METHODIST GIRLS' SCHOOL

Founded in 1887

CONTINUAL ASSESSMENT 2013
PRIMARY 5
SCIENCE

BOOKLET A1

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: _____ ( )

Class: Primary 5._____

Date: 7 March 2013

This booklet consists of 11 printed pages including this page.

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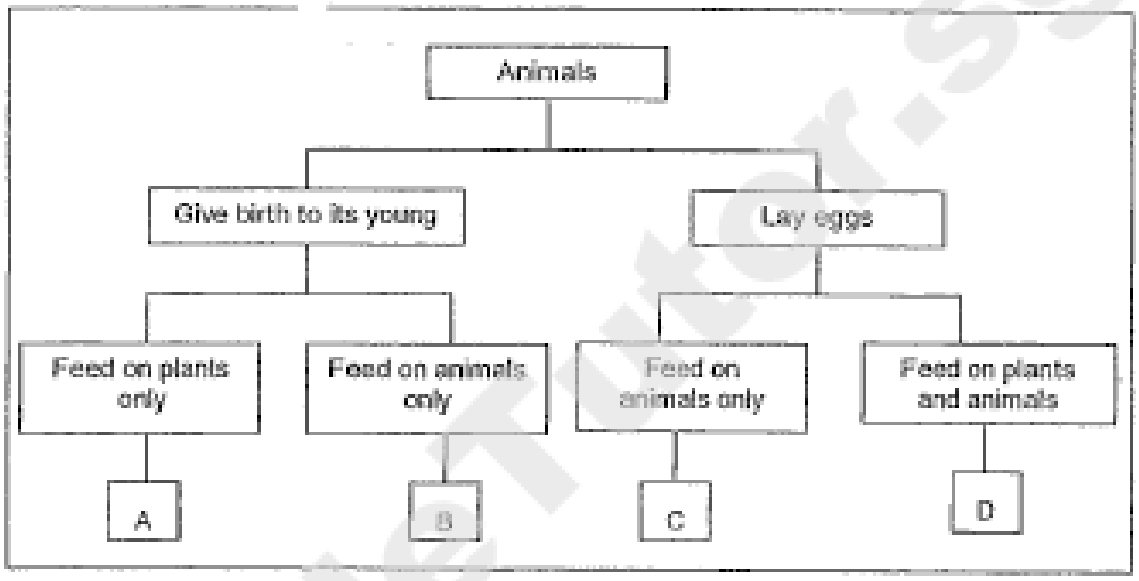
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS).

1. The diagram below shows some similarities and differences between some animals.



From the diagram, we can conclude that animal(s) _____.

(1) A lives on land

(2) C lives in water

(3) A and B might be mammals

(4) C and D are cold-blooded animals

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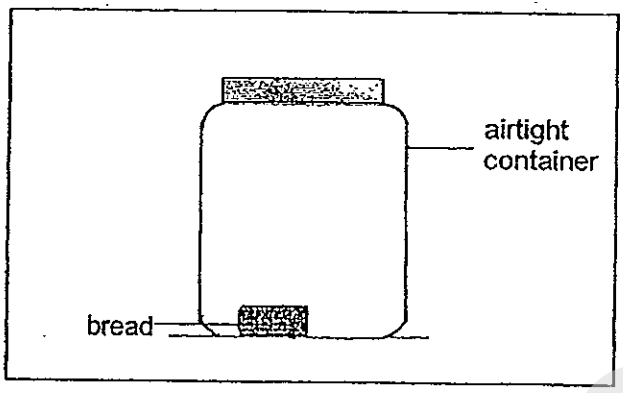
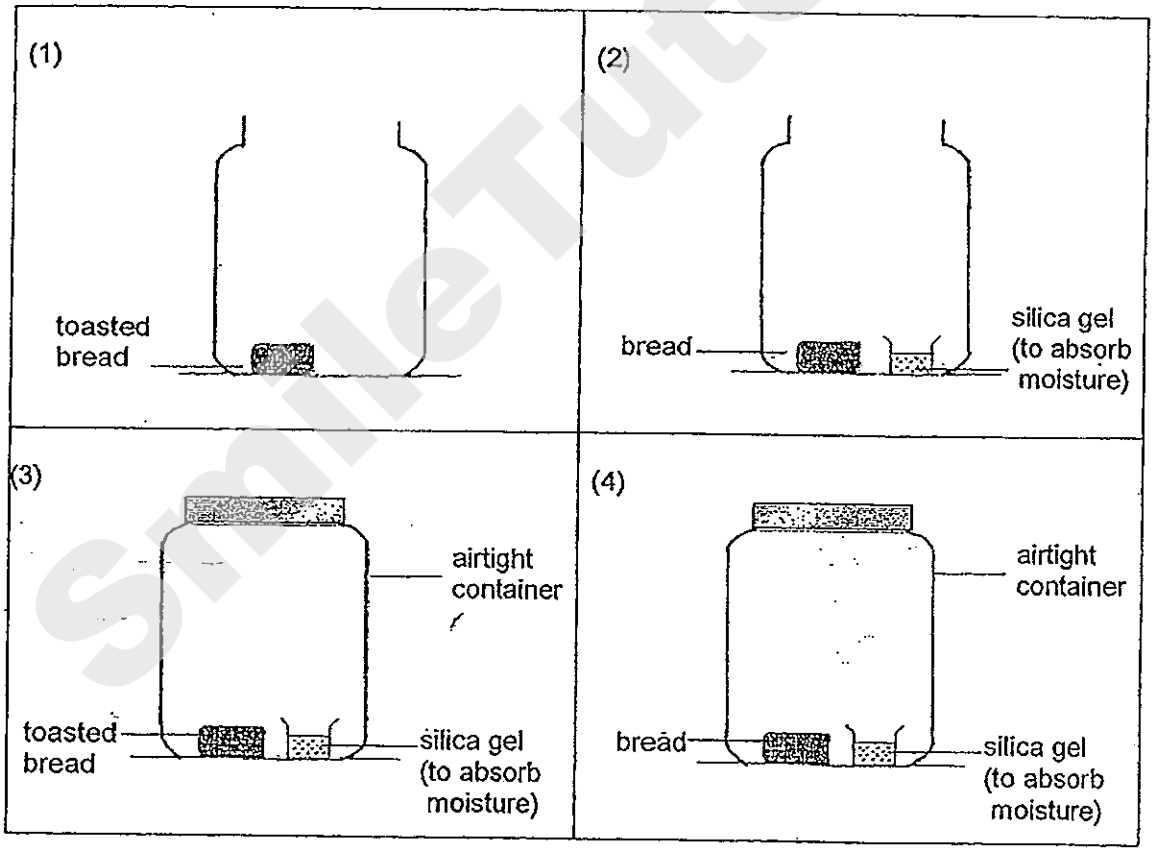
2. Shane needed to set-up a fair experiment to show that moisture is needed to make bread mouldy. She set up a control as shown in the diagram below.



Which one of the following set-ups should she use to carry out the experiment?



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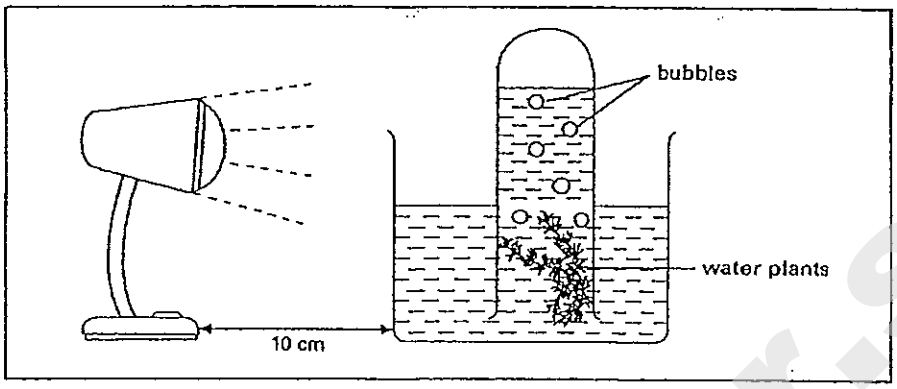
3. Devi set up an experiment as shown in the diagram below.



What would happen to the bubbles when the distance between the lamp and the container is changed?

(1) As the distance increases, the number of bubbles increases.

(2) As the distance increases, the number of bubbles decreases.

(3) As the distance decreases, the number of bubbles decreases.

(4) As the distance changes, the number of bubbles remains the same.

4. A farmer wanted to find out whether he could produce more vegetables by increasing the amount of carbon dioxide in the greenhouse. He planted the same amount of seeds of two different types of vegetable and watered them with the same amount of water. After a month, he collected the vegetables and recorded the mass of the vegetables in the table shown.

	Greenhouse 1		Greenhouse 2	
Percentage of carbon dioxide	0.05%		0.09%	
Type of vegetable	Spinach	Lettuce	Spinach	Lettuce
Mass of vegetable (g)	9	12	12	18

What can he conclude from the table above?

(1) The amount of carbon dioxide only affects the growth of the spinach.

(2) The amount of carbon dioxide does not affect the growth of the vegetable.

(3) Spinach will always grow faster than lettuce at any amount of carbon dioxide.

(4) The greater the amount of carbon dioxide, the greater the mass of the vegetable.

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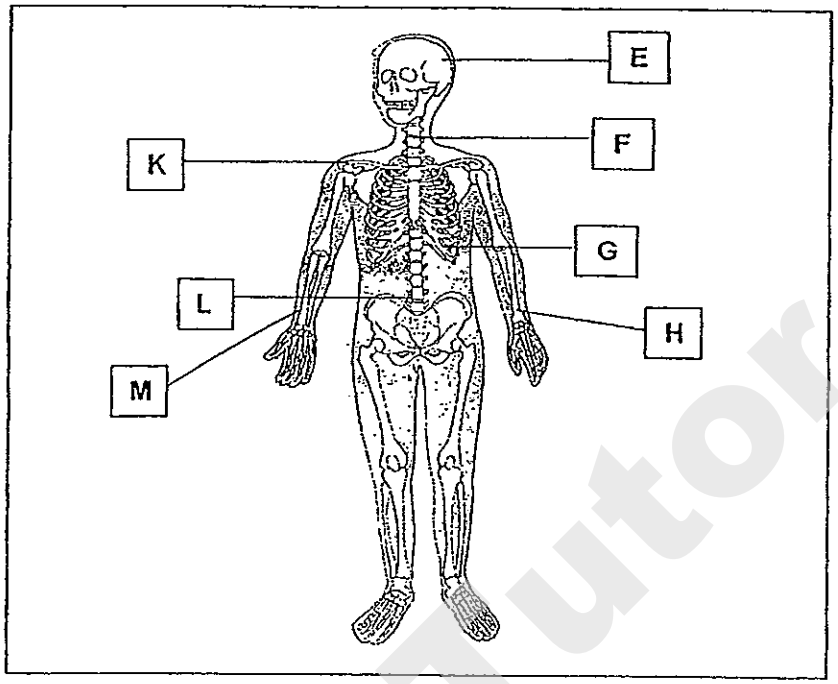
Look at the diagram shown below and answer questions 5 and 6.



5. Which parts of the skeletal system protects the brain, heart and lungs?

	Brain	Heart	Lungs
(1)	E	G	G
(2)	E	F	G
(3)	F	G	L
(4)	F	L	G

6. Trisha accidentally fell during her gymnastics lesson and she could not move her right arm. Her PE teacher suspected that she had fractured her bone(s). Which bone part would the PE teacher suspect?

(1) H
(2) K
(3) L
(4) M

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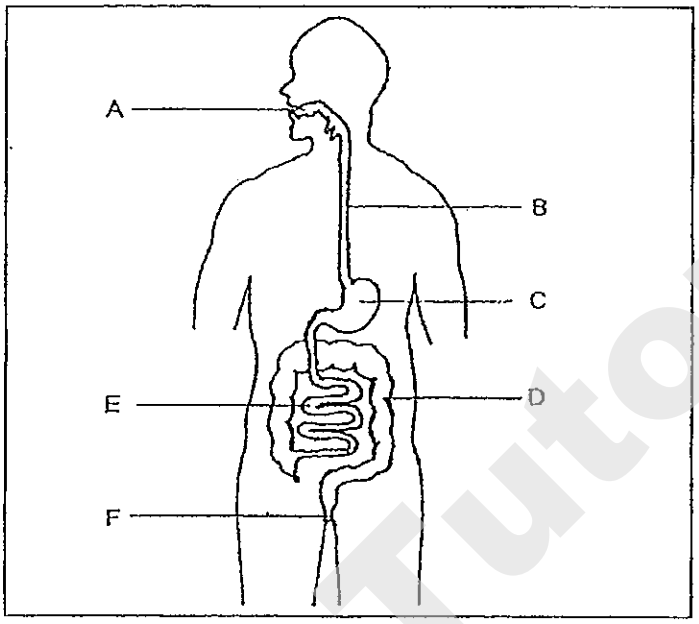
The diagram below shows the human digestive system. Refer to this diagram to answer Questions 7 and 8.



7. Where does digestion take place?

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

8. Which part of the digestive system does most digested food enter the blood stream?

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

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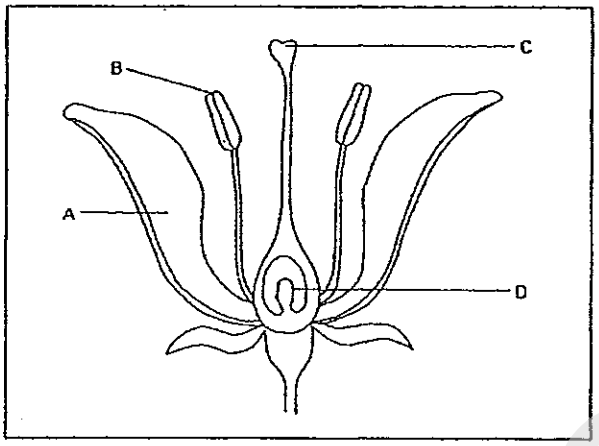
9. An insect has just landed on a flower bringing along some pollen grains.



Which parts of the flower shown above are involved in the process of pollination?

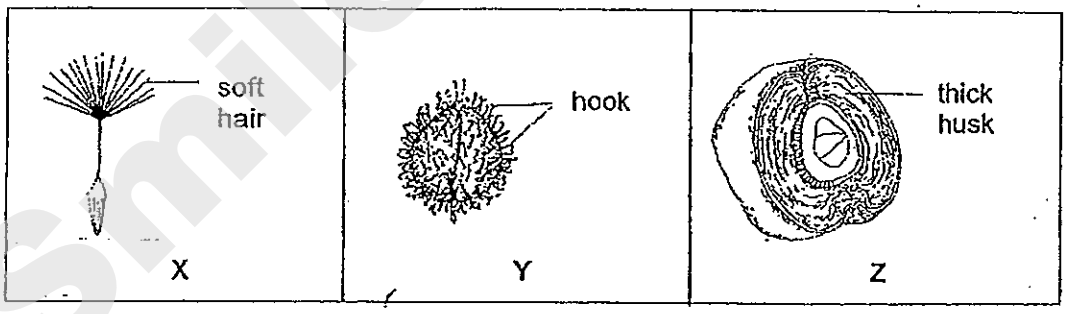
(1) A and B only

(2) B and C only

(3) C and D only

(4) B, C and D only

10. The diagrams show different fruits with special characteristics.



How are fruits X, Y and Z dispersed?

	Dispersed by animal	Dispersed by water	Dispersed by wind
(1)	X	Y	Z
(2)	Y	Z	X
(3)	Z	X	Y
(4)	X	Z	Y

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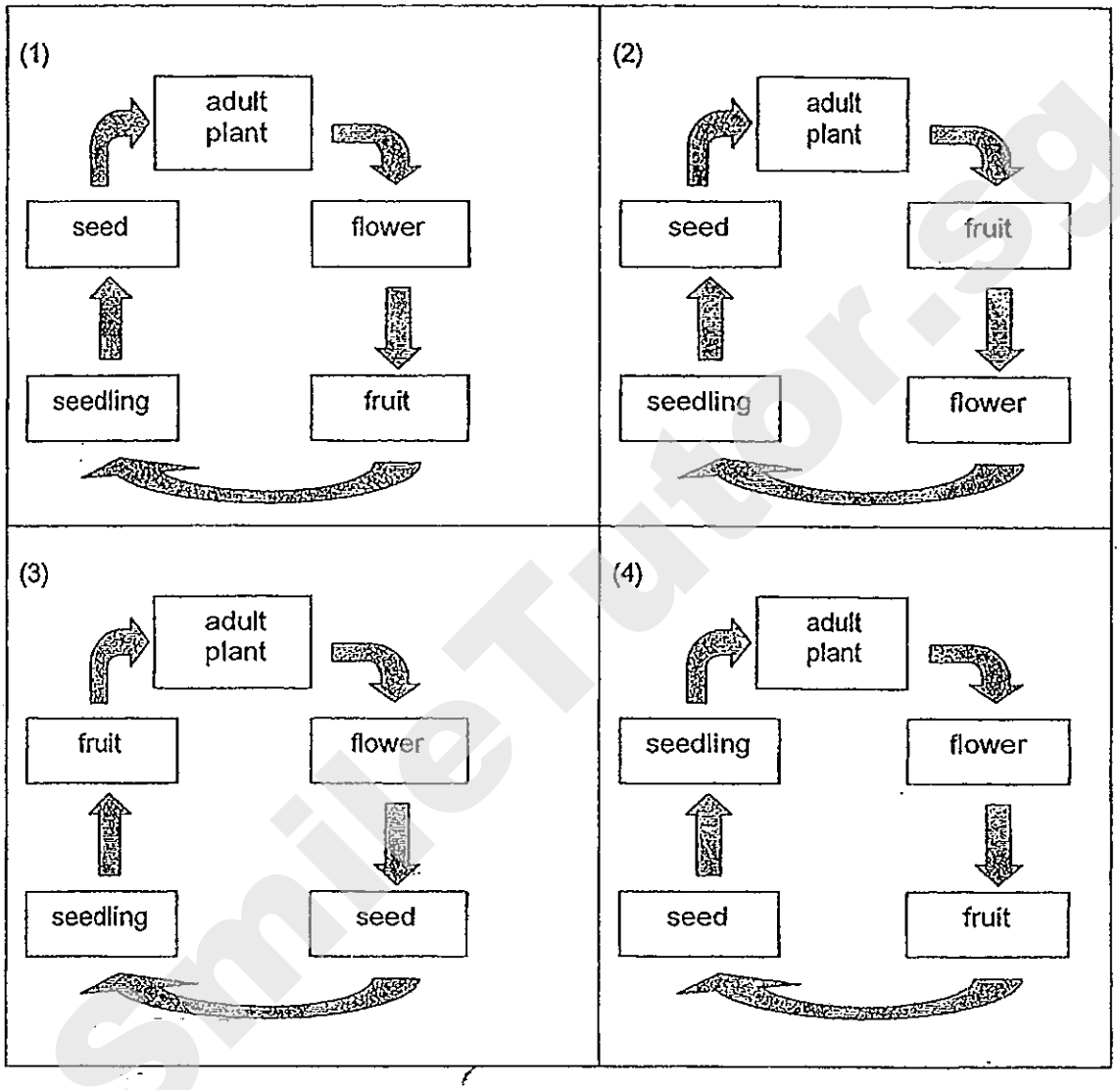
11. Which one of the following shows **correctly** the stages of development in a plant?



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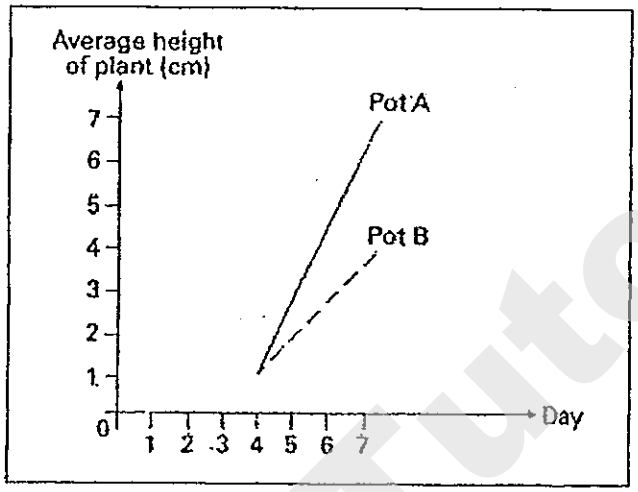
12. Clarence put the same amount of seeds in 2 pots labelled A and B. He placed both pots in a school field, Pot A is placed under a shade and Pot B is placed under the hot sun. He watered them regularly with the same amount of water and recorded the growth of the seedlings daily in a graph below.



What can Clarence conclude from this experiment?

(1) The amount of air affects the rate of growth

(2) The amount of soil affects the rate of growth

(3) The amount of light affects the rate of growth

(4) The amount of food affects the rate of growth

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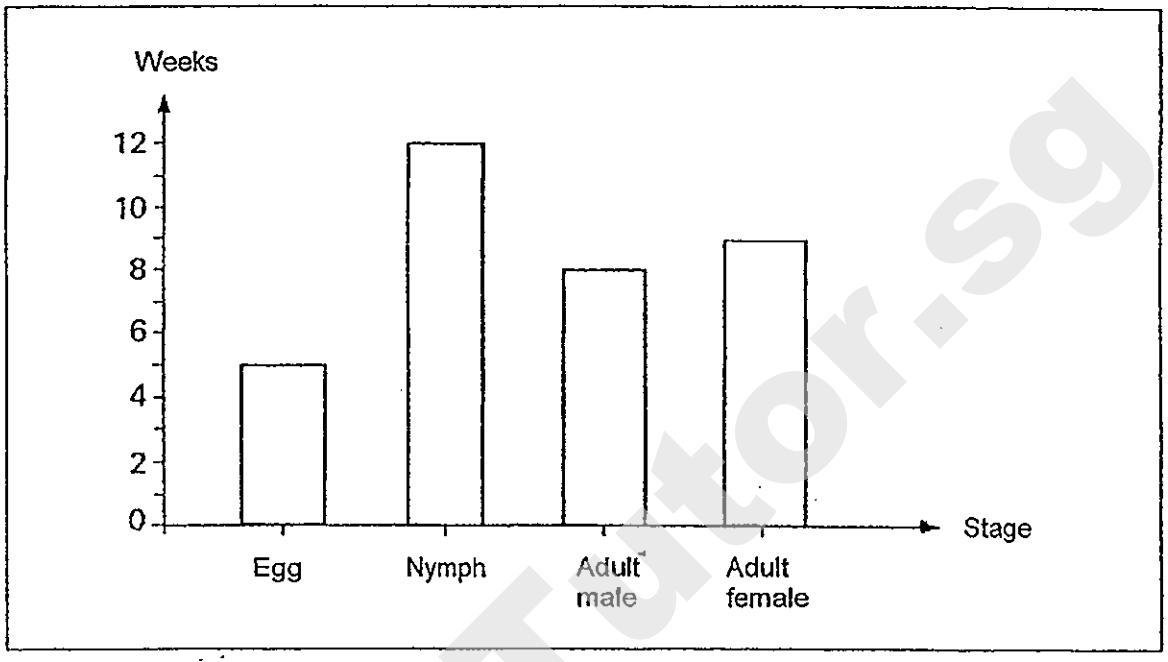
The graph below shows the number of weeks at each stage in the life cycle of an insect. Refer to this graph to answer Questions 13 and 14.



13. How many weeks would the insect take to become an adult after the egg is hatched?

(1) 12
(2) 20
(3) 25
(4) 29

14. Which of the following insects has a similar life cycle as the one above?

(1) Beetle
(2) Butterfly
(3) Mosquito
(4) Dragonfly

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15. Eye colour is a characteristic that can be passed down from parents to their children. The table below shows the eye colours of four students and their respective parents.

Eye colour			
Student		Mother	Father
Alison	Brown	Black	Brown
Beth	Black	Black	Brown
Claudia	Black	Black	Black
Dion	Brown	Brown	Black

Based on the table, which of the following statements is true?

(1) When a child has black coloured eyes, her father will most likely have black coloured eyes.

(2) When a child has brown coloured eyes, her father will most likely have brown coloured eyes.

(3) When a child has brown coloured eyes, her mother will most likely have brown coloured eyes.

(4) When a child has black coloured eyes, at least one of her parents will have black coloured eyes.

END OF BOOKLET A1

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METHODIST GIRLS' SCHOOL

Founded in 1887

CONTINUAL ASSESSMENT 2013
PRIMARY 5
SCIENCE

BOOKLET A2

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

INSTRUCTIONS TO CANDIDATES

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Name: _____ ( )

Class: Primary 5._____

Date: 7 March 2013

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

(60 marks)

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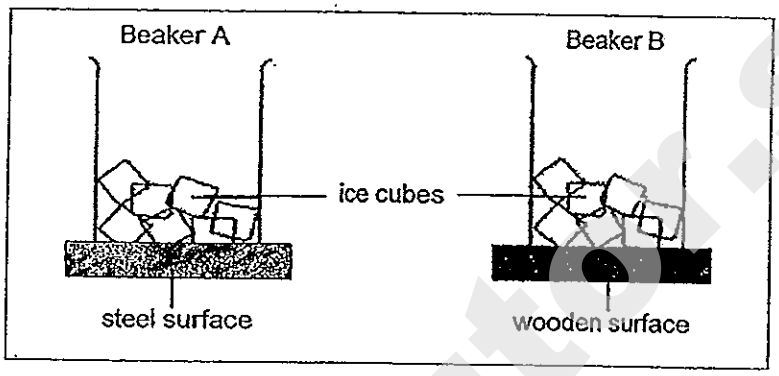
16. Two similar beakers, A and B, were filled with the same amount of ice cubes and placed on a steel surface and a wooden surface respectively as shown in the diagram below.



Four students made the following statements about the set-up.

Student	Statement
Amy	Heat travels from the steel surface to the ice in Beaker A.
Belle	The ice cubes in Beaker B will melt faster than those in Beaker A.
Cindy	The steel surface feels cooler than the wooden one as it loses heat to the beaker of ice more quickly.
Debbie	The wooden surface feels cooler than the steel one as it loses heat more quickly from the surrounding air.

Who made the **correct** statements?

(1) Amy and Belle only

(2) Amy and Cindy only

(3) Belle, Cindy and Debbie only

(4) Amy, Cindy and Debbie only

(Go on to the next page)

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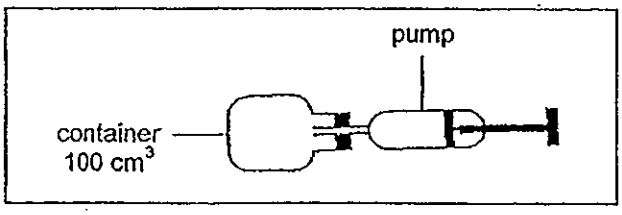
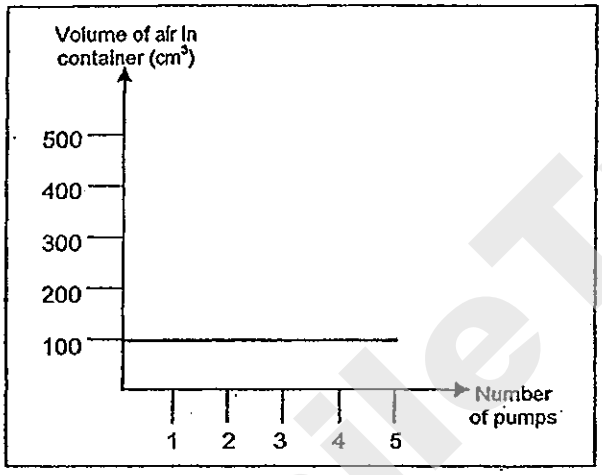
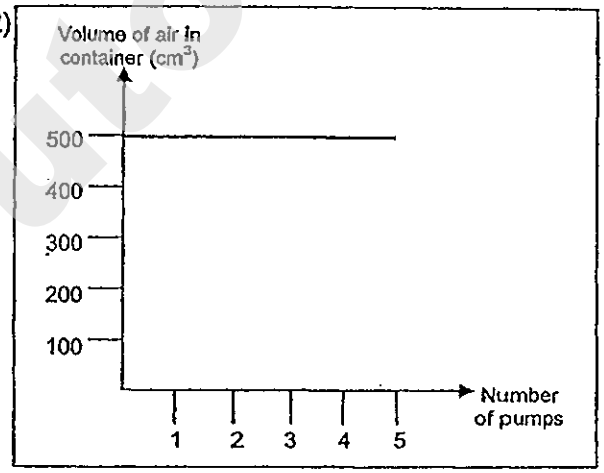
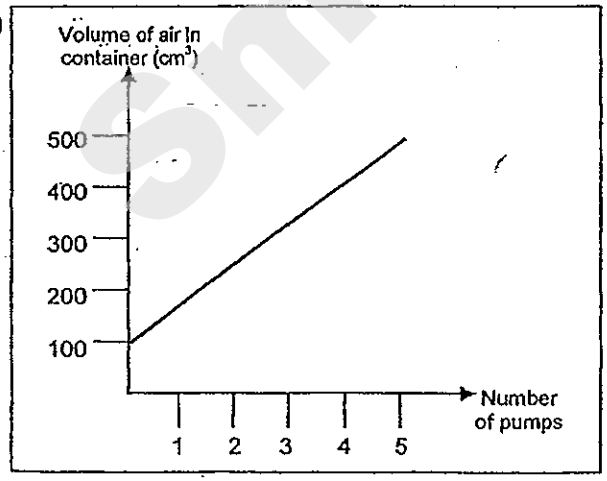
17. Shanon had a container with a capacity of 100 cm^3. She fitted a pump to the container. Each time she pressed the pump, 100 cm^3 of air would enter the container. Shanon pressed the pump 5 times.

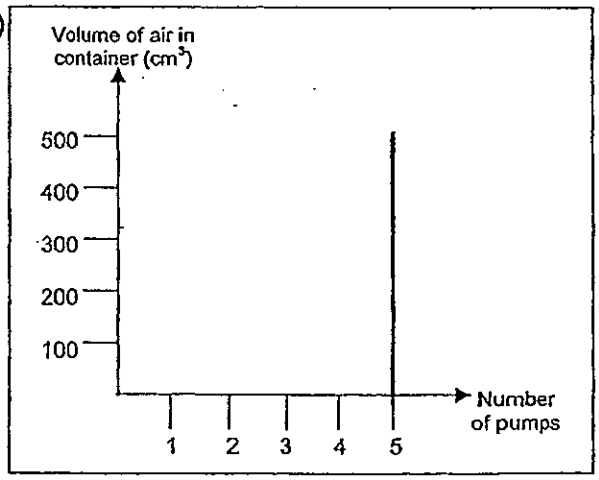


Based on the information given, which of the following graphs shows the change in volume of air in the container?

(1)


(2)


(3)


(4)


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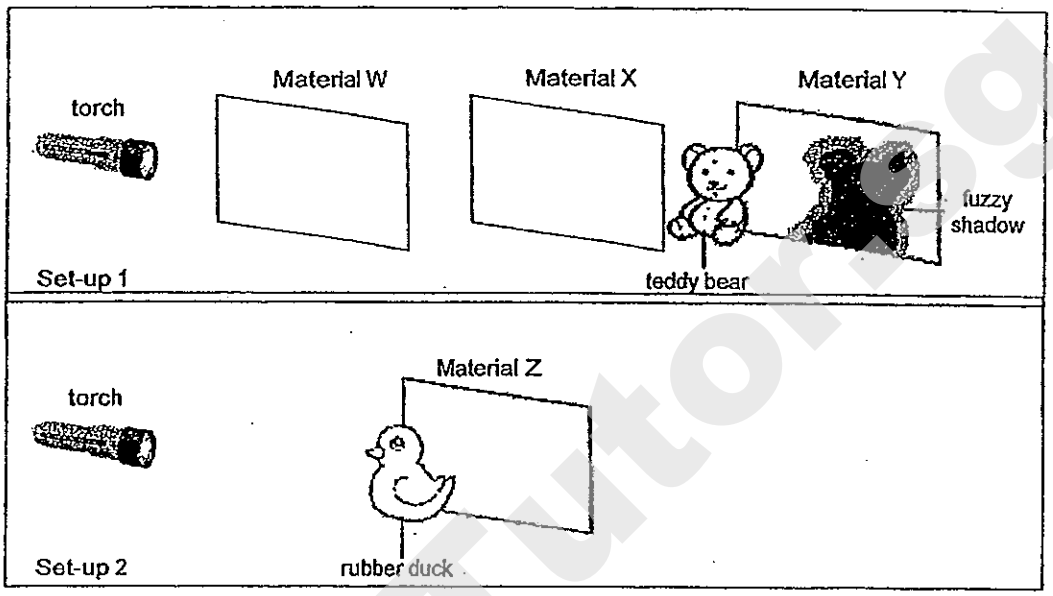
18. Naomi carried out an experiment using, Set-up 1 and Set-up 2. She placed four cards, W, X, Y and Z, each made of different materials, in different positions as shown in the diagrams below.



When the identical torches were switched on in both set-ups, a **fuzzy** shadow of the teddy bear was seen on Material Y. However, no image was seen on Material Z.

Which of the following sets describes Materials, W, X, Y and Z **correctly**?

	Material W	Material X	Material Y	Material Z
(1)	Transparent	Transparent	Opaque	Translucent
(2)	Transparent	Translucent	Opaque	Transparent
(3)	Opaque	Transparent	Transparent	Translucent
(4)	Transparent	Translucent	Opaque	Opaque

(Go on to the next page)

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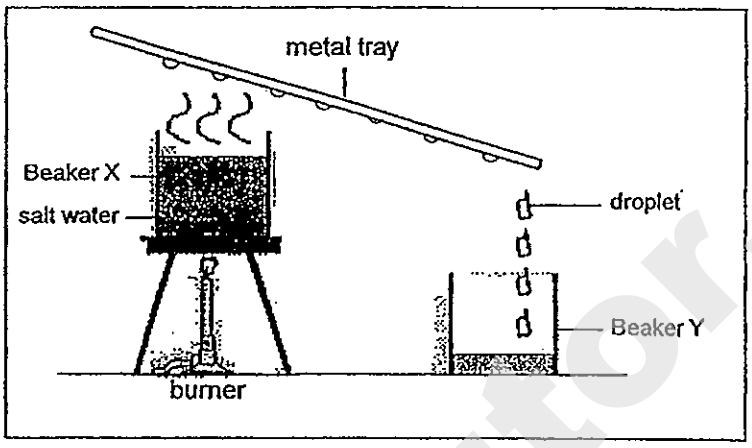
19. Beaker X containing sea water was heated. A metal tray was placed over Beaker X. Beaker Y was positioned underneath the end of the metal tray as shown in the diagram below.



After some time, water was collected at Beaker Y.

Which of the following <u>best</u> explains why the rate of collection of droplets decreases as the heating continues?

(1) As the heating continued, Beaker X lost heat and became cooler, thus, condensation slowed down.

(2) As the heating continued, Beaker X gained heat became hotter, thus, condensation sped up.

(3) As the heating continued, the metal tray lost heat and became cooler, thus, condensation sped up.

(4) As the heating continued, the metal tray gained heat and became hotter, thus, condensation slowed down.

(Go on to the next page)

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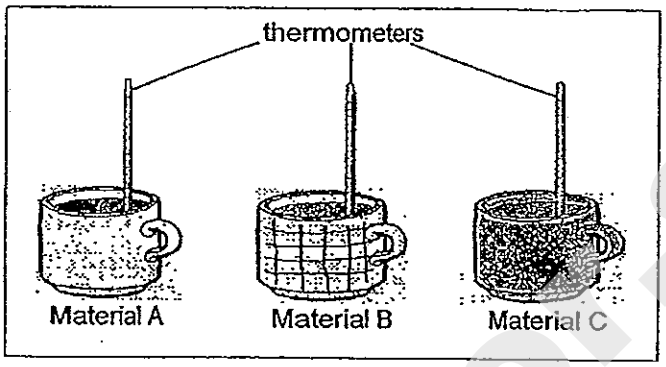
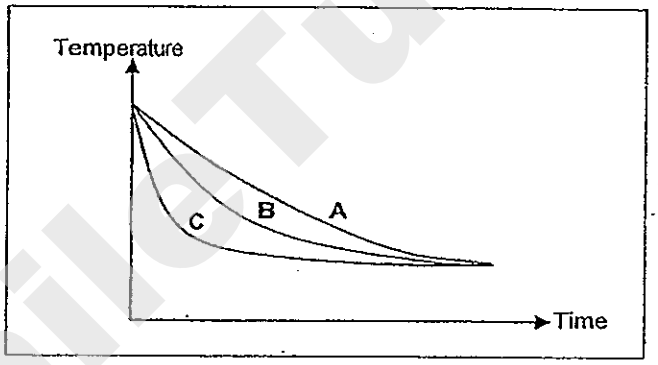
20. Hannah carried out an experiment to find out how well different materials conduct heat. A, B and C are 3 cups made of different materials. Each was filled with the same amount of water at 100°C as shown in the diagram below.



The changes in the temperatures of the water in each cup were then recorded over a period of time. The graph below shows the temperature change in the water in the 3 cups.



Based on the graph, three students made the following conclusions.

Mona: Material C is the best conductor of heat.
Natalie: Material A is the best material to make a container for storing ice blocks.
Odelia: Material B is the best material to make a thermos flask to keep your coffee hot.

Who made the **correct** conclusion(s)?

(1) Mona only

(2) Natalie only

(3) Natalie and Odelia only

(4) Mona and Natalie only

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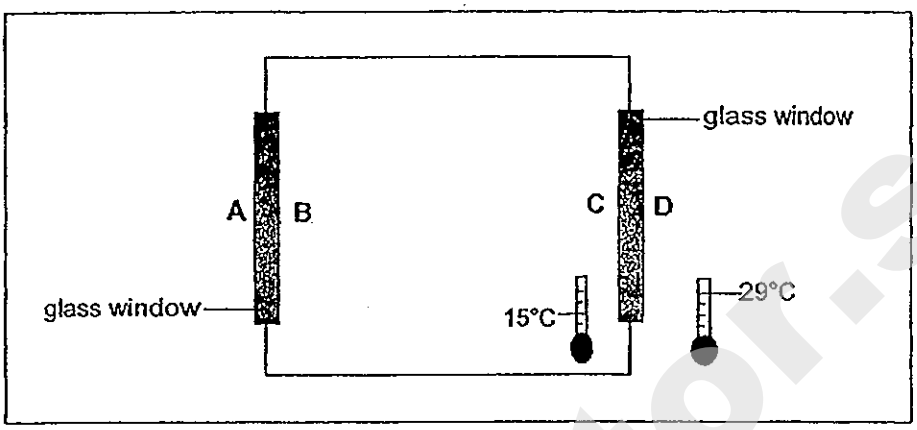
21. The diagram below shows a simple floor plan of an air-conditioned room with two windows.



The temperature in the room measures 15°C while the temperature outside the room measures 29°C. After some time, water droplets formed on the windows.

Where will the water droplets **most likely** be found?

(1) A and B only

(2) A and D only

(3) B and D only

(4) C and D only

(Go on to the next page)

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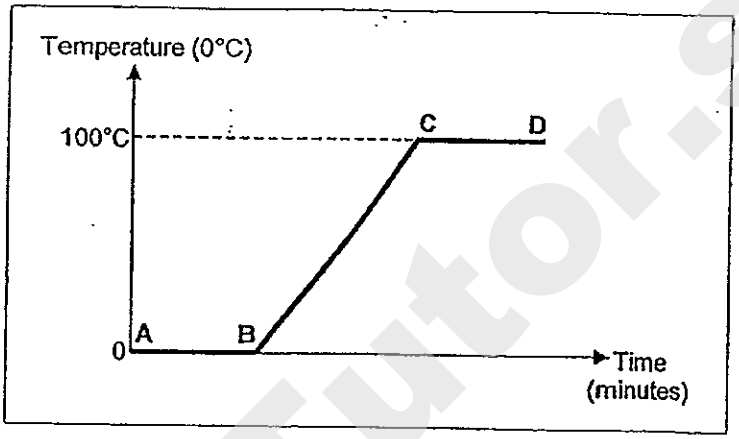
22. Candace heated a beaker of ice over a period of time. The temperature changes that took place during this period of time are shown in the graph below. Study the graph below carefully.



Which part(s) of the graph is heat gain taking place?

(1) BC only

(2) AB and BC only

(3) BC and CD only

(4) AB, BC and CD only

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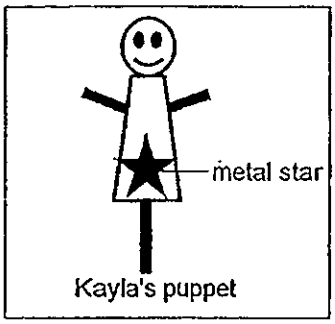
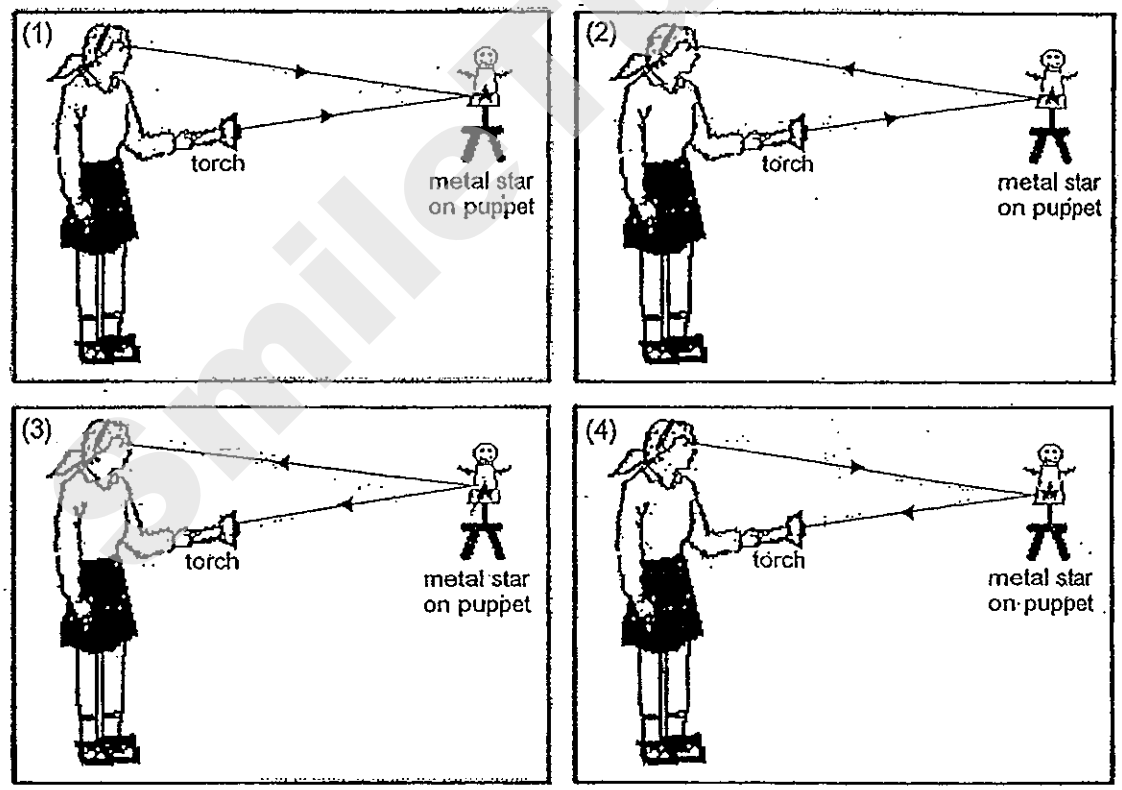
23. Kayla made a stick puppet and added a huge metal star on its body. When she shone a light on the puppet, the star looked shiny.



The arrows in each diagram below indicate the paths of light that allowed Kayla to see the light shining on the puppet's metal star.

Which of the following diagrams shows the **correct** paths of light?



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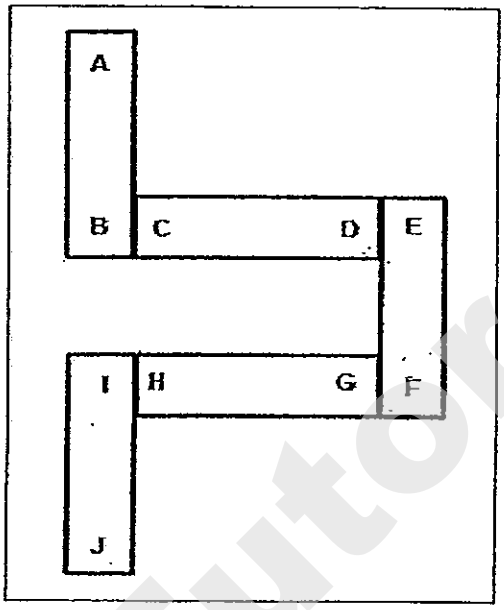
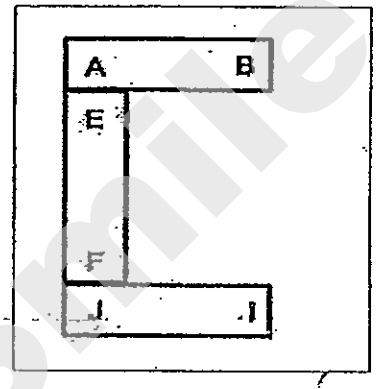
24. The diagram shows how 5 bar magnets are attracted to each other and the letters representing the poles of the magnets.

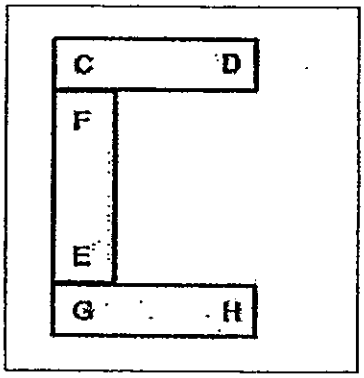


If 3 of the magnets are selected and placed next to each other, which one of the following arrangements below is a possible arrangement?

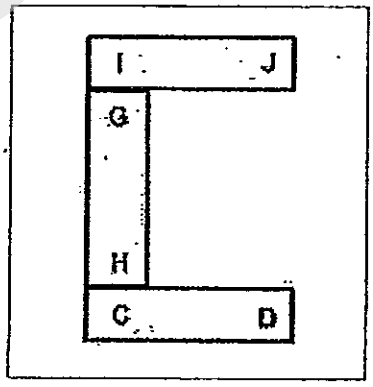
(1)



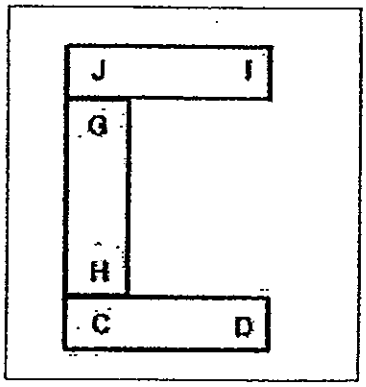
(2)



(3)



(4)



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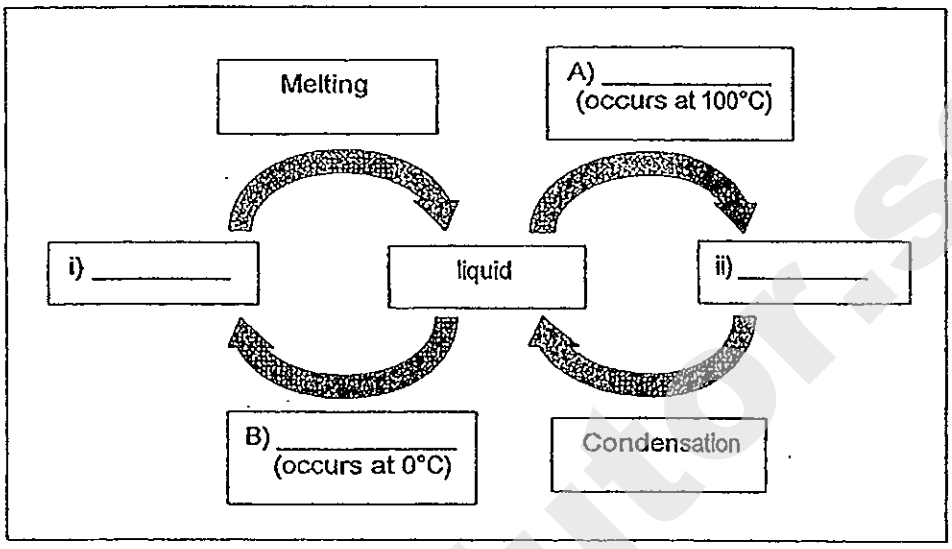
25. Study the diagram below.



A and B are processes while i) and ii) are the states of matter.

Which of the following sets represent them **correctly**?

	A	B	i)	ii)
(1)	Evaporation	Freezing	Solid	Gas
(2)	Evaporation	Melting	Solid	Gas
(3)	Boiling	Freezing	Solid	Gas
(4)	Boiling	Melting	Gas	Solid

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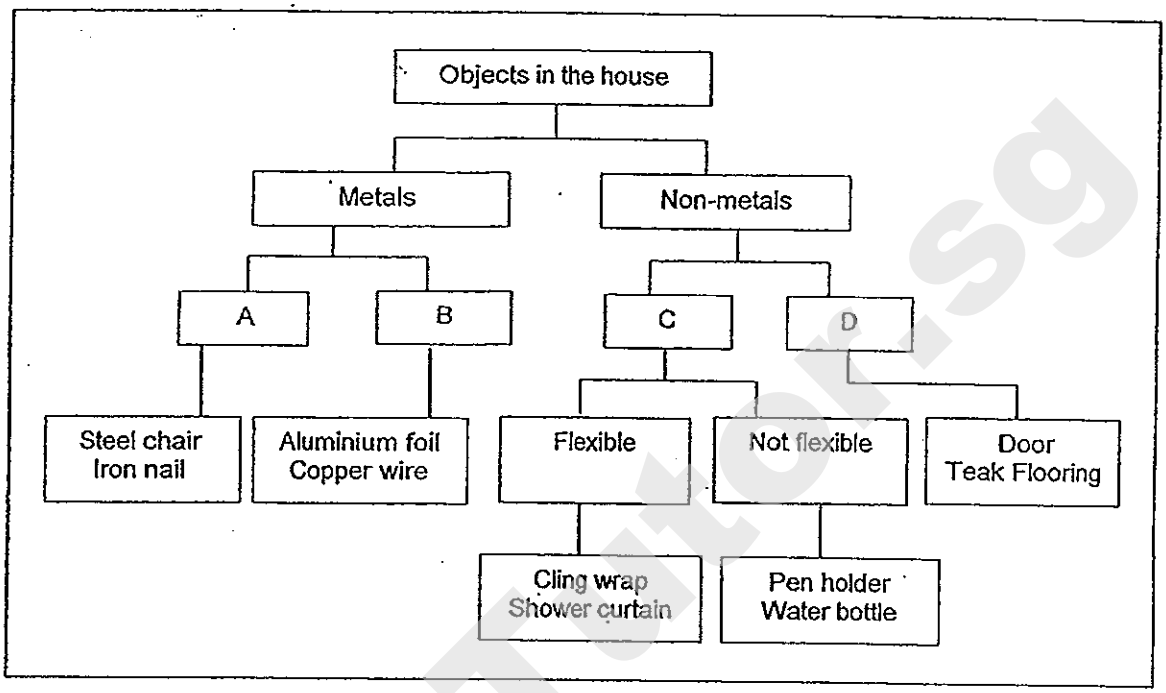
26. Study the flow chart below carefully.



Which of the following sets <u>best</u> represents the groupings A, B, C and D?

	A	B	C	D
(1)	Magnetic	Non-magnetic	Plastic	Wood
(2)	Non-magnetic	Magnetic	Rubber	Plastic
(3)	Rusty	Non-rusty	Cloth	Wood
(4)	Can be scratched	Cannot be scratched	Rubber	Wood

(Go on to the next page)

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27. Natalie helped her mother wash the cups after tea. She stacked the wet cups, one on top of another as shown in the Diagram A below and left them to dry.

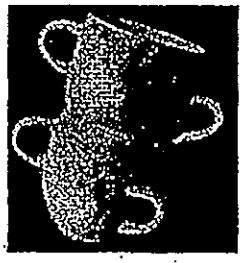

Diagram A

Natalie's mother suggested that the cups would dry faster if she hung them as shown in Diagram B below.

Diagram B

The following statements are some of the reasons that Natalie could think of with regards to her mother's suggestions.

Reason 1:	The cups in Diagram A are stacked up, hence, the cups have less exposed surface area, resulting in a lower rate of evaporation.
Reason 2:	The cups in Diagram B are hung with space apart, hence, the cups have a larger exposed surface area, resulting in a higher rate of evaporation.
Reason 3:	The cups in Diagram B are hung in a row, hence, the cups are blocking each other, resulting in a lower rate of evaporation.

Which of the reason(s) above is(are) **correct**?

(1) 1 only

(2) 1 and 2 only

(3) 2 and 3 only

(4) 1, 2 and 3 only

(Go on to the next page)

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28. Raju wanted to find out whether a nail was magnetized. He put the nail near a magnet, a compass and a paper clip. He recorded his observations below.

A. It repelled the magnet.
B. It attracted the magnet.
C. It attracted the paper clip.
D. It could move the compass needle.

From which of the above observations can he **be sure** that the nail was magnetized?

(1) A only

(2) A and B only

(3) B and C only

(4) A, C and D only

(Go on to the next page)

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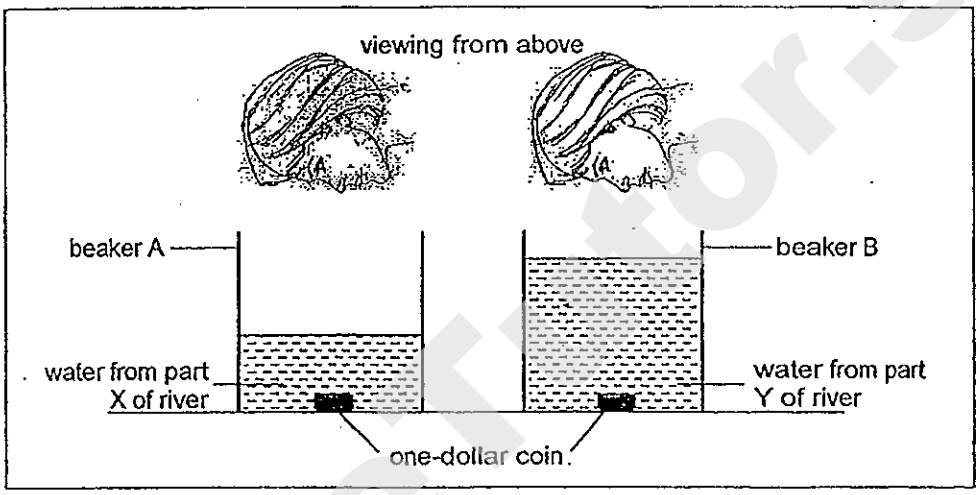
29. Tessa wanted to study how clear the water in a river was. She collected water from two different parts of a river, X and Y.

In her experiment, she used two identical beakers, A and B. At the bottom of each beaker, she placed a one-dollar coin. Then she poured water from part X of the river into beaker A until the coin could no longer be seen from the top.

She repeated the experiment using the water from part Y of the river with beaker B. The results of the experiment are shown below.



From the results above, Tessa concluded that beaker B contains clearer water.

Which of the following statement(s) was(were) the <u>correct</u> reason(s) for her conclusion?

A: Tessa could see the one-dollar coin through a greater volume of water in beaker B as compared to beaker A.

B: Water in part Y of the river is clearer as light can pass through a larger volume of water, allowing Tessa to see the one-dollar coin at the bottom of the beaker.

C: Water in part X of the river is less clear as light can only pass through a smaller volume of water.

(1) A only

(2) B only

(3) A and B only

(4) A, B and C

(Go on to the next page)

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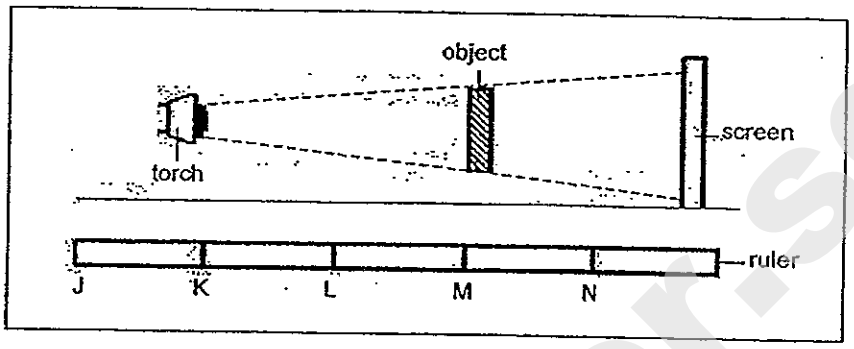
30. Rebecca placed an object at position M and shone a torch at position K. A shadow was cast on the screen as shown in the diagram below.



Rebecca wanted to obtain a smaller shadow than what was formed earlier. At which positions of the ruler should the torch and the object be placed so as to obtain a smaller shadow on the screen?

	Position of torch	Position of object
A	K	N
B	J	K
C	L	M
D	J	M

(1) A and C only

(2) A and D only

(3) B and C only

(4) B and D only

(Go on to the next page)

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CONTINUAL ASSESSMENT 2013
PRIMARY 5
SCIENCE

BOOKLET B1

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

INSTRUCTIONS TO CANDIDATES

Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

Name: _____ ( )

Class: Primary 5._____

Date: 7 March 2013

Booklets A1 & 2	**/ 60**
Booklet B1	**/ 20**
Booklet B2	**/ 20**
TOTAL	**/ 100**

This booklet consists of 8 printed pages including this page.

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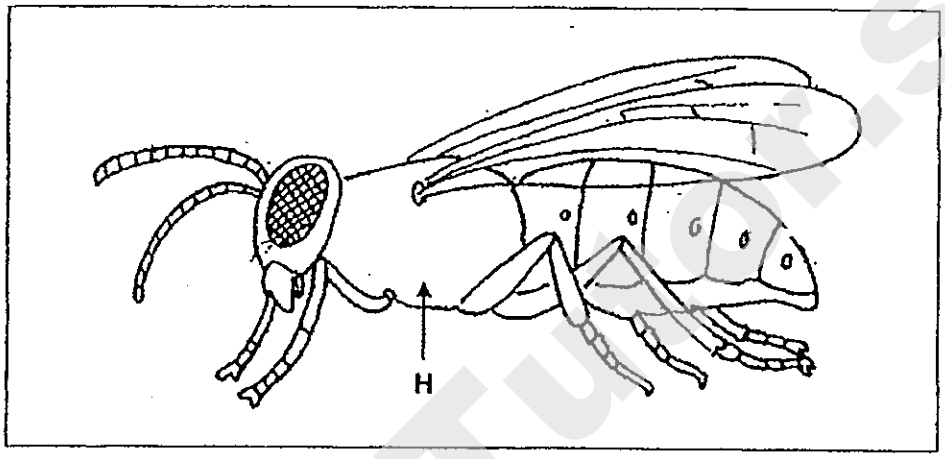
For questions 31 to 44, write your answers in this booklet.

The number of marks available is shown in brackets ( ) at the end of each question or part question. (40 marks)

---

31 Study the picture below and answer the questions carefully.



(a) The above organism is an insect. Why? (1 m)

Reason 1: _____

_____

Reason 2: _____

_____

(b) Name the part labelled **H**. (1 m)

_____

_____

(Go on to the next page)

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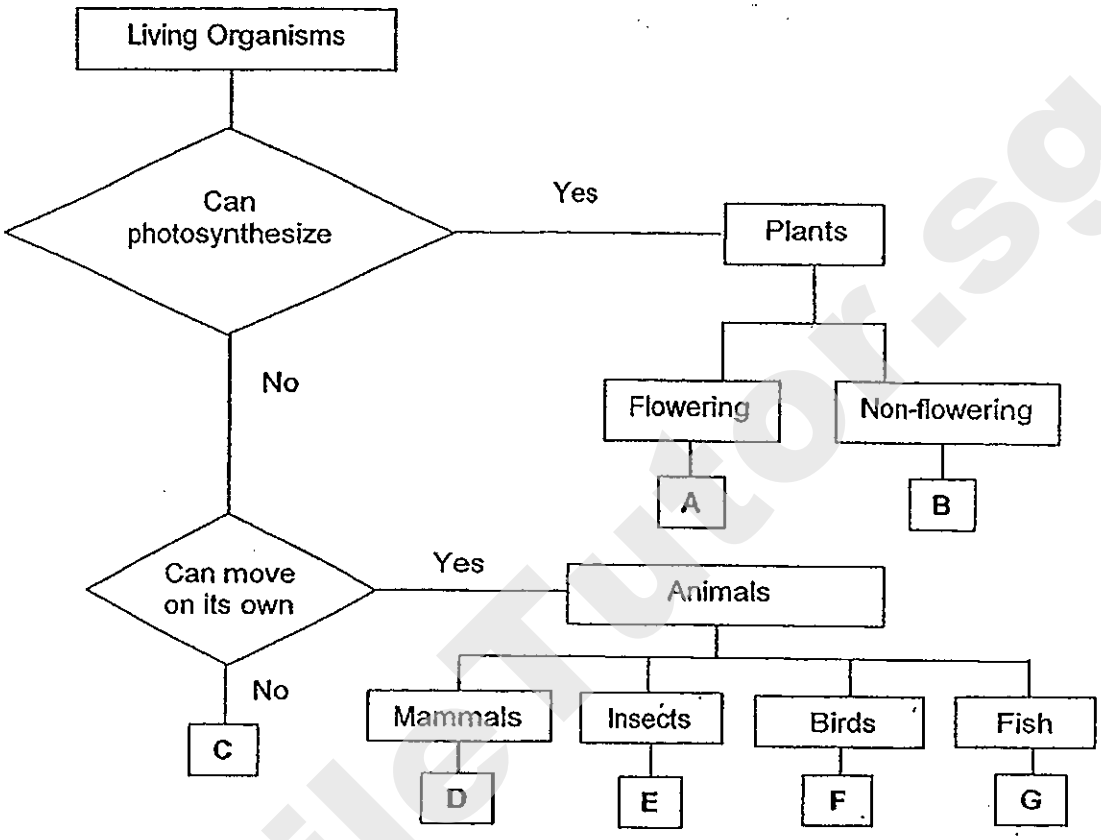
32 Study the classification chart as shown below.



(a) Classify the following organisms by writing the correct letters A, B, C, D, E, F or G in the boxes given. (2 m)

	Living Organism	Letter
(i)	Dolphin	
(ii)	Penguin	
(iii)	Fern	
(iv)	Fungi	

(b) Why is the Fern classified in the respective box? (1 m)

_____

_____

_____

(Go on to the next page)

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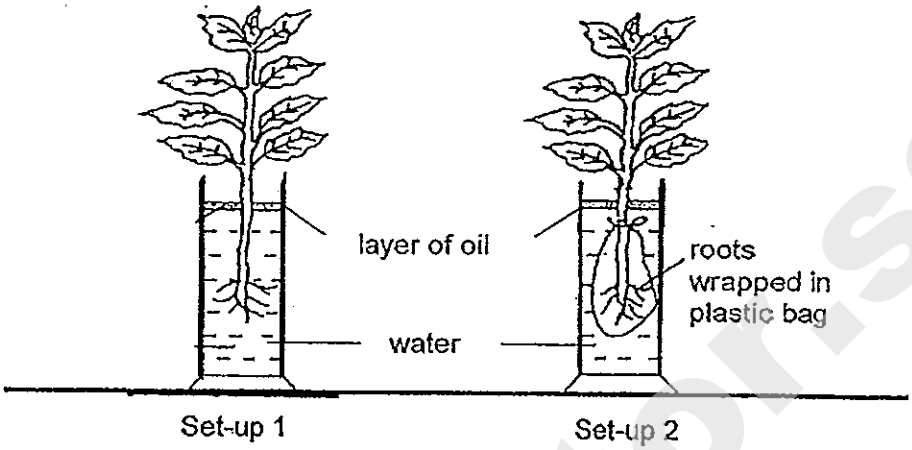
33 Two similar plants are placed in identical jars, each containing the same amount of water as shown in the diagram below.



(a) What will happen to the plant in Set-up 2 after a week?
Give a reason for your answer. (1 m)

(b) What is the purpose of the layer of oil in both set-ups? (1 m)

(Go on to the next page)

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34 Mr Png removed a ring from the stem between X and Y of a plant as shown in diagram 1. After some time, the stem was swollen as shown in diagram 2.

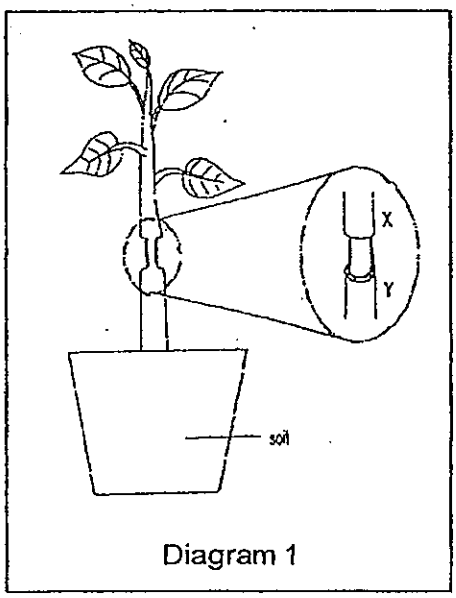

Diagram 1

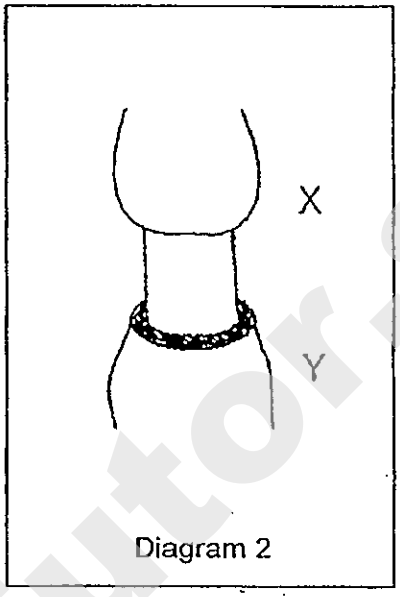

Diagram 2

(a) Explain clearly what caused the swell at the parts X and Y. (2 m)

At X: _____

_____

At Y: _____

_____

(b) Mr Png then plucked off a leaf from the plant and examined the leaf under a microscope. He noticed there were a lot of tiny 'openings' on the underside of the leaf.

(i) What are these 'openings'? _____ (½ m)

(ii) What is the function of these tiny 'openings'? (1 m)

_____

_____

_____

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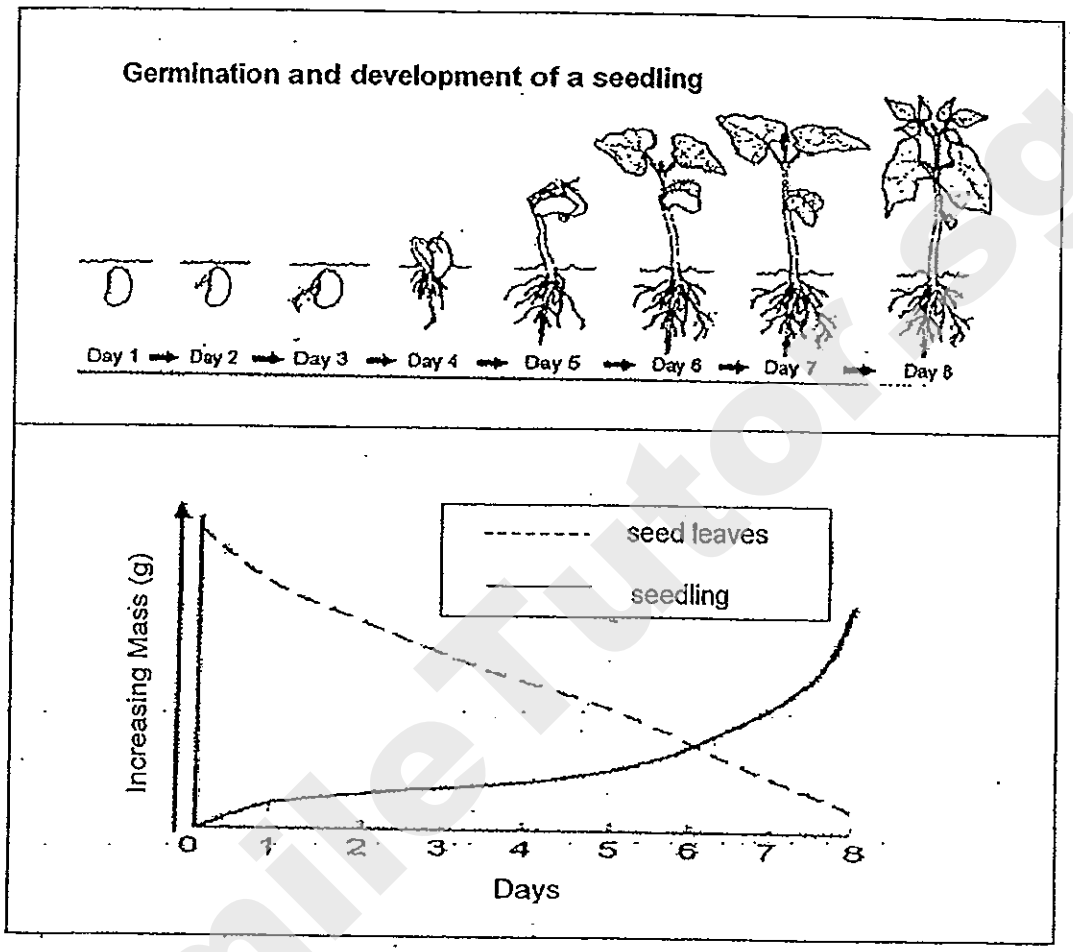
35 The picture and the graph below show the germination and development of a seedling.



(a) Based on the graph, what happened to the seed leaves from Day 1 to Day 8? Give a reason for your answer. (1½ m)

(b) What is the relationship between the mass of the seed leaves and the mass of the seedling? (1 m)

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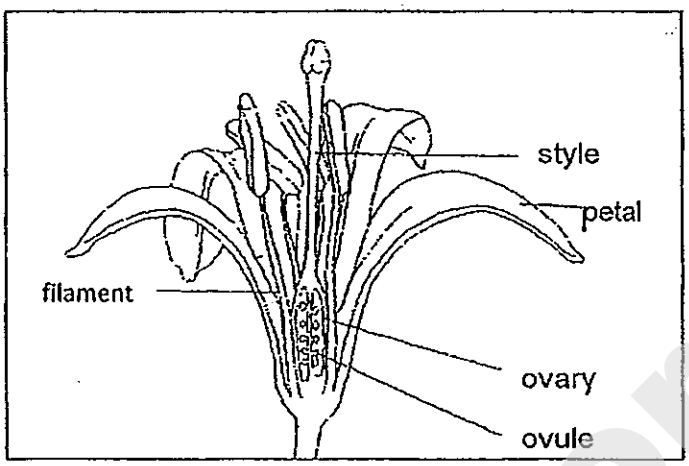
36 Sue found a flower in her garden and drew a cross section of it as shown in the diagram below.



(a) Fill in the blanks with the correct ~~flower parts or the~~ functions of the parts given. (2 m)

Flower part	Explanation
style	_____ _____
Ovule	_____ _____

(b) By observing and touching the flower, Sue concluded that the pollen grains found in the flower are dispersed by insects.
State a reason for her conclusion. (1 m)

_____

_____

(c) Explain how fertilisation takes place in a flower after the pollen grains have landed on the flower. (1 m)

_____

_____

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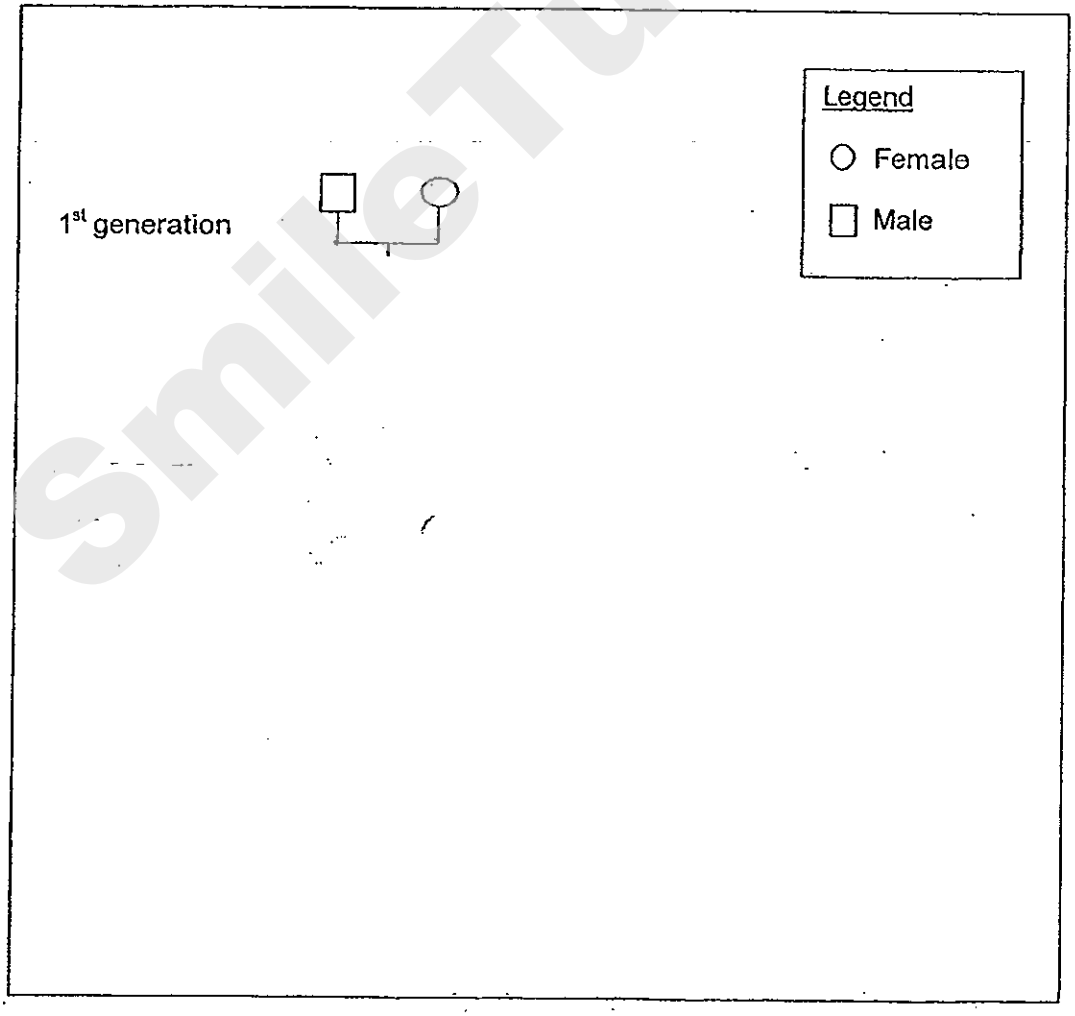
37 John's family consists of three generations.

1st Generation: Paternal grandfather and Paternal grandmother
Maternal grandmother

2nd Generation: Father
Mother
2 paternal aunts
1 maternal aunt
1 maternal uncle

3rd Generation: John
2 sisters

Based on the above information, complete John's family tree in the space provided. Indicate "John" in the family tree. (3 m)



END OF BOOKLET B1

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PRIMARY 5
SCIENCE

BOOKLET B2

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

INSTRUCTIONS TO CANDIDATES

Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

Name: _____ ( )

Class: Primary 5._____

Date: 7 March 2013

Booklet B2	/ 20

This booklet consists of 10 printed pages including this page

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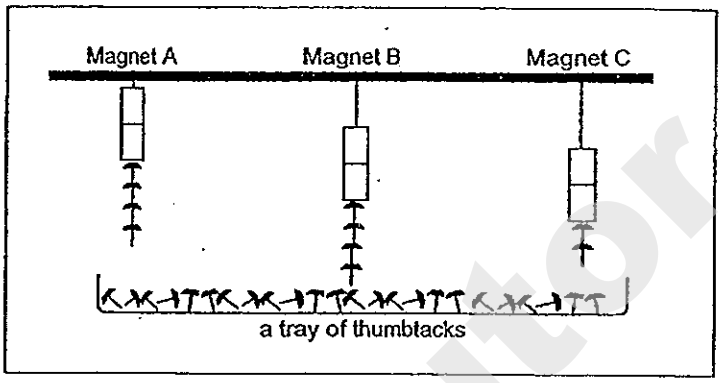
For questions 38 to 44, write your answers in the space provided.

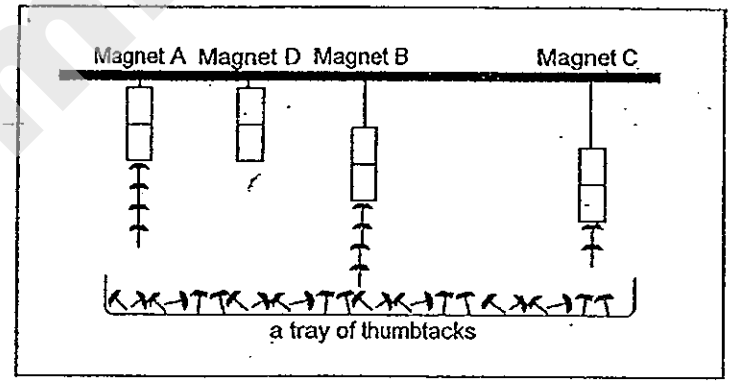
(20 marks)

38. Jenny wanted to test the strength of Magnets, A, B, and C. She hung the magnets on a rod and placed a tray of thumbtacks below them. The diagram below shows what she had observed.



(a) Based on her observation above, she concluded that the strongest magnet is Magnet A. Do you agree with her? Give a reason to support your answer. (1m)

Jenny then placed a stronger magnet, Magnet D, between Magnet A and Magnet B as shown in the figure below.



(b) What will happen to Magnets A and B? (1m)

(Go on to the next page)

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39. Jasmine wanted to find the volume of Object A. She tied Object A to a string, before lowering it into the water in the displacement can as shown in Diagram 1.

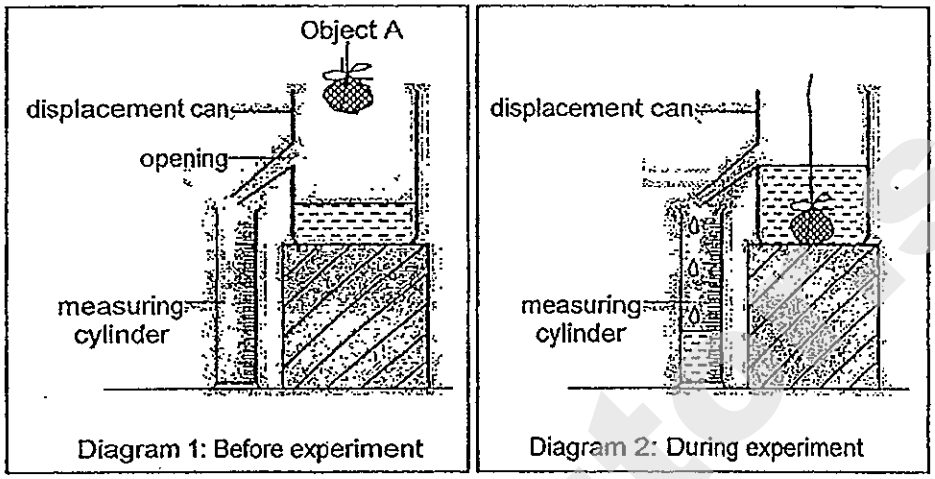

Diagram 1: Before experiment

Diagram 2: During experiment

Her friend said that the amount of water collected in the measuring cylinder as shown in Diagram 2 is **not** an accurate volume of Object A.

(a) What could be done to improve on the execution of the experiment? (1m)

_____

_____

Assuming that Jasmine had made an improvement to her experiment as mentioned in (a), she then replaced Object A with a bottle cork (tied to a string), and repeated the steps above to find out the volume of the cork.

(b) Give a reason why her method to find the volume of the cork above would **not** be accurate ? (1m)

_____

_____

(c) What could be done so that she could obtain the volume of the bottle cork accurately? (1m)

_____

_____

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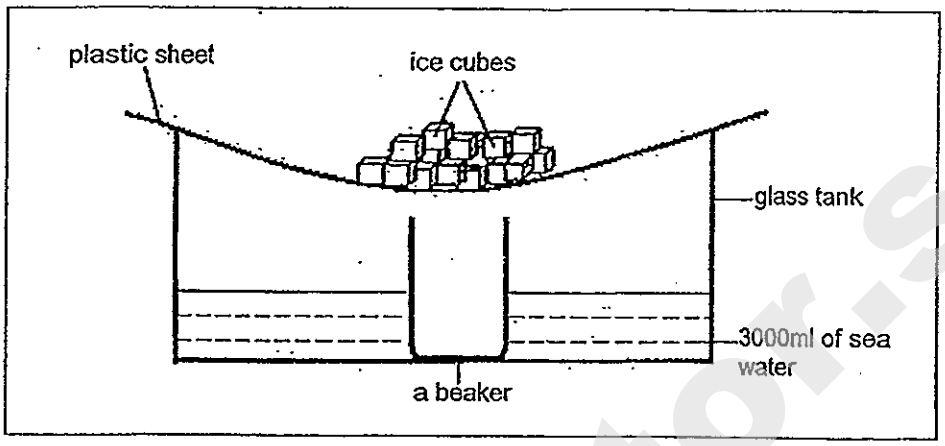
40. A group of students performed an experiment to obtain pure water from sea water by using the set-up as shown in the diagram below.



(a) After two hours, 500ml of pure water was found in the beaker. Explain how the pure water was obtained. (2m)

_____

_____

_____

(b) What was the purpose of placing the ice cubes on the plastic sheet? (1m)

_____

_____

(Go on to the next page)

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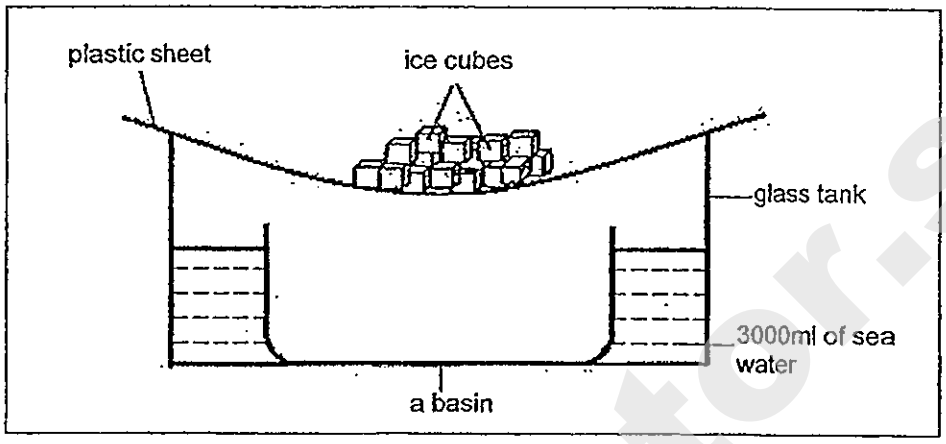
At the same time, another group of students did a similar experiment with the same amount of sea water and ice cubes. However, they replaced the beaker with a large basin to collect water as shown in the diagram below.



(c) After two hours, only 200ml of pure water was found in the basin.
Why was the amount of pure water collected in this set-up lower than the set-up earlier? (1m)

_____

_____

_____

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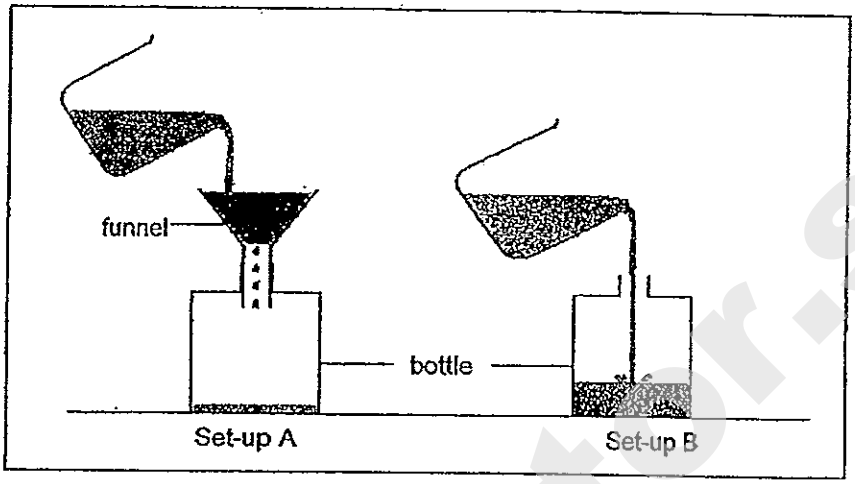
41. Sandra poured water into two similar bottles using the two set-ups, A and B as shown in the diagram below.



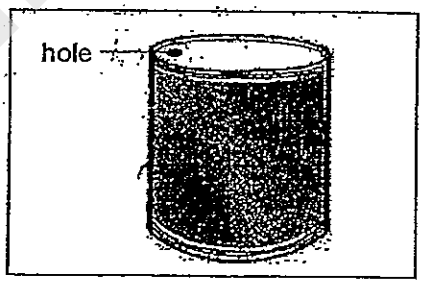
She noticed that the bottle in set-up B filled up faster than in set-up A.

(a) Explain clearly why the bottle in set-up B fills up faster than that in set-up A. (1m)

_____

_____

Sandra wanted to transfer a can of condensed milk into a jar. She made a hole on the top of the can as shown in the diagram below.



Sandra realised that the milk did not flow out as fast as she had wanted it to be.

(b) What should she do to allow the milk to flow out faster?
Explain your answer. (1m)

_____

_____

_____

(Go on to the next page)

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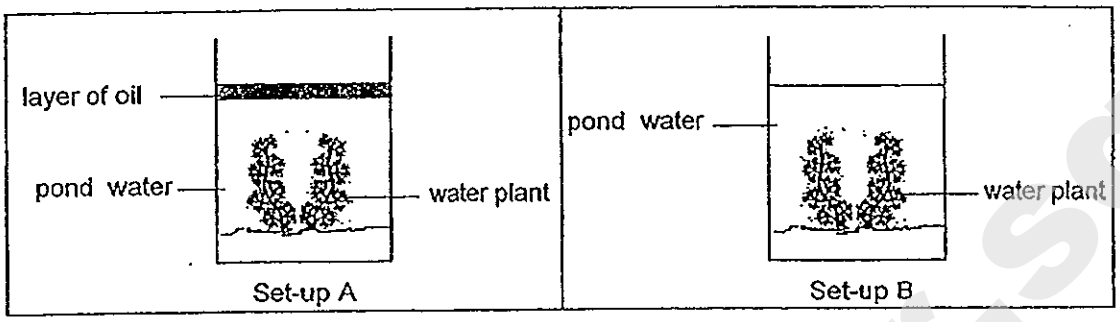
42. Clara performed an experiment to see the effect of a layer of oil on water plants. She prepared two set-ups, A and B, as shown in the diagram.



Except for the layer of oil in set-up A, the other variables in both set-ups were kept constant.

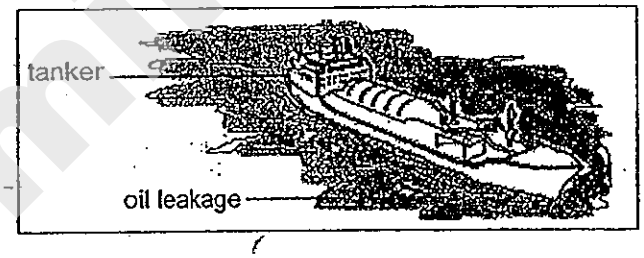
A few weeks later, she observed that the water plants in set-up A died but the water plants in set-up B remained healthy.

(a) Give a reason why the water plants in set-up A died. (1m)

_____

_____

The picture below shows leakage of oil from a tanker in the sea.



(b) What is the effect of this leakage of oil in the sea? (1m)

_____

(c) Explain how the leakage of oil shown above could affect the fishes in the sea. (1m)

_____

_____

(Go on to the next page)

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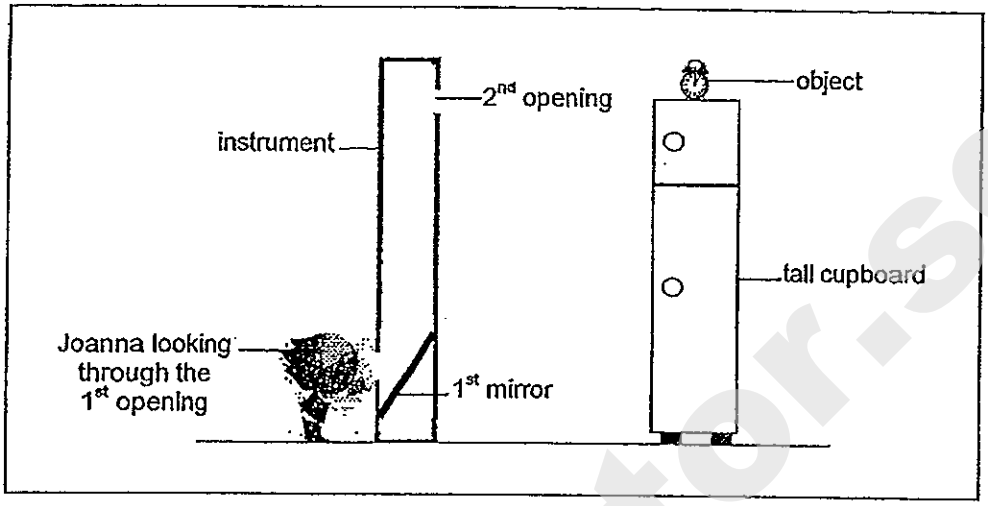
43. Joanna was trying to look at what was on the top of the tall cupboard. She made an instrument to help her to do so.



Joanna realised that she was unable to see the object. She thought of adding a second mirror to her instrument.

(a) Where should she add the second mirror?
In the diagram above, <u>draw</u> the second mirror clearly. (1m)

(b) After adding another mirror in (a), would Joanna be able to see the object using her instrument if there was no light at all in the room?
Explain your answer. (1m)

_____

_____

_____

(Go on to the next page)

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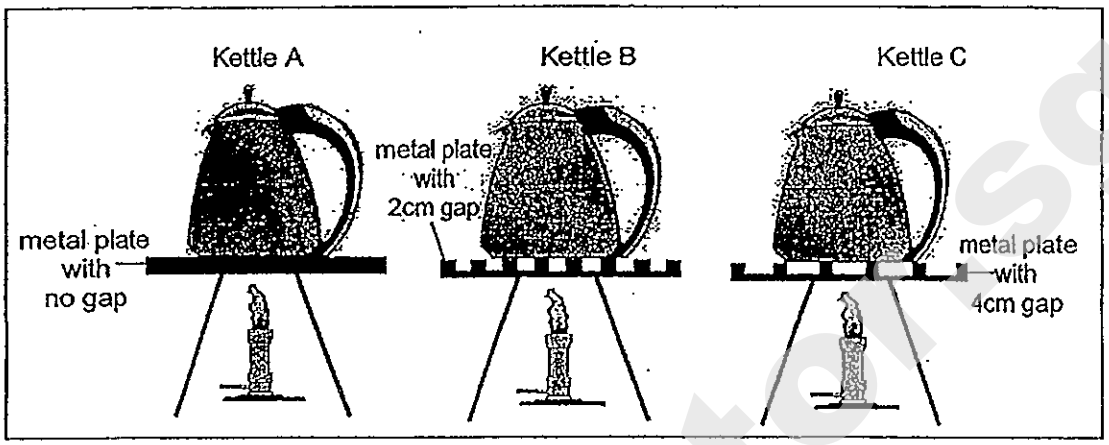
44. In an experiment, Jasmine placed three identical kettles, A, B and C, on three metal plates of the same material with different surfaces. The kettles contained the same amount of water at room temperature. The metal plates were then heated with the same amount of heat from below as shown in the diagram.



She then recorded the time taken for each kettle to boil at 100°C as shown in the table below.

Kettle	Type of metal plate	Time taken to boil at 100°C (minutes)
A	Metal plate with no gap	10
B	Metal plate with 2cm gap	15
C	Metal plate with 4cm gap	20

(a) Based on the information in the table above, Kettle A took the shortest time to boil. Explain the reason for this. (1m)

_____

_____

(b) What can she conclude about the relationship between the length of the gap in the metal plate and the time taken for the kettle to boil at 100°C? (1m)

_____

_____

(Go on to the next page)

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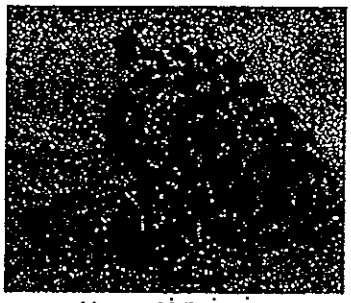
In a desert, the Horned Viper, (which is a kind of snake) crawls on the hot sand while the Thorny Devil, (which is a kind of lizard) runs using its four legs.



Horned Viper

Thorny Devil

Based on this observation, the statements below are made to give reasons why the Thorny Devil can move over a longer distance on hot sand compared to the Horned Viper in a desert.

(c) Write a tick (√) if the statement is a correct reason and a cross (X) if the statement is a wrong reason in the boxes below. (2m)

	Statement	
(i)	The Thorny Devil has a smaller surface area of contact with the hot sand, resulting in less heat being transferred to its body.	
(ii)	The Horned Viper has a larger surface area of contact with the hot sand, resulting in more heat being transferred to its body.	
(iii)	The Thorny Devil has thorns as its outer covering which protect it from the heat of the sun.	
(iv)	The Horned Viper has scales as its outer covering which does not protect it from the heat of the sun.	

End of Paper

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ANSWER SHEET

EXAM PAPER 2013
SCHOOL : MGS
SUBJECT : PRIMARY 5 SCIENCE

TERM : CA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
3	4	2	4	1	4	2	3	2	2	4	3	1	4	4	2	1

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	4	4	2	4	2	4	3	1	2	4	4	2

31)a)1)It has 3 main body party.
2)It has 3 pairs of legs.
b)Thorax.

32)a)D, F, B, C
b)The fern is a living organism, can photosynthesize, is a plant and is non-flowering.

33)a)It will die. As the plastic bag is waterproof, water in the jar is unable to be absorbed by the roots. Water is needed for the plant to survive and the plant does not have it.
b)To prevent evaporation.

34)a)At X: Food from the leaves were unable to reach the bottom part of the plant as the phloem was removed when it was cut off.
At Y: Water and mineral salts absorbed by the roots were unable to reach to reach the upper part of the plant as the xylem was removed when it was cut off.
b)i)Stomata
ii)It allows the exchange of gases to take place.

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35)a)They decreased in mass, because the seedling is using up the food stored in the seed leaves.

b)The greater the mass of the seedling, the lower the mass of the seed leaves.

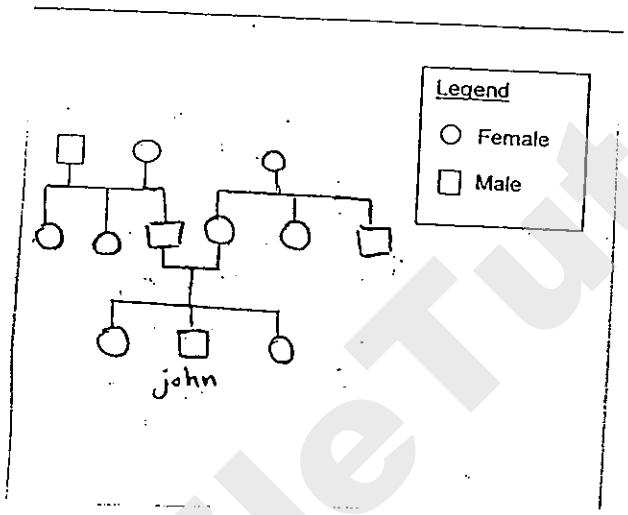
36)a)Style : It supports the stigma.

Ovule: Contains female reproductive cells and will develop into seeds after fertilisation.

b)The flower is colourful and the stigma is sticky.

c)The pollen grains from the anther land on the stigma and a pollen tube grows down to the ovary where the male cell fuses with the female cell.

37)



38)a)Yes. It was able to attract the most amount of thumbtacks from the greatest distance.

b)They will be attracted to magnet D.

39)a)Ensure that the water level is just below the opening of the can before the experiment.

b)The cork will float and hence not the entire cork will be submerged in water.

c)She should tie a heavy object to the cork when submerged it.

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40)a)The molecules in the sea water gained kinetic energy and evaporated. When the water vapour came into contact with the cooler surface of the plastic sheet, it lost heat and condensed into water droplets. When the water droplets became too heavy, they dropped into the beaker.

b)To cool the plastic sheet so that condensation can take place.

c)The surface area is smaller due to the big basin and hence the evaporation rate is slower in two hours.

41)a)Air occupies space. In set-up B, air could escape while in set-up A, it could hot, thus water in set-up A could not flow in faster than set-up B.

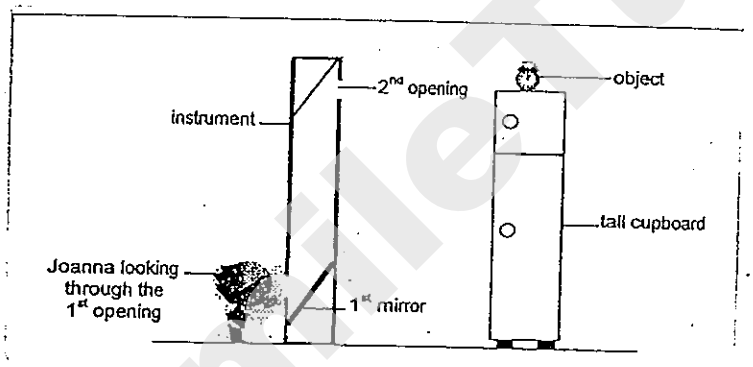
b)She should poke another hole in the can Air can enter through the extra hole and push the condensed milk out through the other hole.

42)a)Carbon dioxide was unable to pass through the oil and without carbon dioxide, the plant was unable to make food and hence died.

b)It will pollute the sea and kill sea creatures.

c)Plants cannot photosynthesize, fishes will die as there will be no more supply of oxygen.

43)a)



b)No. Light will not be reflected by the second mirror to the first and Joanna cannot see the object as there is no light source.

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44)a)Kettle A had the largest surface of contact with metal plate more heat is transferred.

b)The greater the length of the gap in the metal plate, the longer the time taken for the Kettle to boil at 100℃.

c)i) √

ii) √

iii)X

iv)X

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NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 1 2013
PRIMARY FIVE
SCIENCE

Name : _____( )

Class : Primary 5 / ____

Date : 27 February 2013

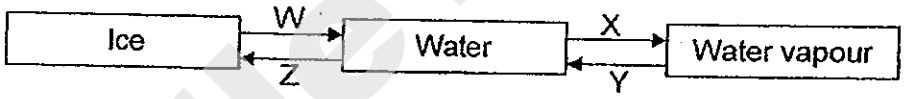
Duration : 1 hr 45 min

MARKS	
Sect A:	/ 60
Sect B:	/ 40
Total :	**/ 100**

Parent's Signature : _____

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. Study the flowchart below.



Name the processes represented by the arrows W, X, Y and Z.

	W	X	Y	Z
(1)	Evaporation	Freezing	Melting	Condensation
(2)	Melting	Evaporation	Condensation	Freezing
(3)	Condensation	Melting	Evaporation	Freezing
(4)	Melting	Condensation	Freezing	Evaporation

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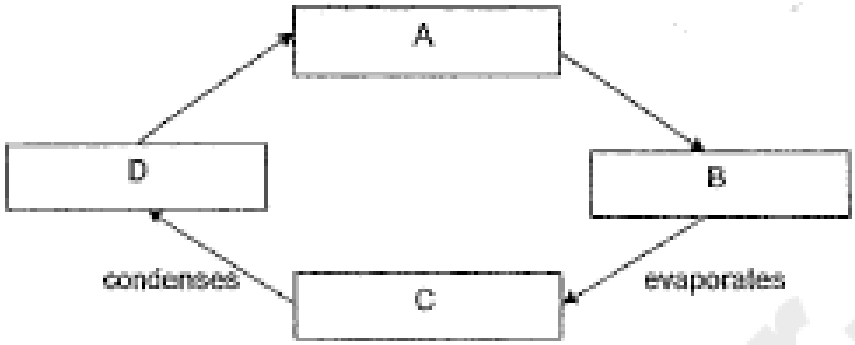
2. Study the diagram shown below.



Which one of the following can be correctly placed in the boxes?

	A	B	C	D
(1)	Water vapour	Water	Rain	Clouds
(2)	Rain	Clouds	Water	Water vapour
(3)	Water vapour	Clouds	Water	Rain
(4)	Rain	Water	Water vapour	Clouds

Distillation is a process where pure water is obtained from contaminated water through heating.

In what ways are the water cycle and the distillation process similar?

A Both are ways of purifying water.
B Steam is formed as the water is heated.
C Both processes involve a change in state.
D The water vapour condenses to form pure water.

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

4. Which of the following is the reason why reproduction is essential to all living things?

(1) Reproduction is to allow more living things to die.
(2) Reproduction is to ensure the continuity of the species.
(3) Reproduction is to ensure that the living things can grow older.
(4) Reproduction is to allow the number of living things to remain the same.

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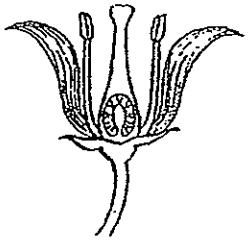
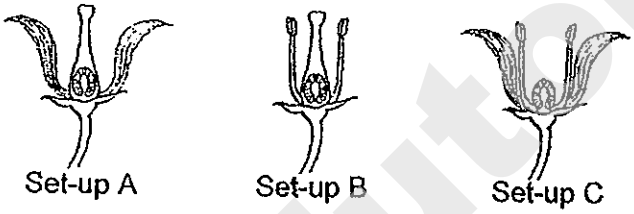
5. Mary conducted an experiment on Plant P in her garden.



Plant P

She removed certain parts of the flower as shown below.



Then she dusted pollen grains from a flower of Plant P over set-ups A, B and C. She observed the flowers over a few weeks.

Which of the set-up(s) did not produce any fruit?

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

6. Which of the following is common to both spores and seeds?

A Both are dispersed by wind.
B Both are kept in the spore bag.
C Both are formed from the ovules of flowers.
D Both enable the reproduction of flowering plants.

(1) D only
(2) A and D only
(3) B and C only
(4) None of the above.

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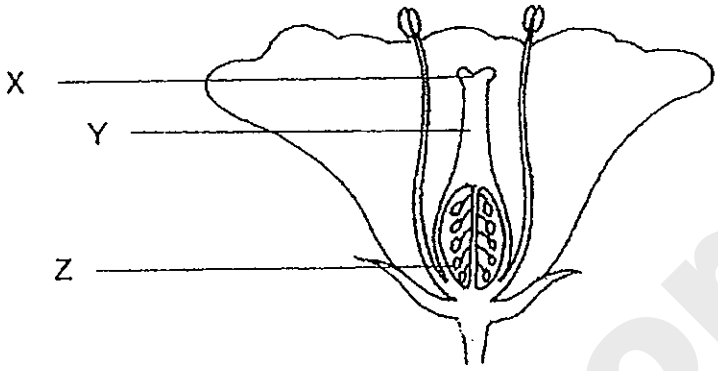
7. Which of the following correctly labels parts X, Y and Z in the diagram below.



	X	Y	Z
(1)	Stigma	Style	Ovule
(2)	Stamen	Ovary	Pollen grain
(3)	Stigma	Filament	Ovule
(4)	Anther	Style	Pollen grain

8. The fruits/seeds shown below are grouped according to their methods of dispersal.

Group A	Group B	Group C
Rubber Saga	Angsana Lalang	Pong pong Nipah

Which of the following sets of fruits has been classified **incorrectly**?

	Group A	Group B	Group C
(1)	Balsam	Shorea	Lotus
(2)	Rain tree	African tulip	Mangrove
(3)	Balsam	African tulip	Coconut
(4)	Mimosa	Shorea	Mangrove

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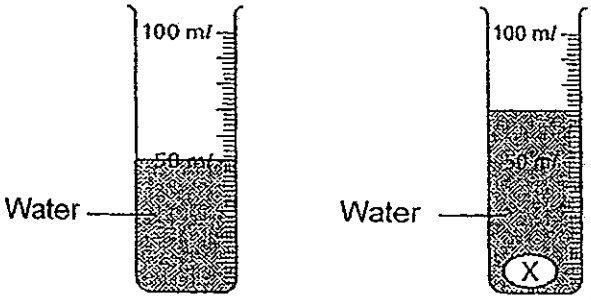
9. An unknown object, X, is dropped into a measuring cylinder filled with 50ml of water. The water level rises to 70ml.



Based only on this observation, which of the following conclusions can you make?

A X is flexible.
B X occupies space.
C X has a fixed mass.

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

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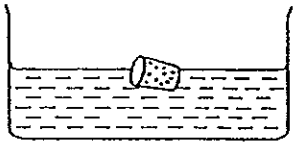
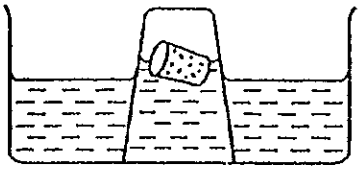
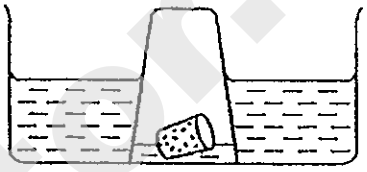
10. A piece of wooden cork is floating on a basin of water. Which one of the diagrams below shows what happens when an empty plastic cup is directly inverted over it?



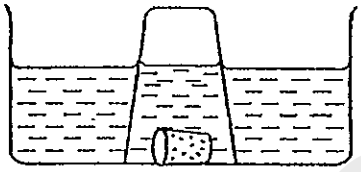
(1)



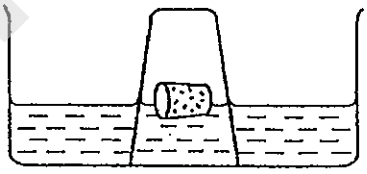
(2)



(3)



(4)



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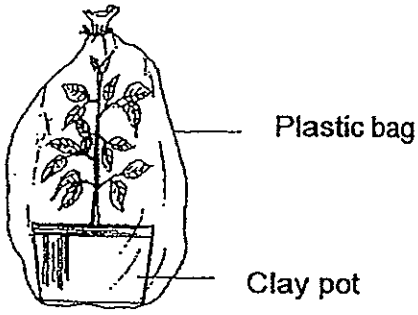
11. A class of pupils put a pot of plant in a plastic bag. They sealed the plastic bag tightly and placed the whole set-up under the Sun as shown below. After some time, the pupils found some droplets of water on the inside of the plastic bag.



The class agreed that the water droplets were due to condensation of water vapour but could not agree where the water vapour came from. Four pupils each gave an explanation below.

Ahmad:	Water vapour in the air present in the plastic bag
Betty:	Water vapour in the air present in the clay pot.
Charles:	Water vapour in the air outside the plastic bag.
Devi:	Water vapour given out by the leaves of the plant.

Who were correct?

(1) Betty and Devi
(2) Ahmad and Devi
(3) Betty and Charles
(4) Ahmad and Charles

12. Which of the following processes or activities have resulted in water pollution in many countries?

A Desalination
B Releasing untreated sewage
C Oil spills from ships
D Littering and dumping of toxic wastes

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

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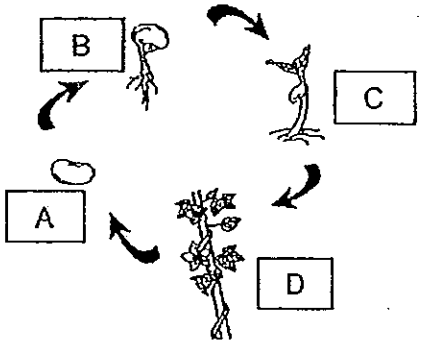
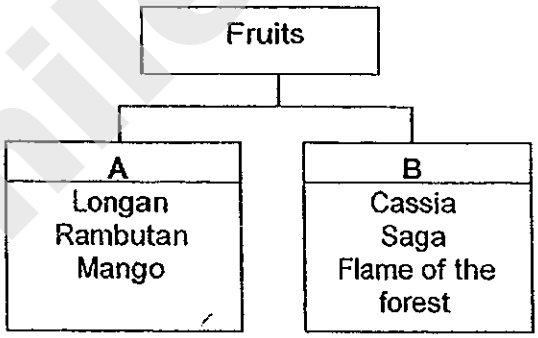
13. The diagram below shows a life cycle of a flowering plant.



At which stage, A, B, C or D, will the plant be able to start making its own food?

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

14. The classification table below shows how some fruits are grouped.



Identify the way how the fruits are grouped.

A Sweet and sour fruits
B Smooth and rough fruits
C Edible and inedible fruits
D One seed and many seeds fruits

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

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15. Which of the following conditions encourage the growth of mould?

A Wind
B Water
C Sunlight
D Nutrients

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

16. The table below records the characteristics of four flowers, A, B , C and D.

Flower	Petals		Smell
	Size	Colour	
A	Large	White	Scented
B	Small	White	Unscented
C	Large	Brightly coloured	Scented
D	Small	Brightly coloured	Unscented

Which flower is most likely to be visited by the **least** number of insects?

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

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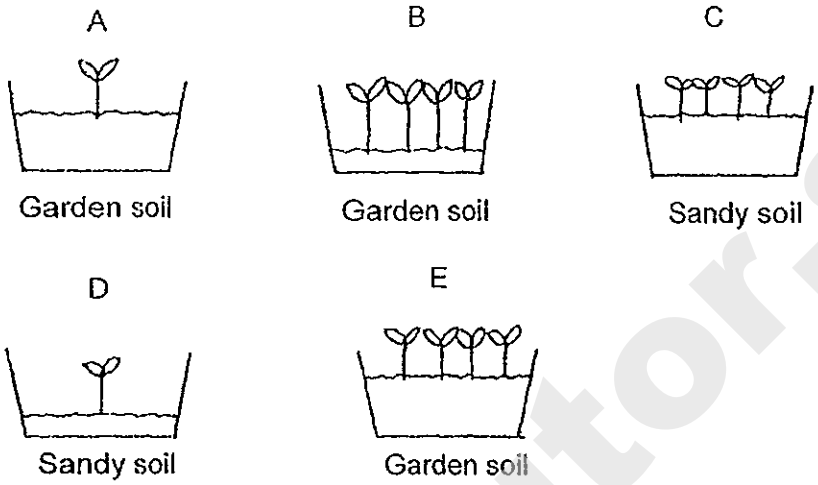
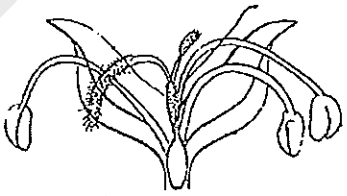
17. Some pupils wanted to find out how overcrowding can affect plant growth They prepared five pots of plants and placed them in the same part of the garden. They watered the plants with the same amount of water every day.



Which two pots of plants should they observe to make it a fair test?

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

18. The diagram below shows parts of a flower.



Which of the statements are true about the flower?

A The flower may be self-pollinated.
B Only the male part is present in the flower.
C The flower has both male and female parts.
D Pollination is likely to be carried out by wind.

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

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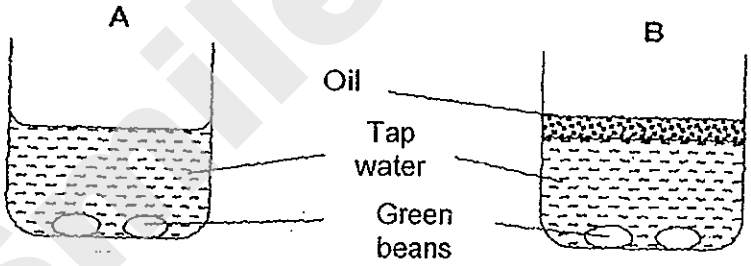
19. Jeremy is asked to find out whether the fruit shown below is dispersed by water.

Which of the following must he do to find out?

A Weigh the fruit.
B Put the fruit into a basin of water.
C Count the number of seeds it has.
D Check whether it has a fibrous husk

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

20. Kenny had a set-up as shown below. He thinks that air is needed for the seeds to become seedlings. He wanted to prove that his hypothesis is correct.



Two days later, the seeds in both the beakers germinated. He repeated the experiment and got the same results. Which of the following explains why his experiments failed?

(1) There was too much oil in Beaker B.
(2) There was too much air in Beaker A.
(3) Both beakers contain dissolved air in the water.
(4) The oil provided air to the beans to germinate in Beaker B.

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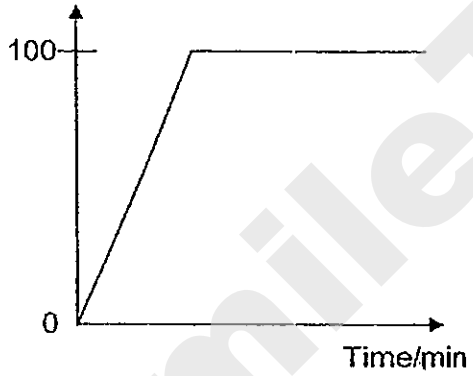
21. Arrange the following steps of seed development in order.

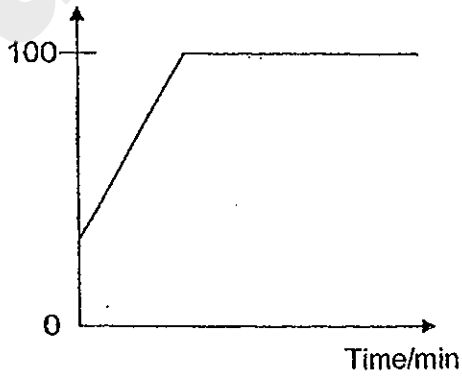
A The root grows.
B The shoot grows.
C Green leaves of the seedling make food in sunlight.
D Conditions are favourable for the seed to germinate.

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

22. Peter heated 100ml of tap water in a beaker with a bunsen burner. He continued to heat the water till it reached boiling point. After 10 minutes, he turned off the bunsen burner and allowed the beaker of water to cool down to room temperature.

Which of the following graph shows the change in temperature correctly?

(1)


(2)


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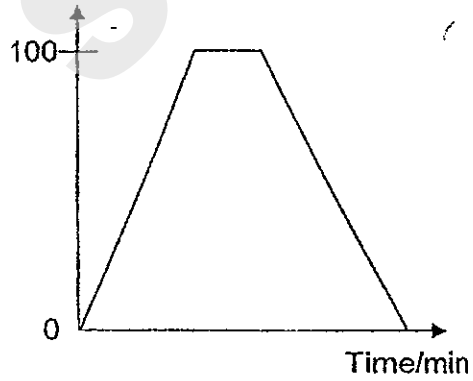
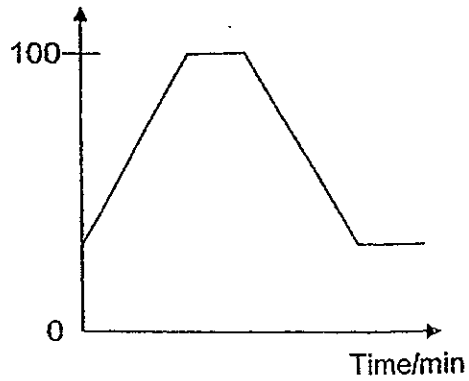


(4)


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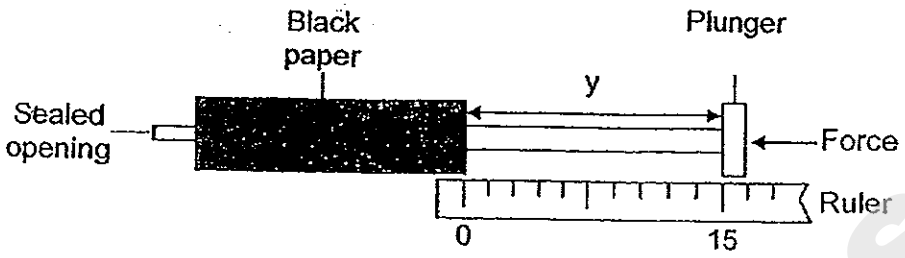
23. Bernard used two identical syringes. Each syringe was covered with a black paper and completely filled with either air or water.



She pushed each plunger as hard as she could. She then measure the distance y.

Which of the following shows the correct values of y?

	y (cm)	
	Syringe with air	Syringe with water
(1)	0	15
(2)	15	0
(3)	5	15
(4)	15	5

24. Mary wanted to study how the mass of a substance, W, is related to its volume. Which of the following steps should Mary do to ensure that the experiment is carried out correctly?

A Repeat the experiment using different substances
B Keep the temperature of the substance W the same during the experiment.
C Measure the mass and volume using different amounts of substance W.

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

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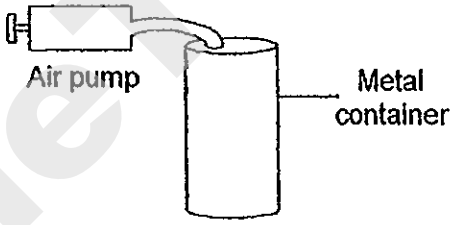
25. The table shows the melting and boiling points of two substances, P and Q.

Substance	Melting point (°C)	Boiling point (°C)
P	36	250
Q	105	178

Which one of the following shows the correct state(s) of P and Q at 100°C?

	P	Q
(1)	liquid	solid
(2)	liquid	liquid
(3)	solid	liquid
(4)	solid	solid

26. A metal container has a capacity of 4000 cm^3. It is half-filled with sand An air pump is attached to it as shown below.



Each time the piston is pushed in, 800 cm^3 of air is forced into the metal container. What will be the volume of air inside the metal container if the piston is pushed in thrice?

(1) 800 cm^3
(2) 2000 cm^3
(3) 2400 cm^3
(4) 4000 cm^3

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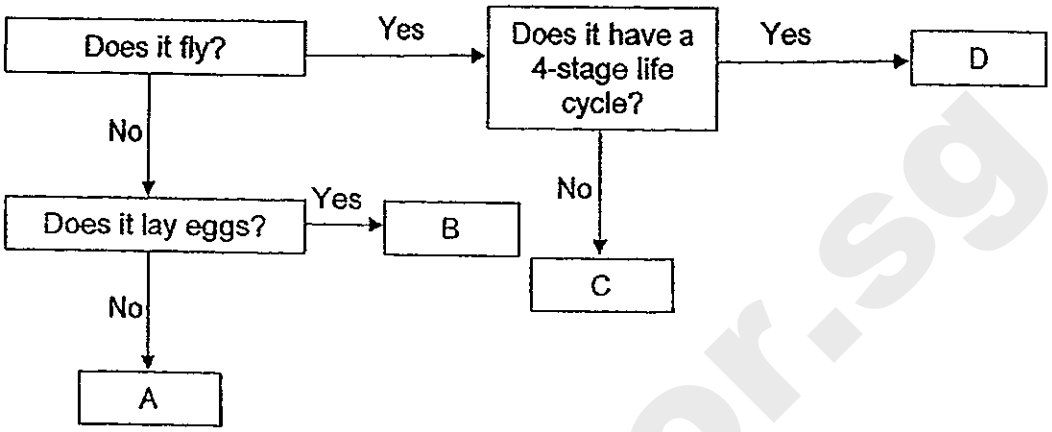
27. Study the diagram below.



Which of the following correctly shows what A, B, C and D could be?

	A	B	C	D
(1)	Guppy	Penguin	Butterfly	Cockroach
(2)	Shark	Salmon	Frog	Housefly
(3)	Snake	Chicken	Mosquito	Human
(4)	Whale	Platypus	Cockroach	Mosquito

28. Compare the life cycle of a dog and the life cycle of a duck.

	Dog	Duck
A	The life starts as a fertilised egg.	The life starts as a fertilised egg.
B	The fertilised egg develops into a puppy inside the mother's body.	The egg is laid and incubated by the mother in order to develop into a duckling.
C	The developing puppy gets nutrients from the mother.	The developing duckling gets nutrients from the egg yolk.
D	The puppy may grow into an adult that can reproduce.	The duckling lays an egg each time.

Which of the following comparisons are **true**?

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

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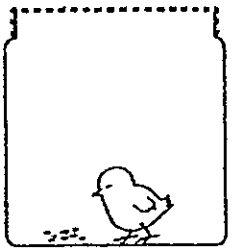
29. A chick was placed in the container with tiny holes on the lid. Some grains were given to the chick daily.



After 3 days, the chick died.

Which of the following statement(s) explain(s) why the chick died?

A The chick needed water to stay alive.
B The tiny holes allowed air to circulate in the container.
C There was not enough oxygen in the container to keep the chick alive.
D There was not enough sunlight in the container to keep the chick alive.

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

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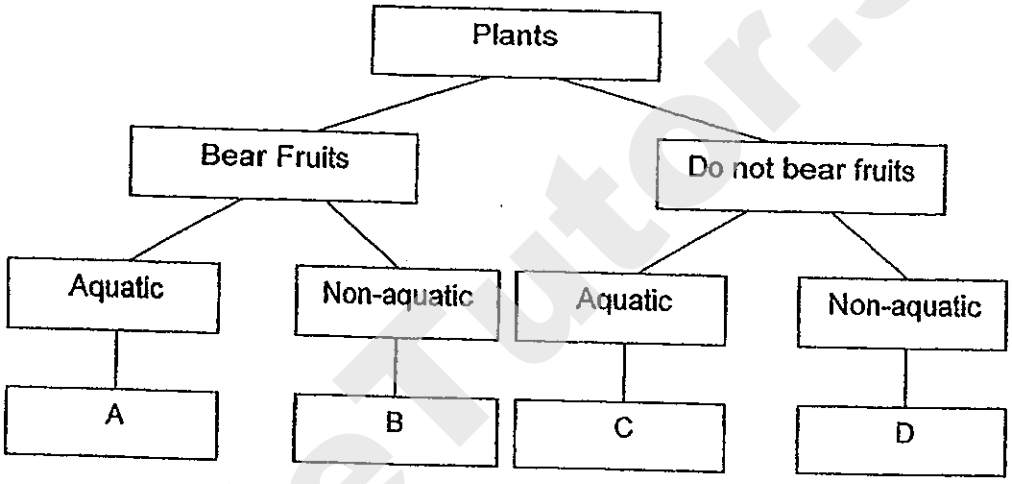
30. The following table provides information on plants R , S , T and U, based on two characteristics. A tick (√) shows the characteristics of the plants.

	R	S	T	U
Has flowers		√	√	
Grows on water		√		√

From the information above, where do plants S and T belong to in the classification table?



	S	T
(1)	A	B
(2)	D	C
(3)	D	B
(4)	A	C

End of Section A

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NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 1 2013
PRIMARY FIVE
SCIENCE

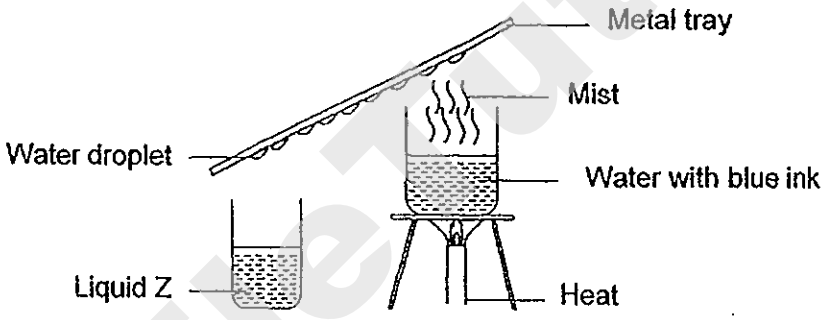
MARKS
40

Name : _____ ( )

Class : Primary 5 / _____

Section B: (40marks)
Write your answers to question 31 to 44.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

31. Harry set up the experiment as shown below.



(a) Explain why water droplets had formed on the metal tray. [2]

_____

_____

_____

(b) What is the colour of Liquid Z? [1]

_____

(c) After ten minutes, the amount of water droplets collected on the metal tray decreased. Explain what had happened. [1]

_____

_____

Score	4

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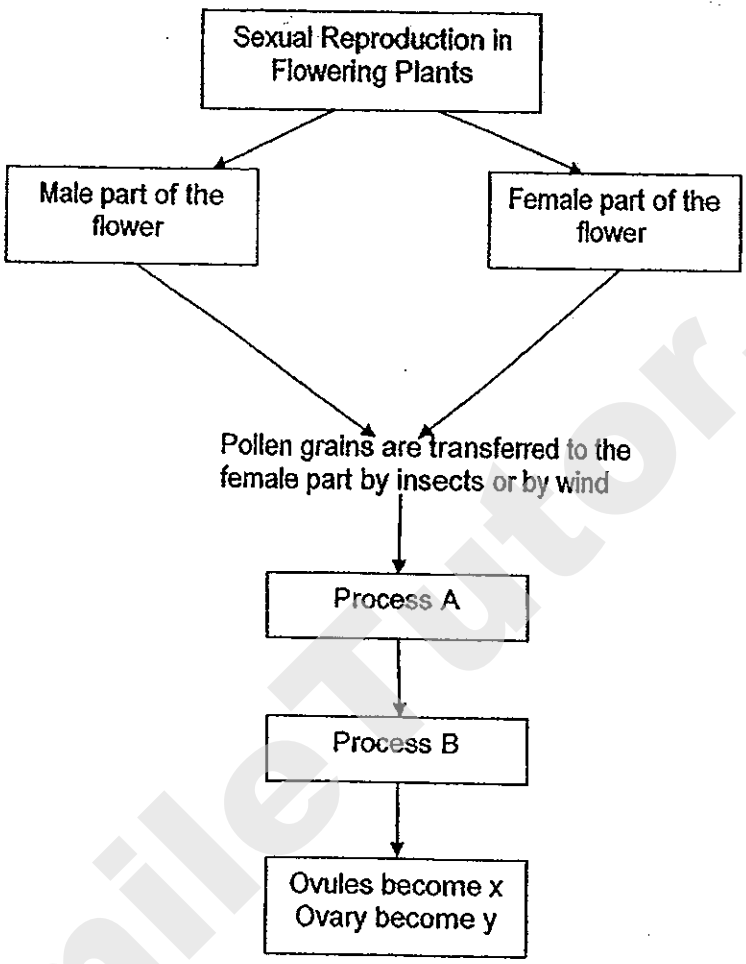
32. Study the flow chart shown below.



(a) Name the processes. [2]

(i) Process A: _____

(ii) Process B: _____

(b) Name the plant parts. [2]

(i) Plant part x: _____

(ii) Plant part y: _____

Score	/ 4

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33. The picture shows a bird eating a papaya fruit.

(a) What attracts the bird to the fruit? [1]

_____

_____

(b) Explain how the bird helps to disperse the seeds. [2]

_____

_____

_____

_____

Score	/ 3

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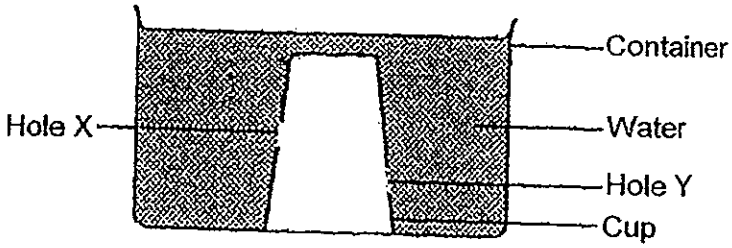
34. A paper cup with two small holes is inverted and pushed into a container of water as shown below.



(a) In the diagram above, draw the water level found in the cup when the cup is completely placed at the bottom of the container of water. [1]

(b) Explain your answer in (a). [2]

_____

_____

_____

Score	/ 3

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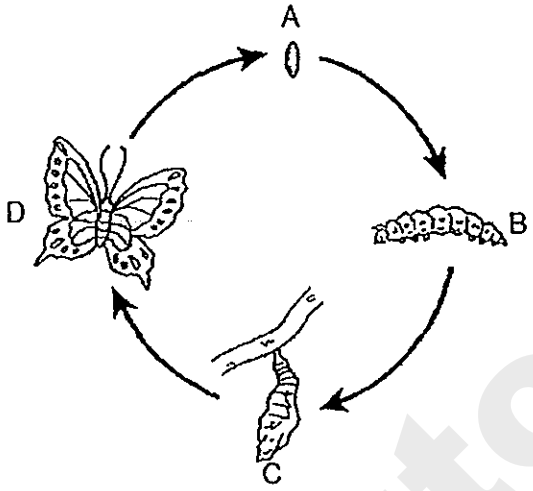
35. The diagram below shows the life cycle of a butterfly.



An orchard farmer uses the butterfly to help him to grow new fruits.

At which stage (A, B, C or D) of the life cycle of the animal is helpful to the farmer. Explain your answer. [2]

_____

_____

_____

_____

Score	/ 2

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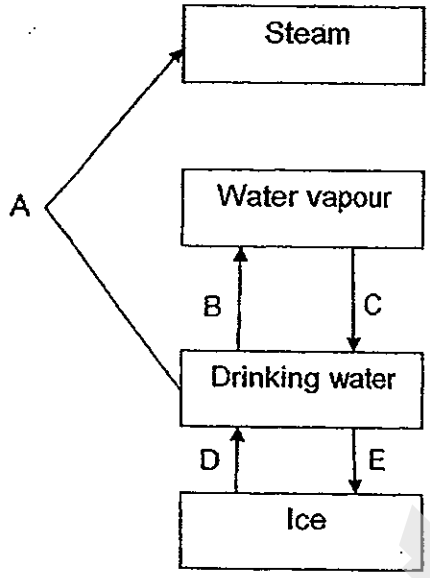
36. Study the chart below.



(a) List the processes (A, B, C, D and/or E) that takes place when water gains heat. [1]

_____

(b) Name two differences between Process A and Process B. [2]

_____

_____

_____

_____

_____

_____

Score	/ 3

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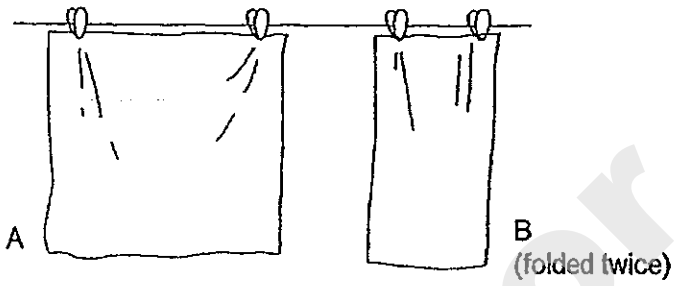
37. On a hot and dry day, Carrisa obtained two plastic containers and added 100ml of water to each of them. She took two identical dry handkerchiefs and put one in each of the containers. Each of the handkerchiefs was soak with the water until there was no water left in the containers. She hung the handkerchiefs on the clothes-line as shown below and measure the time taken for the handkerchiefs to dry completely.



(a) What was the aim of Carrisa's experiment? [1]

_____

_____

(b) Which handkerchief would have taken a longer time to dry? Give a reason for your answer. [1]

_____

_____

Score	/ 2

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38. Mary placed 20 water plants into four containers respectively. Each container had water from four different rivers. She counted the number of water plants left in the containers every 5 days and recorded her observations in the table below.

Water taken from river	Number of water plants			
	Day 0	Day 5	Day 10	Day 15
A	20	20	20	20
B	20	24	27	30
C	20	18	15	13
D	20	15	8	4

(a) From the table above, which river source is the most polluted? Explain your answer. [1]

_____

_____

(b) State two reasons how water is useful to plants. [2]

_____

_____

_____

_____

Score	/ 3

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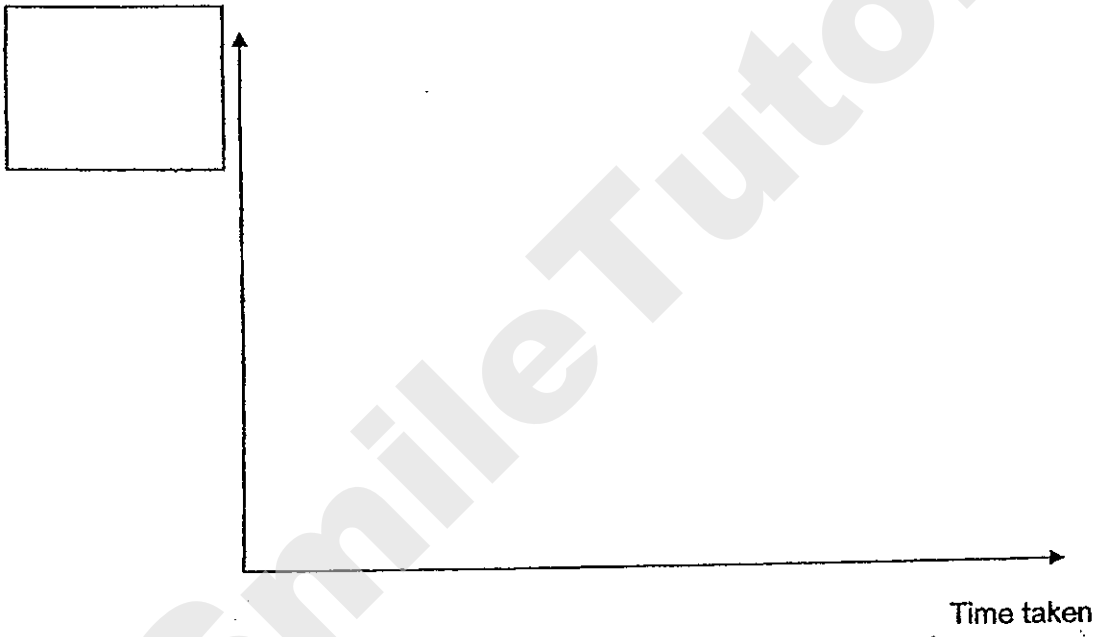
39. The diagram below shows a shorea fruit.

Plot a graph to show the relationship between the size of its wing-like structure and the time taken for it to drop to the ground. Label the missing axis correctly. [2]



Score	/ 2

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40. Ahmad read from a book that an African Violet plant can reproduce from seeds as well as from the leaves. He wanted to compare the growth of the new plants using the two different parts.

He prepared two similar pots with the same type and amount of soil. In Pot A, he placed an African Violet seed in it and in Pot B the leaf of an African Violet. He watered the pots with the same amount of water and recorded his observations in the table below.

	Pot A	Pot B
Day 1	Seed is planted in the soil.	Leaf is planted in the soil.
Day 6	Nothing	Leaflets appear out from the soil
Day 10	Shoot appears out from the soil	More leaflets appear and growing bigger
Day 14	First leaves appear in the seedling	Seedling has grown bigger with many leaves.

The African Violet plant can reproduce asexually by using plant parts and sexually by seeds.

State an advantage and disadvantage for the plant that reproduces sexually. [2]

Advantage:

_____

_____

_____

Disadvantage:

_____

_____

_____

Score	/ 2

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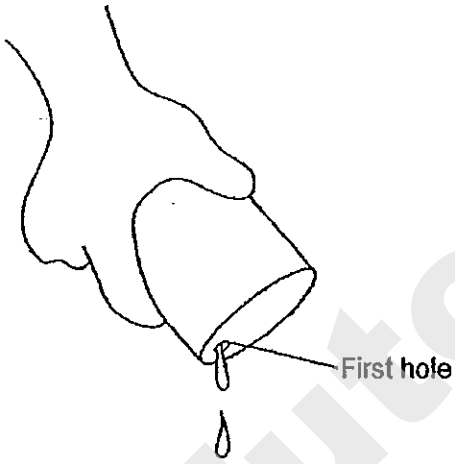
41. Ah Hock makes coffee in a coffee shop. He uses condensed milk to make his drinks. He punched a hole in the tin of condensed milk to pour the contents out as shown in the diagram below, but he found that the milk flowed very slowly. This hindered his ability to work quickly and he was constantly late in preparing his drinks.



His boss suggested that he make a second hole in the tin to allow the milk to flow faster.

(a) Put an 'X' on the part of the tin that Ah Hock should make a second hole to allow the milk to flow faster. [1]

(b) Explain why the milk flow out faster when the second hole was made. [2]

_____

_____

_____

_____

Score	/ 3

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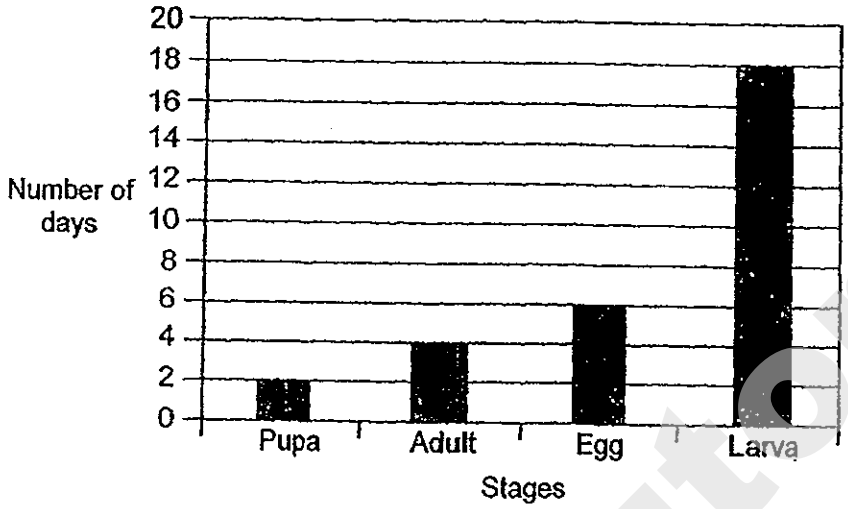
42. Phoebe studied the life cycle of insect Z. She recorded the number of days for each stage of its life cycle. Her results are shown in the graph below. However, she did not present the stages of the life cycle in the correct order.



(a) Write down the stages of the life cycle in the correct order. [1]

Egg → [ ] → [ ] → [ ]

(b) Based on Phoebe's results, how many days does it take for insect Z to become an adult after the egg has hatched? [1]

_____

(c) Insect Z has wings. It spends certain stages of its life cycle in water where it uses an air tube to breathe which differs from when it is an adult.

Name all the stages spent in water and give a reason for your answer. [2]

(i) Stages spent in water:

_____

(ii) Reason:

_____

_____

Score	/ 4

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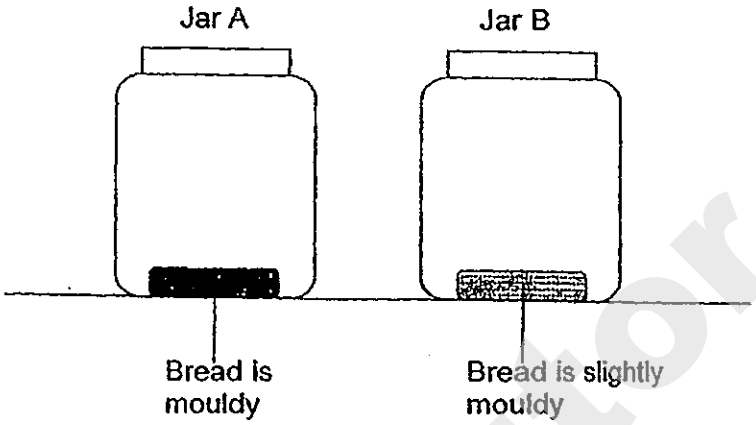
43. Jeremiah left two pieces of bread in two identical jars, A and B. A few drops of water were added to the bread in Jar A only. He covered the jars to make them airtight. The following diagrams show the results of the experiment after three days.



(a) Jeremiah made the jars airtight. How does this make the experiment a fair test? [1]

_____

_____

(b) A third piece of bread was heated with a bread toaster until it was dry. If this bread was put in another airtight jar after it was cooled, what would you expect to see after 3 days? Give a reason for your answer. [1]

_____

_____

Score	/ 2

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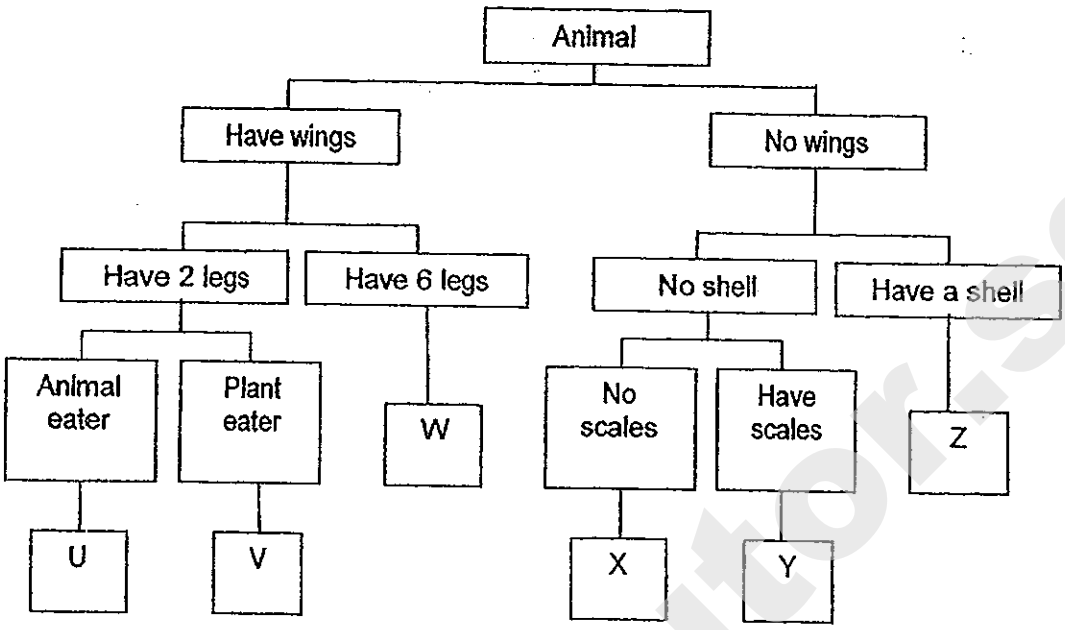
44. Study the classification chart.



(a) Describe Animal Y. [1]

_____

_____

(b) Compare animals V and W. In what way are they similar and different? [2]

Similarity:

_____

_____

_____

Difference:

_____

_____

_____

End of Section B

Score	/ 3

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ANSWER SHEET

EXAM PAPER 2013
SCHOOL : NAN HUA
SUBJECT : PRIMARY 5 SCIENCE

TERM : CA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
2	4	3	2	2	4	1	4	1	2	2	3	3	4	3	2	2

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	4	3	4	4	3	3	1	2	4	3	1	1

31)a)When the water gains from the Bunsen burner, the water evaporates into warm vapour. The warm water vapour condenses on the cooler metal tray into water droplets.

b)Liquid Z is colour less.

c)The metal tray gains heat from the warm water vapour,the metal tray becomes hotter, decreases the rate of condensation of the water vapour.

32)a)i)Pollination
ii)Fertilisation
b)i)Seeds
ii)Fruit

33)a)The fruit is sweet and fleshy.

b)When the birds eat fruit, the small seeds will be swallowed. As the seeds are indigestible, they will be passed out as droppings and land on the ground,far from the parent plant. When the conditions are suitable, these droppings will grow into new papaya plants.

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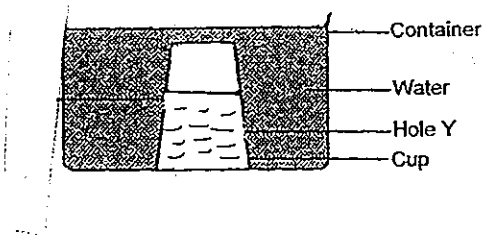
34)a)



b)Air can escape through the holes, so water can enter the cup up to hole X. However, the air above hole X can not escape so water cannot occupy the space above hole X.

35)Stage D. The butterfly feeds on the nectar and helps the flowers to pollinate so that the flowers can be fertilised and new fruits can be produced.

36)a)A,B,D

b)1)Process A takes place at 100℃ but process B takes place at any temperature above 0℃.

2)Process A occurs through out the liquid but process B occurs only at the surface of the liquid.

37)a)The aim was to find out whether the exposed surface area affects the rate of evaporation.

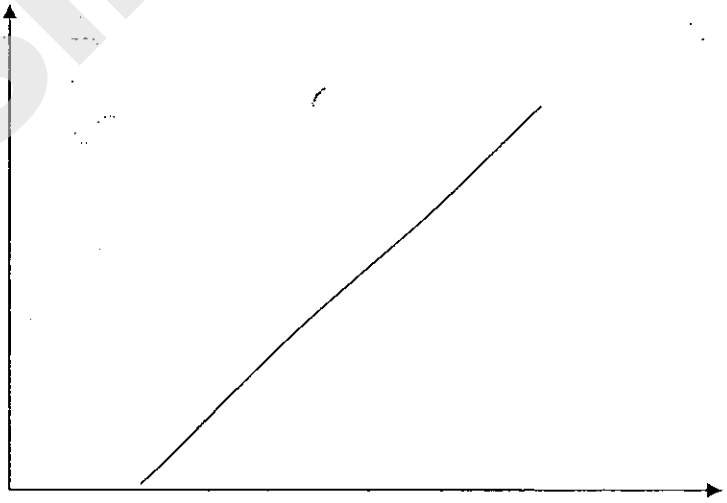
b)Handkerchief B. The smaller exposed surface area of the handkerchief which reduced the rate of evaporation of water.

38)a)River source D. It has the least number of surviving water plants after 15 days.

b)1)Water that is absorbed by plants help them to make food during photosynthesis.

2)Water helps the seed to germinate.

39)The size of wing-like structure



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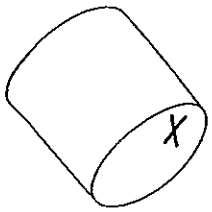
40)Advantage: The germinating plant do not have to compete with parent plant.

Disadvantage: It grows slower sexually the growing a sexually.

41)a)



b)When a second hole was made, air enters the tin through the second hole to occupy the space inside the tin previously occupied by the milk, pushing the milk one from the first hole faster.

42)a)Egg→larva→pupa→adult

b)20 days.

c)i)Egg, larva, pupa.

ii)The insect has no ability to survive out of water its organs are not fully developed.

43)a)This is to ensure that water vapour from the surrounding air cannot get into the jars to moisten the bread inside. In this way only the bread in jar A gets water.

b)There will be no mould found on the bread. There is an absence of water and spores cannot germinate without water.

44)a)Animal Y has no wings and no shell but it has scales.

b)Both of them have wings.

c)Animal V is 2-legged while Animal W is 6-legged.

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NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 – 2013
PRIMARY 5

SCIENCE

BOOKLET A

30 Multiple Choice Questions (60 marks)

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

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
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.

Marks Obtained

Booklet A		/ 60
Booklet B		/ 40
Total		/100

Name: _____ ( ) **Class: P 5** _____

Date : 14 May 2013 **Parent's Signature:**_____

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Rosyth School
Continual Assessment 1 for 2013
STANDARD SCIENCE
Primary 5

Total Marks: 50

Name: _____

Class: Pr 5_____ Register No. _____ Duration: 1 h 15 min

Date: 4 March 2013 Parent's Signature:_____

Instructions to Pupils:

1. Do not open the booklet until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 Parts, Part I and Part II.
4. For questions 1 to 15 in Part I, 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 Part II.

	Maximum	Marks Obtained
Part I	30 marks	
Part II	20 marks	
Total	50 marks	

* This booklet consists of 19 pages.

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Part I (30 Marks)

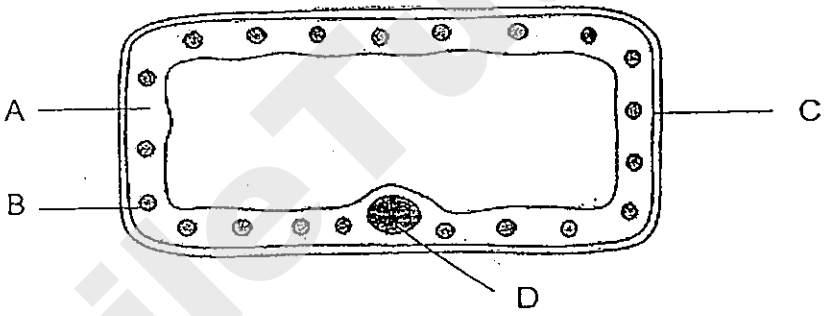
For each question from 1 to 15, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

1. Which of the following statements about cells are true?

A: A cell is a basic unit of life.
B: All living things are made up of many cells.
C: Cheek cells cannot be seen by the naked eye.
D: All cells contain a nucleus, cell membrane and chloroplast.

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

2. The diagram below shows a cell and some of its cell structures.



Which part of the cell is its function correctly described?

(1) Part B controls all activities in the cell.
(2) Part D has green pigment chlorophyll to help make food.
(3) Part A keeps the cell firm which helps the plant to stand upright.
(4) Part C allows only certain substances to enter and leave the cell.

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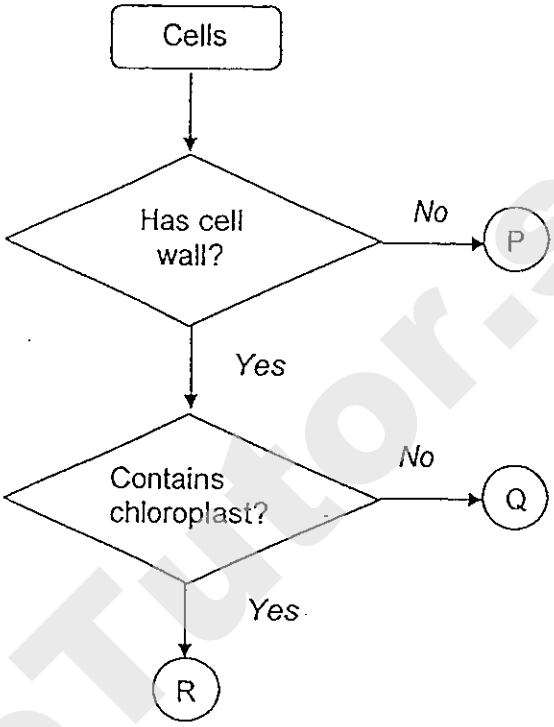
3. Study the flowchart below.



Which of the following classification is correct?

	P	Q	R
(1)	cheek cell	leaf cell	root cell
(2)	root cell	cheek cell	~~leaf~~ cell onion
(3)	cheek cell	root cell	leaf cell
(4)	root cell	cheek cell	leaf cell

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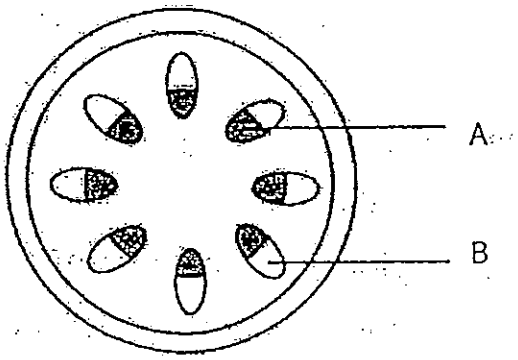
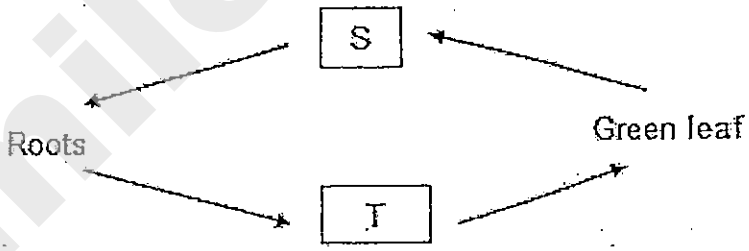
4. The diagram below shows the cross section of a stem.



Which substances are transported by parts A and B of the stem respectively?

	A	B
(1)	Food	Water and dissolved mineral salts
(2)	Water and dissolved mineral salts	Food
(3)	Food and carbon dioxide	Water and oxygen
(4)	Water and oxygen	Food and carbon dioxide

5. Study the diagram below.



Which of the following correctly represents S and T?

	S	T
(1)	Water-carrying tube	Water-carrying tube
(2)	Food-carrying tube	Water-carrying tube
(3)	Water-carrying tube	Food-carrying tube
(4)	Food-carrying tube	Food-carrying tube

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6. A small plant is put into a beaker of red-coloured water. After a day, it was observed that the plant had turned red. What does this show?

A The stem carries the water to other parts of the plant.
B The water from the roots is carried all the way to the leaves.
C The water-carrying tubes are present in the roots, stem and leaves.
D The leaves are making food and transporting it to other parts of the plant

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

7. Why did the plant shown in the diagram below died after four days?

(1) The roots cannot take in water
(2) The leaves cannot trap the sunlight to make food.
(3) The stem cannot hold the plant firmly to the ground.
(4) The stem cannot transport the water from the roots to other parts of the plant.

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8. Janice prepared an experiment with a flowering plant in four different set-ups containing water as shown in the table below.

Set-Up	Location of flowering plant	Presence of roots	Temperature of water
Set-up T	In Sunlight	Present	30°C
Set-up U	In Sunlight	Absent	30°C
Set-up V	In a dark cupboard	Present	30°C
Set-up W	In a dark cupboard	Absent	30°C

What is/are the possible aims of her experiment?

A: To find out if the location of the flowering plant will affect the amount of water taken in.
B: To find out if the presence of roots will affect the amount of water taken in.
C: To find out if the temperature of water will affect the amount of water taken in.

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

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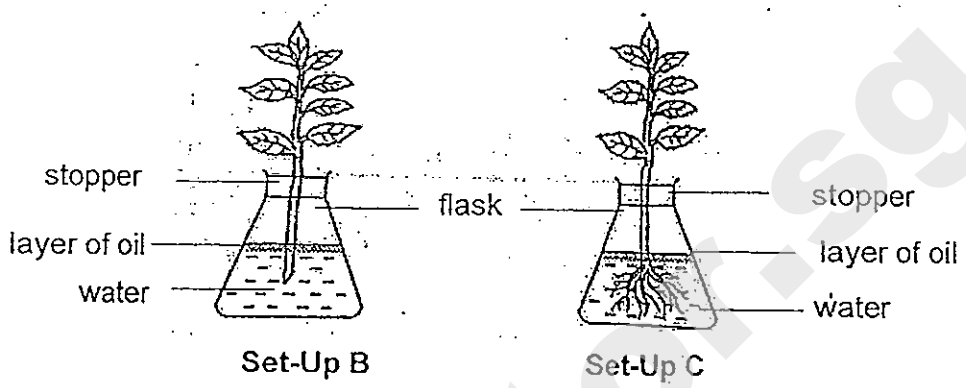
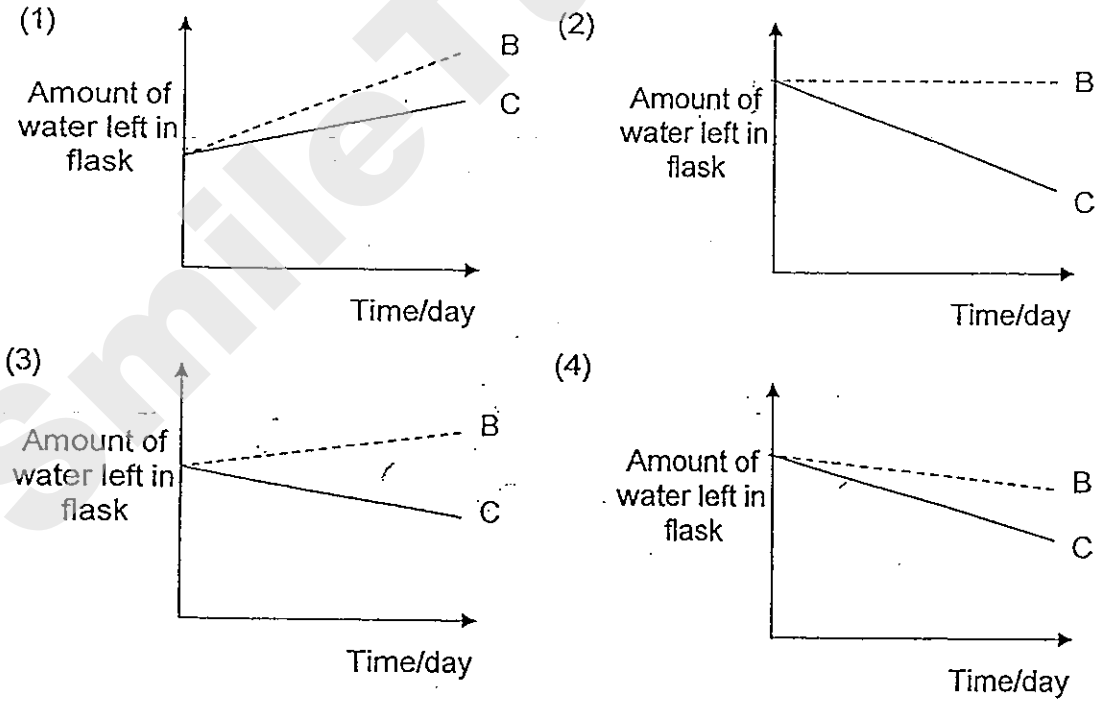
Read the following and answer questions 9 and 10.

Jerome wanted to find out if the presence of roots would affect the amount of water absorbed by a plant.



He recorded the amount of water in each set-up for five days. Based on the results, he plotted a line graph to represent his findings.

9. Which of the following graph is likely to represent the result of the experiment?



10. What could Jerome conclude from his experiment?

(1) The plant with roots took in less water.
(2) Water is transported through the stem.
(3) The plant with roots took in more water.
(4) Roots anchor the plants firmly to the ground.

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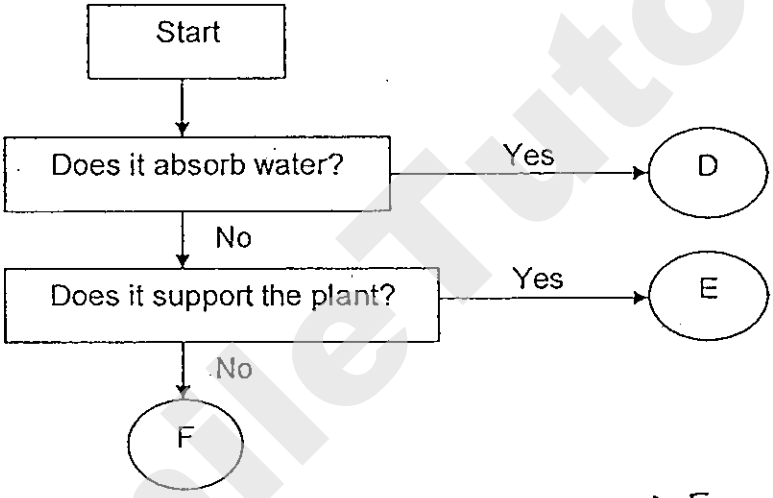
11. Four pupils each made a statement about the functions of various human body systems.

Annie: It supports the body.
Bala: It gives out carbon dioxide.
Cody: It protects the delicate organs in the body
David: It transports waste materials away from different parts of the body.

Which two pupils have made statements about the same human system?

(1) Annie and Bala
(2) Annie and Cody
(3) Bala and David
(4) Cody and David

12. The flowchart below describes the functions of different parts of a plant.



A E F

Which part of the following represents plant parts ~~A, B~~ and ~~C~~?

	Part D	Part E	Part F
(1)	~~Leaves Roots~~	~~roots Leaves~~	Stem
(2)	Leaves	Stem	Roots
(3)	Roots	Leaves	Stem
(4)	Roots	Stem	Leaves

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13. Sheryl grew two pots of balsam plants. Sheryl wanted to find out how the type of soil would affect the growth of the plants. She felt that there were other variables in her set-up that could affect the growth of the plants.

Which of the following variables is classified correctly?

(1)

Variable(s) that must be kept the same	Variable(s) that can be changed
Type of soil	Location of plants
Amount of water	

(2)

Variable(s) that must be kept the same	Variable(s) that can be changed
Amount of soil	Location of plants
Amount of water	Type of soil

(3)

Variable(s) that must be kept the same	Variable(s) that can be changed
Amount of soil	Type of soil
Amount of water	

(4)

Variable(s) that must be kept the same	Variable(s) that can be changed
Type of soil	Location of plants
Amount of soil	

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14. Jane recorded some observations of mushroom and fern in a table as shown below.

Characteristics		Mushroom	Bird Nest Fern
W	Is it able to bear fruits?	No	No
X	Does it make its own food?	No	Yes
Y	Is it able to respond to changes?	Yes	No
Z	Does it need sunlight to grow well?	Yes	Yes

However, Jane's teacher told her that only some of her recordings were correct. Which of the above characteristics were correctly recorded?

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

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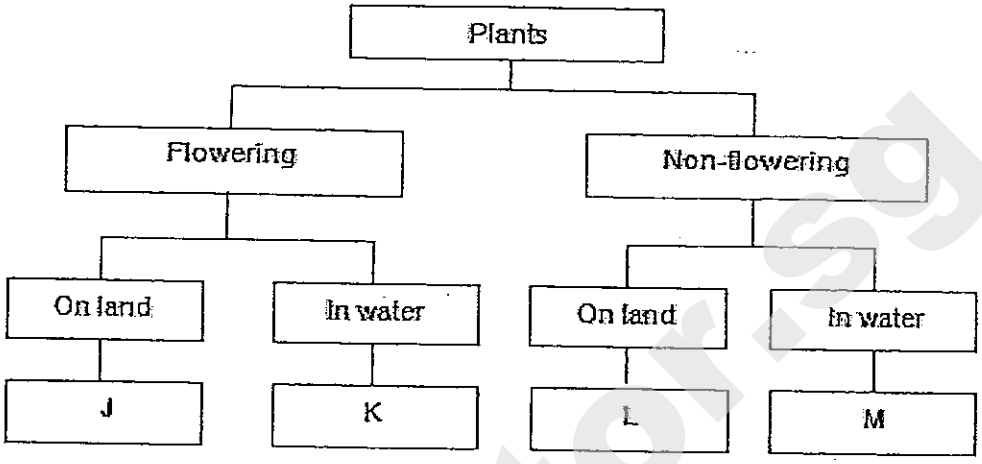
15. The classification chart below shows the characteristics of 4 plants J, K, L and M.



Another table was set up to classify the 4 plants. A (✓) tick was used to represent the presence of a characteristic of the plant.
Which table below shows the characteristics of plants correctly?

(1)

Characteristics	Plant			
	J	K	L	M
It bears fruits.		✓	✓	
It grows on land.	✓			✓

(2)

Characteristics	Plant			
	J	K	L	M
It bears fruits.	✓	✓		
It grows on land.	✓		✓	

(3)

Characteristics	Plant			
	J	K	L	M
It bears fruits.		✓	✓	
It grows on land.	✓		✓	

(4)

Characteristics	Plant			
	J	K	L	M
It bears fruits.		✓	✓	✓
It grows on land.	✓			

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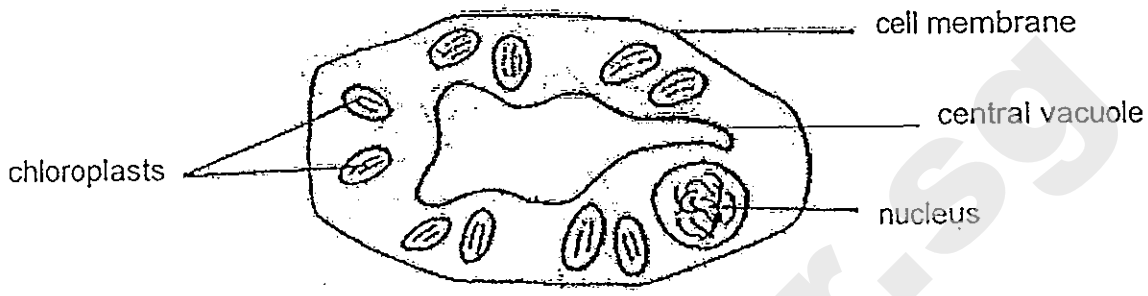
Part II (20 Marks)

For questions 16 to 23, write your answers in this booklet.

16. Study the cell taken from an organism below. A part of the cell has been removed.



(a) Which part of the cell has been removed? (1m)

_____

_____

(b) Explain what will happen to the organism if all the chloroplasts were removed after two days. (1m)

_____

_____

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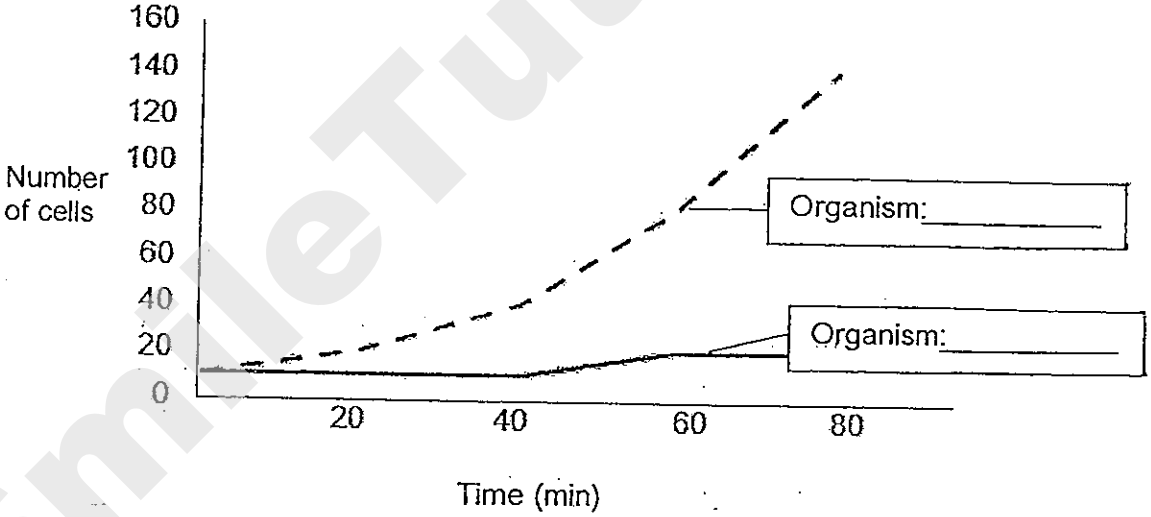
17. Rozana wanted to study the yeast cell and bacteria cells for her Science project.

She placed some yeast and bacteria cells on two separate petri dishes. She counted the number of yeast and bacteria cells under a microscope and recorded the numbers every ~~two~~ twenty minutes. She recorded the numbers in the table below.

Time (min)	0	20	40	60	80
No. of yeast cells	10	10	10	20	20
No. of bacteria cells	10	20	40	80	140

(a) Identify the organism in the graph. (1m)



(b) Which type of cells reproduce at a faster rate? Based on the table, give a reason for your choice. (1m)

_____

_____

(c) Why do single cell organisms divide? (1m)

_____

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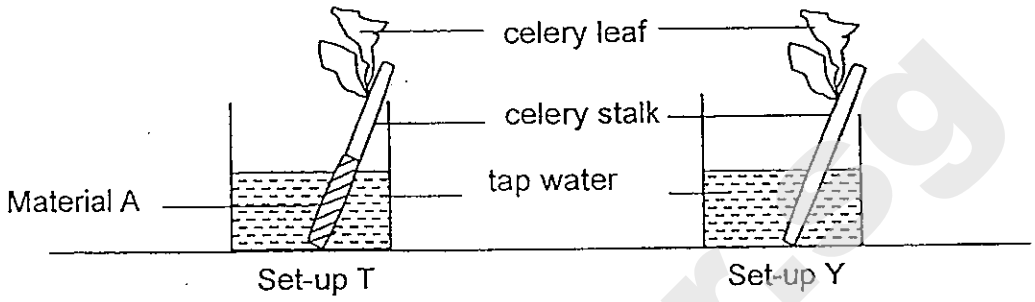
18. Dolly set up an experiment as shown below.

The base of the celery stalk in Set-up T was wrapped with a material A before placing it into the beaker of tap water. The celery stalk in Set-up Y was also placed in a beaker of tap water.



Observations	Set-up T	Set-up Y
	Leaves were yellowish and wilted	Leaves were green and firm

(a) Explain why the leaves in Set-Up T turned yellowish and wilted? (1m)

_____

_____

(b) Explain how water is transported in the celery? (1m)

_____

_____

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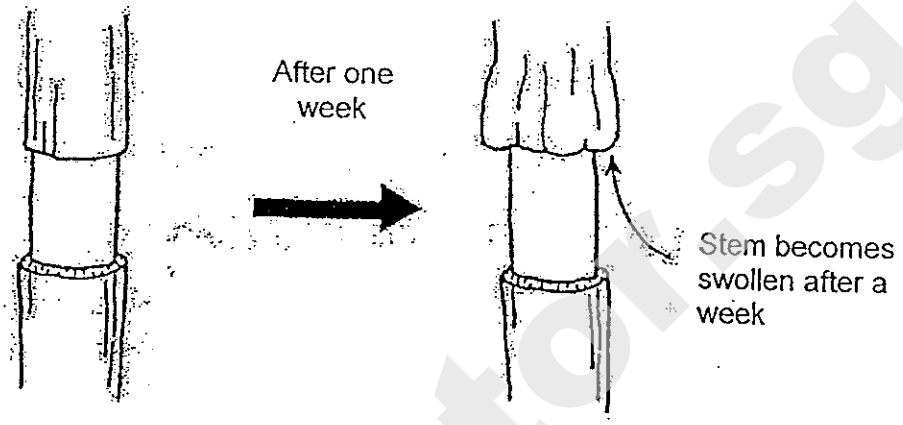
19. Harris wanted to carry out an experiment on a plant. He removed the outer ring of the stem from a plant as shown below. One week later, the stem above the cut-out area became swollen as shown below.



(a) Explain why the stem above the cut out area became swollen. (1m)

_____

_____

(b) After sometime, Harris observed that the roots began to die. Explain why. (1m)

_____

_____

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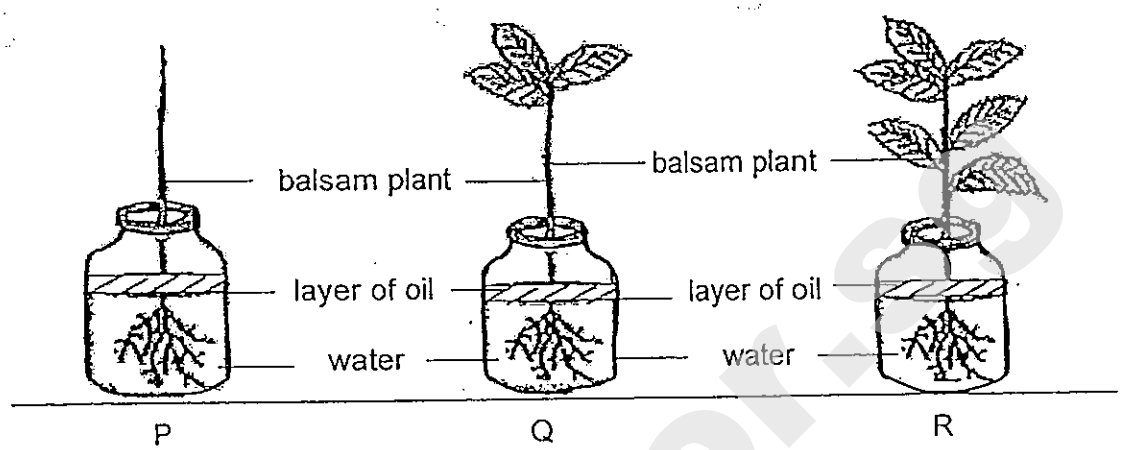
20. Ronald placed three similar balsam plants in 3 similar jars with water. He cut off all the leaves from the plant in jar P and some leaves from the plant in jar Q as shown in the diagram below.



After two days, he measured the amount of water left in each beaker. His results are shown below.

