METHODIST GIRLS' SCHOOL

Founded in 1887

CONTINUAL ASSESSMENT 2014
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: 6 March 2014

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 (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet.

[60 marks]

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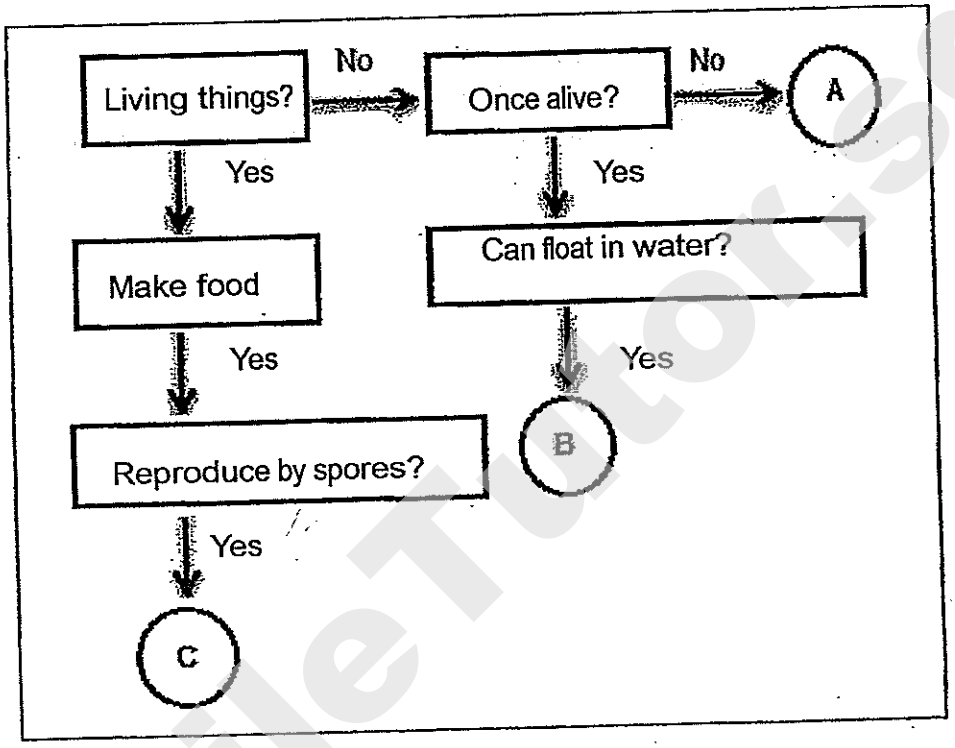
1. Study the flow chart below.



Which of the following best represent objects, A, B and C?

	A	B	C
(1)	Plastic tray	Iron nail	Moss
(2)	Pebble	Tyre	Fern
(3)	Grass	Cardboard	Fungi
(4)	Book	Rubber duck	Algae

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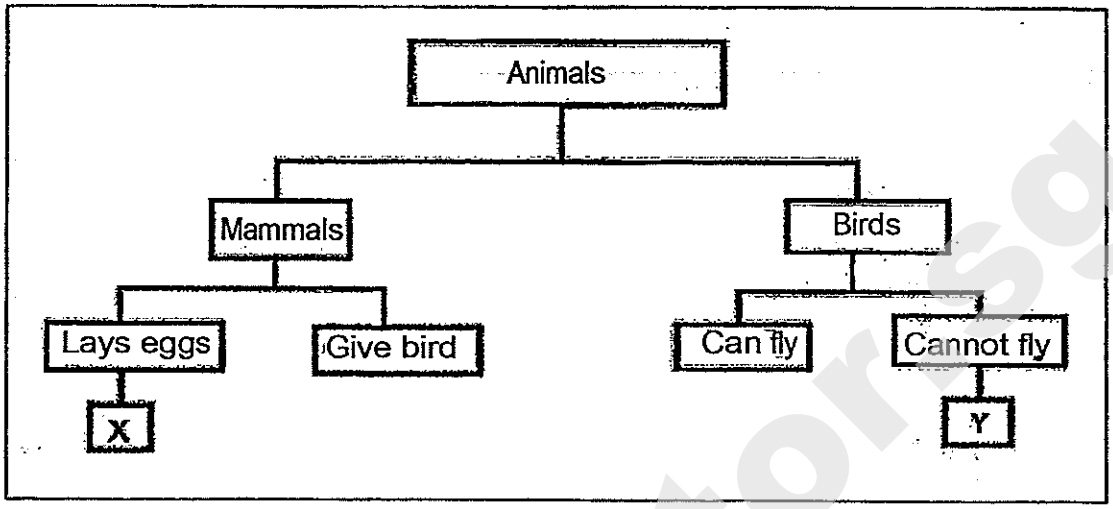
2. The chart below shows how animals can be classified.



Which animals can X and Y be?

	X	Y
(1)	Anteater	Kingfisher
(2)	Platypus	Ostrich
(3)	Whale	Penguin
(4)	Monkey	Peacock

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3. Deborah wanted to find out whether water lettuce, would grow well in water containing detergent.

She used two identical beakers, Beaker A and Beaker B.

The table below shows the items that she had added into one of the beaker.

Beaker	Soap powder	Tap water	Water lettuce
A	10 ml	500 ml	50
B			

If she were to set up Beaker B as a control, which of the following should she choose to add into Beaker B?

	Soap powder	Tap water	Water lettuce
(1)	0 ml	500 ml	50
(2)	10 ml	500 ml	25
(3)	10 ml	300 ml	50
(4)	10 ml	500 ml	50

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4. The table below shows the characteristics of 2 dogs and their young.

Characterisics	Male dog	Famale dog	Young
Long fur	No	Yes	Yes
Short tail	Yes	No	Yes
Black spots	Yes	No	No

Four students made the following statements about the young:

Ali: The young inherited its father's long fur.
Bala: The young inherited 1 trait from its mother.
Cai Xing: The young did not inherit its father's black spots.
David: The young inherited at least 1 trait from both of its parents.

Based on the information given on the table above, who made the correct statement/s?

(1) Ali and Bala only

(2) Cai Xing and David only

(3) Bala, Cai Xing and David only

(4) Ali, Bala, Cai Xing and David only

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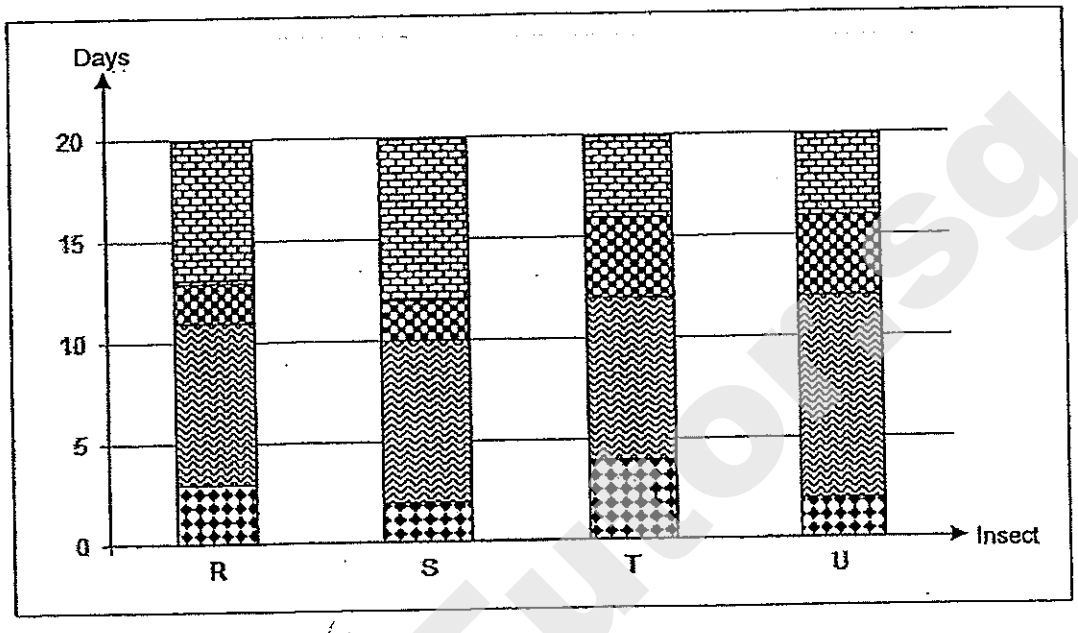
5. The graph below shows the length (number of days) at each of the stage in the 4-stage life cycle of four insects.



Based on the graph above, Mrs Lee, a Science teacher, asked her students on which day/s are all the insects at the same stage in their life cycles, assuming that the eggs of all the insects were laid on the same day?

The following were her students' responses.

Kenny: It is on Day 5.

Lina: It is on Day 9.

Molly: It is on Day 15.

Who gave the correct answer/s?

(1) Kenny only

(2) Lina only

(3) Kenny and Lina only

(4) Lina and Molly only

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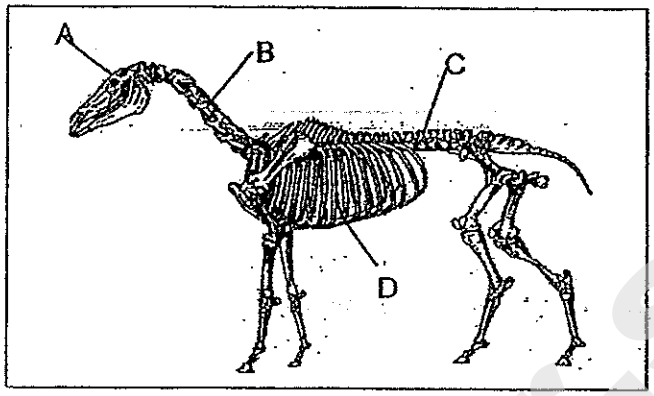
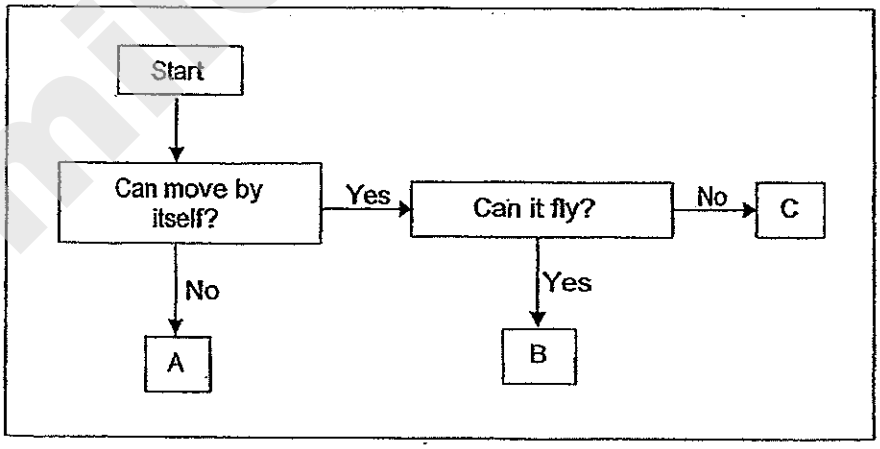
6. The diagram below shows the skeletal system of a horse.



Which part A, B, C or D is similar to the ribcage of the human skeletal system?

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

7. Study the flow chart below.



Which of the following describes organism A, B and C correctly?

	A	B	C
(1)	Moss	Bat	Lizard
(2)	Maggot	Mosquito	Beetle
(3)	Hibiscus	Sparrow	Bee
(4)	Mushroom	Angsana	Balsam

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8. A study was performed on two animals. The characteristics of the two animals were recorded as shown in the table below.

	Animal X	Animal Y
Eggs are laid in water.	Yes	No
Young resemble adult.	No	Yes
Fertilisation takes place externally.	Yes	No

What could Animals X and Y be?

	Animal X	Animal Y
(1)	Frog	Penguin
(2)	Mosquito	Butterfly
(3)	Duck	Frog
(4)	Guppy	Mosquito

9. The table below shows some of the features that the Keith family has.

	Eyes	Ears	Hair	Nails
Mr Keith	black	detached	straight	short
Mrs Keith	brown	detached	curly	short
Annie	brown	detached	straight	long
Benny	brown	attached	straight	short
Christine	black	detached.	straight	short
David	brown	detached	curly	short

One of the four children is adopted. Who is most likely to be the adopted child?

(1) Annie
(2) Benny
(3) Christine
(4) David

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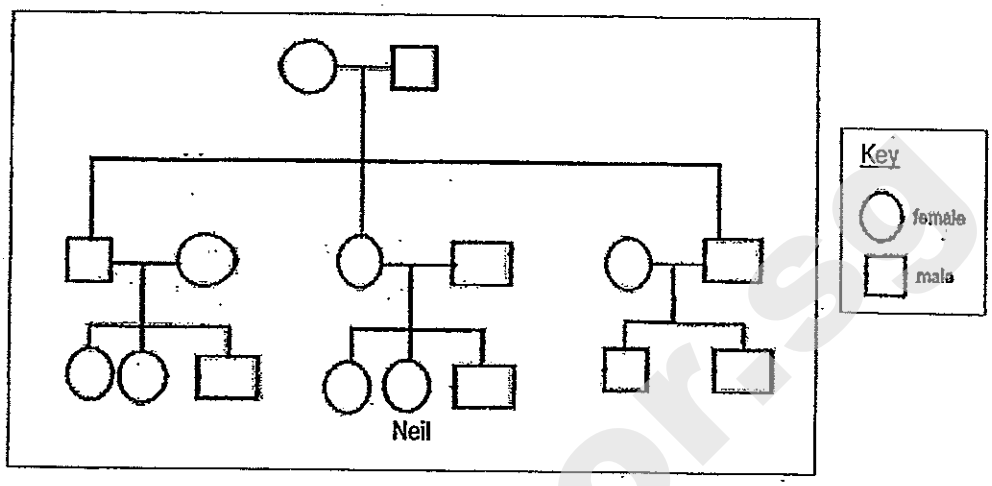
10. The diagram shows Neil's family tree.



How many cousins does Neil have?

(1) 3
(2) 4
(3) 5
(4) 6

11. Study the table of the two groups of animals shown below.

Group A	Group B
Cattle	Crocodile
Buffalo	Snake
Elephant	Alligator

Which of the following statements below is **not true** for the two groups?

(1) They help Man to do work.
(2) Their skins are useful to Man.
(3) They are grouped according to their body coverings.
(4) They are grouped according to their body temperature.

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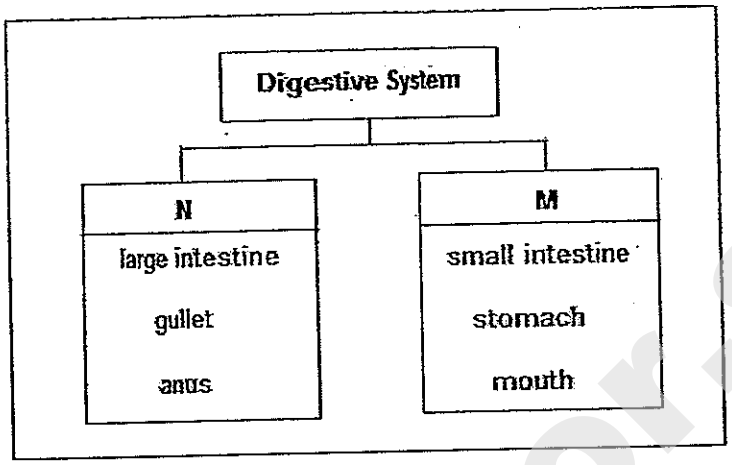
12. The chart below shows how the organs of the human digestive system are classified.



Based on the chart above, some students made the following guesses on the correct headings for M.

Guna: Where absorption of digested food takes place.

Hassan: Where absorption of water takes place.

Imelda: Where digestion is completed.

Jia Ling: Where digestion takes place.

Whose heading/s is/are correct?

(1) Guna only

(2) Jia Ling only

(3) Hassan and Imelda only

(4) Jia Ling and Hassan only

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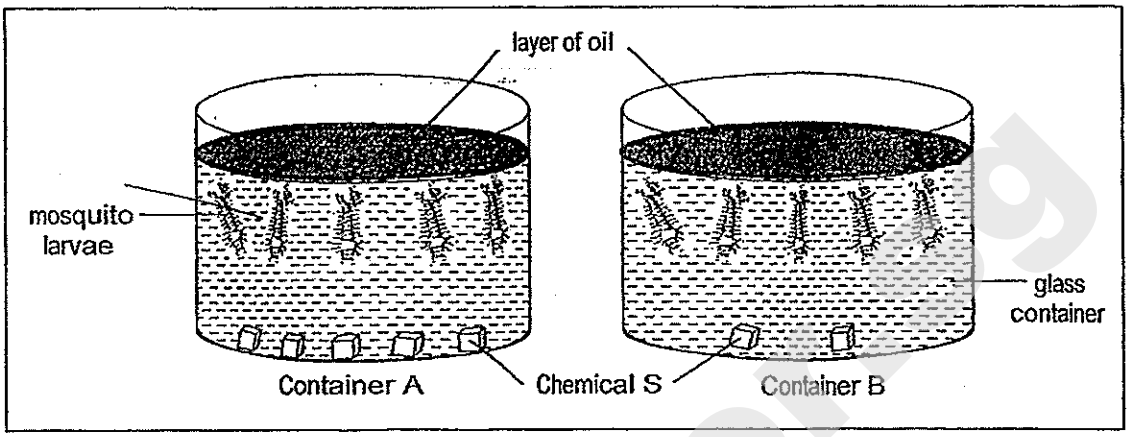
13. Kim conducted an experiment to find out if Chemical S is able to kill mosquito larvae thriving in water. She prepared the following set-ups as shown in the diagram below.



Two days later, she found that all the mosquito larvae had died. She then concluded that Chemical S is effective in killing the mosquito larvae in the water.

However, some of Kim's friends commented that her experiment was not carried out properly and suggested the following ways to correct the set-ups in her experiment.

	Suggestion
Irene	Add three more Chemical S into Container B so that both set-ups are the same to ensure a fair test.
Ju Sheng	Add two more Chemical S into Container A so that the effect of Chemical S will be stronger.
Karthik	Remove all Chemical S from Container B so that Container B can be a control set-up for the experiment.
Lina	Remove the layer of oil as it prevents the mosquito larvae from taking in atmospheric oxygen, thus, causing them to die.

Whose suggestion/s is/are correct?

(1) Irene only

(2) Ju Sheng only

(3) Karthik and Lina only

(4) Lina and Irene only

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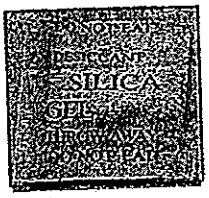
14. Three months ago, Fatimah bought a leather bag. When she opened the box, she found a packet of drying agent as shown in the diagram below.



Thinking that she would not need it, she threw the drying agent away.

When she took out the leather bag from the dust cover, she realised that there were some white patches on the bag as shown in the diagram below.

She realised that she should not have thrown the packet of drying agent away.

Fatimah thought of a few reasons to explain why the drying agent was included.

Reason	
A	The drying agent absorbed the moisture in the air.
B	The drying agent prevented mould from growing.
C	The drying agent provided food for bacteria to feed on.
D	The drying agent gave out pleasant smell to the surrounding.

Which of the reasons above is/are correct?

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

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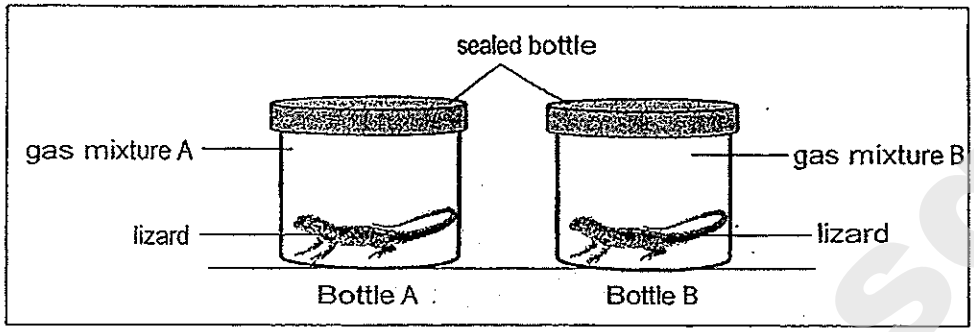
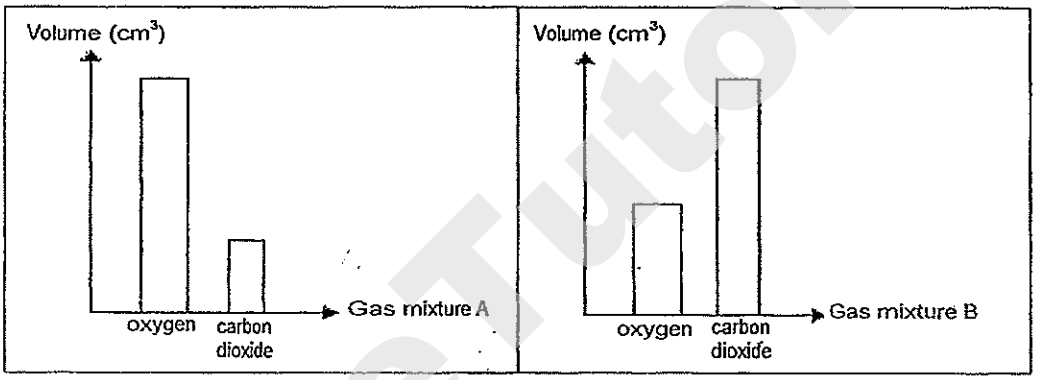
15. Joshua placed a lizard into glass bottles, Bottle A and Bottle B. Gas mixture A and gas mixture B were pumped into Bottle A and Bottle B respectively as shown in the diagram below.



The compositions of gas mixture A and gas mixture B are shown below.



Based on the information given, Joshua made the following conclusions:

Conclusion	
W	Lizard in Bottle A survived longer as the bottle contained more oxygen than carbon dioxide. Oxygen was needed by the lizard for respiration.
X	Lizard in Bottle B survived longer as the bottle contained more carbon dioxide than oxygen. Carbon dioxide was needed by the lizard for photosynthesis.
Y	Lizard in Bottle A died faster as the bottle contained more oxygen than carbon dioxide. The oxygen suffocated the lizard.

Which of the conclusion/s above is/are correct?

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

End of Booklet A1

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METHODIST GIRLS' SCHOOL

Founded in 1887

CONTINUAL ASSESSMENT 2014
PRIMARY 5
SCIENCE
BOOKLET A2

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

INSTRUCTIONS TO CANDIDATES

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Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: _____ ( )

Class: Primary 5._____

Date: 6 March 2014

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]

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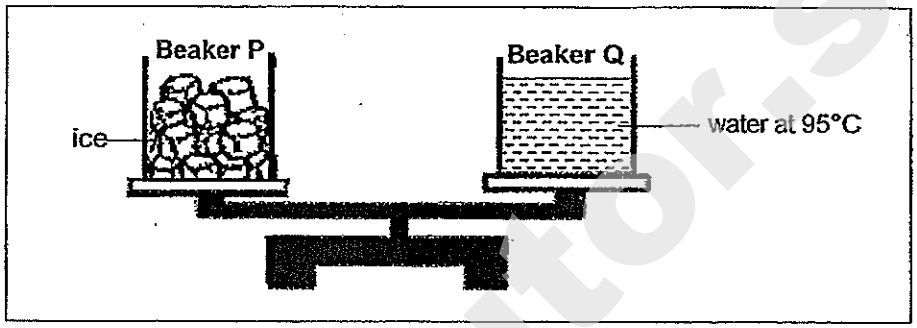
16 Shu Yuan placed Beaker Q which was filled with water at a temperature of 95°C on one side of a digital balance and Beaker P which was filled with ice cubes on the other side. At the start of the experiment, both Beaker P and Q were balanced.



She then asked her friends to predict what would happen to the set-up after one hour. The following predictions were made by her friends:

Rafi: Beaker Q would become heavier because the water has more heat than the ice cubes.

Tim: Beaker Q would become lighter because the water in the beaker evaporated at a faster rate than the water from the melting ice in Beaker P.

Usha: Beaker P would become heavier because the water vapour in the surrounding air condensed on the outer surface of the beaker.

Vivien: Beaker P would become lighter because most of the ice cubes had melted and there was very little ice left.

Who gave the correct prediction/s?

(1) Vivien only

(2) Rafi only

(3) Tim and Usha only

(4) Vivian and Rafi only

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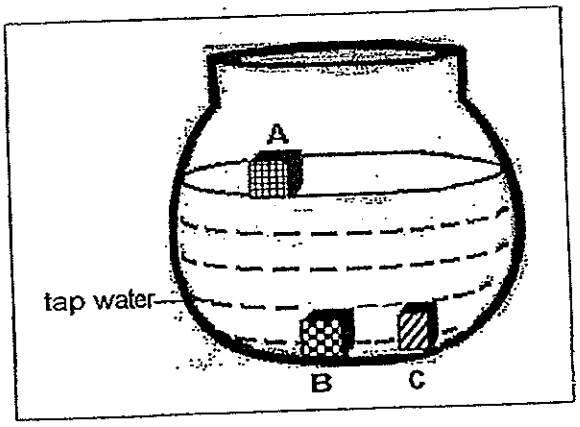
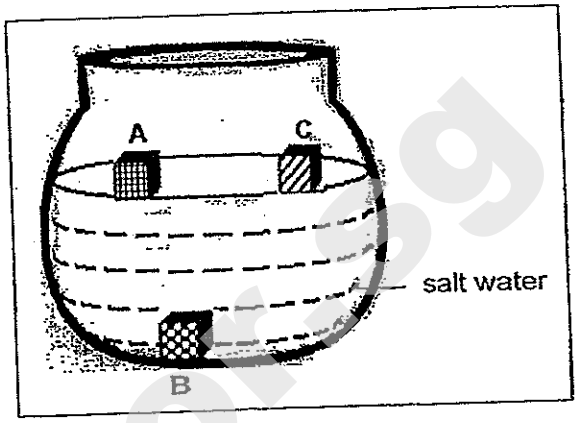
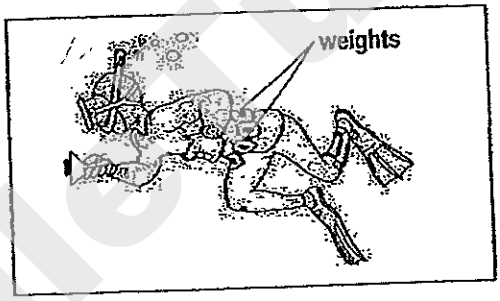
17. Susan was given three objects of different materials, A, B and C. She wanted to find out if these objects float or sink in tap water and salt water. She made the following observation.





She realised that a person who practices scuba diving in the swimming pool has to put weights around his waist to keep his body under water as shown below.



Susan was wondering which material/s, A, B or C, would be most suitable for making the weights for a scuba diver to dive in the sea.

Which of the following statements she made is correct?

	Statment
(1)	Only Material A would be most suitable because it floated on tap and salt water.
(2)	Only Materials B and C would be most suitable because both remained underwater in tap water.
(3)	Only Material C would be most suitable because it remained underwater in tap water but able to float on salt water.
(4)	Only Material B would be most suitable because it remained underwater despite being placed in tap or salt water.

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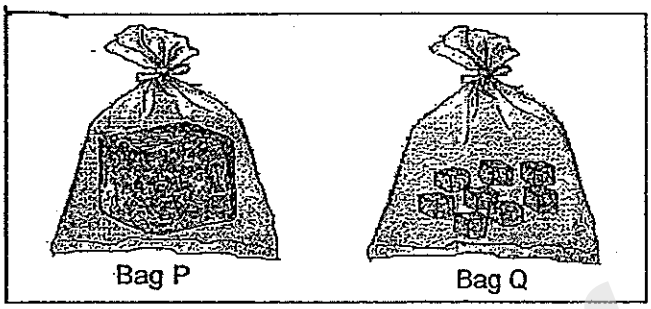
18. Elsie has two bags each containing 200g of ice. Each bag of ice is made up of the 200g of water. The two bags are of the same material and size. Bag P contains one big block of ice while Bag Q contains many small ice cubes.



Which of the following observations will Elsie make at the end of her experiment and the correct explanation for it?

	Observation	Explanation
(1)	The ice cubes in Bag Q will melt completely in a shorter period of time than the big block of ice in Bag P	The ice cubes have bigger exposed surface area compared to the big block of ice.
(2)	The big block of ice in Bag P will melt completely in a shorter period of time than the ice cubes in Bag Q	The big block of ice has bigger exposed surface area compared to the ice cubes.
(3)	The ice cubes in Bag Q will melt completely in a shorter period of time than the big block of ice in Bag P	The temperature of the surrounding air is higher than the temperature in the plastic bag.
(4)	The big block of ice in Bag P will melt completely in a shorter period of time than the ice cubes in Bag Q	The temperature of the surrounding air is higher than the temperature in the plastic bag.

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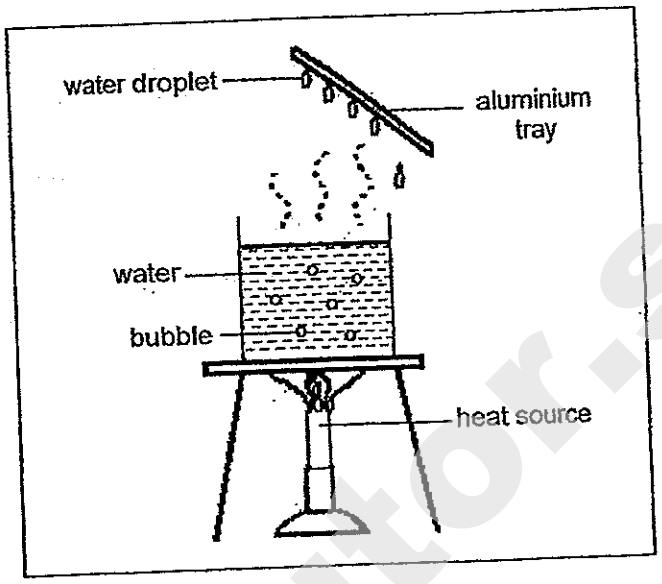
19. Zack designed the setup as shown in the diagram below to simulate the water cycle.



He wrote down the following possibilities that would happen when the source of heat is removed from the set-up above.

A: The temperature of the water in the beaker would decrease.

B: Water from the beaker would evaporate at a slower rate, thus, the formation of water droplets would be slower.

C: The temperature difference between the water and the surrounding air would be greater, thus, the formation of water droplets would be faster.

Which of the possibilities above is most likely to be correct?

(1) A only

(2) B only

(3) A and B only

(4) C and A only

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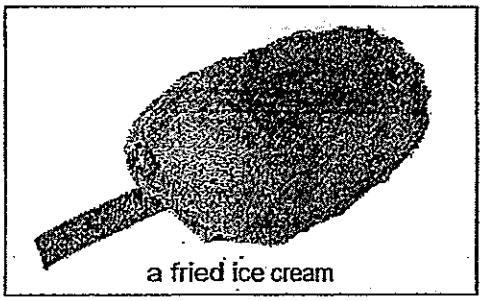
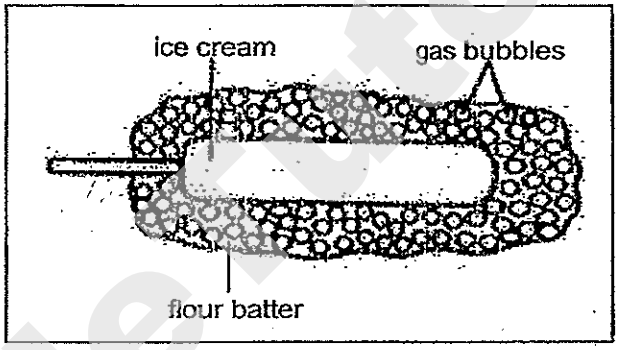
20. Cindy and her friends ordered a fried ice-cream as shown in the diagram below.



Cindy explained to her friends that the fried ice cream is made by dipping the ice cream into a flour batter which is mixed with bicarbonate soda. The bicarbonate soda will produce gas bubbles when it interacts with hot oil during deep frying as shown in the diagram below.



The following are some statements made by Cindy and her friends to explain why the ice-cream did not melt in the hot oil during deep frying.

Cindy: The gas bubbles are poor conductors of heat.

Devi: The gas bubbles slow down the transfer of heat from the hot oil to the ice cream.

Edmund: The gas bubbles slow down the ice cream from gaining heat from the hot oil.

Farida: The gas bubbles do not gain heat from the hot oil.

Who made the correct explanation/s?

(1) Cindy only
(2) Devi only
(3) Cindy, Devi and Edmund only
(4) Devi, Edmund and Farida only

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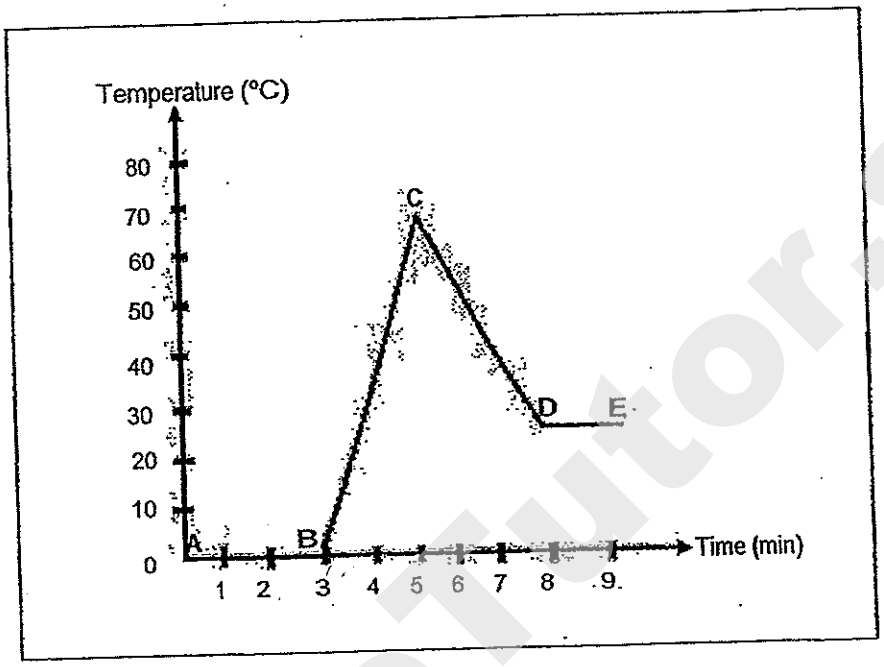
21. Amy took some ice cubes from the freezer and put them in a container. She heated the ice cubes. After a while, the container was left to cool down in a room. The room temperature was 32°C. She plotted a graph to show the changes in the temperature of the content in the container over time as shown in the diagram below.



At which part of the graph did the cooling of hot water to room temperature occur?

(1) AB

(2) BC

(3) CD

(4) DE

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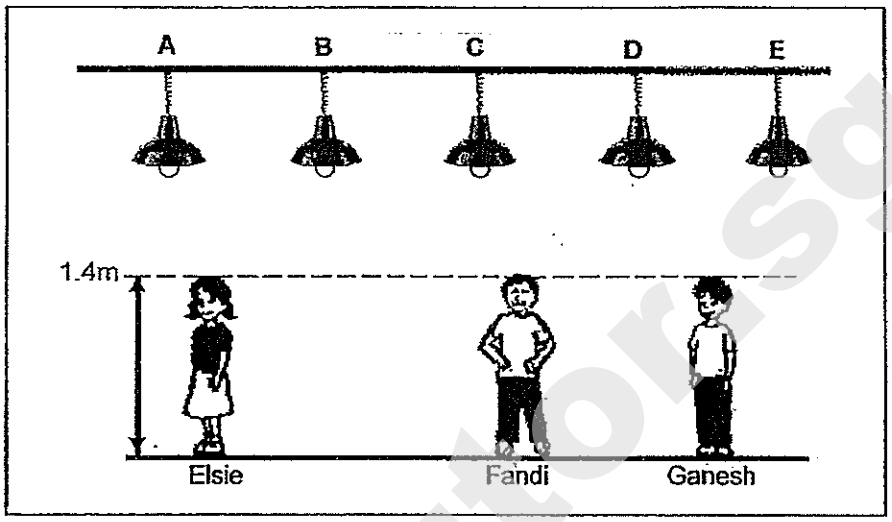
22. Three children, Elsie, Fandi and Ganesh were standing at various positions in a dark room. 5 lamps were hung at Positions A, B, C, D and E on the ceiling above them as shown in the diagram below. The lamps were turned off.



At which position/s should the lamp be switched on such that:

- Fandi has the shortest shadow
- Elsie has a longer shadow than Ganesh

(1) Position A

(2) Position C

(3) Positions A and B

(4) Positions D and E

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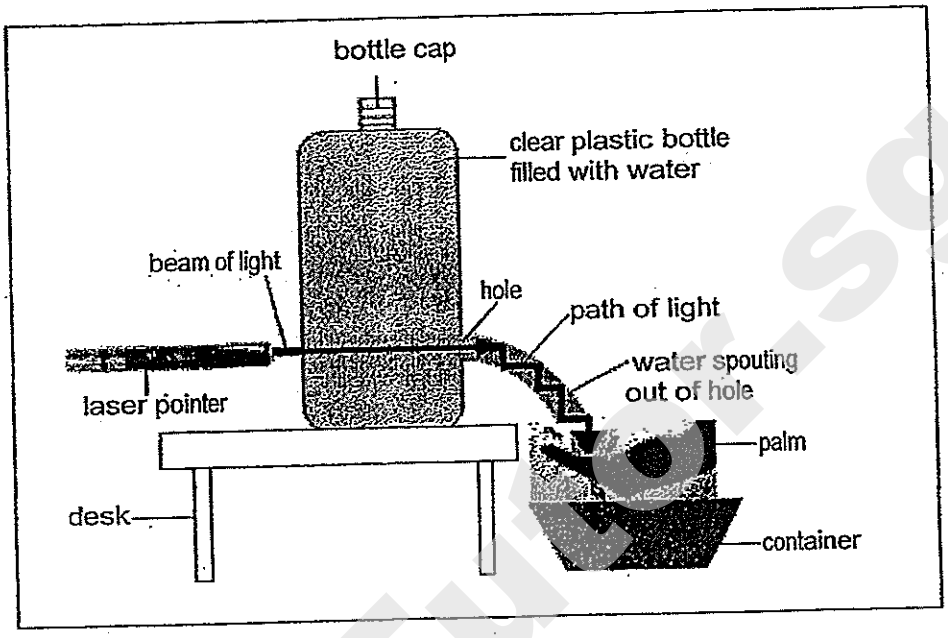
23. Kok Sing prepared the set up as shown in the diagram below to demonstrate the path of light in water.



As the bottle cap was loosened, a beam of light was being projected into the bottle of clear water, in line with a small hole at one side of the bottle where the water was flowing out from.

Kok Sing then placed his palm just above the container where the spout of water landed on. He realised that the beam of light was projected on his palm.

What property of light does the above experiment show?

(1) Light can be bent.

(2) Light can be reflected in water.

(3) Light can be absorbed in water.

(4) Light travels in a straight line.

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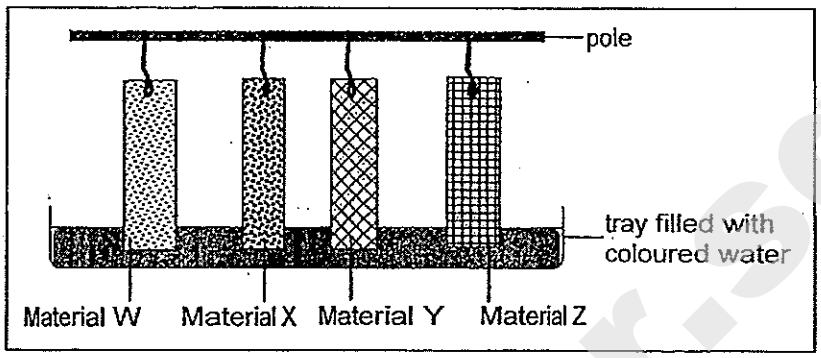
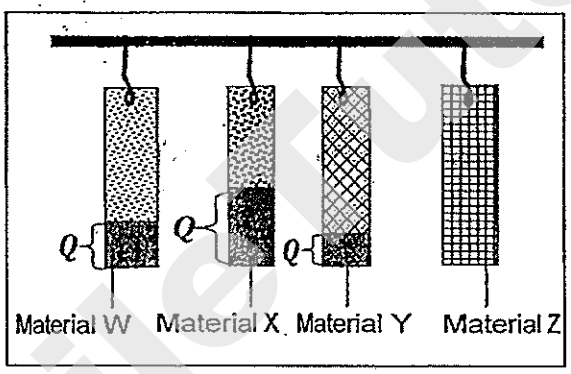
24. Sumei carried out an experiment using four different materials, W, X, Y and Z, of equal lengths. She then placed the end of each material into some coloured water as shown in the diagram below.



Five minutes later, she removed the coloured water. Then she measured the length of each strip of material that was stained by the coloured water as shown in the diagram below.



Key:

Q refers to the length of material that was stained by the coloured water (cm).

The results of her measurements are shown in the table below.

Material	*Q* (cm)
W	5
X	9
Y	3
Z	0

Based on the results above, which material would Sumei use to make a raincoat and why would she choose this material?

	Material	Reason
(1)	W	It absorbed 5cm of coloured water.
(2)	X	It absorbed the most amount of coloured water.
(3)	Y	It absorbed the least amount of coloured water.
(4)	Z	It did not absorb any amount of coloured water at all.

(Go on to the next page)

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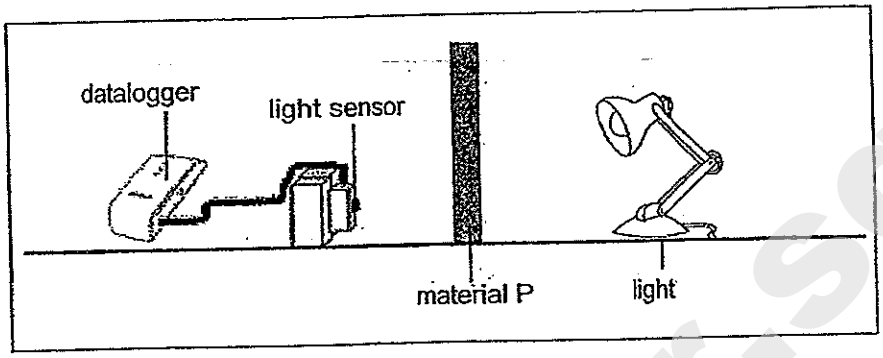
25. Rani attached a light sensor to a datalogger and measured the amount of light that passed through Material P in a dark room as shown in the diagram below.



She then repeated the activity using Material Q and Material R. She recorded the readings as shown in the table below.

	Material P	Material Q	Material R
Amount of light passed through (lux)	0	240	770

Which one of the following **best represents** material P, Q and R **correctly**?

	Material P	Material Q	Material R
(1)	Tracing paper	Clear plastic	Mirror
(2)	Clear plastic	Tracing paper	Mirror
(3)	Mirror	Clear plastic	Tracing paper
(4)	Mirror	Tracing paper	Clear plastic

(Go on to the next page)

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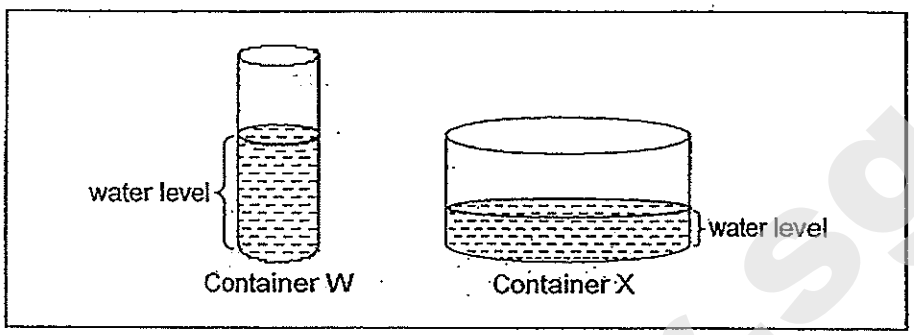
26. Maria poured 200 cm^3 of water at 95°C into each of the two metal containers, W and X, as shown in the diagram below.



20 minutes later, she realised that the temperature of water in Container W was higher than that in Container X.

Maria thought of the following reasons to explain why the temperature in Container W was higher than that in Container X.

A: Container W had a smaller area of exposed surface, hence, the rate of evaporation was slower. Less heat was lost after 20 minutes.

B: Container X had a bigger area of exposed surface, hence, the rate of evaporation was faster. More heat was lost after 20 minutes.

C: The water level in Container W was greater than the water level in Container X, hence, more heat was found in Container W than in Container X.

Which of the reason/s that Maria thought of above is/are correct?

(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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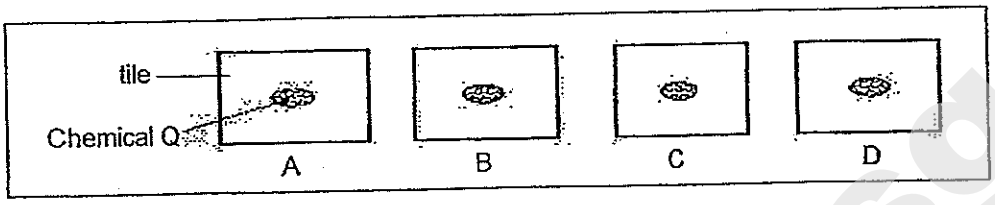
27. Hadi carried out an experiment to investigate which tile can absorb the most heat. 4 tiles of the same size with different surfaces were used in the experiment. A drop of Chemical Q was placed on each tile before they were heated at a temperature of 80°C as shown in the diagram below.



Chemical Q is white in colour when placed at room temperature and its colour would change when there is a change in temperature. The table below shows how the colour of Chemical Q changes.

Temperature	Colour of Chemical Q
30°C to 39°C	white
40°C to 50°C	orange
51°C to 70°C	red
71°C to 80°C	brown

After the tiles were heated for 10 minutes, Hadi recorded his observations in the table below.

Tile	Colour of Chemical Q after 10 minutes
A	red
B	white
C	orange
D	brown

Which tile should Hadi use on the roof so that the house would not be hot during the day and why is it so?

	Tile	Reason
(1)	A	It has a fairly high temperature at the end of the experiment as it is a good conductor of heat.
(2)	B	It has the lowest temperature at the end of the experiment as it is the poorest conductor of heat.
(3)	C	It has the fairly low temperature at the end of the experiment as it is a poor conductor of heat.
(4)	D	It has the highest temperature at the end of the experiment as it is the best conductor of heat.

(Go on to the next page)

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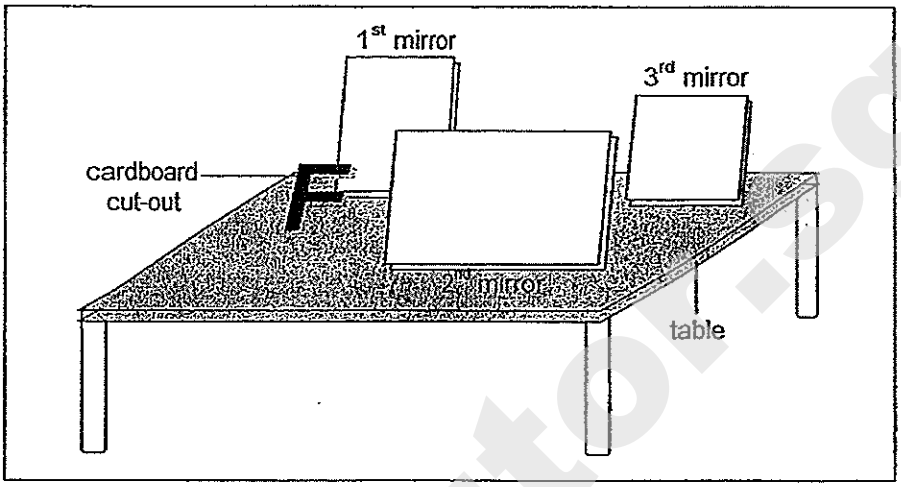
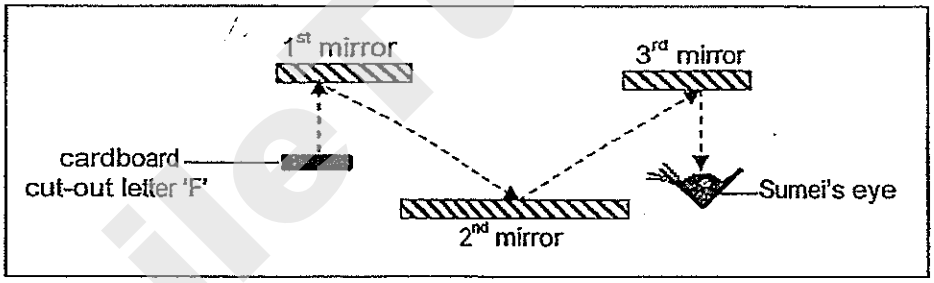
28. The diagram below shows the front view and the top view of how three mirrors had been placed on a table. A large cardboard cut-out of the letter 'F' was placed in front of the first mirror.

Front view



Top view



Sumei learnt in school that when she looked at an object in a mirror, the object would have its right and left image reversed.

Based on what she had learnt, which of the following shows the correct image of the letter 'F' as seen in the third mirror?

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

(Go on to the next page)

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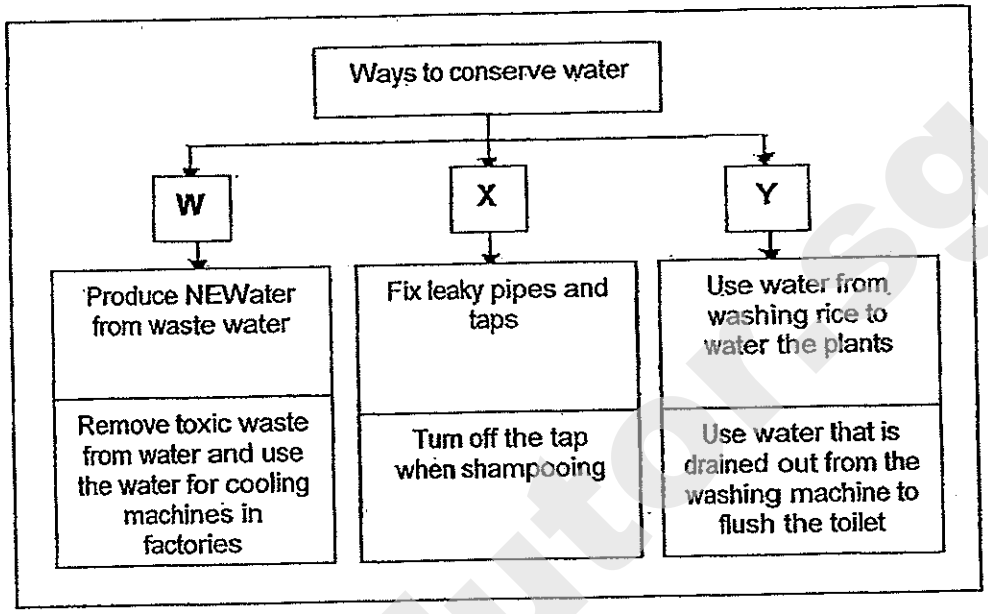
29. The classification table below shows different activities that can be carried out in order to conserve water. The activities are grouped into different categories.



What could the headings for W, X and Y be?

	W	X	Y
(1)	Reuse	Reduce	Recycle
(2)	Reduce	Recycle	Reuse
(3)	Recycle	Reuse	Reduce
(4)	Recycle	Reduce	Reuse

(Go on to the next page)

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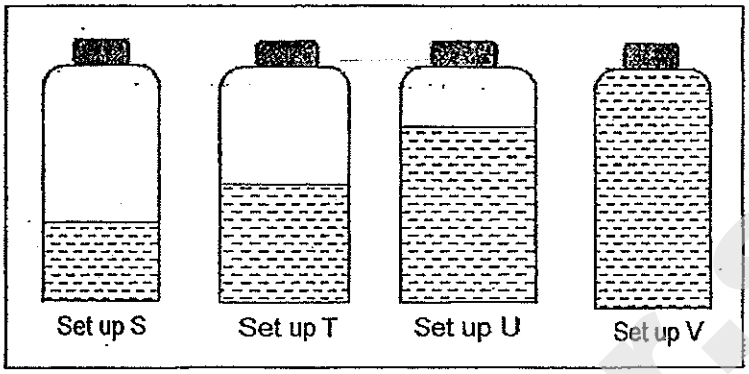
30. Su Ling filled up four identical rubber containers with different amounts of water as shown in the set ups below. Each rubber container can hold 100 *ml* of water.



She then placed the containers filled with water into a freezer. After a day, she recorded her observation in the table below.

Set up	Volume of water (cm^3)	Volume of ice (cm^3)
S	30	35.2
T	50	62.8
U	70	83.4
V	100	109.3

Based on the information above, Su Ling concluded that the volume of water increases when water freezes.

If Su Ling were to repeat the above experiment by replacing the 100ml rubber containers with 100ml glass containers, one of the glass containers would crack.

In which set up will the glass container crack?

(1) S

(2) T

(3) U

(4) V

End of Booklet A2

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METHODIST GIRLS' SCHOOL

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CONTINUAL ASSESSMENT 2014
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: 6 March 2014

Booklet B1	/ 20

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]

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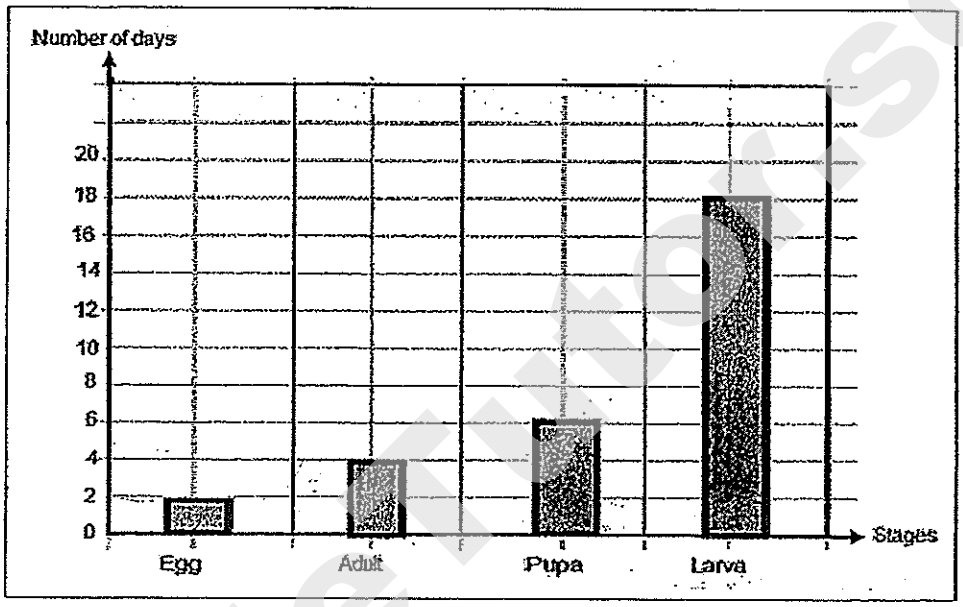
31. Alice studied the life cycle of Insect S. She recorded the number of days for each stage of its life cycle. Her results are shown in the graph below. However, she did not present the stages of the life cycle in the correct order.



(a) Based on Alice's results, how many days does it take for Insect S to become an adult after the egg has hatched? [1]

_____

(b) Insect S spends certain stages of its life cycle in the water. If Insect S is a mosquito, identify a stage of its life cycle that is spent in water. [1]

_____

(c) At which stage of its life cycle is Insect S, a mosquito, most dangerous? Give a reason for your answer. [1]

_____

_____

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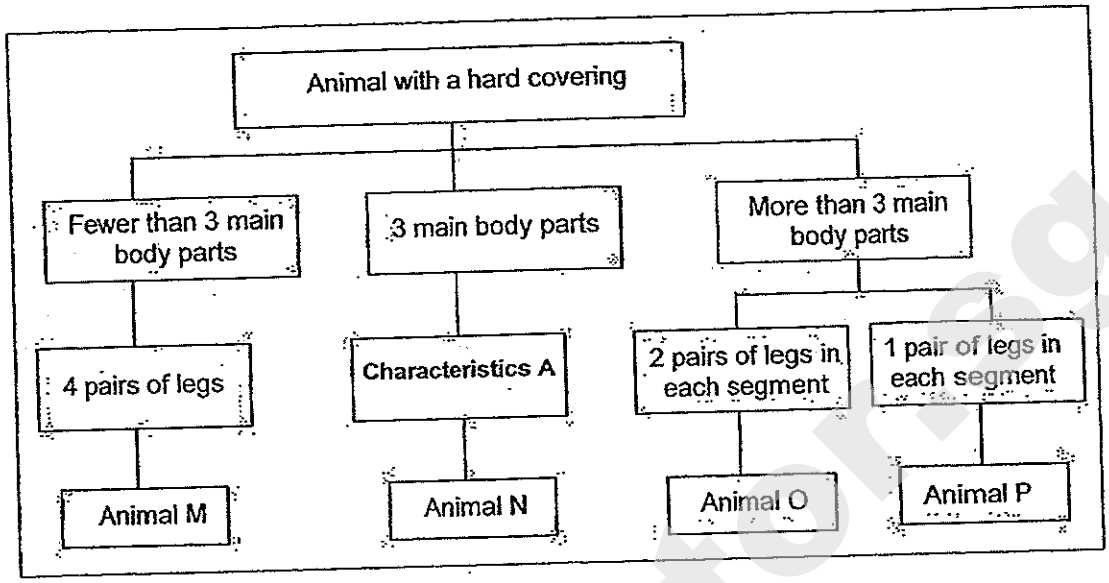
32. The diagram below shows a classification chart.



(a) What is a suitable heading for Characteristics A? [1]

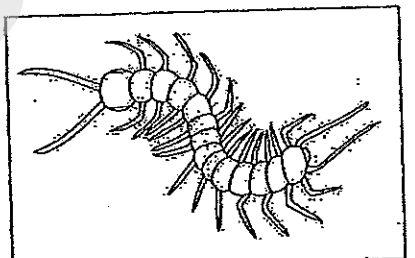
_____

(b) Describe the characteristics of Animal O. [1]

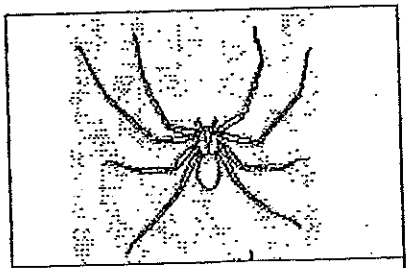
_____

The animals shown in the diagram below have hard body coverings.

(c) Based on the classification chart above, identify the animals shown in the diagram below as Animal M, N, O or P.
(Write your answers in the boxes provided below.) [2]



i) Animal _____



ii) Animal _____

4

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33. Ah Kow carried out an experiment to find out if the amount of water given to plants would affect the number of leaves they grew.

He used 4 identical plants, Plant A, B, C and D. Each plant had the same number of leaves at the start of the experiment. He varied the amount of water given daily to each plant. He recorded the number of leaves each plant had at the end of each week as shown in the table below.

		Number of leaves on the plant at the end of each week				
Plant	Amount water given to the plant daily	Week 1	Week 2	Week 3	Week 4	Week 5
A	120 ml	24	25	27	30	32
B	170 ml	25	28	32	35	39
C	220 ml	25	29	34	38	41
D	270 ml	26	31	36	41	47

(a) Based on the information given above, what is the relationship between the amount of water given to the plants and the number of leaves they grow? [1]

At the beginning of week 6, Ah Kow made some changes to his experiment. He gave Plant A and D each 300 ml of water daily. He then focused his attention in observing Plant A and D for two more weeks.

(b) Which plant, A or D, would be able to carry out photosynthesis at a faster rate? [1]

(c) Explain how the plant that you have chosen in (b) was able to carry out photosynthesis at a faster rate. [1]

3

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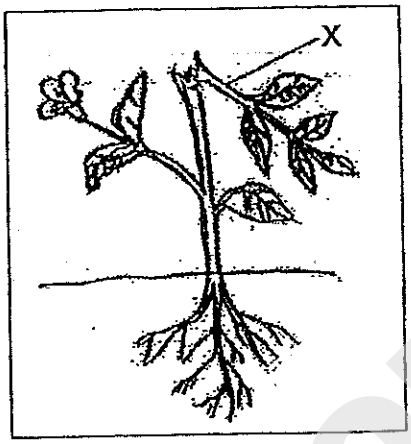
34. Study the diagram shown below carefully.



Johnny accidentally broke the plant Part X while gardening. Three days later, he noticed that Part X had started to wither.

(a) Give a reason why Part X withered? [1]

_____

_____

Johnny and his friends made the following statements about a certain part of a plant.

Johnny: This part carries food made by leaves to the rest of the plant.

Kate: This part carries water and mineral salts from the roots to the rest of the plant.

Leman: This part holds the plant upright and enables them to reach for sunlight which is needed to make food.

(b) Identify the plant part which best fits the descriptions that Johnny and his friends gave above. [1]

_____

2

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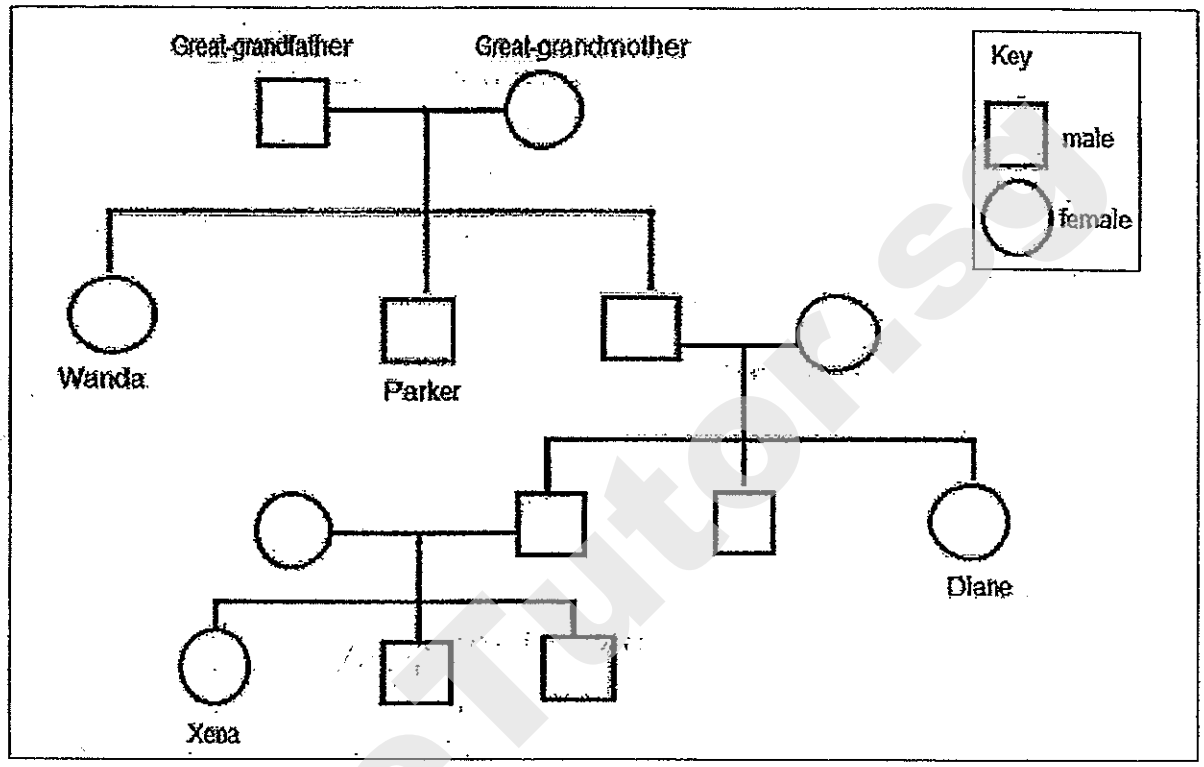
35. Study the family tree of Xena.



(a) How many children do Xena's grandparents have? [1]

_____

(b) What is the relationship between [2]

(i) Xena and Diane?

_____

(ii) Wanda and Parker?

_____

3

(Go on to the next page)

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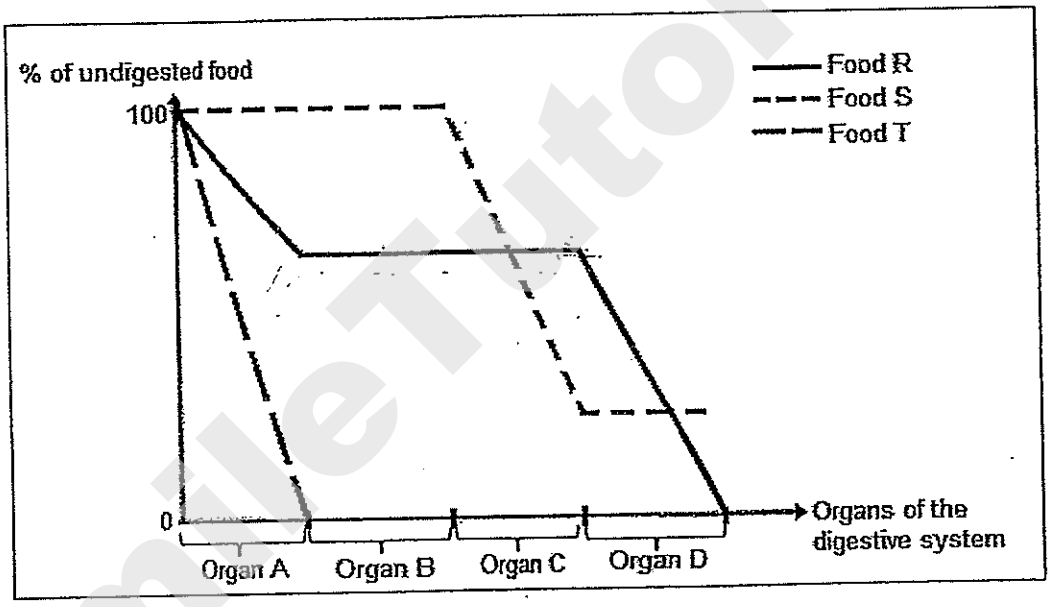
36. A group of students studied the digestive system of Animal Z over three days. They fed the animal with Food R, S and T on Days 1, 2 and 3 respectively as shown in the table below.

Day	Fed with	Amount of food given
1	Food R	100g
2	Food S	100g
3	Food T	100g

The students checked Animal Z's digestive system at specific time intervals each day to find out how much of the food was left undigested.

The results were plotted in the line graph as shown below.



Based on the results above, the students made the following conclusions.

Put a tick (√) if the conclusion is correct and a cross (X) if the conclusion is wrong in the boxes below. [2]

	Conclusion	(√) or (X)
(i)	None of the organs could digest Food R.	
(ii)	Food T was mostly digested in Organ A.	
(iii)	Organ C is the most effective at digestion.	
(iv)	A high percentage of Food S was digested in Organ C.	

2

(Go on to the next page)

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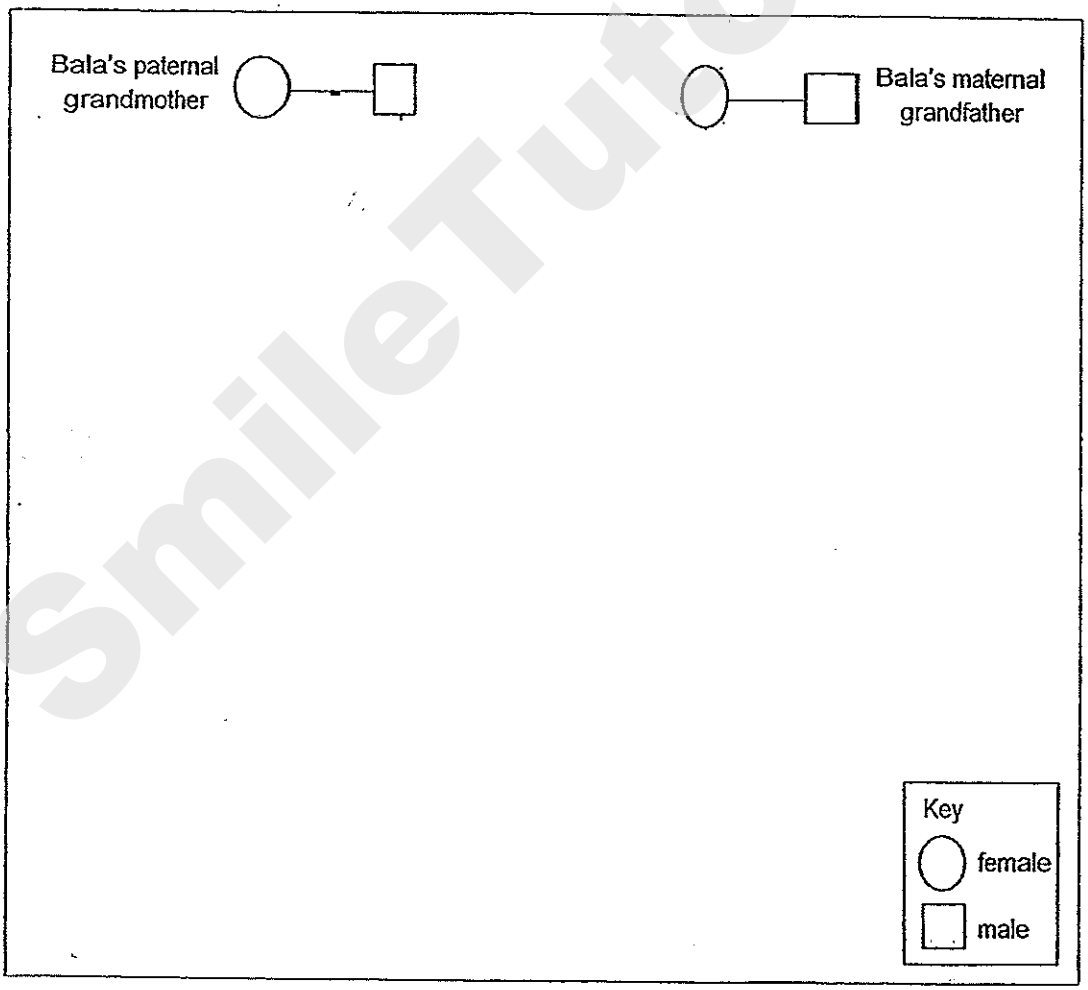
37. The table below shows the descriptions about Bala and his family.

• Bala's paternal grandmother has two children and one of them is a female.
• Bala's maternal grandfather has only one child.
• Bala has two brothers and a sister.
• Bala has two cousins and one of them is a female.

Based on the information given above, complete Bala's family tree below.

Draw and label the symbol for **Bala, his siblings** and his **cousins.** [3]



3

End of Booklet B1

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CONTINUAL ASSESSENT 2014
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: 6 March 2014

Booklet A1 & A2	**/ 60**
Booklet B1	**/ 20**
Booklet B2	**/ 20**
Total	**/ 100**

This booklet consists of 11 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]

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38. Sarah wanted to investigate the effect of pollutant Y on the survival of Water Plant Z using all the materials provided in the table below.

- 1 dropper
- 10 similar Water Plants Z
- 2 identical beakers
- 1 bottle containing pollutant Y
- 1 container containing 600 ml of pond water

The procedures in the table below are the steps that Sarah should take to carry out her experiment. However, the steps are not in order.

(a) In the table below, arrange the steps in the correct sequence so that Sarah could conduct her experiment properly. Write the numbers in the boxes provided in the table below. (The first step has been done for you.) [2]

Step	Procedure
	Place beakers in a sunny area for 1 week.
	Observe the number of Water Plants Z that remained alive after one week.
	Pour 300 ml of pond water from the container into each beaker.
	Put 5 Water Plants Z into each beaker.
	Using the dropper, drop a few drops of pollutant Y into one of the beakers.

2

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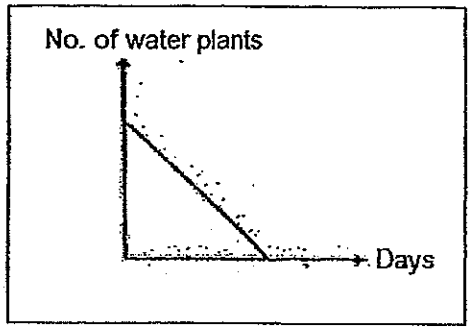
Sarah was then given the graph as shown below.



The graph shows the number of water plants in a river after contaminated water was discharged by a factory in the month of April.

(b) Explain how did the decrease in number of water plants in the river affect the marine life? [1]

_____

_____

1

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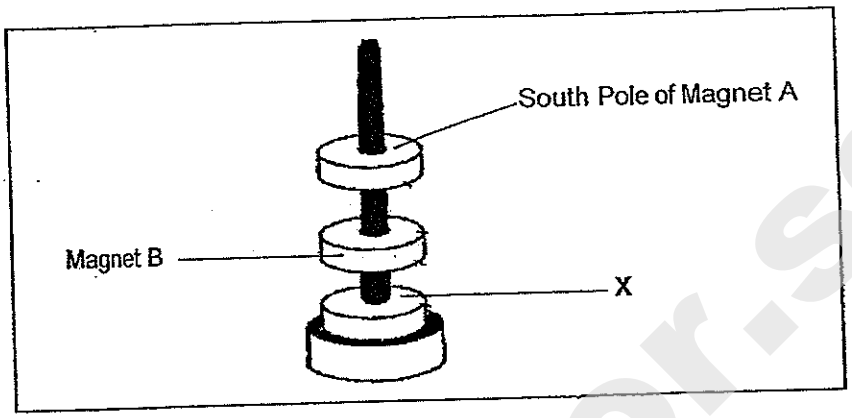
39. Sumei was playing with some ring magnets as shown below. She found out that some of the magnets 'floated' in the air.



(a) If the pole of the top of Magnet A is South Pole, state the pole of X, of the magnet as shown in the diagram above. [½]

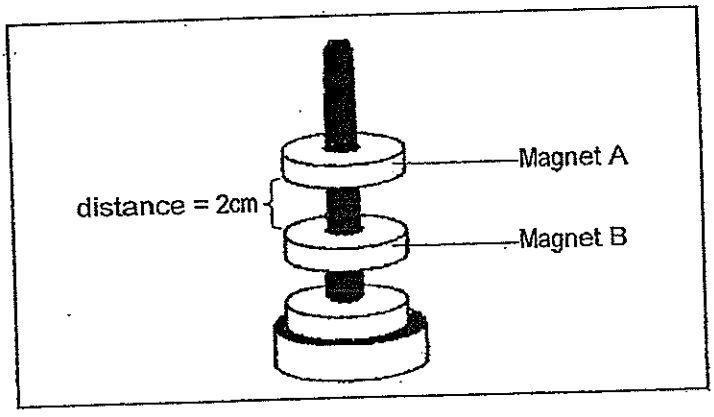
X: _____

(b) Explain why the magnets were able to "float" in the air. [1]

_____

_____

Sumei then measured the distance between Magnet A and Magnet B. It was 2cm apart as shown in the diagram below.



1½

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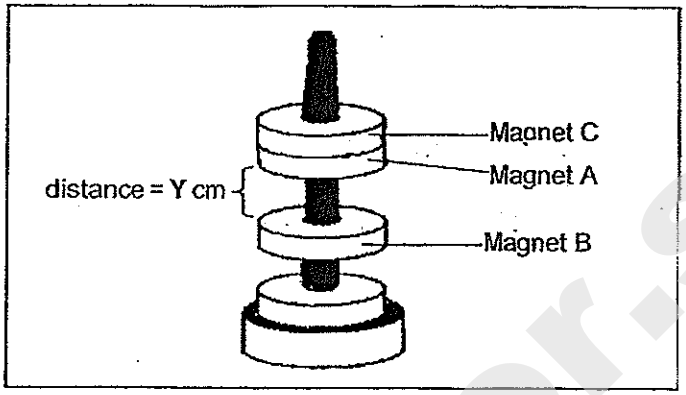
Next, Sumei added Magnet C on top of Magnet A and realised that Magnet C was attracted to Magnet A. She then measured the distance between Magnet A and Magnet B again as shown in the diagram below.



(c) What is the distance between Magnet A and Magnet B?
Put a tick (√) in the correct box below. [½]

	2 cm
	Less than 2 cm
	More than 2 cm

(d) Give a reason for your answer in (c) [1]

_____

_____

1½

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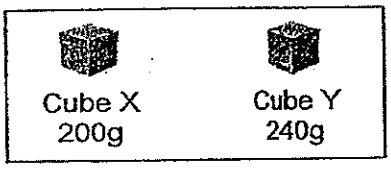
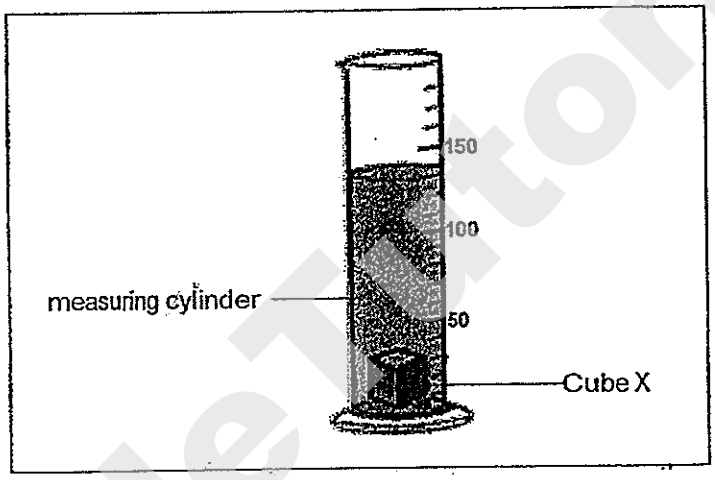
40. Raju has 2 solid metal cubes of the same size. However, the mass of the metal Cube X is 200g and the mass of metal Cube Y is 240g as shown in the diagram below.



When Raju lowered Cube X into a measuring cylinder filled with 100cm^3 of water, the water level rose to 130cm^3 as shown in the diagram below.



(a) What is the volume of Cube X? [1]

Raju then removed Cube X and lowered CubeY into the water.

(b) Assuming that there was no water loss during the procedure, what would the water level in the measuring cylinder be? [1]

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

3

(Go on to the next page)

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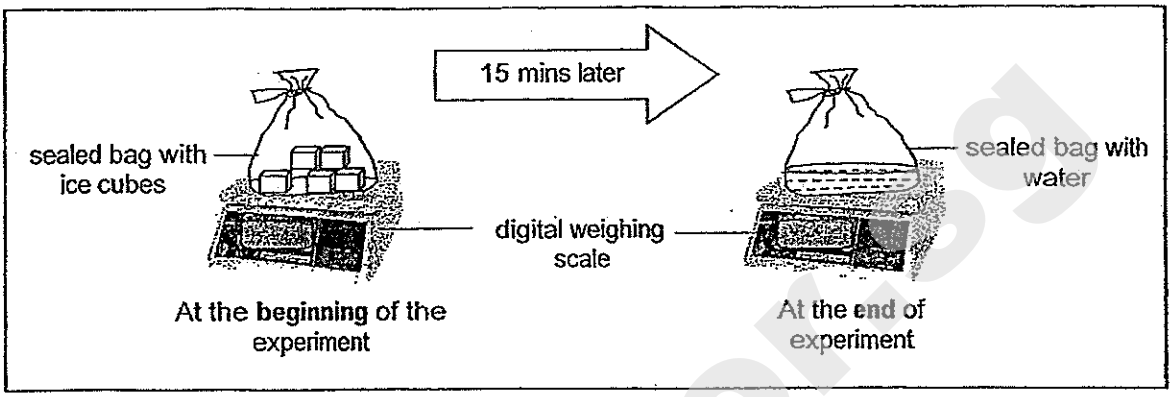
41. Bala, Charlie and Deyu were having an argument about what happens to mass when matter changes from one state to another. They placed 5 ice cubes in a sealed bag. They recorded the mass of ice in the bag at the beginning of the experiment as shown in the diagrams below.



Each of them made these predictions:

Bala: The mass of the bag containing water will be the same as the mass of the bag containing ice cubes. A change in state will not affect its mass.

Charlie: The mass of the bag containing water will be less than the mass of the bag containing ice cubes. A change in state will result in a decrease in its mass.

Deyu: The mass of the bag containing water will be more than the mass of the bag containing ice cubes. A change in state will result in an increase in mass.

(a) Who made the correct prediction? [1]

_____

(b) Mrs Lee, their teacher, told them that they need to ensure the outer part of the sealed bag is dry before recording the mass of the bag of water. Do you agree with her? [1]

_____

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

_____

_____

3

(Go on to the next page)

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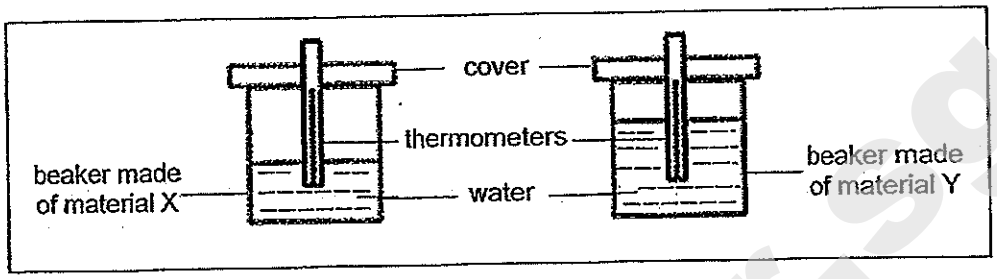
42. Darren set up an experiment to find out more about materials X and Y. The two set-ups below are identical except for the material of the beakers and the amount of water in the beakers.



He recorded the results of his experiment as shown in the table below:

	Temperature of water (°C)	
Time (min)	Beaker made of Material X	Beaker made of Material Y
0	80	80
5	75	65
10	60	35

(a) Based on Darren's experiment, what was he trying to find out about Material X and Y? [1]

(b) Explain why his experiment is not a fair test. [1]

(c) If Darren had made his experiment a fair one, what can you conclude about Material X as compared to Y based on his results? [1]

3

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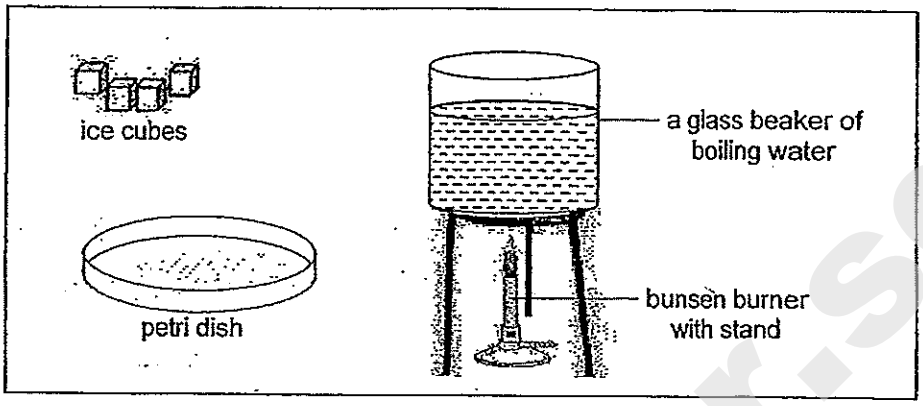
43. Siti was asked to set up an experiment to show the changes of state in the water cycle, using the following apparatus:



(a) In the box provided below, **draw and label** clearly a possible experimental set-up to show the changes of state in the water cycle using all the apparatus provided above. [1½]

(b) Describe clearly the process how **water changes its states** during the water cycle. [1½]

3

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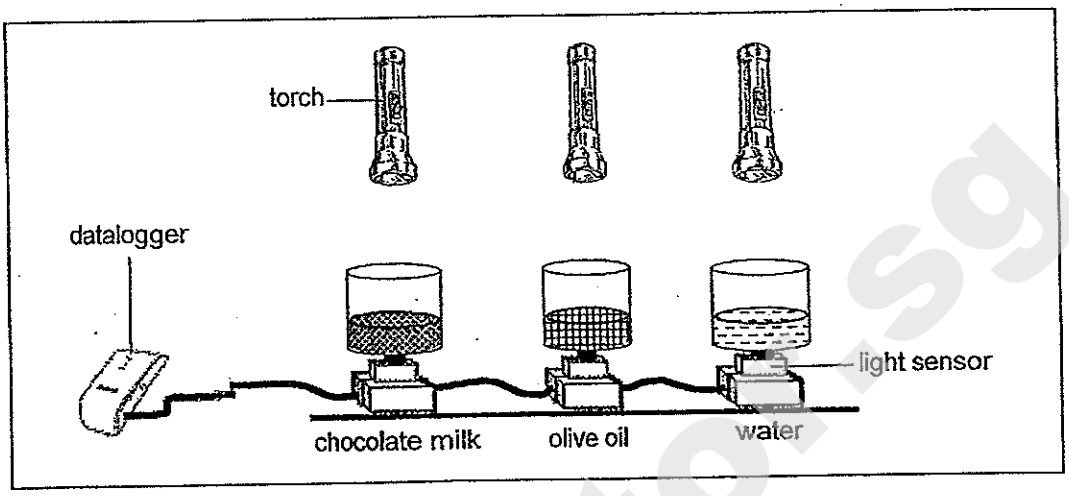
44. Kim Song set up the following experiment with 150cm^3 of three different liquids.



He used light sensors to measure the amount of light that passed through each beaker of liquid and recorded the data in the table below.

Type of liquid	Chocolate Milk	Olive Oil	Water
Intensity of light (unit)	50	150	200

(a) Which of the following would be the aim of the experiment?
Put a tick(√) in the correct box. [1]

(i)	To test if the volume of a liquid affects the amount of light that can pass through.	
(ii)	To test if the type of liquid affects the amount of light that can pass through.	
(iii)	To test if the state of the liquid affects the amount of light can pass through.	

1

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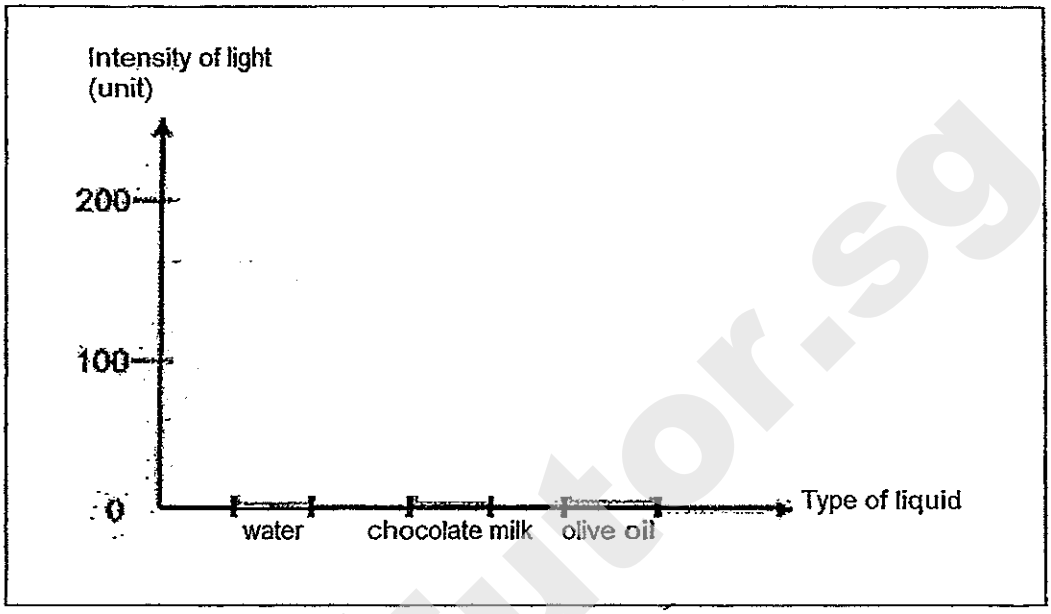
(b) Based on the data collected, **complete** the graph by **drawing three bars** to represent the results. [1]



1

End of Booklet B2

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ANSWER SHEET

EXAM PAPER 2014
SCHOOL : MGS
PRIMARY : P5
SUBJECT : SCIENCE
TERM : CA1

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

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

31)a)24 days.
b)Larva.
c)Adult. Its bite can cause fatal illnesses.

32)a)Three pairs of legs.
b)It has a hard covering, more than 3 main body parts and has 2 pairs of legs in each segment.
c)i)P ii)M

33)a)The more water is given, the more leaves the plants will grow as they need water to carry out photosynthesis.
b)D.
c)It has more leaves to capture more light energy to carry out photosynthesis.

34)a)The leaves were unable to make food as water was transported to part X.
b)The stem.

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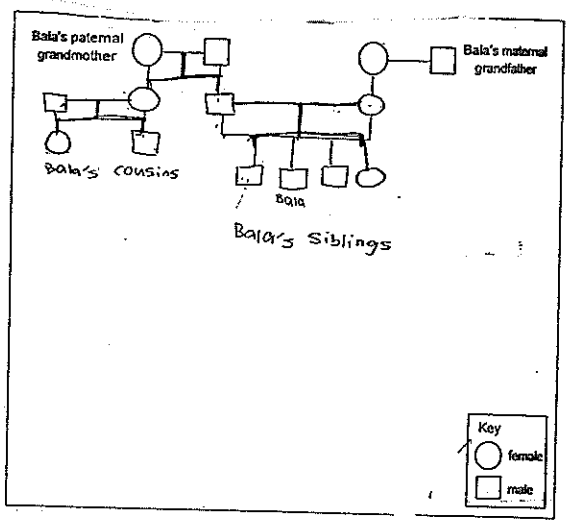
35)a)Three.
b)i)Xena is Diane's niece.
ii)They are siblings.

36)i) ii) ✓ iii)X iv) ✓

37)



38)a)4, 5, 1, 2, 3
b)The decrease in water plants will reduce the amount of oxygen produced by them. The marine life will eventually die because they cannot survive when all the oxygen has been used up.

39)a)X: South
b)The like poles of the magnet are facing each other so they repel.
c)Less than 2 cm
d)Magnet C has mass, so its mass pushes Magnet A down resulting in a decrease of distance.

40)a)30 cm^3
b)130 cm^3
c)Although they both have different mass, they have the same size and shape.

41)a)Bala.
b)Yes.
c)The water droplets that formed on the outer part of the bag will add mass to the bag.

42)a)To find out the heat conductity of Material X and Y.
b)The water in each beaker is different.
c)Material X is able to keep water hot for a longer period of time compared to Material Y.

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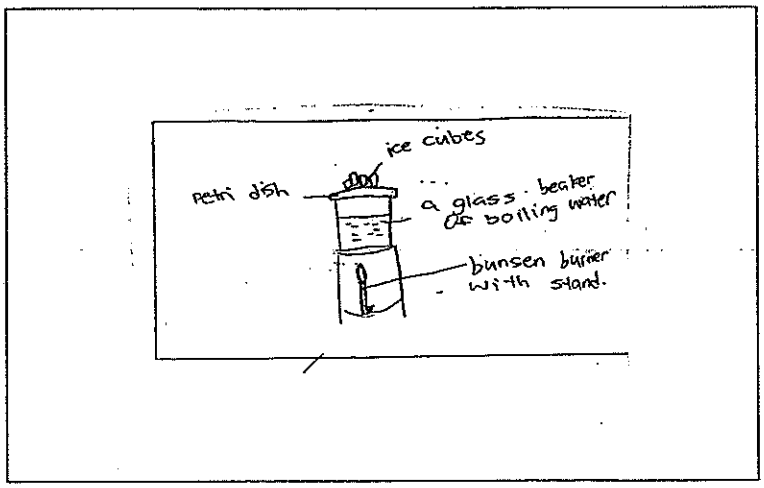
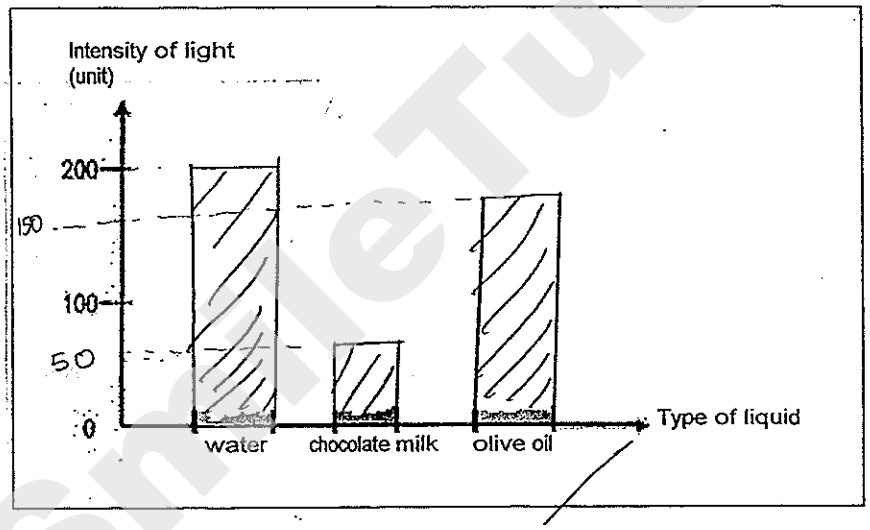
43)a)



b)Water evaporates into water vapour rises and comes into contact with the cooler surface of the base of the Petri dish. It loses heat and condenses into water droplets. The water droplets will drip back into the beaker again.

44)a)ii)

b)



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NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 1 2014
PRIMARY FIVE
SCIENCE

Name : _____( )

Class : Primary 5 / ____

Date : 4 March 2014

Duration : 1 h 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. Which of the following is the reason why living things need to reproduce?

(1) Living things need to provide food for other living things.
(2) Living things need to ensure continuity of their own kind in this world.
(3) Living things need to compete with other living things for air, food and water.
(4) Living things need to increase their numbers to compete with other kinds of living things.

2. Grandpa bought a mango from the fruit stall and shared the fruit with Jonathan. Jonathan observed that the fruit had only one seed and had fleshy, sweet-smelling flesh. He took the seed and planted it in their backyard. After several years, the tree bore fruit. Jonathan tasted the fruit and made some observations.

Which of the following could be the observations he had made?

A The fruit had one seed and was fleshy and sweet-smelling.
B The shape of the fruit was similar to the fruit of the parent plant.
C The fruit had no seed and tasted differently from the fruit of the parent plant.

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

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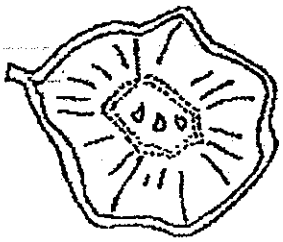
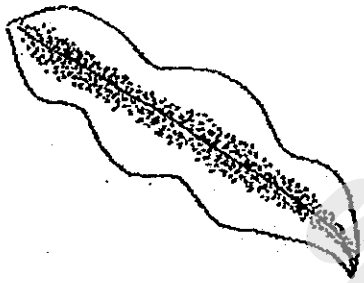
3. Julia and her classmates made a list of observations on two plants in their school garden below.



Fruit of Plant A



Leaf of Plant B

Plant A	Plant B
• bears fruit with wing-like structure • flowers are yellow and slightly-scented	• has spore bags under leaves • found on tree branches

Which of the following statements correctly describes Plant A and Plant B?

(1) Both plants depend on insects for pollination.
(2) Plant A has seeds in the fruit while Plant B has spores in the spore bag.
(3) Plant A has flowers to attract insects to disperse the fruit while Plant B has to depend on wind to disperse the spores.
(4) The spores of both plants are carried by the wind away from the parent plants to reduce competition with the parent plants.

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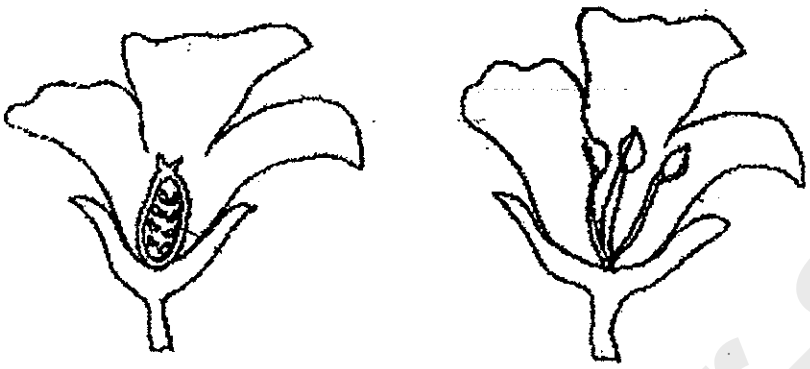
4. The diagrams below show the cross-sections of two flowers, A and B.



Flower A Flower B

Based on the diagrams, which of the following statements is correct?

(1) Both Flowers A and B will develop into fruit.
(2) Both Flowers A and B are needed in the process of sexual reproduction.
(3) Flower A will receive the egg while Flower B will receive the pollen grain.
(4) Insects such as bees help to transfer pollen grains from Flower A to Flower B.

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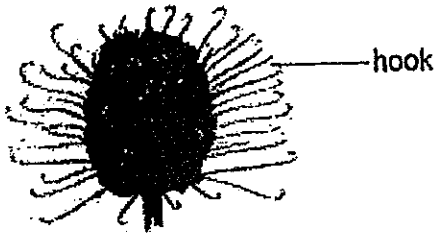
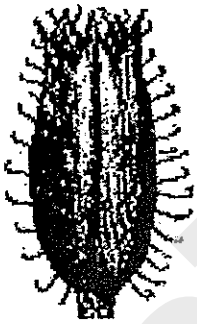
5. Juliet did a sketch of the fruit of a plant found in her garden as shown below.

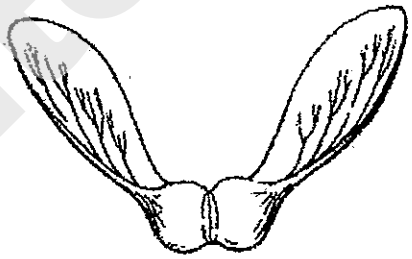


Fruit X

By observing the structures of the following fruits below, which one is most likely to have similar method of dispersal as Fruit X?



(1)



(2)

(3)

(4)

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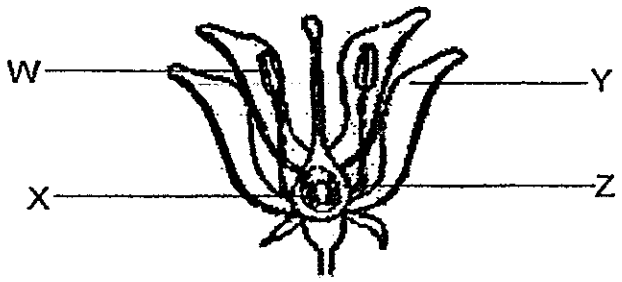
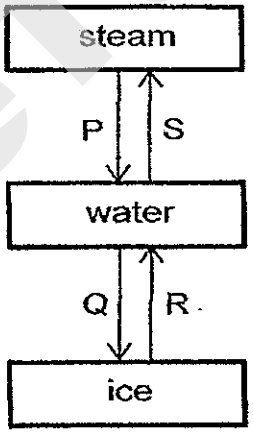
6. Which of the following parts of the flower will form parts of the fruit?



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

7. Study the diagram below.



Arrows P, Q, R and S represent processes that cause a change in the state of water. Which of the following processes involve ~~gain heat~~ heat gain?

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

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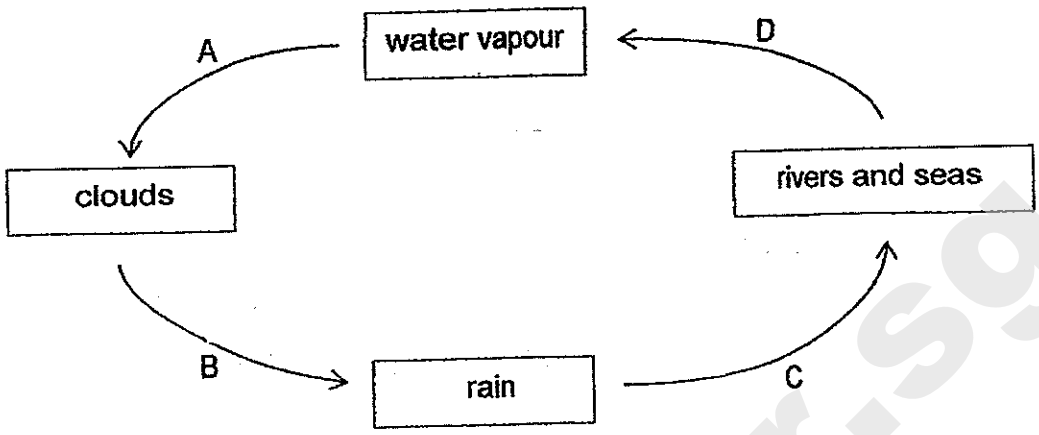
8. The diagram below shows the water cycle.



At which stage(s) of the water cycle is/are there heat loss?

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

9. A class was discussing the importance of water cycle to living things. Some pupils wrote the following statements below.

Michael: Without the water cycle, plants cannot get water to make food.

Norman: Water cycle supplies water which is home to many living things.

Osman : Water cycle provides a constant supply of freshwater to the Earth.

Which of the pupils made the correct statement(s)?

