

SIA2



**RAFFLES GIRLS' PRIMARY SCHOOL  
PRELIMINARY EXAMINATION 2004  
PRIMARY 6 SCIENCE (EM1/EM2)**

<b>Booklet A</b> 60 marks		
<b>Booklet B</b> 40 marks		
<b>Total</b> 100 marks		
	<u>Class</u>	<u>Level</u>
Highest score		
Average score		
Parent's Signature		

**BOOKLET A**

Name: \_\_\_\_\_ ( )

Class: P 6\_\_

Date: 26<sup>th</sup> August 2004

30 Questions

60 marks

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

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

FOLLOW ALL INSTRUCTIONS CAREFULLY.

**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).

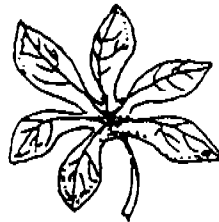
1. Sarah wants to buy a cooking pot for her mother. The pot she is looking for must satisfy the following criteria:

- i. It does not rust easily.
- ii. It is a good conductor of heat.
- iii. The handles are good insulators of heat.
- iv. While cooking, she is able to see the contents in the pot without lifting the lid.

The various parts of the pot are most likely made of:

- (1) wood, rubber and iron
- (2) aluminum, clay and glass
- (3) copper, rubber and ceramics
- (4) stainless steel, glass and plastic

2. Study the diagrams below carefully.



From what you can observe only, which of the following statement(s) is/are correct?

- A) Both leaves are green.
- B) Both have entire edges.
- C) Both have network veins.
- D) Both have jagged edges.

(1) C only

(2) A and B only

(3) B and C only

(4) A and D only

3. Which one of the following statements is correct?

- (1) Fungi are plants.
- (2) Fungi obtain energy from the Sun.
- (3) Fungi feed on plants and animals that are dead and alive.
- (4) Fungi are a type of animal as they feed on other living things.

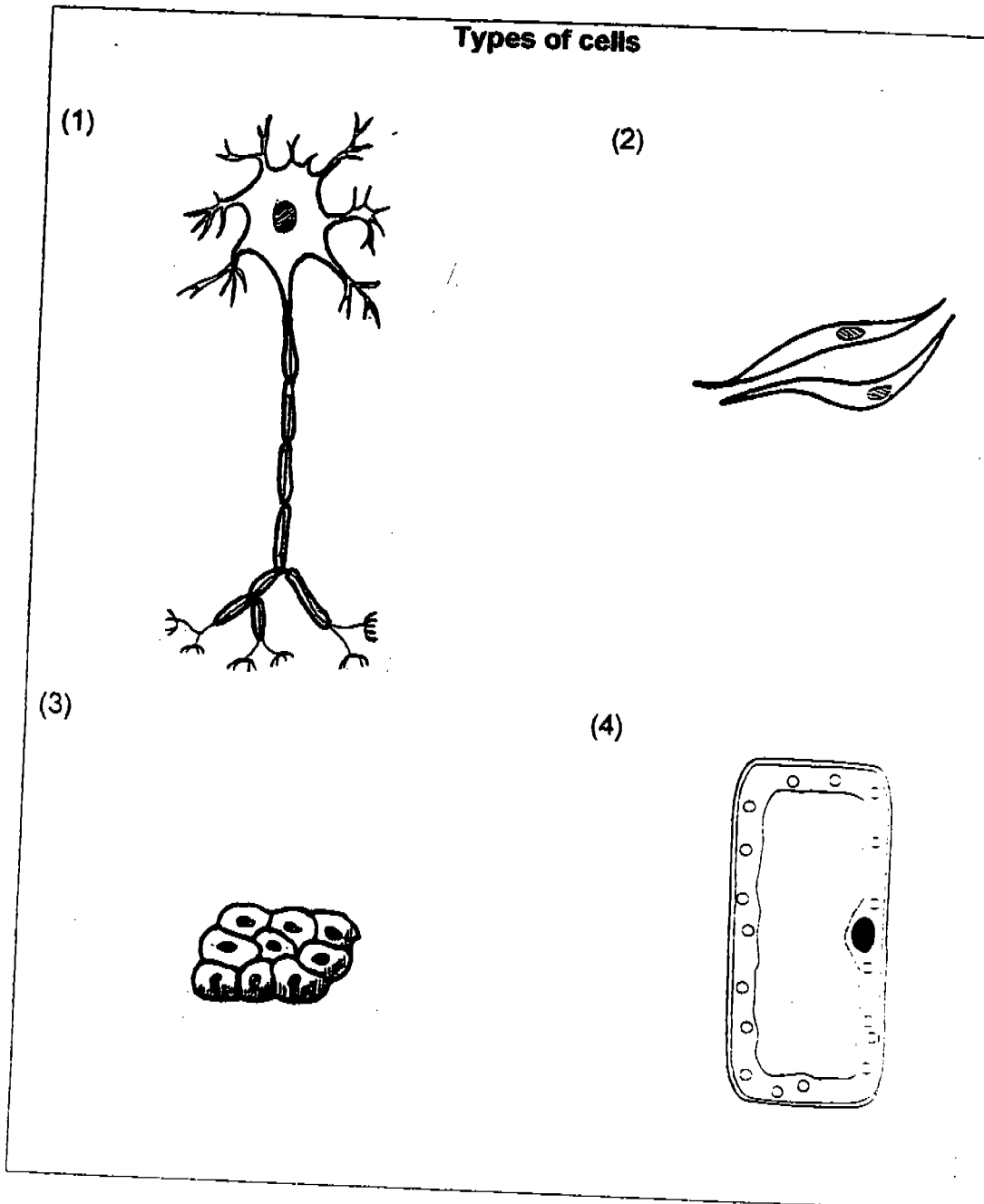
4. Study the table carefully. It contains some information about the planets in the Solar System.

Planet	Distance from Sun (million miles)	Diameter (miles)	Time taken to orbit the Sun
Mercury	36.0	3100	88 days
Venus	67.2	7700	224.75 days
Earth	93.0	7927	365 days
Mars	141.5	4200	687.0 days
Jupiter	483.3	88700	11.84 years
Saturn	886.1	75100	29.46 years
Uranus	1783.0	29300	84.01 years
Neptune	2793.0	27700	164.79 years
Pluto	3666.0	3600	248.43 years

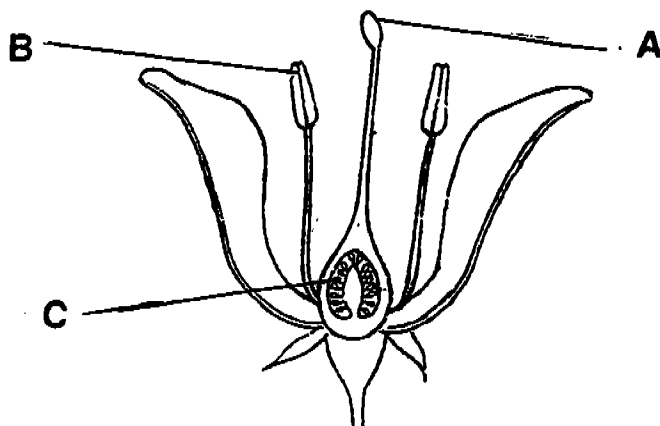
Which one of the following statements is correct?

- (1) The further the planets are from the Sun, the longer it takes for them to orbit the Sun.
- (2) The nearer the planets are to the Sun, the longer it takes for them to orbit the Sun.
- (3) The greater the diameter of the planets, the longer it takes for them to orbit the Sun.
- (4) The smaller the diameter of the planets, the nearer the planets are to the Sun.

5. Study the diagrams below carefully. Which one of the cells resembles an animal brain cell?



6. The diagram below shows the cross-section of a flower. Which one of the following correctly labels the parts of the flower?

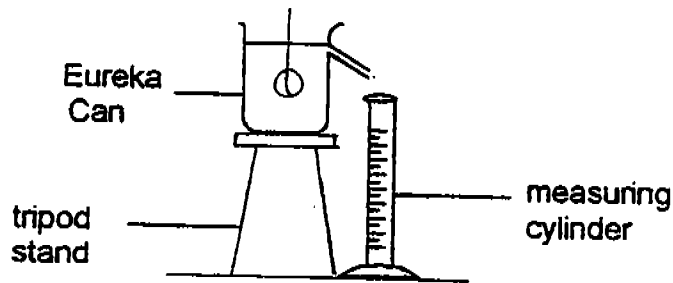


	A	B	C
(1)	anther	stamen	ovary
(2)	anther	stigma	ovule
(3)	stigma	anther	ovule
(4)	stamen	pistil	ovary

7. Study the table below carefully. Which one of the following is incorrectly classified?

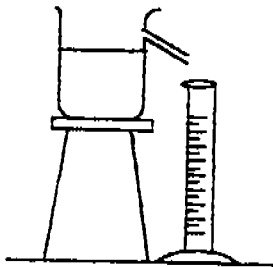
Producing New Plants From Plant Parts				
	Leaves	Suckers	Underground stems	Seeds
(1)	Begonia	Heliconia plant	Onion	Sunflower
(2)	African violet	Garlic	Water chestnut	Chilli
(3)	Begonia	Sealing wax palm	Potato	Tomato
(4)	Bryophyllum	Banana	Ginger	Lady's finger

8. David wants to find out the volume of a solid. He carried out the experiment as shown below.

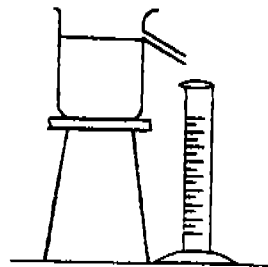


Which one of the diagrams below correctly shows the water level in the Eureka can before the solid is lowered into it?

