poor conductors of heat

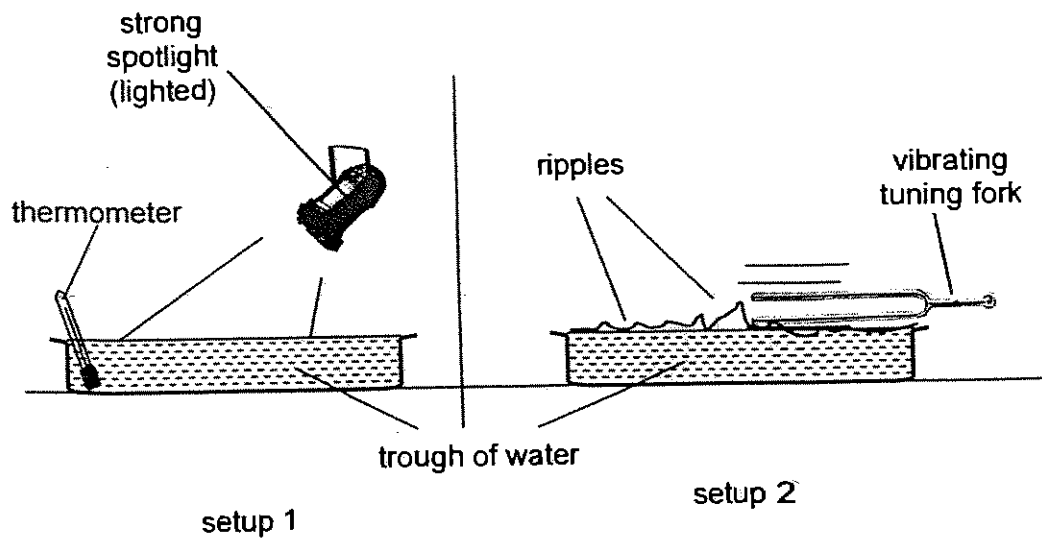
26. Study the following circuit diagram carefully.



In order to light up only 2 bulbs, which switches need to be closed ?

- | | |
|------------------------|------------------------|
| (1) A, B and D only | (2) A, B, C and D only |
| (3) A, B, D and E only | (4) A, B, C, D and E |

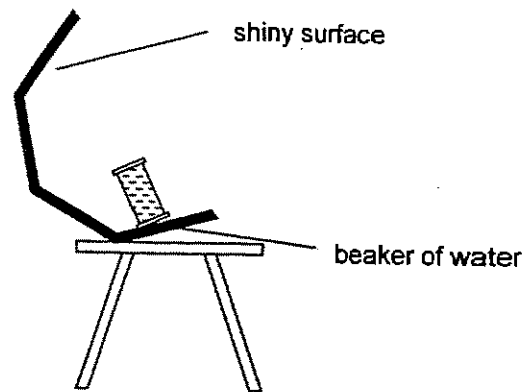
27. Richard set up an experiment as show below.



Which one of the following statements best describes the aim of Richard's experiment ?

- (1) To find out if energy causes changes in matter.
- (2) To compare the amount of energy in setups 1 and 2.
- (3) To prove that there is more energy in setup 1 than setup 2.
- (4) To show that there is no energy transfer in setup 1 but there is energy transfer in setup 2.

28. Fandi designed a solar cooker for a Science Project.



He conducted the experiment several times with the same cooker but with the shiny surface placed at different angles. He then measured the temperature of the water in the beaker after ten minutes.

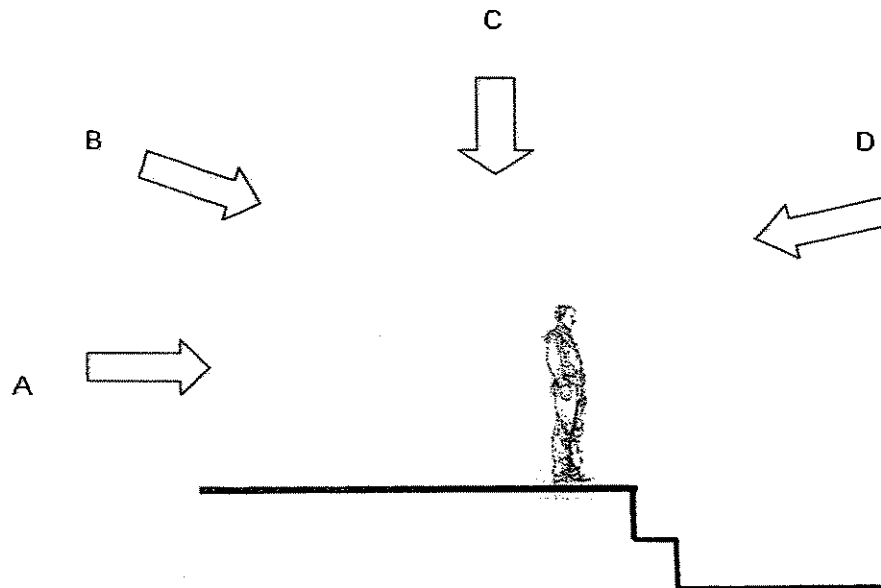
Which one of the following best explains why he experimented with different angles for the shiny surface ?

- (1) To form shadows onto the beaker of water.
- (2) To reflect sunlight away from the beaker of water.
- (3) To allow sunlight to pass through the shiny surface.
- (4) To reflect sunlight so that it is focused on the beaker of water.

29. Look at the picture carefully.



Which one of the following arrows represents the direction of the sun that could have caused the shadows shown in the picture ?



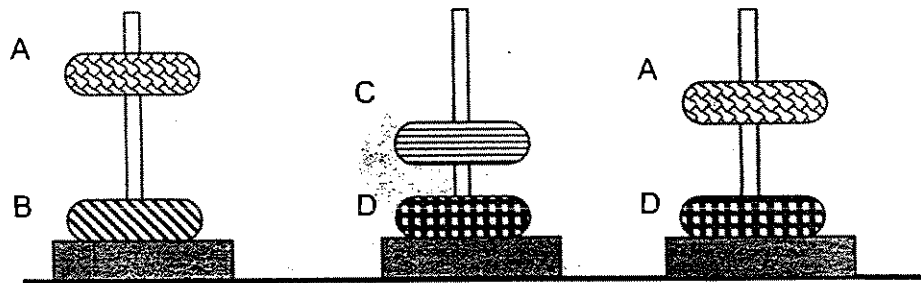
(1) A

(2) B

(3) C

(4) D

30. The following 3 setups show different ring magnets A, B, C and D whose like poles are facing each other. All the magnets have the same mass.



Based on the setups given, which one of the following statements is most likely to be correct ?

- (1) Magnet A is stronger than magnet B.
- (2) Magnet D is stronger than magnet C.
- (3) Magnet A is stronger than magnet C.
- (4) Not possible to tell which magnet is strongest.

***** END OF BOOKLET A *****



NANYANG PRIMARY SCHOOL
PRELIMINARY EXAMINATION
2007

PRIMARY 6
SCIENCE

BOOKLET B

17 questions

40 marks

Duration : 1 h 45 mins

SCORE	
Booklet A	
Booklet B	
Total	

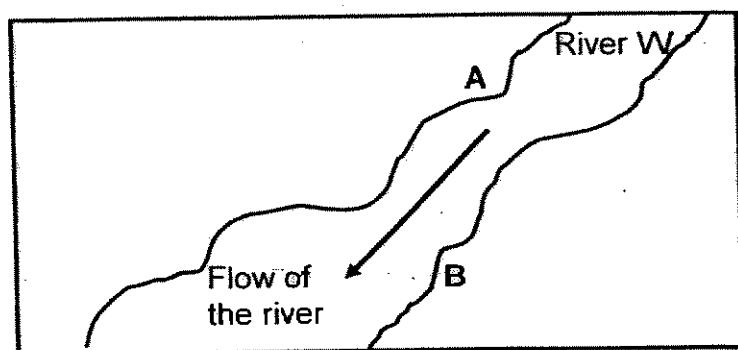
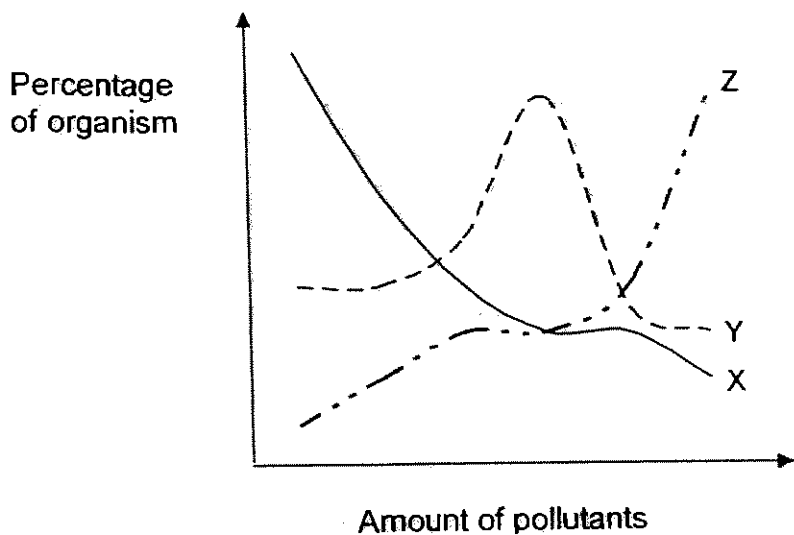
Name : _____ ()

Class : Primary 6 ()

Parent's Signature : _____

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

31. Different aquatic organisms can tolerate different amount of pollutants. As the level of pollutants increases, the number of certain organisms will decrease and the number of other organisms will increase. The graph shows the percentage of the different organisms at the various levels of pollutants at River W. Equal amount of water samples were collected from points A and B of River W.



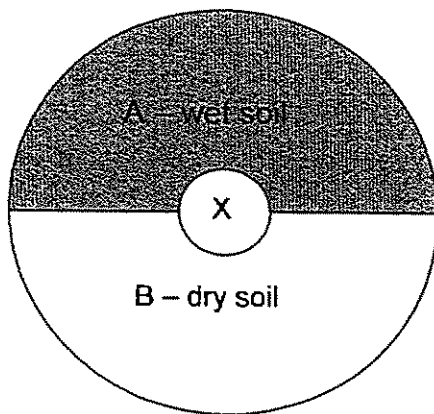
The percentage of each organism found in water samples collected is shown in the table below.

Point	X	Y	Z
A	45%	20%	10%
B	0%	10%	50%

- (a) Using the table above, compare the amount of pollutants from Point A to B. (1 mark)

- (b) Describe one human activity that could have caused this change in the level of pollution? (1 mark)

32. In an experiment, Gopal wanted to find out the most suitable living condition for an organism X to live in. He divided a tray into two parts A and B. He filled part A with wet soil and part B with dry soil. He then covered part A with a piece of black paper and part B with a piece of transparent plastic.



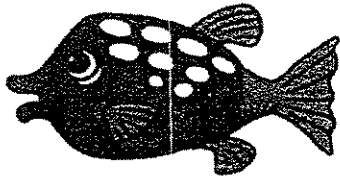
He placed the tray in the hot sun. He then released a number of organism X in the middle of the tray in the area marked by the circle. After one hour, greater number of organism X was found in part A. He obtained the same result after repeating the experiment 3 times.

- (a) Why did he place organism X in the middle and not at the side of the tray? (1 mark)

- (b) Why did he repeat the experiment 3 times? (1 mark)

- (c) Identify the natural habitat of organism X. (1 mark)

33. The following diagram shows two fish X and Y.
Fish Y is a natural predator of Fish X.



Fish X

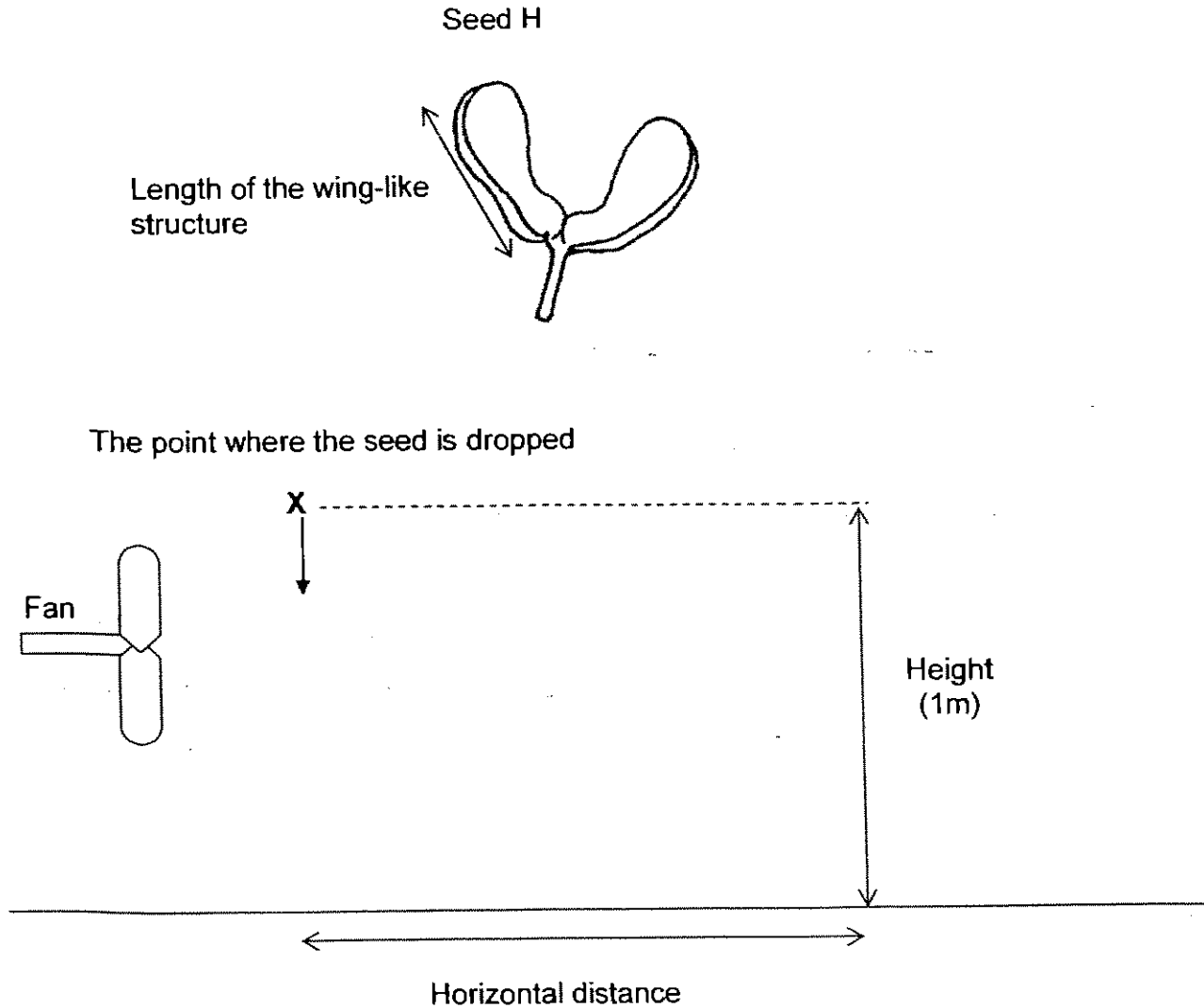


Fish Y

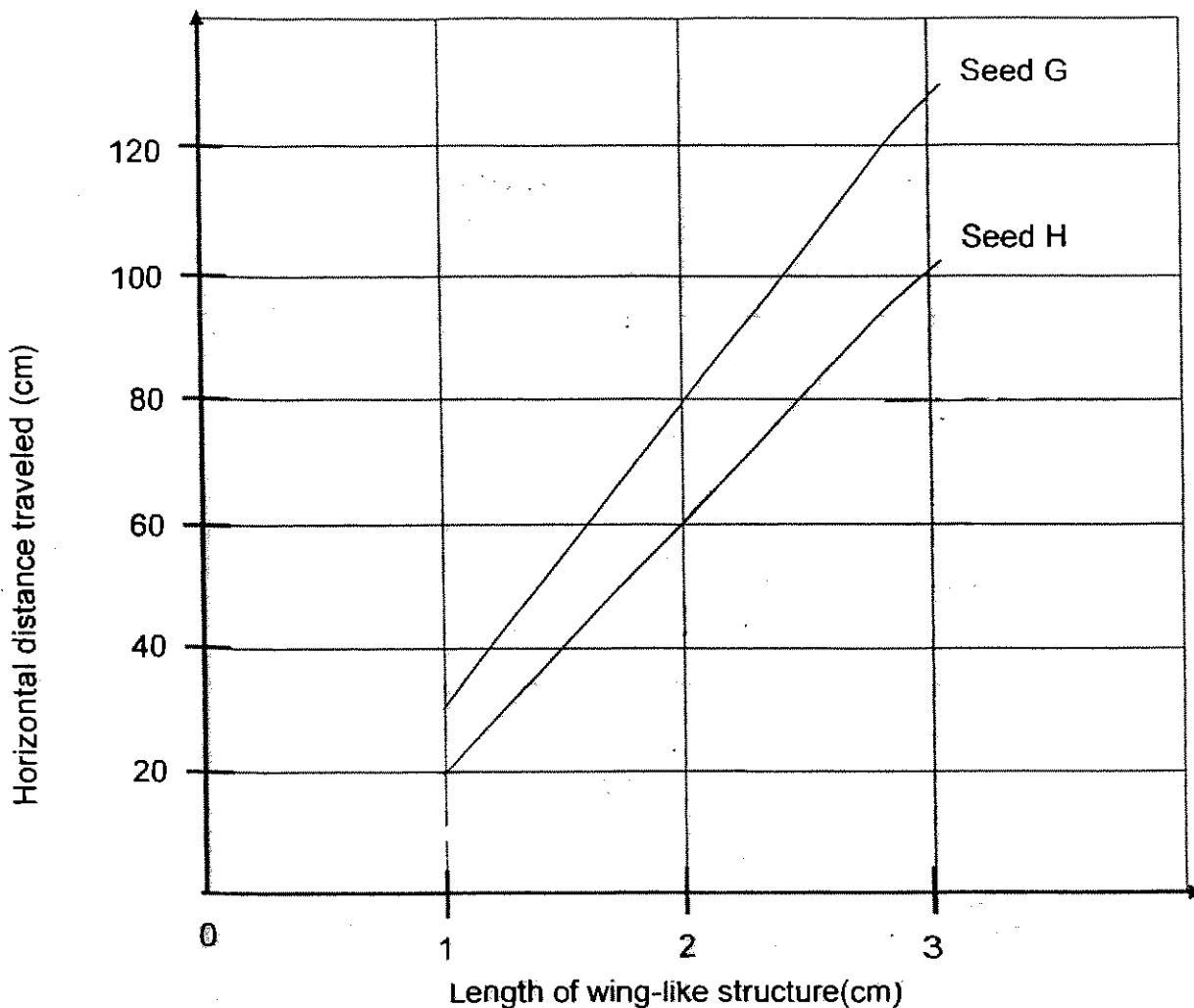
- (a) State one physical adaptation that prevents fish X from escaping from fish Y. (1 mark)

- (b) Explain the answer in (a). (1 mark)

34. Peter wanted to find out how the wing-like structure of a seed affects the distance it will travel in wind. He cut the length of the wing of seed H. He dropped it down from a height of 1 m and measured the horizontal distance it travelled as shown as in the set-up below.



Based on the result the following graph was plotted.



- (a) What is the relationship between the length of the wing-like structure of seed H and the horizontal distance travelled? (1 mark)

- (b) Using the graph, predict the horizontal distance travelled by seed H when its wing-like structure is less than 1cm. (1 mark)

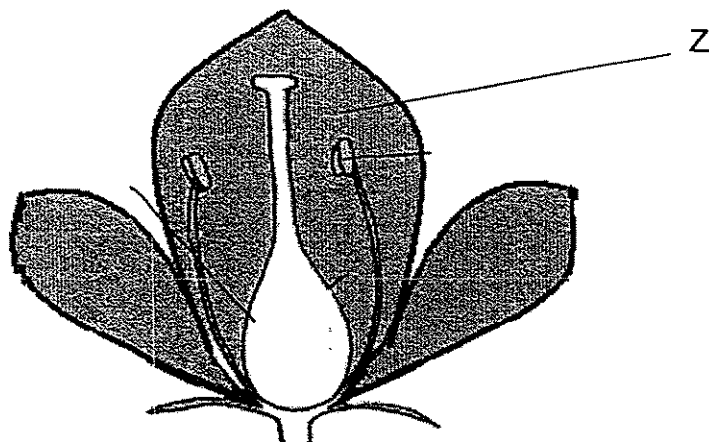
_____ cm

- (c) Peter repeated the experiment with seed G and seed J which are obtained from the same plant as seed H. Seed G was lighter than seed H and seed J was the heaviest among the three seeds. The result for seed G was plotted in the graph above.

Plot the result for Seed J on the graph above.

(1 mark)

35. The diagram below shows a longitudinal-section of a flower.



(a) The table below shows two parts of the flower, X and Y, that have similar functions to certain organs in the human reproductive system.

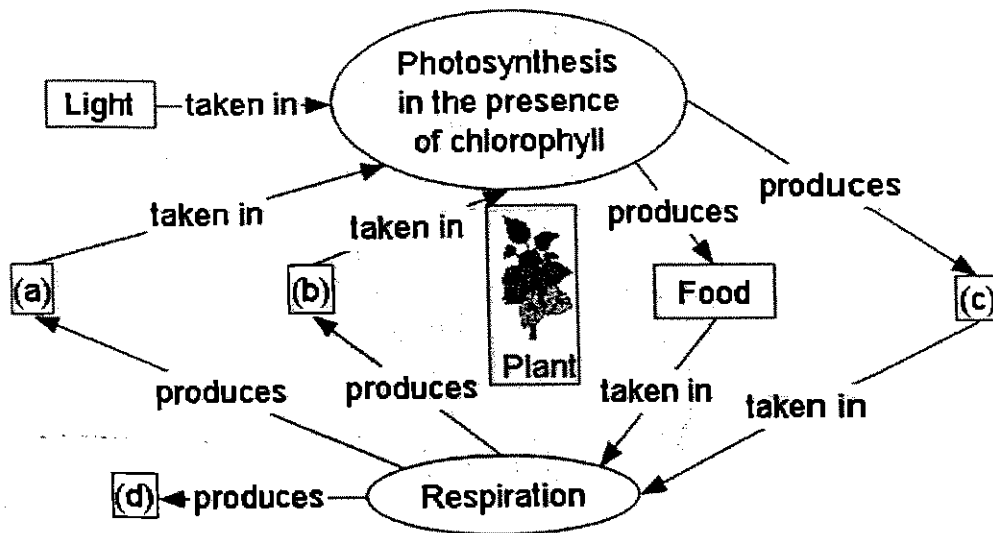
Parts	Similar function to certain organs in the human reproductive system
X	producing sperms
Y	producing eggs

Label part X and Y in the diagram above. (2 marks)

(b) If X is removed from the flower, will the flower be able to develop into a fruit? Explain why. (1 mark)

(c) What is the function of part Z? (1 mark)

36. The diagram below describes the processes of photosynthesis and respiration in plants.



Write down words that best represent (a), (b), (c) and (d).

(2 marks)

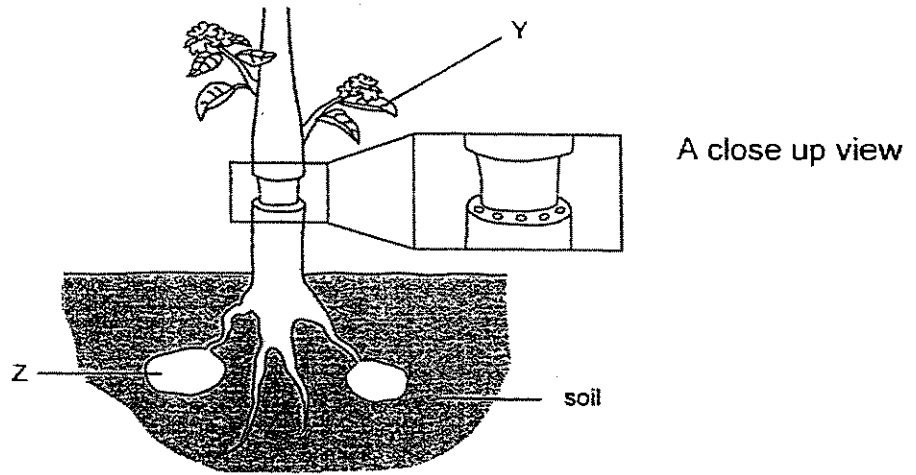
(a) _____

(b) _____

(c) _____

(d) _____

37. The diagram below shows a stem with an outer ring removed. As a result the only tubes carrying food in this stem were removed.

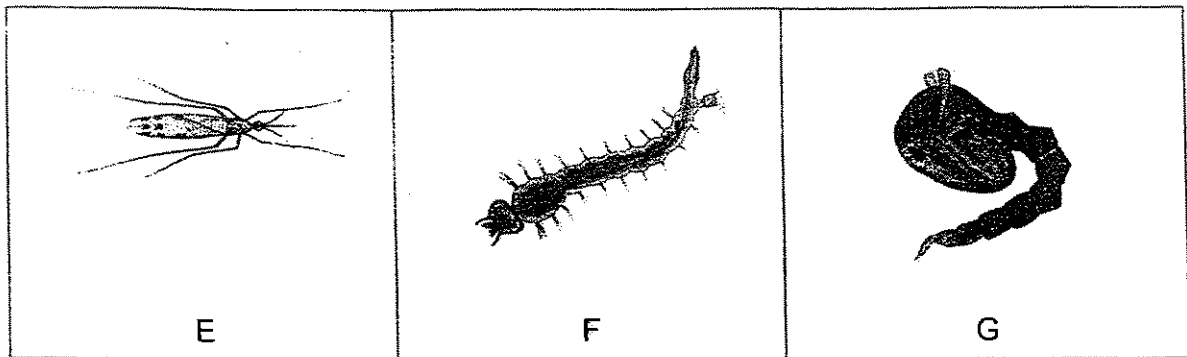


Predict what will happen to part Y and part Z after one week. Explain why.

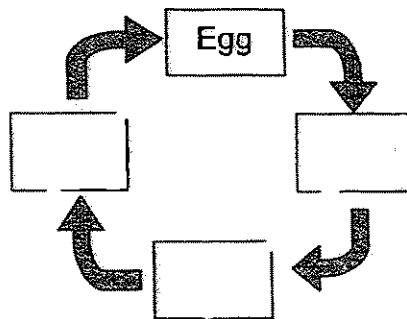
Part	Observation/	Reason
Y		
Z		

(2 marks)

38. The diagram below shows the different stages in the life cycle of insect S.

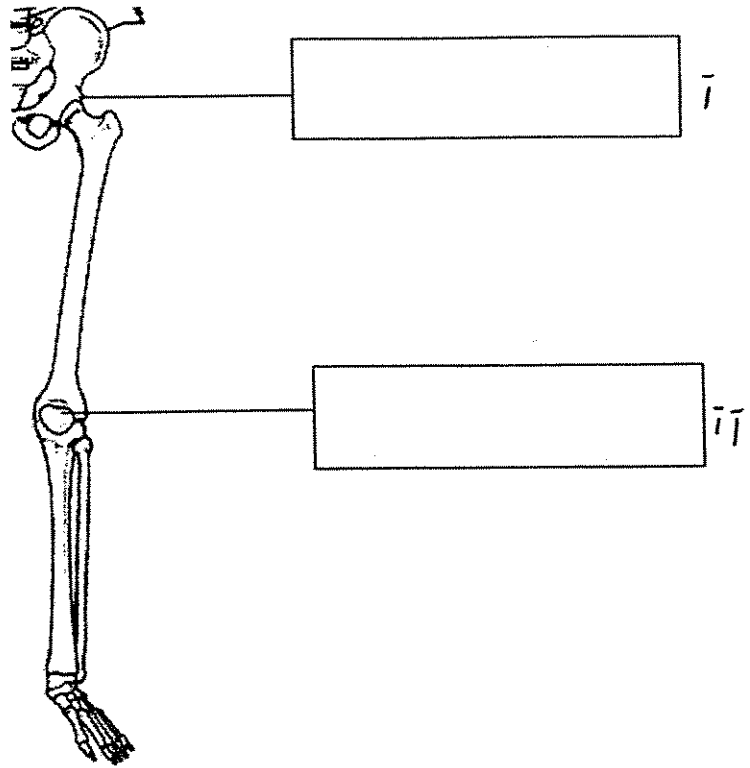


(a) Put stages E, F and G in the life cycle of insect S below. (1 mark)



(b) State a difference between the life cycle of insect S and a cockroach. (1 mark)

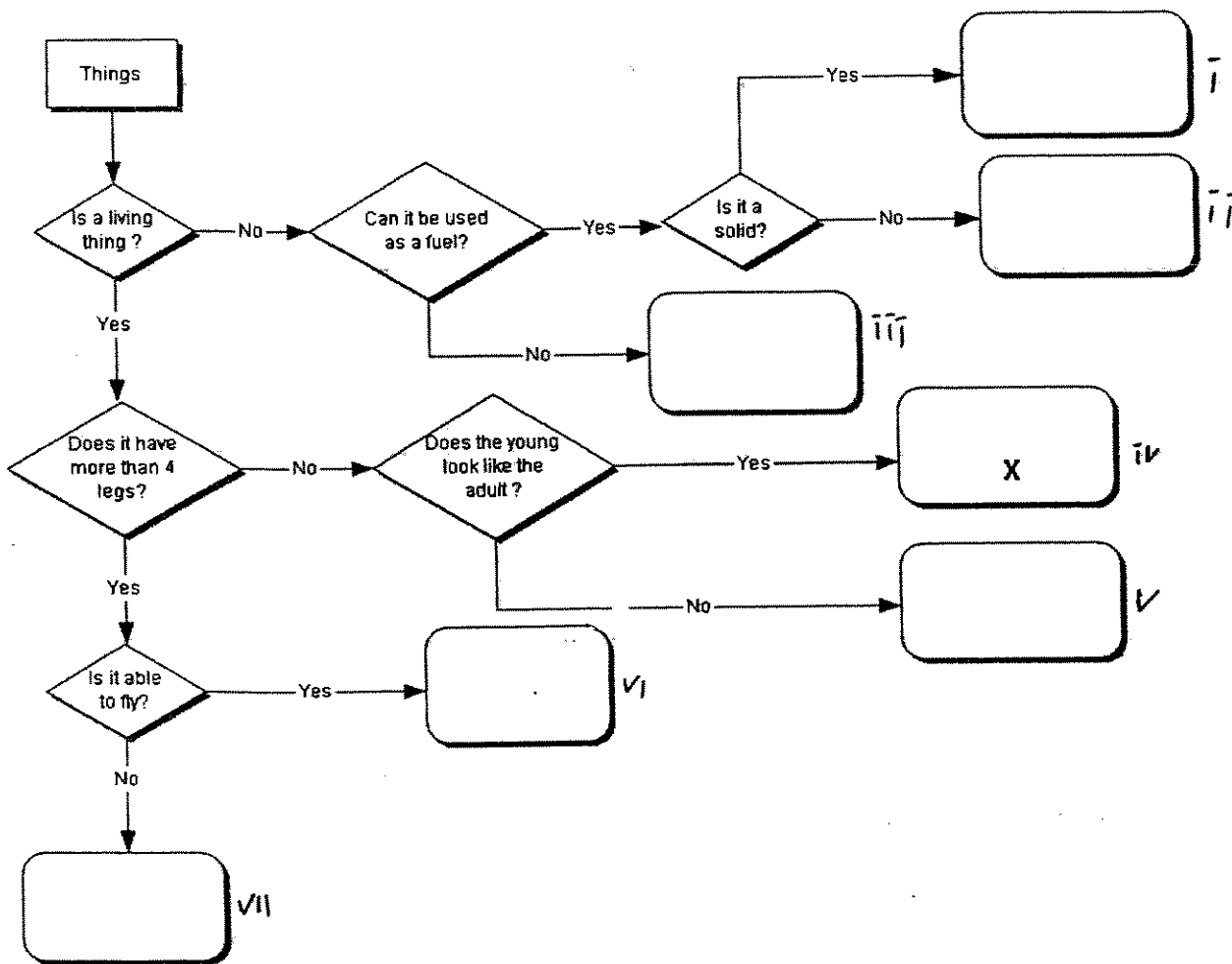
39. The diagram below shows the skeletal system of the human leg.



- (a) Label the "hinge joint" and "ball and socket joint" in the diagram above. (1 mark)
- (b) Explain how these two joints are different in terms of their movement.

(1 mark)

40. Study the flowchart below carefully.

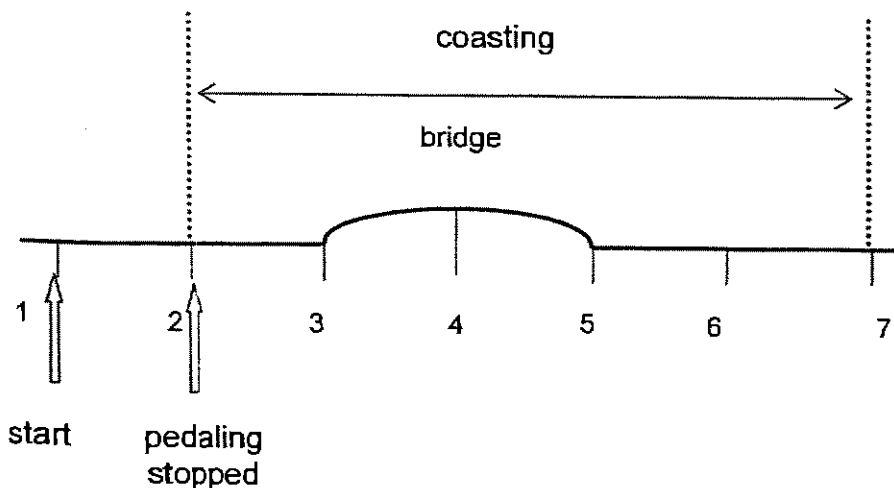


(a) Fill in the appropriate boxes with the words 'coal' and 'butterfly'. (1 mark)

(b) Using the information given above, describe 'X'. (1 mark)

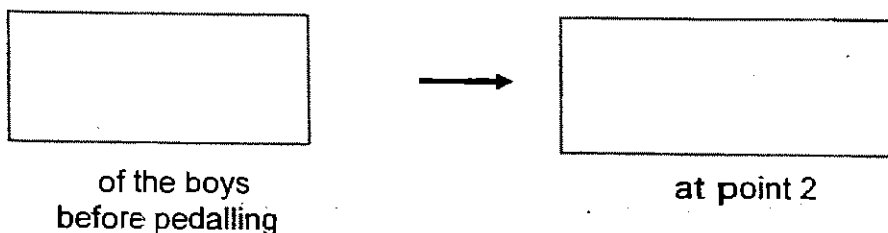
41. Randolph and his friends rode their bicycles at West Coast Park. The boys decided to have a competition when they reached a bridge. They pedaled as fast as they could from point 1 to point 2 and then they stopped. They then lifted their feet from the pedal and coasted to point 7.

A drawing of the path they had taken is shown below.



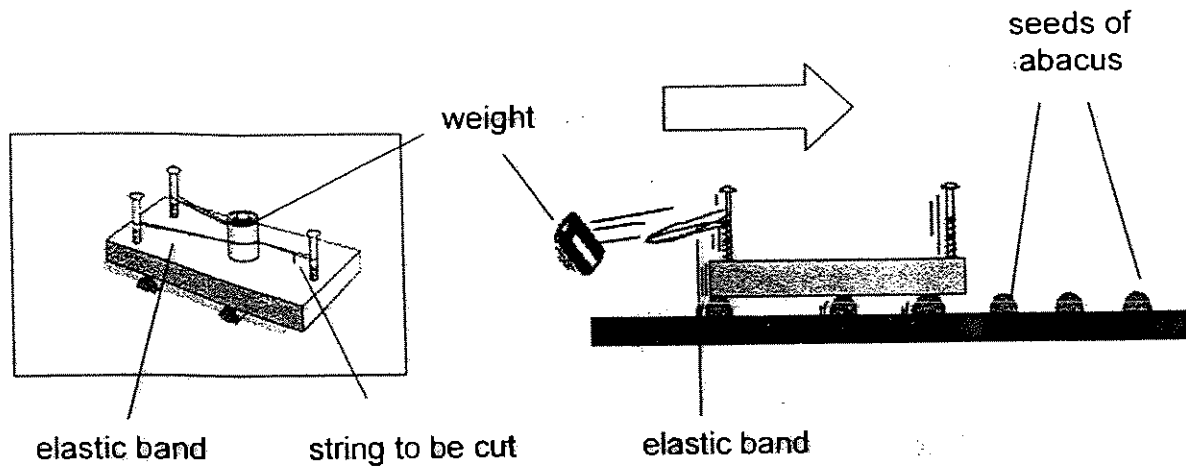
- (a) At which point did the bicycles travel the fastest? (1 mark)

- (b) Describe the energy conversion using the boxes given. (Main energy changes only.) (1 mark)



- (c) What are two other forms of energy that are also present when the bicycles move on the path? (1 mark)

42. The diagram below show an experiment with a toy car.



The toy car was made with a wooden block with three screws attached. A stretched elastic band was fastened to two screws at one end of the car. It was then held by a string tied to another screw at the other end. A weight was lastly placed in the position as shown in the diagram. Different weights were used for each trial.

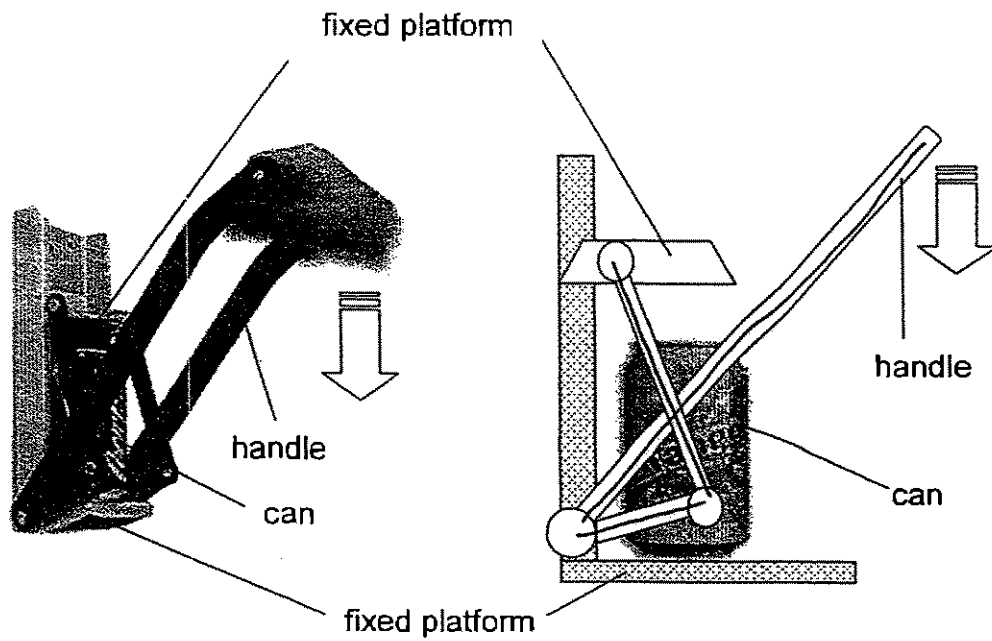
The whole setup was then placed on an abacus so that the seeds act as rollers for the toy car to move on.

The distance moved by the car is measured when the string was cut. The elastic band, wooden block and the positions of the screws remained unchanged.

(a) What was the aim of the experiment ? (1 mark)

(b) The toy car moves a further distance on the seeds of the abacus than on the floor. Explain why. (1 mark)

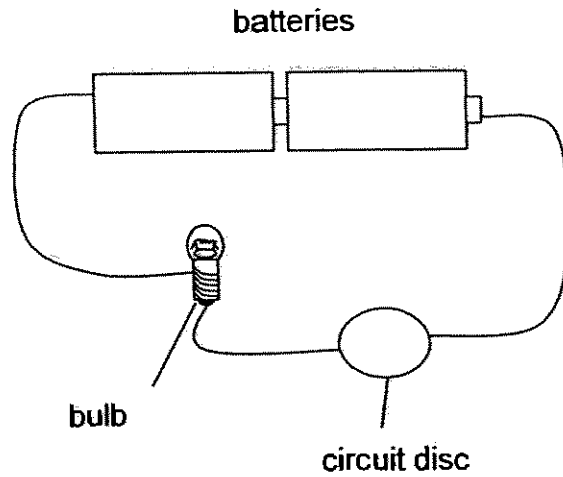
43. The following pictures show a can crusher that is used to reduce the size of empty aluminium cans to one-fifth their original size.



- (a) How many levers are there in the can crusher? (1 mark)

- (b) How does having a longer handle help you when you are using the can crusher? (1 mark)

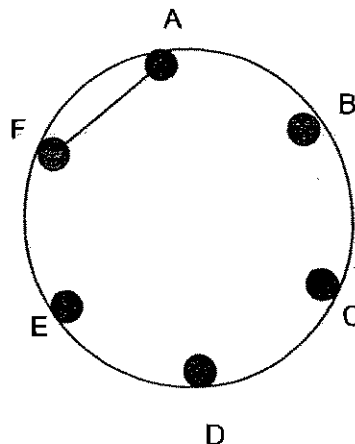
44. Meili used a circuit tester to test a circuit disc as shown below.



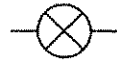
After connecting each pair of contact points on the circuit disc, the following results were obtained.

Contact points connected	Did the bulb light up?
A and C	Yes
B and E	No
C and F	Yes
D and B	No
A and F	Yes

(a) Based on the results given, draw only two lines on the diagram below to show how the circuit disc is connected. (1 mark)



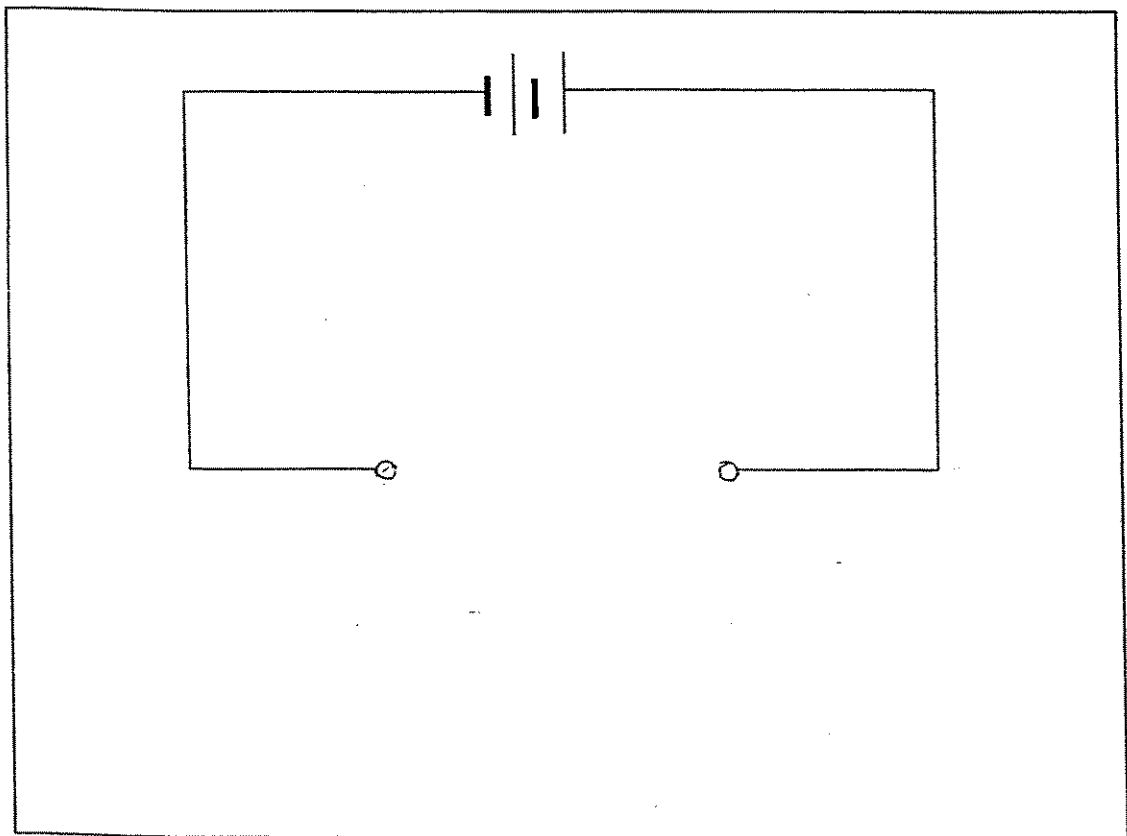
- (b) Using the symbols given, draw how two bulbs could be arranged such that the brightness of the bulbs would be the same as the one in the setup shown in part (a).



bulb

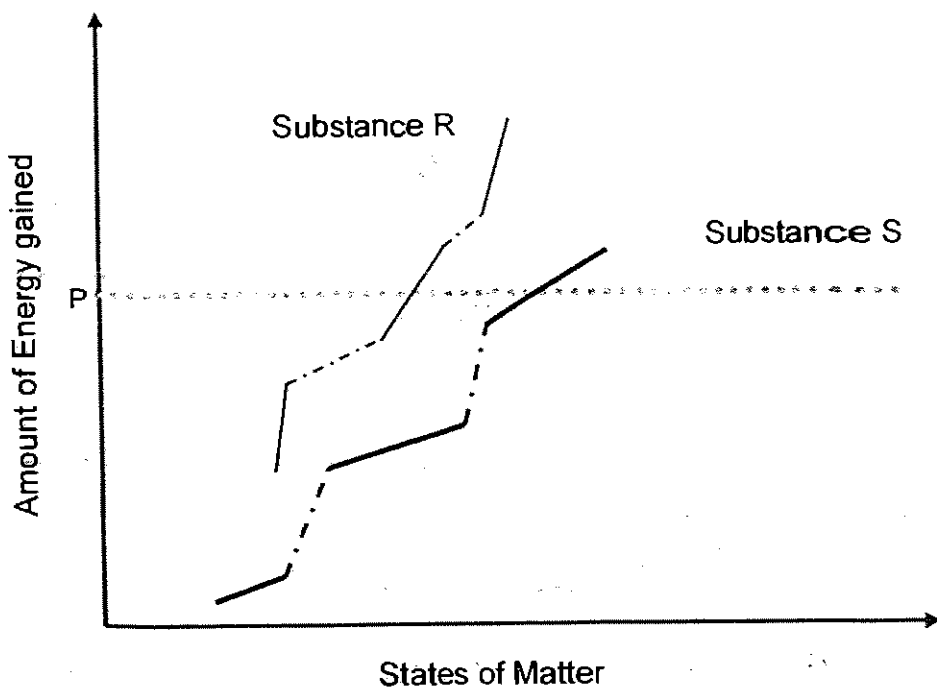


wire



(1 mark)

45. Look at the following graphical representation of changes of states of substances R and S from a solid to a liquid to a gas.



Key

----- change of states

- (a) What form of energy was required for the changes in state in both substances ? (1 mark)

- (b) What would be the states of substances R and S at energy level P ?

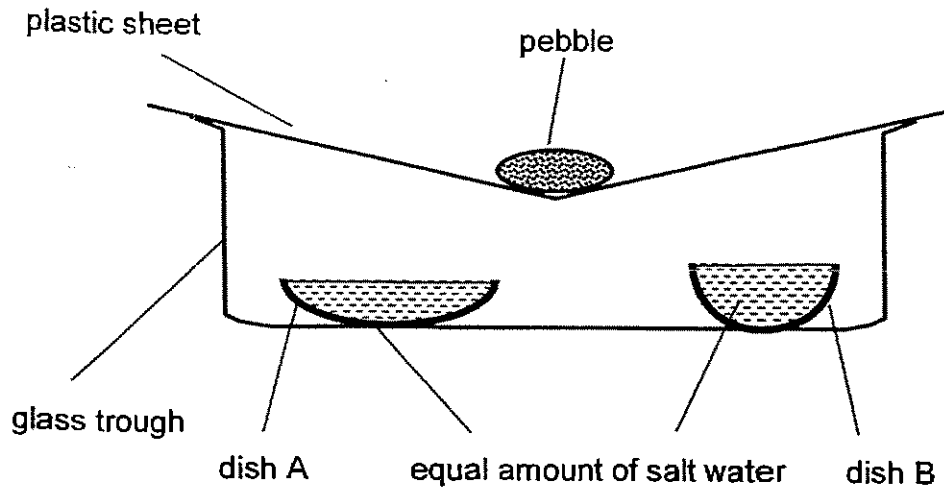
Substance R : _____

Substance S : _____

(1 mark)

- (c) Based on the graph, how is substance R different from substance S in terms of the rates of change from one state to another ? (1 mark)

46. The following experimental setup was placed at the window.



(a) Explain why there is less water in dish A compared to dish B after 3 days.

(1 mark)

(b) Explain how water is collected at the bottom of the trough after 3 days.

(1 mark)

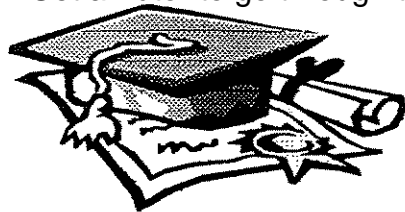
47. Complete the following passage using an appropriate word for each blank. (2 marks)

A magnet is strongest at its _____ and weakest in the middle. To turn a magnetic material into a magnet, one can use stroking, induction or electricity. A magnet loses its magnetism when it is _____ . A stronger magnet will take a _____ time to lose its magnetism than a weaker one. A magnet exerts a _____ that cannot be seen but it can be felt.

***** END OF PAPER *****

Setters :

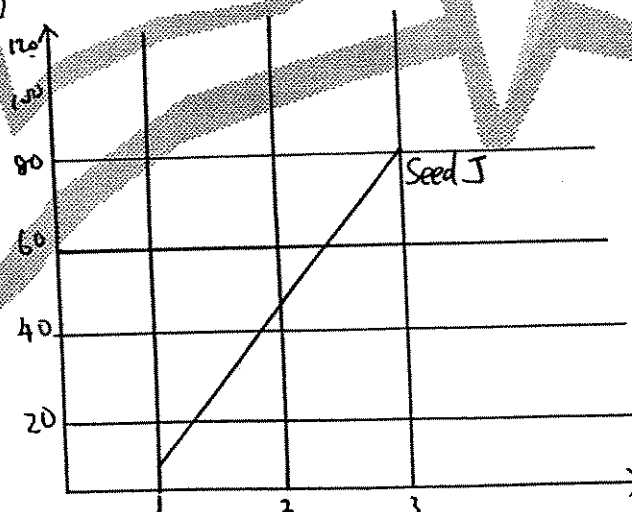
Ms Peh Tvun Chyn
Mr Ting Huat Seng



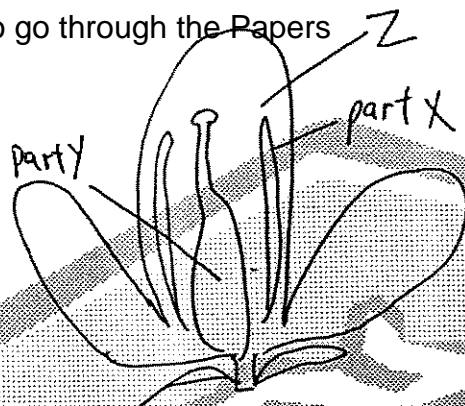
ANSWER SHEET

NANYANG PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
SEMESTRAL ASSESSMENT (2)

1. 2
 2. 3
 3. 1
 4. 4
 5. 2
 6. 3
 7. 4
 8. 4
 9. 1
 10. 3
 11. 2
 12. 3
 13. 3
 14. 3
 15. 2
 16. 3
 17. 3
 18. 4
 19. 3
 20. 1
 21. 4
 22. 3
 23. 3
 24. 2
 25. 3
 26. 1
 27. 1
 28. 4
 29. 2
 30. 3
- 31) a) Point A has less pollutants than point B.
b) Discharge from factories is flowing into the river.
- 32) a) So that the distance from organisms X to part A and part B would be the same.
b) To make sure that the results are reliable.
c) Its natural habitat is the leaf litter
- 33) a) The body of fish X has greater water resistance than that of fish.
b) As fish Y is more streamlined than fish X, fish Y faces lesser water resistance than fish X. Thus, fish Y would be able to swim faster and catch fish X.
- 34) a) The greater the length of the wing-like structure of seed H, the further the horizontal distance traveled.
b) 19
c)



35) a)



b) Yes, the pollen grains from another flower of the same species can still pollinate the flower and thus, fertilise the ovules in the ovary.

c) Part Z attracts insects like bees to collect nectar and in the process pollinate the flowers.

36) a) carbon dioxide

b) water

c) oxygen

d) energy

37) Y: Part Y remains healthy/green.

It is able to make food as the xylem tube is not removed.

Z: Part Z will shrink.

No food is able to be transported from the leaves to part Z because part of the phloem tube is cut off. Thus, part Z will shrink as the roots still need sugars to carry out respiration.

38) a) Egg

E

F

G

b) Insect S has four-stages in its life cycle, while the cockroach has three-stages in its life cycle.

39) a) i) ball and socket joint.

ii) hinge joint.

b) The ball and socket joint enables the leg to move in circular motions, but the hinge joint only enables the lower leg to move back and forth.

40) a) i) Coal vi) Butterfly

b) X is a living thing, does not have more than 4 legs and its young resembles the adult.

41) a) Point 2.

b) Chemical potential energy \rightarrow Kinetic energy

c) Heat energy and gravitational potential energy.

42) a) It was to find out whether the different weights used affected the distance moved by the toy car.

b) The seeds of the abacus help to reduce friction between the toy car the ground surface it is moving on.

43) a) Three

b) Less effort is needed to crush the can.

44) a) F \rightarrow A \rightarrow C

b)



45) a) Heat energy

b) R: Liquid

S: gas

c) Substance R changes state at a faster rate

Substance S: ...

46) a) Since dish A has a larger area of exposed surface than dish B, more water evaporated from dish A compared to dish B. Thus, there is less water in dish A than in dish B at the end of 3 days.

b) The water from the two dishes evaporated and condensed on the cooler surface of the plastic sheet.

47) poles, heated, longer, farce.

---end---

Pei Chun Public School
Continual Assessment 1 – 2007
Science
Primary 6 (Merged Stream)

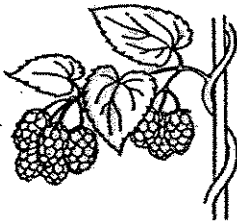
Name: _____ ()
 Class: Pri. 6 ()
 Science Teacher: _____

Date: 2 March 2007
 Time: 1 hr 45 min

Section A (25 × 2 marks)

For each question from 1 to 25, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. The diagrams below show some living things.



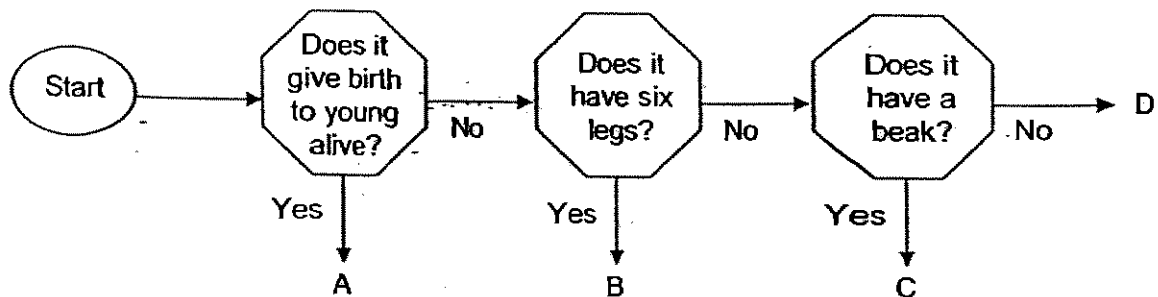
Which of the following statements are true of the living things shown above?

- A: They move from place to place by themselves.
- B: They respond to changes around them.
- C: They can make their own food.
- D: They reproduce.

- (1) A and B only
- (2) A and C only
- (3) B and D only
- (4) C and D only

()

2. The flow chart below shows how some animals are classified.

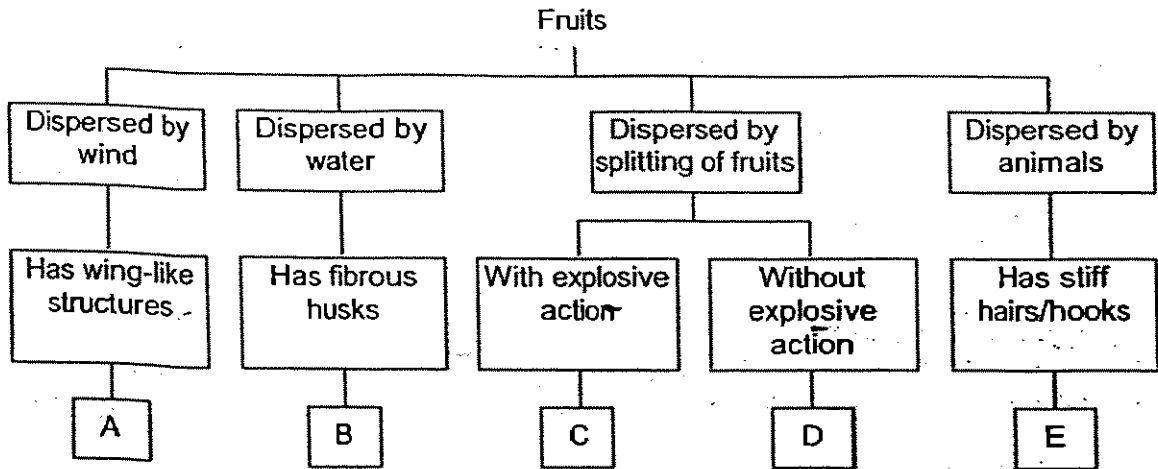


Which one of the following best represents A, B, C and D?

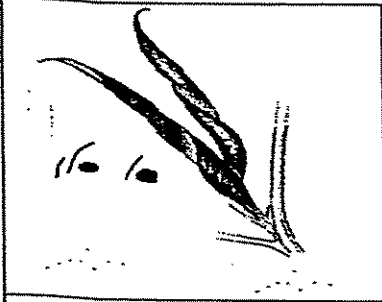
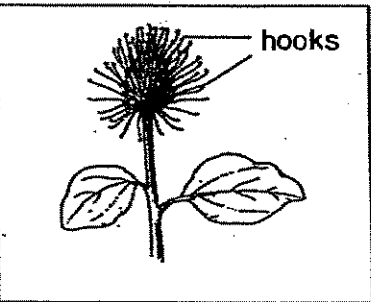
	A	B	C	D
(1)	tiger	grasshopper	kiwi	guppy
(2)	penguin	black widow	platypus	cobra
(3)	bat	water bug	kingfisher	spiny anteater
(4)	whale	mealworm	ladybird	frog

()

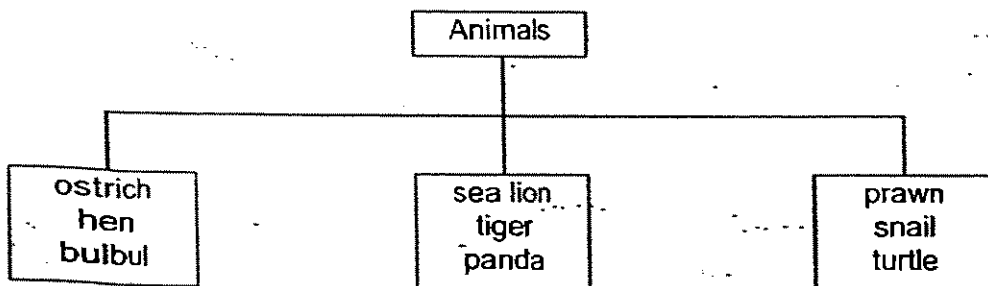
3. Study the classification chart below.



Where should the fruits shown below be correctly placed in the classification chart?

	
(1) E	B
(2) C	E
(3) C	A
(4) B	C

4. Study the classification chart below.



The animals are classified according to:

- A: their breathing methods
- B: their outer coverings
- C: the type of food consumers they are

Which of the above methods of classification is/are correct?

- (1) B only
- (2) A and B only
- (3) B and C only
- (4) A, B and C

5. The diagrams below show two groups of organisms.



Group 1



Group 2

Zhi Fang grouped the following organisms according to how they were similar to the above.



A



B



C



D



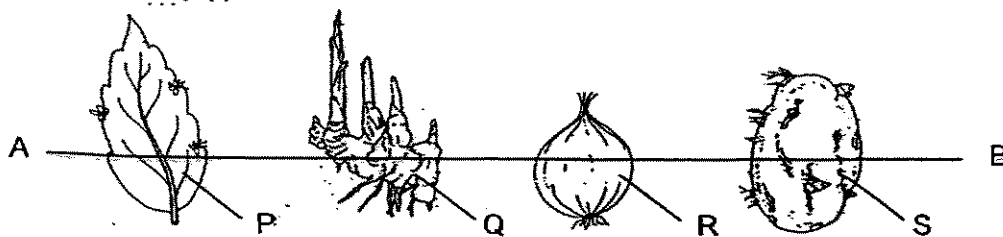
E

Which of the following correctly shows how she has grouped them?

	Group 1	Group 2
(1)	A and C	B, D and E
(2)	A, C and D	B and E
(3)	C and D	A, B and E
(4)	D	A, B, C and E

()

6. The diagrams below show 4 different plant parts. Jessica cut each of the plant part into two. The line AB shows where each part was cut.

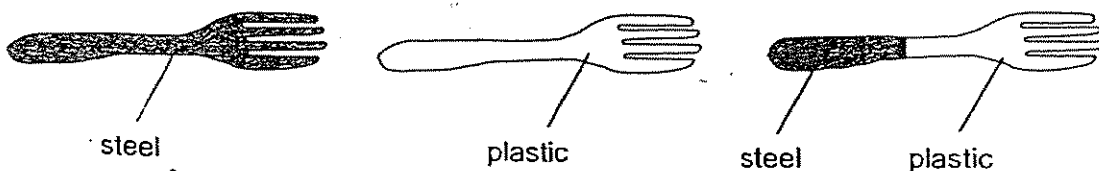


She used the parts P, Q, R and S to grow new plants. Which one of the cut parts would grow new plants?

- (1) P and Q only
- (2) R and S only
- (3) P, Q and S
- (4) P, Q, R and S

()

7. Get a Tutor to go through the Papers
Some forks are shown below.



Based on the diagrams provided, what conclusions can we make?

- A: Different objects can be made of the same material.
- B: Different objects can only be made of different materials.
- C: Similar objects can be made of different materials.
- D: Similar objects can be made of only one material or more than one material.

- (1) A and B only
- (2) C and D only
- (3) A; C and D only
- (4) B, C and D only

8.

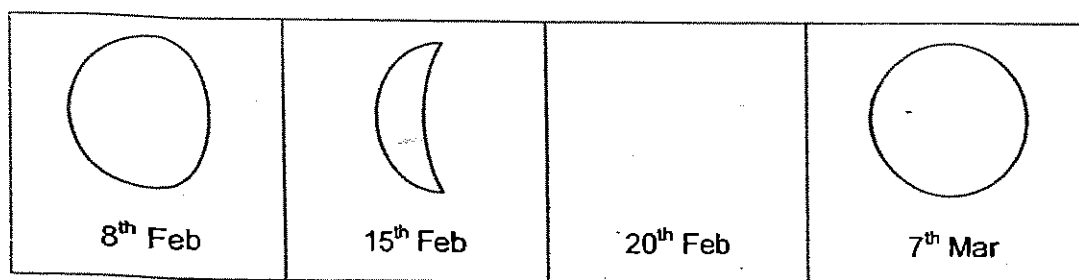
The table below shows the boiling and melting points of four substances, W, X, Y and Z.

Substance	Boiling Point (°C)	Melting Point (°C)
W	-65	-140
X	210	-75
Y	175	-40
Z	120	-15

Which substance is a solid at -50°C and a gas at 150°C?

- (1) W
- (2) X
- (3) Y
- (4) Z

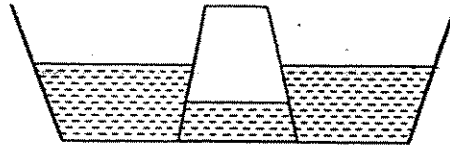
9. The diagrams below show the shapes of the Moon on different dates.



Predict how the Moon would look like on 28th Feb.

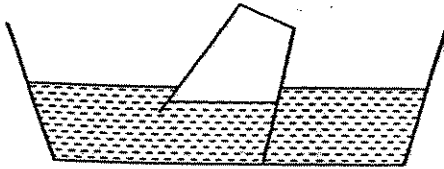
- (1)
- (2)
- (3)
- (4)

10. Sara poured some water into a glass. She placed the glass of water in a basin of water as shown in the diagram below. Then Sara tilted the glass sideways with the mouth of the glass still immersed in the water.

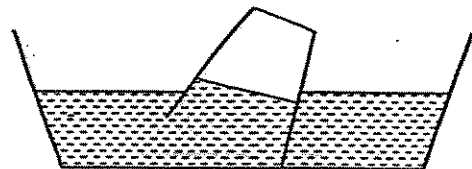


Which one of the following diagrams shows the level of the water in the glass?

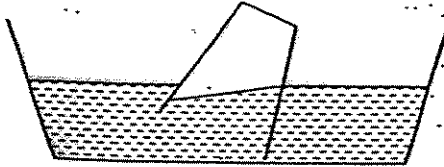
(1)



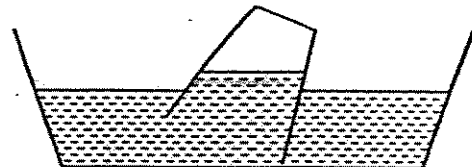
(2)



(3)

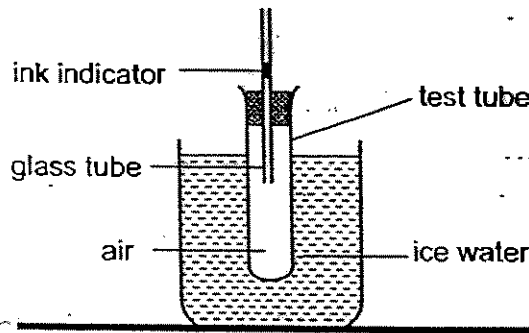


(4)



()

11. In the set-up below, some air is trapped in a test tube which is placed in a beaker of ice water.

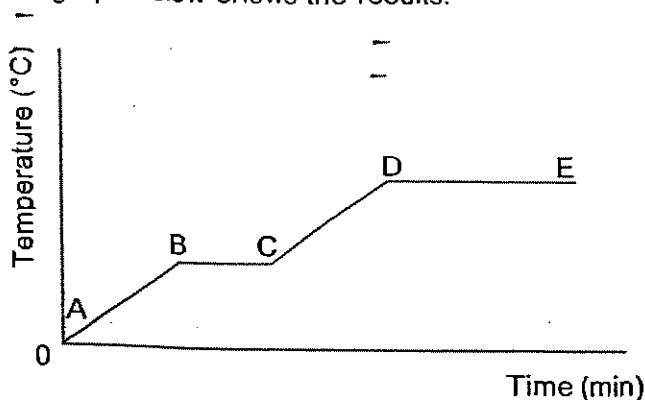


Why does the ink indicator in the glass tube rise first and then fall?

- (1) The test tube contracts first then expands.
- (2) The test tube contracts before the air expands.
- (3) The ink indicator expands before the air contracts.
- (4) The test tube contracts before the air in the test tube contracts.

()

12. A substance is heated and its temperature is recorded at regular intervals. The graph below shows the results.

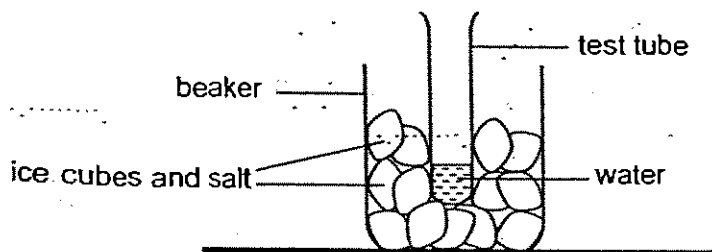


Which part of the graph represents melting?

- (1) AB
- (2) BC
- (3) CD
- (4) DE

()

13. Lyana wanted to conduct an experiment. The diagram below shows the apparatus she used.



Which statements below are true about the results of Lyana's experiment?

- A: The volume of ice formed in the test tube will be greater than the original volume of water in the test tube.
- B: The temperature of the mixture of ice cubes and salt will fall below 0°C.
- C: The water in the test tube will evaporate quickly.
- D: The salt will cause the ice cubes to melt faster.
- E: The water in the test tube will turn into ice.

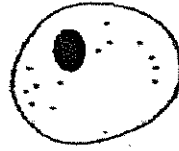
- (1) A, B and E
- (2) A, B, D and E
- (3) B, C, D and E
- (4) A, B, C, D and E

()

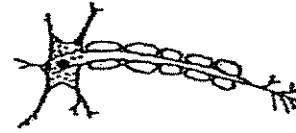
14. The diagrams below show 3 different types of cells.



Cell A



Cell B



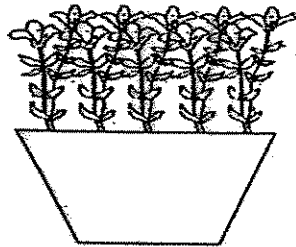
Cell C

Which of the following matches the cells to their functions correctly?

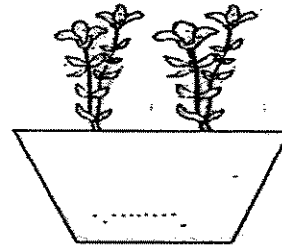
	Photosynthesis	Respiration
(1)	A only	A, B and C
(2)	B only	A and C only
(3)	A and B	C only
(4)	A, B and C	B and C only

()

15. Milla wanted to find out if overcrowding would affect the growth of a plant. She grew some plants in two identical pots, X and Y. She placed these pots at a window under sunlight. She watered them with the same amount of water every day.



Pot X



Pot Y

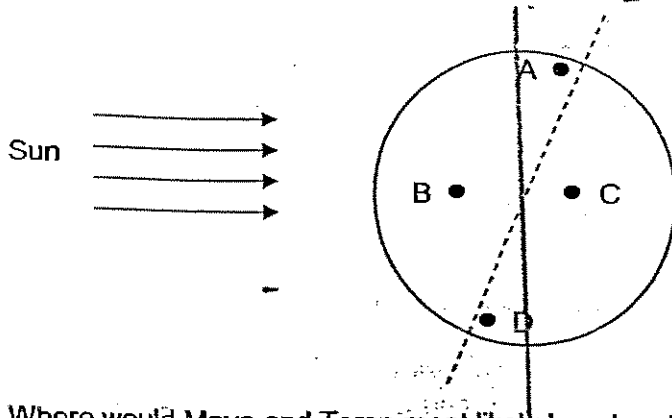
Which variables should she keep the same?

- A: Number of plants used
- B: Amount of water given
- C: Type of plants used
- D: Type of soil used
- E: Location of pots

- (1) A only
- (2) B and E only
- (3) A, C and D only
- (4) B, C, D and E only

()

16. Get a Tutor to go through the Papers
 Maya and Toran are talking on the telephone. Maya tells Toran that it is daytime from where she is. Toran tells Maya that it is night time for him. Study the diagram below and answer the question that follows.



Where would Maya and Toran most likely be when they are talking on the telephone?

	Maya	Toran
(1)	B	A
(2)	B	D
(3)	A	C
(4)	C	D

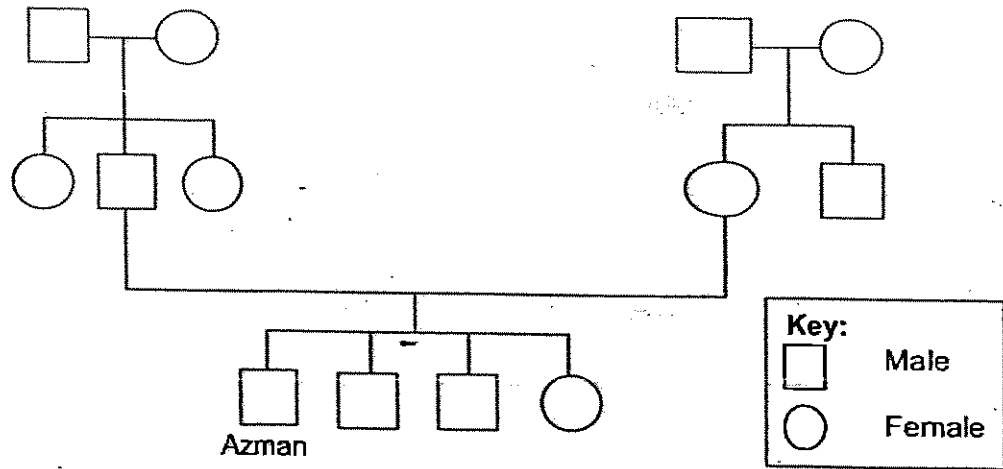
17. The table below shows the characteristics of 6 children.

Characteristics	A	B	C	D	E	F
Black hair	x	x	✓	x	x	✓
Sharp nose	✓	✓	x	x	✓	x
Double eyelids	✓	x	✓	✓	x	✓
Long fingernails	x	x	✓	✓	✓	x
Attached earlobes	✓	x	✓	x	x	✓
Moles on the face	x	✓	x	✓	x	✓
Fluent in English	✓	x	x	✓	✓	✓
Able to roll tongue	x	✓	x	✓	✓	x

How many pairs of identical twins are there likely to be?

- (1) 1
- (2) 2
- (3) 3
- (4) 4

18. The diagram below represents Azman's family tree.



Which of the statements below about Azman is definitely correct?

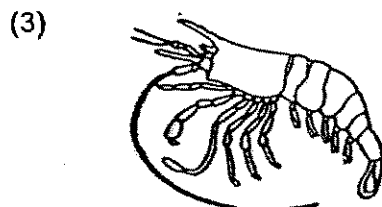
- (1) Azman is the eldest child in his family of 6.
- (2) Azman has 3 brothers and 1 sister.
- (3) Azman has 2 aunts and 1 uncle.
- (4) Azman has 3 aunts and 2 uncles.

()

19. The key below shows one way to classify animals with no backbones.

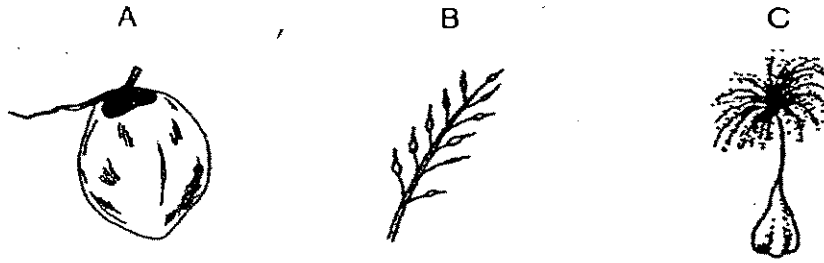
Letter	Description of animal	Description of movement / Category name of organism
A	Has legs	Go to D
	Has no legs	Go to B
B	Tube body with no shell	Go to C
	Body with a shell	Mollusc
C	Body without rings	Nematode
	Body with rings	Annelid
D	More than 4 pairs of legs	Go to F
	4 pairs of legs or less	Go to E
E	3 pairs of legs	Insect
	4 pairs of legs	Arachnid
F	Some legs are shorter than others	Crustacean
	All legs are of the same length	Myriapod

Which one of the following animals is a Crustacean?

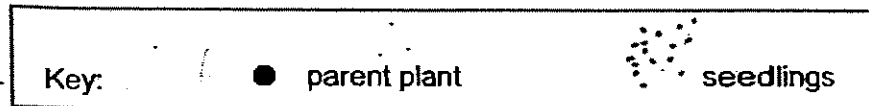
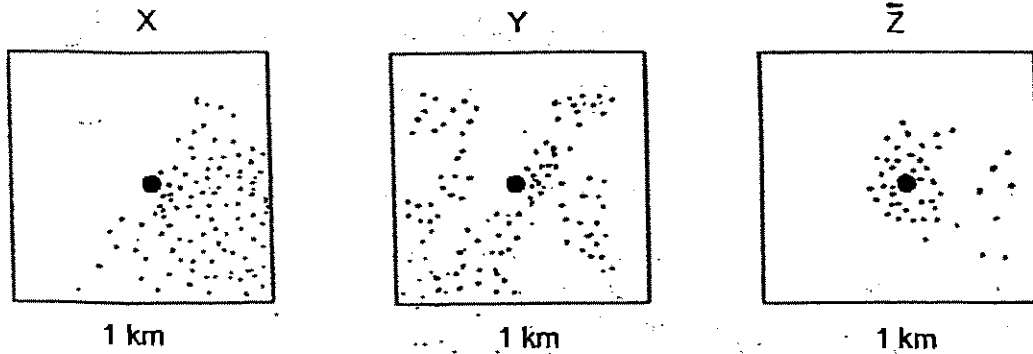


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20. The diagrams below show three different fruits, A, B and C.



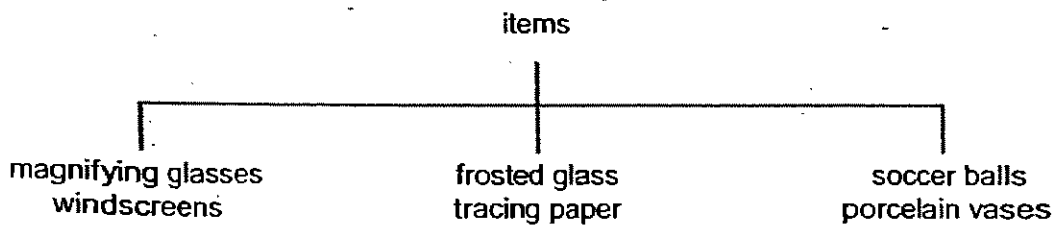
Their dispersal patterns over an area of 1 km² are shown in X, Y and Z below.



Which of the following is most likely to be the pattern and method of dispersal of the three fruits?

	A		B		C	
	dispersal pattern	dispersal method	dispersal pattern	dispersal method	dispersal pattern	dispersal method
(1)	Y	water	Z	animal	X	wind
(2)	Z	water	X	animal	Y	wind
(3)	Y	water	Z	wind	X	wind
(4)	Z	animal	X	wind	Y	water

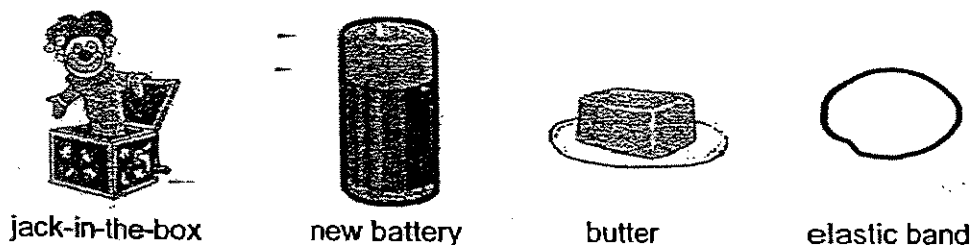
21. The following items are classified into 3 groups.



The objects are classified according to their _____.

- (1) thermal property
- (2) electrical property
- (3) magnetic property
- (4) degree of transparency to light

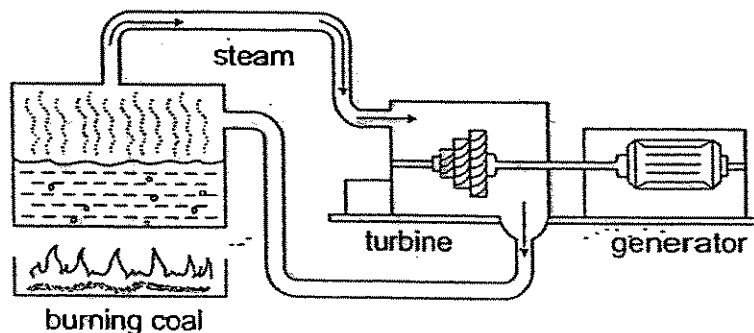
22. The diagrams below show 4 objects.



Based on the diagrams, which of the objects above have potential energy other than gravitational potential energy?

- (1) new battery and butter only
- (2) jack-in-the-box and elastic band only
- (3) jack-in-the-box, new battery and butter
- (4) jack-in-the-box, new battery, butter and elastic band

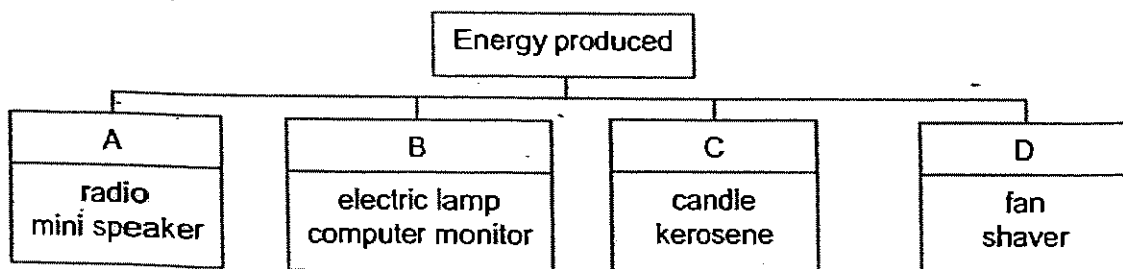
23. The diagram below shows how the energy from burning coal is changed into electricity.



From the diagram, where is electrical energy produced?

- (1) boiler
- (2) steam
- (3) turbine
- (4) generator

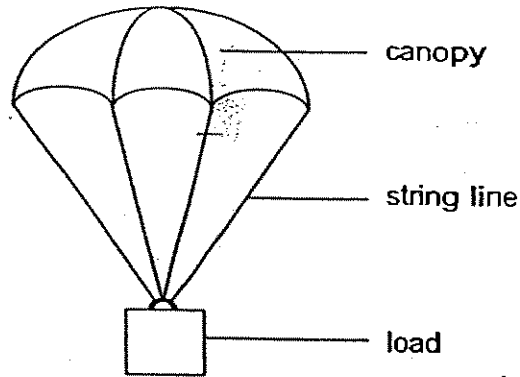
24. Some objects are grouped according to the main form of energy that can be produced by them.



Which one of the following shows the correct headings?

	A	B	C	D
(1)	sound energy	light energy	potential energy	kinetic energy
(2)	electrical energy	heat energy	potential energy	sound energy
(3)	electrical energy	heat energy	chemical energy	sound energy
(4)	sound energy	light energy	heat energy	kinetic energy

25. Chee Seng investigated the effectiveness of various parachute materials for the same canopy design. He recorded the time taken for the parachute to fall 10 metres.



He recorded the results in the table below.

Trial	Material used in canopy	Diameter of material used (cm)	Length of string (cm)	Time taken to fall 10 m (s)
1 ✓	tissue paper	30	40	30
2 ✓	tissue paper	40	40	35
3	tissue paper	40	50	33
4	cotton	30	40	25
5	cotton	30	40	23
6 ✓	cotton	40	40	33
7	plastic	30	50	28
8 ✓	plastic	40	50	33
9 ✓	plastic	40	40	35

Which trials provided a fair test for his investigation?

- (1) 1, 4 and 7 only
- (2) 2, 6 and 9 only
- (3) 3, 6 and 8 only
- (4) 3, 7 and 8 only

For Questions 26 to 30, please refer to Booklet K.

End of Section A

Pei Chun Public School
Continual Assessment 1 – 2007
Science
Primary 6 (Merged Stream)

Name: _____ ()

Date: 2 March 2007

Class: Pri. 6 ()

Parent's Signature: _____

Science Teacher: _____

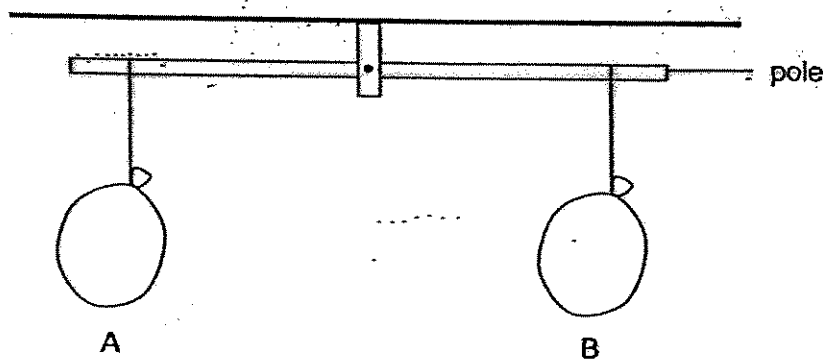
Time: 1 hr 45 min

Marks for Section A	60
Marks for Section B	30
Marks for Booklet K (exclude Section A Qns. 26 to 30)	10
Total Marks	100

Section B (30 marks)

For questions 31 to 42, write your answers in the spaces provided.

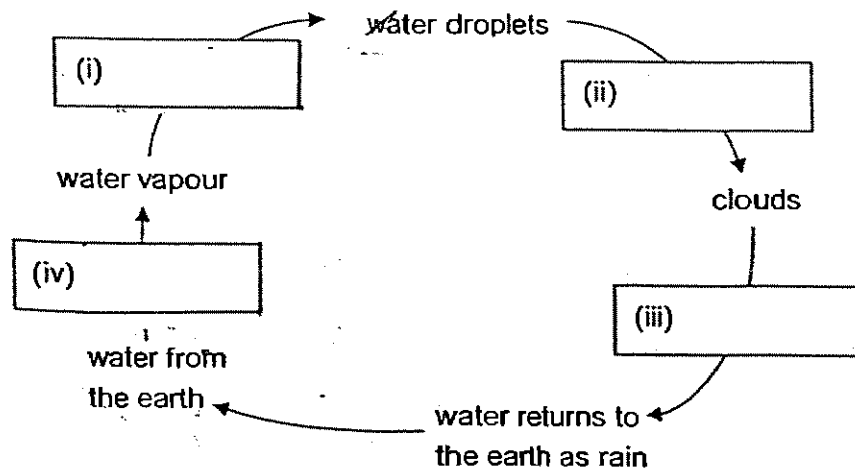
31. Two balloons are filled with air and balanced on a pole as shown below.



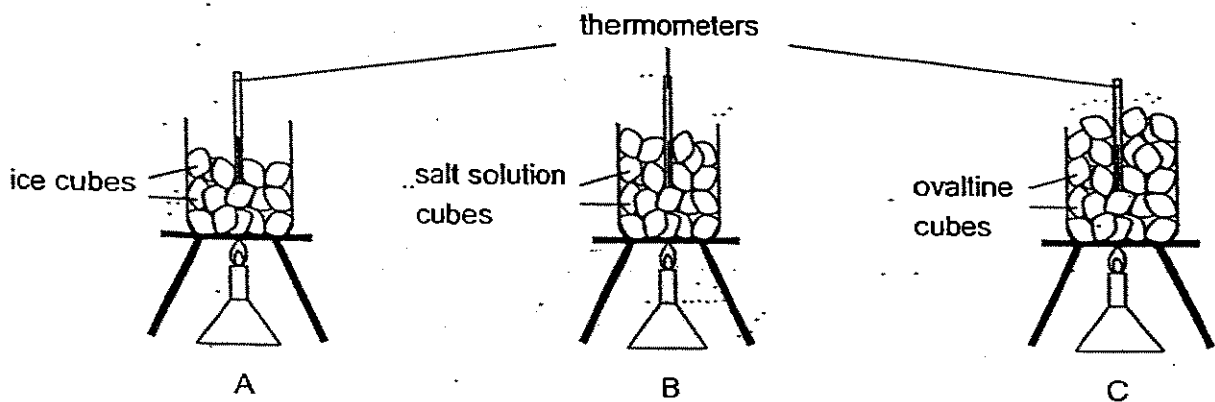
(a) What will happen to balloon B when balloon A is burst? [1]

(b) What conclusion can be drawn from the experiment? [1]

32. Processes in the water cycle involve either a heat gain or heat loss. Fill in the appropriate boxes with either 'heat gain' or 'heat loss' only where a change in the state of water takes place. [1]



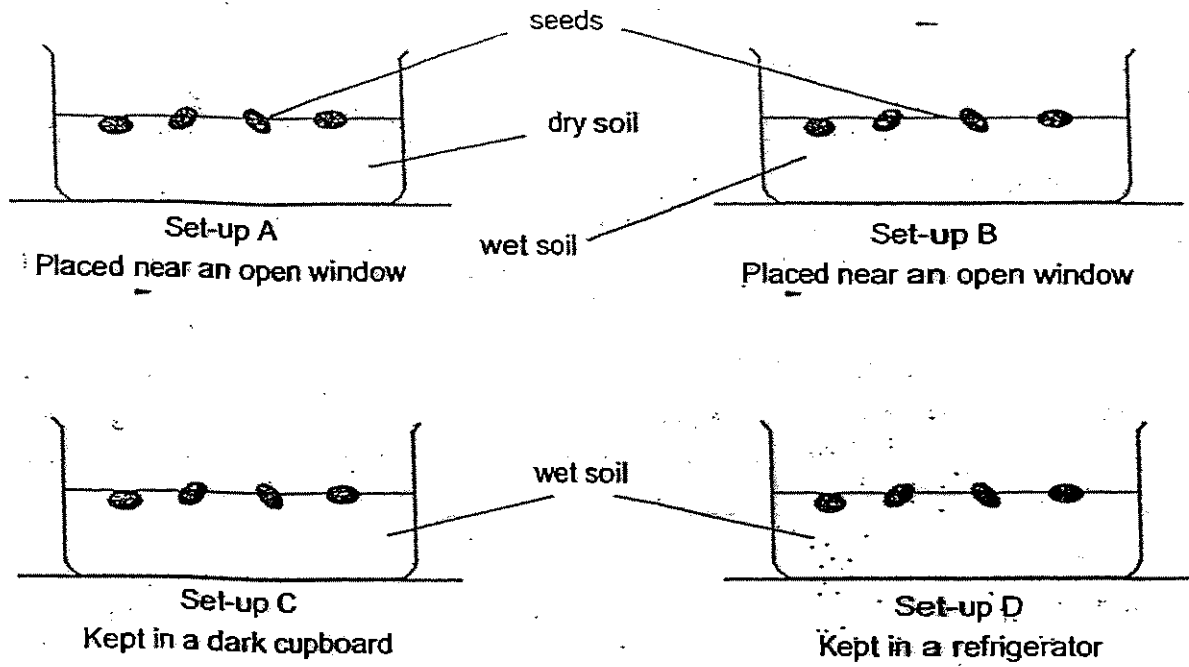
33. Jack freezes different liquids into cubes. Then he heats them to measure their melting points.



- (a) Is the experiment a fair one? Explain your answer. [1]

- (b) Which set-up would have the highest melting point? Why? [1]

34. Some pupils were asked to set up the following experiments to compare the growth of green bean seeds to seedlings.



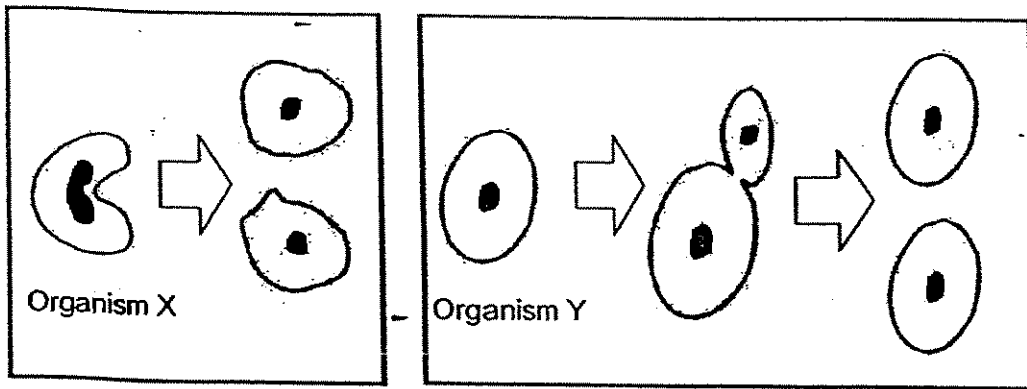
(a) In which set-up will the seeds grow best?

[1]

(b) Explain why seeds in set-ups A and D do not grow into seedlings.

[2]

35. The diagrams below show how organisms X and Y reproduce.

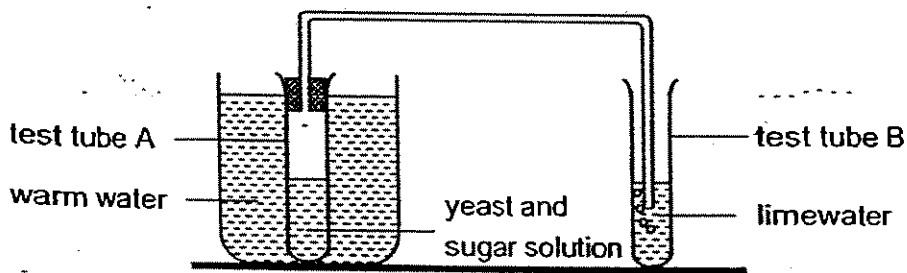


Based on what you can see in the diagrams only, state whether it is 'True', 'False' or 'Not possible to tell' in the space provided by putting a tick (✓) in the appropriate box for each statement.

[2]

Statements	True	False	Not possible to tell
(a) Both are single-cell organisms.			
(b) One parent cell produces 2 daughter cells.			
(c) Budding has taken place in both organisms.			
(d) The cells in both organisms have been fertilised.			

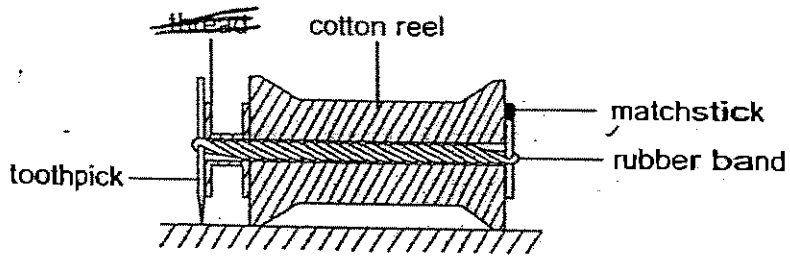
36. A large test tube containing some yeast and sugar solution was set up as shown below. The gas bubbles produced were released into some limewater.



(a) What would happen to the limewater in test tube B? [1]

(b) Explain your answer in (a). [1]

37. Rahul made a toy as shown below. When the toy was released, it would roll on the floor. To make it roll again, he needed to wind the toothpick again.

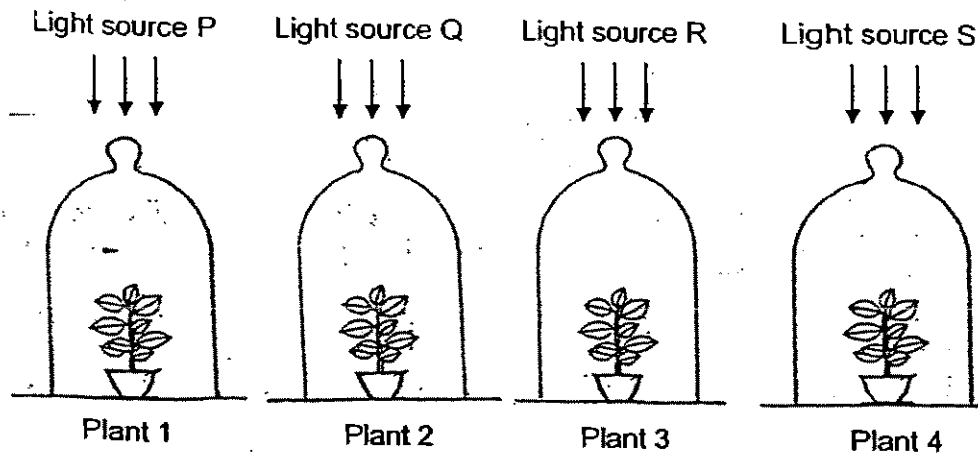


(a) Which part of the toy caused it to roll on the floor? [1]

(b) How could Rahul make it roll further by itself? [1]

(c) Explain your answer in (b). [2]

38. Sulaiman placed identical plants in 4 sealed air-tight bell jars as shown below. He then placed them under strong light sources P, Q, R and S for 24 hours.



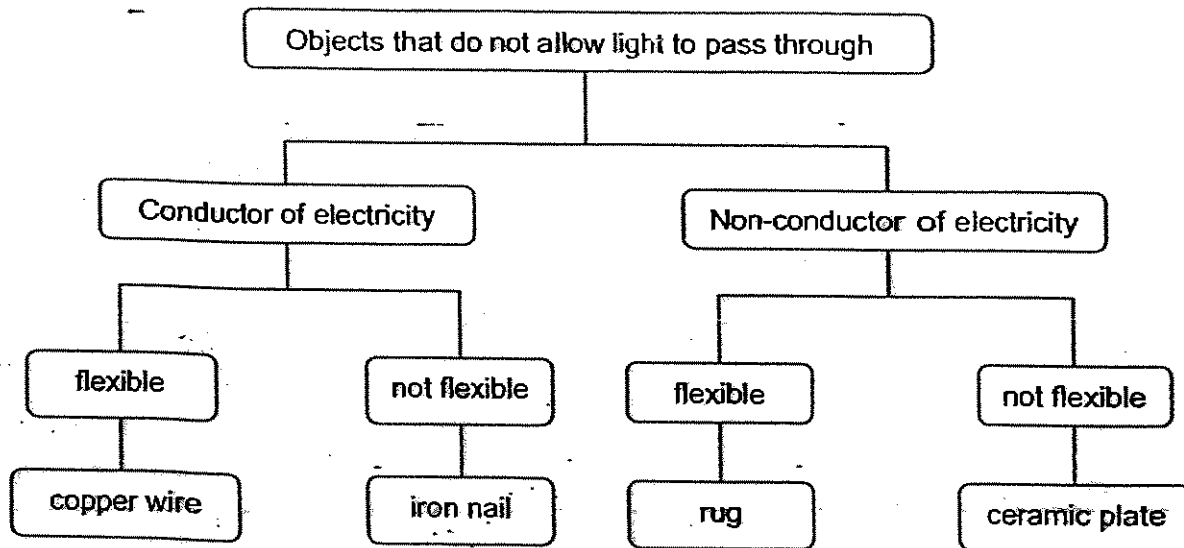
The percentage of carbon dioxide in the air around each plant was measured before and after the experiment. The results are shown in a table below.

Plant	Light source	Percentage of carbon dioxide (before the experiment)	Percentage of carbon dioxide (after the experiment)
1	P	0.03	0.020
2	Q	0.03	0.015
3	R	0.03	0.035
4	S	0.03	0.008

(a) Which light source/s is best for growing plants? Give a reason for your answer. [1]

(b) There was an increase in the percentage of carbon dioxide for Plant 3. What does this tell us about light source R? [1]

39. 4 objects have been grouped using the classification chart below. Study it carefully and answer the questions that follow.

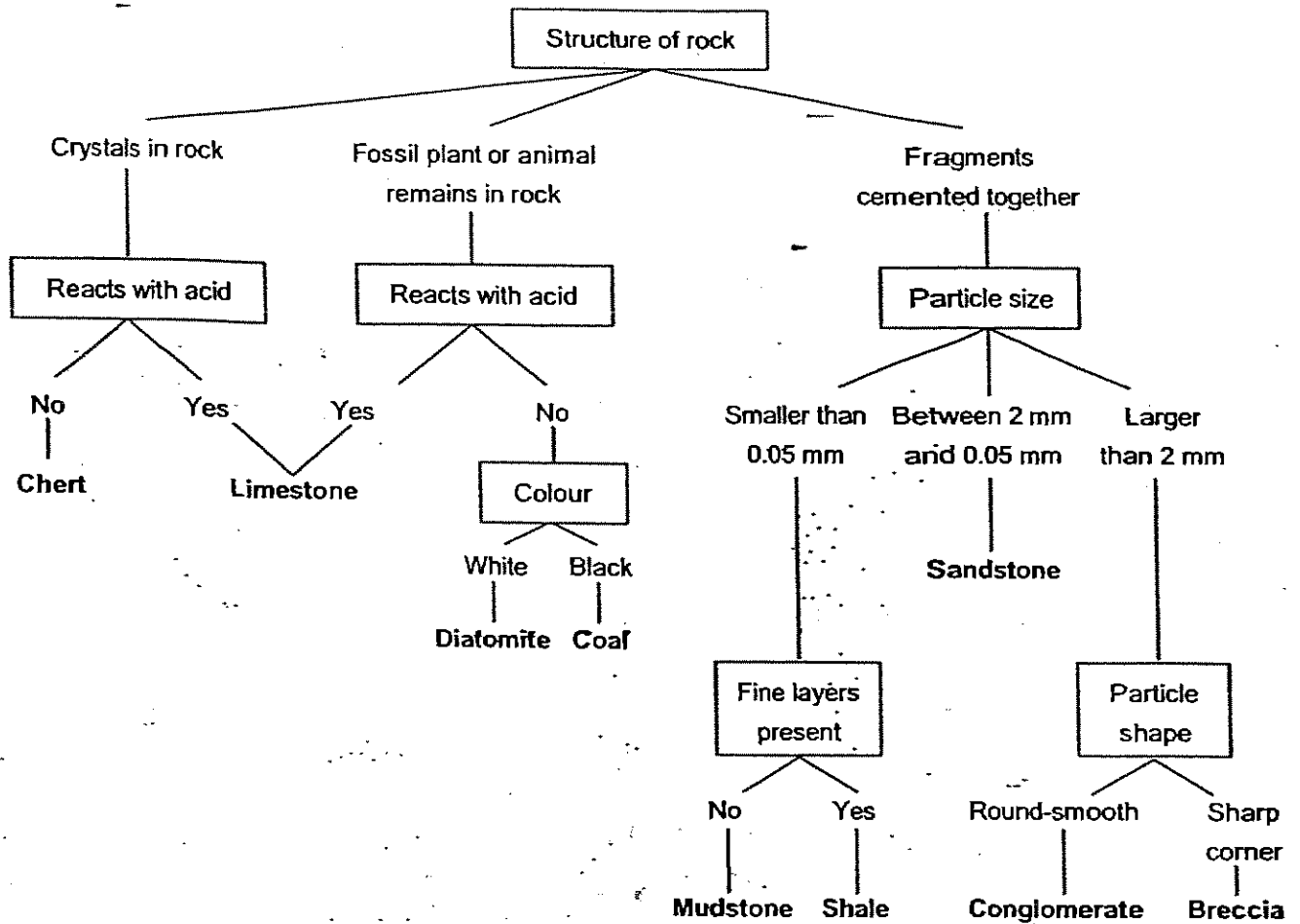


(a) State the similarities between 'copper wire' and 'rug'. [1]

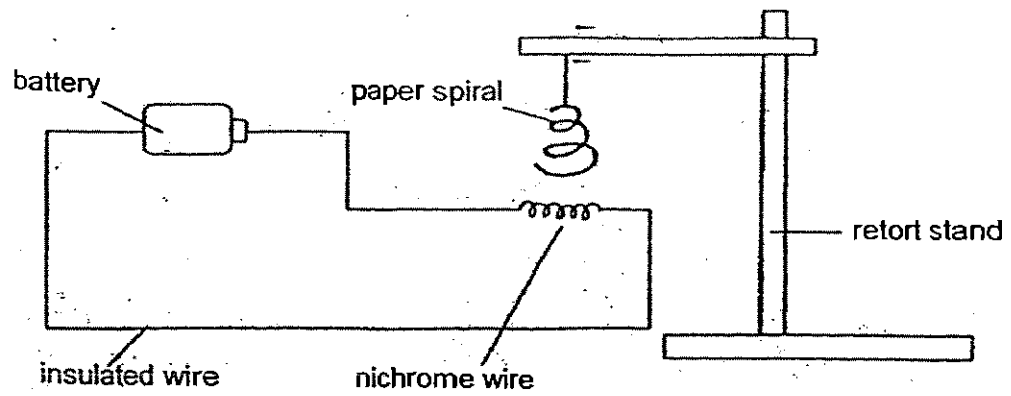
(b) State a difference between 'iron nail' and 'ceramic plate'. [1]

(c) According to the classification chart, which object has the same property as a balloon? [1]

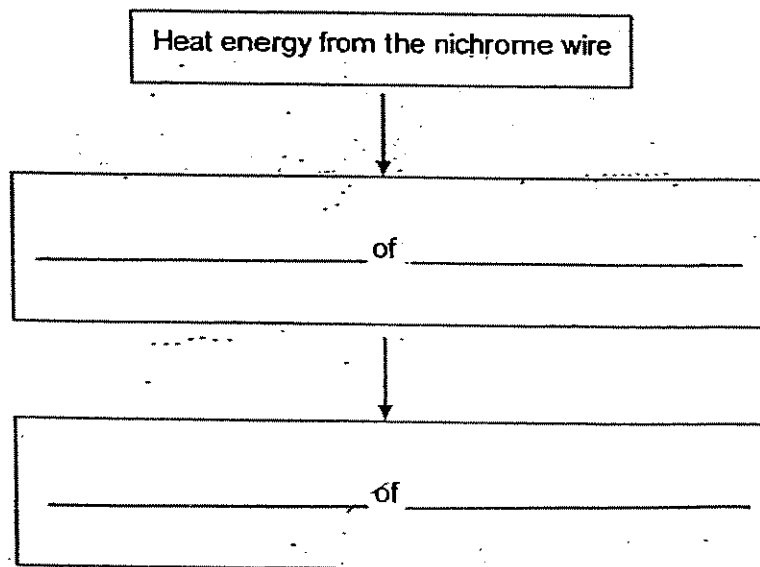
40. The branching key below is used to classify a group of sedimentary rocks. Study it carefully and answer the questions that follow.



- (a) A rock does not react with acid. It contains fossils and is white in colour. Name the rock. [1]
-
- (b) Which feature is used to tell the difference between a piece of mudstone and a piece of shale? [1]
-
- (c) Based on the branching key, what are the characteristics of chert? [1]
-



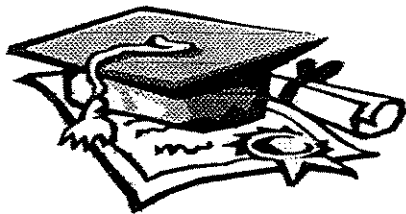
- (a) What will happen to the nichrome wire after a while? [1]
-
- (b) What will happen to the paper spiral after some time? [1]
-
- (c) Describe the energy change starting from the nichrome wire. [2]



For Questions 43 to 46, please refer to Booklet K.

End of Paper

Set by : Ms Salmisna Bte Saleh
Vetted by: P6 Science Committee teachers



ANSWER SHEET

PEI CHUN PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
 CA1 SEMESTRAL ASSESSMENT (1)

- 1.3 31) a) Balloon B will move down wards.
 2.3 b) Air has mass.
- 3.2
- 4.1 32) i) heat loss iv) heat gain
- 5.2
- 6.4 33) a) Yes. The number of cubes does not
 7.2 affect the melting points of liquid.
 8.4 b) Set-up A. There are no impurities in
 9.3 Set-up A which would lower its
 10.1 melting point.
- 11.4
- 12.2 34) a) Set-up B.
 13.1 b) Seeds require oxygen, water and
 14.1 warmth for germination. In Set-up A,
 15.4 the soil dry, thus there is no water
 16.1 and the seeds will not seedling.
 17.2 In set-up D, the seeds are kept in a
 18.3 refrigerator, thus there is no warmth
 19.3 for the seeds to germinate into
 20.2 seedlings.
- 21.4
- 22.4 35) a) True b) True c) False d) False
- 23.4
- 24.1 36) a) It will turn chalky.
 25.2 b) The yeast came out respiration which
 Produces carbon dioxide. The dioxide
 will then flow through the tube and
 into the limewater which will turn
 chalk, when it comes into contact
 with carbon dioxide.
- 37) a) Stretched Rubber band.
 b) Wind more turns of the toothpick.

37)c) When more turns of the toothpick are wound, there will be more elastic potential energy stored in the rubber band. Thus, when the toy is released, the elastic potential energy will be converted to more Kinetic energy, and the toy will roll further.

38)a) Light source. When plant 4 was under light source S, it photosynthesized at a greater intensity, resulting in the percentage of carbon dioxide after the experiment the least.

b) It is not suitable for photosynthesis.

39)a) They are both flexible and are objects that do not allow light to pass through.

b) Iron nail is a conductor of electricity but ceramic plate is a non-conductor of electricity.

c) Rug.

40)a) Diatomite.

b) Whether fine layers are present or not...

c) It is a rock with crystals in it and does not react with acid.

41)	<u>Animals</u>		
	c/with	c/with	c.with	c/with
	feathers	hair	scales	shell
	A	B	C	D
	G	H	E	F

42)a) It will become very hot.

b) It will spin.

c) Kinetic energy of the rising hot air
Kinetic energy of the spinning paper spiral

---end---

Pei Chun Public School
Semestral Assessment 1 = 2007
Science
Primary 6 (merged stream)

Name : _____ ()

Date : 8 May 2007

Class : Pri. 6 ()

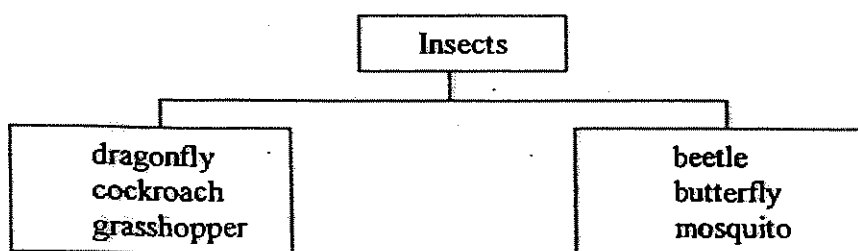
Time : 1 hr 45 min

Science Teacher : _____

Section A (25 × 2 marks)

For each question from 1 to 25, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

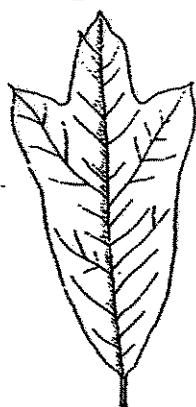
1. Study the classification chart below.



The animals are grouped according to _____

- (1) what they feed on
- (2) where they are found
- (3) the number of pairs of wings
- (4) the number of stages in their life cycles

2. The diagram shows two leaves.



Based on what you can observe in the diagram, how are the leaves similar?

- (1) Both are green leaves.
- (2) Both have jagged edges.
- (3) Both have network veins.
- (4) Their surfaces are equally smooth.

3. Three similar pots of plants, P, Q and R are used in the experiment shown below. They are placed in a windy and sunny place... *of the same weight,*

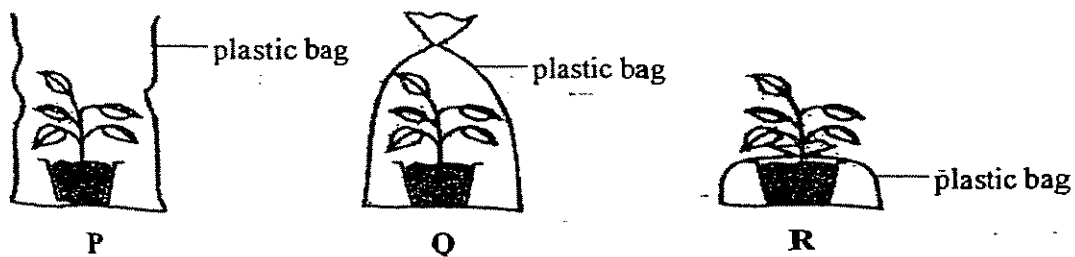


Diagram A

Diagram B

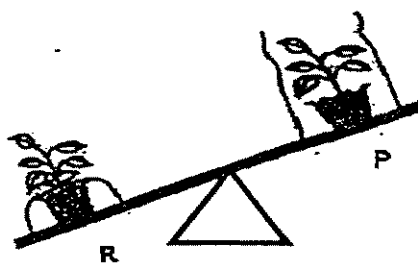
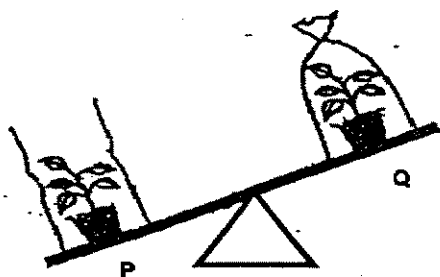
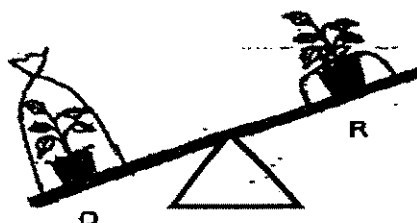
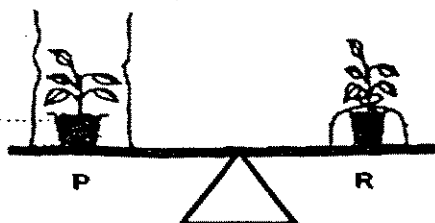


Diagram C

Diagram D



Which of the following diagrams is/are most likely to be correct after half a day?

- (1) D only
- (2) A and B only
- (3) B and C only
- (4) B and D only

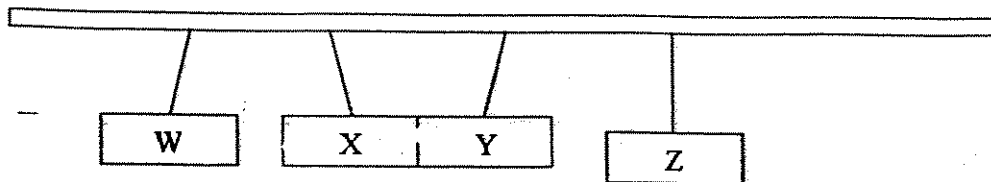
()

4. The table shows the functions of certain parts of the human digestive system. Which of the following represents the small intestine?

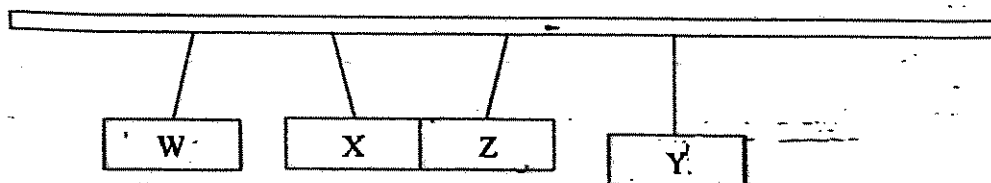
	Grinding of food into smaller pieces	Digestion of food	Absorption of food into blood
(1)	X	✓	✓
(2)	✓	✓	X
(3)	X	X	X
(4)	X	✓	X

()

5. Four objects, W, X, Y and Z, were suspended from a wooden rod. The diagram below shows what happened.



Y and Z exchanged their positions. The diagram below shows what happened next.

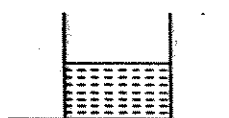


Which of the following best describes the objects?

	Object W	Object X	Object Y	Object Z
(1)	magnet	magnet	magnet	magnet
(2)	magnet	magnet	magnetic material	magnetic material
(3)	magnetic material	magnetic material	magnet	magnet
(4)	magnetic material	magnetic material	magnetic material	magnetic material

()

6. Bala has a glass of water as shown below. First, he puts it in a freezer. When the water in the glass has frozen, he takes it out from the freezer and observes it. Next, he tilts it and observes it again.



Which of the following best describes his observations?

	Glass of ice	Glass of ice when it is tilted
(1)		
(2)		
(3)		
(4)		

()

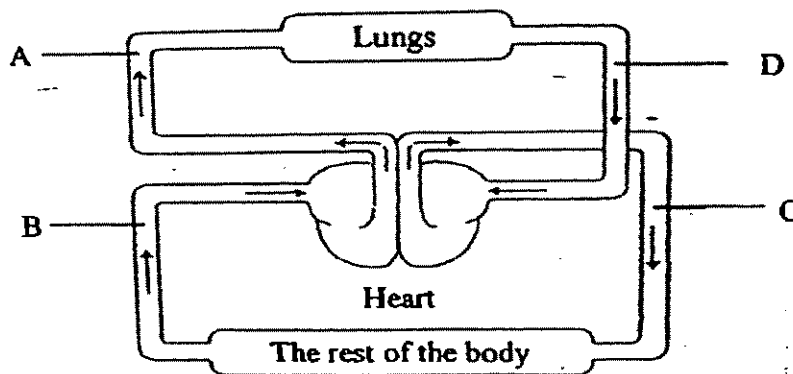
7. Alfian wanted to find out the boiling points of three unknown liquids, X, Y and Z. He put liquids X, Y and Z into 3 identical beakers. He heated the beaker of liquids using a Bunsen burner. Then he recorded the temperature of each liquid.

Type of liquid	Liquid X	Liquid Y	Liquid Z
Colour of liquid	red	blue	green
Volume of liquid (cm ³)	50	100	150
Time taken to heat the liquid until the temperature did not increase any further (min)	12	15	27
Temperature recorded (°C)	78	62	96

Which of the following statements best explains whether this experiment is a fair test?

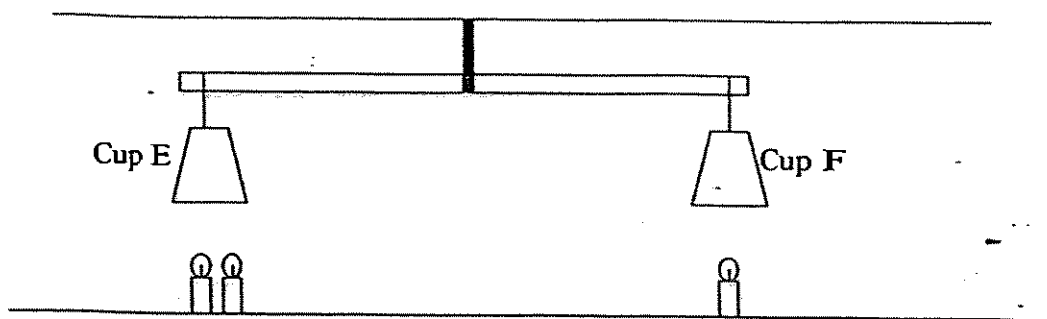
- (1) Yes, it is a fair test. The temperatures recorded are different.
- (2) Yes, it is a fair test. The volume of liquid does not affect the results of the experiment.
- (3) No, it is not a fair test. The volume of liquid affects the results of the experiment.
- (4) No, it is not a fair test. The time taken to heat the liquid until the temperature did not increase any further affects the results of the experiment.

8. The diagram below shows how blood is circulated in our body. Which one of the following correctly shows the amount of oxygen in our blood at A, B, C and D?



	More oxygen at	Less oxygen at
(1)	A and B	C and D
(2)	A and D	B and C
(3)	B and D	A and C
(4)	C and D	A and B

9. Two identical paper cups, E and F, are hung from each side of a balance as shown below. Two lighted candles are placed under Cup E while one lighted candle is placed under Cup F.

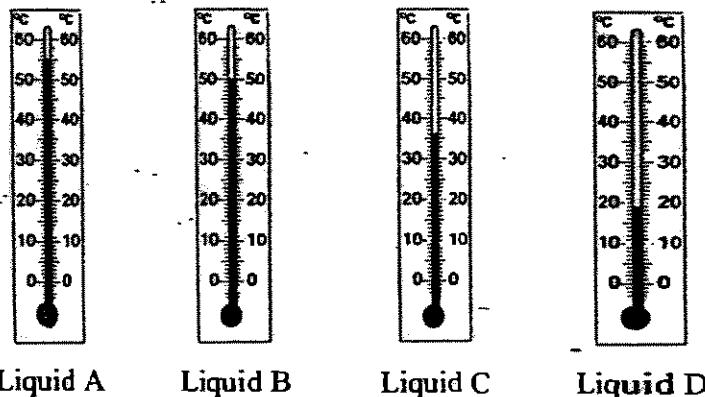


After some time, Cup E will _____ and Cup F will _____

- (1) move upwards, move upwards
- (2) move downwards, move upwards
- (3) move upwards, move downwards
- (4) remain unchanged, remain unchanged

()

10. Four liquids were heated until their temperatures reached 60°C. The diagram below shows the temperature readings of these four liquids after they were allowed to cool for 5 minutes.

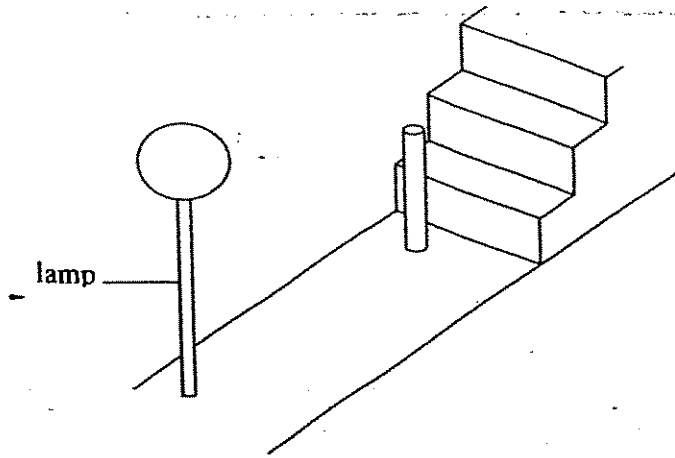


Which liquid is most likely to be the poorest conductor of heat?

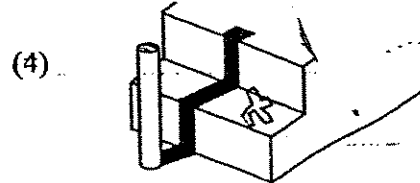
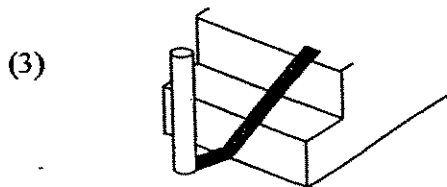
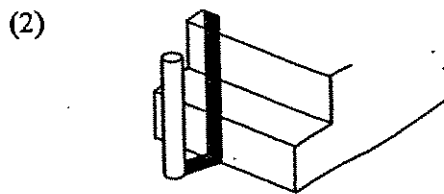
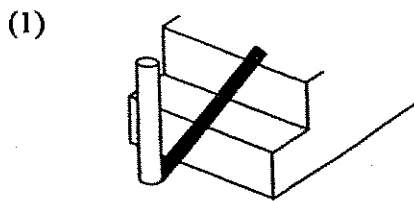
- (1) A
- (2) B
- (3) C
- (4) D

()

11. A pole is placed in front of a flight of steps. A lamp shines onto the pole as shown.



Which diagram shows the correct shadow of the stick?

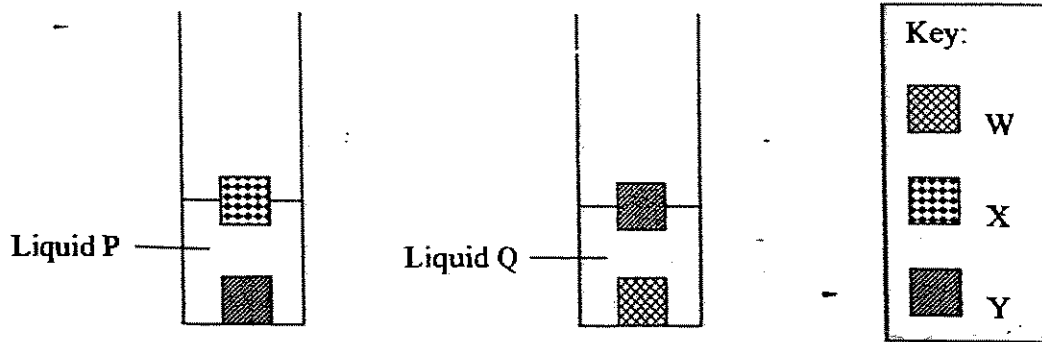


12. Which of the following statements are not true?

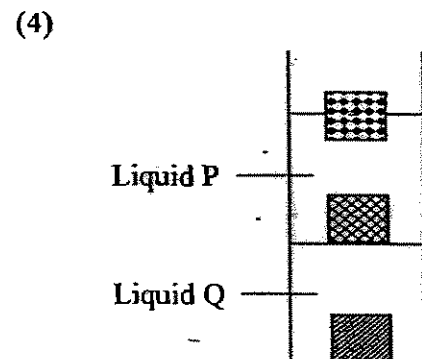
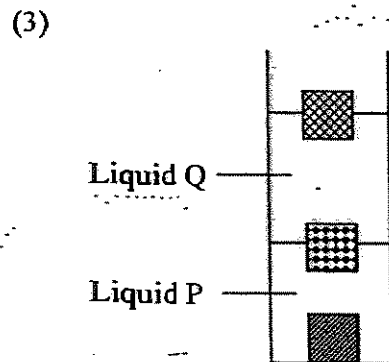
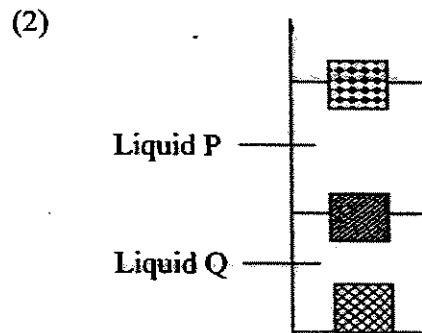
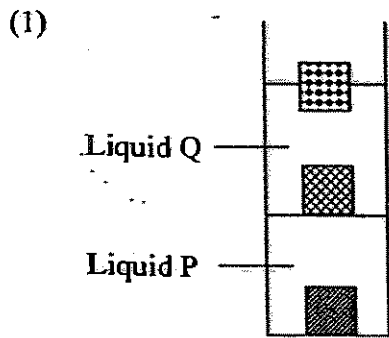
- A: Plants respire all the time.
- B: Respiration takes place in all living cells.
- C: Plants photosynthesize in the day and respire in the night.
- D: Respiration takes place in the respiratory system only.

- (1) A and B only
- (2) A and D only
- (3) B and C only
- (4) C and D only

13. The diagrams below show how different objects behave in liquids P and Q.



Which of the following diagrams shows clearly what happens when liquids P and Q and all the objects are placed in one container?



14. When Laila set up the circuit as shown in Diagram 1, Bulb A did not light up but Bulb B did. When she rearranged the set up shown in Diagram 2, Bulb A lighted up but Bulb B did not.

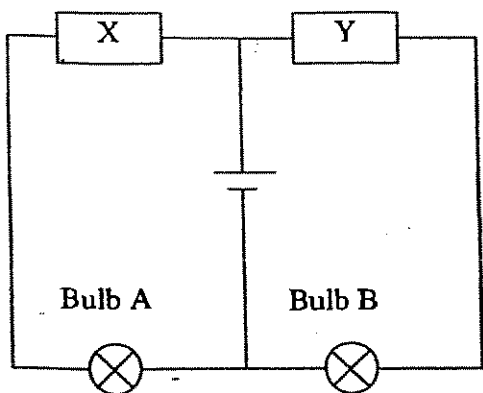


Diagram 1

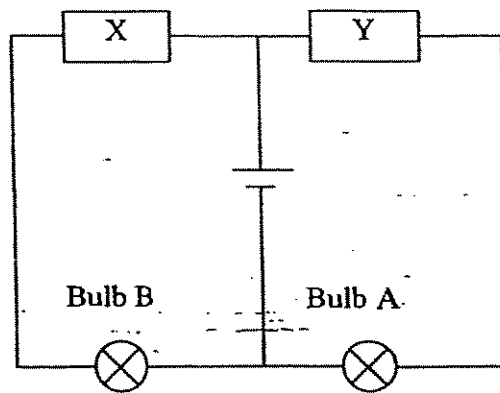


Diagram 2

Which of the following statements best explains her observation?

- (1) Bulb A is fused but Bulb B is not.
- (2) Bulb B is fused but Bulb A is not.
- (3) X is a conductor of electricity but Y is not.
- (4) Y is a conductor of electricity but X is not.

()

15. Mingxia tested a circuit card and recorded the results in the table below.

Clips tested	Did the bulb light up?
A and E	Yes
A and C	No
B and D	Yes
B and C	No
D and E	Yes
E and F	No

Which of the following diagrams show(s) the possible connections of the clips by wires?