Set-Up	Number of leaves	Amount of water at the start of experiment/ml	Amount of water at the end of experiment/ml
P	0	500	480
Q	3	500	400
R	6	500	360

(a) What was the aim of Ronald's experiment? (1m)

_____

_____

(b) From his results, what is the relationship between the number of leaves the amount of water taken in by the plant? (1m)

_____

_____

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21. Isaac wants to conduct an experiment to find out whether the balsam or spinach plant takes in more water. He prepared two beakers of water and he then placed the balsam plant and a spinach plant in each beaker. He added a layer of oil and left the beakers for three days.

(a) Which of the following variables must they keep the same or change to make the experiment a fair one? (2m)

Put a tick in the correct boxes.

Variables	Keep the same	Change
The temperature of the water		
The type of plant		
The amount of water		
The location of the experiment		

After three days, Isaac concluded that the spinach takes in more water.

(b) The water level in both beakers decreased after three days. Why did the water level decrease? (1m)

_____

_____

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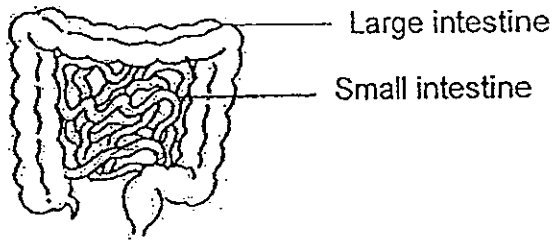
22. The diagram below shows two parts of the digestive system.



(a) What happens in the small intestine during digestion? (1m)

_____

_____

(b) Jim had diarrhea and passed out watery stools. What could have happened in his large intestine to cause the watery stools? (1m)

_____

_____

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23. Siti went for a learning journey to the Singapore Botanical Gardens to study the plants there. Her teacher told her to examine Plant S and T carefully.

Plant S Plant T

Referring to the diagram only, identify one similarity and one difference between plant S and T.

(a) Similarity: (1m)

_____

_____

(b) Difference: (1m)

_____

_____

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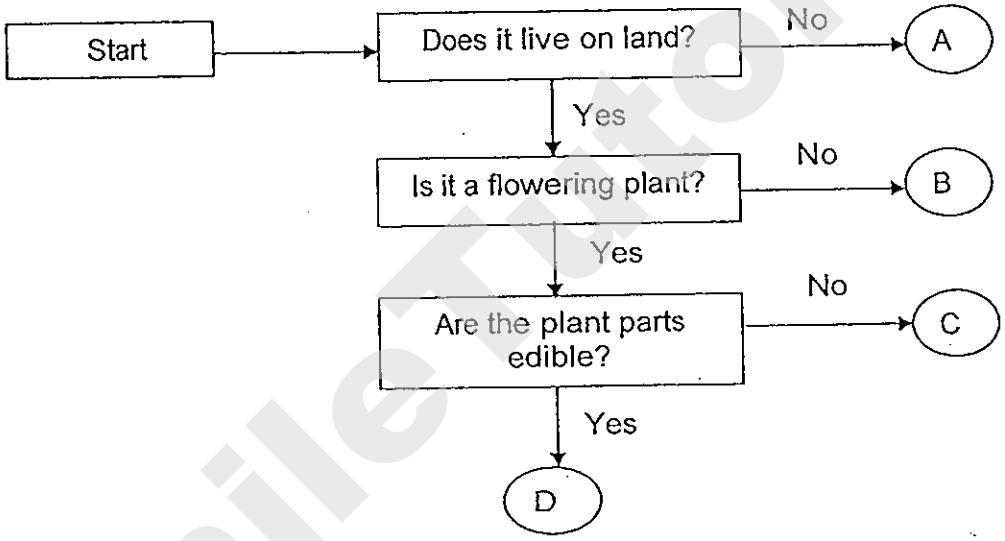
(c) Siti made other observations of the plants she saw and recorded them in the table below.

No.	Description	Letter
1.	A plant that reproduces by spores.	
2.	Chrysanthemum is used for brewing tea.	
3.	Duckweed has roots just below the water surface.	
4.	The pong pong fruit is used as rat poison as it is poisonous.	

Using the flow chart, which letter best represents the things listed below. (2m)



End of Paper

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ANSWER SHEET

EXAM PAPER 2013
SCHOOL : ROSYTH
SUBJECT : PRIMARY 5 SCIENCE

TERM : CA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
1	4	3	2	2	3	4	3	4	3	2	4	3	1	2

16)a)Cell wall.
b)Without the chloroplast, the plant will not be able to trap sunlight.

17)a)bateria cell
Yeast cell
b)Bateria cell, the number of yeast cells doubled after sixty minutes.
c)To reproduce move cells to be extinct.

18)a)Material A did not allow water to pass through thus the celery was notable to take in water causing the leaves to turn yellow and wilt.
b)Water is absorbed and passes through the water-carrying tube to the stem. The water carrying tubes in the stem transports to the leaves.

19)a)The leaf can't transport the food to the roots.
b)The root can't receive the food from the leaves dying out of food.

20)a)To find out number will affect the amount of water absorbed by the plant.
b)As the number of leaves increases, the amount of water taken in by plant increase.

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21)a) √

√

√

√

b)As the plant roots took in the water for the plant to survive.

22)a)Digestion completed and digested food is absorbed through the blood vessels.

b)The large intestine did not absorb enough water from the undigested food.

23)a)Both are flowering plant.

b)Plant S have strong stem while plant T has weak stem.

c)1)B

2)D

3)A

4)C

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NAN HUA PRIMARY SCHOOL
CONTINUOUS ASSESSMENT 2 – 2013
PRIMARY 5

SCIENCE

BOOKLET A

20 Multiple Choice Questions (40 marks)

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
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.

Marks Obtained

Booklet A		/ 40
Booklet B		/ 40
Total		/ 80

Name: _____ ( ) **Class: P 5** _____

Date : 27 August 2013 **Parent's Signature:**_____

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Section A: (20 x 2marks = 40marks)
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.

1. The statements below are steps describing the process of a seed germinating into a seedling when it receives the right conditions.

   A The roots grow.
   B The leaves grow.
   C The shoots grow.
   D The seed leaves drops off.

   Which one of the options below shows the correct order of the germination process?

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

2. Which of the following are parts of a flower?

   A Ovary
   B Seeds
   C Stigma
   D Spores

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

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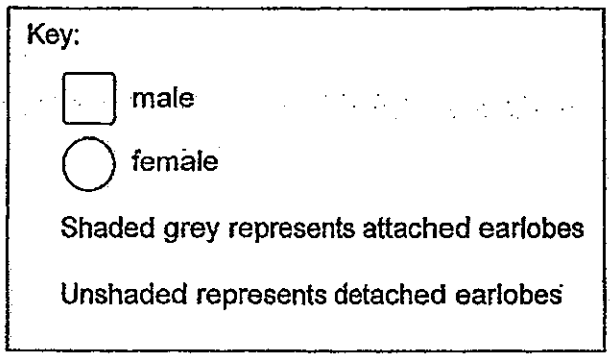
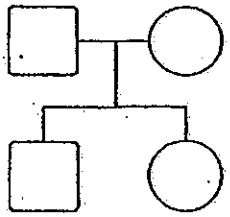
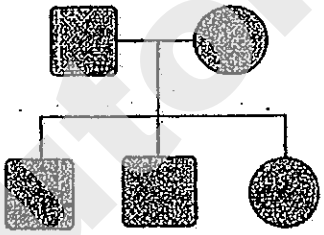
3. The family trees of four families are shown below.

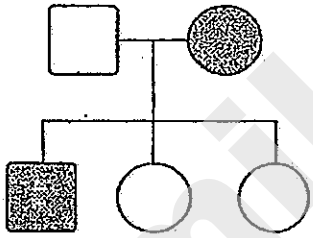




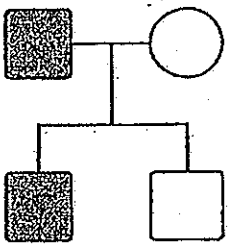
Phua Family



Kua Family



Sua Family



Chua Family

In how many families do the daughters have the same earlobes as their mothers?

(1) One
(2) Two
(3) Three
(4) Four

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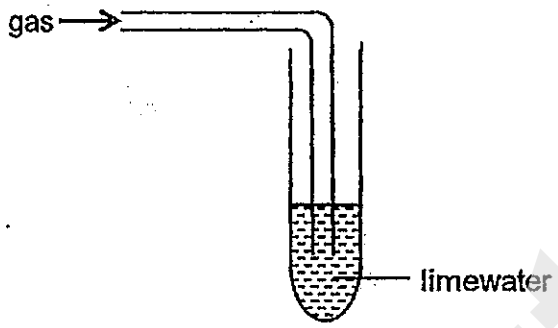
4. Limewater turns chalky in the presence of carbon dioxide. Hence, limewater is commonly used to detect the presence of carbon dioxide.

Jed pumped gases from different sources into test tubes of limewater as shown in the setup below.



He recorded his observations of the limewater in the table below.

Gas	Limewater
Carbon dioxide	Turns chalky
Gas collected from a green plant	Remains clear
Gas collected from a boy's breath	Turns chalky
Gas collected from burning paper	Turns chalky

Which of the following conclusions can be drawn from the results of his observations above?

A The green plant produced oxygen.
B Burning paper produces carbon dioxide.
C The boy's breath contains only carbon dioxide.

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

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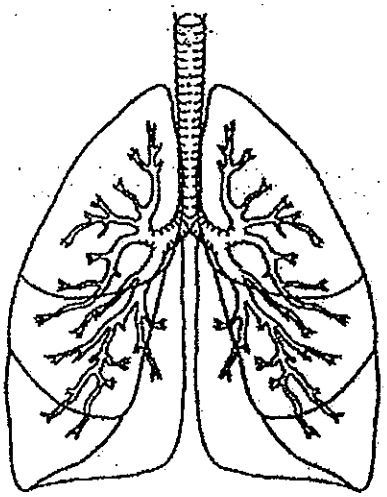
5. The diagram below shows a picture of the human lungs.

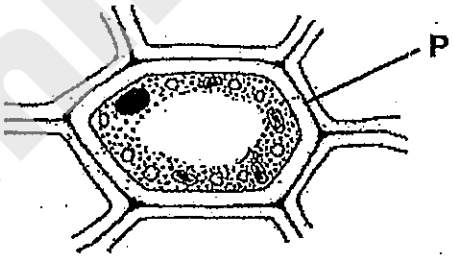


Human Lungs

Which of the following statement about the human lungs is incorrect?

(1) The blood flows through the lungs to pick up oxygen.
(2) The air is moistened in the lungs before it is breathed out.
(3) Oxygen is taken in and carbon dioxide is given out in the lungs.
(4) The air that enters into the lungs from the windpipe is rich in oxygen.

6. Study the diagram below carefully.



Which of the following statement(s) is/are true of the part marked P?

A It supports and protects the cell.
B It prevents the cell from bursting.
C It allows only food to move into the cell.

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

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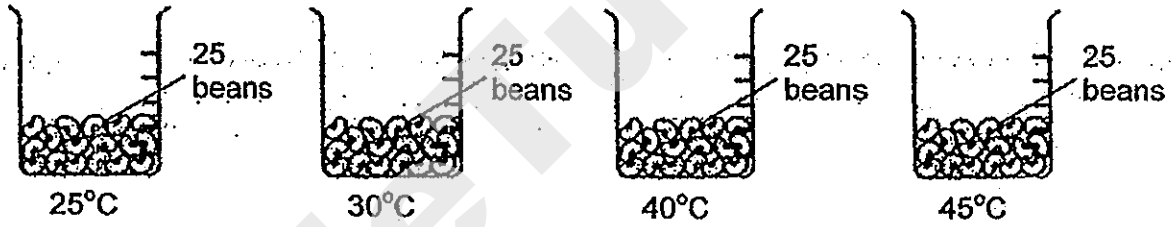
7. Below is a list of common apparatus that is used to construct an electrical circuit. Which are the two most important apparatus needed to light a bulb?

A wire
B switch
C battery
D bulb holder

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

8. An experiment is set up as shown below.



Equal amount of water is added into each beaker. The number of seeds that germinated was counted after 10 hours, and another time after 20 hours of soaking.

The results are shown in the table below.

Temperature	25°C	30°C	40°C	45°C
Number of germinated seeds after 10 hours	15	20	10	0
Number of germinated seeds after 20 hours	20	25	15	0

Which of the following cannot be concluded from the information given in the table?

(1) Some seeds germinated faster than others.
(2) More seeds germinated at 30°C than at 25°C.
(3) The temperature affected the rate of germination of the seeds.
(4) The amount of water did not affect the germination of the seeds.

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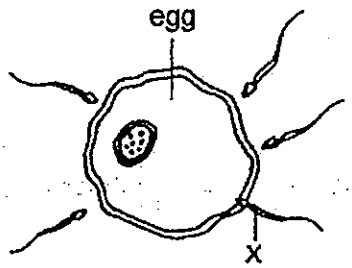
9. The diagram below shows an egg and several sperms.

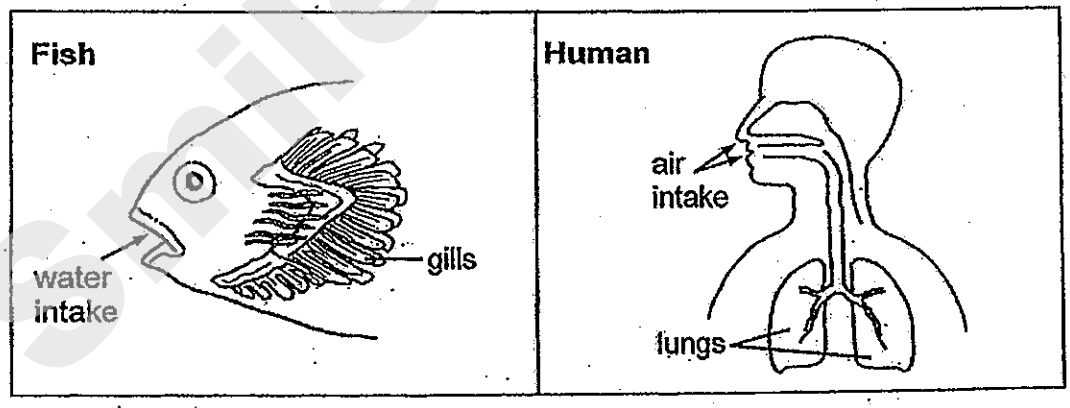


Which of the following statements about the activity shown above is true?

A Normally, one sperm will fertilise the egg.
B The sperms came from the male organism.
C The activity above can only occur inside the body of an organism.
D The egg is not fertilised until the sperm's nucleus fuses with the egg's nucleus.

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

10. The diagrams below show the fish and human respiratory systems.



Which of the statements below are true about the way the fish and the human breathe?

A Both the fish and human take in oxygen from the air.
B Gaseous exchange occurs in both the gills and the lungs.
C The fish takes in water through the mouth but the human takes in air through the nostrils during breathing.

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

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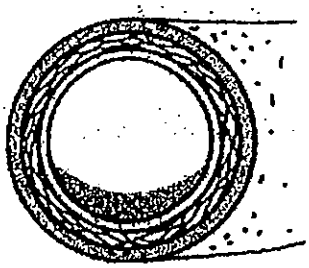
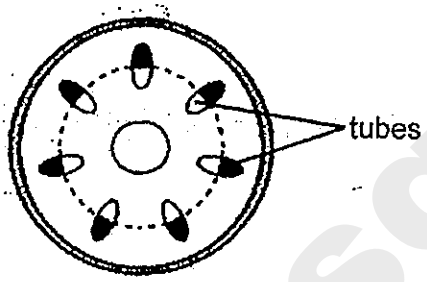
11. The diagrams below show the cross-section of a human blood vessel and a plant stem.



Human Blood vessel



Plant Stem

The blood vessel is part of the human transport system just as the tubes are parts of the plant transport system.
Which of the statements below correctly identify their similarity?

A Both the vessels and tubes transport water, food and minerals.
B Both the vessels and tubes transport material to all parts of the organism.
C Both the vessels and tubes move materials in a cycle round the organism.

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

12. The table below shows the characteristics of cells J and K.

J	K
Has an irregular shape.	Has a regular shape
Does not have a cell wall	Has a cell wall
Has a nucleus	Has a nucleus
Cannot make food	Can make food

Which of the following best represents J and K?

	J	K
(1)	Leaf cell	Cheek cell
(2)	Cheek cell	Leaf cell
(3)	Sperm	Ovum
(4)	Ovum	Sperm

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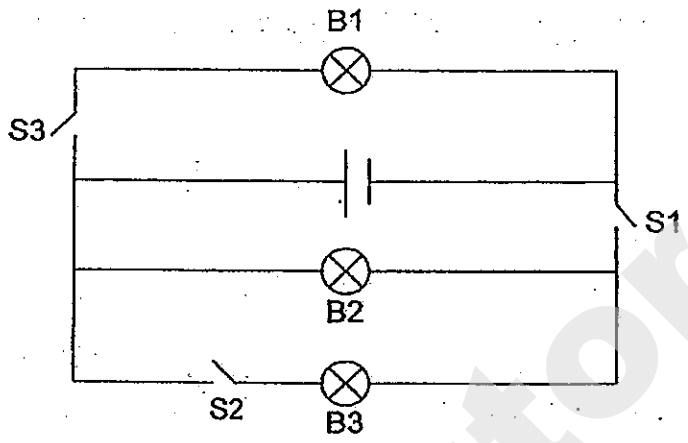
13. Bulbs B1, B2 and B3, and switches S1, S2 and S3 are connected in a circuit as shown below. All switches and bulbs are working properly.



Which one of the following is correct?

	Switches			Do the bulbs light up?		
	S1	S2	S3	B1	B2	B3
(1)	Open	Closed	Closed	yes	no	yes
(2)	Closed	Closed	Open	no	no	yes
(3)	Closed	Open	Closed	no	yes	no
(4)	Open	Open	Closed	yes	no	no

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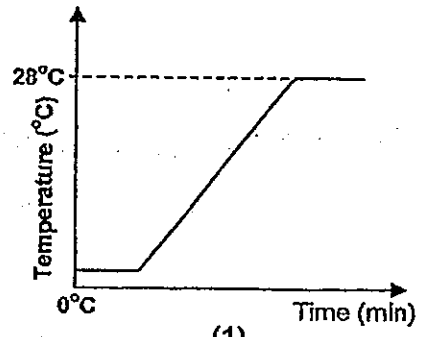
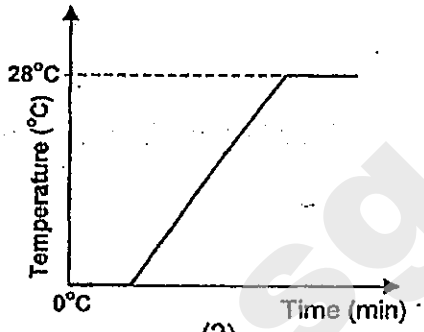
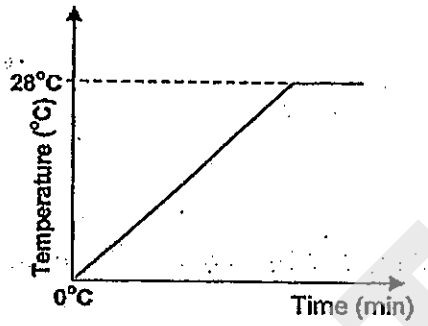
14. Which one of the following graphs represents the change in temperature when some ice cubes are being left on a plate on a dining table over 60 minutes.



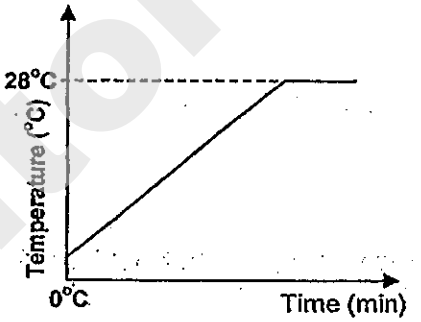
(1)



(2)

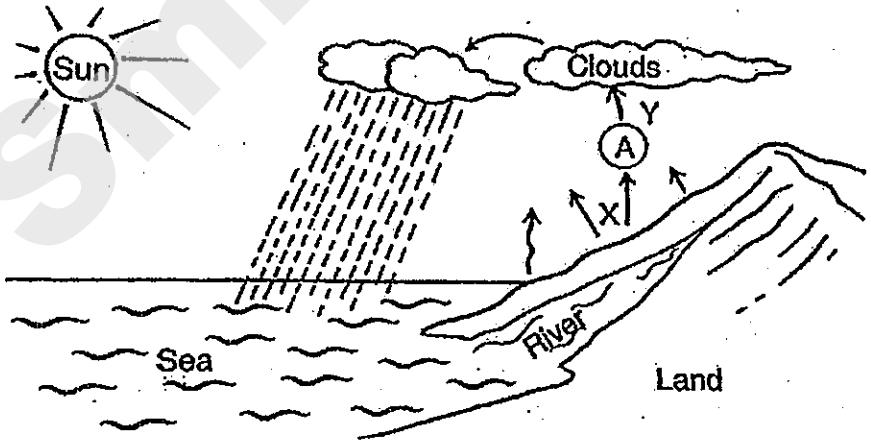


(3)



(4)

15. Study the diagram of the water cycle carefully.



What do the letters A, X and Y represent?

	A	X	Y
(1)	Water droplets	Evaporation	Precipitation
(2)	Water vapour	Condensation	Precipitation
(3)	Water vapour	Evaporation	Condensation
(4)	Water droplets	Condensation	Evaporation

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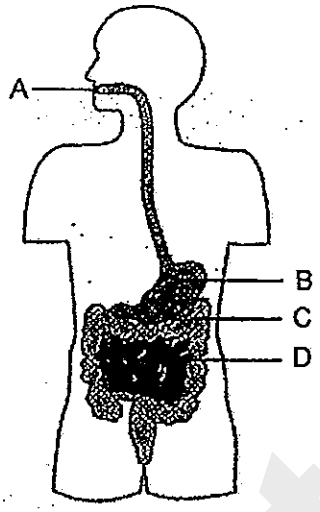
16. The diagram below shows the human digestive system.



In which parts do digestion starts and ends?

	Digestion Starts	Digestion Ends
(1)	A	C
(2)	A	D
(3)	B	C
(4)	B	D

17. Study the table below. X, Y and Z represent the characteristics of the animals.

A tick (✓) shows that the animal has the characteristic.

Animal	X	Y	Z
Ostrich	✓		✓
Pigeon	✓	✓	✓
Frog			✓

Which of the following represent X, Y and Z?

	X	Y	Z
(1)	Has wings	Can fly	Lay eggs
(2)	Can fly	Lay eggs	Has wings
(3)	Has wings	Lay eggs	Can fly
(4)	Lay eggs	Can fly	Has wings

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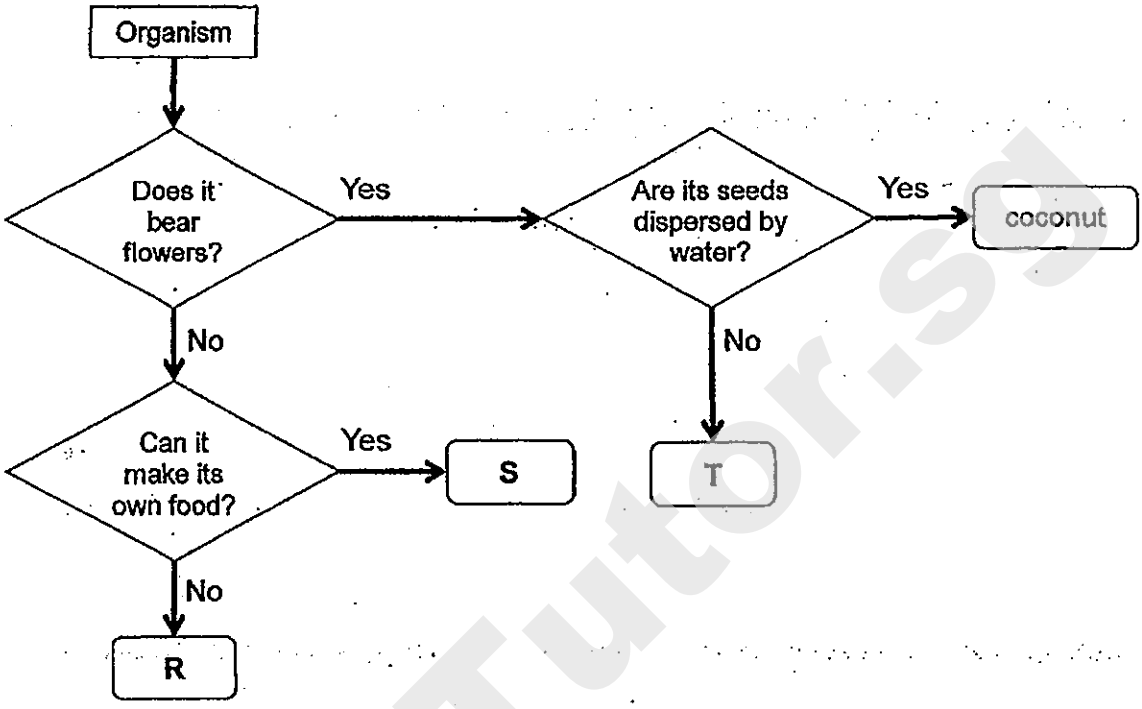
18. Study the chart below carefully.



Which one of the following correctly shows what R, S and T could be?

	R	S	T
(1)	mould	moss	chilli plant
(2)	moss	mould	mushroom
(3)	mushroom	chilli plant	moss
(4)	moss	mushroom	chilli plant

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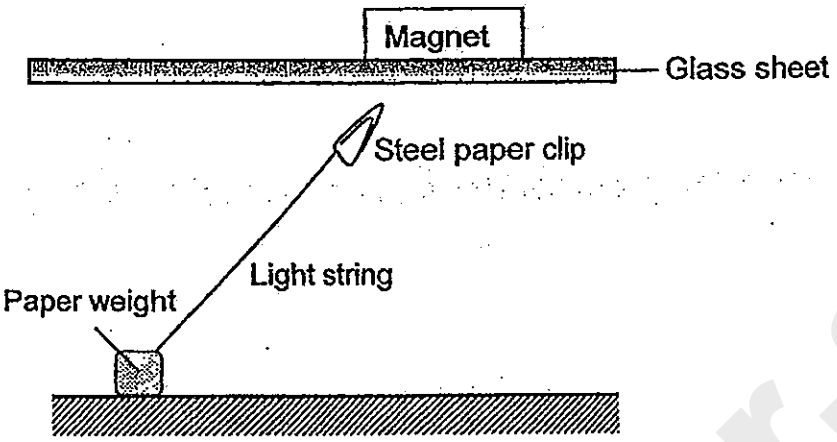
19. Study the diagram below carefully.

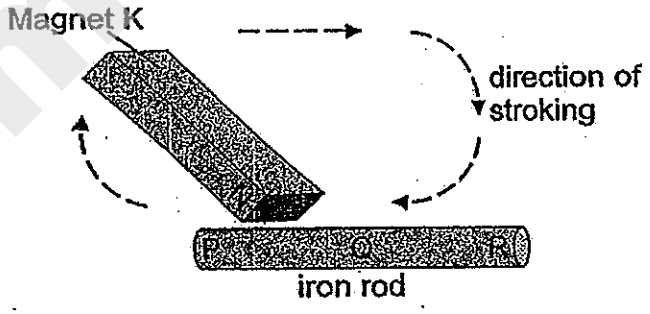


What can you conclude from this experiment?

A Steel is a magnetic material.
B Magnetic force can only be a pull.
C Magnetic force can act from a distance.
D Magnetic force cannot pass through magnetic materials.

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

20. Jack used Magnet K and stroked an iron rod 30 times as shown below.



Which of the statements about the activity above is true?

A The parts P and R can attract more iron nails than Q.
B The iron rod will be able to attract as many iron nails as Magnet K.
C The iron rod will eventually lose most of its magnetism after some time.

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

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NAN HUA PRIMARY SCHOOL
CONTINUOUS ASSESSMENT 2 – 2013
PRIMARY 5

SCIENCE

BOOKLET B

14 Open-ended questions (40 marks)

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

Marks Obtained

Section B		/ 40

Name: _____ ( ) **Class: P 5** _____

Date : 27 August 2013 **Parent's Signature:**_____

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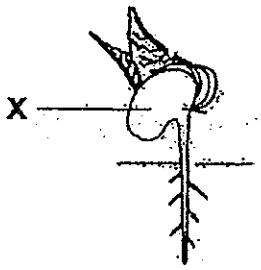
Section B: 14 Questions (40marks)

21. The picture below shows a growing seeding.



(a) Name part X.

_____ [1]

(b) Explain why part X is important in the process of germination? [1]

_____

_____

_____

Score	/ 2

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22. The picture below shows a dog, Tilli, with short jaws, short legs and long white and brown fur.

(a) How did Tilli get its characteristics? [1]

(b) The table below shows three dogs and their characteristics.

Dog	A	B	C
Colour	White and brown	White	Black
Legs	Short	Short	Long
Fur	Long	Short	Short
Jaws	Short	Short	Short

Which two dogs are the likely parents of Tilli? Explain your answer. [1]

Score	/ 2

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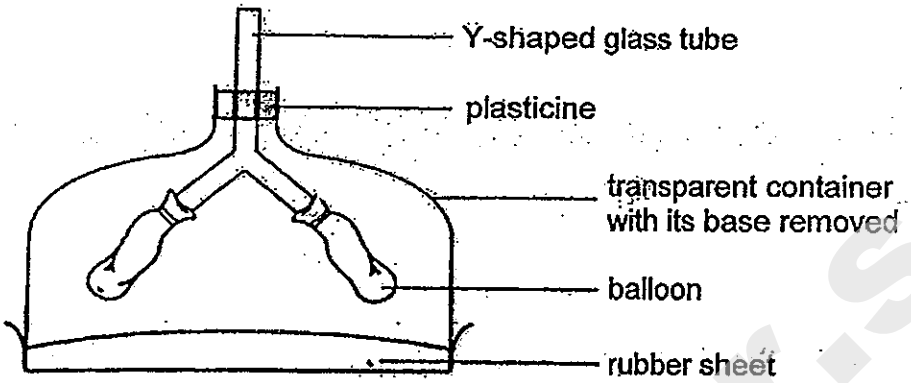
23. A model of the human respiratory system is constructed as shown below.



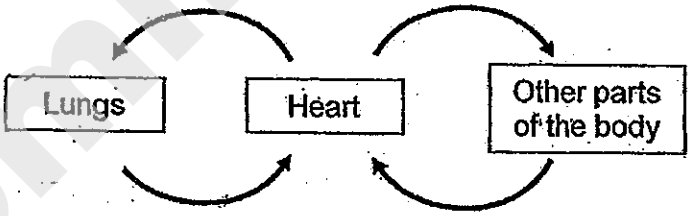
(a) Each item in the model represents a part in our respiratory system. Identify the parts represented by the items below: [3]

Y-shaped glass tube: _____

Balloons: _____

Rubber sheet: _____

(b) Study the diagram below.



Though the lungs belong to the respiratory system, it appears here with the circulatory system.

Explain the role of the lungs in supporting the circulatory system. [1]

_____

_____

_____

Score	/ 4

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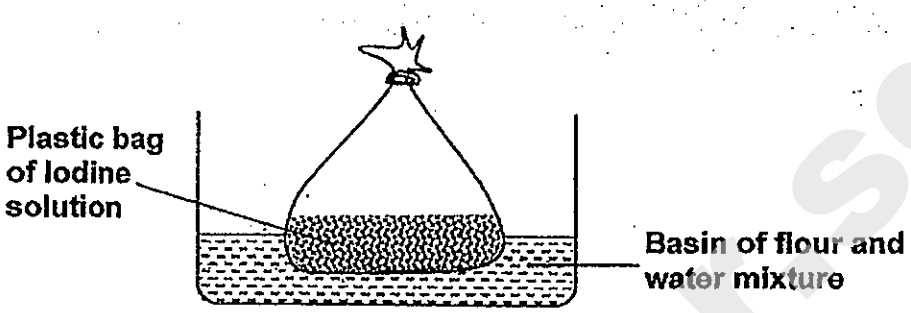
24. Study the setup below carefully.
A plastic bag of iodine solution is dipped into a basin of flour and water mixture.



(a) What will you observe about the flour and water mixture after one hour? [1]

_____

_____

_____

(b) Explain your observation in (a)? [1]

_____

_____

_____

(c) Which part of a cell does the plastic bag represent? [1]

_____

_____

Score	/ 3

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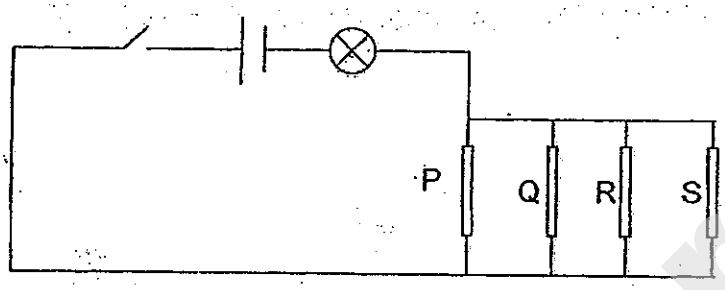
25. Deva wanted to investigate whether four rods, P, Q, R and S, were electrical conductors or insulators. He used the circuit shown below for his investigation.



He tried removing some rods and recorded his findings. The table below shows what happened when the switch was closed and certain rod(s) was/were removed.

Rod(s) removed from the circuit	Did the bulb light up?
P	yes
Q and R	yes
P, Q and R	no
P, R and S	no

From the information provided above, put a tick (✓) in the table below to identify if rods P, Q, R and S are insulators or conductors of electricity. [2]

Rods	Conductor of electricity	Insulator of electricity
P		
Q		
R		
S		

Score	/ 2

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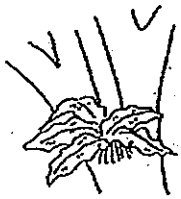
26. Study the plants in the boxes below.

Group A	Group B
Moss  Bird's Nest Fern	Love Grass Mimosa

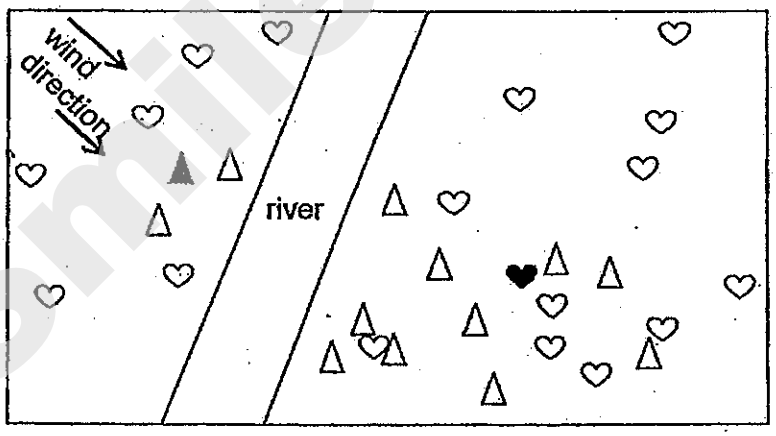
(a) How are the plants in Group A and Group B classified?
Give suitable headings for Group A and Group B. [1]

Group A: _____

Group B: _____

(b) The diagram below shows the location where the new Bird's Nest Fern and the Love Grass are found.

Key: ▲ and ♥ are parent plants



Do you agree that the "▲" should represent the Bird's Nest Fern?
Explain your answer. [1]

_____

_____

_____

Score	/ 2

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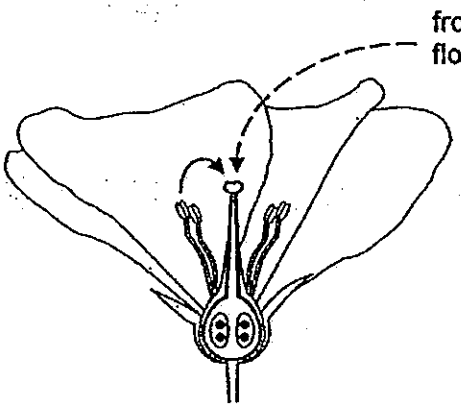
27. The diagram below shows the cross-section of a flower.



(a) The two arrows above show the possible ways the flower may be pollinated.

The table below identifies 2 types of pollination.

Arrow	Name of process
⟶	Self-pollination
- - - ➤	Cross-pollination

Name two possible agents that would help in the process of cross-pollination. [1]

(i) _____

(ii) _____

(b) The fertilisation process of the flowering plant involves the union of the reproductive cell in the pollen grain and the ovum in the ovule.

Complete the comparison table below by identifying:
i) the appropriate headings to classify the cells
ii) the human cells involved in the fertilisation process [2]

i) Headings		
Flowering Plant	Cell in pollen grain	Ovum
ii) Human Being		

Score	/ 3

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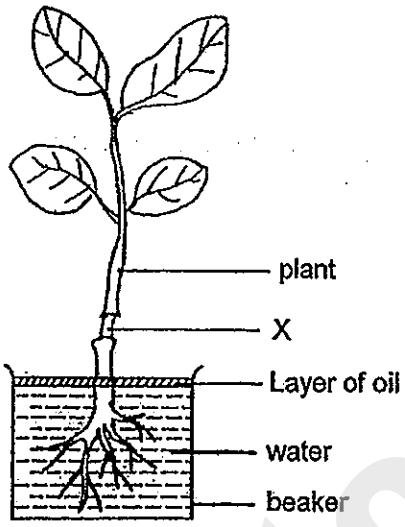
28. Larry set up the following experiment below. He also removed the outer layer of the stem as shown at point X.



(a) What is the purpose of the layer of oil? [1]

(b) After three days, he observed that the stem above point X was swollen but not the stem below point X. Why is this so? [1]

(c) Our blood vessels work like the tubes found in the transport system of the plant above. However, if our blood vessel is cut like the tubes of the plant, we will bleed and die in a short period of time if the bleeding is not stopped.

With reference to the role that the blood plays in our circulatory system, explain why losing too much blood could cause a person to die quickly. [2]

Score	/ 4

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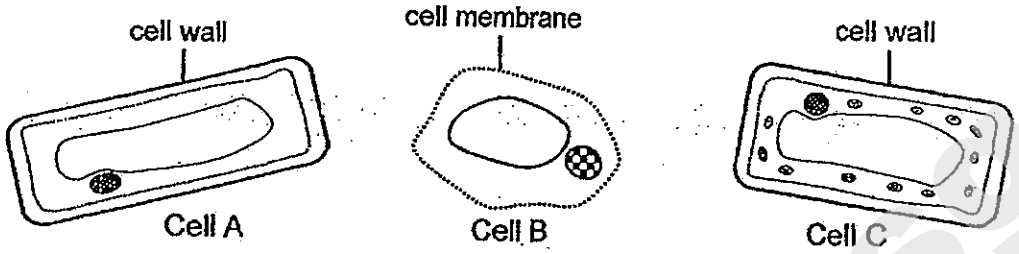
29. Roy observed three cells under a microscope. He concluded that these cells are all different and so came from different organisms.



(a) Do you think Roy is right? Explain your answer. [2]

(b) A dog is an example of a multi-cellular organism. Its body is made up of many different types of cells. Why is it necessary to have different types of cells in an organism? [1]

Score	/ 3

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30. Most of our home lightings are wired in parallel arrangement.

(a) What is the advantage of this arrangement? [1]

_____

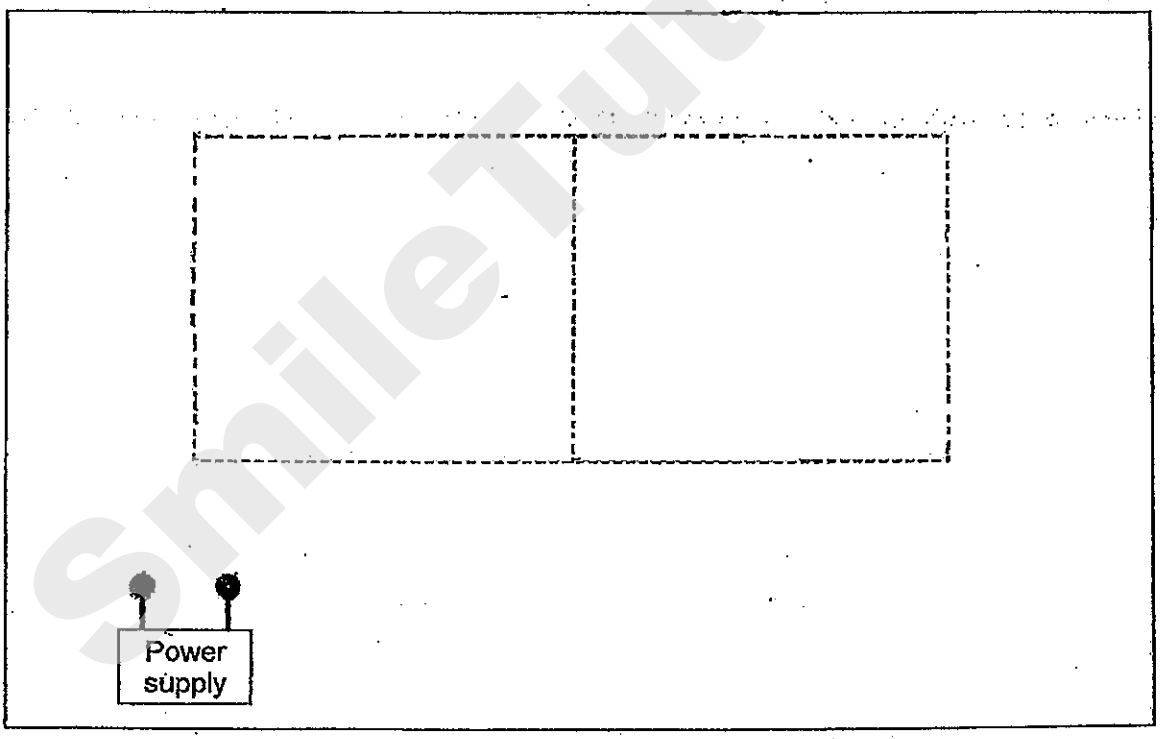
_____

_____

(b) Draw a circuit diagram in the box provided below such that the lights of each room can be switched on and off independently.
The outline of the two rooms (in dotted lines) is drawn for you.
Your circuit should only include:

- two switches
- two bulbs and
- unlimited wires,

Connect your circuit to the power supply instead of drawing batteries. [2]



Score	/ 3

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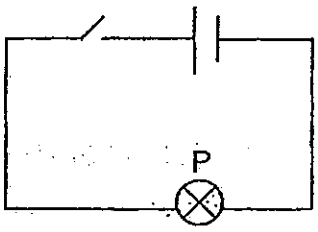
31. The diagram below shows a simple circuit.



Jack wanted to investigate the effect of adding bulbs to the circuit. He started by connecting a second bulb next to bulb P and a third bulb next to it. The number of batteries was unchanged.

(a) What would Jack observe each time he added a bulb next to bulb P? [1]

_____

_____

(b) Explain his observation in (a). [1]

_____

_____

_____

Now Jack decided to add batteries to the original circuit instead of bulbs. He noticed that the bulb got brighter each time he added a battery.

(c) What do you think would happen when he added the 5th battery? Explain you answer. [1]

_____

_____

Score	/ 3

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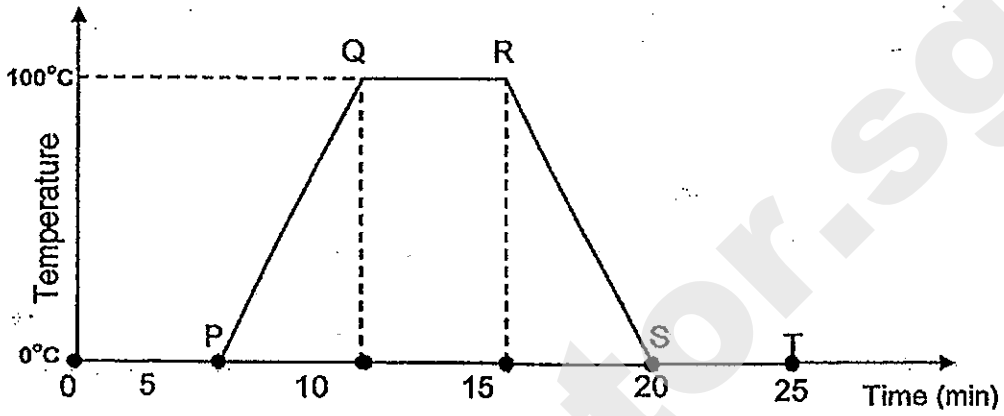
32. Study the graph below carefully. It shows the temperature of water over 25 minutes.



(a) Identify the following processes. [1]

(i) OP: _____

(ii) ST: _____

(b) Describe what is happening from P to Q. [1]

_____

_____

_____

(c) If 50g of ice was used at the beginning of the experiment, would the mass of ice be more than 50g, less than 50g or remain unchanged at the end of 25 minutes? Explain your answer. [1]

_____

_____

_____

Score	/ 3

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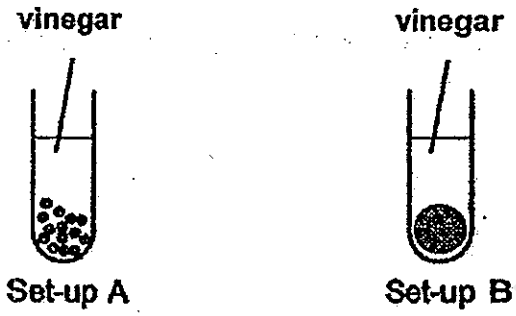
33. A piece of chocolate biscuit in Set-up A is mashed into small pieces but the piece of biscuit in Set-up B remains whole. The same amount of vinegar is added into each set-up to break down the biscuit.



a) The biscuit in set-up A was found to be broken down much faster. Explain why this is so. [1]

_____

_____

_____

b) The human small intestine is about 6m long while the large intestine is only about 1.5m long.

Explain how the length of the small intestine helps us in terms of digestion and food absorption? [2]

_____

_____

_____

Score	/ 3

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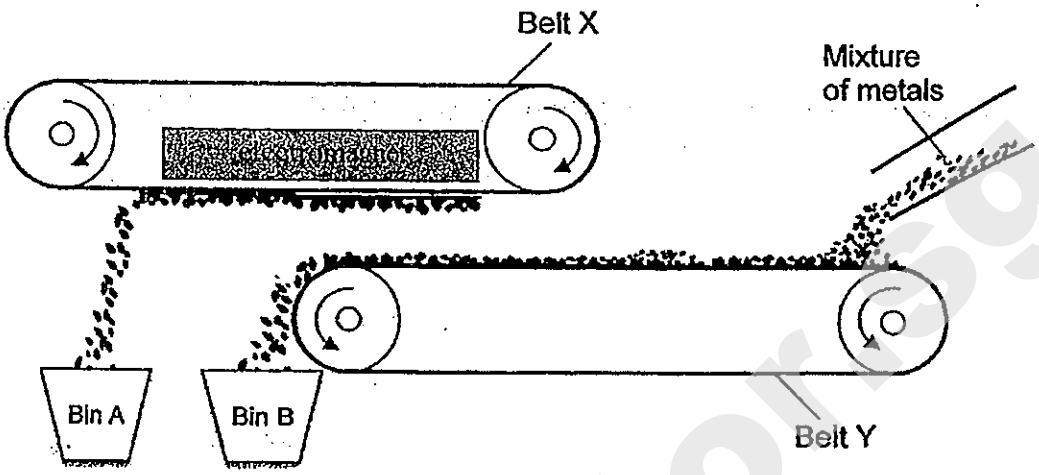
34. The diagram below shows a way to separate magnetic metals and non-magnetic metals. Mr Mah poured a mixture of metals onto a moving belt Y.



(a) Explain how the metals were pickled up by the moving belt X and then collected in Bin A. [2]

(b) Suggest one way to fill Bin A faster. [1]
(Do not suggest pouring more mixture of metals onto Belt Y)

Score	/ 3

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ANSWER SHEET

EXAM PAPER 2013
SCHOOL : NAN HUA
SUBJECT : PRIMARY 5 SCIENCE

TERM : CA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
2	1	2	2	2	3	2	4	3	3	2	2	4	2	3	2	1

Q18	Q19	Q20
1	2	2

21)a)Seed leaves.
b)It provides food for the seedling.

22)a)Tilli inherited the genes from the parents during the process of fertilization.
b)A and B. Both dogs had short legs and short jaws just like Tilli.

23)a)windpipe
lungs
diaphragm
b)The lungs are where the blood in the circulatory system picks up oxygen. The blood rich in oxygen is transported to other parts of the body for respiration. The carbon dioxide in the blood produced during respiration is brought to the lungs. The carbon dioxide is removed into the lungs to be exhaled.

24)a)The flour and water mixture turns dark blue.
b)The iodine solution will pass through the partially permeable bag, causing the flour and water mixture to turn dark blue.
c)Cell membrane.

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25)P : Conductor of electricity
Q : Insulator of electricity
R : Conductor of electricity
S : Insulator of electricity

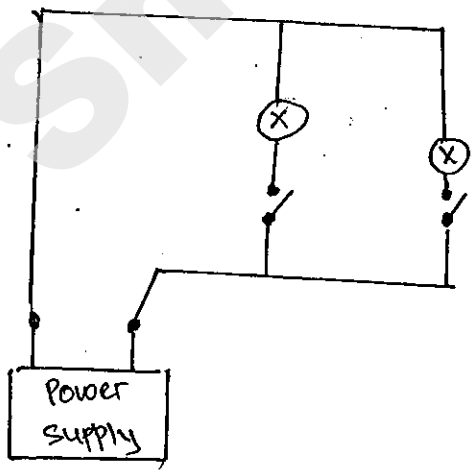
26)a)Group A: reproduce from spores.
Group B : reproduce from seeds.
b)Yes. The spores of the fern are carried by wind and all the new ferns are found further away along the direction of the wind.

27)a)i)wind ii)insect
b)i)Male reproductive cell / Female reproductive cell
ii)sperm / egg

28)a)It is to prevent water in the beaker evaporating.
b)The plant photosynthesis and the leaves produced food. The food travels down words to wards the roots. However the phloem has been cut out so the food could not be transported to the roots. Therefore the food could move and stayed there, causing the part to swell.
c)Our blood helps to carry oxygen from the lungs to the rest of our body. When we do not have enough blood, the other parts of the body will not get enough oxygen to respire so we die.

29)a)No. Cell A and Cell C has a cell wall so it could have come from the same organism.
b)Different cells have different functions and work together for the survive of the organism.

30)a)When are bulb fuses, the rest will still be lit up.
b)



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31)a)The brightness of the bulbs will be reduced.
b)Each bulb receives less electricity than before.
c)The bulb would fuse. Too much electric current has flown through the bulb.

32)a)i)Melting ii)Freezing
b)A heat source had been added so the water gained heat and evaporated until it reached boiling point.
c)Less than 50g from P to S some water had evaporated and escaped as water vapour so there is less water left at the end.

33)a)The biscuit set-up A has more surface area of the food coming into contact with the vinegar and increases the rate of breaking down.
b)A longer small intestine means more time to move through it so that more food is digested. More time to absorb more digested food.

34)a)As the mixture in Belt Y moves toward Belt X, the magnetic metals will be attracted by the electromagnet in Belt X and move along it. When the magnetism is too weak the magnetic metals.
b)Increase the speed of both belt.

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Rosyth School
Continual Assessment 2 for 2013
Science
Primary 5

50

Name: _____

Class: Pr 5 _____ Register No._____ Duration: 1 h 15 min

Date: 29 August 2013 Parent's Signature:_____

Instructions to Pupils:
1. Do not open this booklet until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 parts, Part I and Part II.

	Maximum	Marks Obtained
Section A	30 marks	
Section B	20 marks	
Total	50 marks	

* This paper consists of 18 pages altogether.

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Part I (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. "A number of animals of the same kind, living and reproducing in a place." What is this known as?

   (1) Habitat (2) Organism
   (3) Population (4) Community

2. An experiment was set up with two identical pots A and B. They were filled with equal amounts of soil. Two Balsam seedlings were planted in Pot A and fifteen Balsam seedlings planted in Pot B. A few weeks later, the height of the plants and thickness of the stems were measured.

   The average height and thickness of the plants in pots A and B were recorded as shown below.

Average height of plants (cm)		Average thickness of stems (cm)	
Pot A	Pot B	Pot A	Pot B
25	31	1	0.5

   The above result is most likely because the plants in pot B were competing for _____.

   (1) air (2) space
   (3) water (4) sunlight

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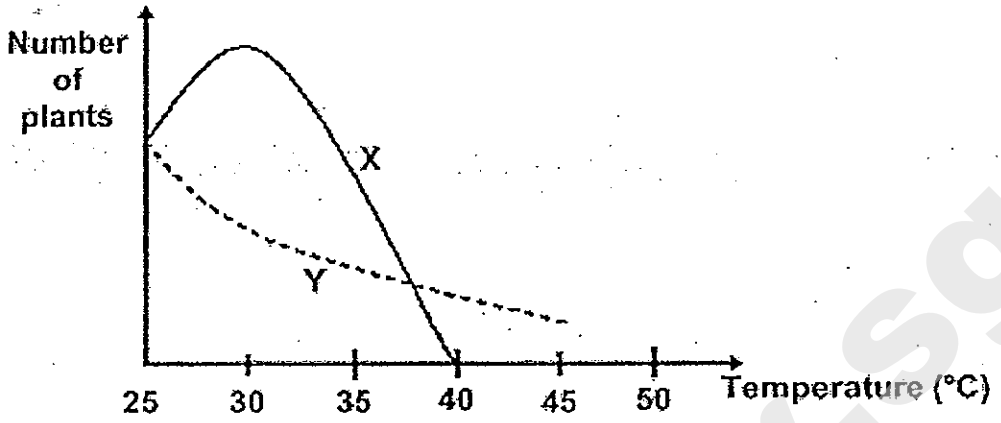
3. Melissa conducted an experiment to find out how temperature affects the growth of two types of plants, X and Y. She presented her findings in a graph as shown below.



She made the following observations based on her results.

A: Plant X grows best at 30°C.
B: There is more Plant X than Plant Y between 25°C and 35°C.
C: The number of Plant X increases as the temperature increases.
D: The number of Plant Y decreases as the temperature increases.

Which of the following statements are correct?

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

4. Study the following food chain.

Algae → shrimp → cod fish → seal → polar bear

Which of the animals above are both a prey and predator?

(1) cod fish and seal only
(2) shrimp and codfish only
(3) seal and polar bear only
(4) shrimp, cod fish and seal only

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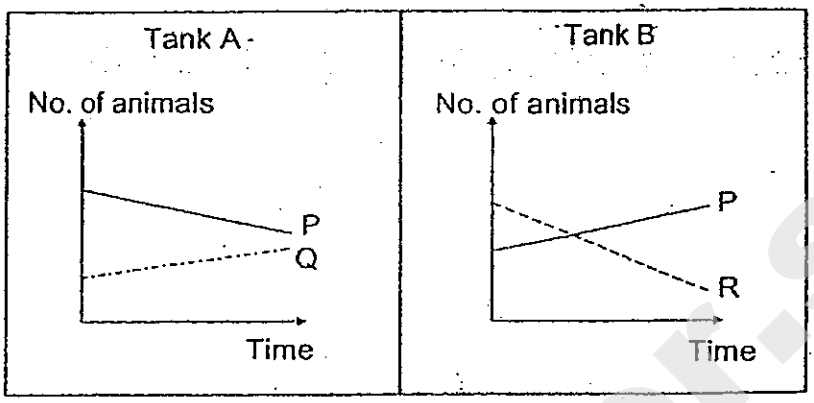
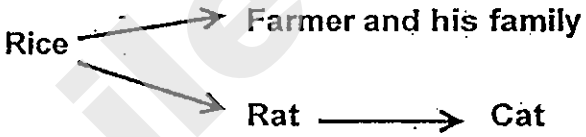
5. Mary caught three different types of animals, P, Q and R, from a pond. She put two types of animals in tanks A and B. The animals in each tank had a predator and prey relationship. She counted the number of animals left in each tank every week and recorded her findings over a month. The graphs below show how the number of animals changed over time.



Which one of the following correctly shows the food relationships among the organisms?

(1) Q → R → P
(2) Q → P → R
(3) P → R → Q
(4) R → P → Q

6. The diagram below shows a food web in a farm.



What could you do to increase the amount of rice grains for the farmer and his family without changing the amount of rice grains produced by the plant?

(1) Increase the number of rats.
(2) Increase the number of cats.
(3) Increase the amount of fertilisers for the rice plant.
(4) Increase the number of people in the farmer's family.

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7. Barry observed different kinds of plants and animals in the pond habitat in his backyard. He recorded the number of these organisms in the table below.

Organisms	Number of Organisms
Water Lily Plants	6
Tadpole	10
Frog	4
Guppy	7
Dragonfly nymph	22
Dragonfly	3
Water Lettuce Plants	5
Water Beetle	11

Based on the information above, which of the following statements is true?

(1) Frogs reproduce more than damselflies.
(2) There are eight populations in the pond habitat.
(3) All the above organisms can form a single food chain.
(4) There are two populations of producers and four populations of consumers.

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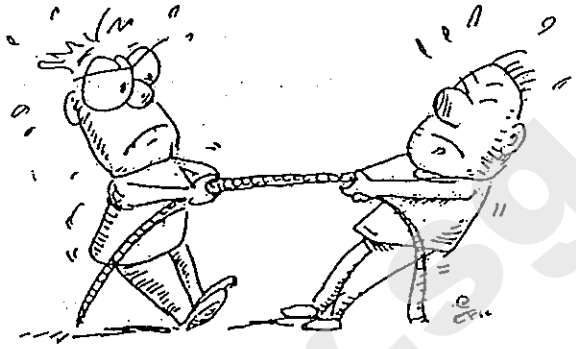
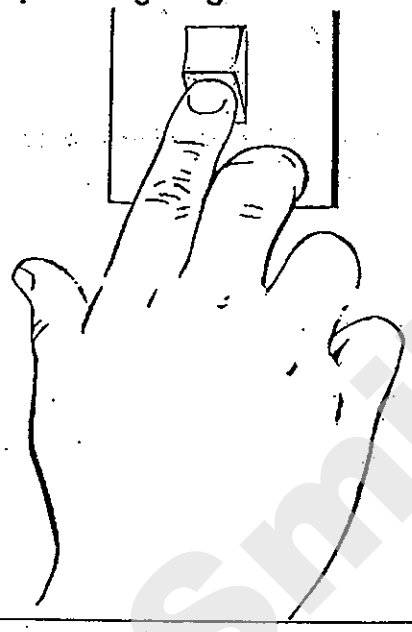
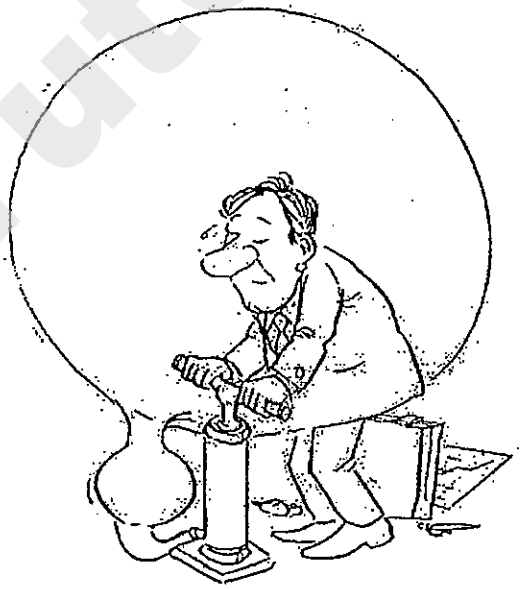
8. Which of the following involve both a push and a pull?

A: mopping the floor	B: playing tug-of-war
	
C: pressing a light switch	**D: pumping a balloon with air**
	

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

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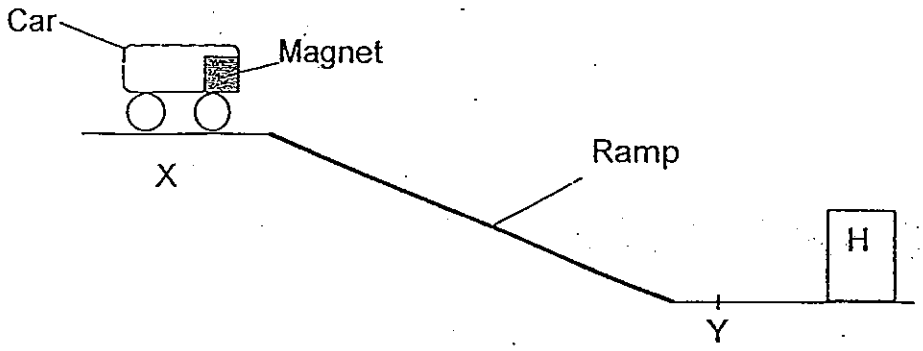
9. Jamie set up an experiment as shown below. When she released the car from X, the car moved back a little before stopping at Y. The car did not touch object H.

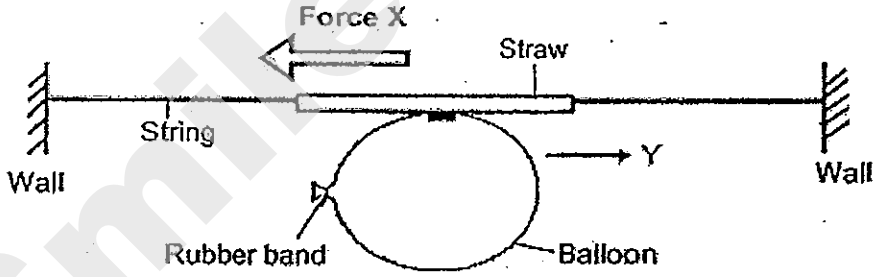


Which of the following forces are acting on the set-up above?

A: Frictional force
B: Magnetic force
C: Gravitational force
D: Elastic spring force

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

10. A string was passed through a straw. An inflated balloon tied with a rubber band was glued firmly to the straw. When the rubber band was removed, air rushed out of the balloon, producing a force of 10 units, causing the balloon to move in direction Y.



At the same time, an opposing force X was also acting on the straw. What is force X and its likely amount that was acting on the string?

	Force	Amount (units)
(1)	Friction	8
(2)	Friction	12
(3)	Gravity	8
(4)	Gravity	12

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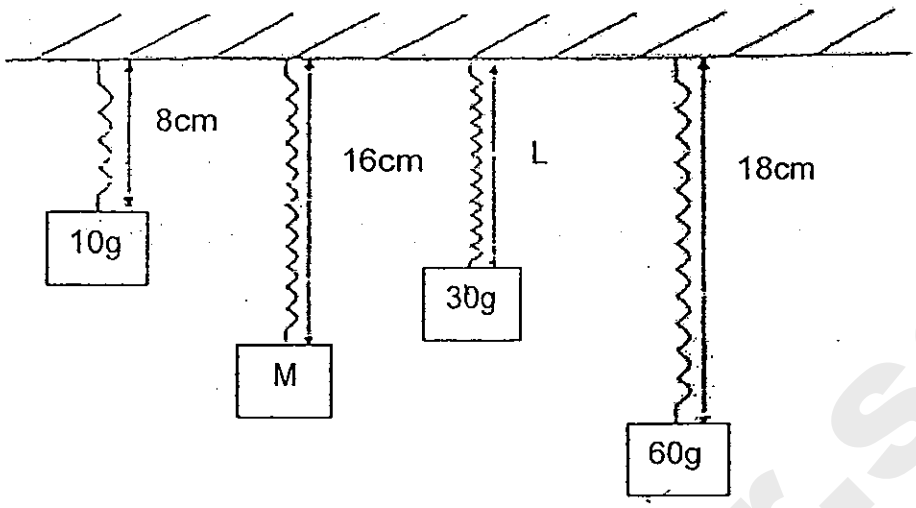
11. The diagram below shows the length of four similar springs. The initial length of each spring is 6cm. Different loads were hung on them, causing the springs to extend.



Which of the following correctly shows the missing information?

	M (g)	L (cm)
(1)	40	12
(2)	50	12
(3)	40	14
(4)	50	14

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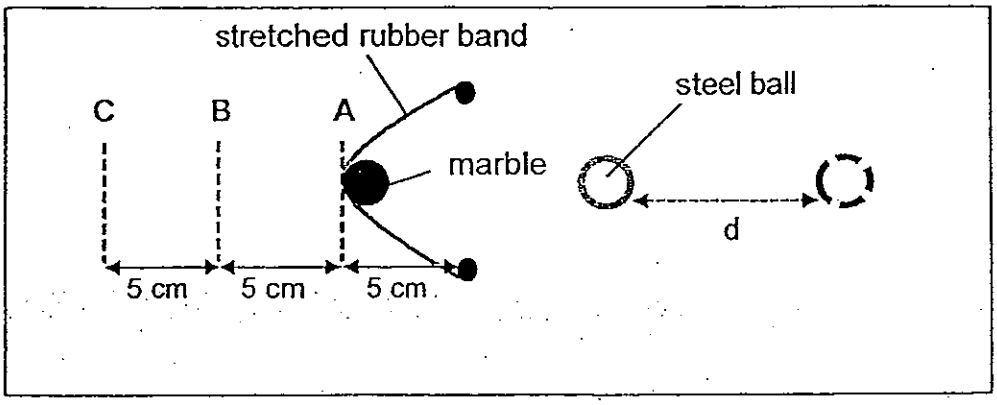
12. Raja placed a steel ball at a fixed point on a smooth table as shown below.



He then stretched the rubber band to the starting distance at A and released a marble to hit the steel ball. He recorded d (the maximum distance travelled by the steel ball when it came to a stop) and repeated his experiment using the different starting points B and C.

Starting point	A	B	C
Maximum distance travelled by steel ball (cm)	?	8	?

Which one of the following could be missing information from the table above?

	A	C
(1)	6	7
(2)	11	14
(3)	14	4
(4)	4	12

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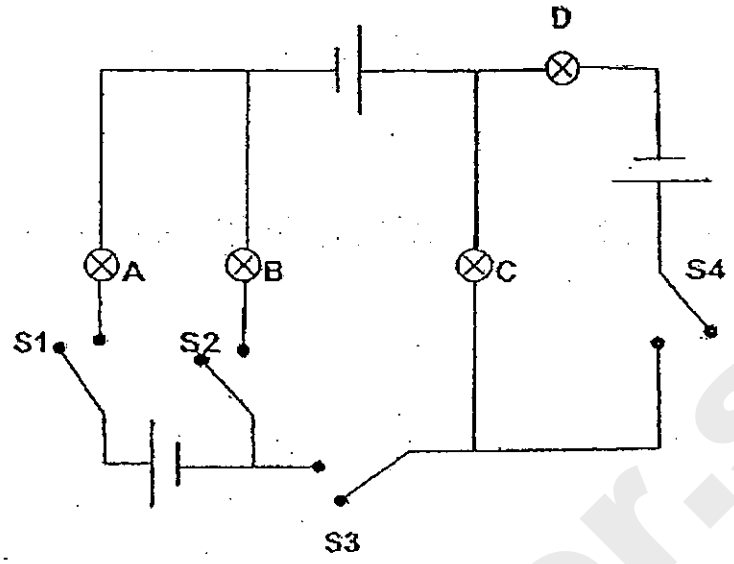
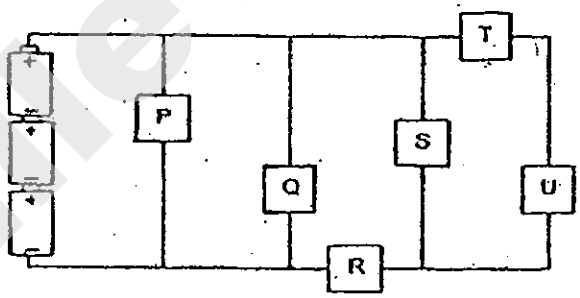
13. Gerard set up an electric circuit as shown in the circuit diagram below. The bulbs are labelled A, B, C and D and the switches are labelled S1, S2, S3 and S4.



Which of the following two switches should you close to produce the brightest light? Not all the bulbs would be lit.

(1) S1 and S2 (2) S1 and S3
(3) S2 and S3 (4) S3 and S4

14. The circuit below has six bulb holders labelled P, Q, R, S, T, U connected to each other.



Janet has two bulbs. In which two bulb holders should the bulbs be fixed such that both bulbs will light up?

(1) P and R (2) Q and T
(3) R and S (4) T and S

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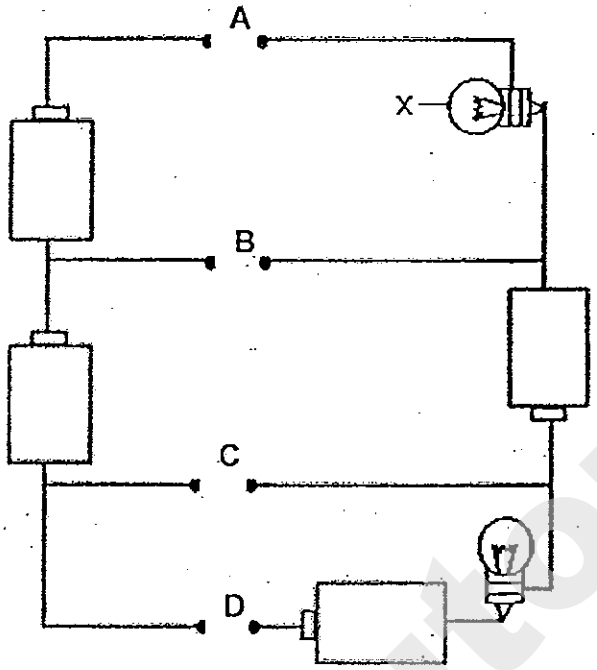
15. The diagram below shows an electric circuit. Irene placed one of the four items – wooden chopstick, plastic ruler, iron thumbtack and a copper coin at each of the gaps A, B, C and D.



Which of the following arrangements would result in Bulb X being the brightest?

	A	B	C	D
(1)	Thumbtack	Copper coin	Chopstick	Ruler
(2)	Thumbtack	Chopstick	Copper coin	Ruler
(3)	Ruler	Copper coin	Chopstick	Thumbtack
(4)	Copper coin	Ruler	Chopstick	Thumbtack

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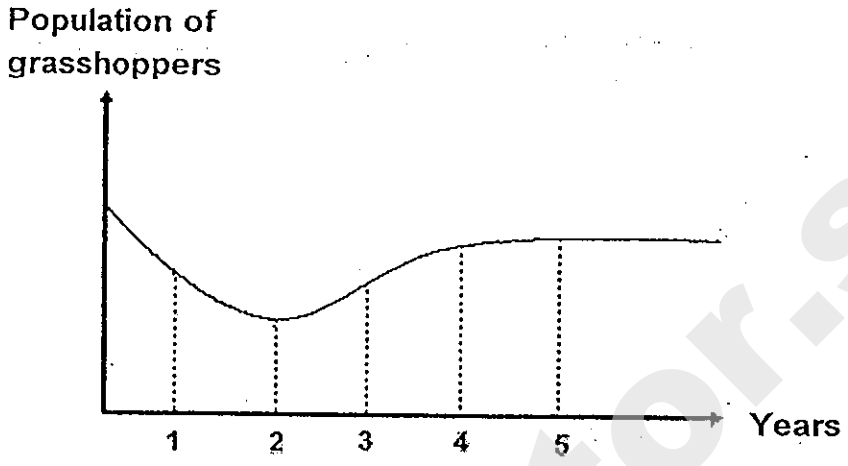
Part II (20 marks)

For questions 16 to 23, write your answers in this booklet.

16. A farmer discovered that his plants were being eaten by grasshoppers and decided to use pesticide to kill them. He sprayed pesticide on a monthly basis over a period of 5 years. The graph below shows the population of the grasshoppers over the 5 year period.



(a) From the graph, describe the change in population of the grasshoppers over the first two years. [1 mark]

_____

_____

(b) Why did the population of the grasshoppers increase after 2 years despite repeated sprayings of the pesticides? [1 mark]

_____

_____

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17. Ben conducted an experiment to find out if the amount of acid would affect the germination of pea seeds. He set up his experiment based on the following procedure:

1. Line four identical dishes with paper towels.
2. Pour equal amounts of distilled water to soak the paper towels in each dish.
3. Add 0, 5, 10 or 15 drops of acid to each of the 4 dishes respectively.
4. Place 40 pea seeds onto each dish.

He then waited 48 hours for the seeds to germinate and recorded the results in the table below.

Number of drops of acid added	Number of pea seeds germinated after 48 hours
0	35
5	20
10	7
15	2

(a) What can Ben conclude about the germination of the pea seed from his experiment? [1 mark]

_____

_____

(b) What is the purpose of the set-up with no drops of acid added? [1 mark]

_____

_____

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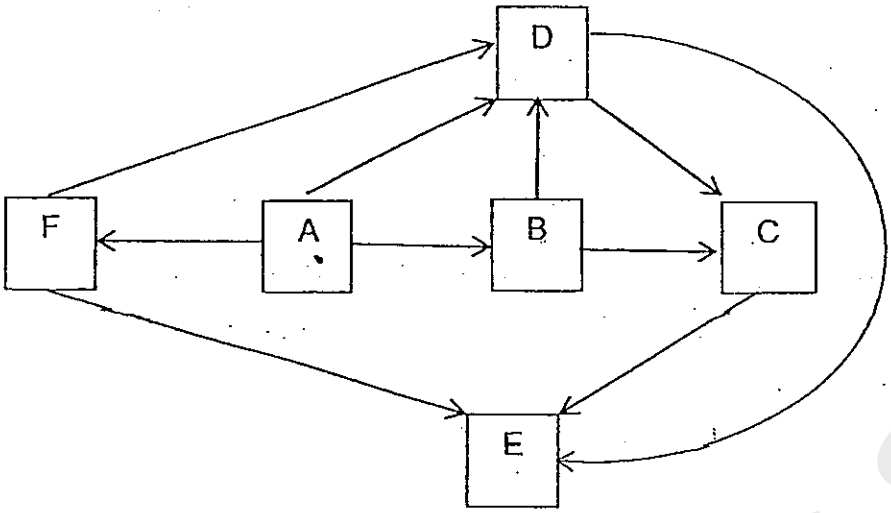
18. Study the food web below.



(a) Which organism is a food producer? [1 mark]

_____

(b) Based on the food web, write a food chain involving 5 organisms. [1 mark]

_____

(c) Identify if the following statements are True or False and tick the appropriate boxes below. [1 mark]

		True	False
(i)	If B increases, E will definitely increase		
(ii)	If E decreases, B will definitely increase		

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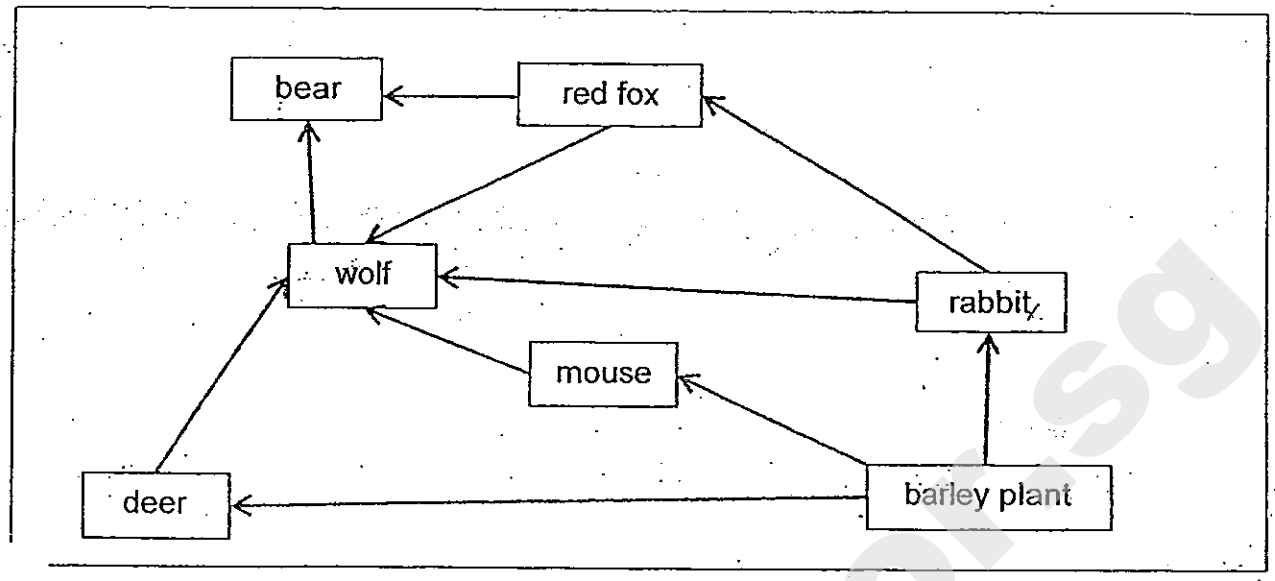
19. Study the food web below.



(a) State the number of food chains that make up this food web. [1 mark]

_____

(b) Which will be the most affected organism if all the rabbits are wiped out? Give a reason for your answer. [1 mark]

_____

_____

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20. Organisms P, Q, R, S and T are living things living together in a community. Study the information given below.

Q is a food producer
Q is eaten by P and S
T eats R and S
P is eaten by S and R.

(a) What is a community? [1 mark]

_____

_____

(b) Draw the food web of organisms P, Q, R, S and T in the box below. [1 mark]

(c) Which of the living things is an omnivore? [1 mark]

_____

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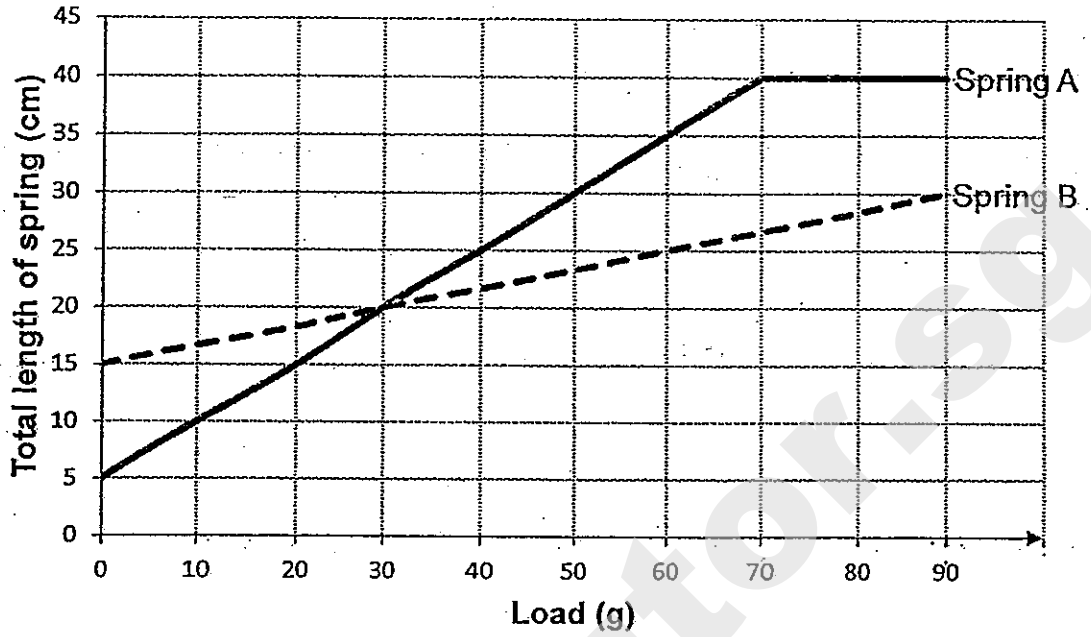
21. Springs, A and B, were used to support various loads. The results were recorded and plotted in the graph below.



(a) What was the difference in the initial lengths of Spring A and B? [1 mark]

_____

(b) What was the difference in the extensions of the two springs when a 30g load is hung on them? [1 mark]

_____

(c) What can be observed about the length of Spring A when the mass was increased from 70g to 90g? Explain your answer. [1 mark]

_____

_____

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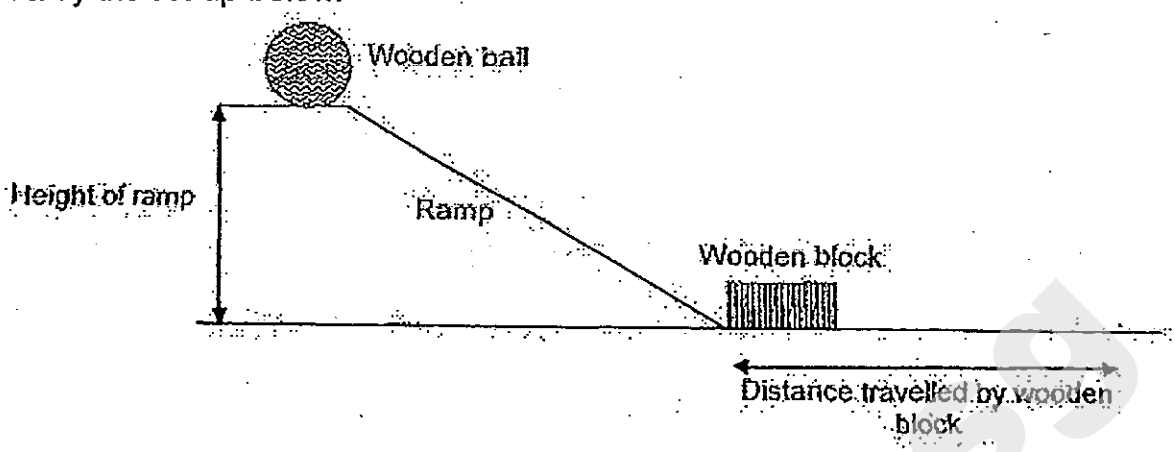
22. Study the set-up below.



When the ball rolls down the ramp, it hits the wooden block and moves it to a new position. The distance moved by the wooden block was measured. The experiment was repeated with different heights of the ramp and the results were recorded in the table below.

Height of ramp (cm)	15	25	30
Distance moved by the wooden block (cm)	19	27	33

(a) What was the relationship between the height of the ramp and the distance moved by the block? [1 mark]

_____

_____

(b) Name one variable that had to be kept the same in order for the experiment to be a fair one. [1 mark]

_____

(c) What would be the effect on the distance moved by the wooden block if the wooden ball is replaced with a solid metal one of the same size? [1 mark]

_____

_____

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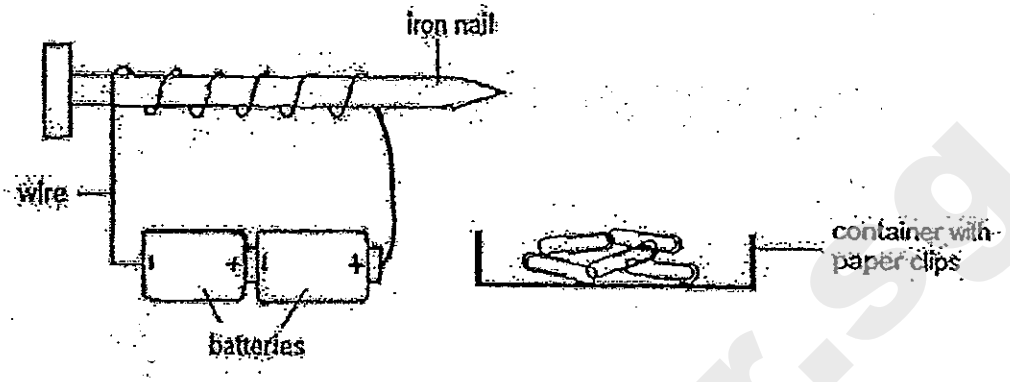
23. Julie conducted an experiment to find out how the strength of the electromagnet was affected by the number of coils of wire using the set-up as shown below. She recorded the greatest number of paper clips the electromagnet could attract in a table.



Number of coils	Number of paper clips
10	2
20	3
30	5
40	6

(a) State the relationship between the number of coils of wire and strength of the electromagnet. [1 mark]

_____

_____

(b) Without changing the number of coils of wire, state another way that she can make the electromagnet stronger. [1 mark]

_____

_____

END OF PAPER

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ANSWER SHEET

EXAM PAPER 2013
SCHOOL : ROSYTH
SUBJECT : PRIMARY 5 SCIENCE

TERM : CA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
3	4	3	1	4	2	4	4	3	1	2	4	2	3	2

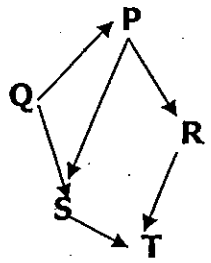
16)a)The grasshopper had decreased from the first three years and increased back for the next two years.
b)The grasshopper had became restanist to the pesticide.

17)a)The amount of acid affects the number of pea seeds that germinate.
b)It is control set-up to prove that acid is that only variable that affects the germination of food.

18)a)A.
b)A→B→D→C→E
c)i)T ii)F

19)a)5
b)Red Fox. The Red Fox does not have other food source to feed on.

20)a)A community is different population that are living together.
b)



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20)c)S.

21)a)10cm.
b)10cm
c)It stop extanding. It has reach its maximum length.

22)a)As the height of the ramp increased the Distance moved by the block also increase.
b)Material of ramp.
c)The wooden block would be pushed further away, it would be heavier so the impact would be more.

23)a)The more the number of coil around the iron nail the stronger the electromagnet.
b)Increase the number of batteries.

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Anglo-Chinese School (Primary)

MID-YEAR EXAMINATION 2013
SCIENCE
PRIMARY FIVE
BOOKLET A

Name: _____ ( ) Class: Primary 5

Date: 13 May 2013 Duration of paper: 1h 45 min

_____

Parent's/Guardian's Signature

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 19 printed pages including this cover page.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all the questions in this section.
5. Shade your answer on the Optical Answer Sheet (OAS) provided.

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For each question from **1** to **30**, four options are given. One of them is the correct answer.

Make your choice and shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

(60 marks)

---

1 The table below shows how 4 fruits A, B, C and D are grouped.

	One Seed	More than one seed
Smooth Skin	A	C
Rough Skin	B	D

Which one of these fruits is most likely to be a durian?

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

2 Water is taken in from the soil through the roots of the plant. Which parts of the plant is the water transported to?

A Stem
B Fruits
C Leaves
D Flowers

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

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3 Julie observed a few animals she saw at the zoo and wrote down some notes regarding their outer covering in the table below.

Animals Observed	Outer Covering of Animals
Zebra	Hair
Dolphin	Scales
Penguin	Feathers
Crab	Shell

She realized she made a mistake in one of her observations. Which animal's outer covering was wrongly described?

(1) Crab
(2) Zebra
(3) Dolphin
(4) Penguin

4 Which one of the characteristics about fungi is correct?

(1) They can all be eaten.
(2) They reproduce by spores.
(3) They produce food by photosynthesis.
(4) They can all be seen with the naked eye.

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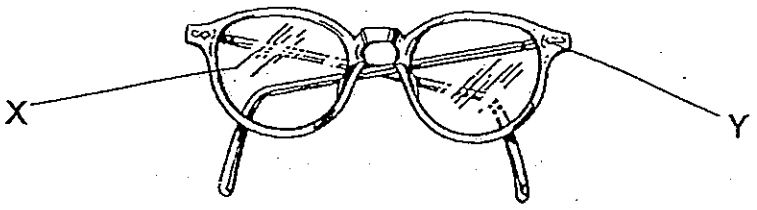
5 The picture below shows a pair of spectacles.



Which materials represents X and Y correctly?

	Material X	Material Y
(1)	Paper	Plastic
(2)	Glass	Metal
(3)	Clear Plastic	Cotton
(4)	Cloth	Rubber

6 Which one of the following comparisons between the life cycles of the two insects, butterfly and cockroach is correct?

(1) Both insects lay eggs.
(2) Both insects have a three-stage life cycle.
(3) Both insects have life cycle stages in water.
(4) Both insects feed on nectar in their adult stage.

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7 Four pupils are predicting what will happen when an inflated balloon is pricked with a pin and then the balloon burst.

Alan	The volume of air in the balloon will remain the same.
Benedict	The shape of the balloon will change.
Charles	The air escapes into the atmosphere.
Donald	The volume of air in the balloon will change.

Based on the predictions only, which of the pupils' predictions are most likely true?

(1) Alan, Benedict and Charles only
(2) Alan, Benedict and Donald only
(3) Benedict, Charles and Donald only
(4) Alan, Benedict, Charles and Donald

Use the diagram below to answer question 8

8 Look at the map above. You are at Bukit Timah, and you tied a bar magnet to a string, suspend it to a retort stand and allowed it to turn freely. Which one place would the south pole of the magnet be pointing to when it stops turning?

(1) Tuas
(2) Changi
(3) Clementi
(4) Woodlands

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9 The table below shows four different materials and the objects that can be made from them.

Materials	Object that material can be made into
S	Wooden Door
T	Glass Bulb Casing
U	Window Panel
V	Paper Lamp

The following are four statements about the materials (S, T, U and V).

A Material T is transparent.

B Material V allows no light to pass through.

C Material U allows light to pass through.

D Material S is translucent.

Based on the table only, which of the following statements are true?

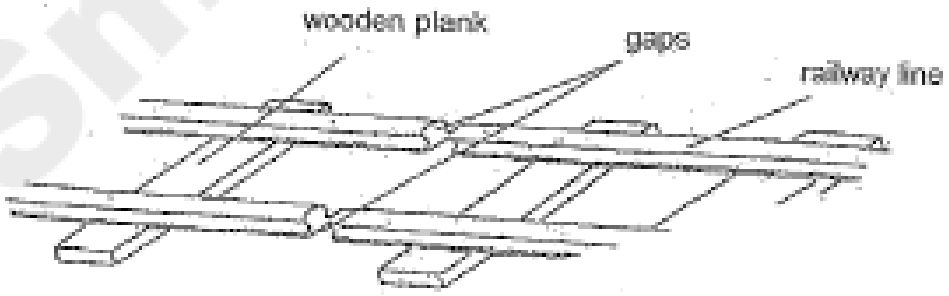
(1) A and B only

(2) A and C only

(3) A, B and C only

(4) B, C and D only

10 It has been observed that there are small gaps between railway lines. Why is this so?



(1) To prevent overheating of the railway line.

(2) To allow heat to pass through the wooden plank.

(3) To allow for room for expansion of the railway line.

(4) To allow for room for contraction of the wooden plank.

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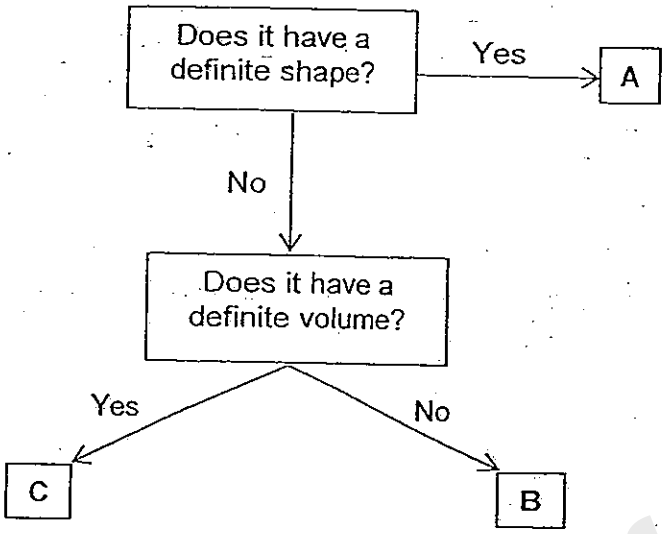
11 Study the flowchart below carefully.



Based on the observations in the flowchart only, which of the following materials are correctly classified?

	A	B	C
(1)	Brick	Orange	Milk
(2)	Apple	Heat	Water
(3)	Coin	Carbon Dioxide	Carrot Stick
(4)	Pencil	Oxygen	Honey

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12 Diagram A shows eggs being boiled in a pot of water. Diagram B shows a cross section of a boiled egg. Which one is the correct path of heat transfer in the process of boiling an egg?

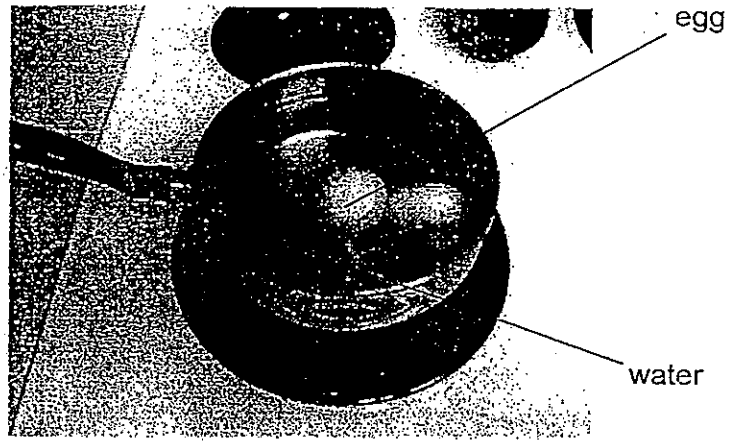

Diagram A

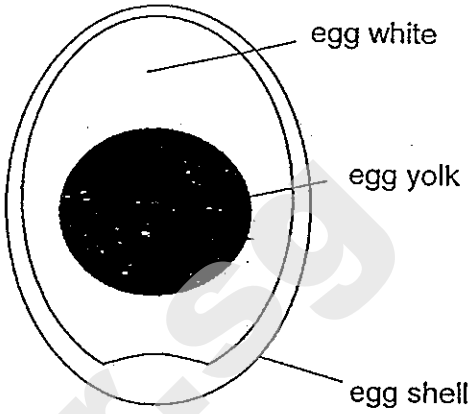

Diagram B

(1) Boiling water → egg shell → egg yolk → egg white

(2) Boiling water → egg yolk → egg white → egg shell

(3) Boiling water → egg white → egg yolk → egg shell

(4) Boiling water → egg shell → egg white → egg yolk

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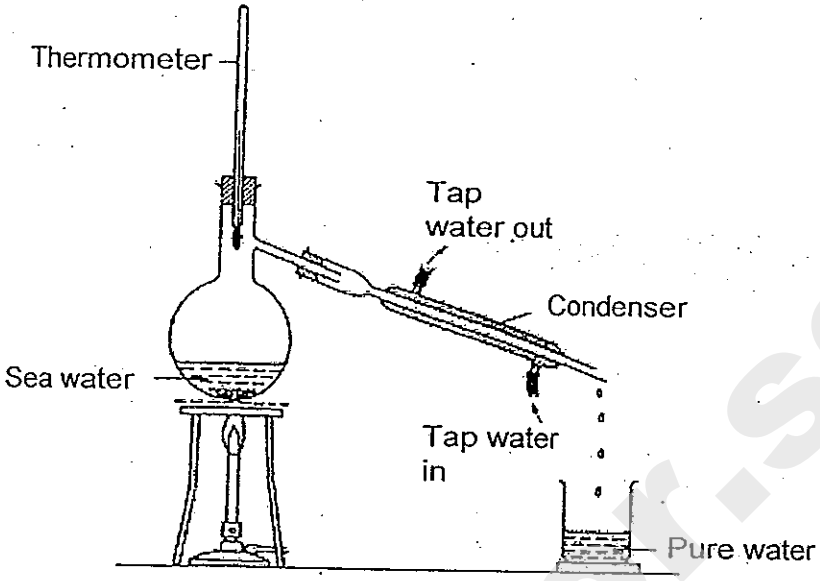
13 Study the set-up below. The sea water is allowed to boil and pure water can be obtained at the end of the process. The steam coming out from the sea water enters the condenser.



The tap water is just flowing around the condenser's outer chamber and did not mix with the sea water.

Based on the set-up above, what is the function of the continuous flow of tap water in the outer chamber of the condenser?

(1) It controls the boiling point of sea water.
(2) It removes all the salt from the sea water.
(3) It allows the steam to lose heat to the tap water.
(4) It allows the steam to gain heat from the tap water.

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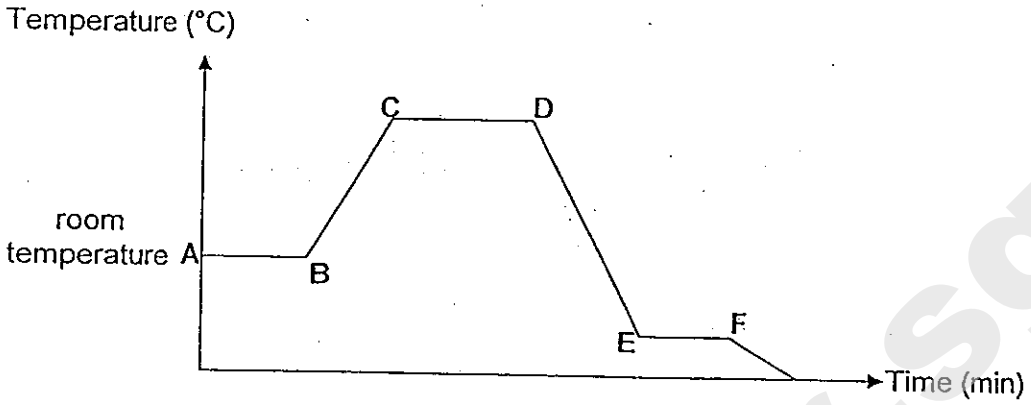
14 Vishnu filled a beaker with tap water at room temperature and placed it on the stove to boil. He then placed the boiled water into the freezer immediately. He recorded the changes in temperature of the water over time throughout the experiment as shown in the graph below.



From the graph, between which points was the water boiling?

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

15 The following statements suggest four ways how water can be conserved.

A Treating waste water to make it drinkable again.
B Using water from washing rice to water the plants.
C Using water from washing laundry to flush the toilet.
D Using a pail of water to wash the car instead of using tap water coming from a hose.

Based on the information given above, classify the statements A, B, C and D above under the correct heading of recycling, reducing or reusing water.

	Recycling water	Reducing water	Reusing water
(1)	A	C	B
(2)	A	D	C
(3)	D	A	B
(4)	D	C	A

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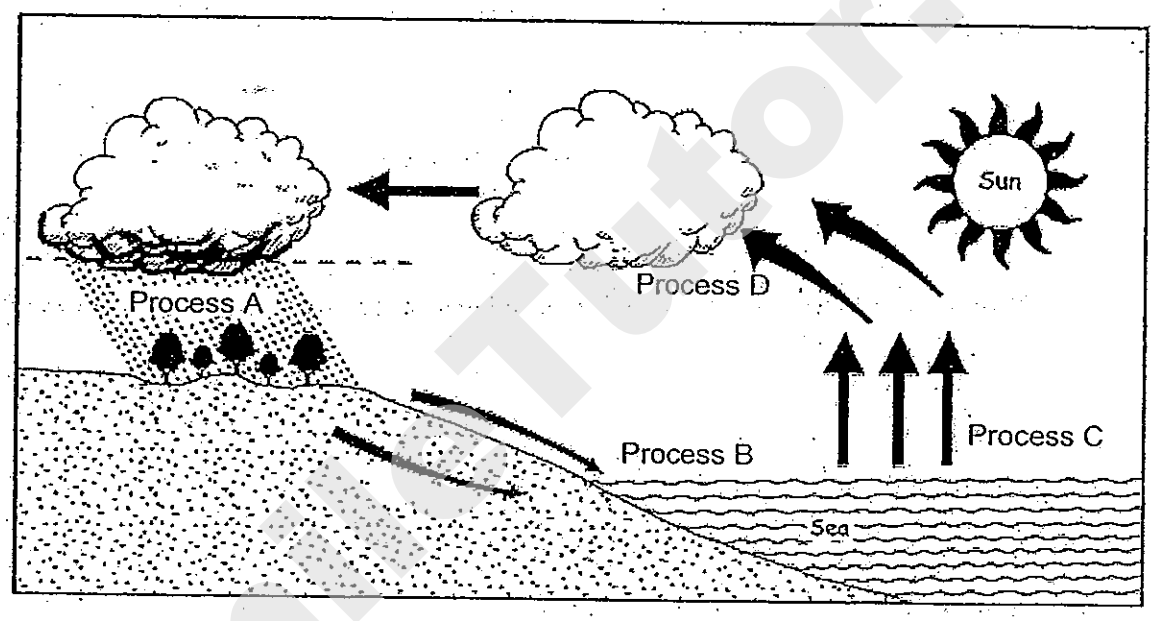
16 Bala filled two identical cups with 300 cm^3 of two different liquids, liquid A and liquid B. They were both placed next to an open window. After three days, he realized that there was less of liquid B than liquid A in the respective cups.

Based on the information given above, what is the aim of the experiment?

(1) To find out if the amount of liquid affects the rate of evaporation.
(2) To find out if the location of the cups affects the rate of evaporation.
(3) To find out if different types of liquid used affects the rate of evaporation.
(4) To find out if the amount of time taken for the experiment affects the amount of liquid left over.

17 The diagram below represents a water cycle.



What is the process labeled D?

(1) Evaporation
(2) Condensation
(3) Precipitation
(4) Collection

18 The form of energy needed for the water cycle to take place is _____ energy.

(1) light
(2) heat
(3) sound
(4) movement

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19 National Water Foundation wanted to find out how polluted the water is around Singapore. Water samples of 200cm^3 were taken from four different lakes, **A**, **B**, **C** and **D**, around the country.

As duckweeds do not grow well in polluted waters, it was used as an indicator to tell how polluted the water is. Twenty duckweeds were placed in each water sample for one week in the Laboratory. The number of duckweeds at the end of the experiment were counted and recorded in the table below.

	Water from Lake A	**Water from Lake B**	**Water from Lake C**	**Water from Lake D**
Number of duckweeds at the start of the experiment	20	20	20	20
Number of duckweeds after one week	12	8	17	5

Based on the table above, arrange the lakes from the most polluted to the least polluted.

(1) **A, B, C, D**
(2) **B, C, D, A**
(3) **C, D, A, B**
(4) **D, B, A, C**

20 What happens when water is in the process of freezing?

A The water loses heat.
B The temperature of the water decreases.
C The temperature of the water remains constant.

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

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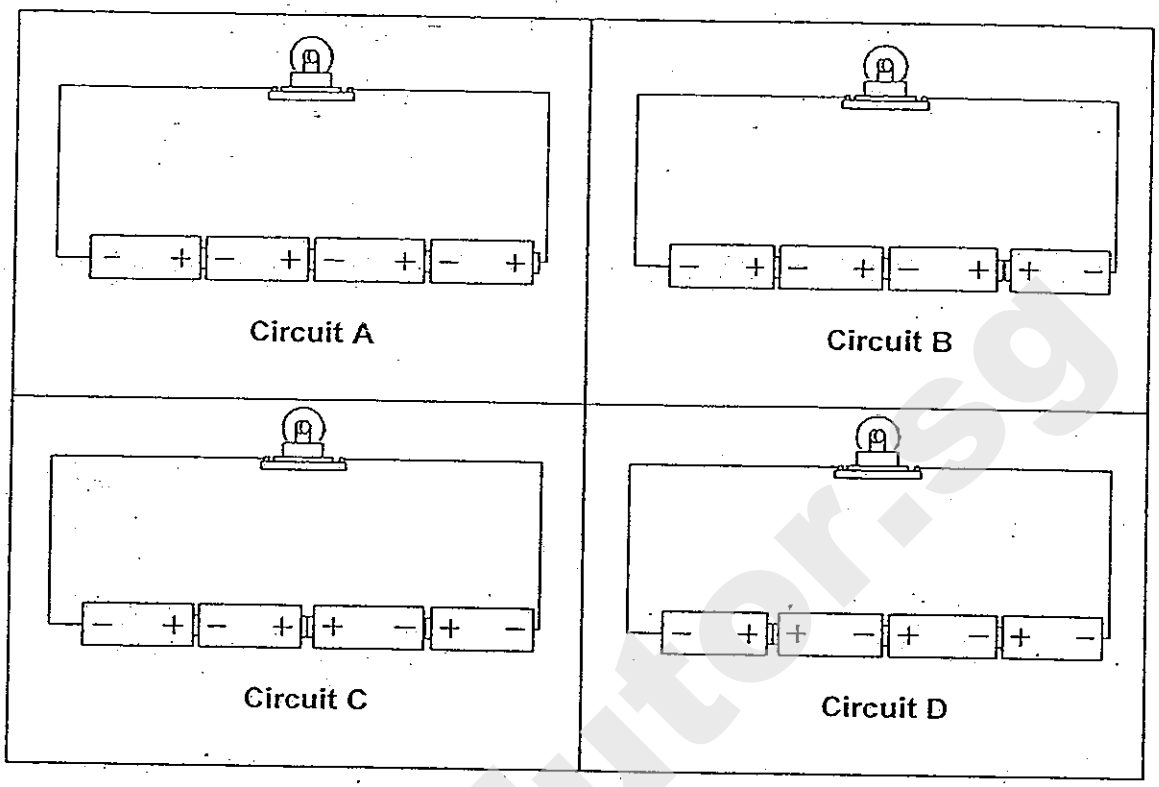
21 Study the circuits below carefully. All the bulbs and batteries are identical and in working condition.



The brightness of the bulbs in the different circuits were measured and recorded in the table below.

Circuit	A	B	C	D
Brightness	20 units	10 units	0 unit	?

Predict the brightness of the bulb in Circuit D.

(1) 0 unit
(2) 5 units
(3) 10 units
(4) 20 units

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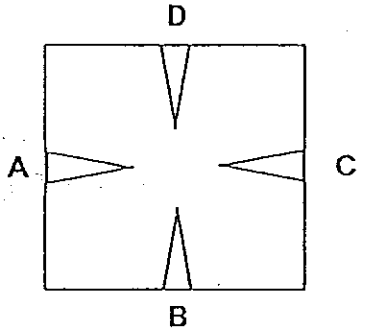
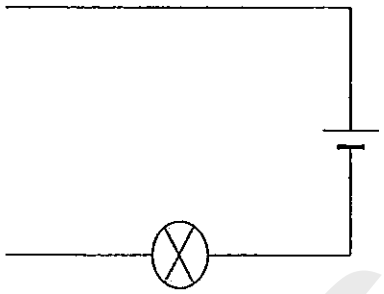
22 James tested the circuit card below with a circuit tester.

Circuit Card



Circuit tester

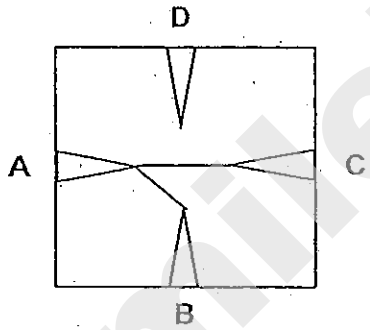


He recorded the results in the table below.

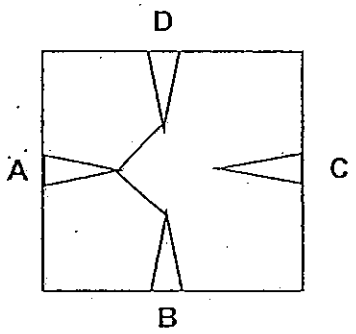
Points tested	Does the bulb light up?
A and B	No
B and C	No
C and D	Yes
D and A	Yes

Which one of the following circuit cards shows the correct arrangement of the wires?

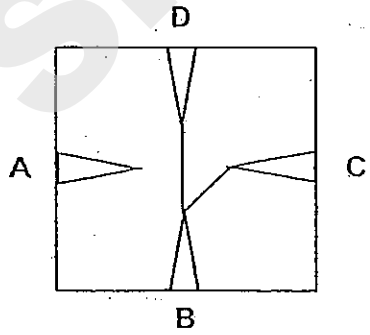
(1)



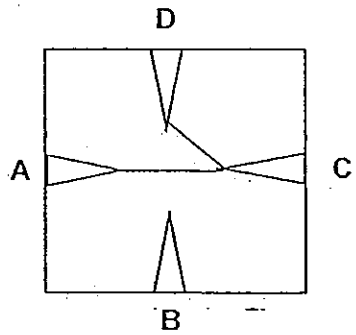
(2)



(3)



(4)



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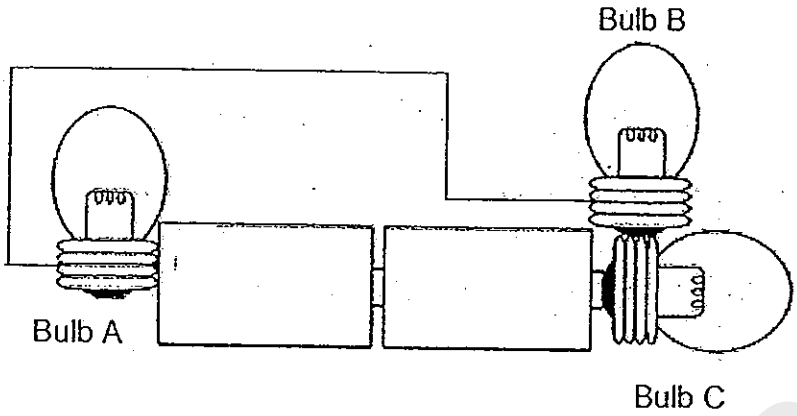
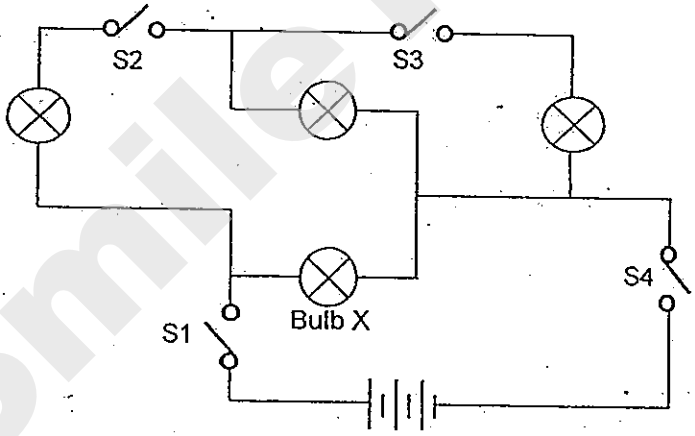
23 Study the diagram below carefully.



Which of the following bulbs will light up?

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

24 The diagram below shows an electrical circuit.



To light up bulb X only, which of the switches should be closed?

(1) S1 and S4 only
(2) S2 and S3 only
(3) S1, S3 and S4 only
(4) S1, S2, S3 and S4

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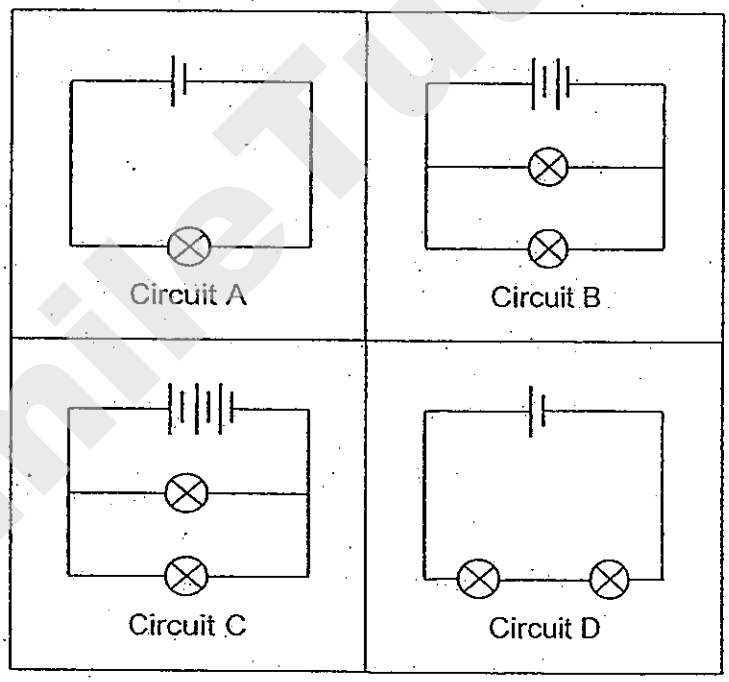
25 Which of the following statements describe safe practices when using electrical appliances?

A Turning on the switch with wet hands.
B Prevent overloading of electrical sockets.
C Repairing faulty electrical appliances by yourself.
D Using electrical appliances with the SAFETY mark.

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

26 Four different electrical circuits A, B, C and D were set up as shown below. The bulbs and the batteries in the four electrical circuits are identical and are all in working condition. All the bulbs in the four electrical circuits are lit up.



Based on the diagrams above, arrange the circuits to show the brightness of its bulb(s) from the brightest to the dimmest.

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

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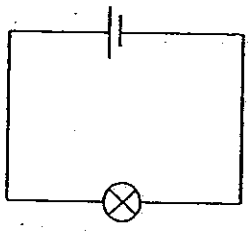
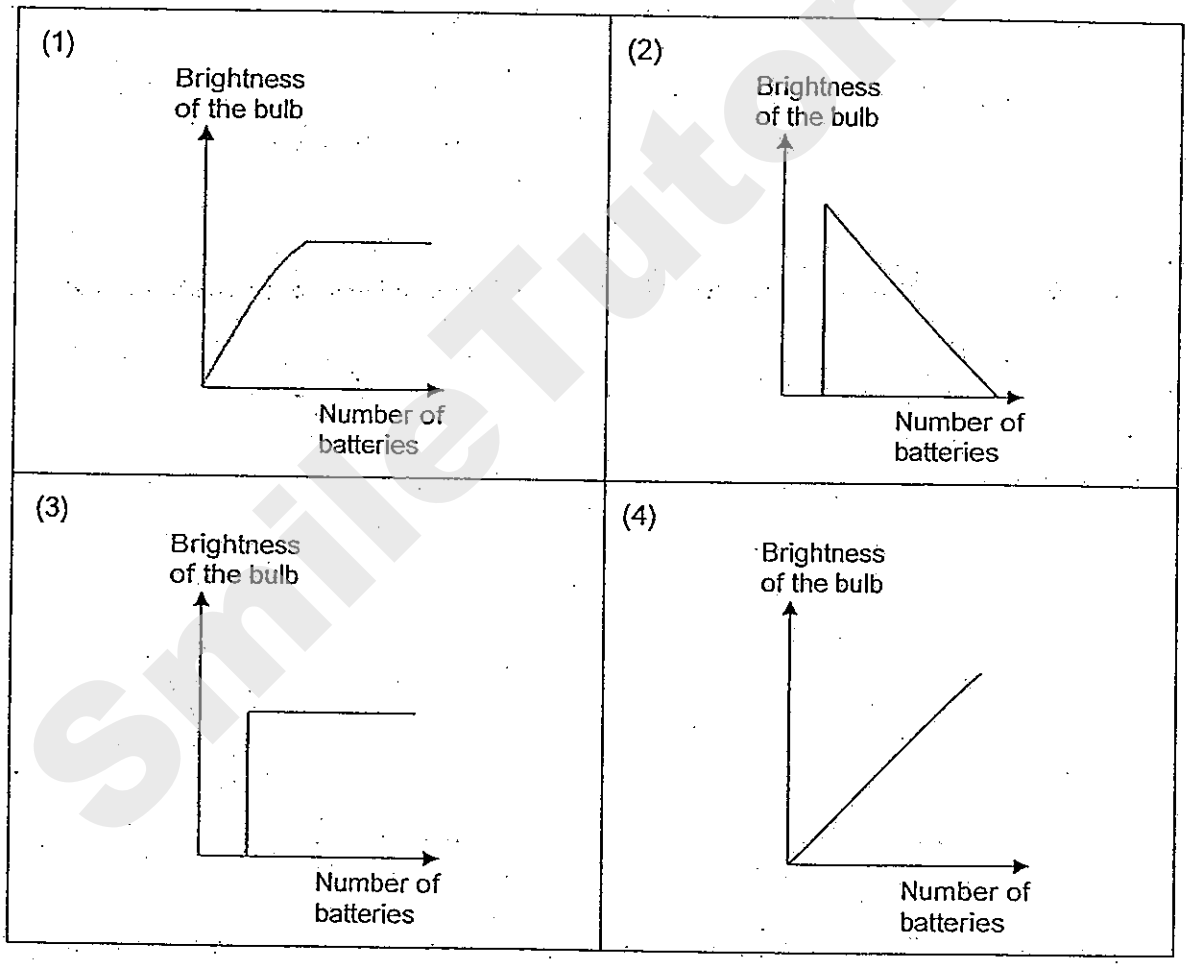
27 The circuit diagram below was set-up.



Which one of the following graphs below correctly represents how the brightness of the bulb will change when more batteries are added in series arrangement in the above circuit? (Assume the bulb and batteries are identical and in working condition.)



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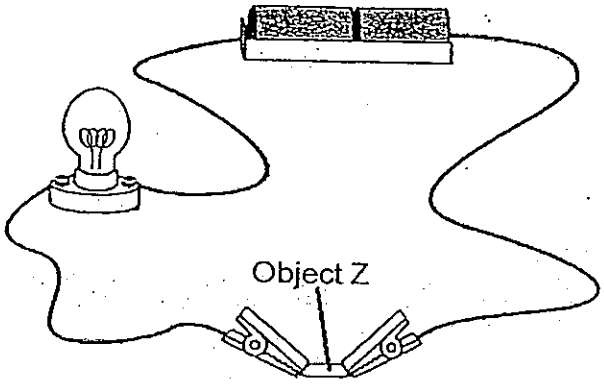
28 Study the electrical circuit shown below.



Which materials might object Z be made of in order for the bulb to light up?

A Plastic
B Iron
C Steel
D Aluminium
E Rubber

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

29 Which one of the following correctly defines the term "population"?

(1) A population is different groups of organisms living together and reproducing in a habitat.
(2) A population is a group of different organisms living together and reproducing in a habitat.
(3) A population is a group of organisms of the same kind living together and reproducing in a habitat.
(4) A population is group of organisms of the same kind living together and reproducing in different habitats.

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30 Which of the following factors below will lead to an increase in population size of animal X in their habitat?

A Diseases that kill animal X

B Abundance of food for animal X

C High birth and death rate of animal X

D Decrease in the number of predators that feeds on animal X

(1) A and C only

(2) B and D only

(3) B, C and D only

(4) A, B, C and D

End of Booklet A

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Anglo-Chinese School (Primary)

MID-YEAR EXAMINATION 2013
SCIENCE
PRIMARY FIVE
BOOKLET B

Name:_____ ( ) Class: Primary 5 ___

Date: 13 May 2013 Duration of paper: 1h 45 min

_____

Parent's/~~Guardian's~~ Signature

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 15 printed pages.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all the questions in this section.

BOOKLET	MAXIMUM MARKS	MARKS OBTAINED
A	60	
B	40	
Total	100	

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For questions **31** to **44**, 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.

(40 marks)

---

31 Rong Jie conducted an experiment with four similar potted plants. He removed a specific part of each plant and allowed them to grow over two weeks. The plants were given the same amount of water and were placed in the same location. After two weeks, he recorded his observations in the table below.

Potted Plant	Part removed from potted plant	Is the plant dead after two weeks?
A	Some leaves	No
B	All flowers	No
C	All roots	Yes
D	All fruits	No

(a) Explain why potted plant C died after two weeks. [1]

(b) What can Rong Jie conclude from this experiment? [1]

(Go on to the next page)

Score /2

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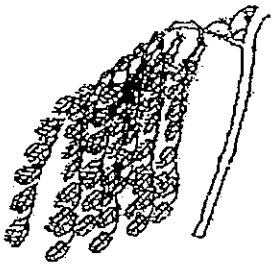
32 It was observed that the leaves of the rain tree look different at different times of the day. The differences were recorded and the pictures of the same group of leaves are shown below.

In sunny weather



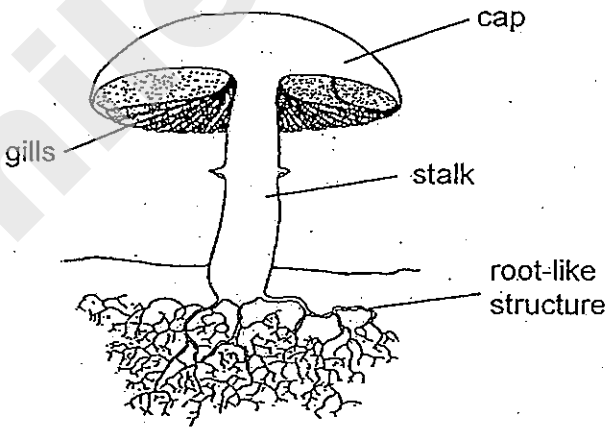
In cloudy weather or in darkness

(a) What are the two characteristics of living things that the rain tree is demonstrating? [2]

Characteristic one:

Characteristic two:

Study the picture of a mushroom shown below.



(b) How does the mushroom obtain food? [1]

(c) What does the gills of the mushroom store? [1]

(Go on to the next page)

Score	/ 4

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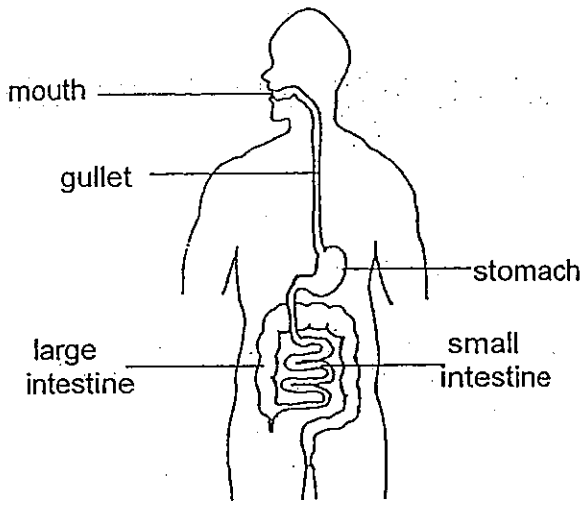
33 After eating a meal of mass, 500 g, the food travels down the digestive system. The amount of digested food and undigested food at the different digestive organs is recorded in the table below.



Organ of digestive system	Mass of undigested food	Mass of digested food	Total mass of food
mouth	470 g	30 g	500 g
gullet	470 g	30 g	500 g
stomach	400 g	100 g	500 g
small intestine	250 g	250 g	500 g
large intestine	250 g	0 g	250 g

(a) Based on the table above, identify where digestion first took place. Explain your answer. [2]

(b) Why is there no change in the mass of digested food in the gullet? [1]

(c) Explain why there is no digested food found in the large intestine. [1]

(Go on to the next page)

Score /4

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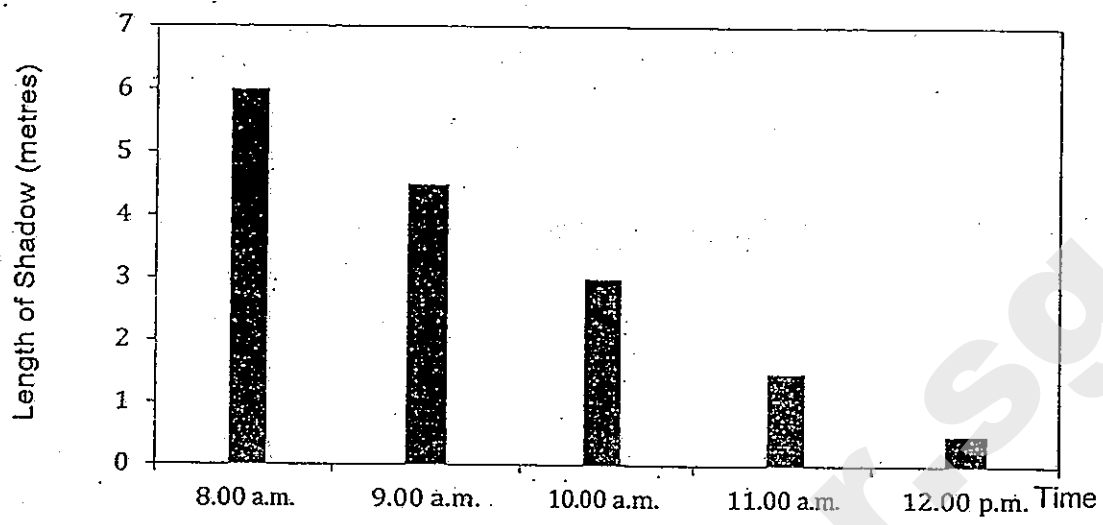
34 Natalie measured the length of the shadow cast by a lamp-post at different times of a sunny day. She plotted a graph as shown below.



(a) Based on the graph above only, predict the length of the shadow at 11.30 a.m. [1]

(b) Explain why the shadow was the shortest at 12.00 p.m. [1]

(Go on to the next page)

Score	/ 2

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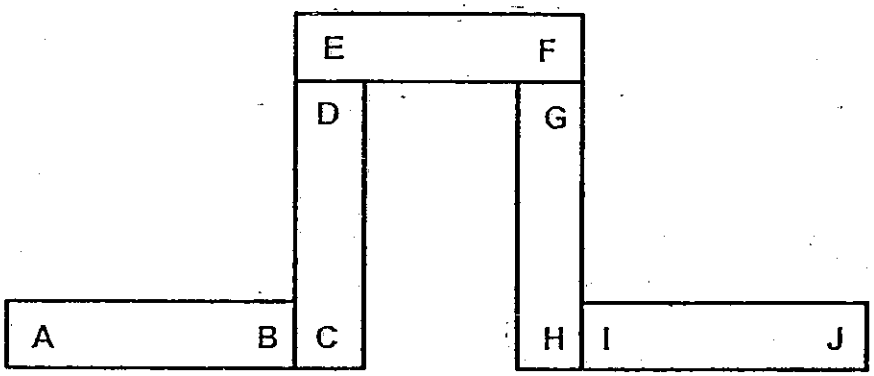
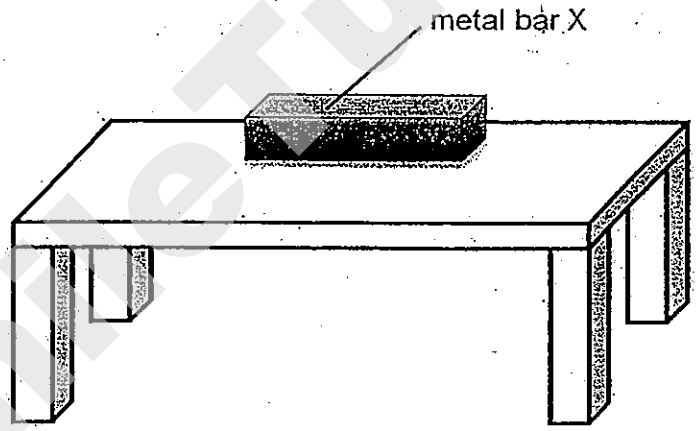
35 Five bar magnets with their ends marked **A** to **J** can be arranged as shown below.



(a) If end A is the south pole of the bar magnet, determine the magnetic pole for the following ends of the bar magnets (Based on the diagram above).

(i) End E: _____ [1]

(ii) End H: _____ [1]



(b) A piece of metal bar X was placed on the table. Using a magnet only, explain how to determine if the metal bar X on the table is a magnet. [2]

_____

_____

_____

(Go on to the next page)

Score	/ 4

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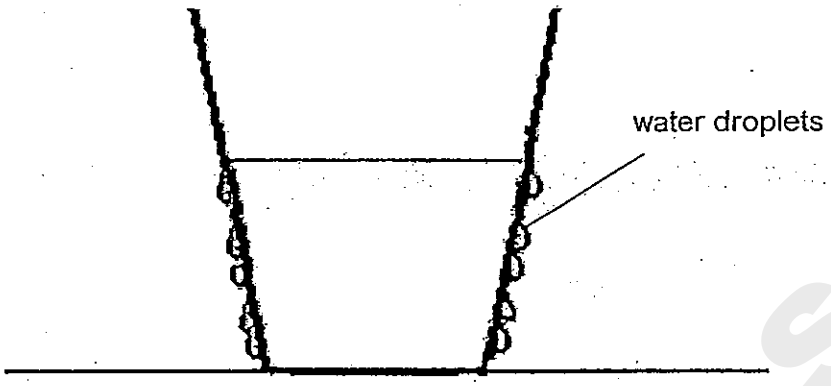
36 Michael places a glass of water on the kitchen table. The water is not at room temperature. After five minutes, he observed water droplets forming at the outer lower surface of the glass as shown in the diagram below.



Is the glass containing hot or cold water? Explain your answer. [2]

(Go on to the next page)

Score	/ 2

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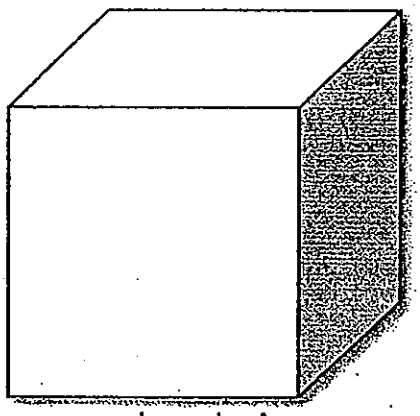
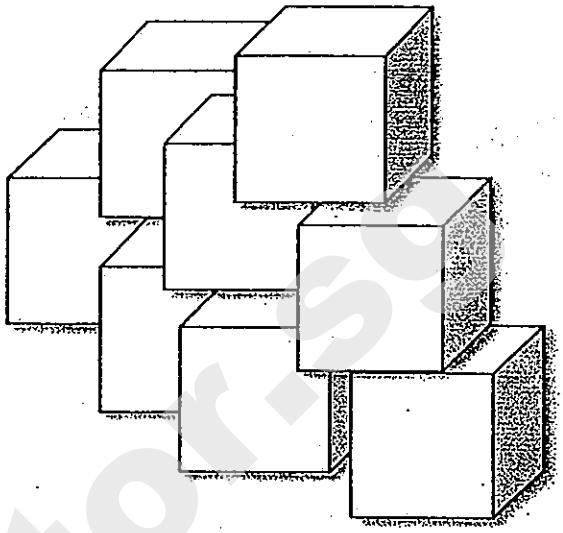
37 Branson has two litres of water. He used the water (one litre each) to make different sizes of the ice cubes as shown below.



Ice cube A
(one litre of water was used)



Eight ice cubes B
(one litre of water was used)

All eight ice cube B melts faster than ice cube A.

Give two possible explanations for the observations made. [2]

_____

_____

_____

(Go on to the next page)

Score	/ 2

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38 Read the article below and answer the questions that follow.

On the 25th of March 1989, an oil tanker collided with another vessel in the open sea and spilled 230 000 litres of thick black crude oil. The effect of the incident was devastating. Many marine life like fishes, and sea birds were affected and died as a result.

(a) Give two possible ways the sea birds would have been negatively affected by the oil spill. [2]

(b) Explain clearly how the oil spill will affect the fully submerged plants in the sea? [1]

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(Go on to the next page)

Score	/ 3

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39 The table below shows the melting and boiling points of four substances, A, B, C and D.

Substance	Melting point (°C)	Boiling point (°C)
A	4	56
B	0	100
C	240	600
D	-200	-20

Based on the information above, put a tick (✓) to indicate in what state each of the substance will be at 27°C. [2]

Substance	Solid	Liquid	Gaseous
A			
B			
C			
D			

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Score	/ 2

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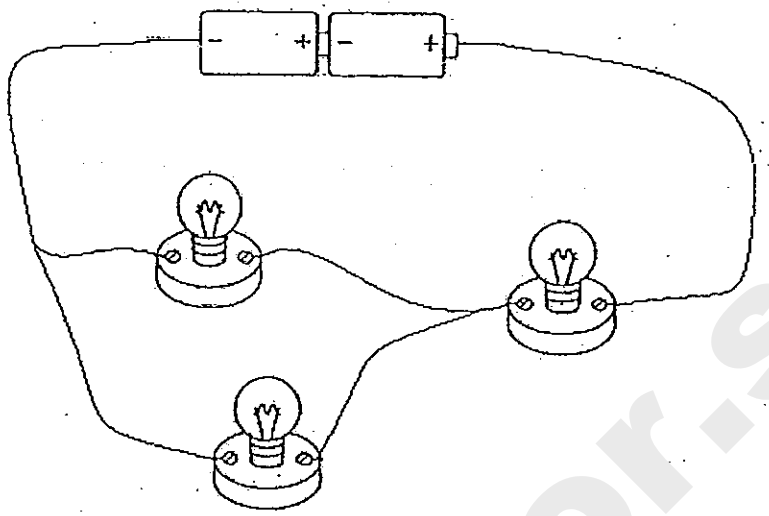
40 The diagram below shows a picture of an electrical circuit.



In the box below, draw using pencil and ruler a circuit diagram that represents the above electrical circuit. Your diagram must include all the electrical components in the same arrangement as shown in the diagram above. [3]

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(Go on to the next page)

Score	/ 3

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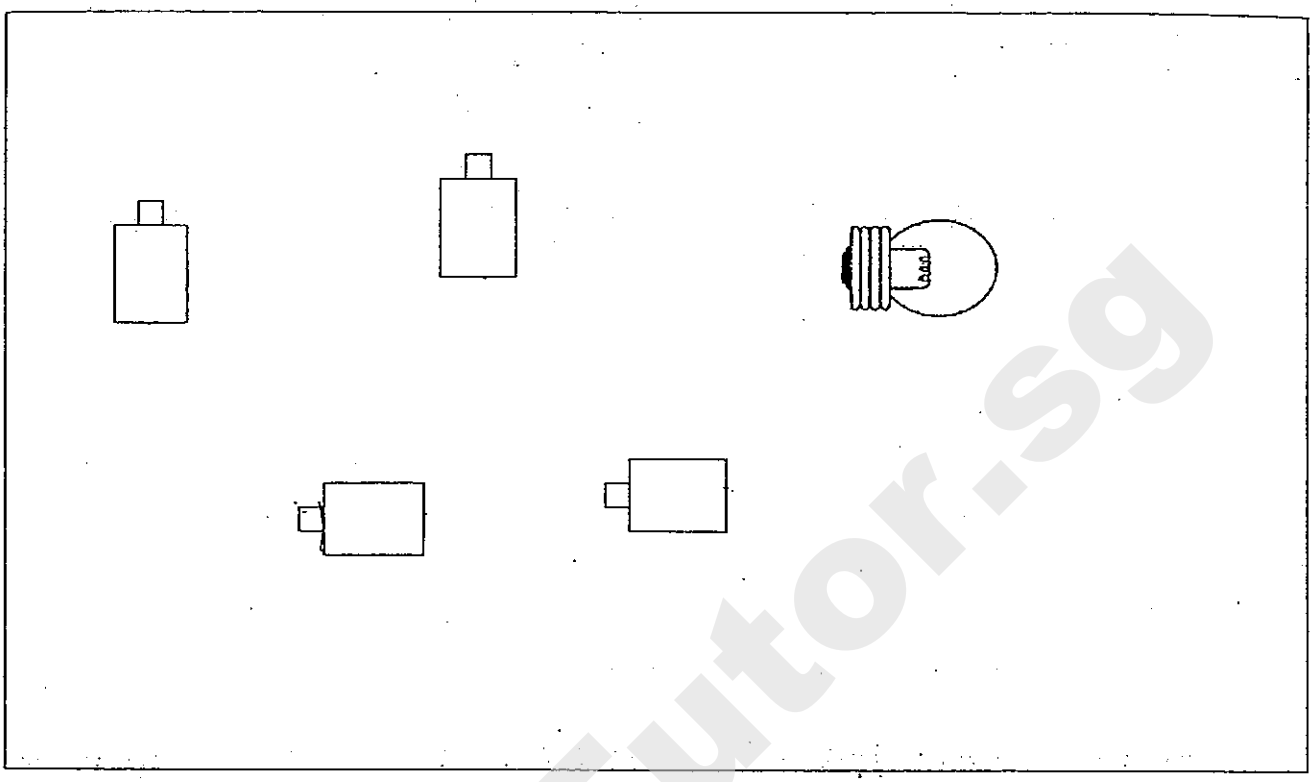
41 The diagram below shows a bulb and four batteries. Draw wires to complete the electrical circuit such that the bulb lights up the brightest. [2]



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Score	/ 2

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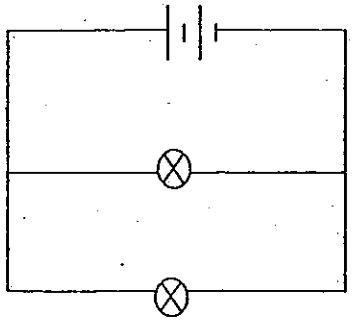
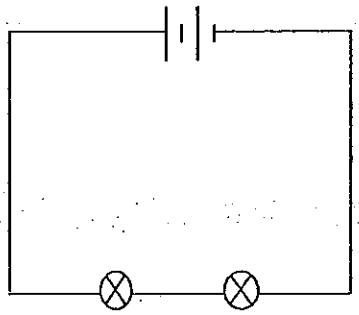
42 Study the two electrical circuits below. The batteries and bulbs used are identical and in working condition.



Circuit A



Circuit B

(a) Based on the diagrams above, compare the brightness of the bulbs found in circuit A and B. [1]

(b) What will happen if one of the bulbs in circuit A fused? [1]

(c) What will happen if one of the bulbs in circuit B fused? [1]

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Score	/ 3

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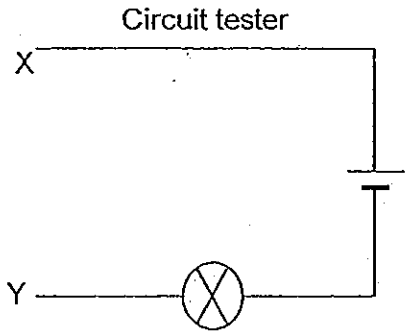
43 A circuit tester was set up as shown in the diagram below.



Wires of different thickness were used to join point X to Y. The brightness of the bulb was measured using a data logger. The results were recorded in the tale below.

Thickness of wire	Brightness of the bulb
1 mm	15 units
3 mm	11 units
5 mm	9 units

(a) What is the aim of the experiment? [1]

(b) According to the result, what is the relationship between the thickness of the wire and the brightness of the bulb? [1]

(c) Predict the likely brightness of the bulb if a 4 mm thick wire is used. [1]

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Score	/ 3

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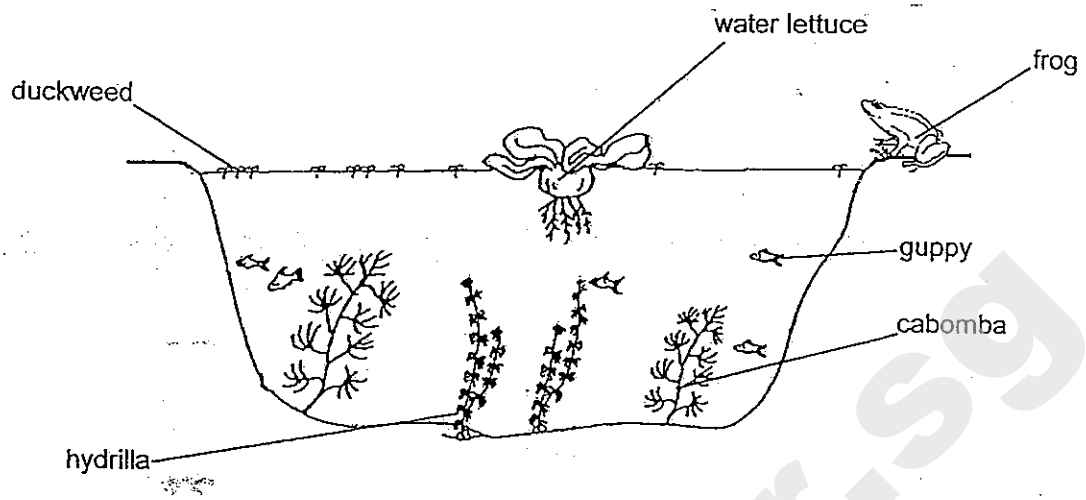
44 The diagram below shows a pond habitat with its pond community.



Malik commented that there are only five populations in this community as a frog cannot be counted as a population by itself.

(a) Explain why a frog alone cannot be considered as a population. [1]

(b) How are the guppies and fully submerged plants (hydrilla and cabomba) interdependent? [2]

(c) Explain how the fully submerged plants (hydrilla and cabomba) will be affected if the population of floating plants (duckweed and water lettuce) increases? [1]

End of Booklet B

Score	/ 4

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ANSWER SHEET

EXAM PAPER 2013
SCHOOL : ACS
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
4	4	3	2	2	1	3	3	2	3	4	4	3	3	2	3	2

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	4	4	3	4	2	1	3	2	4	3	3	2

31)a)No roots means that the plant cannot get water and minerals which will cause them to die.
b)He can conclude that a plant needs its roots to lives.

32)a)One: That it responds to changes.
Two: It can move on their own.
b)It absorbs food from the soil place its grows on.
c)They store spores.

33)a)Mouth, from then on the mass of digested food took place.
b)The gullet does not digest anything, it only transport the food from the mouth to the stomach.
c)The digested food was all absorbed in the small intestine before proceeding to the large intestine.

34)a)It would be One meter fifty centimeters long.
b)The sun should have been right above the lamp-post in that way, only a little shadow could have been formed.

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35)a)i)South ii)North

b)Place the magnet near(the end)of metal bar. If the metal bar repels the metal bar is a magnet.

36)Cold water. The water droplets appeared on the lower surface of the glass showing that the lower surface is cooler than the surrounding water vapour. The water vapour from the surrounding air touches the cooler lower surface of the glass, loses heat and condenses to from water droplets.

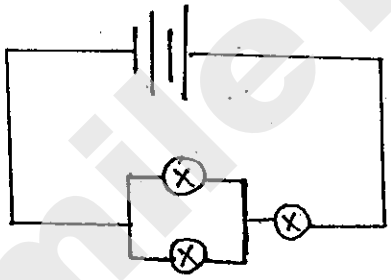
37)The eight ice cube B has larger exposed surface area that ice cube A. Therefore it gains heat and melt faster.

38)a)The birds could have oil all over their wings not allowing them to take flight. And when if eats dead fish which died due to the oil, seabird are eating contaminated food which may cause death.

b)As the oil is black it blocks the sunlight from reaching fully submerged plants and they cannot photosynthesis the plant will eventually die.

39)A: Liquid
B: Liquid
C: Solid
D: Gaseous

40)



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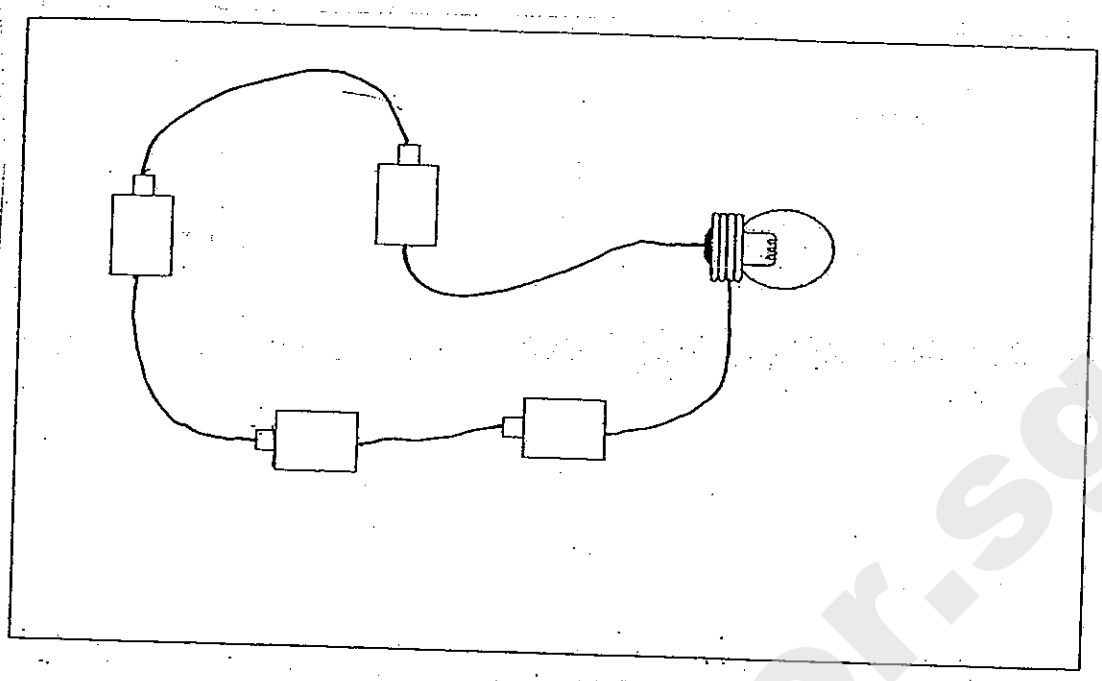
41)



42)a)A will be brighter than B.
b)The other bulb will continue shining.
c)In circuit B, when one bulb fuses, the other will not belt.

43)a)To see whether the thickness of wire will affect the brightness of the bulb.
b)The thicker the wires are the dimmer the bulb are.
c)10 units.

44)a)There is no frog of the opposite gender around the park.
b)The guppies give carbon dioxide to the hydrilla and cabomba in return the fully submerged plant give oxygen to the guppies.
c)The floating plant will block the sun light from fully submerged plant and fully submerged cannot photosynthesis and will eventually die.

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CATHOLIC HIGH SCHOOL
SEMESTRAL ASSESSMENT 1
2013
PRIMARY FIVE

SCIENCE

BOOKLET A

Name: _____ ( )

Class: Primary 5 _____

Date: 22 May 2013

30 questions

60 marks

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

This booklet consists of 17 printed pages, excluding cover page.

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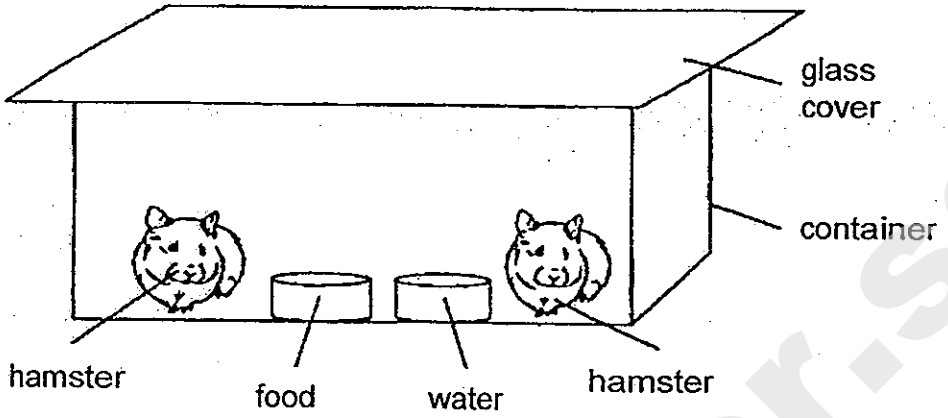
Booklet A (30 × 2 marks)

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 your answer on the Optical Answer Sheet. (60 marks)

1. The diagram below shows two hamsters in an enclosed container.



The two hamsters were found dead twenty-four hours later.
Which one of the following was the most likely cause of death for the two hamsters? There was insufficient _____.

(1) air

(2) food

(3) water

(4) space

2. Four children each made a statement about a shirt.

Alice	The shirt is a living thing as it can become bigger.
Belany	The shirt is a non-living thing as it cannot reproduce.
Cecilia	The shirt is a living thing as it can respond to changes in the surroundings.
Diane	The shirt is a non-living thing as it does not need air, food and water to survive.

Whose statement(s) is/are true?

(1) Diane only

(2) Belany and Diane only

(3) Belany and Cecilia only

(4) Alice, Belany and Diane only

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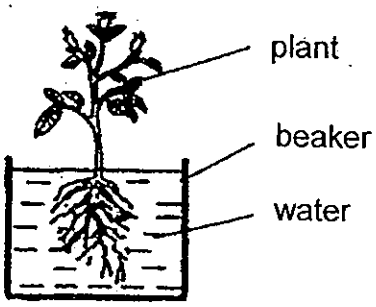
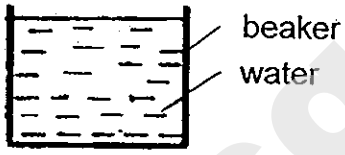
3. Lionel wanted to investigate the volume of water taken in by a plant over a week. He placed a plant in beaker P containing water. He set up another beaker Q as a control. He left both set-ups near the window for a week.



Set-up P



Set-up Q

He recorded the results in the table below.

Set-up	Volume of water (cm^3)	
	Day 1	Day 7
P	1400	1080
Q	1400	1340

From the table above, what was the volume of water taken in by the plant?

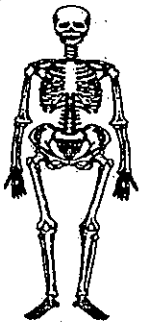
(1) 60 cm^3

(2) 260 cm^3

(3) 320 cm^3

(4) 480 cm^3

4. What is/are the function(s) of the system shown below?



A To support the body
B To help us move our body
C To provide us with warmth
D To protect the internal organs

(1) D only

(2) A and B only

(3) A, B and C only

(4) A, B and D only

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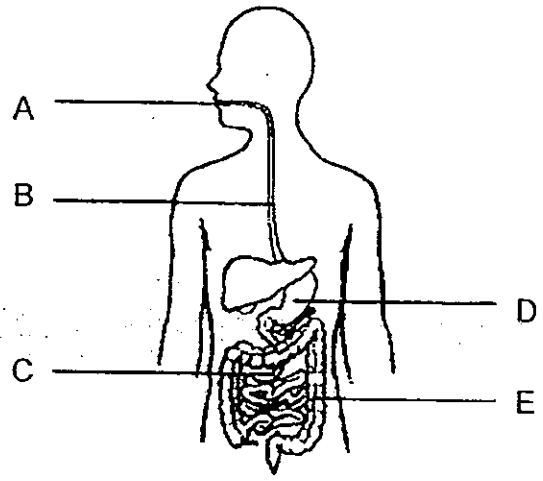
5. The diagram below shows the human digestive system.



Which are the parts that do not produce digestive juices?

(1) A and B only

(2) B and E only

(3) A, C and D only

(4) B, C, D and E only

6. The diagram below shows four types of cells.

P Q R S

Based on the diagrams above, which one of the following is a correct classification of the cells above?

	Plant Cell	Animal Cell(s)
(1)	Q and S	P and R
(2)	P and Q	R and S
(3)	Q and R	P and S
(4)	Q, R and S	P

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7. Which of the following are found in a typical animal cell?

A nucleus
B cell wall
C cytoplasm
D chloroplast
E cell membrane

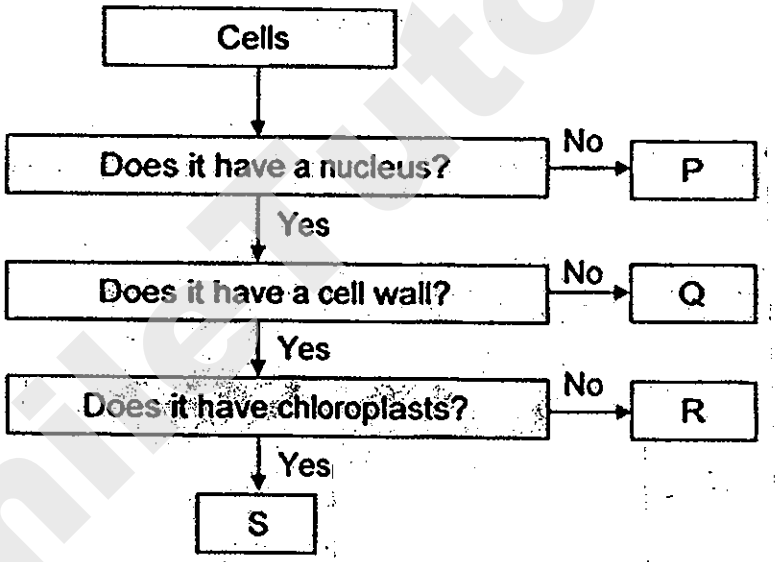
(1) A, B and C only

(2) A, C and E only

(3) B, D and E only

(4) C, D and E only

8. The flow chart below contains information on four types of cells P, Q, R and S.



Which one of the cells P, Q, R or S will produce sugar?

(1) P

(2) Q

(3) R

(4) S

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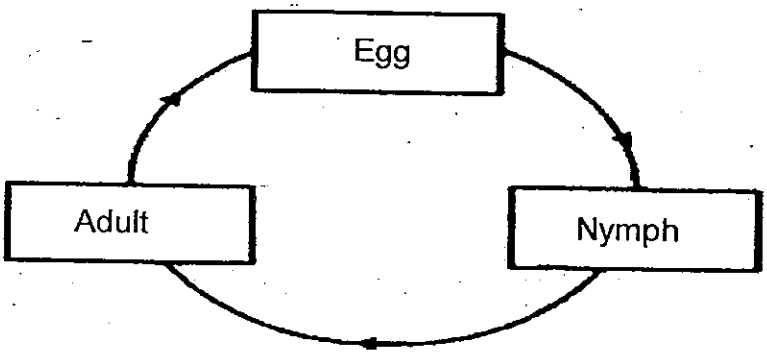
11. The diagram below shows the life cycle of an animal.

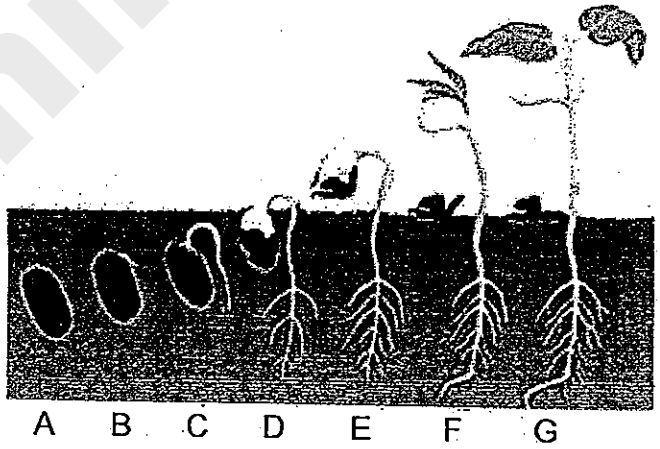


Which of the following animals has/have a similar life cycle as shown above?

A butterfly
B mosquito
C cockroach
D grasshopper

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

12. The diagram below shows the stages A to G of a seed growing into a seedling.



Which stage(s) show(s) that the process of germination has just taken place?

(1) B only
(2) G only
(3) C and D only
(4) E and F only

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9. Which of the following is/are produced during photosynthesis?

A water
B sugar
C oxygen
D light energy
E carbon dioxide

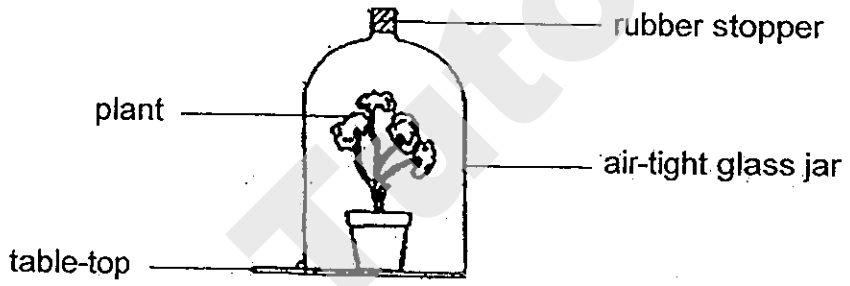
(1) B only

(2) B and C only

(3) A, C and E only

(4) B, C and D only

10. Nigel wants to find out if the amount of carbon dioxide changes when a plant is kept in an air-tight glass jar as shown in the diagram below. The set-up is placed in an open area.



Which of the following shows the most possible amount of carbon dioxide in the air-tight glass jar from 7 a.m. to 1.00 p.m. on a clear day?

	Amount of carbon dioxide in the air-tight glass jar at		
	9 a.m.	11 a.m.	1 p.m.
(1)	decrease	decrease	no change
(2)	no change	decrease	no change
(3)	decrease	decrease	decrease
(4)	increase	decrease	increase

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15. Freddy collected 4 fruits, P, Q, R and S, from a plant that disperses by splitting. The 4 fruits were subjected to different temperatures. He recorded the findings in the table below.

Fruit	P	Q	R	S
Temperature (°C)	40	30	20	10
Time taken for the fruit to split (hours)	2.5	3	10	24
Distance the seeds were scattered (metres)	1.75	1.5	0.75	0.35

What could he conclude from his findings?

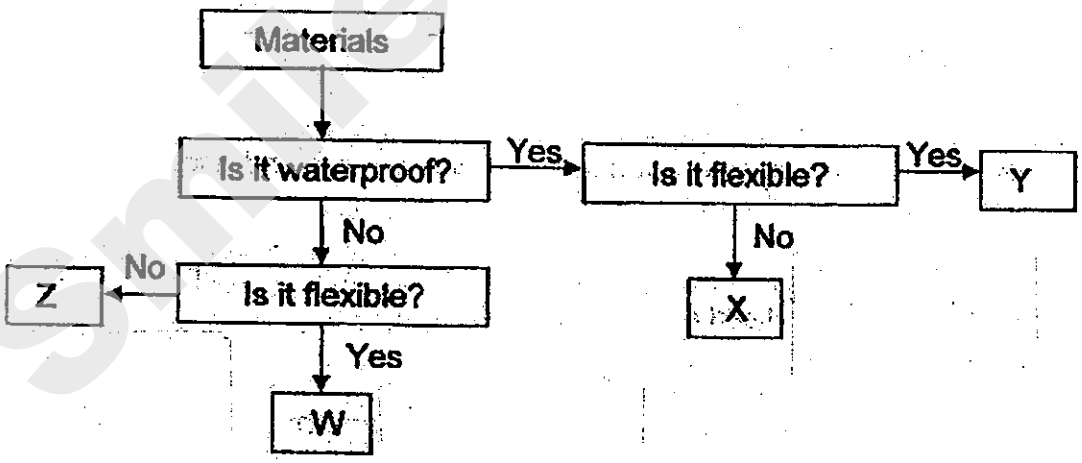
(1) The higher the temperature, the longer the time taken for the fruit to split and the nearer the seeds were scattered.

(2) The higher the temperature, the shorter the time taken for the fruit to split and the further the seeds were scattered.

(3) The lower the temperature, the shorter the time taken for the fruit to split and the nearer the seeds were scattered.

(4) The lower the temperature, the longer the time taken for the fruit to split and the further the seeds were scattered.

16. The flow chart below shows the properties of some materials.



Which material W, X, Y or Z is a suitable material for a raincoat?

(1) W

(2) X

(3) Y

(4) Z

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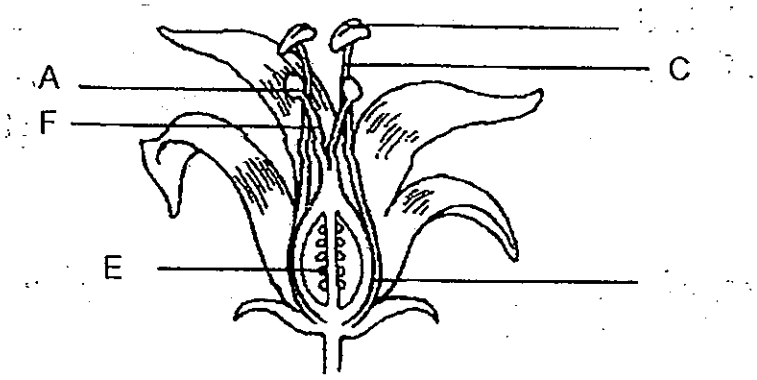
13. The diagram below shows a section of a flower. The parts of the flower are labelled as A, B, C, D, E and F.



Which of the following best matches the parts labelled A, B, C, D, E and F?

	A	B	C	D	E	F
(1)	anther	stigma	filament	ovule	ovary	style
(2)	stigma	anther	filament	ovary	ovule	style
(3)	stigma	anther	style	filament	ovule	ovary
(4)	style	stigma	anther	ovary	ovule	filament

14. Five pupils were having a group discussion on the sexual reproduction in flowering plants. The following are some of the statements they made.

Adeline	Pollination is the transfer of pollen grains from the stigma to the anther.
Benny	Sexual reproduction involves a male and a female reproductive cells.
Cathy	Fertilisation is the process by which a male reproductive cell fuses with a female reproductive cell to produce a fertilised egg.
Darren	Germination is the first stage of the reproduction in flowering plants.
Edwin	The scattering of seeds away from the parent plant does not help to prevent overcrowding.

Who has/have provided an incorrect statement on the sexual reproduction in flowering plants?

(1) Adeline only

(2) Benny and Darren only

(3) Cathy, Darren and Edwin only

(4) Adeline, Darren and Edwin only

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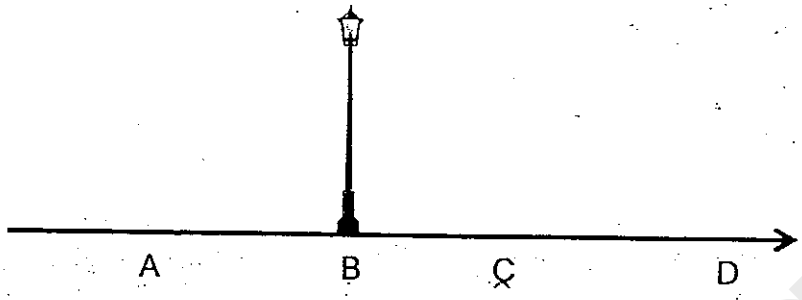
19. One dark night, Jane wanted to find out how the position of the lighted street lamp affects the length of her shadow as she walked from position A to D.



Which of the following shows the correct order of Jane's position such that the length of her shadow is from the shortest to the longest?

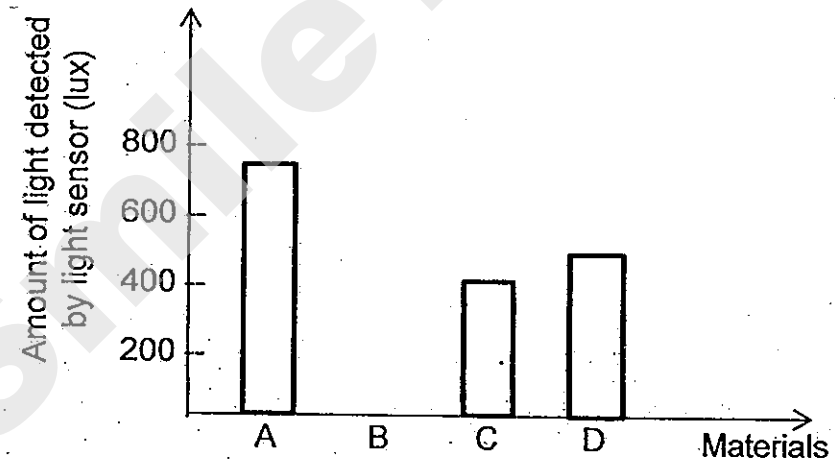
(1) A, D, C, B

(2) B, C, A, D

(3) C, B, A, D

(4) D, A, C, B

20. Mrs Chua conducted an experiment to find out how much light can pass through four different materials A, B, C and D using a datalogger with a light sensor. The graph below shows the results.



Based on the graph above, which one of the following statements is true?

(1) Material B allows minimal amount of light to pass through.

(2) Material D allows less light to pass through as compared to Material B.

(3) When Materials A and B are stacked together, light cannot pass through them.

(4) The total amount of light that can pass through Materials A and C when they are stacked together is 1100 lux.

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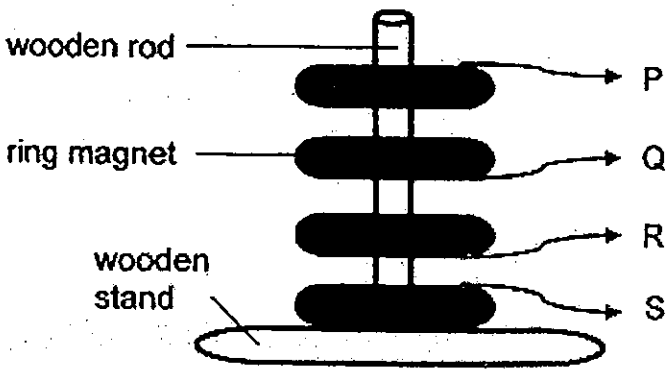
17. The diagram below shows four similar ring magnets floating above one another.



What could be the poles of the ring magnets at the positions labelled P, Q, R and S?

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

18. John carried out an experiment as shown below.

He brought a bar magnet close to each of the 3 bars, A, B and C. He then recorded his findings in the table below.

Bar	Findings
A	One end of the bar was attracted to the N-pole of the bar magnet while the other end repelled the N-pole of the magnet.
B	Both ends were attracted to N-pole and S-pole of the bar magnet.
C	Both ends were not attracted to the N-pole or S-pole of the bar magnet.

Which one of the following statements is most likely to be correct about bars A, B and C?

(1) Bar A is a magnet.

(2) Bar B is a temporary magnet.

(3) Bar C is made of a magnetic material.

(4) Bars A and B are made of non-magnetic material.

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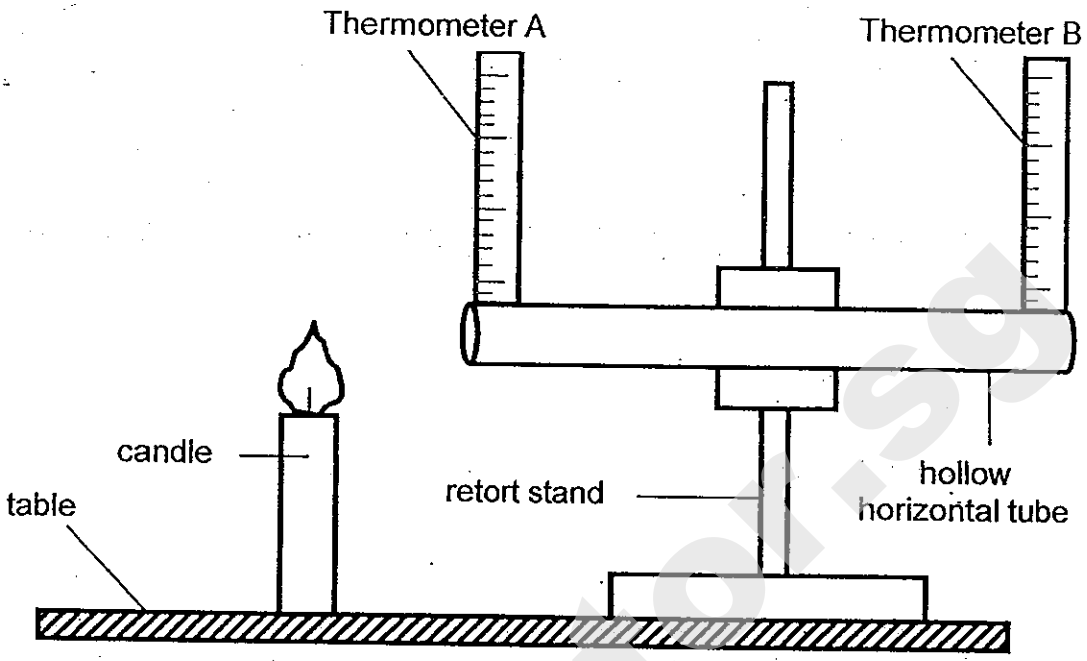
22. Fahmi set up the experiment as shown below. He secured a hollow horizontal tube to the retort stand. He placed 2 thermometers at each end of the horizontal tube and lighted a candle on one side of the set-up.



What would he notice about the readings on thermometers A and B if the candle was moved further away from the hollow horizontal tube?

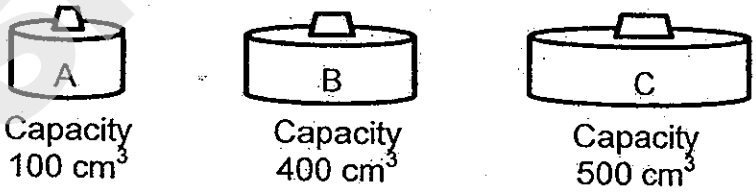
(1) The temperature readings on both thermometers would be lower.

(2) The temperature readings on both thermometers would be higher.

(3) Only the temperature reading on thermometer B would decrease gradually.

(4) The temperature reading on thermometer A would be similar to the temperature reading on thermometer B.

23. Which of the following container(s) can be used to contain 400 cm^3 of air?



(1) B only

(2) C only

(3) B and C only

(4) A, B and C

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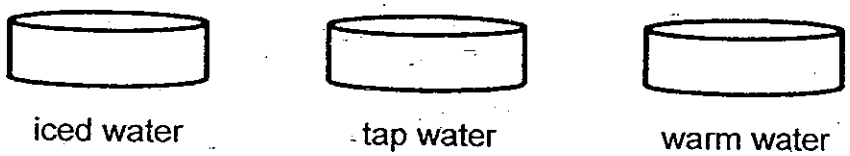
21. Samuel conducted an experiment as shown below. He filled three containers with iced water, tap water and warm water.



The table below shows the procedure he took when conducting the experiment.

Step	Procedure
1	Place the right hand in the warm water and the left hand in the iced water.
2	After four minutes, put both hands in the basin of tap water.

Which one of the following correctly shows how his hands would feel?

	left hand	right hand
(1)	cold	cold
(2)	cold	warm
(3)	warm	warm
(4)	warm	cold

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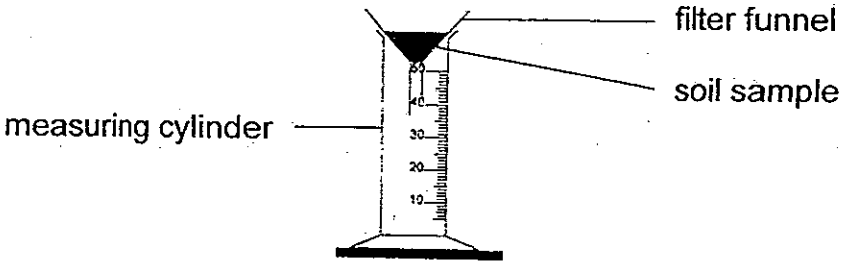
24. Jani set up the experiment below to find out how quickly water can pass through two different types of soil, X and Y.



The time taken for the water to pass through each type of soil was measured and recorded in the table below.

Soil sample	Soil X	Soil Y
Time taken (seconds)	43	17

Which one of the following correctly represents the properties of Soil X and Soil Y?

	Size of soil particles	Size of air spaces
(1)	smaller in X than Y	smaller in Y than X
(2)	smaller in Y than X	larger in X than Y
(3)	larger in Y than X	smaller in X than Y
(4)	larger in X than Y	larger in Y than X

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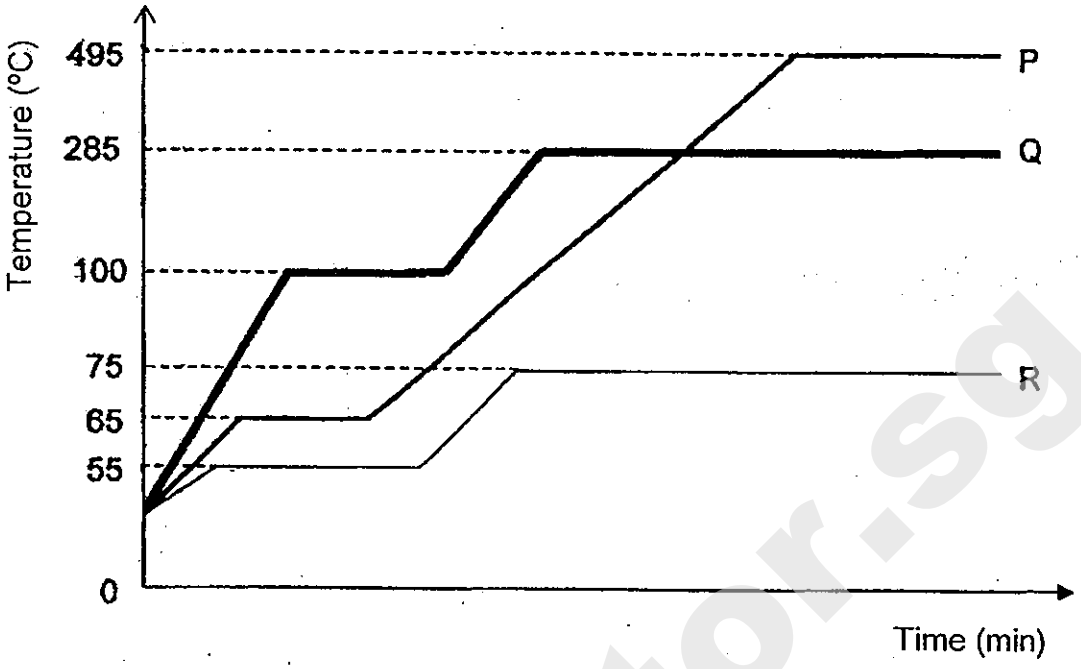
25. Mrs Lim heated 3 substances P, Q and R until they reached boiling point. The graph below shows the change in temperature.



