

SAT

**ANGLO-CHINESE SCHOOL (JUNIOR)
SEMESTRAL ASSESSMENT 1 (2005)
SCIENCE
PRIMARY SIX**

NAME : _____ ()
CLASS : P6 _____
DATE : 12th May 2005

BOOKLET A

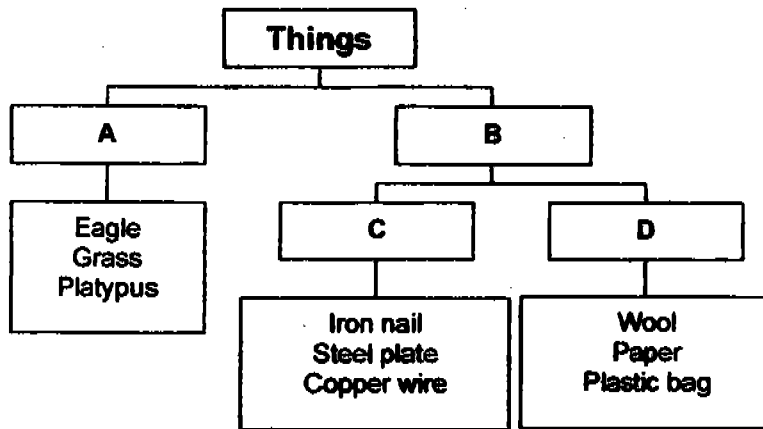
Total Time (Booklets A and B) : 1 hour and 45 minutes

**Do not open the booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.**

PART I (60 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Choose the correct option (1, 2, 3 or 4) and shade the correct oval on the Optical Answer Sheet (OAS) provided.

- 1 The classification chart shows some things classified according to certain characteristics.



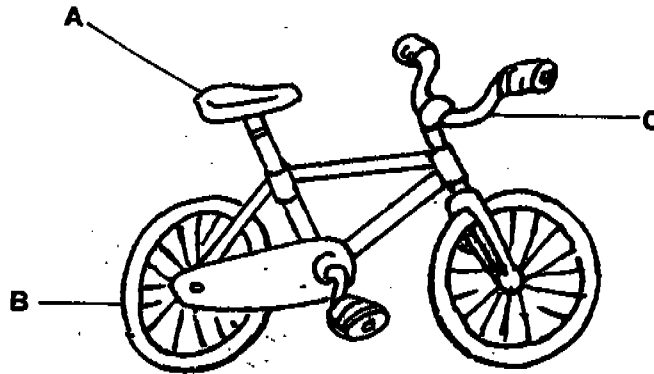
Which of the following headings are most suitable for the above classification chart?

	A	B	C	D
(1)	Living	Non-living	Magnetic	Non-magnetic
(2)	Natural	Man-made	Magnetic	Non-magnetic
(3)	Living	Non-living	Metal	Non-metal
(4)	Natural	Man-made	Metal	Non-metal

- 2 Joe jogged round the track 6 times in the morning on a sunny day. What is the source of energy for Joe and what are the energy changes during the jog?

	Source	Energy Changes
(1)	Food	Chemical potential energy in his body was converted to heat and sound energy.
(2)	Food	Chemical potential energy in his body was converted to heat, sound and kinetic energy.
(3)	Sun	Solar energy in his body was converted to heat and sound energy.
(4)	Sun	Solar energy in his body was converted to chemical potential energy.

- 3 The diagram shows a bicycle and parts A, B and C. The table below shows materials X, Y and Z and their properties.



	Properties
Material X	Light-weight, hard and durable
Material Y	Flexible and expandable
Material Z	Soft and waterproof

Which of the following shows the best material to use for each part?

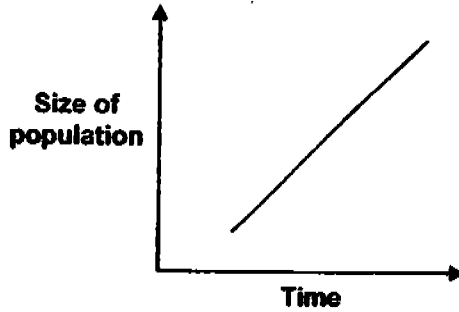
	A	B	C
(1)	X	Y	Z
(2)	Y	X	Z
(3)	Z	X	Y
(4)	Z	Y	X

- 4 Joshua wanted to find out whether chemical K helps to keep flowers fresh for a longer time. Which 2 vases must he compare in order to conduct a fair test?

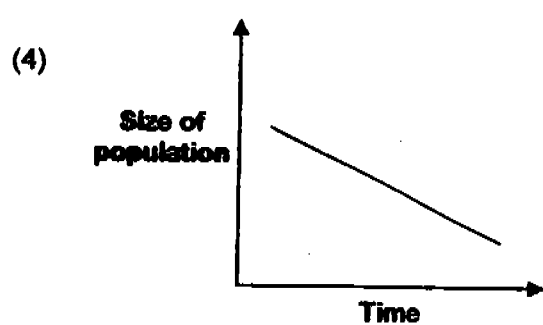
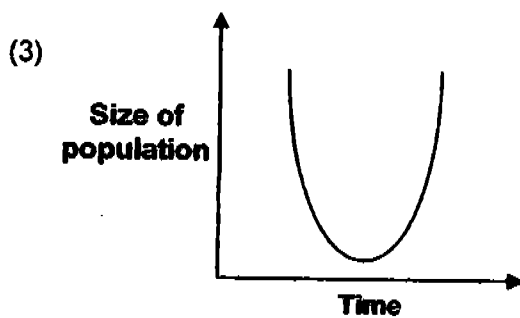
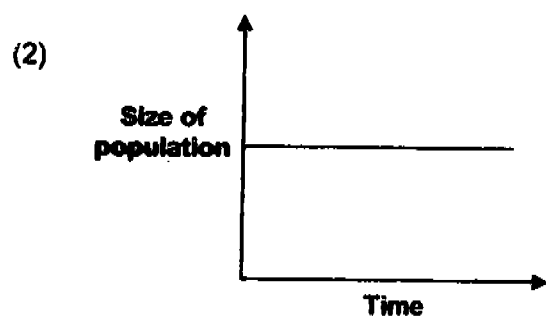
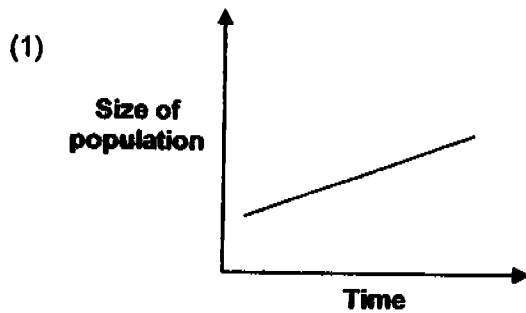
Vase	Number of stalks of flowers	Amount of Chemical K (mg)	Amount of Water (ml)
V	4	5	300
W	3	0	300
X	3	5	300
Y	4	0	300

- (1) V and Y
 (2) X and Y
 (3) V and X
 (4) W and Y

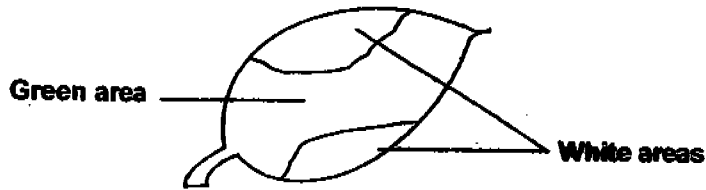
- 5 The graph shows the change in the **population of cows** over a period of time in a particular area.



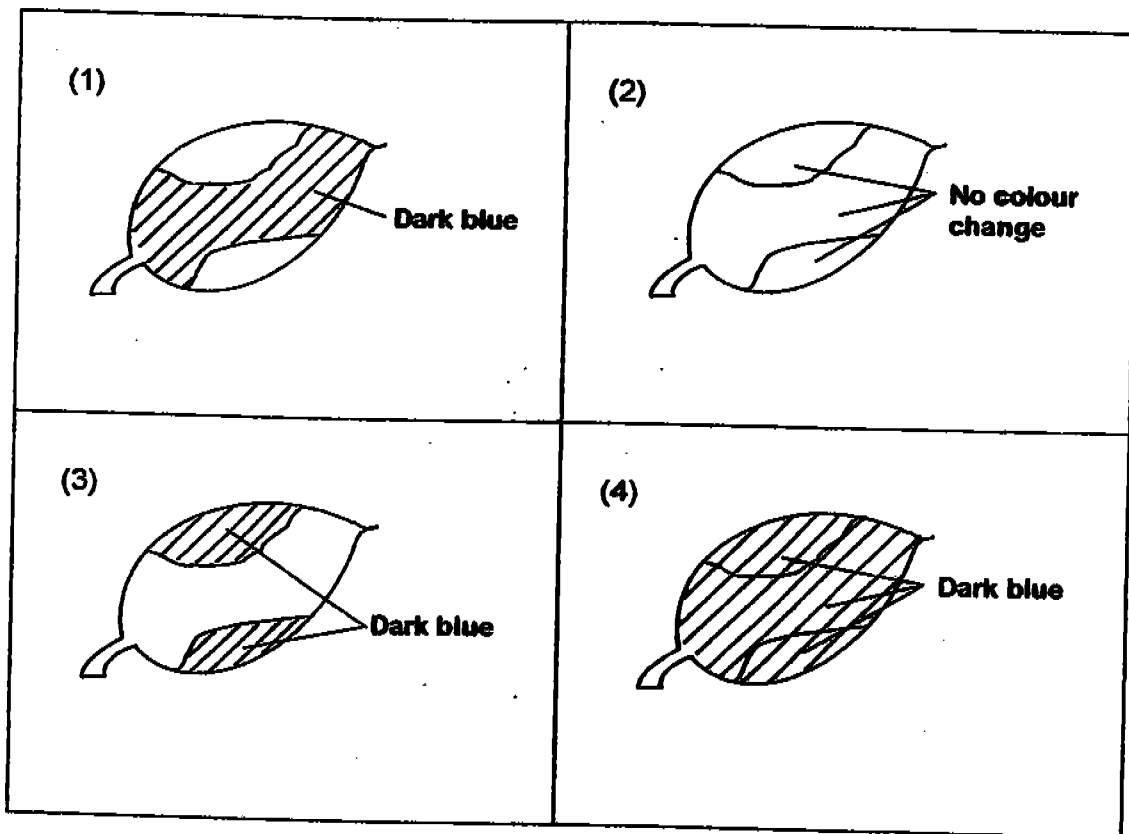
Which one of the following graphs shows the **population of grass** over the same period of time in the same particular area?