Diagram P

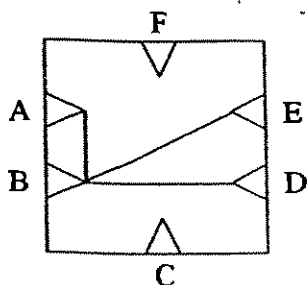


Diagram Q

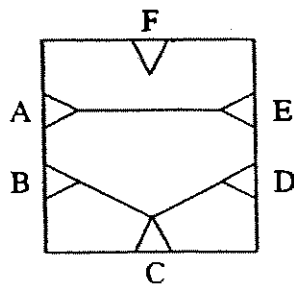
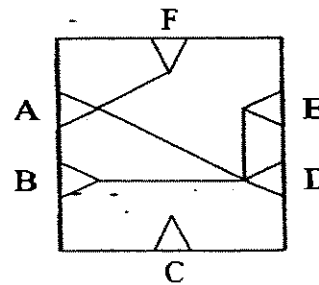


Diagram R

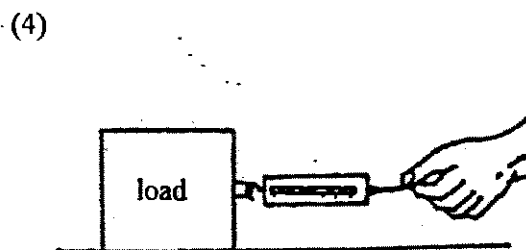
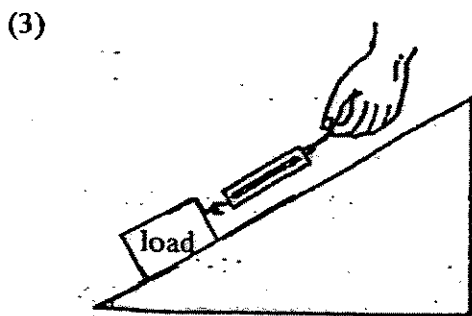
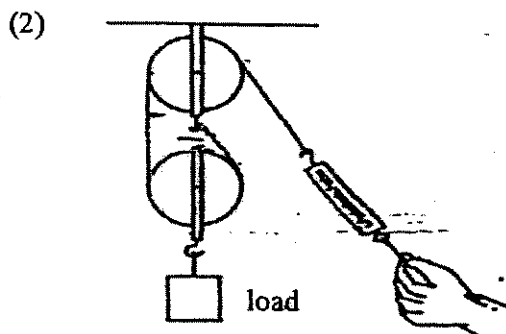
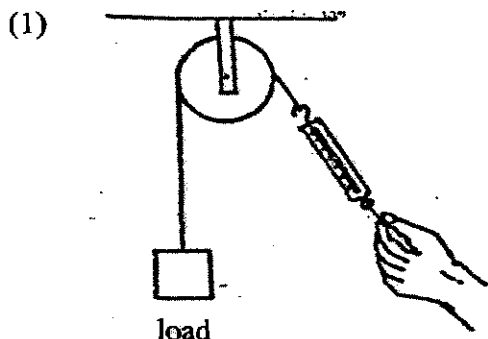


- (1) P only
- (2) P and R only
- (3) Q and R only
- (4) All of the above

()

16. Mr Chen wants to demonstrate that:
- the effort is smaller than the load;
 - the effort moves a longer distance than the load;
 - the effort and the load move in the same direction.

Which of the following should he use to carry out his demonstration?



17. Some materials are grouped as shown in the table below.

A	B
steel	wood
copper	styrofoam

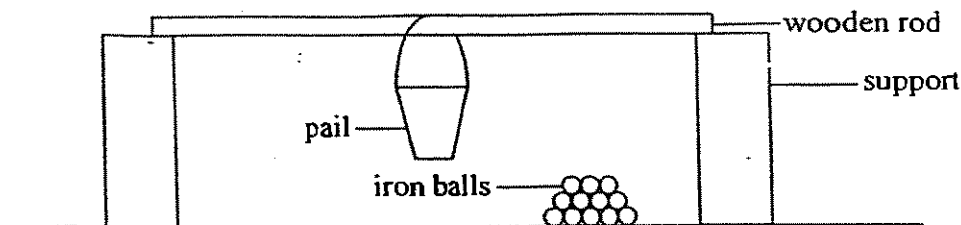
The table below shows four pairs of headings for Group A and Group B.

A	B
conductors of electricity	non-conductors of electricity
from the ground	from plants
magnetic	non-magnetic
metal	non-metal

How many of the above pairs of headings is/are correct?

- (1) 1
 (2) 2
 (3) 3
 (4) 4

18. Devi used 3 types of wooden rods A, B and C of the same thickness and length to set up an experiment as shown in the diagram below.

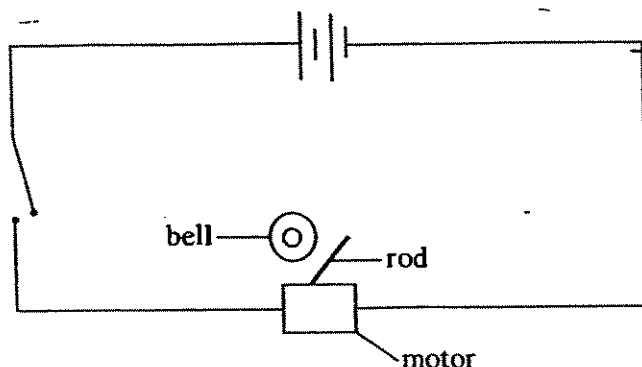


She hung a pail in the middle of wooden rod A. Then, she put iron balls as weights, one at a time, into the pail until wooden rod A broke. She repeated the experiment with wooden rod B and wooden rod C. She recorded the results as shown in the table below.

Type of wood	Number of iron balls put into pail before the wood breaks
A	6
B	10
C	14

Which of the following best describes the aim of Devi's experiment?

- (1) To find out which pail holds the most number of iron balls.
 - (2) To find out which type of wood is the strongest.
 - (3) To find out how the length of wood affects the strength of the wood.
 - (4) To find out how the type of wood affects the number of iron balls the pail can hold.
- ()
19. The diagram below shows an electric circuit. When the switch is closed, the motor will run, the rod will hit the bell and the bell will ring.



What is the energy conversion that takes place in the electric circuit when the switch is turned on?

- (1) chemical energy \rightarrow kinetic energy \rightarrow sound energy + heat energy
 - (2) electrical energy \rightarrow kinetic energy \rightarrow sound energy + heat energy
 - (3) electrical energy \rightarrow potential energy \rightarrow kinetic energy \rightarrow sound energy
 - (4) chemical energy \rightarrow electrical energy \rightarrow kinetic energy \rightarrow sound energy
- ()

20. The table below shows the population of Cupid's Shaving Brush plants in four different plots of land.

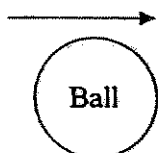
Number of Cupid's Shaving Brush Plants				
Months	Plot A	Plot B	Plot C	Plot D
January	3	9	7	5
February	6	12	5	8
March	11	14	4	6

Which plot shows the greatest increase in the number of Cupid's Shaving Brush plants by the end of March?

- (1) Plot A
- (2) Plot B
- (3) Plot C
- (4) Plot D

()

21. A ball is moving in the direction as shown in the diagram below.



A force is applied to the ball in the opposite direction of its motion.

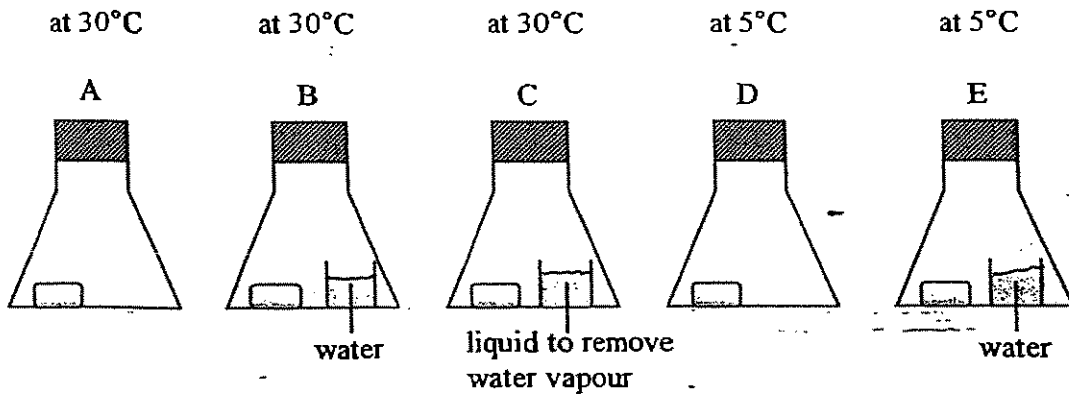
What can the effects of the force applied on the ball be?

- A: The ball slows down
- B: The ball stops moving
- C: The ball bounces upwards
- D: The ball moves in the opposite direction.

- (1) A and B only
- (2) A and C only
- (3) A, B and D only
- (4) B, C and D only

()

22. Peter wanted to find out the conditions needed to prevent bread from turning mouldy. He put a piece of bread in each of the flasks, A, B, C, D and E. He put the flasks under different conditions as shown in the diagram below.



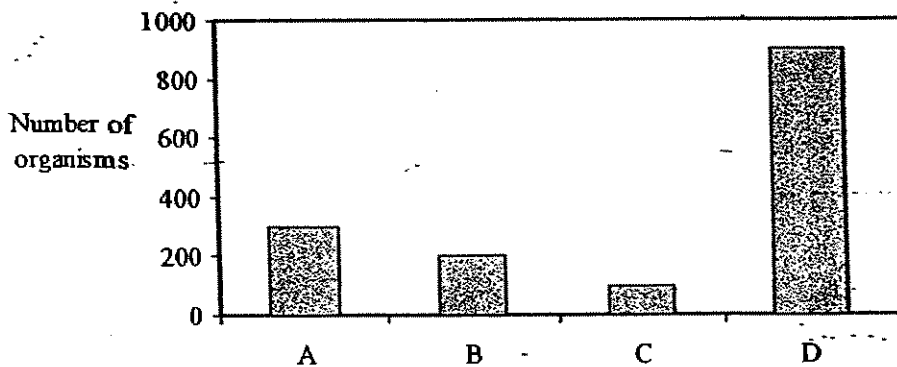
After one week, only the bread in A, B and E turned mouldy.

If this type of bread was shipped from overseas to Singapore, which one of the following conditions would keep the bread as fresh as possible during shipment?

- (1) moist
- (2) at 30°C
- (3) dry and at 5°C
- (4) moist and at 5°C

()

23. The graph shows the number of organisms that form a food chain in a pond community.

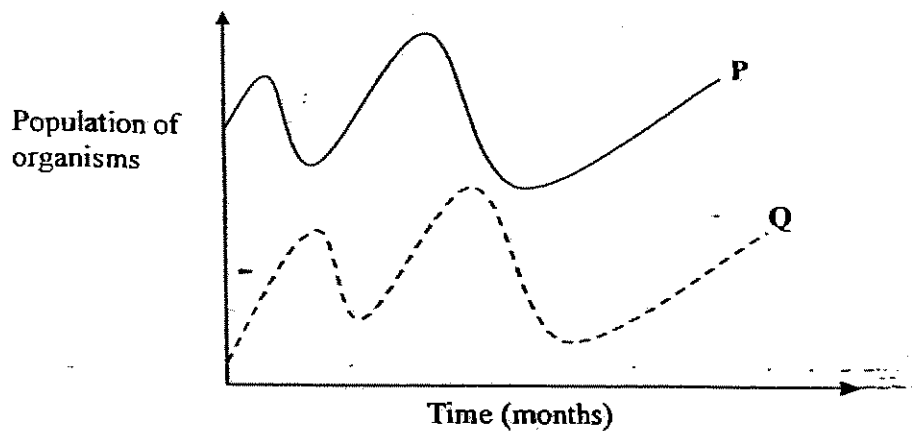


Which of the following food chains is in the correct order?

- (1) D → A → C → B
- (2) C → A → B → D
- (3) D → A → B → C
- (4) C → B → A → D

()

24. The graph below shows the changes in the number of two populations of organisms in a garden over a period of 6 months. These two populations have a direct food relationship.



Based on the graph, which of the following is likely to be true?

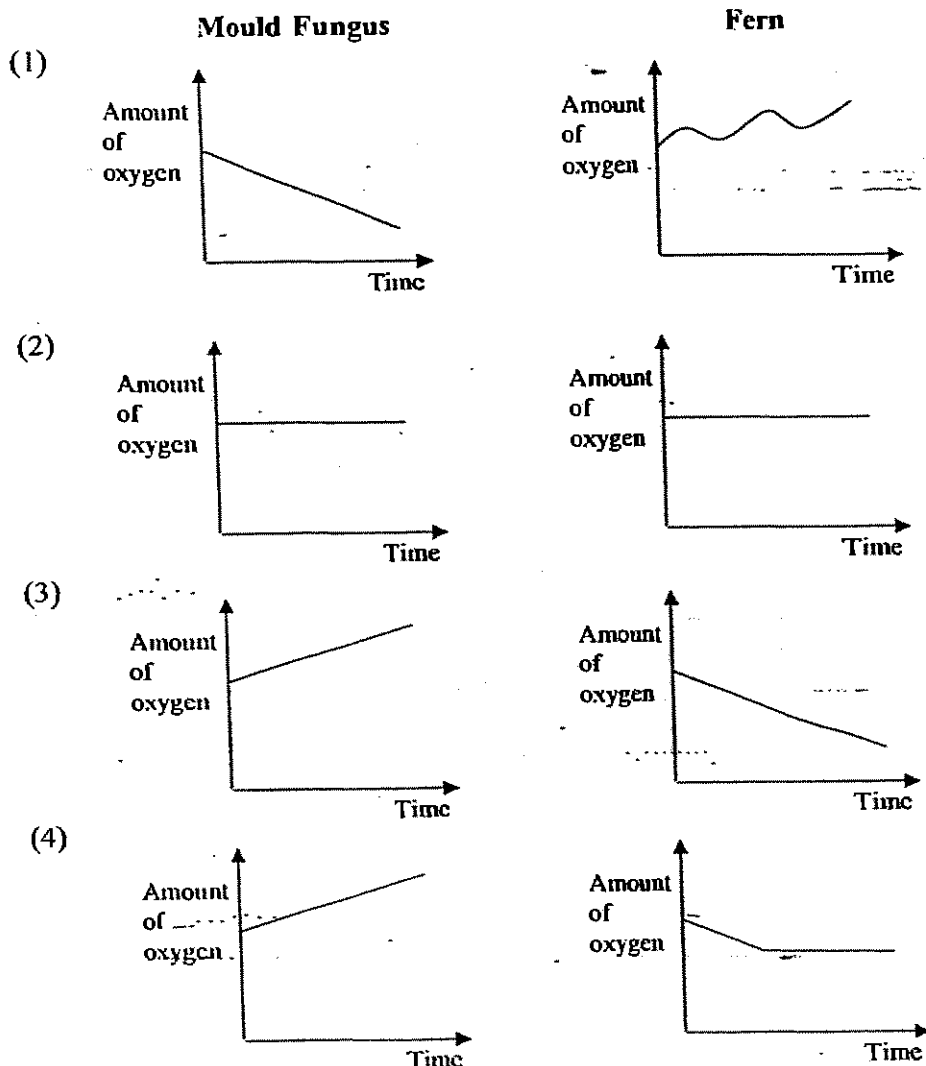
- A: If P is a plant, Q is an animal that feeds on it.
B: If both P and Q are animals, P is a predator of Q.
C: If both P and Q are animals, Q is a predator of P.

- (1) B only
(2) C only
(3) A and B only
(4) A and C only

()

25. A mould fungus and a fern are kept in two different plastic containers and placed side by side in an open field for 3 days and 3 nights. Both organisms are provided with sufficient nutrition.

Which two of the following graphs represent the change in oxygen level within the two containers?



For Questions 26 to 30, please refer to Booklet K.

End of Section A

Pei Chun Public School
Semestral Assessment 1—2007
Science
Primary 6 (merged stream)

Name : _____ ()

Date : 8 May 2007

Class : Pri. 6 ()

Parent's Signature : _____

Science Teacher : _____

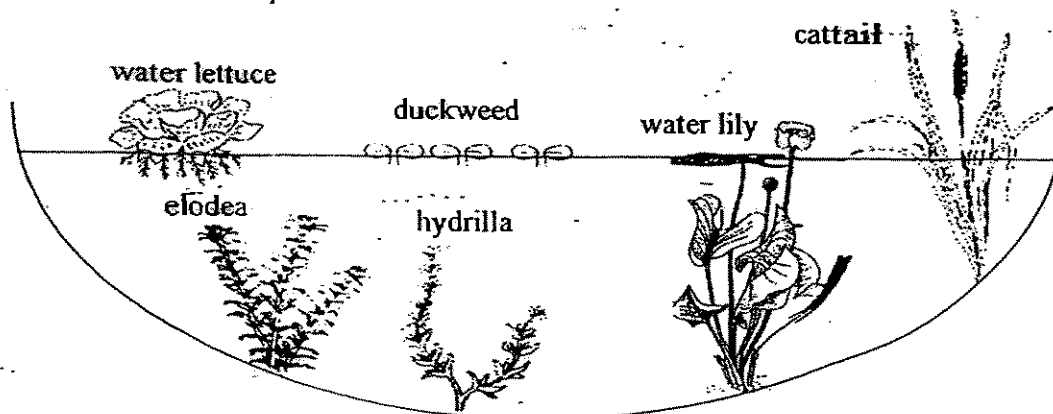
Time : 1 hr 45 min

Marks for Section A	60
Marks for Section B	30
Marks for Booklet K (exclude Section A Qns. 26 to 30)	10
Total Marks	100

Section B (30 marks)

For questions 31 to 42, write your answers in the spaces provided.

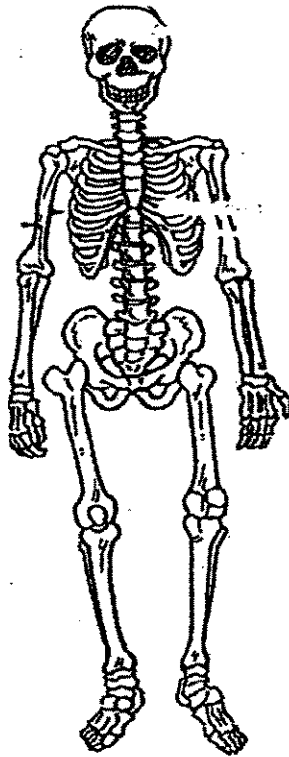
31. Draw a classification chart to classify the following aquatic plants according to where they can be found in a pond. (2m)



32. The diagram below shows the human skeletal system.

(a) Label the skull and ribcage in the diagram.

(1m)



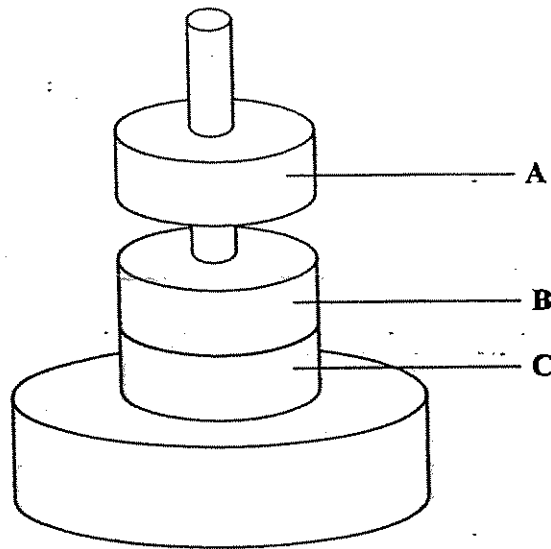
(b) Name one of the organs protected by the ribcage

(½m)

(c) Besides protecting organs, give another reason why the skeleton is important.

(1m)

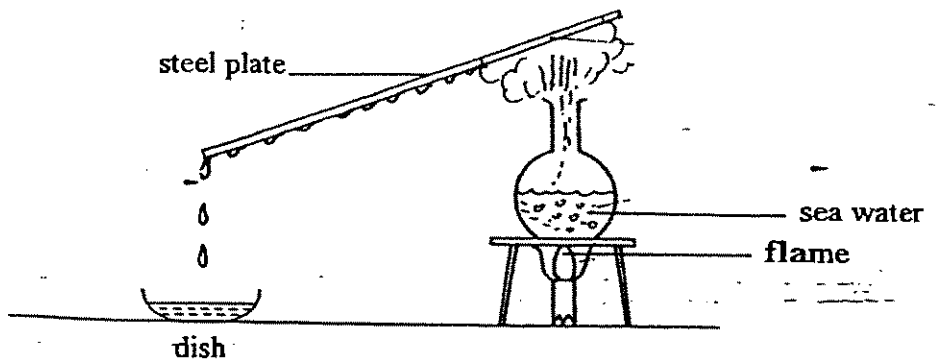
33. John placed 3 metal rings, A, B and C, over a wooden rod with a circular base as shown in the diagram.



- (a) Which ring(s) is/are definitely a magnet(s)? (1m)

- (b) Give a reason for your answer in (a). (1m)

34. Mary conducted an experiment to obtain water from sea water as shown below. She observed that water droplets dripped from the steel plate into the dish.



- (a) Complete the table below by writing down the processes that were taking place at the various parts in the experiment. (1½m)

	Process
Water in the flask	
At the water surface in the flask	
On the underside of the steel plate just above the flask	

- (b) Explain the processes that the water in the flask underwent till it appeared in the dish. (2m)

35. Malek conducted an experiment. He used a bimetallic strip made up of 2 metals, X and Y, riveted together as shown in the diagram below.



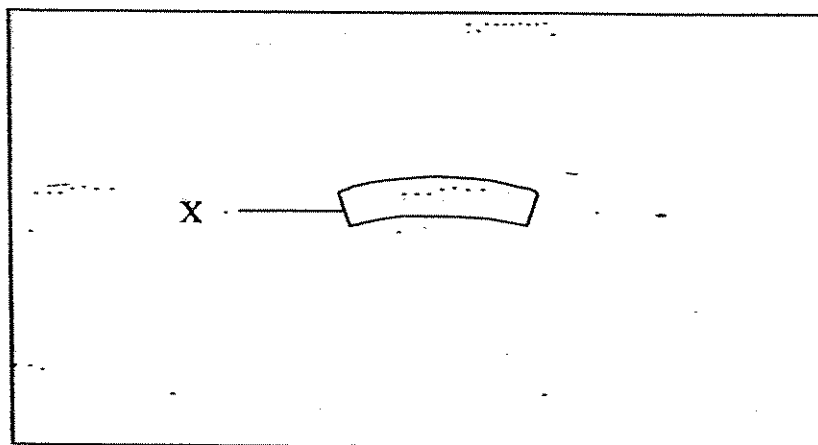
After heating the bimetallic strip over a strong flame, he observed the following change in the bimetallic strip as shown in the diagram below.



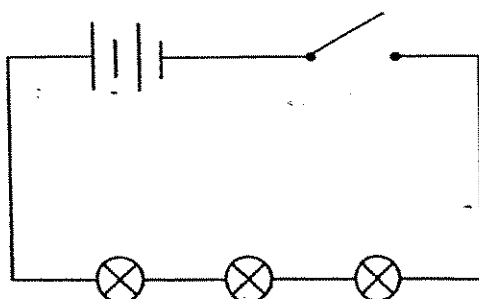
- (a) What was Malek trying to find out from his experiment? (1m)

- (b) He repeated the experiment using another bimetallic strip made up of 2 metals, X and Z, of equal thickness. Z expands more than X.

Draw and label Z on the diagram below to show how it will look like after expansion, as compared to X. (1m)



36. William used two batteries, three bulbs, a switch and some wires to set up a circuit as shown in the circuit diagram below:



He noticed that all the three bulbs were dim and were hardly glowing when the circuit was closed.

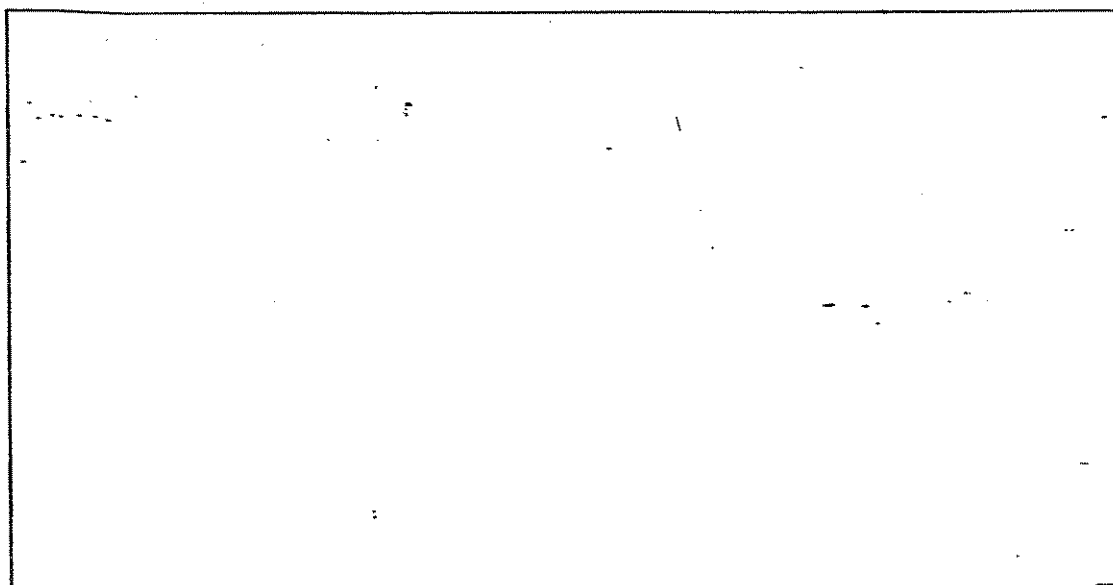
- (a) He decided to make some changes to the circuit to make the bulbs brighter. Put a tick (✓) beside each statement that describes what he should do. (1m)

(i)	He should remove one or two of the bulbs from the circuit.	
(ii)	He should reconnect the batteries in the circuit in a parallel arrangement.	
(iii)	He should add more batteries to the circuit.	

- (b) After a while, William noticed that one of the bulbs fused. As a result, the circuit could no longer work.

Using two batteries, two bulbs, two switches and some wires, draw a circuit diagram in the box below to show how William could make a circuit which:

- (i) allows a bulb to light up each time a switch is closed;
 (ii) allows one bulb to light up even though the other bulb has fused. (1m)



37. The distance of some planets from the Sun and the time taken for the planets to revolve around the Sun are shown in the table below.

Planets	Distance from the Sun (million km)	Time taken to complete one revolution around the Sun (days)
A	108	225
B	150	365
C	58	88
D	778	4380
E	228	687

- (a) Arrange the planets in order, beginning from the coldest. (1m)
-

- (b) From the data given above, state the relationship between the distance of the planets from the Sun and the time taken to complete one revolution around the Sun. (1m)
-

38. Mr Tham moved a glass block over a piece of wood in an experiment as shown below. The experiment was repeated three times with three different liquids, X, Y and Z, poured onto the wood.



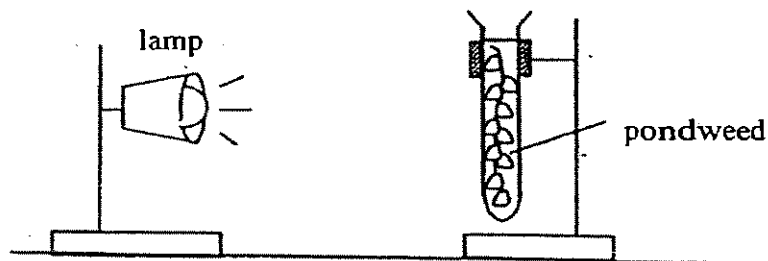
The distances moved by the block are recorded below.

Liquid	Distance moved by the glass block (cm)
Nil	30
X	34
Y	40
Z	37

- (a) How does measuring the distance moved by the block when no liquid is applied act as a control? (1m)
-

- (b) Based on the results, which one of the three liquids is the best lubricant? Explain. (1m)
-

39. Jian Wei wanted to find out the effect of light on photosynthesis. He put some pondweed in a test tube of pond water. He then placed a lamp at different distances from the test tube. He counted the number of bubbles produced in one minute.



The table below shows the results of the experiment.

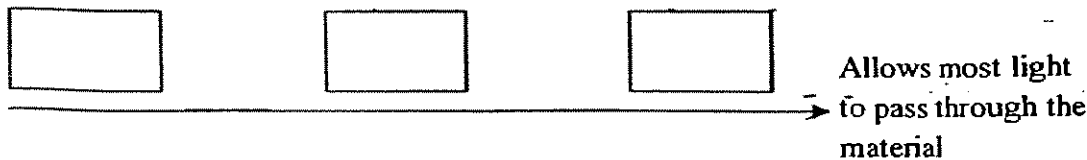
Distance of lamp from pondweed (cm)	10	20	30	40	50
Number of bubbles per minute	18	9	5	3	1

- (a) What pattern do you observe from the results? (1m)

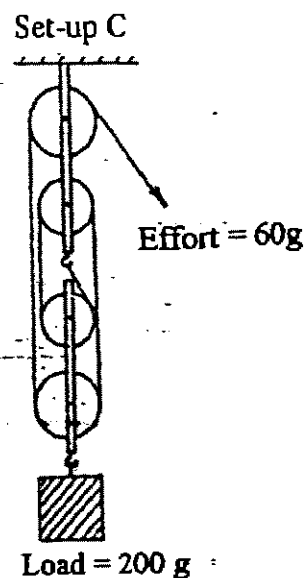
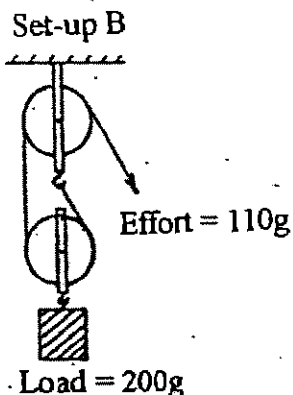
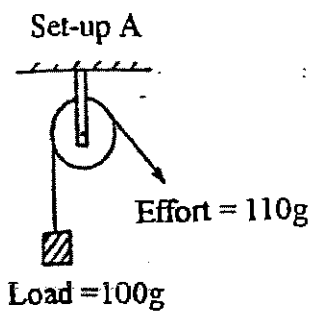
Next, Jian Wei went to get three rectangular blocks made of different materials. He placed each block one at a time between the lamp and the test tube. The distance between the lamp and the pondweed was kept at 10cm. He recorded the results in the table below.

Material that the rectangular block was made of	D	E	F
Number of bubbles per minute	1	18	12

- (b) Arrange the materials, D, E and F, in ascending order of the degree of transparency by filling the letters in the boxes below. (1m)



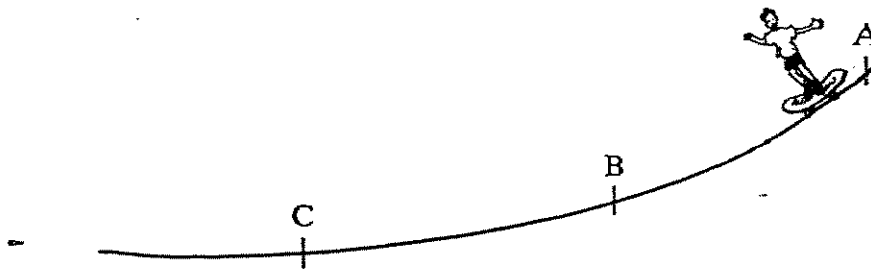
40. Denise conducts an experiment as shown below to find out if the number of pulleys affect the effort required to raise a load.



- (a) Is the experiment a fair one? Why? (1m)

- (b) From Set-up B and Set-up C, what pattern do you observe about the effort needed and the number of movable pulleys used? (1m)

41. The diagram below shows the run of a skateboarder which ends after point C.



(a) What kind of energy possessed by the skateboarder was decreasing as he travelled down the slope? (1m)

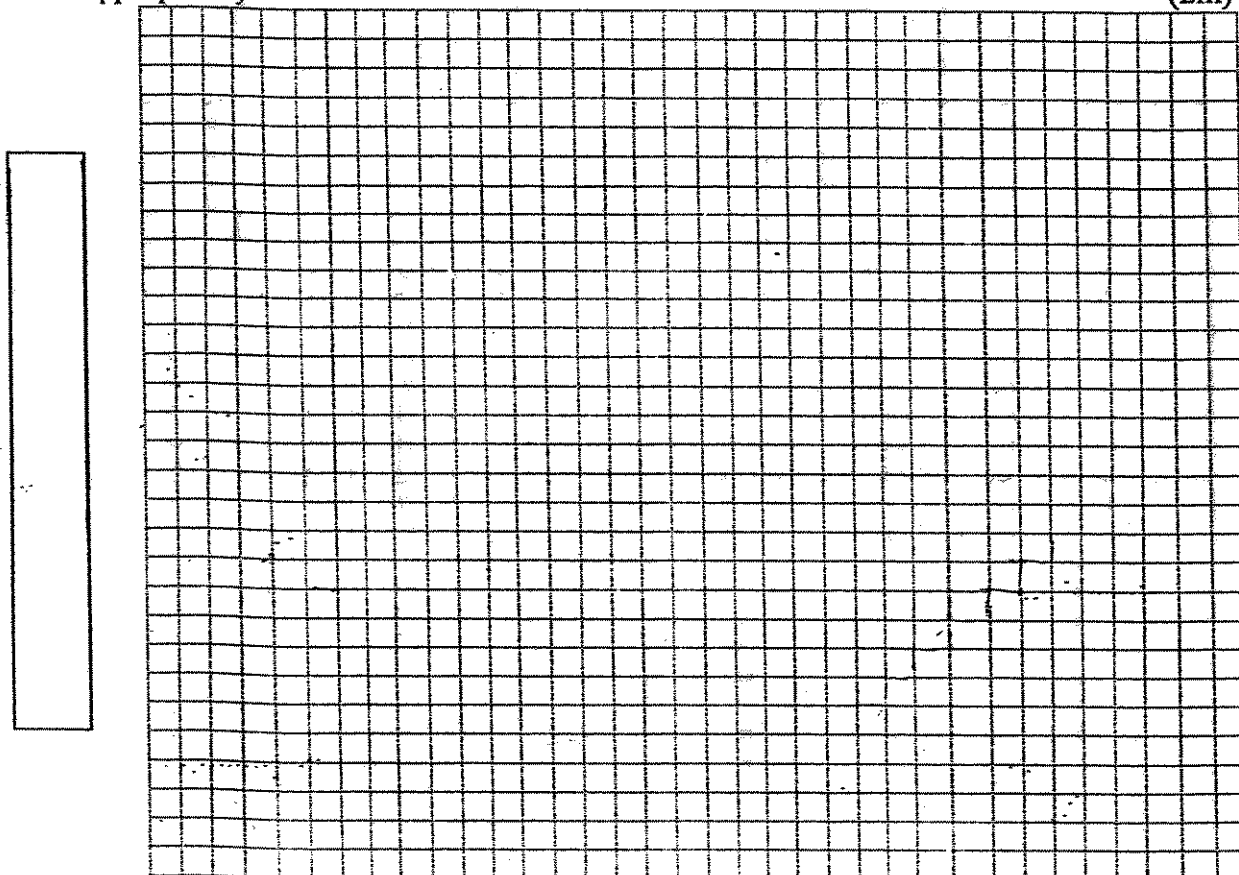
(b) What kind of energy was he gaining as he travelled down the slope? (1m)

(c) Explain clearly what happened when the skateboarder moved from point A to point C with regards to energy change. (2m)

42. Rahul conducted an experiment to measure the length of a spring with increasing masses hung from it. He recorded the results in a table below.

Mass of weights (g)	0	5	10	15	20	25
Length of spring (cm)	8	12	16	20	24	28

- (a) Use the measurements in the table to plot a line graph to show the results. Label the axes appropriately. (2m)

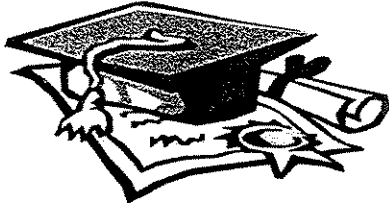


- (b) What is the extension of the spring when the weight is 20 g? (1m)

- (c) What is the relationship between the weight hung on the spring balance and the extension of the spring? (1m)

For Questions 43 to 46, please refer to Booklet K.
End of Paper


Set by : Mr David Koh
Vetted by: P6 Science Committee teachers



ANSWER SHEET

PEI CHUN PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
SEMESTRAL ASSESSMENT (1)

1. 4	31)	<u>Aquatic plants</u>		
2. 3				
3. 4				
4. 1				
5. 2		floating	partially submerged	fully-submerged
6. 4				
7. 2				
8. 4		water lettuce	cattail	elodea
9. 3		duckweed	water lily	hydrilla

10. 1		
11. 4	32) a)	
12. 4		
13. 2		
14. 4		
15. 2		
16. 2		
17. 2		
18. 2		
19. 4		
20. 1		
21. 3		b) Heart
22. 3		c) It supports the body and gives the body its shape.
23. 3		
24. 4		
25. 1	33) a)	A & B
		b) Only magnets can repel each other. A & B repel each other, so they are definitely magnets.

34) a) Boiling
Evaporation
Condensation

34) b) The sea water boiled to form steam. The hot water vapour rose and condensed on the cool under side of the steel plate, forming tiny water droplets on the steel plate. These water droplets drip down along the under side of the steel plate on the dish.

35) a) Malek was trying to find out which metal, X and Y, could expand more when heated.



36) a) i) ✓ iii) ✓



37) a) D, E, B, A, C

b) The further the distance of the planets from the sun, the greater the time taken to complete one revolution around the sun.

38) a) It is to use as a comparison to show liquid reduces friction between surface of the block and wood.

b) Y. The glass block moves the greatest distance over liquid Y, which means that Y reduces the most friction between the glass block and wood, so it is the best lubricant.

39) a) The further the distance of lamp from pondweed, the lesser the number of bubbles produced per minute.

b) D, F, E

40) a) No. The load in set-up A does not have the same weight as the other loads in the other set-up B & C.

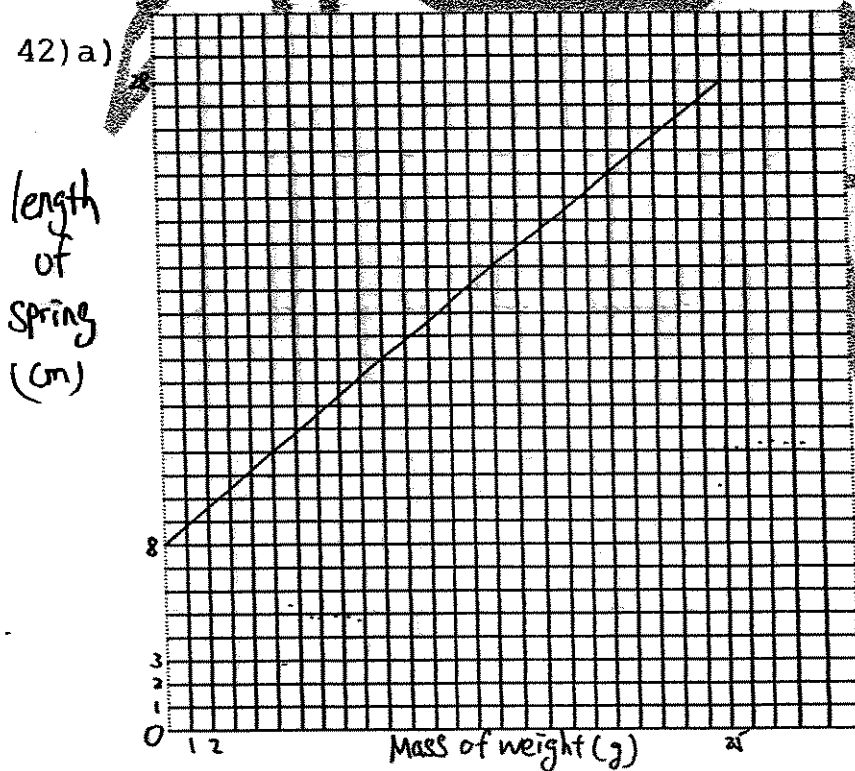
b) The greater the number of movable pulleys used, the smaller the effort required to raise the load.

41) a) Gravitational potential energy

b) kinetic energy.

c) As the skateboarder is moving down, the gravitational potential energy is converted to kinetic energy. The skateboarder would be travelling at his fastest speed when he moves off the slope as the kinetic energy of the moving skateboarder is at its maximum. As the skateboarder moves along the slope part of the energy is changed to heat and sound energy.

42) a)



b) $24 \text{ cm} - 8 \text{ cm} = 16 \text{ cm}$

c) The heavier the weight hung on the spring, the greater the extension of the spring.

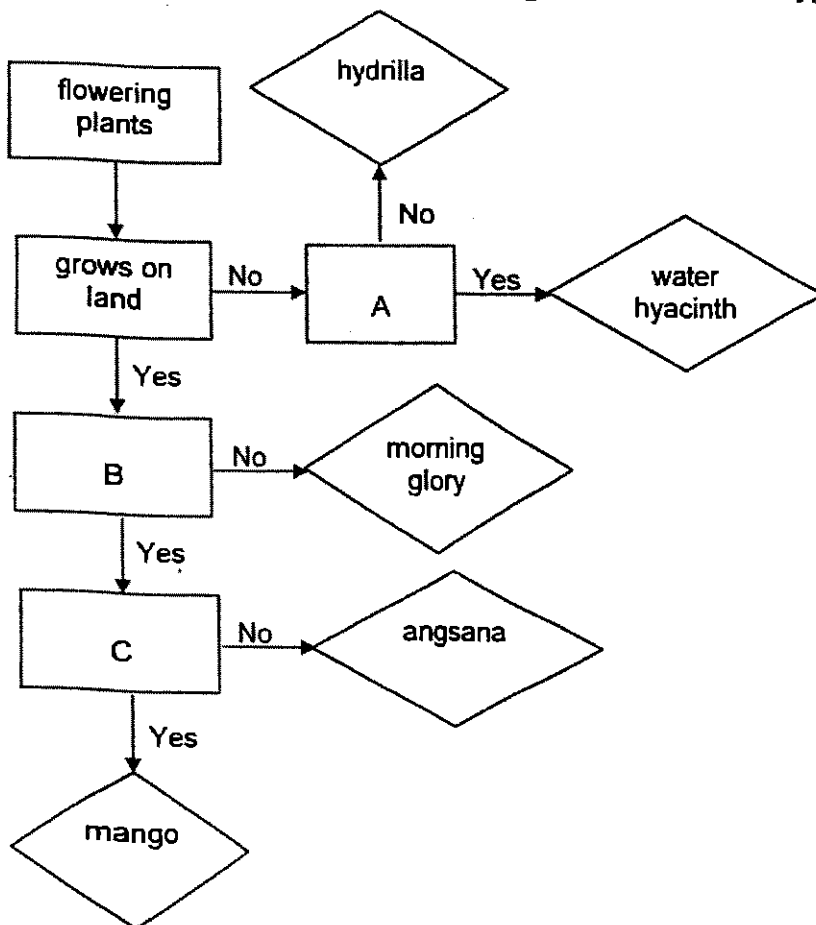
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PART 1 (60 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

(30 x 2 marks)

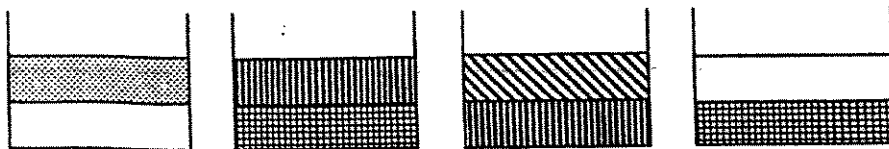
1. The flowchart below can be used to distinguish between some types of plants.



What do A, B and C in the flowchart represent?

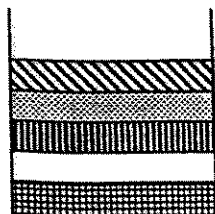
	A	B	C
(1)	has a fleshy stem	has a woody stem	has poisonous fruits
(2)	has spores	has a weak stem	has poisonous fruits
(3)	floats on water	has a woody stem	has fleshy fruits
(4)	has swollen leaf stalks	has a weak stem	has fleshy fruits

2. The diagram below shows the positions of 5 different liquids when placed together in containers.

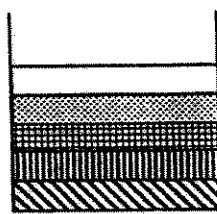


Which of the following shows correctly what will happen when they are in a container?

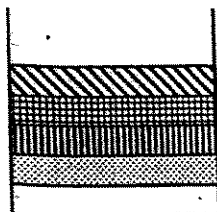
(1)



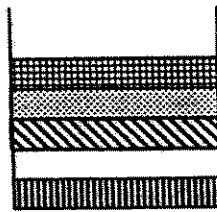
(2)



(3)



(4)



()

3. The table below shows the melting and boiling points of substances P, Q and R.

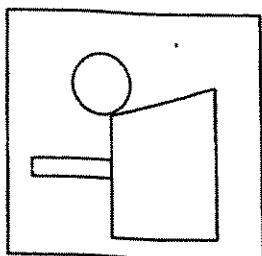
Substance	Melting point (°C)	Boiling point (°C)
P	42	78
Q	28	63
R	54	90

At which one of the following temperatures are the three substances in the same state?

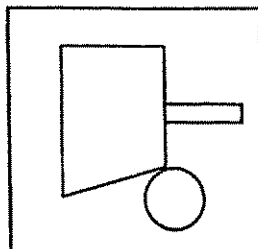
- (1) 30 °C
 (2) 49 °C
 (3) 60 °C
 (4) 80 °C

()

4. Sandy holds up a picture card in front of a mirror. Her friend, Vinny, uses a pin-hole camera to look at the picture in the mirror and sees the image shown below.



Sandy's picture card



What Vinny sees through the pin-hole camera

Sandy then holds up a card with the words "BRED" printed on it in front of the mirror. Which of the images below would Vinny see through the pin-hole camera, assuming that she is using the camera to view the mirror image of the words like before?

(1)

D E R B

(2)

B R E D

(3)

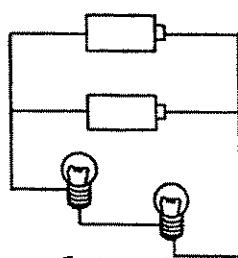
D E R B

(4)

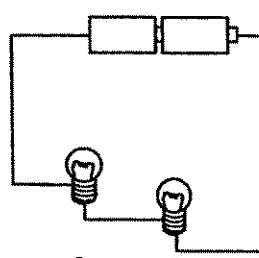
D E R B

()

5. Study the 2 set-ups below.



Set-up A



Set-up B

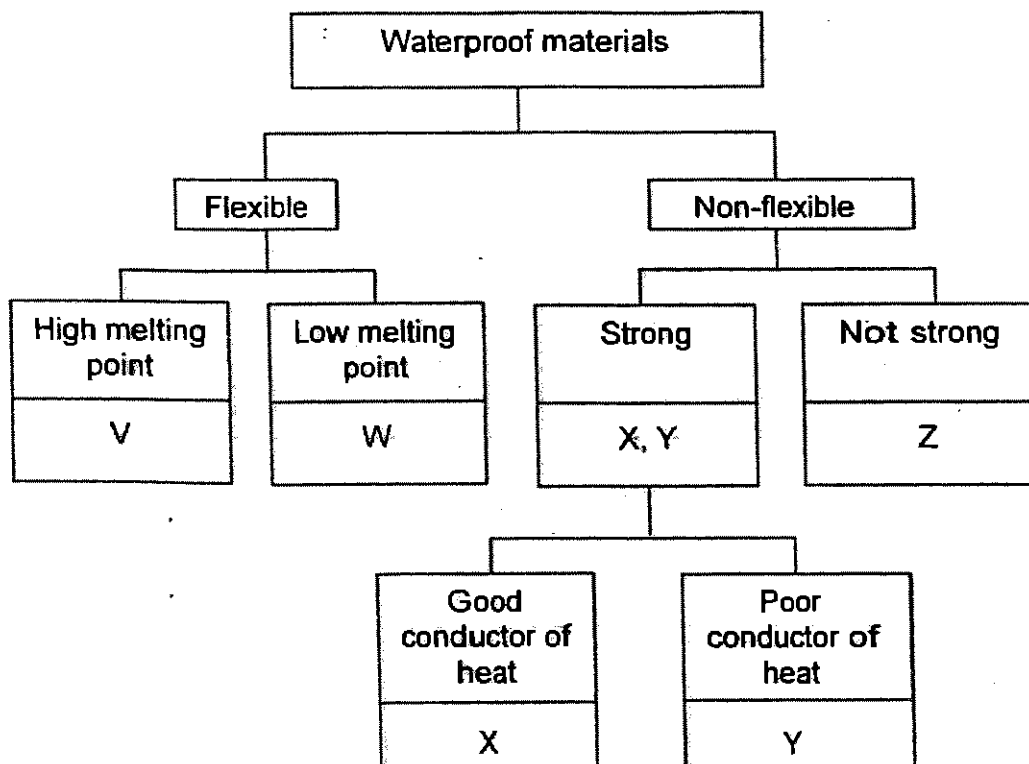
Which of the following statements are not true?

- A: The bulbs in Set-up A are brighter than the bulbs in Set-up B.
- B: Both the bulbs and batteries in Set-up B are arranged in series.
- ~~C: The batteries in Set-up B will last longer than the batteries in Set-up A.~~
- D: If 1 of the bulbs in Set-up A is fused, the other bulb will not be able to light up.

- (1) A and B only
- (2) A and C only
- (3) B and D only
- (4) B, C and D only

()

6. Rihana was told to select the best materials for making raincoats and helmets from the chart shown below. She was also told not to select the same materials for making the items.

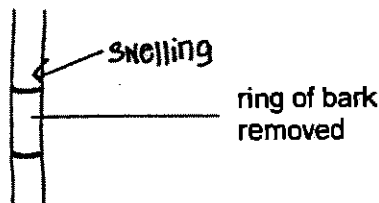


Based on the classification chart above, which of the following shows the best choice for making the raincoats and helmets?

	Raincoats	Helmets
(1)	V	Z
(2)	W	Y
(3)	X	Y
(4)	V	Y

()

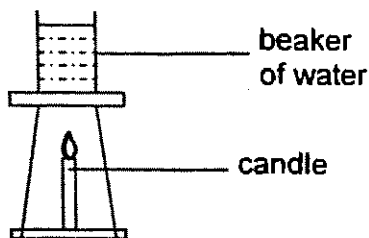
7. Derrick removes a small and thin ring of bark from a plant growing in an open field. A few days later, he notices a swelling above the ring of bark that was removed.



Which statement correctly explains the presence of the swelling?

- (1) Food travelling down the stem was trapped above the ring.
 - (2) Water travelling up the stem was trapped above the ring.
 - (3) Food travelling up the stem was trapped above the ring.
 - (4) Water travelling down the stem was trapped above the ring.
- ()

8. Albert set up the experiment as shown in the diagram below. After 30 minutes, he noted the volume of water that remained in the beaker.



He repeated the experiment with 2 identical candles, then with 3 identical candles and recorded the results in the table shown below.

Number of candles	Volume of water (in ml)	
	Before the experiment	After the experiment
1	50	47
2	50	42
3	50	37

The aim of Albert's experiment was to find out if _____.

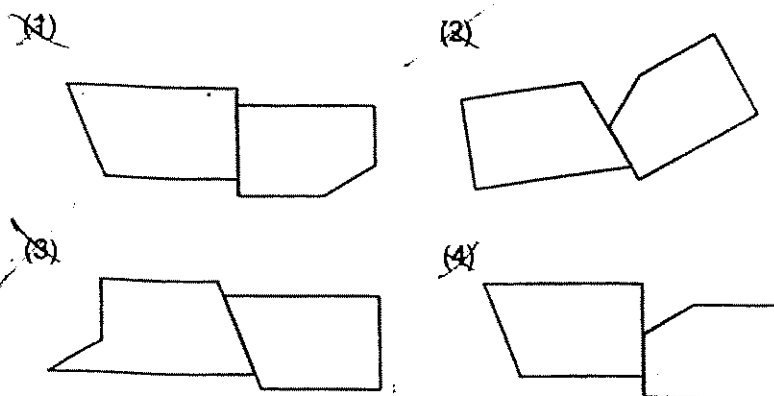
- (1) the rate of evaporation is affected by the exposed surface area of the water
- (2) the amount of heat received by the beaker of water is affected by the duration of the experiment
- (3) the rate of evaporation is affected by the amount of heat received by the beaker of water
- (4) the amount of heat received by the beaker of water is affected by the number of candles used

()

9. Victoria broke a bar magnet into 3 pieces, A, B and C as shown below.

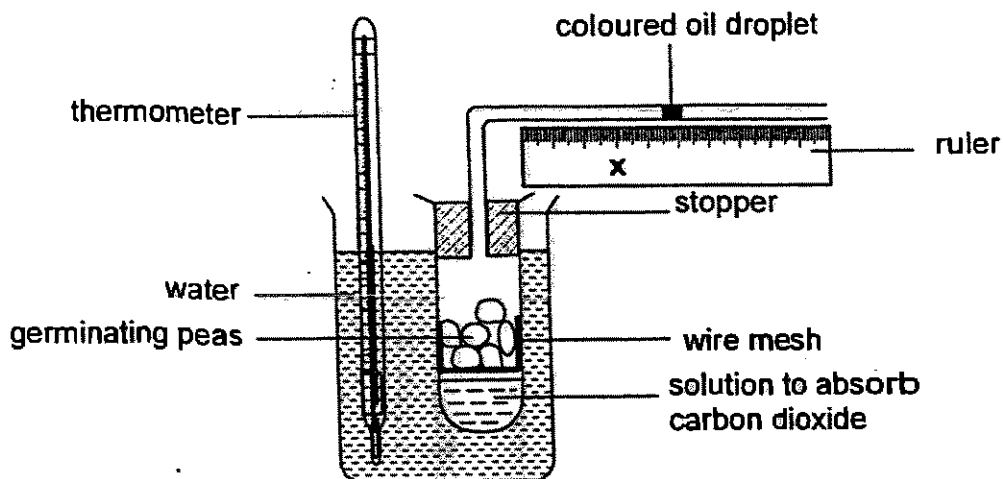


Which of the following is not possible when two broken pieces of the magnet are brought together?



()

10. Tommy sets up the experiment shown in the diagram below in a dark room.



What will Tommy observe about the oil droplet and what is a possible explanation for this?

- (1) It shifts toward X, because the germinating peas take in oxygen.
- (2) It will not move because germination cannot take place in a dark room.
- (3) It shifts away from X, because the germinating peas give out carbon dioxide.
- (4) It will not move because the germinating peas take in oxygen and give out carbon dioxide.

()

11. Jenna has 4 similar objects, E, F, G and H, which are made of different materials. The table below shows the materials that the objects are made of.

Objects	E	F	G	H
Material	iron	steel	aluminium	copper

She places two of the objects together in the combinations shown below, then tries separating them from each other by using a magnet.

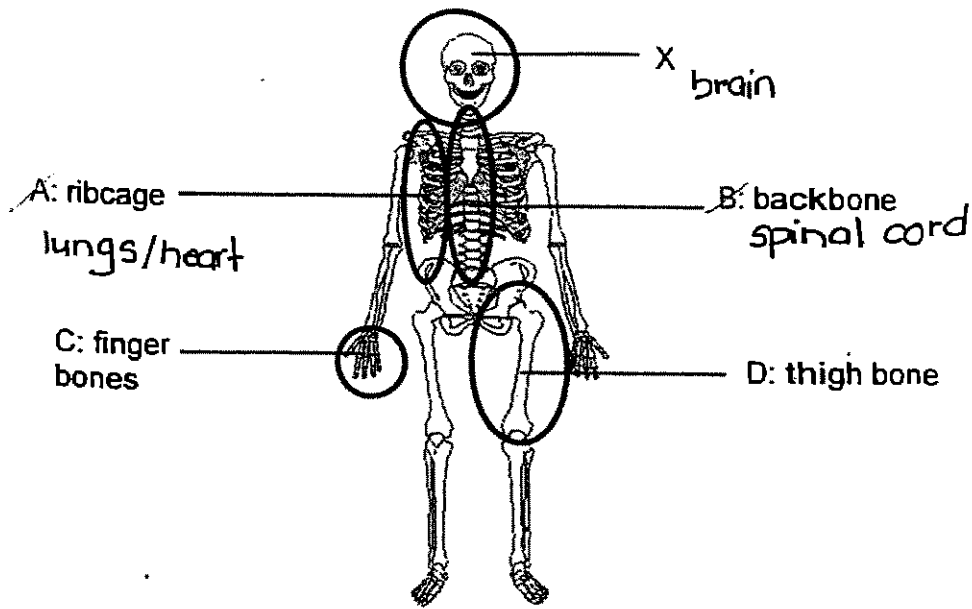
- A: Objects E and F
- B: Objects F and G
- C: Objects F and H
- D: Objects G and H

In which of these was she successful?

- (1) A and B
- (2) A and C
- (3) B and C
- (4) B and D

()

12. X protects an important and delicate part of the human body. Which of the following bones do the same?



- (1) A and B only
 (2) A and C only
 (3) B and D only
 (4) A, C and D only

() .

13. Some inventions imitate the adaptations of animals. The diagram below shows a man in snorkelling gears and flippers under water.



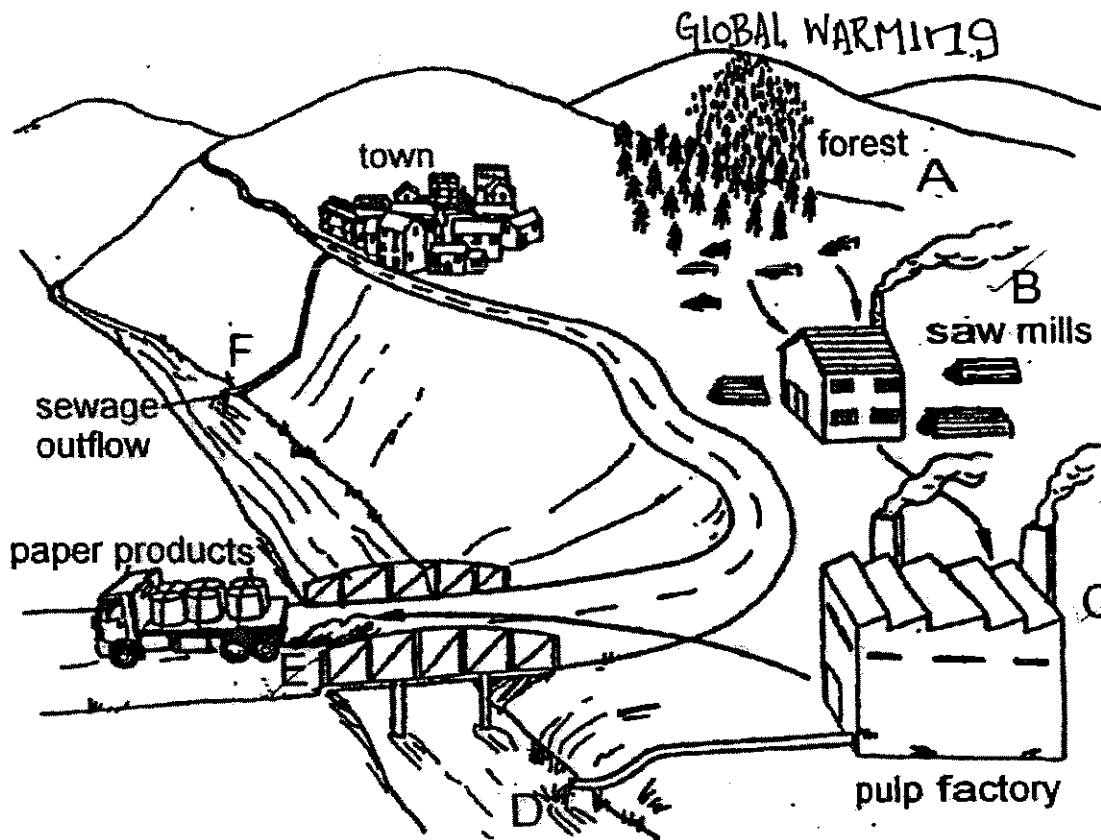
From which animals did Man get the idea of snorkelling gears and flippers?

- A: Frog
 B: Great diving beetle
 C: Water stick insect
 D: Tadpole

- (1) A and C
 (2) A and D
 (3) B and C
 (4) B and D

()

14. The diagram below shows some human activities which affect the environment.

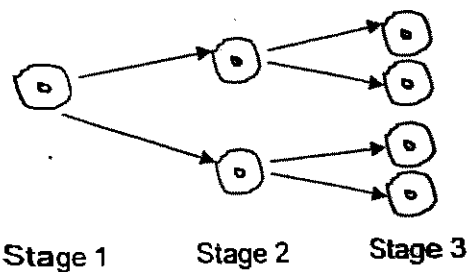


Based on the diagram, what are the activities that cause air pollution?

- (1) A and B only
- (2) A, D and F only
- (3) B, C and D only
- (4) B, C and E only

()

15. The diagram below shows the first few stages of cell division for a particular cell.

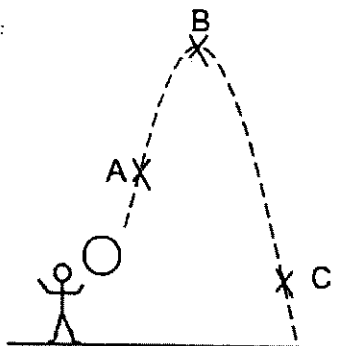


At the fifth stage, how many cells would there be?

- (1) 16
- (2) 32
- (3) 64
- (4) 128

()

16. Jared threw a ball up into the air as shown in the diagram below. At various points of the path, the ball possessed potential energy, kinetic energy, or a combination of both.



What were the type(s) of energy the ball possessed at Points A, B and C?

(1)

Position	Type of energy		
	PE	KE	PE + KE
A			✓
B	✓		
C			✓

~~(2)~~

Position	Type of energy		
	PE	KE	PE + KE
A			✓
B		✓	
C			✓

~~(3)~~

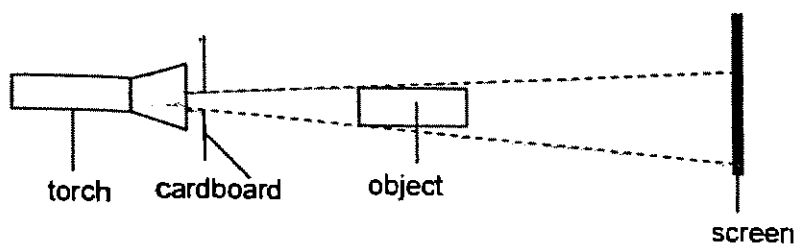
Position	Type of energy		
	PE	KE	PE + KE
A		✓	
B	✓		
C			✓

(4)

Position	Type of energy		
	PE	KE	PE + KE
A			✓
B	✓		
C		✓	

()

17. Lilian sets up a simple experiment as shown below.



What can she do to make the shadow on the screen smaller?

- ~~A:~~ Move the torch and cardboard nearer to the object.
- ~~B:~~ Move the object nearer to the screen.
- ~~C:~~ Move the screen towards the object.
- ~~D:~~ Move the screen away from the object.













- (1) B only
- (2) A and D only
- (3) B and C only
- (4) A, B and D only

()

18. Joshua wants to find out how the wing-like structure of an angšana fruit affects the time it takes to reach the ground when dropped from a certain height. He selects 3 similar angšana fruits and cuts the wing-like structure of the fruits to different sizes. Then, he records the time taken for each fruit to reach the ground when dropped from a certain height in the table below.

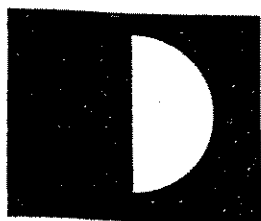
Fruit	Time taken for the angšana fruit to reach the ground (seconds)		
	1 st try	2 nd try	3 rd try
W	6.9	6.4	6.0
X	2.8	2.4	2.6
Y	4.3	4.6	5.1

Which of the following correctly represents the angšana fruits W, X and Y?

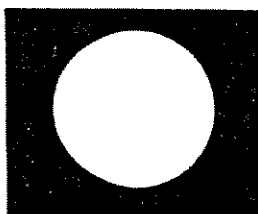
	W	X	Y
(1)			
(2)			
(3)			
(4)			

()

19. Alice observed the shapes of the Moon on 7th March and 14th March.



7th March



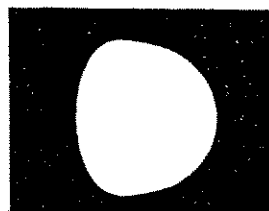
14th March

What would the shape of the Moon be on 24th March?

(1)



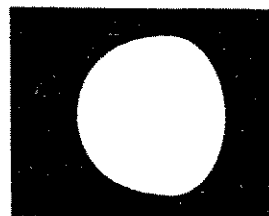
(2)



(3)

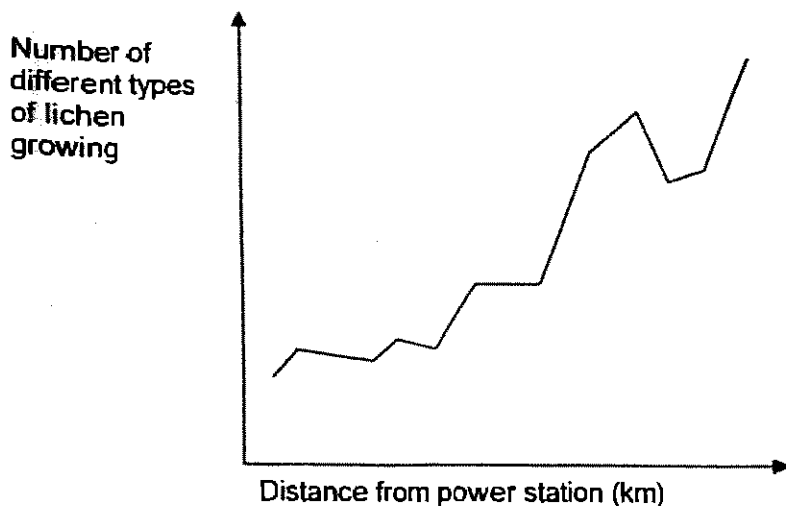


(4)



()

20. Lichens are organisms which are very sensitive to air pollution. The graph below shows how the distance from a power station affects the number of types of lichen growing around the power station.



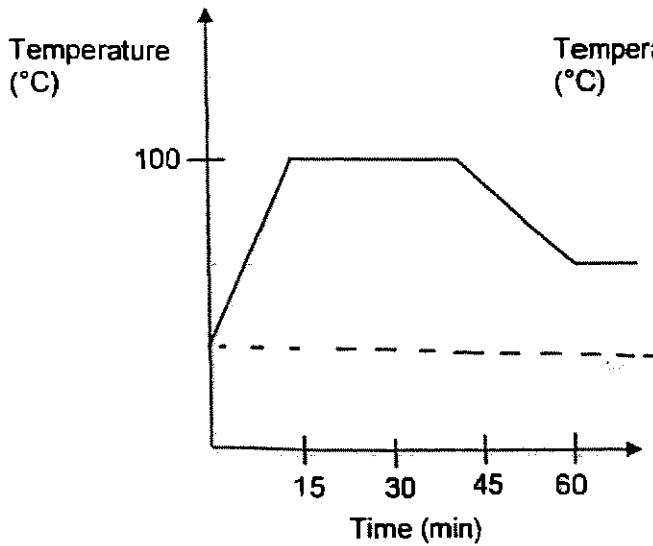
Which one of the following conclusions can be drawn from the graph above?

- (1) There are fewer types of lichens growing near the power station.
 - (2) Less types of lichens grow in areas further away from the power station.
 - (3) As the distance from the power station increases, air pollution increases.
 - (4) The number of types of lichens growing decreases when the distance from the power station increases.
- ()

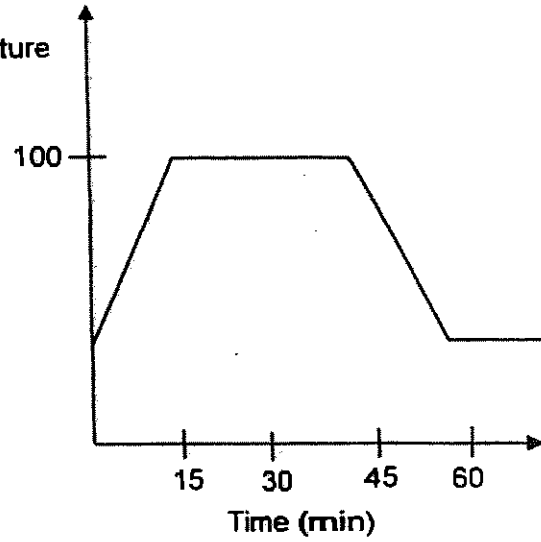
21. Helen heated a pot of tap water till it boils. After the water has boiled for some time, she placed it on the table and allowed it to cool.

Which of the following best shows the changes in the temperature of the water?

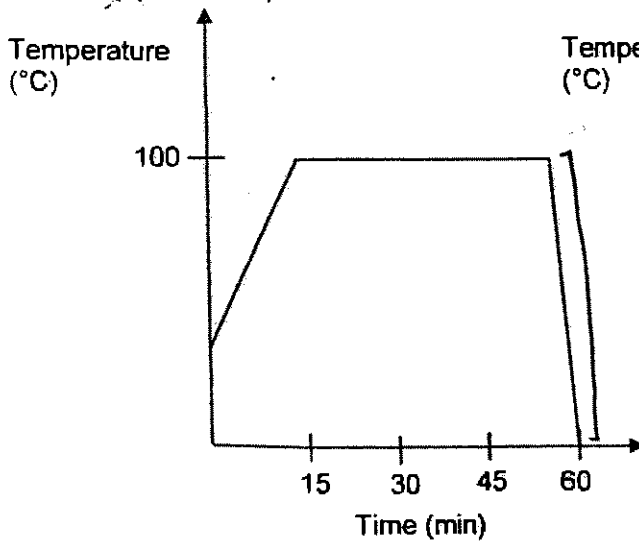
(1)



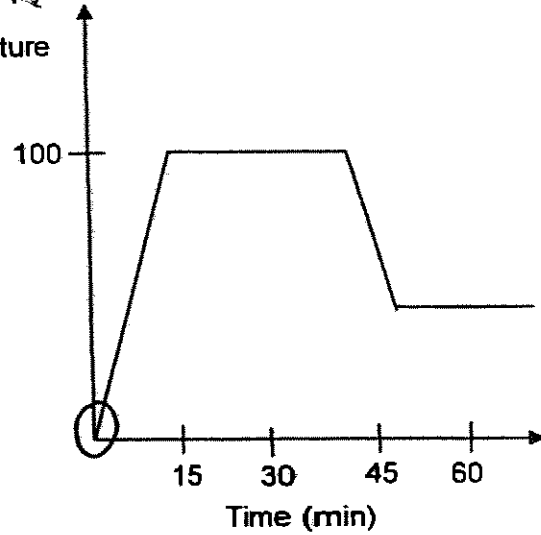
(2)



(3)

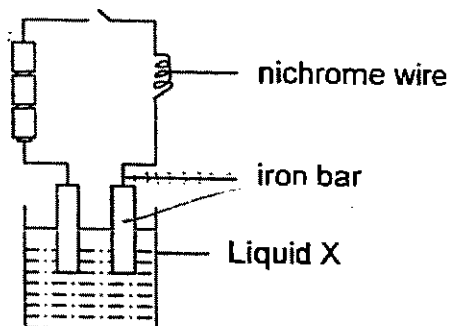


(4)



()

22. Connor set up an experiment as shown below. When the circuit was closed, he observed that the nichrome wire was red hot.



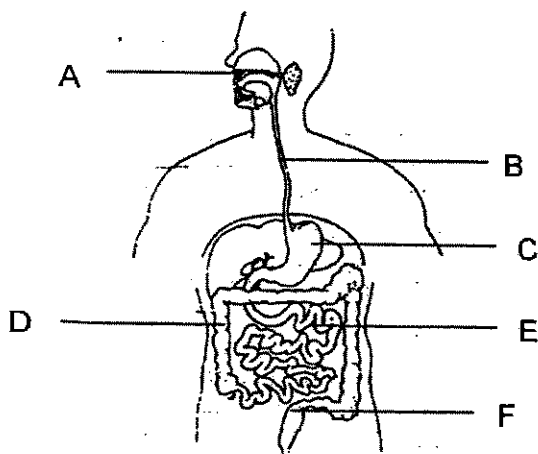
Which of the following statements are possible deductions that can be concluded from Connor's experiment?

- A: Heat can pass through Liquid X.
- B: Electricity can pass through Liquid X.
- C: The greater the number of batteries in the circuit, the hotter the nichrome wire.
- D: Electrical energy in the circuit is converted to heat energy and light energy in the nichrome wire.

- (1) A and C only
- (2) B and D only
- (3) B, C and D only
- (4) A, B, C and D

()

23. The diagram below shows the human digestive system.

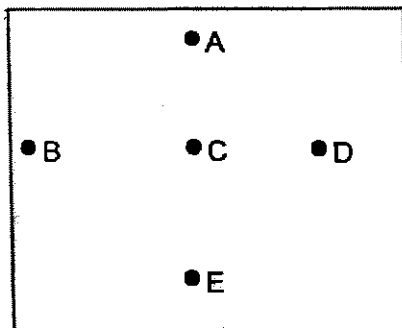


In which of the parts, A, B, C, D, E and F are digestive juices added?

- (1) A, D and E only
- (2) C, D and E only
- (3) A, C and E only
- (4) A, C and F only

()

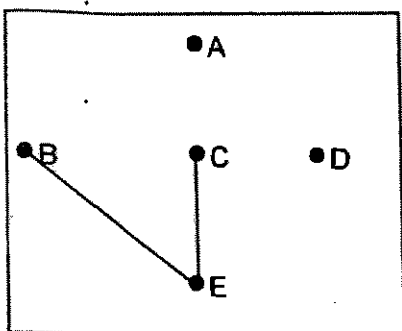
24. John wanted to find out how the wires behind the circuit card shown below were connected. He joined the two ends of a circuit tester to the different points of the card each time and recorded the results he observed in a table.



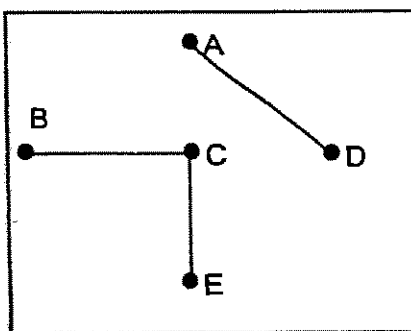
Points joined to the circuit tester	Did the bulb light up?
A and B	No
A and E	Yes
B and D	No
C and E	Yes

Based on the results of John's experiment, which of the following shows the correct arrangement of the wires behind the circuit card?

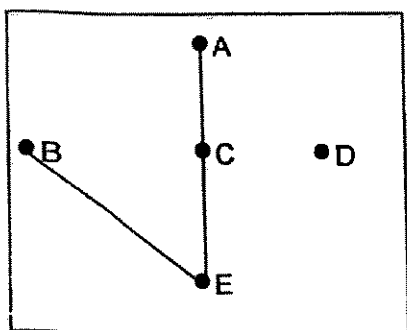
(*)



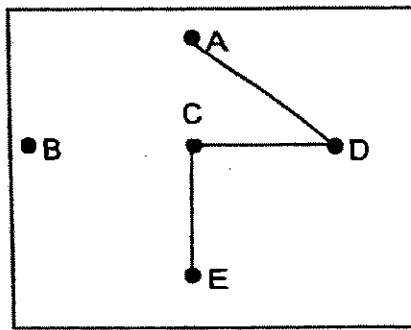
(X)



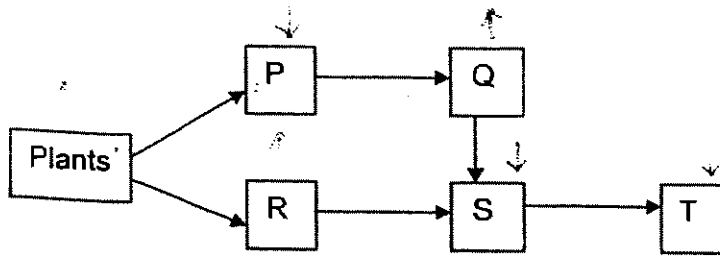
(3)



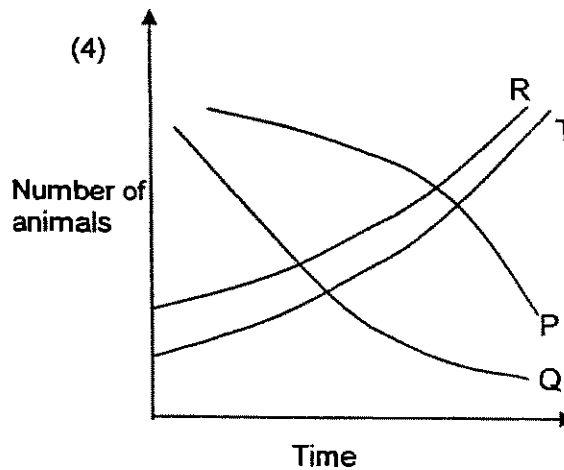
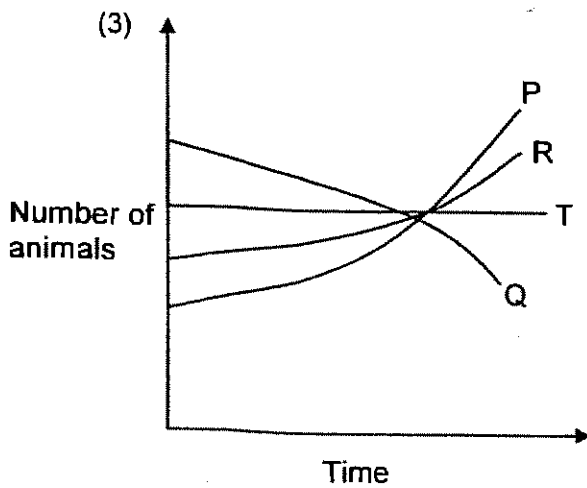
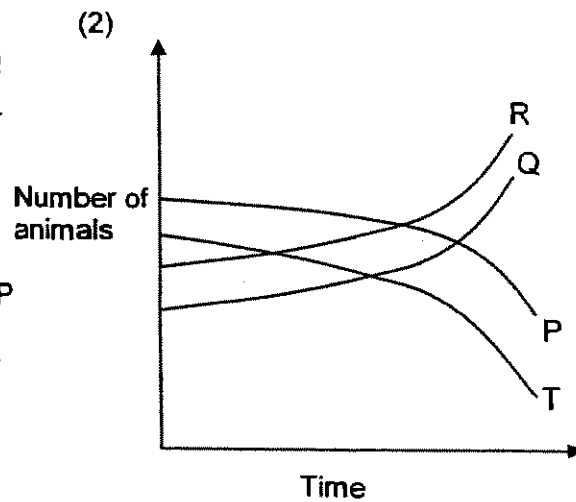
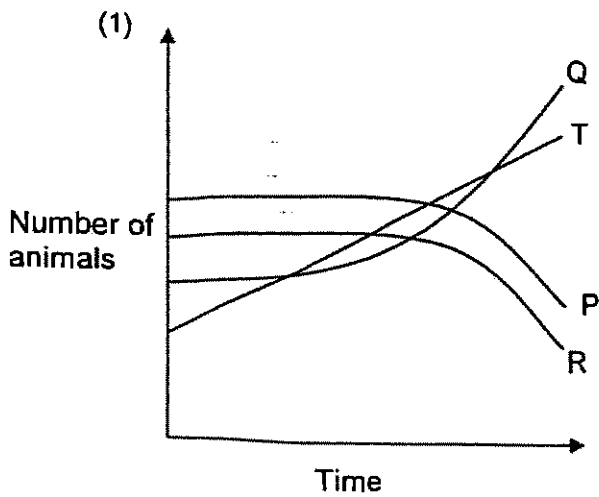
(4)



25. In the food web shown below, P, Q, R, S and T represent animals.

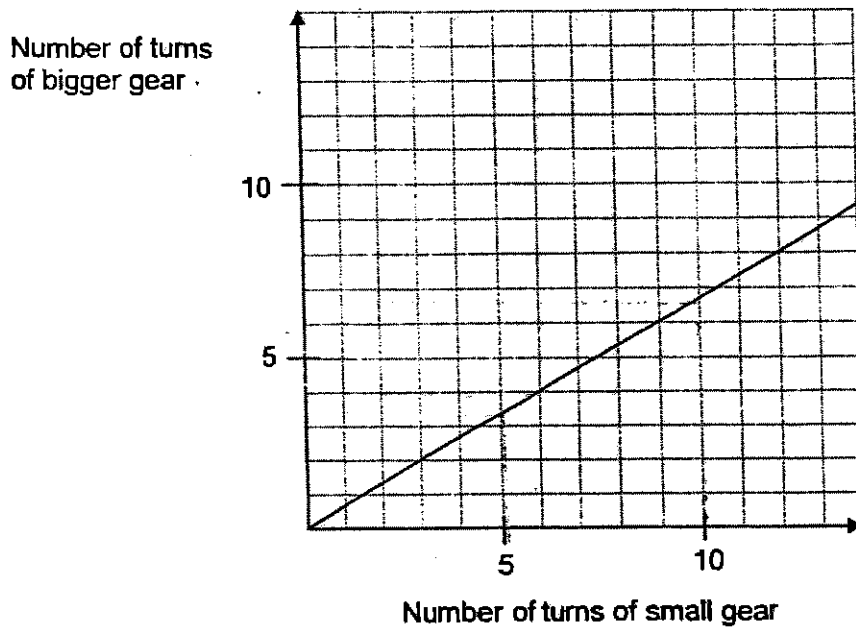


Which one of the following shows how the populations of P, Q, R and T are likely to be affected immediately if there is a decrease in the population of S in a habitat?

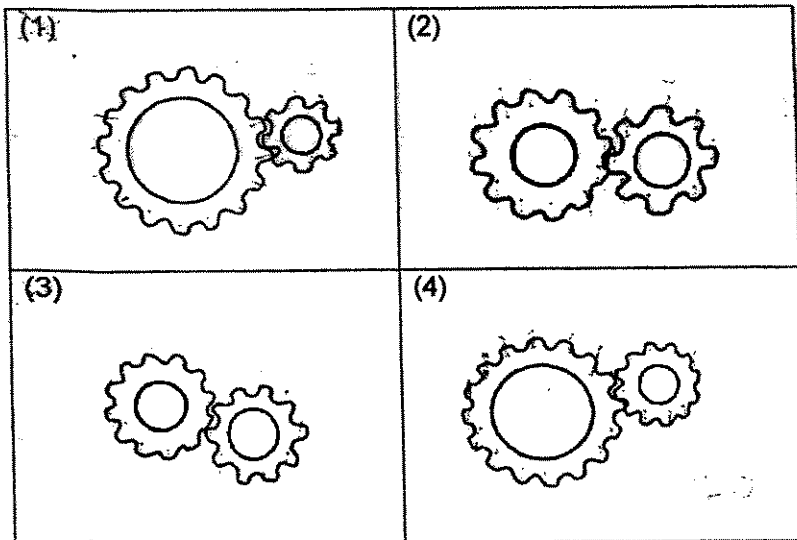


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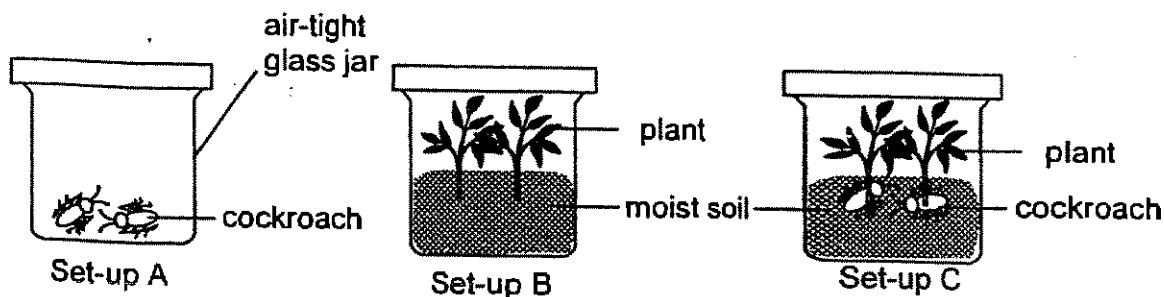
26. A gear system consists of a bigger gear and a smaller gear. The relationship between the number of turns of the bigger gear and the smaller gear is shown in the graph below.



Which one of the following figures shows this pair of gears?



27. 4 boys put some organisms into 3 identical containers as shown below. They left the set-ups in a sunny part of a field from 8 am to noon.

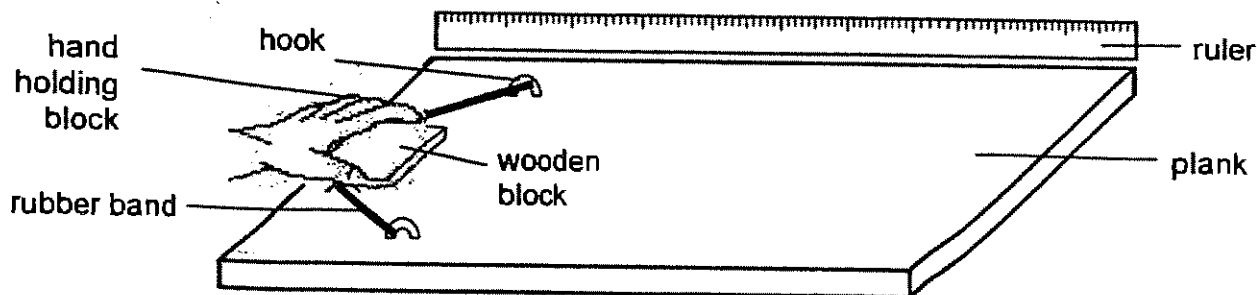


Ian and his friends made the following statements about the amount of oxygen in the set-ups.

- Ian : There was an equal amount of oxygen at noon in all the set-ups.
 Andrew : Set-up C had the most amount of oxygen at the end of the experiment.
 David : Set-up A had the least amount of oxygen at the end of the experiment.
 Collin : There was more oxygen in Set-up B than in C at the end of the experiment.

Which of them was correct?

- (1) Colin only
 (2) Andrew and David
 (3) Ian and Andrew
 (4) David and Collin
28. Jolene sets up the experiment as shown below. She covers the surface of the plank with sheets made of different materials and measures the distance that the block travels upon the different surfaces after it is released from the position as shown in the diagram.

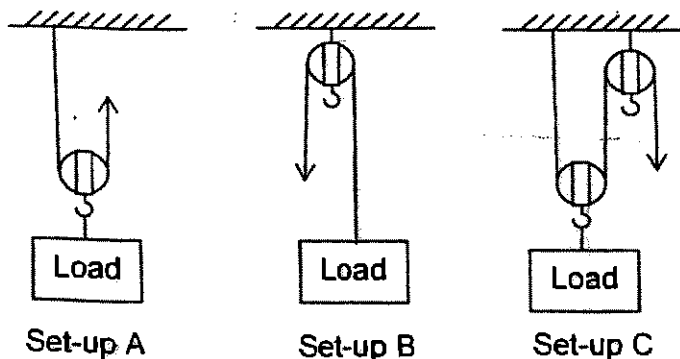


Sheets	Distance travelled (cm)		
	1 st try	2 nd try	3 rd try
A	27.8	29.8	28.2
B	11.2	12.3	9.3
C	19.8	18.2	17.3

Which of the following best represents the materials that sheets A, B and C are made of?

	A	B	C
(1)	flannel	plastic	sandpaper
(2)	plastic	sandpaper	flannel
(3)	sandpaper	flannel	plastic
(4)	flannel	sandpaper	plastic

29. Fatimah lifted Load P with one of the set-ups shown below and lifted Load Q using another of the set-ups. She recorded her results in a table shown below. However, Fatimah accidentally spilt some ink on her completed table as shown below.



Load	Distance moved by load (cm)	Distance moved by effort (cm)	Force needed (N)	Set-up used
P	15	30		
Q	20		120	

Given that Load P weighs 400g and Load Q weighs 120g, which of the following was her original table?

(1)

Load	Distance moved by load (cm)	Distance moved by effort (cm)	Force needed (N)	Set-up used
P	15	30	400	A
Q	20	20	120	B

(2)

Load	Distance moved by load (cm)	Distance moved by effort (cm)	Force needed (N)	Set-up used
P	15	30	200	C
Q	20	20	120	B

(3)

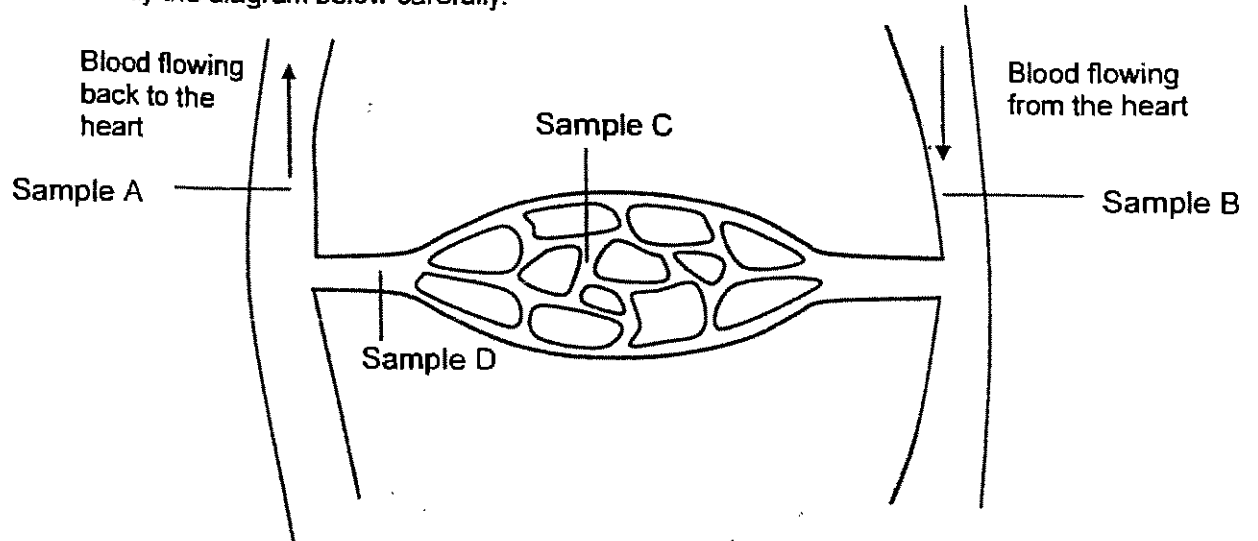
Load	Distance moved by load (cm)	Distance moved by effort (cm)	Force needed (N)	Set-up used
P	15	30	200	A
Q	20	40	120	B

(4)

Load	Distance moved by load (cm)	Distance moved by effort (cm)	Force needed (N)	Set-up used
P	15	30	200	B
Q	20	20	120	C

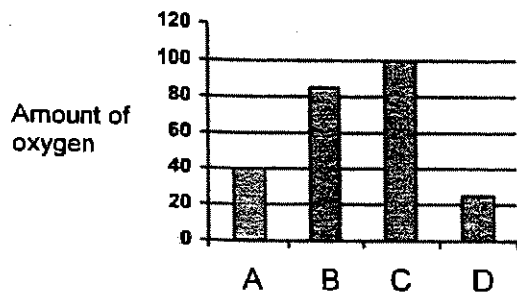
(. .)

30. Study the diagram below carefully.

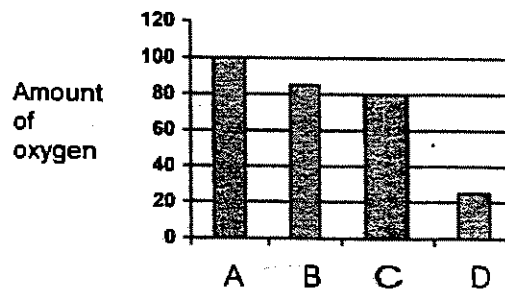


Blood samples A, B, C and D were taken from different blood vessels in the body. Which graph most appropriately shows the amount of oxygen in the blood samples?

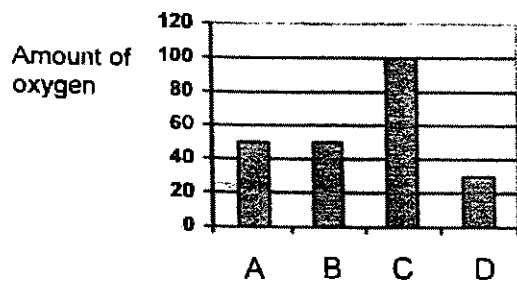
(1)



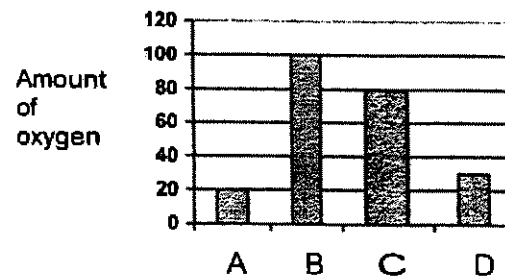
(2)



(3)



(4)



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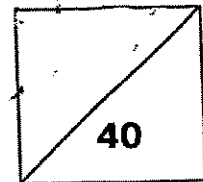
Index Number: -

PEI CHUN PUBLIC SCHOOL
PRELIMINARY EXAMINATION 1 – 2007
PRIMARY 6 (merged stream)
SCIENCE
BOOKLET B

16 questions

Marks:

40 marks



Total Time for Booklets A and B: 1h 45 min

Name : _____ ()

Class : Primary 6 ()

Date : 3 August 2007

Subject Teacher : _____

Parent's Signature: _____

INSTRUCTIONS TO CANDIDATES

Do not open this booklet until you are told to do so.

Follow all instructions carefully.

Write your answers in this booklet.

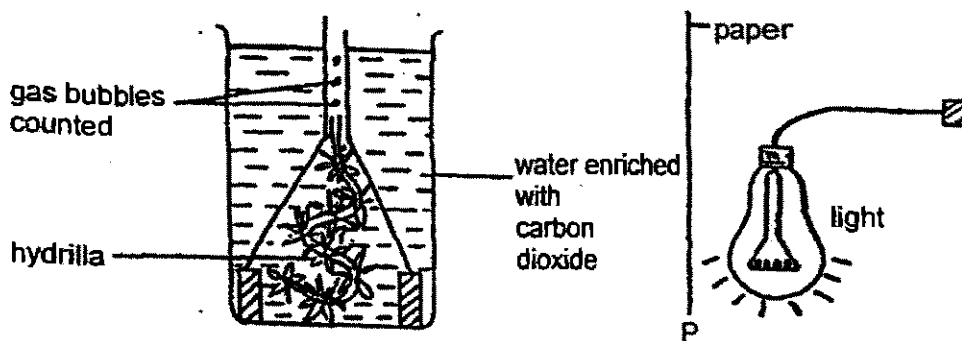
PART II

For questions 31 to 46, write your answers in this booklet.

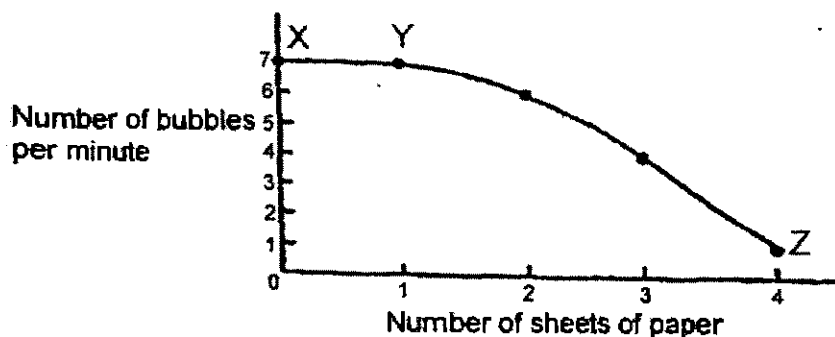
The number of marks available is shown in the brackets [] at the end of each question or part question.

(40 marks)

31. An experiment was set up using a hydrilla plant and an electric light bulb as shown below. Bubbles of oxygen produced by the plant in one minute were counted. Then, a very thin sheet of paper was placed at position P and the experiment was repeated. The experiment was repeated another three times. One more sheet of the thin paper was added at P each time.



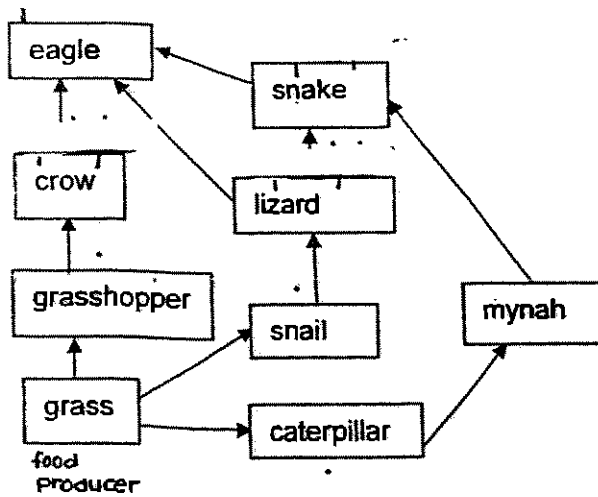
The results of the experiment were recorded as shown below.



- (a) What was the purpose of placing paper at P? [1]

- (b) Without removing the four sheets of paper, what can you do to increase the number of bubbles from Point Z? [1]

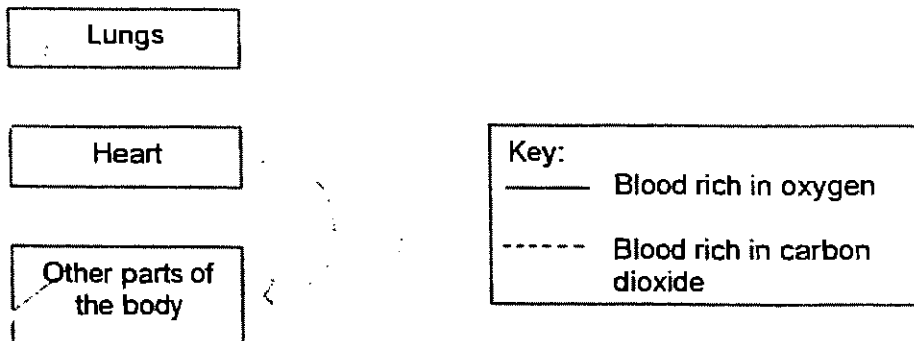
32. Study the food web shown below.



(a) How many complete food chains are there in this food web? [1]

(b) List all the organisms which are both a prey and a predator. [1]

33. A diagrammatic representation of the circulatory system is shown below.

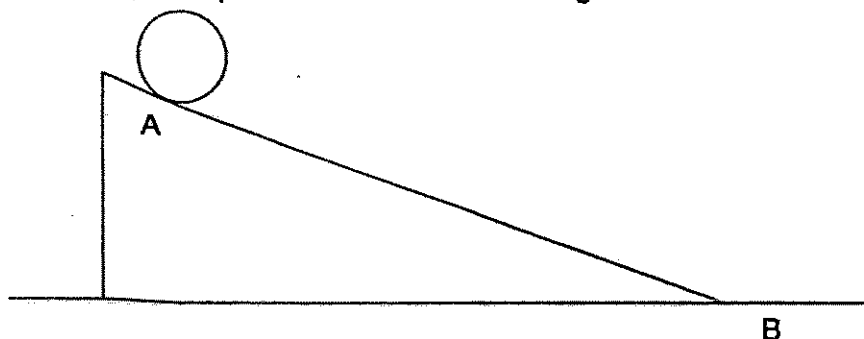


(a) Use the key provided. Draw lines with arrows to connect the heart and lungs. Your arrows must indicate the flow of blood in our circulatory system. [1]

(b) What is the difference between the blood entering the lungs and the blood leaving the lungs? [1]

(c) Why does our heart beat faster when we are exercising? [1½]

34. Grace set up an experiment as shown in the diagram below.



Grace covered the surface of the ramp entirely with each of the three different types of materials : plastic, sandpaper and wood. For each material, she released the ball in the same way at A and measured the time taken for the ball to travel to B on the ramp. She did this three times for each material.

She recorded her results in the table below.

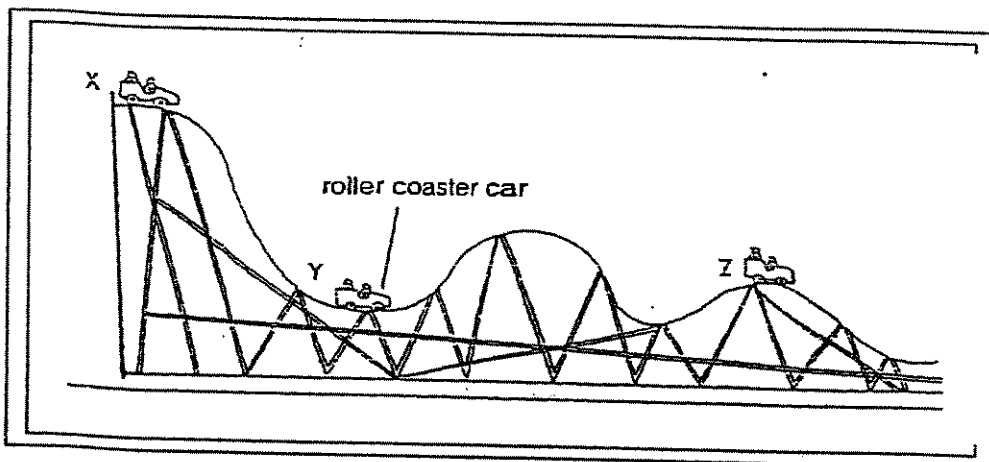
Material covering slope	Time taken for the ball to travel from A to B (s)			
	1 st try	2 nd try	3 rd try	Average
plastic	5	6	3	5
sandpaper	7	8	6	7
wood	6	7	5	6

(a) What are the possible aims of Grace's experiment? [1]

Aims	Tick
(a) To find the time taken for the ball to travel down the ramp	<input type="checkbox"/>
(b) To find out which material creates the most friction	<input type="checkbox"/>
(c) To find out how the materials used to cover the surface of the ramp would affect the time taken for the ball to travel from A to B	<input checked="" type="checkbox"/>
(d) To find out which material requires the most effort for the ball to roll down the ramp	<input type="checkbox"/>
(e) To find out which type of material, when used to cover the surface of the ramp, would allow the ball to travel down the ramp the fastest.	<input type="checkbox"/>

(b) Why did Grace perform the experiment three times for each type of material? [1]

35. A roller coaster car moves along the path as shown below.



(a) Will the amount of kinetic energy in the roller coaster car at Y be more or less if the slope surface is rougher? Provide a reason for your answer. [1]

(b) Write down the energy conversion that takes place when the car at the top of the roller coaster moves down from Point X to Point Y. [1]

Gravitational potential energy of the roller coaster

→

+

+

36. Felix wanted to find out the factors affecting the rate of evaporation of water. He had seven set-ups, P, Q, R, S, T, U and V, using containers of the same material. He conducted two different tests with three set-ups each time. The table below provides details on the set-ups that he used in his experiment.

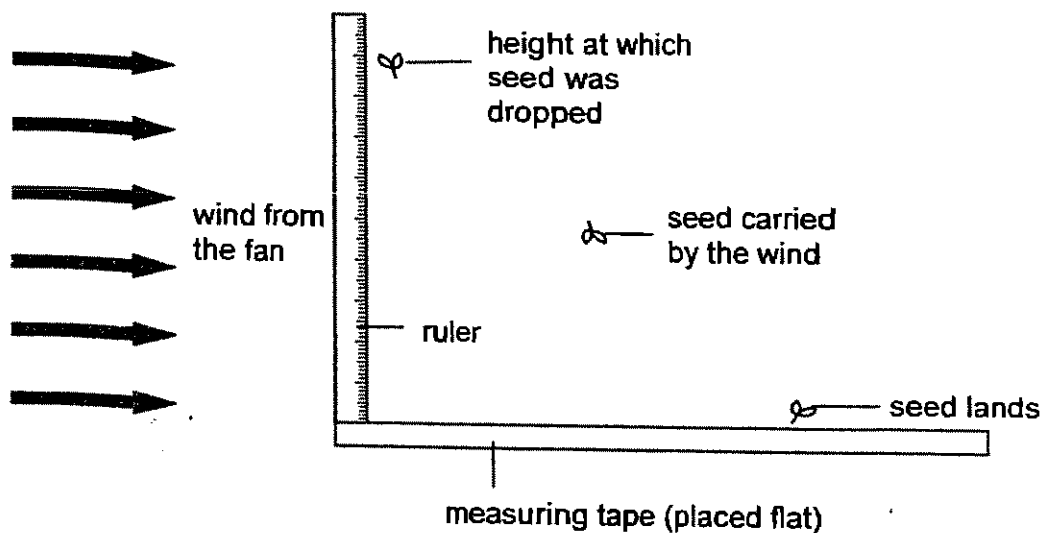
Set-Up	P	Q	R	S	T	U	V
Volume of water (ml)	400	200	400	200	200	400	200
Temperature of water ($^{\circ}\text{C}$)	30	55	30	35	60	30	70
Exposed surface area (cm^2)	100	150	150	150	100	200	150

- (a) What would be the aim of one of his tests if he had used set-ups P, R and U? [1]

- (b) If he wanted to find out whether the temperature of water affected the rate of its evaporation, which 3 set-ups could be used? [1]

- (c) What other variable should be kept constant when Felix conducted this experiment? [1]

37. Damien carried out the experiment as shown below with a wind dispersed seed. He dropped the wind dispersed seed from various heights in front of a fan and recorded the horizontal distance travelled by the seed in a table.

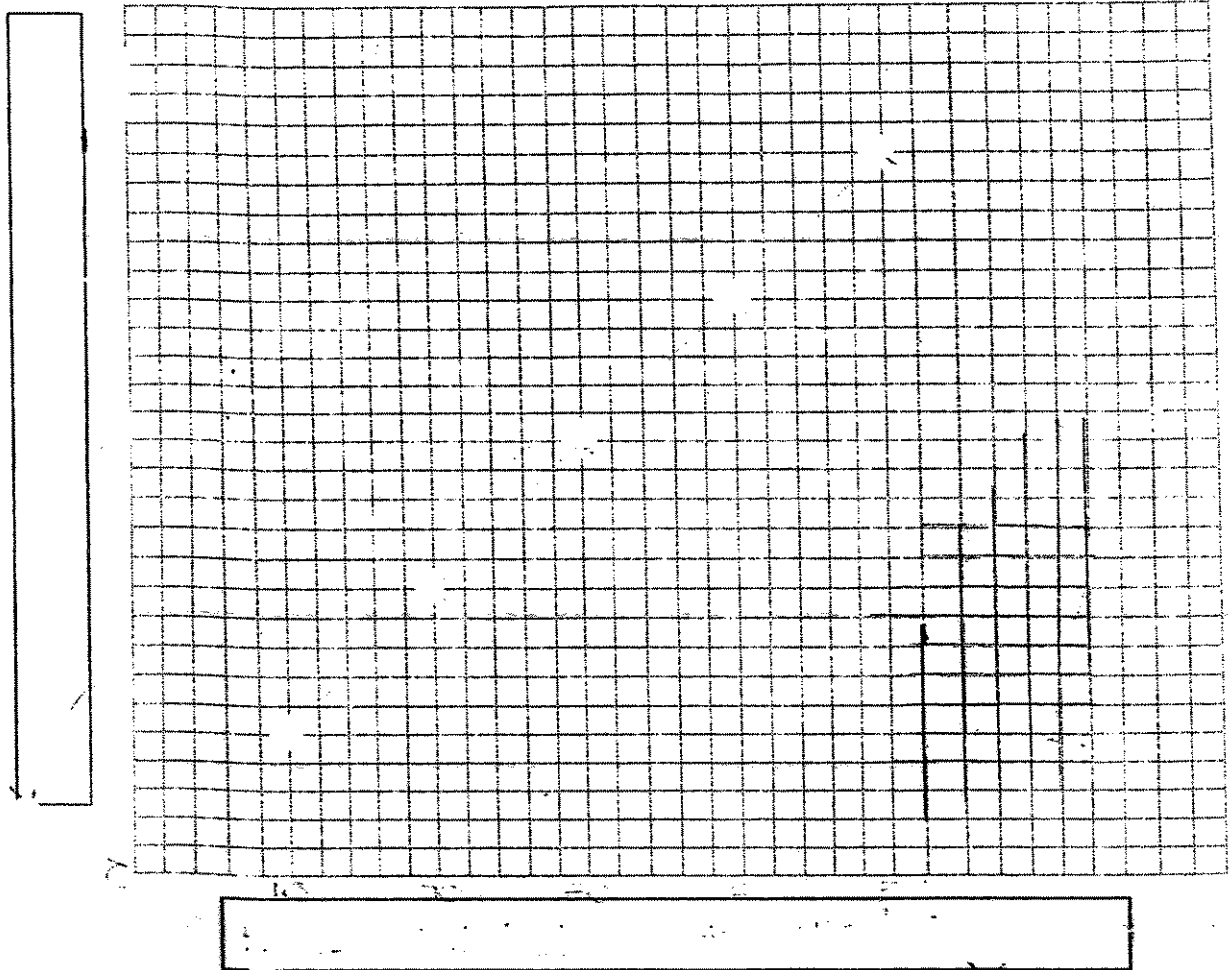


Height at which seed was dropped (cm)	Horizontal distance travelled by seed (cm)		
	1 st reading	2 nd reading	3 rd reading
5	7	12	11
10	24	19	17
15	27	29	34
20	41	43	36
25	49	54	47

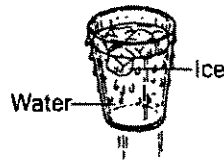
- (a) What pattern can Damien observe from this experiment?

[1]

- (b) Based on the results given in the table, plot a line graph of the height above the ground at which the seed was released against the average horizontal distance travelled by the seed. [2]

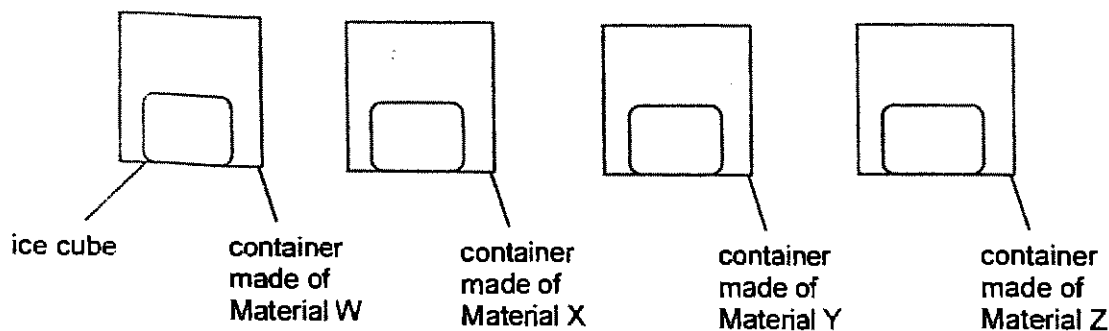


38. Cassandra left a glass of water with ice cubes in it on the dining table. After a few minutes, she returned and saw that the outside of the glass was wet.

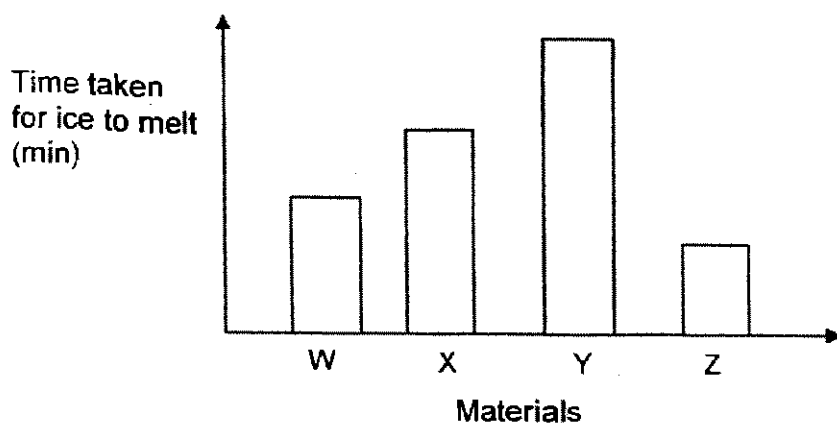


Explain what had caused the outside of the glass to be wet. [2]

39. An ice cube was placed and sealed in each of four containers made of different materials of equal thickness. The containers are identical in size.



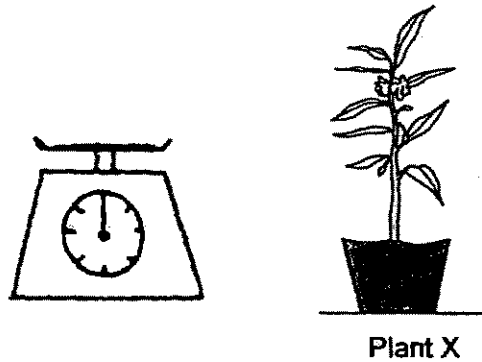
The graph below shows the time taken for the ice in each container to melt completely.



- (a) Based on the graph provided, which material is least suitable for making containers for keeping food warm? [1]

- (b) State a property of this material which makes it the least suitable for making containers for keeping food warm. Explain. [1½]

40. Joachim wishes to find out how much water Plant X loses over 24 hours through transpiration. He is given Plant X and a weighing scale as shown below.



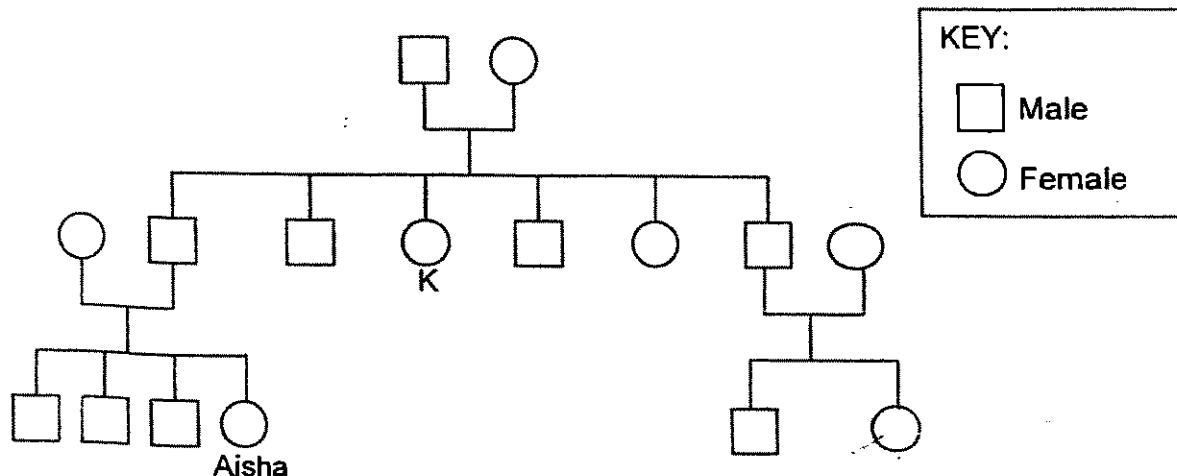
He would not be able to conduct a fair experiment with just the two items shown above.

- (a) What else would be needed for Joachim to conduct the experiment?
Why would he need this? [1]

- (b) What are the steps that Joachim could take to find out how much water Plant X loses in 24 hours? [1½]

Step 1 : _____

41. Aisha completed her family tree below before her cousin got married.

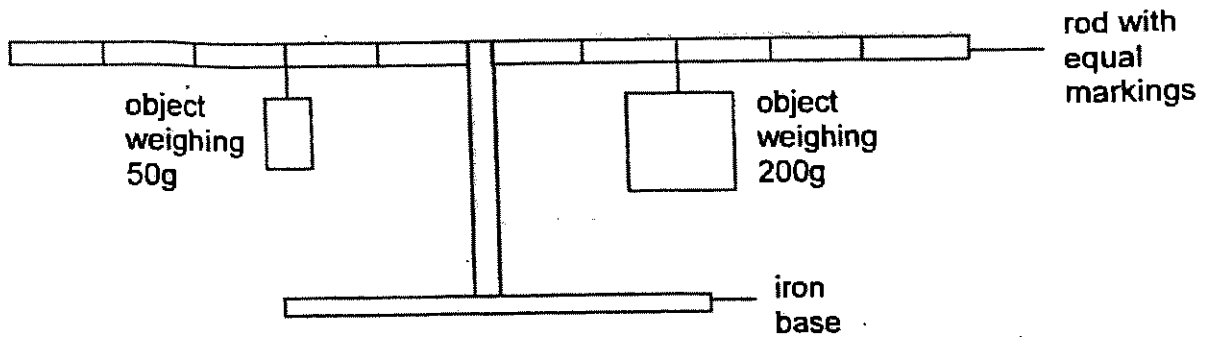


(a) Read the following statements. Decide whether they are true, false or not possible to tell. Put a tick (✓) in the appropriate boxes. [1½]

Statement	True	False	Not possible to tell
(i) Aisha has 3 uncles.		<input checked="" type="checkbox"/>	
(ii) Aisha has 3 brothers.		<input checked="" type="checkbox"/>	
(iii) Aisha is younger than her relative marked with a 'K'.			<input checked="" type="checkbox"/>

(b) Aisha's female cousin got married last year and recently became the mother of twin boys. Complete the family tree above to show the new additions to the family. [1]

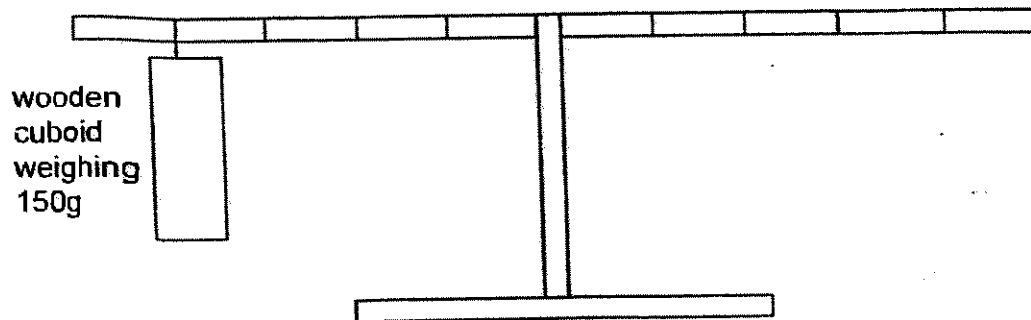
42. Mei Qing set up an experiment as shown below. She balanced the rod with an object weighing 50g on one end and an object weighing 200g on the other. The rod had equal markings on it.



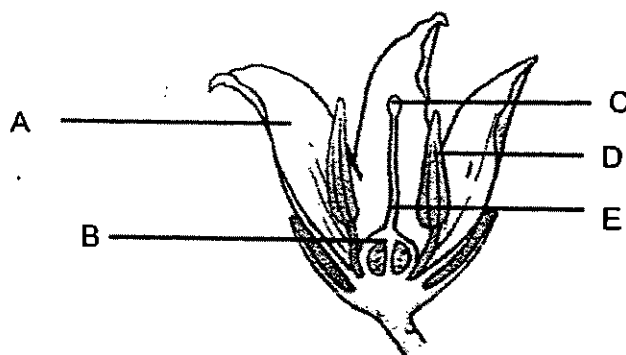
- (a) What is the object weighing 50g likely to be? [1]

- (b) Explain why the rod was balanced even though the objects were of different weights [1]

- (c) Mei Qing replaced the object weighing 50g with a wooden cuboid as shown below. Draw in where the object weighing 200g should be placed in order for the rod to be balanced. [1]



43. The diagram below shows the cross section of a flower.

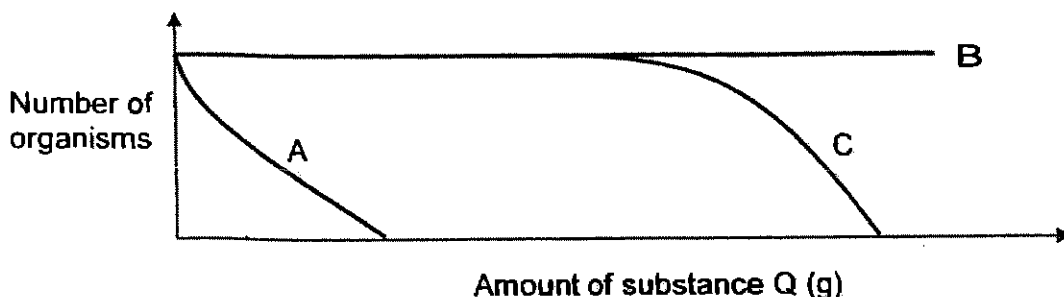


(a) The table below shows the functions of the different parts of the flower labelled A, B, C, D and E in the given diagram. Complete the table by writing in the correct letters, A, B, C, D and E next to each function. [2]

Function of the flower parts	Part
(i) Attracts insects	
(ii) Protects the ovules	
(iii) Contains pollen sacs	
(iv) Catches pollen grains	

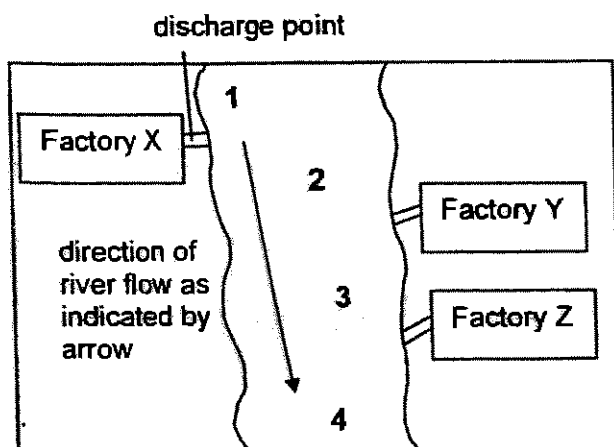
(b) What change would take place at B several days after the male cell has fused with the egg? [1]

44. Ming Hui wanted to find out if Q, a substance commonly disposed of by factories into rivers, affects organisms A, B and C. He prepared ten beakers, each containing 500 ml of clean river water and the same number of organisms A, B and C. He added different amounts of substance Q to each of the ten beakers. After a day, he counted the number of each type of organism still alive in the beakers. The graph below shows his results.



- (a) Which organism(s) was/were affected by substance Q? [1]

Ming Hui then took water samples from 4 points as numbered in the map below.



He counted the number of organisms, A, B and C, in each water sample and the results are shown in the table below.

	1	2	3	4
A	Many	Many	Few	None
B	Many	Many	Many	Many
C	Many	Many	Many	Few

- (b) Which factory, Y or Z gave out more of substance Q? Provide a reason for your answer. [1]

45. Birds which wade in water must have adaptations to survive in that kind of environment. They must have the adaptations to wade in the water and to pick food off the water with their beaks. Study the 3 diagrams below of wading birds.

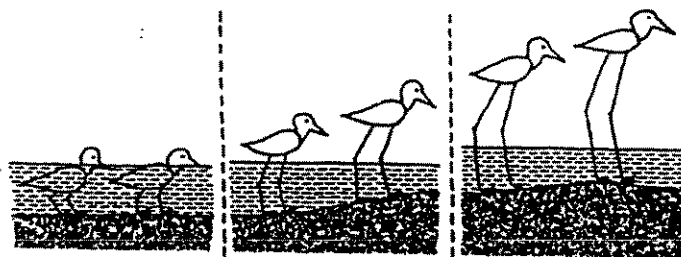
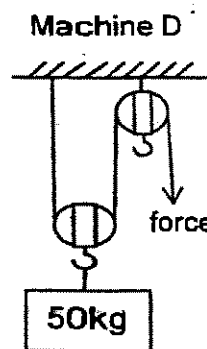
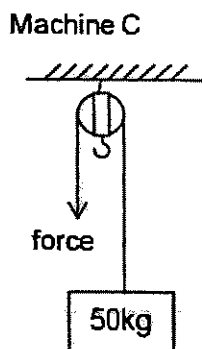
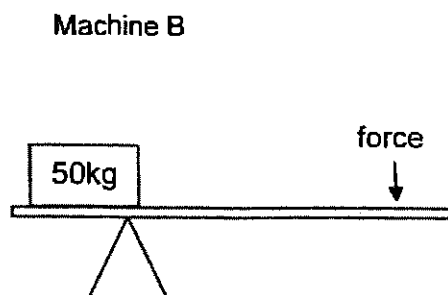
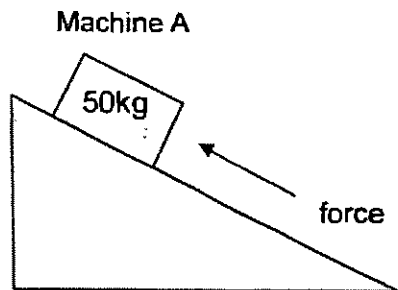


Diagram 1 Diagram 2 Diagram 3

- (a) Which diagram shows birds which are best suited to live in such an environment? [1]

- (b) Give reasons why the birds in the other 2 diagrams are not suited to live in that kind of environment. [2]

46.

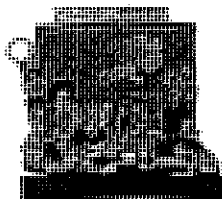


(a) Which one(s) of the four machines, A, B, C or D use(s) a force of less than 50kg to lift up the load shown? [1]

(b) What is the difference in using Machine A as compared to B, C and D? [1]

Set by:
Vetted by:

Ms Jane Geraldine
Ms Maria Chan
Mr Tan Keng Hock
Mr Lee Hong Khim



ExamSutra 考试圣经

Answer Sheets

Pei Chun / Pri 6 SA2/2007 Science

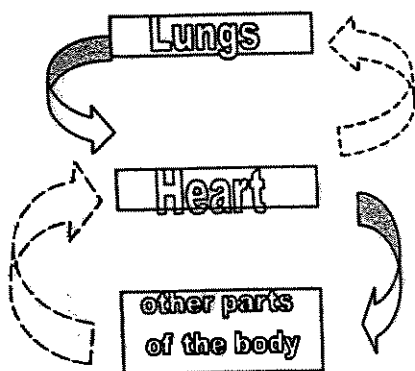
- | | | | | | |
|------|------|------|------|------|------|
| 1)3 | 2)1 | 3)3 | 4)1 | 5)2 | 6)4 |
| 7)1 | 8)3 | 9)4 | 10)1 | 11)3 | 12)1 |
| 13)1 | 14)4 | 15)1 | 16)1 | 17)3 | 18)4 |
| 19)3 | 20)1 | 21)2 | 22)2 | 23)3 | 24)4 |
| 25)2 | 26)2 | 27)4 | 28)2 | 29)2 | 30)4 |

31)a. *to reduce the amount of light getting to the plant.*

31)b. *Use a brighter light bulb.*

32)a. *Four food chains.* b. *Snake, lizard, crow and mynah*

33)a.



33)b. *The blood entering the lungs is rich in carbon dioxide while the blood leaving the lung is rich in oxygen.*

33)c. *To transport more digested food and oxygen to all parts of the body to produce more energy.*

Oxygen + digested food → (respiration) → energy + carbon dioxide + water.