Which of the following correctly shows the state of substances P, Q and R at 90°C?

	P	Q	R
(1)	Solid	Gas	Liquid
(2)	Liquid	Solid	Gas
(3)	Liquid	Gas	Solid
(4)	Gas	Solid	Liquid

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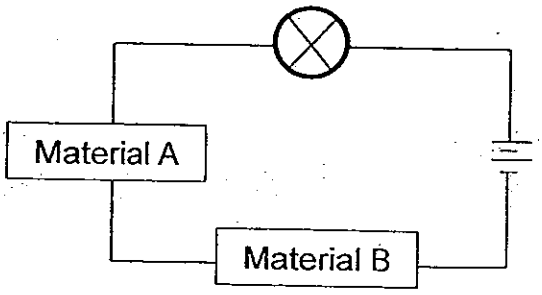
26. The circuit diagram below shows a bulb, two batteries and materials A and B connected together by wires. The bulb did not light up at all.



Which one of the following is the most possible reason for the bulb not lighting up?

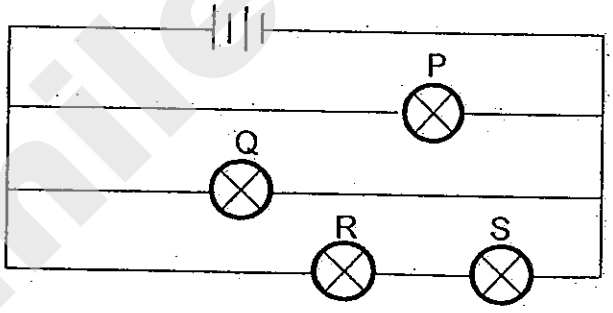
(1) Material A is an electrical insulator.

(2) Material B is an electrical conductor.

(3) The circuit is not arranged in parallel.

(4) A switch was not connected to the circuit.

27. Study the circuit diagram below.



Which of the bulb(s) will remain lit even when bulb S fuses?

(1) P only

(2) R only

(3) P and Q only

(4) R, Q and P only

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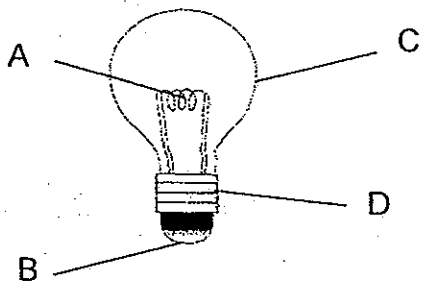
28. Study the diagram below. Which part(s) A, B, C and D is/are not conductors of electricity?



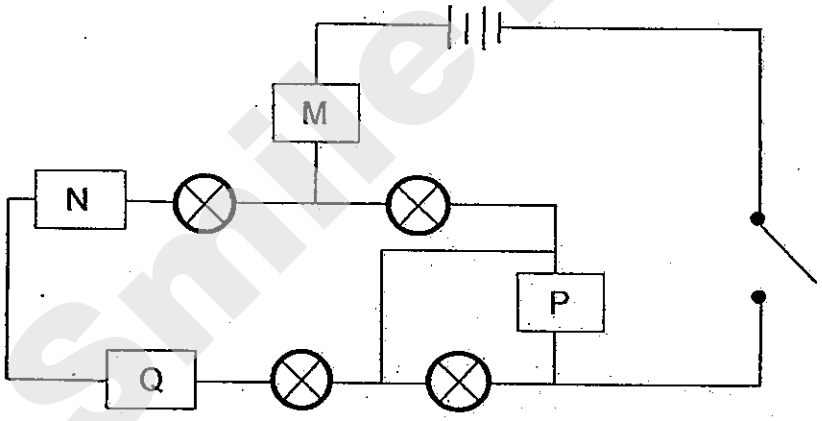
(1) A only

(2) C only

(3) B and D only

(4) A, B and D only

29. May was given four objects, a metal ring, a copper coin, a pencil lead and a plastic button. She was told to connect the objects to the circuit, at positions M, N, P or Q, such that the most number of bulbs would light up at the same time when the switch was closed.



Which one of the following correctly shows the positions of the 4 objects?

	Position M	Position N	Position P	Position Q
(1)	metal ring	pencil lead	plastic button	copper coin
(2)	metal ring	plastic button	pencil lead	copper coin
(3)	pencil lead	metal ring	copper coin	plastic button
(4)	plastic button	metal ring	copper coin	pencil lead

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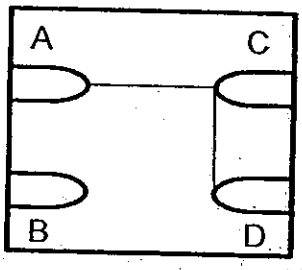
30. John set up a circuit tester to find out how four paper clips, A, B, C and D, on a circuit card were connected using wires. When the wires of the circuit tester were connected to two paper clips at each time, the following observations were made.

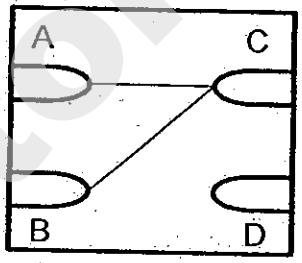
Paper clips connected to circuit tester	Does the bulb in the circuit tester light up?
A and B	No
A and C	Yes
A and D	Yes
B and C	No
B and D	No

Which of the following shows a possible arrangement of the wires behind the circuit card?

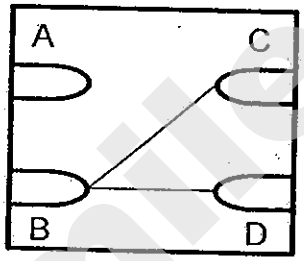
(1)



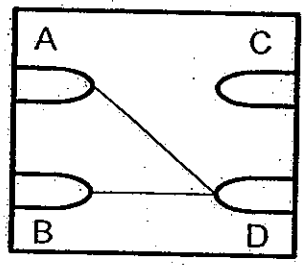
(2)



(3)



(4)



End of Booklet A

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CATHOLIC HIGH SCHOOL
SEMESTRAL ASSESSMENT 1
2013
PRIMARY FIVE

SCIENCE

BOOKLET B

Name: _____ ( )

Class: Primary 5 - _____

Date: 22 May 2013

Booklet A	60
Booklet B	40
Total	100

14 questions

40 marks

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

This booklet consists of 14 printed pages, excluding cover page.

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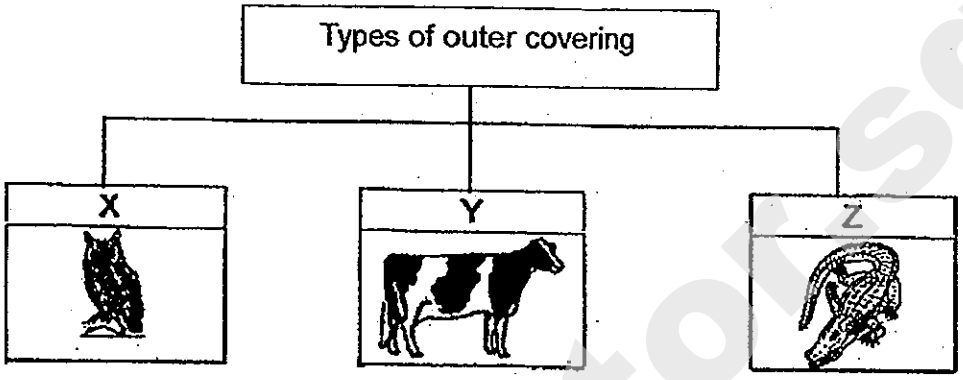
Booklet B (40 marks)

For questions 31 to 44, 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 classification chart below shows how some animals are classified.



(a) Based on the classification chart, which group, X, Y or Z, should the penguin belong to? Give a reason for your answer. [1]

_____

_____

(b) Other than providing warmth, state another two functions of the outer covering of animals. [1]

_____

_____

2

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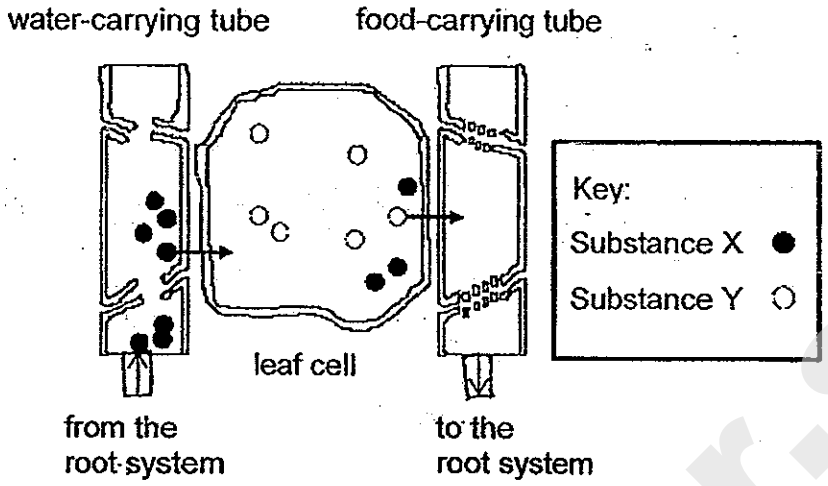
32. The diagram below shows the side view of a leaf cell, water-carrying tube and food-carrying tube during the day.



(a) What could substances X and Y be? [1]

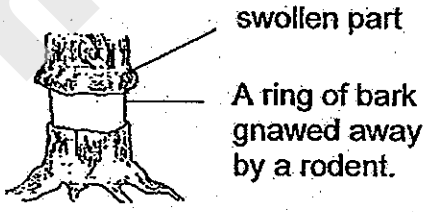
Substance X - _____

Substance Y - _____

(b) What is the cell part that must be present in the leaf cell in order for it to produce Y? [1]

_____

The diagram below shows part of a tree destroyed by an animal. The animal had gnawed away a ring of bark.



(c) After a few days, the trunk just above the destroyed bark was seen to be swollen. The tree died after a few weeks. Based on the diagram above, explain why the tree died. [1]

_____

_____

3

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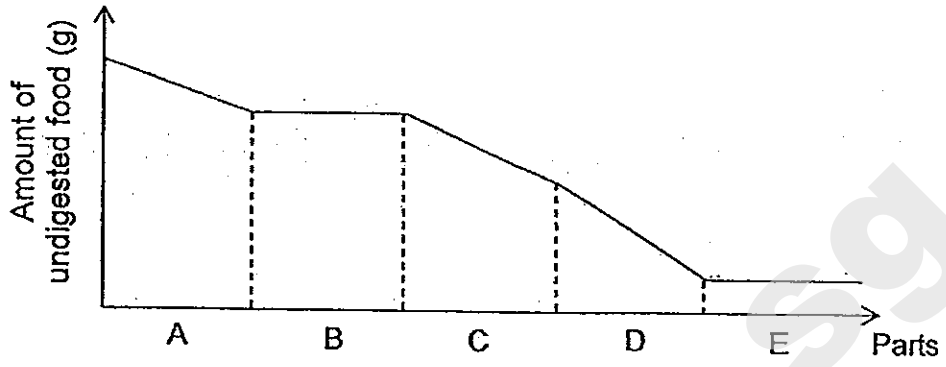
33. The graph below shows the amount of undigested food when it passes through different parts of our digestive system.



(a) Which part of the digestive system does part B represent? Give a reason for your answer. [1]

_____

_____

(b) In which part(s), A, B, C, D or has/have digestion taken place? Support your answer from the information given in the graph. [1]

_____

_____

Jane was given two objects, an empty box and a sponge by her teacher. Her teacher wanted her to use one of the objects to make reference to the large intestine in the human digestive system.

(c) Which object should she use? Explain your choice. [1]

_____

_____

3

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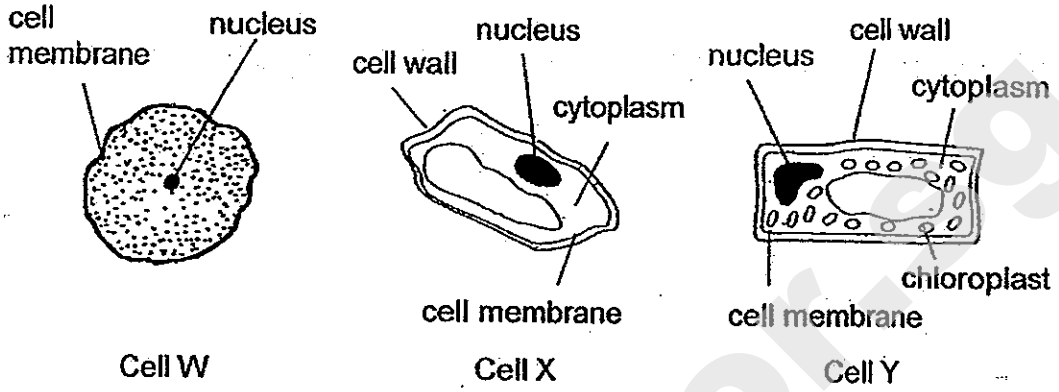
34. Tammy observed three types of cells W, X and Y under a microscope as shown in the diagram below.



(a) The three types of cells were tested with iodine solution. Which type(s) of cells would most likely cause the iodine solution to turn dark blue? [1]

_____

_____

(b) Give reasons to support your choice(s) in (a). [1]

_____

_____

(c) Based on the diagram above, which is/are plant cells? Name one characteristic that the cell(s) has/have to support your answer. [1]

_____

_____

3

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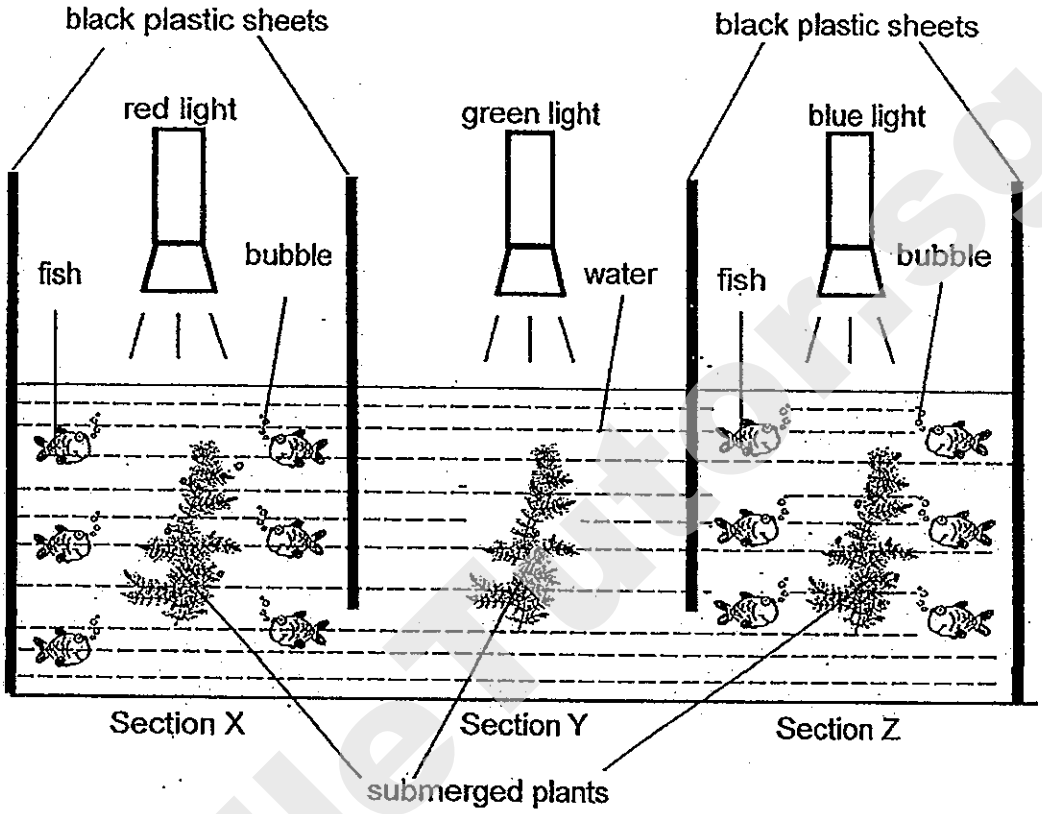
35. Judy set up an experiment in a dark room. She wanted to find out which coloured light(s), red, green or blue, could be used for photosynthesis. She divided a tank into three equal sections X, Y and Z by placing black plastic sheets as shown in the set-up below. The three coloured lights were of the same brightness. She put in same number of fish and submerged plants into each section. After some time, bubbles were observed and the fish were in sections X and Z only.



(a) Explain why the fish were found only in Sections X and Z. [2]

_____

_____

(b) What conclusion can Judy draw about the coloured lights? [1]

_____

_____

(c) If Judy removed the submerged plants from her set-up, what would she observe? [1]

_____

4

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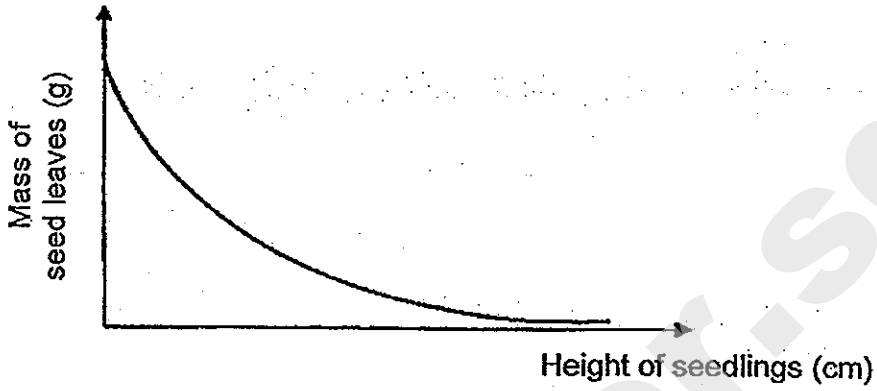
36. The graph below shows the relationship between the mass of the seed leaves and the height of the seedlings.



(a) From the graph above, state the relationship between the height of the seedlings and the mass of seed leaves. [1]

_____

_____

(b) Why does the mass of seed leaves decrease? [1]

_____

_____

2

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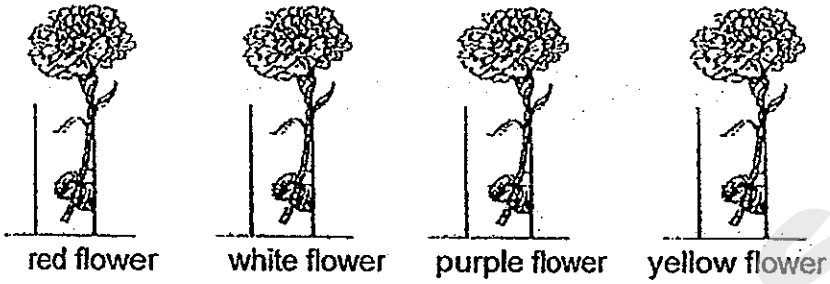
37. Mary wanted to find out the colour of flowers most butterflies would prefer. She placed 4 similar stalks of artificial flowers of four different colours into a container each. She then put 10 drops of the same type of sweetened liquid in the centre of each of the 4 artificial flowers and left the 4 stalks of artificial flowers at the same spot at the eco-garden in her school.



Mary then counted the number of butterflies that visited the 4 artificial flowers over a period of 3 hours. Her results are shown in the table below.

Colour of artificial flower	Number of butterflies visiting the flowers at different times of the day		
	9 a.m. to 10 a.m.	10 a.m. to 11 a.m.	11 a.m. to 12 noon
red	5	8	10
white	1	3	6
purple	4	8	11
yellow	7	10	15

(a) Based on Mary's results, which colour of the artificial flowers did the butterflies prefer most? Explain your answer. [1]

_____

_____

Mary then wanted to find out the relationship between the size of the artificial flowers and the number of butterflies visiting the artificial flowers.

(b) What changes should she make to her original experiment? [1]

_____

_____

2

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38. The diagram below shows one of the shorea fruits which Vince had.

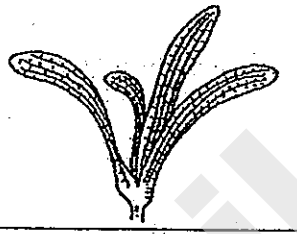
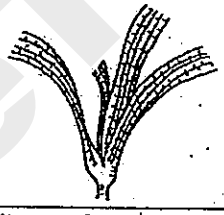
He threw the shorea fruit up in the air and observed its movement as it came down.

(a) How does part X help the shorea fruit to disperse its seed? [1]

_____

_____

Vince wanted to investigate if the length of part X of the shorea fruit affects the time taken for it to reach the ground. He dropped each of the following shorea fruits from a height. The table below showed what he did to the shorea fruits B and C.

shorea fruit A	shorea fruit B	shorea fruit C
		
No change	1 cm of part X was trimmed off	2 cm of part X was trimmed off
Took 15 sec to reach the ground	Took 9 sec to reach the ground	Took 5 sec to reach the ground

(b) Based on the results above, what conclusion can he make? [1]

_____

_____

(c) Write down two variables which he should keep constant for his experiment to be a fair test. [1]

(i) _____

(ii) _____

3

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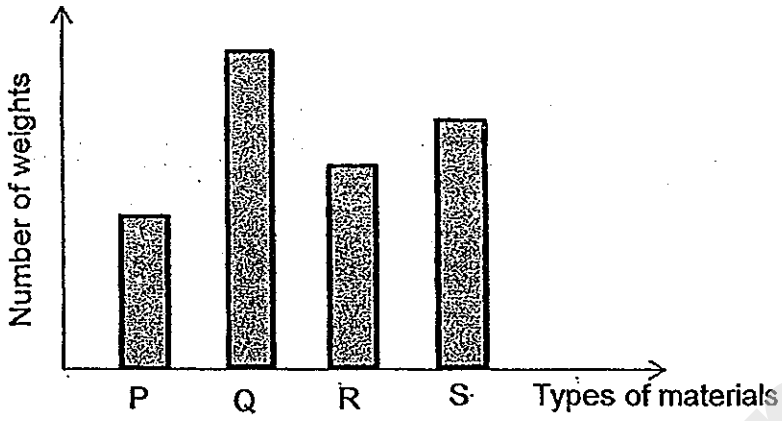
39. Victor was provided with 4 different types of materials P, Q, R and S which were of the same thickness and length. Weights were added until the material broke. The graph below showed the results of his experiment.



(a) Based on the results of his experiment, what could he conclude about the 4 types of materials? [1]

_____

_____

Victor decided to soak the 4 materials in 4 similar beakers, containing 100ml of water each. He recorded the amount of water left in each of the beakers after 1 minute in the table shown below.

Material	Amount of water left in the beaker (ml)
P	90
Q	100
R	30
S	70

(b) What material could Q most likely to be? Give a reason for your answer. [1]

_____

_____

2

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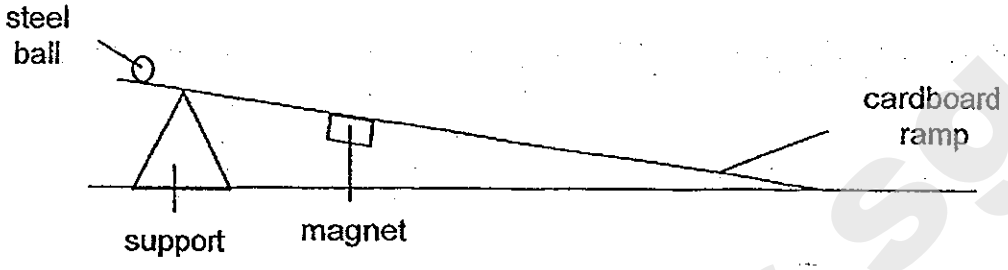
40. Halim placed a strong magnet below a cardboard ramp as shown in the diagram below.



(a) What would happen to the steel ball when it was released from the top of the cardboard ramp? [1]

_____

_____

Halim then replaced the cardboard ramp with an iron ramp of the same length and thickness.

(b) What would happen to the steel ball when it was released from the top of the iron ramp? [2]

_____

_____

3

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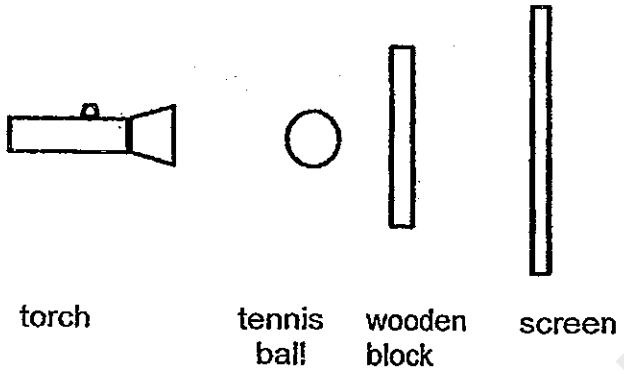
41. The diagram below shows a torch shining on a tennis ball and a rectangular piece of wooden block. The tennis ball is placed at the centre and in front of the rectangular piece of wooden block.



(a) In the space below, draw how the shadow of the tennis ball and wooden block would look like when cast on the screen. [1]

(b) What would you do to the set-up if you wanted a bigger shadow? (You are not allowed to move the tennis ball and wooden block.) [1]

_____

_____

2

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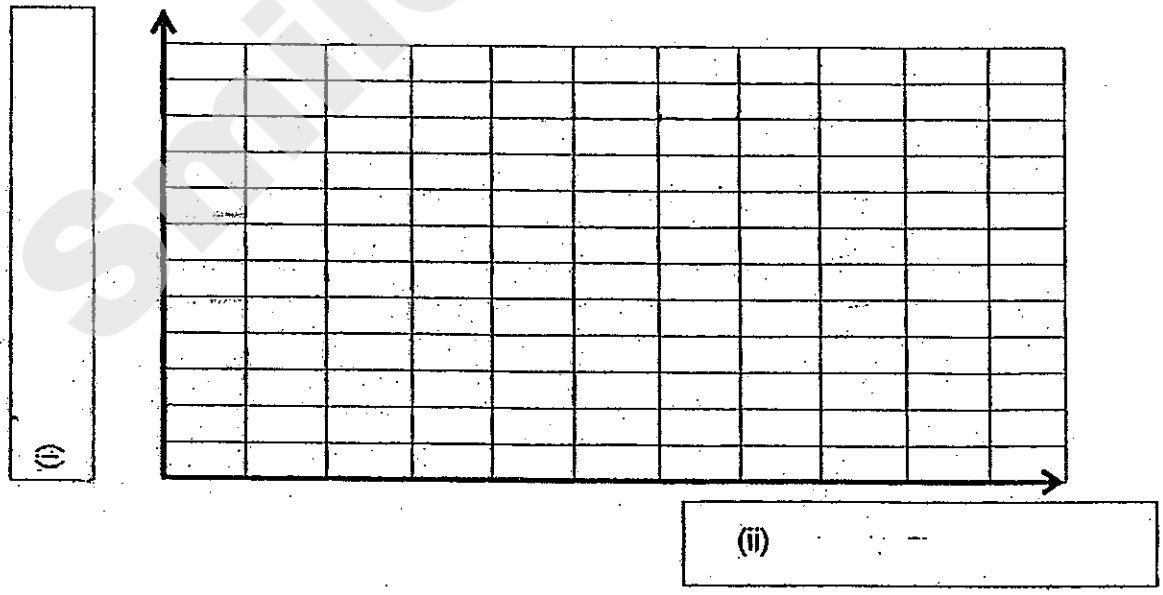
42. Timothy filled a beaker with 200ml of water. He heated the beaker of water continuously for 16 minutes. He recorded the temperature of the beaker of water at intervals of two minutes in the table below.

(a) Complete the table below. [1]

Time (min)	Temperature (°C)
0	20
2	35
4	55
6	75
8	95
10	100
12	100
14	(i)
16	(ii)

(b) Label the axes (i) and (ii) of the graph below [1]

(c) Draw a line graph using the values from the table above. [1]



3

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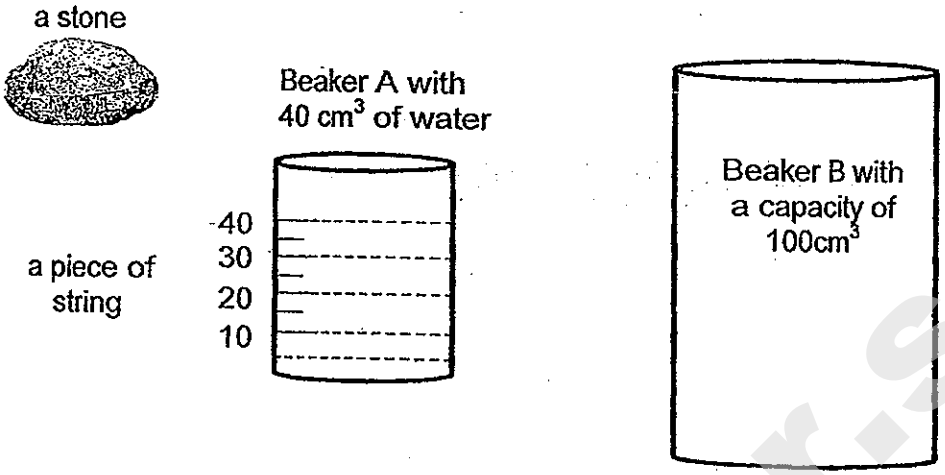
43. Jenny conducted an experiment to find out the volume of a stone that she picked up from the park. She prepared the following materials:



(a) In the space provided below, write down the steps she would take to find the volume of the stone. [2]

Steps	Procedure
1	
2	
3	
4	

(b) Jenny observed that the volume of water in beaker B was now 75 cm^3. Show how she would be able to calculate the volume of the stone in the space provided. [1]

(c) Based on her experiment, what can you infer about the properties of the stone? [1]

4

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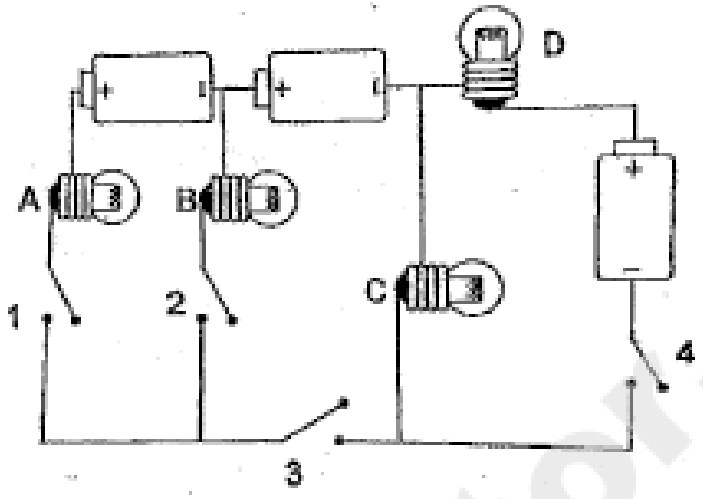
44. Timothy set up the circuit as shown in the diagram below. He used bulbs of similar size and voltage and labelled the bulbs A, B, C and D. The switches were labelled 1, 2, 3 and 4.



(a) Which bulb(s) would light up when only one of the switches was closed? [1]

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

(c) Which switches should be closed for bulb A to produce the brightest light? [1]

(d) State a reason for your answer in (c). [1]

End of Booklet B

4

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ANSWER SHEET

EXAM PAPER 2013
SCHOOL : CATHOLIC HIGH
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
1	2	2	4	2	1	2	4	2	3	4	1	2	4	2	3	2

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
1	2	3	4	1	4	3	2	1	3	2	1	1

31)a)Group X. A penguin has feathers like the owl thus it should be placed under Group X.
b)Helps the animals to camouflage and protects the animals from injuries.

32)a)X: water Y: sugar
b)Chloroplast
c)The food made by the leaves was not able to be transported to the roots as the food-carrying tubes carrying food were removed.

33)a)Gullet. The gullet merely pushes balls of food from the mouth into the stomach thus no digestion takes place at the gullet. Part B.
b)Part A, C and D. There was a decrease in the amount of undigested food.
c)She should use a sponge. The sponge absorbs water like the large intestine whose function is to absorb water from the undigested food.

34)a)Cell Y.
b)Cell Y has chloroplast that help the plant to make food and excess food is stored as starch thus when iodine solution is dropped on it, it turns dark blue.
c)Cell X and Y. Both cells have cell walls which is a characteristic of a plant cell.

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35)a)The submerged plants in X and Z captured the coloured lights and carried out photosynthesis thereby producing dissolved oxygen and the fish which were swimming near the plants would be able to dissolved oxygen.

b)Red and blue coloured lights can be used for photosynthesis but not green coloured light.

c)All the fish would be found swimming near the surface of the water in all three section.

36)a)As the height of the seedling increases, the mass of seed leaves decreases.

b)The seedling gets its food from the seed leaves so when the seedling develops its leaves, the seed leaves will wither and drop off.

37)a)Yellow. The yellow artificial flower had the most number of butterflies visiting it over 3 hours.

b)She should use artificial flowers of the same colour but of different sizes.

38)a)The wing-like structure helps the shorea fruit to stay afloat in the air for a period of time before landing on the ground.

b)The shorter the wing-like structure, the shorter the time taken for the shorea fruit to land on the ground.

c)i)Height at which the shorea fruit was dropped.

ii)Mass of each shorea fruit.

39)a)Material Q is the strongest material while material P is the weakest material.

b)Rubber/Plastic/Metal. Rubber/Plastic/Metal is waterproof as it does not absorb any water.

40)a)The steel ball will stop above the magnet as it gets attracted by the magnet.

b)The steel ball would roll all the way down as the magnetic force cannot pass through iron as iron is a magnetic material.

41)a)

b)Move the screen further away from the wooden block/ tennis ball and wood.

42)a)i)100

ii)100

b)i)Temperature℃

ii)Time (min)

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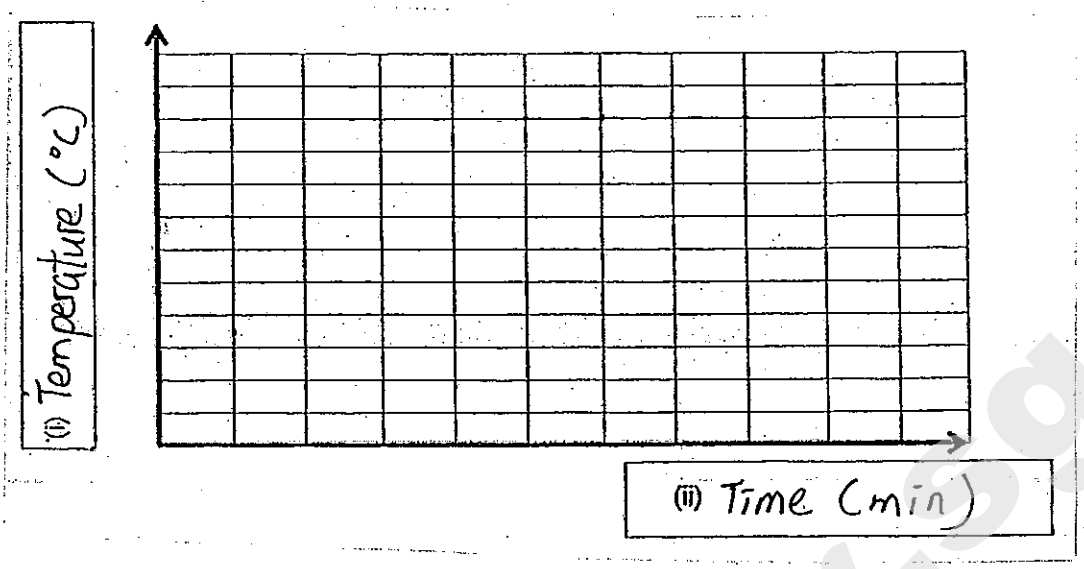
42)c)



43)a)1)Pour water from beaker A to beaker B.

2)Tie the string around the stone and lower it in beaker B.

3)Measure Beaker B and record the new water level in Beaker B.

4)Subtract the volume of water Beaker A from the volume of water and stone in Beaker B.

b)Volume of water and stone – volume of water = $75cm^3 - 40cm^3 = 35cm^3$

c)The stone id solid. It occupies space and has a definite volume.

44)a)Bulbs C and D.

b)A closed circuit is formed when switch 4 is closed, thus bulbs C and D would light up.

c)Switches 1,3 and 4.

d)When switches 1,3 and 4 are closed, it forms a closed circuit with the greatest number of batteries thus it would produce the brightest light.

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Name: _____ ( )

Class: Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

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Primary 5
Semestral Assessment 1 – 2013
SCIENCE

BOOKLET A

15 May 2013

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

30 questions
60 marks

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

This booklet consists of 21 printed pages.

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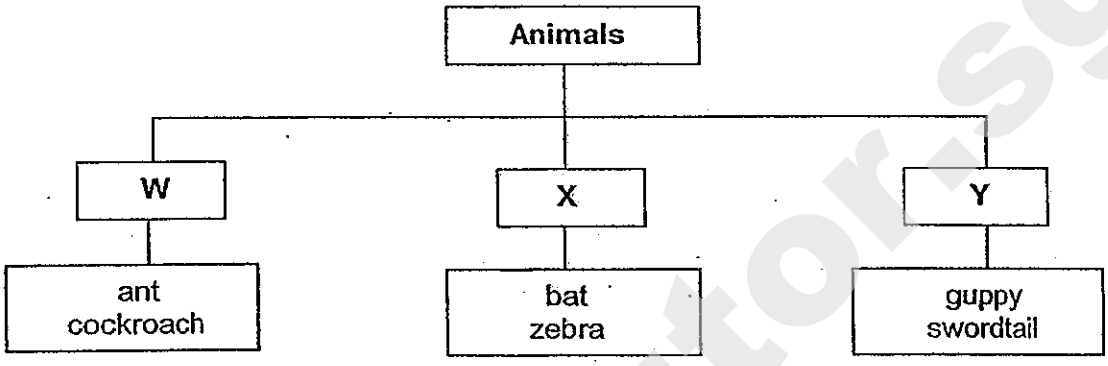
Section A : (30 x 2 MARKS)

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. Study the classification chart below.



Which one of the following is the most suitable heading for each group of animals?

	W	X	Y
(1)	6 legs	2 legs	no legs
(2)	insects	mammals	fish
(3)	lay eggs	give birth	lay eggs and give birth to young
(4)	fly	run	swim

2. The table below compares a muscle cell and a celery leaf cell. Which one of the following correctly shows the difference between the two cells?

	Muscle cell	Celery leaf cell
(1)	Has a cell membrane	Has no cell membrane
(2)	Has no cytoplasm	Has cytoplasm
(3)	Has no cell wall	Has cell wall
(4)	Contains hereditary materials in the nucleus	Does not contain hereditary materials in the nucleus

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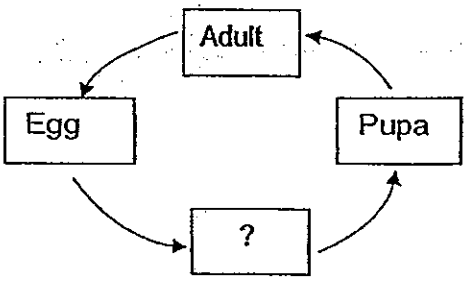
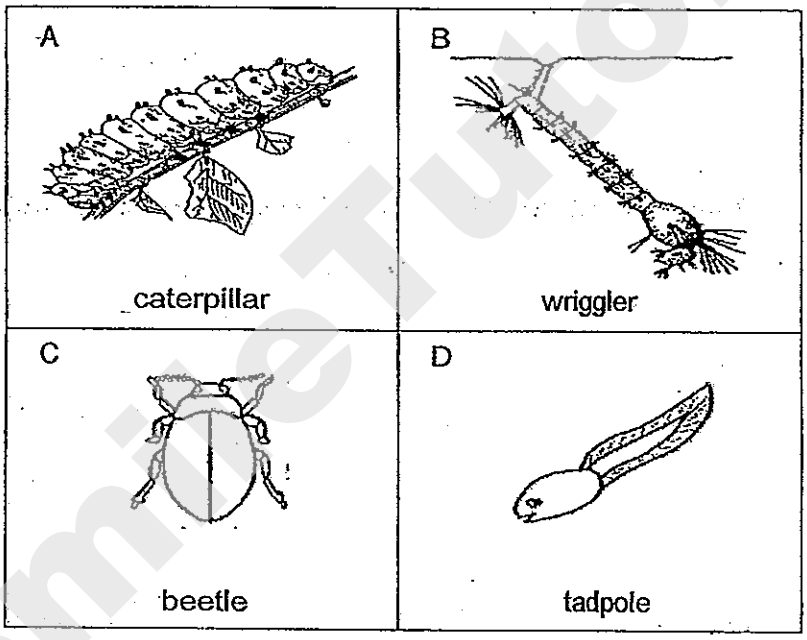
3. The diagram below shows the life cycle of an organism.



Which of the following organisms can be used to complete the above life cycle?



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

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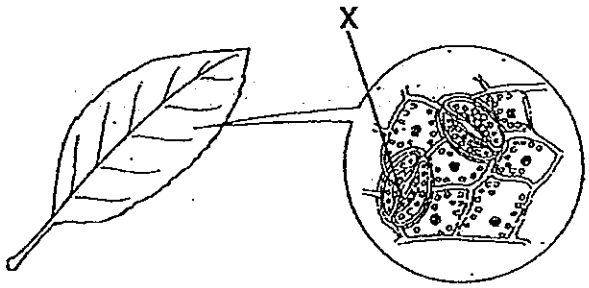
4. The diagram below shows part X found on the enlarged view of a leaf of a tropical plant.

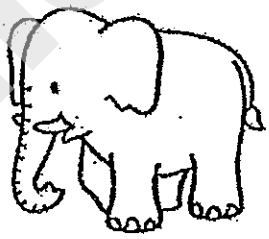


Which of the following statements about part X are correct?

A It opens to absorb water for the plant.
B It allows gaseous exchange to take place.
C It is found mostly on the underside of leaves
D It traps energy from the sun for the plant to make food.

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

5. The diagram below shows a baby elephant.



Which of the following statements about the animal are true?

A Each of its cells has a cell wall.
B It has cells that carry out different functions.
C As it grows, its cells increase in size and number.
D Its skeletal structure provides support and enables it to move.

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

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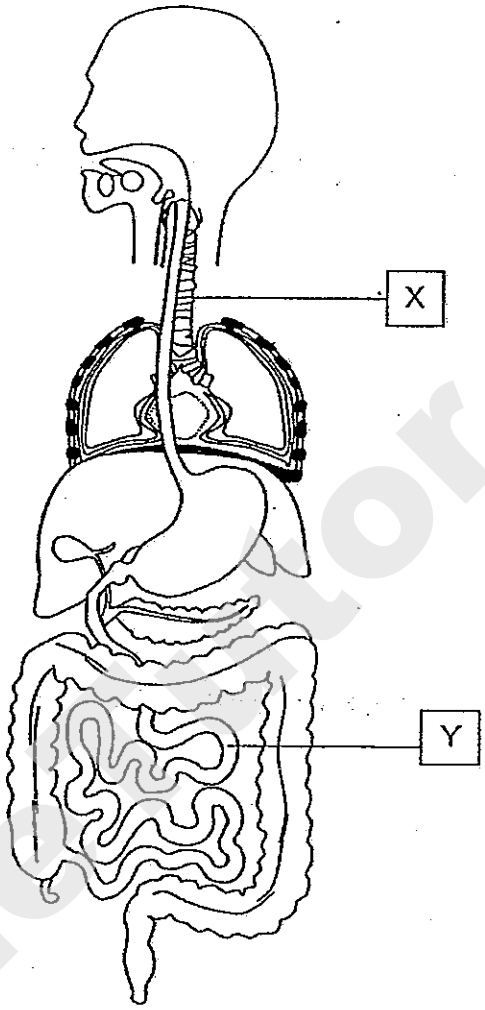
6. Look at the diagram below.



Which one of the following correctly describes the functions of the parts labelled X and Y?

	X	Y
(1)	To allow food to travel to the stomach	To absorb water from undigested food
(2)	To allow air to pass to the lungs	To absorb water from undigested food
(3)	To allow air to pass to the lungs	To allow absorption of nutrients into the bloodstream
(4)	To allow food to travel to the stomach	To allow absorption of nutrients into the bloodstream

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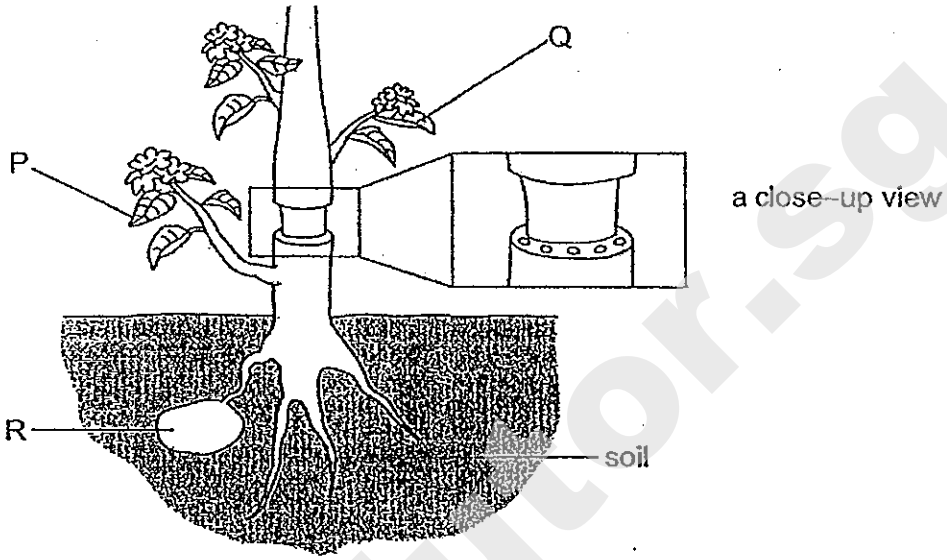
7. Sandra removed an outer ring of a stem from a plant as shown below. As a result, the tubes carrying food and water were removed



After a week, Sandra made some observations about parts P, Q and R of the plant above. Which one of the following correctly depicts Sandra's observations?

	Part P	Part Q	Part R
(1)	Green	Wilted	Smaller
(2)	Wilted	Green	Smaller
(3)	Wilted	Green	Bigger
(4)	Green	Wilted	Bigger

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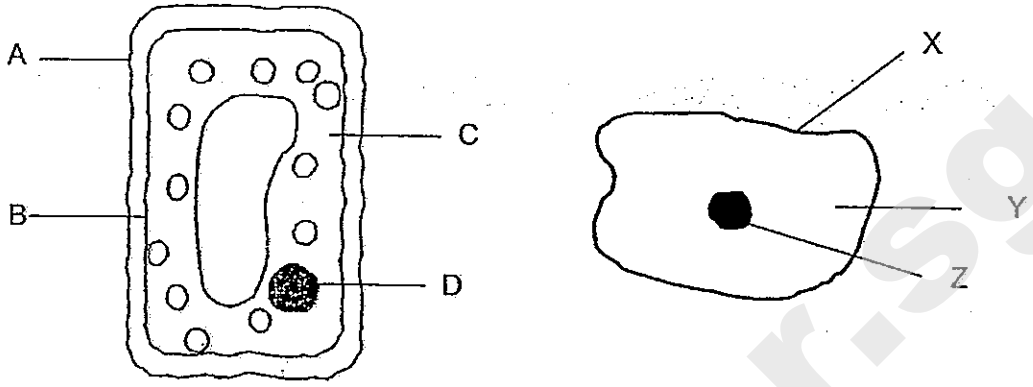
8. The diagram below shows two cells examined under a microscope.



Which parts of the above cells are correctly matched to their function?

	Parts	Functions
(1)	A and Y	Give the cells their regular shape.
(2)	B and X	Control the movement of substances in and out of the cells.
(3)	C and Y	A jelly-like substance which controls all the activities of the cells.
(4)	D and Z	Control the production of food.

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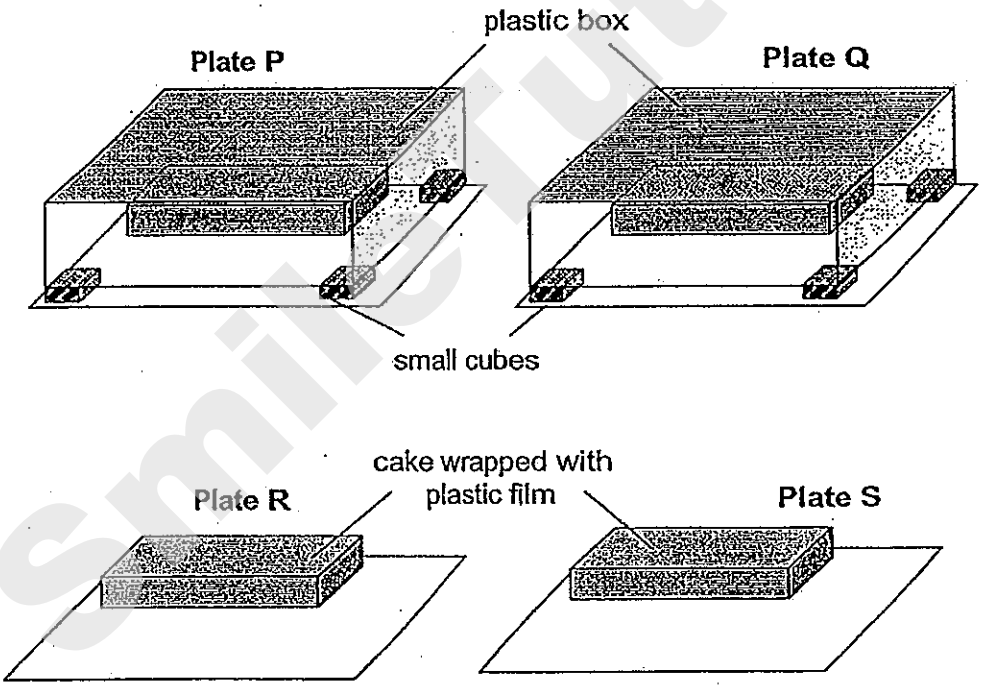
9. A group of pupils conducted an investigation to find out which conditions are best suited for the growth of mould. They cut a big piece of cake into four quarters and put each quarter onto a different plate. They placed the plates in the open for an hour so that mould spores could fall on all four pieces of cake. Then they did the following to each smaller piece of cake.

Plate P:	They covered the cake with a clear plastic box. The box stood on four small cubes to let air in.
Plate Q:	They moistened the cake with water and covered it the same way as Plate P.
Plate R:	They wrapped the cake in a plastic film so that no air could get in.
Plate S:	They moistened the cake with water, then wrapped it with a plastic film so that no air could get in.



What can the pupils find out from the experiment?

(1) They can only find out whether mould needs air to grow.
(2) They can only find out whether mould needs water to grow.
(3) They can find out whether mould needs air and water to grow.
(4) They can find out whether mould needs air, water and light to grow.

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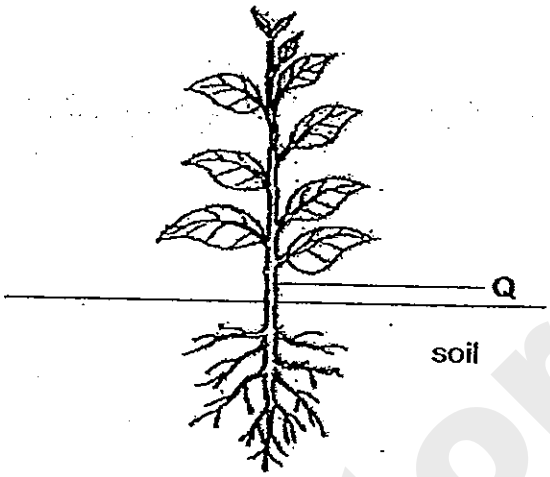
10. The diagram below shows a plant.



Which of the following are functions of Q?

A Holds the plant firmly to the ground.
B Absorbs water and mineral salts from the soil.
C Carries water and mineral salts to the leaves.
D Holds the plant upright to obtain maximum amount of sunlight.

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

11. A well-watered plant was kept in a dark cupboard for three hours. Which one of the following would not be able to carry out its functions?

(1) nucleus
(2) cell wall
(3) cytoplasm
(4) chlorophyll

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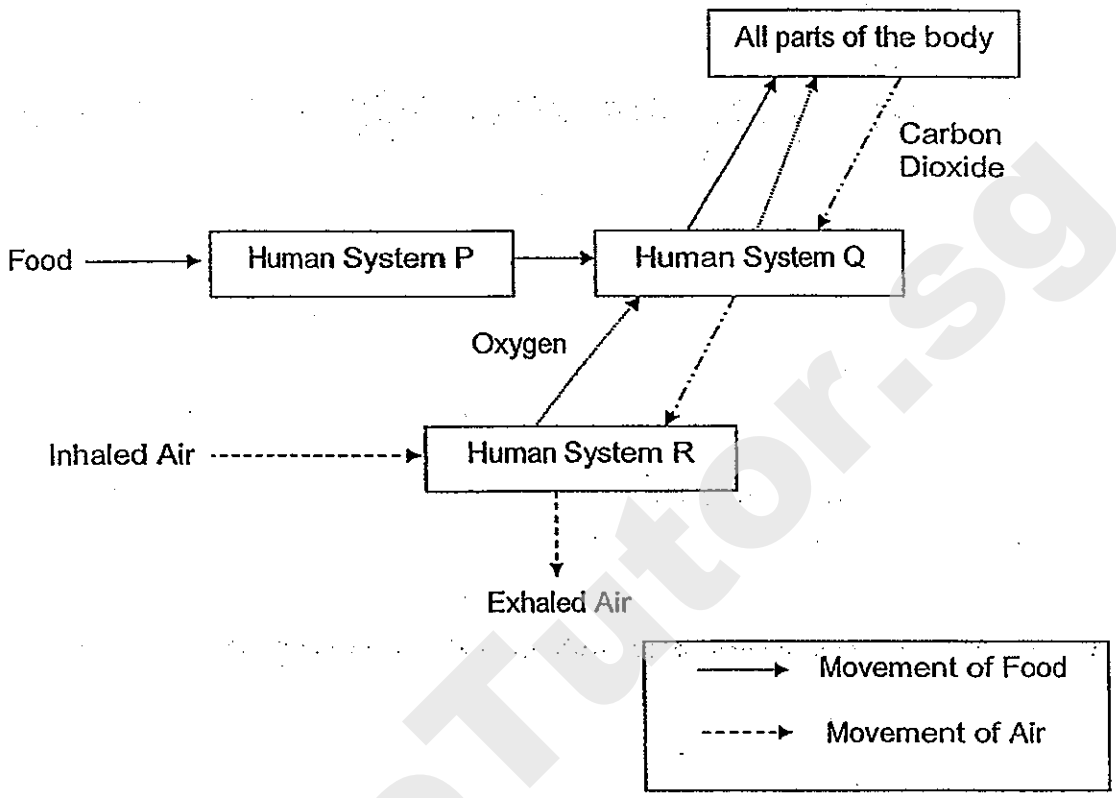
12. The diagram below shows the different systems P, Q and R in a human body.



Which one of the following correctly represents human systems P, Q and R?

	P	Q	R
(1)	Circulatory System	Digestive System	Respiratory System
(2)	Digestive System	Circulatory System	Respiratory System
(3)	Respiratory System	Circulatory System	Digestive System
(4)	Digestive System	Respiratory System	Circulatory System

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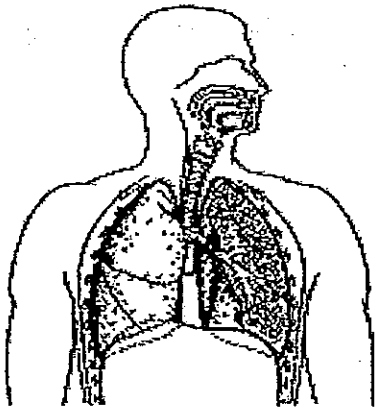
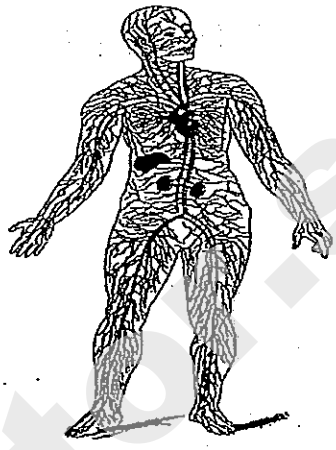
13. The diagram below shows 2 systems, A and B, in the human body.

System A	System B
	

Which of the following statements about the above systems are true?

A Exchange of gases takes place in System A.
B System B supports the human body and gives its shape.
C System A and B work together to allow cells in the body to get oxygen.
D System B transports only oxygen, digested food and water to all parts of the body.

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

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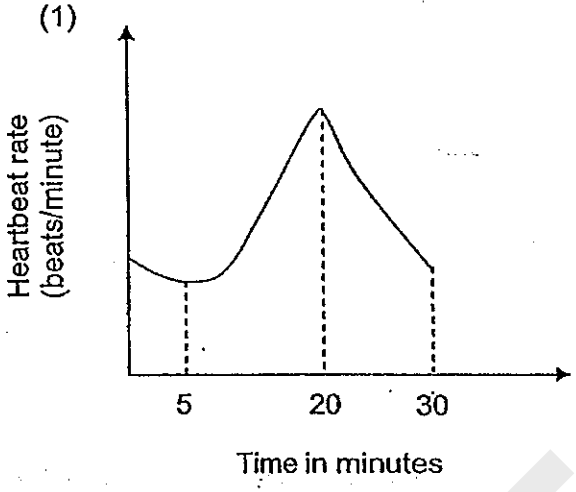
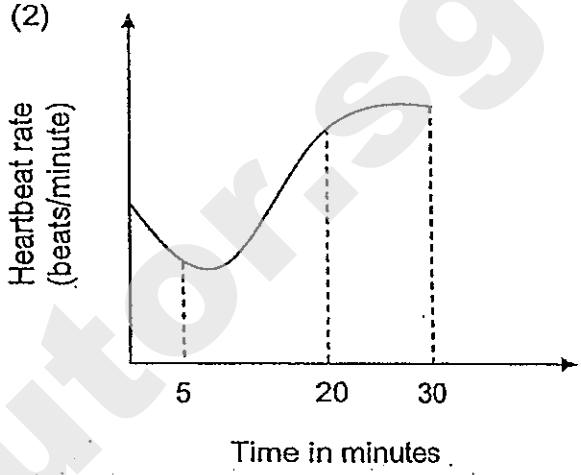
14. Jackson read a book for 5 minutes before he started to run on the treadmill for 15 minutes. He then stopped to rest for 10 minutes.

Which one of the following graphs best represents possible changes in his heartbeat rate during the above activities?

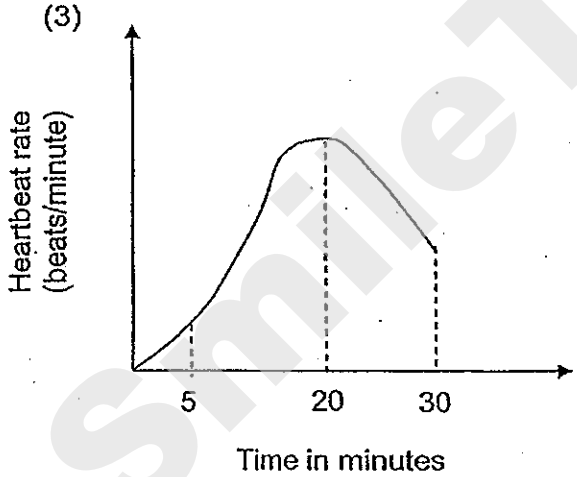
(1)



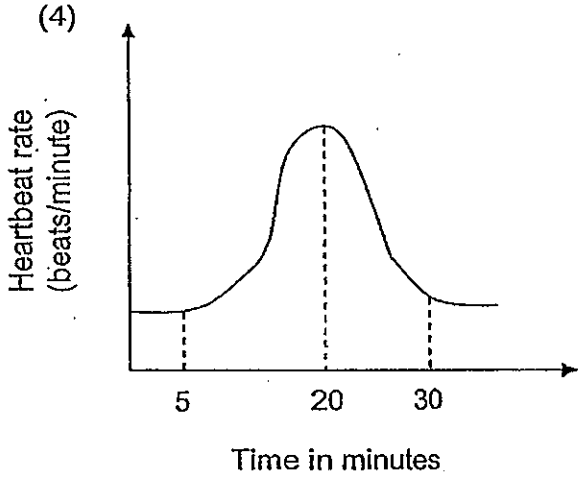
(2)



(3)



(4)



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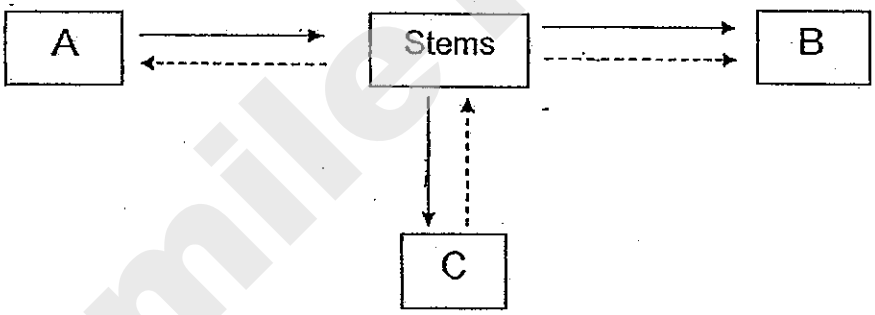
15. Which one of the following correctly describes the movement of the ribcage, diaphragm and chest when a person inhales?

	Ribcage	Diaphragm	Chest
(1)	Move in and downwards	Move downwards	Expands
(2)	Move in and downwards	Move upwards	Contracts
(3)	Move out and upwards	Move downwards	Expands
(4)	Move out and upwards	Move upwards	Contracts

16. The diagram below shows the direction in which food and water are transported to different parts of a plant.



Which one of the following best represents the parts A, B and C?

	A	B	C
(1)	Roots	Fruit	Leaves
(2)	Leaves	Fruit	Flowers
(3)	Fruit	Leaves	Roots
(4)	Leaves	Roots	Fruit

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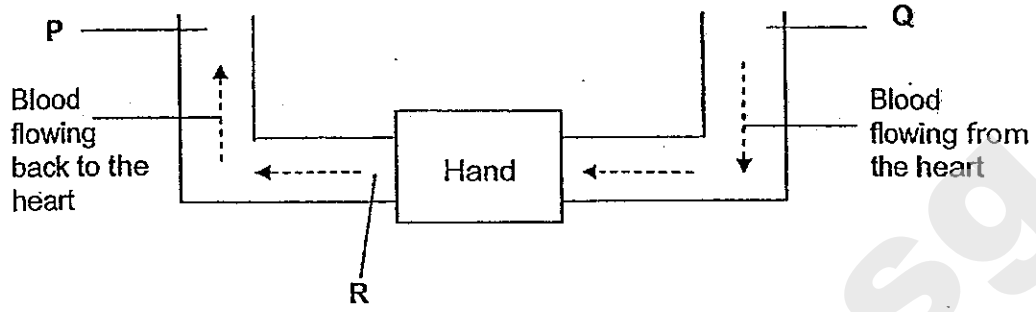
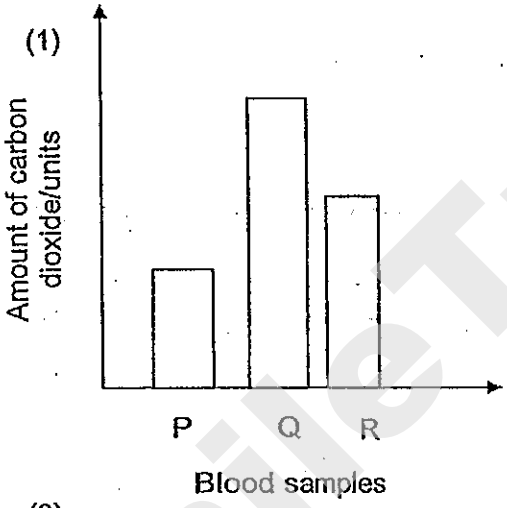
17. The diagram below shows the flow of blood through a part of our body.

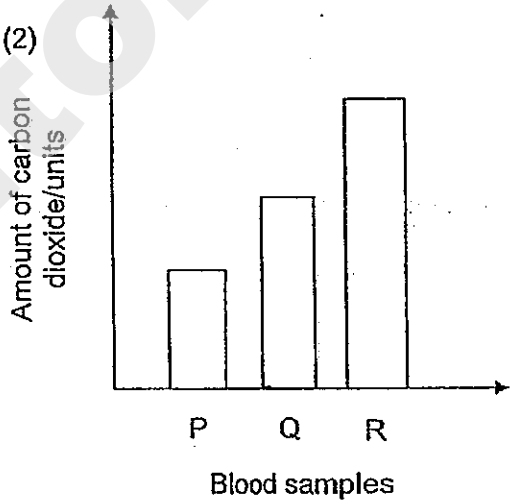


Blood samples, P, Q and R, are taken from different parts of the blood vessels in the body as shown in the diagram above. Which one of the following bar graphs best represents the amount of carbon dioxide in the blood samples?

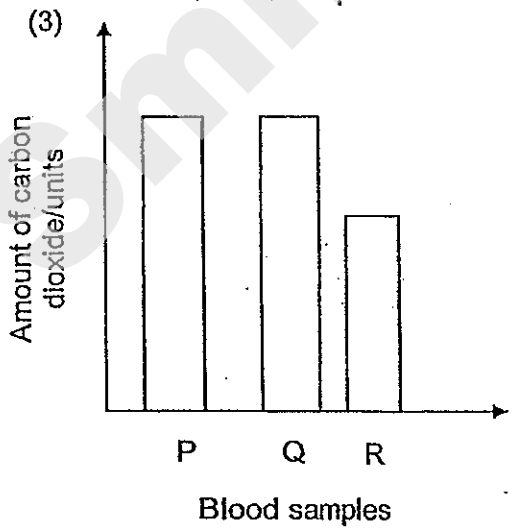
(1)



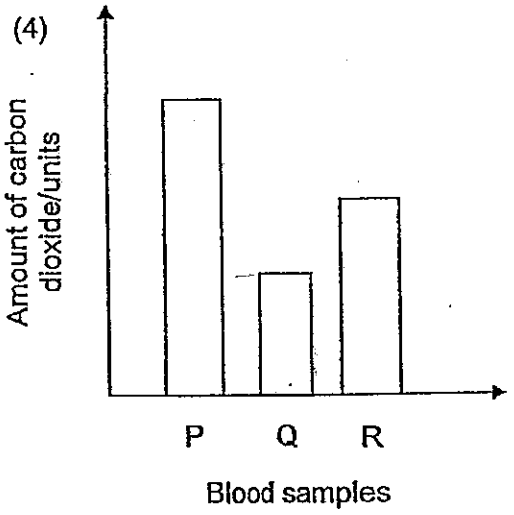
(2)



(3)



(4)



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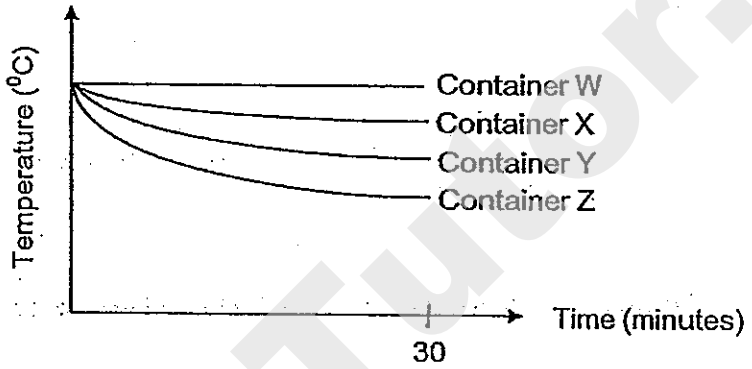
18. Air is different from water in that air _____.

(1) has mass
(2) occupies space
(3) can be compressed
(4) has a definite volume

19. Sally poured equal amounts of hot chocolate into containers W, X, Y and Z that were made of different materials. She then measured the temperature of the hot chocolate for 30 minutes. Her results were shown in the graph below.



If Sally wanted a container to keep her ice-cream cold, which container, W, X, Y or Z, should she use?

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

20. The table below shows the freezing point of three substances X, Y and Z.

Substance	X	Y	Z
Freezing point (°C)	8	35	133

Based on the information given above, which one of the following statements is correct?

(1) X is a solid at 6°C.
(2) X and Y are both liquids at 20°C.
(3) Y and Z are both gases at 150°C.
(4) Z can be a liquid or a gas at 133°C.

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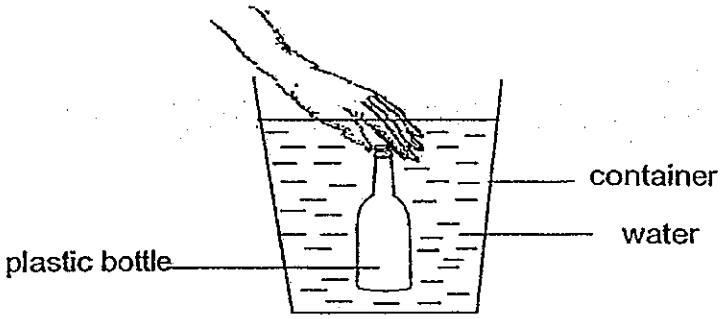
21. Jayden pushed an empty plastic bottle into a container of water as shown in the diagram below.

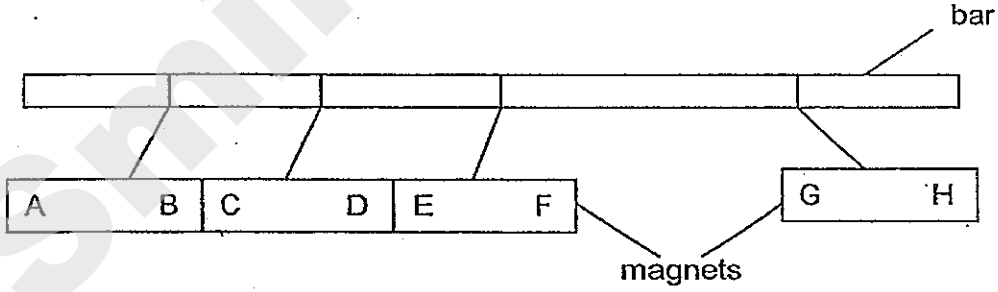


Which of the following would take place if Jayden were to unscrew and remove the cap of the bottle in the container of water?

A Water rushes into the bottle.
B Air in the bottle becomes compressed.
C The water level in the container remains the same.
D Bubbles moves up rapidly to the surface of the water.

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

22. The diagram below shows four identical magnets hanging freely on a bar. A, B, C, D, E, F, G and H are poles of the magnets.



Based on the above observation, which one of the following statements is true about the magnets?

(1) B will repel E.
(2) A and D are like poles.
(3) C will be attracted to G.
(4) F and H are like poles.

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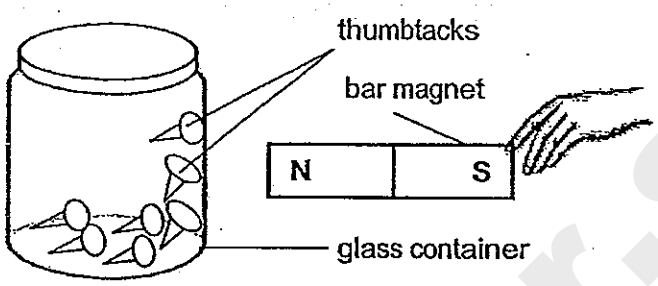
23. Kimberly held a bar magnet near a glass container containing thumbtacks. She noticed some thumbtacks appear to float above the base of the glass container as shown in the diagram below.

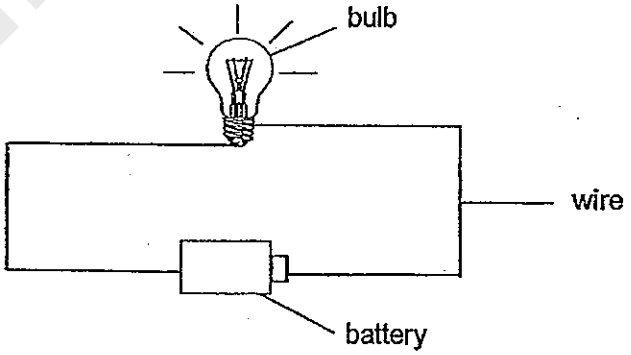


Given that the thumbtacks were made of the same material, which of the following conclusions could Kimberly make based on her observation?

A The thumbtacks are magnetic.
B The thumbtacks are made of steel.
C Magnetism can act from a distance.
D The magnetic force is able to pass through the glass container.

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

24. Study the circuit below.



In the circuit above, electricity passes through the _____.

(1) wire only
(2) wire and bulb only
(3) battery and bulb only
(4) wire, battery and bulb

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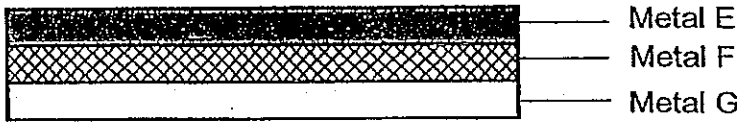
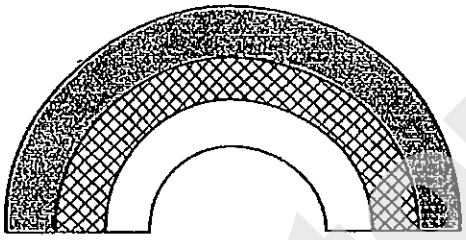
25. Shaun had a metal bar which was made up of three different types of metals E, F and G.



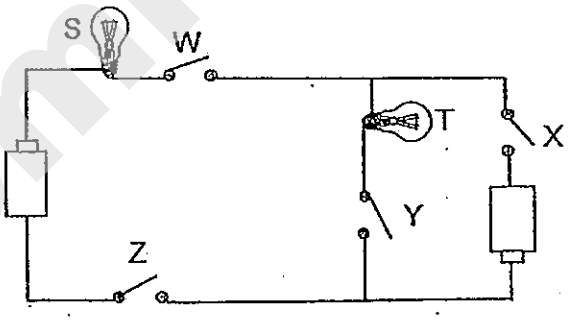
After heating the metal bar for 20 minutes, Shaun observed that the metal bar became curved as shown below.



Which one of the following conclusions could Shaun make about the metals E, F and G?

(1) Only Metal E
(2) Metal E expanded the most
(3) Metal G contracted the most.
(4) Metal F expanded less than Metal G.

26. Study the circuit below.



Which one of the following positions of the switches will result in only bulb S lighting up?

	Switch W	Switch X	Switch Y	Switch Z
(1)	Open	Closed	Closed	Open
(2)	Closed	Closed	Open	Closed
(3)	Open	Open	Closed	Closed
(4)	Closed	Closed	Open	Open

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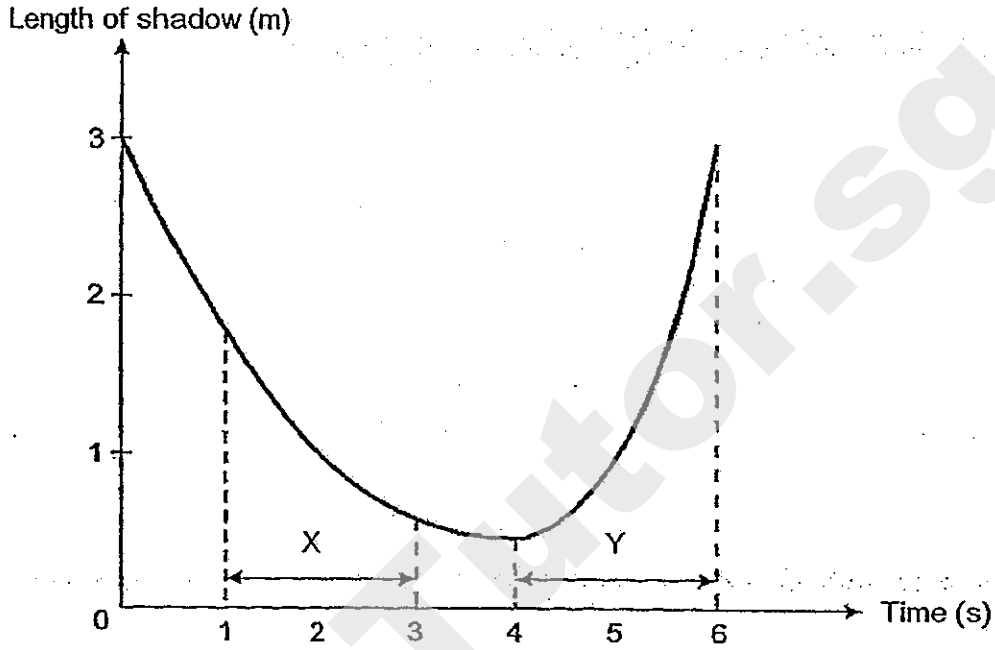
27. The graph below shows how the length of Adele's shadow changes over a period of time as she walks in a straight line near a street lamp at night.



Which of the following statements are correct?

A Adele is walking directly below the lamp at the 4th second.
B Adele is walking towards the lamp during the period X and away from the lamp during the period Y as shown in the graph.
C Adele is walking at a faster speed during the period X compared to the period Y.
D Adele is walking towards the lamp during the period Y and away from the lamp during the period X as shown in the graph.

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

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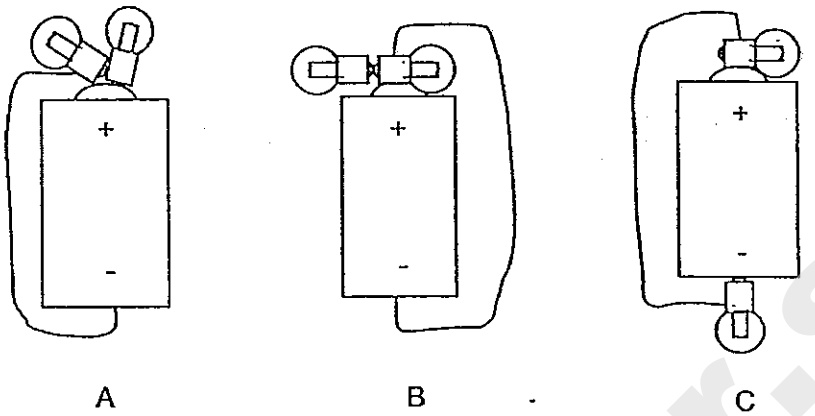
28. Look at the diagrams below.

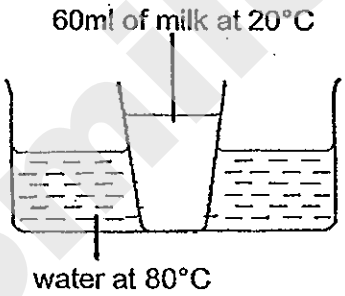


Which one of the above circuit arrangements will enable both bulbs to light up?

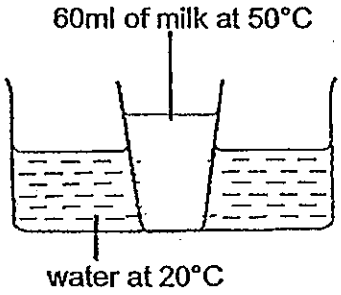
(1) A only
(2) B only
(3) A and C only
(4) B and C only

29. In which one of the following set-ups will the milk gain the most amount of heat at the end of 5 minutes?

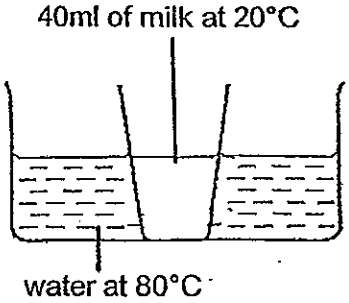
(1)



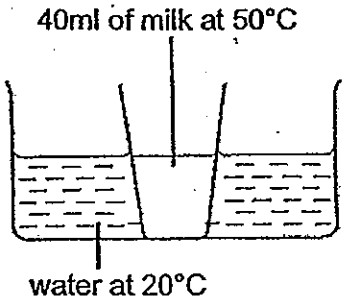
(2)



(3)



(4)



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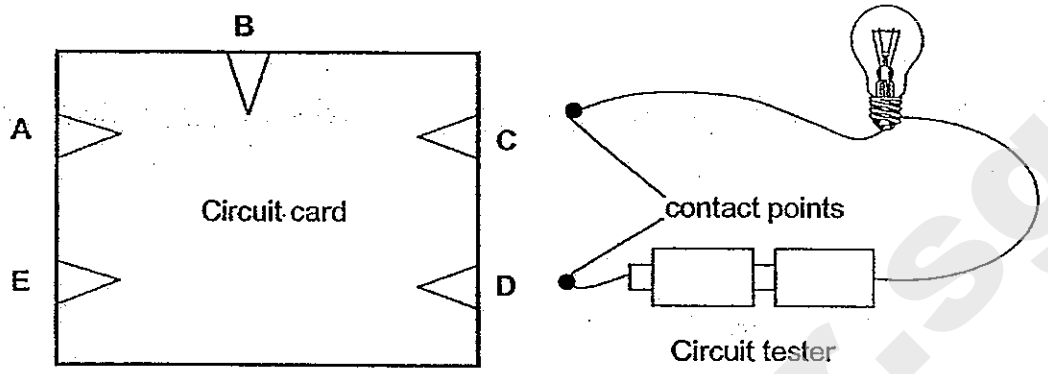
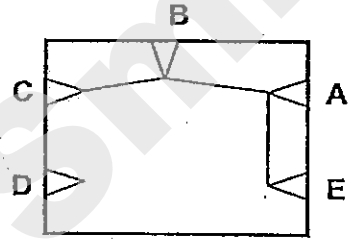
30. The diagram below shows a circuit tester and a circuit card. A, B, C, D and E are clips on the circuit card.

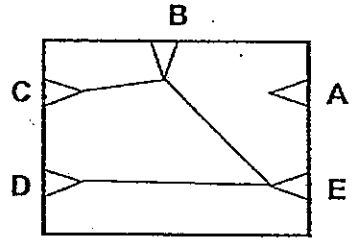


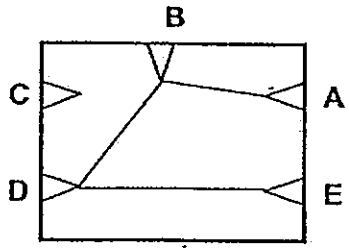
The table below shows the results obtained when the contact points on the circuit tester are connected to different pairs of clips on the circuit card shown above.

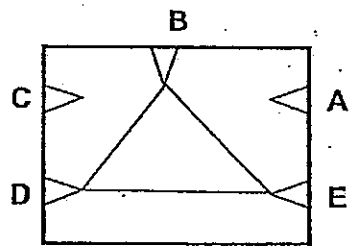
Pairs of connected clips	Results
A and C	Bulb is not lighted
A and D	Bulb is not lighted
B and C	Bulb is lighted
B and D	Bulb is lighted
B and E	Bulb is lighted
D and E	Bulb is lighted

Based on the results shown in the table above, which one of the following shows the correct connection of the wires behind the circuit card?

(1)


(2)


(3)


(4)


End of Section A

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Name: _____ ( )

Class: Primary 5 _____

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Primary 5
Semestral Assessment 1 – 2013
SCIENCE

BOOKLET B

15 May 2013

Booklet A	60
Booklet B	40
Total	100

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

14 questions
40 marks

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

This paper consists of 14 printed pages.

_____
Parent's signature/Date

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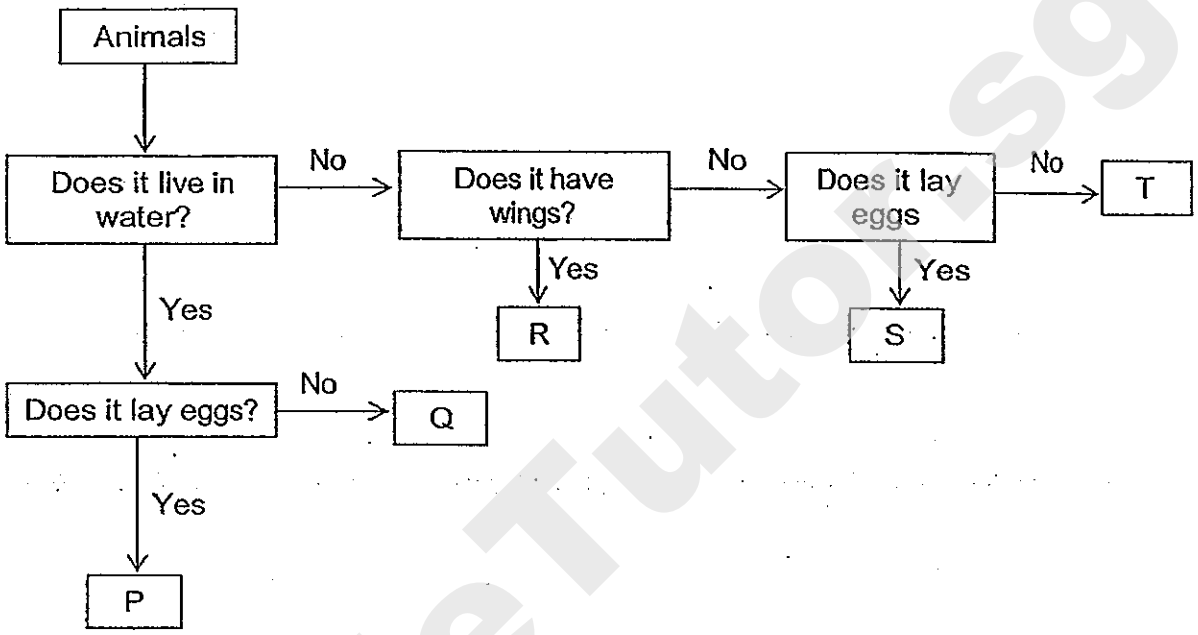
SECTION B (40 MARKS)

Answer the following questions in the spaces provided.

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

---

31. Study the flowchart below.



(a) Based on the information given in the above flowchart, what are the 2 differences between animal S and animal Q? [1]

(i) _____

(ii) _____

(b) Identify the letter in the above flowchart (P, Q, R, S or T) that best represents each of the following animals. [2]

Animal	Letter
Grasshopper	
Dog	
Goldfish	
Whale	

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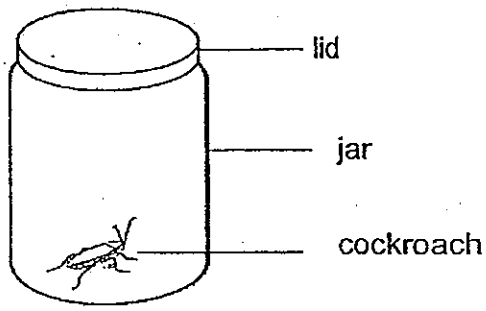
32. Nathania kept a cockroach in a jar as shown below.



Put a tick (✓) in the boxes to indicate how the composition of the various gases in the jar would change over one day. [1½]

		Increased	Decreased	Stayed the same
(a)	**Carbon dioxide**			
(b)	**Oxygen**			
(c)	**Nitrogen**			

33. The table below shows the pulse rate of Tessa as she exercises.

Duration of exercise (in minutes)	4	8	12	16
Pulse rate per minute	60	68	76	84

(a) Based on the table above, what is the relationship between the duration of exercise and the pulse rate per minute? [1]

_____

_____

(b) Explain your answer in (a). [2]

_____

_____

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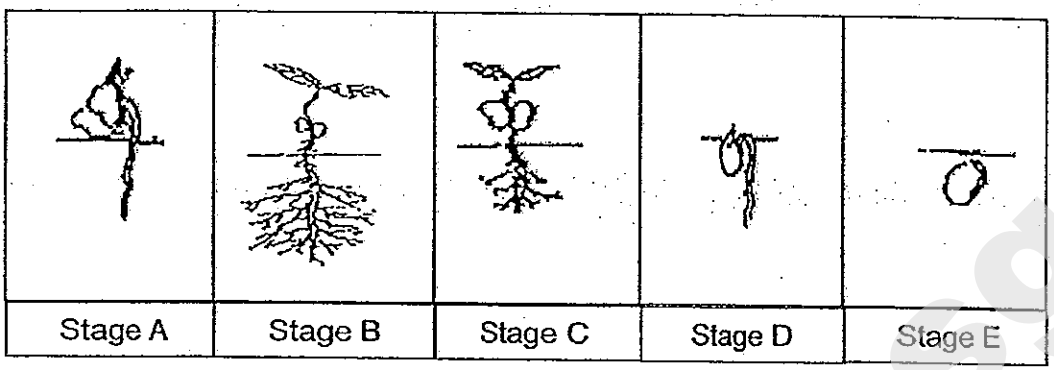
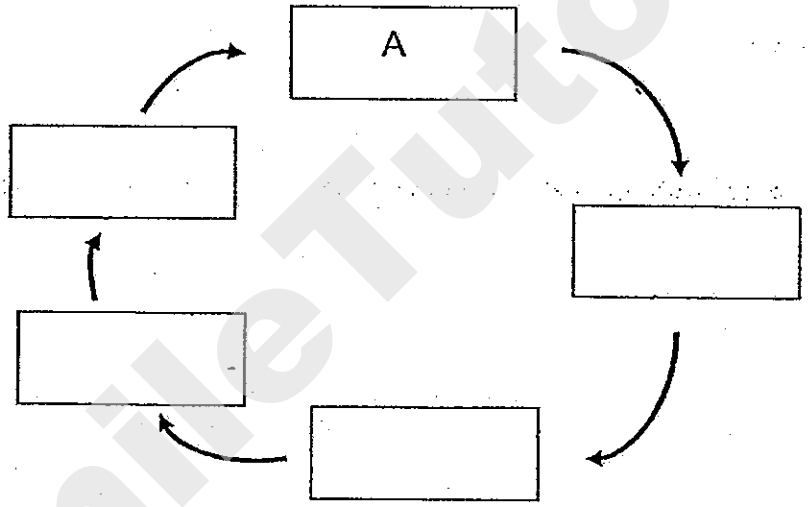
34. The pictures below shows the different stages in the life cycle of a bean plant.



(a) Complete the stages by writing the letters, B, C, D and E, in the boxes below to show the correct order of the life cycle of the bean plant. Stage A has been done for you. [2]



(b) At stage A, how does the seedling obtain the food it needs for growth? [1]

_____

_____

(c) Beside water, list 2 other conditions that must be present for a seed to germinate. [1]

(i) _____

(ii) _____

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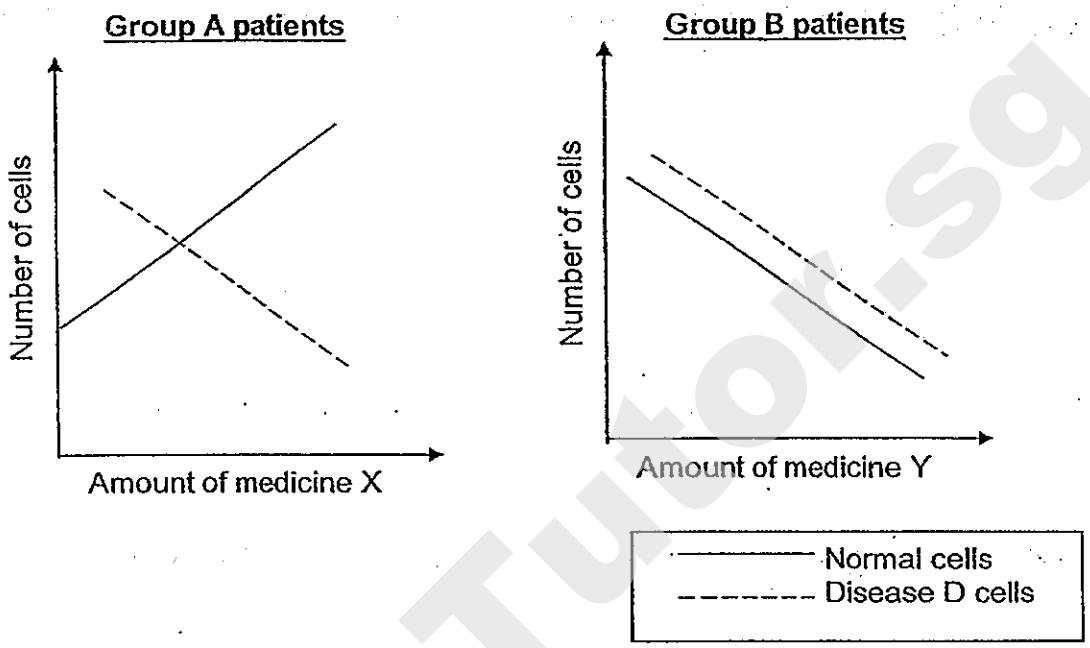
35. Doctor Wong, a doctor who specialized in treating disease D, conducted a research on two different types of medication for destroying disease D cells. He divided his patients suffering from disease D into two groups A and B. He administered medicine X to group A patients and medicine Y to group B patients. He recorded his findings in the graph below.



(a) Based on the above graphs, which medicine, X or Y, is better for treating disease D? [1]

_____

(b) Explain your answer in (a). [2]

_____

_____

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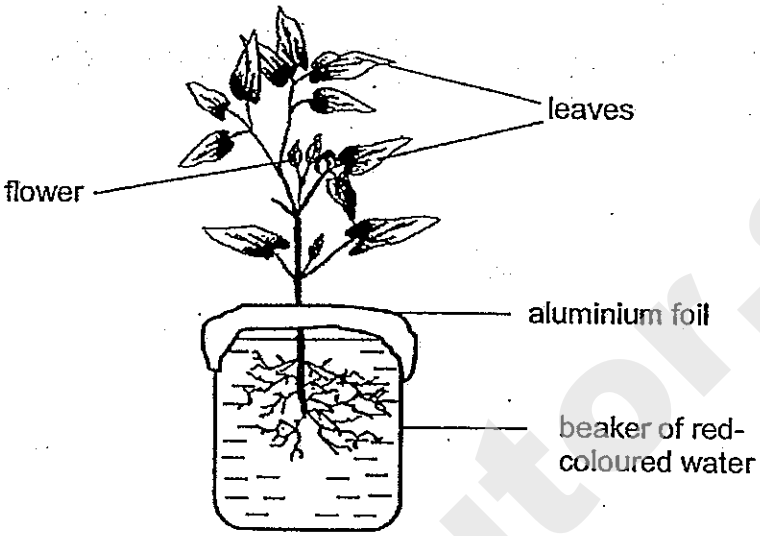
36. Jovi placed a healthy plant in a beaker of red-coloured water as shown in the diagram below. He covered the top of the beaker with aluminium foil. Two days later, Jovi observed that the flowers had turned red.



(a) State 2 other observations Jovi would have made of the above set-up. [2]

Observation 1: _____

_____

Observation 2: _____

_____

(b) Explain why the flowers turned red? [1]

_____

_____

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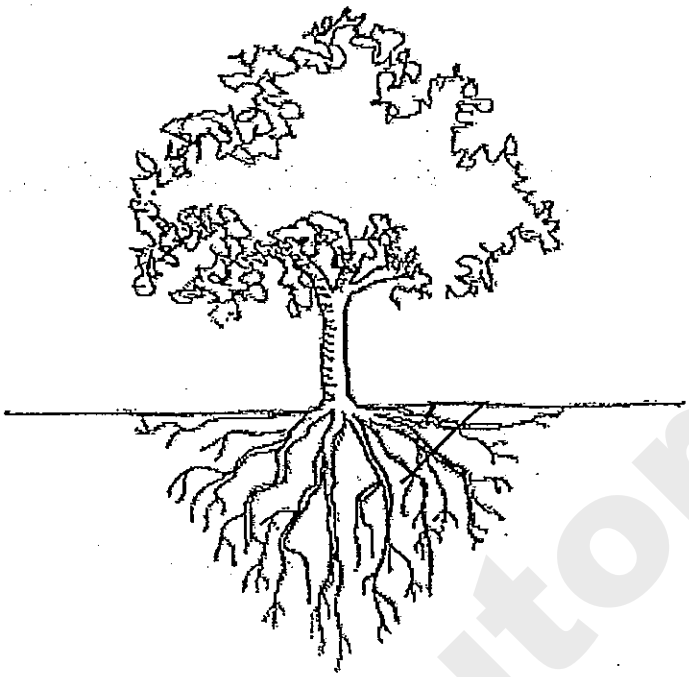
37. The diagram below shows a tree.



Cell X and Y are taken from the tree above and observed under the microscope.

The information of the two cells, X and Y, is recorded in the table below.
A tick (✓) shows the presence of the cell part.

	Parts of a cell		
	nucleus	cell wall	chloroplasts
X	✓	✓	
Y	✓	✓	✓

(a) Draw a line pointing to the part of the tree where cell X is most likely to be taken from and label it as 'X'. [1]

(b) Draw a line pointing to the part of the tree where cell Y is most likely to be taken from and label it as 'Y'. [1]

(c) Based on the information in the table above, state what cell Y can do that cell X cannot. [½]

_____

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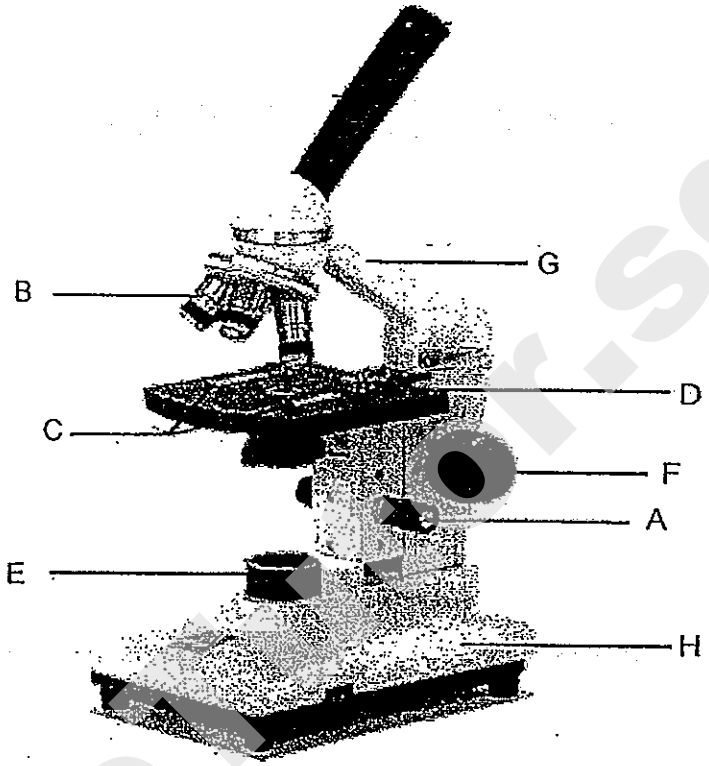
38. The diagram below shows a microscope.



In each blank below, write the letters, A, B, C, D, E, F, G or H, to match the labelled parts with their functions in the boxes provided. [2½]

	Function	Part
(i)	Shines light on the specimen.	
(ii)	The parts to be held when carrying the microscope.	
(iii)	It is used to make fine adjustments to get a sharp view of the specimen.	
(iv)	The microscope slides are placed here to be observed.	
(v)	It magnifies the specimen.	

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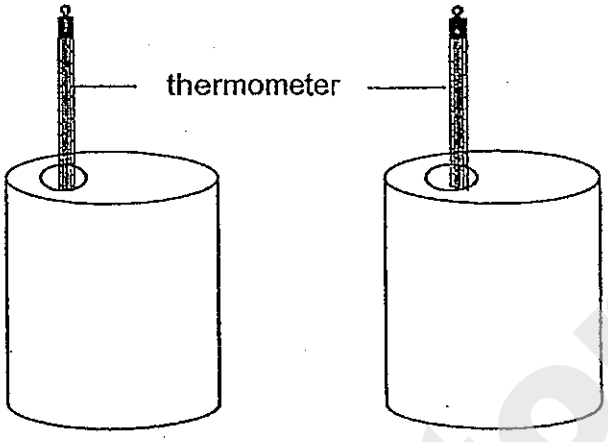
39. An experiment was conducted with two similar sized metal cans, Y and Z, made of different materials as shown below. Hot water at 90°C was poured into the two cans before they were placed on a table in a room. Temperature of the hot water in the two cans was then measured at 3-minute intervals for 15 minutes.



The readings were recorded in the table below.

Time (minutes)	Temperature of water (°C)	
	Metal Can Y	Metal Can Z
0	90	90
3	78	84
6	66	77
9	54	71
12	42	64
15	30	58

(a) Based on the results from the table above, what can you conclude about the heat conductivity of Can Y and Can Z? Explain your answer. [2]

_____

_____

(b) State one other variable that has to be kept constant in order to make the experiment a fair one. [1]

_____

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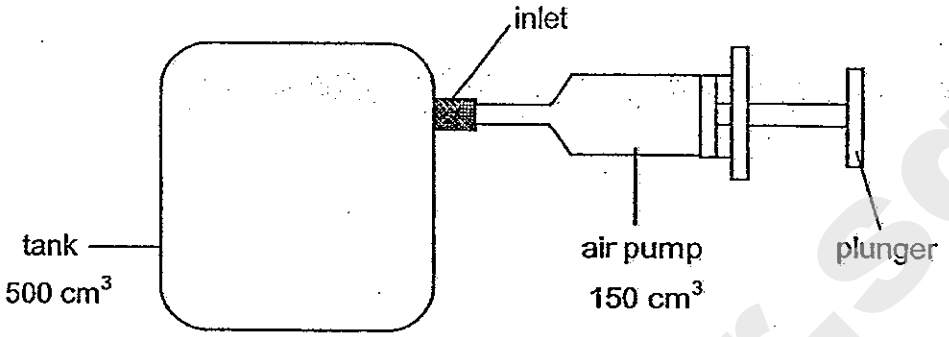
40. An air pump is used to pump air into a tank via an inlet as shown in the diagram below. The tank and the air pump have a capacity of 500 cm^3 and 150 cm^3 respectively.



(a) State what would happen to the volume and mass of air in the tank **(increase, decrease or remain the same)** after John has pushed in the plunger of the air pump 5 times. [1]

(i) Volume of air : _____

(ii) Mass of air : _____

(b) Explain your answer in part a(i). [2]

_____

_____

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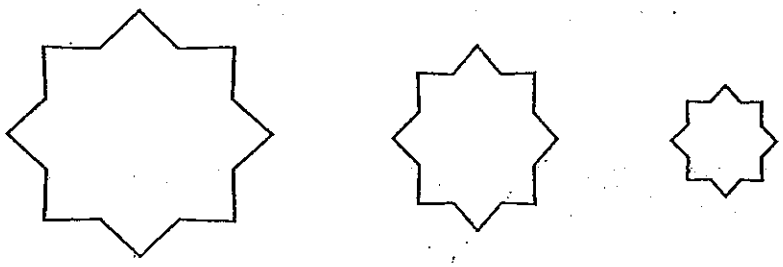
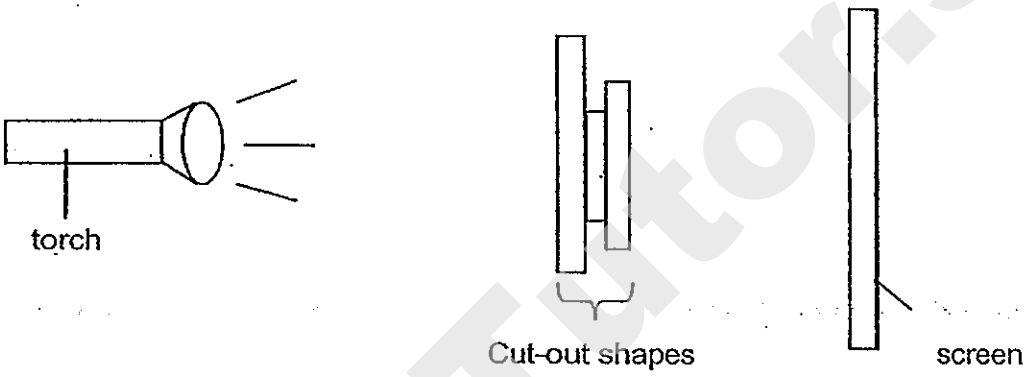
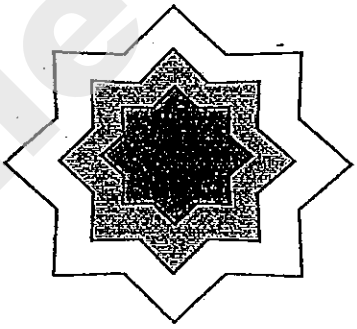
41. Randy cut out 3 shapes, A, B and C, from different materials as shown in the diagram below. The cut-out shapes are of different sizes.



He stacked the cut-out shapes together and placed them between a torch and a fixed screen as shown below.



Randy observed the following shadow on the screen.



(a) Based on the above shadow, draw lines to match the cut-out shapes A, B and C to the materials that they could be made of. [1½]

A •	• Frosted glass
B •	• Clear glass
C •	• Wood

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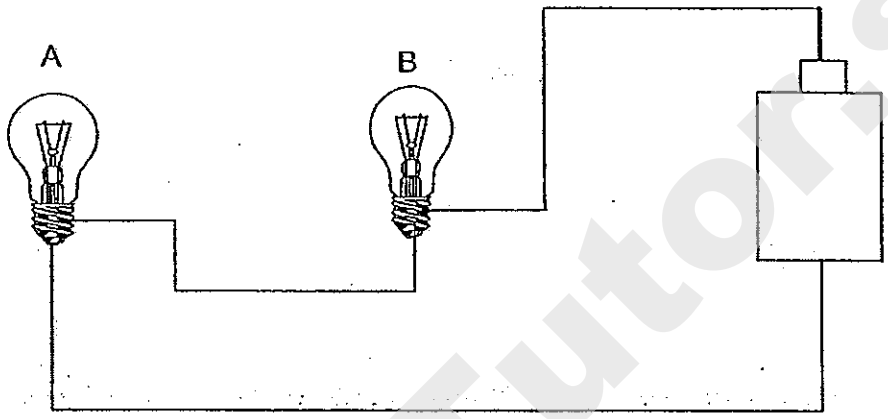
(b) Using the same apparatus, suggest 2 ways Randy could cast a smaller shadow on the screen. [2]

(i) _____

(ii) _____

42. In the circuit shown below, both bulbs A and B are lit.



(a) Will bulb A remain lit when bulb B blows? [½]

_____

(b) Give a reason for your answer in (a). [1]

_____

_____

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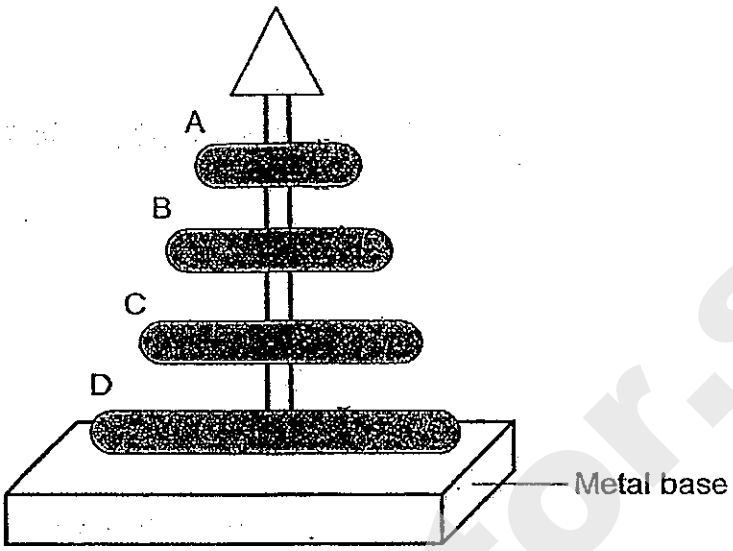
43. Abigail used four ring magnets, A, B, C and D, to form a model of a Christmas tree as shown below.

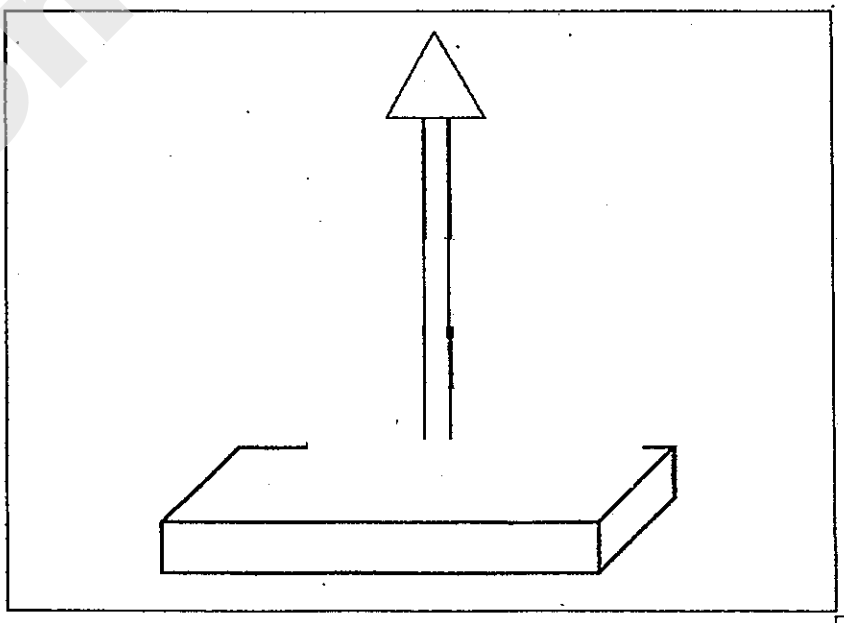


(a) Suggest how she was able to keep the three ring magnets, A, B and C, floating above ring magnet D. [2]

_____

_____

(b) Using the same set-up as in (a), complete the diagram below to show what Abigail would observe if she were to flip ring magnet A and D around. **Label** clearly. [2]



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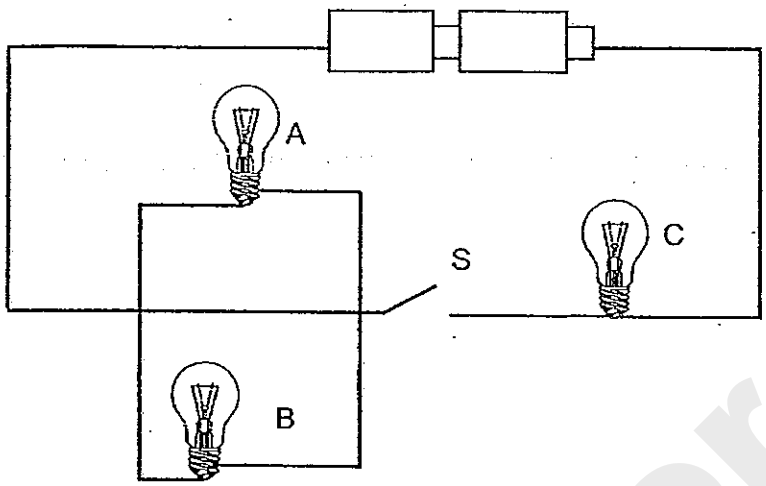
44. Jerome set up the following circuit.



(a) Which bulb(s) will light up when

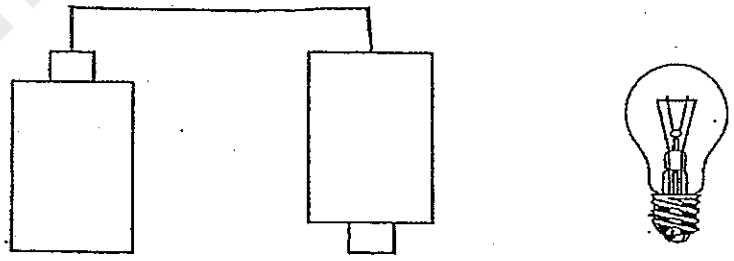
(i) Switch S is open? [½]

_____

(ii) Switch S is closed? [½]

_____

(b) In the diagram below, draw wires to connect the bulb and the batteries so that the bulb lights up. [1½]



End of Section B

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ANSWER SHEET

EXAM PAPER 2013
SCHOOL : CHIJ
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
2	3	1	2	2	3	4	2	3	4	4	2	1	4	3	1	4

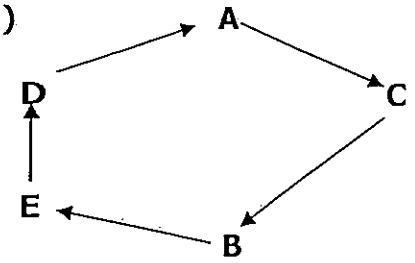
Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	1	1	2	3	3	4	2	2	1	1	3	2

31)a)i)Animal S does not live in water but Animal Q lives in water.
ii)Animal Q does not lay but Animal S lays eggs.
b)R, T, P, Q

32)a)Increased
b)Decreased
c)Stayed the same

33)a)The greater the duration of the exercise, the greater the pulse rate per minute.
b)The more Tessa exercises, the more energy she needs. Thus, the heart pumps faster and faster.

34)a)



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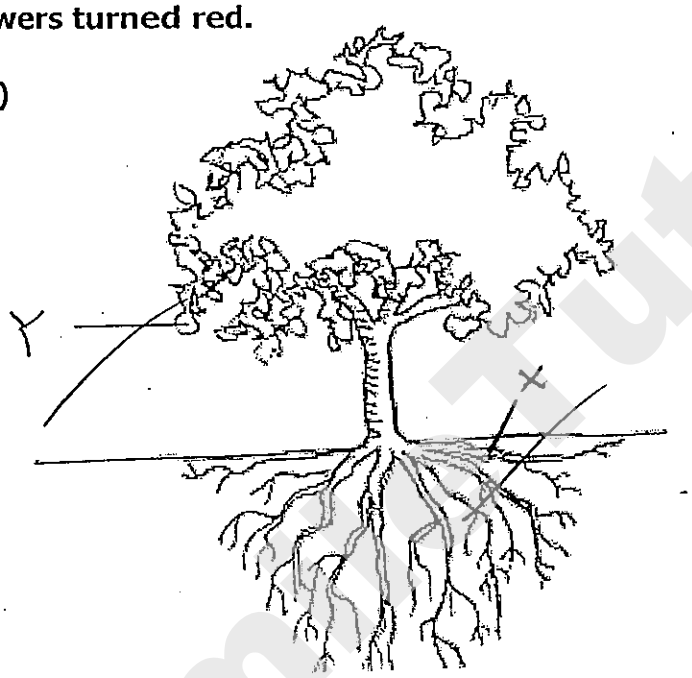
34)b)It obtains food and nutrients from the seed leaves.
c)i)Warmth ii)Air

35)a)Medicine X.
b)Although Medicine Y decreases the number of disease D cells, it also destroys normal cells. This would cause the body of the Group B patients to have a lack of cells. However, Medicine X not only destroys the disease D cells, it helps the body to produce normal cell to repulse Disease D cells, benefiting the body.

36)a)1)The amount of water would have decreased.
2)The leaves would have a hue of red.
b)The roots of the plant absorbed the red-coloured water. The red-coloured water was carried through he xylem and to the flowers, turning them red. So the flowers turned red.

37)a)b)



c)Cell Y can make food.

38)i)E ii)G,H iii)A iv)D v)B

39)a)Y is a better heat conductor than Z. The temperature of water in Y at the end of 15 minute is lower showing that Y is a better heat conductor as it conducted heat away from the water faster.
b)The amount of water in each can.

40)a)i)Remain the same.
ii)Increase.
b)Air can compressed so when the plunger is pushed in the air still occupies the same amount of space in the tank.

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41)a)A → Clear glass

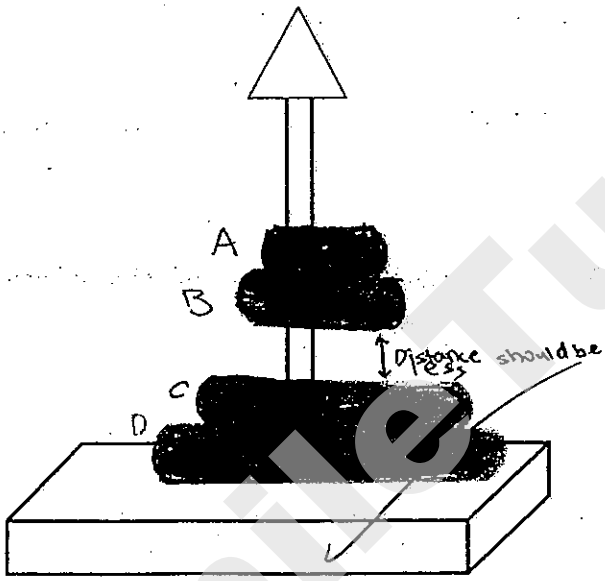
B → Frosted glass

C → Wood

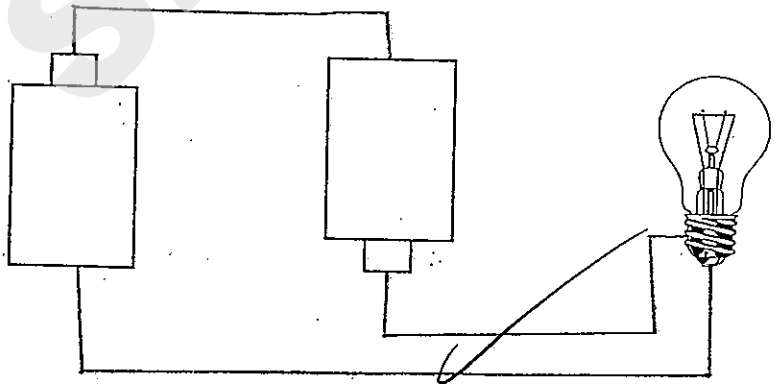
b)i)He can move the torch further away from the screen.
ii)He can move the cut-outs

42)a)No.
b)If bulb B blows, no electric current can flow through and the circuit is broken. Thus, bulb A will not be lit.

43)a)The like poles of the magnet are facing each other so they repel.
b)



44)a)i)None ii)A,B
b)



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HENRY PARK PRIMARY SCHOOL
2013 SEMESTRAL EXAMINATION 1
PRIMARY 5 SCIENCE

Duration of Paper: 1 h 45 min

100

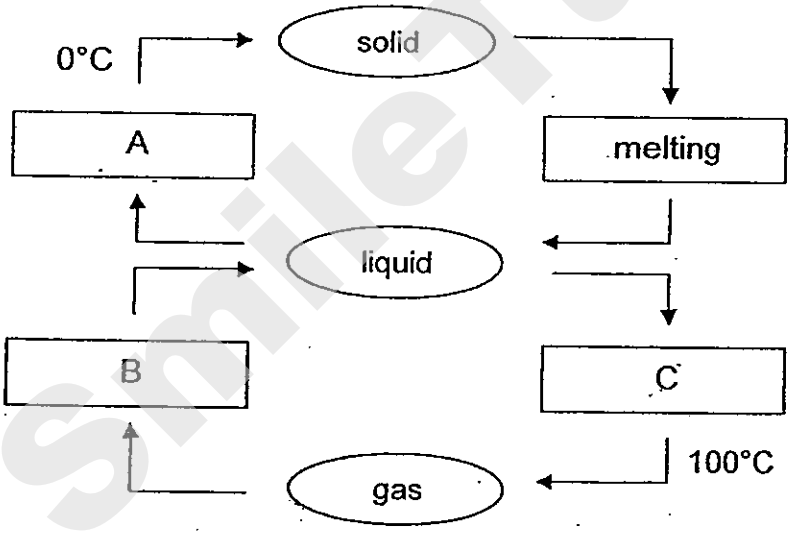
Name:_____ ( ) Parent's Signature _____

Class: Pr 5 _____

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. The diagram below represents the changes of state of water.



Which one of the following correctly describes the processes A, B, and C?

	A	B	C
(1)	freezing	evaporation	condensation
(2)	condensation	freezing	evaporation
(3)	freezing	condensation	boiling
(4)	condensation	evaporation	boiling

( )

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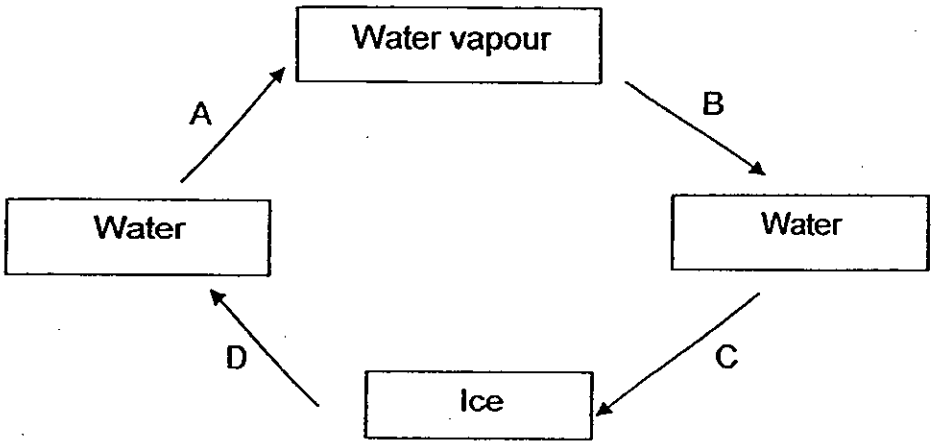
2. The diagram below shows water changing states through processes A, B, C and D.



The processes that involve heat gain are _____.

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

( )

3. Study the table below on the melting points of substances A, B, C and D.

Melting Point (°C)			
A	B	C	D
5	23	11	16

Which of the following will be a liquid at 15°C?

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

( )

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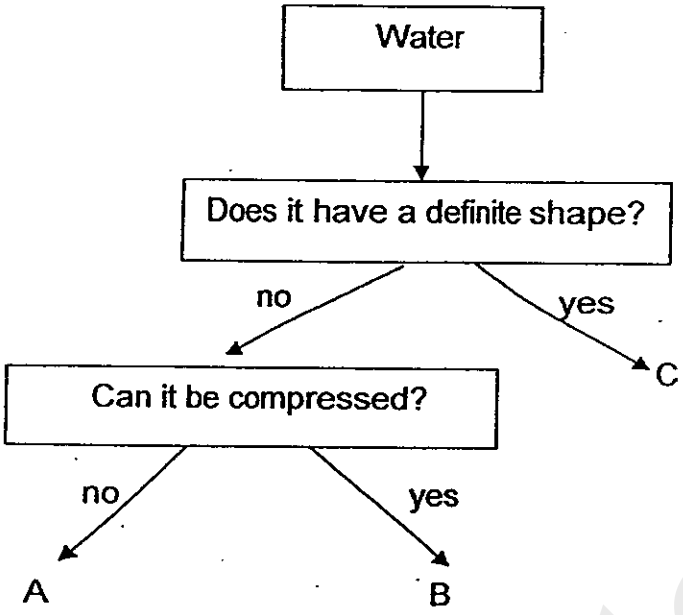
4. Study the flowchart on water below.



Which of the letters in the diagram represents steam and ice?

	Steam	Ice
(1)	A	C
(2)	B	C
(3)	C	A
(4)	C	B

( )

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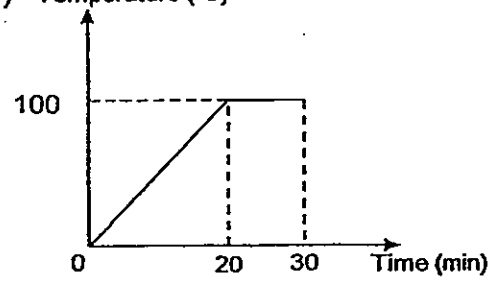
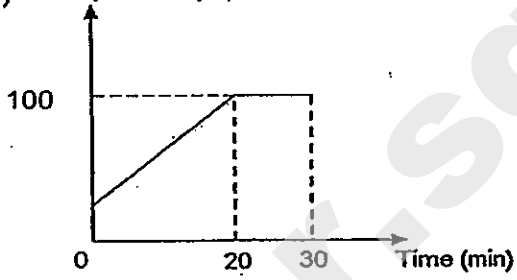
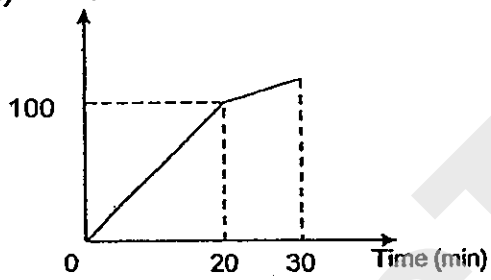
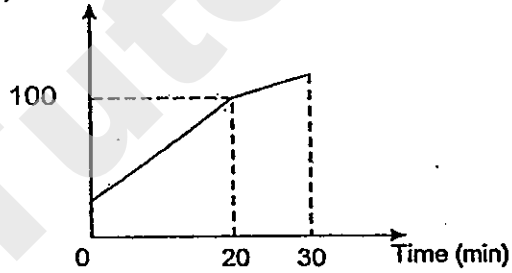
5. In a room, Elaine heated a beaker of tap water for 20 minutes until it started boiling. She continued boiling it for another 10 minutes.

Which one of the following graphs correctly shows the changes in temperature of water over the 30 minutes?

(1)


(3)


(2)


(4)


( )

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6 Jenny wants to investigate whether the temperature of the surroundings will affect the rate of evaporation of water. She added some water to 5 towels and left them to dry at locations shown below in the table.

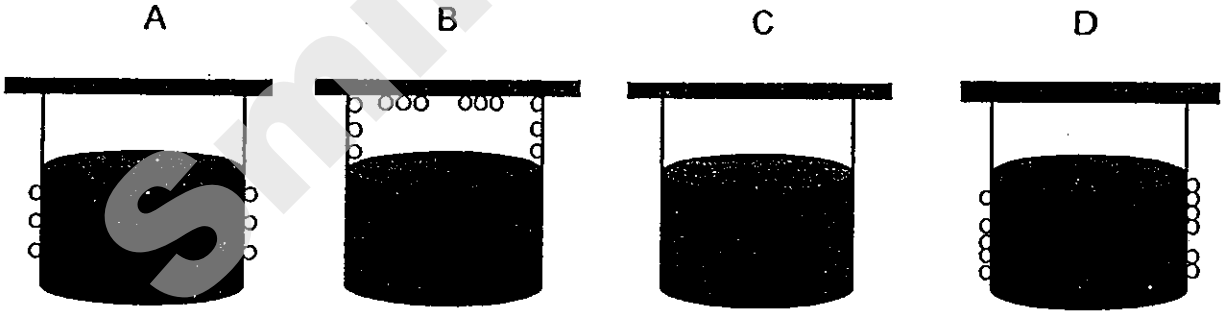
Towel	Material	Size	Location for drying	Amount of water added at the start of experiment
A	cotton	30 cm^2	in the house	400 ml
B	cotton	30 cm^2	open field	500 ml
C	cotton	50 cm^2	in the house	500 ml
D	polyester	50 cm^2	open field	500 ml
E	cotton	50 cm^2	open field	500 ml

Which of the following setups should she use for comparison?

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

( )

7. Four identical containers, A, B, C and D, containing the same volume of water at different temperatures are placed on the same table as shown below.



o - Water droplets

Which of the following shows the temperature of the water in the beakers from the lowest to the highest?

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

( )

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8. The following statements describe the stages in the water cycle.

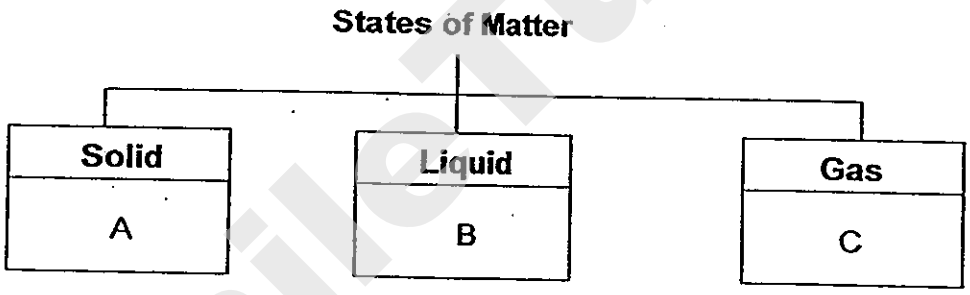
A: Water flows from the highlands to river and sea.
B: Water droplets fall from clouds.
C: Clouds are formed by condensation of water vapour
D: Water evaporates from rivers, sea and land.

Arrange the statements to show the process of the water cycle.

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

( )

9. Study the chart on states of matter below.



Which of the following box(es) should we place **clouds** in?

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

( )

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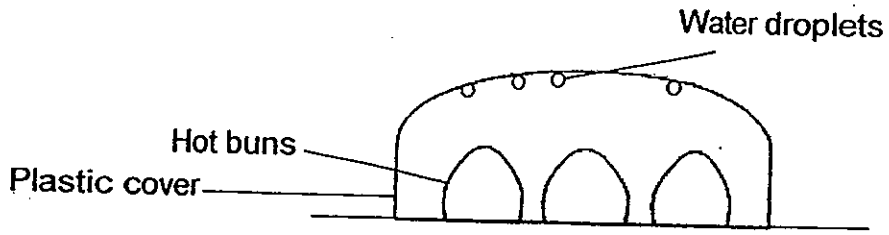
10. Peter placed some hot buns under a plastic cover on a table at room temperature of 28°C as shown below.



After 10 minutes, he found some water droplets on the underside of the plastic cover.

Based on his observation, which of the following statements explains how the water droplets were formed?

A: Water vapour has evaporated from the hot buns.
B: Water vapour has condensed on the underside of the plastic cover.
C: Water vapour has gained heat from the underside of the plastic cover

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

11. Shufen was holding a metal spoon with a cube of ice. After some time, her fingers which were holding the spoon felt cold.

Which one of the following correctly explains why Shufen felt her fingers were cold?

(1) The spoon lost heat to the ice and to her fingers.
(2) The spoon gained heat from the ice and from her fingers.
(3) The spoon gained heat from the ice and lost heat to her fingers.
(4) The spoon lost heat to the ice and her fingers lost heat to the spoon. ( )

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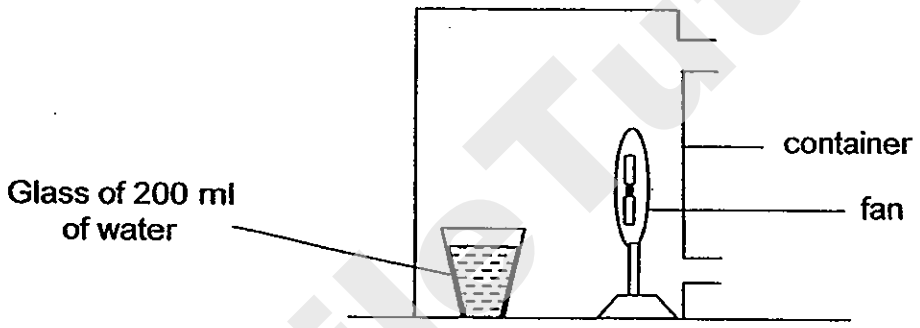
12. Which of the following actions are examples of water conservation?

A: Amy waters her plants with the water she used to wash her vegetables.
B: Jane takes a long bubble bath in her bath tub after school.
C: Singapore produces NEWater for drinking and other uses.
D: Jeremy decides that it is better to take more showers during hot days.

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

13. Dylan carried out an experiment using the set-up shown below, to find out how the amount of wind affects the rate of evaporation of water.



Dylan wants to have 3 set ups for this experiment.
Which of the following variables should Dylan change in each setup?

(1) The number of fans
(2) The size of the glass
(3) The amount of water in the glass
(4) The time taken for water to evaporate completely ( )

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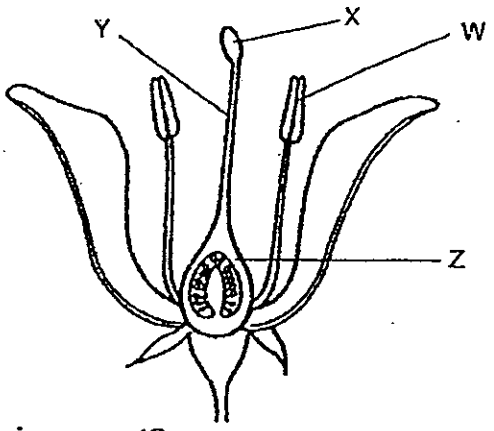
14. Study the diagram below that shows parts W, X, Y and Z of a flower.

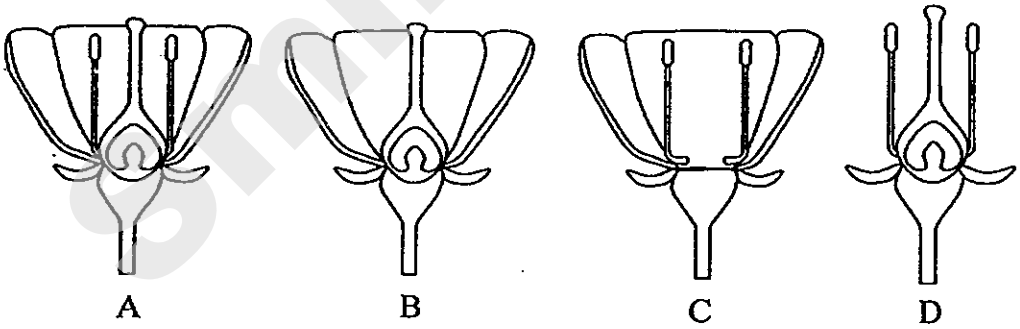


Which of the following is correct?

	W	X	Y	Z
(1)	Stigma	Style	Ovary	Anther
(2)	Anther	Stigma	Style	Ovary
(3)	Anther	Stigma	Ovule	Style
(4)	Style	Anther	Ovary	Stigma

( )

15. The diagram below shows flowers A, B, C and D. Pollen grains from flowers of the same type were dusted over each flower.



Which of the above flower(s) would most likely develop into a fruit?

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

( )

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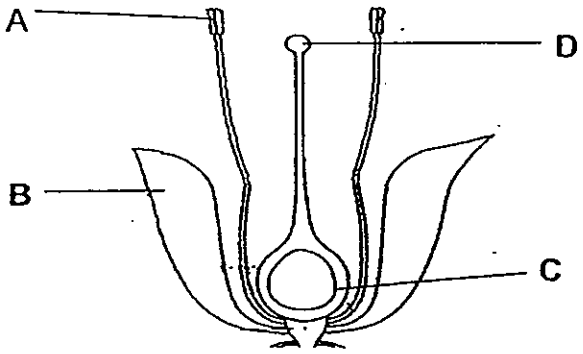
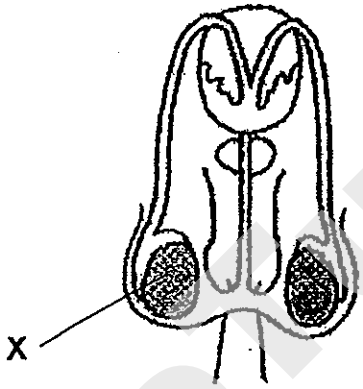
16. The diagrams below show parts of the reproductive systems of a flowering plant and a human.



reproductive system of a flowering plant



male reproductive system

Based on the diagrams above, which part of the flower, A, B, C or D, has a similar function as part X?

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

( )

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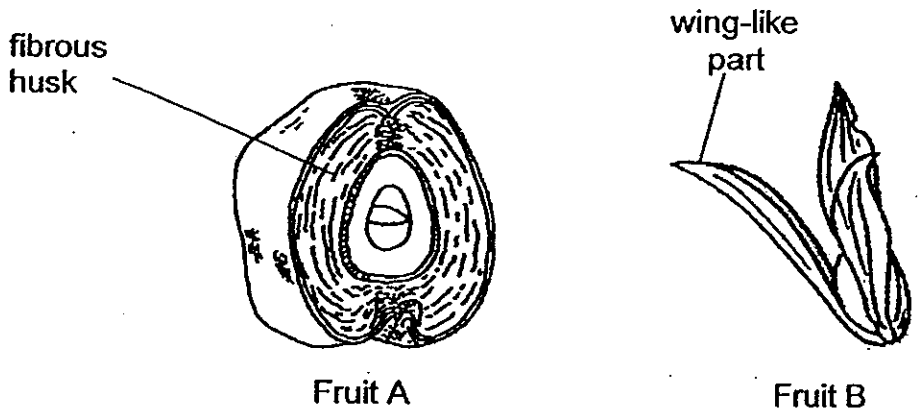
17. A and B are fruits from different plants.

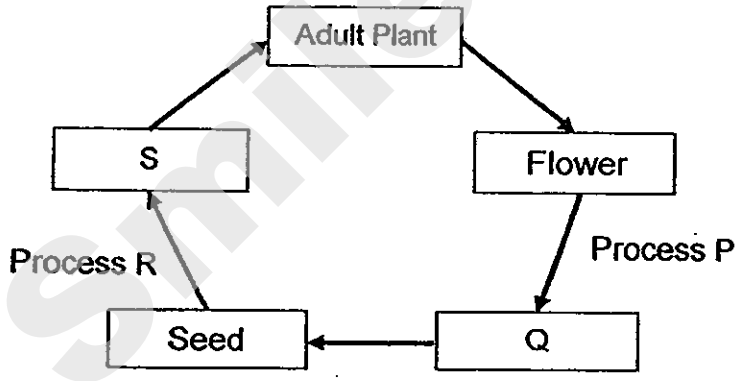


How are fruits A and B dispersed?

	A	B
(1)	Water	Animal
(2)	Splitting	Wind
(3)	Animal	Water
(4)	Water	Wind

( )

18. The diagram below shows the life cycle of a flowering plant.



Which one of the following shows the correct representation of stages P, Q, R and S?

	P	Q	R	S
(1)	Germination	Fruit	Fertilisation	Seedling
(2)	Fertilisation	Seedling	Pollination	Fruit
(3)	Pollination	Seedling	Germination	Fruit
(4)	Fertilisation	Fruit	Germination	Seedling

( )

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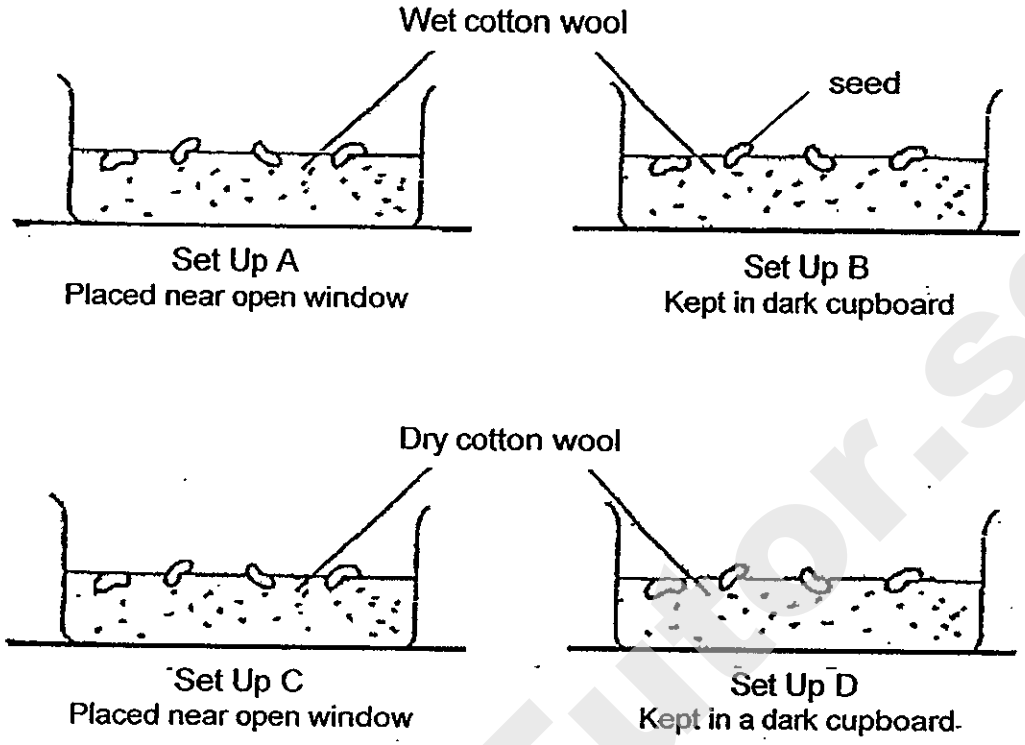
19. Mary wants to find out what the conditions for germination are. She sets up the experiment below.



In which set-up(s) will the seeds germinate?

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

( )

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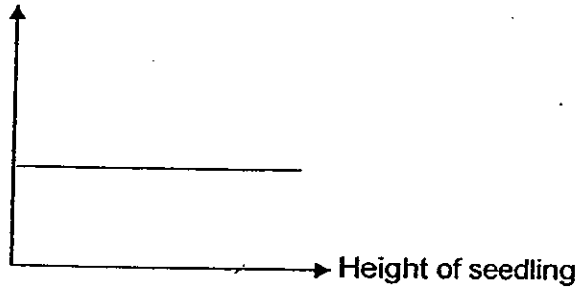
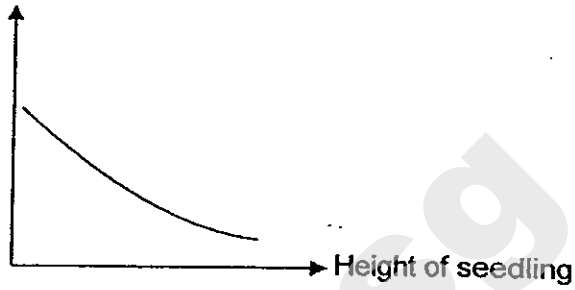
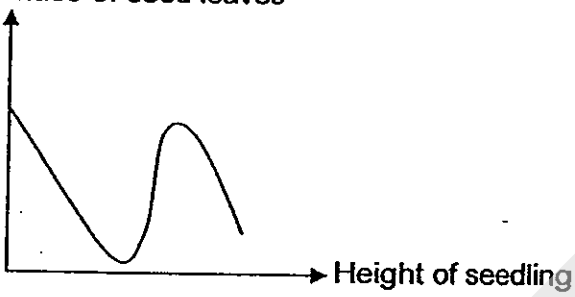
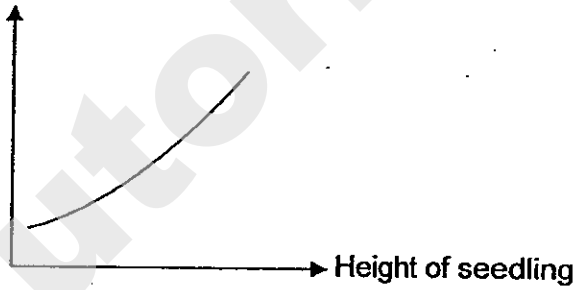
20. Which one of the graphs below shows the correct relationship between the **mass** of the **seed leaves** and the **height** of the **seedling** as it grows?

(1)


(3)


(2)


(4)


( )

21. Aini went to the park and saw some plants. She classified the plants into two groups X and Y as shown in the table below.

X	Y
Apple	Maidenhair Fern
Durian	Staghorn fern
Banana	Moss
Mango	Bird's nest fern

What can the headings X and Y be?

	X	Y
(1)	Land plants	Water plants
(2)	Flowering plants	Non-flowering plants
(3)	Water plants	Land plants
(4)	Reproduce by spores	Reproduce by seeds

( )

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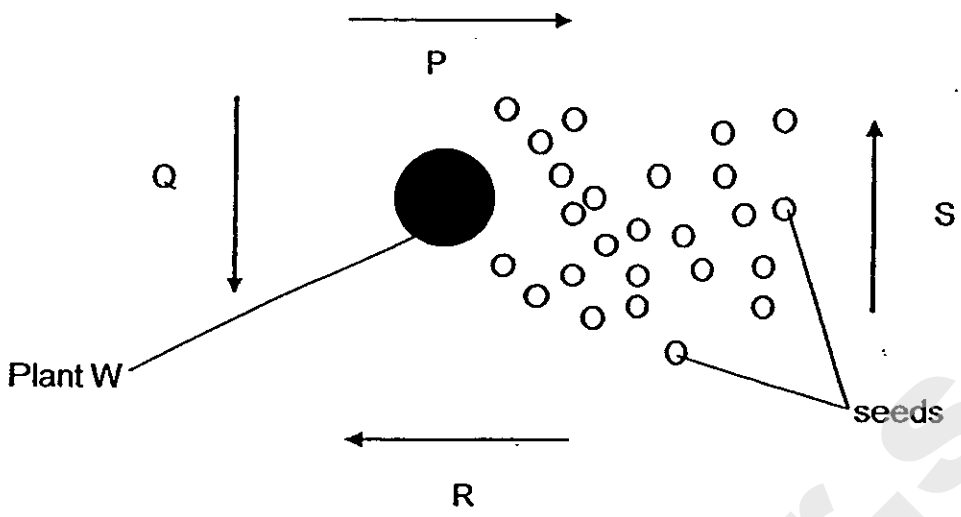
22. The diagram below shows the dispersal of seeds of Plant W by wind.

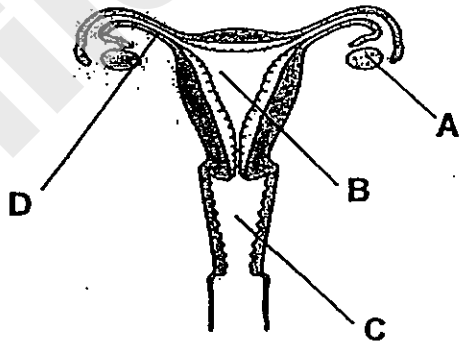


Which arrow(s) show(s) the direction of the wind during the seed dispersal?

(1) P only
(2) S only
(3) R only
(4) Q and R only

( )

23. The diagram below shows the female reproductive system in humans.



Female reproductive system

Where does the fertilized egg develop into a baby?

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

( )

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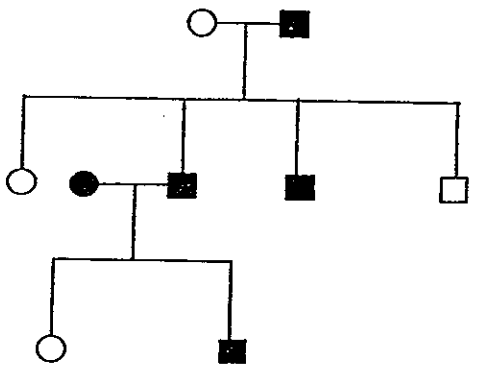
24. Study the family tree below.



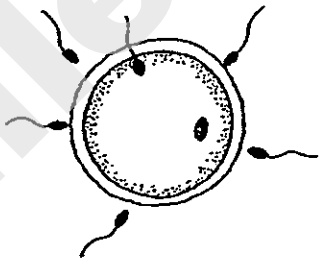
Key

- ○ Female
- □ Male
- ● Female tongue roller
- ■ Male tongue roller

Which of the following statements about Hairi's family tree is true?

(1) Hairi's sister is a tongue roller.
(2) Both Hairi's parents are tongue rollers.
(3) Both Hairi's grandparents are tongue rollers.
(4) Hairi's father has a sister who is a tongue roller. ( )

25. The diagram below shows the process of fertilization of a human egg.



4 statements were made on the above fertilization process.
Which of the following statements are true?

A: Fertilization takes place inside the female's body.
B: The fertilized egg develops into a baby in the ovary.
C: Fertilization takes place when the sperm fuses with the egg.
D: More than one sperm is needed to fertilise an egg.

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

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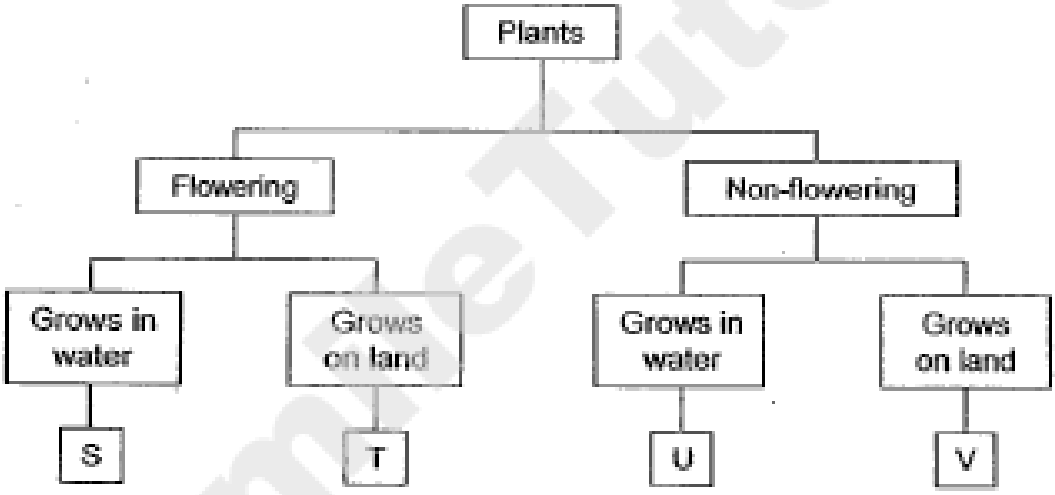
26. Nelson studied 4 plants, A, B, C and D, and recorded his observations in the table below.

A tick (✓) shows that the plant has the characteristic and a (X) shows that it does not.

Plants	Characteristics	
	Bears fruit	**Grows on land**
A	✓	✓
B	✓	X
C	X	✓
D	✓	✓

Study the classification chart below.



In which box, S, T, U or V, can Plant D be placed in?

(1) S
(2) T
(3) U
(4) V

( )

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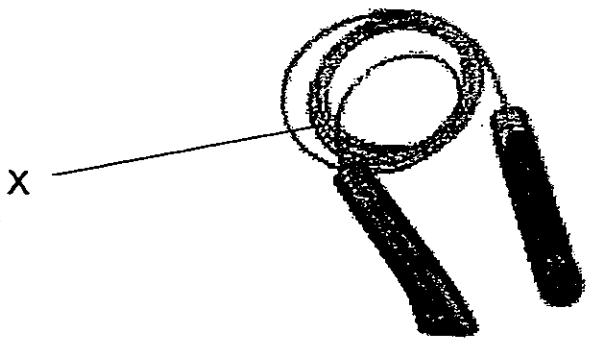
27. Meilan is able to roll up her skipping rope shown below because the material used to make part X is _____.

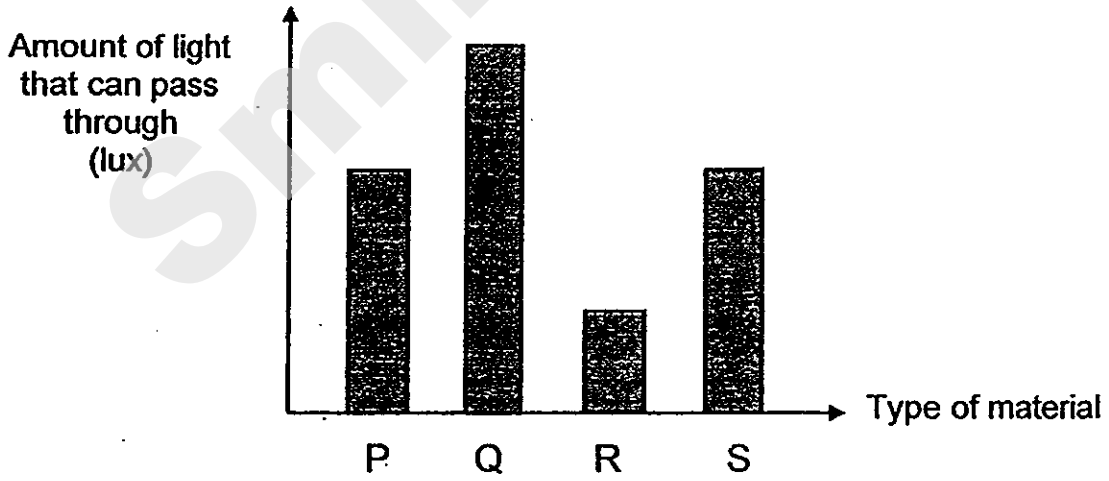


Skipping rope

(1) hard
(2) light
(3) strong
(4) flexible ( )

28. Mrs Tay wants to sew a set of curtains that can block out the most light for her bright room. She wants to choose a suitable material for making the window curtains.

The graph below shows the amount of light that can pass through each type of material, P, Q, R and S.



Which of the following materials is the **most** suitable for making the window curtains?

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

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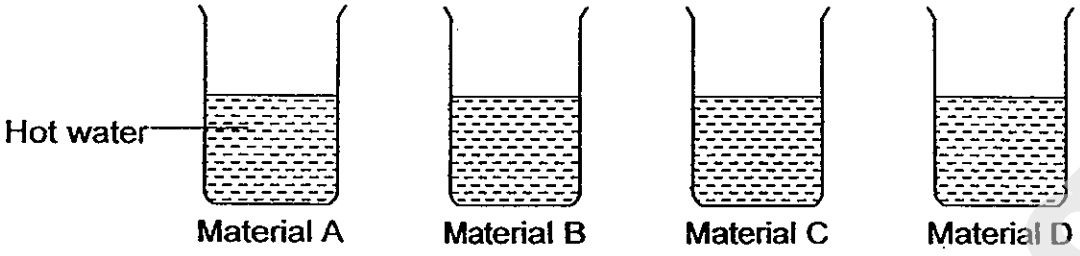
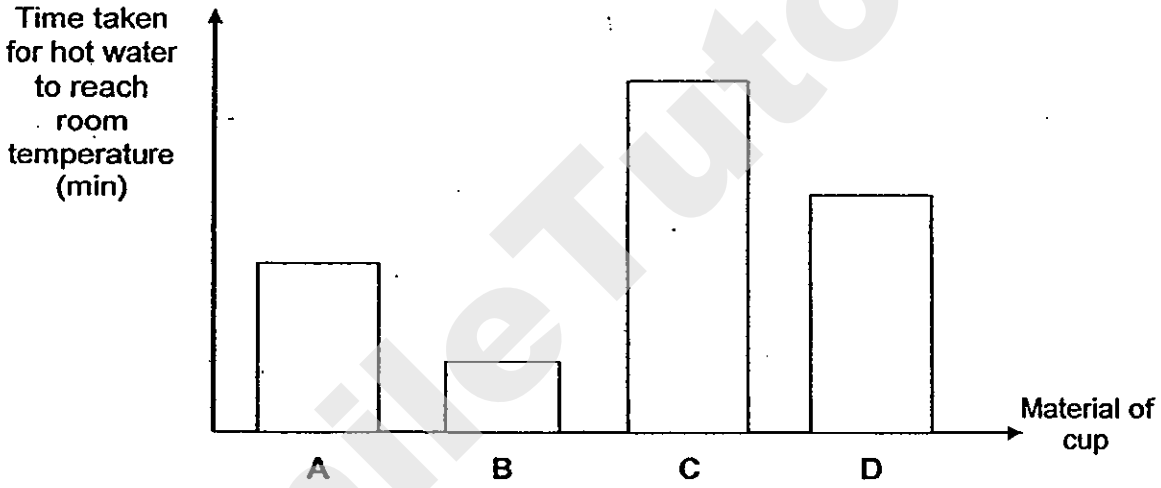
29. Bala has 4 cups made of 4 different materials, A, B, C and D. The cups are of the same size and thickness. He put an equal amount of hot water in each cup. He placed all the cups in the classroom.



Bala recorded the time taken for the hot water to reach room temperature in each cup in the graph below.



Bala wanted to choose one of the materials to keep his cold drinks cold for long periods of time.

Which of the following materials is the **most** suitable material?

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

( )

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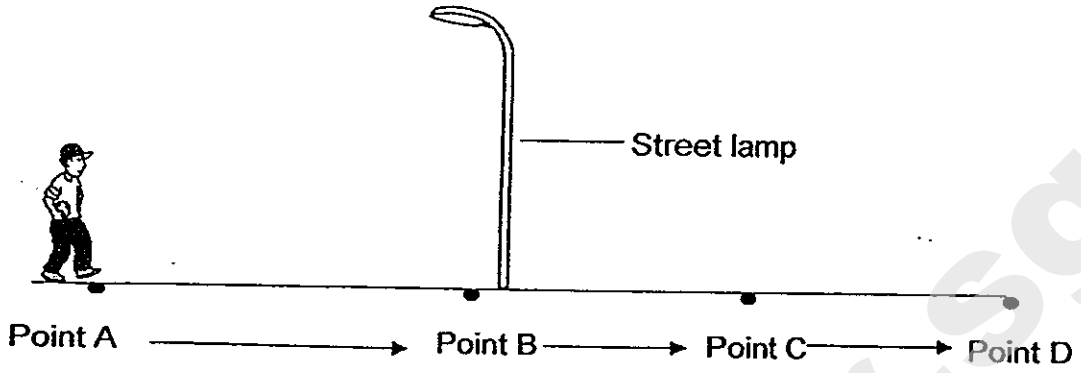
30. One night, Ben was walking past a street lamp from point A to point D as shown in the diagram below.



If the only light source in that area was only the street lamp, at which point will Ben's shadow be the shortest?

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

( )

End of Booklet A

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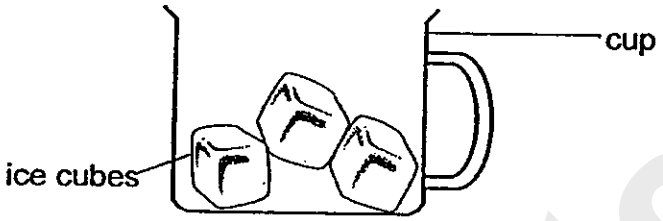
HENRY PARK PRIMARY SCHOOL
2013 SEMESTRAL EXAMINATION 1
PRIMARY 5 SCIENCE

40

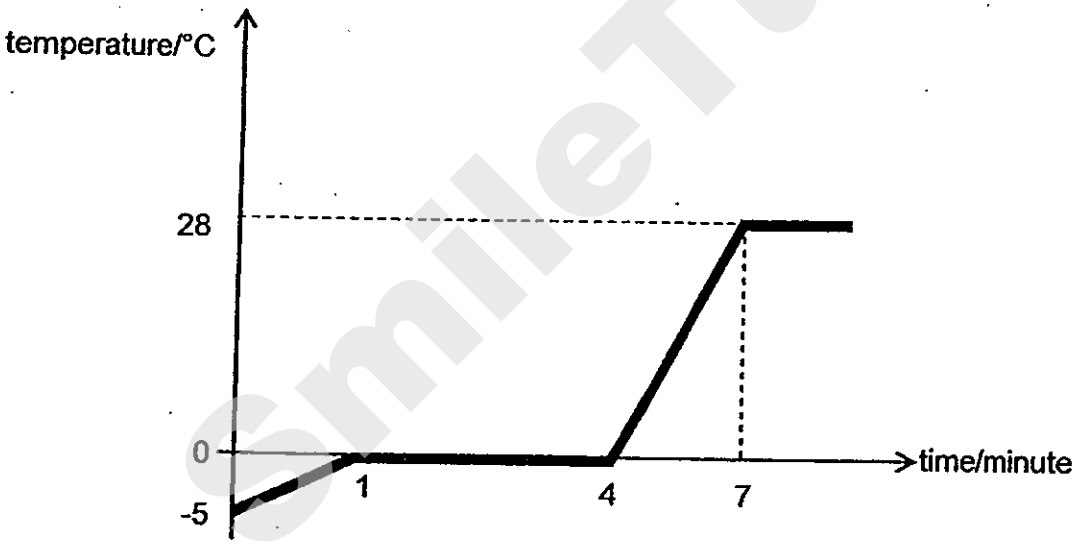
Name:_____( ) Class: Pr 5_____

Booklet B (40 marks) Write your answers to questions 31 to 44 in the spaces given.

31. Andy conducted an experiment in the Science room as shown in the diagram below.



He measured and recorded the temperature of the ice cubes at 1 minute interval and drew a graph shown below to show the changes in temperature.



a) Name the process taking place between the 1st and 4th minute. *(1m)*
Give a reason for your answer.

_____

_____

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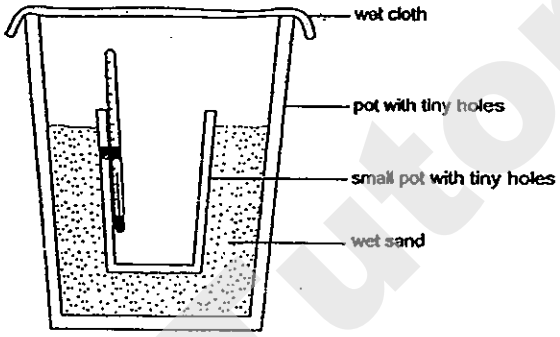
Question 31 continued

b) Write down the temperature of the surroundings of the Science room. *(1m)*

_____

32. Han Seng wanted to investigate the effect of evaporation on the temperature of the surrounding air. He sets up the experiment as shown below.



He placed the set-up in a dry place and recorded the temperature of the air inside the small pot. The results are shown below.

time (minutes)	temperature of air inside small pot (°C)
0	30
10	28
20	27

a) Explain the decrease in the temperature of air inside that was observed. *(2m)*

_____

_____

_____

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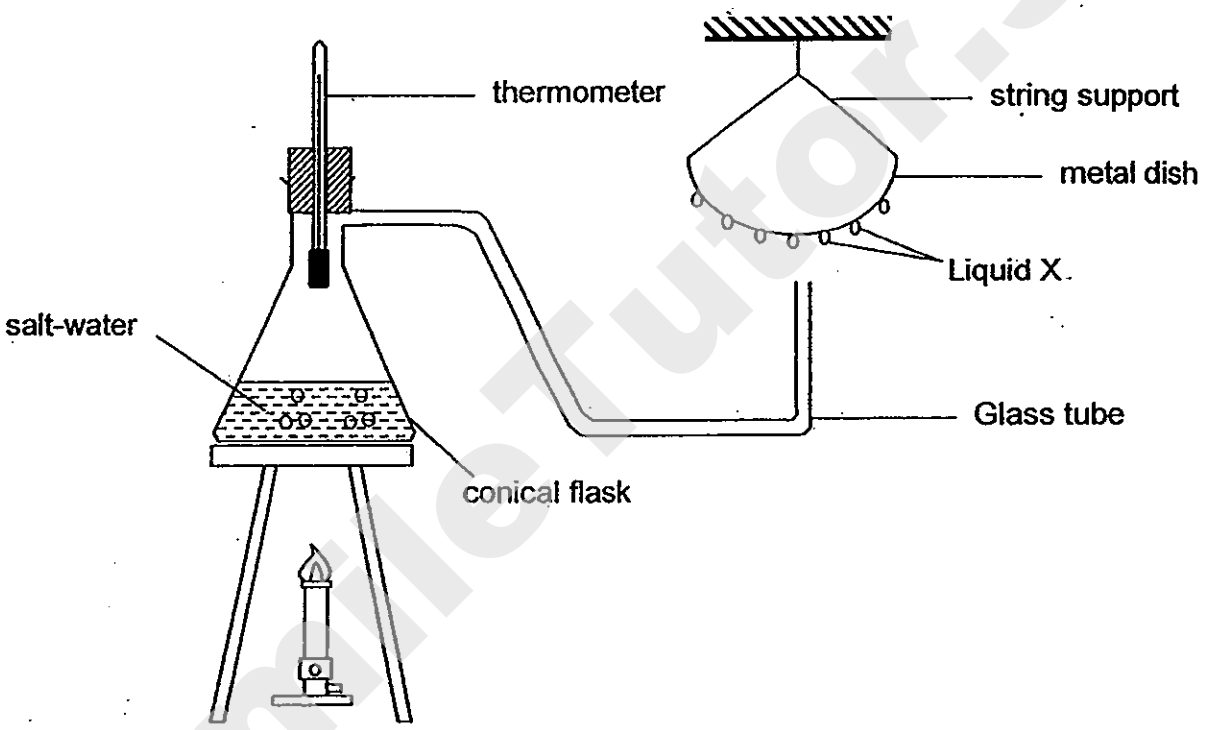
Question 32 continued

b) What can be concluded from this experiment? *(1m)*

_____

_____

33. The diagram below shows an experimental set-up that represents the water cycle. The salt-water in the conical flask is boiling.



a) Name liquid X which is formed on the metal dish. *(1m)*

_____

b) Which part of the set up above represents the clouds in the water cycle? *(1m)*

_____

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Question 33 continued

c) What can be added to the metal dish in order to increase the amount of liquid X formed on the underside of the metal dish? *(2m)*
Give a reason for your answer.

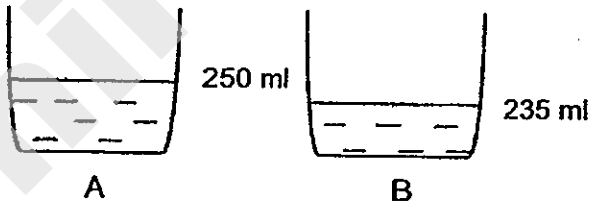
_____

_____

34. 2 identical containers, A and B, were filled with 300ml of water.

Container A was placed in a classroom while Container B was left outdoors under the sun.

After a few hours, it was noticed that both containers showed a decrease in water level. The amount of water remaining in each container is shown below.



a) Name the variable that is changed in the above experiment. *(1m)*

_____

b) Explain why the rate of evaporation of water was faster in Container B than in Container A. *(1m)*

_____

_____

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Question 34 continued

c) A 3rd container, C, was filled with 300 ml of water and placed together with Container B in the sun as shown below.

C

The rate of evaporation of water in Container C was faster than in Container B. Explain why. *(1m)*

_____

_____

_____

d) Write down one **other** factor that could **increase** the rate of evaporation of water. *(1m)*

_____

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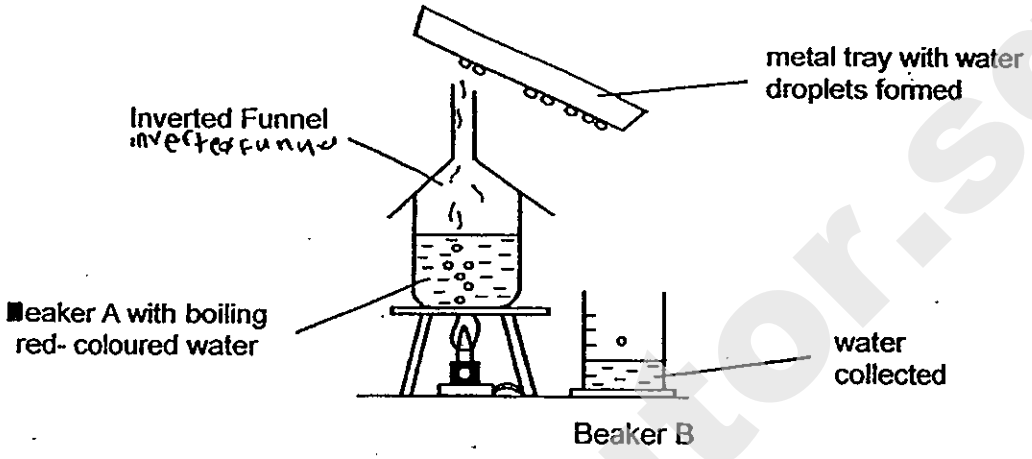
35. The following diagram shows an experiment setup involving coloured water.



a) What is the colour of water collected in Beaker B? *(1m)*

_____

b) State one **similarity** and one **difference** between the process of **boiling** (of water) and the process of **evaporation** (of water). *(2m)*

Similarity:

_____

_____

Difference:

_____

_____

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36. The following table shows the comparison between sexual reproduction in humans and in flowering plants.

Complete the table below by writing the correct word in each blank. *(2m)*

	Humans	Flowering Plants
Where the male sex cell is produced	Testes	(ai)_____
Where the female sex cell is produced	(aii)_____	Ovary
After fertilisation	The fertilised egg will develop into a (bi)_____	The ovary will develop into (bii)_____

(c) Write 1, 2, 3 and 4 in the boxes to show the **correct sequence** of the process of fertilisation in human reproduction. *(1m)*

A baby develops and grows in the womb.	
A sperm fuses with the egg.	
The fertilised egg starts going through cell division.	
Sperms travel into the female reproductive organ.	

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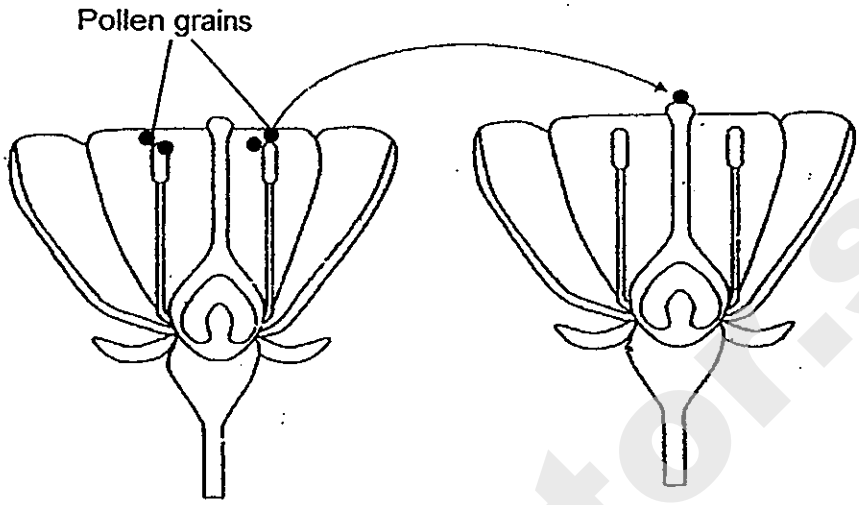
37. The diagram below shows a process, indicated by the arrow, which takes place in some plants.



Flower A

Flower B

a) Name the process that is taking place. Describe what happens during this process. *(2m)*

_____

_____

Flower C is small, dull in colour and has no scent.

Flower C

b) The male parts of Flower C are hanging out from the flower. How does this help the plant to reproduce? *(1m)*

_____

_____

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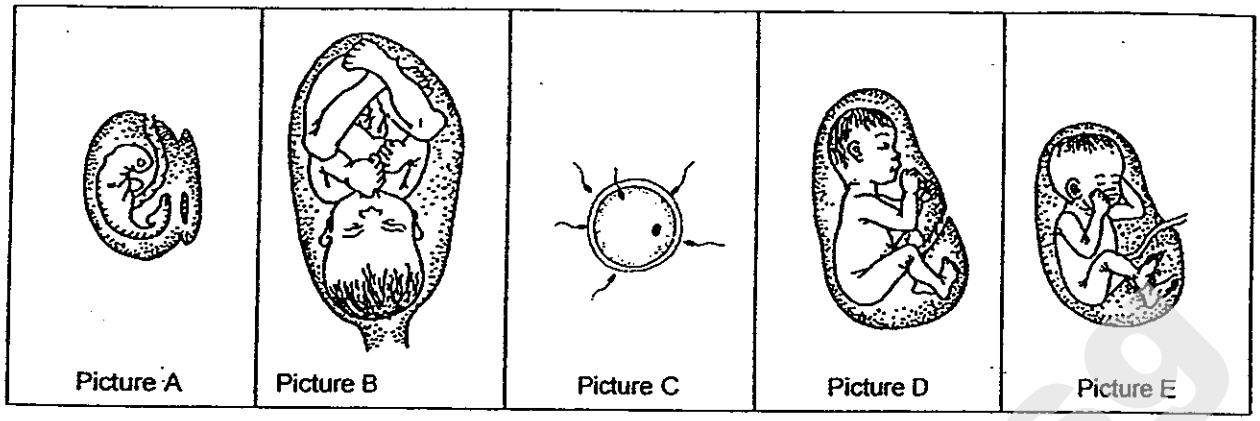
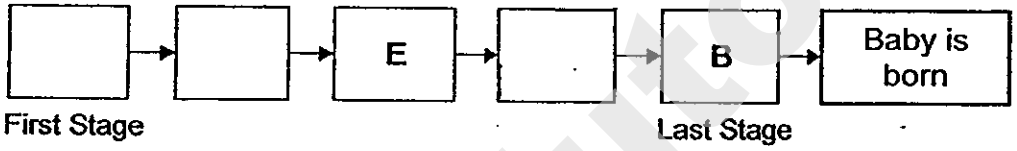
38. The pictures below show the different stages of development for a human baby.