- 6 Iodine solution is brownish-yellow and it turns dark blue in the presence of starch. The diagram below shows a variegated leaf (a leaf in which some parts of it are white because there is no chlorophyll) being tested for starch by using iodine solution.



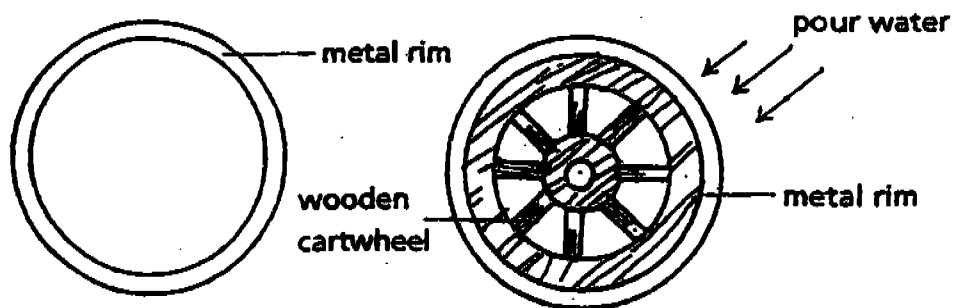
Which one of the following diagrams shows the expected result?



- 7 Which of the following statements correctly describes the effects of the revolution of the Moon and the rotation of the Earth respectively?

	Revolution of the Moon	Rotation of the Earth
(1)	Causes the four seasons	Causes the phases of the Moon
(2)	Causes the phases of the Moon	Causes day and night
(3)	Causes high and low tides	Causes the four seasons
(4)	Causes day and night	Causes high and low tides

8 The diagrams show how a metal rim is fitted tightly round a wooden cartwheel.



Step 1: A large amount of heat is applied to the metal rim.

Step 2: The metal rim is placed round the wooden cartwheel.

Step 3: Cold water is poured over them.

What are the reasons for carrying out steps 1 and 3?

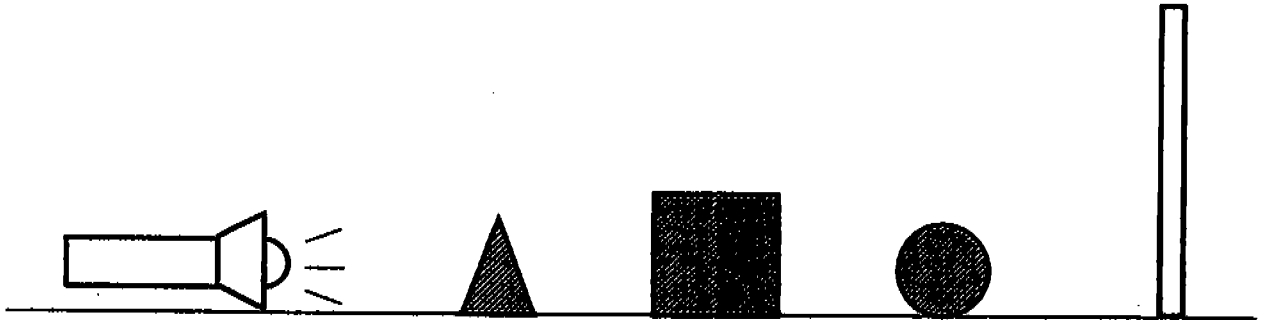
	Step 1	Step 3
(1)	The metal rim contracts when heated so that it can fit round the wooden cartwheel.	Cold water is used to expand the metal rim so that it grips tightly round the wooden cartwheel.
(2)	The metal rim contracts when heated and takes up less space.	Cold water is used to expand the metal rim so that it takes up more space.
(3)	The metal rim expands when heated so it can fit round the wooden cartwheel.	Cold water is used to contract the metal rim so that it grips tightly round the wooden cartwheel.
(4)	The metal rim expands when heated and takes up more space.	Cold water is used to cool the metal rim so that it takes up less space.

9 Which of the following activities will cause air pollution?

- A Smoking cigarettes
- B Vehicles using solar energy
- C Factories spewing gases into the air

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

- 10 The diagram shows 3 objects being placed on a table in front of a screen.
A shadow is formed on the screen.



torchlight

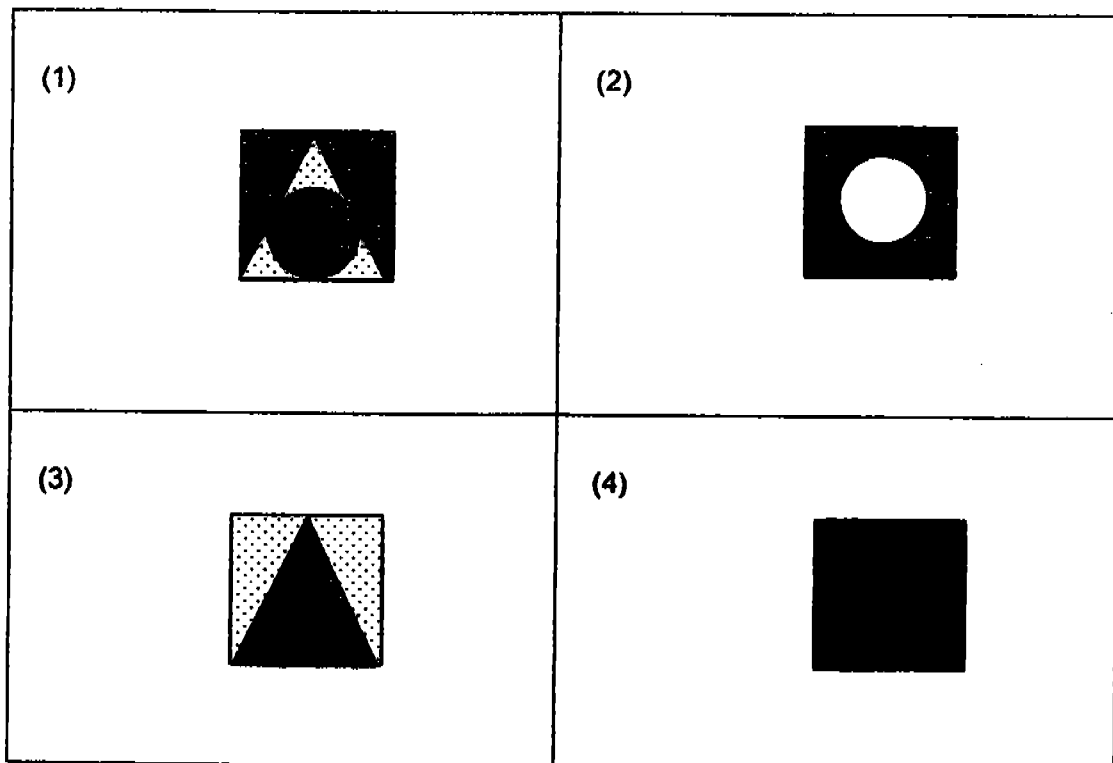
plasticine pyramid

wooden box

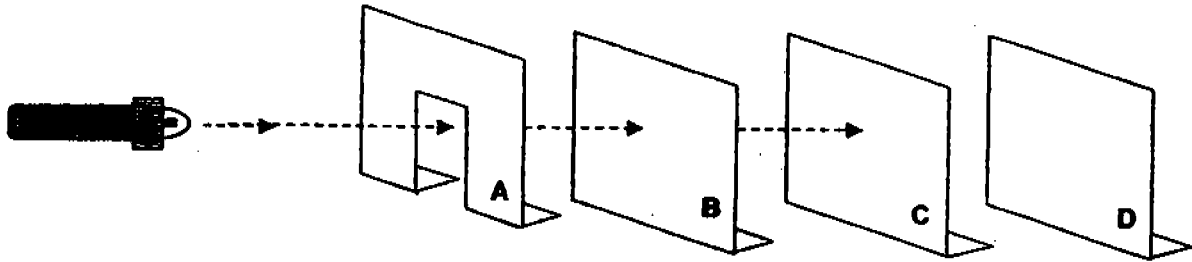
tennis ball

screen

Which one of the following shows how the shadow would look on the screen?