34)a. *B.C.E*

34)b. *She wanted to get a more reliable result.*

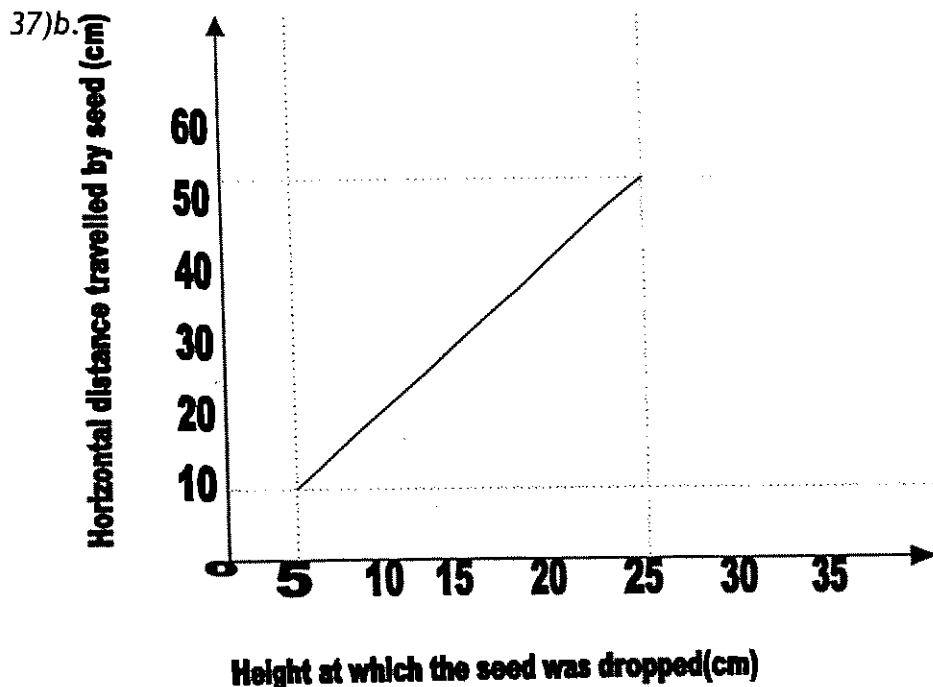
35)a. *It would be less. There would be more friction between the wheels of the roller coaster and the slope and more kinetic energy is used to overcome friction*

35)b. *Gravitational potential energy of the (RC) roller coaster → kinetic energy + Heat energy + Sound energy*

36)a. *To find out now the exposed surface area of water affects the rate of evaporation of water.* 36)b. *Set-up Q, S and V*

36)c. The place where containers are placed.

37)a. He can observe that the higher the height at which the seed was dropped, the further the horizontal distance travelled by the seed.



38) Warm water vapour from the surrounding air condenses on the cooler surface of the glass of water to form water droplets.

39)a. Material Z. 39)b. It is a good conductor of heat to pass through it the most easily in the fastest time.

40)a. It is to prevent heat loss from the soil.

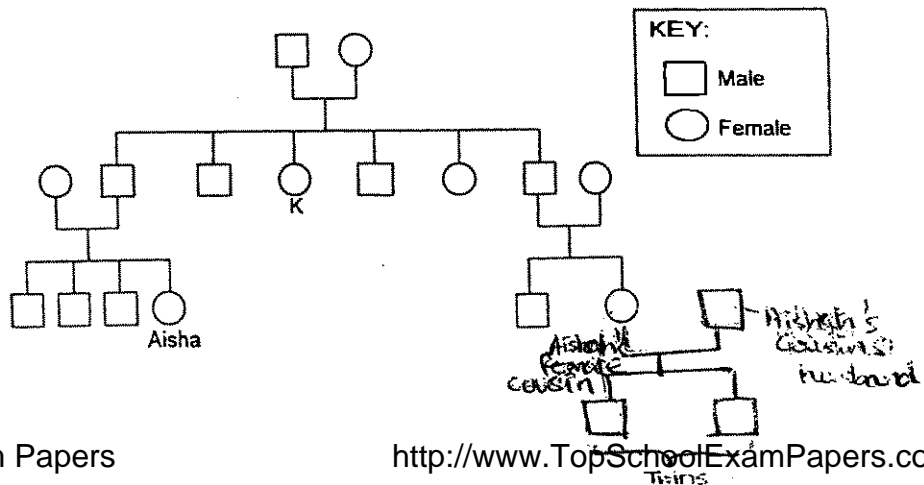
40)b. step 1: seal the pot of soil with a plastic bag.

Step 2: place the potted plant on a weighing scale and record its mass.

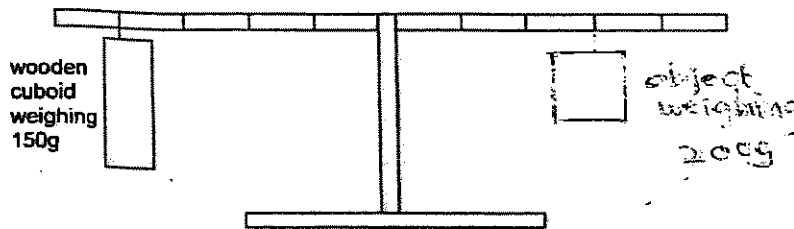
Step 3 : Read the mass at the end of the experiment. Compare the results.

41)a. i True ii. True iii. Not possible to tell.

41)b. 41. Aisha completed her family tree below before her cousin got married.



- 42)a. A magnet b. There were forces of attraction between the magnet and the iron base and this caused the magnet to be pulled downwards.



- 43)a. i. A ii. B iii. D iv. C b. It will swell and become a fruit.
- 44)a. A and C. b) Factory Z because the number of organism C which was affected by greater amounts of substance Q from point 3 to point 4.
- 45)a. Diagram 2 b. Birds in diagram 3 have legs that are too long and they cannot reach the food in the water with their beaks.
- 46)a. Machine A, B and D b. The load will move in the same direction as the effort for machine A but the load will move in an opposite direction

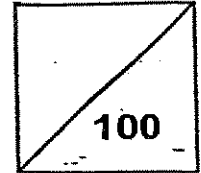
Index Number: -

PEI CHUN PUBLIC SCHOOL
PRELIMINARY EXAMINATION 2 – 2007
PRIMARY 6 (merged stream)
SCIENCE
BOOKLET A

30 questions

Marks:

60 marks



Total Time for Booklets A and B: 1h 45 min

Name _____ ()

Class : Primary 6 ()

Date : 13 September 2007

Subject Teacher : _____

Parent's Signature: _____

INSTRUCTIONS TO CANDIDATES

Do not open this booklet until you are told to do so.

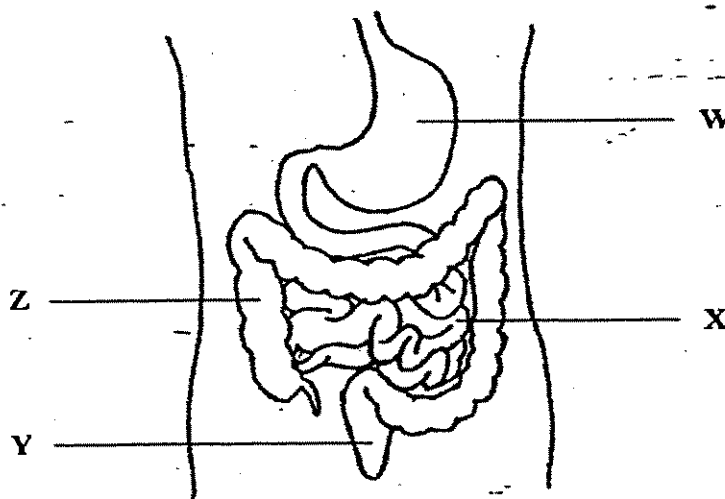
Follow all instructions carefully.

Answer all questions.

Part I (30 × 2 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. The diagram shows part of the human digestive system.



Study statements A to D carefully.

Statement A: Water is absorbed from the undigested food here.

Statement B: Digested food is absorbed into the blood stream here.

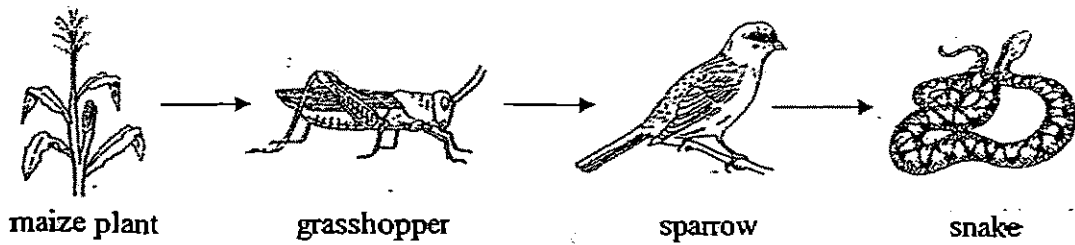
Statement C: Faeces is stored here before being excreted out of the body.

Statement D: Digestive juices are added so that food is further broken down here.

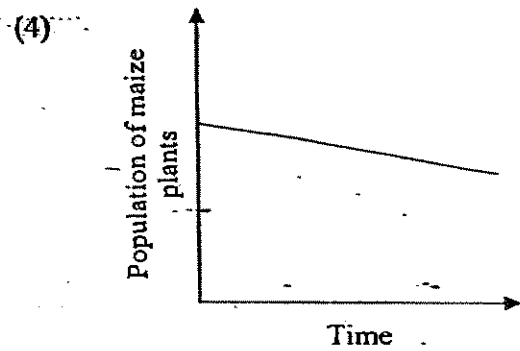
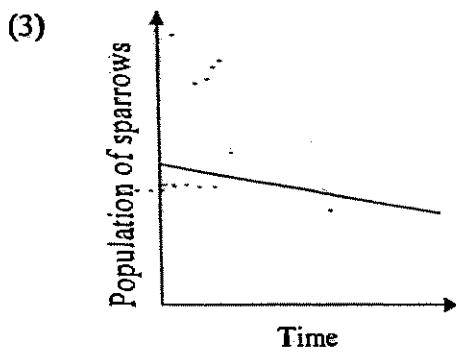
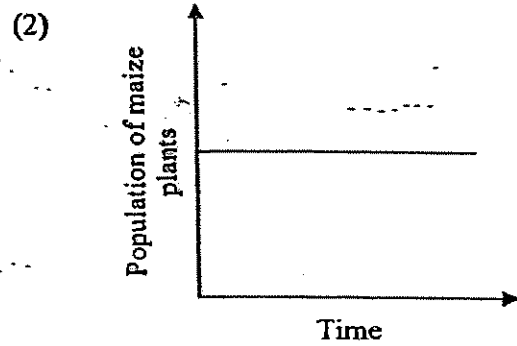
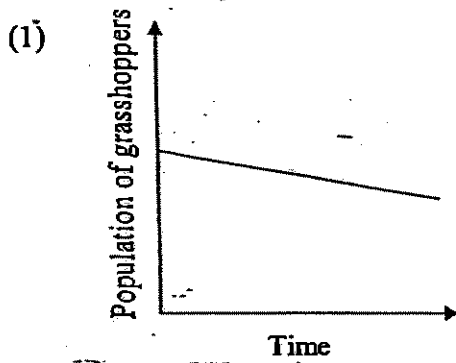
Which one of the following correctly matches the statements to the labelled parts W, X, Y and Z?

	Statement A	Statement B	Statement C	Statement D
(1)	X	Y	W	Z
(2)	X	Z	Y	W
(3)	Y	W	Z	X
(4)	Z	X	Y	W

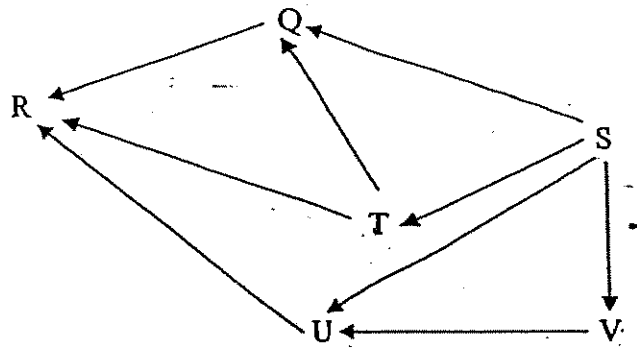
2. Study the food chain below.



If there is a decrease in the population of snakes, which of the following graphs shows what will likely happen?



3. Study the food web below.

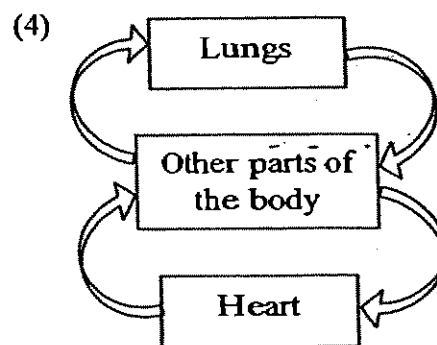
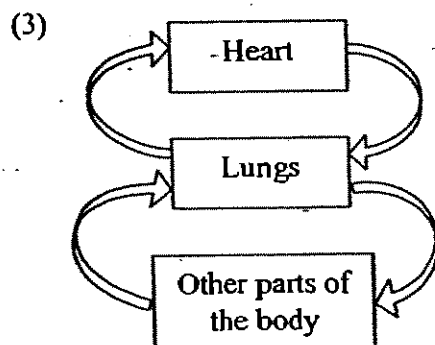
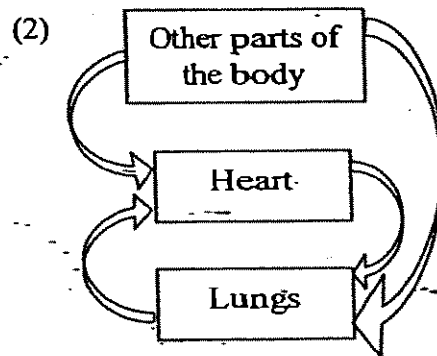
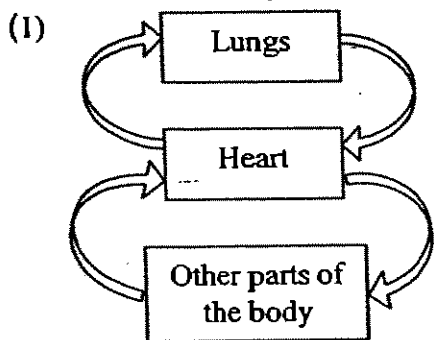


Based on the food web, which of the following statements are definitely true?

- A: Organism U is an omnivore.
- B: Organism Q eats plants only.
- C: There are 3 food consumers in the food web.
- D: When S is wiped out, population of R will also be wiped out.

- (1) A only
- (2) A and D only
- (3) B and C only
- (4) B, C and D only

4. Which one of the following diagrams correctly shows the flow of blood in our circulatory system?



5. Sumei wanted to find out how the amount of light affects the rate of photosynthesis of a plant. The table below shows 8 different set-ups for her experiment.

Set-up	Location	Amount of fertiliser used (g)	Type of soil
G	on a window ledge	5	loamy soil
H	in a house	5	garden soil
I	in an open field	10	loamy soil
J	on a window ledge	5	garden soil
K	in a house	10	loamy soil
L	on a window ledge	10	garden soil
M	in a house	10	loamy soil
N	in an open field	5	garden soil

Which 3 set-ups should she use for her experiment to be a fair one?

- (1) G, I and K
- (2) H, J and N
- (3) H, K and M
- (4) I, K and L

()

6. The plants in the table below are grouped according to the plant parts where starch is stored.

Group E	Group F	Group G	Group H
barley	potato	yam	papaya
maize	turnip	ginger	banana
red beans	carrot	sweet potato	cucumber
groundnut	radish	water chestnut	strawberry

Which groups of plants have been grouped wrongly?

- (1) E and F only
- (2) F and G only
- (3) E and H only
- (4) G and H only

()

9. Mr. and Mrs. Smith have four children. One of the children is adopted. The table below shows certain characteristics of the Smith family.

	Dimples	Hitchhiker's thumb	Short hair	Double eyelids
Mr. Smith		✓	✓	✓
Mrs. Smith	✓	-	✓	✓
Alan	✓	✓	✓	✓
Brian		✓	✓	✓
Cindy	✓			✓
Diana		✓	✓	

Which of the children is most likely to be adopted?

- (1) Alan
- (2) Brian
- (3) Cindy
- (4) Diana

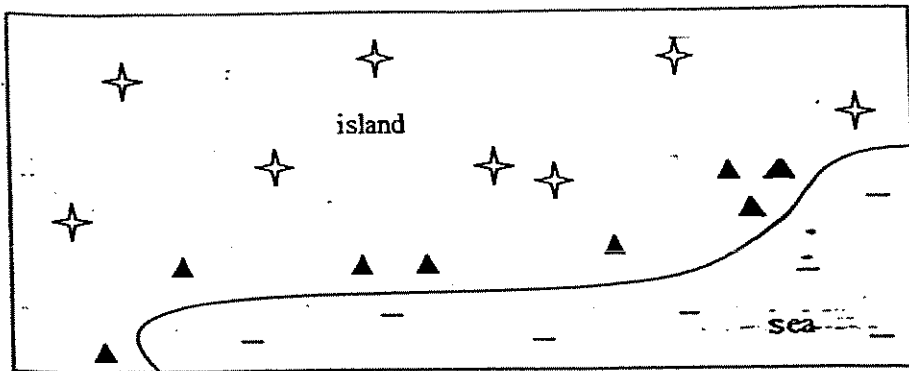
10. Mala wants to find out if the leaf she has picked contains starch. She carries out the following steps:

- Step A: Place the leaf in a beaker of boiling water.
 Step B: Remove the leaf and place it in a beaker of warm alcohol.
 Step C: Wash the leaf in warm water.
 Step D: Put a drop of iodine on the leaf.

What is the purpose of each step of the experiment?

	Step A	Step B	Step C	Step D
(1)	kill the leaf	remove the chlorophyll	soften the leaf	test for presence of starch
(2)	soften the leaf	remove the chlorophyll	test for presence of starch	kill the leaf
(3)	kill the leaf	soften the leaf	remove the chlorophyll	test for presence of starch
(4)	soften the leaf	kill the leaf	remove the chlorophyll	test for presence of starch

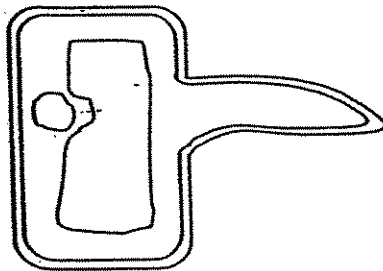
11. The diagram shows part of an island where two types of plants (✦, ▲) are growing.



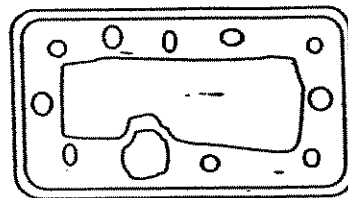
How are the fruits or seeds of each type of plant most likely dispersed?

	▲	✦
(1)	water	wind
(2)	wind	animals
(3)	animals	splitting action
(4)	water	splitting action

12. The diagrams below show two types of cells, G and H.



G



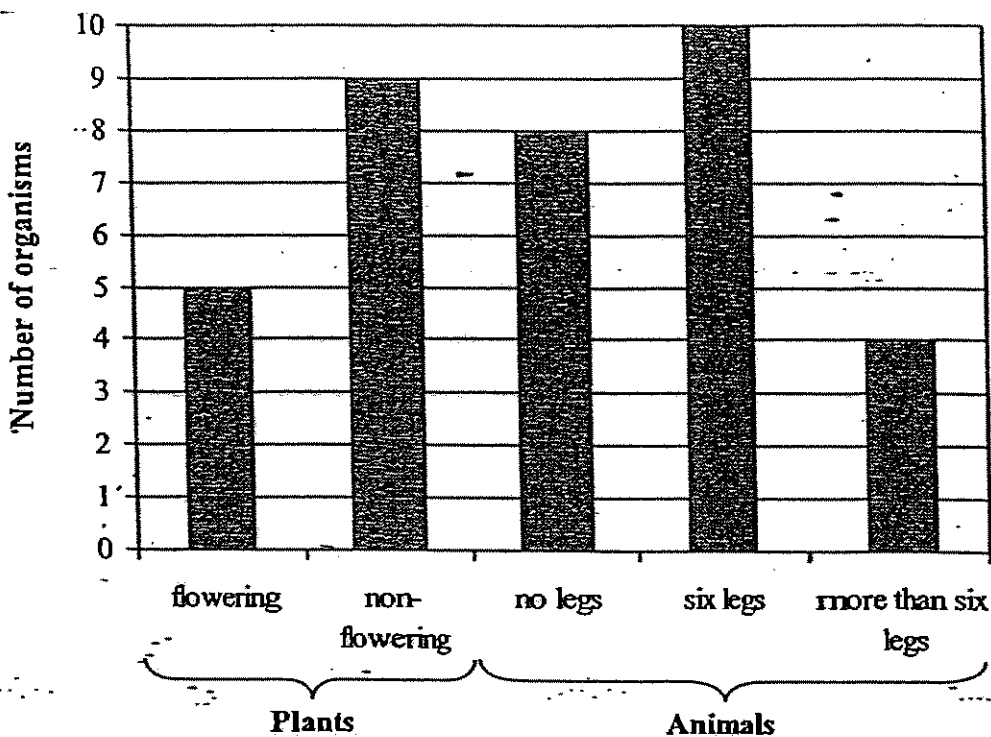
H

From which part of the plant are these two cells taken from?

	G	H
(1)	stem	flower
(2)	leaf	fruit
(3)	root	leaf
(4)	fruit	stem

garden

13. A group of pupils counted the plants and animals found in a rotting log community. The results are shown below.



Which of the following statements about the plants and animals in the rotting log community are definitely correct?

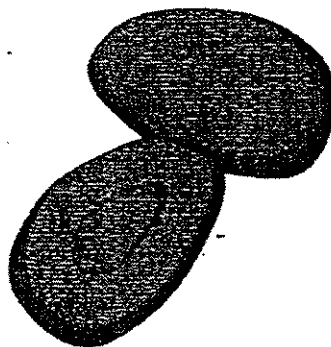
- A: There are ten insects.
- B: The organisms live in the same habitat.
- C: There is one population of flowering plants.
- D: There are at least five populations of plants and animals.

- (1) A and B only
- (2) C and D only
- (3) A, B and D only
- (4) All of the above

14. The classification key below is used to classify fruits.

1)	Fruit with many seeds -----	Go to 2
	Fruit with only one or two seeds -----	Go to 6
2)	Fruit with seeds on the outside -----	Aggregate fruit
	Fruit with seeds on the inside -----	Go to 3
3)	Fruit with spine-like projections on skin -----	Multiple fruit
	Fruit with relatively smooth skin -----	Go to 4
4)	Fruit soft with seeds inside a central paper core ---	Pome
	Seeds not in core -----	Go to 5
5)	Seeds in a pod -----	Legume
	Seeds not in a pod -----	Berry
6)	Fruit with wings for seeds -----	Samara
	Fruit with no wings -----	Go to 7
7)	Soft fruit with single seed in centre -----	Drupe
	Dry fruit -----	Go to 8
8)	Thick hard shell around seed -----	Nut
	Very thin, papery fruit so that fruit looks like seed	Achene

Study the diagram below.



Using the classification key, how would the fruit be classified?

- (1) multiple fruit
- (2) achene
- (3) samara
- (4) drupe

()

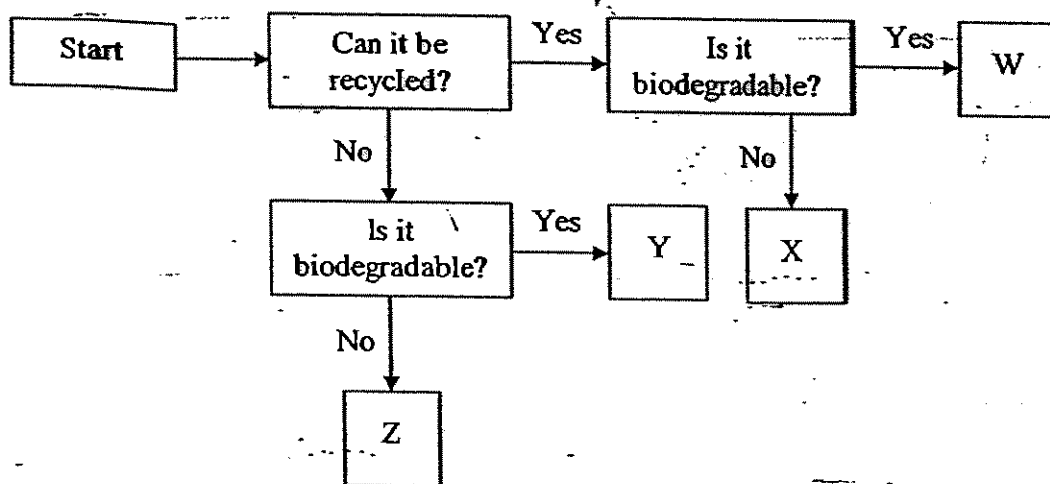
15. An experiment was carried out in a lab on 4 types of weeds, W, X, Y and Z. At the beginning of the experiment, 30 of each type of weeds were treated with weed killer while another 30 of each type were left untreated. The table below shows the number of weeds found at the beginning and at the end of the experiment.

Weed	Not treated with weed killer		Treated with weed killer	
	Beginning of experiment	End of experiment	Beginning of experiment	End of experiment
W	30	26	30	25
X	30	40	30	45
Y	30	40	30	30
Z	30	50	30	35

Which weed was best controlled by the weed killer?

- (1) W (2) X
 (3) Y (4) Z ()

16. Study the flow chart below. W, X, Y and Z represent 4 materials.

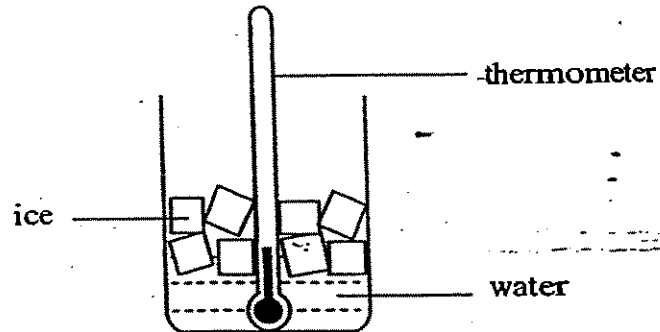


Which of the following could W, X, Y and Z be?

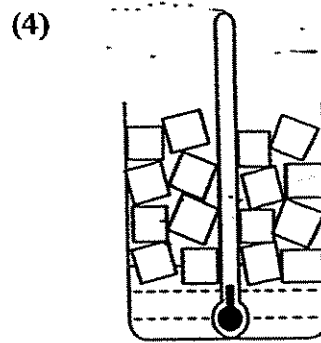
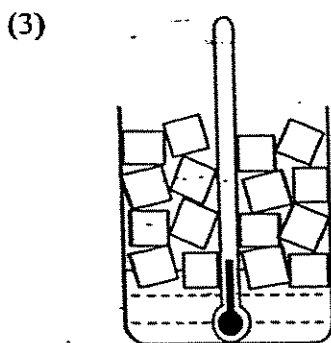
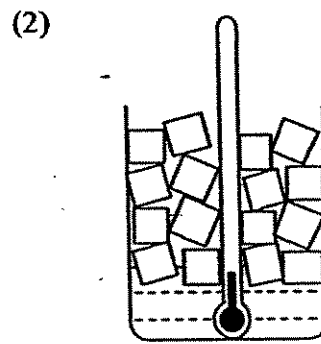
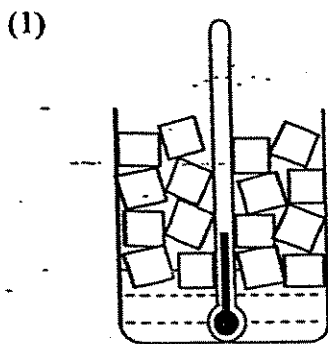
	W	X	Y	Z
(1)	waste food	cardboard box	styrofoam cup	glass bottle
(2)	glass bottle	styrofoam cup	cardboard box	waste food
(3)	cardboard box	glass bottle	waste food	styrofoam cup
(4)	styrofoam cup	waste food	glass bottle	cardboard box

()

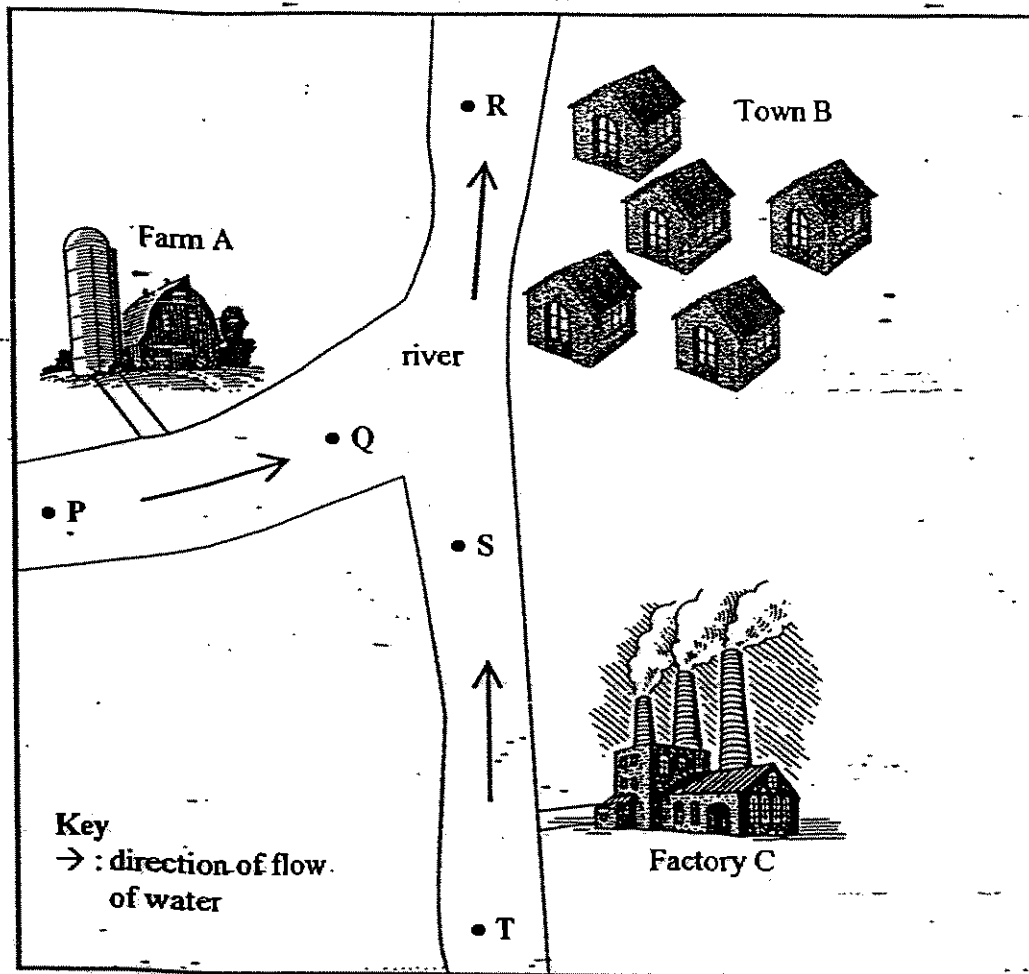
17. Alan added some ice cubes into a beaker of water. A while later, he measured the temperature of the water with a thermometer and found that it was 0°C , as shown in the diagram below.



Alan added more ice into the beaker. Five minutes later, he measured the temperature of the water again. Which diagram below correctly shows the reading on the thermometer?



18. Study the map below.

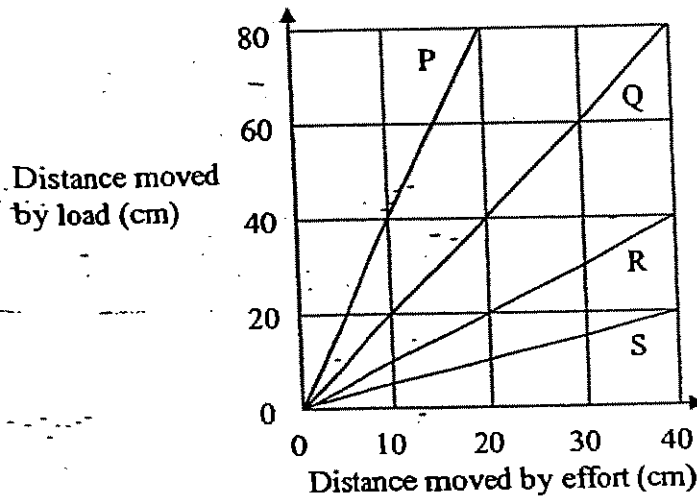
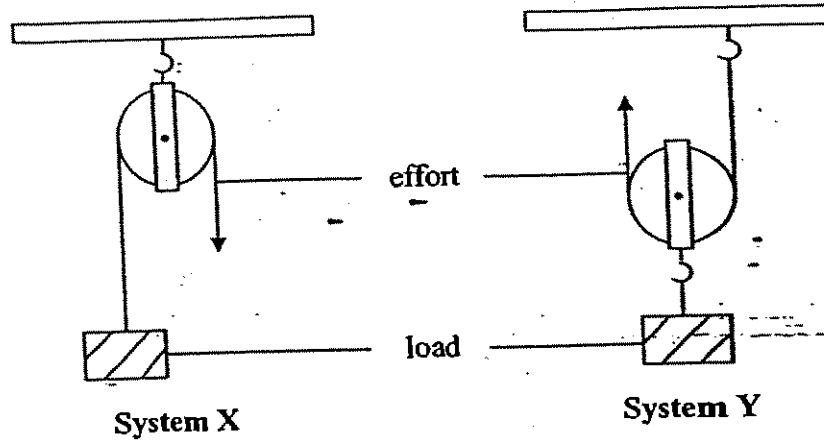


The residents at Town B complained that the water in the river has become dirty and smelly and they could no longer bathe or wash their clothes in it. The authorities wanted to find out how much of the pollution in the river was caused directly by Farm A. At which 2 places should they collect samples of water from?

- (1) P and R
- (2) S and T
- (3) S and R
- (4) P and Q

()

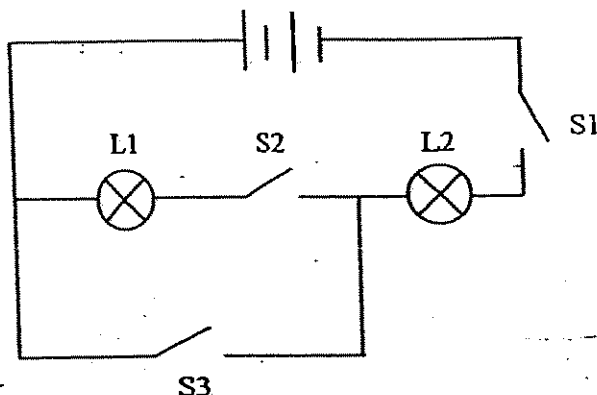
19. Study the diagrams below carefully.



Which of the graphs represent the relationship between the distance moved by the effort and that moved by the load of System X and System Y?

	System X	System Y
(1)	R	S
(2)	R	P
(3)	Q	P
(4)	Q	R

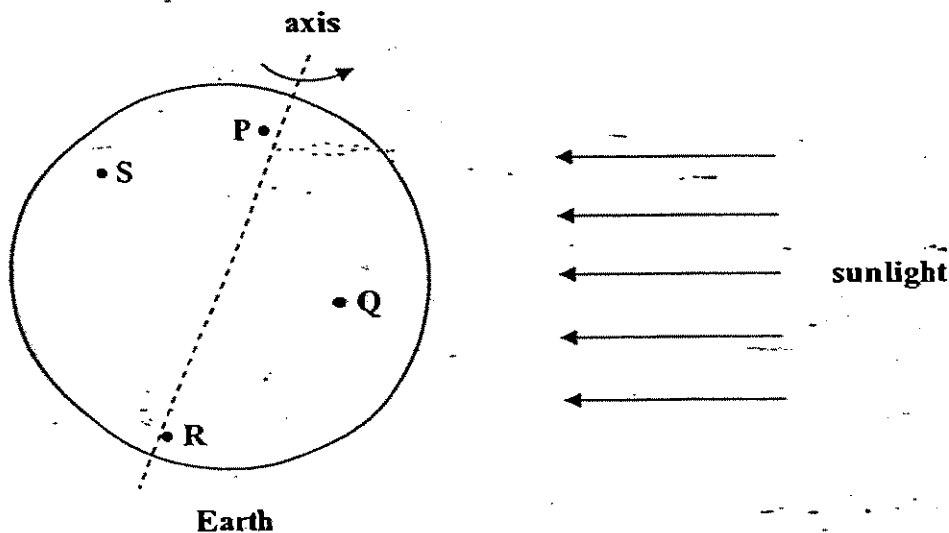
20. Leha set up a circuit using two batteries, two bulbs, L1 and L2, and three switches, S1, S2 and S3.



Which of the following is correct?

	S1	S2	S3	L1	L2
(1)	open	closed	open	lighted up	not lighted up
(2)	closed	open	closed	not lighted up	lighted up
(3)	open	open	closed	not lighted up	lighted up
(4)	closed	closed	open	lighted up	not lighted up

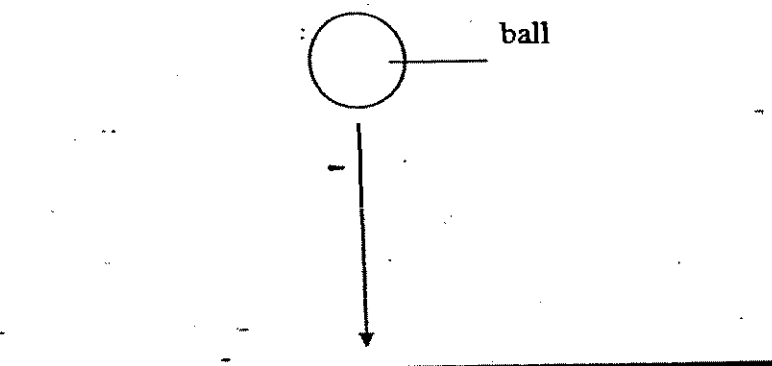
21. Study the diagram below.



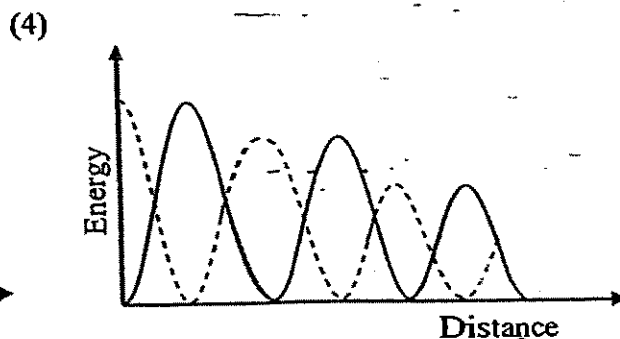
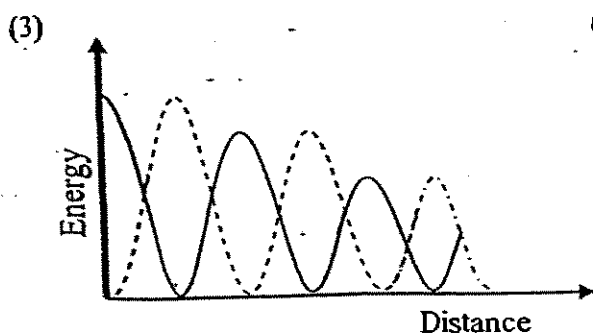
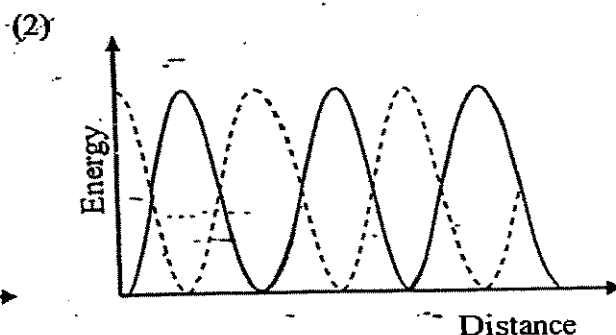
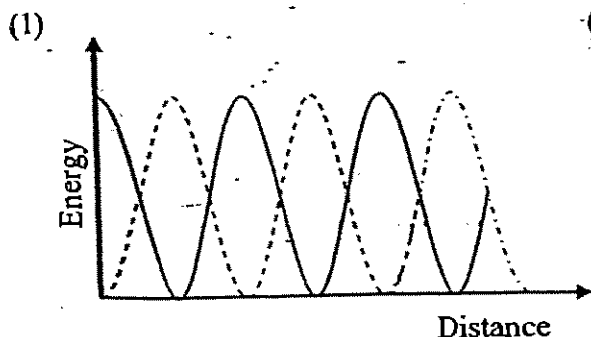
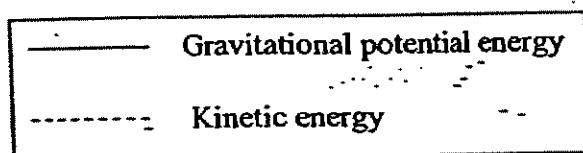
24 hours later, which places on Earth would be experiencing daytime?

- (1) P and Q only (2) P and S only
 (3) Q and R only (4) R and S only ()

22. Sandy dropped a ball from a certain height and allowed the ball to bounce continuously.

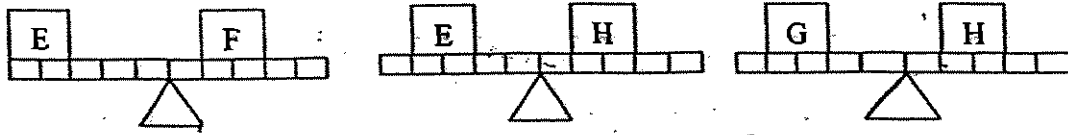


Which one of the following graphs correctly shows the relationship between the gravitational potential energy and kinetic energy of the ball from the moment the ball was dropped?

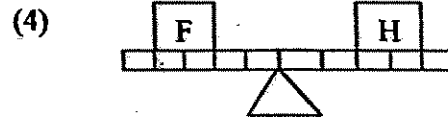
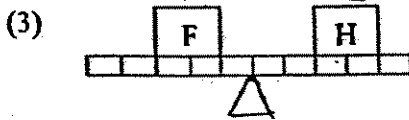
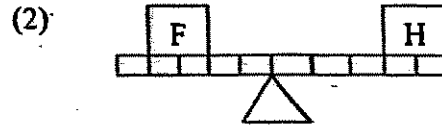
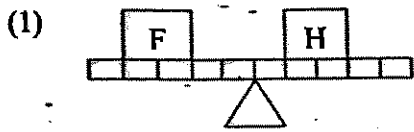


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23. 4 different loads, E, F, G and H, are balanced using lever systems as shown below.

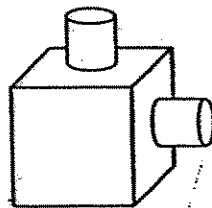


Which of the following shows the correct positions of load F and H when they are in balance?

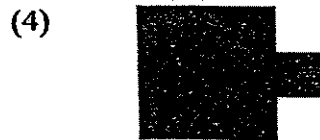
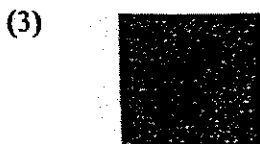
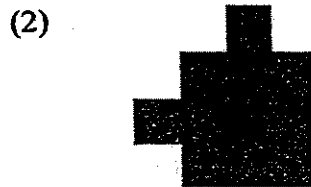


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24. Study the object below.

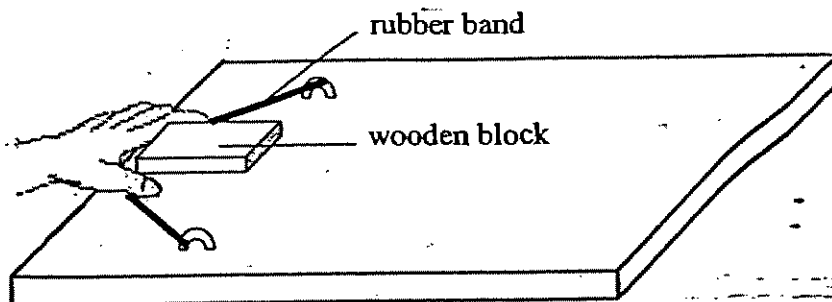


Which one of the following shadows cannot be formed by the object above?



()

25. Helen carried out an experiment to test the friction between a wooden block and four different surfaces as shown below.



She recorded the results in the table below.

Type of surface	Distance moved by the block (cm)		
	1 st try	2 nd try	3 rd try
W	62	60	61
X	61	65	66
Y	80	75	79
Z	75	73	68

Arrange the four surfaces in ascending order from the smoothest to the roughest.

- (1) Y, Z, X, W (2) W, Y, X, Z
 (3) Y, W, Z, X (4) W, X, Z, Y

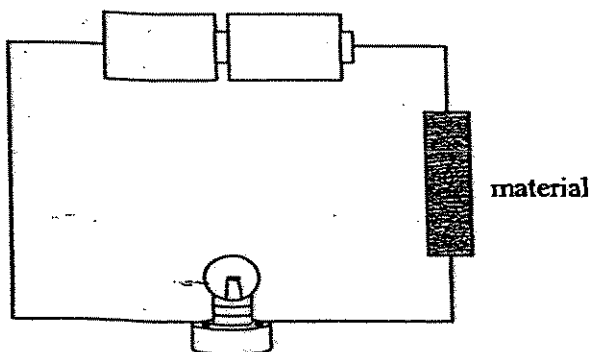
26. Four covered mugs made from different materials, J, K, L and M, were used to contain hot coffee. The warmth of the coffee in each mug was then tested at 10-minute intervals. The observations were recorded in the table below.

Material	At the start	10 min later	20 min later	30 min later
J	Hot	Hot	Warm	Cold
K	Hot	Hot	Hot	Warm
L	Hot	Warm	Cold	Cold
M	Hot	Warm	Warm	Cold

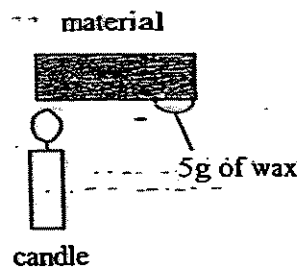
Which material is the best conductor of heat?

- (1) J (2) K
 (3) L (4) M ()

27. – Leila conducted two experiments with material A in set-up 1 and set-up 2. Then she repeated the experiment using materials B, C and D. Study the two set-ups below carefully.



Set-up 1



Set-up 2

She recorded her findings in the table below.

Material	Set-up 1	Set-up 2
	Brightness of the bulb	Time taken for wax to melt
A	dim	12 min
B	very bright	2 min
C	bright	3 min
D	no light	18 min

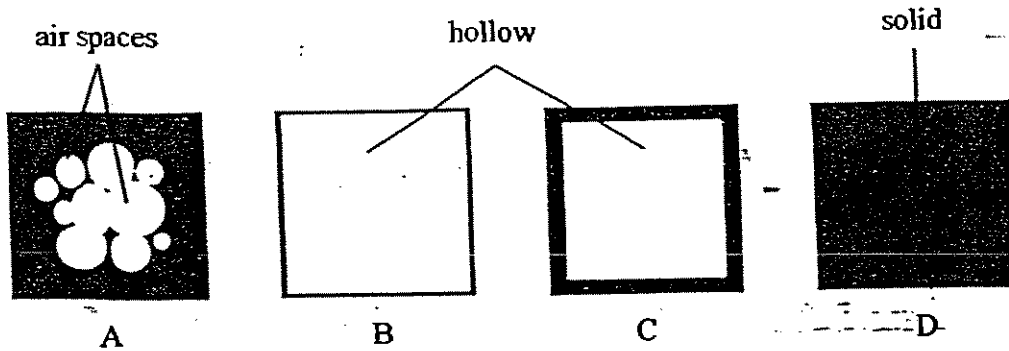
Which of the following was the best aim of the experiment?

To find out _____

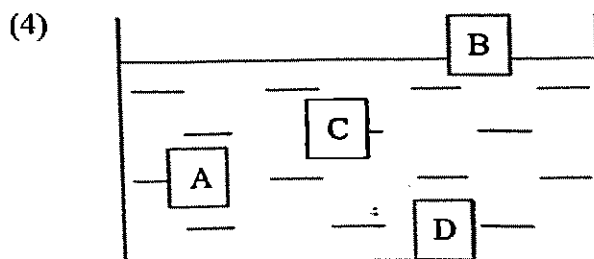
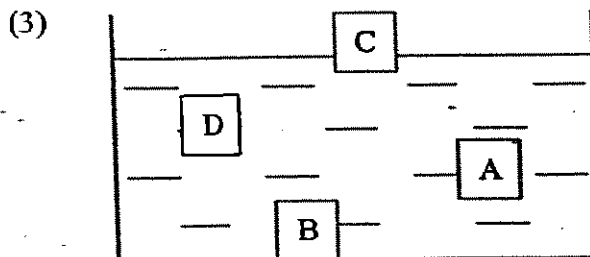
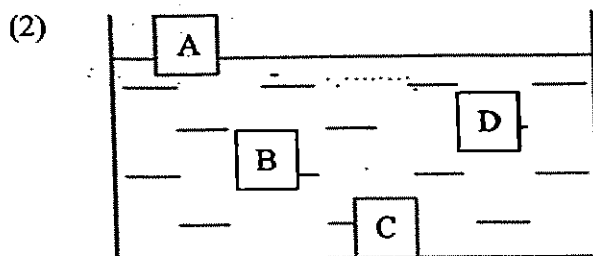
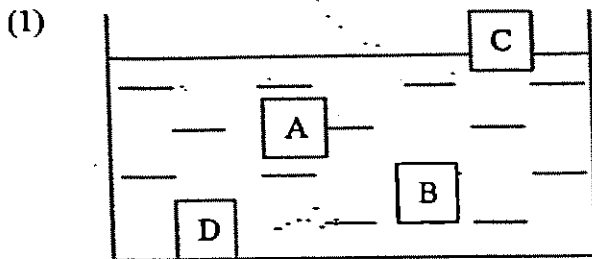
- (1) which materials conduct electricity
- (2) which material is the best conductor of heat
- (3) which material allows light to pass through and conducts heat
- (4) which materials are good conductors of heat and conductors of electricity

()

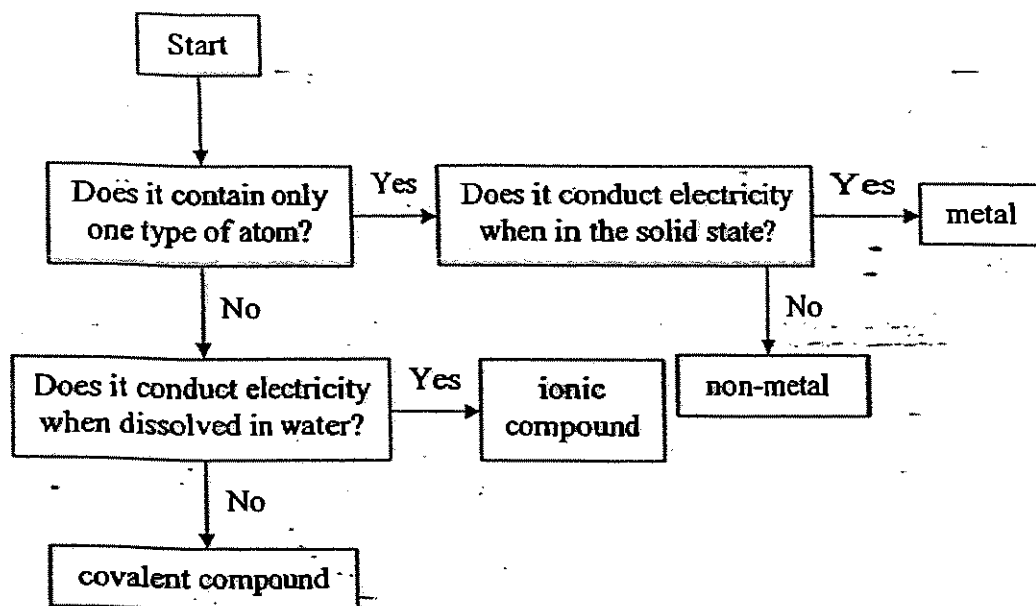
28. The diagrams below show the cross-sections of four cubes which are identical in size and material.



Aishah placed the four cubes into a tank of tap water. Which of the following diagrams correctly shows the positions of the cubes in the tank?



29. Study the flow chart below.



Sulphur is a substance that has the following characteristics:

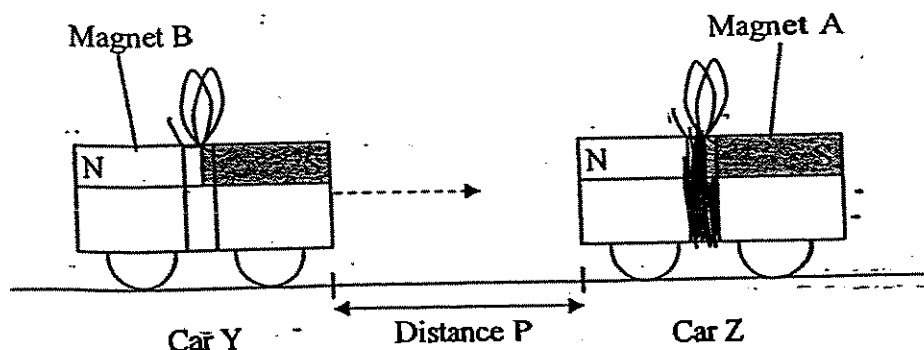
- Contains only one type of atom
- Does not conduct electricity in the solid state

Based on the information provided, how can sulphur be classified?

- (1) metal
- (2) non-metal
- (3) ionic compound
- (4) covalent compound

()

30. Rahim secured two magnets, A and B, on top of two cars, Y and Z. The cars were placed facing each other at a distance, as shown below.



Step 1 : Rahim pushed Car Y slowly towards Car Z.

Step 2 : He then recorded Distance P where Car Y and Car Z started to move towards each other on their own.

Steps 1 and 2 were repeated with Magnet C and Magnet D on Car Y. The table below shows the results of his experiment.

Magnet	Distance P (cm)
B	6
C	4
D	8

Based on his results, which conclusions is/are definitely correct?

- A: Magnet C is weaker than Magnet B.
 B: Magnet B is stronger than Magnet D.
 C: Magnet D is stronger than Magnets B and C.
 D: Magnet D is the strongest of the four magnets.

- (1) B only
 (2) A and C only
 (3) B and D only
 (4) A, C and D only

End of Section A

Index Number:

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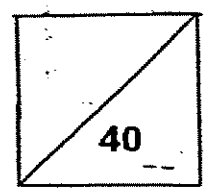
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PEI CHUN PUBLIC SCHOOL
PRELIMINARY EXAMINATION 2 – 2007
PRIMARY 6 (merged stream)
SCIENCE
BOOKLET B

16 questions

Marks:

40 marks



Total Time for Booklets A and B: 1h 45 min

Name : _____ ()

Class : Primary 6 ()

Date : 13 September 2007

Subject Teacher : _____

Parent's Signature: _____

INSTRUCTIONS TO CANDIDATES

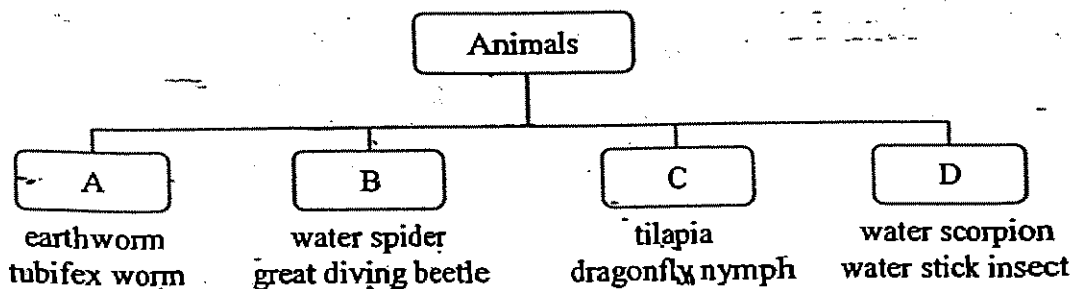
- Do not open this booklet until you are told to do so.
- Follow all instructions carefully.
- Write your answers in this booklet.

Part II (40 marks)

For questions 31 to 46, write your answers in this booklet.

The number of marks available is shown in brackets () at the end of each question or part question.

31. Study the classification chart below.
Some animals have been classified according to their methods of breathing.



- (a) Which group (A, B, C or D) do the following animals belong to? (1 m)

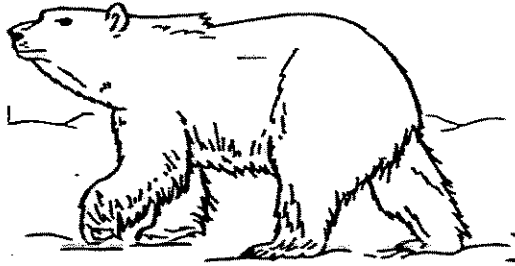
(i) tadpole : _____

(ii) mosquito larva: _____

- (b) How do the animals in Group A breathe? (1 m)

- (c) Could 'whale' be placed in any of the groups above? Explain your answer. (1 m)

32. (a) Below is a diagram of a polar bear.



The polar bear would not be able to survive in a forested area in Singapore. Explain. (2 m)

Reason 1: _____

Reason 2: _____

(b) Study the diagrams below.



Plant X



Plant Y

How are the plants shown above adapted to receive sunlight? (2 m)

33. Mala wants to find out which soil sample, A or B, is able to retain more water. She uses all of the materials shown below.



50cm³ of Soil A



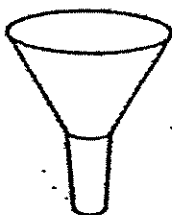
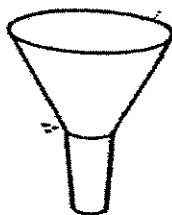
50cm³ of Soil B



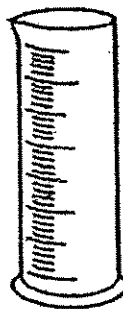
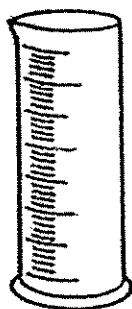
stopwatch



2 beakers of water



2 funnels



2 measuring cylinders

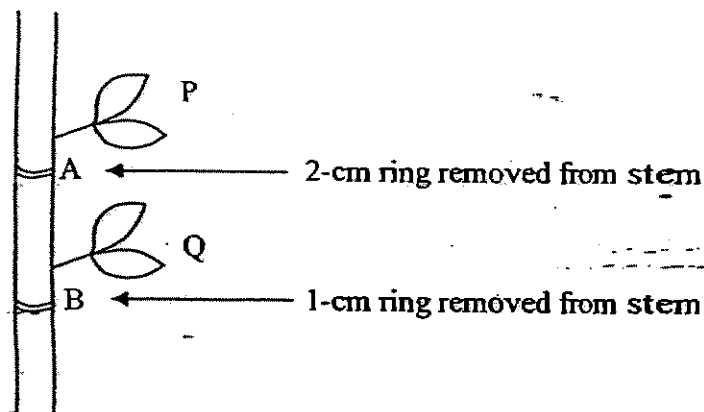


cotton wool

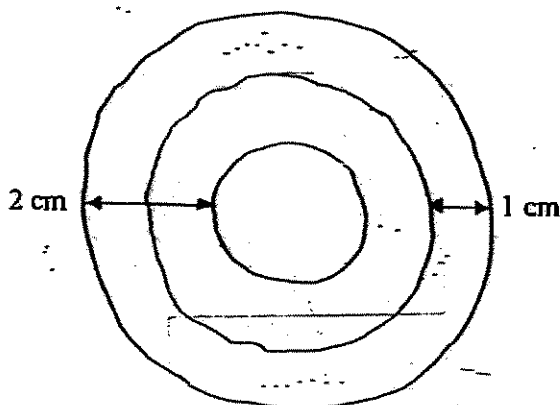
Write down the steps she needs to take for her experiment.

(2 m)

34. Meishan carried out an experiment on a stem of a plant as shown below. She removed a 2-cm ring at position A and a 1-cm ring at position B of the stem. She observed that the leaves at Position P died after two days.



- (a) Based on the information given above, shade the part of the stem that carries water in the diagram below. (1 m)

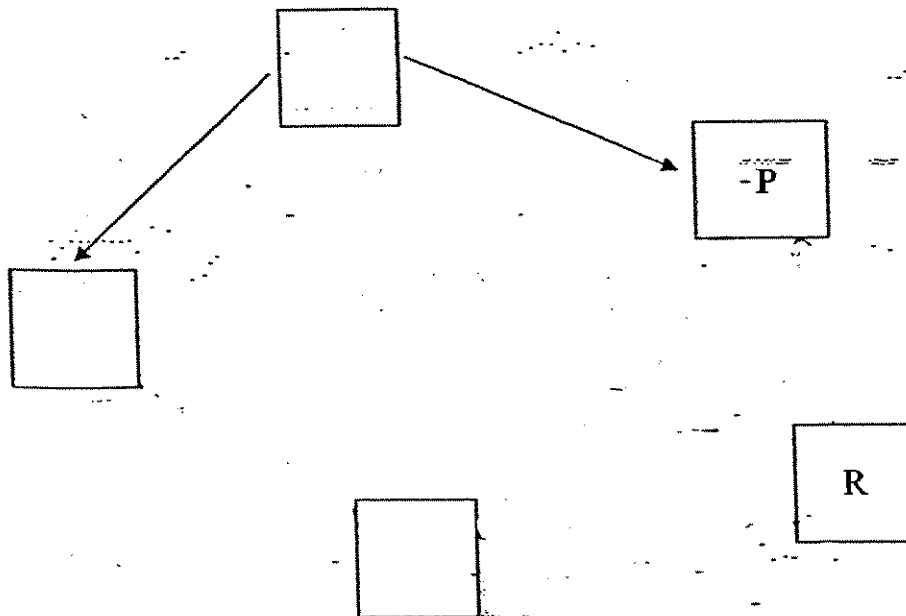


- (b) Explain why the leaves at position Q can survive after 2 days. (1 m)

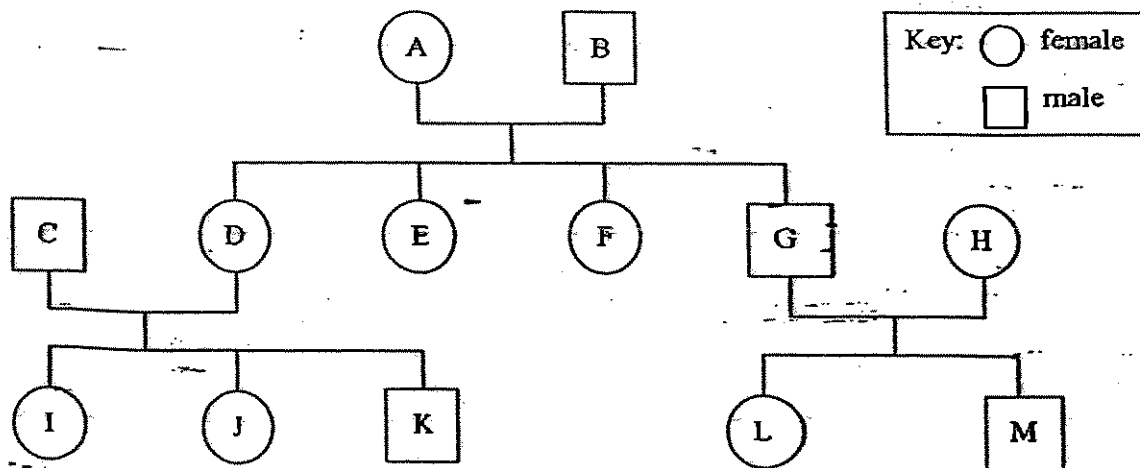
35. A food web consists of five organisms, P, Q, R, S and T. Information about these organisms is given in the box below.

- P eats both plants and animals.
- Q eats plants only.
- R is eaten by P.
- R is a prey as well as a predator.
- S is a food producer.
- T eats 3 other animals.

Write the letters Q, S and T in the correct boxes and complete the food web below. (2 m)



36. Study Suhaila's family tree below.



(a) Suhaila has 2 siblings. Which letters represent Suhaila's parents? (½ m)

(b) Suhaila's uncle just had a third child – a boy. Draw in the family tree above this new addition to the family and label it X. (½ m)

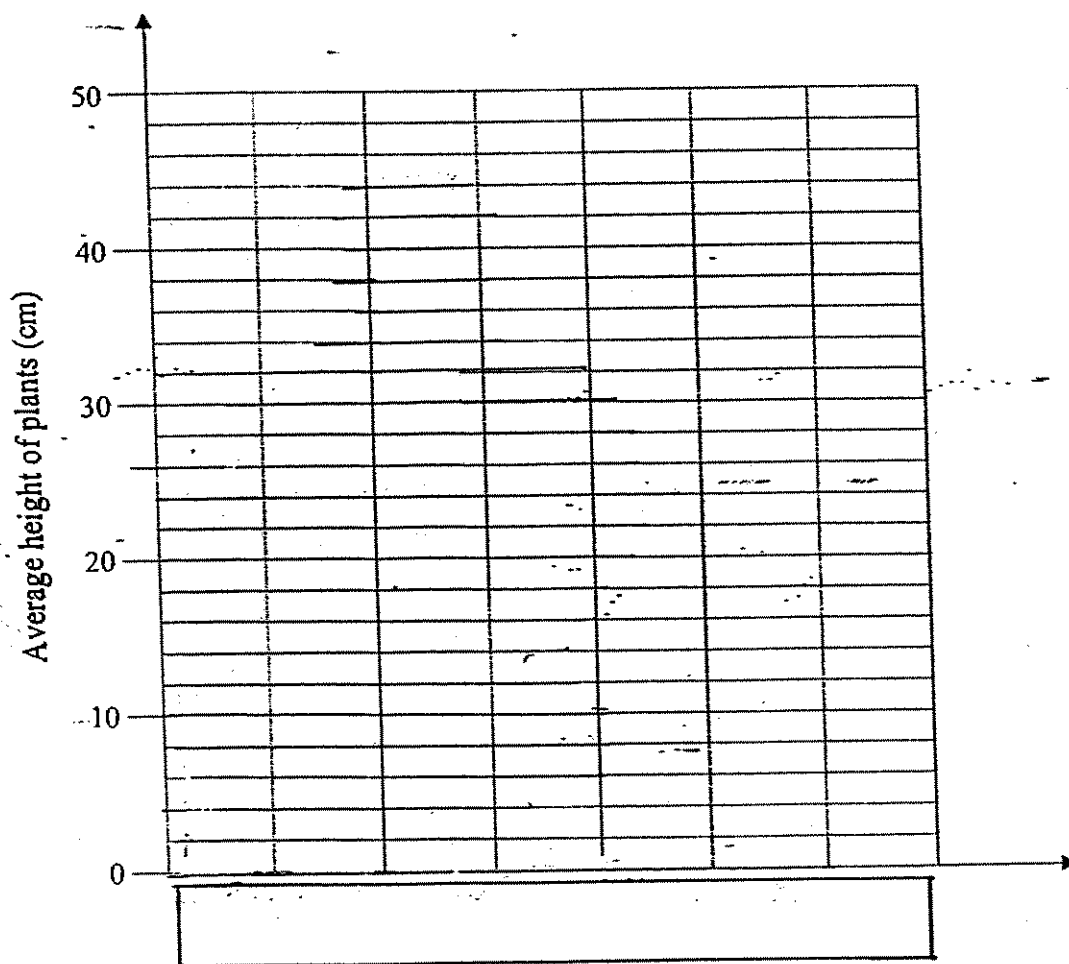
(c) How many sisters does Suhaila's mother have? (½ m)

(d) How is B related to M? (½ m)

37- Linda wanted to find out about the effect of overcrowding on plant growth. She conducted an experiment by growing balsam plants in 3 identical pots, J, K and L, for 2 weeks. She used the same type and amount of soil in each pot. After 2 weeks, she recorded her findings in the table below.

	Pot J	Pot K	Pot L
Number of plants	3	12	8
Average height of plants (cm)	24	42	30

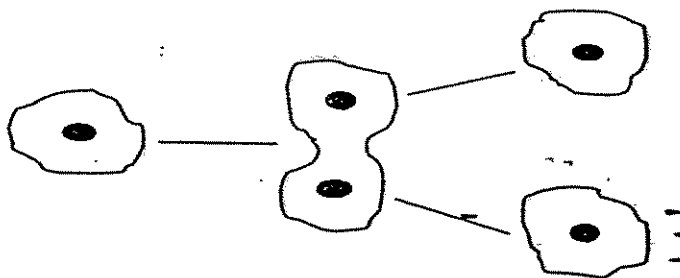
(a) Using the measurements in the table above, plot and complete the bar graph to show the results. (1 m)



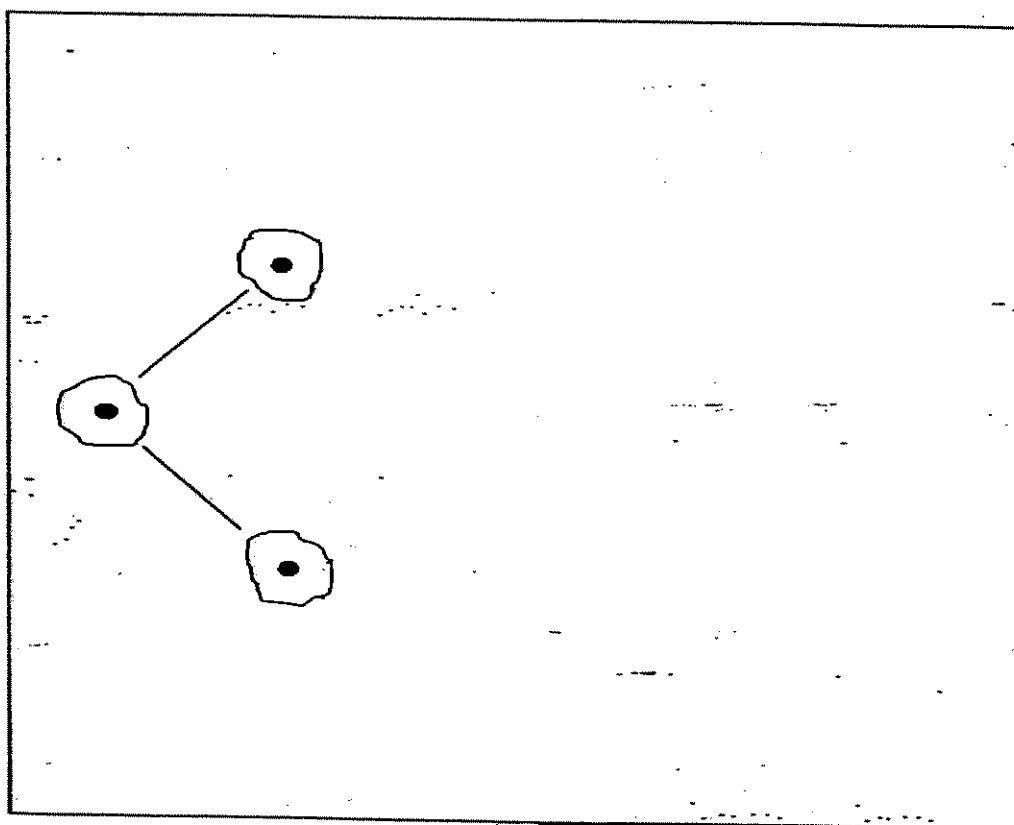
(b) Give a reason why the stems of the balsam plant in Pot K were longer. (1 m)

(c) State one variable that Linda should keep constant in order for her experiment to be a fair one. (1 m)

38. The diagram below shows how an amoeba divides itself into two.



(a) Draw the number of amoeba produced after the 3rd division. (1 m)



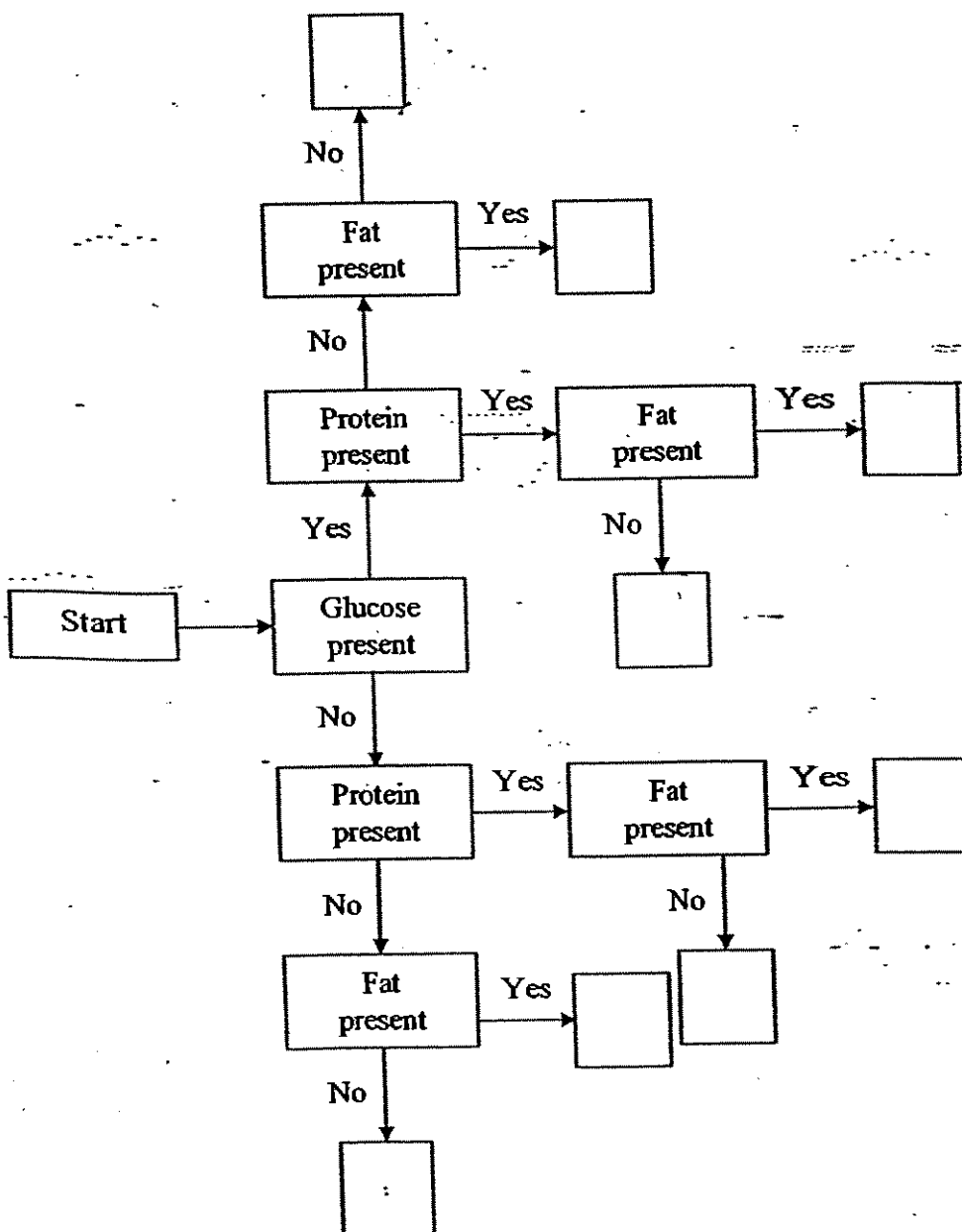
(b) How many daughter cells are there after the cell has divided itself 6 times? (½ m)

(c) Which part of the cell controls the process in (b)? (½ m)

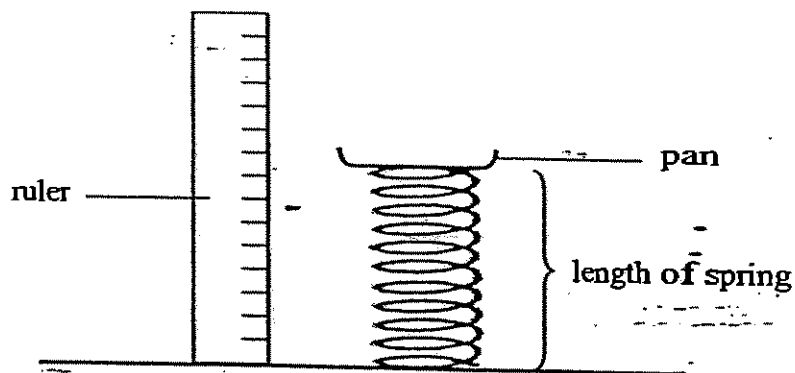
39. Suresh wanted to find out if protein, glucose and fat were found in some foods. He tested the presence of such substances in 4 different types of food, A, B, C and D. He then recorded his results as shown in the table below.

Food	Protein present	Glucose present	Fat present
A		✓	
B	✓	✓	✓
C	✓		✓
D	✓	✓	

In the flow chart below, write the letters A, B, C and D in the correct boxes. (2 m)

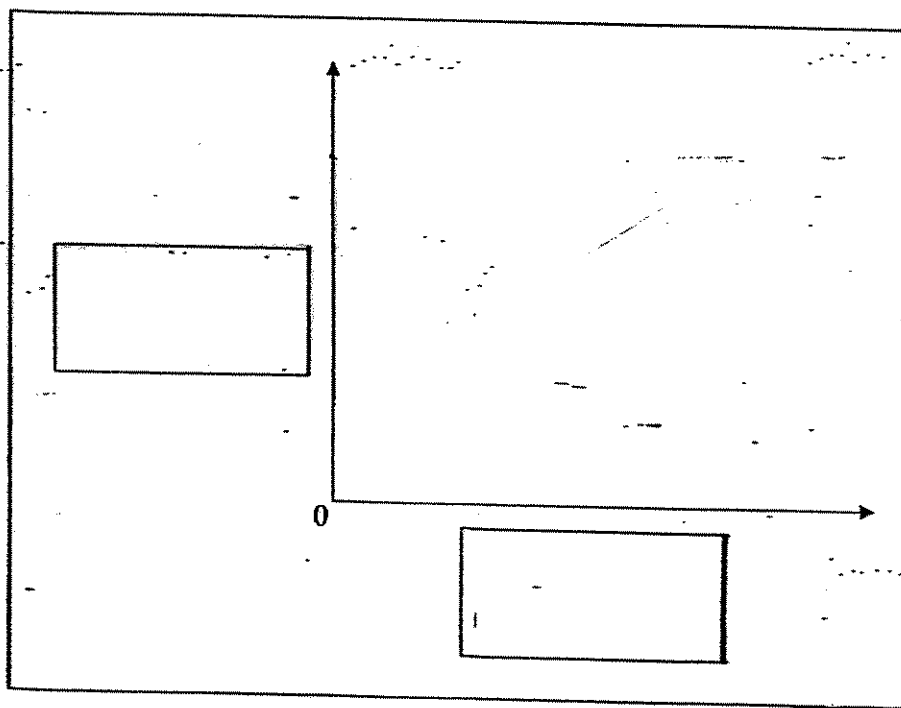


40. Suresh set up an experiment as shown in the diagram below. He then placed a 50-g block on the pan and recorded the length of the spring.



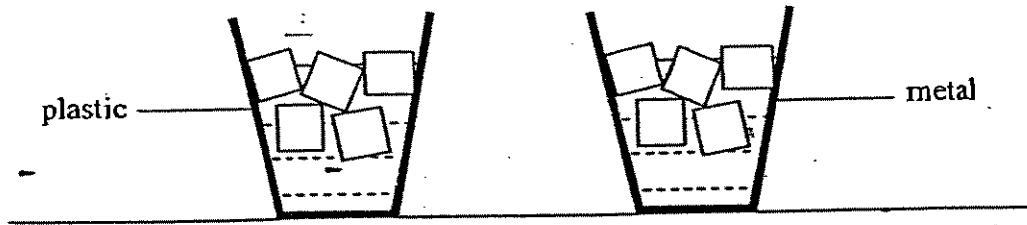
He continued to add 50-g blocks on the pan until the total mass of the blocks reached 200g.

- (a) In the space below, label the axes of the graph and draw a line graph to record his observation. (2 m)



- (b) What is the relationship between the length of the spring and the mass of the blocks on the pan? (1 m)

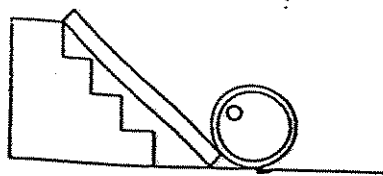
41. Ahmad filled 2 similar glasses, one made of plastic and the other made of metal, with water and ice cubes. He then placed them side by side on a table as shown below.



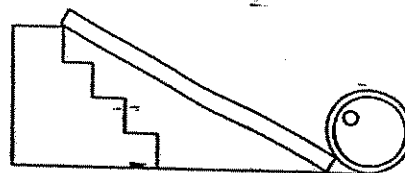
- (a) What will happen to the ice in the plastic glass as compared to the ice in the metal glass? (1 m)

- (b) Explain your answer in (a). (2 m)

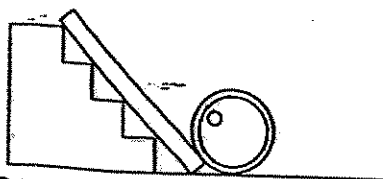
42. 4 ramps of different lengths are used to move a barrel of oil up the same flight of steps in the set-up as shown below.



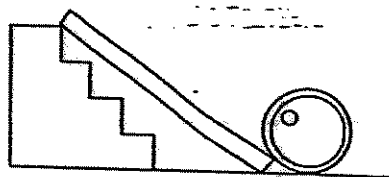
Set-up A



Set-up B



Set-up C



Set-up D

(a) Arrange the set-ups, starting with the one that requires the least amount of effort to move the barrel up the ramp. Write the letters in the boxes below.

(1 m)

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least effort

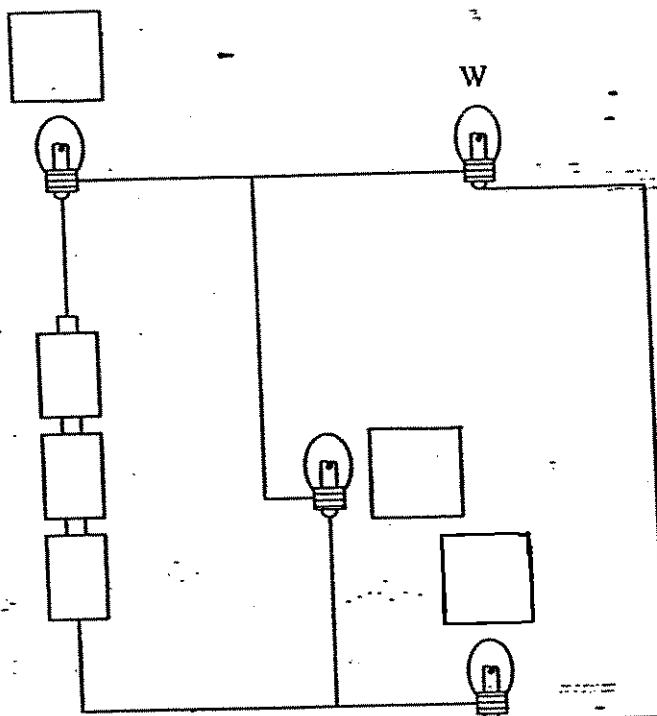
→
most effort

(b) List two variables that must be kept the same throughout the experiment. (1 m)

(c) What is the relationship between the angle of the ramp and the amount of effort needed to move the load up the ramp? (1 m)

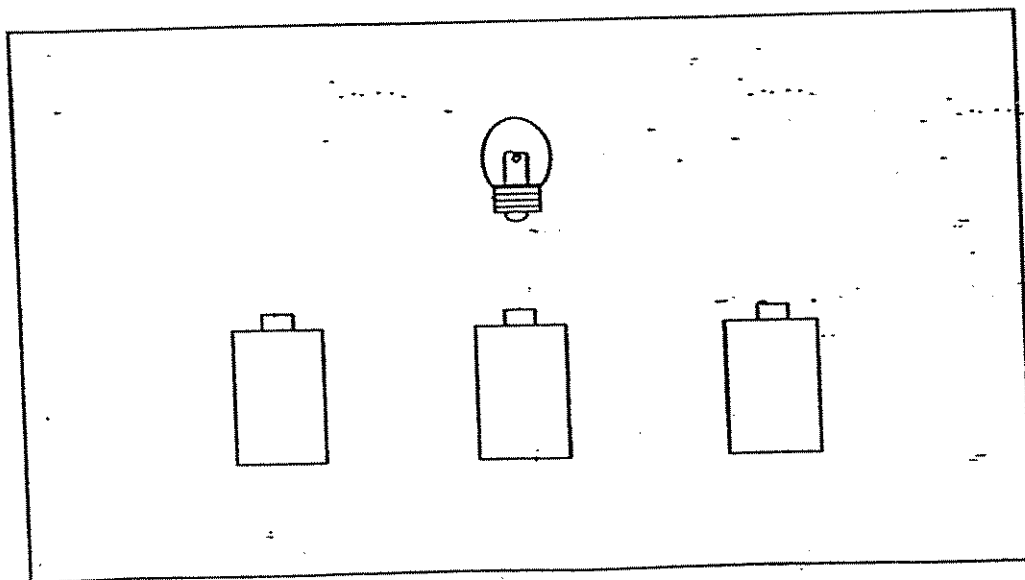
43. (a) Danny set up a circuit as shown in the diagram below. He found out that if Bulb W fuses, Bulb X will also be affected but Bulb Y and Z will continue to light up.

— In the diagram below, label the bulbs, X, Y and Z, in the boxes provided. (1 m)



- (b) The diagram below shows a bulb and 3 identical batteries.

Draw the minimum number of lines (to represent wires) needed to join the batteries and the bulb such that the bulb will give the brightest light. (1 m)



SCORE

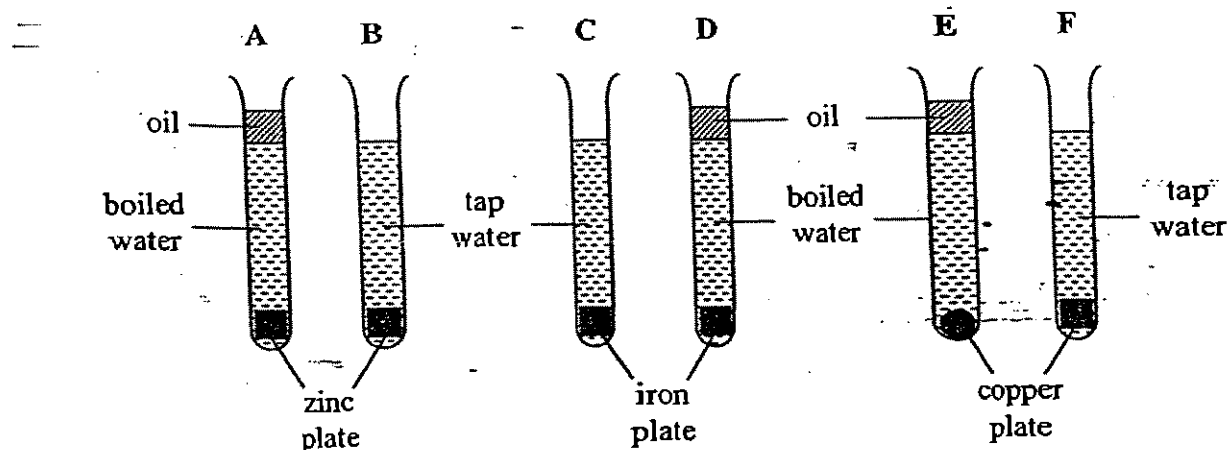
Go on to the next page

44. Mala heated solids D, E and F and liquids T, U and V for 5 minutes under the same conditions. She then recorded the results in a table as shown below.

	Volume (cm ³)			
	Before heating	Average (Before heating)	After heating	Average (After heating)
D	100	100	104	105
E	100		108	
F	100		103	
T	100	100	122	116
U	100		115	
V	100		111	

- (a) What was the aim of the experiment?
-
-
- (b) Did Mala conduct a fair test? Give a reason for your answer. (1 m)
-
-
- (c) Based on Mala's results, what was the conclusion about the expansion of solids and liquids? (1 m)
-
-

45. Kelly set up the following apparatus to find out about rusting.



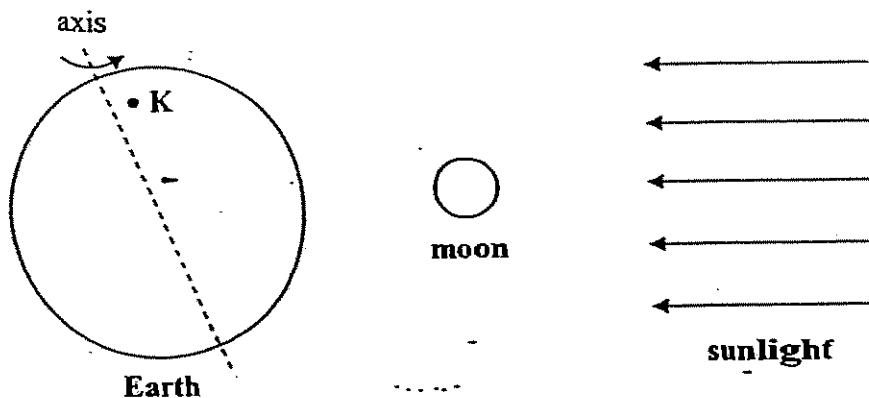
The table below shows the results of her experiment after 2 weeks.

Test-tube	Did the metal rust?	
	Yes	No
A		✓
B		✓
C	✓	
D		✓
E		✓
F		✓

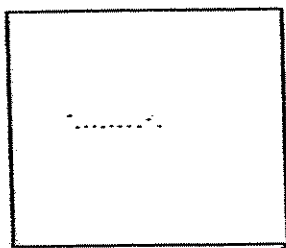
(a) Did Kelly set up a fair test to find out about rusting? Give a reason for your answer. (1 m)

(b) Based on the results of Kelly's experiment, list the factors that would cause rusting to take place. (1 m)

46. (a) The diagram below shows the moon and Earth.



In the box below, show how the moon will appear in the sky to a person who is standing at point K on Earth. (1 m)

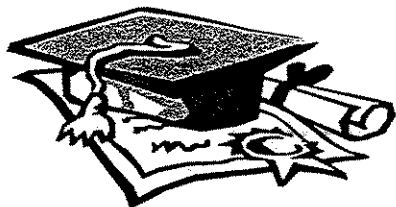


(b) Yong Sheng observed the sun in the sky and said that the sun was moving. Is he correct? Explain your answer. (1 m)

End of Section B

Set by: Mdm Noorhaida Ab Majid
Vetted by: Ms Maria Chan
Mdm Ong Sock Li
Mr Tan Keng Hock
Mr Lee Hong Khim

SCORE

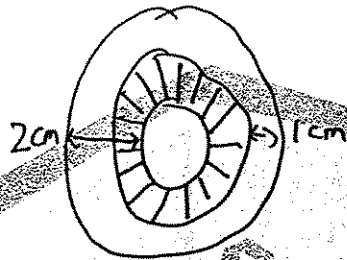


ANSWER SHEET

PEI CHUN PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
PRELIMINARY EXAMINATION (2)

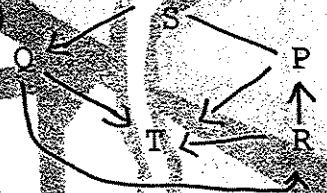
- | | |
|-------|---|
| 1. 4 | 31)a) i) C ii) D |
| 2. 1 | b) They breathe through their moist |
| 3. 2 | skin. |
| 4. 1 | c) This method of breathing is not |
| 5. 2 | in the classification chart. |
| 6. 2 | |
| 7. 2 | 32)a) 1) Its thick layer of fat/fur would |
| 8. 4 | not lose heat fast enough to keep |
| 9. 4 | itself cool in the hot weather. |
| 10. 1 | 2) Its stiff hair on the soles of |
| 11. 1 | its feet would not allow it to |
| 12. 3 | walk freely on forest grounds. |
| 13. 3 | b) Plant X has a weak stem to twine/ |
| 14. 4 | coil up a support. plant Y has |
| 15. 4 | tendrils to cling to the support to |
| 16. 3 | climb or plant Y has leaves that |
| 17. 3 | reach out to receive sunlight. |
| 18. 4 | |
| 19. 1 | 33) 1) Stuff some cotton wool into each |
| 20. 2 | funnel to stop the soil from |
| 21. 1 | dropping into the measuring |
| 22. 3 | cylinder. |
| 23. 2 | 2) Place funnel into each measuring |
| 24. 3 | cylinder. |
| 25. 1 | 3) Pour all of soil A into one funnel |
| 26. 3 | and all of soil B into the other. |
| 27. 2 | 4) Pour all the water into the beaker |
| 28. 4 | into each funnel at the same time. |
| 29. 2 | |
| 30. 2 | |

34) a)



b) The xylem tubes had not been removed.

35)



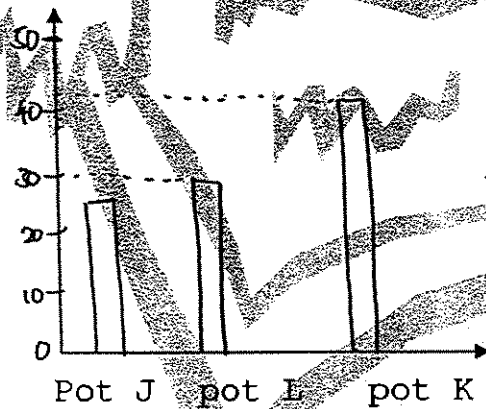
36) a) C, D

b) M X

c) 2

d) B is M's grandfather.

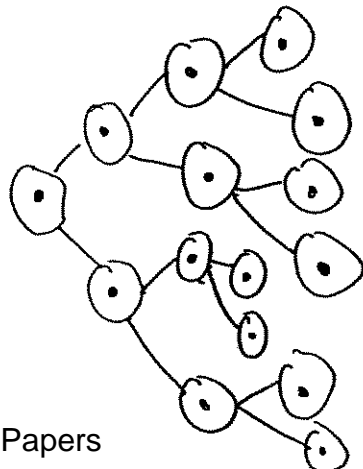
37) a)



b) There were the most balsam plants in B and the plants need to compete for sunlight, nutrients water and space. Thus the stems of the balsam plant had to grow longer to obtain sunlight for photosynthesis.

c) The amount of water given to the plants in each pot.

38) a)

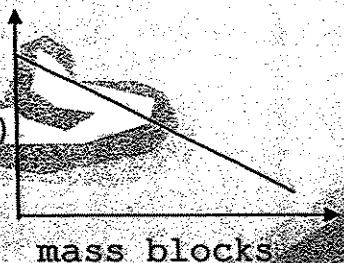


38) b) 64

c) Nucleus

39) A, B, D, C

40) a) Length of spring (cm)



b) The greater the mass of the blocks on the pan, the shorter the length of the spring.

41) a) The ice in the plastic glass will melt slower than the ice in the metal.

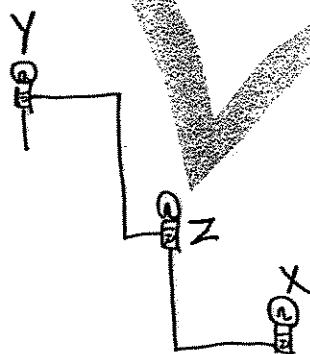
b) Plastic is a poorer conductor of heat than metal. Therefore, the ice cubes in the plastic glass will gain heat slower than the ice cubes in the metal glass.

42) a) B, D, A, C

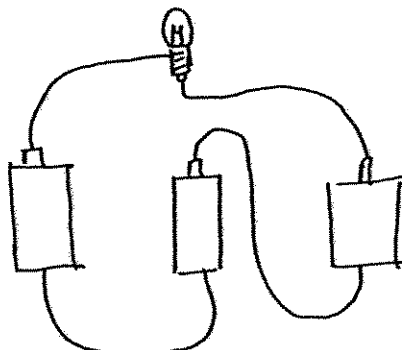
b) The barrel of oil/The size/type of barrel of oil/mass of barrel.

c) The smaller the angle of the ramp the smaller the effort needed to move the load up the ramp.

43) a)



b)



44)a) She wanted to find out if solids or liquids expand more when heat.

b) Yes. She used the same volume of solids and liquids at the start of the experiment.

c) Liquids expand more than solids when heated.

45)a) Yes. The shape of the copper plate does not affect the result of the experiment.

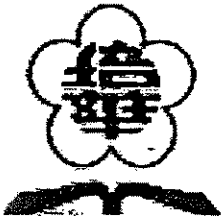
b) Air/oxygen and that the metal must be iron.

46)a)



b) No. The sun is not moving. It is the Earth rotating about its own axis, which cause the apparent movement of the sun across the sky.

---end---



PEI HWA PRESBYTERIAN PRIMARY SCHOOL
FIRST CONTINUAL ASSESSMENT 2007
SCIENCE
PRIMARY 6

Name : _____ ()

Class : _____ (6)

Date : _____

Parent's Signature : _____

Booklet A

Total time for Section A and B : 1 hour 45 minutes

Section	Type	Max. Marks	Marks Obtained
A	Multiple-Choice	60	
B	Short Answers	40	
Grand Total		100	

- Do not open this booklet until you are told to do so.
- Follow all instructions carefully.
- Answer all questions.
- Check your work carefully.

SECTION A (30 X 2 = 60 MARKS)

For each question from 1 to 30, four options are given. Only one of them is correct. Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Classifying things helps us to _____.

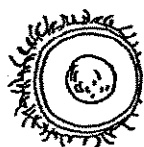
- A : get things organised
- B : sort equal number of things into each group
- C : show how things are similar
- D : find out the differences among things

- (1) A only
- (2) B and D only
- (3) A, C and D only
- (4) A, B, C and D

2. Observe the fruits below.



Mango



Rambutan



Lychee



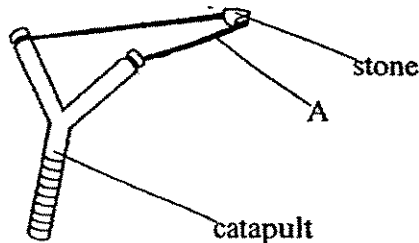
Longan

We can classify the above fruits based on their _____.

- A : number of seeds
- B : skin texture
- C : shape
- D : size

- (1) A and D only
- (2) B and C only
- (3) B, C and D only
- (4) A, B, C and D

3. Rubber is used to make part A of the catapult because it _____.



- (1) does not conduct heat easily
- (2) does not rust
- (3) is strong enough to hold the stone
- (4) is highly flexible

4. What are the common properties of the objects shown below?



A book



A glass jar



A pillow



A ceramic vase

- A : They are waterproof.
 B : They are non-conductors of electricity.
 C : They are poor conductors of heat.
 D : They are non-magnetic.

- (1) A and D only
 (2) B and C only
 (3) A, C and D only
 (4) B, C and D only

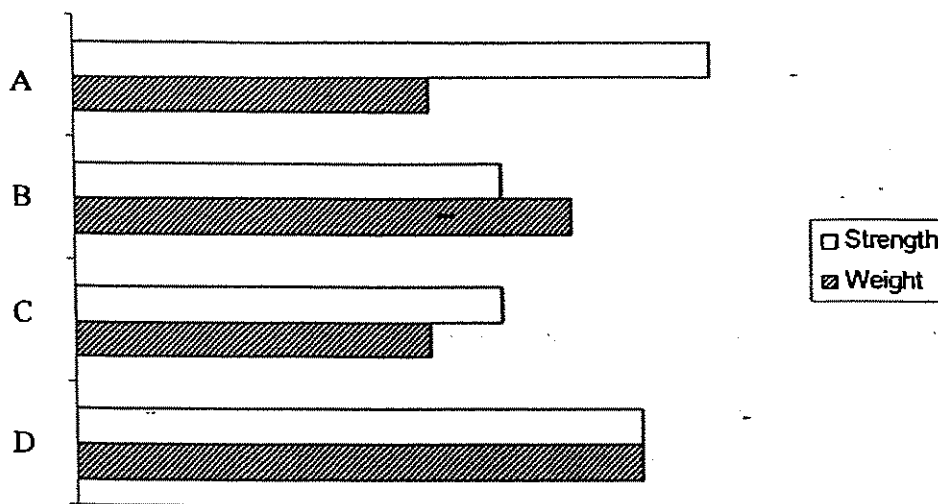
5. Max wanted to build a dog kennel for his pet dog. The table below gives some information about four materials, W, X, Y and Z.

Material	Colour	Is it waterproof?	Is it easy to cut?	Is it strong?
W	White	No	No	Yes
X	Black	No	Yes	Yes
Y	Red	Yes	Yes	No
Z	Yellow	Yes	Yes	Yes

Which material is most suitable for building the roof of the kennel?

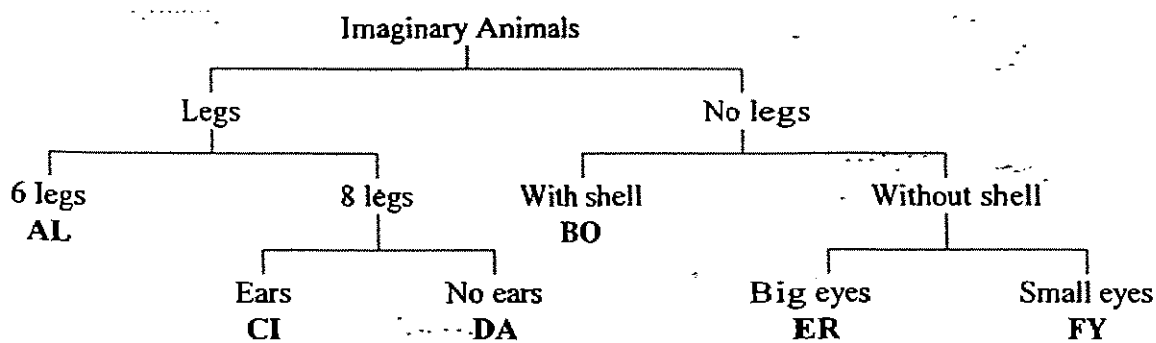
- (1) Material W
 (2) Material X
 (3) Material Y
 (4) Material Z
6. Which of the following statements about energy is not true?
- (1) Energy can neither be created nor destroyed.
 (2) Energy can be converted from one form to another.
 (3) Energy has mass and occupies space.
 (4) Energy from most of our energy resources is derived directly or indirectly from the Sun.

7. Metal alloys are mixtures of two or more metals. The strength of an alloy is measured by the amount of force required to mould them. The graph below shows the strength and weight of metal alloys A, B, C and D.



A sculptor wants to sculpt a metal structure from an alloy that is lightweight and can be easily moulded. Which metal alloy should he use?

- (1) A
 - (2) B
 - (3) C
 - (4) D
8. Some imaginary animals are classified in the table below.



Which of the following creatures is CI?



(1)



(2)

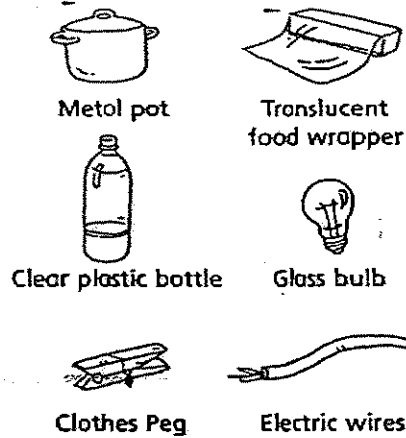


(3)



(4)

9. The diagram below shows some objects.

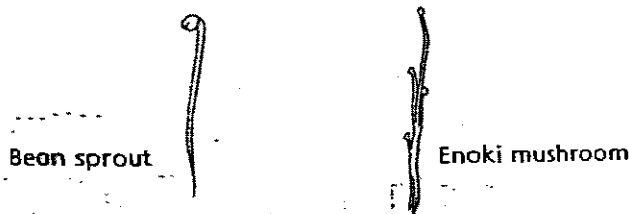


Which of the following physical properties can be used to classify these objects into different groups?

- A : Electrical conductivity
- B : Heat conductivity
- C : Strength
- D : Transparency to light

- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) A, B, C and D

10. Compare the bean sprout with the enoki mushroom.

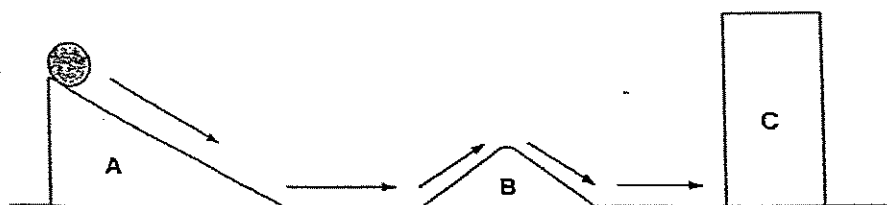


Which of the following shows the differences between the bean sprout and enoki mushroom?

	Bean Sprout	Enoki mushroom
A	Grows from seeds	Grows from spores
B	Cannot move freely from place to place	Moves freely from place to place
C	Leaves will develop	No leaves will develop
D	Needs air and water to stay alive	Does not need air and water to stay alive

- (1) A and C only
- (2) B and D only
- (3) A, B and C only
- (4) A, C and D only

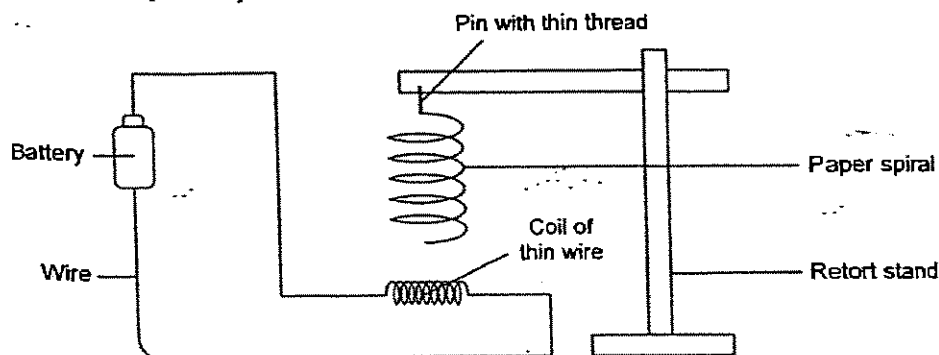
11. A marble is released from the top of ramp A. It rolls downwards and then moves up ramp B and goes down again before it is stopped by rectangular block C.



Which of the following statements is true?

- (1) There is no friction whenever the marble rolls downwards.
- (2) When the marble is released from ramp A, it gains potential energy.
- (3) The marble stops at C because it has lost some of its kinetic energy.
- (4) As the marble moves up ramp B, kinetic energy is changed to potential energy.

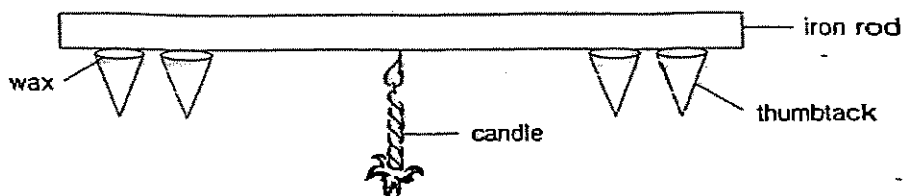
12. David set up an experiment as shown below.



He observed that the paper spiral began to spin after a few seconds. Which of the following caused the spiral to spin?

- (1) Thin thread
 - (2) Battery
 - (3) Coil of thin wire
 - (4) Hot air
13. The disadvantage(s) of using fossil fuels as a source of energy is/are they _____.
- A : take millions of years to be formed
 B : produce radioactive material which is difficult to dispose of
 C : cause pollution
 D : are available only when the sun is shining
- (1) A only
 - (2) A and C only
 - (3) B and D only
 - (4) B, C and D only

14. A few thumbtacks were attached to an iron rod using some wax. The centre of the rod was heated as shown below. After a while, all the thumbtacks fell off. What was the energy that caused the thumbtacks to fall off?



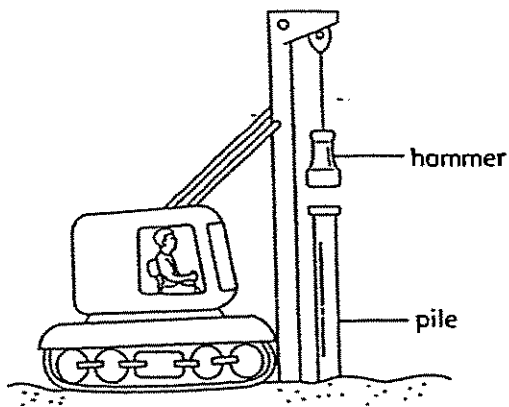
- (1) Heat energy
 (2) Light energy
 (3) Chemical potential energy
 (4) Kinetic energy
15. The table below shows the conversion of electrical energy to three useful forms of energy in three different appliances.

Appliance	Energy conversion
X	electrical energy → heat energy
Y	electrical energy → kinetic energy
Z	electrical energy → light energy

What are the appliances X, Y and Z likely to be?

	X	Y	Z
(1)	toaster	television	torch
(2)	hair dryer	electric drill	wax candle
(3)	rice cooker	washing machine	gas stove
(4)	water heater	ceiling fan	computer

16. The diagram below shows a pile driver. The hammer is falling towards the pile on the ground.

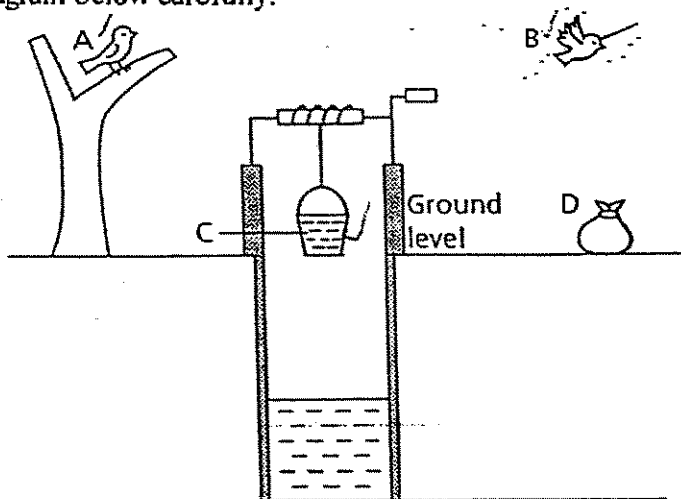


Which of the following statements about the hammer are true?

- A : It has gravitational potential energy because of its position.
- B : It has kinetic energy because of its motion.
- C : It has mass because the force of gravity is acting on it.
- D : Its gravitational potential energy is decreasing because the force of gravity is acting against it.

- (1) A and B only
- (2) C and D only
- (3) A, B and C only
- (4) A, B, C and D

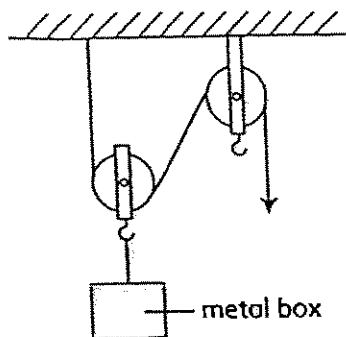
17. Study the diagram below carefully.



Which of the objects A, B, C and D have gravitational potential energy?

- (1) A and B only
- (2) C and D only
- (3) A, B and C only
- (4) A, C and D only

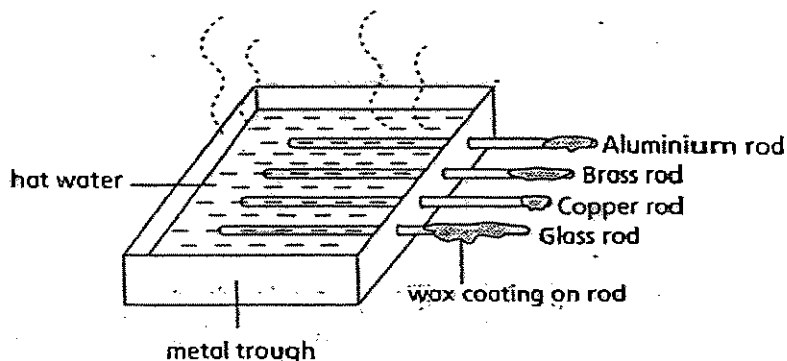
18. What forms of energy are produced when the simple machine shown below is used to lift a heavy metal box from the ground?



- A : Chemical potential energy
- B : Gravitational potential energy
- C : Kinetic energy
- D : Sound energy

- (1) A and C only
- (2) B and D only
- (3) B, C and D only
- (4) A, B, C and D

19. Four rods of equal length and thickness but of different materials are coated with equal amount of wax in the same manner. They are fixed to a trough containing hot water. The diagram below shows what happens to the wax on each rod after five minutes.

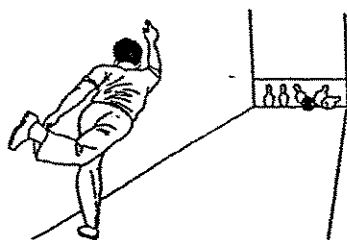


What information can you get from the diagram above?

- A : The aluminium rod conducts heat better than the brass rod.
- B : The aluminium rod conducts heat better than the copper rod.
- C : The glass rod conducts heat better than the copper rod.
- D : The wax on the copper rod melts faster than the wax on the brass rod.

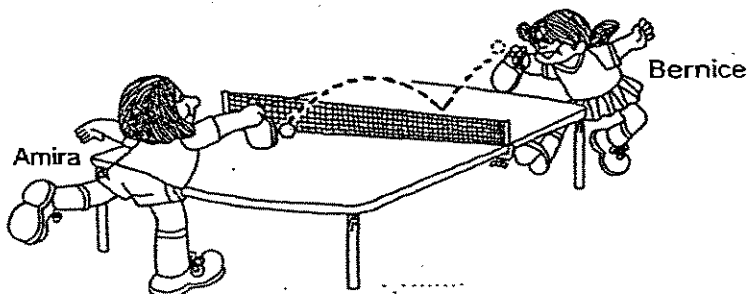
- (1) A and D only
- (2) B and C only
- (3) A, B and C only
- (4) B, C and D only

20. Look at the diagram below carefully.



What is the energy conversion that takes place when Ali bowls the ball?

- (1) Kinetic energy \rightarrow Gravitational potential energy \rightarrow Heat energy \rightarrow Sound energy
 (2) Kinetic energy \rightarrow Chemical potential energy \rightarrow Heat energy + Sound energy
 (3) Gravitational potential energy \rightarrow Kinetic energy \rightarrow Sound energy \rightarrow Heat energy
 (4) Chemical potential energy \rightarrow Kinetic energy \rightarrow Sound energy + Heat energy
21. The diagram below shows two girls playing table tennis. Amira hit the ball over the net and Bernice hit it back with a lot of force.

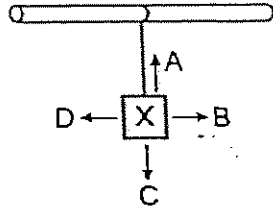


What happened at the point when Bernice hit the ball?

- A : The speed of the ball increased.
 B : The ball stopped moving.
 C : The force caused a change in the size of the ball.
 D : There was a change in the direction of the ball.

- (1) A and B only
 (2) A and D only
 (3) B and C only
 (4) A, C and D only

22. Look at the diagram below.



The string holding Object X is exerting a force in the direction of _____.

- (1) A
- (2) B
- (3) C
- (4) D

23. When a little girl lifts a heavy bag from the ground, there are forces opposing her. The forces are _____.



A : the force of attraction between the Earth and the bag
 B : the force of attraction between the Earth and the girl
 C : the frictional force between the bag and the girl's hands
 D : the weight of the bag

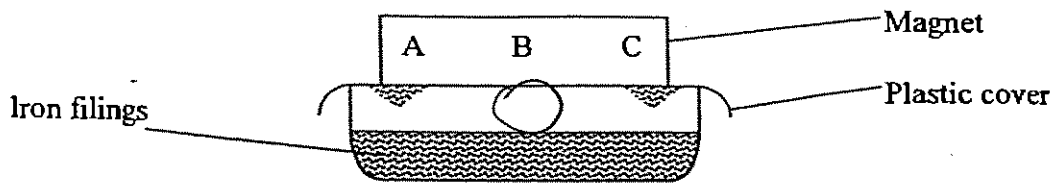
- (1) A and C only
- (2) A and D only
- (3) B and D only
- (4) A, B and D only

24. In which of the following activities is frictional force more of a disadvantage?

A : Moving parts of a machinery
 B : Placing bathroom mats in the bathrooms
 C : Striking a match against the side of a matchbox
 D : Getting a bangle out of a wrist without breaking it

- (1) A and C only
- (2) A and D only
- (3) B and C only
- (4) B and D only

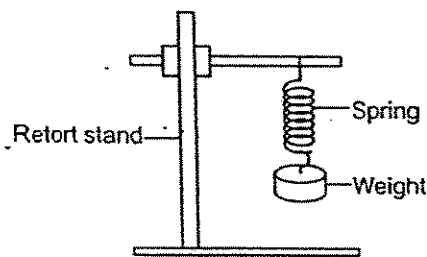
25. When Mary placed a magnet on the cover of a plastic container filled with some iron filings, she observed some iron filings attracted to the plastic cover.



Which of the following shows the likely mass of iron filings attracted to the three different parts of the magnet (A, B and C) when Mary replaced the plastic cover of the container to a steel cover?

Mass of iron filings (g)			
	A	B	C
(1)	5	1	5
(2)	0	5	0
(3)	5	0	5
(4)	0	0	0

26. A 10-cm spring was stretched when different weights were hung from it. The extensions of the spring were recorded as shown in the table below.

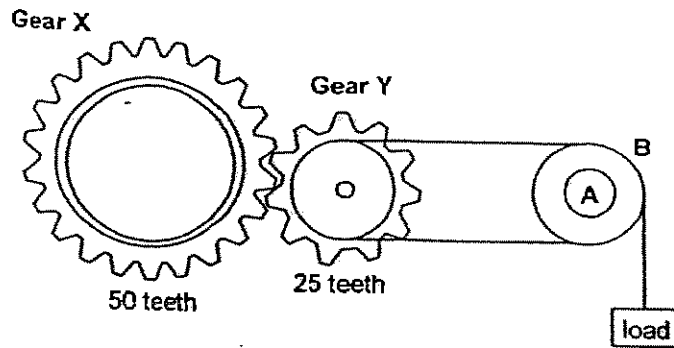


Weight (g)	10	20	40	60
Extension (cm)	2	4	8	12

What would be the total length of the spring when a 70 g weight is hung from it?

- (1) 10 cm
- (2) 14 cm
- (3) 24 cm
- (4) 70 cm

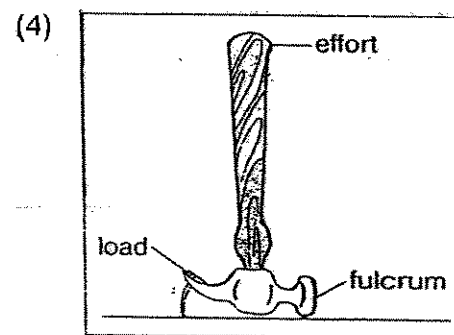
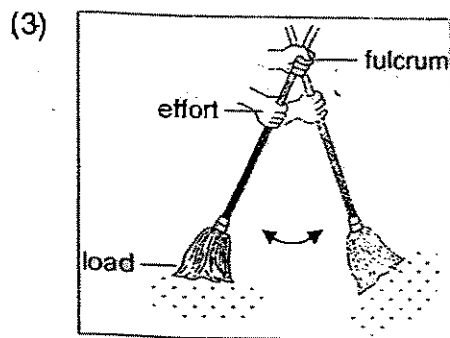
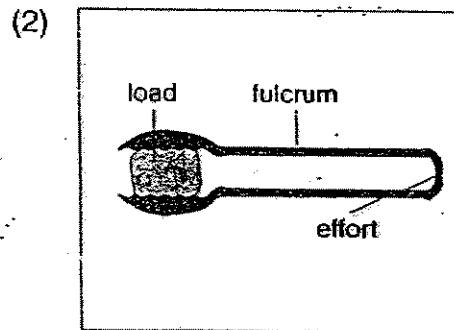
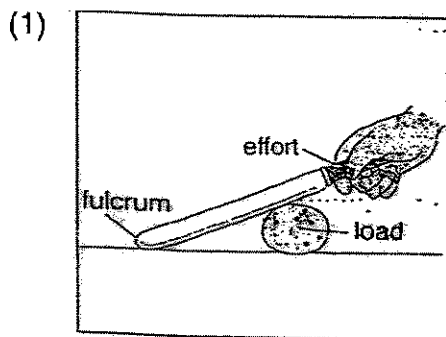
27. The diagram below shows a combination of simple machines.



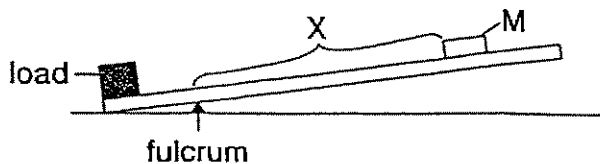
Which of the following statements is not true about this system?

- (1) A and B always turn together in the same direction.
- (2) The speed of Gear X is half that of Gear Y.
- (3) Turning Gear X in the clockwise direction raises the load.
- (4) Axle A turns in the opposite direction of Gear Y.

28. Study the diagrams below. Which diagram is wrongly labelled?



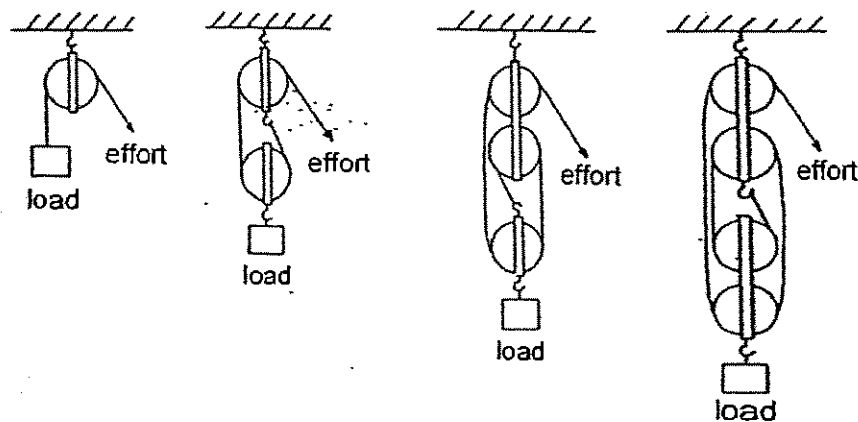
29. James conducted an experiment using a 1-m ruler as shown in the diagram below. He measured the distance X and recorded the mass M required to lift the load. When X is 40 cm, M is 120 g.



He repeated the experiment and recorded his results in a table as shown below. Which set of results is wrong?

	X (cm)	M (g)
(1)	20	240
(2)	30	160
(3)	50	90
(4)	60	80

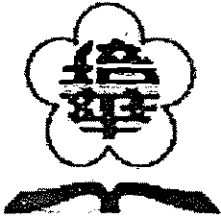
30. Study the four pulley systems below.



Which of the following statements are true of all the pulley systems?

- A : Only one string is used.
- B : The effort is smaller than the load.
- C : The effort and the load move in opposite directions.
- D : The distance moved by the effort is longer than that moved by the load.

- (1) A and B only
- (2) A and C only
- (3) B and D only
- (4) B, C and D only



PEI HWA PRESBYTERIAN PRIMARY SCHOOL
FIRST CONTINUAL ASSESSMENT 2007
SCIENCE
PRIMARY 6

Name : _____ ()

Class : _____ (6)

Date : _____

Parent's Signature : _____

Booklet B

Total time for Section A and B : 1 hour 45 minutes

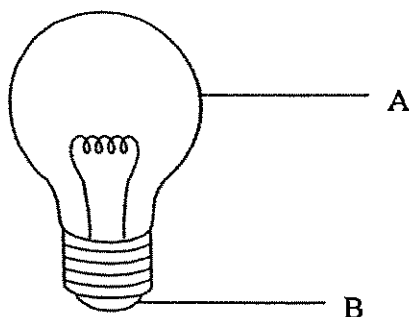
Section	Type	Max. Marks	Marks Obtained
A	Multiple-Choice	60	
B	Short Answers	40	
Grand Total		100	

- Do not open this booklet until you are told to do so.
- Follow all instructions carefully.
- Answer all questions.
- Check your work carefully.

SECTION B (40 MARKS)

For each question from 31 to 46, write your answers in the spaces provided.

31. The diagram below shows an electric bulb.



What are the materials used to make parts A and B of the bulb? Give one reason to explain why each material is suitable to make parts A and B respectively. (2 marks)

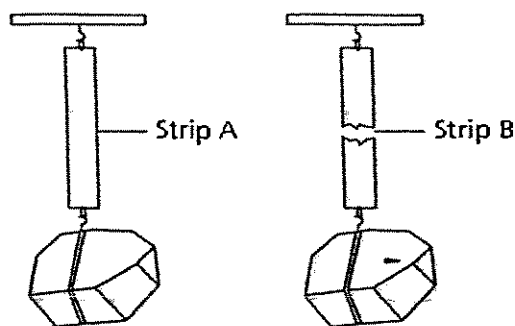
Part	Material	Reason
A		
B		

32. Living things can be classified into animals, plants and fungi based on their form, nutrition and movement.

a) State one similarity between plants and fungi in terms of their movement. (1 mark)

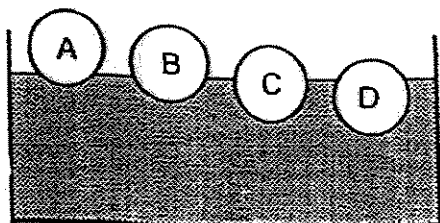
b) State one difference between animals and plants in terms of their nutrition. (1 mark)

33. Strip A and Strip B are made of different materials. The diagram below shows what happened when a heavy stone was hung on Strip A and then on Strip B.



What can you conclude about the property of Strip A and Strip B from the information given? (1 mark)

34. The following diagram shows the results after four identical lead balls were dropped from different heights onto a tray of sandy soil.

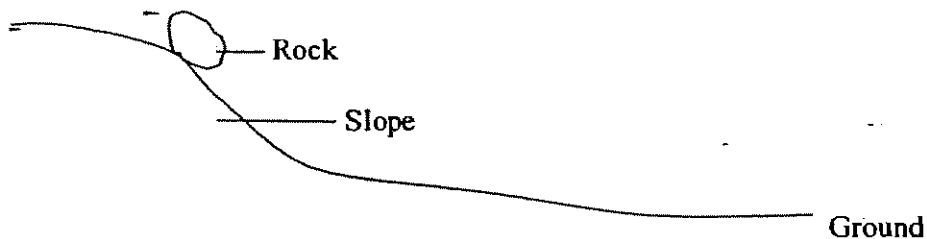


a) What is the force that causes the lead balls to drop towards the soil? (1 mark)

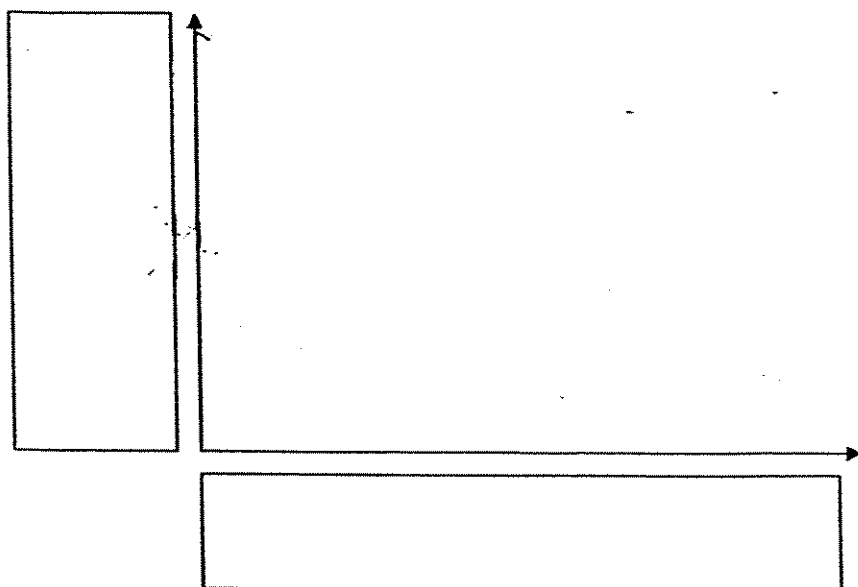
b) What happens to the potential energy of the balls as they are dropping? (1 mark)

c) What is the relationship between the height of the lead balls from the tray and the depth of the hole made by them in the sandy soil? (2 marks)

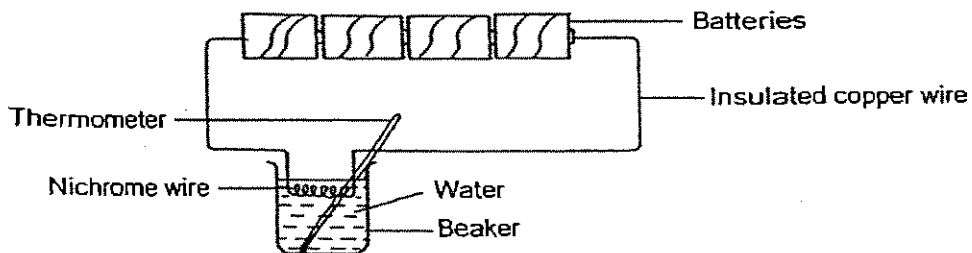
35. A rock rolls down a slope as shown in the diagram.