(1) Osman only
(2) Osman and Norman only
(3) Michael and Norman only
(4) Michael, Norman and Osman

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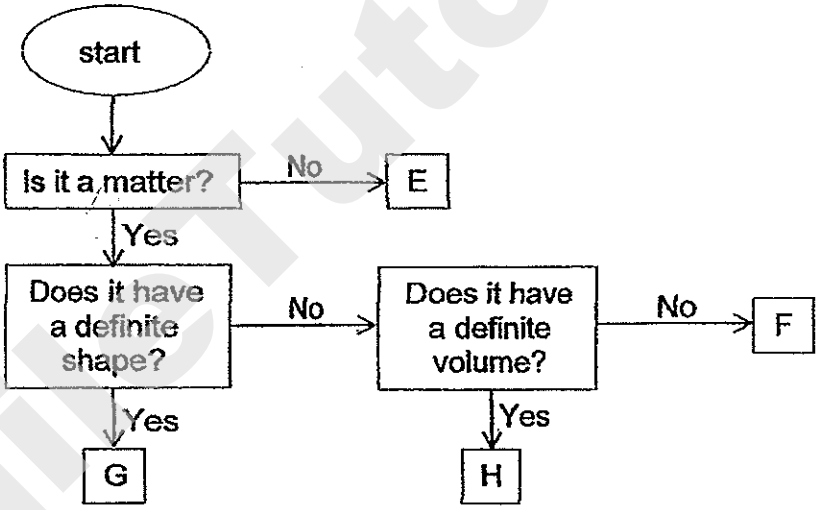
10. Which of the following activities are ways to help in the conservation of water?

A Repair any water leaks in the house immediately.
B Use a water-efficient washing machine to do laundry.
C Rubbish should be burnt before dumping into the sea.

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

11. Study the chart below.



What could E, F, G and H be?

	E	F	G	H
(1)	heat	ice	oxygen	milk
(2)	heat	shadow	ice	milk
(3)	shadow	oxygen	ice	milk
(4)	shadow	oxygen	milk	ice

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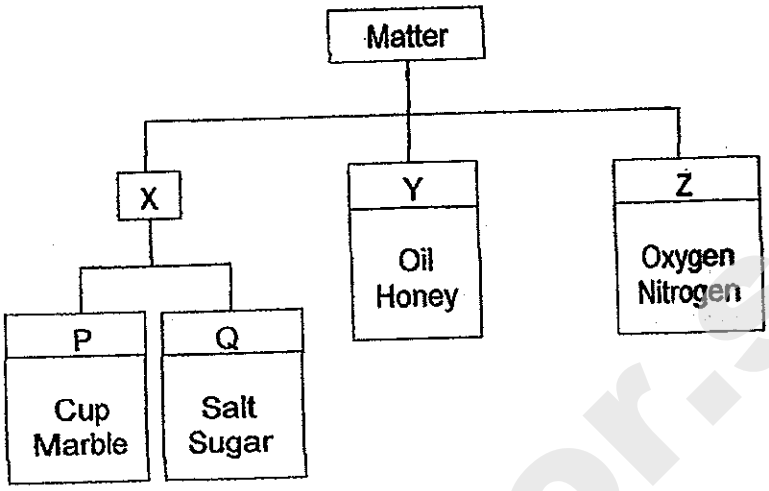
12. Gopal was given a list of matter to classify. He grouped them according to the chart shown below.



Which of the following describes groups P, Q, X, Y and Z?

(1) Z can be compressed but P, Q and Y cannot be compressed.
(2) X and Y have fixed masses but Z does not have a fixed mass.
(3) P and Y cannot be compressed but Q and Z can be compressed.
(4) X and Z take the shape of the container while Y has a definite shape.

13. Study the diagram of a flower below.

Which of the following statements best describe the flower?

A The anthers are hanging out of the flower.
B The flower is most likely pollinated by insects.
C The flower has both the male and female reproductive parts.

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

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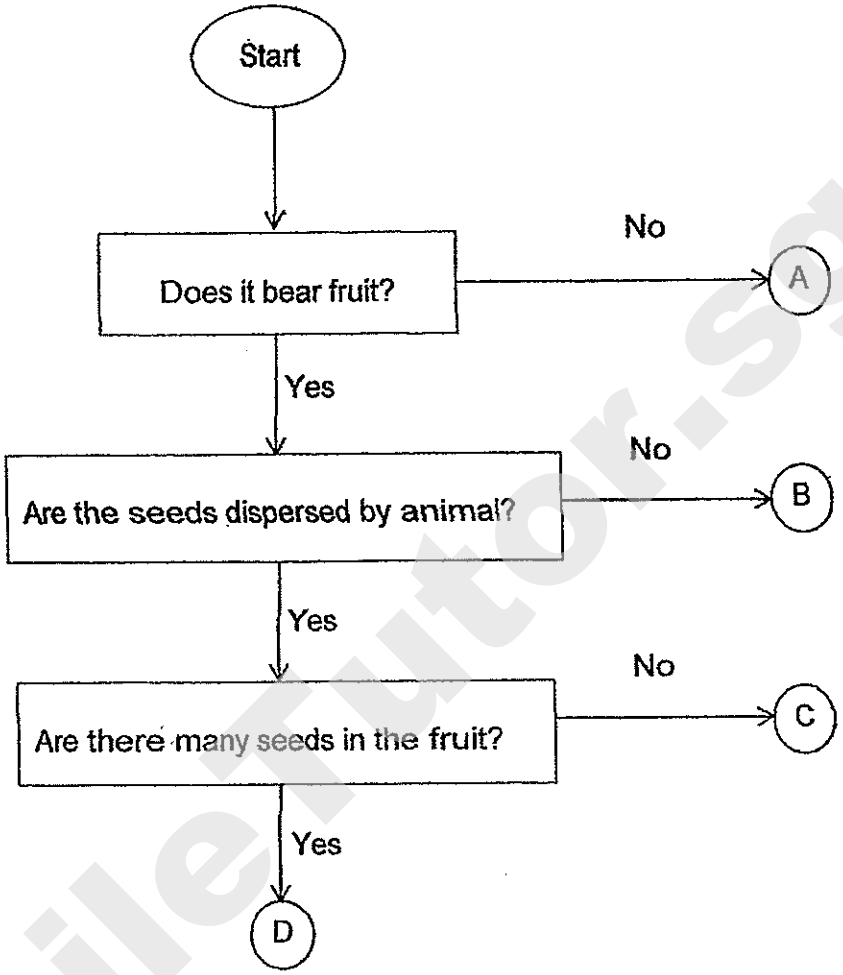
14. Study the chart below.



Which of the following correctly represent A, B, C and D?

	A	B	C	D
(1)	stag's horn fern	angsana	papaya	coconut
(2)	stag's horn fern	coconut	papaya	rambutan
(3)	mushroom	angsana	rambutan	papaya
(4)	mushroom	coconut	rambutan	angsana

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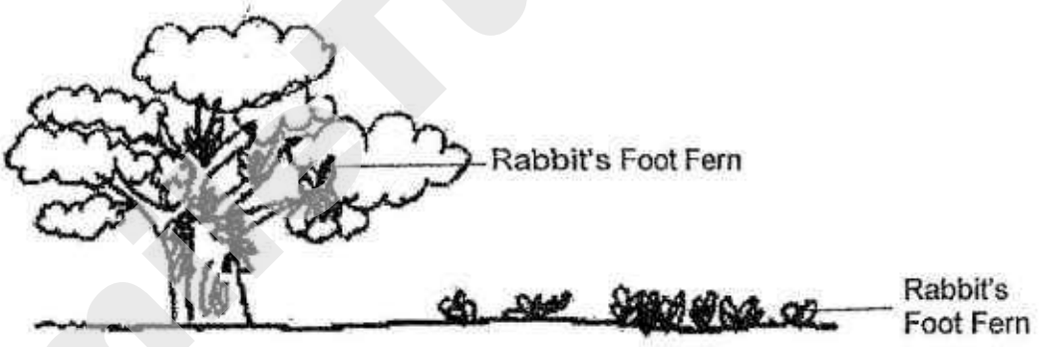
15. In 2011, the National Park Board planted a row of Rain Trees along Junior Road. There is a plot of undeveloped land along Junior Road.

Two years later, Rabbit's Foot Ferns were spotted growing on the branches of the Rain Trees although no one has planted them.

Rain Tree in 2011



Rain Tree in 2013

What could be the most likely explanation to the growth of the Rabbit's Foot Fern on the Rain Trees?

(1) The spores of the Rabbit's Foot Fern were carried by the wind to the branches of the trees.
(2) The water from the ground evaporated and carried the spores of the Rabbit's Foot Fern to the Rain Tree.
(3) Birds fed on the spore bags and flew to the trees to excrete their waste containing undigested spores on the branches.
(4) Insects visited the flowers of the Rabbit's Foot Fern and carried the pollens on their body, which were deposited on the branches when they landed on the branches.

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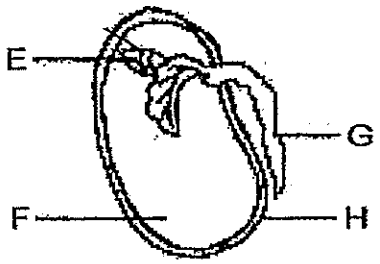
16. The diagram below shows the cross-section of a germinating seed.



Which of the following statements is true about the function of each part?

(1) G develops first to take in water.
(2) F stores food made by the seedling.
(3) E provides food for the germinating seed.
(4) H provides nutrients for the seed to germinate before the first leaves appear

17. Some types of flowers bloom at night. They rely on nectar-feeding bats and moths for pollination.

What could most likely be the characteristics of such flowers?

(1) They are brightly coloured.
(2) They are small and non-scented.
(3) They are big and sweet-smelling
(4) They have stigma hanging out of the flower.

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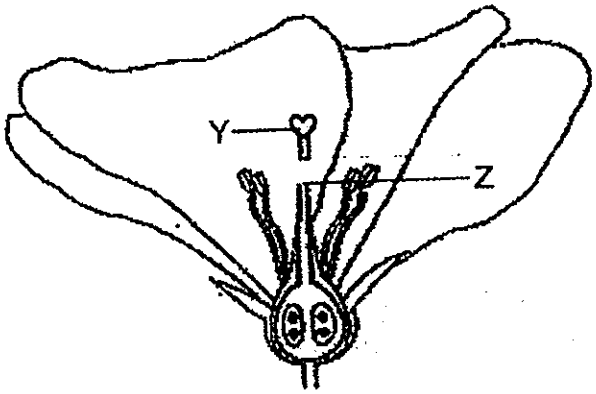
18. Study the cross-section of a flower below.

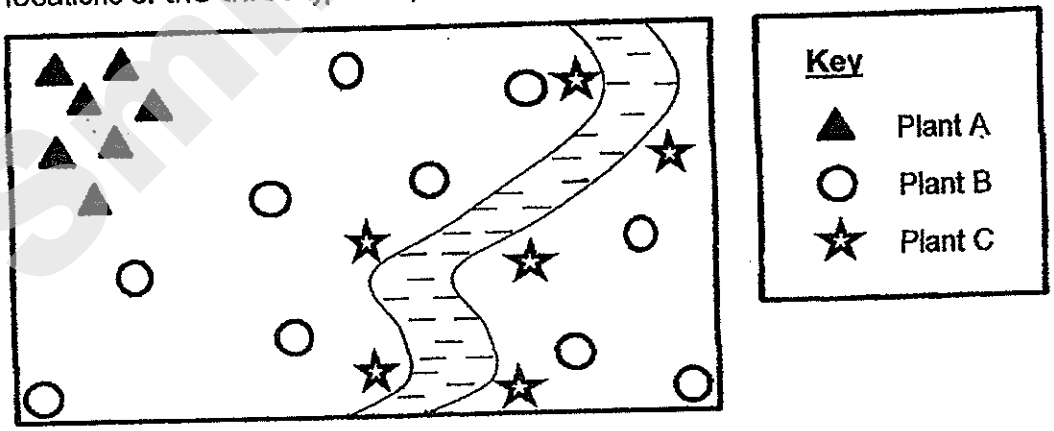


Mrs Tan cuts the flower part Y at Z. She leaves the flower intact on the plant. After some time, she observes that the flower develops into a fruit. What could be the possible explanation(s) for her observations?

A Pollen grains can still land on Z..
B Insects could have carried the pollen grains into the ovary.
C Fertilisation has already occurred before flower part Y is cut at Z.

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

19. A scientist visited a village by a river and observed the plants in the surrounding. He found three types of plants in that area and drew a diagram showing the locations of the three types of plants as shown below.



Which of the following statements describes the three types of plants, A, B and C, correctly?

(1) Plant B has fruit with fibrous husk.
(2) Plant C has fruit with wing-like structure.
(3) Plant C has fleshy and juicy fruit with seeds.
(4) Plant A has fruit that split open when ripened.

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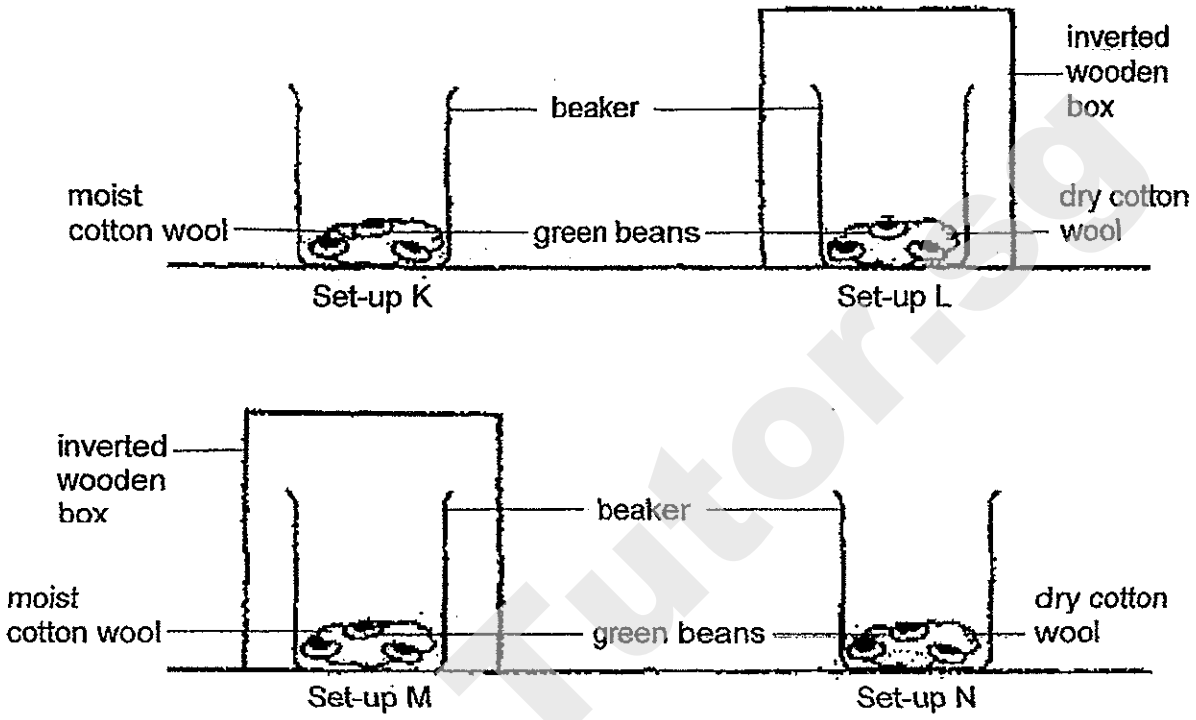
20. Nina wants to grow some green bean seeds. She prepares four set-ups shown below and places them in a room at a temperature of 27°C.



Which of the following set-ups will the green bean seeds germinate?

(1) Set-ups K and N only
(2) Set-ups K and M only
(3) Set-ups L and N only
(4) Set-ups L and M only

21. The table below shows the comparison between plants that are reproduced by seeds and by spores. Which of the following comparisons is/are true?

Comparison	Plants reproduced by spores	Plants reproduced by seeds
A	Non-flowering	Flowering
B	Spores are tiny and light.	Seeds are big and heavy.
C	Pollination occurs before fertilisation.	Pollination occurs before fertilisation.

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

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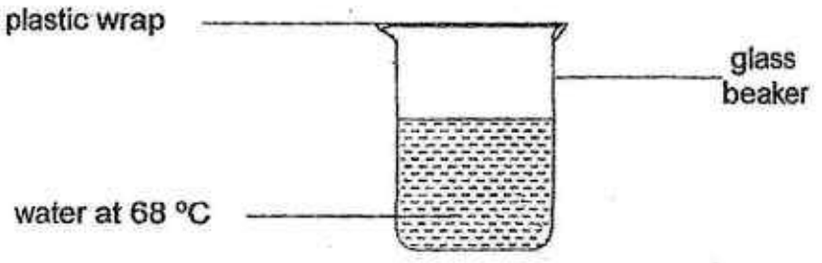
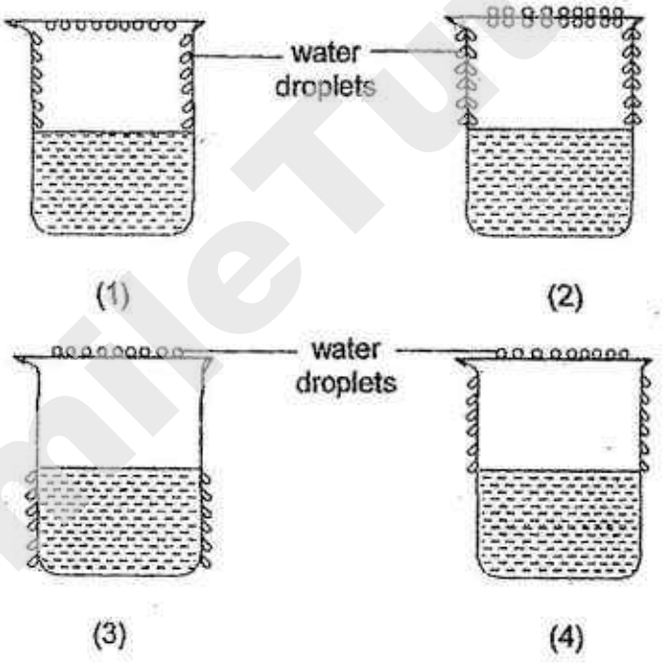
22. A beaker of water at 68°C was left on the table in the Science Laboratory at a room temperature of 28 °C.



Which of the following could be the observation after one minute?



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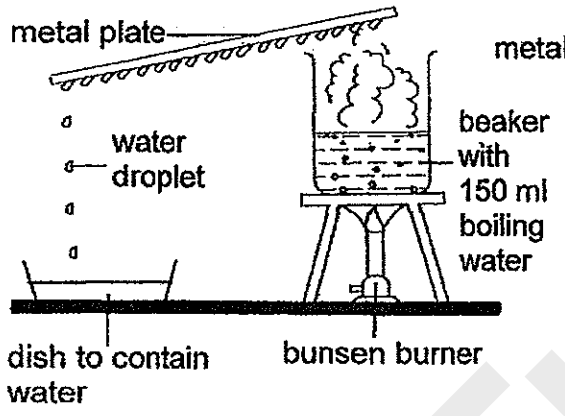
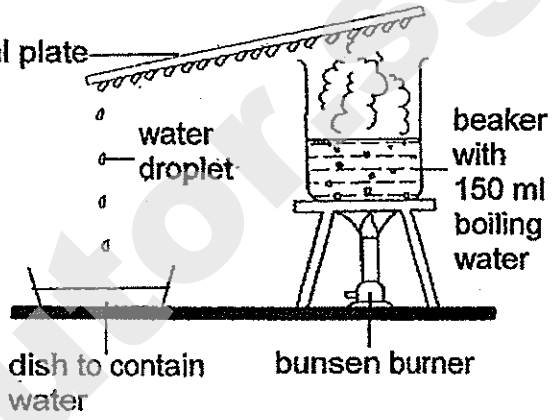
23. Observe the four set-ups below. The length of the metal plate above the beaker in contact with the steam is varied in the set-ups. The water droplets form on the surface of the metal plate will slide down and is collected in the dish at the end of the metal plate. Each beaker contains 150 ml of water and is boiled with the same intensity of heat over the same period of time.

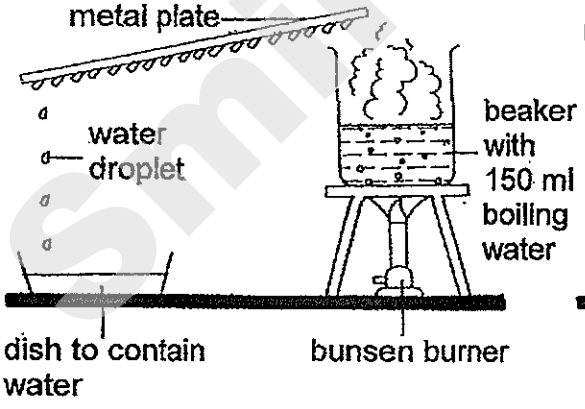
Which of the following set-ups will have the least amount of water collected in the dish over the same period of time?



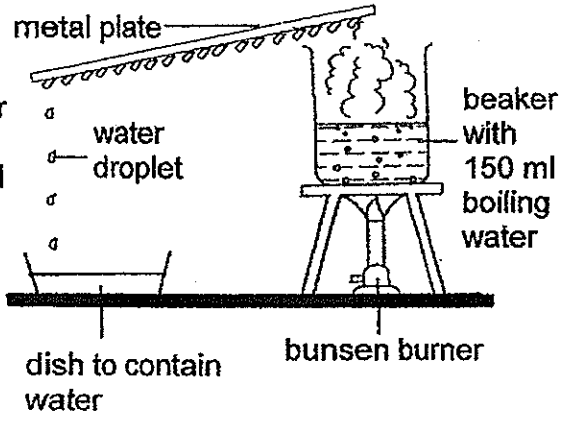
(1)



(2)



(3)



(4)

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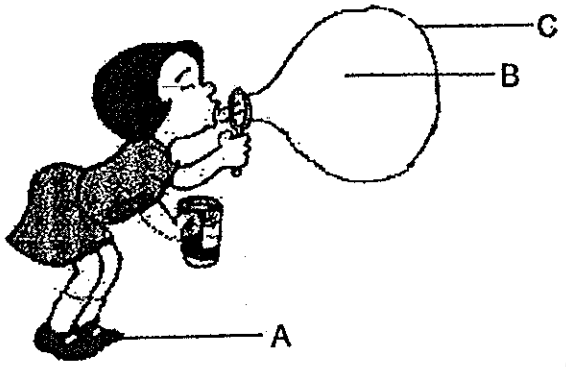
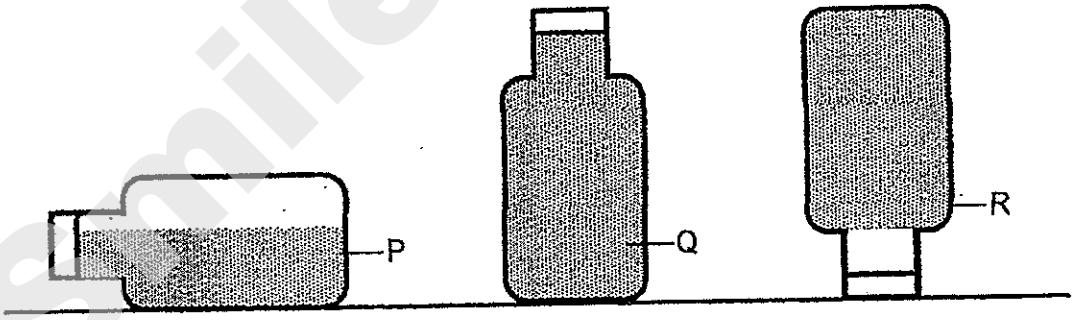
24. A girl is blowing soap bubble as shown in the picture below.



Which of the following classify the matter correctly?

	Solid	Liquid	Gas
(1)	A	B	C
(2)	B	C	A
(3)	C	A	B
(4)	A	C	B

25. Three matter, P, Q and R, are placed in similar containers on a table as shown in the diagram below.



Based only on your observation, which of the following statement(s) is/are definitely true about P, Q and R?

A Matter P is a gas.
B Matter R is a solid.
C Matter Q is a liquid.
D Matter P, Q and R are the same matter at different states.

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

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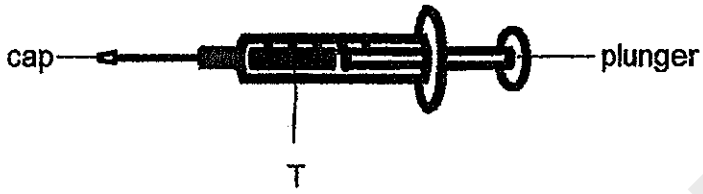
26. Afifah placed matter T into a syringe as shown below.



When Afifah pushed in the plunger, she found that she could push in the plunger easily. Which of the following could matter T be?

A water
B honey
C cooking oil
D carbon dioxide

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

27. The table below shows the types of food eaten by the adults and their young for 4 types of animals.

Animal	Food for the adult	Food for the young
E	green plants	green plants
F	small fish	small fish
G	planktons	mother's milk
H	rats	rats

Based on the information given, which of the following conclusions can be made about the four animals?

(1) Animal E is a plant-eater.
(2) Animal G spends part of its life on land.
(3) All the animals have a 4-stage life cycle.
(4) The young of the animals resembles their parents in appearance when they eat the same kind of food.

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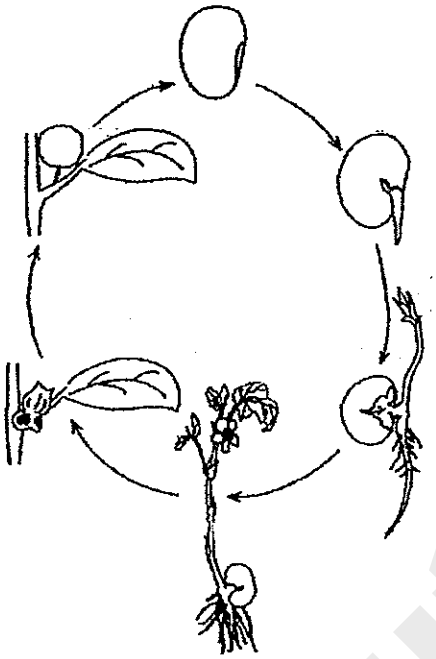
28. The diagram below shows the development of a flowering plant.



Which of the following statements best describes the flowering plant above?

(1) Fertilisation has taken place.
(2) The plant has a 6-stage life-cycle
(3) The fruit of the plant is sweet-smelling.
(4) The fruit of the plant germinates into a seedling.

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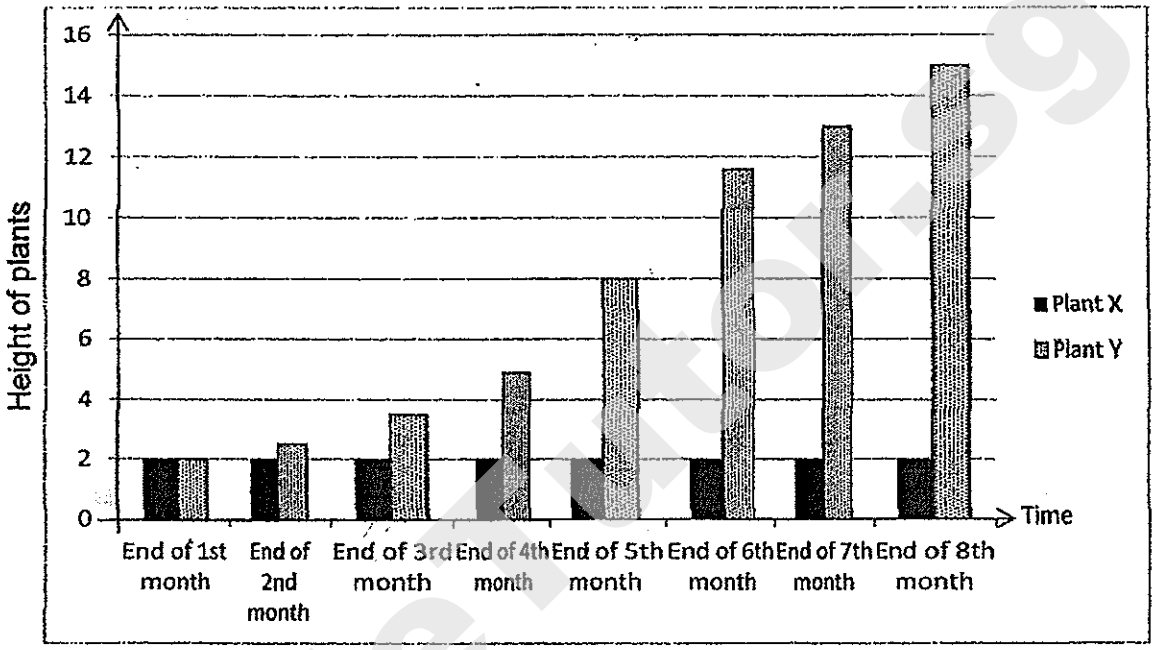
29. Two plants, X and Y, are placed in two similar pots of soil. The two pots are placed by the window of a room. The two pots of plants are given the same amount of water each day. Their growth is recorded in the graph shown below.

Height of plants measured over 8 months



Based on the graph above, which of the following statements is true about the two plants?

(1) Plant X can reproduce but not Plant Y.
(2) Plant Y is a living thing but not Plant X.
(3) Plant X needs air and water but not Plant Y.
(4) Plant Y has reached its maximum height of growth.

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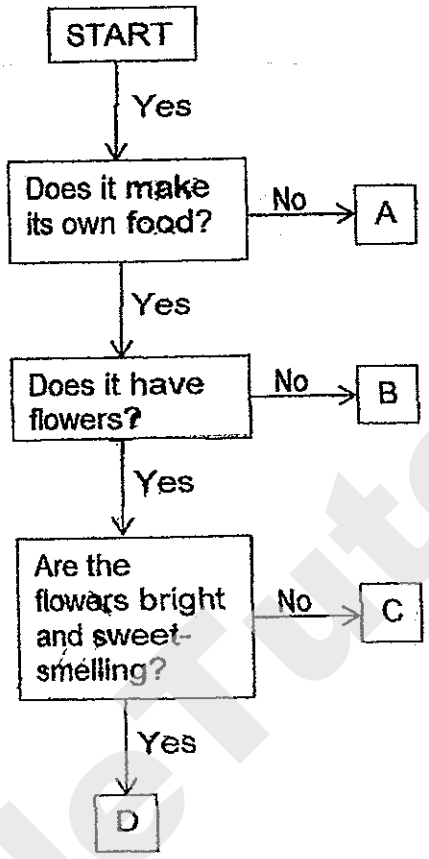
30. Study the chart of below.



Based on the information given by the chart above, where will you place 'fungi'?

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

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NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 1 2014
PRIMARY FIVE
SCIENCE

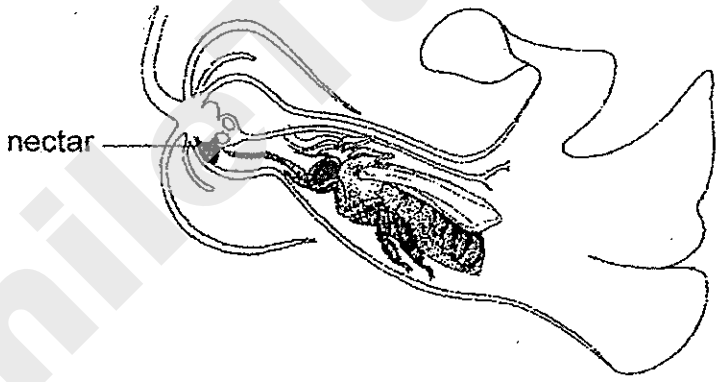
MARKS
/40

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. Many insects visit flowers and many of them helps in the pollination of flowers. The diagram below shows a flower containing nectar and a bee that visits the flower for its nectar.



(a) State two possible features of the flower that attract the bee to it. [2]

_____

_____

(b) Explain clearly how the bee helps in the process of pollination. [1]

_____

_____

Score	/3

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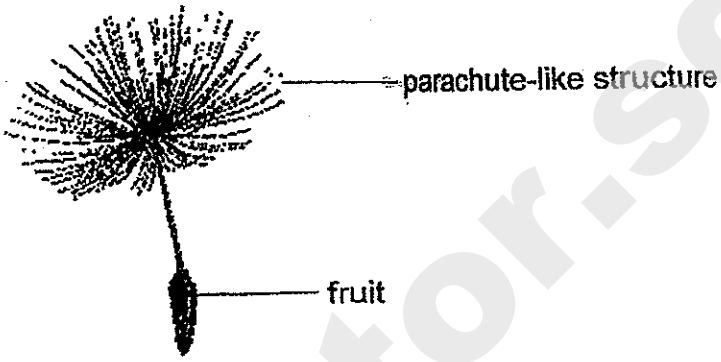
32. As Mother was cleaning the house, she found a tiny fruit on the floor. She was very surprised as she did not have such a plant in her garden.

The diagram below shows the fruit that Mother had found.



(a)How do you think the fruit was dispersed? [1]

_____

(b)Explain how the parachute-like structure helps the fruit to be dispersed. [1]

_____

_____

Score	2

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33. Mike wanted to find out if the temperature of the surrounding affects the rate of evaporation of water. He prepared a few containers as shown in the table below for his experiment.

Study the table below.

Container	Volume of water used (ml)	Surrounding temperature (°C)	Presence of wind
E	60	20	no wind
F	60	20	strong wind
G	60	30	no wind
H	80	20	no wind
I	80	30	strong wind

(a) Which of the containers, E, F, G, H and I, should he use for his experiment? [1]

_____

(b) In order to carry out a fair test, list two other variables, other than the volume of water used and the presence of wind, that Mike needs to keep constant during the experiment. [2]

_____

_____

_____

Score	/ 3

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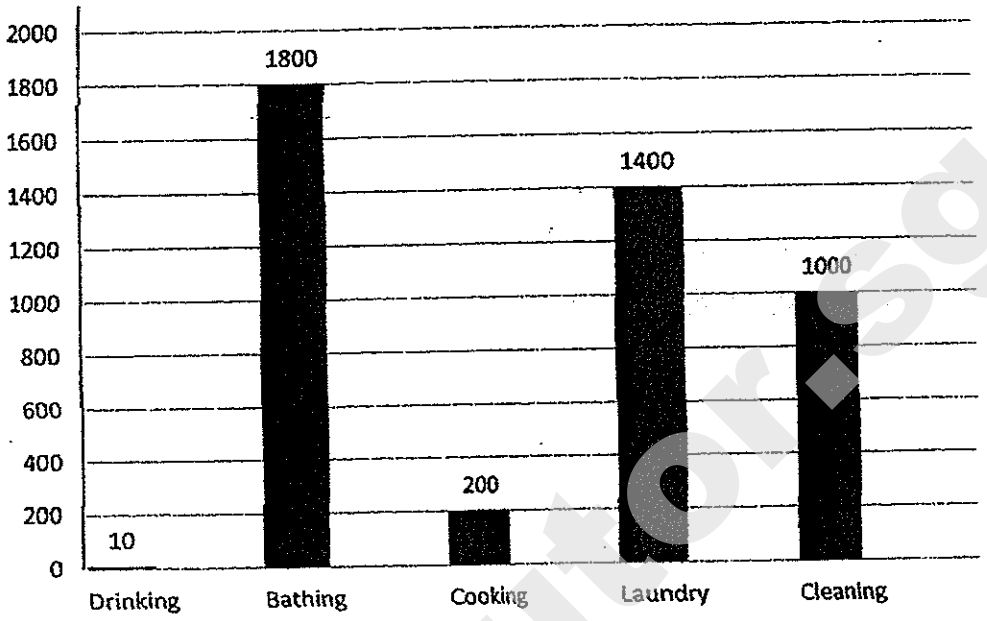
34. The bar graph below shows the amount of water used by Mr Kumar, his wife and his son in a day.



(a) Based on the activities shown in the graph above, list two ways that Mr Kumar's family can do to reduce the amount of water used in a day. [2]

(b) Explain why do we need to conserve water although three-quarter of the Earth is covered with water. [1]

Score	3

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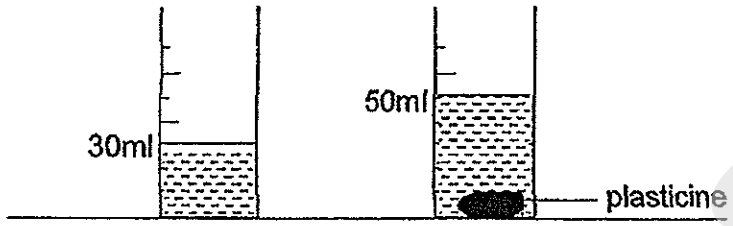
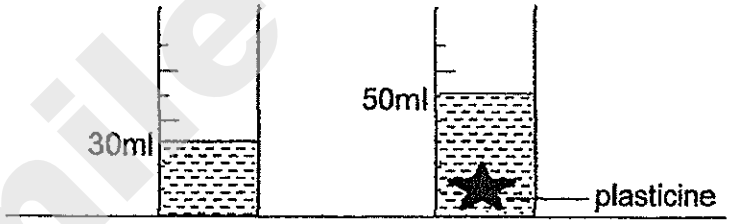
35. A measuring cylinder is filled with 30 ml of water. A piece of plasticine is placed into the measuring cylinder. The water level rises to 50ml.



(a) Based on the observation above, what can you infer about the property of the piece of plasticine? [1]

_____

(b) The plasticine is taken out of the measuring cylinder and moulded into a different shape. It is placed back into the measuring cylinder of water and the water level rises to 50ml again as shown in the diagram below.



What property of plasticine does this experiment show? [1]

_____

Score	2

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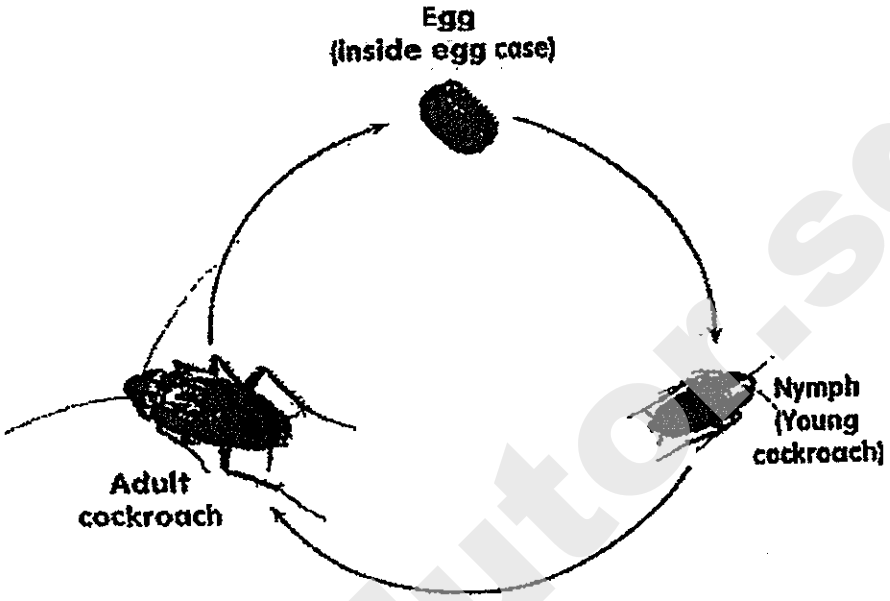
36. The diagram below shows the stages in the life cycle of a cockroach.



(a) At which stage, nymph or adult, is the cockroach more difficult to kill? Explain your answer. [1]

_____

_____

(b) A cockroach has a 3-stage life cycle while a butterfly has a 4-stage life cycle. Other than the number of stages in the life cycle, state another difference between the life cycle of a cockroach and a butterfly. [1]

_____

_____

Score	/ 2

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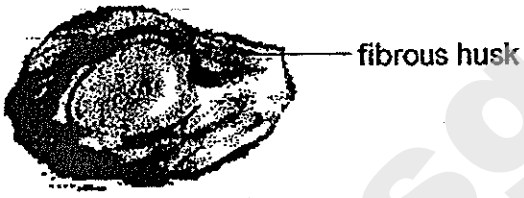
37. Study the diagram of fruit H below.

Fruit H



Cross-section of Fruit H

Mr Lim observed Fruit H floating in the water near the seashore.

(a) Explain why the fruit can float in water. [1]

Mr Lim took Fruit H home and planted its seed in his garden. He watered it everyday and the seed also received a good amount of sunshine.

(b) Was the seed of Fruit H able to germinate? Explain your answer. [1]

Score	/ 2

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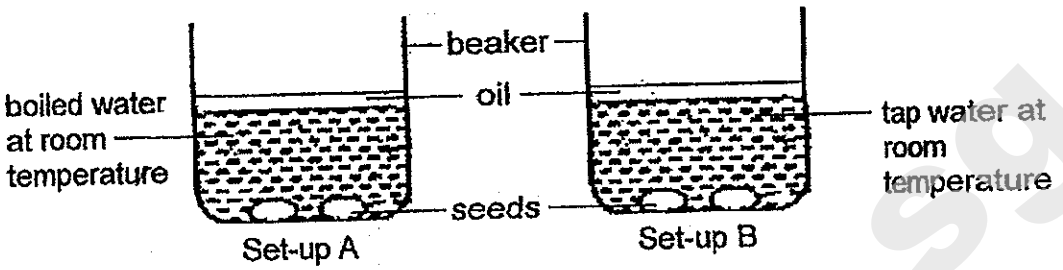
38. A group of students conducted an experiment with the following set-ups. The water in Set-up A was boiled to remove the oxygen in the water.



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

(b) Which set-up, A or B, would the students expect the seeds to germinate? Explain your answer.

(c) Besides preventing water from evaporating, state another purpose of the layer of oil. [1]

(d) What change(s) should the students make to the set-up(s) if they want to find out if water is needed for seed germination? [1]

Score	/ 4

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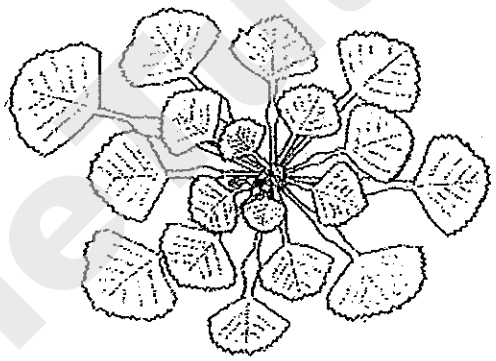
39. Some plants produce edible fruits with tiny seeds. These seeds can be swallowed by birds that feed on the fruits of these plants. The undigested seeds are passed out in the birds' droppings. Hence the birds help in the dispersal of the seeds of these plants.

(a) State two advantages of this method of seed dispersal. [2]

Plants need sunlight to make food in order to grow. The picture below shows a plant from the top view.



(b) Explain why the leaves of the plant are arranged in this way. [1]

Score	3

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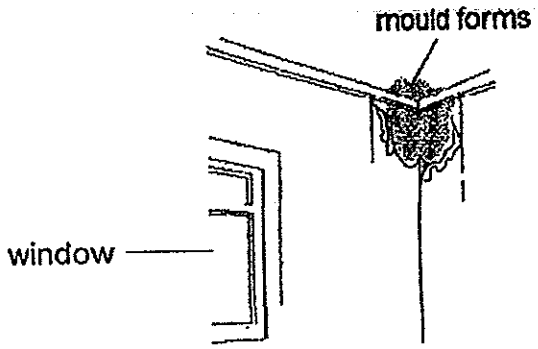
40. Ali and his family members shower with warm water every day. One day, Ali is shocked to notice a patch of mould growing at the top corner of the bathroom wall as shown in the diagram below.



(a) State the conditions present in the bathroom that make the growth of mould possible. [1]

(b) Explain how the mould starts to form at the top corner of the bathroom wall. [1]

(c) Explain how taking warm showers everyday causes the top corner of the bathroom wall to be moist. [2]

Score	4

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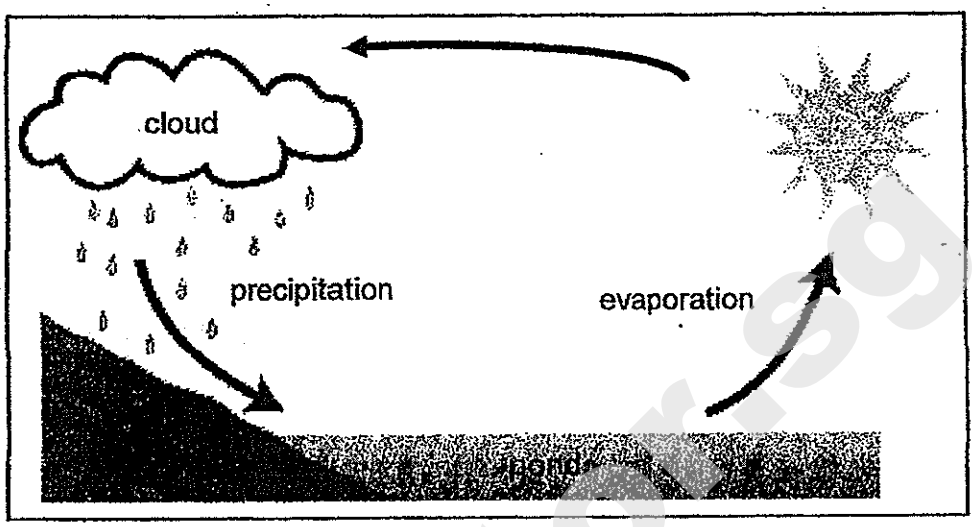
41. Study the diagram of the water cycle below.



The land and pond shown in the diagram were owned by Farmer Brown. Farmer Brown used water from the pond to water his plants every day. There were also some water plants and animals living in the pond.

Recently, there was a prolonged period of drought. There was no rainfall for a period of two months. Farmer Brown noticed that the water plants and animals living in the pond decreased in number.

(a) What do you think happened to the amount of water in the pond? Explain why. [2]

(b) Based on the diagram above, explain why the water cycle is important to the living things in the pond. [1]

Score	3

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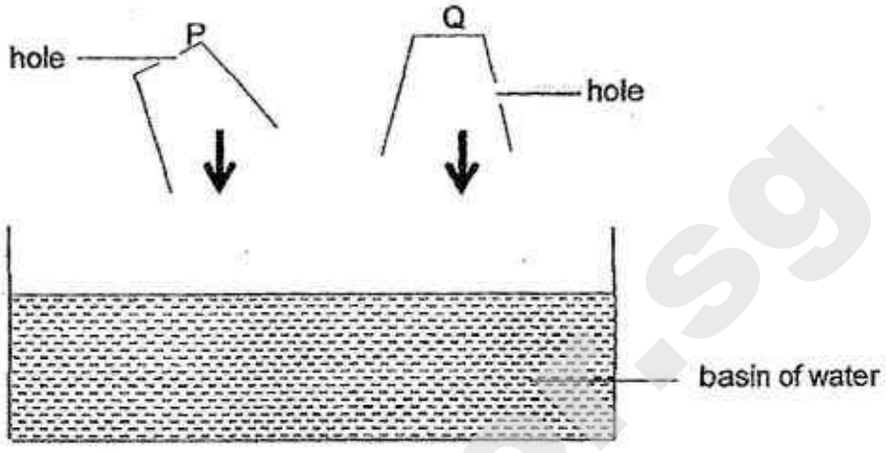
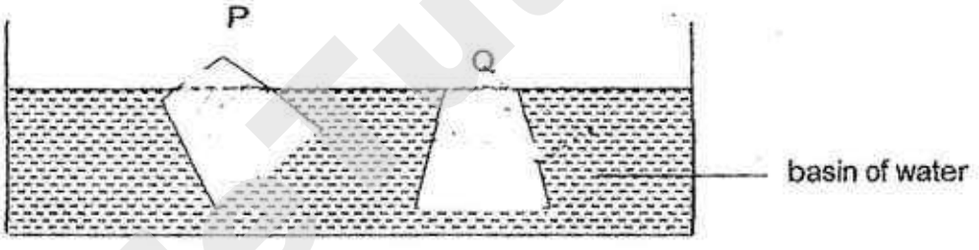
42. Paul prepared two cups with a hole in each of them and a basin of water. He pushed each cup down in the direction indicated by the arrows.



(a) In the diagram below, draw the water levels for cups P and Q respectively



(b) Explain the changes to the water levels in each cup. [2]

Cup P: _____

_____

_____

_____

_____

Cup Q: _____

_____

_____

_____

Score	3/2

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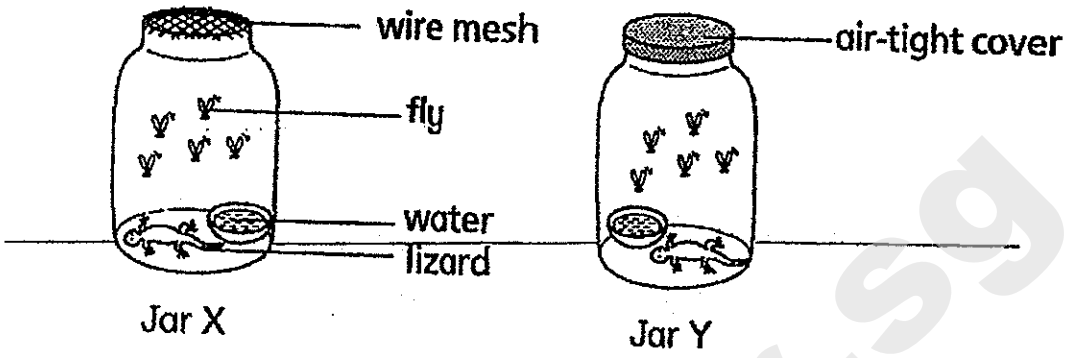
43. Study the set-ups below.



(a) After a few hours, the lizard in Jar Y dies. Explain why. [1]

_____

_____

(b) After a few days, there were no more flies left in Jar X and the lizard was dead too. What can you conclude from this observation about living things? [1]

_____

_____

(c) Suggest a way to keep the lizard in Jar X alive for a longer period of time. [1]

_____

_____

Score	3

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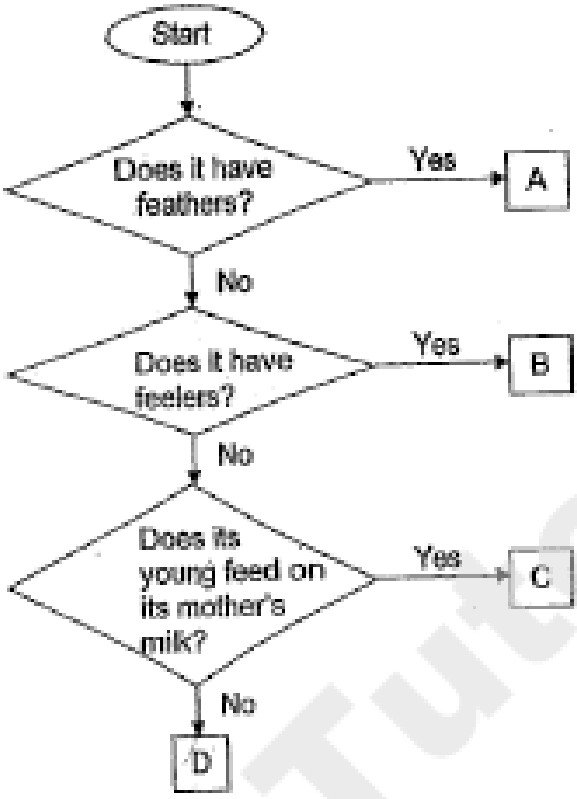
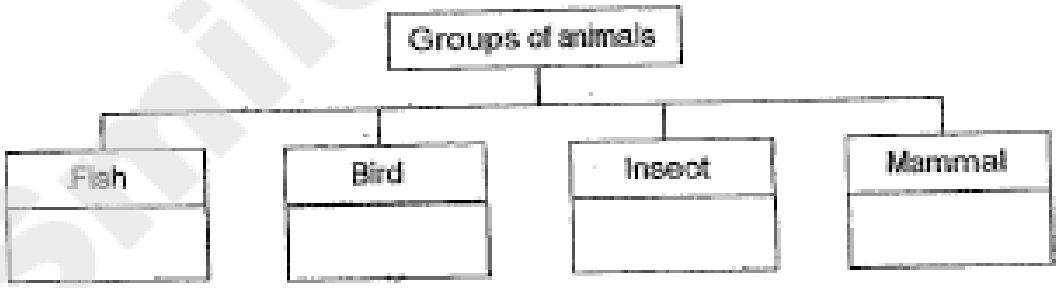
44. Study the flow chart below.



(a) A, B, C and D represent four different types of animals. Classify the animals under the headings by writing the letters A, B, C and D, in the boxes provided below. [2]



(b) Some animals lay many eggs at one time. What is the advantage of laying many eggs at one time? [1]

(c) Which two groups of animals are most likely to lay many eggs at one time? [1]

Score 3/4

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ANSWER SHEET

EXAM PAPER 2014
SCHOOL : NAN HUA
PRIMARY : P5
SUBJECT : SCIENCE
TERM : CA1

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

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

31)a)It is brightly coloured and scented.
b)When the bee went into the flower to collect nectar, pollen grains will stick onto the bee. When the bee goes to another flower to collect nectar, the pollen grains will drop onto the stigma of another flower.

32)a)The fruit was dispersed by wind.
b)The parachute-like structure helps the fruit to stay afloat in the air for a longer period of time so the fruit can be dispersed further away from parent plant.

33)a)Containers E and G.
b)1)Exposed surface area of container.
2)Temperature of water at the beginning.
3)Type of beaker C same material.
4)exposed surface area of the opening of the container.

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34)a)They can take a shower instead of a bath and they can use a rag to do cleaning instead of using a hose.
b)Only one percent of the world's water is clean and able to use.

35)a)Plasticine has a volume.
b)Plasticine has a definite volume.

36)a)Adult. The adult cockroach can fly while the nymph cannot so the adult cockroach can escape more easily.
b)The young of the cockroach resembles its adult while the young of the butterfly does not resemble its adult.

37)a)The fruit has a fibrous husk so it can trap air making the fruit float on water.
b)Yes, the seed has warmth water and oxygen to germinate.

38)a)The students wanted to find out if oxygen is needed for seed germination.
b)Set-up B. There is dissolved oxygen in the tap water.
c)To present oxygen from the air to enter in the water.
d)They should remove the water in set-up A and oil from set-up A and B.

39)a)The decomposed dropping would provide nutrients for the young seedling. The seed can be dispersed further away from the parent plant to reduce competition for light, space, water and nutrients.
b)The leaves will have more exposed surface area to capture more sunlight to make food.

40)a)Warmth, moist and oxygen.
b)The spores in the air may land at the corner. Then, when the conditions are suitable, the mould will germinate.
c)When the water gain heat, it will evaporate. The warm water vapour would come into contact with the cooler surface of the bath room, Then, the warm water vapour will lose heat and condense of the bath room moist.

41)a)The water in the pond decreases in volume. The water in the pond has evaporated but there is no cool condition so no water vapour has condensed into water droplets has no rain is returned to the pond.
b)The water cycle provides a constant supply of fresh water for the living things in the pond.

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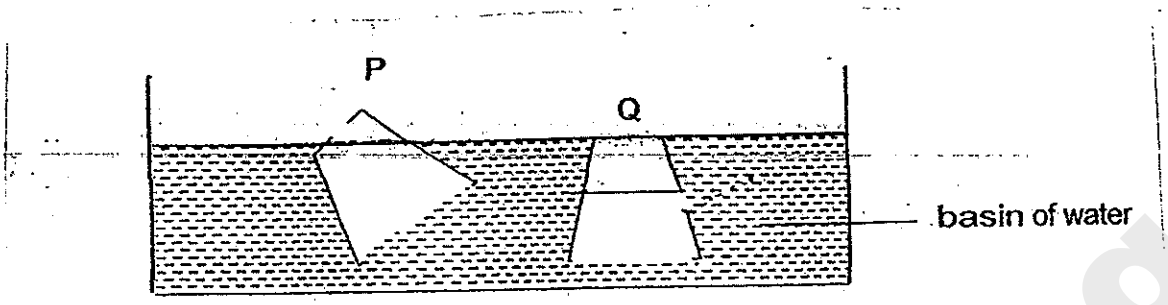
42)a)



42)b)Cup P: The air in the cup escaped from the hole made at the top so the cup allows the water to occupy the space previously occupy red by air.

Cup Q: When water entered cup Q, some of the air escapes through the hole however the air in the cup has trapped, occupying the space above the hole level, thus the water level in the cup stayed at the hole level.

43)a)The cover of Jar Y is air-tight, so air cannot enter the Jar after some time the air in Jar Y will be used up by the lizard, hence there is no oxygen for the lizard to survive.

b)Living things need food to survive.

c)Add more flies into Jar X.

44)a)D, A, B, C

b)By laying many increases eggs at one time, it increases the chance of more of the eggs being hatched and developed into adults.

c)B and D.

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Rosyth School
Continual Assessment 1 for 2014
STANDARD SCIENCE
Primary 5

Total Marks: 50

Name: _____

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

Date: 3 March 2014 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 16 pages.

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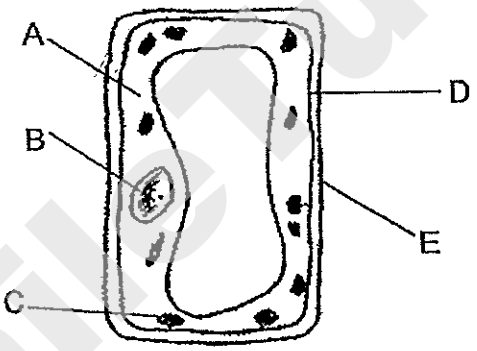
Part I (30 Marks)

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 one of the following is the basic unit of life for a hydrilla plant and a worm respectively?

	Hydrilla Plant	Worm
(1)	Cell	Cell
(2)	Cell Wall	Cell Membrane
(3)	Chloroplast	Cytoplasm
(4)	Nucleus	Nucleus

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



Which of the following headings best matches the cell parts A to E?

	It supports the cell	It contains genetic information	Parts that can be found in animal cells
(1)	E	C	A, B, C
(2)	D	A	A, B, E
(3)	A	C	C, D, E
(4)	E	B	A, B, D

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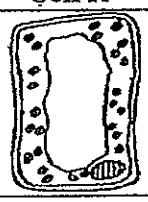
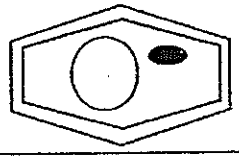
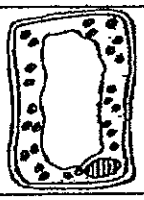
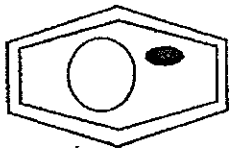
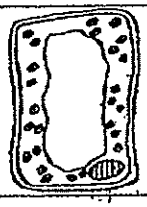
3. Study the table below. A tick (√) represents that the cell has the characteristic.

Characteristic of Cell	Cell P	Cell Q	Cell R
Has cell wall		√	√
Has cytoplasm	√	√	√
Has a nucleus	√	√	√
Has chloroplast		√	
Has cell membrane	√	√	√

Based on the information in the table above, which of the following show examples of cells, P, Q and R?

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

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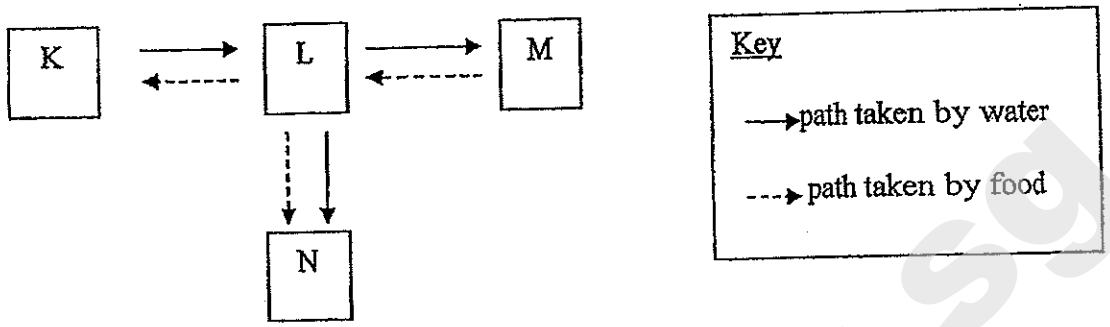
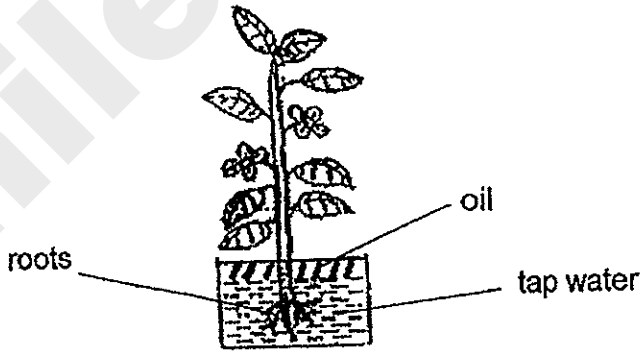
4. The diagram below shows the different paths taken by water and food in a plant Z. K, L, M and N represent the various parts of a plant.



Which one of the following best represents parts K, L, M and N?

	K	L	M	N
(1)	roots	leaves	flowers	stem
(2)	leaves	flowers	stem	roots
(3)	roots	stem	leaves	fruits
(4)	leaves	roots	stem	flowers

5. Pei Pei left a small plant in a beaker of water. After a day, she observed that there is less water in the beaker.



What can be the aim of her experiment?

A: To find out if roots are needed for plants to take up water
B: To find out if plants take in water.
C: To find out if there are water-carrying tubes in a plant.

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

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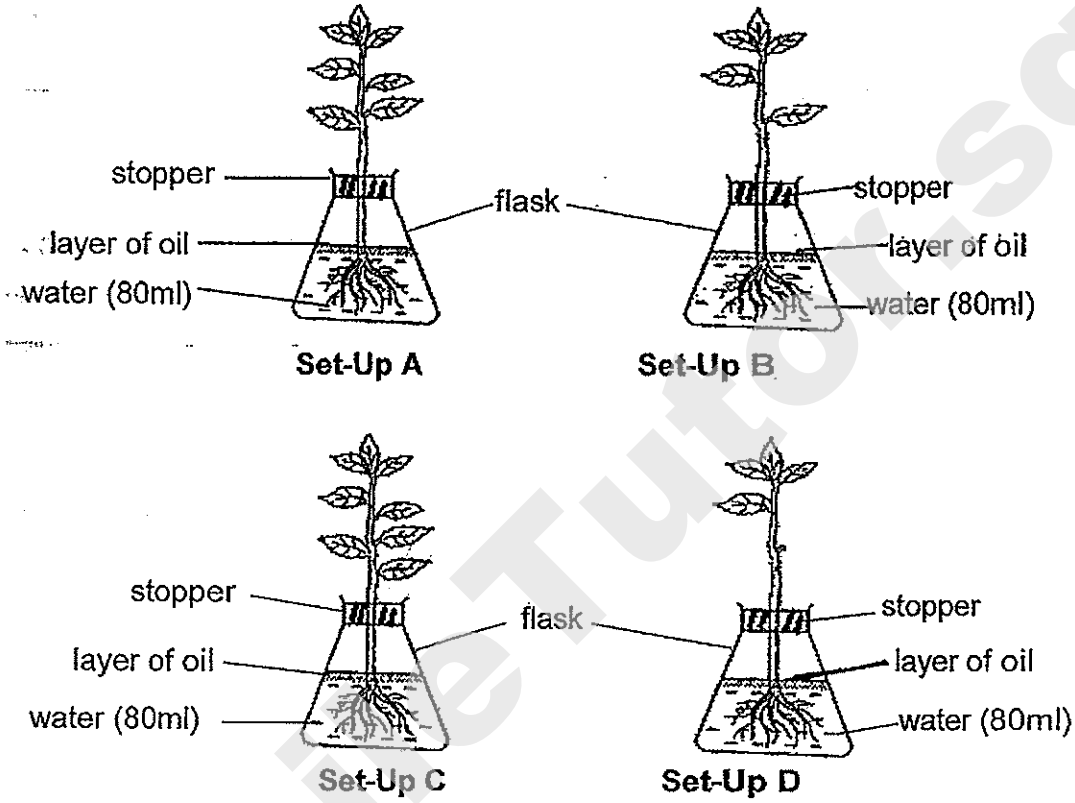
Read the following and answer questions 6 and 7.

Halim prepared the following set-ups to do an experiment.



6. Arrange the four set-ups A, B, C and D in ascending order in terms of the amount of water left at the end of the experiment.

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

7. What other variable must he keep constant if he wants to find out how the number of leaves affects the amount of water taken in by the plant?

(1) The type of oil.
(2) The size of the flask.
(3) The amount of water in the beaker.
(4) The temperature of surrounding air.

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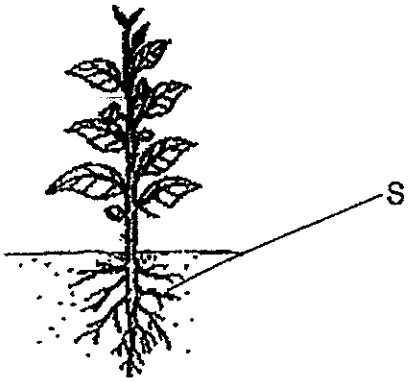
8. Below is a diagram of a plant.



What is the function of part S of the plant?

A: To take in water for the plant.
B: To anchor the plant firmly to the ground.
C: To support the leaves in order to get as much sunlight.
D: To transport food from the leaves to the rest of the plant.

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

9. Regan wanted to find out if the amount of water given to the plant affects its growth.

Set-up	Amount of Water / cm^3 per day	Height of plant at beginning of experiment	Height of plant at the end of experiment
A	500	1m	1.5m
B	1000	1.2m	1.9m
C	1500	1.4m	2.1m

From his results, what can he conclude?

(1) The amount of water does not affect the growth of the plant.
(2) The lesser the amount of water, the lesser the growth of the plant.
(3) The more the amount of water, the greater the growth of the plant.
(4) The amount of water affects the growth of the plant to a certain extent.

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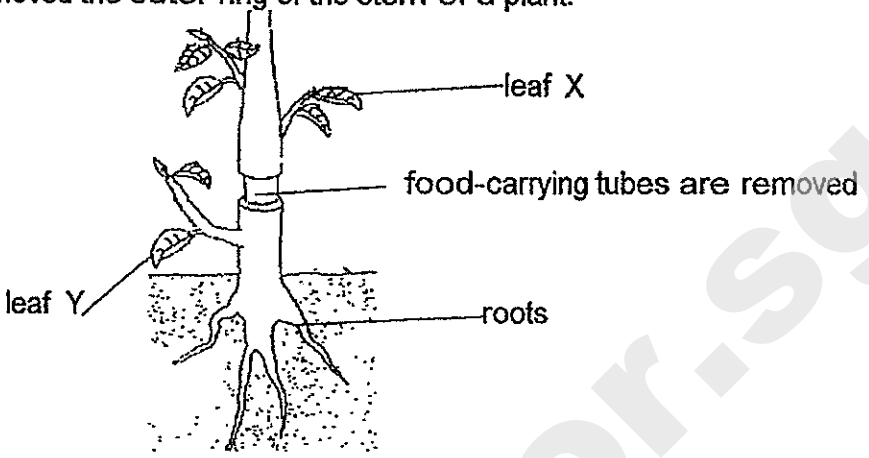
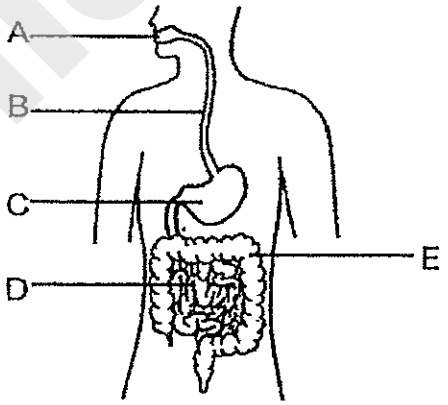
10. Henry removed the outer ring of the stem of a plant.



Which of the following correctly state his observations after a few days?

	X	Y
(1)	Remained green	Remained green
(2)	Turned yellow	Remained green
(3)	Turned yellow	Turned yellow
(4)	Remained green	Turned yellow

11. The diagram below shows the human digestive system.



Which one of the following statements is correct about the digestive system?

A: Digestion does not take place at B.
B: Digestion begins at A and ends at E.
C: Digestive juices are found at A, C and D.
D: Digested food enters the blood stream at D.

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

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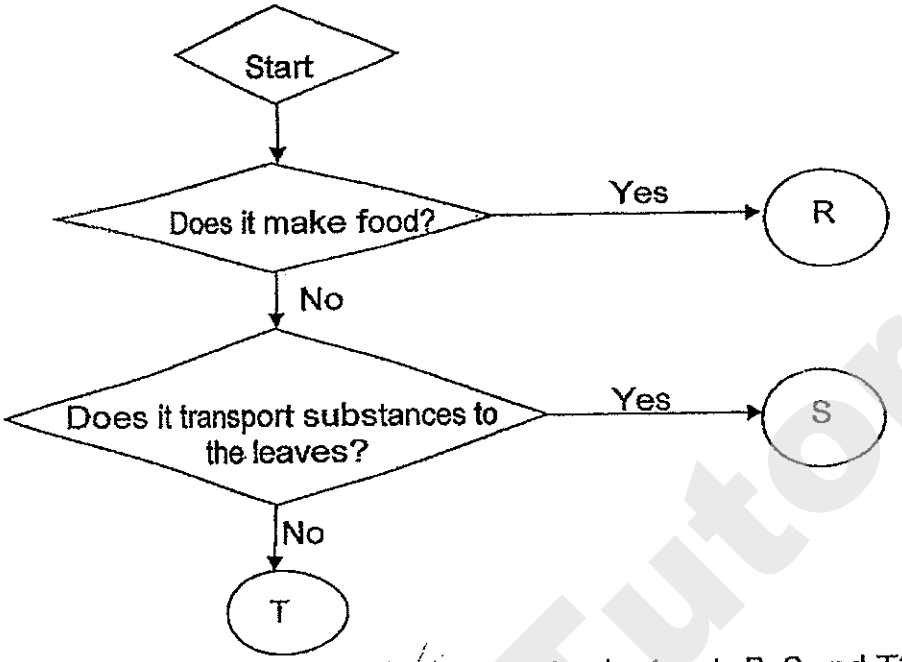
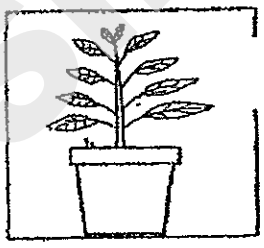
12. The flowchart below describes the functions of different parts of a plant.



Which of the following represents plant parts R, S and T?

	R	S	T
(1)	leaves	roots	stem
(2)	leaves	stem	roots
(3)	stem	leaves	stem
(4)	roots	stem	leaves

13. James put a plant inside a black box with a hole. He placed the set-up next to the window and watered the plant daily.



Day One

Day Ten

Which of the following characteristic can be used to explain the observation above?

(1) All living things die.
(2) All living things can grow.
(3) All living things respond to changes.
(4) All living things need food, water and air.

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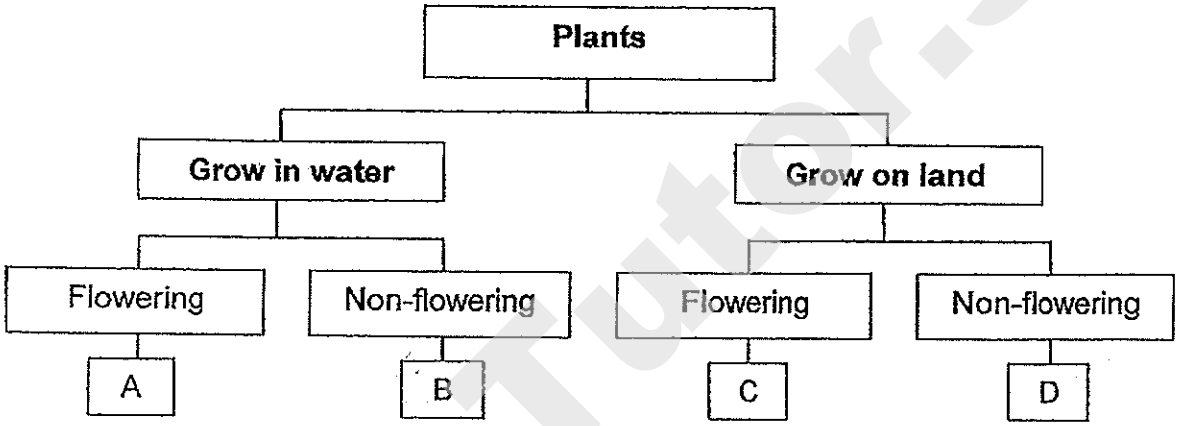
14. The following table shows some characteristics of two plants M and N.

	Plant M	Plant N
Does it grow on land?	Yes	No
Does it bear fruit?	Yes	No

Use the classification chart to find Plant M and N.



Which group A, B, C and D do Plant M and Plant N belong to?

	Plant M	Plant N
(1)	A	C
(2)	A	D
(3)	C	B
(4)	D	C

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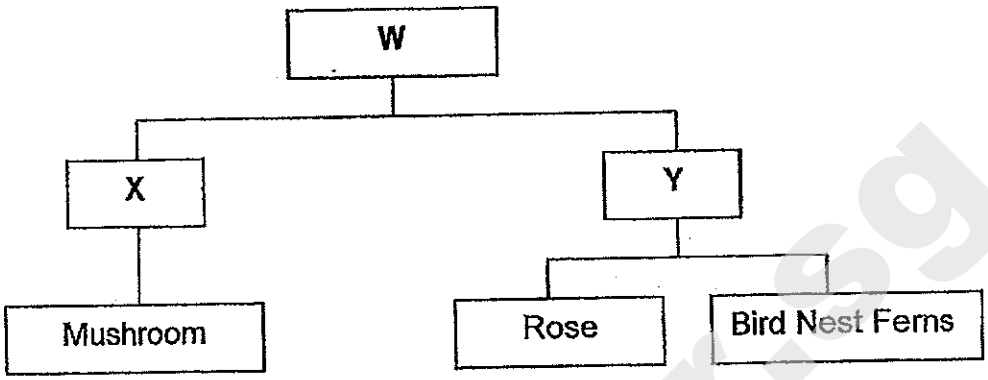
15. Study the classification chart below.



Which of the following are suitable headings for W, X, and ?

	W	X	Y Y
(1)	Plants	Non-Flowering Plants	Flowering Plants
(2)	Plants	Cannot make food	Can make food
(3)	Living Things	Cannot make food	Can make food
(4)	Living Things	Non-Flowering Plants	Flowering Plants

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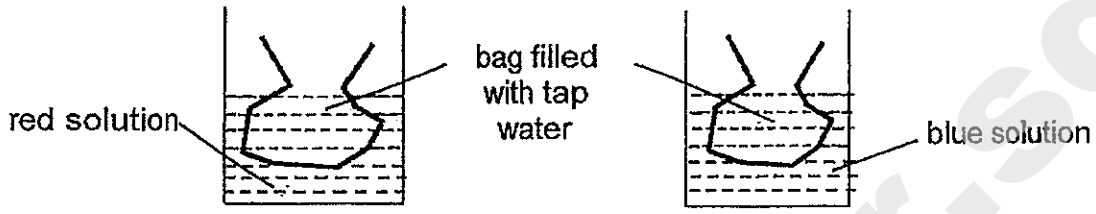
Part II (20 Marks)

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

16. The diagram below shows two set-ups.



Set-up A Set-up B

XinYi put two similar bags made of material Q into coloured solutions as shown in the above set-ups. After ten minutes, she recorded her observation in the table below.

Set-up	Colour of tap water
A	Remains the same
B	Blue

(a) Which part of the cell represent material Q? Explain your answer. (1m)

_____

_____

Refer to the pictures below. The dog has increased in size after a year.

At first After a year

(b) State the change in the cells that has caused the dog to increase in size. (1m)

_____

_____

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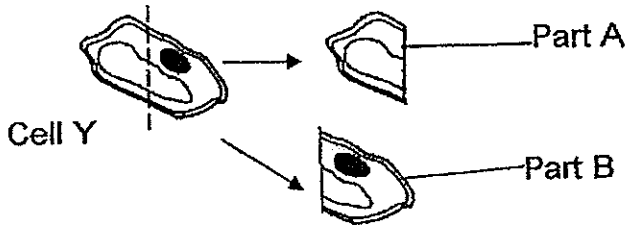
17. Francis cut a plant cell Y into two parts, A and B as shown in the diagram below.



He observed that one part of the cell shrunk and died but the other part continued to grow.

(a) Which part, A or B continued to grow? Explain your answer. (1m)

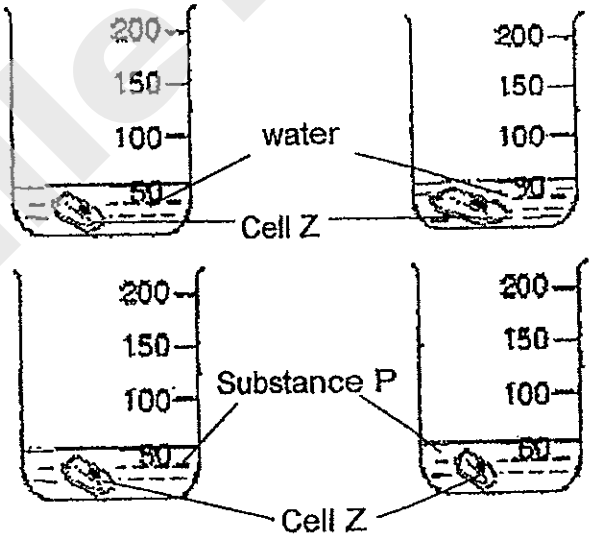
_____

_____

(b) State a part of the plant where Cell Y is likely to be found. Give a reason for your answer. (1m)

_____

_____



(c) Cell Z was placed in a beaker of water, the cell became bigger. However when cell Z was placed in substance P, it did not become bigger. What is a possible reason the cell did not change in size when placed in substance P? (1m)

_____

_____

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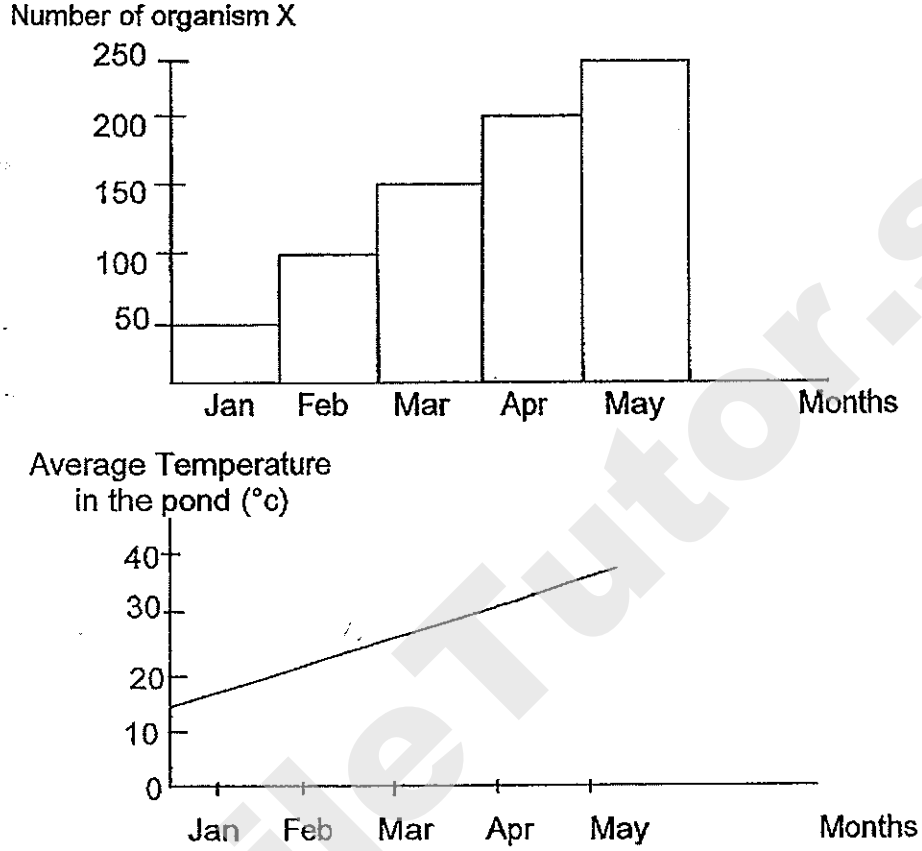
18. The bar graph below shows the number of organism X reproduced in a pond over a period of time. The line graph shows the average temperature in the pond.



(a) Based on the graphs shown above, what is the relationship between the number of organism X reproduced and the average temperature in the pond? (1m)

Question 18(b) and 18(c) continues on page 13

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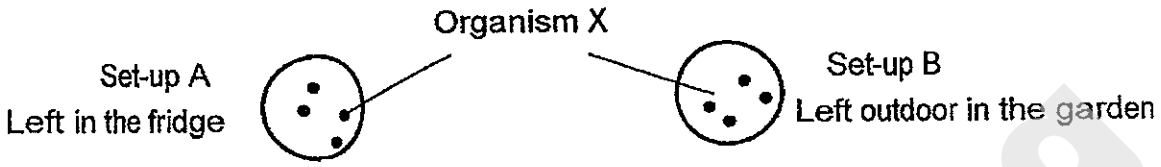
Penny put some organism X in two similar petri dish as shown in the diagram below. She counted the number of organism X at the end of the experiment.



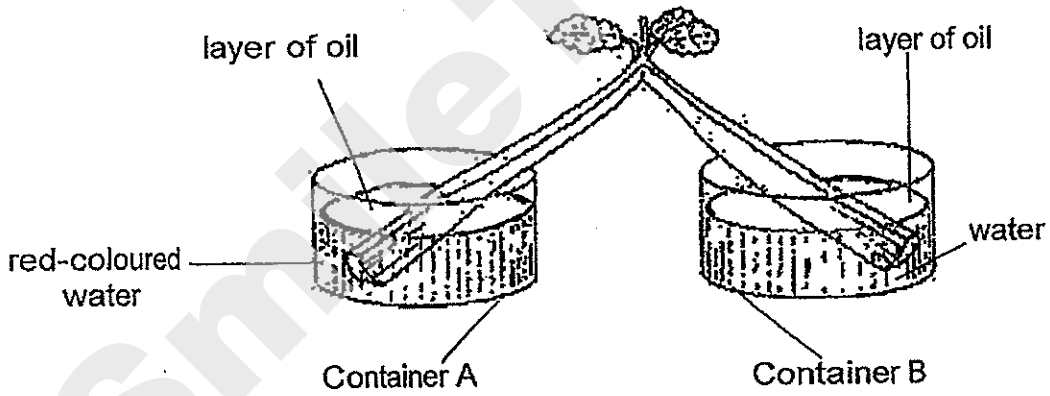
(b) What do you think is the aim of her experiment? (1m)

_____

(c) Name a variable that she must keep constant in the above set-up. (1m)

_____

19. The diagram below shows a plant.



(a) Halim set up his experiment by placing the stem of a plant in two containers. He left the set-ups in an open area for a day. What would be the results observed for the leaves? (1m)

_____

(b) What would Halim do to show that the stem takes in water? (1m)

_____

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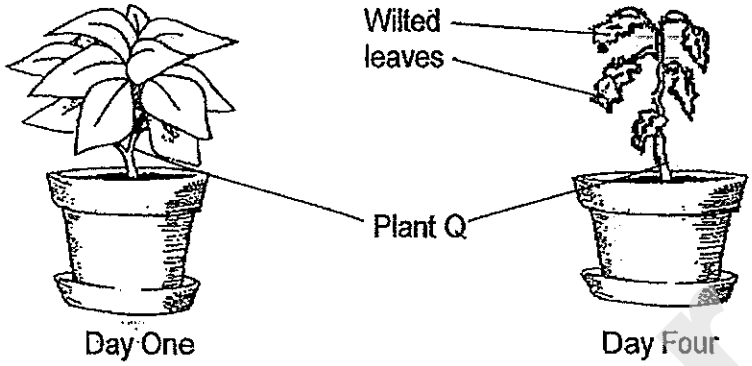
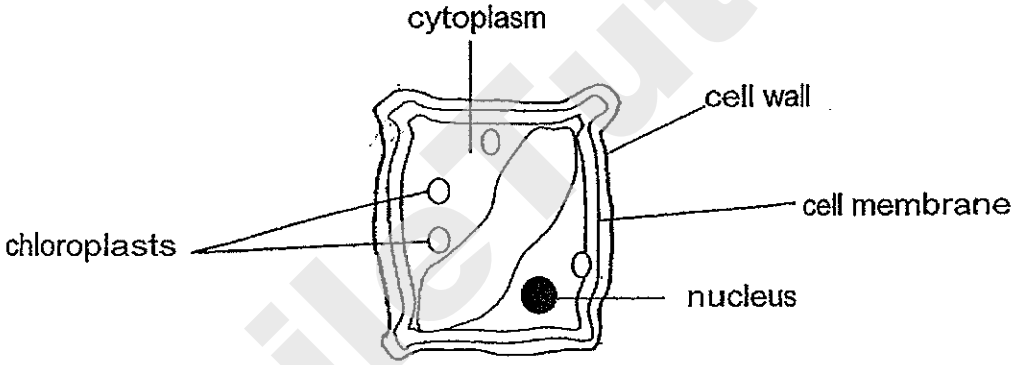
20. The diagram below shows Plant Q at the start of the experiment and after four days.



Alicia took a section of the leaf from Plant Q at the start of the experiment and examined it under a microscope. The diagram below shows one cell from the leaf.



(a) What difference would she observe in the cell on Day Four compared to Day One? (1m)

_____

_____

(b) How is the function of the nucleus similar to the function of a teacher in a class? (1m)

_____

_____

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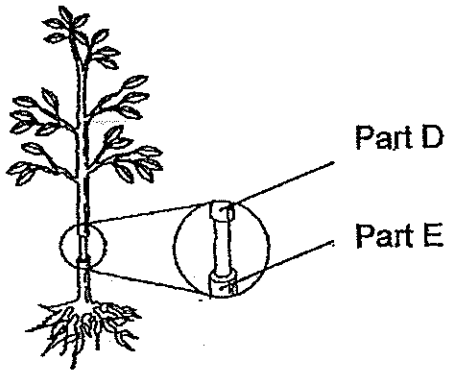
21. Wei Ming cut a cross- section of the stem from the plant in the set-up below.



(a) He measured and recorded the thickness of the stem in the table below. Based on his data in the table, write D or E in the space provided to show the correct part of the plant he had observed. (1m)

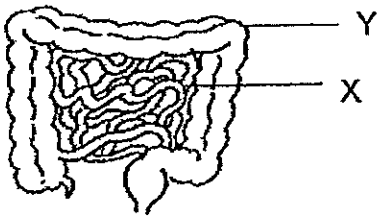
Part	Day One	Day Four	Day Eight
	15cm	12cm	10cm
	16cm	18cm	20cm

(b) Explain your answer in (a). (1m)

_____

_____

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



(a) State one similarity between the function of X and Y. (1m)

_____

(b) Describe the functions of part X. (2m)

_____

_____

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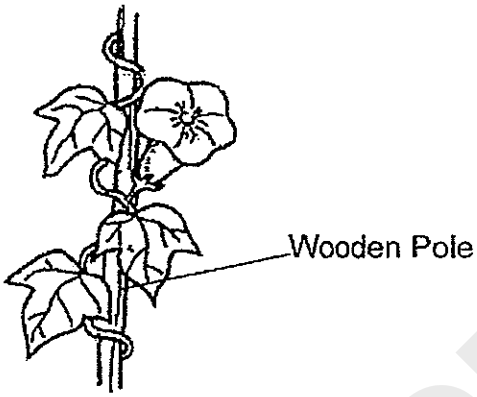
23. Mickey make some observations of the Plant W below.



(a) Explain why the plant needs the wooden pole in the above diagram. (2m)

_____

_____

Mickey classified three other plants, A, B and C as shown in the table below.

Characteristics	Plants		
	A	B	C
▪ Grow on land	Yes	Yes	Yes
▪ Has fruits	No	Yes	Yes
▪ Has strong stem	No	No	Yes

(b) Which group can he classify Plant W in the table? Explain your answer. (2m)

_____

_____

End of Paper

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ANSWER SHEET

EXAM PAPER 2014
SCHOOL : ROSYTH
PRIMARY : P5
SUBJECT : SCIENCE
TERM : CA1

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

16)a)Cell membrane as it controls what enters or exits the cell.
b)The number of cells increased/mulitplied.

17)a)Part B, it has the nucleus to replace damaged cells.
b)Root. Cell Y does not have chloroplast and thus if found in parts that does not contain chloroplast.
c)The cell membrane blocked out the substance P and did not allow it to enter Cell Z.

18)a)The higher the Temperature of the pond, the more amount Number of organism X.
b)To see if the temperature of its surroundings will affect the number of Organism X.
c)The same number of organism X at the start of the experiment.

19)a)The leaves would turn red.
b)Measure the amount of water left at the end of the experiment compared to the start.

20)a)The cytoplasm has struck.
b)The nucleus controls all activities in the cells like what the teacher instructs what the pupils do in the class.

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21)a)E, D

b)He would observe Part D would be swollen with food as food cannot be transported downwards and Part E would be smaller as food would be used up.

22)a)Both allows subs substance to be absorbed.

b)X compete digestion of food and absorb of digested food.

23)a)The plant has weak stem and need the pole as a support to hold itself upright to obtain more sunlight.

b)B. As the plant has a weak stem, has fruit and it grow on land, thus it matches all of the statements in B.

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NAN HUA PRIMARY SCHOOL
CONTINUOUS ASSESSMENT 2 – 2014
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 : 21 August 2014 **Parent's Signature:**_____

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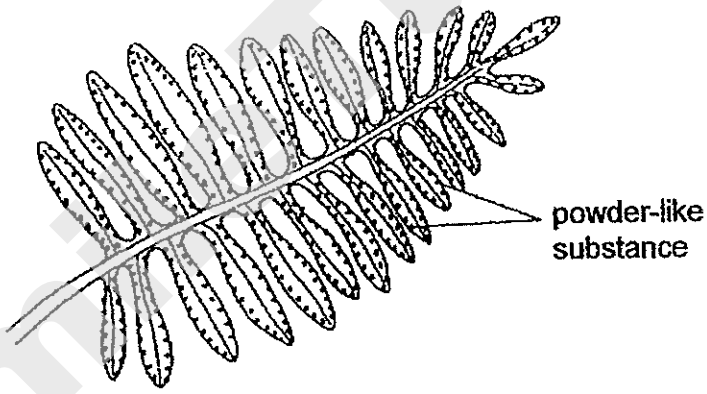
Section A: (20 x 2 marks = 40 marks)
For each question from 1 to 20, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Plants are living things that can reproduce.
Which statement explains why plants need to reproduce?

(1) Plants take in carbon dioxide.
(2) Plants provide food for animals.
(3) Plants provide oxygen for animals.
(4) Plants need to ensure that their own kind can continue to exist.

2. John shifted to his new home at a new estate that planted many different plants. After a year, most of the plants flowered. He noticed one particular plant that had no flowers. He studied the plant carefully and found a powder-like substance under its leaves as shown below.



From the information above, which statement about this plant is correct?

(1) The plant reproduces from spores.
(2) The powder-like substance is pollen grains.
(3) The plant has buds on its leaves that grow into new plants.
(4) The powder-like substance protects the plant from caterpillars that feed on its leaves.

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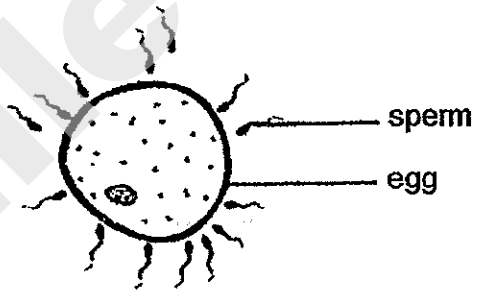
3. The chart below shows the family tree of the Tan family and their traits.

Father	Mother	Josh
Short hair Straight hair Double eyelids Black eyes Short nails	Long hair Curly hair Single eyelids Blue eyes Long nails	Short hair Curly hair Double eyelids Blue eyes Short nails

From the information above, how many characteristics did Josh inherit from his father and mother?

	Father	Mother
(1)	1	2
(2)	1	3
(3)	2	2
(4)	2	3

4. The diagram below shows an egg and some sperms.



Which of the following statements about human reproduction are **incorrect**?

A The sperms are produced by the male.
B The male produced many sperm because many sperms are needed to fertilise the egg.
C The egg released by the ovary matures in the womb before meeting the sperm.
D The fertilised egg becomes a zygote and develops into a foetus.

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

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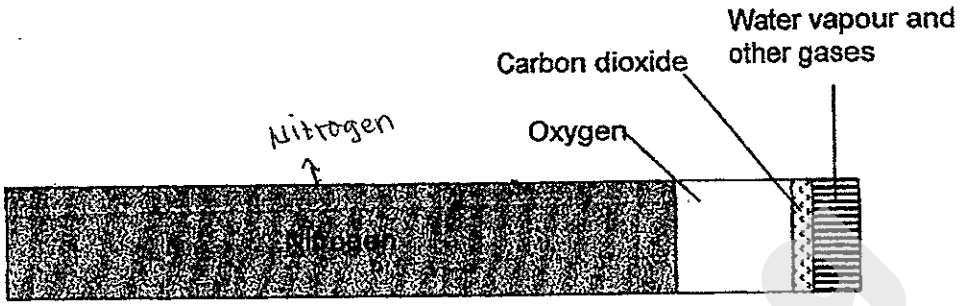
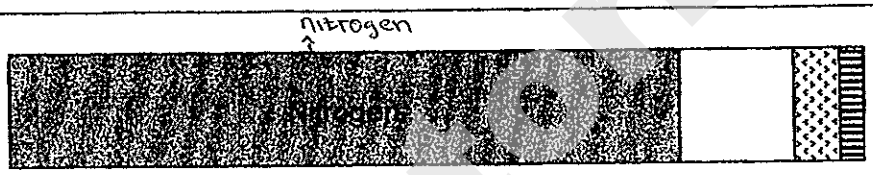
5. The diagram below shows the composition of gases in the air we breathe in.

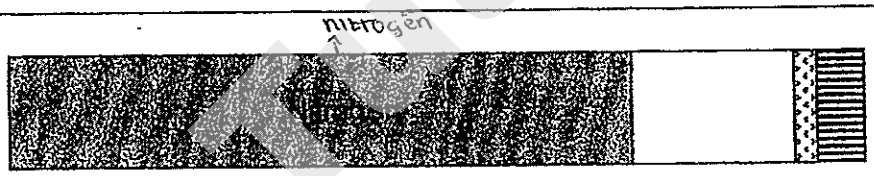


Which of the options below correctly shows the changes in the composition of gases in the air we breathe out?

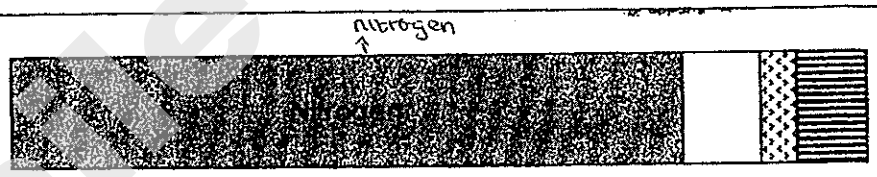
(1)



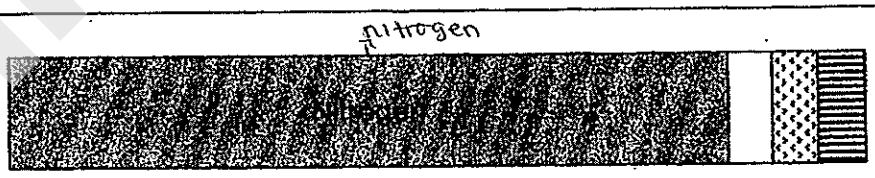
(2)



(3)



(4)



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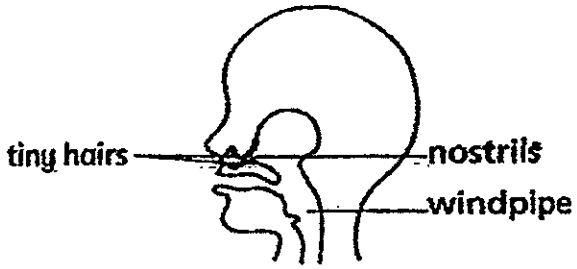
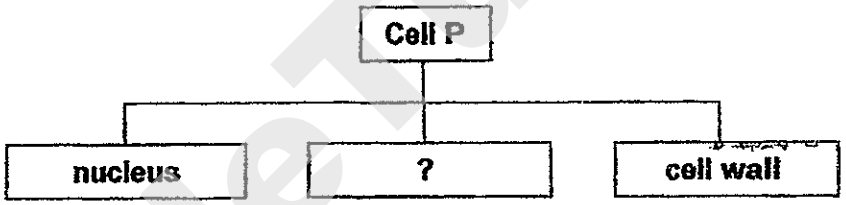
6. The diagram below shows part of the human respiratory system.



What is the function of the tiny hairs in the nostrils?

(1) They trap air to keep our nose warm.
(2) They moisten the air before entering our windpipe.
(3) They remove germs and viruses in the air we breathe in.
(4) They trap dirt and dust particles in the air we breathe in.

7. Jared studied Cell P under a microscope and listed some parts of the cell below.



Which of the following part(s) could definitely be found in Cell P?

A chloroplast
B cytoplasm
C cell membrane

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

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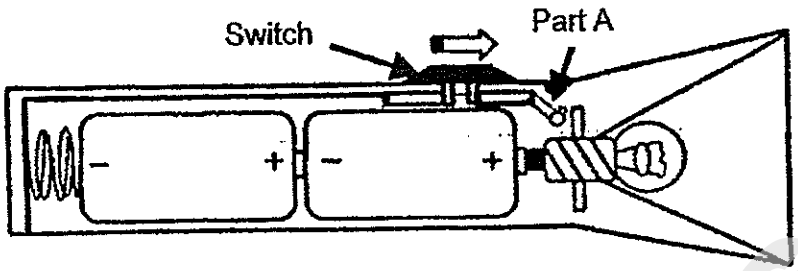
8. The diagram below shows a cross-section of a torchlight.



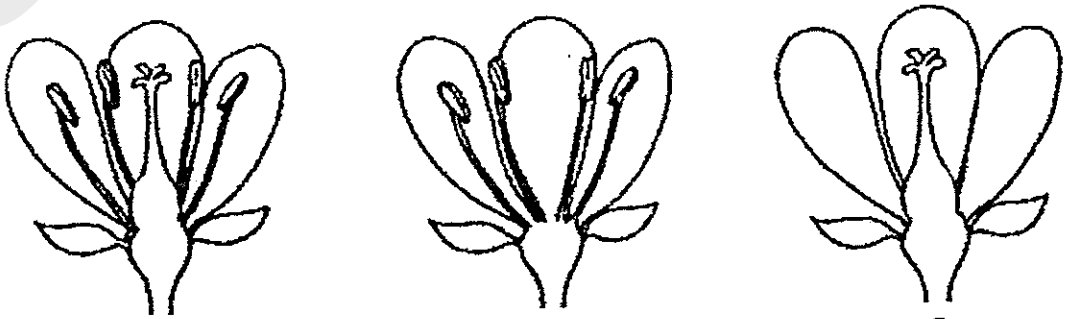
When the switch is pushed forward, Part A moves forward to close the circuit and the bulb lights up.
James brought a similar torchlight to his school camp. When he returned from the camp, he found that the bulb did not light up when he pushed the switch.

Which of the following could be the possible reasons why his torchlight was not working?

A The bulb had fused.
B The battery had gone flat.
C The torchlight casing had a chipped corner.
D The positive ends of both batteries were connected to each other.

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

9. Three flowers, A, B and C, had some petals removed from one side as shown in the diagrams below.



Which of the flower(s) will **not** be able to develop into a fruit?

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

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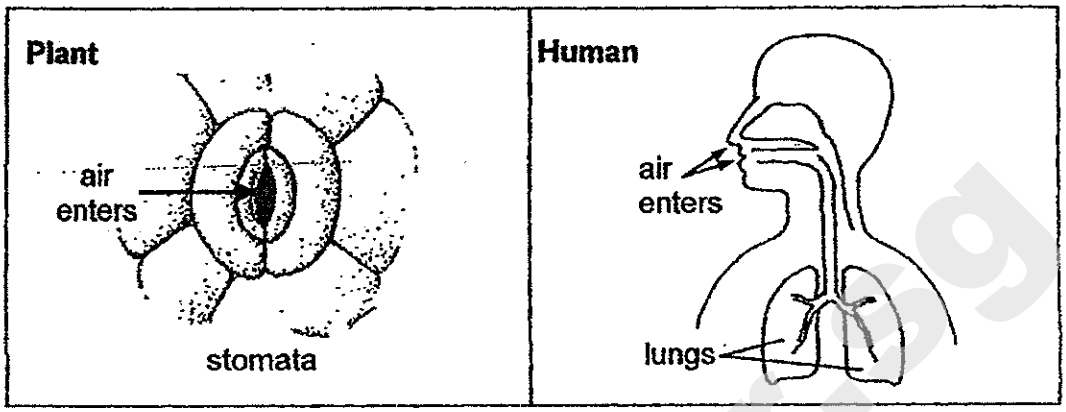
10. The diagrams below show how the exchange of gases occur in plants and humans.



Which of the statements below are true about the way the plant and the human carry out gaseous exchange?

A Both the plant and human take in oxygen from the air.
B The amount of air entering the human body changes with the breathing rate.
C The plant controls the amount of air entering or leaving by changing the size of the stomata.