Arrange the pictures in correct order by adding letters A, C and D below. *(2m)*



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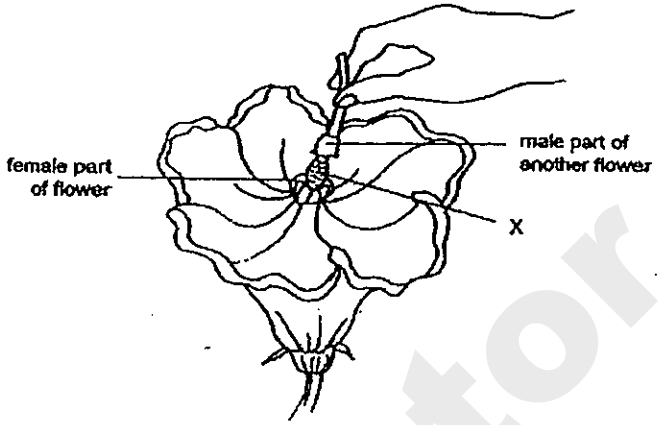
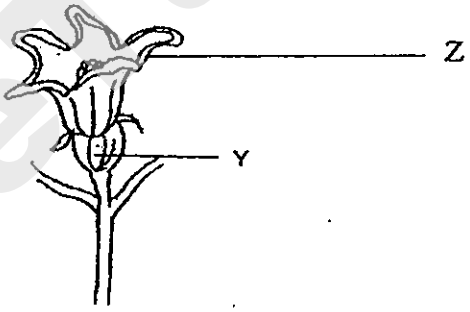
39. Mr Lim has a flower with only the female reproductive part. To fertilise this flower, he rubbed the male reproductive part of another flower from the same plant onto this female part as shown in the diagram below.



The male part of the flower contains a substance X which is needed for sexual reproduction.



One week later, Part Y started to swell.

a) What is Substance X? *(1m)*

_____

b) Name the process that took place in Part Y. *(1m)*

_____

c) What will happen to Part Z as Part Y started to swell? *(1m)*

_____

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40. Daniel carried out an experiment to find out which is the most suitable temperature for green beans to germinate.

He put 4 similar set-ups, each in a different place, as shown in the table below.

Set-ups	A	B	C	D
Place	freezer	fridge	classroom	oven
Temperature of surrounding air (°C)	- 12	3	29	80
Number of days taken to germinate	Did not germinate at all	4	1	Did not germinate at all

a) State the variable that Daniel has changed in this experiment. *(1m)*

_____

b) Based on the results, what can Daniel conclude for this experiment? *(1m)*

_____

_____

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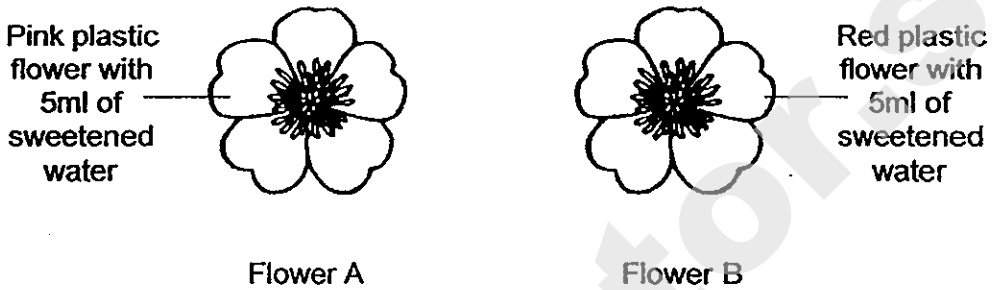
41. David carried out an experiment to find out if bees are attracted to sweetened water.

He used 2 similar plastic flowers of different colours and sprayed each of them with 5 ml of sweetened water as shown below.

The plastic flowers were left in an open garden for 5 hours.



His teacher, Mrs Tan, told him that his experiment was **not** a fair one.

a) State 2 changes David has to make to his set-up to ensure a fair experiment. *(2m)*

(i) _____

_____

(ii) _____

_____

b) After David makes the changes to his set-up, what variable should he measure to draw a conclusion on his experiment? *(1m)*

_____

_____

_____

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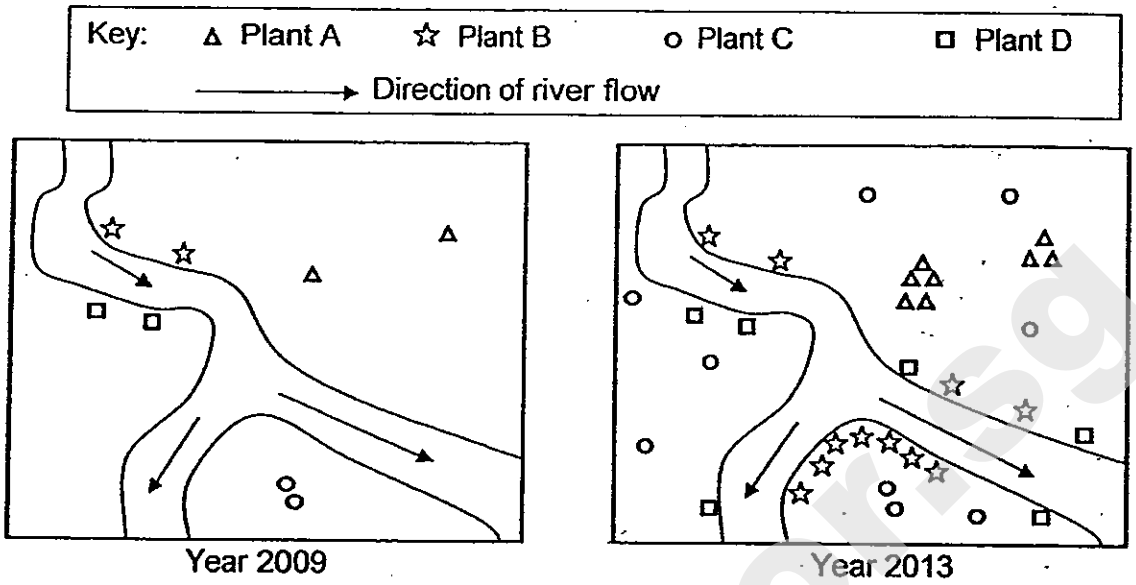
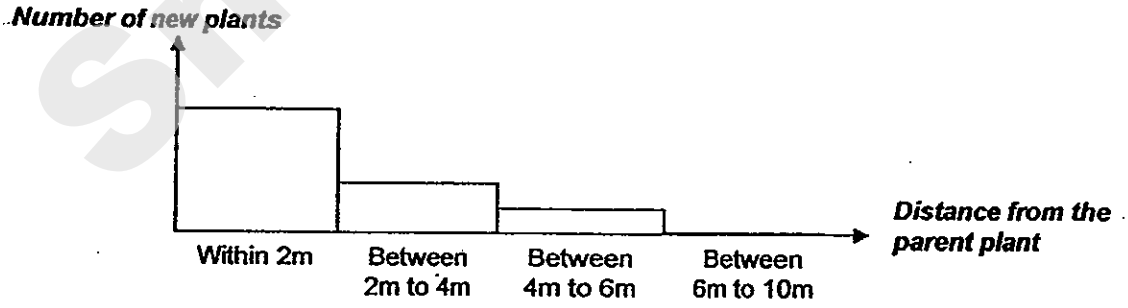
42. The diagrams below show the growth of plants A, B, C and D in an area over 4 years.



(a) Classify plants A, B, C and D by writing down the correct letters in the table below. *(2m)*

Dispersed by water	Dispersed by splitting	Dispersed by animals

(b) Plant X is dispersed by splitting. The graph below shows the number of seedlings of plant X that can be found growing away from the parent plant.



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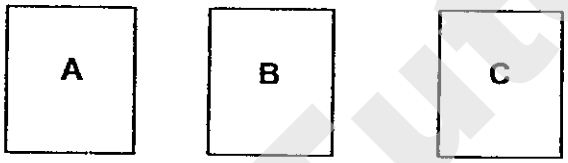
Question 42 continued

Based on the graph above, what is the relationship between the number of new plants and the distance from the parent plant for Plant X? *(1m)*

_____

_____

43. Tom wants to find out which material, A, B or C is the hardest. He used 3 similar sheets, made of different materials, A, B and C as shown below.



He used the same amount of strength to scratch each sheet 8 times with an iron nail and recorded the results in the table below.

Material	Number of scratches on the material
A	3
B	8
C	5

Use the results given in the table above to answer the following questions.

a) Which material, A, B or C, is the hardest? Explain your answer. *(1m)*

_____

_____

b) Tom scratched another similar sheet of material, D, with the iron nail 8 times. He observed 6 scratches on material D. *(1m)*
Which materials from table above are harder than Material D?

_____

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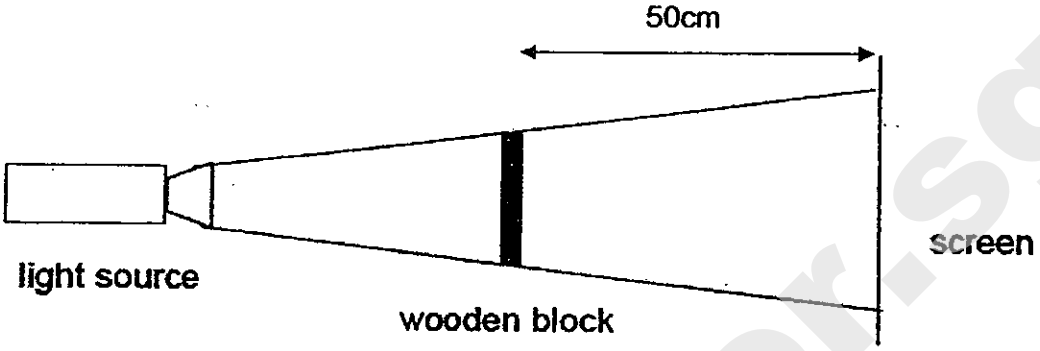
44. Tim wanted to find out if the distance between the wooden block and the screen will affect the size of the shadow cast on the screen.

He placed a wooden block in front of a light source to cast a shadow on a screen 50 cm away. The light source was not moved during the experiment.



He moved the wooden block 10 cm closer to the screen when he repeated the experiment. He measured the height of the shadow formed.

The following measurements were taken.

Distance between wooden block and the screen (cm)	Height of shadow formed (cm)
50	22.3
40	18.2
30	14.9
20	X
10	11.2

a) What is the value of X from the table above? *(1m)*

_____

b) Based on the results, what is the relationship between the distance of the wooden block from the screen and the height of the shadow? *(1m)*

_____

_____

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Question 44 continued

c) The wooden block was replaced by another material, X, of the same size and thickness. The shadow formed was of the same size but more blurred and of a lighter shade than the shadow formed by the wooden block. *(1m)*

What does this tell about the property of material X?

_____

End of Booklet B

Setters: Mr Nicholas Sin & Ms Michelle Tan

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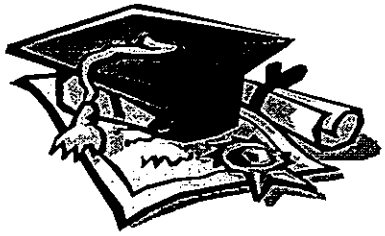

ANSWER SHEET

EXAM PAPER 2013
SCHOOL : HENRY PARK PRIMARY SCHOOL
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA1

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Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
3	1	2	2	3	3	4	4	1	2	4	2	1	2	4	1	4

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	2	3	2	1	2	2	2	2	4	3	3	2

Booklet B

Q31

a) Melting. The temperature remained constant at 0°C from the 1st to 4th minute. / Melting point is at 0°C.

b) 28°C

Q32

a) Water from the wet sand and wet cloth evaporates. It absorbs heat/ gains heat from the surrounding air.

b) Evaporation of water causes a decrease in the temperature of surrounding air.

Q33

a) Water droplets

b) Liquid X

c) Ice cubes. When water vapour touches the cooler metal dish, it loses heat more as ice is cold; hence it condenses into liquid X, which is water droplets.

Q34

a) The location of the experiment.

b) The temperature of surrounding air in higher in B than A.

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c) The exposed surface area of the water of Container C was larger than that of Container B. The larger the exposed surface area of water, the faster the rate of evaporation.
d) A low level of humidity.

Q35
a) Colourless
b) Both processes gain heat.
c) The process of boiling happens throughout the water but the process of evaporation happens only at the surface of the water.

Q36
a) i) Anther
ii) Ovary
b) i) baby
ii) fruit
c)

A baby develops and grows in the womb	4
A sperm fuses with the egg	2
The fertilised egg starts going through cell division	3
Sperms travel into the female reproductive organ	1

Q37
a) Pollination. The pollen grain from the male anther is transferred to the stigma of the female.
b) The male parts of Flower C are hanging out from the flower, the pollen grains from the male parts can be shaken off easily and carried by the wind.

Q38) C → A → E → D → B → Baby is born

Q39
a) Pollen grains
b) Fertillization
c) Part Z will start to wither and drop out.

Q40
a) The temperature of surrounding air.
b) The most suitable temperature for green beans to germinate is 29°C.

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Q41

a) i) David should change both of the flowers to either pink or red plastic.

ii) David should put plain water on one of the flowers, and the other still keeps the same, sweetened water.

b) The number of bees visiting to the flower of sweetened water and the flower with plain water.

Q42

a)

Dispersed by water	Dispersed by splitting	Dispersed by animals
B, D	A	C

b) The further the distance from the parent plant for Plant X, the lesser number of new plants.

Q43

a) A. It has the least number of scratches on it.

b) A, C

Q44

a) 12.8cm

b) The further the distance between he wooden block and the screen, the longer the height of the shadow.

c) It is translucent.

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METHODIST GIRLS' SCHOOL

Founded in 1887

MID-YEAR EXAMINATION 2013
PRIMARY 5
SCIENCE

BOOKLET A1

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: _____ ( )

Class: Primary 5._____

Date: 16 May 2013

This booklet consists of 9 printed pages including this page.

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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.

[60 marks]

---

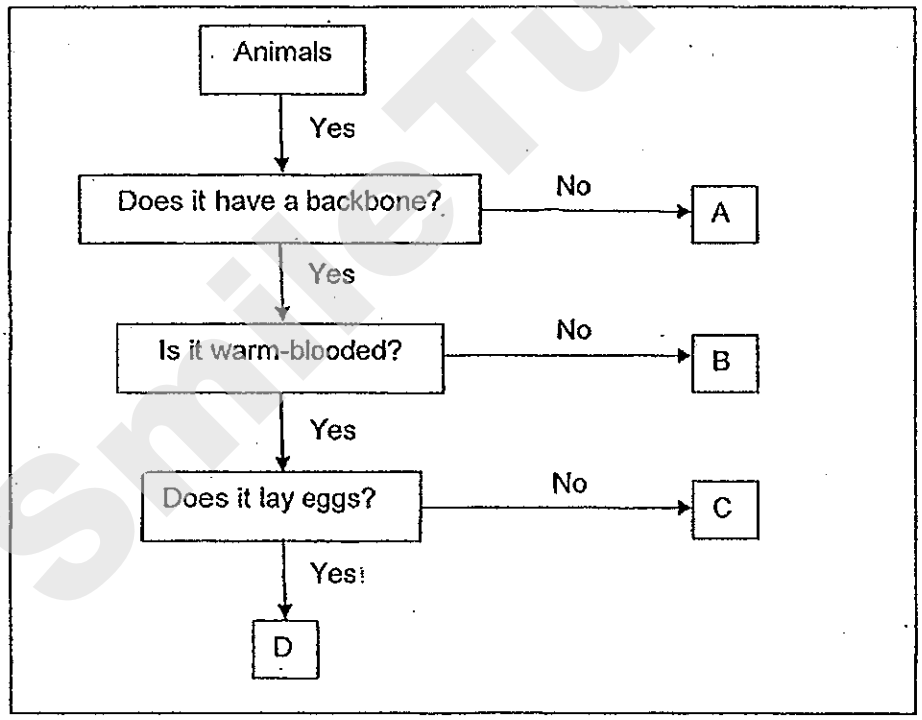
1. Study the table below.

	Moves on its own	Can reproduce	Can make food
A	No	No	No
B	No	Yes	Yes

Based on the table above, what can you conclude about A and B?

(1) A and B are living things.
(2) A is a fungi and B is a plant.
(3) A is a non-living thing and B is a living thing.
(4) Both A and B need air, food and water to grow.

2. Study the flow chart below.



Which of the following are animals A, B, C and D most likely to be?

	A	B	C	D
(1)	Snake	Penguin	Pig	Lizard
(2)	Snail	Crocodile	Dog	Penguin
(3)	Turtle	Toad	Cat	Crocodile
(4)	Spider	Lizard	Duck	Parrot

(Go on to the next page)

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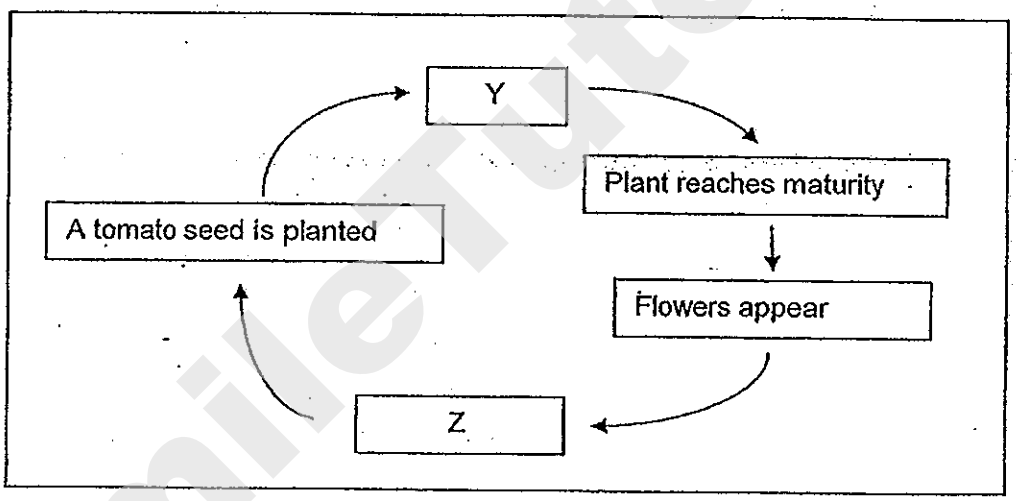
3. A living thing, S, has the characteristics shown below.

A: S does not bear flowers.
B: S reproduces from spores.
C: S cannot make its own food.

What is S likely to be?

(1) Moss
(2) Bacteria
(3) Mushroom
(4) Bird's nest fern

4. Study the life cycle of the tomato plant shown below.



Which of the following show the stages Y and Z correctly?

	Y	Z
(1)	Shoot appears	Fruits appear
(2)	Roots appear	Seed leaves fall off
(3)	Seeds are pollinated	Seeds are dispersed
(4)	Fruits appear	Roots appear

(Go on to the next page)

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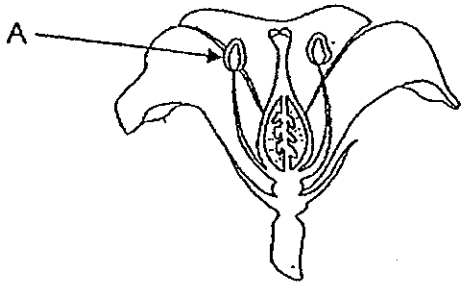
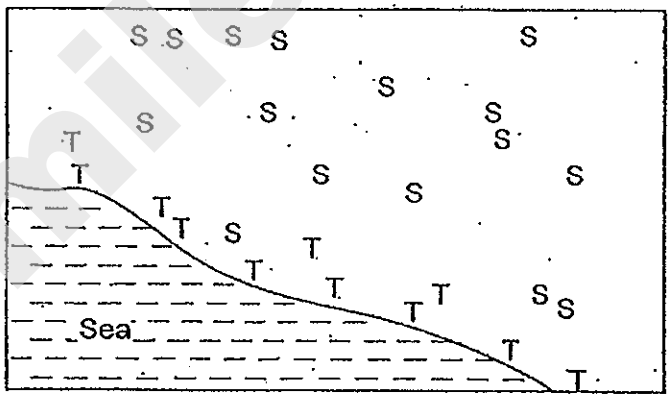
5. The diagram below shows the cross section of a flower.



Which part of the human reproductive system has the similar function as A?

(1) penis
(2) ovary
(3) testis
(4) sperm

6. The diagram below shows part of a shoreline where two types of plants, S and T are growing.



What are the likely characteristics of Plants S and T?

	Characteristics of fruits	
	Plant S	**Plant T**
(1)	Hard and heavy	Wing-like structure
(2)	Sweet and fleshy	Fibrous husk
(3)	Dry with hard pods	Small, light and has fine hairs
(4)	Edible with small digestible seeds	Covered with hooks

(Go on to the next page)

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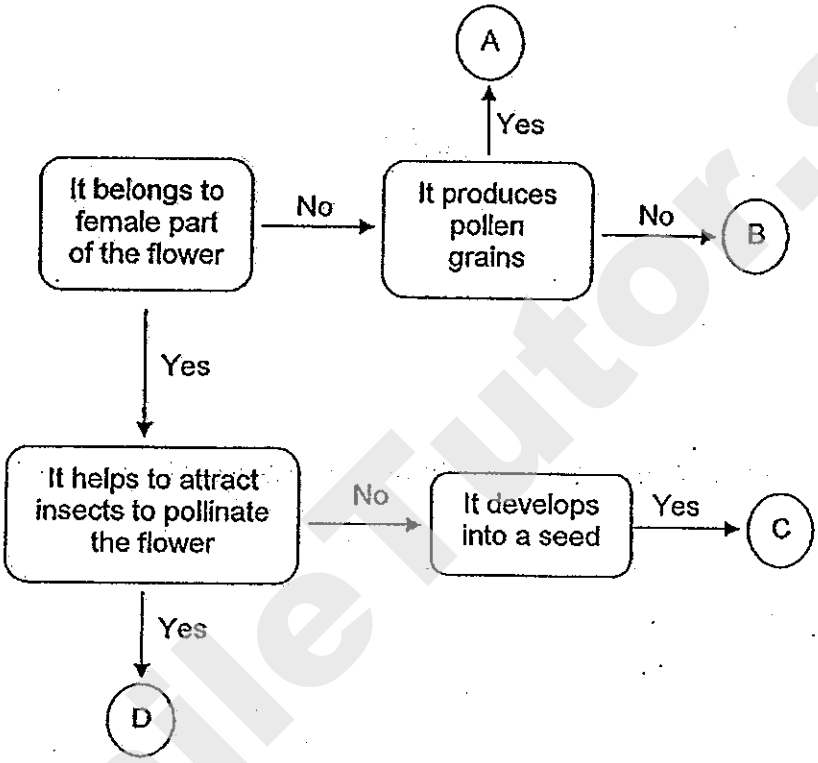
7. The flow chart below describes various parts of a flower, labelled A, B, C and D.



Which of the following correctly identifies the parts A, B, C and D?

	A	B	C	D
(1)	Filament	Anther	Ovary	Ovule
(2)	Filament	Anther	Ovule	Ovary
(3)	Anther	Filament	Ovary	Petal
(4)	Anther	Filament	Ovule	Petal

(Go on to the next page)

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8. Study the following table carefully. Young Plants P and Q are the offspring of Parent Plant Z. One of the young plants is reproduced sexually while the other is reproduced asexually.

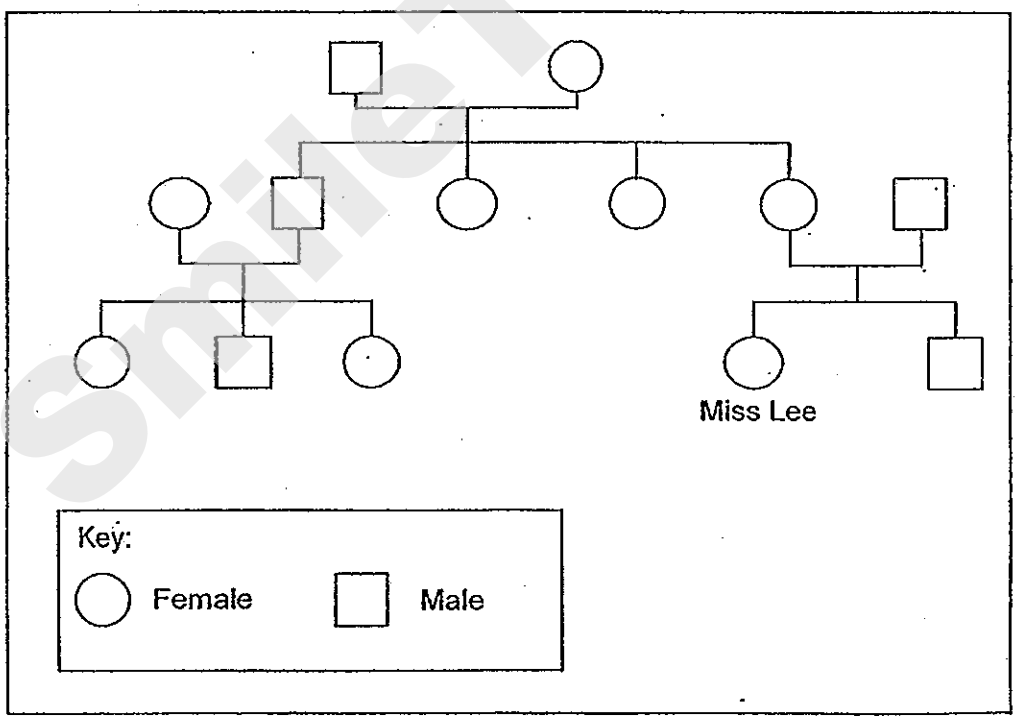
Features	Parent Z	Young Plant P	Young Plant Q
Height	Short	Short	Short
Colour of fruit	Light orange	Dark orange	Light orange
Size of fruit	Big	Small	Big

Which of the following statement(s) about Young Plants P and Q is/are correct?

A: Plant Q will produce juicer fruits than its Parent Plant Z
B: Plant P is reproduced sexually while Plant Q is reproduced asexually.
C: Plant Q is genetically identical to Parent Plant Z while Plant P is genetically different from Parent Plant Z.

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

9. Study the family tree below carefully.



How many nieces does Miss Lee's mother have?

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

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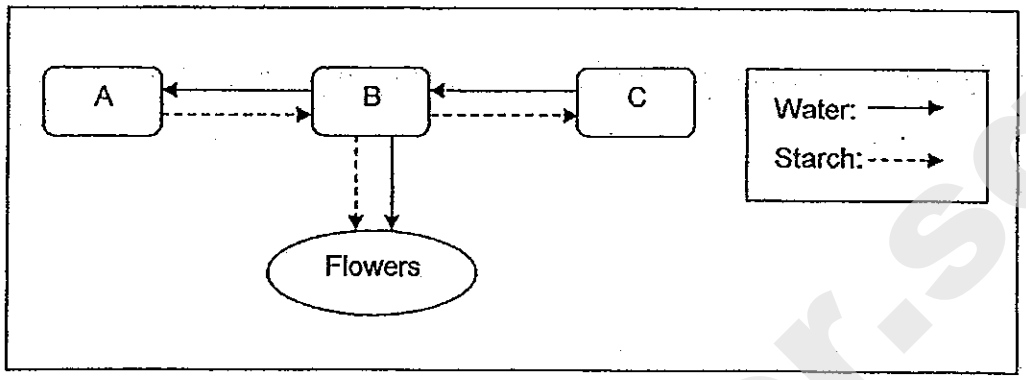
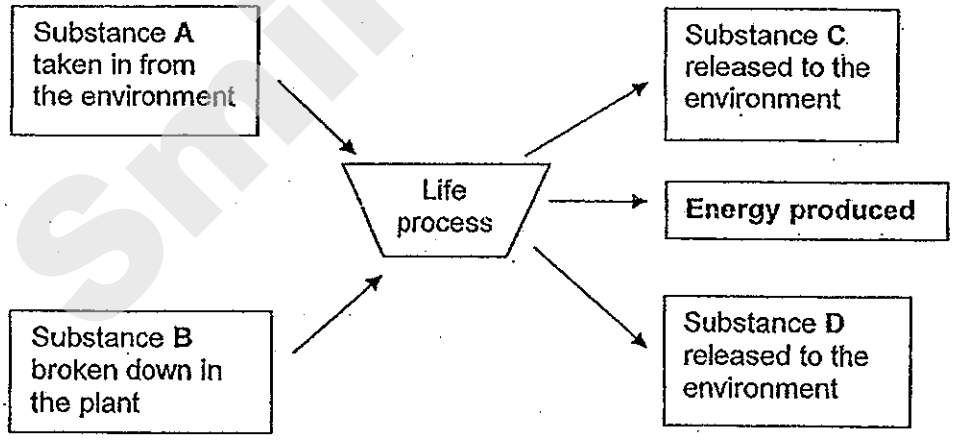
10. The diagram below shows how water and starch are transported in a plant.



Which one of the following shows the parts of the plant correctly?

	A	B	C
(1)	leaves	stem	roots
(2)	roots	stem	leaves
(3)	stem	leaves	roots
(4)	leaves	roots	stem

11. The diagram represents a certain life process that takes place in green plants.



Which one of the following correctly identifies Substances A, B, C and D?

	A	B	C	D
(1)	carbon dioxide	food	oxygen	water vapour
(2)	water	food	oxygen	carbon dioxide
(3)	food	water	water vapour	oxygen
(4)	oxygen	food	water vapour	carbon dioxide

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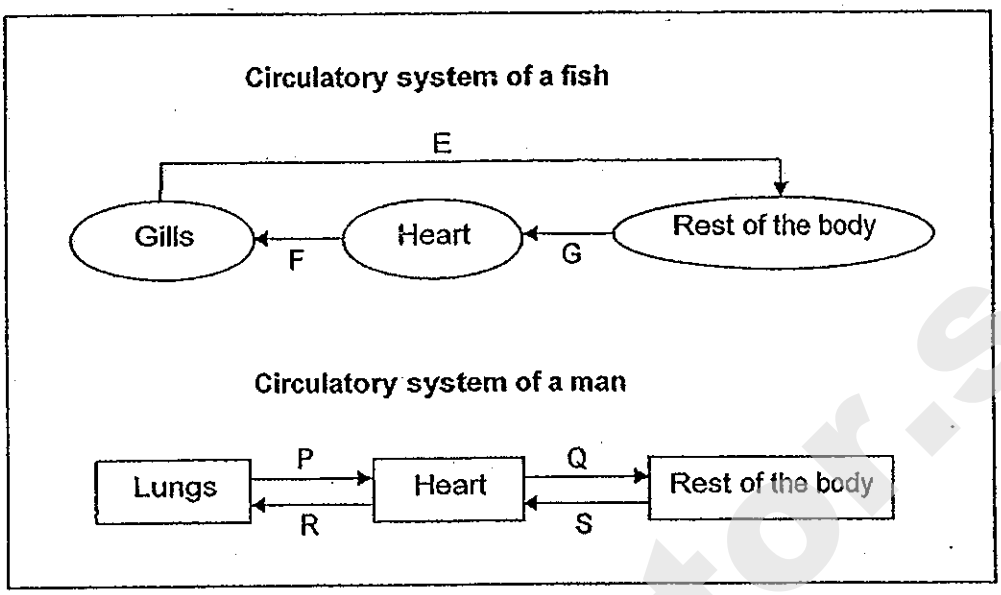
12. The diagrams below show how gases are transported in the circulatory systems of a fish and a man.

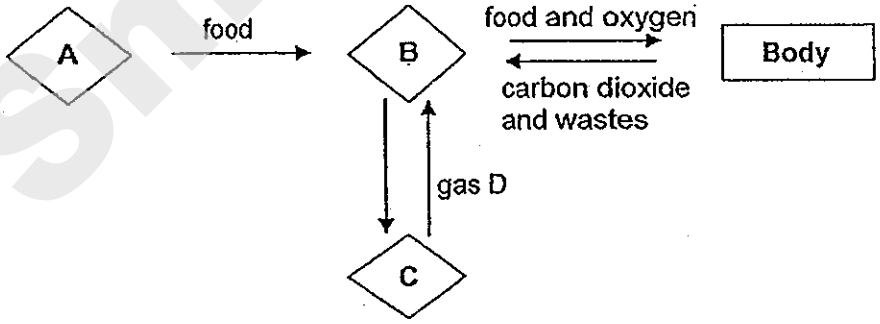


Based on the diagrams above, which of the following statement(s) is/ are correct?

A: F, G, P, and Q carry blood rich in oxygen.
B: Both systems require a heart to pump the blood in the body.
C: Oxygenated blood flows from the gills to the rest of the body in the fish.

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

13. The diagram below shows the different systems working together in the human body.



Based on the diagram above, which systems do A, B and C represent and what is gas D?

	System A	System B	System C	Gas D
(1)	digestive	circulatory	respiratory	oxygen
(2)	circulatory	digestive	respiratory	oxygen
(3)	digestive	respiratory	circulatory	carbon dioxide
(4)	circulatory	respiratory	digestive	carbon dioxide

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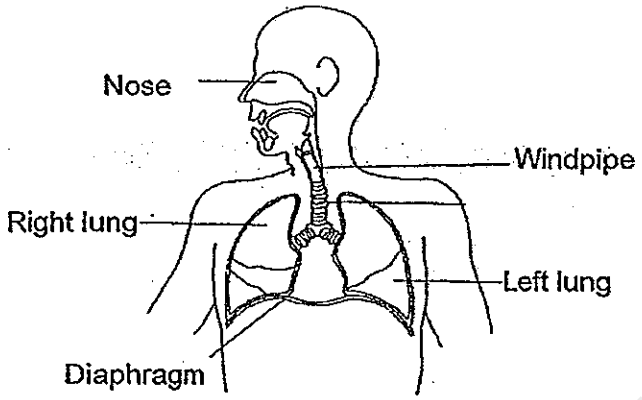
14. The diagram below shows the respiratory system in a human body.

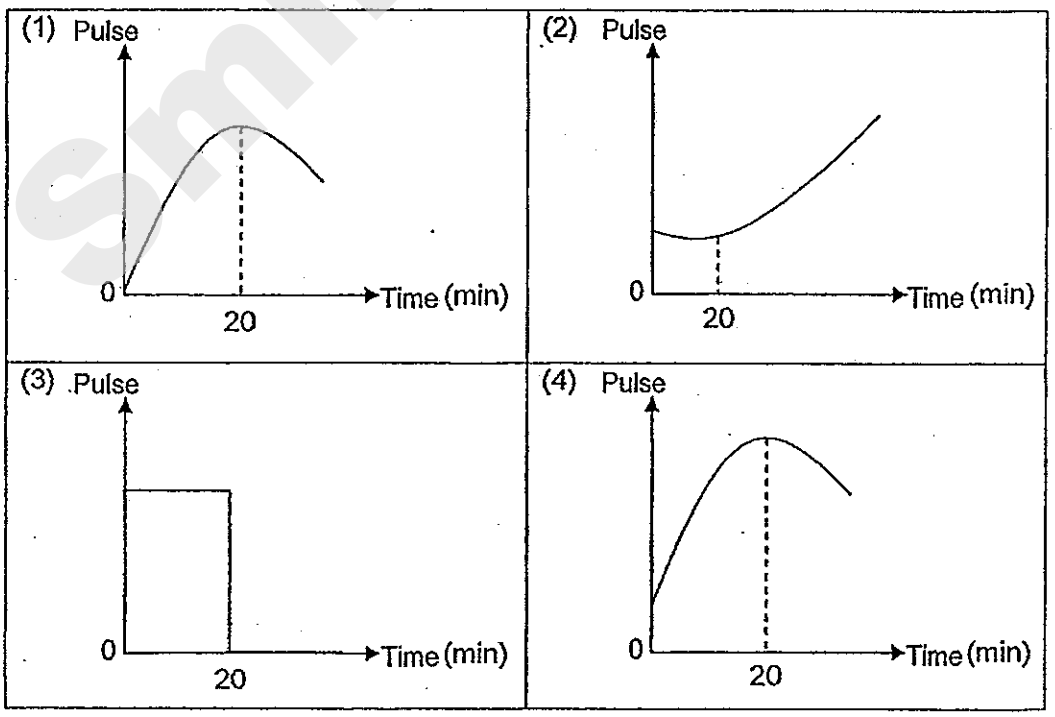


A: The diaphragm supports the lungs.
B: The nose absorbs oxygen for the body.
C: The lungs enable exchange of gases with the surrounding air.
D: The windpipe allows air to travel to the lung and food to the stomach.

Which of the above statement(s) is/ are correct?

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

15. An athlete jogs continuously up the hill for twenty minutes and then took a rest. Which graph shows his pulse rate during the training session?



End of Booklet A1

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METHODIST GIRLS' SCHOOL

Founded in 1887

MID-YEAR EXAMINATION 2013
PRIMARY 5
SCIENCE

BOOKLET A2

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: _____ ( )

Class: Primary 5._____

Date: 16 May 2013

This booklet consists of 13 printed pages including this page.

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

[60 marks]

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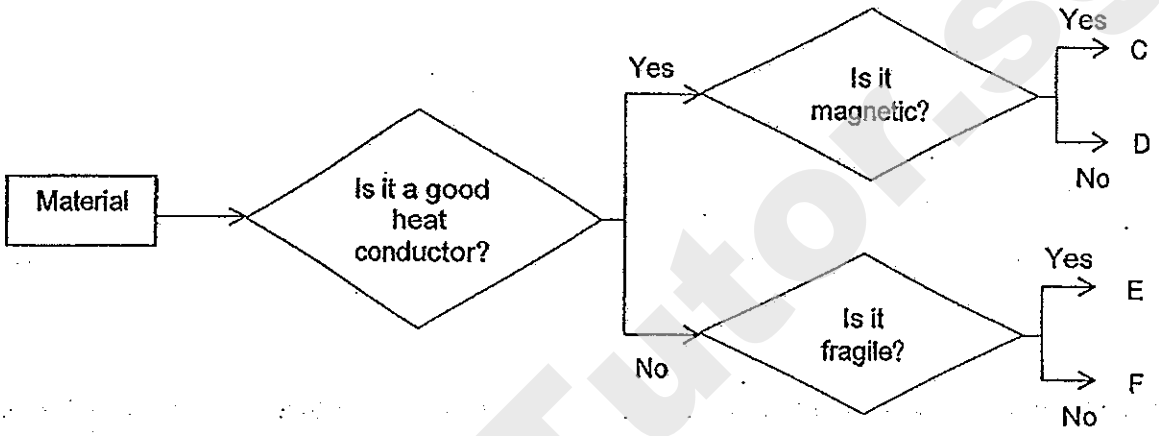
16. The diagram below shows how materials C, D, E and F can be classified.



What do C, D, E and F represent?

	C	D	E	F
(1)	Iron	Steel	Wood	Rubber
(2)	Nickel	Copper	Glass	Wood
(3)	Aluminium	Silver	Clay	Plasticine
(4)	Steel	Cobalt	Ceramic	Fabric

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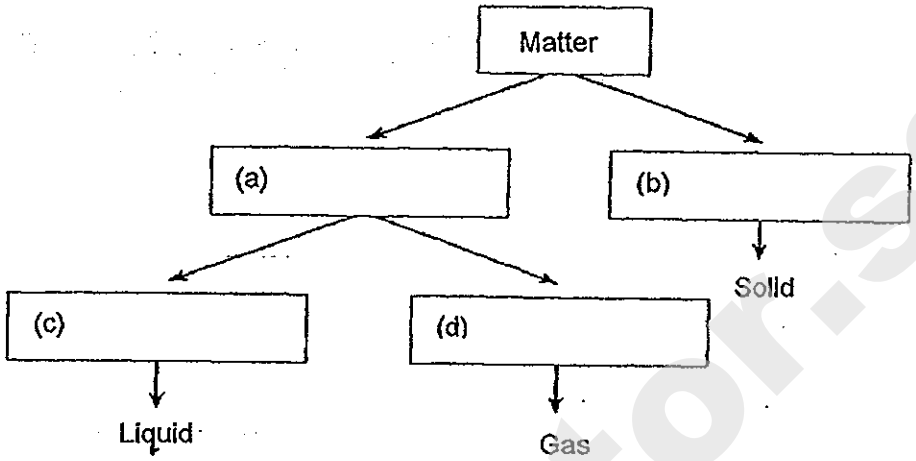
17. Matter has mass and occupies space. However, some have definite shapes and volumes while others do not.



What are the answers for the boxes above?

	(a)	(b)	(c)	(d)
(1)	No definite shape	Definite shape	Definite volume	No definite volume
(2)	No definite shape	Definite shape	No definite volume	Definite volume
(3)	Definite shape	No definite shape	Definite volume	No definite volume
(4)	Definite shape	No definite shape	No definite volume	Definite volume

18. A student wanted to find out how different volume and temperature of the water would affect the amount of heat transfer. He filled four similar beakers with water of different volume and temperature as shown below.

Beaker	Volume (ml)	Temperature (°C)
A	30	70
B	30	37
C	80	70
D	25	37

The four beakers were placed in the freezer overnight. Which beaker lost the greatest amount of heat to become ice?

(1) A

(2) B

(3) C

(4) D

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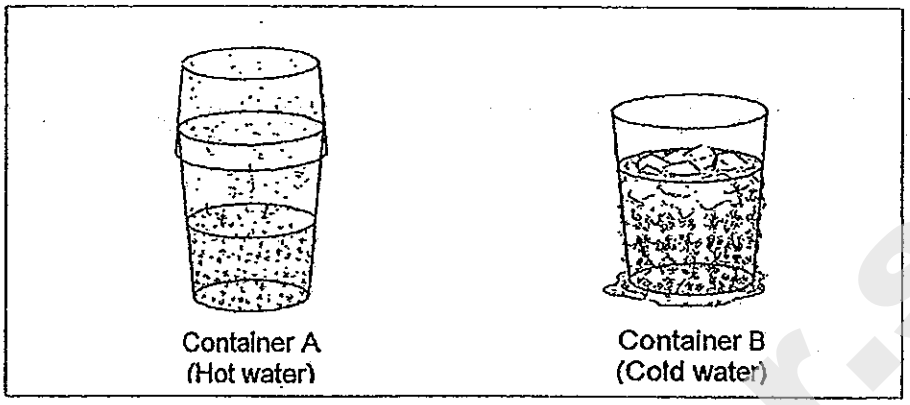
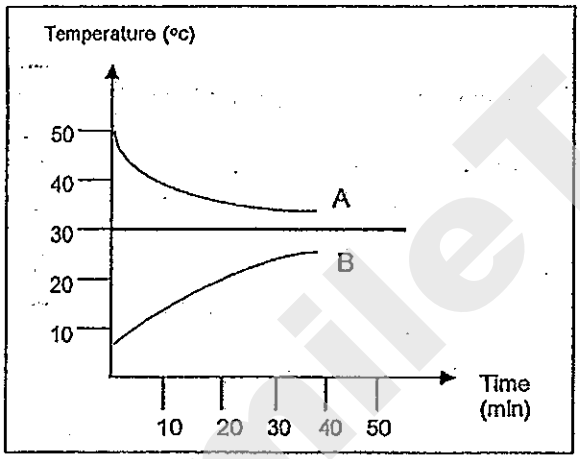
19. Two containers were filled with water at different temperatures.

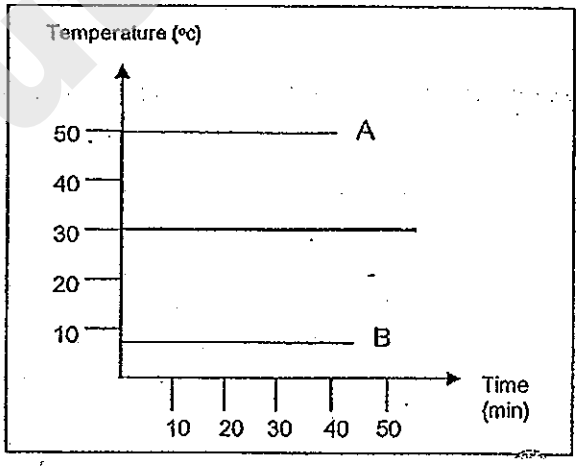


Which one of the following graphs correctly shows the temperature of the water in the containers after a period of time?

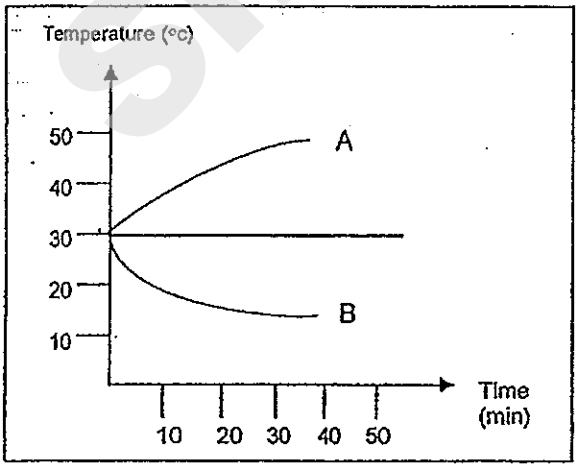
(1)



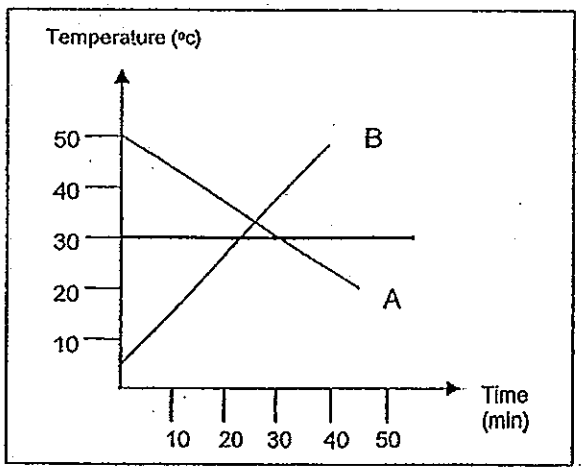
(2)



(3)



(4)



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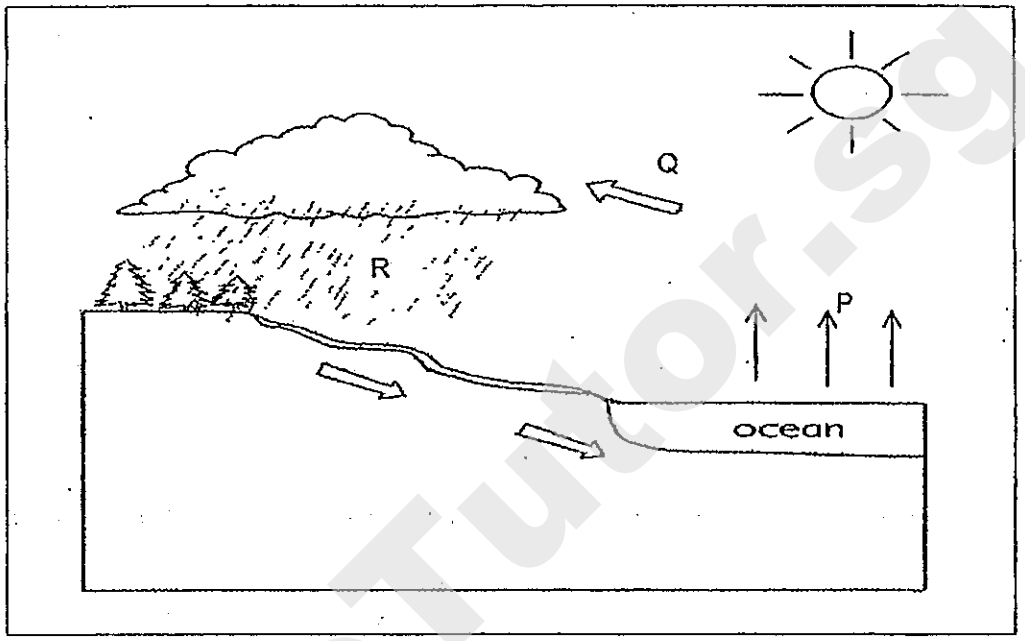
20. The following diagram shows a water cycle.



There is heat transfer at each process in the water cycle. What is the heat gain and heat loss at different parts of the water cycle?

	P	Q	R
(1)	No change	Heat gain	Heat loss
(2)	Heat loss	Heat gain	No change
(3)	Heat gain	No change	Heat loss
(4)	Heat gain	Heat loss	No change

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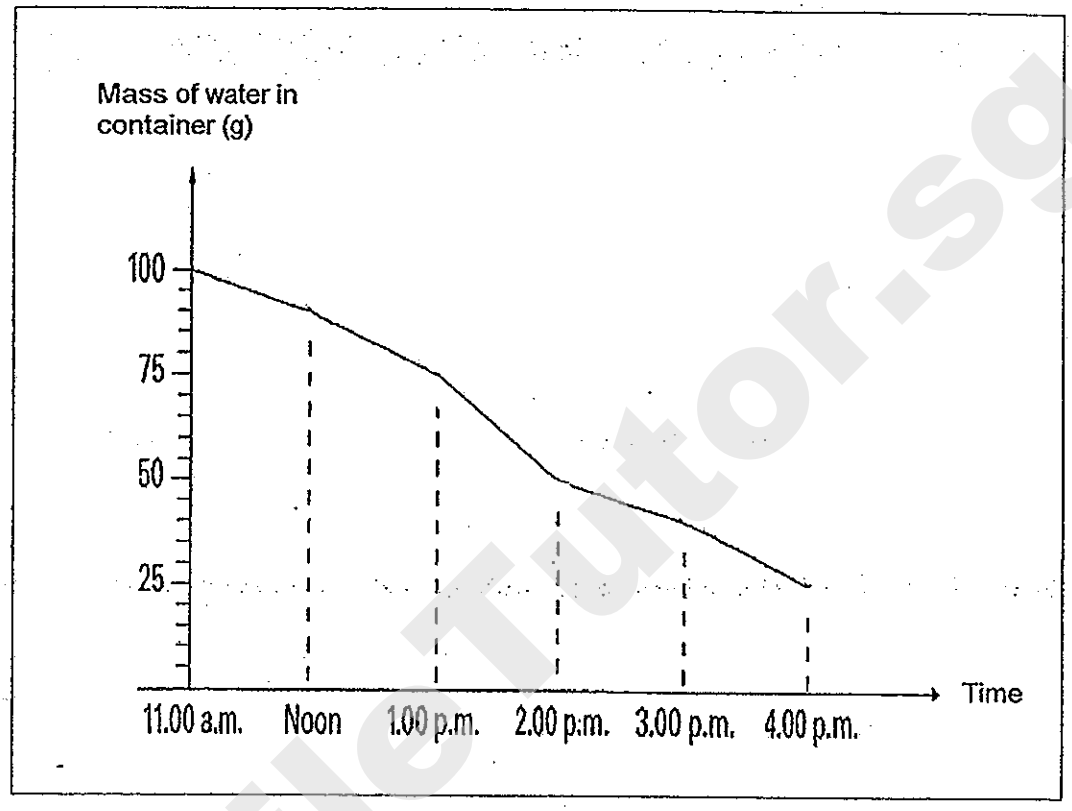
21. The graph below shows the change of mass of water in a container placed under the sun.



The rate of evaporation is the highest between _____.

(1) 12.00p.m. and 1.00p.m.

(2) 1.00p.m. and 2.00p.m.

(3) 2.00p.m. and 3.00p.m.

(4) 3.00p.m. and 4.00p.m.

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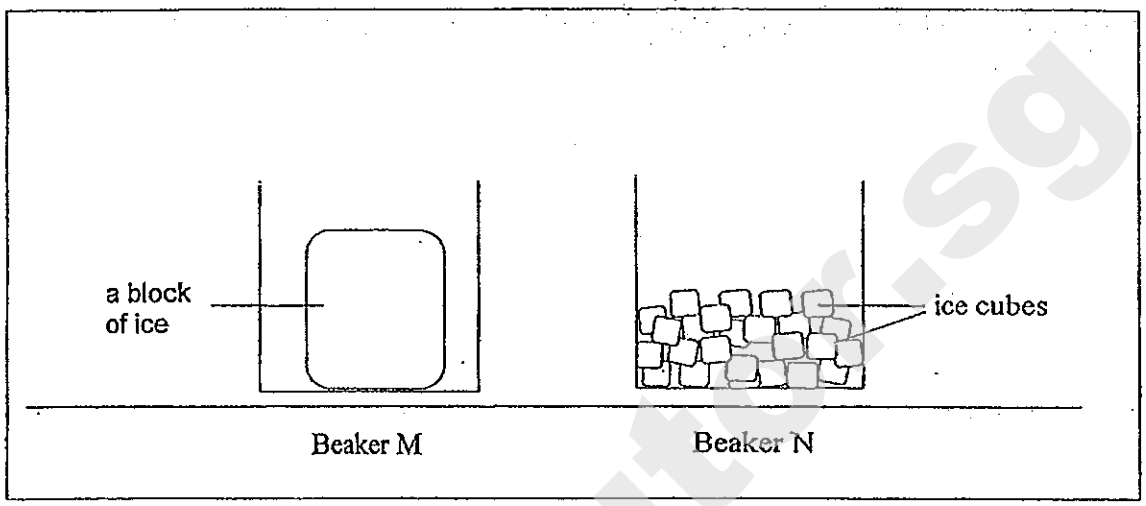
22. Sam would like to know whether the size of the ice would affect its rate of melting. He set up an experiment as shown below and left the beakers in the laboratory for 30 minutes.



After 30 minutes, Sam poured out the water that was found in each beaker into a measuring cylinder. What would Sam observe after 30 minutes?

(1) Both beakers of ice melted at the same rate
(2) The ice cubes melted faster than the block of ice
(3) The block of ice melted faster than the ice cubes
(4) Both beakers of ice melted but he was not able to tell which one melted faster

23. On a hot and humid day, Fatimah feels warm and 'sticky'. What is the reason for this observation?

(1) The perspiration on her skin cannot evaporate at all.
(2) The stickiness on her skin is due to the air pollutants around her..
(3) The heat from the sun speeds up the rate of evaporation of her perspiration.
(4) The higher amount of water vapour in the air slows down the rate of evaporation.

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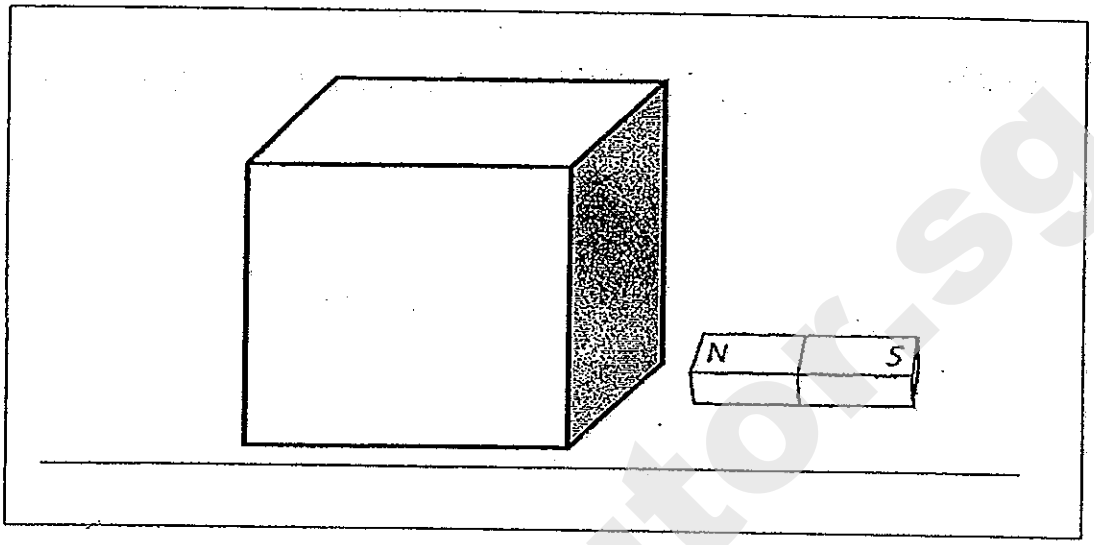
24. The diagram shows a box which is made of a certain material and a magnet. When the magnet is brought close to the box, the magnet experienced repulsion.



Which one of the following statements below is true?

(1) There is a magnet in the steel box.
(2) There is a magnet in the wooden box.
(3) There is a steel nail in the copper box.
(4) There is a nickel nail in the plastic box.

(Go on to the next page)

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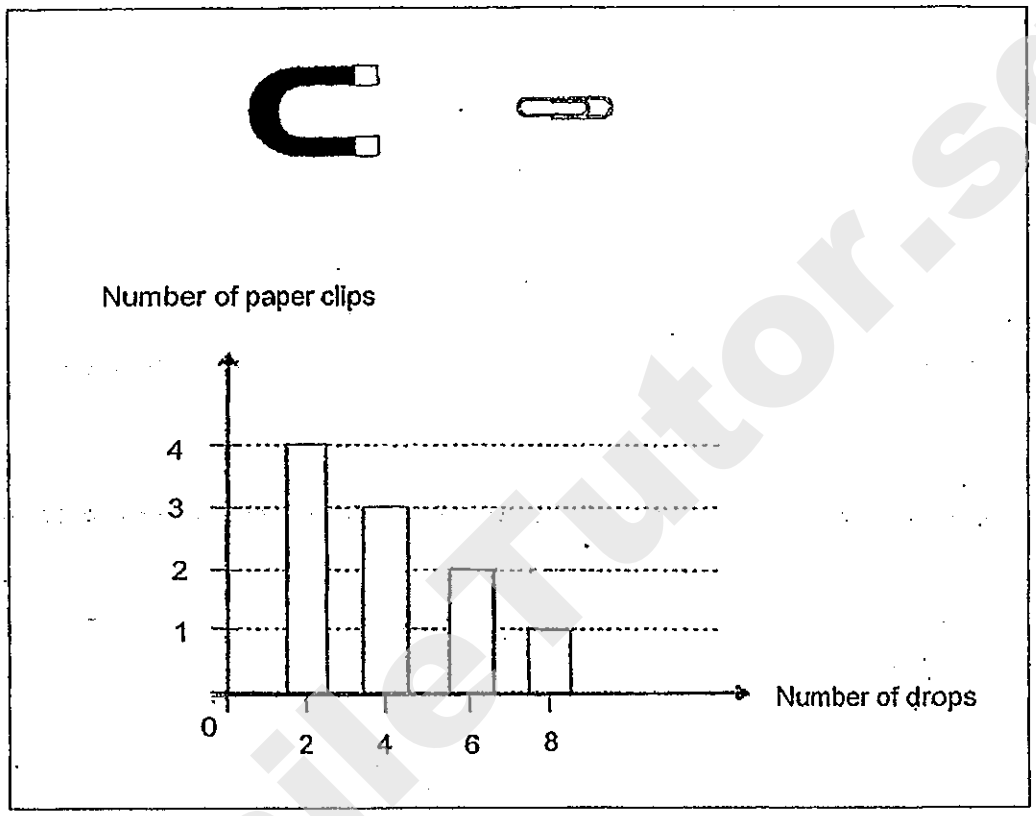
25. Jane conducted an experiment to find out how the strength of a magnet was affected by the number of times the magnet was dropped on the ground. She dropped the magnet from the same height and then recorded how many paper clips it could attract when the clips were placed near it. The graph below showed the results of the experiment.



Based on the graph above, which one of the following statements is a likely conclusion?

(1) Before dropping, the magnet could attract 4 paper clips
(2) After dropping it 2 times, the magnet could attract 3 paper clips
(3) After dropping it more than 8 times, the magnet could not attract any paper clips
(4) After dropping it more than 3 times, the magnet attracted less than 4 paper clips

(Go on to the next page)

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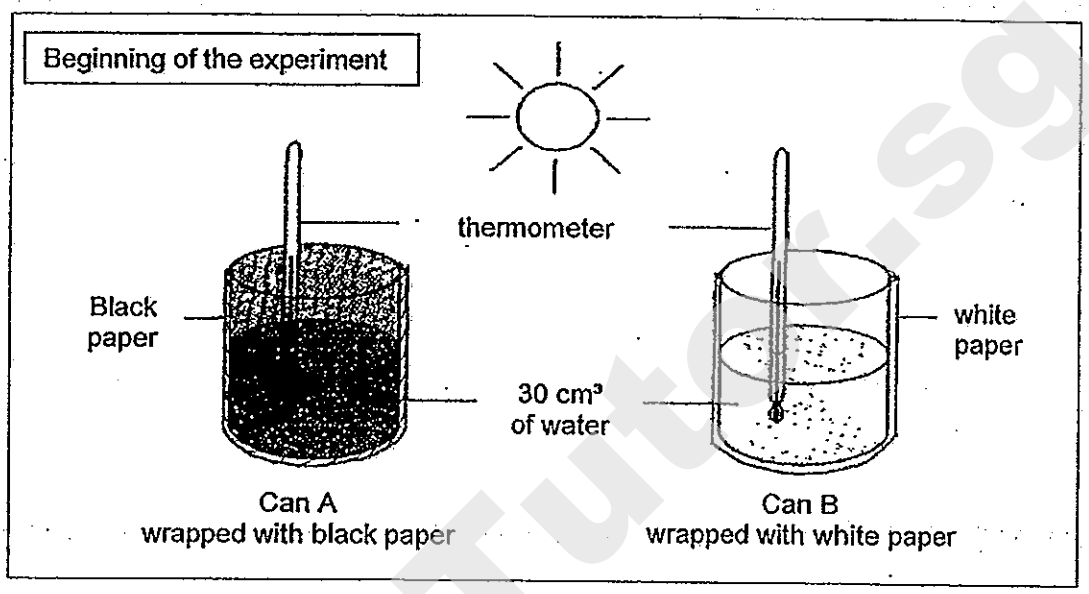
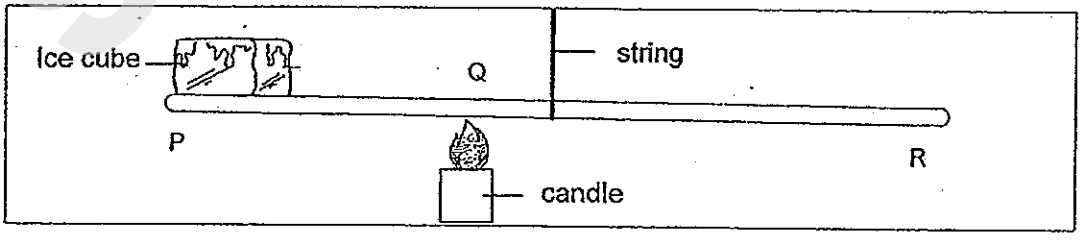
26. Shannen wrapped two cans of water with paper of the same quality but of different colours as shown below. She then placed them under the sun for 1 hour.



What would Shannen observe at the end of the experiment?

(1) Both cans had the same temperature.
(2) Can A had a higher temperature than Can B
(3) Can B had a higher temperature than Can A
(4) Both cans remained at the temperature of 25°c

27. A metal rod PR was suspended in the air by a string. An ice cube was placed at P while a burning candle was placed under Q as shown below.



After a short while, the ice started to melt. Which one of the following statements is true?

(1) P is the coldest point, followed by Q, then R
(2) P is the coldest point, followed by R, then Q
(3) Q is the hottest point, followed by P, then R
(4) R is the hottest point, followed by Q, then P

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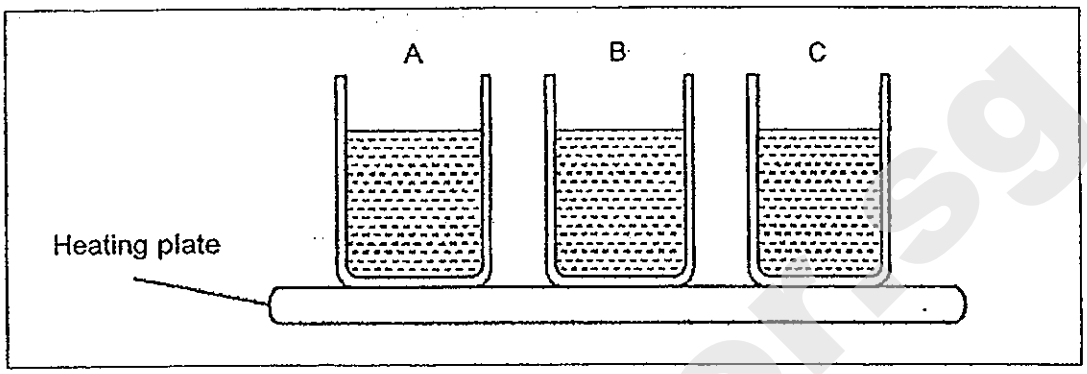
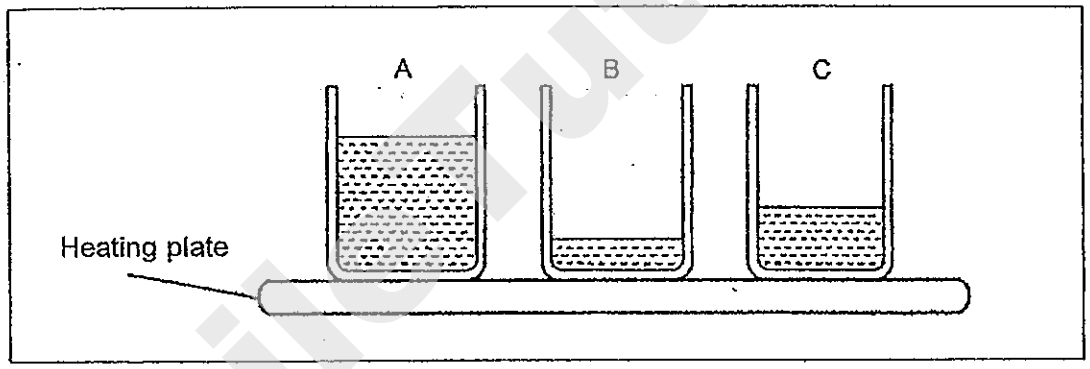
28. Three similar containers A, B and C contained the same amount of water of the same temperature. They were placed on a heating plate as shown in the diagram below.



After 30 minutes, the water level in the containers dropped as shown below.



What is the reason for this observation?

(1) Container A is the best conductor of heat
(2) Container B is the poorest conductor of heat
(3) Container C is a better conductor of heat than A
(4) Container B is a poorer conductor of heat than C

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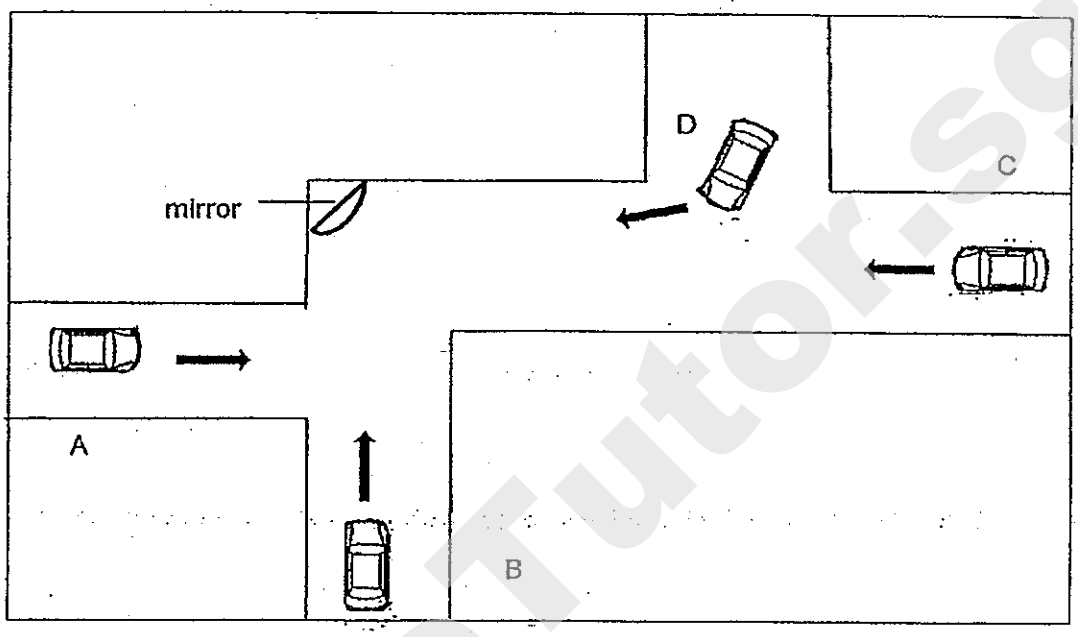
29. Four cars, A, B, C and D are moving on the road in the directions as shown in the diagram. There is a mirror installed at the corner of the roads.



Which two drivers are not able to see each other in the mirror while driving?

(1) A and B

(2) B and C

(3) C and D

(4) B and D

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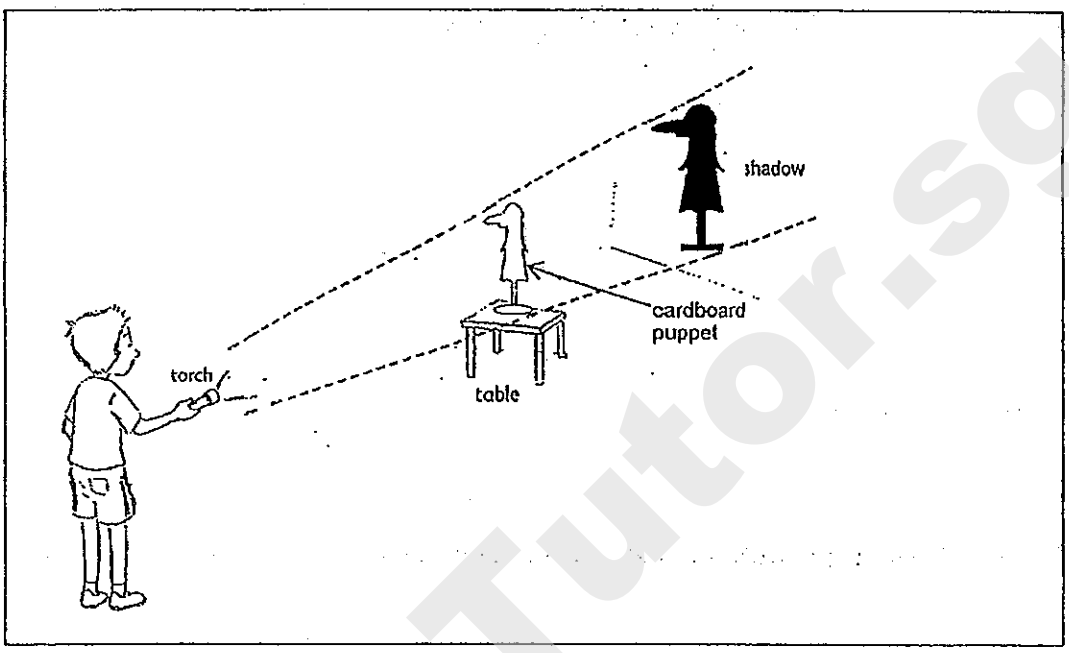
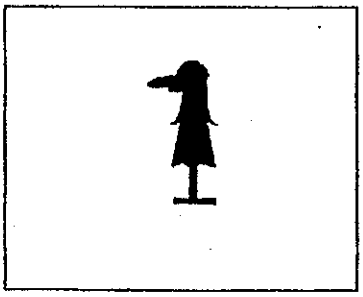
30. Raju shone his torchlight onto a cardboard puppet which cast a shadow on the wall as shown.



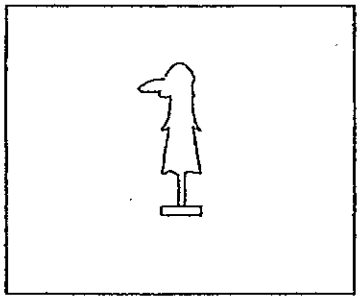
Which of the following correctly represents the shadow formed when Raju moved closer to the puppet?

(1)

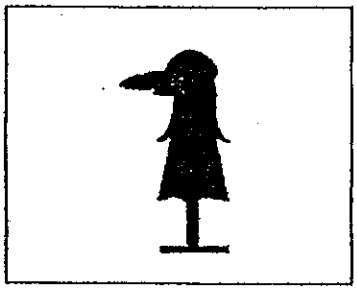
(2)



(3)



(4)



End of Booklet A2

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METHODIST GIRLS' SCHOOL

Founded in 1887

MID-YEAR EXAMINATION 2013
PRIMARY 5
SCIENCE

BOOKLET B1

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

INSTRUCTIONS TO CANDIDATES

Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

Name: _____ ( )

Class: Primary 5._____

Date: 16 May 2013

Booklet A	**/ 60**
Booklet B1	**/ 20**
Booklet B2	**/ 20**
TOTAL	**/ 100**

This booklet consists of 8 printed pages including this page.

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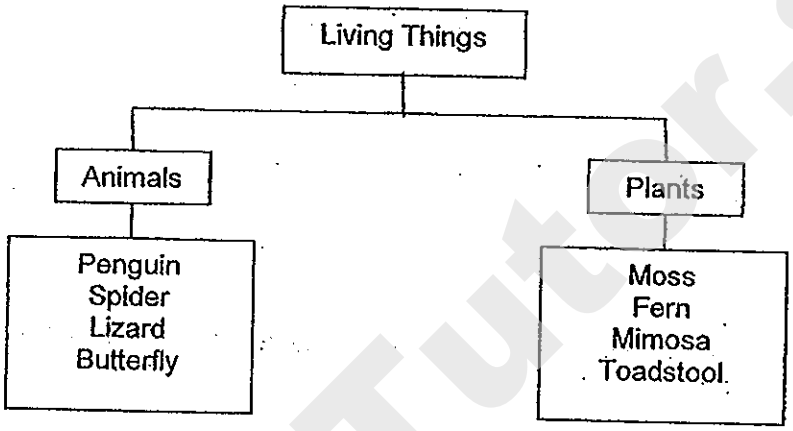
For questions 31 to 37, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

[20 marks]

31. Study the classification chart below carefully:



(a) Based on the chart above, which of the living things is **wrongly** grouped? [1]

(b) Give a reason for your answer. [1]

(c) Name an organism which is in the same group as your answer in (a). [1]

3

(Go on to the next page)

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32. Diagram 1 shows two reproductive cells of humans.
Diagram 2 shows the life cycle of a frog.

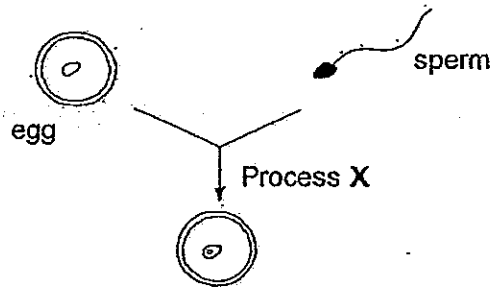


Diagram 1

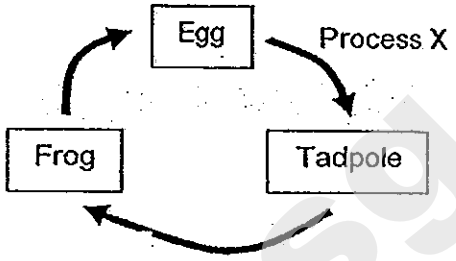


Diagram 2

(a) Which process in animal reproduction occurs at X? [1]

_____

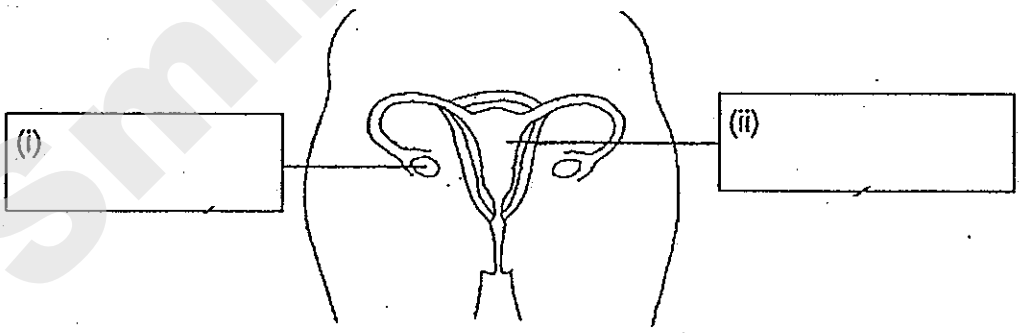
(b) The frog lays many eggs at one time. Why do frogs lay many eggs at one time? [1]

_____

_____

_____

33. The diagram below shows a female human system.



(a) Label the parts (i) and (ii) of the female reproductive system. [1]

(b) What is the function of part (i) as shown above? [1]

_____

_____

4

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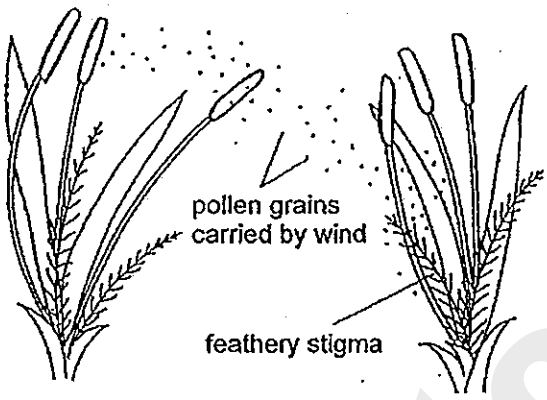
34a. Study the diagram below carefully.



(i) The diagram above shows a process in plant reproduction. Describe the process. [1]

(ii) How are the male parts adapted to carry out the process shown in the diagram above? [1]

2

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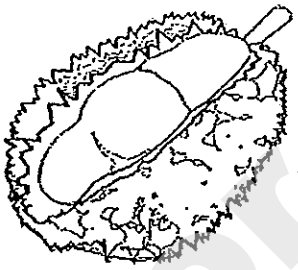
34b. The diagrams below show how the fruits are dispersed by animals.

Fruit Y



Fruit Z

(i) State the difference between the methods of seed dispersal of Fruit Y from Fruit Z. [1]

_____

_____

_____

(ii) Compared to fruit Z, explain how the method of dispersal of the seed of Fruit Y is more advantageous to the seed. [1]

_____

_____

_____

2

(Go on to the next page)

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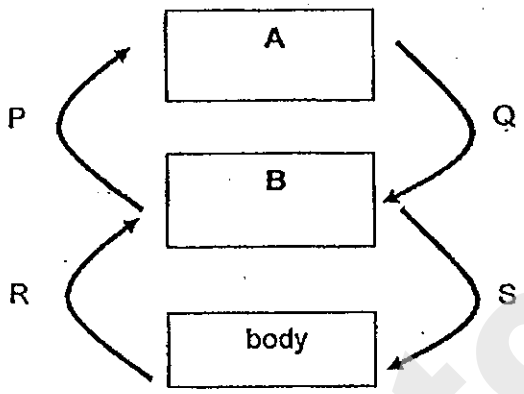
35. The diagram below shows how blood flows in the human circulatory system. Boxes A and B each represents a different organ. Arrows P, Q R and S represent the movement of blood.



(a) Identify Organ A and Organ B [1]

Organ A: _____

Organ B: _____

(b) State one difference between the gases found in the blood flowing at P and Q. [1]

_____

_____

_____

(c) Name the type of blood vessels carrying blood flowing at R and S. [1]

R: _____

S: _____

3

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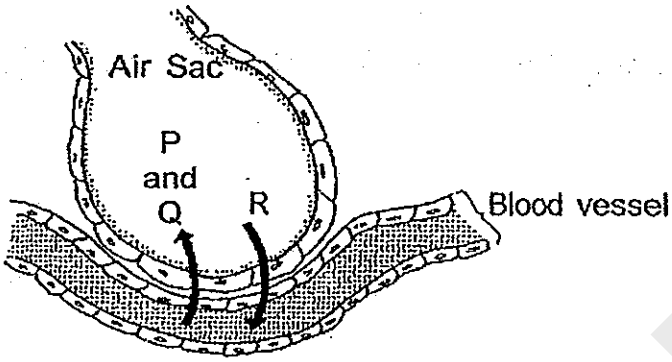
36. The diagram below shows the exchange of gases between the blood in an air sac and a blood vessel.



(a) P, Q and R represent gases that enter and leave the air sac respectively. Identify gases P, Q and R. [2]

Gas P: _____

Gas Q: _____

Gas R: _____

(b) What happens to gas R after it enters the blood vessels? [1]

_____

_____

_____

_____

(c) There are many air sacs in our lungs. Explain why this is necessary. [1]

_____

_____

_____

_____

4

(Go on to the next page)

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37. A research was conducted to find out about the breathing rates of young children. The results are presented in the table below.

Age	Average breathing rate (breaths per minute)
4	23
5	22
6	22
7	21
8	20
9	20
10	19
11	18
12	17
13	16
14	15
15	14
16	14

(a) What is the relationship between the age of the children and breathing rate? [1]

(b) John is a ten year old boy who loves to jog. Explain how his breathing rate would differ from the table above if he jogs continuously for thirty minutes. [1]

2

End of Booklet B1

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METHODIST GIRLS' SCHOOL

Founded in 1887

MID-YEAR EXAMINATION 2013
PRIMARY 5
SCIENCE

BOOKLET B2

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

INSTRUCTIONS TO CANDIDATES

Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

Name: _____ ( )

Class: Primary 5._____

Date: 16 May 2013

Booklet B2	/ 20

This booklet consists of 8 printed pages including this page.

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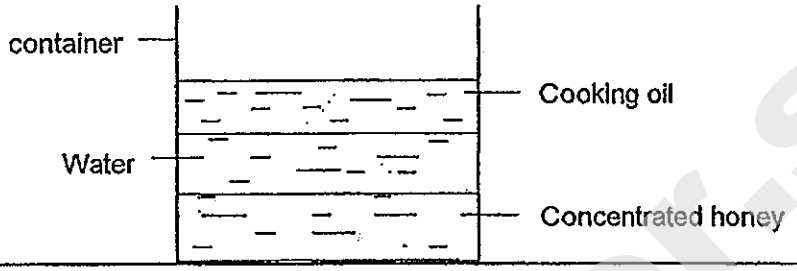
For questions 38 to 44, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

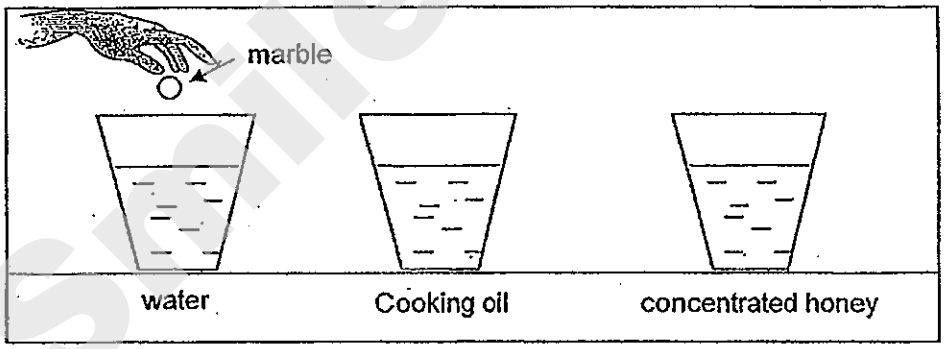
[20 marks]

38. When Raine poured an equal amount of 3 different types of liquids into a container, she found that they formed 3 separate layers as shown below.



(a) Explain the above observation. [1]

Raine then filled three glasses with the above liquids. Then she dropped a marble into the water and timed how long it took the marble to fall to the bottom. She repeated the same procedure for the other two glasses.



(b) Raine observed that marble fall the fastest in water. Rank the order of how quickly the marble sinks in the three liquids in the space below. [1]

Fastest → Slowest

2

(Go on to the next page)

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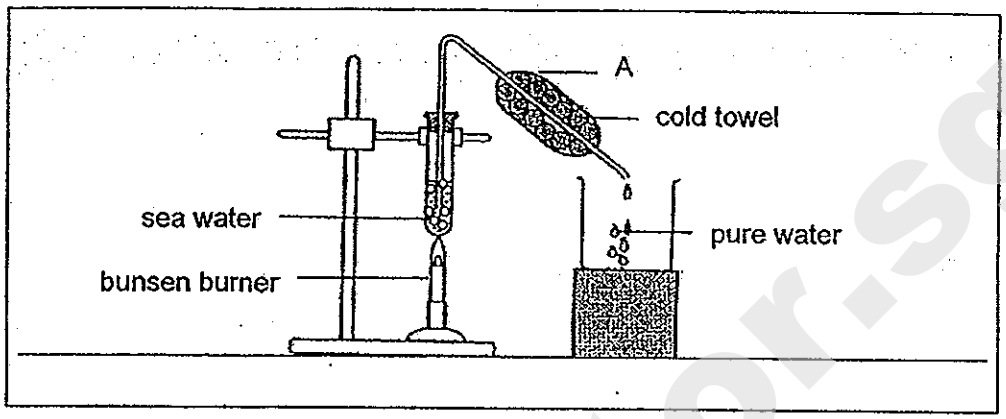
39. In a Science laboratory, pure water can be obtained from sea water as shown in the set-up below.



(a) Name the 3 processes involved in the above experiment. [1½]

(b) ~~(a)~~ What is the purpose of the cold towel in the set-up of A? [1]

(c) ~~(b)~~ If the ~~bunser~~ bunsen burner continues to heat up the sea water for a length of time, water would stop dripping into the beaker. Explain why this is so? [1]

3½

(Go on to the next page)

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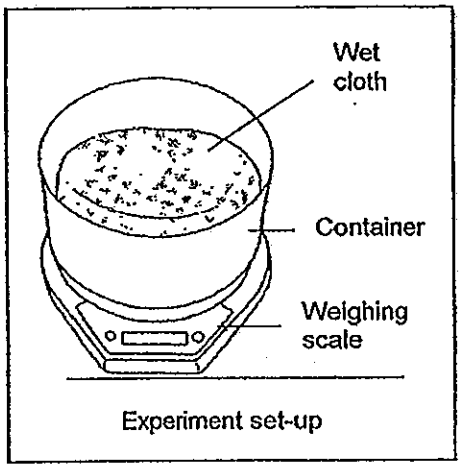
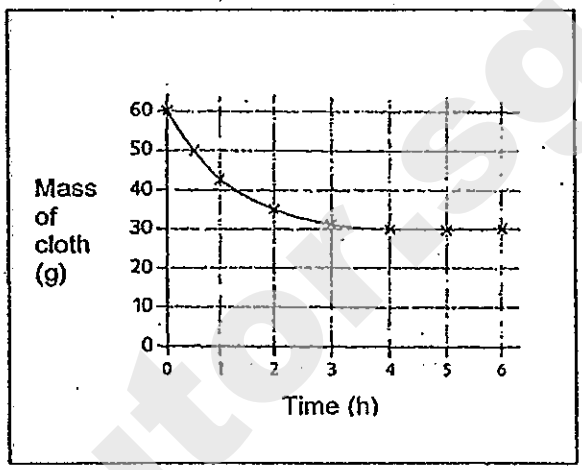
40. Jasmine wanted to find the change in mass of a piece of wet cloth. She placed the wet cloth in a container on a weighing scale and left them in the room for a few hours. She then charted a graph as shown below.



Experiment set-up



(a) Based on the graph, what could have caused the mass of the wet cloth to change? [1]

(b) What is the mass of the cloth when it is dry? [1]

(c) What could be done so that she could dry the cloth faster? [1]

3

(Go on to the next page)

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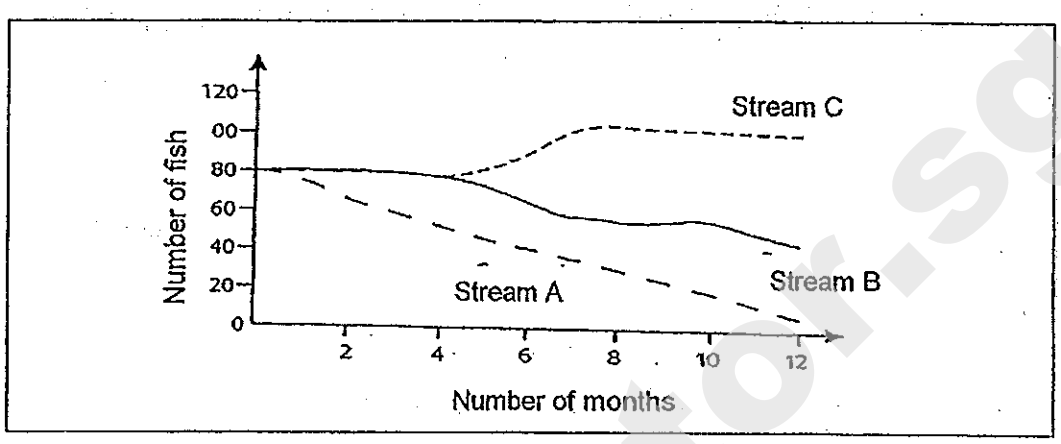
41. A group of fishermen catches fish for a living along the streams in the village. Unfortunately, an incident of oil spill happened and affected one of the streams. The number of fish found in the streams for the past 1 year was charted as shown below.



Based on the graph, indicate whether the following statements are **'True'**, **'False'** or **'Not possible to tell'**. Put a tick (√) in the correct box. [2½]

	Statement	True	False	Not possible to tell
(a)	Stream A was polluted.			
(b)	There was a drop in the number of fish in Stream B due to a disease among the fish.			
(c)	Stream C is not affected by the oil spill.			
(d)	Stream C is always found with more fish than the other 2 streams.			
(e)	From the 4th month to the 8th month, the death rate of fish in Stream B is lower than its birth rate.			

2½

(Go on to the next page)

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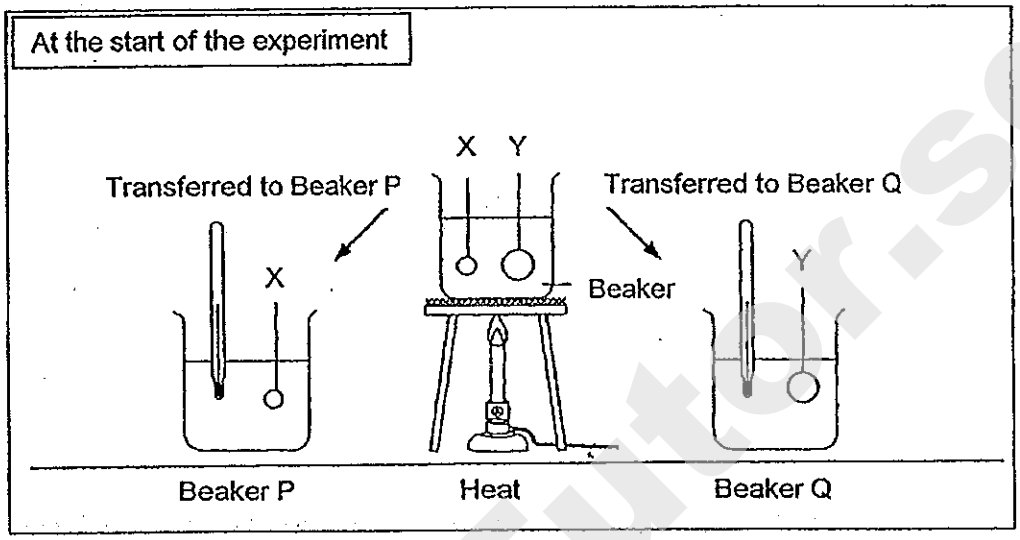
42. X and Y are two steel spheres of different sizes. They were heated in a beaker of water for 30 minutes as shown in the diagram. After that, the 2 spheres were transferred to two separate beakers, P and Q. Beakers P and Q are similar and contained equal volumes of water at room temperature.



(a) What could be observed in both beakers, P and Q, after 5 minutes? [1]

(b) What is the relationship between the size of the steel sphere and the temperature of the sphere? [1]

(c) Give a reason for your answer in (b). [1]

3

(Go on to the next page)

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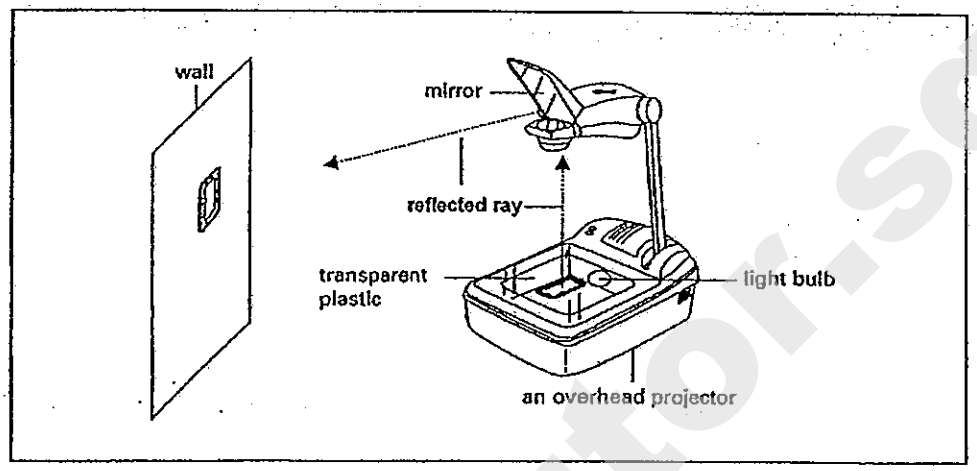
43. The picture below shows an overhead projector. It is used to form an image on the wall.



(a) What is the purpose of the light bulb? [1]

(bi) What is the property of light in this set-up? [1]

(bii) What happened if the mirror is shattered? [1]

3

(Go on to the next page)

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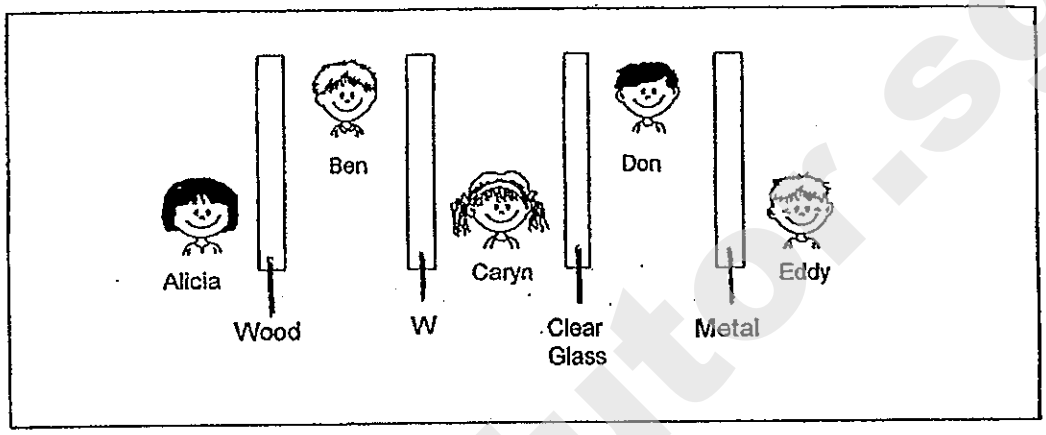
44. In a carnival, there was a 'Guess Who?' game where the players could choose to stand behind a wall that would prevent their friends from seeing them. The walls were made of different materials as shown below.



(a) Who were able to see each other? [1]

_____

_____

(bi) Ben claimed that he could only guess that Caryn was beside him but he was not sure. What possible material could W be? [1]

_____

(bii) What property of the material W allows Ben to make this guess? [1]

_____

3

End of Booklet B2

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ANSWER SHEET

EXAM PAPER 2013
SCHOOL : MGS
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
3	2	3	1	3	2	4	3	2	1	4	3	1	1	4	2	1

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	1	4	2	2	4	2	4	2	2	3	1	4

31)a)Toadstool.
b)Toadstool is not a plant as it does not have the characteristics and parts of a plant.
c)Mushroom.

32)a)Fertilisation.
b)Predators might eat up their eggs and laying many eggs increases the chance that at least one will survive and to ensure the continuity of their kind.

33)a)i)Ovary ii)Womb
b)It produce egg cells which fertilises with the male cells.

34)a)i)The process is pollination by which pollen grains from the anther land on the stigma by wind and a pollen tube grows down from the pollen grains to the ovary.
ii)The anther and filament are long, tall and light so they can reach out and pollen grains can easily be carried away wind for dispersal.
b)i)Seeds of Fruit Y are swallowed with the fruit and passed out with droppings of the animal while the animal eats the flesh of Fruit Z and discards its seed.

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34)b)ii)The seeds of Fruit Y has nutrients from the droppings to help them grow well as a seedling.

35)a)A: Lungs B: Heart
b)The blood flowing in Q is rich in oxygen while the blood in P is rich in carbon dioxide.
c)R: Veins S: Arteries

36)a)P: Water vapour
Q: Carbon dioxide
R: Oxygen
b)It will be transported to by blood to the heart which pumps it to every cell in our body through the blood vessels for respiration.
c)Air sacs increase the surface area of the lungs for exchange of gases.

37)a)The greater the age of the children, the lower the breathing rate.
b)His breathing rate would be faster than his normal breathing rate as his body needs to take in oxygen faster to respire so that he can jog.

38)a)Oil is less dense than water. Water is less dense than concentrated honey.
b)Water cooking oil concentrated honey

39)a)Evaporation, boiling and condensation.
b)To cool the hot water vapour so that condensation can take place.
c)All the water has evaporated.

40)a)Water, which has mass, has evaporated and thus the mass of the wet cloth has decreased.
b)30g.
c)She could put the cloth a place with a lot of wind.

41)a)T b)Not c)T d)F e)F

42)a)The temperature of both beakers would rise.
b)The greater the size of the steel sphere, the higher the temperature of the sphere.
c)A bigger sphere contains more heat energy than a smaller sphere, causing the temperature to be higher.

43)a)To provide a light source and light rays for the mirror to reflect.
b)Light travels in straight lines and can be reflected by mirrors.
c)I mage reflected will be irregular.

44)a)Caryn and Don.
b)Frosted glass.
c)It is translucent.

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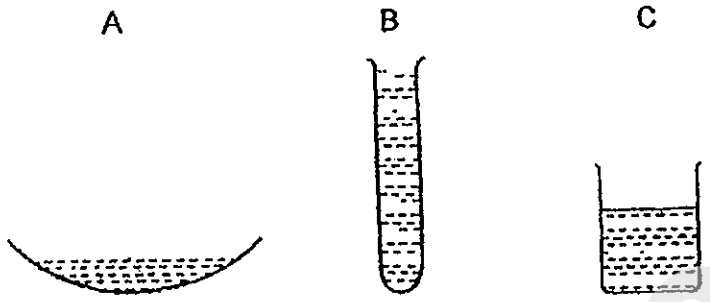
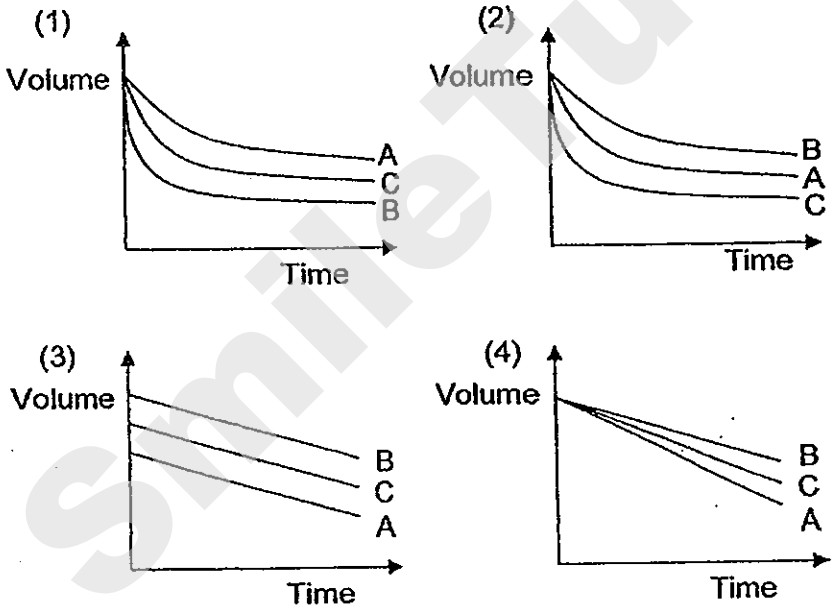
Section A: (30 x 2marks = 60marks)
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Equal amounts of water are put into three different containers and placed side by side on a windy and sunny day



Which one of the graphs below shows the change in the volume of water in the three containers?



2. When we breathe out on a mirror, our breath forms a 'mist' on the mirror. This is because the air we breathe out is _____.

(1) cooler than the surrounding air
(2) drier than the air we breathe in
(3) cleaner than the surrounding air
(4) warmer than the surface of the mirror

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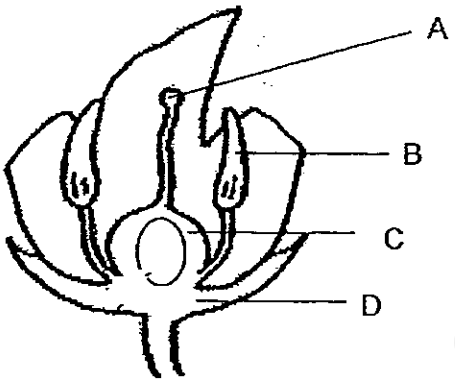
3. The diagram below shows the flower of a plant.



In which parts of the flower are pollen grains and ovules produced?

	Pollen Grains	Ovules
(1)	A	C
(2)	A	D
(3)	B	C
(4)	B	D

4. Which statement below describes part of the sexual reproduction process that occurs in plants?

(1) Suckers from a plant grow into new plants.
(2) A leaf falls to the soil, develops roots, and grows
(3) Seeds are developed from the flower of the plant.
(4) Underground stems from a plant grow into new plants.

5. Which sequence represents the order of development for most flowering plants?

(1)	Seed develops inside fruit	→	Seed is dispersed	→	Seed germinates	→	Plant grows
(2)	Seed is dispersed	→	Seed develops inside fruit	→	Seed germinates	→	Plant grows
(3)	Seed germinates	→	Plant grows	→	Seed is dispersed	→	Seed develops inside fruit
(4)	Seed is dispersed	→	Plant grows	→	Seed germinates	→	Seed develops inside fruit

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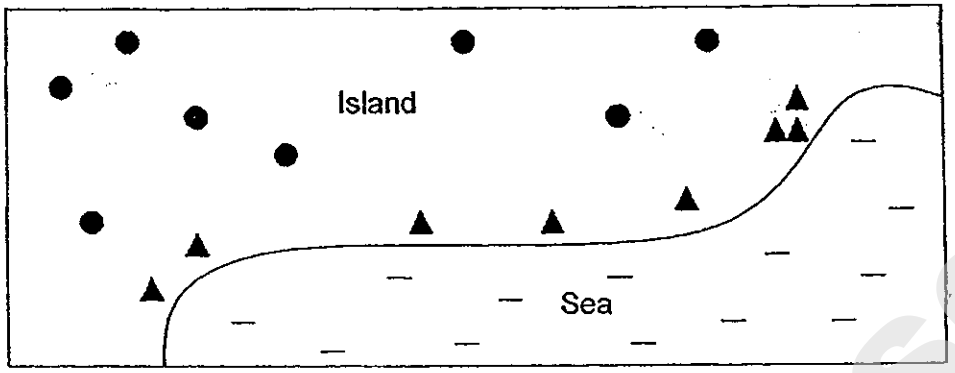
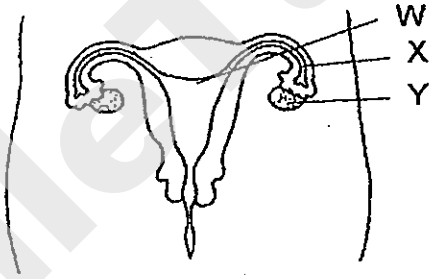
6. The diagram shows part of an island where two types of plants (●, ▲) are growing.



How are the fruits or seeds of each type of plant most likely dispersed?

	●	▲
(1)	Wind	Animal
(2)	Animal	Splitting
(3)	Wind	Water
(4)	Splitting	Water

7. The diagram below shows parts of the female human reproductive system.



Which one of the following statement(s) is/are true of the system shown above?

A The egg travels from Y to X.
B A fertilised egg is released from Y every month.
C The sperm fuses with the egg at W during fertilisation.

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

8. When do organs begin to develop in humans?

(1) After fertilisation and before birth
(2) Before fertilisation and after birth
(3) In the egg cell before fertilisation
(4) In the sperm cell after fertilisation

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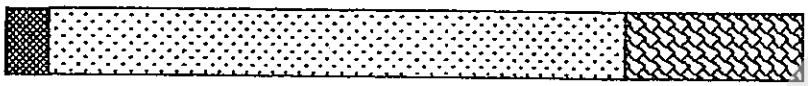
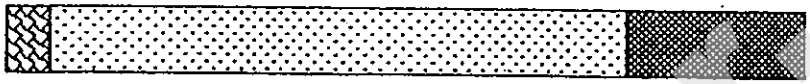
9. Carbon dioxide, nitrogen and oxygen are represented by the following symbols.

Which of the options below shows the correct composition of air in terms of the three gases?

(1) 

(2) 

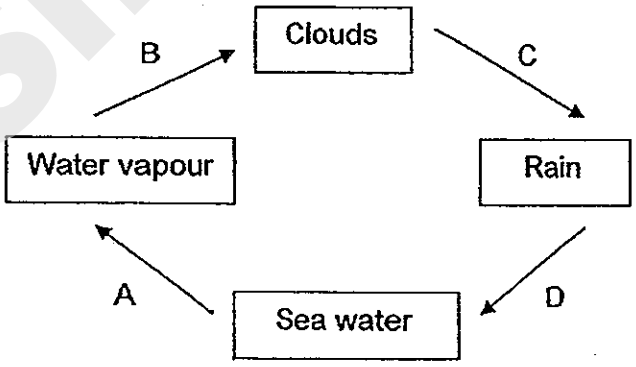
(3)

(4)

10. The lungs and the heart are two organs in the human body. Which one of the following statements on the functions of the lungs and the heart is true?

(1) The lungs remove carbon dioxide from the body.
(2) The heart removes carbon dioxide from the lungs.
(3) The lungs transport oxygen produced by the heart.
(4) The heart takes in oxygen from the surroundings directly into the body.

11. The diagram below shows the water cycle.



Which stages involve a change in state?

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

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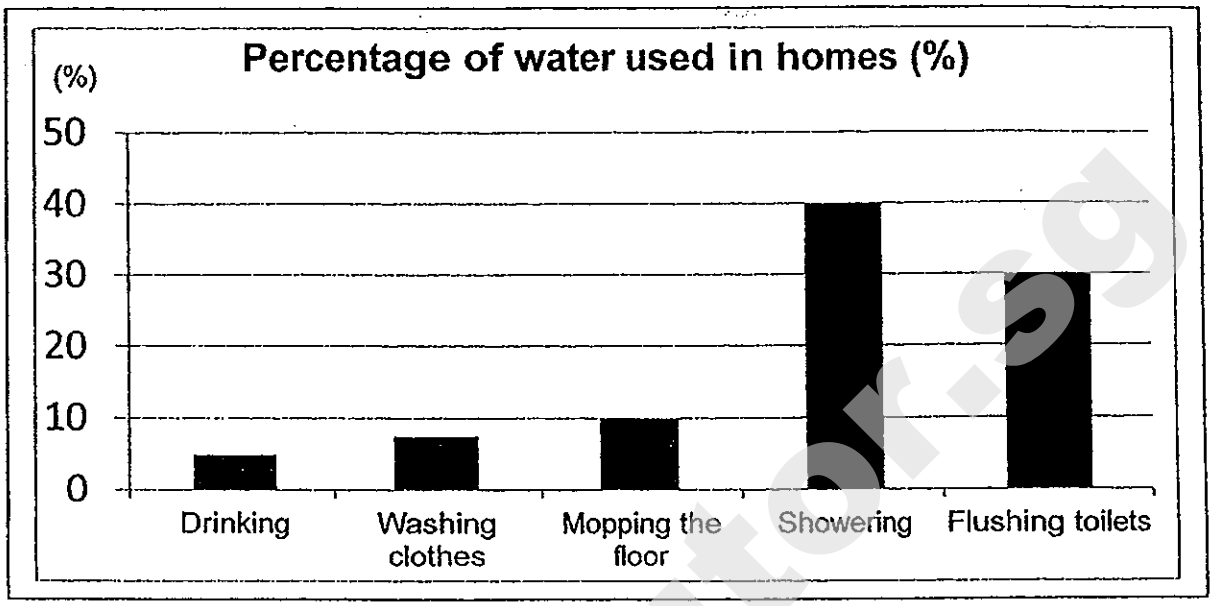
12. The graph below shows the purpose for which people use water in their homes. In times of low rainfall, people are asked to conserve water by using less water.



Which two actions are likely to save the most water?

	Action 1	Action 2
(1)	Halve the time in the shower	Drink less water
(2)	Halve the time in the shower	Use half flush toilets
(3)	Wash clothes in cold water	Use half flush toilets
(4)	Wash clothes in cold water	Leave the kitchen dirty

13 Which of the following statements describe reproduction in plants correctly?

A Plants have to reproduce to ensure continuity of their species.
B The male reproductive cells are called pollen grains.
C The female egg cell is stored in the ovule.
D The ovule develops into a fruit.

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

14. Which of the following statements are true about the Bird's Nest Fern?

A It is a flowering plant that reproduces by seeds.
B It is a non-flowering plant that reproduces by spores.
C It is a fungus that feeds on the leaves of the tree that it stays on.
D It is a green plant that can photosynthesize as it has chlorophyll.

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

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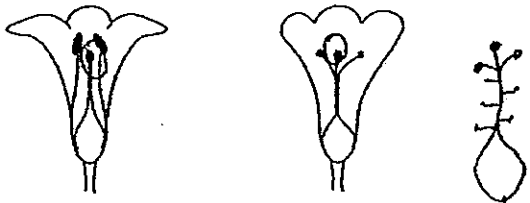
15. The diagrams below show the cross-sections of 2 different types of flowers.



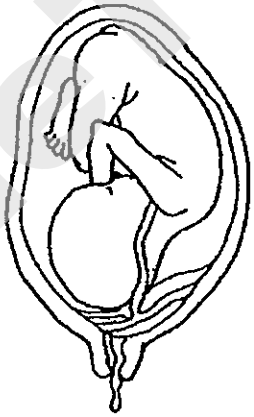
Flower A Flower B

Which statement(s) about both flowers is/are true?

A Both flowers have male and female parts.
B Pollination can take place in both flowers.
C Only Flower A can develop into a fruit but not Flower B.

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

16. The diagram below shows an unborn human baby. The unborn baby is called the foetus.



Which of the following statements about the foetus are correct?

A At this stage, it does not need any food.
B The foetus is developed from a fertilised egg.
C At this stage, it does not breathe through the nose.
D The foetus stays and grows in the stomach of the mother.

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

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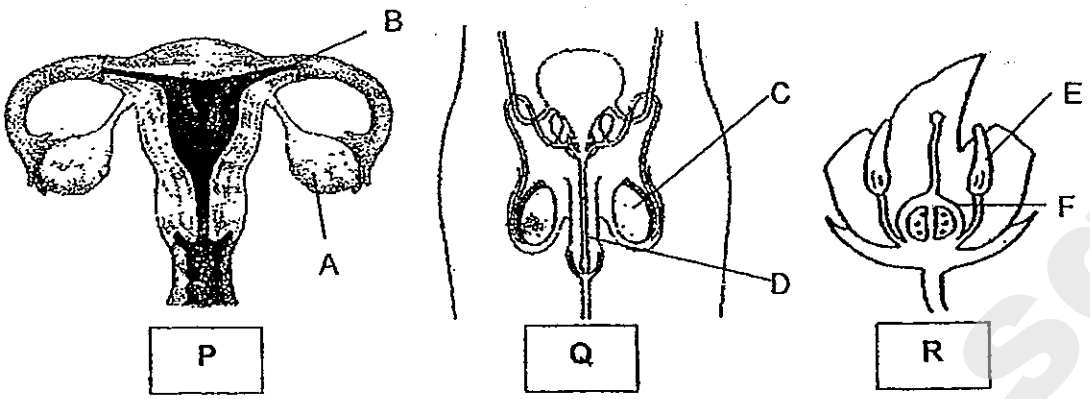
The diagrams below show the reproductive organs of some organisms.
Based on the diagrams below, answer Questions 17 & 18.



17. Which 2 letters, from the above reproductive organs, represent the parts that produce male reproductive cells?

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

18. Which of the following statement(s) about the reproductive organs of P, Q and R is/are **incorrect**?

A Fertilisation can take place within R itself.
B R contains both the male and female sex cells.
C The reproductive organs of P and Q produce different types of sex cells.
D The reproductive organs of P and Q produce both male and female sex cells.

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

19. The table below matches the function to the organs found in a human body system.

	Organ	Function
A	Nose	Moistens and filters air
B	Lungs	Gaseous exchange
C	Diaphragm	Muscle that controls air intake

Which pairs are correctly matched?

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

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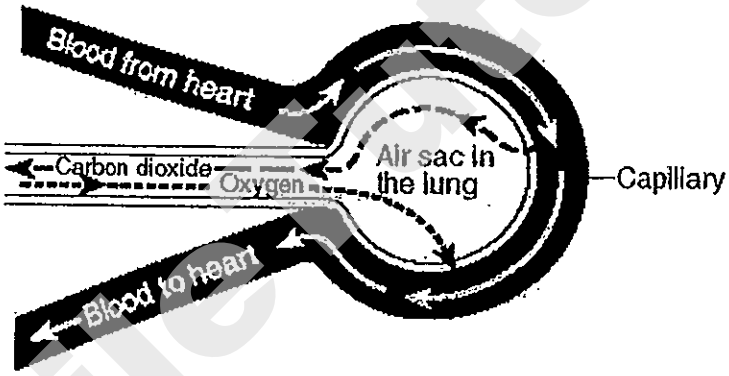
20. Which one of the following shows the correct path taken by the blood in the human body?

(1) Body parts → lungs → heart → body parts
(2) Body parts → heart → lungs → body parts
(3) Body parts → lungs → heart → lungs → body parts
(4) Body parts → heart → lungs → heart → body parts

21. The diagram below represents a magnified view of an air sac in the human being. The white arrows indicate blood flow.



Which two body systems are interacting in the above diagram?

(1) skeletal and muscular
(2) nervous and respiratory
(3) reproductive and digestive
(4) respiratory and circulatory

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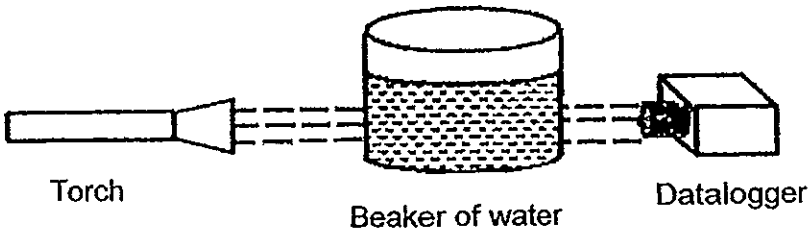
22. Jerry collected three beakers of water from different sources. He shone a torch at each beaker of water and recorded the amount of light passing through the beaker of water as detected by a datalogger as shown below.



The results are shown below.

Beaker	Amount of light detected by datalogger (lux)
A	60
B	1000
C	300

Which of the following shows the most likely source of the three beakers of water?

	A	B	C
(1)	Pond	Muddy stream	Reservoir
(2)	Reservoir	Pond	Muddy stream
(3)	Muddy stream	Reservoir	Pond
(4)	Pond	Reservoir	Muddy stream

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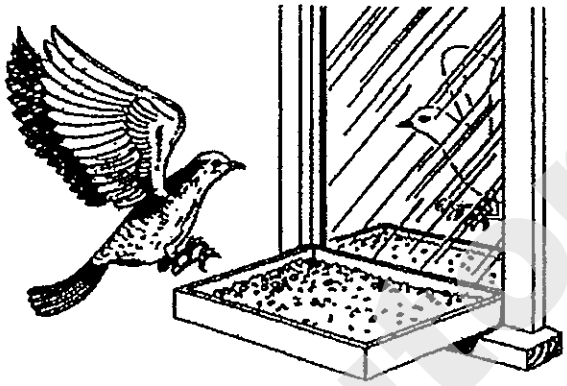
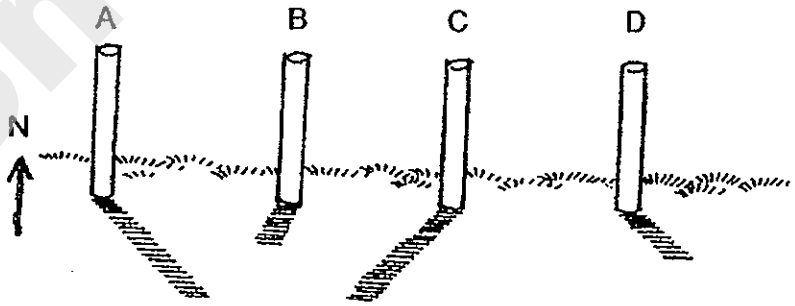
23. The picture below shows a bird landing at a bird feeder outside a window. The bird can see its own reflection in the presence of light.



Which one of the following correctly shows the path of light that makes it possible for the bird to see its reflection?

(1) From sun to window to bird
(2) From bird to sun to window
(3) From bird to sun to window to bird
(4) From sun to bird to window to bird

24. The diagram below shows the shadow of the same vertical pole at different times of the day.



Which of the following shows the correct shadow for the different times?

	7 a.m	11 a.m	3 p.m	5 p.m
(1)	A	D	B	C
(2)	A	B	D	C
(3)	C	B	D	A
(4)	C	B	A	D

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25. A wet shirt is put on a clothesline to dry on a sunny day. The shirt dries because _____.

(1) the shirt gains heat and evaporates
(2) the shirt loses heat and condenses
(3) the water in the shirt loses heat and condenses
(4) the water in the shirt gains heat and evaporates

26. Two pots, X and Y, of the same size, shape and thickness, contained 800 ml and 300 ml of water respectively The materials of the pots are different. Both were heated over two separate flames till the water in them boiled.

Pot X
(800 ml of water)

Pot Y
(300 ml of water)

If the water in both pots took 10 minutes each to reach boiling point, what possible conclusions can be made?

A The material of Pot X is a better conductor of heat than Pot Y.
B The water in Pot X is colder than that in Pot Y.
C The flame used for Pot Y was weaker than that used for Pot X.

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

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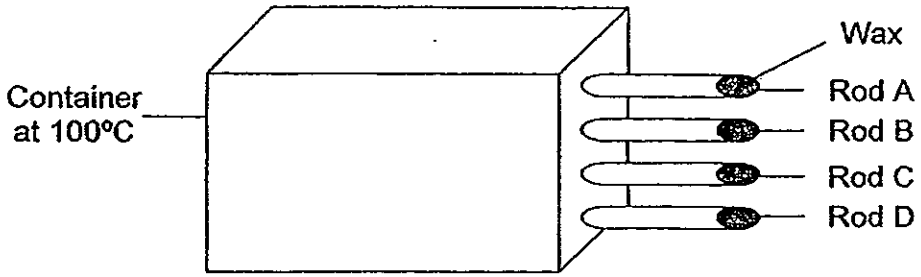
27. In the diagram below, Rods A, B, C and D are of the same length but are made of different materials. They are attached to a container which was heated to 100°C. At the tip of each rod is a piece of candle wax.



The pieces of candle wax melted in the following order.

Melted first → Melted last
B C A D

Which rod provides the best material for making the handle of a kettle?

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

28. Below are observations made of four objects.

Object	observations
A	Is able to cast a faint shadow when light is shone on it.
B	Is able to complete the electrical circuit to light up a bulb.
C	Is attracted to magnets.
D	Is able to keep hot soup warm for a longer time.

Which of the following can represent Objects A, B, C and D?

	A	B	C	D
(1)	Tracing Paper	Steel paper clip	Copper nail	Aluminium pot
(2)	Clear plastic sheet	Iron nail	Steel paper clip	Aluminium pot
(3)	Cardboard	Steel paper clip	Iron nail	Clay pot
(4)	Tracing Paper	Copper nail	Steel paper clip	Clay pot

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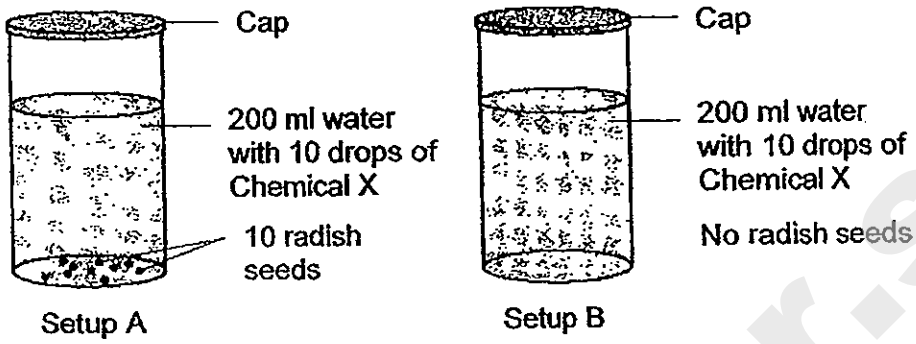
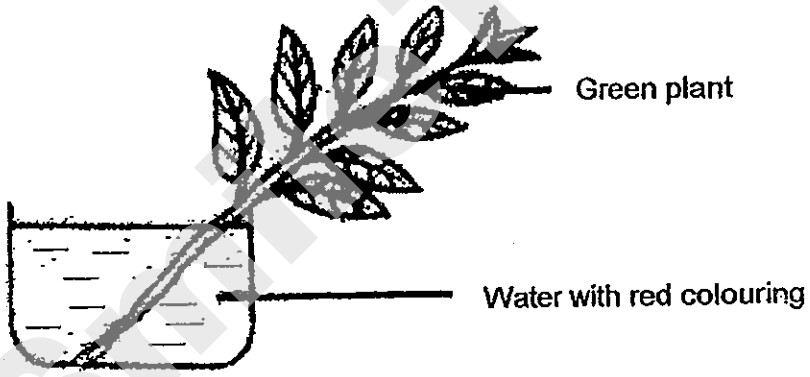
29. A student set up the experiment shown below to determine if radish seeds take in oxygen as they germinate. Chemical X truns blue when oxygen is present in the water, but is colourless when oxygen is not present in the water. Setups A and B each contained 200 ml of water and 10 drops of Chemical X. Ten radish seeds were added to Setup A. Setup B had no radish seeds.



What is the purpose of Setup B in this experiment?

(1) To be used as the control setup.
(2) To be used as the experimental setup
(3) To show that seeds do not give off oxygen.
(4) To show that seeds do not give off carbon dioxide.

30.



Kenny carried out an experiment as shown above. On the following day, the stem is cut across with a knife. The cross-section of the stem appears reddish. The leaves also appear red. This shows that _____.

A the leaves make food
B the stem carries water through it
C the leaves carry water to all parts of the plant

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

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NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 – 2013
PRIMARY 5

SCIENCE

BOOKLET B

14 Open-ended questions (40 marks)

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

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

Marks Obtained

Section B		/40

Name: _____ ( ) **Class: P 5** _____

Date : 14 May 2013 **Parent's Signature:**_____

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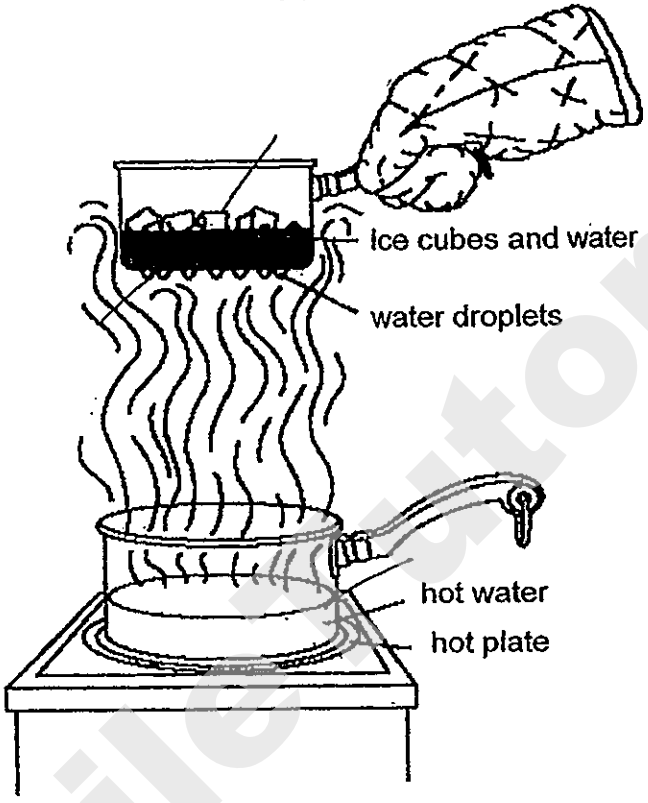
Section B: (40marks)
Write your answers to question 31 to 44 in the spaces provided.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

31. The diagram below shows an activity performed by a student in a classroom.



(a) Name three processes that are occurring in the above activity. [1]

_____

(b) Explain clearly why there are water droplets on the underside of the pan? [2]

_____

_____

_____

Score	/ 3

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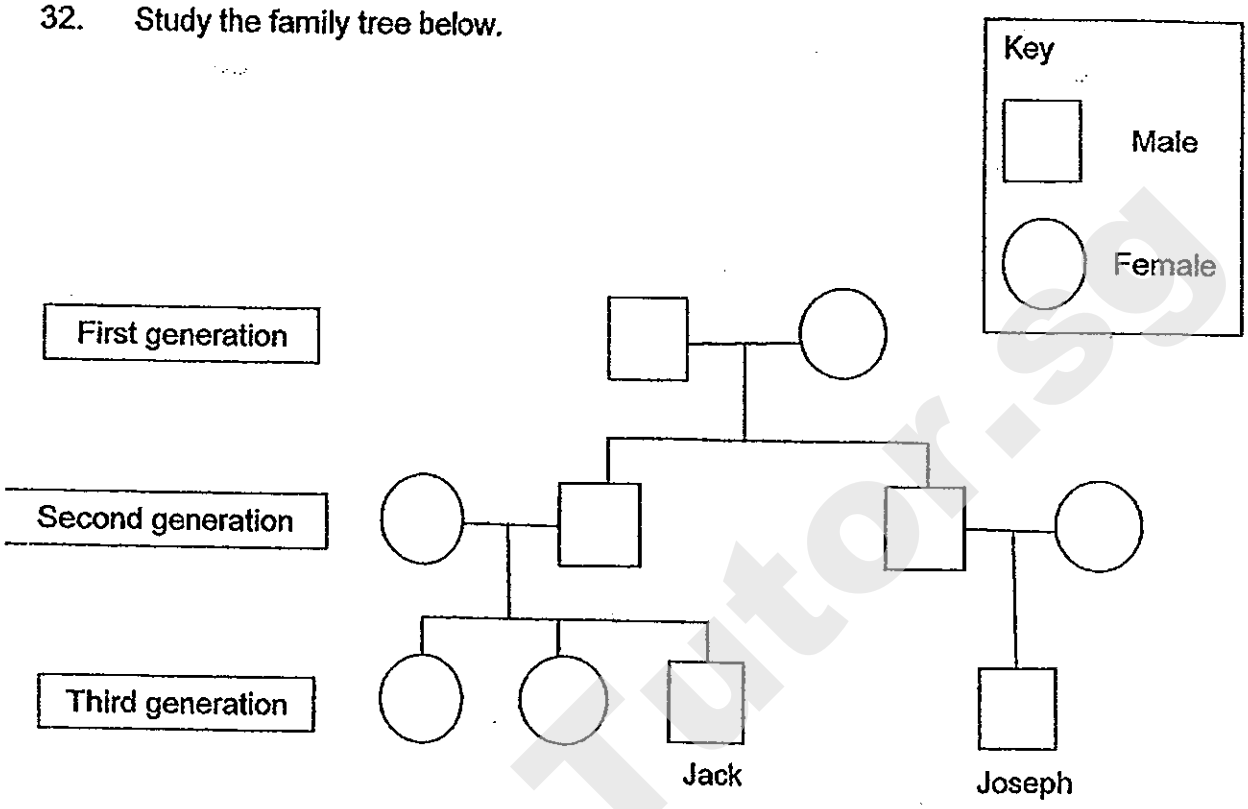
32. Study the family tree below.



(a) How is Jack related to Joseph? [1]

_____

(b) Tongue-rolling is one of the characteristics that is passed from parents to offsprings.
It is observed that if only 1 parent could roll his or her tongue, all their children could roll their tongues.
In the first and second generation of the above family tree, there are a total of two males who could roll their tongues.
What is the **minimum** number of females in the family tree who can roll their tongues? [1]

_____

Score	/ 2

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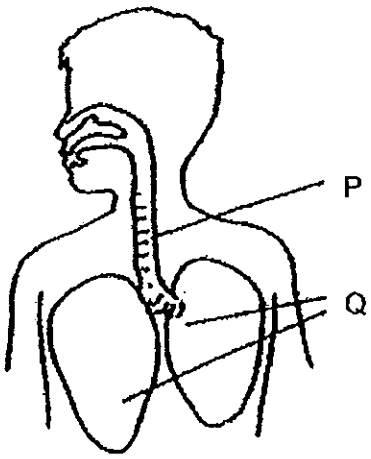
33. The diagram below shows one of the important systems in the human body.



(a) Name parts P and Q in the diagram above. [1]

P : _____ Q : _____

(b) Which human body system does the above diagram represent? [1]

_____

(c) Name the part of the skeletal system that protects part Q. [1]

_____

Score	/ 3

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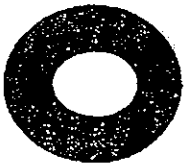
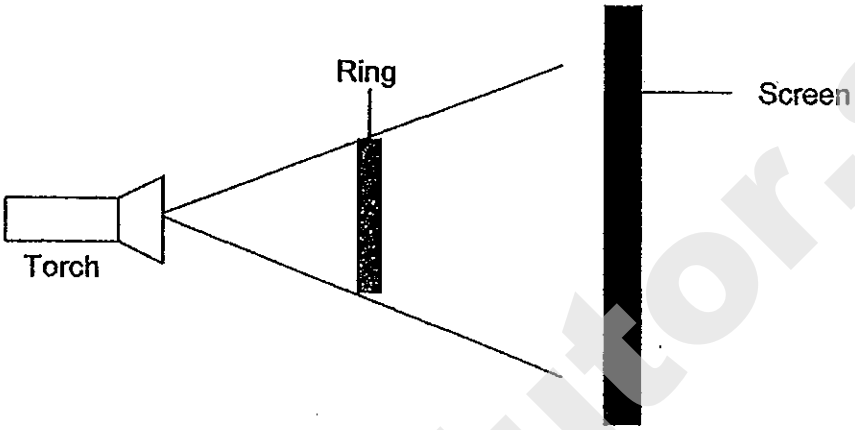
34. Alice shone a torch on the metal ring shown below.



Its shadow is formed on the screen.



(a) Draw the shadow formed on the screen in the box below. [1]

(b) State two actions that Alice can take to increase the size of the shadow. [2]

Score	/ 3

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35. Hector carried out an experiment to learn more about heat and temperature.
He first recorded the temperature of the air in a bottle as shown in Diagram 1. Then he placed several hot eggs in the bottle and sealed the bottle with a rubber stopper so that it was air-tight. After 5 minutes, he recorded the temperature of air in the bottle as shown in Diagram 2.

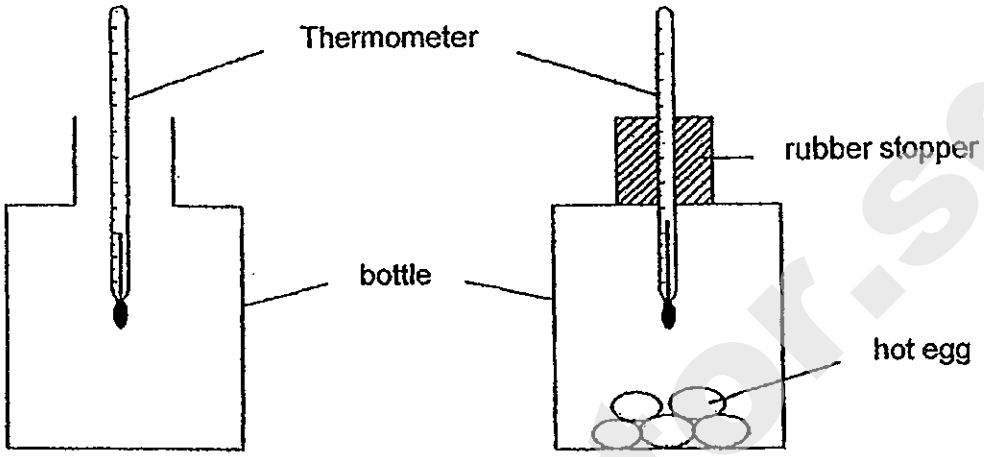

Diagram 1 **Diagram 2**

His results are shown in the table below.

Temperature of air in the bottle	
Diagram 1	Diagram 2
28°C	36 °C

(a) Explain why there is an increase in the temperature of the air in Diagram 2. [1]

_____

_____

(b) A refrigerator uses electricity to keep the temperature of the air inside at 10°C. Hector has the habit of putting his hot milo in the refrigerator. His mother advises him to let the hot milo cool before putting it in the refrigerator, otherwise it will increase the household electricity bill.
Explain how this will help the family to save electricity. [2]

_____

_____

_____

Score	/ 3

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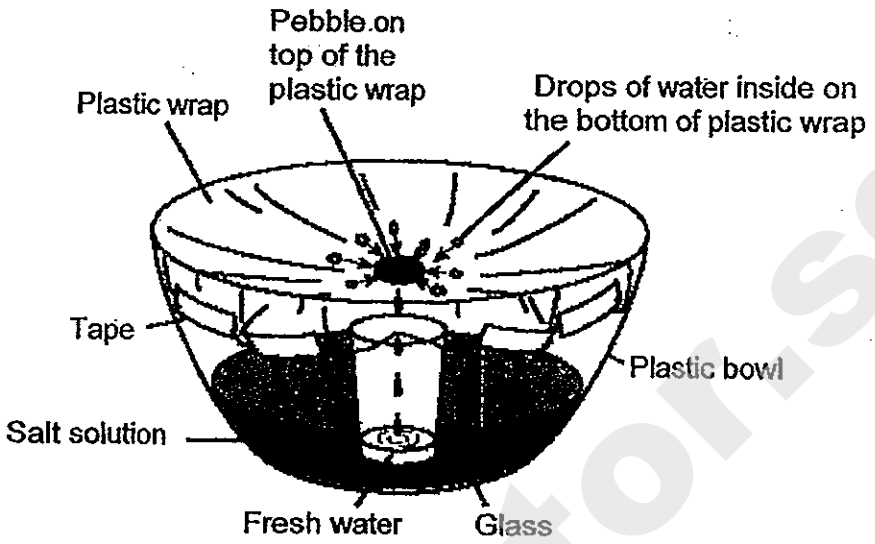
36. Mabel wanted to set up a model of the water cycle. She dissolved 5g of salt in 50ml of water and put the salt solution in the setup below.



(a) Explain why the level of the salt solution will decrease slightly if the model is left in a sunny location for several days? [1]

_____

_____

(b) What is the purpose of the plastic wrap? [1]

_____

_____

(c) Explain why the mass of salt in the salt solution will remain as 5g after several days. [1]

_____

_____

_____

Score	/ 3

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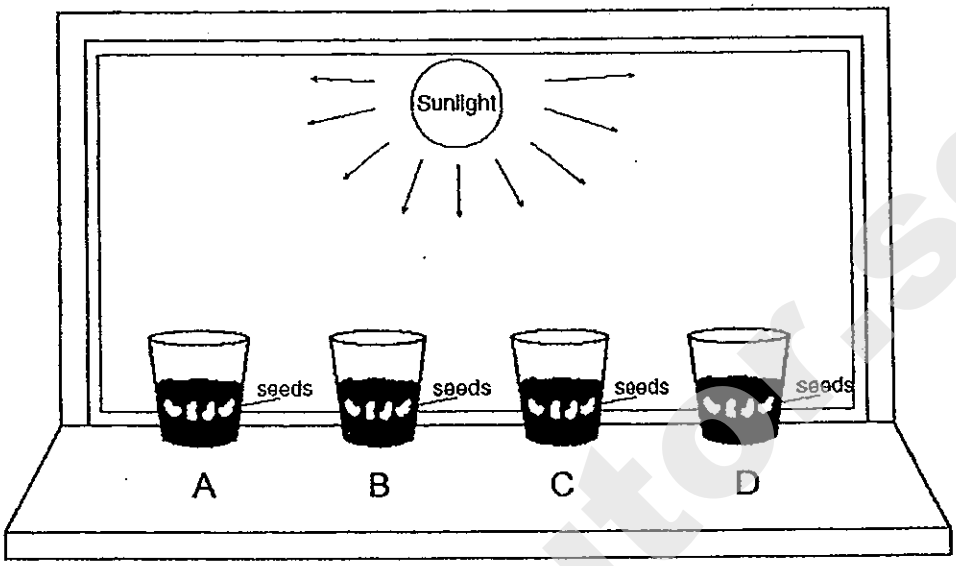
37. Jenny set up the experiment below to learn about plant growth. She added a different amount of water to four identical containers, each containing four seeds in 100 cm^3 of soil as shown in the table below. All the four containers were placed in the same sunny location.



	A	B	C	D
Water (ml)	0	10	20	40
Soil (cm^3)	100	100	100	100

(a) What is the aim of Jenny's experiment? [1]

_____

_____

(b) Identify two variables that are being held constant in her experiment. [1]

_____

(c) Explain clearly why these variables need to be held constant in her experiment. [2]

_____

_____

_____

Score	/ 4

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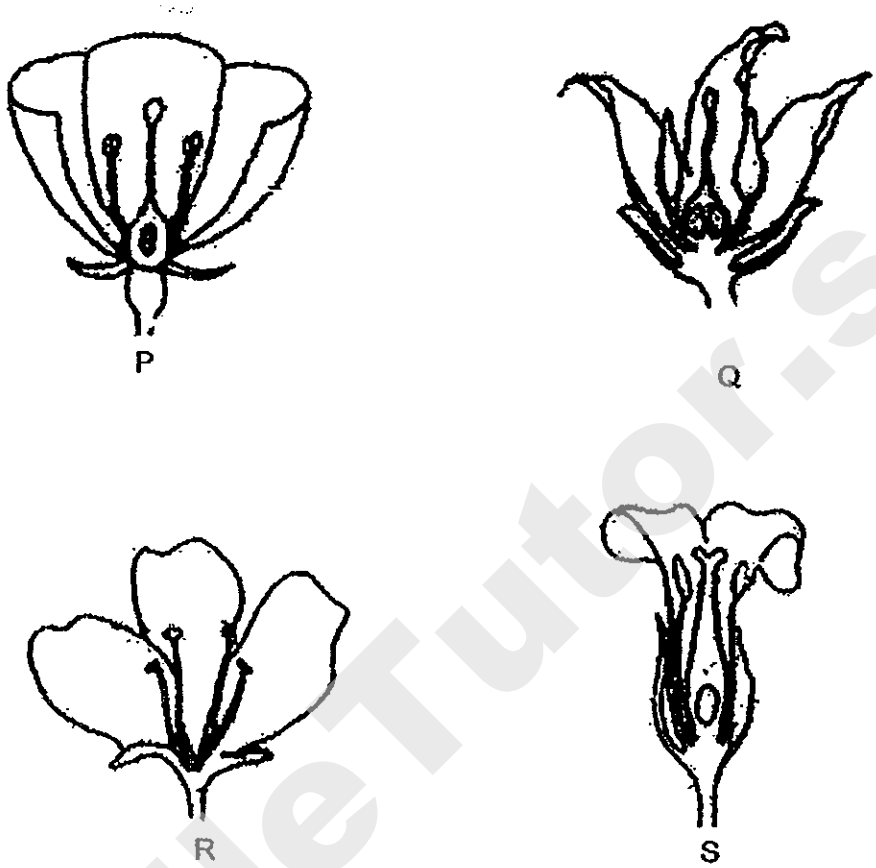
38. Look at the diagrams below.



(a) Which of the flower(s) shown above can never develop into a fruit? [1]

_____

(b) Give a reason for your answer. [1]

_____

_____

Score	/ 2

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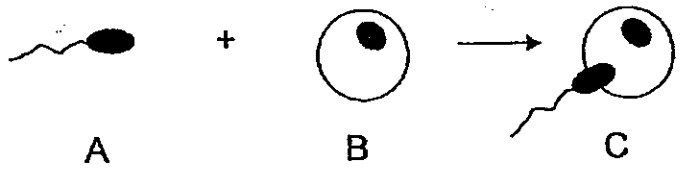
39a. The diagram below shows a model of sexual reproduction in humans.



(i) Which letter in the diagram represents a female sex cell? [1/2]

_____

(ii) What is the process occurring at C? [1/2]

_____

39b. The diagram below shows a developing human baby.

(i) Identify Structure X and state its function. [1]

_____

_____

_____

Score	/ 2

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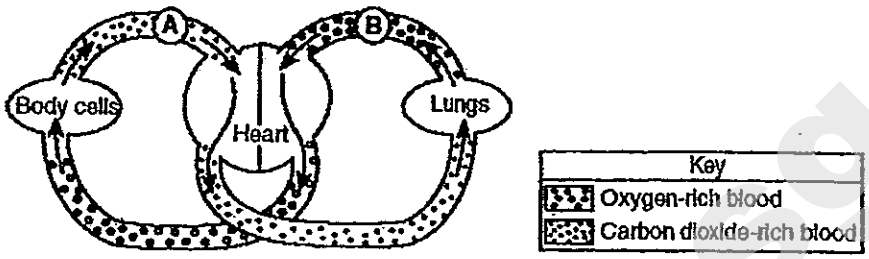
40. The diagram below represents a human organ system. The arrows show the directions of blood flow. Letters A and B represent locations in this system.



(Not drawn to scale)

(a) Identify the human organ system for the movement of blood shown in the diagram.

_____ system [1]

(b) Explain clearly why blood at location B contains more oxygen than blood at location A. [2]

_____

_____

_____

_____

_____

Score	/ 3

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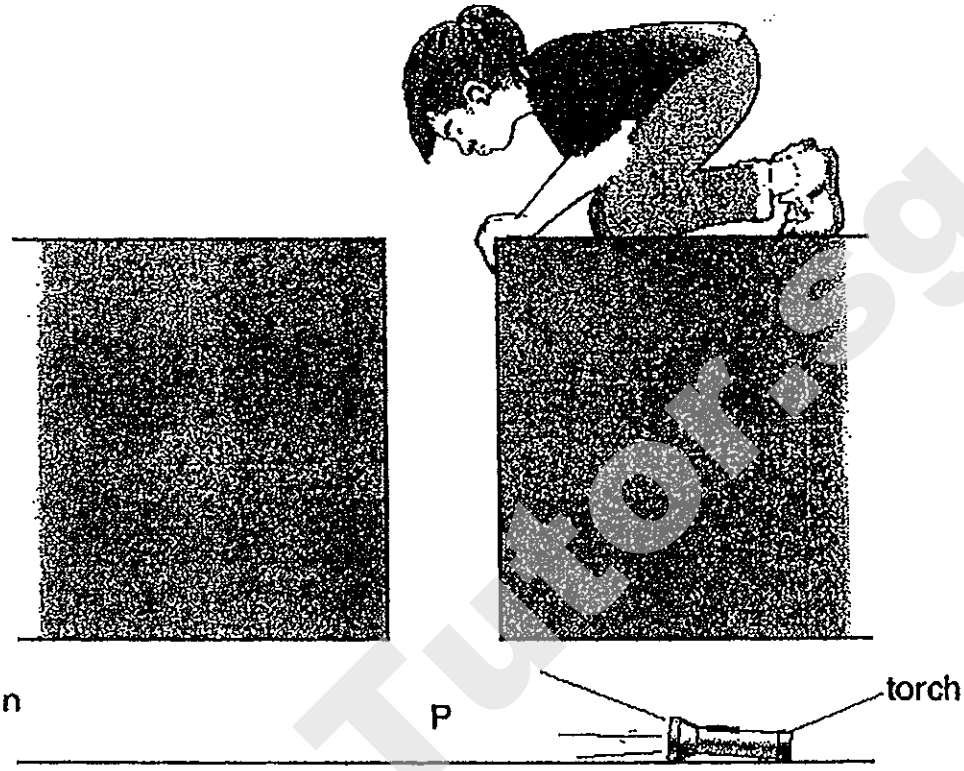
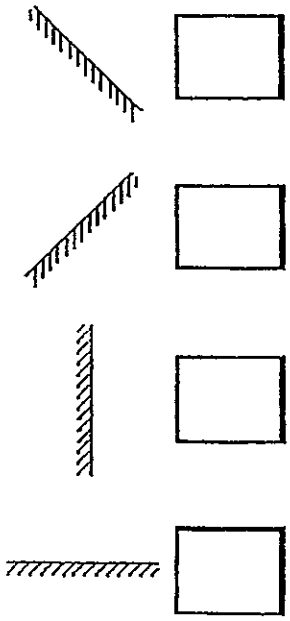
41. Samantha dropped her torch in a drain. The torch was still switched on but Samantha could not see it.



(a) Samantha lowered a mirror into the drain and placed it at position P. [1]
At which angle should Samantha put the mirror to see the torch?
Tick the correct box.



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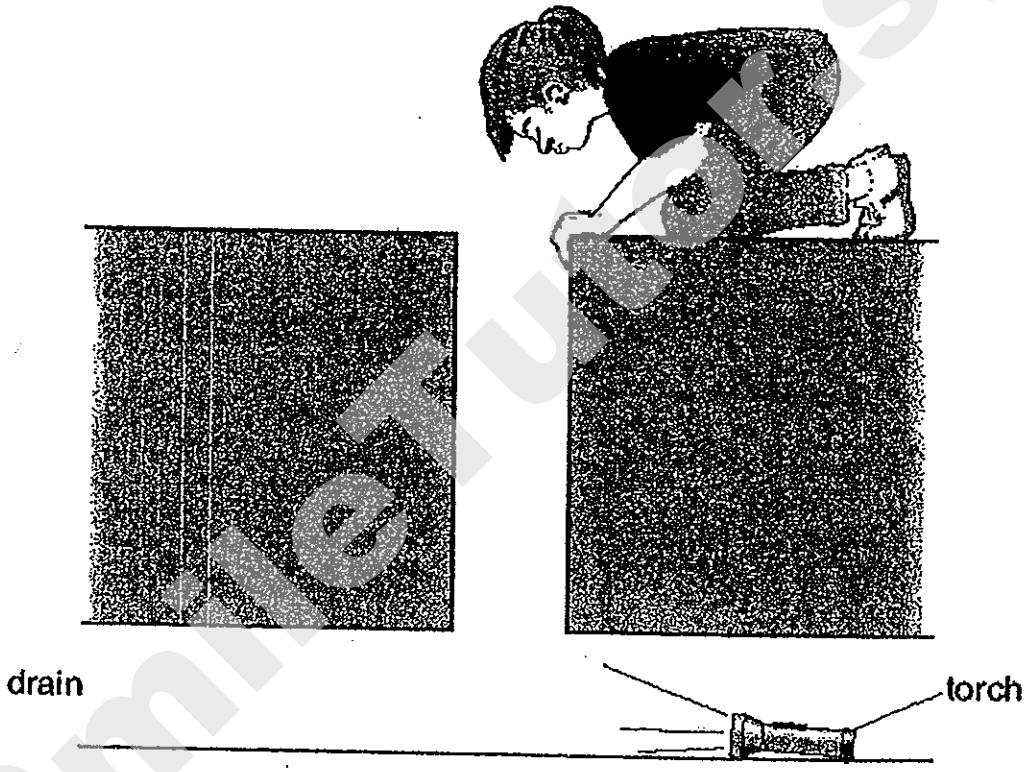
(b) What happens to the light from the torch when it hits the mirror? [1]

_____

_____

(c) Draw the mirror of your choice in (a) in the diagram below. Then draw arrows to show how Samantha can see the torch. [1]



Score	/ 3

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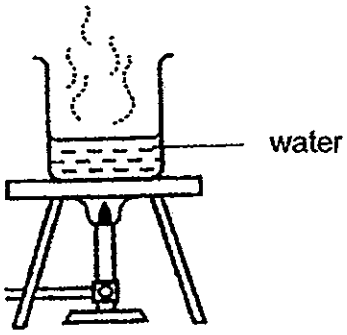
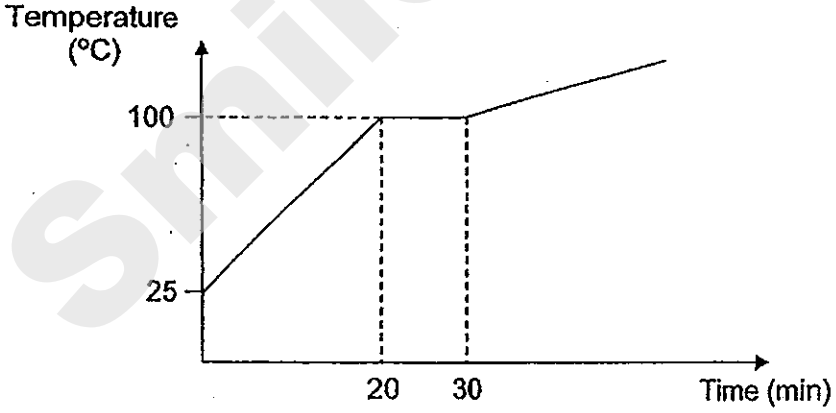
42. Michael set up an experiment as shown in the diagram below.



He noted that the mass of the beaker was 100g. He added 100g of water at 25°C and started heating. After every 10 minutes, he lifted the beaker and weighed it. At the same time, he placed a thermometer in the beaker to measure the temperature. He then quickly returned the beaker to the flame to continue heating. He recorded his results in a table as shown below.

Time (min)	Temperature (°C)	Total mass of beaker and water (g)
0	25	200
10	71	183
20	100	165
30	100	126
40	107	100
50	118	100

He drew a graph as shown below to help him understand the results he obtained.



(a) Why did the total mass of beaker and water decrease during the first 10 minutes of the experiment? [1]

_____

_____

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(b) What was happening to the water in the beaker at the 20th minute? [1]

_____

_____

(c) Why did the total mass of beaker and water remain at 100g after 40 minutes? [1]

_____

_____

_____

Score	/ 3

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43. Ellen clears her drawer and finds some objects made from different types of materials. She lists down some properties of each object into a table shown below.

Properties	Objects							
	A bottle cork	A pencil lead	A glass marble	A bar magnet	A plastic ruler	A rubber band	A styrofoam ball	A wooden toothpick
Is flexible						√	√	√
Is waterproof		√	√	√	√	√	√	
Floats on water	√			√			√	√
Comes from living things	√	√				√		√

However, she puts **four** ticks in the wrong boxes. **Circle** the wrong ticks in the table above. [2]

Score	/ 2

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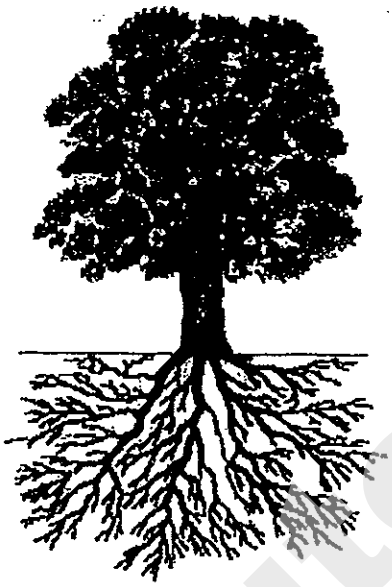
44. The diagram below shows a tree.



(a) The tree takes in water and oxygen from the soil. Name one other type of substance the tree needs to take in from the soil. [1]

_____

(b) The roots of the tree above are long and split into many smaller roots. How does this help the tree to absorb water? [2]

_____

_____

(c) When the weather turns cold, the tree will shed most of its leaves. Explain why the tree grows slower during this period. [1]

_____

_____

Score	/ 4

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ANSWER SHEET

EXAM PAPER 2013
SCHOOL : NAN HUA
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
4	4	3	3	1	3	1	1	1	1	1	2	3	4	1	1	3

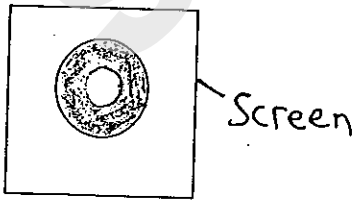
Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	4	4	4	3	4	3	4	2	4	4	1	1

31)a)Evaporation, Condensation and melting.
b)The hot water evaporated and the warm water vapour condensed on the cooler underside of the pan to form water droplets.

32)a)Jack is Joseph's cousin.
b)The minimum number is three.

33)a)P: Windpipe Q: Lungs
b)Respiratory system.
c)The ribcage.

34)a)



b)1)Move the ring nearer to the torch.
2)Move the screen further away from the ring.

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35)a)The air in the bottle in Diagram 2 gains heat from the hot eggs and thus there is an increase in the temperature of the air in Diagram 2.

b)The cooler milo will not cause the air inside the refrigerator to gain as much that heat, hence less electricity is was to therefore helping the family to save electricity.

36)a)The water from the salt solution had evaporated.

b)To allow water vapour to condense on the cooler inner surface of the plastic wrap.

c)The salt did not evaporate, so it's mass will remain the same.

37)a)The aim is to find out whether the amount of water used affects the growth of the seeds.

b)The area where the seeds were placed and the type of soil.

c)It is to ensure a fair test. The variable that should be changer in this experiment is the amount of water. Changing the amount of soil will affect the results of the experiment.

38)a)Flower R.

b)There is no pistil so no pollen grains can land on that flower. Fertilisation will not occur and therefore it cannot become a fruit.

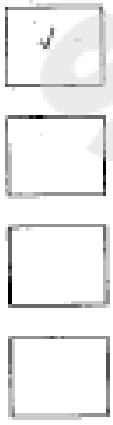
39)a)i)Letter B ii)Fertilisation

b)i)It is the umbilical cord. It transports food, water nutrients and oxygen to the baby. When the baby produces waste and carbon dioxide, it gets through the umbilical cord and to the mother's body and the mother will release it.

40)a)Circulatory

b)The blood at Location B has picked up absorbed oxygen in the lungs while the oxygen in the blood at location A has been used.

41)a)



b)It gets reflected.

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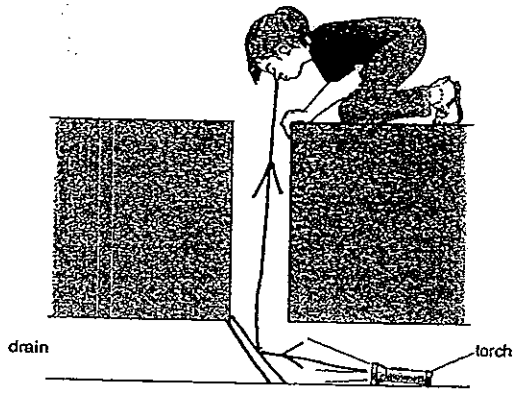
41)c)



42)a)The water had gained heat and evaporated.

b)The water was boiling.

c)The water in the beaker boiled. All the water changed into water vapour at 100℃.Only the beaker which is 100g is left.

43)

Properties	Objects							
	A bottle cork	A pencil lead	A glass marble	A bar magnet	A plastic ruler	A rubber band	A styrofoam ball	A wooden toothpick
Is flexible						√	√	√
Is waterproof		√	√	√	√	√	√	
Floats on water	√			√			√	√
Comes from living things	√	√				√		√

44)a)Nutrients.

b)There will be more roots in contact with the soil and hence able to absorb more water.

c)There are fewer leaves to make food.

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NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SEMESTRAL ASSESSMENT ONE
2013

BOOKLET A

Date : 14 May 2013

Duration : 1 h 45 min

Name : _____ ( )

Class: Primary 5 ( )

Parent's signature: ....

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

Booklet A consists of 19 printed pages including this cover page.

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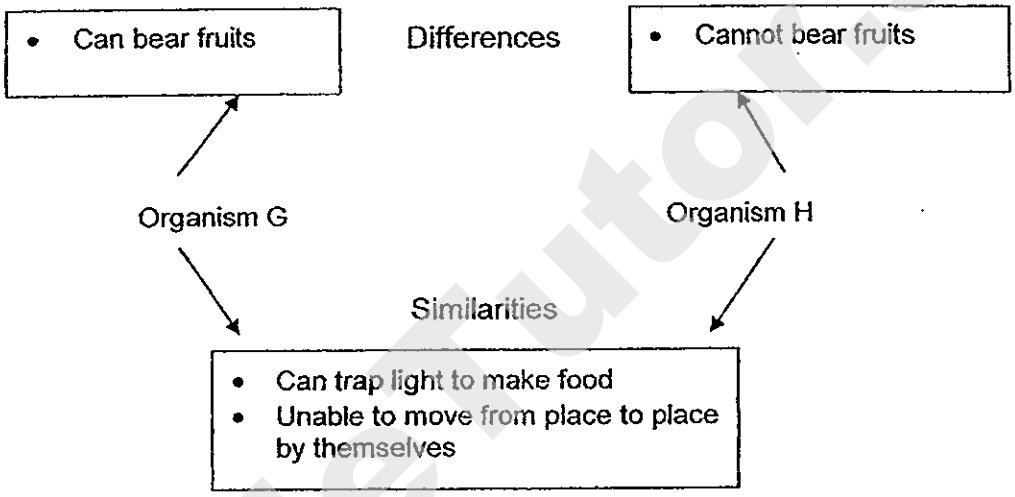
Section A (30 x 2 marks = 60 marks)
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.**

1. Study the diagram below.



Which of the following conclusion(s) is/ are **incorrect**?

A Both organism G and organism H are plants.
B Organism G is a plant but organism H is a fungi.
C Organism G is a flowering plant but organism H is a non-flowering plant.

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

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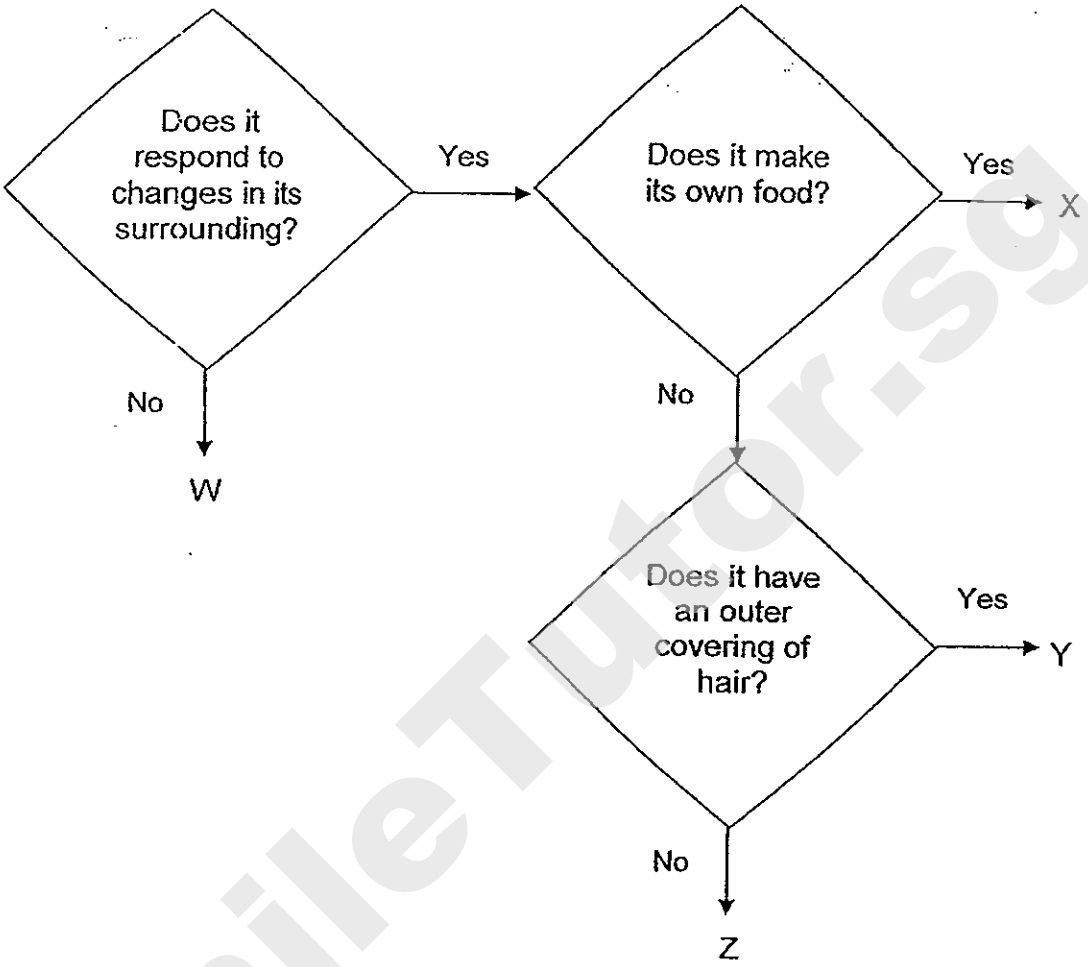
2. Study the flow chart below.



Based on the flow chart above, which of the following statements are true?

A W is not alive.
B Z is an animal.
C X can trap sunlight.
D Y gives birth to its young alive

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

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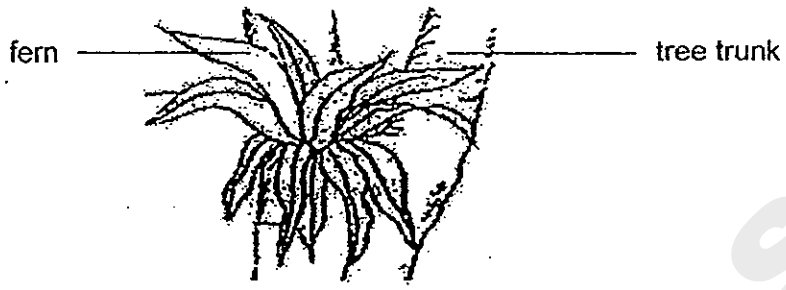
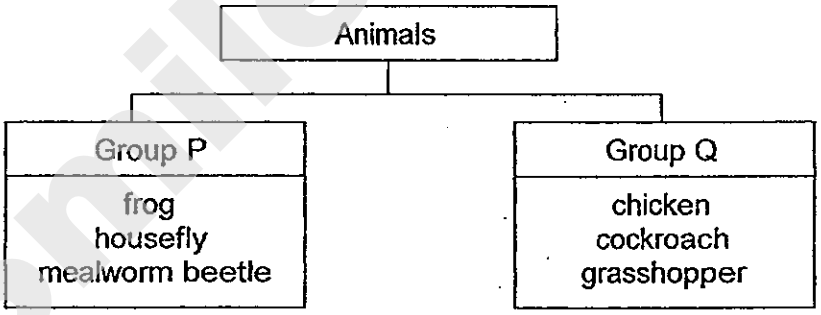
3. Tammy saw some fern growing on the trunks of a tree at the Botanical Gardens.



How does the fern benefit from growing on the tree?

(1) It gets more air to grow.
(2) It gets food from the tree trunks.
(3) It gets more sunlight for making food.
(4) It gets water from the water-carrying tubes in trees.

4. Study the classification chart below.



Which of the following best represents groups P and Q?

	Group P	Group Q
(1)	Insects	Not Insects
(2)	Lay eggs	Give birth to young alive
(3)	Have a 3-stage life cycle	Have a 4-stage life cycle
(4)	Have young that do not resemble their parents	Have young that resemble their parents

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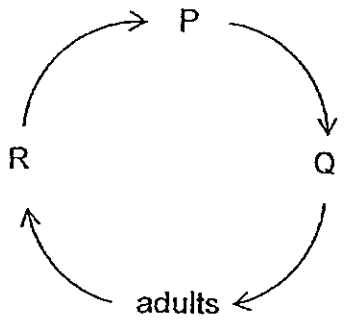
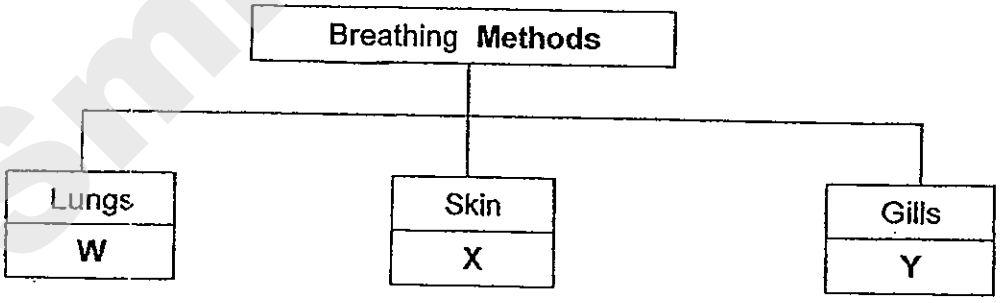
5. In the diagram below, the letters P, Q and R represent a stage in the life cycle of a butterfly.



Which one of the following statements is **true**?

(1) At stage P, it moults as it grows.
(2) At stage Q, it has wings to fly around.
(3) At stage R, it spends most of its time eating.
(4) At stage P, it does not eat and does not move around.

6. The classification chart below shows the breathing methods of some organisms.



Which of the following sets of organisms below best represents organisms W, X and Y?

	W	X	Y
(1)	sparrow	frog	whale
(2)	man	seal	swordtail
(3)	dolphin	earthworm	guppy
(4)	shark	caterpillar	molly

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7. Which one of the following consists of only the female parts of a flower?

A anther, filament, pollen
B stigma, style, ovary
C ovary, ovule, stigma
D ovule, anther, filament

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

8. Which of the plants below reproduce from spores?

A moss
B grass
C ferns
D ixora

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

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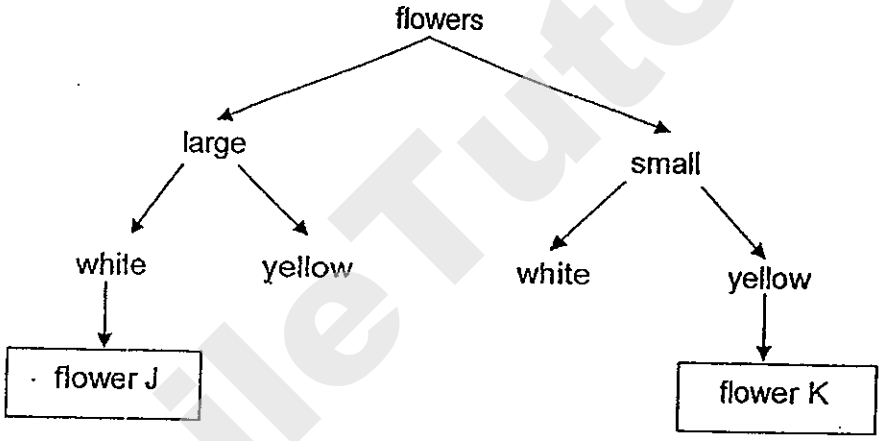
9. Peter collected some flowers from the school garden. He recorded the characteristics of the flowers and the animals that were attracted to the flowers as shown in the table below.

Characteristics of flowers	Animal attracted to the flowers
large, white	A
large, yellow	B
small, yellow	C
small, white	D

His Science teacher then showed him a chart which contained the characteristics of two flowers found at the nearby park.



Which animals would flower J and flower K most likely attract?

	flower J	flower K
(1)	A	B
(2)	D	B
(3)	A	C
(4)	D	C

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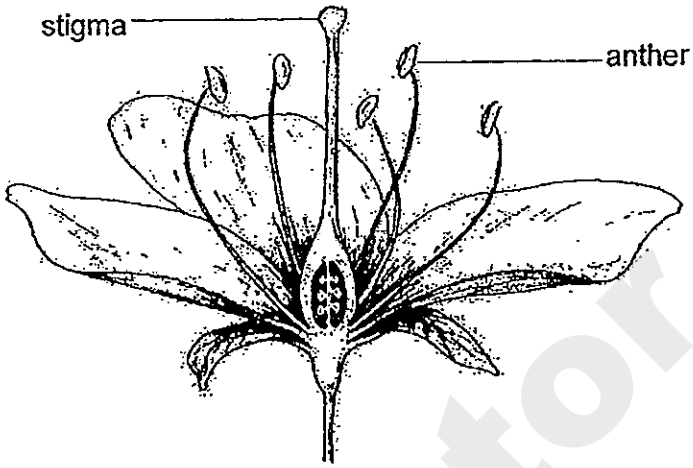
10. Pauline bought a pot of plant from a florist. After a week, she observed that the plant bore some flowers. However, the stigma of one flower was removed by her brother after a few days.



Which one of the following best explained what could happen to that flower?

	Observation	Explanation
(1)	The flower was fertilised	The style could have received the pollen grains.
(2)	The flower was pollinated	Pollen grains from another flower could have landed on the stigma before it was removed.
(3)	The flower was not fertilised	The flower did not produce ovules after the stigma was removed.
(4)	The flower was not pollinated	The flower would die as it had no stigma.

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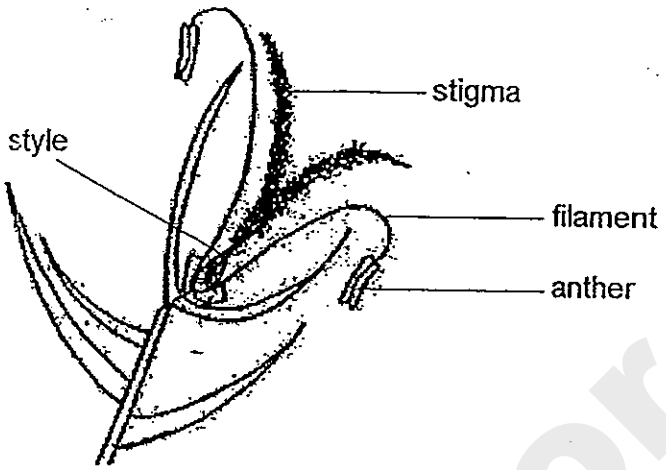
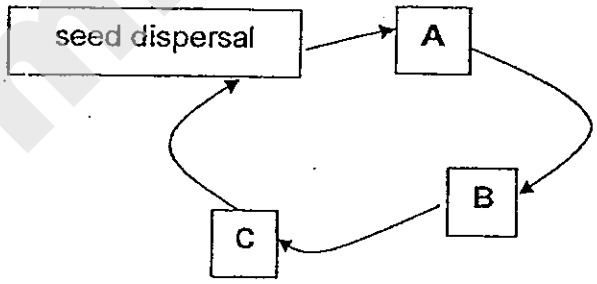
11. The diagram below shows flower X.



Based on the diagram only, which of the following best explains why flower X is most likely pollinated by wind?

(1) The anthers are heavy.
(2) The stigma is long and feathery
(3) The stigma is at the centre of the flower.
(4) The anthers are attached firmly to the filament.

12. The diagram below shows the processes in the life cycle of a flowering plant.



Which one of the following represents the missing processes A, B and C?

	A	B	C
(1)	fertilisation	germination	pollination
(2)	germination	pollination	fertilisation
(3)	pollination	germination	fertilisation
(4)	germination	fertilisation	pollination

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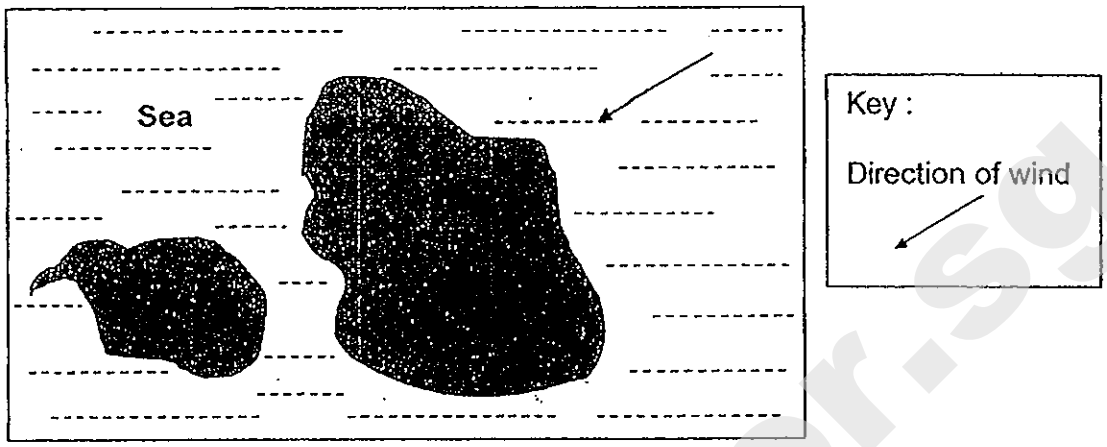
13. The diagram below shows two islands, R and T.