Complete the graph to show the change in gravitational potential energy and kinetic energy of the rock as it rolls to the ground. Label the axes correctly. (3 marks)



36. Mary connected a nichrome wire to an electric circuit as shown below.

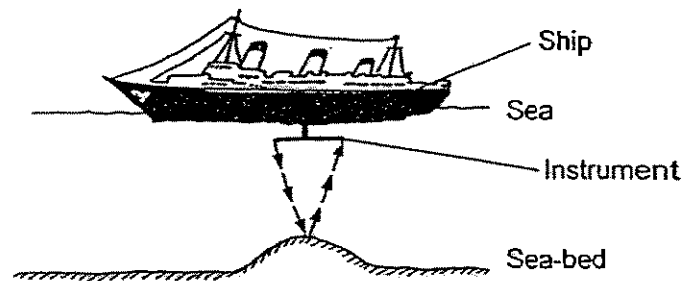


She observed that the temperature of the water in the beaker increased when the switch was turned on.

a) What was the source of energy in the circuit? (1 mark)

b) Write down the energy conversion that took place in the circuit. (1 mark)

37. The picture below shows a ship with an instrument that transmits and receives a form of energy to and from the sea-bed.



- a) What form of energy is received by the instrument? (1 mark)

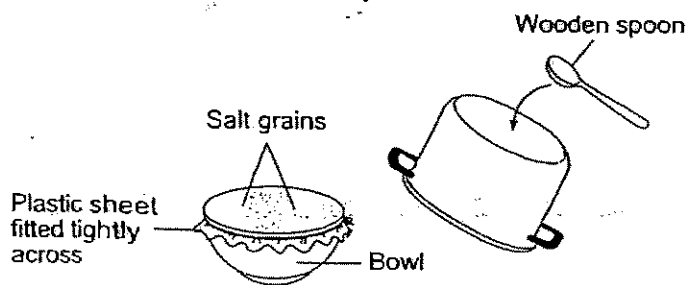
- b) What is the instrument used for? (1 mark)

- c) State two properties of the energy that allows the instrument to work. (2 marks)

i) _____

ii) _____

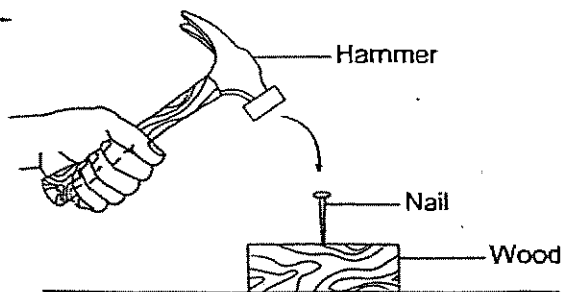
38. Jane fitted a piece of plastic sheet tightly across the top of a bowl and sprinkled salt grains on it. Then she used a wooden spoon to strike a metal pot near the bowl.



- a) What happened to the salt grains? (1 mark)

- b) Explain your answer in (a). (2 marks)

39. Study the picture below.



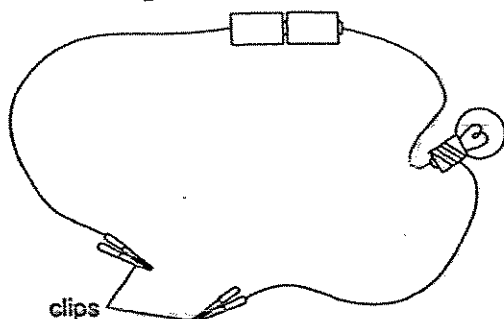
a) Write down the energy conversion for the hammer when it strikes the nail. (1 mark)

b) How would a hammer with a heavier head affect the movement of the nail? (1 mark)

40. Classify A, B, C and D into 2 groups according to the type of energy that they possess. Give a heading for each group. (3 marks)

- A : A box on top of a shelf
- B : A candle
- C : A glass of orange juice
- D : A kite stuck in a tree

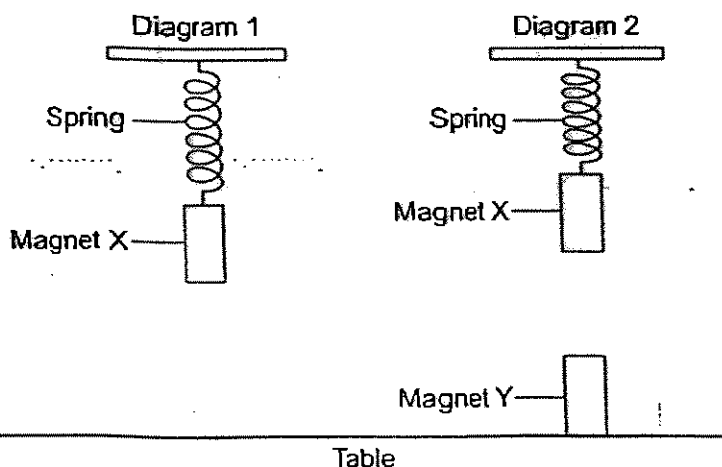
41. Larry placed some objects between the clips in a circuit tester.



a) What was the aim of the experiment? (1 mark)

b) What will happen if Larry placed a steel key between the clips? (1 mark)

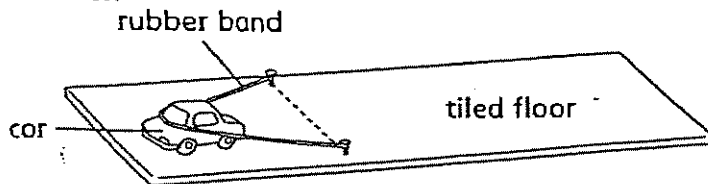
42. Magnet X is hung from a spring as shown in Diagram 1. Magnet Y is then placed on the table, directly below Magnet X as shown in Diagram 2.



a) What happened to the spring in diagram 2? (1 mark)

b) Explain your answer in (a). (2 marks)

43. There were four similar tiled floors that have been coated with different substances, A, B, C and D. An experiment was then carried out to find out how far a car would move over these tiled floors.

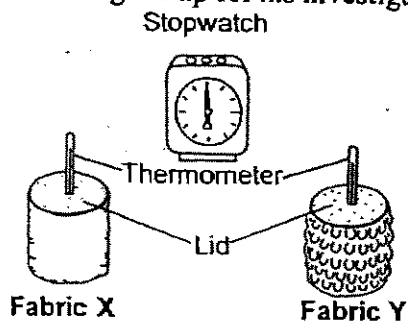


The table below shows the results.

Substance coating tiled floor	Distance moved by the car (cm)
A	25
B	38
C	9
D	17

- a) Arrange the substances in order from the one that causes the most friction to the one that causes the least. (1 mark)
-
- b) Which substance is the best choice for applying on the tiles around a swimming pool? (1 mark)
-

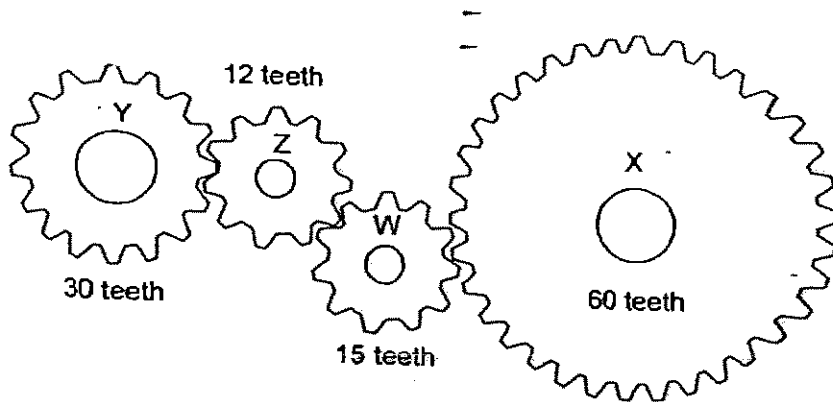
44. Jim was trying to find out which fabric, X or Y, would keep him warmer. He used the following set-up for his investigation.



He wrapped one layer of each fabric around a can of hot water.

- a) What should he measure to find out which of the fabric would keep him warmer? (1 mark)
-
- b) Briefly describe how he should use his results to decide which fabric would keep him warmer. (2 marks)
-

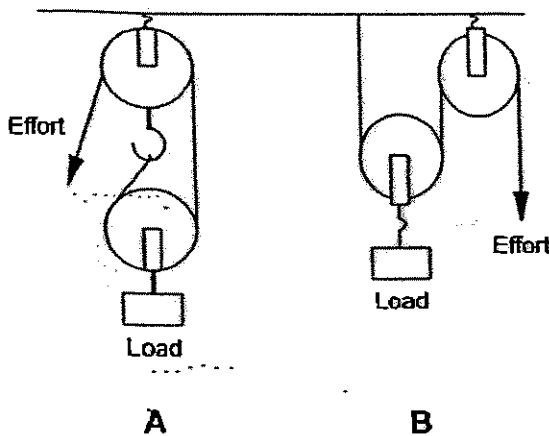
45. Study the gears below.



a) If Gear X rotates clockwise, which other gear/s will also rotate clockwise? (1 mark)

b) Which gear will rotate ^{as} 4 times as fast as Gear X? (1 mark)

46. Study the pulleys shown below.

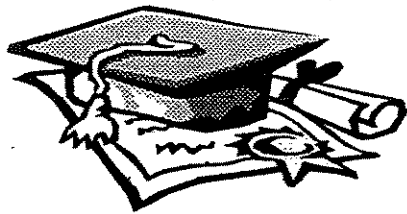


a) State one similarity between pulley system A and B. (1 mark)

b) Fill in the blanks with the correct word. (1 mark)

In the pulley systems A and B, the _____ moves a greater distance than the _____.

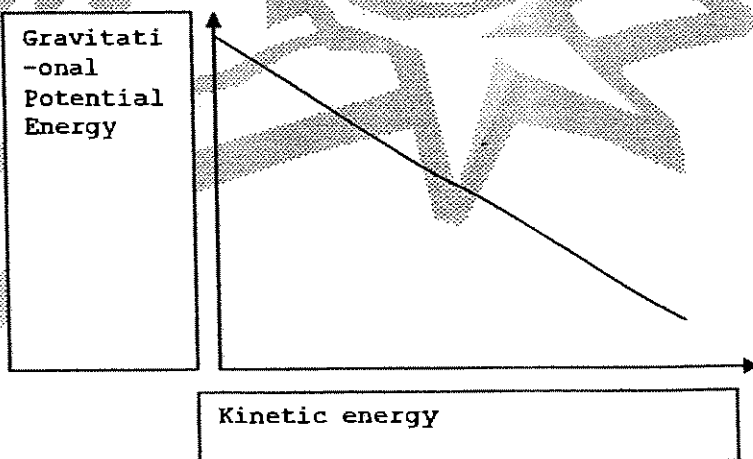
END OF PAPER



ANSWER SHEET

PEI HWA PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
CONTINUAL ASSESSMENT (1)

- 1. 3
 - 2. 3
 - 3. 4
 - 4. 4
 - 5. 4
 - 6. 3
 - 7. 3
 - 8. 4
 - 9. 4
 - 10. 1
 - 11. 4
 - 12. 4
 - 13. 2
 - 14. 1
 - 15. 4
 - 16. 1
 - 17. 3
 - 18. 3
 - 19. 1
 - 20. 4
 - 21. 2
 - 22. 1
 - 23. 2
 - 24. 2
 - 25. 4
 - 26. 3
 - 27. 4
 - 28. 2
 - 29. 4
 - 30. 2
- 31) A=Glass-It is transparent
B=Metal-Metal is a conductor of electricity so, when there is an electric it will be able to light the bulb up.
- 32) a) They cannot move freely from one place to another on their own.
b) Plants make their own food, but animals depend on other organisms for food.
- 33) Strip A is stronger than strip B.
- 34) a) The force is gravitational force.
b) It decreases and converts to Kinetic Energy.
c) The higher the height of the lead balls from the tray, the lower the depth of the hole made by them in the sandy soil.....
- 35)



- 36) a) The batteries.
- b) Chemical Potential Energy → Electrical Energy → Heat Energy.
- 37) a) Sound Energy
b) It is to see how far down is the sea-bed.
c) i) Sound Energy travels through water.
ii) Sound Energy can be bounced.
- 38) a) The salt grains jumped into the air.
b) Sound is produced when the spoon bit the pot. The sound energy caused the plastic sheet to vibrate thus salt grains jumped into air.
- 39) a) Gravitational Potential Energy → Kinetic Energy → Heat energy + Sound Energy.
b) The nail will move deeper into the wood.
- 40) Gravitational Potential Energy Chemical Potential Energy
- | | |
|---|---|
| A | B |
| D | C |
- 41) a) To find out if the objects conduct electricity.
b) The bulb will light up.
- 42) a) It compressed.
b) The pole that was facing magnet X and the pole that was facing magnet Y were like poles which made them repelled and also caused the spring to compress.
- 43) a) C, D, A, B b) Substance C
- 44) a) measure the temperature of the water in the cans.
b) The can with higher temperature would show that the fabric was better in retaining heat.
- 45) a) Gear Z b) Gear W
- 46) a) Both effort moves in the opposite direction from the load.
b) Effort, load.



PEI HWA PRESBYTERIAN PRIMARY SCHOOL
FIRST SEMESTRAL ASSESSMENT 2007
SCIENCE
PRIMARY 6

Name : _____ ()

Class : _____ (6)

Date : _____

Parent's Signature : _____

BOOKLET A

Total time for Booklet A and B : 1 hour 45 minutes

Booklet	Type	Max. Marks	Marks Obtained
A	Multiple-Choice	60	
B	Open-Ended	40	
Grand Total		100	

- Do not open this booklet until you are told to do so.
- Follow all instructions carefully.
- Answer all questions.
- Check your work carefully.

PEI HWA PRESBYTERIAN PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1, 2007
SCIENCE-PRIMARY 6

NAME: _____ ()

MARKS: _____

CLASS: _____ (6)

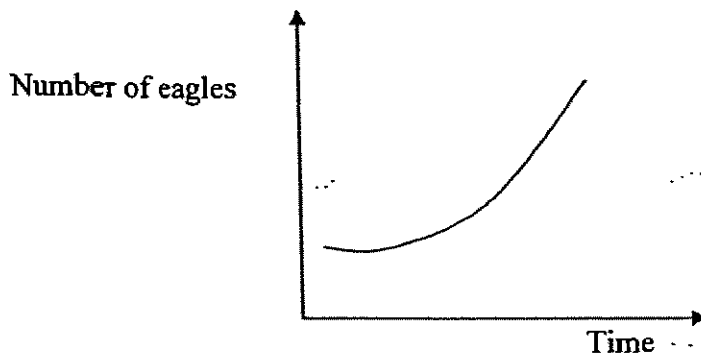
SECTION A (30 X 2 = 60 MARKS)

For each question from 1 to 30, four options are given. Only one of them is correct. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Observe the food chain below.

Vegetable → caterpillar → chicken → eagle

The population of eagles over a period of two years is represented by the following graph:



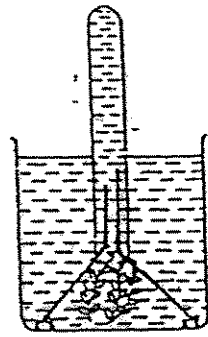
Which of the following show how the other populations are affected?

- A: a decrease in the vegetable population
- B: a decrease in the chicken population
- C: an increase in the caterpillar population
- D: a decrease in the caterpillar population

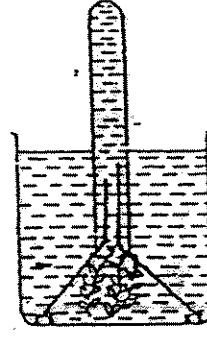
- (1) A and D
- (3) A and C

- (2) B and C
- (4) A, B and C

2. Matthew wants to conduct a fair test to determine whether the amount of sunlight affects the amount of oxygen produced by water plants. He sets up his experiment as shown below.



Set up A



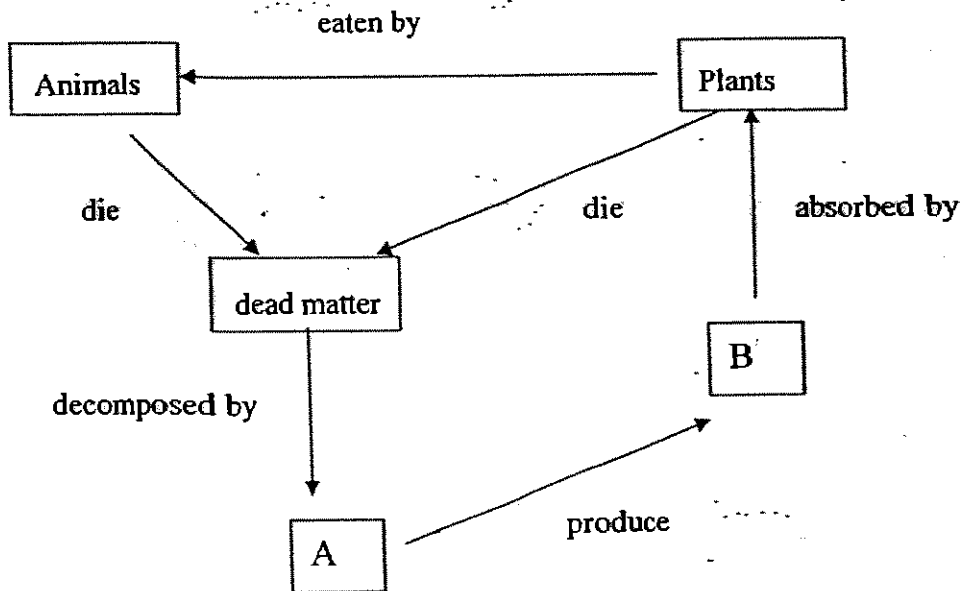
Set up B

Which of the following variables should be **different** in Set up A and B in this experiment?

- (1) amount of baking soda added to the plants
- (2) amount of water in the beakers
- (3) amount of sunlight available to the plants
- (4) type of water plants used

()

3. Study the flow chart carefully.

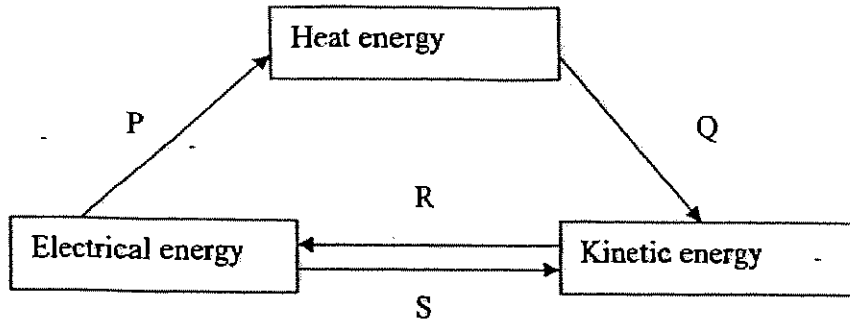


What do the letters A and B represent?

	A	B
1	maggot	carbon dioxide
2	earthworm	mineral salts
3	fungi	nutrients
4	bacteria	oxygen

()

6. The diagram below shows how one form of energy can be converted to another. P, Q, R and S represent different energy conversions.

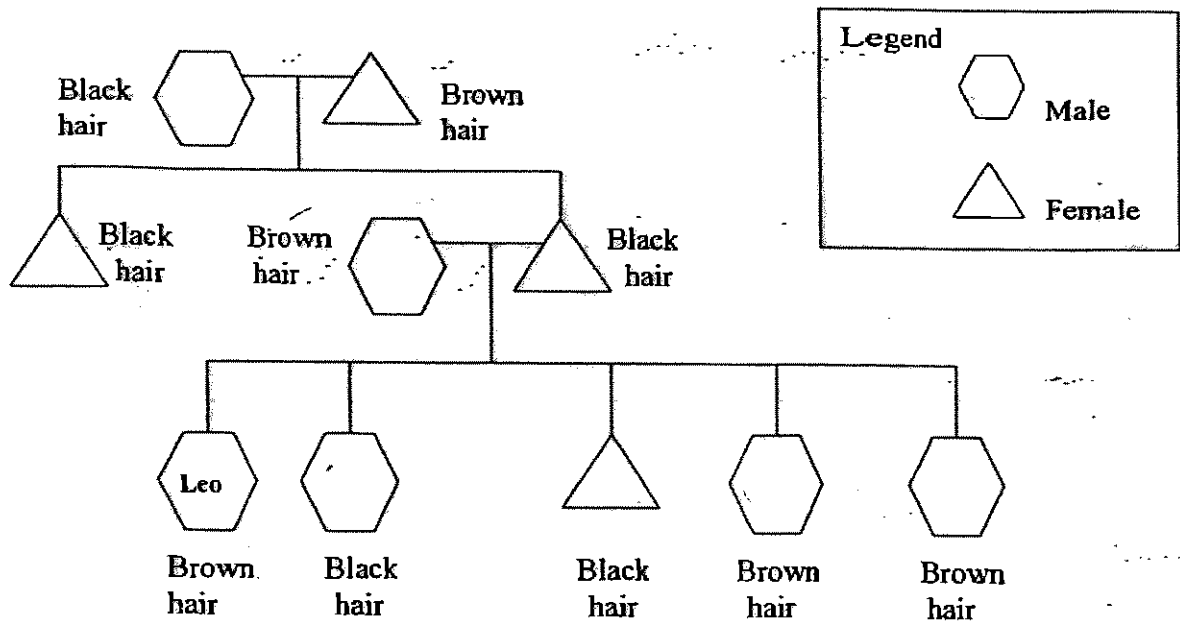


In which of the following does energy conversion represented by arrow R take place?

- (1) A washing machine
- (2) An electric fan
- (3) A generator producing electricity
- (4) A computer

()

7. Study the family tree below and answer the following question.



Which of the following statement(s) is/are correct?

- A: Leo has four siblings.
- B: Leo has inherited his hair colour from his father.
- C: Leo's grandparents have black hair.

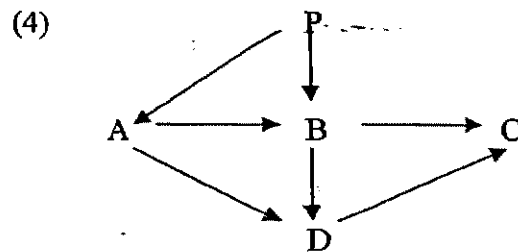
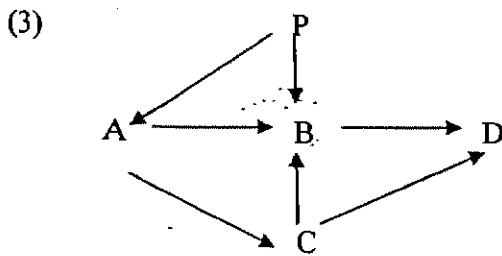
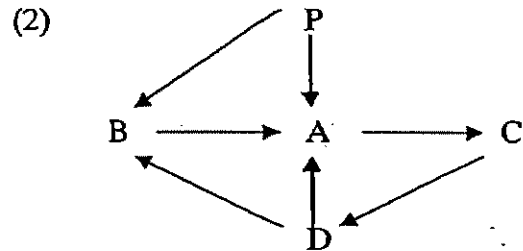
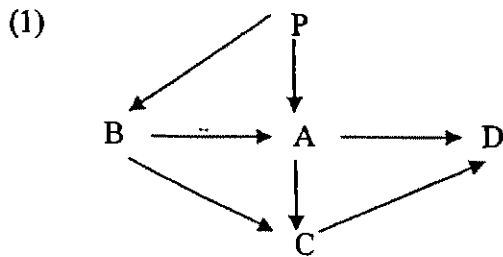
- (1) A and B
- (2) B and C
- (3) A and C
- (4) A, B and C

()

8. A, B, C and D are four living things in a community. The table below shows the food of A, B, C and D.

Food consumer	Food
A	P
B	P and A
C	B and D
D	A and B

Which of the following food webs is found in this community?



()

9. Four plants A, B, C and D are placed under different conditions for a month. Below is a chart showing the different conditions under which each plant is placed. Study the table carefully and answer the following question.

Plants	Location	Amount of water	Amount of fertiliser
A	Garden	0 ml	10 g
B	Garden	10 ml	10 g
C	Garden	10 ml	5 g
D	Dark room	20 ml	5 g

A leaf is plucked from each plant and tested for the presence of starch. Which of the four plants will have starch in their leaves?

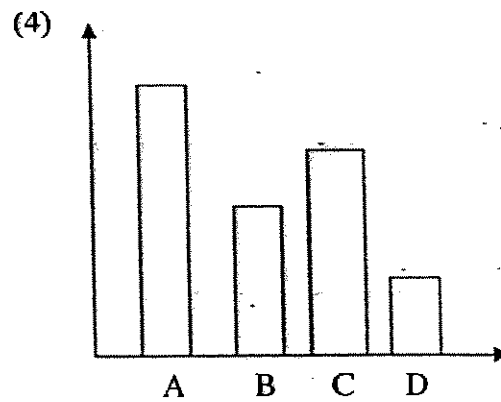
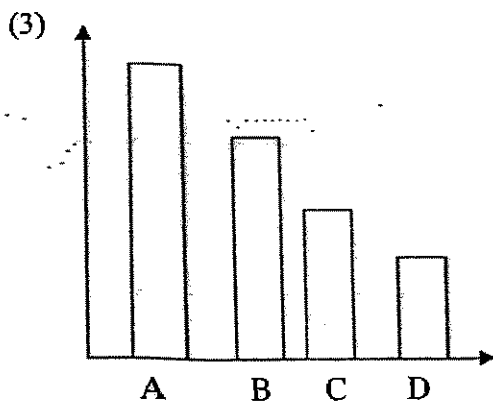
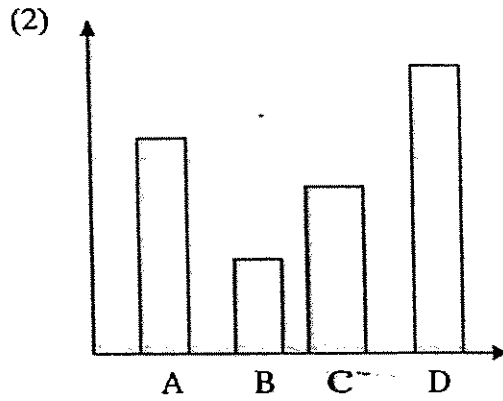
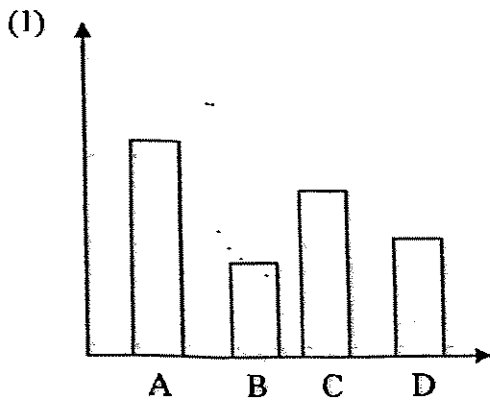
- (1) B only
 (2) D only
 (3) A and D only
 (4) B and C only

()

10. Which of the following graphs best shows the populations of the various organisms in a field community?

Legend:

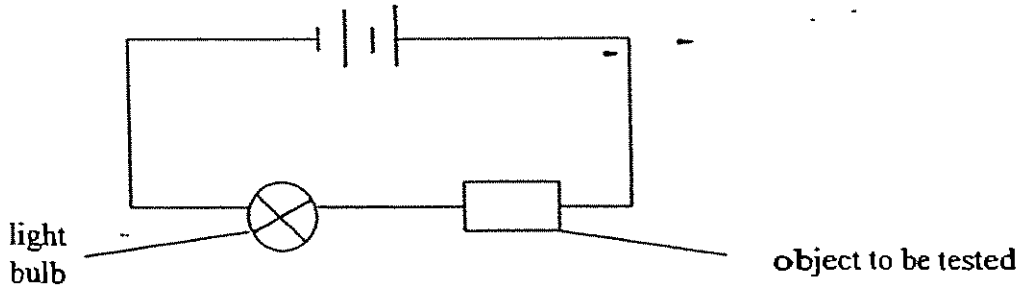
A	Grass
B	Lizard
C	Grasshopper
D	Mynah



()

11. Mandy carried out an experiment to find out which objects A, B, C and D are conductors of electricity. The results are recorded below.

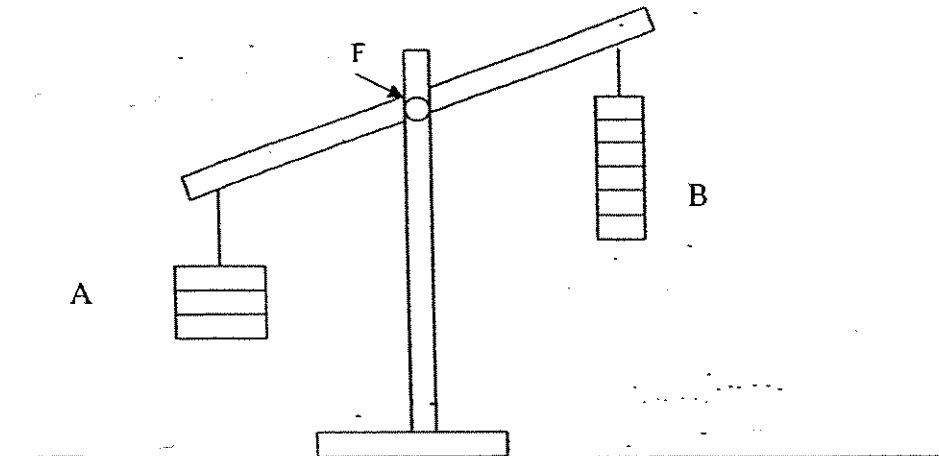
Objects	Bulb lights up	Bulb did not light up
A	✓	
B	✓	
C		✓
D	✓	



What can objects A, B, C and D be?

	Object A	Object B	Object C	Object D
1	nail	pencil lead	chalk	magnet
2	pin	aluminium foil	cane	rubber
3	wooden ruler	scissors	candle	coin
4	metal clip	pin	key	cardboard

12. The diagram below shows a lever system.



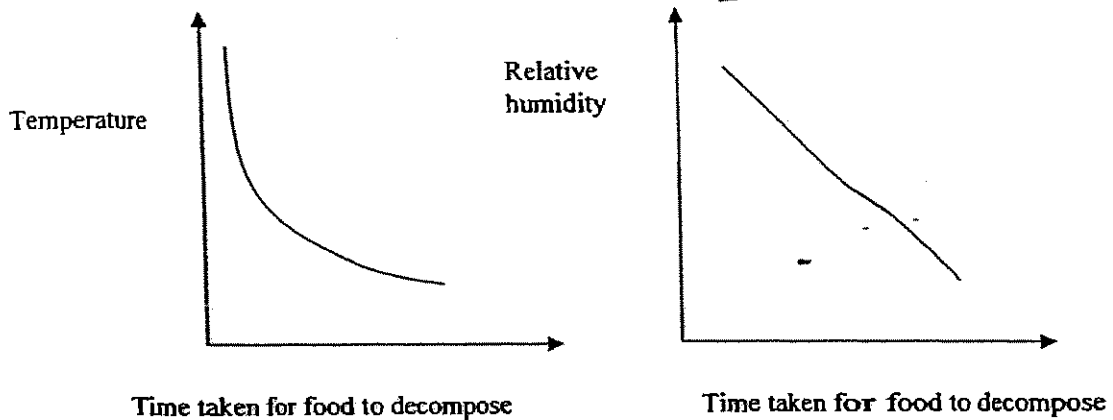
What must Carol do to balance the above lever system?

- A: Add weights to B.
- B: Remove some weights from B.
- C: Move B towards F.
- D: Move A towards F.

- (1) A and C
- (3) B and C

- (2) A and D
- (4) B and D

13. The two graphs below show how temperature and relative humidity affect the time taken for food to decompose.



We can conclude from the above two graphs that food decays faster _____.

- A: when there is a decrease in temperature and relative humidity
- B: when there is an increase in temperature and relative humidity
- C: at high temperature and high humidity
- D: at high temperature and low humidity

- (1) A and C
- (2) A and D
- (3) B and C
- (4) B and D

()

14. Ken wanted to find out if dried fish decomposes when it gets wet. He carried out an experiment according to the following steps:

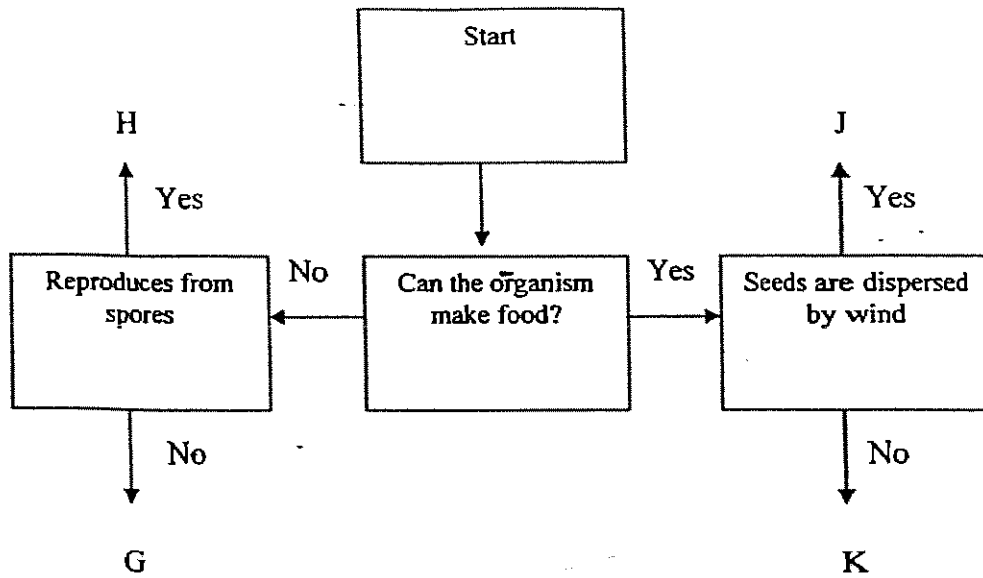
- Step 1: Take a dried fish.
- Step 2: Dip the fish in water for ten minutes.
- Step 3: Place the fish in a dark cupboard for a week.
- Step 4: Examine the fish on the 8th day for changes in colour, smell and appearance.

Do you think Ken's experiment is a fair test?

- (1) Yes, he had wet the fish before he put it in the dark cupboard.
- (2) Yes, he had observed the fish on the 8th day to observe for changes in colour, smell and appearance.
- (3) No, he had not taken into account the size of the fish.
- (4) No, he had not set up another experiment as a control to compare the results.

()

15. Study the following flow chart.



Which of the following correctly matches the organisms to the letters G, H, J and K?

	Angsana	Paramecium	Saga	Mushroom
1	J	K	G	H
2	J	G	K	H
3	J	H	K	G
4	K	G	J	H

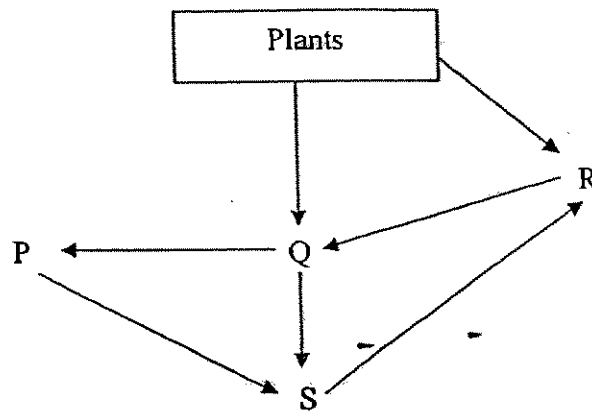
()

16. Which of the following does not require frictional force?

- (1) Writing on the board.
- (2) Holding a bag.
- (3) Clapping your hands.
- (4) Cycling on a bicycle.

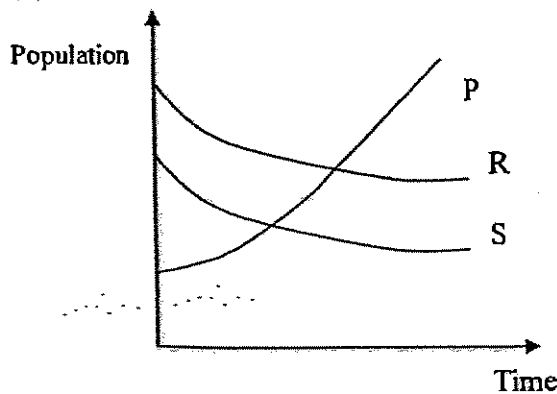
()

17. Study the food web below.

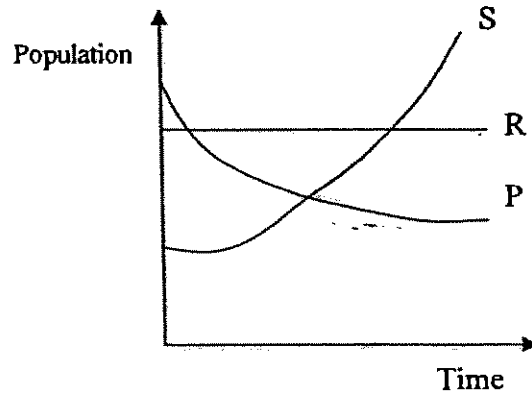


Which one of the following graphs shows the changes in the populations of P, R, and S if the population of Q decreases?

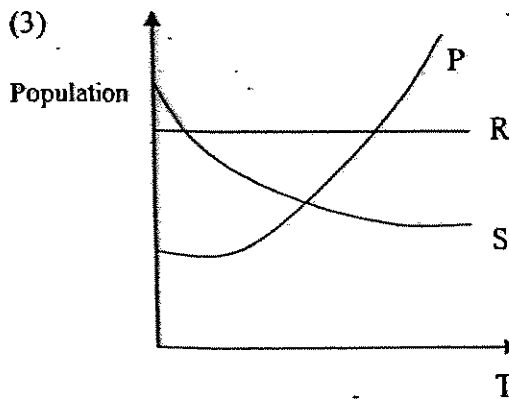
(1)



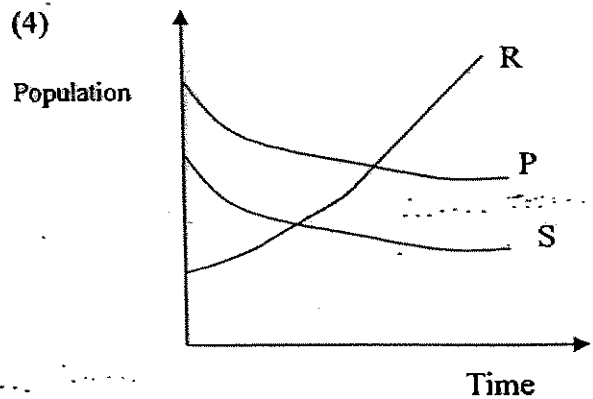
(2)



(3)



(4)



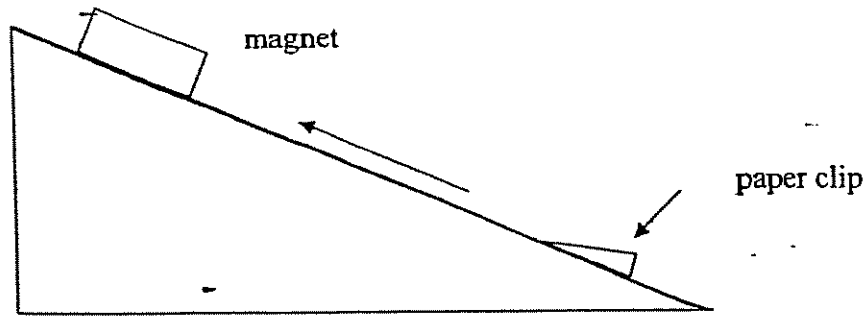
()

18. Why do we usually get to see the full moon from the Earth on the fifteenth day of each lunar month?

- (1) The lighted half of the moon is facing the Earth.
- (2) The moon is not lighted by the Sun at all.
- (3) The moon is between the Sun and the Earth.
- (4) The Sun is between the Earth and the moon.

()

19. When Kenny placed a magnet at the top of the ramp, as shown in the diagram, the paper clip moved up the ramp and became attached to the magnet.



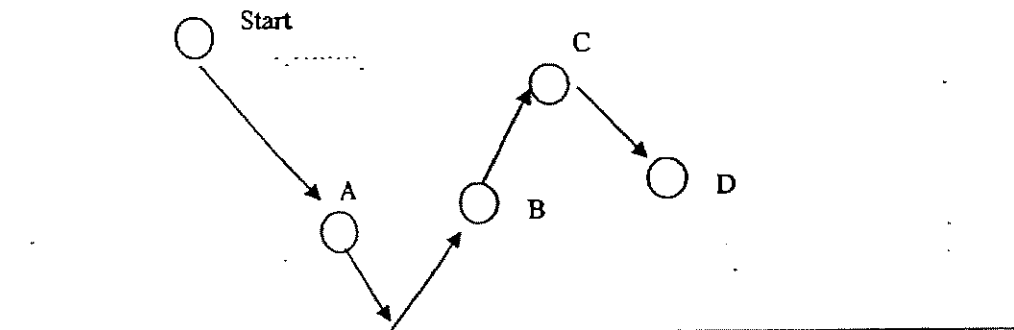
What are the forces acting on the paper clip as it moves along the ramp?

- A: frictional force
- B: magnetic force
- C: elastic potential force
- D: gravitational force

- | | |
|----------------|-------------------|
| (1) B | (2) A and D |
| (3) A, B and D | (4) A, B, C and D |

()

20.

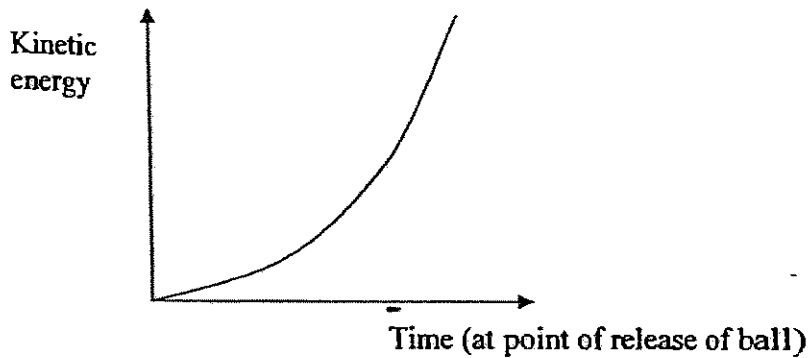


In the diagram above, a ball is released from a height above the ground. At which point is it losing kinetic energy and gaining potential energy?

- | | |
|-------|-------|
| (1) A | (2) B |
| (3) C | (4) D |

()

21. A ball is dropped from the top of a building to the ground floor. The graph shows its kinetic energy as it moves. Which of the following statements are **true**?



- A: The ball has no kinetic energy when it is at rest.
 B: As the ball moves nearer to the ground, its kinetic energy increases.
 C: The kinetic energy of the ball will peak when it touches the ground.

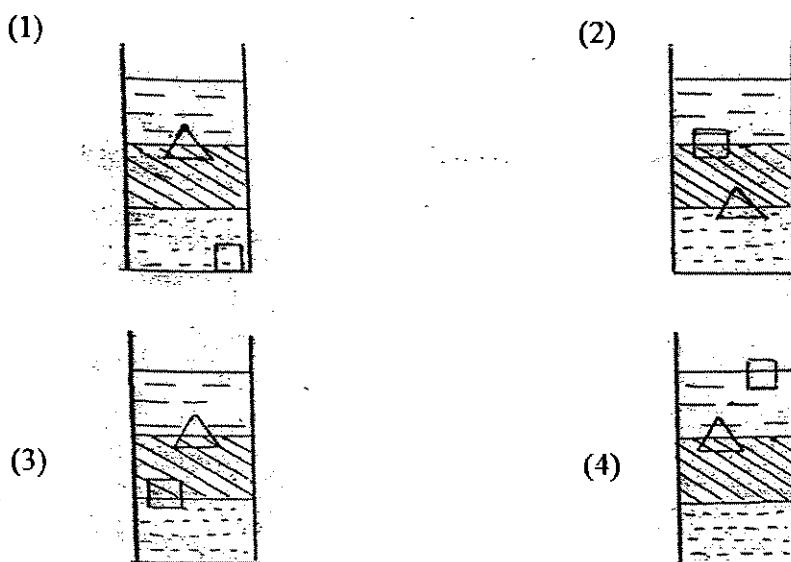
- (1) A only
 (2) A and B only
 (3) B and C only
 (4) A, B and C

()

22. The diagrams below show the positions of two objects when they are placed in three different liquids, X, Y and Z.



When these three types of liquids are poured into a container and both objects are placed in it, which one of the following will show the correct positions of the objects?



()

23. Elyon studied about the leaf litter community in school. He set up four containers of leaf litter, W, X, Y and Z, of the same size and left them in 4 different places. The following table shows the condition in each container of leaf litter.

Container of leaf litter	Location	Temperature	Condition in the leaf litter
W	Under a saga tree	25°C	Damp
X	On a carpark floor	30°C	Dry
Y	In a school field	36°C	Damp
Z	Beside a window	28°C	Dry

In which container do you think Elyon will find the greatest number of populations of animals after two months?

- (1) W (2) X
(3) Y (4) Z

()

24. Roger conducted an experiment by planting one string bean seedling each in 5 identical pots A, B, C, D and E. He planted each seedling in the same amount of identical garden soil under various conditions as shown in the following table. He recorded their growth in height after two weeks, as shown in the table below.

Results of the experiment after 2 weeks:

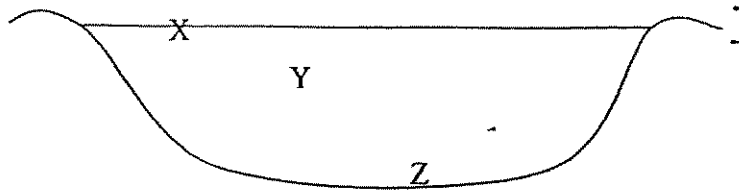
	Plant A	Plant B	Plant C	Plant D	Plant E
Height of plant (cm)	10	20	30	15	45
Amount of fertiliser added (grams)	1	4	6	2	8
Water added (ml per day)	55	55	55	55	55

Study the information on the growth of similar seedlings under different conditions. What conclusion can we draw from this experiment?

- (1) Providing different amounts of fertiliser to the soil affects plant growth more than providing different amounts of water.
(2) The plant needs water and fertiliser for healthy growth.
(3) The plant grew more slowly when less fertiliser was added to the soil.
(4) The plant grew faster when less fertiliser was added to the soil.

()

27. The diagram below shows the cross-section of a pond.



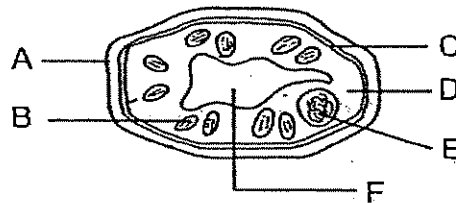
Which two children have identified all the three organisms correctly?

	X	Y	Z
Carol	Water lettuce	Tadpole	Hydrilla
Tom	Duckweed	Guppy	Elodea
Meilin	Pond skater	Watersnail	Duckweed
Kenny	Pond skater	Guppy	Water hyacinth

- (1) Carol and Tom
- (2) Carol and Kenny
- (3) Tom and Meilin
- (4) Meilin and Kenny

()

28. Study the following diagram.



Identify the part labelled C and its function.

- (1) It is the cell membrane. It supports the cell and gives it a regular shape.
- (2) It is the cell membrane. It allows only certain substances to pass through.
- (3) It is the cell wall. It supports the cell and gives it a regular shape.
- (4) It is the cell wall. It allows only certain substances to pass through.

()

29. A plant X was found in its natural habitat in the Sahara desert. Which of the following would probably not describe it?

- A It has thick stems that can store water.
- B It has an extensive shallow root system.
- C It has needle-like leaves.
- D It has stomata on the upper surface of the leaves for gaseous exchange.

- (1) A and B
- (2) A and C
- (3) B and C
- (4) B and D

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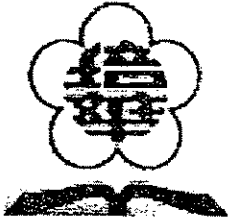
30. Enhui rolled a coin on level ground. After a while, the coin came to a stop. Which of the following statements correctly explains why the coin came to a stop?

- A: The kinetic energy of the moving coin was converted to potential energy.
- B: The kinetic energy of the moving coin was converted to heat and sound energy.
- C: The kinetic energy of the moving coin was used to overcome the friction between the moving coin and the floor.

- (1) A only
- (3) A and C only

- (2) C only
- (4) B and C only

()



**PEI HWA PRESBYTERIAN PRIMARY SCHOOL
FIRST SEMESTRAL ASSESSMENT 2007
SCIENCE
PRIMARY 6**

Name : _____ ()
 Class : _____ (6)
 Date : _____

BOOKLET B

Total time for Booklet A and B : 1 hour 45 minutes

Booklet	Type	Max. Marks	Marks Obtained
A	Multiple-Choice	60	
B	Open-Ended	40	
Grand Total		100	

- Do not open this booklet until you are told to do so.
- Follow all instructions carefully.
- Answer all questions.
- Check your work carefully.

PEI HWA PRESBYTERIAN PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1, 2006
SCIENCE-PRIMARY 6

NAME: _____ ()

MARKS / 40

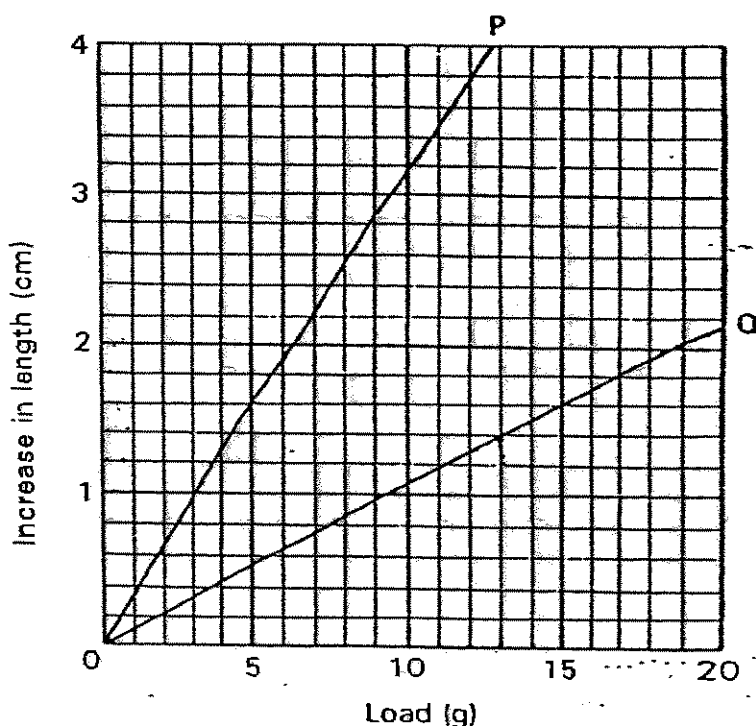
CLASS: _____ (6)

Parent's signature: _____

SECTION B (40 MARKS)

Answer all the questions. Write your answers in the space provided.

31. The graph shows the increase in length of two springs, P and Q, when loads are hung on them.

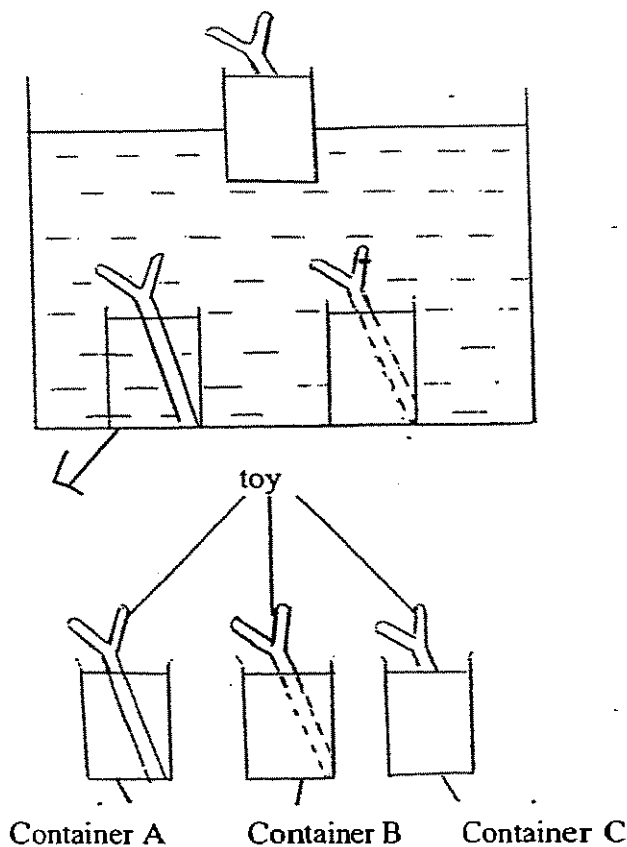


- (a) Study the graph carefully and complete the table below by filling in the empty boxes. (2m)

Spring	Load (g)	Increase in length (cm)
P	5	
Q		1.4

- (b) Which spring is more easily stretched? Explain your answer. (2m)

32. There are three containers, A, B and C. They are made of different materials. The following diagrams show the observations when 3 identical toys are placed in each container and when the three containers are dropped into a tank of water.



Suggest a material that A is made of. Give a reason for your answer. (2m)

33. Samantha wants to carry out an experiment to find out if dead prawns decompose faster in a cupboard or a refrigerator. She put the same number of identical prawns in two identical test-tubes. She placed one test tube in a cupboard (in the living room) and the other in a refrigerator.

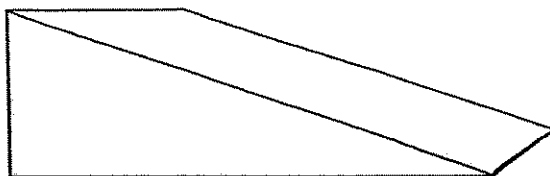
(a) State ^{one} ~~two~~ other variables that she has to keep the same. (2m)

(i) _____

~~(ii)~~ _____

(b) What is the variable that is changed in this experiment? (1m)

34. Elaine set up a ramp as shown in the diagram. She first rolled a tin down the ramp. After that, she rolled a ball and finally a ring down the ramp. The time taken for each object to reach the floor was recorded. The experiment was carried out three times with each object. The table below shows the results of the experiment.

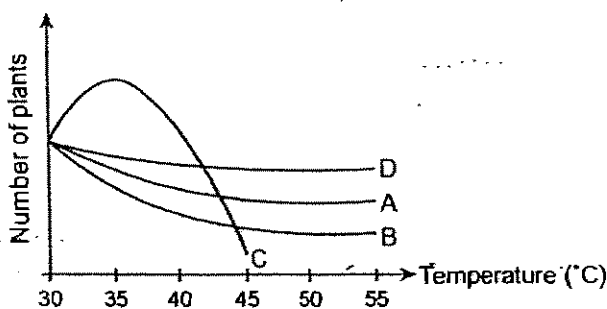


Object	Time taken (s)		
	First try	Second try	Third try
Tin	3.1	1.9	2.5
Ball	2.4	0.7	1.5
Ring	3.9	2.2	3.0

- a) What is the force that causes the objects to roll down the ramp? (1m)

- b) The times taken for each object to reach the floor are different in the three tries. Give a possible reason why this happened. (1m)

35. The graph below shows the relationship between the number of different species of plants A, B, C and D and temperature of the surrounding.



- a) What is the ideal temperature to grow plant C? (1m)

- b) Describe the relationship between temperature of the surrounding and the population of Plant A. (1m) 2m

36. Give two differences between the physical characteristics of the leaf litter community and the garden community. (2m)

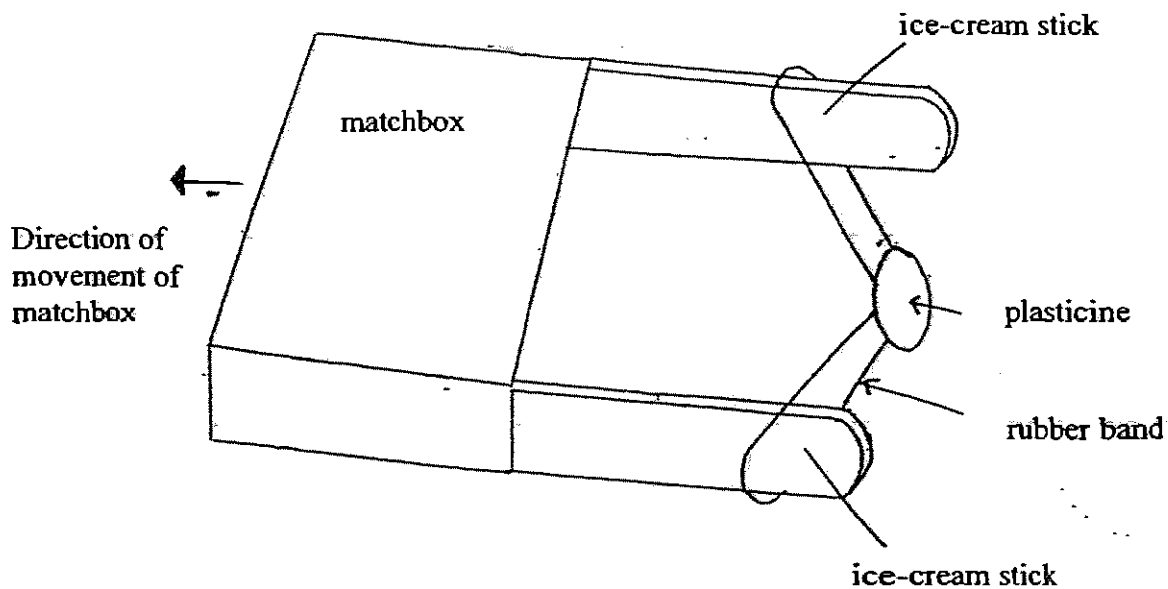
37. Study the plants in the box.

Lotus	Elodea	Cattail	Hydrilla
-------	--------	---------	----------

a) In which habitat are you most likely to find these plants? (1m)

b) Group the above plants into two groups and present your answer in a classification table below. Include a heading for each group of plants. (3m)

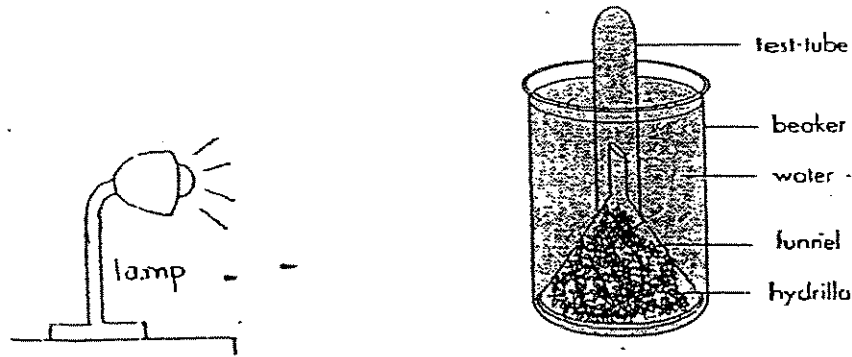
38. The toy shown below is made up of a matchbox with 2 ice-cream sticks attached to the sides of the box. A piece of plasticine was placed in a rubber band placed at the two ends of the ice-cream sticks. When the rubber band is released, the matchbox moves in the direction indicated by the arrow.



- a) Write down the energy conversion that occurs when the rubber band is released, causing the matchbox to move. (2m)

- b) What could be done to the toy to make the matchbox move at a further distance? (1m)

39. Mr Samad set up the experiment shown below to find out how the rate of photosynthesis is affected by the intensity of light.



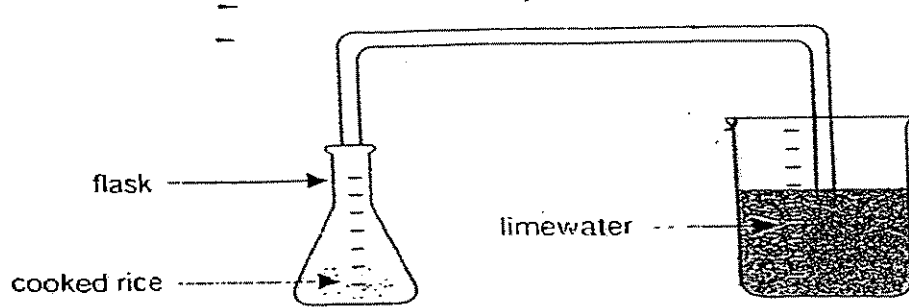
The beaker was placed at different distances from the light source and the bubbles given off by the hydrilla were recorded.

Distance of lamp from beaker in cm	Bubbles released per minute
10	16
20	13
30	8
40	6
50	5

a) Predict what you would expect the number of bubbles released to be when the lamp is 25 cm from the beaker. (1m)

b) From the results given in the table above, what is the relationship between the distance of the lamp from the beaker and the number of bubbles released per minute? (2m)

40. In the set-up shown below, some limewater was poured into the beaker and some cooked rice was put into the flask. The set-up was left at room temperature for one week.

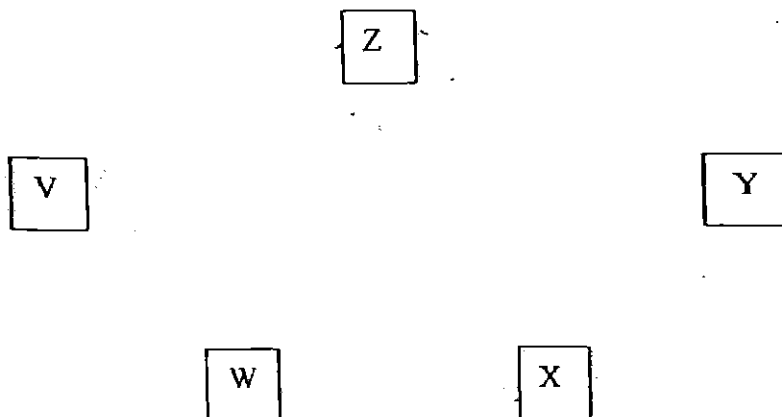


(a) Describe what you would observe in the beaker after one week. (1m)

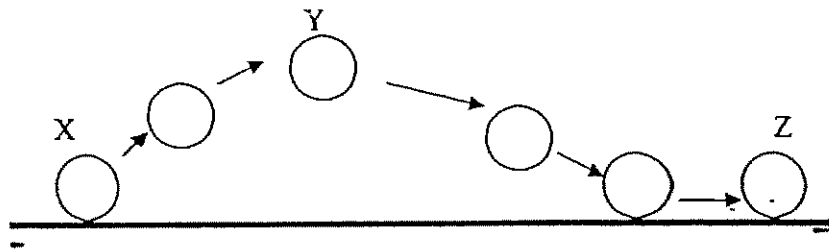
(b) Explain why this happens. (1m)

41. A community consists of only five organisms V, W, X, Y and Z. Study the following information about these organisms carefully and construct a food web based on the information given. (2m)

- V is an omnivore.
- W is the only producer.
- X and Z are herbivores.
- Y feeds on X and Z only.
- V feeds on Z.



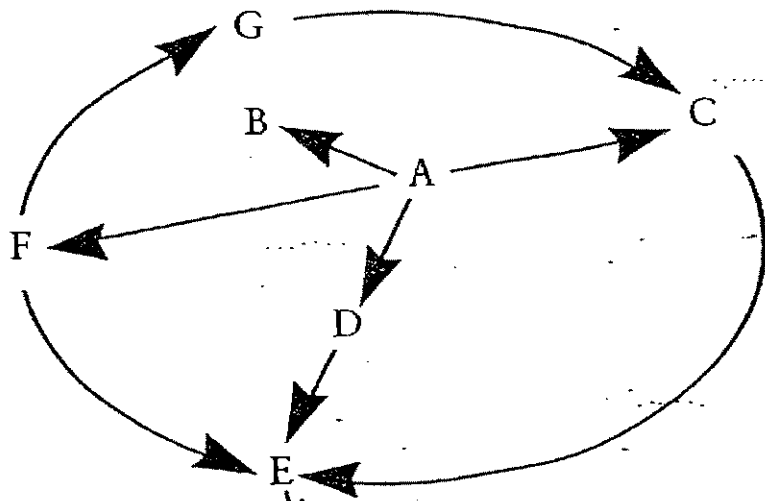
42. The following diagram shows the path taken by a football after it was kicked from the starting point position X.



a) What energy does the football possess at point Y? (1m)

b) What force(s) cause(s) the football to move from position Y to finally rest at Z? (1m)

43. Study the food web below and answer the following questions.



a) Write down the correct alphabet(s) to identify the herbivore(s). (1m)

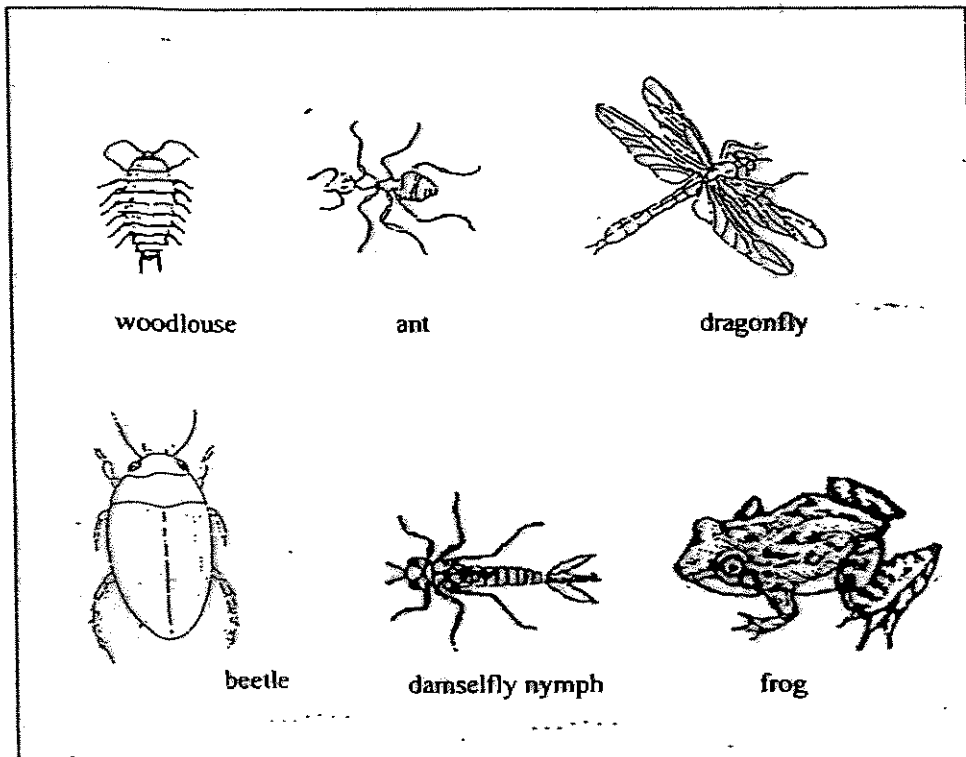
b) What kind of food consumer is 'C'? (1m)

44. Give two reasons why the planet Earth supports a diversity of life unlike other planets. (2m)

i) _____

ii) _____

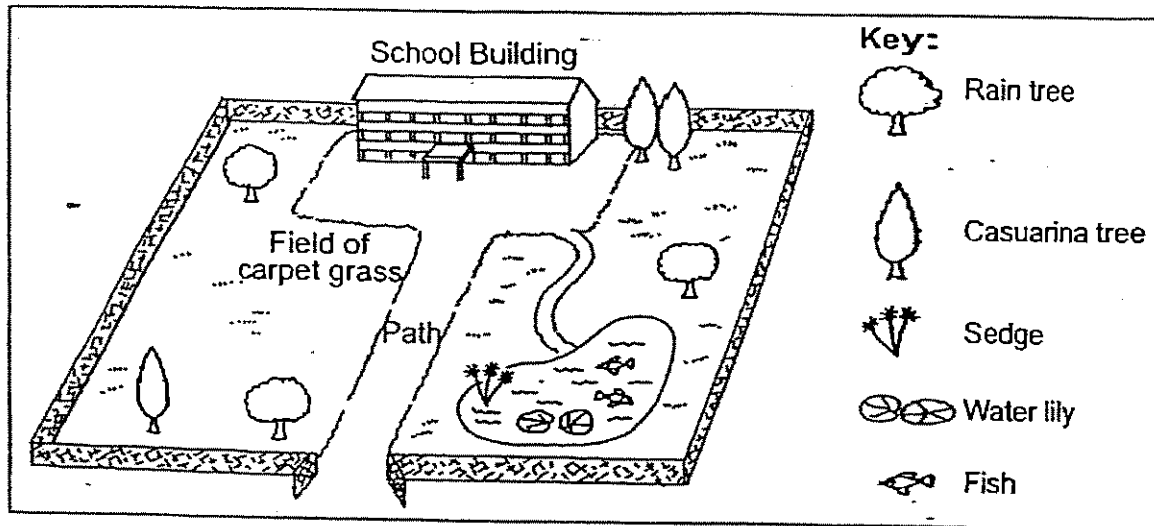
45. Study carefully the diagram below and answer the following questions.



a) Name two organisms that belong to the pond community. (1m)

b) Name two organisms that belong to the leaf litter community. (1m)

46. The diagram below shows the map of a school.

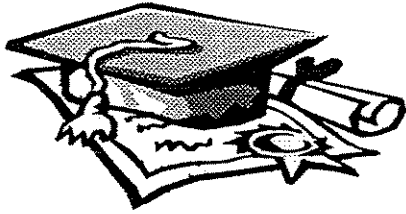


a) How many plant populations are indicated on the map? (1m)

b) If more rain trees and casuarina trees are planted on the field of carpet grass, what will happen to the carpet grass? (1m)

c) Explain your answer in part (b). (1m)

- End of Paper -



ANSWER SHEET

PEI HWA PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
SEMESTRAL ASSESSMENT (1)

1. 4 31)a) 13, 1.6
 2. 3 b) Spring P. It extends longer than
 3. 3 spring Q when a load 13g was hung.
 4. 4
 5. 3 32) Glass. It is transparent and it
 6. 3 sinks.
 7. 1
 8. 4 33)a) i) Period of time.
 9. 4 b) The place where the prawns are put.
 10. 4
 11. 1 34)a) Gravitational Force.
 12. 2 b) The objects were released at
 13. 3 different starting points.
 14. 4
 15. 2 35)a) 35°C
 16. 3 b) The higher the temperature, the
 17. 4 smaller the population.
 18. 1
 19. 3 36) 1) The temperature in the garden
 20. 2 community is higher than the leaf
 21. 2 litter community.
 22. 3 2) The leaf litter community does
 23. 1 not receive as much sunlight as
 24. 3 the garden community.
 25. 4
 26. 2 37)a) Pond habitat.
 27. 1 b) Partially-submerged Full-submerged
 28. 2 Lotus Hydrilla
 29. 4 Cattail Elodea
 30. 4

38) a) Potential Energy \rightarrow Kinetic energy + Heat energy.

b) Pull harder on the rubber band so that it moves further.

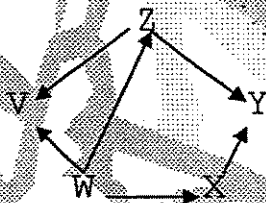
39) a) Between 8 and 13 bubbles in a minute.

b) The further the distance of the lamp from the beaker, the lesser the number of bubbles released per minute.

40) a) The lime water had turned chalky.

b) The rice was decomposing and when it decomposes, it produces carbon dioxide.

41)



42) a) Gravitational Potential Energy.

b) Gravitational and Frictional Force.

43) a) B, D, F

b) It is an omnivore.

..... 44) i) The presence of a layer of atmosphere surrounding it.

ii) It has water.

45) a) dragonfly and damselfly nymph.

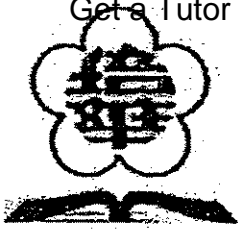
b) woodlouse and beetle.

46) a) 5

b) They will die.

c) The rain trees and casuarinas tree compete with the carpet grass for sunlight water and nutrients.

---end---



PEI HWA PRESBYTERIAN PRIMARY SCHOOL
PRELIMINARY EXAMINATION 2007
SCIENCE
PRIMARY 6

Name : _____ ()
 Class : _____ (6)
 Date : _____
 Parent's Signature : _____

BOOKLET A

Total time for Booklet A and B : 1 hour 45 minutes

Booklet	Type	Max. Marks	Marks Obtained
A	Multiple-Choice	60	
B	Open-Ended	40	
Grand Total		100	

- Do not open this booklet until you are told to do so.
- Follow all instructions carefully.
- Answer all questions.
- Check your work carefully.

**PEI HWA PRESBYTERIAN PRIMARY SCHOOL
PRELIMINARY EXAMINATION 2007
SCIENCE
PRIMARY 6**

NAME: _____ ()

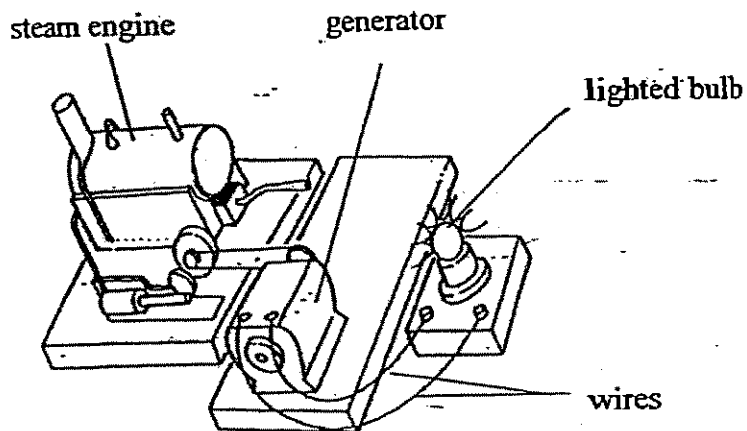
MARKS: _____ / 60

CLASS: _____ (6)

Section A (30 × 2 = 60 MARKS)

For each question from 1 to 30, four options are given. Only one of them is correct. Make your choice (1, 2, 3 or 4) and shade the correct oval on the Optical Answer Sheet (OAS).

1. A steam engine produces steam that turns the turbine, which is connected to a generator.



Which of the following energy pathways best describes the energy changes which occur?

(1)	Heat energy → Kinetic energy → Electrical energy → Heat + Light energy energy
(2)	Electrical energy → Heat energy → Kinetic energy → Heat + Light energy energy
(3)	Heat energy → Light energy → Electrical energy → Heat + Light energy energy
(4)	Light energy → Kinetic energy → Electrical energy → Heat + Light energy energy

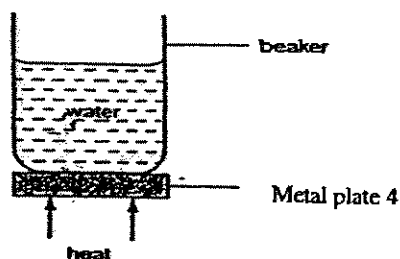
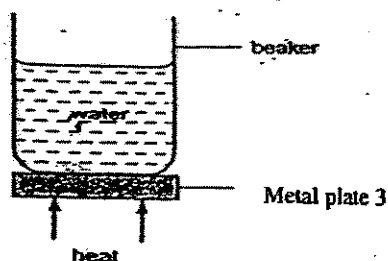
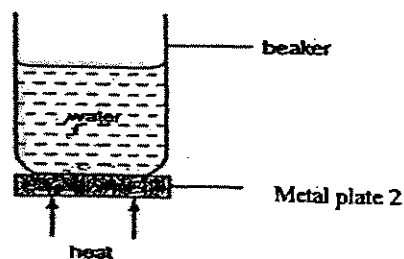
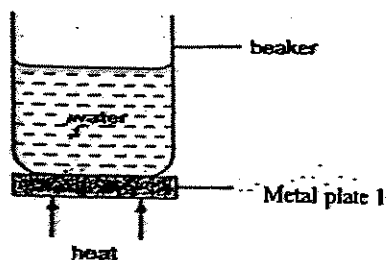
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2. In which one of the following situations must frictional forces be kept at the lowest?

- (1) Skiing down a snow slope
- (2) Applying the brakes of a bicycle
- (3) Walking along a road
- (4) Leaning a ladder against a wall

()

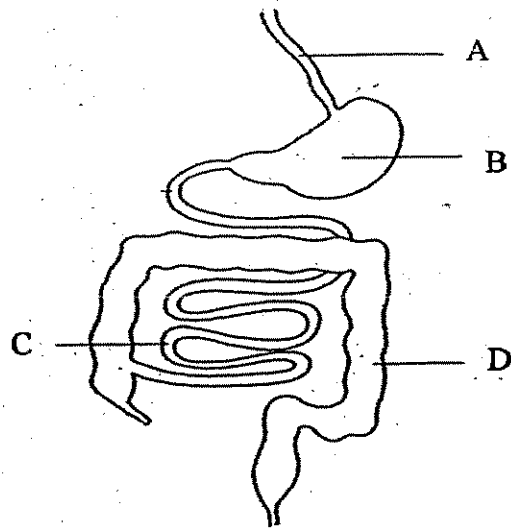
3. Four beakers containing the same amount of water at the same temperature are placed on hot metal plates. The plates are all the same size but made from four different metals. The times taken to produce the increase in temperature of the water are given below. Which metal plate is the poorest conductor?



Metal Plate	Increase In Temperature	Time
(1)	10°C	100 s
(2)	12°C	100 s
(3)	15°C	200 s
(4)	18°C	200 s

()

4. The diagram below shows the human digestive system.



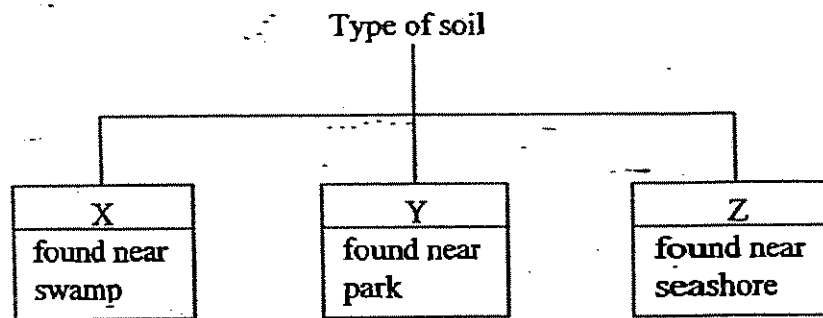
In which part, A, B, C or D, is food digested and passed into the blood vessels?

- (1) A
- (3) C

- (2) B
- (4) D

()

5. The following shows a classification chart.

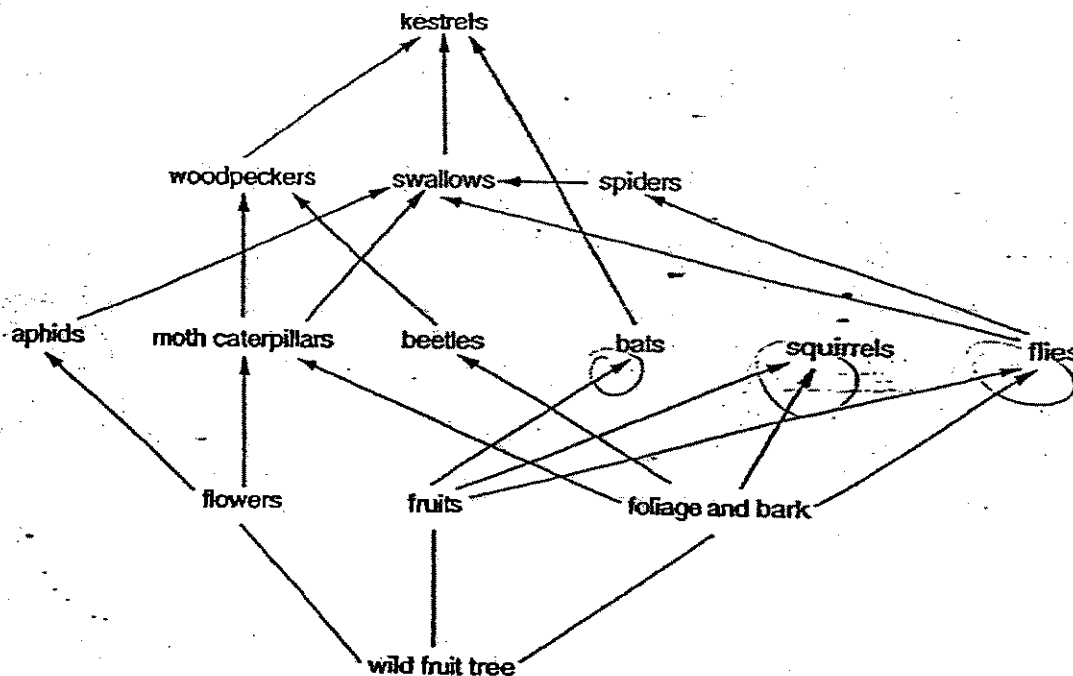


Which of the headings represent X, Y and Z?

	X	Y	Z
(1)	Clayey	Garden	Sandy
(2)	Garden	Clayey	Sandy
(3)	Sandy	Garden	Clayey
(4)	Clayey	Sandy	Garden

()

6. The diagram below shows a food web of a community living on a wild fruit tree.



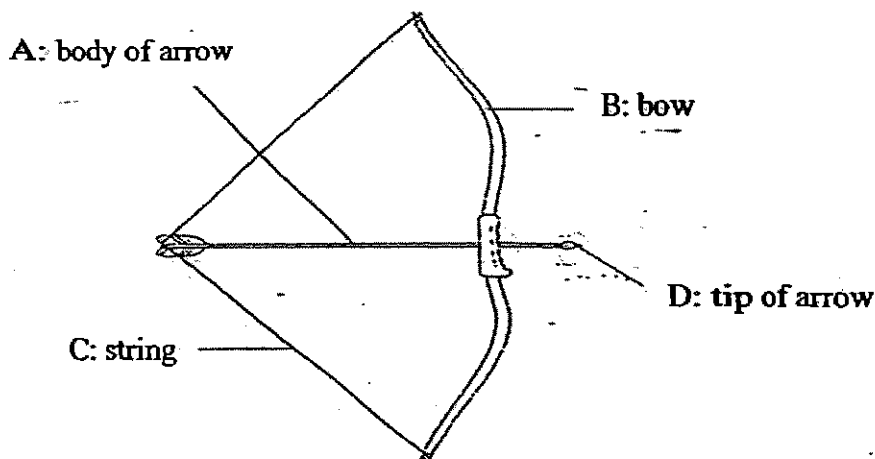
Which animals would be most affected, if the flowers of the tree were not pollinated?

- (1) aphids
- (3) kestrels

- (2) squirrels
- (4) bats

()

7.



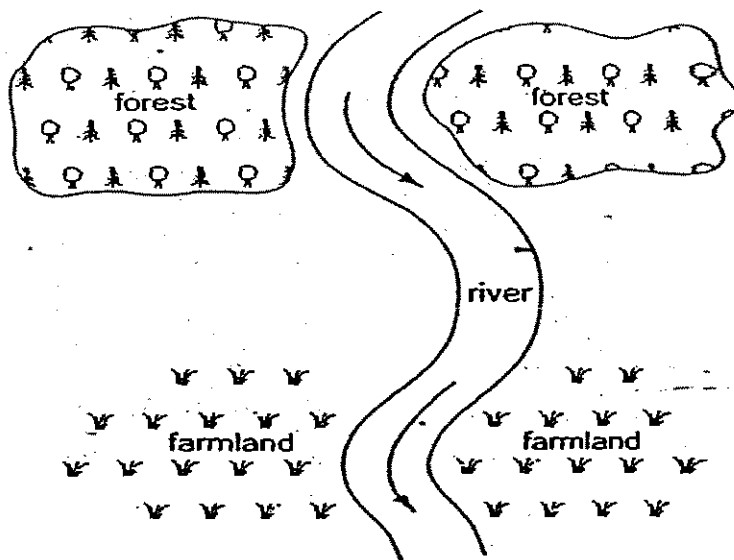
When Muthu released an arrow shown in the diagram above, it travelled at a great speed. The arrow's kinetic energy was converted from energy stored in _____.

- (1) A only
- (3) A and C only

- (2) B and C only
- (4) A, C and D only

()

8. The diagram below shows a forest and farmland on either side of a river.

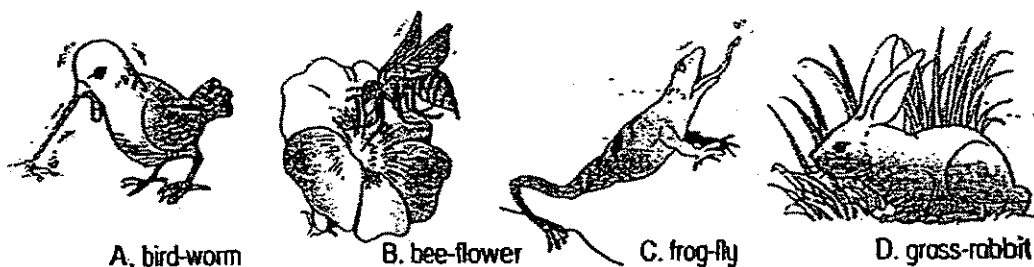


The forest is cut down. What will be the most likely effect and how it is connected to the cutting down of the forest?

	Likely effect	How it is connected to the cutting down of the forest
(1)	Flooding of the farmland	Water running off cleared area
(2)	Gradual change to desert conditions	Global warming
(3)	Increase in number of water plants	More light falling on the river
(4)	Gradual change to swampy conditions	Trees no longer transpiring

()

9. Which of the following shows a predator-prey relationship?

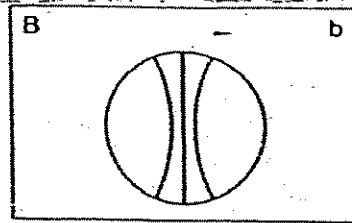


- (1) A and B only
- (3) A, B and C only

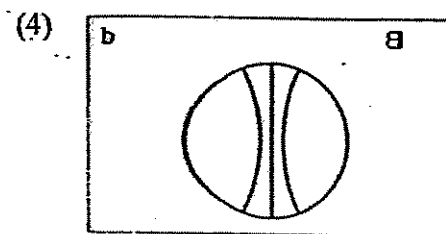
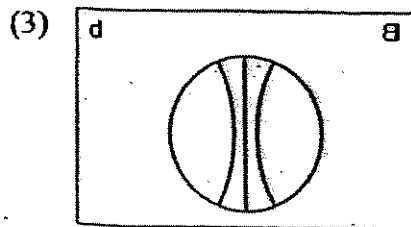
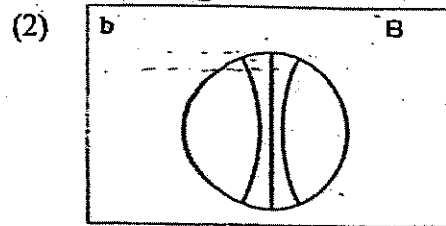
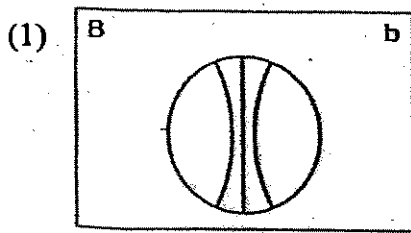
- (2) A and C only
- (4) A, B, C and D

()

10.

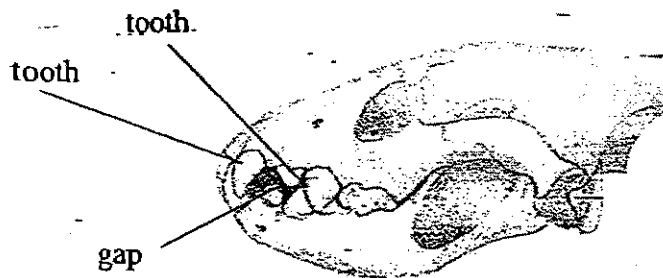


A placard like the one shown above will appear in the mirror as



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11. George discovered a skull during a field trip. He examined the skull and concluded that it belonged to an animal which preyed on other animals.

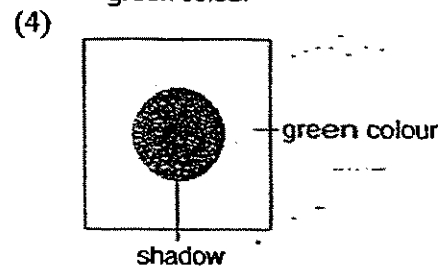
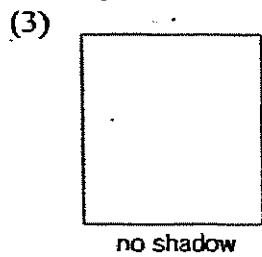
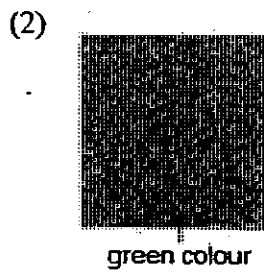
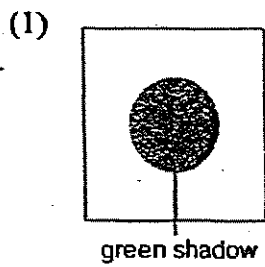
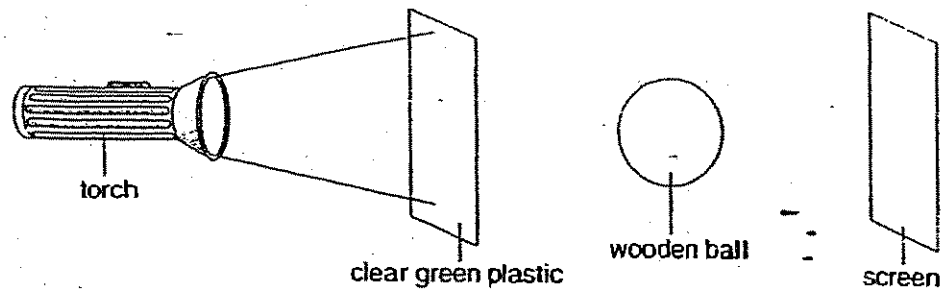


Which one of the following pieces of information helped George arrive at his conclusion?

- (1) There are lesser teeth on the lower jaw.
- (2) There is a big gap between the teeth.
- (3) There are few teeth.
- (4) The teeth are sharp and pointed.

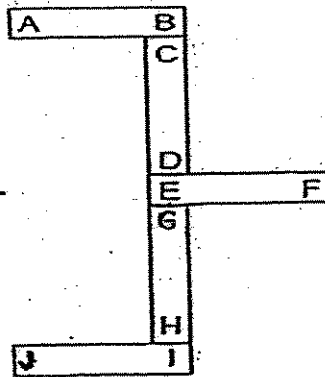
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12. Siva conducts the experiment as shown below. Which of the following shadows will he see on the screen?

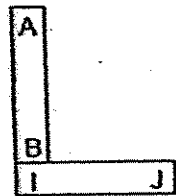


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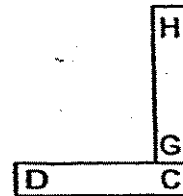
13. Five bar magnets with their ends marked A to J can be arranged as shown below. Which of the following diagrams shows a possible arrangement of two of the magnets?



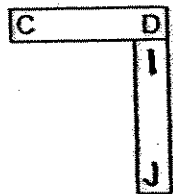
(1)



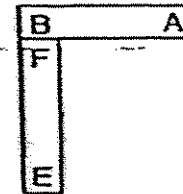
(2)



(3)

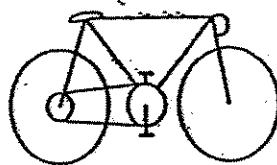


(4)

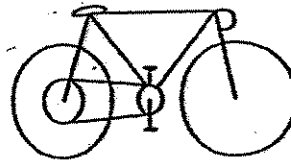


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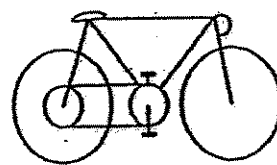
14. Which of the bicycles below requires the least effort to ride when going uphill?



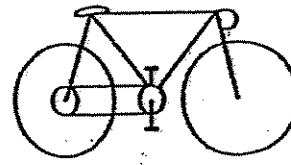
(1)



(2)



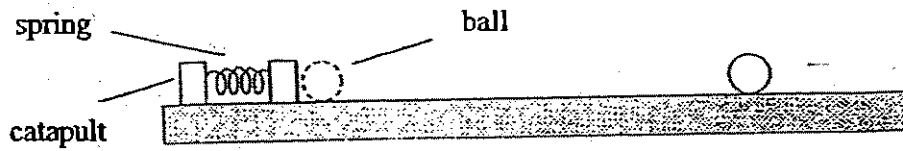
(3)



(4)

()

15. Farid wanted to find out how the length of the spring of a catapult affects the elastic force exerted by the catapult. He set up the experiment as shown below.

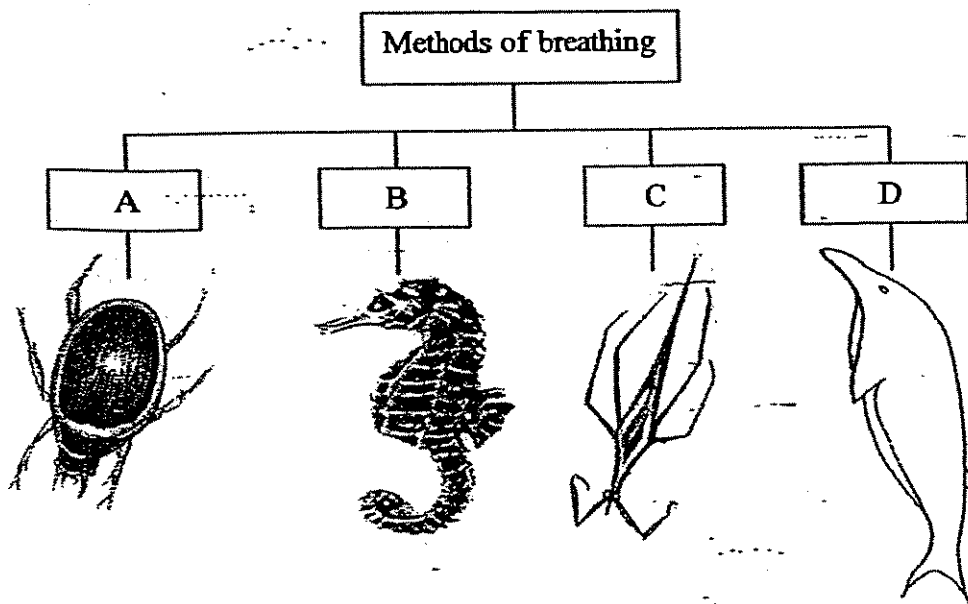


Study the list of variables given. Which of the variables he must keep the same in order to have a fair test?

- A: The surface of the table
- B: The ball
- C: The length of the spring
- D: The material used for the spring

- (1) A and B only
 - (2) A and D only
 - (3) A, B and C only
 - (4) A, B and D only
- ()

16. The table below shows how a few aquatic animals can be classified.

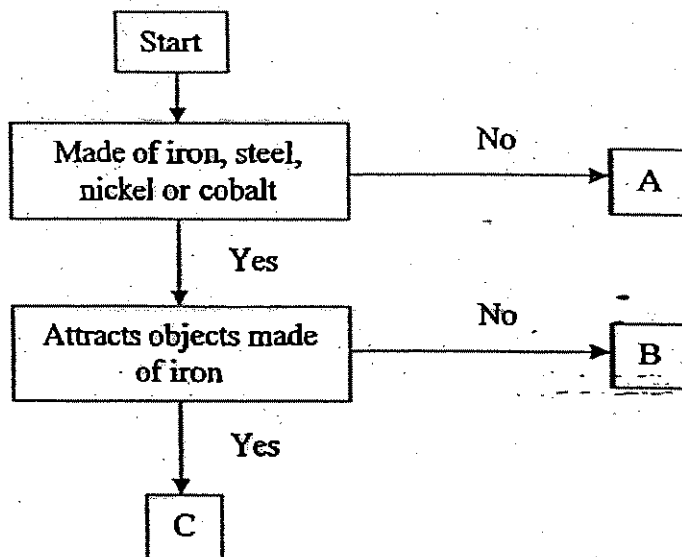


Which group, A, B, C or D, does the animal below belong to?



- (1) A
 - (2) B
 - (3) C
 - (4) D
- ()

17. In the flow chart below, A, B and C represent different objects.

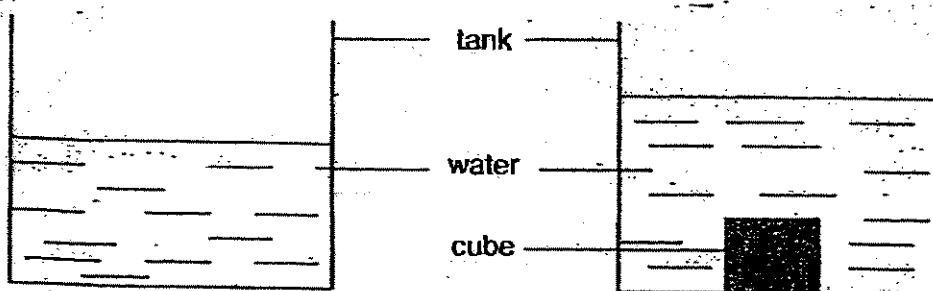


Which of the following is correct?

	A	B	C
(1)	Plastic ruler	Nail	Horseshoe magnet
(2)	Eraser	Pencil	Lodestone
(3)	Paper	U-shaped magnet	Pencil lead
(4)	Rod magnet	Paper clip	Wooden ruler

()

18. Thomas filled a tank with water. When he dropped a cube into the tank, he observed that the water level rose as shown below.

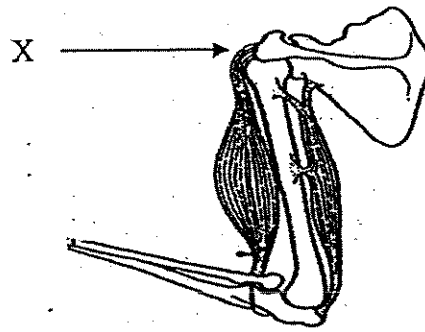


What is the explanation for the above observation?

- (1) The cube does not float on water.
- (2) The cube was heavier than the water.
- (3) The water expanded when the cube was placed in the tank.
- (4) The cube took up space previously occupied by the water.

()

19. The diagram below shows a joint of the human arm.



Which of the following joints of the human skeletal system moves the same way as the part marked 'X'?

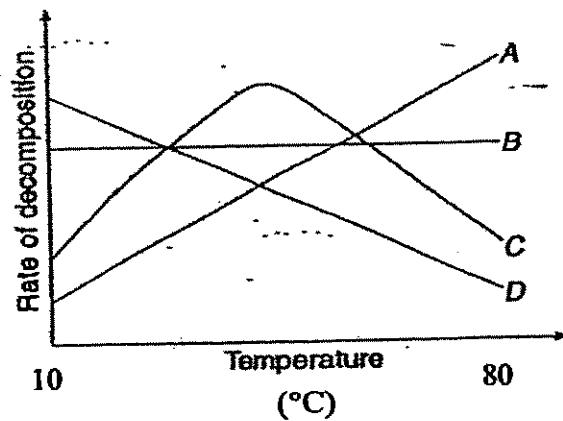
- A: elbow
- B: knee
- C: wrist
- D: ankle

- (1) A and B only
- (3) C and D only

- (2) B and C only
- (4) A and D only

()

20. Which of the following graphs most likely shows the relationship between the rate of decomposition and temperature?

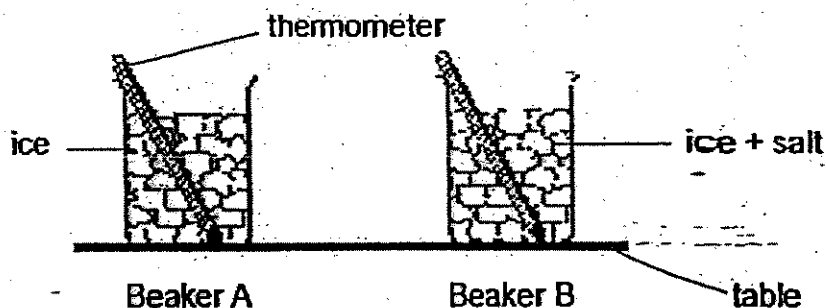


- (1) A
- (3) C

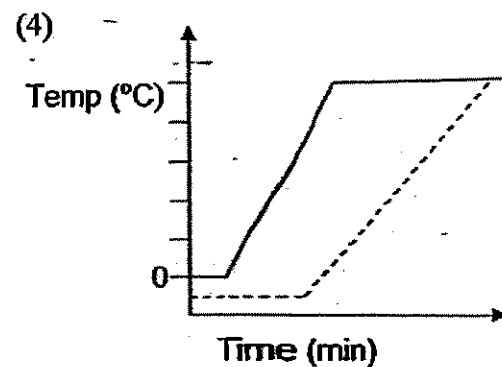
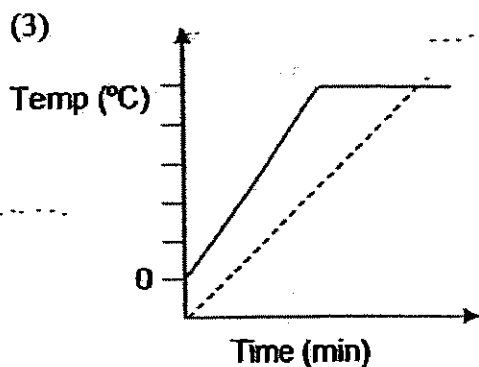
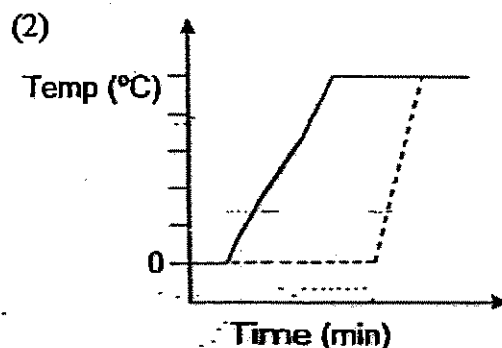
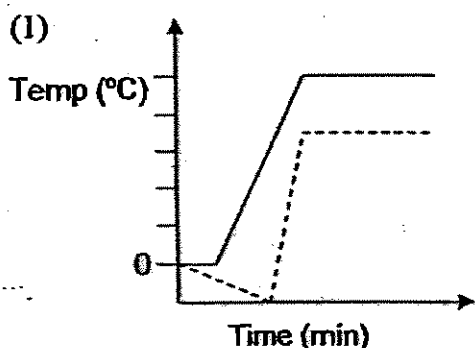
- (2) B
- (4) D

()

21. Jackson carried out an experiment using two beakers of ice as shown below. Beaker A and Beaker B contained the same amount of ice. Some salt was added to the ice in Beaker B only. The temperatures were observed and recorded at regular intervals.



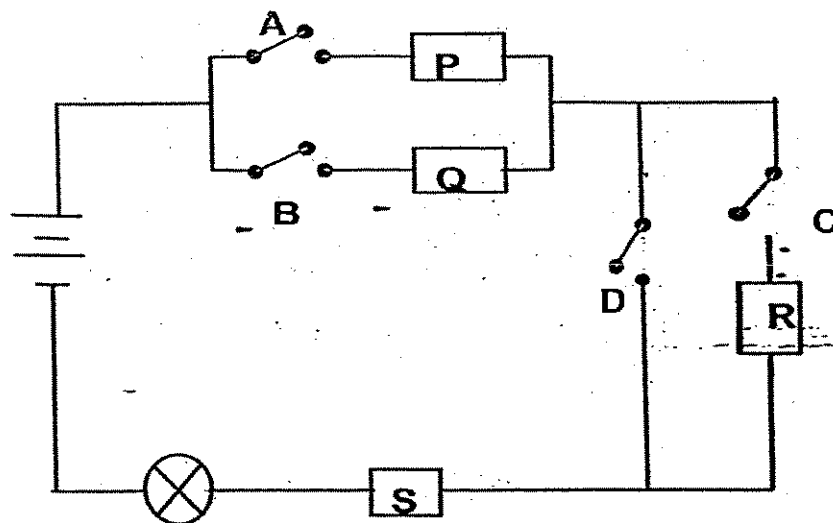
Which of the following graphs below correctly shows the changes in the temperature in the two beakers over time?



————— Beaker A
 - - - - - Beaker B

()

22. The diagram below shows an electrical circuit. P, Q, R and S are objects placed in the circuit. A, B, C and D are switches.



The table below shows what happens when the switches are closed.

Switches closed	Bulb lighted
A and D only	√
B and D only	X
A and C only	√
B and C only	X

Which of the following sentences is true about the circuit?

- (1) Only P and S are conductors of electricity.
- (2) Only P and R are conductors of electricity.
- (3) Only P, Q and R are conductors of electricity.
- (4) Only P, R and S are conductors of electricity.

()

23. Examples of biotechnology include _____

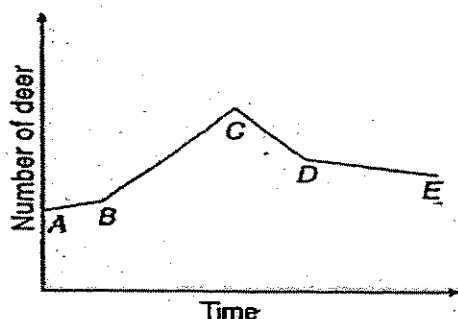
- A: manufacture of yoghurt
- B: making a tomato plant pest-resistant
- C: observing the ozone layer
- D: recycling paper to make paper products

- (1) A and B only
- (3) A, B and C only

- (2) C and D only
- (4) A, B and D only

()

24. The following graph shows the change in deer population in a forest.



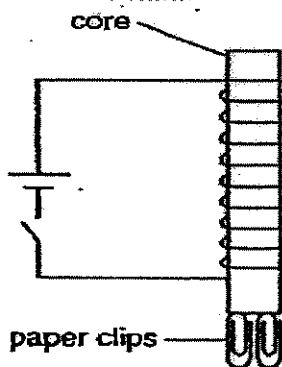
Which of the following events may have occurred at point B?

- A: A forest fire broke out.
- B: There was an increase in plant populations.
- C: A disease inflicted the deer population.
- D: All the deer's predators were killed.

- (1) A and B only
- (2) A and C only
- (3) B and D only
- (4) A, C and D only

()

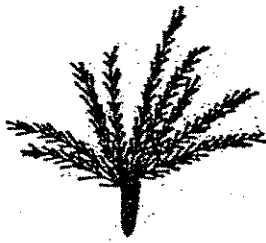
25. Four different metal rods are placed, in turn, inside a coil of copper wire. The table below gives the results of the experiment. Which rod would be most suitable to use for the core in an electric bell?



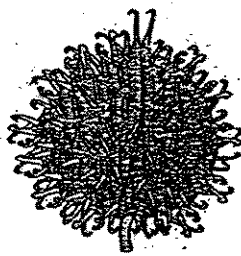
Rod	Number of paper clips held when current is switched on	Number of paper clips held when current is switched off
(1)	4	4
(2)	8	5
(3)	6	0
(4)	5	1

()

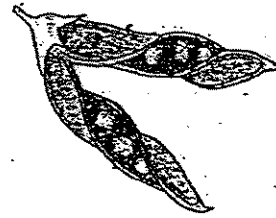
28. The diagrams below show the fruit of three plants.



Fruit I

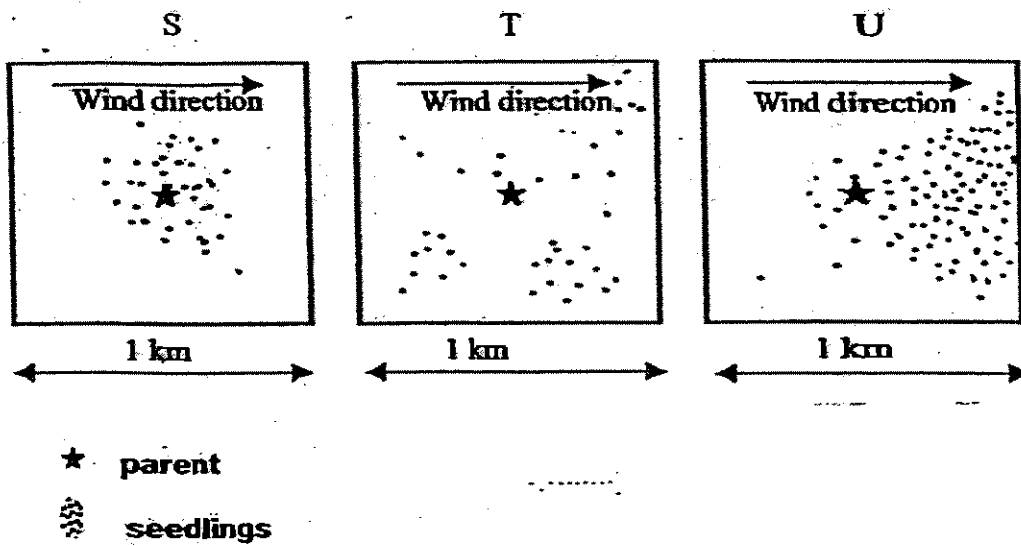


Fruit II



Fruit III

The dispersal patterns S, T and U of the 3 plants are shown below.

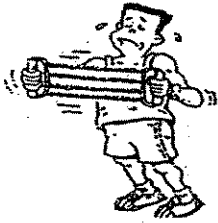





Which of the plants would produce dispersal patterns S, T and U respectively?

Dispersal of fruits			
	Fruit I	Fruit II	Fruit III
(1)	S	T	U
(2)	U	S	T
(3)	U	T	S
(4)	T	U	S

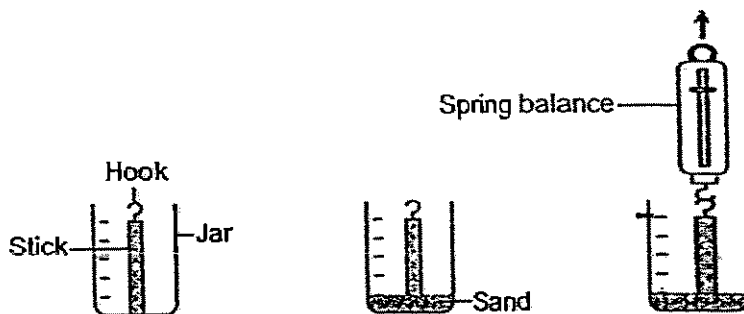
()

- 29. Each diagram below shows the action and the force(s) required to carry out the action. Which of them is wrongly matched?

	Action	Push	Pull
(1)			✓
(2)			✓
(3)			✓
(4)		✓	✓

()

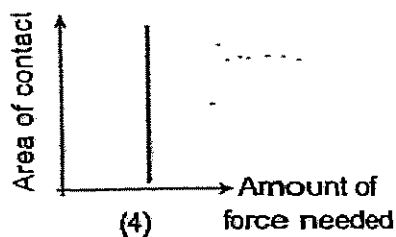
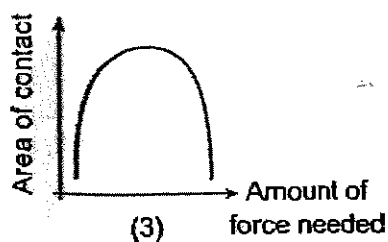
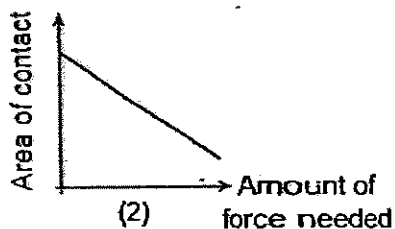
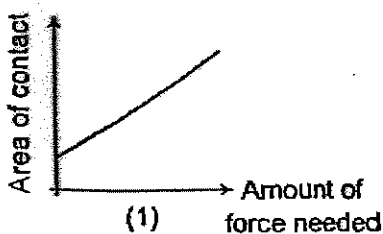
30. Sivaji set up an experiment as shown below.



He placed a stick in a jar, as shown in the first diagram. He then poured sand into the jar until it reached the first mark. Next, he attached a spring balance to the hook and pulled slowly upwards. He recorded the amount of force needed to pull the stick out of the sand. Next, he repeated the experiment with more sand reaching different marks each time.

After the experiment, he drew a graph to show the relationship between the amount of force needed to pull the stick out and the area of contact between the sand and the stick.

Which of the following graphs below describes correctly the results of Sivaji's experiment?



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**PEI HWA PRESBYTERIAN PRIMARY SCHOOL
PRELIMINARY EXAMINATION 2007
SCIENCE
PRIMARY 6**

Name : _____ (. . .)

Class : _____ (6)

Date : _____

BOOKLET B

Total time for Booklet A and B : 1 hour 45 minutes

Booklet	Type	Max. Marks	Marks Obtained
A	Multiple-Choice	60	
B	Open-Ended	40	
Grand Total		100	

- Do not open this booklet until you are told to do so.
- Follow all instructions carefully.
- Answer all questions.
- Check your work carefully.

PEI HWA PRESBYTERIAN PRIMARY SCHOOL
PRELIMINARY EXAMINATION 2007
SCIENCE
PRIMARY 6

NAME: _____ () MARKS: _____ / 40

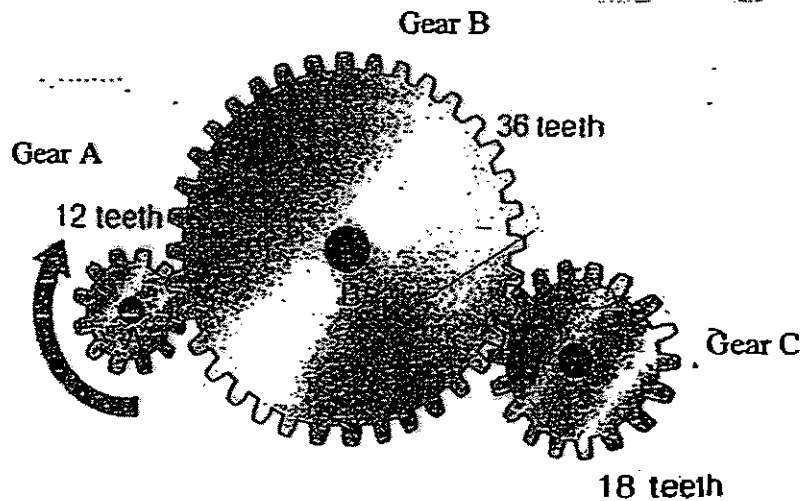
CLASS: _____ (6) Parent's signature: _____

SECTION B (40 MARKS)

Answer all questions. Write your answers in the space provided.

31. A, B and C are three gear wheels. Gear A has 12 teeth.
 Gear B has 36 teeth. Gear C has 18 teeth.

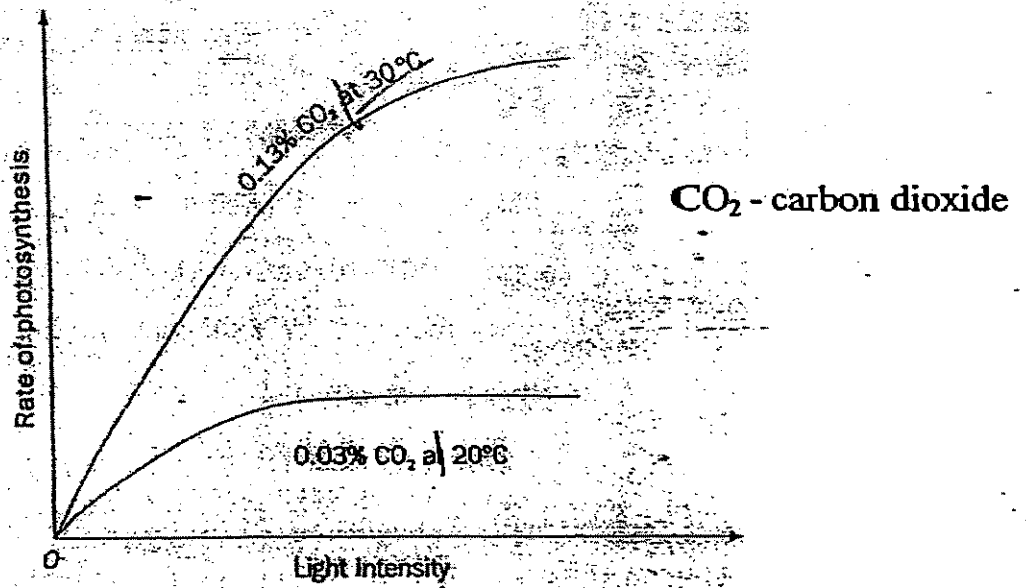
a) Gear A is turning in a clockwise direction. Draw arrows to show the directions in which Gears B and C are turning. (1 mark)



b) Write down the number of times per minute Gear B will turn if Gear A is rotated 30 times per minute. (1 mark)

Gear B : _____ times per minute

32. Jack carried out an experiment and drew the graphs as shown below.



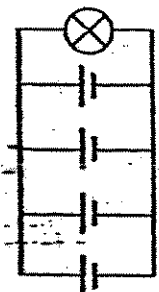
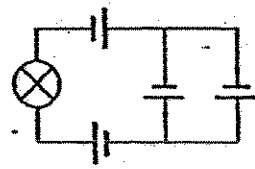
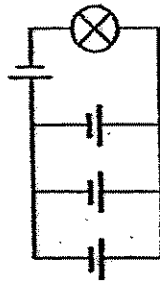
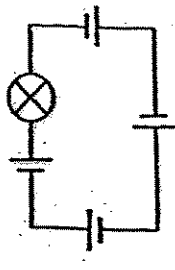
a) How does the concentration of CO₂ affect the rate of photosynthesis? (1 mark)

b) Based on the information given on the graph, what are two other factors that affect the rate of photosynthesis other than the concentration of CO₂? (2 marks)

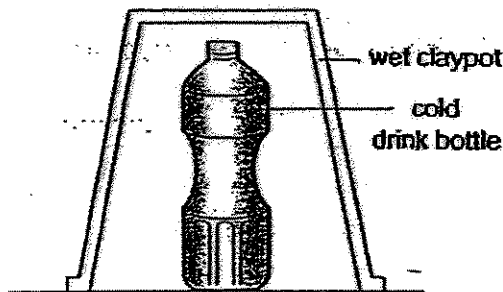
i)

ii)

33. Study the four circuit diagrams below. All the batteries and bulbs are similar. Arrange them in order of brightness by writing 1, 2, 3 and 4 in the boxes below. '1' represents the brightest setup while '4' represents the dimmest. (1 mark)

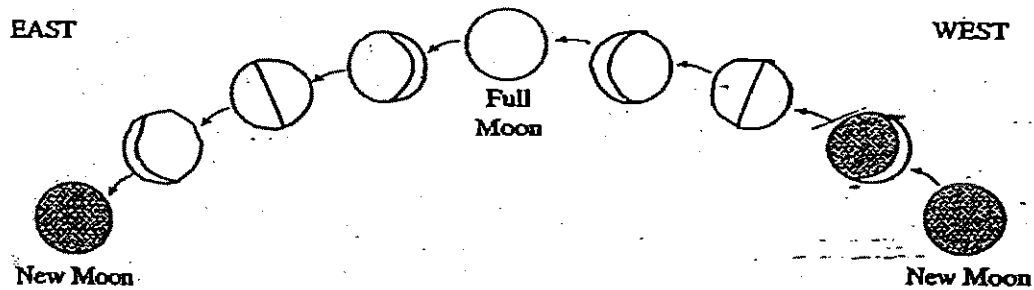


34. Study the diagram below.



A cold drink can be kept cool by placing a wet claypot over it as shown in the diagram. The claypot had been previously soaked in water. Explain the reason for the drink remaining cold. (2 marks)

35. Study the diagram carefully. The Moon moves across the sky from West to East over a month. Shade the correct part of each circle to show the phases of the Moon. The first and last two circles have been shaded for you. (2 marks)



36. The table below shows the classification of several different activities.

Group A	Group B
Planting new trees to replace those that were cut down	Cutting down trees to build houses and factories
Melting scraped cars to recover metal	Spraying pesticides on crops
Using waste water to flush toilets	Disposing dirty water into rivers

a) Suggest suitable headings for Group A and Group B? (2 marks)

Group A: Activities that _____

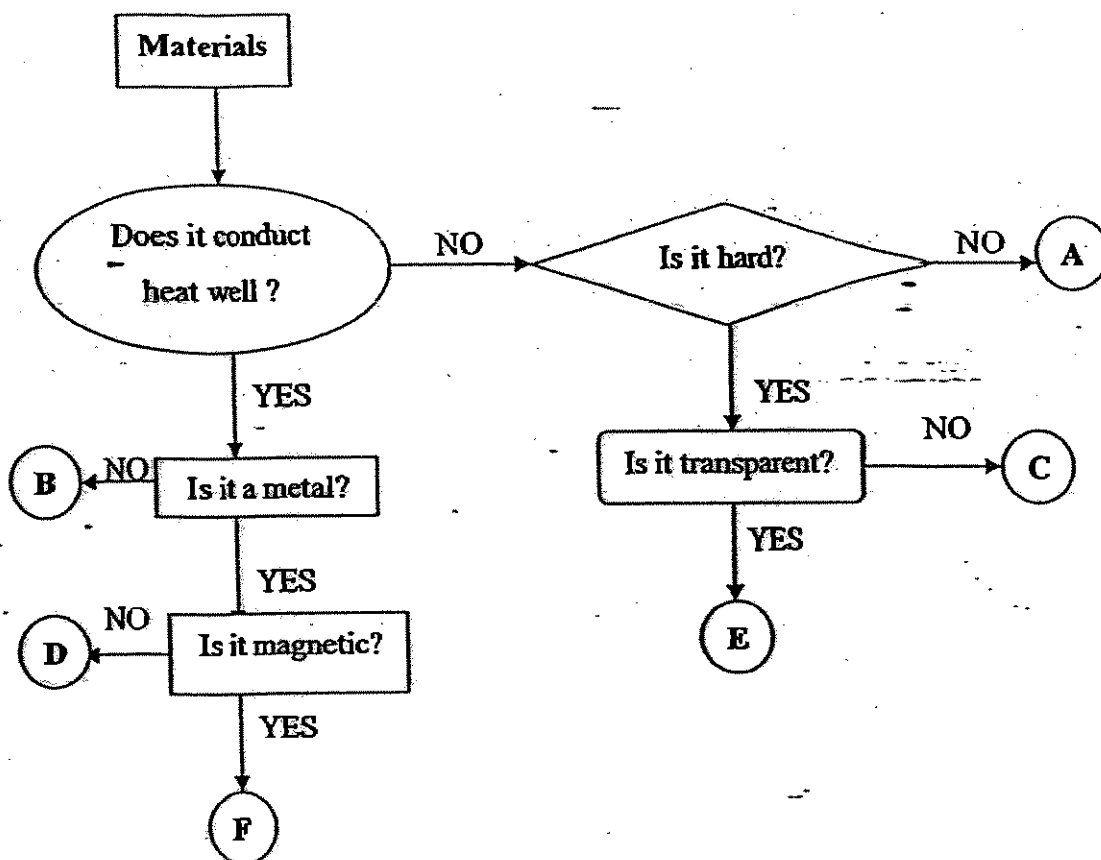
Group B: Activities that _____

b) In which group, A or B, would you place the following activities?
 (1 mark)

i) Throwing litter into drains and canals: _____

ii) Treating sewage before discharging it into the river: _____

37. The flowchart below shows some properties of materials A, B, C, D, E and F.



Based on the above flowchart, answer the following questions.

a) State two properties of material D. (1 mark)

i) _____

ii) _____

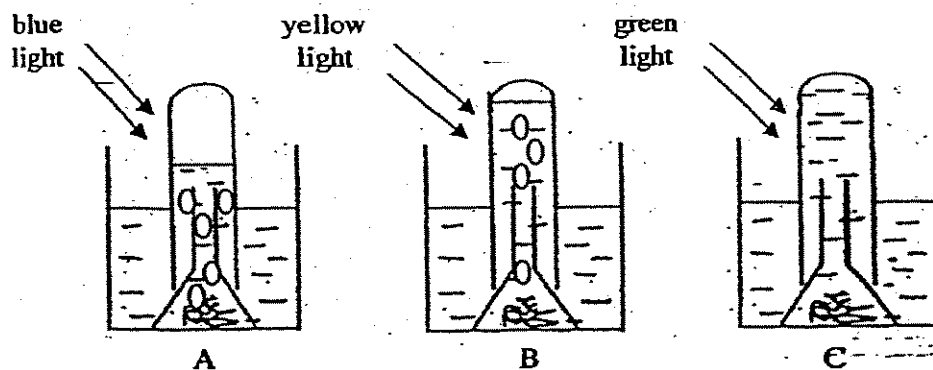
b) State two common properties between materials C and E. (1 mark)

i) _____

ii) _____

c) Under which of the materials A, B, C, D, E and F, would you put the material steel? (1 mark)

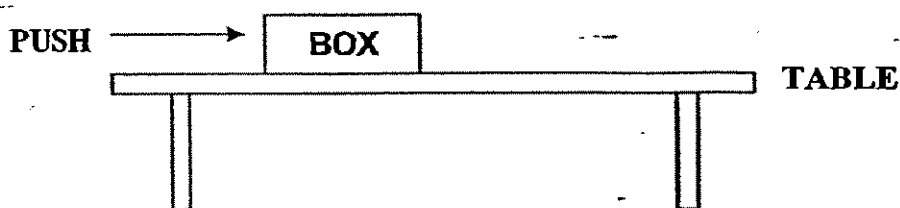
38. Some pupils set up an experiment with three hydrilla plants A, B and C. After a few hours, the following results were observed.



a) What was the aim of the experiment? (1 mark)

b) What was the conclusion of the experiment? (2 marks)

39 Bobby has to push a cardboard box across a table as shown in the diagram below.

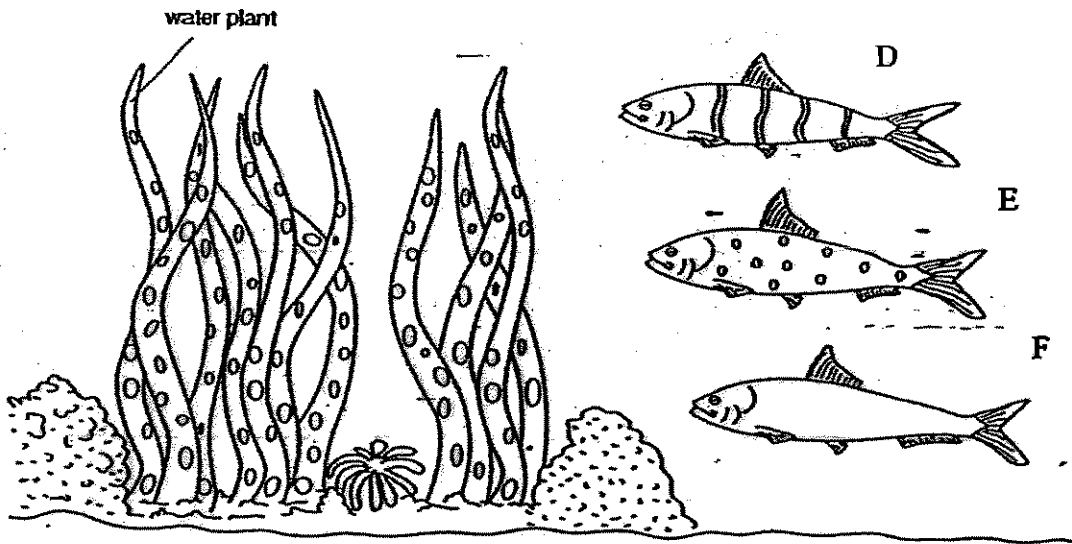


When Bobby starts pushing the box, he finds it difficult to do so because the table has a rough surface. Suggest 2 ways to make his task easier without changing the table. (2 marks)

i)

ii)

40. The diagram below shows three types of fishes D, E and F. They live amongst water plants in a river.

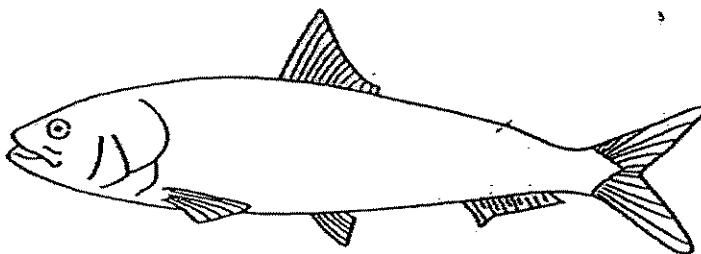


A predator to these fishes is introduced into the river.