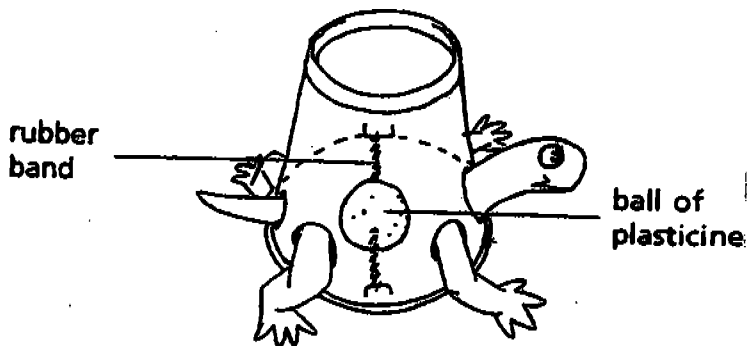
- 11 The diagram shows a light beam from a laser pointer travelling through 3 dividers made of different materials. The beam of light stops at Divider C.



What could be the materials used to make all the four dividers, A, B, C and D?

	Divider A	Divider B	Divider C	Divider D
(1)	glass	metal	clay	plastic
(2)	plastic	clay	wood	glass
(3)	wood	glass	metal	clay
(4)	clay	plastic	glass	metal

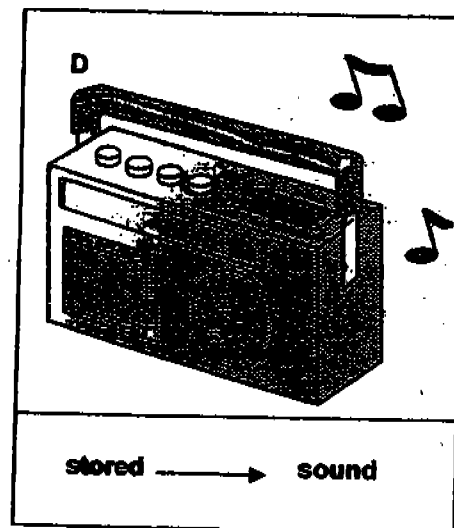
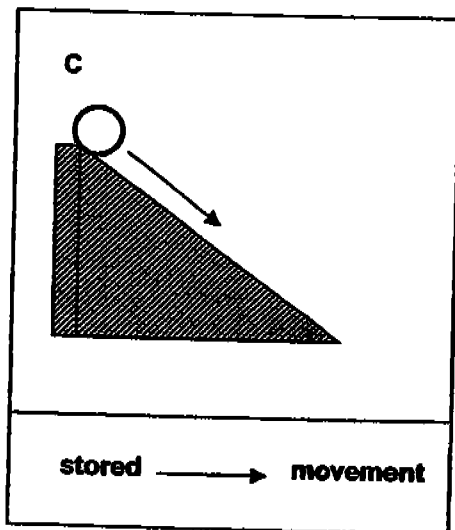
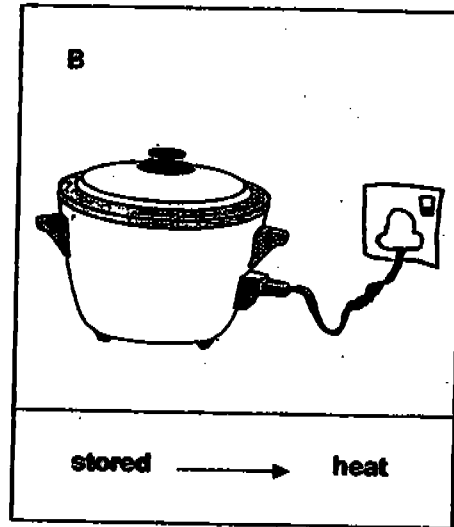
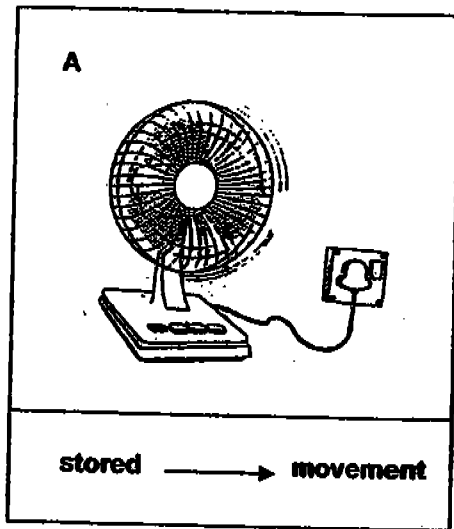
- 12 Jason made a toy tortoise using a polystyrene foam cup. He fixed a ball of plasticine to the rubber band inside the cup. He placed the tortoise on the table and rolled it backwards. When he released the tortoise, it was able to move forward.



If Jason wanted to make the toy tortoise move over a longer distance, what could he do?

Jason could ...	
(1)	increase the size of the polystyrene foam cup.
(2)	increase the number of legs on the toy tortoise.
(3)	roll the toy tortoise sideways over a longer distance.
(4)	roll the toy tortoise backwards over a longer distance.

13 Which of the following pictures has a correct description of the conversion of energy ?



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



- 14 The table shows some observations of a sportsman's breathing during three activities

Activity	No. of breaths in 15 seconds	Volume of air exchanged for each breath in 15 seconds (litres)
A	3	0.8
B	4	2.0
C	10	3.0

Which of the following activities are best represented by A, B and C?

	A	B	C
(1)	Sitting	Quick run	Slow jog
(2)	Sitting	Slow jog	Quick run
(3)	Quick run	Sitting	Slow jog
(4)	Slow jog	Quick run	Sitting

- 15 Mei Hua goes on a nature walk and picks up 2 fruits, A and B. She records her observations as shown below.

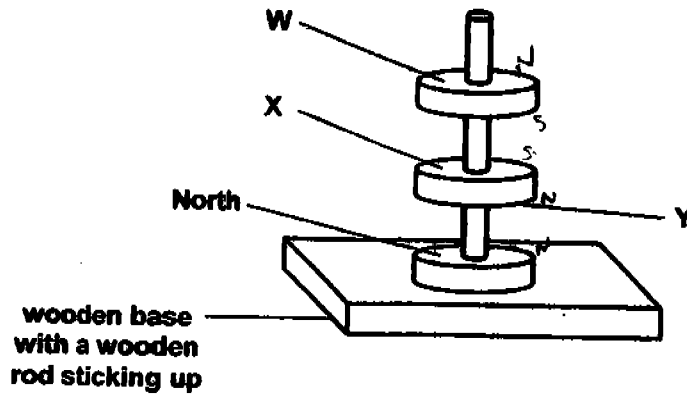
Fruit A	Fruit B
 <ul style="list-style-type: none"> • Original size • Fleshy and juicy • Many small seeds 	 <ul style="list-style-type: none"> • Size magnified 10 times • Dry and light • Sharp spikes attached

Based on her observations, Mei Hua is able to make some inferences about the fruits.

Which one of the inferences is possible of Fruit A but not possible of Fruit B?

- (1) It is dispersed by wind.
- (2) It sticks to the fur of animals.
- (3) It is dispersed by man and animals.
- (4) Its seeds are passed out together with animal droppings.

- 16 When Aden placed 3 ring magnets through a wooden rod, they were seen "floating" as shown in the diagram below.



Each pole of the magnet is labeled W, X and Y. The pole of the magnet at the bottom is indicated. Which of the following data shows the correct polarity of the other magnets?

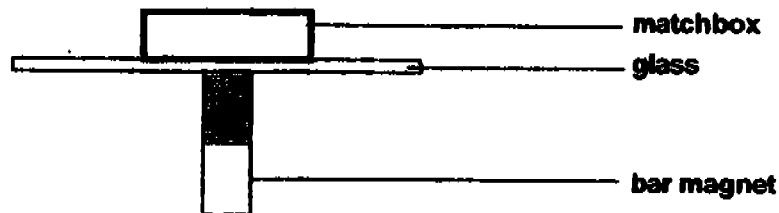
	W	X	Y
(1)	South	North	South
(2)	North	South	North
(3)	North	North	South
(4)	South	South	North

- 17 Which of the following statements about the life cycles of a cockroach and a grasshopper is/are true?

- A Both life cycles have four stages.
- B Both of their young moult during the early stages.
- C The cockroach lays only one egg at a time but the grasshopper lays many eggs.

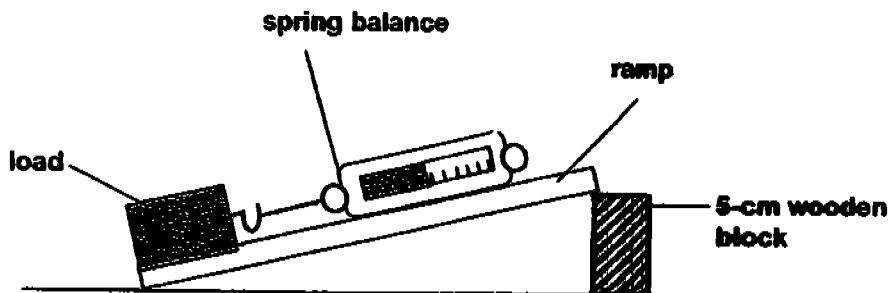
- (1) A only
- (2) B only
- (3) B and C only
- (4) A, B and C

- 18 When George moved the bar magnet, the match box on the thin sheet of glass moved too. His teacher told him that there was an object inside the match box.



What is the most likely object to be found inside the match box ?