In January, four types of fruits A, B, C and D were found on island R but only grass was found on island T. Some features of the fruits on island R are shown in the table below.

Plant	Features of fruits
A	fibrous husk
B	juicy and fleshy
C	dry up and split open
D	has light and feathery structures

In March, new fruits were discovered growing on island T. Some of them resembled the ones from island R.

Which of the following plants could these new fruits have come from?

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

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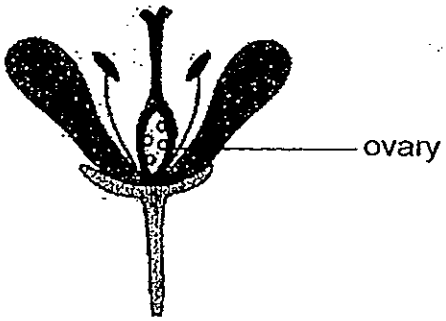
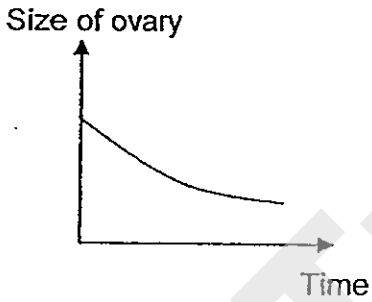
14. Peter drew a few graphs to predict the change in the size of a flower's ovary after fertilisation.

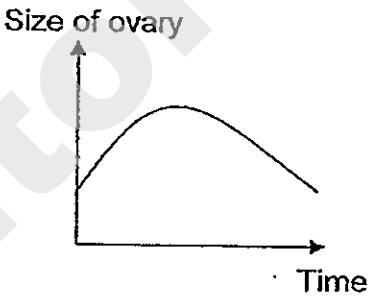


Which one of the following graphs shows the change correctly?

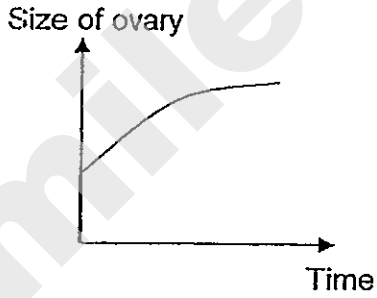
(1)



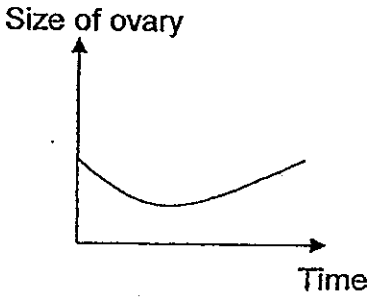
(2)



(3)



(4)



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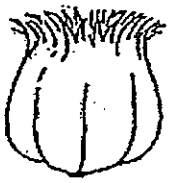
15. The diagram below shows a fruit from plant P. Jamie wanted to find out if the fruit is dispersed by water.

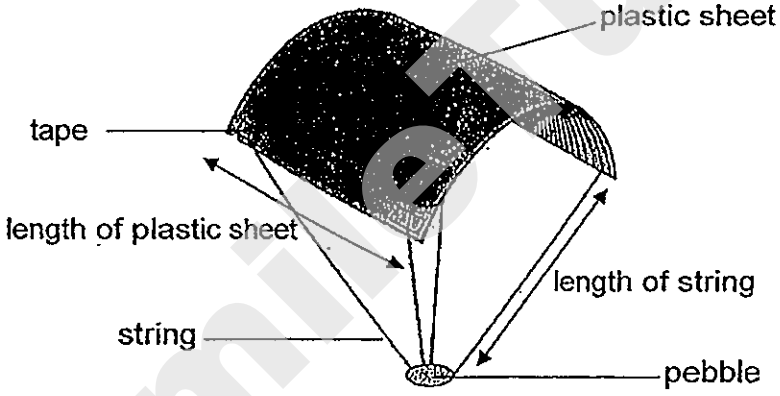


Which of the following actions could be used to help her in her investigation?

A Measure the mass of the fruit
B Place the fruit in water to observe if it floats
C Open the fruit to see if it contains a fibrous husk

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

16. Hanson made a toy to represent seed dispersal as shown below. He wanted to find out if the size of the plastic sheet affects the time taken for the toy to reach the ground.



He dropped the toy from a certain height and observed that it glided in the air for a period of time before it reached the ground.

Which of the following two set-ups should he use for his experiment?

Set-up	Number of similar pebbles	Length of string(cm)	Length of plastic sheet (cm)
A	1	16	8
B	2	17	10
C	1	16	8
D	2	17	15

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

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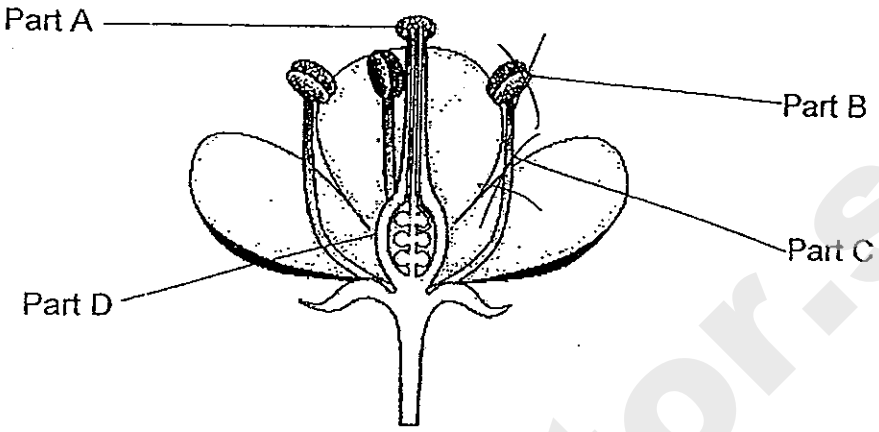
17. A group of pupils wanted to find out which parts of flower X were not necessary to form a fruit. They removed two parts of flower X. After some time, flower X developed into a fruit.



Flower X

Which two parts of flower X were removed?

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

18. Which of the following statements about reproduction in **both** plants and humans are **true**?

A The eggs are the female reproductive cells.
B Fertilisation takes place in the female reproductive system.
C The pollen grains and sperms are the male reproductive cells.

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

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19. The diagrams below show a flower (diagram A) and the male and female human reproductive systems (diagrams B and C).

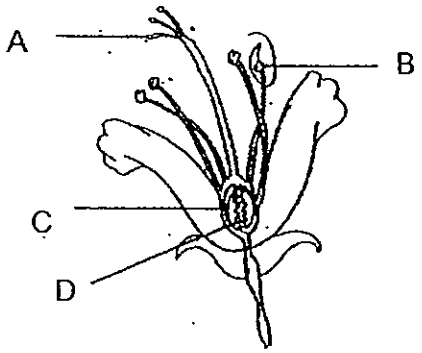

Diagram A

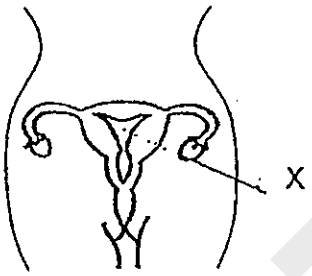

Diagram B

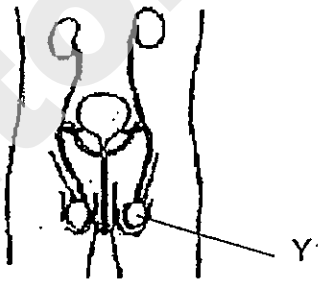

Diagram C

Which parts of the flower have the same function as the parts marked **X and Y** in the human reproductive systems?

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

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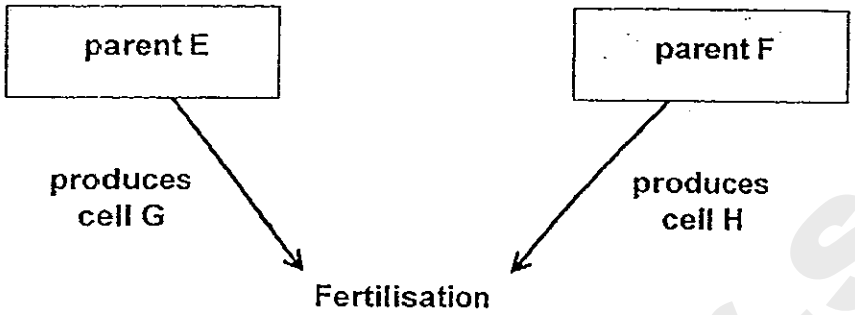
20. The diagram below shows the processes for human reproduction to occur.



Which one of the following correctly states the gender of parents E and F, and the cells, G and H, that they produce?

	parent E	parent F	cell G	cell H
(1)	male	female	egg	sperm
(2)	female	male	sperm	sperm
(3)	male	female	sperm	egg
(4)	female	male	egg	egg

21. Study the table below.

Substance	Does it have mass?	Does it have a fixed shape?	Does it have a fixed volume?
X	Yes	No	Yes

Which of the following statements about substance X is/are false?

A Substance X is a solid
B Substance X is a liquid
C Substance X is a shadow
D Substance X can be compressed

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

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22. Which one of the following groups consists of matters which exist in the same state when at room temperature?

(1) water, milk, sugar
(2) toothpaste, juice and sand
(3) water vapour, nitrogen, salt
(4) oxygen, water vapour and carbon dioxide

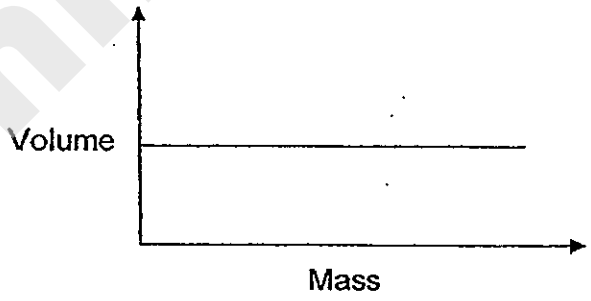
23. John observed the properties of A and B and recorded his observation in the table shown below.

Property	A	B
Can be seen	Yes	No
Can be compressed	No	Yes
Has mass and volume	Yes	Yes

Which one of the following best represents A and B?

	A	B
(1)	stone	tap water
(2)	shadow	wind
(3)	sand	air
(4)	steam	fire

24. The graph below shows the relationship between the mass and volume of substance X in a 200 cm^3 metal container.



Which of the following can substance X be?

(1) oil
(2) marbles
(3) orange juice
(4) carbon dioxide

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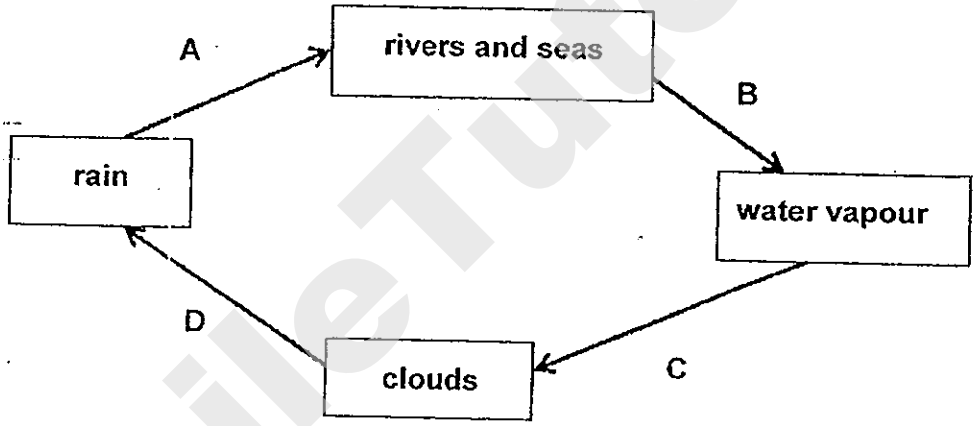
25. Which one of the following actions helps us to conserve water?

(1) Use a water hose to wash the car.
(2) Take a bath instead of a quick shower.
(3) Drink bottled mineral water instead of tap water.
(4) Conduct campaigns regularly to remind people to reuse water.

26. The diagram below shows the water cycle.



Which letter, A, B, C or D, represent a process that involves heat loss?

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

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27. Zechariah filled four different glass containers with the same amount of water. He then placed them in the same location at the garden. After two days, he recorded the amount of water left in each container in the table below.

Container	Amount of water (ml) (start of experiment)	Amount of water (ml) (end of experiment)
W	60	30
X	60	25
Y	60	50
Z	60	45

Based on the results above, which one of the following statements is **true** about the experiment?

(1) Container Y was the poorest conductor of heat.
(2) Container X had the largest exposed surface area.
(3) The rate of evaporation was fastest in container Y.
(4) Less water evaporated from container W than container Z.

28. Which of the following statements about evaporation and boiling of pure water are **true**?

A Boiling involves heat gain of water but not evaporation.
B Evaporation involves a change from liquid state to gaseous state but not boiling.
C Evaporation takes place at any temperature but boiling takes place only at 100°C.
D Boiling takes place throughout the water but evaporation takes place at the surface of the water.

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

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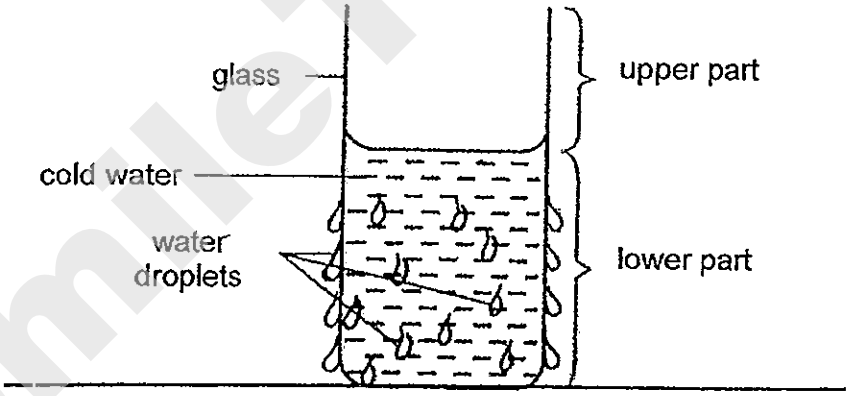
29. The table below shows the melting and boiling points of three substances, J, K and L.

Substances	Melting point (°C)	Boiling point (°C)
J	30	150
K	- 4	29
L	52	80

Which one of the following observations is correct when the substances are placed in a room at 25°C?

(1) Substance K is in the solid state.
(2) Substance L is in the liquid state.
(3) Substances J and L are in the solid state.
(4) Substances J and K are in the gaseous state.

30. Study the diagram shown below.



Which one of the following statements is a possible reason for **more** water droplets appearing on the lower part of the glass?

(1) Temperature of the lower part of the glass is higher than the surrounding.
(2) There is more heat loss from the upper part than from the lower part of the glass.
(3) Temperature of the lower part of the glass is lower than the upper part of the glass.
(4) There is more water vapour surrounding the lower part than the upper part of the glass.

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NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SEMESTRAL ASSESSMENT ONE
2013

BOOKLET B

Date :14 May 2013

Duration : 1 h 45 min

Name : _____ ( )

Class: Primary 5 ( )

Marks Scored:

Booklet A:		60
Booklet B :		40
Total :		100

Any query on marks awarded should be raised by 22 May 2013. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.

Parent's signature: .....

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

Booklet B consists of 14 printed pages including this cover page.

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Section B (40 marks)
Write your answers to questions 31 to 44 in the spaces provided.
Marks will be deducted for misspelt key words.

31. Nicole wanted to carry out an experiment to find out how moisture affects the growth rate of bread mould.

(a) Tick (✓) the variable(s) that she should keep **the same** in her experiment. [1]

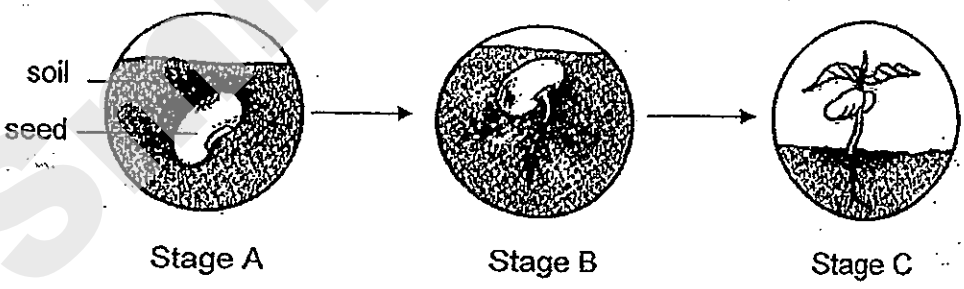
Type of bread	
Size of bread	
Amount of water	
Location of set-up	

(b) State how bread moulds reproduce. [1]

_____

_____

32. The diagram below show some stages in the growth of a bean plant.



(a) At stage B, where does the seedling get its food from? [1]

_____

(b) At which stage, A, B or C, is the seedling able to make its own food? Explain your answer. [1]

_____

_____

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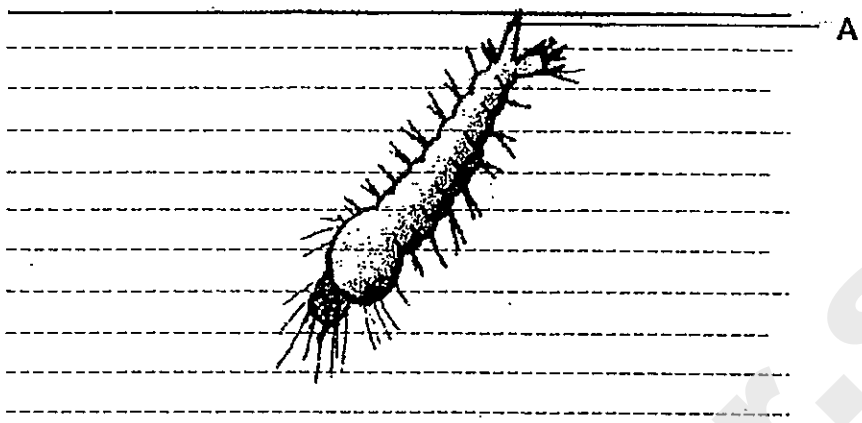
33. The diagram below shows a mosquito larva living in water.



(a) What is the purpose of the tube-like structure A? [1]

_____

_____

(b) Name the stage that the larva has to go through before it becomes an adult. [1]

_____

(c) Singapore has a period of rainy weather that encourages the breeding of mosquitoes.

With reference to the life cycle of mosquitoes, explain why they breed faster here during this period of time [2]

_____

_____

_____

_____

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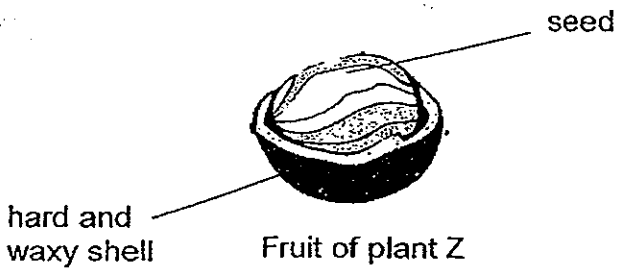
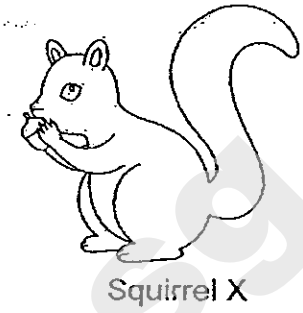
34. Squirrel X feeds on the seed of plant Z and helps in its dispersal.





During summer, squirrel X will break the shell of the fruit of plant Z and buries many seeds in different places to store food for winter. It will also bury more seeds than it needs but then does not return for them.

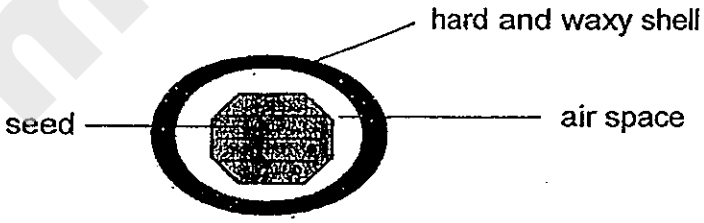
(a) Explain how it will help plant Z when the squirrel buries each seed in a different place. [2]

_____

_____

_____

(b) The diagram below shows the top view of the fruit of plant Z when it is cut in half.



Suggest another method of dispersal for the fruit of plant Z and explain your answer. [1]

_____

_____

_____

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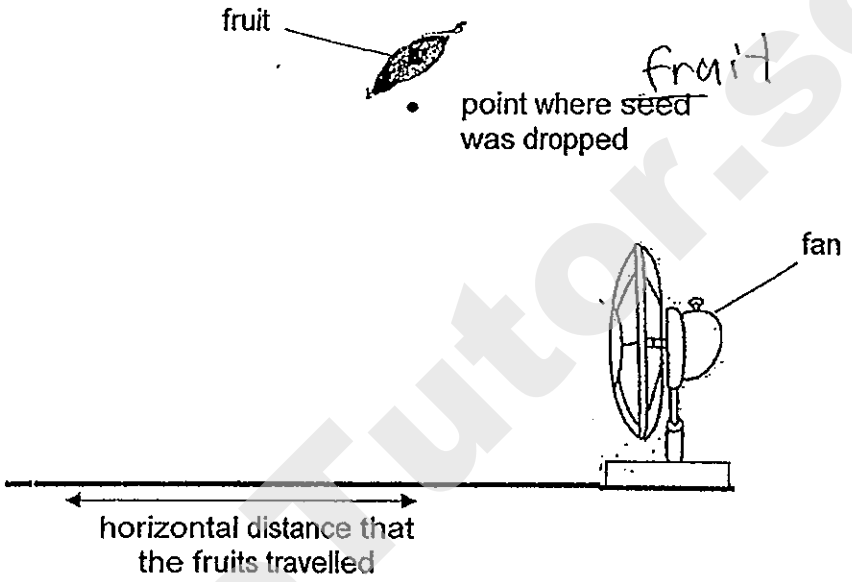
35. Elly wanted to find out how the mass of a fruit affects the distance it travelled. She collected four fruits, W, X, Y and Z, of similar sizes from the same tree at a nearby park.

She then conducted an experiment by dropping each fruit from a height of 1 metre. As the fruit reaches the ground, a fan blew it away horizontally. The fan was switched on at high speed.



The table below shows the horizontal distance that each fruit travelled.

Fruit	Distance travelled by each fruit (m)
W	36.4
X	29.8
Y	34.7
Z	31.5

(a) Based on her results, arrange the fruits, W, X, Y and Z, in increasing order of their masses. [1]

Lightest ⟶ Heaviest

[ ] , [ ] , [ ] [ ]

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(b) The diagram below shows two fruits, A and B, which are dispersed by wind.

It was observed that fruit A was dispersed a further distance than fruit B.

Mass of fruit A : 22g

Mass of fruit B : 37g

Suggest a possible reason for the observation. [1]

_____

_____

36. A group of scientists went for a field trip and discovered a new type of flower which only bloomed once a year. They named it flower R. It was also discovered that a type of fly, S, was attracted to flower R. A research was done and the following information was collected:

Flower R	Fly S
• male and female parts were found on different flowers • emitted the smell of rotting meat • produced fruit which were sweet and fleshy	• attracted to the smell of flower R • the young fed on rotting meat

(a) What was the benefit to **flower R** when fly S visited it? [1]

_____

_____

(b) Suggest a method of seed dispersal for flower R. [1]

_____

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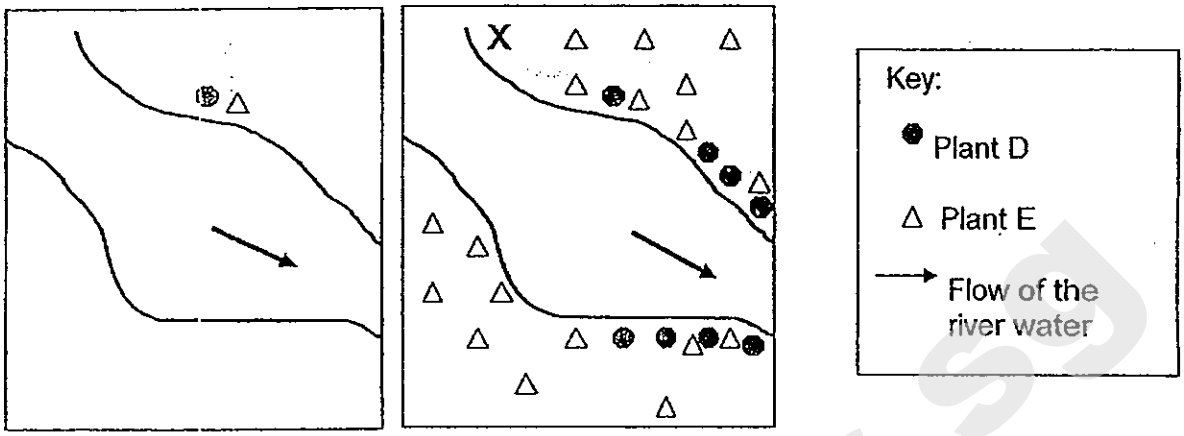
37. The diagrams below show the maps of the same place in 1990 and 2000.



Map A in 1990 Map A in 2000

(a) Based on the maps, which plant is dispersed by water and which plant is dispersed by wind? [2]

(i) By water : _____

(ii) By wind: _____

(b) State a reason to explain why it was not possible for plant D to be found at location X? [1]

_____

_____

(c) Animal S fed on fruit F which grew near the river. Describe the characteristics of fruit F [1]

_____

_____

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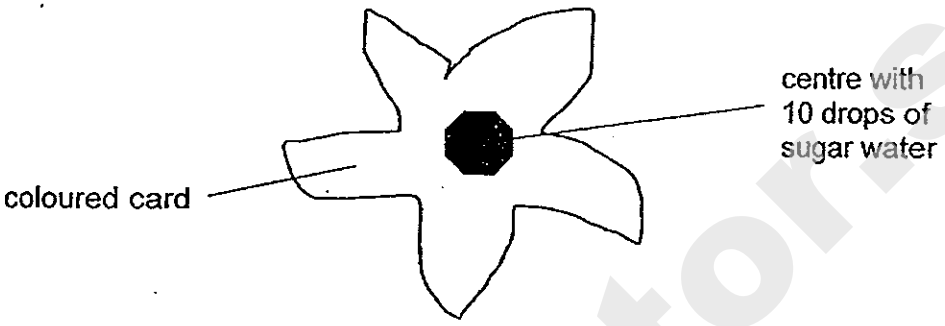
38. Ali conducted an experiment with the following items:

- model flowers made from three different coloured cards
- sugar water

He added 10 drops of sugar water in the centre of each flower. The model flowers were left in his garden for three hours. He then observed the number of butterflies which visited the flowers.



Ali recorded the results in the table from 7a.m. to 10 a.m. as shown below:

Colour of flower	Number of butterflies visiting the flower		
	7.00a.m.- 8.00a.m.	8.00a.m.- 9.00a.m.	9.00a.m.-10.00 a.m.
grey	6	4	2
yellow	16	11	6
red	9	5	1

(a) State the aim of the experiment conducted by Ali. [1]

_____

_____

(b) Based on the table above, which colour attracted the most number of butterflies? [1]

_____

(c) Ali wanted to conduct another experiment to find out the relationship between the size of the flowers and the number of butterflies visiting the flowers.

Name two variables that should be kept the same for this second experiment. [2]

(i)_____

(ii)_____

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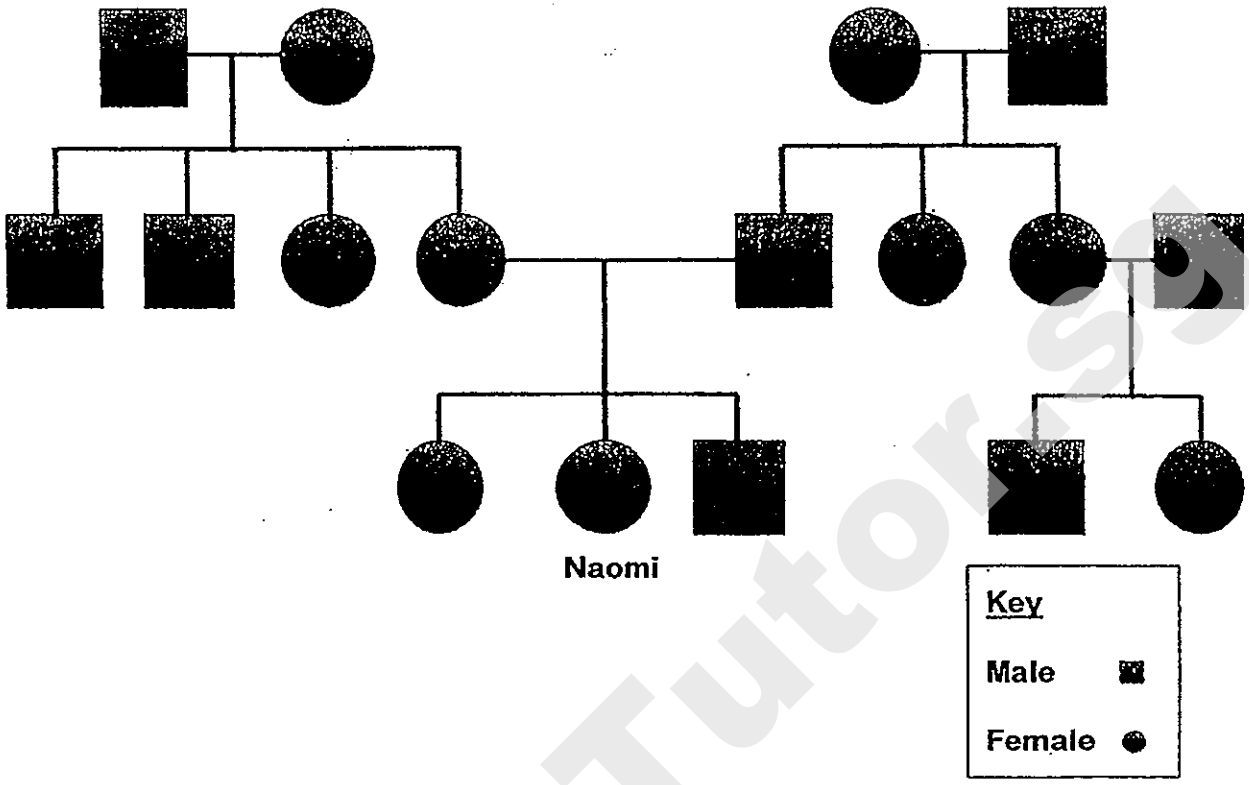
39. Study Naomi's family tree below.



(a) How many sibling(s) does Naomi have? State the gender of her sibling(s). [1]

_____

(b) How is W related to Naomi? [1]

_____

(c) How many sister(s) does Naomi's mother have? [1]

_____

(d) Naomi's paternal grandfather can roll his tongue and so does Naomi. Give a reason why Naomi is able to roll her tongue. [1]

_____

_____

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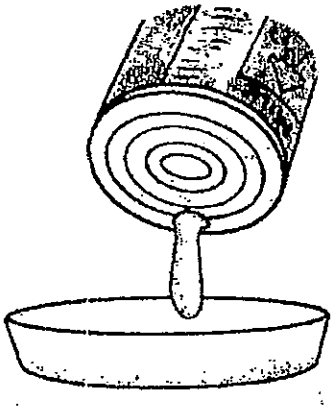
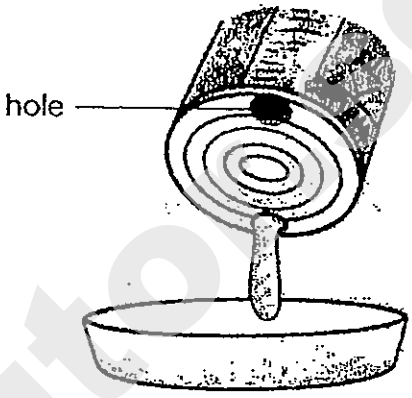
40. Ted took out a tin of condensed milk and punched a hole in it. When he tried to pour out the milk, he found that the milk flowed out very slowly. He then made another hole in the tin and found that the condensed milk flowed faster.



Set-up A



Set-up B

Explain why the milk could flow out faster in set-up B. [2]

_____

_____

_____

_____

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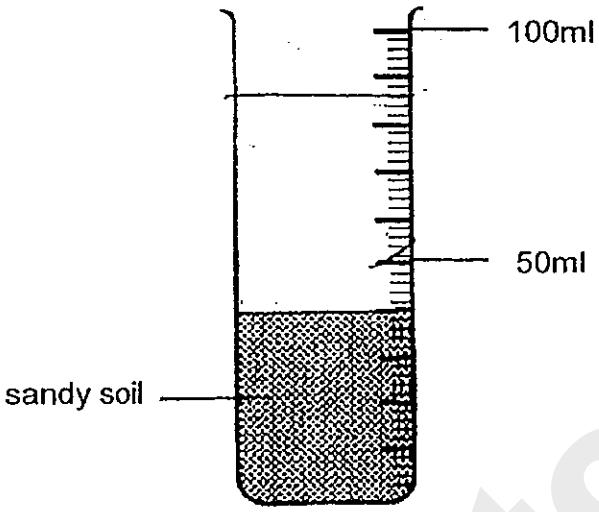
41. A 100 ml measuring cylinder was packed with sandy soil up to the 40 ml. Then 50 ml of water was poured into the measuring cylinder.



i) Draw the water level in the diagram above. [1]

ii) Explain your answer in (i). [2]

_____

_____

_____

_____

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42. Plant G is a floating water plant. It had been observed that the population of plant G in Nanyang Lake had been decreasing over the last few months. It was later found that there were 3 factories dumping waste water into the lake. An experiment was conducted to test the effect from each source of waste water on plant G.

Equal number of plant G was placed in 3 beakers which were filled with waste water from each factory. The 3 set-ups were kept in a laboratory for 15 days. The table below shows the results of the experiment.

	Source of waste water		
	Factory X	Factory Y	Factory Z
Number of plant G at the start	30	30	30
Number of plant G after 15 days	12	5	21

i) Based on the data above, which factory had been dumping waste water that was the most **harmful** to plant G? [1]

_____

ii) Give a reason for your answer in (i). [1]

_____

_____

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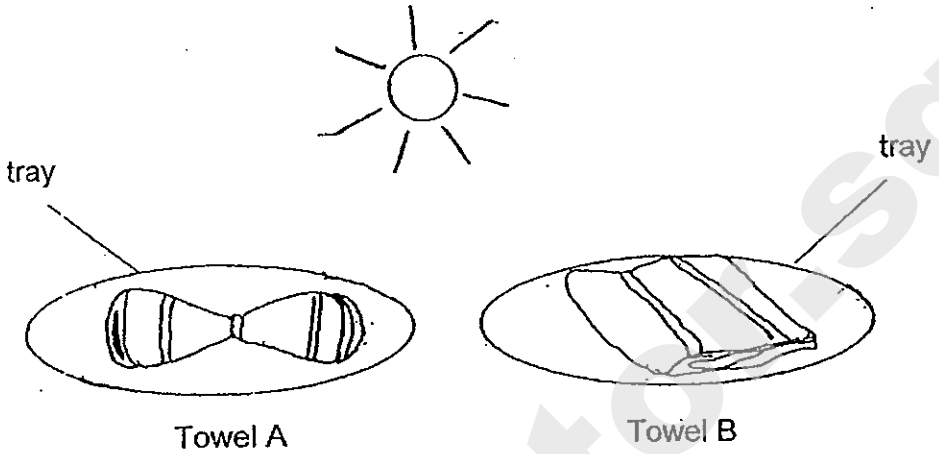
43. The diagrams below show two identical towels, A and B. They were soaked in 50ml of water and the initial mass of each towel was recorded. Towel A was rolled up and tied with a string before being placed on a tray. Towel B was folded and placed on another tray. Both towels were placed in an open area. The mass of each towel was measured again after one hour.



(a) What was the aim of the experiment? [1]

_____

_____

(b) Apart from the variables mentioned above, state one **other** variable that has to be kept constant in order for the experiment to be a fair one. [1]

_____

(c) The results of the experiment above were recorded in the table below.

Towel	Mass of towel at first (g)	Mass of towel after 1 hour (g)
A	50	38
B	50	32

Based on the results above, explain the difference in the mass of the two towels after one hour. [1]

_____

_____

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44. Valerie, Qi Qi and Shermin observed a kettle of boiling water and made the following statements.

Valerie : There is more water vapour in the surroundings now.

Qi Qi : I can see steam coming out of the spout of the kettle.

Shermin : The temperature of the boiling water is rising.

(i) Which girl(s) has/have made the **wrong** statement? [1]

_____

(ii) Explain why the statement(s) is/are wrong ? [2]

_____

_____

_____

_____

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ANSWER SHEET

EXAM PAPER 2013
SCHOOL : NANYANG
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
2	1	3	4	1	3	3	2	3	2	2	2	1	3	3	3	2

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	3	3	4	4	3	4	4	3	2	2	3	3

31)a)Type of bread
Size of bread
Location of set-up
b)They reproduce by spores.

32)a)The seed leaves.
b)C. The seedling has finished the food supply of the seed leaves and grown its true leaves.

33)a)It is for breathing in oxygen and breathing out carbon dioxide.
b)The pupa stage.
c)Due to the rainy weather, more water puddles are formed. Mosquitoes are then intended to lay eggs in the water puddles and breed faster.

34)a)Squirrel X had helped the plant Z to disperse its. Sometimes, squirrel X might have buried the seeds where the land is more fertile and all the conditions are present. Thus, the seed would germinate.
b)Plant Z's fruit is disperse by water. It has air space in the fruit to help it float on water.

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35)a)W,. Y, Z ,X
b)The mass of fruit A is lighter than the mass of fruit B.

36)a)When fly S lands on flower R, the pollen grains will stick onto it. When fly S lands on another flower R, the pollen grains would far of on to the stigma of that flower R.
b)It is dispensed by animals.

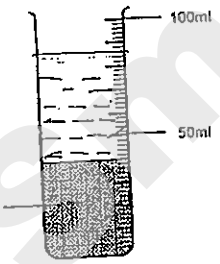
37)a)i)Plant D. ii)Plant E.
b)The location of Plant D is after the location X. So, it follows the flow of the river water and lands somewhere far away from location.
c)Fleshy/Juicy.

38)a)It is to find out which colour of flowers can attract the most amount of butterflies.
b)yellow.
c)i)The same type of coloured cards used.
ii)Placed at same location.

39)a)2. A male and a female.
b)They are cousins.
c)1.
d)The gene which is the ability to roll Naomi's tongue was being passed from her grains father to her father and to her.

40)When another hole is made, air can go in from there, occupying the empty space and forcing the condensed milk out of the tin.

41)i)



ii)There are air spaces between the soil particles. When water is poured into the measuring cylinder, air escapes and some water fills up, occupy the air spaces between the soil particles.

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42)i)Factory Y.

ii)At the start of the experiment there were 30 plant G in use for the experiment on each factory. After 15 days, the pants left of factory Y is less than 10 but the other were more than 10 left.

43)a)It is to find out whether the bigger the exposed surface area, the rate of evaporation is faster.

b)Both towels must be placed on identical trays.

c)As towel B was placed on the tray with a bigger exposed surface area than towel A,towel B evaporated water than towel A, resulting of towel B's mass which is lighter than towel A's mass.

44)i)Qi and Shermin.

ii)Steam is hot water vapour in gaseous stat and hence it cannot be seen. The temperature of boiling water is always constant.

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Section A	60
Section B	40
Your score out of **100** marks	
Parent's signature	

RAFFLES GIRLS' PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1
2013

Name : _____ Index No: ___Class: P5____

7 May 2013 **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. Meng Meng placed 20 guppies into a fish tank. She counted and recorded the number of guppies which were alive in the tank weekly for one month.

Week	Number of guppies
1	20
2	18
3	15
4	14

Based on the information above, which one of the following statements is true about the guppies?

(1) They can die (2) They can grow

(3) They can reproduce (4) They are able to move by themselves

2. Four children observed the following characteristics of an animal.

Ariel : It crawls.
Bohan : It has 6 legs.
Cindy : It has 3 body parts.
Daming : It has a pair of wings.

Which of the following children's observations would help to determine that the animal is an insect?

(1) Ariel and Bohan only

(2) Bohan and Cindy only

(3) Bohan and Daming only

(4) Cindy and Daming only

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3. The table below shows the characteristics of animals P, Q, R and S.

Animal	Has 2 legs	Has wings	Has body covering of hair
P	✓	✓	
Q	✓	✓	✓
R	✓		✓
S			✓

Based on the table above, which of the following statement(s) is/are true?

A Animal Q is an insect.

B Only animal S is a mammal.

C Both animals P and Q are birds.

D Animals Q, R and S are mammals.

(1) A only

(2) D only

(3) B and C only

(4) B, C and D only

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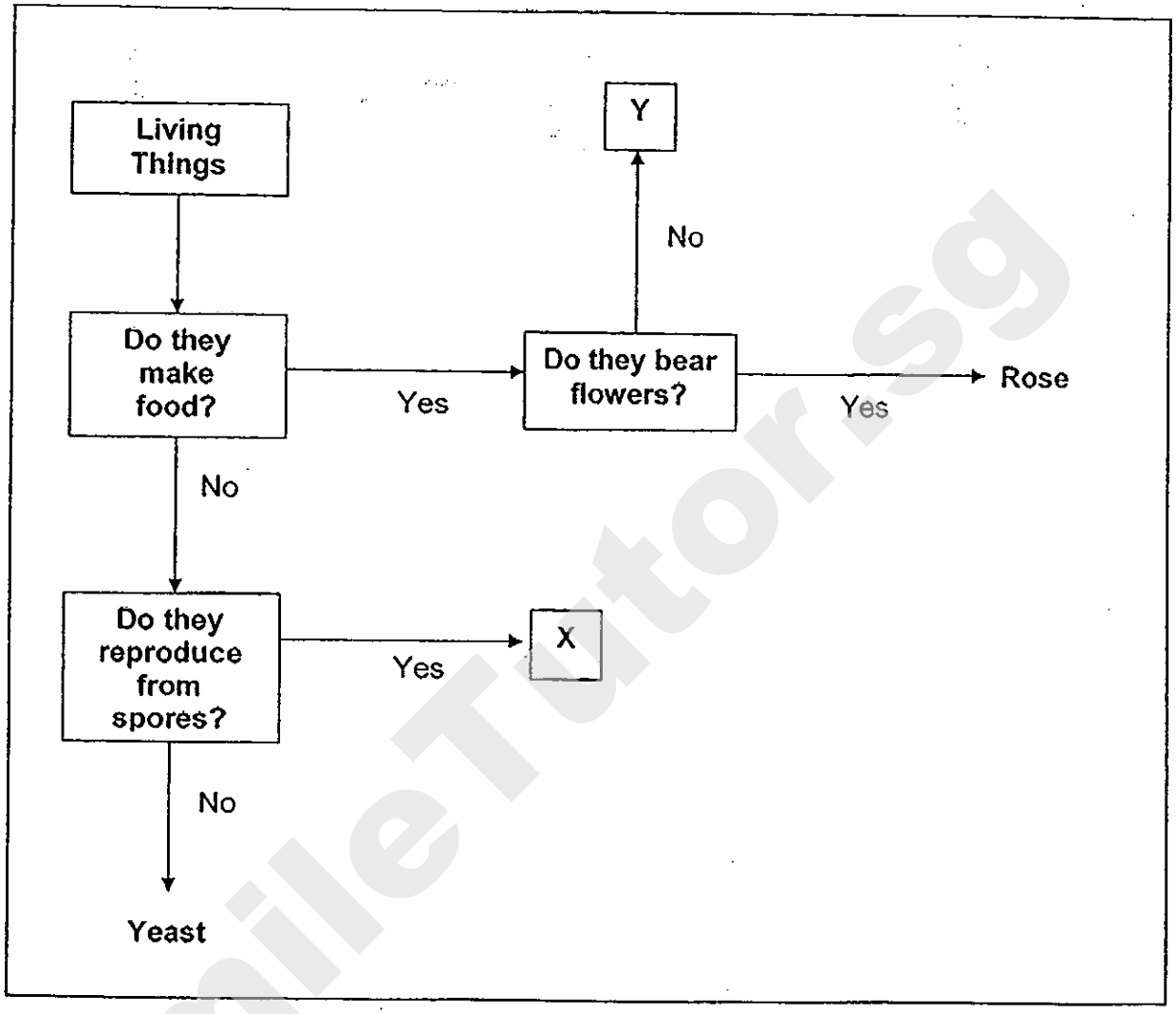
4. Study the flow chart below carefully.



Which of the following best represent X and Y respectively?

	X	Y
(1)	bacteria	moss
(2)	puffball	ladder fern
(3)	water lily	bracket fungus
(4)	bird's nest fern	hibiscus

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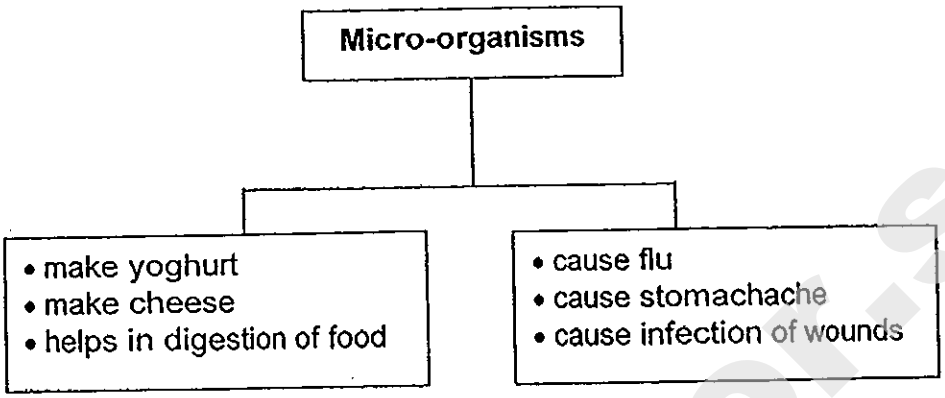
5. The flow chart below shows how we can group micro-organisms.



Based on the information above, how are the micro-organisms grouped?

A whether they are useful to man

B whether they reproduce from spores

C according to number of cells (single-celled or multi-celled)

(1) A only

(2) B only

(3) A and B only

(4) B and C only

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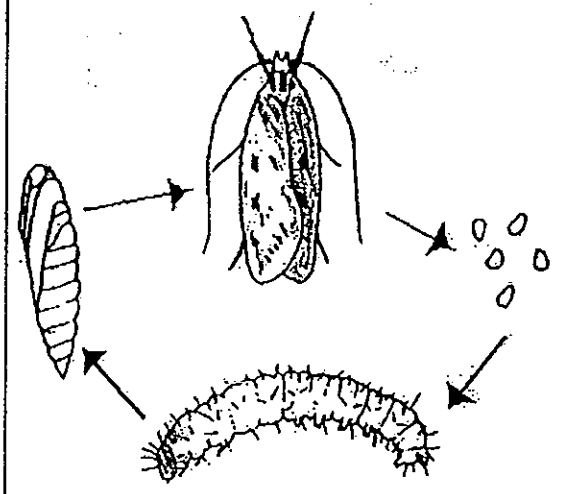
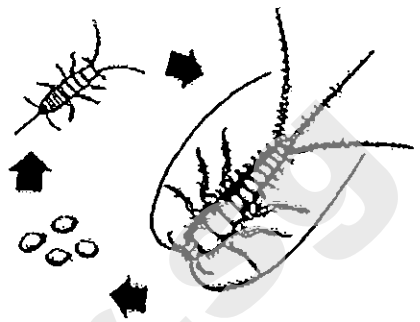
6. The diagrams below show the life cycle of organisms X and Y.

Organism X	Organism Y
	

Based on the diagrams above, which of the following statement(s) is/are true?

A Both the adults of organisms X and Y are able to fly.

B The young of organism X does not look like its adult while the young of organism Y looks like its adult.

C Organism X has a 4-stage life cycle while organism Y has a 3-stage life cycle.

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

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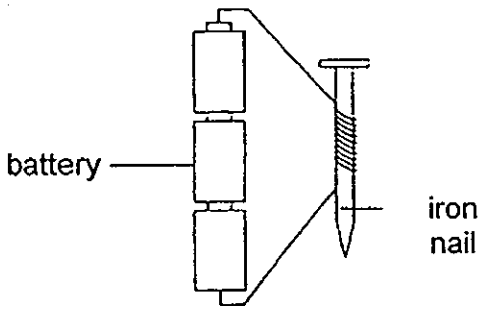
7. Katrina made an electromagnet by coiling wire around an iron nail and then connecting the wires to batteries as shown in the diagram below.



Which of the following statements suggest a way to increase the strength of the magnetised iron nail in the set-up above?

A Increase the number of batteries.

B Increase the number of coils of wire around the iron nail.

C Replace the iron nail with an aluminium nail.

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

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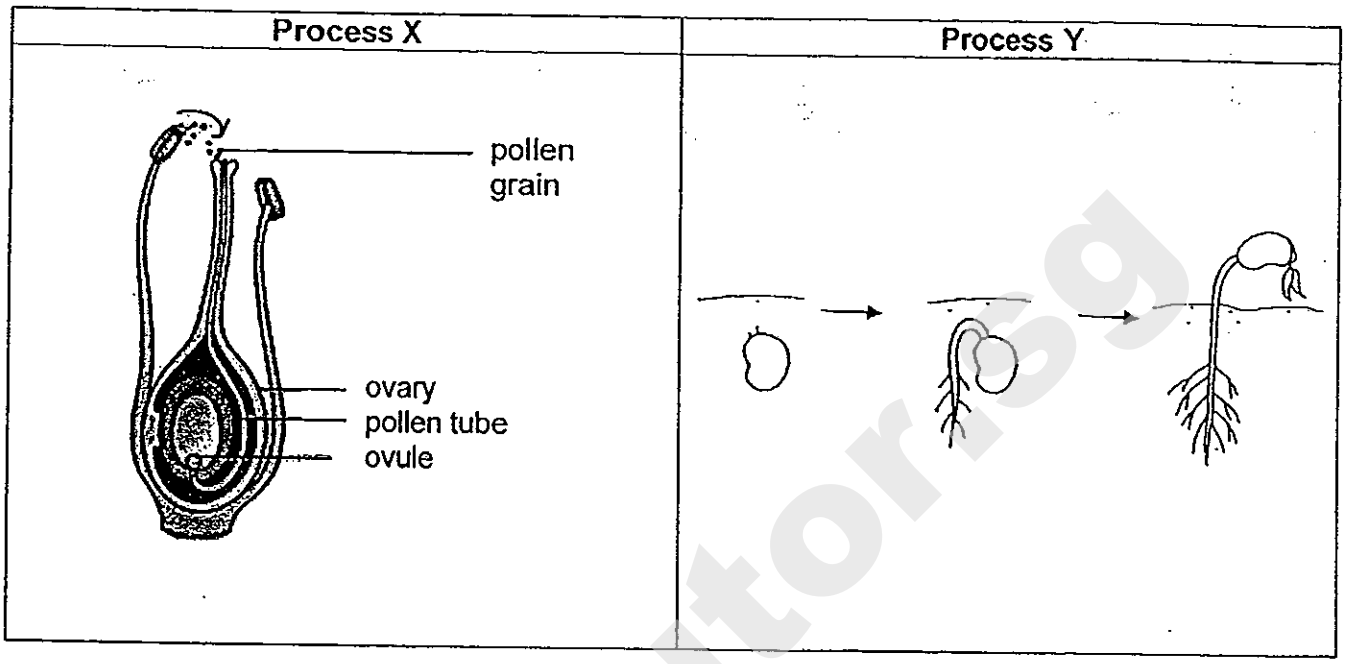
8. The diagram below shows two processes, X and Y.



Which of the following represent the processes, X and Y, as shown in the diagrams above?

	X	Y
(1)	dispersal	fertilisation
(2)	pollination	germination
(3)	germination	pollination
(4)	fertilisation	dispersal

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9. Which of the following statement(s) is/are true about the sexual reproduction in flowering plants and humans?

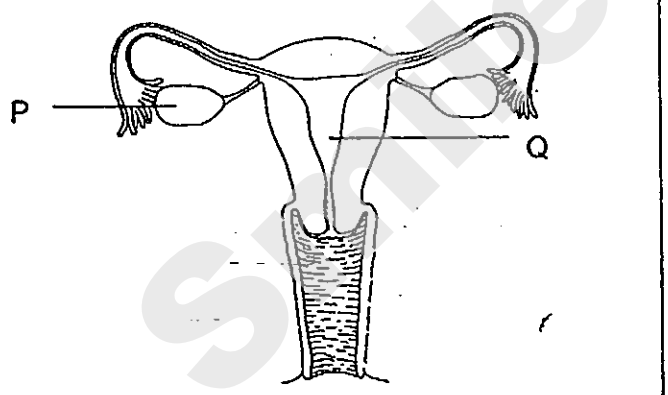
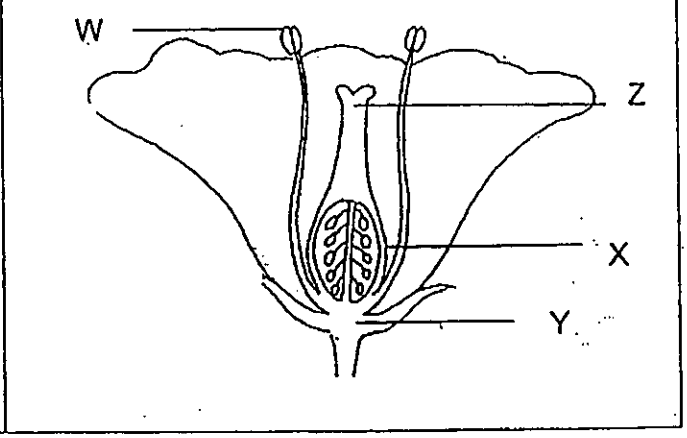
A Fertilisation in humans occurs when the sperm fuses with an egg.

B The male reproductive parts in plants are stigma, anther and ovules.

C Fertilisation in flowers occurs when a male sex cell fuses with a female sex cell.

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

10. The diagrams below show the human and plant reproductive systems.

Human	Plant
	

Identify the parts where the female sex cells are produced in both the human and plant reproductive systems as shown in the diagrams above.

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

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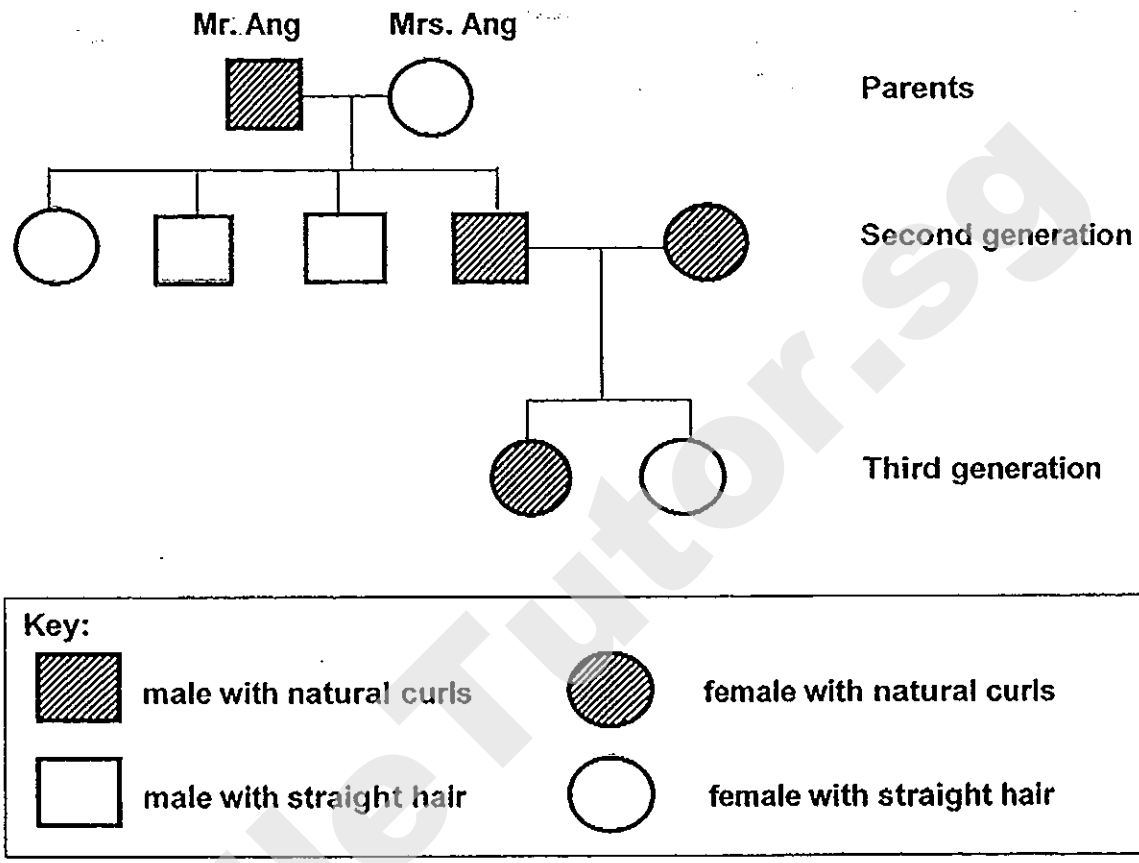
11. The diagram below shows Mr. Ang's children and grandchildren who were born with natural curls.



Based on the information above, which of the following statement(s) is/are correct?

A Mr. Ang has two daughters with straight hair.

B Mr. Ang has a son and a granddaughter with natural curls.

C Mr. Ang's daughter-in-law inherited her natural curls from him.

(1) A only

(2) B only

(3) B and C only

(4) A, B and C

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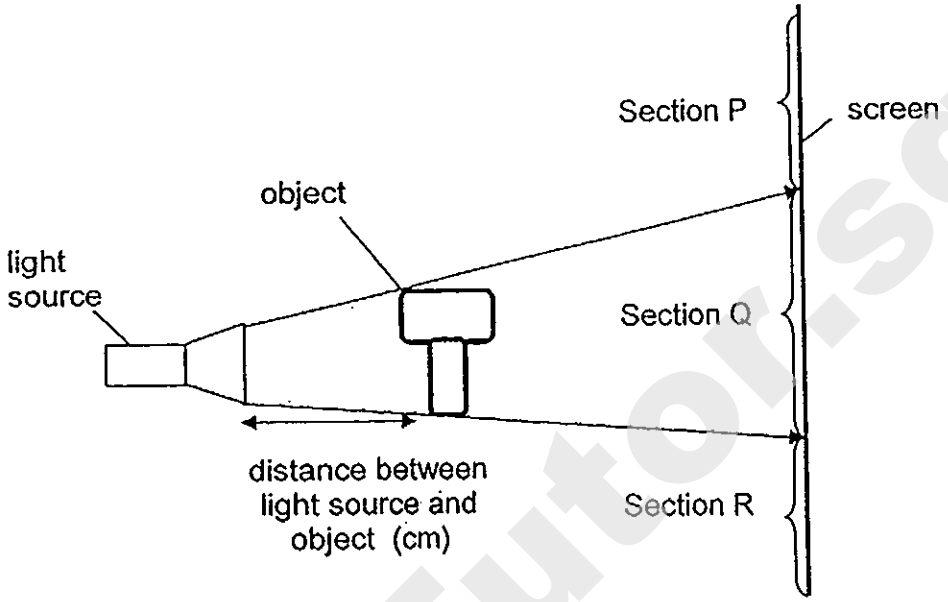
12. Karen made an object out of a wooden block and a tin can. She then placed it between a light source and a screen as shown below.



Based on the diagram above, which one of the following is correct?

(1) The shadow cast on the screen is on sections P and R only.

(2) The shadow will be bigger if the screen is nearer to the object.

(3) The shadow will be bigger if the distance between light source and object decreases.

(4) The shadow will be bigger if the distance between light source and object increases.

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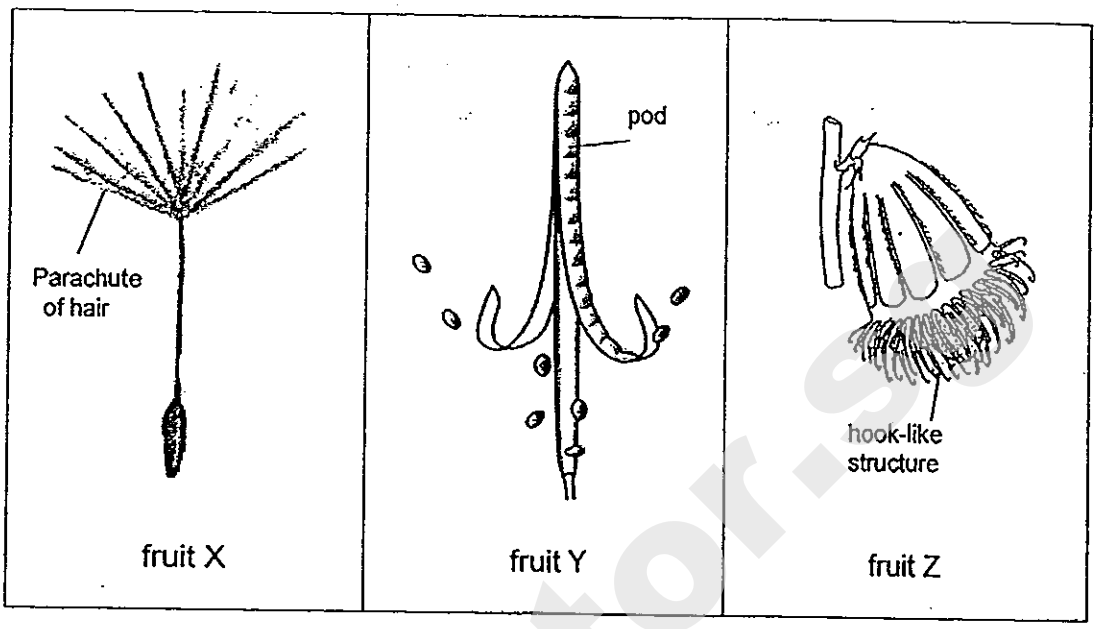
13. The diagrams below show some fruits (not drawn to scale).



Which one of the following shows correctly how fruits X, Y and Z are being dispersed?

	Fruit X	Fruit Y	Fruit Z
(1)	by animal	by wind	by water
(2)	by splitting	by water	by wind
(3)	by water	by animal	by splitting
(4)	by wind	by splitting	by animal

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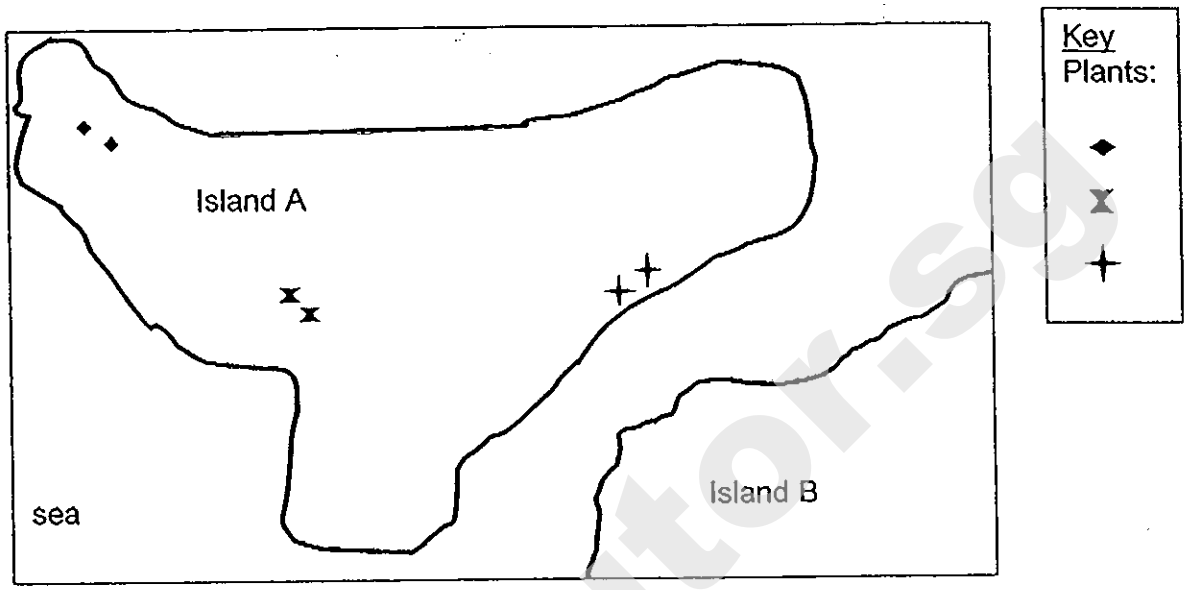
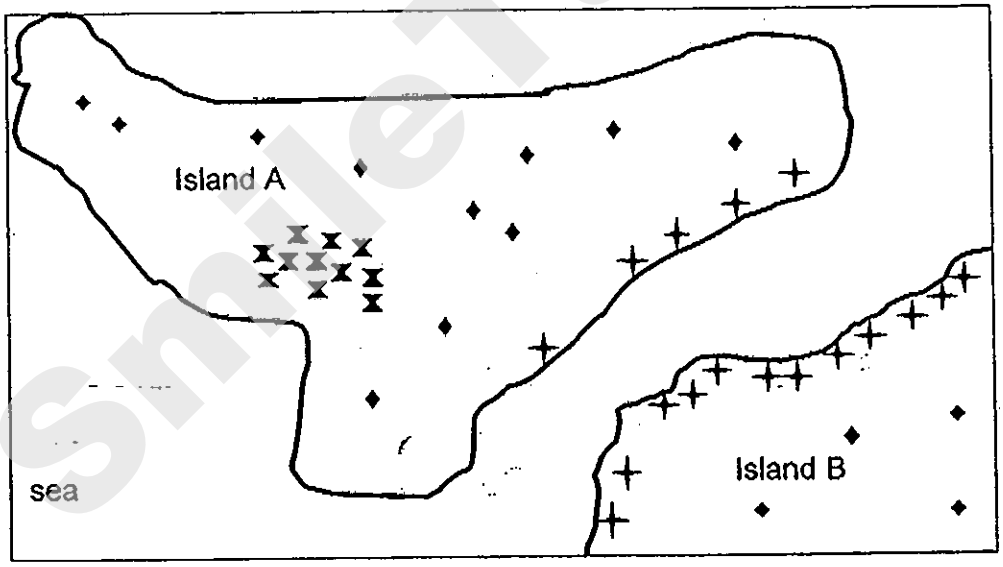
14. The diagram below shows an Island A where some plants are growing.



After a few months, some plants were found on Island B.



Which of the following best represents the method of dispersal of the plants?

	◆	+	⧗
(1)	animal	wind	splitting
(2)	animal	water	splitting
(3)	water	wind	animal
(4)	splitting	water	wind

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15. Sarah went on a field trip and recorded the following characteristics of four different animal pollinators.

Pollinator	Characteristics
Organism A	• Attracted to large, strong scented flowers • Active in the day
Organism B	• Attracted to small, brightly coloured flowers • Likes scented flowers • Active in the day
Organism C	• Attracted to brightly coloured flowers • Has a poor sense of smell • Active in the day
Organism D	• Attracted to white coloured flowers • Has a good sense of smell • Active at night

Sarah found two types of flowers and made the following observations.

Flower	Observations
X	• White petals • Blooms in the evening • Produces a strong scent after the sun sets
Y	• Red petals • Blooms in the day • Does not produce a scent

Based on the information above, which are the most likely organisms that pollinate flowers X and Y?

	Flower X	Flower Y
(1)	Organism A	Organism B
(2)	Organism A	Organism C
(3)	Organism D	Organism C
(4)	Organism D	Organism B

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16. David conducted an experiment with some seeds. He placed 10 seeds in 8 identical pots, A to H, which contained identical amounts of soil. He watered each pot of seeds with 20 mℓ of water daily. He then exposed the pots to different temperatures as shown in the table below. He measured and recorded the number of seeds which germinated after 3 days.

Pot	Temperature of soil (°C)	No. of seeds per pot	No. of seeds germinated
A	5	10	0
B	10	10	0
C	15	10	4
D	20	10	8
E	25	10	9
F	30	10	8
G	35	10	1
H	40	10	0

Based on the information given above, which one of the following statements is correct?

(1) The most number of seeds germinated between 20°C and 30°C.

(2) Water is the most important condition for the seeds to germinate.

(3) The lower the temperature of the soil, the fewer the number of seeds germinated.

(4) The higher the temperature of the soil, the greater the number of seeds germinated.

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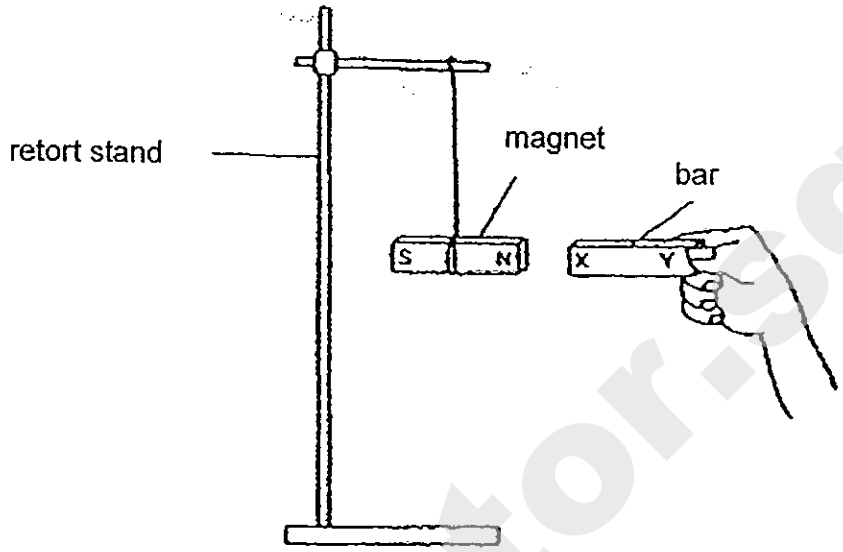
17. Three bars, P, Q and R, were brought very near to the N-pole of a magnet as shown in the diagram below.



The table below shows the results of the experiment.

Bar	Pole of the bar that is facing the magnet	Magnet swings towards the pole	Magnet swings away from the pole	No reaction to the magnet
P	X		✓	
	Y	✓		
Q	X	✓		
	Y	✓		
R	X			✓
	Y			✓

What materials were the bars, P, Q and R, most likely made of?

	P	Q	R
(1)	wood	glass	steel
(2)	nickel	aluminium	plastic
(3)	copper	wood	wood
(4)	iron	steel	copper

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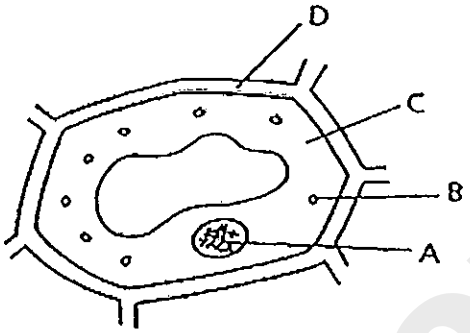
18. A scientist would like to make a kind of plant grow faster and bigger. Which one of the following parts of the plant cell should he work on?



(1) A

(2) B

(3) C

(4) D

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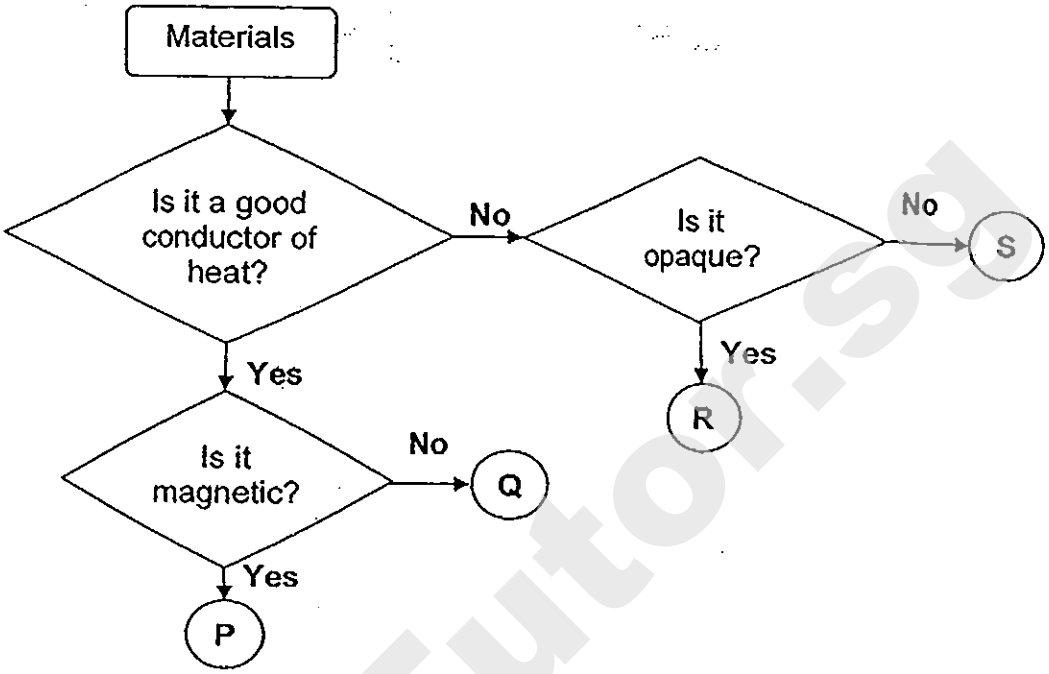
19. Study the flow chart below.



Which of the following materials best represent P, Q, R and S respectively?

	P	Q	R	S
(1)	Aluminium	Nickel	Frosted glass	Clear plastic
(2)	Copper	Iron	Porcelain	Wood
(3)	Steel	Copper	Cardboard	Clay
(4)	Nickel	Silver	Leather	Frosted glass

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20. Sarah had three rods made of different materials. She wanted to find out which material was the hardest.

She used Rod P to scratch on Rod Q. She found that there were no scratches on Q. She applied the same amount of force to scratch the other rods using Rod Q.

She repeated the scratch test using other rods and recorded her results in the table as shown below.

Rod	Did P scratch the rod?	Did Q scratch the rod?	Did R scratch the rod?
P		Deep scratches	Moderate scratches
Q	No scratches		No scratches
R	No scratches	Fine scratches	

Which one of the following shows the correct order of hardness of the material from the least hard to the hardest?

(1) R, P, Q

(2) P, Q, R

(3) P, R, Q

(4) Q, R, P

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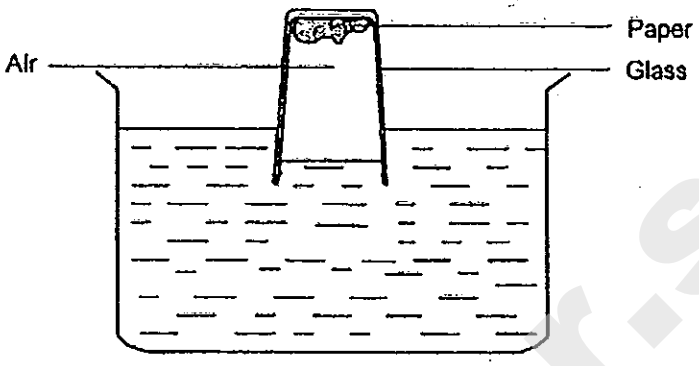
21. Ali pasted a piece of paper onto the inner bottom surface of a glass.He turned the glass upside down and pushed it into a basin of water. He noticed that the paper remained dry.



Which property of air does this experiment show?

(1) Air has mass.

(2) Air occupies space.

(3) Air cannot dissolve in water.

(4) Air takes the volume of the container.

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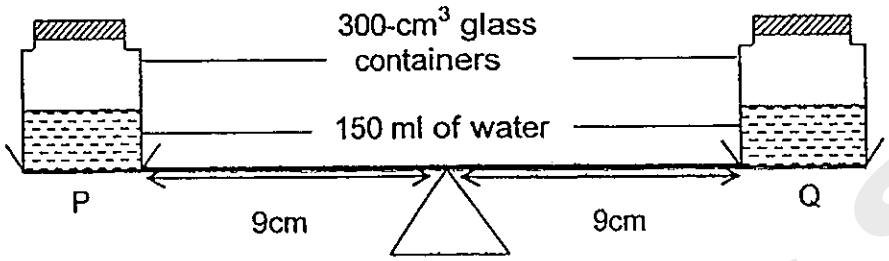
22. Sam balanced two identical 300-cm^3 glass containers, each containing 150 ml of water on a balance as shown in the diagram below.



After Sam pumped in an additional 50 cm^3 of air into Container P, which of the following would happen?

A The balance remained balanced.

B The balance tilted downwards at Container P.

C Volume of air in Container P increased.

D Volume of air in Container P remained the same.

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

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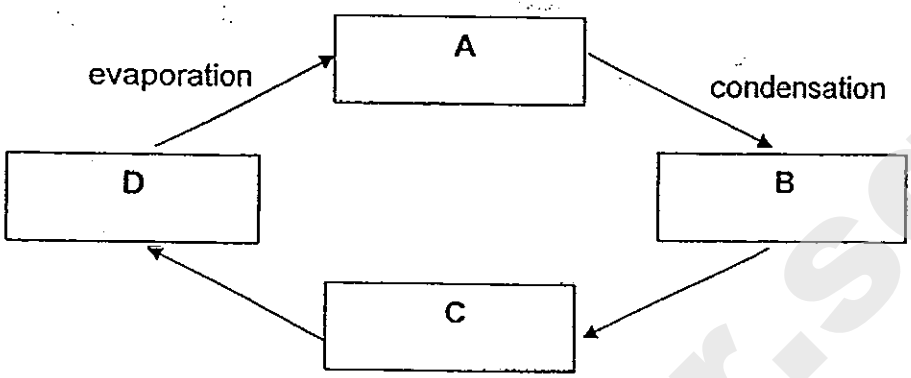
23. The diagram below shows the water cycle.



Based on the diagram above, what do A, B, C and D represent?

	A	B	C	D
(1)	rain	clouds	water vapour	water
(2)	water vapour	clouds	rain	water
(3)	clouds	rain	water	water vapour
(4)	water vapour	rain	clouds	water

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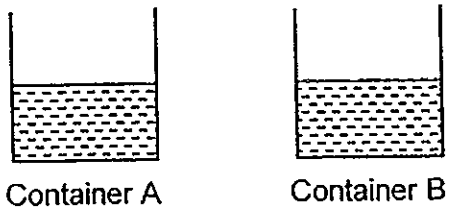
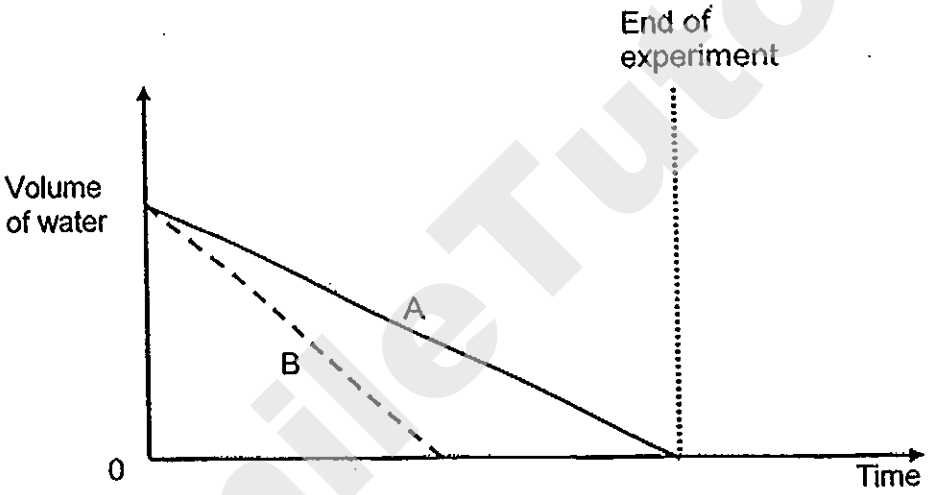
24. Lily filled two identical containers with the same amount of water and then placed them in two different locations.



She measured the volume of water left in each container at regular intervals over some time and plotted the graph below.



Based on the graph above, which of the following statement(s) is/are likely to be true?

A Container B was placed in a more windy location than Container A.

B Container A was placed in a warmer location than Container B.

C There was more water left in Container A than Container B at the end of the experiment.

D All the water in both Containers A and B had evaporated at the end of the experiment.

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

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25. The table below shows the freezing points and boiling points of three unknown substances, X, Y and Z.

Substance	Freezing Point (°C)	Boiling Point (°C)
X	44	98
Y	35	143
Z	27	76

Which of the substances, X, Y or Z, is/are liquid(s) at 80°C?

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

26. Gopal conducted an experiment to find out if the temperature of water affects the rate of evaporation. He recorded the conditions in the table below.

Set-up	Exposed surface area of water (cm^2)	Temperature of water (°C)	Amount of water (mℓ)
V	30	80	200
W	50	50	200
X	30	40	250
Y	40	50	250
Z	50	80	200

Which pair of set-ups must he use to compare in order to form a correct conclusion?

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

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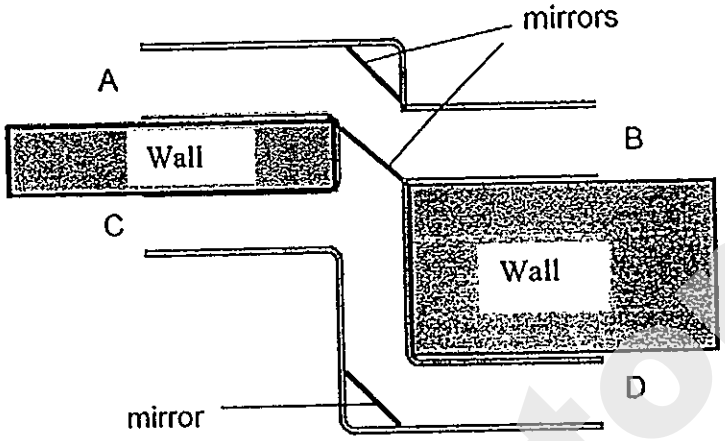
27. The diagram below shows a connection of pipes. Mirrors are fixed inside the pipes.



In order to see an object through the pipes, where should the eye and the object be placed respectively?

	Position of eye	Position of object
(1)	A	C
(2)	B	D
(3)	A	B
(4)	D	C

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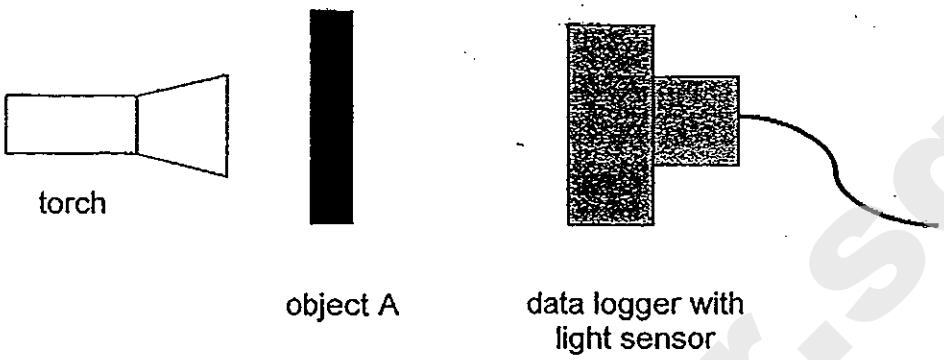
28. Three different objects, A, B and C are placed one at a time in front of a torch. A datalogger, which measures the amount of light that can pass through the object, is placed in front of the object as shown below.



The amount of light that can pass through the object is recorded and shown in the table below.

Object	Amount of light measured (lux)
A	50
B	98
C	0

Which one of the following can objects A, B and C be?

	A	B	C
(1)	Clear glass panel	Frosted glass panel	Wooden plank
(2)	Mirror	Vanguard sheet	Clear plastic sheet
(3)	Frosted glass panel	Clear plastic sheet	Mirror
(4)	Vanguard sheet	Mirror	Clear glass panel

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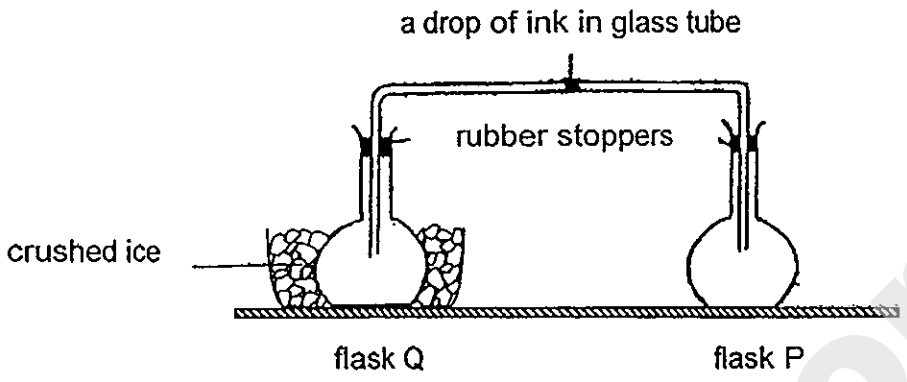
29. Sarah set up an experiment as shown in the diagram below. A glass tube containing a drop of ink connects the two identical glass flasks.



She placed flask Q in crushed ice for 10 minutes. She then observed that the drop of ink moved towards flask Q.

Which of the following would explain what Sarah had observed?

A The air in flask Q lost heat to the crushed ice.
B The air in flask P lost heat to the surroundings.
C The air in flask Q contracted and pulled the drop of ink towards flask Q.
D The air in flask P contracted and pushed the drop of ink towards flask Q.

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

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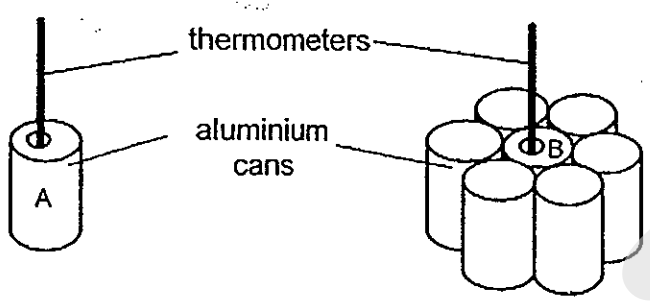
30. Some identical aluminium cans are filled up with boiling water as shown in the two set-ups below. The temperature of the water in cans A and B is measured and recorded over a period of 24 hours.

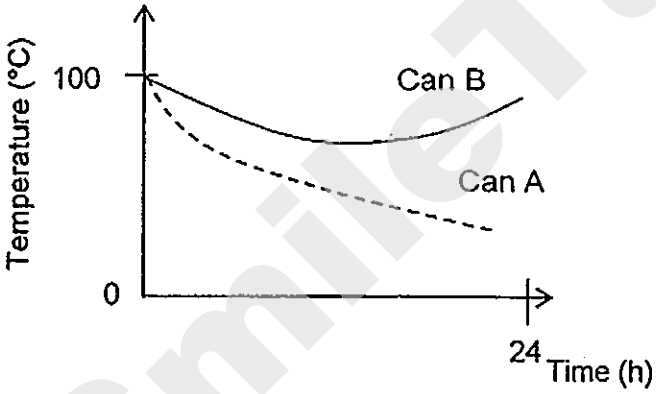


Set-up 1
A can is filled with boiling water

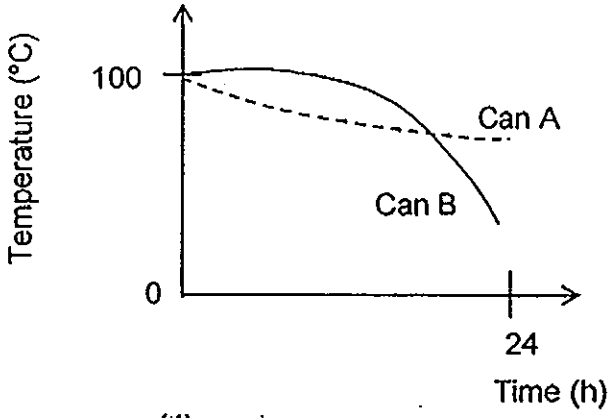
Set-up 2
All cans are filled with boiling water

Which of the following graphs would likely show the change in temperature of the water in cans A and B respectively?

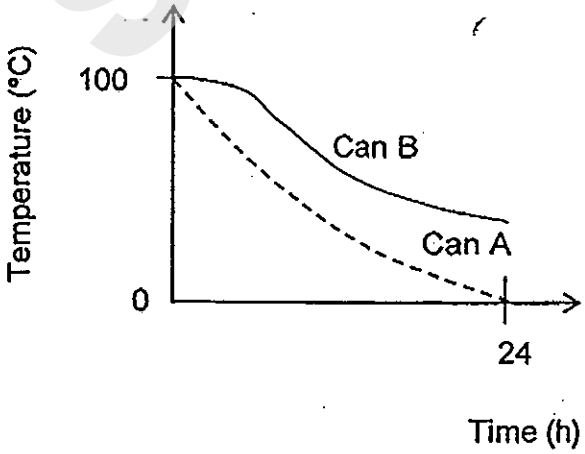
(1)



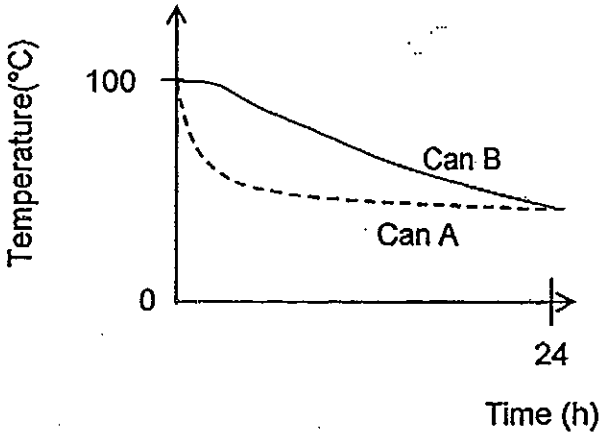
(2)



(3)



(4)



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Name : _____ Index No : _____ Class : P5 ___ 40

SECTION B (40 marks)

For questions 31 to 44, write your answers clearly in the spaces provided.

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

31. Nicole set up an experiment to find out which type of string, A, B, C or D, is the strongest. She attached weights to each string and recorded the maximum mass that each string could hold before it snapped. She recorded her results in the table below.

String	Maximum amount of mass the string could hold before snapping (g)
A	400
B	600
C	800
D	200

(a) What is the changed variable in the experiment? [1]

_____

(b) Name one variable that she should keep constant for a fair test. [1]

_____

(c) Based on the data above, which is the strongest string? Give a reason for your answer. [1]

_____

_____

Score 3

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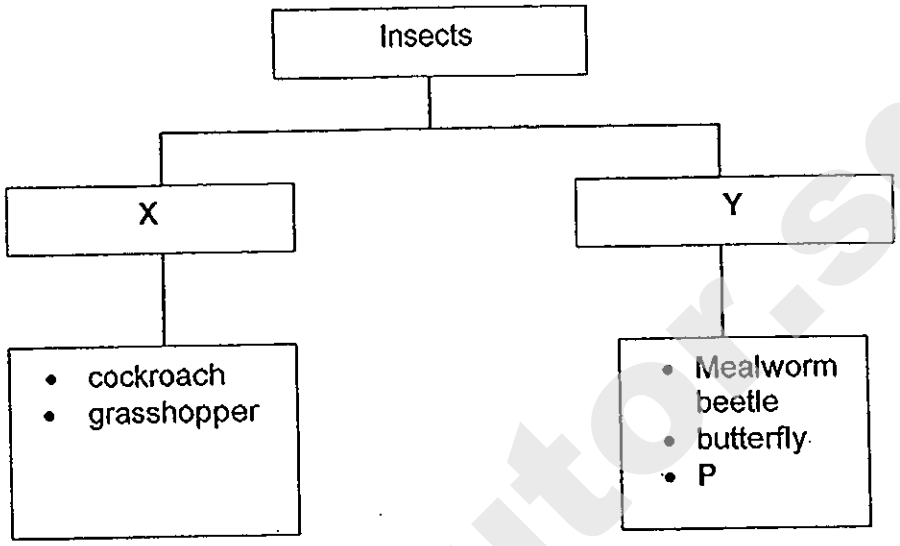
32. The diagram below shows how some insects are being classified.



(a) Write suitable headings for X and Y. [1]

X: _____

Y: _____

(b) Name an example of P. [1]

_____

Score	/ 2

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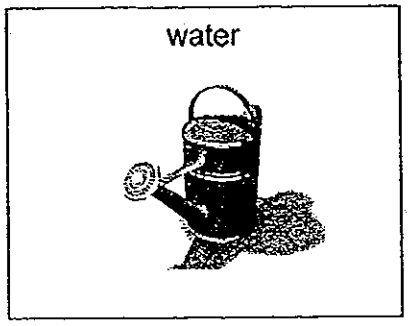
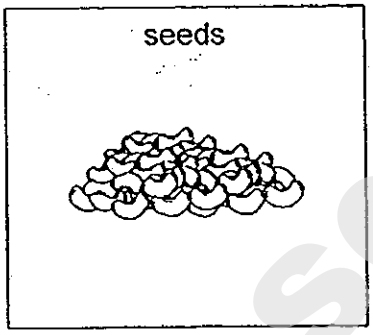
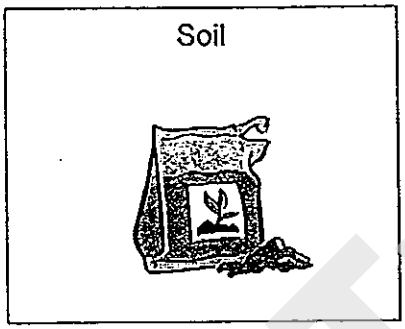
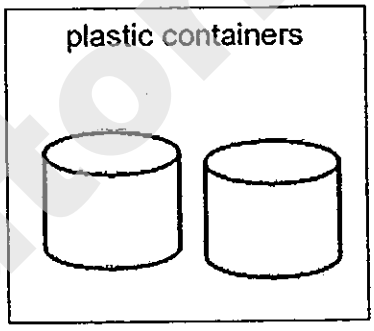
33. Siti wanted to conduct an experiment to find out if water is needed for seeds to germinate.
The diagrams below show the materials which she can use in her experiment.









The statements below are the steps she has taken to conduct her experiment. Reorder the steps in the correct sequence and write down the numbers 1, 2, 3, 4, 5 and 6 in the table below. [3]

Steps	Sequence
Observe in which container the seed will germinate after 3 days.	
Place the containers, A and B, filled with soil and seeds on the table.	
Label 2 containers, A and B, respectively.	
Put 5 seeds in containers A and B respectively.	
Put the same amount of soil in containers A and B.	
Water the seeds in container A only.	

Score	/ 3

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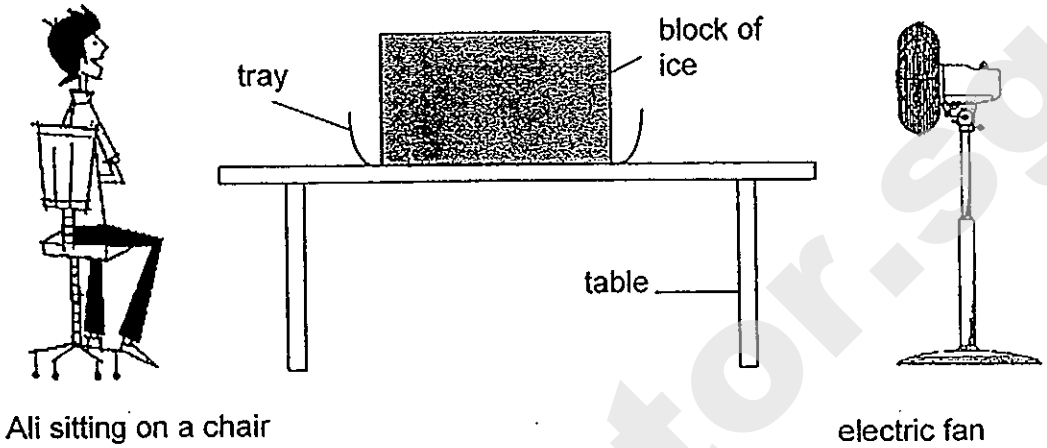
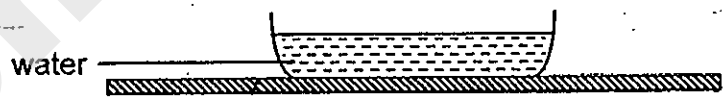
34. Ali wanted to save energy by not switching on the air conditioner in his room. Instead, he placed a 4-kg block of ice on a tray and placed it on the table in the enclosed room as shown in the diagram below. Then he switched on the fan. He felt cooler at the position where he was seated after a while.



(a) Explain how the set-up above helped Ali to feel cooler. [2]

One day later, Ali found that the block of ice had completely melted and there was water in the tray. He measured the mass of the water in the tray and found that it was only 3kg 800g.



(b) Why was there a decrease in the mass of the water? [1]

Score	/ 3

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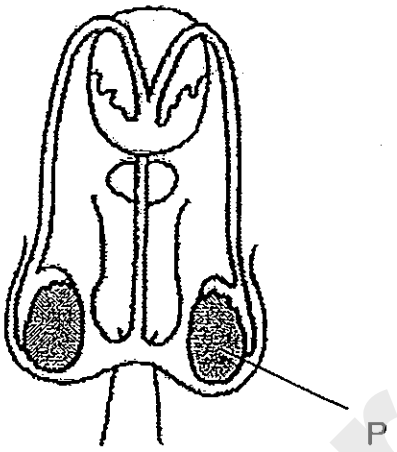
35. The diagram below shows the male reproductive system.



(a) Name the reproductive organ 'P' and state its function. [1]

Reproductive Organ 'P'	Function
_____	_____ _____ _____

Score	/ 1

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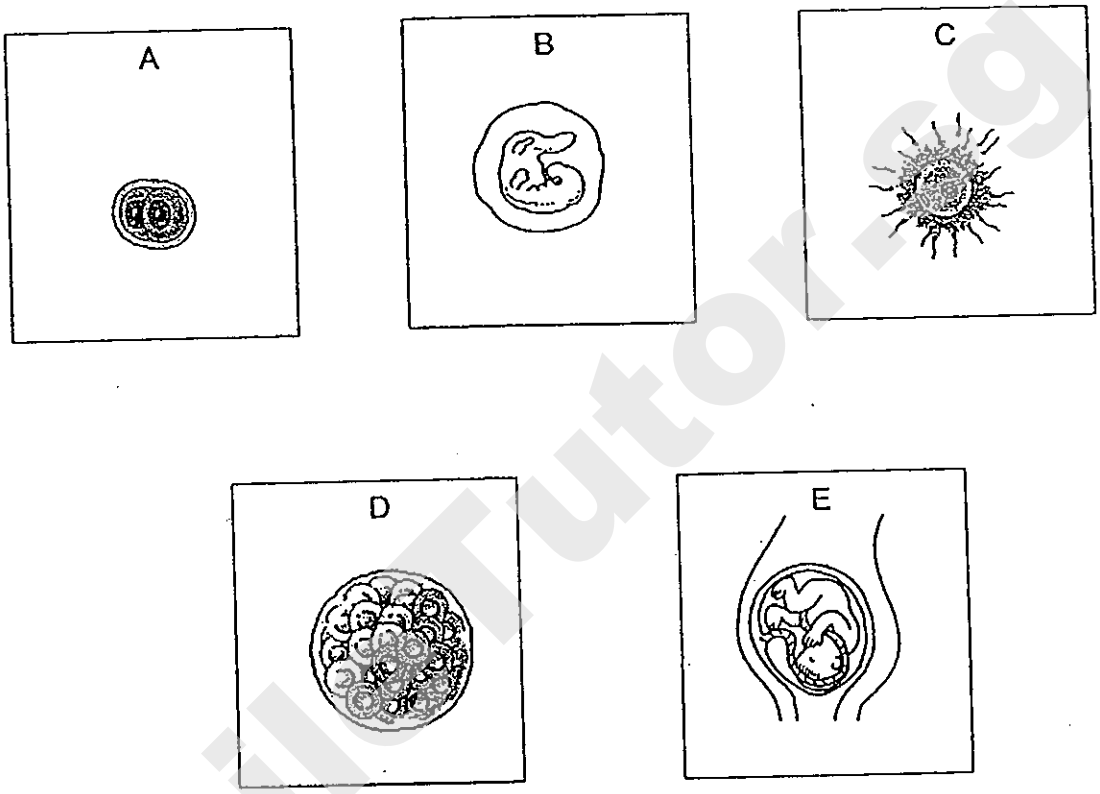
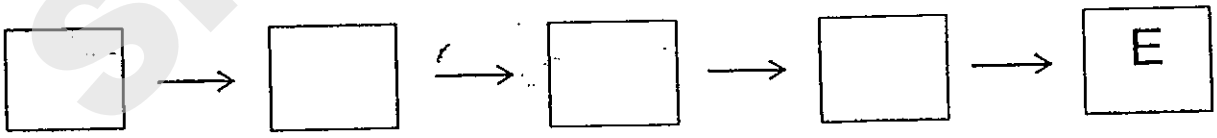
35 (b) The diagrams below show the different stages in human sexual reproduction.



Order the diagrams in the correct sequence. [1]



Score	/ 1

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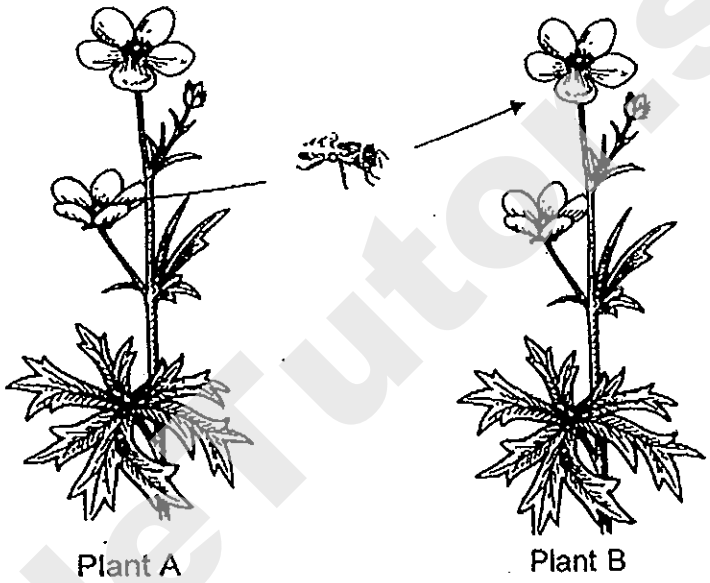
36 (a) Bees go from flower to flower to collect nectar. In what way is this behaviour of the bees helpful to the flowers? [1]

_____

_____

(b) The diagram below shows an insect flying from a flower in plant A to a flower in plant B which is of the same species.



(i) State which part of the flower will develop into a fruit. [1]

_____

(ii) Based on the process indicated in the diagram above, will the young plant that had developed from the seeds of plant B contain exactly the same characteristics as the parent plant B?
Give a reason for your answer. [1]

_____

_____

Score	/ 3

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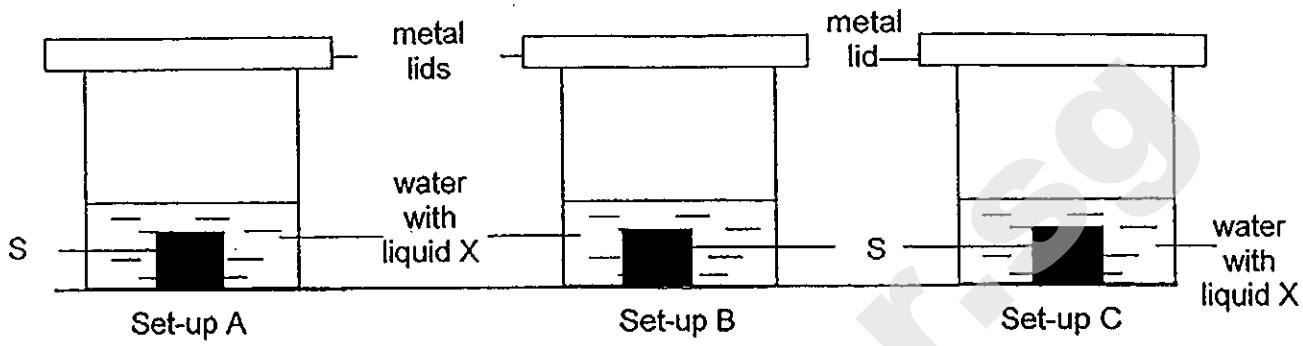
37. Jia Xin conducted an experiment as shown in the diagram below. She put a cube of substance S into each set-up. Each set up contained 200mℓ mixture of water and liquid X as shown in the diagram below.



The table below shows the different proportions of water and liquid X in the mixture in each set up.

Type of liquid	Set-up A	Set-up B	Set-up C
water (mℓ)	130	100	50
liquid X (mℓ)	70	100	150
water and liquid X (mℓ)	200	200	200

Her teacher highlighted that the greater the amount of liquid X, the faster the rate at which substance S would break down into simpler substances.

(a) By comparing the set-ups above with the human digestive system, name the parts of the set-ups above which represent the following: [1]

(i) Digestive juices : _____

(ii) Food : _____

(b) Based on the information above, arrange the set-ups, A, B and C, in increasing order according to the time taken for the cube of substance S contained in it to be broken down into simpler substances. [1]

shortest time taken → **longest time taken**

☐ , ☐ , ☐

Score	/ 2

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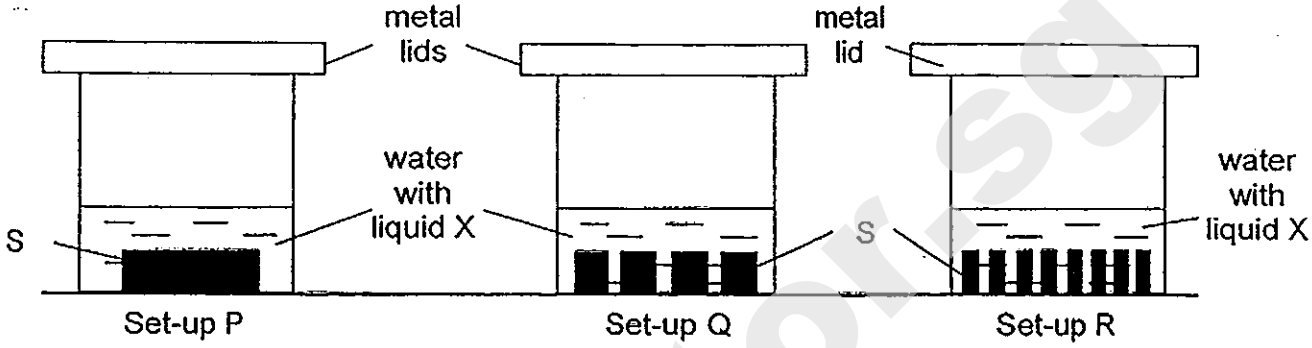
Continued from Pg.35

Jia Xin set up another experiment. She placed 10g of substance S and equal amounts of liquid X and water mixture in set-ups P, Q and R. The size of substance S in each set-up was changed as shown in the diagrams below.



Jia Xin recorded the amount of time taken for substance S to be broken down into simpler substances in the table below.

Set-ups	P	Q	R
Surface area of S (cm^2)	32	88	152
Time taken for S to break down (min)	50	28	15

(c) What is the relationship between the surface area of substance S and the time taken for it to be broken down into simpler substances? [1]

_____

_____

Score	/ 1

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38. Jane weighed 4 materials, P, Q, R and S, which were of similar sizes. She immersed each of them in a bowl of water which contained 20g of water for 2 minutes. Then, she removed them from the bowl before weighing them again.

She recorded her findings in the table below.

Materials	Mass of material before putting into water (g)	Mass of material after being immersed in water (g)
P	30	30
Q	30	37
R	30	50
S	30	40

(a) Which one of the materials, P, Q, R or S, absorbed the most amount of water? [1]

_____

(b) From the data given, which one of the materials, P, Q, R or S, is most suitable for making umbrellas? Explain your answer. [2]

_____

_____

Score	/ 3

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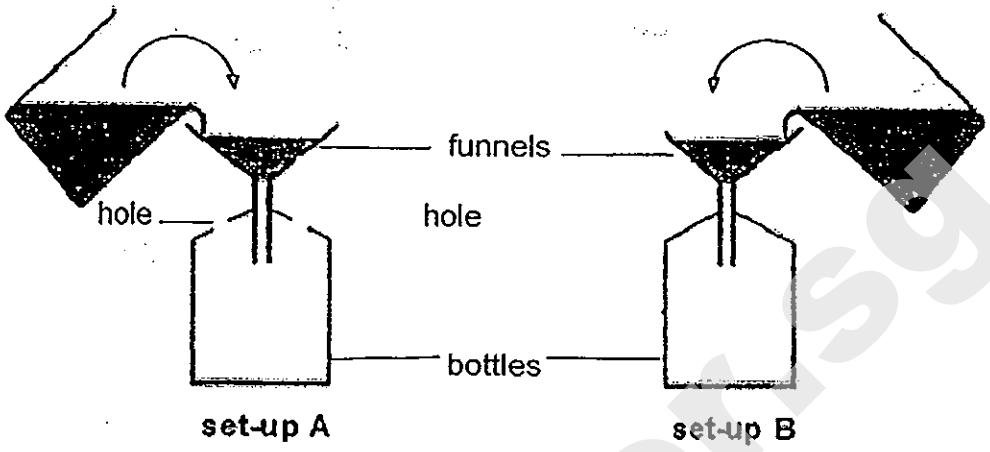
39. Fatimah set up an experiment as shown below. She poured 100ml of water in each funnel and left the set-ups for 3 minutes.



Which set-up, A or B, would have collected more water at the end of the 3 minutes? Explain your answer. [2]

_____

_____

_____

_____

Score	/ 2

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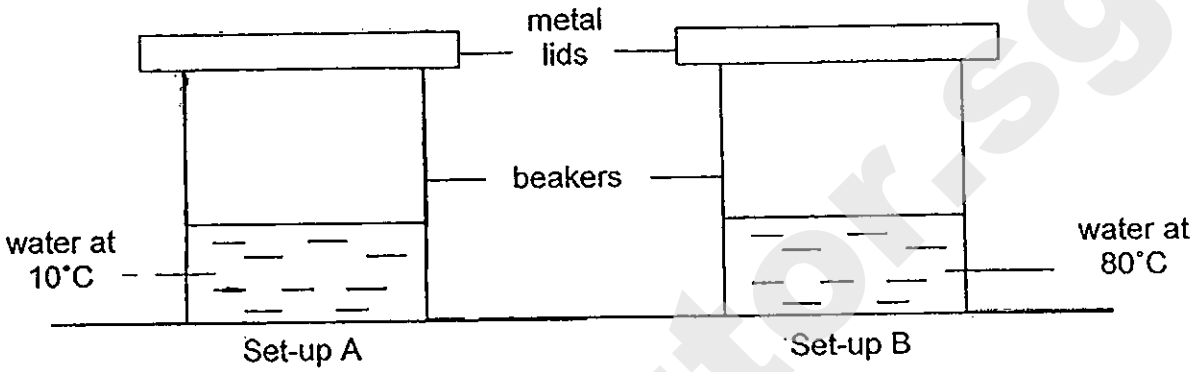
40. Jun Peng poured 500 ml of water into two identical containers. He then covered each container with a metal lid and placed them in a room with a constant temperature of 28 °C. After some time, he observed that tiny droplets of water had formed in both set-ups, A and B.



(a) In the diagrams above, draw where the water droplets had formed in set-up A. [1]

(b) Explain how the water droplets were formed in set-up A. [2]

_____

_____

Score	/ 3

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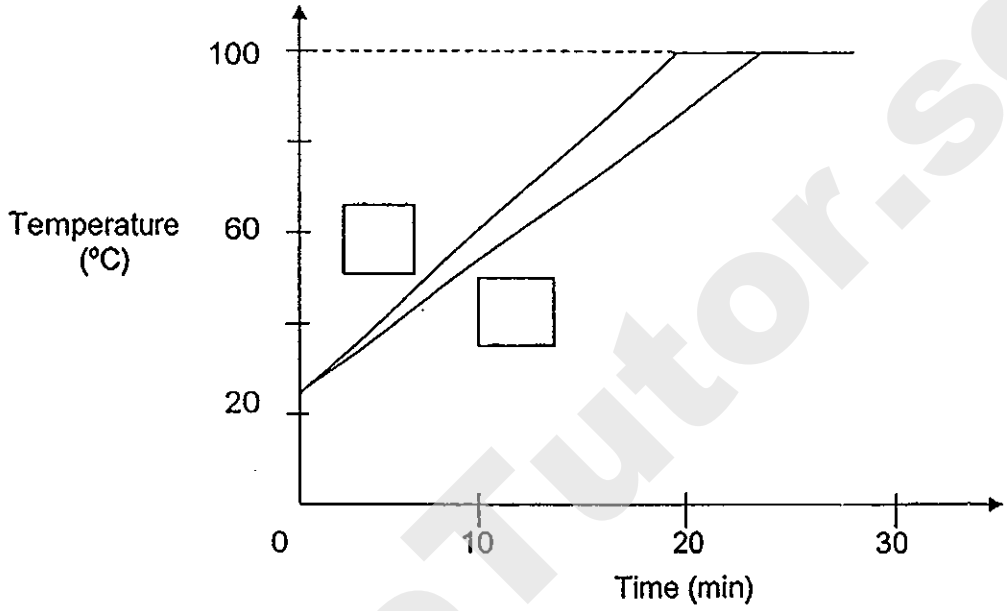
41. Two containers, X and Y, made of different materials are of the same size and thickness. They each contained 500mℓ of water at 25°C. The same amount of heat was applied to the two containers for 30 minutes.

The diagram below shows the changes in the temperature of the water in the two containers.



(a) The water in container X took a shorter time than the water in container Y to reach boiling point.

Label the graphs above with 'X' and 'Y' correctly in the boxes provided.[1]

(b) Explain why the water in container X reached the boiling point faster than the water in container Y. [1]

_____

_____

Score	/ 2

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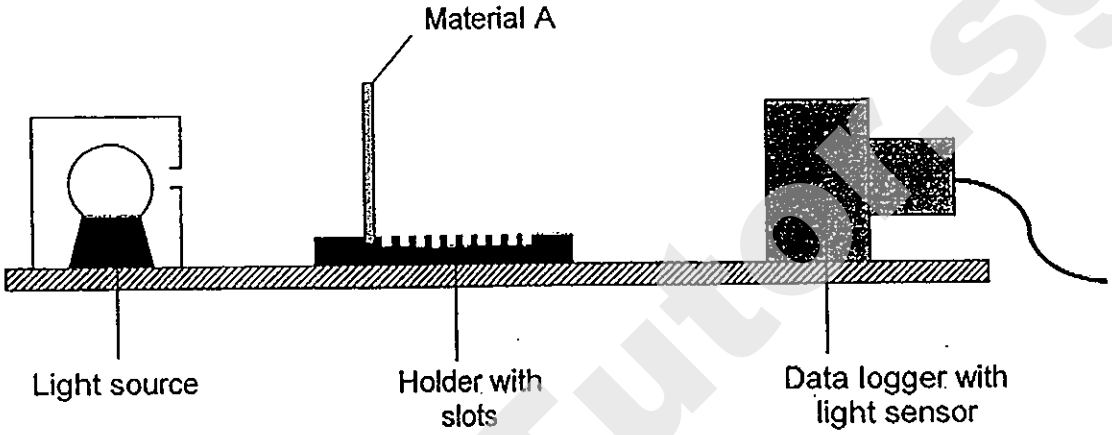
42. Ravi set up an experiment to measure the amount of light that passes through different types of materials. The materials he used are of the same size and thickness. He used a data logger with a light sensor to record the results. The holder with slots allowed different number of materials being placed at the same time.



He recorded his results in the table shown below.

Number of material A	Amount of light recorded (Lux)
0	5000
1	3600
2	2700
3	2000
4	0
5	0

(a) Based on the table above, describe the relationship between the number of pieces of material A used and the amount of light recorded. [2]

_____

_____

_____

Score	/ 2

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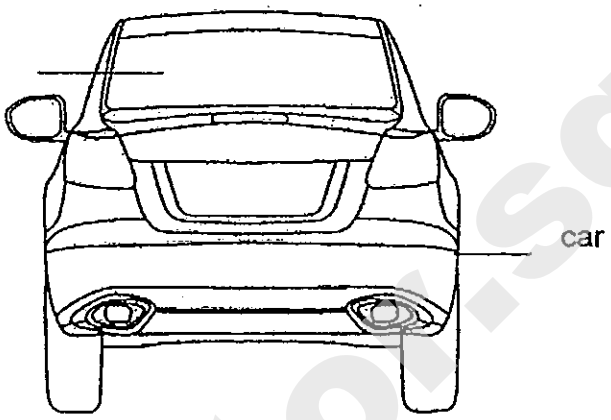
(b) Ravi's father uses a film to paste on his car's windscreen to reduce the glare from the sun when he drives. The diagram below shows where he pastes it on the car.



Based on the information above, what is the maximum number of sheets of film made of material A can he paste on his car windscreen to help reduce the maximum amount of glare from the sun while driving?
Give a reason for your answer. [2]

_____

_____

Score	/ 2

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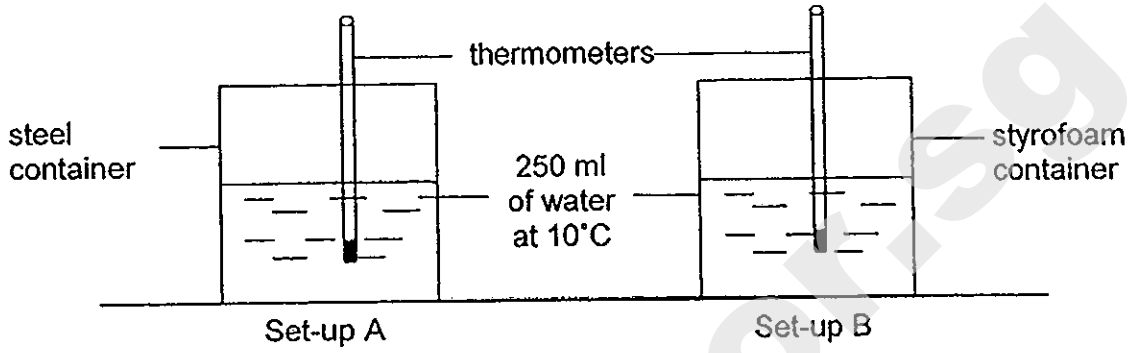
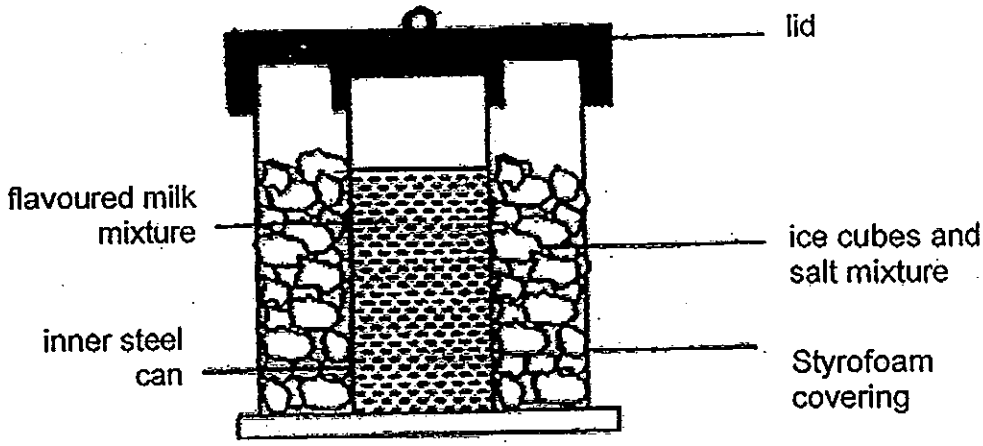
43. Rachel wanted to make ice cream without using the freezer. She carried out an experiment to investigate the heat conductivity of different materials. She prepared set-ups A and B using the apparatus shown in the diagrams below. She placed the two set-ups in the science laboratory.



She then recorded the temperature of the water in each set-up at every 10-minute interval.

Time (min)	Temperature (°C) of water in	
	steel container	styrofoam container
10	13	10
20	20	12
30	25	16
40	27	18
50	29	21
60	29	24

Based on the information above, she prepared a set-up as shown below to make ice cream without using the freezer.



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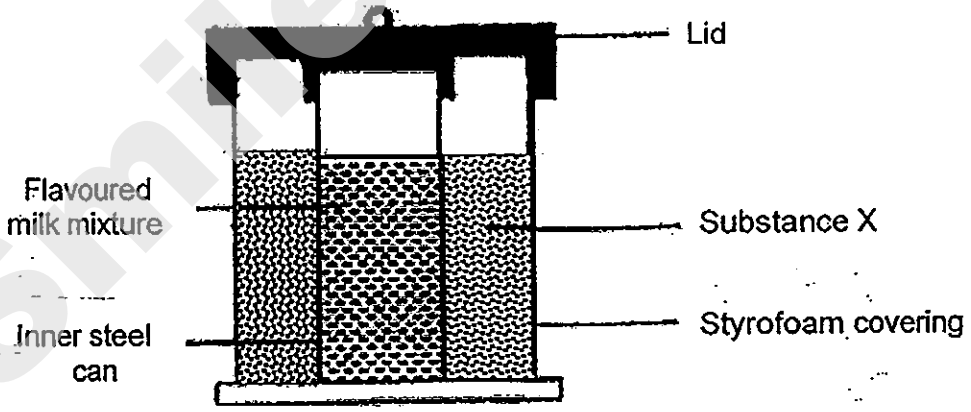
Continued from Pg.43

She used a styrofoam covering on the outer layer of the container and a steel can to contain the milk mixture in the inner layer of the container.

(a) Explain why she chose to use these two materials for the set-up used to make ice cream. [2]

Materials	Explanations
styrofoam covering	_____ _____
steel can	_____ _____

(b) Rachel repeated the experiment using the same set-up but replaced the ice cubes and salt mixture with substance X. She observed that it took a shorter time for the milk mixture to turn into ice cream than using the previous set-up.



Explain why the milk mixture took a shorter time to turn into ice cream when the ice cubes and salt mixture is replaced with substance X. [1]

_____

_____

Score	/ 3

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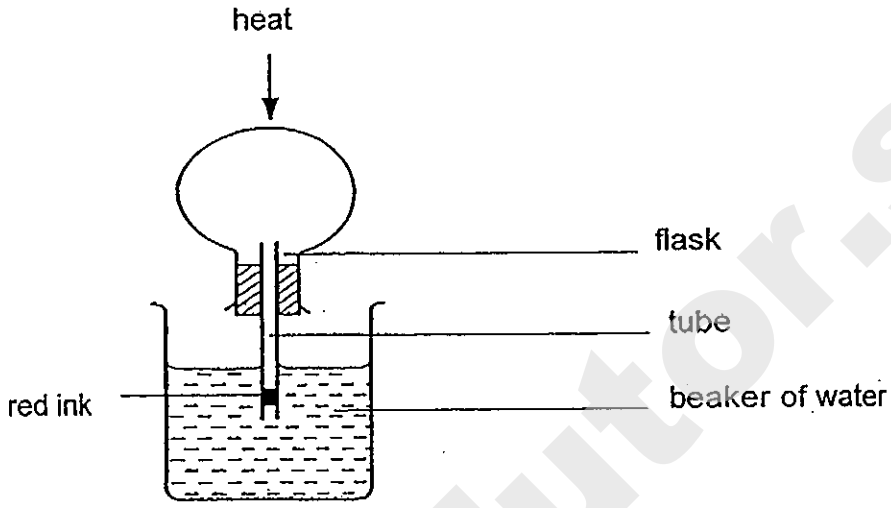
44. Samuel sets up the apparatus as shown below. In the set-up, a round bottom flask is inverted into a beaker of water with a glass tube containing a drop of red ink.



(a) When the flask is heated with a gas burner, Samuel observes that the drop of red ink flows out of the tube and the water in the beaker turns slightly red.

Explain what caused the drop of red ink to flow out of the tube. [2]

_____

_____

_____

(b) Besides the change in colour of the water in the beaker, predict one other observation Samuel will make. [1]

_____

_____

Score	/ 3

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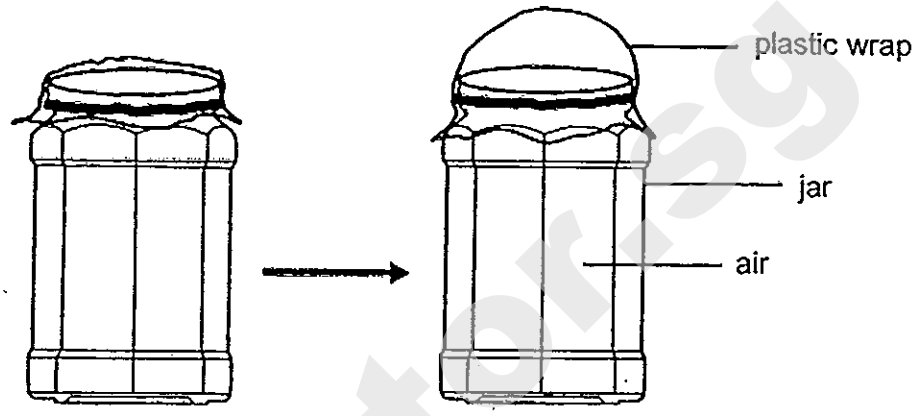
Continued from Pg.45

(c) Samuel covered a jar tightly with a piece of plastic wrap so that air could not enter it. The diagrams below show the jar after Samuel had heated it.



Jar at 28 °C Jar after being heated to 80 °C

Indicate the changes in the mass of the air and the volume of air in the jar after the jar has been heated. [1]

Put a tick (√) in the appropriate box(es) below.

		Increased	Decreased	Remained the same
(i)	Mass of air in the jar			

		Increased	Decreased	Remained the same
(ii)	Volume of air in the jar			

- END OF PAPER -

Score	/ 1

Setters: Ms Melissa Yeo, Mdm Jane Woon, Ms Lim Siew Hoon

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ANSWER SHEET

EXAM PAPER 2013
SCHOOL : RAFFLES GIRLS'
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
1	2	2	2	1	3	1	2	3	1	2	3	4	2	3	1	4

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
1	4	3	2	4	2	3	3	4	3	3	1	4

31)a)The type of string.
b)The length of string.
c)String C. It holds the most amount of mass before it snapped.

32)a)X: 3 stag- life cycle.
Y: 4 stag- life cycle.
b)Housefly.

33)641325

34)a)The block of ice gained heat from the surrounding air and the surrounding air lost heat to the block of ice so when the wind blows the surrounding cooler air, Ali's body lost heat to the cooler surrounding air so he felt cooler.
b)200g of the water had evaporated which cause a decrease in mass.

35)a)testes / It reproduce the male reproductive cells called sperms.
b)C→A→D→B

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36)a)It helps pollination to occurs as it transfers pollen grains from the anther to the stigma.

b)i)Ovary.

ii)No. This is only a cross-pollination process.

37)a)i)Liquid

ii)substance S

b)C, B, A

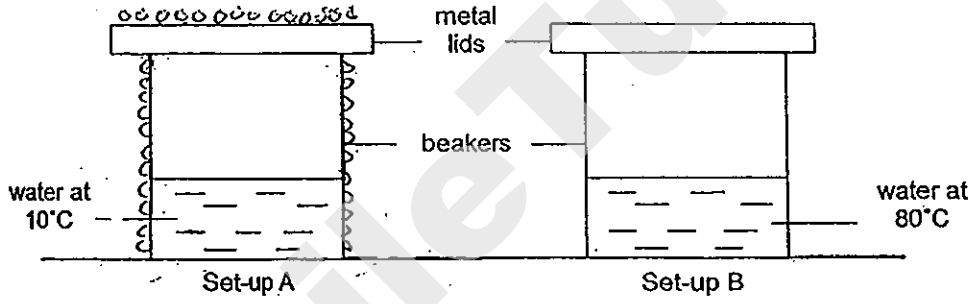
c)When the surface area of S increase, the time taken for S to break down decrease.

38)a)Material R.

b)Material P. The mass of material after being immersed in water remain the same. It is waterproof.

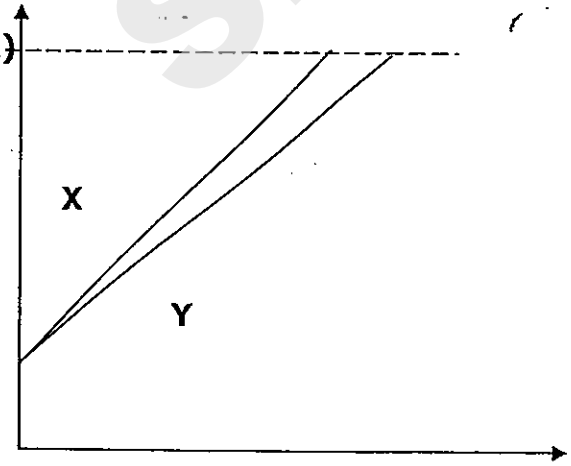
39)Set-up A. In Set-up A, there are holes on the bottle which allow air to escape and not occupy the space in the bottle so the water will flow into the bottle to occupy the same. In Set-up B, there are no hole on the bottle for the air inside to escape, the air occupies the space in the bottle and very little water could enter the bottle.

40)a)



b)The water vapour in the surrounding air condenses on the cool outer surface of the container and metal lid to from tiny droplets of water.

41)a)



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41)b)The material of container X is a better conductor of heat than the material of container Y so the heat travels faster.

42)a)When the number of piece of material A increases, the amount of light recorded decreases. When 4 or more piece of material A are used, no light can pass through so the amount of light recorded is zero.

b)Maximum is 3 sheets. If he pastes 4 sheets, no light can pass through and he cannot see where he is driving. If he pastes 3 sheets, he can still see outside but the least amount of light can pass through thus reducing the maximum amount of glare form the sun while driving.

43)a)Styrofoam covering : Styrofoam is an insulator of heat so it will not gain heat from the surrounding. Thus the ice cubes will not melt easily.

Steel can : So it will keep the ice cubes and salt mixture and milk mixture at the same temperature.

b)Substance X has a lower freezing point than the ice cubes and salt mixture.

44)a)The air in the flask gained heat from the gas burner and expanded and pushed the drop red of red ink.

b)Bubbles of air can be seen in the water.

c)i)Remained the same.

ii)Increased

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Rosyth School
Semestral Examination 1 for 2013
STANDARD SCIENCE
Primary 5

Total Marks: 60

Name: _____

Class: Pr 5 - _____ Register No. _____ Duration: 1 h 45 min

Date: 15 May 2013 Parent's Signature: _____

Booklet A

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 44, write your answers in the spaces given in Booklet B.

* This booklet consists of 18 pages.

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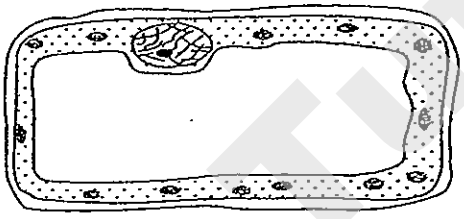
Part I (60 MARKS)

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. Which of the following is/are a unit of life for all living things?
   A : cell
   B : organ
   C : system

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

2. Which group of living things contains cells as shown below?



   (1) Plants (2) Fungi
   (3) Animals (4) Bacteria

3. Which system helps the animal to obtain oxygen for survival?

   (1) Skeletal (2) Muscular
   (3) Digestive (4) Respiratory

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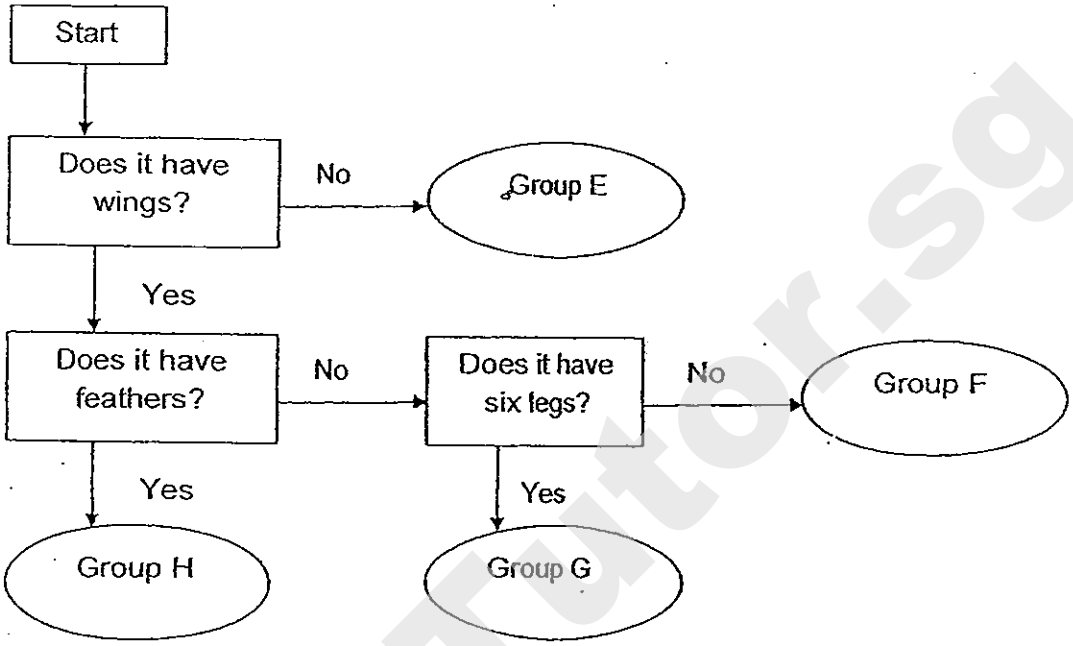
4. Study the flowchart below.



Which groups may consist of mammals?

(1) E and H
(2) E and F
(3) G and H
(4) F and G

5. Which one of the following is true about all animal cells?

(1) All have a nucleus.
(2) All have a regular shape.
(3) All do not have vacuoles.
(4) All do not have a cell wall.

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6. A group of students took a sample of cells and observed them under a microscope. There were no chloroplasts in the cells. They made the following statements:

Andrew: The cells cannot carry out photosynthesis.

Jane: The cells do not have chloroplasts but can still be plant cells.

David: The cells do not have a cell wall because they do not have chloroplasts.

Mary: The cells cannot be from a plant because they do not have chloroplasts.

Which of them is/ are correct?

(1) Andrew only
(2) David and Mary only
(3) Andrew and Jane only
(4) Andrew, David and Mary only

7. Mr Tan carried out an experiment by placing identical cells into salt solutions, each containing different amounts of salt. After some time, he then measured the size of the cells and recorded it in the table below.

	Amount of salt (g) dissolved in 100ml of water	Size of the cell (units)
A	10	7
B	0	8
C	30	5
D	20	3

Which of the above is an experimental control set-up?

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

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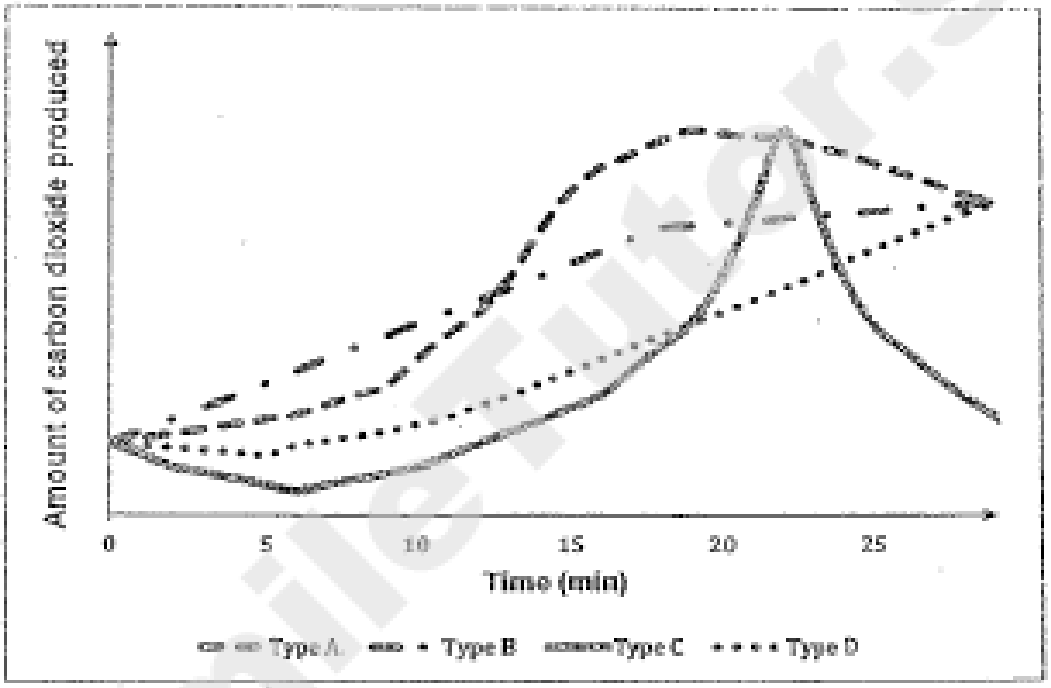
8. Yeast breaks down sugar and produces carbon dioxide which helps bread to rise.

James conducted an experiment to test different types of yeast. He put the same number of yeast cells into 4 different containers of sugar solution for 30 minutes and measured the amount of carbon dioxide produced.



Which type of yeast should he use to make his bread rise the most in the shortest time?

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

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9. Lily wanted to find out which nutrient is the best for the reproduction of a unicellular organism.

She placed the same number of unicellular organisms in different nutrients. She recorded the results after a period of time as shown below.

Type of nutrients	Number of organisms at the end of the experiment
A	16
B	8
C	64
D	32

Which nutrient has caused the unicellular organisms to have the greatest number of cell divisions?

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

10. Which of the following are carried in the water-carrying tubes found in a plant?

A : Water
B : Dissolved mineral salts
C : Food
D : Oxygen

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

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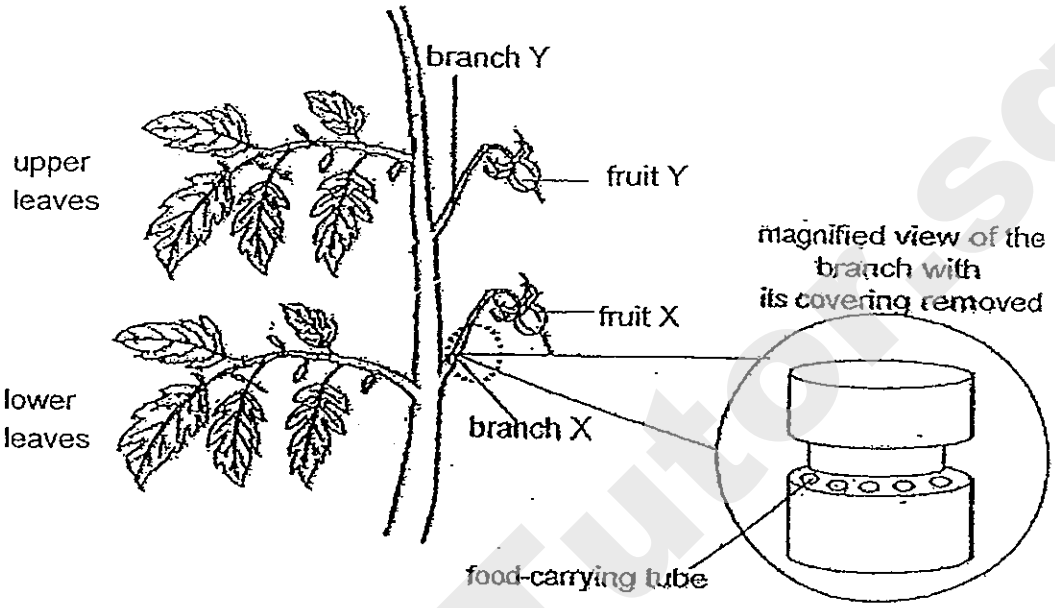
11. Two fruits of similar size were found growing on a plant. A farmer removed a part of the branch as shown below.



After a few weeks, he noticed that fruit Y had grown but fruit X had not. Which of the following statements explains this observation?

(1) Food stored in fruit Y is not transported to fruit X.
(2) Only the upper leaves can make food for branch Y.
(3) Water taken in by the roots can be transported to branch Y only.
(4) Food made by the leaves was transported to fruit Y but not fruit X.

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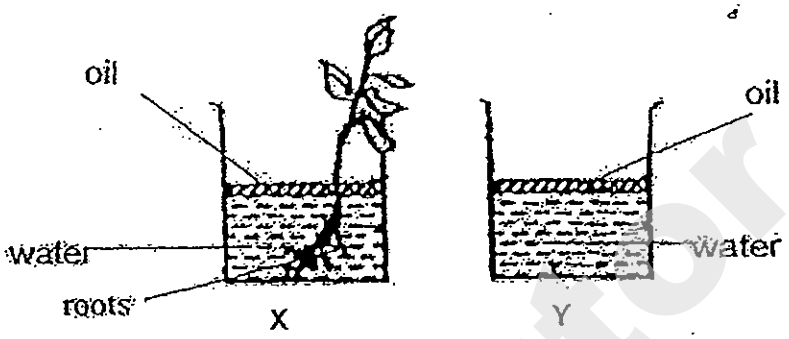
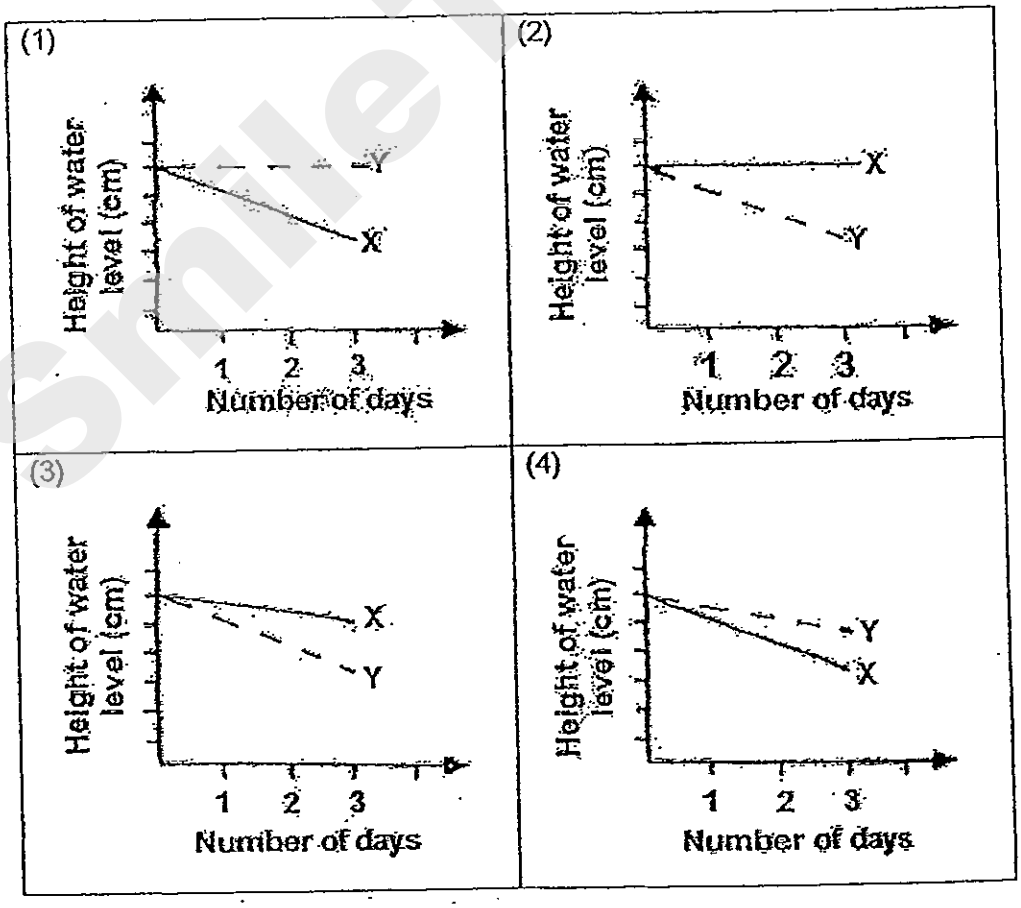
12. Sally poured in an equal amount of water in each of the Beakers X and Y. She placed a balsam plant with roots in Beaker X then added a thin layer of oil to each beaker.

Next, she placed both beakers near a window and recorded the height of the water level in each beaker over a period of 3 days.



Which one of the following graphs shows correctly the changes in the water level in both Beakers X and Y?



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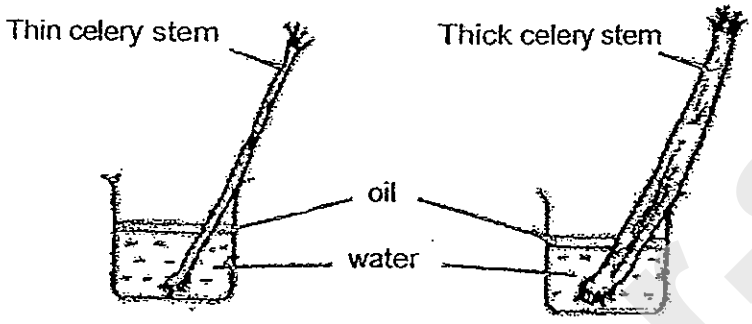
13. Study the experimental set-up below.



Which one of the following is a possible aim for the above set-up?

(1) To find out if plants take in water.
(2) To find out if plants need water-carrying tubes to transport water.
(3) To find out if the thickness of the stem will affect the rate at which the plant makes food.
(4) To find out if the number of water-carrying tubes will affect the rate of water taken in by the plants.

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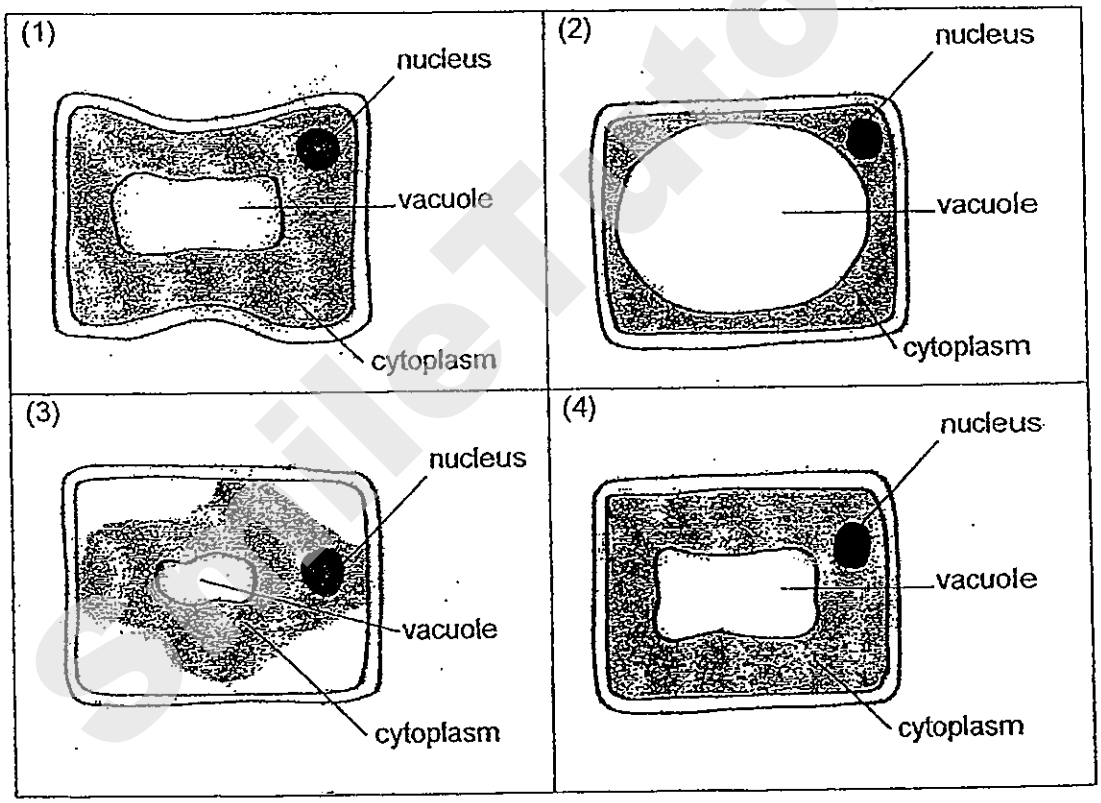
14. The plant below was left in the sun for a month without water. A sample of its cells was then taken and viewed under a microscope.

Which of the following are you most likely to see?



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15. In which of the following parts can digestive juices be found?

A: Mouth
B: Stomach
C: Small intestine
D: Large intestine

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

16. Which system transports digested food to all parts of the body?

(1) Muscular
(2) Digestive
(3) Circulatory
(4) Respiratory

17. The table below shows Andrew's pulse rate when he carries out three different activities.

Activity	Pulse rate per minute
A	80
B	105
C	60

Which of the following is likely to represent the three activities correctly?

	Activity A	Activity B	Activity C
(1)	Playing soccer	Walking along the beach	Sleeping
(2)	Walking along the beach	Playing soccer	Sleeping
(3)	Sleeping	Walking along the beach	Playing soccer
(4)	Sleeping	Playing soccer	Walking along the beach

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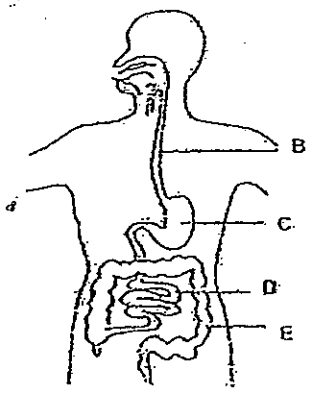
18. The diagram below shows the human digestive system.



At which part does the digested food enter the bloodstream?

(1) B
(2) C
(3) D
(4) E

19. What are the similarities between the plant transport system and the human circulatory system?

A: Both systems have tubes.
B: Both systems transport oxygen.
C: Both systems transport dissolved food and water.

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

20. Ali, Brian and Carla wanted to find out which of them have the biggest lung capacity. They decided to blow into a balloon and see who could blow the biggest balloon. Which of the following factors must they keep the same to ensure a fair test?

A: Number of breaths
B: Shape of the balloon
C: Original size of balloon
D: Start time of blowing the balloon.

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

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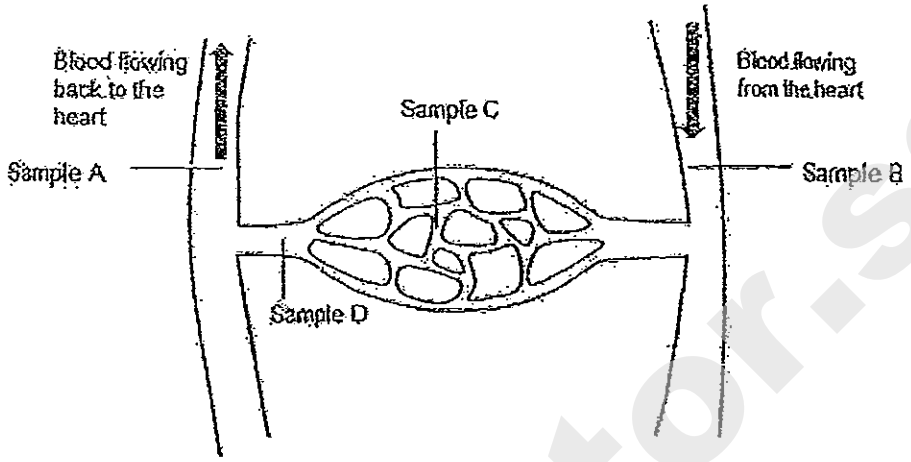
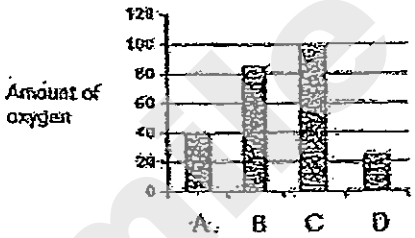
21. Study the diagram below carefully.

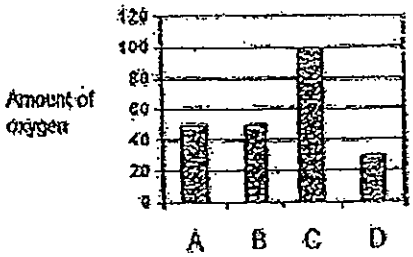


Blood samples A, B, C and D were taken from different blood vessels in the body. Which graph most appropriately shows the amount of oxygen in the blood samples?

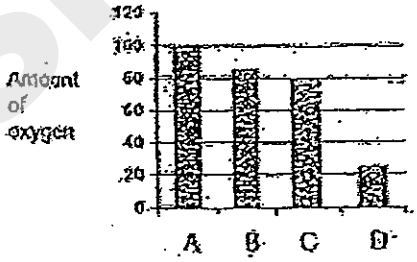
(1)



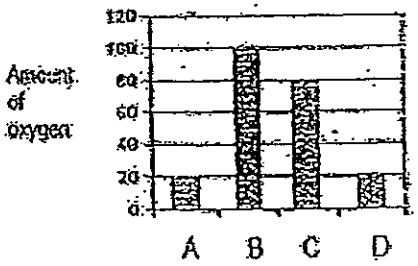
(2)



(3)



(4)



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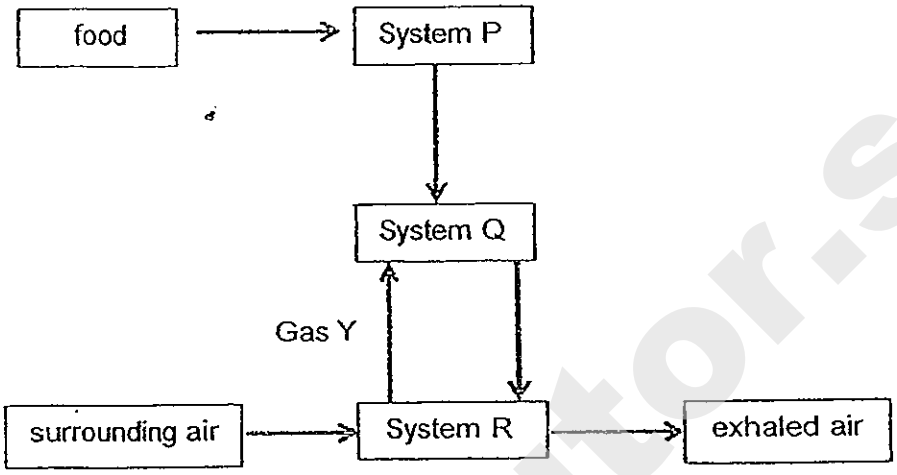
22. The diagram below shows how food and gases are transported in the human body.



Which systems do P, Q and R represent and what is Gas Y?

	System P	System Q	System R	Gas Y
(1)	Digestive	Respiratory	Circulatory	Carbon dioxide
(2)	Digestive	Circulatory	Respiratory	Carbon dioxide
(3)	Digestive	Respiratory	Circulatory	Oxygen
(4)	Digestive	Circulatory	Respiratory	Oxygen

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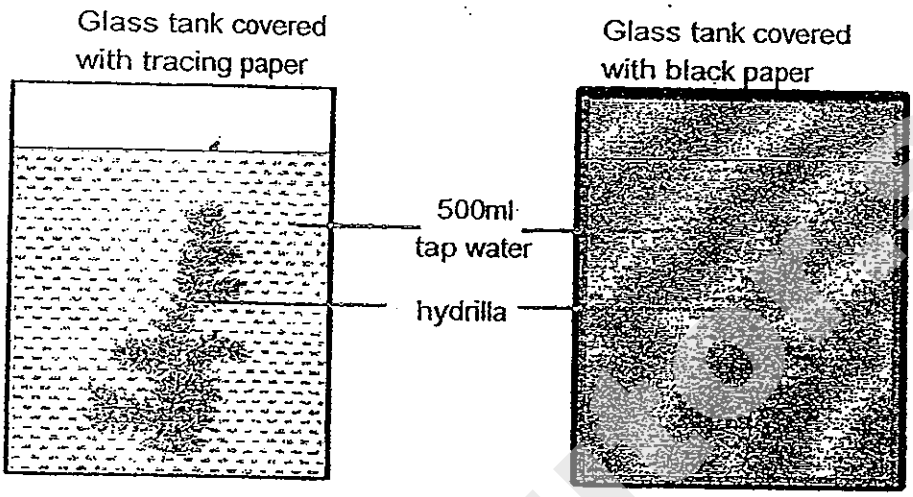
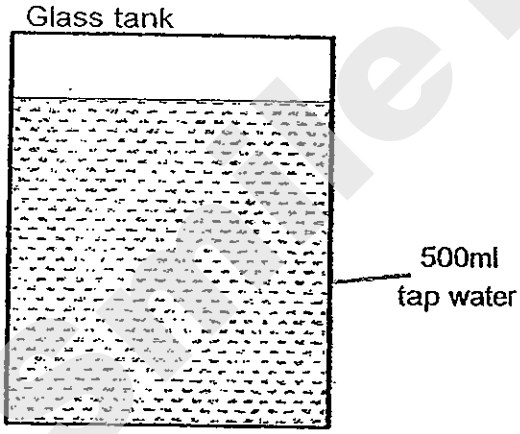
23. Kester set up an experiment as shown below. He wanted to find out how the amount of sunlight affects the growth of a hydrilla plant.

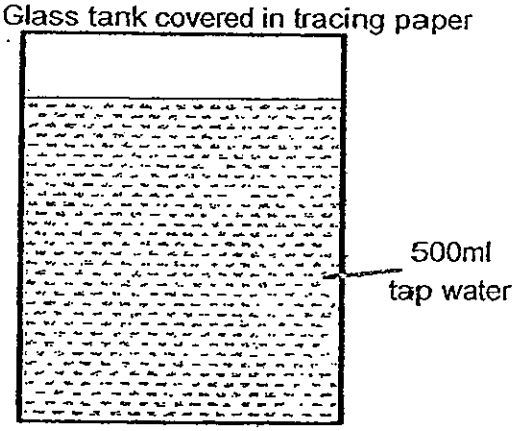


Which one of the following set-ups should he use as a control experiment?

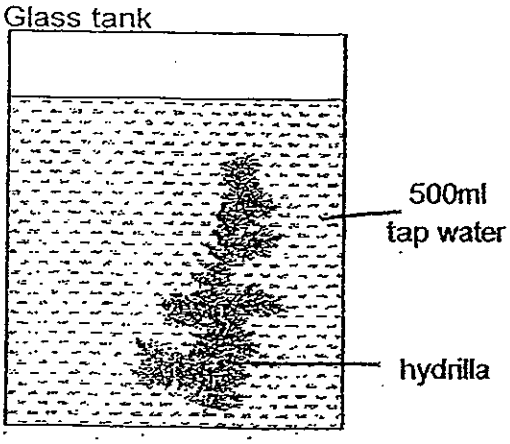
(1)



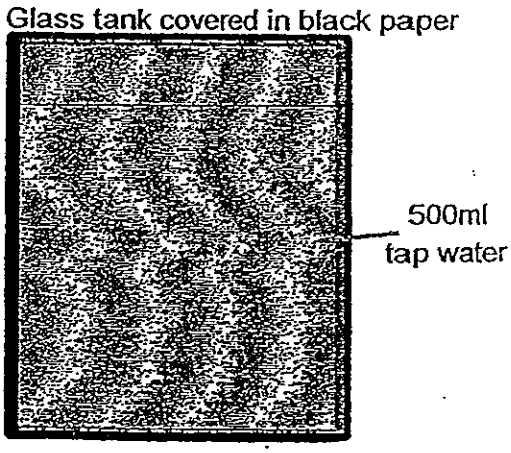
(2)



(3)



(4)



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24. Jason scratched Materials A, B, C and D with the following objects. He recorded 'Yes' if the material was scratched by the object and 'No' if the material was not scratched by the object as shown below.

	Scratched by:			
	Metal ruler	Wooden rod	Glass rod	Chalk
Material A	yes	yes	yes	no
Material B	yes	no	no	no
Material C	no	no	no	no
Material D	yes	no	yes	no

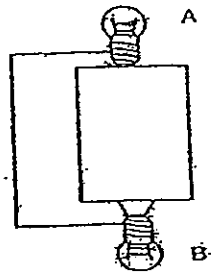
Arrange the materials in terms of their hardness. Begin with the material with the least hardness.

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

25. Which one of the following materials are conductors of electricity?

(1) Plastic and Iron
(2) Glass and Steel
(3) Silver and Copper
(4) Nylon and Aluminium

26. Ken connected a battery and 2 bulbs as shown below.



Which of the following observations would Ken observe?

(1) Both A and B lit up.
(2) A lit up but B did not.
(3) B lit up but A did not.
(4) Both A and B did not light up.

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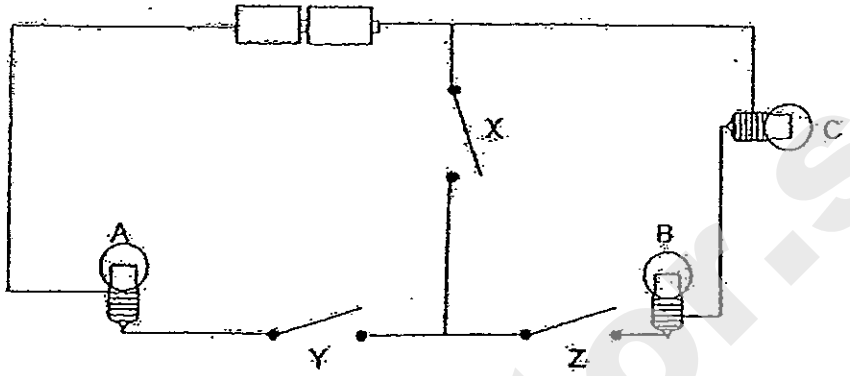
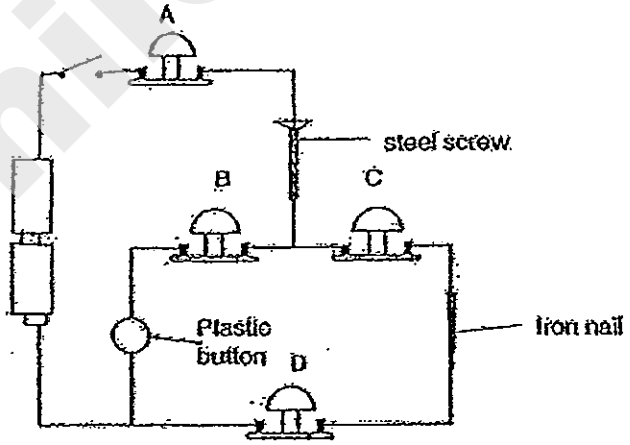
27. Study the circuit below.



If switches X and Y are closed, which bulb(s) will light up?

(1) A only
(2) B and C only
(3) A and C only
(4) None of the bulbs

28. Study the circuit below. There are 4 bells, A, B, C and D connected in the circuit.



Which of these bells will ring when the switch is closed?

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

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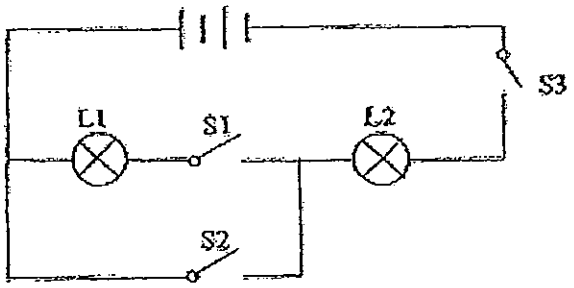
29. A circuit is set up using two bulbs, L1 and L2, and three switches, S1, S2 and S3 as shown in the diagram below.



Which one of the following set-ups is correct?

	S1	S2	S3	L1	L2
(1)	closed	open	open	lighted up	not lighted up
(2)	open	closed	open	not lighted up	lighted up
(3)	closed	open	closed	lighted up	not lighted up
(4)	open	closed	closed	not lighted up	lighted up

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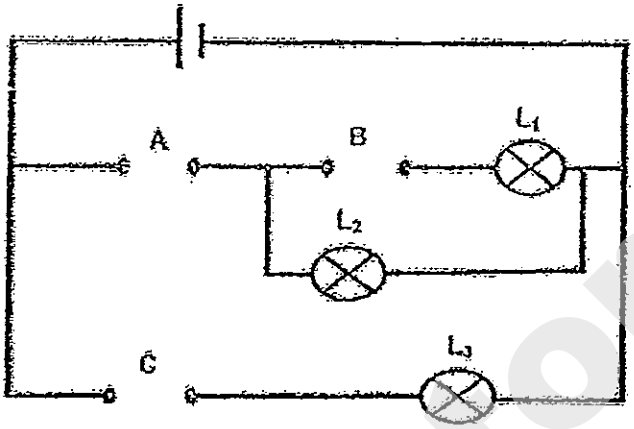
30. Tom has 3 rods, P, Q and R, made of different materials. He placed them in various positions, A, B and C, of the circuit shown below.



The results of the experiment were shown in the table below. When any of the bulbs, L1, L2, or L3, lit up during the experiment, a tick (√) was placed in the box.

Position where rods were placed			Bulbs		
A	B	C	L1	L2	L3
Rod P	Rod Q	Rod R		√	√
Rod Q	Rod R	Rod P			√

Based on the above results, which one of the following materials are conductors of electricity?

(1) P and Q only
(2) P and R only
(3) Q and R only
(4) P, Q and R

End of Booklet A

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Rosyth School
Semestral Examination 1 for 2013
STANDARD SCIENCE
Primary 5

Total Marks: /100

Name: _____

Class: Pr 5- _____ Register No. _____ Duration: 1 h 45 min

Date: 15 May 2013 Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 31 to 44, write your answers in the spaces given in this booklet.

	Maximum	Marks Obtained
Booklet A	60 marks	
Booklet B	40 marks	
Total	100 marks	

* This booklet consists of 11 pages.

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PART II (40 MARKS)

For questions 31 to 44, write your answers in this booklet.

31. A group of students carried out an experiment to find out the effectiveness of different types of herbs in soap against bacteria. They put an equal amount of soap in 4 petri-dishes and measured the area in which bacteria grew.

The results were recorded as shown below.

Set-up	Area of bacterial growth (cm^2)
Soap only	15.0
Soap + Herb A	9.2
Soap + Herb B	12.5
Soap + Herb C	2.1

(a) How do bacteria multiply? (1 mark)

_____

_____

(b) What is the purpose of the set-up that contains only soap? (1 mark)

_____

_____

(c) Which herb would you recommend to be used in the homemade soap? Explain your choice. (1 mark)

_____

_____

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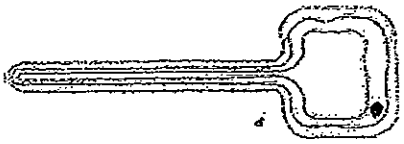
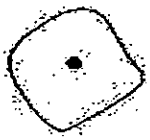
32. State one similarity and one difference between a root hair cell and a human cheek cell with regard to the parts of a cell. (2 marks)

Root hair cell



Human cheek cell



Similarity:

_____

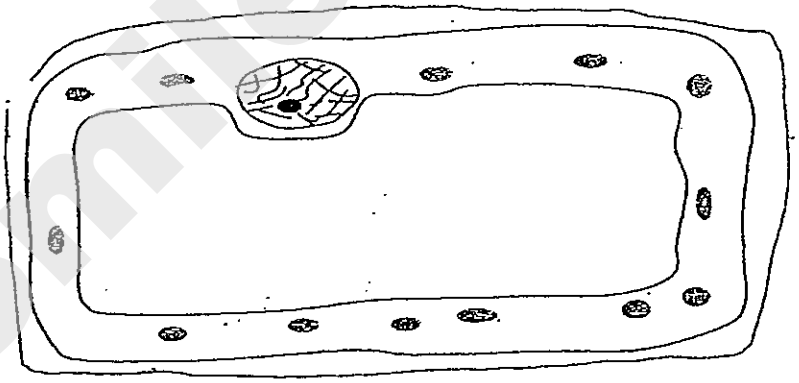
_____

Difference:

_____

_____

33. Study the plant cell drawn by Sammy.



(a) Draw the missing part of the cell and label it. (1 mark)

(b) State the function of the missing part in (a). (1 mark)

_____

_____

(c) Label the part of the cell that controls cell activities. (1 mark)

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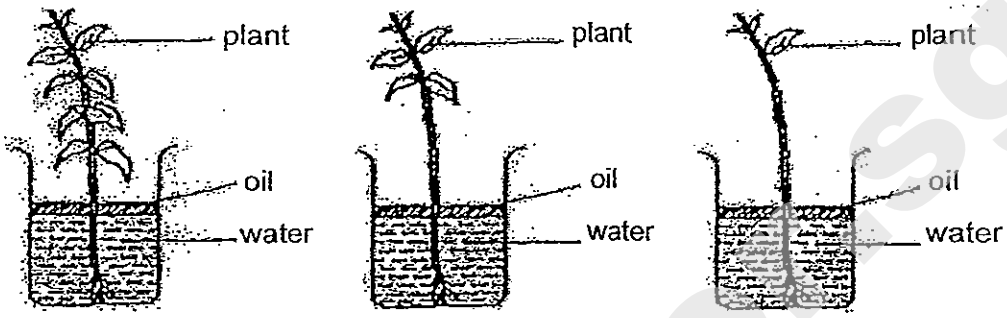
34. Three plants were placed in identical beakers containing water at the same level as shown below. They were left near a window for an hour.



Set-up A **Set-up B** **Set-up C**

At the end of the experiment, the height of the water in each jar was measured.

(a) What is the aim of the experiment above? (1 mark)

_____

_____

(b) Describe how the water reaches the leaves. (1 mark)

_____

_____

_____

(c) Why do all plant cells need water? (1 mark)

_____

_____

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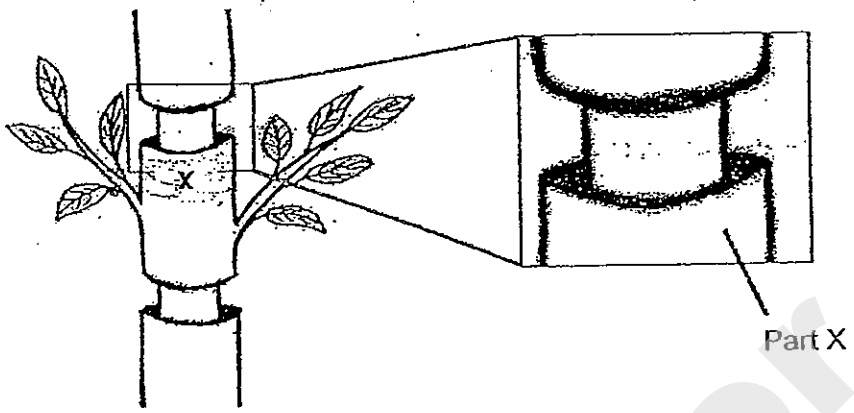
35. Jordan removed two rings of food carrying tubes from a plant for an experiment as shown below.