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

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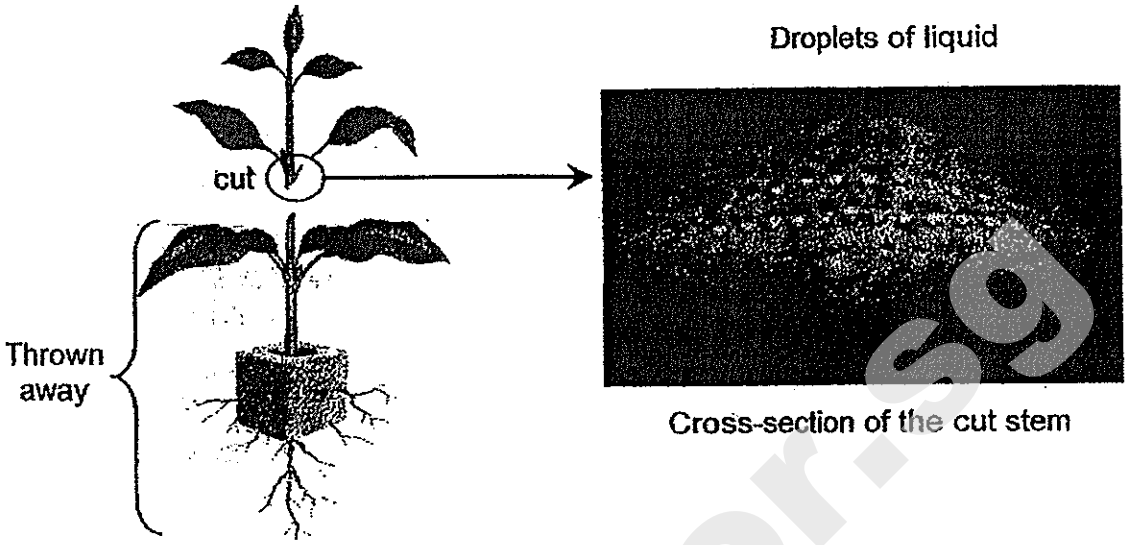
11. Study the diagram below carefully.



The plant was cut in half and the bottom half was thrown away. The cross-section of the cut stem of the upper half of the plant was observed. Droplets of liquid can be seen coming out as shown in the diagram above.

Which one of the following statements about the observation is correct?

(1) The stem was attacked by pests since it was cut and exposed.
(2) As the food-carrying tubes were cut, food was flowing out from the tubes.
(3) As the water-carrying tubes were cut, water was flowing out from the tubes.
(4) As the food and water carrying tubes were cut, food and water were flowing out from the tubes.

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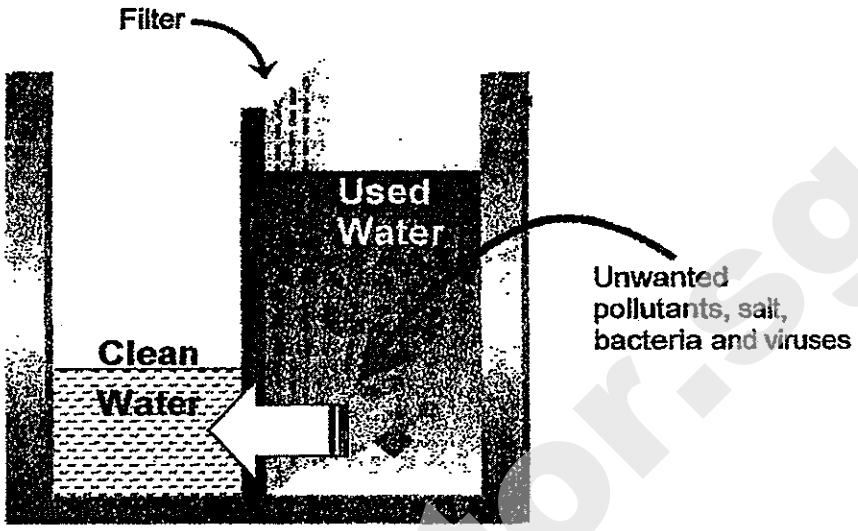
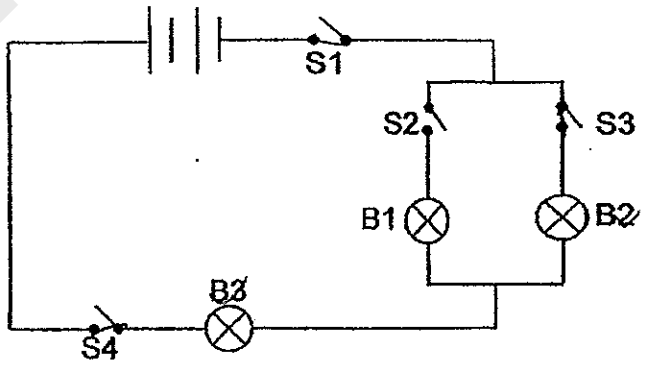
12. Jamie visited the Singapore NEWater plant. She learnt that water is recycled for use in our country. In one of the processes, used water is passed through a special filter that does not allow unwanted pollutants, salt, bacteria and viruses to pass through it.



Jamie immediately remembered her Science lessons about cells.
Which part of the cell has similar function as the filter?

(1) Nucleus
(2) Cytoplasm
(3) Chloroplast
(4) Cell membrane

13. Bulbs B1, B2 and B3, and switches S1, S2, S3 and S4 are connected in a circuit as shown below. All switches and bulbs are working properly.



Which switches must be closed in order for B2 and B3 to light up?

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

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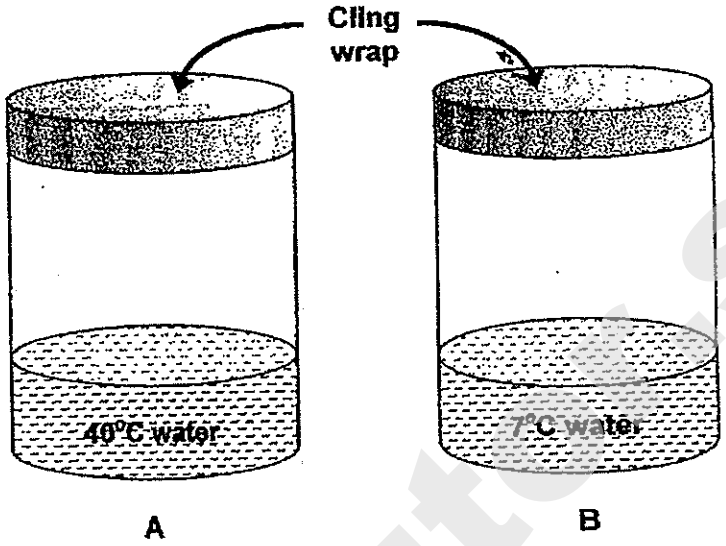
14. Adrian set up an experiment with cups A and B, each containing the same amount of water at different temperatures as shown below. The cups were placed in an air-conditioned room at 20°C.



Which statements below about cups A and B are correct?

A There was more heat in cup A than in cup B.
B Water droplets would be found on the inner surface of cup A.
C Water droplets would be found on the outer surface of both cups.

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

15. Which of the following statement(s) is/are true about our digestive system?

A Digestion is completed in the stomach.
B The digested food is absorbed into the blood stream in the small intestine.
C The large intestine continues to digest the food after the small intestine.
D Water is added to the undigested food in the large intestine.

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

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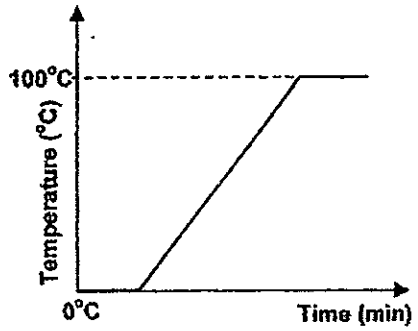
16. Jeanette put some ice cubes into a beaker and heated them over a Bunsen burner over a period of time until it boils. The change in temperature over the whole process was shown in the graph below.

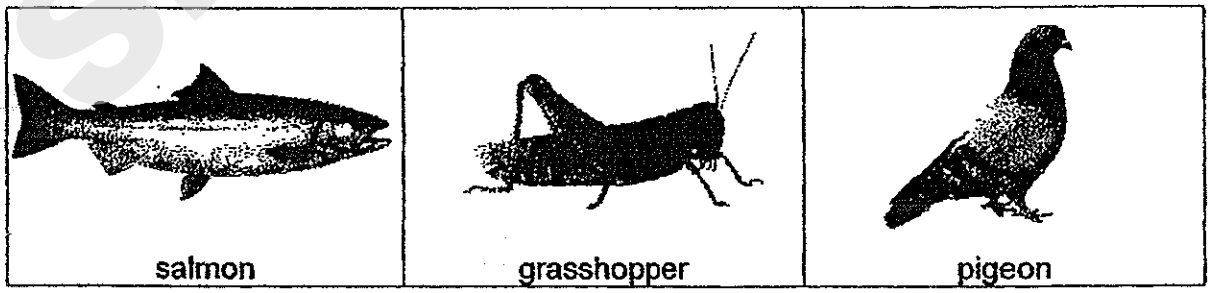


Jeanette repeated the experiment again and placed another flame below the beaker.
Which of the following statements correctly describe what happened when an additional Bunsen burner was added to heat the ice cubes?

A It shortened the time for the ice to melt and start boiling.
B Most of the additional heat from the second burner would be lost to the surroundings.
C The extra heat from the additional burner was used by the ice cubes or water to change its state.
D The heat from the second additional burner caused the temperature of the water to increase beyond 100°C.

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

17. Study the animals below carefully.



What is one common characteristic among these three animals?

(1) How they breathe
(2) The way they move
(3) Their outer covering
(4) The way they reproduce

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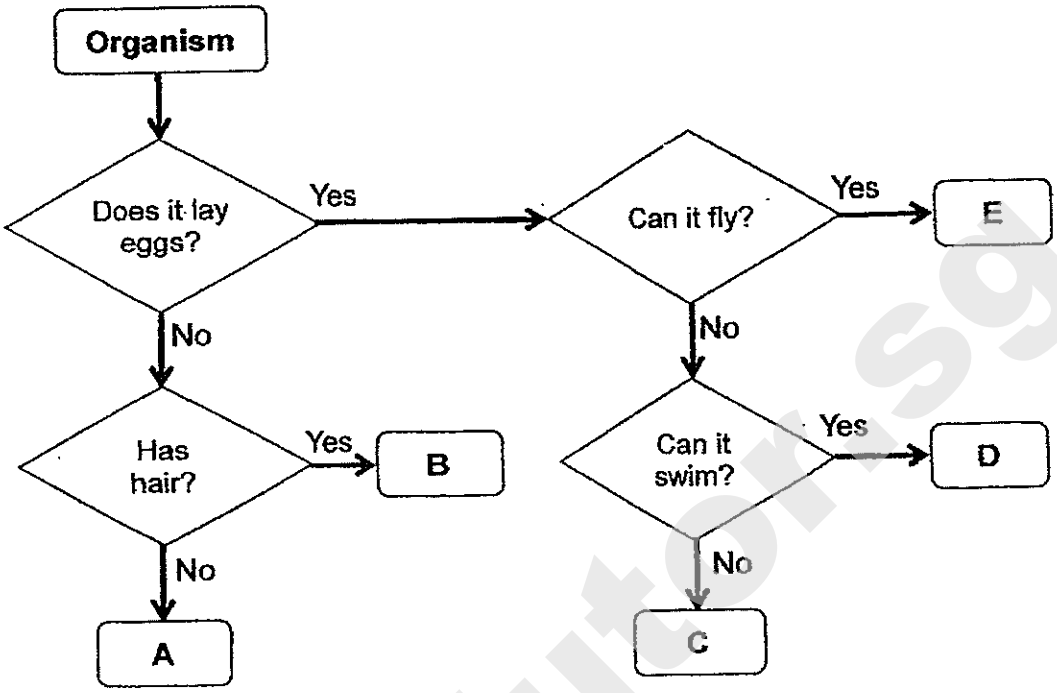
18. Study the chart below carefully.



Which one of the following correctly matches the animals to the letters, A, B, C, D and E, in the flowchart above?

	Penguin	Guppy	Rabbit	Eagle
(1)	B	D	C	A
(2)	C	D	B	E
(3)	D	A	B	E
(4)	E	A	C	D

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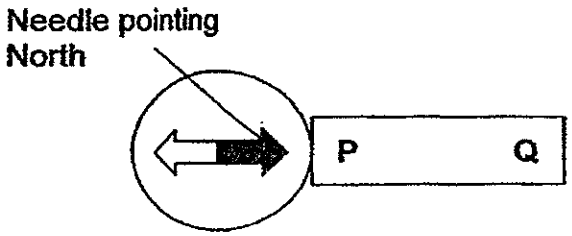
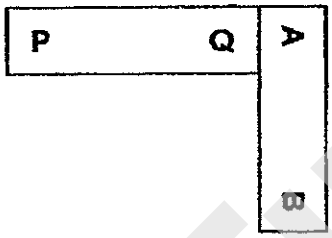
19. Bar magnet X with poles, P and Q, was brought near a compass as shown in the diagram below.



When another bar magnet Y, with poles A and B, was brought near bar magnet X, they attracted to each other as shown below.



Which one of the following correctly identifies poles P, Q, A and B?

	Bar Magnet X		Bar Magnet Y	
	P	Q	A	B
(1)	North	South	North	South
(2)	North	South	South	North
(3)	South	North	North	South
(4)	South	North	South	North

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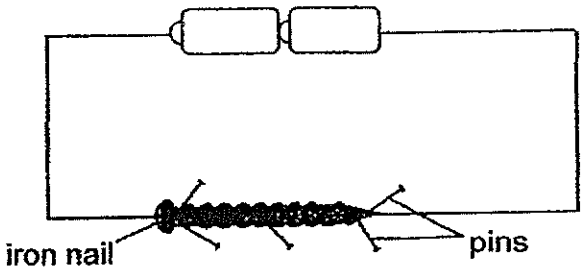
20. Sammi prepared a setup as shown below. She coiled the insulated wire 10 times round the iron nail.



However, the iron nail could only attract 5 pins as shown in the diagram.
Which of the suggestion(s) below will enable her iron nail to attract more pins?

A Use a longer iron nail
B Coil the insulated wire more times around the iron nail
C Add more batteries in series

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

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NAN HUA PRIMARY SCHOOL
CONTINUOUS ASSESSMENT 2 – 2014
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 : 21 August 2014 **Parent's Signature:** _____

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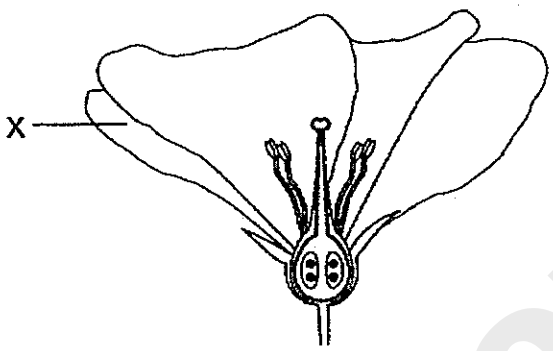
Section B: (40 marks)
Write your answers to question 21 to 34 in the spaces provided.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

21. The picture below shows the cross-section of a flower.



(a) Name two parts that belong to each of the following:

i) Male part of the flower : _____, _____ [1]

ii) Female part of the flower : _____, _____ [1]

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

_____

_____

Score	2½ / 3

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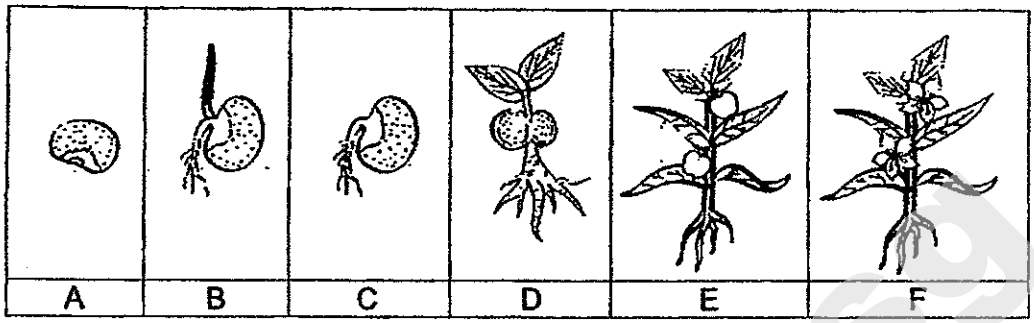
22. The diagram below shows the process of development of a seed.



(a) Rearrange the diagrams in the correct order? [1]

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

(c) From the diagram above, identify the stage, A, B, C, D, E or F, where the seed leaves will no longer be needed. Give a reason. [1]

Score	3

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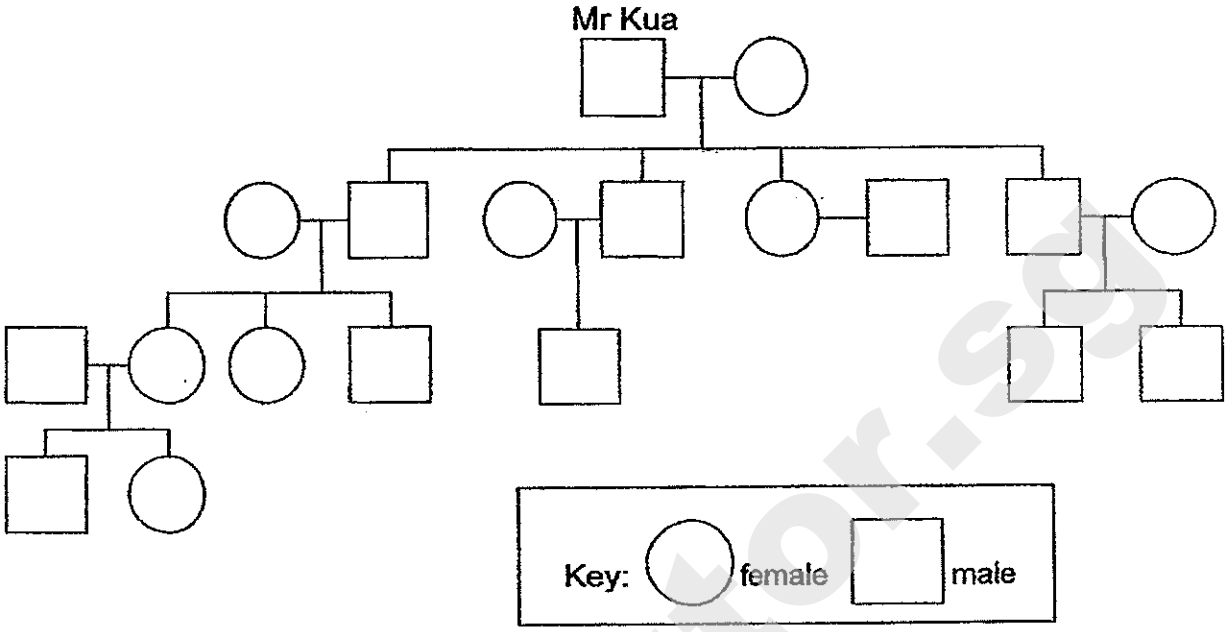
23. The diagram below shows a detailed family tree of Mr Kua.



(a) Jeremy is Mr Kua's grandson. He has two siblings. Mark with a cross, X, and label "Jeremy" in the family tree above. [1]

(b) Mr Kua can roll his tongue. What is the maximum number of females in the family who could inherit this trait? [1]

_____

_____

Score	2

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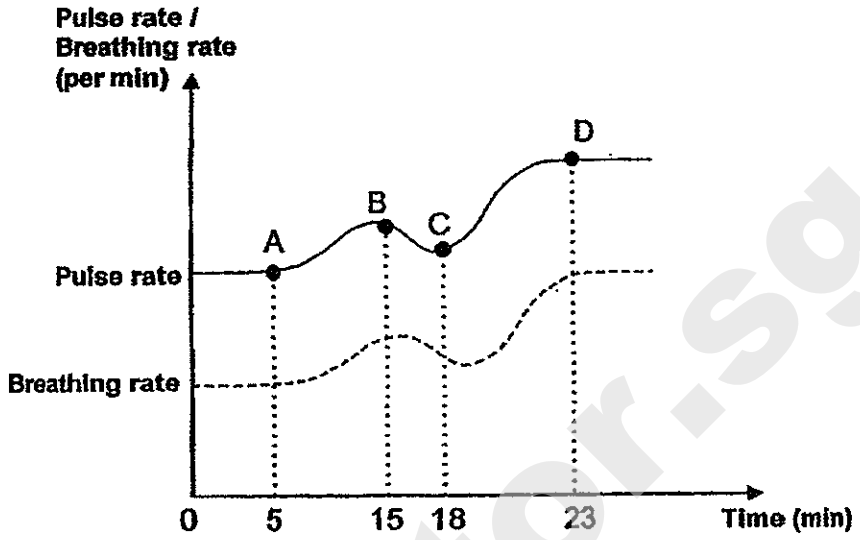
24. Joash was getting ready to do his NAPFA 1.6km run. Before he ran, he did his warm up exercises. The table below shows his breathing and pulse rates over time.



(a) At which points, A, B, C or D, did he: [1]

(i) stop his warm up exercises: _____

(ii) start his running: _____

(b) Explain why Joash's breathing and pulse rate increased when he was running? [2]

_____

_____

_____

_____

Score	/ 3

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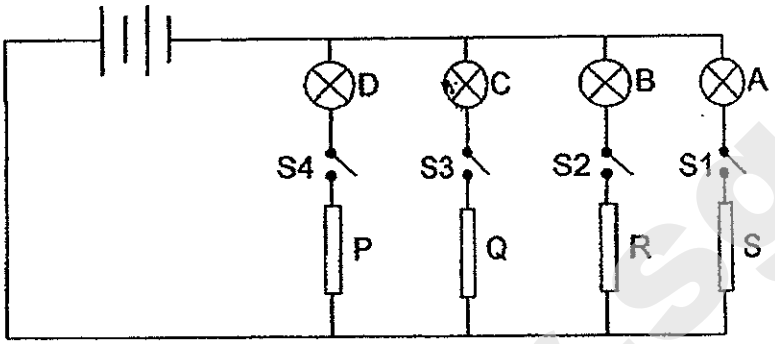
25. Ramesh did an investigation with 4 rods, P, Q, R and S, which could be electrical conductors or insulators. He used the circuit shown below for his investigation.



The table below shows what happened when the switches were closed.

Switches closed — Bulb A — Bulb B — Bulb C — Bulb D

Switches Closed	Bulb A	Bulb B	Bulb C	Bulb D
S1 and S2	not lighted	lighted	not lighted	not lighted
S2 and S4	not lighted	lighted	not lighted	lighted

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 — Not possible to tell

Rods	Conductor of electricity	Insulator of electricity	Not possible to tell
P			
Q			
R			
S			

Score	
	2

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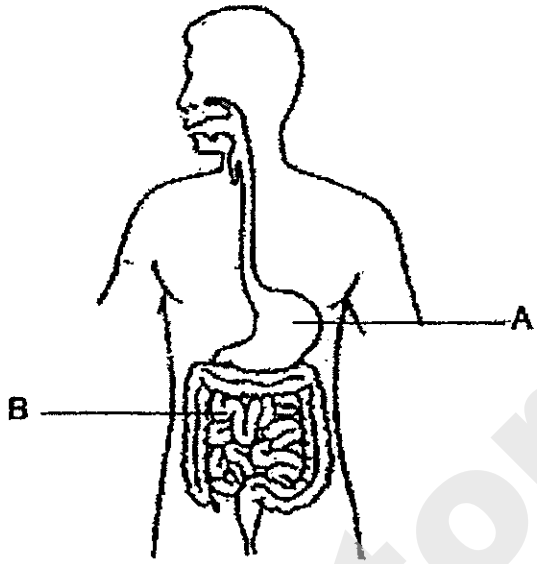
26. The diagram below shows the human digestive system.



(a) Identify the organs A and B. [1]

A: _____

B: _____

(b) Hossan's grandfather had his stomach removed due to cancer. Based on your understanding of the digestive system, will his grandfather's digestive system still be able to provide digested food needed by his body? [2]

_____

_____

_____

Score	
	3

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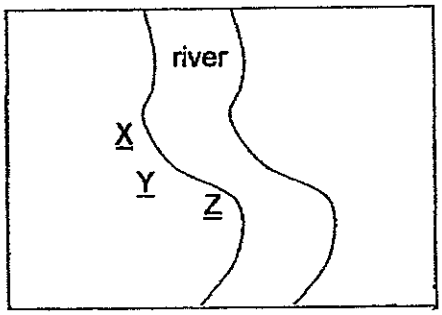
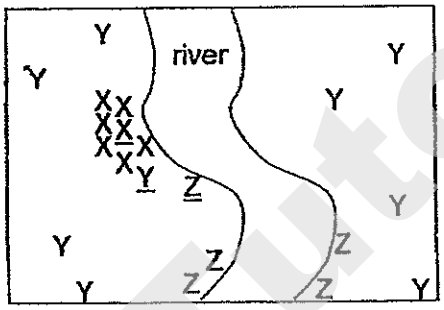
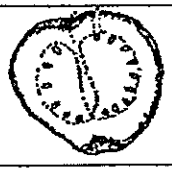
27. Three plants X, Y and Z were planted on a land next to a river as shown below.



After several years, more of the three plants were found as shown below.
X, Y and Z represent the parent plants that were planted earlier.



(a) From the information provided above, match the plants X, Y and Z to the correct fruit in the table below. [2]

Fruit	Represented by X, Y or Z
Coconut	
Balsam	
 Guava	

(b) Study the coconut and guava fruits in part (a). Explain why the guava seeds can be dispersed further away from the parent plant than the coconut? [2]

Score	4

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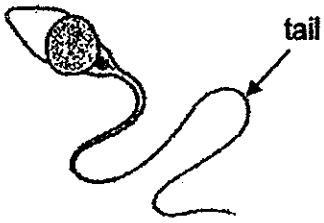
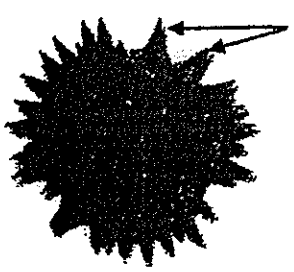
28. The diagrams below show a sperm and a pollen grain.



Sperm



Pollen grain

The sperm has a powerful tail that helps it swim up the womb of the female to meet the egg. The pollen grain, however, does not have a tail but it has a spikey outer cover.

(a) Explain clearly how the spikey outer cover of the pollen grain helps it to be transferred to the stigma of another flower. [1]

_____

_____

(b) In the reproduction process of both the flowering plant and human, a large number of pollen grains and sperms are produced. Explain clearly why this is so. [1]

_____

_____

_____

Score	/ 2

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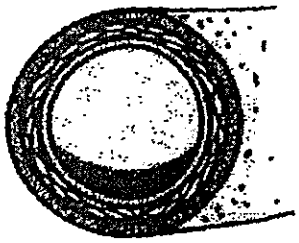
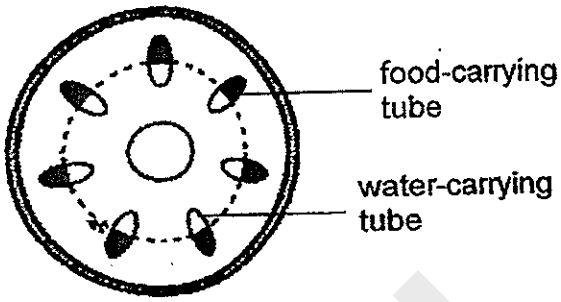
29. Study the diagrams below carefully.

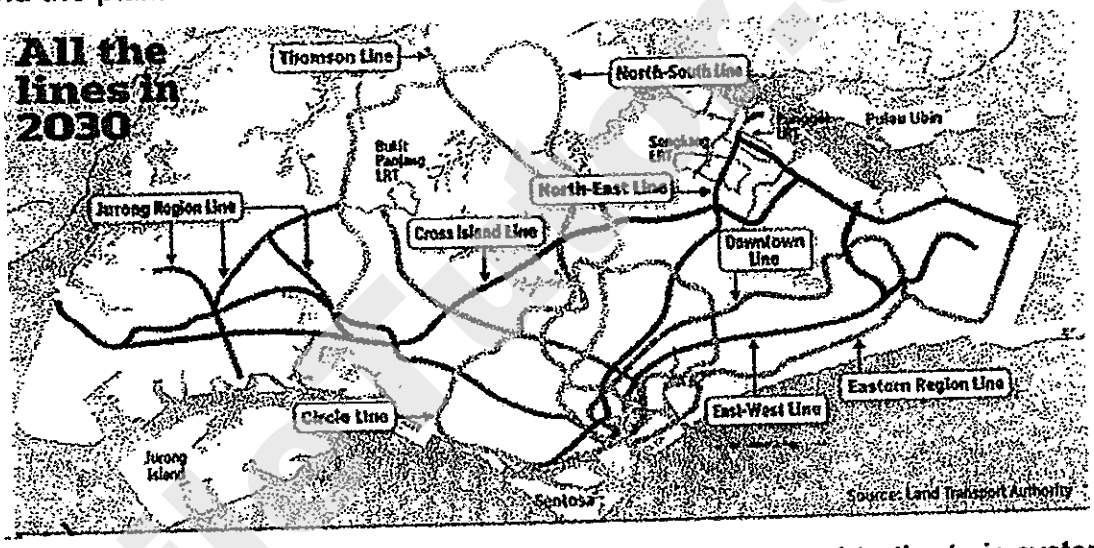


cross-section of a blood vessel



Cross-section of a plant stem

Both of the tubes shown above are parts of the transport systems of the human and the plant. Their common function is to transport materials.



(a) The plant and human transport systems can be compared to the train system that transports people around.
If you study the train lines, it does not cover every part of Singapore.
What will happen if the plant and human transport tubes do not cover every part of the plant or human body? [2]

(b) Study the diagrams of the human and plant transport tubes.
State one observable difference between the human and plant transport tubes. [1]

Score	
	3

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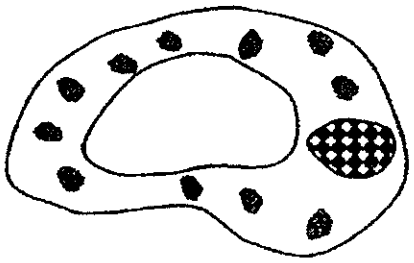
30. During a science lesson, Mohan was given a cell to observe under a microscope. He drew the cell he observed in his notebook as shown below.



Mohan was unable to identify the cell as his teacher had removed a part from the cell.

(a) Name the part that the teacher had removed. [1]

_____

(b) Other than the part that was removed, what other observation would help Mohan identify the type of cell. Explain your answer clearly. [2]

_____

_____

_____

Score	3

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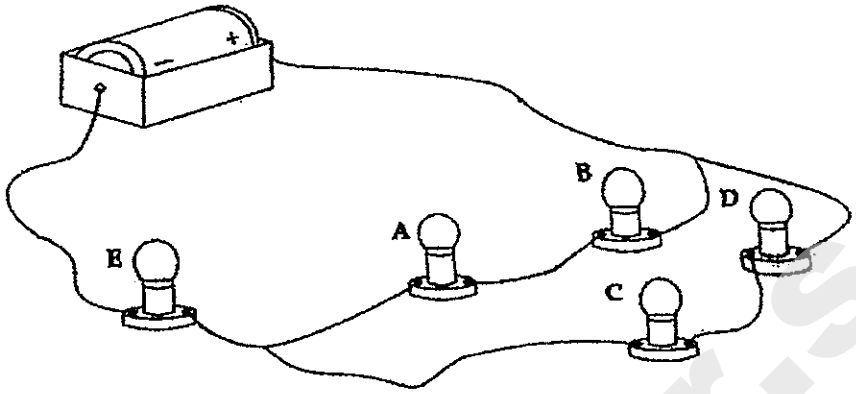
31. Jovis set up a circuit as shown in the diagram below. She was very happy that all the bulbs lighted up.



However, she did not identify a problem with this circuit. There was a possibility that if one of the 5 bulbs, A, B, C, D or E, fused, all the bulbs would not light up.

(a) Identify the bulb, if fused, would cause all the bulbs not to light up? Explain clearly why this happens. [1]

_____

_____

(b) Re-design the whole circuit for Jovis such that all the other bulbs would remain lighted even if one bulb or up to four bulbs are fused at the same time. Using symbols, draw the circuit diagram in the space below. [2]

Score	
	3

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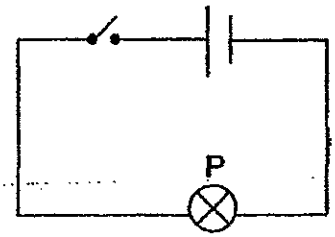
32. The diagram below shows a simple circuit.



Joe wanted to investigate the effect of adding bulbs in series 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. Each time he added a bulb, he used a datalogger to measure the brightness of bulb P (measured in lux).

NO - OF Bulbs Brightness OF bulb (Lux)

One	10000
Two	5000
Three	1500

(a) Based on the table above, what is the relationship between the number of bulbs and the brightness of bulb P? [1]

(b) When Jack added the fourth bulb, his reading was zero. What could be the explanation for this? [1]

(c) Name 2 other variables that must be kept constant in this experiment. [1]

Score	3

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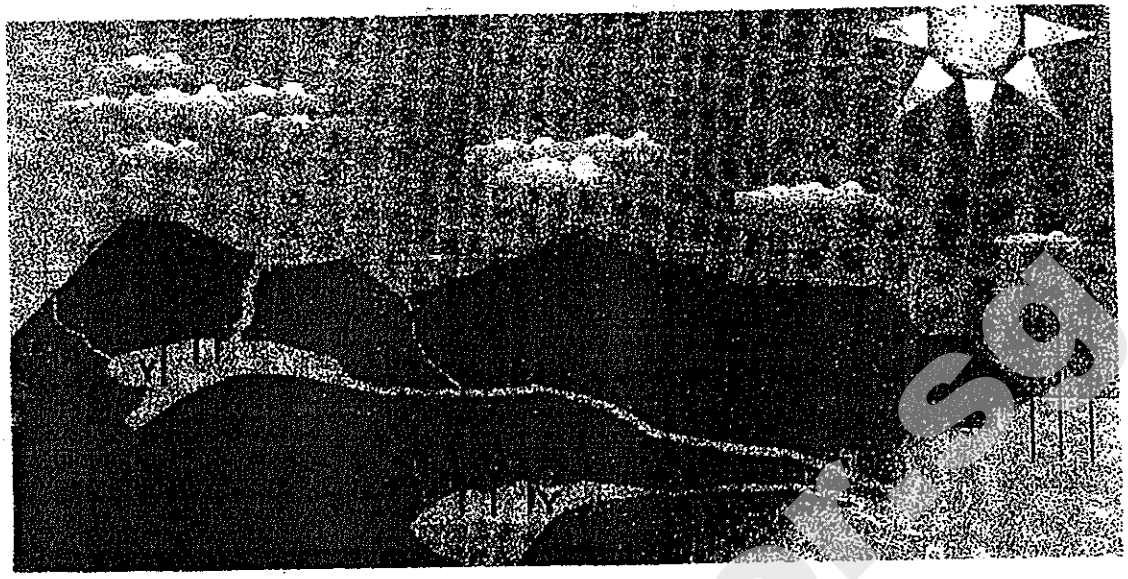
33. The diagram below shows a simple water cycle.



(a) Identify the processes X and Y. [1]

X: _____

Y: _____

(b) Most of the earth's water is found in the seas and oceans which is salty. Furthermore, much of our fresh water resources like rivers and lakes are polluted by harmful or waste matter caused by human activities.

How is it still possible to get a constant supply of fresh water through the water cycle? [1]

_____

_____

(c) From your answer in part (b), what energy is needed for the process to occur? [1]

_____

_____

Score	/ 3

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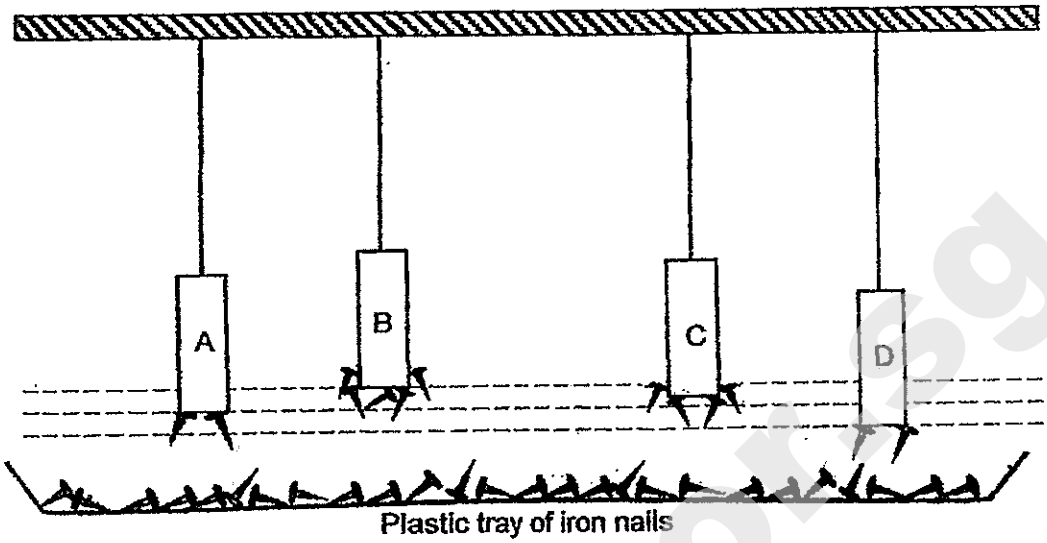
34. Bimal set an experiment to compare the magnetic strength of four magnets, A, B, C and D. The magnets were of the same size. He hung them up at various heights from a tray of nails.



Plastic tray of iron nails

From the result of his experiment as shown above, he could not conclude which magnet was the strongest.

(a) How should Bimal change his set so that he would be able to find out which magnet was the strongest? [1]

_____

_____

With the same setup above, Bimal replaced magnet B with a much stronger magnet Z of the same size.

(b) State 2 observations that could be made: [2]

i) _____

_____

ii) _____

_____

End of paper

Score	
	3

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ANSWER SHEET

EXAM PAPER 2014
SCHOOL : NAN HUA
PRIMARY : P5
SUBJECT : SCIENCE
TERM : CA2

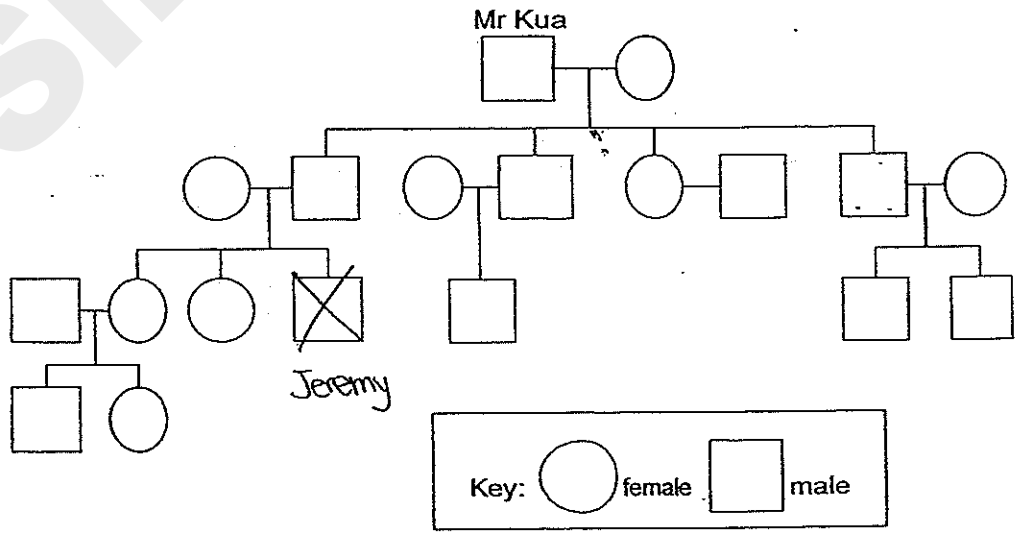
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
4	1	1	2	1	4	3	3	2	4	2	4	4	3	2	2	4

Q18	Q19	Q20
3	4	4

21)a)i)Anther, Filament ii)Stigma, Ovary
b)Part X (The petals) attract animals/insects to pollinate the flower/attract pollinators.

22)a)A,C,B,D,F,E
b)They provide food for the seed to germinate into a seedling.
c)D/E/F. The leaves have developed and able to make food for the seedlings.

23)a)



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23)b)4.

24)a)i)B ii)C
b)More energy is needed so he breathed faster to take in more oxygen and his heart pumped faster to supply more blood rich in oxygen for respiration.

25)P : Conductor of electricity
Q : Not possible to tell
R : Conductor of electricity
S : Insulator of electricity

26)a)A: Stomach B: Small intestine
b)Yes. The small intestine is still able to (add digestive juices to)digest the food and pass the digested food to the circulatory system through the (small) intestinal wall.

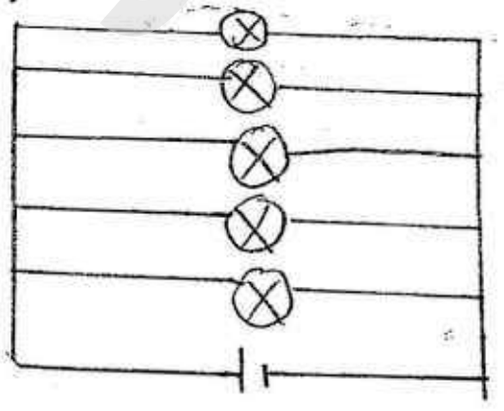
27)a)Z, X, Y
b)The guava seeds are eaten with the flesh and passed out when the animal had travelled far away. The coconut is dispersed by water so they are found along the riverside.

28)a)The spikey outer cover/spikes help the pollen grain to hook stick onto the animal's/insect's body.
b)The large number of sperms and pollen grains increase the chance that an egg is fertilised.

29)a)The part (of the human of plant)that the transport tubes do not reach will not receive food/water. These parts/cells at these parts will die.
b)The human has only on network/type/set of tubes but the plant has two net works of tubes.

30)a)Cell wall.
b)The cell has chloroplast to make food so it is a plant cell.

31)a)E. When Bulb E fused, electricity cannot flow through the circuit.
b)



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32)a)As the number of bulbs increases, the brightness of bulb P decreases.
b)The battery was flat.
c)Type of bulb / Type of battery

33)a)X: Condensation.
Y: Evaporation.
b)Only water will evaporate to form water vapour so the rain that away fresh clean water.
c)Heat energy.

34)a)Bimal should place the magnet at the same height.
b)i)It will attract more than 5 iron nails.
ii)It will attract the magnet A.

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Rosyth School
Continual Assessment 2 for 2014
STANDARD SCIENCE
Primary 5

Total Marks: ____ / 50

Name: _____

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

Date: 21 August 2014 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 20 pages.

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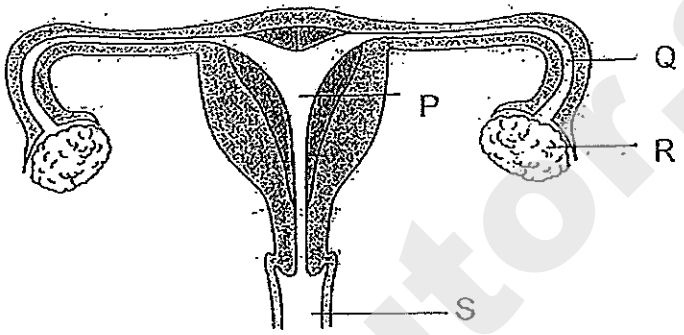
Part I (30 Marks)

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. The diagram shows the female reproductive system.



In which part is the egg formed and the foetus developed?

	Formation of Egg	Development of Foetus
(1)	R	P
(2)	Q	R
(3)	S	R
(4)	S	P

2. Which of the following statements are true?

A: Sperms are produced by the males.
B: Eggs of all animals have hard shells.
C: Reproduction is a way to prevent extinction of a species.
D: When all living things reproduce, a sperm and an egg is needed.

(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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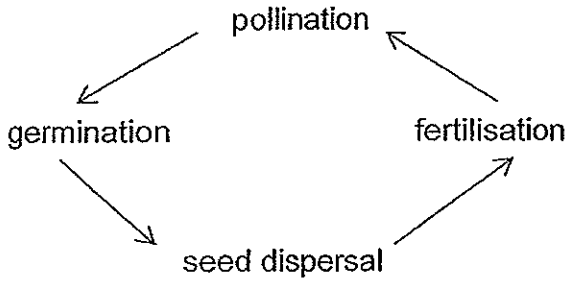
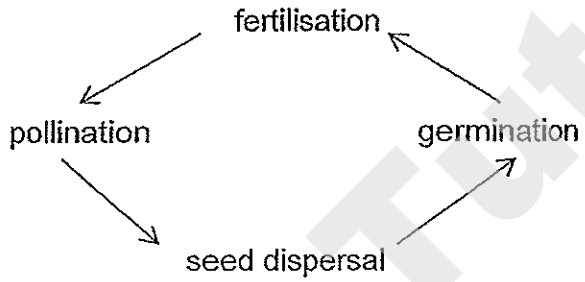
3. Which one of the following shows the correct sequence of reproduction in flowering plants?

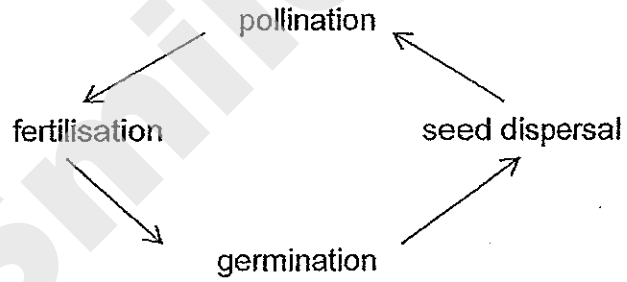
(1)



(2)



(3)



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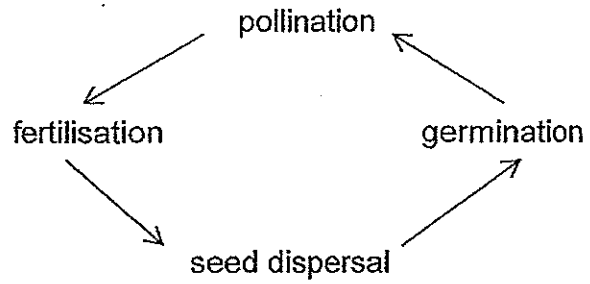

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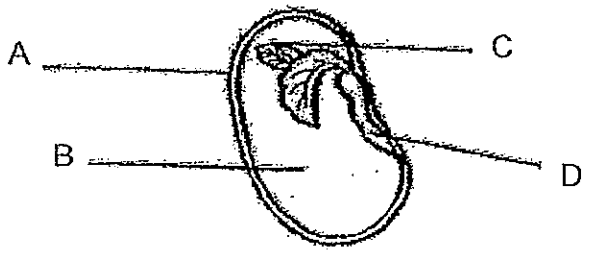
4. The parts of a seed are shown in the diagram below.



Which part of the seed provides food for the seedling?

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

5. Timothy carried out an experiment to find out if the colour of a flower would affect the number of insects it attracted. The table below shows the characteristics of four types of flower K, L, M and N.

Flower	Petal		Smell
	Size	Colour	
K	Large	Brightly-coloured	Scented
L	Small	White	Scented
M	Large	White	Scented
N	Small	Brightly-coloured	Unscented

Which two flowers should he choose in order to conduct a fair experiment?

(1) K and M
(2) L and N
(3) K and L
(4) M and N

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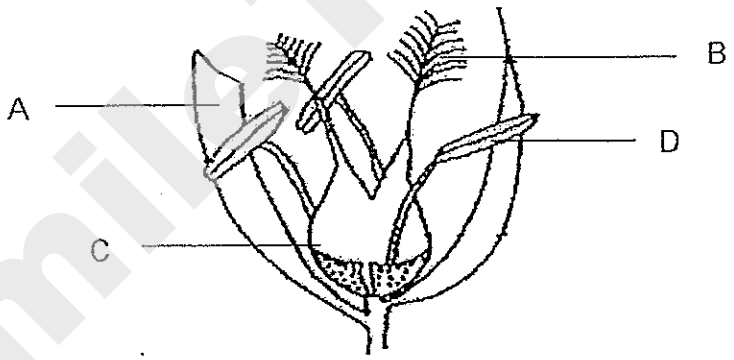
6. Susan conducted an experiment using 2 seedlings of the same type. She ensured that the variables for her experiment were as stated in the table below.

Types of Variable	Variable
Changed Variable	Amount of fertilizers
Measurable Variable	Height of the seedling
Unchanged Variables	Amount of water
	Intensity of light

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

(1) To find out if the intensity of light affects the growth of the seedlings.
(2) To find out if the height of the plant affects the growth of the seedlings.
(3) To find out if the amount of water given affects the growth of the seedlings.
(4) To find out if the amount of the fertilizer given affects the growth of the seedlings.

7. The following diagram shows parts of a flower.



Which of the following statements correctly describes the function of each part?

Part	Function
A	Protects the egg cell
B	Receives the pollen grain
C	Protects the anther
D	Protects the pollen grain

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

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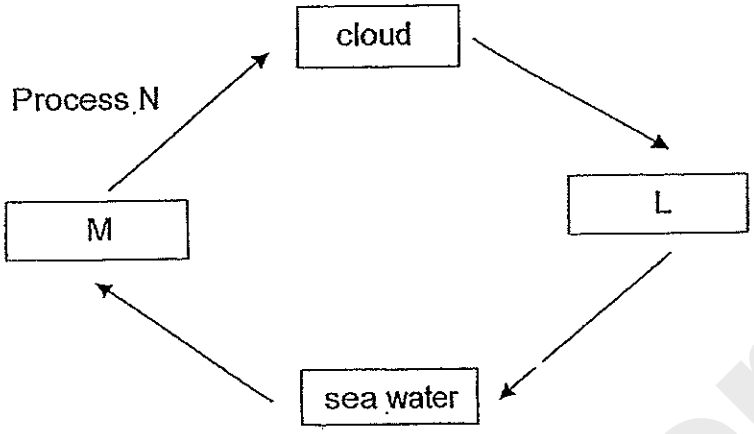
8. The diagram shows the water cycle.



Which one of the following is correct?

	L	M	Process N
(1)	water vapour	rain	evaporation
(2)	rain	water vapour	evaporation
(3)	water vapour	rain	condensation
(4)	rain	water vapour	condensation

9. Which of the following underlined substances gain heat energy in the given situations?

A: Ice melting in a glass of orange juice
B: Water evaporating from the ocean
C: Water droplets forming on a leaf surface in the morning
D: Ice pack placed on the forehead of a person with high fever

(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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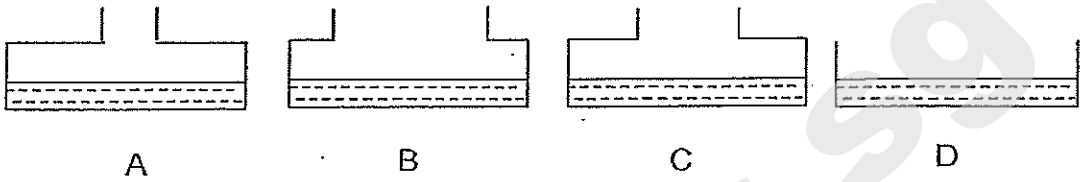
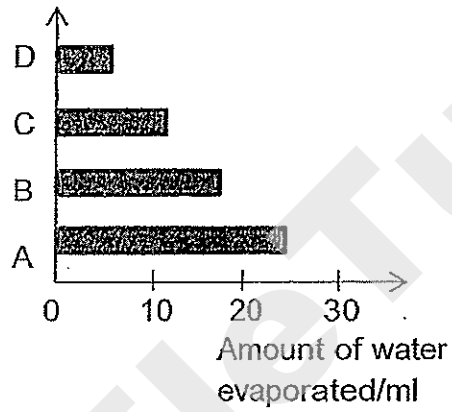
10. 25ml of water was poured into four different containers and left on the table at room temperature.

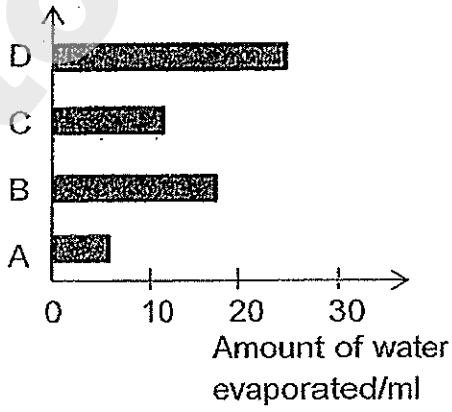


Which one of the following graphs most accurately shows the amount of water evaporated from each container?

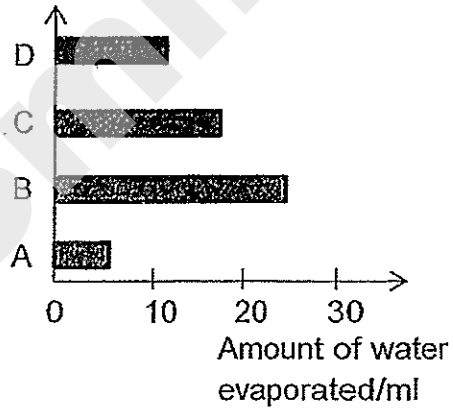
(1)



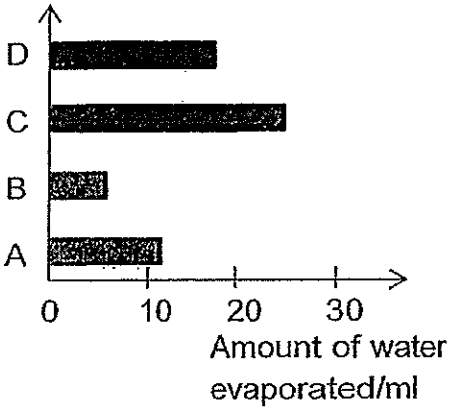
(2)



(3)



(4)



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11. Which of the following are causes of water pollution?

A: Oil spills in ocean
B: Burning of trees to clear land
C: Spilling of chemicals from factories into drains
D: Use of pesticides to kill pests in a nearby plantation

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

12. Jared wanted to study the factors that affect the rate of evaporation. He used two of the set-ups as shown in the table below to conduct some investigations.

Set-Up	Material of container	Exposed surface area /cm^2	Original amount of water /ml	Temperature of water at the start / °C
P	Plastic	200	500	50
Q	Glass	200	250	50
R	Plastic	400	500	50
S	Glass	200	250	70

Which are the possible aims of his investigation?

A: To find out if the material of container affects the rate of evaporation
B: To find out if the exposed surface area affects the rate of evaporation
C: To find out if the temperature of the water affects the rate of evaporation

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

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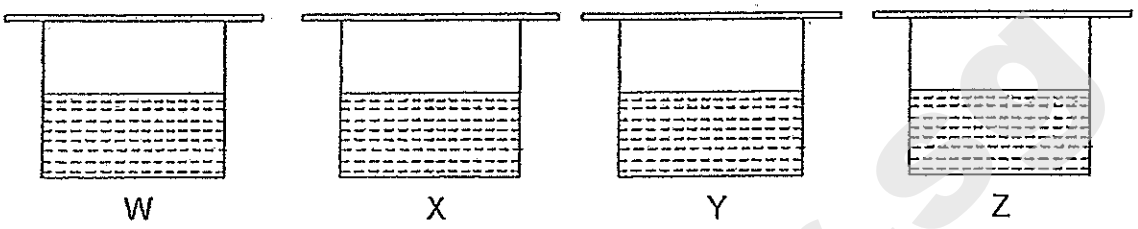
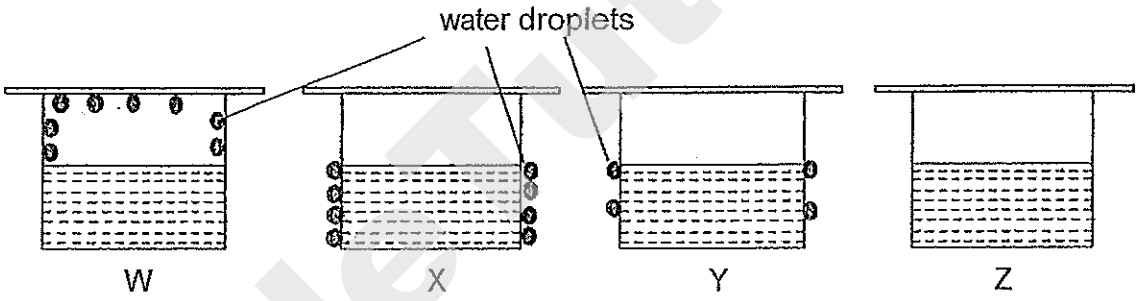
13. The diagram below shows four identical beakers W, X, Y and Z covered with a metal lid each filled with water at different temperatures. They were then left in the kitchen.



After 20 minutes, the following observations were seen on the surfaces outside the beakers and on their lids.



Based on the observations above, which of the following statements are true?

A: Beaker X and Y contain warm water.
B: Water in beaker Z is at room temperature.
C: Water vapour from the surrounding air loses heat to form water droplets inside beaker W.
D: Water vapour from the surrounding air loses heat to form water droplets outside beaker X and Y.

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

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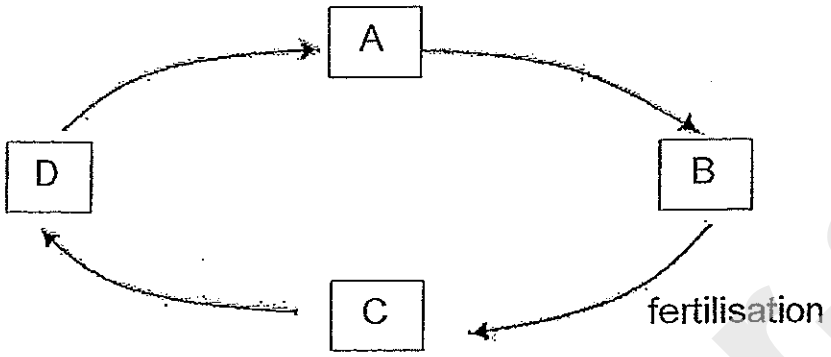
14. The diagram below shows the life cycle of a butterfly.



Which one of the following correctly shows the different stages of its life cycle?

	A	B	C	D
(1)	Larva	Egg	Pupa	Adult
(2)	Larva	Adult	Egg	Pupa
(3)	Pupa	Egg	Adult	Larva
(4)	Pupa	Adult	Egg	Larva

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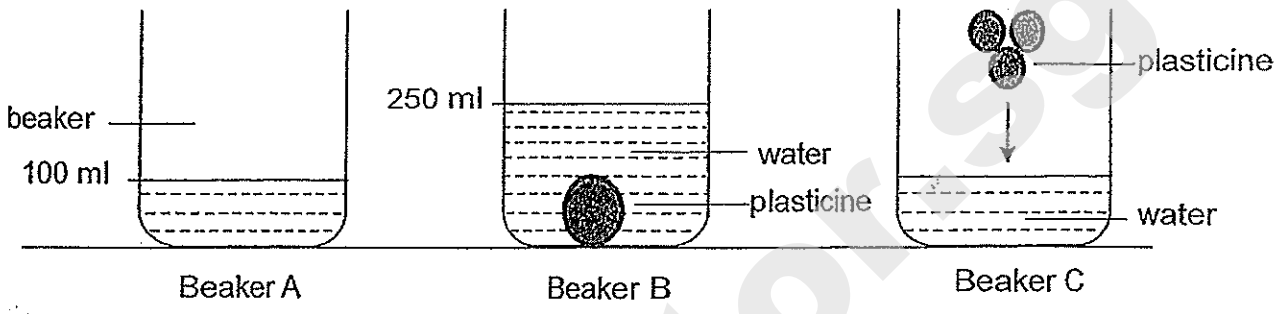
15. A ball of plasticine was removed from a beaker of water and remoulded to form 3 similar balls as shown below. The balls were then carefully lowered into the same beaker of water. (Assume that there is no loss of water during the transfer)



What is the volume in beaker C when the 3 similar balls are lowered?

(1) 200 ml
(2) 230 ml
(3) 250 ml
(4) 300 ml

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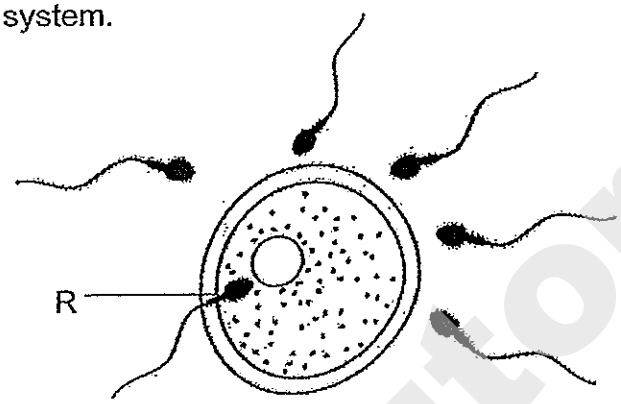
Part II (20 marks)

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

16. The diagram below shows an egg surrounded by sperms in the human reproductive system.



(a) Name the process that took place when sperm R entered the egg. (1m)

_____

_____

(b) Why must there be so many sperms released inside the female body? (1m)

_____

_____

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17. Diagrams 1 and 2 below show the reproductive systems of a plant and a human respectively.

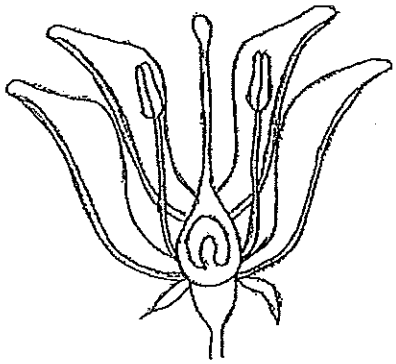


Diagram 1

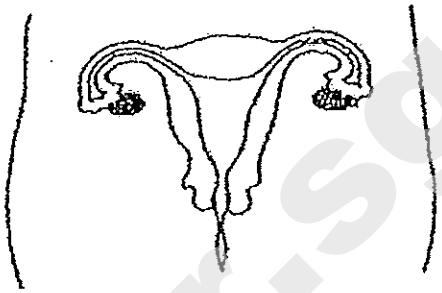


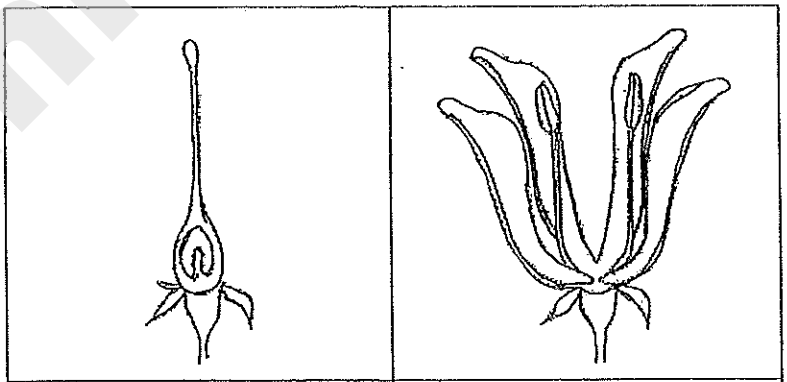
Diagram 2

(a) Based on the diagrams, state one similarity between the reproductive systems of the plant and the human. (1m)

_____

_____

(b) In an experiment, two similar flowers, A and B, from a growing plant were used. The different parts from each of these flowers were removed as shown in the diagram below.



Flower A	Flower B

Some pollen grains from the same type of flower were then dusted over the flowers.

[Question 17 is continued on page 13]

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(i) In which flower, A or B, would the formation of fruits occur? Give a reason for your answer. (1m)

_____

_____

(ii) There are two known methods of pollination namely insect pollination and wind pollination. Recently, farmers are starting to practise mechanical pollination where pollen is sprayed in large amount from an aircraft to the fields.

Suggest how can mechanical pollination help farmers? (1m)

_____

_____

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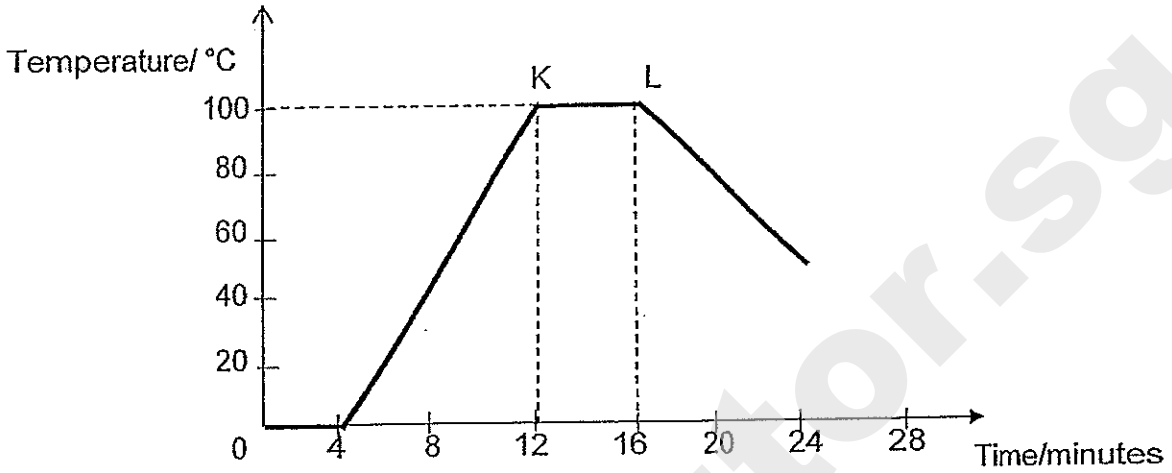
18. Jerry heated some ice cubes in a beaker using a heating plate. He recorded the changes in temperature over a period of time as shown in the graph below.



(a) State what happened between K and L (1m)

_____

(b) Suggest two ways to heat up the beaker of ice cubes faster. (1m)

_____

_____

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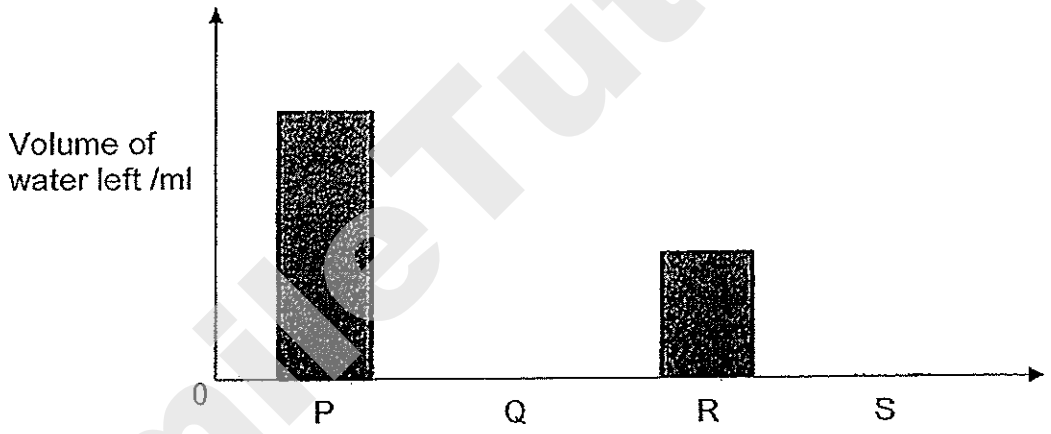
19. Four identical containers P, Q, R and S were each filled with an equal volume of water. They were left in four locations with different conditions over a period of four hours as shown in the table below.

Container	Temperature/ °C	Wind speed/km/h
P	30	25
Q	30	10
R	70	10
S	70	30

After four hours, the amount of water left in each container is measured. The result is shown in the graph below.



(a) Draw the missing bar graphs to show the volume of water left in Q and S after 4 hours in the chart above. (1m)

(b) What is the relationship between the speed of wind and the volume of water left in the containers? (1m)

_____

_____

(c) Explain the above relationship. (1m)

_____

_____

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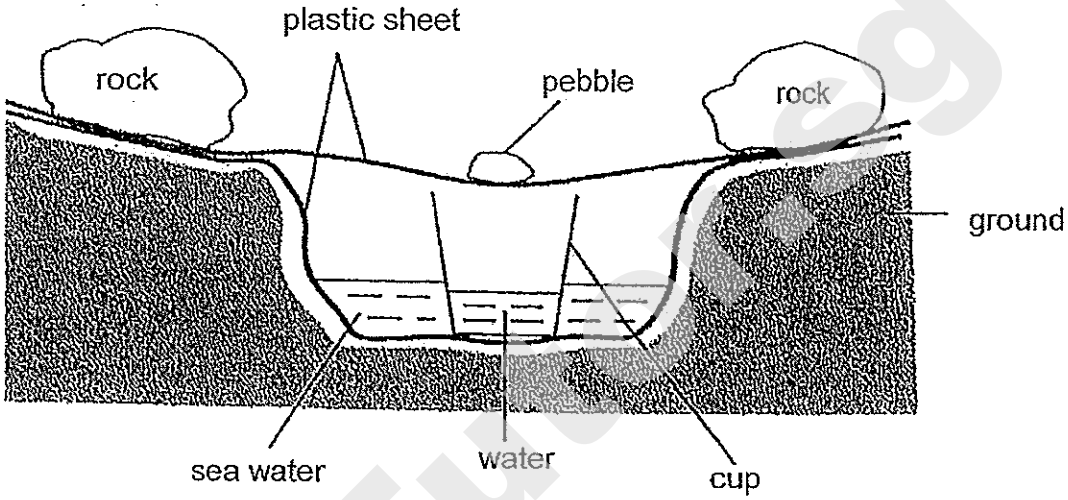
20. A group of scouts went camping at a beach and was tasked to obtain drinking water from sea water. They dug a hole in the ground and lined it with a plastic sheet. They collected some sea water and poured it into the hole. An empty cup was placed in the middle and another plastic sheet was used to cover the hole. They also placed rocks at the two sides and a pebble was placed as shown below.



(a) After a few hours, water was found in the cup. Describe how water was obtained. (2m)

(b) What would be observed if the pebble on the plastic sheet in (a) was replaced with a few ice cubes? (1m)

[Question 20 is continued on page 17]

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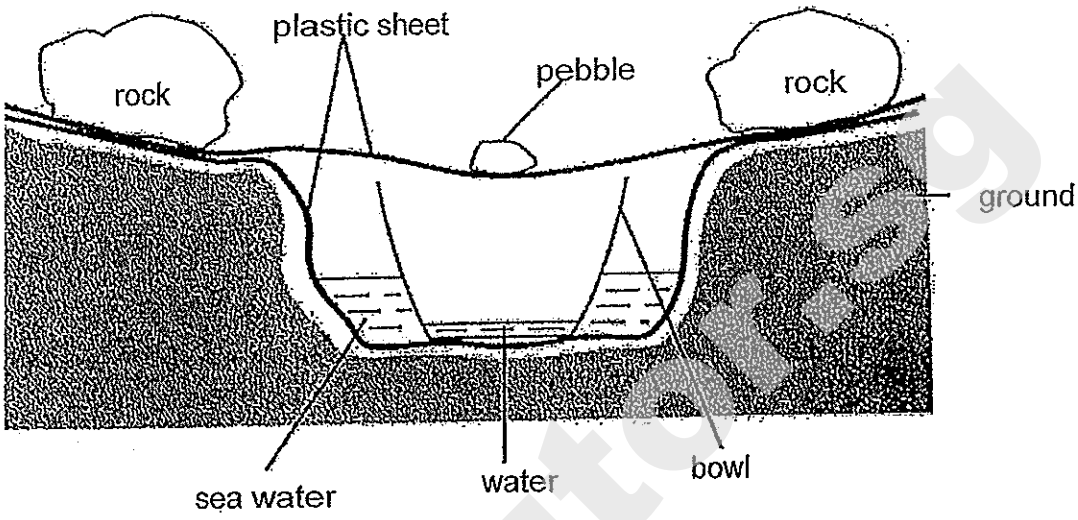
Another group of scouts did a similar task with the same amount of sea water in the hole. Instead of using a cup, they used a large bowl to collect the water.



(c) After a few hours, they found that less water was collected in the bowl. Explain why it had happened. (1m)

_____

_____

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21. The table below shows how an insect's body length changes after each moult.

Number of moults	Body Length (cm)
1	2
2	3
3	4

(a) What do you think would happen to the mass of the insect as the number of moults increases? (1m)

_____

_____

(b) Why do the young of insects need to moult? (1m)

_____

_____

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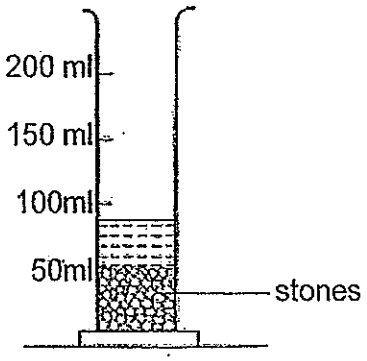
22. A measuring cylinder was packed with small stones to the 50 ml mark. 50 ml of water was then added but the water level did not reach the 100 ml mark as shown below.

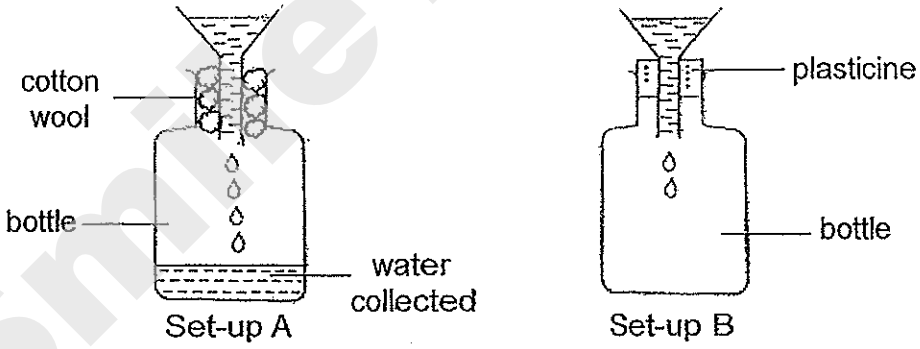


(a) Explain why the water level did not reach the 100 ml mark. (1m)

_____

_____

In another investigation, two set-ups A and B, were used as shown below.



It was observed that the water flows into the bottle easily in set-up A but only a few drops of water entered the bottle in set-up B.

(b) Explain the difference in the observations for set-ups A and B. (1m)

_____

_____

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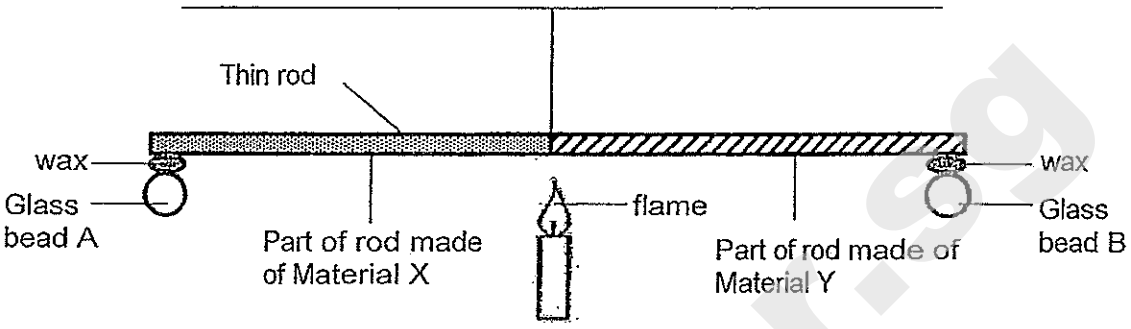
23. Tom hung a thin rod made of materials X and Y. Two identical glass beads were attached to the ends of the rod by the same amount of wax as shown in the diagram below.



After a few minutes, Tom observed that glass bead B dropped.

(a) Explain what caused glass bead B to drop. (1m)

_____

_____

(b) Which material, X or Y, should Tom use to make a container to keep food warm for a longer period of time? Give a reason for your answer. (1m)

_____

_____

End of Paper

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ANSWER SHEET

EXAM PAPER 2014
SCHOOL : ROSYTH
PRIMARY : P5
SUBJECT : SCIENCE
TERM : CA2

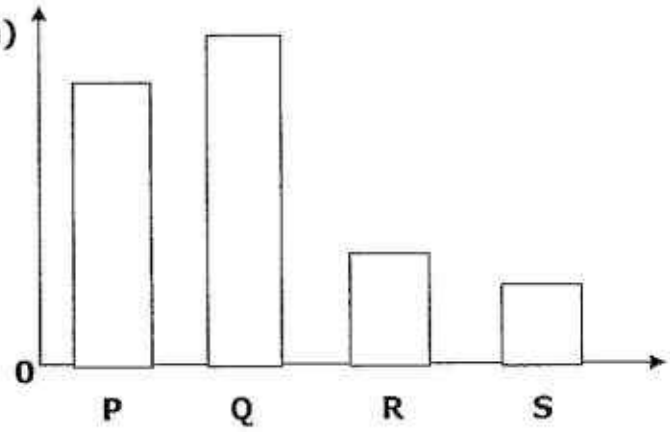
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
1	1	4	2	1	4	2	4	2	2	4	3	2	4	3

16)a)Fertilisation
b)It increases the chance of the male sperm cell fertilizing with the female egg cell.

17)a)Both have female parts.
b)i)It has ovary for fertilization to take place.
ii)It helps speed up fertilization.

18)a)The ice cubes had melted and reached boiling point.
b)1)Increase the heat source.
2)pour hot water over the ice cubes.

19)a)



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19)b)The faster the speed of the wind is the lesser amount of water left in the containers.

c)The greater the speed of wind, the faster the rate of evaporation.

20)a)The sea water evaporated onto the plastic sheet as water vapour, condenses with the cold plastic sheet turns to water droplets, and slides down to where the cup is collects more water and eventually drop into the cup as clear water.

b)A larger amount of water will be observed.

c)The seawater has a smaller exposed surface area to evaporate and less water was collected.

21)a)The mass of the insect will increase.

b)They moult to enable the body to grow.

22)a)There were small gaps in the stones and the water, took up the space in it, which is why it did not reach the 100ml mark.

b)Cotton wool allows the air to escape but the plasticine did not allow air to escape.

23)a)Heat traveled from the flame through the rod and made the wax melt.

b)X. X is a poorer conductor of heat and can keep the food warm for a longer period of time.

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Anglo-Chinese School (Primary)

MID-YEAR EXAMINATION 2014
SCIENCE
PRIMARY FIVE
BOOKLET A

Name: _____ ( ) **Class: Primary 5** ___

Date: 8 May 2014 **Duration of paper: 1 h 45 min**

_____
Parent's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 23 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 Which of the following need(s) to be present for mould to grow?

A Light
B Food
C Water
D Oxygen

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

2 Which one of the following is a unique characteristic of **fish**?

(1) They grow.
(2) They use gills to breathe.
(3) They have three body parts.
(4) They have hair on their bodies.

3 What is the function of the stem of a plant?

(1) The stem holds the plant upright.
(2) The stem holds the plant to the ground.
(3) The stem attracts insects to collect nectar from it.
(4) The stem absorbs water and mineral salts from the ground.

(Go on to the next page)

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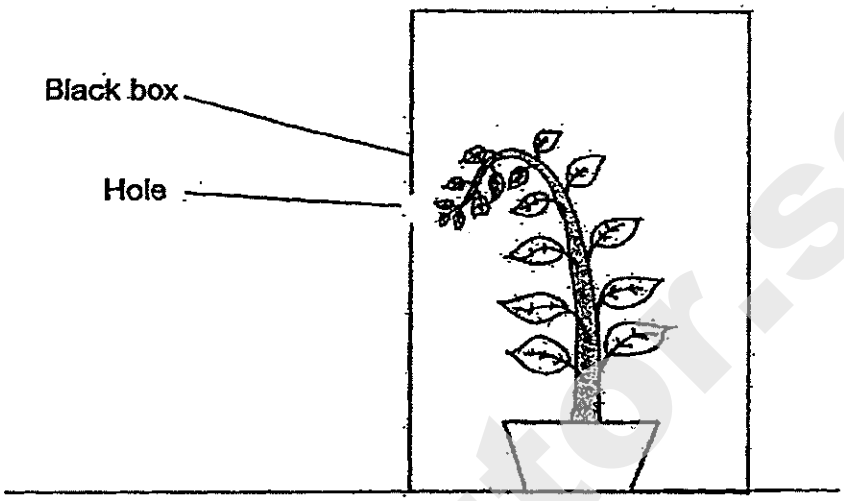
4 James put a plant inside a black box with a hole. He placed the set-up in a well-lit place and watered the plant with an equal amount of water daily as shown below. He observed that as the plant grew, the stem bent towards the hole.



Which one of the following is a possible reason for such an observation?.

(1) The plant grew downwards due to gravity.

(2) The plant was withering from a loss of water.

(3) The leaves made the top of the plant heavier.

(4) The plant bent towards the area with more light..

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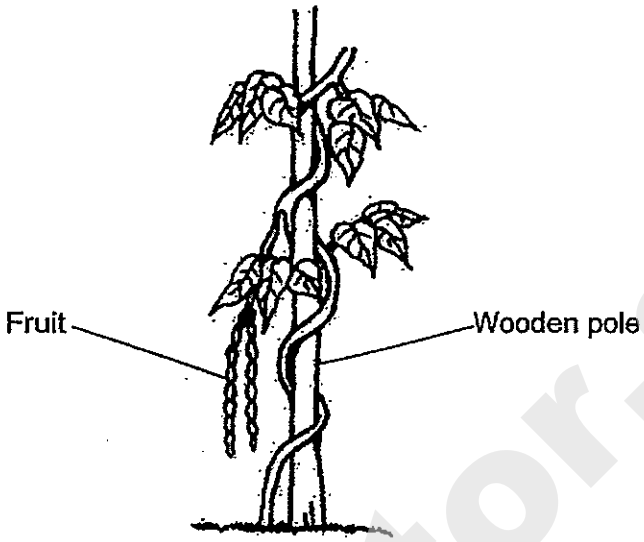
5 Desmond went to the garden and saw the plant shown below.



He wrote down a few inferences based on his observations. Which inference(s) is/are correct?

A This plant has no roots.
B This plant has a weak stem.
C This plant is a flowering plant.

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

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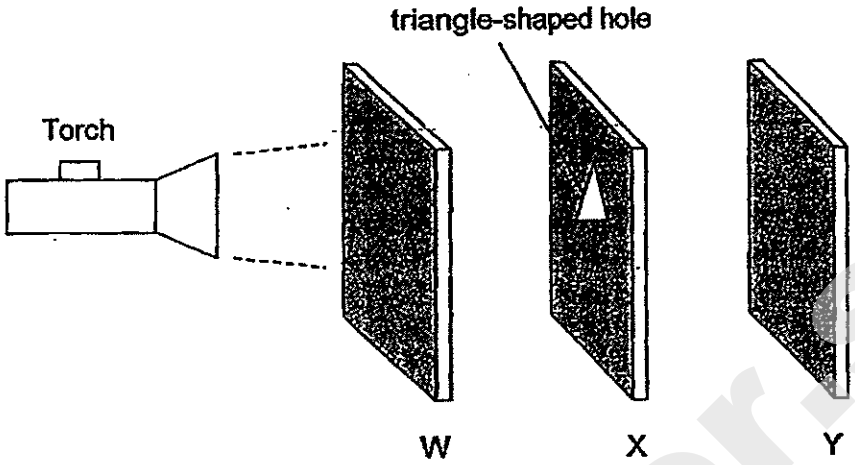
6 Shawn carried out an experiment in a dark room as shown in the diagram below.



Sheets W, X and Y were arranged in a straight line. When Shawn switched on the torch, a bright triangular patch of light was shown on Sheet Y only.

Which one of the following correctly describes the properties of the materials that sheets W, X, and Y are made of?

	Allows light to pass through	Does not allow light to pass through
(1)	W and X	Y
(2)	W and Y	X
(3)	W	X and Y
(4)	X	W and Y

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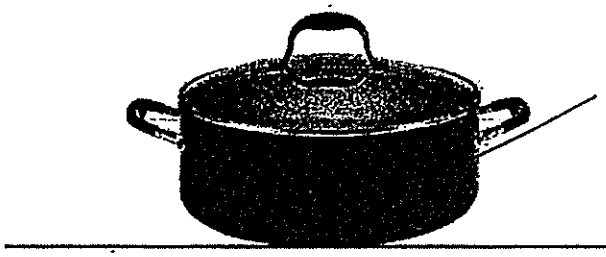
7 The picture below shows a metal cooking pot.



Which material, metal or plastic, is better for making part X? What is the reason?

(1) Metal is better because it is easier to make a pot.

(2) Metal is better because it is a good conductor of heat.

(3) Plastic is better because it is cheaper than metal.

(4) Plastic is better because it is a poor conductor of heat.

8 Muthu wrote some observations about the life cycles of a cockroach and a grasshopper as shown below.

A Their youngs have wings.

B Their life cycles consist of three stages.

C They moult as they grow.

Based on the observations above, which statement(s) is/are true?

(1) C only

(2) A and B only

(3) A and C only

(4) B and C only

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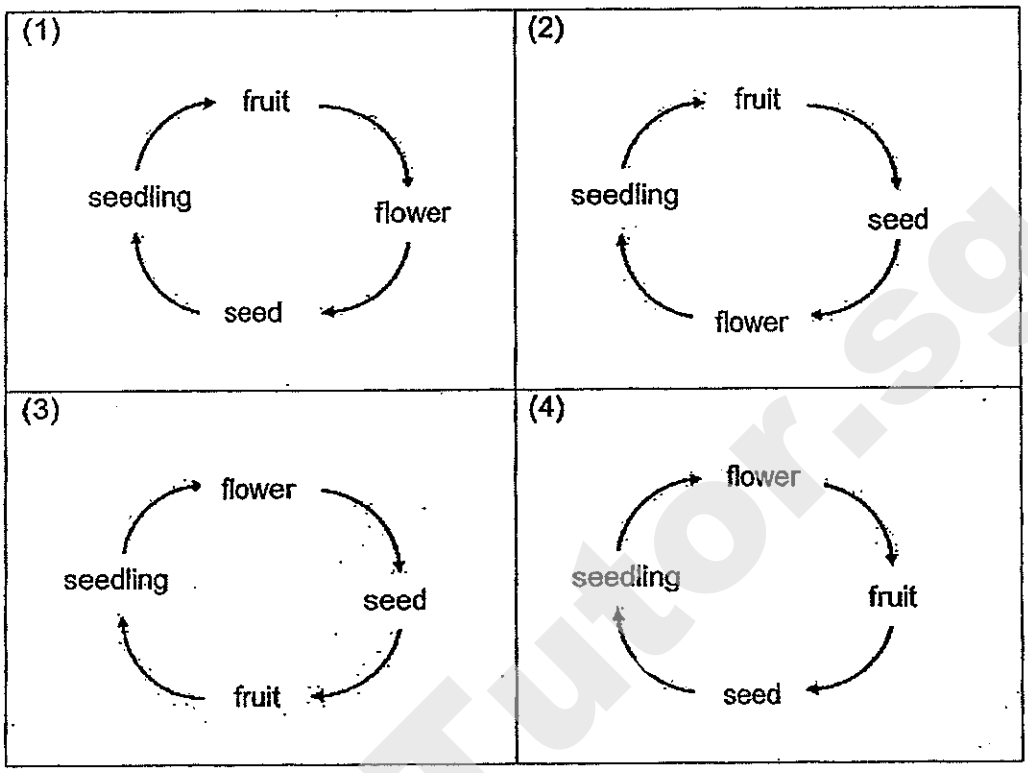
9 Which one of the following best represents the life cycle of a plant?



10 Sean conducted an experiment by following these procedures:

Step 1: Pour 500 ml of water into a measuring cylinder.
Step 2: Put a ball of clay into the measuring cylinder and measure the new water level.
Step 3: Carefully remove the clay from the measuring cylinder and flatten it.
Step 4: Put the flattened clay back into the measuring cylinder.
Step 5: Measure and record the water level again.

Which one of the following is the aim of Sean's experiment?

(1) To find out whether the shape of the clay affects the mass of the clay.
(2) To find out whether the shape of the clay affects the volume of the clay.
(3) To find out whether the volume of the clay affects the volume of the water.
(4) To find out whether the volume of the water affects the volume of the clay.

(Go on to the next page)

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11 Study the figures below carefully. Figure 1 shows a balloon filled with air, floating on water in a glass container. When the balloon was pushed downwards, some water in the container overflowed as shown in Figure 2.

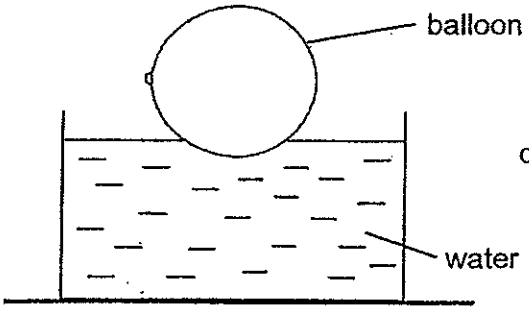

Figure 1

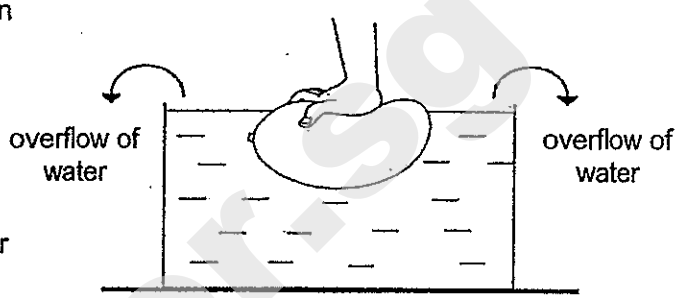

Figure 2

Which one of the following can be inferred from the overflow of water in Figure 2?

(1) Air has weight.

(2) Air occupies space.

(3) Air can be compressed.

(4) Air has no definite shape.

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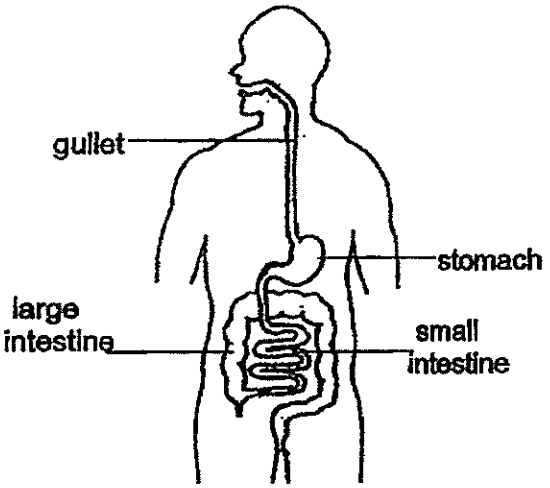
12 The digestive systems of rabbits and humans share many similarities. The diagrams below show the digestive systems of a human and a rabbit.



With reference to the human digestive system, identify parts A and B of the rabbit's digestive system.

	A	B
(1)	gullet	stomach
(2)	small intestine	gullet
(3)	gullet	large intestine
(4)	gullet	small intestine

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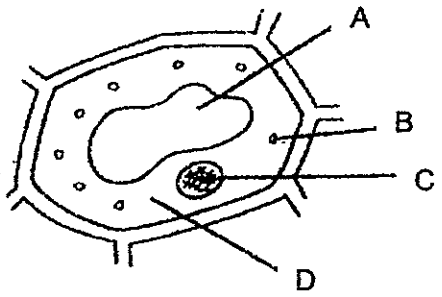
13 A scientist wants to create a seedless passion fruit.



Which one of the following parts of the plant cell of a passion fruit must the scientist insert the genetic information into so that the plant will produce seedless passion fruit?

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

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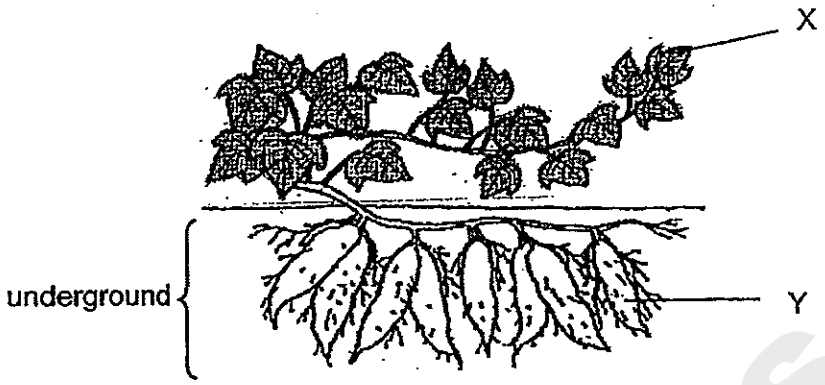
14 The diagram below shows a plant.



Cells were taken from the Parts X and Y. What are the cell parts you can find in **both** Part X and Part Y of the plant?

A Nucleus
B Cell wall
C Chloroplast
D Cell membrane

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

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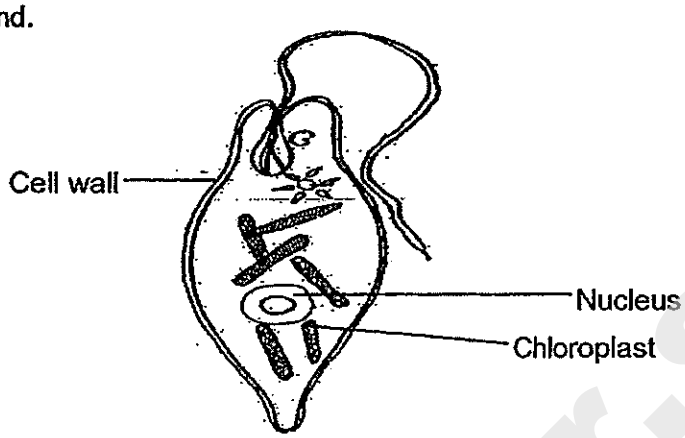
15 The diagram shows a magnified view of a single-celled organism which Kelvin had found in a pond.



Based on the diagram above, which of the statements below is/are likely to be true?

A The organism is a plant.

B The organism is an animal.

C The organism can make its own food.

(1) A only

(2) A and B only

(3) A and C only

(4) A, B and C only

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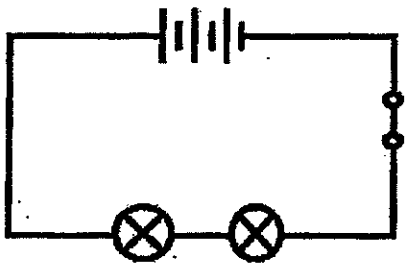
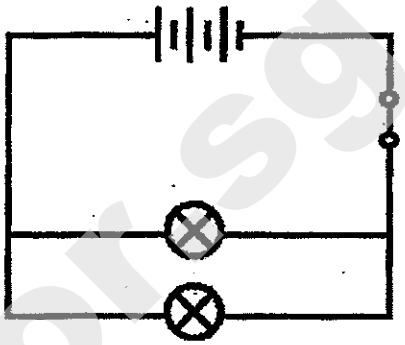
16 Study the diagrams below carefully. All the circuits have identical batteries and bulbs and they are all working properly. Which one of the following circuits has the **dimmest** bulbs?

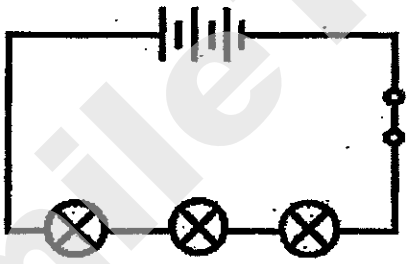
(1)



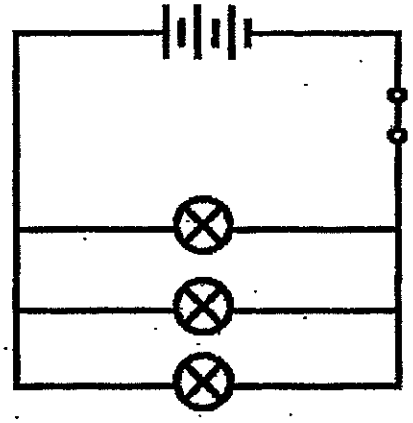
(2)



(3)



(4)



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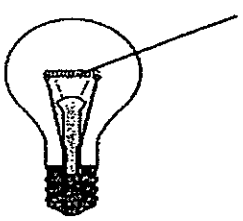
17 The picture below shows a light bulb.



Which material is most suitable for making Part X of the light bulb?

Material	Properties of Material
A	Is a good conductor of electricity and has a high melting point.
B	Is a poor conductor of electricity and has a high melting point.
C	Is a good conductor of electricity and has a low melting point.
D	Is a poor conductor of electricity and has a low melting point.

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

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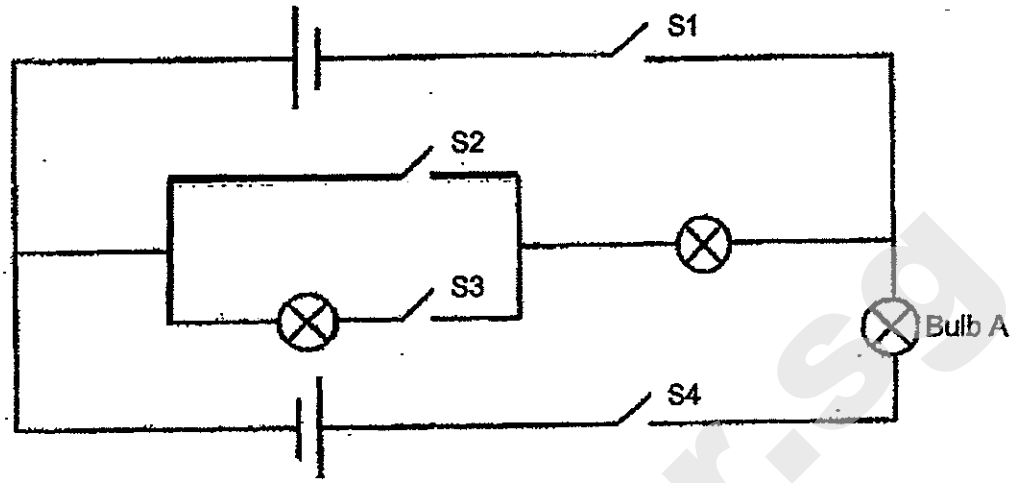
18 In the circuit below, the bulbs and batteries are all identical and working properly.



Which switches need to be closed for bulb A to be at its brightest?

(1) S1 and S2 only

(2) S1 and S4 only

(3) S2 and S4 only

(4) S3 and S4 only

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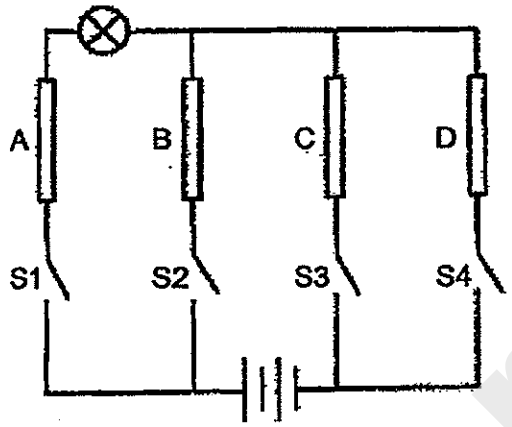
19 Christopher sets up a circuit as shown below.



The table below indicates what each object is made of.

Object	Material object is made of
A	Aluminium
B	Iron
C	Steel
D	Rubber

Which switches (S1, S2, S3, S4) must he close in order for the bulb to light up?

(1) S1 and S4 only

(2) S2 and S3 only

(3) S1 and S3 only

(4) S2 and S4 only

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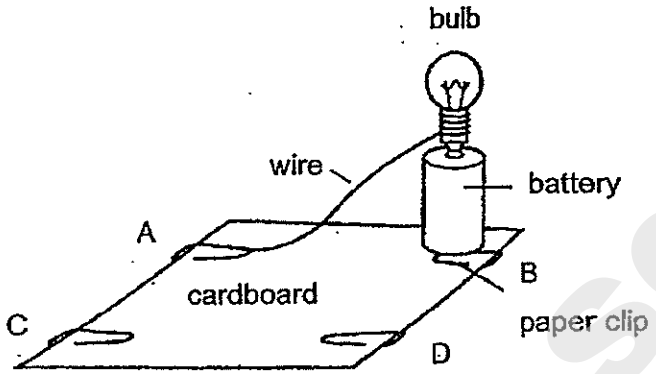
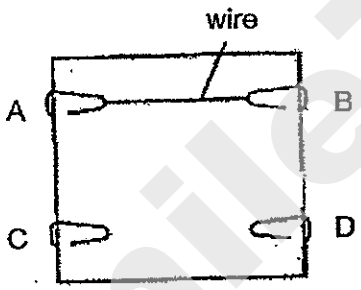
20 Study the circuit below. There are wires connecting the paper clips underneath the cardboard.

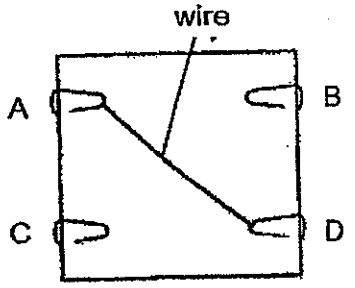


The bulb in the above circuit did not light up. Which one of the following connections shown in the diagrams below represents how the wires were connected underneath the cardboard?