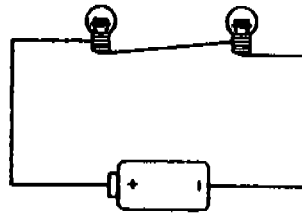
- A Steel clip
 - B Nickel coin
 - C Copper wire
 - D Aluminium strip
- (1) A only
 (2) A and B only
 (3) C and D only
 (4) B, C and D only
- 19 Nigel sets up an experiment to see whether the steepness of the ramp affected the amount of force needed to pull a load.



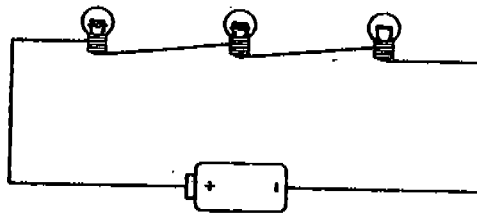
To carry out a fair test, which of the variables must be kept the same?

- A the wooden block
 - B the weight of the load
 - C the length of the ramp
 - D the surface of the ramp
- (1) A and C only
 (2) B and D only
 (3) A, B, and D only
 (4) A, C and D only

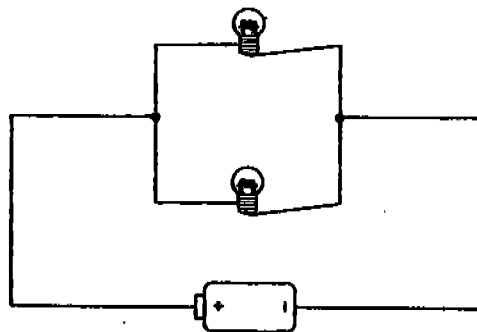
20. The diagrams show three closed circuits in which all the bulbs light up. The bulbs and batteries used are the same.



Circuit D



Circuit E

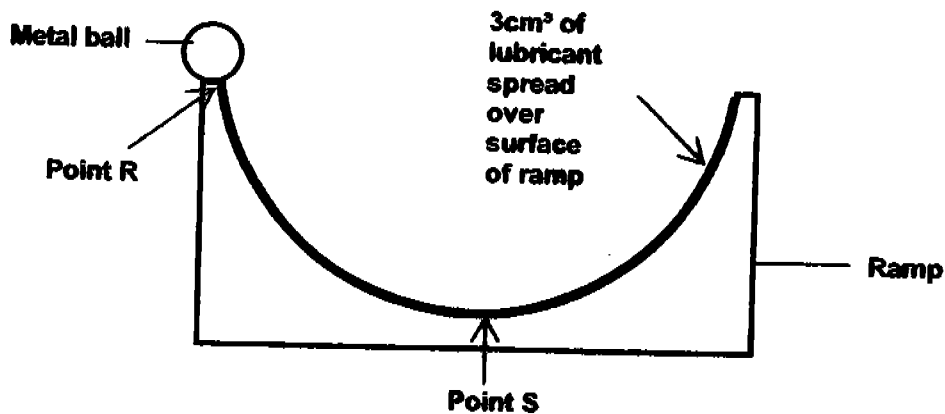


Circuit F

Arrange the circuits according to the brightness of the bulbs in ascending order.

- (1) D E F
- (2) E D F
- (3) F D E
- (4) F E D

- 21 The diagram shows a curved ramp coated with 3 cm^2 of lubricant. When a metal ball is released from Point R, the ball will roll up and down the curved ramp for some time before it comes to a rest at Point S. The time taken for the ball to come to rest is recorded in the table below. The experiment was repeated with 3 other lubricants to find out which is the best lubricant. The results are recorded in the table below.



Lubricant	Time taken for the ball to come to rest (sec)
K	15
L	8
M	22
N	30

Which lubricant (K, L, M or N) is the best lubricant?

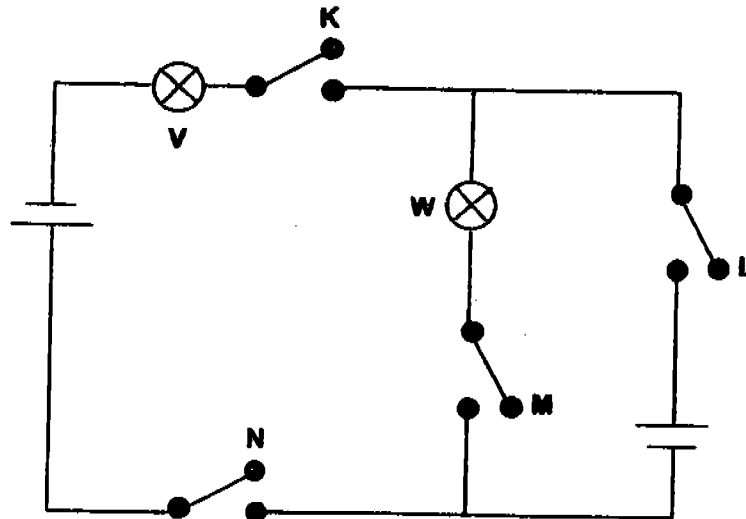
- (1) K
 - (2) L
 - (3) M
 - (4) N
- 22 The table shows 2 groups of animals classified according to their characteristics.

Group A	Group B
Butterfly	Hamster
Frog	Guppy
Mealworm beetle	Turtle

How are the two groups of animals classified?

- (1) The place they live in.
- (2) The type of food they eat.
- (3) Whether the young of the organism looks like the adult.
- (4) Whether the organism lays eggs or give birth to the young alive.

- 23 In the circuit below, which of the switches should be left open and which should be closed so that only bulb V lights up?



	Switch K	Switch L	Switch M	Switch N
(1)	Open	Closed	Closed	Open
(2)	Closed	Closed	Open	Closed
(3)	Open	Open	Closed	Closed
(4)	Closed	Closed	Open	Open

- 24 Which of the following actions do not help to conserve fresh water?

- A Washing a hand towel under a running tap.
- B Using a washing machine to wash two shirts.
- C Using a pail of water to wash a motor-car.
- D Flushing a garden drain using a garden hose.

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

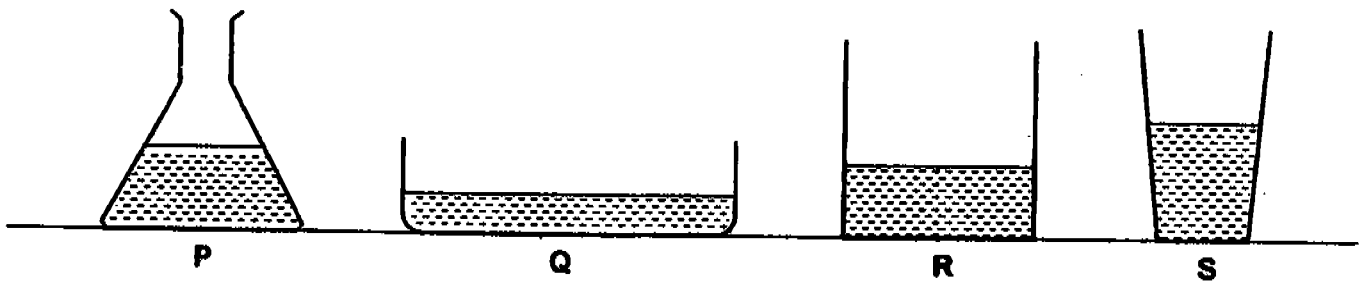
- 25 Gopal filled 4 similar fish tanks with the same amount of water and put 25 guppies into each of them. He kept the conditions in all the 4 fish tanks constant except for the number and sex of the guppies which he put into each tank. The table below shows how he distributed the fish.

TANK	MALE GUPPY	FEMALE GUPPY
W	15	10
X	20	5
Y	25	0
Z	0	25

Which of the options below (1, 2, 3 or 4) best represents the probable number of fish in the four tanks after 3 months?

	Tank W	Tank X	Tank Y	Tank Z
(1)	40	30	25	30
(2)	30	40	30	15
(3)	45	35	20	15
(4)	35	45	25	25

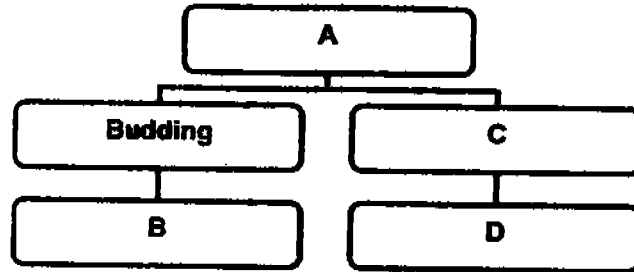
- 26 The diagram shows four containers (P, Q, R, S) containing 500 ml of tap water each. They were left on table, near an open window on a bright and sunny day for 6 hours. At the end of the 6 hours, the volume of the water left in each container was measured and recorded.



Which of the following amounts show the correct record of the volumes of the water left in each container after the 6 hours?