(a) What will happen at Part X? (1 mark)

(b) Explain your observation in (a). (1 mark)

(c) What will happen to the plant after some time? Why? (1 mark)

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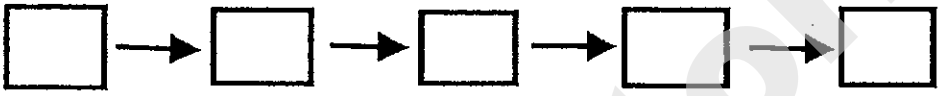
36. Read the following carefully.

A: The lungs expand.
B: The air goes into the lungs.
C: Air goes through the nose.
D: The air goes into the windpipe.
E: Hairs in the nose trap dust and dirt present in the air.

(a) Arrange them in the correct order to describe what happens during breathing. The first one has been done for you. (1 mark)

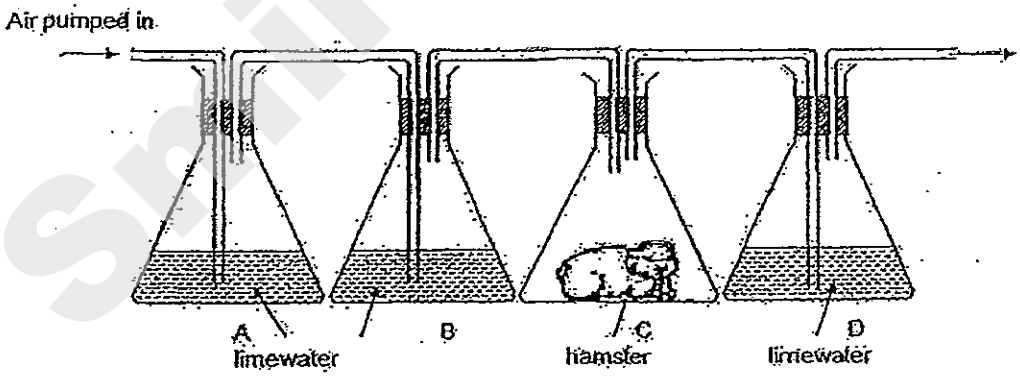


(b) What happens when air enters the lungs? (1 mark)

_____

_____

37. Eric studied an experiment as shown below.



(a) What will happen to the limewater in D? (1 mark)

_____

_____

_____

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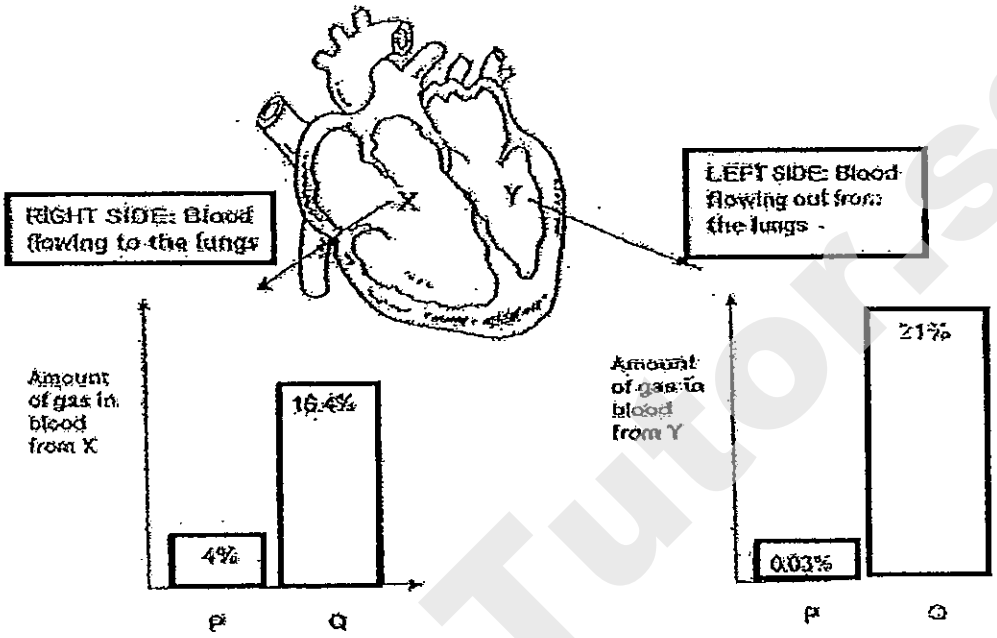
38. The diagram below shows a human heart. There are two parts labelled X and Y. Gases P and Q are found in parts X and Y. The amount of P and Q found in X and Y is represented in the graphs below.



(a) Identify gas P and Q (1 mark)

(i) P is _____

(ii) Q is _____

(b) Describe how the circulatory system and the respiratory system work together to ensure that Gas P is removed from the body. (2 marks)

_____

_____

_____

_____

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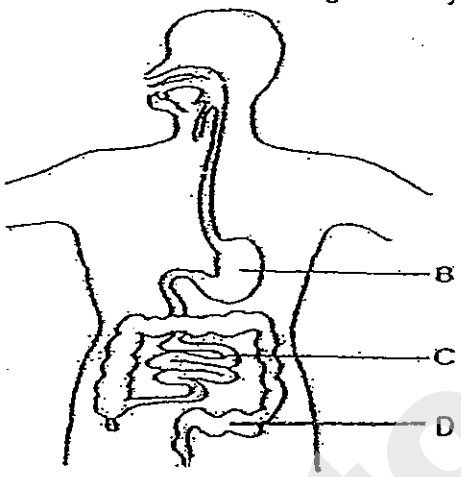
39. The diagram below shows the human digestive system.



(a) What are the organs labelled B and C? (1 mark)

B: _____

C: _____

(b) State the function of organ D. Explain why this function is important to the human body. (2 marks)

_____

_____

_____

(c) Would you agree that the digestive system is more important than the circulatory and respiratory systems. Explain your choice. (1 mark)

_____

_____

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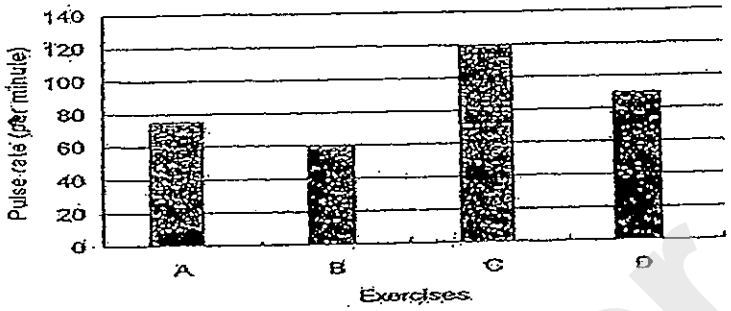
40. John carried out an experiment to find out the change in pulse rate after exercising. After each exercise, he measured his pulse rate. He recorded the results and drew a graph as shown below.



(a) Arrange the exercises, starting with the least vigorous to the most vigorous. (1 mark)

_____

(b) Explain why his pulse rate is faster for more vigorous exercises. (1 mark)

_____

_____

John also measured his breathing rate after each acuvity. The results are shown in the table below.

Type of Activity	Pulse rate	Breathing Rate
A	78	40
B	60	20
C	120	80
D	90	65

(c) What is the relationship between John's pulse rate and his breathing rate? (1 mark)

_____

_____

(d) Name the two systems that are involved in the above activities. (1 mark)

_____

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41. The properties of 3 materials are as stated below.

Properties	Material A	Material B	Material C
Strength	weak	strong	medium
Hardness	soft	hard	hard
Light or heavy	heavy	light	light
Waterproof	waterproof	not waterproof	waterproof

(a) Which material would you use to make a beach ball? Explain your answer. (1 mark)

42. Aaron used new batteries and bulbs of similar voltage to set up 2 circuits as shown below.

Set-up C Set-up D

(a) State the difference between the brightness in the bulb in set-up C and set-up D? (1 mark)

(b) What has caused the above difference in set-up C? (1 mark)

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43. Kenny wants to find out how the number of batteries in a circuit will affect the brightness of a bulb. State the following variables. (3 marks)

(a) Measured variable:

_____

(b) Changed variable:

_____

(c) Variable to be kept the same:

_____

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44. Helen had a battery and a bulb as shown in figure 1.

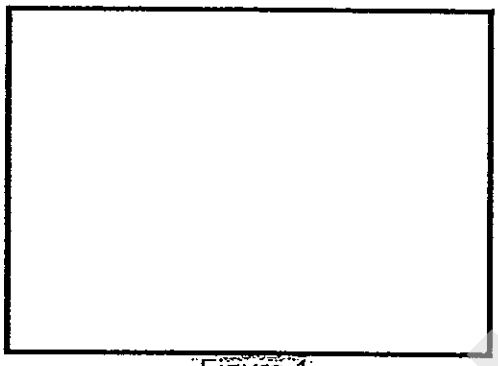

Figure 1

(a) Connect the battery and bulb above to form a closed circuit. Use lines to represent wires. (1 mark)

Next, Helen added another bulb as shown below in figure 2.

Figure 2

(b) Connect the battery and bulbs above to form another closed circuit. The bulbs in figure 2 must be of the same brightness as the bulb in figure 1. Use lines to represent wires. (1mark)

(c) Give an advantage and a disadvantage for the circuit in figure 2. (2 marks)

Advantage:

_____

Disadvantage:

_____

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ANSWER SHEET

EXAM PAPER 2013
SCHOOL : ROSYTH
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA1

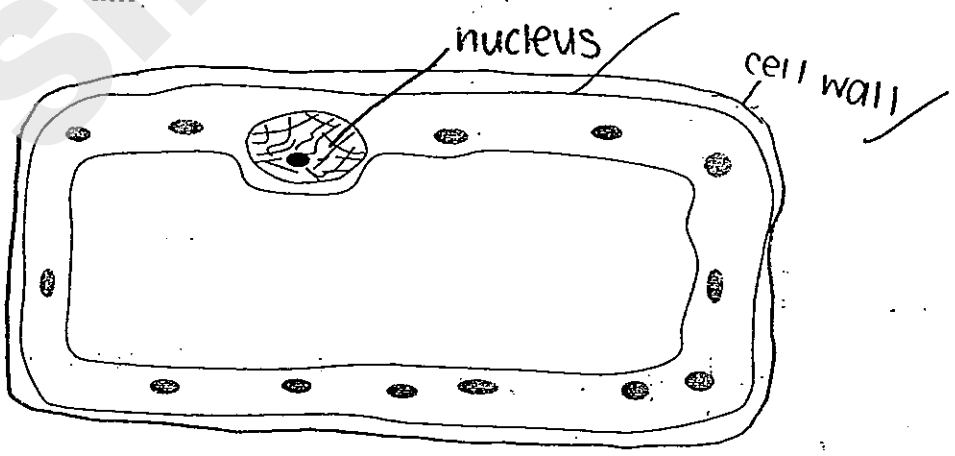
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
1	1	4	2	4	2	3	1	3	1	4	1	4	3	2	3	2

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	2	2	4	4	3	3	3	1	1	3	4	2

31)a)Cell Division.
b)It is prove that only the herb affect the bacterial growth.
c)It has the smallest area of bacteria growth hence is the most effective to prevent the cells from multiplying.

32)Similarity : Both cell have a nucleus.
Difference : Root hair cell have a cell wall but the human cheek cell does not have a cell wall.

33)a)c)



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33)b)It gives the plant it shape.

34)a)To find out if the number of leaves the affect the amount of water taken in by the plant.
b)The root in the water and the water-carrying tube transport the water to all part of the plant.
c)It is to make cell firm so plant is up right.

35)a)Part X will be swollen.
b)The food made by the plant cannot be transport therefore the food would be transport there.
c)The plant will die. Food made by the leaves cannot be transport to the roots.

36)a)A→C→E→D→B
b)Exchange of gases take oxygen enter the lungs through the walls into the blood and carbon dioxide is removed in the blood into the lungs.

37)a)It will turn Chalky.
b)To find out if living thing things gives out carbon dioxide during respiration.

38)a)i)carbon dioxide. ii)oxygen
b)The circulatory transports gasp from the body to the lungs. The respiratory system carries out gaseous exchange in the lungs to remove gasp.

39)a)B: stomach C: small intestines
b)It absorbs the water from the undigested food so that the body will not lose too much water.
c)No. The body need all the system to work together.

40)a)B,A,D,C
b)More oxygen in need for vigorous exercise so the pulse is faster.
c)The higher the pulse rate the breathing rate also increases.
d)Respiratory system and circulatory system.

41)a)C. It has to be waterproof so that if it fall on to the water it won't tear and it must be light for us to hit.
b)No. It is not water[roof and will absorb water.

42)a)D will light up brightly but set-up C will not.
b)In set-up C, two batteries are arranged with negative pole facing each other.

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43)a)Brightness of a bulb.
b)Number of batteries
c)No. of bulb.

44)a)

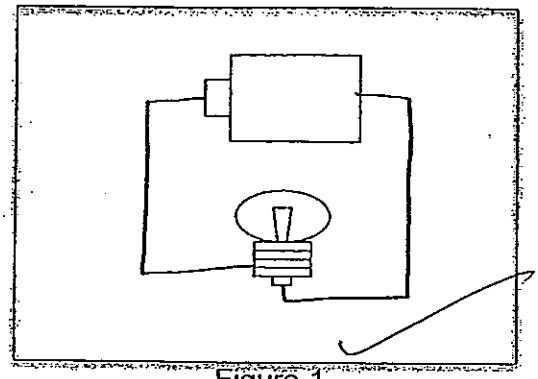

Figure 1

b)

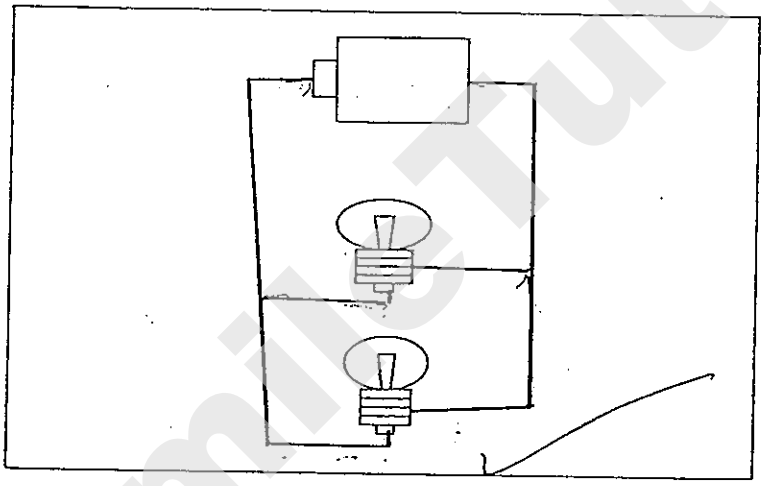

Figure 2

c)Advantage: If 1 bulb blow, the other still remain lightly.
Disadvantage : It use a lot of electricity.

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SINGAPORE CHINESE GIRLS' SCHOOL

FIRST SEMESTRAL ASSESSMENT 2013

SCIENCE

PRIMARY FIVE

NAME: _____( ) DATE: _____

CLASS: PRIMARY 5

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.

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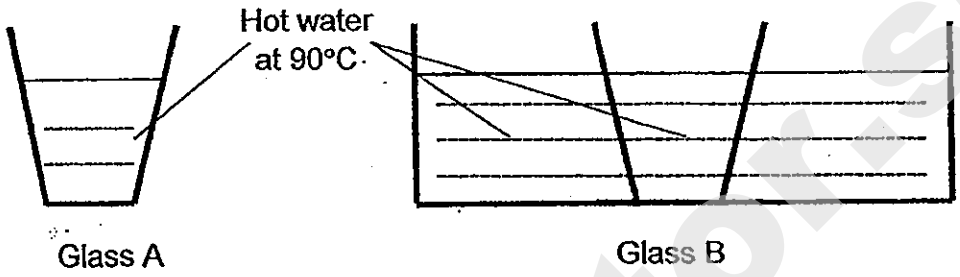
Part 1 (60 marks)
For each question from 1 to 30, 4 options are given.
One of them is the correct answer. Make your choice, (1, 2, 3 or 4).
Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Abigail carried out an experiment to find out how heat can affect matter. Hot water was poured into 2 glasses of the same thickness as shown below. After some time, Glass A cracked but Glass B did not.



Which of the following best explains the outcome of the experiment?

	Glass A	Glass B
(1)	Inner surface of glass expanded more than outer surface.	Inner and outer surface of glass expanded at the same rate.
(2)	Inner and outer surface of glass expanded at the same rate.	Inner surface of glass expanded more than outer surface.
(3)	Outer surface of glass expanded more than inner surface.	Inner surface of glass expanded more than outer surface.
(4)	Inner and outer surface of glass expanded at the same rate.	Outer surface of glass expanded more than inner surface.

2. Which of the following traces the route of digestion in our body?

(1) Mouth → Gullet → Small Intestine → Stomach → Large Intestine
(2) Nose → Gullet → Stomach → Small Intestine → Large Intestine
(3) Mouth → Gullet → Stomach → Small Intestine → Large Intestine
(4) Mouth → Windpipe → Small Intestine → Stomach → Large Intestine

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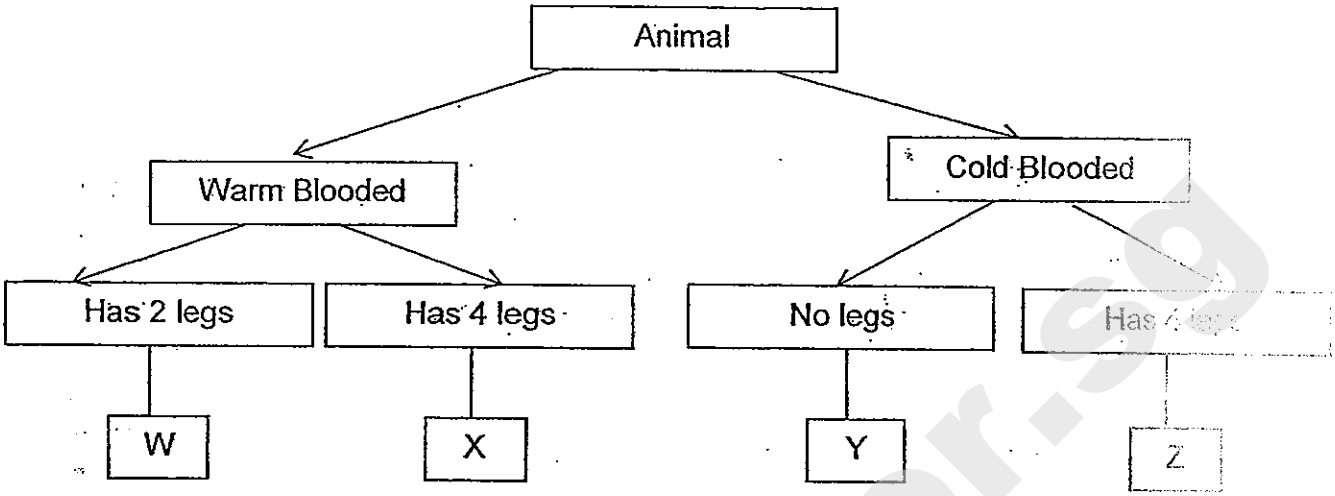
3. Study the classification table below.



Which one of the following pupils identified the animals correctly?

	Pupils	W	X	Y	Z
(1)	Barbara	Guppy	Deer	Dolphin	Lizard
(2)	Candice	Fly	Ladybird	Guppy	Frog
(3)	Daniel	Penguin	Lizard	Turtle	Toad
(4)	Eliza	Chicken	Lion	Snake	Crocodile

4. Martin carried out an experiment to see how long his hand could remain on the surface of a hot plate. The table below shows the results.

Temperature of hot plate surface	Time taken **before his hand leaves the surface of the hot plate (s)**
40	4
60	2
80	0.5

What conclusion can Martin make from the experiment?

(1) Heat travels from a hotter to cooler place.
(2) Heat travels to Martin's hand faster if the temperature is lower.
(3) The hotter the surface of the plate, the faster his hand leaves the surface of the hot plate.
(4) As the temperature of the surface of the hot plate increases, Martin will leave his hands there longer.

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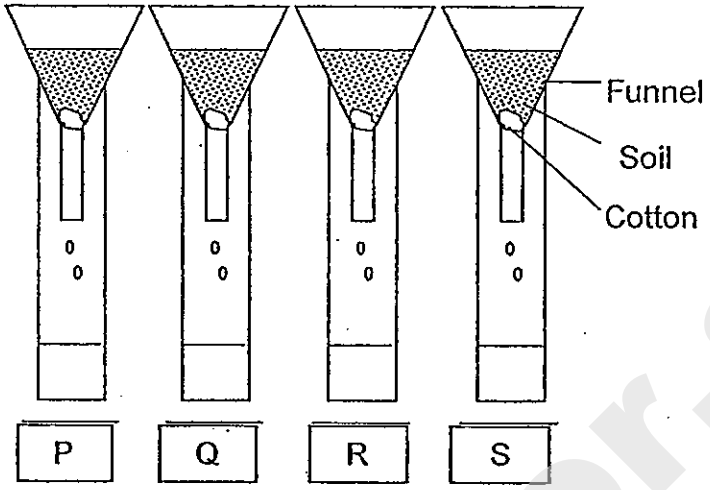
5. Gordon set up the following experiment to find out which type of soil would retain water best.



Soil Sample	Time taken for first drop of water to fall into cylinder (s)	Amount of water in cylinder after 20 minutes (ml)
P	6	200
Q	29	70
R	18	100
S	10	?

Which one of the following data would Gordon most likely record for **Amount of water in cylinder after 20 minutes in** Soil Sample S in his table above?

(1) 50
(2) 100
(3) 150
(4) 200

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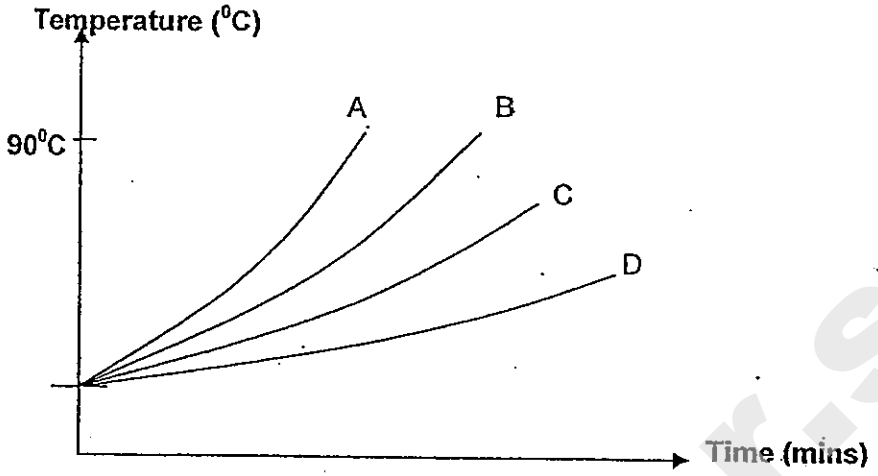
6. Study the graph below.



Faridah wanted to boil eggs. She had to decide among the cooking pots made of different materials. Which one of the following materials would allow her to cook the eggs in the shortest time?

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

7. Jackie made the following observations about 2 animals, T and S. She drew up the table below.

Animals / Characteristics	T	S
Feathers		✔
Scales	✔	
Legs	✔	✔
Wings		✔

What ~~can Mandy~~ Jackie **definitely** conclude from her observations above?

A: Animal S cannot fly
B: Animal T cannot fly
C: Animal S is a fish
D: Animal T is a fish
E: Animal S is a bird
F: Animal T is a bird

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

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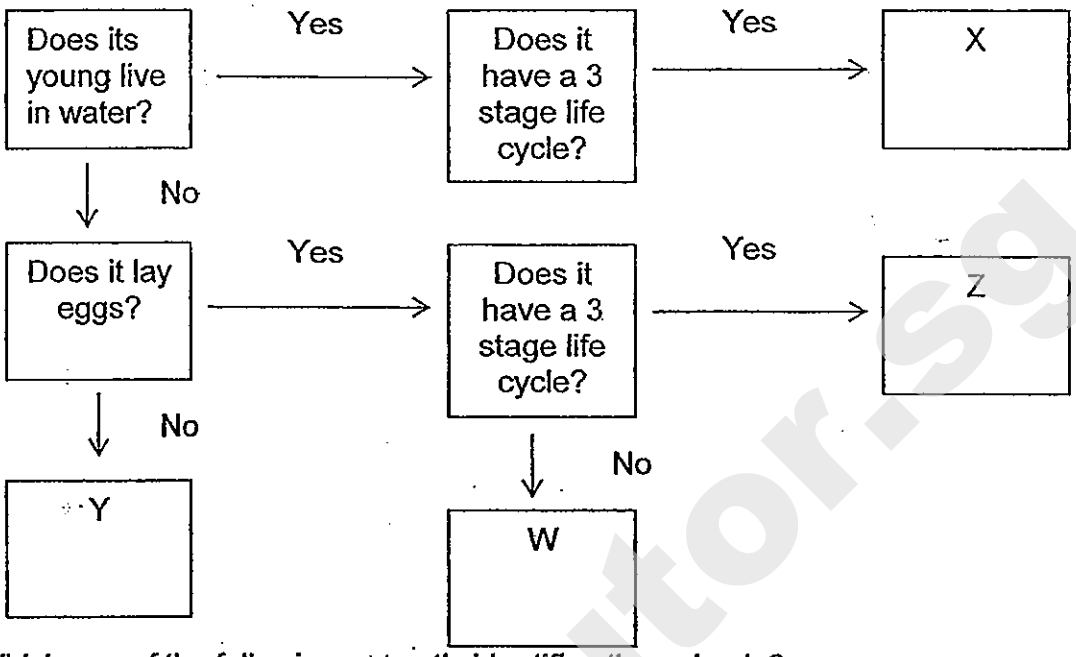
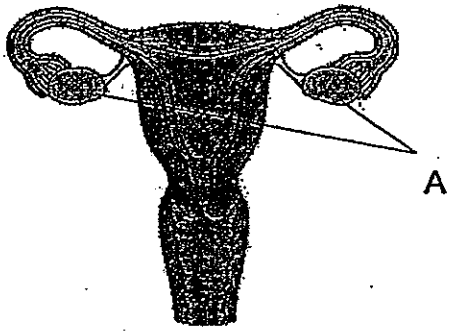
8. Study the flow chart below.



Which one of the following correctly identifies the animals?

	W	X	Y	Z
(1)	Beetle	Mosquito		Cockroach
(2)	Bee	Mosquito		Grasshopper
(3)	Butterfly	Frog		Grasshopper
(4)	Grasshopper	Toad		Beetle

9. The diagram below shows a human reproductive system.



What would happen if parts A were removed?

(1) No eggs can be released.
(2) More eggs will be released.
(3) The foetus will develop in the vagina.
(4) The sperms will not be able to be produced.

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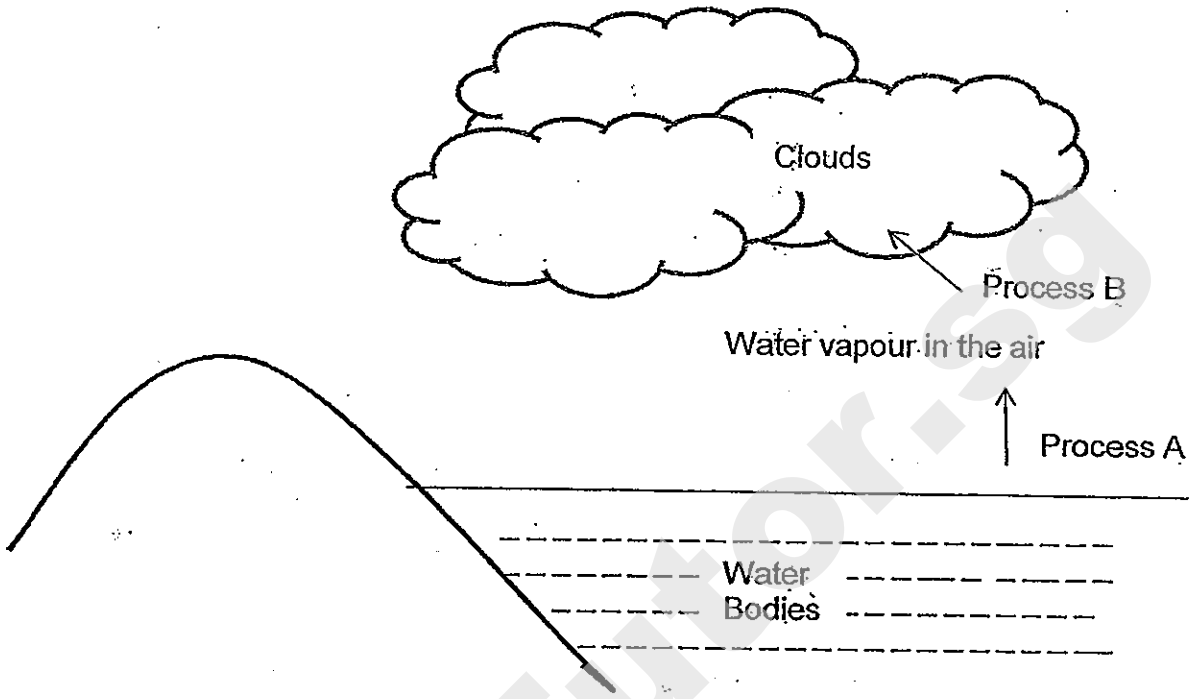
10. Study the water cycle below.



Which one of the following describes if heat is gained or lost by the water for Process A and Process B?

	A	B
(1)	Heat Gain	Heat Loss
(2)	Heat Gain	Heat Gain
(3)	Heat Loss	Heat Gain
(4)	Heat Loss	Heat Loss

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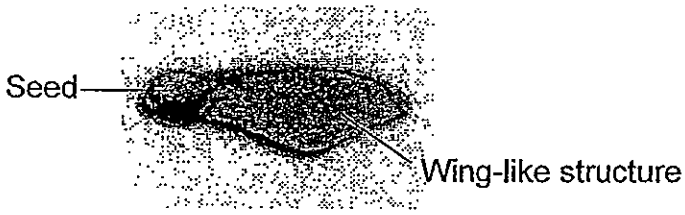
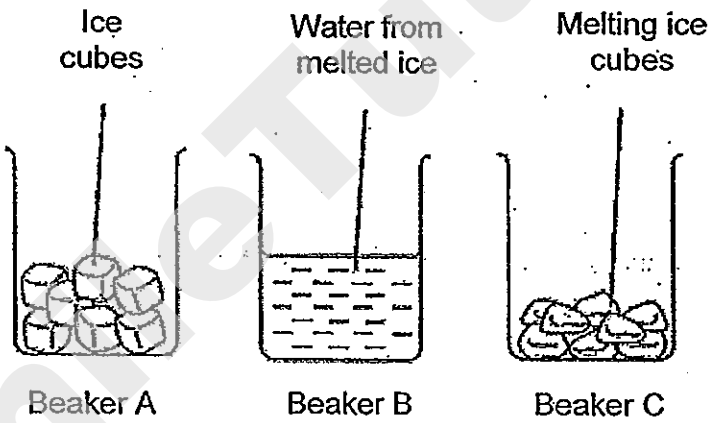
11. Gordon picked up a seed as shown in the diagram below while walking at a park.



The seed is likely to be dispersed by _____.

(1) Wind
(2) Water
(3) Animals
(4) Splitting

12. Look at the following set-up.



Helena recorded the temperature of the set-ups in a table. Which one of the following shows the correct recording?

	Beaker A	Beaker B	Beaker C
1	-2°C	3°C	0°C
2	0°C	3°C	5°C
3	-2°C	0°C	-1°C
4	0°C	0°C	-2°C

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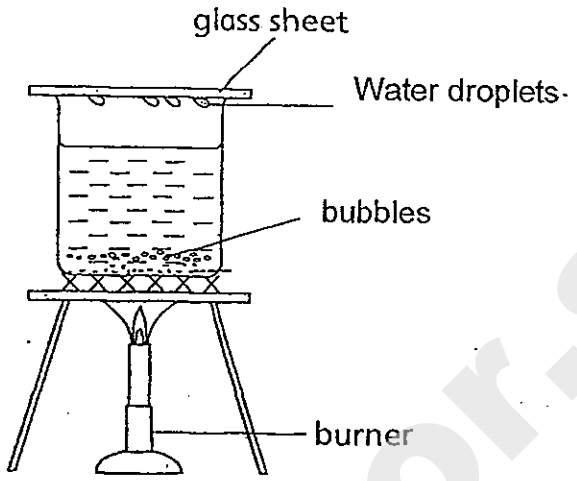
13. Study the experiment below.



Why did water droplets appear on the inner surface of the glass sheet?

(1) The water vapour was cooler than the glass sheet and the water vapour condensed into water droplets.
(2) The glass sheet was cooler than the water vapour and the water vapour condensed into water droplets.
(3) The bubbles rose to the surface of the water and condensed into water droplets.
(4) The surface of the glass sheet inside was warmer than the outer surface and water droplets formed on it.

14. Study the classification table below.

	Cell A	Cell B	Cell C
Nucleus	√		
Cell Wall	√		√
Chloroplast			√
Cell Membrane	√	√	

Which one of the following represents a cell from a root hair?

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

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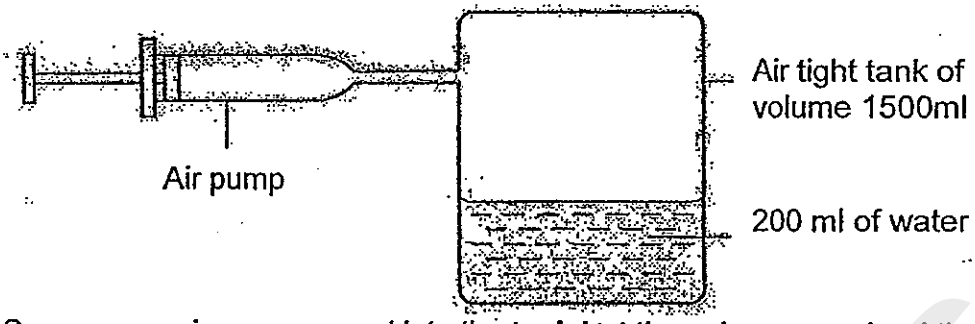
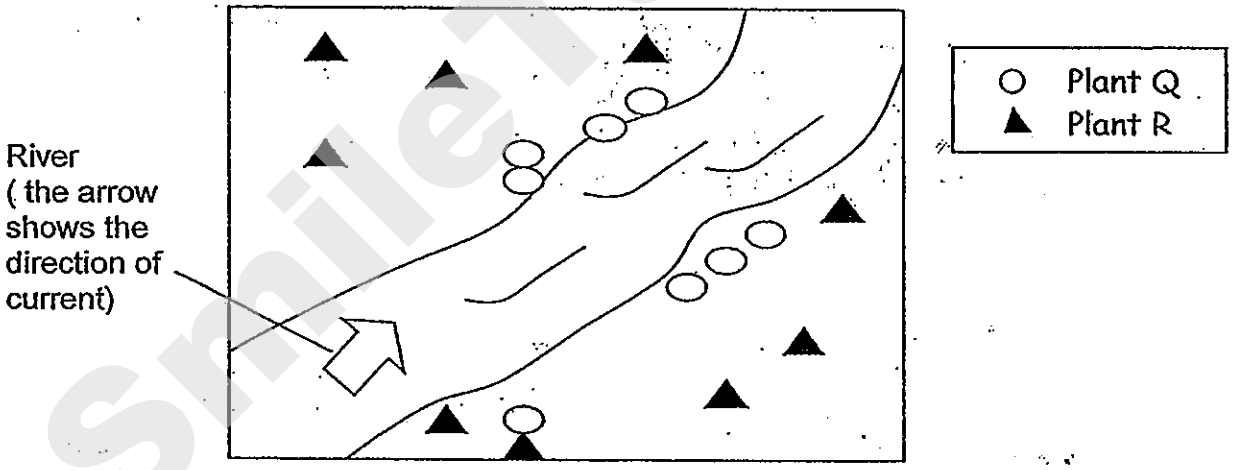
15. Jacob set up an experiment as shown below.



Some more air was pumped into the tank but the volume remained the same. This is because air _____.

(1) has mass
(2) takes up space
(3) cannot be compressed
(4) does not have a definite volume

16. Thomas drew a map of a piece of land where Plants Q and R were found growing.



Which of the following would best represent Plant Q and Plant R?

	Plant Q	Plant R
(1)	Coconut	Love Grass
(2)	Angsana	Coconut
(3)	Love Grass	Coconut
(4)	Love Grass	Angsana

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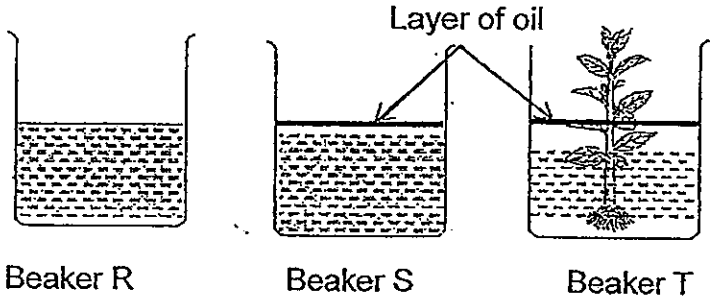
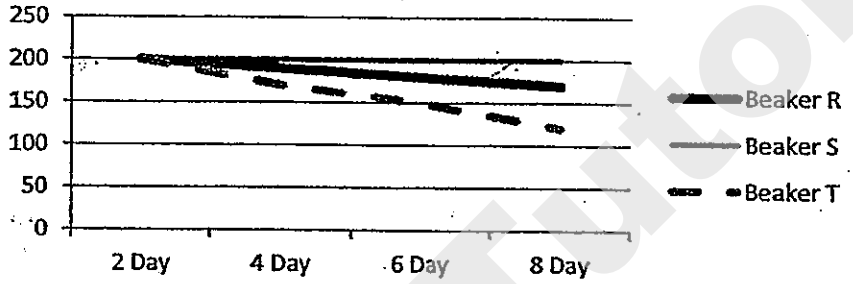
17. Suyin carried out an experiment to find out which beaker would have the least amount of water after 1 week. She placed all her beakers on the table.

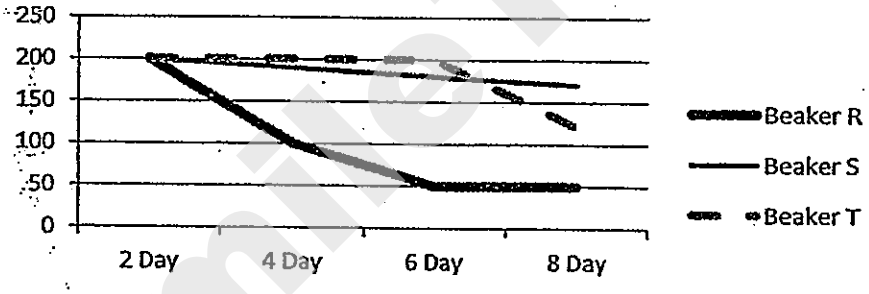


She monitored the amount of water in each beaker every 2 days. Choose the graph that most likely shows her observation.

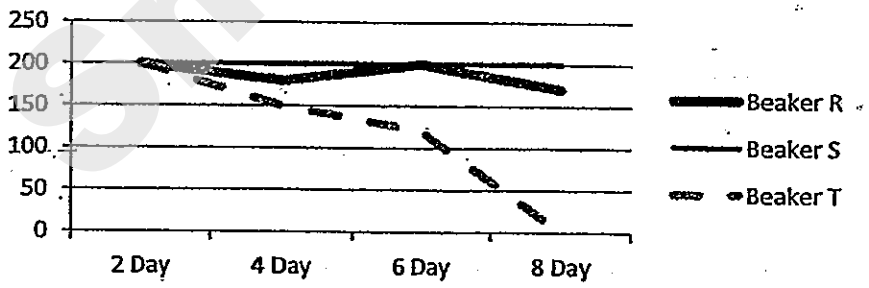
(1)



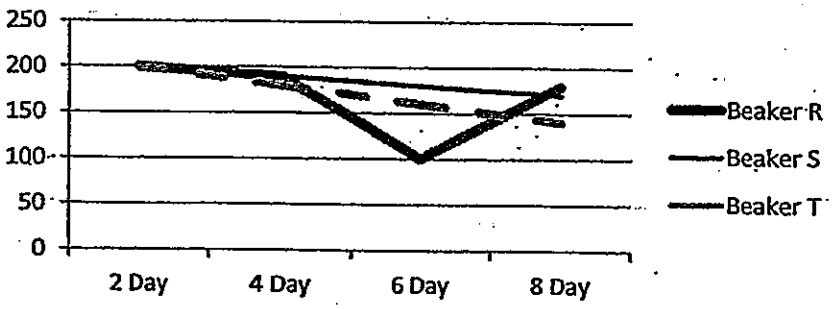
(2)



(3)



(4)



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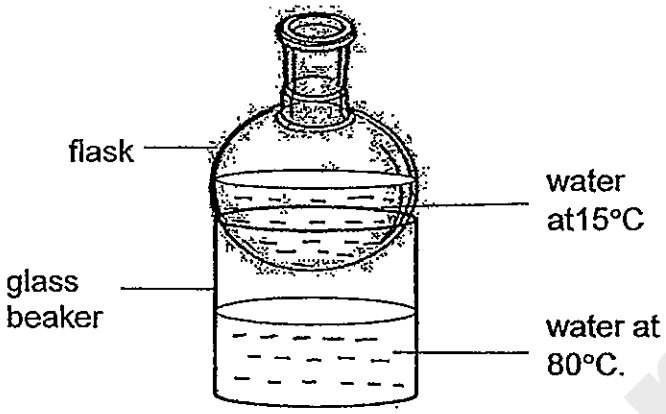
18. Martha placed a flask of water with a temperature of 15°C on a glass beaker of water with a temperature of 80°C. After 5 minutes, she recorded her observation.



Which of the following describes what she had observed?

A Water droplets are visible at the bottom of the flask.
B Water droplets are visible at the inner surface of the flask.
C Water droplets are visible at the outer surface of the glass beaker.
D Water droplets are visible at the inner surface of the glass beaker.

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

19. Study the table below.

Substances	J	K
Melting point	20°C	40°C
Boiling point	60°C	80°C

Which of the following statements describe J and K correctly?

A Both substances melt at 30°C.
B Both substances boil at 60°C.
C Both substances are solids at 10°C.
D Both substances are only liquid at 80°C

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

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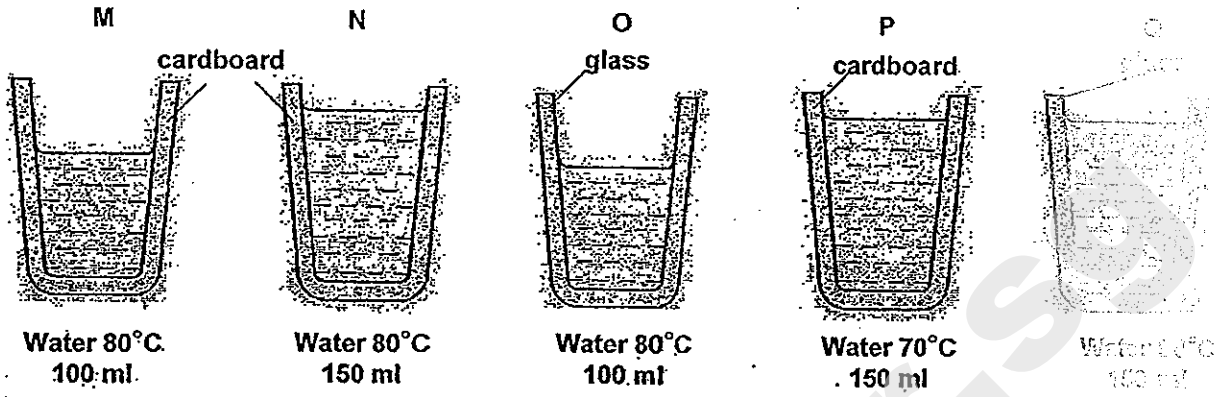
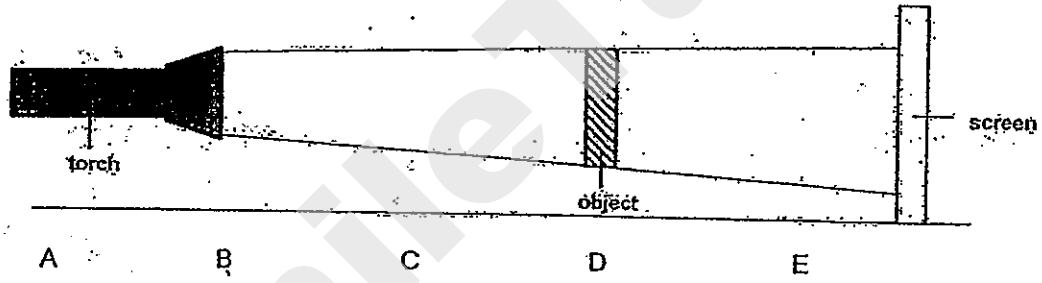
20. Kelly wanted to find out whether glass or cardboard is a better conductor of heat.



Which of the 2 set-ups should she use to conduct her experiment?

(1) N and Q
(2) M and O
(3) P and Q
(4) M and N

21. Craig placed a torch at position B. He also placed an object at position D as shown below. A shadow was cast on the screen.



Which of the following set-ups will result in the **smallest** shadow on the screen?

	Position of torch	Position of object
(1)	C	E
(2)	C	D
(3)	A	D
(4)	A	E

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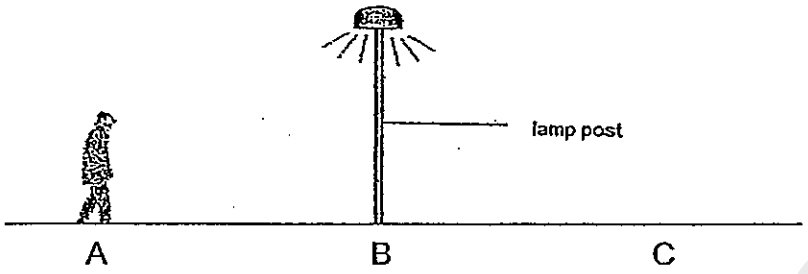
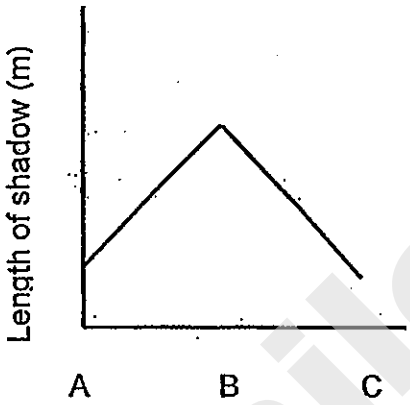
22. One night, Derek walked along a pavement and he passed under a street lamp.

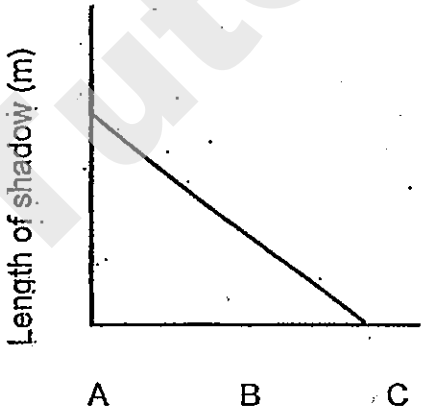


Which one of the following graphs show the change in the length of his shadow as he walked from point A to B and then to C?

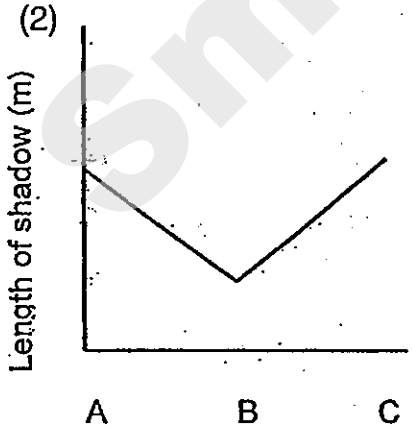
(1)



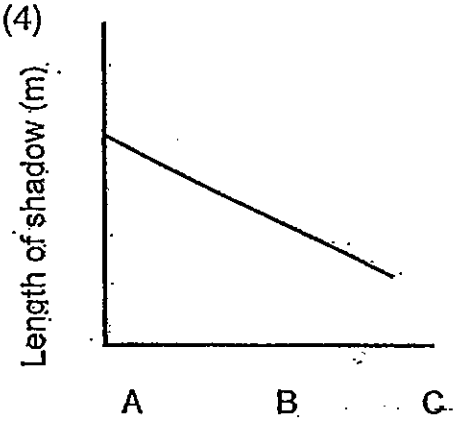
(3)



(2)



(4)



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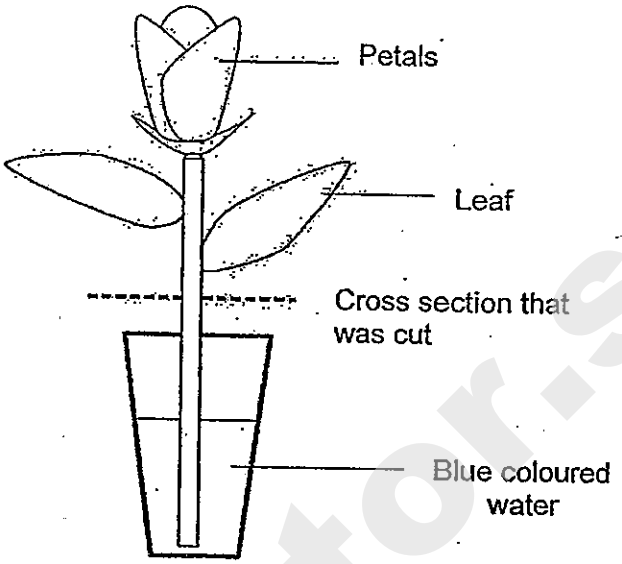
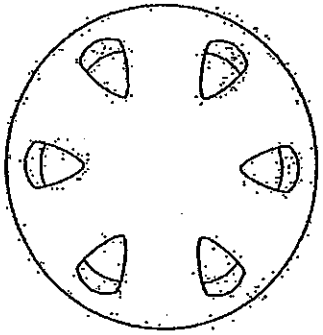
23. A stalk of tulip was placed in coloured water as shown below.



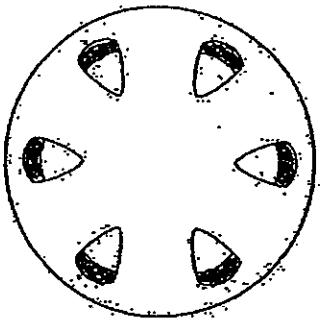
After two days, the stem was cut. Which one of the following cross section of the stem would be observed?

(1)

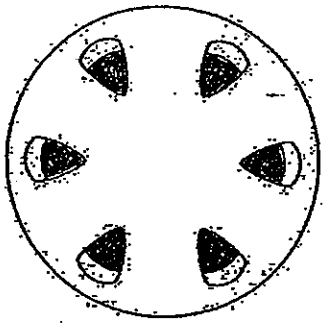
(3)



(2)



(4)



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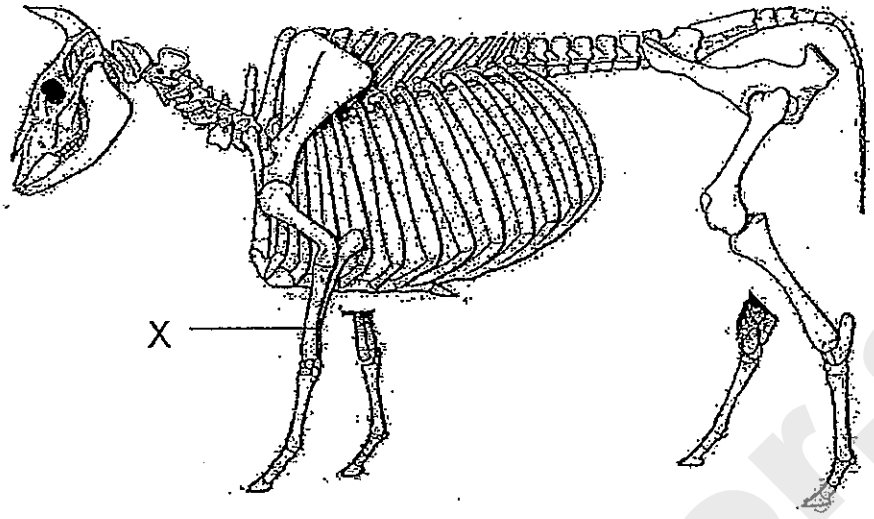
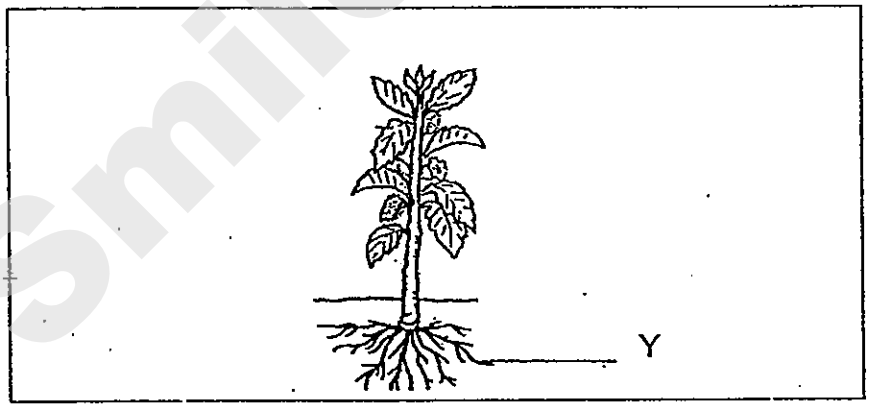
24. The picture shows a skeleton of an animal.



Which one of the other following systems must work together with 'X' to enable it to move?

(1) Muscular system
(2) Digestive system
(3) Circulatory system
(4) Respiratory system

25. Look at the plant below.



What is the function of part Y?

(1) It keeps the plant upright.
(2) It provides food for the plant.
(3) It holds the plant firmly to the ground.
(4) It transport water to other parts of the plant.

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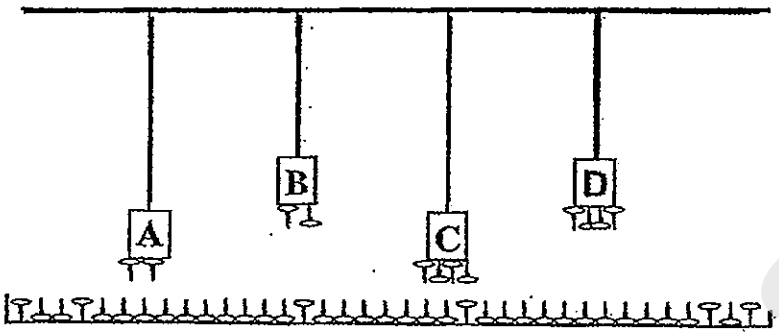
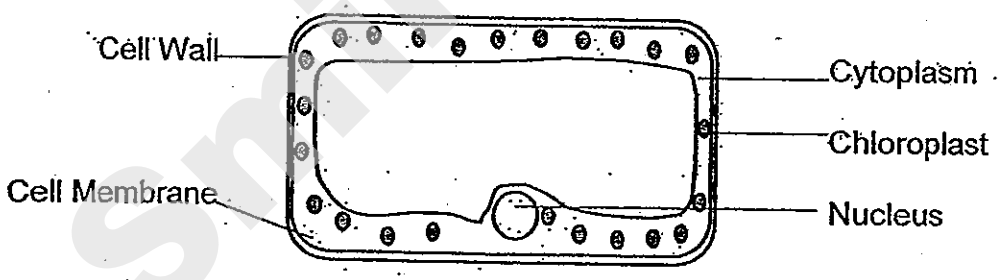
26. Viviene wanted to test the strength of different magnets. She set up an experiment as shown below.



From the above results of her experiment, what can Viviene conclude from her experiment?

(1) Magnet C is weaker than magnet A.
(2) Magnet D is stronger than Magnet C.
(3) Magnet C is the strongest and Magnet B is the weakest.
(4) Since the magnets are hung at different length, she is unable to find which is the strongest magnet.

27. The diagram below shows a picture of a cell.



The cell is likely to be taken from a _____

(1) plant
(2) mammal
(3) fungi
(4) fish

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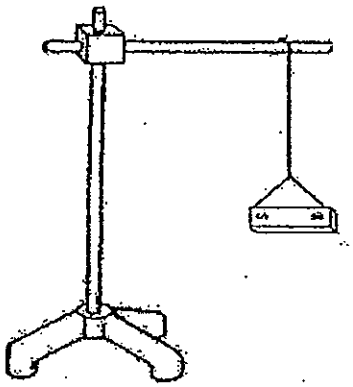
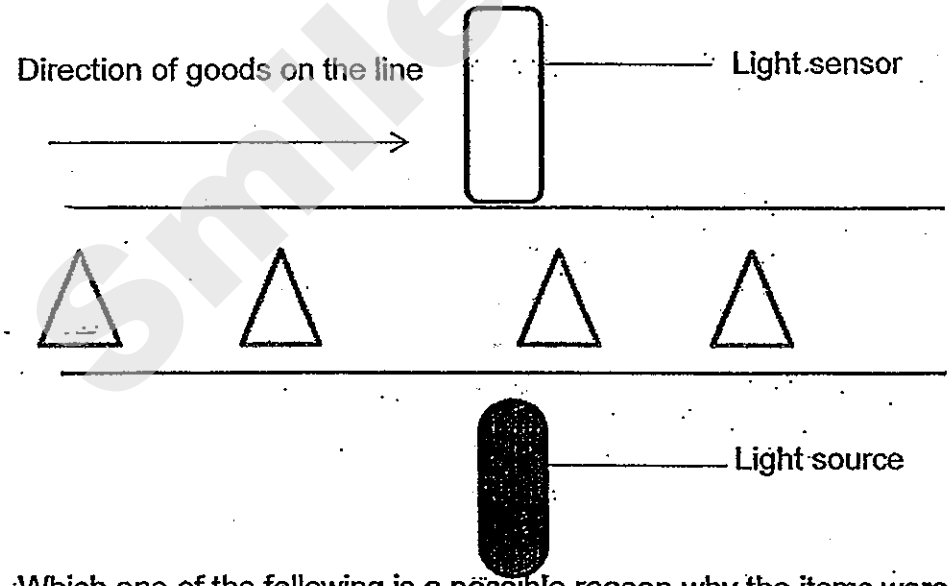
28. Sharon hung a magnet as shown in the diagram below and gave it a spin.



After 1 minute, which one of the following observation will she make?

(1) The bar magnet will spin continuously.
(2) The bar magnet will stop spinning and rest itself at the East-West direction.
(3) The bar magnet will stop spinning and rest itself at the North-East direction.
(4) The bar magnet will stop spinning and rest itself at the North-South direction.

29. At Mr Tan's factory, the goods are counted when the lights are completely blocked. Mr Tan later discovered that some of his goods were not counted for.



Which one of the following is a possible reason why the items were not accounted for?

(1) The light source was too bright.
(2) The goods were made of clear glass.
(3) The goods were placed too close to the light sensor.
(4) The goods were placed at unequal distances from each other.

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SINGAPORE CHINESE GIRLS' SCHOOL

FIRST SEMESTRAL ASSESSMENT 2013

SCIENCE

PRIMARY FIVE

NAME: _____ ( ) DATE: _____

CLASS: PRIMARY 5 SY / C / G / SE / P

Booklet A		60
Booklet B		40
Total		100

Parent's Signature

_____

BOOKLET B

14 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.

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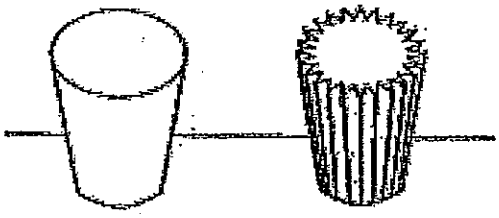
30. Dee poured hot water into 2 cups made of the same material as shown in the diagram below.



She realized that she could hold Cup B for a longer time as compared to cup A. Which one of the following best explains this?

(1) Cup A is a better conductor of heat than cup B
(2) Cup B is a better conductor of heat than cup A.
(3) Dee's hand was in contact with a larger surface area for cup B than A.
(4) Dee's hand was in contact with a smaller surface area for cup B than A.

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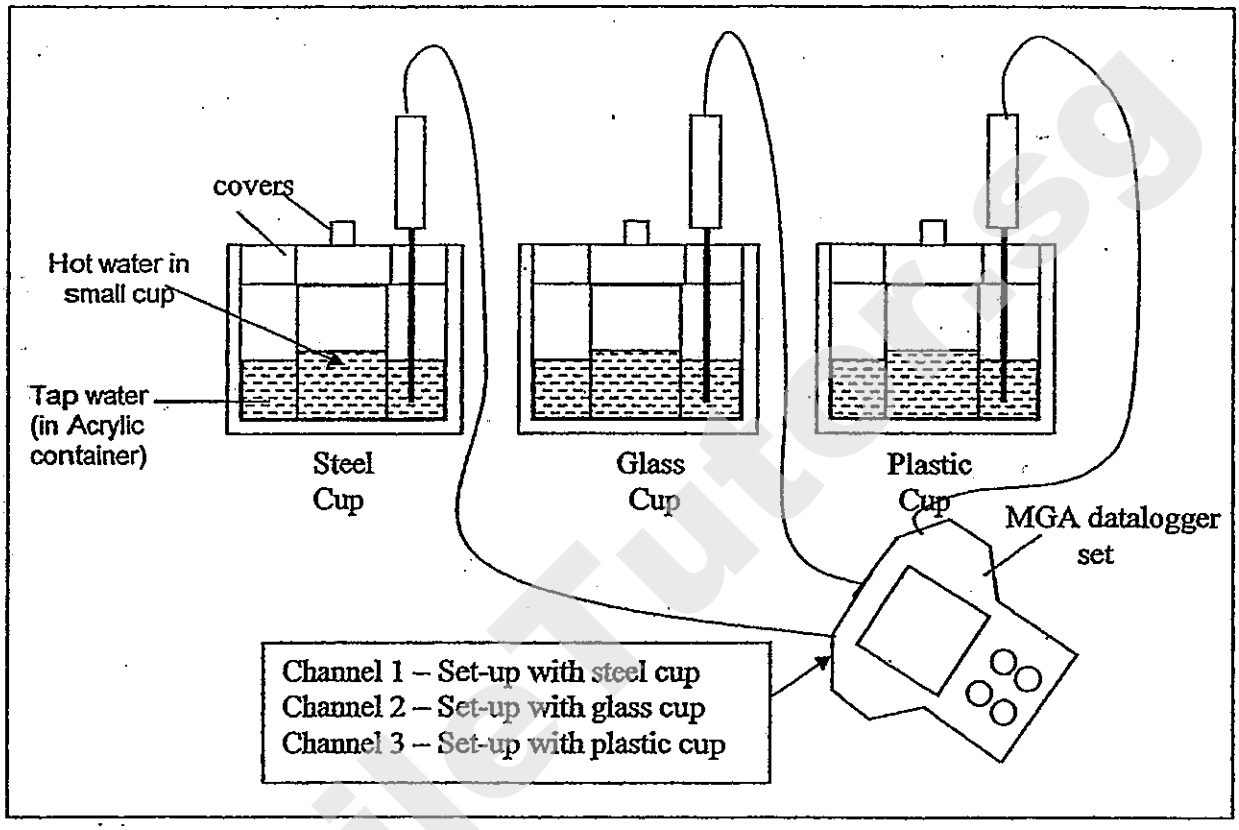
Part II (40 marks)

Answer all the following questions.

31. Iskandar set up the following experiment in his classroom.



After 3 minutes, he recorded the temperature of water in each acrylic container as shown in the table below.

	Steel Cup	Glass Cup	Plastic Cup
Temperature of water in the acrylic containers	50°C	45°C	40°C

(a) Explain why the temperature of water in the acrylic container that has the steel cup is higher than the water in the other acrylic containers? (2m)

_____

_____

(b) From the results above, which material would Iskandar use to transport ice? (1m)

_____

3

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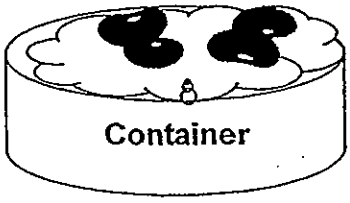
32. Toby observed and recorded changes in some beans placed on moist cotton wool in the container shown below.



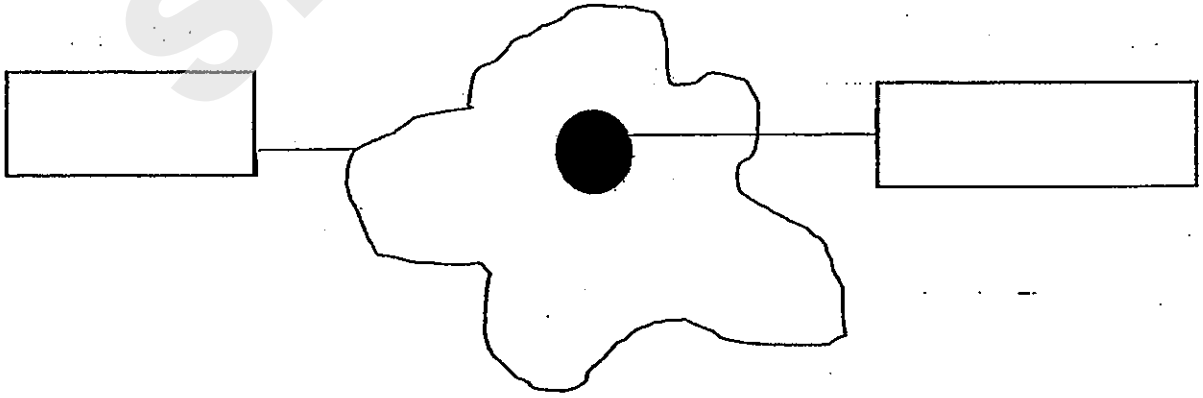
(a) In the boxes below, arrange in order of appearance Toby's observation. (1m)

A: A tiny shoot grows upwards.
B: A root grows downwards for water.
C: The bean absorbs water, swells and the seed coat cracks open.

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

_____

33. Below is an amoeba which is a single-cell organism.
Label the parts of the cell in the boxes provided in the diagram below. (2m)



4

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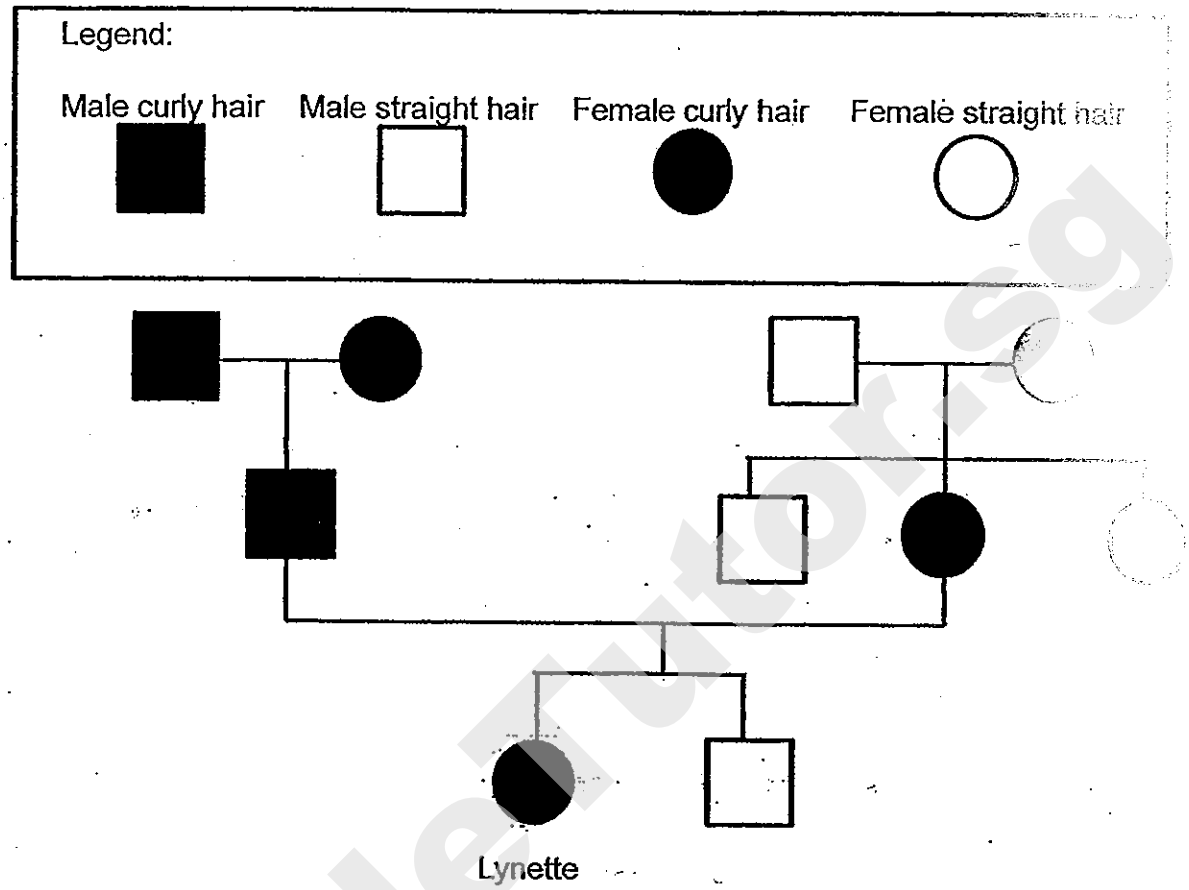
34. Study the family tree below.



(a) Who did Lynette's brother inherit his type of hair from? (1m)

_____

(b) Read the following statements. For each, tick the correct boxes 'True, 'False' or 'Not Possible to Tell' in the table below (2m)

		True	False	Not Possible to tell
(i)	Lynette's grandmothers have curly hair.			
(ii)	If Lynette had children of her own, they will all have curly hair.			

3

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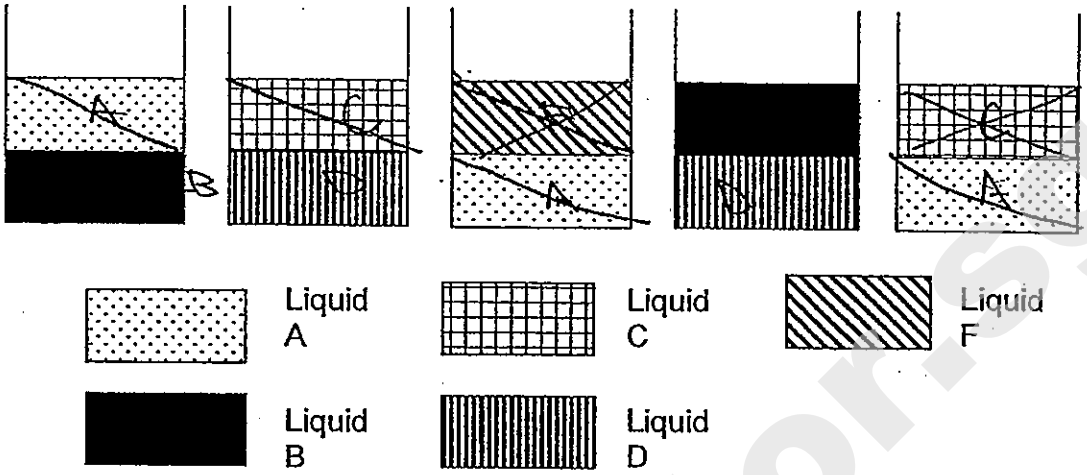
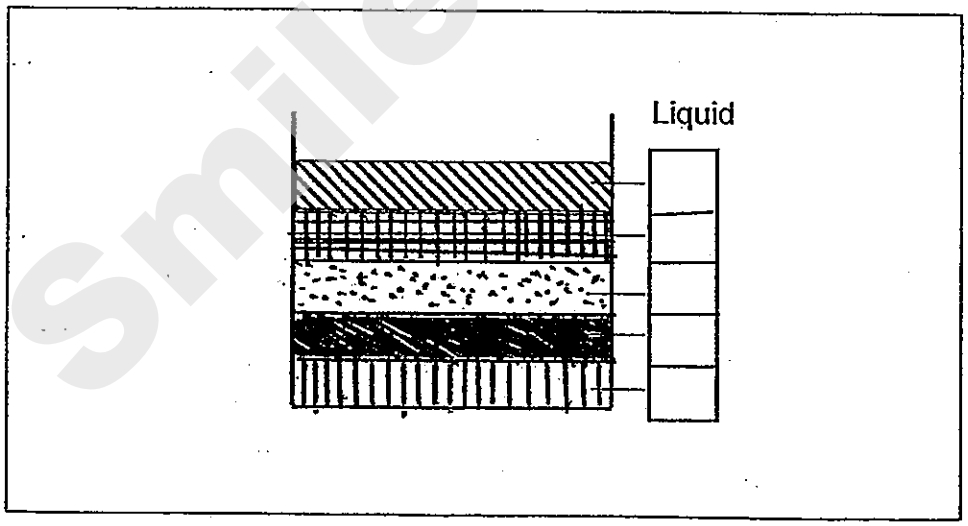
35. Henry wanted to test if different liquids could float on top of each other. The diagram below shows the results of his experiment.



(a) Henry then poured all the different liquids into 1 container.
In the box below, **write the letter** of the different liquids in the correct position when they are put together.
The topmost letter has already been written for you. (2m)



(b) Henry placed the container undisturbed in his balcony. After a week he noticed that the liquid level had decreased. Explain his observation. (1m)

_____

3

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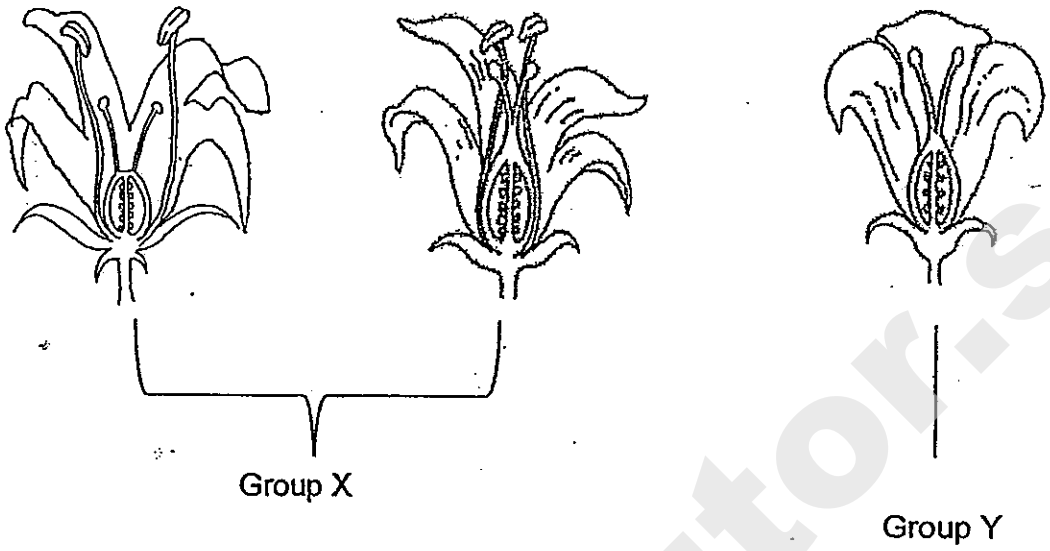
36. The flowers below have been grouped into 2 groups – X and Y.

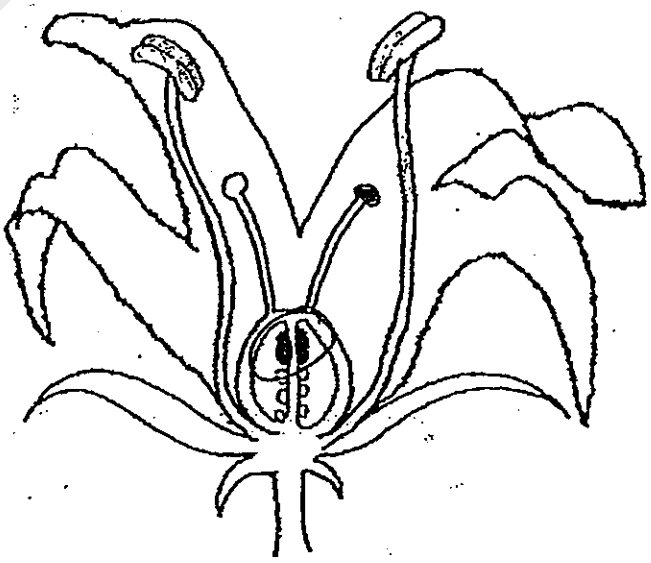


(a) Write down a suitable heading for Group X and Group Y.(1m)

Group X: _____

Group Y: _____

(b) The flower below has been pollinated. In the diagram below draw ~~use~~ using the symbol '●' to represent pollen grains on the correct part of the flower to show **pollination**. (1m)



2

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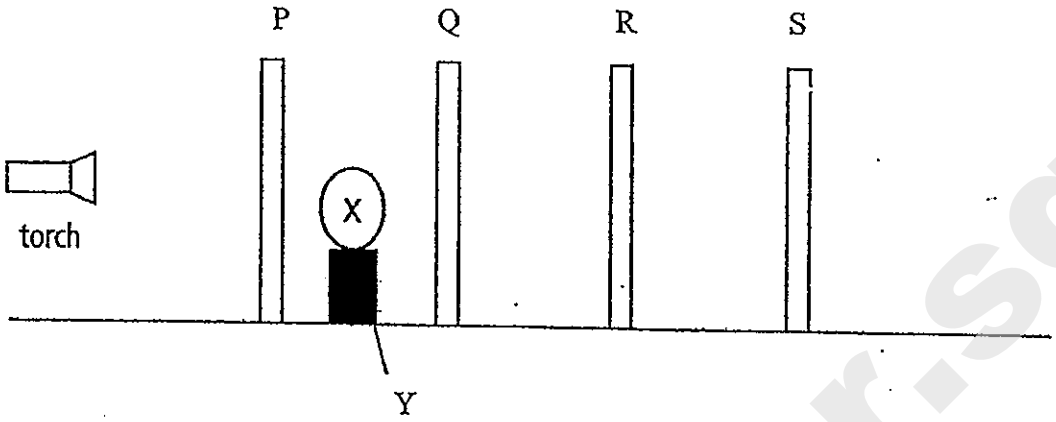
37. Edward set up an experiment in a dark room as shown below.



On Screen S, a dark shadow was formed for Object Y and a lighter shadow was formed for Object X.

Based on this observation put a tick (✓) in the correct boxes. (3m)

		True	False	Not Possible to tell
(a)	Only Screens Q and R allowed light to pass through.			
(b)	Object Y is made of wood.			
(c)	Object X allowed some light to pass through it.			

3

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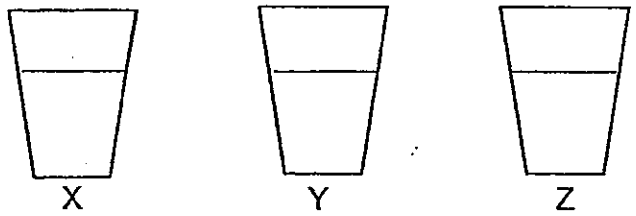
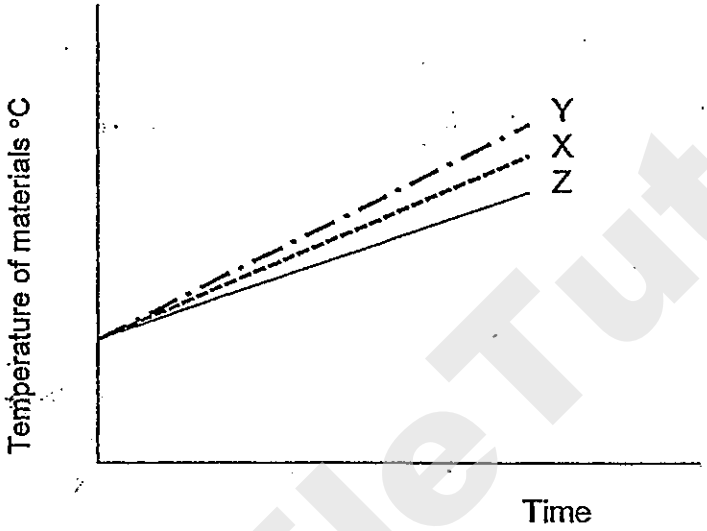
38. Emily filled 3 containers made of different materials with hot water. After 5 minutes, she plotted the temperature of the materials in the graph below.





(a) Arrange the material from the best to the poorest conductor of heat. (1m)

_____

(b) What would happen to the temperature of all 3 materials after 5 hours? (1m)

_____

_____

(c) Which material would allow hot coffee to cool the fastest? Explain your answer.(2m)

_____

_____

4

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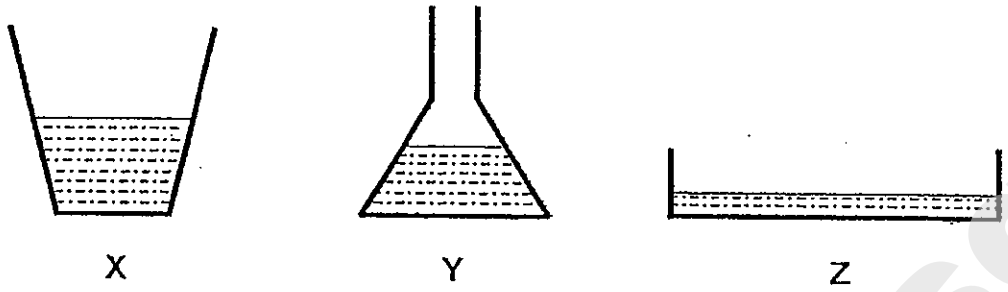
39. Bertie wanted to find out if the exposed surface area of a container would affect the rate of evaporation. She placed containers X, Y, Z filled with water on a table as seen in the diagram below.



(a) Besides the location, state 2 control variables to ensure a fair test. (2m)

_____

_____

(b) What must Bertie measure at the end of her experiment? (1m)

_____

_____

(c) Arrange the beakers in order, starting with the least amount of water left in it after one week. (1m)

_____

4

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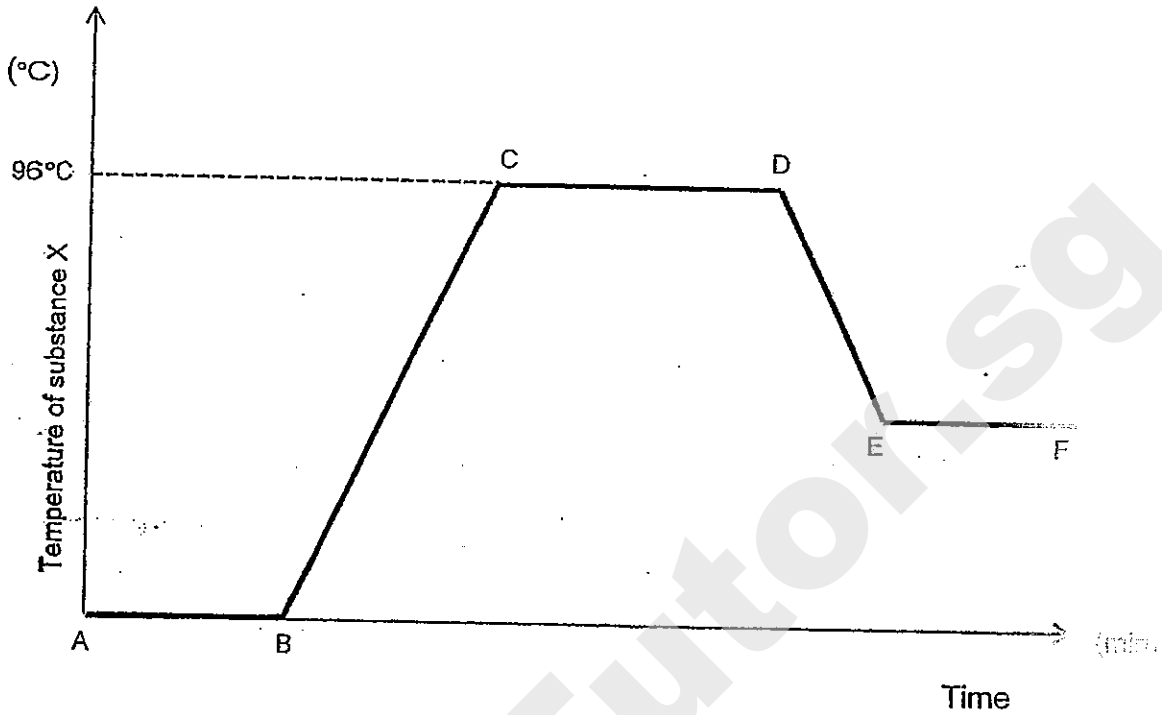
40. Substance X was heated and then left to cool to room temperature. The graph Below recorded its temperature over time.



(a) What process is taking place from A to B? (1m)

_____

(b) What state/s of matter is/are Substance X in at CD? (1m)

_____

(c) Tick the correct boxes on whether substance X gained or lost heat to the surroundings.(2m)

	AB	BC	CD	DE
Heat gain				
Heat loss				

4

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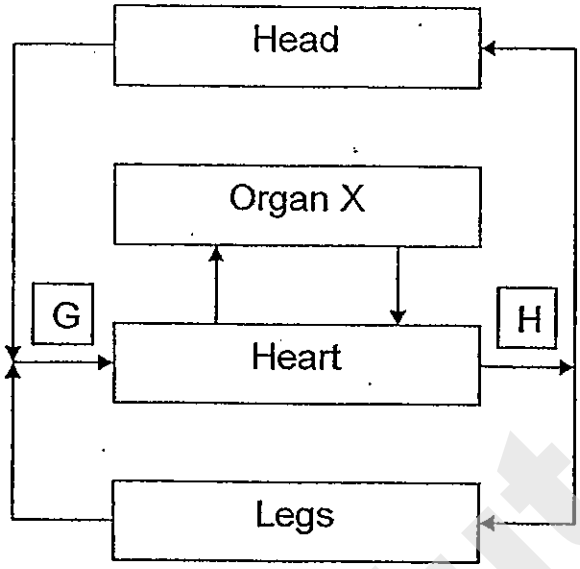
41. The diagram below is a model of our circulatory system. The arrows represent blood vessels.



(a) State the difference between the level of oxygen in the blood at G and H. (1m)

_____

_____

(b) Organ X is also part of our respiratory system. What is Organ X? (1m)

_____

2

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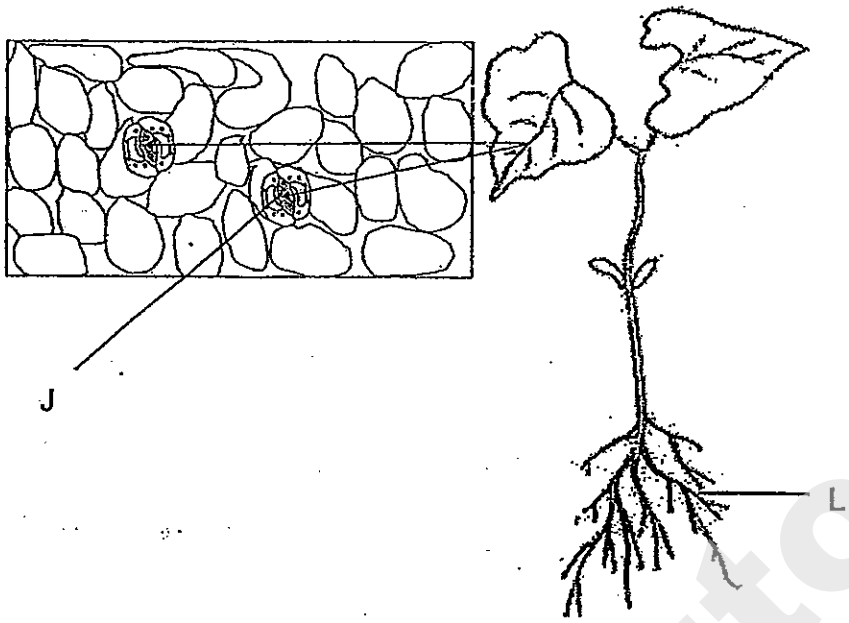
42. Below is a picture of a plant.



(a) What would happen to the plant if Part L was removed? Explain your answer. (2m)

_____

_____

(b) Part J was observed under the microscope. List the main function of J. (1m)

_____

_____

(c) Draw the life cycle of the plant in the box below. (1m)

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43. Study the table below.

Characteristics	Animal X	Animal Y
Moults	✓	
Lays eggs		✓
Has hair		✓
Has wings		✓

(a) Based on the table above, describe Animal Y. (1m)

_____

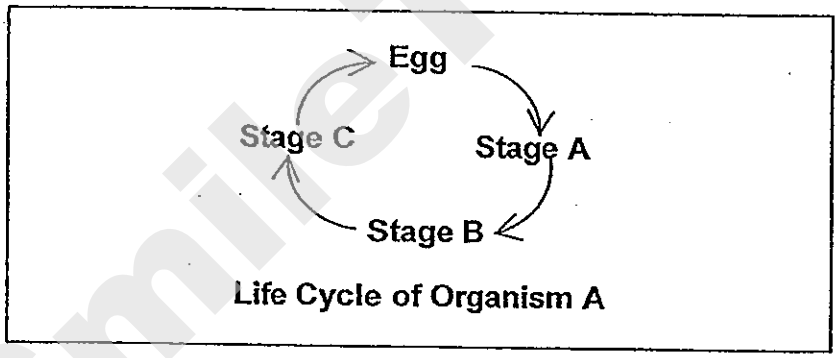
_____

(b) Harold was asked by his teacher to give an example of animal X. He gave 'butterfly' as his answer. Is Harold correct? Explain your answer. (1m)

_____

_____

44. Study the life cycle of organism A below.



(a) Organism A is a pest and can fly at Stage C. Spencer wants to reduce the number of Organism A but he was told that killing them at stage C was not the best solution to his problem. Besides the ability to fly, state another reason why killing them at Stage C is not the best solution. (1m)

(b) Suggest what Spencer should do to solve the problem. (1m)

_____

_____

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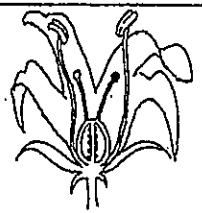
SCGS Primary P5 SA1 Science Answers

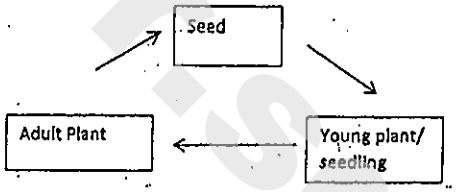
1)1	6)1	11)1	16)1	21)4	26)2
2)3	7)2	12)1	17)1	22)2	27)1
3)4	8)3	13)2	18)3	23)4	28)4
4)3	9)1	14)1	19)2	24)1	29)2
5)3	10)1	15)4	20)2	25)3	30)4

Qn	Answer *(Does not include all possible answers)*
31a	The steel cup is the best conductor of heat / is a better conductor of heat than glass and plastic. Thus, heat was conducted from water in the steel cup to the water in the acrylic container fastest.
31b	Plastic
32a	C, B, A.
32b	Air, water and warmth
33	
34a	Maternal Grandfather (1m)
34b	True: √ / False: / Not Possible to tell: √
35a	F, C, A, B, D
35b	The liquid had evaporated
36a	X - Flower with male and female reproductive parts Y – Flower with only female reproductive parts
36b	

37	True	False	Not Possible to tell
		√	
			√
	√		

38a	Y, X, Z
38b	Their temperature would be the same which is the room temperature.
38c	Material Y. It is the best conductor of heat and thus the hot coffee can lose heat fastest to the surroundings through Material Y.
39a	The amount of water placed in the beaker at the start of the experiment The amount of time/ duration for the water to evaporate. Temperature of the water at the start of the experiment.
39b	She must measure the amount of water left in each container at the end of the experiment.
39c	Z, X, Y
40a	Melting
40b	Liquid and gaseous
40c	

	AB	BC	CD	DE
Heat gain	√	√	√	
Heat loss				√

41a	H has more oxygen than G.
41b	Lungs
42a	The plant will grow weaker and eventually die. It will not be able to absorb water for the plant without L. OR: It will topple over. The plant can't be held firmly to the ground without L.
42b	Allows for gaseous exchange to take place
42c	
43a	Animal Y does not moult, has hair, wings and lays eggs but it does not.
43b	No. Butterflies has wings and lay eggs.
44a	They would already be able to reproduce/ breed/ lay eggs.
44b	Kill them at stage B, A or Egg stage before they are able to reproduce.

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TAO NAN SCHOOL 道南学校

SINCERITY & PERSEVERANCE

PRIMARY 5 MID-YEAR EXAMINATION 2013

Name : _____ ( ) Date: 20 May 2013

Class : Primary 5 ( ) Time: 8.00 a.m. - 9.45 a.m.

Parent's Signature : _____ Marks: _____ / 60

SCIENCE

BOOKLET A

INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

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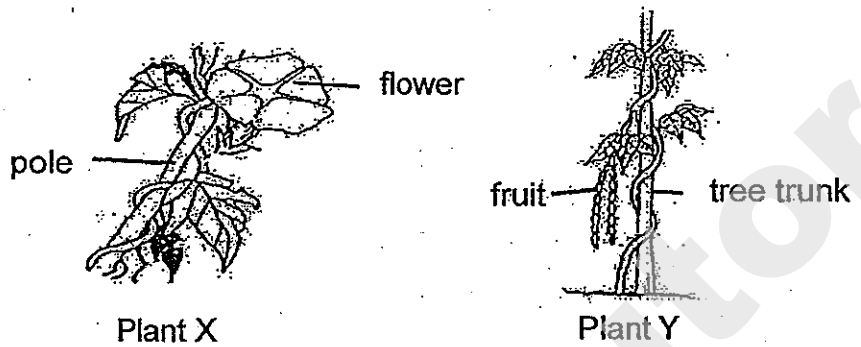
Section A (30 x 2 marks)

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

1. The pictures below show Plant X and Plant Y.



Which of the following about Plant X and Plant Y is true?

(1) Only Plant Y bears fruit.
(2) Only Plant X is a flowering plant.
(3) Plant X and Plant Y have weak stems.
(4) Plant X and Plant Y reproduce by spores.

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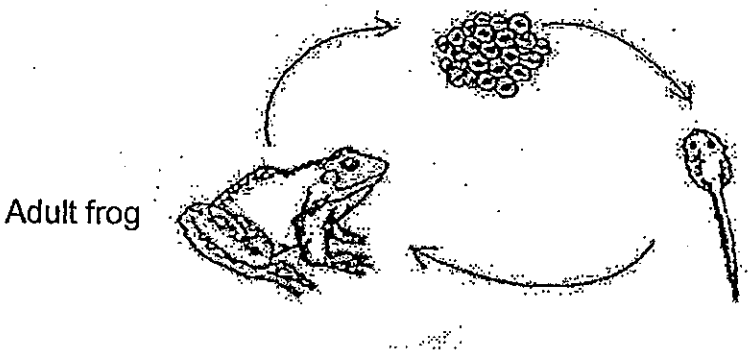
2. The life cycle of a frog is shown below.



Based on the life cycle above, which of the following is true?

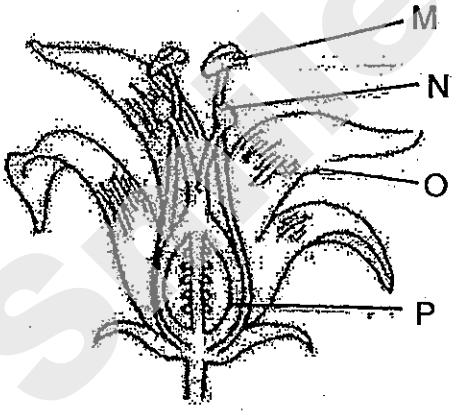
(1) The young resembles its parent.

(2) A frog gives birth to its young alive.

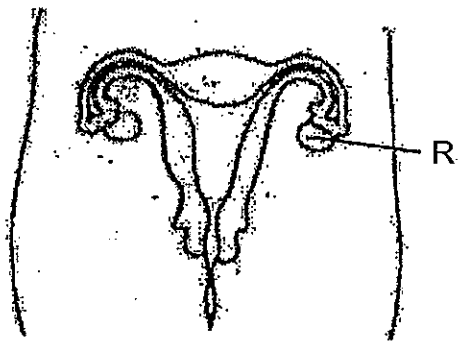
(3) There are three stages in the life cycle.

(4) All the eggs that were laid were fertilised.

3. The diagrams below show the parts of a flower and a female reproductive system.



Flower



Female reproductive system

Which part of the flower, M, N, O or P, has a similar function as R of the female reproductive system?

(1) M

(2) N

(3) O

(4) P

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4. Thomas wanted to find out how balsam plants grow under certain conditions. The steps that he took in his investigation are recorded below.

Step 1: Two identical pots, A and B, were filled with equal amounts of soil.

Step 2: Five seeds were placed in Pot A and twenty seeds were placed in Pot B.

Step 3: Both pots were placed side by side in a garden.

Step 4: Both pots were watered with an equal amount of water daily.

What was the aim of his experiment?

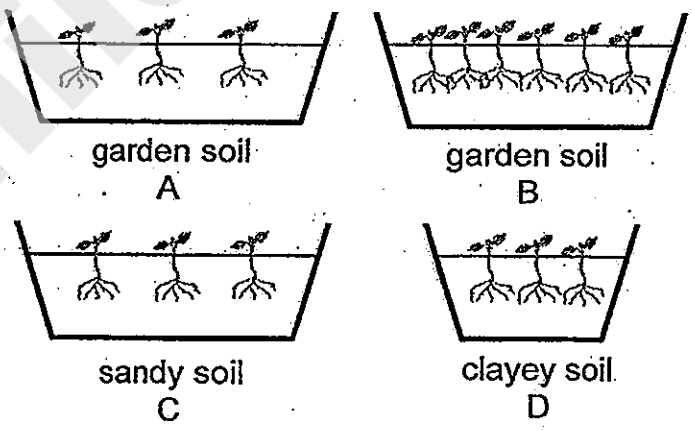
(1) To find out if the balsam plants grow well in pots.

(2) To find out if the balsam plants grow well in gardens.

(3) To find out if water is necessary for balsam plants to grow.

(4) To find out if overcrowding can affect the growth of balsam plants.

5. Samy wanted to find out if overcrowding can affect the growth of seedlings. He placed some green bean seeds in four pots of soil in a sunny part of a garden. He watered the seeds with the same amount of water daily. After a few days, the seeds developed into seedlings.



Which pots of seedlings should Samy observe to make a fair comparison?

(1) A and B

(2) A and D

(3) B and C

(4) C and D

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6. The table below provides some information on three cells, W, X and Y. A tick (✓) indicates the presence of a part of a cell.

	W	X	Y
nucleus	✓	✓	✓
chloroplast		✓	
cell wall	✓	✓	

Which of the following are represented by the cells, W, X and Y?

	W	X	Y
(1)	leaf cell	root cell	red blood cell
(2)	root cell	leaf cell	~~red blood cell~~ plant stem cell
(3)	root cell	leaf cell	cheek cell
(4)	red blood cell	root cell	~~root cell~~ plant stem cell

7. Which of the following about a developing baby in a woman's womb is correct?

(1) It develops from a fertilised ovary.

(2) It is made up of only one kind of cell.

(3) It carries genetic information from only its father.

(4) It develops after a sperm cell fuses with an egg cell.

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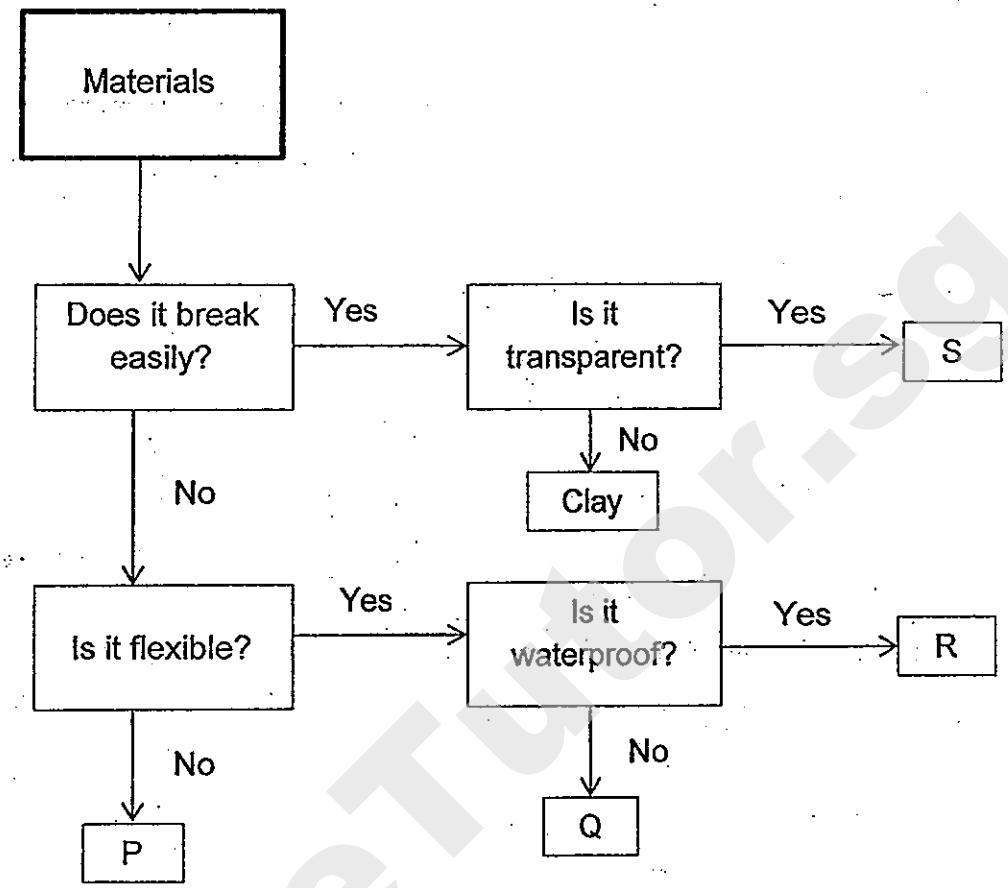
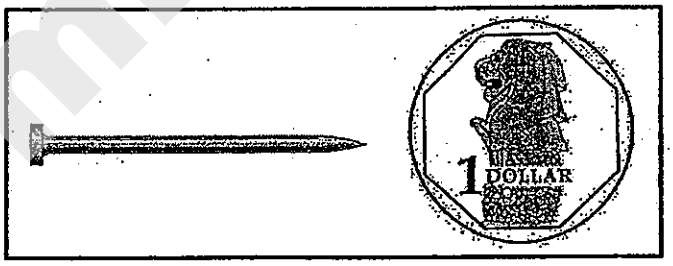
8. The flow chart below differentiates materials, P, Q, R, S and clay.



Based on the flow chart above, which material, P, Q, R or S, is used to make the objects below?



metal nail metal coin

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

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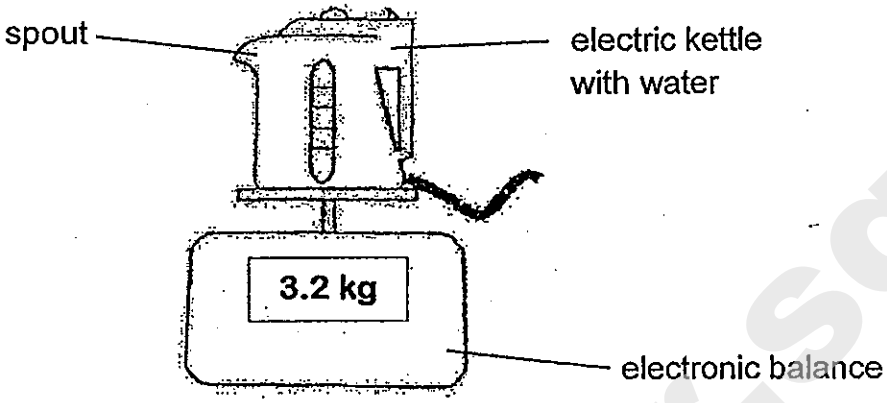
9. An electric kettle containing some water weighed 3.2 kg as shown in the picture below.



The kettle was switched on until the water in it boiled. What was the weight of the kettle of water after the water in it boiled?

(1) It was 3.0 kg.
(2) It was 3.2 kg.
(3) It was 3.4 kg.
(4) It was 3.6 kg.

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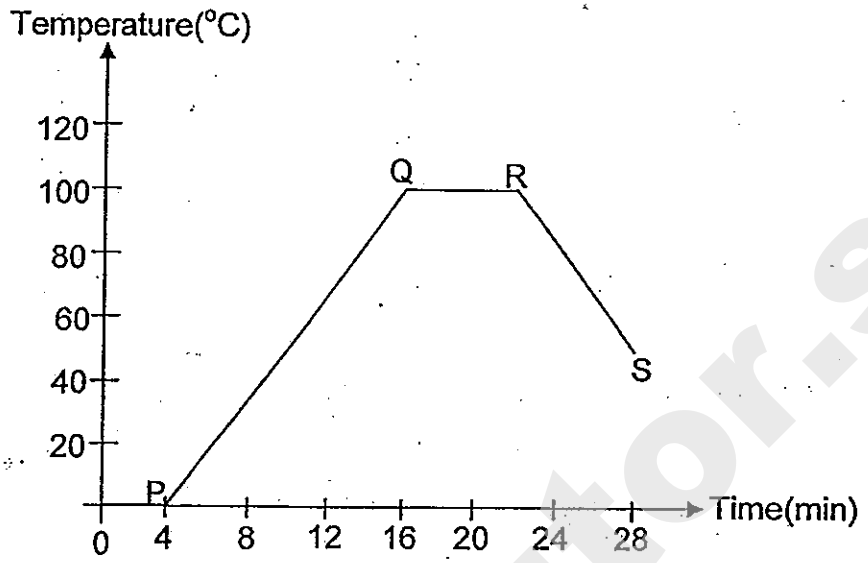
10. Freddy heated a beaker of ice continuously. He recorded the changes in the temperature of the contents in the beaker over a period of time in the graph below.



Based on the information above, which of the following could have possibly happened?

(1) The ice started to melt at P.

(2) Water did not gain heat between Q and R.

(3) Some tap water was added at the 22nd minute.

(4) Water changed from liquid to solid from R to S.

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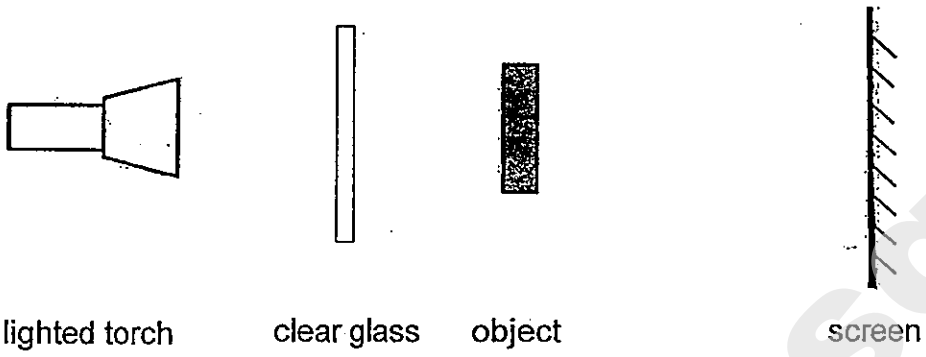
11. A piece of clear glass and an object were placed between a lighted torch and a screen as shown in the diagram below.



A shadow was formed on the screen. How could the shadow on the screen be enlarged?

(1) Remove the clear glass.
(2) Move the object nearer to the screen.
(3) Move the object nearer to the clear glass.
(4) Move the lighted torch further from the screen.

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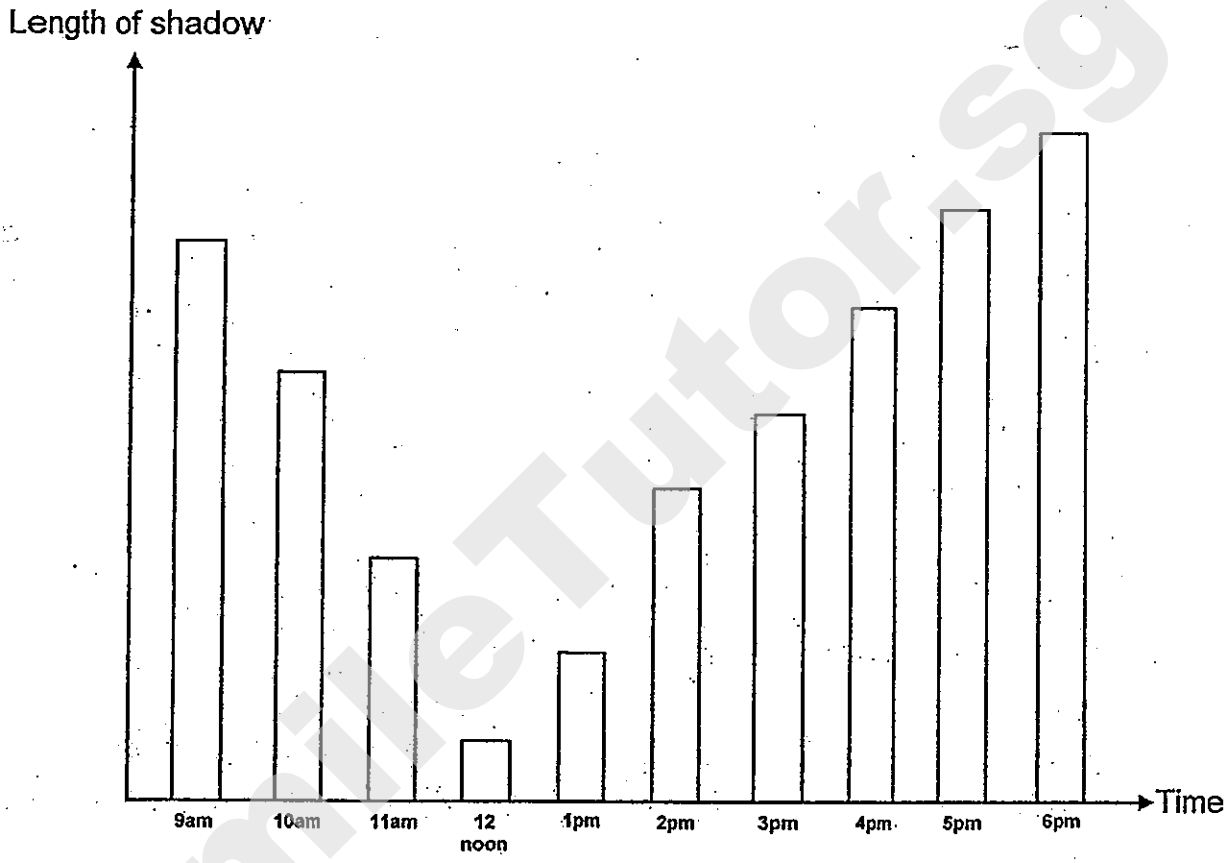
12. Peter conducted an experiment to find out if the length of the shadow of a pole depends on the time of the day. He placed a wooden pole in an open field on a sunny day. Next, he measured the length of the shadow of the pole every hour from 9 a.m. to 6 p.m.

He recorded the results of his experiment in the bar graph below.



Based on the bar graph above, which of the following is correct?

(1) The shadow was shortest in the morning.

(2) The shadow was formed when the light blocked the pole.

(3) The length of the shadow increased from 12 noon to 6 p.m.

(4) The length of the shadow increased every hour after 6 p.m.

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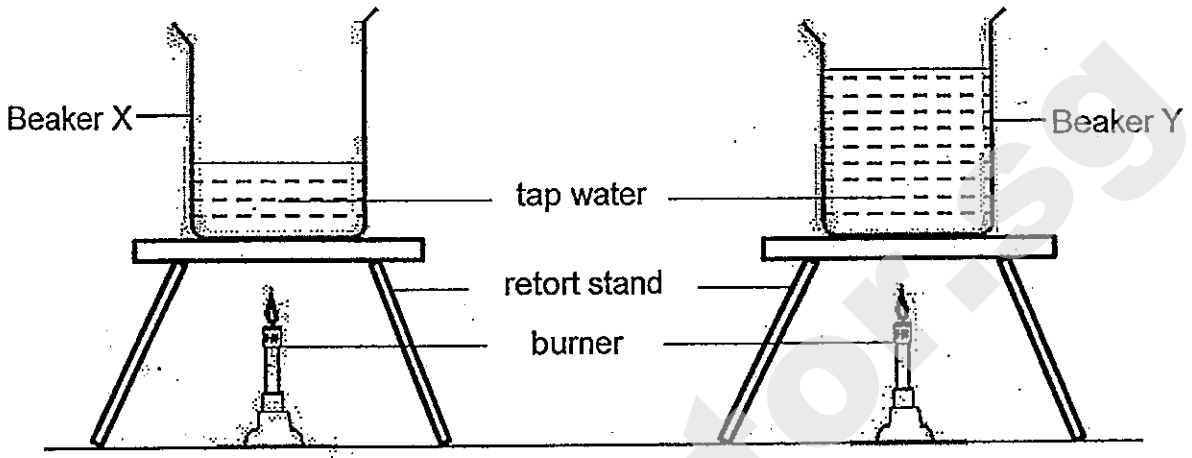
13. Identical beakers, Beaker X and Beaker Y, were each filled with a different volume of tap water at 29°C. The beakers of water were heated till the water in each beaker boiled. Then, they were left in a classroom for an hour.



Which of the following about both beakers of water is correct?

(1) Beaker Y will reach room temperature first.

(2) At 90°C, both beakers of water contained the same amount of heat.

(3) At the 10th minute both beakers of water have the same amount of heat.

(4) The time taken to heat the beakers of water to boiling point was different.

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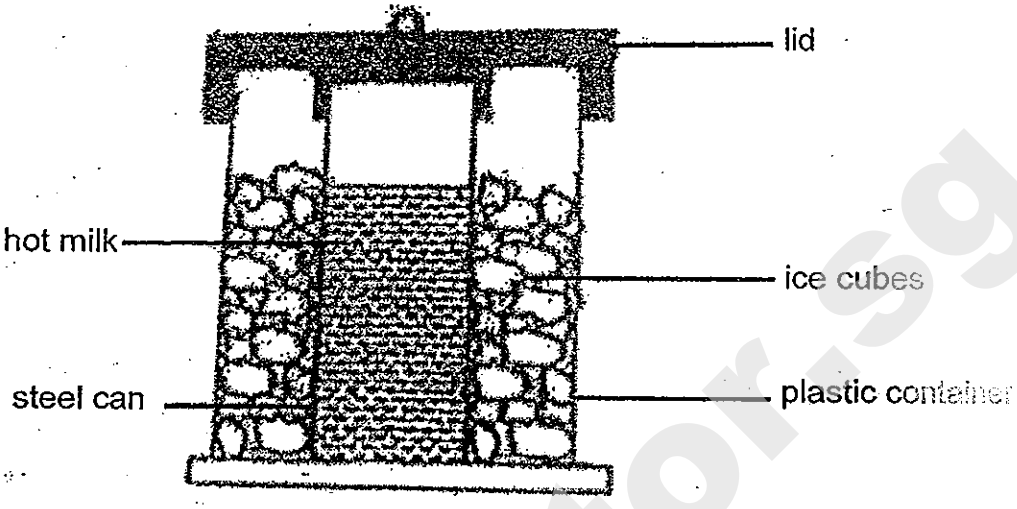
14. Mrs Tan poured a packet of hot milk into the steel can of the apparatus below.



Which of the following is correct?

(1) The steel can transferred heat to the ice cubes and hot milk.

(2) Heat travelled from the ice cubes to the hot milk in the steel can.

(3) The ice cubes and hot milk gained heat from the plastic container.

(4) Heat was lost from the hot milk to the ice cubes in the plastic container.

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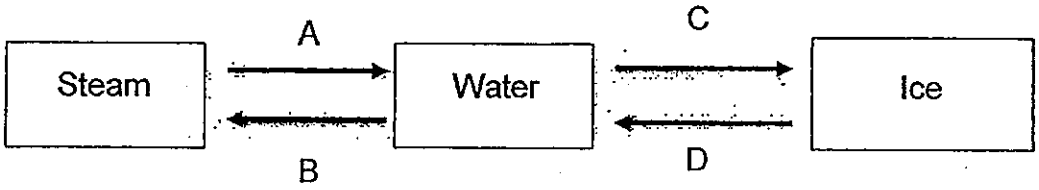
15. The diagram below shows what happens when water changes from one state to another.



Which of the following heat transfers are represented by A, B, C and D?

	A	B	C	D
(1)	Lose heat	Gain heat	Lose heat	Gain heat
(2)	Gain heat	Gain heat	Lose heat	Lose heat
(3)	Lose heat	Lose heat	Gain heat	Gain heat
(4)	Gain heat	Lose heat	Gain heat	Lose heat

16. Which of the following about the water cycle is false?

(1) The water cycle takes place all the time.

(2) Water evaporates to form water droplets.

(3) Water fall from the clouds as rain, snow and hailstones.

(4) Condensation is a process that takes place in the water cycle.

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17. Suggestions on how water can be conserved are stated below.

A : Purify water to make NEWater

B : Take a quick shower instead of a bath.

C : Collect water used for rinsing clothes to wash the toilet.

D : Use a pail of water instead of a hose when washing a car.

Classify the suggestions, A, B, C and D, under the correct headings of recycling, reducing and reusing.

	Reducing	Reusing	Recycling
(1)	A	B	C and D
(2)	B and C	D	A
(3)	B and D	C	A
(4)	C	A and B	D

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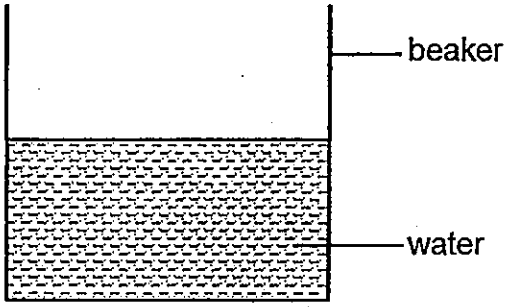
18. A beaker with 100 ml of water in it is shown below. Joanne wants the water in the beaker to dry up in the shortest possible time.



Which of the following should Joanne do?

(1) Add salt to the water.

(2) Pour the water into a big plate.

(3) Boil the beaker of water over a fire.

(4) Put the beaker of water near the fan.

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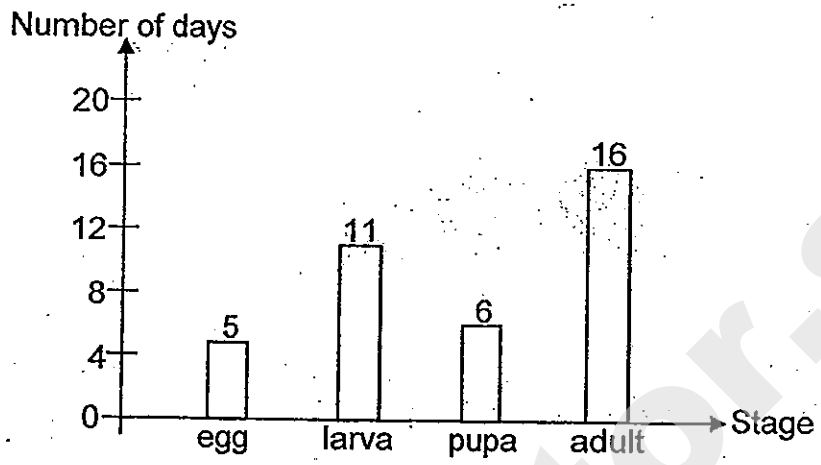
19. The bar graph below shows the number of days in each stage of the life cycle of an insect.



At which stage would the insect be 16 days after the egg was hatched?

(1) Egg
(2) Larva
(3) Pupa
(4) Adult

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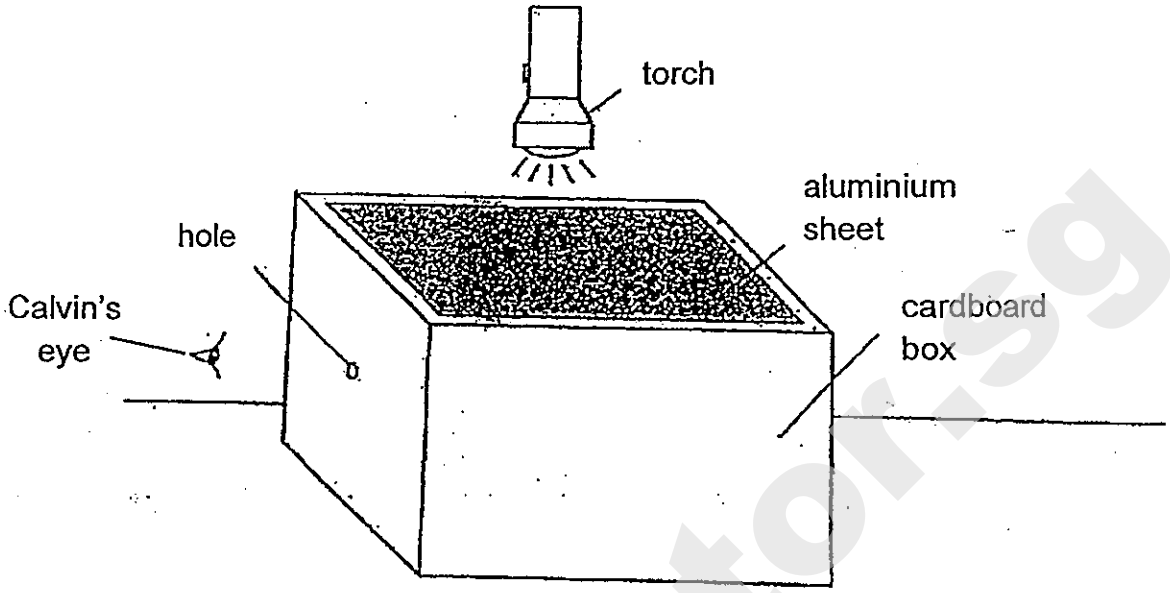
20. Calvin placed some objects inside a cardboard box and covered the top of the box with an aluminium sheet.



Calvin then turned on the torch and tried to see the objects in the box through the hole at its side. However, he could not see the objects.

What should Calvin do to see the objects in the box?

(1) Use a brighter torch.

(2) Make the hole smaller.

(3) Place his eye nearer the hole.

(4) Replace the aluminium sheet with a clear plastic sheet.

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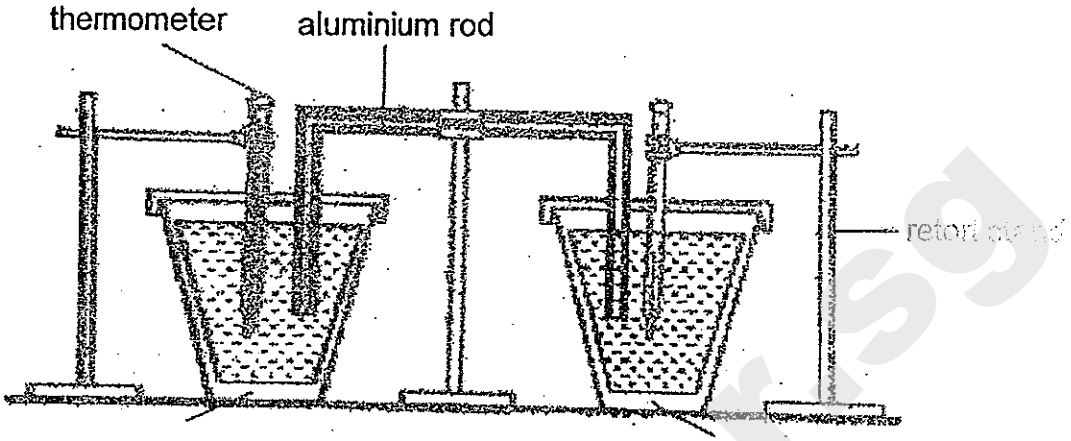
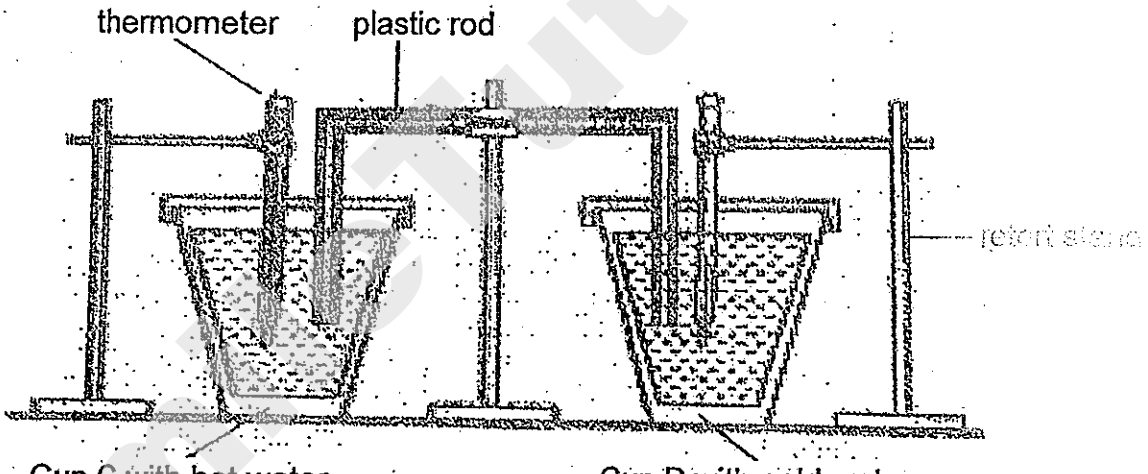
21. Winnie set up an experiment using four identical insulated cups as shown below.





After ten minutes, Winnie recorded the temperature of the water in each cup. Which of the following shows the temperature of the water in each cup from the coolest to the hottest after ten minutes?

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

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22. In a Science project, Helmi made observations on the number of visits by bees to six flowers, U, V, W, X, Y and Z, in a garden. The results were recorded in the table below.

Flower	Size of Petals	Colour of Petals	Scent of flower	Number of visits by bees
U	Large	Orange	scented	45
V	Large	Orange	no scent	23
W	Medium	Violet	scented	12
X	Medium	Orange	no scent	?
Y	Small	Orange	no scent	8
Z	Small	Violet	no scent	5

Unfortunately, Helmi had forgotten to record the number of visits by bees to the flower, X. What is the most likely number of visits by bees to the flower, X?

(1) 7
(2) 10
(3) 24
(4) 60

23. Mr Tay has a fruit tree that bears flowers but not fruits. Which of the following explains why Mr Tay's fruit tree does not bear fruits?

(1) The tree has male flowers only.
(2) The tree has female flowers only.
(3) The tree has both male and female flowers.
(4) The tree has more male than female flowers.

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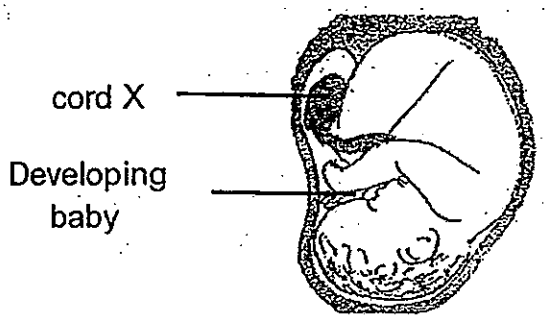
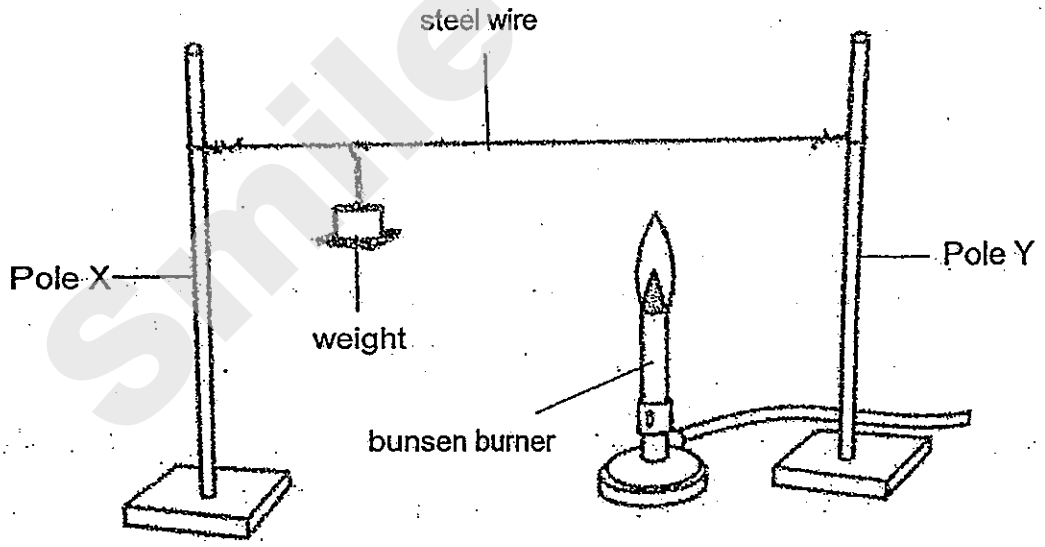
24. The diagram below shows a developing baby in a mother's womb.



Which of the following about cord X is true?

(1) The fertilisation takes place in cord X.
(2) It connects the developing baby to the mother.
(3) Wastes from the mother are passed out through cord X.
(4) It carries food and oxygen to the mother from the developing baby.

25. Jonathan set up an experiment as shown below.



What will happen to the weight after 30 minutes?

(1) The mass of the weight will increase.
(2) The mass of the weight will decrease.
(3) The weight will move towards Pole X.
(4) The weight will move towards Pole Y.

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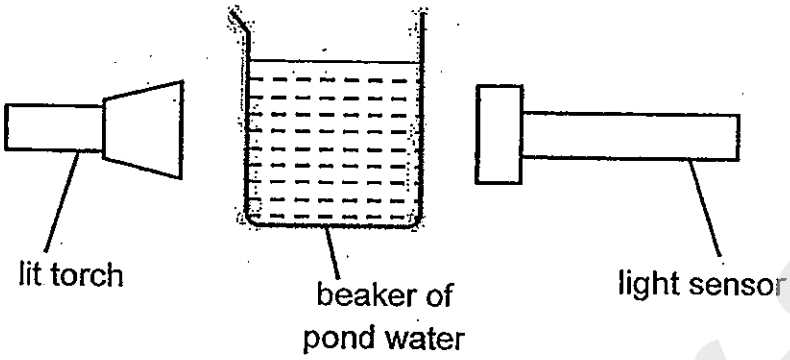
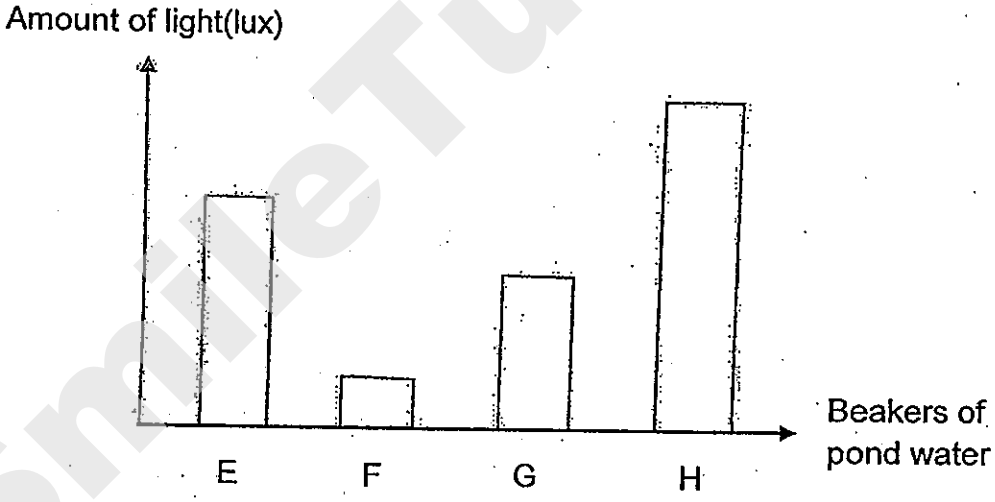
26. Jacinta collected four beakers of pond water from four different ponds, E, F, G and H. Using the set-up below, she measured the amount of light that passed through each beaker of pond water using a light sensor.



She then plotted the bar graph below based on the amount of light recorded by the light sensor for each beaker of pond water.



A submerged plant was placed in each of the beakers of pond water. In which of the beakers will the submerged plant receive the most light?

(1) E
(2) F
(3) G
(4) H

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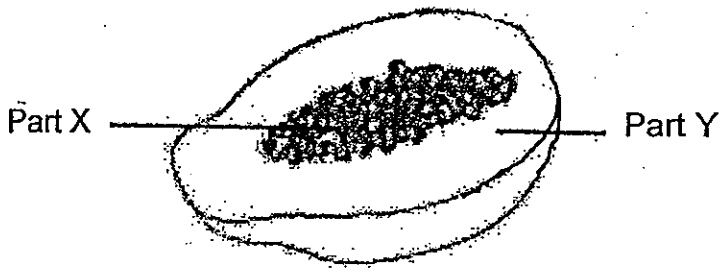
27. The diagram below shows the cross section of a papaya.



Which part of the flower did Part X and Part Y develop from?

	Part X	Part Y
(1)	Ovule	Stigma
(2)	Ovary	Ovule
(3)	Ovule	Ovary
(4)	Style	Ovary

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28. Which of the following statements about unicellular organisms is correct?

(1) They have cell walls.
(2) They are made of many cells.
(3) They cannot be seen with the naked eye.
(4) They get their food through their cytoplasm.

29. In the experiment shown below, an iron rod was placed on a block of ice. The ice melted.

Why did the ice block melt?

(1) The iron rod and surrounding air lost heat to the ice block.
(2) The ice block lost heat to the iron rod and surrounding air.
(3) The ice block lost coldness to the iron rod and surrounding air.
(4) The iron rod and surrounding air gained coldness from the ice block.

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30. Three plants, •, ☆ and ✦, were planted on a piece of land as shown in Figure 1 below.

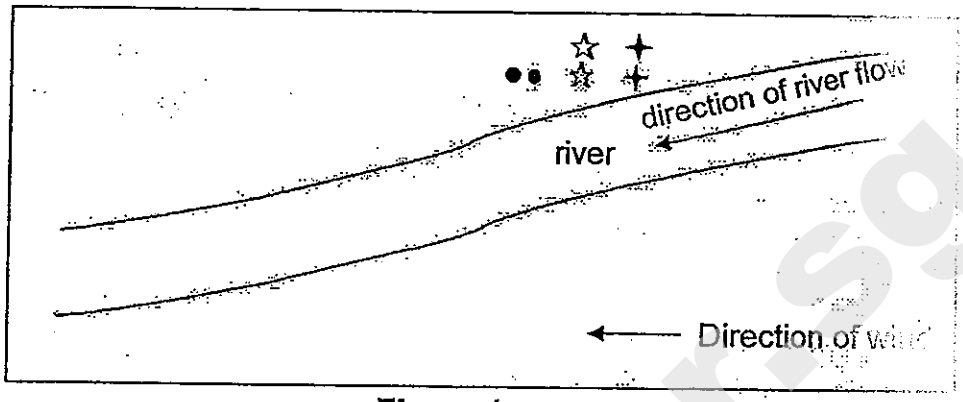

Figure 1

Their seeds have different methods of dispersal. After a few years, more of the three plants were found growing on that piece of land as shown in Figure 2 below.

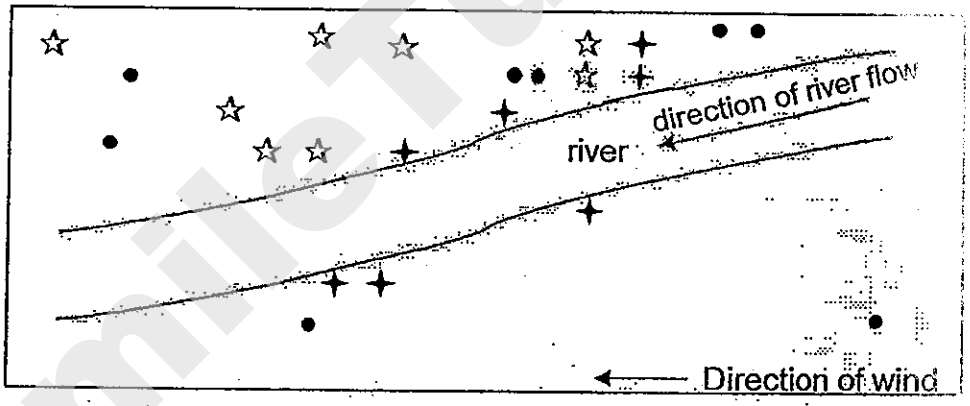

Figure 2

How are the three plants, •, ☆ and ✦, dispersed?

	•	☆	✦
(1)	by wind	by animals	by water
(2)	by animals	by wind	by water
(3)	by water	by wind	by animals
(4)	by animals	by water	by wind

End of Booklet A

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TAO NAN SCHOOL
SINCERITY & PERSEVERANCE

PRIMARY 5 MID-YEAR EXAMINATION 2013

Name : _____ ( ) Date: 20 May 2013

Class : Primary 5 ( ) Time: 8.00 a.m. - 9.45 a.m.

Parent's Signature : _____ Marks: _____ / 40

SCIENCE

BOOKLET B

INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

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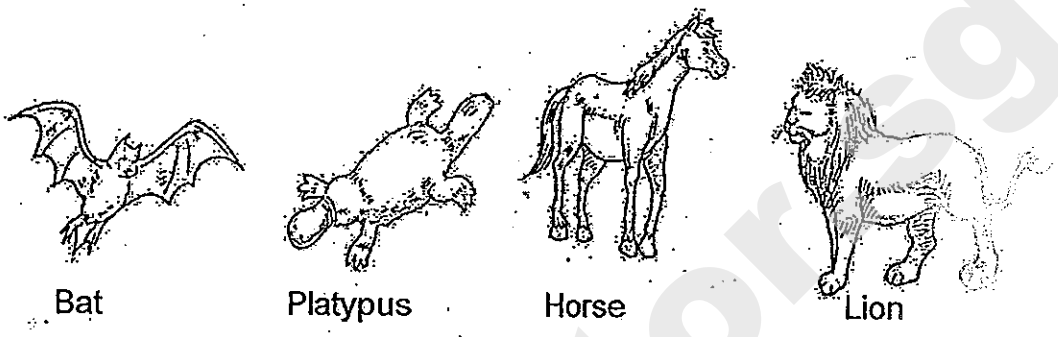
Section B (40 marks)

Write your answers to the questions, 31 to 44, in the spaces provided.

31. Study the animals below.



(a) Which group of animals do they belong to? [1]

_____

(b) State two characteristics of this group of animals. [2]

_____

_____

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32. Some pupils collected information on the locations, P, Q, R and S, to decide on the location to grow some plants. They recorded their information in the table below.

Location	Temperature	Light
	Reading (°C)	Reading (lux)
P	27	89 000
Q	32	96 000
R	30	94 000
S	29	91 000

(a) Based on the information collected, what is the relationship between light and temperature? [1]

_____

_____

(b) Plant X grows better at location P, than at location Q. Explain why this is so based on the information collected. [2]

_____

_____

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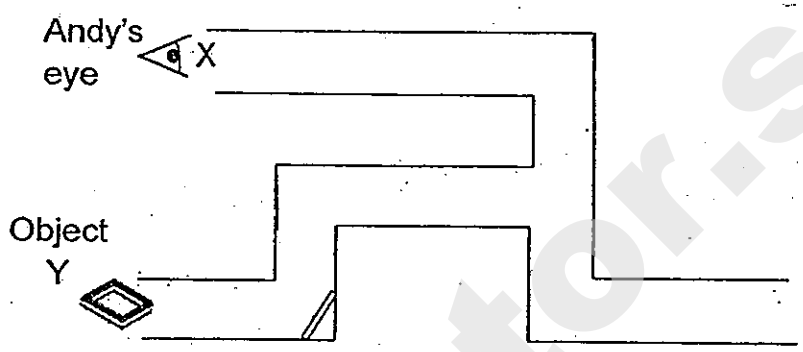
33. The diagram below shows a connection of pipes with a mirror placed inside it. Andy is looking through the pipe. He wants to see Object Y. More mirrors have to be placed in the connection of pipes.

(a) Draw the mirrors and light rays in the diagram below to show how Andy can see Object Y. [2]



(b) State one property of light that allows Andy to see object Y. [1]

_____

_____

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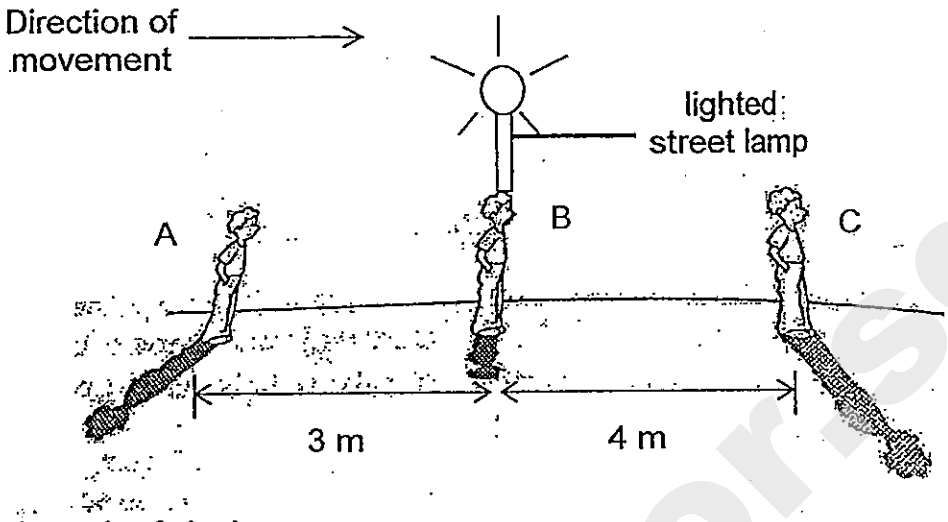
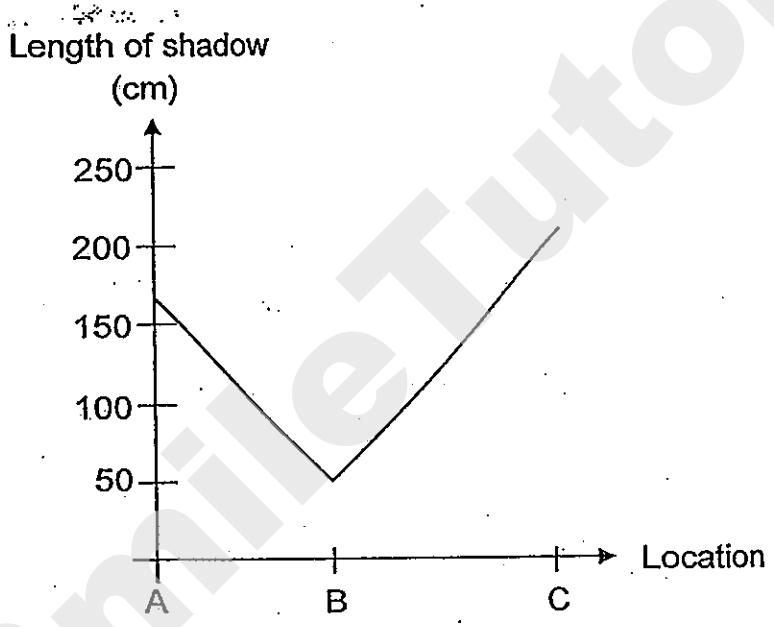
34. The diagram below shows the change in the length of a man's shadow as he walked towards a lighted street lamp and eventually past it.





(a) State the changed variable.. [1]

(b) Based on the graph above, what is the relationship between the length of the man's shadow and the man's distance from the lighted street lamp?[2]

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35. The statements below describe how rain is formed.

A	Heat from the Sun warms the Earth.
B	Rain falls when water droplets in the clouds become too big and heavy.
C	Water droplets in the clouds become bigger and heavier.
D	Tiny droplets of water form clouds.
E	Water evaporates from the ground and water bodies.
F	Water vapour cools and condenses.
G	Water vapour rises.

Fill in the boxes below with the letters, A, B, C, D, E, F and G, in the correct order to show the formation of rain. [2]

[ ] → [ ] → [ ] → [F] → [ ] → [ ] → [ ]

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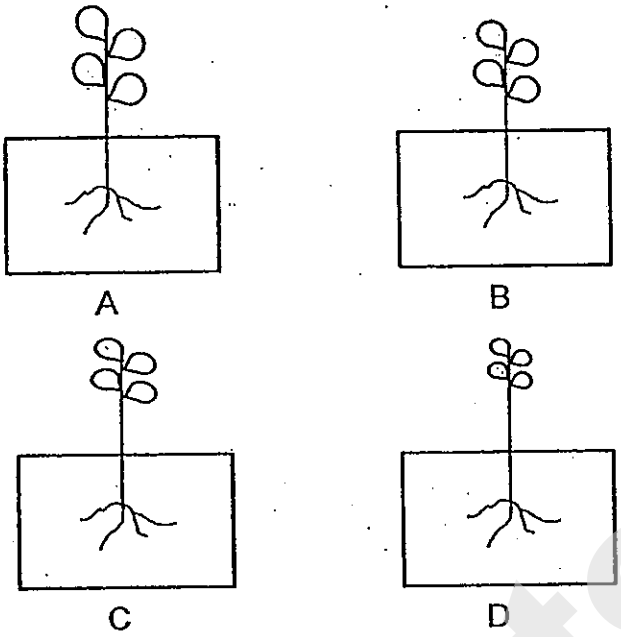
36. Jamilah and her friends conducted an experiment using four plants with leaves having different surface areas (m^2) as shown below.



They recorded the results in the table below.

Set up	Total loss of water (ml)	Surface area of leaf (m^2)	Rate of water loss (ml/ m^2)
A	1.5	0.20	7.5
B	1.0	0.16	6.25
C	0.6	0.12	5
D	0.2	0.10	2

(a) What is the relationship between the surface area of the leaf and the rate of the water loss? [1]

_____

_____

(b) In a desert, where water is scarce, plants usually have leaves of small surface area. Based on the information given in the table above, explain how such a feature is beneficial to the plants. [2]

_____

_____

_____

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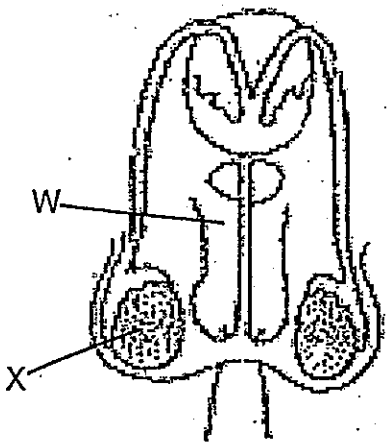
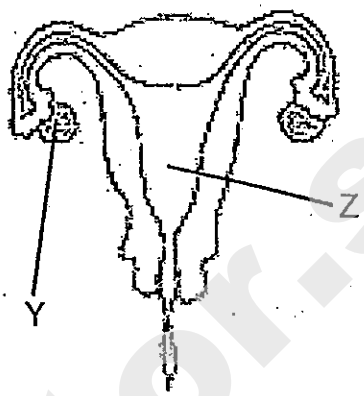
37. The diagrams below show the male and female reproductive systems of humans.



Male Reproductive System



Female Reproductive System

(a) Name the organs, W, X, Y and Z. [2]

W : _____

X : _____

Y : _____

Z : _____

(b) Name the part of the female reproductive system where the fertilised egg develops. [1]

_____

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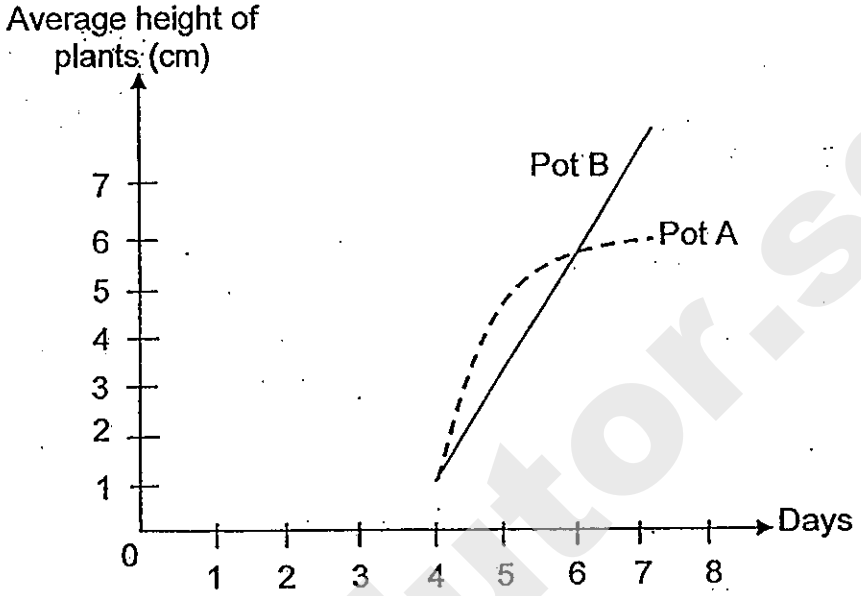
38. Charlie has two similar pots of soil, Pot A and Pot B. He places 10 bean seeds in each pot. He places Pot A in a dark cupboard and Pot B in a garden. Charlie waters the pots daily and records the height of plants in each pot. The results are shown in the graph below.



(a) Based on the above, indicate whether each of the following is 'True', 'False' or 'Not Possible to Tell'. Put a tick (✓) in the correct box. [1]

Statement	True	False	Not Possible to Tell
All the seeds germinated by the 4th day.			
Light is necessary for germination of the seeds.			
All the plants placed in the dark are taller than the plants placed in the light.			

(b) Why do you think the plants in Pot A grow more slowly than those in Pot B from Day 5 to 7? [2]

_____

_____

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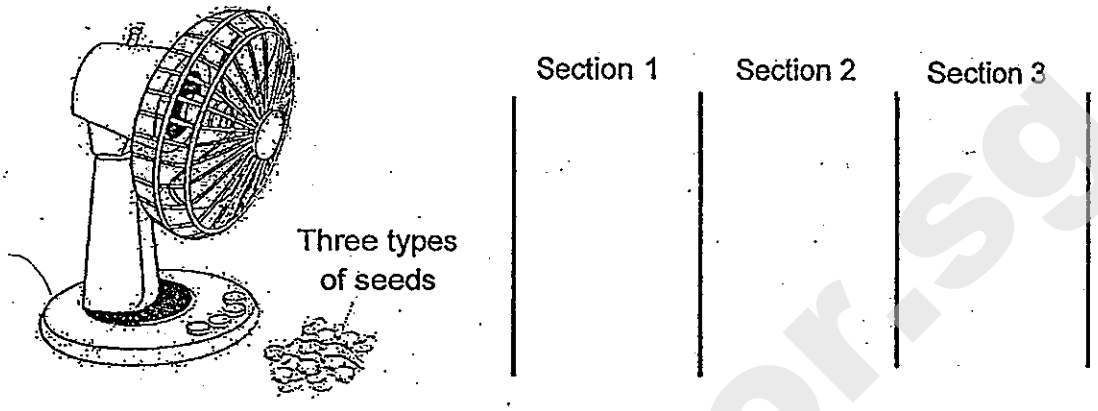
39. Sarah had three types of seeds which are dispersed by wind. She took 10 seeds of each type and mixed them together. She then placed them on a table in front of a fan. She switched on the fan for 30 seconds and then counted the number of each type of seed in the sections she had marked out on the table.



The number of each type of seed in the sections is shown in the table below.

Type of seeds	Average mass of seed (g)	Number of seeds		
		Section 1	Section 2	Section 3
X	2	0	1	9
Y	4	0	10	0
Z	6	8	2	0

(a) What can Sara conclude from the above table? [1]

_____

_____

(b) Why did Sara place all three types of seeds at the same starting point? [1]

_____

_____

(c) What should Sara do to make sure that her results are reliable? [1]

_____

_____

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40. (a) A classification table is shown below.

Group X	Group Y	Group Z
Potato	Banana	Begonia
Ginger	Pineapple	Byrophyllum

How are the plants grouped in the classification table above? [1]

_____

(b) The diagram below shows the cross-section of a flower.

Based on the above diagram, indicate whether each of the following is 'True', 'False' or 'Not Possible to Tell'. Put a tick (✓) in the correct box. [1]

Statement	True	False	Not Possible to Tell
There are many ovaries in the flower.			
Many pollen grains are needed for the flower to be fertilised.			

(c) State one reason why insects are attracted to flowers? [1]

_____

_____

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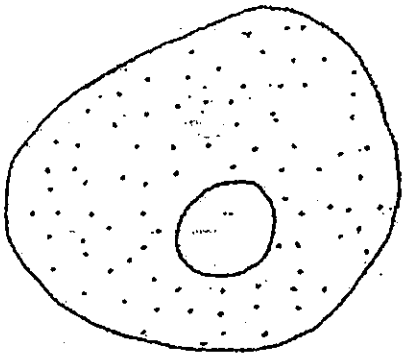
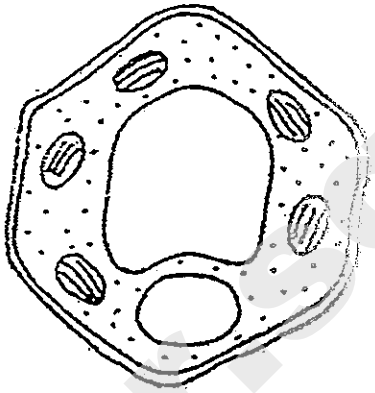
41. The diagrams below show a plant cell and an animal cell. The cells are labelled Cell X and Cell Y.



Cell X



Cell Y

(a) Identify the plant cell and the animal cell. [1]

Plant cell: _____

Animal cell: _____

(b) Some parts of Cell Y are not found in Cell X. Identify one of these parts. [1]

_____

(c) What is the function of the part in (b)? [1]

_____

_____

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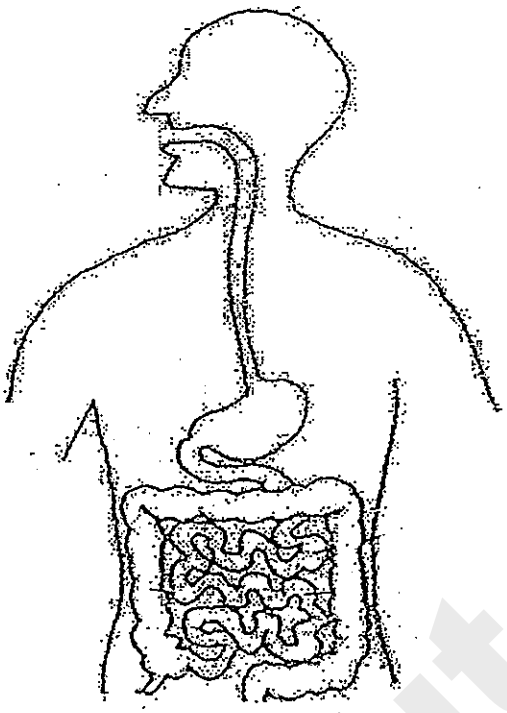
42. The diagram below shows a human digestive system.



(a) Label the part of the human digestive system where digestion of food is completed. [1]

(b) After digestion of food is completed, explain what happens to the digested food. [1]

_____

_____

(c) Wendy used a knife to cut an apple into smaller pieces. Name the part of the human digestive system where a similar action takes place. [1]

_____

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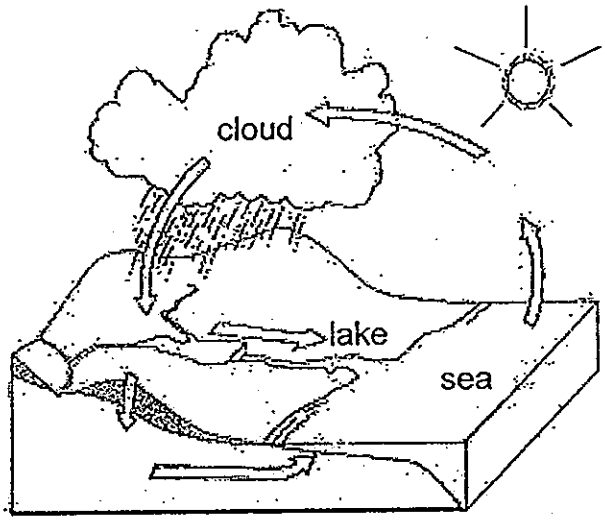
43. Below shows the water cycle and the drying of a wet T-shirt.



Water Cycle

Drying of a wet T-shirt

(a) Name the process that is found in both the water cycle and the drying of the wet T-shirt? [1]

_____

(b) A pupil commented that the water from the wet T-shirt will eventually fall as rain. Explain why. [2]

_____

_____

_____

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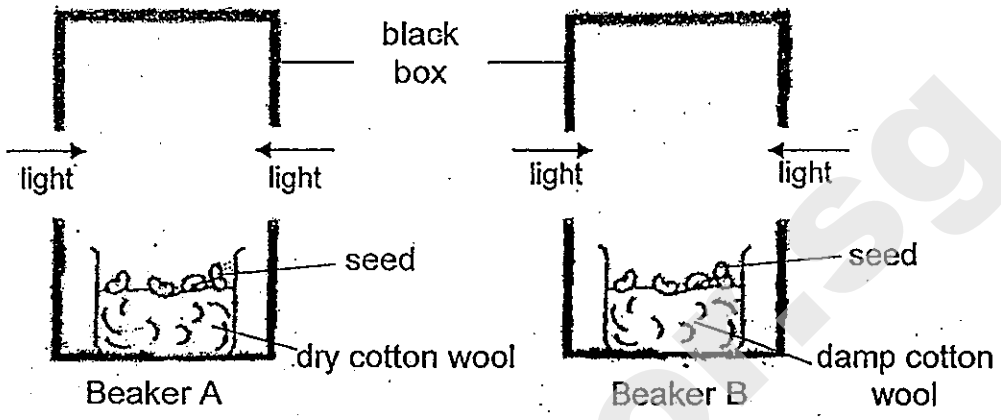
44. An equal number of seeds were put in identical glass beakers, Beaker A and Beaker B, each with an equal amount of cotton wool. The two beakers were placed in black boxes made of the same material near an open window.



(a) In which beaker, Beaker A or Beaker B, would the seeds most likely germinate? Explain why. [1]

_____

_____

(b) How would you know that the seeds have germinated? [1]

_____

End of Paper

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ANSWER SHEET

EXAM PAPER 2013
SCHOOL : TAO NAN
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA1

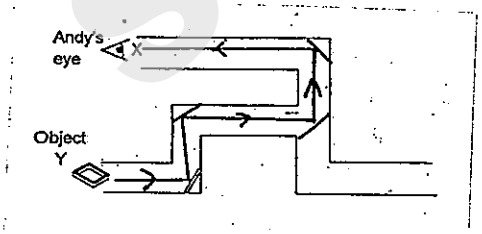
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
3	3	4	4	1	3	4	1	1	3	3	3	4	4	1	2	3

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	3	4	4	2	1	2	4	4	3	3	1	2

31)a)They belong to the mammals group.
b)They have air and they give birth to their young alive.

32)a)As the light increases, the temperature also increases.
b)Plant X grows better at location P as the temperature of the plant is lower than that at position Q and at location P, the exposure to light for the plant is lower compared to the exposed of light at position Q.

33)a)



b)Light travels in a straight line.

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34)a)The changed variable is the distance of the man from the street lamp.
b)As the man's distance from the lighted street lamp increases, the length of the man's shadow increases.

35)A→E→G→F→D→C→B

36)a)As the surface area of the leaf increases, the rate of water loss also increases.
b)Leaves with small surface area will lose less water and this will help the plants to survive longer in the desert where water is scarce.

37)a)W: Penis X: Testes Y: Ovary Z: Womb
b)The fertilised egg develops in the womb.

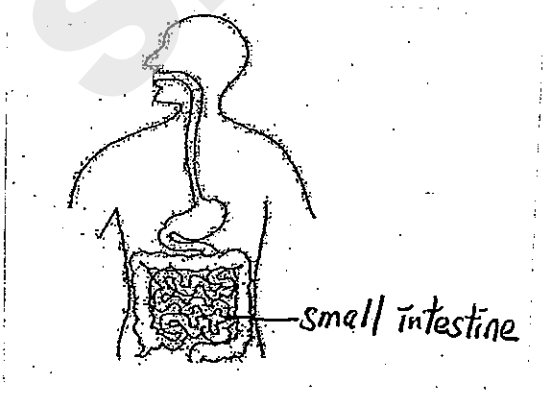
38)a)Not
F
Not
b)The plants in Pot B had light to make their own food but the plants in Pot A did not therefore plants in Pot A grow more slowly than those in Pot B from Day 5 to 7.

39)a)She can conclude that the lighter the mass of the seed, the further the seed will travel.
b)It was to make the experiment a fair test.
c)She can repeat the experiment at least three times to make sure that her results are reliable.

40)a)They are grouped according to the way they reproduce.
b)F , Not
c)Insects are attracted to flowers as they can get nectar from the flowers.

41)a)Plant cell: Cell Y.
Animal cell: Cell Y.
b)It is the cell wall.
c)It keeps the shape of the cell.

42)a)



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42)b)The digested food goes in the bloodstream to provide food for the rest of the body.

c)It is the mouth.

43)a)It is evaporation.

b)The water from the wet T-shirt will evaporate into warm water vapour which will rise and touch the cooler surface of the surrounding air and condense into tiny water droplets which will eventually join together with other tiny water droplets and form clouds and fall as rain.

44)a)Beaker B. It has all the variables, warmth, oxygen and water needed for germination.

b)You would know that the seeds have germinated when the roots and the shoots have grown.

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Anglo-Chinese School (Primary)

END-OF-YEAR EXAMINATION 2013
SCIENCE
PRIMARY FIVE
BOOKLET A

Name: _____ ( ) **Class: Primary 5** ___

Date: 28 October 2013 **Duration of paper: 1h 45 min**

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 25 printed pages including this cover page.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all the questions in this booklet.
5. Shade your answer on the Optical Answer Sheet (OAS) provided.

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For each question from **1** to **30**, four options are given. One of them is the correct answer.

Make your choice and shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

(60 marks)

1 In the table below, P, Q and R represent the characteristics of some animals.
A tick (√) indicates that the animals listed in the table below have the characteristic(s).

Characteristics / Animals	P	Q	R
Cockroach	√		√
Frog		√	√
Grasshopper	√		√

Which of the following best represent the headings for P, Q and R?

	P	Q	R
(1)	Has six legs	Lay eggs in water	Has a 3-stage life cycle
(2)	Has a 3-stage life cycle	Lay eggs in water	Has six legs
(3)	Has a 4-stage life cycle	Has six legs	Lay eggs in water
(4)	Has six legs	Has a 4-stage life cycle	Lay eggs in water

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(Go on to the next page)

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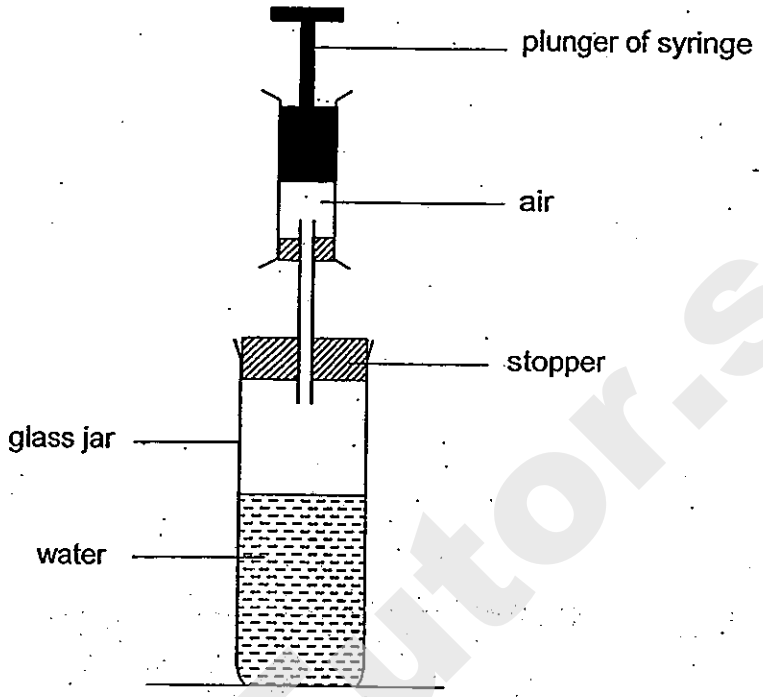
2 A syringe was connected to a glass jar as shown in the diagram below. The capacity of the jar is 300 cm^3. The jar contained 250 cm^3 of water and the syringe contained 10 cm^3 of air.



When the plunger of the syringe was pushed in completely, 10 cm^3 of air was forced into the jar. What was the volume of air in the jar after the plunger of the syringe had been pushed in completely?

(1) 10 cm^3

(2) 50 cm^3

(3) 260 cm^3

(4) 300 cm^3

(Go on to the next page)

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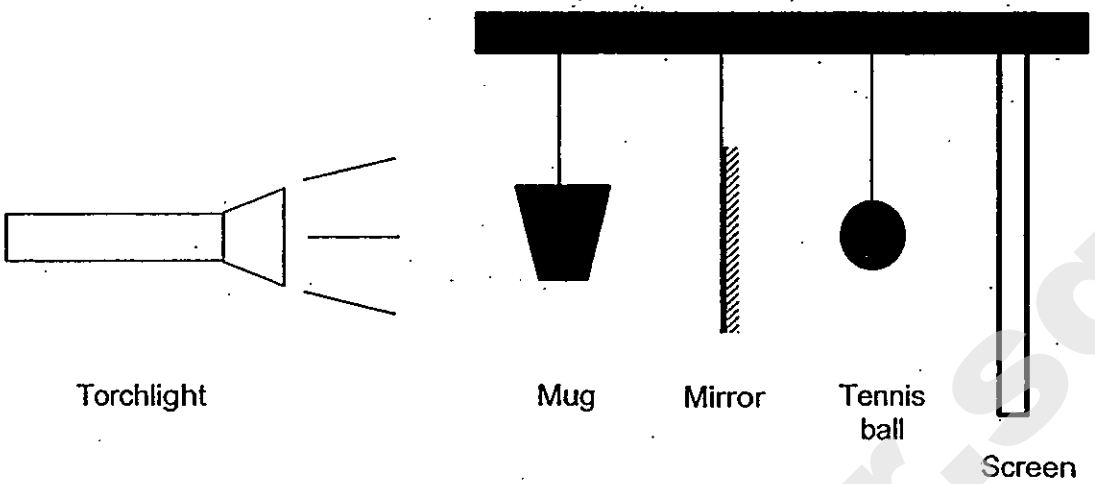
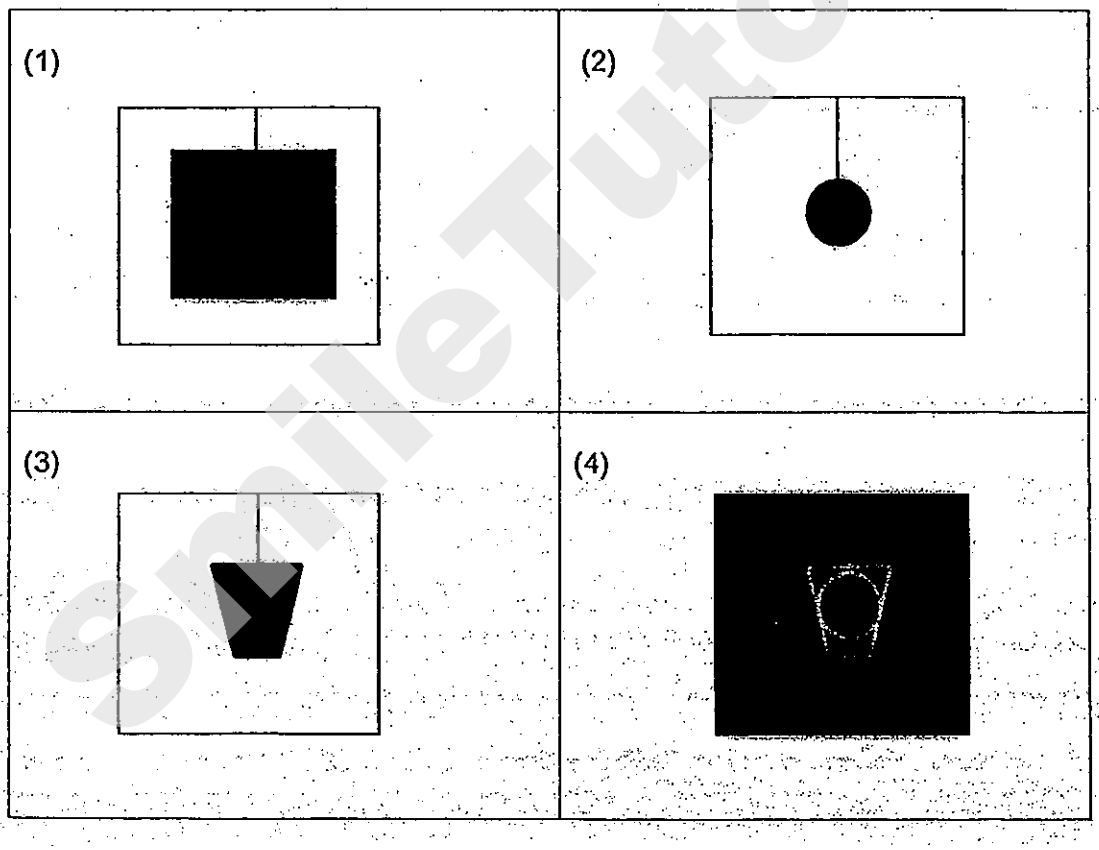
3 A torch was shone at three objects hanging by strings as shown in the diagram below.



Which one of the following shadows will most likely be formed on the screen?



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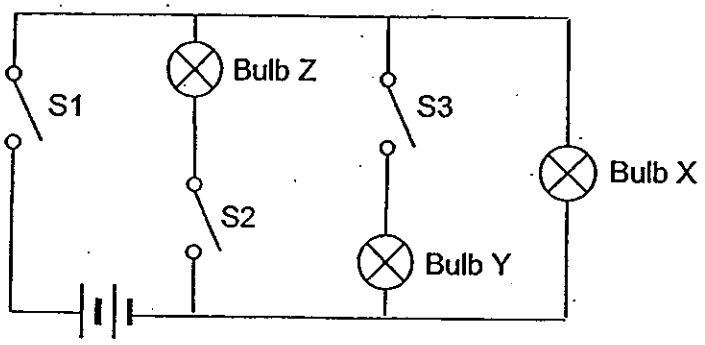
4 Study the circuit diagram below.



In which order must the switches be closed so that Bulb X lights up first, followed by Bulb Y and then Bulb Z?