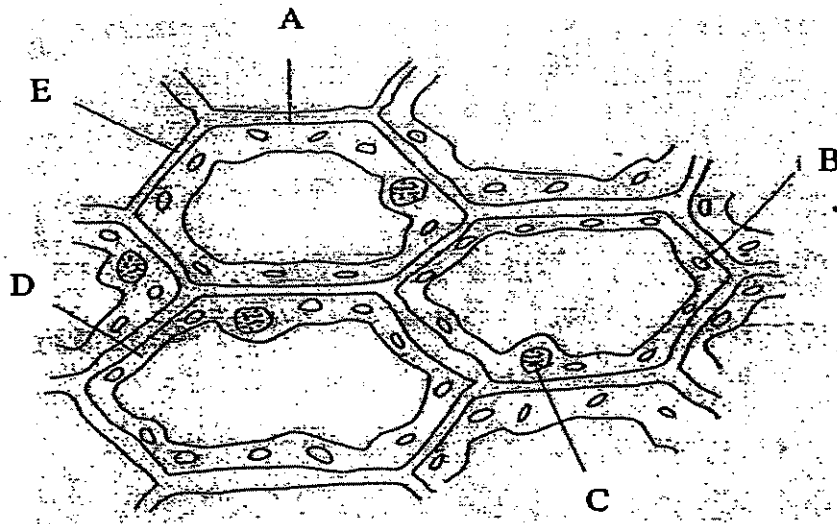
a) Which type of fish D, E or F would probably decrease in number most quickly?
(1 mark)

b) Explain your answer in (a). (2 marks)

c) After several months, another type of fish G, appeared in the river and began to increase in number. On the outline below, draw the structural adaptation the fish would have that contributed to the increase in its population. (1 mark)



41. A pupil looked at cells on a slide, using a microscope. The cells are shown in the diagram below. Parts of the cells are labelled A to E.

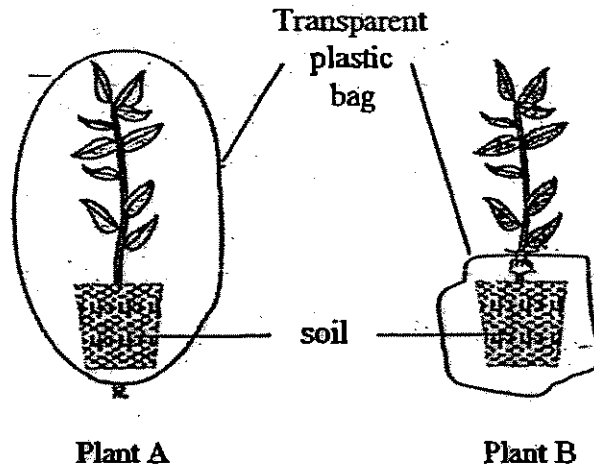


a) Complete the table. Write each part of the cell next to the correct letter. The first one has been done for you. (2 marks)

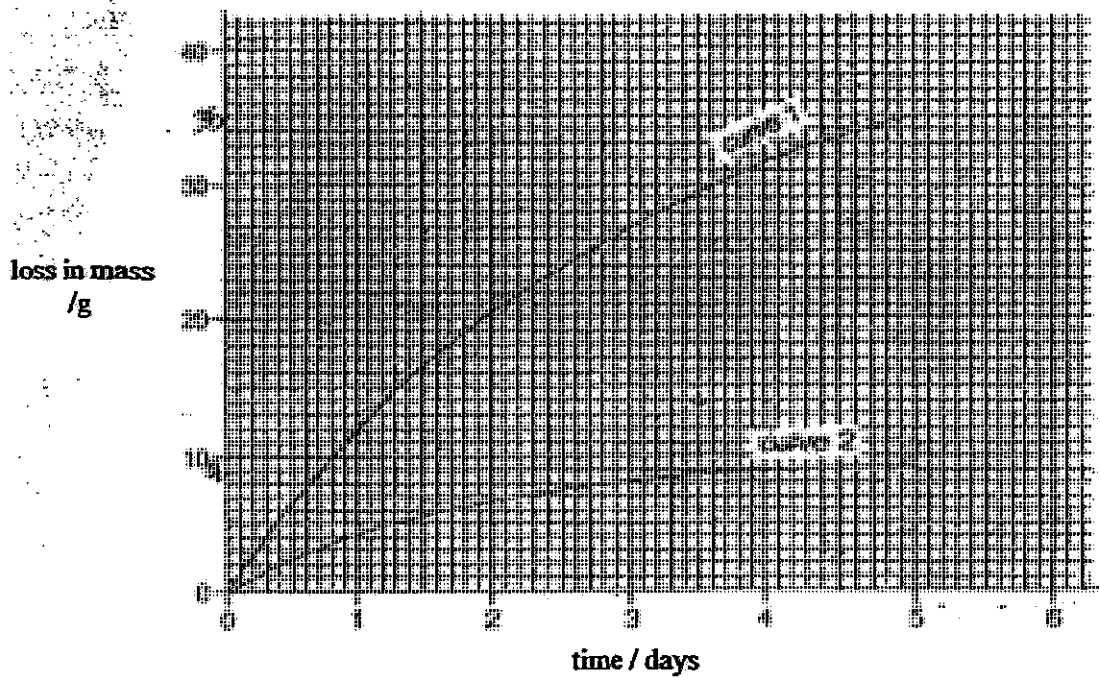
Letter	Part of cell
A	Cell membrane
B	
C	
D	
E	

b) What is the function of the cell membrane? (1 mark)

42. The diagram below shows an experiment set up to investigate the change in the mass of the potted plants A and B over a period of time.



The graph below shows the loss in mass of the plants (Plant A and Plant B) over five days.

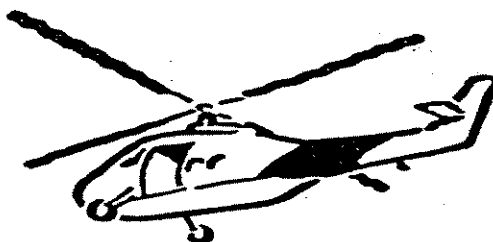


a) Which plant gives the result shown by curve 2? (1 mark)

b) Estimate the mass that would be lost by the plant in answer (a) at the end of day 6. (1 mark)

c) What would be the effect on the mass of plant B if a thin layer of grease was applied on the upper surfaces of all the leaves? (1 mark)

43. The diagram below shows a helicopter hovering in the air.



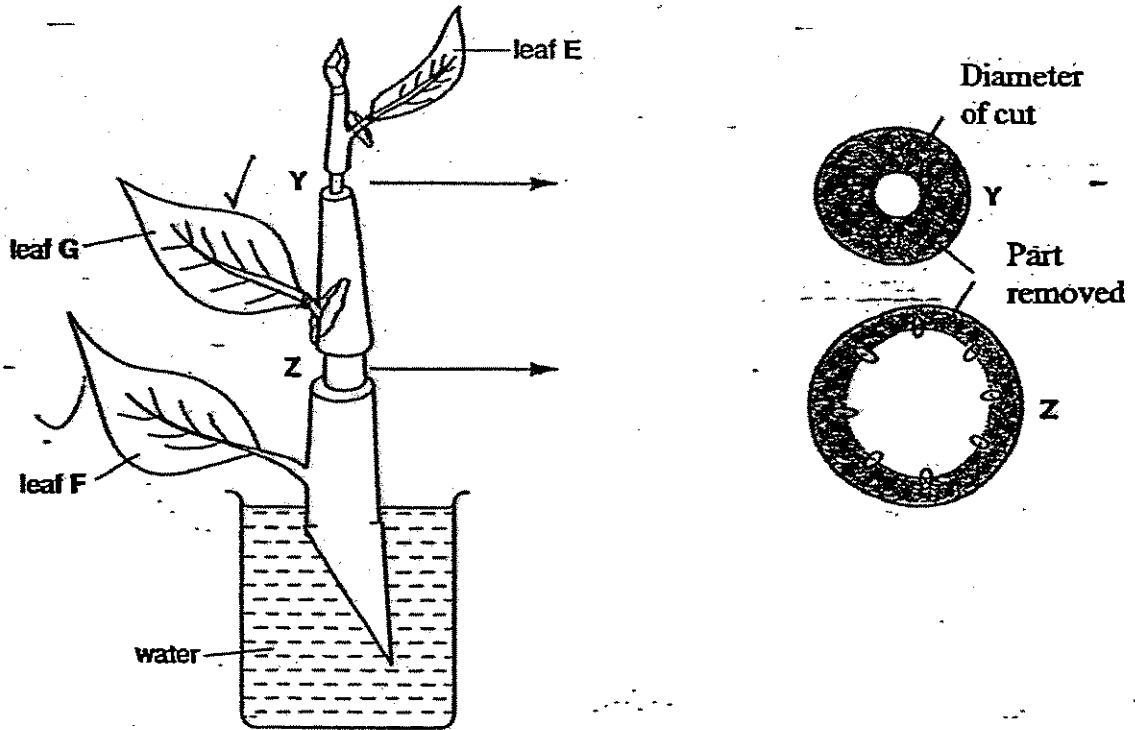
The energy changes shown in the diagram can be represented as:

Chemical potential energy \rightarrow Kinetic energy + Light energy + Heat energy
+ Sound energy

Complete the table to state the source of energy. (2 marks)

	Form of energy	source of energy
i)	Chemical potential energy	from the fuel
ii)	Kinetic energy	
iii)	Light energy	
iv)	Heat energy	
v)	Sound energy	
vi)		

44. Two sections of a plant, Y and Z were removed before the plant was placed into a beaker of water as shown in the diagram below. Then it was left in the open for 2 days.

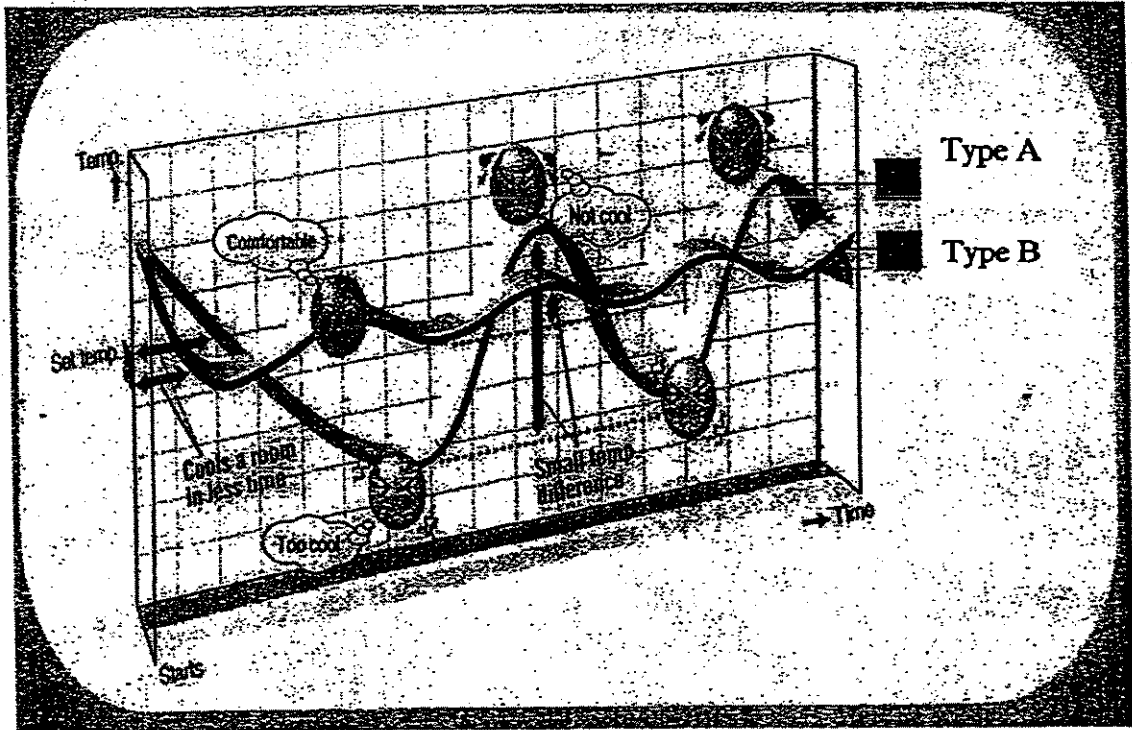


a) Leaves E, F and G were tested for starch.

Which of the leaves would contain starch? (1 mark)

b) Explain your answer in (a) (1 mark)

45. One day, Mr Singh and his children were in a taxi. One of the children picked up a pamphlet and read it. It was an advertisement about air-conditioners. Below shows what the boy saw.



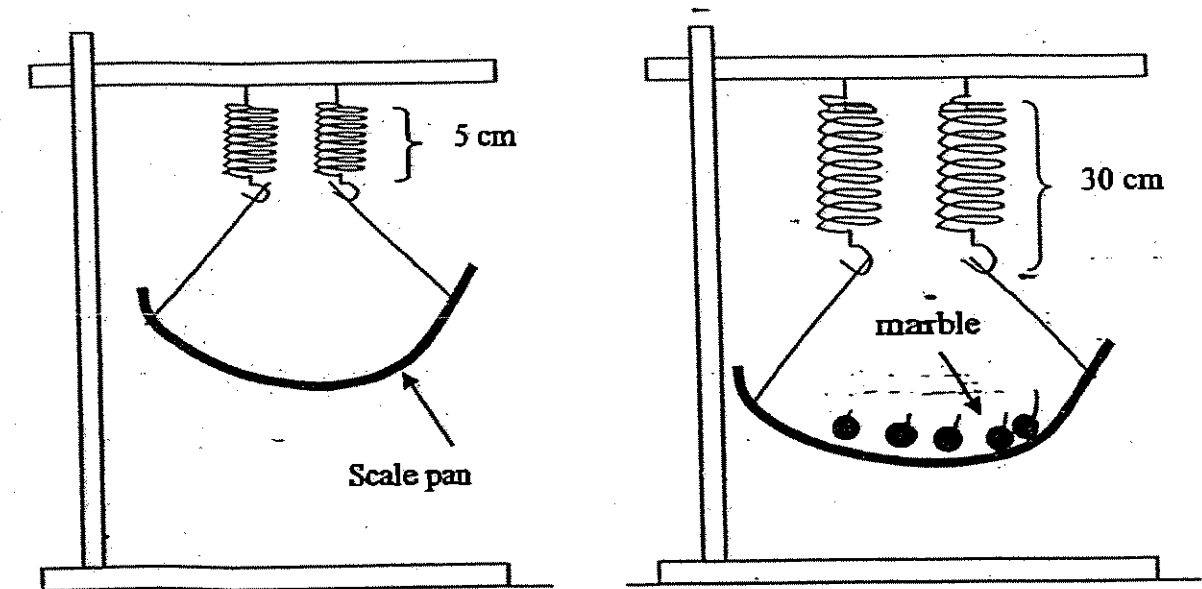
a) Which is a more efficient air-conditioner, Type A or Type B? (1 mark)

b) Give two reasons to your answer in (a). (2 marks)

i) _____

ii) _____

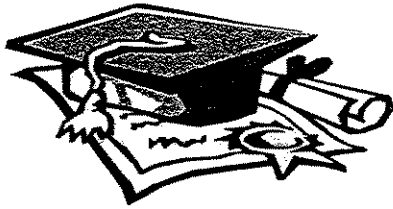
46. Study the diagram below. Identical springs were used for the experiment.



a) Based on the above diagram, what is the total extension of the two springs when five identical marbles are placed on the scale pan? (1 mark)

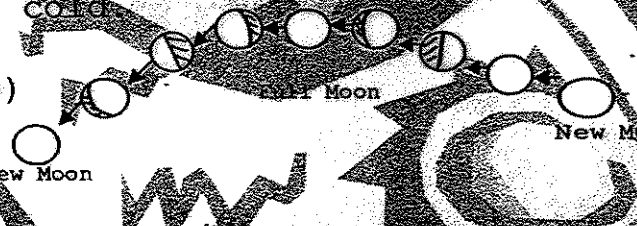
b) A pupil removed two marbles from the scale pan. What would likely be the new total lengths of the two springs? (1 mark)

END OF PAPER



ANSWER SHEET

PEI HWA PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
SEMESTRAL ASSESSMENT (2)

- 1.1 31)a) Gear A = 1 turn
2.1 = Gear B
3.3 = 1/3 turn
4.3 Gear A = 30 turns
5.1 = Gear B
6.4 = 10 turns
7.2 B) 10
8.1
9.2 32)a) The more CO_2 , the rate of photosynthesis
10.3 b) i) The light intensity
11.4 ii) The temperature
12.4
13.2 33) 1, 3, 2, 4
14.1
15.4 34) The wet clay pot did not allow the heat
16.3 from the surroundings to enter the cold
17.1 drink. Therefore, it kept the cold drink
18.4 cold.
19.3
20.3 35)
21.4 
22.4
23.1
24.3 36)a) A: save the environment
25.3 B: harm the environment
26.1 b) i) B
27.3 ii) A
28.3
29.3 37)a) i) It conducts heat well.
30.1 ii) It is non-magnetic.
b) i) Both of them are hard.
ii) Both of them do not conduct heat well.

37)c) Material F

38)a) It is to find out if the colour of the light affects the rate of photosynthesis.

b) Blue light is the best light for hydrilla plants to photosynthesis.

39)i) Spread a lubricant which reduces frictional force on the table.

iii) Add rollers to the bottom of the box.

40)a) F

b) Fish D and E have patterns on their bodies that allow them to camouflage among the water plants to avoid being seen by the predator but fish F has no pattern on its body to allow it to blend with its surroundings.

41)a) A: Cell membrane

B: Chloroplasts

C: Nucleus

D: Cytoplasm

E: Cell wall

b) It controls the movement of materials in and out of the cell.

42)a) Plant A

b) 9g

c) There is no effect on the loss of mass in plants B.

43)iii) from the movement of the propeller.

iv) from the light bulb.

v) from the engine.

vi) from the engine.

44)a) Leaf F and G.

b) Leaf F was the closest Leaf to the water and the xylem connecting from the water to Leaf F was not cut out. The xylem connecting from the water to leaf was not cut too. Both leaf can photosynthesis and therefore both leaves will contain starch.

45) a) Type B.

b) i) The time taken to cool the room for Type B was lesser than the time taken to cool the room for Type A.

ii) Type B's air con stays close to the set temperature but type A's air con not.

46) a) 50cm

b) 40cm

---end---



RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (1)
2007

SECTION A	/ 60	
SECTION B	/ 40	
Your score out of 100 marks	Class	Level
Highest score		
Average score		
Parent's signature		

Name : _____ Index No: _____ Class: P 6 _____

10 May 2007 SCIENCE Att: 1 h 45 min**SECTION A (30 X 2 marks)**

For each question from 1 to 30, four options are given.

One of them is the correct answer. Make your choice (1, 2, 3 or 4).

Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.

1 Which of the following statements is/ are true for ALL living things?

- A They can respire.
- B They give birth to their young alive.
- C They depend on other living things for food.
- D They inherit their genetic information from their parents.

- (1) A only
- (2) A and D only
- (3) B and C only
- (4) C and D only

2 The pictures below show 2 types of animals, X and Y.



X

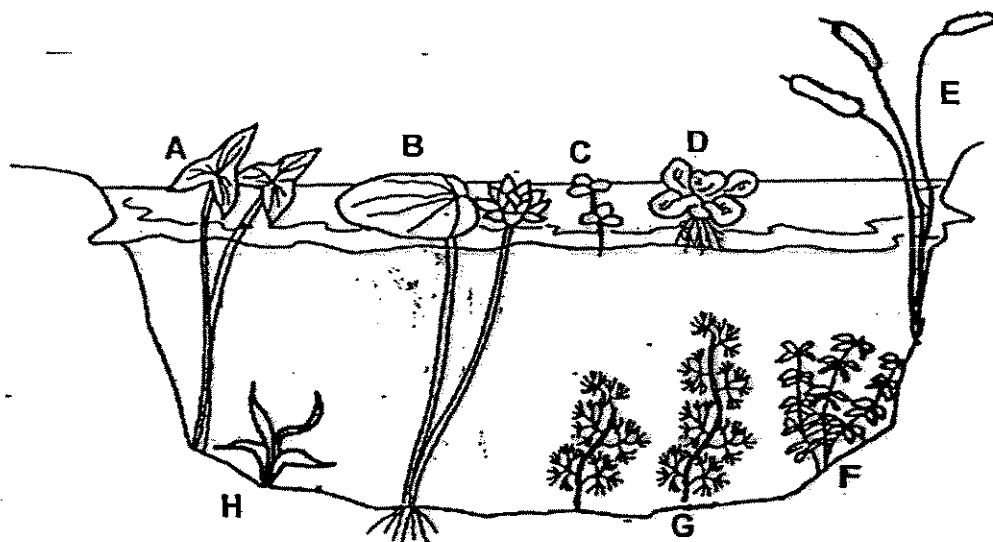


Y

Which of the following statements correctly describe both animals?

- A X has wings but not Y.
 - B Both have 3 body parts.
 - C Both X and Y have feelers.
 - D X has 6 legs while Y has 8 legs.
-
- (1) A and D only
 - (2) B and C only
 - (3) A, B and C only
 - (4) A, C and D only

3 The diagram below shows some water plants growing in a pond.



John classified the water plants in the pond in the table shown below.

Water plants		
submerged	half - submerged	floating
B F G H	A E	C D

Which one of the water plants above did John classify wrongly?

- (1) A
- (2) B
- (3) D
- (4) E

- 4 Samuel conducted an experiment to find out the conditions necessary for bread mould to thrive.

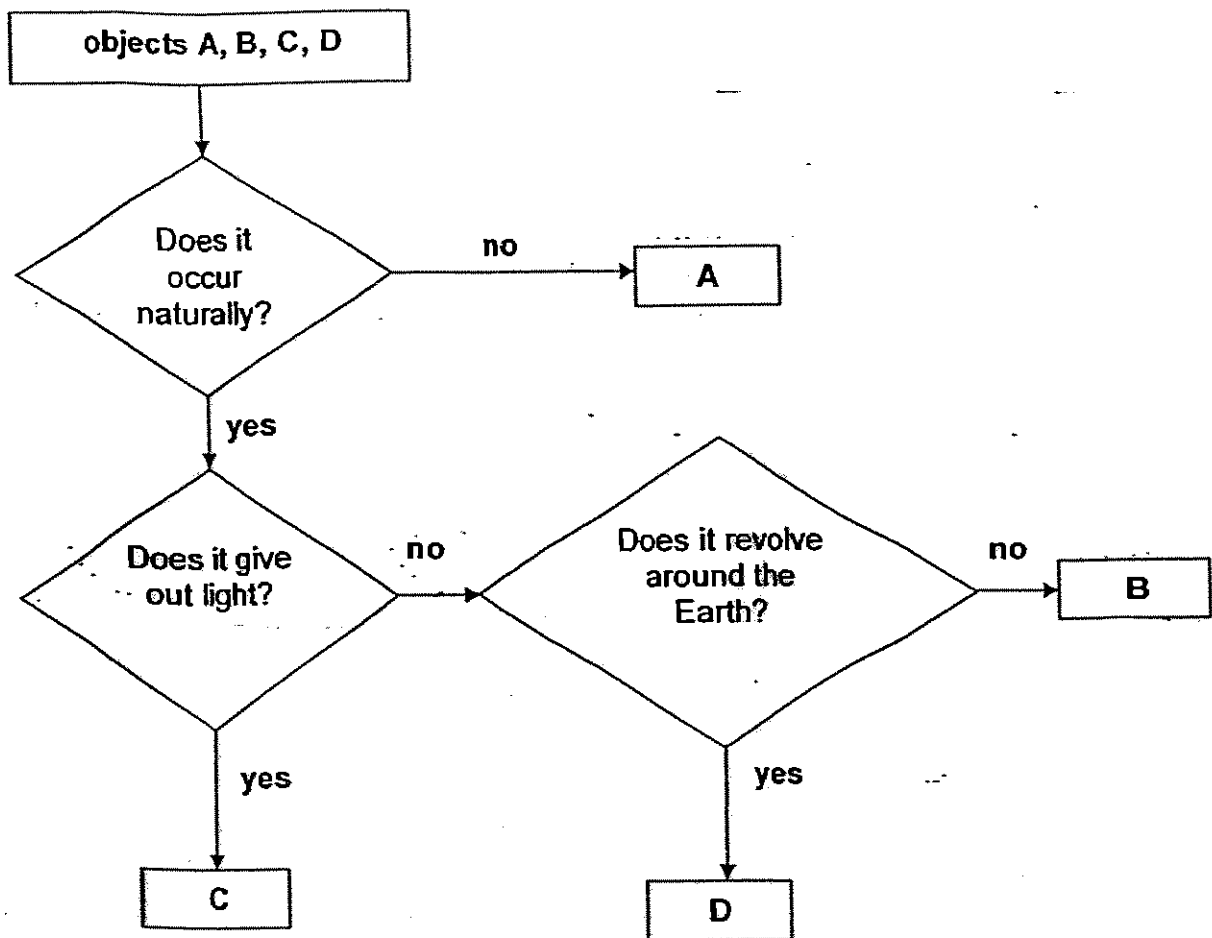
The table below shows the conditions under which four different bread samples, A, B, C and D, were kept.

Condition	Sample A	Sample B	Sample C	Sample D
dry	√ -		√	
moist		√		√
bright		√	√	
dark	√			√

In which bread sample would Samuel find the most mould?

- (1) Sample A
- (2) Sample B
- (3) Sample C
- (4) Sample D

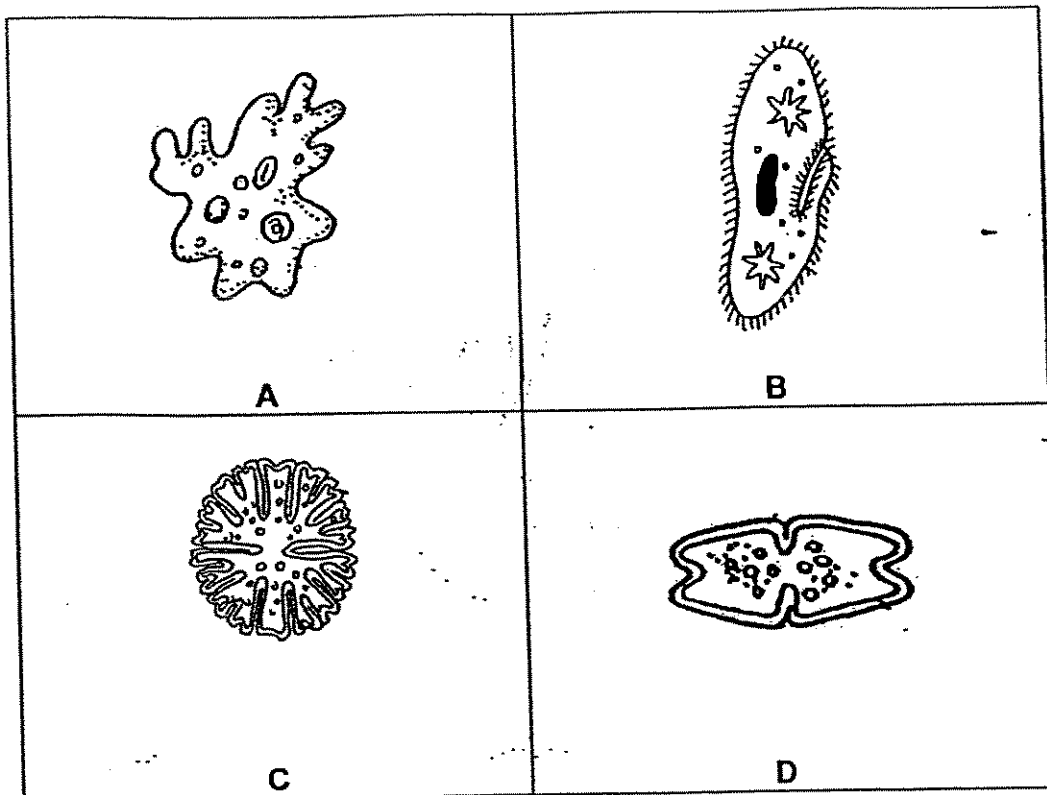
5 The flow chart below is used to differentiate the objects in the solar system.



Which one of the following represents the Moon?

- (1) A
- (2) B
- (3) C
- (4) D

6 Below are some unicellular organisms.

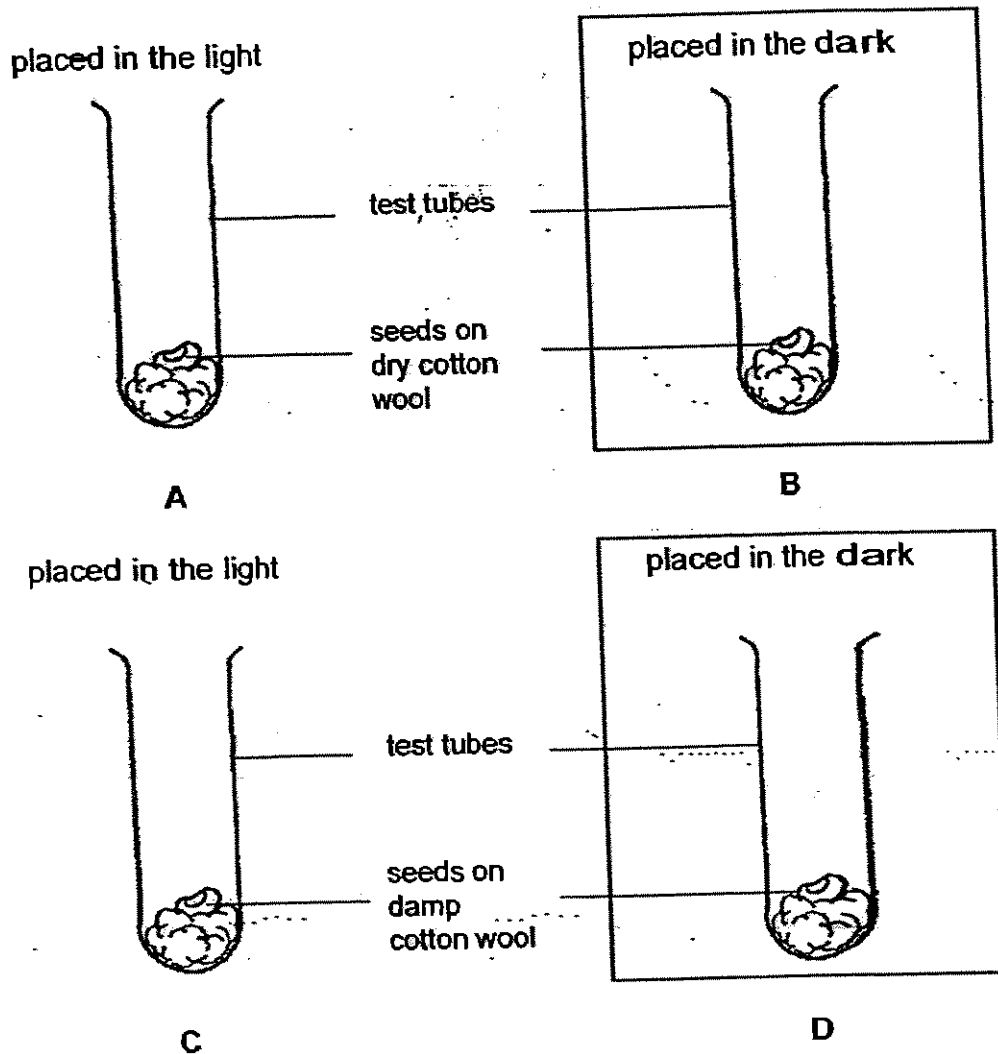


Which of the cells above are most likely plant cells?

- (1) A and B only
- (2) A and C only
- (3) B and D only
- (4) C and D only

7 Siti has 4 set-ups, A, B, C and D, as shown below.

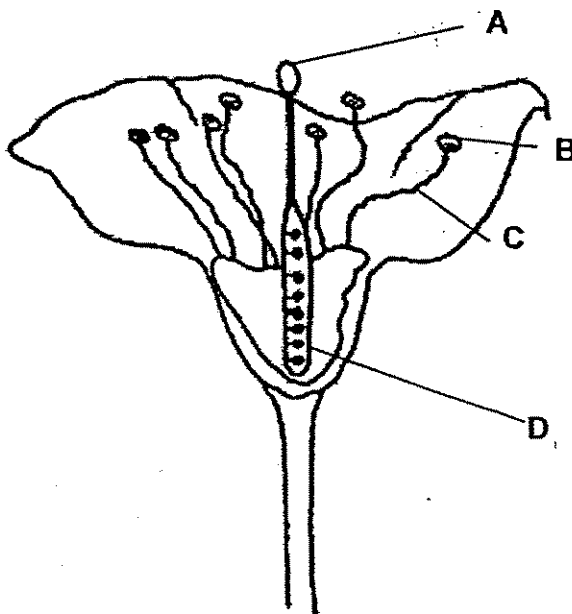
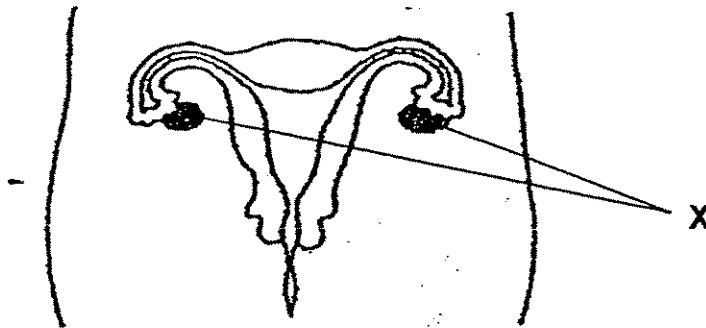
She placed set-ups A and C in the light and set-ups B and D in the dark. The seeds in set-ups A and B are on dry cotton wool and the seeds in set-ups C and D are on damp cotton wool.



Which of the set-ups shown above should Siti use to find out if water and light are needed for germination?

- (1) A and B only
- (2) C and D only
- (3) B, C and D only
- (4) A, B, C and D

- 8 The diagrams below show parts of the reproductive organ of a female human being and a plant respectively.

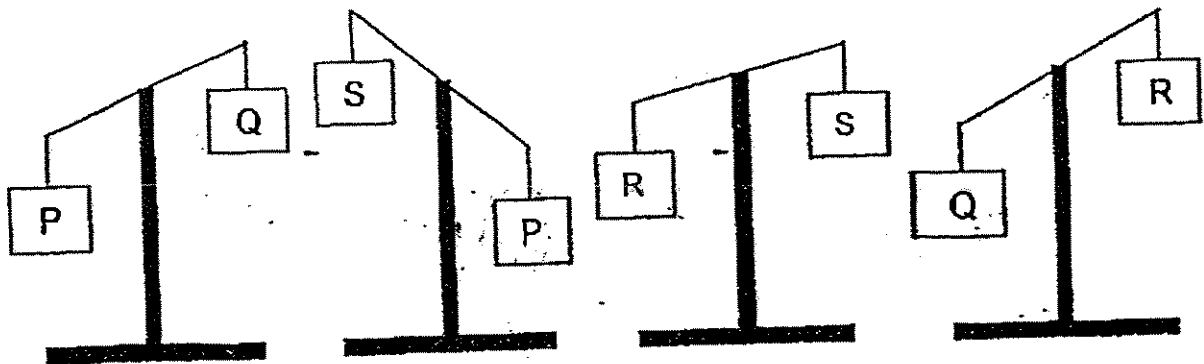


Part X protects the egg cells in a female human being.

Which part of the flower, A, B, C or D, protects the egg cells of the plant?

- (1) A
- (2) B
- (3) C
- (4) D

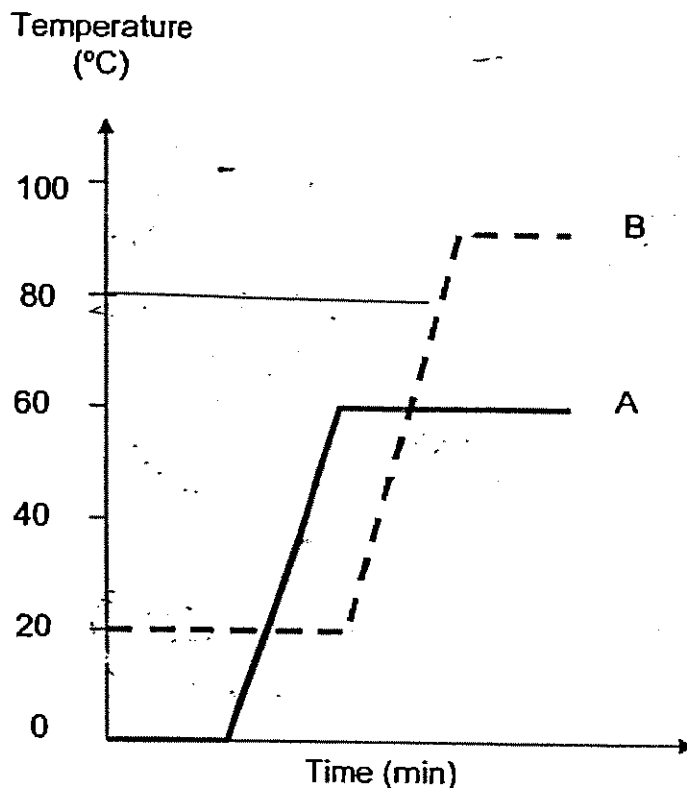
- 9 The diagrams below show what happens to a lever balance each time two objects are placed on it.



Which of the following statements is / are **NOT** correct?

- A P has a larger mass than R.
 - B R has a larger mass than Q.
 - C S has the least mass.
- (1) B only
- (2) A and C only
- (3) B and C only
- (4) A, B and C

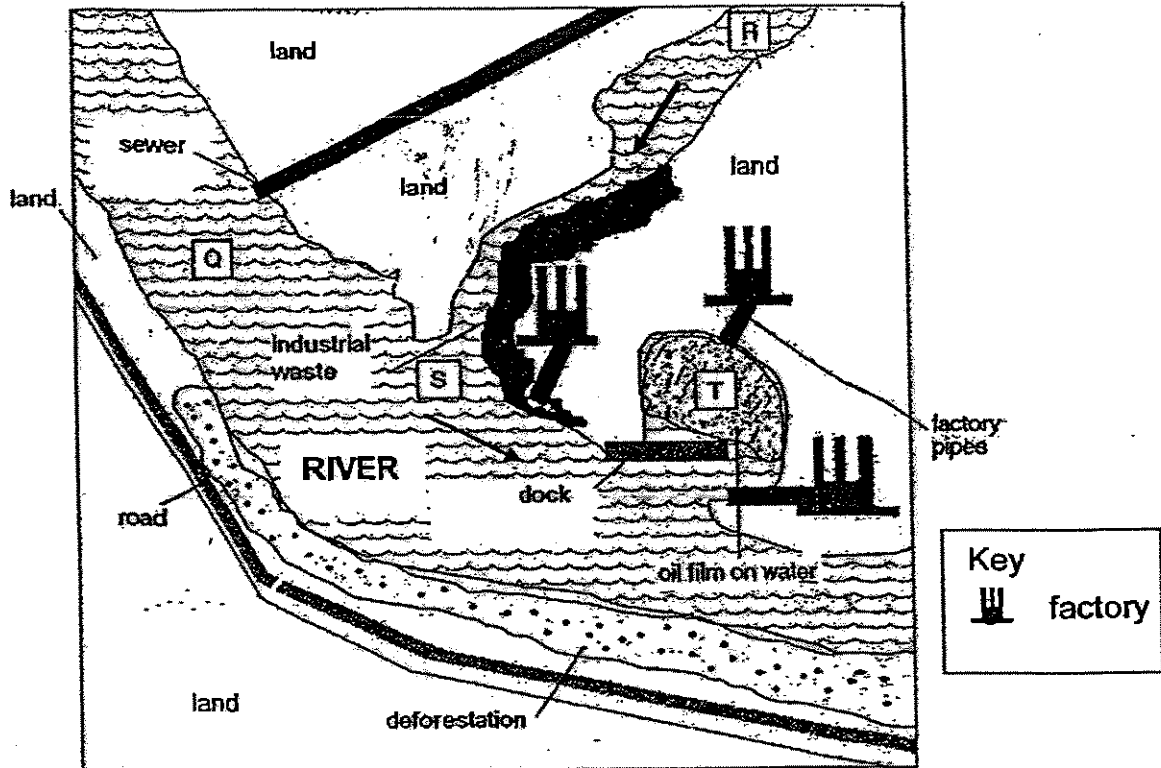
- 10 The graph below shows the melting points and boiling points of Substance A and Substance B.



Which one of the following statements about the graph above is TRUE?

- (1) The melting point of B is 0 °C.
- (2) Substance B is a solid at 80 °C.
- (3) Substance A and Substance B are liquids at 40 °C.
- (4) Substance A has a higher boiling point than Substance B.

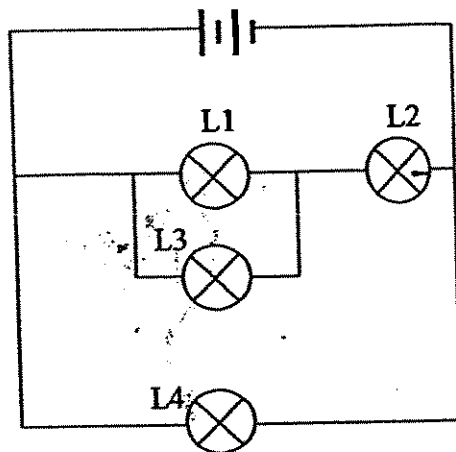
- 11 Ethel drew a map (NOT drawn to scale) of an area around the river near her home as shown below. It shows what she had found in and around the river. The arrows on the map indicate the direction of water flow.



At which part of the river, Q, R, S or T, is it most likely to be least polluted?

- Q
- R
- S
- T

- 12 The diagram below shows four lamps connected to 2 batteries in a closed circuit.

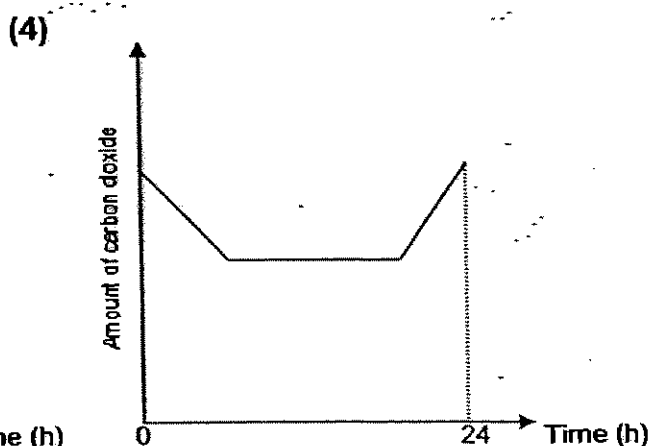
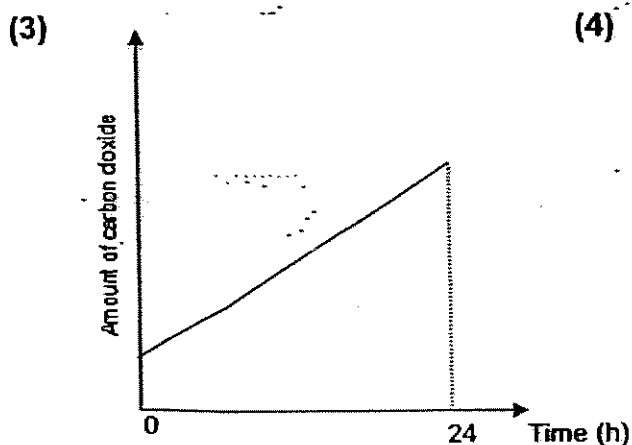
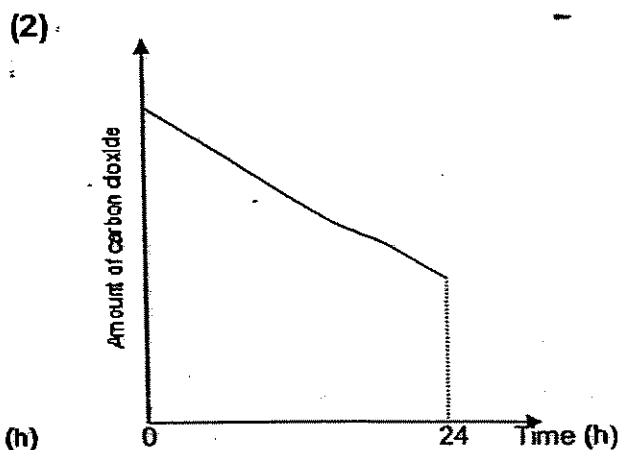
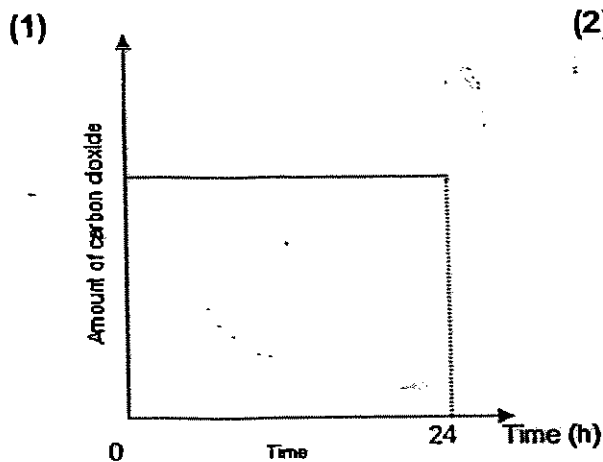


When one of the lamps is not working, only 1 lamp remains lighted. Which lamp is **NOT** working?

- (1) L1
- (2) L2
- (3) L3
- (4) L4
- 13 Which one of the following statements is **TRUE**?
- (1) Exhaled air has less nitrogen than inhaled air.
- (2) Inhaled air has less water vapour than exhaled air.
- (3) Exhaled air has more dust particles than inhaled air.
- (4) Inhaled air has more carbon dioxide than exhaled air.

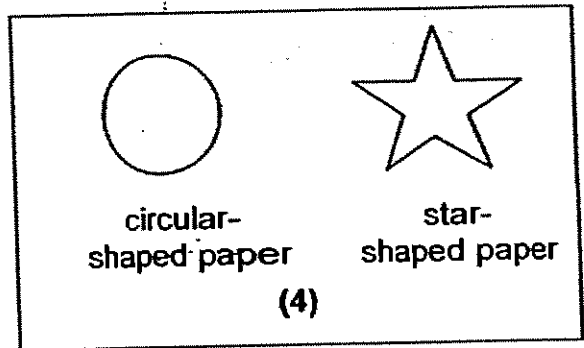
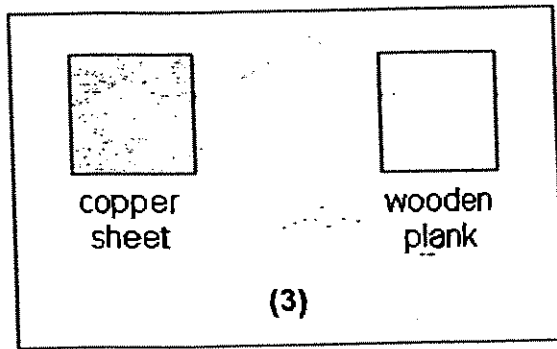
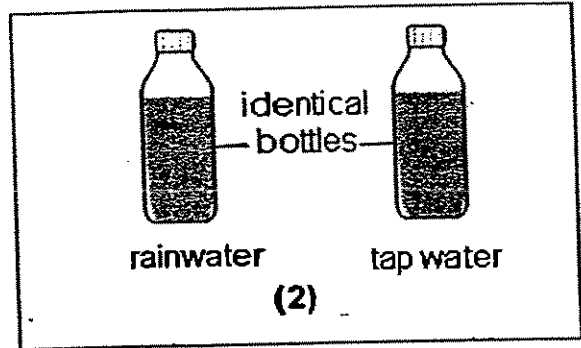
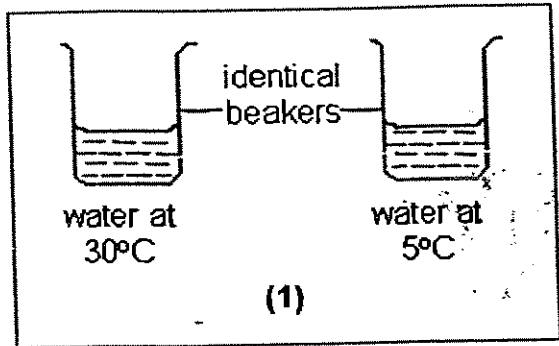
14 A few snails are kept in an airtight container for a day.

Which one of the following graphs can be used to show the change in the amount of carbon dioxide in the container at the end of the day?



15 Gwendolyn is given four different sets of items to compare.

Using only her sense of touch, which set will she **NOT**^{be} able to compare?



16 When starch is mixed with saliva, it is broken down into sugar.

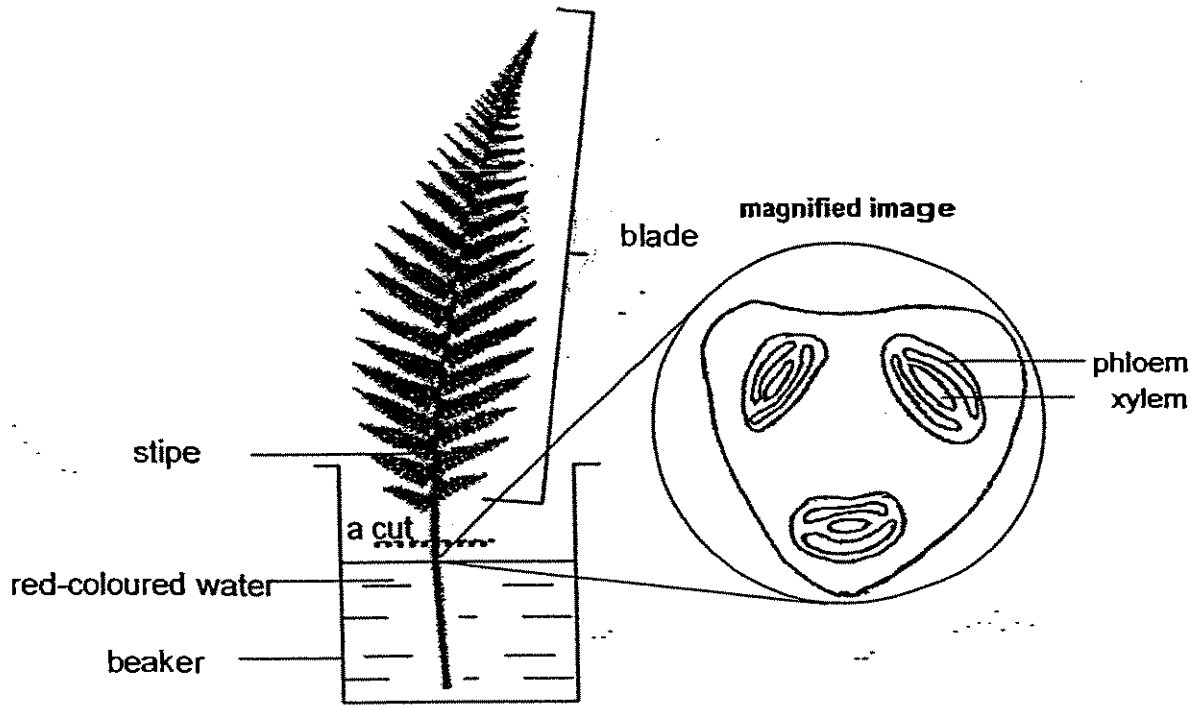
Zi Xuan wants to test if the length of time affects this process. She prepared 5 set-ups, A, B, C, D and E, as shown in the table below.

Set-ups	Amount of starch (ml)	Amount of saliva (ml)	Time in which starch and saliva interact (min)	Temperature of mixture (°C)
A	10	20	10	30
B	15	22	10	25
C	10	20	15	30
D	15	20	10	25
E	15	20	10	30

Which pair of set-ups should Zi Xuan use for her experiment?

- (1) A and C
- (2) B and D
- (3) C and D
- (4) D and E

- 17 Ravi took part of a blade from a fern and dipped it in a beaker of red-coloured water for a day. The next day, he cut out a cross-section of the stipe and observed that some parts within it had turned red.



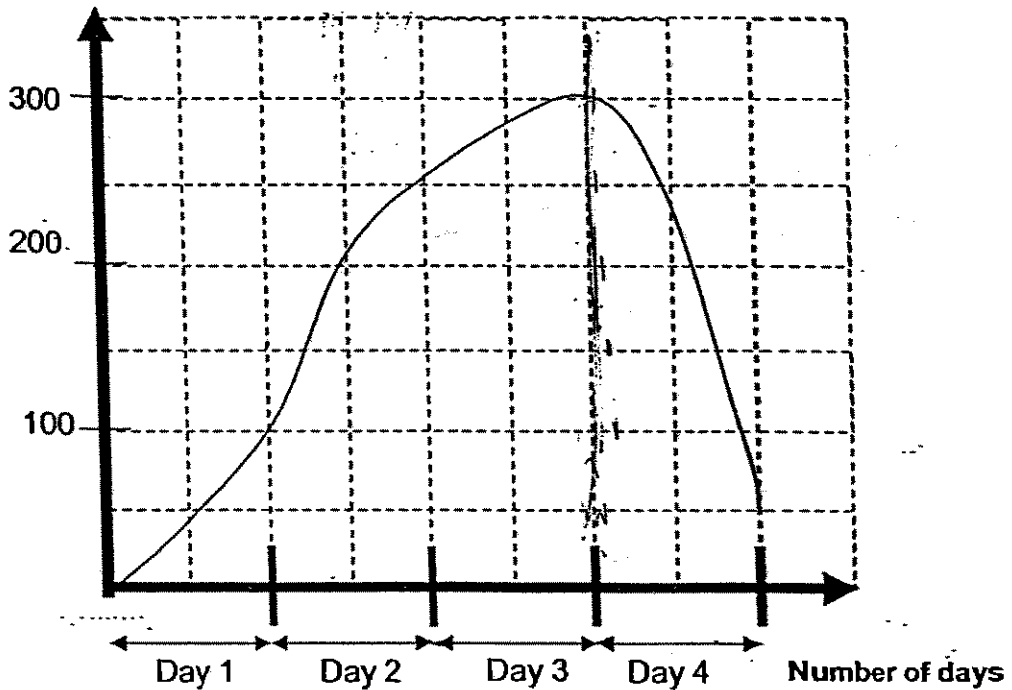
Which one of the following correctly shows what Ravi saw in the cross-section of the stipe?

<p>(1)</p>	<p>(2)</p>	<p>Key</p> <p> stained red</p> <p> not stained red</p>
<p>(3)</p>	<p>(4)</p>	

Name : _____ Index No: _____ Class: P 6 _____

- 18 The graph below shows how a population of bacteria in a muddy puddle changed over a period of 4 days.

Population size

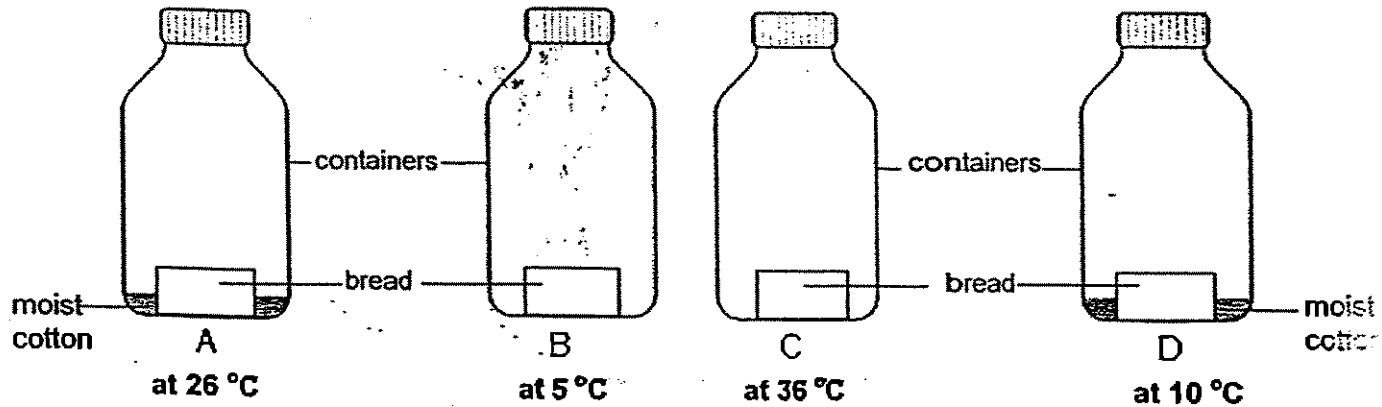


During which day, 1, 2, 3 or 4, has the bacteria population reached its maximum?

- (1) Day 1
- (2) Day 2
- (3) Day 3
- (4) Day 4

- 19 During a Science lesson, Terry learned that to slow down the decomposition of food, he needed to make the condition in the environment unsuitable for decomposers to live in.

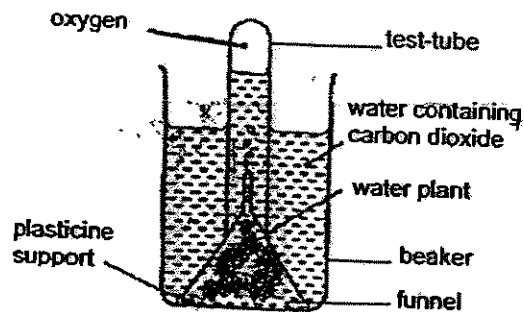
He placed an equal amount of bread in each of the 4 containers, A, B, C and D, each kept in different conditions as shown below.



Which container, A, B, C or D, has the **BEST** condition to slow down the decomposition of bread?

- (1) A
- (2) B
- (3) C
- (4) D

- 20 Shamirah had 4 water samples, A, B, C and D, collected from different parts of the same river. Using the same amount of each water sample, she set up the following apparatus using the same amount of water plant. She placed 4 set-ups near a window for 2 days.



At the end of the experiment, Shamirah compared the amount of oxygen produced by the water plants and recorded her observations in the table shown below.

water sample	Amount of oxygen collected (units)
A	14
B	20
C	18
D	10

Shamirah made the following conclusions:

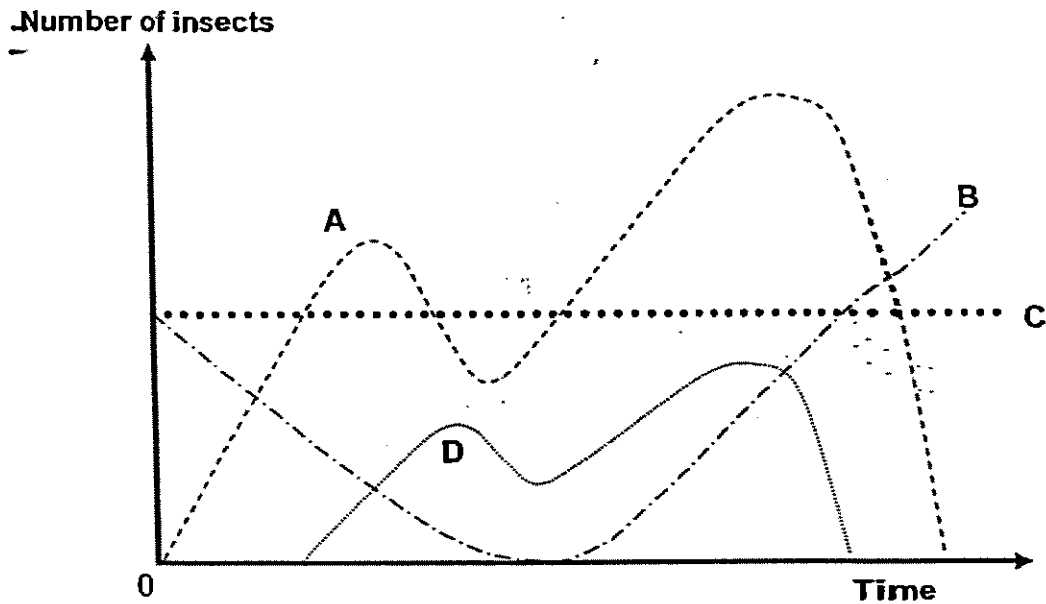
- A Different parts of the river are polluted.
- B The water samples used affect the rate of photosynthesis of the water plants.
- C The water plants in all the water samples, A, B, C and D, photosynthesised at different rates.
- D The rate of photosynthesis of the water plants is dependent on the amount of sunlight that each plant receives.

Based on Shamirah's experimental results above, which of her conclusions are **CORRECT**?

- (1) A and B only
- (2) C and D only
- (3) A, B and C only
- (4) B, C and D only

21 The graph below shows the changes in the population of 2 insects over a period of time.

One of the populations is a type of greenfly and the other is a ladybird which feeds on it.



Which one of the following correctly represents the greenfly and ladybird populations?

	greenfly population	ladybird population
(1)	A	D
(2)	B	C
(3)	C	D
(4)	D	A

- 22 A group of children made these observations of different environments and recorded them in their journals.

Environments	Observations
A	bright, dry and cool
B	dark, damp and warm
C	stuffy, dark with varied temperature
D	airy, bright with a constant temperature

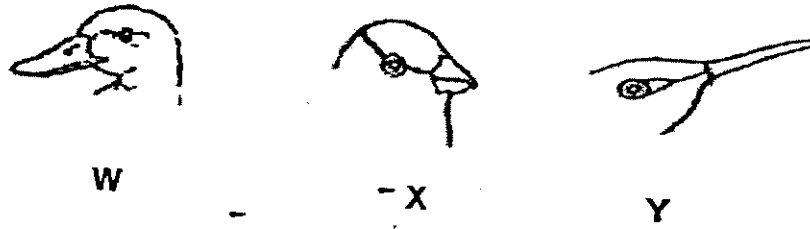
Which one of the environments is **BEST** suited for woodlice?

- (1) A
(2) B
(3) C
(4) D
- 23 Which of the following structural adaptations enable the camel to live in a desert?

- A It has thick-padded feet.
B It stores water in its hump.
C It has stiff hair on its soles.
D It has long, thick eyelashes.

- A and B only
 A and D only
 B and C only
 C and D only

24 The diagrams below show some birds with different types of beak, W, X and Y.

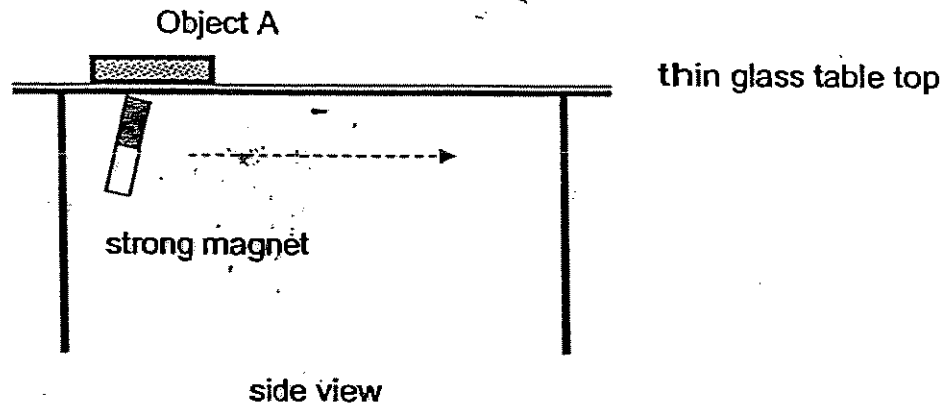


The shape and size of a beak give clues to what a bird eats.

Which one of the following best describes the kind of food that is easily picked up by each type of beak?

	W	X	Y
(1)	seed	nectar	fish
(2)	fish	nectar	seed
(3)	fish	seed	nectar
(4)	nectar	fish	seed

- 25 Jodi placed a strong magnet under Object A and dragged it across the thin top of a glass table in the direction as shown in the set-up below.



Jodi repeated the experiment with 3 other objects, B, C and D, one at a time. She recorded her results in the table below. A tick [✓] is used to show the observation that she had made for each object.

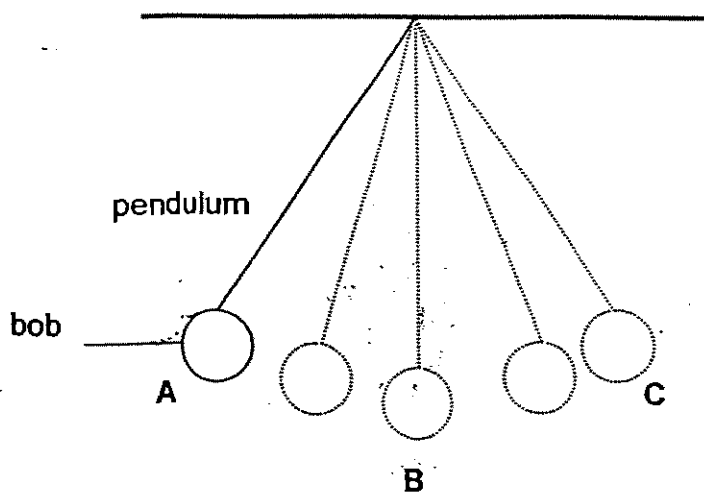
Objects	moved with the magnet	did not move with the magnet
A	✓	
B		✓
C	✓	
D	✓	

Which one of the following objects has been correctly matched with the material it is made from?

(1)
 (2)
 (3)
 (4)

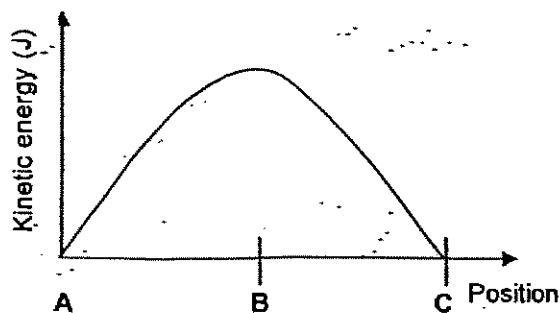
Object	Material
A	gold
B	iron
C	copper
D	steel

26 Sam carried out an experiment using the apparatus as shown below. He lifted the bob and let it swing freely for a period of time.

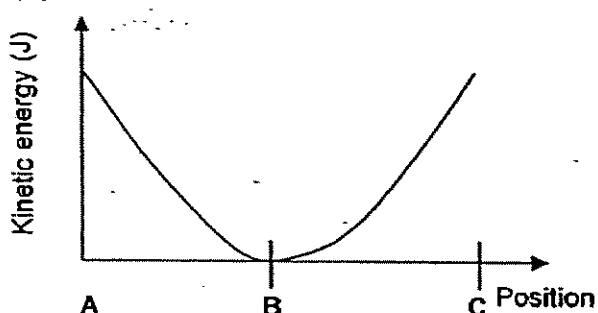


Which one of the following graphs shows the change in kinetic energy of the bob as it was FIRST swung from A to B and then to C?

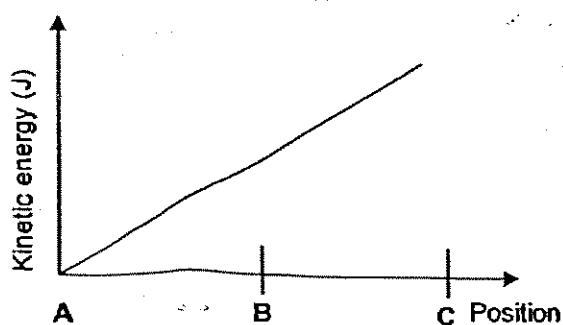
(1)



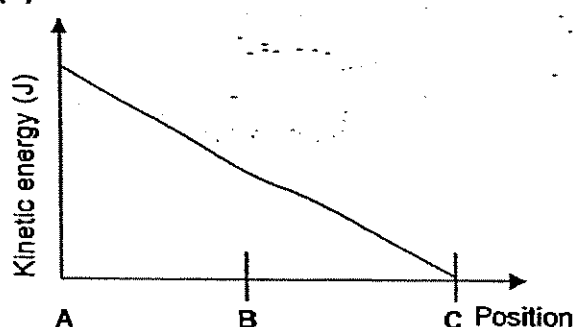
(2)



(3)



(4)



27 Which of the following has/ have chemical potential energy?

- A wind
- B petrol
- C butter
- D battery

- (1) D only
- (2) A and C only
- (3) B, C and D only
- (4) A, B, C and D

28 Mary made the following statements about photosynthesis:

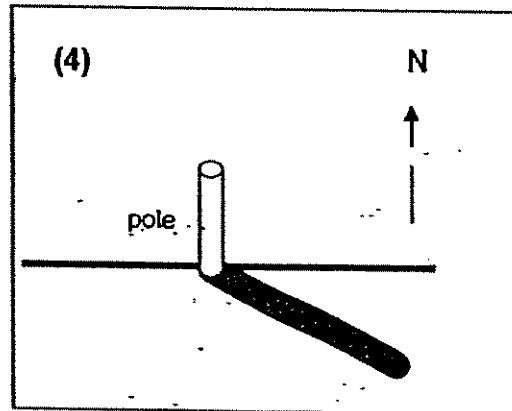
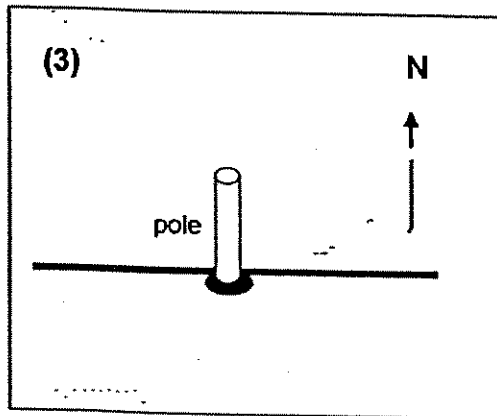
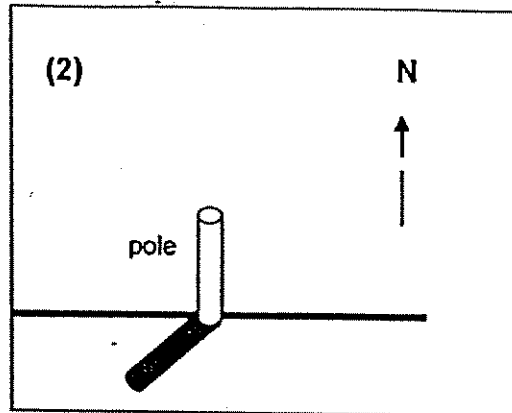
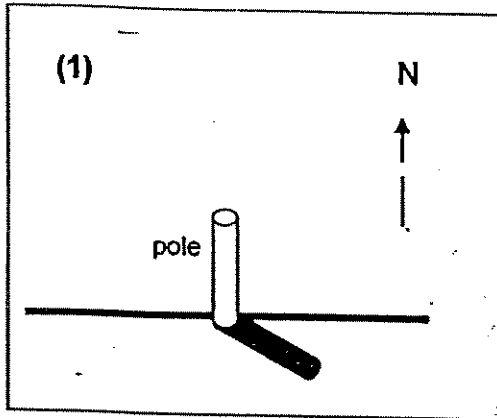
- A Respiration takes place during photosynthesis.
- B Only heat energy is needed for plants to carry out photosynthesis.
- C Photosynthesis can only take place in cells that contain chloroplasts.
- D During respiration, the excess food made during photosynthesis is used up for energy.

Which of the statements above made by Mary is/ are **INCORRECT**?

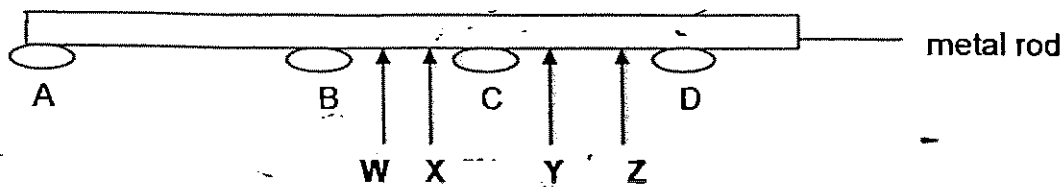
- ~~(1)~~ B only
- ~~(2)~~ A and D only
- ~~(3)~~ A, B and C only
- ~~(4)~~ B, C and D only

29 Cynthia took some pictures of a pole at different times on a sunny day.

Which one of the following pictures was taken at 10 a.m. on that day?



- 30 The diagram below shows a metal rod with four similar drops of wax, A, B, C and D, attached to it.

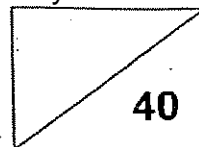


When the metal rod was heated by a candle flame placed below it, the drops of wax melted in this order: C, B, D and lastly, A.

At which part of the metal rod, W, X, Y or Z, was the candle flame placed?

- (1) W
- (2) X
- (3) Y
- (4) Z

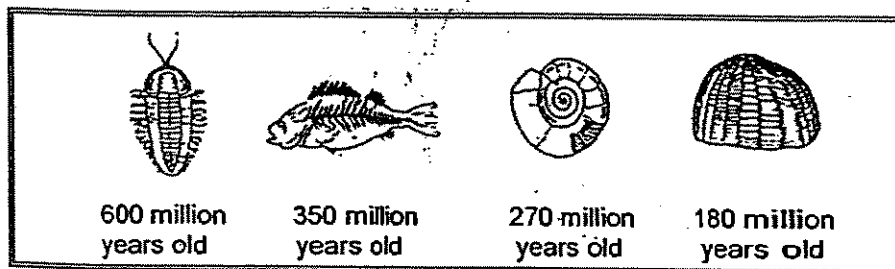
Name: _____ Index No: _____ Class: P6 _____



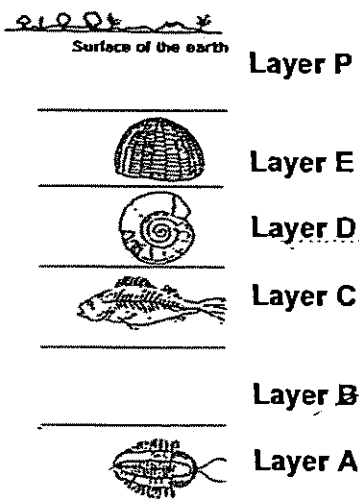
SECTION B (40 marks)

For questions 31 to 46, write your answers in the spaces provided.
The number of marks available is shown in brackets [] at the end of each question or part question.

31 Fossils are the remains of plants and animals that lived a long time ago. The diagrams below show the different fossils and their approximate minimum age.



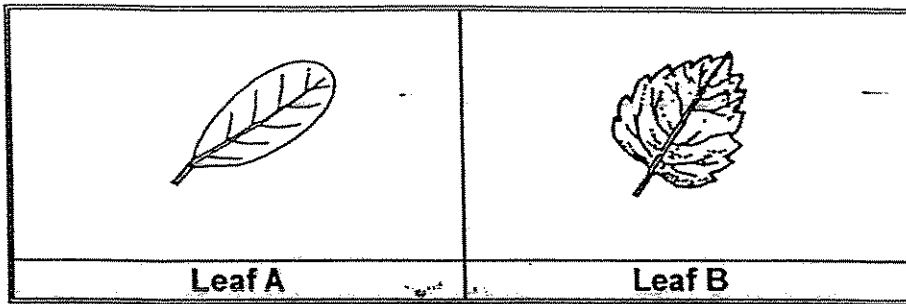
These fossils were found in different layers of the earth as shown below.



(a) What relationship can be observed between the age of the fossils and the way they were arranged in the layers of the earth? [1]

(b) If fossil X is found to be at least 420 million years old, in which layer of the earth could it be found? [1]

32 The diagrams below show two leaves, A and B.



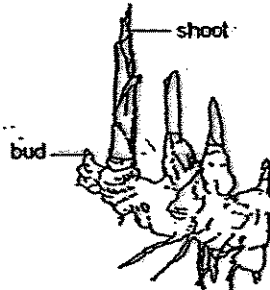
Based on what can be observed from the diagrams, state one similarity and one difference between the 2 leaves, A and B.

[Do not compare size or shape.]

[2]

(a)	Similarity	
(b)	Difference	

33 Mrs Chan bought a piece of ginger and placed it on her kitchen table. After 2 weeks, she found shoots growing from the buds of the ginger as shown below.



(a) Where did the shoots obtain the energy for growth?

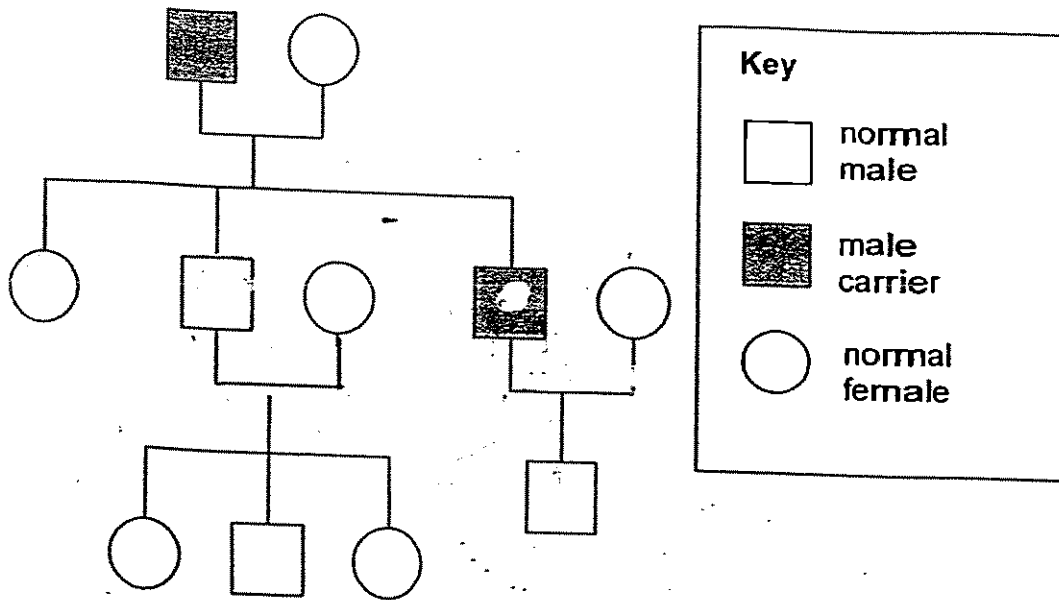
[1]

(b) After another 2 weeks, the ginger plant withered and died. Give 2 reasons why this happened.

[2]

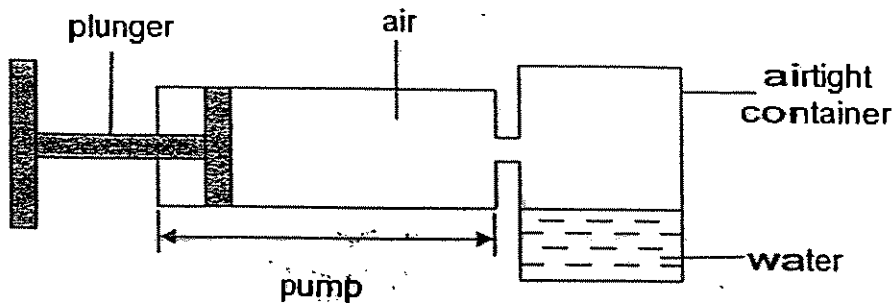
Reason 1	
Reason 2	

34 The diagram below shows the family tree of Ahmad.



- (a) Ahmad's father and grandfather are carriers of a rare disease. LABEL 'Ahmad' and 'Yusof' in the family tree above. [1]
his uncle
- (b) How many sisters does Uncle Yusof have? [1]
_____ sister(s)
- (c) Which part of the cell enables traits to be passed on from the parents to their young? [1]

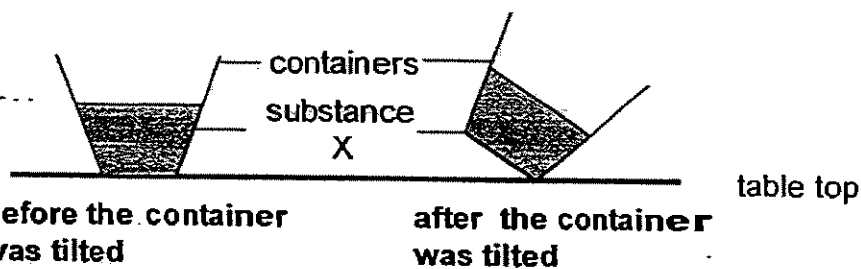
- 35 The pump is connected to an airtight container of 200 cm^3 with 80 cm^3 of water. Every time the plunger in the pump is pushed in, 150 cm^3 of air is forced into the airtight container.



- (a) What is the volume of the air in the airtight container after the plunger in the pump is pushed in **ONCE**? [1]

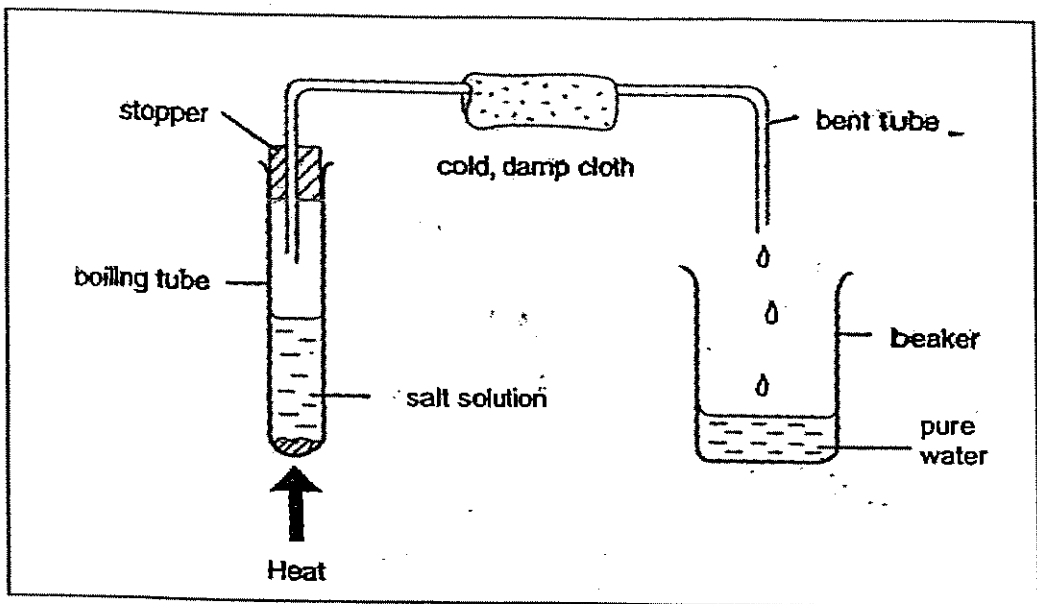
- (b) Explain your answer in (a) using a property of air. [1]

The diagram below shows a container with substance X at room temperature, before and after the container was tilted.



- (c) What is the state of substance X at room temperature? Give a reason for your answer. [1]

- 36 Clare wanted to obtain pure water from salt solution. She set up the experiment using the apparatus as shown below.

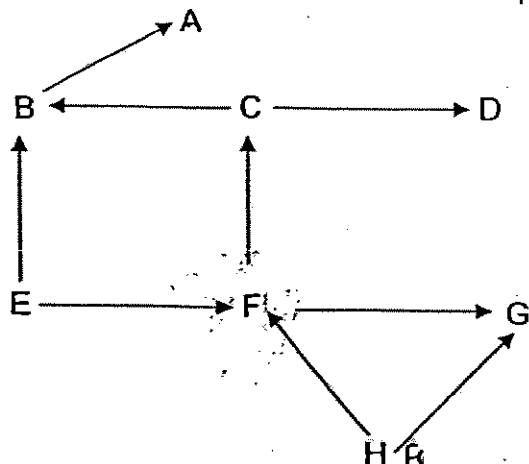


- (a) What is left in the boiling tube after all the water has been boiled dry? [1]

- (b) Explain step by step how Clare obtained pure water from the salt solution. The first step is done for you. [2]

Step 1	Heat the salt solution in a boiling tube which is attached to a bent tube wrapped with a cold, damp cloth.

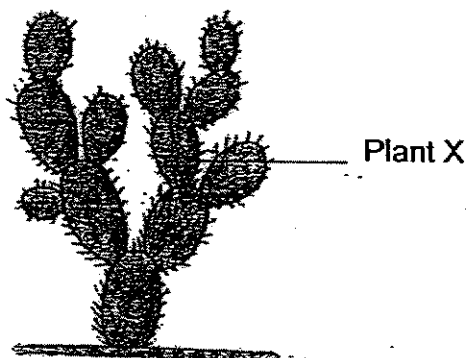
37 The food web shown below shows the relationships of organisms A to H.



- (a) Write down one food chain which involves only 4 organisms. [1]

- (b) Which organism(s) is an omnivore/ are omnivores? [1]

38 Plant X as shown below can survive well in deserts.

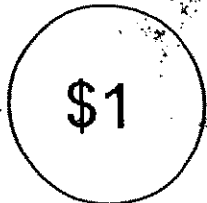
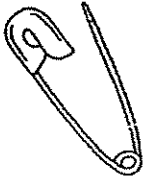



- (a) Based on the picture above, name a feature of plant X which helps it to survive in the desert. [1]

- (b) Explain how this feature helps plant X to live in the desert. [1]

39 Fariq had to open the lid of a tin of biscuits. His teacher gave him the objects shown below. She wanted him to choose the object which could help him to open the lid of the tin most effectively.

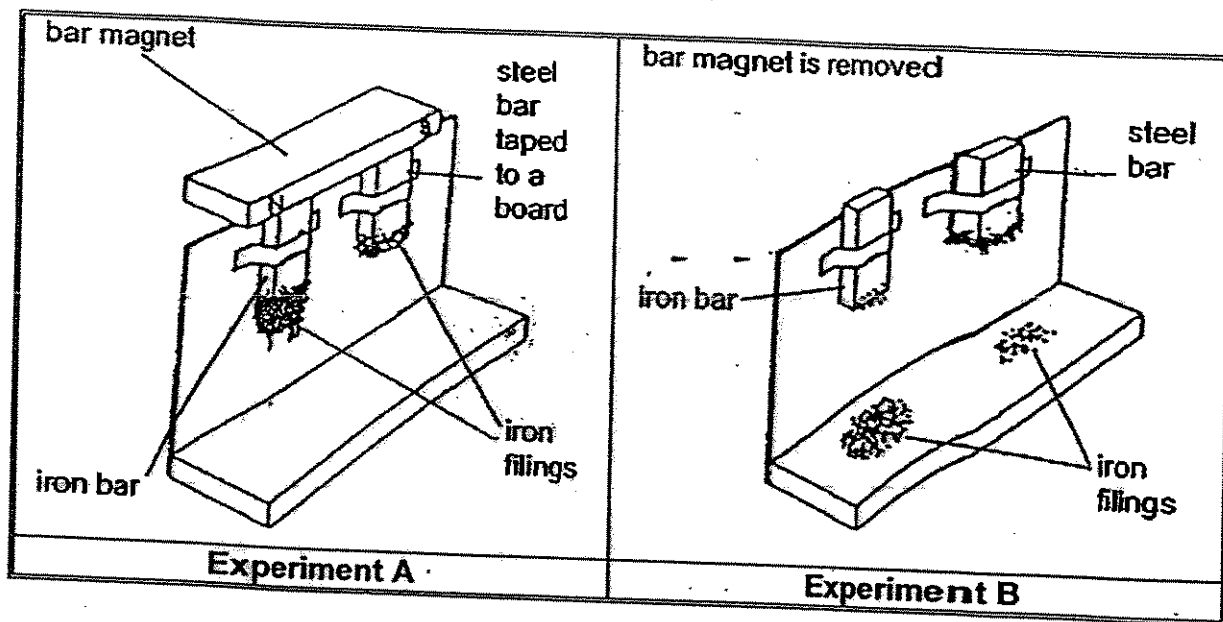
(a) In the table shown below, put a tick (✓) next to the object that Fariq should choose to open the lid of the tin most effectively. [1]

Object	Tick (✓)
 <p>a coin</p>	
 <p>a safety pin</p>	
 <p>a screwdriver</p>	

(b) Name the simple machine that Fariq used in (a). [1]

(c) Using your answer to (b), explain how this object can help Fariq open the lid easily. [1]

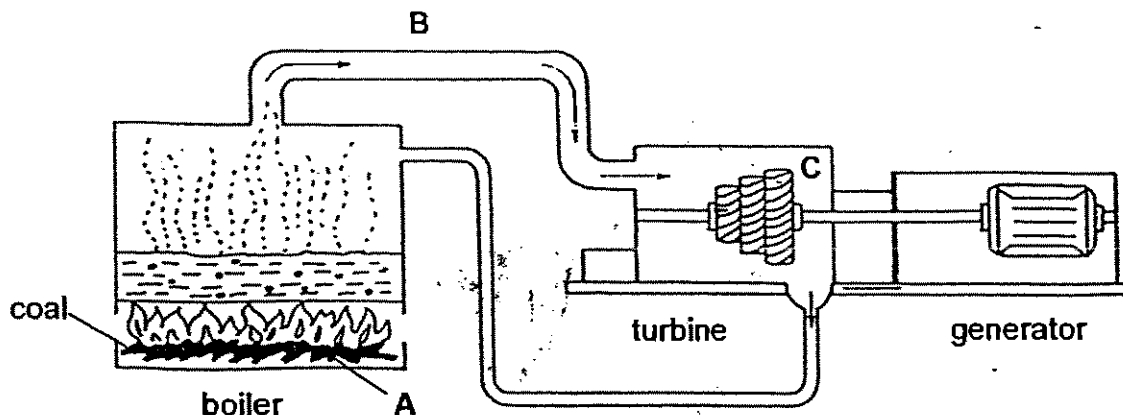
40 Margaret carried out the following experiments, A and B, on magnets and observed the interactions that had taken place.



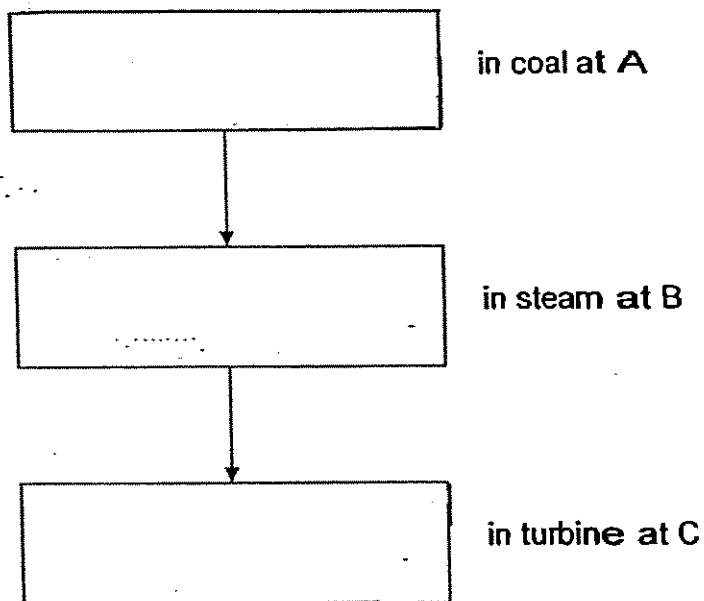
(a) Write down one observation made by Margaret when the bar magnet was removed. [1]

(b) What was Margaret trying to find out in her experiments? [1]

- 41 The diagram below shows how coal is burned to generate electricity at the power station.

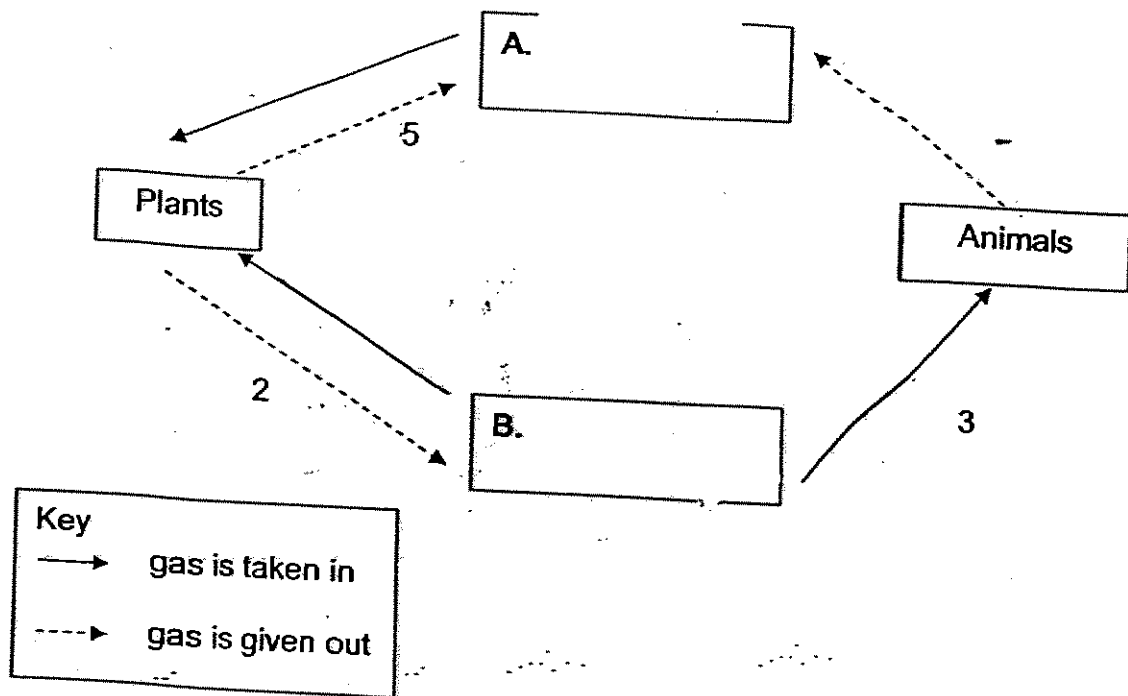


- (a) State the conversion of energy from A to C. [2]



- (b) What would be the relationship between the amount of coal burnt and the speed in which the turbine would turn? [1]

42 The diagram below shows how gaseous exchange takes place between the plants and animals.

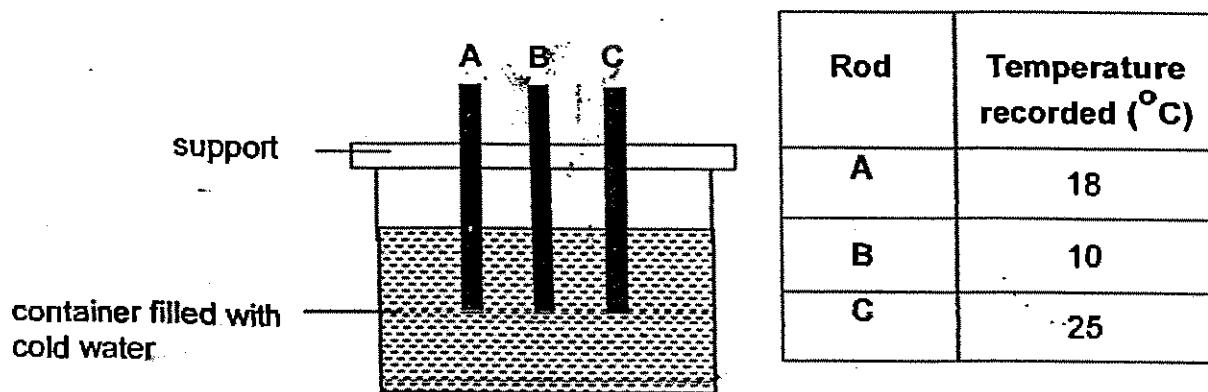


- (a) Write the gases involved in the boxes, A and B, of the diagram above. [2]
- (b) Name the process taking place at the following arrows: [2]

Arrows	Process
1 and 2	
3 and 4	

- 43 Jennifer carried out an experiment using 3 rods, each made of a different material, A, B and C. The rods were initially at room temperature.

One end of each rod was put in a container filled with cold water. After a while, the temperature at the other end of each rod was measured as shown in the table below.

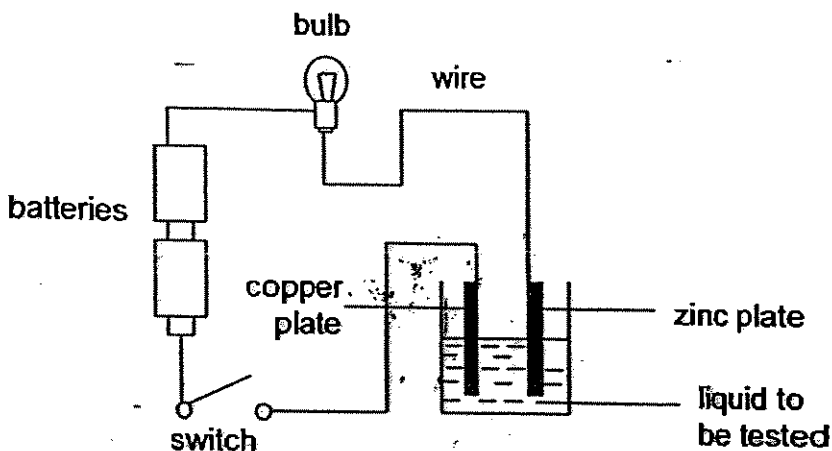


Jennifer wanted to choose a material to make a container that would keep drinks hot for as long as possible.

- (a) Which material, A, B or C, should she use to make the cup? Why? [1]

- (b) Suggest a suitable material to make a container that could cool down hot drinks quickly. [1]

- 44 – Shawn set up an experiment using the apparatus as shown below. The bulb lighted up when the switch was on.



Using the same set-up shown above, Shawn used three different types of liquids, one at a time, and recorded the brightness of the bulb in the table below.

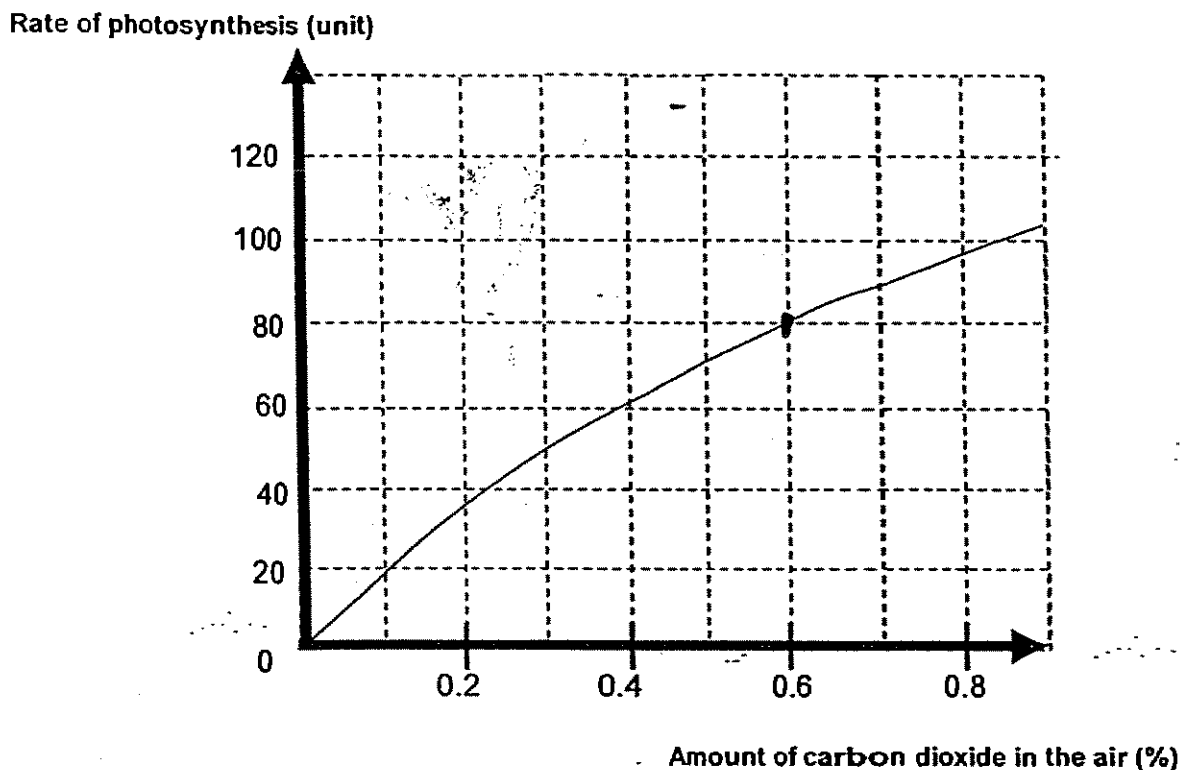
types of liquid	brightness of the bulb		
	dim	bright	very bright
X		✓	
seawater			✓
Y	✓		

Using the information above, answer the following questions:

- (a) What was the purpose of Shawn's experiment? [1]

- (b) Explain why Shawn concluded that it is dangerous to swim in the sea when a storm is brewing. [1]

- 45 The table below shows the results of an investigation to find the effect of the amount of carbon dioxide present in the air on the rate of photosynthesis.



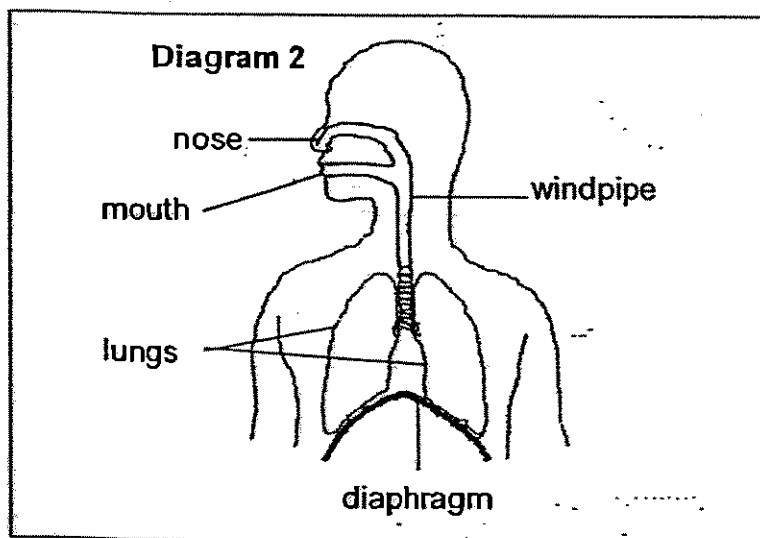
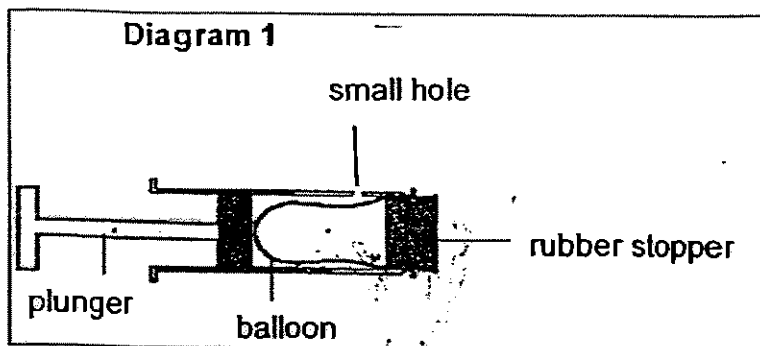
Using the results from the graph shown above, answer the following questions:

- (a) What is the rate of photosynthesis when the concentration of carbon dioxide in the air is 0.6%? [1]

_____ unit

- (b) What is the effect of the amount of carbon dioxide present in the air on the rate of photosynthesis? [1]

- 46 Aziz made a model, using the apparatus shown below in Diagram 1, to show the action of the diaphragm in our respiratory system (shown in Diagram 2).



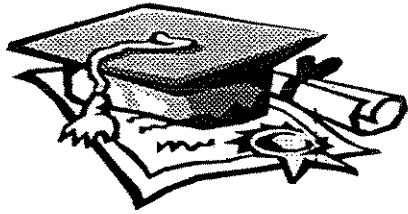
Compare the model Aziz made with our respiratory system. What does each of the following represent?

[2]

(a)	the balloon	
(b)	the plunger	

- END OF PAPER -

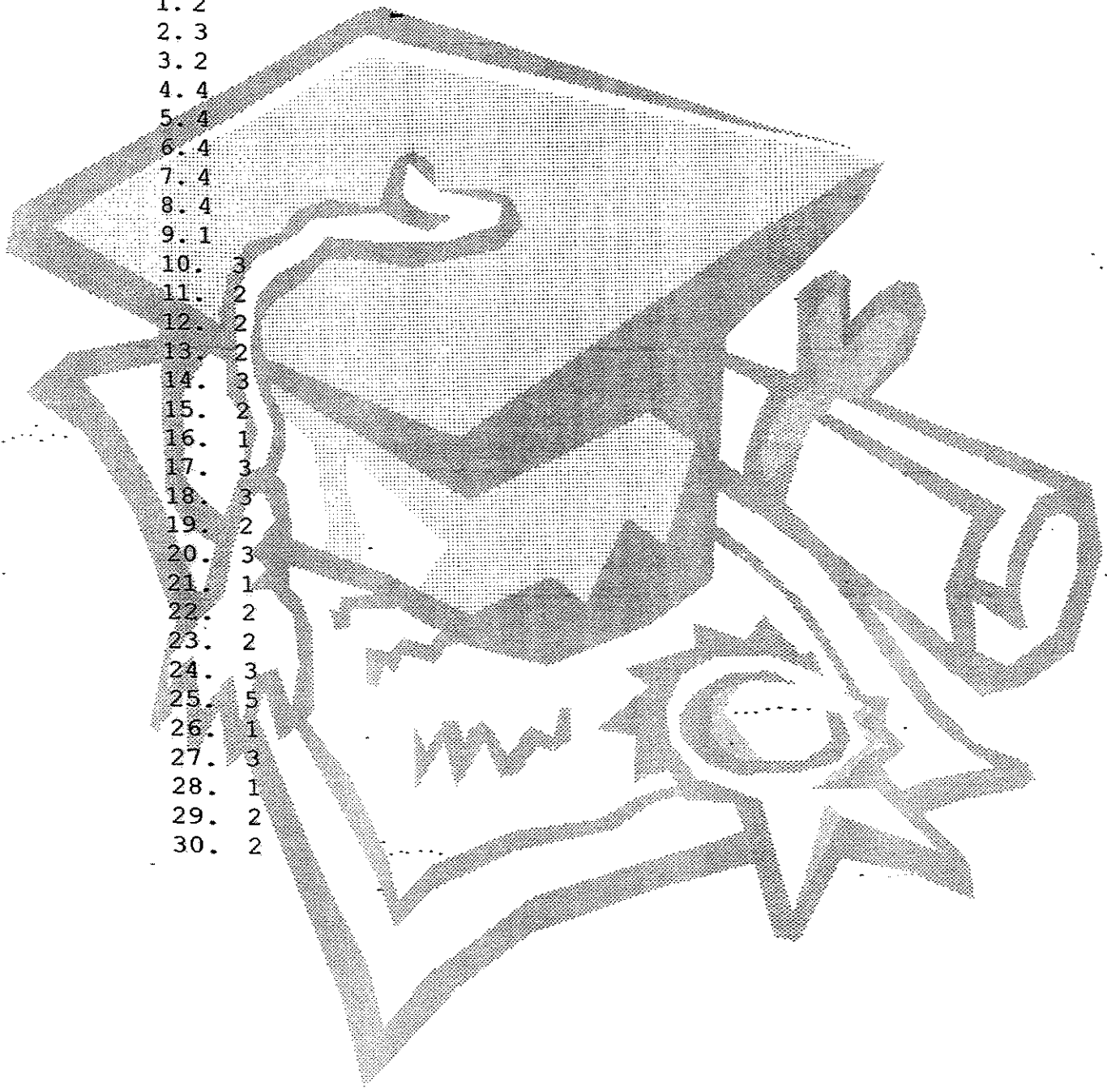
Setters: Mdm Chow Wei Yi
 Ms Ho Win Nie
 Ms Lee Suan Khim
 Mrs Martha John
 Mr Tan Siew Whatt



ANSWER SHEET

RAFFLES GIRLS' PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
SEMESTRAL ASSESSMENT (1)

- 1. 2
- 2. 3
- 3. 2
- 4. 4
- 5. 4
- 6. 4
- 7. 4
- 8. 4
- 9. 1
- 10. 3
- 11. 2
- 12. 2
- 13. 2
- 14. 3
- 15. 2
- 16. 1
- 17. 3
- 18. 3
- 19. 2
- 20. 3
- 21. 1
- 22. 2
- 23. 2
- 24. 3
- 25. 5
- 26. 1
- 27. 3
- 28. 1
- 29. 2
- 30. 2



No.	Marks	Answers
31	a	1 <ul style="list-style-type: none"> ▪ The older the fossil, the deeper in the earth it was found. ▪ The deeper a fossil is found in the earth, the older the fossil tends to be. ▪ The younger the fossil, the higher the layer it was found in the earth. ▪ The oldest fossil is at the bottom layer/found at the bottom. ▪ The oldest fossils are put at the bottom ▪ The fossils are arranged from the youngest to the oldest
	b	1 Layer B
32	a	1 Both have <ul style="list-style-type: none"> ▪ Veins / a main vein ▪ a leaf stalk ▪ network veins leaf pattern ▪ net veins ▪ veins and a <u>short stem</u> ▪ have similar vein patterns. ▪ both did not have parallel veins. ▪ veins in the same alignment
	b	1 Leaf A has an entire edge while Leaf B has a toothed/ jagged edge. <ul style="list-style-type: none"> ▪ Leaf A has an entire edge but Leaf B does not have. ▪ Leaf B has a toothed edge but Leaf A does not have

33	a	1	The <u>stored food</u> in the underground stem provided energy for the new shoots to grow.
	b	2	The <u>stored food was used up</u> and there <ul style="list-style-type: none"> ▪ were <u>no nutrients</u> ▪ was <u>no water</u> for the shoots to continue growing.
34	a	1	square right at the bottom on the right Ahmad
	b	1	square in the middle Yusof
	c	1	1 <ul style="list-style-type: none"> ▪ the nucleus ▪ gene in the chromosome of the nucleus

No.	Marks	Answers	
35	a	1	120 cm ³
	b	1	Air <ul style="list-style-type: none"> ▪ can be compressed ▪ takes the volume of the container ▪ occupies the space in the container ▪ has no definite volume
	c	1	It is a solid as it has a fixed / definite shape.

36	a	1	Salt			
	b	2	<table border="1"> <tr> <td>Stage 2</td> <td>The salt solution <u>evaporated</u> to become <u>water vapour</u>.</td> </tr> <tr> <td>Stage 3</td> <td>The hot water vapour <u>condensed</u> on the cooler surface in the bent tube to form <u>tiny water droplets</u> which are collected in the beaker.</td> </tr> </table>	Stage 2	The salt solution <u>evaporated</u> to become <u>water vapour</u> .	Stage 3
Stage 2	The salt solution <u>evaporated</u> to become <u>water vapour</u> .					
Stage 3	The hot water vapour <u>condensed</u> on the cooler surface in the bent tube to form <u>tiny water droplets</u> which are collected in the beaker.					
37	a	1	<ul style="list-style-type: none"> ▪ E → F → C → D ▪ H → F → C → D 			
	b	1	B and G			
38	a	1	<p>It has</p> <ul style="list-style-type: none"> ▪ [tiny] needle-like leaves ▪ a swollen stem 			
	b	1	<ul style="list-style-type: none"> ▪ to reduce water loss ▪ survive without water for a longer period of time 			
39	a	1	Screwdriver			
	b	1	a lever			
	c	1	<ul style="list-style-type: none"> ▪ The object uses the smallest force to overcome a heavier load. ▪ Least effort is required to lift the load. ▪ The effort and the load move in opposite directions ▪ There is a change in the direction of the <u>applied force/ effort</u>. 			
40	a	1	<ul style="list-style-type: none"> ▪ More iron filings dropped off from the steel bar than the iron bar. 			
	b	1	<p>To compare</p> <ul style="list-style-type: none"> ▪ which of the two metal bars (iron or steel) can remain magnetised for a longer time ▪ which one of the two metal bars (iron or steel) loses its magnetism more easily than the other 			

No.	Marks	Answers
41	a	2 potential energy kinetic energy kinetic / movement energy
	b	1 <ul style="list-style-type: none"> The more the amount of coal was burnt, the faster/ quicker the turbine would turn. The turbine turned more quickly when more coal was burnt.
42	a	2 A. carbon dioxide B. oxygen
	b	2 Photosynthesis Respiration
43	a	1 C cannot conduct heat as well as B and A.
	b	1 Any type of metal e.g. <ul style="list-style-type: none"> steel copper metal
44	a	1 To find out <ul style="list-style-type: none"> how well the 3 liquids conduct electricity which one of the three liquids is the best conductor of electricity which one of the three liquids is a bad conductor of electricity
	b	1 One may get electrocuted while swimming in the sea if a bolt of lightning strikes the sea water since sea water is able to conduct electricity.
45	a	1 80
	b	1 The greater the amount of carbon dioxide present in the air, the greater/faster is the rate of photosynthesis.
46	a	1 lungs
	b	1 diaphragm

RAFFLES GIRLS' PRIMARY SCHOOL
PRELIMINARY EXAMINATION
2007



Name : _____ Index No: _____ Class: P 6 _____

Your score out of 100 marks	— —	
	Class	Level
Highest score		
Average score		
Parent's signature		

23rd August 2007

SCIENCE

Att: 1 h 45 min

SECTION A (30 X 2 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS) provided.

- 1 The tables below show how Sally and Siti classified some organisms into 2 groups.

Sally's classification :

Group P	Group Q
apple tomato	moss bread mould bracket fungus

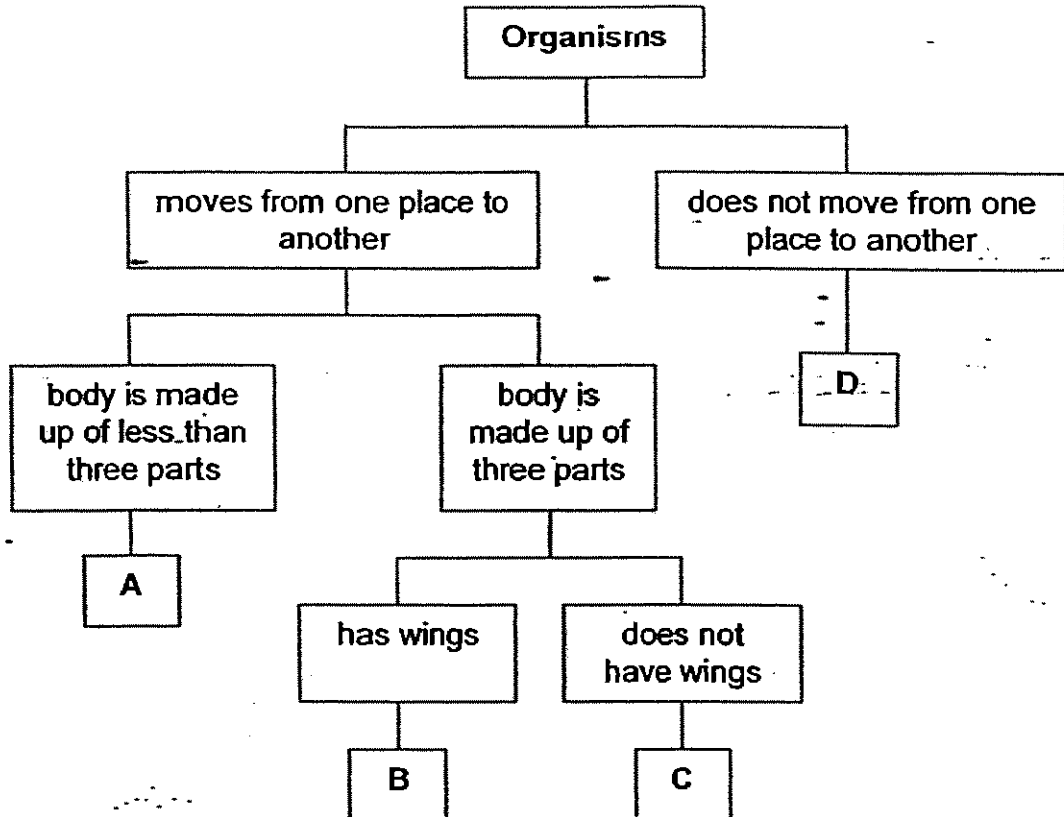
Siti's classification :

Group R	Group S
moss apple tomato	bread mould bracket fungus

How did the two girls group the organisms?

	Sally	Siti
(1)	whether they have or do not have chlorophyll	whether they are flowering or non-flowering plants
(2)	whether they are flowering or non-flowering plants	whether they have fruits or no fruits
(3)	whether they feed on decaying matter or make their own food	whether they have or do not have chlorophyll
(4)	whether they bear flowers or do not bear flowers	whether they can or cannot make their own food

- 2 The chart below shows how some organisms are classified.

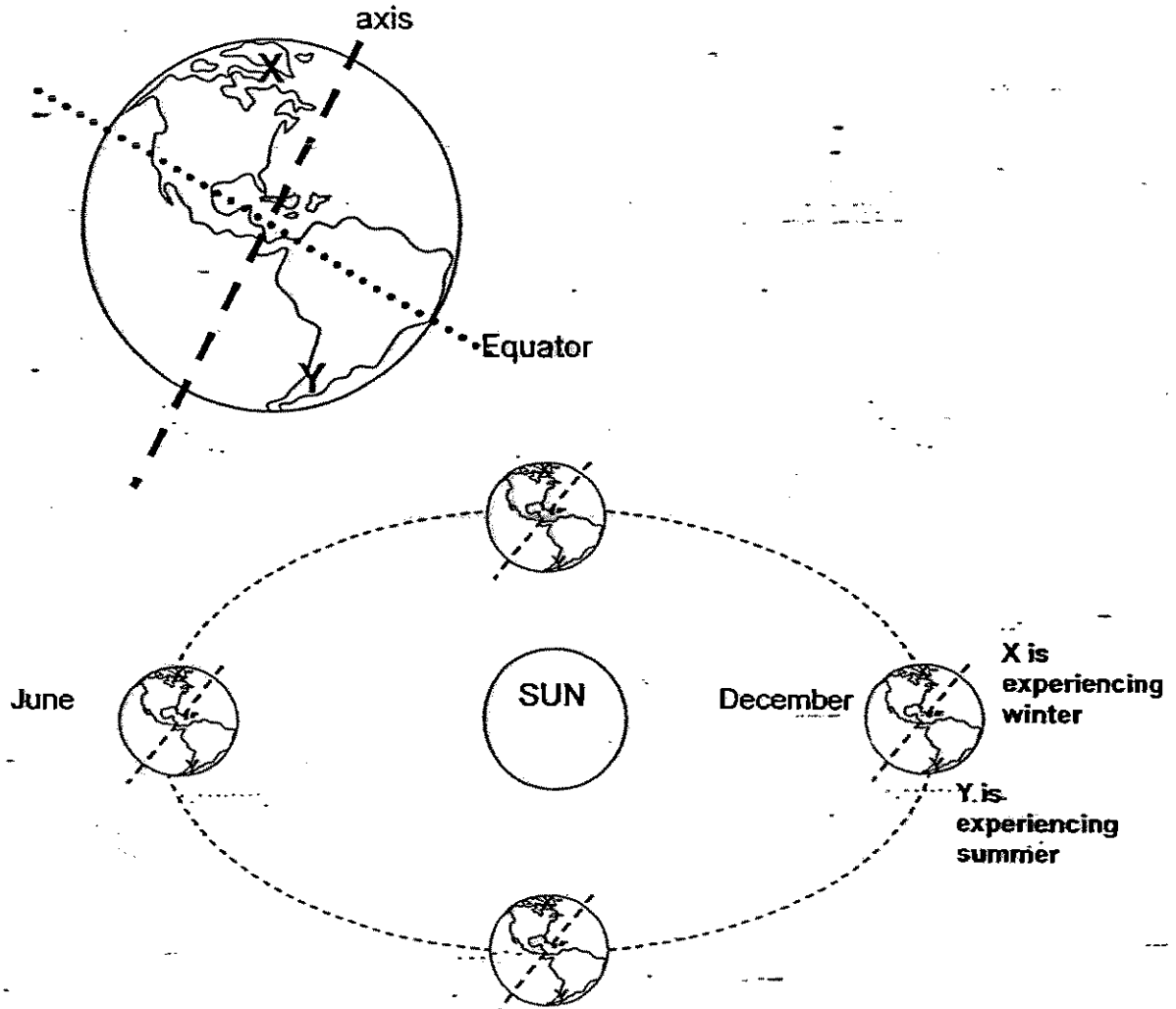


Maggie caught a flying insect in the garden.

Which group, A, B, C or D, does this animal most likely belong to?

- (1) A
 (2) B
 (3) C
 (4) D
- 3 Which of the following organisms break down dead matter into simple substances?
- A maggot
 B bacteria
 C woodlouse
 D mushroom
- (1) A and C only
 (2) B and D only
 (3) A, B and C only
 (4) B, C and D only

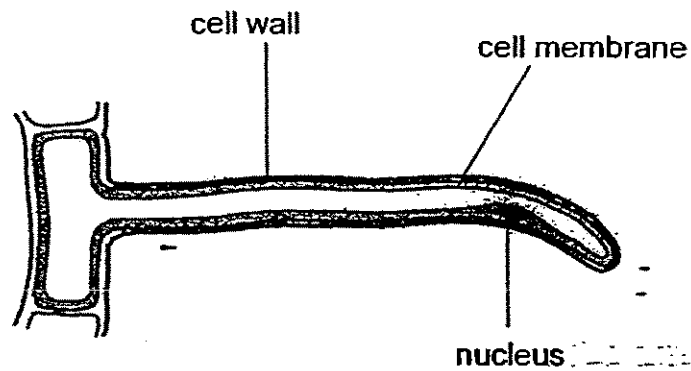
- 4 The Earth's axis is tilted at an angle of 23.45° (NOT drawn to scale) and this causes some parts of the Earth to receive more sunlight than others in the same period of time. Depending on the location, some parts on the Earth experience the four seasons in this order: spring, summer, autumn and winter.



Which one of the following shows correctly the seasons that Parts X and Y are experiencing in June?

	Part X	Part Y
(1)	winter	summer
(2)	summer	winter
(3)	autumn	spring
(4)	summer	spring

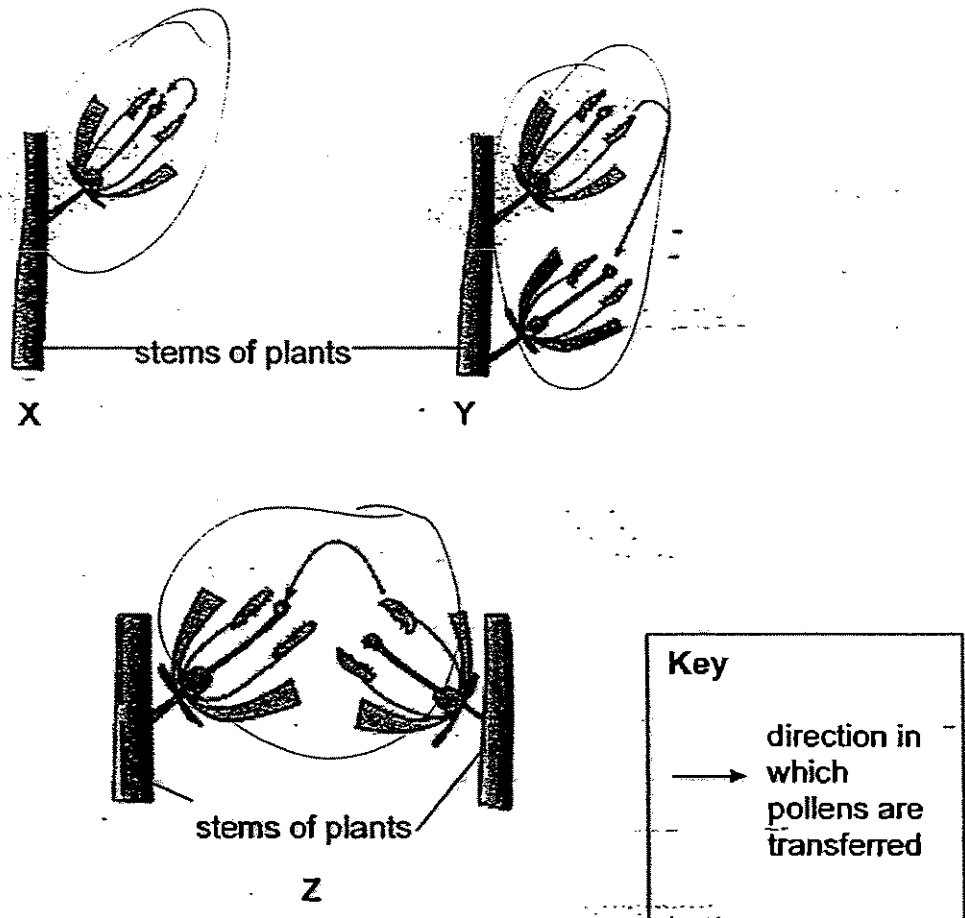
5 A cell specimen as shown below was placed under a microscope.



Based on the diagram above, which one of these statements is **CORRECT**?

- (1) This is a plant cell since it has a nucleus.
- (2) This is an animal cell since there is no chloroplast.
- (3) This is an animal cell since there is a cell membrane.
- (4) This is a plant cell although it does not have any chloroplast.

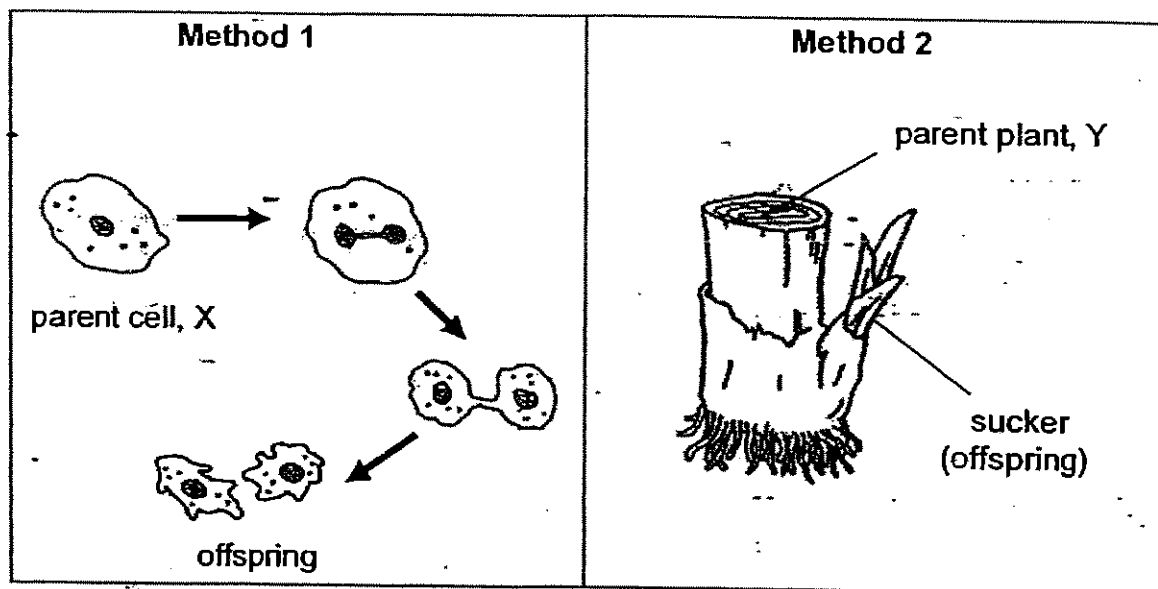
- 6 The diagrams show how flowers of a certain species go through pollination.



Which one of the following shows correctly how the two types of pollination take place?

	self-pollination	cross-pollination
(1)	X only	Y and Z only
(2)	X and Y only	Z only
(3)	Y and Z only	X only
(4)	X, Y and Z	none

- 7 Four students studied the following methods of reproduction of two types of organisms, X and Y.



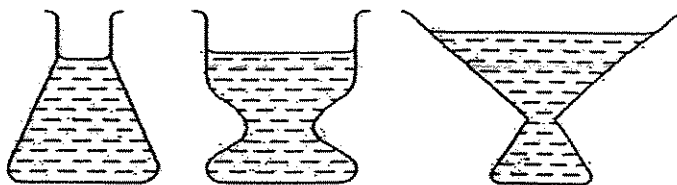
The students came up with their statements and recorded them in their science notebooks.