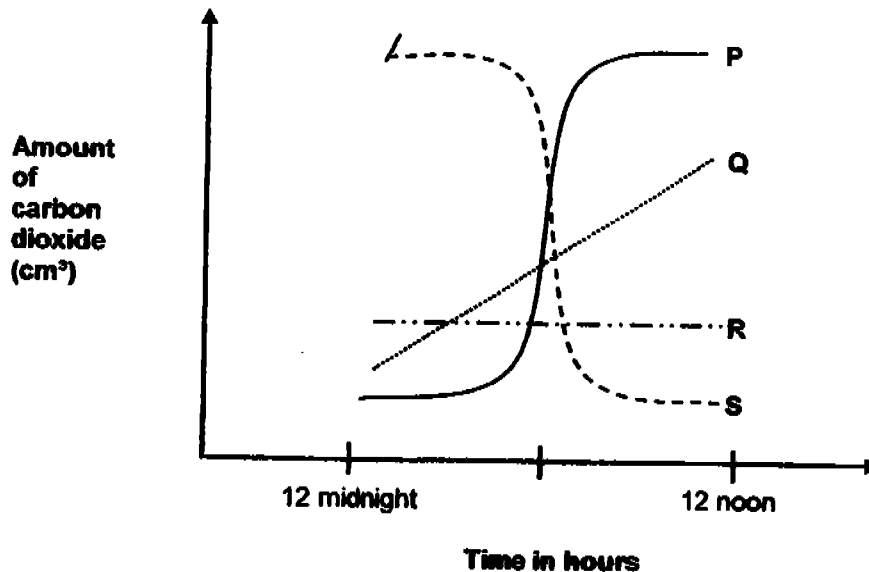
Volume of water (ml) left in each container				
	P	Q	R	S
(1)	450	485	470	465
(2)	470	450	465	485
(3)	485	450	465	470
(4)	470	485	465	450

- 27 The classification chart below shows how some organisms produce new cells. Which headings can be put in A, B, C and D?



	A	B	C	D
(1)	Binary Fission	Cell Division	Yeast	Amoeba
(2)	Binary Fission	Amoeba	Cell Division	Yeast
(3)	Cell Division	Binary Fission	Amoeba	Yeast
(4)	Cell Division	Yeast	Binary Fission	Amoeba

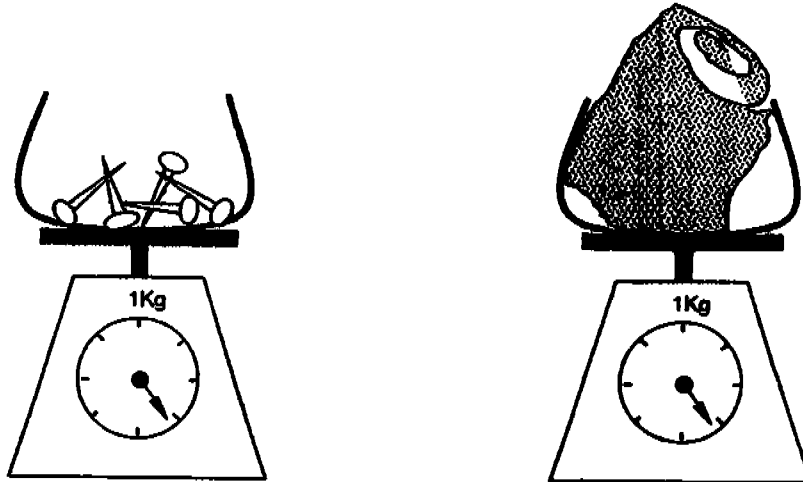
- 28 Melvin placed a potted plant in his room. He used a data logger to measure the level of carbon dioxide around the plant.



Which one of the line graphs shows correctly the most likely amount of carbon dioxide around the plant from 12 midnight to 12 noon?

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

- 29 Ali compared the volumes of 400g of nails and 400g of cotton wool. The containers are of negligible weights.



What could he conclude from the comparisons of the volumes?

- A The iron nails have a definite volume but the cotton wool does not.
 - B The volumes of both the iron nails and the cotton wool are the same.
 - C For the same weight, the iron nails has a smaller volume than the cotton wool.
 - D For the same weight, the iron nails have a greater volume than the cotton wool.
- (1) C only
 - (2) D only
 - (3) A and C only
 - (4) A and D only

- 30 When Ronald was loosening the lid of a jam bottle, he was using his

- A wrist joint
 - B ankle joint
 - C finger joints
- (1) A only
 - (2) C only
 - (3) A and B only
 - (4) A and C only

**ANGLO-CHINESE SCHOOL (JUNIOR)
SEMESTRAL ASSESSMENT 1 (2005)
SCIENCE
PRIMARY SIX**

NAME : _____ ()
CLASS : P6 _____
DATE : 12th May 2005

BOOKLET B

Total Time (Booklets A and B) : 1 hour and 45 minutes

**Do not open the booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.**

_____ Parent's Signature
_____ Date

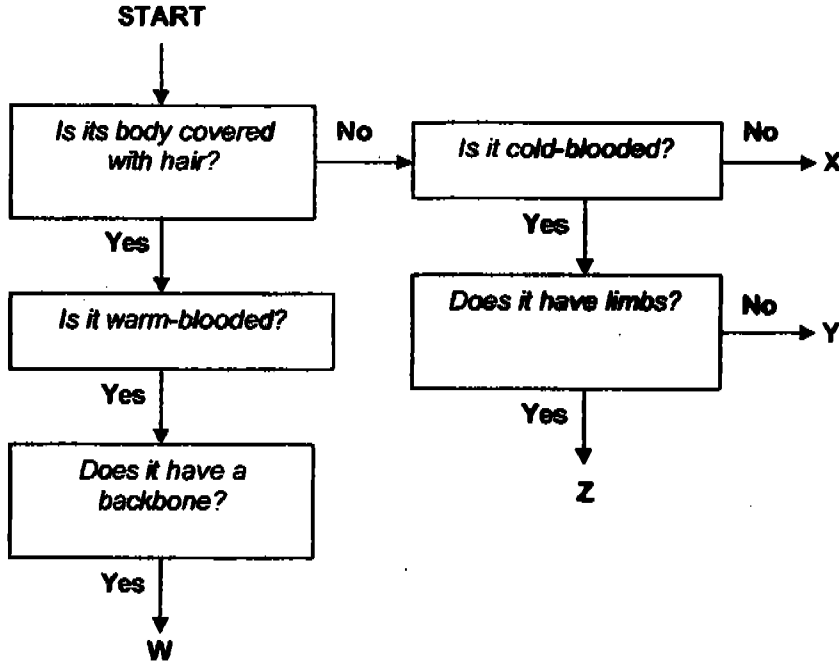
BOOKLET A	/60
BOOKLET B	/40
TOTAL	/100

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 flowchart carefully.



(a) Which letter (W, X, Y or Z) best describes a platypus? [1]

(b) Which animal could be Y? Why? [2]

32 Complete each blank in the paragraph below with a word. [2]

Plants trap light energy from the Sun to produce food. This is passed on to us when we consume food. The Sun is the main natural _____ of energy for all living things on Earth. The food we eat is kept as _____ energy in our body. The amount of energy we need depends on the type of activities we are carrying out.

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Score	
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33

Jonan planted the same number of cabbage, lettuce and spinach in a terrarium (an artificial habitat) and put in some snails. He wanted to find out which vegetable the snails liked to eat most. He checked all the plants daily at 5 pm and recorded the number of snails he found on these plants. The results are shown in the table below.

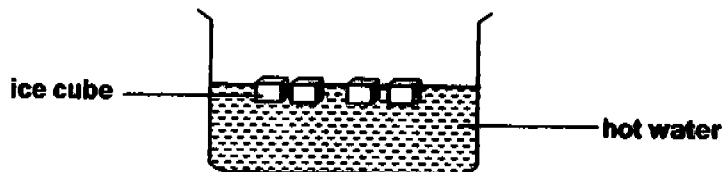
	Number of snails found		
	Cabbage	Lettuce	Spinach
Day 1	6	7	2
Day 2	2	7	2
Day 3	3	7	2

(a) From the results, which vegetable did the snails seem to like the least? [1]

(b) If the lettuce and cabbage were removed, how would the snails respond? [1]

34

The diagram shows some ice cubes just as they are put in a basin of hot water.



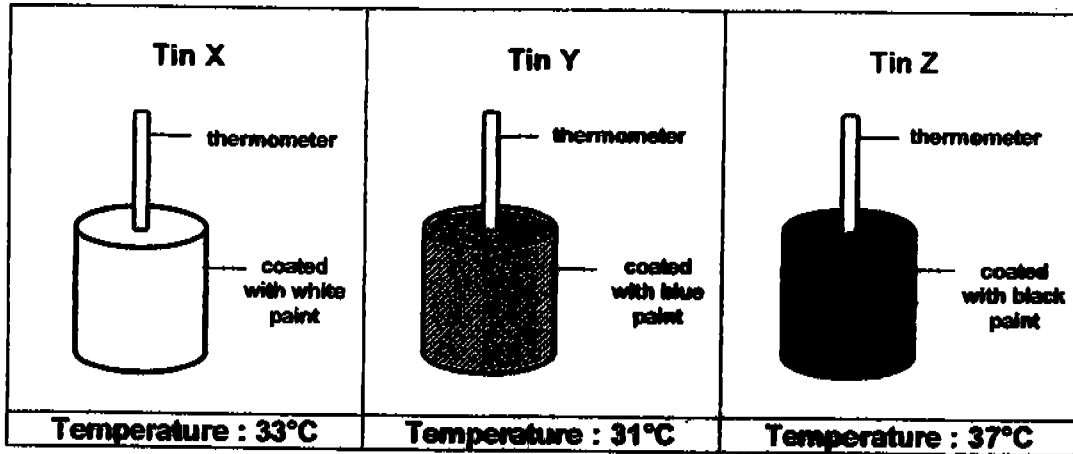
(a) What will happen to the ice cubes? [1]

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

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Score	
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35 Derek conducted an investigation shown in the diagram. He placed three empty tins, X, Y and Z, under the hot sun. A thermometer was inserted into each tin. After an hour, he recorded the temperature of the air in each tin.