	First	Second	Third
(1)	S1	S2	S3
(2)	S2	S3	S1
(3)	S3	S2	S1
(4)	S1	S3	S2

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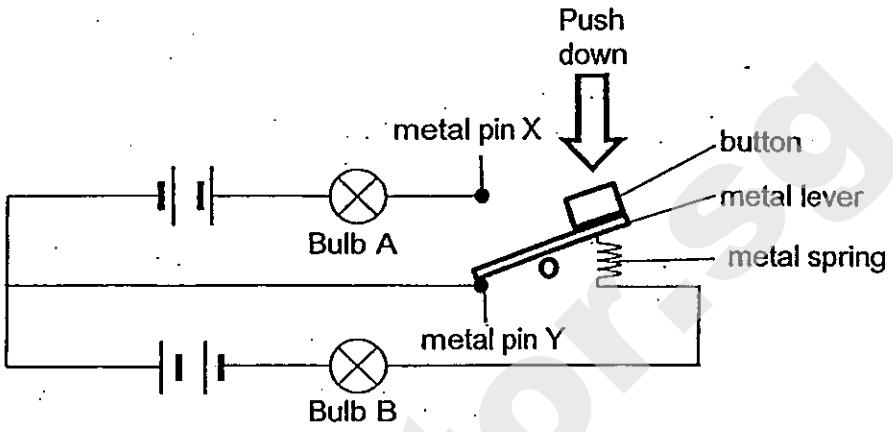
5 The electric circuit in the diagram below consists of two identical bulbs and four identical batteries. At first, Bulb A was unlit while Bulb B was lit with a brightness of 10 units. When the button is pushed downwards as shown by the arrow, the metal lever moves upwards to touch metal pin X.



How much would Bulb A and B be lit when the button is pushed down?

	Bulb A	Bulb B
(1)	Brighter than 10 units	Brighter than 10 units
(2)	0 unit	0 unit
(3)	10 units	10 units
(4)	10 units	0 unit

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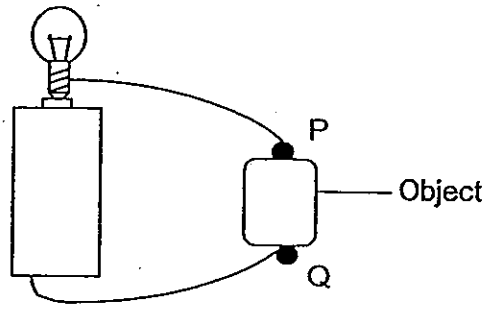
6 Terry set up an electric circuit as shown in the diagram below. He connected three different objects, A, B and C, each made from a different material but of the same size. The objects were connected, one at a time, at the points P and Q, and left in the circuit for 20 minutes each.



The table below shows the observations he made.

Object	Did the bulb light up?	Was the object hot?
A	Yes	No
B	No	No
C	Yes	Yes

Based on the observations above, Terry made some conclusions.
Which one of the following conclusions is most likely to be correct?

(1) Object A is an insulator of electricity.

(2) Object B is a conductor of electricity.

(3) Object C gives off less heat than Object A.

(4) Objects A and C are conductors of electricity.

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7 The table below shows whether a specific part of a cell is present or absent in three different types of cells, P, Q and R.

A tick (√) indicates that the specific part of a cell listed in the table below is present in that type of cell.

Cell part / Cell type	Nucleus	Cell Wall	Chloroplasts	Cell Membrane
P	√	√		√
Q	√	√	√	√
R	√			√

Based on the information from the table above only, which of the following statement(s) about P, Q and R is/are true?

A Q is most likely a plant cell.

B P is most likely an animal cell.

C R may be found in the leaf of a plant.

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

8 Which of the following statement(s) about the respiratory system is/are correct?

A The nose hairs trap dust.

B The respiratory system helps to remove carbon dioxide from the body.

C The main organs in the respiratory system consist of the nose, gullet, lungs, and diaphragm.

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

(Go on to the next page)

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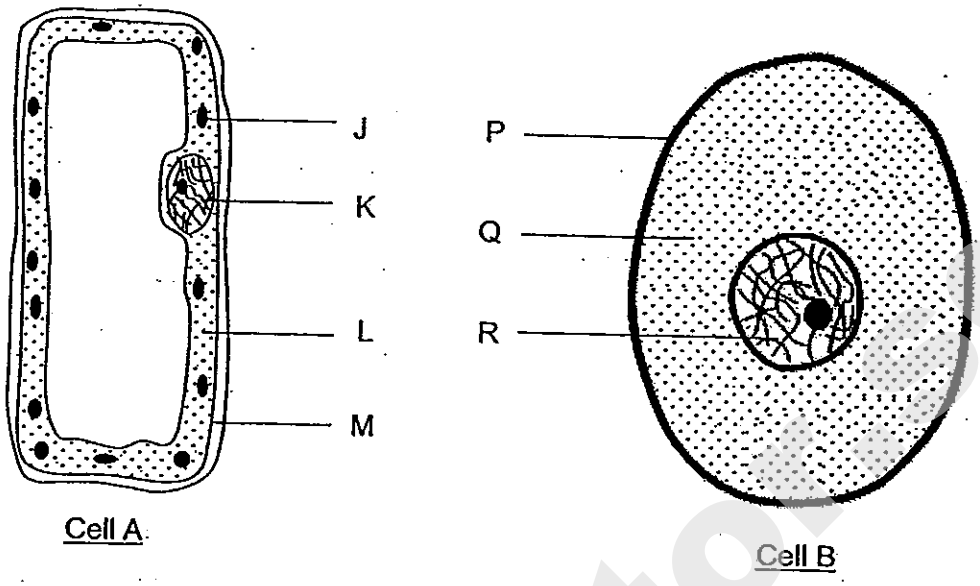
9 The diagrams below show the parts of two different cells, A and B.



Which parts of the cells are correctly matched to their functions?

	Parts	Functions
(1)	M and P	Give the cells their regular shape.
(2)	J and P	Control all the activities in the cells.
(3)	L and Q	Jelly-like substance where most cell activities take place.
(4)	K and R	Control the movement of substances in and out of the cells.

(Go on to the next page)

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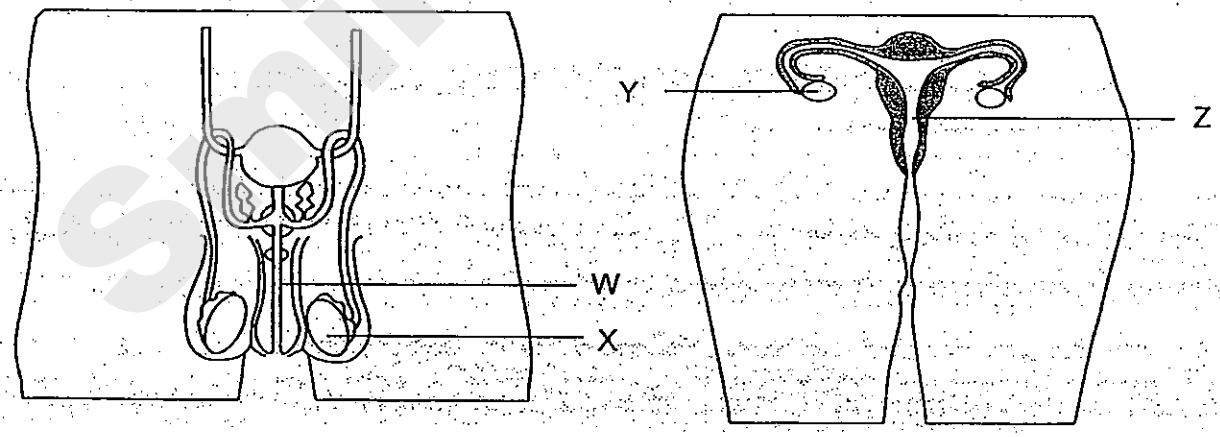
10 The table below shows the comparison between sexual reproduction in flowering plants and humans.

	Flowering Plants	Humans
Male reproductive cell	W	Y
Female reproductive cell	X	Z

Which of the following correctly represent W, X, Y and Z?

	W	X	Y	Z
(1)	sperm	ovule	pollen grain	womb
(2)	anther	stigma	sperm	egg
(3)	pollen grain	ovule	sperm	egg
(4)	pollen grain	style	anther	womb

11 The diagrams below show the male and female reproductive parts of a human.



Which parts of the systems produce the reproductive sex cells?

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

(Go on to the next page)

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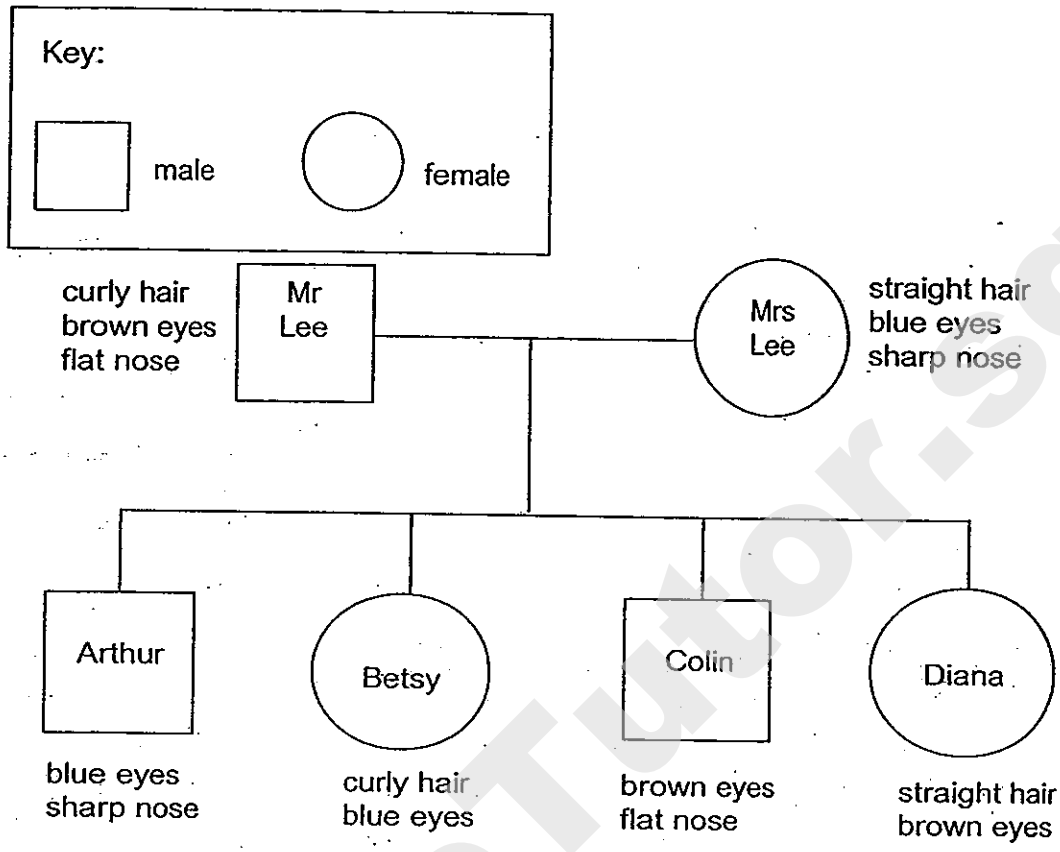
12 Study the family tree of the Lee family below. A brief description of the physical characteristics of the different family members is given.



Based on the information above, which of the four children inherited exactly two characteristics from one of their parents?

(1) Betsy and Diana only

(2) Arthur and Betsy only

(3) Arthur and Colin only

(4) Arthur, Betsy, Colin and Diana

13 Which of the following characteristics can be passed down from parents to their young?

A Fingerprint

B Length of hair

C Attached earlobes

D Tongue-rolling ability

(1) A and B only

(2) C and D only

(3) B, C and D only

(4) All of the above

(Go on to the next page)

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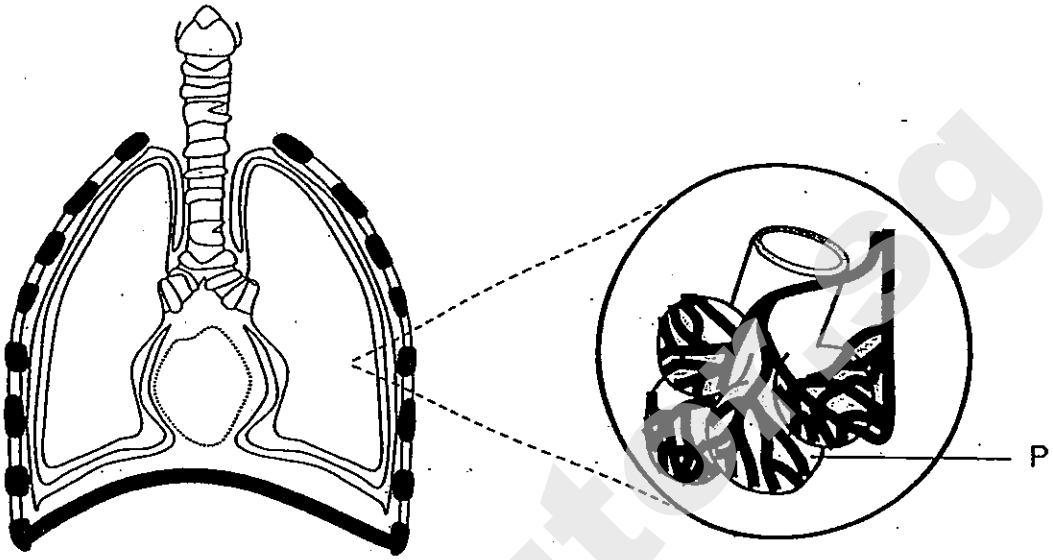
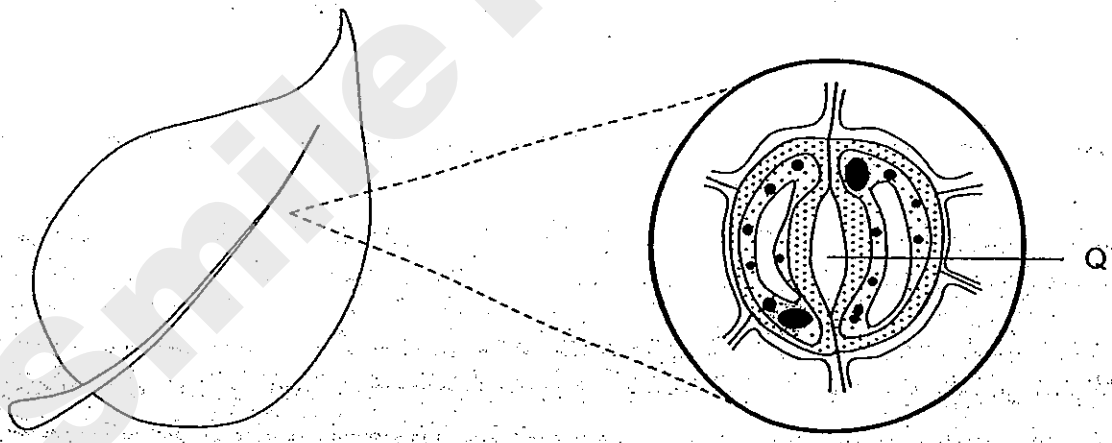
14 The diagrams below show a part of the human respiratory system, P, and a part of the underside of a leaf, Q.



Human respiratory system



Underside of a leaf

Based on the diagrams above, which of the following statement(s) about P and Q is/are true?

A Air is stored in P and Q.

B Q makes food for the plant.

C Gaseous exchange occurs at P and Q.

(1) A only

(2) C only

(3) A and B only

(4) B and C only

(Go on to the next page)

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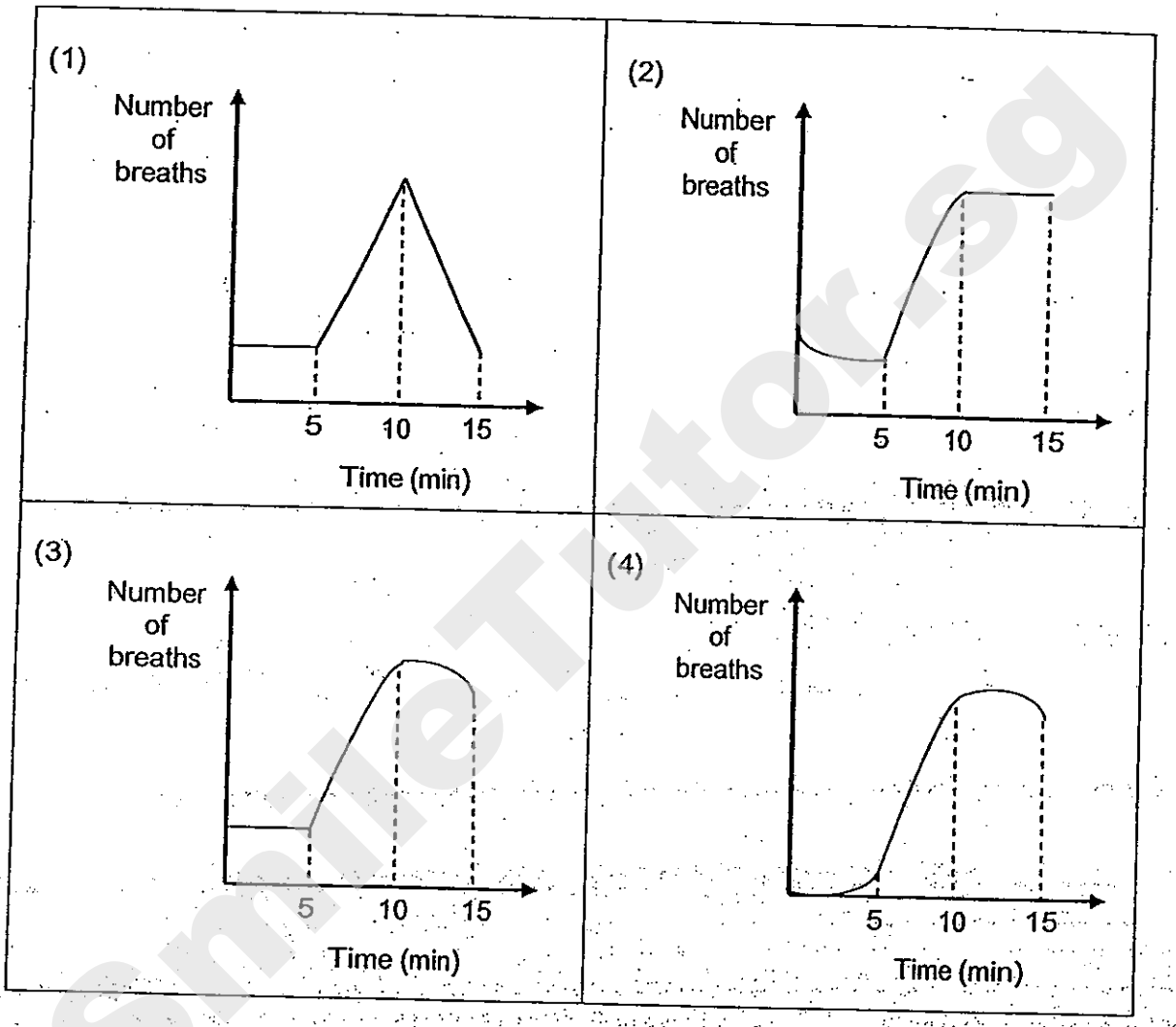
15 Raphael recorded his breathing rate while he was at rest for five minutes. He then started to run for five minutes. He then stopped running and rested for five minutes. His breathing rate was continuously measured for an entire 15 minutes.

Which one of the following graphs most likely represents a change in his breathing rate before, during and after the run?



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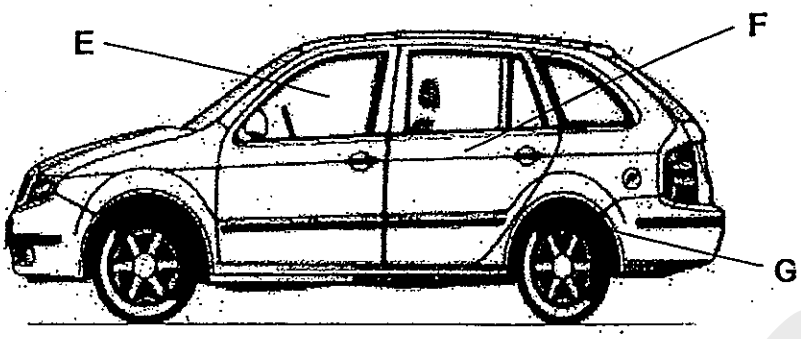
16 The diagram below is a picture of a car. Different parts of the car are made of different material.



Which one of the following materials are best suited for making parts E, F and G of the car?

	E	F	G
(1)	Metal	Glass	Rubber
(2)	Glass	Rubber	Metal
(3)	Glass	Metal	Rubber
(4)	Rubber	Glass	Metal

17 Study the pictures of the leaves below.

Four students made comments about the leaves.

Alex: Each of them has a leaf stalk.

Bobby: Leaf A and Leaf C have network veins, but not Leaf B.

Charlie: Leaf B is narrow in width while Leaf A and C are not.

Danny: They have entire edges.

Which students had made the right comments?

(1) Alex and Charlie only

(2) Alex and Danny only

(3) Alex, Bobby and Charlie only

(4) Alex, Bobby, Charlie and Danny

(Go on to the next page)

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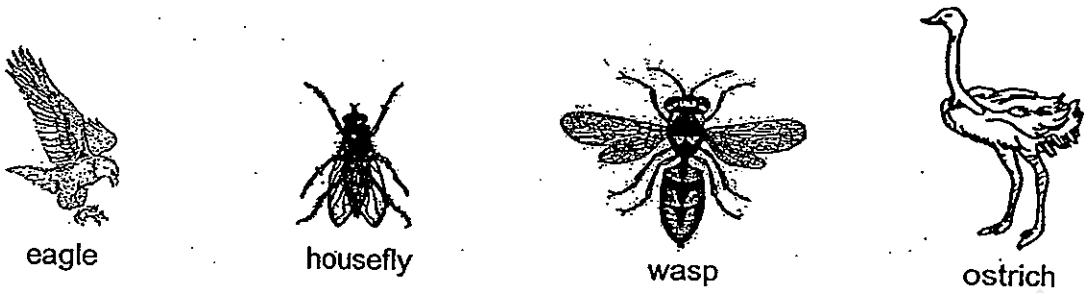
18 Study the pictures below.



Based on the observation of the diagrams and your knowledge about them, what are the common characteristics of the four living organisms?

A All of them can fly.

B All of them have wings.

C All of them reproduce by laying eggs.

(1) B only

(2) A and C only

(3) B and C only

(4) A, B and C only

19 Which of the following processes take place at a constant temperature?

A Boiling

B Melting

C Freezing

D Evaporation

E Condensation

(1) D and E only

(2) A, B and C only

(3) B, C and D only

(4) None of the above

(Go on to the next page)

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20 Which of these statements about the evaporation and boiling of pure water are correct under normal conditions?

A Boiling requires heat while evaporation does not.

B Boiling produces steam while evaporation produces water vapour.

C Evaporation rate is affected by the exposed surface area of water while boiling rate is not.

D Evaporation can take place at room temperature while boiling can only take place at 100°C.

(1) A and B only

(2) C and D only

(3) B, C and D only

(4) All of the above

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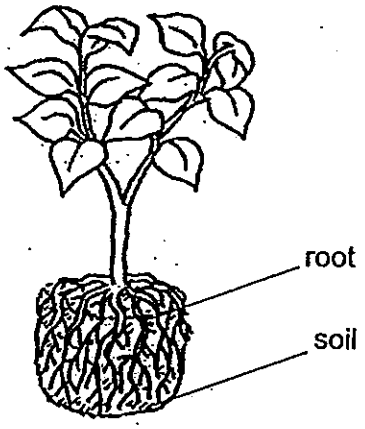
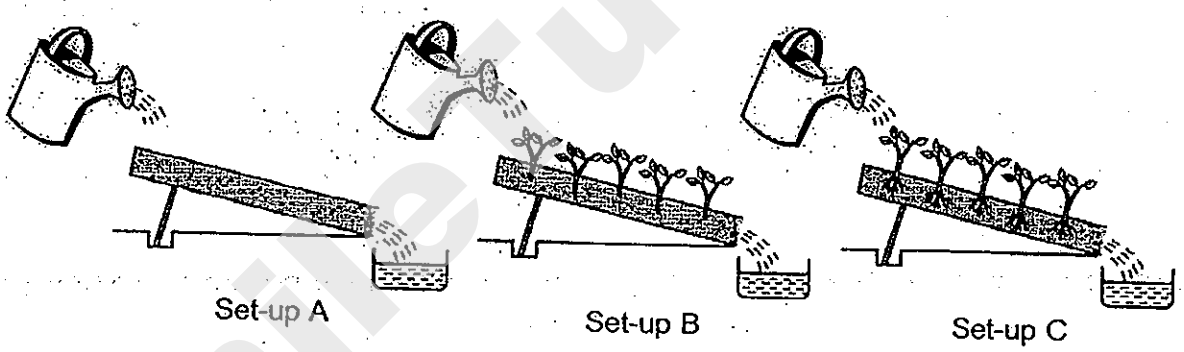
21 The diagram below shows that roots of the plant hold on to the soil firmly. By doing so, it reduces the amount of soil being washed off a slope when it rains.



Alex carried out an experiment to find out if the roots of the plant reduce the amount of soil being washed off a slope. At the start, 1000 g of soil was placed in three identical trays slanted at an angle. Five plants without roots were planted in set-up B while five plants with roots were planted in set-up C. All plants were of the same type and height.



Equal amounts of water was poured onto the set-ups as shown above. The amount of soil left in each tray is dried and weighed. Predict the amount of soil left in the tray at the end of the experiment for each set-up.

	Amount of soil left in set up A (g)	Amount of soil left in set up B (g)	Amount of soil left in set up C (g)
(1)	710	950	740
(2)	700	750	950
(3)	980	760	980
(4)	950	950	760

(Go on to the next page)

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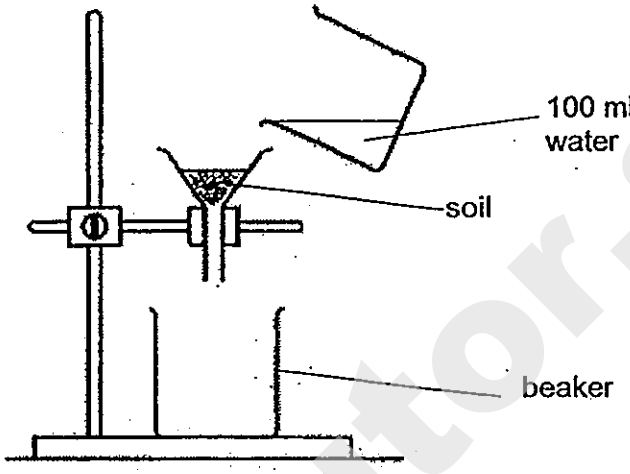
22 Steven wanted to conduct an experiment to find out how different types of soil affect the rate at which water seeps through them when it rains. He set up the experiment as shown below and poured 100 ml of water to the different soil and measured the amount of water collected in the beaker after 30 minutes.



The result was recorded in the table below.

Type of Soil	Amount of water collected in the beaker after 30 minutes (ml)
A	75
B	33
C	58
D	90

Which soil, A, B, C or D, is the worst at slowing down the rate of water seeping through it?

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

(Go on to the next page)

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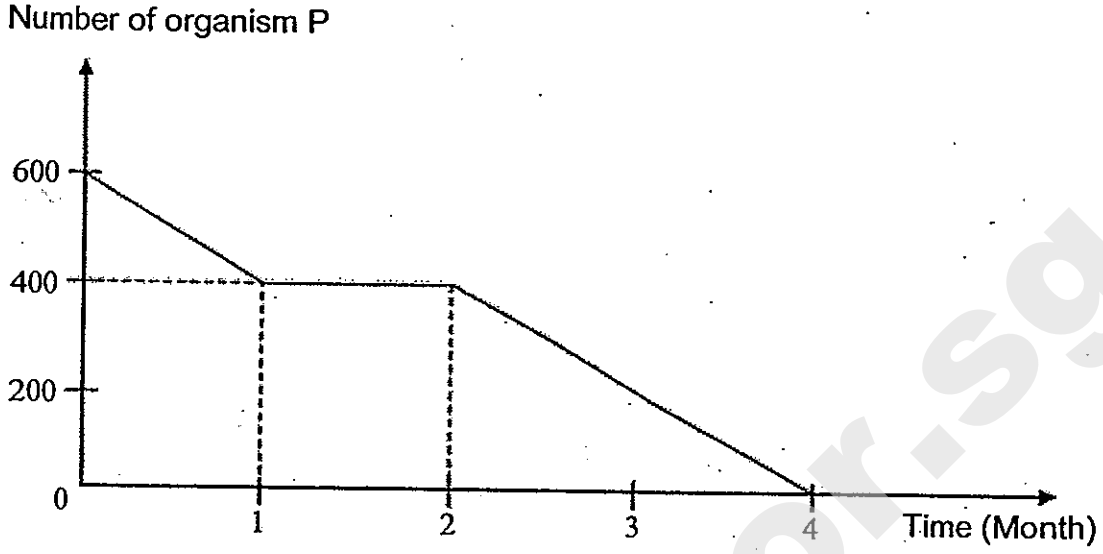
23 The line graph below shows the change in population size of organism P over a period of four months. The number of organism P at the beginning was 600.



Based on the graph only, which one of the following statements is correct?

(1) The number of P decreased every month.

(2) The number of P remained the same for a month.

(3) The whole population of P died eventually due to a disease.

(4) The highest number of P was recorded at the end of the first month.

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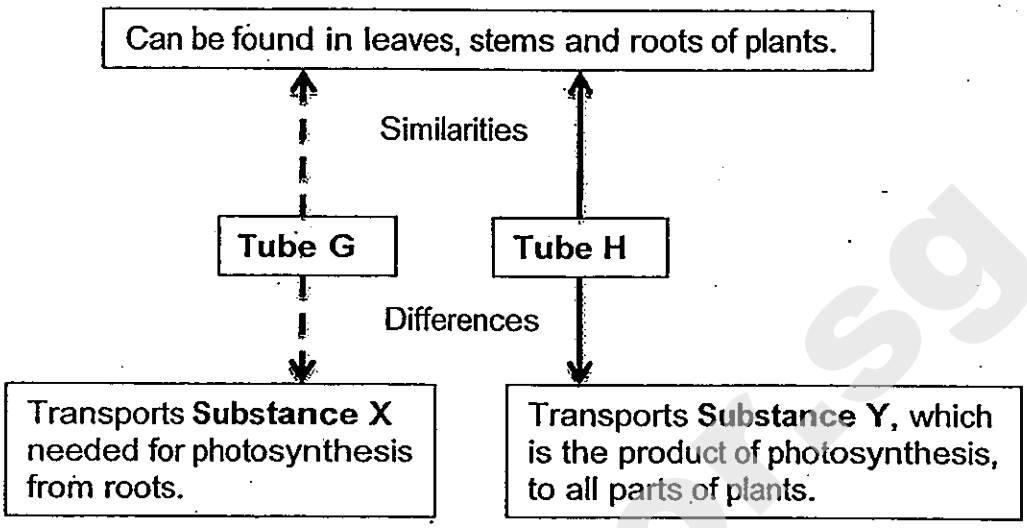
24 The diagram below represents the similarities and differences of the tubes found in a plant transport system.



Which one of the following correctly identifies G, H, X and Y?

	Tube		Substance	
	G	H	X	Y
(1)	food-carrying	water-carrying	food	water
(2)	water-carrying	food-carrying	food	water
(3)	food-carrying	water-carrying	water	food
(4)	water-carrying	food-carrying	water	food

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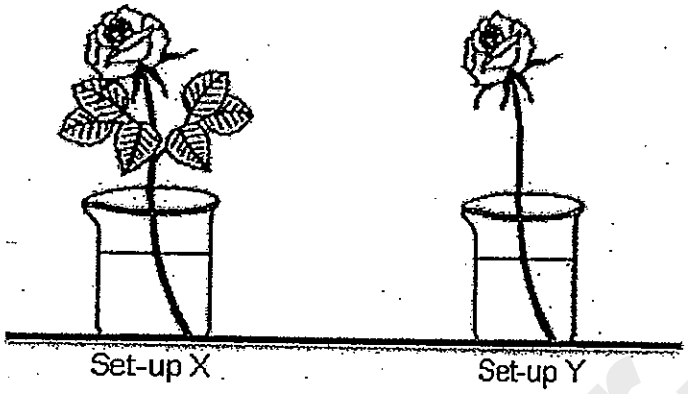
25 Two identical plants with white flowers were placed in a beaker of water mixed with blue dye each as shown in the diagram below. The leaves of the plant in set up Y were removed while the plant in set up X has leaves. Both set ups were placed under the sun.



It was observed that both flowers turned blue. However, the flower in set-up X turns blue faster than the flower in set-up Y. What can you infer from this observation?

A The stem only transports water to the leaves.
B The water travel up the stems of the plant to the flower.
C The presence of leaves speeds up the transportation of water in plants.
D The presence of leaves does not affect the transportation of water in plants

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

(Go on to the next page)

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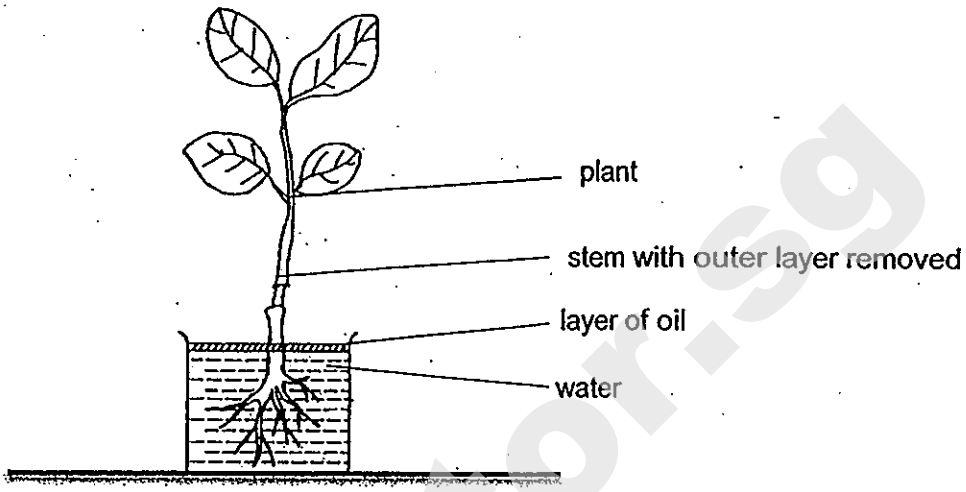
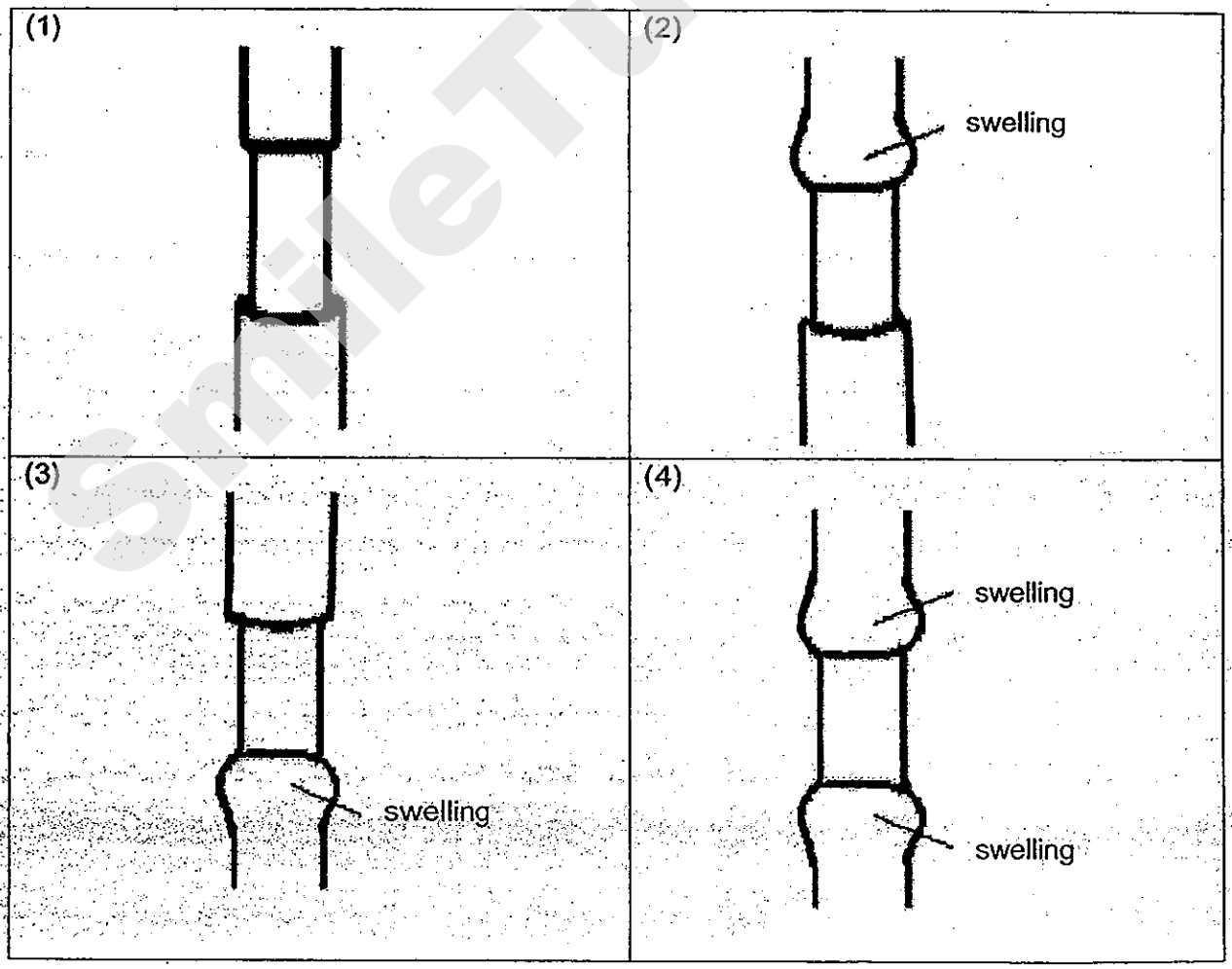
26 Lance wanted to find out what will happen when the food-carrying tubes have been removed from a section of the stem. He set up the experiment as shown below and carefully removed a ring of stem so that only the food-carrying tubes were removed. He left the plant near an open window for five days.



Predict what Lance will observe at the stem five days later.



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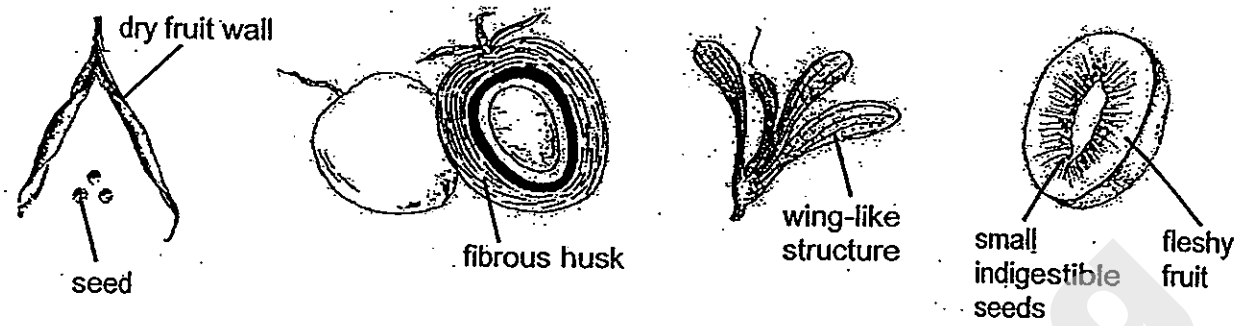
27 Observe the fruits below. Based on their characteristics that you can observe, identify their method of seed dispersal.



Fruit A **Fruit B** **Fruit C** **Fruit D**

	Seeds are dispersed by:			
	Animals	**Water**	**Splitting**	**Wind**
(1)	A	C	B	D
(2)	A	B	D	C
(3)	B	C	A	D
(4)	D	B	A	C

28 James placed an equal number of similar seeds into four dishes (P, Q, R and S). Each dish was exposed to different conditions as shown in the table below. A tick (✓) indicates the presence of the condition.

Dish	**Conditions**			
	Water	**Air**	**Light**	**Temperature (°C)**
P	✓		✓	30
Q	✓	✓	✓	0
R	✓	✓		30
S		✓	✓	0

In which of the dishes will the seeds germinate?

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

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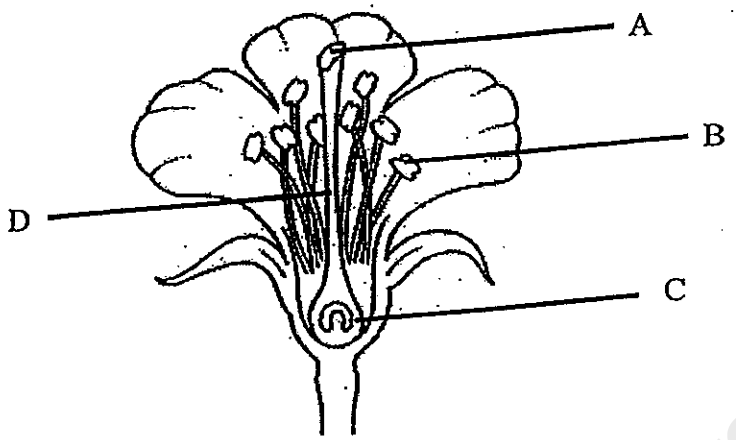
29 The diagram below shows the cross-section of a flower.



Which is the correct label for the parts A, B, C and D?

	A	B	C	D
(1)	Anther	Stigma	Style	Ovary
(2)	Ovary	Style	Anther	Stigma
(3)	Stigma	Anther	Ovary	Style
(4)	Ovary	Style	Stigma	Anther

(Go on to the next page)

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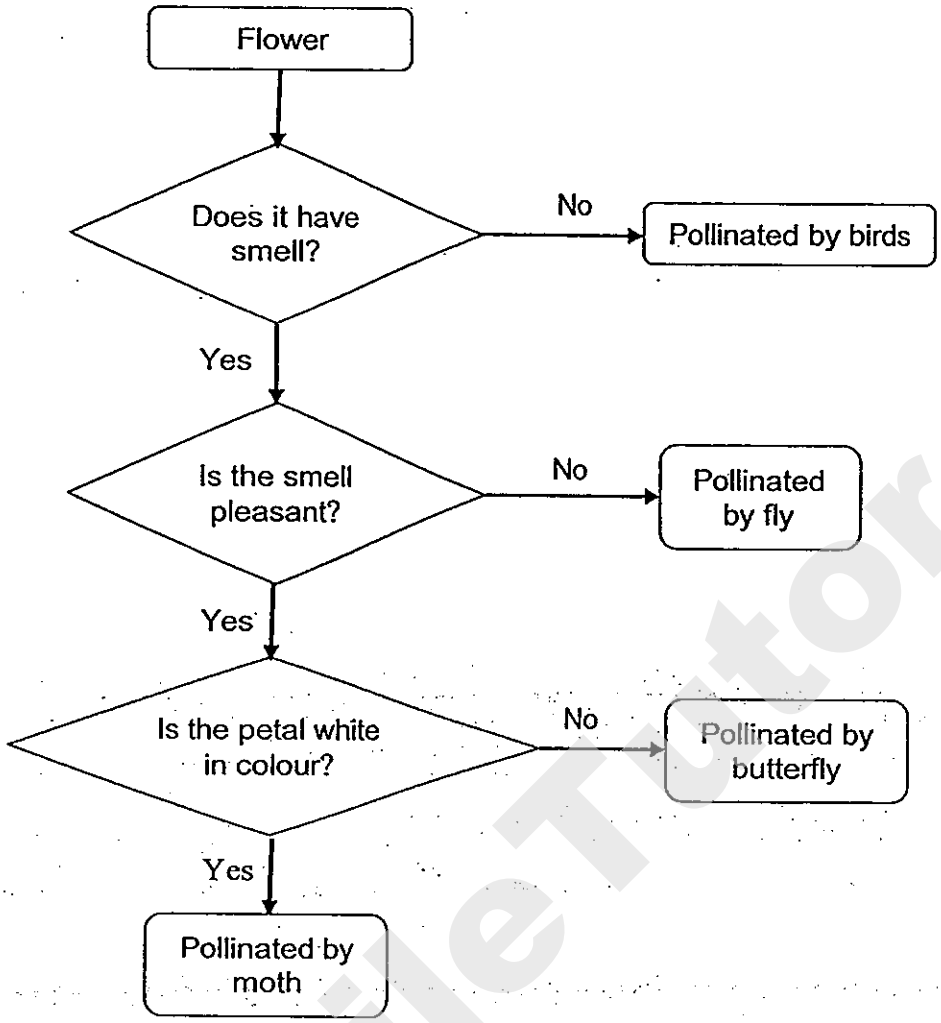
30 Study the flowchart below. It describes the general characteristic of the flowers that are pollinated by different animals.



Plant X has flowers with white petals and sweet fragrance.

Which animal is most likely to pollinate the flowers of plant X?

(1) Fly
(2) Bird
(3) Moth
(4) Butterfly

End of Booklet A

Check your answers carefully.

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Anglo-Chinese School (Primary)

END-OF-YEAR EXAMINATION 2013
SCIENCE
PRIMARY FIVE
BOOKLET B

Name:_____( ) **Class: Primary 5** ___

Date: 28 October 2013

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 16 printed pages including this cover page.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all the questions in this booklet.

BOOKLET	MAXIMUM MARKS	MARKS OBTAINED
A	60	
B	40	
Total	100	

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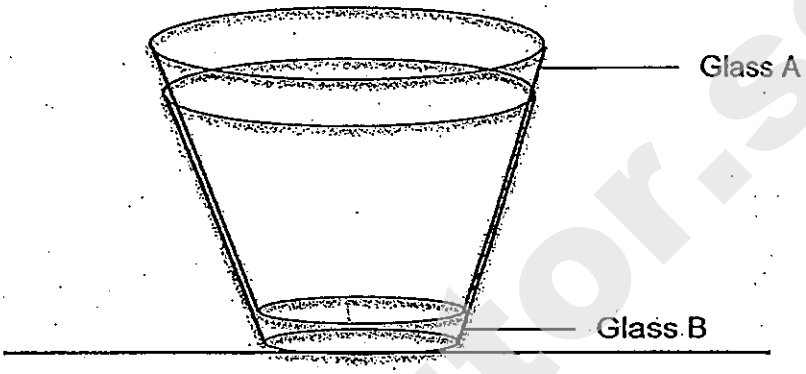
For questions **31** to **44**, write your answers in the spaces provided.

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

(40 marks)

---

31 Ronald found two identical glasses that are stuck together as shown in the diagram below.



(a) Describe what Ronald can do to separate the two glasses without breaking them. [1]

_____

_____

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

_____

_____

Once the two glasses were separated, Ronald then used the two glasses, A and B, to conduct another experiment to study the difference between heat and temperature. The table below provides the details of the set-ups that he used for his experiment.

Set-up / Variables	Glass A	Glass B
Volume of water (ml)	200	100
Temperature of water (°C)	70°C	70°C
Temperature of surrounding (°C)	30°C	30°C

(Go on to the next page)

Score	/ 2

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(c) Ronald predicted that the two glasses of water will cool down at the same rate since both of them were filled with water of the same temperature.

Do you agree? Explain your answer. [2]

_____

_____

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Score	/ 2

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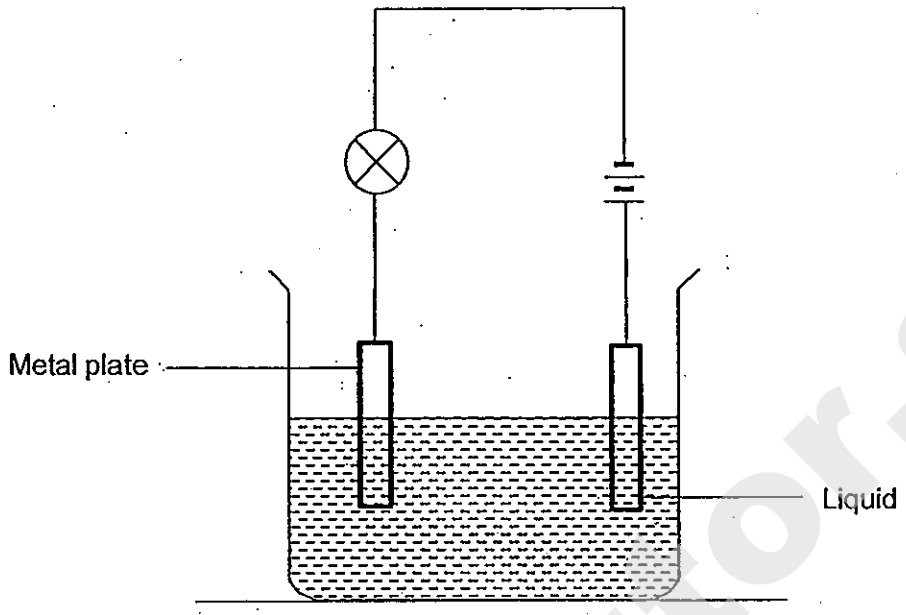
32 Samuel set up an experiment as shown in the diagram below to find out which liquids conduct electricity.



A similar set-up was used every time a new liquid was tested. He recorded whether the bulb lit up in the table shown below.

Liquids	**Did the bulb light up?**
Vinegar	Yes
Seawater	Yes
Pure water	No
Cooking oil	No

(a) State one variable that must be kept constant so that the experiment is a fair one. [1]

_____

_____

(b) Samuel inferred from his observation that vinegar is a better conductor of electricity than seawater. What could he have observed to make this inference? [1]

_____

_____

(Go on to the next page)

Score	/ 2

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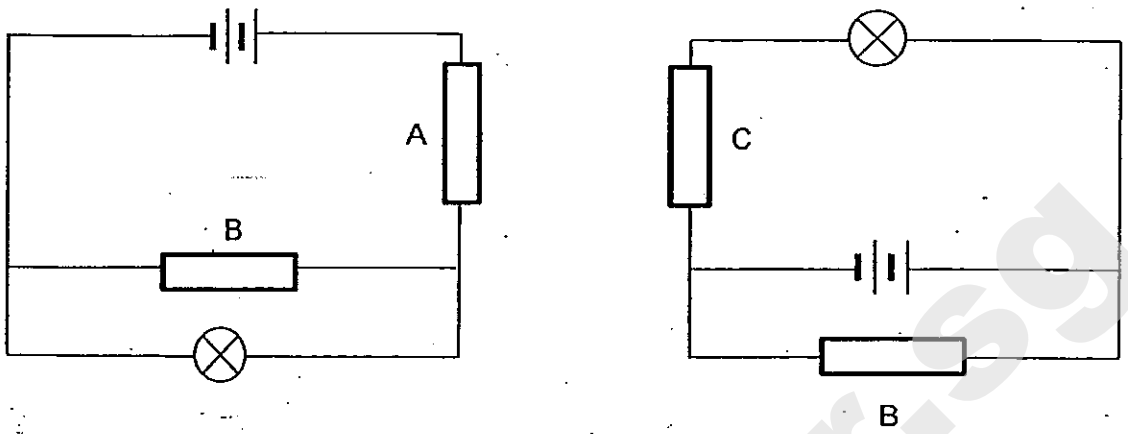
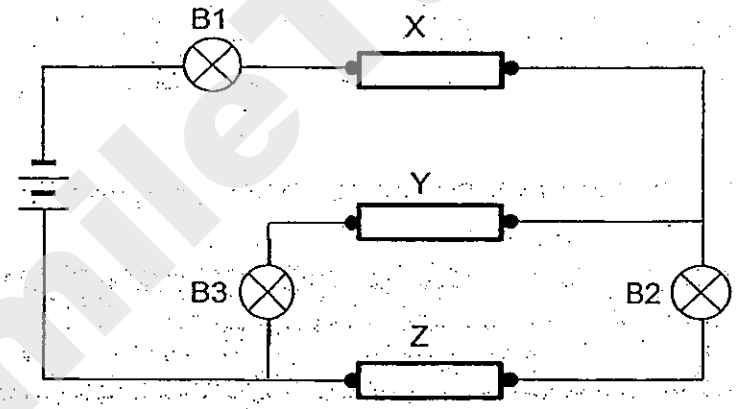
33 Three different types of rods, A, B and C, of the same size were placed in two electric circuits as shown in the diagrams below. One of the rods is an insulator of electricity. The bulbs in both circuits lit up.



(a) Based on the diagrams above, which rod is an insulator of electricity? [1]

The three rods, A, B and C, were then placed at positions X, Y and Z in another electric circuit as shown below.



(b) Based on the diagram above, complete the table below. For each scenario, indicate which bulb(s) would light up by putting a tick (√) in the correct box. [2]

Scenario	Positions where rods were placed			Bulb(s) that would light up		
	Position X	Position Y	Position Z	B1	B2	B3
1	A	B	C			
2	C	A	B			

(Go on to the next page)

Score	/ 3

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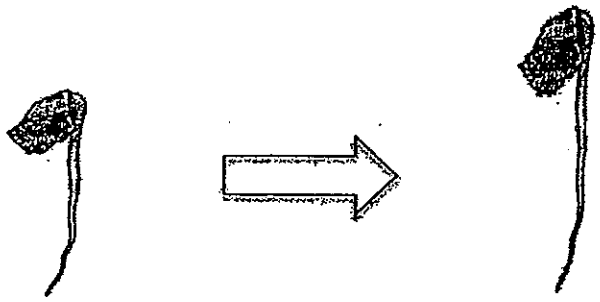
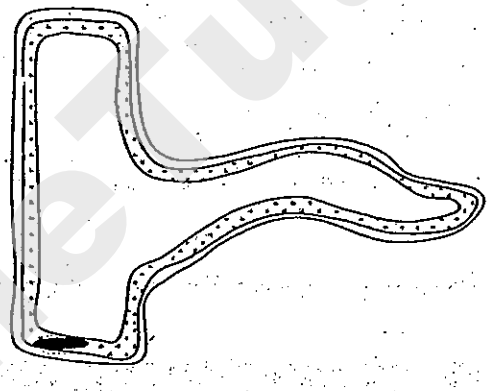
34 The diagram below shows a germinating seed with its root growing out. After several days, the roots became longer.



(a) What happens to the cells in the root as the root grows in length? [1]

The diagram below shows the image of a root cell when observed under a microscope.



(b) Which part of a plant cell is missing in the root cell that can be found in a green leaf cell? [1]

(c) Explain why the cell part in **(b)** is not found in the root cell. [2]

(Go on to the next page)

Score	/ 4

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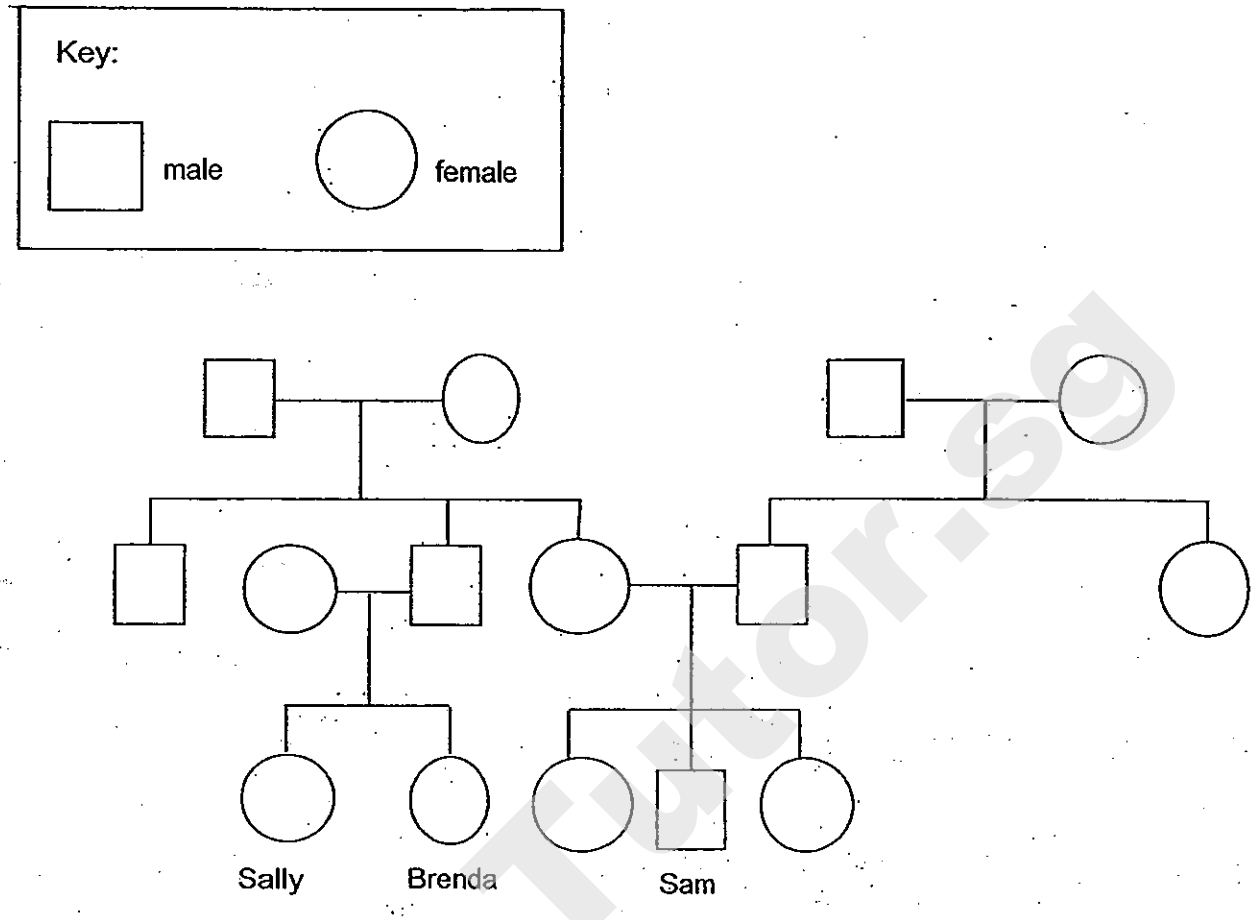
35 The diagram below shows the family tree of Sally, Brenda and Sam.



Based on the information above, put a tick (√) in the correct boxes to indicate whether the statements are True, False or Not possible to tell. [2]

	Statement	True	False	Not Possible to tell
(a)	Sam has two sisters.			
(b)	Brenda and Sally are twins.			
(c)	Sam's father has four nieces.			
(d)	Brenda's father and Sam's mother are siblings.			

(Go on to the next page)

Score	/ 2

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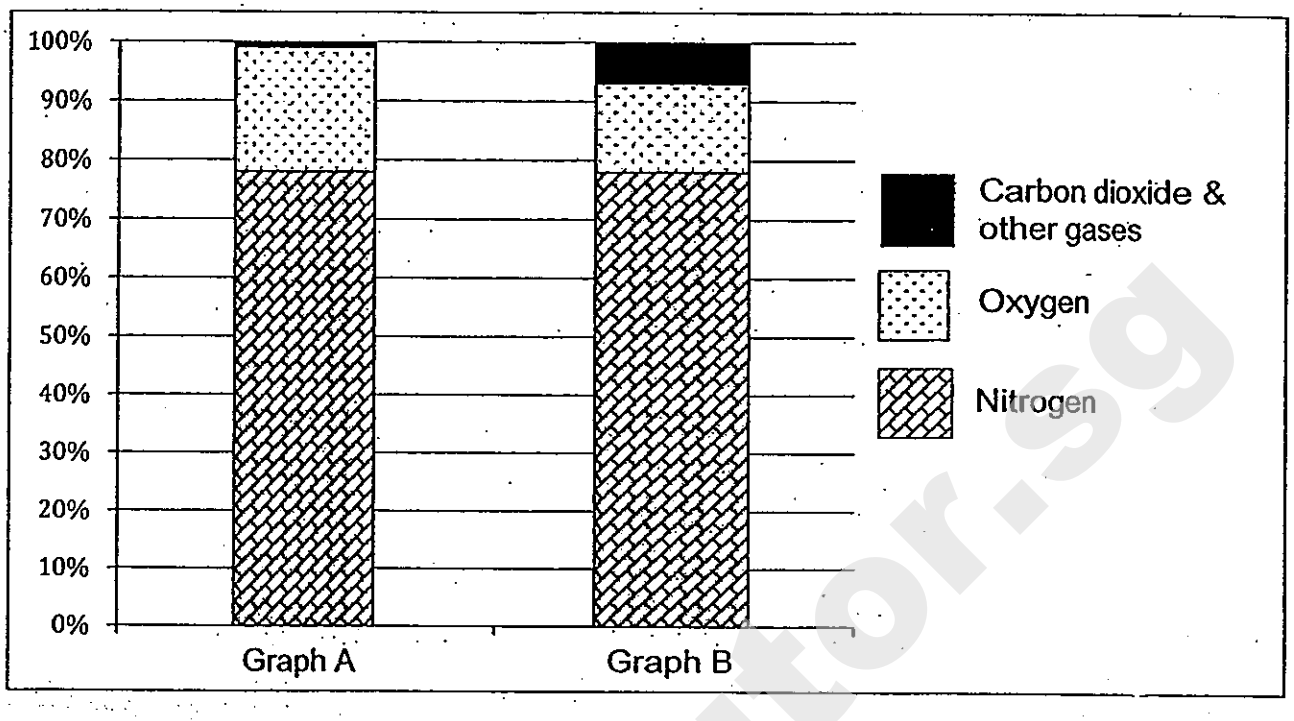
36. The bar graphs below show the composition of inhaled and exhaled air.



(a) Which bar graph, A or B, best represents the composition of inhaled air? Explain your choice. [1]

(b) Based on the graphs above, state one other difference between inhaled and exhaled air. [1]

(c) There is a part of the skeletal system that provides protection to one important part of the respiratory system.
What is this part of the skeletal system and which organ does it protect? [2]

(Go on to the next page)

Score	/ 4

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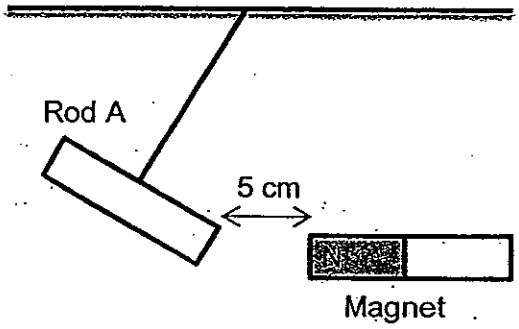
37 In Diagram 1, Rod A was tied to a string and the North Pole of a magnet is placed near it. Rod A moved away from the magnet as shown below.

Diagram 1

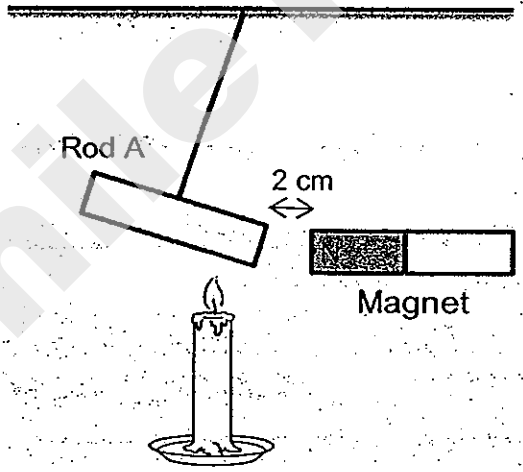


(a) Based on the observation above, what material is Rod A made of? [1]

_____

In Diagram 2, a flame is placed underneath Rod A and the North Pole of the same magnet is placed near it, however, this time the distance between Rod A and the magnet reduces.

Diagram 2



(b) Explain the observation in diagram 2. [1]

_____

_____

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Score	/ 2

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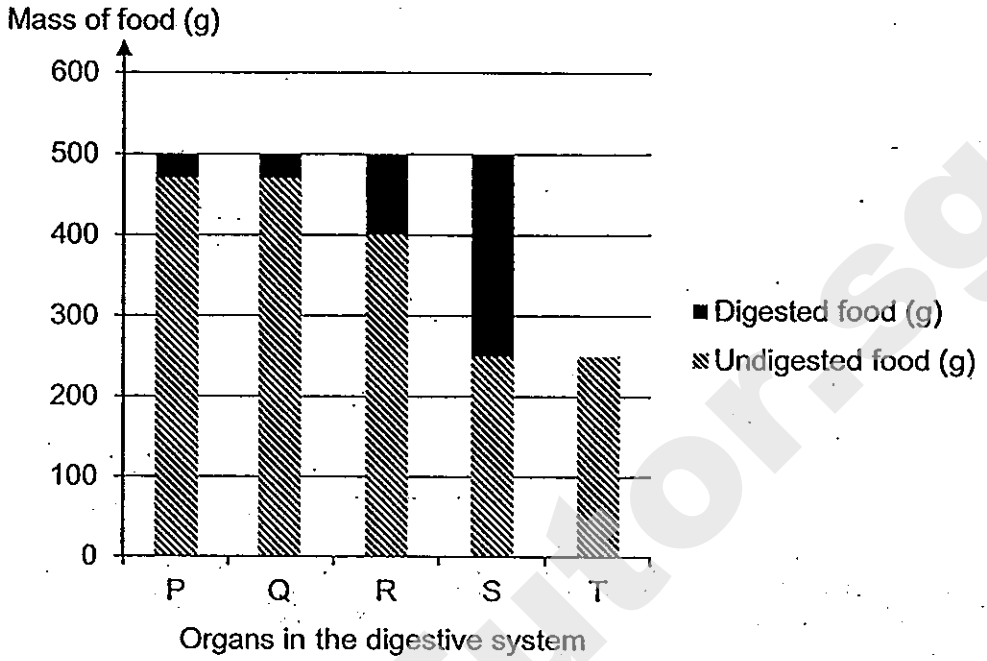
38 The graph below shows the amount of digested food in the different part of the digestive system.



(a) Based on the graph above, identify the organ(s) where digestion take(s) place by putting a tick (✓) in the correct box(es). [1]

Organs in the digestive system	Is there digestion taking place here?
Q	
R	
S	
T	

(b) What are the two functions of the small intestine in the digestive system? [1]

_____

_____

(Go on to the next page)

Score	/ 2

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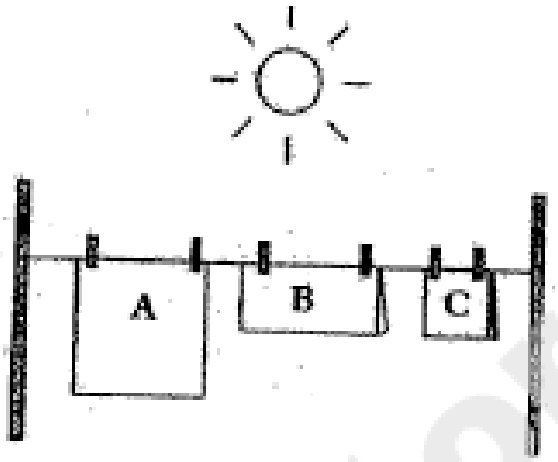
39 Sean wanted to conduct an experiment to find out if the amount of exposed surface area affects the rate of evaporation. Three identical towels of the same size and materials, each containing the same amount of water, were left hanging out in the open as shown in the diagram below. Towel A is fully opened up, towel B is folded once and towel C is folded twice.



After three hours, towel A is completely dried, towel B is still wet while towel C is the wettest. Sean recorded the mass of each towel at the start of the experiment and at the end of it. The results are shown in the table below.

	Mass at the start of experiment (g)	Mass after three hours. (g)
Towel A	300	80
Towel B	300	190
Towel C	300	250

(a) Based on the table above, what is the relationship between the exposed surface area and the rate of evaporation that Sean can infer from his experiment? [1]

_____

_____

(b) Name two other factors that affect the rate of evaporation. [1]

i. _____

ii. _____

(Go on to the next page)

Score	/ 2

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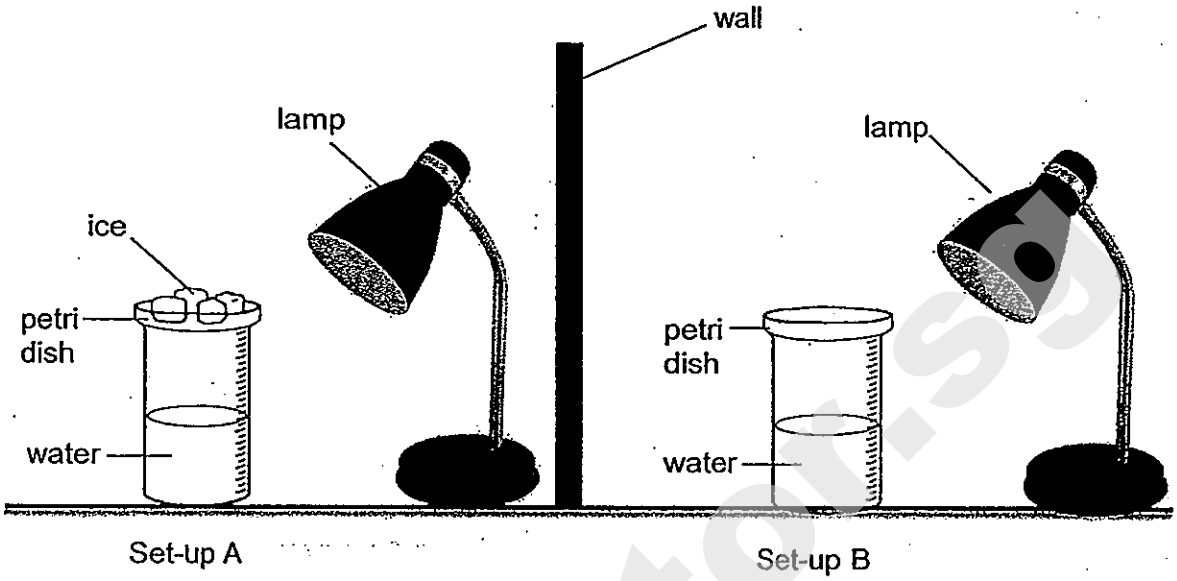
40 Jonathan prepared the two set-ups as shown below to demonstrate the formation of rain in the water cycle. The two lamps were switched on.



(a) Water droplets was formed at the base of the petri dish in set-up A.
Give an explanation for this observation. [2]

(b) There was no water droplets formed at the base of the petri dish in set-up B. Give an explanation for this observation. [1]

(Go on to the next page)

Score	/ 3

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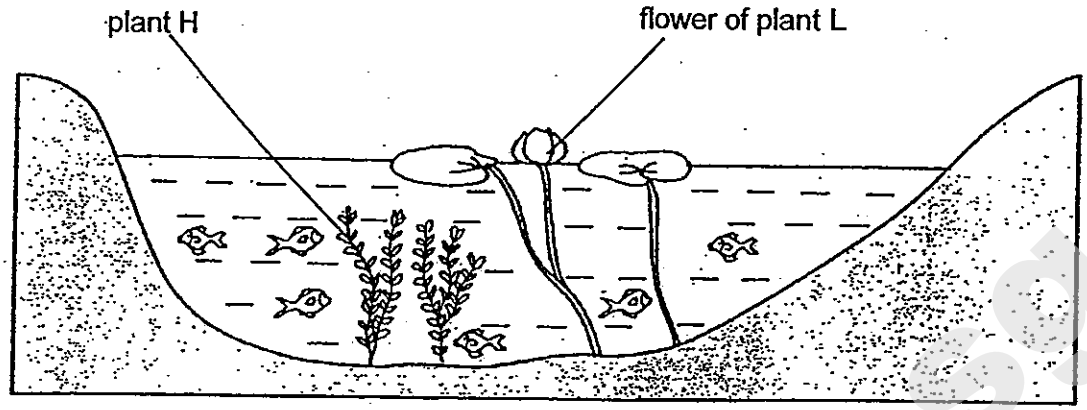
41 The diagram below is a picture of a pond.



(a) Besides providing oxygen for the fish in the pond, suggest two more reasons why plant H is important for the fish in the pond: [2]

_____

_____

_____

_____

(b) What will happen to the ovule of the flower of plant L after it has been fertilized? [1]

_____

_____

The seeds of plant L has waterproof outer layer.

(c) Explain how plant L disperses its seeds using the characteristic of the seed. [1]

_____

_____

(Go on to the next page)

Score	/ 4

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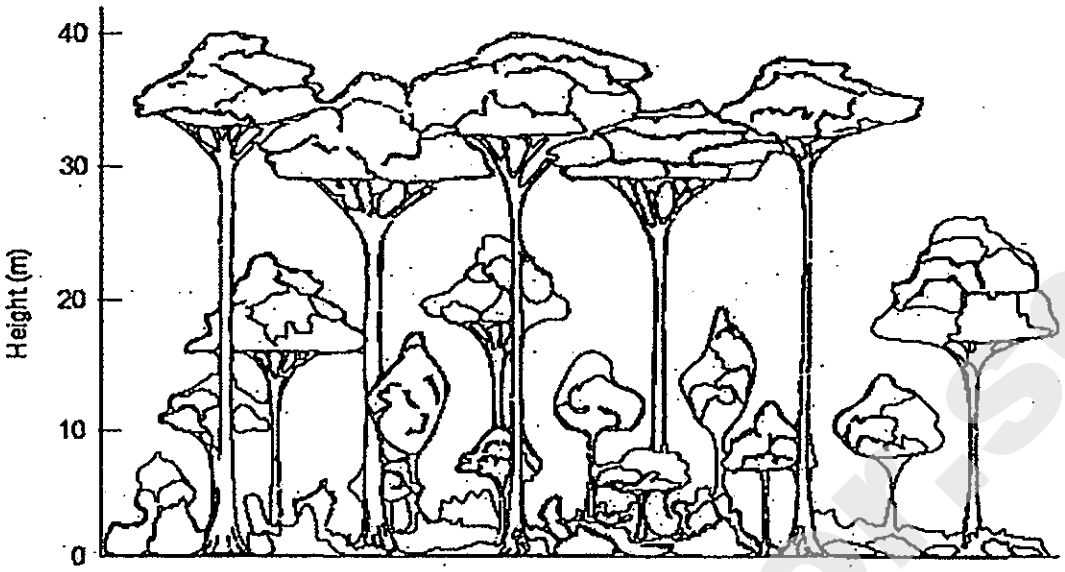
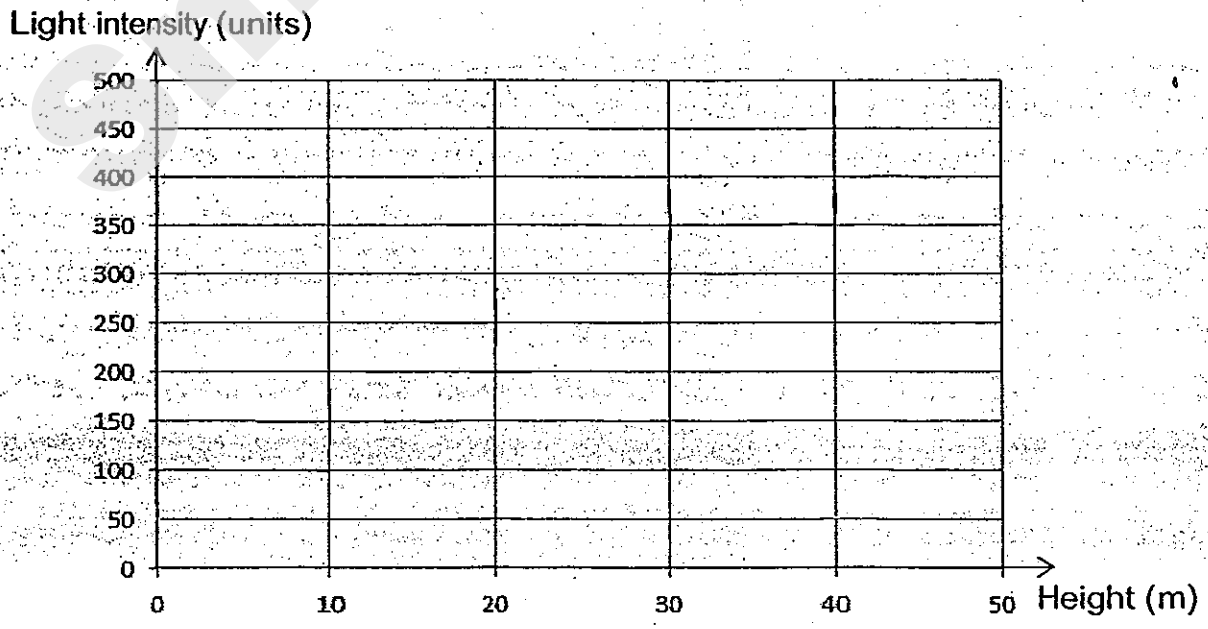
42 The diagram below shows part of a rainforest.



George wanted to investigate the amount of light at different heights in the rainforest. The table below is the result he collected.

Height (m)	Light intensity (units)
0	50
10	150
20	250
30	350
40	450

Plot a line graph using pencil and ruler to represent the data collected by George. [2]



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Score / 2

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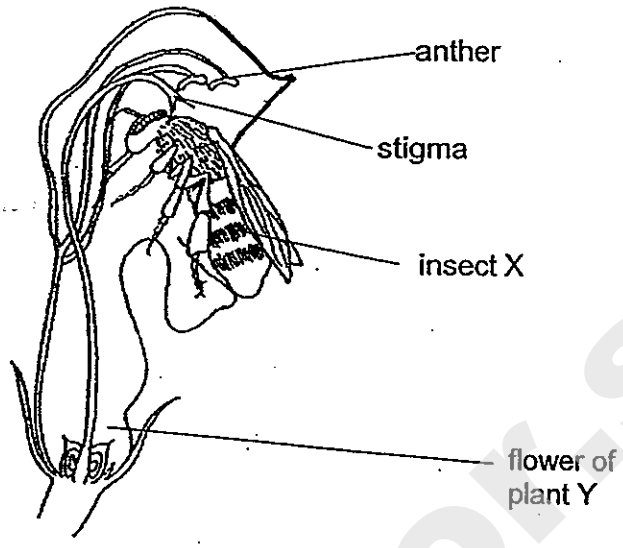
43 The diagram below shows insect X feeding on the nectar from plant Y's flower. The hairy body of insect X will brush against the anther and stigma of the flower while doing so.



(a) What process will most likely happen to the flower of plant Y when Insect X flew to another flower of the same specie to obtain nectar from it? [1]

_____

Insect X is the only insect that visits the flower of plant Y for nectar.

(b) State one advantage and one disadvantage for Plant Y for this close relationship with Insect X. [2]

One advantage for Plant Y:

_____

_____

One disadvantage for Plant Y:

_____

_____

(Go on to the next page)

Score	/ 3

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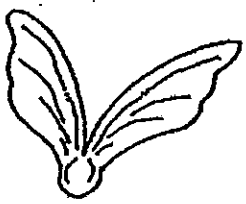
44 Gary found fruit X with two wing-like structures in the garden as shown in the diagram below. He decided to investigate if the wing-like structures help to disperse the seed.



fruit X with two wing-like structures

He dropped the fruit from a height of 10 m and recorded the time taken for the fruit to reach the ground. He repeated the experiment using the same fruit but with its wing-like structure cut-off, one at a time, as shown below.

fruit X with one wing-like structure

fruit X with no wing-like structure

(a) State one other variable that he must keep the same to ensure that the experiment is a fair one. [1]

_____

For each of the experiment carried out he compared the results as shown in the table below.

Time taken for the fruit to reach the ground (seconds)		
Fruit X with two wing–like structure	**Fruit X with one wing–like structure**	**Fruit X with no wing–like structure**
21.6	15.1	7.9

(b) What conclusion can be drawn from the results above? [1]

_____

_____

(c) Explain why a seed must be dispersed from the parent plant. [1]

_____

_____

End of Booklet B

Check your answers carefully.

Score	/ 3

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ANSWER SHEET

EXAM PAPER 2013
SCHOOL : ACS
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
1	2	1	4	3	4	1	2	3	3	3	3	2	2	3	3	3

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	2	3	2	4	2	4	3	2	4	3	3	3

31)a)Heat glass B and place ice in glass A.
b)The heat will cause glass B to expand while the ice will cause glass A to contract, making it easier to separate them.
c)No. The water in glass B will cool down faster than the water in glass A as there is a lesser volume of water in glass B.

32)a)The amount of batteries.
b)The bulb lit up brighten than when it was in vinegar than to seawater.

33)a)B is the insulator.
b)1)B1, B2
2)B1, B3

34)a)The cells divide.
b)The chloroplast.
c)The root cell is found underground and does not make food for the plant and so it does not have chloroplast.

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35)a)T b)Not c)F d)T

36)a)Graph A it has more oxygen than graph B.
b)Inhaled air has more oxygen than exhaled air.
c)The ribcage protects the lungs.

37)a)Either iron, cobalt, nickel or steel.
b)Rod A and the magnet lost some of its magnetism due to heating.

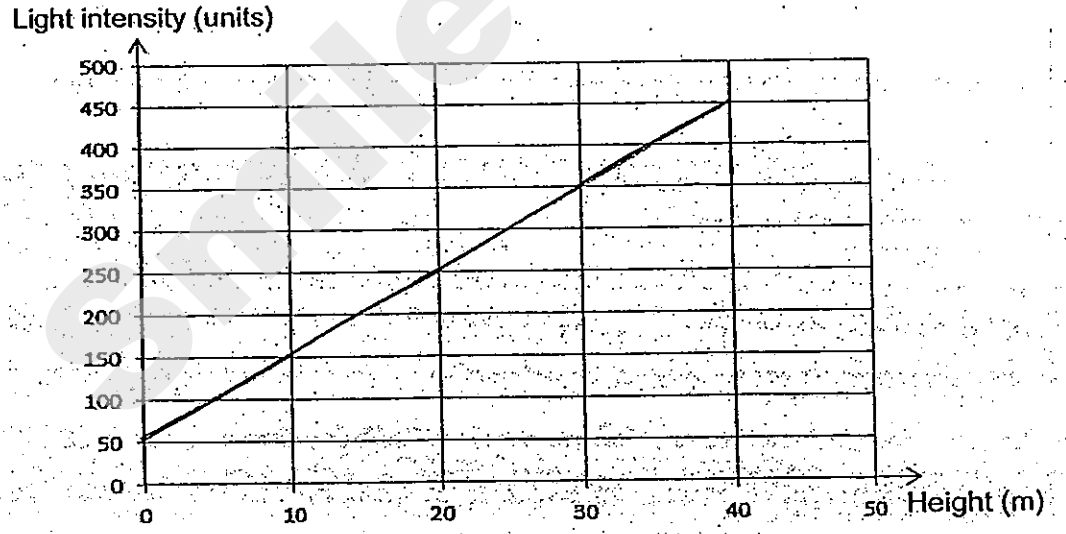
38)a)R S
b)It digest the food once more and absorb nutrients into the bloodstream.

39)a)The larger the exposed surface area the faster the rate of evaporation.
b)i)Speed of wind. ii)Humidity.

40)a)The water in the beaker evaporated and the water vapour rise and touch the cooler surface of the Petri-dish condense to form water droplets.
b)The base of the Petri-dish in set-up B is not cooler than the water vapour.

41)a)1)The fishes could camouflage with plant X to hide from predators.
2)Plant H provides food for the organisms in the pond.
b)The ovule will turn into a seed.
c)The seed is dispersed by water as the waterproof outer layer of the allows it to prevent water from trap air float on water.

42)



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43)a)Pollination.

b)One advantage for Plant Y:

Plant Y's pollen will not land on flower of other species.

One disadvantage for Plant Y:

Plant Y will be extinct if insect X is extinct.

44)a)The amount of wind.

b)The more wing-like structures longer time to reach the ground.

c)To prevent overcrowding so the young does not compete with parent plant for resources.

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CATHOLIC HIGH SCHOOL
SEMESTRAL ASSESSMENT 2
2013
PRIMARY FIVE

SCIENCE

BOOKLET A

Name: _____ ( )

Class: Primary 5 - _____

Date: 24 October 2013

30 questions

60 marks

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

This booklet consists of 26 printed pages, excluding cover page.

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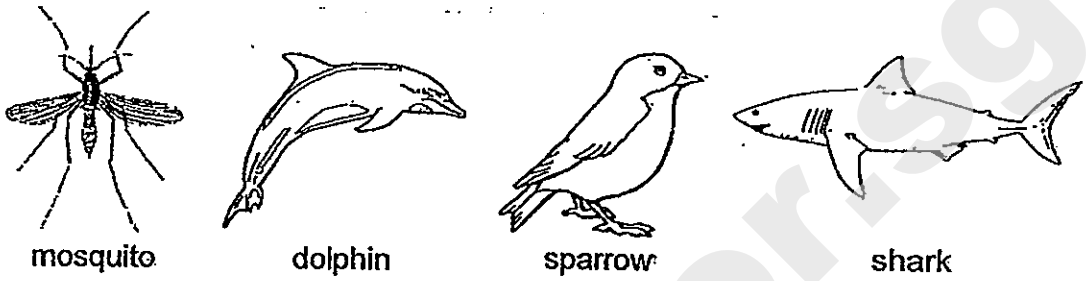
Booklet A (30 × 2 marks)

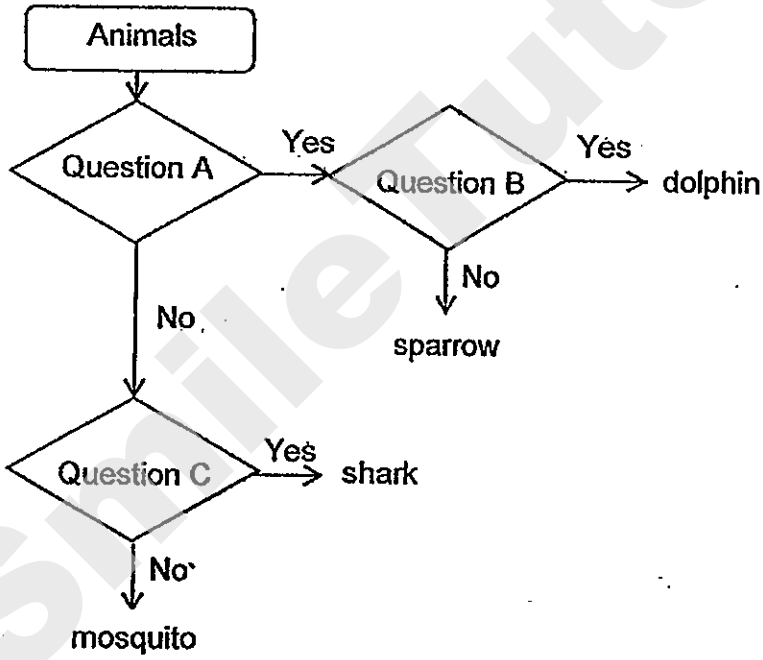
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade your answer on the Optical Answer Sheet.

(60 marks)

1. Jason had to classify the four animals shown.



He classified them with the help of the chart below.



What were the three questions A, B and C?

	Question A	Question B	Question C
(1)	Do they have gills?	Do they have lungs?	Do they live on land?
(2)	Do they have lungs?	Do they live in water?	Do they have gills?
(3)	Do they live on land?	Do they have gills?	Do they have lungs?
(4)	Do they live in water?	Do they have lungs?	Do they have gills?

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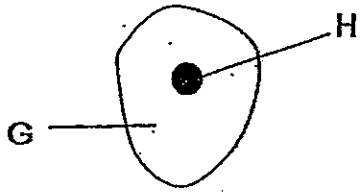
2. The diagram below shows a cell.



Which of the following correctly state the functions of the labelled parts?

	G	H
(1)	Gives the cell its shape.	Controls the movement of materials in and out of the cell.
(2)	Controls all activities of the cell.	Allows cell activities to take place.
(3)	Allows cell activities to take place.	Controls all activities of the cell.
(4)	Controls the movement of materials in and out of the cell.	Gives the cell its shape.

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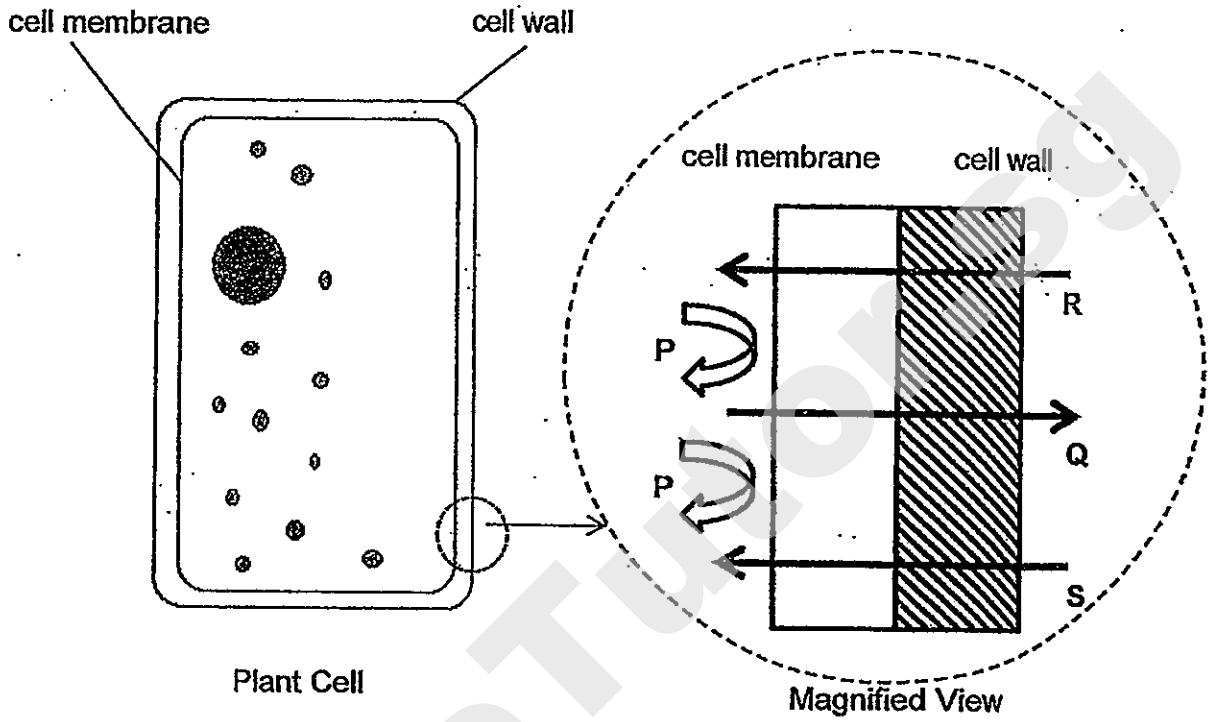
3. The diagram below shows the outer layers of the plant cell as well as the movement of substances, P, Q, R and S, in and out of the cell as represented by the arrows shown.



Based on the diagram above, which of the following correctly describes the cell membrane of the plant cell?

A It gives the plant cell a regular shape.
B It controls the flow of substances in and out of the cell.
C It is semi-permeable and allows only substance P to pass through.
D It allows substances Q, R and S to pass through it easily but prevents substance P from passing.

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

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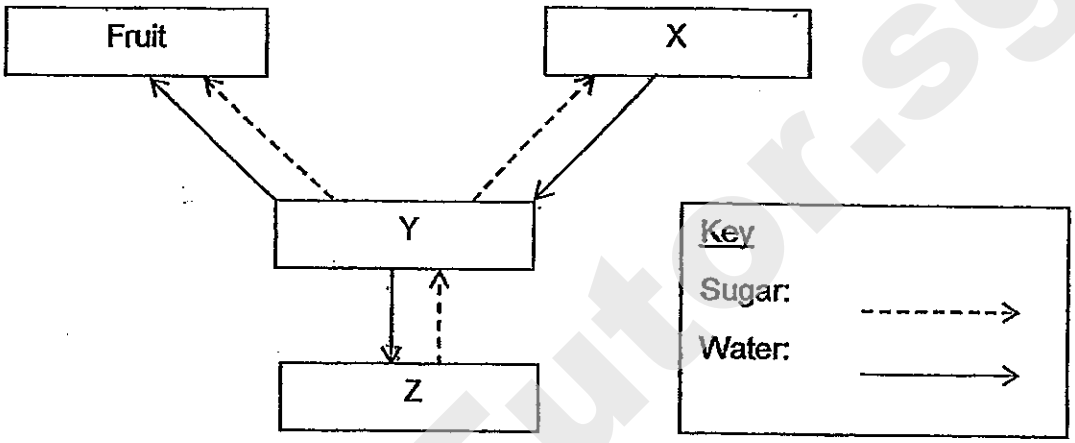
4. The diagram below shows how sugar and water are transported to and from different parts of a plant.



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

	X	Y	Z
(1)	Stem	Roots	Leaves
(2)	Roots	Leaves	Stem
(3)	Roots	Stem	Leaves
(4)	Leaves	Stem	Roots

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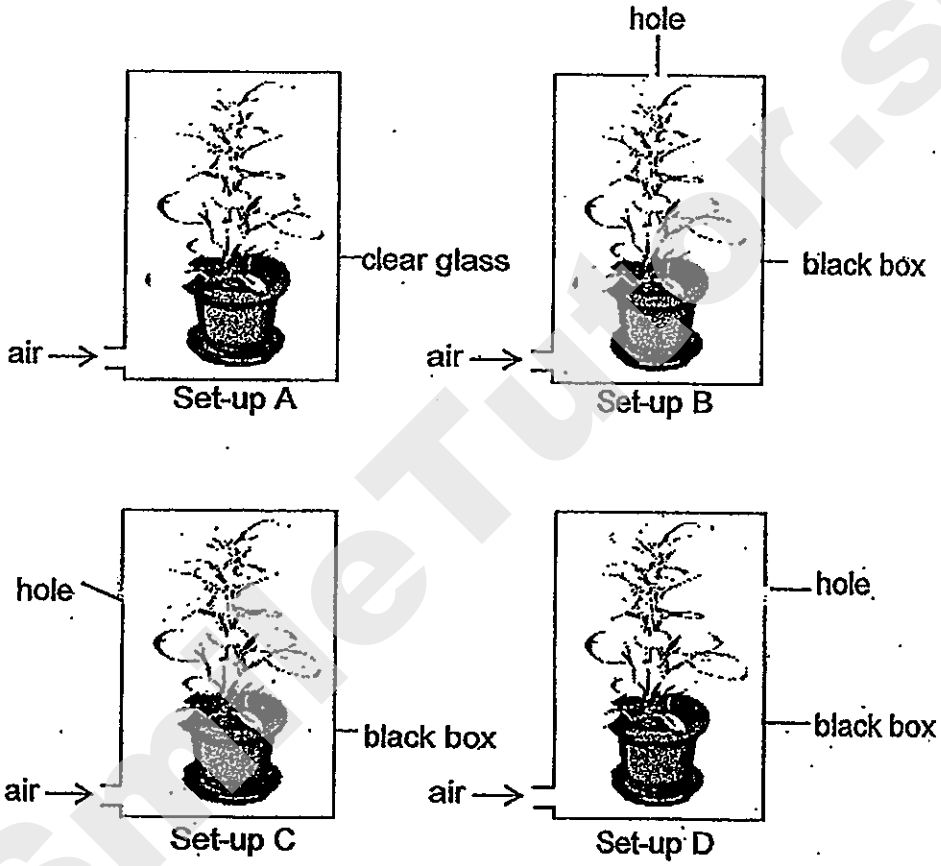
5. Laura conducted an experiment as shown below. She prepared 4 set-ups, A, B, C and D. At the start of the experiment, she added 200ml of water to each of the set-ups.



The aim of her experiment is to find out _____.

(1) how plants respond to light
(2) if air is needed for plant growth
(3) if light is needed for photosynthesis
(4) how much water a plant can take in

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6. The tables below show how Karen and Janet classified some organisms into two groups.

Karen's classification:

Group A	Group B
lime plant chilli plant	bread mould toadstool moss

Janet's classification:

Group C	Group D
lime plant chilli plant moss	bread mould toadstool

How did the two girls group the organisms?

	Karen	Janet
(1)	They are flowering or non-flowering plants.	They have fruits or no fruits.
(2)	They reproduce from seeds or spores.	They can or cannot make food.
(3)	They have or do not have chlorophyll.	They are flowering or non-flowering plants.
(4)	They make their own food or feed on decaying matter.	They have or do not have chlorophyll.

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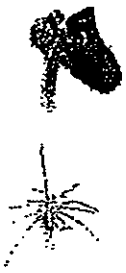
7. The diagram below shows a bean sprout and mushrooms.



bean sprout

mushrooms

Which of the following comparisons are correct?

	Bean sprout	Mushrooms
A	Does not need oxygen	Do not need carbon dioxide
B	Reproduces from a seed	Reproduce from spores
C	Will develop green leaves	Will not develop green leaves
D	Depends on seed leaves for food	Depend on decaying matter for food

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

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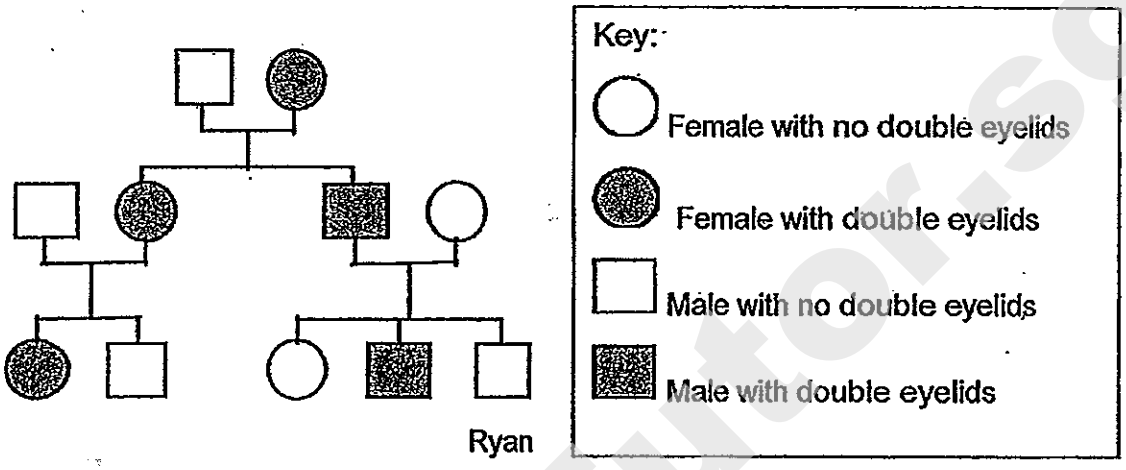
8. The diagram below shows 3 generations of Ryan's family that carry the genetic trait of double eyelids.



Based on the family tree above, which of the following statements are true?

A Ryan has a cousin who has double eyelids.
B Ryan's mother inherited the double eyelids from his grandmother.
C There is a possibility of Ryan's sister having a daughter with double eyelids.
D This trait of double eyelids is passed on to only the female members of the family.

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

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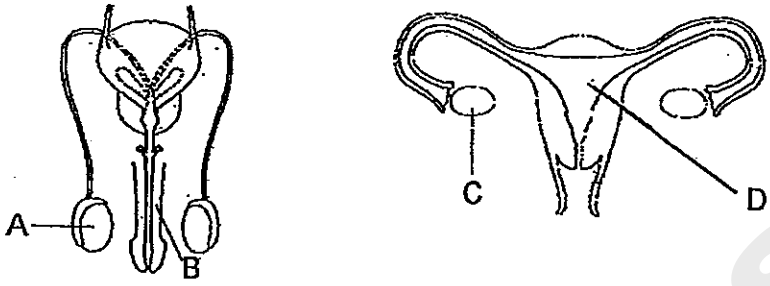
9. The diagrams below show the human reproductive systems.



Which parts of the reproductive systems produce cells that have to be fused to develop into a baby?

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

10. Which of the following is wrongly matched to their functions?

	Organs	Functions
A	Heart	Pumps blood to all parts of the body.
B	Lungs	Transport oxygen around our body.
C	Windpipe	Transports food from the mouth to the stomach.
D	Stomach	Grinds food into smaller pieces.
E	Small intestine	Completes digestion of food.
F	Large intestine	Removes water from undigested food.

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

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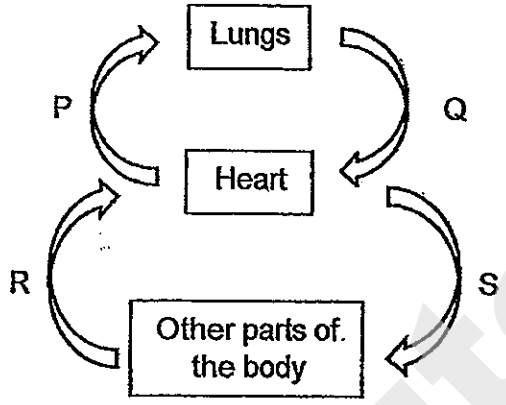
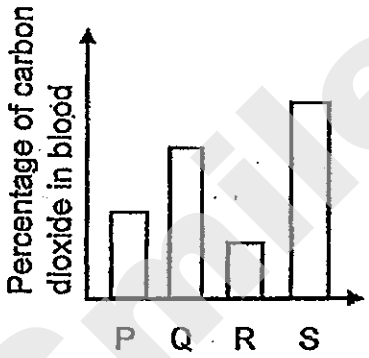
11. The diagram below is a representation of blood circulation in a human body. Arrows P, Q, R and S represent the flow of blood to the various parts of the body.

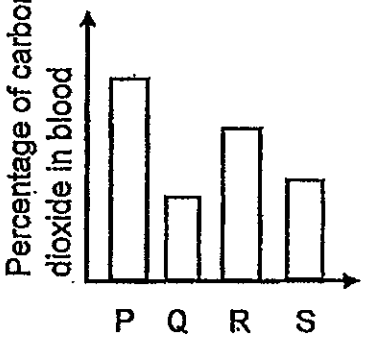


Which one of the following graphs represents the percentage of carbon dioxide in P, Q, R and S?

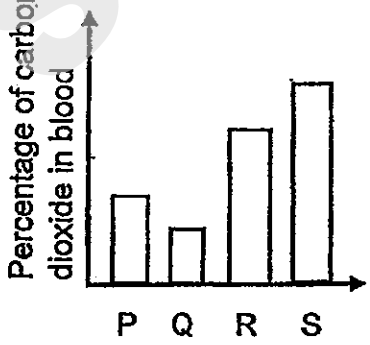
(1)



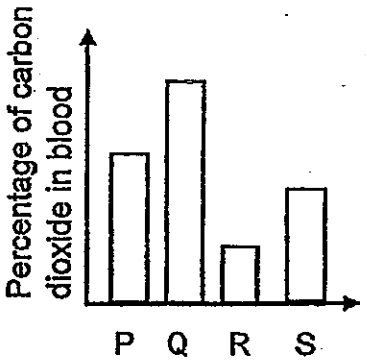
(2)



(3)



(4)



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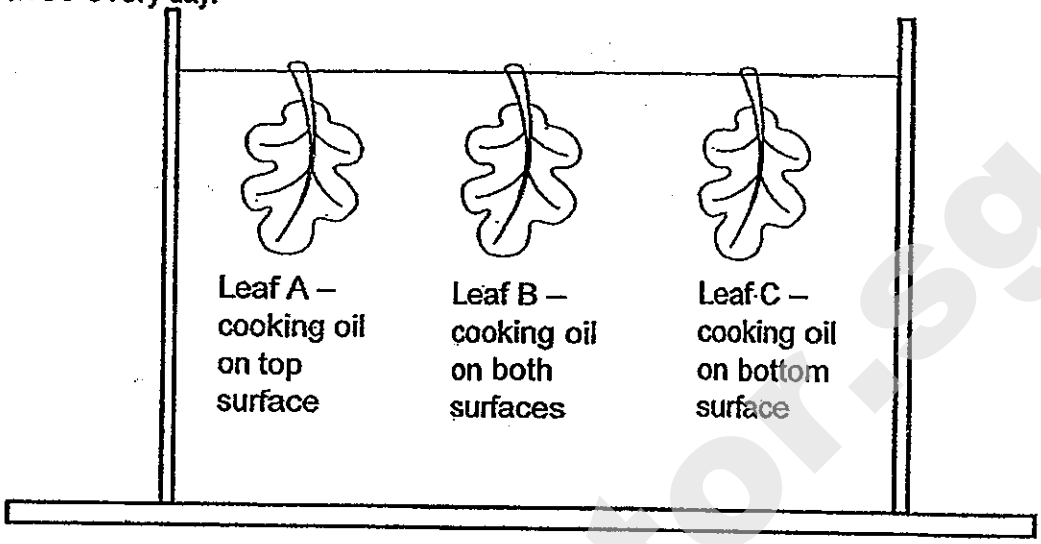
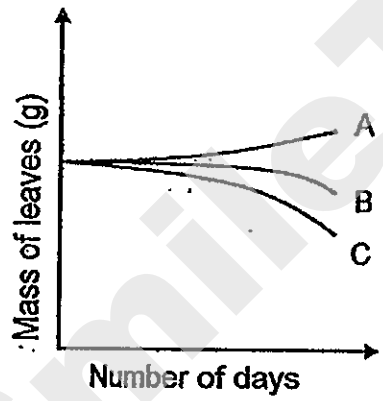
12. Eileen and her classmates smeared different surfaces of three identical leaves with cooking oil and hung them near a window. They weighed the leaves every day.

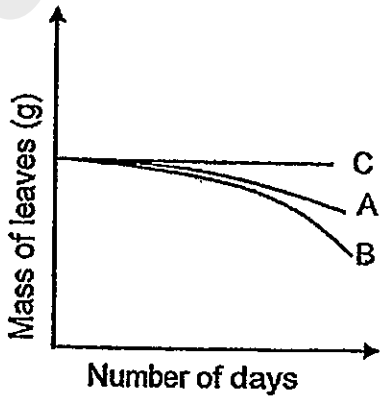


Which one of the following graphs shows the change in mass of the leaves after 3 days?

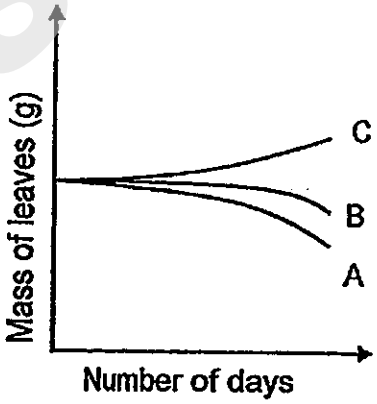
(1)



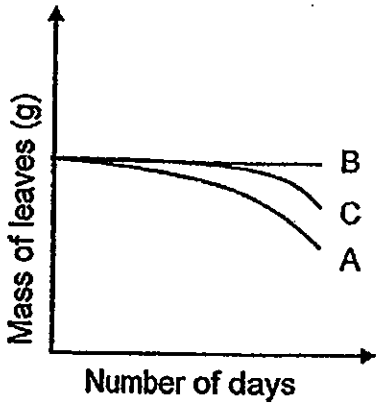
(2)



(3)



(4)



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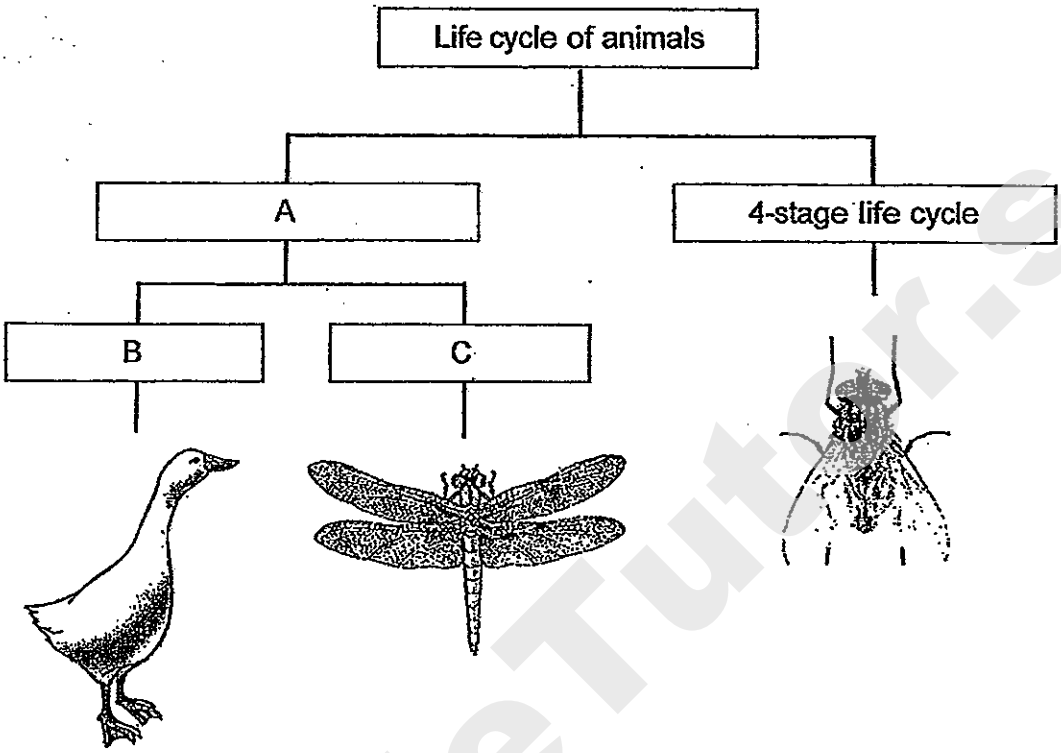
13. The classification chart below shows how animals can be classified according to their life cycles.



Which one of the following sub-headings best represent A, B and C?

	A	B	C
(1)	2-stage life cycle	young looks like adult	young does not look like adult
(2)	2-stage life cycle	young does not look like adult	young looks like adult
(3)	3-stage life cycle	young looks like adult	young does not look like adult
(4)	3-stage life cycle	young does not look like adult	young looks like adult

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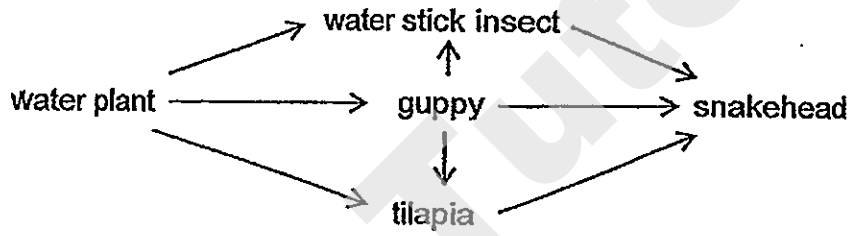
14. The diagram shows organisms in a food chain.

grass → deer → lion

What is the source of energy for this food chain?

(1) sun
(2) water
(3) oxygen
(4) nutrients

15. Study the food web below.



Which of the following statements about the food web are incorrect?

A The tilapia is a plant eater.
B The guppy gets its energy directly from the sun.
C There is only one food producer in the food web.
D The water plant is the prey of the water stick insect.
E The snakehead and the tilapia compete for the guppy for food.

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

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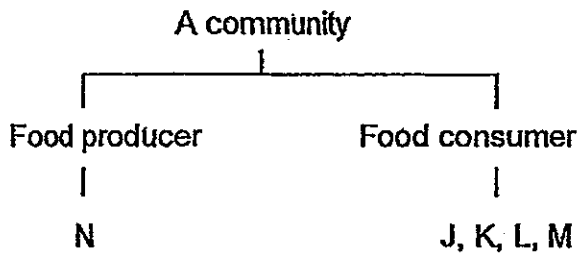
16. In a certain community, the organisms are grouped as shown.

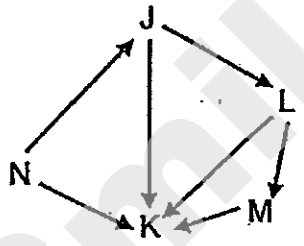


The table below shows the food consumed by the organisms.

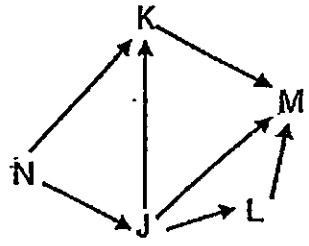
Organisms	Food
J	N
K	N, J
L	K, M
M	J, K

Which one of the following food webs is found in the community?

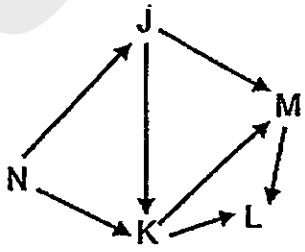
(1)



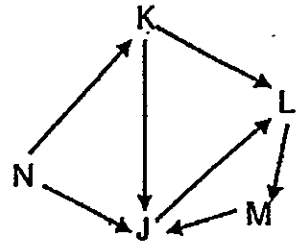
(2)



(3)



(4)



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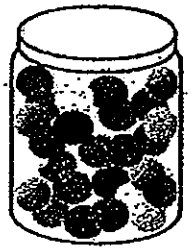
17. Bryan filled a container with marbles until he said there was no more space in the container to put anything into it.



However, his friend, Lance said that he was wrong.

What can Lance do to show that Bryan is wrong?

A Heat the container of marbles.
B Shake the container of marbles.
C Pour sand into the container of marbles.
D Pour water into the container of marbles.

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

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18. Peter measured the mass of a soccer ball at the beginning of his experiment. After that, he used an air pump to pump air into the soccer ball and measured the changes in the mass. He then recorded the results in the table shown below.

Number of pumps	Mass of soccer ball (g)
0	400
10	405
20	410
30	416

What conclusions can Peter make, based on his results?

A The mass of the soccer ball increases with more pumps.
B The volume of the soccer ball remains the same with more pumps.
C The mass of the soccer ball is determined by the number of pumps given to it.
D The volume of the soccer ball is determined by the number of pumps given to it.

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

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19. A steel bar, AB, was magnetised using the stroke method as shown in Diagram 1 below. Diagram 2 shows the magnetic poles of AB after it was magnetised.

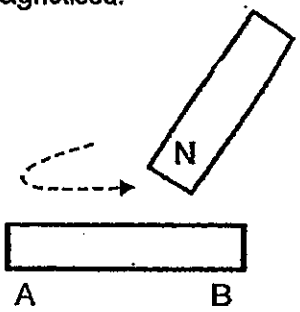
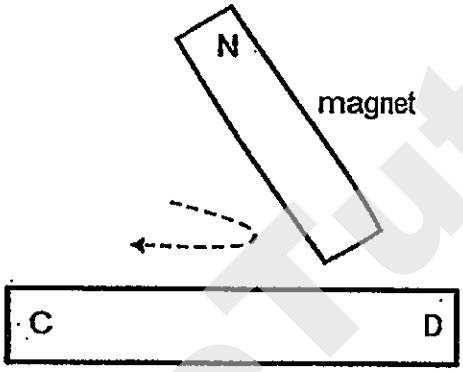


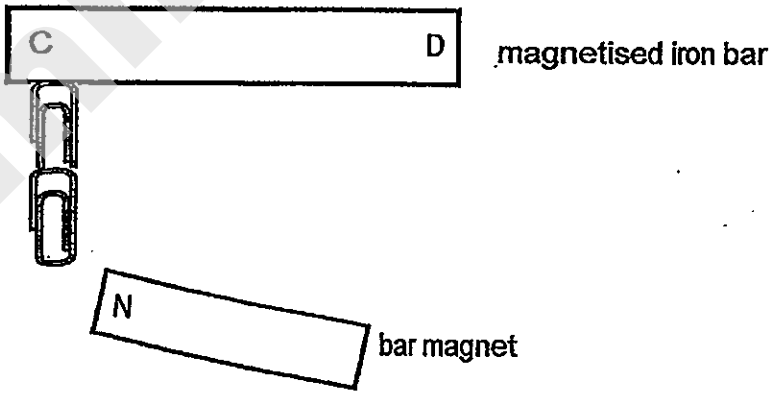
Diagram 1

Diagram 2

Similarly, Jenny magnetised an iron bar, CD, using a magnet as shown below.



Two paper clips were attracted to the magnetised iron bar. Jenny brought one end of a bar magnet close to the tip of the 2nd paper clip as shown below.



Jenny would probably observe that the 2nd paper clip _____.

(1) did not move
(2) fell to the ground
(3) moved towards the magnet
(4) moved away from the magnet

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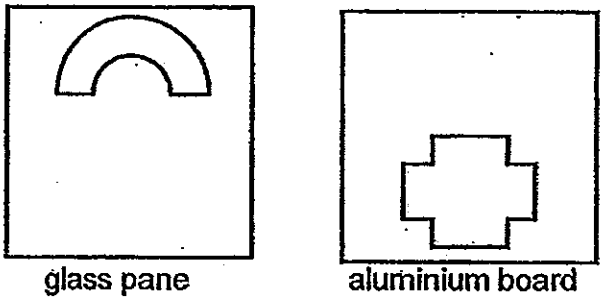
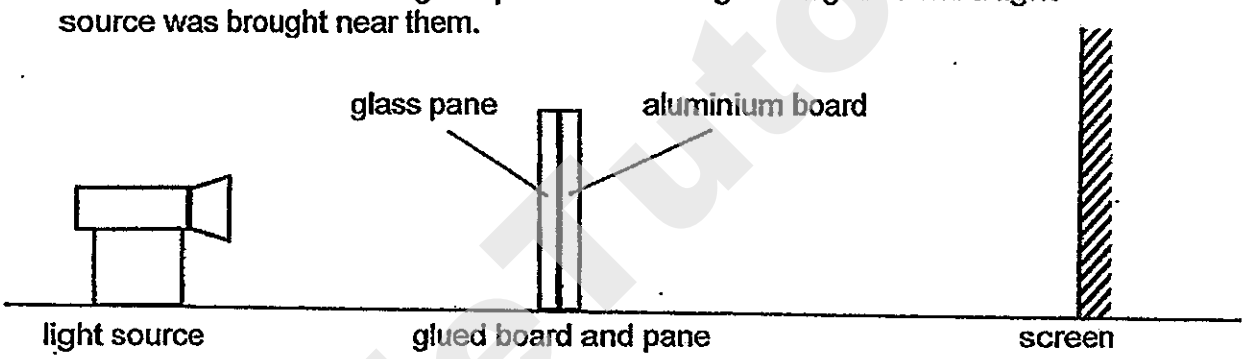
20. Joseph took an aluminium board and a glass pane of similar size and thickness and cut out shapes from them, as shown in the diagram.



The aluminium board and glass pane were then glued together and a light source was brought near them.

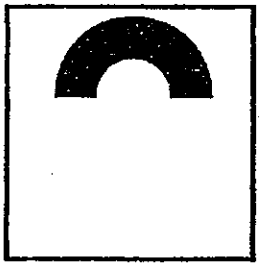


Which one of the following is the shadow formed on the screen?

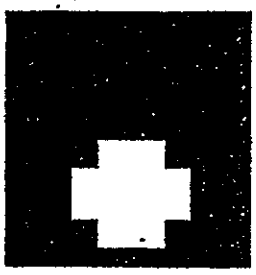
(1)

(2)

(3)



(4)



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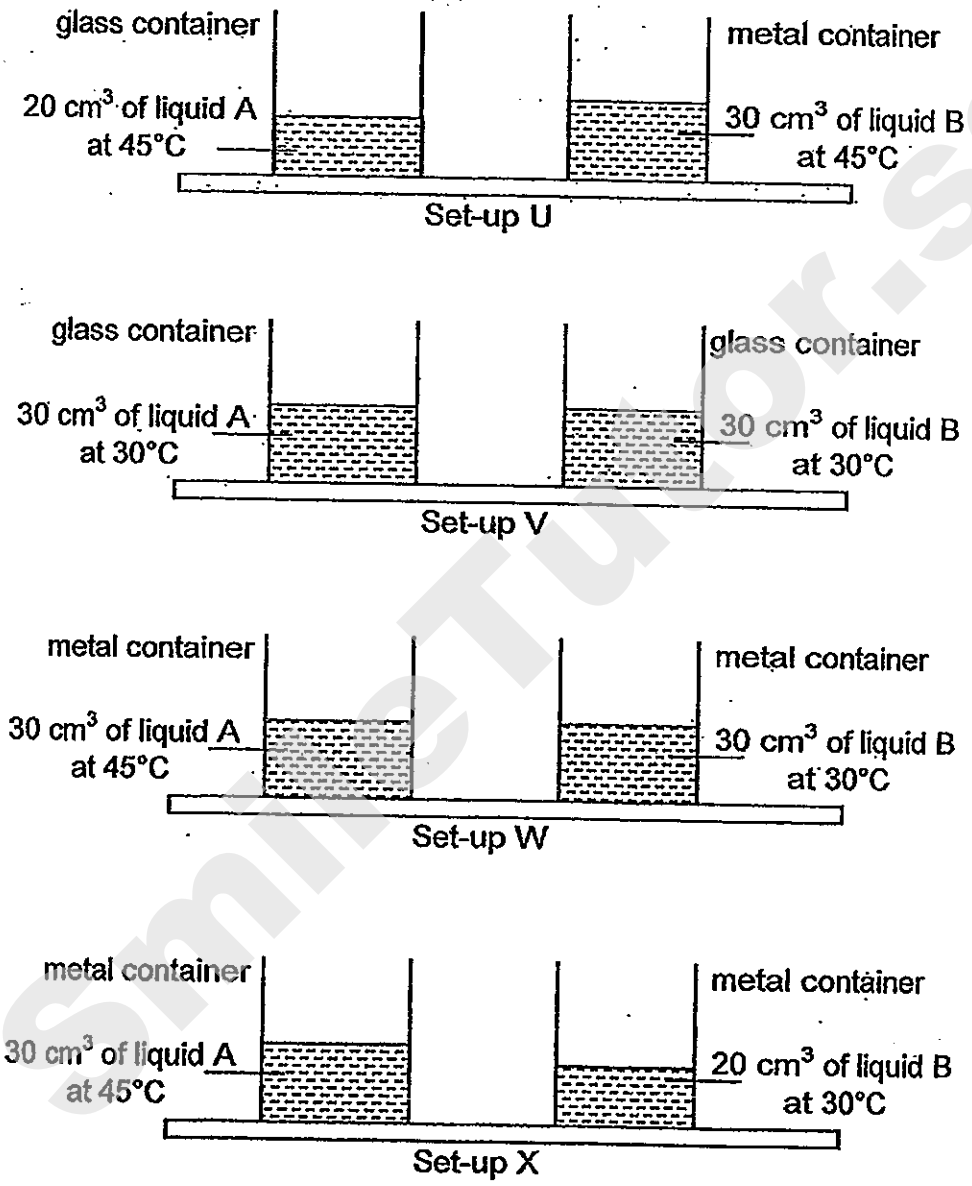
21. Mark set up an experiment to compare the rate of evaporation of 2 liquids, A and B. The diagrams below show 4 different set-ups U, V, W and X.



Which of the following set-ups will give a fair test?

(1) U
(2) V
(3) W
(4) X

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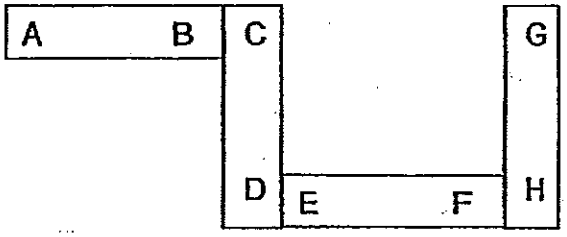
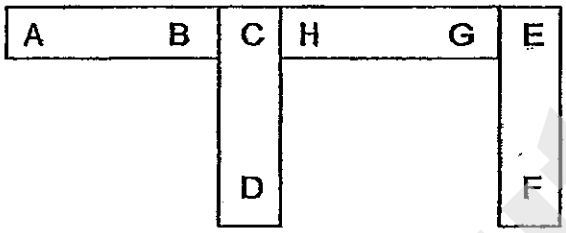
22. Xavier arranged four magnets with poles labelled A to H as shown below.

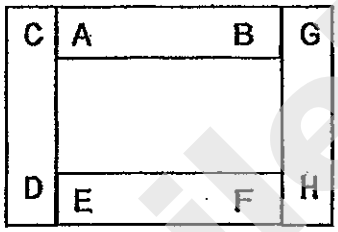


Which one of the following is another possible arrangement?

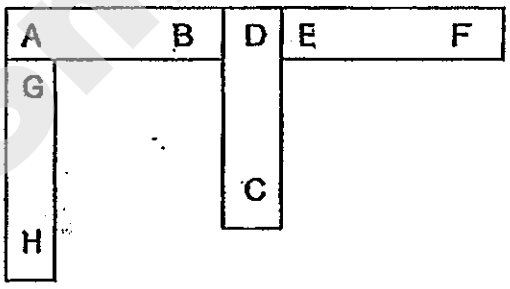
(1)



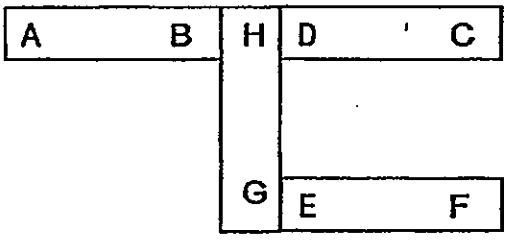
(2)



(3)



(4)



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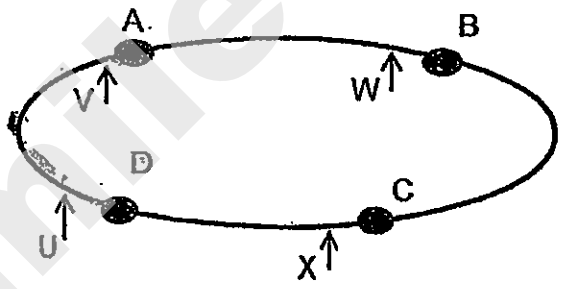
23. Michelle compared the hardness of four tiles K, L, M and N by scratching them with rods made of different materials. She records her observations in the table below, using a tick to indicate the presence of scratch marks on the tiles.

Rods	Presence of scratch marks			
	Tile K	Tile L	Tile M	Tile N
Iron	√	√		√
Wooden	√	√		
Plastic		√		

Which of the following correctly shows the four tiles arranged in ascending order of hardness?

(1) M, N, K, L
(2) L, K, N, M
(3) M, K, L, N
(4) K, N, M, L

24. Melvin placed four blobs of wax, A, B, C and D, at different points on a metal wire, as shown in the diagram.



He then heated the wire only at one part and the blobs of wax melted in the order D, A, C and then B.

At which point, U, V, W or X, was the wire heated?

(1) U
(2) V
(3) W
(4) X

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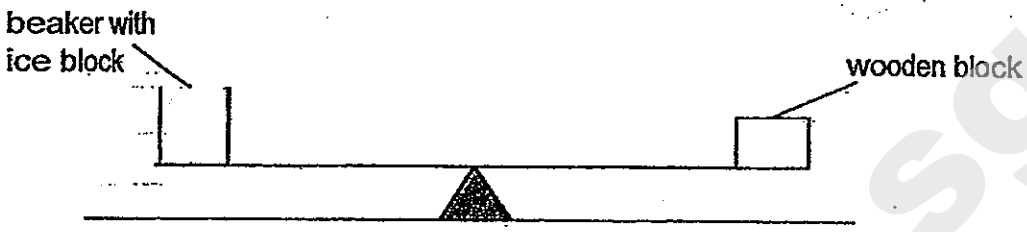
25. A beaker containing an ice block was placed on a balance as shown below. The ice block was left to melt completely.



It was observed that the balance tilted downwards on the side of the beaker with ice block when the ice had melted completely. Which of the following could have resulted in the observation made?

A The mass of the ice block increased when it melted.
B The volume of the ice block decreased when it melted.
C The water vapour from the surrounding air condensed on the beaker.

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

26. Jonathan wanted to find out the effect of wind speed on the rate of evaporation of water. He prepared four set-ups, using containers made of the same material, under different conditions.

Set-up	Exposed surface area (cm^2)	Volume of water (cm^3)	Surrounding temperature (°C)	Wind speed (km/h)
A	40	80	26	12
B	50	80	29	16
C	50	80	29	18
D	60	80	26	16

Which two set-ups should he use for his experiment?

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

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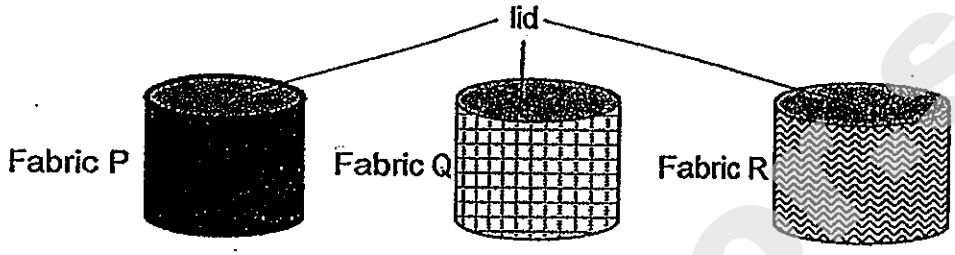
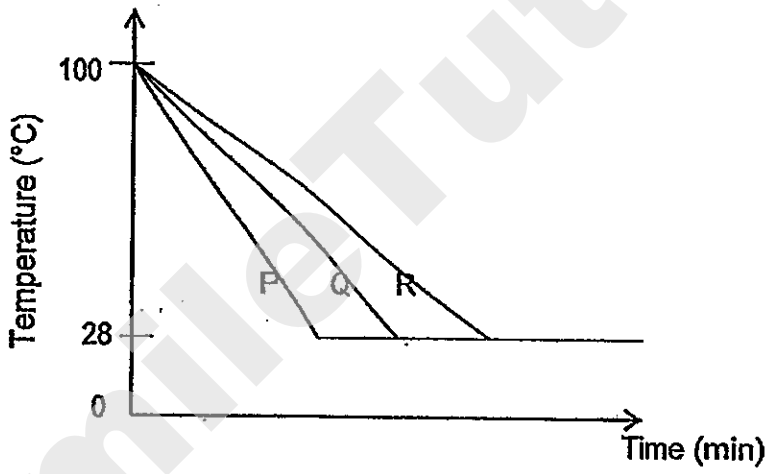
27. Timothy was given 3 types of fabrics, P, Q and R. He carried out the following experiment using the fabrics.

- He took 3 identical tins and wrapped them with a layer of fabric P, Q and R respectively.
- He filled each tin with boiling water and took the temperature of the water before covering it with a lid made of a poor conductor of heat.
- He took the temperature of the water in each tin at 5 minute intervals for the next 60 minutes.



The graph below shows his observation.



Based on the data, he chose one fabric to make a sweater to keep warm and another as a t-shirt for wearing to the beach on a hot day.
Which one of the following shows the fabrics he had chosen?

	Sweater	T-shirt
(1)	P	R
(2)	Q	R
(3)	R	P
(4)	P	Q

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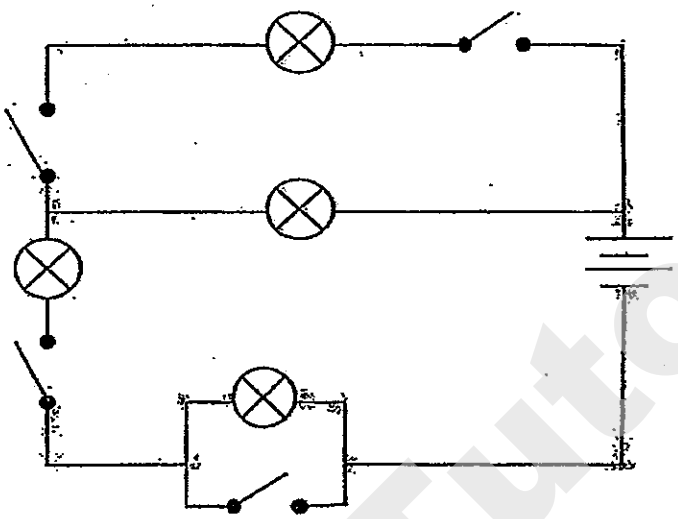
28. The diagram below shows an electrical circuit.



What is the least number of switches that must be closed for all the bulbs to light up?

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

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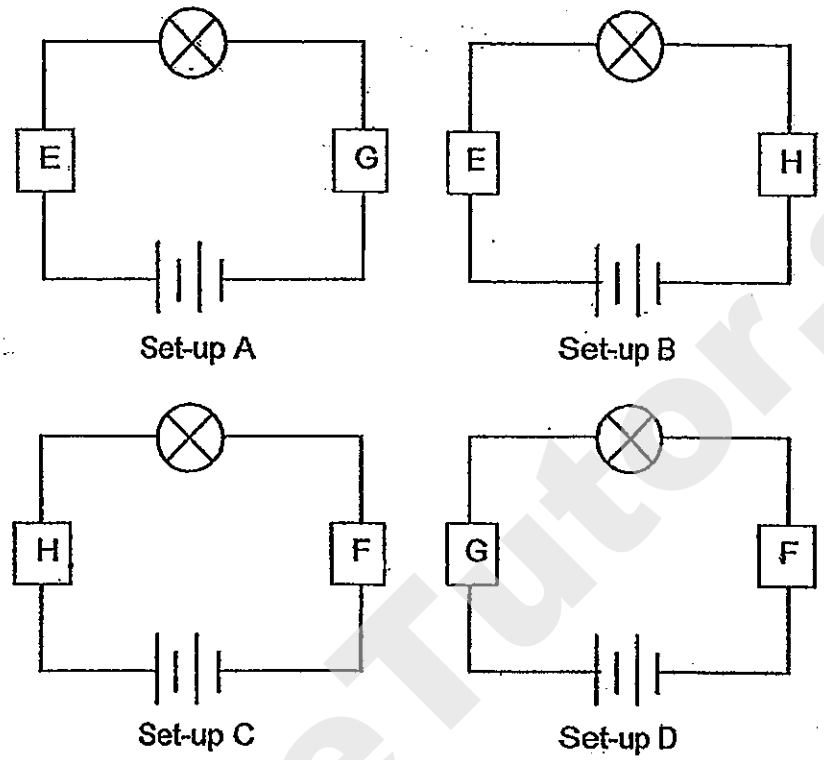
29. The circuits below are set up with different materials, E, F, G and H.



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

Set-up	Bulb lights up	Bulb does not light up
A		✓
B	✓	
C	✓	
D		✓

Which of the materials are conductors of electricity?

(1) E, F and G only
(2) E, F and H only
(3) E, G and H only
(4) F, G and H only

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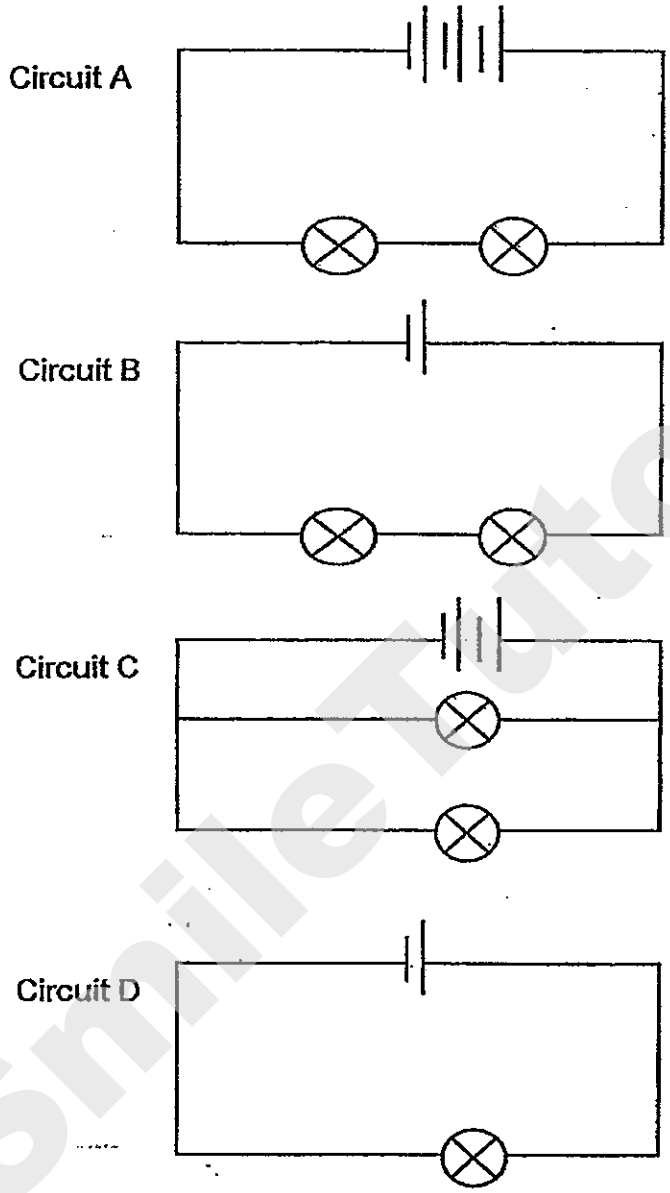
30. Jinming set up four electrical circuits A, B, C and D using identical batteries and bulbs. The batteries and bulbs were all working properly.



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

	Least bright →			Brightest
(1)	A	B	C	D
(2)	B	D	A	C
(3)	C	A	D	B
(4)	D	B	C	A

End of Booklet A

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CATHOLIC HIGH SCHOOL
SEMESTRAL ASSESSMENT 2
2013
PRIMARY FIVE

SCIENCE

BOOKLET B

Name: _____ ( )

Class: Primary 5 - _____

Date: 24 October 2013

Parent's Signature: _____

Booklet A	60
Booklet B	40
Total	100

14 questions

40 marks

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

This booklet consists of 14 printed pages, excluding cover page.

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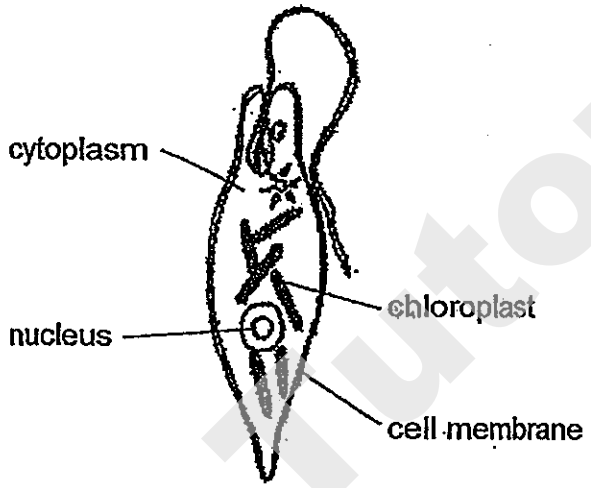
Booklet B (40 marks)

For questions 31 to 44, 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 a single-celled organism X which can be found living in fresh water ponds.



Organism X

(a) Based on the diagram above, identify the structure that suggests that Organism X is more likely to be a plant cell than an animal cell. [1]

_____

(b) State one structure of a typical plant cell that is not present in Organism X. [1]

_____

(Go on to the next page)

SCORE	/ 2

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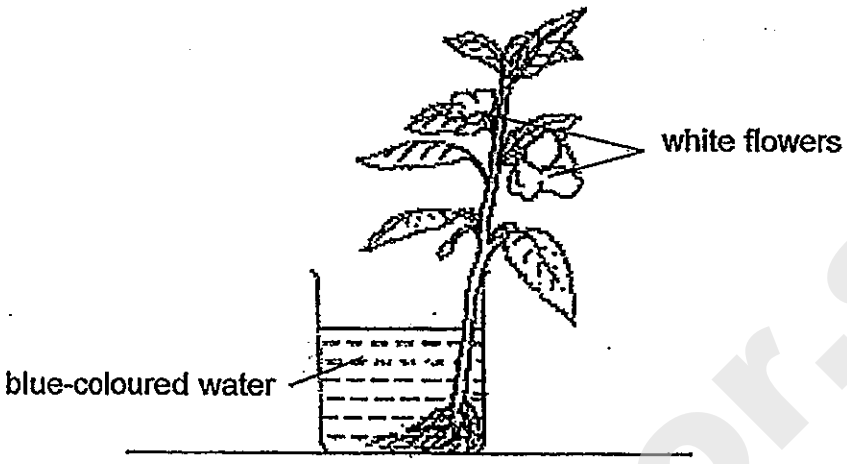
32. Linda placed a plant with white flowers into a beaker containing blue-coloured water as shown below. She left the set-up on the table for 3 days.



(a) What can she observe about the flowers after 3 days? [1]

_____

_____

(b) Give a reason for your answer in (a). [1]

_____

_____

(Go on to the next page)

SCORE	/ 2

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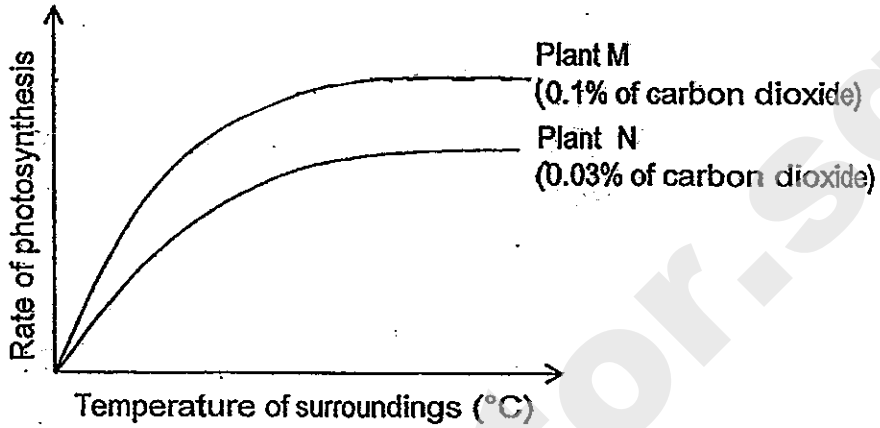
33. Ken carried out an experiment to investigate the factors affecting the rate of photosynthesis of 2 identical pots of plants. He placed both pots in the same location but gave different amounts of carbon dioxide. The graph below shows the results of his experiment.



(a) Based on the graph above, state the relationship between the temperature of the surroundings and the rate of photosynthesis. [2]

_____

_____

_____

(b) Based on the graph above, state the relationship between the percentage of carbon dioxide and the rate of photosynthesis: [1]

_____

_____

(c) Which plant will make more food? Explain your answer. [1]

_____

_____

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SCORE	/ 4

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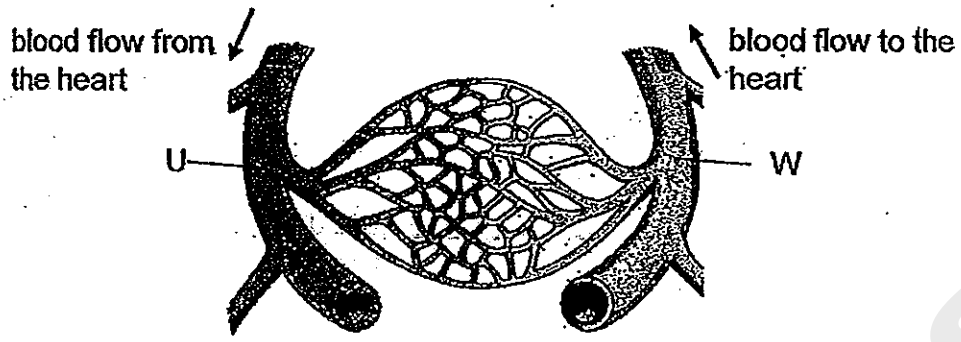
34. U and W in the diagram below are blood vessels.



(a) What is the difference between the blood flowing in blood vessels U and W? [1]

_____

_____

(b) Besides gases, name 2 other substances that the blood transports. [1]

_____

_____

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SCORE	/ 2

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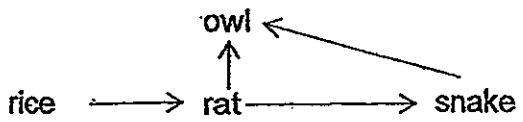
35. The diagram below shows a food web in a farm.



(a) Based on the food web above, identify the organism which is both a prey and a predator. [1]

_____

(b) Recently, a farmer noticed that the amount of rice grains he could collect has decreased.

Based on the food web above, what is the possible cause for the decrease in rice grains collected and how can the farmer prevent the decrease? [2]

Possible cause:

_____

_____

How to prevent the decrease in rice grains collected:

_____

_____

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SCORE	/ 3

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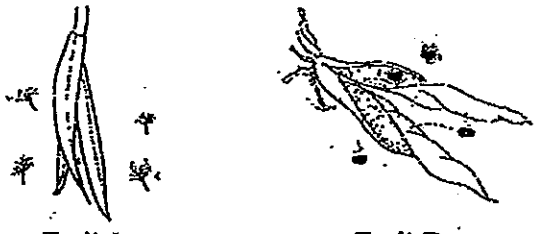
36. The diagram below shows two different fruits, A and B, splitting open to release their seeds.



Fruit A Fruit B

(a) Fruit A disperses its seeds further than Fruit B. Based on your observation of the seeds, state the method of dispersal of Fruit A after splitting. Explain your answer. [2]

_____

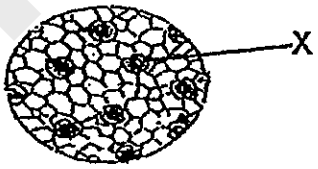
_____

(b) Explain wht seeds which are dispersed further away from the parent plant have a higher chance of growing into healthy new plants. [1]

_____

_____

37. Zavier observed the underside of a leaf sample under a microscope as shown below.



(a) Name the structure X and state its function. [1]

_____

(b) Zavier observed that there are more of these structures on the underside of the leaf. Explain why this is so. [1]

_____

_____

(Go on to the next page)

SCORE	/ 5

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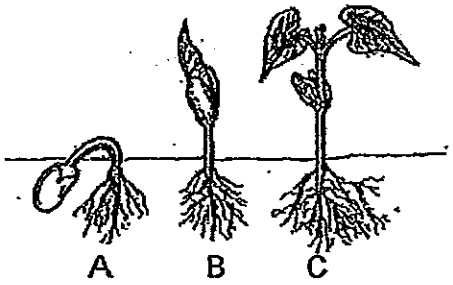
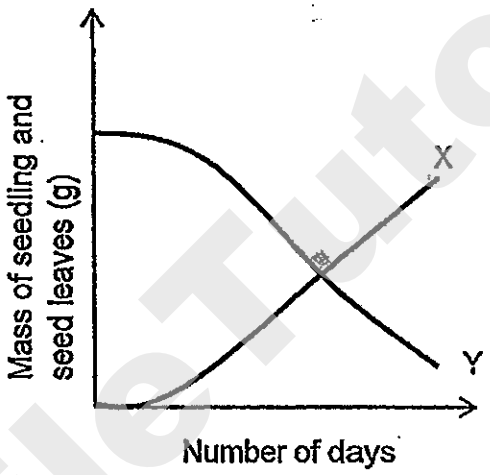
38. Jeff placed a beaker containing wet soil with a seed in it. A few days later, he noticed that the seed had started to germinate.



The graph below shows the change in the mass of the seedling and its seed leaves during the experiment.



(a) Which line on the graph, X or Y, shows the change in the mass of the seed leaves from stage A to stage C? Explain. [1]

_____

_____

(b) How did the seedling obtain its food in stage C? [1]

_____

_____

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SCORE	/ 2

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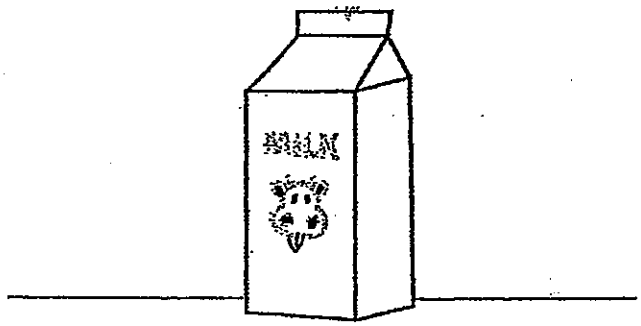
39. Daniel took a carton of cold milk out of the refrigerator and placed it on the table.



(a) What would he see on the carton after 10 minutes? [1]

_____

(b) Explain what happened in part (a). [1]

_____

_____

(c) State the change of state that has taken place in part (a). [1]

_____

(Go on to the next page)

SCORE	/ 3

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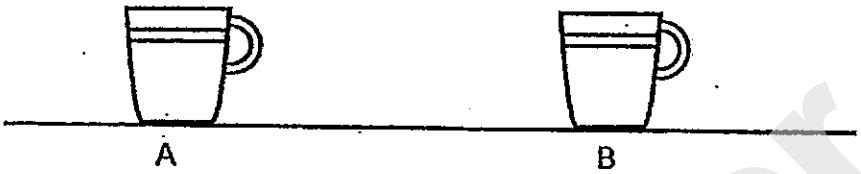
40. Cups A and B, each made of different materials, were filled with the same amount of water at 2°C at the same time.

Cup B felt colder than A when touched and water vapour condensed on Cup B more quickly than on A.



Both cups were left in a room at 30°C. The temperature of water in both cups was measured every five minutes.

The table below shows the changes in the temperature of water in cup A over a period of 20 minutes.

Time (min)	0	5	10	15	20
Temperature of water (°C)	2	9	11	15	19

(a) Would the temperature of the water in Cup B be higher or lower than 19°C at the 20th minute? Explain your answer. [2]

_____

_____

_____

(b) Which cup, A or B, would be more suitable to use for keeping coffee warm? Explain your answer. [2]

_____

_____

_____

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SCORE	/ 4

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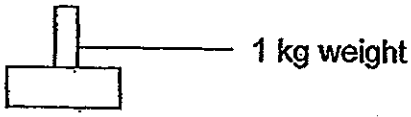
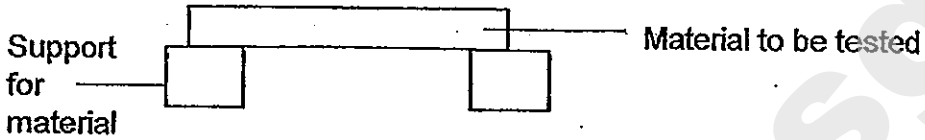
41. Tom dropped a 1 kg weight on 5 different materials from a fixed height as shown in the diagram below.





He noted the number of times the weight was dropped before the material broke into 2 pieces. The results are as shown below.

Material tested	Number of times the weight was dropped before material broke
P	48
Q	37
R	64
S	23
T	51

(a) What was Tom trying to find out? [1]

_____

_____

(b) Some statements were made based on the above experiment. Put a tick (√) to indicate if the statements are True, False or Not possible to tell in the table below. [2]

	Statements	True	False	Not Possible To Tell
(i)	Material T is a metal.			
(ii)	Material P is stronger than Material R.			
(iii)	Material T is hard enough to scratch material Q.			
(iv)	Material S would be the first to break if a 2 kg weight is used to repeat the experiment.			

(Go on to the next page)

SCORE	/ 3

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42. Maria held a magnet near rod P which was tied to a string, as shown in diagram 1 below. She observed that rod P moved away from the magnet.

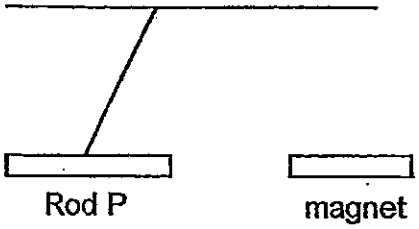

Diagram 1

(a) Based on what Maria observed, what is P likely to be? [1]

_____

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

_____

_____

Maria then placed a flame under the magnet as shown in diagram 2. After some time, rod P started moving towards the magnet.

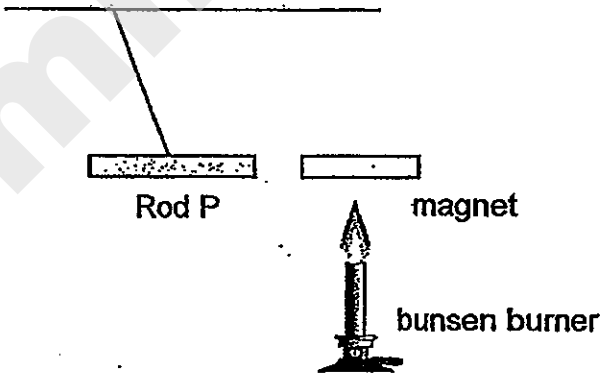

Diagram 2

(c) Explain her observation in diagram 2. [1]

_____

_____

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SCORE	/ 3

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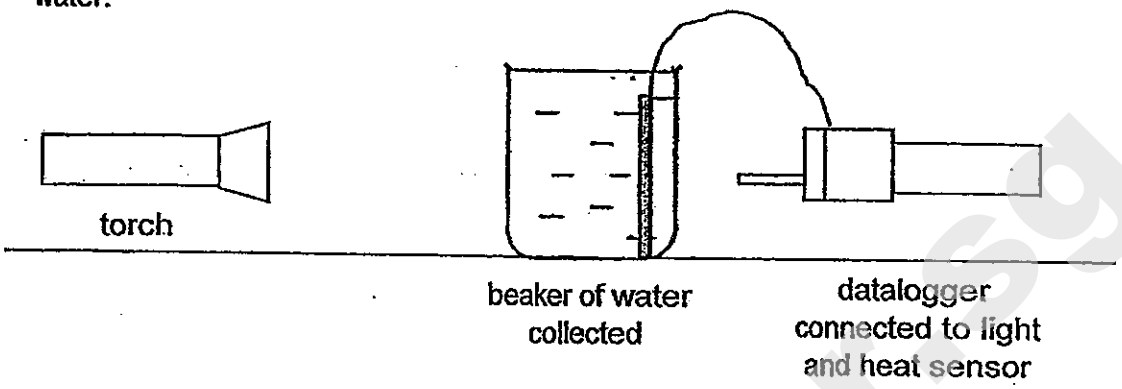
43. Alvin collected 3 samples of water from 3 different ponds X, Y and Z from different locations. Using the set-up below, he placed each sample of water in front of a light and heat sensor of the datalogger and recorded the amount of light that passed through the samples of water and the temperature of the water.



Water sample source	Amount of light received by sensor (lux)	Temperature of water (°C)
Pond X	320	20
Pond Y	3	38
Pond Z	196	29

(a) List 2 variables that must be kept constant to ensure a fair test. [1]

(i) _____

(ii) _____

(b) If a coin is dropped into the three beakers containing the water samples, in which beaker will the coin be least visible? Explain your answer. [1]

_____

_____

(c) What is the relationship between the clarity and the temperature of the water? [1]

_____

_____

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SCORE	/ 3

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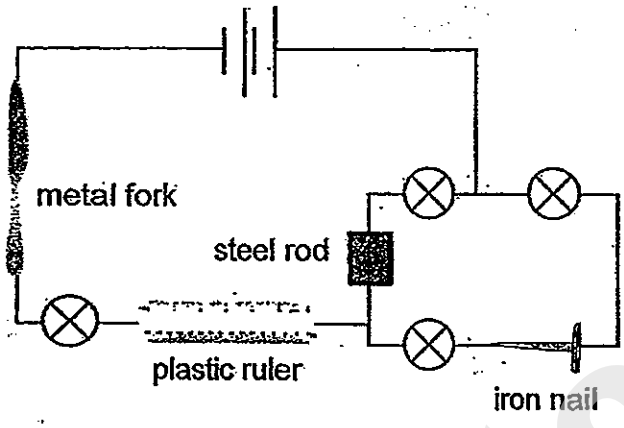
44. Study Circuit X below.



Circuit X

(a) How many bulbs will light up? [1]

_____

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SCORE	/ 1

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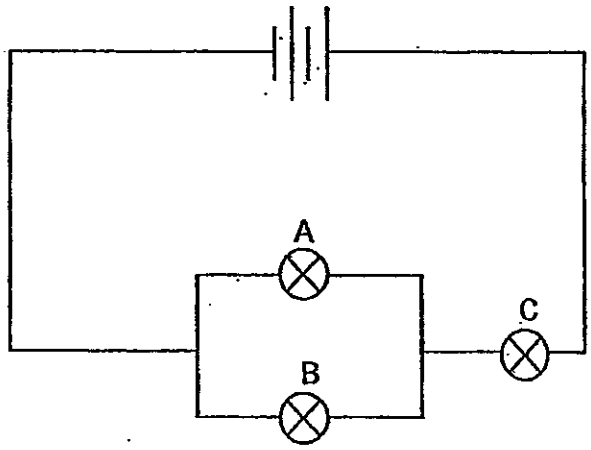
44. (b) In Circuit Y below, all the bulbs A, B and C are lit.



Circuit Y

(i) When 1 bulb was removed from circuit Y above, the other 2 bulbs immediately went off. Which bulb was removed? [1]

_____

(ii) Rearrange circuit Y so that all 3 bulbs glow even brighter than before. In the space below, draw the circuit diagram to show the new arrangement to make all 3 bulbs glow brighter. [2]

End of Paper

SCORE	/ 3

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ANSWER SHEET

EXAM PAPER 2013
SCHOOL : CATHOLIC HIGH
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
2	3	2	3	1	2	4	1	1	3	2	4	3	1	4	3	3

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	4	4	2	4	2	1	2	3	3	3	2	2

31)a)The cell has chloroplast and only plant cells have but not animal cells.
b)Cell wall.

32)a)The white flower turned blue.
b)The roots took in the blue-coloured water and transported it to the flower through the water-carrying tubes.

33)a)The higher the temperature of the surroundings the higher/faster the rate of photosynthesis but up to a certain temperature/point of which the rate of photosynthesis remains uncharged.
b)The higher the percentage of carbon dioxide, the higher the rate of photosynthesis in the plants.
c)Plant M. Plant M is give more carbon dioxide than Plant N, so the rate of photosynthesis is higher, which means it makes more food.

34)a)The blood in blood vessel U is oxygen-rich blood but the blood in blood vessel W is oxygen-poor blood.
b)The blood vessels also transport water and digested food.

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35)a)Snake.
b)Possible cause:
Increase in the population of rate.
Introduce more owls/or snakes.

36)a)By wind. Seeds from A have hair like/feather like structures which enables the seeds to float in the air and allow it to be carried further away.
b)It is to prevent overcrowding so that the young plant need not compete with the parent plant and other plants for nutrients, air and sunlight.

37)a)It is a stomata and it helps in the exchange of gasses.
b)More of the structures on the underside of the leaf help reduce water loss to the surroundings.

38)a)Line Y. As the seedling grows, it uses the stored food in the seed leaves. Thus the mass of the seed leaf decreased.
b)The seedling has leaves so it is able to make its own food.

39)a)Water droplets will form on the outer side of the milk carton.
b)The warm water vapour in the surrounding air comes into contact with the cold outer surface of the carton and cools down and condenses into tiny water droplets.
c)Gas to liquid.

40)a)Temperature of the water in Cup B would be higher than 19℃. Cup B was make of a material that was a better conductor of heat than Cup A and gains heat faster from the surrounding so the water reached higher temperature than A at the 20min.
b)Cup A. Heat from the coffee will be conducted away more slowly than Cup B because A is a poser conductor of heat.

41)a)To find out which material is the strongest.
b)i)Not ii)F iii)Not iv)T

42)a)Magnet.
b)Only magnets can repel each other.
c)When a flame was placed under the magnet, after some time, the magnet lose some of its magnetism, thus, rod P moved towards the magnet.

43)a)i)The distance between the torch and the beaker.
ii)Intensity of light/ Distance of torch from beaker amount of water in the beaker.
b)Sample Y. The water from pond Y allowed the least amount of light to pass through these the coin will be least visible in sample Y.
c)The lower the clarity of the water, the higher the temperature of the water.

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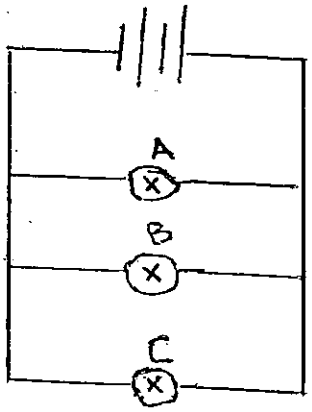
44)a)None of the bulbs will light up.

b)i)Bulb C.

ii)



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Name: _____ ( )

Class: Primary 5 _____

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Primary 5

Semestral Assessment 2 – 2013

SCIENCE

BOOKLET A

29 October 2013

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

30 questions
60 marks

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

This booklet consists of 27 printed pages.

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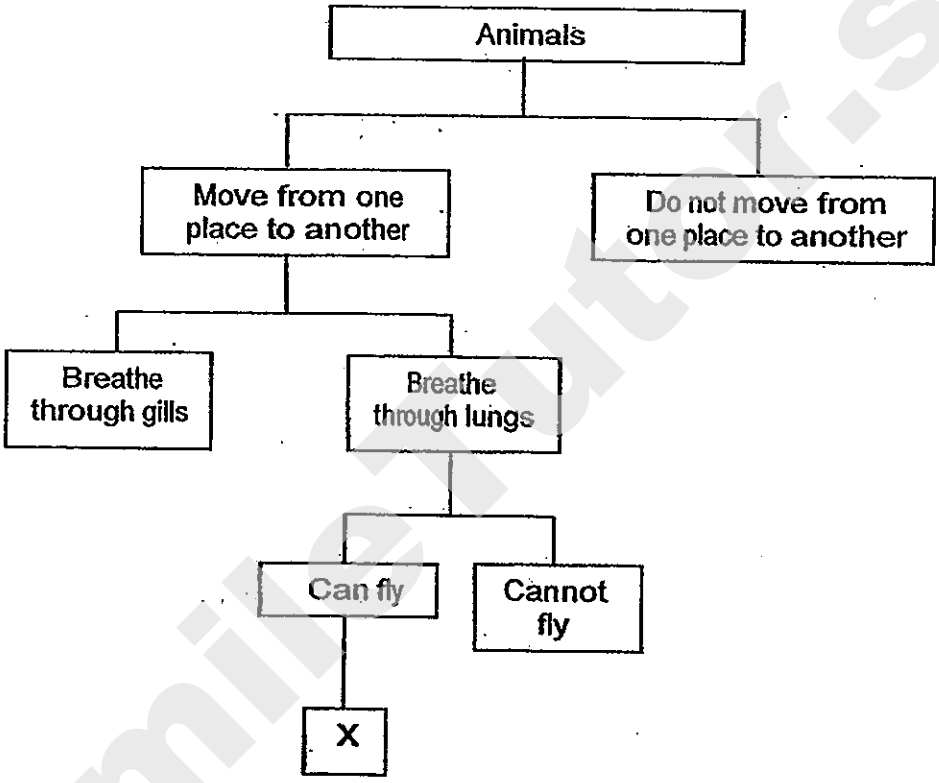
Section A : (30 x 2 marks)

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 provided.

1. The classification chart below shows the characteristics of some animals.



Which of the following animal groups can be represented by X?

A Bird
B Fish
C Insect
D Mammal

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

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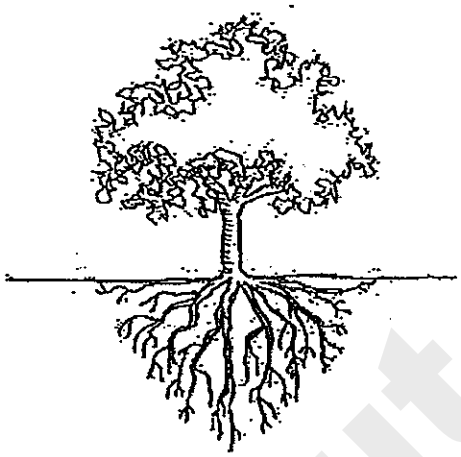
2. The diagram below shows a tree.



Which of the following statements about the parts of the tree is **incorrect**?

A The roots help the tree to transport food.
B The leaves spread out to receive moisture and sunlight.
C The roots spread out to reach for more water and minerals.
D The branches spread the leaves out to enable the tree to maintain its shape.

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

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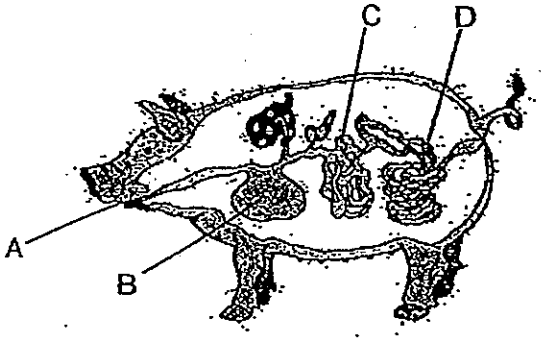
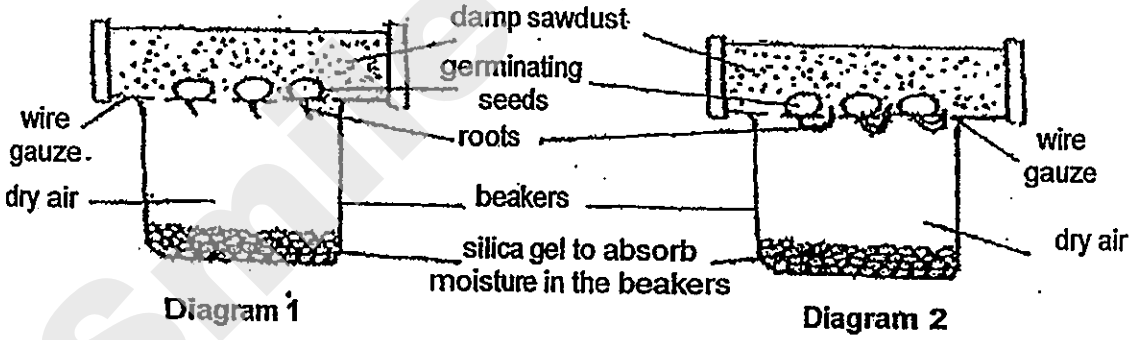
3. The digestive system of a pig as shown below is very similar to that of a human being.



Based on the above diagram, food is partially digested at part _____ and digested food is absorbed into the bloodstream at part _____.

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

4. Sundram placed some germinating seeds in a set-up as shown below in diagram 1.



He then left the set-up in a well-ventilated room and diagram 2 shows the changes to the germinating seeds after a few days.

Which one of the following conclusions can Sundram draw from the above observation?

(1) Roots grow towards water.
(2) Germination cannot take place in dry air.
(3) Germination cannot take place in sawdust.
(4) Air, moisture and warmth are needed for germination to take place.

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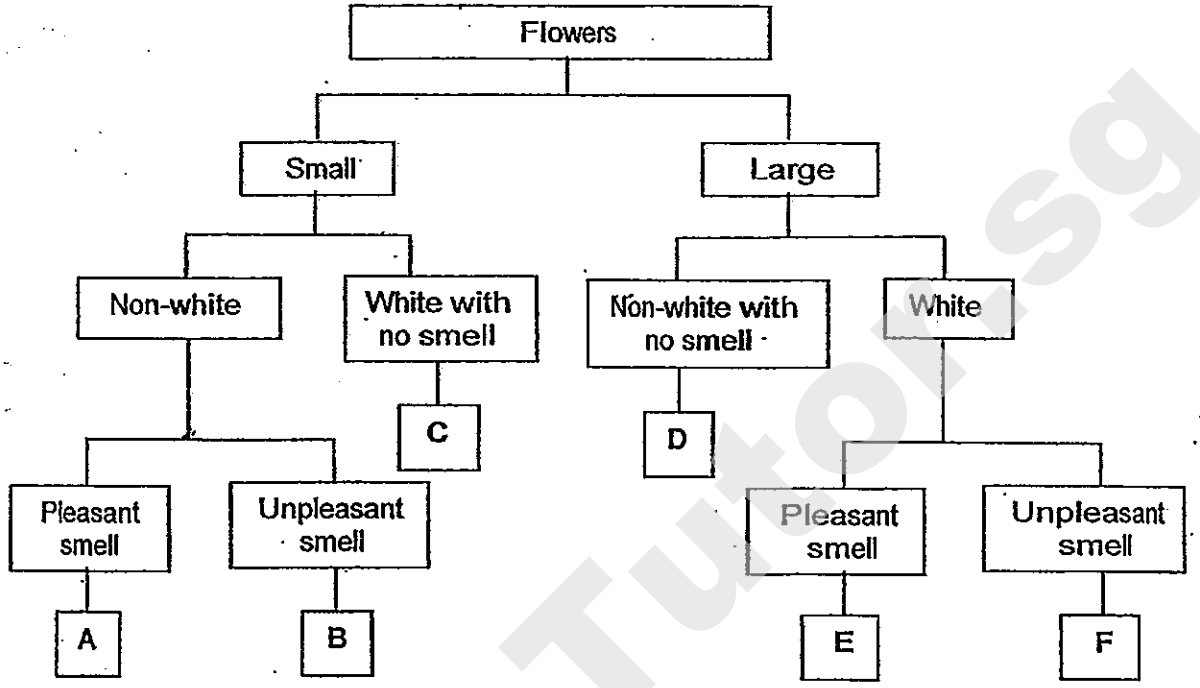
5. The classification chart below shows how 6 flowers, A, B, C, D, E and F, are classified.



The table below shows the characteristics of flowers that animals X, Y and Z are attracted to.

Animal	Characteristics of flowers
X	Small, red with a pleasant smell
Y	Small, white with no smell
Z	Large, white with a pleasant smell

Based on the above classification chart, which one of the following shows the flowers, A, B, C, D, E or F, animals X, Y and Z are most likely attracted to?

	Animal X	Animal Y	Animal Z
(1)	A	C	E
(2)	B	C	F
(3)	E	D	A
(4)	C	D	E

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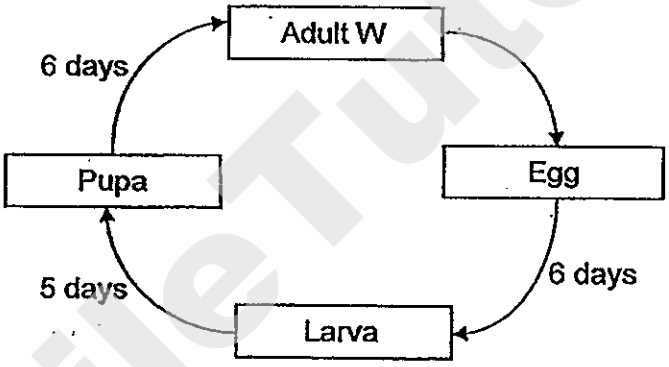
6. The number of eggs laid by organism W and the length of time taken for W to grow from an egg to an adult change with the surrounding temperature as shown in the table below.

Temperature of surroundings (°C)	Number of fertilised eggs laid	Time taken for eggs to grow into adults (days)
16	50	30
21	90	17
26	130	13
31	201	9

At a certain time of the year, the life cycle of W in an environment is shown below.



Based on all the above information, which of the following statements are correct?

A The temperature of the environment is 21°C.
B It takes 11 days for W to become pupae after the eggs have hatched.
C W will be able to multiply quickly when the temperature of the environment is between 26°C and 31°C.
D The number of fertilised eggs W laid decreases with decreasing temperature.

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

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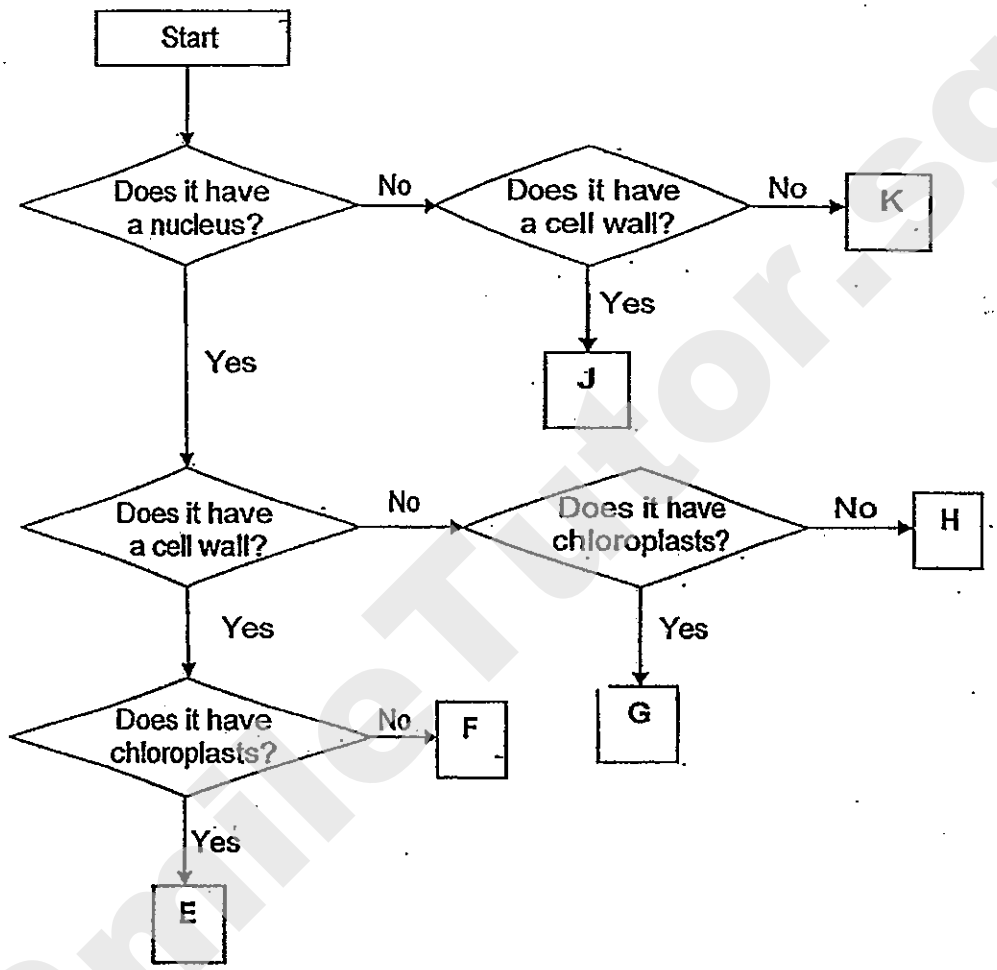
7. The diagram below shows a flowchart used to differentiate cells E, F, G, H, J and K.