Which of these students made the **WRONG** statement(s)?

- A Bob : The offspring of organisms X and Y are normally genetically identical to their respective parents.
- B Gavin : The offspring have better resistance against bacteria than their parents.
- C Sumin : It is not likely for the offspring of organism Y to produce better quality fruits than its parent.

- (1) A only
 (2) B only
 (3) A and B only
 (4) B and C only

- 8 Fatimah poured an equal amount of substance X into the three containers as shown below and made her observation at once.



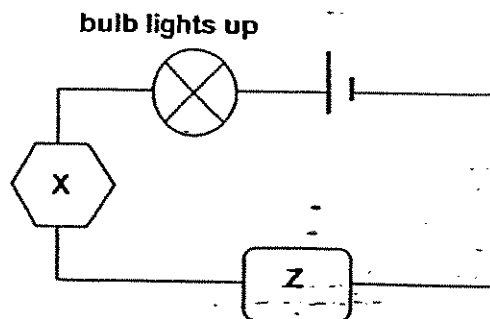
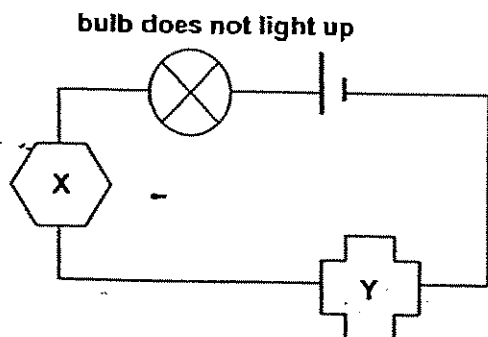
What is the purpose of Fatimah's experiment?

- (1) To find out if substance X has a definite volume.
- (2) To find out the state of substance X at room temperature.
- (3) To find out if substance X takes the shape of the containers.
- (4) To find out if the rate of evaporation is affected by the exposed surface area of substance X.
- 9 Which one of the following is classified correctly?

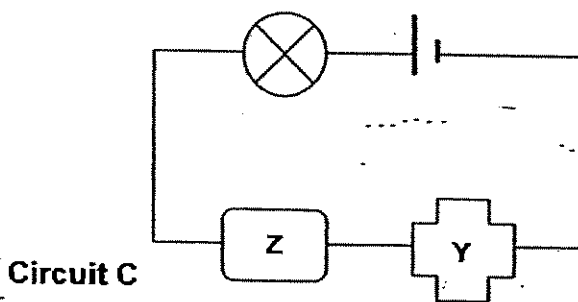
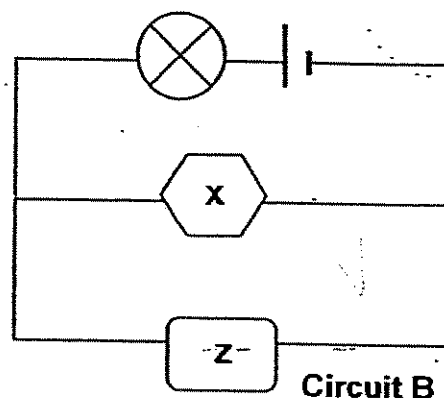
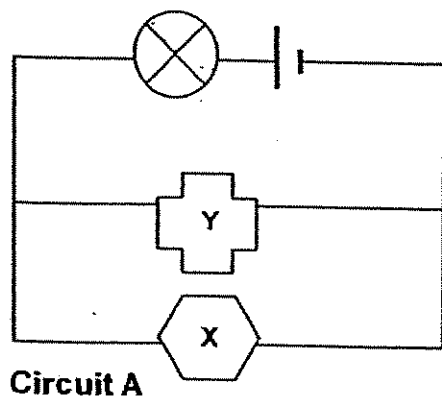
	solid state	liquid state	gaseous state
(1)	ice	rain	clouds
(2)	dew	rain	water vapour
(3)	ice	clouds	steam
(4)	rain	water vapour	clouds

- 10 Which one the following does NOT help to conserve water?
- (1) Collect rainwater to water the plants
- (2) Process used water into drinkable water
- (3) Purchase drinkable water from other countries
- (4) Educate the citizens to reuse and recycle used water

11 Patricia set up the circuits below using a bulb, a battery and objects X, Y and Z.



She used the objects, X, Y and Z, again to form the circuits below.

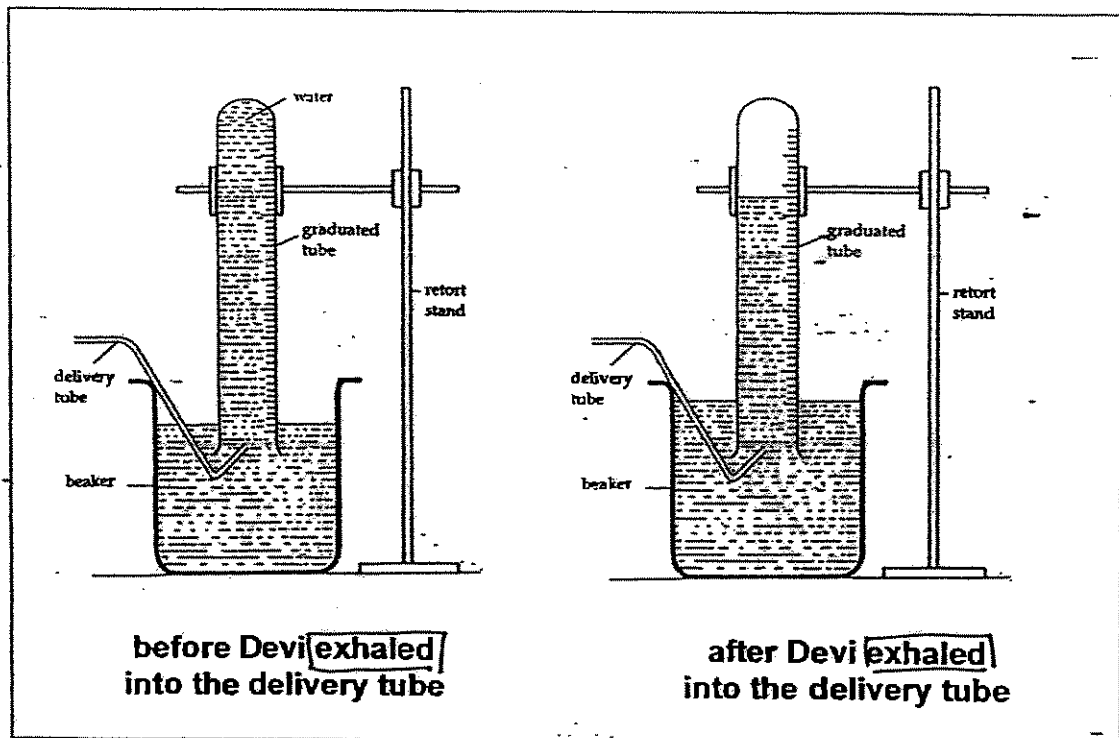


In which of the circuit diagrams shown above, A, B and C, did Patricia see the bulb light up?

- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) A, B and C

12

Devi filled a graduated tube with water and exhaled into the delivery tube as shown in the diagrams below.

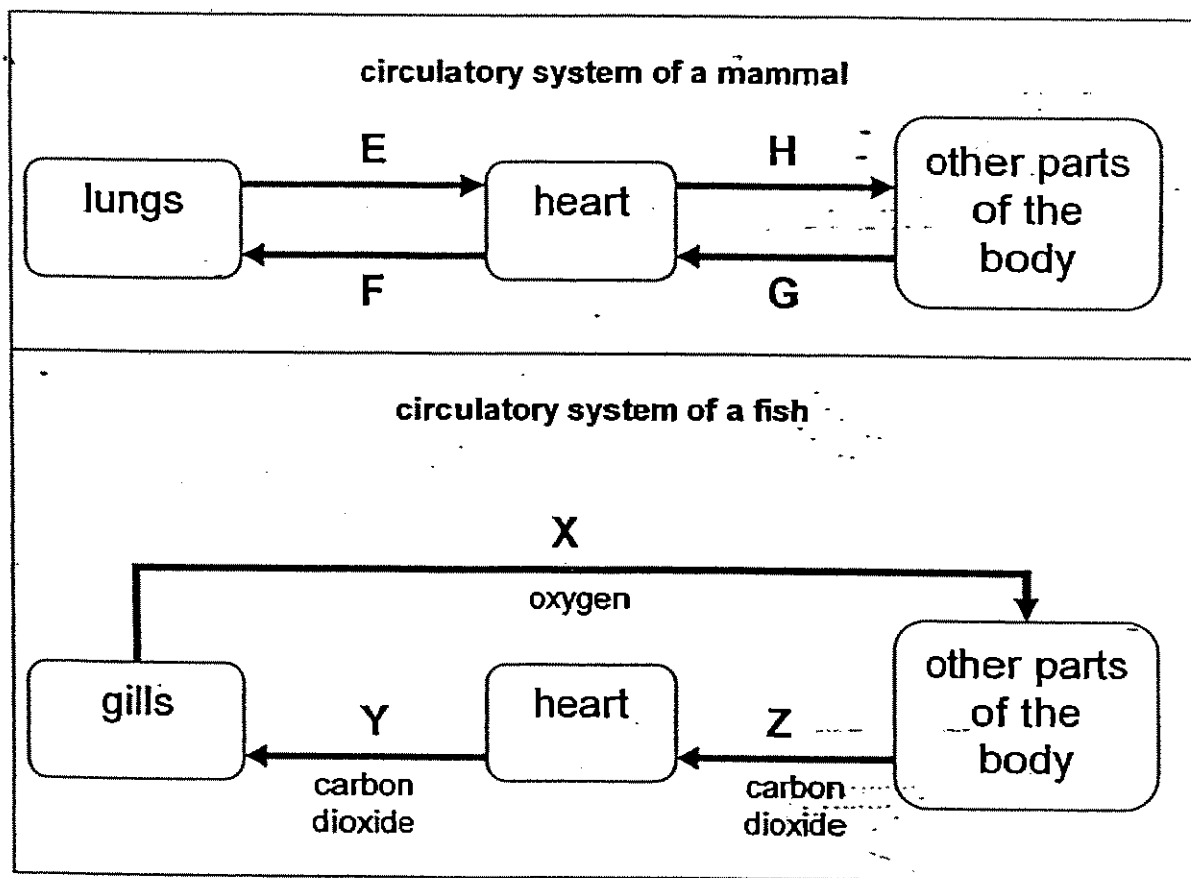


Devi was trying to find out _____

- (1) if water takes up space
- (2) if oxygen takes up space
- (3) the amount of air she gave out
- (4) the amount of oxygen she gave out

- 13 The diagrams below show the circulatory systems of two organisms, a mammal and a fish.

The arrows represent the blood vessels that carry blood from the lungs or gills to the other parts of the body.



Based on the diagrams above, which of the following statements is/ are CORRECT?

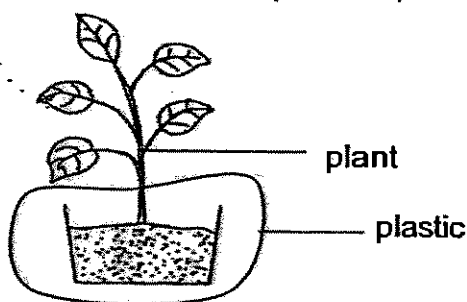
- A Only blood vessels G, Y and Z carry blood with less oxygen.
- B Only blood vessels E, H and X carry blood with more oxygen.
- C Oxygen-rich blood from the gills goes to the heart like the blood in blood vessel E.

- (1) B only
- (2) A and B only
- (3) A and C only
- (4) A, B and C

- 14 Chloe took three similar plants, A, B and C, of about the same size and covered the stems and leaves with "cling wrap" (a thin piece of plastic wrapper). She treated the leaves of each plant in the following ways:

Leaves on Plant A	the <u>upper surfaces</u> of the leaves were covered with " <u>cling-wrap</u> "
Leaves on Plant B	the <u>undersides</u> of the leaves were covered with " <u>cling-wrap</u> "
Leaves on Plant C	<u>both sides</u> of the leaves were covered with " <u>cling-wrap</u> "

Chloe wrapped each pot of soil with a piece of plastic as shown below.



Each plant, A, B and C, was weighed and then placed near a window to get sunlight. After 2 days, each plant was weighed again.

The table below shows the weight of each plant before and after it was in the sun.

Plant	Weight of the plant (g)	
	at the start of the experiment	after 2 days
A	150	142
B	150	144
C	150	146

What does Chloe's experiment show?

- (1) The stomata allow the exchange of gases to take place.
- (2) Water vapour escaped to the surroundings from the leaves only.
- (3) Water vapour escaped through the stomata which are found mainly on the undersides of the leaves.
- (4) The stomata are found mainly on the undersides of the leaves in Plant A and upper surfaces of the leaves in Plants B and C.

- 15 The table below shows the sense organs, A, B, C and D, which Trina used to make the following observations:

sense organ \ observation	A	B	C	D
The syrup is yellow and sticky.	√	-		√
The water in the pail is overflowing.				√
The flower petals are fragrant and soft.	√		√	
The coffee is bitter.		√		

Trina later made the following observation:

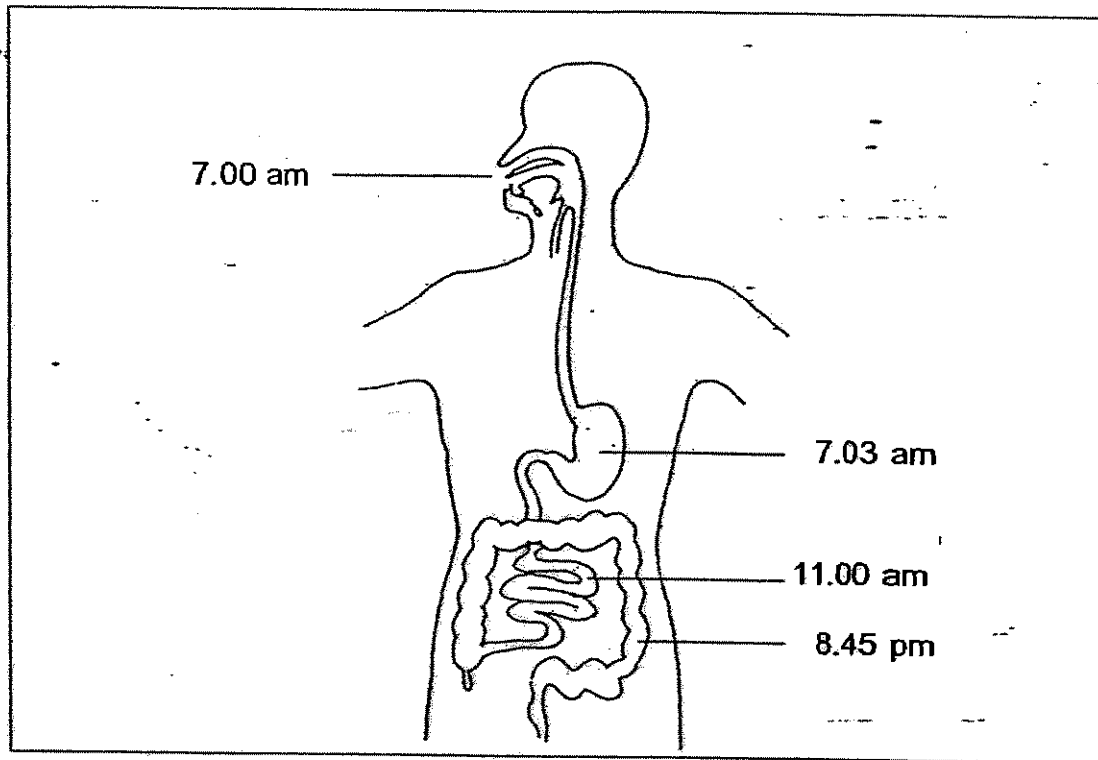
The red grapes are sweeter than the green ones.

Which of her sense organs, A, B, C and D, did Trina use to make the above observation?

- (1) B only
- (2) B and D only
- (3) C and D only
- (4) A, B and C only

- 16 Clara did an experiment to track the path of food in her digestive system.

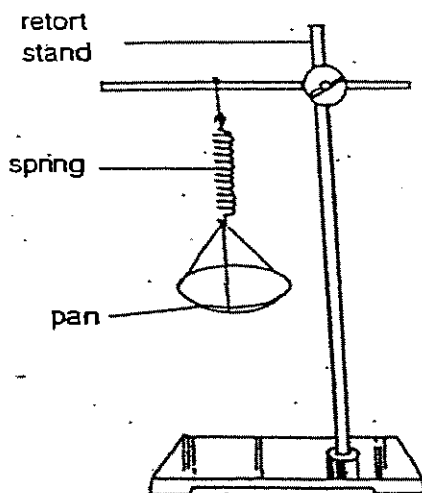
The diagram below shows where the food was found at different times on that day.



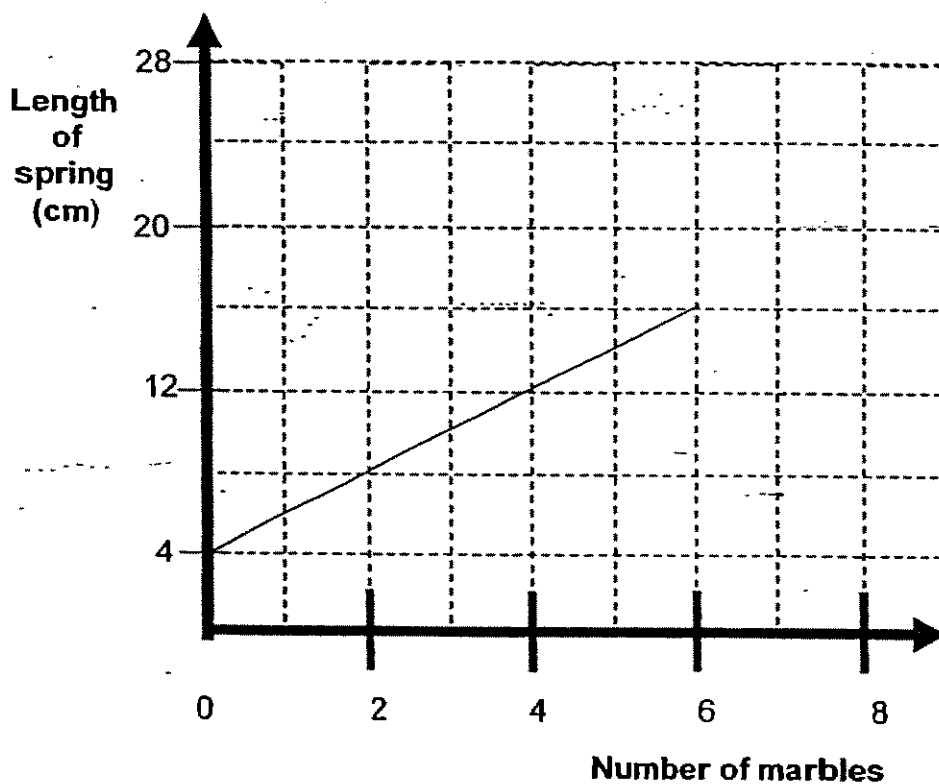
At about what time was Clara's digested food absorbed into the blood stream?

- (1) 7.00 am
- (2) 7.03 am
- (3) 11.00 am
- (4) 8.45 pm

- 17 Daniel used the set-up as shown below to measure the length of a spring.



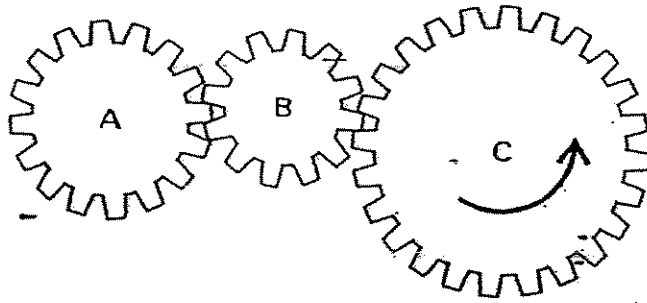
Each time a different number of marbles was placed in the pan, Daniel recorded his results and plotted a graph as shown below.



Based on the graph drawn by Daniel, what would the extension of the spring be if Daniel had placed 8 marbles in the pan?

- (1) 14 cm
- (2) 16 cm
- (3) 18 cm
- (4) 20 cm

- 18 The diagram below shows a set of gears, A, B and C. The direction of rotation of gear C is as shown.



The number of teeth in each of the gears is shown in the table below.

Gear	Number of teeth
A	16
B	12
C	24

Which one of the following shows the correct time taken for each gear, A, B and C, to make one turn?

Time taken to make one turn (minutes)		
Gear A	Gear B	Gear C
3	4	6
4	3	6
4	6	3
6	3	4

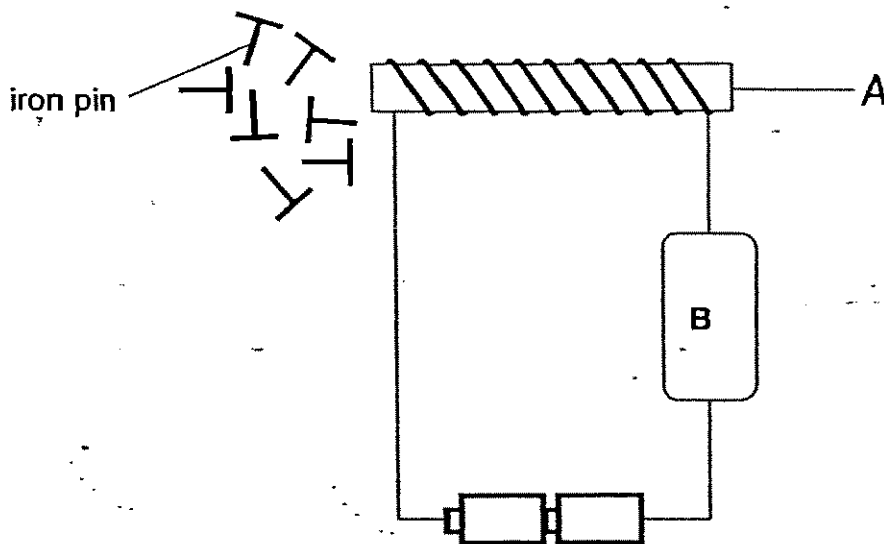
(1)

(2)

(3)

(4)

- 19 Betty conducted an experiment using the apparatus shown below with 2 different materials for Objects A and B. She wanted to make Object A into a temporary magnet.



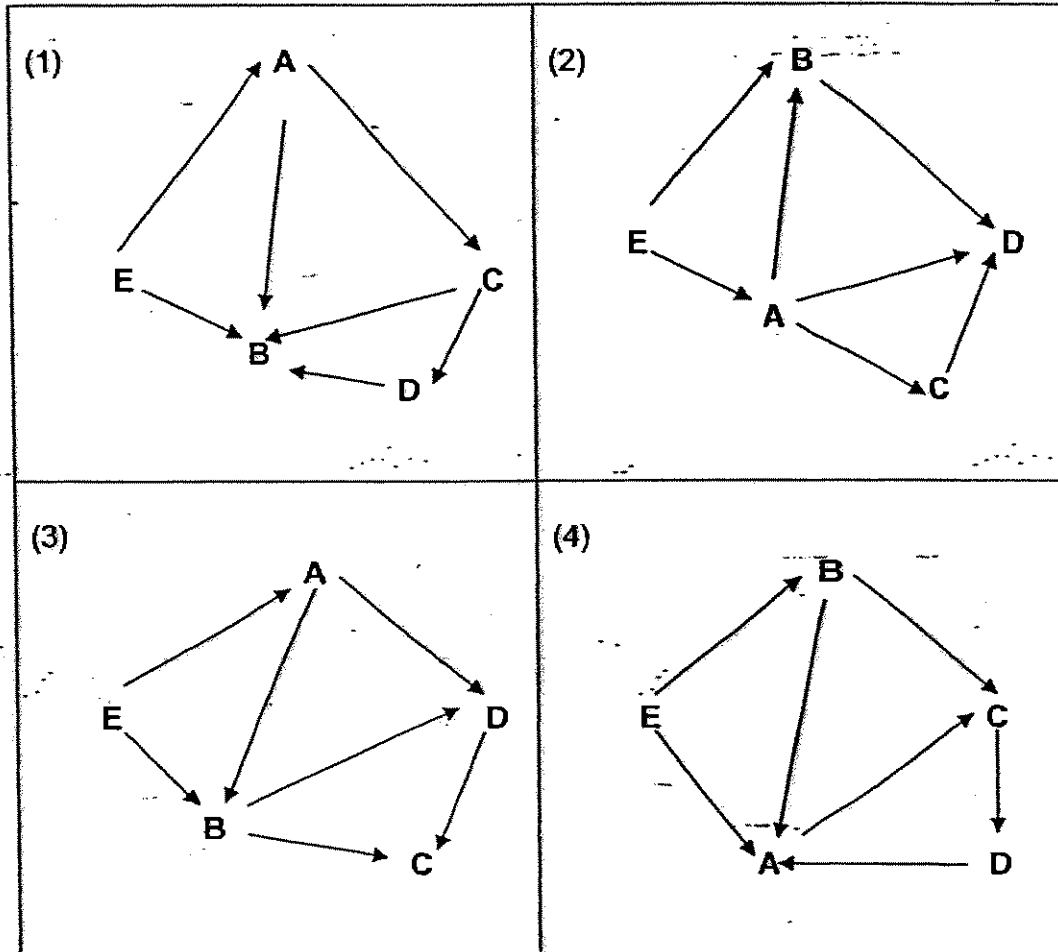
Which one of the following pairs of materials should Betty use for Objects A and B to ensure that the iron pins would be attracted to Object A?

material used	
Object A	Object B
(1) copper	nickel
(2) iron	aluminium
(3) lead	steel
(4) steel	ceramic

20 A, B, C, D and E are 5 organisms in a certain community.
The following is some information about these organisms:

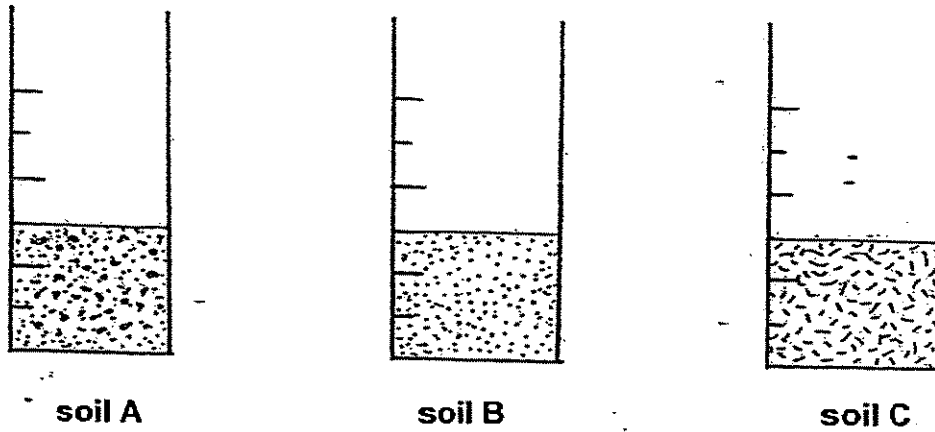
- A has 2 predators.
- B is the only omnivore.
- C and D have 2 food sources.
- E is a food producer.

Which one of the following food webs is found in this community?



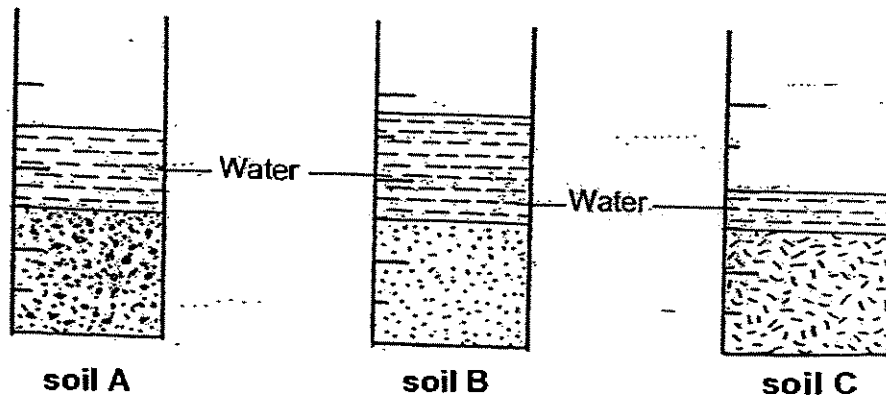
21 David wanted to find out which type of soil contains the most amount of air.

He placed one cupful of each type of soil, A, B and C, into each of the three jars shown below.



He then poured a cupful of water into each of the three jars at the SAME time.

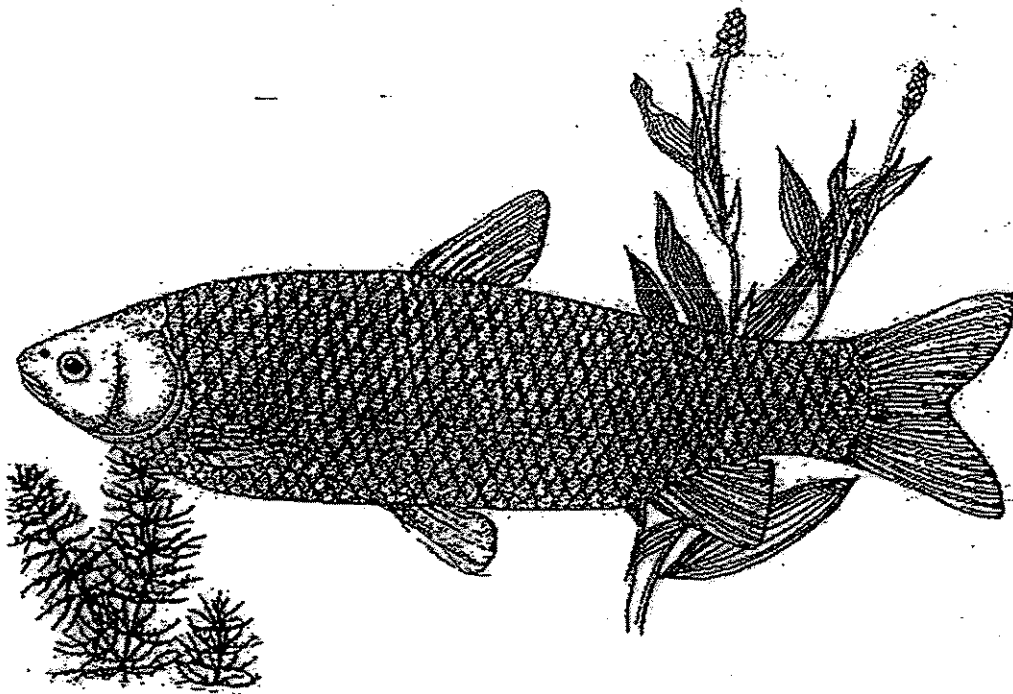
The diagrams below show David's initial observations of the 3 set-ups after the cupful of water was poured into each jar of soil.



Which one of the following shows the correct arrangement of the soils, from the soil with the most amount of air to the soil with the least amount of air?

	(most)		(least)
	least amount of air		
(1)	A	B	C
(2)	B	A	C
(3)	C	A	B
(4)	C	B	A

22 The diagram below shows an aquatic animal.



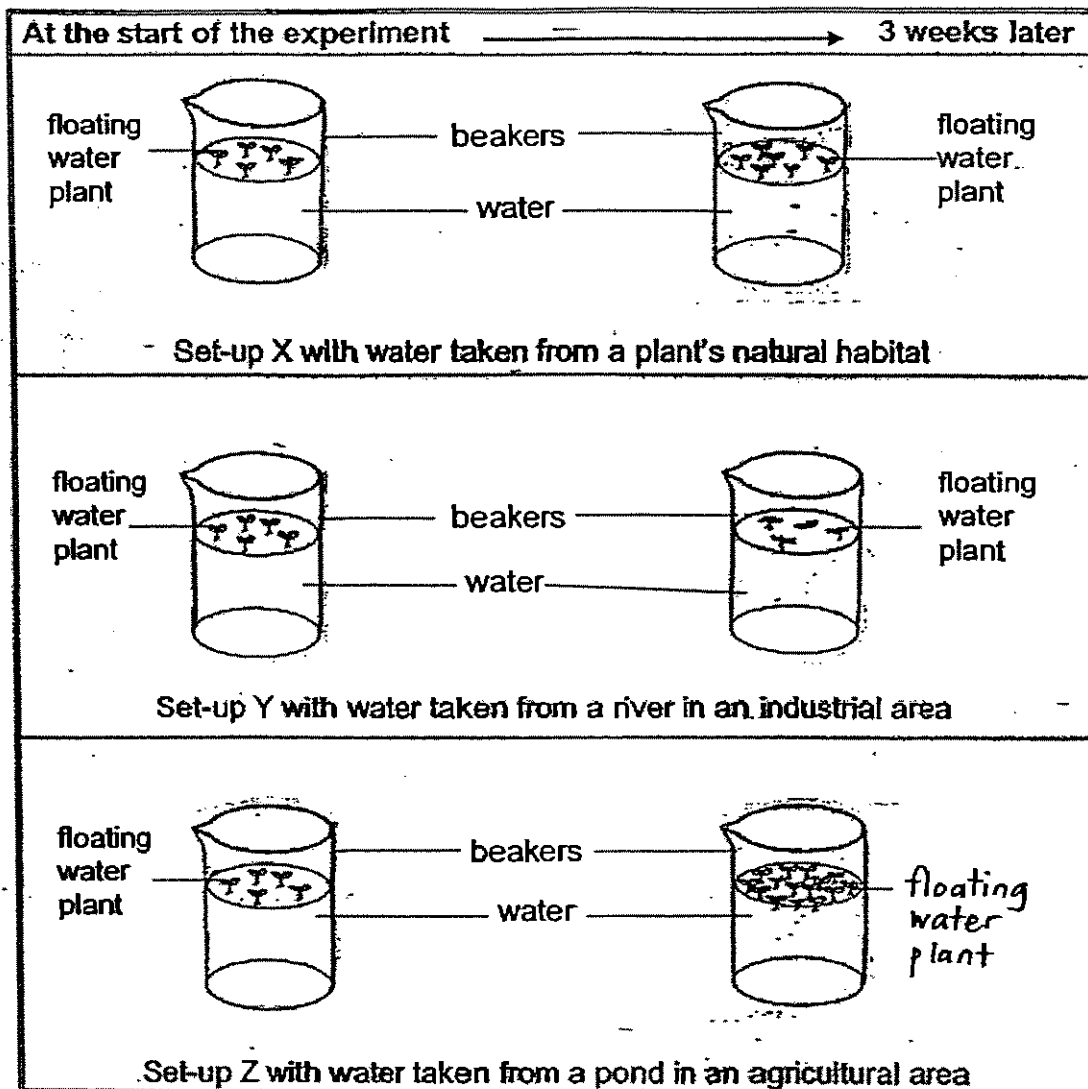
The fins of the animal shown above help it to maintain balance in water.

What is the purpose of its tail fin?

- (1) It helps the animal to sense danger.
- (2) It protects the animal from its predators.
- (3) It helps the animal to push itself forward in the water.
- (4) It helps the animal maintain its streamlined body shape.

- 23 Sarah used the following 3 set-ups, X, Y and Z, and kept them in identical conditions for 3 weeks.

At the end of the 3 weeks, Sarah made the following observations:



What can Sarah infer from her experiment?

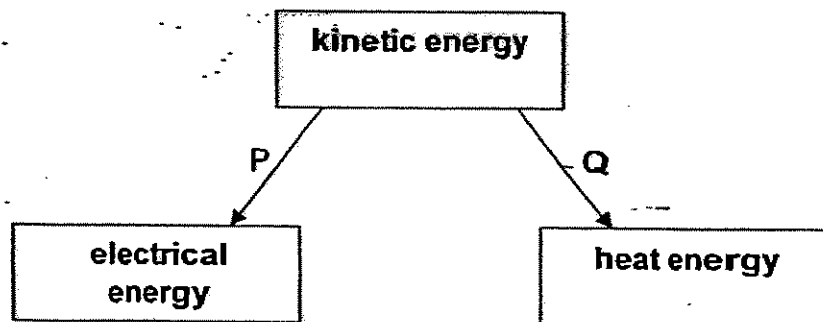
- A Water sample in Beaker X did not have any nutrients.
 - B Water sample in Beaker Y was the most polluted.
 - C Water sample in Beaker Z contained suitable nutrients which allowed the water plants to grow well.
- (1) A only
 (2) A and C only
 (3) B and C only
 (4) A, B and C

24 Which of the following statements are TRUE about the development in modern biotechnology?

- A It can help us to produce food by fermentation with the help of useful microorganisms.
- B Genetically modified food has the same appearance and characteristics as any food we eat.
- C Genetically modified food results in increased food production which can help countries facing food shortage.
- D In genetic selection we can easily produce and determine the desirable characteristics we want in plants within a short time.

- (1) A and C only
- (2) A and D only
- (3) A, B and C only
- (4) B, C and D only

25 The diagram below shows how energy can be converted from one form to another by the activities, P and Q.



Which one of the following pair best represents the activities, P and Q, involved?

	P	Q
(1)	rubbing hands together	using an electric iron
(2)	using an electric kettle	using a generator at a power plant
(3)	using a generator at a power plant	rubbing hands together
(4)	using an electric iron	using an electric kettle

26 Which of the following is a renewable resource/ are renewable resources of energy?

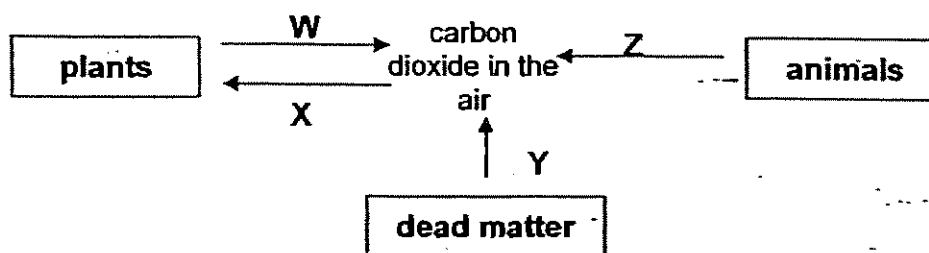
- A Sun
- B coal
- C wind
- D running water

- (1) A only
- (2) A and B only
- (3) B and C only
- (4) A, C and D only

27 Which one of the following statements about energy is NOT true?

- (1) The Sun is our main source of light and heat energy.
- (2) All living things need energy to carry out life processes.
- (3) Light energy from the Sun keeps the water cycle going.
- (4) Food consumers are indirectly dependent on the Sun for energy.

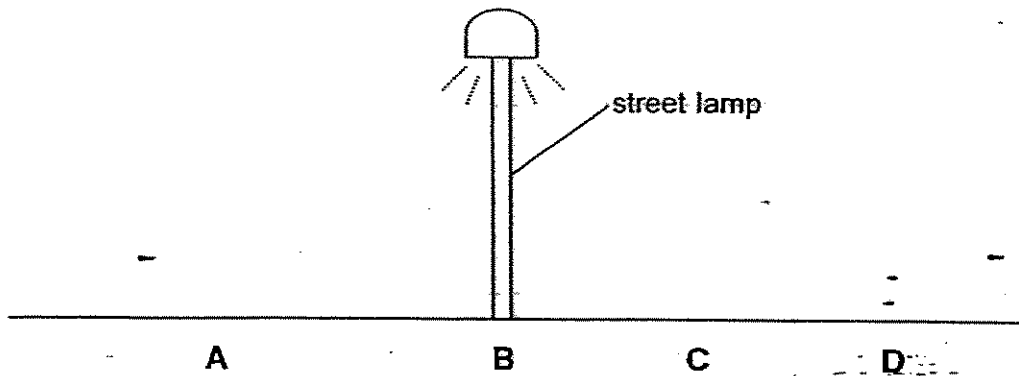
28 The diagram below shows how carbon dioxide is added to or removed from the air during the processes, W, X, Y and Z.



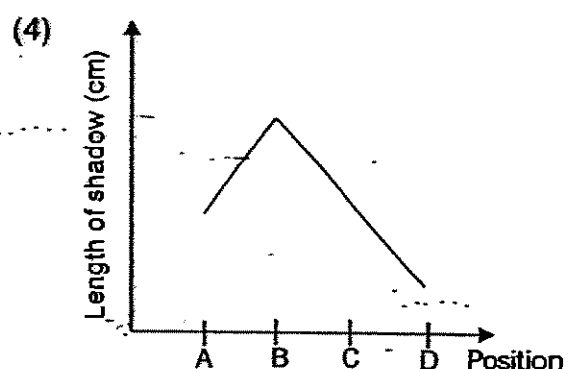
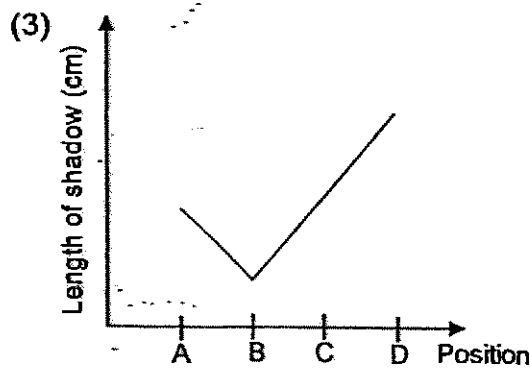
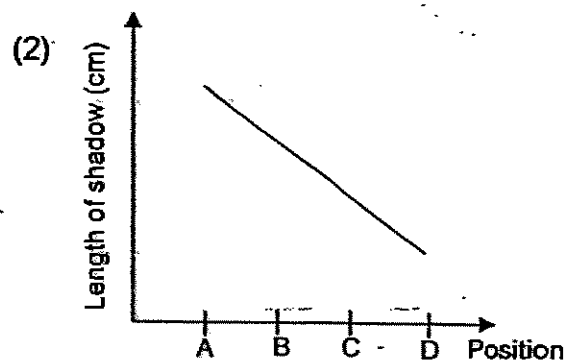
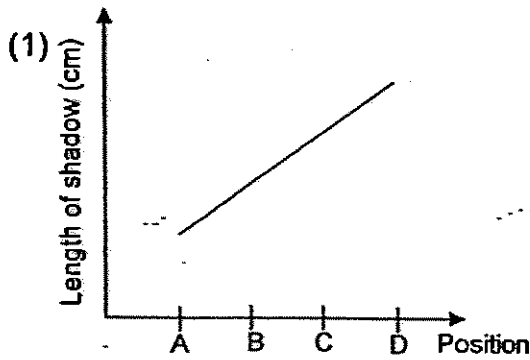
Which one of the following correctly identifies the processes, W and Y?

	W	Y
(1)	respiration	decomposition
(2)	respiration	photosynthesis
(3)	photosynthesis	decomposition
(4)	photosynthesis	respiration

29 On a dark night, Sam walked from A to D under a lighted street lamp:

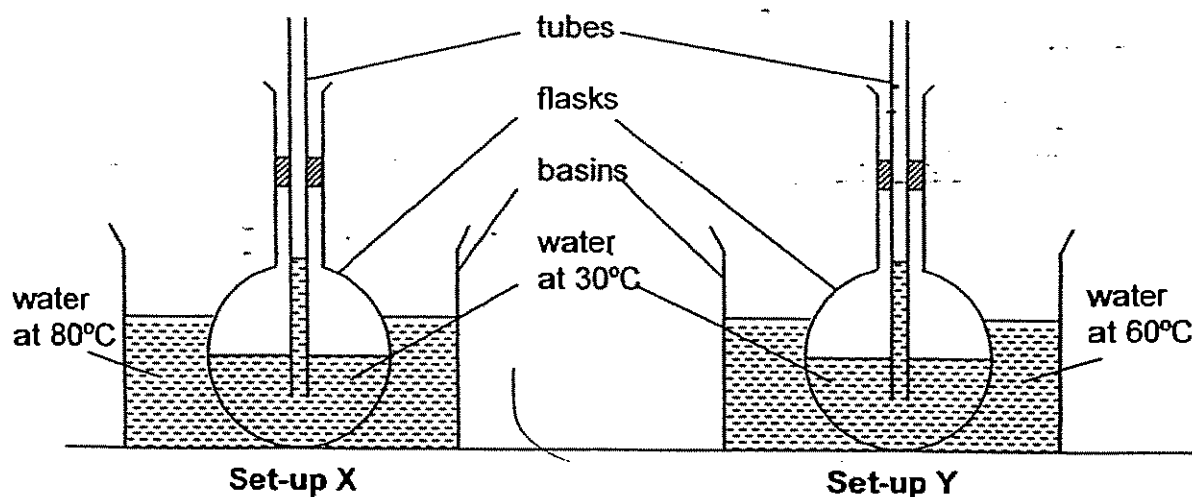


Which one of the following graphs shows how the length of Sam's shadow changes from A to D under the lighted street lamp?



- 30 The diagrams below show the experimental set-ups X and Y at the beginning of the experiment.

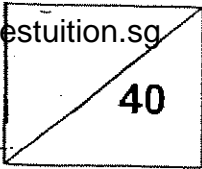
The two set-ups are identical except for the temperature of water in the basin which was different. The flasks were immersed in different basins of water for two minutes.



Which of the following would most likely happen during the experiment?

- A The temperature of the water in the flasks of both set-ups would increase.
- B The water in the basins of both set-ups would gain heat from the water in the flasks.
- C The water level in the tube of set-up X would be higher than the water level in the tube of set-up Y.
- D The water in the flask of set-up X would expand while the water in the flask of set-up Y would contract.

- (1) A and C only
- (2) B and D only
- (3) A, B and C only
- (4) B, C and D only



Name: _____ Index No: _____ Class: P6 _____

SECTION B (40 marks)

For questions 31 to 46, write your answers in the spaces provided.

The number of marks available is shown in brackets [] at the end of each question or part question.

31 (a) Classify the following materials into two groups, A and B. [1]

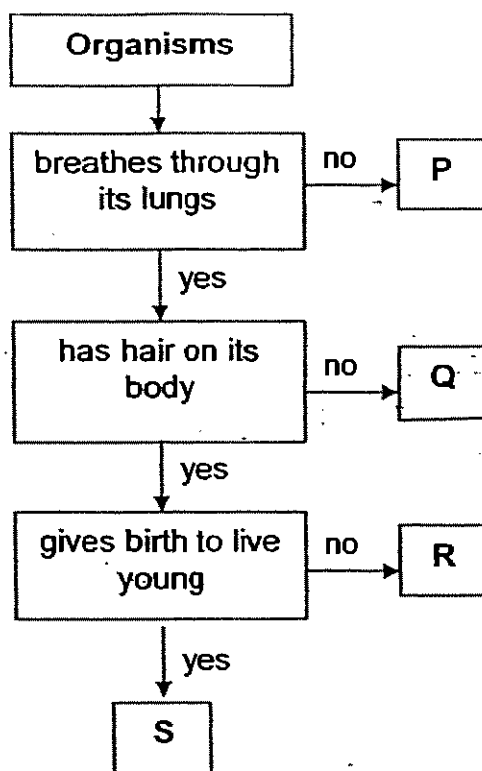
iron	nickel	wood	steel	plastics
Group A		Group B		

(b) State the properties that you have used to classify these materials. [2]

Group A:

Group B:

32 The chart below shows how some organisms are differentiated.

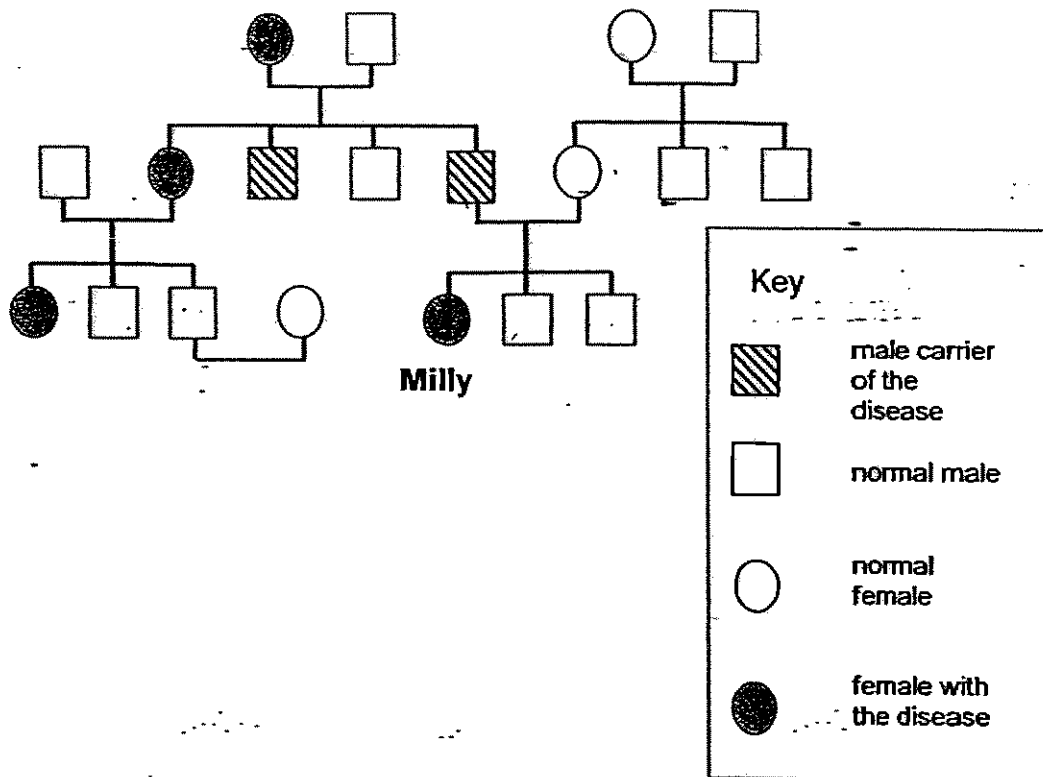


Based on the information above, answer the following questions:

(a) Identify the characteristic(s) that is/ are common for both organisms, Q and R. [1]

(b) Which letter, P, Q, R or S, would best represent "bat"? [1]

33 The diagram below shows the family tree of Milly.



(a) How many male cousins does Milly have? [1]

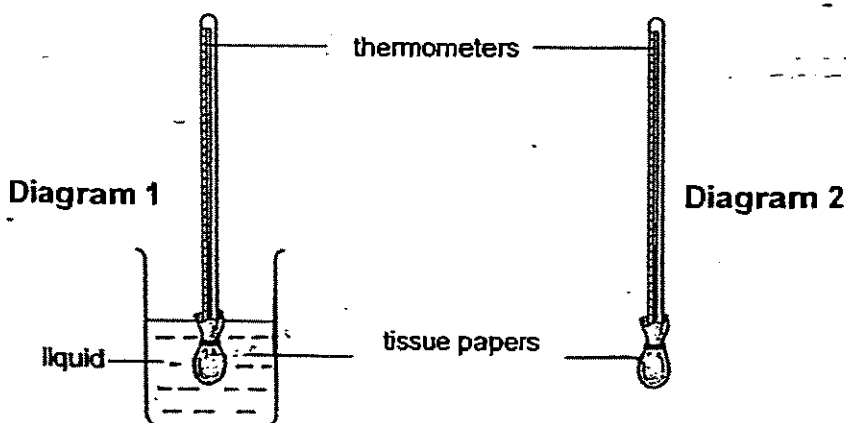
(b) How many ~~sisters~~ does Milly's father have? [1]

(c) Milly thinks that she has inherited the disease from her mother. Is Milly correct? Explain your answer. [1]

34 Zi Xuan carried out an experiment with four different liquids, W, X, Y and Z.

She dipped each thermometer into a different liquid (as shown in Diagram 1) and then removed immediately.

This was done after she had wrapped the bulbs of four thermometers with tissue papers and secured them with rubber bands as shown in Diagram 2.



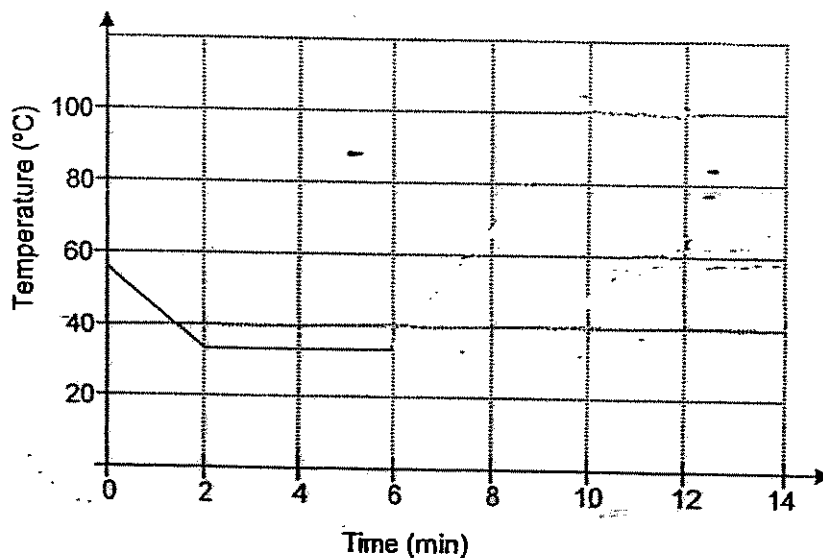
The reading on each thermometer was recorded every two minutes in the table as shown below.

time in min	Reading on the thermometer ($^{\circ}$ C)			
	liquid W	liquid X	liquid Y	liquid Z
0	23	23	23	23
2	14	19	-11	21
4	4	16	-2	20
6	2	14	-8	20
8	3	14	-1	20
10	4	14	8	20
12	6	14	17	20

(a) Which one of the liquids, W, X, Y or Z, evaporated most rapidly? [1]

(b) After six minutes, the reading went up on the thermometer dipped in liquid Y. Explain why. [1]

- 35 The graph below shows the temperature change of pure water in a beaker that was left on a table in a room over a period of time.



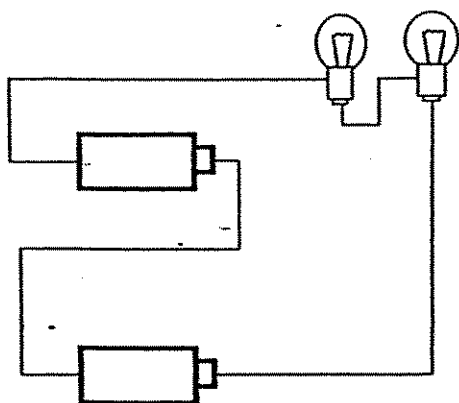
Based on the graph above, answer the following questions:

- (a) Explain why the temperature of water stopped decreasing after the second minute. [1]

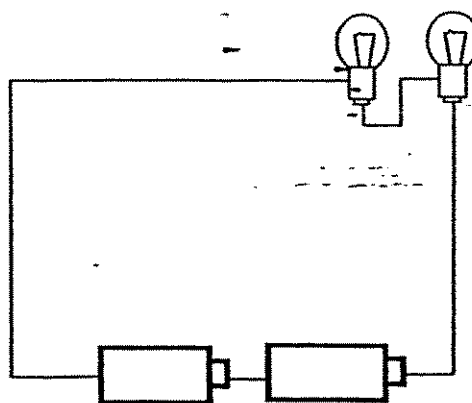
- (b) A heat source was introduced at the 6th minute. The water boiled after heating for four minutes. The heat source was removed at the 12th minute. Complete the graph until the 12th minute. [1]

36 Natalie wanted to find out whether the arrangement of batteries would affect the brightness of the bulbs.

Using the same type of components, she set up 2 circuit arrangements, A and B, as shown in the circuit diagrams below.



Circuit A



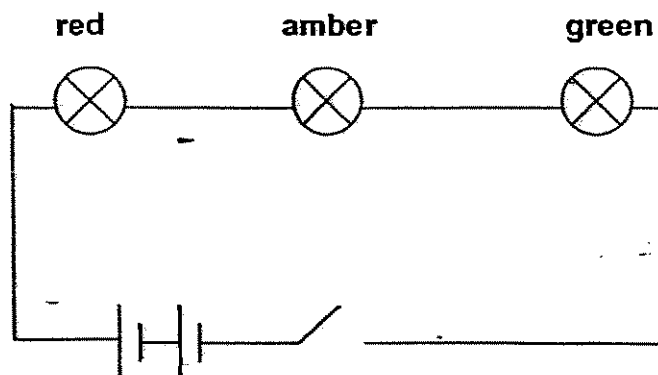
Circuit B

Natalie concluded that the arrangement of batteries does not affect the brightness of the bulbs.

- (a) Based on the diagrams above, give a reason why Natalie made a wrong conclusion. [1]

- (b) **DRAW IN PENCIL** a circuit diagram in the space below to show what the circuit arrangement in A should be for Natalie to conduct a fair test. [1]

Natalie modified the circuit arrangement in B. She added a switch and coloured bulbs to the circuit as shown below.



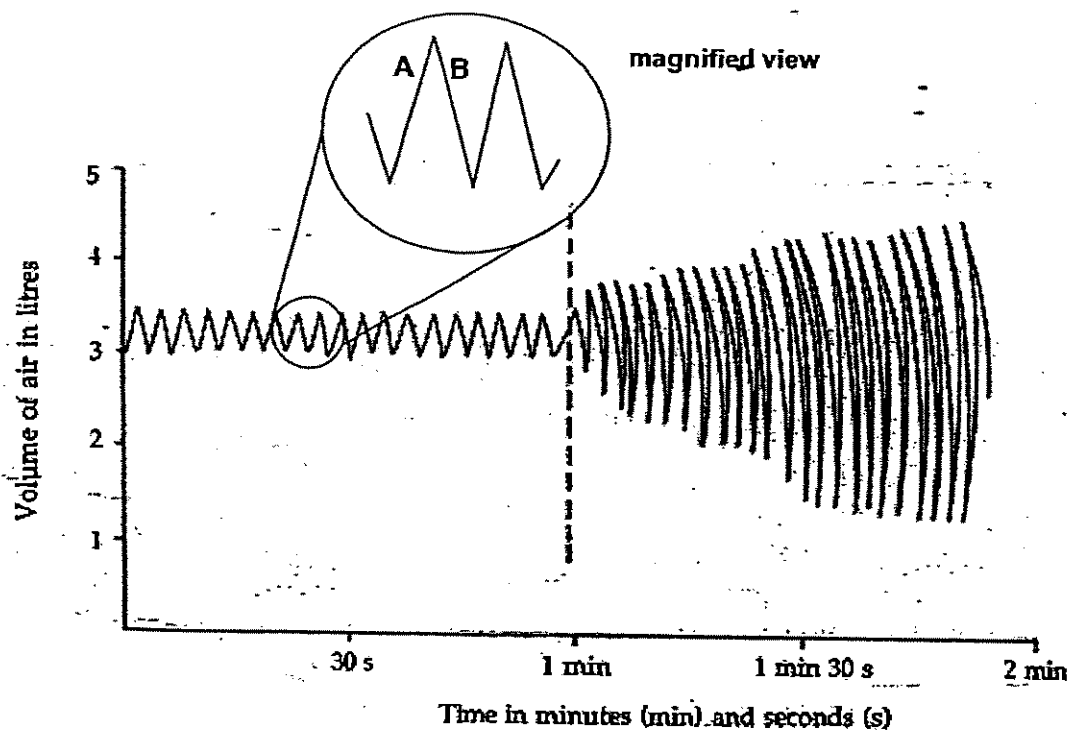
- (c) Give a reason why this circuit arrangement **CANNOT** show a change from ~~red~~ to amber and then to ~~red~~ similar to traffic lights circuit. *over* [1]

- (d) Suggest how the circuit above should be arranged such that the change in the colour of the bulbs takes place **ONE** at a time.

DRAW IN PENCIL a circuit diagram to show the new arrangement of the coloured bulbs in the space below. [1]

- 37 Matthew used a spirometer to measure the volume of air that enters and leaves his lungs during breathing.

The graph below shows his rate of breathing within 2 minutes.

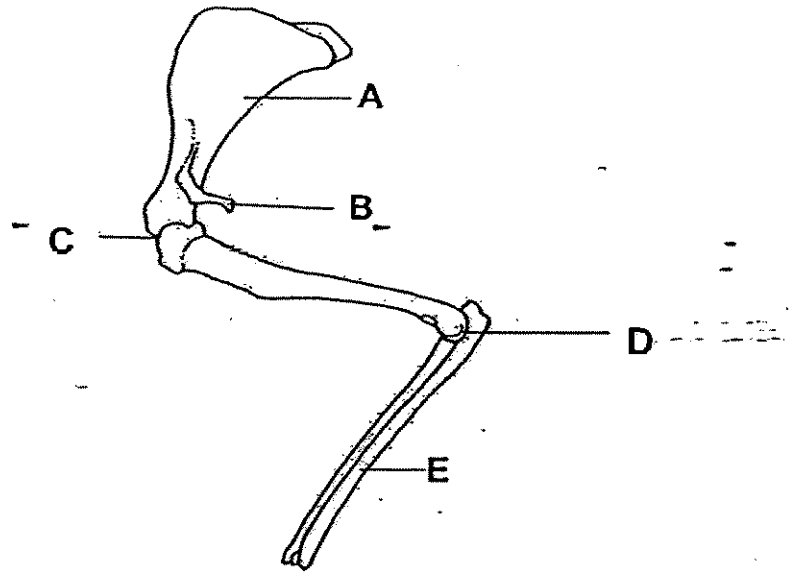


- (a) Which part of the graph, A or B, shows that Matthew is breathing in? [1]

- (b) Give a reason for your answer. [1]

- (c) Name an activity which Matthew could be doing after the first minute. [1]

38 The diagram below shows parts of the skeletal system of an animal.



(a) Which two parts, A, B, C, D or E, are joints in the limb shown above? [1]

Parts _____

(b) Give a reason why the joints are needed in the limb. [1]

39 Hui Ling believes that a heavier object will drop to the ground faster than a lighter object on Earth.



feather



iron ball

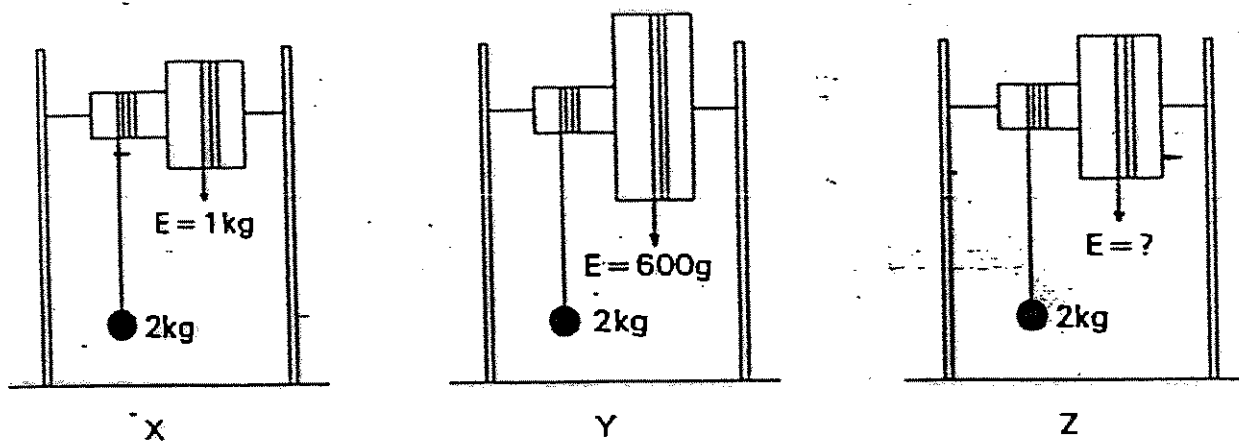
(a) Hui Ling drops a feather and an iron ball from the **SAME** height and at the **SAME** time. Which object will reach the ground first? [1]

(b) Name **ONE** force that acts on these two objects as they fall towards the ground. [1]

(c) Hui Ling plans to repeat her experiment three times. Why must she repeat her experiment? [1]

40 Victoria set up 3 sets of wheel and axle, X, Y and Z, as shown below.

The effort, E, in each case is just enough to lift the 2 kg load.

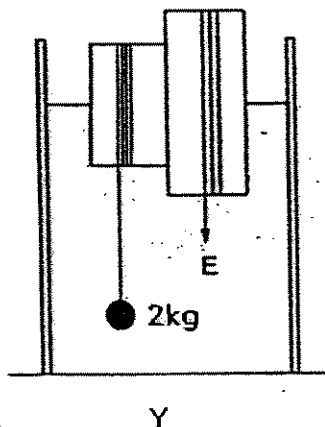


Based on the information above, answer the following questions:

(a) What conclusion could Victoria draw? [1]

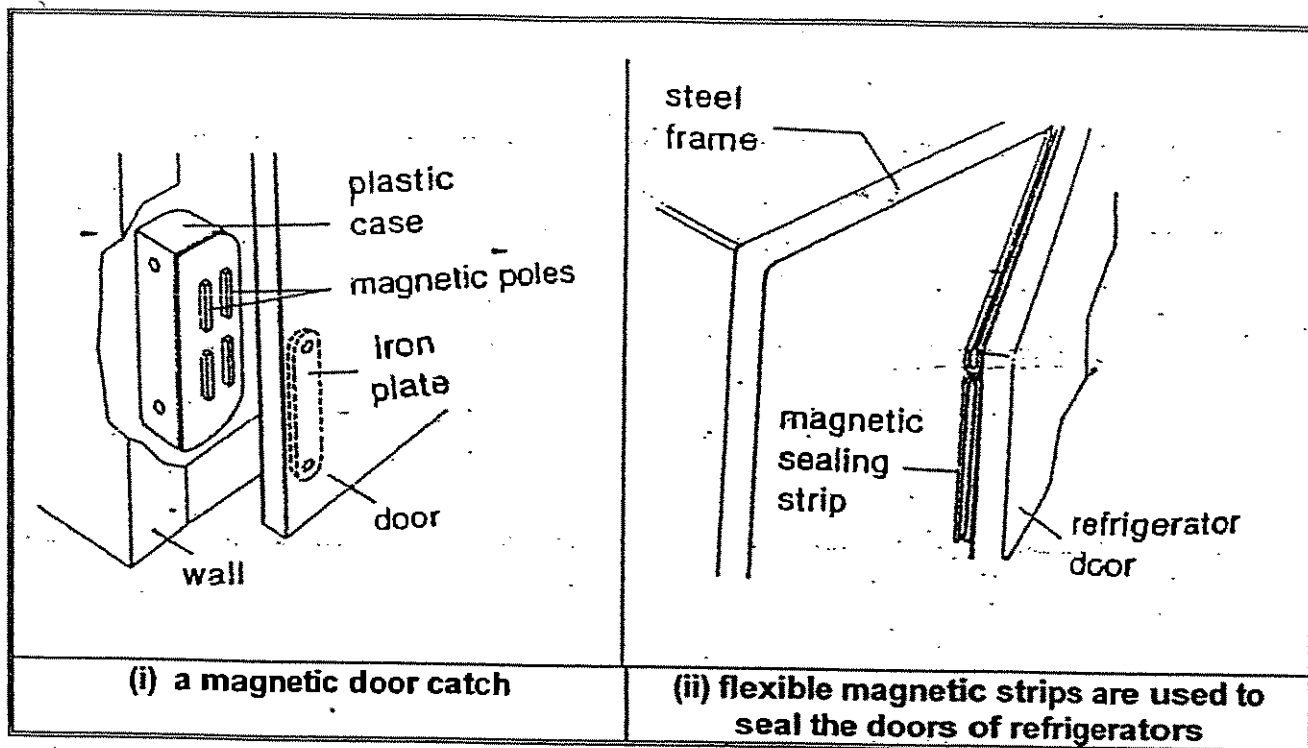
(b) Estimate the effort needed in Z. [1]

Victoria increased the diameter of the axle in Y as shown below.



(c) What would happen to the amount of effort needed in Y? [1]

41 The diagrams below show the common use of permanent magnets in a door catch and on a refrigerator door.

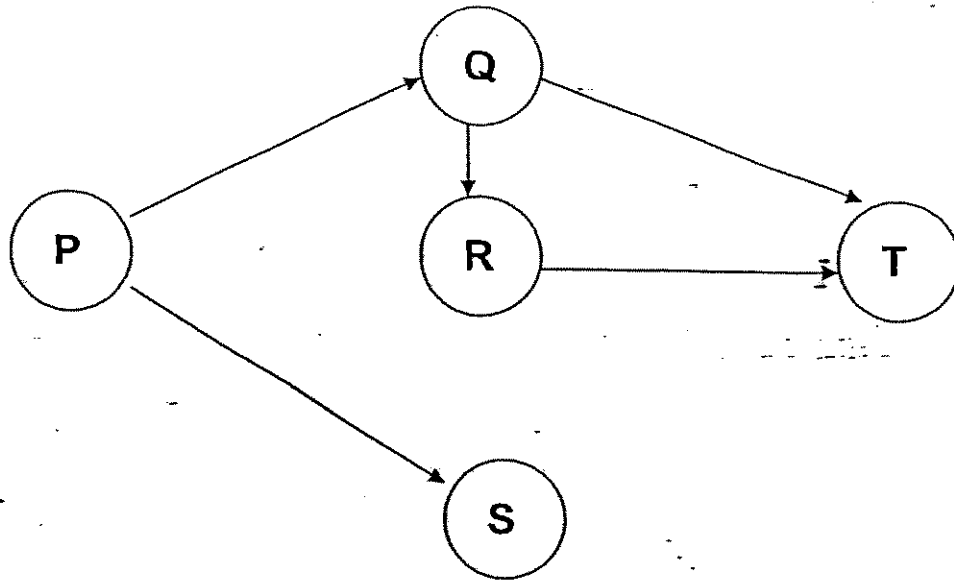


(a) Based the diagrams above, name the parts which interact with each other to enable both the door catch and the refrigerator door to work. [1]

(i) magnetic door catch	(ii) refrigerator door

(b) State the magnetic property at work in both (i) and (ii). [1]

42 P, Q, R, S and T are 5 different organisms living in a community.



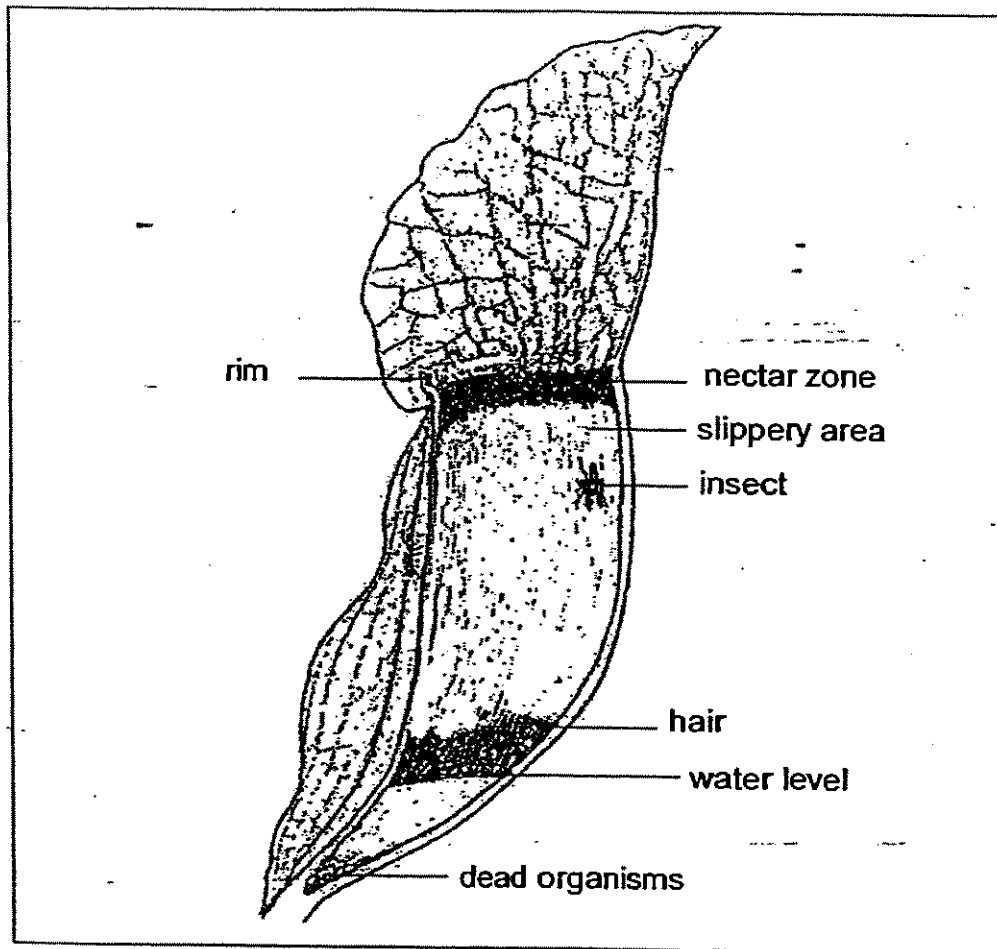
Use the information above to answer the following questions:

(a) State one predator - prey relationship found in this food web. [1]

(b) If the entire population of Q was destroyed, what would be the immediate short term effect on population S? [1]

(c) Give a reason for your answer in (b). [1]

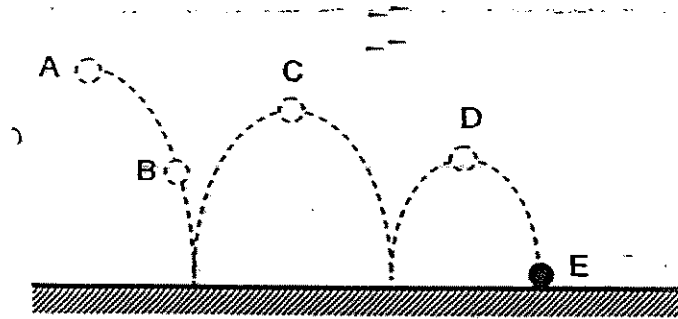
43 The diagram below shows the cross-section of an insect-eating plant. The insects get trapped and are digested by the plant.



Based on the diagram above, state **TWO** adaptations which the insect-eating plant has and how each adaptation enables it to survive. [2]

Adaptation 1	
Adaptation 2	

44 The diagram below shows the pathway of a ball from A to E.



(a) State the main energy change from A to B. [1]

in the ball at A



is converted to

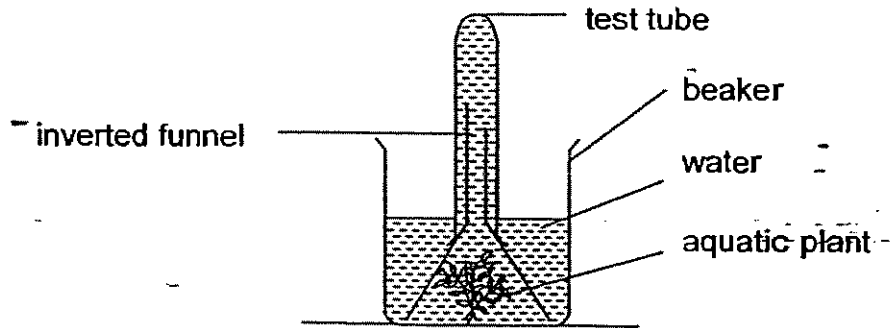
+

in the ball at B

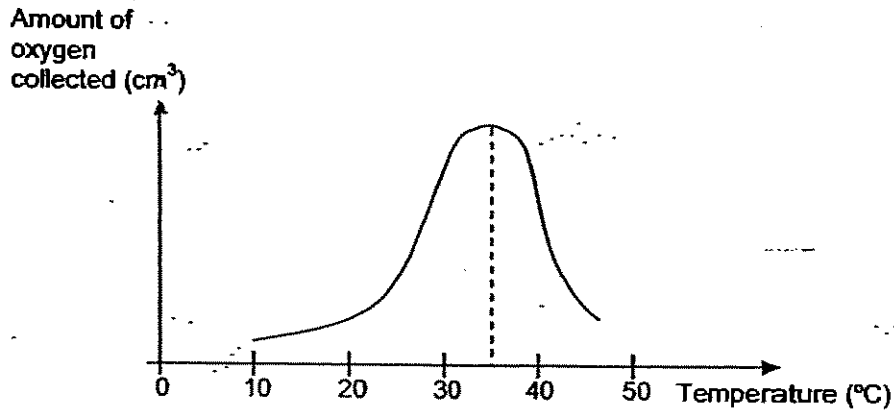
(b) State one difference in the form of energy in the ball at C and D. [1]

Jane used the following set-up as shown below to find out the effect of temperature on the rate of photosynthesis of an aquatic plant.

She prepared several identical set-ups and placed each of them in rooms of different temperatures. All the set-ups were exposed to the same amount of light.



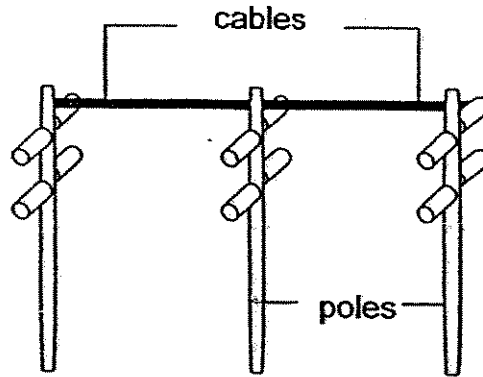
At the end of the experiment, Jane recorded the amount of oxygen collected in the test tube for each set up. She plotted the following graph based on her results.



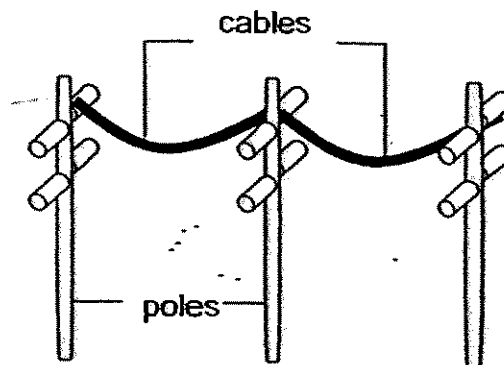
Based on the information above, what can Jane conclude about the effect of temperature on the rate of photosynthesis of the aquatic plant? [2]

46 The diagram below shows two different methods of installing the telephone cables on a hot day.

Method 1



Method 2

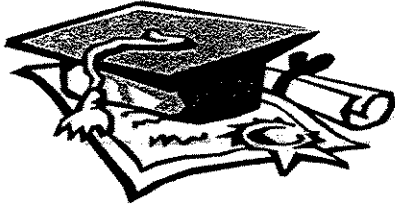


Which one of these two methods shown above is better?
Explain your answer.

[2]

- END OF PAPER -

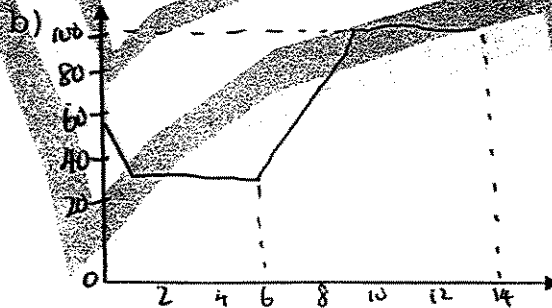
Setters:
Mrs Martha John
Ms Ho Win Nie
Mdm Lim Sok Yen
Mr Tan Siew Whatt



ANSWER SHEET

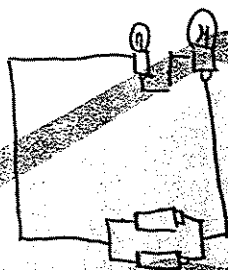
RAFFLES PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
SEMESTRAL ASSESSMENT (2)

1. 4
 2. 2
 3. 2
 4. 2
 5. 4
 6. 2
 7. 2
 8. 3
 9. 3
 10. 3
 11. 1
 12. 3
 13. 1
 14. 3
 15. 2
 16. 3
 17. 4
 18. 2
 19. 2
 20. 3
 21. 2
 22. 3
 23. 3
 24. 4
 25. 3
 26. 4
 27. 3
 28. 1
 29. 3
 30. 1
- 31) a) Group A: steel, iron, nickel
Group B: wood, plastic
b) Group A: Magnetic materials
Group B: Non-magnetic materials
- 32) a) Organisms Q and B both breathe through their lungs.
b) S.
- 33) a) 2 male cousins.
b) 1 sister.
c) Milly is not correct. As the key representing Milly's mother is not shaded her mother is a normal female, she could have got ton it from her father as the key representing her father is shaded which means her father is a carrier of the disease.
- 34) a) Y
b) As it evaporated, it loses heat to the surrounding.
- 35) a) After the second minute, the pure water lost heat to the surroundings and became at room temperature.



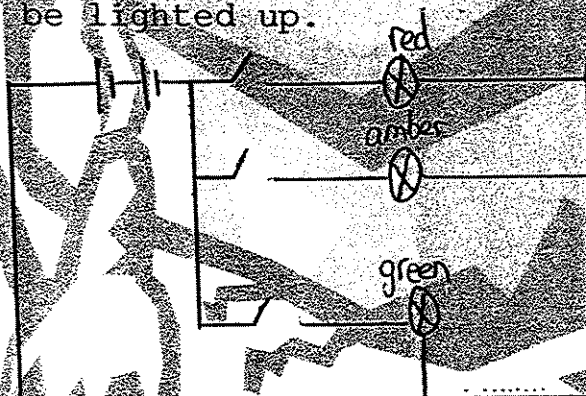
36) a) The arrangement of batteries in both circuit A and circuit B are in series.

b)



c) As this is not a parallel circuit, the switch cannot control which color bulb she wants to light. Instead, when she closes the switch all three bulbs would be lighted up.

d)



37) a) A

b) A shows the volume of air is increasing so Matthew is breathing in.

c) Swimming.

38) a) C and D

b) The joints are needed as it allows the animal to walk.

39) a) The iron ball

b) Frictional force of air

c) It is to get more reliable data so that her experiment will give more accurate results.

40)a) The larger the wheel, the lesser effort needed to lift a heavier load.

b) Between 600g to 1 kg.

c) The effort needed in Y would increase.

41)a) i) Magnetic poles.

Iron plate.

ii) Magnetic sealing strip.

Steel frame.

b) Magnets in (i) and (ii) attracted magnetic materials in (i) and (ii).

42)a) T is the predator of Q.

b) Population S would increase.

c) If Q was destroyed, there would be more food for population S, so its population would increase.

43)1) It has a slippery area so insects that fly in cannot escape.

2) It has a nectar zone in which the plant uses to attract insects.

44)a) Gravitational Potential energy

Kinetic energy + less gravitational energy

b) In the ball C is kinetic energy + Gravitational potential energy but in the ball at D possesses lesser kinetic and Gravitational Potential energy.

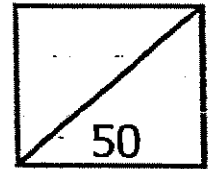
45) As the temperature increase, the amount of oxygen collected increases until it reaches maximum at 35°C. As the temperature increases beyond 35°C, the amount of oxygen collected decreases.

46) Method 2 is better. It allows for contraction of the wire during cold weather. If Method 1 is used, the cables would snap during cold weather.

---end---



Rosyth School
First Continual Assessment for 2007
SCIENCE
Primary 6



Name: _____

Total
Marks:

Class: Pr _____

Register No. _____

Duration: 1 h 15 min

Date: 28 February 2007

Parent's Signature: _____

Instructions to Pupils:

1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 sections, Section A and Section B.
4. For questions 1 to 15 in Section A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 16 to 23, give your answers in the spaces given in the Section B.

	Maximum	Marks Obtained
Section A	30 marks	
Section B	20 marks	
Total	50 marks	

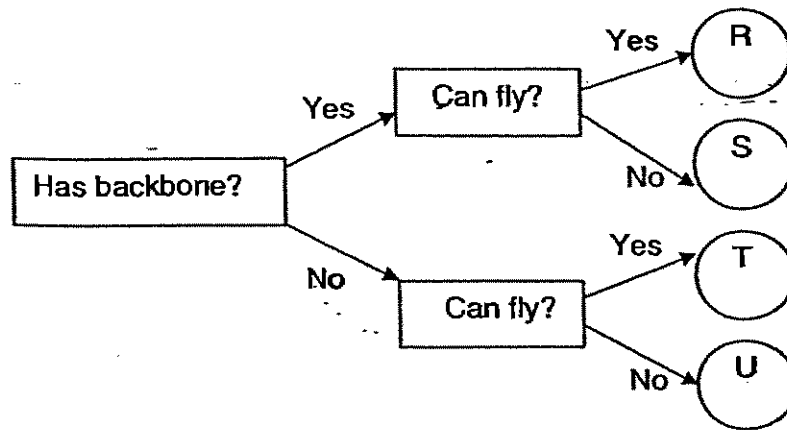
* This booklet consists of 14 pages .

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SECTION A (30 MARKS)

For each question from 1 to 15, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Study the flow chart below.



According to the chart, which one of the following deductions is true?

- (1) R is not a mammal.
- (2) S is not an insect.
- (3) T is a fish.
- (4) U is a mammal.

2. The classification table below shows the classification of pumpkin, balsam, bracket fungus and ladder fern into two groups W and Z.

Group W	Group Z
Pumpkin Balsam	Bracket fungus Ladder fern

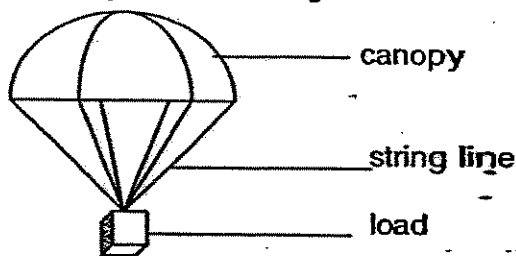
What characteristics can be used to classify them into groups W and Z?

- A: Type of nutrition
- B: Method of reproduction
- C: Flowering or non-flowering
- D: Food producers or consumers

- (1) A and C
- (2) B and D
- (3) B and C
- (4) A and D

(Go on to the next page)

8. Students investigated the effectiveness of various parachute designs. The diagram below shows their parachute design.



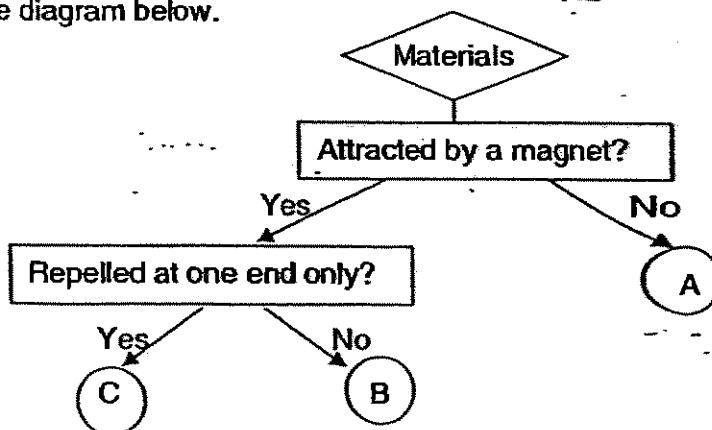
The table below shows the experimental results.

Experimental Set-up	Size of material used for canopy (cm ²)	Material used in canopy	Length of each string line (cm)	Time taken to fall 10m (s)
P	314.0	Plastic	30	23
Q	706.5	Plastic	30	28
R	706.5	Plastic	20	30
S	314.0	Paper	20	25
T	706.5	Paper	20	30
U	706.5	Paper	30	28
V	314.0	Cotton	20	20
W	314.0	Cotton	20	18
X	706.5	Cotton	20	38

Some students wanted to find out how the material of canopy will affect the time taken for the parachute to fall 10m. Which experimental set-ups should they choose?

- (1) P, Q and U only
- (2) Q, R and X only
- (3) P, S and V only
- (4) R, T and X only

9. Study the diagram below.



What deduction can be made from the above diagram?

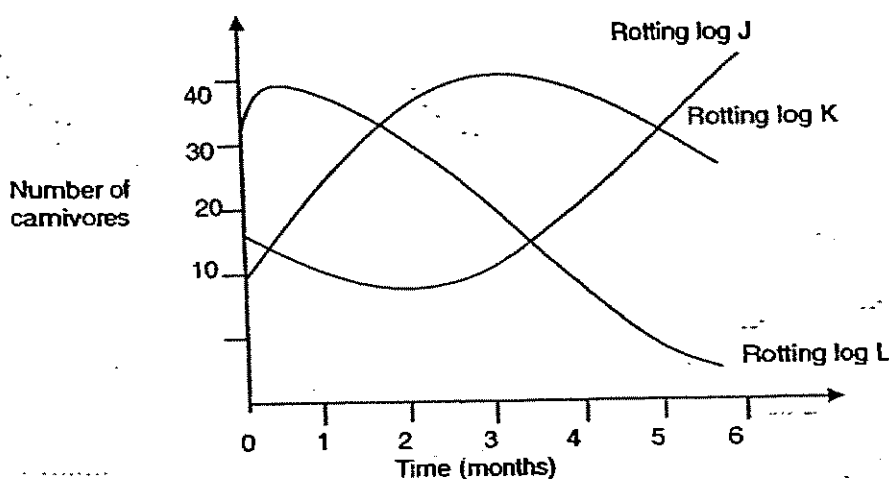
- (1) B is not a magnet.
- (2) A can be magnetised
- (3) C is non-magnetic.
- (4) A and B are non-magnetic

(Go on to the next page)

10. Kumar and his friends would like to visit a place where they could see mudskippers, tree-climbing crabs, fiddler crabs and some migratory birds during a certain period of the year. What would this habitat most likely be?

- (1) Tropical rainforest
- (2) Mangrove swamp
- (3) Freshwater lake
- (4) Seashore

11. The graph below shows the population size of all the carnivores in 3 rotting log communities J, K and L during a 6-month period.

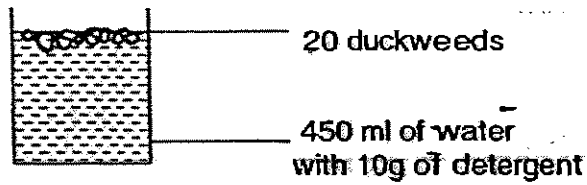


Based on the graph, which one of the following statements is true?

- (1) The population size of carnivores in all three rotting log communities showed an increase after 5 months.
- (2) Towards the end of the second month, the same number of carnivores was found in two of the rotting log communities.
- (3) The population size of carnivores in two rotting log communities decreased steadily throughout the 6 months.
- (4) Towards the end of the second month, some carnivores migrated from Rotting log K to Rotting log L.

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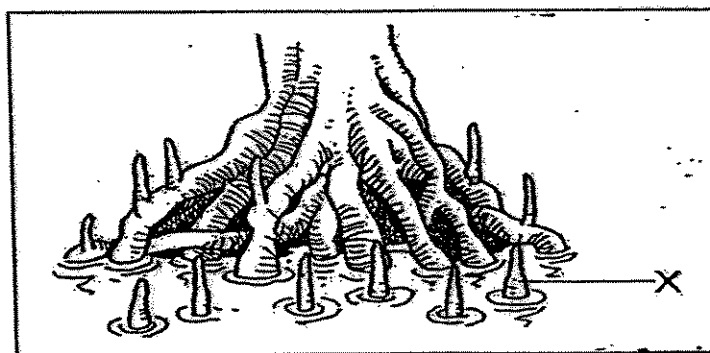
12. Chris wanted to find out whether duckweeds grow well in water containing detergent. He prepared an experimental set-up as shown below.



If he wanted to set up a control for his experiment, which of the following should he choose?

- (1) 20 duckweeds
500ml of water with 20g detergent
- (2) 10 duckweeds
450 ml of water with 10g of detergent
- (3) 20 duckweeds
500 ml of water with 5g of detergent
- (4) 20 duckweeds
450-ml of water only

13. The picture below shows a plant in the swamp community.

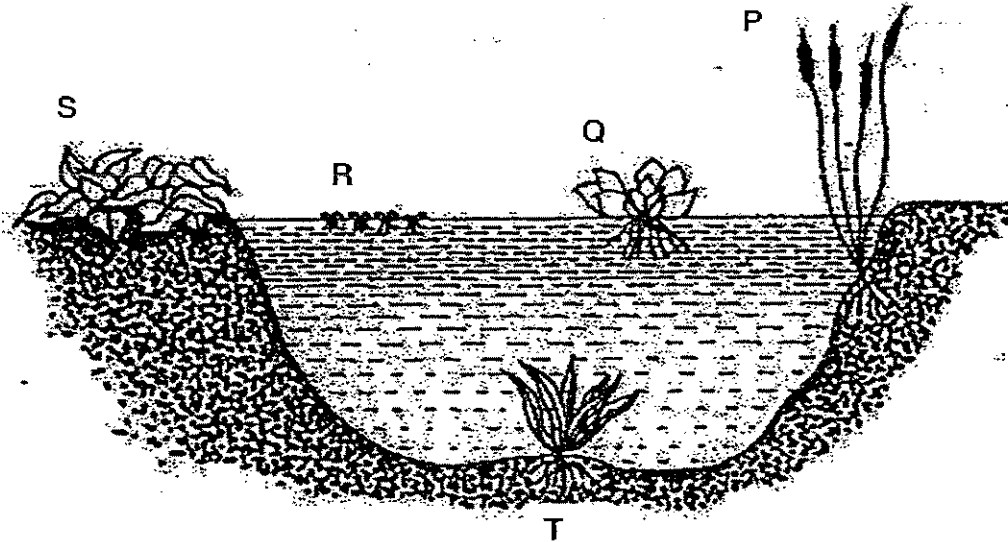


What is the plant part labelled X adapted for?

- (1) It carries out photosynthesis.
(2) It takes in moisture.
(3) It traps sunlight.
(4) It takes in air.

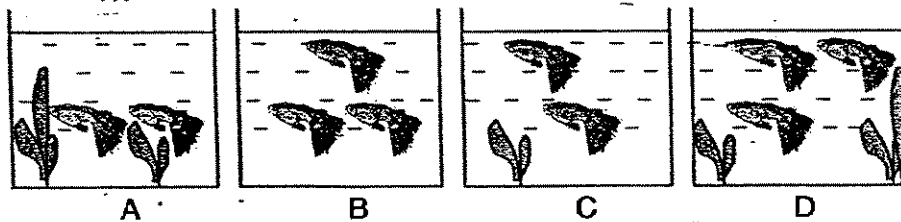
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14. The diagram below shows five populations of plants P, Q, R, S and T in a pond community.



What will happen when Plant Q multiplies quickly?

- (1) Only Plant T will grow well.
 - (2) The other 4 plants will not be affected.
 - (3) Only Plant T and Plant R will not grow well.
 - (4) Only Plant S and Plant P will not grow well.
15. Ahmad wanted to find out how the presence of water plants would affect the fish in an aquarium. Which pair of set-ups should he choose to make the test a fair one?



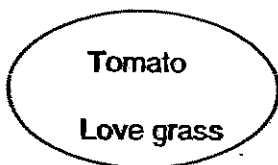
- (1) A and C
- (2) B and D
- (3) A and D
- (4) B and C

(Go on to the next page)

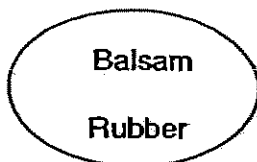
SECTION B (20 MARKS)

For questions 16 to 23, write your answers in this booklet.

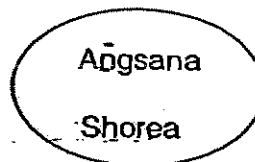
16. Study the groups of plants below.



Group R



Group S



Group T

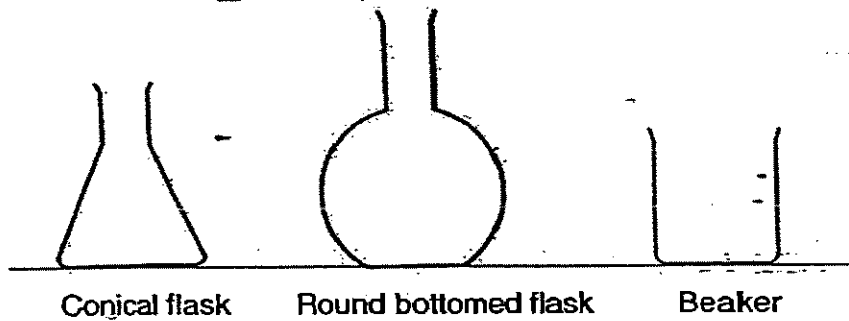
The diagram below shows a fruit of a plant.



(a) In which group would you put the fruit? Explain your answer clearly. (1m)

(b) Classify the above plants using a classification chart. Provide a suitable heading and sub-headings for your chart. (2m)

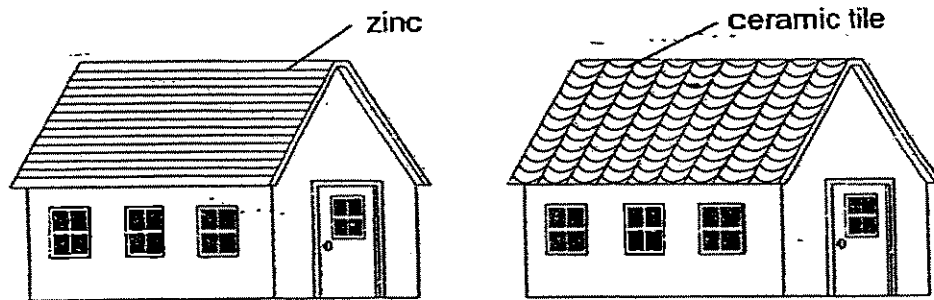
17(a) The diagram shows some science laboratory equipment.



(i) What material are they usually made of? (1m)

(ii) Explain why this material is chosen to make the laboratory equipment shown in the diagram. (1m)

(b) Both ceramic tiles and zinc, which is a metal, can be used to make the roof of houses as shown in the diagram below.

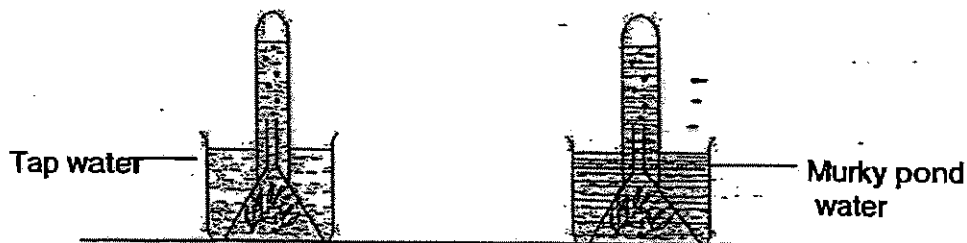


Mr Phua, a contractor, decided to use ceramic tiles for the construction of the roof to provide greater comfort to the occupants.

Give an explanation for Mr Phua's choice of material for the roof. (1m)

Rosyth School/ Continual Assessment 1/Science/ P6 / 2007

18. Joe wanted to conduct an experiment to find out how murky pond water affect the rate of photosynthesis in hydrilla. He placed the two set-ups as shown below in a garden over a period of time.

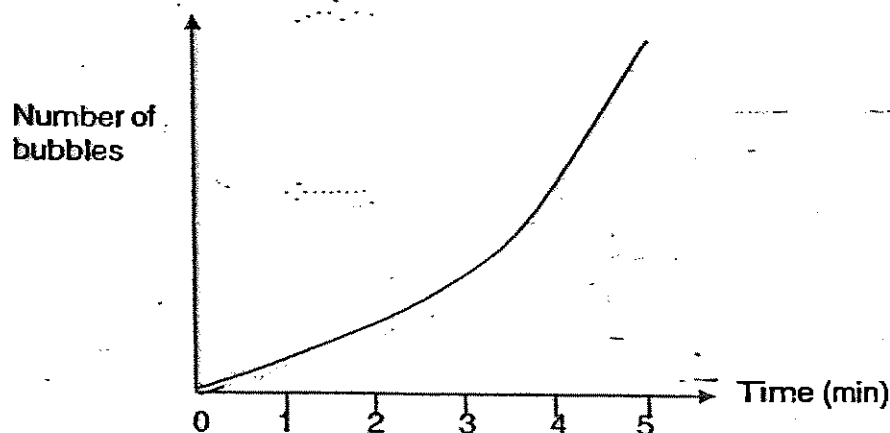


- (a) Write down two variables he must keep constant to ensure a fair test. (1m)

Variable 1: _____

Variable 2: _____

Joe drew a line graph to show his results for the plants in tap water.



- (b) Draw another line graph on the same axes to show his results for the plants in murky pond water. (1m)

- (c) Why did he measure the number of bubbles given off? (1m)

Go to next page

Rosyth School/ Continual Assessment1/Science/ P6 / 2007

19. A group of pupils counted the plants and animals found in a certain habitat in school. The results are shown in the table below.

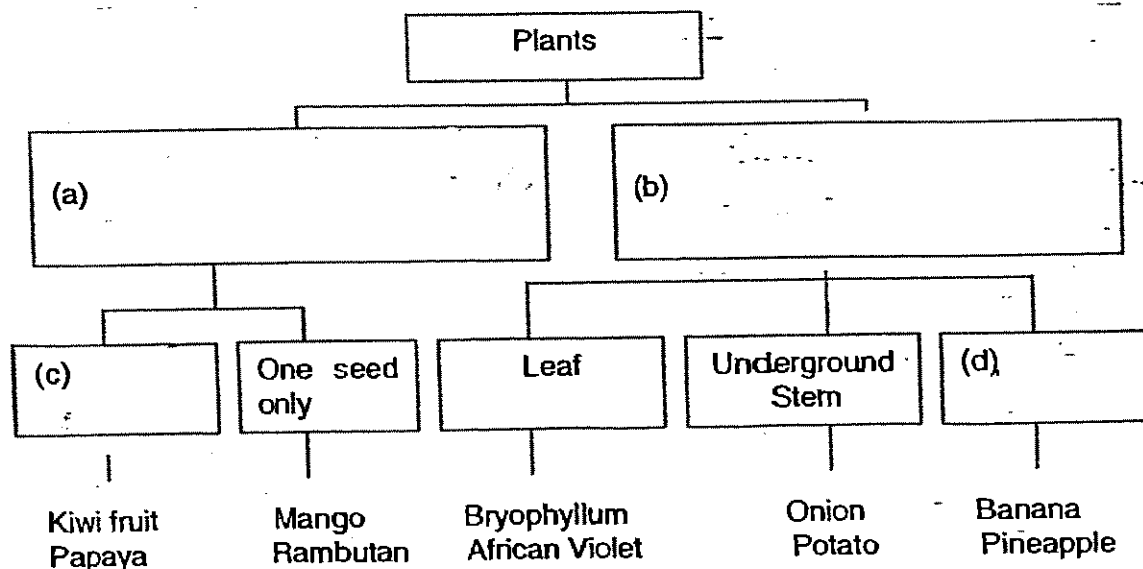
Characteristics of organisms	Animals			Plants		
	No legs	Six legs	More than six legs	Floating	Partially submerged	Totally submerged
Number of organisms	5	10	8	4	7	3

(a) What community do the organisms belong? (1m)

(b) What is the least number of populations of plants and animals found in this habitat? (1m)

(c) Name two animals in this habitat that have no legs. (1m)

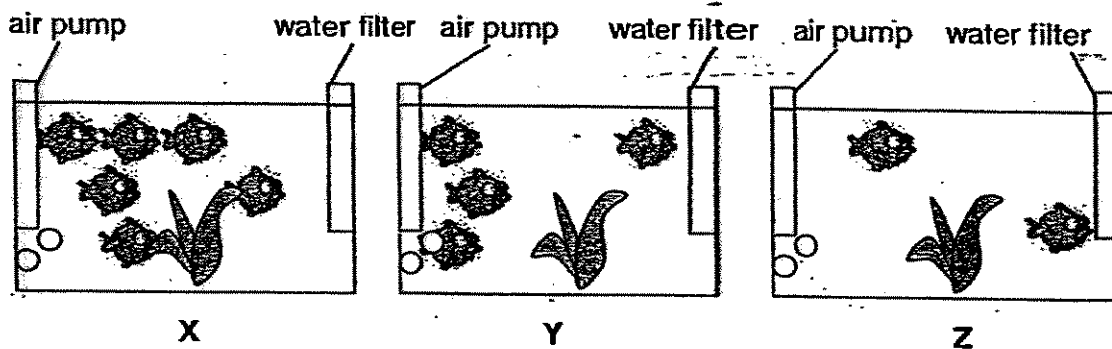
20. Look at the classification chart below. Complete the chart with suitable words in the blanks (a), (b), (c) and (d). (2m)



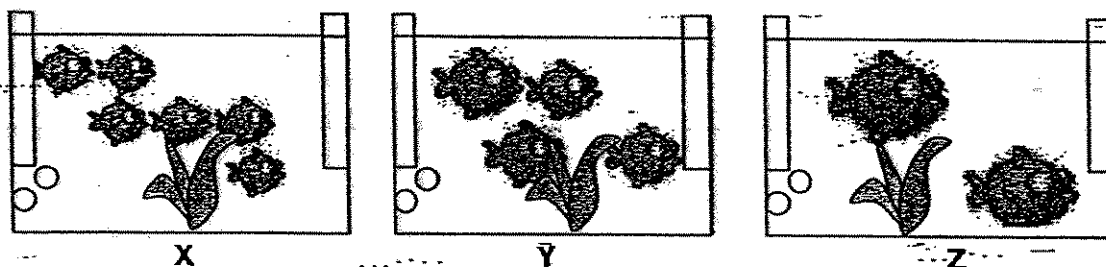
Rosyth School/ Continual Assessment 1/ Science/ P6 / 2007

21. Some students set up an experiment using goldfish. Each tank was filled with the same amount of filtered water. Each tank had air supplied to it and the water in the tanks was continually cleaned by a filtering system. The same amount of fish food was placed in each of the fish tanks every morning.

The diagrams show the three fish tanks X, Y and Z.



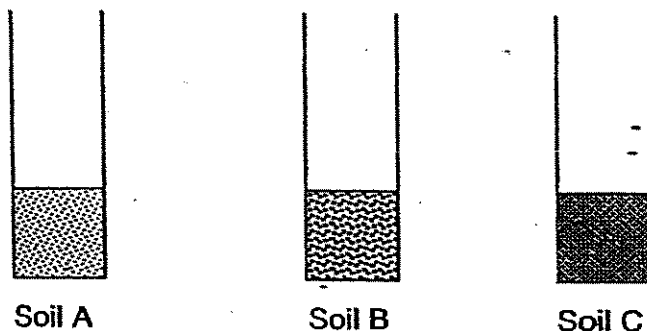
The diagrams below show what the students expected to see in the fish tanks after two months.



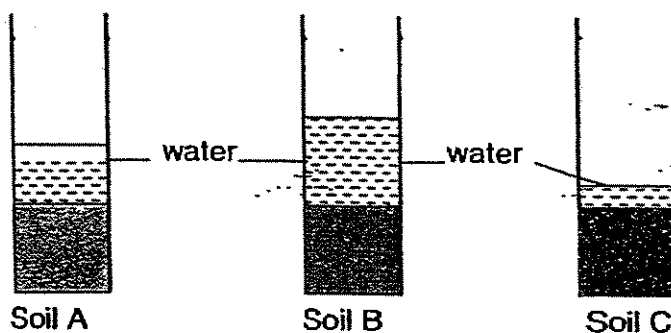
(a) What was likely to be the students' hypothesis at the start of the experiment? (1m)

(b) State how the plant and goldfish in the aquarium are interdependent, (1m)

22. Rani collected three different types of soil. She wanted to find out which type of soil contained the most air. She placed the same amount of each type of soil in three separate jars.



He poured a cupful of water into each jar. The results are shown below.



- (a) What do you think was observed when Rani added water to the soil? Give a reason for your observation. (1m)

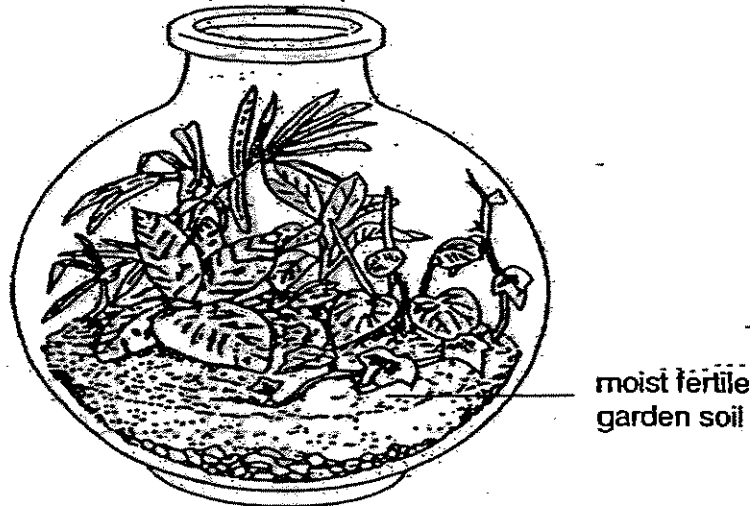
- (b) Arrange the three types of soil in order, from the soil with the least air to the soil with the most air in the boxes below. (1m)

--	--	--

Least air \longrightarrow Most air

Rosyth School/ Continual Assessment1/Science/ P6 / 2007

23. Peter wanted to set up a terrarium in his house. He planted some plants with their roots intact in a bowl and watered the plants. The set-up is shown in the diagram below.

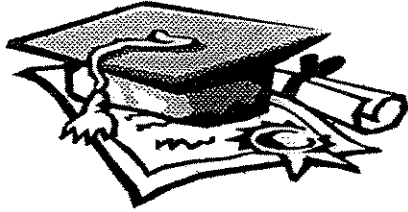


After a few weeks, Peter observed that the plants in the jar became dry and brown.

- (a) What should Peter have done for the plants to survive well in the bowl? . (1m)

- (b) Explain your answer in part (a). (1m)

END OF PAPER

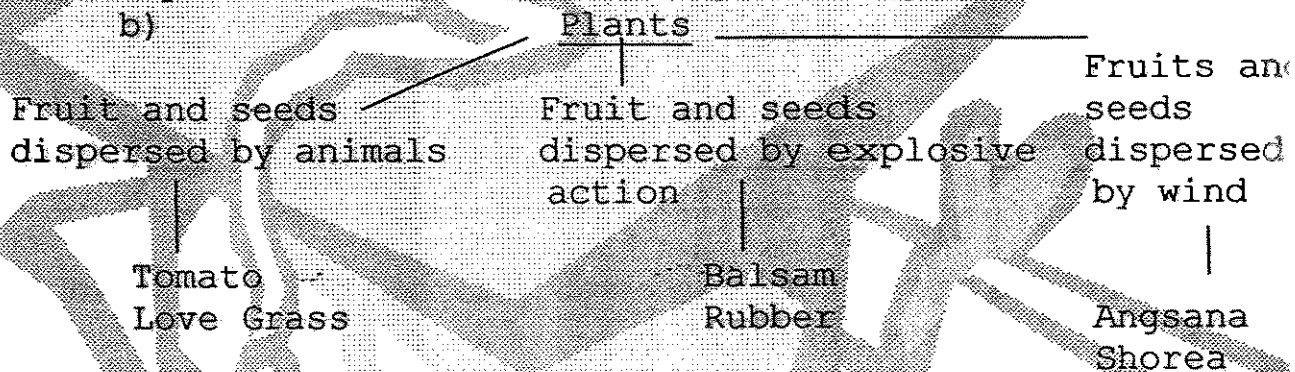


ANSWER SHEET

ROSYTH PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
CONTINUAL ASSESSMENT (1)

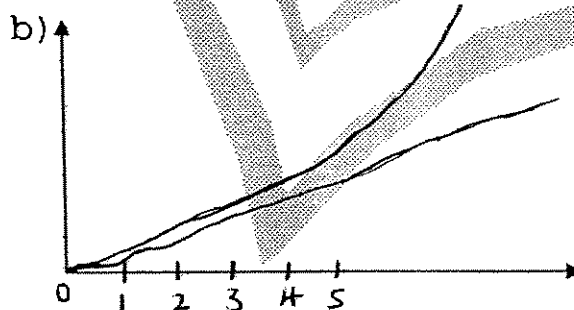
- 1)2 2)3 3)4 4)1 5)2 6)1 7)2 8)4
9)1 10)2 11)2 12)4 13)4 14)3 15)2

16)a) Group T. The fruit has hair to float in the air/trap air so it should be dispersed by wind.



- 17)a) i) They are usually made of clear glass.
ii) As clear glass is transparent, the scientists who use it for an experiment can see how it is going and he can also observe the result of the experiment.
b) For the material zinc, when it rains, it will be noisy. For the ceramic tile, when it rains, it will be silent.

- 18)a) 1: The amount of hydrilla put in each set-up.
2: The amount of water in each set-up.



18)c)When the plants give off bubbles, it means that the plant is under going photosynthesis. The more the bubbles produced, the higher the rate of photosynthesis the plant is under going.so, if Joe see that one of the plants in the set-up is producing more bubbles than the other,he will know that water in that set-up allows more light to pass through.

19a)The organisms belongs to the pond community.
b)6 populations.
c)They are fish and eel.

20)a)Reproduce by seeds.
b)Reproduce by other plant parts.
c)Many seeds.
d)Suckers.

21)a)The smaller the number of fish in the larger the fish will grow into.
b)The plant depend on the fishes for carbon dioxide while the fishes depend on the plants for oxygen.

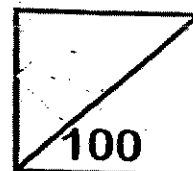
22)a)Bubbles.Air is escaping from the soil as water takes up the space.
b)B,A,C

23)a)Cover the jar with an air light plastic wrapper.
b)The water from the soil will evaporate and water vapour will condense on the cover to form water droplets.

---end---



Rosyth School
First Semestral Assessment for 2007
SCIENCE
Primary 6



Name: _____

Total
Marks:

Class: Pr _____

Register No. _____

Duration: 1 h 45 min

Date: 14th May 2007

Parent's Signature: _____

Instructions to Pupils:

1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets, Booklet A and Booklet B.
4. For questions 1 to 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 31 to 46, give your answers in the spaces given in the Booklet B.

	Maximum	Marks Obtained
Booklet A	60 marks	
Booklet B	40 marks	
Total	100 marks	

* This booklet consists of 18 pages. (Pg. 1 to 18)

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PART I (60 MARKS)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

1. Study the classification table below carefully.

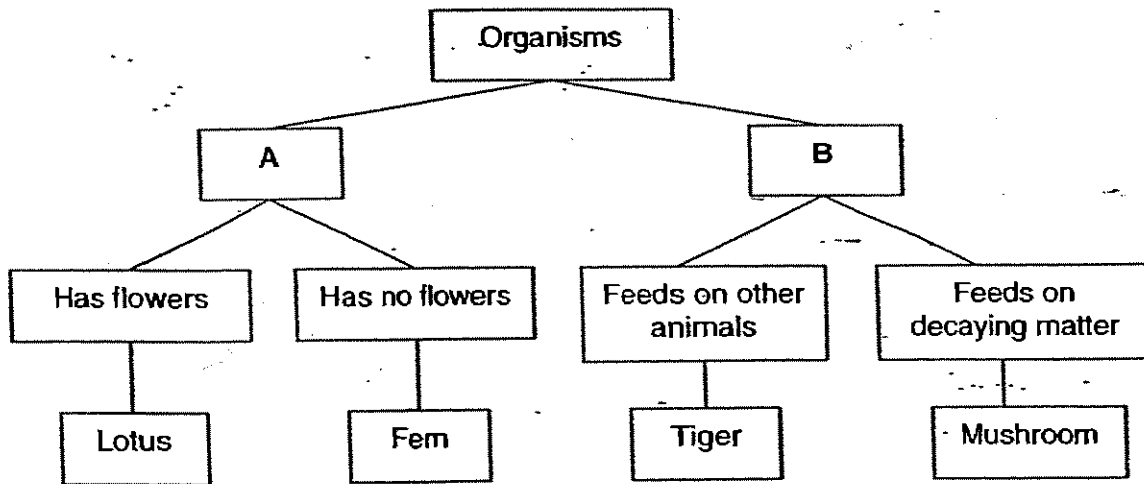
Animals that have		
Two legs	Four legs	Six legs
Sparrow	Horse	Mosquito
Parrot	Deer	Cockroach
Eagle	Cow	Butterfly

What does the classification table show?

- A: - It shows how a sparrow and deer are similar.
- B: It shows how a parrot and cockroach are different.
- C: It shows that some animals are similar in the type of food they eat.
- D: It shows that some animals are different in the number of legs they have.

- (1) A and C only
- (2) B and D only
- (3) A, B and C only
- (4) B, C and D only

2. Study the classification chart below carefully.



Which one of the following can headings A and B be?

	A	B
(1)	Plants	Animals
(2)	Grow in water	Grow on land
(3)	Have chlorophyll	Do not have chlorophyll
(4)	Do not move from place to place by themselves	Move from place to place by themselves

3. The table below shows information about two animals named Bella and Chella.

Characteristics	Bella	Chella
Where they live	Land	Water
How they reproduce	Gives birth to its young	Lays eggs
Type of body covering	Has hair	Has feathers
How they move	Flies	Swims and walks

Based on the information given above, which of the following statement(s) about the animals is/are definitely true of both animals?

- A: Bella is a bird because it lives on land and it flies.
- B: Bella is a mammal because it gives birth to its young alive and has hair.
- C: Chella is a fish because it lives in water and swims.
- D: Chella is a cold-blooded animal because it swims in water and walks on land.

- (1) A only
- (2) B only
- (3) A and C only
- (4) B and D only

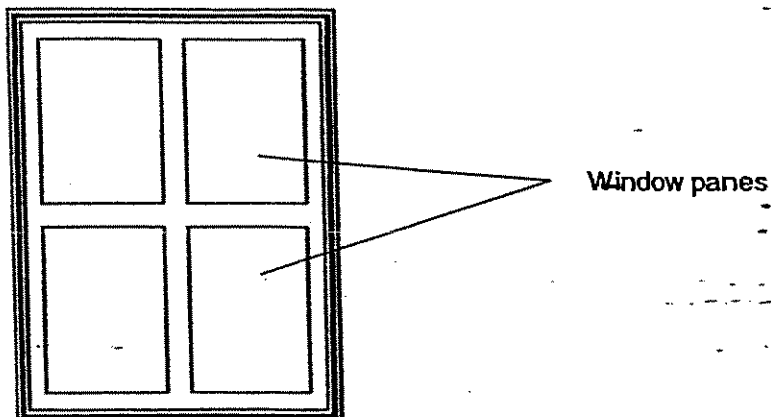
4. Study the characteristics of the groups of organisms in the table below carefully.

Group	Characteristics
P	<ul style="list-style-type: none"> • Multicellular • Carry out photosynthesis • Reproduce by seeds
Q	<ul style="list-style-type: none"> • Multicellular • Do not carry out photosynthesis • Reproduce by laying eggs • Have an outer covering of hair
R	<ul style="list-style-type: none"> • Unicellular • Do not carry out photosynthesis • Reproduce by binary fission

Which one of the following correctly shows the animals that can be put in Groups P, Q and R?

	P	Q	R
(1)	Morning glory	Anteater	Mushroom
(2)	Hibiscus plant	Platypus	Amoeba
(3)	Birds' Nest ferns	Bat	Paramecium
(4)	Duckweeds	Dolphin	Yeast

5. Below is a picture of a window. Window panes are usually made of glass.

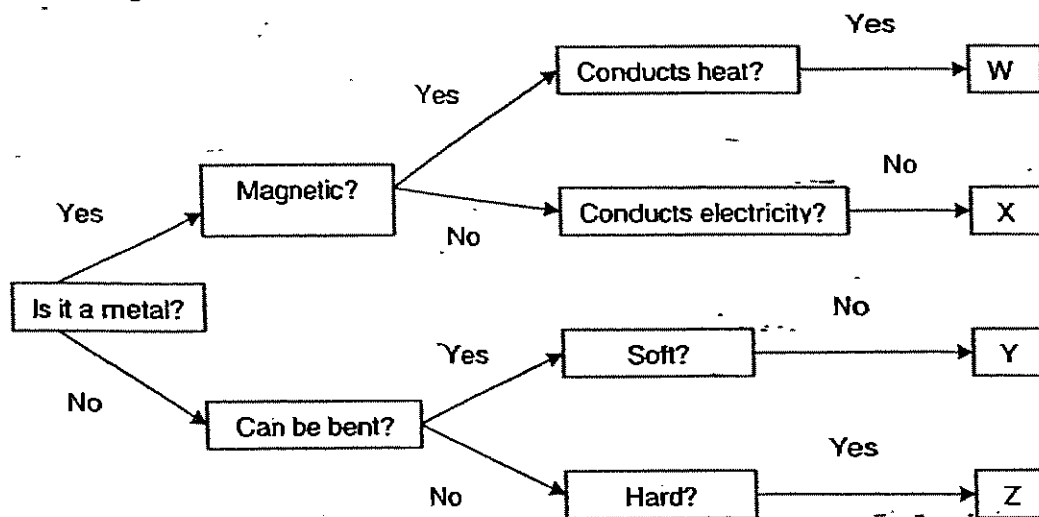


Why is glass chosen for making windowpanes?

- A: Glass is non-magnetic.
- B: Glass is waterproof.
- C: Glass is a good conductor of heat.
- D: Glass allows light to pass through it.

- (1) A and C only
- (2) B and D only
- (3) A, B and C only
- (4) B, C and D only

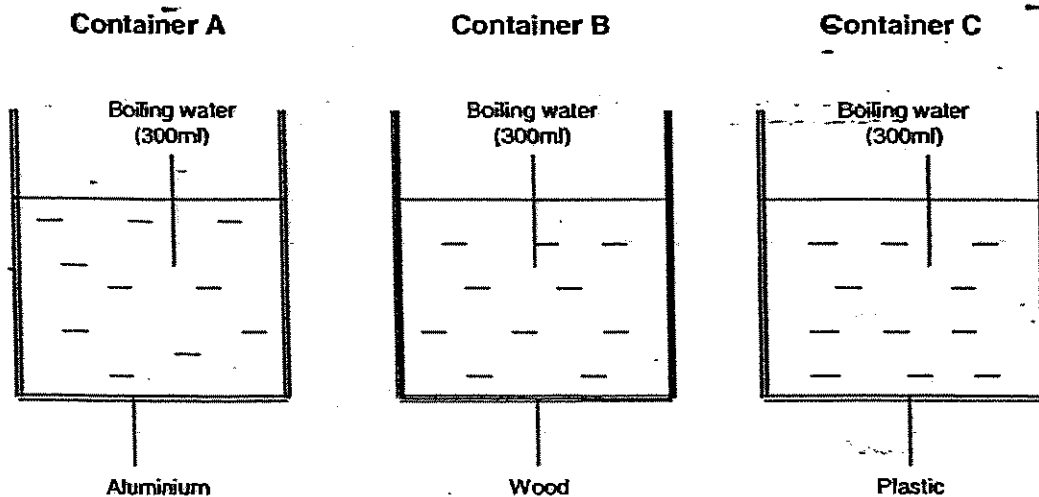
6. The diagram below shows how materials W, X, Y and Z can be classified.



Which one of the following is true?

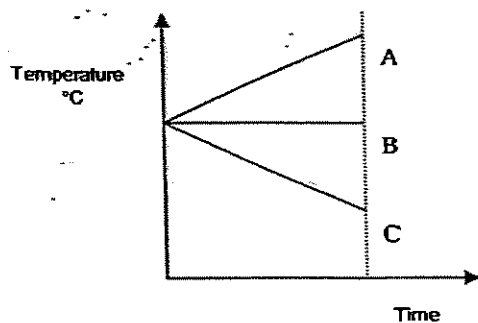
- (1) W repels metal.
- (2) X is an electrical conductor.
- (3) Y is flexible.
- (4) Z is a hard metal.

7. Three containers (A, B and C) of the same size and equal thickness are filled with 300ml of boiling water. Each container is made of a different material. The containers are left on a table for two hours.

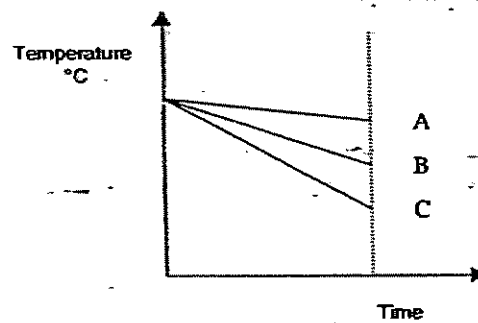


Which one of the following graphs best shows the changes in the temperature of the water in each container?

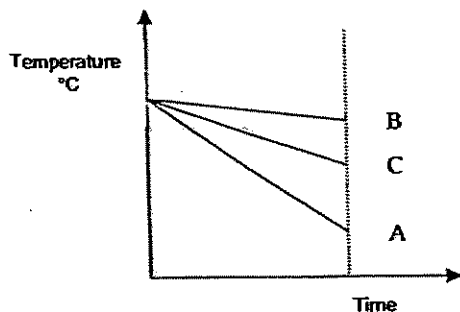
(1)



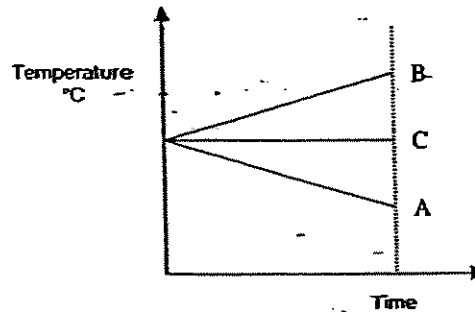
(2)



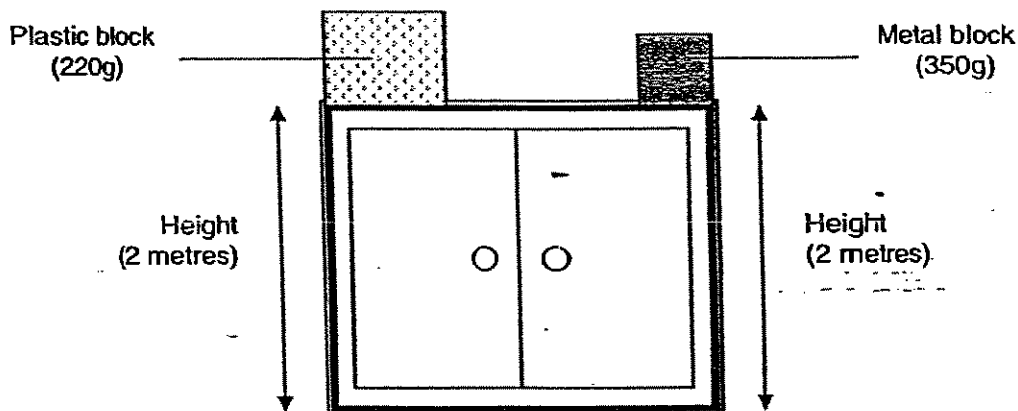
(3)



(4)

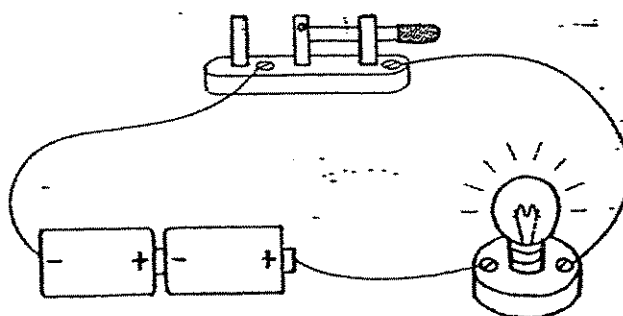


8. Jenny placed a big plastic block (220g) and a small metal block (350g) on top of her cupboard in her bedroom.



Which one of the following statements about the plastic block and metal block is true?

- (1) The plastic block has greater amount of gravitational potential energy because it takes up more space.
 - (2) Both blocks do not have any gravitational potential energy because they are at rest.
 - (3) Both blocks have the same amount of gravitational potential energy because they are at the same height.
 - (4) The metal block has greater amount of gravitational potential energy because it has a greater mass.
9. A bulb lights up when it is connected to a closed circuit as shown in the diagram below.

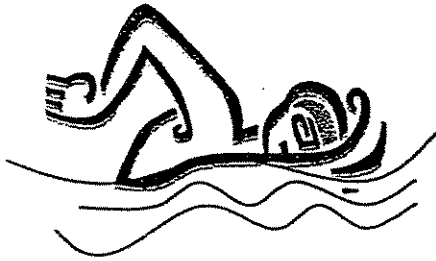


What is the energy conversion involved in the circuit above?