(a) What was the aim of the experiment?

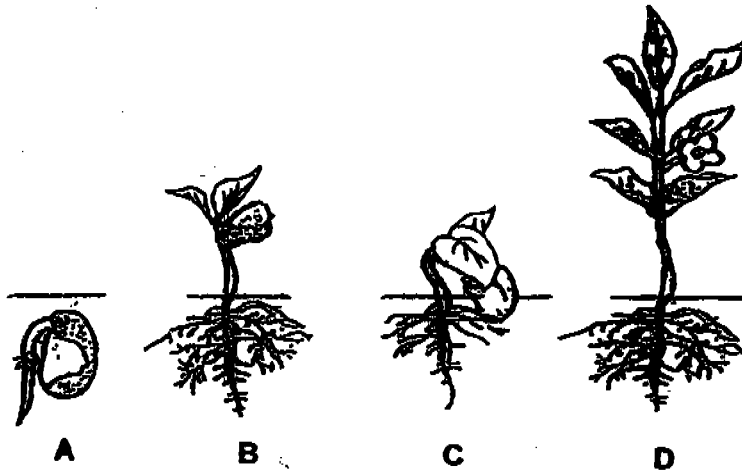
(b) His teacher told him that he should have set up a control for his investigation. In the box below, draw and label the set-up for the control.

[2]

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Score	
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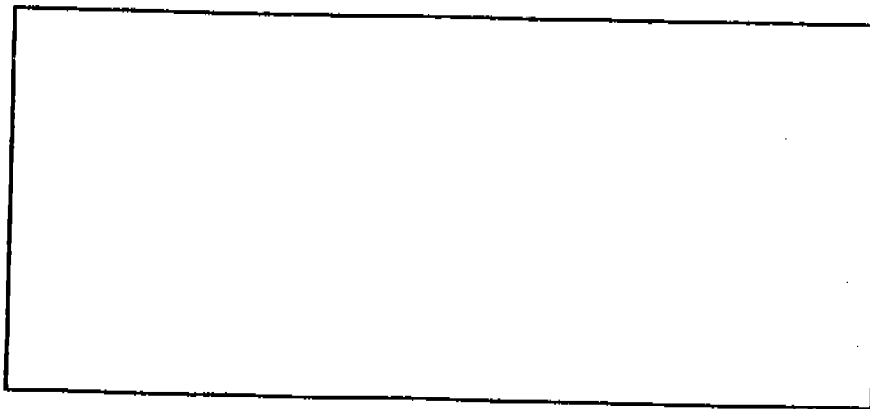
Yacob planted a few bean seeds in a transparent pot. Over the next month, he observed its growth and drew his observations. The diagrams show his drawings.



(a) Arrange Yacob's drawings of his observations (A, B, C and D) in the correct order beginning with what he saw first. [1]

(b) What are the conditions necessary for germination to take place? [1]

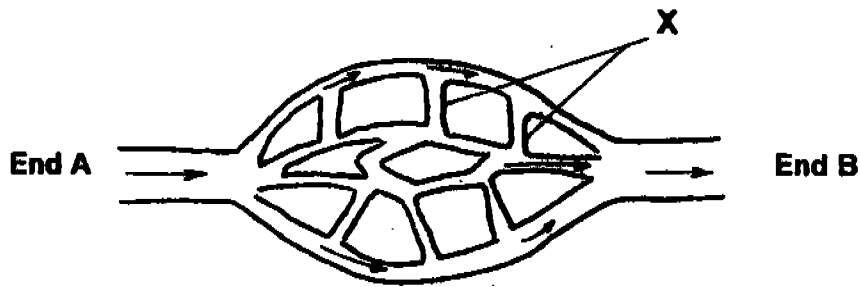
(c) In the box below, draw diagram A from Yacob's observations and label the part that provides the energy for germination. [1]



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Score	1
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- 37 The diagram shows the movement of blood from an artery to a vein through some capillaries.



- (a) Complete the table by writing in the words 'low' or 'high' to represent the level of oxygen and carbon dioxide in the blood vessels. [1]

Gas	Level of the gas	
	End A	End B
Oxygen		
Carbon dioxide		

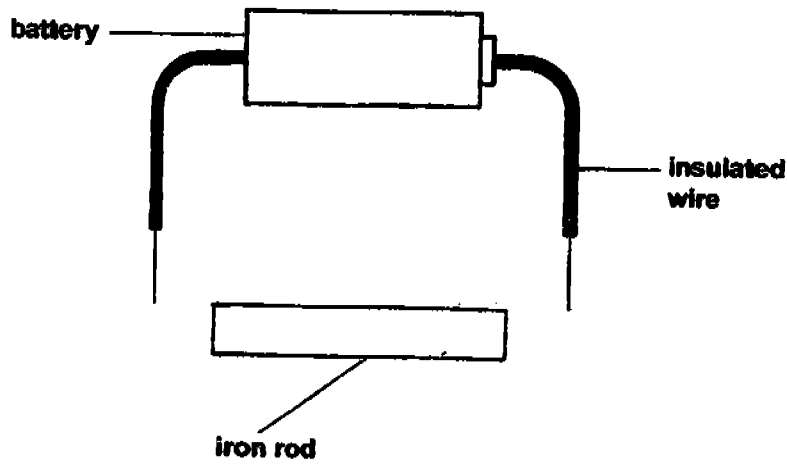
- (b) Name End A and End B. [1]

End A is the _____

End B is the _____

- (c) The blood vessels in the part labeled X have thinner walls than End A and End B. Explain why. [1]

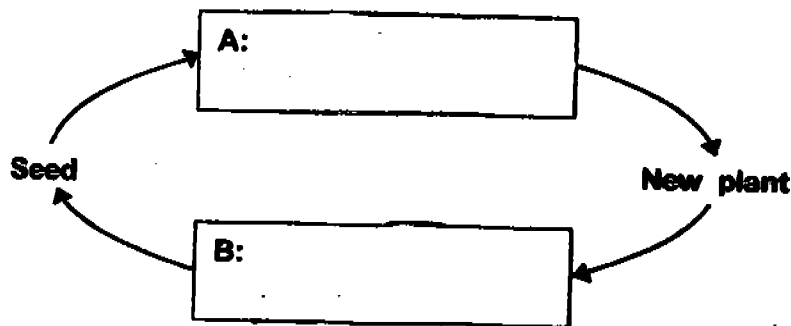
38 An electromagnet can be made by using a battery, an insulated wire and an iron rod.



- (a) In the diagram, draw lines to connect the insulated wires so that the iron rod becomes an electromagnet. [1]
- (b) Without changing the iron rod, state 2 ways in which the electromagnet can be made stronger? [2]

- (i) _____
- (ii) _____

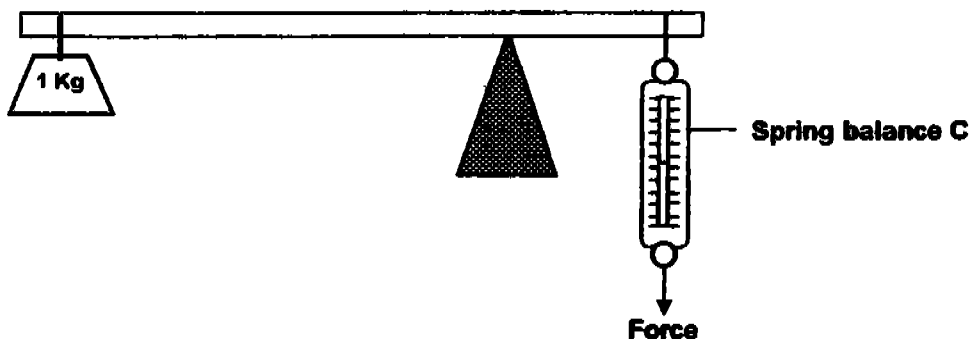
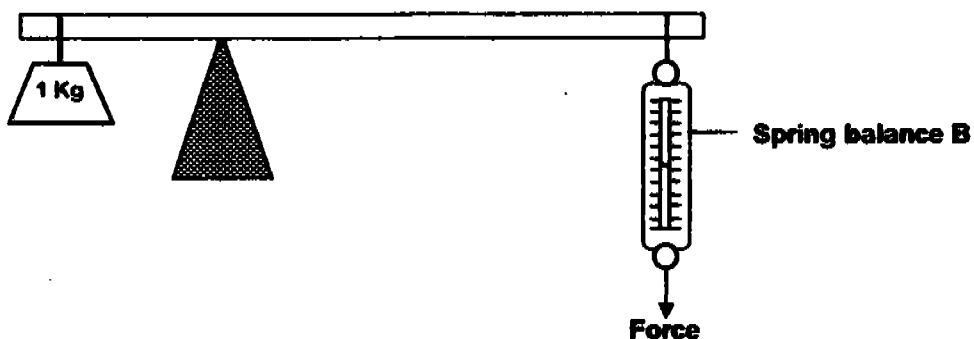
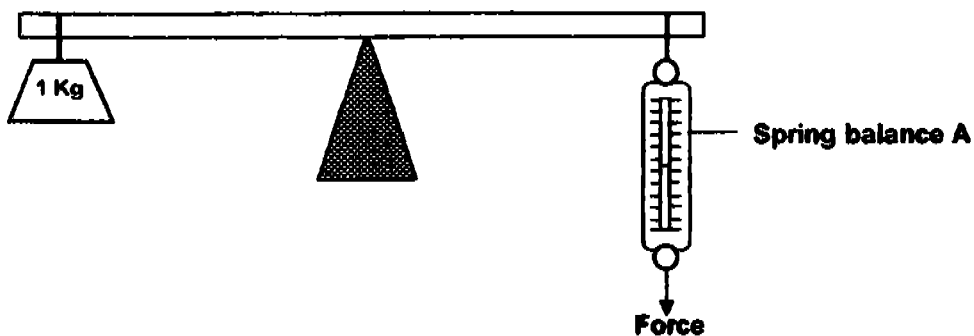
39 The diagram represents the life cycle of a flowering plant. A is a process and B is a plant part. Fill in the blanks correctly with two of the following words. [2]



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Score	
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40 Look at the diagrams below.