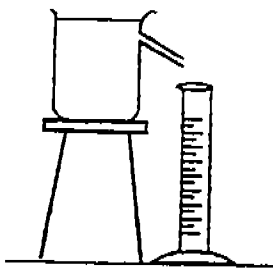
(1)



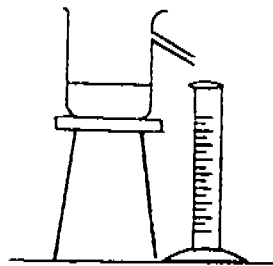
(2)



(3)



(4)

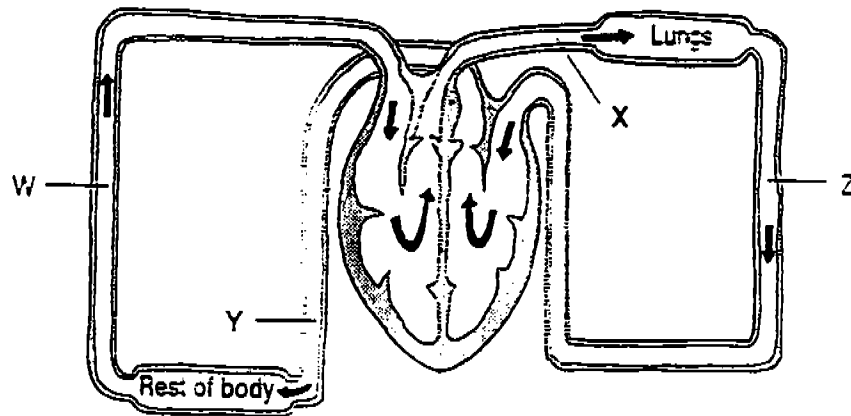








13. The diagram below shows how blood is circulated in our body.



Which one of the following represents correctly the amount of oxygen at W, X, Y and Z?

	Less oxygen at	More oxygen at
(1)	W and Y	X and Z
(2)	X and Z	W and Y
(3)	Y and Z	X and W
(4)	W and X	Y and Z

14. A teacher suspected that one of her pupils had been smoking heavily out of school but no cigarettes were found on him. According to her, his breath gave him away. Which sense organ do you think the teacher was using when making such an assumption?

- (1) Eyes only  
 (2) Taste only  
 (3) Nose only  
 (4) Ears only

15. Digestion of food begins in our \_\_\_\_\_ and ends in our \_\_\_\_\_.

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

16 The leaves of some plants growing near a construction site are covered by soot and dust. These plants cannot grow healthily because they are unable to take in \_\_\_\_\_.

- A water
- B oxygen
- C sunlight
- D carbon dioxide

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

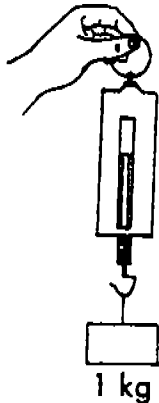
17. Which of these statements is/are correct?

- A Smaller objects are always lighter.
- B Gravity affects the weight of an object.
- C The effect of weight cannot be felt but can be seen.
- D The weight of an object depends on its mass only.

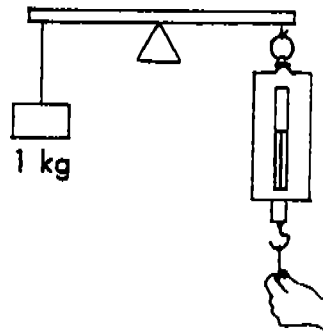
- (1) A and B only
- (2) B only
- (3) C and D only
- (4) B, C and D only

18. Which of the following spring balances will show the highest reading?

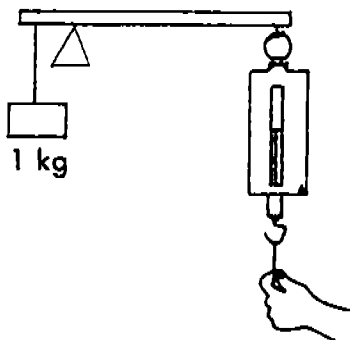
(1)



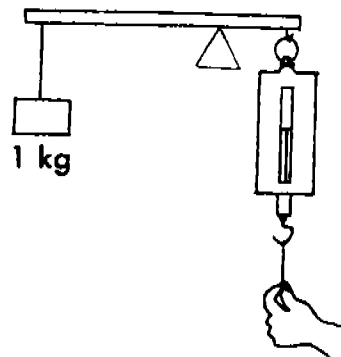
(2)



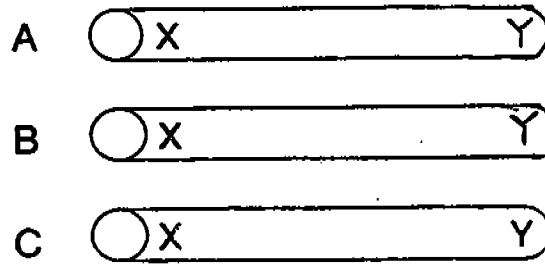
(3)



(4)



19. Tom has 3 rods labelled A, B and C.



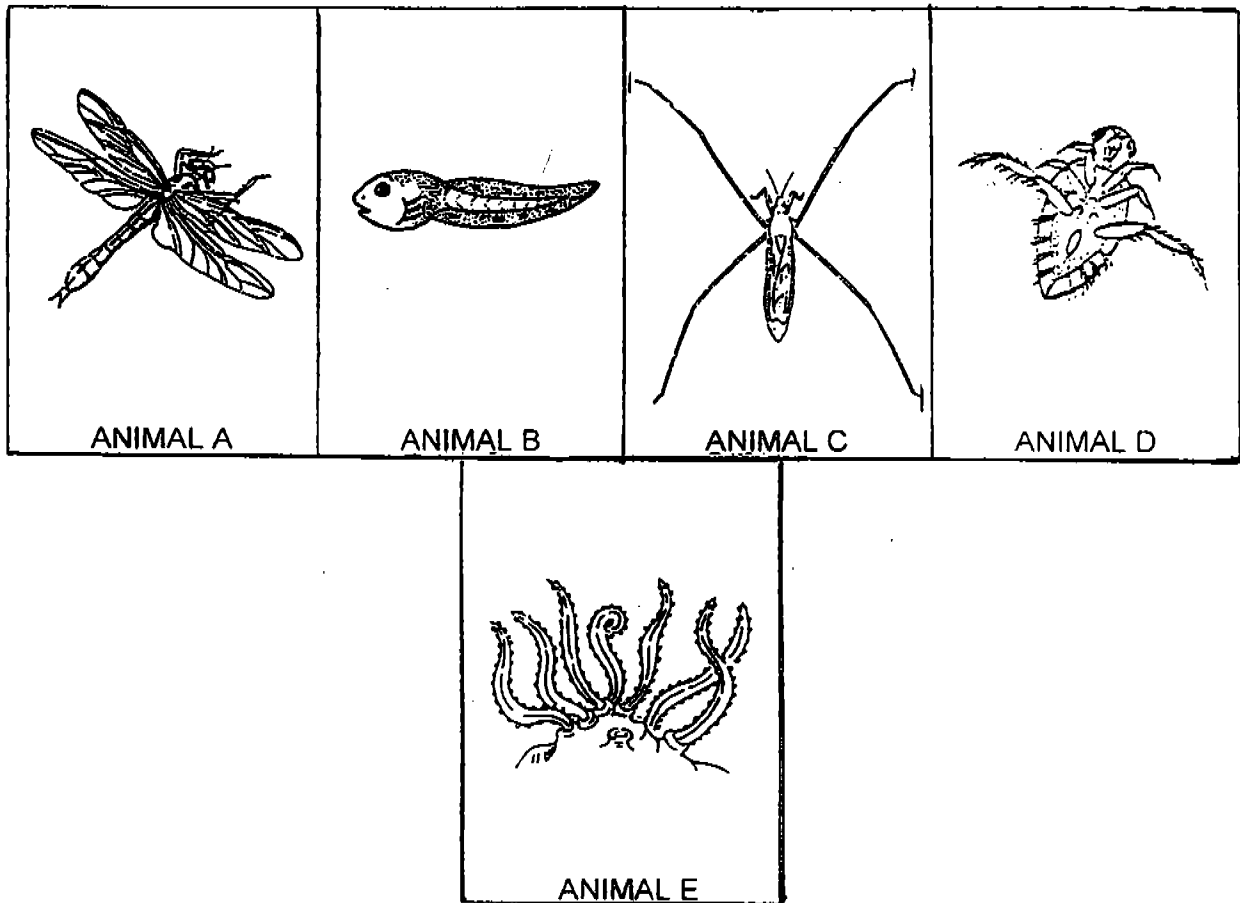
He carried out a simple test by bringing a bar magnet near the 3 rods and recorded his results in the table below.