- (1) electrical energy \rightarrow light energy
- (2) chemical energy \rightarrow heat energy + light energy
- (3) chemical energy \rightarrow electrical energy \rightarrow heat energy + light energy
- (4) chemical energy \rightarrow kinetic energy \rightarrow heat energy \rightarrow light energy

12. The diagrams below show some outdoor activities.

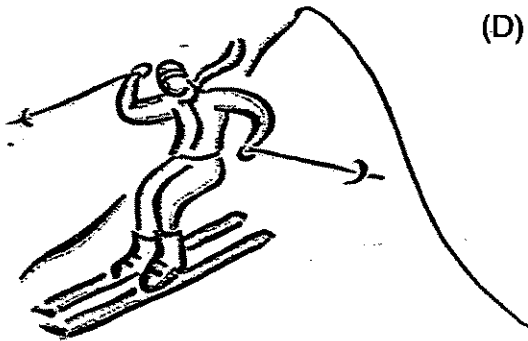
(A)



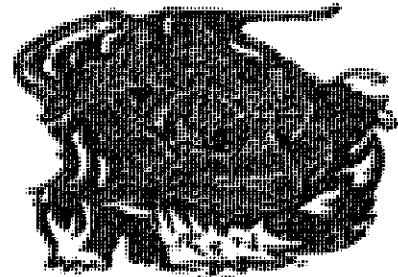
(B)



(C)



(D)



Which of the activities shown above require energy from running water?

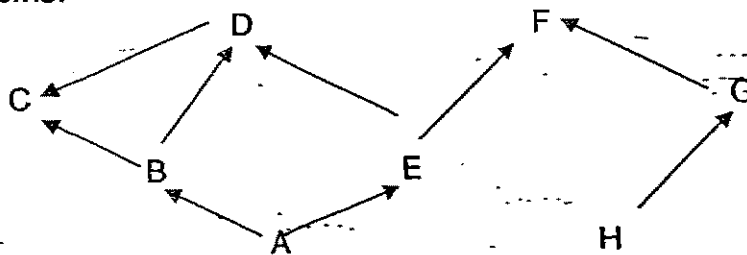
(1) A and B only

(2) B and D only

(3) A, B and C only

(4) A, C and D only

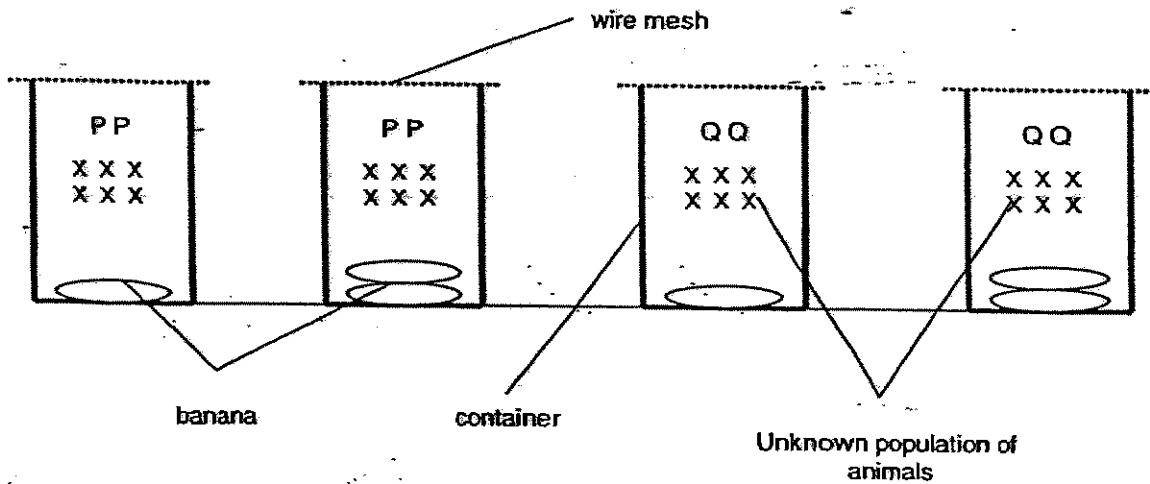
13. The diagram below shows a food web. The letters A to H represent living organisms.



Which one of the following given in the table below is true about the living things in the food web?

	Food Producer	Predator only	Prey only	Both Prey and Predator
(1)	A	C	B	E
(2)	B	F	A	D
(3)	A	D	G	F
(4)	H	F	B	D

14. A scientist found an unknown population of animals in a banana tree. He wanted to find out more about the unknown population he had found. He placed four set-ups and introduced P or Q as shown below.

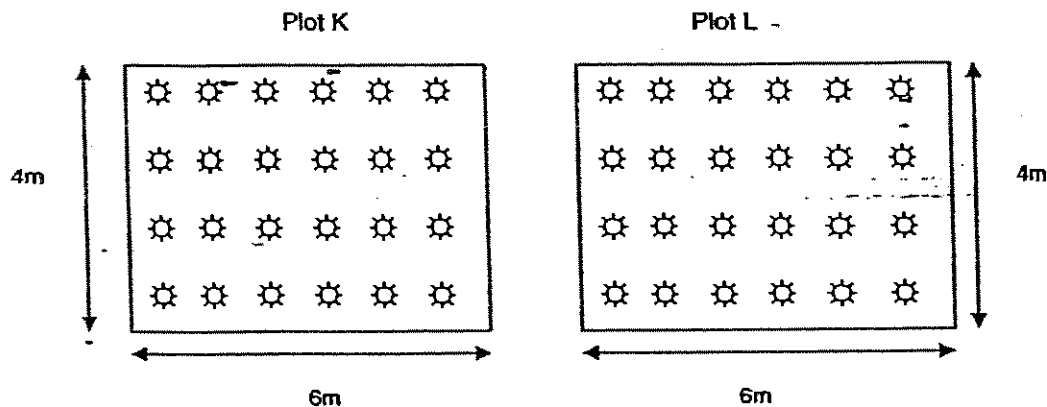


What could be the possible aim(s) of his experiment above?

- A: To find out which organism, P or Q, will affect the unknown population of animals.
 B: To find out whether the number of organisms, P and Q, affect the unknown population of animals.
 C: To find out whether there is a food relationship between the unknown population of animals and banana.

- (1) A only
 (2) B only
 (3) A and C only
 (4) B and C only

15. Mr Wong has two similar plots of land growing the same kind of vegetables. The two vegetable plots, Plot K and Plot L, are next to each other in an open area in his vegetables farm.



Mr Wong used the vegetable plots for an experiment. In Plot K, the dead parts of the plants were cut and removed as soon as they appeared. In Plot L, the dead parts were allowed to fall and decay in the ground. After one month, it was noticed that the vegetables in Plot L are growing taller and have more leaves than those in Plot K. What was the most likely reason for this?

- (1) Overcrowding in Plot K caused the vegetables to compete for nutrients and water.
- (2) The vegetables in Plot K were damaged when their dead parts were removed.
- (3) The vegetables in Plot L received more sunlight than the vegetables in Plot K.
- (4) The vegetables in Plot L had more nutrients than the vegetables in Plot K.

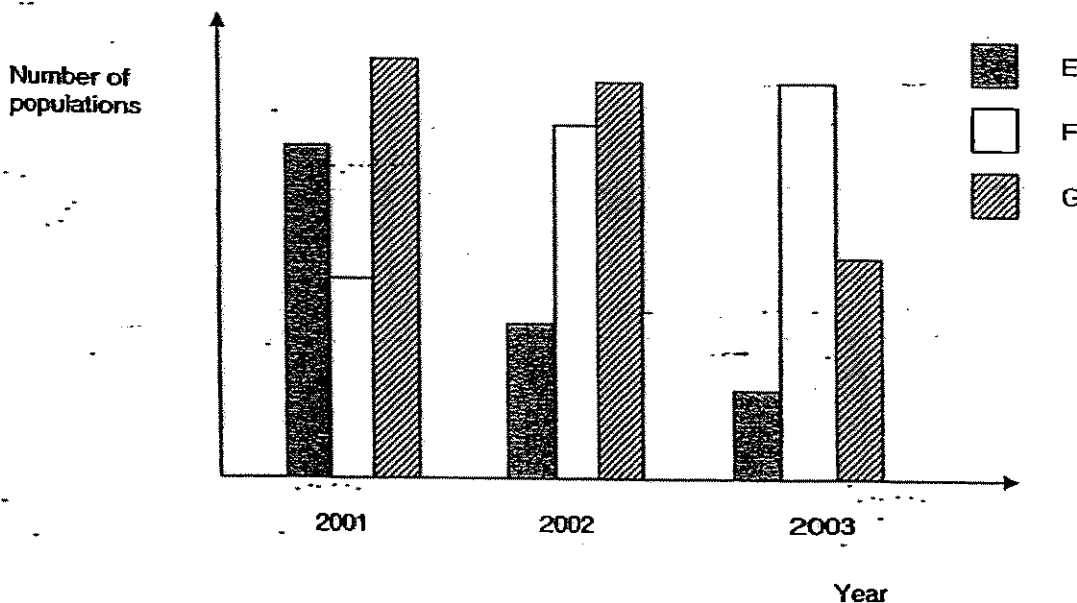
20. In an experiment, Yu Han sowed some apple seeds in similar pots, A, B, C and D. She recorded what she did in the table below.

Pot	Number of apple seeds	Amount of water used	Type of soil used	Presence of sunlight
A	15	1500ml	Clayey	Yes
B	25	2000ml	Garden	Yes
C	15	1500ml	Clayey	Yes
D	25	2000ml	Clayey	Yes

Which two pots should she use in order to find out how the type of soil affects the germination of apple seeds?

- (1) A and D
- (2) A and C
- (3) B and C
- (4) B and D

21. The graph below shows the size of populations, E, F and G in a forest over a period of three years.



Based on the graph, what reasons could cause a decrease in the size of Population E?

- A: An increase in the population of G.
 - B: A decrease in the population of G.
 - C: An increase in the population of F.
 - D: A decrease in the population of F.
- (1) A and C only
 - (2) B and C only
 - (3) A and D only
 - (4) B and D only

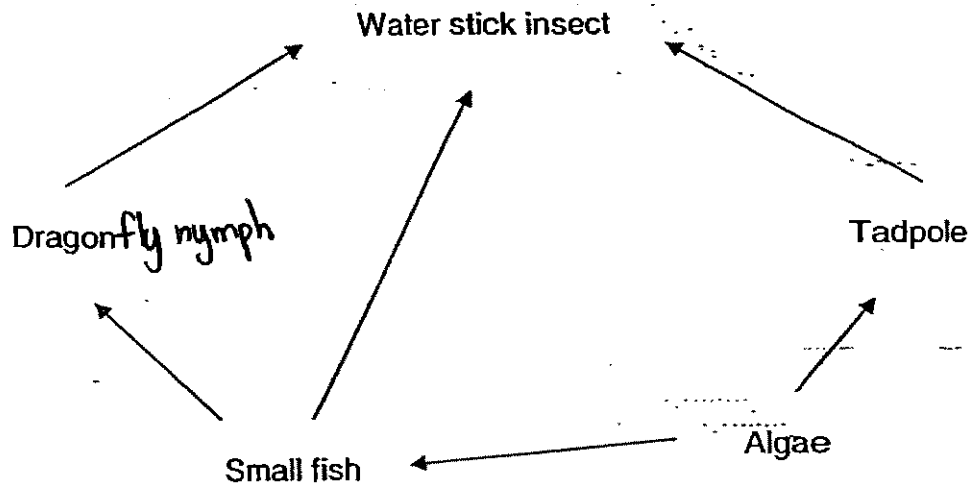
22. Which of the following are reasons aphids are considered pests to farmers?

- A: They lay their eggs in the fruit.
- B: They suck the sap of the plant.
- C: They spread plant diseases.
- D: They feed on the leaves of the plant.

- (1) A and C only
- (3) A and D only

- (2) B and C only
- (4) B and D only

23. Study the food web below carefully.

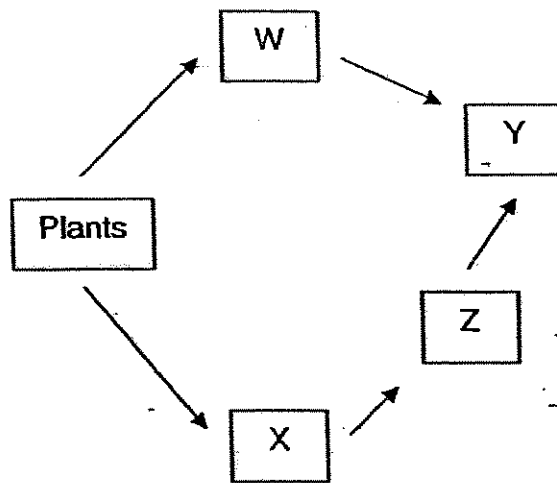


If there were no small fish, which population will be affected immediately?

- (1) Algae
- (3) Water stick insect

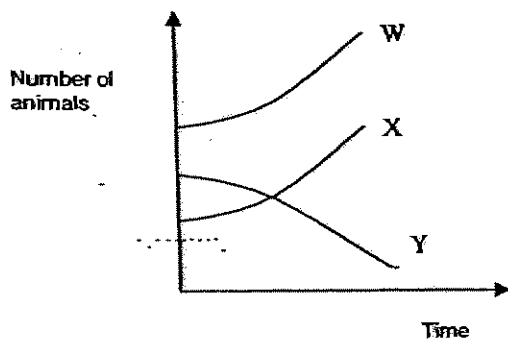
- (2) Dragonfly nymph
- (4) Tadpole

24 Study the food web below.

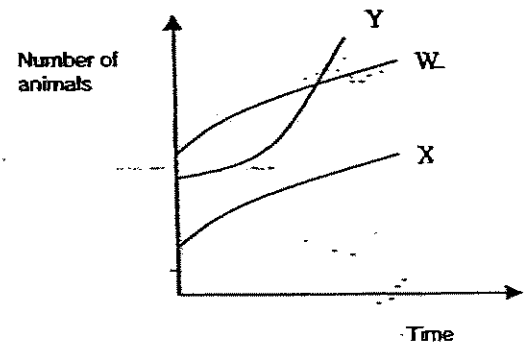


Which one of the following graphs shows the correct changes in the populations of W, X and Y when Z decreases?

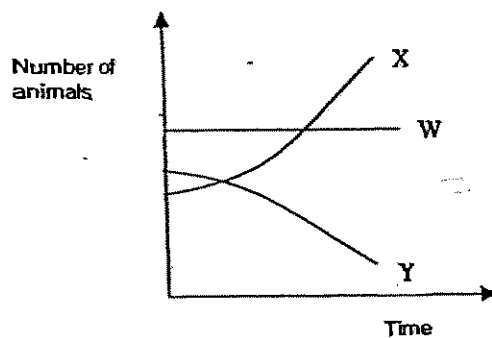
(1)



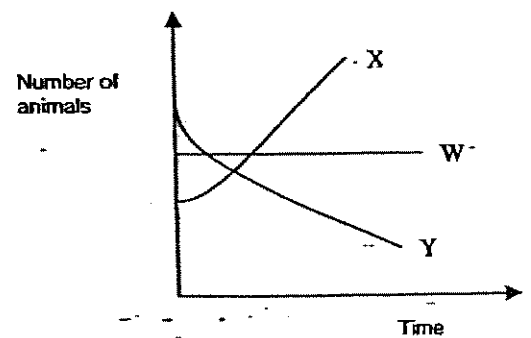
(2)



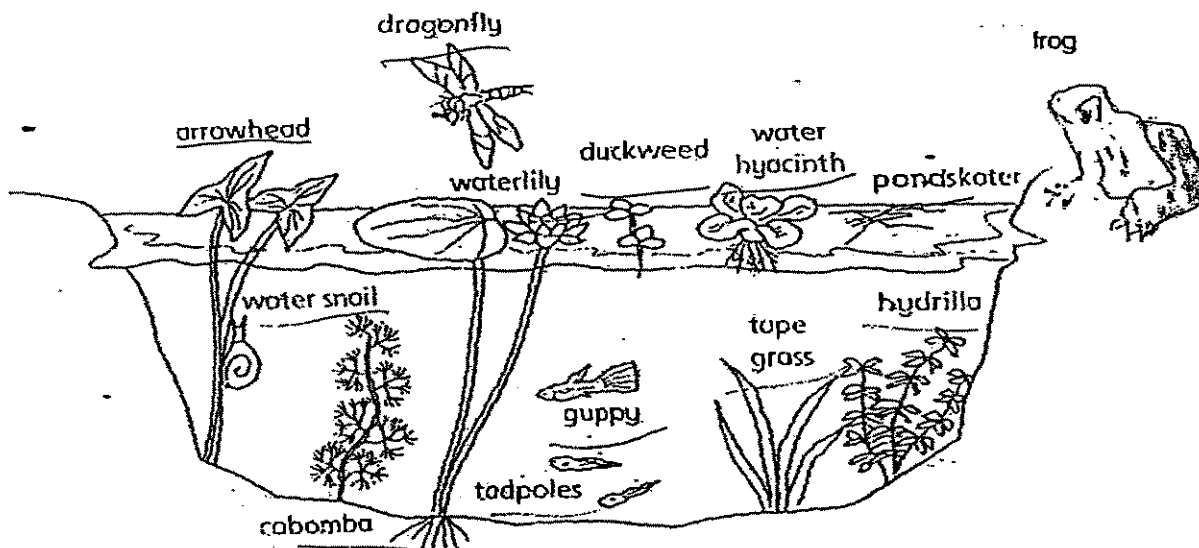
(3)



(4)



25. Below is a picture of a pond community.



What is the number of populations in this community?

- (1) 5
- (2) 6
- (3) 12
- (4) 13

26. The table below shows the average temperature at a seaside and the number of crabs found at the seaside. The readings were taken over a period of time from 6am to 3pm.

Time	Average temperature (°C)	Number of crabs
6am	14	67
9am	18	49
12pm	24	23
3pm	26	12

Based on the readings, what possible deduction could be made?

- (1) Crabs prefer rainy weather.
- (2) Crabs prefer sunny weather.
- (3) The higher the temperature the lesser the number of crabs.
- (4) The higher the temperature the greater the number of crabs.

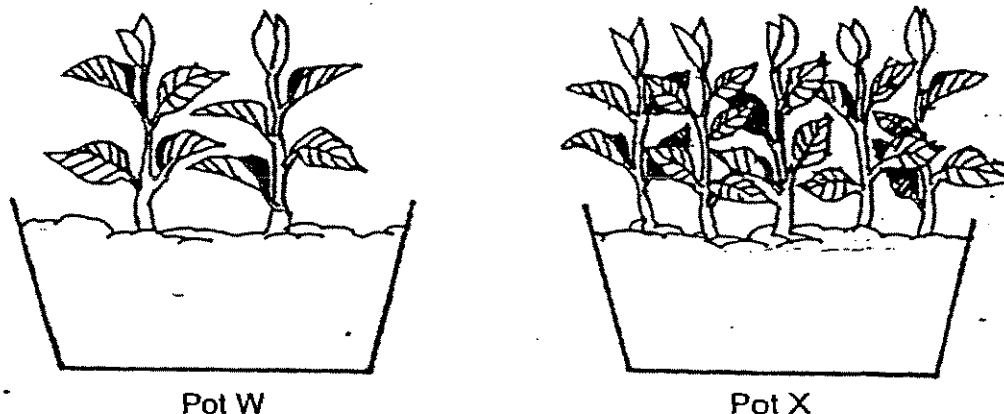
27. Simon wanted to find out the suitable conditions needed for the survival of Organism R. He set up four segments as shown below. He introduced similar number of Organism R in the four segments. He made his observations after a period of time.

Damp and cool	Dry and cool
Damp and warm	Dry and warm

His teacher commented that his experiment was not fair. Which one of the following could be the likely reason for his experiment to be unfair?

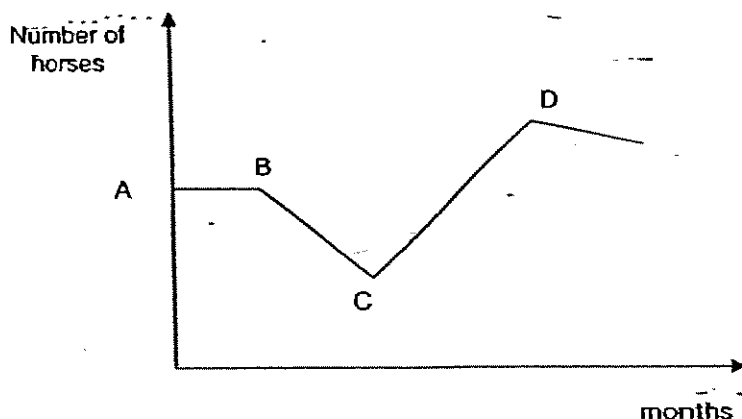
- (1) There were two variables that were different.
- (2) The area of the segment was different.
- (3) He should made his observations immediately.
- (4) He should place different number of Organism R in the four segments.

28. Similar balsam plants were grown in two similar pots, W and X, with similar soil condition.



Both pots of plants were placed in the same area of a garden and the balsam plants were given equal amount of water daily. It was observed that the balsam plants in Pot W grew healthier than those in Pot X. What is a possible reason?

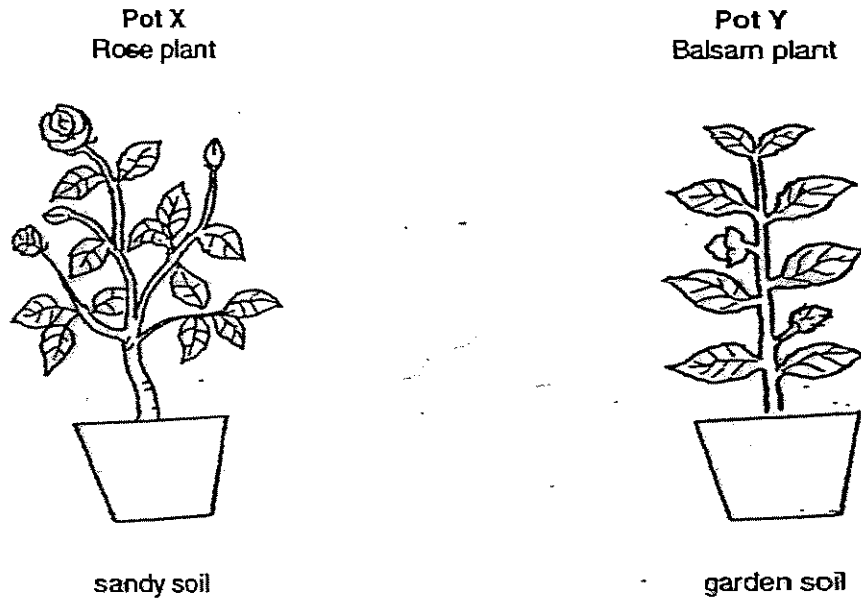
- (1) There are more pests that feed on the plants in Pot X.
 - (2) There is a greater competition for nutrients in Pot X.
 - (3) There are more green leaves in the balsam plants in Pot W to make food.
 - (4) The plants in Pot W receive more sunlight so they produce more food.
29. The graph below shows a change in the population of horses in a grassland over a 2-year period.



Which one of the following events could have taken place at Point C?

- (1) A disease inflicted the population of horses.
- (2) There was a shortage of food for the horses.
- (3) Hunters killed the horses' predators.
- (4) There was an increase in the population of the horses' predators.

30. Diana wanted to find out how the type of soil would affect the growth of plants. She grew two types of plants, one in sandy soil and the other in garden soil as shown in the diagram below. She put Pot X in the dark and Pot Y in the light. She watered the plants with equal amount of water daily.



Diana's teacher commented that the above experiment was not a fair one. Which of the following changes should Diana do in order to ensure that the experiment is a fair one?

- A: She should take away the rose plant and plant a balsam plant in Pot X.
- B: She should replace Pot Y with sandy soil.
- C: She should place Pot X in the light.
- D: She should water the plant grown in sandy soil more.

- (1) A and B only
- (3) B and D only

- (2) A and C only
- (4) C and D only

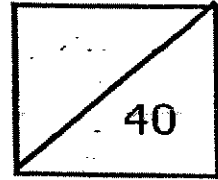
End of Booklet A



Rosyth School
First Semestral Assessment for 2007
SCIENCE
Primary 6

Name: _____

Total
Marks:



Class: Pr _____

Register No. _____

Duration: 1 h 45 min

Date: 14 May 2007

Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 31 to 46, give your answers in the spaces given in this Booklet B.

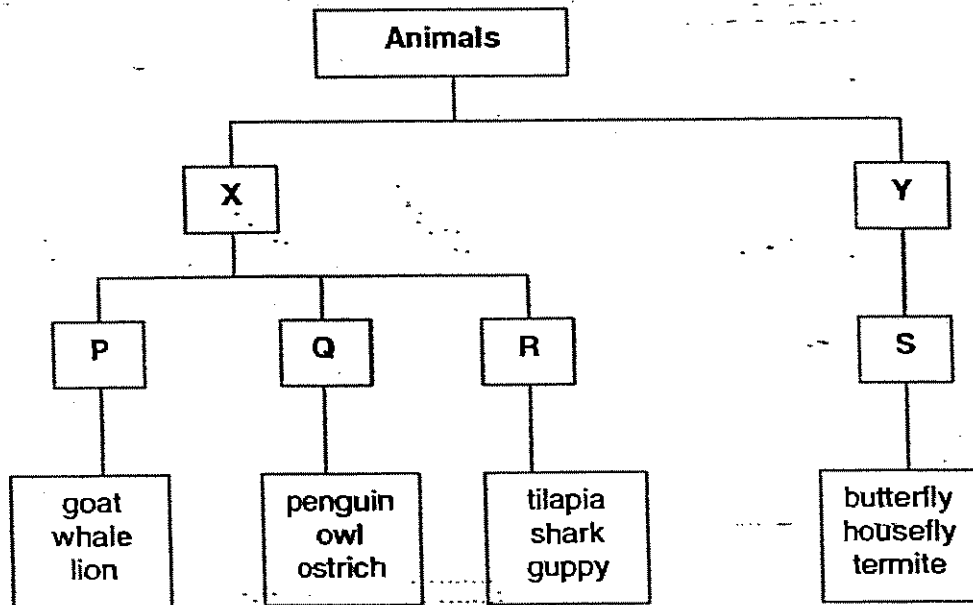
* This booklet consists of 17 pages.

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PART II (40 MARKS)

Read each question carefully and write your answer in the space provided.

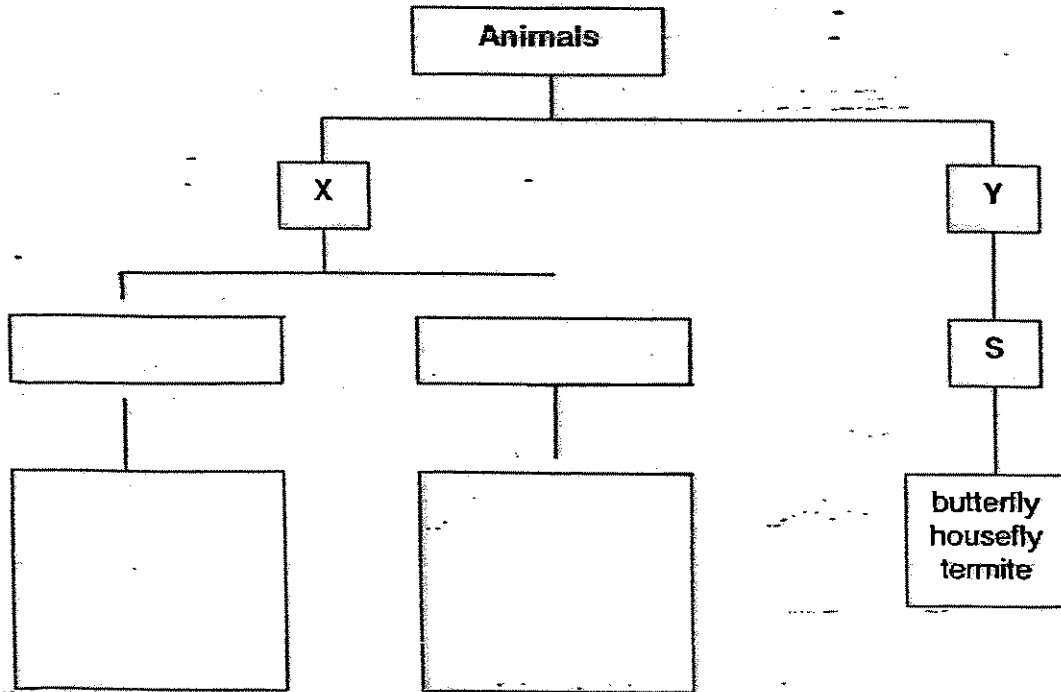
31. Study the classification chart of twelve animals shown below.



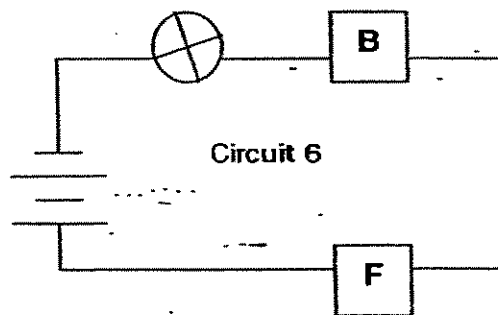
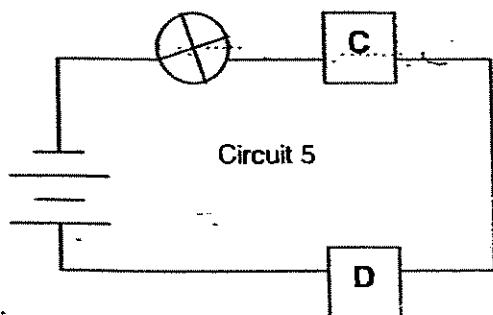
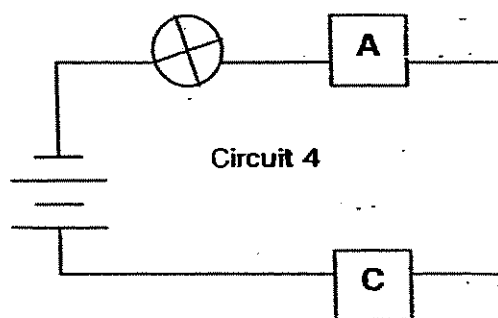
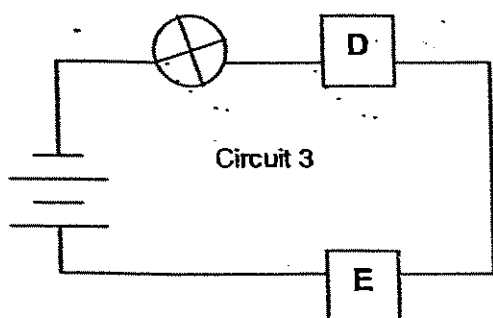
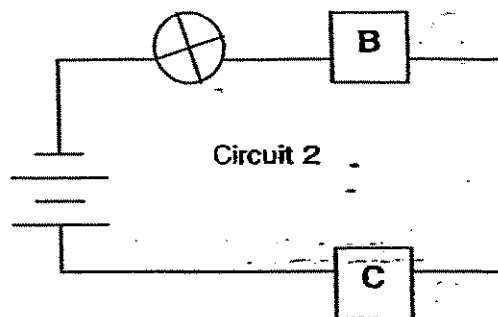
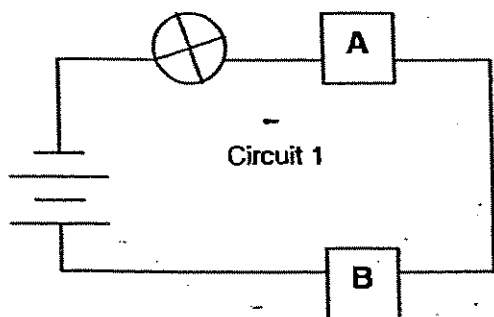
(a) Animals in Group X have a special feature in their body structure which animals in Group Y do not have. What is this feature? (1m)

Question 31 continues on the next page

31(b). Study the animals in Groups P, Q and R carefully. How would you regroup the animals in P, Q and R into two groups such that there are **at least** 4 animals in each group? Show the new classification chart below by completing the chart below. (2m)



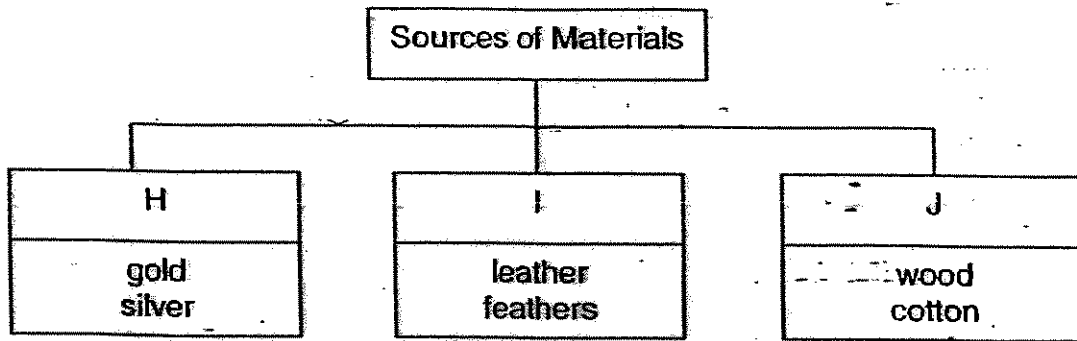
32. Study the six circuit diagrams as shown below. The circuits are connected to six blocks, A, B, C, D, E and F. Each block is made of a different material.



Jia En tested the six circuits shown above and found out that only the bulbs of Circuits 2 and 5 lighted up. Complete the classification table below by indicating whether Materials A, B, C, D, E and F are electrical conductors or insulators. (3m)

Electrical Conductors	Electrical Insulators

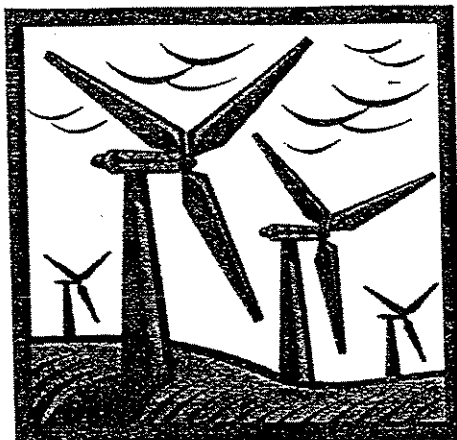
33. The classification chart below shows some materials being classified under three different groups H, I and J.



(a) In which group should "rubber" be classified under? Give a reason for your answer. (1m)

(b) If you were asked to group the materials into two groups, what characteristic would you use? (1m)

34. The diagram below shows windmills that can be found in some countries.



In some countries, windmills are used to help generate electricity. Windmills are not cheap to construct. In order to generate sufficient electricity, a large number of windmills must be built over a huge area of land. Besides the cost and the extensive use of land, state one advantage and one disadvantage of using windmill to generate electricity. (2m)

Advantage: _____

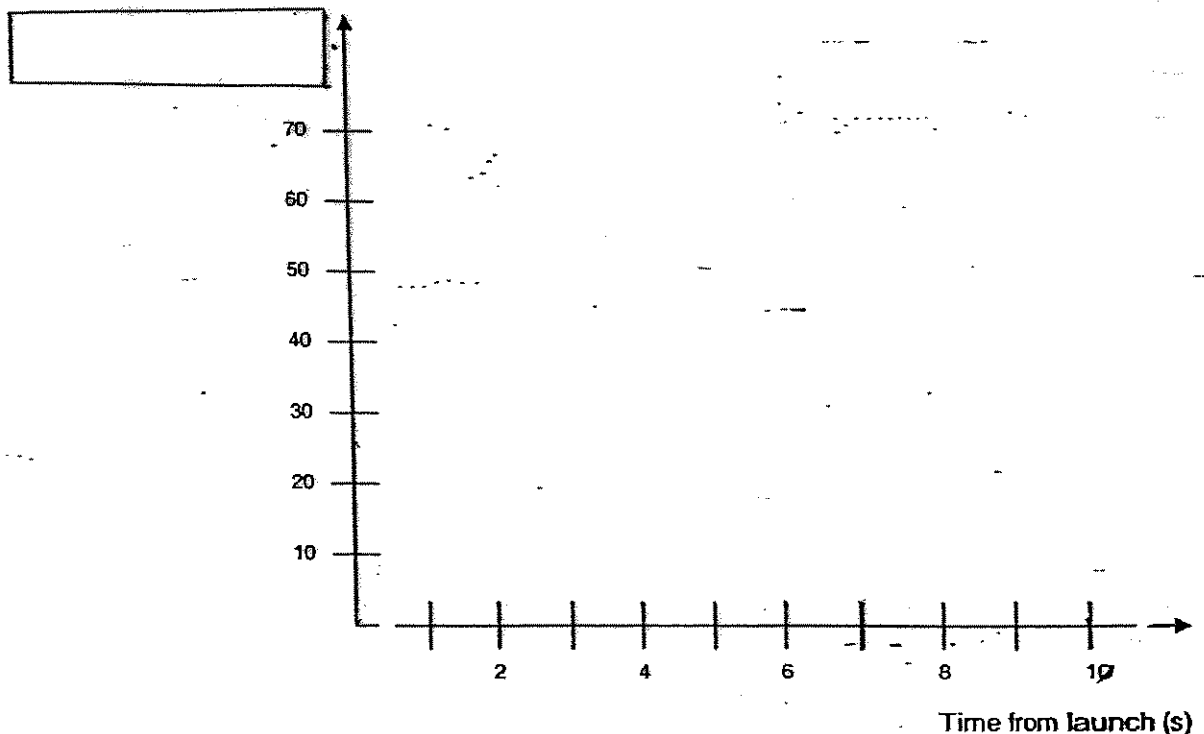
Disadvantage: _____

35. Clarence made a toy rocket using a cardboard, some wires and straws. He launched his toy rocket in an open field. He recorded the flight time and the height his toy rocket reached. The table below shows the results of his launch.

Time from launch (seconds)	Height above ground (centimetres)
0	0
1	25
4	60
5	64
6	70
7	58
9	29
10	0

- (a) Based on the information given in the table above, draw a line graph below to show the flight of Clarence's toy rocket. Indicate a suitable heading for the vertical axis of the graph in the box below.

(2m)

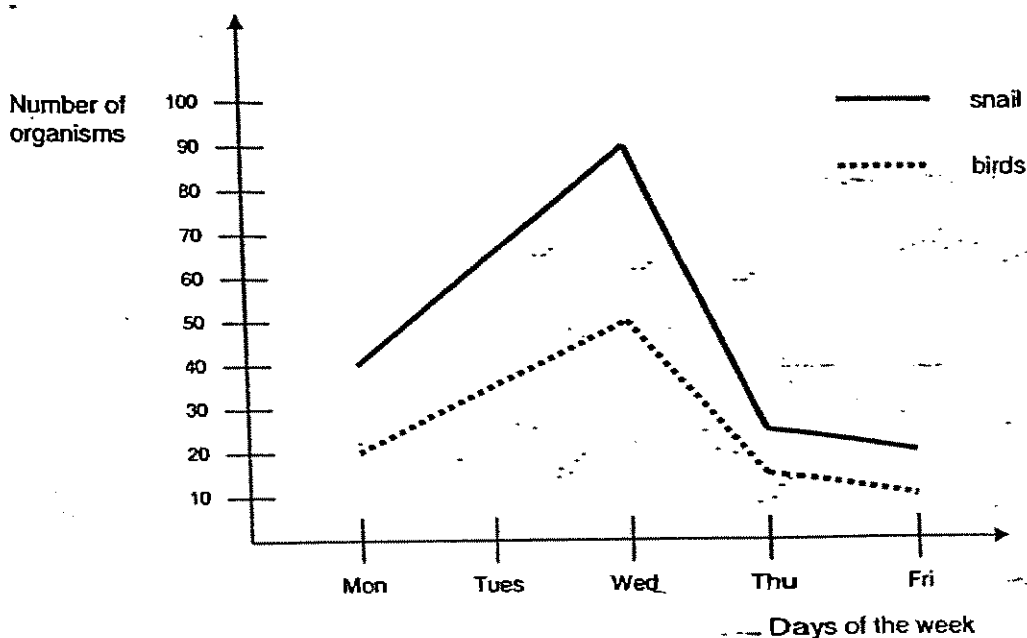


- (b) State the energy the toy rocket possessed when it reached the highest point. (1m)

36. The table below shows the weather condition of a particular week, from Monday to Friday.

Monday	Sunny
Tuesday	Rainy
Wednesday	Rainy
Thursday	Sunny
Friday	Sunny

The graph below shows the populations of birds and snails in a small field on the same week, from Monday to Friday.



- (a) How was the number of snails affected by the weather condition? (1m)

- (b) State the relationship between the number of snails and the number of birds. (1m)

37. Bemice wanted to find if presence of light would affect the rate of decomposition.

She was provided with the following materials:

- 2 plastic containers
- prawns
- clear plastic food wrap

(a) Describe in the table below, the steps she should take to set up the experiment. She should use all the materials she was provided with. (2m)

Steps	Description
Step 1	

(b) What observation would show that presence of light affects the rate of decomposition? (1m)

38. Study the food chains below carefully.

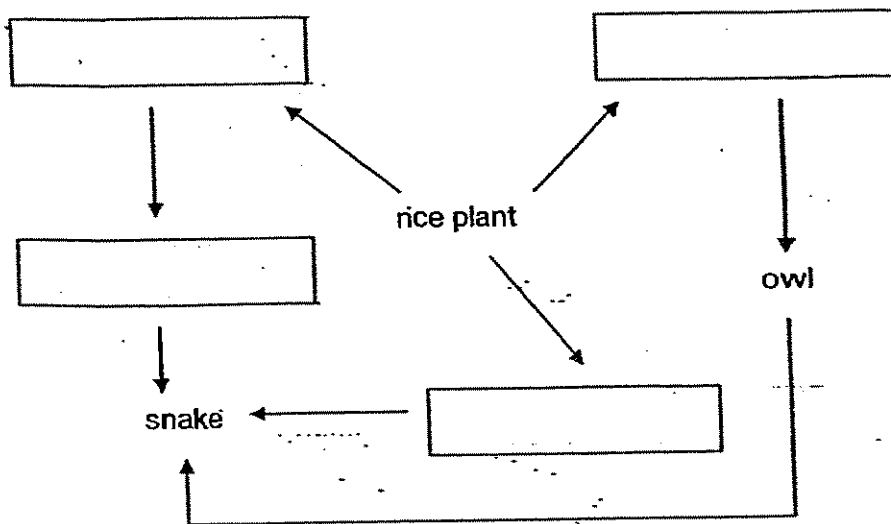
Rice plant → grasshopper → crow → snake

Rice plant → mouse → owl → snake

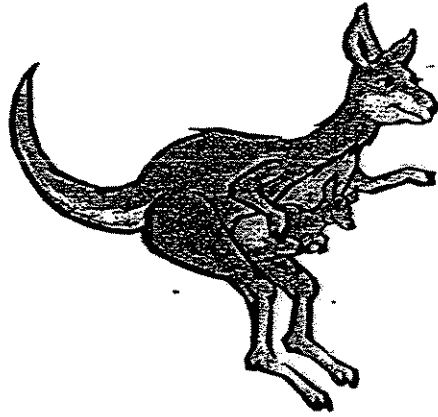
Rice plant → sparrow → snake

~~Rice plant → grasshopper → mynah → snake~~

Complete the food web using the food chains above (2m)



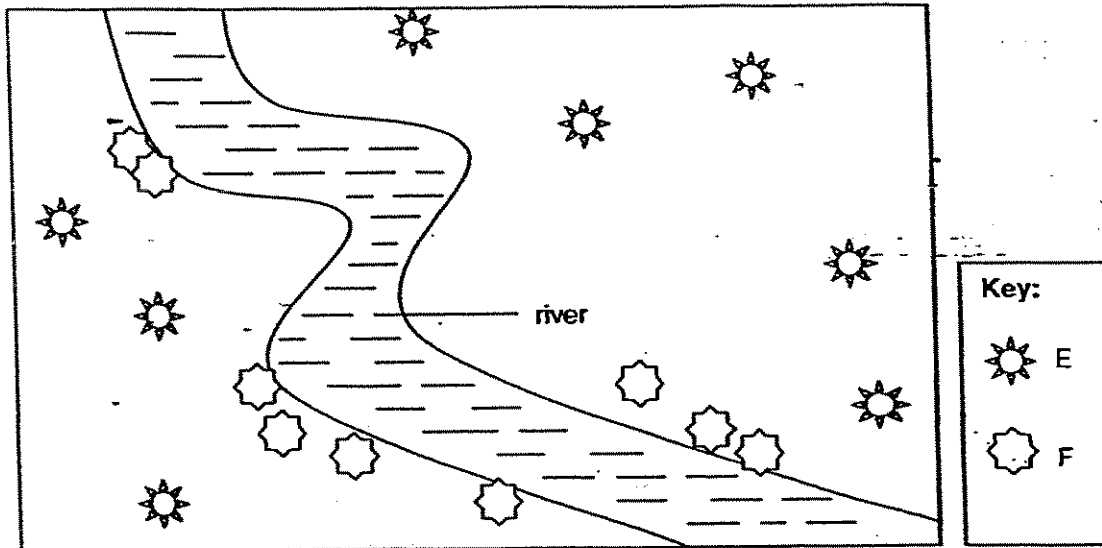
39. The diagram below shows a female adult kangaroo. It has a flap of skin called a pouch, attached to the front of its body for carrying and nursing its young.



- (a) How does having this pouch enhance the survival of the kangaroo? (1m)

- (b) Besides the pouch, indicate another structural adaptation that kangaroos have to ensure the survival of their own kind in its natural habitat. (1m)

40. A group of pupils went trekking in a forest. They collected information about the number and position of two kinds of trees, E and F, found in the forest. They presented the information in the map shown below.

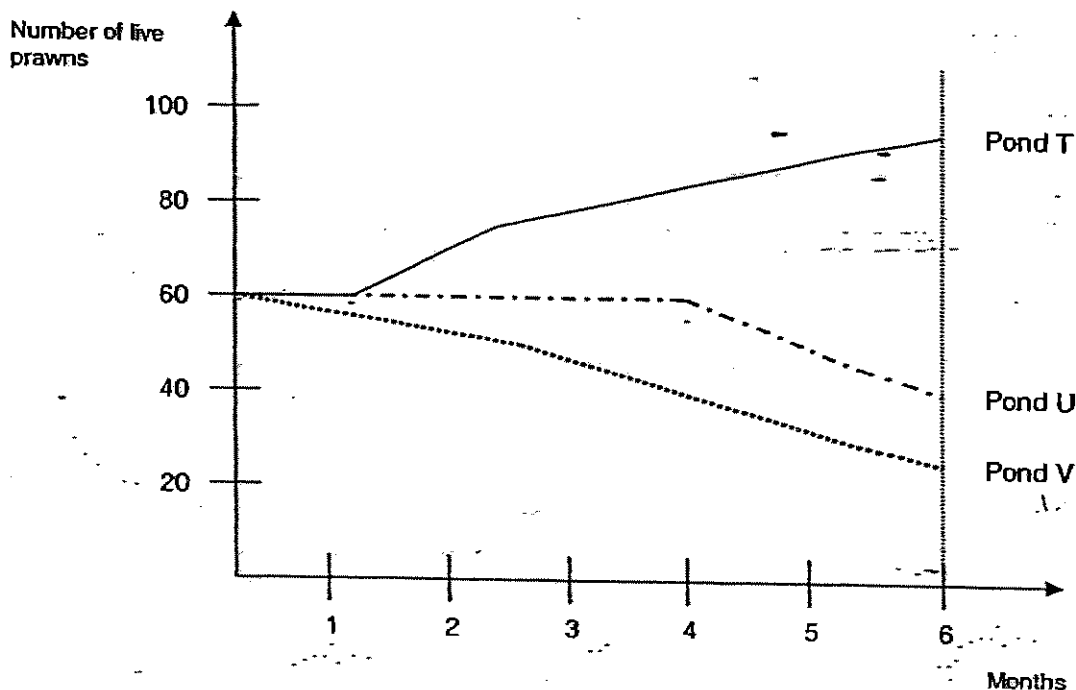


The fruits or seeds of these trees have different structural adaptations for dispersal. Study the map shown above carefully. For each tree, state the adaptation of its fruits or seeds and how this adaptation helps in its dispersal in the boxes below.

-(2m)

Fruits or seeds of	Structural adaptation	Function
Tree E		
Tree F		

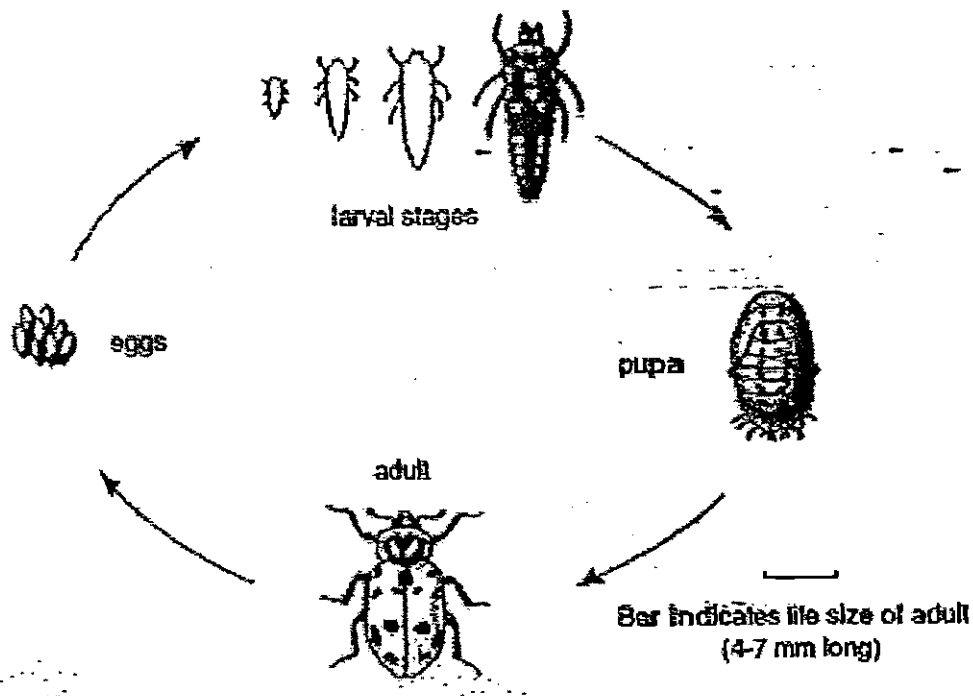
41. Si Yun carried out an experiment. She put three boxes, each with the same number of prawns, into three ponds, T, U and V respectively. The graph below shows the results of the experiment.



Four statements about the results are given below. Study the graph above carefully and indicate whether each of the statements is True, Not True or Not Possible to Tell. Put a tick (✓) in the correct box. (2m)

	Statement	True	Not True	Not Possible to Tell
(a)	The number of prawns increased before decreasing in all ponds.			
(b)	Pond V is more polluted than Pond U.			
(c)	Pond T is most suitable for rearing prawns.			
(d)	Pond U has more plants than Pond V.			

42. The diagram below shows the life cycle of the convergent lady beetle.



(a) At which stage of the life cycle is the lady beetle most useful to the community it lives in? Explain your answer. (2m)

(b) A farmer found some pests on his crops and introduced the lady beetle to get rid of the pest. What is the likely pest that the farmer had found? Explain your answer. (1m)

43. The table below shows the number of organisms in a Science garden over a period of 5 days.

Organisms	Number of organisms on				
	1 st day	2 nd day	3 rd day	4 th day	5 th day
Mynahs	2	0	4	3	0
Grasshoppers	2	6	7	5	2
Caterpillars	15	15	10	7	6
Ants	20	20	18	21	11

- (a) Which organism(s) was/were likely to be visitor(s) to the Science garden? (1m)

- (b) Give two possible reasons for the decrease in the number of caterpillars over the 5-day period. (2m)

Reason 1 :

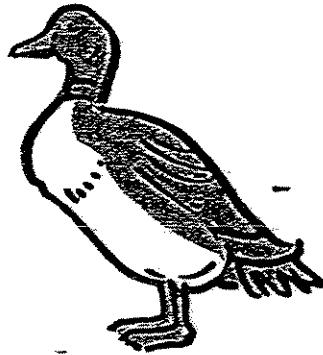
Reason 2 :

44. Many mosquito eggs were found on the surface of a school pond. There were some hydrilla, water lettuce, duckweeds and twenty fishes in the pond. A group of pupils decided to pour a thick layer of oil over the pond's surface to prevent the mosquitoes from multiplying further.

(a) Explain how the pupils' action would affect the floating plants in the school pond. (2m)

(b) How might the aquatic animals in the pond be affected if the floating plants died? (1m)

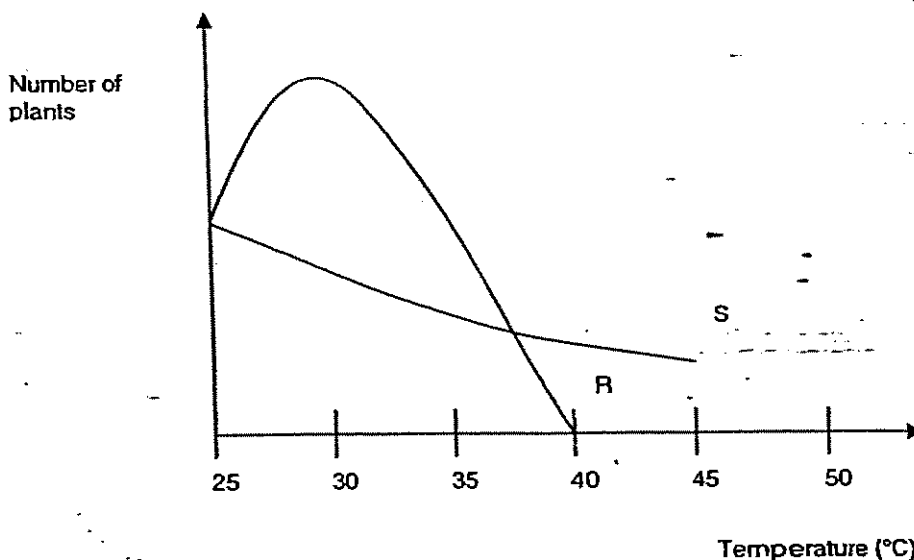
45. The pictures below show a duck and a frog.



(a) What common adaptation for swimming can you observe in the animals shown above? (1m)

(b) Identify the adaptation for breathing that the frog has which the duck has not. (1m)

46. The graph below shows the relationship between the number of two species of plants, Plant R and Plant S and temperature.

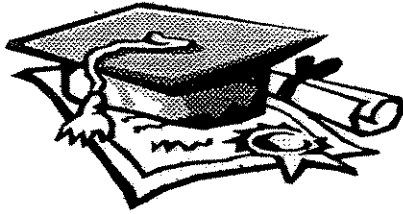


(a) Based on the graph, what would be a suitable temperature to grow Plant R? Explain your answer. (1m)

(b) What pattern can be observed between the temperature and the population of Plant S? (1m)

(c) Besides temperature, what is another factor that can cause the situation in part (b) to arise? (1m)

END OF PAPER



ANSWER SHEET

ROSYTH PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
SEMESTRAL ASSESSMENT (1)

1. 2 31)a)The feature is that they are
2. 3 vertebrates.
3. 2 b)i)give birth to young alive.
4. 2 ii)lay eggs.
5. 2 iii)goat whale lion guppy.
6. 3 iv)tilapia penguin owl ostrich
7. 3 shark.

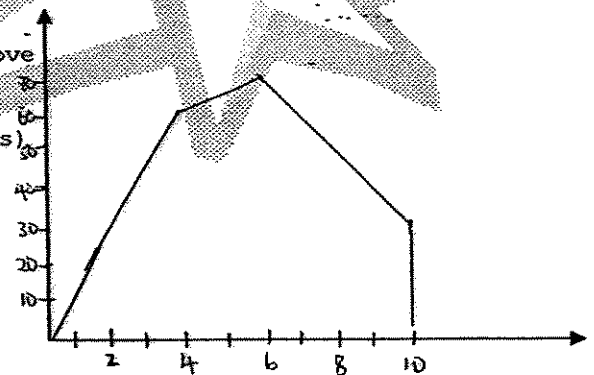
8. 4
9. 3 32)B, C, D → A, E, F

10. 4
11. 3 33)a)Group J. The materials in Group
12. 2 J are from trees. As rubber
13. 4 tree, it should be classified
14. 3 under Group J.
15. 4 b)I would use the characteristics
16. 3 of the materials depending
17. 3 whether they are electrical
18. 3 conductors or electrical
19. 4 insulators.

20. 4
21. 2 34)Advantage: It is a renewable
22. 2 source of energy.
23. 2 Disadvantage: It is not always
24. 1 available.

25. 3
26. 3
27. 2
28. 2
29. 3
30. 2

35) a) height above
ground
(centimeters)



35)b) Gravitational potential energy.

36)a) When it is rainy, the number of snails usually increase and when it is sunny, the number of snails usually decrease.

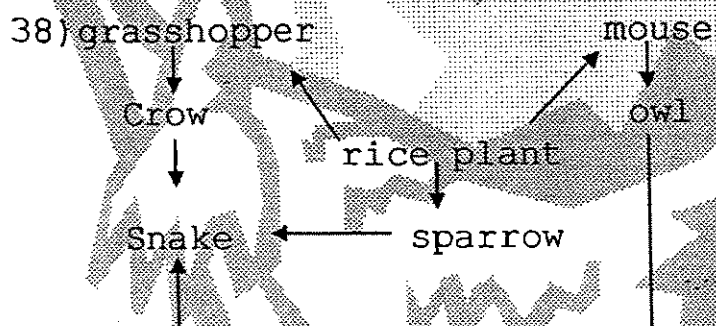
b) The more the number of snails, the more the number of birds.

37)a) Step 1: Put an equal amount of prawns each into the 2 plastic containers and wrap the container with clear plastic food wrap.

Step 2: Place 1 container in the light and place the other container in the dark.

Step 3: record the number of decayed prawns over a period of time and compare.

b) The prawns would look more mushy/ watery and have stronger smell.



39)a) It keeps the young warm and it can survive in cold weather...

b) It has strong hind legs to hop away quickly from their predators.

40) Tree E: . wing-like structure
. light

to be blown away by the wind.

Tree F: . fibrous husk
. waterproof

to float on water and prevent water from going into the fruit.

41)a) Not True
b) Not possible
c) True
d) Not possible

42)a)It can be a food source for its predators such as birds.

b)The lady beetle could eat the aphids.

43)a)Mynahs and grasshoppers.

b)1: Some of the caterpillars were eaten by the mynahs.

2: Some of the caterpillars had changed into butter flies.

44)a)The roots would not be able to receive water and without water, they cannot photosynthesis. Overtime, their population will decrease.

b)There will be no food for the aquatic animals and they will also eventually die.

45)a)They have webbed feet for swimming.

b)The frog has moist skin to breathe under water while the duck do not have.

46)a)30c. When plant R was at 30c, the number of them was the most.

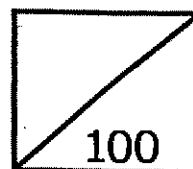
b)The higher the temperature, the less number of plant S around.

c)The amount of light for plant S to use during photosynthesis.

---end---



Rosyth School
Preliminary Examination for 2007
SCIENCE
Primary 6



Name: _____

Total
Marks:

Class: Pr _____

Register No. _____

Duration: 1 h 45 min

Date: 23 August 2007

Parent's Signature: _____

Instructions to Pupils:

1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets, Booklet A and Booklet B.
4. For questions 1 to 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 31 to 46, give your answers in the spaces given in the Booklet B.

	Maximum	Marks Obtained
Booklet A	60 marks	
Booklet B	40 marks	
Total	100 marks	

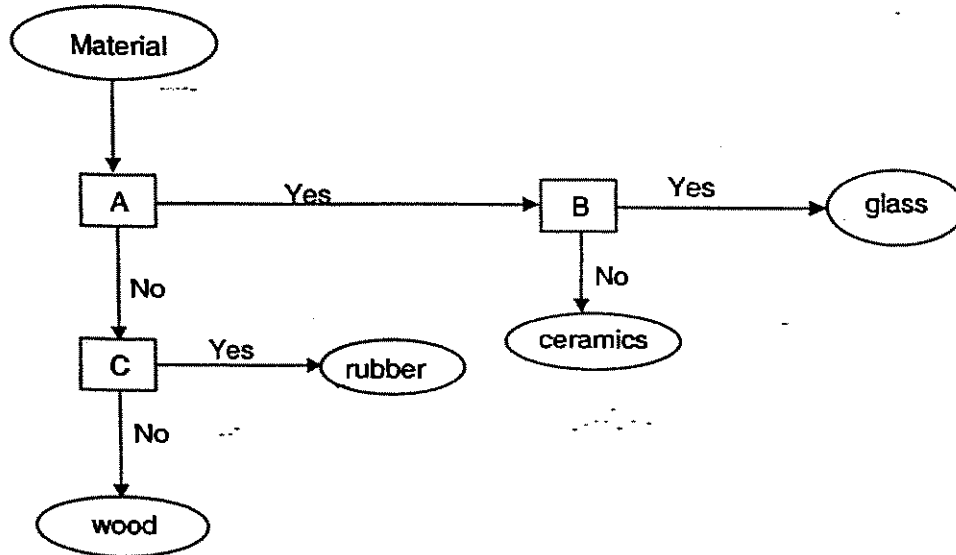
* This booklet consists of 18 pages (pg 1-18) .

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PART I (60 MARKS)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1 Study the flowchart below carefully.



Which of the following are suitable questions that show the characteristics of Materials A, B and C in the flowchart above?

	A	B	C
(1)	Is it fragile?	Does it allow light to pass through?	Is it flexible?
(2)	Is it flexible?	Is it fragile?	Does it conduct electricity?
(3)	Does it conduct electricity	Is it hard?	Is it fragile?
(4)	Does it allow light to pass through?	Does it conduct electricity?	Is it hard?

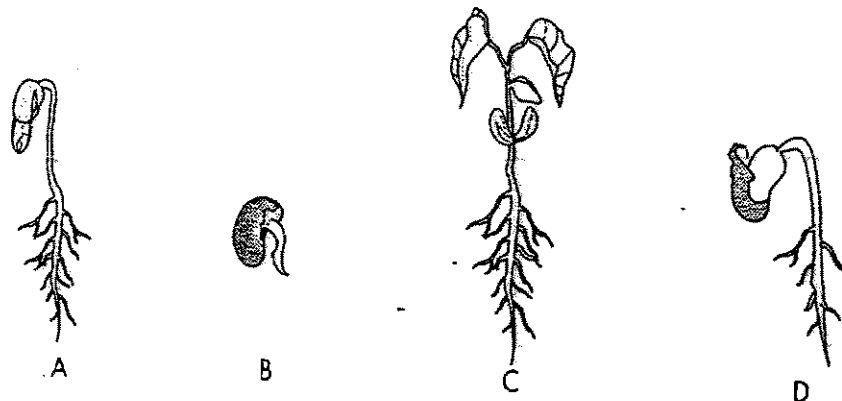
2 Which of the following is one of the reasons why the mushroom and the mould are classified as fungi rather than as plants?

- (1) They reproduce by spores.
- (2) They usually live on other organisms.
- (3) They do not have chlorophyll to make their own food.
- (4) They cannot move freely from one place to another by itself.

(Go on to the next page)

Rosyth School/ P6Prelim/ Science/ 2007

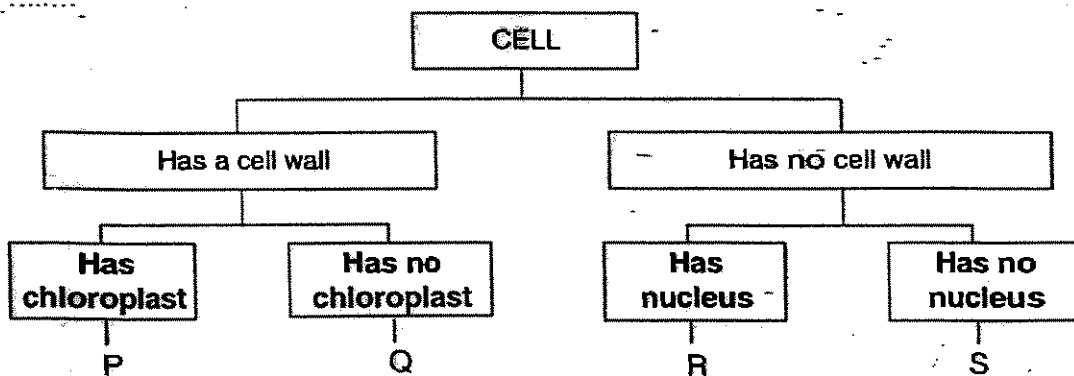
3 The diagram below shows a bean plant at different stages of its growth.



At which stage(s) is sunlight essential for further healthy growth?

- (1) C only
- (2) A and C only
- (3) A, B and D only
- (4) A, B, C and D

4 Four cells, P, Q, R and S, are classified according to the chart shown below.



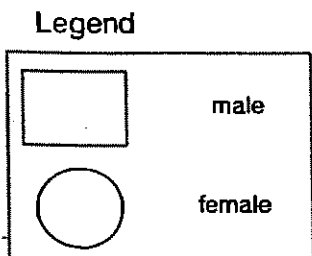
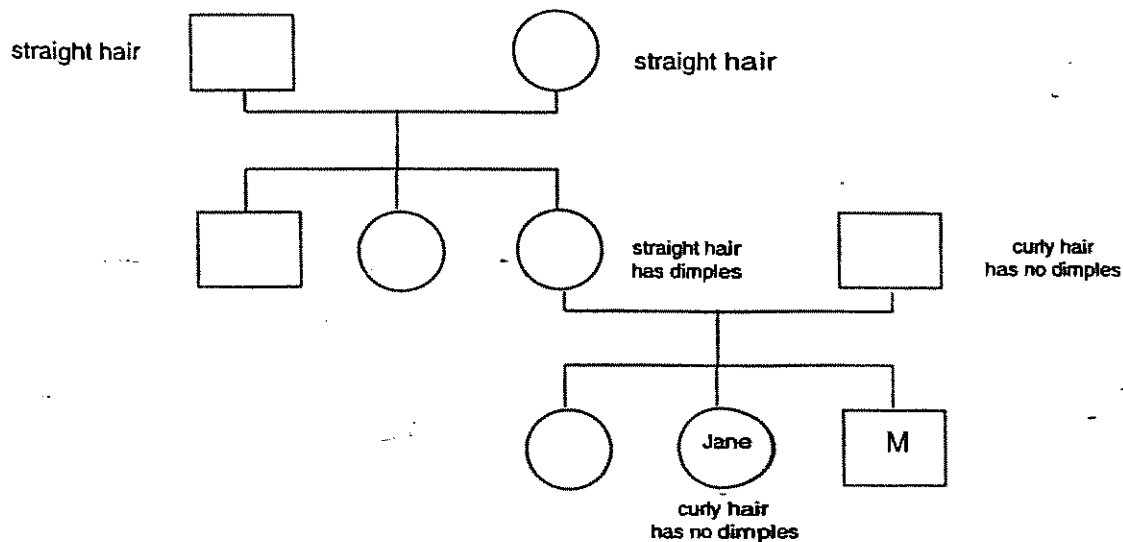
Based on the chart, which of the following statements about P, Q, R or S could be correct?

- (1) P could be a leaf cell while R could be a root cell of a plant.
- (2) R could be an onion skin cell while S could be an animal nerve cell.
- (3) Q could be a root cell of a plant while S could be a human red blood cell.
- (4) S could be a human red blood cell while P could be an onion skin cell.

(Go on to the next page)

Rosyth School/ P6Prelim/ Science/ 2007

5 Jane drew her family tree as shown below.



Based on the family tree, which of the following statements are true?

- A M is Jane's cousin.
- B Jane's father has a brother and a sister.
- C Jane inherited her curly hair from her father.
- D The grandparents shown in the family tree are the parents of Jane's mother.

- | | |
|------------------|---------------------|
| (1) C only | (2) A and B only |
| (3) C and D only | (4) B, C and D only |

(Go on to the next page)

- 6 The table below shows the characteristics of four seeds or fruits W, X, Y and Z.

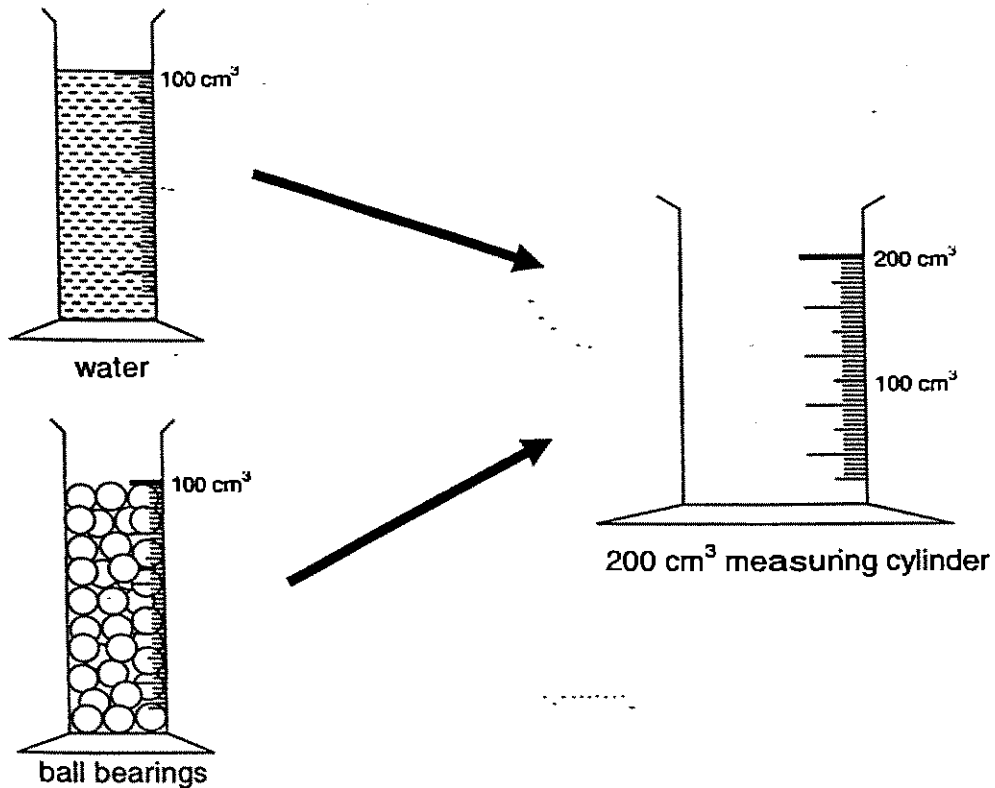
Seed / Fruit	Size	Weight	Other Characteristics
W	Small	Light	It has hooks
X	Small	Light	It is brightly coloured
Y	Small	Light	It has a dry and hard fruit wall when ripe
Z	Big	Heavy	It is buoyant with a fibrous husk

What method of dispersal do W, X, Y and Z most likely use?

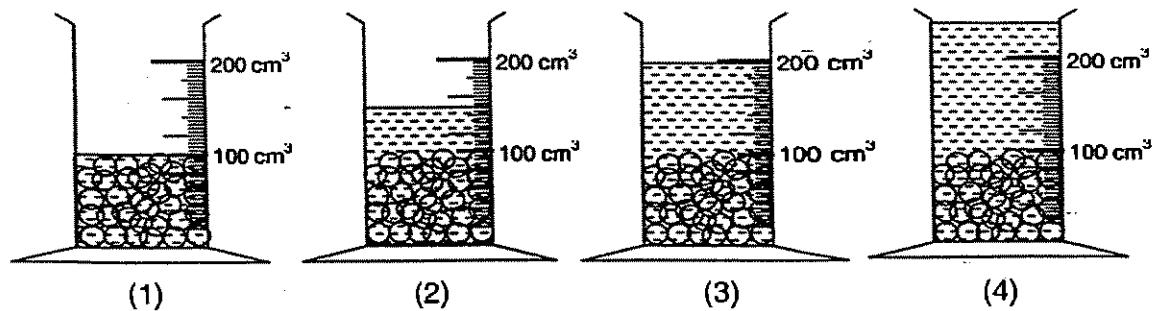
	W	X	Y	Z
(1)	By wind	By animals	By water	By animals
(2)	By animals	By animals	By splitting open of fruit	By water
(3)	By animals	By wind	By wind	By water
(4)	By splitting open of fruit	By water	By splitting open of fruit	By wind

(Go on to the next page)

- 7 Nadiah filled up a measuring cylinder with 100 cm^3 of water. She filled up another similar 100 cm^3 measuring cylinder with ball bearings. Next, she transferred both the water and the ball bearings into a 200 cm^3 measuring cylinder.



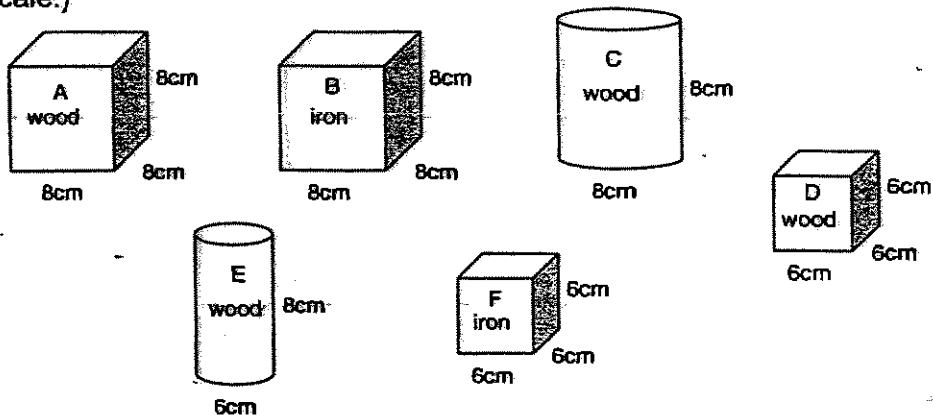
Which one of the following diagrams shows the possible volume occupied by the water and the ball bearings in the 200 cm^3 measuring cylinder?



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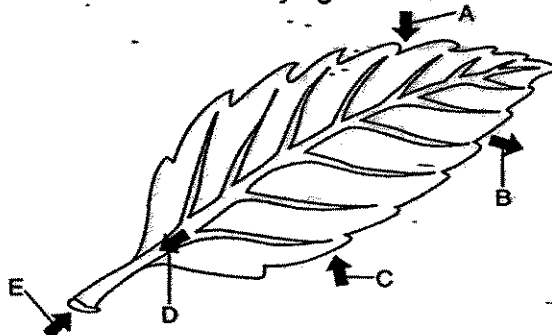
8 Peter wanted to find out whether different materials of the same volume had the same mass. He had the following items to work with. (Diagrams not drawn to scale.)



Which 2 items should he work with to ensure a fair test?

- (1) A and D only
- (2) B and D only
- (3) C and E only
- (4) D and F only

9 The leaf is often referred to as a 'food factory' as its function is to make food for the plant. The leaf below is carrying out this function.



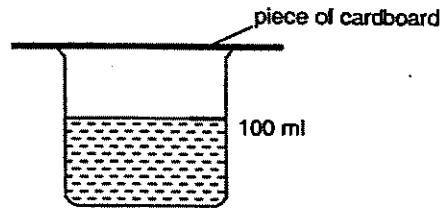
Which of the following shows the correct set of labels for the arrows?

	A	B	C	D	E
(1)	Sunlight	Oxygen	Carbon dioxide	Sugar	Water
(2)	Water	Carbon dioxide	Sunlight	Water	Oxygen
(3)	Carbon dioxide	Oxygen	Sunlight	Sugar	Water
(4)	Sunlight	Water	Oxygen	Carbon dioxide	Sugar

(Go on to the next page)

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- 10 James filled a beaker with 100ml of water and covered the beaker with a piece of cardboard as shown in the diagram below. He then placed the beaker into the freezer. After a day, the water had turned to ice. Without removing the piece of cardboard, James noted the volume of the ice and thereafter left the beaker of ice on the table to melt completely.

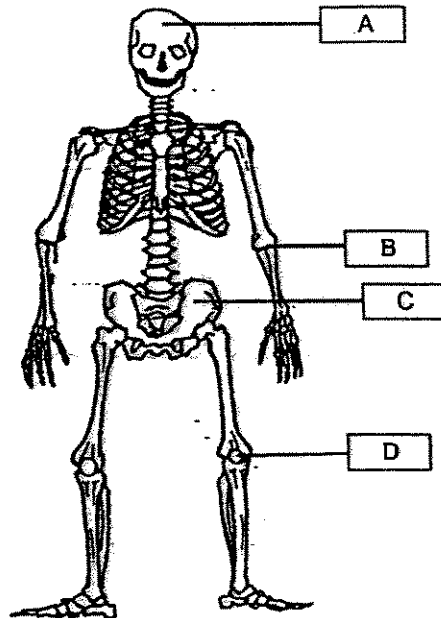


Which of the following possibly indicates the volume of the ice right after the beaker was taken out of the freezer and the volume of the water after all the ice had melted?

	Volume of ice right after the beaker was taken out of the freezer	Volume of the water after all the ice had melted
(1)	100 ml	80 ml
(2)	100 ml	100 ml
(3)	110 ml	110 ml
(4)	110 ml	100 ml

(Go on to the next page)

11 The diagram below shows a skeleton with some parts labelled A, B, C and D.



Which part(s) help(s) protect our organs?

- (1) A only
- (2) A and C only
- (3) B and D only
- (4) A, B, C and D

12 The diagram below represents the composition of gases in inhaled air.



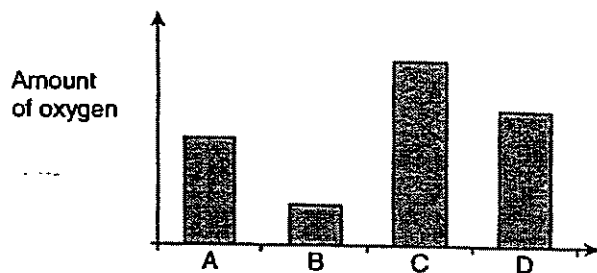
M represents oxygen.
 N represents nitrogen and
 L represents carbon dioxide, other gases and water vapour.

Which of the following statement(s) is/are true after the inhaled air enters the human respiratory system and exits as exhaled air?

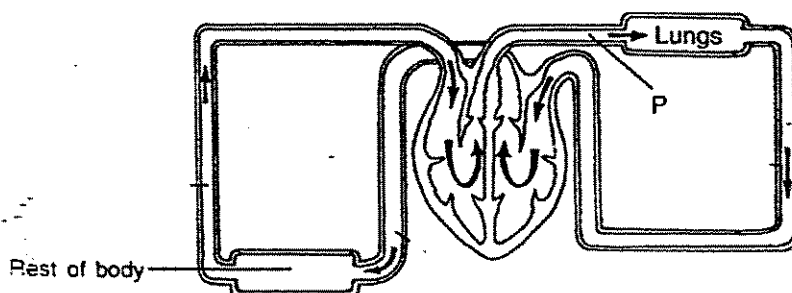
- A Amount of M increases.
 - B Amount of N increases.
 - C Amount of L increases.
- (1) A only
 - (2) C only
 - (3) A and B only
 - (4) B and C only

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- 13 The graph below shows the amount of oxygen in four blood samples taken at the same time from four different blood vessels in the body.



The diagram below shows how blood is circulated in our body.

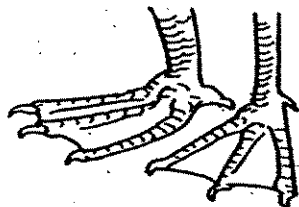


Which blood sample (A, B, C or D) was most likely taken from P of the circulatory system above?

- | | |
|-------|-------|
| (1) A | (2) B |
| (3) C | (4) D |

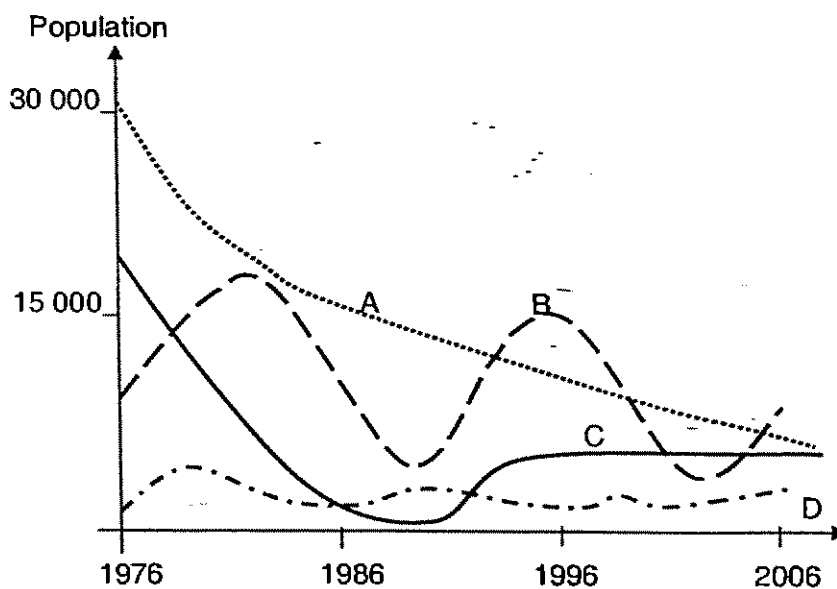
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16 The diagram below shows the feet of a bird.



Which one of the following statements is true of the bird?

- (1) It is a bird of prey.
 - (2) It is able to move in water.
 - (3) It digs in the ground for worms.
 - (4) It perches on the branches of trees.
- 17 The population sizes of four different species of birds (A, B, C and D) were monitored over a period of 30 years. The results are shown on the graph.



Which species (A, B, C or D) is in the greatest danger of extinction?

- (1) A
- (2) B
- (3) C
- (4) D

(Go on to the next page)

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18 Which of the following statements about yoghurt making are true?

- A Yeast is added.
- B Oxygen is needed.
- C Bacteria are added.
- D Fermentation of milk takes place.

- (1) A and B only
- (2) C and D only
- (3) A, B and C only
- (4) A, B, C and D

19 A plantation was infested with 2 types of Aphids, A and B. The farmer wanted to use ladybirds to remove the aphids. He did the following experiment to find out which type of Ladybird W, X, Y or Z was the most effective.

He put 50 Ladybird W in the first cage and the same number of Ladybird X, Ladybird Y and Ladybird Z in the second, third and fourth cage respectively.

He also put 200 Aphid A and 200 Aphid B in each of the 4 cages.

The number of each type of aphid left in each cage is shown in the table below.

Cage with	Number of aphids left	
	Aphid A	Aphid B
Ladybird W	19	269
Ladybird X	25	200
Ladybird Y	121	143
Ladybird Z	140	154

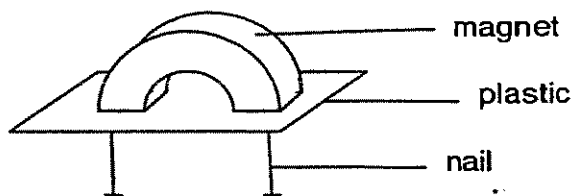
Which type of Ladybird (W, X, Y or Z) should he introduce to remove as many Aphid A and Aphid B as possible from his plantation?

- (1) Ladybird W
- (2) Ladybird X
- (3) Ladybird Y
- (4) Ladybird Z

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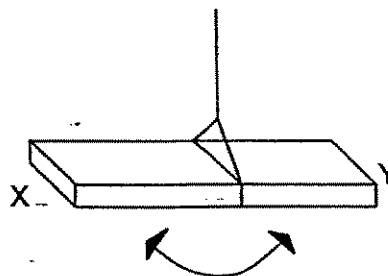
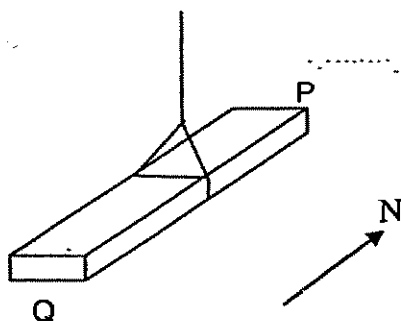
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- 20 Michael placed a sheet of plastic between two nails and a magnet as shown in the diagram below. The nails were attracted to the magnet. Then Michael placed more and more similar sheets of plastic until the nails could no longer be attracted by the magnet.



What is the aim of Michael's experiment?

- (1) To find out if plastic is magnetic.
 - (2) To find out if the nails are magnetic.
 - (3) To find out the strength of the magnet.
 - (4) To find out the parts of the magnet that has the strongest pull.
- 21 A metal bar PQ is hung by a thin thread. It always comes to rest with one end of the bar, P, pointing North as shown in the diagram below. Another bar XY made of the same metal as PQ settles in no definite direction.

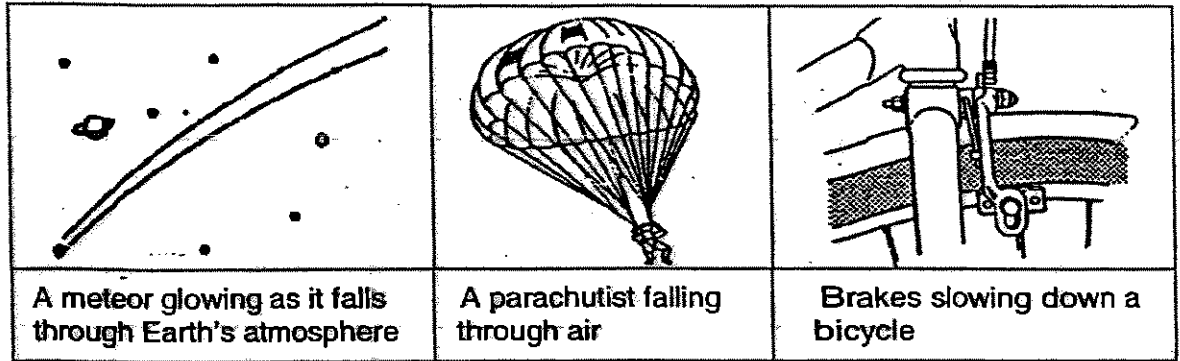


What happens if the two bars are brought near to each other?

- (1) End P attracts end X but repels end Y.
- (2) End P repels end X but attracts end Y.
- (3) End P neither attracts nor repels end X.
- (4) Both ends, P and Q, attract end X.

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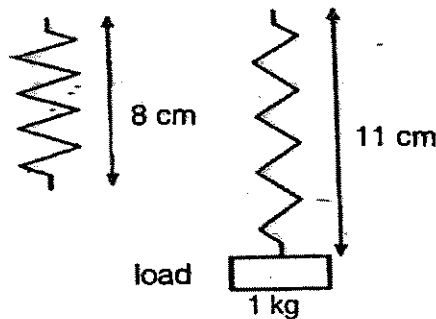
22 The pictures show some effects of a force.



What is this common force that is acting in these three situations above?

- | | |
|--------------|-------------------------|
| (1) Friction | (2) Gravitational force |
| (3) Weight | (4) Magnetic force |

23 The diagram below shows how the length of a spring changes when a load of 1 kg is hung on it.

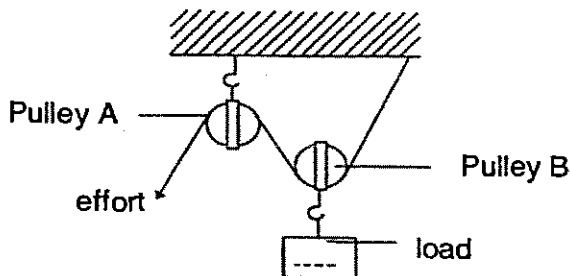


What will the final length of the spring be when a 3 kg load is hung on it?

- | | |
|-----------|-----------|
| (1) 9 cm | (2) 14 cm |
| (3) 15 cm | (4) 17 cm |

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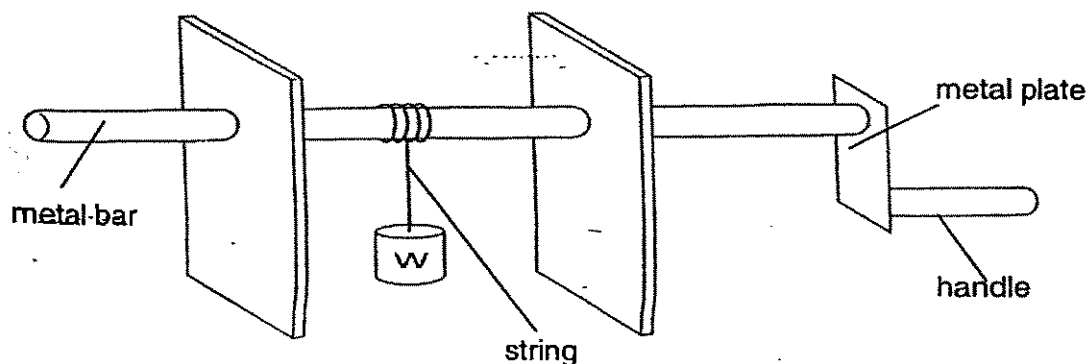
24 Study the diagram below.



What is the function of Pulley A?

- (1) To change the direction of force applied.
- (2) To reduce the effort needed to lift the load.
- (3) To reduce the distance moved by the effort.
- (4) To allow a small effort to overcome a heavy load.

25 The simple machine below has been constructed to lift the load W.



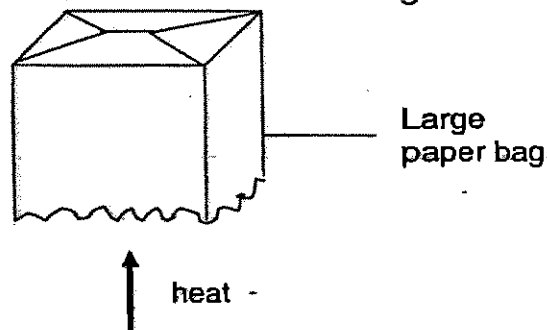
What can be done to reduce the effort needed to lift the load?

- (1) Use a longer string.
- (2) Use a longer handle.
- (3) Use a longer metal plate.
- (4) Use a metal bar with a bigger diameter.

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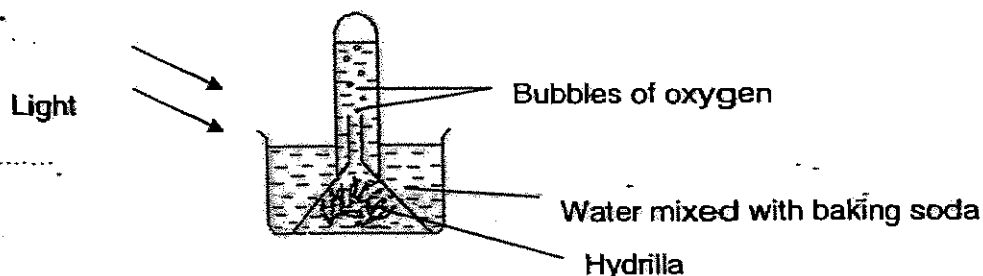
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- 26 The air in a large paper bag was heated as shown in the diagram below.

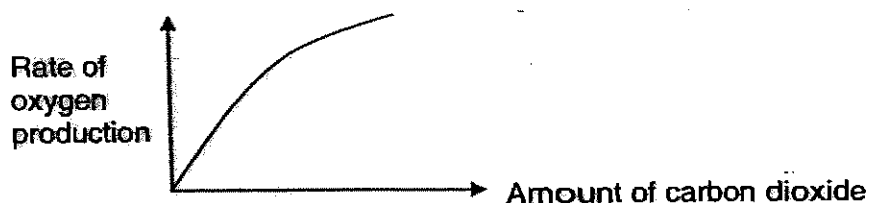


The bag rose through the surrounding air. What was the cause?

- (1) Heat always rises.
 - (2) The air in the bag expanded and rose.
 - (3) The mass of the paper bag decreased.
 - (4) The mass of the air in the bag increased.
- 27 Some students investigated the photosynthesis of hydrilla using the set-up shown below.



The rate of oxygen production was plotted against the amount of carbon dioxide present in the water in the graph shown below.



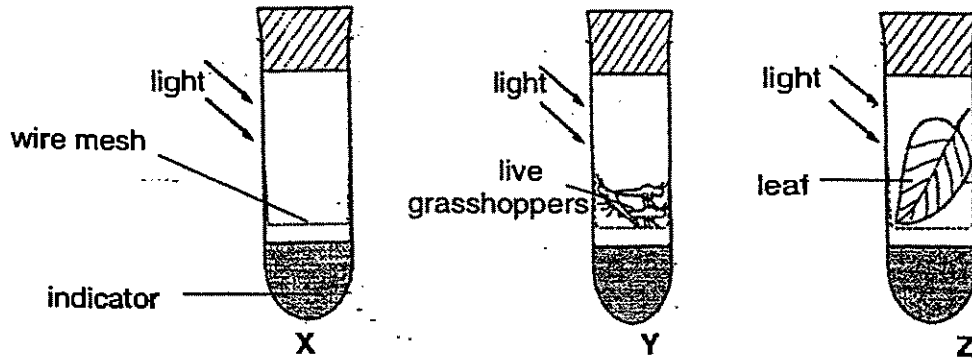
What conclusion could be deduced from the graph?

- (1) The amount of oxygen affects the rate of respiration.
- (2) The amount of oxygen affects the rate of photosynthesis.
- (3) The amount of carbon dioxide affects the rate of respiration.
- (4) The amount of carbon dioxide affects the rate of photosynthesis.

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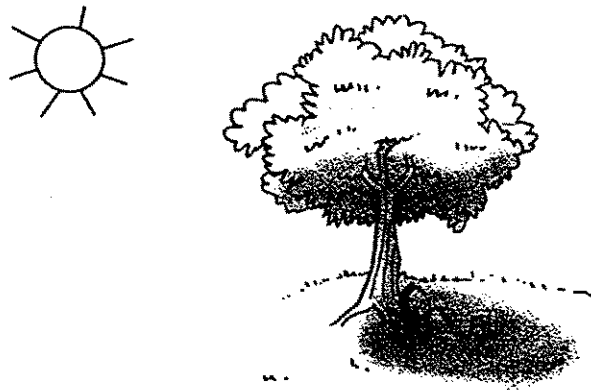
28. Three test-tubes are set up as shown below. At the start of the experiment, the indicator in each test-tube is red. The indicator changes from red to yellow when exposed to increased levels of carbon dioxide.



What will the colour of the indicator be in each test-tube after two hours?

	X	Y	Z
(1)	Yellow	Yellow	Yellow
(2)	Yellow	Red	Red
(3)	Red	Yellow	Red
(4)	Red	Red	Yellow

29. The picture below shows a boy lying under the shade of a tree.



Which one of the following statements is **incorrect**?

- (1) The tree blocks the light rays and creates a shadow.
- (2) No light is present in the shade so the boy cannot be seen clearly.
- (3) The shadow will change in size depending on the position of the sun.
- (4) The boy feels cooler because the tree absorbs some of the heat rays of the sun.

(Go on to the next page)

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- 30 Tony wound his clockwork mouse, then let it moved up a steep slope. The mouse ran up the slope, stopped halfway, then tumbled back to land with a crash at the base of the slope. Which one of the energy conversions shown in the table is incorrect?

	Activity	Energy Conversion
(1)	Winding the mouse	Chemical energy of Tom's muscle to elastic potential energy of the spring
(2)	Mouse moves up the slope	Elastic potential energy of the spring to gravitational potential energy
(3)	Mouse falls	Gravitational potential energy to kinetic energy of movement
(4)	Mouse lands with a crash	Kinetic energy of movement to sound and heat energy

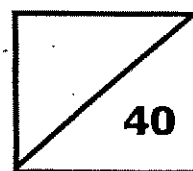
End of Booklet A



Rosyth School
Preliminary Examination for 2007
SCIENCE
Primary 6

Name: _____

Total
Marks:



Class: Pr _____

Register No. _____

Duration: 1 h 45 min

Date: 23 August 2007

Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 31 to 46, give your answers in the spaces given in this Booklet B.

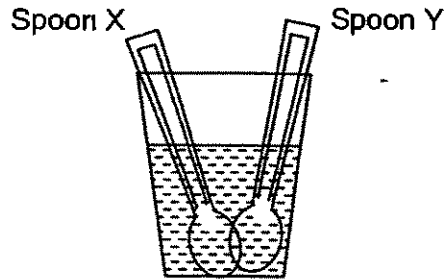
* This booklet consists of 15 pages (pg 19-33).

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PART II (40 MARKS)

For questions 31 to 46, write your answers in this booklet.

- 31 Spoons X and Y are made of different materials. Wei Ming placed Spoon X and Y into a cup of hot water as shown in the diagram below.



After a while, he touched the handles of both spoons.

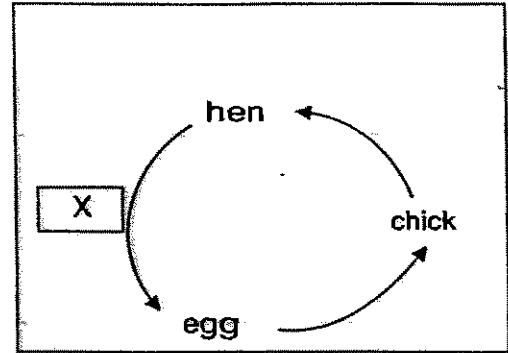
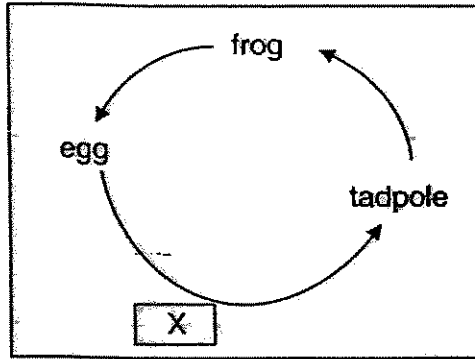
- (a) What do you think Wei Ming was trying to find out about the materials of Spoons X and Y? [1]

- (b) If Spoon X is made of ceramics and Spoon Y of stainless steel, what observation would Wei Ming make in the experiment and what could he conclude about the materials? [11]

Observation : _____

Conclusion : _____

32 The diagrams below show the life cycle of a frog and a hen.



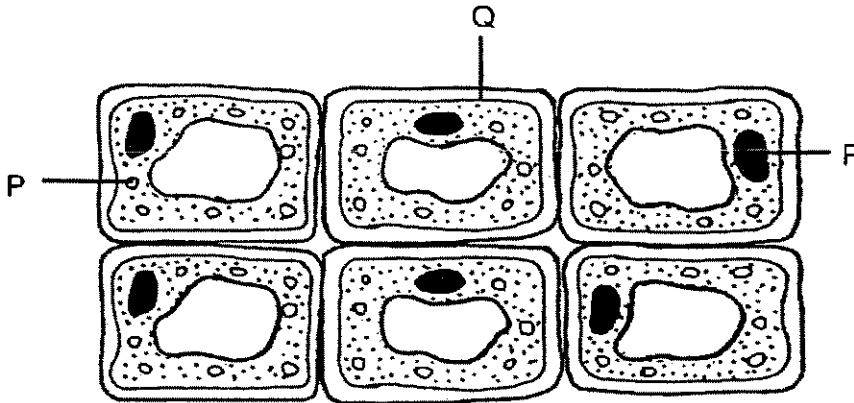
(a) What process must happen at X in both the life cycle of the frog and that of the hen such that their eggs will continue to develop into the next stage of each life cycle? [1]

(b) Why is Process X placed after the egg stage in the life cycle of the frog while Process X is placed before the egg stage in the life cycle of the hen? [1]

33 Fill in the boxes with suitable word(s) to compare the male reproductive systems of a rabbit and a hibiscus plant. [2]

	Rabbit	Hibiscus Plant
Part that produces the male sex cell.	(a) _____	Anther
Name of male sex cell	Sperm	(b) _____

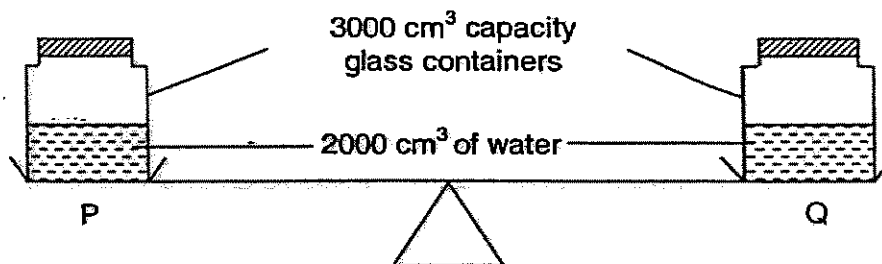
- 34 Keming used a microscope to examine some cells on a slide. The cells are shown in the diagram below. Parts of the cells are labelled P, Q and R.



Based on what he saw, Keming made the following statements. Put a tick (✓) in the appropriate boxes to indicate whether the statements are 'True', 'False' or 'Not Possible to Tell'. [2]

	Keming's statements	True	False	Not Possible to Tell
(a)	P gives support to the plant cell and helps it to maintain its shape.			
(b)	Q is partially permeable and controls the movement of materials in and out of the cell.			
(c)	These plant cells are from the leaf of the elodea.			
(d)	R is the part of the cell that contains chlorophyll needed for photosynthesis.			

- 35 Two similar glass containers, P and Q, both with a maximum capacity of 3000 cm^3 were both filled with 2000 cm^3 of water and capped. They were placed on a balance as shown in the diagram below.



Through a special hole in the cap, Raju managed to pump another 300 cm^3 of air into Container P and another 100 cm^3 of air into Container Q. The caps were resealed so that air could not escape and both containers were placed on the balance again.

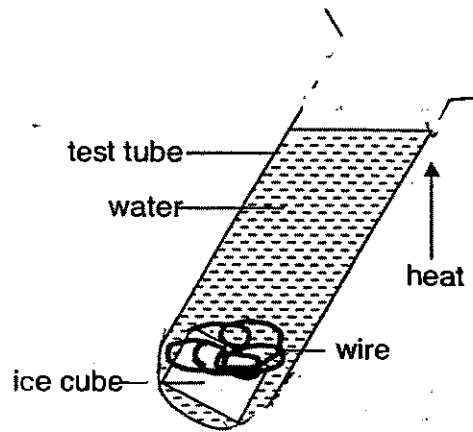
- (a) What happens to the balance? [1]

- (b) What is the volume of air in each container now? [1]

Volume of air in Container P : _____

Volume of air in Container Q : _____

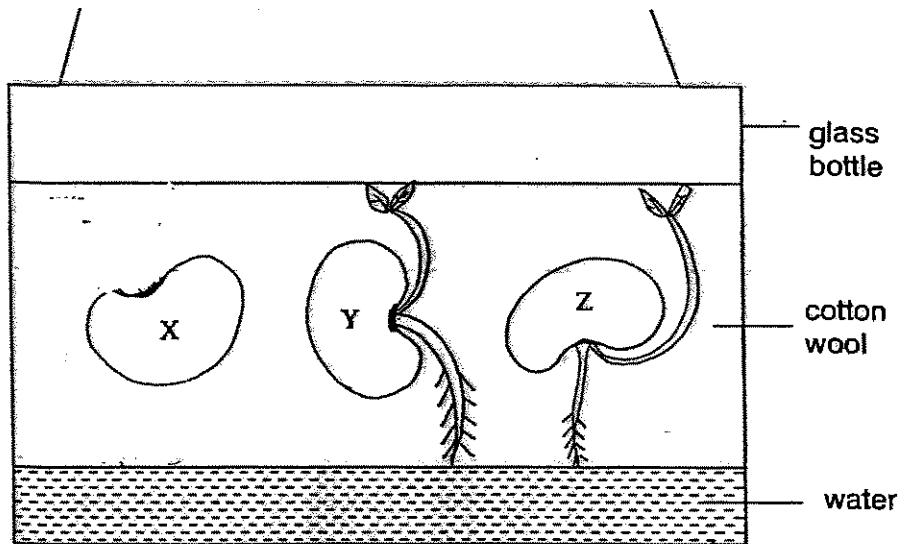
- 36 Kevin filled a test tube with water. He then placed an ice cube into the test tube and kept it to the base of the test tube with the weight of a piece of wire as shown in the diagram below.



Kevin then heated the water near the water surface. After a while, he noticed water droplets forming at two places of the test tube.

- (a) Draw some water droplets at each place clearly in the diagram above. [1]
- (b) The water at the surface boiled after a few minutes but the ice cube did not melt completely. Explain why. [1]

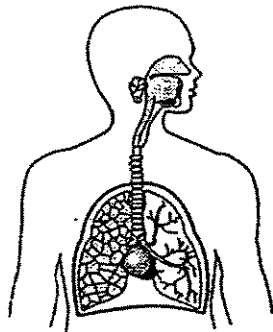
- 37 Mathew placed Beans X, Y and Z between some cotton wool and the inside wall of a glass bottle. The bottle was then filled with some water.



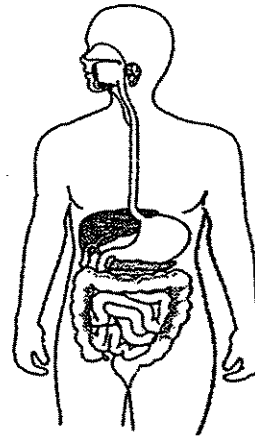
After a few days, Mathew noticed roots and shoots growing out of all three beans and he drew what he saw in the diagram above for Beans Y and Z.

- (a) Help Mathew to draw in the root and shoot of Bean X in the diagram above. [1]
- (b) What does the above experiment show about the growth of the root and shoot of a bean plant? [1]

38 The diagrams below show two systems in the human body.



System F



System G

(a) Give the name of each of the two systems shown. [1]

(i) System F: _____

(ii) System G: _____

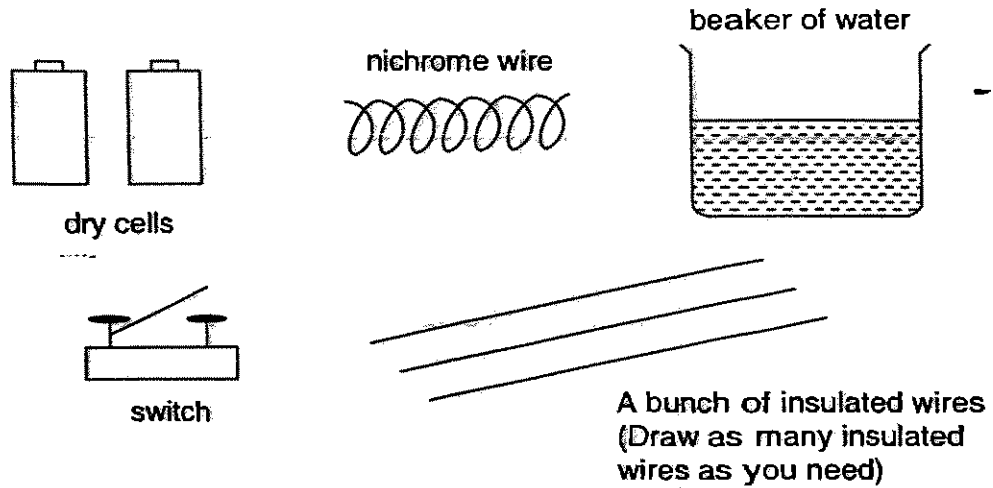
(b) Identify the part(s) in System F and the part(s) in System G that are richly covered with blood vessels? [1]

(i) System F: _____

(ii) System G: _____

(c) Why are ~~mem~~ blood vessels necessary

39. Ken wanted to show that a coil of nichrome wire could heat up a beaker of water. He used all of the following materials.

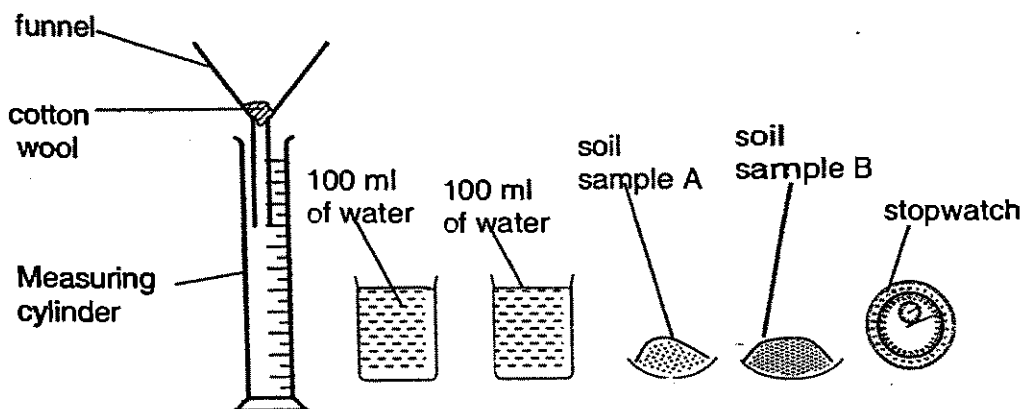


(a) In the space below, draw the electric circuit he had set up to conduct his experiment. Label your diagram. [2]

(b) How would Ken know if his circuit works? [1]

40. An experiment is conducted to find out which soil sample can hold water longer. The diagram below shows the materials needed for the experiment :

- A measuring cylinder
- A funnel containing some cotton wool
- Equal amount of two soil samples
- Two beakers of water
- A stopwatch.



The results of the experiment are shown in the table below.

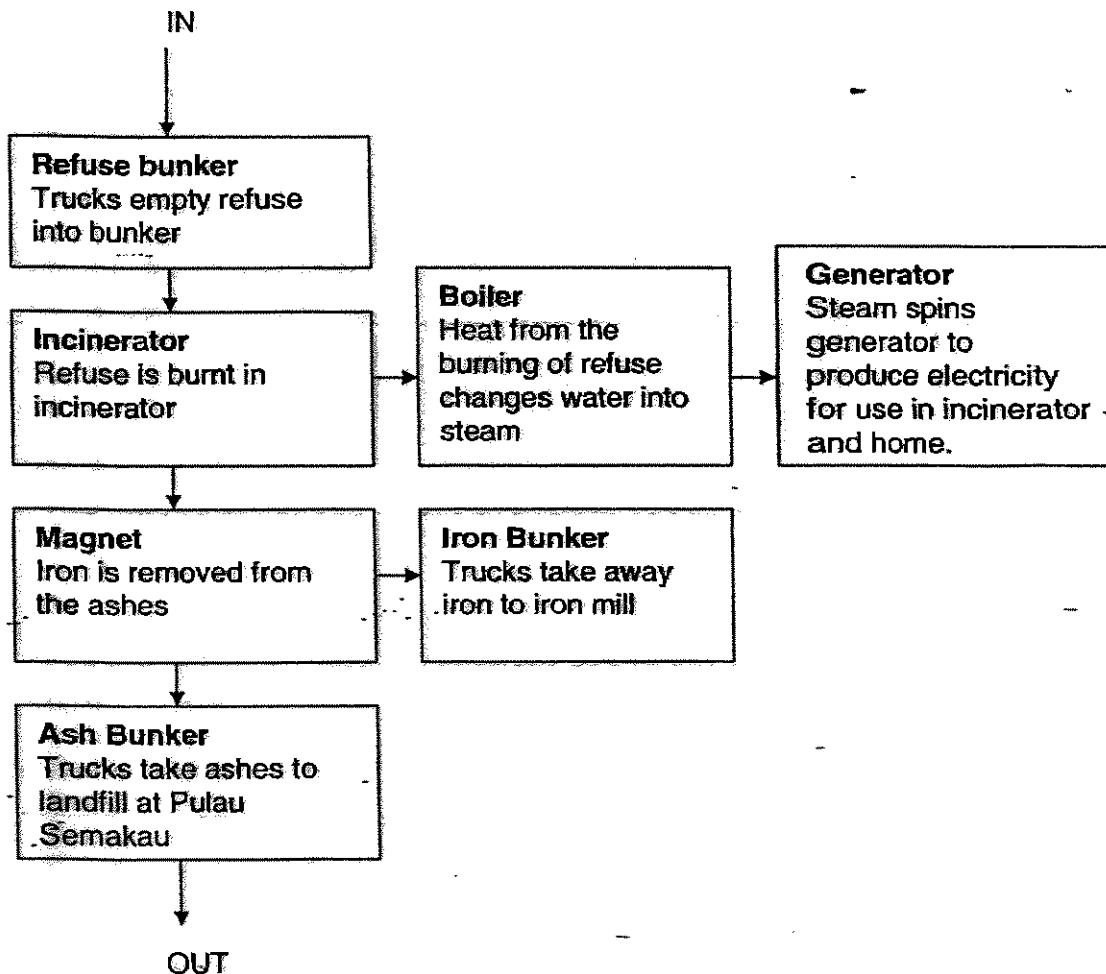
Soil Sample	Time taken to collect 60ml of water (s)
A	42
B	18

Describe the procedure to find out which soil sample can hold water longer. [1]

(b) Which soil sample is more suitable to grow a cactus? Why? [1]

(c) If soil sample A is garden soil, predict the time taken to collect 60ml of water from clayey soil. [1]

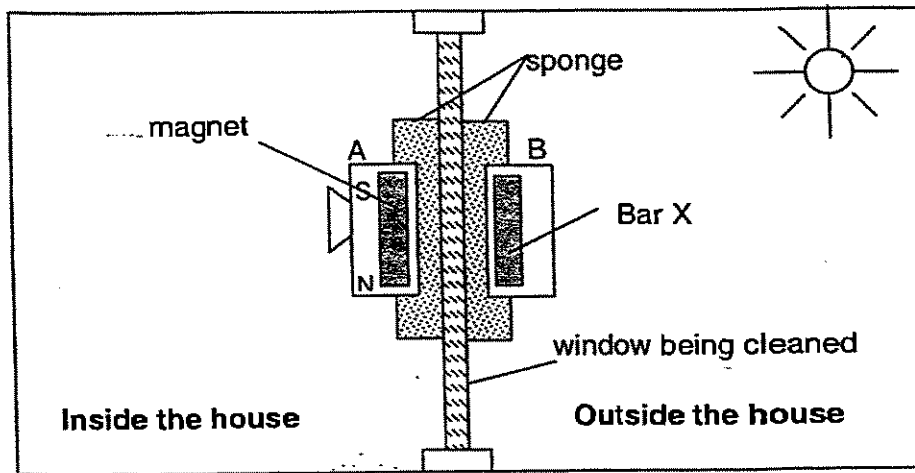
41. The diagram below shows what happens to the refuse that is taken to the Ulu Pandan Incineration Plant.



Explain how two practices carried out at the above incineration plant support the conservation of natural resources. [2m]

- (i) _____
- _____
- _____
- (ii) _____
- _____
- _____

42. The diagram below shows a two-piece device designed for cleaning both sides of a glass window pane at the same time. When part A is moved over the glass surface inside the house, part B follows it, moving over the glass surface outside the house.

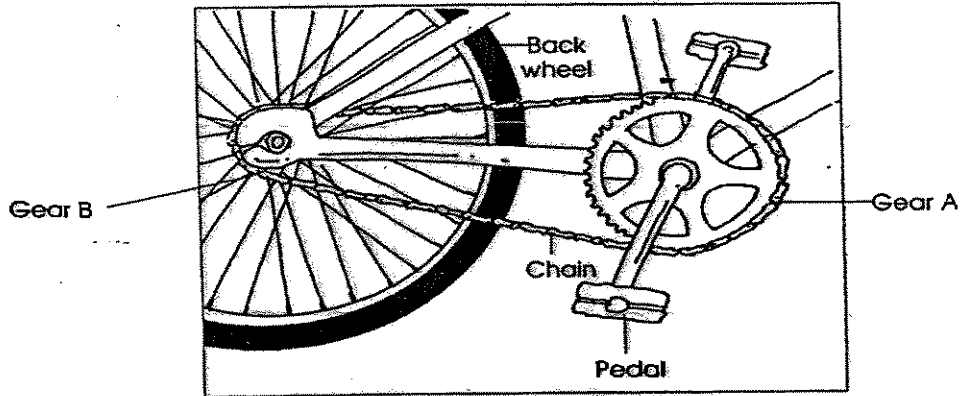


- a) What is the material of Bar X? [1]

- b) Explain why B follows the movement of A. [1]

- c) If the window panes were made of aluminium of the same thickness as glass, would the device work? Why? [1]

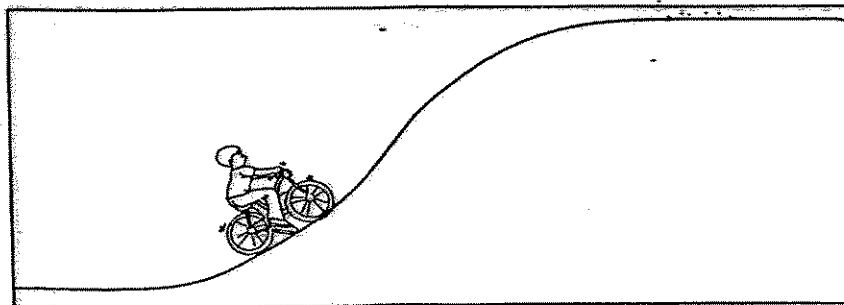
43. The diagram below shows the gear system of a bicycle.



(a) Explain how pedalling a bicycle makes it move forward. [1]

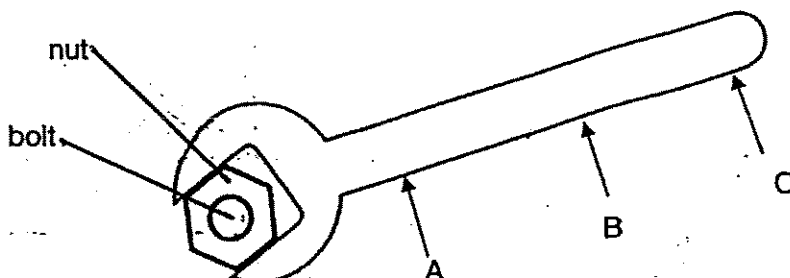
(b) Gear A and Gear B are not of the same size. Explain how this makes cycling easier. [1]

(c) A cyclist cycles up a slope as shown in the diagram below.



Identify two forces at work which makes the task difficult. [1]

44. The diagram below shows a spanner being used to unscrew a nut from a bolt.



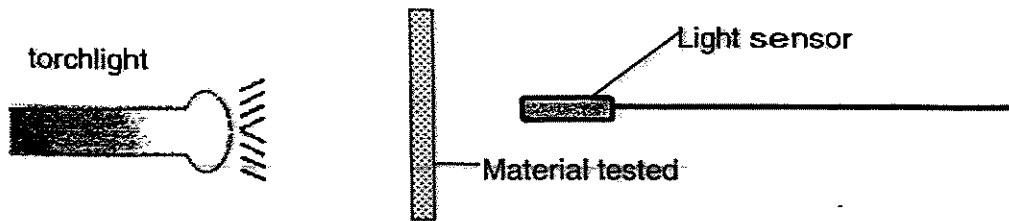
(a) Identify the type of simple machine used. [1]

(b) At which position (A, B or C) would you push the spanner? Why? [1]

(c) The nut and bolt are so rusty that it is difficult to turn the nut. Why is it difficult to turn the rusty nut? [1]

(d) What can be done to enable the rusty nut to be turned without increased effort? [1]

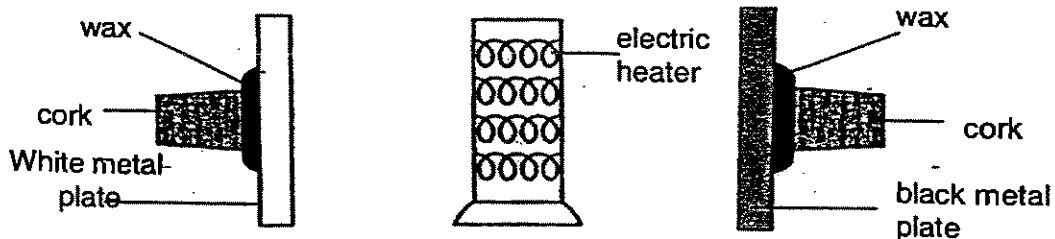
45. The diagram below shows an experiment in which a light sensor is used to determine the degree of transparency of different materials.



- (a) Describe the room where the experiment should be conducted to ensure a fair test. [1]

- (b) Identify two variables that must be kept constant. [1]

46. Two small corks were fixed to two identical plates, made of the same metal with wax. One metal plate was painted white and the other painted black. An electric heater was placed between them at an equal distance from the two plates as shown in the diagram below. The heater was switched on and after some time, one of the corks dropped off.



- (a) What was the aim of the experiment? [1]

- (b) Which cork would drop off first? Explain your answer. [1]

- (c) If the white metal plate were replaced by a black wooden block of the same size and thickness as the white metal plate, which cork would drop off first? Why?

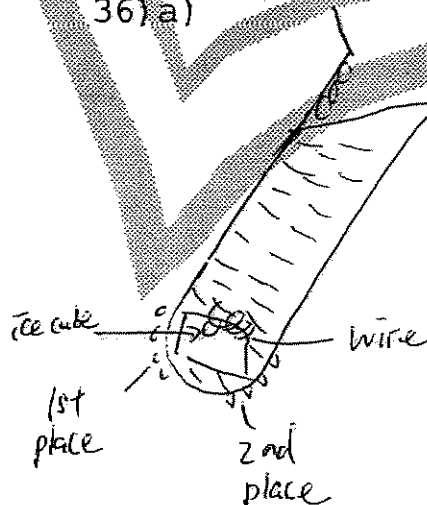
End of Paper



ANSWER SHEET

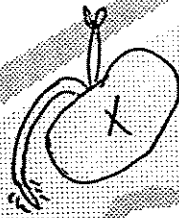
ROSYTH PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
SEMESTRAL ASSESSMENT (2)

- 1. 1 31) a) He was trying to find out which
- 2. 3 material of spoons X and Y is a
- 3. 1 better conductor of heat.
- 4. 3 b) i) The handle of spoon Y will feel
- 5. 3 hotter than the handle of spoon X.
- 6. 2 ii) Stainless steel is a better conductor
- 7. 2 of heat than ceramics.
- 8. 4
- 9. 1 32) a) Fertilisation.
- 10. 4 b) For the frog, the male will coat the
- 11. 2 eggs with a jelly-like substance when
- 12. 2 the female lays the eggs. For the hen,
- 13. 2 the male will have to fertiliser the
- 14. 1 eggs in the hen's body before the egg
- 15. 3 is hatched.
- 16. 2
- 17. 1 33) a) Tester b) Pollen
- 18. 2
- 19. 3 34) a) False b) True c) Not d) False
- 20. 3
- 21. 4 35) a) P will be heavier than Q, so P will
- 22. 1 move down while Q will move up.
- 23. 4 b) P: 1000cm³
- 24. 1 Q: 1000cm³
- 25. 3
- 26. 2 36) a)
- 27. 1
- 28. 3
- 29. 1
- 30. 2



36)b) Water is a poor conductor of heat so heat does not travel quickly to the ice cube.

37)a)



b) The root grows towards water while the shoots grow upwards towards sunlight.

38)a) i) Respiratory system.

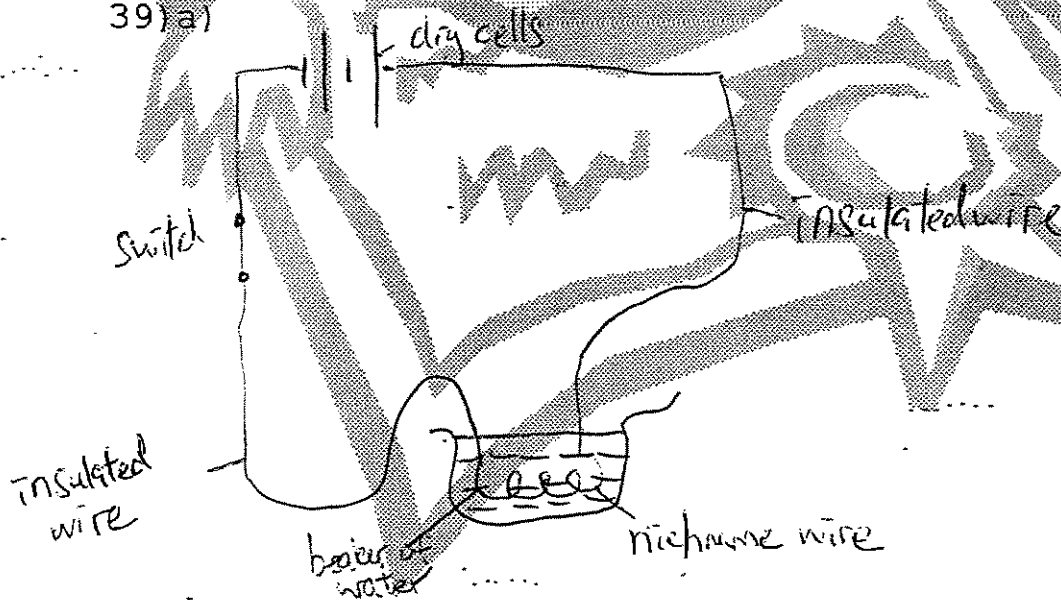
ii) Digestive system.

b) i) air sacs

ii) Small intestine.

c) The digested food absorbed by the blood stream has to be transported in the blood vessels to other parts of the body.

39)a)



b) He could feel the beaker of water from the outside and if the circuit works, the beaker of water will feel hot.

40) a) Pour soil sample A into the funnel and pour 100ml of water into the funnel. Use a stop watch to determine the time taken to collect 60ml of water in the measuring cylinder. Repeat the steps above for soil sample B.

- b) Soil sample B. It does not retain much water.
- c) 55 seconds.

41) i) We can save the Earth by recycling the iron by removing the iron from the ashes and bring them to the iron mill.

ii) The heat from the burning of refuse changes water into steam which spins the generator to produce electricity for other usage. In this case, we save the Earth by not burning fossil fuels for electricity.

42) a) Steel

- b) Steel is attracted by the magnet.
- c) Yes as magnetism can pass through aluminium.

43) a) When we pedal, Gear A moves, causing the chain to move. When the chain moves, Gear B moves causing the wheel to move forward.

- b) Gear A is bigger, so when we pedal, we do not need such a big force to move the gear.
- c) Frictional force and gravitational force.

44) a) Wheel and axle.

- b) Position C. It is the position which requires the least effort to push the spanner.
- c) We can apply lubricant to the rusty nut.

45) a) The room should be dark.

- b) The brightness of the bulb and the voltage of the batteries in the torchlight.

46) a) The aim was to find out whether a black surface or white surface absorbs more heat.

- b) The cork fixed to the wax on the black metal plate would drop off first.

c) The cork fixed to the wax on the black metal plate would drop off first. Metal is a better conductor of heat than wood.

SINGAPORE CHINESE GIRLS' SCHOOL

FIRST SEMESTRAL ASSESSMENT 2007

NAME: _____ ()

DATE: 8th May 2007

CLASS: PRIMARY 6SY / C / ~~6~~ / SE / P

SCIENCE

BOOKLET A

30 questions

60 marks

Total time for Booklets A & B: 1 h 45 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

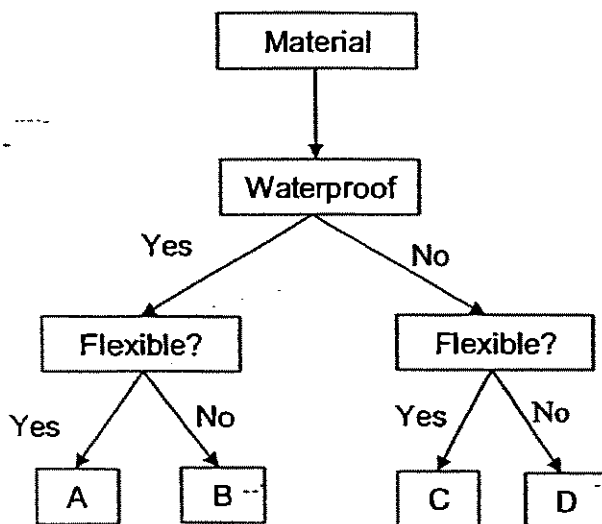
Class: Primary 6 SY / C / Q / SE / P

8th May 2007.
Duration: 1hr 45mins

Booklet A (60 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1 Study the classification chart of 4 different materials below.



Which material is most suitable to be used to make a raincoat?