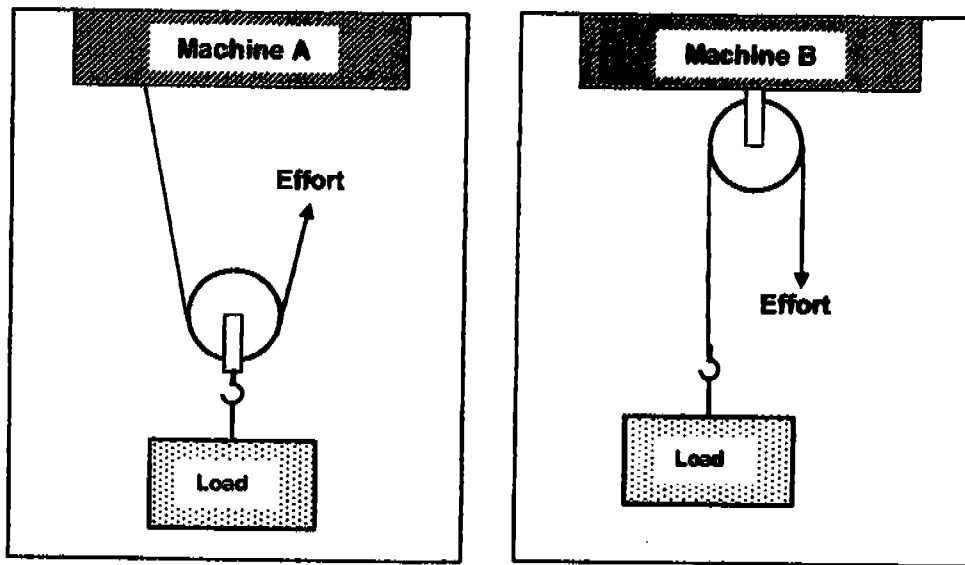


- (a) Which one of the spring balances (A, B or C) will record the highest reading? [1]
-
- (b) What must be done to the fulcrum in set up A so that the force needed to move the load is reduced? [1]
-
-

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41 The diagram shows 2 simple machines A and B.



(a) Read the statements and complete the table by writing 'True' or 'False' [1]

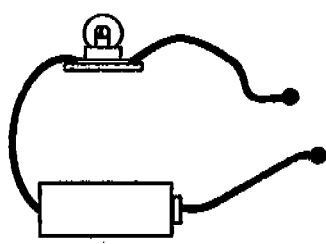
	Machine A	Machine B
There is a change in the direction of force.		
The distance moved by the force is greater than the distance moved by the load.		

(b) Give an example of Machine B and state how it can be useful to Man. [1]

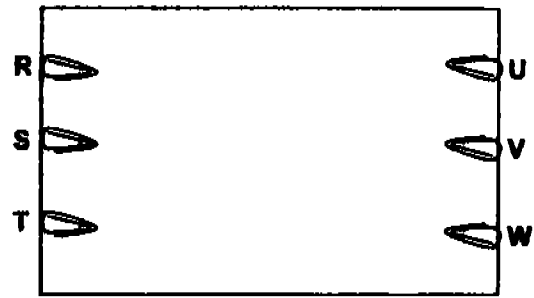
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42 Gabriel constructed a circuit tester and a circuit board as shown in the diagrams. The circuit board has a paper clip at the points R, S, T, U, V and W. Some of the paper clips are connected by wires behind the card.



Circuit tester



Circuit board

To find out how the wires behind the circuit board was connected, Gabriel connected the two ends of the circuit tester to two different paper clips at the same time and recorded the results in the table below.

Clips	Bulb lit up	Bulb did not light up
R and W	✓	
S and U		✓
R and T	✓	
S and W	✓	
V and W		✓
R and S	✓	

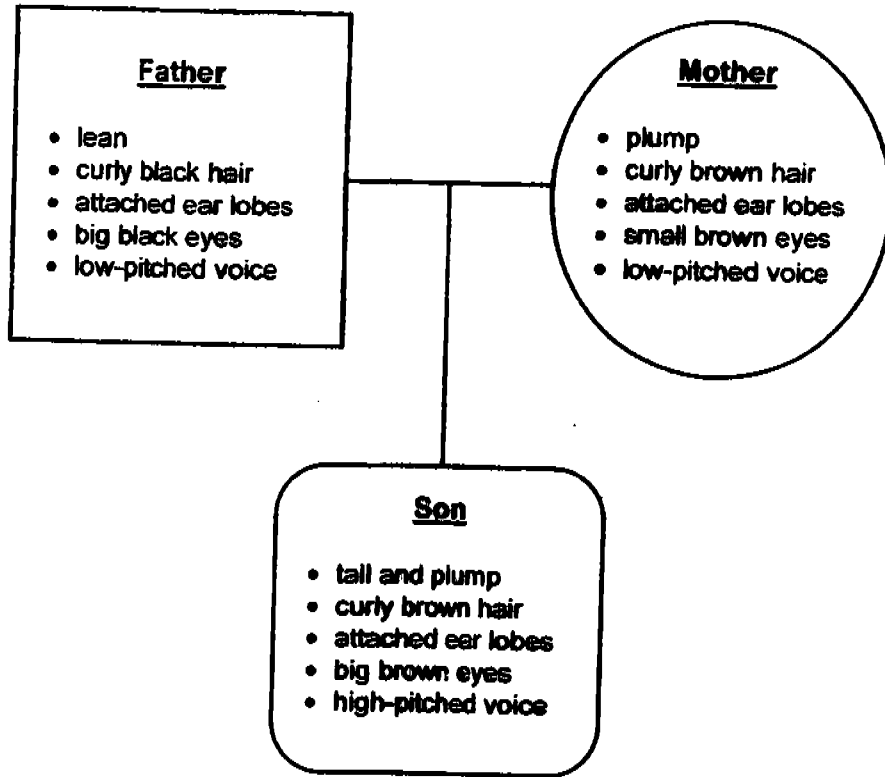
(a) Use the information in the table and guess how the wires behind the circuit board were arranged. In the diagram below, draw two more wires to show a possible arrangement. The first one has been drawn for you. [1]



(b) Gabriel then replaced the battery in the circuit tester and tested clips R and W again. The bulb lit up brightly only for a second. Suggest a possible reason and provide an explanation. [1]

43

The diagram below represents some of the characteristics of a couple and their nine year old son. Study the diagram carefully and answer the questions that follow.



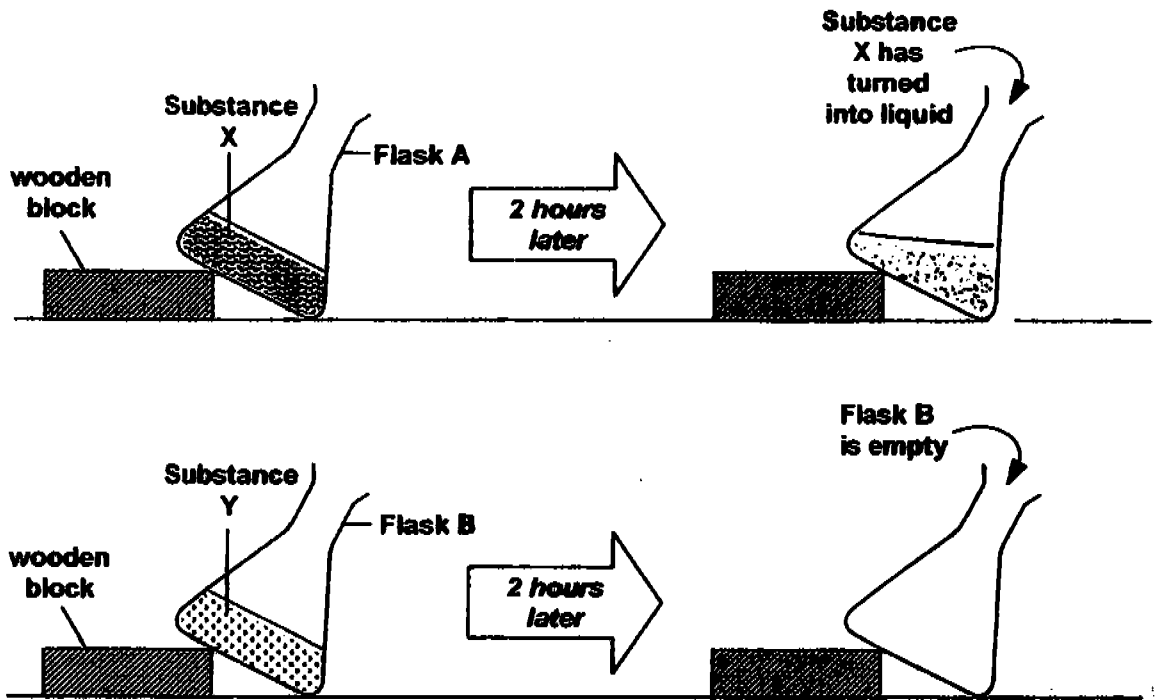
(a) Which characteristics common to both parents did the son inherit? [1]

(b) Which characteristic found only in the father did the son inherit? [1]

(c) Why do all living things reproduce? [1]

Score	

44 Ali had 2 flasks, A and B, containing substances X and Y respectively. He left them on the table top at room temperature(30° C) for 2 hours.