Rods	Test results
A	X was attracted to the south pole of the magnet but Y repelled it.
B	X was attracted to the two poles, Y was also attracted to the two poles
C	Both X and Y were not attracted to both poles of the magnet.

Which one of the following statements about rods, A, B and C is correct?

- (1) Rod C is a not a metal.
- (2) Rods A and B are magnets
- (3) Rod B is a temporary magnet.
- (4) Rods A and B are made of magnetic materials.

20. Joanna and her classmates wanted to collect the pond animals shown below.

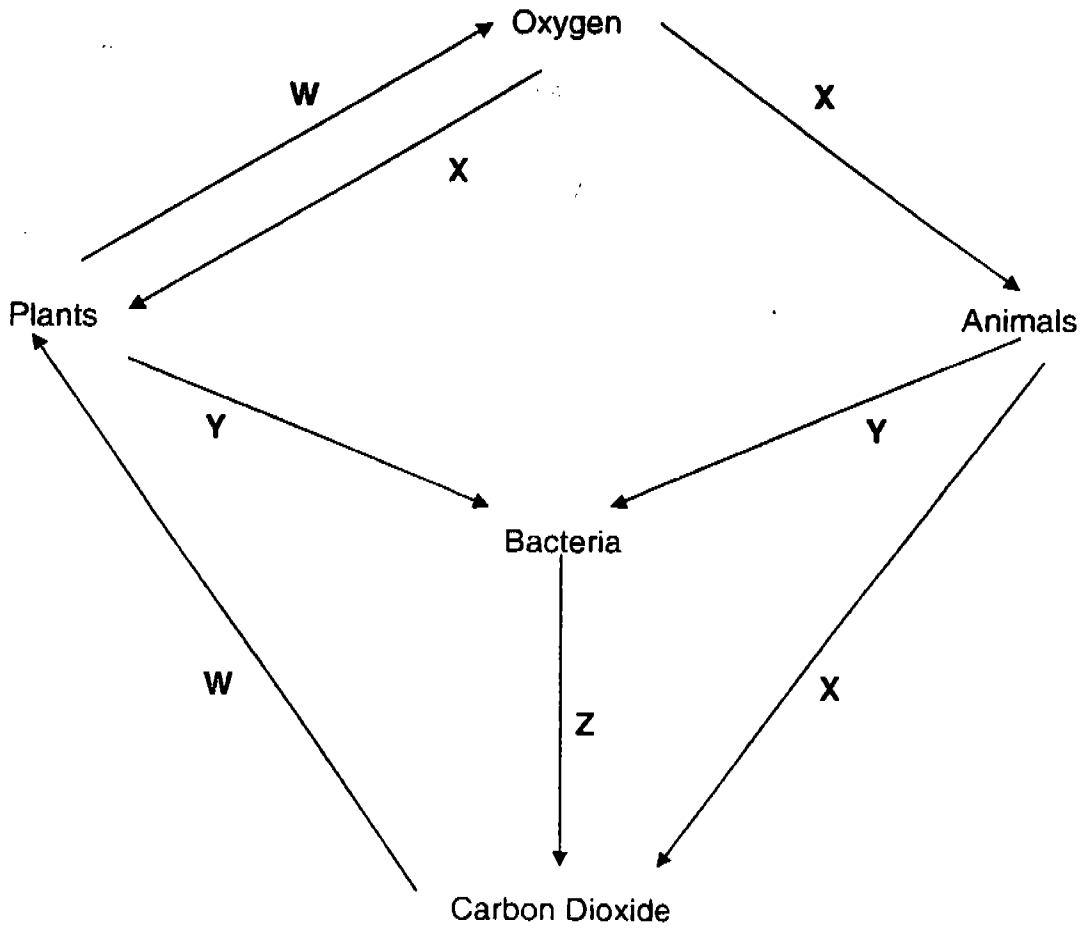


The table shown below shows the different parts of the pond they are most likely to find them.

Which of these locations have been correctly matched to the animals shown above?

	Around the Pond	On the Surface	In the Water	Bottom of Pond	Near the Surface
(1)	D	A	E	B	C
(2)	B	C	A	D	E
(3)	A	C	B	E	D
(4)	C	B	D	A	E

21. The following diagram shows the interdependence of plants and animals in the environment and how these organisms interact with the environment.

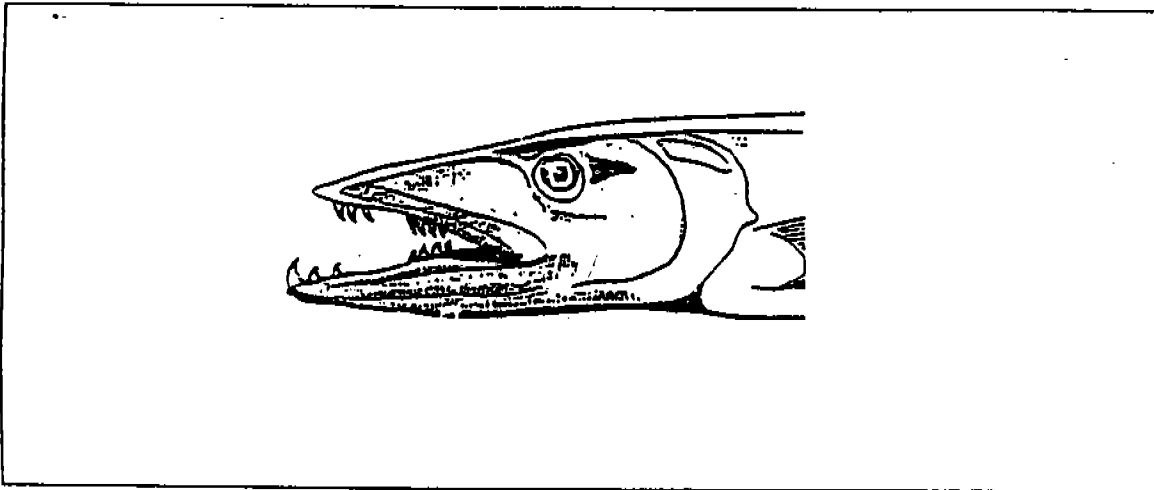


*arrows labelled*

What processes do the letters W, X, Y and Z represent?

	Respiration	Photosynthesis	Decay
(1)	W	X	Y
(2)	W	X	Z
(3)	X	W	Z
(4)	X	W	Y

22. Animals have structural and behavioural adaptations which enable them to survive in their natural habitats.



By looking at the picture of the head of the fish, which of the following is true of how this organism survives in its natural habitat?

- (1) It is a herbivore.
- (2) It feeds on animals.
- (3) It uses its eyes to scare away predators.
- (4) It is able to hold its breath underwater for a long time.

23. What types of pollution are caused when an aeroplane spraying pesticide flies over an orchard?

- A. Air Pollution
- B. Land Pollution
- C. Noise Pollution
- D. Water Pollution

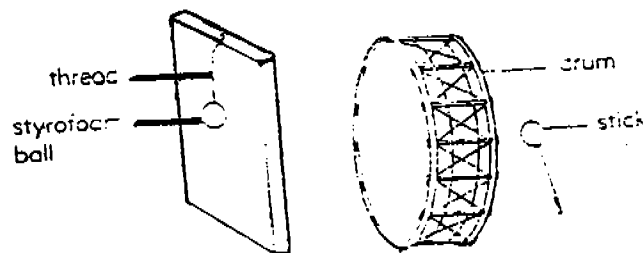
- (1) A and C only
- (2) B and D only
- (3) A, B and C only
- (4) A, B, C and D

24. Which of the following statements are advantages of biotechnology?

- A. Creation of fermented food.
- B. Production of pest-resistant crops
- C. Plants yielding more nutritious and tastier fruits.
- D. Production of new types of medicine to fight dangerous diseases.

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

25. Nicole set up an experiment as shown below.



When Nicole strikes the drum hard with the drum stick, a sound is heard and the styrofoam ball moves. What does this experiment show?