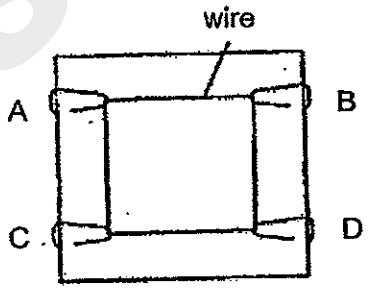
(1)



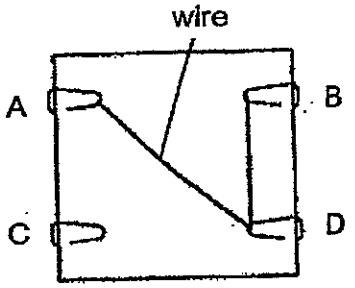
(2)



(3)



(4)



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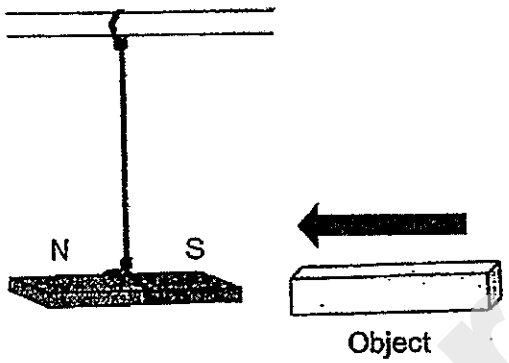
21 Michael held four objects, R, S, T and U one at a time near a freely-suspended bar magnet. He held the objects near both poles of the magnet one at a time and recorded his observations in the table below.



Object	When held near the North pole of the magnet	When held near the South pole of the magnet
R	Attracted	Attracted
S	Attracted	Attracted
T	No response/ no movement	No response/ no movement
U	Attracted	Repelled

Michael made the following statements.

A Object U is a magnet while objects R, S and T are not.

B Object R, S and U are magnets while object T is not.

C Objects R and S are made of magnetic materials while objects T and U are not.

D Objects R, S and U are made of magnetic materials while object T is not.

Which of the following statements are true?

(1) A and C only

(2) A and D only

(3) B and C only

(4) B and D only

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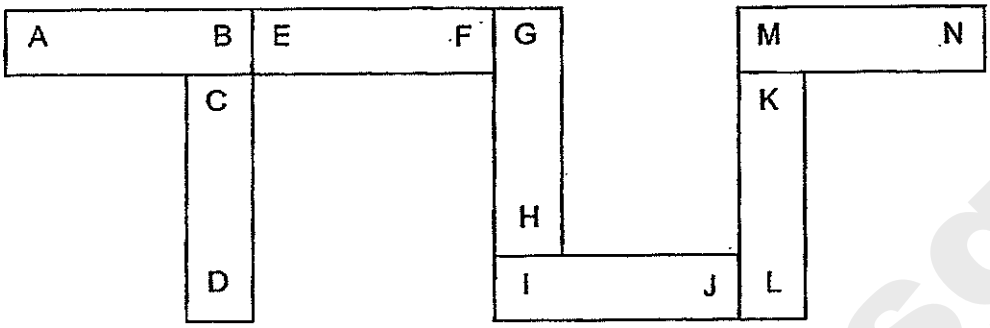
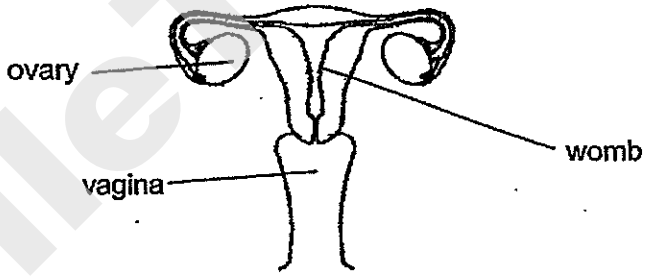
22 Seven bar magnets with their ends marked A to N can be arranged as shown below.



Which pair of ends will likely exert a magnetic force of attraction towards each other?

(1) A and G
(2) C and J
(3) D and N
(4) F and K

23 The picture below shows the human female reproductive system.



The male will deposit his sperm through **Part X** and the foetus will develop into a baby in **Part Y** after the egg has been successfully fertilized.

Identify the organs that represent Part X and Y in the picture above.

	Part X	Part Y
(1)	Womb	Vagina
(2)	Womb	Ovary
(3)	Vagina	Womb
(4)	Vagina	Ovary

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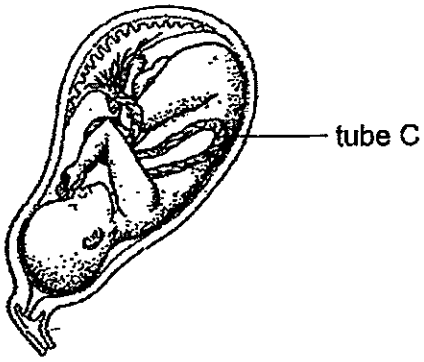
24 The picture below shows a developing baby in the mother's womb.



What is transported from the mother to the developing baby through tube C?

A Blood
B Oxygen
C Nutrients
D Carbon dioxide

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

25 In the human reproductive system, how many sperm(s) is/are needed to fertilise an egg.

(1) One sperm only
(2) Two sperms only
(3) Four sperms only
(4) As many sperms as possible

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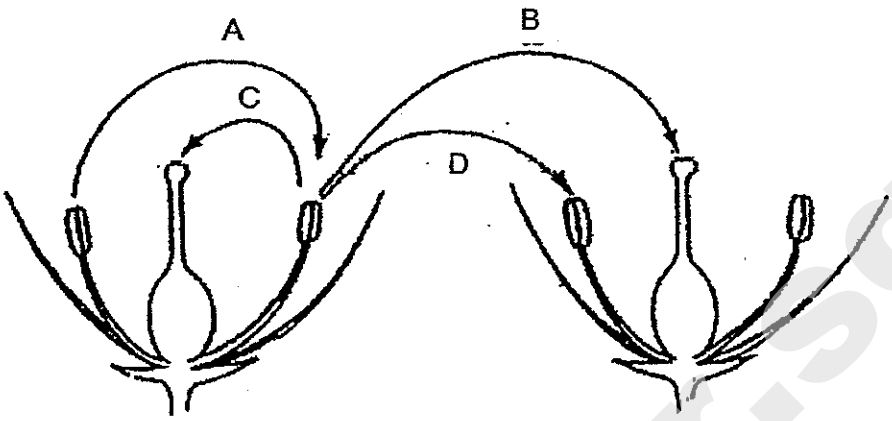
26 The diagram below shows two flowers of the same plant.



The arrows indicate the movement of pollen grains. Which two arrows show the pollination of the flower?

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

27 James wanted to find out how much water is needed for the germination of coffee seeds. The table below shows the different set-ups.

Variables	Set-up A	Set-up B	Set-up C	Set-up D
Amount of soil	80 cm^3	80 cm^3	80 cm^3	80 cm^3
Type of soil	Garden soil	Sandy soil	Garden soil	Garden soil
Amount of water given daily	100 cm^3	100 cm^3	100 cm^3	80 cm^3
Surrounding temperature	25°C	15°C	15°C	15°C

In order for James to carry out a fair test, which two set-ups should he use in his experiment?

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

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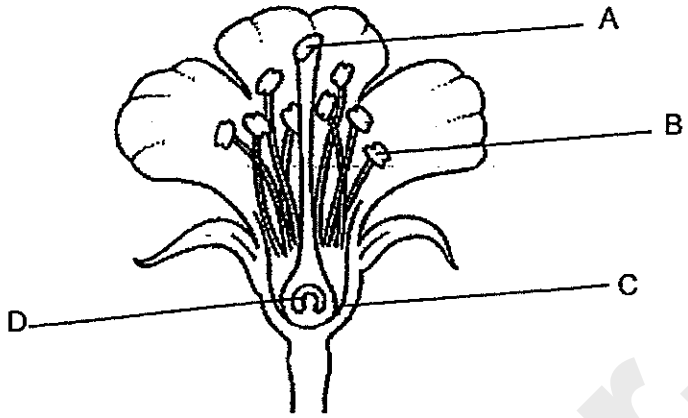
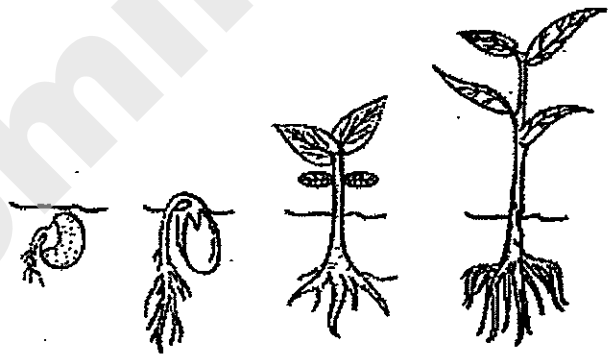
28 The diagram below shows the cross-section of a flower.



Which parts of the flowers will develop into the seed and the fruit respectively?

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

29 Study the diagram below.



During which stages would the young plant be able to make its own food?

(1) Stages A and B only

(2) Stages C and D only

(3) Stages B, C and D only

(4) Stages A, B, C and D

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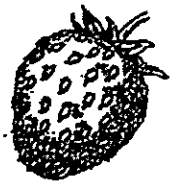
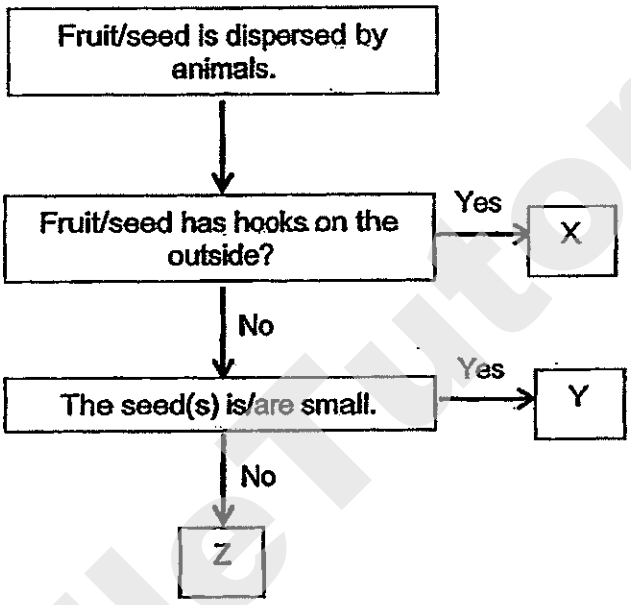
30 Study the three fruits and the flowchart shown below carefully.

avocado



strawberry

cocklebur



Which letters (X, Y and Z) represent the avocado, strawberry and cocklebur?

	X	Y	Z
(1)	Strawberry	Avocado	Cocklebur
(2)	Cocklebur	Strawberry	Avocado
(3)	Avocado	Cocklebur	Strawberry
(4)	Strawberry	Avocado	Cocklebur

End of Booklet A

Please go on to Booklet B.

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Anglo-Chinese School (Primary)

MID-YEAR EXAMINATION 2014
SCIENCE
PRIMARY FIVE
BOOKLET B

Name: _____ ( ) **Class: Primary 5** ___

Date: 8 May 2014 **Duration of paper: 1 h 45 min**

_____
Parent's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 15 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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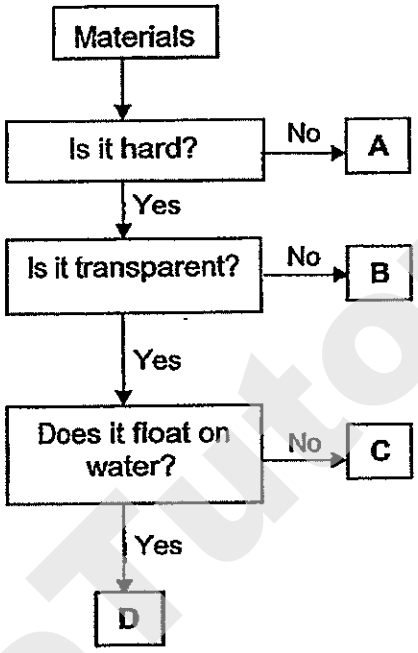
For questions **31** to **44**, write your answers in the spaces provided.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

(40 marks)

---

31 Study the flowchart below carefully.



(a) Based on the flowchart above, describe material B. [1]

_____

_____

(b) Which letter in the flowchart represents a glass block? [1]

_____

_____

(Go on to the next page)

Score 2

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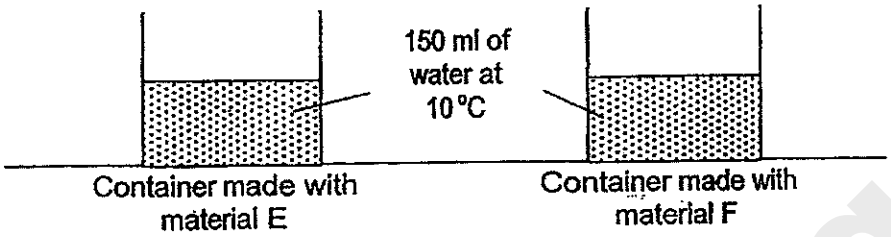
32 Arnold set up an experiment as shown below in the Science Room.

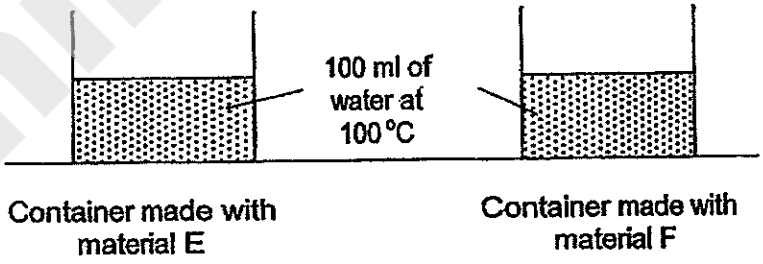


The containers were of the same shape and capacity. They were filled with 150 ml of water at 10°C at the same time. Both containers were left on the table and allowed to naturally warm up to room temperature. The temperature of the water was taken every ten minutes and the readings were recorded in the table below.

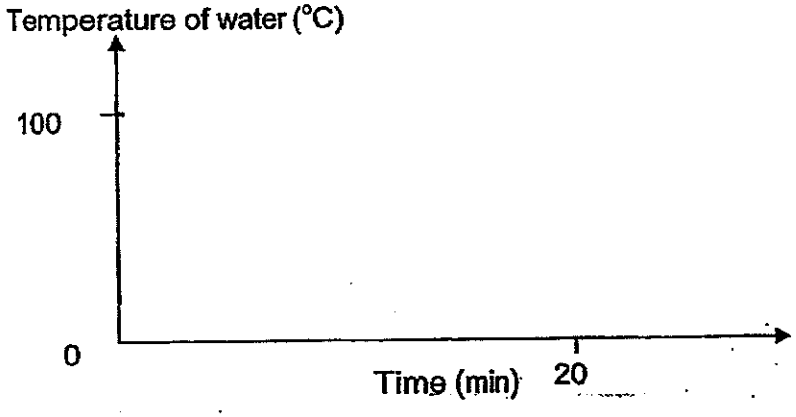
	Temperature of the water after...			
	10 min	20 min	30 min	40 min
Material E	13°C	19°C	26°C	29°C
Material F	11°C	13°C	16°C	20°C

(a) Which material is more suitable for making a frying pan? Explain your answer. [2]

Another experiment was set up at the same location using the same containers. This time, they were filled with 100 ml of water at 100°C at the same time.



(b) In the space provided, draw two straight lines graphs to show the changes in temperature for both containers after 20 minutes. Use a pencil and ruler to draw the two lines. [2]



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Score 4

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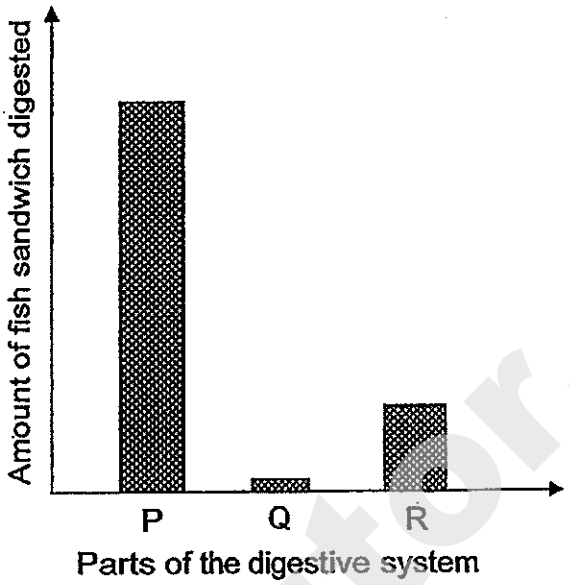
33 Shin Ann ate a fish sandwich for lunch. The graph below shows the amount of fish sandwich that was digested at the different parts of his digestive system after his lunch.



Use the bar graphs above to answer the following questions.

(a) Using the information shown in the graph above, identify the letters that represent the mouth and small intestines of the digestive system. [2]

Parts	Letters
Mouth	
Small Intestines	

(b) What is the function of the large intestines in the digestive system? [1]

_____

_____

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Score: /3

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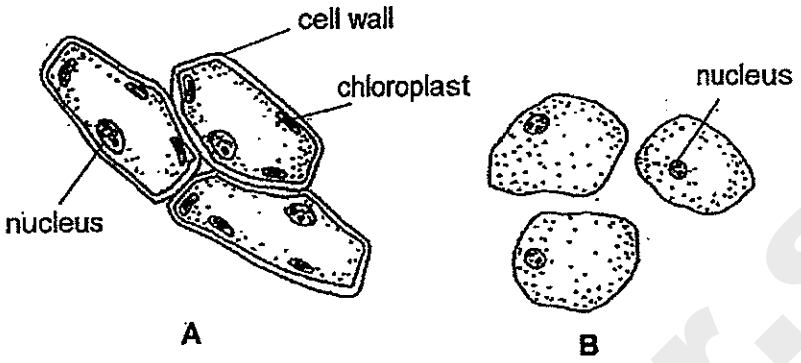
34 Observe Cells A and B below carefully.



(a) State one difference between Cells A and B. Do not mention differences in size and shape. [1]

_____

_____

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

_____

_____

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Score

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35 Daniel conducted an experiment to study how the arrangement of bulbs in a circuit affected their brightness. He had the following apparatus to use for his experiment:

- Six identical bulbs
- Four identical batteries
- Wires

After setting up his experiment, he discovered that when one bulb fused, the remaining bulbs in set-up A did not light up, while the remaining bulbs in set-up B still remain lit.

(a) In the space provided below, draw a circuit diagram for each of the set-ups that he needed to conduct his experiment. He had to conduct both experiments at the same time. [3]

Set-up A	Set-up B

(b) Daniel had to record the brightness of the bulbs in each circuit for comparison.

State the equipment he would need to use to obtain this reading. [1]

_____

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Score / 4

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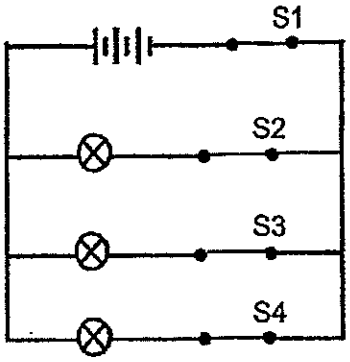
36 A circuit is connected as shown below.



(a) Which switch is able to switch off all the three bulbs at the same time in the circuit? [1]

_____

(b) Besides being able to control the bulbs with the switches, what are the other **two** advantages of arranging the bulbs in parallel instead of in series? [2]

(i) _____

(ii) _____

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Score / 3

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37 Bernard wants to reduce electricity bill for his family.

(a) What can Bernard do differently to help him cut down electricity consumption? [1]

_____

_____

(b) Bernard's sister suggested putting many plugs into one socket to cut down electricity consumption. Is this a good suggestion? Why? [1]

_____

_____

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(Go on to the next page)

Score / 2

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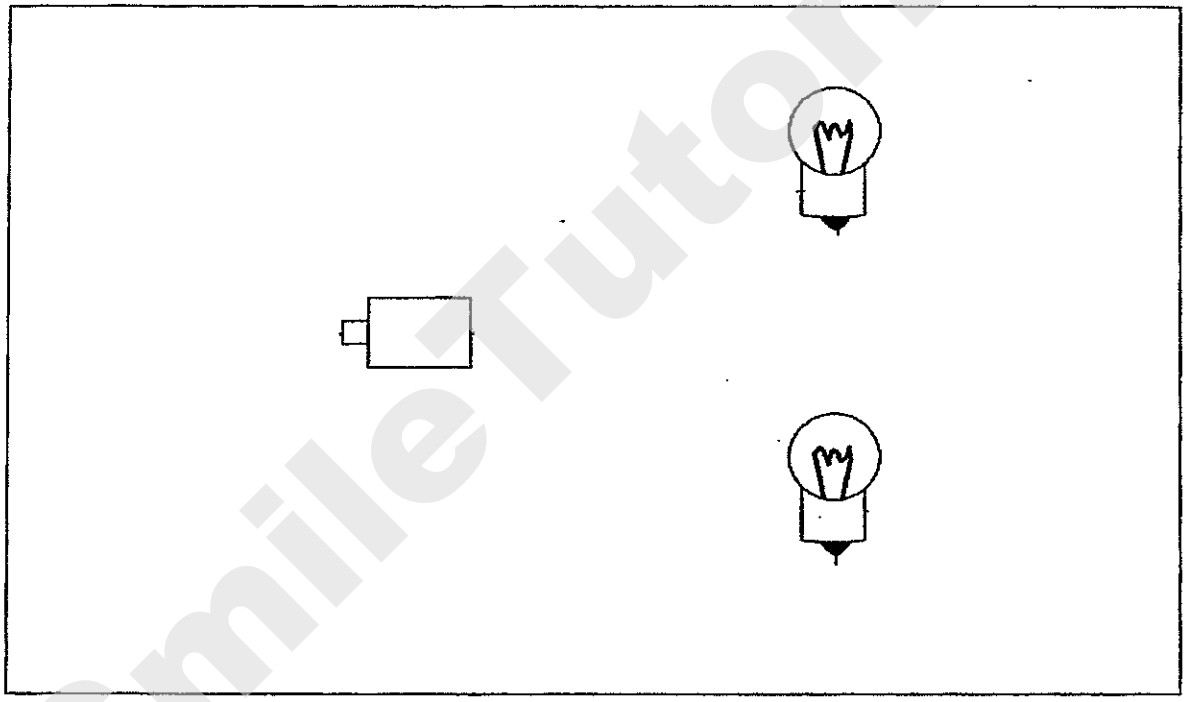
38 Wires used in households are made of copper wrapped with rubber.

(a) State an advantage of using rubber to wrap the copper wires. [1]

_____

_____

(b) The diagram below shows two bulbs and one battery. Draw wires to complete the electrical circuit such that the two bulbs light up. [2]



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Score 3

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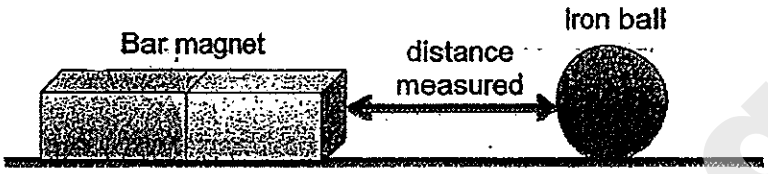
39 Ameen carried out an experiment to find out the magnetic strength of four different bar magnets. He placed bar magnet P on the table and measured the furthest distance from which the bar magnet could attract the iron ball.



He then repeated the same procedure using bar magnets Q, R and S. All the bar magnets are similar in sizes. The results were recorded in the table below.

Bar magnet	Furthest distance measured (cm)
P	2.3
Q	5.2
R	8.6
S	1.9

(a) Arrange the magnets in order of their magnetic strength from the weakest to the strongest. [1]

☐ ☐ , ☐ , ☐

weakest → strongest

(b) Will the experiment still be successful if an aluminium ball is used instead? Explain your answer. [1]

_____

_____

_____

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Score	/ 2

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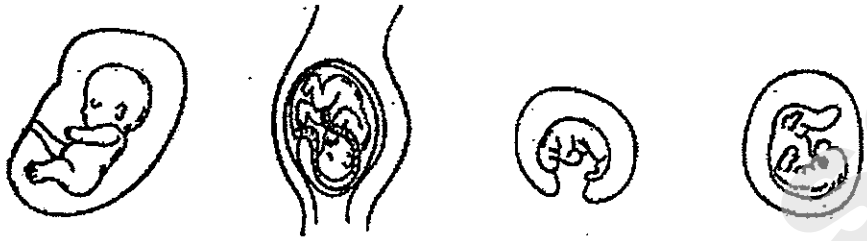
40 A scientist observed and drew the following diagrams to show an unborn baby at different stages of development.

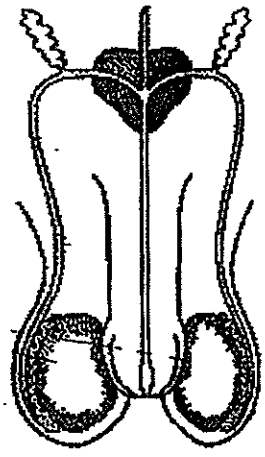


A B C D

(a) Arrange the diagrams above in the right order by writing the letters in the boxes below to show the order in which the baby develops. The first letter has been done for you. [1]

C			

(b) The diagram below shows the male human reproductive system.
Identify and label the part(s) that produce(s) the sperm cells in the diagram below. [1]



Male reproductive system
(Front view)

(Go on to the next page)

Score / 2

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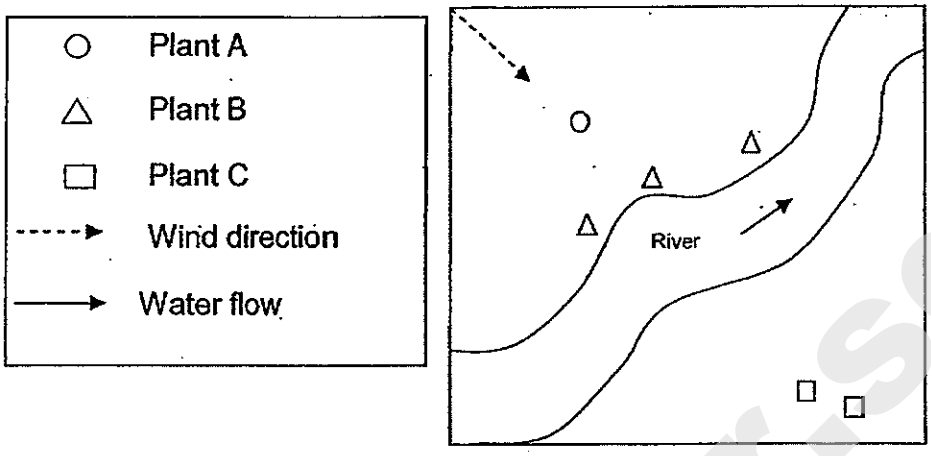
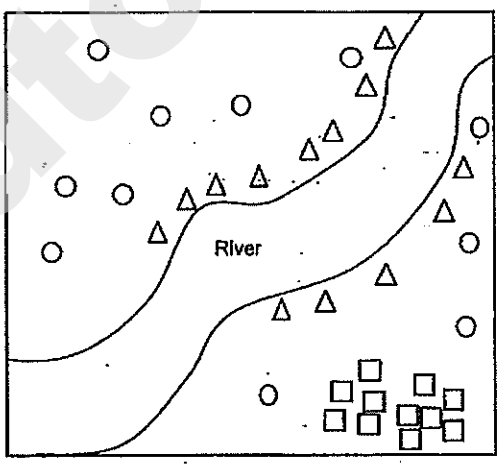
41 The diagram below shows the population of three different types of plants in an area in the year 2004. The arrow indicates the direction of water flow and wind direction.



The diagram below shows the population of the same three different types of plants in the same area in the year 2014.



Based only on the diagrams above, indicate whether each of the statements below is **True** or **False**. Put a tick (✓) in the correct box. [2]

Statement	True	False
Plant A disperses its fruits/seeds by water.		
Plant A disperses its fruits/seeds by animals.		
The fruits/seeds of Plant B are dispersed by animals that only visit the river for water.		
The fruits/seeds of Plant C are most probably dispersed by splitting.		

(Go on to the next page)

Score / 2

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42 Your teacher taught you that only warmth, water and oxygen are needed for seeds to germinate. You wanted to find out if sunlight is needed for seeds to germinate too.
You are given the following items:

cotton wool	water	two identical beakers
some green beans		One black box and one glass box of the same size

Design an experiment to determine if sunlight is needed for seeds to germinate.

(a) Draw and label the suitable set-ups for the experiment using all the items provided. Use ruler and pencil whenever appropriate. [2]

Set-up A	Set-up B

(b) Write down the steps you will take to conduct the experiment. You may use more than four steps. [2]

Step 1: Set up both set- up A and B as shown above.
Step 2:
Step 3:
Step 4:

(Go on to the next page)

Score	/ 4

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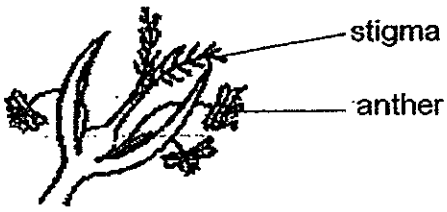
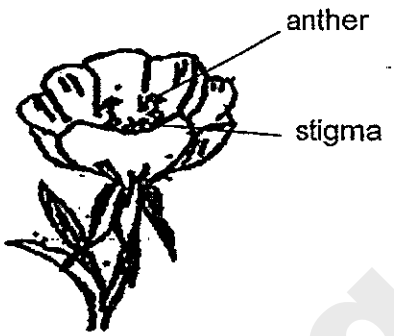
43 Study the diagrams shown below.



Flower A



Flower B

(a) Based on your observations of the picture alone, state the agents of pollinations for flowers A and B. Support your choice with an explanation. [2]

Flower A

Agent: _____

Reason: _____

_____

Flower B

Agent: _____

Reason: _____

_____

(b) What is the process that may happen next after pollination? [1]

(Go on to the next page)

Score: /3

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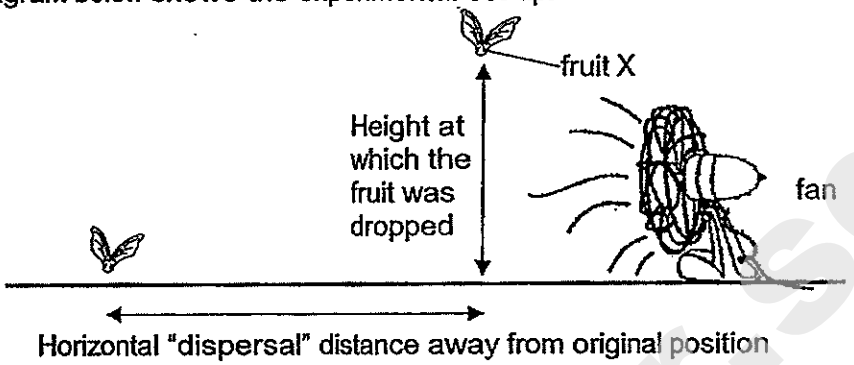
44 Gideon carried out an experiment to investigate how the horizontal "dispersal" distance from the parent plant is affected by the height at which a fruit is dropped. The diagram below shows the experimental set-up.



He dropped fruit X from different heights and recorded the horizontal "dispersal" distance from its original position. He recorded the results in the table below.

Height at which the fruit was dropped (cm)	Horizontal "dispersal" distance away from original position (cm)
5	3
10	6
15	9
20	12
25	15

(a) Based on the results shown in the table above, describe the relationship between the height at which the fruit was dropped with its horizontal "dispersal" distance away from its original position. [2]

(b) Explain why being too near to the parent plant is not suitable for the germinating seeds of fruit X? [2]

End of Booklet B

Check your answers carefully.

Score 4

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ANSWER SHEET

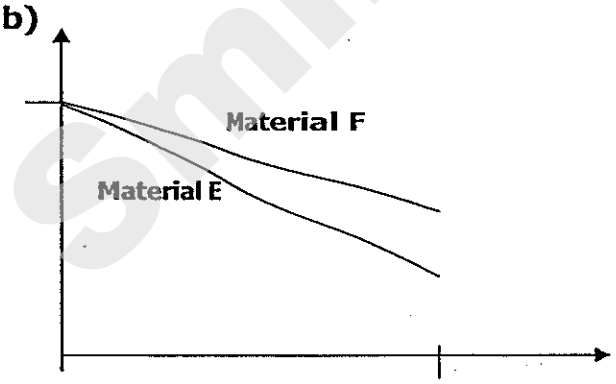
EXAM PAPER 2014
SCHOOL : ACS
PRIMARY : P5
SUBJECT : SCIENCE
TERM : SA1

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

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

31)a)It is hard and it is not transparent.
b)Letter C.

32)a)Material E as it is a better conductor of heat to material F.
b)



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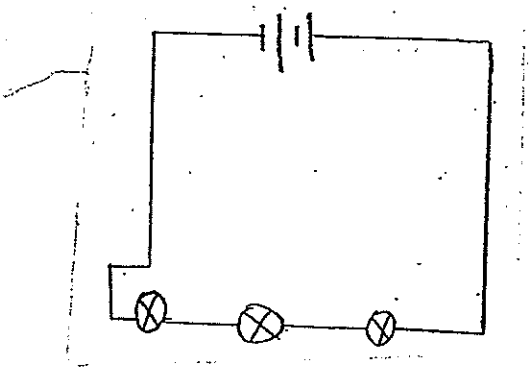
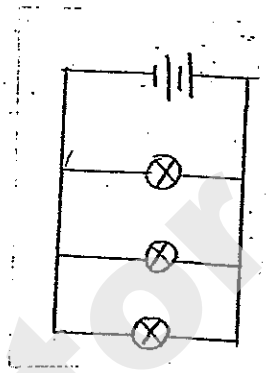
33)a)Mouth : Q
Small Intestines : P
b)To absorb water and dissolved mineral salts.

34)a)Cell A has a cell wall but cell B don't have.
b)To let the substance in and out of the cell.

35a)Set-up A



Set-up B



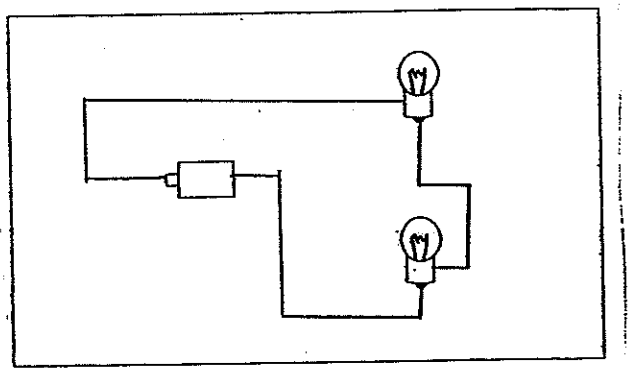
b)A data logger and a light sensor.

36)a)Switch 1.
b)i)When one bulb fuses the other bulbs still lights up in parallel but when one of the bulb fuses, the other bulbs will not light up in series.
ii)The bulbs are brighter when arranged in parallel then when arranged in series.

37)a)He can switch off the fan if he is not using it.
b)No as it may create a fire.

38)a)Rubber does not conduct electricity, so electricity in wires will not be conducted to people touching when touch.

b)



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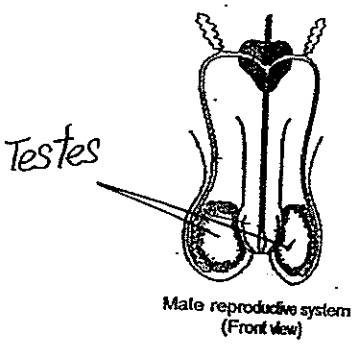
39)a)S, P, Q, R

b)No as it is not a magnetic material.

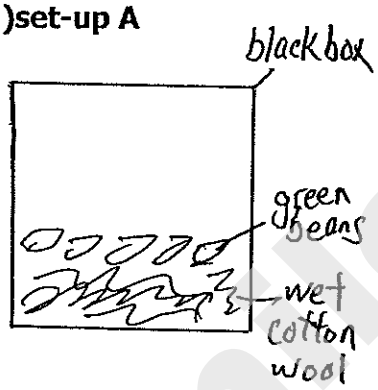
40)a)C, D, A, B

b)

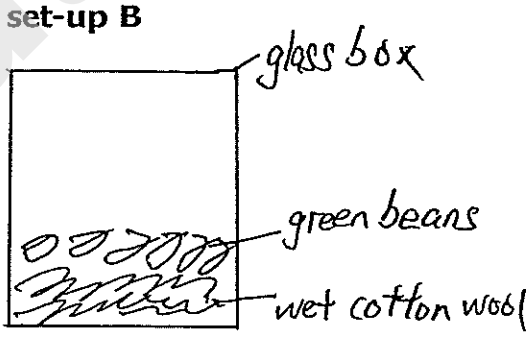


41)F , T, F, T

42)a)set-up A



set-up B



b)2)Put a black box in set-up A and a glass box in set-up B.

3)Place some cotton wool into each box.

4)Place them at the same location.

5)Pour some water into the cotton wool in both box.

6)See if the beans in each set-up germinates after a few weeks.

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43)a)Flower A

Agent: Wind.

Reason: The anthers are hanging out of flower to allow the wind to carry the pollen away.

Flower B

Agent: Bees

Reason: Anthers and stigma rest inside the petals.

b)Fertilisation.

44)a)Higer the fruit was dropped, the distance from the original position increases.

b)It is to prevent over crowding and if they are too near, the seeds of fruit X cannot germinate as the parent plant block the sunlight water, nutrient from the seeds of fruit X.

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CATHOLIC HIGH SCHOOL
SEMESTRAL ASSESSMENT 1
2014
PRIMARY FIVE

SCIENCE

BOOKLET A

Name: _____

Class: Primary 5 _____

Date: 16 May 2014

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 22 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 Which of the following is / are needed for bread to turn mouldy?

A light

B water

C oxygen

D carbon dioxide

(1) B only

(2) A and C only

(3) B and C only

(4) A, B and D only

2 Charles observed two animals and recorded his observations in the table below.

Observations	Animal A	Animal B
There are 4 stages in the life cycle.	✓	
Its eggs are laid on land.		✓
It has three body parts.	✓	

Which of the following animals matches his observations in the table above?

	Animal A	Animal B
(1)	Frog	Mosquito
(2)	Butterfly	Frog
(3)	Mosquito	Chicken
(4)	Cockroach	Butterfly

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3 Peter wanted to find out if overcrowding affects the germination of seeds. The table below shows 5 different set-ups.

Variable	Set-up A	Set-up B	Set-up C	Set-up D	Set-up E
Duration of experiment	3 days	5 days	5 days	5 days	5 days
Location	In the room	In the room	In the field	In the field	In the room
Number of seeds	10	30	10	30	30
Amount of water given daily (ml)	10	20	10	10	20
Size of pot	small	medium	large	medium	small

Which set-ups should Peter choose to ensure that his experiment is a fair test?

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

4 The picture below shows a boy blowing a balloon.

Which of the following correctly describes what happens to his ribs, diaphragm and chest when he blows into the balloon once?

	Ribs	Diaphragm	Chest
(1)	Move out and upwards	Moves downwards	Bigger
(2)	Move out and upwards	Moves upwards	Smaller
(3)	Move in and downwards	Moves downwards	Bigger
(4)	Move in and downwards	Moves upwards	Smaller

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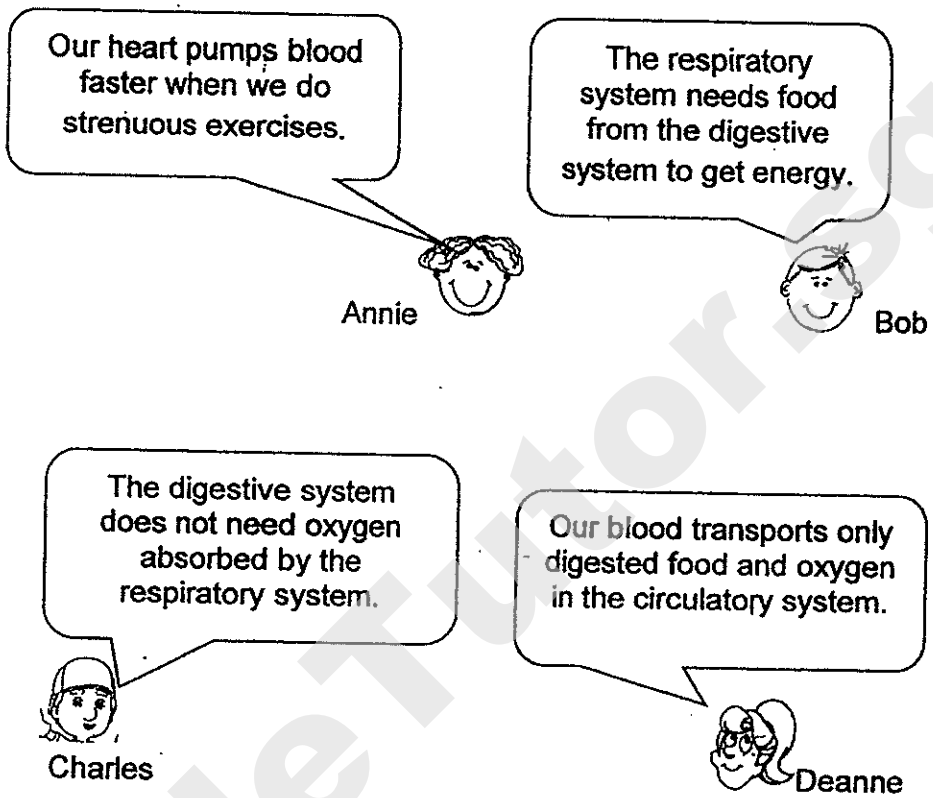
5 Study the concept cartoon shown below about the systems in living things.



Who has/have made the correct statement(s)?

(1) Bob only

(2) Annie and Bob only

(3) Charles and Deanne only

(4) Annie, Charles and Deanne only

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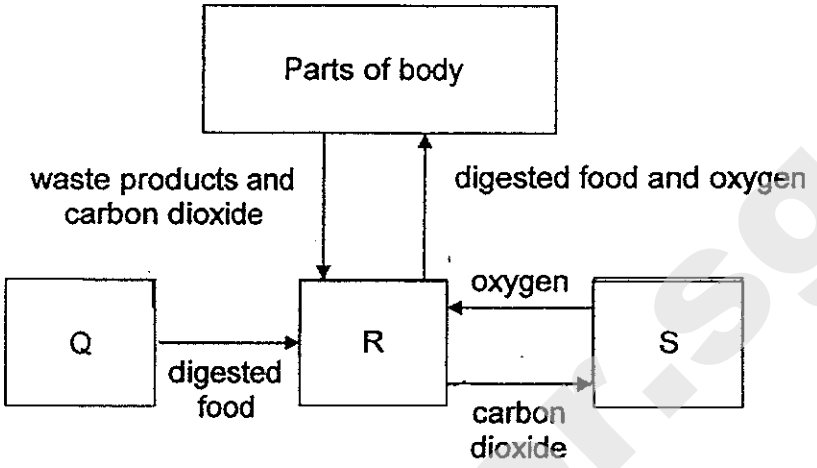
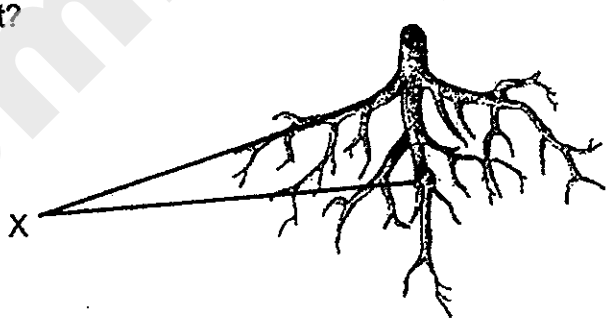
6 The diagram below shows the different systems in the human body working together.



Based on the diagram above, which systems do Q, R and S represent?

	Q	R	S
(1)	Digestive	Respiratory	Circulatory
(2)	Digestive	Circulatory	Respiratory
(3)	Circulatory	Digestive	Respiratory
(4)	Respiratory	Circulatory	Digestive

7 The diagram below shows a plant part. How is part 'X' useful to the plant?



A It stores food.

B It keeps the plant upright.

C It anchors the plant to the ground.

D It absorbs water and mineral salts.

(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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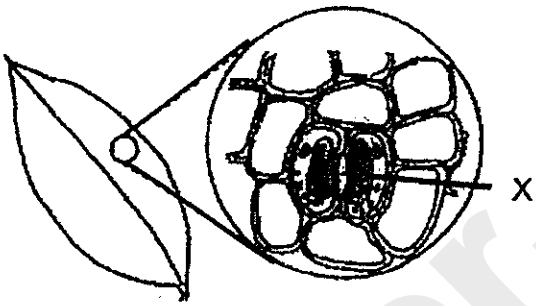
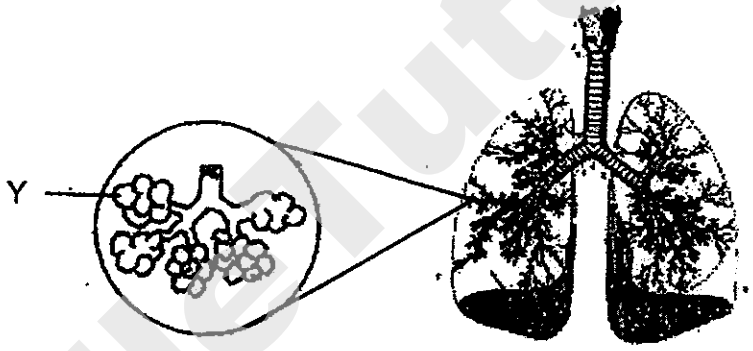
8 The diagrams below show a part of a leaf and a human respiratory system.



part of a leaf



Human respiratory system

Which one of the following statements is true?

(1) Air is stored in parts X and Y.

(2) Gaseous exchange occurs at parts X and Y.

(3) Part X helps the plant to make food while part Y helps in gaseous exchange.

(4) Part X helps the plant to respire while part Y helps the human to inhale and exhale.

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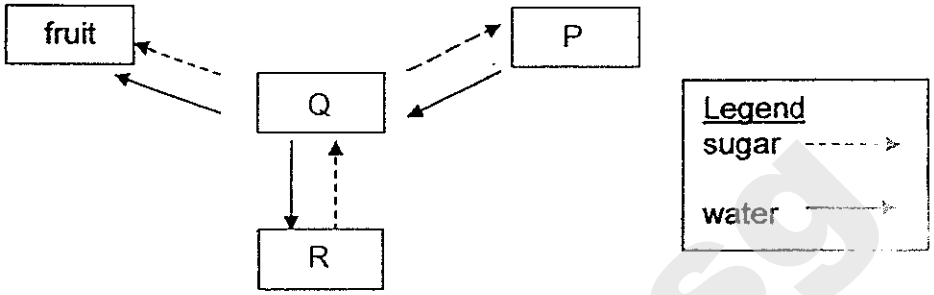
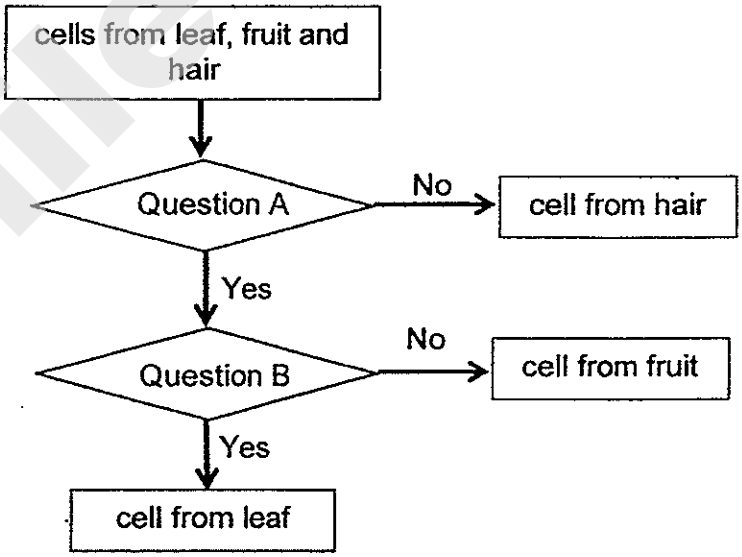
9 The diagram below represents how sugar and water are transported within a plant. P, Q and R are parts of the plant.



Which one of the following identifies P, Q and R correctly?

	P	Q	R
1)	root	leaf	stem
2)	root	stem	leaf
3)	leaf	root	stem
4)	stem	leaf	root

10 Karen classified three types of cells as shown below.



What are questions A and B?

	Question A	Question B
(1)	Does it have a cell wall?	Does it have chloroplasts?
(2)	Does it have a nucleus?	Does it have a cell wall?
(3)	Does it have chloroplasts?	Does it have a cell wall?
(4)	Does it have a cell membrane?	Does it have a nucleus?

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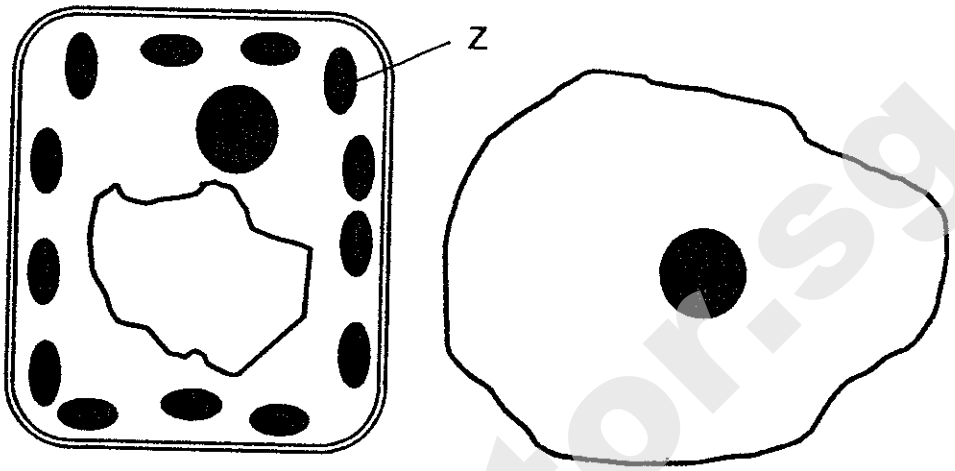
11 The diagram below shows two cells, M and N.



Cell M

Cell N

A scientist managed to successfully transfer Part Z in cell M to cell N. He found that this new cell N produced sugar when placed in a brightly-lit environment. Which of the following would also take place in cell N?

A Cell N would produce oxygen.

B Cell N would have a more regular shape.

C Cell N would start to form a cell membrane.

D Cell N would be able to form a stronger cell wall

(1) A only

(2) A and D only

(3) B and C only

(4) B and D only

12 Which one of the following does not help plants to obtain more sunlight for photosynthesis?

(1) Presence of twining stems to climb up support.

(2) Arrangement of leaves that reduces overlapping.

(3) Presence of stomata on the underside of the leaves.

(4) Presence of air spaces in between cells in the stem of a totally submerged aquatic plant to remain upright in water.

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13 Which of the following statements about food made during photosynthesis are correct?

A Food made by plants is stored as starch in the plant.

B Plants make use of the food only in the presence of sunlight.

C Food made in the leaves is transported to all parts of the plant.

D Excess food that plants made is stored in different parts of the plant.

(1) A and D only

(2) B and C only

(3) A, C and D only

(4) A, B, C and D

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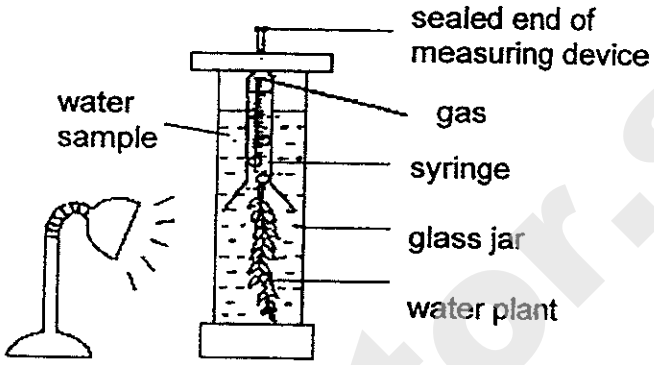
14 Joey carried out an experiment using four water samples, A, B, C and D collected from four different locations of the Kallang River. Using the same amount of water samples and water plants, she set up four similar experimental set-ups as shown below.



After 1 hour, Joey recorded the amount of gas collected in the measuring device for each water sample in the table below.

Water Sample	Volume of gas collected (cm^3)
A	25
B	13
C	11
D	18

Which of Joey's following conclusions based on the data gathered are correct?

A The water plants in all the set-ups photosynthesise at different rates.

B The river is the least polluted at the place where water sample C was collected.

C The location where the water sample was collected affects the rate of photosynthesis of the water plants.

D The amount of light is the only factor which determines the rate of photosynthesis for all the water plants.

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

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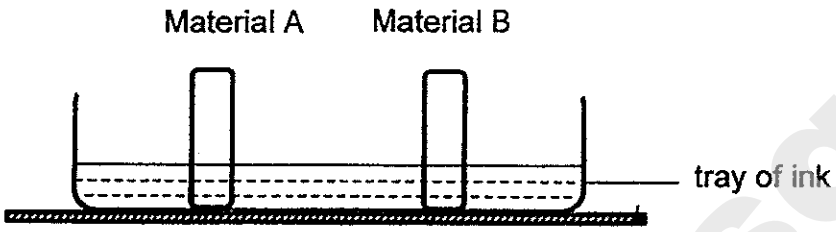
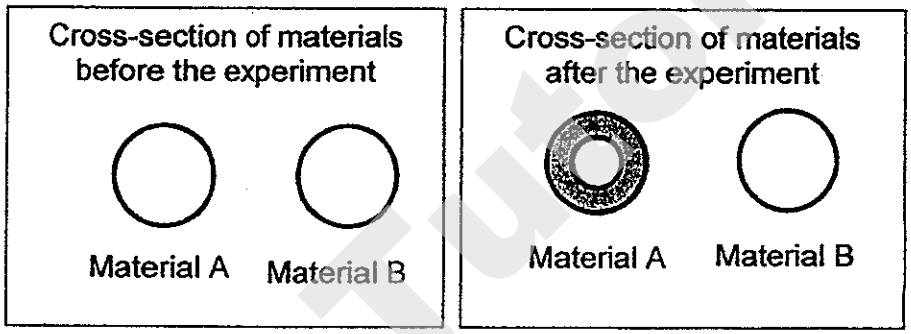
15 Two materials, A and B, of similar sizes, were left to stand in a tray of ink.



After half an hour, both pieces were removed from the tray of ink and cut into half. Their cross-sections are shown below.



What does the experiment show about the properties of materials A and B?

(1) Material A is stronger than material B.

(2) Material A is less elastic than material B.

(3) Material A breaks more easily than material B.

(4) Material A absorbs water but material B does not absorb water.

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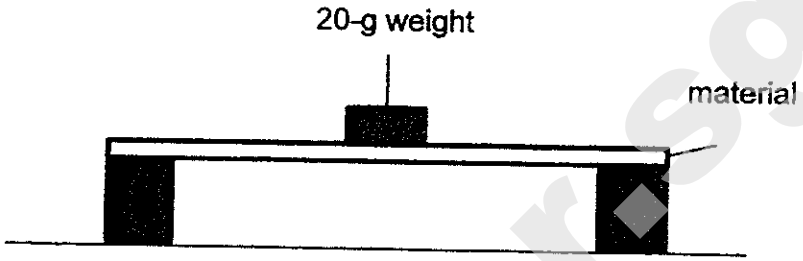
Use the following information to answer Questions 16 and 17.

Mei Ling conducted an experiment to study the strength of four different materials P, Q, R and S. She placed 20-g weights on each material and recorded the number of weights needed before the material broke.



The table below shows her results.

Material	Number of 20-g weights placed on material before it broke
P	2
Q	10
R	8
S	13

16 Which material is the weakest?

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

17 Which one of the materials is most suitable for making a kettle?

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

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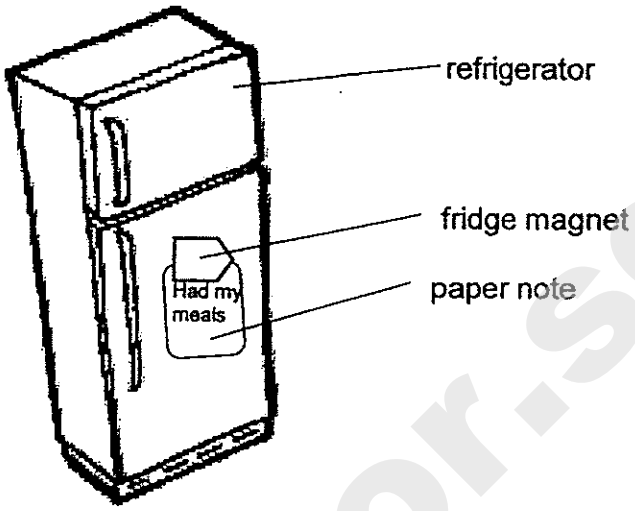
18 Sally used a fridge magnet to attach a paper note on the door of the refrigerator as shown in the diagram below.



When she tried to attach a thicker piece of paper note, both the magnet and the paper fell onto the floor.

Based on the above information, which of the following statements is/are most likely correct?

A The thinner paper note is made of magnetic material.

B Magnetism is not able to pass through the thicker paper.

C The surface of the refrigerator's door is made of a magnetic material.

(1) C only

(2) A and B only

(3) B and C only

(4) A, B and C

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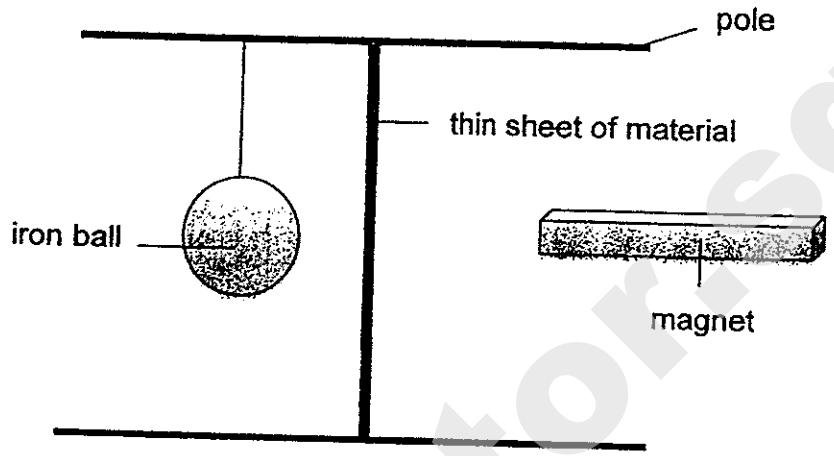
19 Ali hung an iron ball from a pole and placed a thin sheet of material as shown in the diagram below. He then brought a strong magnet close to the material without touching it.



Side view

He observed what happened and recorded his observations in the table below.

He repeated the experiment with another material and recorded his observations.

Material	Iron ball moved
A	No
B	Yes

Based on his observations, what is Material B most likely to be?

(1) iron

(2) steel

(3) cobalt

(4) copper

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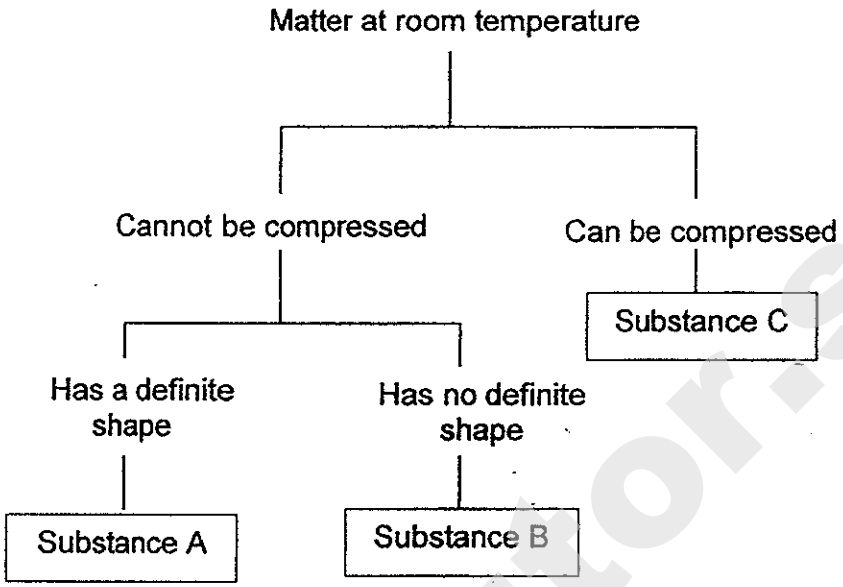
20 The chart below shows the properties of some matter.



A 1-litre glass bottle contains 800cm^3 of Substance C and 200cm^3 of Substance B.

If another 100cm^3 of Substance C is added to the bottle, what is the volume of Substance C in the bottle now?

(1) 700cm^3

(2) 800cm^3

(3) 900cm^3

(4) 1000cm^3

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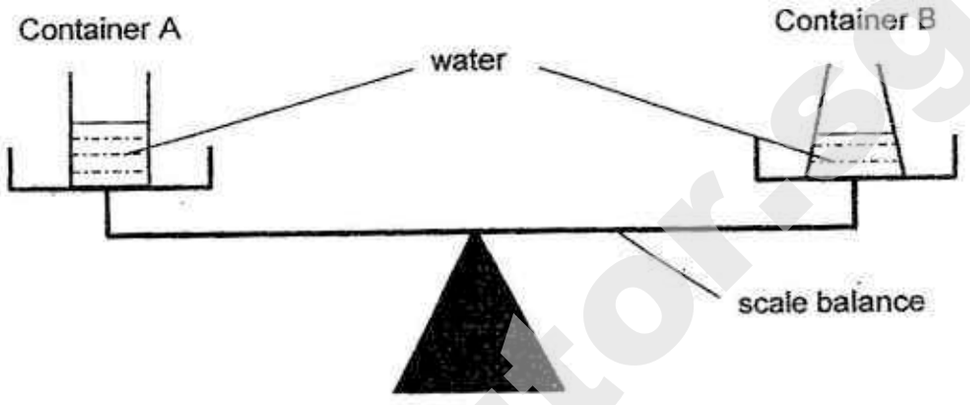
21 The diagram below shows two plastic containers, A and B, which are left in an open field under the sun. They contain the same amount of water. They are left on the scale balance for a few hours. At the start of the experiment, the scale is balanced.



What will you most likely observe about the above set-up after a few hours?

(1) The side with container A will tilt downwards as the water level in container A is higher than that in container B.

(2) The side with container A will tilt downwards as there will be lesser water in container B due to more evaporation of water from container B.

(3) The side with container B will tilt downwards as there will be lesser water in container A due to more evaporation of water from container A.

(4) The two containers of water will still balance each other as the containers are of the same size and mass and they each contain the same amount of water.

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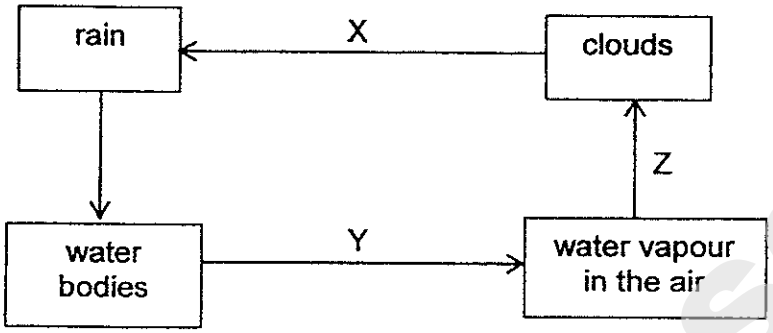
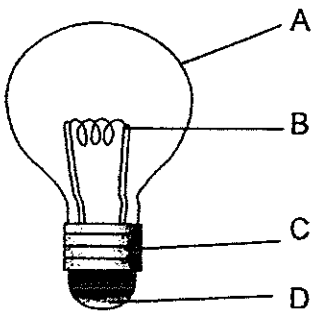
22 The diagram below shows the water cycle. X, Y and Z represent the processes taking place at each stage of the water cycle.



Which one of the following correctly indicates what takes place at X, Y and Z?

	X	Y	Z
(1)	Change of state	Heat is gained by the water.	Heat is gained by the water vapour.
(2)	Change of state	Heat is lost by the water.	Heat is lost by the water vapour.
(3)	No change of state	Heat is lost by the water.	Heat is gained by the water vapour.
(4)	No change of state	Heat is gained by the water.	Heat is lost by the water vapour.

23 Which parts of the bulb can conduct electricity?



(1) A and B only

(2) B and C only

(3) C and D only

(4) B, C and D only

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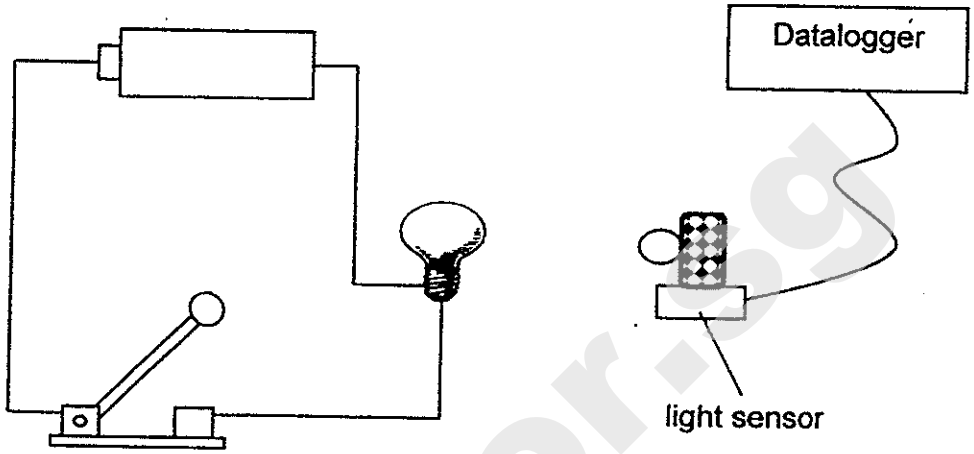
24 Danny connected a circuit as shown below.



When the switch was closed, Danny measured the brightness of the bulb with a light sensor that was attached to a datalogger. He then repeated his experiment with a different number of batteries.

He recorded his results in the table as shown.

Number of batteries	Brightness of bulb (lux)
1	70
2	125
3	160
4	230
5	0

What happened to the bulb when 5 batteries were used?

(1) The bulb fused.

(2) The bulb grew dimmer.

(3) The bulb grew brighter.

(4) The bulb remained the same.

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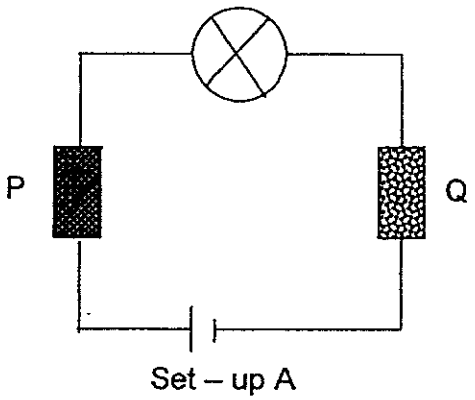
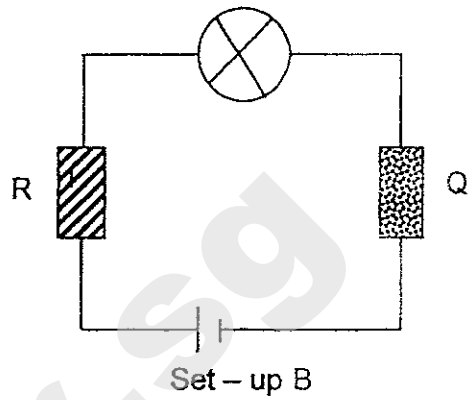
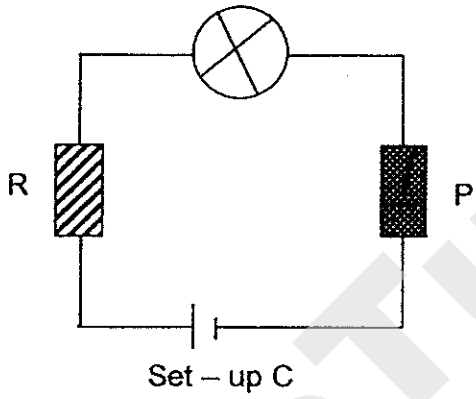
25 4 different materials, P, Q, R and S, were used to set up the 4 circuits shown below.



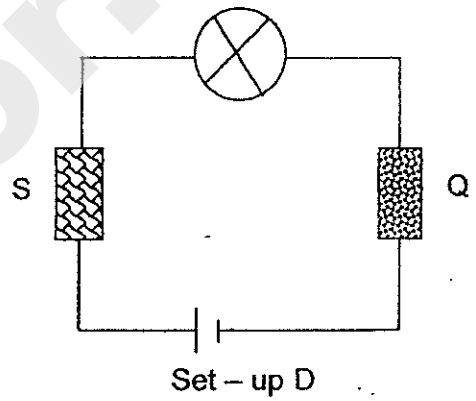
Set – up A



Set – up B



Set – up C



Set – up D

The results were recorded in the table below.

Set - up	Does the bulb light up?	
	Yes	No
A		✓
B	✓	
C		✓
D	✓	

What could be concluded about the materials?

(1) Material S is not a conductor of electricity.

(2) Materials P and Q are conductors of electricity.

(3) Materials R, Q and S are conductors of electricity.

(4) Materials R and Q are not conductors of electricity.

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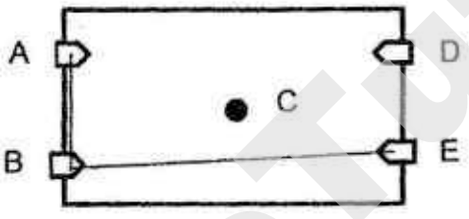
26 Shawn uses a circuit tester to test a circuit card. The table below shows what happens to the bulb when each pair of clips, A, B, C, D and E, is tested.

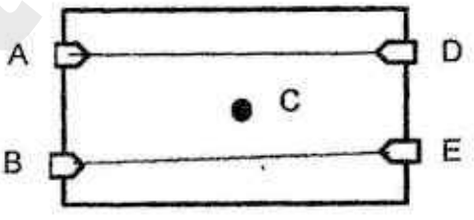
Clips tested	Bulb of circuit tester
A and B	Does not light up
A and C	Lights up
C and D	Lights up
B and C	Does not light up
B and E	Does not light up
A and D	Lights up

Which one of the following represents the correct circuit card?

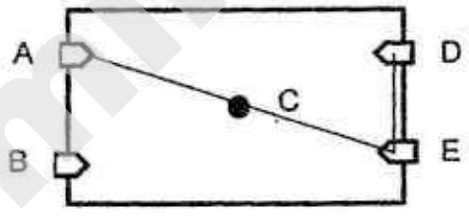
(1)



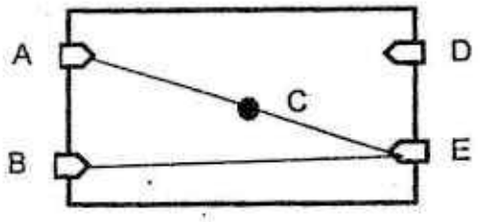
(2)



(3)



(4)



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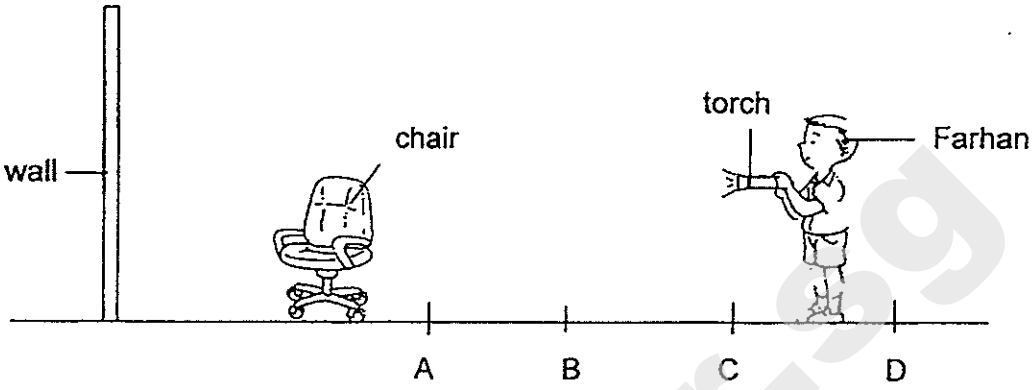
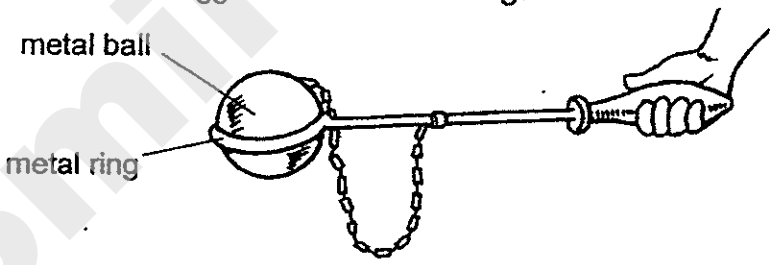
27 Farhan carried a torch and stood a distance away from a chair. He shone the light on the chair and a shadow was formed on the wall.



At which of the above positions A, B, C or D should Farhan stand to form the biggest shadow on the wall?

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

28 Tom wanted to pass the metal ball through the metal ring. However, the metal ball was bigger than the metal ring.



What should Tom do to allow the metal ball to pass through the metal ring?

A Heat the ball over a flame.
B Heat the ring over a flame.
C Dip the ball into cold water.
D Dip the ring into cold water

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

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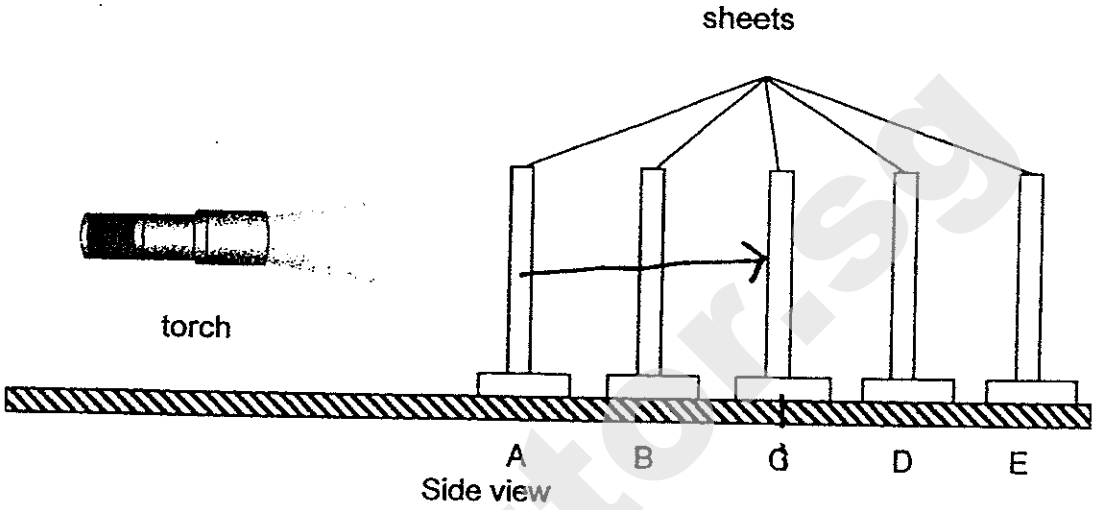
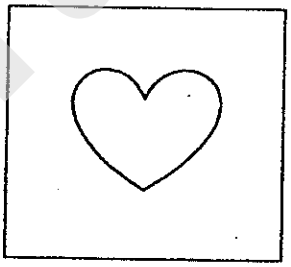
29 A group of pupils set up the experiment below. Sheets A, B, C, D and E are of the same size but made of different materials.



A heart-shaped cut-out was made on Sheet A as shown below.



The properties of sheets A, B, C, D and E are shown in the table below.

Allows light to pass through	Allows some light to pass through	Does not allow light to pass through
B	~~C~~ D	A
E		~~D~~ C

On which sheet would the shadow of the cut-out be seen when the torch was switched on?

(1) B

(2) C

(3) D

(4) E

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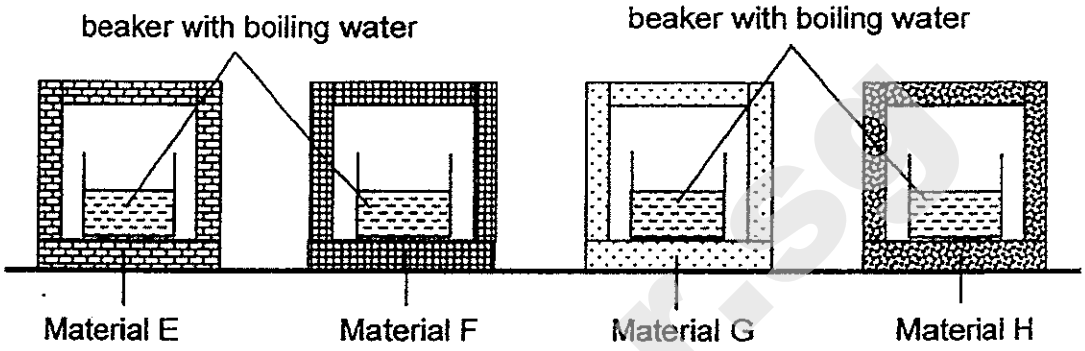
30 Vince set up the apparatus below using materials of different heat conductivity. He used beakers of the same size containing an equal amount of boiling water in each beaker. He put the beakers into four boxes made of different materials.



He recorded the temperature of water in each beaker at regular intervals using a temperature sensor. The table below shows the results of the experiment.

Time (min)	Temperature of water (°C)			
	E	F	G	H
0	100	100	100	100
5	77	65	90	88
10	69	42	88	76
15	56	39	83	71
20	40	37	80	69

Based on the results in the table above, which material is the best conductor of heat?

(1) E
(2) F
(3) G
(4) H

End of Booklet A

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CATHOLIC HIGH SCHOOL
SEMESTRAL ASSESSMENT 1
2014
PRIMARY FIVE

SCIENCE

BOOKLET B

Name: _____ ( )

Class: Primary 5 - _____

Date: 16 May 2014

Booklet A	60
Booklet B	40
Total	100

Parent's Signature: _____

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 15 printed pages, excluding cover page.

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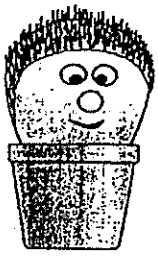
Booklet B (40 marks)

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)

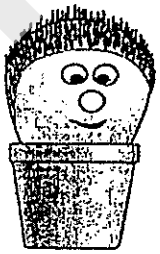
31 Nadia mixed grass seeds with soil. She made three model heads out of the mixture. She soaked two of the heads in water.

The drawings below show the model heads after one week.



Model A

Model B



Model C

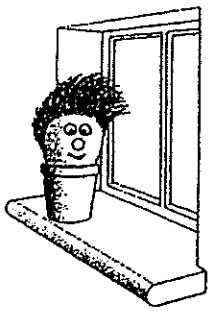
(a) (i) Which two model heads did Nadia soak in water? [1]

_____ and _____

(ii) Give a reason for your answer in part a(i)

_____

Nadia put one of the model heads near a window.



(b) Based on the diagram above, why did the grass grow towards the window? [1]

_____

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SCORE	/ 2

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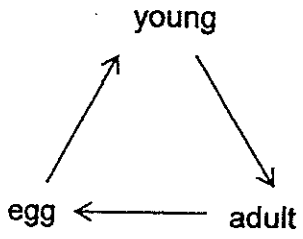
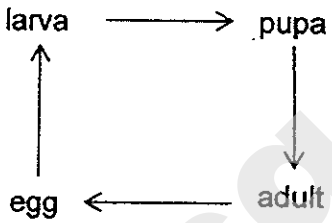
32 The diagrams below show the life cycles of two different animals.



Chicken



Butterfly

From the diagrams above, state one similarity and one difference between the life cycles of a chicken and a butterfly. [2]

Similarity:

_____

_____

Difference:

_____

_____

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SCORE	/ 2

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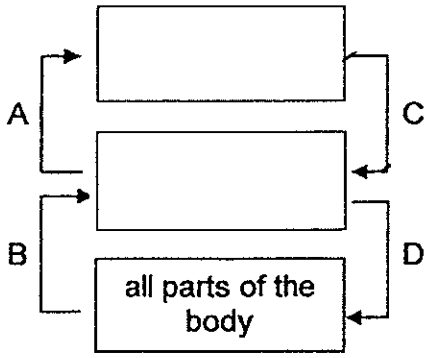
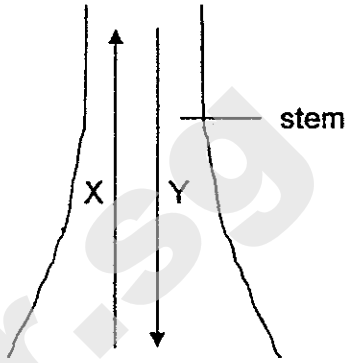
33 The diagrams below show the paths of the movement of substances in the Human Circulatory System and the Plant Transport System.



Human Circulatory System



Plant Transport System

(a) Fill in the boxes in the Human Circulatory System above with the correct organs to complete the diagram. [1]

(b) Identify what X and Y represent in the Plant Transport System above. [1]

X: _____

Y: _____

(c) State one way in which the Plant Transport System is different from the Human Circulatory System. [1]

_____

_____

(d) When Path C is entirely blocked, the movement of the substances in Paths A, B and D will also be affected. Explain why when Path Y in the Plant Transport System is entirely blocked, the movement of substances in Path X will not be affected. [1]

_____

_____

(Go on to the next page)

SCORE	/ 4

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34 When we breathe, air is inhaled and exhaled.

The table below shows the differences between inhaled air and exhaled air.

(a) Complete the table by giving one other difference. [1]

	Differences between	
	Inhaled air	Exhaled air
1	at room temperature	is warmer
2	contains more dust	contains less dust
3		

(b) Explain why the air that has been exhaled is of a higher temperature than the air that is inhaled. [1]

_____

_____

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SCORE ___ / 2

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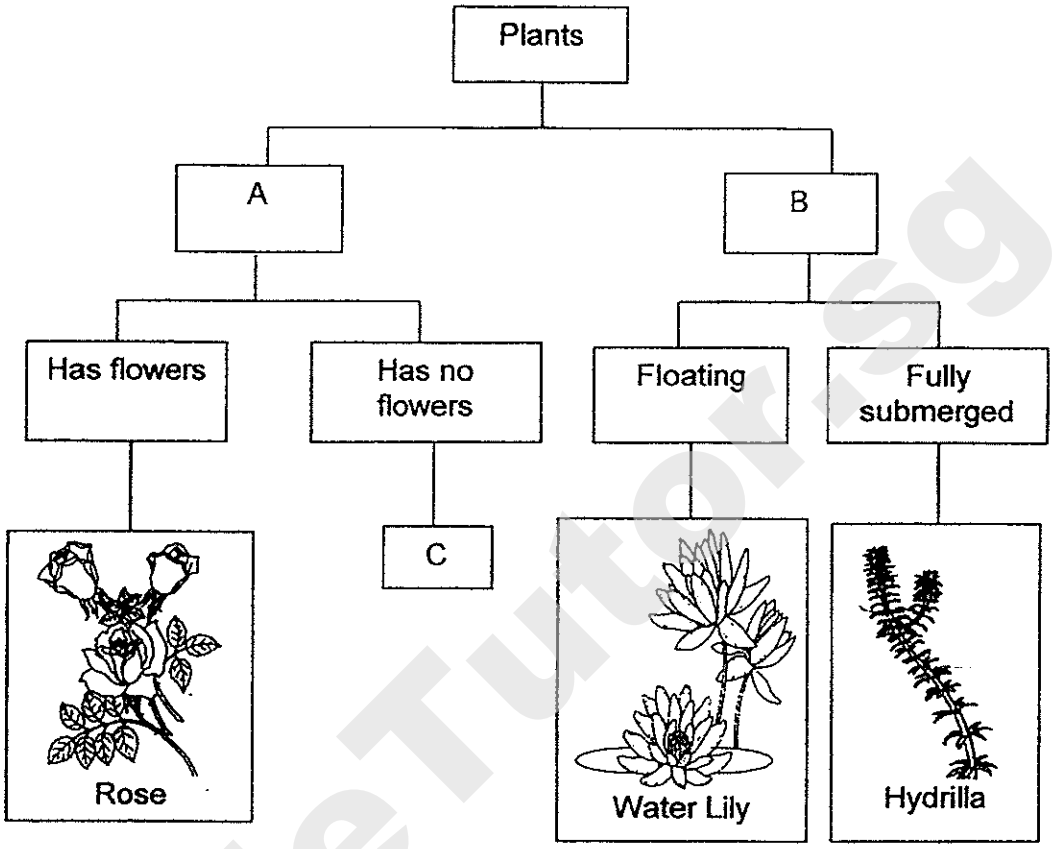
35 Study the flow chart below.



(a) Write down a suitable heading for A and B. [1]

A: _____

B: _____

(b) Based on the flowchart, describe the characteristics of C. [1]

_____

_____

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SCORE 2

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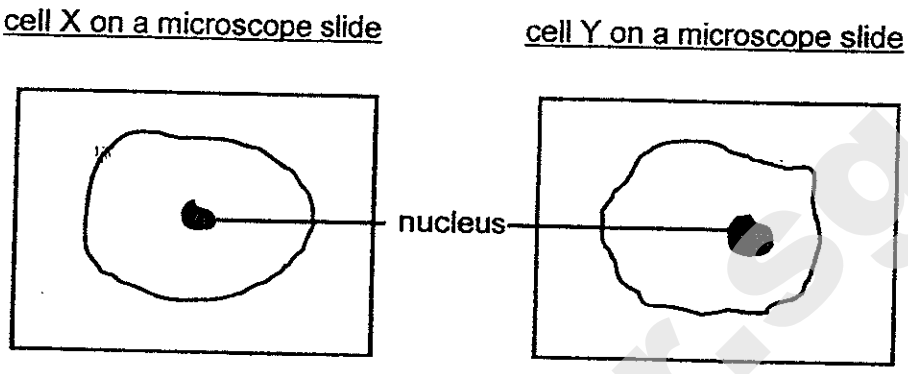
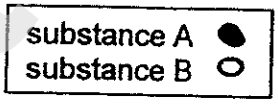
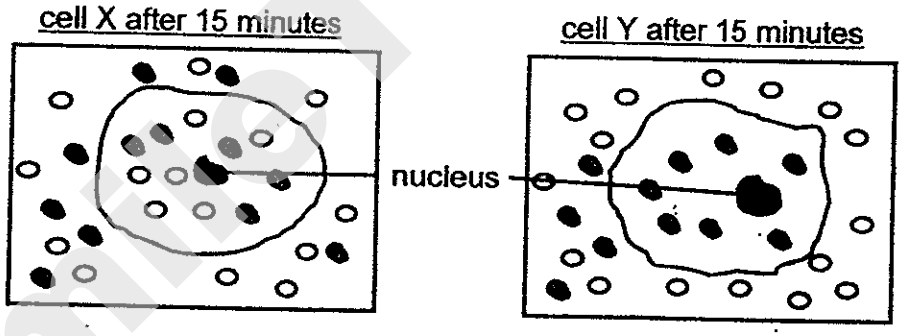
36 Charles carried out an experiment to explore the function of a certain part of two different cells, shown below.



The diagram below shows what happens to the two cells, X and Y, after being immersed separately in solution P for 15 minutes.

Solution P contains two substances, A and B.





(a) Compare the difference between cells X and Y 15 minutes after immersing them in solution P. (Do not compare shape and size.) [1]

_____

_____

(b) Which part of the cell is responsible for the change in the number of substance A in cell Y as compared to cell X? Give a reason for your answer. [1]

_____

_____

(Go to the next page)

SCORE	/ 2

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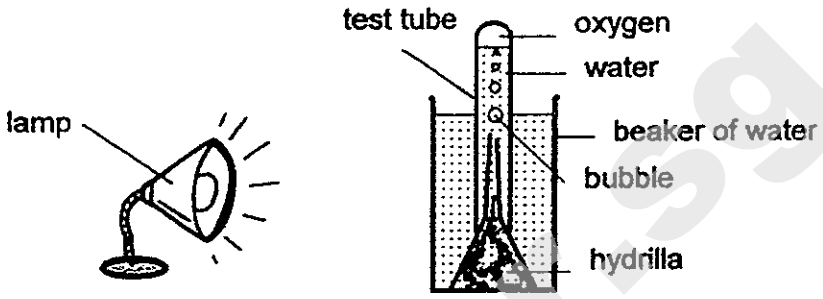
37 David carried out an experiment by placing an inverted test tube with water in a beaker of water with some hydrilla plants as shown below. He placed a lamp near the beaker and counted the number of bubbles produced within one hour.



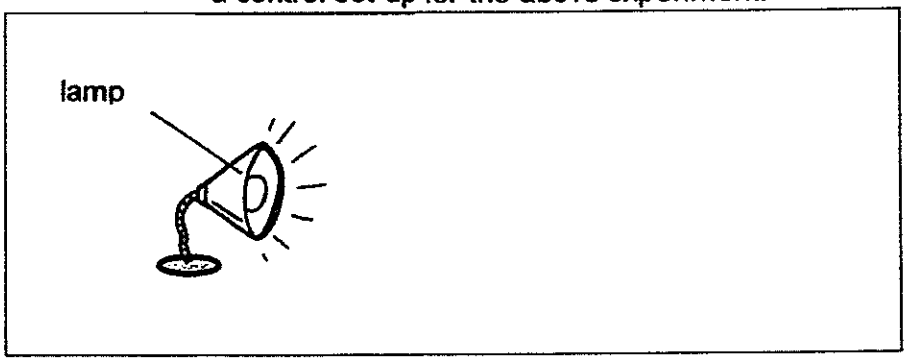
David repeated the experiment with a different number of hydrilla plants and recorded the results in the following table.

Number of hydrilla plants	2	5	8
Number of bubbles produced	10	35	48

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

(b) Without changing the number of hydrilla plants or adding any apparatus to the experiment, what should David do to increase the number of bubbles produced by the plants? [1]

(c) Draw and label a control set-up for the above experiment. [1]



(d) What is the purpose of the control set-up? [1]

(Go on to the next page)

SCORE / 4

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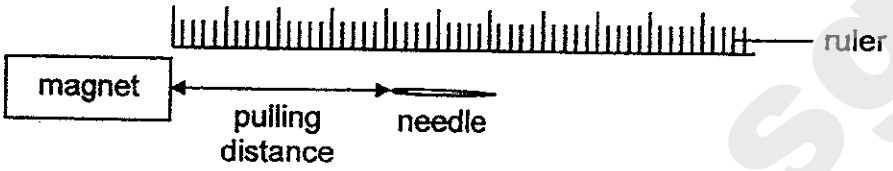
38 Four magnets of similar sizes W, X, Y and Z were tested for their strength. A needle was slowly pushed towards each magnet until it was attracted by the magnet as shown in the diagram below. The maximum distance from which the magnet attracted the needle is called the pulling distance.



The table below shows the pulling distance of the four magnets.

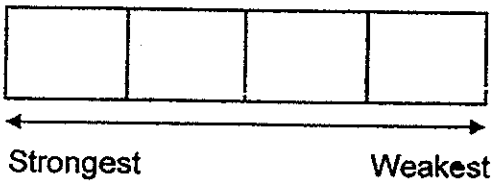
Magnet	Pulling distance (cm)
W	6
X	3
Y	8
Z	2

(a) Which magnet is the strongest? Give a reason to support your answer. [1]

_____

_____

(b) In the boxes given below, arrange the magnets W, X, Y and Z according to their strength from the strongest to the weakest. [1]



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SCORE 2

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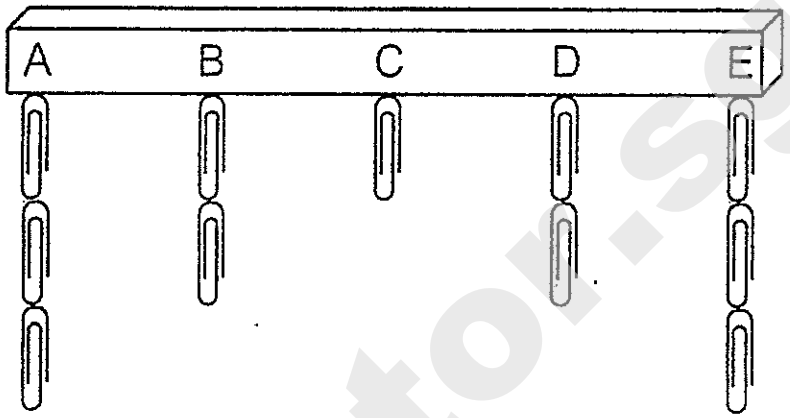
Continue from Question 38

Linda then used Magnet Y for an experiment as shown below. She placed a paper clip one at a time on different points A, B, C, D and E on the magnet until no more paper clips were attracted by the magnet.



She recorded the results in the table below.

	A	B	C	D	E
Number of paper clips	3	2	1	2	3

(c) What do the results in the table above show about the strength of a magnet? [1]

_____

_____

(d) State one way you can weaken the strength of the magnet. [1]

_____

_____

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SCORE / 2

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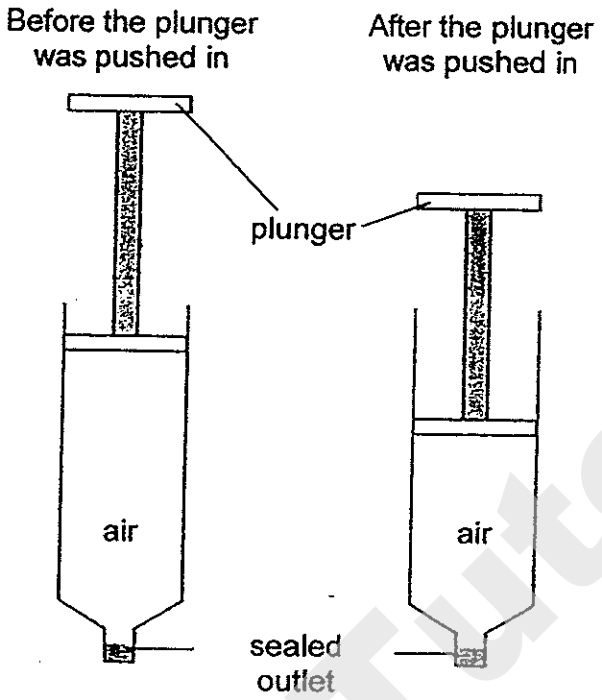
39 John filled a syringe with air. The outlet of the syringe was sealed.



(a) Explain why John was able to push the plunger in. [1]

_____

_____

(b) Would he be able to push the plunger in if he replaced the air with the same amount of sand? Explain. [1]

_____

_____

(c) State two similar properties of air and sand. [1]

_____

_____

(Go on to the next page)

SCORE 3

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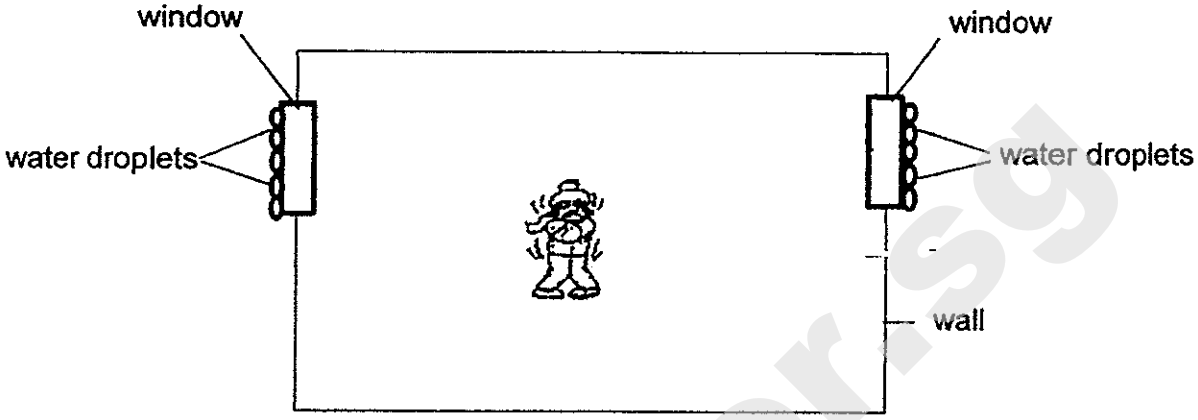
40 Sarah was standing in an air-conditioned room with 2 windows. The temperature in the room was set at 22°C.



After some time, she noticed that water droplets had formed on the outer side of the windows as shown above.

Explain how the water droplets were formed. [2]

_____

_____

_____

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SCORE	/ 2

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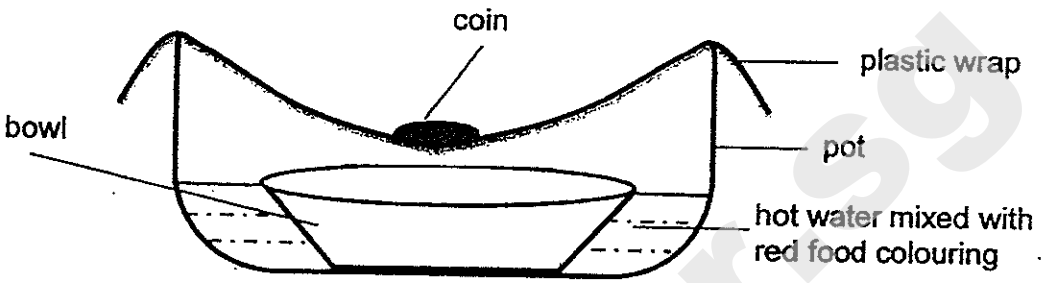
41 Eugene set up an experiment as shown in the diagram below. He collected some liquid in the bowl after an hour.



(a) Eugene said that the water he collected in the bowl was red. Do you agree with him and why? [1]

_____

_____

(b) Eugene replaced the bowl with a smaller bowl and he found that more water was collected in the smaller bowl. Why did this happen? [1]

_____

_____

_____

(c) Suggest 2 changes that he could do to the set-up to increase the amount of water that he can collect in the bowl in an hour. [2]

_____

_____

(Go on to the next page)

SCORE	/ 4

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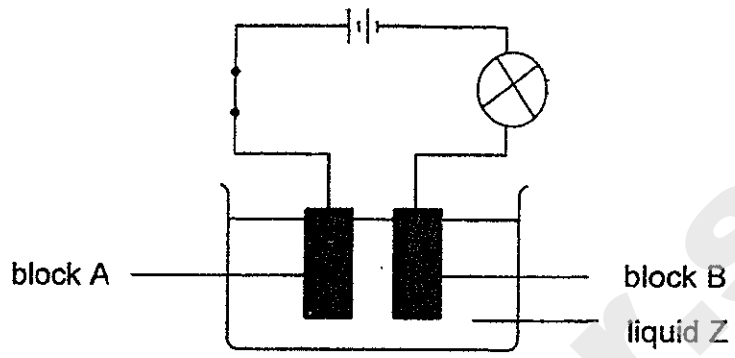
42 The diagram below shows an experimental set-up. The bulb lights up when the switch is closed.



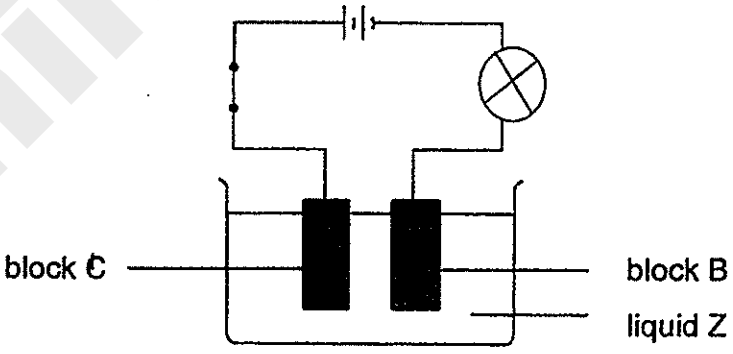
(a) What are blocks A and B made of? [1]

_____

(b) What can you conclude about the property of liquid Z? [1]

_____

When block A is replaced by block C, the bulb does not light up.



(c) Give a reason why the bulb does not light up. [1]

_____

_____

(d) What can you do to block C so that the bulb will light up? [1]

_____

(Go on to the next page)

SCORE	/ 4

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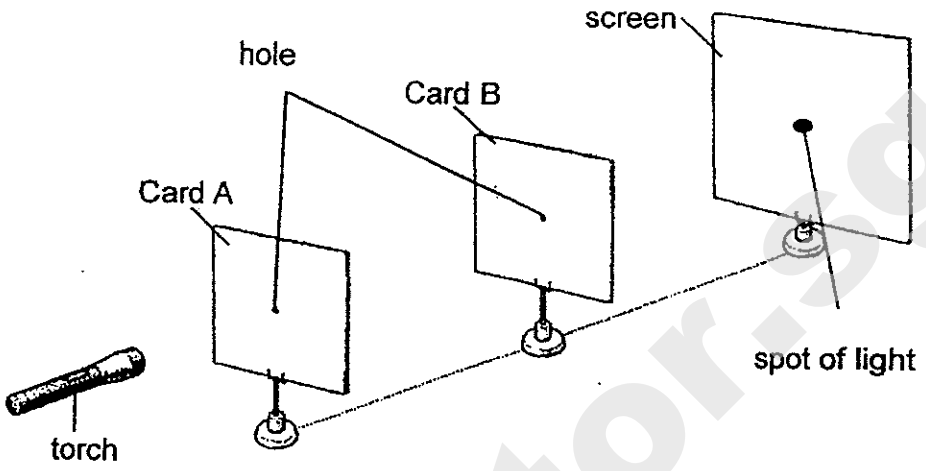
43 Gabriel arranged a torch, two cardboards with a hole in the centre and a screen as shown below.