After the 2 hours, he noticed that Substance X had turned into a liquid, while nothing was left of Substance Y.

(a) In the diagram above, draw the liquid state of Substance X in Flask A. [1]

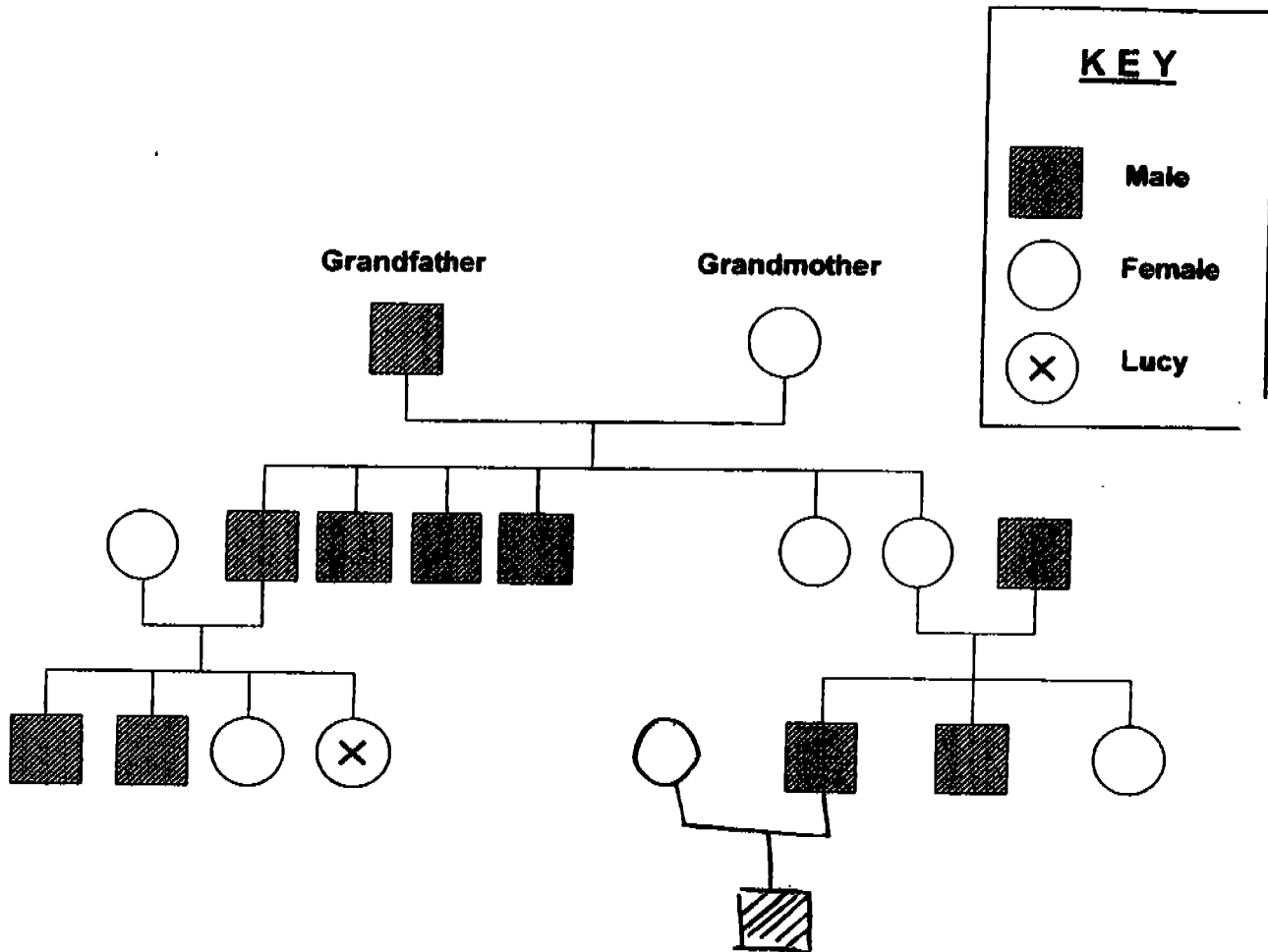
(b) Suggest a substance that could be Substance Y. [1]

(c) Ali then replaced Substance X in Flask A with plasticine. He noticed no change after 2 hours. Explain why. [1]




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Score	
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45 The diagram below shows Lucy's family tree.



KEY

-  Male
-  Female
-  Lucy

(a) From the diagram we can tell that Lucy's grandfather has _____ daughters and seven _____ [1]

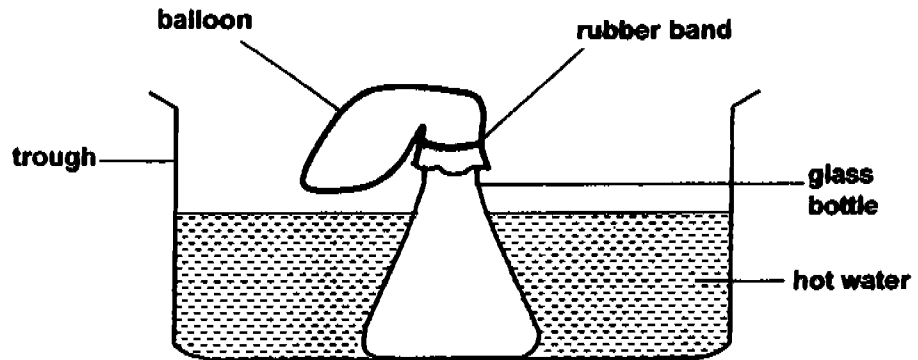
(b) How many brothers does Lucy's father have? _____ [1]

(c) Lucy receives information that one of her male cousins has married and he and his wife has a new baby boy. In the diagram, draw the symbols to represent the new additions to the family tree. [1]

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- 46 Bala fixed a deflated balloon snugly over the mouth of a glass bottle. He held down the glass bottle in a trough of hot water as shown in the diagram. The water in the trough had a temperature of 95°C.



- (a) What change would Bala observe in the balloon after a short while? [1]

- (b) Explain how the hot water contributed to the change observed in the balloon. [1]

☺ End of Paper ☺

Score	
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SKA7

ANGLO CHINESE SCHOOL (JUNIOR)
SEMESTRAL ASSESSMENT 1 (205)
SCIENCE
PRIMARY SIX

01. 3	11. 3	21. (4)
02. 2	12. 4	22. 3
03. 4	13. 1	23. 2
04. 1	14. 2	24. 4
05. 4	15. 4	25. 3
06. 1	16. 2	26. 3
07. 2	17. 2	27. 4
08. 3	18. 2	28. 4
09. 2	19. (3)	29. 1
10. 4	20. 2	30. 4

31) a) Letter W

b) It could be a snake. A snake is not covered in hair, is cold blooded and does not have limbs.

32) source

chemical

33) a) The snails seem to like spinach the least.

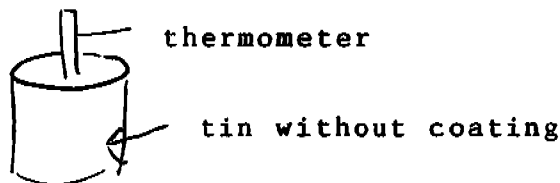
b) They will all start to eat the spinach.

34) a) They will melt.

b) The hot water will cause the ice cube to gain heat therefore it will melt more quickly when left in a container with no water.

35) a) To which the colour absorbs heat best.

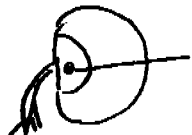
b)  thermometer

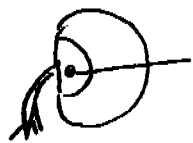


tin without coating

36) a) A, C, B D

b) There must be air, water and warmth

c)  seed leaf



37) a) High Low b) artery

Low High vein

c) It is to allow gaseous exchange.



- b) i) Add more batteries
ii) Coil the insulated wire around the iron rod.

39) A : Germination B: Fruit

40) a) Spring balance C

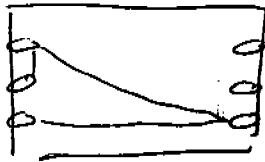
b) Move the fulcrum closer to the load.

41) a) False True

True False

b) Hoisting a flag. The flag can be hoisted up without someone going to place the flag.

42) a)



b) The voltage of the battery was too high and the bulb lit up brightly and blew.

43) a) Attached ear lobes

b) Big eyes

c) It is to ensure the continuity of their own kind.

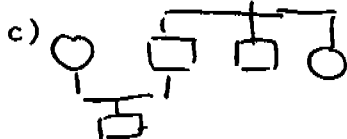
44) a)

b) It could be dry ice

c) Plasticine does not change its shape unless somebody shapes it.

45) a) 2 grandchildren

b) 3 brothers



46) a) Balloon will inflate a little.

b) The hot water heat up the air in the glass bottle and the air expanded, causing the ball to inflate