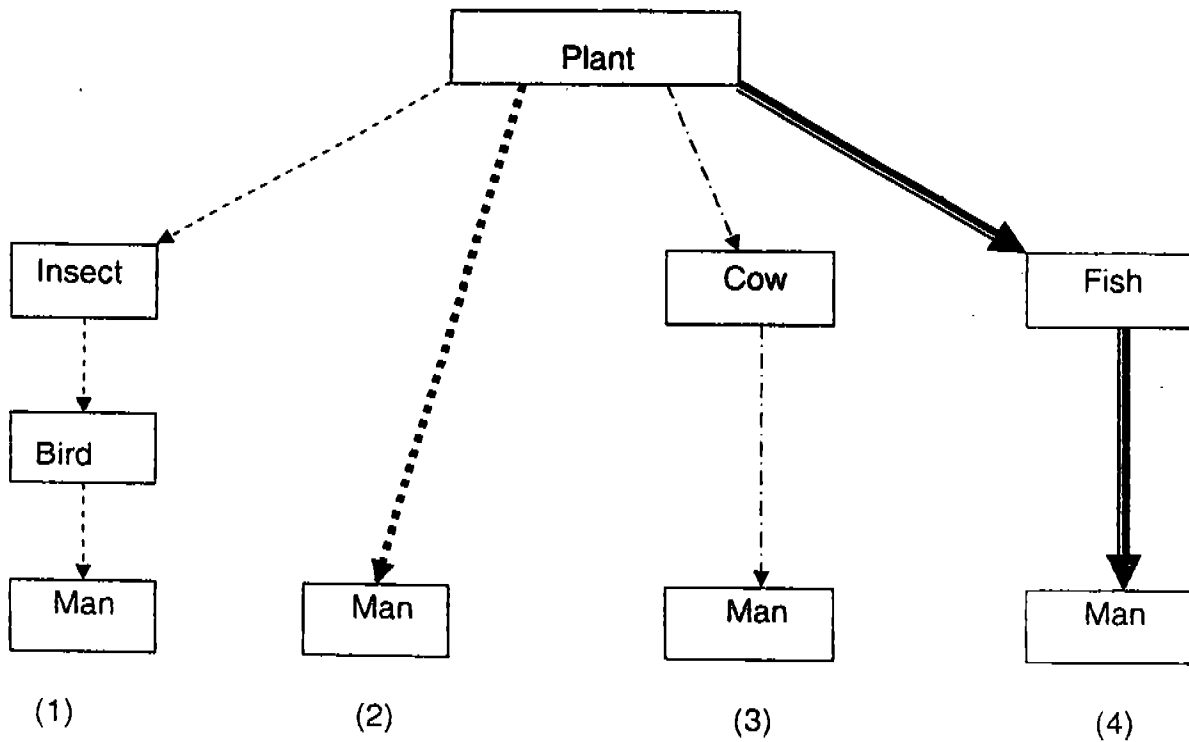
- (1) A styrofoam ball can only move when there is sound energy.
- (2) Sound is a form of energy because it can make the styrofoam ball move.
- (3) The styrofoam ball has potential energy because it is above the ground.
- (4) The drum is a source of energy because it can make the styrofoam ball move.

26. Which one of the following actions does not help to conserve energy?

- (1) Car pool with others.
- (2) Switch on the fan only when it is hot.
- (3) Use a solar heater in place of electric heater.
- (4) Place hot water in the refrigerator to hasten cooling.

27. The diagram shows four possible pathways for the transfer of energy from plants to Man.

Which one of the energy chains below transfers the most energy from plants to Man?



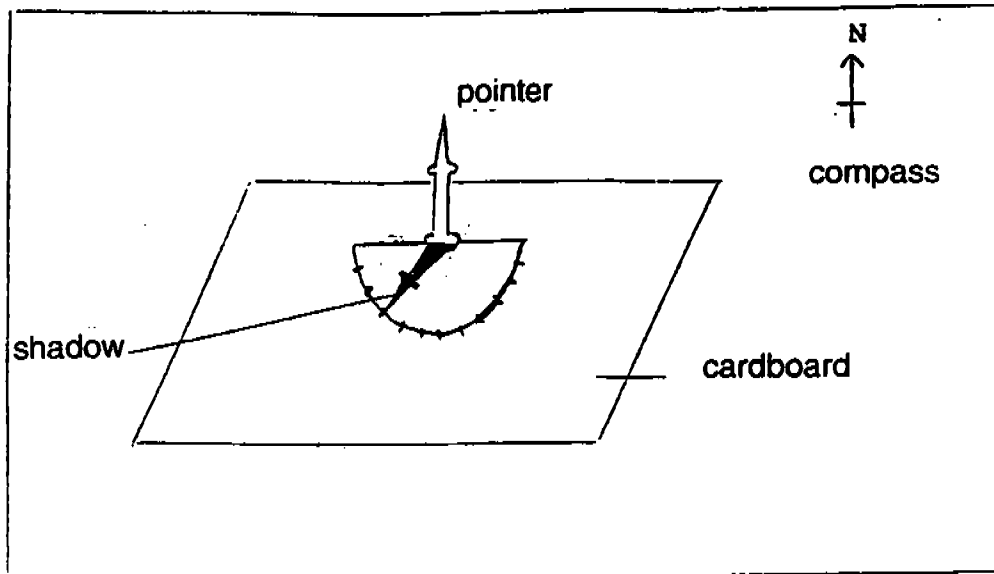
28. Which one of the following is/are sources of light?

- A. The Sun
- B. The Moon
- C. A camera
- D. The planets

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



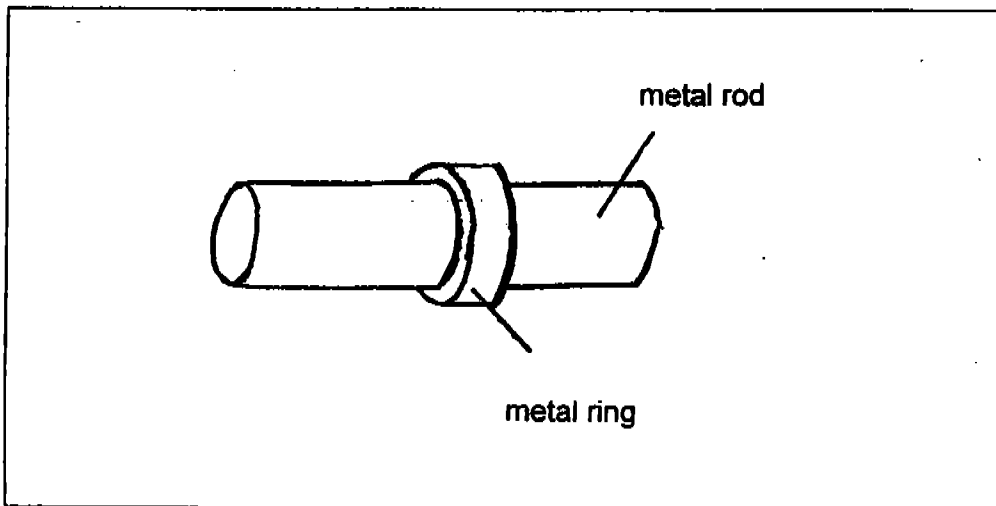
29. Iris was asked to tell the time by using a simple sundial as shown below.



What was the time shown on the sundial?

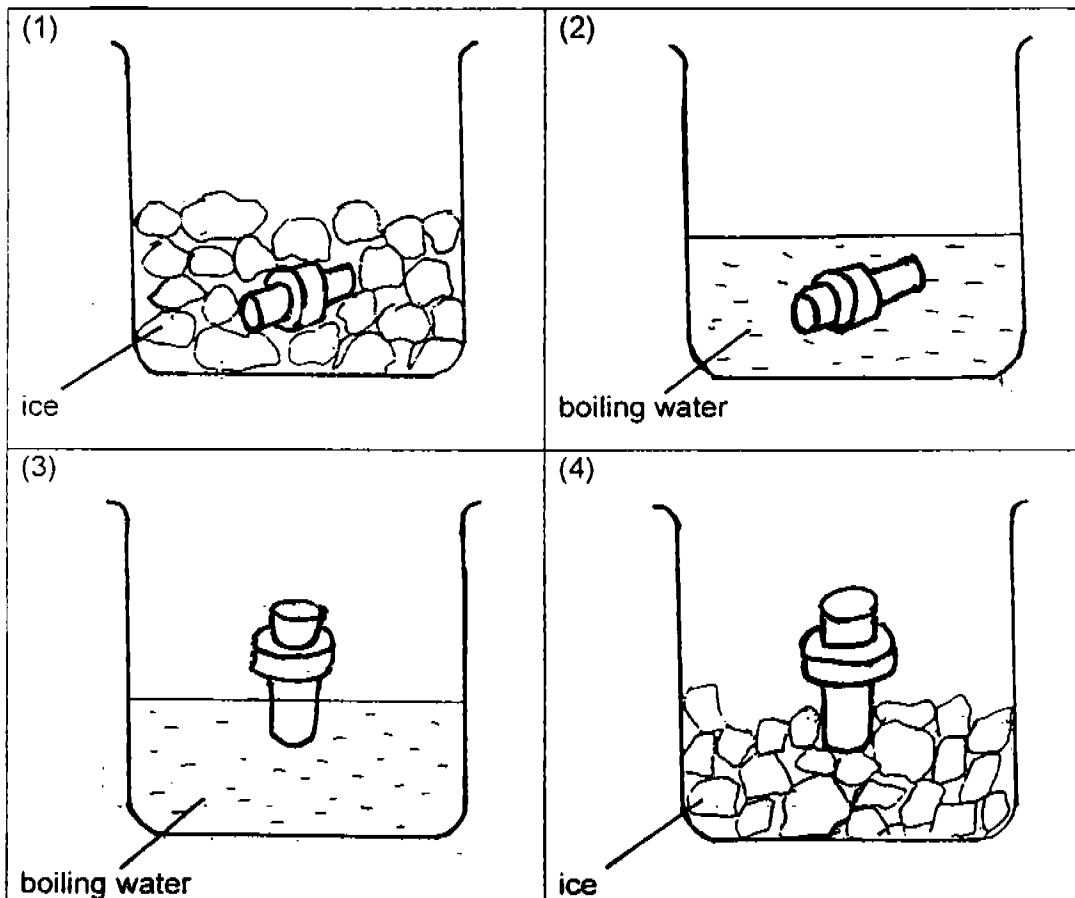
- (1) 3.00 a. m.
- (2) 9.00 a. m.
- (3) 3.00 p. m.
- (4) 9.00 p. m.