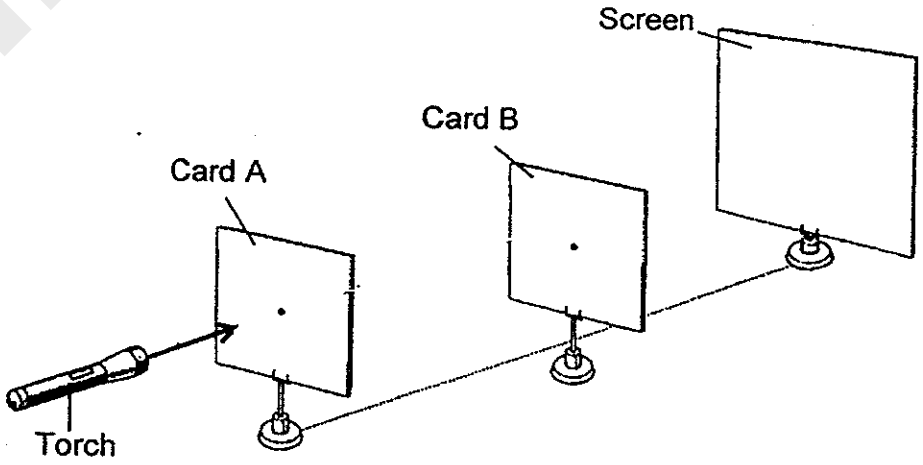
When Gabriel switched on the torch, the light from the torch could be seen on the screen.

(a) What property of light is shown in this experiment? [1]

_____

(b) Gabriel moved Card B to one side as shown below. [1]
The path of light passed through the hole in Card A and onto Card B.

Draw the path of light from the torch to show where it would hit Card B.



(Go on to the next page)

SCORE ___ / 2

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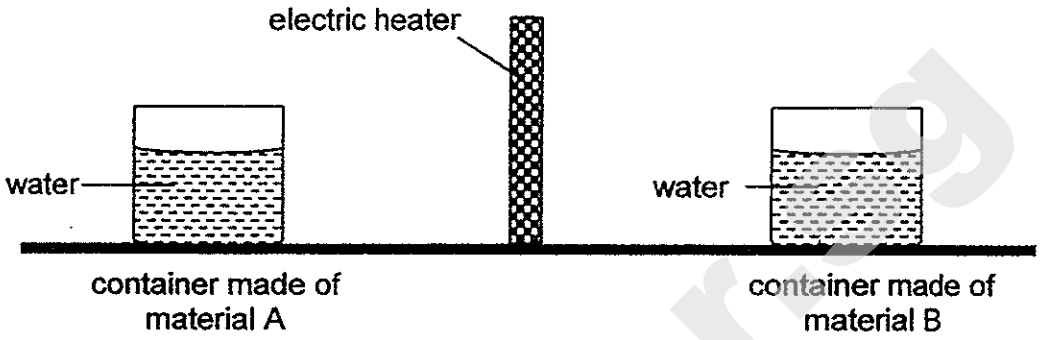
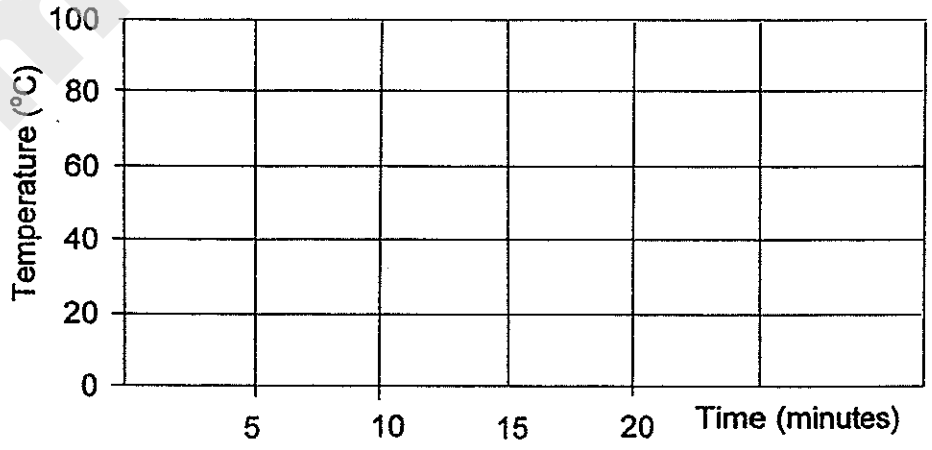
44 Ryan set up an experiment with two containers made of different materials, A and B. The containers have the same size, thickness and the same amount of water in them. He placed them at an equal distance from an electric heater as shown in the diagram below.



The heater was then switched on and he recorded the temperature over a duration of 20 minutes. The table below shows the results.

Time (min)	Temperature of water in container made of material A (°C)	Temperature of water in container made of material B (°C)
0	20	20
10	60	40
15	80	50
20	100	60

(a) Using a ruler and pencil, draw and label two line graphs in the space below to represent the two sets of results in the table for materials A and B. [2]



(b) Which material, A or B, would be more suitable for making a box used to transport blocks of ice? Explain your answer. [1]

End of Booklet B

SCORE 3

CHS/Sci/P5/SA1/2014

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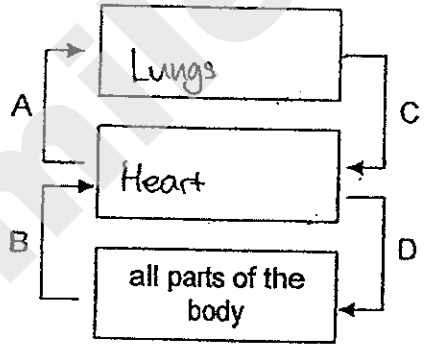
EXAM PAPER 2014		
LEVEL	:	PRIMARY 5
SCHOOL	:	CATHOLIC
SUBJECT	:	SCIENCE
TERM	:	SA1

Q1	3	Q7	2	Q13	3	Q19	4	Q25	3
Q2	3	Q8	2	Q14	1	Q20	2	Q26	3
Q3	3	Q9	2	Q15	4	Q21	3	Q27	1
Q4	4	Q10	1	Q16	1	Q22	4	Q28	4
Q5	2	Q11	1	Q17	4	Q23	4	Q29	2
Q6	2	Q12	3	Q18	3	Q24	1	Q30	2

Q31	(a)	(i) A and C (ii) Grass seeds have germinated into young plants.
	(b)	Grass is a living thing and living things need food to survive. Plant needs sunlight to make food and thus it moves towards the window to get sunlight.
Q32		Similarity: Both life cycle have egg stage.
		Difference: The life cycle of the chicken has 3 stages while the life cycle of the butterfly has 4 stages.
Q33	(a)	 Human Circulatory System
	(b)	X : water and mineral salts Y : sugar
	(c)	The plant transport system transports sap while the human transport system transports blood
	(d)	Path Y and Path X are difference tubes. When Path Y is blocked, the substances in Path X would not be affected.
Q34	(a)	contains less carbon dioxide ; contains more carbon dioxide.
	(b)	When the air is inhaled, it is at room temperature. When air is in the body which is of higher temperature than the room temperature, it gains heat and thus when the air is exhaled, it is of a higher temperature

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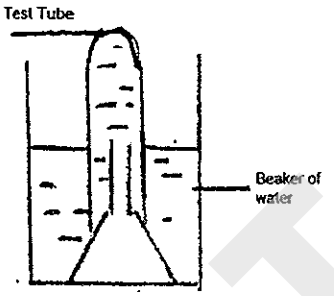
Q35	(a)	A: Land Plant B: Water Plant
	(b)	It is a plant that grows on land and has no flowers.
Q36	(a)	Cell X has both substance A and B while Cell Y has only substance A.
	(b)	Cell membrane. The function of the cell membrane is to control substances from entering and leaving the cell. Cell membrane of Y allows substance B to leave only and allowed substance A to enter while the cell membrane of X allowed both substance A and B to enter the cell.
Q37	(a)	To find out how the number of hydrilla plants affects the rate of photosynthesis.
	(b)	Put the light closer to the hydrilla plant.
	(c)	
	(d)	To compare and confirm that it is the hydrilla plant only that affects the rate of photosynthesis.
Q38	(a)	Magnet Y. Magnet Y could attract the needle at the furthest distance, showing that the magnetic force is the strongest.
	(b)	Y, W, X, Z
	(c)	The magnet is strongest at its poles and weakest in the middle.
	(d)	Hit the magnet with a hammer.
Q39	(a)	When the syringe was filled with air, the particles of air are far apart and there is space between them. These particles are also able to move about freely. As such, the particles can be compressed to occupy a smaller space. Thus, the plunger can be pushed in.
	(b)	No. Sand is a solid and has no definite volume and it cannot be compressed.
	(c)	Both have mass and occupy space.
Q40		The warmer water vapour in the surrounding air loses heat to the cooler window surface and condenses to form water droplet.
Q41	(a)	No. When the water evaporates, the red food colouring does not evaporates thus the bowl will contain water without red food colouring.
	(b)	There was more exposed surface area of the hot water so more water would evaporate to form more water vapour and could form more water droplets.
	(c)	Replace the plastic wrap with an aluminium wrap.

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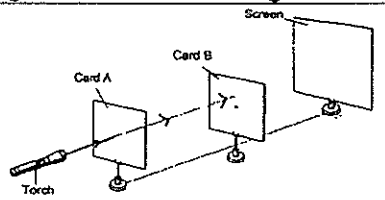
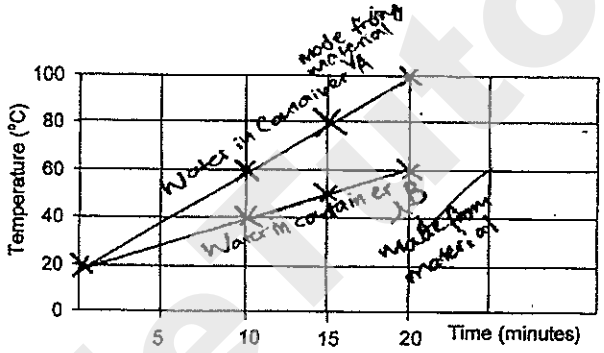
Q42	(a)	Steel
	(b)	Liquid Z
	(c)	Block C is an insulator which does not allow electricity to flow through. This results in an open circuit and the bulb will not light up.
	(d)	Wrap in an aluminium.
Q43	(a)	Light travel in a straight line.
	(b)	
Q44	(a)	
	(b)	Material B. It is a poorer conductor of heat so longer time is needed for heat cannot pass through the material, while material A is a better conductor of heat so heat can pass through faster and easily.

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CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 5
Semestral Assessment 1 – 2014
SCIENCE

BOOKLET A

15 May 2014

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.
Shade your answers in the Optical Answer Sheet (OAS) provided.

This paper consists of 20 printed pages.

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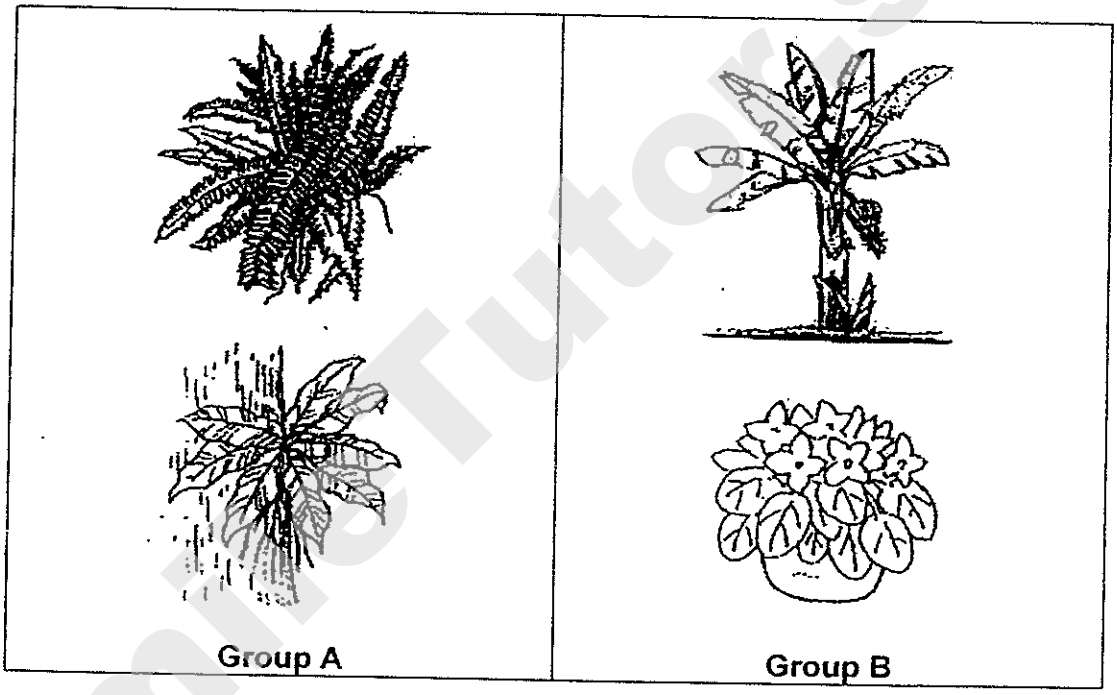
Section A (30 x 2 marks = 60 marks)

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. The diagram below shows two groups of plants, A and B.



How are the plants in these two groups classified?

	Group A	Group B
(1)	Grow on land	Grow in water
(2)	Bear flowers	Do not bear flowers
(3)	Can make its own food	Cannot make its own food
(4)	Reproduce from spores	Do not reproduce from spores

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2. Four pupils made the following statements about animals.

Andy	All mammals have fur or hair.
Belle	All birds have a beak, feathers and wings.
Cindy	Some animals lay eggs while others give birth to live young.
Don	Outer coverings such as feathers and scales protect animals from injuries.

Who had made the correct statements?

(1) Andy and Belle only
(2) Cindy and Don only
(3) Andy, Cindy and Don only
(4) Andy, Belle, Cindy and Don

3. Which one of the following statements about bacteria is **true**?

(1) Bacteria are used to make bread.
(2) All bacteria are harmful to humans.
(3) All bacteria are reproduced by spores.
(4) Bacteria can be found in our intestines.

4. The table below shows Andrew's pulse rate when he carries out three different activities.

Activity	Pulse rate per minute
S	80
T	105
U	60

Which of the following is likely to represent the three activities correctly?

	S	T	U
(1)	Playing netball	Strolling in the park	Sleeping
(2)	Strolling in the park	Playing netball	Sleeping
(3)	Sleeping	Strolling in the park	Playing netball
(4)	Sleeping	Playing netball	Strolling in the park

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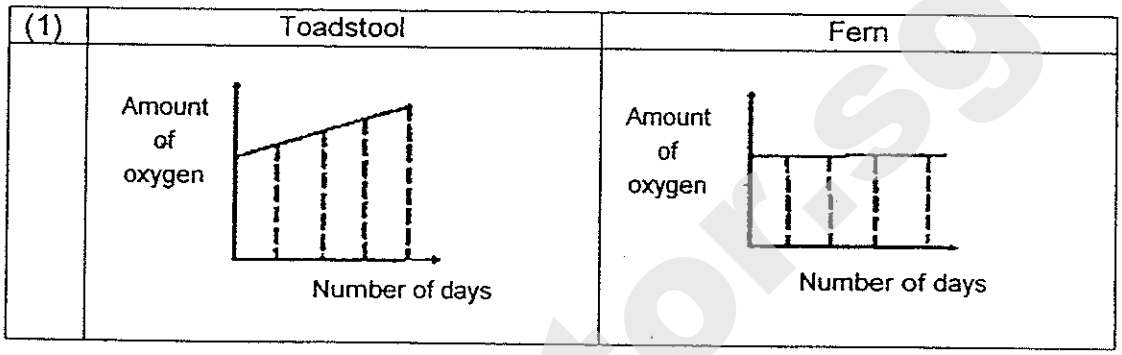
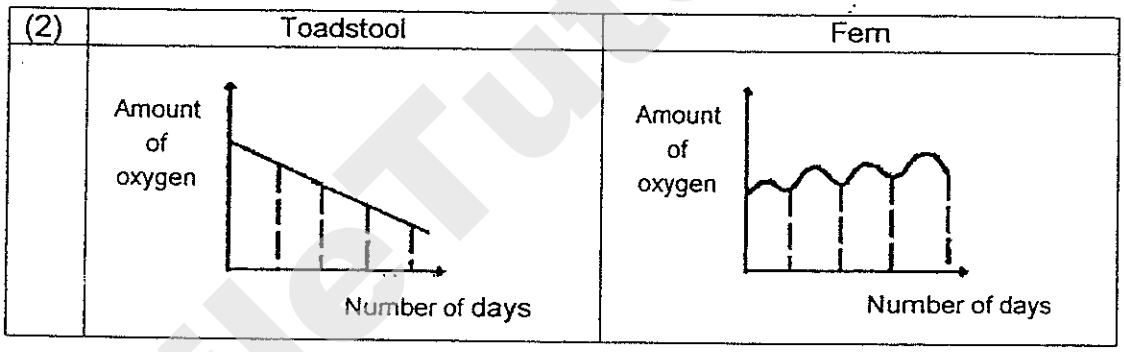
5. Two identical glass containers were each placed over a toadstool and a fern, side by side in a field for a period of 4 days.

Which one of the following pairs of graphs represents the change in oxygen level in these two glass containers?

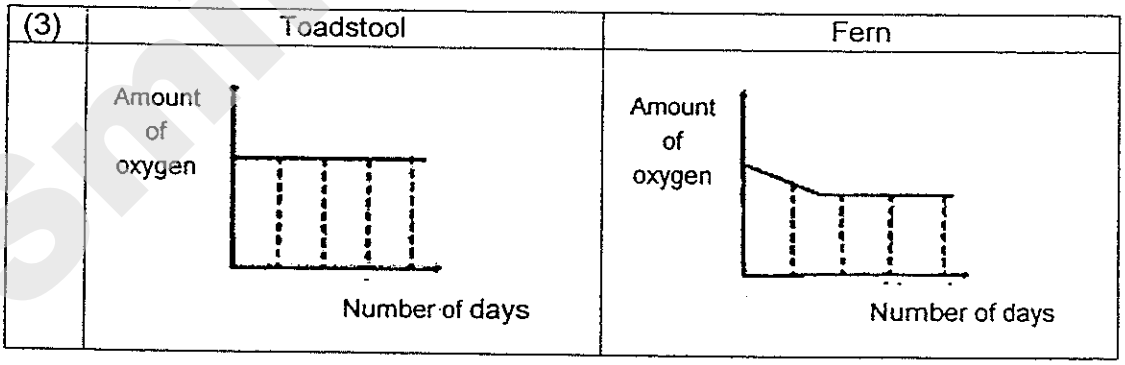
(1)



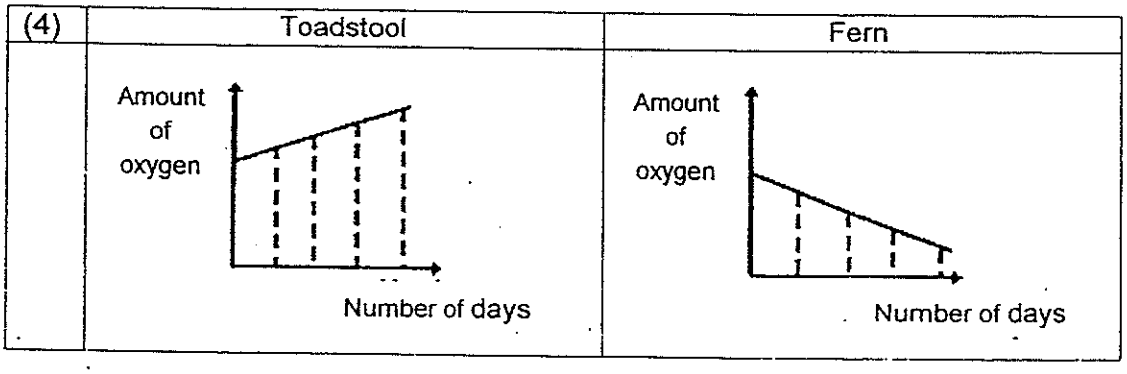
(2)



(3)



(4)



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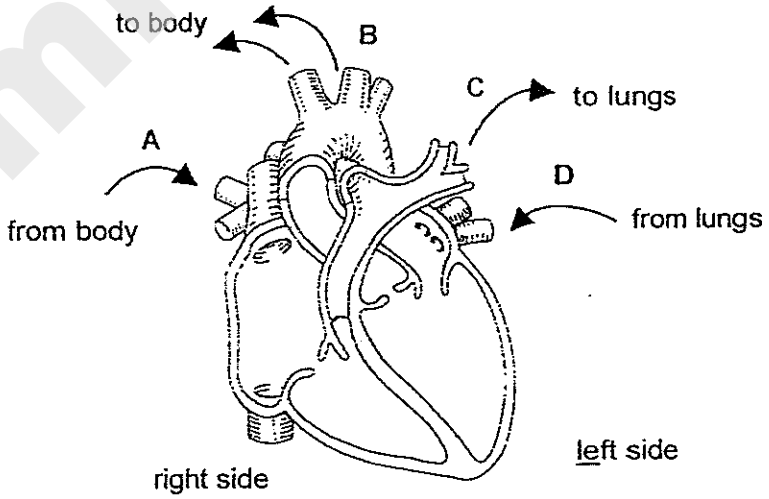
6. Mary observed a flying organism (as shown below) in her garden and wrote the following statements.

A: It has wings.
B: It does not lay eggs
C: It breathes through its lungs.
D: It is body is covered with hairs.
E: It is active at night and sleeps during the day.

Which statements tell her that this organism is a mammal and not a bird?

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

7. Refer to the heart diagram below



Which one of the following shows the correct sequence of how blood is being transported around our body?

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

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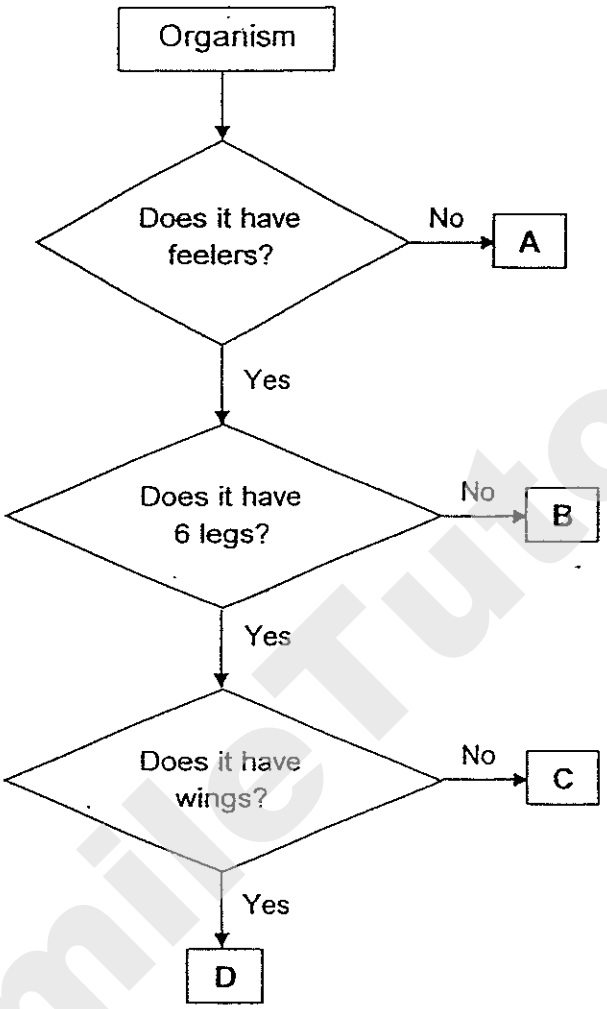
8. Study the flowchart below.



Which letter, A, B, C or D, best represents the animal shown below?

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

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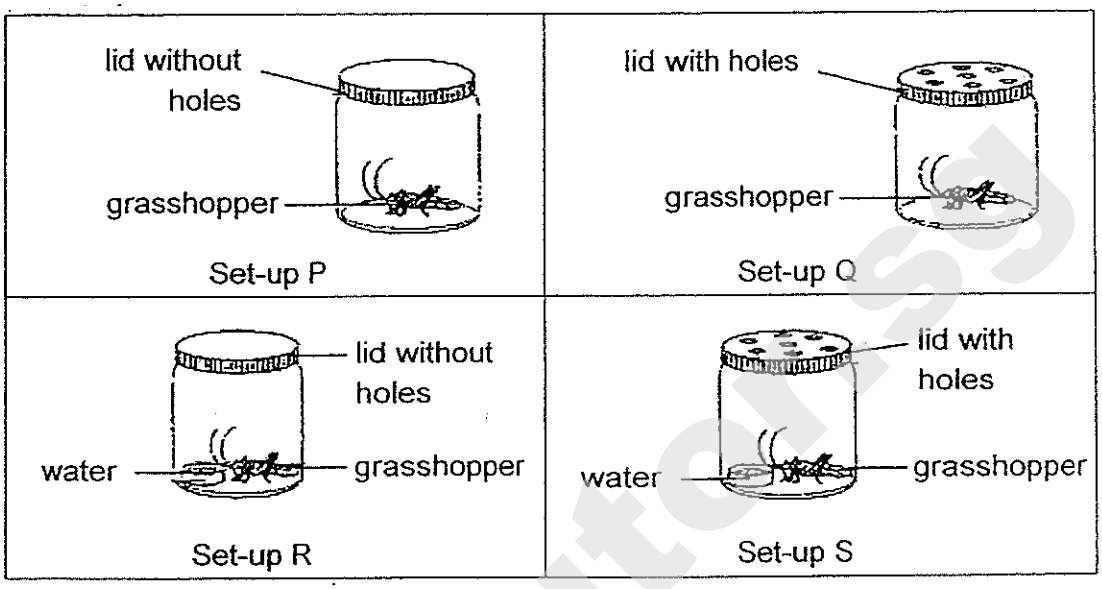
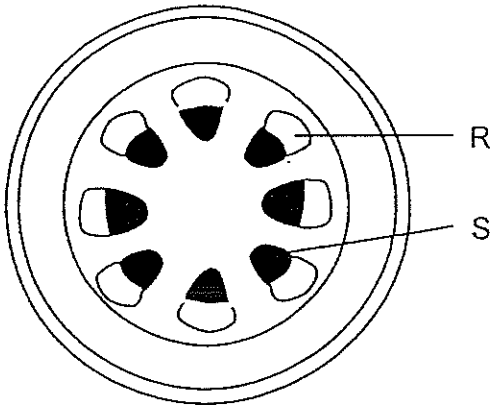
9. Paul sets up four jars, P, Q, R and S, as shown in the diagram below.



He wants to find out whether a grasshopper needs air to survive. Which of the following set-ups should he use?

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

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



Which substances are transported by parts, R and S, of the stem respectively?

	R	S
(1)	Food	Water and dissolved mineral salts
(2)	Water dissolved mineral salts	Food
(3)	Food and carbon dioxide	Water and oxygen
(4)	Water and oxygen	Food and carbon dioxide

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11. Kelly prepared an experiment with four similar pots of flowering plant in four different set-ups shown in the table below. Each pot contains same amount of water.

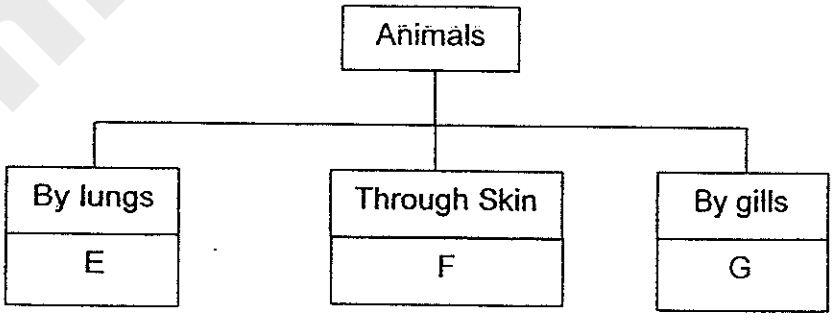
Set-up	Location of the pot of flowering plant	Presence of roots	Temperature of water
W	In sunlight	Present	30 °C
X	In sunlight	Absent	30 °C
Y	In a dark cupboard	Present	30 °C
Z	In a dark cupboard	absent	30 °C

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 the water will affect the amount of water taken in.
D To find out if the amount of water will affect the amount of water taken in.

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

12. The chart below shows the classification of animals by their breathing method.



Which one of the following set of organisms can be best represented by organisms E, F and G?

	E	F	G
(1)	Sparrow	Frog	Whale
(2)	Man	Seal	Swordtail
(3)	Dolphin	Earthworm	Guppy
(4)	Shark	Caterpillar	Goldfish

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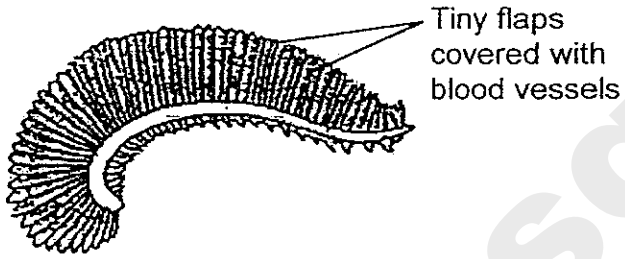
13. The diagram below shows the gills of a fish.

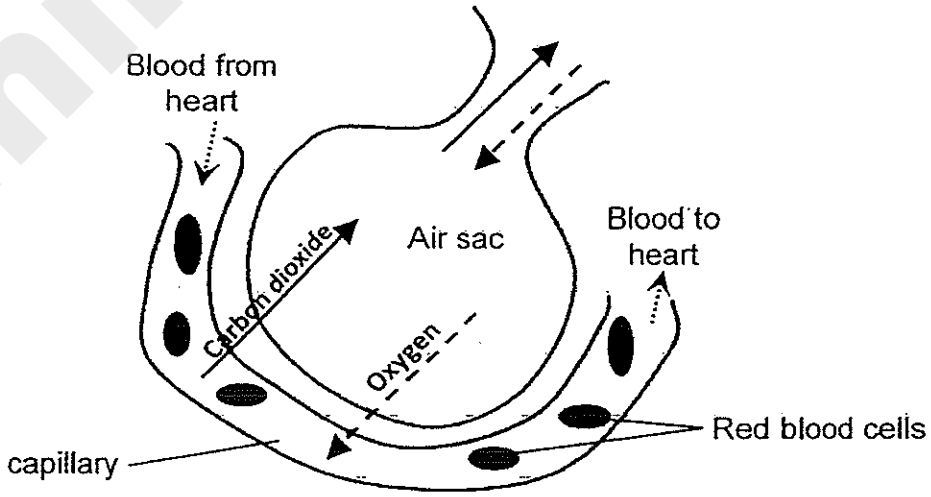


The gills of a fish have the same function as the lungs in humans. Hence, the gills have many tiny flaps to _____.

A increase the surface area for the absorption of oxygen
B enable gaseous exchange to take place at a faster rate
C enable water to be able to flow out of the gills at a faster rate
D Increase the surface area for the absorption of carbon dioxide

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

14. The diagram below represents a magnified view of an air sac in the human being.



Which two body systems are interacting in the above diagram?

(1) digestive and muscular
(2) nervous and respiratory
(3) reproductive and digestive
(4) respiratory and circulatory

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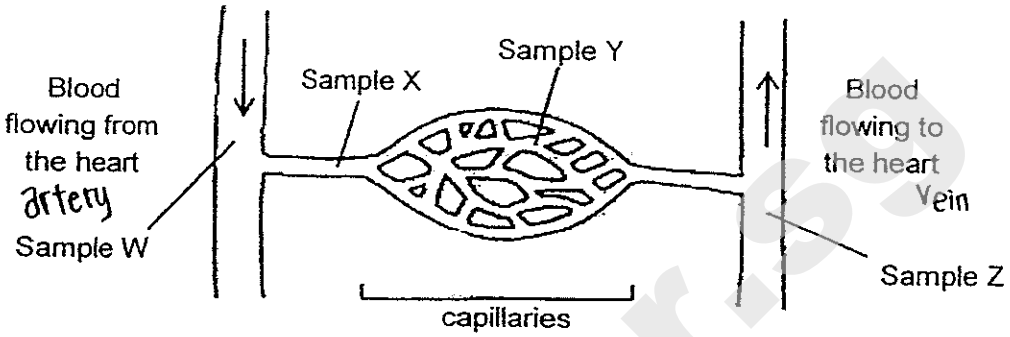
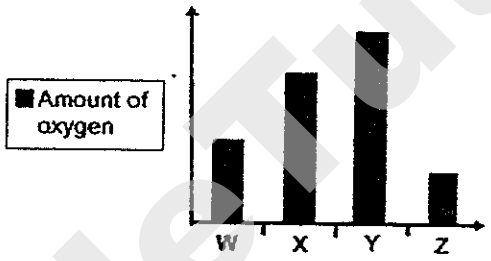
15. The diagram below shows the blood vessels in the human circulatory system.

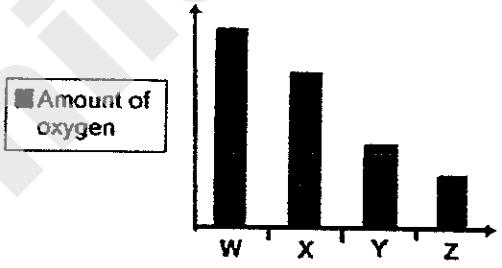


Blood samples, W, X, Y and Z, were taken from different blood vessels in the body. Which one of the following bar graphs is most likely to show the correct amount of oxygen in the blood samples, W, X, Y and Z respectively?

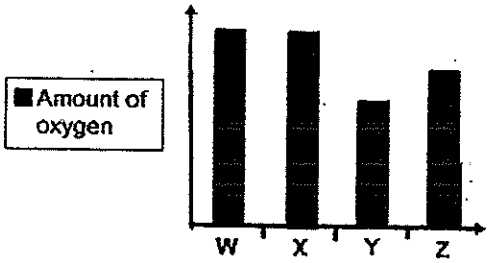
(1)



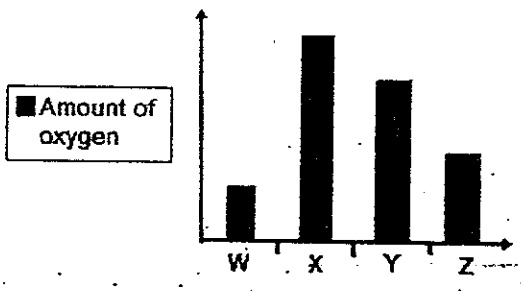
(2)



(3)



(4)



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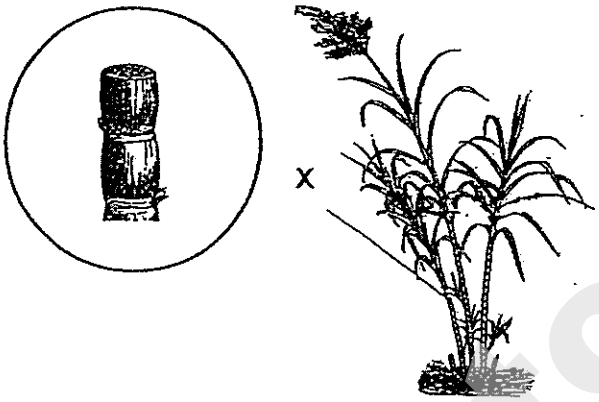
16. Look at the diagram of a plant that is shown below.

Magnified view of part X



Which are the functions of the part marked X?

(A) To store food
(B) To take in water
(C) To hold and spread out the leaves
(D) To hold the plant firmly to the ground

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

17 Which of the following statements about cells is **true**?

(1) All plant cells have chloroplasts.
(2) Bigger animals have bigger cells.
(3) All animal cells are irregular in shape.
(4) An organ is made up of many types of cells.

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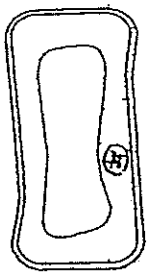
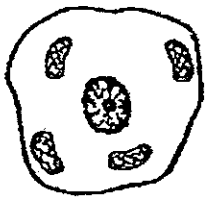
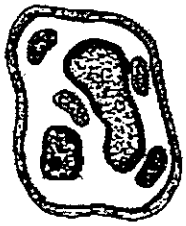
18. The diagrams below show 4 different cells being observed under a microscope.

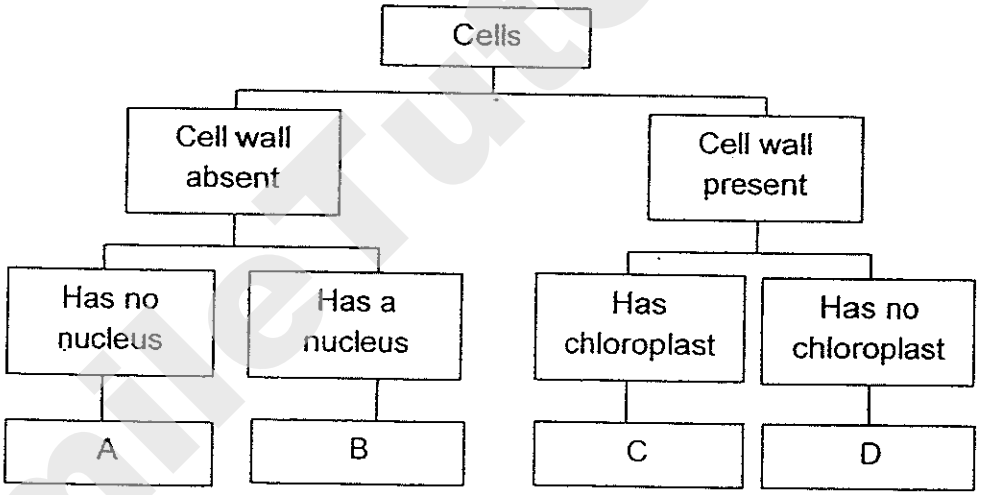

cell W


cell X


cell Y

cell Z

Based on the diagrams above, which of the following correctly shows how the cells should be classified in the classification chart below?



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

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19. Steve was given a bottle with an inflated balloon as shown in Diagram 1 below. After placing this set-up in a location for half an hour, the balloon was found to be deflated as shown in Diagram 2 below.

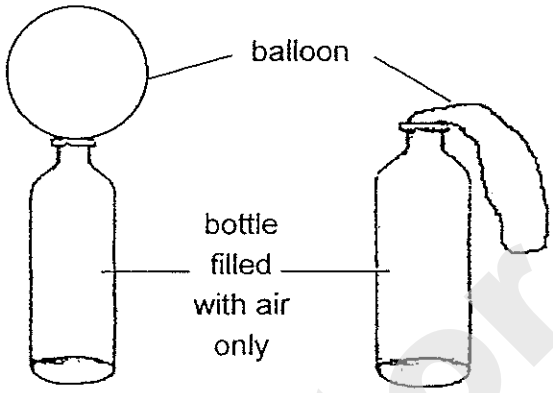

Diagram 1 Diagram 2

Where could the bottle be placed that caused the balloon to be deflated?

(1) In a freezer
(2) Above a flame
(3) In a windy room
(4) In a basin of hot water

20. Which of the following are not matter?

A Steam
B Sunlight
C Darkness
D Electricity

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

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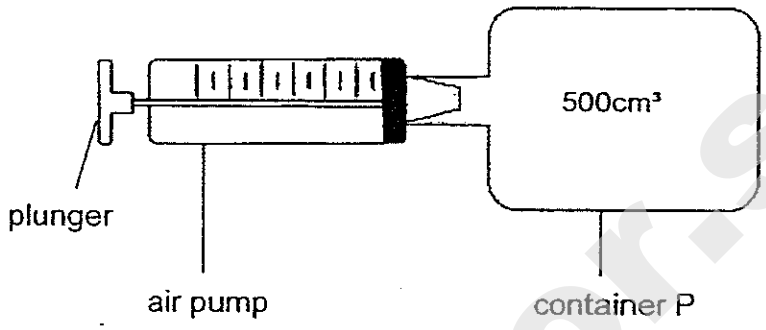
21. Winston conducted an experiment with 2 containers, P and Q, each with a volume of 500cm³. The containers are made of 2 different materials. Each container is attached with an air pump as shown in the diagram below.



Each time he pushes the plunger, 100cm³ of air enters the container. Which of the following correctly shows the materials the containers, P and Q, are made of and the corresponding volume of air in them if Winston pushes the plunger twice?

	Material of container	Volume of air in the container
A	Glass	500cm³
B	Wood	550cm³
C	Thin rubber	650cm³
D	Metal	700cm³

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

22. The table below shows the boiling and melting points of three substances X, Y and Z.

Substances	X	Y	Z
Boiling Point (°C)	58	85	155
Melting Point (°C)	3	23	52
State at room temperature (26°C)	A	B	C

Which one of the following shows the states of the substances, X, Y and Z at room temperature?

	A	B	C
(1)	liquid	liquid	solid
(2)	solid	gas	solid
(3)	liquid	solid	gas
(4)	solid	solid	gas

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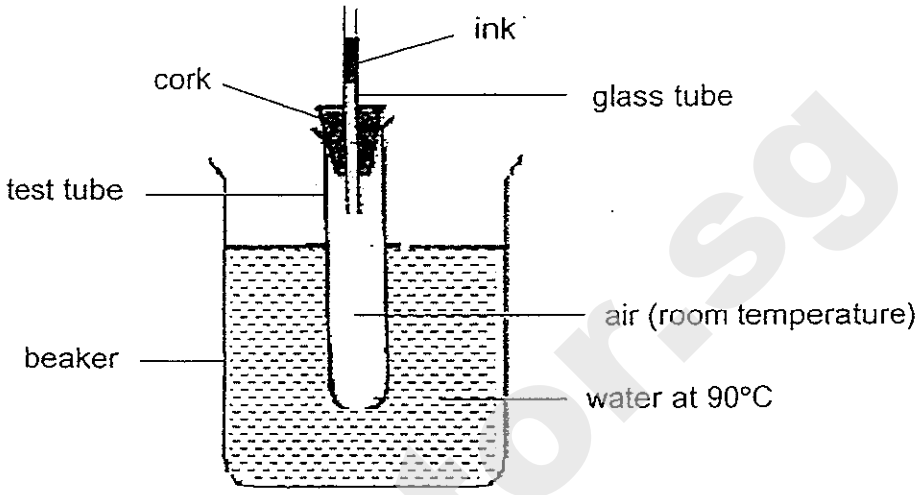
23. Hazel set up an experiment as shown below.



What would Hazel observe about the ink in the glass tube during the experiment?

(1) The ink would rise.
(2) The ink would drop.
(3) The ink would drop and then rise.
(4) The ink would remain at the same position.

24. Which of the following statements is incorrect?

(1) Soap bubbles reflect light.
(2) Metals and shiny surfaces can reflect light very well.
(3) We do not need light to say that a dress is pink in colour.
(4) A transparent plastic sheet allows all the light falling on it to pass through.

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25. "Teh tarik" is a hot tea beverage which is poured back and forth repeatedly between two containers from a certain height. The picture below shows a man preparing "Teh tarik".

Which one of the following describes the heat transfer that has taken place?

(1) The hot tea loses heat to the surrounding air to cool down more quickly.

(2) The hot tea gained heat from the surrounding air to become hotter more quickly.

(3) The hot tea gained heat from the man so that it remained hotter for a longer time.

(4) Heat from one container was transferred to the other container so that the tea remained hot for a longer time.

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26. Steve placed a wooden block at position X in front of a screen as shown in Diagram 1 below and observed the shadow cast on the screen. He then moved the wooden block to position Y, further from the torch, and observed the shadow cast on the screen again as shown.

Diagram 1

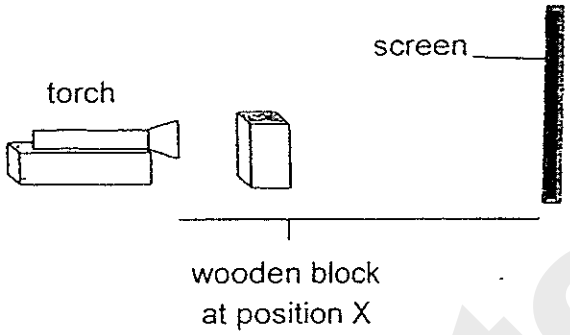
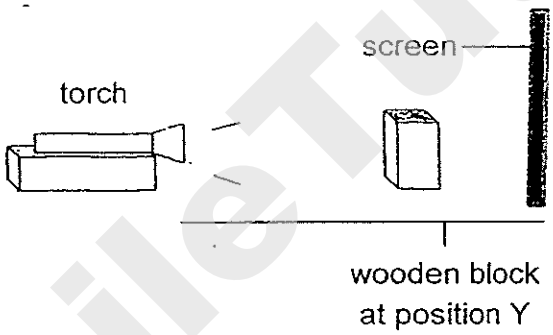
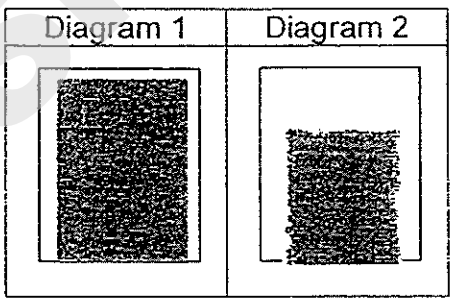


Diagram 2

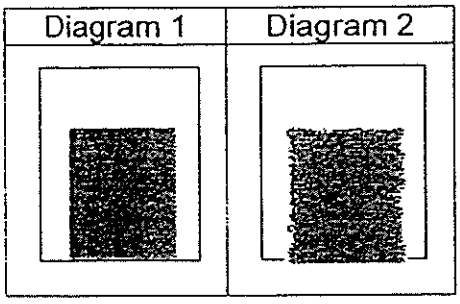


Based on his observations, which of the following shows correctly the shadows cast on the screens?

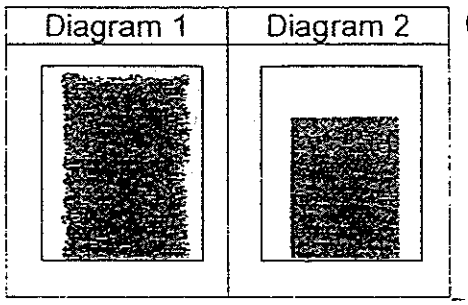
(1)



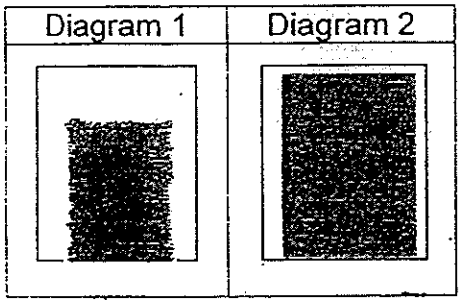
(2)



(3)



(4)



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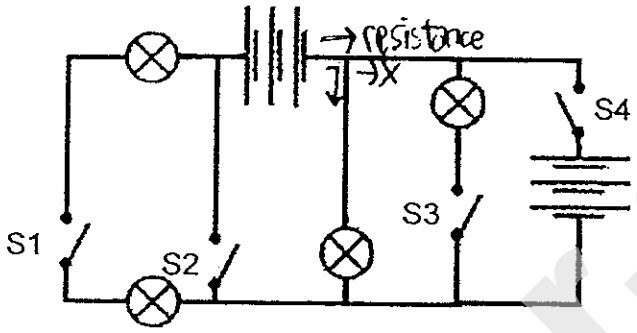
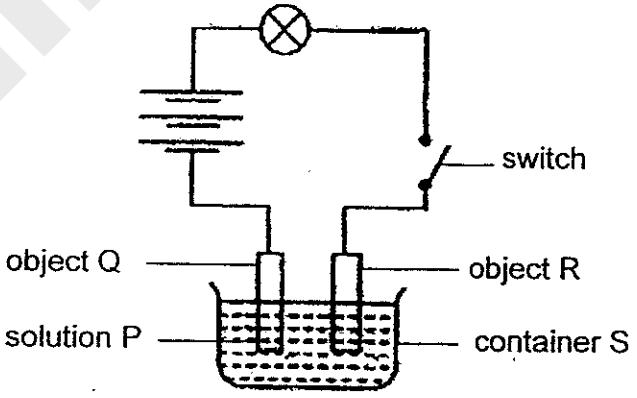
27. A circuit board has 4 switches, 4 bulbs and some batteries as shown below.



What is the **least** number of switches that have to be closed in order to have all the bulbs light up?

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

28. Janice conducted an experiment with an electrical circuit attached with object Q and R dipped into solution P as shown in the diagram below. She observed that the light bulb lights up when the circuit is closed.



Based on the experiment above, which of the following statements is correct?

(1) Solution P is a conductor of electricity.
(2) Object Q and R are made of non-magnetic material.
(3) Container S is made of material that is a conductor of electricity.
(4) The switch is made of material that is a good conductor of heat.

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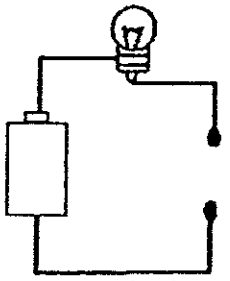
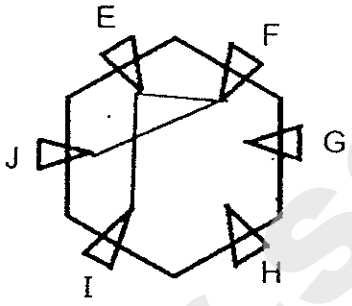
29. Zena was given a circuit tester to find out which of the metal paper clips E, F, G, H, I or J are connected on the mystery circuit card.



circuit tester



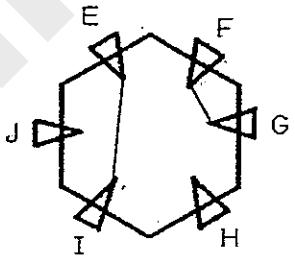
mystery circuit card

She recorded her observations in the table below.

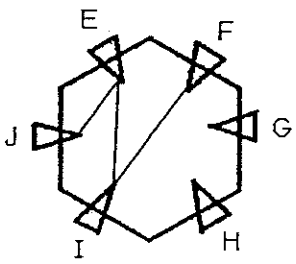
Metal paper clips tested	Did the light bulb light up?
E and F	Yes
F and J	Yes
G and H	No
H and I	No
I and E	Yes
J and F	Yes

From the observations recorded, which of the following circuit card was she given?

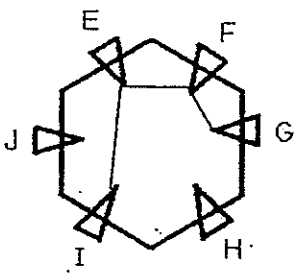
(1)



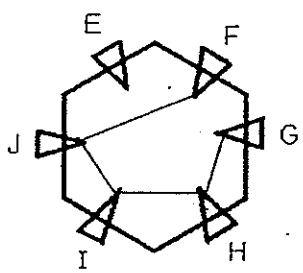
(2)



(3)



(4)



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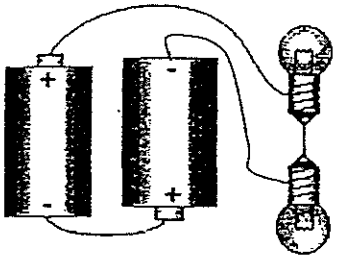
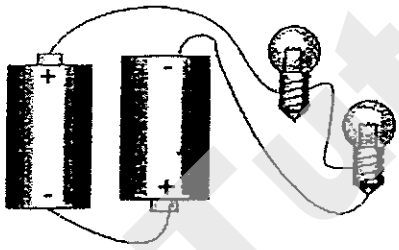
30. Look at the circuits below carefully.

(A)

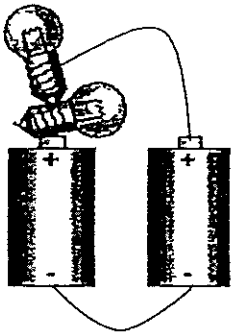


(B)

(C)



(D)



Which one of the circuits will have at least 1 bulb light up?

(1) B and D only

(2) A, B and C only

(3) A, C and D only

(4) B, C and D only

~ End of Section A ~

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CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 5
Semestral Assessment 1 – 2014
SCIENCE

BOOKLET B

15 May 2014

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.

Booklet A	60
Booklet B	40
Total	100

This paper consists of 14 printed pages.

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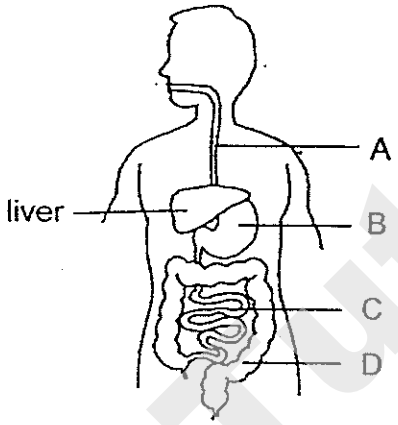
Section B (40 marks)
For questions 31 to 44, write your answers in this booklet.

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

31. The diagram below shows the human digestive system.



(a) As the food passes through the system, at which part, A, B, C or D, does it contain the least digested food? [1]

_____

(b) Name part A and state its function in the digestive system. [1]

_____

_____

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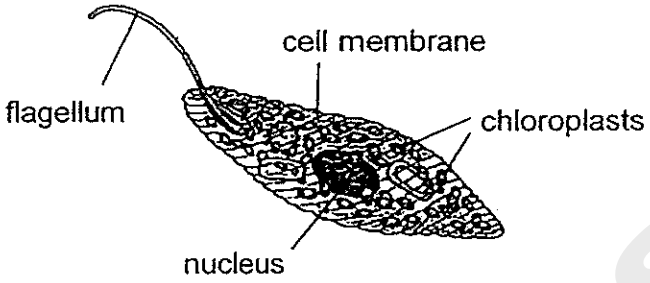
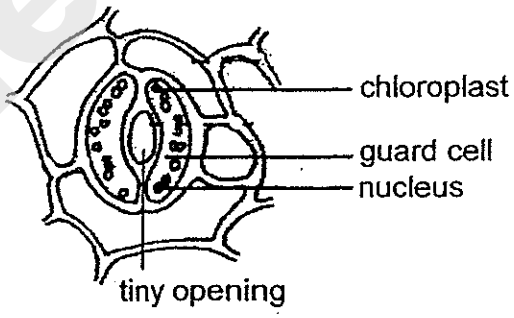
32. Nathan was studying the unicellular organism shown in the diagram below. The organism is found in a pond and it moves with the use of its tail-like structure or flagellum.



(a) Based on the diagram, explain why Nathan would have difficulty classifying the organism as an animal cell or a plant cell. [2]

The diagram below shows a cell taken from a plant.



(b) Name the tiny opening and state one of its main functions. [2]

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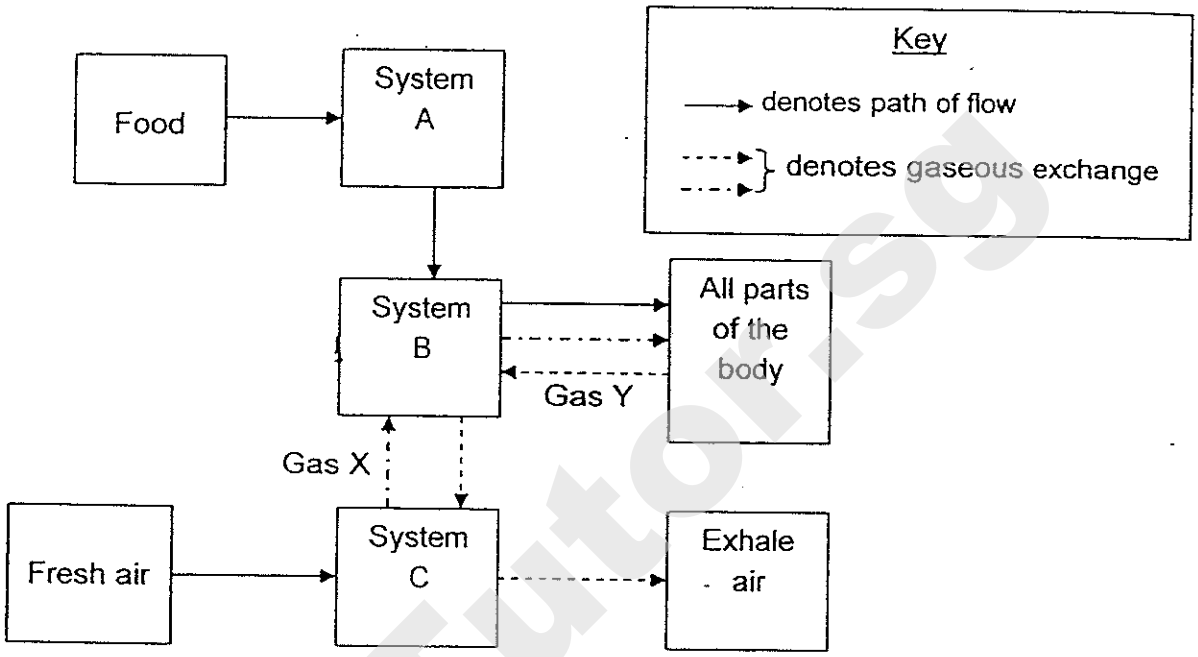
33. The chart below shows how food and air is transported in the human body.



(a) Identify systems B and C. [1]

System B: _____

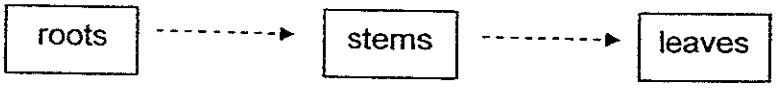
System C: _____

(b) Identify gases X and Y. [1]

Gas X: _____

Gas Y: _____

(c) The diagram below shows the movement of water in a plant.



State one difference between system B of the human body and the water transport system in a plant. [1]

_____

_____

_____

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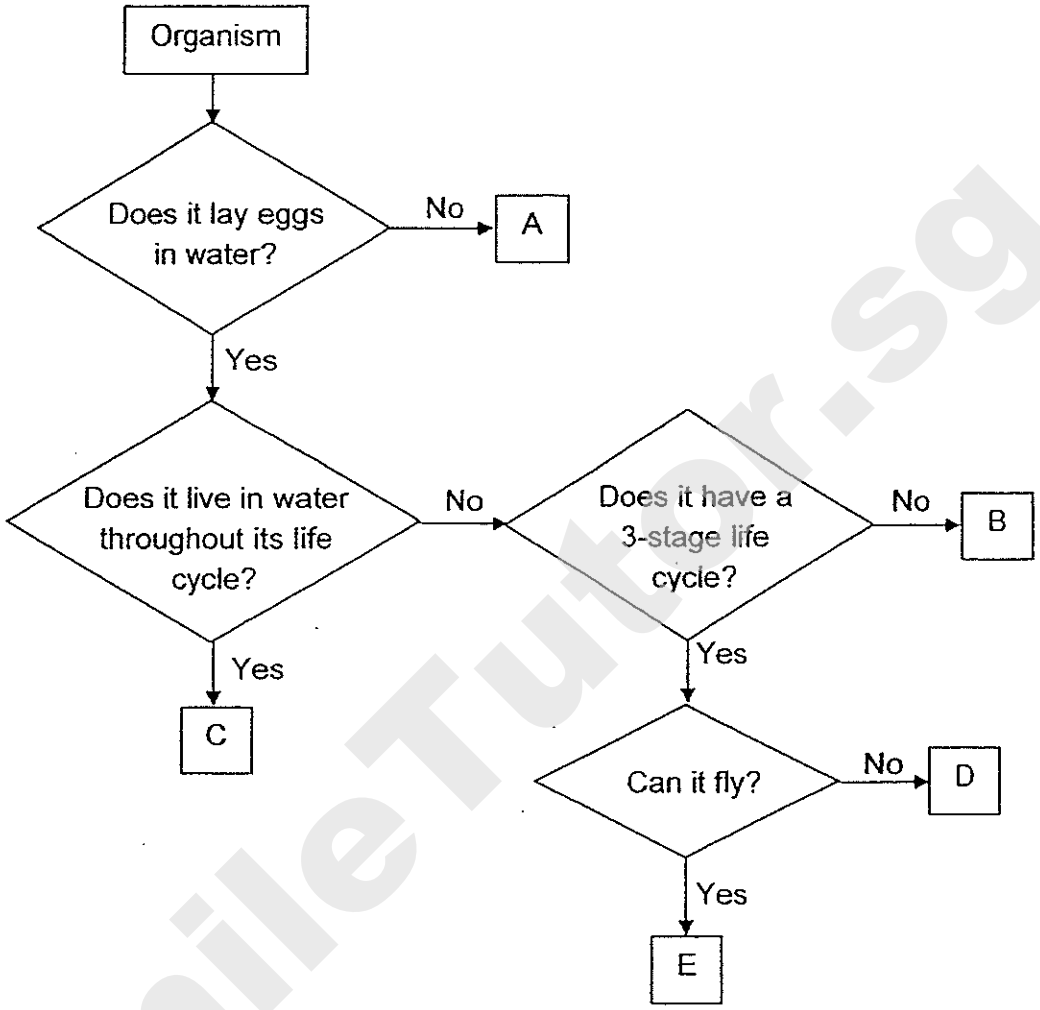
34. Study the flowchart below carefully.



(a) State the characteristics of organism D. [2]

_____

_____

(b) Based only on the characteristics shown in the flowchart, state one similarity and one difference between organisms, C and E. [1]

Similarity: _____

Difference: _____

(c) Which letter, A, B, C, D or E, in the flowchart does mosquito represent? [1]

_____

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35. An outer ring of the stem between positions, X and Y, of a plant is removed as shown in Figure 1. One of the tubes found in this section is also removed. Figure 2 shows the appearance of the stem around the section removed after some time.

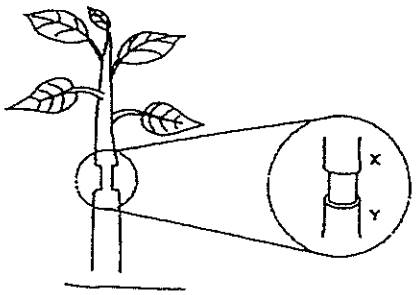


Figure 1

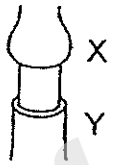


Figure 2

(a) Based on the result shown in Figure 2, what is the tube that has been removed? [1]

_____

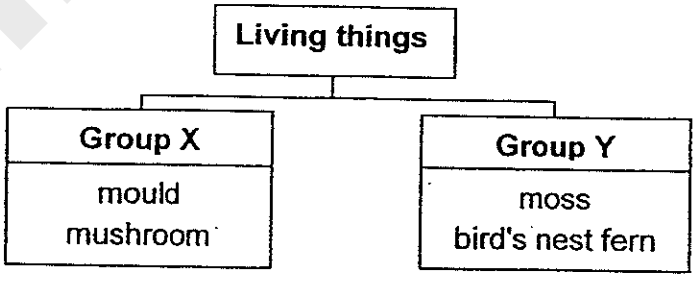
(b) What could have caused the swelling at part X of the stem as shown in Figure 2? [2]

_____

_____

_____

36. Joan classified some living things into two groups as shown in the chart below.



(a) Suggest a suitable heading for X and Y? [1]

Group X: _____

Group Y: _____

(b) Organisms like moulds and bacteria can spoil our food. However, they can be useful too. State one way to show how these organisms can be useful to our environment. [1]

_____

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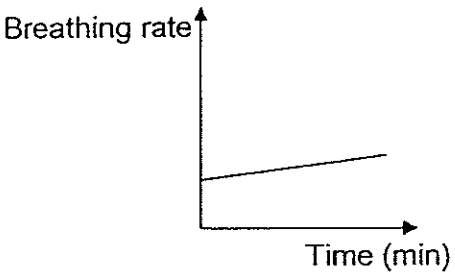
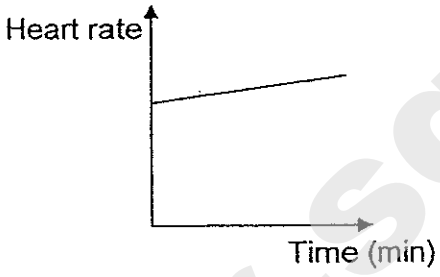
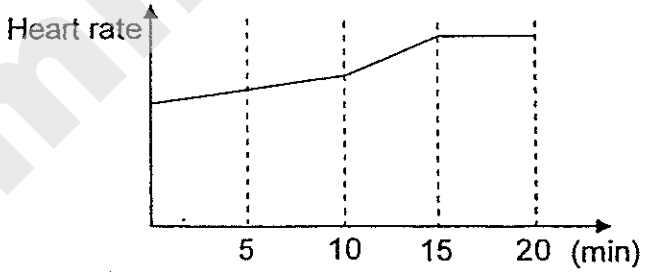
37. Ali walked round the field for 10 minutes. His heart rate and breathing rate during the walk were measured and plotted in the graphs as shown below.





(a) Based on the graphs shown above, what is the relationship between the heart rate and breathing rate? [1]

(b) After 10 minutes of walking, Ali increased his pace and jogged for another 10 minutes. He plotted his heart rate as shown in the graph below.



(i) Why was there a greater change in his heart rate after 10 minutes? [2]

(ii) What happened to his heart rate after 15 minutes?

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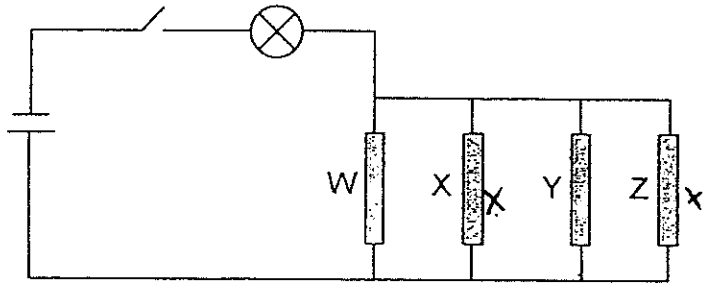
38. Ellen wanted to investigate whether four rods, W, X, Y and Z, were electrical conductors or insulators. She used the circuit below.



The table below shows what happened when the switch was closed and certain rod(s) was/were removed.

Rod(s) removed from circuit	Did the bulb light up?
W	Yes
X and Y	Yes
W, X and Y	No
W, Y and Z	No

Based on the results of her experiment, complete the table below. [2]

Rod	Conductor or insulator?
W	
X	
Y	
Z	

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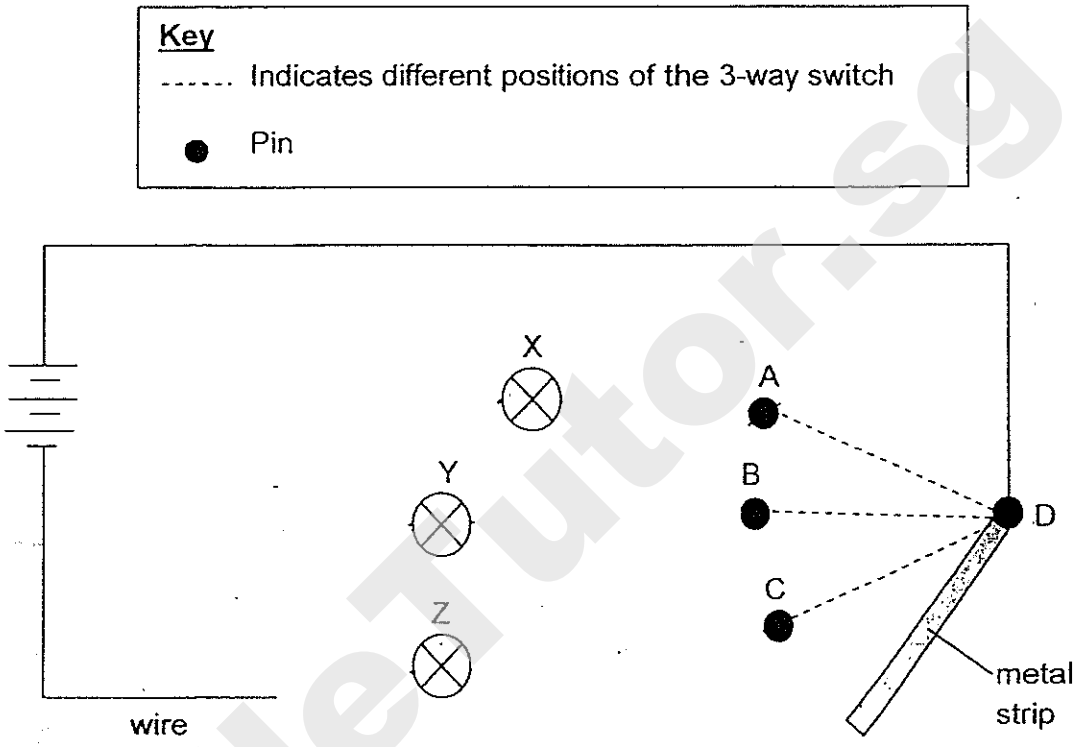
39. The diagram shows an open circuit with three bulbs, X, Y and Z. The circuit is controlled by a 3-way switch which is made up of 4 pins, A, B, C and D. A metal strip is connected to Pin D and can be moved to touch pins, A, B and C.



(a) **Draw wires** in the diagram to show how the 3-way switch can be connected to bulbs, X and Z, so that we can move the metal rod to light up **any one of the 3 bulbs.** [2]

(b) What is the advantage of using a 3-way switch system as shown above, in the house? [1]

_____

_____

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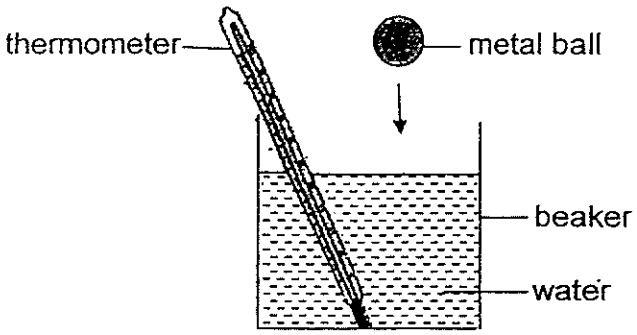
40. A metal ball was taken from a freezer and put into a beaker of water at room temperature as shown in the diagram below.



Write down an observation about the temperature of the water and another about the water level. Explain why they happened. [2]

Temperature of the water	
Observation	
Explanation	

Water level in the beaker	
Observation	
Explanation	

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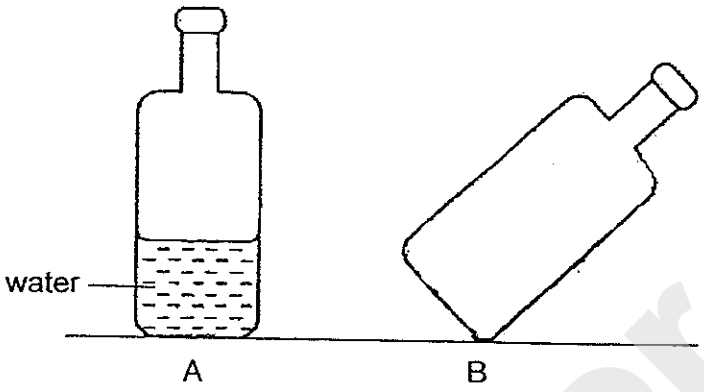
41. Diagram A shows a water bottle partially filled with water. Diagram B shows the new position of the bottle when it is tilted.



(a) Using a **ruler** and a **pencil**, draw the water level in diagram B. [1]

(b) Based on the above observation, what can you infer about the property of a liquid? [1]

_____

_____

(c) State one similarity and one difference between a liquid and a gas. [1]

Similarity: _____

Difference: _____

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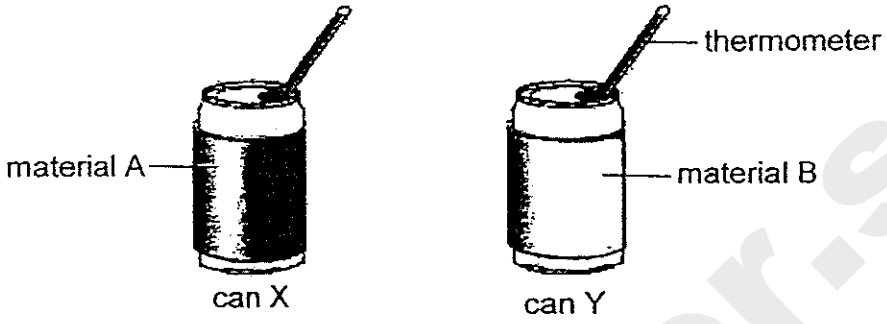
42. Ginna carried out an experiment with two identical cans, X and Y. She filled each can with 150ml of water at 70°C. Next, she wrapped can X with material A and can Y with material B. The materials were of the same size and thickness. She left the two cans on a table in the room.



She measured the temperature of the water in the two cans every five minutes and recorded the results in the table below.

Time (min)	Temperature of water (°C)	
	Can X	Can Y
0	70	70
5	62	64
10	53	58
15	44	53
20	36	47
25	31	41
30	31	35
35	31	?

(a) Why was the temperature of water in can X lower than the temperature of water in can Y after 5 minutes? [2]

_____

_____

_____

(b) Based on the results in the table above, predict the most likely temperature of water in can Y at 35 minutes? [1]

_____

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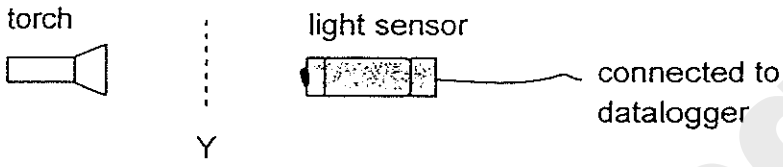
43. Betty carried out an experiment with a light sensor in a dark room. She set up the experiment as shown in the diagram below.



(a) When nothing is placed at Y, the light sensor shows a reading of 500 lux (units). When a sheet of tracing paper is placed at Y, the reading becomes 200 lux. Give a reason for this observation. [1]

_____

_____

Betty repeated her experiment with four different types of materials, A, B, C and D and recorded the results in the table below.

Material	Amount of light (lux)
A	0
B	495
C	180
D	250

(b) Betty wanted to choose a material to make a display cabinet for her toy collections. Which one of the materials, A, B, C or D, is the most suitable? Explain your answer. [2]

_____

_____

_____

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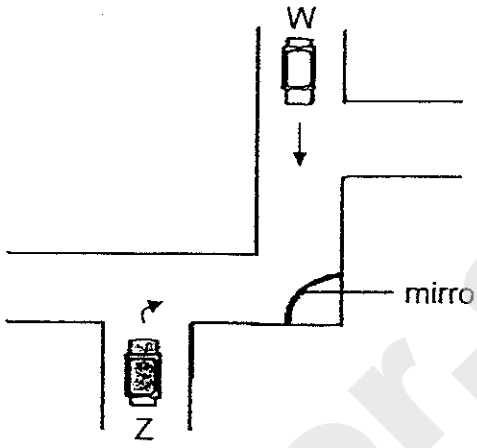
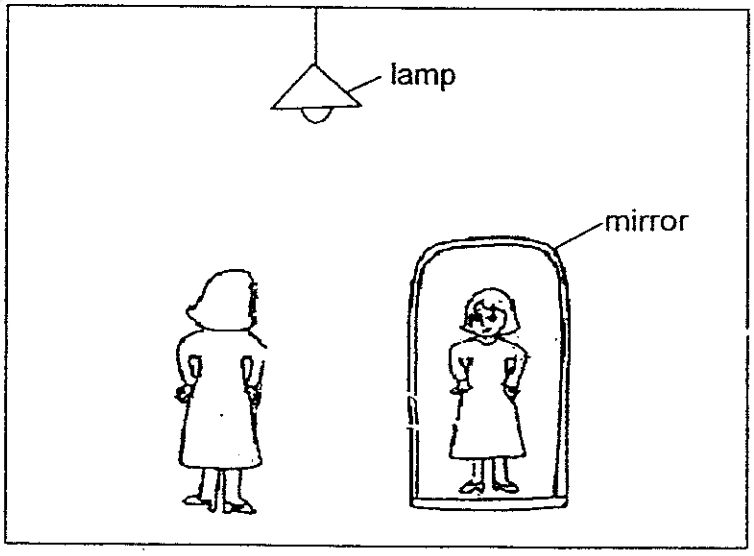
44. The diagram below shows two cars, W and Z. They are travelling in the directions shown by the arrows.



(a) Can the driver of car Z see car W in the mirror from the position shown in the diagram? Explain your answer. [1]

(b) The diagram below shows a girl standing in front of a mirror in a room. Draw arrows to show how light travels from the lamp to enable her to see her own reflection in the mirror. [1]



~~ End of Paper ~~

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Exam Paper 2014 Answer Sheet

School: CHIJ ST NICHOLAS GIRLS' SCHOOL
Subject: PRIMARY 5 SCIENCE
Term: SA1

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

31. (a) D
(b) Gullet. It has muscles to push the food down from the mouth to the stomach.

32. (a) A plant cell has a cell wall while this organism does not have a cell wall. An animal cell does not have chloroplasts but this organism has chloroplasts, hence Nathan would have difficulty classifying the organism as an animal cell or a plant cell.
(b) Stomata. It opens and closes to allow gaseous exchange between the plant and the surrounding air.

33. (a) B: Circulatory system
C: Respiratory system
(b) X: Oxygen
Y: Carbon dioxide
(c) System B of the human body transport oxygen, food and water to all parts of our body from the heart and waste materials from our body back to the heart but the water transport system in a plant transports only water from the roots to all parts of the plant.

34. (a) Organism D lays eggs in water, does not live in water throughout its life cycle, has a 3-stage life cycle and cannot fly.
(b) Similarity: Both organisms C and E lay eggs in water.
Difference: Organism C lives in water throughout its life cycle while organism E does not live in water throughout its life cycle.
(c) B

35. (a) The food-carrying tubes.
(b) As positions X and Y are removed below the leaves, no food made in the leaves can be transported to the roots. As a result, food made in the leaves is stored at the end of part X, causing it to swell.

36. (a) X: Fungi
Y: Plants
(b) Moulds and bacteria decompose decayed food, then the food will return to the soil as nutrients.

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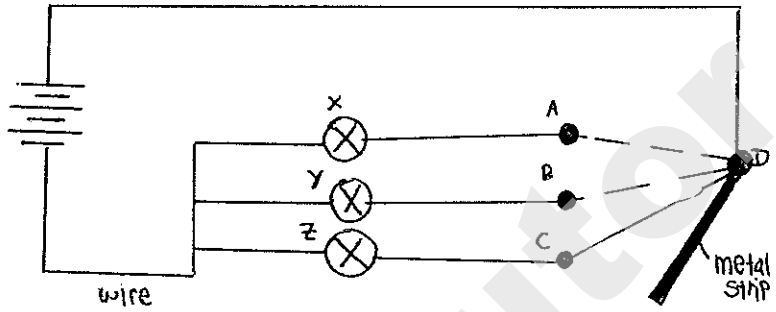
37. (a) As the heart rate increases, the breathing rate also increases.

(b) i. As he was exercising, his body needed more energy, hence his heart beats faster to pump more blood containing oxygen and digested food to the cells in his body to carry out more respiration and at the same time, removing carbon dioxide, so there was a greater change in his heart rate.

ii. His heart rate remains the same after 15 minutes.

38. W: conductor; X: insulator; Y: conductor; Z: insulator

39. (a)



(b) If 1 bulb fuses, the rest of the bulbs will still light up.

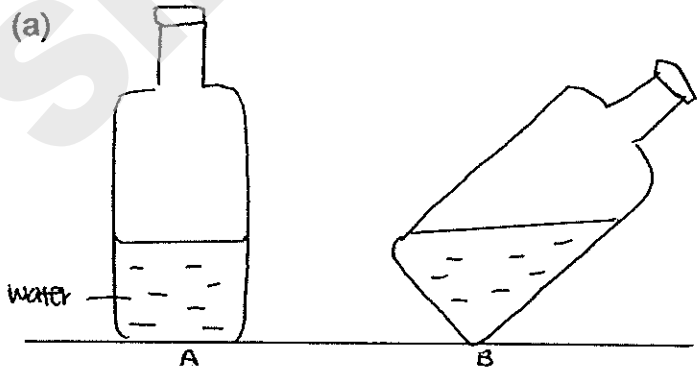
40. (a) Observation: The temperature of the water will be lower than the room temperature.

Explanation: The water lost heat to the metal ball as heat travels from a hotter region to a colder region; hence the temperature of the water will be lower than room temperature.

Observation: The water level in the beaker will rise.

Explanation: The metal ball is a solid and solids occupy space, hence the water level in the beaker will rise.

41. (a)



(b) Liquids do not have a fixed shape.

(c) Similarity: Both liquid and gas occupy space.

Difference: The liquid cannot be compressed while the gas can.

42. (a) Material A which was used to wrap around can X is a better conductor of heat than material B. Good conductor of heat conduct heat away faster than poor conductor of heat, so the temperature of water in can X is lower than the temperature in can Y after 5 minutes.

(b) 31°C

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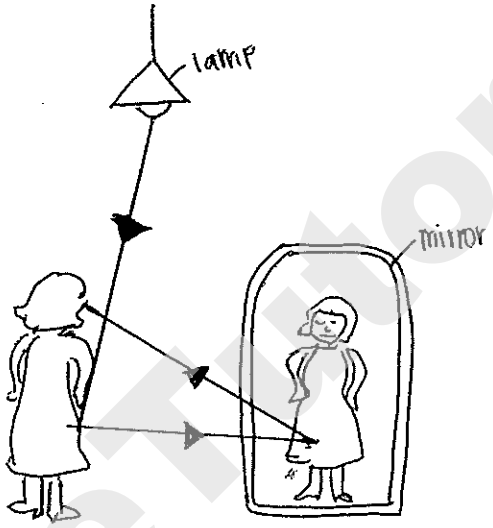
43. (a) The sheet of tracing paper is translucent, which means it allows some light to pass through, so the reading became 200 lux when the tracing paper is paced at Y.

(b) Material B. It allows the most amount of light to pass through among the 4 materials, so light can pass through the cabinet and the toys in the cabinet will reflect the light into her eyes, allowing her to see her toy collection.

44. (a) No. Reflection of car W cannot be reflected into the driver of car Z's eyes and light travels in a straight line.

(b)



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HENRY PARK PRIMARY SCHOOL
2014 SEMESTRAL EXAMINATION 1
SCIENCE
PRIMARY 5

100

Duration of Paper: 1 h 45 min

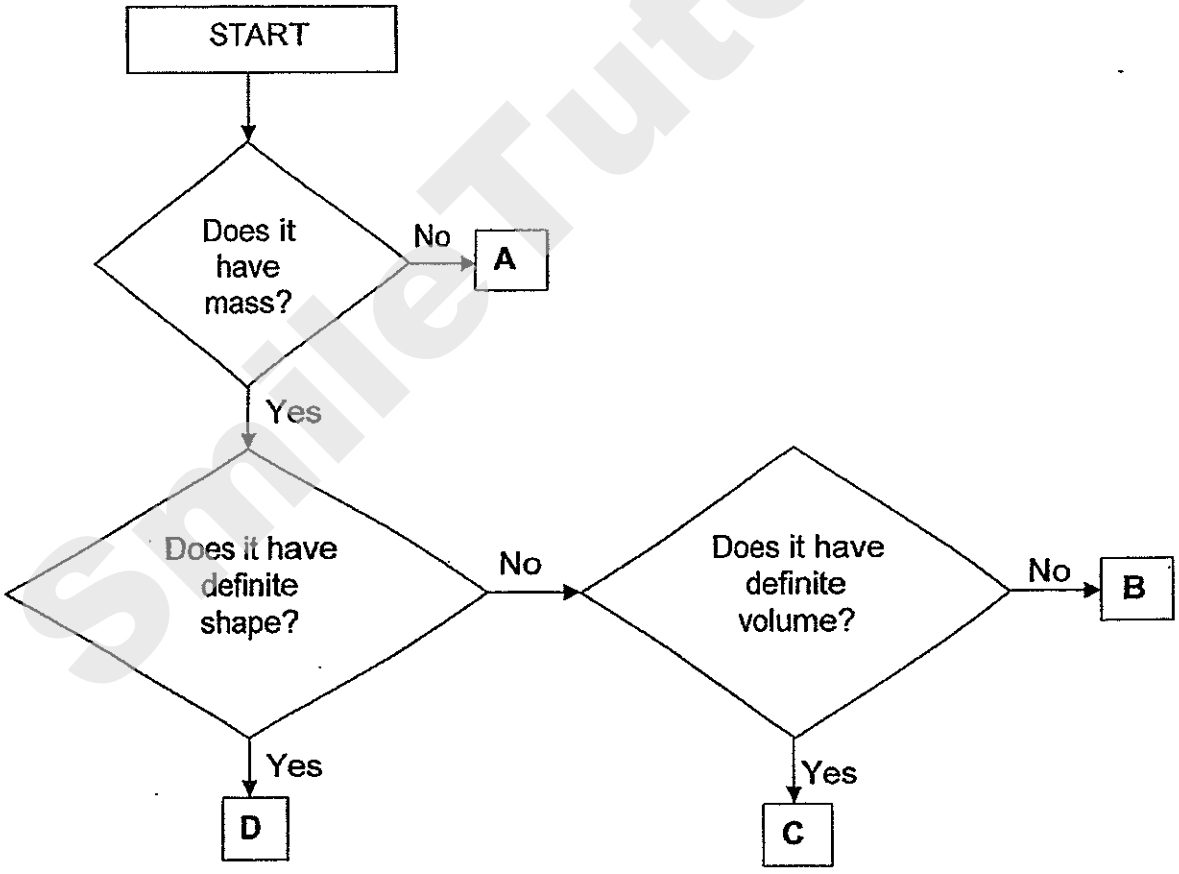
Name:_____ ( )

Class: Pr 5 _____ Parent's Signature: _____

Booklet A (60 marks)

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

1. Study the flow chart below.



Which of the above, A, B, C and D, **cannot** be classified as matter?

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

( )

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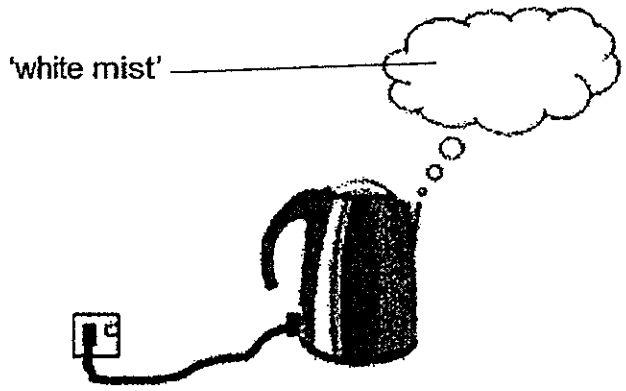
2. Study the diagram below.

Sam observed a 'white mist' above the kettle of boiling water.



Which of the following statements correctly shows the similarity between the **'white mist'** and **clouds in the sky**?

(1) Both have mass.
(2) Both are in gaseous state.
(3) Both do not occupy space.
(4) The temperature of both are 100°C. ( )

3. The table below shows the melting and boiling points of substances X, Y and Z.

Substance	Boiling point (°C)	Melting point (°C)
X	110	56
Y	148	108
Z	88	65

Which of the following describes the state of matter of each substance at 90°C?

	X	Y	Z
(1)	solid	liquid	gas
(2)	liquid	gas	solid
(3)	liquid	solid	gas
(4)	solid	gas	liquid

( )

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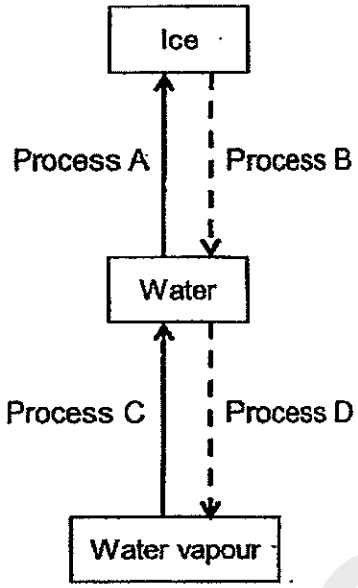
4. The diagram below shows the changes in state of water.



Which of the following is correct?

	Process A	Process B	Process C	Process D
(1)	Condensation	Evaporation	Freezing	Melting
(2)	Freezing	Melting	Evaporation	Condensation
(3)	Freezing	Melting	Condensation	Evaporation
(4)	Melting	Freezing	Evaporation	Condensation

( )

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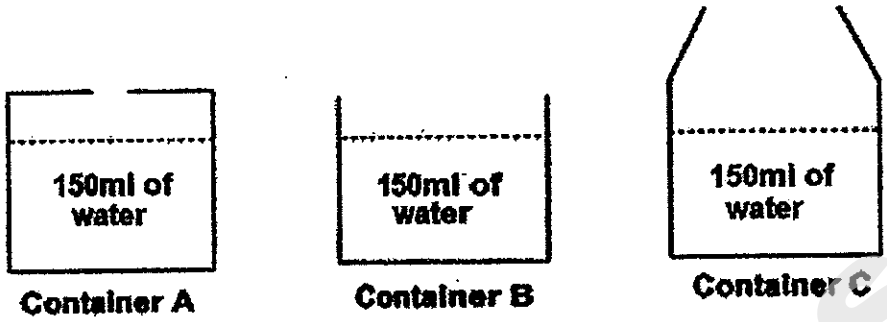
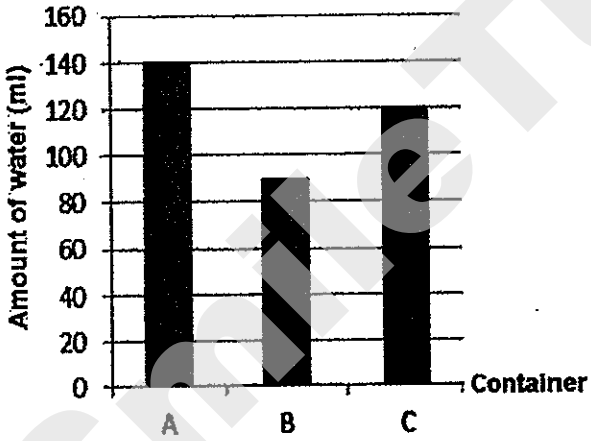
5. Three similar containers, A, B and C, were set up as shown below. Each container has the same amount of water but different sizes of openings.

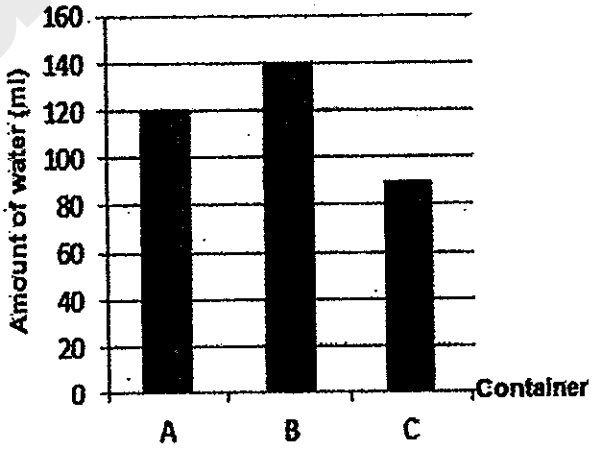


The amount of water in each container was measured after placing them under the Sun for two hours.
Which of the following graphs correctly represents the amount of water **left** in each container after two hours?

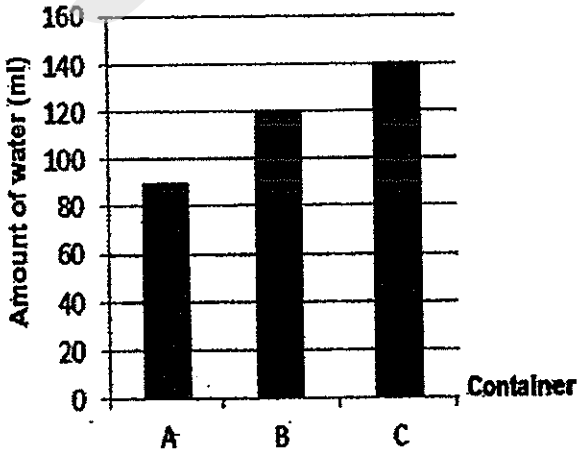
(1)



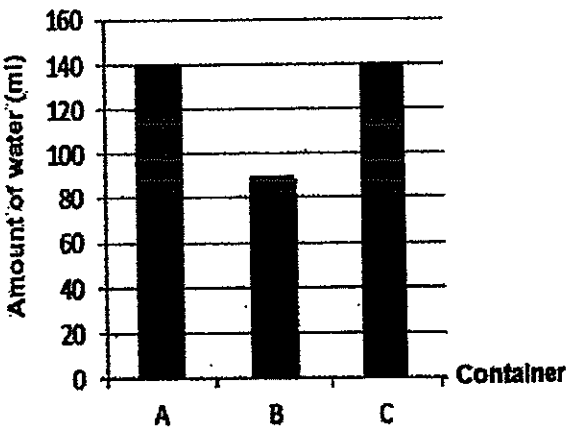
(2)



(3)



(4)



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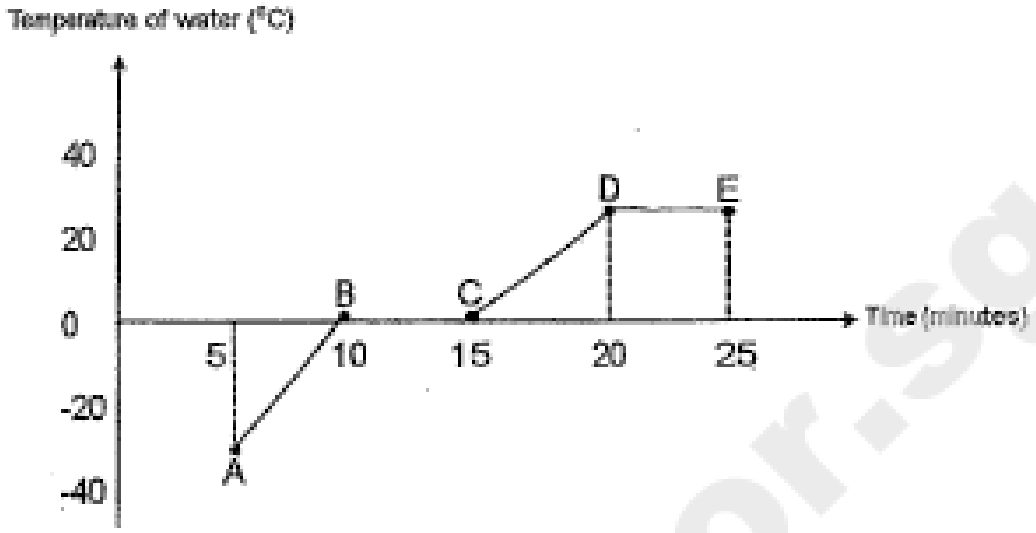
6. The graph below shows the changes in temperature of an ice cube over 25 minutes.



Which part of the graph (lines AB, BC, CD or DE) shows that the ice cube is melting?

(1) AB
(2) BC
(3) CD
(4) DE ( )

7. Sarah conducted an experiment with substances **X**, **Y** and **Z**. These are her observations.

X cannot be compressed. Y will take the shape of the container. Z can be compressed.

Y becomes Z when it gains heat. X becomes Y when it gains heat.

Based on her observations, identify **X**, **Y** and **Z** respectively.

	X	Y	Z
(1)	Solid	Liquid	Gas
(2)	Solid	Gas	Liquid
(3)	Liquid	Solid	Gas
(4)	Gas	Liquid	Solid

( )

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8. Which of the following statements are **correct** about evaporation and boiling of water?

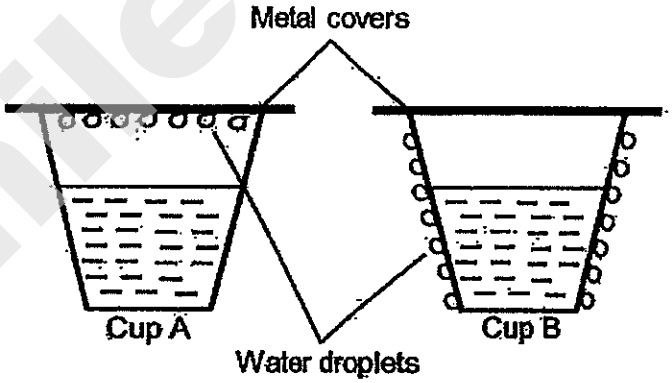
	Evaporation	Boiling
A.	Takes place on the surface of water	Takes place throughout the water
B.	Slow process	Fast process
C	Water loses heat during this process	Water gains heat during this process

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

( )

9. Mary prepared two similar cups, A and B, containing water of different temperatures.

They are placed in a room temperature of 30°C. After a few minutes, Mary saw water droplets as shown in the set-ups below.



Which of the following best represents the temperature of water in the two cups?

	Temperature of water (°C)	
	Cup A	Cup B
(1)	10	30
(2)	10	80
(3)	30	80
(4)	80	10

( )

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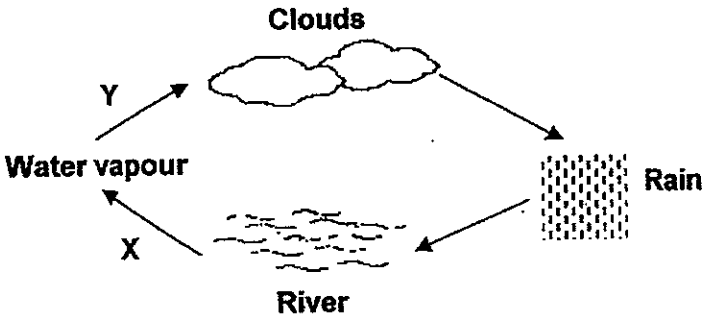
12. The diagram below shows the water cycle.



X and Y are two processes taking place in the water cycle shown above.

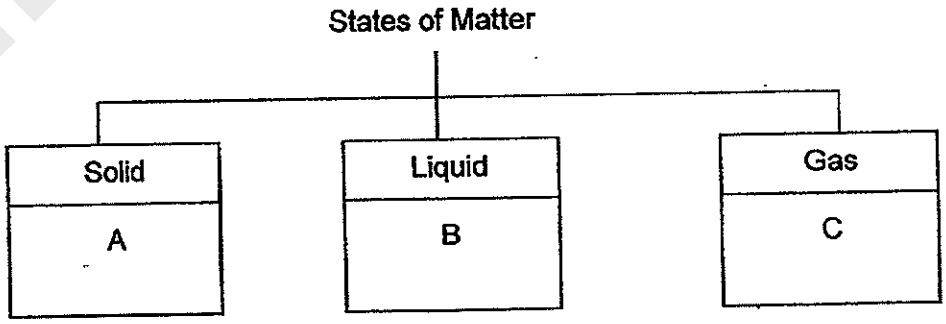
In which of the following is process X or process Y taking place?

A: Leaving an ice cube on the table.
B: Blowing wet hair with a hairdryer.
C: Adding ice cubes into a glass of warm milk.
D: Mist formed on spectacles when leaving an air-conditioned room.

	Process X	Process Y
(1)	B	A
(2)	D	C
(3)	C	A
(4)	B	D

( )

13. Study the classification chart below.



Which of the following box(es) should we place 'steam' in?

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

( )

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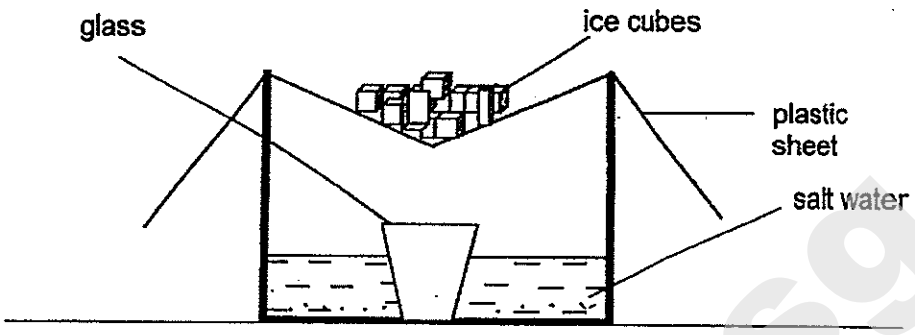
10. James set up the following experiment in the school's Science lab. After some time, a substance was found in the glass.



Which of the following substances was found in the glass?