Based on the above information, which of the following statements about the above cells are definitely true?

A Cells H and K may be animal cells.
B Cells E and F are taken from plants.
C Cells E and G can trap sunlight to make food.
D Cells J and K may not be cells as they do not have a nucleus.

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

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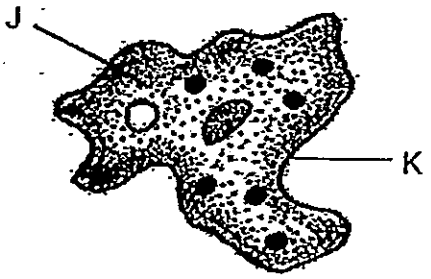
8. The diagram below shows a cell.



Which one of the following states the functions of parts J and K correctly?

	J	K
(1)	Controls the movement of substances in and out of the cell	Controls all activities in the cell
(2)	Allows cell activities to take place	Gives the cell a fixed shape
(3)	Gives the cell a fixed shape	Produces chlorophyll
(4)	Allows cell activities to take place	Controls the movement of substances in and out of the cell

9. The diagram below shows a fruit found by Megan during her school trip to Sungei Buloh Nature Reserve.

Which one of the following tests can Megan carry out to find out if the fruit is most likely dispersed by water?

(1) Measure the mass of the fruit.
(2) Measure the volume of the fruit.
(3) Observe whether the fruit sinks in water.
(4) Observe the presence of hairs on the fruit.

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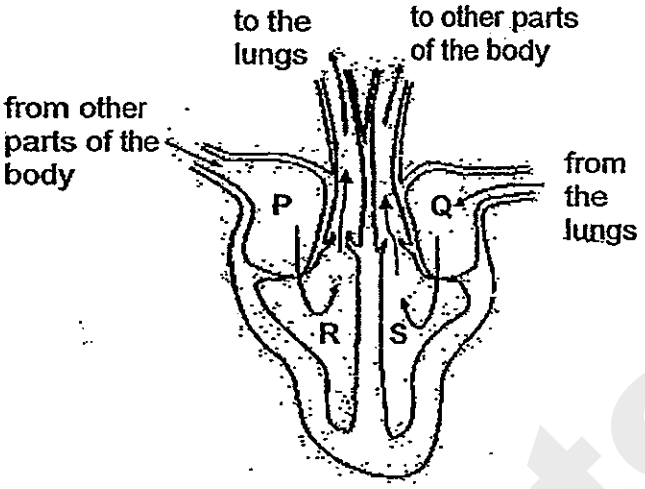
10. The arrows below show the movement of blood as it passes through a human heart.



The human heart

Which one of the following correctly describes the blood found in parts P, Q, R and S?

	P	Q	R	S
(1)	rich in carbon dioxide	rich in oxygen	rich in oxygen	rich in carbon dioxide
(2)	rich in oxygen	rich in carbon dioxide	rich in oxygen	rich in carbon dioxide
(3)	rich in carbon dioxide	rich in carbon dioxide	rich in oxygen	rich in oxygen
(4)	rich in carbon dioxide	rich in oxygen	rich in carbon dioxide	rich in oxygen

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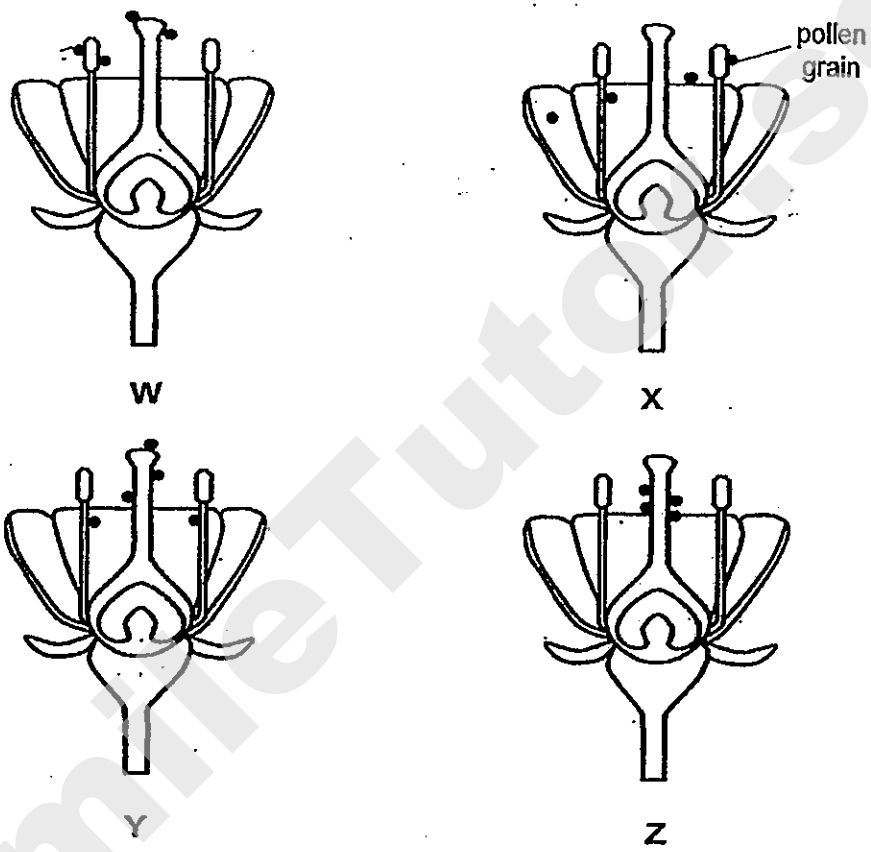
11. The diagram below shows 4 flowers, W, X, Y and Z, of the same species. The black dots "•" represent pollen grains that have landed on the flowers as shown below.



Based on the above observation, which of the flowers, W, X, Y or Z, have been successfully pollinated?

(1) W and X only
(2) W and Y only
(3) Y and Z only
(4) W, Y and Z only

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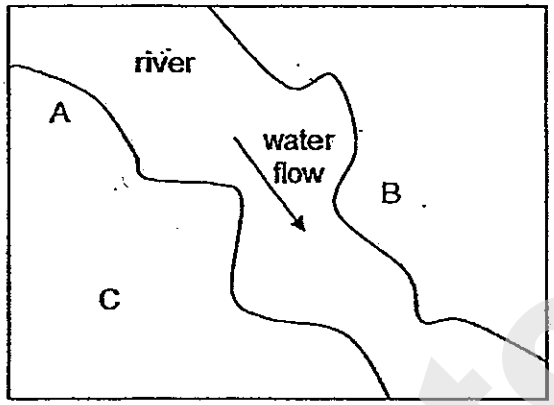
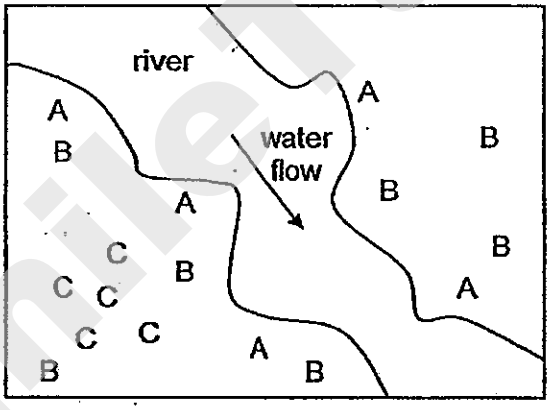
12. The diagram below shows part of an island where 3 types of plant, A, B and C are growing.



After 3 years, the number of each type of plant has increased as shown in the diagram below.



How are the seeds/fruits of A, B and C most likely dispersed?

	A	B	C
(1)	Water	Splitting	Splitting
(2)	Animal	Animal	Wind
(3)	Wind	Wind	Animal
(4)	Water	Animal	Splitting

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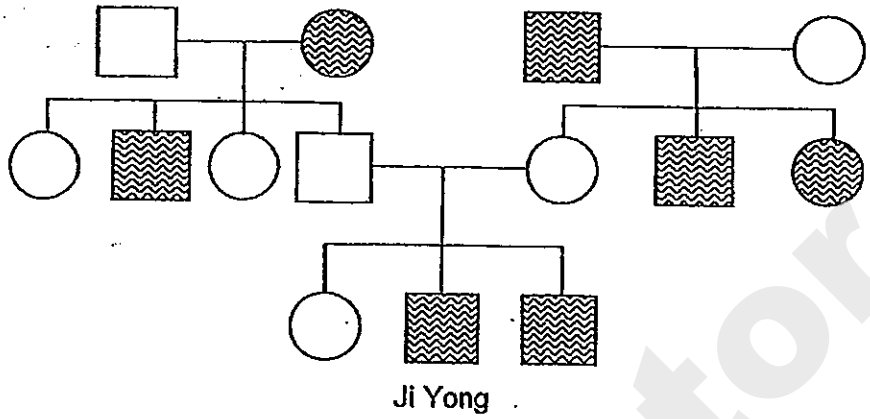
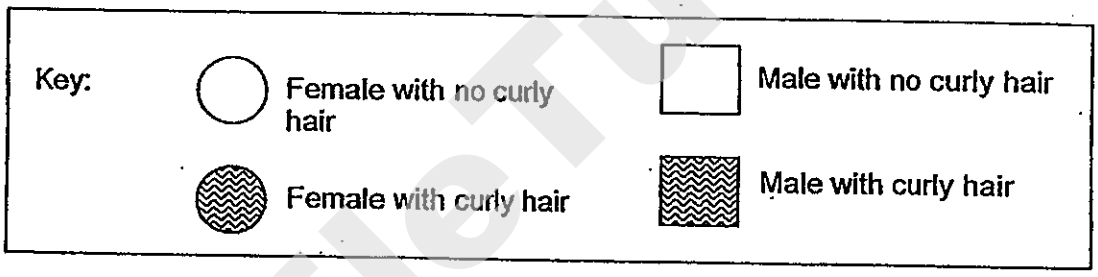
13. Study the family tree of Ji Yong below. The family tree shows the members who either have curly hair or no curly hair.





Based on the information provided above, which one of the following statements about the family tree is true?

(1) Ji Yong's parents have curly hair.
(2) Ji Yong and his brother do not have curly hair.
(3) Ji Yong's father has a brother who has curly hair.
(4) Both Ji Yong's grandfathers do not have curly hair.

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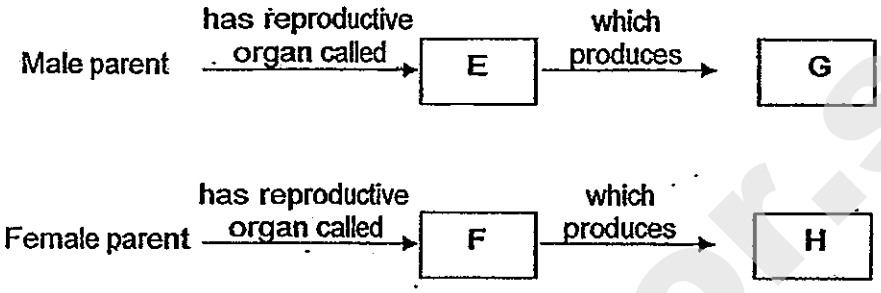
14. Study the diagram below.



Which one of the following correctly represents E, F, G and H?

	E	F	G	H
(1)	Anther	Ovary	Pollen grains	Ovules
(2)	Testis	Ovary	Sperms	Eggs
(3)	Penis	Vagina	Eggs	Ovaries
(4)	Testis	Womb	Sperms	Eggs

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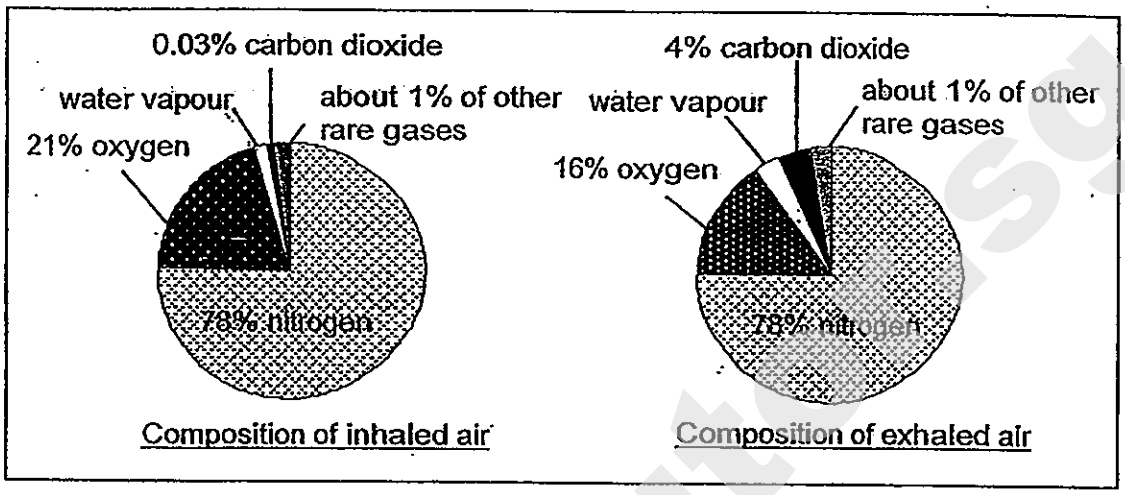
15. The diagram below shows the composition of inhaled and exhaled air.



Based on the above diagram, which of the following statements about inhaled and exhaled air are true?

A Exhaled air has more oxygen than carbon dioxide.
B Exhaled air has more water vapour than inhaled air.
C Inhaled air has a lower temperature than exhaled air.
D Inhaled air has the same amount of nitrogen as exhaled air.

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

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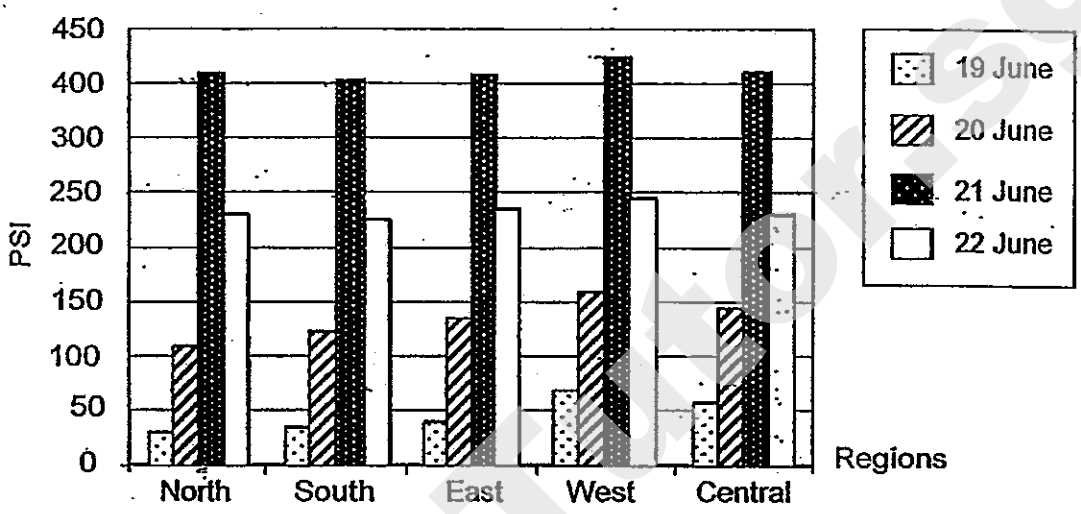
16. The graph below shows the Pollutant Standards Index (PSI) readings of the North, South, East, West and Central regions in Singapore from 19 June to 22 June.



The table below shows the PSI value and the air quality description.

PSI Value	0 - 50	51 - 100	101 - 200	201 - 300	Above 300
Air quality descriptor	Good	Moderate	Unhealthy	Very unhealthy	Hazardous

(Note: PSI is a measure of the concentrations of pollutants in the air.)

Based only on the above information, which of the following statements is/are definitely true?

A The PSI on all 4 days are within the unhealthy range everywhere in Singapore.
B The PSI on all 4 days are highest in the West region.
C The PSI on all 4 days are lower in the North than in the South region.
D The lungs and air tubes of the people are damaged on the days when the PSI value is between 101 and 200.

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

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17. Mohan fully immersed 4 different materials, A, B, C and D, of the same size into 4 containers each containing a certain amount of tap water. He then removed the materials from the containers after 5 minutes.

The table below shows the amount of water in the containers as observed by Mohan.

	Container for material A	Container for material B	Container for material C	Container for material D
Amount of water in container at first	65ml	155ml	90ml	100ml
Amount of water in container at the end	55ml	125ml	45ml	70ml

Based on the above results, which one of the materials, A, B, C or D, should Mohan choose to make a bath towel?

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

18. The table below shows the freezing and boiling points of substances A, B, C and D.

Substance	Freezing point	Boiling point
A	-4 °C	60 °C
B	5 °C	75°C
C	-2 °C	45 °C
D	20 °C	87 °C

At which one of the following temperatures are the 4 substances. A, B, C and D, in the same state?

(1) 18 °C
(2) 32 °C
(3) 47 °C
(4) 63 °C

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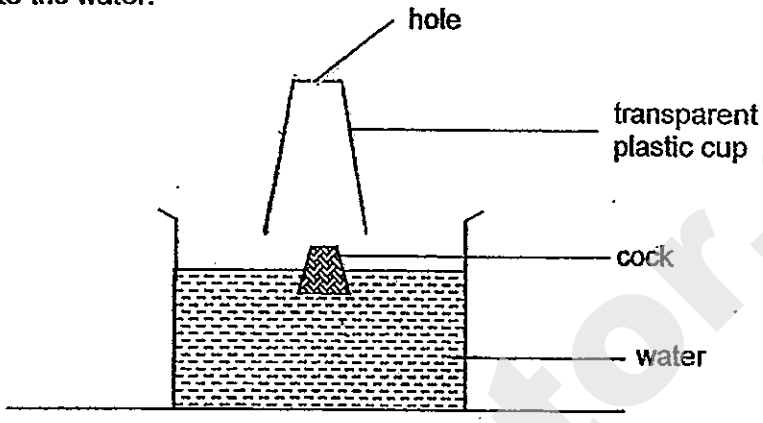
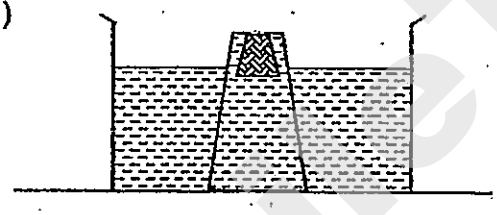
19. Kenne placed a piece of cork in a basin of water. Next, he made a hole at the bottom of a transparent plastic cup before inverting the cup over the piece of cork as shown below. He then proceeded to push the cup vertically into the water.

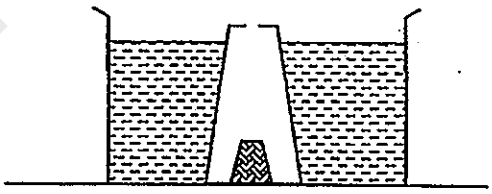


Which one of the following best represents what he would observe?

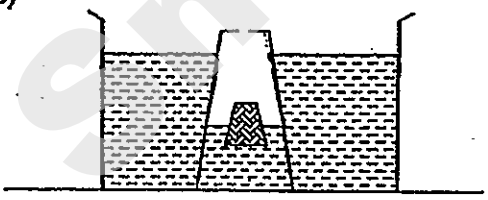
(1)



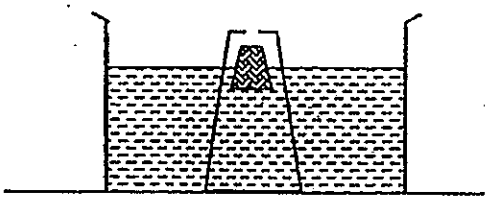
(2)



(3)



(4)



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20. Ethan wanted to compare the hardness of four objects R, S, T and U. He tested them by scratching them with rods made of plastic, wood and metal. After the experiment, he concluded that object T is the hardest, followed by object U, R and S.

Which one of the following was the most likely observation that he had made?

(1)

Objects	(✓) indicates the presence of scratch marks made by the rods		
	Plastic	Wood	Metal
R			✓
S			
T	✓	✓	✓
U		✓	✓

(2)

Objects	(✓) indicates the presence of scratch marks made by the rods		
	Plastic	Wood	Metal
R		✓	✓
S	✓	✓	✓
T			
U			✓

(3)

Objects	(✓) indicates the presence of scratch marks made by the rods		
	Plastic	Wood	Metal
R		✓	✓
S			
T	✓	✓	✓
U			✓

(4)

Objects	(✓) indicates the presence of scratch marks made by the rods		
	Plastic	Wood	Metal
R			✓
S	✓	✓	✓
T			
U		✓	✓

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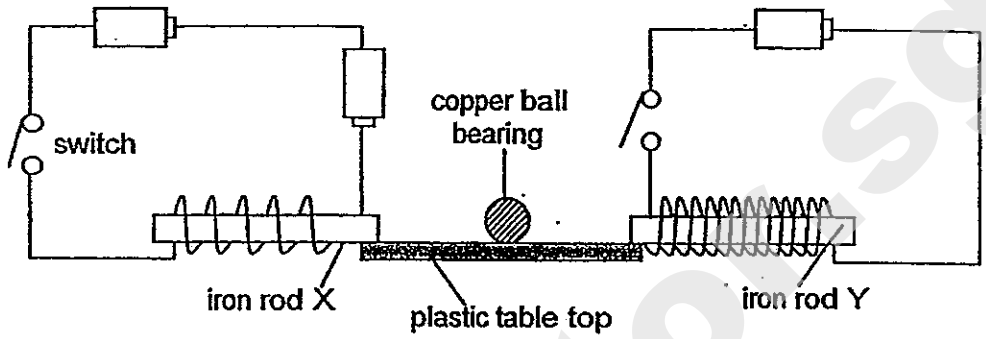
21. The diagram below shows an experiment set up by Ron.



Ron had used identical batteries, wires, switches and iron rods for the above set-up.

When the switches were closed, what observation would Ron make of the ball bearing?

(1) The ball bearing moved towards iron rod X.
(2) The ball bearing moved towards iron rod Y.
(3) The ball bearing remained in the same position.
(4) The ball bearing moves towards iron rod X before moving towards iron rod Y.

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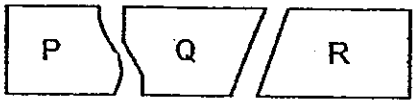
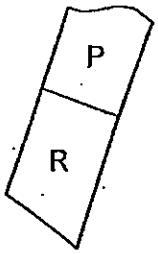
22. Beckam broke a piece of magnet into 3 pieces, P, Q and R, as shown below.

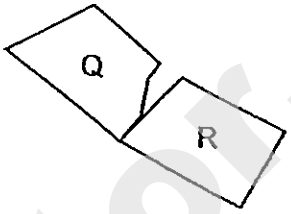


Which one of the following arrangements is possible when 2 broken pieces of the magnet are brought together?

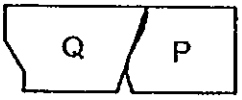
(1)



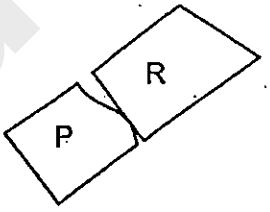
(2)



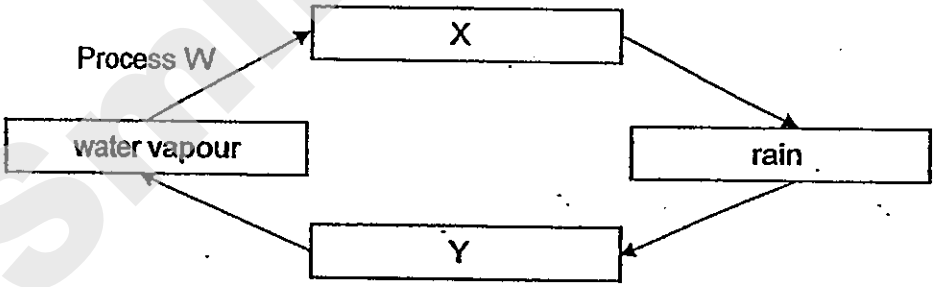
(3)



(4)



23. The diagram below shows the water cycle.



Which one of the following correctly represents W, X and Y?

	W	X	Y
(1)	evaporation	cloud	ocean water
(2)	evaporation	ocean water	cloud
(3)	condensation	cloud	ocean water
(4)	condensation	ocean water	cloud

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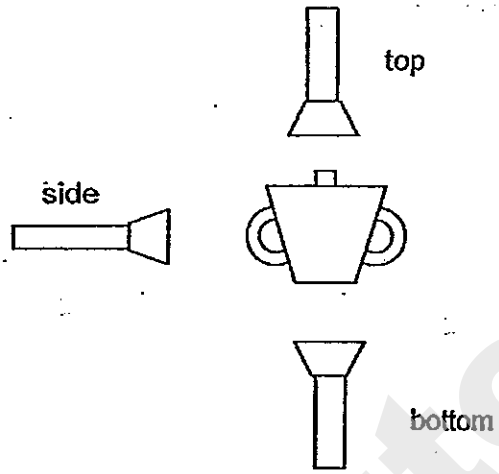
24. Bee Eng used a torch to shine on a mug with a lid from three different positions as shown below.



Which one of the following correctly shows the shadows observed by Bee Eng when the torch was shone from the three different positions?

	top	side	bottom
(1)			
(2)			
(3)			
(4)			

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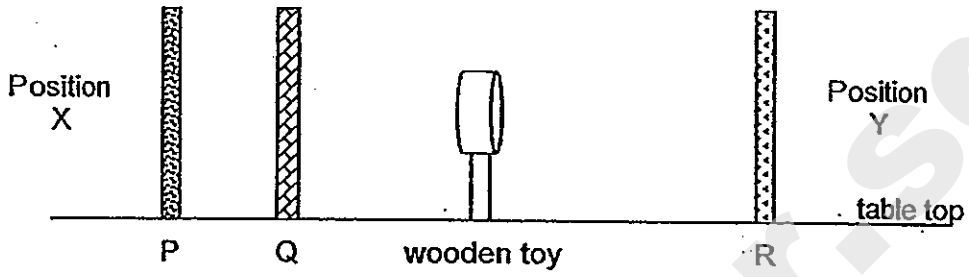
25. Angela placed 3 similar sized screens, P, Q and R, made of different materials and a wooden toy on a table as shown below.



When Angela viewed the toy from position X, she was able to see it clearly. However, the toy was seen as a blurry image when she viewed it from position Y.

Which one of the following best represents the materials that screens P, Q and R could be made of?

	P	Q	R
(1)	Frosted glass	Clear glass	Clear plastic
(2)	Clear glass	Cardboard	Frosted paper
(3)	Clear plastic	Frosted glass	Cardboard
(4)	Clear plastic	Clear glass	Frosted paper

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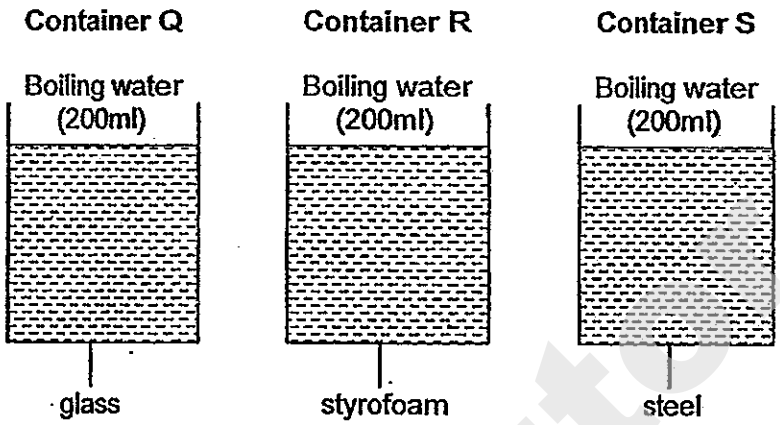
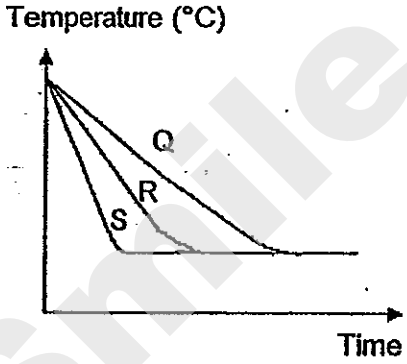
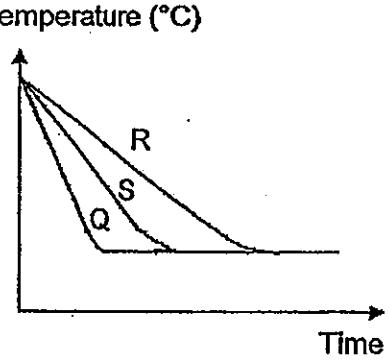
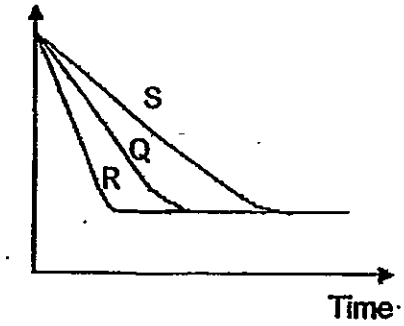
26. Three containers, Q, R and S, of the same size and thickness are filled with 200ml of boiling water. Each container is made of a different material as shown below. The containers are left on a table for three hours.

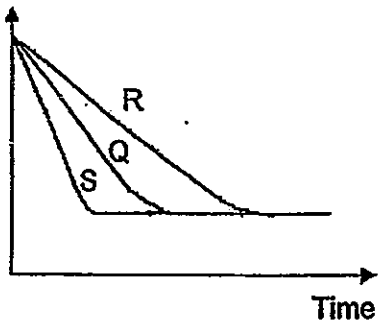


Which one of the following graphs best represents the changes in the temperature of the water in each container at the end of the experiment?

(1)


(2)


(3)


(4)


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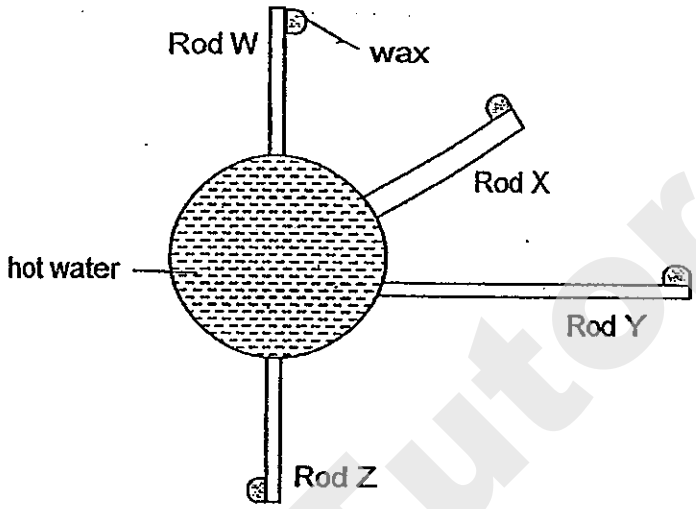
27. Nelson wanted to investigate the factors affecting the heat conductivity of different rods. He had a container of hot water with rods W, X, Y and Z attached to it. Each rod had a piece of wax placed at the end of it as shown in the diagram below. He then measured the time taken for the wax on each rod to melt completely.



The table below provides the information on the various rods.

Rod	Material	Length (cm)	Thickness (cm)
W	Brass	6	0.5
X	Brass	6	0.8
Y	Glass	9	0.3
Z	Steel	6	0.5

Which of the following sets of rods should he compare in order to ensure a fair test?

A Rod W and X
B Rod W and Z
C Rod X and Y
D Rod Y and Z

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

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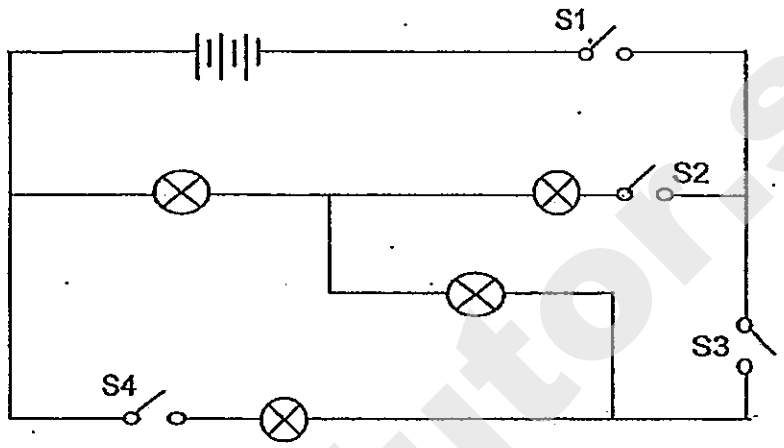
28. An electric circuit was set up as shown in the diagram below.



Which of the following switches should be closed to ensure that only 2 bulbs light up?

A S1 and S2
B S1 and S3
C S1 and S4
D S2 and S4

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

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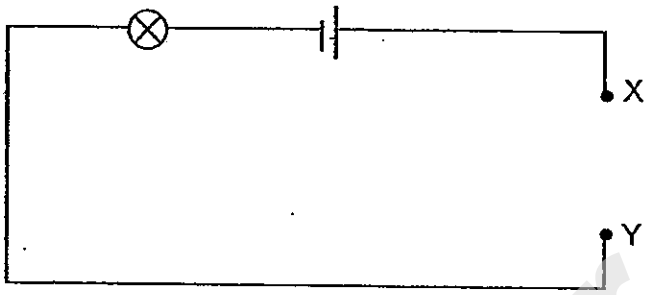
29. Singa cut 4 pieces of wire, P, Q, R and S, each of different length and thickness from the same material. He then set up a circuit as shown below.



He used each of the wires to join ends X and Y and observed the brightness of the bulb. He recorded his observations in the table below.

Wire	Length (m)	Thickness (mm)	Brightness of bulb
P	1.5	0.2	Bright
Q	1.5	0.4	Very bright
R	2	0.2	Dim
S	2	0.4	Bright

Based on the information in the table above, what can Singa conclude from his experiment?

A As the length of the wire decreases, the brightness of the bulb increases.
B As the length of the wire decreases, the brightness of the bulb decreases.
C As the thickness of the wire increases, the brightness of the bulb decreases.
D As the thickness of the wire increases, the brightness of the bulb increases.

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

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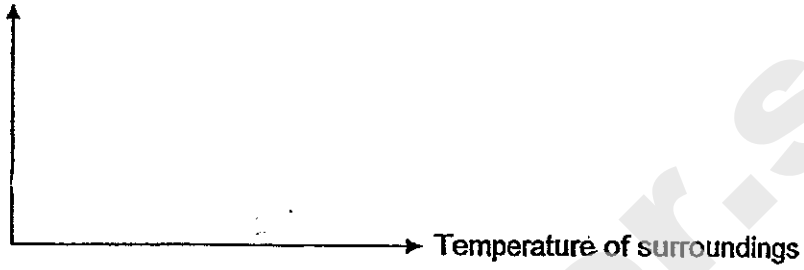
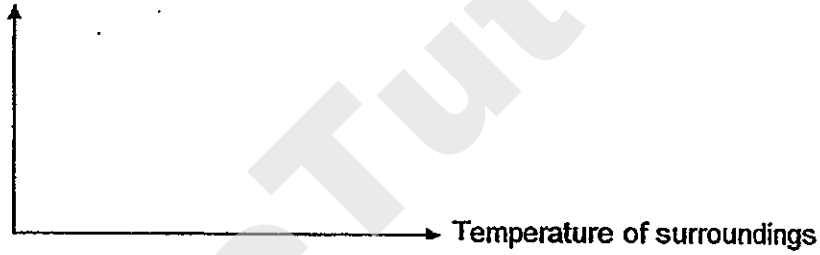
30. Aston conducted an experiment to find out the effects of temperature on the evaporation of water from 3 identical wet towels over a period of time. Which one of the following should he use to represent his results?

(1) Size of towel

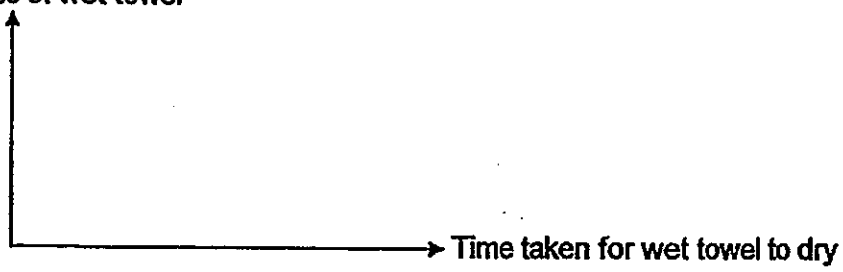


(2) Mass of wet towel



(3) Exposed surface area of towel

(4) Mass of wet towel



***** END OF SECTION A *****

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Name: _____ ( )

Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

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Primary 5

Semestral Assessment 2 – 2013

SCIENCE

BOOKLET B

29 October 2013

Booklet A	60
Booklet B	40
Total	100

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

14 questions
40 marks

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

This paper consists of 16 printed pages.

_____
Parent's Signature/Date

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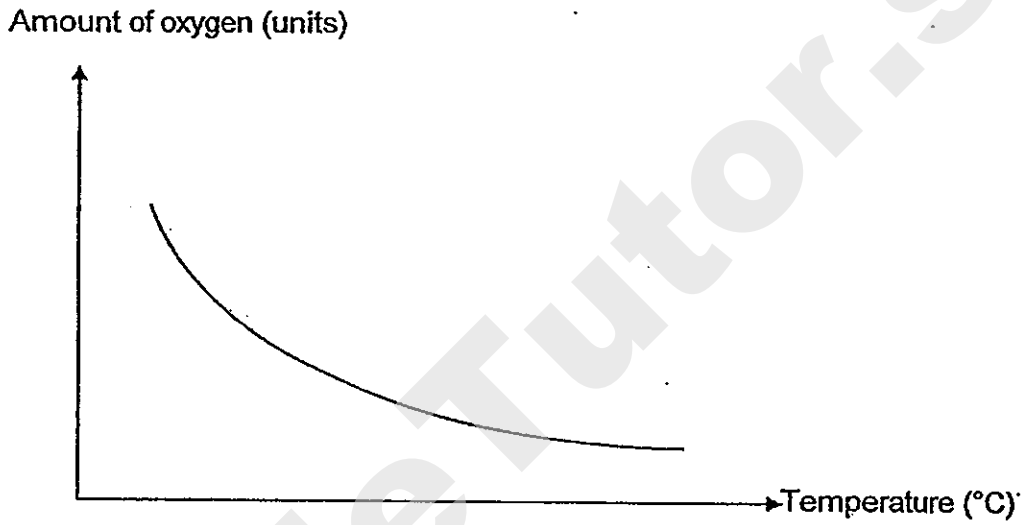
Section B (40 marks)

For questions 31 - 44, 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. Agnes conducted an experiment to measure the amount of oxygen present in the water of her fish tank at different temperatures. She plotted her results in the graph below.



(a) Based on the above graph, what is the relationship between the temperature and the amount of oxygen present in the water? [1]

_____

_____

(b) Agnes observed that the rate at which the fishes in her tank open and close their gill covers increased when the temperature of the water in the tank increased. Using the results of the experiment, explain her observation. [2]

_____

_____

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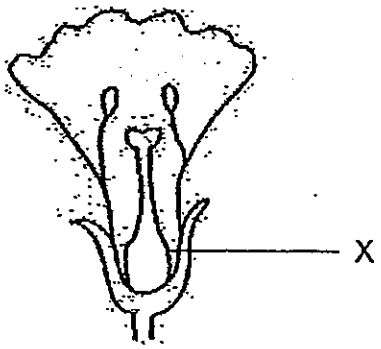
32. Gwen's teacher showed her a diagram of the cross-section of a flower P as shown below.



Flower P

(a) Based on her observation of the above diagram, Gwen concluded that flower P is not pollinated by wind. Why do you think Gwen concluded so? [2]

_____

_____

(b) What will part X develop into after fertilisation has taken place? [1]

_____

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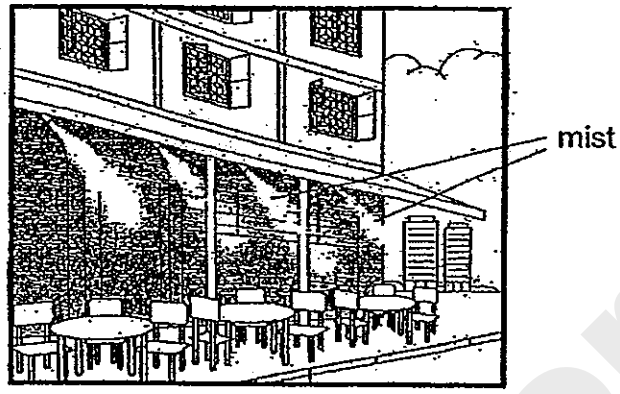
33. Ah Huat installed water mist systems outside his open-air cafe to cool the surrounding air as shown below. Tiny water droplets in the form of a mist are produced.



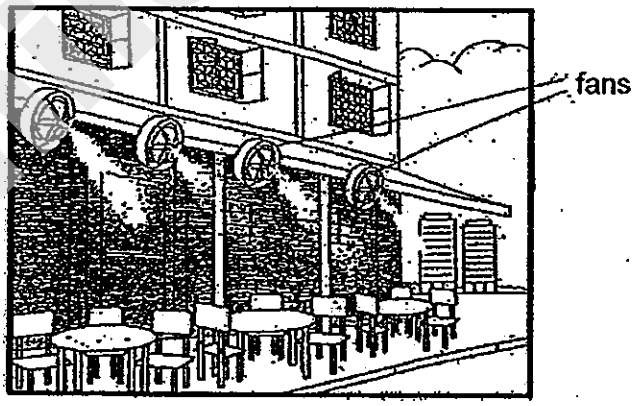
(a) Explain how such a system is able to lower the temperature of the surrounding air. [2]

_____

_____

_____

Subsequently, Ah Huat added fans to his water mist system as shown below to cool the surrounding air more effectively.



(b) Suggest two reasons how adding the fans would help to cool the surrounding air more effectively. [2]

(i) _____

_____

(ii) _____

_____

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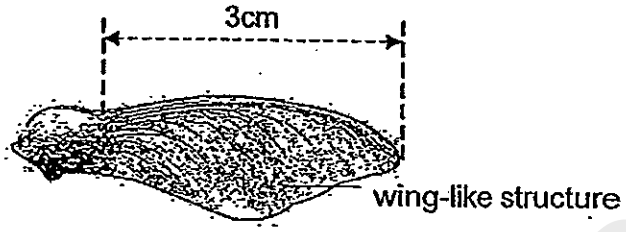
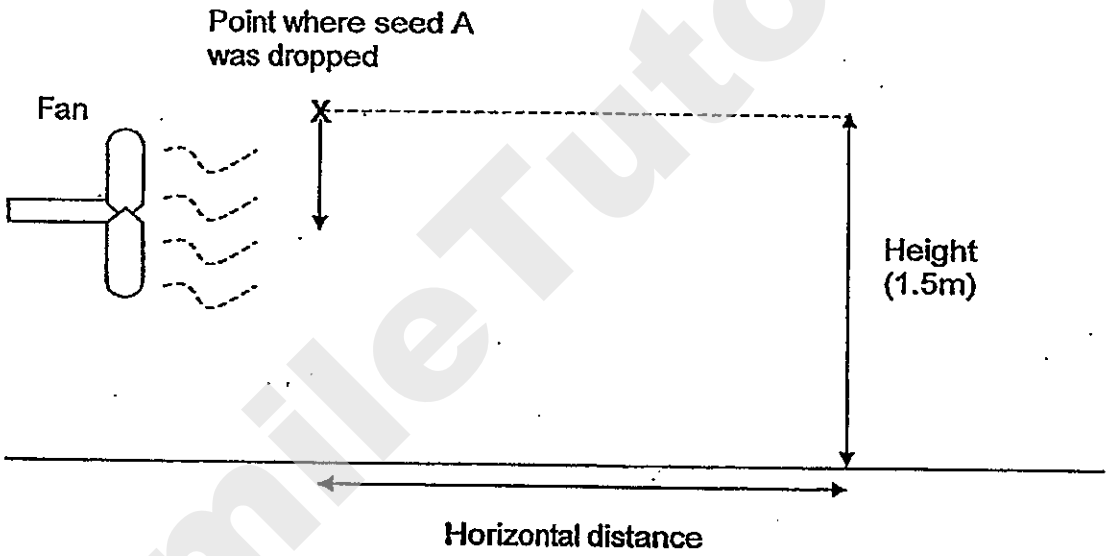
34. Mikayla wanted to find out how the wing-like structure of a seed affects the distance it will travel. She obtained a seed A with a 3cm wing-like structure from a plant as shown below.



Seed A

She dropped it from a height of 1.5m and measured the horizontal distance it travelled as shown in the set-up below.



Next, she trimmed off 1cm of the wing-like structure of seed A and repeated the experiment as above. Then, she trimmed off another 1cm from the wing-like structure and repeated the experiment as above. She did this another time before plotting her results on a graph as shown.

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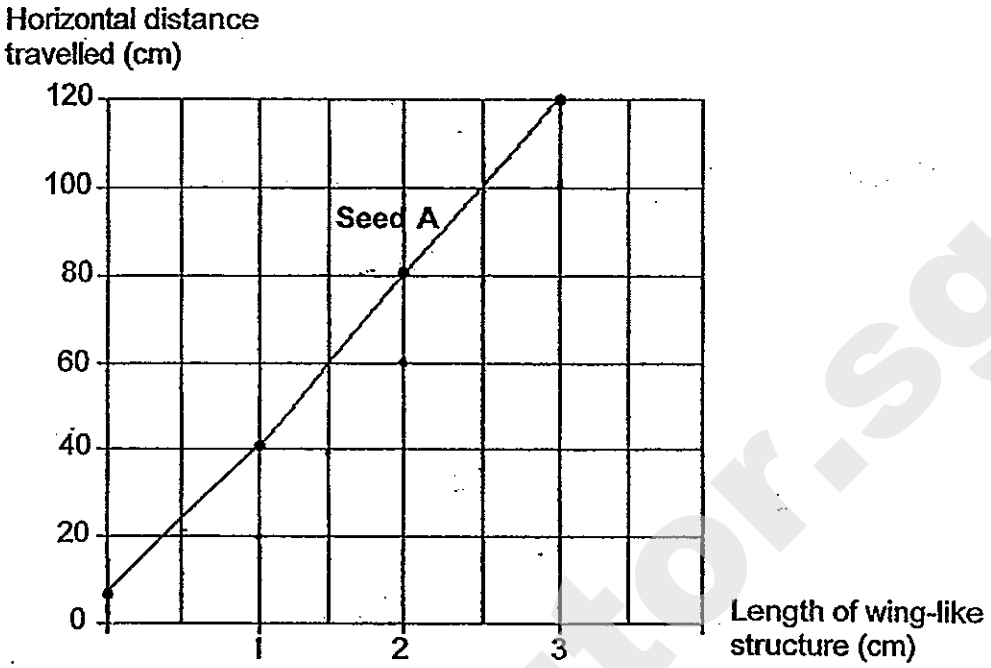

(a) Based on the above graph, state the relationship between the length of the wing-like structure of seed A and the horizontal distance travelled. [1]

_____

_____

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

_____

_____

(c) Mikayla found another seed B, with the same 3cm wing-like structure as seed A, from the same plant. However, Seed B was heavier than seed A. She then repeated the same experiment with seed B and recorded the results.
Draw another graph in the above diagram to show the results for seed B. [1]

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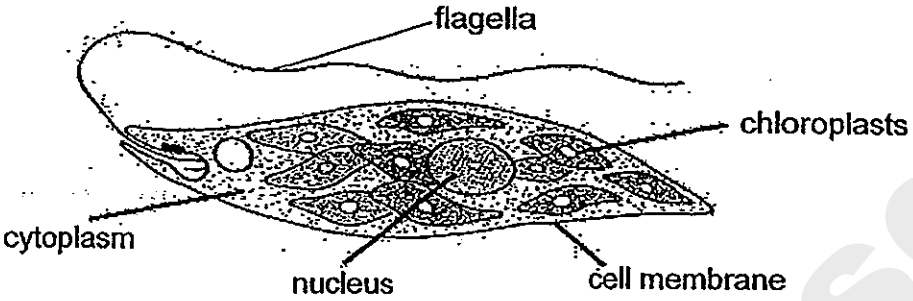
35. Meng Neng found a single-celled organism X, as shown below, living in pond water.



(a) Based on his observation of organism X, Meng Neng said that organism X cannot be classified as a plant. Suggest a reason why he said so. [1]

_____

_____

(b) State one part inside this organism that is not found in a typical animal cell. [1]

_____

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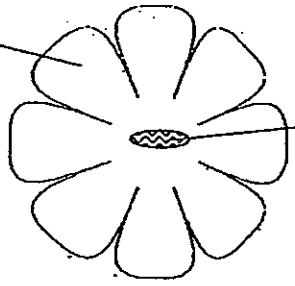
36. Sam wanted to find out the colour of flowers that most bees prefer. He made similar sized model flowers using different coloured papers. He then put 15 drops of the same sweetened water in the centre of each flower before leaving the model flowers in the open field.



He then counted the number of bees that visited the model flowers over 3 hours and recorded his results in the table below.

Colour of flower	Number of bees attracted		
	8 – 9am	9 – 10am	10 – 11am
blue	18	11	13
purple	10	8	9
yellow	27	24	20

(a) Based on the results in the above table, what conclusion can Sam draw from his experiment? [1]

_____

(b) Hamni wanted to find out the relationship between the size of flowers and the number of honey bees visiting the flowers. Suggest 2 changes she should make to Sam's experiment. [2]

(i) _____

(ii) _____

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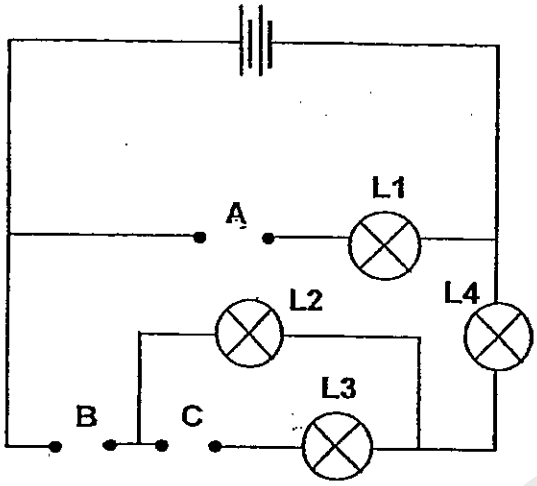
37. Gywneth was given 3 rods, X, Y and Z, made of unknown materials. She placed them at positions A, B and C, respectively of the circuit shown below.



The results of her experiment were shown in the table below. When any of the bulbs, L1, L2, L3 or L4, lit up during the experiment, a tick (√) was placed in the box.

Positions where rods were placed			Bulbs			
A	B	C	L1	L2	L3	L4
X	Y	Z	√	√		√

(a) Based on the results in the above table, what can you conclude about the electrical conductivity of the 3 rods? [1]

_____

_____

(b) To conduct further tests on the rods, Nerissa then placed the rods at different positions as shown in the table below. Indicate with a tick (√) the bulbs that would light up when the rods were placed at different positions. [2]

	Positions where rods were placed			Bulbs			
	A	B	C	L1	L2	L3	L4
(i)	Y	Z	X				
(ii)	Z	Y	X				

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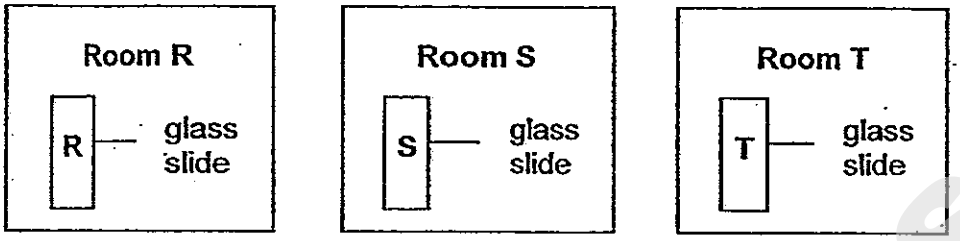
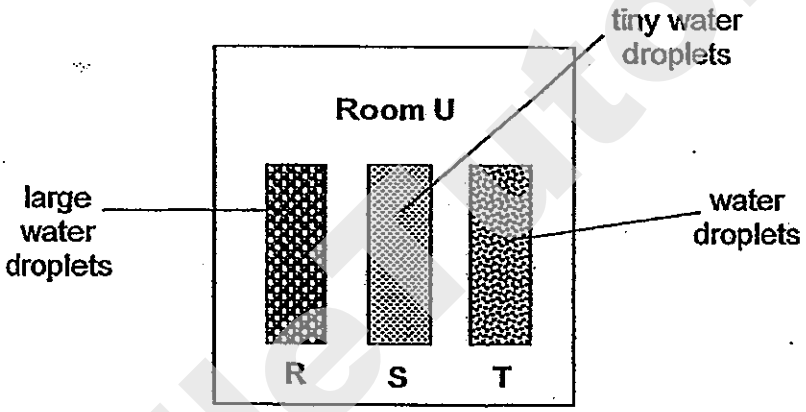
38. Mei Ling left three similar glass slides in 3 rooms, R, S and T, of different temperatures for an hour as shown below:



After which, she removed the glass slides and placed them on a table in room U. After 10 minutes, she noticed water droplets forming on the glass slides as shown in the diagram below.



(a) Based on the results observed above, arrange the 3 rooms, R, S and T, in order of their temperatures, from the lowest to the highest. [1]

_____

(b) Explain how water droplets were formed on the glass slides. [2]

_____

_____

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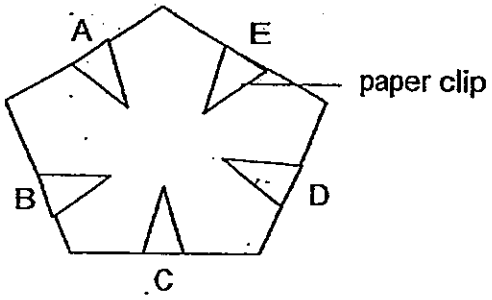
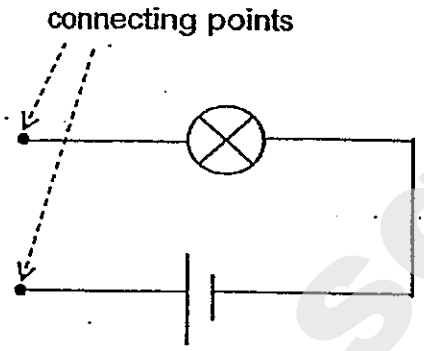
39. Joenn's Science teacher asked her to use a circuit tester to test the wire connections at the back of the circuit card shown below.



Circuit card



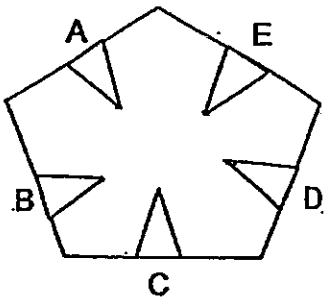
Circuit tester

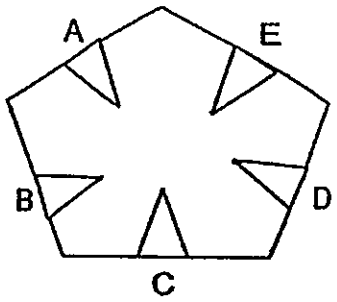
She recorded her test results in a table as shown below.

Clips Tested	Did the bulb light up?	
	Yes	No
A and B	√	
A and C		√
A and D	√	
A and E	√	
B and C		√
B and D	√	
B and E	√	
C and D		√

Joenn concluded that there were several possible connections on the circuit card.

From the results obtained, draw 3 lines on each circuit card below to show 2 different wire connections at the back of the card. [2]





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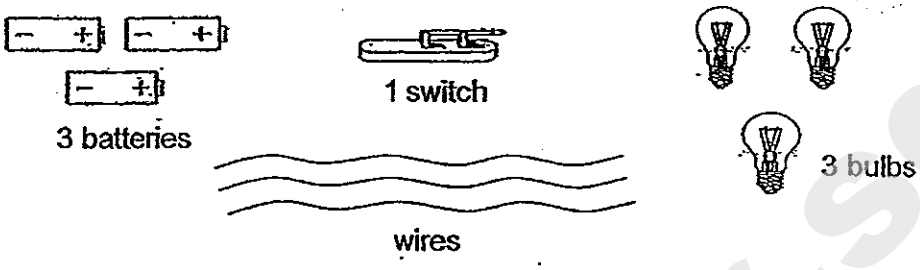
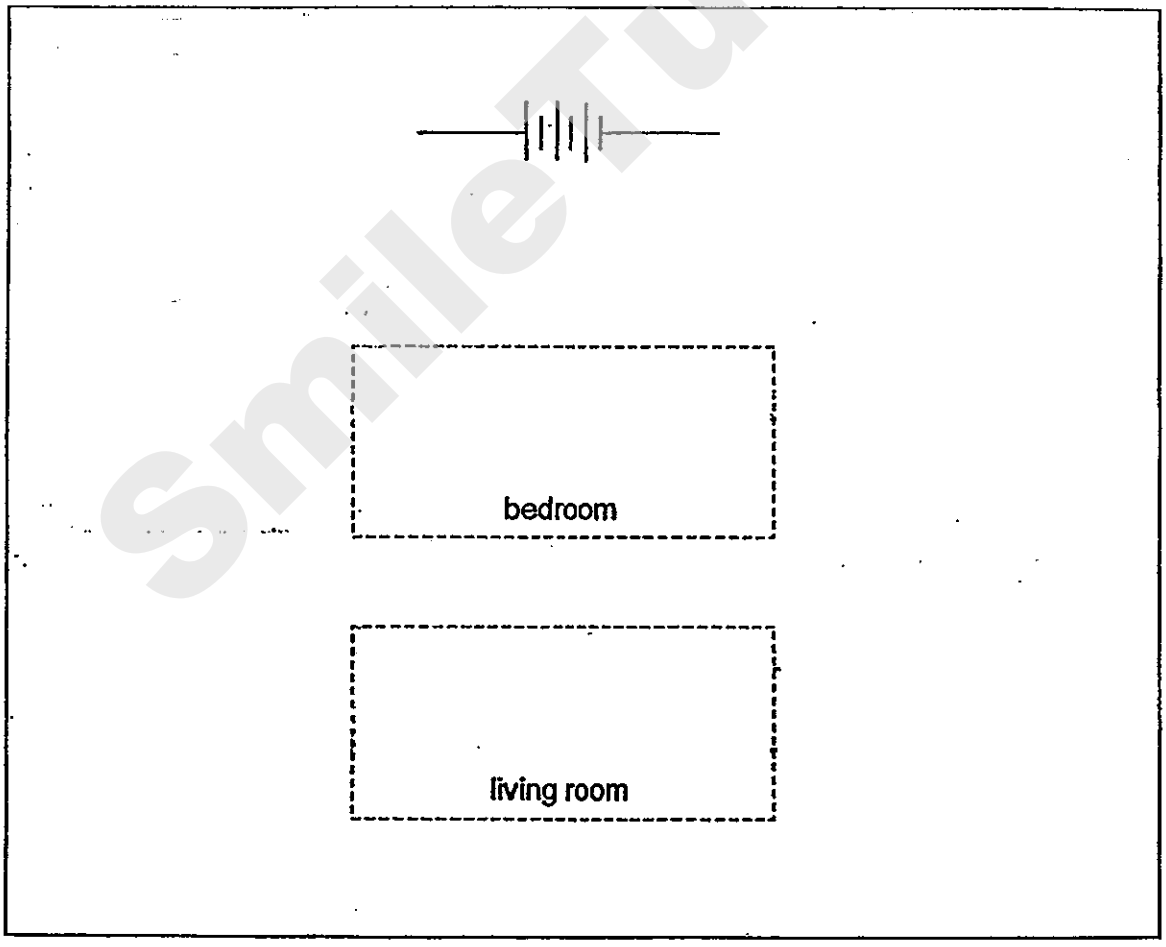
40. Sandra wanted to make a toy house for her doll and she wanted to fix 2 bulbs in the living room and 1 bulb in the bedroom. She was then given some electrical components as shown below.



Upon completing the toy house, she noticed that the light in each room was of equal brightness when the switch was closed.

Complete the circuit diagram below to show the circuit that Sandra had set up. (*Sandra has to use all the components given.*) [2]



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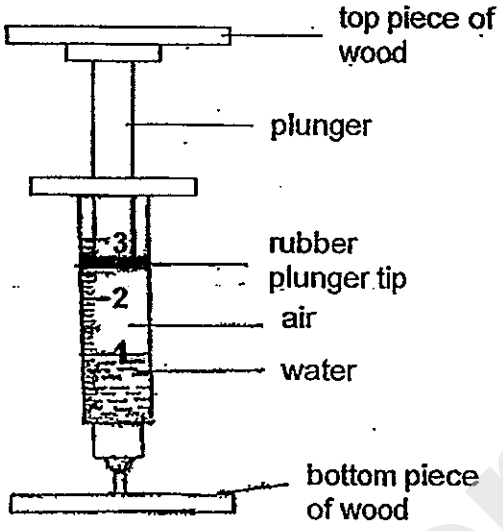
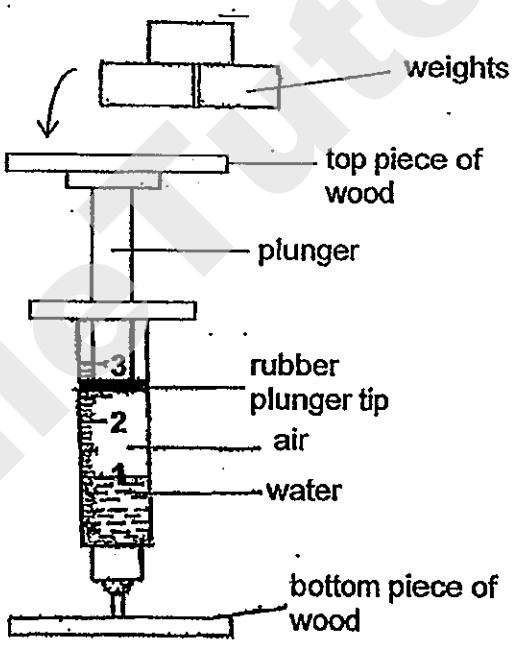
41. Penelope placed a syringe containing water and air between two pieces of wood as shown below.



Penelope then placed weights on the top piece of wood as shown in the diagram below.



(a) What do you think would happen to the volume of air and water in the syringe when the weights were placed on the top piece of wood? [2]

_____

(b) If Penelope were to place more weights on the top piece of wood, would the rubber plunger tip reach the mark "1" on the syringe? Explain your answer. [1]

_____

_____

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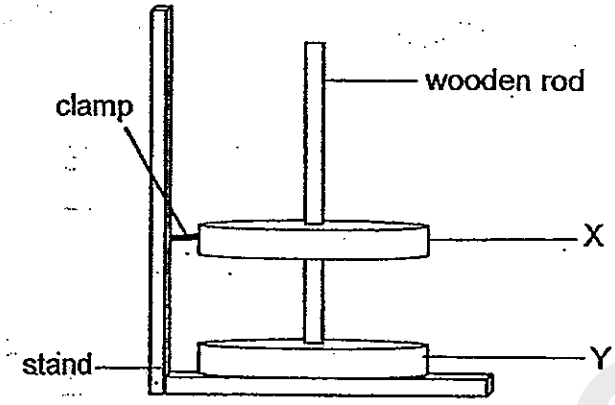
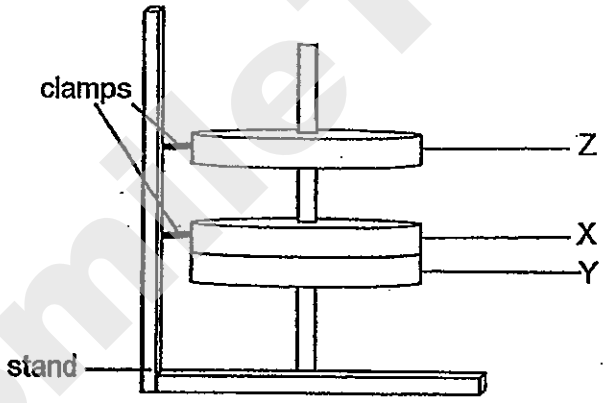
42. Sean placed two different metal rings X and Y through a wooden rod and clamped metal ring X to the stand as shown in the diagram below.



He then clamped metal ring Z to the set-up and the diagram below showed what happened to ring Y.



Based on the above observation, state whether each of the following statements is True (T), False (F) or Not Possible to Tell (NP). [2]

	Statements	Answer
(a)	Ring Y is a magnet.	
(b)	Ring Z is a magnet.	
(c)	Ring Y and Z are made of steel.	
(d)	Ring X is made of a magnetic material.	

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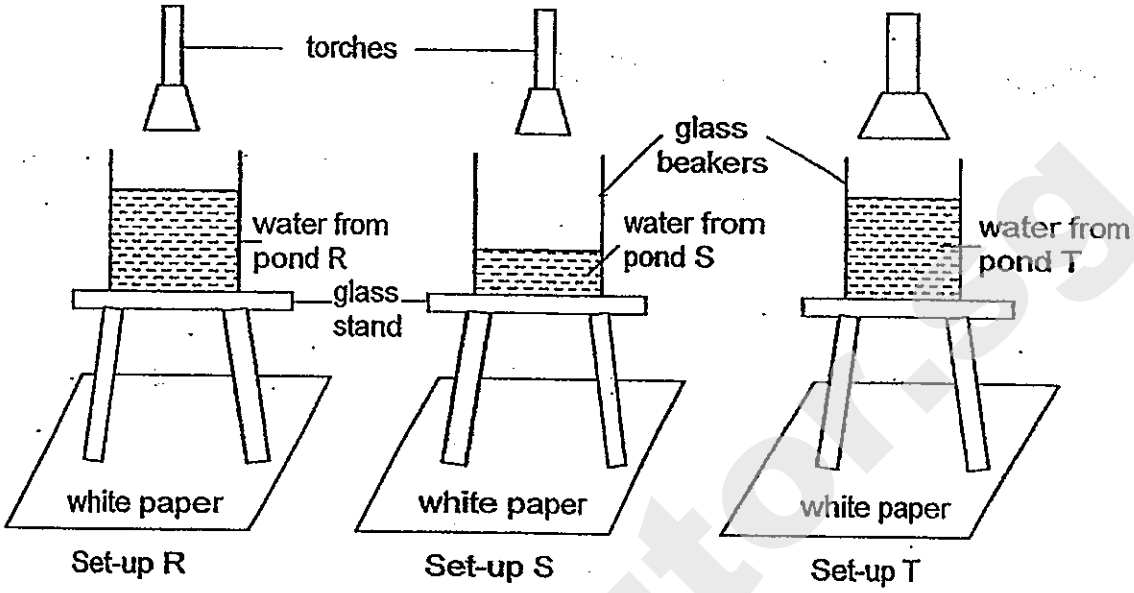
43. Jasmine conducted an investigation to find out which pond has the greatest amount of soil particles in the water. She collected 3 samples of water from 3 ponds R, S and T and set up the experiment as shown below in a dark room.



Her teacher told her that she had conducted an unfair test.

(a) State 2 changes Jasmine should make to her set-ups to ensure a fair test. [1]

(i) _____

(ii) _____

(b) Jasmine conducted her experiment in a dark room. How does this make it a fair test? [1]

_____

_____

(c) Based on her experiment, what observation would help her to decide which pond water has the least amount of soil particles? [1]

_____

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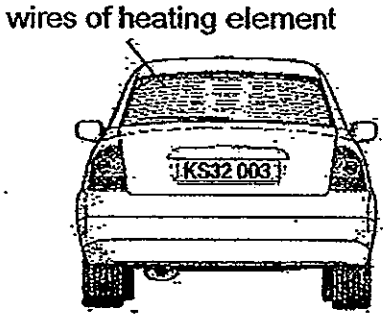
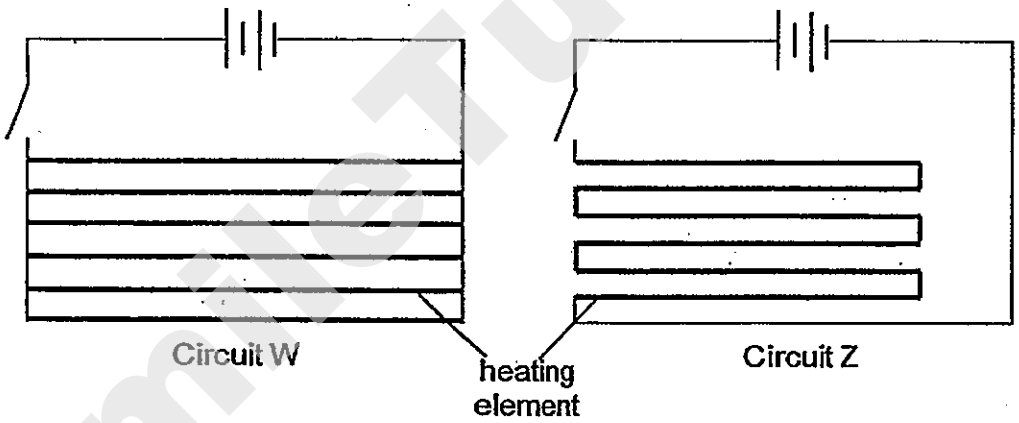
44. The back window of a car shown below has a heating element that is part of an electrical circuit connected to the battery of the car. On cold days, mist may form on the back window of the car, obstructing the motorist's view of the traffic. When the heating element is switched on, the back window will be prevented from misting over.



The diagram below shows two ways, W and Z, of connecting the circuit of the heating element.



(a) After observing the two circuits, Kenneth concluded that circuit W is more suitable for the heating element. Explain why Kenneth made such a conclusion. **(Do not mention length of heating element.)** [2]

_____

_____

(b) Explain how the heating element prevents the back window of the car from misting over when the switch is closed. [2]

_____

_____

~~ End of Paper ~~

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ANSWER SHEET

EXAM PAPER 2013
SCHOOL : CHIJ
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
2	4	3	1	1	3	3	4	3	4	2	4	3	2	3	1	3

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	4	2	3	1	3	4	4	4	1	1	2	2

31)a)As the temperature creases, the amount oxygen in two decreases.
b)The greater the temperature of the water, the less oxygen present in the water. As fishes need dissolved oxygen to survive, when the temperature of the water increased, the amount of dissolved oxygen decreased and the fishes open and close their gill covers move to absorb more dissolved oxygen.

32)a)The anthers are not hanging out of the flower so the wind cannot carry away the pollen grains easily.
b)A fruit.

33)a)The water droplets produced is cooler than the surrounding air. Thus, the water droplets gains heat from the surrounding air and evaporates as water vapour, causing the surrounding air to lose heat and at the same time producing cooling effect.
b)i)The fans blew the water droplets to a larger area so cooler a larger area.
ii)It produces wind that increases the rate of evaporation.

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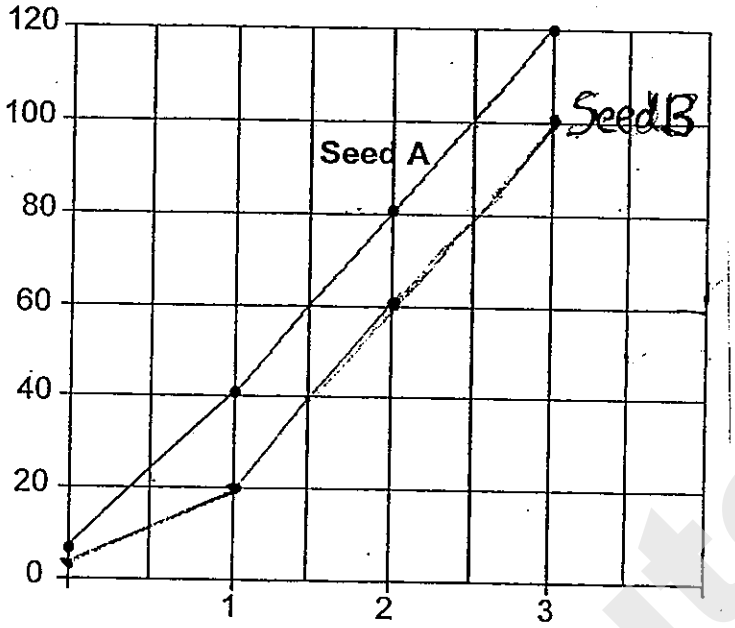
34)a)The greater the length of the wing-like structure, the greater the horizontal distance travelled.

b)The wing-like structure enables the seed to stay afloat in the air longer to allow the wind to blow it future away.

c)



35)a)Plant cells have cell walls. However, the Organism X does not have a cell wall. Thus, Organism X cannot be a plant cell.

b)Chloroplasts.

36)a)Bees are attracted to the colour yellow more than to other colours.

b)i)Change all the colours to the same colour.

ii)Change the size of each flower so all the flowers do not have the same size.

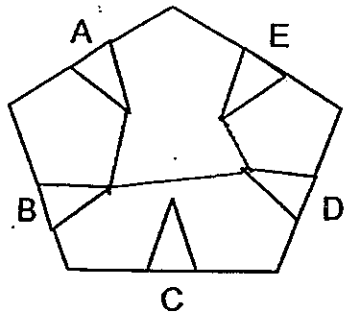
37)a)Rods X and Y are electrical conductors but Rod Z is an electrical insulator.

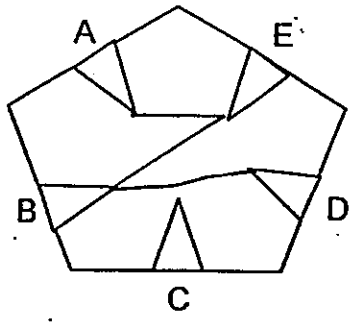
b)i)L1 ii)L2, L3,L4

38)a)R, T, S

b)Warm water vapour from the surroundings in Room U touched the cooler surface of the glass slides, lost heat and condensed into tiny water droplets.

39)





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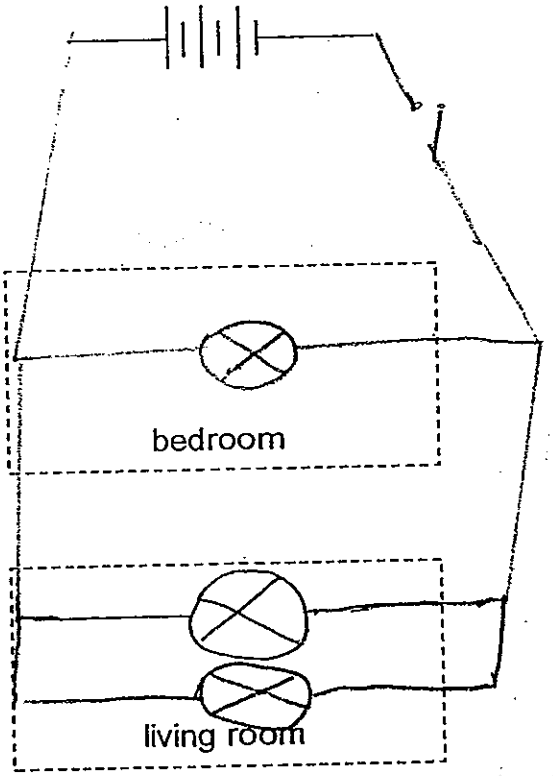
40)



41)a)The volume of air in the syringe would decrease, whereas the volume of water in the syringe would remain the same.

b)No. Although air can be compressed, it can only b compressed to a limit. Thus, as the air occupies space will "1" the air cannot be compressed completely and the plunger cannot reach the mark "1" on the syringe.

42)a)NP b)NP c)NP d)F

43)a)i)Change the torch in set-up T to a torch of the same size as in set-up R and S.

ii)Change the amount of water in set-up S to the same volume as the other set-up S.

b)This it to ensure that the torch is the only light source.

c)The brightest patch of light on the paper.

44)a)The heating elements are arranged in parallel, so if one heating element is faulty the other will still function.

b)Any water droplets on the back window will gain heat from the heating element and evaporate as water vapour, away from the back window of the car, so it does not mist up.

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METHODIST GIRLS' SCHOOL

Founded in 1887

END OF YEAR EXAMINATION 2013
PRIMARY 5
SCIENCE

BOOKLET A1

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: _____ ( )

Class: Primary 5.

Date: 3 October 2013

This booklet consists of 16 printed pages including this page

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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.

[60 marks]

---

1. While on a nature trip, Madeline and her friends collected a fruit. Back in school, their teacher told them that the fruit they collected was dispersed by water. What could Madeline do to confirm this?

A: Cut the fruit to find out if it contains water.
B: Cut the fruit to find out if it has a fibrous husk.
C: Place the fruit in water and observe if it floats.
D: Release the fruit in front of the strong wind from a fan and observe how far it can travel.

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

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(Go on to the next page)

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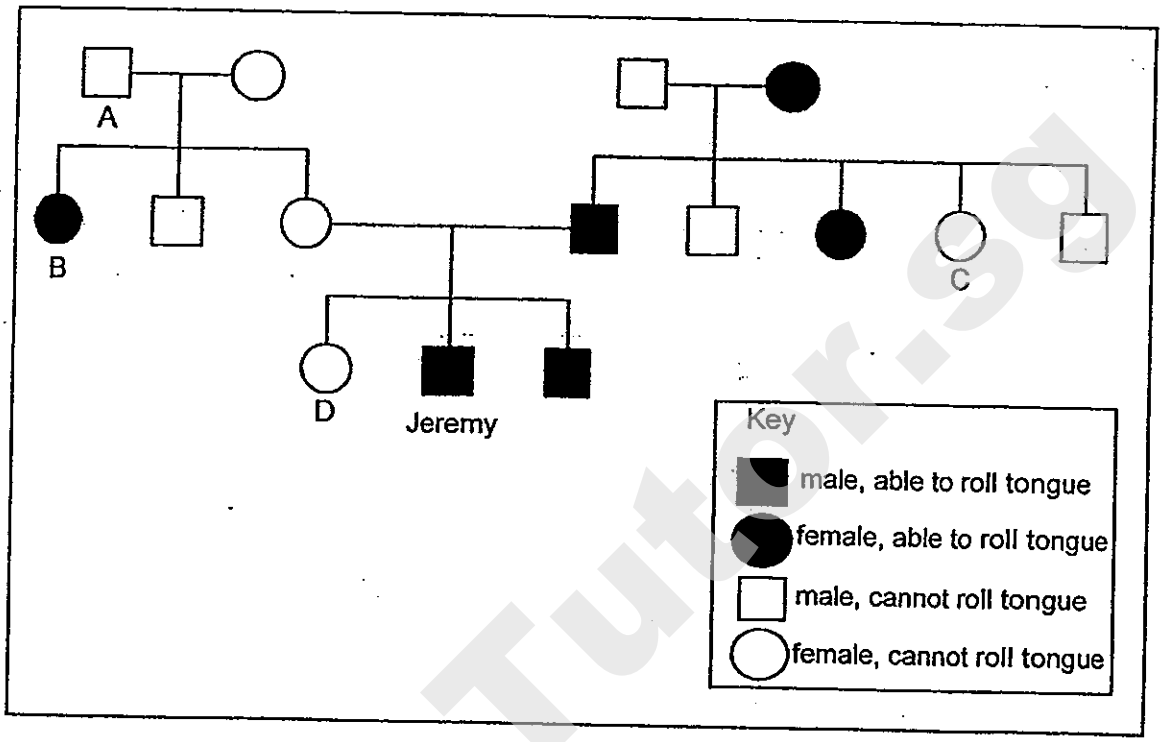
2. Study the family tree below. The family tree shows the members who can either roll their tongues or cannot roll their tongues. Jeremy can roll his tongue. Recently, someone sent in an anonymous letter saying that one of his family members is adopted.



Based on the family tree above, who is most probably adopted?

(1) A

(2) B

(3) C

(4) D

(Go on to the next page)

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3. A group of students obtained the data as shown in the table below during a Science lesson.

Students	Pulse rate at rest (beats/min)	Pulse rate after exercise (beats/min)
A	60	91
B	70	97
C	78	122
D	74	106
E	83	119

Three students, Patricia, Qistina and Ramona, each gave a statement on the relationship between pulse rate and exercise.

Patrica: The pulse rate increases when a person exercises as the heart has to pump faster to deliver more oxygen and digested food to the cells to be used.

Qistina: The pulse rate decreases when a person exercises as the heart has to pump slower to deliver less oxygen and digested food to the cells to be used.

Ramona: The pulse rate remains the same when a person exercises as exercising has no effect on the pulse rate.

Who made the **correct** statement?

(1) Patricia only
(2) Qistina only
(3) Ramona only
(4) None of the above

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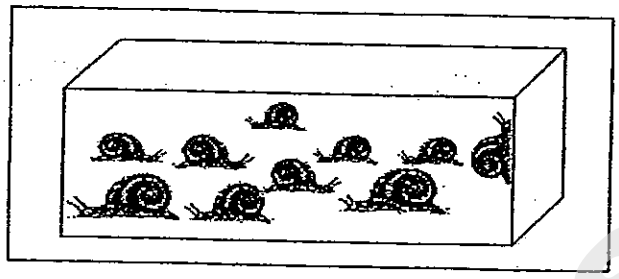
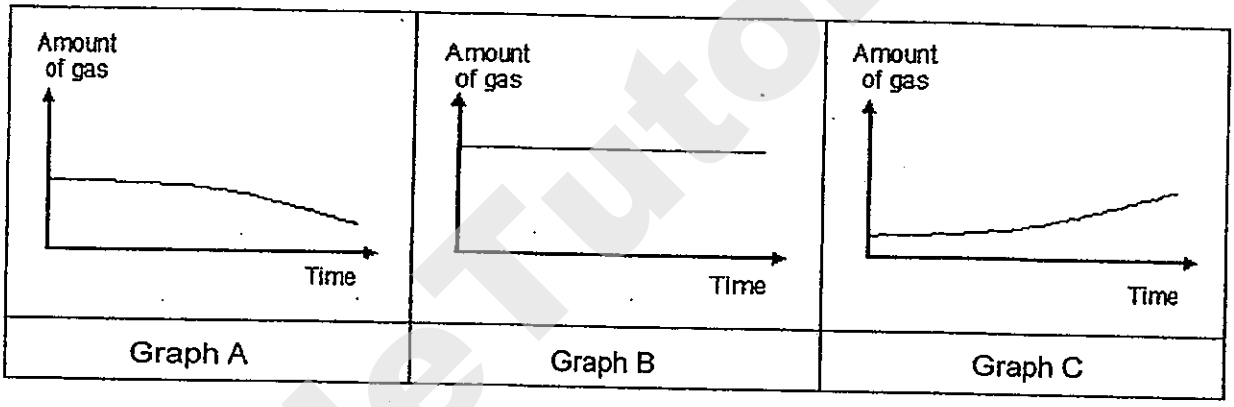
4. Victoria kept 10 snails in an air tight tank as shown in the diagram below.



She wanted to find out the change in the level of gases in the tank two hours later. She plotted three different graphs to show the level of the various gases in the tank as shown below.



Which of the graphs above correctly represents the changes in the levels of the carbon dioxide and oxygen as shown below?

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

(Go on to the next page)

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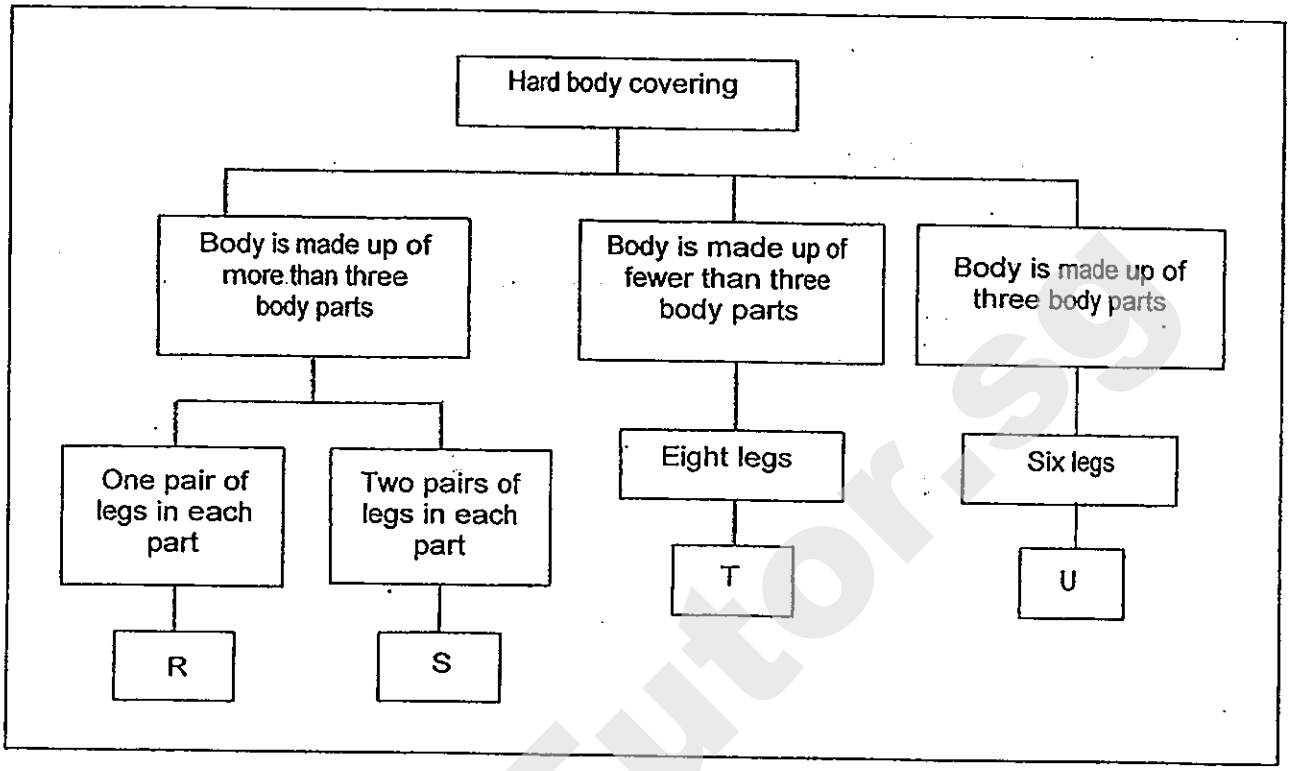
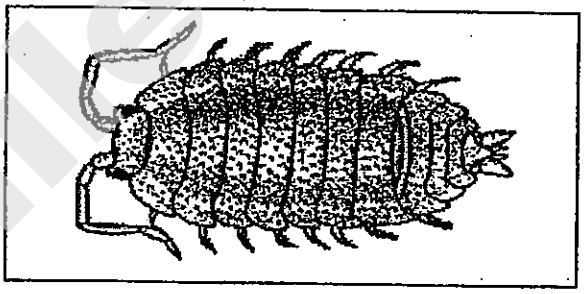
5. Study the classification table below.



Rachel found an animal as shown in the diagram below. She observed that it had a hard body covering.



Which group, R, S, T or U does this animal belong to?

(1) R

(2) S

(3) T

(4) U

(Go on to the next page)

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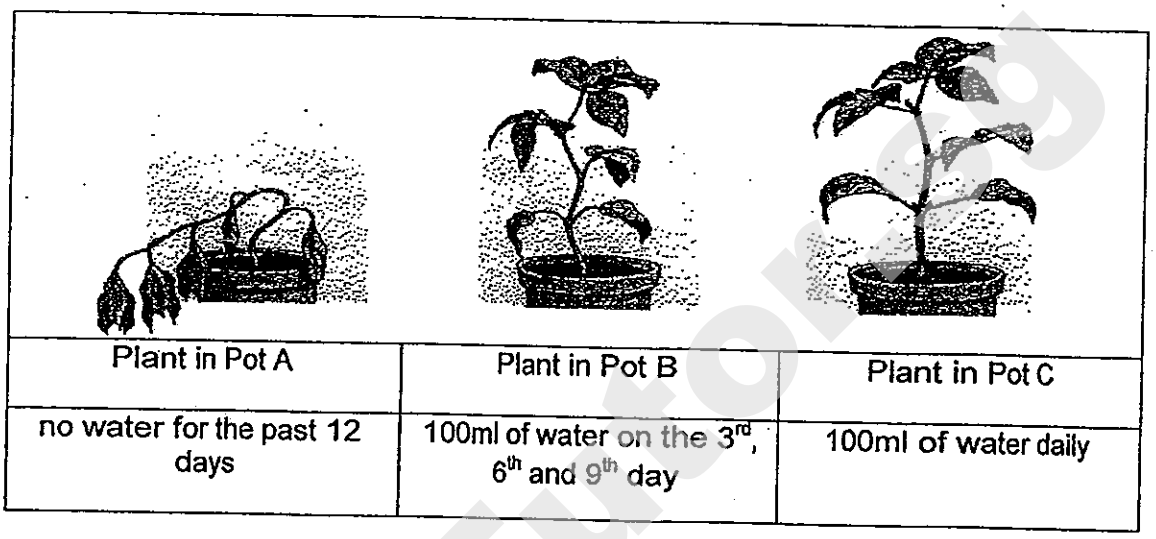
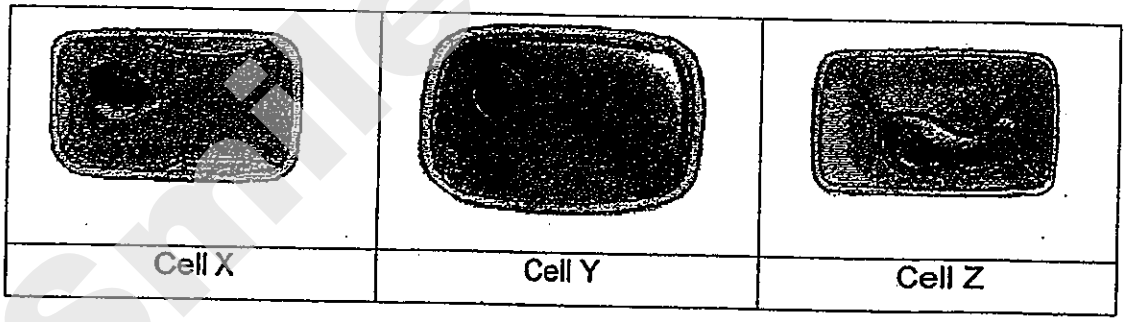
6. Mrs Lee wanted to show her students the effect of water on plants. She set up an investigation on three pots of balsam plants. Other than the amount of water, all the other variables were kept the same. There was also sufficient sunlight for the plants to make food.

The diagram below shows what the three pots of balsam plants looked like 12 days later.



Mrs Lee then took a cell sample from each of the plant and observed them under the microscope. The results of the cell samples were shown in the diagram below.



Based on the results, she then instructed her students to match the cell samples to the correct plants.

Which of the following students matched the cell samples to the plants correctly?

	Students	Plant in Pot A	Plant in Pot B	Plant in Pot C
(1)	Abrielle	Cell X	Cell Y	Cell Z
(2)	Brenda	Cell Z	Cell Y	Cell X
(3)	Caitlyn	Cell Z	Cell X	Cell Y
(4)	Deborah	Cell Y	Cell X	Cell Z

(Go on to the next page)

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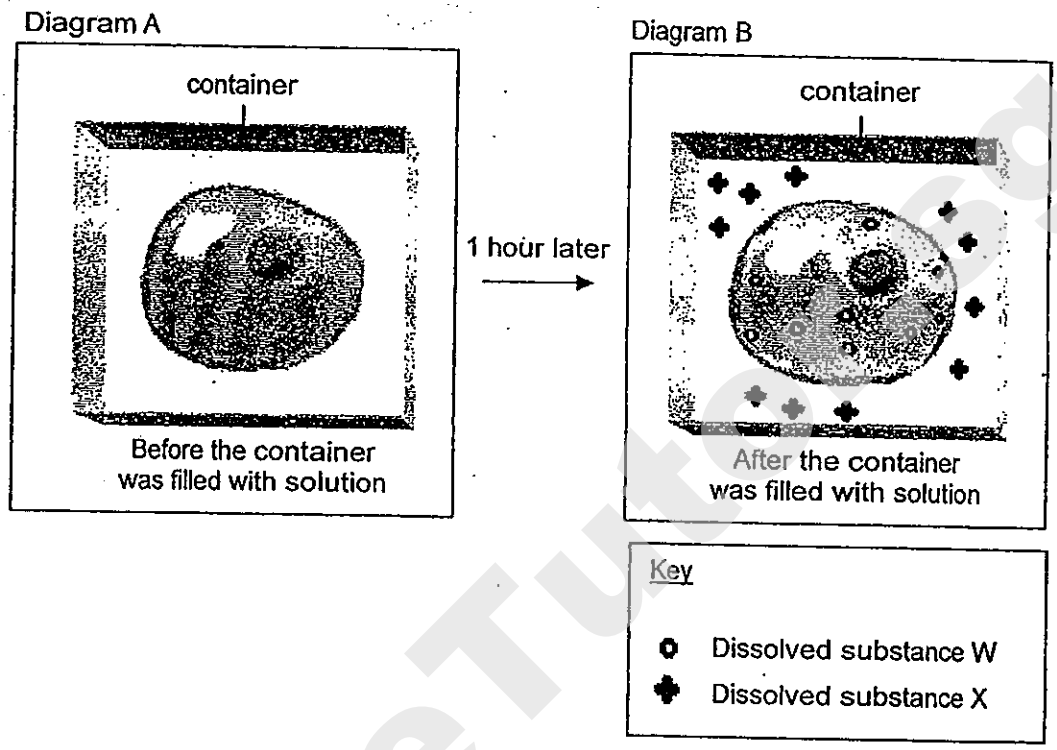
7. An animal cell was placed in a container. The container was then filled with a solution that contained dissolved substances, W and X.

Diagram A below shows the cell before the container was filled with the solution. Diagram B shows the cell after the container was filled with the solution one hour later.



Three children, Jasmine, Kayla and Lauren, made the following conclusions based on the observations from the diagram above.

Jasmine: The cell membrane is semi-permeable. It allows only certain substances to enter or leave the cell.

Kayla: Dissolved substances W and X could move in and out of the cell.

Lauren: The nucleus controlled the movement of substances W and X in and out of the cell.

Who made the correct conclusion/s?

(1) Kayla only

(2) Jasmine only

(3) Jasmine and Lauren only

(4) Jasmine, Kayla and Lauren

(Go on to the next page)

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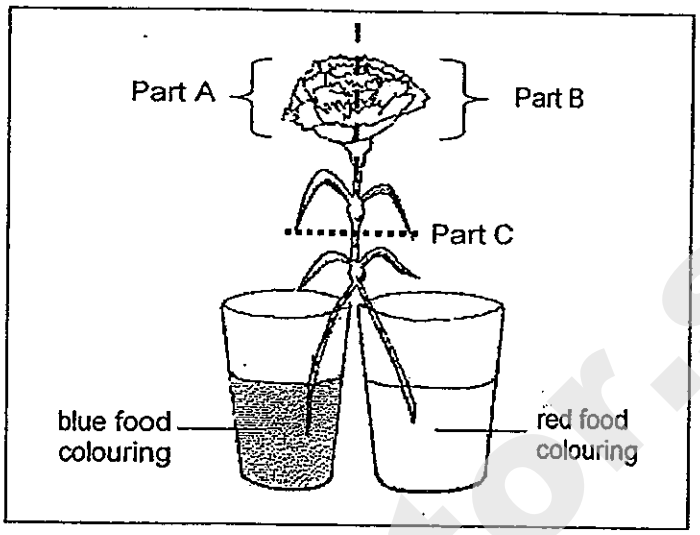
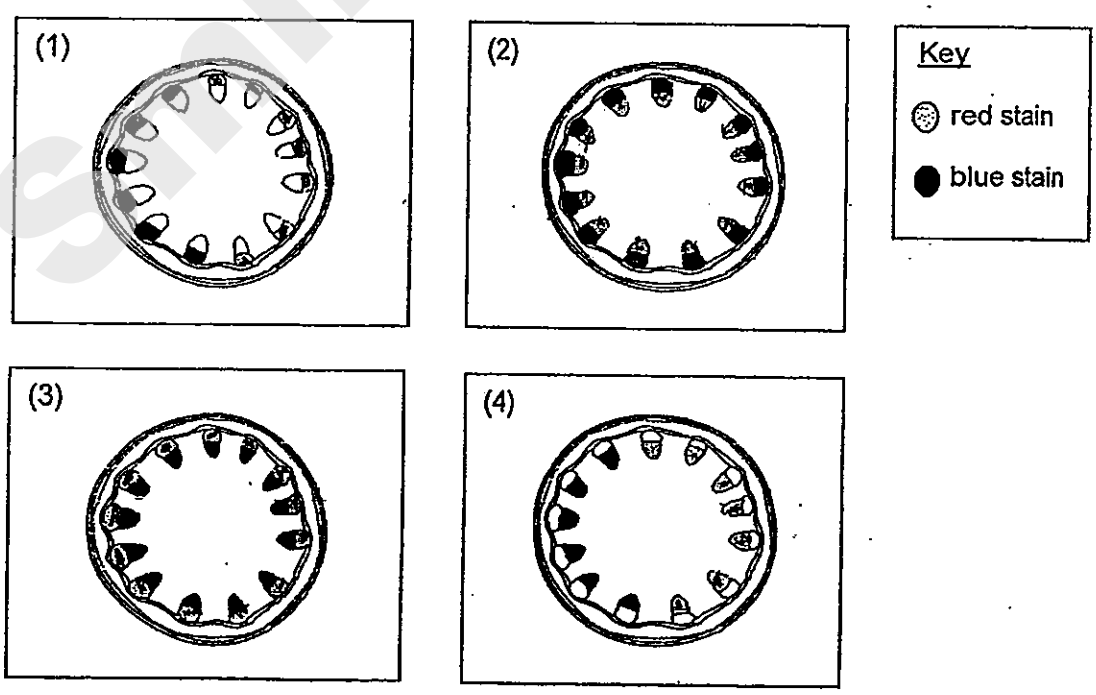
8. Sumei set up the following experiment as shown below. She split the stalk of a white carnation into half and immersed one half into blue food colouring and the other half into red food colouring. She labelled part of the petals Part A and the other Part B.



The next day, she observed that Part A of the carnation had turned blue while Part B had turned red because the blue and red colouring was transported by the water carrying tubes in the stalk to the petals.

She then cut a thin slice from the stem of the plant at Part C.

Which one of the following diagrams shows the areas that have been stained by the blue and red colourings?



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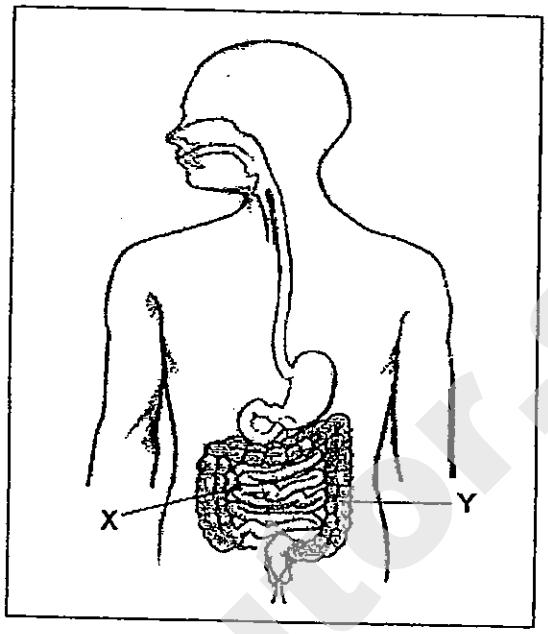
9. The diagram below shows the human digestive system.



Which of the following correctly shows what happens at X and Y?

	X		Y	
	Absorption of water	Absorption of digested food	Absorption of water	Absorption of digested food
(1)	Yes	No	No	Yes
(2)	No	Yes	No	Yes
(3)	Yes	Yes	Yes	No
(4)	Yes	No	Yes	No

(Go on to the next page)

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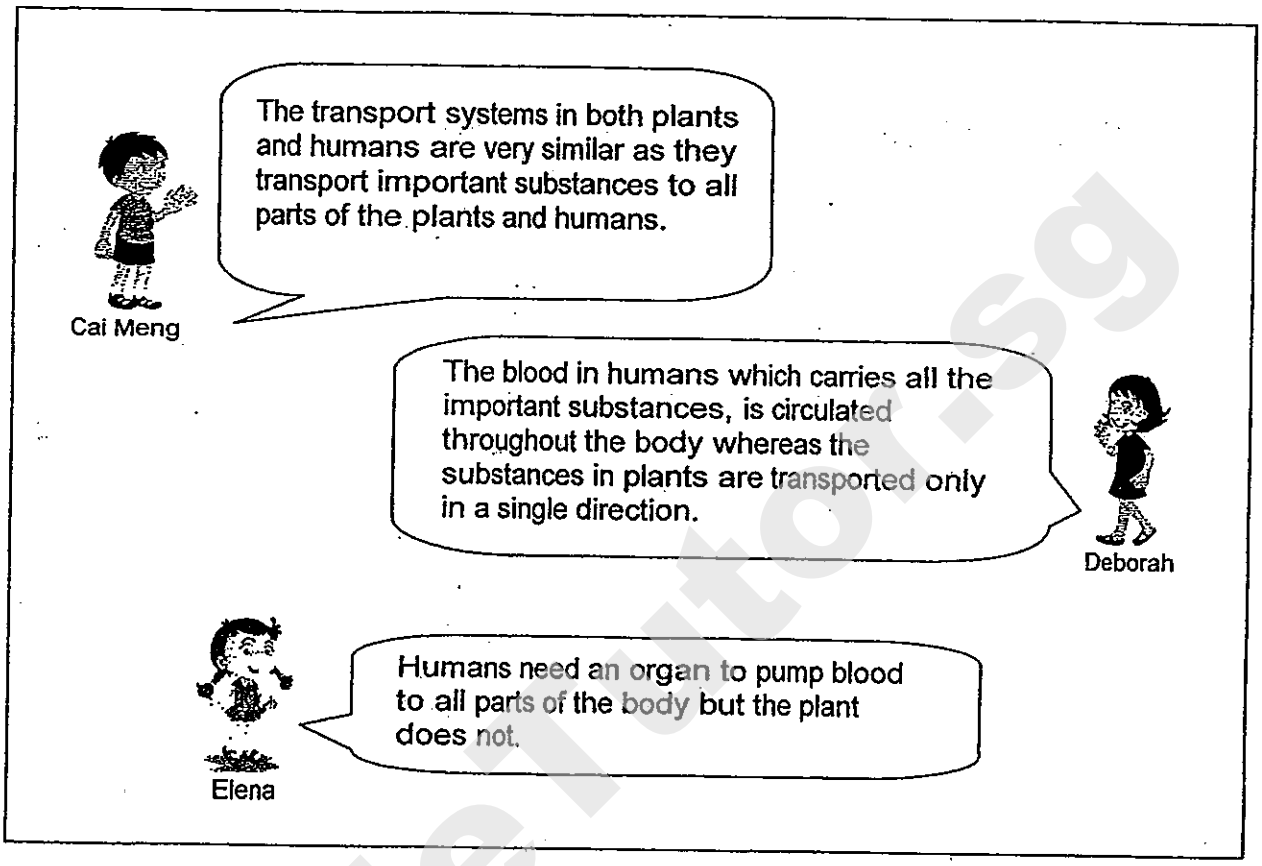
10. Cai Meng, Deborah and Elena were having a discussion on what they had just learnt about the transport systems in both plants and humans. They made the following comments.



Who made the correct comment/s?

(1) Cai Meng only

(2) Cai Meng and Deborah only

(3) Deborah and Elena only

(4) Cai Meng, Deborah and Elena

(Go on to the next page)

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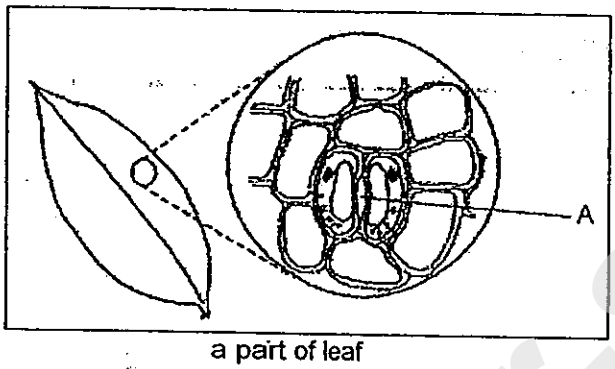
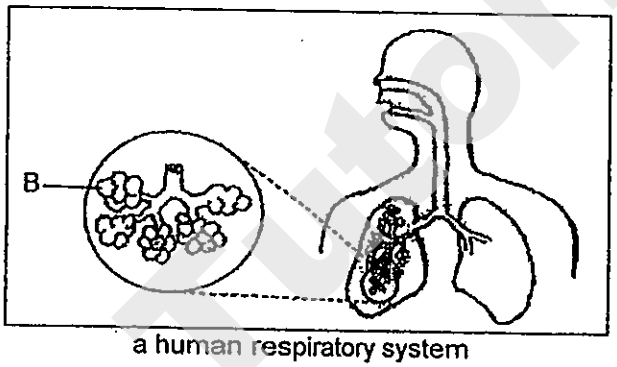
11. The diagrams below show a part of a leaf and the human respiratory system.



a part of leaf



a human respiratory system

Which of the following statements is true?

(1) Air is stored in parts A and B

(2) Gaseous exchange occurs at parts A and B

(3) Part A helps the plant to make food while part B helps in gaseous exchange

(4) Part A helps the plant to respire while part B helps the human to inhale and exhale

(Go on to the next page)

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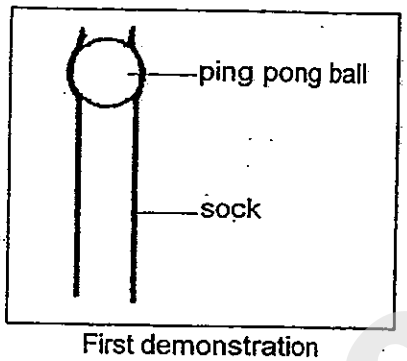
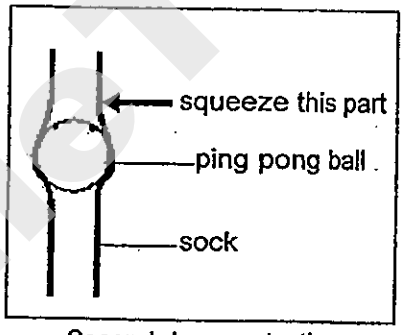
12. Mrs Lee used a section of an old sock and a ping pong ball to demonstrate how our muscles help in the movement of a substance in our human body system.

In her first demonstration, she placed the ping pong ball at the top opening of the sock. It was observed that the top portion of the sock bulged out but the ping pong ball did not move any further downwards. The set-up of her demonstration is shown in the diagram below.



First demonstration

In her second demonstration, she squeezed the top half of the sock at the region near the ping pong ball, as indicated by the arrow below. The ping pong ball was observed to move downwards. She repeated her actions until the ping pong ball reaches the bottom end of the sock.



Second demonstration

In which part of the human body would our muscles help in the movement of a substance as demonstrated by Mrs Lee?

(1) gullet

(2) mouth

(3) large intestine

(4) small intestine

(Go on to the next page)

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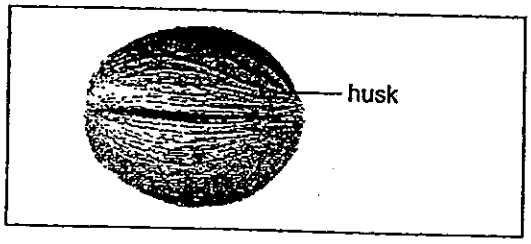
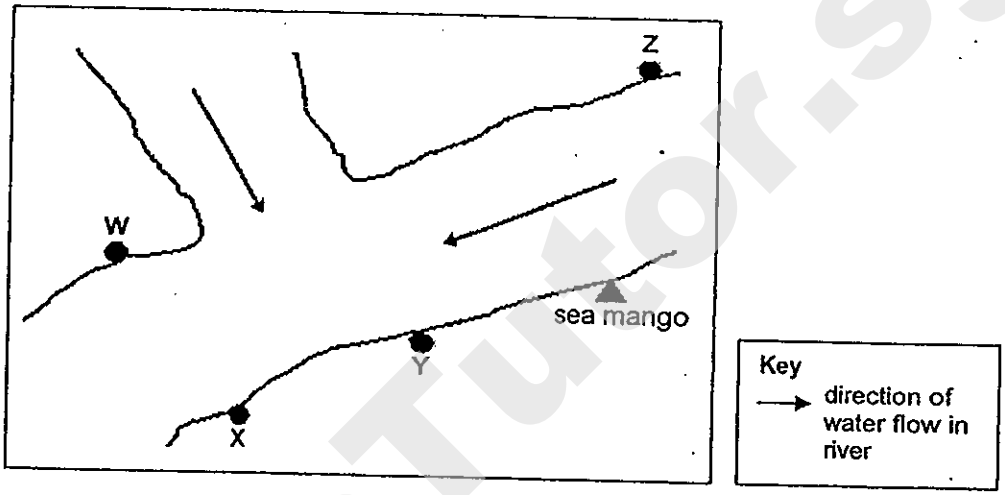
13. The diagram below shows the fruit of a sea mango.



The diagram below shows the different possible parts, W, X, Y and Z of a swift flowing river where sea mango may be found growing.



Three students, Ali, Bala and Cynthia made the following statements about the **unlikely** part/s of the river where the young of sea mango is found.

Ali: Part Z because the fruits cannot float against the flow of the river to reach this part.

Bala: Part W because the fruits can only float along the same side of the river where the young of sea mango is found.

Cynthia: None of the above parts because with its fibrous husk, the fruit will be able to reach all parts of the river.

Who made the correct statement/s?

(1) Bala only

(2) Ali only

(3) Bala and Cynthia only

(4) Cynthia and Ali only

(Go on to the next page)

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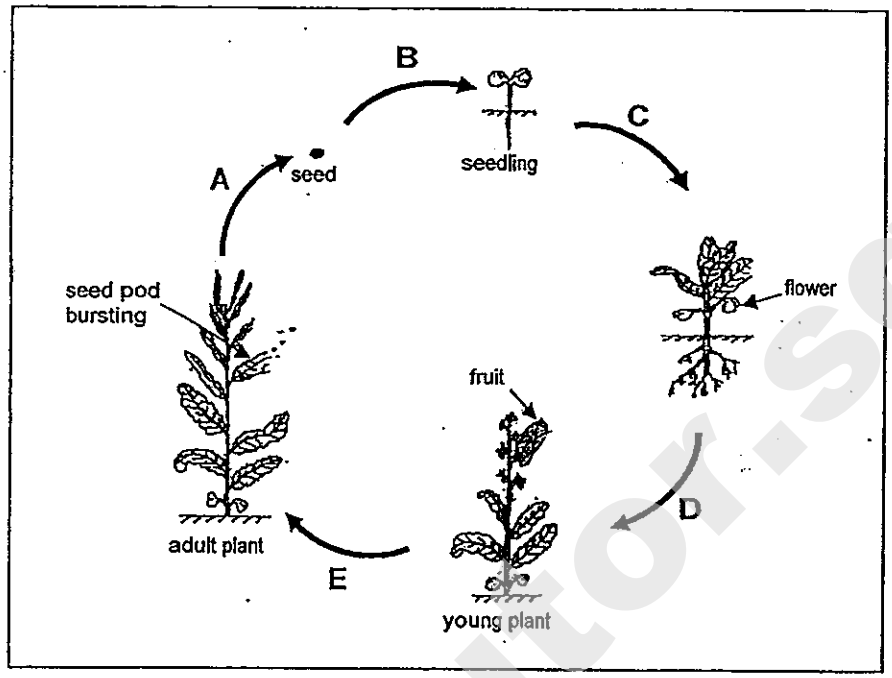
14. The diagram below shows the stages of growth of a flowering plant.



Based on the stages above, at which stages do germination and pollination take place respectively?

	Germination	Pollination
(1)	A	C
(2)	B	D
(3)	C	E
(4)	D	A

(Go on to the next page)

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15. Plants that reproduce by spores may produce thousands of spores at a time. The following statements were made to explain why these plants produce such a large number of spores.

A: A large number of spores will ensure dispersal by wind.

B: A large number of spores will increase the chance that a new plant is grown.

C: A large number of spores will ensure new healthy plants.

Which of the statements above provides the best explanation why such plants produce a large number of spores?

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

(Go on to the next page)

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METHODIST GIRLS' SCHOOL

Founded in 1887

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PRIMARY 5
SCIENCE

BOOKLET A2

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: _____ ( )

Class: Primary 5._____

Date : 3 October 2013

This booklet consists of 10 printed pages including this page.

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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.

[60 marks]

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16. Three materials, A, B and C are classified according to their properties as shown in the table below.

	Material A	Material B	Material C
Magnetic material	No	No	Yes
Poor conductor of heat	No	Yes	No
Conductor of electricity	Yes	No	Yes

Which of the following are A, B and C most likely to be?

	A	B	C
(1)	Gold	Graphite	Iron
(2)	Copper	Plastic	Steel
(3)	Glass	Nickel	Graphite
(4)	Graphite	Styrofoam	Aluminum

17. Miss Chay brought a container of fine grains into her Science class. The grains were made up of four substances, P, Q, R and S. She asked her pupils to carry out an experiment to separate them.

The table below shows the properties of substances, P, Q, R and S.

Substance	Magnetic	Able to dissolve in water	Colour
P	Yes	No	White
Q	No	Yes	White
R	No	No	Brown
S	No	Yes	Silver

Which two substances would be the most difficult to separate from the mixture?

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

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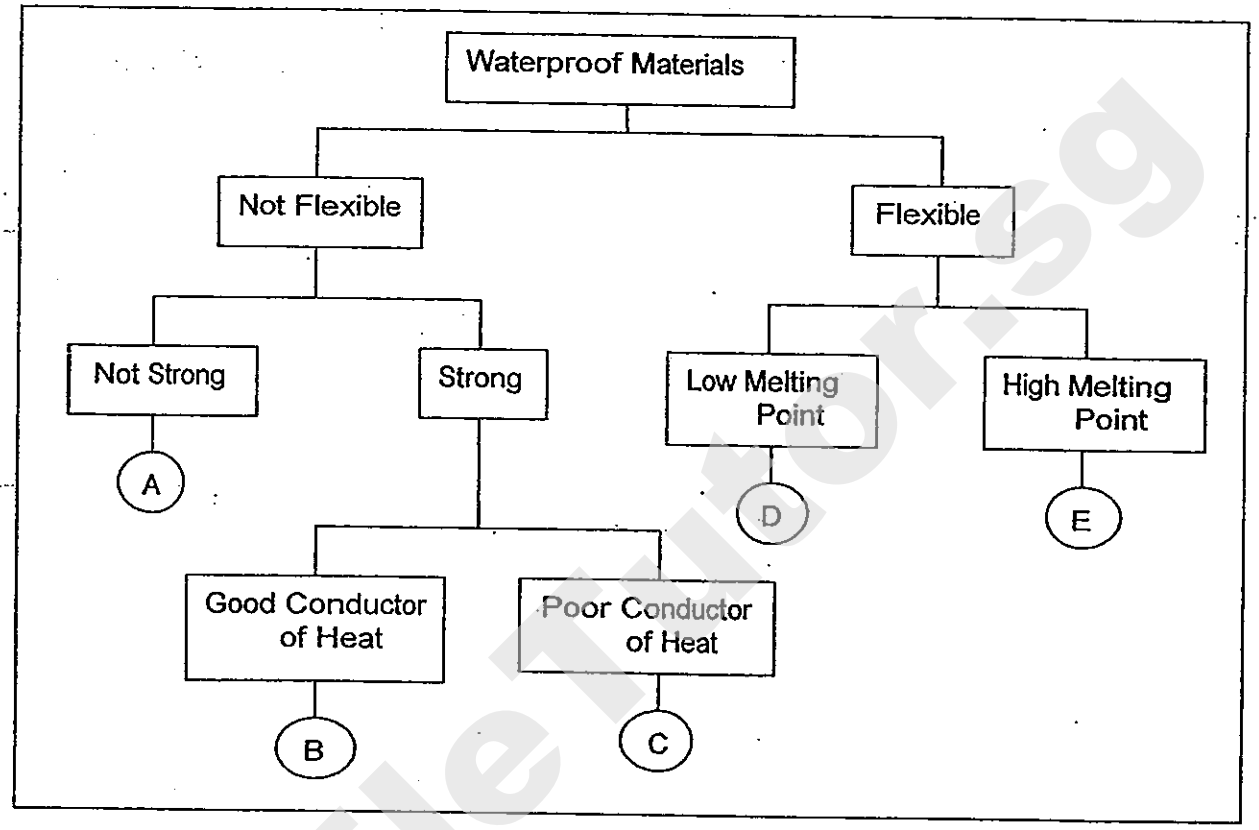
18 The classification table below shows the properties of materials A, B, C, D and E.



Mr Lim was told to select the best material for making a helmet for firemen.

Which is the best material for making a helmet for firemen?

(1) B
(2) C
(3) D
(4) E

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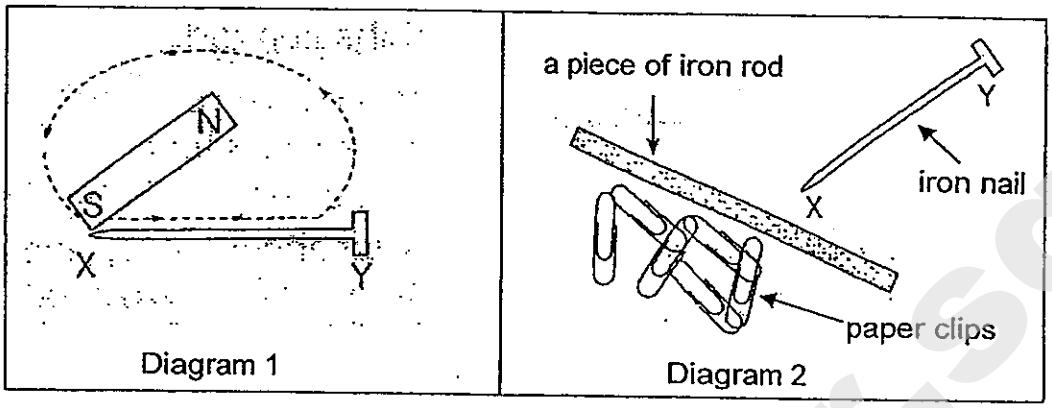
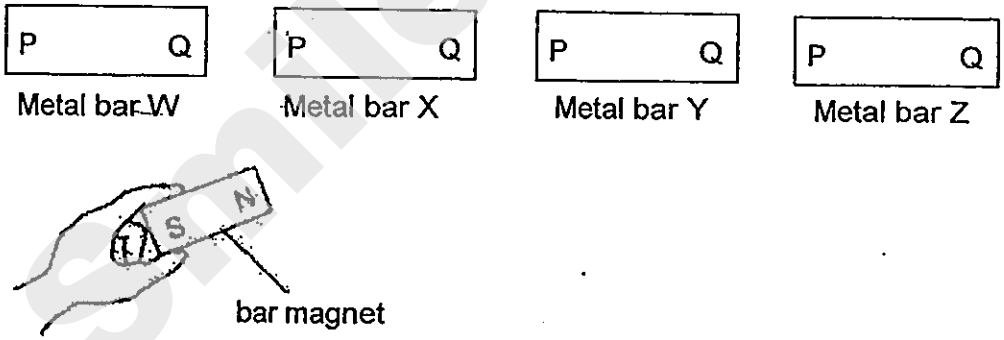
19. Ali stroked the entire length of an iron nail with a bar magnet in the same direction as shown in Diagram 1. After that, he held the iron nail above a piece of iron rod and some paper clips below it as shown in diagram 2.



What will happen to the paper clips in Diagram 2?

(1) The paper clips will remain at the same place.
(2) The paper clips will be attracted to the iron rod.
(3) The paper clips will be attracted to the iron nail.
(4) The paper clips will move away from the iron rod.

20. Erin had four metal bars, W, X, Y and Z as shown below. She brought the North pole of a bar magnet near end P of each metal bar and recorded the observations. Next, she brought the North pole of the bar magnet near end Q of each metal bar and again recorded the observations.



Erin recorded the observations made during the experiment in the following table.

Metal bar	Observations	
	North pole and end P	North pole and end Q
W	attracted	attracted
X	attracted	repelled
Y	repelled	attracted
Z	no reaction	no reaction

Which of the metal bars are magnets?

(1) W only
(2) X and Y only
(3) W, X and Y only
(4) X, Y and Z only

(Go on to the next page)

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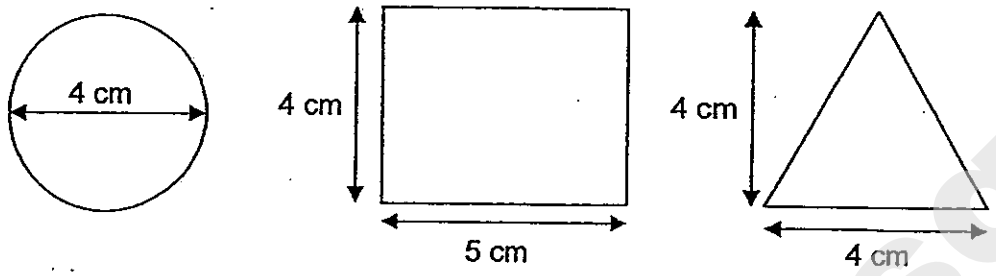
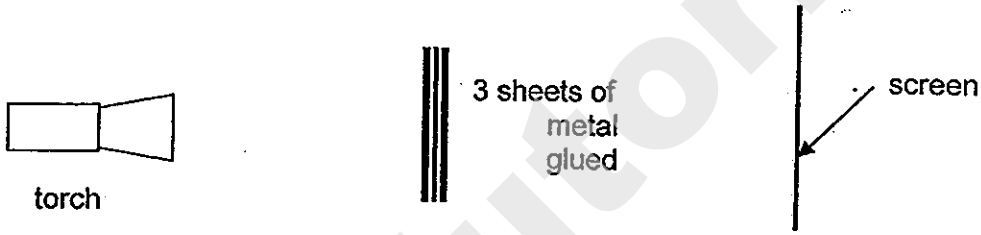
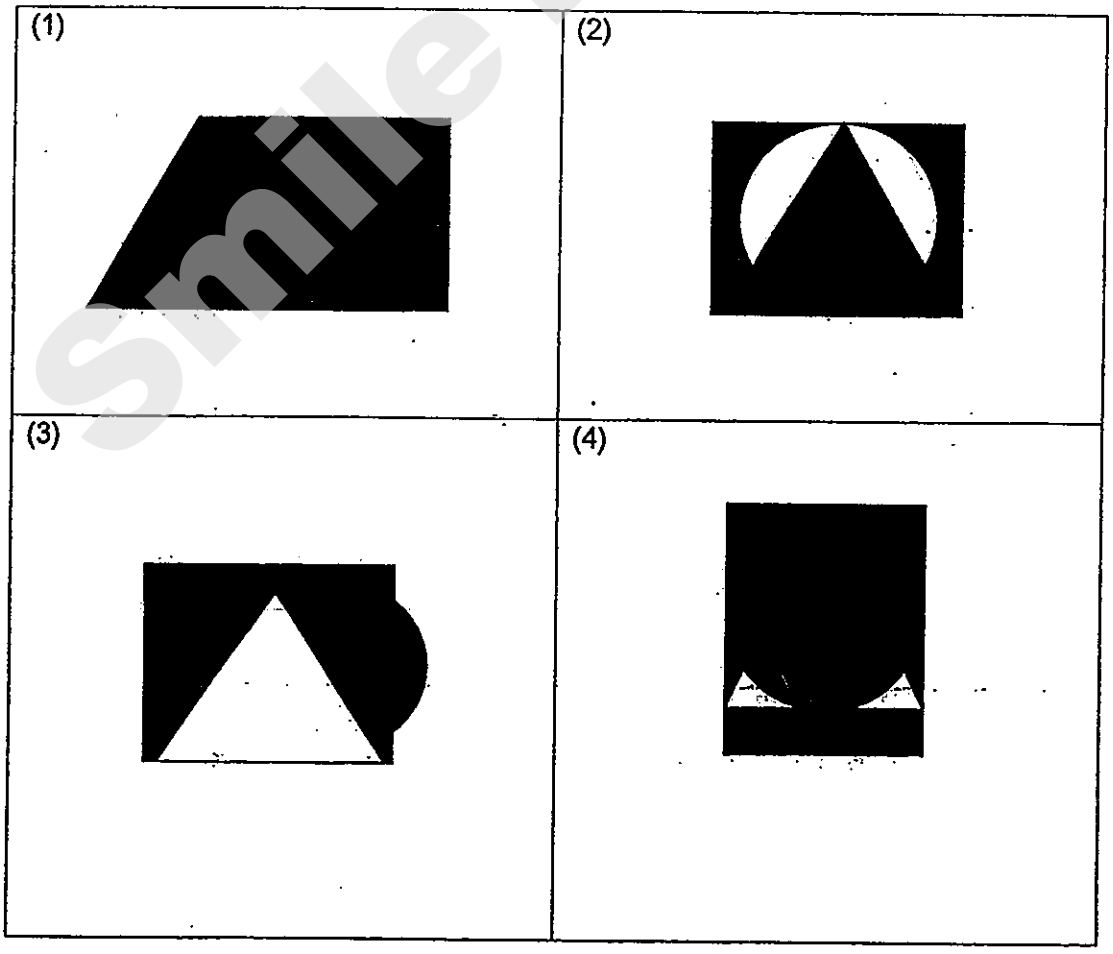
21. The diagram below shows 3 pieces of metal sheets, a circle, a rectangle and a triangle. (Not drawn to scale)



The 3 metal sheets were glued together and placed in between a torch and a screen. When the torch was switched on, a shadow was observed on the screen.



Which one of the following is **most likely** to be observed on the screen?



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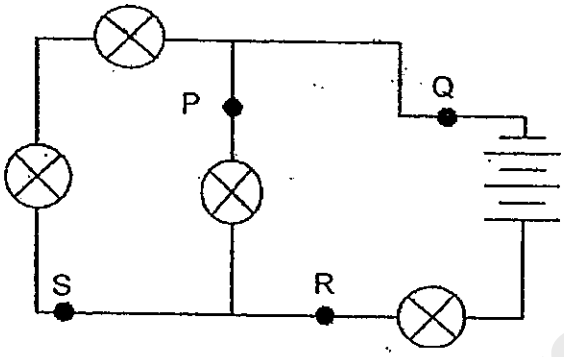
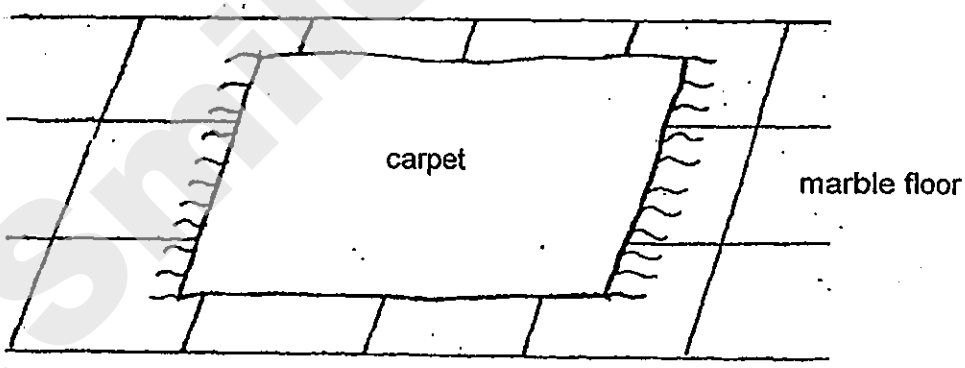
22. Study the electric circuit. All the four bulbs are lighted up.



Mr Soh wants to install a switch so that he is able to switch off a bulb while leaving the rest of the bulbs lighted. Which part of the circuit, P, Q, R or S, should Mr Soh install the switch?

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

23. A carpet is placed on a marble floor in a room as shown below.



Gabby discovers that the carpet feels warmer to her bare feet compared to the marble floor when she stands on it. Why is this so?

(1) The carpet gains heat from the surroundings.
(2) Heat travels from the marble floor to the carpet.
(3) The marble floor conducts heat faster than the carpet.
(4) The marble floor has a lower temperature than the carpet.

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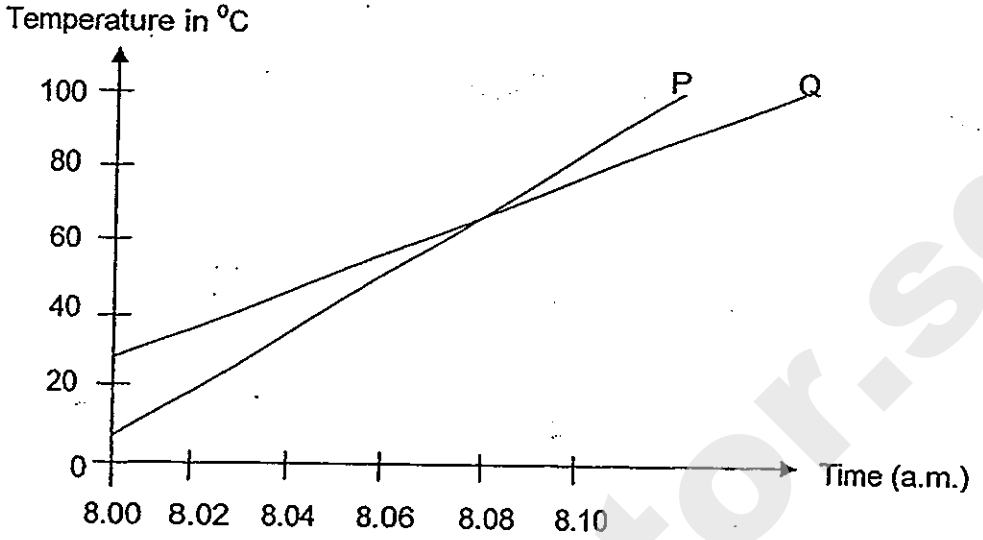
24. Jenny heated two identical beakers marked P and Q, which were filled with an equal amount of water, at 8 a.m. The graph below shows the changes in the temperature of water in beakers P and Q over a period of time.

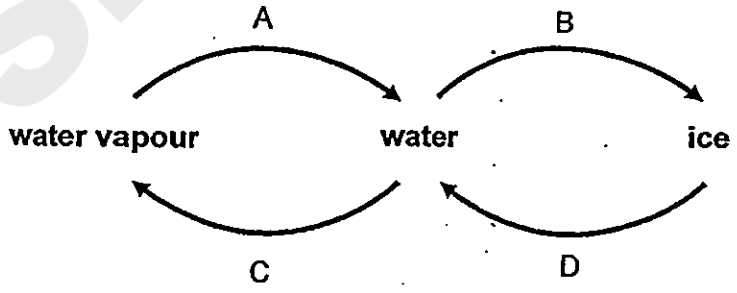


Based on the graph above, which of the following statements is/ are true?

A: Beaker P received less heat than Beaker Q.
B: Both beakers of water reached the same temperature at about 8.08 a.m.
C: ~~Wendy~~ Jenny filled the beakers with water of the same temperature before heating.

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

25. The diagram below shows how water changes its state. There are 4 processes, A, B, C and D.



During which two processes is heat lost to the surroundings?

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

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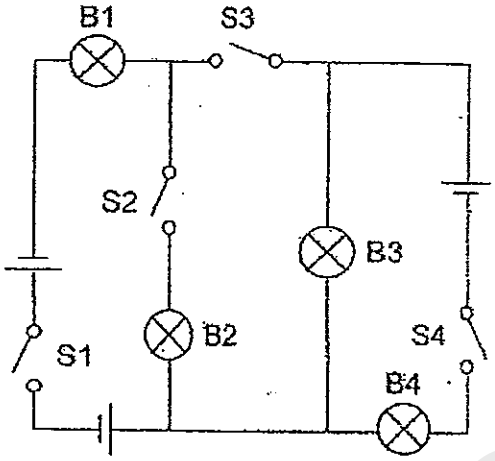
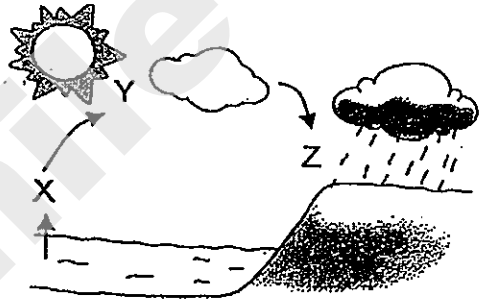
26. Based on the circuit as shown below, which of the following switches have to be closed in order to achieve the brightest light when the bulb/ bulbs is/ are lit up?



(1) S1 and S3
(2) S2 and S3
(3) S1 and S4
(4) S3 and S4

27. The diagram below shows the water cycle.



The letters X, Y and Z represent different processes involved in the water cycle. Which of the following statements is / are correct?

A: There is heat gain in Process X
B: There is heat loss at Process Y
C: There is heat gain during Process Z.
D: Process X can take place at any time.

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

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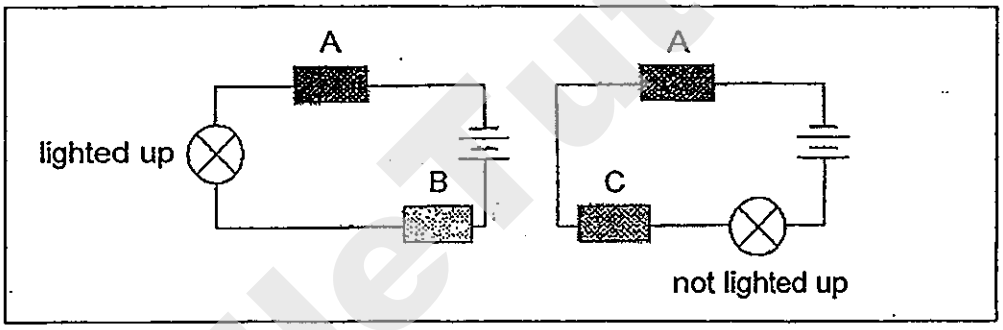
28. Aiden noticed water droplets on the exterior of the glass windows of his mother's car in the afternoon when he entered the air-conditioned car. Which of the following explanations are correct?

A: The surrounding air outside is colder than the window of the car.
B: The surrounding air outside is warmer than the window of the car.
C: Water vapour in the car condenses on the cold window of the car.
D: Water vapour outside the car condenses on the cold window of the car.

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

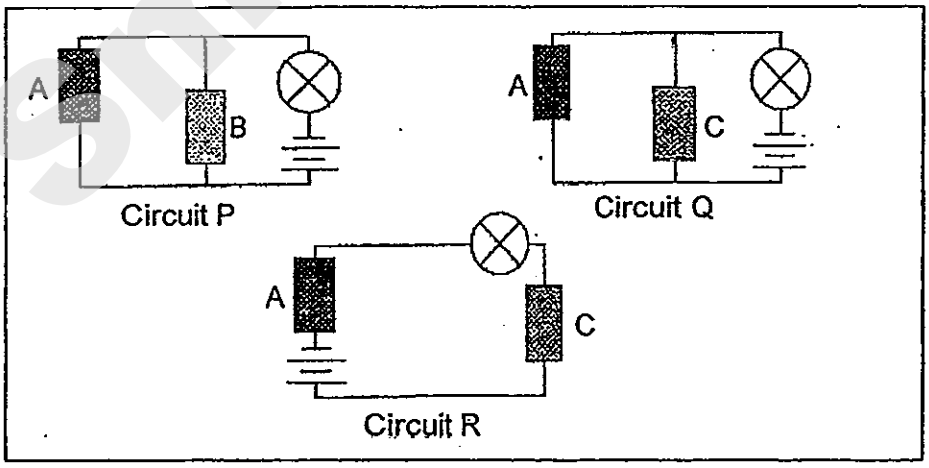
29. Keith used the same type of batteries and bulbs to make 2 circuits as shown in set-up1 below. But he used different materials, A, B and C.

Set-up 1



Keith then reshuffled the electrical components and made 3 circuits as shown in set-up 2.

Set-up 2



In which of the circuits, P, Q or R, will the bulb light up?

(1) P only
(2) P and Q only
(3) P and R only
(4) P, Q and R

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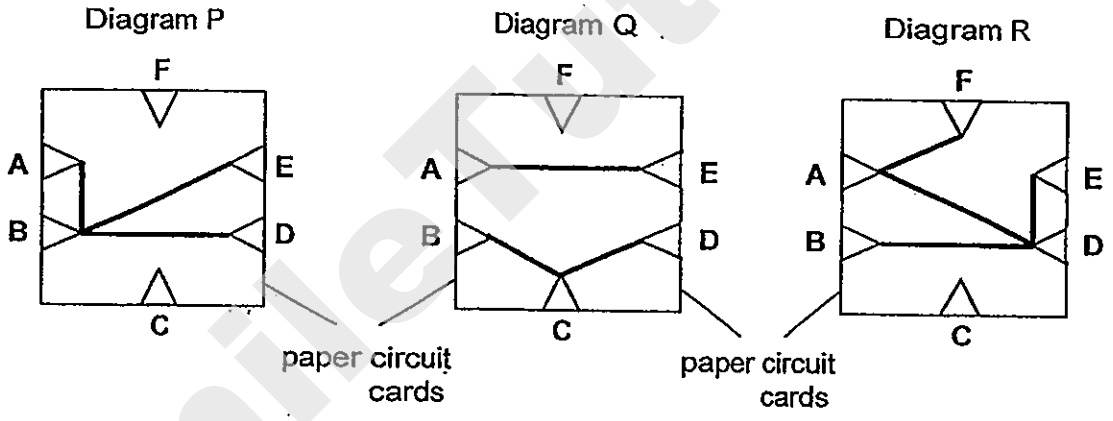
30. John tested a paper circuit card and recorded the results in the table below.

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 connectors of the clips by wires?



(1) P only
(2) R only
(3) Q only
(4) P and Q only

End of Booklet A2

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END OF YEAR EXAMINATION 2013
PRIMARY 5
SCIENCE

BOOKLET B1

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

INSTRUCTIONS TO CANDIDATES

Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

Name: _____ ( )

Class: Primary 5._____

Date : 3 October 2013

Booklet B1	/ 20

This booklet consists of 12 printed pages including this page.

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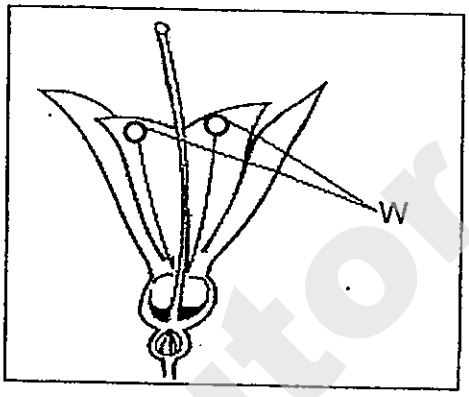
For questions 31 to 37, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

[20 marks]

31. Study the flower shown in the diagram below.



(a) Name the part labelled W in the diagram above. [1]

(b) Would the flower still be able to reproduce if the parts labelled W were removed? Explain your answer. [1]

(c) State one similarity between the pollen grain and the sperm. [1]

3

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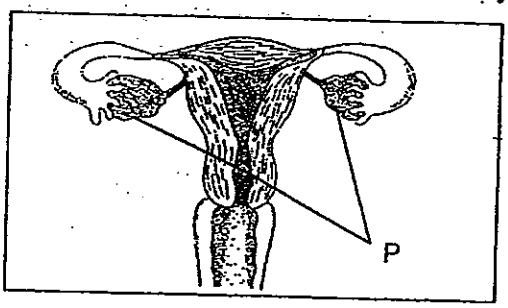
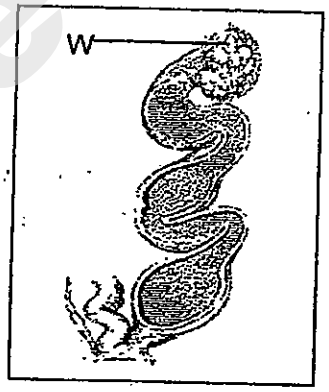
32. The diagram below shows the human female reproductive system.



(a) Name the part labelled P. [1]

(b) What is the main function of the part labelled P? [1]

The diagram below shows the female reproductive system of a bird. The part labelled W has the same function as the part labelled P in the human female reproductive system.



However, the human female reproductive system has two parts labelled P. The female reproductive system of a bird on the other hand, has only one part labelled W.

(c) What advantage has the human female reproductive system over the female reproductive system of a bird? [1]

3

(Go on to the next page)

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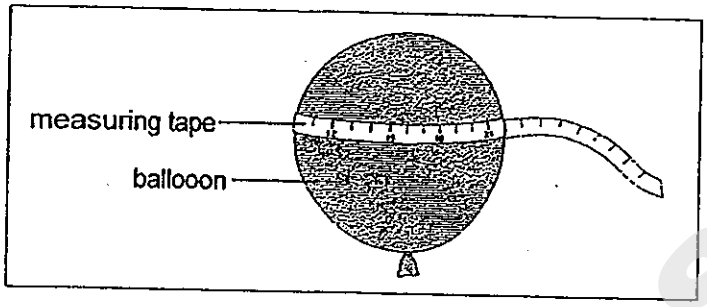
33. Four girls wanted to find out if the mass of a person affects the amount of air she breathes out. Each of them then took a deep breath and blew into a balloon. Then, the balloon was secured with a rubber band to ensure that no air could escape. Next, the balloon was measured around its widest part to determine its size as shown in the diagram below.



Name	Age (years)	Mass (kg)	Number of breaths blown into the balloon	Size of balloon (cm)
Alicia	7	34	1	11
Brenda	9	52	1	9
Candice	11	45	1	12
Deborah	13	60	1	8

(a) Their teacher said that the investigation is not a fair one. Why did she say that? [1]

_____

_____

(b) What can the girls do to obtain a consistent and reliable result? [1]

_____

_____

Asthma is a lung disease that inflames the air passage of the respiratory system. Sandy has asthma, the tubes that carry air into and out of her lungs are swollen and the muscles around them tighten.

Diagram A shows a cross-section of a normal air passage. Diagram B shows a cross-section of an air passage during an asthma attack.

2

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Diagram A
Normal air passage

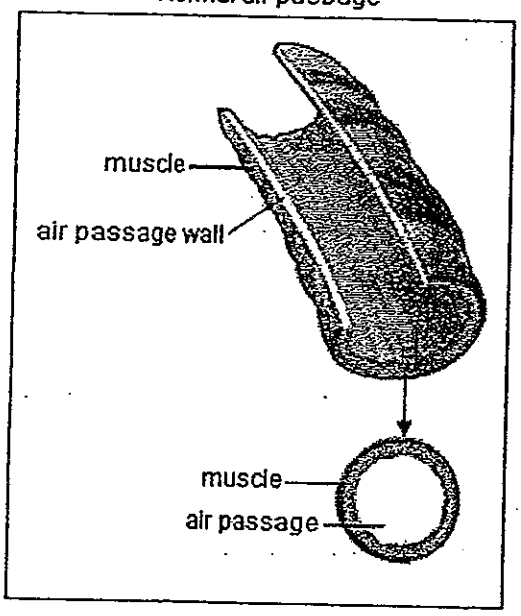
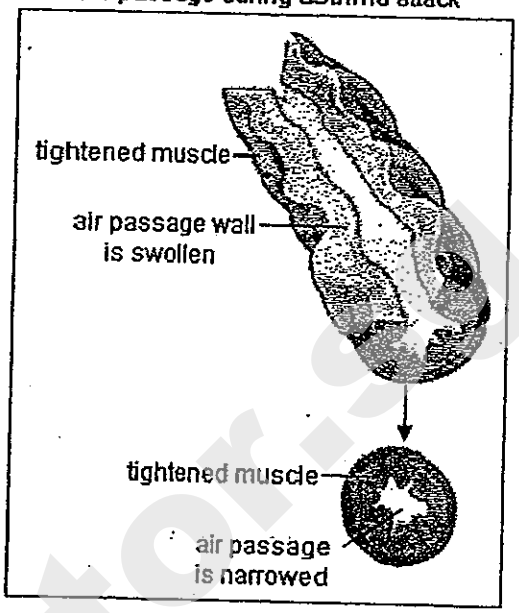


Diagram B
Air passage during asthma attack



(c)
~~(b)~~ A person suffering from an asthma attack would have difficulty in blowing up a balloon. Explain the reason for this [1]

_____

_____

1

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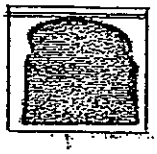
34. Jessika prepared three set-ups A, B and C as shown in the diagram below.

Set-up A	Set-up B	Set-up C
		
• fresh bread • 25 ml of water added	• fresh bread • sealed in a vacuum-packed plastic bag • 25 ml of water added	• toasted bread

After two weeks, Jessika noticed some black spots growing on the bread in Set-up A.

(a) What could the black spots be? [1]

_____

(b) Based on the investigation above, besides warmth, what are the other two conditions required for the black spots to grow? [1]

_____

Four months ago, Jessika bought a pair of leather boots. On opening the box, she found a packet of drying agent as shown in the diagram below. Thinking that she would not need it, she threw the drying agent away.

2

(Go on to the next page)

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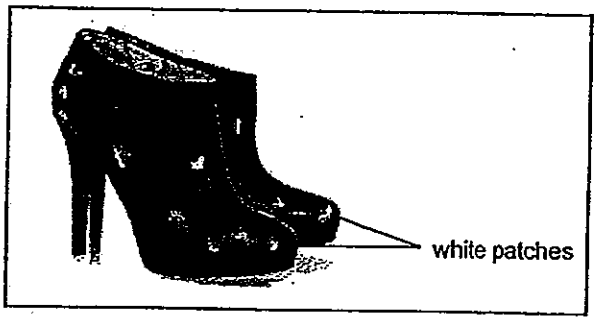
When she took out the pair of leather boots from the box, she noticed that there were some white patches on the boots as shown in the diagram below



She realised that it was a mistake to throw the packet of drying agent away.

(c) Why was the packet of drying agent included in the box when Jessika first bought the pair of leather boots 4 months ago? [1]

_____

_____

1

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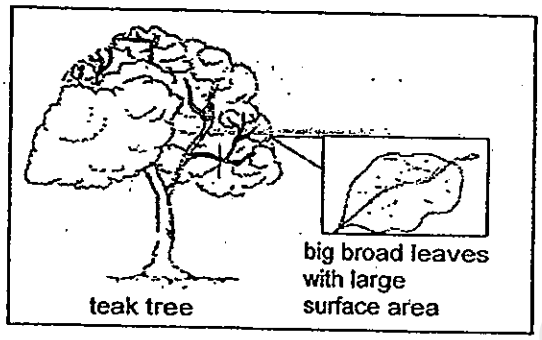
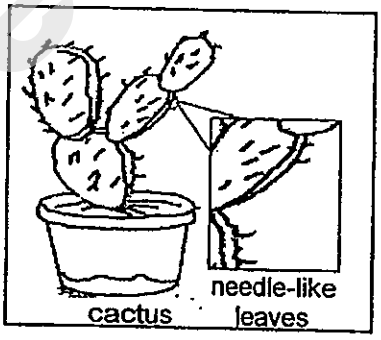
35. Study the diagram of a teak tree as shown below.



The teak tree has big broad leaves with large surface areas. It is found in rainforests where the weather is warm and there is plenty of sunlight. The rain falls all year round.

(a) How does the large surface area of the leaf of the teak tree allow it to make food more efficiently? [1]

A cactus on the other hand, is a plant found in the desert where the weather is hot and there is very little rainfall. Unlike the teak tree, the cactus has needle-like leaves as shown in the diagram below.



(b) Explain why the leaves of the cactus plant appear small and needle-like? [1]

(c) In which part of the cactus is food mainly being manufactured? [1]

3

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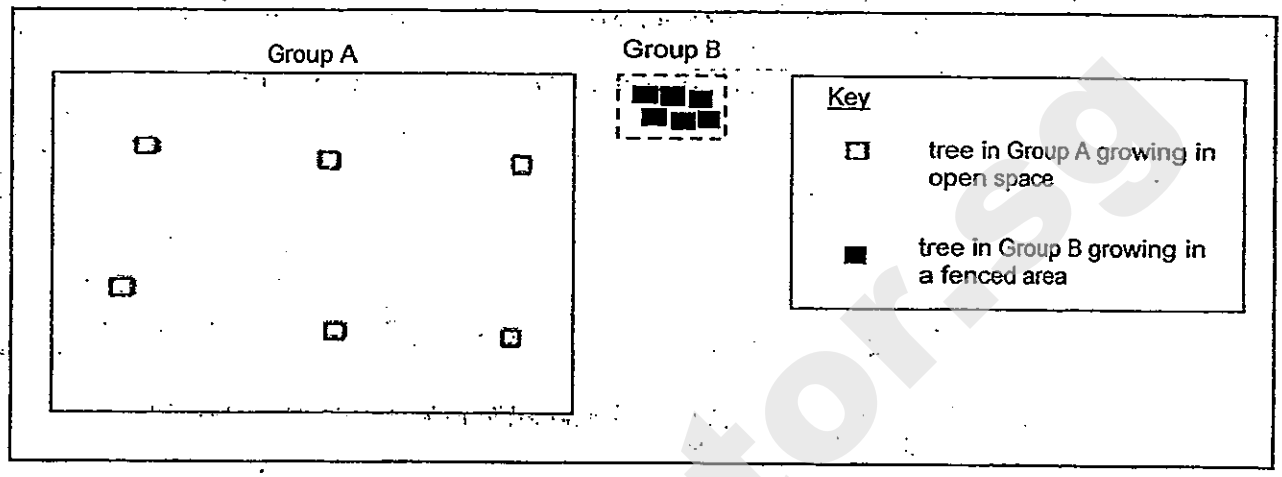
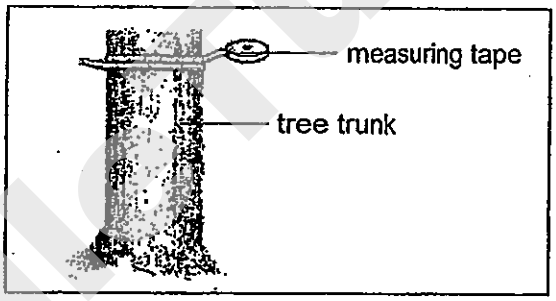
36. Alyssa and Rita studied two groups of angsana trees, Group A and Group B, which were found growing at two different locations. The trees in Group A were growing in an open space while the trees in Group B were growing in a fenced area.

The diagram below shows the location of the trees in Group A and Group B.



The girls measured around the trunk of each Angsana tree as shown in the diagram below.



They then recorded the results in the table shown below.

Sizes of tree trunks growing in open space (cm)	Sizes of tree trunks growing in a fenced area (cm)
319	102
192	68
323	81
401	33
352	97
245	72

(Go on to the next page)

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(a) Using the information from the table above, what can Alyssa and Rita conclude about the sizes of tree trunks growing in a fenced area as compared to those growing in an open space? [1]

(b) What do you think could be the reason for your answer in part (a)? [1]

2

(Go on to the next page)

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37. A group of students was given four different types of cells, A, B, C and D. They observed the cells under a microscope and recorded their observations in the table shown below.

Parts	Type of Cell			
	A	B	C	D
Cell wall	Present	Present	Absent	Absent
Cell membrane	Present	Present	Present	Present
Cytoplasm	Present	Present	Present	Present
Nucleus	Present	Present	Present	Absent
Chloroplast	Absent	Present	Absent	Absent

(a) **Draw** and **label** Cell A in the box below. [1]

The students then carried out an experiment on the four cells to find out what happens when each of the cells was soaked in a beaker of water for 5 hours.

1

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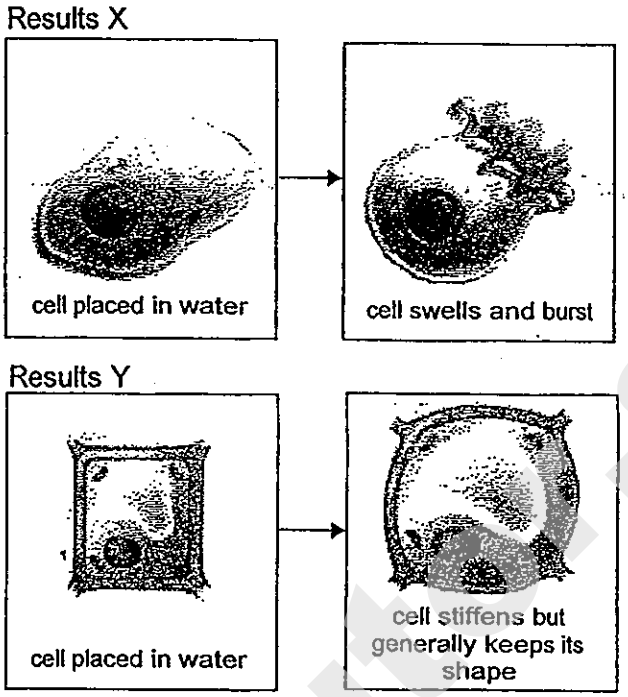
The diagram below shows the results of the experiment 5 hours later.



Two of the cells reacted the same way as Results X while the other two cells reacted the same way as Results Y.

(b) Which two cells reacted the same way as Results X when soaked in the beaker of water for 5 hours? Explain your answer. [1]

_____

_____

(c) Give an example of a Cell D and give a reason why you chose this example. [1]

_____

_____

2

End of Booklet B1

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BOOKLET B2

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

INSTRUCTIONS TO CANDIDATES

Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

Name: _____ ( )

Class: Primary 5._____

Date: 3 October 2013

Booklet A	**/ 60**
Booklet B1	**/ 20**
Booklet B2	**/ 20**
Total	**/ 100**

This booklet consists of 8 printed pages including this page.

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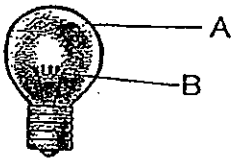
For questions 38 to 44, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

[20 marks]

38. The diagram below shows a bulb.



(ai) Name the parts indicated in the diagram above. [1]

A: _____ B: _____

(aii) What is the most likely property of the material used for part A? [1]

_____

_____

(b) Mrs Phua advised her daughter to buy an umbrella with a plastic tip instead of a metal tip. She commented that a metal tip is especially unsafe if there was lightning.

Explain why it is so. [1]

_____

_____

3

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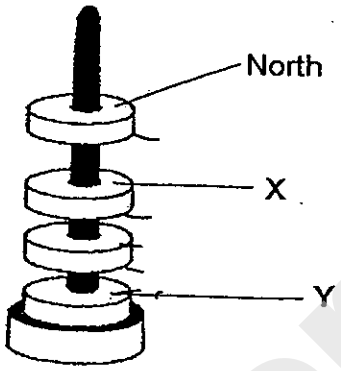
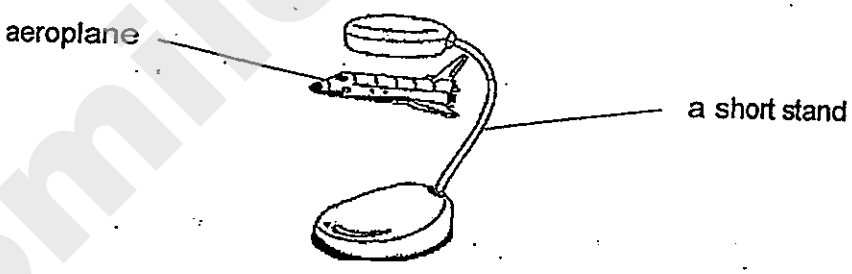
39. Jeremy was playing with some ring magnets as shown below. He found out that he could make some of them 'float' in the air.



(a) If the pole of the top ring magnet is North Pole, state the poles, X and Y, of the magnets as shown in the diagram above. [1]

X: _____ Y: _____

Jeremy has a toy aeroplane that is able to 'float' in the air as shown below.



(b) Based on what he has learnt from (a), explain clearly why the toy plane is able to stay in the air. [2]

_____

_____

3

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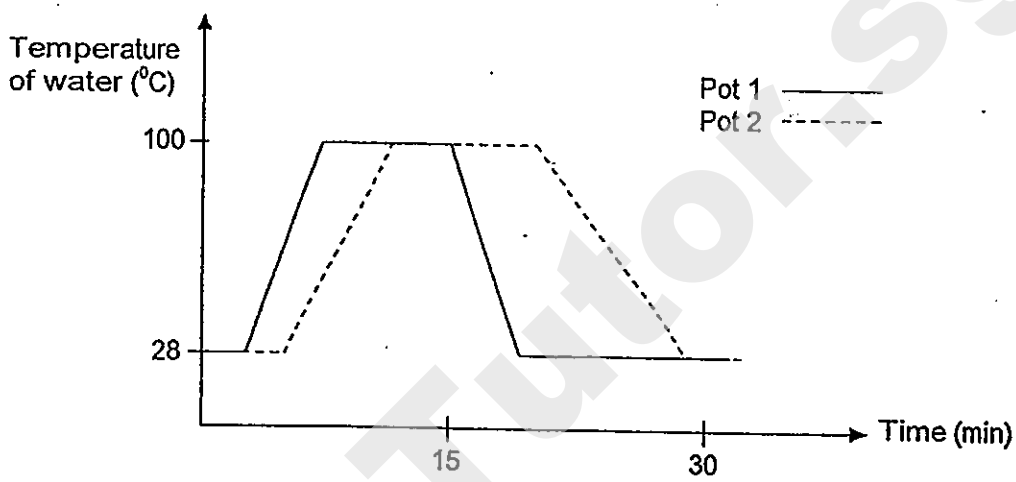
40. Mrs Chua had a clay pot and a steel pot of the same size. She poured equal amounts of water into each of them and placed them on a stove. She turned on the fire for 15 minutes. After 15 minutes, she removed the pots from the stove and left them to cool on the table.

Mrs Chua recorded the temperatures of the water in the pots as shown in the graph below.



(a) Based on the graph above, identify the material of the pots. [1]

Pot 1: _____

Pot 2: _____

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

_____

_____

_____

(c) Provide an advantage of cooking food using the clay pot over the steel pot. [1]

_____

_____

_____

3

(Go on to the next page)

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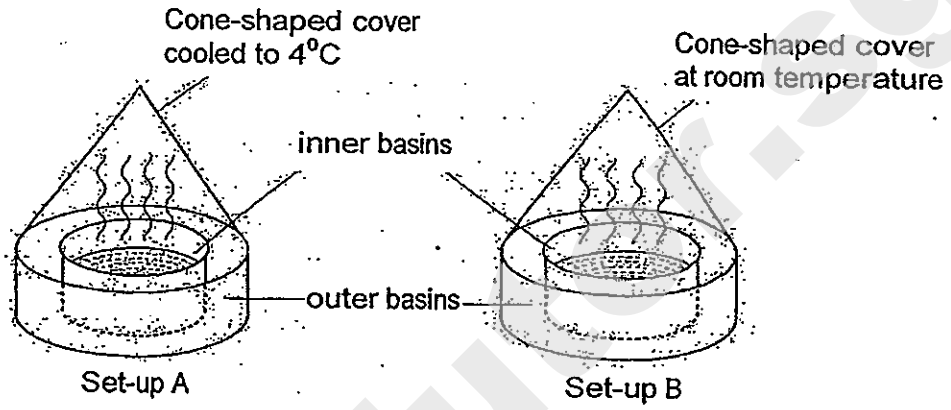
41. Mathew set up an experiment as shown in the diagram below to investigate the rate of condensation of water. The apparatus used in both set-ups are identical. Mathew poured equal amounts of freshly boiled water into the inner basins and covered the outer basin with the cone-shaped cover. However, the cone-shaped cover used in Set-up A was cooled to 4°C before the start of the experiment while the cone-shaped cover used in Set-up B was left at room temperature. He then observed the set-ups for eight minutes.



(a) What variable should he measure in order to find out which set-up allows a faster rate of condensation? [1]

(b) Which set-up do you think will allow condensation to take place at a faster rate? Give a reason for your answer. [1]

(c) Why do you think Mathew use a cone shaped cover for his experiment? [1]

3

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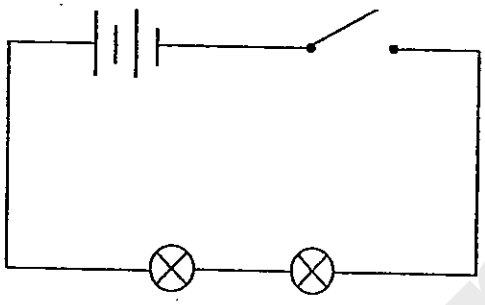
42. Ally set up an electrical circuit as shown in the circuit diagram below.



Ally noticed that both the bulbs were dim when the switch was closed. She decided to make some changes to the circuit so that the bulbs would glow brighter.

(a) State two ways she could do to the circuit so that the two bulbs will glow brighter. [1]

_____

_____

(b) Ally is given **two batteries**, **two bulbs**, **one switch** and **some wires** in a Science competition. She is asked to connect the circuit components and construct a circuit which allows one bulb to light up even though the other bulb has fused. [2]

In the space below, draw a **circuit diagram** of the circuit she should construct.

3

(Go on to the next page)

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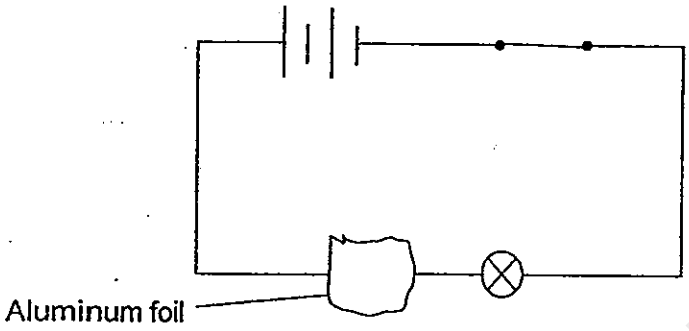
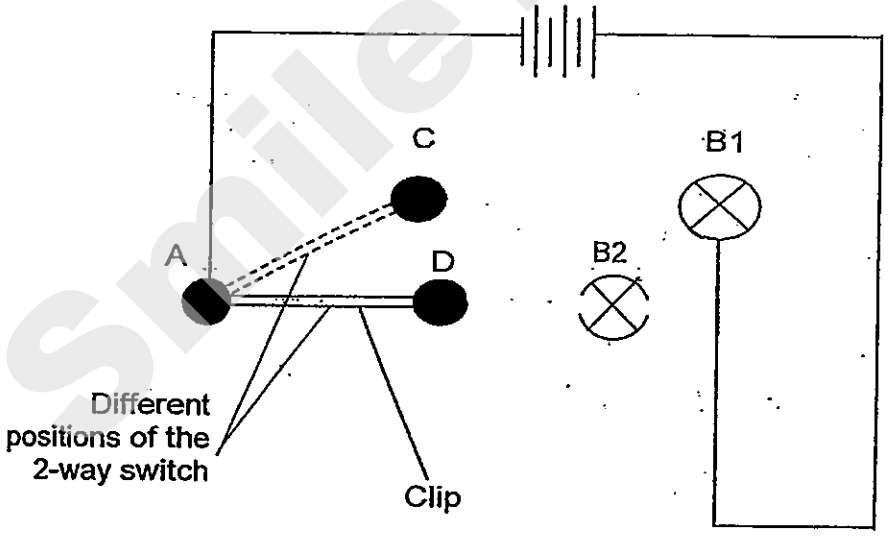
(c) What will happen to the other bulb if one of the bulbs in Ally's circuit was replaced by a piece of aluminum foil? Explain your answer. [1]



43. The diagram below shows an open circuit. The 2-way switch is made up of 3 pins A, C and D. A clip is connected to Pin A and it can be moved to touch pins C or D.



Draw 3 wires in the diagram above to show how the 2-way switch can be connected to the bulbs so that only I bulb can light up at a time. [2]

3

(Go on to the next page)

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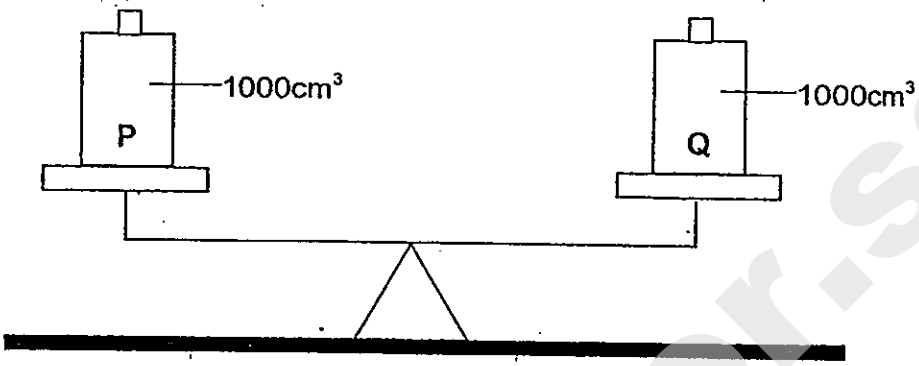
44 Jess balanced two identical containers of equal capacity, P and Q, on a lever balance as shown in the diagram below.



(a) State what Jess would observe when she pumped in another 800 cm^3 of air into container P [1]

(b) What properties of air does this experiment clearly demonstrate? [1]

2

End of Booklet B2

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ANSWER SHEET

EXAM PAPER 2013
SCHOOL : MGS
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
3	2	1	2	1	3	2	4	3	4	2	1	2	2	2	2	4

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	1	2	1	1	3	2	1	1	3	4	2	1

31)a)Anthers.
b)Yes. Cross-pollination can still take place.
c)Both fuse with the female egg during fertilisation.

32)a)Ovaries.
b)To produce eggs for fertilization.
c)The human does not rely too much on one ovary while the bird has to. Also for the human if one of the ovaries are not working there is still a second one to depend on, while the bird doesn't have another one.

33)a)The age of each of the girls are different when they are meant to be a constant variable, unabling them to compare accurately.
b)They can repeat the investigation three times and find the readings.
c)The air passage is swollen and the muscles are tightened, making the passage narrow causing it to be difficult for air to travel out of the lungs and to the mouth to blow air into a balloon.

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34)a)Mould

b)Water and air.

c)The packet of drying agent contains silica gel which helps to keep the boots dry so that mould will not grow, helping to maintain the boots well so it will not spoil.

35)a)There is more exposed surface area of the chlorophyll and hence it can trap more sunlight to make food more efficiently.

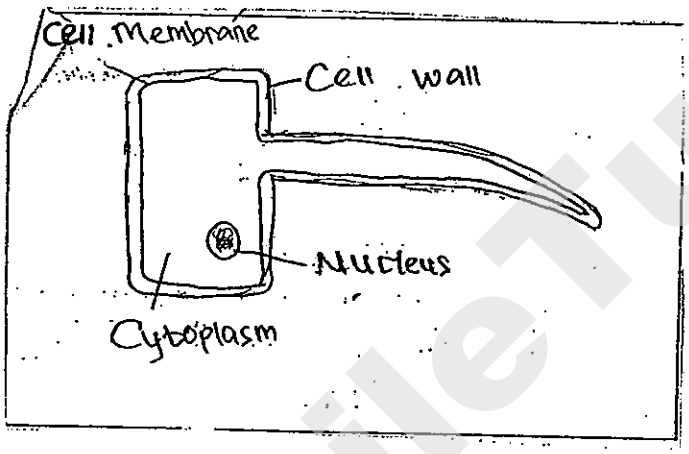
b)To reduce the surface area of the leaves so that the water loss through transpiration is not prevented, thus conserving water in the hot desert.

c)The stem.

36)a)The sizes of tree trunks growing in an open space is larger compared to those growing in a fenced area.

b)Trees growing close together have to compete for sunlight, nutrients, water and space unlike those growing on open space.

37)a)



b)Cells C and D. Both have no cell wall to keep its shape and hence in not as strong. When it absorbs too much water, it bursts, no cell wall keeping it together.

c)Red blood cell. It has no nucleus, cell wall and chloroplast but cell membrane and cytoplasm is present.

38)a)i)A: Glass casing B: Filament

ii)It is transparent

b)As metal is a good conductor of electricity, when there is lightning the metal tip might conduct the electricity and the person might get electrocuted.

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39)a)X: South Y: South

b)There is a magnet on the aeroplane and one on the bottom of the stand. Both like poles are facing each other, causing repulsion which allows the toy plane to stay in the air.

40)a)1: Steel 2: Clay

b)Steel is a better conductor of heat than clay. Hence, pot 1, which gains heat and loses heat faster should be made of steel and pot Z, which gains heat and loses heat slower should be made of clay.

c)The food in the pot could be kept warmer for a longer period of time.

41)a)The amount of pure water/ water droplets collected in the outer basins.

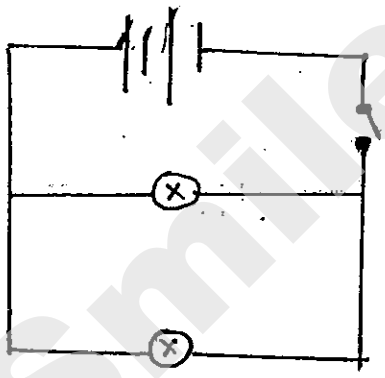
b)Set-up A. As the cone-shaped cover is colder than the cone-shaped cover in set-up B, the evaporated water vapour will lose heat faster and hence condense faster.

c)So that the condensed water droplets would slide back into the outer basin as the sides of the cone is slanted.

42)a)1)Put more batteries.

2)Arrange the bulbs in parallel.

b)



c)The bulb would continue to light up as aluminum is a conductor of electricity and hence, electric current can flow through it, creating a closed circuit with no gaps.

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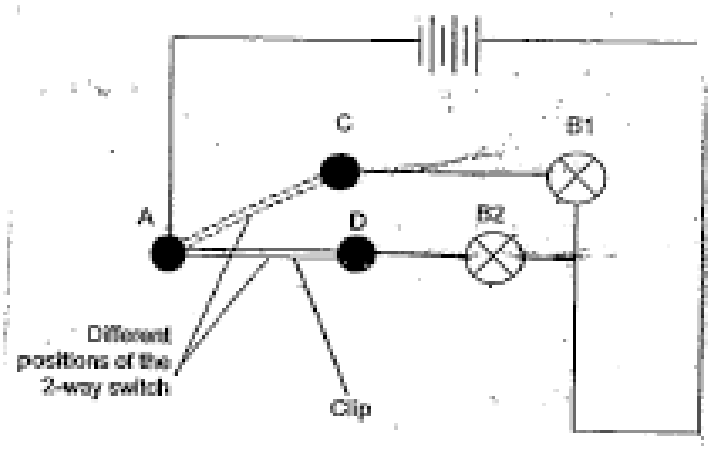
43)



44)a)The level balance would tilt downwards towards container P.
b)Air has mass and can be compressed.

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