30. Study the following diagram.



John was given the task of removing the ring which is stuck around the rod.

Which one of the following diagrams shows the best method that John should use to remove the ring from the rod?





**RAFFLES GIRLS' PRIMARY SCHOOL  
PRELIMINARY EXAMINATION 2004  
PRIMARY 6 SCIENCE (EM1/EM2)**

**BOOKLET B**

Name: \_\_\_\_\_ ( )

Class: P 6\_\_

Date: 26<sup>th</sup> August 2004

16 Questions

40 marks

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

Section	Maximum marks	Marks obtained
B	40	

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FOLLOW ALL INSTRUCTIONS CAREFULLY.

**Section B (40 marks)**

There are 16 questions in this section. Answer all of them. Write your answers in the spaces provided.

31. The table below shows some materials classified into two groups.

A	B
Carbon water copper silver	wood rubber porcelain glass

Give an appropriate heading for each group.

A: \_\_\_\_\_

[1]

B: \_\_\_\_\_

[1]

32. Classify the animals listed in the table below into two groups.

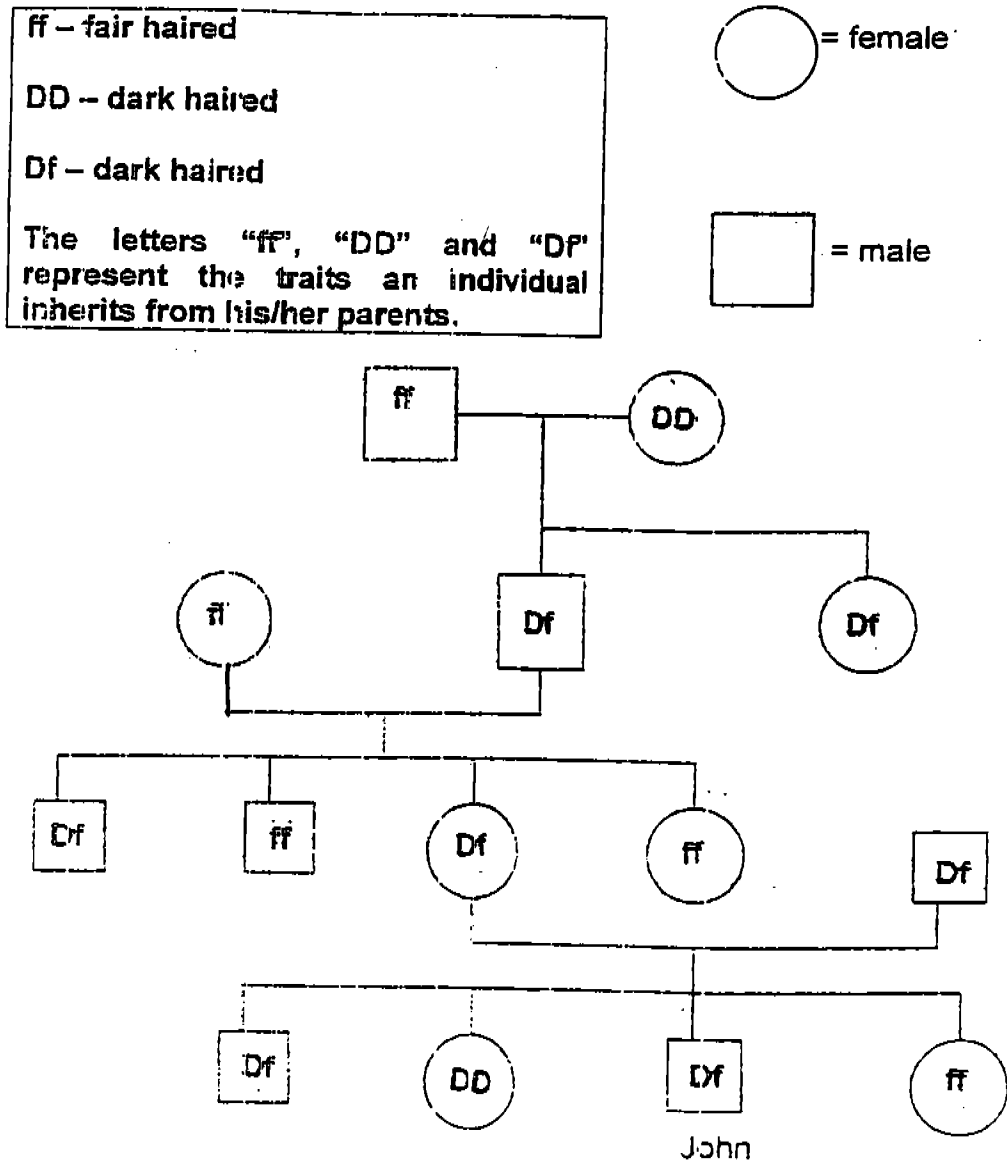
[2]

*platypus*

Types of animals	
polar bear	frog
<del>platypus</del>	guppy
bat	dragonfly

Lay Eggs	Give birth to young alive

33. Children inherit characteristics from their parents. Study the family tree below.



(a) How many of John's aunt(s) and uncle(s) are dark haired? [1]

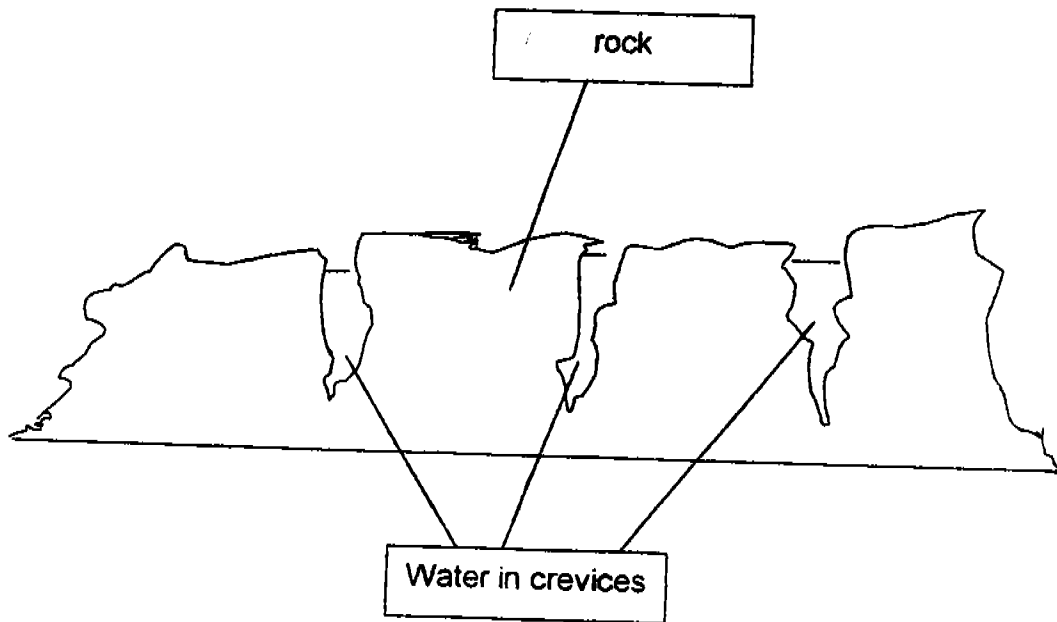
\_\_\_\_\_

(b) John's grandfather is \_\_\_\_\_ haired. [1]

(c) John's aunt is light haired. From whom did she get her genes? [2]

\_\_\_\_\_

34. The diagram below shows some water trap in the crevices of a rock formation.

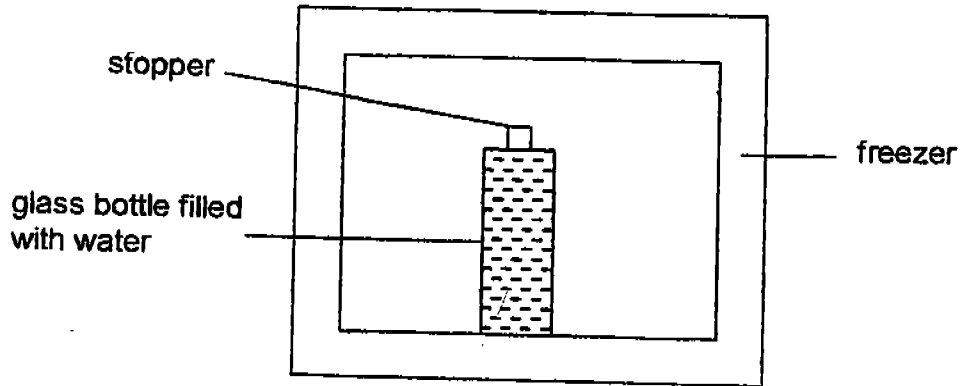


(a) While Paul was on a field trip with his class, his teacher told them that when water freezes in the crevices, the crevices would become bigger. Give an explanation for why this would happen? [1]

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(b) Study the diagram below carefully.