(1) Ice
(2) Salt
(3) Water
(4) Salt water

( )

11. Which of the following **does not** show effects of heat gain?

(1) Water freezing
(2) Ice cube melting
(3) Drying clothes in the garden
(4) Cooking rice in a rice cooker

( )

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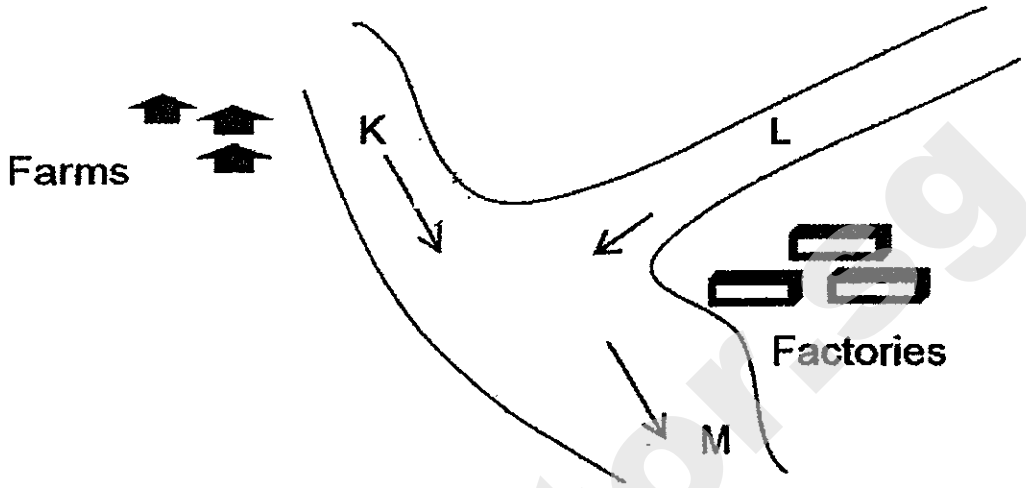
14. Samantha obtained equal amounts of water samples from different parts of the rivers, K, L, and M as shown in the diagram below.

The arrows show the direction in which the water flows.



She placed an equal number of water plants into each water sample and recorded her observations in the table below.

Part of River	Number of water plants	
	At the beginning of experiment	3 days later
K	10	6
L	10	17
M	10	0

The farms and factories release substances into the river that are harmful to the organisms in the river.

What can she conclude from her observation?

A. The water sample from Part M contained the least amount of harmful substances.
B: The water sample from Part M was not suitable for water plants to grow.
C: The water sample from Part K is affected by the harmful substances released from the farm.
D: The water sample from Part L is most suitable for water plants to grow.

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

( )

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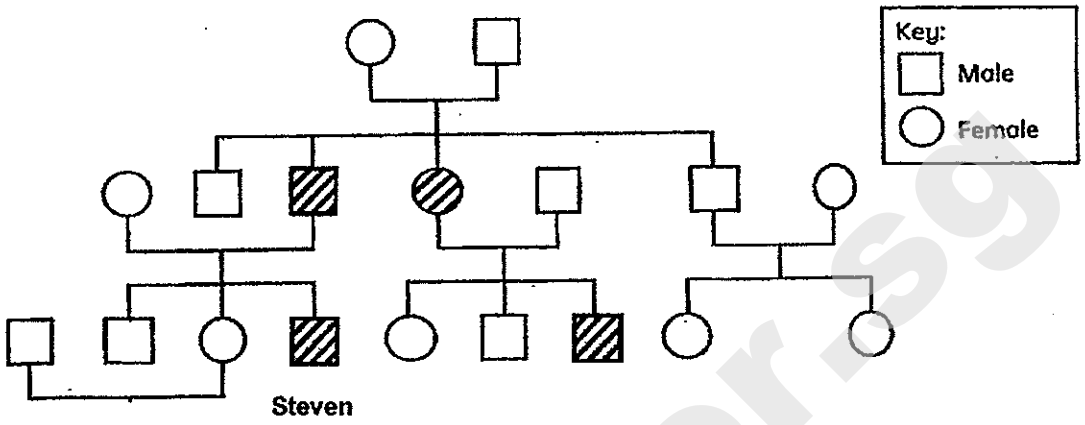
15. The diagram below shows Steven's family tree.

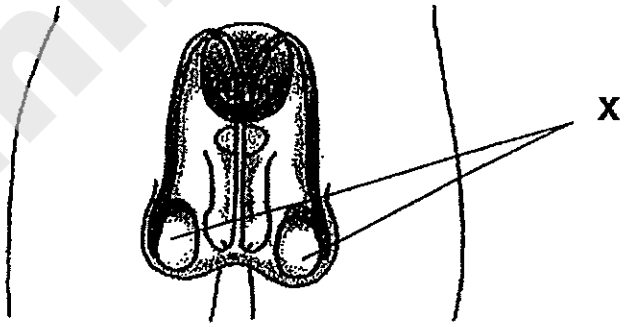


The shaded figures represent family members with dimples.

Based on the table above, which of the following statements is **not** correct?

(1) Steven's siblings do not have dimples.
(2) Steven's mother does not have dimples.
(3) Steven and his male cousin have dimples.
(4) Steven inherited his dimples from his grandfather. ( )

16. The diagram below shows the male reproductive system of a human.



Which of the following is produced by the parts labelled X?
(1) egg
(2) ovary
(3) sperm
(4) testes

( )

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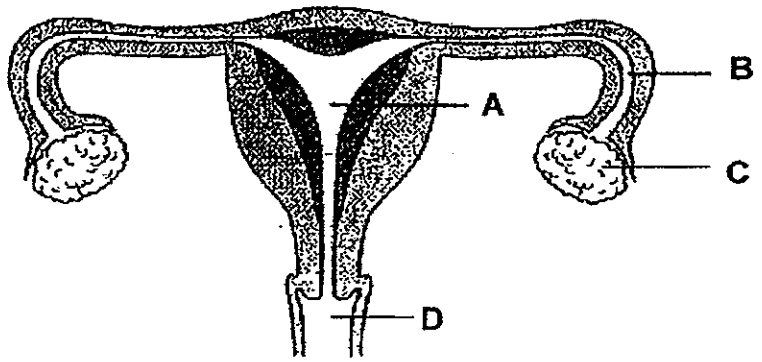
17. The diagram below shows parts (**A**, **B**, **C** and **D**) of the female reproductive system of a human.



Which one of the following parts of the female reproductive system produces the eggs?

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

( )

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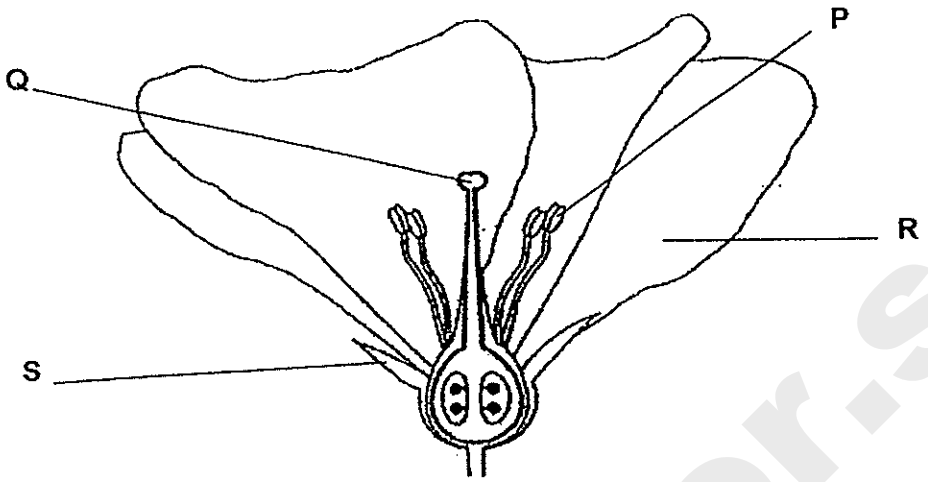
18. Siti conducted an experiment with a flower shown below.



She removed one part of the flower. The flower did not produce any seeds after that.

Which part of the flower, **P**, **Q**, **R** or **S** did Siti remove?

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

( )

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19. Diagram A shows the fruit of a plant. Diagram B shows the flower of the same plant.

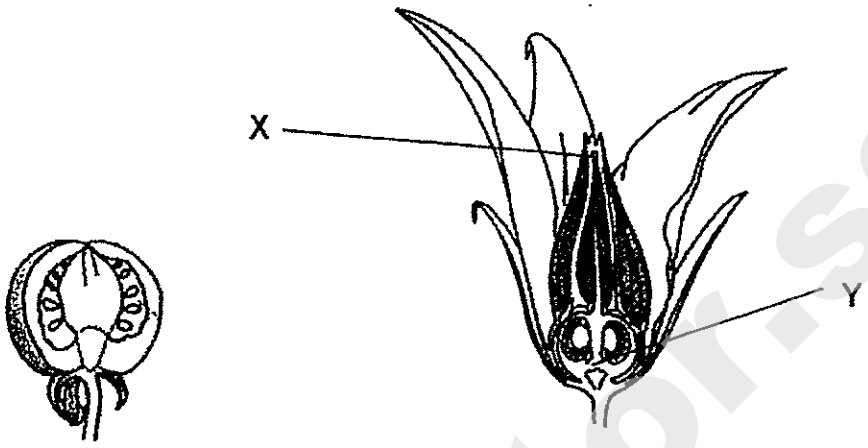


Diagram A

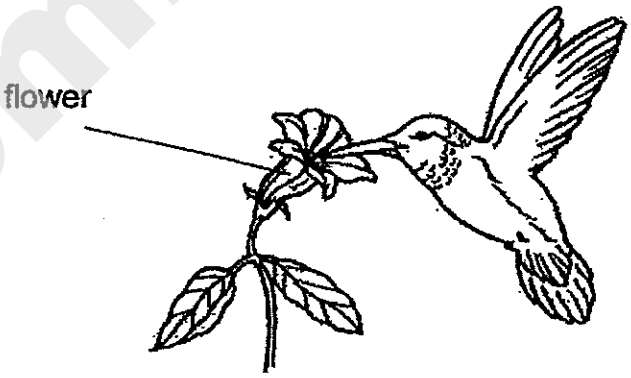
Diagram B

State the process(es) that must take place and which part, X or Y, of the flower has the fruit developed from.

	Process(es)	Part of the flower
(1)	Pollination and fertilisation	X
(2)	Pollination only	Y
(3)	Pollination only	X
(4)	Pollination and fertilisation	Y

( )

20. Study the diagram below.



Plant P

How is the bird useful to the plant P?

(1) It feeds on the nectar of the flower.
(2) It carries the stigma to another flower.
(3) It carries the pollen grains to another flower.
(4) It ensures the seeds are dispersed away from the parent. ( )

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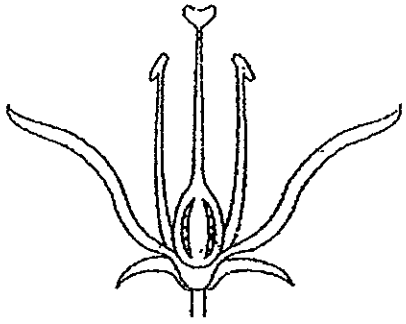
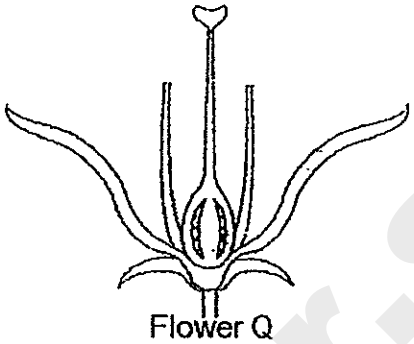
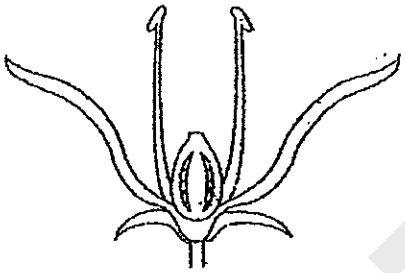
21. Tim placed a pot of plant with four similar sized flowers in the garden after removing parts of each of the flowers **Q**, **R** and **S** as shown in the diagram below.



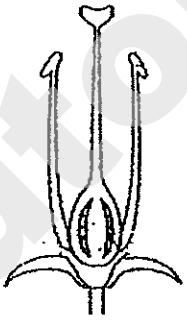
Flower P



Flower Q



Flower R



Flower S

Which flowers are likely to become fruits?

(1) P and S only
(2) R and Q only
(3) P, Q and S only
(4) Q, R and S only

( )

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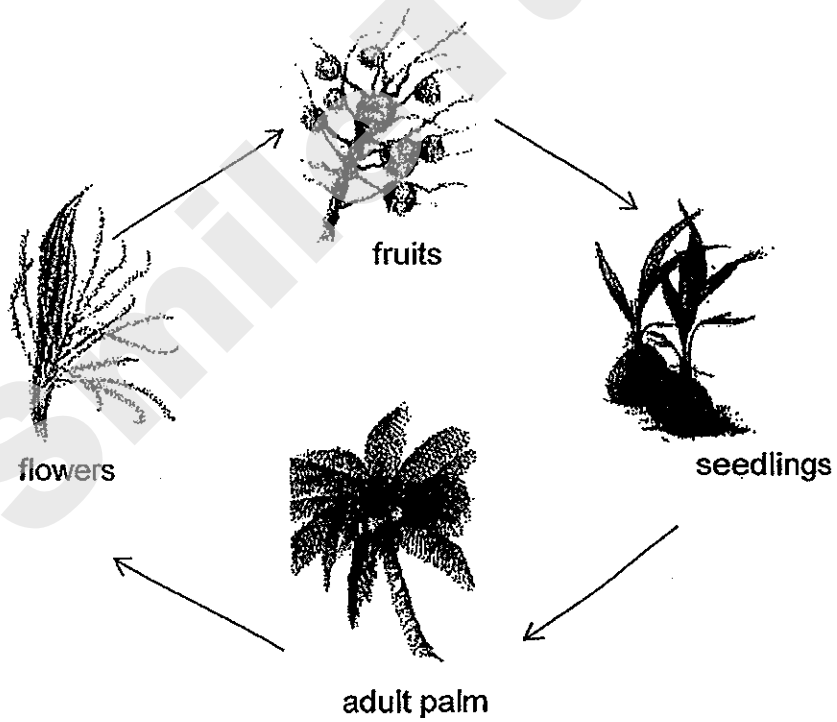
22. Observe the picture below carefully.
People were often hurt and cars dented when the fruits of these palms fell on them.

The diagram below shows the life cycle of a palm.



Without cutting down all the palms, which part should be removed to prevent these plants from bearing fruits?

(1) fruits
(2) flowers
(3) seedlings
(4) adult palm

( )

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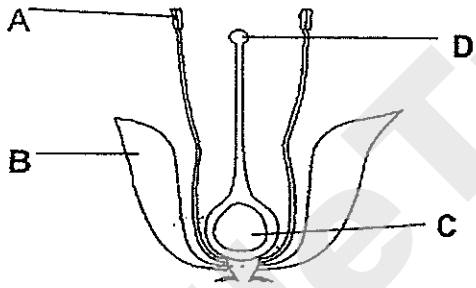
23. In both humans and flowering plants, sexual reproduction is similar in which of the following ways?

A: In both, fertilisation takes place between the male and the female reproductive cells.
B: In both, pollination takes place before the fertilisation process.
C: In both, the main female reproductive part containing the eggs is called the ovary.
D. In both, germination has to take place to produce an offspring.

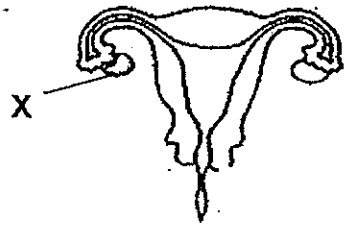
(1) A and B only
(2) B and C only
(3) A and C only
(4) C and D only

( )

24. The diagrams below show parts of two reproductive systems.



Flower



Human
Reproductive System

Which of the following statements correctly compares part X with parts A, B, C and D?

A: Parts A and X are ovaries.
B. Fertilisation takes place inside parts D and X.
C: Parts C, D and X are the female reproductive parts.
D: Parts C and X contain eggs.

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

( )

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25. Study the table on the male reproductive cells of the plant and the human.

	Male reproductive cells	
	In Flowering Plants	**In Humans**
A	Produced in large numbers	Produced in large numbers
B	Produced in the anther	Produced in the testes
C	One male reproductive cell fuses with the egg	Many male reproductive cells fuse with the egg
D	Fuses with the female reproductive cell in the stigma	Fuses with the female reproductive cell in the ovary

Which of the following statements from the above table is correct?

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

26. The table below shows the characteristics of two cats and their offspring.

Characteristics	Male Cat	Female Cat	Offspring (Kitten)
Pointed ears	Yes	No	No
White fur	No	Yes	Yes
Short Tail	Yes	No	Yes

Based on the table above, which of the following statement(s) is/are correct?

The kitten _____.

A: inherited its mother's white fur.
B: inherited 2 traits from its father.
C: did not inherit its father's pointed ears.
D: inherited at least 1 trait from both of its parent.

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

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27. Elle wanted to find out the strength of four bar magnets, **P, Q, R** and **S.**

She placed each magnet 10 cm from an iron nail and moved the magnet towards the iron nail.

She then measured and recorded the distance from which each magnet attracted the iron nail.

She carried out the experiment three times.

Magnet	Average distance between the magnet and the iron nail when the iron nail was attracted to the magnet (cm)
P	5.5
Q	8
R	4
S	2.5

Based on her results above, which bar magnet is the strongest?

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

( )

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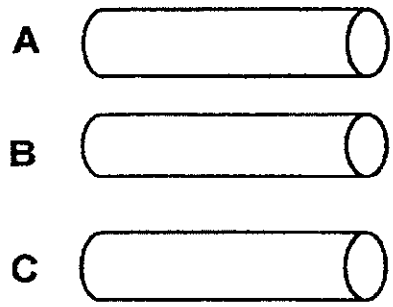
28. Fahrin has three rods labelled **A**, **B** and **C**.



He carried out an experiment by bringing part X of a bar magnet near to each end of the three rods, A, B and C, as shown above.

He then recorded his results in the table below.

Rod	Observation
A	Both ends of Rod A are attracted to part X of the bar magnet.
B	One end of Rod B is attracted to part X of the bar magnet while the other end repel.
C	Both the ends of Rod C are not attracted to part X of the bar magnet.

Which of the following statements about rods **A**, **B** and **C** is likely to be correct?

(1) Rod B is a magnet.
(2) Rod C is a temporary magnet.
(3) Both Rod A and Rod B are magnets.
(4) Both Rod A and Rod C are made of magnetic materials. ( )

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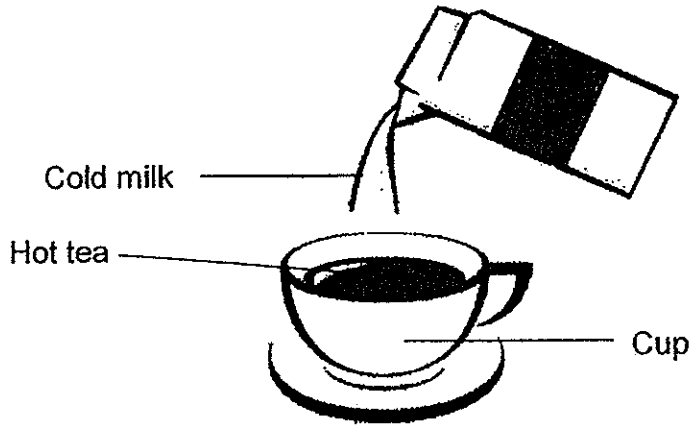
29. Ali poured some cold milk into a cup of hot tea he has prepared as shown below.



Which of the following about heat gain and heat loss is correct after the cold milk is added to the cup of hot tea?

	Heat Gained	Heat Lost
(1)	Cup	Cold milk
(2)	Hot tea	Cold milk
(3)	Hot tea	Cup
(4)	Cold milk	Hot tea

( )

30. Jordan carried out an experiment to find out which cup will keep a drink warm the longest period of time.

He poured an equal amount of hot coffee into three cups, **X**, **Y** and **Z**, each made of a different material. He then recorded the temperature of the coffee in each cup every five minutes as shown in the table below.

	Temperature of coffee in cups (°C)		
Time (Min)	**X**	**Y**	**Z**
0	85	85	85
5	81	79	77
10	78	75	72
15	75	72	68
20	72	67	62

Based on the table above, the coffee in cup _____.

(1) **X** lost heat the fastest.
(2) **Z** lost heat the slowest.
(3) **X** took the longest time to reach 72°C.
(4) **Z** took the longest time to reach 72°C. ( )

End of Booklet A

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40

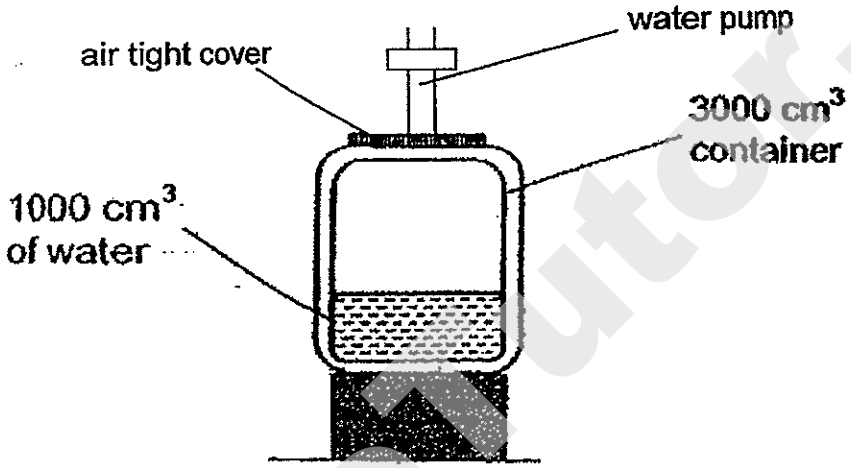
Name:_____ ( )

Class: Pr 5 _____ Parent's Signature: _____

Booklet B (40 marks)

Write your answers to questions 31 to 44 in the spaces given.

31. The container below has a capacity of 3000 cm^3 and contains 1000 cm^3 of water.



Without opening the air tight cover, Tim pumped in 50 cm^3 of water into the container using the water pump.

a) Would the volume of **air** in the container **increase**, **decrease** or **remain the same**? *(1m)*

_____

b) What is the property of gas that is demonstrated by Tim's action? *(1m)*

_____

_____

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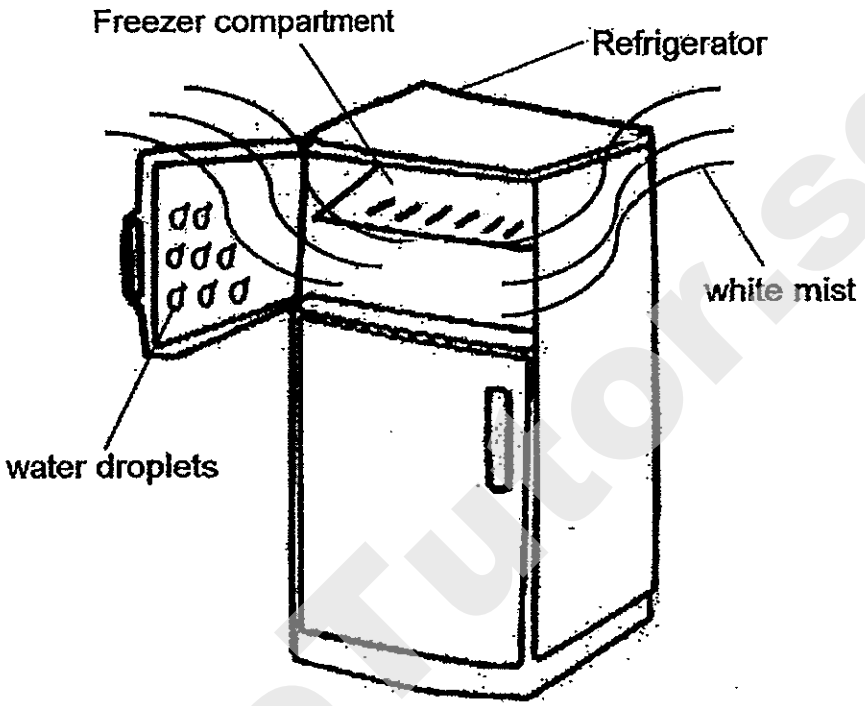
32. The diagram below shows a refrigerator. When the freezer compartment is opened, Billy noticed 'white mist' coming out of it.



a) Is the 'white mist' in **solid**, **liquid** or **gaseous** state? *(1m)*

_____

b) Water droplets were formed on the freezer door when it was left opened for a few minutes. *(2m)*
Explain how these water droplets were formed.

_____

_____

_____

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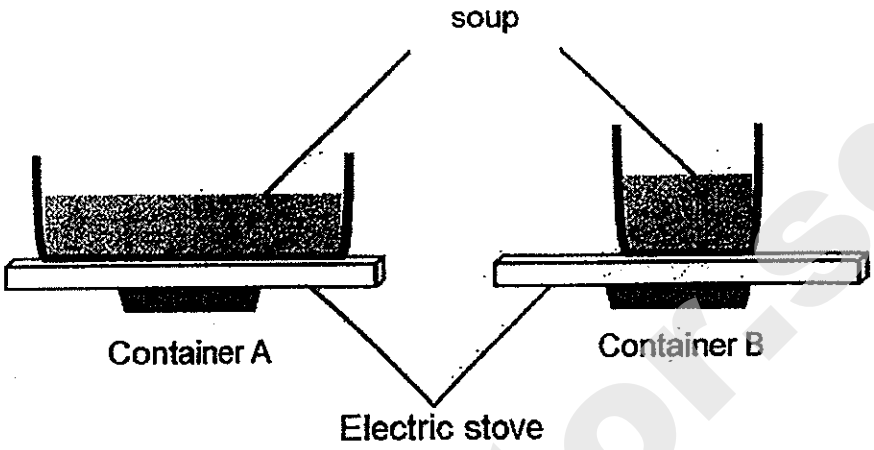
33. Mrs Lee set up two containers, A and B, of the same material and thickness as shown below.

Each contains 500 ml of soup of the same temperature.



Mrs Lee started heating the soup in both containers at the same time.

She observed that the soup in Container A started to boil first.

Explain why. *(2m)*

_____

_____

_____

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34. After showering, Jayne decided to **tie her wet hair up in a bun** as shown below.

Diagram A

Diagram B

However, her mother told her to **let her hair down** as it will help to dry her hair up faster.

a) Explain why Jayne's mother is correct. *(2m)*

_____

_____

b) State **another way** that will help dry her hair up faster. *(1m)*

_____

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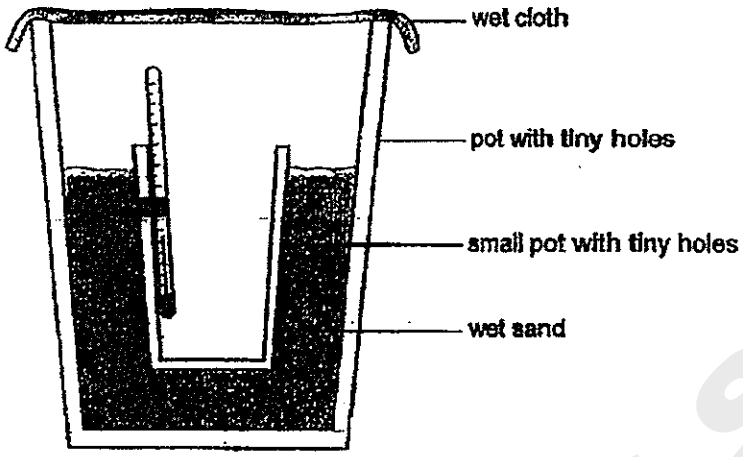
35. The set-up below was placed in a dry place.



After 20 minutes, the temperature of the surrounding air inside the small pot decreased.

Tick (✓) the correct statement which explains the decrease in temperature. *(1m)*

a)

Explanation	Tick (✓)
Wet sand loses heat to the thermometer	
Water vapour condensing on the wet cloth	
Water evaporates from the wet sand	

b) After stepping out of the swimming pool, Sanjan felt a cooling sensation all over his body as the water droplets on his body dried up very quickly. *(2m)*

Explain why he felt a cooling sensation on his body.

_____

_____

_____

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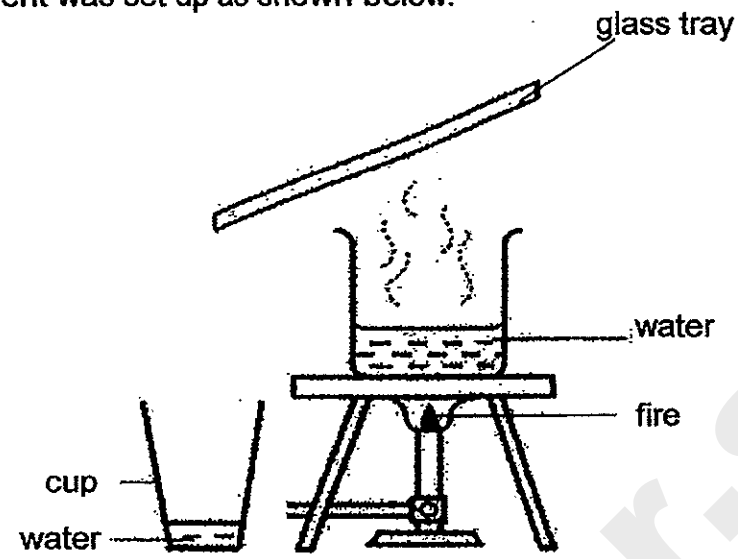
36. An experiment was set up as shown below.



It was observed that the amount of water collected in the cup is not the same as the amount of water evaporated from the beaker.

a) Give a reason for this observation. *(1m)*

_____

_____

The experiment was repeated a second time with the aim of collecting more water in the cup in the same amount of time.

b) Suggest what must be done to the glass tray so that more water can be collected in the cup. *(1m)*

_____

_____

c) Give a reason for your answer in (b). *(1m)*

_____

_____

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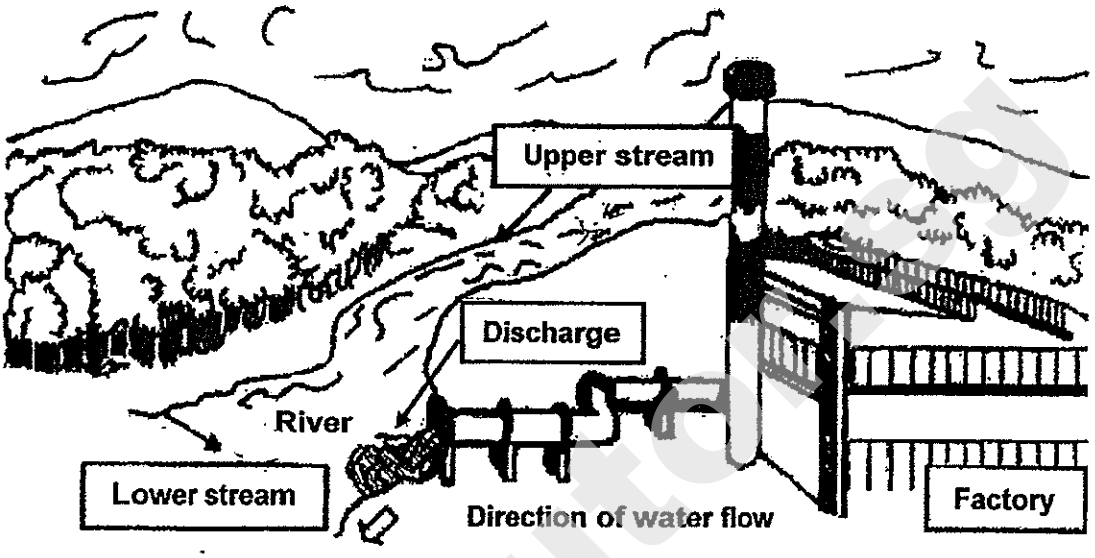
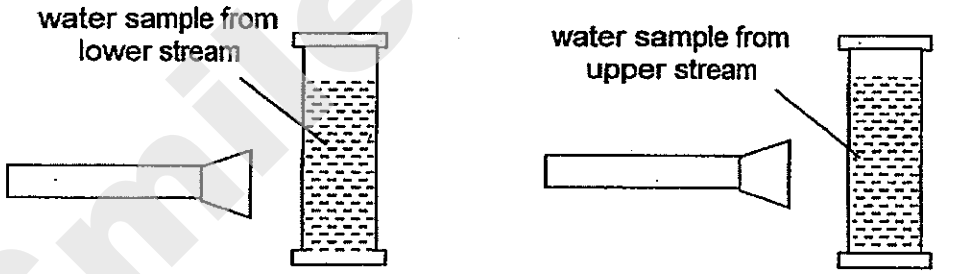
37. The picture below shows a river flowing towards the sea. Situated near the river is a factory which discharges waste into the river.



A scientist collected a sample of water from the lower stream and upper stream of the river. He then shone a torch into each water sample as shown below.



a) In which set-up (A or B) would he observe less amount of light passing through? *(1m)*

_____

_____

b) Explain your answer in (a).

_____

_____

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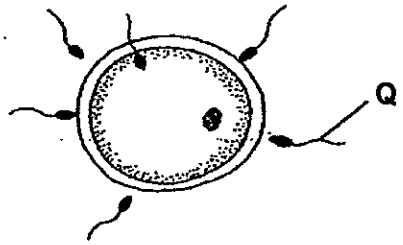
38. The diagram below shows a process that happens in human reproduction system.

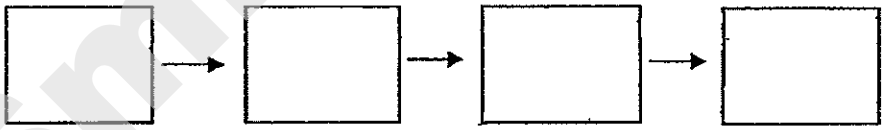


a) Name the reproductive organ that produces Q: _____ *(1m)*

b) Name the **process** that is shown above: _____ *(1m)*

c) Arrange the following processes in human reproduction in the **correct order** and write the corresponding letters in the boxes provided below. *(1m)*

A: The fertilised egg begins to grow
B: A baby develops and grows in the womb
C: A sperm fuses with the egg
D: Sperms travel into the female reproductive organ



(Start)

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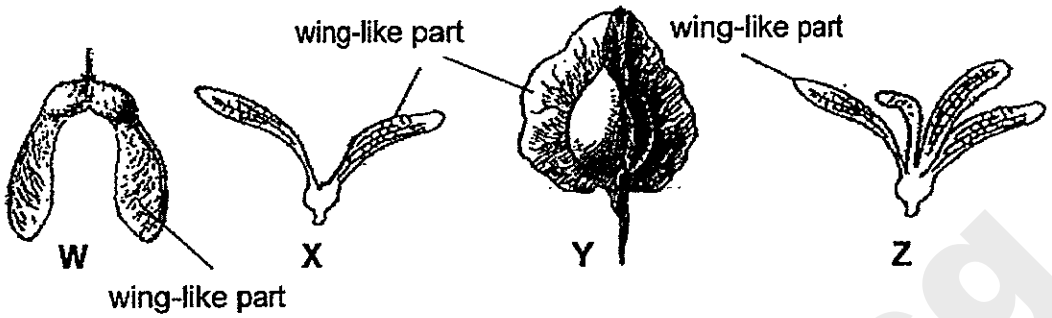
39. The diagram below shows four winged fruits, W, X, Y and Z.



Jim wants to find out how the number of wing-like parts affects the length of time the fruits can stay in air.

a) Which two fruits (W, X, Y and Z) should he use to ensure a fair test? *(1m)*

_____

b) (i) Explain why Jim should drop each fruit from the same height during the experiment. *(1m)*

_____

_____

(ii) Put a (✓) beside **another** variable that Jim must keep the same in the table below. *(1m)*

How the fruits are released	
Number of wing-like parts	

c) The spinning action slows down the fruits' fall to the ground so that wind can carry them further away from the parent plants. *(1m)*
State **one** advantage of the seedlings growing further away from the parent plants.

_____

_____

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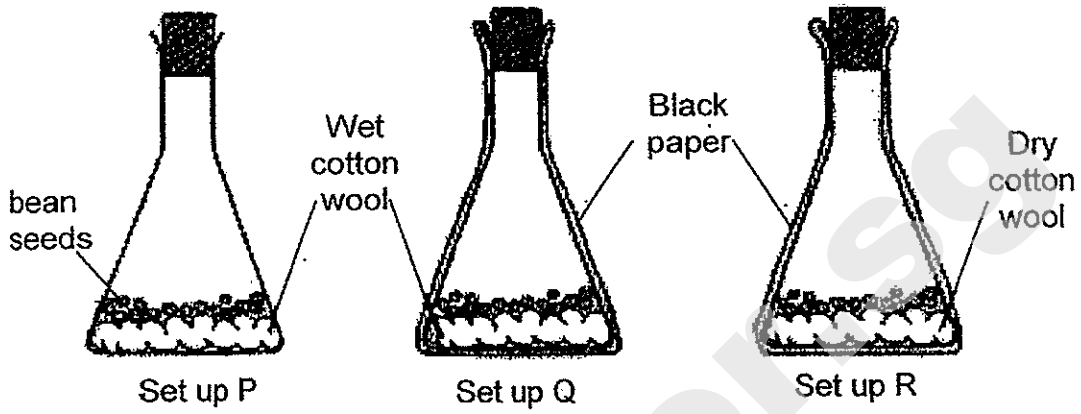
40. Jen used some bean seeds in the set ups below. Set ups P and Q are completely covered with black paper. Jen placed the set up next to an open window.



a) The seeds from which set up(s) are most likely to germinate? *(1m)*

_____

_____

b) Based on the experiment, state the condition(s) that is/are **not** necessary for germination. *(1m)*

_____

_____

c) In another experiment, if Jen wants to find out how temperature will affect the germination of bean seeds, which variable should she change? *(1m)*

_____

_____

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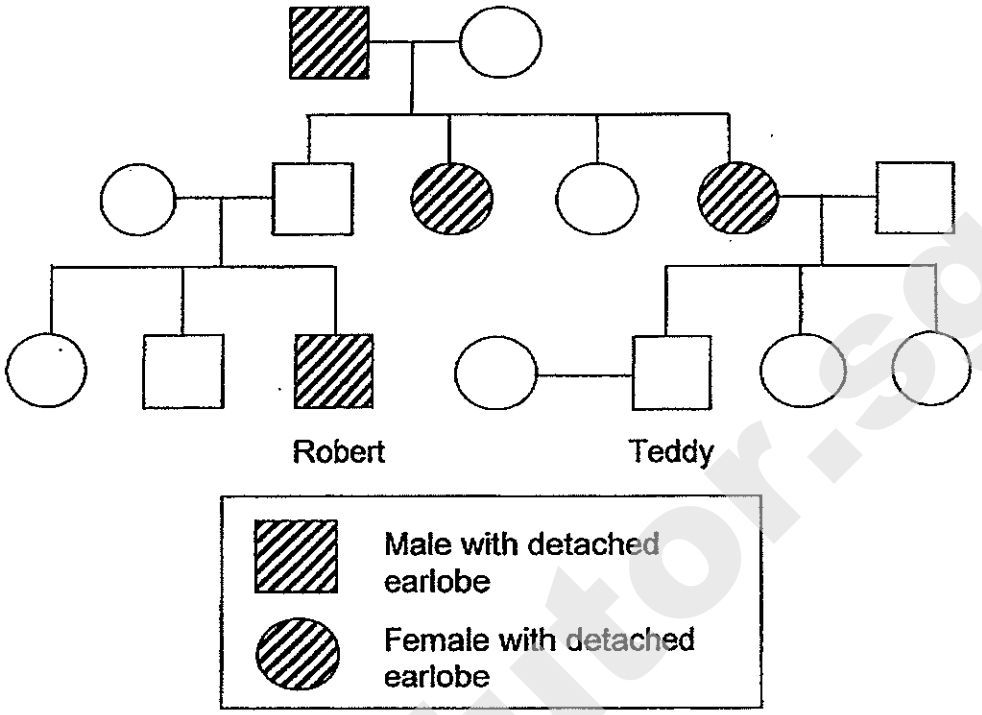
41. The diagram below shows Teddy's family tree consisting of 3 generations in which the physical characteristic of detached earlobe is observed.



a) Based on the family tree above, which of the following statements can be correctly inferred? Put a tick '✓' against the correct statements. *(2m)*

☐ The detached earlobe characteristic was passed down to Robert from his mother.

☐ Teddy and his siblings do not have detached earlobe.

☐ More men than women have detached earlobes in Robert's family.

☐ Robert's grandfather was responsible for passing down the detached earlobe characteristic to Robert.

b) Robert's sister has recently undergone surgery to change the shape of her nose. Will her offspring inherit her new nose shape? *(1m)*

_____

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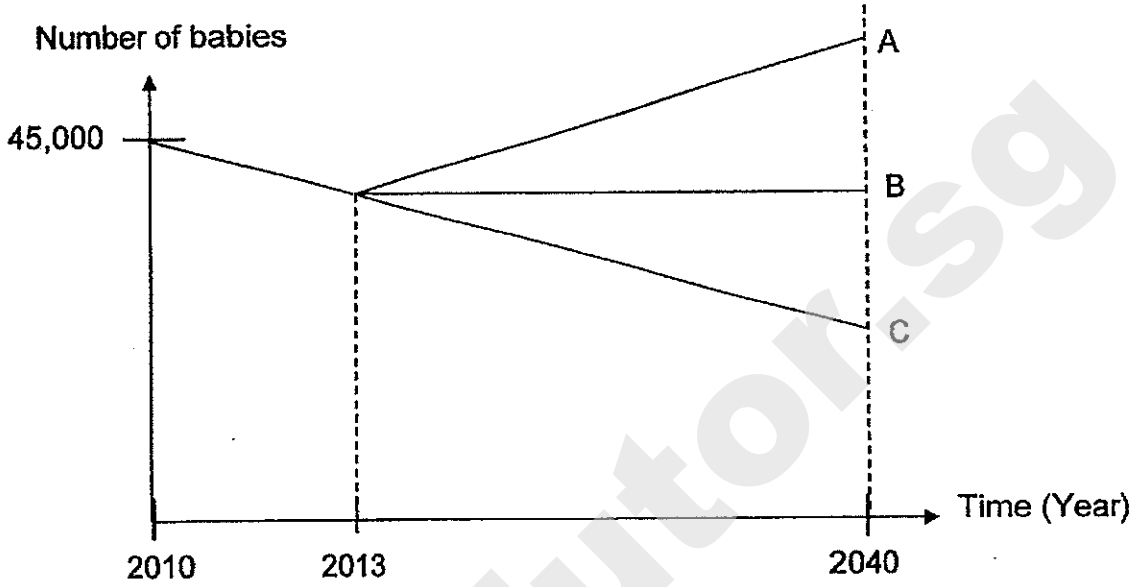
42. Singapore has an ageing population. This means that there are more elderly people in the total population than new babies born each year.

The graph below shows the number of babies born a year in Singapore from 2010 to 2013.



a) What can you observe about the number of babies born during the 3-year period from 2010 to 2013? *(1m)*

b) If the trend continues until 2040, predict which line, A, B or C represents the likely number of babies born? *(1m)*

c) In human reproduction, how does the large number of male reproductive cells produced help in our survival? *(1m)*

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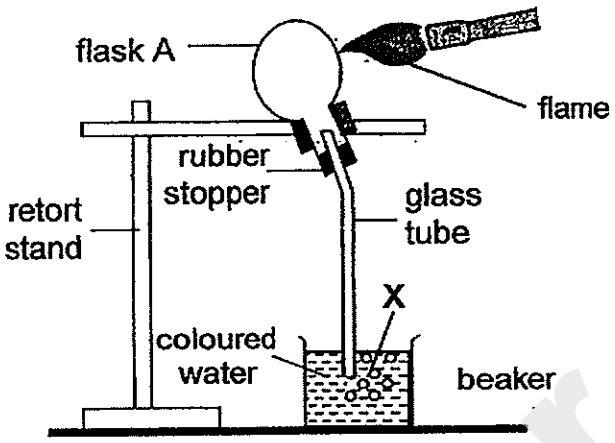
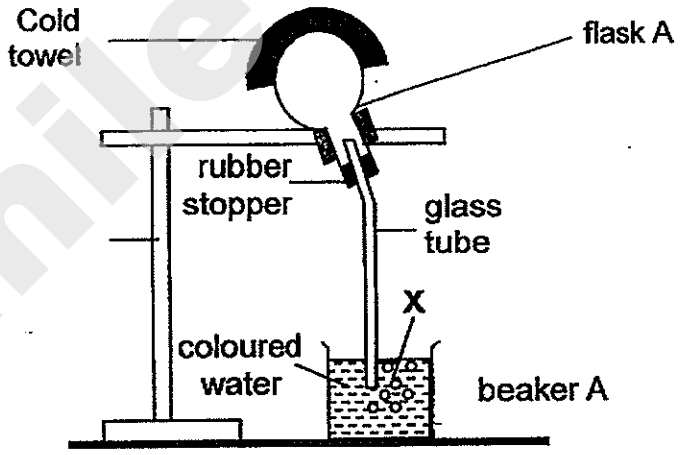
43. Andy gently heated flask **A** of his experimental set-up as shown below. After some time, substance **X** is observed in the beaker of coloured water.



(a) What is substance **X**? *(1m)*

_____

Andy then removed the flame and covered the flask with a cold wet towel.



(b) What would he observe about the coloured water in beaker A? *(1m)*

_____

(c) Explain your answer in (b). *(1m)*

_____

_____

_____

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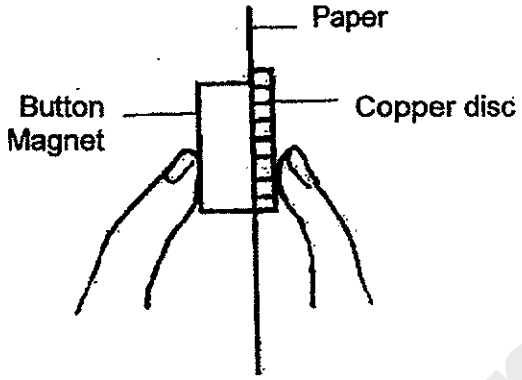
44. Darren held a magnet on one side of a piece of paper and a copper disc on the other side of the paper shown in the diagram below.



However, he observed that when he moved his finger away from the copper disc, it fell off.

(a) Explain why the copper disc fell off. *(1m)*

_____

_____

(b) What will Darren observe if the copper disc is replaced by a steel disc? *(1m)*

_____

_____

(c) Explain your answer in (b) *(1m)*

_____

_____

_____

End of Booklet B

Setters:

Mr Nicholas Sin
Ms Grace Chan
Ms Rebecca Lo

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ANSWER SHEET

EXAM PAPER 2014
SCHOOL : HENRY PARK
PRIMARY : P5
SUBJECT : SCIENCE
TERM : SA1

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

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

31)a)The volume of air in the container will decrease.
b)Gas can be compressed.

32)a)The 'white mist' is in liquid state.
b)Water vapour from the surrounding air loses heat to the freezer door and condenses into water droplets.

33)The container (soup in A) has a larger exposed surface area thus the container (soup in A) gained heat faster.

34)a)The exposed surface area (of water/hair)is greater, so water evaporates faster.
b)The presence of wind increased/level of humidity decreases.

35)a)

X
√

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35)b)The water droplets on Sanjan's body, gained Sanjan's body heat, thus evaporated quickly with the body heat.

36)a)Some water that evaporated from the beaker did not condense on the glass tray.
b)Add ice to the glass tray.
c)More water vapour can condense.

37)a)Set-up A.
b)The water is polluted from the discharge from the factory.

38)a)Testes
b)Fertilisation
c)D→C→A→B

39)a)Fruits X and Z.
b)i)Jim should drop each fruit from the same height during the experiment to ensure a fair test.
ii)How the fruits are released
c)To prevent competition for space, water, minerals and light.

40)a)Set-up P and Q.
b)Sunlight.
c)She should put the set-ups in different surroundings with different temperature.

41)a)

√
√

b)No.

42)a)There is a decrease in the number of babies born over the years.
b)Line C.
c)To increase the chance of at least one male reproductive cell to fuse with an egg.

43)a)Bubbles/ air bubbles.
b)The water would move up the glass tubing.
c)As the air in the flask cools down, it contracts, allowing water to move up and take up the space previously occupied by air.

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44)a)The copper disc is non-magnetic.
b)The steel disc will be attracted to the magnet.
c)Steel is a magnetic material.

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METHODIST GIRLS' SCHOOL

Founded in 1887

MID-YEAR SEMESTRAL ASSESSMENT 2014
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: 12 May 2014

This booklet consists of 12 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]

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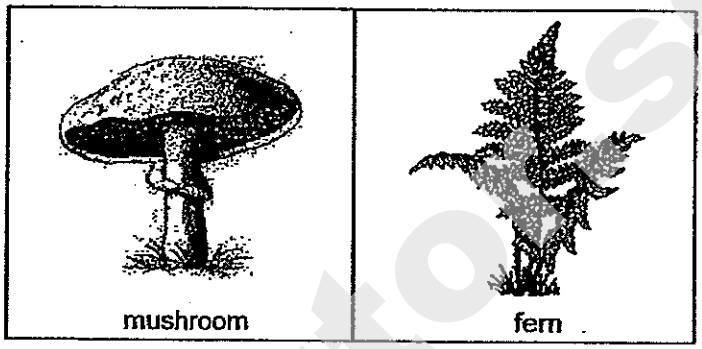
1. Study the diagram below.



Which of the following statement/s about the organism above is/are **Incorrect**?

A: Both have leaves.
B: Both reproduce by spores.
C: Both are non-flowering plants.
D: Both cannot make their own food.

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

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2. Four pupils, Ali, Bala, Candy and Dan were having a discussion about the germination of seeds. They made the following statements.

Ali: The seed obtains its nutrients from the seed leaves.

Bala: During germination, the root breaks out of the seed coat first and grows upwards.

Candy: During germination, the shoot breaks out of the seed coat first and grows downwards.

Dan: Light, moisture and warmth are three conditions that are always necessary for seed germination.

Who made the correct statement/s?

(1) Ali only
(2) Dan only
(3) Ali, Bala and Candy only
(4) Ali, Bala, Candy and Dan

3. The table shows the physical descriptions of four boys.

Name	Description
Andy	Has pimples
Bob	Has double eyelids
Charlie	Has short hair
Danny	Has attached earlobes

Which of the boys could have inherited these traits from their parents?

(1) Andy and Charlie only
(2) Charlie and Danny only
(3) Bob and Danny only
(4) Bob and Charlie only

(Go on to the next page)

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4. Ruth and Jamie were asked to classify the following fruits into two groups.

Kiwi	Coconut	Love grass	Pong pong

Ruth classified the fruits into two groups as shown in the table below.

Group A	Group B
Kiwi	Coconut
Love grass	Pong pong

Jamie, on the other hand, classified the fruits into two groups as shown in the table below.

Group A	Group B
Kiwi	Love grass
Coconut	Pong pong

Which of the following shows the correct headings for the girls' grouping?

	Ruth		Jamie	
	Heading for Group A	Heading for Group B	Heading for Group A	Heading for Group B
(1)	Flowering plants	Non-flowering plants	Big	Small
(2)	Dispersed by animals	Dispersed by water	Edible	Inedible
(3)	Has many seeds	Has only one seed	Smooth surface	Rough surface
(4)	Has fibrous husk	Has stiff hairs	Seeds scattered randomly	Seeds scattered in one direction

(Go on to the next page)

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5. A group of students wanted to find out if the parts of a flower affect the fertilization of the plant. They took four similar hibiscus flowers A, B, C and D. They removed various parts of the hibiscus flowers. The parts that were removed are shown in the table below.

Flowers	Parts removed
A	Petals only
B	Sepal only
C	Stigmas only
D	Anthers only

Then pollen grains from another flower was collected and dusted on the remaining parts of the four groups of flowers. The development of these flowers was then observed over a period of time.

Which flower/s **did not** develop into fruits after a few weeks on observation?

(1) C only

(2) D only

(3) A and B only

(4) C and D only

6. Pansy found some fruits, A, B, C and D while jogging one day. She observed the fruits and recorded some characteristics of the fruits as shown in the table below.

Fruit	Characteristics			
	Colour	Flesh	Texture of outer covering	Special Feature
A	Yellow	Thick	Smooth	None
B	Dark brown	Thin	Rough	None
C	Brown	Thin	Rough	Stiff hairs
D	Brown	Thin	Smooth	Wing-like

Which of the fruits are likely to be dispersed by animals?

(1) A and D only

(2) A and C only

(3) B and C only

(4) B and D only

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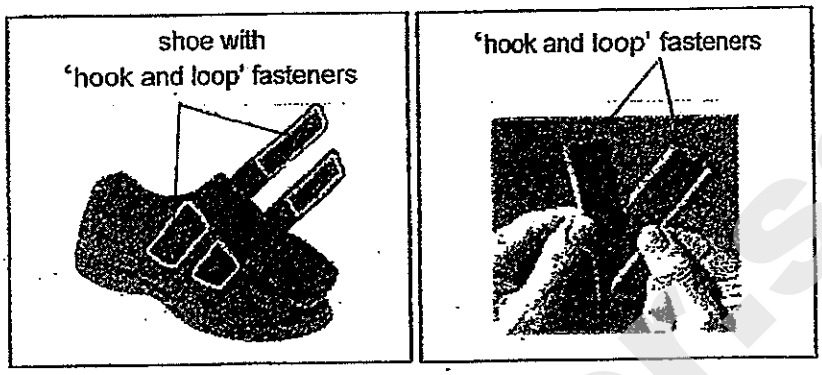
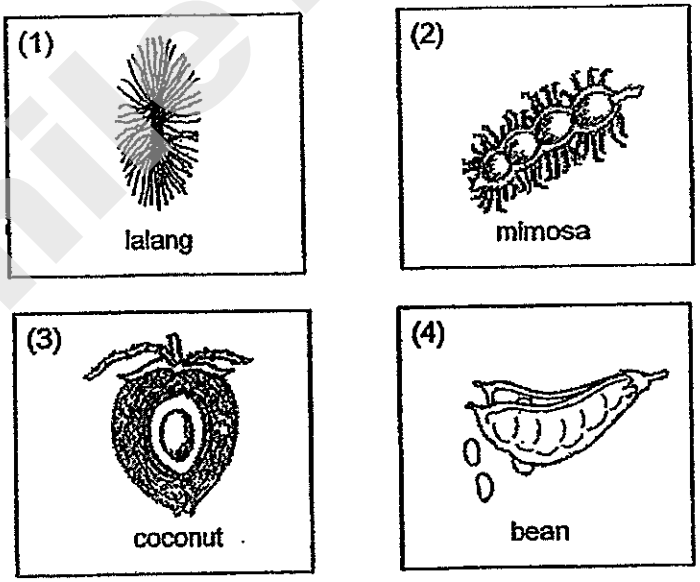
7. The diagram below shows the 'hook and loop' fasteners.



It is made up two components. One of the components feature tiny hooks while the other features hairy loops.

When the two components are pressed together, the hooks catch in the loops and the two pieces fasten or bind temporarily until they are separated.

Which of the following fruit has the same **characteristics** as the hook?



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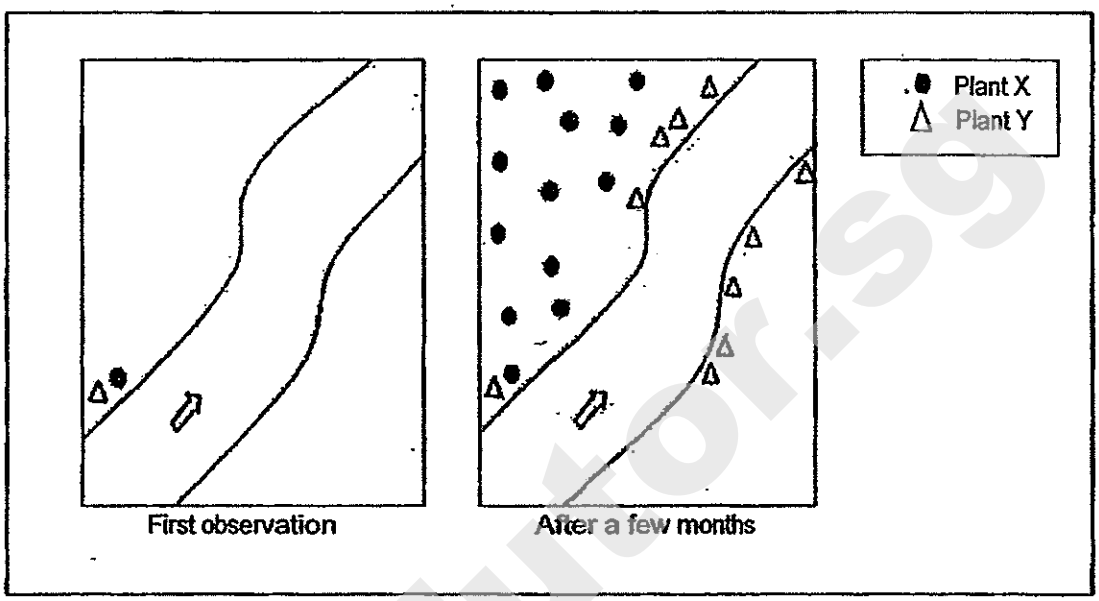
8. A group of friends recorded the number of wild plants X and Y on a piece of land. After a few months, they visited the piece of land again. Their observations are shown in the diagrams below.



What are the characteristics of the fruits of plants X and Y respectively?

	Plant X	Plant Y
(1)	stiff hairs	wing-like structures
(2)	wing-like structures	fibrous husk
(3)	fibrous husk	bright red outer covering
(4)	bright red outer covering	stiff hairs

(Go on to the next page)

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9. Jenny and her friends carried out an experiment using two shorea fruits. They carried out the following procedure.

Prosedure	
Step 1	Collect two shorea fruits.
Step 2	Cut off the wing-like structure of one fruit.
Step 3	Drop both fruits from the same height and record the time taken for each fruit to reach the ground.
Step 4	Repeat the experiment three times.

What was the aim of their experiment?
They were trying to find out if the _____.

(1) strength of the wind affect the distance travelled by the shorea fruit

(2) wing-like structure of the shorea fruit helped it to stay in the air longer

(3) number of fruits affect the time taken for the shorea fruits to stay in the air

(4) direction of the wind affect the time taken for the shorea fruit to stay in the air

10. The table below shows the comparison between the sexual reproduction in flowering plants and animals.

Type of sex celis	In flowering plants	In animals
Male	A	C
Female	B	D

Which of the following shows the correct representation of A, B, C and D?

	A	B	C	D
(1)	Anther	Ovum	Sperm	Egg
(2)	Sperm	Egg	Pollen grains	Ovum
(3)	Sperm	Pollen grains	Egg	Ovum
(4)	Pollen grains	Ovum	Sperm	Egg

(Go on to the next page)

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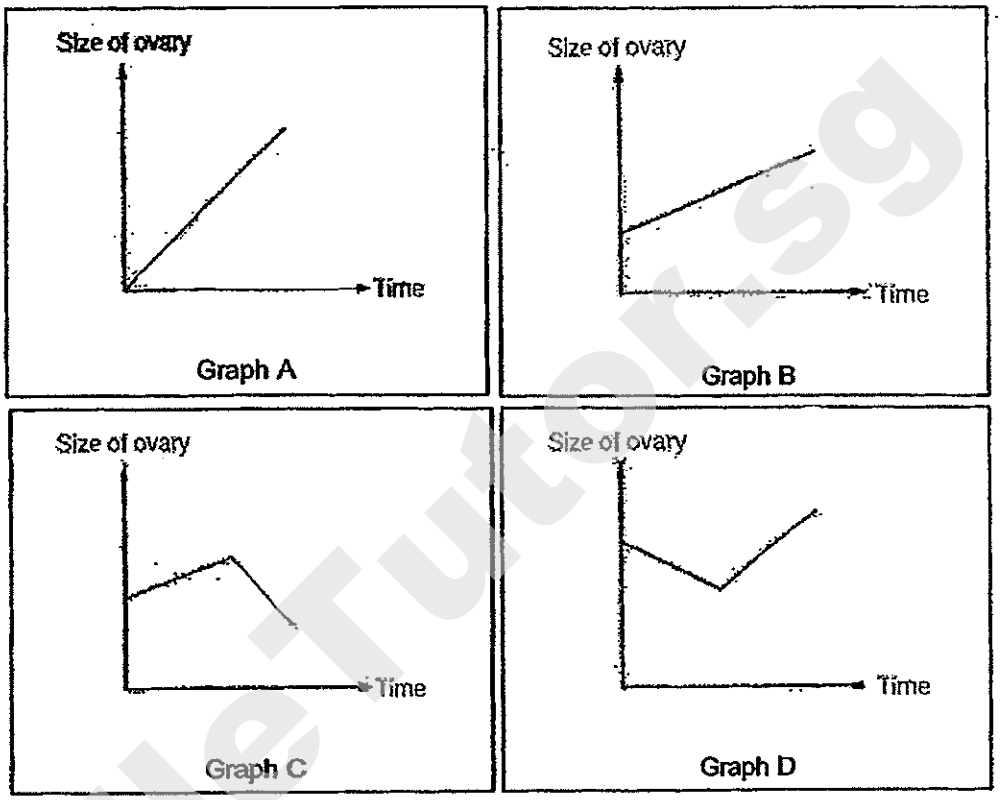
11. The graph below shows the relationship between the size of the ovary over time after fertilisation takes place.



Which of the graphs above correctly shows the changes in the size of a flower's ovary after fertilization?

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

(Go on to the next page)

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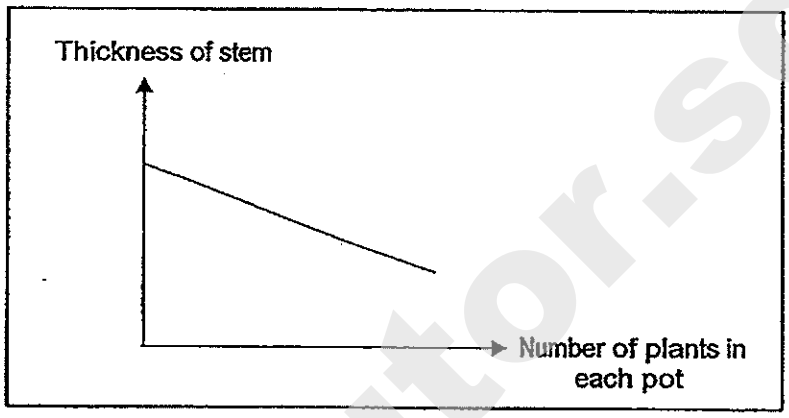
12. Julia had several similar pots. She planted different numbers of plants in each of the pots. She kept them in the same place and watered them with equal amounts of water. She noted that the thickness of the stems in each pot was different. The graph below shows how the number of plants in each pot affects the thickness of the stem.



Which of the following can you conclude from her experiment?

A: Overcrowding can cause plants to have thin stems.

B: The fewer the plants in the pot, the thinner their stems.

C: The pots with the most number of plants have the thinnest stems.

D: The greater the number of plants in the pot, the thicker the stem.

(1) D only

(2) A and C only

(3) B and D only

(4) A, B and C only

(Go on to the next page)

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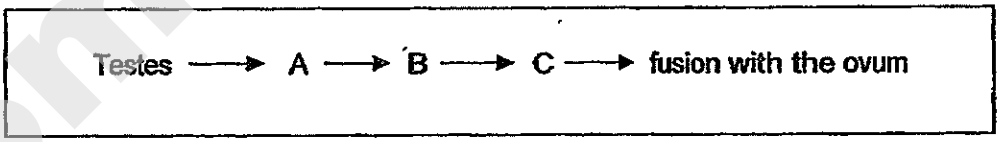
13. The table below shows the description of **Organisms P** and **Q**.

Description	Organism P	Organism Q
Lays eggs	Yes	Yes
Its young resembles its parent	No	No
Number of stages in a life cycle	4	3
Method of fertilization	Internal	External

Based on the information given in the table above, identify **Organism P** and **Q**.

	Organism P	Organism Q
(1)	Butterfly	Ostrich
(2)	Dragonfly	Rhinoceros
(3)	Cockroach	Pigeon
(4)	Mosquito	Toad

14. The **process of fertilisation** in animals takes place when the fusion of the sperm and the ovum occurs. Three letters A, B and C represent the movement of sperm from the male body to the female body as shown in the diagram below.



Which sexual organ is represented by B?

(1) Uterus
(2) Penis
(3) Vagina
(4) Fallopian tube

(Go on to the next page)

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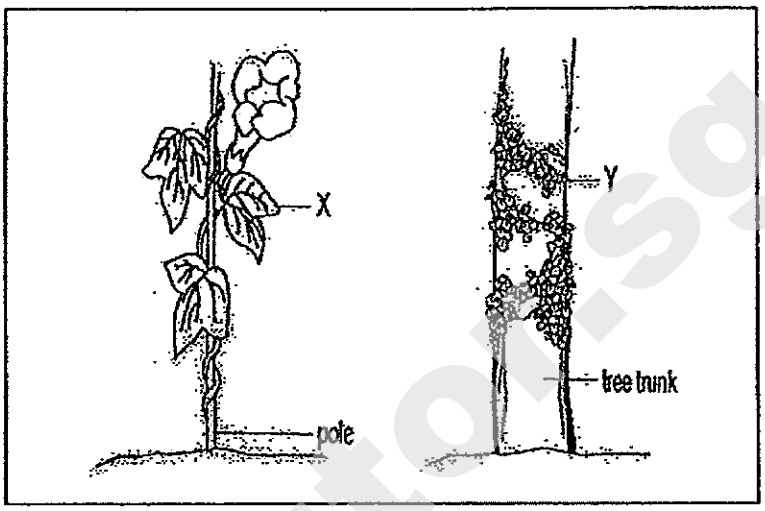
15. The diagram below shows two green plants, X and Y, growing in a garden.



The following statements describe plants X and Y.

A: They have roots
B: They reproduce by spores
C: They make their own food
D: They need support to grow

Which of the following statements about both plants, X and Y, is correct?

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

End of Booklet A1

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METHODIST GIRLS' SCHOOL

MID-YEAR SEMESTRAL ASSESSMENT 2014
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: 12 May 2014

This booklet consists of 16 printed pages including this page

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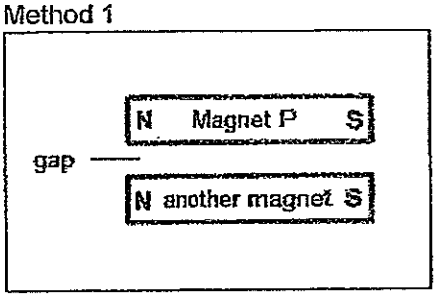
For each question from 1 to 30, four **options** are given, one of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet.

[60 marks]

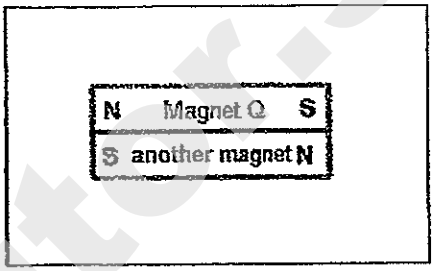
---

16. Ah Teck wanted to find the best method, 1, 2, 3 or 4, to store magnets. He stored four identical magnets, P, Q, R and S, with other magnets of similar strength as shown below.

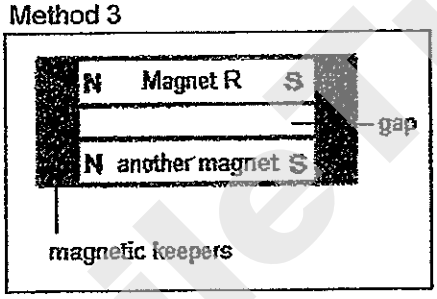
Method 1



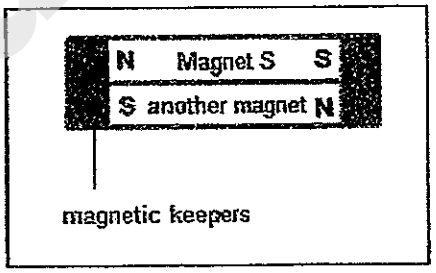
Method 2



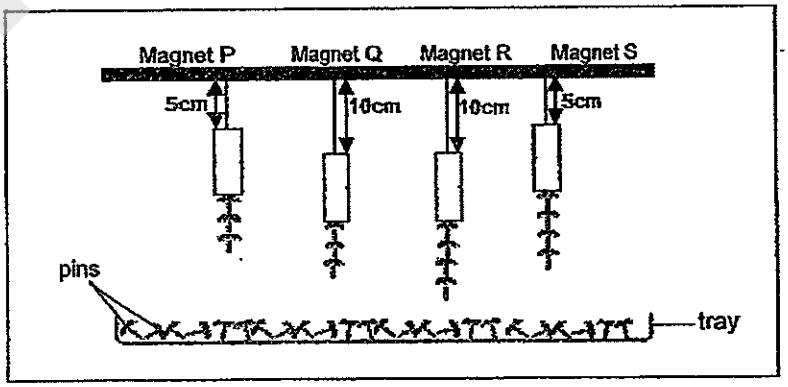
Method 3



Method 4



Two weeks later, he suspended the four magnets, P, Q, R and S above a tray containing some pins. He observed the number of pins attracted to each magnet to determine its strength.



Based on his observations made, which is the best method to store magnets?

(1) Method 1

(2) Method 2

(3) Method 3

(4) Method 4

(Go on to the next page)

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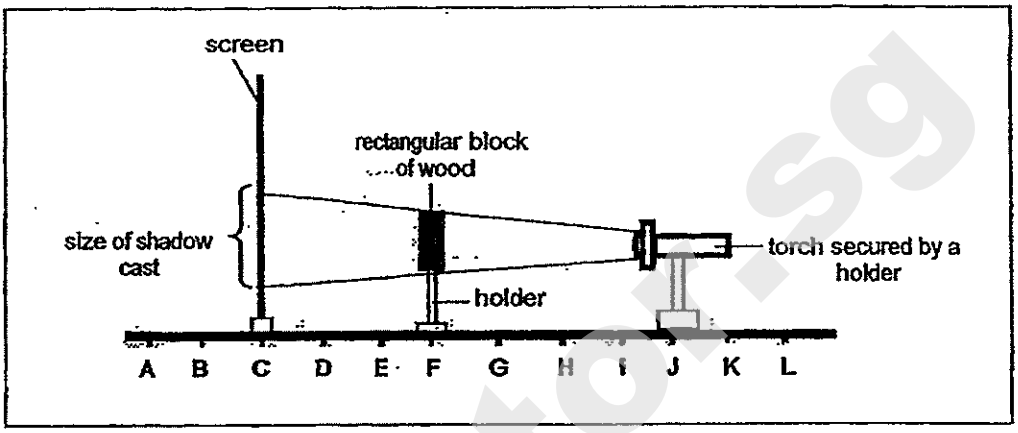
17. Ahmad made some markings A to L, at regular intervals, on a platform. He then positioned 3 objects on it. The screen was placed at position C, the rectangular block of wood at F and the torch at J. When the torch was switched on, a shadow was cast on the screen as shown in the diagram below.



If Ahmad were to shift the torch to position H on the platform, which of the following differences would he notice in the shadow cast?

A : The shadow would be bigger.

B : The shadow would be smaller.

C : The shadow would be clearer.

D : The shadow would be blurred.

(1) A and B only

(2) C and D only

(3) A and D only

(4) B and D only

(Go on to the next page)

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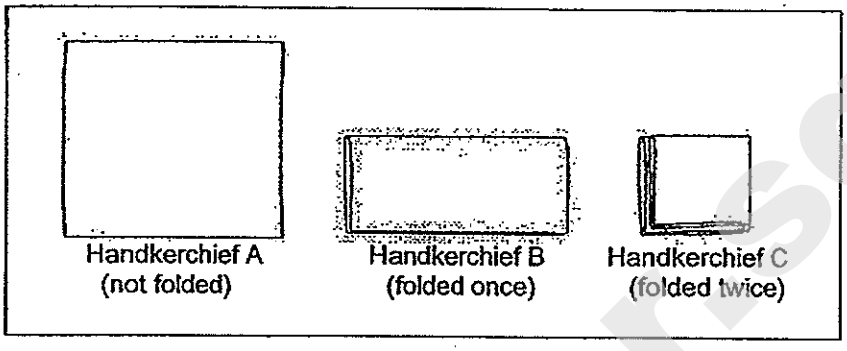
18. Valerie conducted an experiment using three identical handkerchiefs A, B and C.



She poured the same amount of water on each of them. She then made different number of folds and recorded the time taken for each handkerchief to dry completely.

Her results are shown below.

Handkerchief	Time taken to dry completely (min)
A	20
B	40
C	100

Based on the results above, Valerie and her friends made the following conclusions.

Sumei: The more the number of folds, the higher the rate of evaporation.

Tim: The fewer the number of folds, the higher the rate of evaporation.

Usha: The smaller the exposed surface area of the handkerchief, the lower the rate of evaporation.

Valerie: The larger the exposed surface area of the handkerchief, the lower the rate of evaporation.

Who made the correct conclusion/s?

(1) Sumei only
(2) Tim and Usha only
(3) Usha and Valerie only
(4) Tim, Usha and Sumei

(Go on to the next page)

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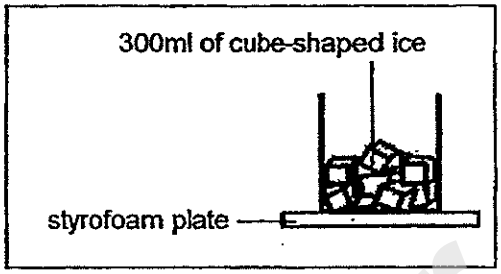
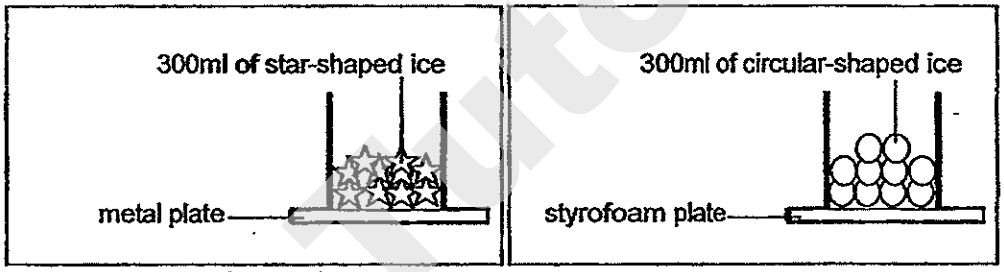
19. Lily wanted to find out whether the shape of ice affects its melting rate. She placed ten pieces of cube-shaped ice with a combined volume of 300ml into a glass beaker as shown in the diagram below.



Lily then prepared the following set-ups to compare her results.



Set-up X Set-up Y

Which of the set-ups above, X or Y, should Lily choose to compare her results and what should Lily measure in order to find out how the shape of ice affects the rate at which ice melts?

	She should choose Set-up	She should measure
(1)	X	The amount of water droplets formed on the outer surface of the glass beaker.
(2)	Y	The time taken for ice to melt completely.
(3)	X	The amount of water left in the glass beaker.
(4)	Y	The temperature of the water in the glass beaker.

(Go on to the next page)

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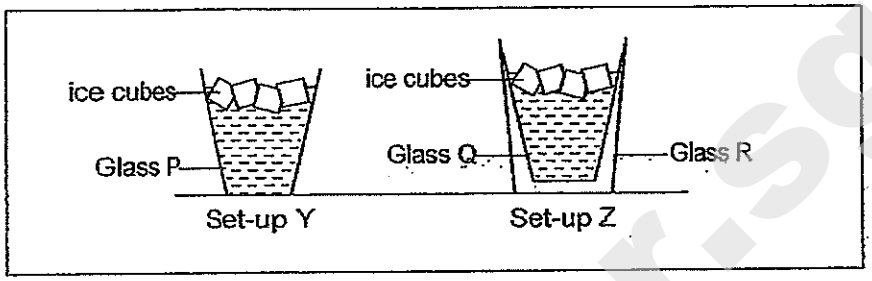
20. Nora filled two identical glasses, P and Q, with the same amount of water. She then added four ice cubes into each glass. Next, she placed glass Q into glass R, as shown in the diagram below.



Five minutes later, she recorded her observation in the table as shown below.

Observation	Set-up Y	Set-up Z
Condition of ice cubes	Completely melted	Slightly melted
Water droplets forming outside of glass	Yes	No

Based on Nora's experiment, the outside of Set-up Y felt cooler compared to the outside of Set-up Z.

Mrs Tan, Nora's teacher, said that glasses with double walls reduced the amount of water droplets condensing on the outside of the glass when ice water was placed inside the glass.

Nora thought of the following reasons to explain Mrs Tan's theory.

A: The air between Glass Q and Glass R acted as a poor conductor of heat.

B: The heat from the surrounding air had to travel through Glass R before it could come into contact with the cooler surface of Glass Q.

C: The heat from the surrounding air was able to reach Glass P faster than Glass Q.

Which of the following reason/s explain/s Mrs Tan's theory correctly?

(1) A only

(2) B only

(3) B and C only

(4) A, B and C

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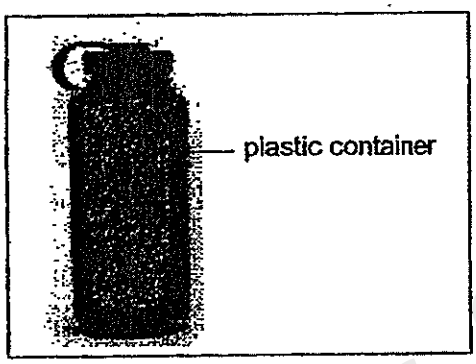
21. The diagram below shows a plastic container with a capacity of 3000 cm^3.



Four students, John, Hassan, Limin and Muru, made the following statements about the container.

John: The plastic bottle can store 2000 cm^3 of carbon dioxide.

Hassan: It can store 3050 cm^3 of oxygen.

Limin: It can store 1000 cm^3 of sand.

Muru: It can store 3010 cm^3 of water.

Who made the correct statements?

(1) John and Hassan only.

(2) John, Hassan and Limin only

(3) John, Limin and Muru only

(4) John, Hassan, Limin and Muru only

(Go on to the next page)

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22. Wendy conducted an experiment by heating three similar rods made of metals, W, X and Y for 30 minutes. She recorded the lengths of each rod before and after the heating in the table as shown below.

Metal	length before heating (mm)	Length after30 min of heating (mm)
W	200	210
X	200	203
Y	200	207

Based on the results of her experiment, Wendy concluded that different metals increase by different lengths after heating.

Using the same heat intensity, Wendy then heated another thicker rod made of metal Z of length 200 mm for 30 minutes.

Which of the following correctly describes the length of the rod made of metal Z after heating?

	Length of rod made of metal Z	Reason
(1)	more than 200 mm	The amount of heat supplied is the same. The thicker rod will take a longer time to heat up as compared to the thinner rod. Hence, it will expand less than the other metals.
(2)	more than 200 mm	The amount of heat supplied is higher. The thicker rod will take a shorter time to heat up as compared to the thinner rod. Hence, it will expand more.
(3)	equal to 200 mm	The amount of heat supplied is too low. The thicker rod will need a longer time to heat up as compared to the thinner rod. Hence, its length will remain the same.
(4)	not able to tell	The amount of heat supplied is not indicated. Hence, there was not enough information to determine the length of rod made of metal Z.

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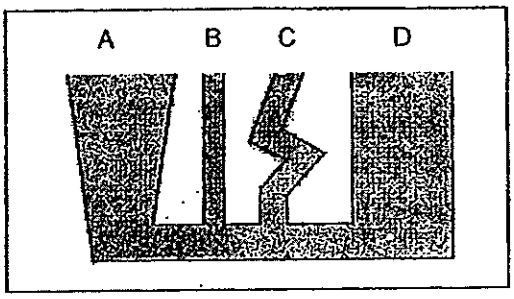
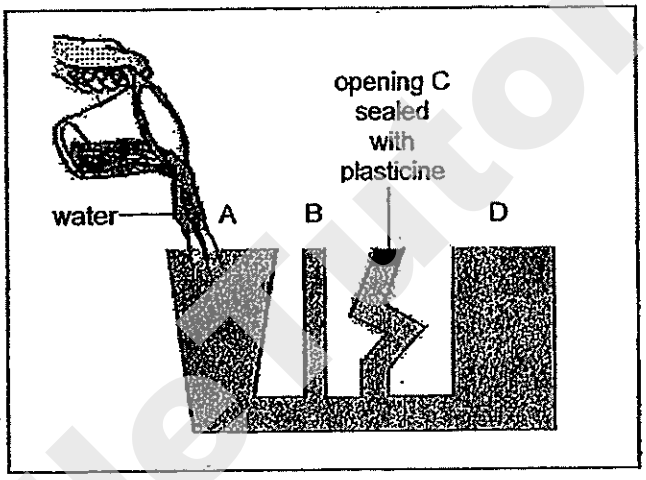
23. The diagram below shows a communicating vessel with openings, A, B, C and D.

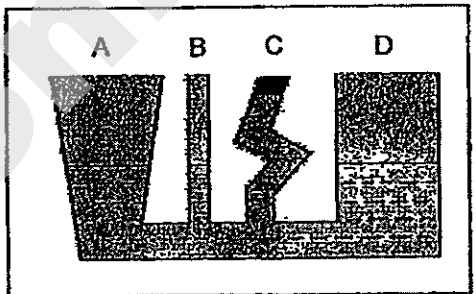


Ah Mei sealed opening C with some plasticine and started pouring water into the communicating vessel as shown in the diagram below.

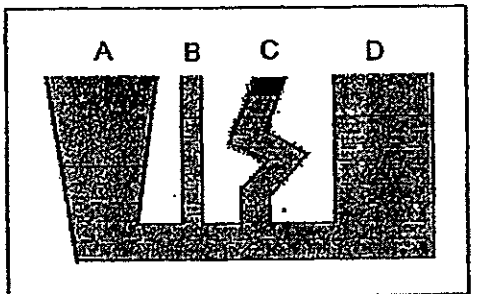


Which of the following shows the correct water level after the water has been poured into the communicating vessel?

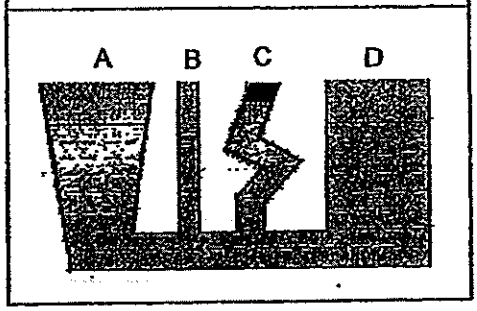
(1)



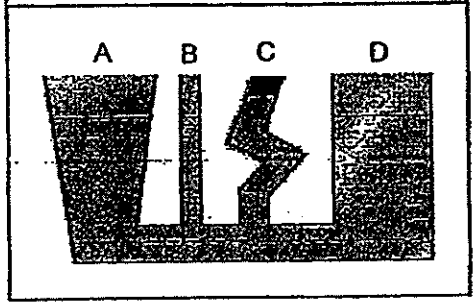
(2)



(3)



(4)



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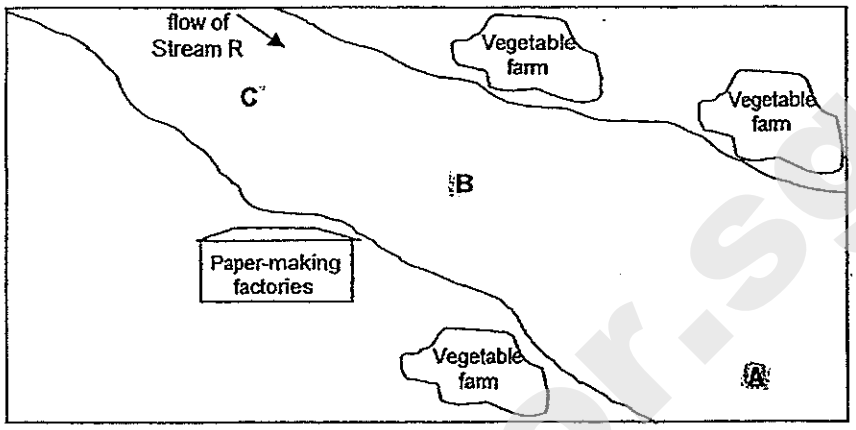
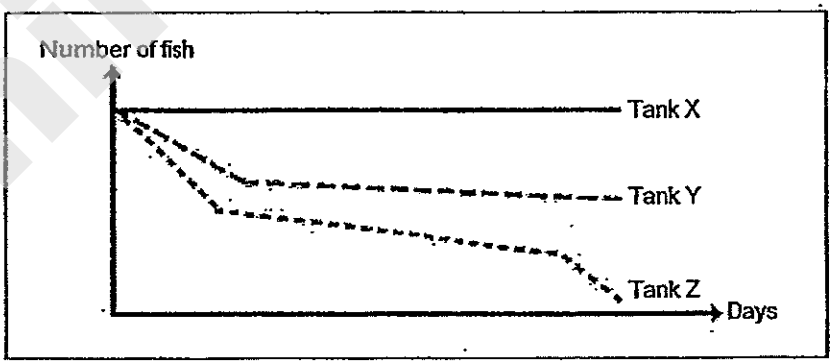
24. The diagram below shows Stream R. Some nearby vegetable farms and a paper-making factory were reported to discharge their waste into the stream.



To determine the effect of water pollution on living organisms, three water samples were taken from Points A, B and C of Stream R.

The water samples were then used to fill up three identical tanks, X, Y and Z respectively. Six identical fish were placed in each tank and then placed in the same room.

The fish were fed daily with the same amount of food. The same number of water plants was also included in each tank. The number of live fish in the tank was recorded over 2 weeks and presented in a graph as shown below.



Based on the graph above, which of the following shows the tanks and its corresponding water samples contained in each of them correctly?

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

(Go on to the next page)

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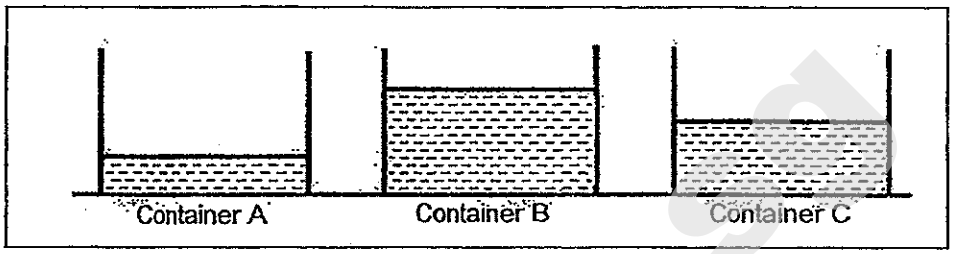
25. Kok Sing filled three identical containers A, B and C with different amounts of water as shown in the diagram below. He placed the containers at the same place in a humid area.



Three hours later, he measured the amount of water left in the three containers using a measuring cylinder.

Based on his findings, he wrote the following statements.

Statement 1: There is more water left in container B than in container C after three hours.

Statement 2: There is no more water left in container A after three hours

Statement 3: The water in container C evaporates the slowest.

Statement 4: The rate of evaporation for all the three containers is the same.

Which of the statements above are correct?

(1) Statements 1 and 2 only

(2) Statements 3 and 4 only

(3) Statements 1 and 4 only

(4) Statements 2 and 3 only

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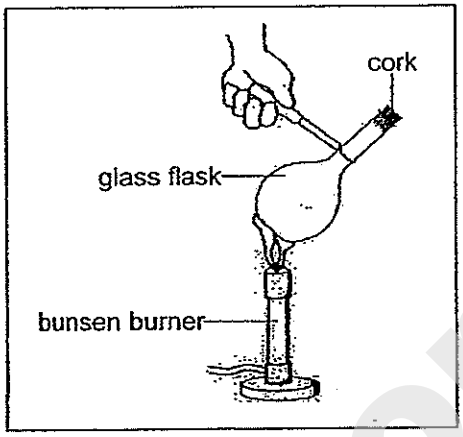
26. Mina heated an empty glass flask over a bunsen burner for 30 minutes as shown in the diagram below



Minah's friends made the following predictions about what would happen after the flask was heated for 30 minutes.

Ahmad: The cork would pop out because when the flask was heated, the air inside the flask gained heat. As it gained heat, it would expand and push the cork out.

Britney: Nothing would happen because the heat could not travel through the flask. The air inside the flask would remain the same hence there would be no reaction.

Chitra: The cork would be sucked into the flask because when the flask was heated, the flask would expand. There would be more space inside the flask hence the cork would be sucked into the flask.

David: The cork would pop out because when the flask was heated, the flask would gain heat from the surrounding air. The heat would then push the cork out.

Who made the correct prediction?

(1) Ahmad

(2) Britney

(3) Chitra

(4) David

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27. When Ravi placed a marble into a beaker of water, the water rose to the level as shown in Diagram 1 below.

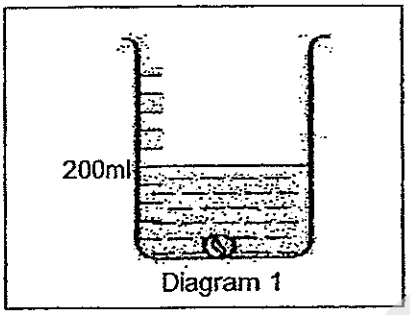

Diagram 1

When Ravi added two more marbles of the same size into the beaker of water, the new water level is as shown in Diagram 2.

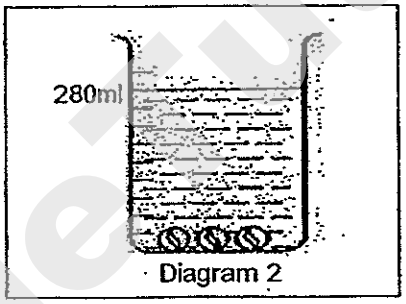

Diagram 2

What would the water level be if all the marbles were removed and what property of matter did it show?

	Water level	Property of matter
(1)	80 ml	Matter occupies space.
(2)	100 ml	Matter occupies space and it has mass.
(3)	160 ml	Matter occupies space and it has volume.
(4)	240 ml	Matter occupies space and has no definite volume.

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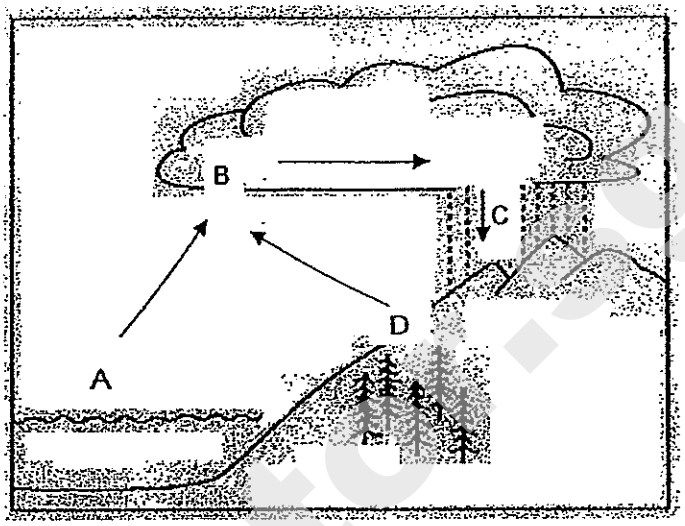
28. The diagram shows the different stages of the water cycle.



Based on the diagram above, some pupils made the following statements about the stages of the water cycle.

Deborah: Evaporation occurs only at stage A.

Elsie: There is heat lost both at Stage A and Stage B.

Fandi: At Stage D, plants give out water vapour into the surrounding.

Who made the correct statement/s?

(1) Elsie only

(2) Fandi only

(3) Deborah only

(4) Elsie and Deborah only

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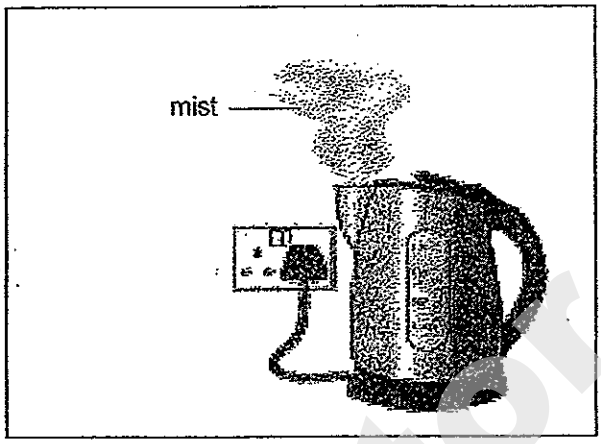
29. When water boils, a mist can be seen coming from the boiling water as shown below.



The table below shows some differences between mist and steam made by some pupils.

Pupil	Mist	Steam
Jenna	It can be seen	It cannot be seen
Kaili	It is made up of tiny water droplets	It is made up of water vapour
Lionel	There is heat gain	There is heat lost
Muthu	The process is called condensation	The process is called evaporation

Whose comparisons were correct comparison/s?

(1) Jenna and Kaili only

(2) Lionel and Muthu only

(3) Lionel, Muthu and Jenna only

(4) Jenna, Kaili and Muthu only

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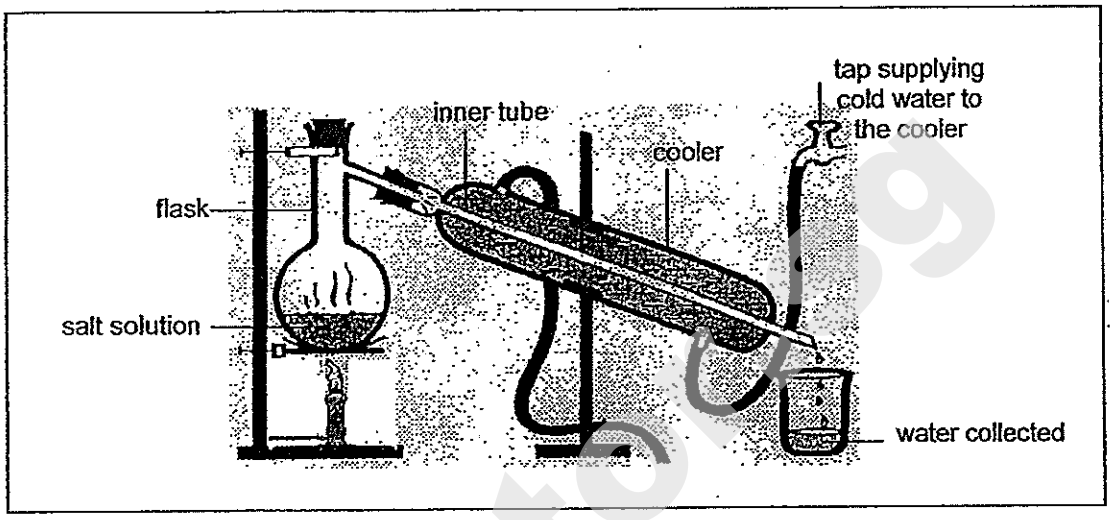
30. The diagram below shows the process known as distillation.



Distillation may be used to remove salt from water.

The table below shows the steps involved in distillation.

Step	Decription
1	The salt solution is heated in a flask to boiling point.
2	The water will vaporize (or become steam) while the salt remain in the flask.
3	The steam is then directed into an inner tube.
4	In the inner tube, the steam cools down and returns to water as it come into contact with the cooler.

Which of the following shows the correct sequence of processes in distillation?

(1) heating → evaporating → cooling → condensing

(2) heating → condensing → cooling → evaporating

(3) cooling → condensing → heating → evaporating

(4) cooling → evaporating → heating → condensing

End of Booklet A2

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MID-YEAR SEMESTRAL ASSESSENT 2014

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: 12 May 2014

Booklet A1 & A2	**/ 60**
Booklet B1	**/ 20**
Booklet B2	**/ 20**
Total	**/ 100**

This booklet consists of 7 printed pages including this page.

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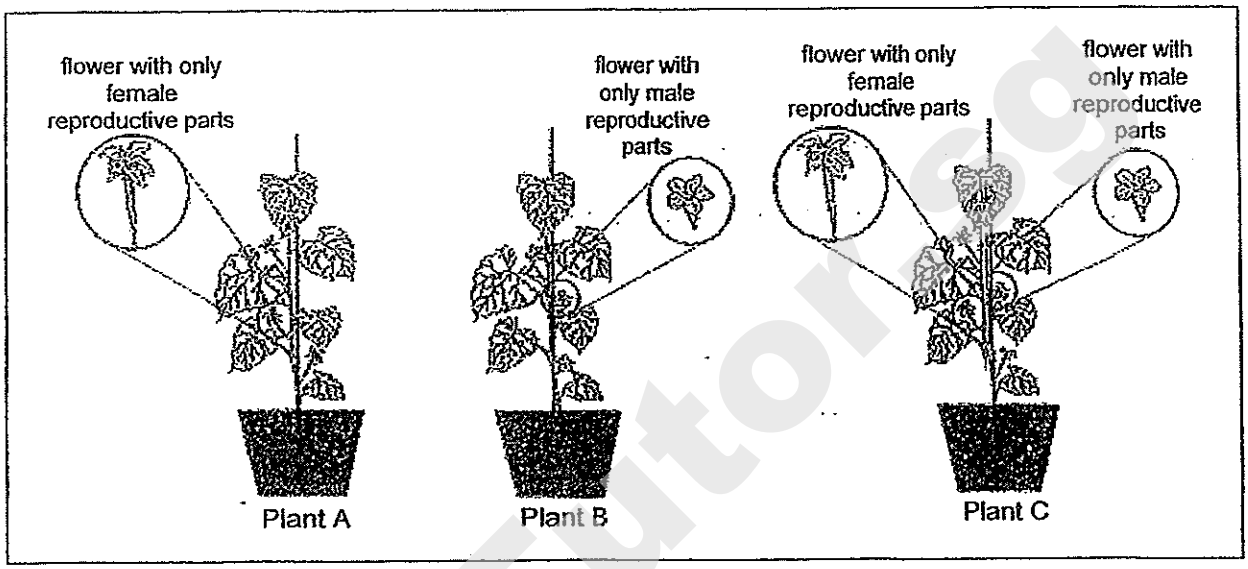
For questions 31 to 37, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question. [20 marks]

31. Study the diagram of the cucumber plant shown in the diagram below.



Plants A, B and C are found in the same garden.

Which of the following statements about these three plants are "True", "False" or "Not possible to tell"? Put a tick in the correct column. [2]

	Statement	True	False	Not possible to tell
(a)	The flowers on plant B can undergo self-pollination			
(b)	Plant B will not be able to produce any fruits			
(c)	Any fruits that develop on Plant C will have a combination of characteristics from Plant A and Plant B.			

2

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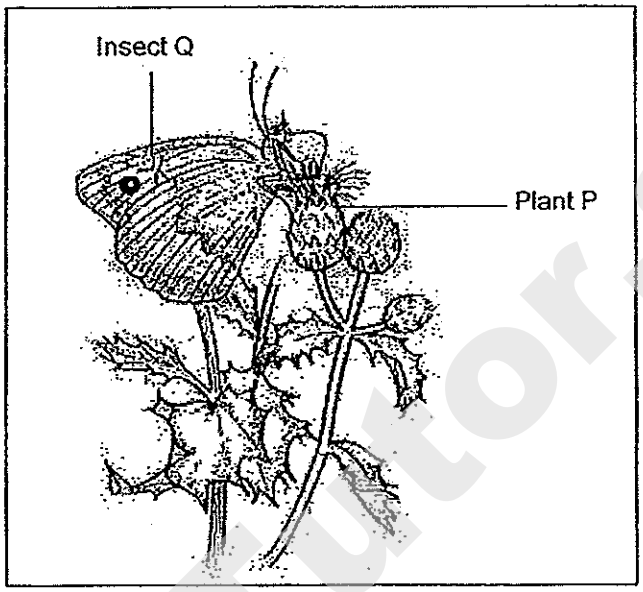
32. The diagram below shows Plant P and Insect Q depending on each other to survive. Insect Q feeds on the nectar of the flower of Plant P.



(a) Name two possible characteristics of the flowers of Plant P. [2]

(i) _____

_____

(ii) _____

_____

(b) How is Insect Q important in ensuring the continuity of Plant P? [1]

_____

_____

3

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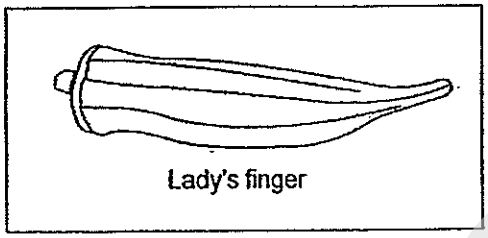
33. Study the picture of a lady's finger as shown in the diagram below.



Lady's finger

When mature, the fruit of the lady's finger dries up and becomes tougher and more woody in texture.

(a) Based on the information given only, what is the most likely method of seed dispersal for the fruit shown above? [1]

_____

(b) Give a main reason why plants disperse their seeds [1]

_____

_____

(c) Name another plant that disperses its seeds using the same dispersal method mentioned in (a). [1]

_____

3

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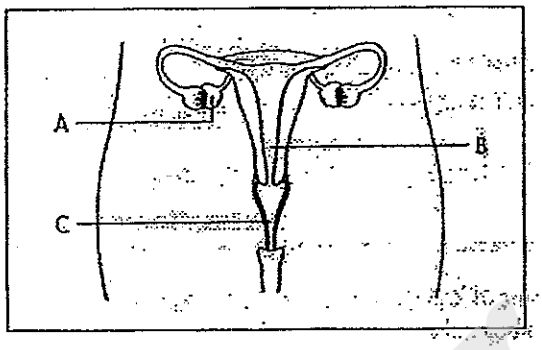
34. Study the human system below carefully.