- 1) A
- 2) B
- 3) C
- 4) D

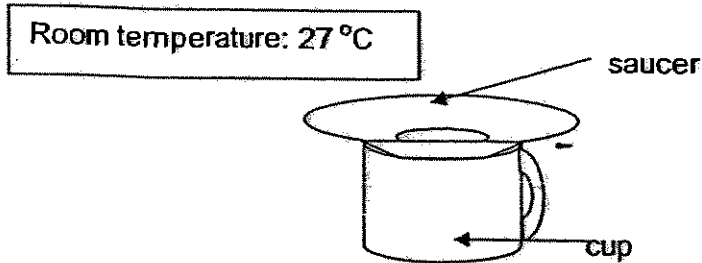
2 The melting points and the boiling points of substance A and B are shown in the table below.

Substance	Boiling Point (°C)	Melting Point (°C)
A	80	3
B	65	1

At which temperature is Substance A a solid and Substance B a liquid?

- 1) 0 °C
- 2) 2 °C
- 3) 65 °C
- 4) 78 °C

Eva poured some hot water into a cup and covered it with a saucer as shown in the diagram below. Study the table below to answer Questions 3 and 4.



The table below shows the change in temperature of the hot water over 10 minutes. Study the table carefully.

Time (min)	0	1	2	3	4	5	6	7	8	9	10
Temperature of hot water (°C)	99	80	77	74	71	68	65	63	60	58	56

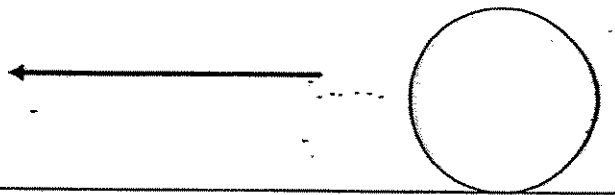
3 What is the most likely amount of time it would take for the temperature of the water to cool to 45 °C?

- 1) 5 minutes
- 2) 10 minutes
- 3) 18 minutes
- 4) 25 minutes

4 What will be the temperature of the water after 5 hours?

- 1) 0 °C
- 2) 10 °C
- 3) 27 °C
- 4) 45 °C

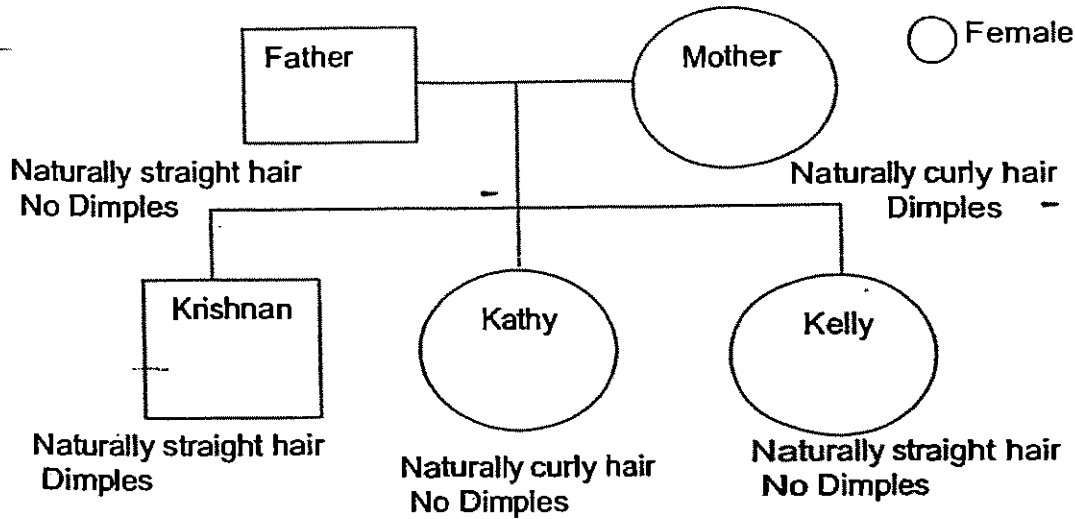
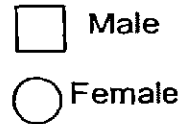
5 The ball in the diagram is rolling along the floor. It will come to a stop after rolling for a distance. The ball stops by itself because of _____.



- 1) frictional force
- 2) gravitational force
- 3) the shape of the ball
- 4) the weight of the ball

6 The following is the family tree of Krishnan.

Legend:

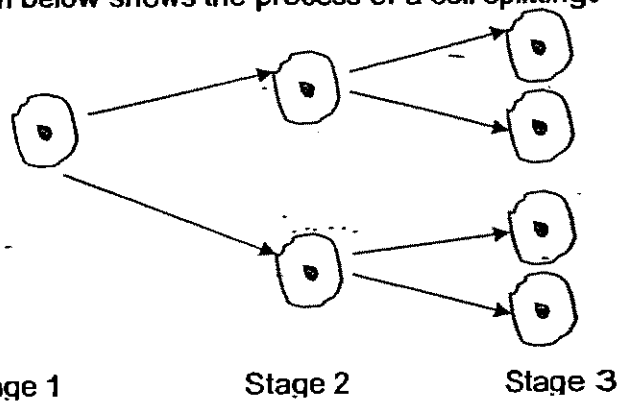


Which of the following conclusions can you draw from the above family tree?

- A: Krishnan has two sisters.
- B: Krishnan inherited his hair from his father.
- C: Kelly inherited both her features from her mother.
- D: Both Krishnan and Kathy inherited one feature from their father.

- 1) A and B only
- 2) B and D only
- 3) A, B and C only
- 4) A, B and D only

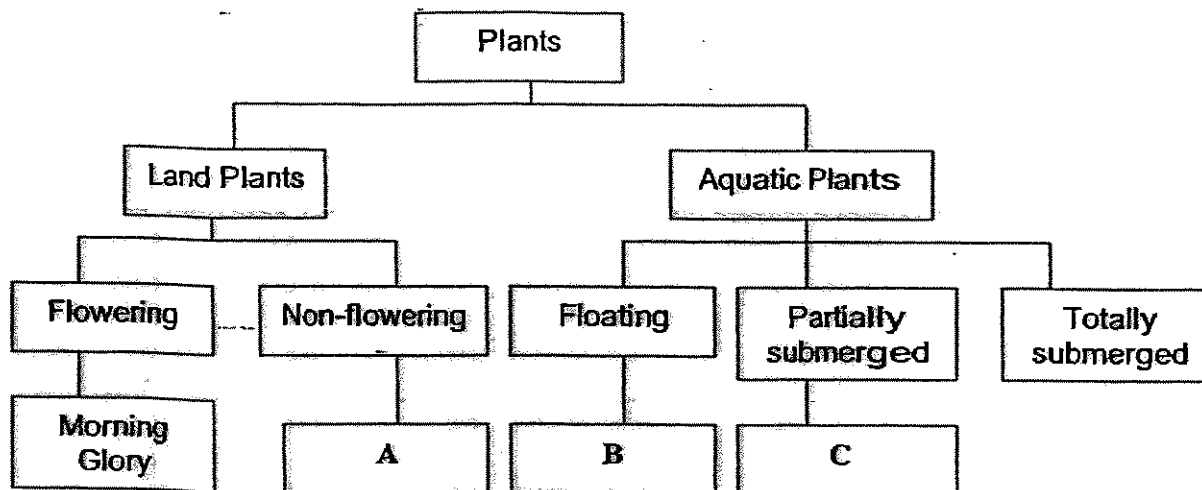
7 The diagram below shows the process of a cell splitting.



At which stage will there be 64 cells?

- 1) Stage 4
- 2) Stage 5
- 3) Stage 6
- 4) Stage 7

8 Study the classification chart below carefully.



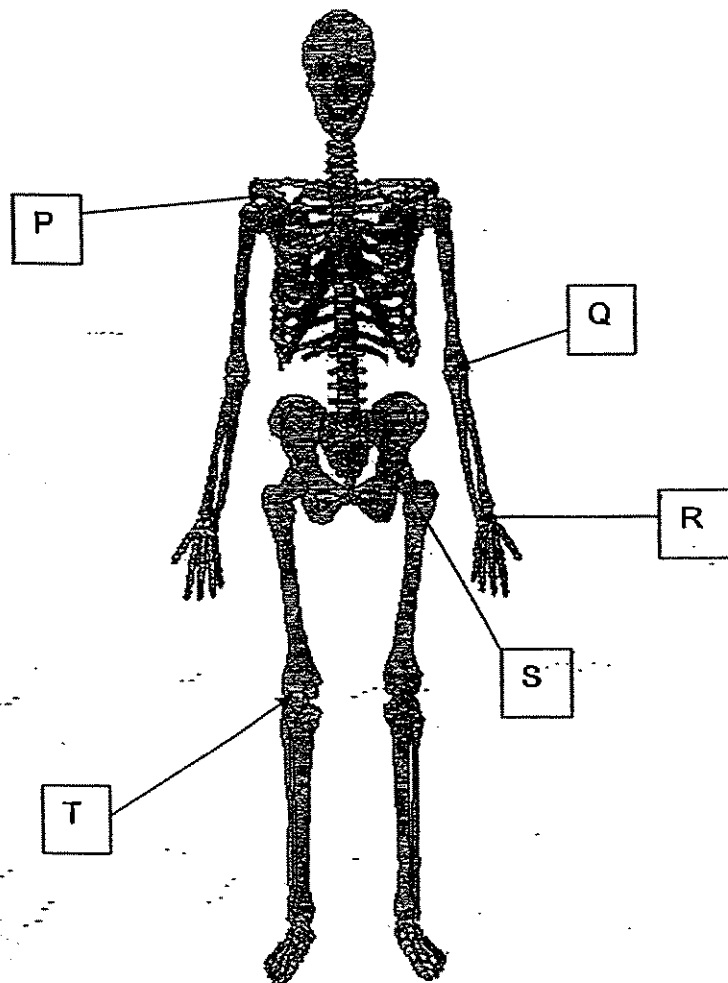
What plants are A, B and C likely to be?

	A	B	C
1)	moss	water moss fern	lotus
2)	fern	water hyacinth	cabomba
3)	hydrilla	duckweed	cattail
4)	cabomba	cattail	duckweed

9 A bowl has 300g of water in it. Lynette dissolved 50g of sugar in it. Three days later, the mass of the solution left in the bowl is 220g. The remaining solution contains _____.

- 1) 50g of sugar only
- 2) 220g of water only
- 3) 180g of water and 40g of sugar
- 4) 170g of water and 50g of sugar

10 The diagram below shows a human skeleton.

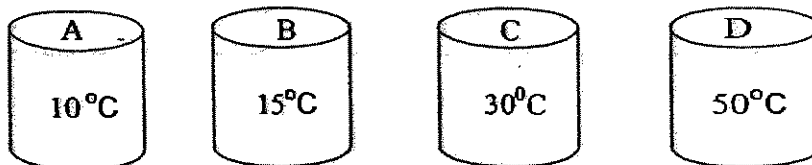


P, Q, R, S and T represent the different types of joints. Which of the following statements are correct?

- A) Q and T are hinge joints
- B) R and S are moveable joints
- C) Only P is a ball and socket joint

- 1) A only
- 2) C only
- 3) A and B only
- 4) A, B and C only

- 11 Jason left 4 cups on a table in a room that has a temperature of 28°C. On which cup will condensation take place?



- 1) A only
 2) A and B only
 3) B and C only
 4) C and D only

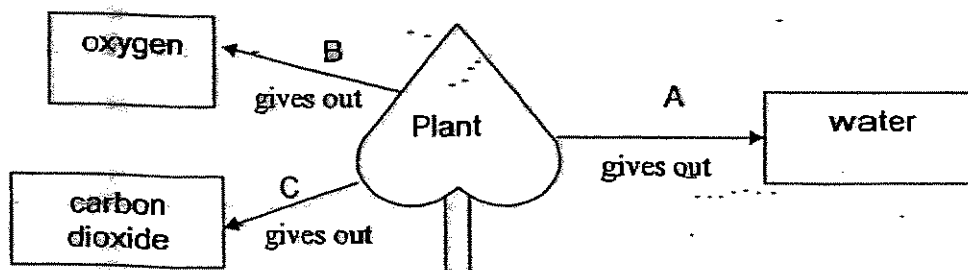
- 12 The table below shows the heartbeat of 3 pupils.

Pupil	No. of heartbeat per min
Joan	75
Ellen	120
Kim	90

What is one possible reason for Ellen's heartbeat to be faster than the rest? She may be _____.

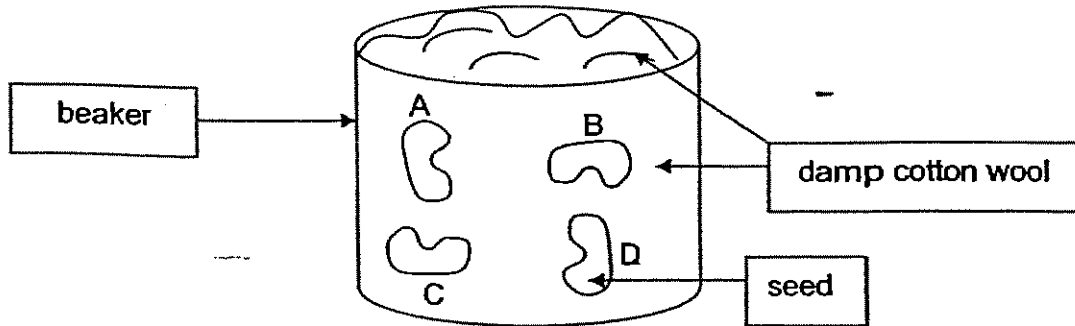
- 1) taking a nap
 2) watching television
 3) running after a bus
 4) taking a leisurely stroll

Study the diagram below and answer Questions 13 and 14.



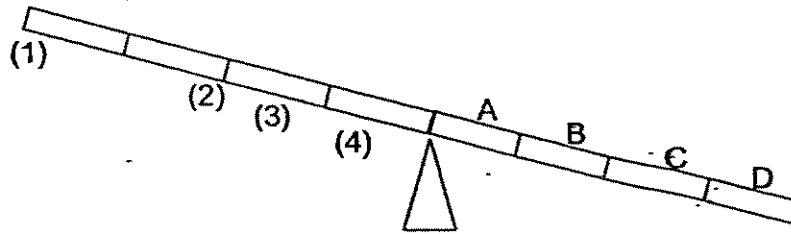
- 13 What process is taking place at A?
- 1) Breathing
 2) Respiration
 3) Transpiration
 4) Photosynthesis
- 14 Which one of the following is true? Process _____
- 1) B takes place all the time
 2) C takes place only at night
 3) A takes place only in the day
 4) A and B can take place in the day

- 15 Ian took 4 seeds and grew them in 4 different positions as shown in the diagram below. The beaker was placed on a table in a room. Which of the seeds would have its shoot growing upwards and its roots growing downwards when it germinate?



- 1) B only
 2) C and D only
 3) A, B and D only
 4) A, B, C and D

- 16 The following diagram shows a see-saw. Lucy sits at point B on the see-saw. She weighs 35kg. Nally sits on the opposite side of the see-saw and she weighs 20 kg. At which point must Nally sit to balance the see-saw?

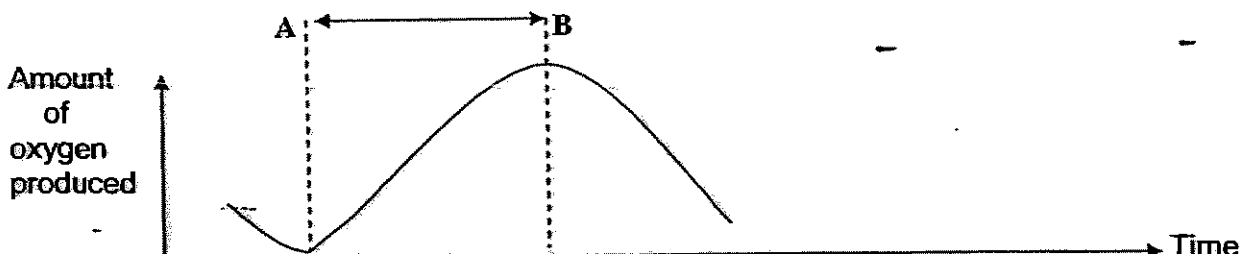


- 17 Chemical potential energy \longrightarrow electrical energy \longrightarrow kinetic energy
 +
 heat energy
 +
 light energy
 +
 sound energy

Which of the following does not enable the energy transformation shown above?

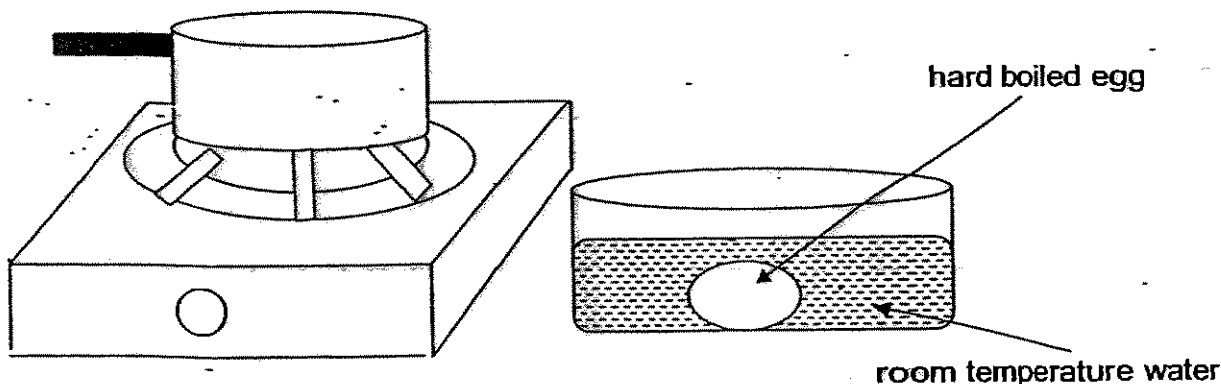
- 1) laptop
 2) toy robot
 3) computer keyboard
 4) washing machine

- 18 Shu Ming conducted an experiment to investigate the rate of photosynthesis of a plant. She measured the amount of oxygen produced by the plant over a period of time. The graph below shows the results of her investigation.



There was a rise in the amount of oxygen produced between stage A and B. What could be the time frame during this period?

- | | |
|------------------|------------------|
| 1) 7 am to 10 am | 3) 4 pm to 6 pm |
| 2) 12 pm to 3 pm | 4) 7 pm to 10 pm |
- 19 Mother transferred a hard-boiled egg from a boiling pot to a bowl containing water at room temperature water. Mother made some observations and noted them.

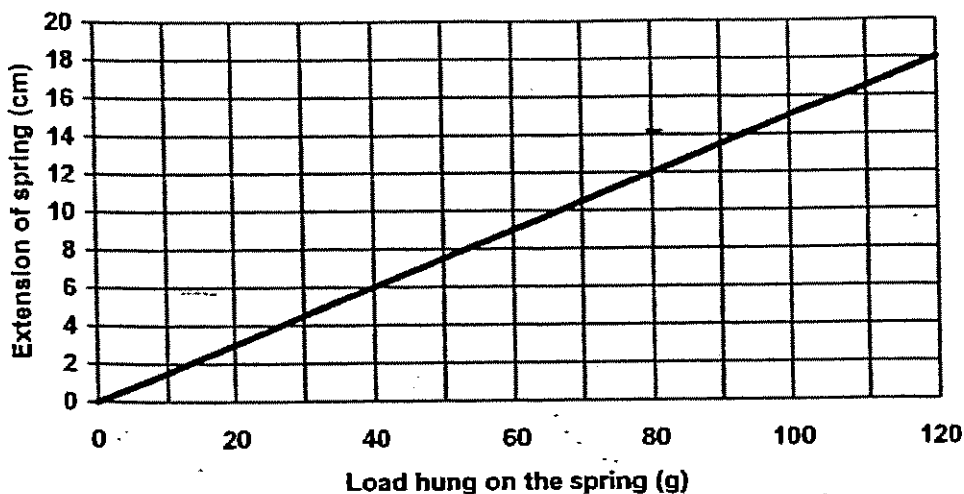


All statements below refer to interaction in the bowl.

- A: The egg lost heat to the water.
- B: The water gained heat from the egg.
- C: Heat energy travels from a hotter place to a cooler place.
- D: The level of water increased after mother placed the egg in.
- E: The temperature of the water falls after Mother placed the egg in.

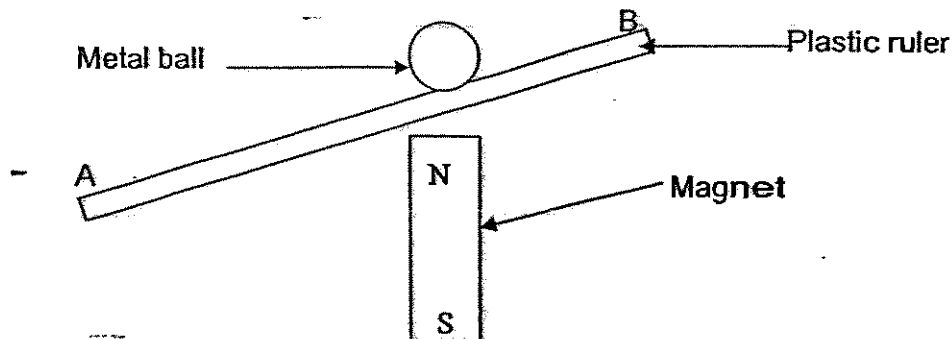
- | | |
|--------------------|-----------------------|
| 1) A and B only | 3) A, B, C and D only |
| 2) A, B and C only | 4) A, B, D and E only |

- 20 Which one of the following best describes the relationship between the extension of the spring and the load?



- 1) The heavier the load, the shorter the spring
 2) The heavier the load, the longer the extension of spring
 3) The lighter the load, the faster the rate of extension of spring
 4) The heavier the load, the faster the rate of extension of spring
- 21 In which of the following electrical appliances is heat energy produced as an unnecessary by-product?
- | | |
|----------|---------------|
| A) iron | C) television |
| B) dryer | D) computer |
- 1) A and B only
 2) A and C only
 3) C and D only
 4) B and D only
- 22 Which one of the following statements is **true** about conductors/insulators of electricity?
- 1) Water cannot conduct electricity
 2) All conductors of electricity are made of metal
 3) Insulators of electricity are magnetic materials
 4) All electrical wires are conductors of electricity

Jeffrey set up an experiment as shown in the diagram below. Study the diagram below to answer Questions 23 and 24.



23 As he rolled the metal ball down the plastic ruler, the metal ball was suspended along the ruler as shown above. What was the force that was stopping the ball from moving towards position A?

- 1) frictional force
- 2) magnetic force
- 3) gravitational force
- 4) elastic spring force

24 What does this experiment show?

- A) Gravity helps to move the ball down
- B) Magnetic force can pass through plastic
- C) The metal ball is made of non-magnetic material
- D) The magnetic force is stronger than the gravitational force

- 1) A and B only
- 2) B and C only
- 3) B and D only
- 4) A, B and D only

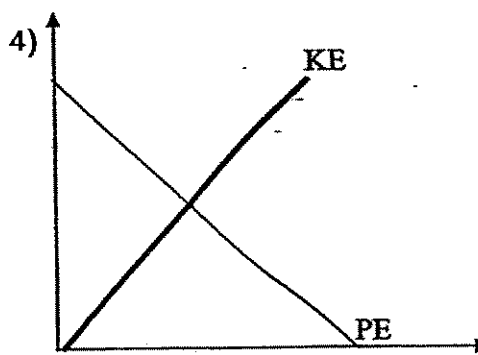
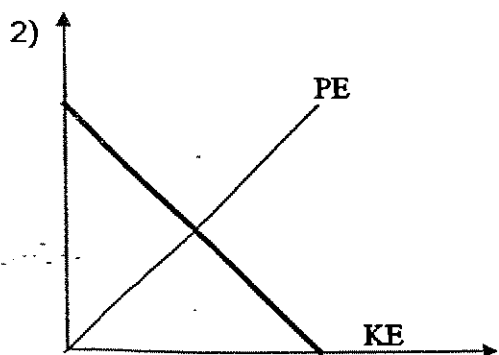
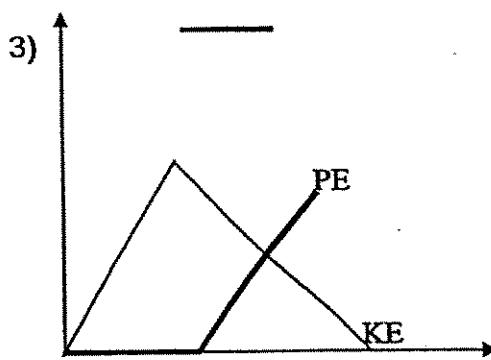
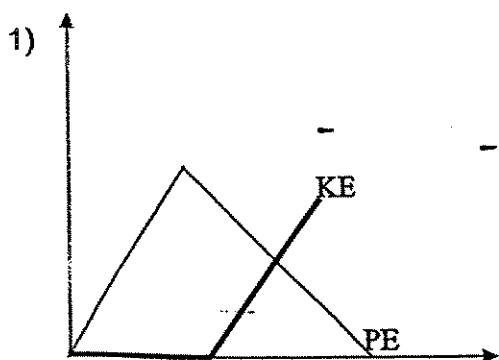
25 The table below shows the properties of solids, liquids and gases. An 'X' means that the property is present.

Properties	(A)	(B)	(C)
Occupies space	X	X	X
Has a definite shape	X		
Has a definite volume	X	X	
Can be compressed			X

Which of the following best describes A, B and C?

	A	B	C
1)	Coffee powder	Oil	Nitrogen
2)	Milk	Oxygen	Tissue paper
3)	Rain	Snow	Apple juice
4)	Alcohol	Steam	Wind

26 A toy car has already been wound up. Which one of the following graphs indicates the change of energy in the toy car when it is released?



27 Ridaah was trying to find a suitable analogy to represent the functions of different parts of a plant cell. She came up with the following table to illustrate her analogy. Which one of the following is **incorrect**?

	Factory	Parts of the Cell	Functions
1)	Entrance to the Factory	Cell membrane	It controls the substances that enter and exit the cell.
2)	Assembly line in the Factory	Nucleus	contains genetic information that controls all the activities that take place in the cell.
3)	Structure of the Factory	Cell Wall	a stiff material, which gives plant cells their regular shapes.
4)	Canteen in the Factory	Chloroplast	pigment that ensures that photosynthesis can take place so that there is food for the cell

- 28 Siti soaked a plant and an animal cell of similar size in two similar dishes containing the same amount of water overnight. The next day, she observed the cells under the microscope and noticed that the animal cell had burst and that the plant cell looked more bloated. She drew the following conclusions. Which of the following conclusions are correct?

- A: The animal cell is more waterproof than the plant cell.
 B: The plant cell is bigger and therefore can absorb more water.
 C: The animal cell has only a thin layer of cell membrane. When too much water enters it, it bursts.
 D: Plant cells have cell walls made of cellulose which is a very strong material which prevents the cell from bursting.

- 1) A and B only
 2) C and D only
 3) A, B and C only
 4) B, C and D only

- 29 David wanted to know how different types of soil would affect plant growth. He grew two plants, one in sandy soil and one in garden soil. He put Pot A in the dark and Pot B in the light.

	Pot A	Pot B
Types of soil	sandy	garden
Position	dark	light
Type of plant	rose	hibiscus
Size of pot	small	small
Amount of water	300ml	300ml

Which of the following changes should he make so that the experiment would be fair test?

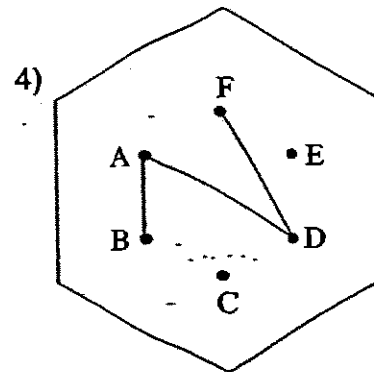
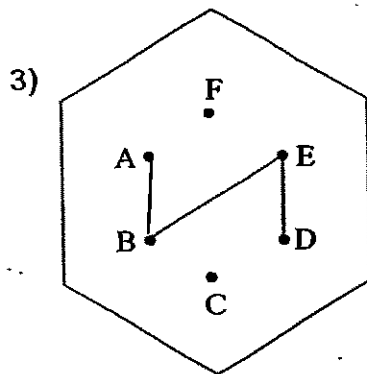
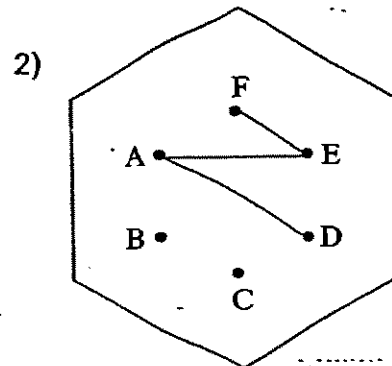
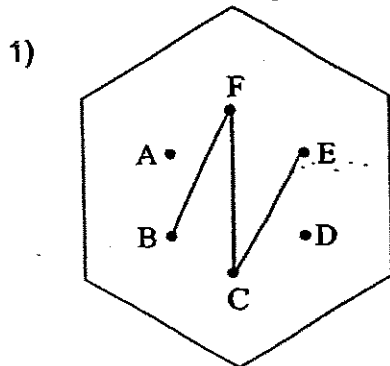
- A) He should put Pot A in the light.
 B) He should put garden soil into Pot A.
 C) He should use the same type of plant.
 D) He should put both plants in bigger pots.
 E) He should water the plant grown in sandy soil more as water flows through sand easily.

- 1) A and D only
 2) B and E only
 3) C and E only
 4) A and C only

30 The clips of a circuit card are tested with a circuit tester. The results are given in the table below.

Clips tested	Bulb of circuit tester
A and B	Lights up
C and E	Does not light up
A and F	Does not light up
B and D	Lights up
C and F	Does not light up

Which of the following shows the correct circuit card tested?



SINGAPORE CHINESE GIRLS' SCHOOL
FIRST SEMESTRAL ASSESSMENT 2007

NAME: _____ ()

DATE: _____

CLASS: PRIMARY 6SY / C / ϕ / SE / P

Booklet A	60
Booklet B	40
Total	100

Parent's Signature

SCIENCE

BOOKLET B

16 questions

40 marks

Total time for Booklets A & B: 1 h 45 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

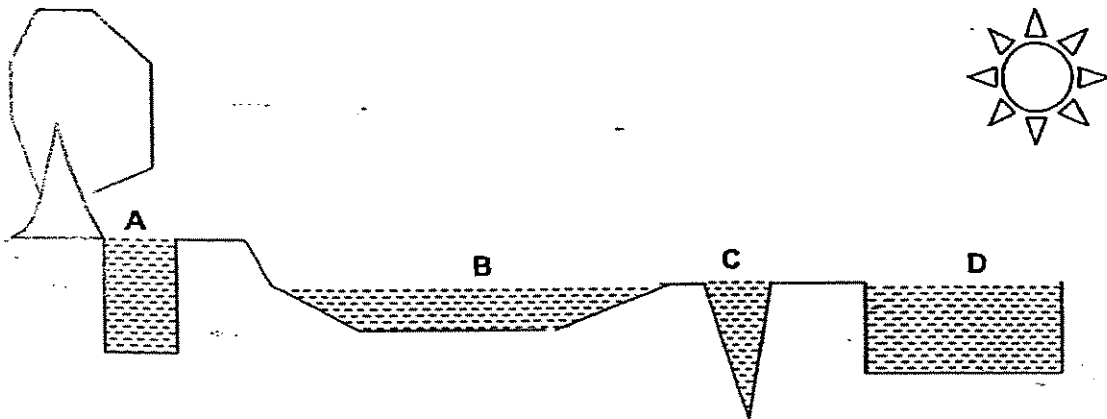
Name: _____ ()
Class: Primary 6 SY/C/§/SE/P

Date: 8th May 2007
Duration: 1hr 45 mins

Booklet B (40 marks)

Answer all the following questions.

31 Linda noticed four puddles of water on the ground. After a few hours, she noticed that the water had disappeared from some puddles.



With reference to the diagram, list two factors from the diagram above that could affect the rate of evaporation. (2)

a _____

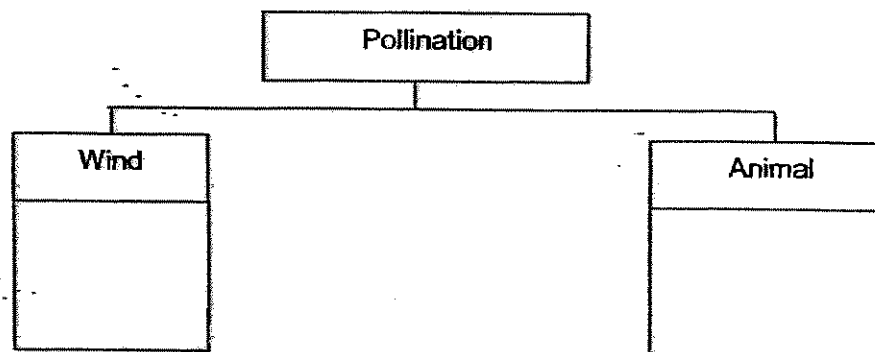
b _____



- 32 Candy took a walk in the Science Garden and noted the characteristics of 4 different plants A, B, C and D. She recorded her observations in the table as shown below.

Characteristics	A	B	C	D
Does it have small petals?	Yes	No	No	Yes
Is it colourful?	No	Yes	Yes	No
Does it have a nice fragrance?	No	Yes	Yes	No
Is the anther dangling outside the flower?	Yes	No	No	Yes
Does it produce nectar?	No	Yes	Yes	No

Based on the information given above, help Candy to complete the classification chart below to show how the flowers(A,B, C and D) are pollinated. (2)



- 33 Diagram A shows a cross-section of a stem and Diagram B shows part of the human circulatory system.

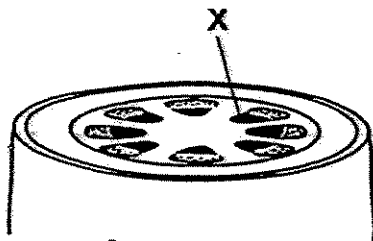


Diagram A

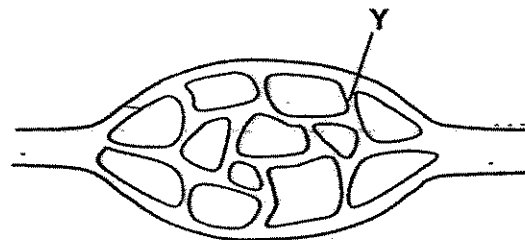
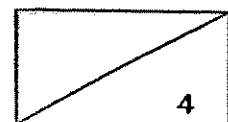
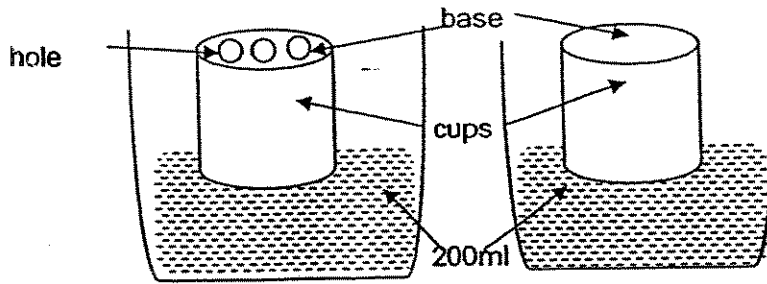


Diagram B

- a Name part X: _____ Y: _____ (1)
- b How are functions X and Y similar? (1)

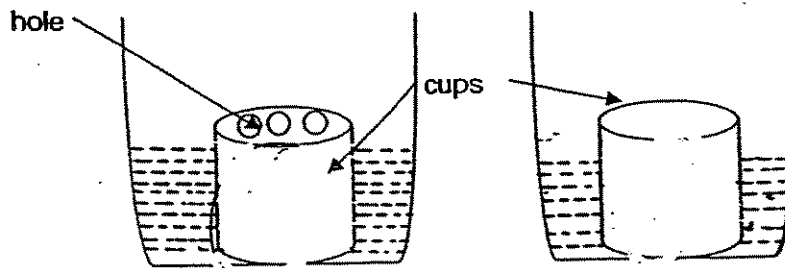


- 34 Janet intends to immerse two similar cups into two identical containers of water as shown in the diagram below.

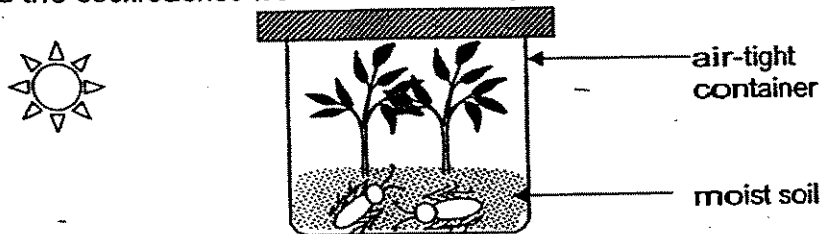


- a Will the water level be the same if both cups are totally immersed in the container. Why? (2)

- b Draw on the diagram below the water level in the cups when they are placed in the container as shown below. (1)

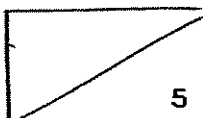


- 35 Peter set up an experiment as shown below. After 3 days, both the plants and the cockroaches were still alive.

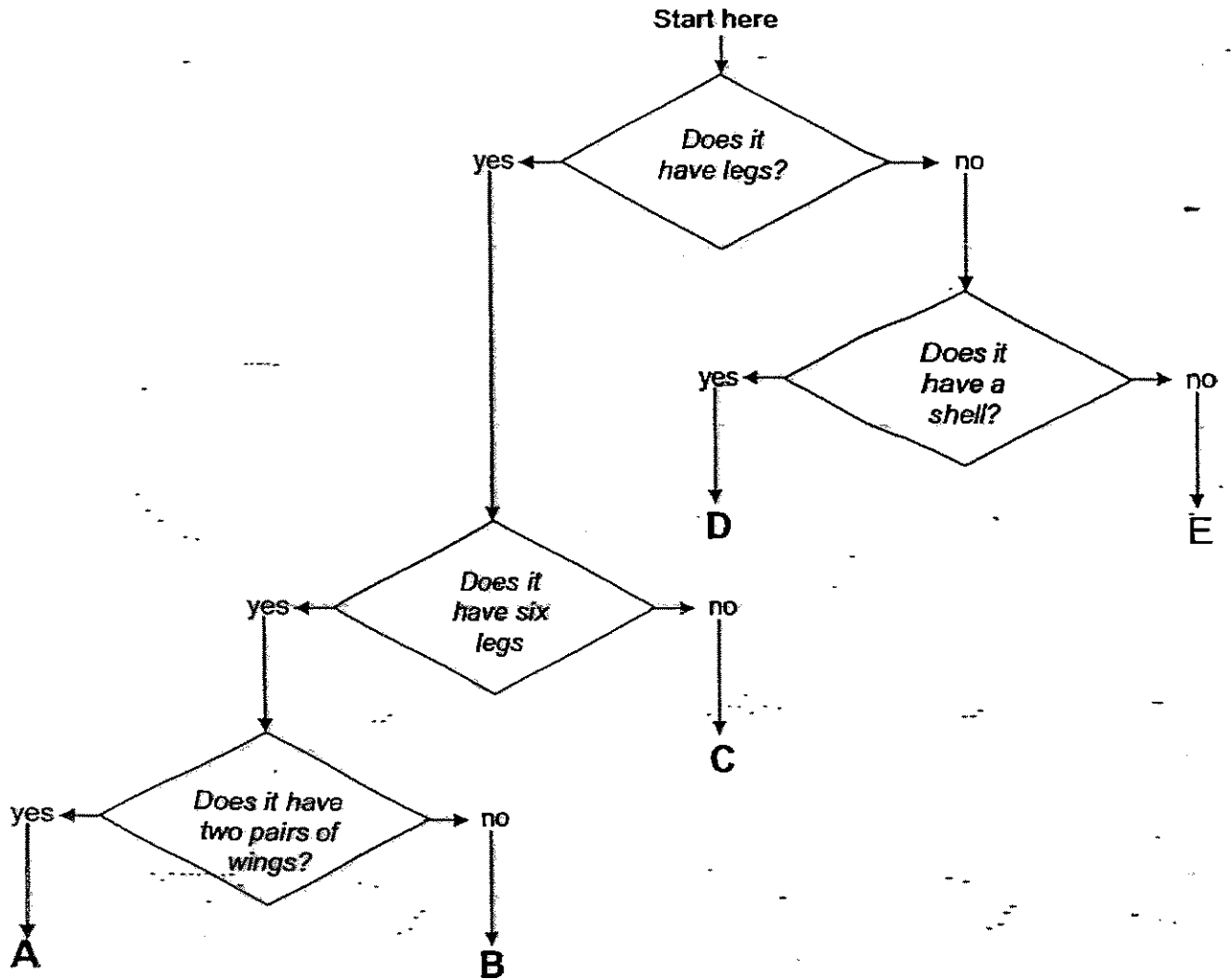


- a Explain how the plants helped the cockroaches to stay alive. (1)

- b Explain how the cockroaches helped the plants to stay alive. (1)



36 Study the classification table below. Use the information given to answer the following questions.



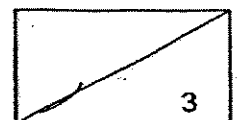
a Look at the organism below. Under which letter would you place this organism? (1)



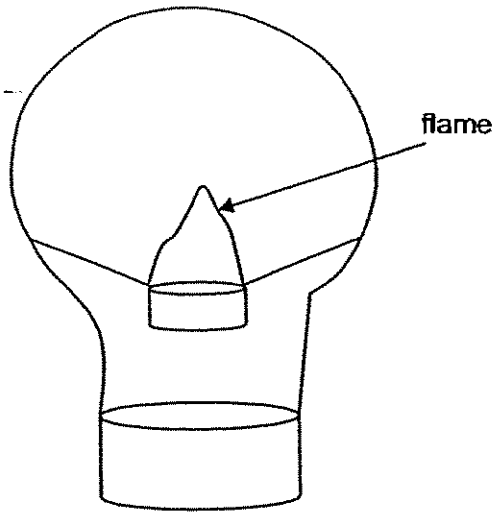
b Name an organism that best describes letter C and E. (2)

C: _____

E: _____



37 The diagram below shows a cross section of a hot air Balloon.



a Describe how the heat energy from the flame can help the balloon to rise up in the air? (2)

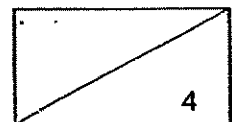
38 The diagram below shows 3 different fingerprints.



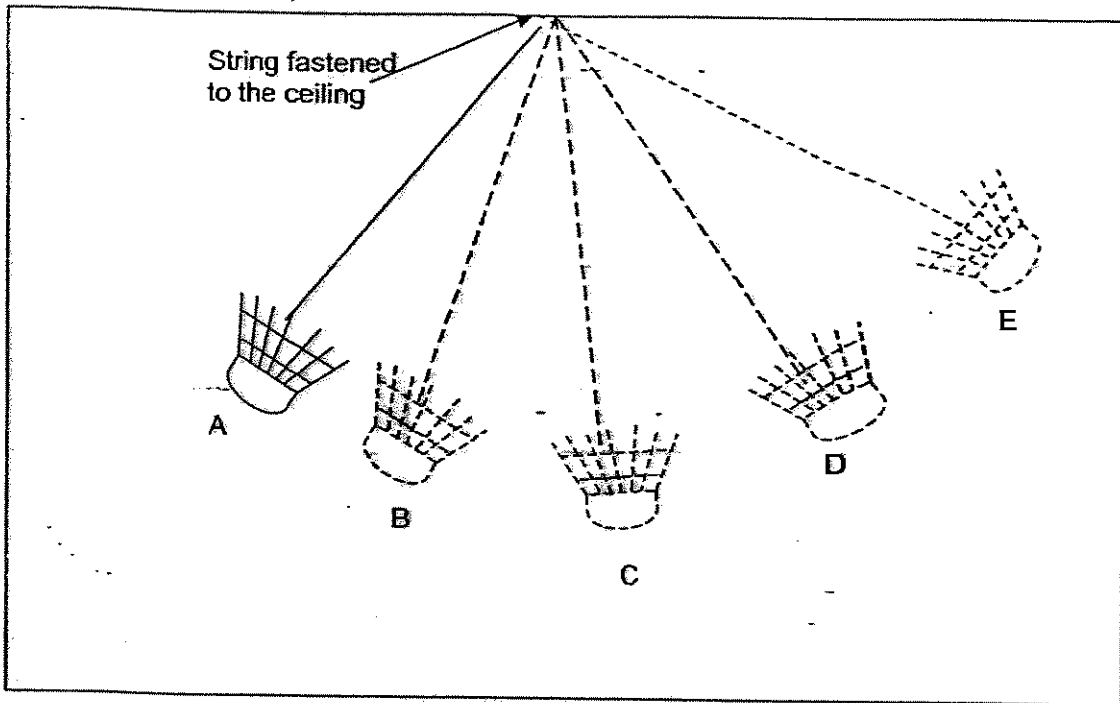
List two benefits of fingerprints.(2)

a

b

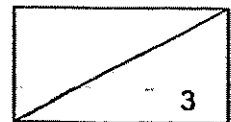


39 Kelly's coach told her to practise hitting the shuttlecock. She hits the shuttlecock at point A.

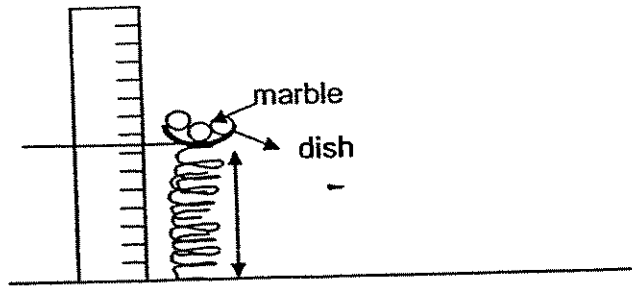


a How is the energy at point A different from the energy at point E? (2)

b At which position does the shuttle have the least potential energy?(1)



- 40 Luke wanted to find out if the number of marbles affects the length of spring.

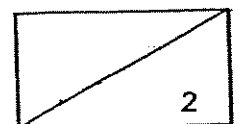


He began by placing 3 marbles on the dish and measured the length of the spring in cm. He repeated the same steps by adding more marbles to the dish and plotted a table to show the results.

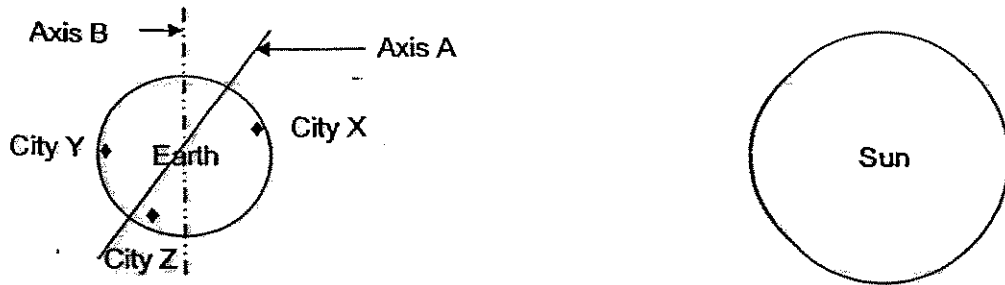
Number of Marbles	Length of Spring (cm)
0	52
3	43
6	34
8	28
10	?

- a What was the length of the spring when 10 marbles were placed on the dish?(1)

- b If this experiment was conducted on a planet with twice the gravity of Earth, what would be the length of the spring be when 3 marbles are placed in the dish? Why? (1)



41 Study the diagram below.



State if the following statements are true or false by putting a tick (✓) in the correct column. (3)

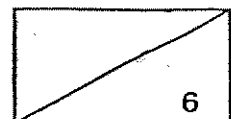
	Statements	True	False
a)	Axis B is the equator.		
b)	The Earth is spinning on Axis B.		
c)	City Z will be the 1 st to experience sunrise.		
d)	City Z will experience Sunrise before City Y.		
e)	The residents in City X is experiencing day time.		
f)	The residents in City Y are experiencing night time.		

42 A basketball rolled off a table and, bounced a few times before it came to a complete stop.

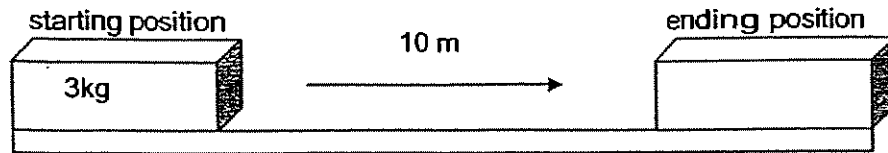


a Why was the ball not able to maintain the same height for each bounce?(1)

b What forms of energy does it possess when it was at position A? (2)



- 43 A load of 3kg was pushed across 4 different surfaces. The time taken to travel across the 4 different surfaces was recorded on the table below.

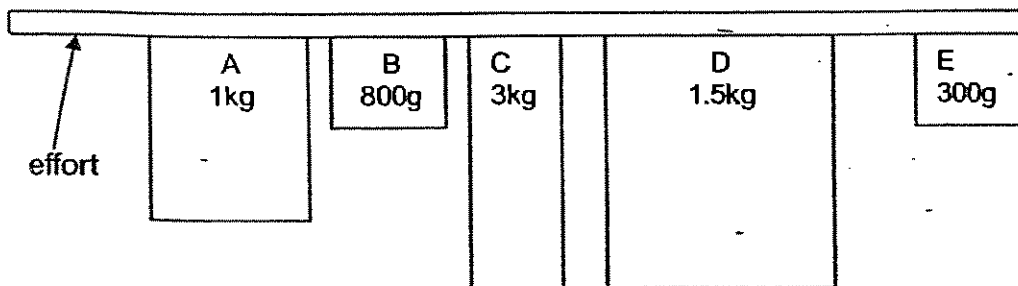


Match the type of surfaces against the time taken to move across to the ending position. (2)

Polished marble floor	Carpeted floor
Unpolished wooden floor	Plastic Mat

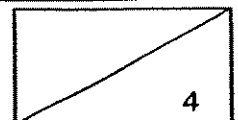
Time Taken (secs)	Type of Surfaces
30	
210	
70	
120	

- 44 Daniel hung 5 flags of different weight on a pole. He wanted to lift the pole at the point marked 'effort'. His friends told him that he could rearrange the flags to reduce the effort needed to raise the pole

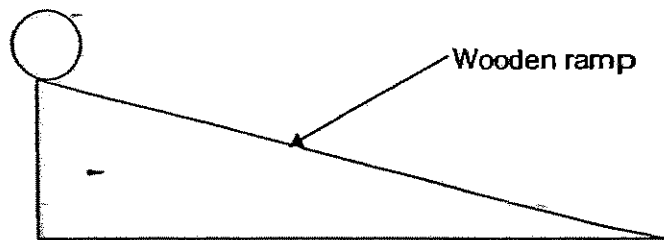


Using the letters A to E arrange, the flags so that less effort is needed to raise the pole. (2)

Effort	Flags				
Daniel	1 st	2 nd	3 rd	4 th	5 th



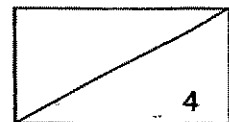
- 45 Alan rolled 3 metal balls down the wooden ramp and recorded the time taken to travel to the ground.



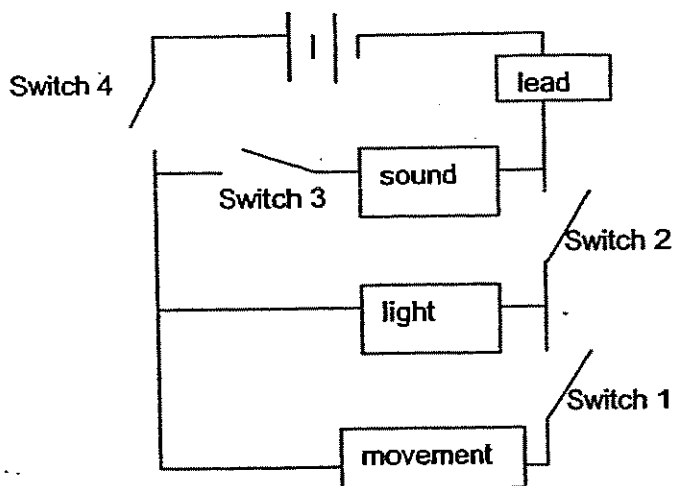
Type of ball	A	B	C
Mass of ball(kg)	5	10	7
Time taken (s)	6	2.5	4

- a What is the relationship between the mass of the ball and the time taken to travel to the ground? (2)

- b Give another two variables that must be kept constant in order for the experiment to be fair. (2)



- 46 Lynette was designing a toy that produces light, sound and movement. The diagram below shows the circuit she constructed.

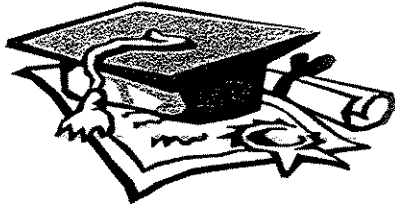


- a Complete the table to show which switches Lynette must close in order for the various energy to be activated. (2)

Energy to be activated	Which switch must be closed?
Movement and sound <i>light</i>	i)
Sound only	ii)

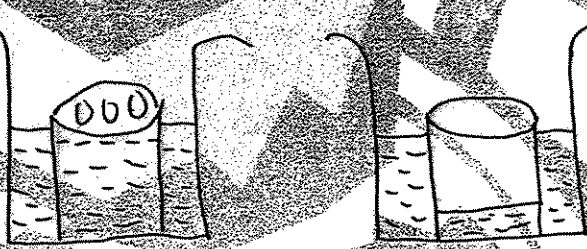
- b What forms of energy will be affected if the piece of lead was replaced by a piece of plastic? (1)





ANSWER SHEET

S C G S PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007 -
SEMESTRAL ASSESSMENT (1)

1. 1
2. 2
3. 3
4. 3
5. 1
6. 4
7. 4
8. 1
9. 4
10. 3
11. 2
12. 3
13. 3
14. 4
15. 4
16. 1
17. 3
18. 1
19. 3
20. 2
21. 3
22. 4
23. 2
24. 4
25. 1
26. 4
27. 2
28. 2
29. 4
30. 3
- 31) a) exposed surface area.
b) amount of water.
- 32) wind = A, D
Animal = B, C
- 33) a) X=xylem tube
Y=blood vessels
b) They transport water.
- 34) a) No. Water level in the cup with hole will be higher, because air escapes from the holes and water could easily enter the cup.
b) 
- 35) a) Cockroaches need oxygen to stay alive. Plants will give out oxygen during photosynthesis.
b) For photosynthesis occur, carbon dioxide is needed. Cockroaches give out carbon dioxide.
- 36) a) B b) C=spider E=Earthworm

37) a) The heat energy from the flame heats up the air above it. As hot air rises, it pushes the balloon up into the air.

38) a) Finger prints us to grab hold of things.
b) Everyone has a different finger print, so they different one person from another.

39) a) Point E has a greater amount of gravitational energy than point A.
b) Point C.

40) a) 22cm
b) 34cm. weight of marbles will be twice that on the planet.

41) a) F b) F c) T d) T e) T f) T

42) a) The energy had been converted to sound and heat energy. Therefore, energy have been lost after each bounce.
b) Kinetic energy and potential energy.

43) 30=polished marble floor.
210=carpeted floor.
70=plastic mat.
120=unpolished wooden floor.

44) C, D, A, B, E

45) a) The heavier the ball, the faster it is to travel to the ground.
b) 1) Length of ramp.
2) Effort used
3) Size of ball

46) a) i) switch 1, 2 and 4
ii) switch 4 and 3
b) 1) Sound energy
2) Light energy
3) Movement energy

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**SINGAPORE CHINESE GIRLS' SCHOOL
PRELIMINARY EXAMINATION 2007
PRIMARY 6 SCIENCE**

Name: _____ (. .) Date: _____

Class: Primary 6 SY / C / Q / SE / P

SCIENCE

BOOKLET A

30 questions

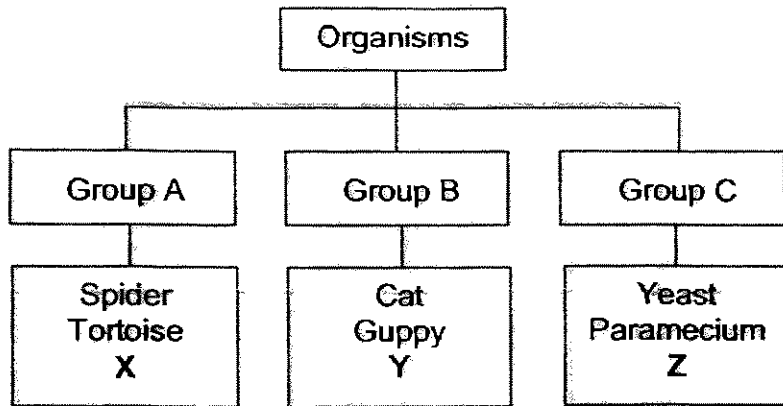
60 marks

Total Time For Booklets A & B : 1 h 45 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

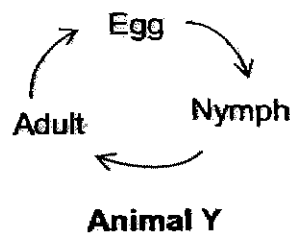
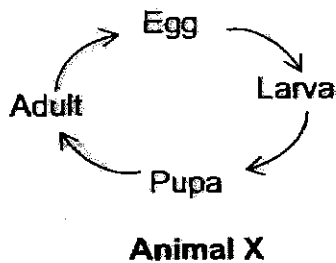
FOLLOW ALL INSTRUCTIONS CAREFULLY.

4) Which of the following animals are represented by X, Y and Z respectively?



	X	Y	Z
1)	Crocodile	Salmon	Euglena
2)	Duck	Rabbit	Earthworm
3)	Elephant	Mudskipper	Hydra
4)	Cobra	Horse	Amoeba

5) Study the life cycles of Animal X and Y below.



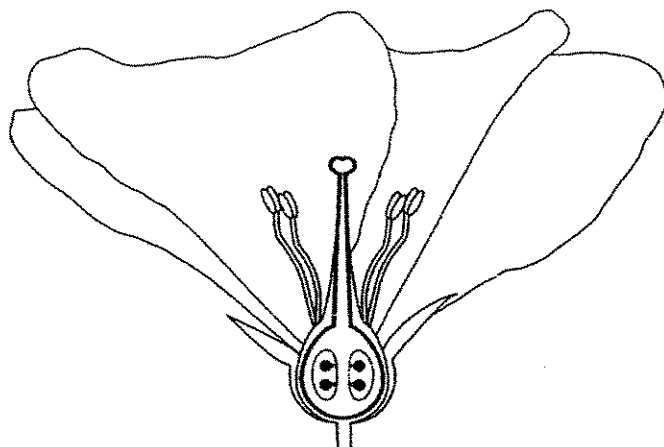
Based on the life cycles of Animal X and Animal Y, it can be inferred that

- ~~A~~: Animal Y has 3 stages in its life cycle while Animal X has 4.
- ~~B~~: Animal X lays eggs in water while Animal Y lay eggs on land.
- ~~C~~: The young of Animal X looks like the adult but the young of Animal Y does not.
- ~~D~~: Animal X takes a longer time than Animal Y to develop from an egg to an adult.

- ~~1)~~ A only
- ~~2)~~ B and D only

- ~~3)~~ A, B and C only
- ~~4)~~ A, B, C and D only

- 6) Observe the diagram of the cross-section of the flower below.



Which of the following statements can be deduced from the diagram?

- A: The flower has at least 4 anthers.
- B: The flower has both male and female parts.
- C: The fruit developed will have more than 1 seed.

- 1) A and B only
- 2) A and C only
- 3) B and C only
- 4) A, B and C

- 7) Study the chart below.

Plant	Grows near parent plant	Produces seeds enclosed in pods	Edible
W	✓		✓
X	✓	✓	✓
Y	✓	✓	
Z		✓	

Which of the following plants are represented by W, X, Y and Z respectively?

	W	X	Y	Z
*	Ginger	Balsam	Green bean	Yellow flame
*	Bryophyllum	Peanut	Rubber	Lallang
*	Rambutan	Lady's finger	Shorea	Angsana
*	Banana	Long bean	Saga	African tulip

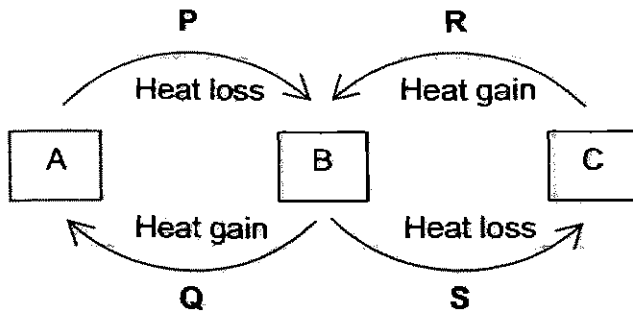
- 8) The following statements are some observations of matter made by Raja.

- A has a definite shape.
- B has a definite volume.
- C has no definite shape.
- D cannot be compressed.

Which of the following matter is definitely a solid?

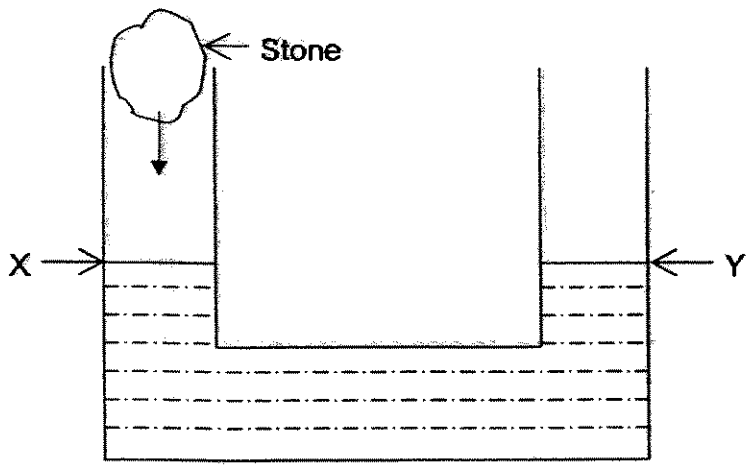
- 1) A only
- 2) A and C only
- 3) B and C only
- 4) A, B and C only

- 9) A, B and C represent the 3 states of water. Which 2 arrows indicate melting and freezing respectively?



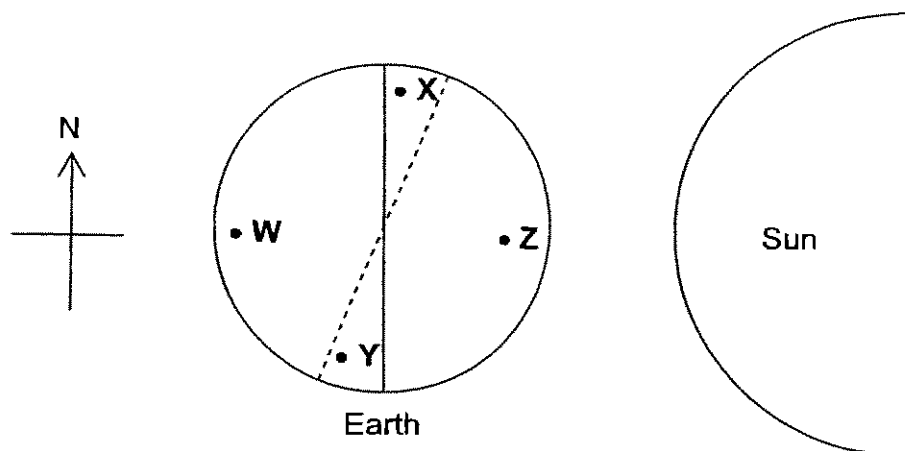
	Melting	Freezing
1) <input checked="" type="checkbox"/>	P	Q
2) <input checked="" type="checkbox"/>	Q	P
3) <input checked="" type="checkbox"/>	R	S
4) <input checked="" type="checkbox"/>	S	R

- 10) The container below has some water. What will happen to the water level at X and Y when the stone is placed into the container?



	Water level of X	Water level of Y
1) <input type="checkbox"/>	Increase	Remains the same
2) <input type="checkbox"/>	Decrease	Remains the same
3) <input type="checkbox"/>	Increase	Increase
4) <input type="checkbox"/>	Decrease	Increase

11) Ahmad is about to see the sunrise. At which position is he most likely at now?



- 1) W
- 2) X
- 3) Y
- 4) Z

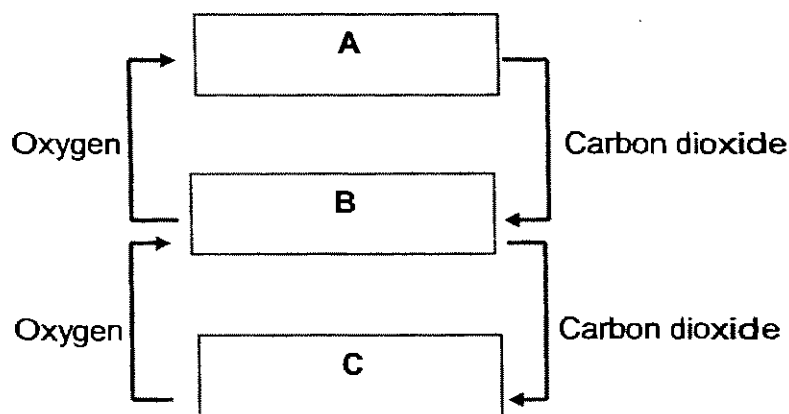
12) Which of the following parts of the body are able to move without the help of the skeleton?

- ~~A: Head~~
- ~~B: Eyelid~~

- ~~C: Tongue~~
- ~~D: Lower jaw~~

- 1) A and B only
- 2) B and C only
- 3) C and D only
- 4) A and D only

13) The diagram below shows the exchange of gases in our circulatory system.



Which of the following parts of the body are represented by A, B and C respectively?

	A	B	C
1)	Heart	Lungs	All parts of the body
2)	Heart	All parts of the body	Lungs
3)	All parts of the body	Heart	Lungs
4)	Lungs	Heart	All parts of the body

14) Which of the following are possible functions of the non-woody stems in plants?

- ~~A~~: transport food
- ~~B~~: transport water

- ~~C~~: support the plant upright
- ~~D~~: carry out photosynthesis

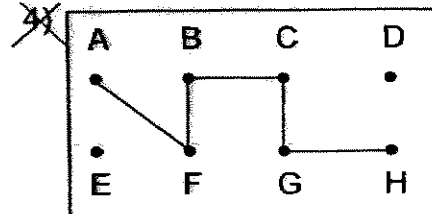
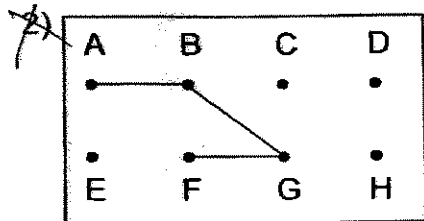
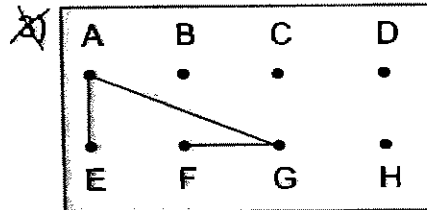
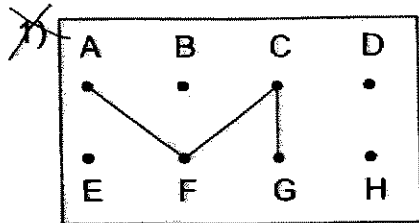
- A and B only
- C and D only

- A, C and D only
- A, B, C and D

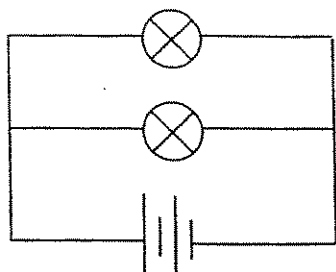
15) Halim used a circuit tester to test several points on a circuit card. He then recorded his findings in the table below.

Points	Does the bulb light up?
AE	No
BF	No
FG	Yes
AG	Yes
DE	No
CH	No

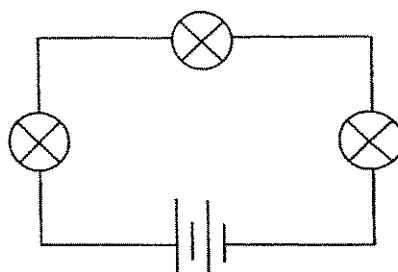
Which of the following circuit cards did Halim use?



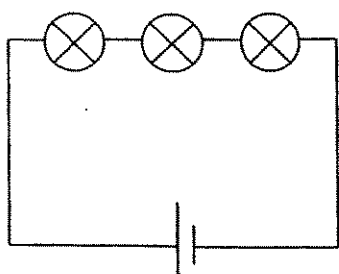
- 16) Sumei wanted to find out if the arrangement of bulbs would affect the brightness of the bulbs. Which set-ups should she use to ensure a fair test?



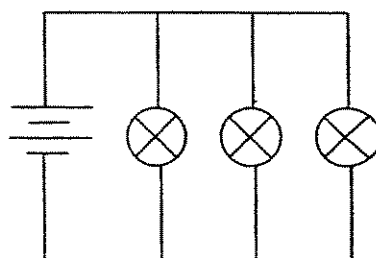
Set-up A



Set-up C



Set-up B



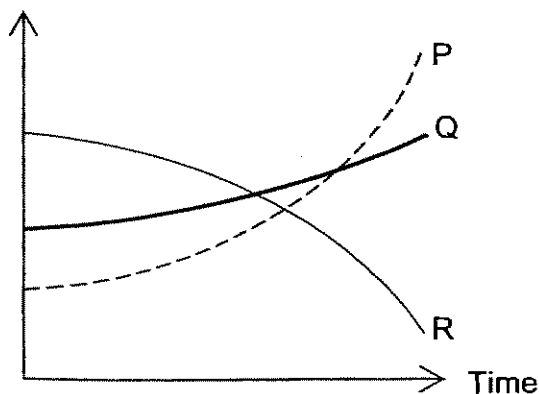
Set-up D

- 1) A and B only
- 2) C and D only

- 3) A, B and C only
- 4) B, C and D only

- 17) Populations of organisms P, Q and R are placed together in the same habitat. Only 1 of the organisms is prey to the other 2 organisms. The graph below shows the populations of P, Q and R over a period of time.

Population of organisms



Which of the following statements about the organisms are true?

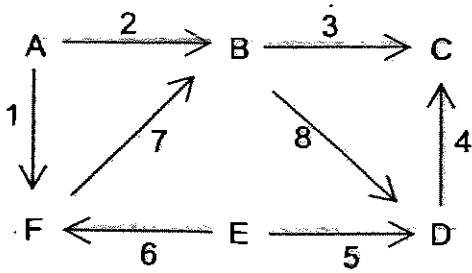
- ~~A~~ R is the prey of Q.
- ~~B~~ P reproduces faster than Q.
- ~~C~~ There are more P than Q at the beginning.
- ~~D~~ There are only 2 occasions when 2 of the organisms reach the same population.

- ~~1~~ A and B only
- ~~2~~ B and D only

- ~~3~~ A, C and D only
- ~~4~~ A, B, C and D

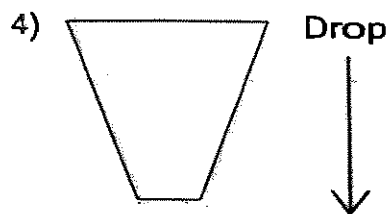
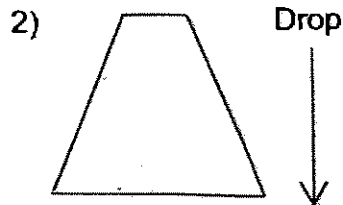
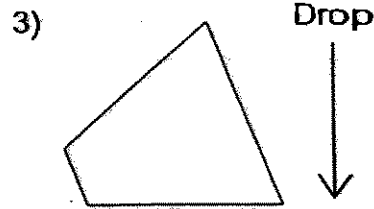
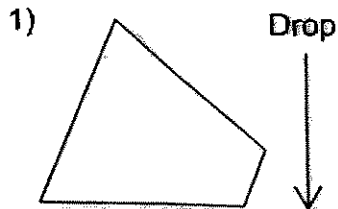
- 18) Ming Huat drew a food web based on the following information. However, 2 of the arrows have been drawn wrongly.

C is a carnivore.
 D is an omnivore.
 B is eaten by D only.
 B and F are herbivores.
 A and E are food producers.

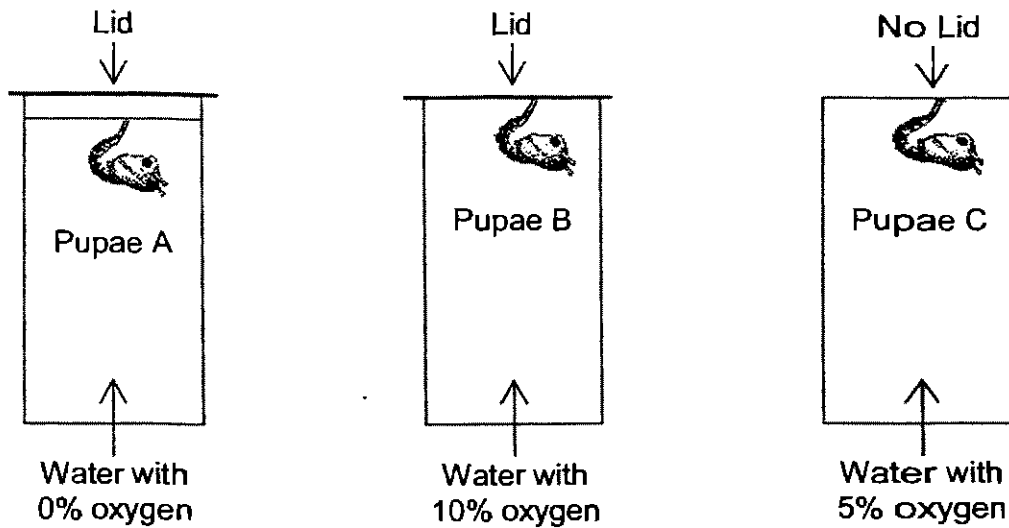


Which of the arrows have been drawn wrongly?

- 1) 1 and 6
 2) 3 and 7
 3) 2 and 4
 4) 5 and 8
- 19) An object is dropped from the same height, each time using a different position viewed from the side, will the object make the deepest depression in the sand?



- 20) The set-ups below show the pupae of a mosquito placed in containers of the same size. All the set-ups are placed in the same location. Arrange the pupae in order, from the pupa that will survive the longest to the pupa that will survive the shortest.



- 1) A, C, B
 2) C, A, B
 3) B, C, A
 4) C, B, A

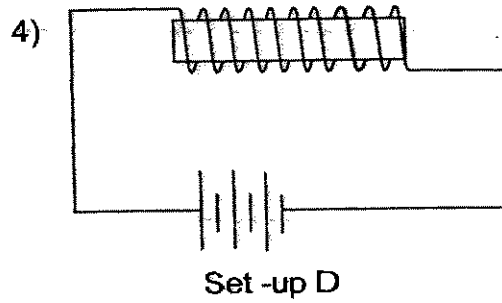
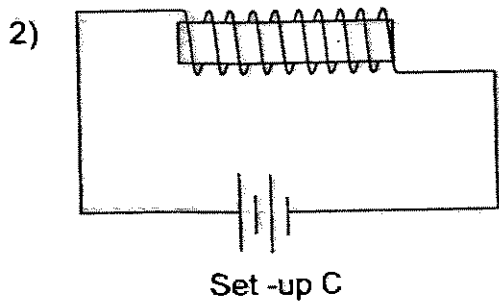
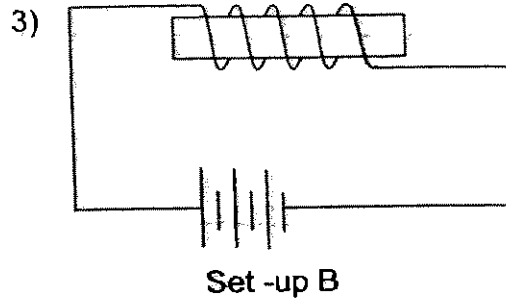
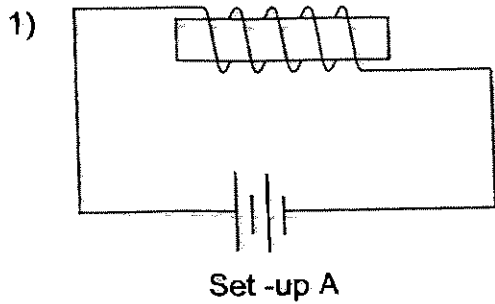
- 21) Bacteria X is added to milk to turn the milk into yoghurt. The table below shows the number of Bacteria X present in the milk at different temperatures over a period of time.

Temperature	Number of Bacteria X				
	0 min	5 min	10 min	15 min	20 min
20°C	10	12	17	25	33
25°C	10	14	19	27	36
30°C	10	14	20	31	40
35°C	10	21	34	50	73
40°C	10	23	39	58	80
45°C	10	22	36	54	76
50°C	10	18	24	33	43

Marie added some Bacteria X into a bottle of milk. Based on the table above, under which range of temperature should Marie keep the milk and bacteria mixture in order for the mixture to be turned into yoghurt in the shortest time?

- 1) 25°C - 30°C
 2) 32°C - 36°C
 3) 38°C - 42°C
 4) 46°C - 50°C

22) The iron rods in each of the set-ups are of the same size. In which set-up will the iron rod attract the most number of iron pins?



23) Which of the following forces are able to act at a distance?

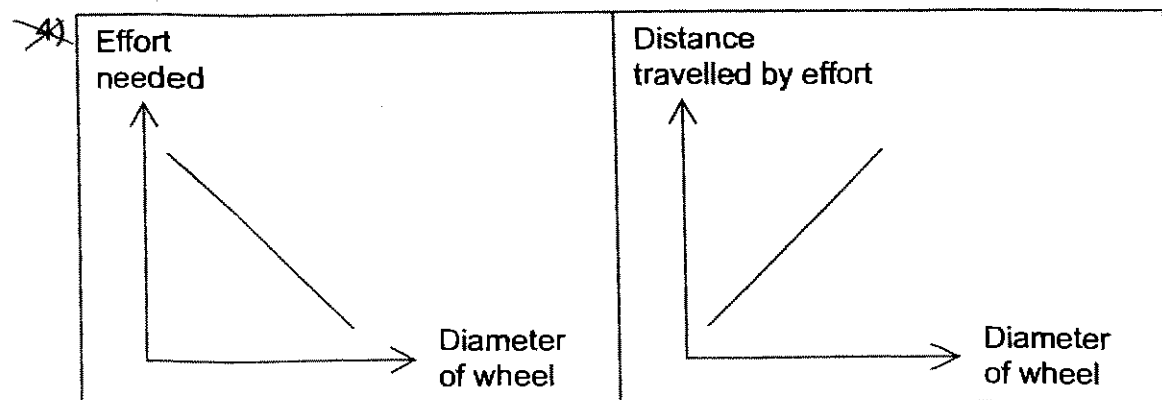
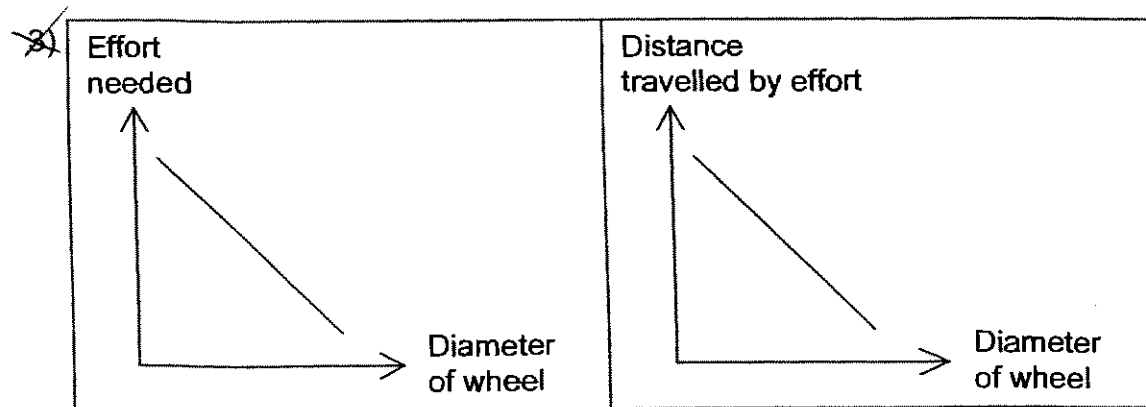
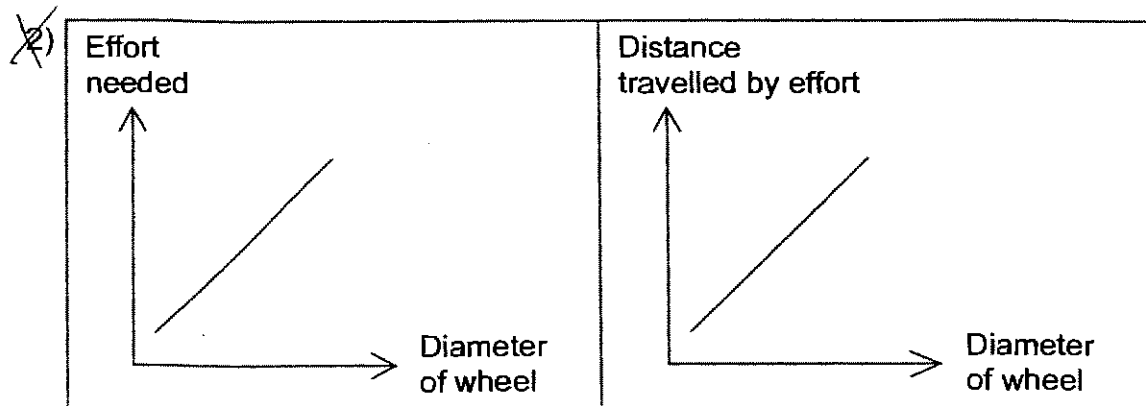
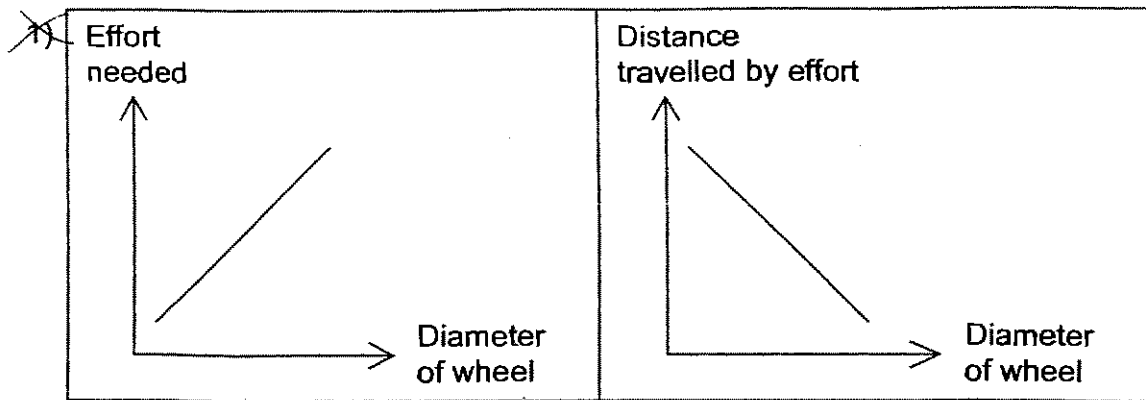
~~A~~: Frictional force
B: Magnetic force

~~C~~: Gravitational force
~~D~~: Elastic spring force

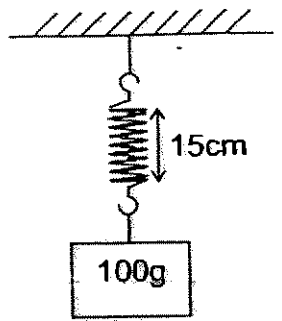
~~1) A and B only~~
~~2) B and C only~~

~~3) A, B and C only~~
~~4) A, B, C and D~~

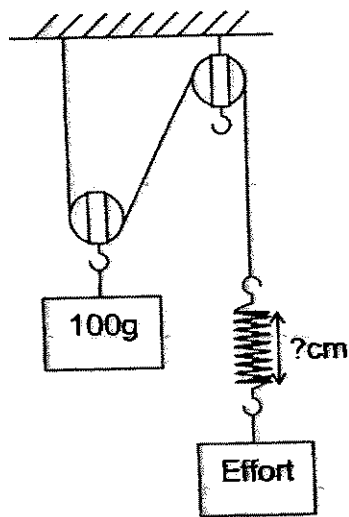
24) The wheel and axle is a type of simple machine. Which of the following pairs of graphs correctly shows the relationship between the diameter of the wheel and the effort applied and the relationship between the diameter of the wheel and the distance travelled by the effort?



- 25) A spring of original length of 10 cm is stretched to 15cm when a 100g load is hung on it.



The same spring is then hung on a pulley system as shown below. The effort applied is just enough to lift the 100g load.



What is the most likely length of the stretched spring in the pulley system? (The diagrams are not drawn to scale)

- | | |
|----------|---------|
| 1) 10cm | 3) 15cm |
| 2) 13 cm | 4) 20cm |
- 26) Which of the following are the results of the increase in the amount of carbon dioxide in the atmosphere?
- | | |
|-----------------|-------------------|
| A: Acid rain | C: Air pollution |
| B: Soil erosion | D: Global warming |
- | | |
|----------------------------|-------------------------------|
| 1) A and C only | 3) B, C and D only |
| 2) A and D only | 4) A, B, C and D |

27) Which of the following are necessary for photosynthesis to take place and are also released during respiration?

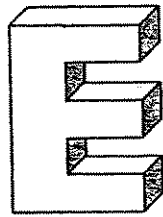
- ~~A~~: Sugar
- ~~B~~: Water
- ~~C~~: Oxygen

- ~~D~~: Energy
- ~~E~~: Carbon dioxide

- ~~1~~ B and E only
- ~~2~~ B, C and D only

- ~~3~~ A, C and E only
- ~~4~~ B, D and E

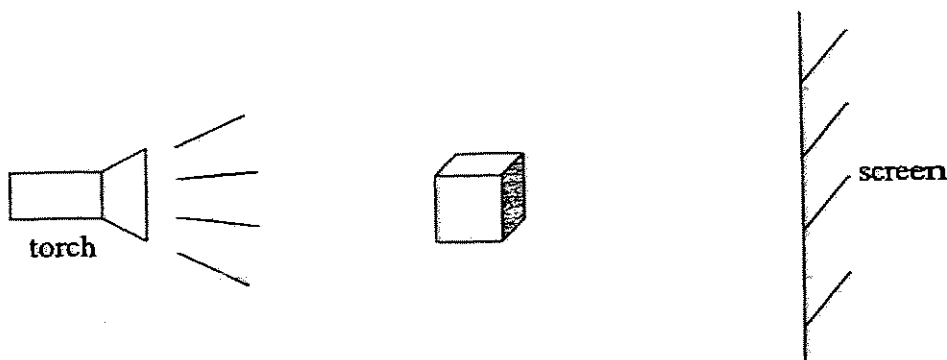
28) Which one of the following shadows can be formed by the object below?



- 1) A and B only
- 2) B and C only

- 3) A, B and D only
- 4) A, B, C and D

29) Which of the following would result in a larger shadow to be cast on the screen?

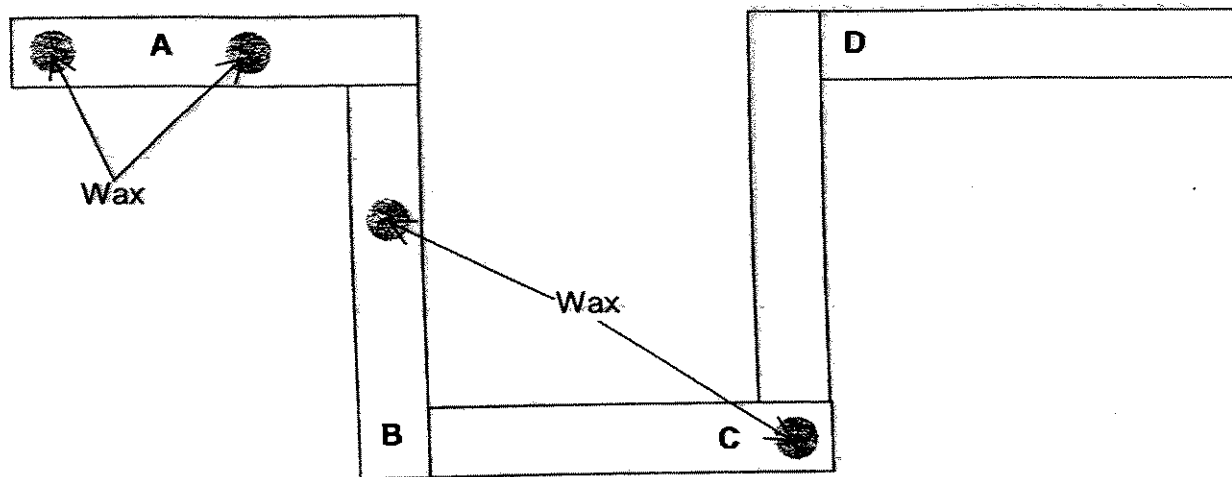


- A: Move the screen nearer the object.
- B: Move the screen away from the object.
- C: Move the light source nearer the object.
- D: Move the light source away from the object.

A and C only
 A and D only

B and C only
 B and D only

30) 5 pieces of iron rods of the same size are joined together to form a structure. 5 blobs of wax are stuck to different parts of the structure as shown below.



At which point should the flame be placed so that all the blobs of wax will melt in the shortest time?

- 1) A
- 2) B
- 3) C
- 4) D

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**SINGAPORE CHINESE GIRLS' SCHOOL
PRELIMINARY EXAMINATION 2007
PRIMARY 6 SCIENCE**

Name: _____ (/) Date: _____

Class: Primary 6 SY / C / ~~Ø~~ / SE / P

Components	Marks Obtained	Total Marks
Booklet A		60
Booklet B		40
Total		100

<hr/> Parent's Signature

SCIENCE

BOOKLET B

16 questions

40 marks

Total Time For Booklets A & B : 1 h 45 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY

Name: _____ ()

Date: _____

Class: Primary 6 SY / C / G / SE / P

Part II (40 marks)

Answer all the following questions.

31. The diagram below shows 2 seeds. Seed A has 2 seed leaves while Seed B has only 1 seed leaf. Plants that produce seeds with 1 seed leaf are known as monocots. Plants that produce seeds with 2 seed leaves are known as dicots.



- a) What is the function of seed leaves? (1m)

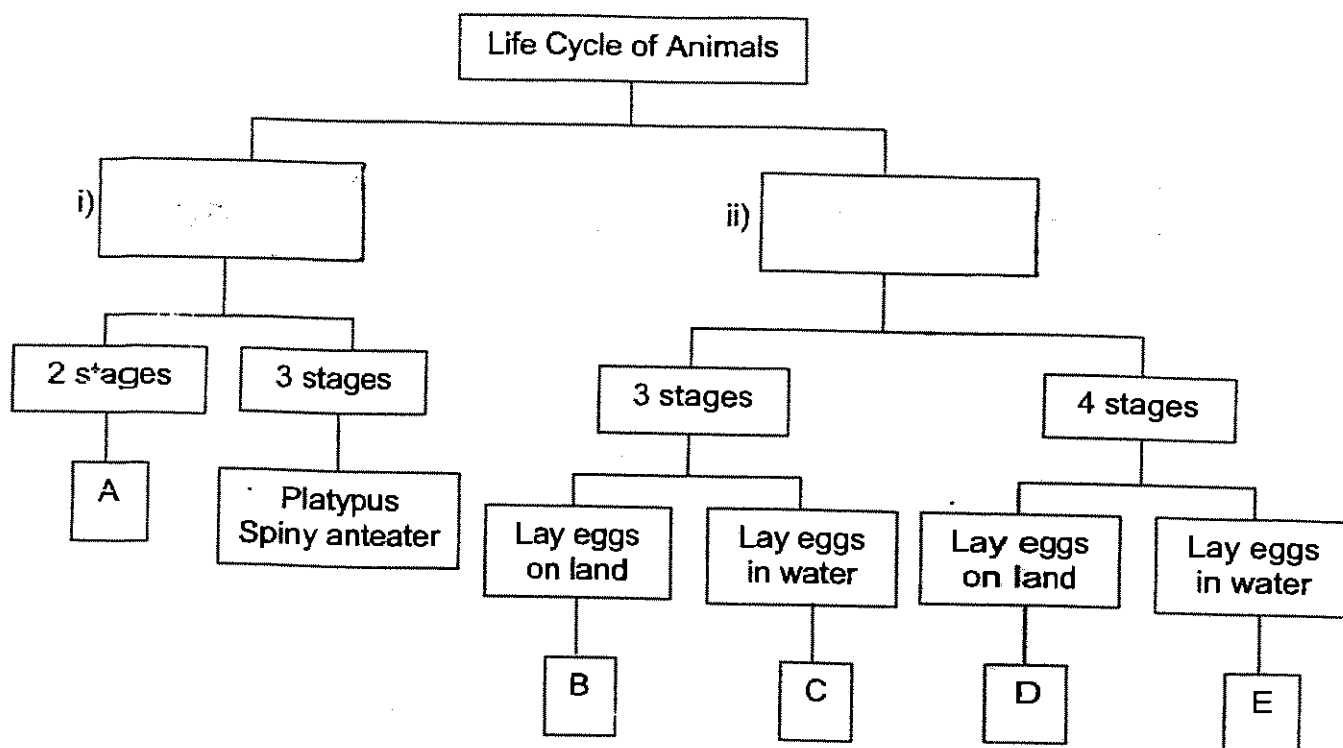
Ahmad made some observations on monocots and dicots and recorded his findings in the table below.

Plant	Number of seed leaves	Types of veins	Type of roots	Colour of flowers
A	2	network	taproots	red
B	1	parallel	fibrous roots	white
C	1	parallel	fibrous roots	yellow
D	2	network	taproots	white
E	1	parallel	fibrous roots	red
F	2	network	taproots	purple
G	2	network	taproots	pink
H	1	parallel	fibrous roots	white

- b) Based on Ahmad's findings, put a tick (✓) in the appropriate column to indicate if each of the following statement is 'True', 'False' or 'Not possible to tell'. (2m)

Statements	True	False	Not possible to tell
i) Dicots have fibrous roots.			
ii) Monocots have leaves with parallel veins.			
iii) Both monocots and dicots are flowering plants.			
iv) Dicots take a longer time to germinate than monocots.			

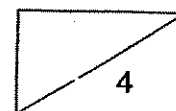
32. Study the classification chart below.



- a) Fill in suitable headings in the boxes labeled (i) and (ii) in the classification chart above. (1m)
- b) Name the method of reproduction for organisms in group A. (1m)

- c) Which group, A, B, C, D or E, does the dragonfly belong to?. (1m)

- d) Which group of organisms, A, B, C, D or E lay eggs on land and have 4 stages in the life cycle? (1m)

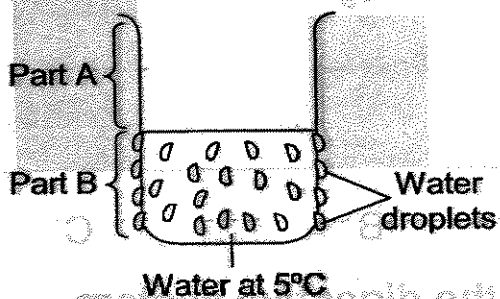


33. Xiaoming tried to observe Cell X under a microscope but he could not see the cell very clearly as most parts of Cell X are colourless. He then put a drop of iodine onto Cell X and then washed off the iodine. He observed the cell under the microscope again and found that one part in the cell has been stained dark blue. Xiaoming deduced that some iodine solution must have entered into the cell.

a) Is Cell X a plant cell or animal cell? (1m)

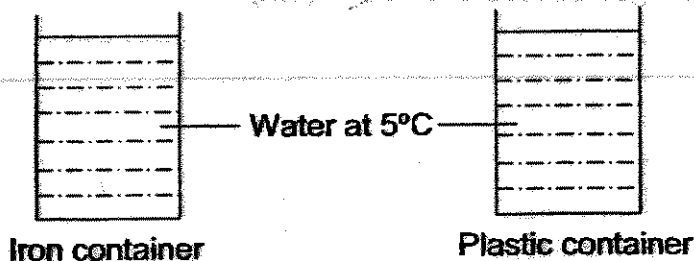
b) Which part of the cell allowed the iodine solution to enter into the cell? (1m)

34a. The beaker below contains some cold water.

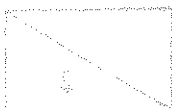


Why are water droplets formed on Part B of the beaker but not on Part A? (1m)

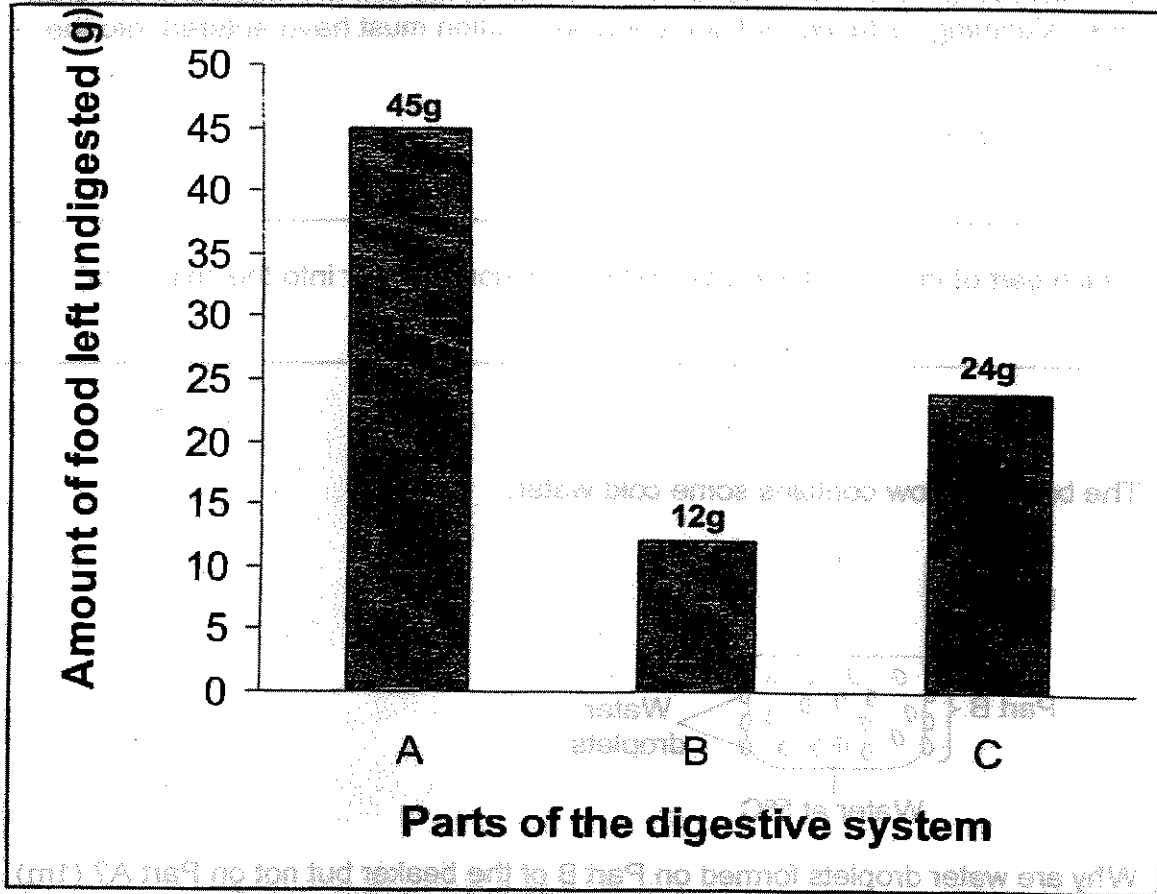
b. The 2 containers below contain the same amount of water at the same temperature. They are placed on a table in a room.



On which container will water droplets appear sooner on the outer side of the container? Give a reason for your answer. (1m)

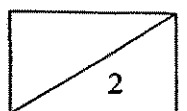
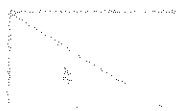


35. Linda ate 50g of food during her tea break. The graph below shows the amount of food left undigested by 3 different parts of the digestive system, the small intestine, stomach and mouth.



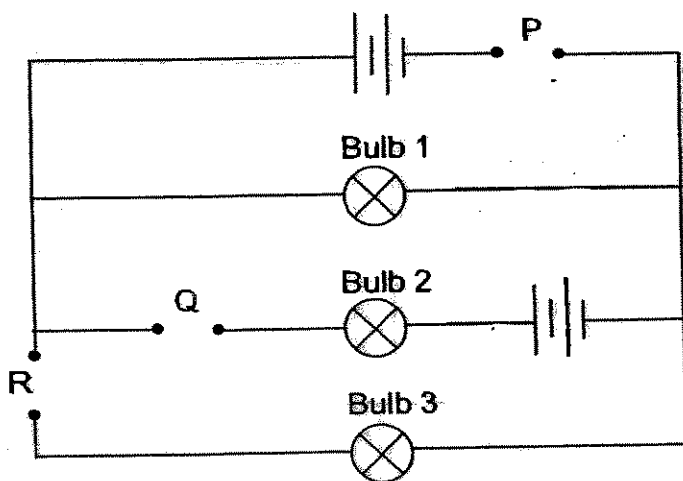
- a) Which part of the digestive system, the small intestine, stomach or mouth, does C most likely represent? (1m)

- b) In which part, A, B or C is digested food absorbed? (1m)



36. Sam used the circuit below to test if Objects A, B, C, D and E are made of conductors of electricity. He connected different objects to the circuit at testing positions P, Q and R and recorded his findings in the table below.

Objects placed at			Does the bulb light up?		
P	Q	R	Bulb 1	Bulb 2	Bulb 3
A	B	C	✓	✓	✓
E	D	A	✓	✓	
C	D	E	✓	✓	
E	A	B			
B	C	D	✓	✓	✓

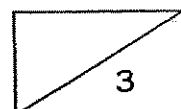


One of the testing positions that Sam has chosen is unsuitable in determining if all the 3 objects tested at the **same time** are conductors of electricity.

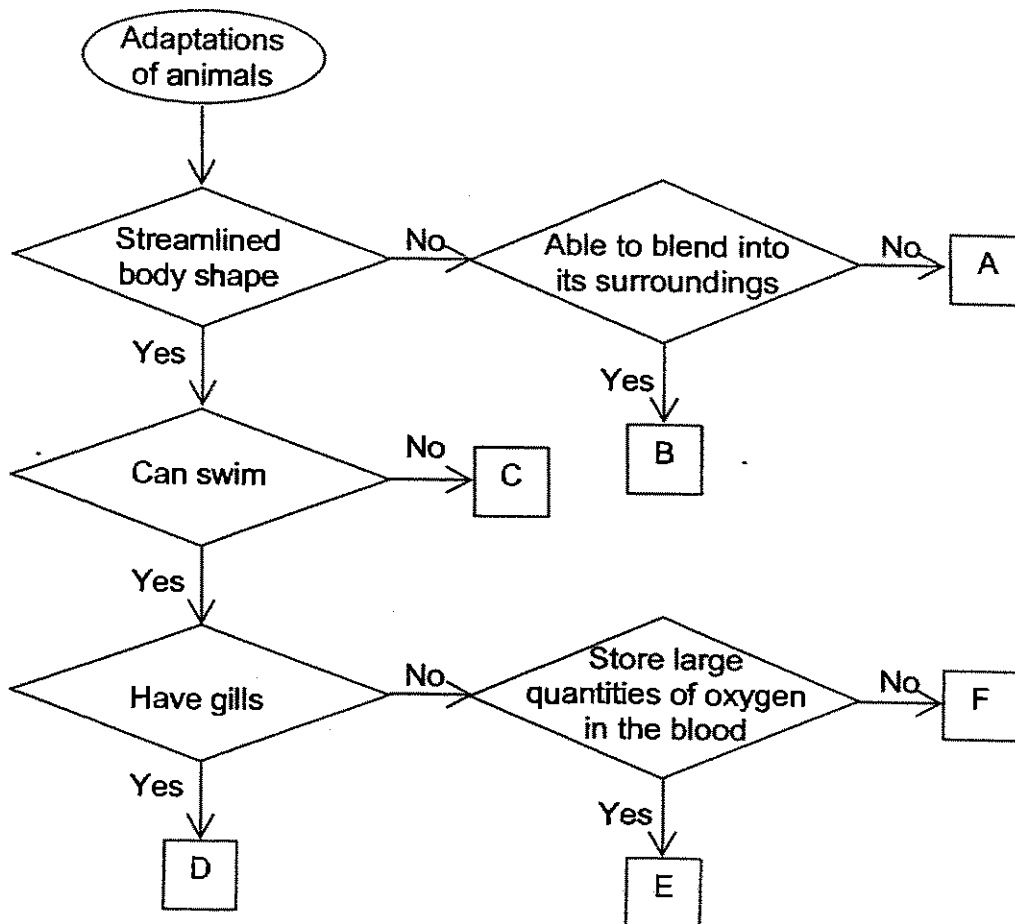
ai) Which testing position, P, Q or R is unsuitable?. (1m)

— aii) In the circuit diagram above, mark an 'X' on the circuit to indicate where Sam should place the new testing position so that it will be suitable to determine if all the 3 objects tested at the **same time** are conductors of electricity. (1m)

b) Which of the material/s is/are non-conductors of electricity? (1m)



37. Study the flowchart below. A, B, C, D, E and F represent different groups of animals. Answer the questions based on the flowchart.

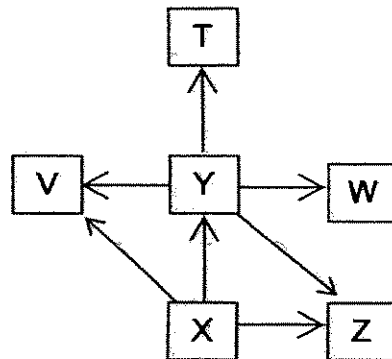


- a) Give an example of an animal in group E. (1m)

- b) List all the characteristics of animals in group B. (1m)

- c) Animal X has hollow bones. In which group does Animal X most likely belong to? (1m)

38. Mr Tan is a farmer. His crop, X has been attacked by pest Y. He wants to get rid of pest Y with the help of their natural predators instead of using pesticide. Study the food web below.



Which predator/s of Y should Mr Tan introduce into his farm so that he can have the best harvest of his crops? Give a reason for your answer. (2m)

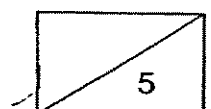
39. Devi wanted to find out if a ball can bounce higher if water is added to the surface on which the ball bounces. She put some water on a concrete surface and dropped the ball from a height. She then dropped the ball 2 more times from the same height and each time recorded her findings in the table below.

1 st Try	2 nd Try	3 rd Try	Average
19cm	21cm	23cm	21cm

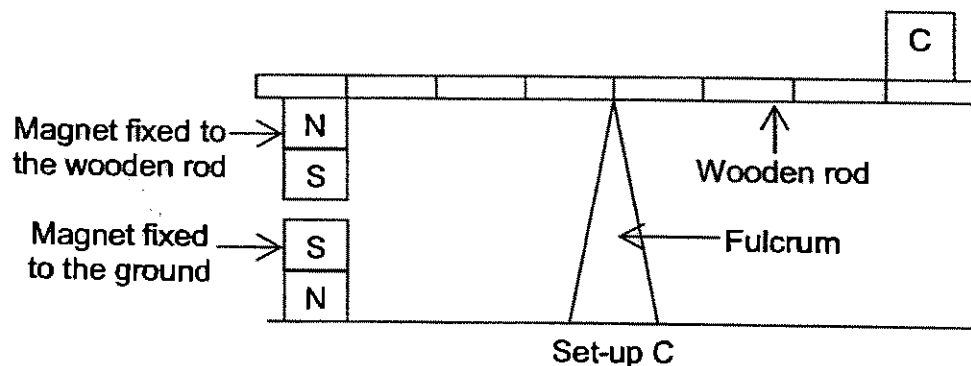
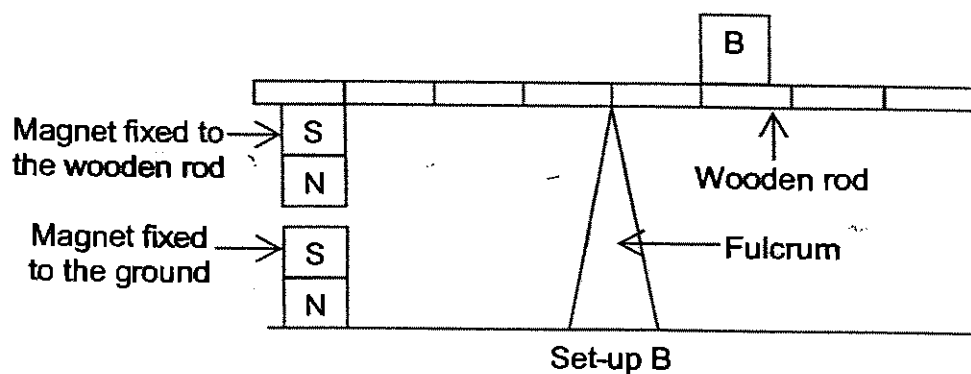
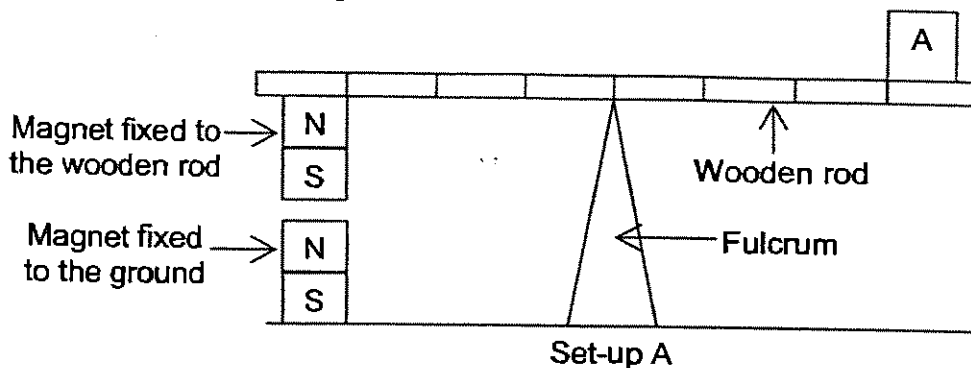
- a) Why does she have to drop the ball from the same height each time? (1m)

- b) What is the purpose of carrying out 3 trials for her experiment? (1m)

- c) She is unable to form any conclusion from her experiment. What must she do so that she can form a conclusion? (1m)



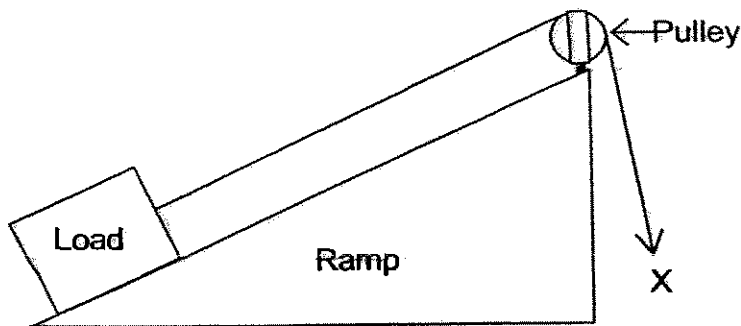
40. The diagrams below show 3 set-ups, A, B and C. All the magnets have the same mass and the same magnetic force.



- a) Which objects/s is/are heavier than the magnet? (1m)
-
- b) Arrange the objects A, B and C from the smallest mass to the largest mass. (1m)
-
- c) Indicate in the table below with a tick (✓) in the appropriate column, what would happen if the magnets fixed to the ground are removed from set-ups B and C. (1m)

Set-up	Wooden rod will tilt up at the end with the magnet.	Wooden rod will tilt up at the end with the load.
i) B		
ii) C		

41. Mr Lim wanted to lift up a load. He attached a string to the load and pulled it from position X as shown below.



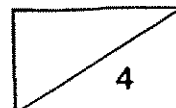
- a) What is Mr Lim's purpose of using the pulley here? (1m)

- b) What is the purpose of using the ramp? (1m)

42. Impurities A, B, C, D, E and F are contaminants that may be found in the water. The table below show the types of impurities that Filter V, W, X, Y and Z can filter water to make it safe for human consumption. Each filter cost \$10 000.

Filter	Impurities
V	A and E
W	A and B
X	A and F
Y	D and E
Z	C and E

- a) Water Treatment Plant P treats water from a river that contains Impurities A, B, C and D. Which are the filters that Water Treatment Plant P must have in order to filter the water from the river safe enough for human consumption without incurring unnecessary cost? (1m)
-
- b) Water Treatment Plant Q has Filters V, W, X and Z. It treats water that contains impurities A, B, C, E and F. One of the filters is damaged. Fortunately, Water Treatment Plant Q is still able to remove all the impurities from the water. Which of the Filters V, W, X or Z is damaged? (1m)
-



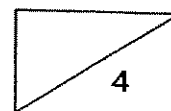
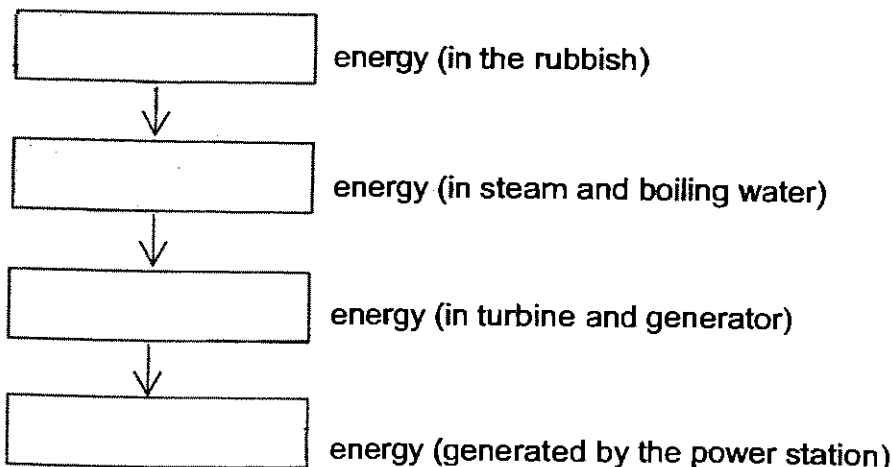
43. Ah Seng wanted to find out if the amount of water given to plants would affect the number of leaves they grew. He took 4 plants of similar size and the same type. Each plant had the same number of leaves at the start of the experiment. The amount of water given daily was different for Plant A, B, C and D. He recorded the number of leaves each plant had at the end of each week in the table below.

Plant	Amount of water given to the plant daily	Number of leaves on the plant at the end of each week					
		Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
A	100 ml	22	23	25	28	30	33
B	150 ml	23	26	30	33	37	40
C	200 ml	23	27	32	36	39	44
D	250 ml	24	29	34	39	45	50

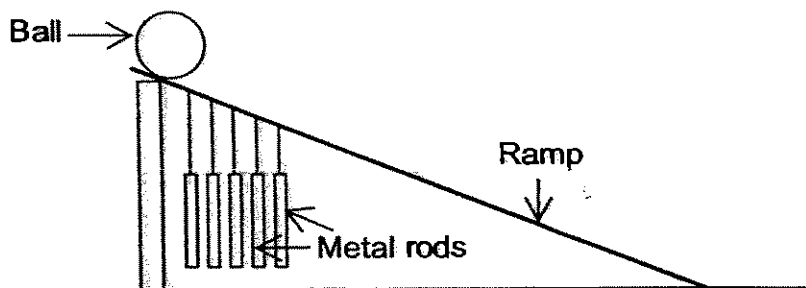
- a) What is the relationship between the amount of water given to the plants and the number of leaves they grow? (1m)

- b) At the start of Week 7, Ah Seng gave plant A and D the same amount of water daily. Which plant would be able to carry out photosynthesis at a faster rate? Explain how the chosen plant was able to carry out photosynthesis at a faster rate. (1m)

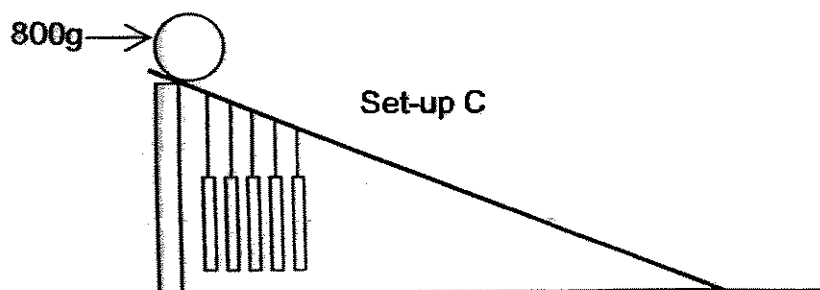
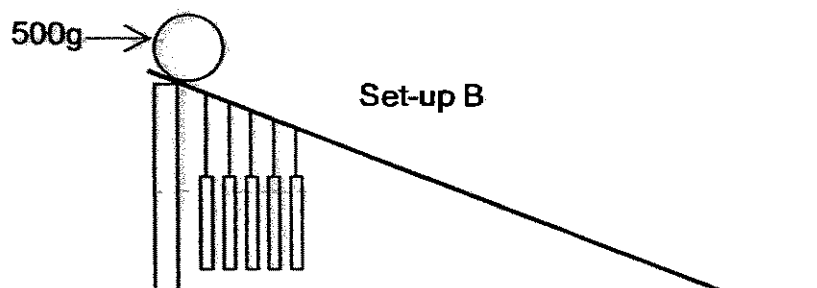
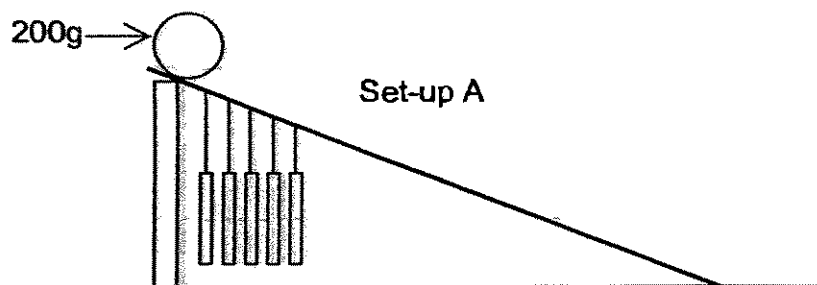
44. A power station uses rubbish instead of fossil fuel to generate electricity. Complete the boxes with the main forms of energy to show the conversion of energy that takes place in the power station. (2m)



45. Susan sets up the experiment as shown below. When the ball rolls down the ramp, the metal rods hung below the ramp will clink against each other. She notices that if the ball has more kinetic energy, the metal rods will clink against each other more forcefully, producing louder sound.

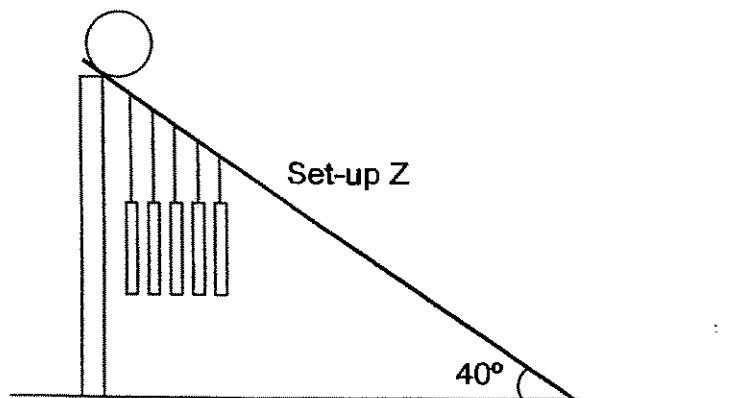
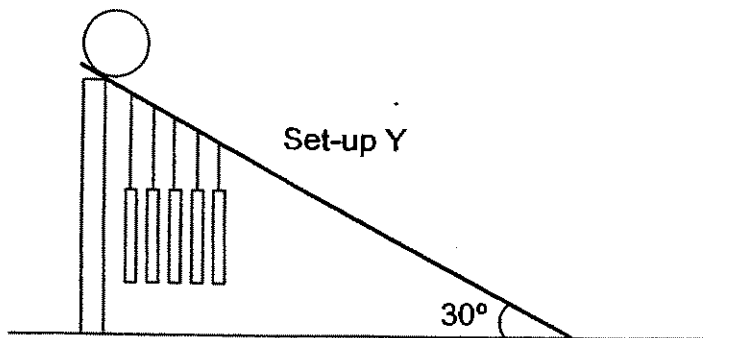
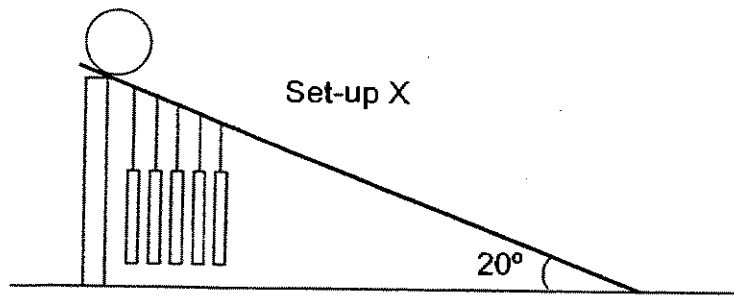


She then repeats the experiment using the same ramp but with balls of different masses.

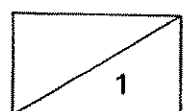


- a) Which of the set-ups above would result in the metal rods making the loudest sound when the balls rolls down the ramps? (1m)

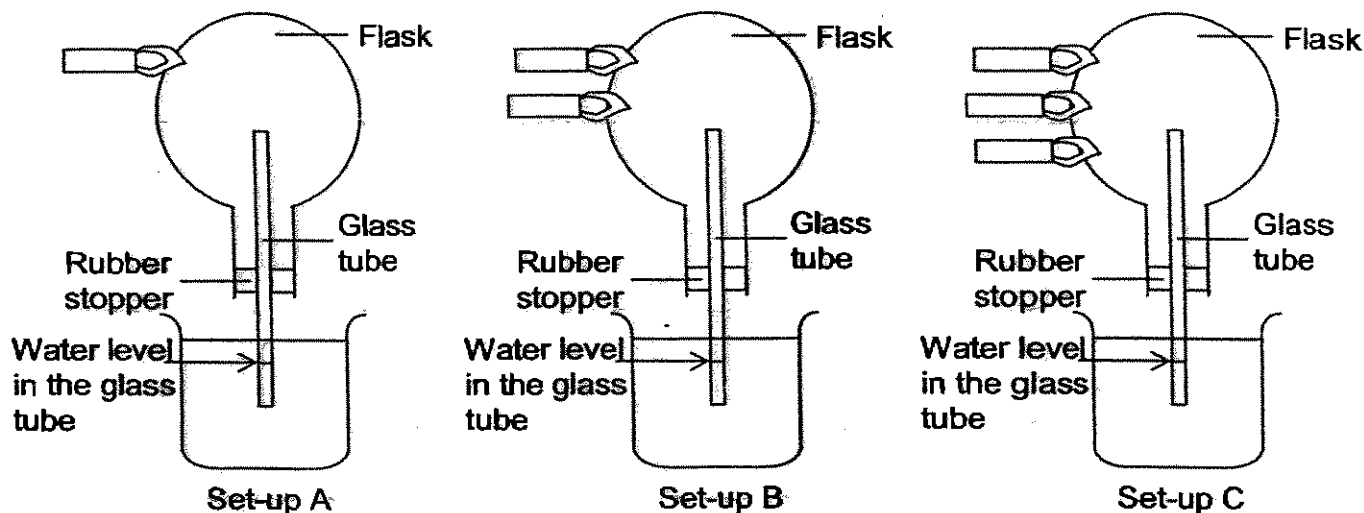
45b. In the next experiment, she uses balls of the same mass but ramps of different steepness.



b) Which of the above set-ups will result in the loudest sound when the balls roll down the ramps? (1m)



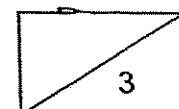
46. Jane inserted a glass tube into a flask and secured the glass tube with a rubber stopper. She then inverted the flask with the glass tube and place one end of the glass tube into a beaker of water. She then prepared another 2 similar set-ups using the same type of apparatus. She noticed that the water levels in the 3 glass tubes were the same at the start of the experiment.

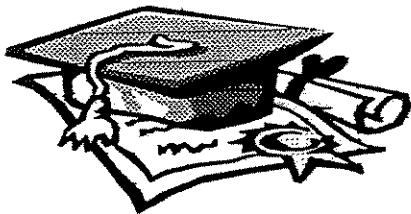


She then heated each of the flasks with different amount of heat for 2 minutes. After that, she let the containers cool down. As the flasks were cooling down, she noticed that the water level in the glass tube was higher than the water level at the start of the experiment.

- a) Explain why the water level in the glass tube increased as each flask was cooled down. (2m)

- b) After the flasks have cooled down to room temperature, in which set-up would the water level in the glass tube be the highest?

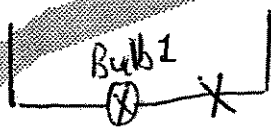




ANSWER SHEET

SCGS PRIMARY SCHOOL - PRIMARY 6 SCIENCE 2007
SEMESTRAL ASSESSMENT (2)

1. 3 31)a) It provides food for the baby plant
2. 1 b) i) False ii) True
3. 1 iii) True iv) Not
4. 4
5. 1 32)a) i) Mammals ii) insects
6. 4 b) Give birth to young.
7. 4 c) C
8. 1 d) D
9. 3
10. 3 33)a) Plant cell.
11. 3 b) Cell membrane.
12. 2
13. 3 34)a) Part B is of a lower temperature
14. 4 than the water vapour in the
15. 1 surrounding air but part A is the
16. 2 same temperature as the water
17. 1 vapour in the surrounding air.
18. 2 b) Iron container. Therefore, the water
19. 4 in the iron container will gain
20. 2 heat faster than the water in the
21. 3 plastic container.
22. 4
23. 2 35)a) Stomach
24. 4 b) B
25. 2
26. 2 36) ai) F
27. 4 aii)
28. 1
29. 3
30. 2



b) E and A

37) a) dolphin.

b) It has no streamlined body shape and it is able to blend into its surroundings.

c) C.

38) He should introduce predators T and W. T and W does not eat X. Therefore, when T and W attack Y, Y will decrease and gradually die. When Y dies, nothing will attack X.

39) a) To make it a fair test.

b) To ensure accuracy result.

c) Bounce the ball at the same height on a concrete surface without water.

40) a) A and B

b) C, A, B

c) i) ✓ X

ii) X ✓

41) a) To use a small effort to overcome the load.

b) To lift the load with less effort.

42) a) W, Y and Z

b) V

43) a) The amount of water given to the plant daily, the greater number of leaves on the plant at the end of each week.

b) D. It has more leaves to capture more light energy to photosynthesis.

44) Potential → heat → kinetic → electric

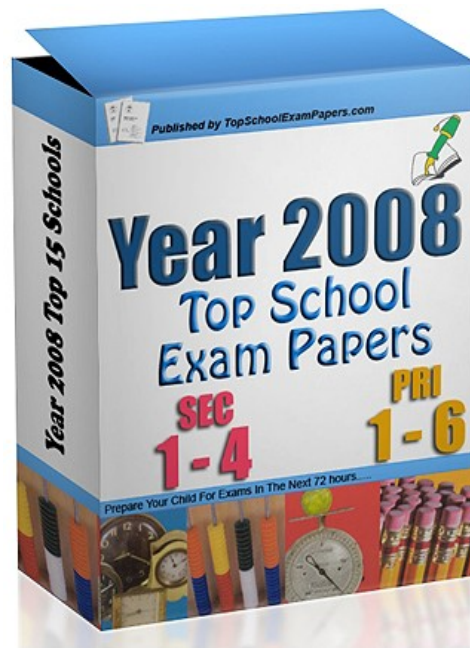
45) a) set-up C.

b) Z.

46) a) Air expanded and escaped when the container is being heated.

b) Set-up C.

---end---



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