If Paul filled a glass bottle to the brim with water and placed it in a freezer. After 5 hours, what will happen to the glass bottle? [1]

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35. (a) What is the importance of the water cycle? [1]

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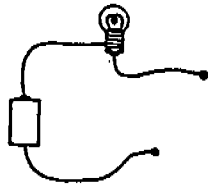
(b) Name a factor that affects the rate of evaporation. Describe how the factor affects the rate of evaporation. [2]

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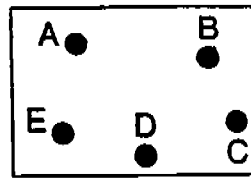
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36(a)



A circuit tester



A circuit card

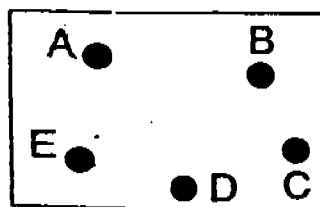
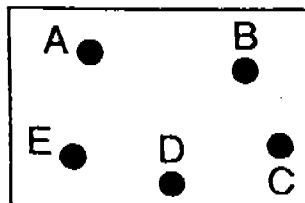
The circuit tester shown above is connected to some of the metal pins, A, B, C, D and E on the circuit card shown next to it. The metal pins are connected by wires behind the card.

The table below shows when the bulb lights up when different combination of the pins are connected to the circuit tester.

Points connected	Does the bulb light up?
A and D	No
B and D	Yes
C and E	Yes

Based on the results in the table above, draw 2 possible ways the metal pins are connected by wires behind the circuit card. [2]

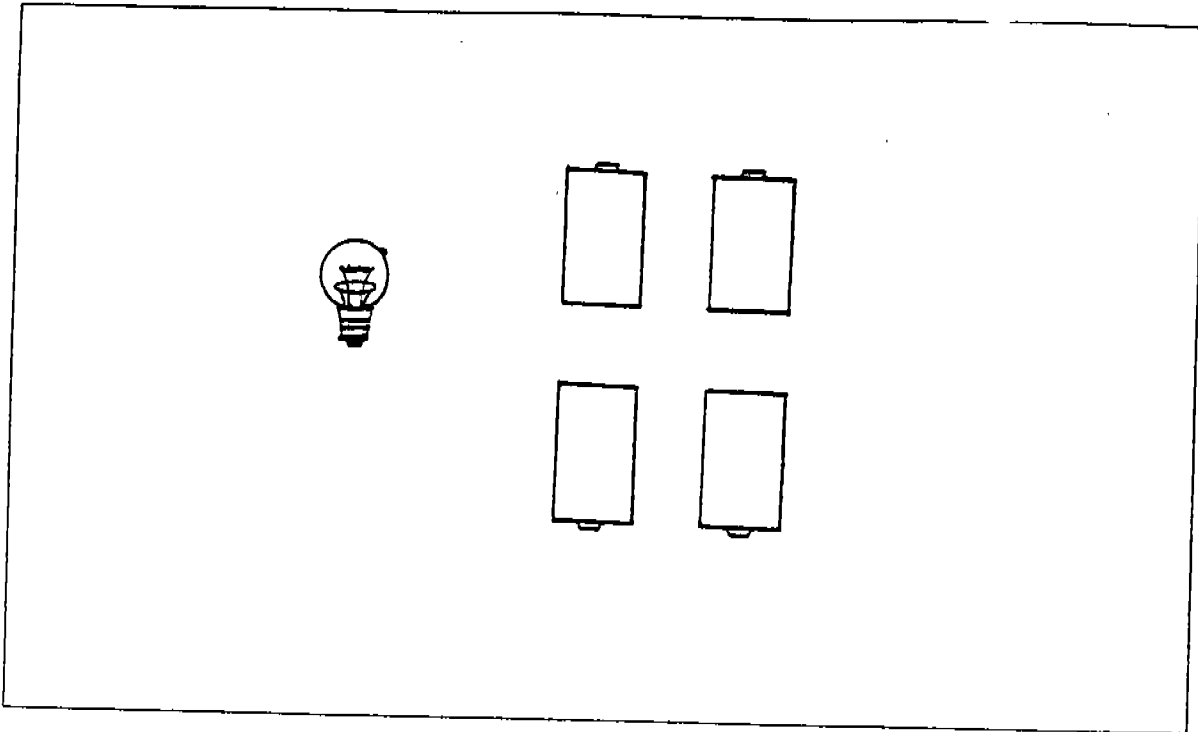
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36(b) You are given 4 batteries and a bulb. Draw wires to join all the items given so that the bulb will light up most brightly.

[ 1 ]



37. The diagram below shows a boy blowing into an inverted bottle of water through a straw after taking a deep breath. He is trying to find out his lung capacity.



- (a) What happens to the water in the bottle when the boy blows into it? [ 1 ]

- (b) Describe how he could measure the volume of air now trapped in the bottle in **not more than 4 steps**. ( He can only use the apparatus given in the diagram and a measuring cylinder) Step 1 has been done for you. [ 2 ]

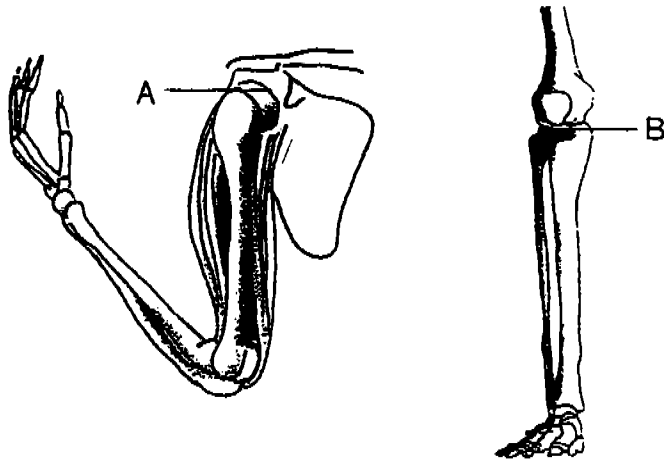
Step 1: Fill the 2-litre bottle with water and invert it into the trough of water.

Step 2: \_\_\_\_\_

Step 3: \_\_\_\_\_

Step 4: \_\_\_\_\_

38. The two diagrams below show 2 different types of joints, A and B, in our body. A is a ball and socket joint and B is a hinge joint.



(a) Why are joints important to us?

[ 1 ]

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(b) Compare how joints A and B allow us to move our limbs differently.

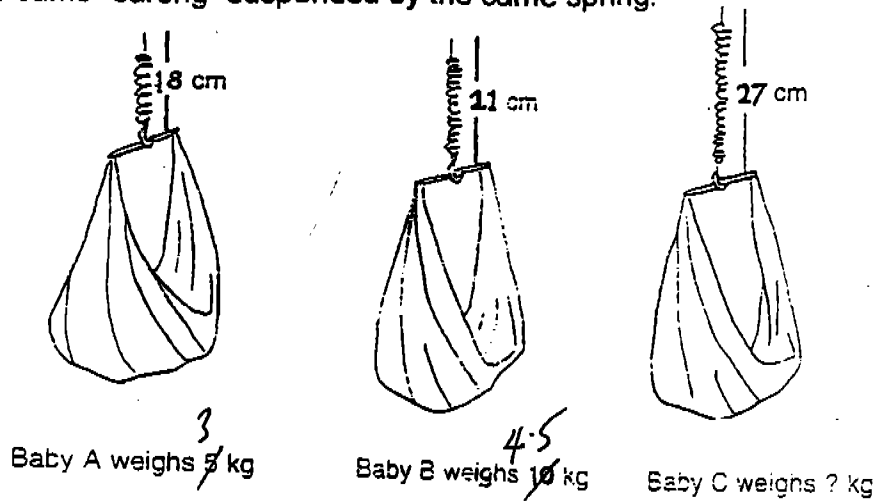
[ 2 ]

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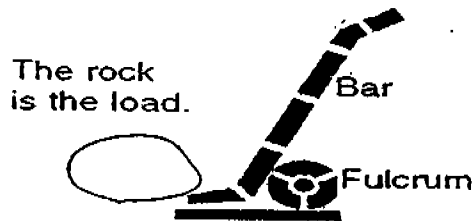
39. The diagrams below show what happens when different babies sleep in the same "sarong" suspended by the same spring.