(a) Name the parts labelled, A, B and C. [1½]

A: _____

B: _____

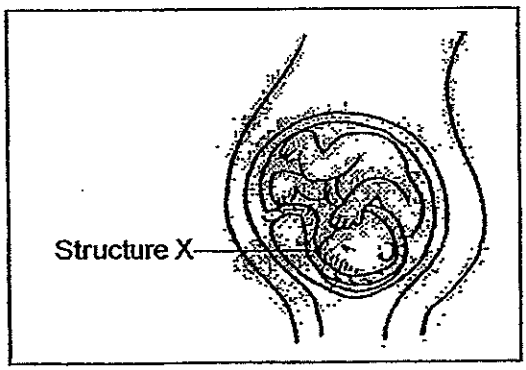
C: _____

(b) What is the importance of organ A? [1]

_____

_____

35. The diagram below shows a foetus and structure X.



Identify structure X and how is structure X important to the foetus? [1½]

_____

4

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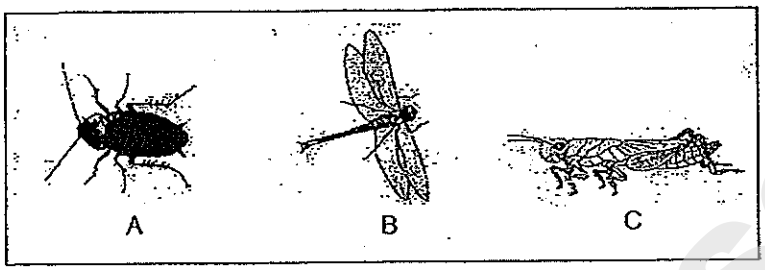
36. Study the insects shown below.



(a) List one similarity in their life cycles. [1]

_____

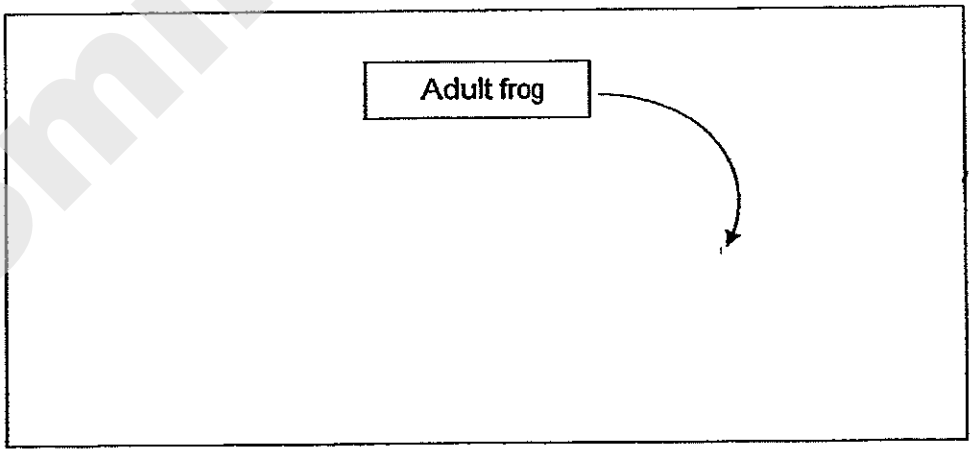
_____

(b) What is one difference between Insect A and its young in terms of their appearance? (Do not compare size and shape) [1]

_____

_____

(c) In the space below, complete the life cycle of the frog. [1]



(d) State one differencebetween the life cycle of a frog and that of Insect A. [1]

_____

_____

4

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37. Sam planted 30 seeds of chilli and pumpkin in soils of different temperatures. The percentage of seeds which germinated and the number of days taken for the first seed of each batch to germinate were recorded in the table below.

Temperature °C	Chili		Pumpkin	
	Percentage germinated	Number of days taken to germinate	Percentage germinated	Number of days taken of germinate
0	0	-	0	-
5	0	-	0	-
10	80	30	0	-
15	98	14	0	-
20	98	8	20	13
25	97	6	50	8
30	85	6	60	5
35	40	9	0	-
40	0	-	0	-

(a) What is the best temperature range for both types of seed to germinate? [1]

_____

(b) Give a reason for your answer in (a). [1]

_____

_____

(c) By comparing the results for the chilli and pumpkin seeds, which type of seed is more sensitive to the temperature of the soil? [1]

_____

(d) Give a reason for your answer in (c). [1]

_____

_____

4

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: 12 May 2014

Booklet B2	/ 20

This booklet consists of 12 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]

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38. A bimetallic strip consists of two metals attached firmly to each other. In the bimetallic strip shown below, metal A expands at a slower rate than metal B when heated.

A flame is positioned at Position X of the bimetallic strip as shown in the Diagram 1 below. Diagram 2 shows what the bimetallic strip looked like after it was heated.

Diagram 1: Before heating

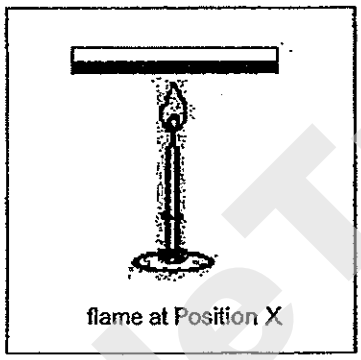
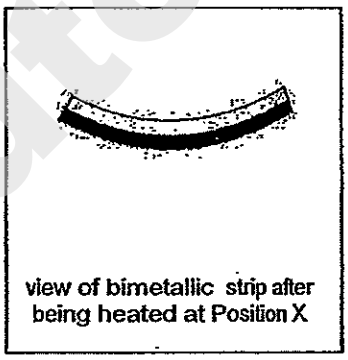


Diagram 2: After heating



The flame is then placed at Position Y of the bimetallic strip as shown in Diagram 3.

Diagram 3: Before heating

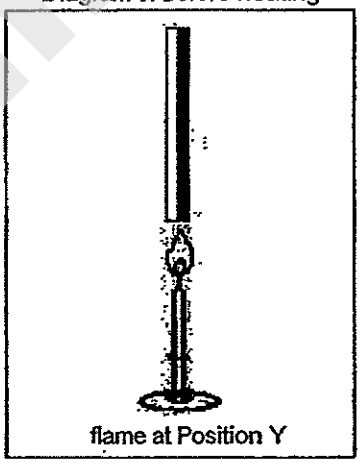
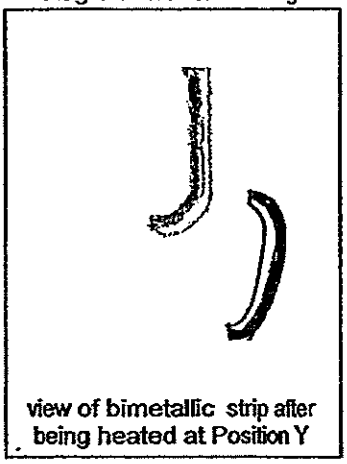


Diagram 4: After heating



(a) In Diagram 4 above, **draw and shade** the bimetallic strip to show what it would look like after it was heated at Position Y. [1]

1

(Go on to the next page)

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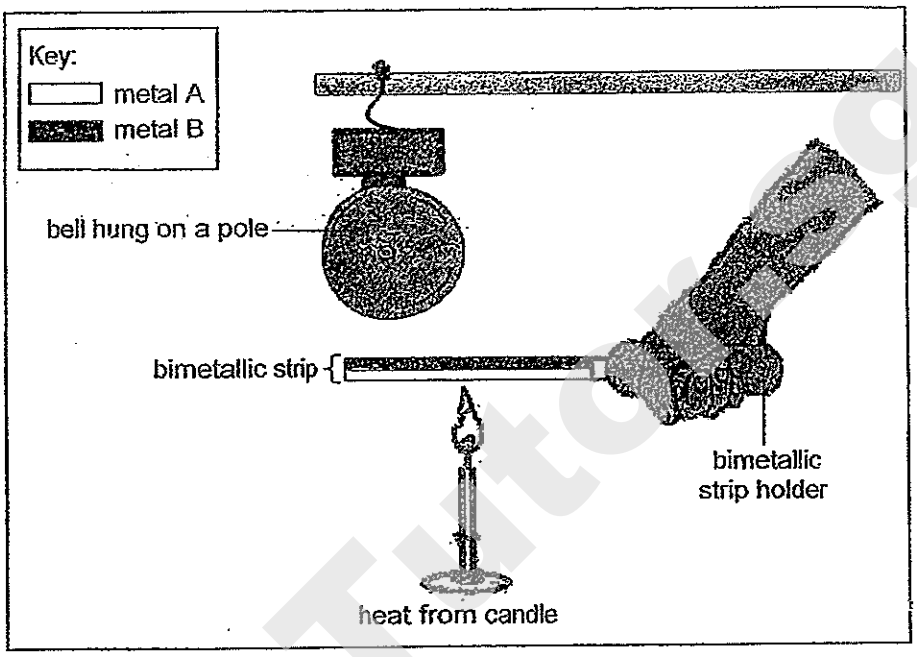
Jenny wanted to use the **same type** of bimetallic strip to carry out an experiment. She attached the bimetallic strip to a holder and placed a heated candle under the strip as shown in the diagram below.



When the bimetallic strip gets heated up by the candle, it will bend and touch the bell causing the bell to ring.

(b) Jenny's friend commented that there is a mistake in her set-up. Identify the mistake. [1]

_____

_____

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

_____

_____

2

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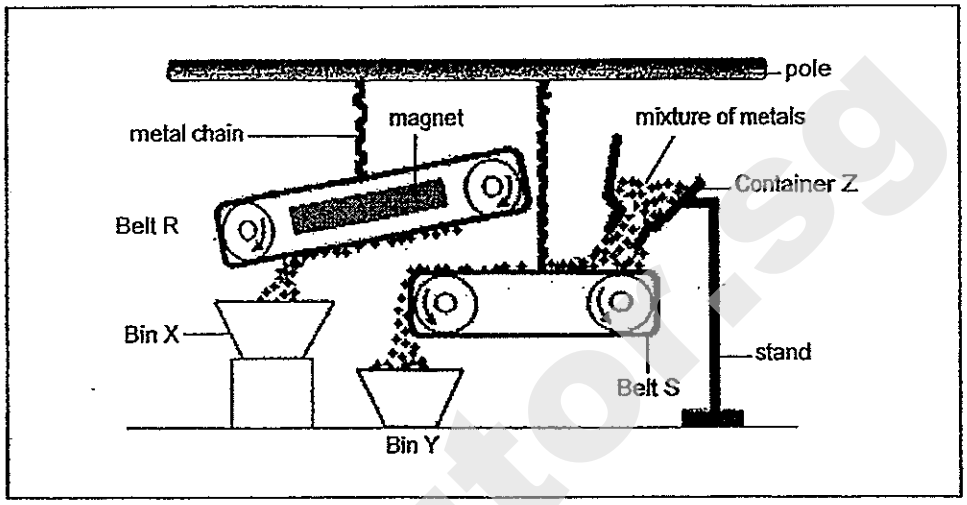
39. The diagram below shows some machines that were used to separate magnetic metals from non-magnetic metals.



Siti poured a mixture of metals into Container Z. The mixture landed onto moving Belt S.

As the mixture moved along Belt S, Siti observed that at certain points, some metals were 'picked up' by the moving Belt R. These metals then travelled along Belt R, before they were collected in Bin X.

(a) What metals were collected in Bin X? [½]

_____

(b) Explain how the magnetic metals were 'picked up' by the moving Belt R and then collected in Bin X? [1½]

_____

_____

_____

Siti's teacher said that one way to fill up Bin X faster is to pour more metals into Container Z.

(c) Suggest another way for Siti to fill up Bin X faster. [1]

_____

_____

3

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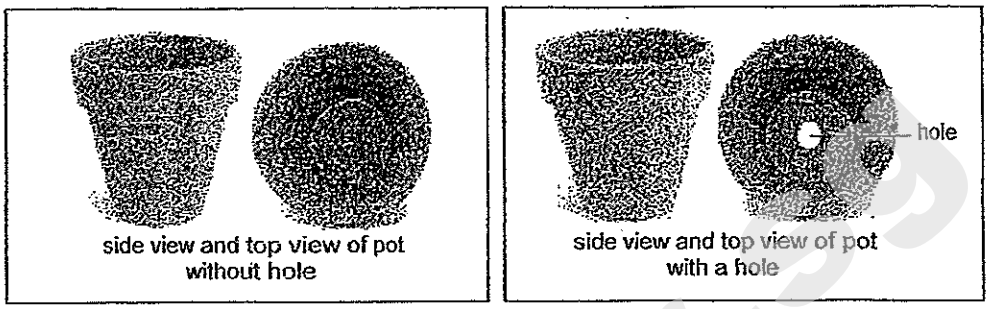
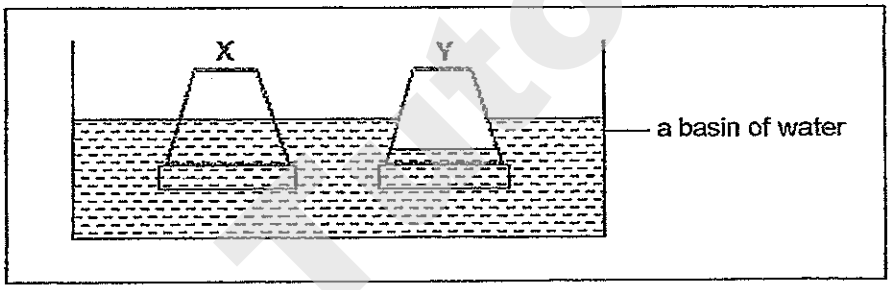
40. Ali found two clay pots. The pots are similar in every way except that one has a hole at the base while the other does not as shown in the diagrams below.



He then inverted the two pots into a basin of water as shown in the diagram below.



(a) Identify the pot (X or Y) which has a hole at the base and the one without any hole at the base respectively. [1]

(i) Pot with a hole at the base: Pot _____

(ii) Pot without any hole at the base: Pot _____

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

_____

_____

2

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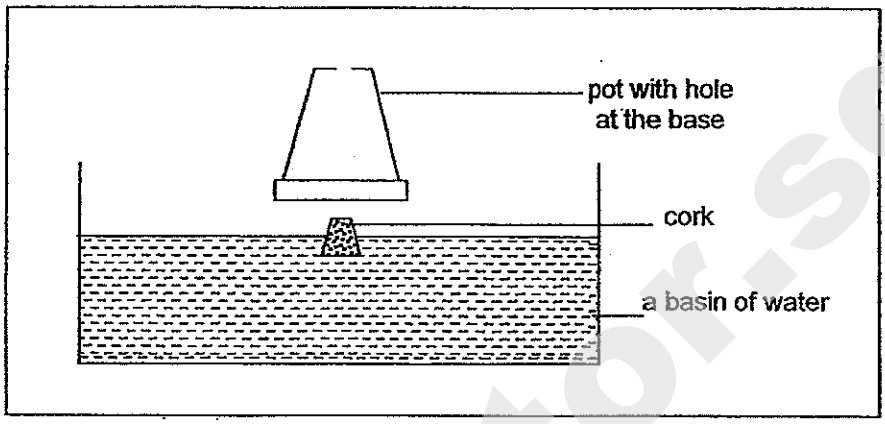
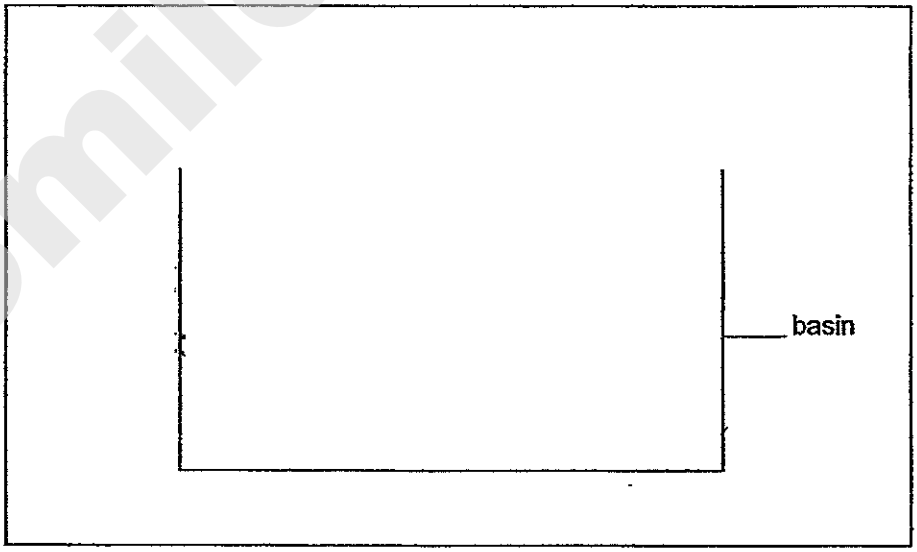
Ali then placed a piece of cork in the basin of water. Next, he inverted the pot with the hole over the piece of cork as shown in the diagram below.



(c) In the box below, complete the diagram by **drawing in**

(i) the cork
(ii) the pot with the hole at the base
(iii) the water level in the basin and in the inverted pot

when Ali pushed the inverted pot vertically into the water. [1]



1

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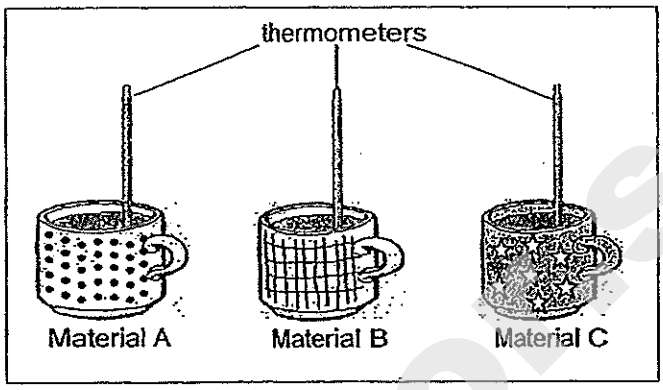
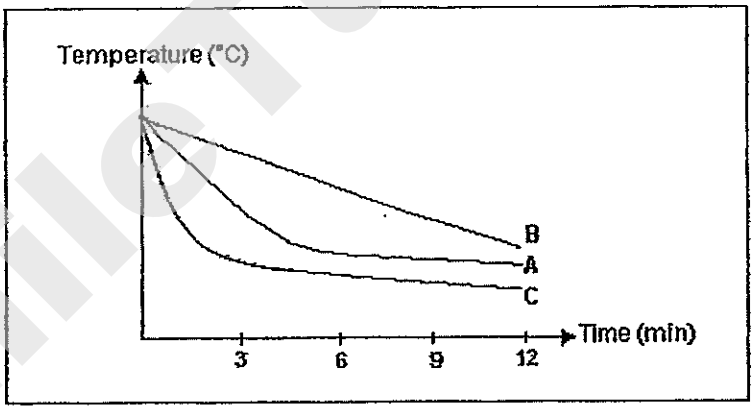
41. Hadi carried out an experiment to find out which kind of mug is best for keeping his tea hot. All the mugs are of the same size and thickness but are of different materials. Each mug was filled with the same amount of tea at 100°C as shown in the diagram below.



The changes in the temperatures of the tea in each mug were then recorded over a period of time. The graph below shows the temperature change of the tea in the 3 mugs.



Based on the graph above, Hadi concluded that mug B is best for keeping the tea hot.

(a) Do you agree with him? Explain your reason. [1]

_____

_____

1

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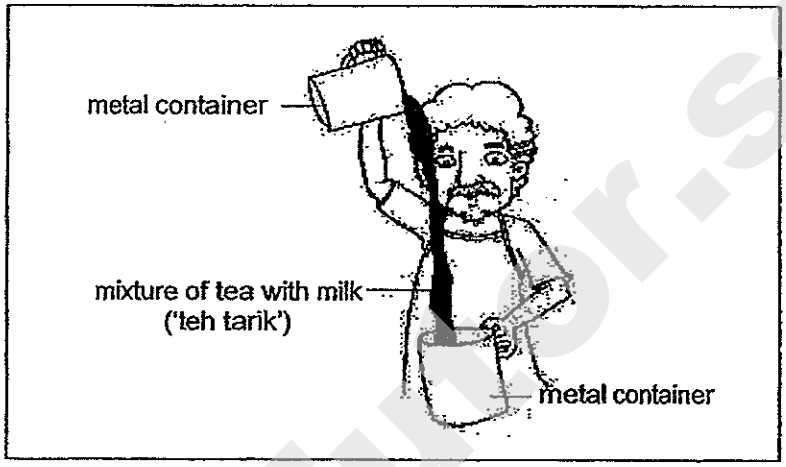
One morning, Hadi went to a hawker centre to have breakfast with his father. His father ordered 'teh tarik'. His father explained that 'teh tarik' was actually tea with milk. Hadi then noticed that the mixture of tea with milk was then poured up and down between two metal containers repeatedly as shown in the diagram below before it was served to his father.



(b) How did the action of repeatedly pouring the mixture of tea with milk between the two metal containers help to cool the tea? [1]

_____

_____

(c) According to Hadi's observation above, why do you think metal containers are used to prepare the 'teh tarik'? [1]

_____

_____

2

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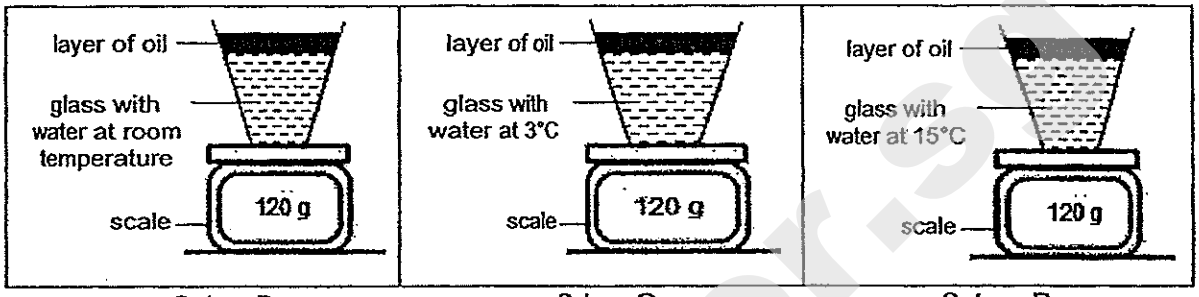
42. Suling filled three identical glasses with 100 *ml* of water and 10 *ml* of oil each. One of the glasses contained water and oil at room temperature, another glass contained water and oil at 3°C and another glass contained water and oil at 15°C.

She placed all the glasses on identical digital scales as shown below.



Set-up P Set-up Q Set-up R

(a) Why did Suling pour the layer of oil into each glass of water? [1]

_____

_____

Five minutes later, Suling observed that the mass of the glass and its content in set-up Q was greater than that in set-up R.

(b) Explain Suling's observations. [1]

_____

_____

After another ten minutes, Suling observed that the mass of the glass of water and oil in set-up P remained unchanged.

(c) Based on Suling's observations of set-up P **only**, what will happen to the mass of the glass after another 10 minutes later? [1]

_____

_____

3

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43. Raju's wife heated up a pot of soup as shown in Diagram 1. Twenty minutes later, he noticed that Substance X formed on the underside of the transparent glass lid as shown in Diagram 2. It then became difficult for him to see through the glass lid of the pot.

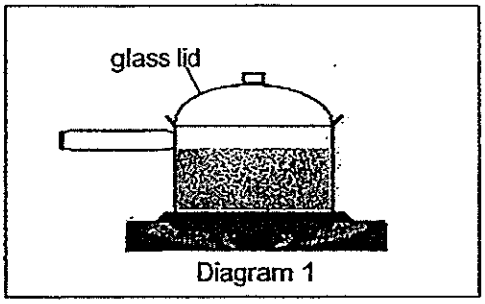


Diagram 1

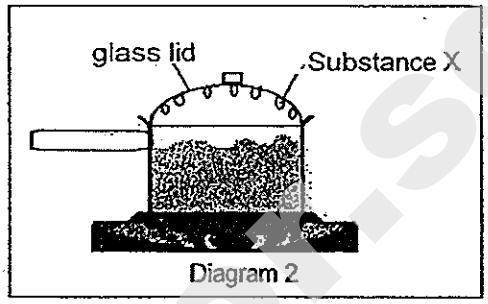
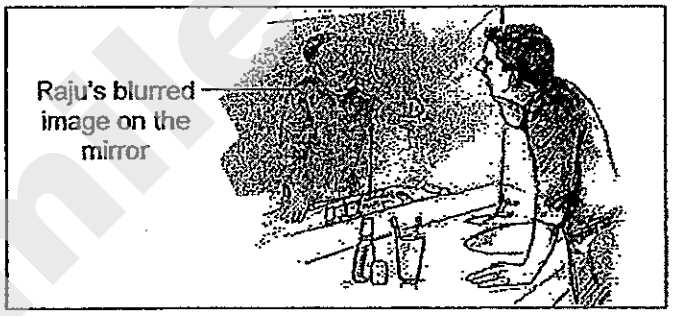


Diagram 2

(a) Identify Substance X. [1]

_____

After work, Raju had a hot shower. After his shower, while he was still in the bathroom brushing his teeth, he realized that he could not see his image clearly in the mirror.



(b) How did Raju's image in the mirror become blurred? [1]

_____

_____

2

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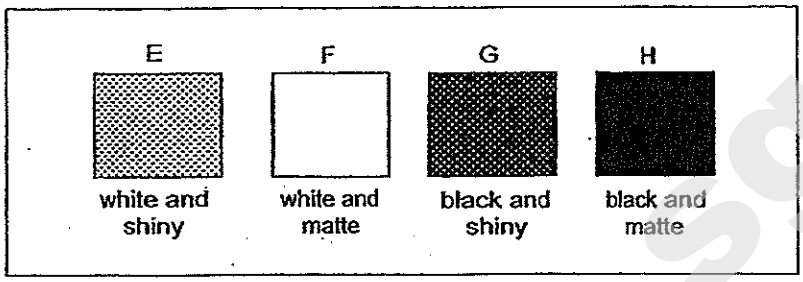
44. Brenda selected 4 metal sheets, E, F, G and H of different surfaces and labelled them as shown in the diagram below to investigate if the colour and the finishing of materials affects the rate at which heat is transferred.



She left the 4 metal sheets under the hot sun for 3 hours before measuring their temperature. She recorded the results in the table as shown below.

Metal sheet	Colour	Finishing	Temperature at the end of 3 hrs
E	white	shiny	50° C
F	white	matte	55° C
G	black	shiny	70° C
H	black	matte	75° C

Based on the results of the experiment, Brenda concluded that the colour of the metal sheets affects the rate at which heat is transferred more than the finishing.

(a) Do you agree with her? [1]

_____

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

_____

_____

2

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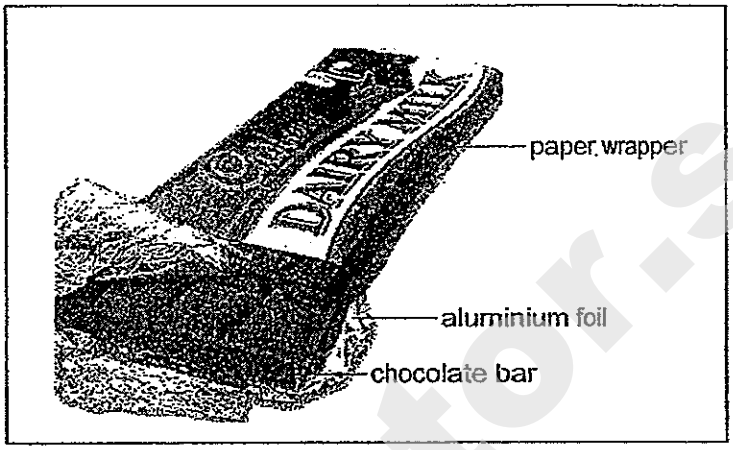
Most chocolates sold are wrapped in aluminium foil which is beneath the paper wrapper as shown in the diagram below.



The aluminium is used to provide a barrier against light, moisture and other gases so as to prevent the chocolates from spoiling.

(c) Explain how by wrapping the chocolate bar with aluminium foil increases its life span. [1]

_____

_____

1

End of Booklet B2

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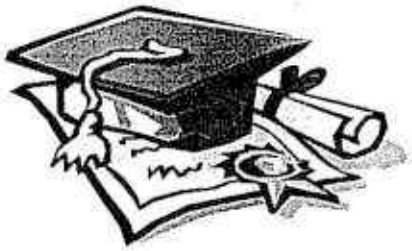

ANSWER SHEET

EXAM PAPER 2014
SCHOOL : MGS
PRIMARY : P5
SUBJECT : SCIENCE
TERM : SA1

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

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

31)a)False
b)True
c)Not

32)a)i)The flowers of Plant P is bright and attractive.
ii)The flowers of Plant P is colourful.
b)In sect Q might have taken pollen grains from another plant, and can bring the pollen grains to the stigma of plant P, that can help Plant P to fertilise.

33)a)Splitting/explosive action.
b)To prevent overcrowding.
c)Peas.

34)a)A: Ovary B : Womb C : Vagina
b)It produces eggs.

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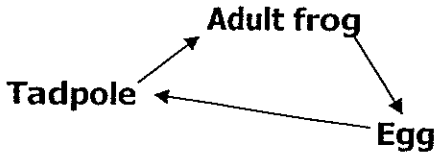
35)Umbilical cord. The umbilical cord carries nutrients to the feotus and helps it to pass out waste.

36)a)They have three stages in their life cycle.
b)Insect As young do not have wings but the adult has wings.
c)



d)The eggs of cockroach are fertilised internally but the frog's eggs are fertilised externally.

37)a)20℃ ----30℃
b)When both seeds are placed at 30℃, the most number of their seeds are germinated.
c)Pumpkin seeds.
d)The pumpkin seeds germinate at a narrower temperature range than the chili seeds.

38)a)

b)Metal B should be the one being heated by the candle.
c)When it is heated, Metallic B would curve more than metallic strip A, causing the strip to bend downwards and not hitting the bell.

39)a)Magnetic Metals.
b)Belt R when the magnectic force is no longer present.
c)She could make the magnet stronger.

40)a)i)X ii)Y
b)The hole in the cup when placed in the water, will allow air to escape, letting more air into the cup. Cup Y does not have a hole in it therefore there will be loss water in it as air takes up space.
c)

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41)a)Yes. The temperature remained the hottest for the longer period of time compared to mug A and C.

b)As the tea is poured from one container to another, heat is lost to the surrounding air.

c)Metal containers are a good conductor of heat, so the tea will lose heat faster.

42)a)To prevent the water from evaporating.

b)Water in Set-up Q has a lower temperature than Set-up R so more water vapour from the surrounding air condensed on the cool surface of the glass in Set-up Q than Set-up R.

c)It will still remain unchanged.

43)a)Water droplets.

b)The hot air of the bath room comes in contact with the cool surface of the mirror, causing the mirror to condense, forming water vapour on the mirror. Therefore, Raju's image on the mirror cannot be seen clearly.

44)a)Yes.

b)There is a greater increase in the temperature of the metal sheet between the 2-coloured metal compared to the different finishings.

c)The aluminium has a shiny surface which reflects most of the light away from the chocolate resulting in reducing excessiue heat gain from the chocolate.h

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NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 – 2014
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 trun over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answer in the Optical Answer Sheet (OAS) provided.

Marks Obtained

Booklet A		/ 60
Booklet B		/ 40
Total		/ 100

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

Date : 12 May 2014 **Parent's Signature:** _____

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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.

1. The pictures below show a tree fern and a coconut tree.

tree fern coconut tree

How are both plants similar to each other?

(1) Both plants bear fruits.
(2) Both are non-flowering plants.
(3) Both the spores and seeds are dispersed by wind.
(4) Both the spores and seeds will grow into new plants under suitable conditions.

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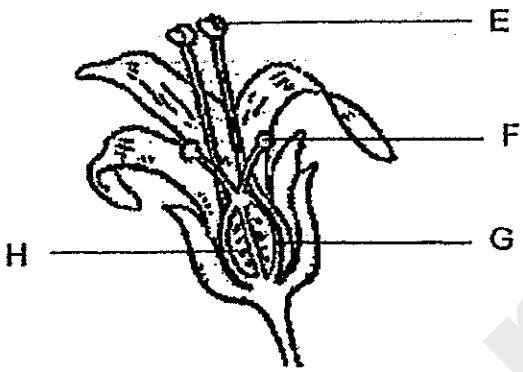
2. The diagram below shows the cross-section of a flower.



Which of the following statements is correct?

A Part G will develop into a fruit while H will develop into the seed of the fruit.
B Part E will form a pollen tube for the pollen grain to travel down to reach the ovary.
C Part E is the male reproductive organ while F is the female reproductive organ of the plant.

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

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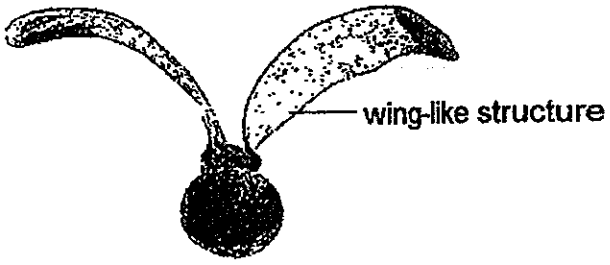
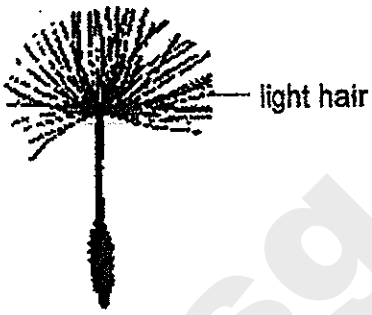
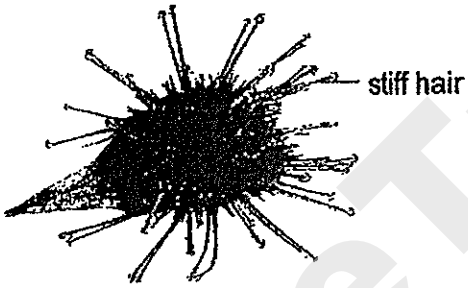
3. The diagrams below show four different types of fruits.



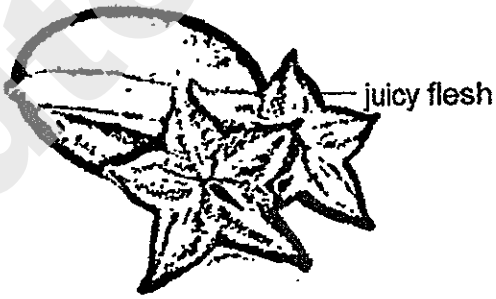
A



B



C



D

Which of the following fruits are most likely dispersed by animals?

(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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4. Lily wrote down some notes on the germination process of a seed.

A The seed coat traps light energy.
B Oxygen is required in the process.
C Stored food is used in the process.
D The seed uses water stored in the seed leaves.

Which of the following statements are true?

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

5. Sue and her classmates made the following statements about some characteristics that are passed down from parent to young.

Robert : Fingerprints of identical twins are identical.
Suzhen : Hair length can be passed down from parent to young.
Thaman : Some traits are passed down the generations but may not show in some generations.
Umairah : The young resembles more of its mother as it develops in her womb.

Which one of the children made the correct statement?

(1) Robert
(2) Suzhen
(3) Thaman
(4) Umairah

6. In the sexual reproduction of humans, one egg is released at a time compared to many sperms being produced at one time. Which of the following could be the possible reason(s) for the large production of sperm at a time?

A The egg has more sperms to choose from.
B More sperms can fertilise the egg at one time.
C The egg will take a shorter time to be fertilised.
D The egg will have a higher chance of being fertilised.

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

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7. An earthworm is placed in a sealed glass jar for half an hour. What changes would you observe to the composition of the various gases in the jar?

	Nitrogen	Oxygen	Carbon dioxide	Water vapour
(1)	remains the same	decreases	increases	decreases
(2)	remains the same	decreases	increases	increases
(3)	increases	increases	increases	remains the same
(4)	increases	decreases	decreases	remains the same

8. The list below shows parts of a human body.

A nose
B heart
C lungs
D ribcage
E windpipe

Which of the following are parts of the human respiratory system?

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

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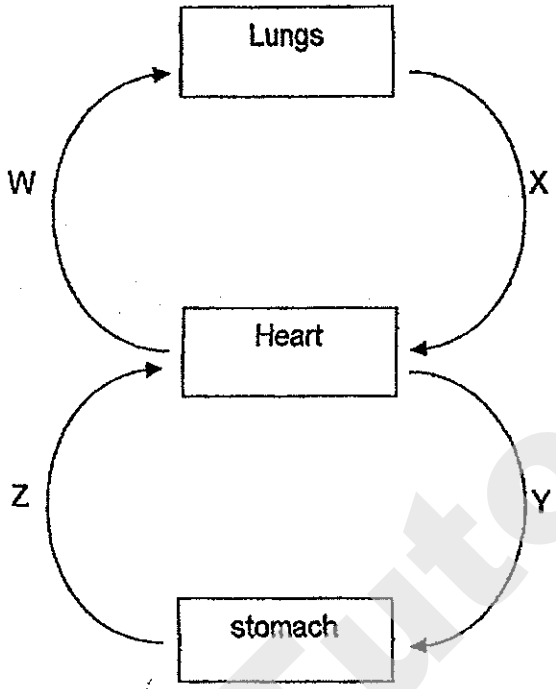
9. The circulatory system in human is important as it circulates blood in our body.



W, X, Y and Z represent blood vessels in the body. In what way are they similar?

(1) X and Z contain blood rich in oxygen
(2) X and W contain blood rich in oxygen
(3) W and Z contain blood rich in carbon dioxide
(4) W and Y contain blood rich in carbon dioxide

10. The food-carrying tubes in plants and the blood vessels in human have similar functions.

The table below states some functions of the food-carrying tubes and the blood vessels.

	substances transported	food-carrying tubes in plants	blood vessels in humans
A	food	√	√
B	oxygen	√	√
C	carbon dioxide	√	√

Which of the following comparisons are correct?

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

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11. Devi made a list of properties on the three states of water. Which of the following is correct?

	Properties	Ice	water	water vapour
(1)	has mass	Yes	Yes	No
(2)	has a definite shape	Yes	Yes	No
(3)	has a definite volume	Yes	No	Yes
(4)	can be compressed	No	No	Yes

12. Which of the following states the correct comparison between the evaporation and boiling processes of water?

		evaporation	boiling
(1)	can occur at any temperature	Yes	Yes
(2)	temperature remains constant during the process	No	No
(3)	gains heat during the process	Yes	Yes
(4)	change from liquid to gaseous state	Yes	No

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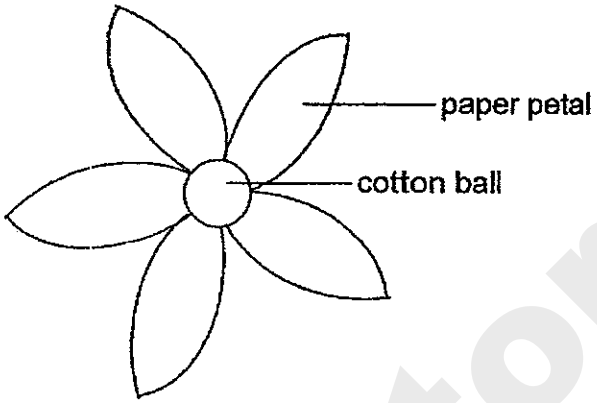
13. A class of pupils did an experiment to find out which colour of flowers attract the most butterflies. They made 4 flower models of the same size out of paper as shown in the diagram below. The centre of the flower is a ball of cotton wool of the same size.



The pupils made a syrup using sugar and water. They put 15 drops of syrup on each of the five balls of cotton. The model flowers were placed in an open field on a sunny day.

The pupils counted the number of butterflies that visited the flowers over a period of time as shown in the table below.

Colour of petals	Number of butterflies that visited the flower		
	8 to 9 a.m.	9 to 10 a.m.	10 to 11a.m.
Red	5	6	4
Green	0	1	0
White	3	4	3
Yellow	8	9	7

Based on the information collected, what conclusion can the pupils draw from the experiment?

(1) More butterflies visited the white flower than the red flower.
(2) The yellow flower is most frequently visited by the butterflies.
(3) The most number of butterflies visited the flowers from 8-9 a.m.
(4) The butterflies did not like the taste of the syrup on the green flower.

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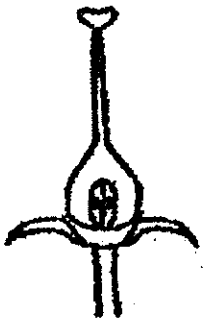
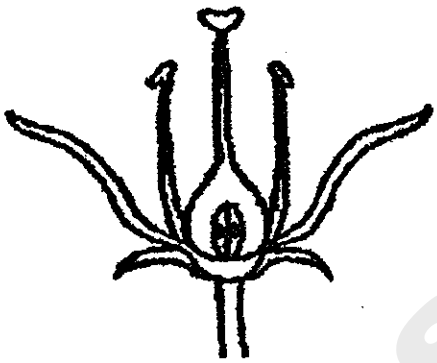
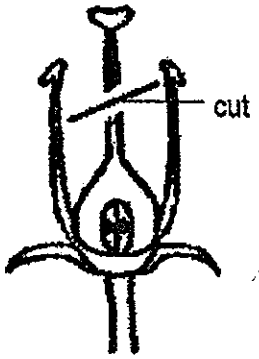
14. Study the four specimens of flowers below carefully.



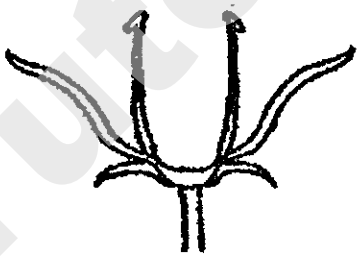
Flower A



Flower B



Flower C



Flower D

Which of the following flowers could possibly develop into a fruit?

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

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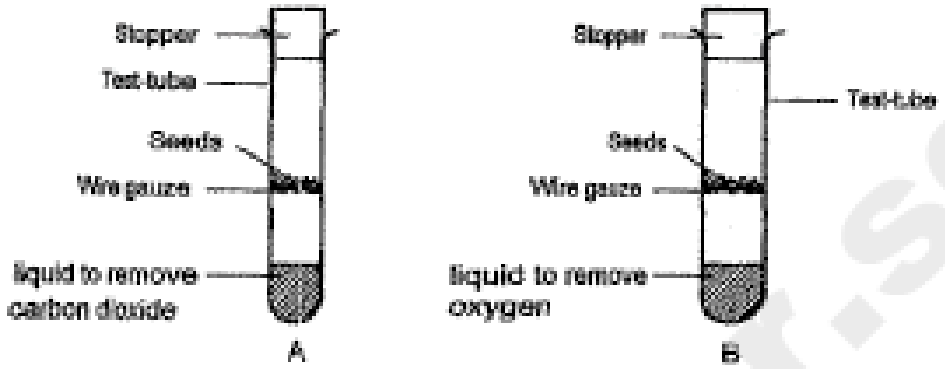
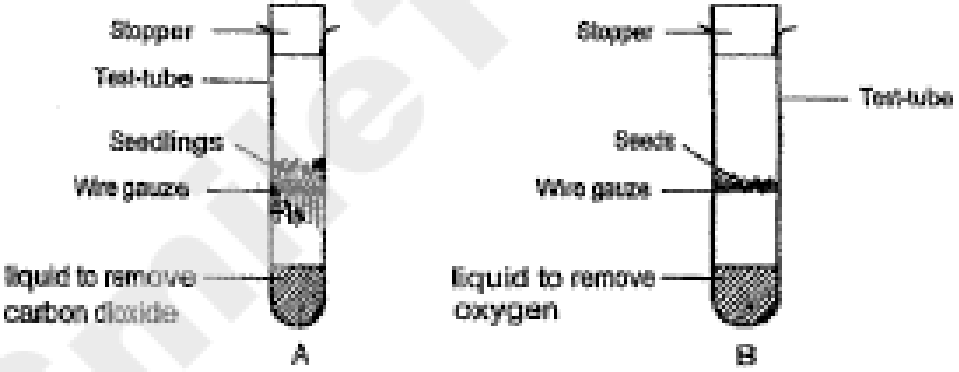
15. Leon set up two test tubes as shown below.



The two test tubes were left at the same corner of a room at 27°C. After a few days, the seeds in test tube A germinated but the seeds in test tube B did not.



Based on the observations stated, what can you conclude from this experiment?

(1) Seeds will germinate at a temperature of 27°C.
(2) Oxygen is released in the process of germination.
(3) Seeds can germinate in the absence of carbon dioxide.
(4) Roots grow first to absorb oxygen from the surrounding.

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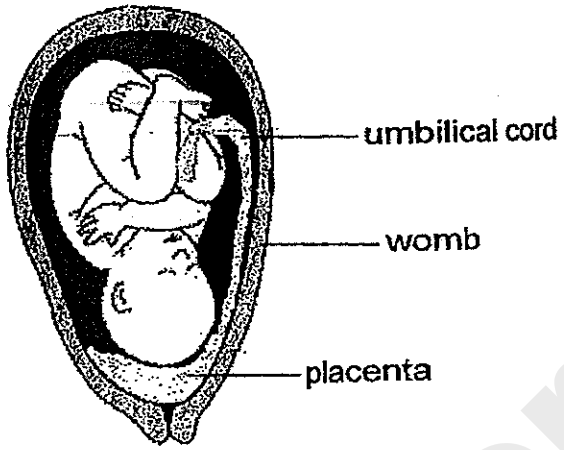
16. The diagram below shows a foetus growing in its mother's womb.



Which of the following processes must occur in order for the foetus to develop in the womb?

A An egg cell is fertilised by a sperm cell.
B The fertilised egg cell divides to form more cells.
C More sperm cells are required to fertilise the cells that are formed from the division of the fertilised egg.

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

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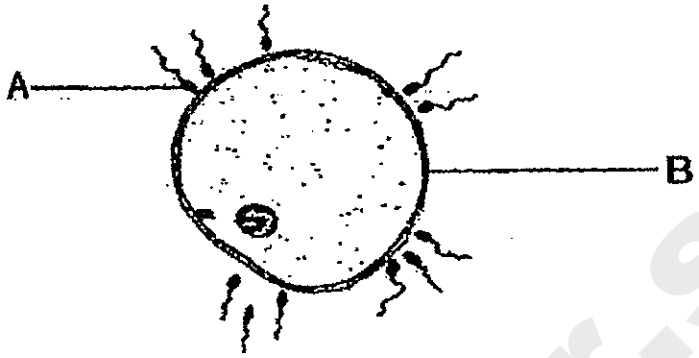
17. Study the diagram below which shows the fertilisation process of the human reproductive system.



Which one of the following information given below is correct?

	Male reproductive cell	Female reproductive cell	Organ producing male reproductive cell	Organ producing female reproductive cells
(1)	A	B	testes	ovaries
(2)	A	B	penis	vagina
(3)	B	A	testes	ovaries
(4)	B	A	penis	vagina

18. A class of pupils learnt about the sexual reproductive systems of both plants and humans in class. They wrote down lesson notes on what they had learnt. Read the statements below made by some of the pupils carefully.

Alan : The young will inherit characteristics of both parents.
Bernice : Once fertilised, the egg cell will divide and develop into the young.
Carol : The sperms have to travel to meet the egg in order for fertilisation to take place.
Donald : The egg cell travels to meet the sperms in order for fertilisation to take place.

Who are correct about both the plant and human reproductive systems?

(1) Alan and Donald
(2) Bernice and Carol
(3) Bernice and Donald
(4) Alan, Bernice and Carol

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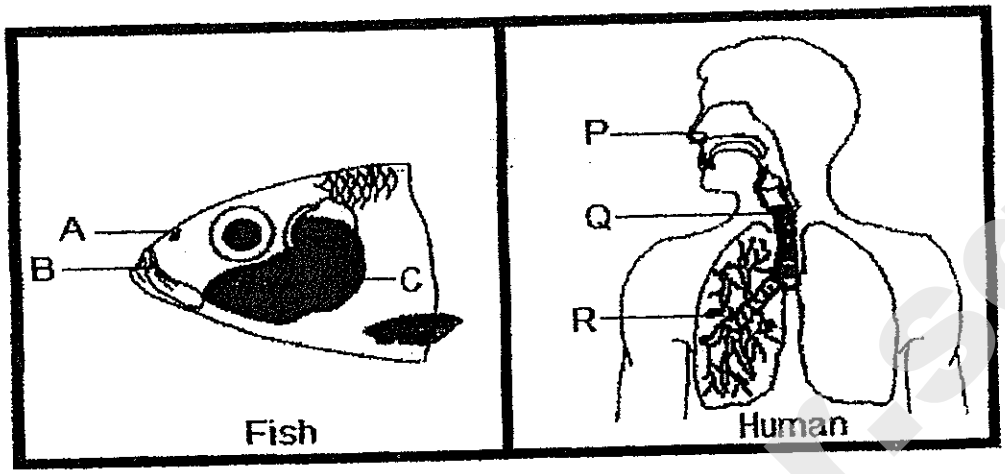
19. The diagrams below show the respiratory systems of the fish and the human.



Where does gaseous exchange occur in both the fish and human respiratory systems?

	Fish	Human
(1)	A	P
(2)	B	Q
(3)	C	R
(4)	B and C	P and R

20. Peiling learnt that different systems in the human body work together in order for the body to function properly. She listed down three systems she had learnt.

A Digestive System
B Circulatory System
C Respiratory System

Which of the following system(s) work together when a person is eating?

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

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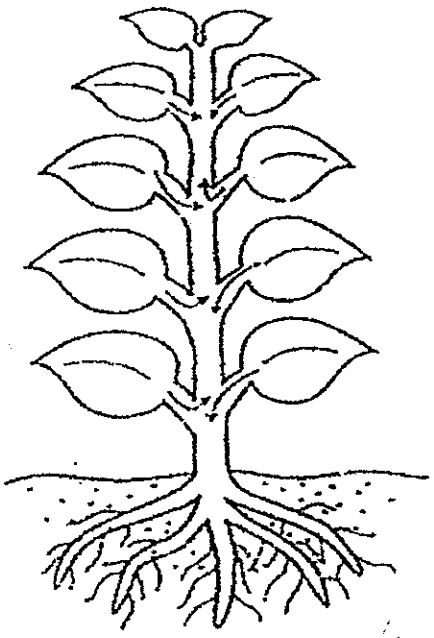
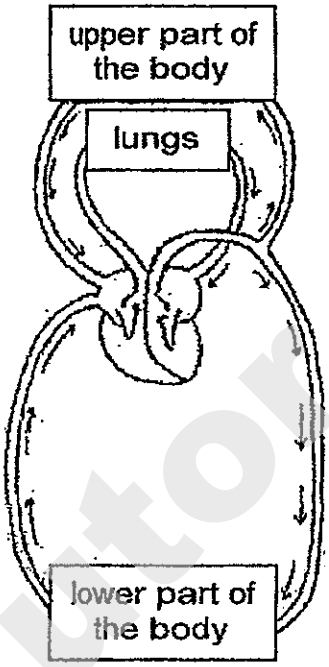
21. Plants and humans are living things that need food and they have transport systems to transport their food around their bodies.





Which one of the following statements is true about the transportation of food in plants and humans?

(1) An organ is needed to pump food through the tubes.
(2) Food is transported to all parts of the system through tubes.
(3) Both systems have tubes to transport undigested food to be disposed of.
(4) Food is broken down into simple substances before it is transported to other parts of the systems.

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22. A gardener measured the depth of water in his school pond using the same method at 10 a.m. over a period of 10 days. He tabulated his results as shown below.

Day	Depth of water in the school pond (cm)
1	77
2	75
3	70
4	64
5	74
6	73
7	70
8	69
9	76
10	65

Based on the results in the table above, between which two days did the pond water gain the most heat from its surroundings?

(1) Between Day 2 and Day 3
(2) Between Day 4 and Day 5
(3) Between Day 8 and Day 9
(4) Between Day 9 and Day 10

23. Which of the following describe what happen at the melting point of ice and boiling point of water?

A There is a change in state.
B The surrounding air gains heat.
C Heat is required in both processes.
D The temperature remains constant.

(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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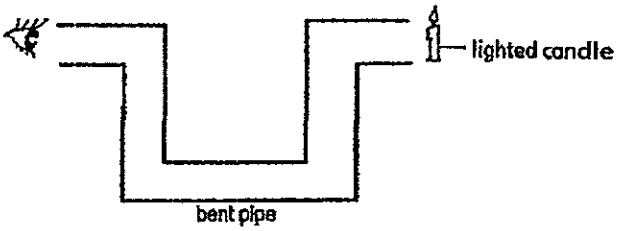
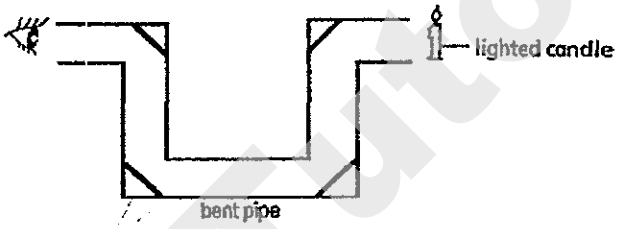
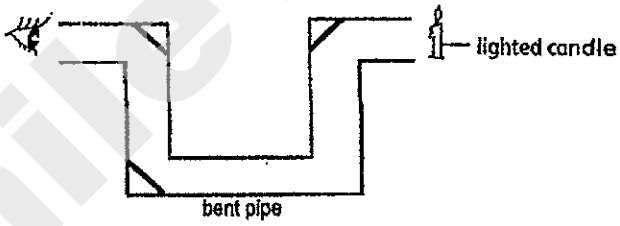
24. Rashid looked through a bent pipe at one end but was unable to see the lighted candle at the other end.



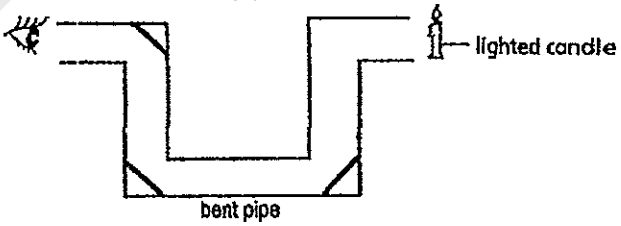
He learnt from his Science lessons that he would be able to see the lighted candle if he had placed mirrors in the pipe.
Which one of the following set-ups will allow Rashid to see the lighted candle at the other end?



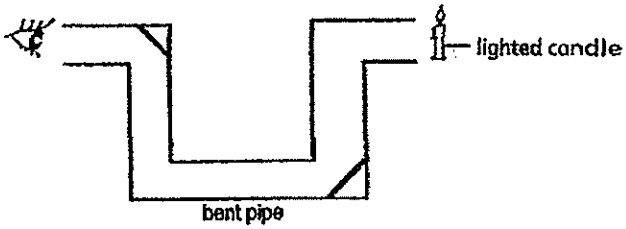
(1)



(2)



(3)



(4)

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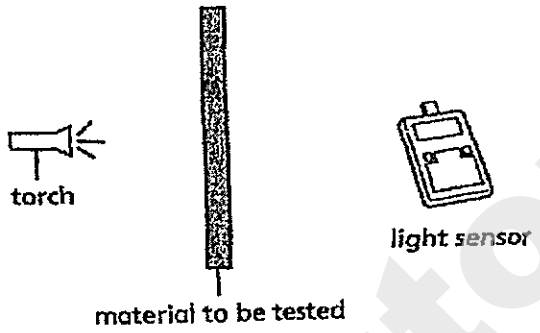
25. Ian wanted to investigate the degree of transparency of four different materials W, X, Y and Z. He measured the light intensity from the torch in a dark room without any material placed between the torch and the light sensor and took down the reading shown below.

Light intensity from the torch: 800 LUX

He then carried out the experiment in the dark room using the set-up shown below.



He recorded the results in the table below.

Material	Reading on the light sensor (LUX)
W	0
X	520
Y	800
Z	17

Based on Ian's results, which material is most suitable to make the lens of a pair of sunglasses?

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

26. Muthu listed down a list of observations he made from the surroundings.

A The water in the pot on the stove started to boil.
B Ice cubes in a cup placed in the kitchen melted into water.
C Water droplets formed on the outer surface of a glass of iced water.
D Water in an ice tray turned into ice cubes when placed in the freezer.

Which of the following observations took place as a result of heat loss?

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

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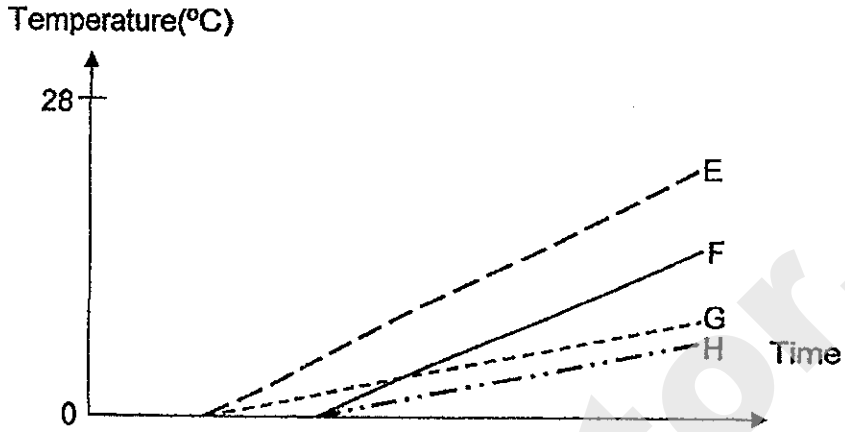
27. Lilian placed the same amount of crushed cubes in four cups of similar sizes made of different materials E, F, G and H, in a room of 28°C. She noted down the time taken for all the ice cubes to melt in each cup and sketched her findings in the graph below.



Based on the graph above, which of the following materials can keep a drink warm for the longest period of time?

(1) Material E
(2) Material F
(3) Material G
(4) Material H

28. Maggie wanted to know the degree of hardness for Materials A, B, C and D. She used Material A to scratch on the surfaces of the other three materials and noted down the results in the table below. She repeated the experiment using Materials B, C and D.

material used for scratching	material that was scratched on			
	A	B	C	D
A		scratch marks	no scratch marks	scratch marks
B	no scratch marks		no scratch marks	scratch marks
C	scratch marks	scratch marks		scratch marks
D	no scratch marks	no scratch marks	no scratch marks	

Using the information from the table above, arrange the four materials, A, B, C and D, based on their degree of hardness, beginning with the hardest material.

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

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29. Ponchos are used on rainy days instead of umbrellas by hikers as they are more convenient to use.

Besides being lightweight, which of the following properties must the material used to make the ponchos have?

A hard
B flexible
C waterproof

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

30. A plant is made up of several plant parts and each part serves a different function to support the survival of the plant.

Which of the following statement(s) is/are true about the function(s) of leaves?

A Make food for the plant.
B Takes in water for the plant.
C Provide shade for the plant.
D Helps the plant reach for sunlight.

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

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NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 – 2014
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 answer in this booklet.

Marks Obtained

Section B		/40

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

Date : 12 May 2014 **Parent's Signature:**_____

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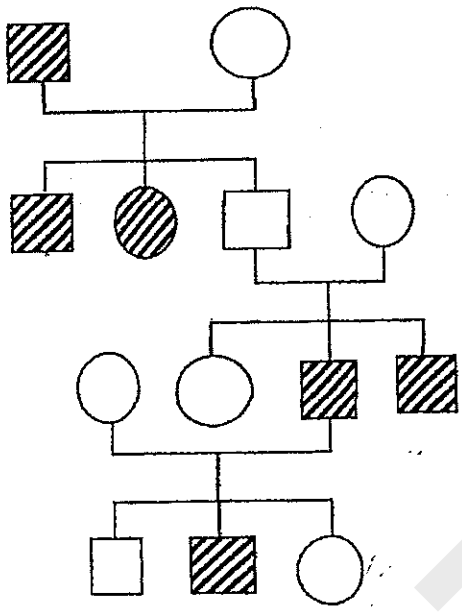
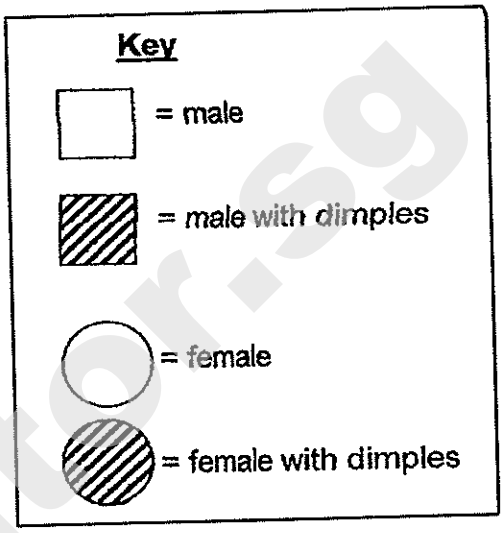
Section B: (40 marks)
Write your answers to question 31 to 44.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

31. Study Muthu's family tree below.





(a) Muthu has dimples and he notices that both Uncle Siva and Aunt Neera also have dimples. Put a cross (X) on the symbol that represents Uncle Siva in the family tree above. [1]

(b) Uncle Siva marries a woman with no dimples and has a girl with dimples. Draw, using a ruler, the extension in the family tree. [1]

(c) Not all Muthu's siblings have dimples. Why is this possible? [1]

_____

_____

Score	3

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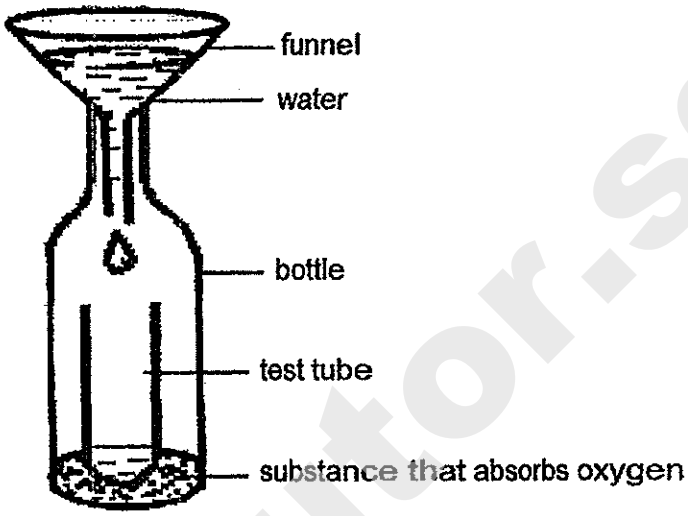
32. Miss Tan poured some water through a funnel in the set-up shown below and her pupils observed that the water dripped down slowly.



(a) The bottle contained a substance that would take away oxygen in the air so that water could enter to take the place of oxygen. However, it was observed that the water still dripped slowly into the bottle. Explain the observation. [2]

(b) What could be done to increase the rate of water dripping down into the test tube? [1]

Score	3

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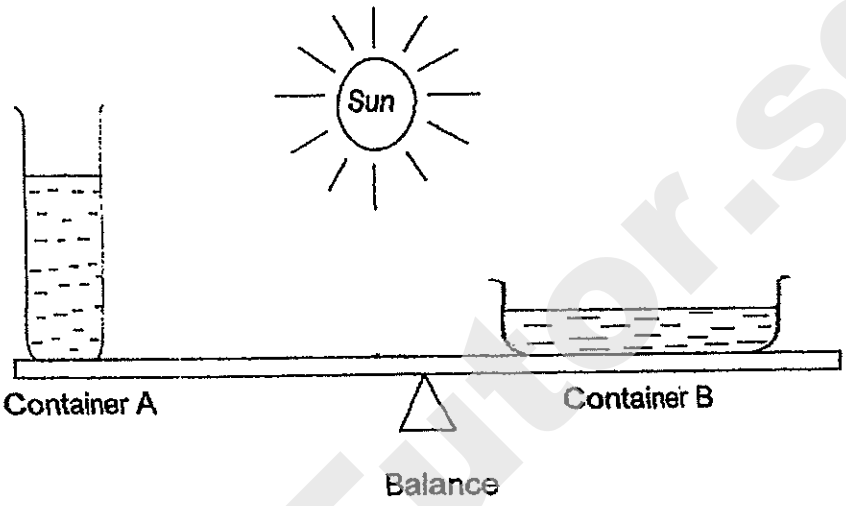
33. Roger set up an experiment as shown below. He wanted to find out if certain factors would affect the rate of evaporation of water. The containers he used were made from the same type of material and had the same mass when empty. He poured in 200ml of water in each of the container and placed the set-up under the sun for two hours.



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

(b) The balance tilted downwards on one side after some time. Which side, A or B, do you think the balance had tilted downwards? Give a reason for your answer. [2]

(c) State two other factors that would affect the rate of evaporation. [1]

Score	4

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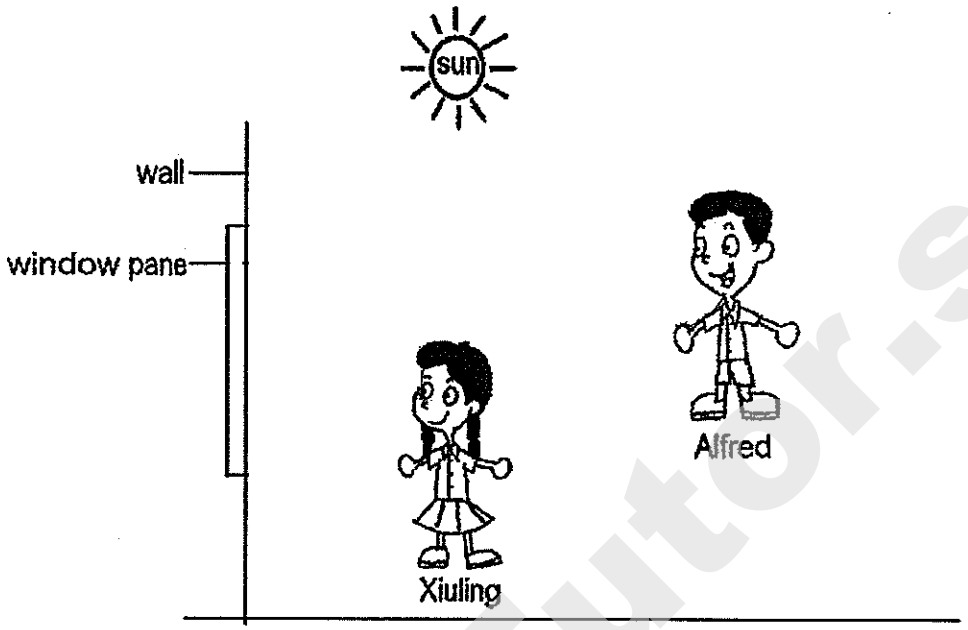
34. Alfred noticed Xiuling standing in front of a building and wanted to call out to her. Before he could do so, Xiuling turned around and greeted him.



(a) Describe how Xiuling was able to see Alfred who was standing behind her. [1]

(b) With the help of a ruler, draw the light rays in the diagram above to show how the light travels to enable Xiuling to see Alfred. [1]

Score	2

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35. Alex went to the park for his morning exercise and he noticed some water droplets on the leaves of the plants. His father told him that those were dew drops and they were formed from the condensation of water vapour in the air.

(a) Explain how the water vapour in the air condenses into dew. [1]

_____

_____

(b) After a few hours, when the surrounding temperature increases, Alex noticed that the dew drops 'had disappeared'. Explain his observation. [1]

_____

_____

Score	/ 2

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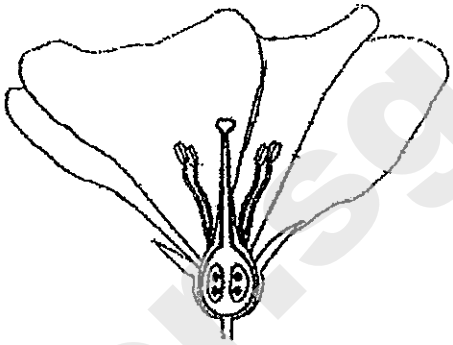
36. The diagram below shows the cross-sections of two flowers, R and S.

Flower R



Flower S

(a) Based on the diagrams above, which flower does not depend on insects for pollination? Suggest a possible method of pollination for this flower and give a reason for your answer. [1]

_____

_____

(b) Suzy looked at the flower and concluded that only Flower S can develop into a fruit. Do you agree with her conclusion? Explain why. [1]

_____

_____

Score	/ 2

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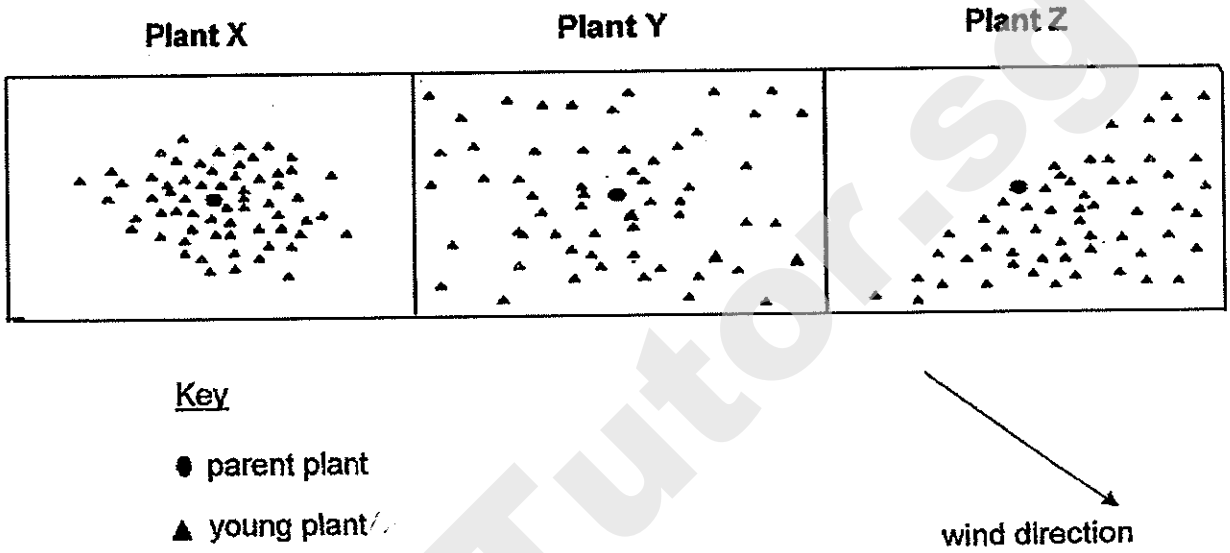
37. Three different plants were found growing on a plot of land. They flowered at the same time and their seed dispersal patterns over an area of 10 000 m^2 were shown in the diagrams below.



(a) Which of the plants, X, Y or Z, has its seeds dispersed by wind? Give a reason for your choice. [1]

_____

_____

(b) In the absence of wind, how would the dispersal of seeds of the plant relying on wind dispersal be affected? Which dispersal pattern will it resemble? [2]

_____

_____

Score	3

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38. Compare the plant and human sexual reproductive organs below.

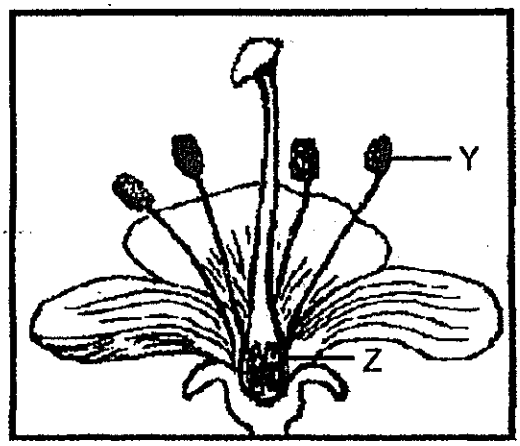

Diagram E

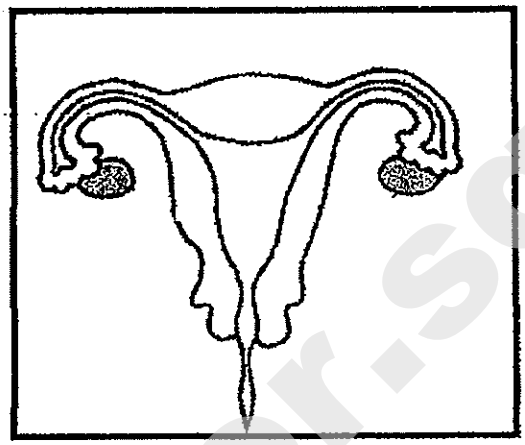

Diagram F

(a) Identify the part of the human reproductive system that has similar function as Part Z of the flower in Diagram E. Label the part(s) "Z" in Diagram F above. [1]

(b) Name the part of the human reproductive system that has similar function as part Y of the flower in Diagram E and state its function. [1]

_____

_____

(c) Animals can move by themselves. Two animals can come close to each other and mate so that the male can transfer the male reproductive cells to the female. Plants however cannot move about and mate. Identify the process in plants that has a similar function as mating in animals. [1]

_____

Score	3

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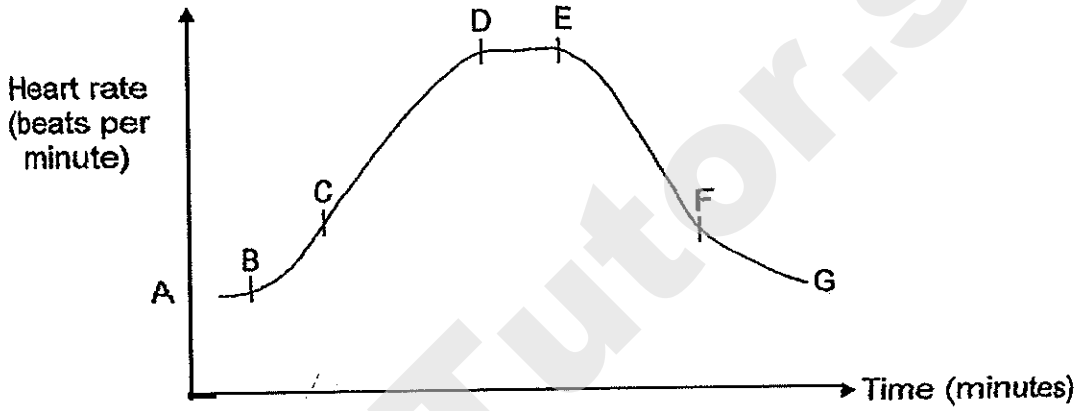
39. Mr Ahmad has a daily morning exercise routine. He will walk round the running track once before increasing his speed to start his jog. After his jog, he will walk round the running track once again before sitting down on a bench to rest.

The graph below shows Mr Ahmad's heart rate plotted against time during his morning exercise routine.



(a) Study the graph above carefully. Which part of the graph shows the time when Mr Ahmad was jogging round the running track? [1]

(b) Explain why the heart rate increases from part C to D and then remains constant from part D to E. [2]

Score	3

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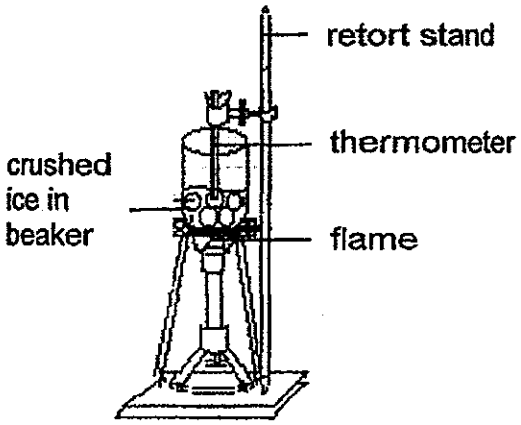
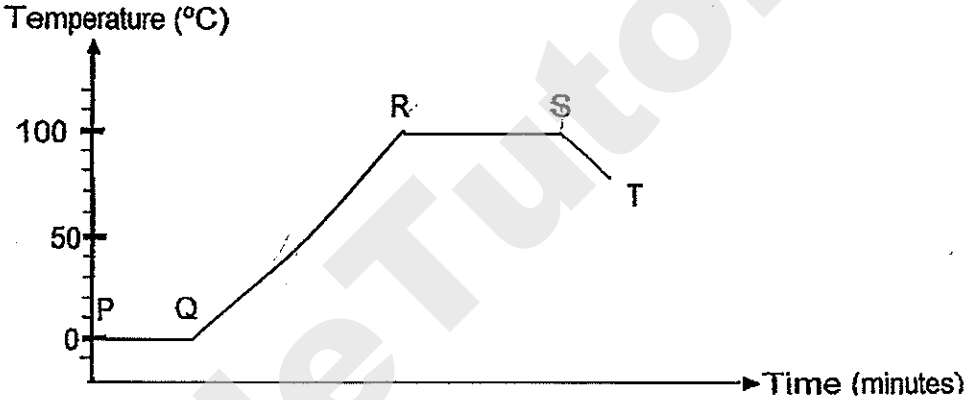
40. Study the set-up below carefully.



The graph below shows the changes in the temperature of the set-up above over time.



(a) What process is taking place at PQ? [1]

(b) Why did the temperature of water in the beaker start to rise at Point Q? [1]

(c) Explain why the temperature of water in the beaker remains constant at RS. [1]

(d) What could have happened at Point S? [1]

Score	4

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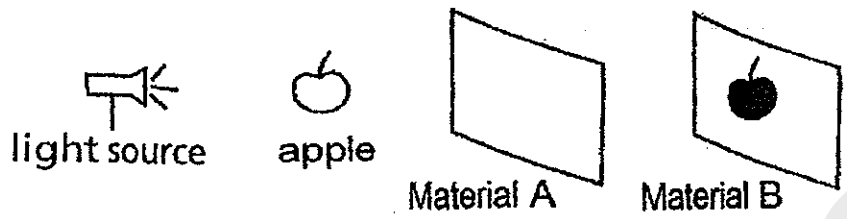
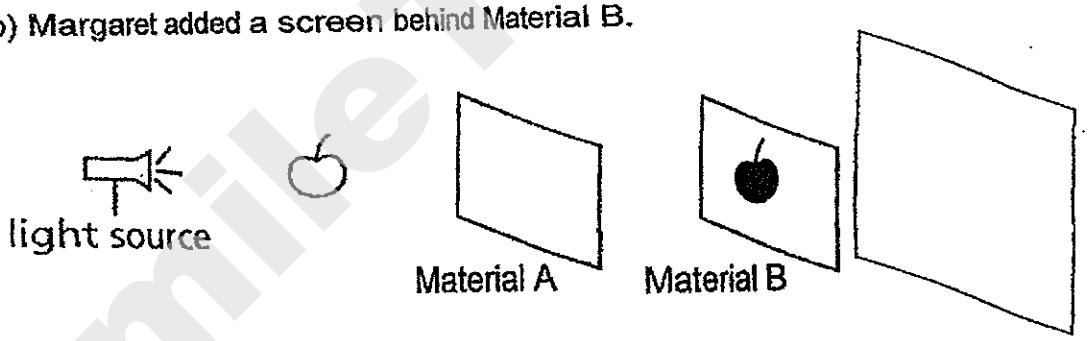
41. Margaret arranged a light source, an apple and a rectangular piece of Material A and Material B in a straight line in a dark room as shown below.



(a) When Margaret switched on the torch, she found that a shadow of the apple was formed on Material B. Explain why the shadow was formed on Material B and not on Material A. [2]

(b) Margaret added a screen behind Material B.



Draw the shadow that will be seen on the screen in the space provided below. [1]

Score	3

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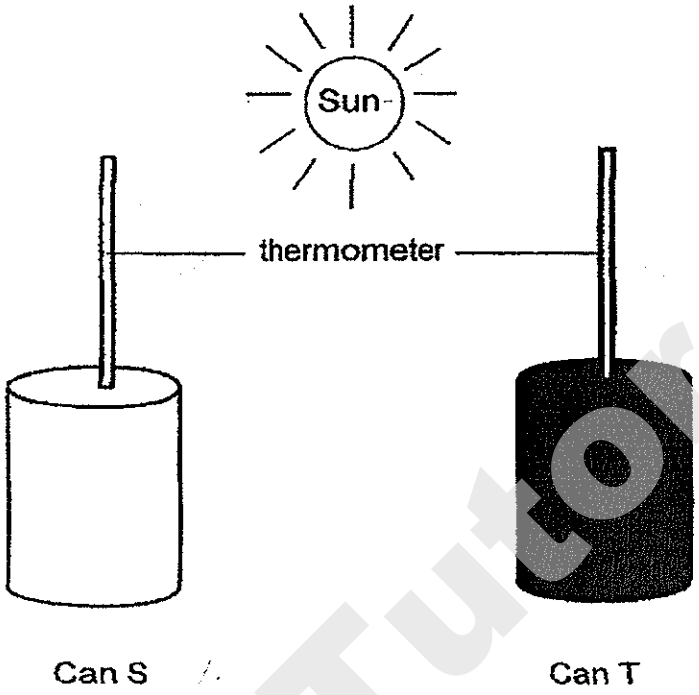
42. Paul filled up two similar cans with 150 ml of tap water. He placed a thermometer in each container. He painted Can S white and Can T black. He placed both set-ups in the sun for an hour as shown in the diagram below.



(a) Complete the table below by putting a tick (√) in the correct column. [2]

Variable	Dependent (variable measured)	Independent (variable changed)	Constant Variable
Colour of can			
Material of can			
Duration of experiment			
Reading on thermometer			

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Paul recorded the temperature of water at 10-minute intervals. He tabulated the results in the table below.

	Temperature of water (°C)						
Duration (minutes)	**0**	**10**	**20**	**30**	**40**	**50**	**60**
S	30	31	32	33	34	35	35
T	30	33	36	38	41	43	44

(b) What can Paul conclude from the experiment? [1]

(c) Based on the results of the experiment, what coloured shirt should Paul wear on a hot day? Why? [1]

Score	4

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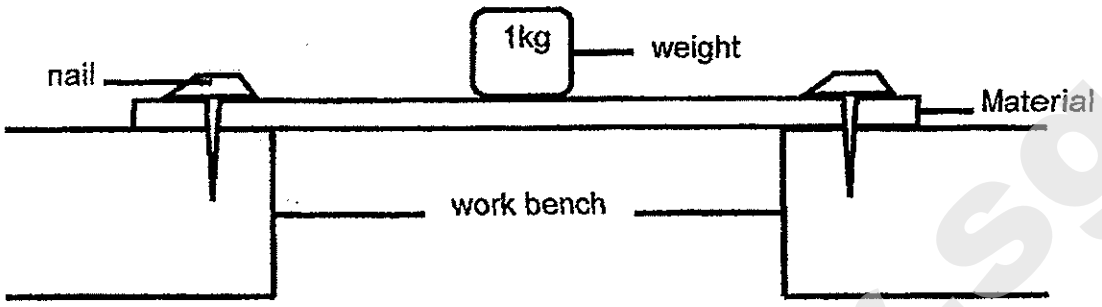
43. Father wanted to find out which material is more suitable to make a tabletop. He cut Materials K, L and M into the same size and prepared a set-up as shown below to carry out his experiment.



Father kept adding weights on the material to a maximum of 10 pieces of weight. He repeated the above experiment three times before moving on to the next material.

He wrote down his observations in the table below.

Material	Observations
K	Material became bent but did not break when the 10th piece of weight was added.
L	Material broke when the 10th piece of weight was added.
M	Material did not bend or break when the 10th piece of weight was added.

(a) Why did Father repeat the experiment three times for each type of material?[1]

_____

_____

(b) Which material is the best choice for making a tabletop? State two properties of that material, from the observations above, which make it suitable to be used as a tabletop. [1]

_____

_____

Score 2

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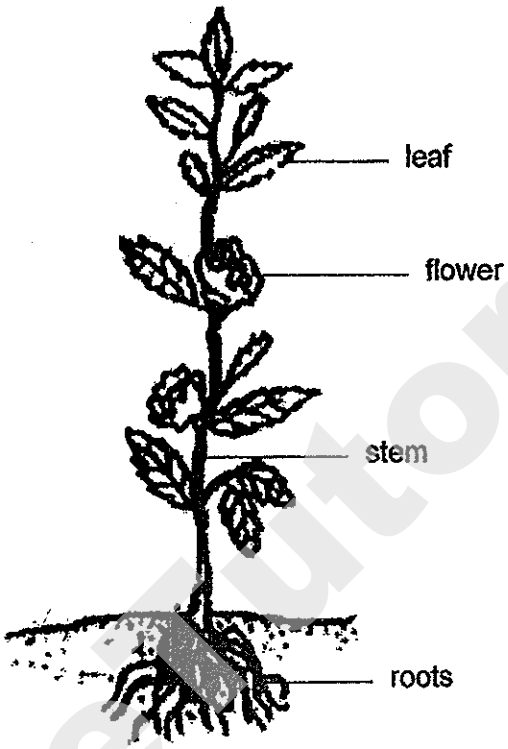
44. Study the diagram of a flowering plant below.



How does the stem work together with the roots and the leaves of the plant to enable the plant to survive? [2]

Score	/ 2

-End of paper-

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ANSWER SHEET

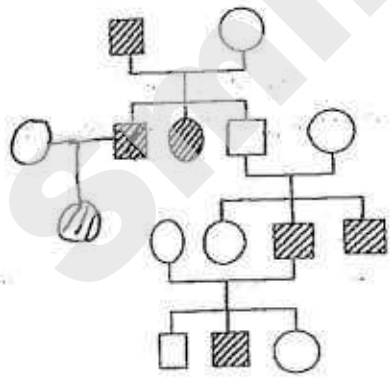
EXAM PAPER 2014
SCHOOL : NAN HUA
PRIMARY : P5
SUBJECT : SCIENCE
TERM : SA1

(

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

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

31)a)b)



c)Because some traits are passed down the generations but may not show in some generations.

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32)a)There are still other gases present in the air in the bottle. These gases take up space in the bottle and they cannot escape, hence water cannot flow in to take up the same space.

b)He could poke a few holes on the bottle.

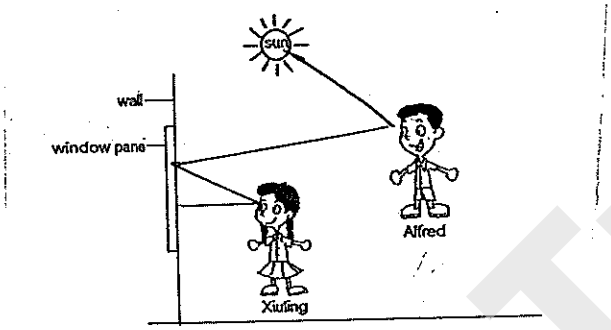
33)a)He wanted to find out if the size of the exposed surface area of the water will affect the rate of evaporation of water from the container.

b)The balance will tilt down wards on the side of container A. As container A has a smaller exposed surface area than B, less water has evaporated during the experiment, causing it to have a greater mass the than B and hence the balance tilts downwards on the side of container A.

c)The presence of wind and the temperature of the surroundings.

34)a)Alfred reflects light (from the sun) to the window pane and the window pane reflects the light into Xiuling's exes.

b)



35)a)The warmer water vapour in the air loses heat to the leaves when it comes into contact with the cooler surface of the leaves, condensing into water droplets.

b)The dew drops gained heat and evaporated.

36)a)Flower R. It is more likely pollinated by wind as it has its anthers hanging out for the pollen grains to be carried easily away by the wind.

b)Yes, I agree. Flower S has ovules and can be fertilised.

37)a)Plant Z. The seeds are dispersed in the direction of the wind.

b)It will be dispersed closer to the parent plant. It will resemble dispersal pattern X.

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38)a)

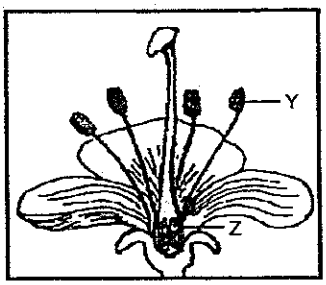

Diagram E

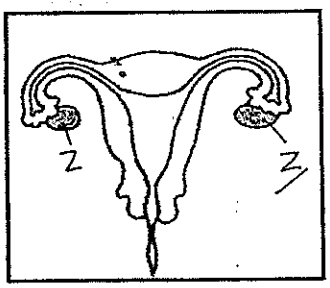

Diagram F

b)Testis. The testis produces sperms.
c)Pollination.

39)a)CE
b)When Ahmad starts to jog C, his body needs more energy. Therefore his heart has to pump faster to supply oxygen-rich blood and digested food to all parts of his body for respiration to realease more energy. From D to E, there is sufficient oxygen and digested food to reduce energy, so the heart pump at a constant rate.

40)a)Melting.
b)The ice had melted into water and the water started gaining heat from the flame.
c)The water has reached its boiling point at point R.
d)The temperature could have been removed from the flame.

41)a)Material A is transparent, thus no shadow was formed on Material A but Material B is opaque, hence the shadow of the apple is formed on Material B.
b)

42)a)

b)The black can gains heat faster than the white can.
c)White. White colour gains heat slower.

43)a)He wanted to ensure reliability of the result.
b)M. Because it did not bend or break.

44)The stem transport water absorbed by the roots to the leaves. The stem transport the food made by the leaves to the roots.

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NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SEMESTRAL ASSESSMENT 1

2014

BOOKLET A

Date : 8 May 2014
Duration : 1 h 45 min

Name : _____ ( )

Class: Primary 5 ( )

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

Booklet A consists of 20 printed pages including this cover page.

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Section A (30 x 2 marks = 60 marks)

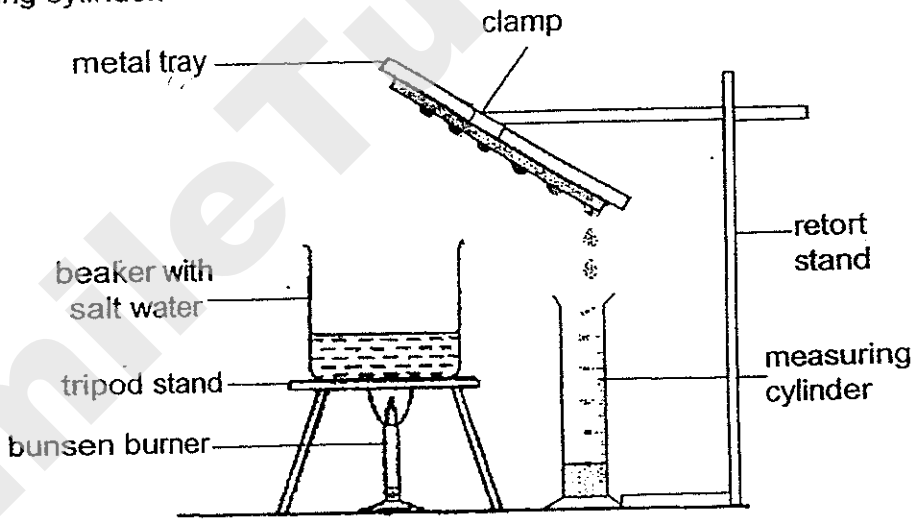
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.**

1. Which of the following statements are **true** about boiling and evaporation of water?

A Boiling and evaporation of water take place at 100°C.
B Water gains heat during evaporation and boiling of water.
C Boiling and evaporation take place only at the surface of water.
D There is a change in state of water during boiling and evaporation.

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

2. Pauline set up an experiment as shown below. At the end of the experiment, she observed that some water was collected in the measuring cylinder.



Which of the following statements is/are **correct** about the experiment above?

A Salt water was collected in the measuring cylinder.
B Salt was left behind in the beaker as the water evaporated.
C Salt was collected on the metal tray at the end of the experiment.
D Only water in the beaker evaporated into water vapour and condensed into water droplets on the metal tray.

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

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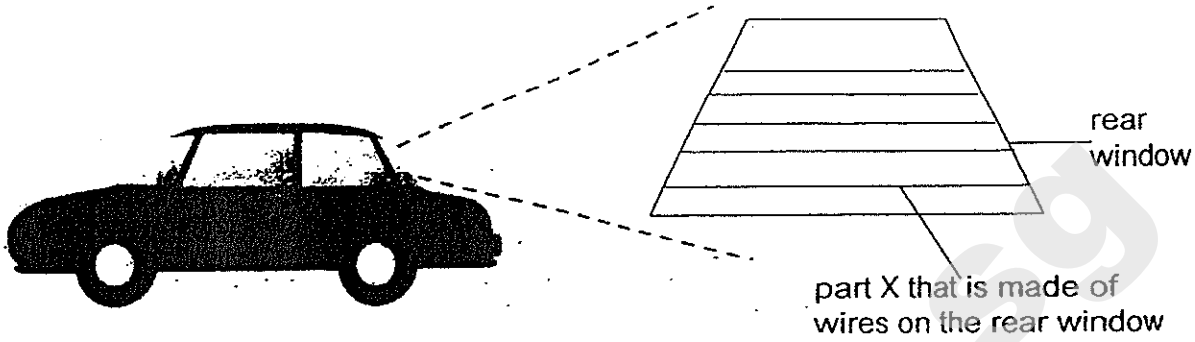
3. Jie Ming noticed that the rear window of his father's car was misted up. When Jie Ming's father switched on part X, the mist on the rear window cleared up. Jie Ming touched the part of the rear window where part X was, it felt warm.



Which one of the following describes what happened when part X was switched on?

(1) The mist on the rear window lost heat to part X.
(2) The mist gained heat from part X and evaporated.
(3) Surrounding air lost heat to part X and condensed into water droplets.
(4) The temperature of the surrounding air is hotter than part thus causing water droplets to evaporate.

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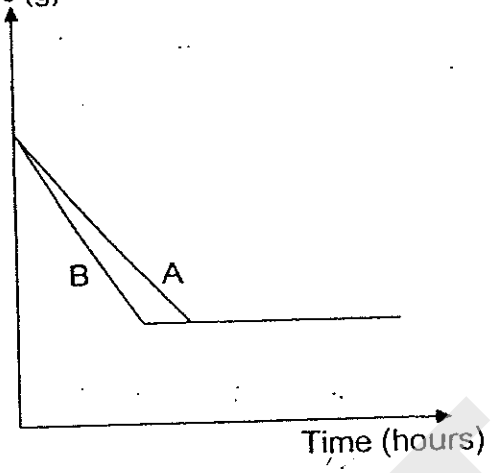
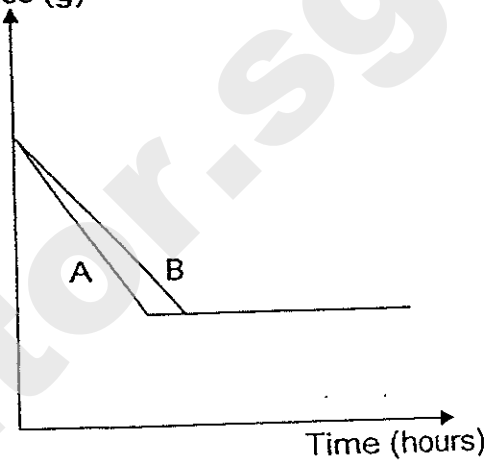
4. Taufiq conducted an experiment on the rate of evaporation of water. He poured an equal amount of water on 2 identical towels, A and B. Towel A was spread out in a closed cupboard but Towel B was spread out under the fan for a day.

Which one of the following graphs correctly shows the masses of towels A and B as time passed?

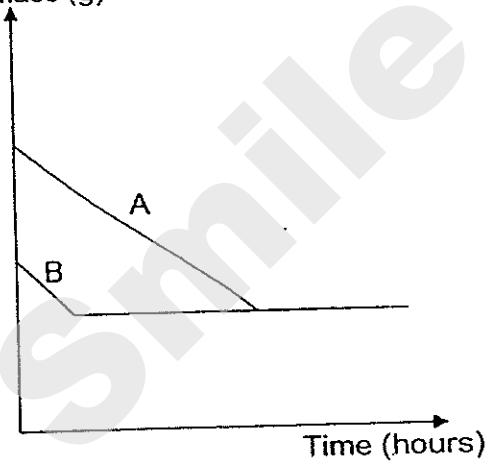
(1) Mass (g)



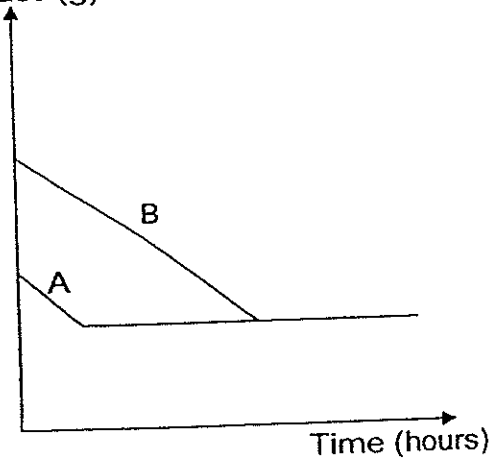
(2) Mass (g)



(3) Mass (g)



(4) Mass (g)



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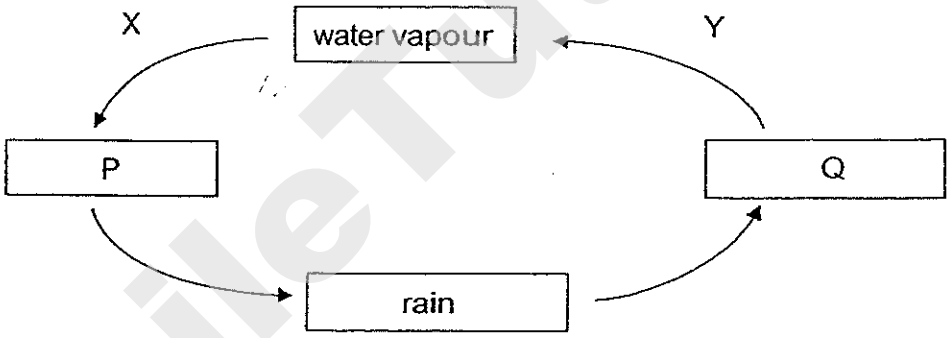
5. The table below shows the melting and boiling points of three substances, E, F and G.

Substances	Melting Point (°C)	Boiling Point (°C)
E	19	102
F	- 5	18
G	71	134

Which one of the following observations is **correct** if the substances are placed in a room at 26°C?

1) Substance E is in the solid state.
2) Substance G is in the solid state.
3) Substances E and F are in the liquid state.
4) Substances E and G are in the gaseous state.

6. The diagram below represents the water cycle.



Which one of the following represents P, Q, X and Y correctly?

	P	Q	Process X	Process Y
1)	water	clouds	evaporation	condensation
2)	water	clouds	condensation	evaporation
3)	clouds	water	condensation	evaporation
4)	clouds	water	evaporation	condensation

7. Which one of the following statements about reproduction is **false**?

(1) Animals can reproduce sexually but not plants.
(2) Reproduction takes place in both plants and animals.
(3) The young inherit their characteristics from their parents.
(4) Living things will become extinct if they do not reproduce.

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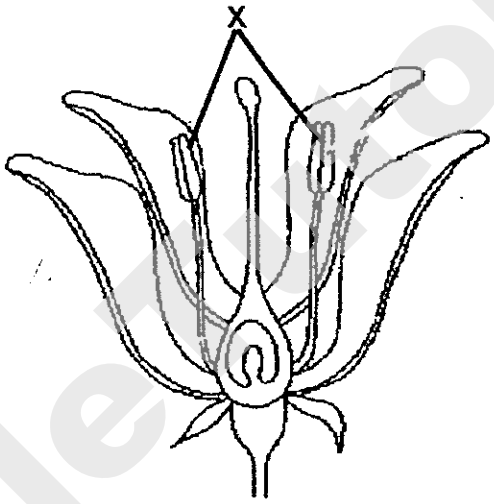
8. Which of the following is/are **true** about plants which reproduce by spores?

A They cannot produce flowers.
B They can make their own food.
C They can be pollinated by insects.

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

9. The diagram below shows the cross-section of an unfertilised flower.



If both part X are cut off, what effect will it have on the flower?

A The flower will attract less pollinators.
B The flower will not be able to develop into a fruit.
C The flower will not be able to receive pollen grain.
D The flower will have less chance of being pollinated.

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

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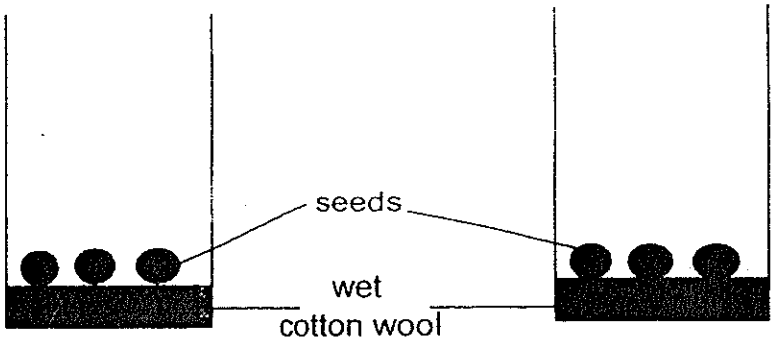
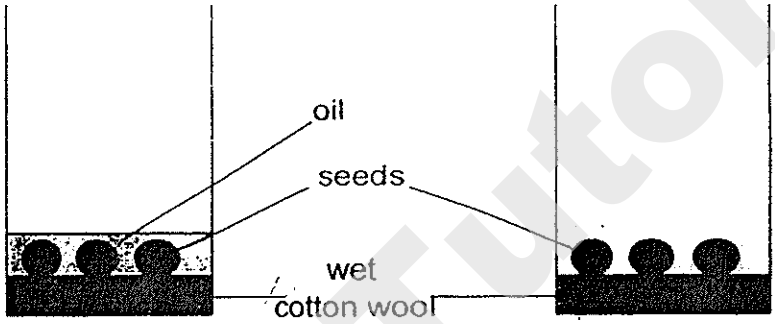
Joey prepared 4 set-ups, A, B, C, D, as shown below.



Set-up **A**
Placed near a window

Set-up **B**
Placed in a freezer



Set-up **C**
Placed near a window

Set-up **D**
Placed in a dark room

In which of the following set-ups would the seeds most likely germinate?