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

- (b) What is the weight of baby C? [ 1 ]

40. Machines help to make our work easier.

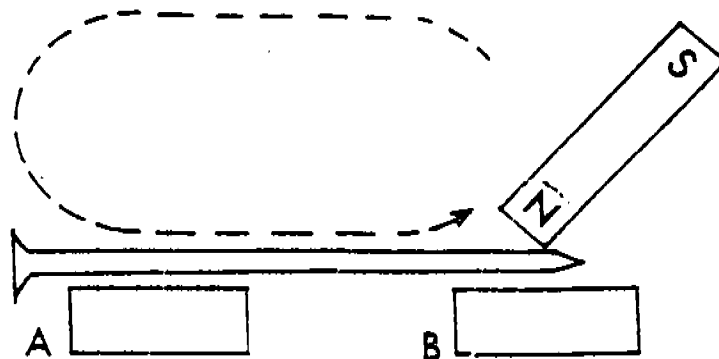


- (a) What type of simple machine is a crowbar? [ 1 ]

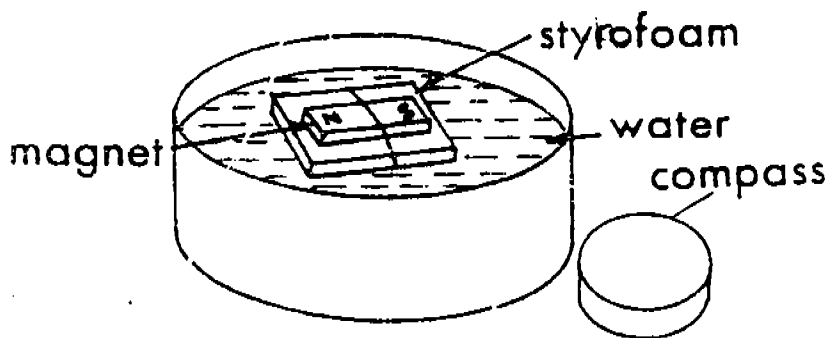
- (b) Give one advantage of using a crowbar to lift the rock. [ 1 ]

- (c) Give one disadvantage of using the crowbar to lift the rock. [ 1 ]

- 41(a) The diagram shows an iron nail being made into a magnet. Write in the poles of the temporary magnet in the boxes provided. [ 1 ]



- (b) A bar magnet is placed on a piece of Styrofoam and is set floating in a trough of water. A compass is then placed at the side of the trough as shown. However, the needle of the compass is missing. Draw in the needle of the compass and label the two poles of the Needle using "N" and "S". [ 1 ]



42 (a) Two animals, the deer and the tiger live in a jungle. The following events will take place if all the tigers are shot dead.

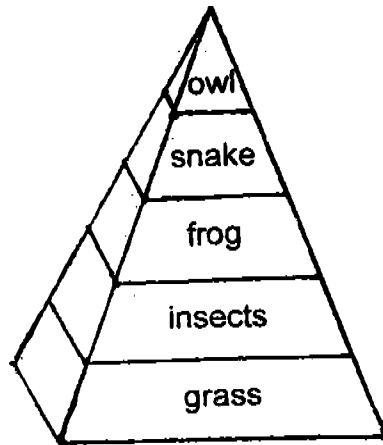
- P- No food is left for the deer.
- Q- The plants are eaten up.
- R- The population of deer increases tremendously.
- S- Many deer die of hunger.

Arrange the events above in their correct sequence by writing the letters P, Q, R and S in the boxes shown below.

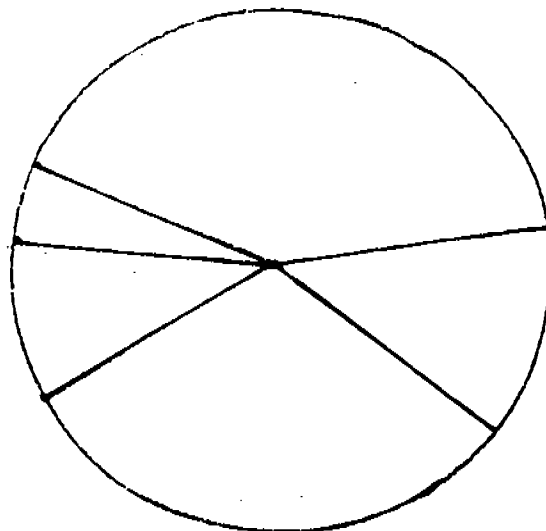
Takes Place First	Takes Place Last		

[ 1 ]

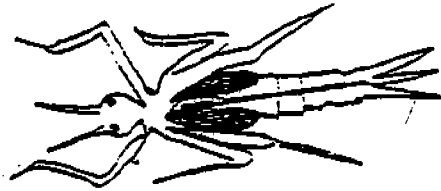
(b) Organisms in a certain field community are placed at different levels of the pyramid according to their population size as shown below.



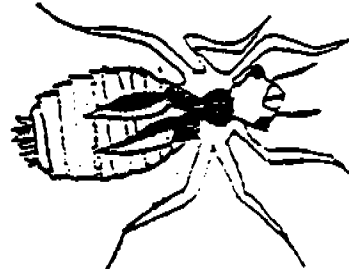
Write the word 'snake' and 'insects' to show where the snakes and insects should be placed in the pie chart below. [ 2 ]



43. Study the pictures of the nymphs of the damselfly and the dragonfly below.



Damselfly nymph



Dragonfly nymph

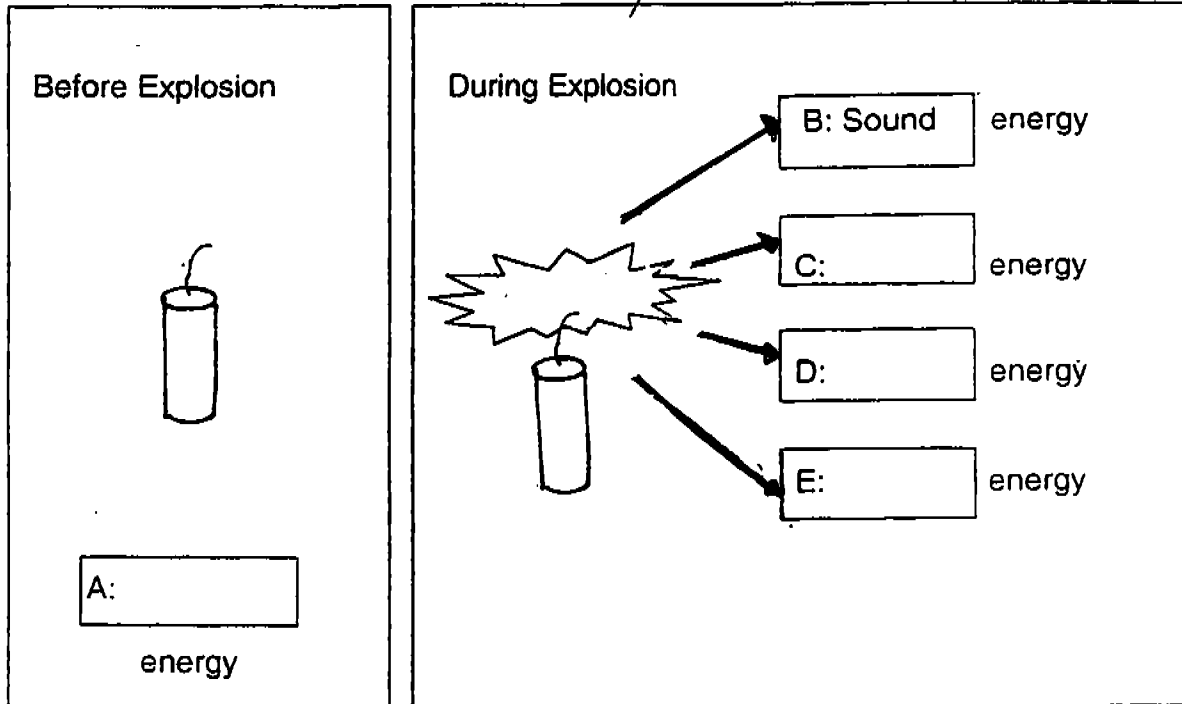
(a) Which nymph can move through water with less resistance?

\_\_\_\_\_ [1]

(b) Give a reason to explain your choice.

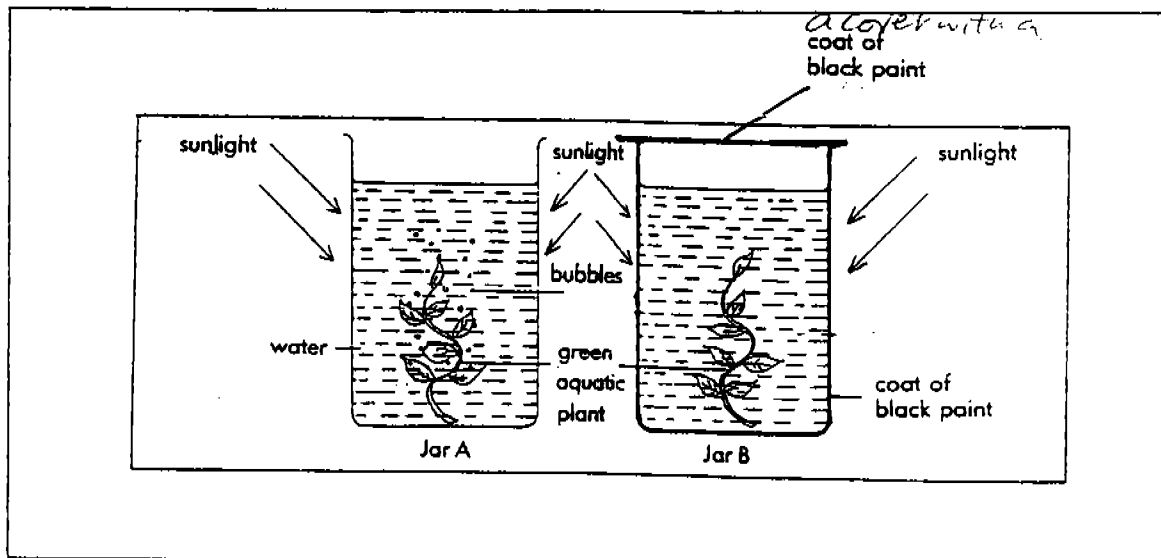
\_\_\_\_\_  
\_\_\_\_\_ [1]

44. Fireworks contain explosive substances. Once lit, they will explode and produce changes in energy. The diagram below illustrates these changes. Fill in the energy changes represented by A, C, D and E in the given boxes. *different forms of energy*



[ 2 ]

45. Dexter carried out an experiment as shown and placed the following set-ups in the sun.



After an hour, he noticed there were tiny bubbles from the plant in Jar A but not from the plant in Jar B.

Explain why there is such a difference.

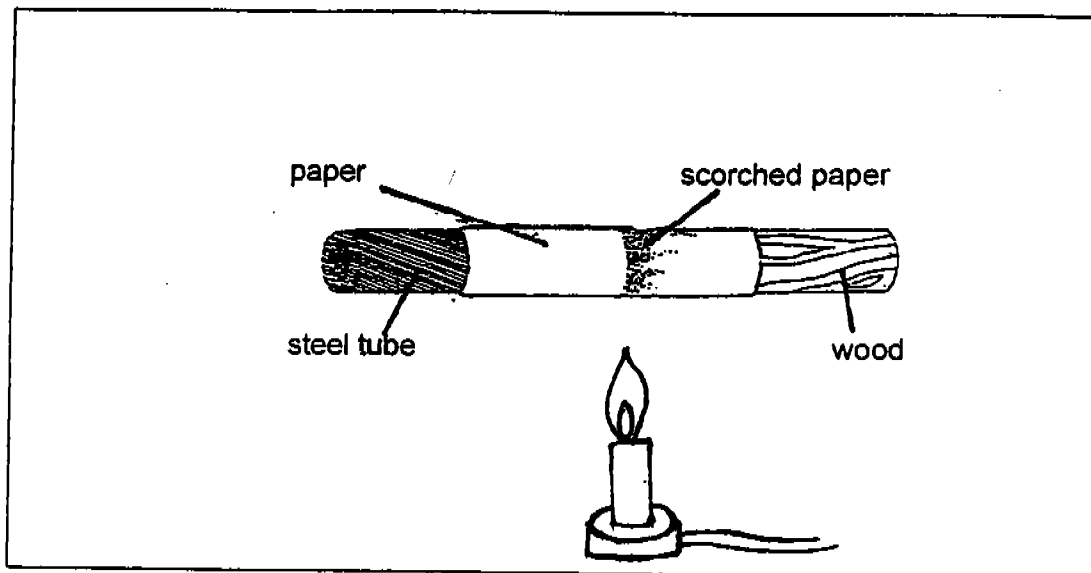
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46. Yin Yin attached a wooden rod to a steel tube. She then wrapped a piece of paper tightly round both in the centre. The paper is gently heated over a bunsen burner as shown in the diagram below.



After some time, only the side of the paper round the wooden rod is scorched.

Why is the side of the paper round the steel tube not scorched?

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[ 2 ]

THE END

Setters: Miss J. Phua  
Miss J. Woon  
Mrs M. John

**RGPS 2004 Preliminary Examination Paper Answer Key**

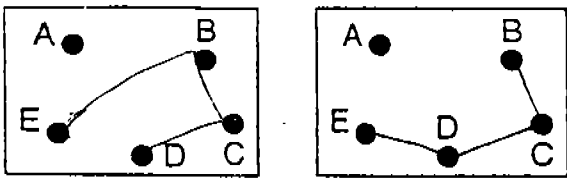
SIA 2

**Section A (30 x 2 marks)**

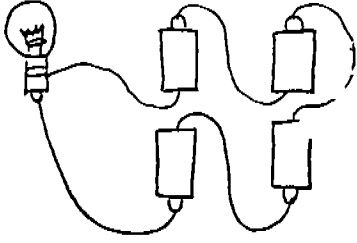
1. (4)	6. (3)	11. (4)	16. (3)	21. (3)	26. (4)
2. (1)	7. (2)	12. (1)	17. (2)	22. (2)	27. (2)
3. (3)	8. (2)	13. (4)	18. (4)	23. (4)	28. (1)
4. (1)	9. (4)	14. (3)	19. (4)	24. (4)	29. (2)
5. (1)	10. (3)	15. (3)	20. (3)	25. (2)	30. (4)

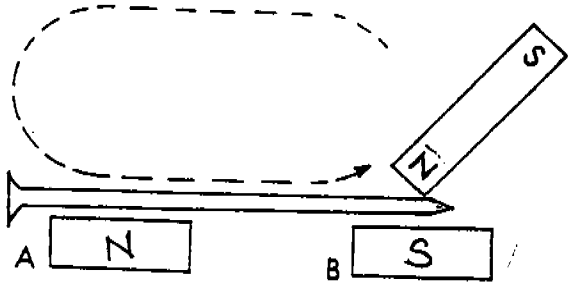
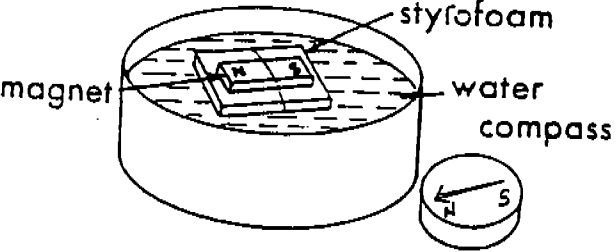
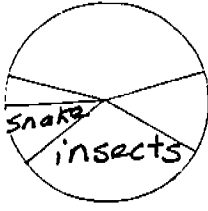
or (4)

**Section B (40 marks)**

Answer	Marks	Remarks
Q31. A: conductor of electricity B: non-conductor of electricity	[1m] [1m]	If electricity is not stated-0m
Q32. Lay eggs: platypus, frog & dragonfly Give birth to young alive: polar bear, guppy & bat	[1m] [1m]	<del>All animals to be stated in each column to obtain full mark of 1 for each category otherwise: 0m</del>
Q33 (a) 1 uncle and zero aunt (b) dark (c) From her parents/father and mother	[1m] [1m] [1m]	
Q34(a) <u>The volume of water increases when it freezes</u> (b) The bottle will crack.	[1m] [1m]	
Q35 (a) The water cycle ensures a <u>continuous supply of water for the survival of all living things.</u> (b)- Increase(decrease) in • temperature OR • exposed surface area OR • wind speed/presence of wind OR • atmospheric pressure OR • humidity causes the rate of evaporation to increase/decrease	[1/2m] [1/2m] [1m]       [1m]	
Q36(a) 	[1m each]	Accept any other possible answer

1 wrong (1/2)  
2 wrong (1m)

Answer	Marks	Remarks
Q36 (b) 	[1m]	
Q37(a) The water in the bottle has been displaced by the air the boy blows into it.  The water level drops (b) - <u>Take a deep breath</u> and <u>blow</u> into the bottle through the straw <u>until you cannot continue blowing out air anymore.</u> -Take the inverted bottle out and <u>pour the remaining water into a measuring cylinder.</u> - <u>Find the difference</u> between the volume of water before the experiment and the volume left.	[1m]  [ ½m ] [1/2m]  [1/2m]  [1/2m]  [1/2m]  <b>[total-2 m]</b>	Accept other possible ways of phrasing the answer.
Q38(a) Joints allow movements of our body. (b) Joint A allows movement <b>several directions/ rotational movement</b> but Joint B allows movement in <b>only one direction.</b>	[ 1m ]  [ 2m ]	
Q39(a) 12 cm (b) 7.5 kg	[ 1m ] [ 1m ]	
Q40(a) Lever (b) It is easier to lift the rock with the crowbar because we use <b>less effort</b> to overcome the heavier load. <b>OR</b> It changes the direction of the force. (c) The effort has to move through a longer distance than the load.	[1m] [1m]  [1m]	

Answer	Marks	Remarks
<p>Q41(a)</p>  <p>(b)</p> 	<p>[1m]</p> <p>[1m]</p>	
<p>Q42(a) R, Q, P, S</p> <p>(b)</p> 	<p>[1m]</p> <p>[2m]</p>	
<p>Q43(a) Damselfly nymph</p> <p>(b) It has a <b>more streamlined body shape</b> than the dragonfly nymph</p>	<p>[1m]</p>	<p>Must show comparison No comparison - 0m</p>
<p>Q44 A: potential/stored C/D/E: light/heat/kinetic (in any order)</p>	<p>[1/2m] [1/2m each]</p>	<p>Misspelling - 0m</p>
<p>Q45. The plant in Jar A <u>received sunlight, could photosynthesise/make food</u> and produce bubbles while the plant in Jar B <u>could not photosynthesise/make food</u> as it <u>could not receive sunlight</u> because of the <u>coat of black paint</u>.</p>	<p>[1/2m]</p> <p>[1/2m]</p> <p>[1m]</p>	<p>Must explain the difference between what is happening in Jar A and Jar B.</p>
<p>Q46. The steel tube <u>conducts heat away</u> [1] <u>faster than</u> [1] wood/Steel is a <u>better conductor of heat</u> than wood.</p>	<p>[2m]</p>	<p>Must show comparison</p>