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

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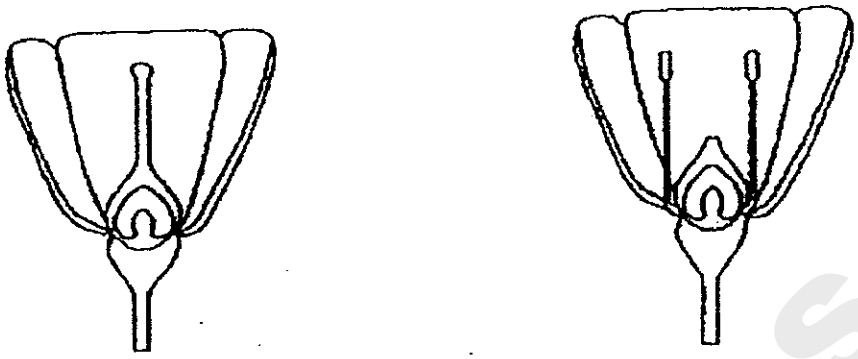
11. The diagram below shows 2 unfertilised flowers taken from the same plant.



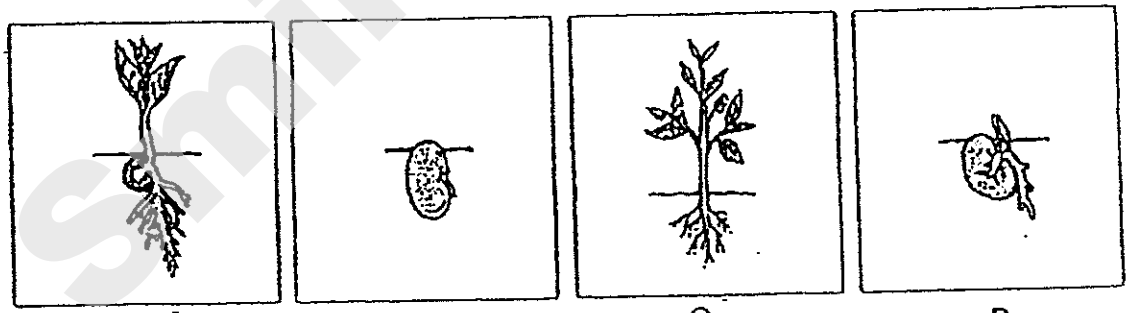
flower A

flower B

Based on the diagram above, which one of the following statements is **true**?

(1) Flower B can develop into a fruit.
(2) Pollination can occur in flower A.
(3) Pollination can occur in flower B.
(4) Flower A can be used to pollinate flower B.

12. The diagram below shows the different stages, A, B, C and D, in the life cycle of a bean plant.



A B C D

At which of the stage(s) will the plant be able to make its own food?

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

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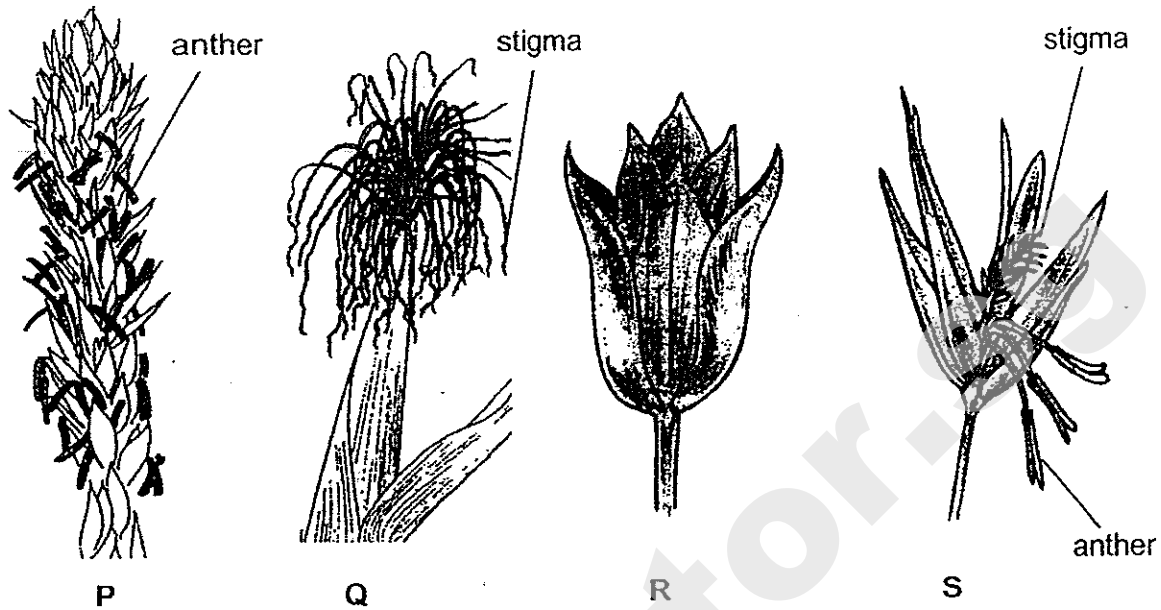
13. The diagram below shows 4 different types of flowers, P, Q, R and S.



Based on the diagram above, which of the following statements are **true**?

A Flower P is not wind-pollinated because the anthers are small.
B Flower Q is wind-pollinated because the stigmas are hanging outside the flower.
C Flower R is insect-pollinated because the reproductive parts are hidden inside the flower.
D Flower S is wind-pollinated because the reproductive parts are both found on the same flower.

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

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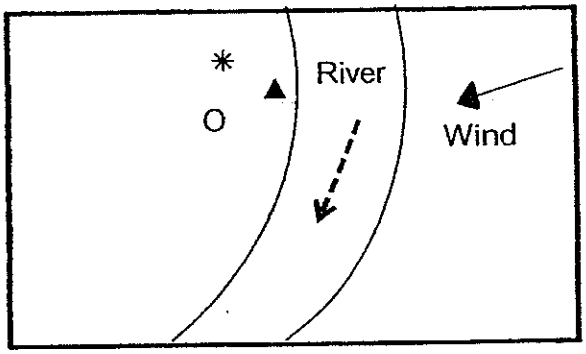
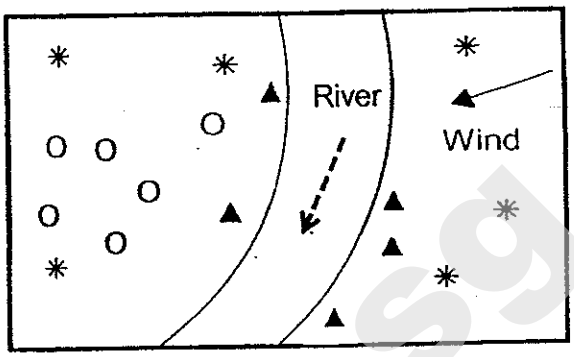
14. The following diagrams represent the distribution of 3 types of plants, X, Y and Z, in an unknown location.



Year 2004



Year 2006

Key
Plant X: O
Plant Y: ▲
Plant Z: ✳
Flow of river: - - - - →
Direction of wind: ——→

Based on the diagrams above, which of the following characteristics correctly describe the fruits of plants X, Y and Z?

	X	Y	Z
1)	Sweet and juicy	Dry pods	Small and light
2)	Sweet and juicy	Small and light	Dry pods
3)	Small and light	Fibrous and waterproof	Sweet and juicy
4)	Small and light	Sweet and juicy flesh	Fibrous and waterproof

15. John was given some fruits and he tried to group them according to the way they are dispersed.

Which of the following has been grouped **correctly**?

A	B	C	D
Pong Pong	Shorea	Apple	Rubber
Coconut	Love Grass	Mango	Angsana
Nipah	Dandelion	Cherry	Balsam

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

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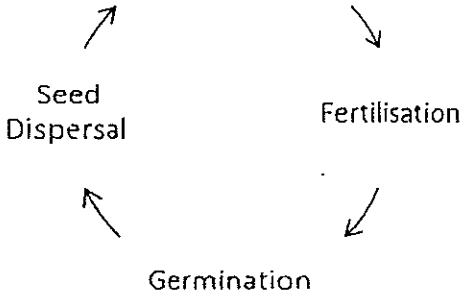
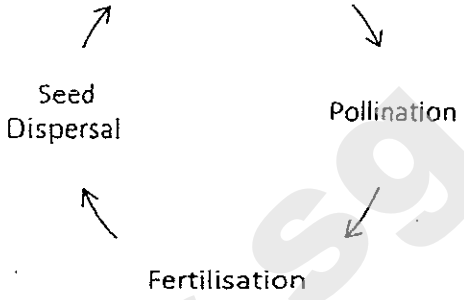
16. Which one of the following shows the correct order of the processes in the life cycle of a flowering plant?

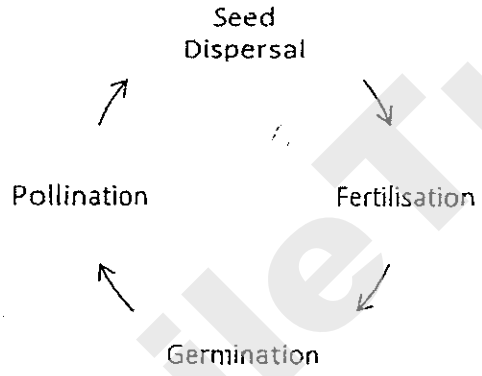
1)



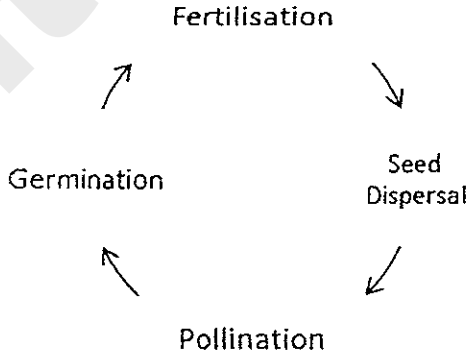
2)



3)



4)



17. Which of the following statements about germination is/are **true**?

A The seed coat breaks during germination.
B The shoot grows out first during germination.
C The seed needs sunlight during germination.
D The seed leaf provides food for the germinating seed.

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

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18. Which one of the following statements about both the male and female human reproductive systems are **correct**?

	Female Reproductive System	Male Reproductive System
1)	The ovary produces eggs.	The penis produces sperms.
2)	There is only one ovary in each female.	There are two testes in each male.
3)	Many eggs are released each time.	Many sperms are released each time.
4)	The fertilised egg attached itself to the womb and develops into the foetus.	The sperms which do not fertilise the egg will eventually die.

19. The umbilical cord is important in the development of the foetus. Which one of the following statements is true about its function?

A The umbilical cord supports the foetus in the womb.
B The umbilical cord transports nutrients to the foetus.
C The umbilical cord transports oxygen to the foetus.
D The umbilical cord removes carbon dioxide and waste materials from the foetus.

(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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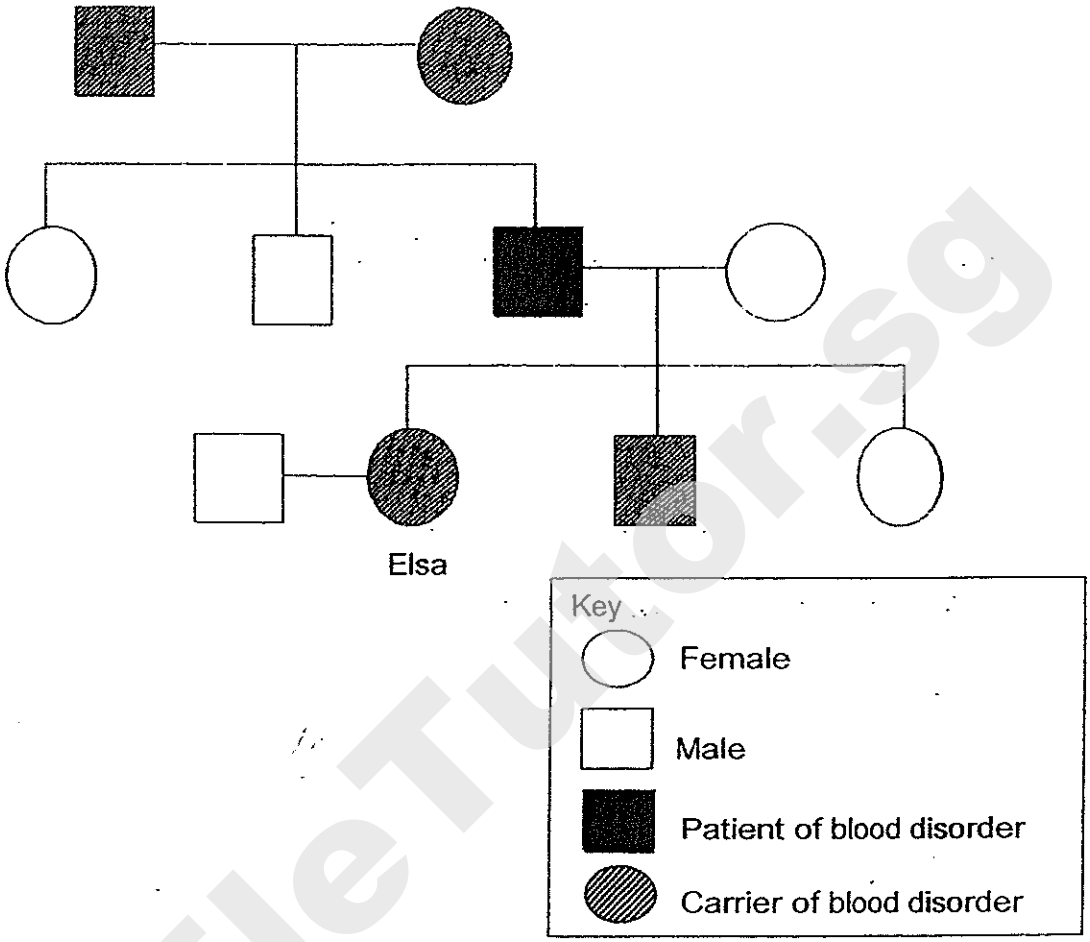
20. Study the family tree of Elsa's family. It shows the genetic trait for a blood disorder in 3 generations.



Based on the information from the family tree, which of the following statements are **true**?

A Elsa has two brothers and one of them is a carrier of blood disorder.
B Elsa's father is a patient of the blood disorder because he inherited the genes from his parents.
C The genes for this blood disorder are passed down from Elsa's paternal family.
D The genes for this blood disorder are inherited by only the female members of the family.

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

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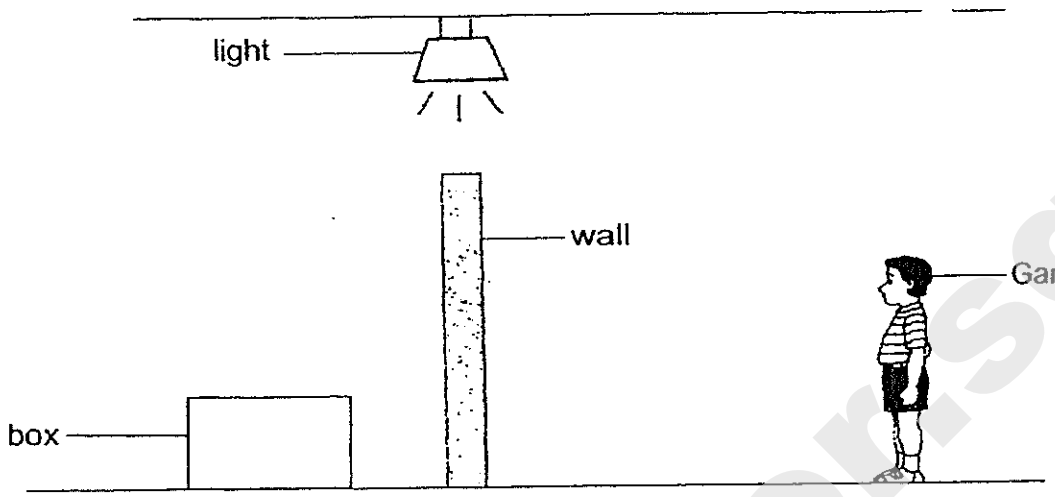
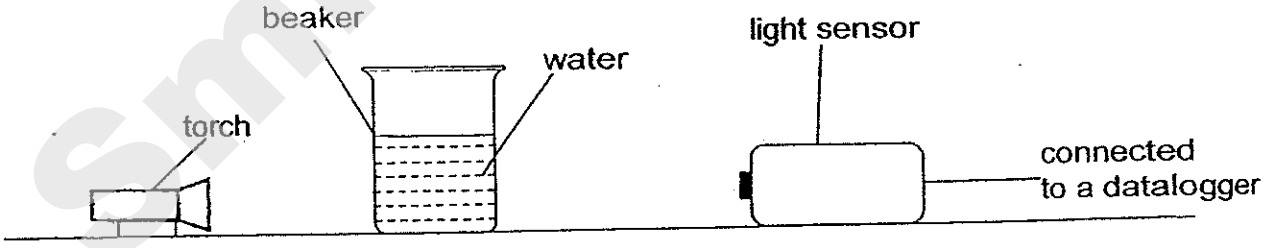
Gary stood behind the wall and could not see the box as shown in the diagram below.



Which one of the following statements explains why Gary could not see the box?

(1) The box could not reflect light.
(2) The wall could not give off light.
(3) The box did not allow light to pass through.
(4) The wall did not allow light to pass through.

22. Mala carried out an experiment in a dark room to investigate how the samples of water from locations A, B and C will affect the amount of light passing through them. The experimental set-up is shown below.



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

A Amount of water
B Material of beaker
C Distance between torch and water sample
D Distance between water sample and light sensor

(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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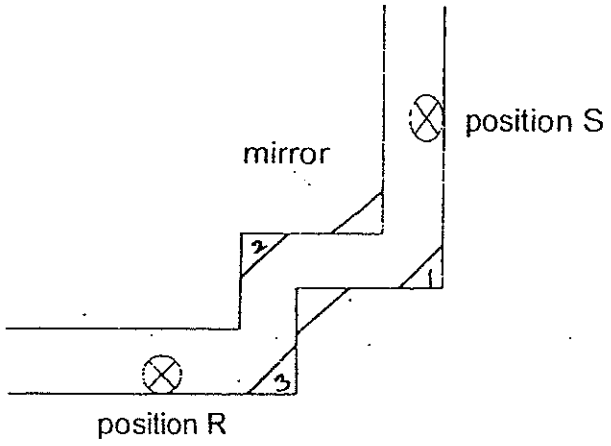
23. Two boys are travelling in a maze. They stopped at positions R and S as shown in the diagram.

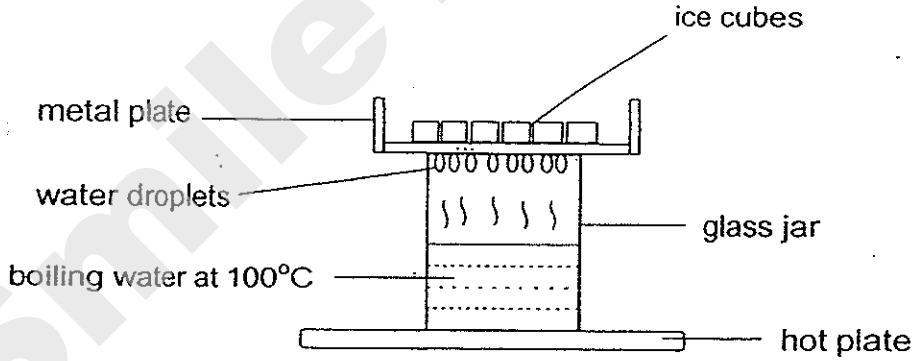


Top view of the maze

What is the least number of mirrors needed for the two boys to see each other from positions R and S?

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

24. A metal plate with ice cubes was placed over a glass jar of boiling water and was left on the hot plate as shown in the diagram below.



Which of the following explains the observation shown in the above diagram?

A The metal plate lost heat to the ice cubes.
B The ice cubes lost heat to the surroundings.
C Water gained heat from the hot plate and become water vapour.
D Water vapour lost heat to the metal plate and become water droplets.

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

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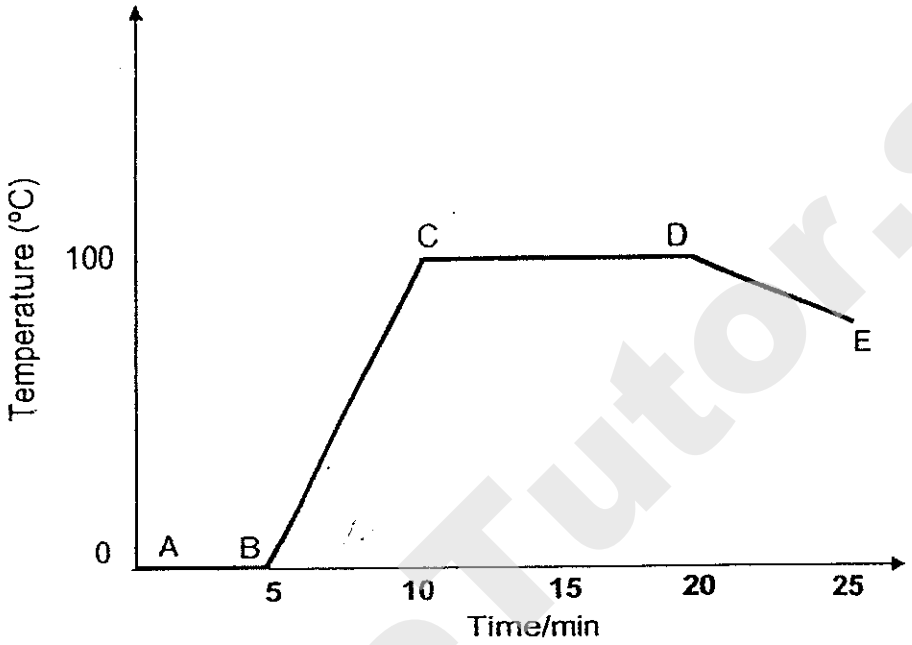
25. Tom put a laboratory thermometer into a beaker of ice cubes. The beaker was then heated continuously until bubbles were seen in the beaker. After a while, a white 'cloud' was seen at the mouth of the beaker. He switched off the fire after some time.
Tom recorded the temperature of the water at 5-minute intervals. He then plotted a graph as shown below.



Which one of the following correctly describes the process happening at different points of the graph?

	Parts	Heat gain	Heat loss
1)	AB		✓
2)	BC	✓	
3)	CD		✓
4)	DE	✓	

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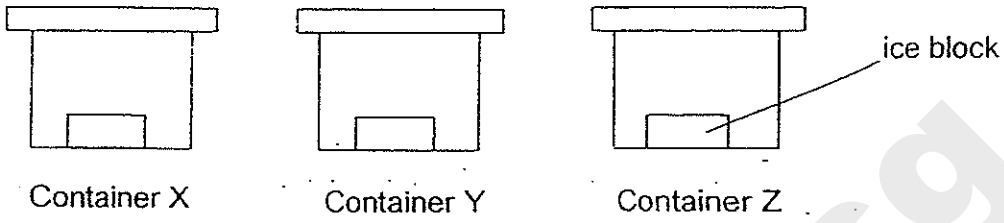
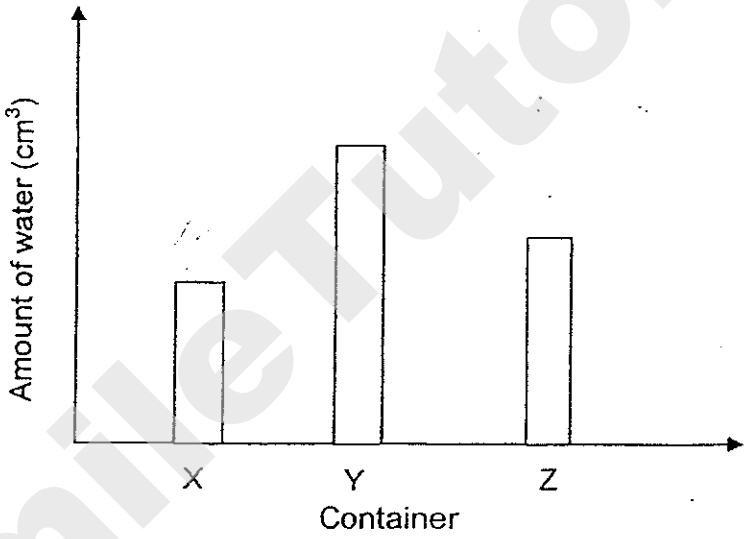
26. Janet has three containers X, Y and Z of the same sizes. They are made of different materials. Janet puts an identical ice block into each of the three containers respectively. The three boxes were left in a room which has a surrounding temperature of 30°C.



After 20 minutes, she measured the amount of water in each container and recorded her findings in a graph as shown below.



After the experiment, Janet stated the following conclusions.

A Container Y is the best conductor of heat.
B The ice block in container X lost the most heat.
C Container X allows the most amount of heat to pass through it.
D Container Z is a better conductor of heat than X but a poorer conductor of heat than container Y.

Which of the above conclusions are **correct**?

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

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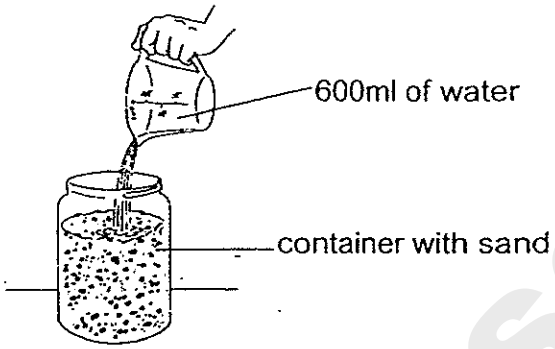
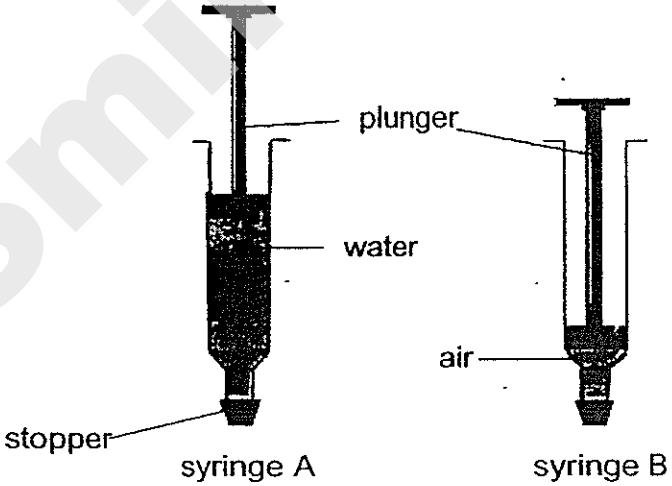
27. When Ramesh poured 600ml of water into a container filled with sand, he observed bubbles at the surface of the sand.



Which one of the following statements explains his observation?

1) Air was produced when the sand absorbed the water.
2) Air in the sand was trapped on the surface when the water was poured into the container.
3) Air in the water could not pass through the sand and remained at the surface.
4) Air in the sand was pushed to the surface as the water took the place of air spaces in the sand.

28. Huiying set up an experiment with syringe A filled with equal amount of water and syringe B with equal amount of air. Syringe A which was filled with water, could not be pushed downwards. However, syringe B which was filled with air, could be pushed downwards. The result of the experiment is shown below.



What can Huiying conclude from the experiment?

1) Air and water have masses.
2) Air and water occupy space.
3) Air can be compressed but water cannot be compressed.
4) Water does not have a fixed volume but air has a fixed volume.

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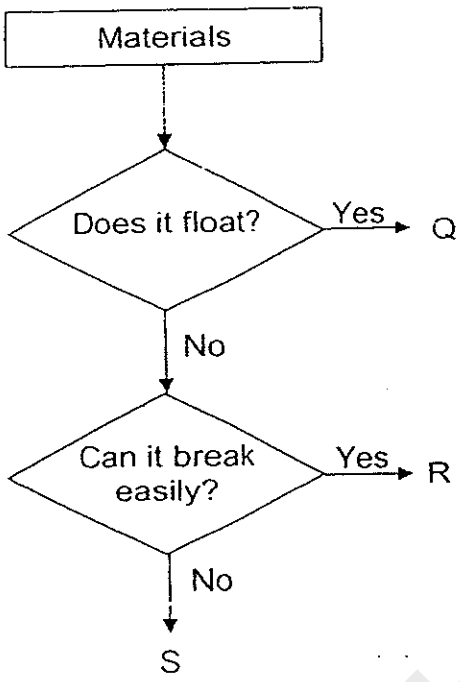
29. Study the flow chart below.



Which one of the following represents materials Q, R and S?

	Q	R	S
1)	iron	styrofoam	glass
2)	glass	iron	wood
3)	wood	glass	iron
4)	styrofoam	wood	styrofoam

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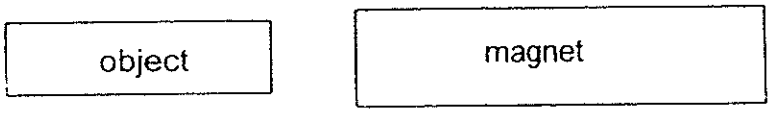
30. Tom placed 4 objects, W, X, Y and Z, one at a time near the pole of a magnet as shown in the diagram below.



He recorded his observations in the table below.

Object	Observation
W	attracted to the magnet
X	repelled by the magnet
Y	no reaction
Z	attracted by the magnet

Which one of the following is the best conclusion based on his observations?

1) W and X are magnets while Y and Z are metals.
2) W and Z are metals and X and Y are magnets.
3) W is magnetic, X is magnet and Y and Z are non-magnetic.
4) W and Z are magnetic, X is a magnet and Y is non-magnetic.

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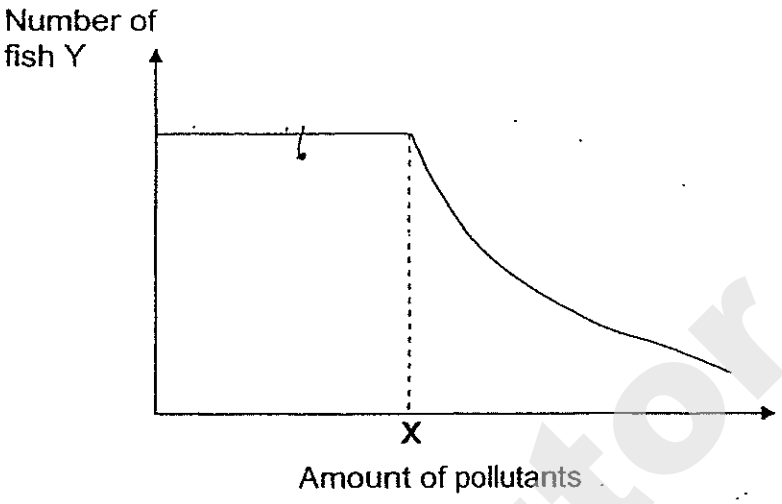
Section B (40 marks)
Write your answers to questions 31 to 44 in the spaces provided.

31. The graph below shows the change in the number of fish Y when the amount of pollutants in a river changes.



(a) Based on the graph, what is the relationship between the number of fish Y and the amount of pollutants in the river? [1]

_____

_____

(b)i) State a human activity that could have caused an increase in the amount of pollutants in the river. [1]

_____

_____

(b)ii) Based on your answer in (i), suggest a method to control the human activity. [1]

_____

_____

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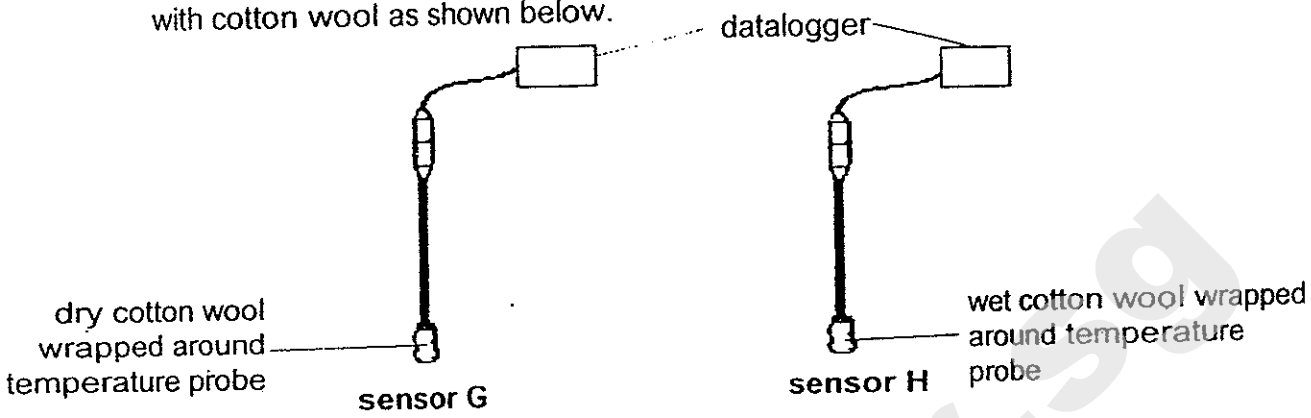
32. Shane recorded temperatures of a room using two dataloggers and temperature sensors, G and H. The ends of the sensors were covered with cotton wool as shown below.



At every 5 minutes, the data logger recorded temperatures detected by the sensors. Shane recorded the results in the table as shown below.

Time (minutes)	Temperature recorded by G (°C)	Temperature recorded by H (°C)
0	30	26
5	30	27
10	30	28
15	30	29
20	30	30
25	30	30

(a) Explain the temperature difference between sensor G and H for during the first 15 minutes. [1]

_____

_____

(b) What could have happened to the cotton wool to explain the results recorded by sensor H after 20 minutes? [1]

_____

_____

(c) When Shane had a fever, his mother used a wet cloth to wipe his body constantly. Based on the results of this experiment, how would his mother's action help him? [1]

_____

_____

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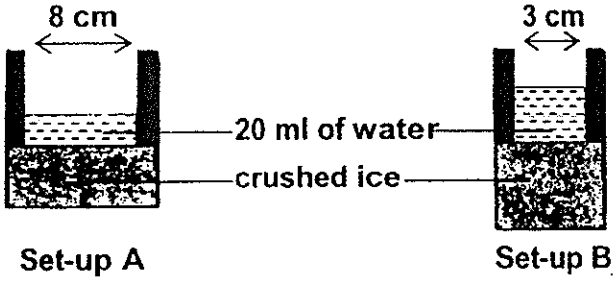
33. Ivan added 20 ml of water into each of the set-ups below. The set-ups are made up of two metal containers with the same thickness. The base of each container is filled up with an equal amount of crushed ice.



Ivan noticed that the water in set-up A became cold faster than the one in set-up B.
Based on the diagram only, explain Ivan's observation. [2]

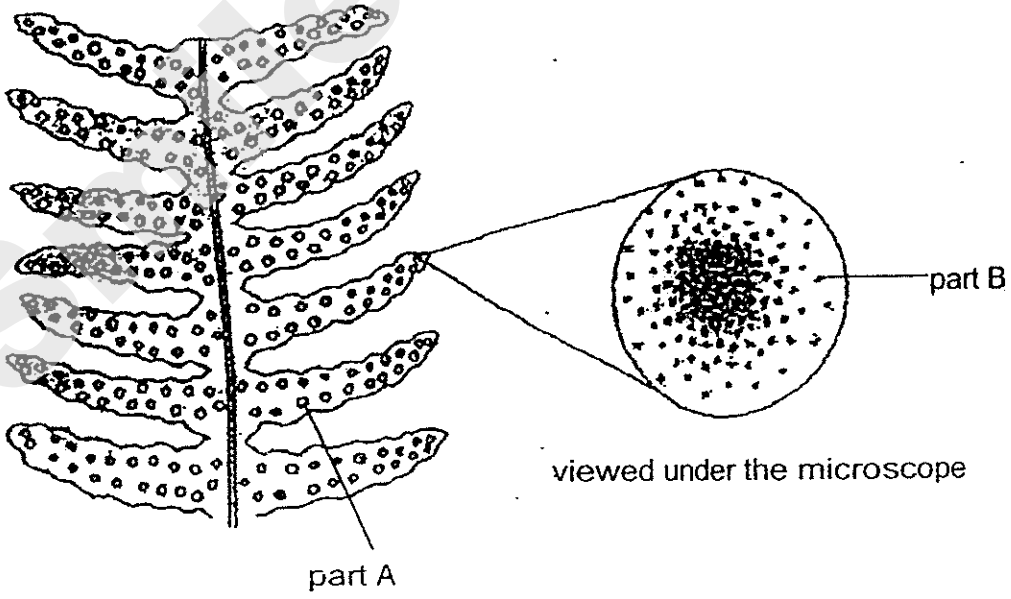
_____

_____

_____

_____

34. The diagram below shows the underside of a fern.



(a) Identify part A and part B. [1]

A: _____

B: _____

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(b) Why does the fern need to produce many of part B? [1]

(c) Identify the characteristics of part B and state its most likely method of dispersal. [1]

(d) Mushrooms have a similar method of reproduction as ferns. State one difference between mushrooms and ferns. [1]

35. John planted a green bean seed on a cotton wool, placed it near a window and watered it every day. He recorded the length of the root and the shoot of the germinating seed at various intervals.

Day	Length of shoot (mm)	Length of root (mm)
1	0	0
2	0	1.7
3	1.2	2.4
4	2.6	3.8

(a) Based on the results, what can be concluded about the growth of the germinating seed? [1]

(b) State the 3 conditions required for a seed to germinate. [1]

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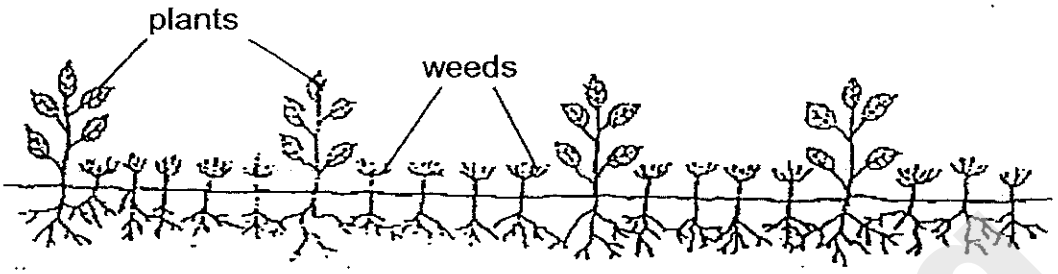
36. The diagram below shows part of a garden.



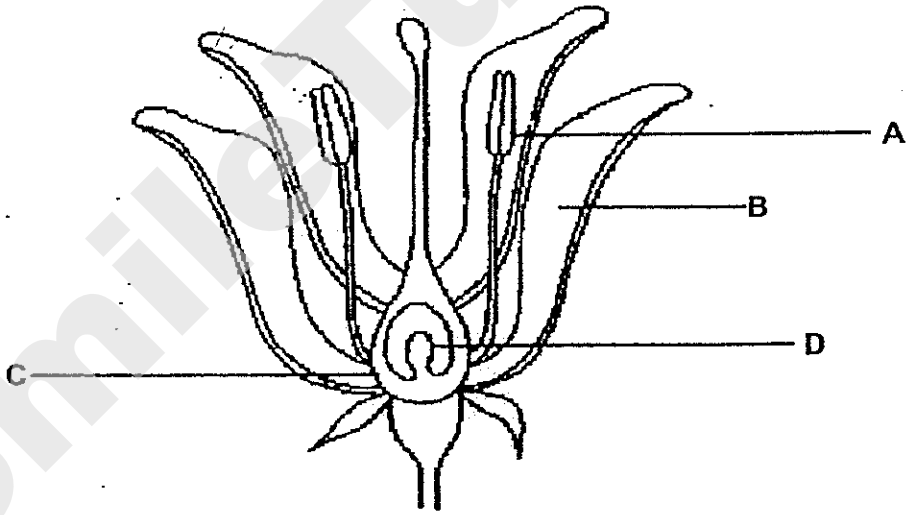
Based on the diagram, explain why gardeners always try to pluck out any weeds growing around the plants in the garden. [2]

_____

_____

_____

37. The diagram below shows an unfertilised flower.



What will happen to parts A, B, C and D, after fertilization? [2]

Part A: _____

Part B: _____

Part C: _____

Part D: _____

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38. Kathy found three shorea fruits, A, B and C, with identical seed sizes but wing-like structures of different lengths as shown in the diagram below. She then dropped all of them from the same height and place and measured the time taken for the fruits to reach the ground. The results are shown in the table below.

fruit A fruit B fruit C

	A	B	C
Length of wing-like structures (cm)	2.4	4.3	5.2
Time taken to reach the ground (s)	X	3.5	Y

(a) State the possible values of X and Y. [1]

X: _____s

Y: _____s

(b) State the aim of Kathy's experiment. [1]

_____

_____

(c) Other than those mentioned in the question, state one variable which must be kept constant to ensure a fair test. [1]

_____

_____

(d) What can Kathy do to make the results of the experiment more reliable? [1]

_____

_____

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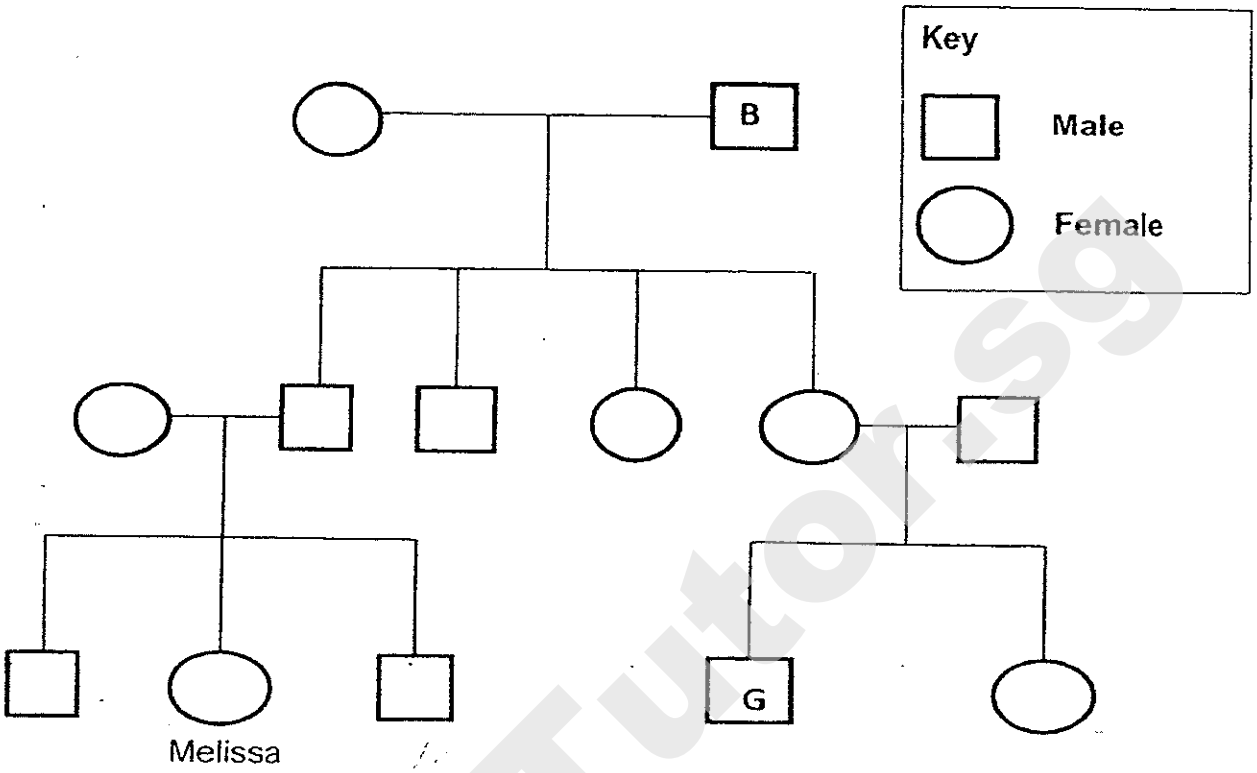
39. The diagram below shows the family tree of Melissa and her extended family.



(a) How many siblings does Melissa have? [1]

_____

(b) How is person B related to person G? [1]

_____

(c) If person B has double eyelids, what is the maximum number of people in the third generation that can have double eyelids? [1]

_____

(d) Melissa's paternal grandfather can roll his tongue and so does Melissa. Give a reason why Melissa can roll her tongue. [1]

_____

_____

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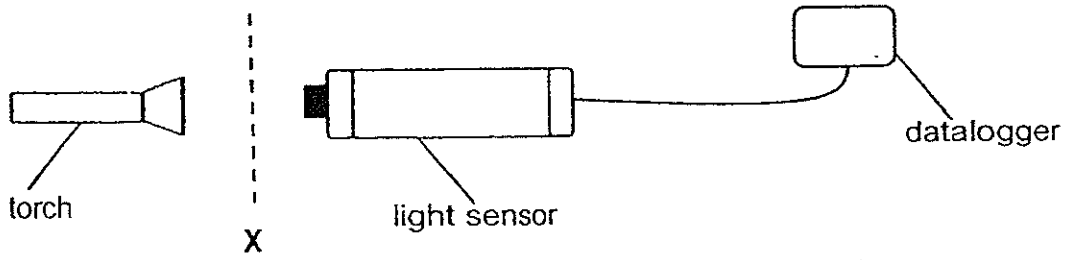
40. Bob set up an experiment in a dark room as shown below.



No object was placed at position X. The torch was switched on and the datalogger shows a reading of 95 lux.

(a) Bob then placed object Z at position X and the reading becomes 0 lux. Give a reason for this observation. [1]

_____

_____

Bob decided to use the same set-up to count number of sheets of paper. He used identical sheets of paper. He placed a sheet of paper at position X and repeated the experiment by increasing the number of sheets of paper. The table below shows the results collected.

Number of sheet	Amount of light
0	95
1	78
2	53
3	29
4	14
5	3
6	0
7	0
8	0

(b) Suggest why the set-up cannot be used to count more than 6 sheets of paper. [1]

_____

_____

(c) State one change to help Bob modify the experiment so that the set-up can count up to 8 sheets of the paper. [1]

_____

_____

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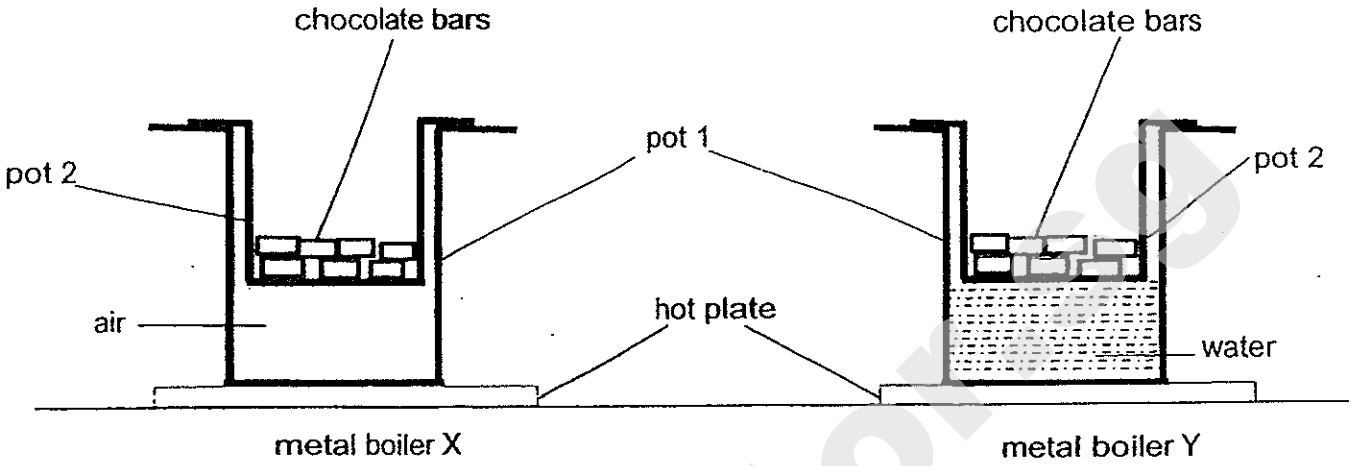
41. The diagram below shows two identical metal boilers, X and Y. Each is made up of two pots and used to melt the same number of chocolate bars.



The two boilers were placed over hot plates and an equal amount of heat was supplied to heat them.
Mrs Tan observed that after heating both boilers for 10 minutes, the chocolate bars in boiler X just started to melt but the chocolate bars in boiler Y have melted completely.

(a) Explain the observation Mrs Tan has made. [2]

_____

_____

_____

(b) The boiler can also be used to keep food hot after it has been removed from the heat source. State a possible reason why Mrs Tan should use a ceramic boiler instead of metal boiler for this purpose. [1]

_____

_____

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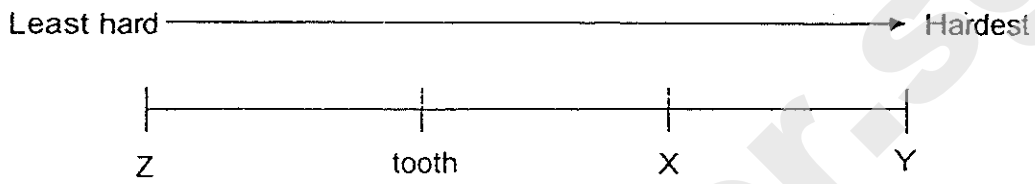
42. Every toothpaste contains a material that is hard enough to clean off food that is stuck on our teeth without scratching the teeth.
Tina compared three materials, X, Y and Z, to see which of them is suitable to be used in toothpastes. She ranked their hardness on a simple scale as shown below. The hardness of teeth is shown on the same scale.



Which material, X, Y or Z, should Tina use in the toothpaste?
Explain your answer. [2]

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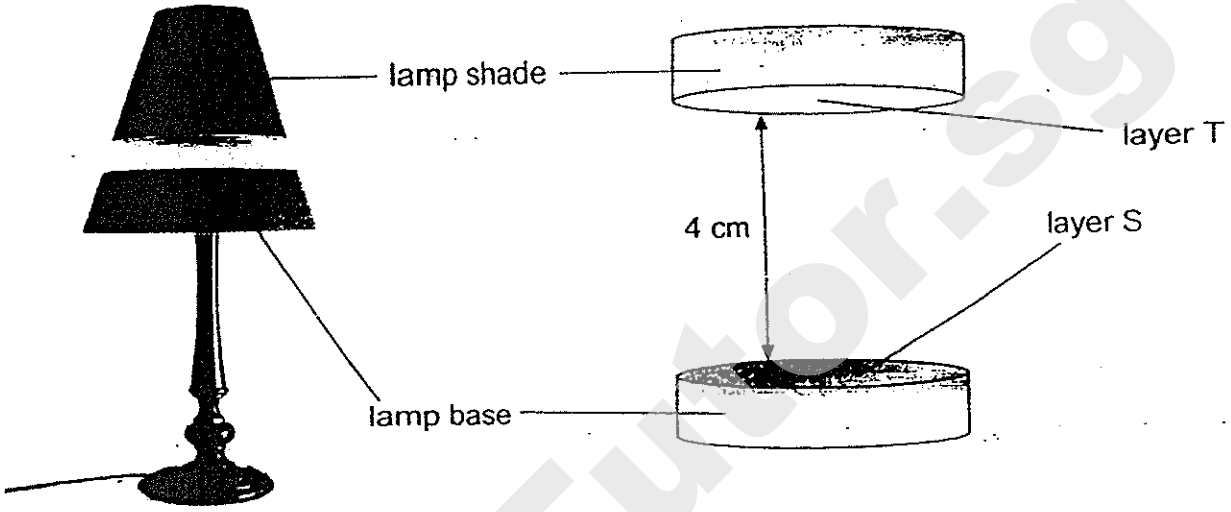
43. Diagram 1 below shows the floating desk lamp. The lamp shade 'floats' about 4cm above the lamp's base

Diagram 2 shows the magnified view of the lamp shade and the base of the lamp. Layer S contains many electromagnets powered by electricity. Layer T is made of object Z.



(a) Explain how the lamp shade could 'float' above the lamp base. [1]

(b) When the electricity was switched off, the lamp shade no longer 'floats' above the lamp base. Explain this observation. [2]

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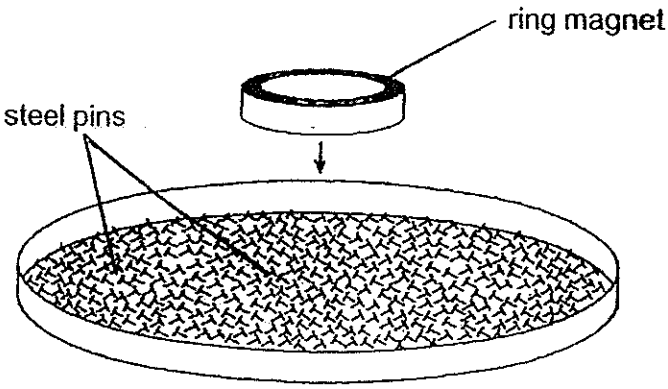
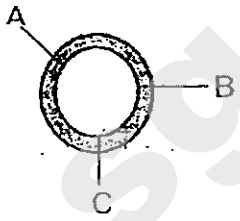
The diagram below shows a ring magnet lowered onto a tray of steel pins and the bottom view of the ring magnet.





bottom view of ring magnet

(c) Fill in the number of pins attracted to the bottom of the magnet at positions A and C. [1]

A	B	C
	4	

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44. May placed some paper clips, one at a time at points P, Q and R of a magnet (diagram 1) until no more paper clips could be attracted by it.

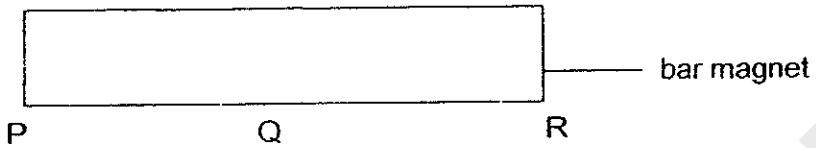


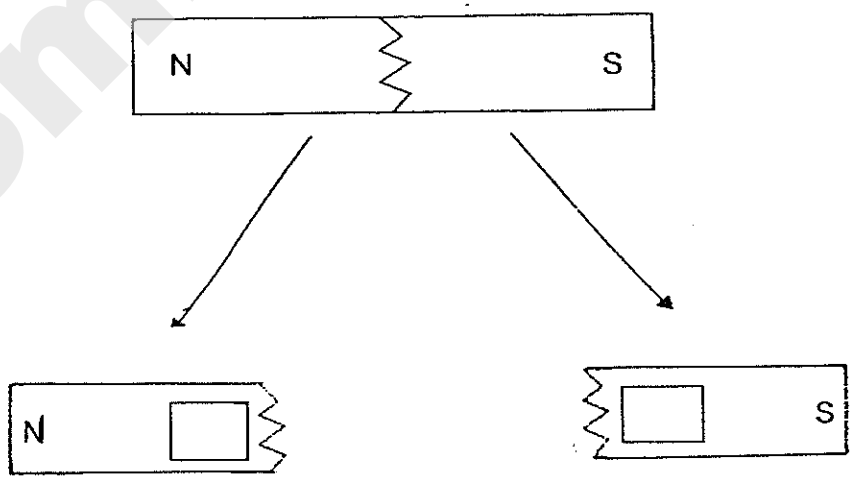
Diagram 1

She recorded the number of paper clips at the three points in the following table.

Point	Number of paper clips
P	5
Q	2
R	5

(a) What can May conclude about the bar magnet based on her observation? [1]

(b) May accidentally dropped the bar magnet and it broke into two pieces. The two broken pieces are still magnets.
Label the poles of the two pieces of broken magnets in the boxes as shown below. [1]



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EXAM PAPER 2014
SCHOOL : NANYANG PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : SA1

BOOKLET A

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	3	2	1	2	3	1	1	1	3
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	1	3	3	2	2	2	4	4	2
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	1	3	3	2	2	4	3	3	4

BOOKLET B

Q31 a) The amount of pollutants did not affect the number of Fish Y until X amount of pollutants. After X amount of pollutants increased, the number of Fish Y decreases.
b)i)They could have littered into the river.
ii)They should not litter into the river but throw their rubbish into the dustbins.

Q32 a) When water gains heat from the sensor to evaporate, there will be a drop of temperature.
b) All the water on the cotton wool has evaporated and the temperature of the cotton wool has become the same temperature as the cotton wool on G.
c) The water droplets on Shane's body gain heat from his body and evaporate, thus bringing Shane's body temperature down.

Q33 There is a greater exposed surface area of water in contact with the crushed ice, so the water in set-up A loses heat faster/lost more heat than the one in set-up B.

Q34 a) A: sporebags
B: spores
b) To allow the plant to increase its chances of survival./ growing into a new plant.
c) It is small and light. It is dispersed by wind.
d) Spores are found in the gills of mushrooms but spores are found on the underside of the leaves of ferns./ Ferns can make their own food, mushrooms cannot.

Q35 a) The root grows before the shoot/ the root grows first/ appear first.
b) The 3 conditions are water, oxygen and warmth.

Q36 There will be too many plants in the garden if more weeds grow there and the plants will have to compete with each other for light, water, space and minerals salts.

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Q37 Part A : Wither/ wilt and drop off
Part B : Wither/ wilt and drop off
Part C : Grow/ become into the fruit
Part D : Grow/ become into the seed

Q38 a) X: 2
Y: 4.4
b) To find out how the length of the wind-like structures of the shorea fruit affect the time taken for it to reach the ground.
c) The amount of wind at the place where the fruits are being dropped./ Weight of fruit.
d) She can repeat the experiment for at least 3 times.

Q39 a) Two.
b) Person B is person G's maternal grandfather.
c) 6.
d) Melissa inherited the characteristics from her father./ Melissa's paternal grandfather passed the characteristic to her father and then passed the characteristics to her.

Q40 a) Object Z is opaque and does not allow light to pass through it.
b) No light was able to pass through the 6 sheets of paper/ the 6 sheets of paper blocked the light from passing through to reach the light sensor.
c) He should place the torch nearer to position X./ use a brighter light source/ use a torch with a greater intensity of light.

Q41 a) Water is a better conductor of heat than air and caused the chocolate to melt at a faster rate/completely faster in boiler Y than in boiler X.
b) Ceramic is a poorer conductor of heat than metal and loses heat slower/ Metal is a better conductor of heat than ceramic, hence it will lose heat faster.

Q42 Material Z. Z is less hard than the tooth and will not scratch the tooth.

Q43 a) There was repulsion between object Z and the electromagnets.
b) The electromagnets will lose their magnetism and will no longer repel object Z.
c) A- 4, B- 4, C- 4

Q44 a) The bar magnet is strongest at its poles.
b) N, S

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P5 2014 Science SA 1 – Booklet B analysis

31. **Constant line** : The amount of pollutants did not affect the number of Fish Y until X amount of pollutants. (1/2m)
decreasing curve : After X amount of pollutants increased. the number of Fish Y decrease. (1/2m)
Focus : must explain for **two parts** of the graph.
Unacceptable answer : As the number of fish X decreases, the amount of pollutants increase- **wrong sequence**
Number of fish will only decrease due to more pollutants.

32(a). When water gains heat from the sensor to evaporate, there will be a drop of temperature.(1m)
Focus: explain for the lower temperature **(26°C to 29°C)** for sensor H compared to sensor G which **remains at 30 °C**.
OR : Water from wet cotton wool cools the sensor. (This explanation focuses on water being a cooling agent).

32(b). Water in the cotton wool has all evaporated./Water in the cotton wool dried up.
This explains why the temperature for sensor H reaches 30 °C, as no water left in the cotton wool to cool the sensor. Pupils can use the constant 30 °C for Sensor G to deduce that the cotton wool is dry when Sensor H record a constant temperature of 30 °C.

32(c). The water droplets on Shane's body gains heat from his body (1/2m) and evaporate, thus bringing Shane's body temperature down (1/2m).
Focus: **How would using a wet cloth bring down the fever?**
Concept : heat loss / heat gain
The water droplets on Shane's body gains heat from his body and evaporate**(explanation),** thus bringing Shane's body temperature down. **(effect)**
OR : His body lost heat to the wet cloth (1/2m) and his body temperature dropped (1/2m).

33.There is a **greater** exposed surface area **of water** in contact with **the crushed ice (**1m), so the water in set-up A lost heat **faster**/lost **more** heat (1m) than the one in set-up B.
Focus: Why the **water** in set-up A become cold **faster** than in set-up B?
Must compare using both set-ups . using 'comparative'
Concept : water lost heat to the crushed ice and became cold.
Take Note : Object becomes cold due to heat loss.

34(b) To allow the plant to increase its chances of survival/ growing into a new plant
Focus: Why does the fern need to produce **many** of part B?
Unacceptable answer : To ensure the continuity of its own kind, does not answer to the key word 'many'. **only to answer ' why does the fern reproduce?**

34(d) Spores are found in the gills of mushrooms but spores are found on the underside of the leaves of ferns/Ferns can make their own food, mushrooms cannot.
Focus:must compare using the **characteristics** of ferns and fungi (at the P5 level)
Unacceptable answers such as : mushroom is a fungi and fern is a plant. (does not explain why the mushroom is a fungi and a fern is a plant)

35. The root grows **before** the shoot / the root grows **first**/ appear **first**
Focus: Root must grow before the shoot, based on the table of results provided.
Answer : The root grows **faster** than the shoot is not acceptable. Indicates root and shoot grow together at first but root was faster in the growth later on.

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37. Part A: Wither / wilt and drop off
Part B: Wither /wilt and drop off
Part C: Grow/become into the fruit
Part D: Grow /become into the seed
Focus : To explain what **will happen** to parts A,B,C and D, after fertilization, **not** to state the labelled parts.
Unacceptable answer : part A:anther, B: petal C:ovary D:Ovule

38(b). To find out **how** the length of the wing-like structures of the shorea fruit affect the time taken for it to reach the ground.
Focus: There is a range of value for the changed variable, length of wing-like structures, for this experiment so the aim will be 'HOW' length of wing-like structure will affect the results, time taken for the fruit to reach the ground.
'IF' is used when experiment is conduct with and without condition under investigation. The conclusion will provide a YES or NO answer.
Eg :
Aim : To find out **if** light is needed for germination.
Experiment : Set-up 1 : Seed in cup with all germinating factors kept in the dark (no light)
Set-up 2 : Seed in cup with all germinating factors under light (with light)
Observation : Seed in both set-ups germinated.
Conclusion : Light is not needed for germination.

38(c). Weight of fruit(0.5m) as weight is different from mass.
Weight is the gravitational pull towards the earth while mass is the amount of matter in an object.
Answers not acceptable : fruits from the same tree – does not matter as question states that the 3 fruit are the same kind and they have the same seed size.
Dropped the fruits at the same time- does not matter as it is the 'duration' of time(time taken) which is crucial.

38(d). **Repeat** the experiment for at least 3 times.
Focus: 'Repeat' to indicate 'reliability' of experimental results

39(d). Melissa inherited the characteristics from her father. / Melissa's paternal grandfather passed the characteristic to her father and then passed the characteristics to her.
Focus :Inheritance of genes/characteristics **must be from her father**.

- Characteristics from parents (father/mother) are passed down to their offspring (children).

40(b). No light was able to through the 6 sheets of paper/ the 6 sheets of paper blocked the light from passing through to reach the light sensor.
Focus: **light not able to pass through** the 6 sheets of paper.
Answer not acceptable: the papers were too thick. Does not indicate the effect of the thickness of the papers.
40(c). Place the torch nearer to position X/ Use a torch with a greater intensity of light/use a brighter light source.
Focus: how to ensure **more light can pass through** the 8 sheets of paper.
Answers not acceptable: change the battery of the torch
Use two torches – does not ensure more light can pass through unless the two torches are shone at the same spot, hence higher intensity of light.
Use transparent/translucent sheets of paper – question states that the same set-up was used to count the identical sheets of paper.

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41(a). Water is **a better conductor of heat** than air (1m)**[explanation]** and caused the chocolate to melt completely **quicker**/ at a **faster** rate in boiler Y than in boiler X(1m)**[effect]**
Focus: Comparison question requires the use of 'comparatives'.
Water is a better conductor of heat than air : observation states that the chocolate bars in X **just started to melt** while those in Y **melted completely**. Hence, shows that water conducts heat to the chocolate bars **faster** as compared to air.

41(b) Ceramic is a **poorer** conductor of heat than metal (0.5m) and loses heat **slower**(0.5)/ Metal is a **better** conductor of heat than ceramic, hence it will lose heat **faster**.
Focus: Comparison question requires the use of 'comparatives'.
Concept: Heat must be retained in the boiler for long if want to keep food hot, means heat loss should be very minimum. Which material will ensure heat loss is slower?
Remember : A good conductor of heat will gain heat and lose heat quickly/ A poor conductor of heat will gain heat and lose heat slowly.

42. Material Z (1m) (*Choice*). Z is less hard than the tooth (0.5)(*data*) and will not scratch the tooth (0.5m)(*explanation*)
Focus: Make a choice, use data/results and explain on your choice. Comparison question.
Concept: hardness- the ability of a substance to scratch another substance or be itself scratched
Unacceptable answer: Z is **softer** than the tooth. Soft is not the opposite of hard as in English.
Answering Techniques : Choice, data, explanation

43(a). There was repulsion between object Z and the electromagnets.
Focus : must mention the concept of 'repulsion' in order to explain on ' lamp shade could float above lamp base.

43(b). The electromagnets will lose their magnetism (1m)**[explanation]** and will no longer repel object Z(1m). **[effect]**
Focus: must mention losing of magnetism(when electricity is stopped) and cannot repel object Z
Concept: electromagnets require electricity to work in order to repel the lamp shade.

43(c). A- 4 C-4
Concept : A, B and C are the poles of the ring magnet, hence the strength is the same. The top and bottom of ring magnet are the poles of the ring magnet.

44(a). The bar magnet is strongest at its poles(1m).
Focus: must provide **conclusion** and **not on observation.**
Unacceptable answers: The poles of the magnet can attract the most number of paperclips- stating the data from the table only, not able to provide a conclusion based on the data but merely stating an observation.

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RAFFLES GIRLS' PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1
2014

Section A	60
Section B	40
Your score out of **100** marks	
Parent's signature	

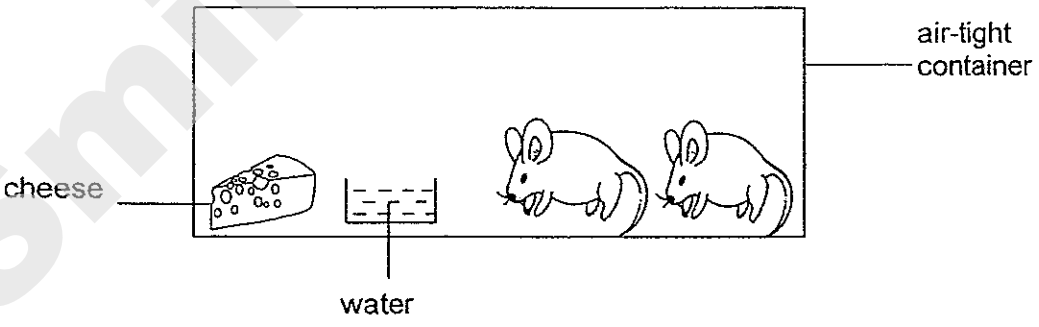
Name : _____ Index No: ___ Class: P5____

6 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. Wan Qi placed two mice in an air-tight container as shown below.
The diagrams are not drawn to scale.



She observed that the mice died after a week.
Based on the experiment above, what could she conclude about living things?

(1) Living things grow.

(2) Living things reproduce.

(3) Living things need air to survive.

(4) Living things respond to changes around them.

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2. Muthu classified the whale as a mammal. Which of the following statement(s) describe(s) the characteristics of all mammals?

A It feeds on its mother's milk.

B It reproduces by laying eggs.

C It uses its fins to swim in water.

D It has scales to protect its body.

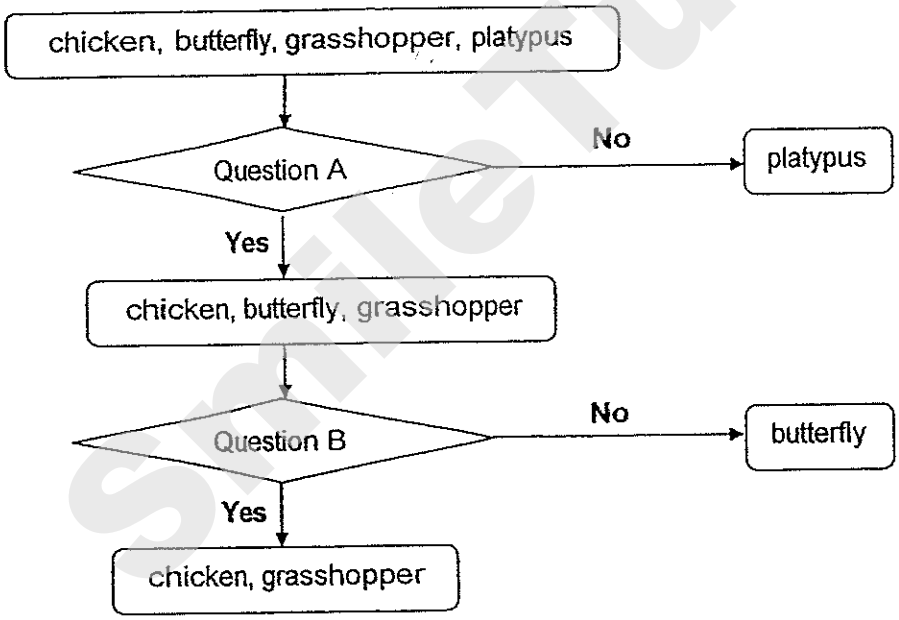
(1) A only

(2) A and B only

(3) B and C only

(4) C and D only

3. Glenn classified four animals, chicken, butterfly, grasshopper and platypus using the flow chart below.



Which one of the following represents questions A and B respectively?

	Question A	Question B
(1)	Do they have wings?	Do they lay eggs?
(2)	Do they lay eggs?	Do they have wings?
(3)	Do they have wings?	Do they have a 3-stage life cycle?
(4)	Do they lay eggs?	Do they have a 3-stage life cycle?

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4. What is generally common among flowering and non-flowering plants?

(1) They reproduce by seeds.
(2) They reproduce by spores.
(3) They are able to make their own food.
(4) They are able to move from place to place.

5. Which of the following statement(s) about micro-organisms is/are **incorrect**?

A All micro-organisms are harmful to us.
B All micro-organisms can make their own food.
C Micro-organisms are found in yoghurt and kimchi.
D Micro-organisms can be seen with the help of a microscope.

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

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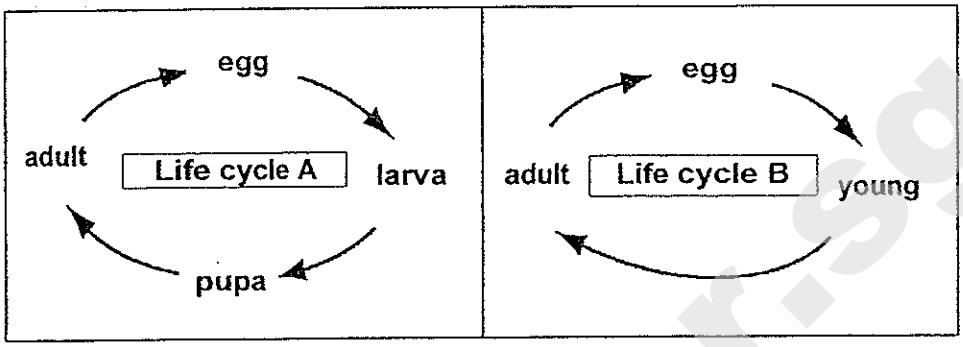
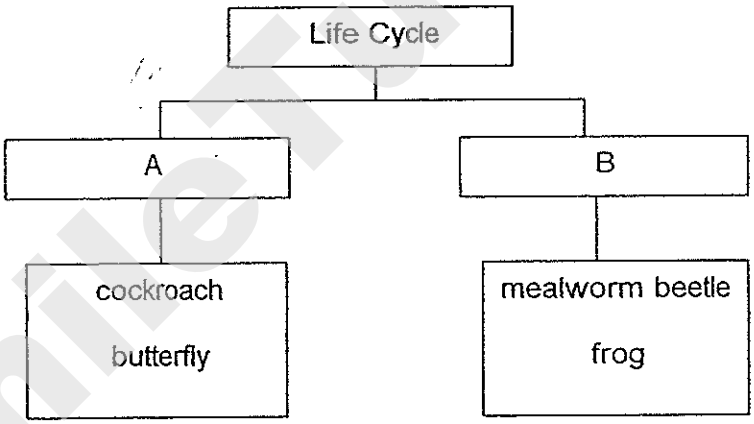
6. The diagrams below show two life cycles, A and B.



Raja grouped the following organisms according to the two different life cycles.



Which of the above organisms were grouped **incorrectly**?

(1) butterfly and frog
(2) cockroach and frog
(3) butterfly and mealworm beetle
(4) cockroach and mealworm beetle

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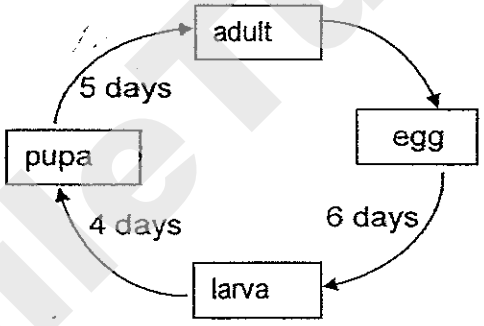
7. The table below shows that certain temperatures can affect organism X in the following ways:

- number of eggs laid by the female X each time
- length of its life cycle (from the time the eggs are laid to the end of its adult stage)

Temperature of the surroundings (°C)	Number of fertilised eggs laid	Length of life cycle of X (days)
18	50	25
22	112	15
26	136	13
30	215	10

At a certain time of the year, the life cycle of X in a farm is shown below.



Based on the information above, which of the statement(s) is/are **incorrect**?

A The surrounding temperature in which X lived was 22°C.
B It took 10 days for X to change from its larval to pupal stage.
C X reproduced more quickly when it lived in warmer surroundings of 22°C to 30°C.

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

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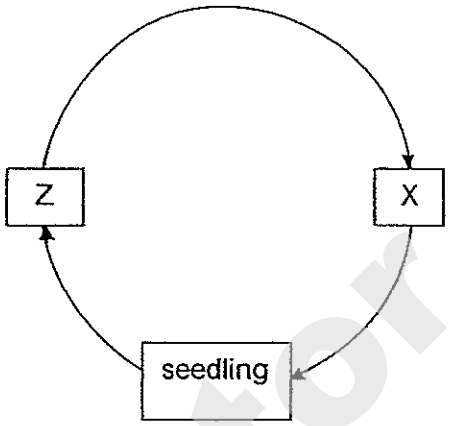
8. The diagram below shows the life cycle of a flowering plant. X and Z represent the developmental stages of its life cycle.



Life cycle of a flowering plant

Which one of the following identifies the correct stages of development?

	X	Z
(1)	Adult	Seed
(2)	Adult	Seedling
(3)	Seed	Adult
(4)	Seedling	Seed

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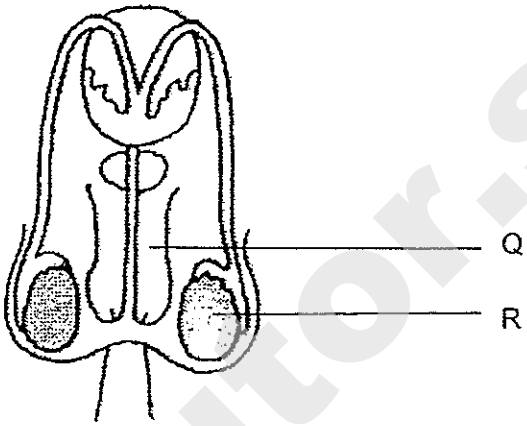
9. The diagram below shows the labelled parts, Q and R, of a human reproductive system.



Which of the following statement(s) is/are correct?

A Q produces reproductive cells.

B R produces reproductive cells.

C Q delivers reproductive cells into the female reproductive system.

D R produces and delivers reproductive cells into the female reproductive system.

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

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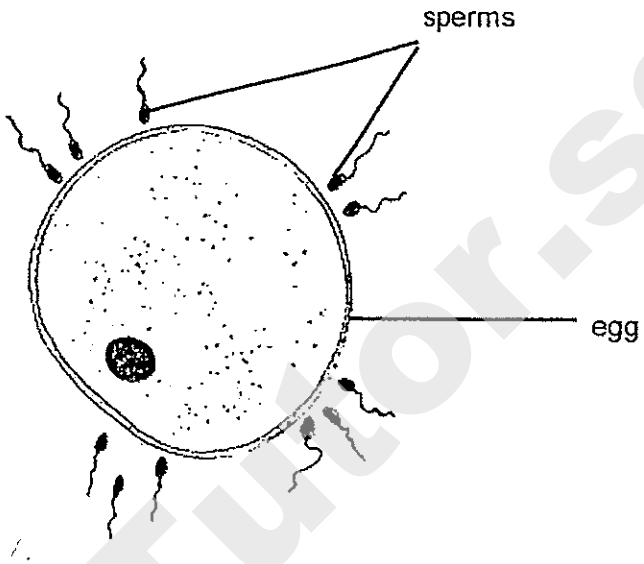
10. The diagram below shows some sperms and an egg.



Which of the following statement(s) is/are correct?

A Only one sperm can fertilise the egg.

B The fertilized egg will develop into a fruit.

C Cell division will occur once the egg has been fertilized.

D The sperm and egg are produced in the male reproductive system.

(1) A and C only

(2) A and D only

(3) B and C only

(4) B and D only

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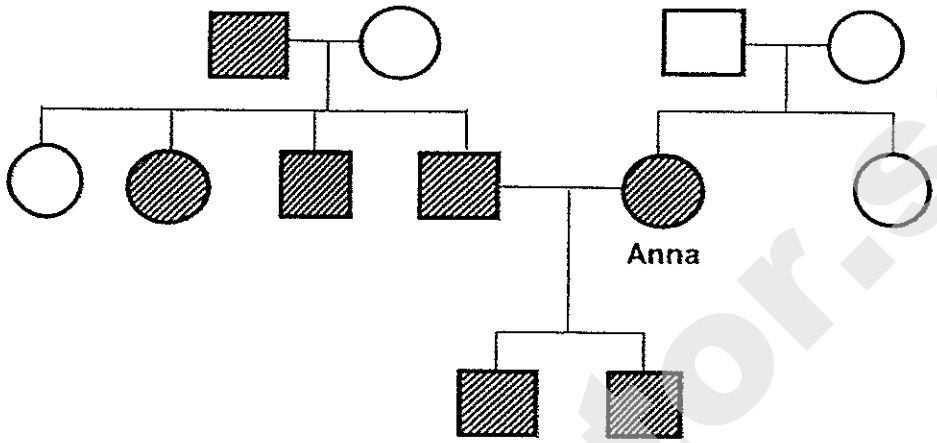
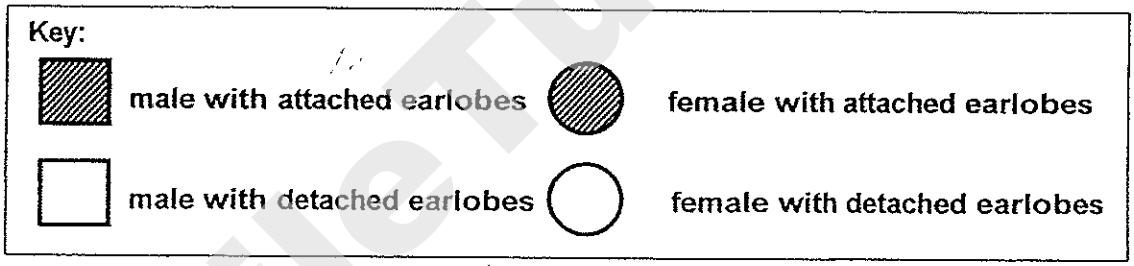
11. Study Anna's family tree below. The family tree shows Anna's family members who either have attached or detached earlobes.





Based on the information above, which of the following statements are correct?

A Anna's brother has attached earlobes.

B Anna's husband has attached earlobes.

C Two of Anna's sisters-in-law have detached earlobes.

D Anna's sons inherited the attached earlobe from her and her husband.

(1) A and B only

(2) A and C only

(3) B and D only

(4) C and D only

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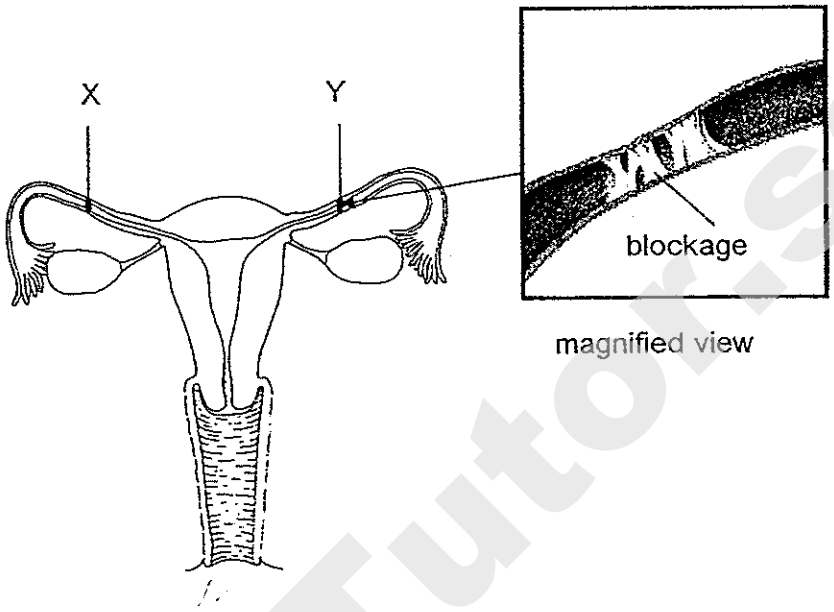
12. The diagram below shows a blockage at both parts, X and Y, of a reproductive system in an adult.



Based on the above information, which one of the following statements correctly states how the blockages at X and Y will affect the reproductive system shown above?

(1) The reproductive system will produce damaged egg cells.

(2) The reproductive system will not be able to produce any egg cells.

(3) The male reproductive cell entering the above reproductive system will not be able to reach the egg cell.

(4) The woman with the above reproductive system can get pregnant naturally but will give birth to deformed baby.

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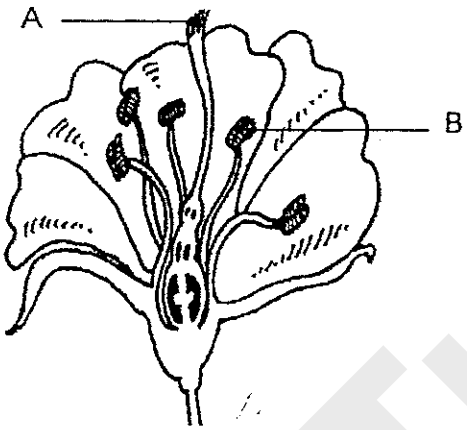
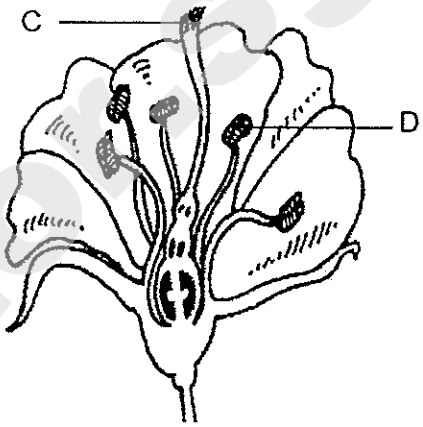
13. The diagrams below show the cross-sections of Flowers 1 and 2 from plants of the same species.



Flower 1



Flower 2

Which one of the following correctly shows the way in which pollen grains are transferred during pollination?

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

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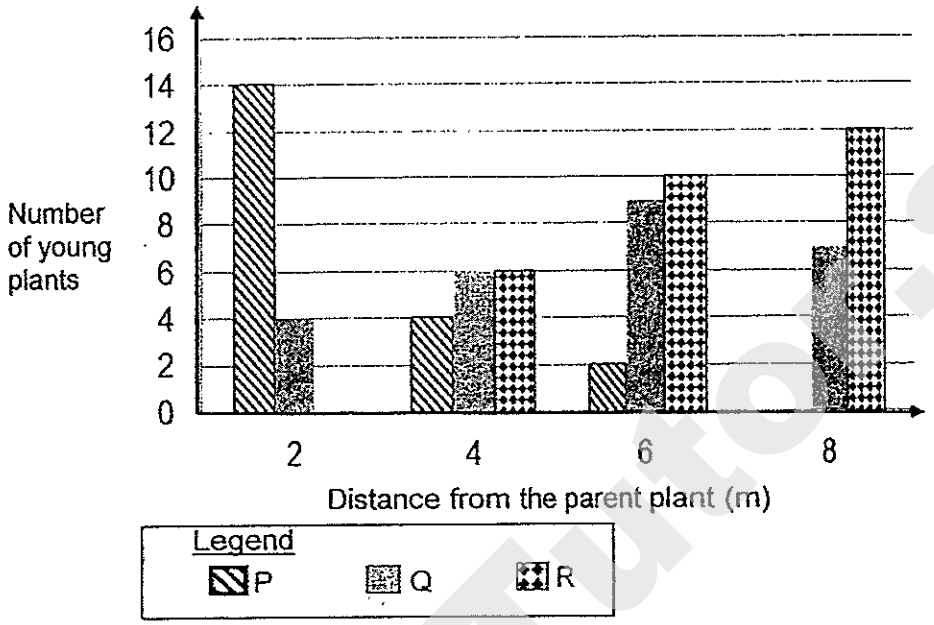
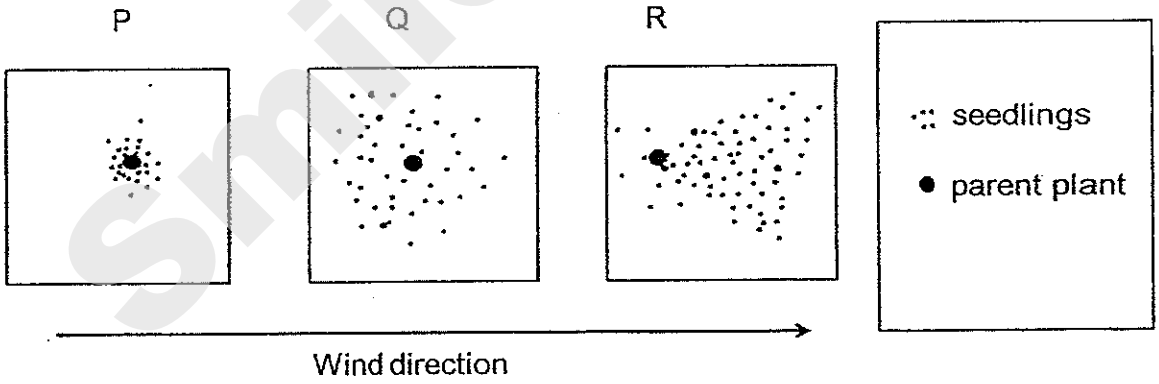
14. Ali counted the number of three different types of young plants, P, Q and R, at various distances from their parent plants in a nature reserve.



The following diagrams, P, Q and R, show the positions of the parent plants and their respective seedlings over an area.



Based on the information above, which one of the following shows the most likely method of seed dispersal for plants P, Q and R?

	P	Q	R
(1)	wind	animal	splitting
(2)	wind	splitting	animal
(3)	splitting	wind	animal
(4)	splitting	animal	wind

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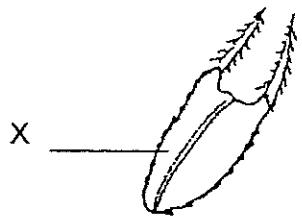
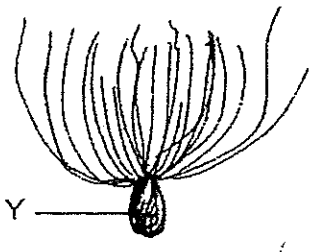
15. The diagrams below show two seeds, X and Y.

	Characteristics of the seed
	- X is small and light. - There are short and stiff hairs on a pair of tooth-like structures at one end of the seed.
	- Y is small and light. - There are long and soft hairs on one end of the seed.

Based on the characteristics of each seed, which of the following most likely describe(s) the method of dispersal for seed X and Y correctly?

A X is dispersed by splitting.

B Y is dispersed by wind.

C Both X and Y cannot be dispersed by animals.

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

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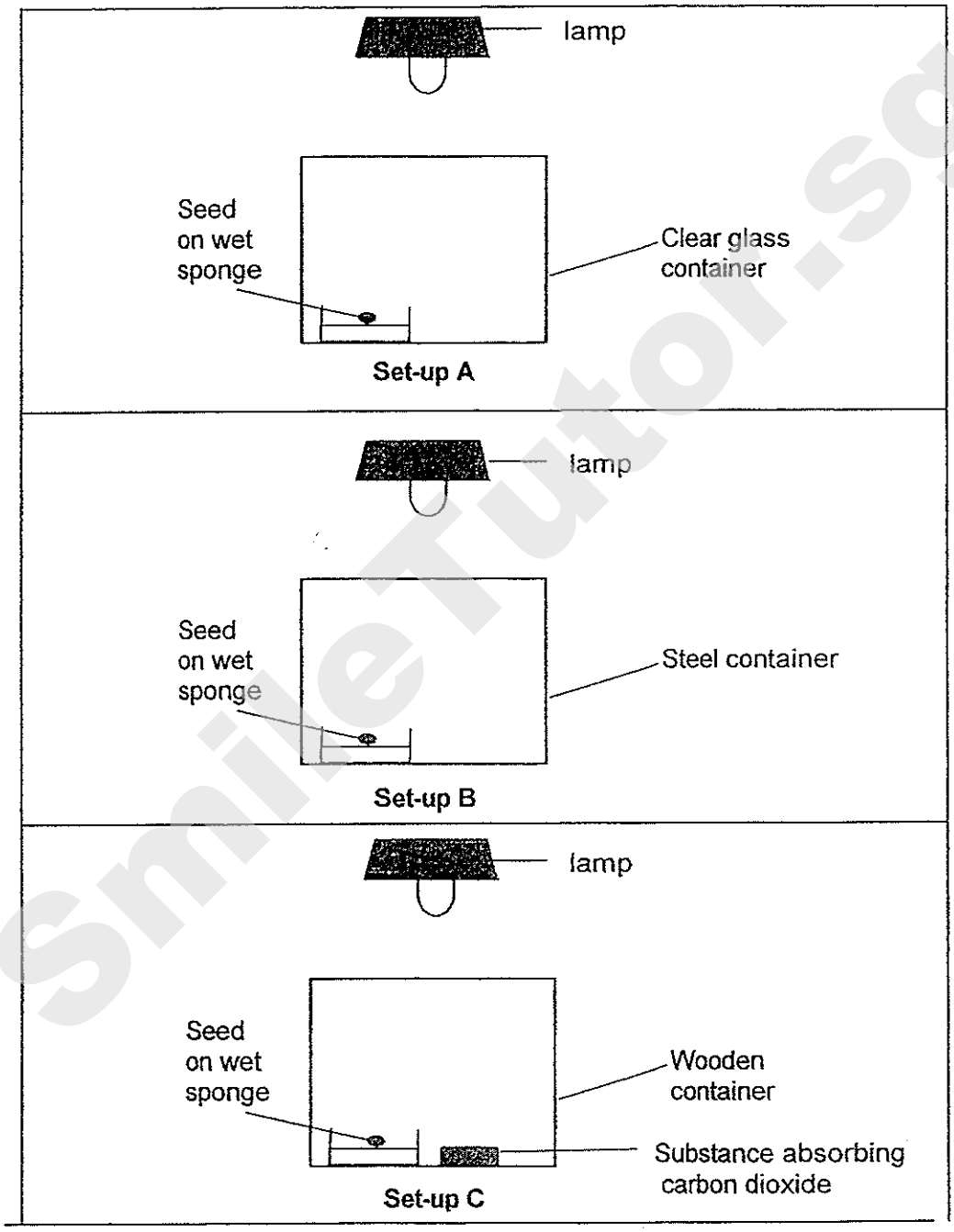
16. Set-ups A, B, and C, each consisted of a 15-litre container made of a different material. In each container, a seed of the same type was placed on a piece of wet sponge. The same amount of air was pumped into the containers. The set-ups were placed under a brightly-lit lamp.



Which set-up(s) had suitable conditions for the seed to germinate?

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

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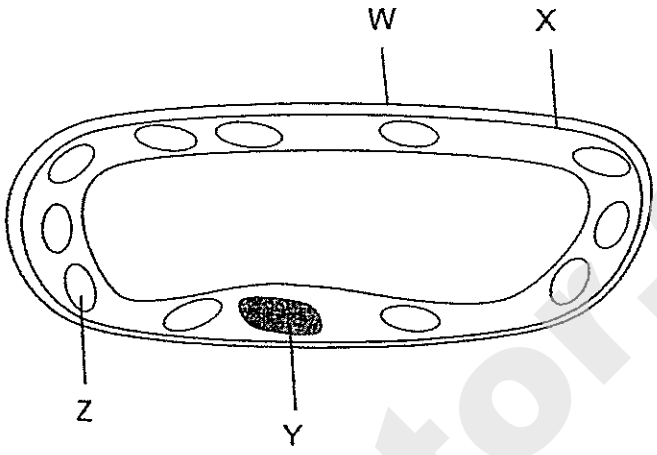
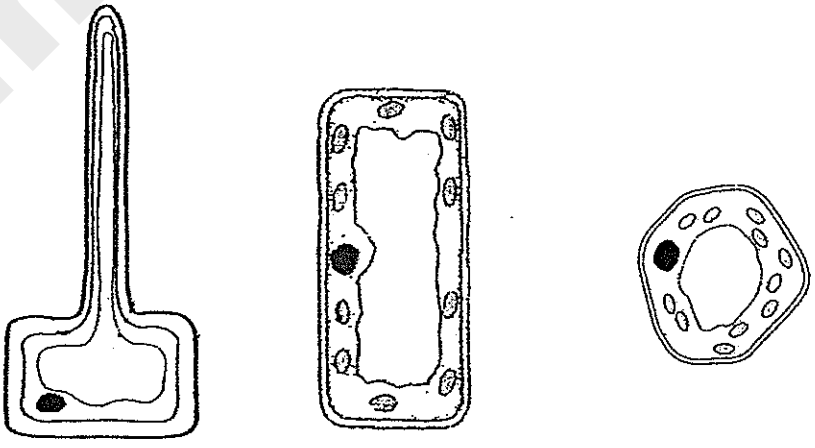
17. The diagram below shows a plant cell.



Which of these parts are not found in an animal cell?

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

18. The diagrams below show 3 different types of plant cells.



A B C

Which of these cells has/ have the ability to make food?

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

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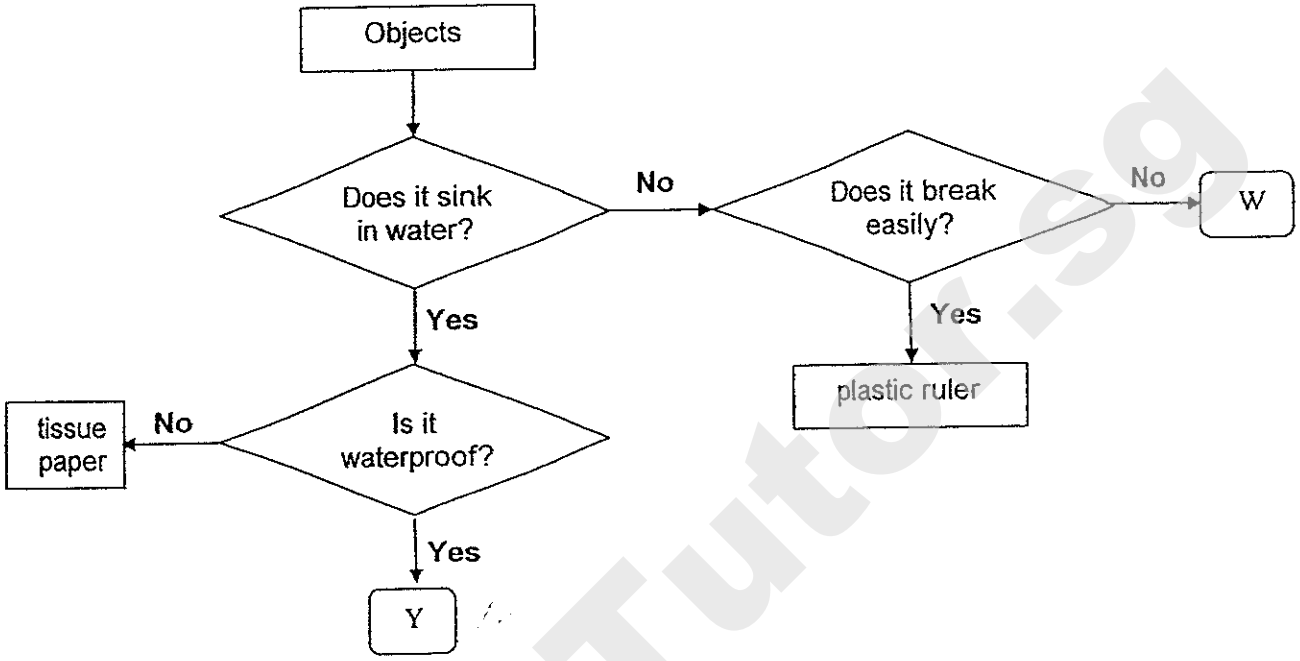
19. Amanda placed some objects in a basin of water and made some observations. Then she drew the following flow chart to differentiate them.



Which one of the following best represents objects W and Y?

	W	Y
(1)	straw	stone
(2)	stone	straw
(3)	marble	glass rod
(4)	glass rod	marble

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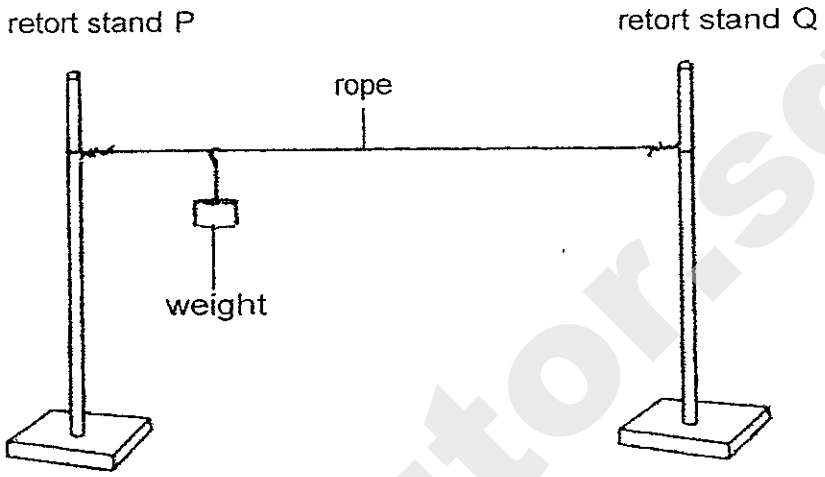
20. Ravi set up an experiment using the apparatus as shown below.



Ravi continued to add weights to the rope until it broke.

What was Ravi's purpose of conducting his experiment?

He aimed to find out the _____ of the rope.

(1) texture
(2) strength
(3) elasticity
(4) hardness

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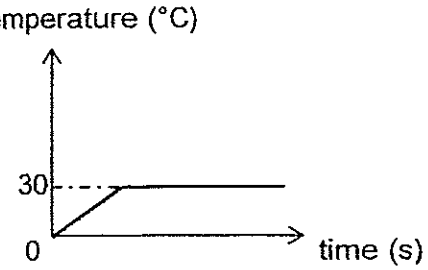
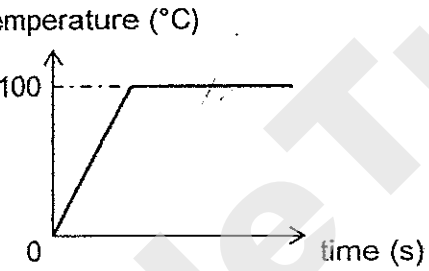
21. Ahmad measured and recorded the change in temperature of the ice cubes overtime.

Which one of the following graphs best represents Ahmad's observations?

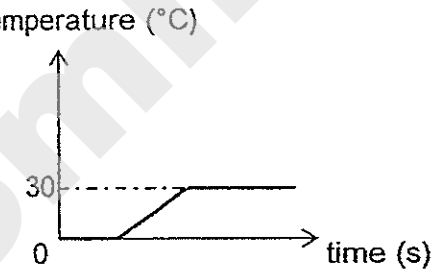
(1)



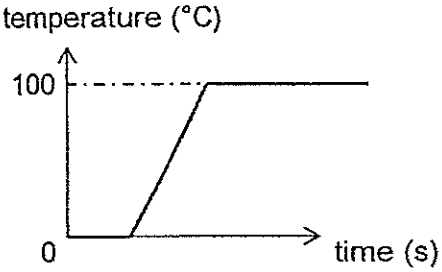
(2)



(3)



(4)



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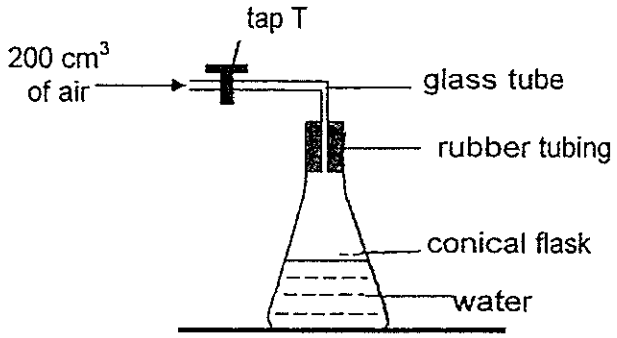
22. The conical flask with a capacity of 200 cm^3 contained 50 cm^3 of water.

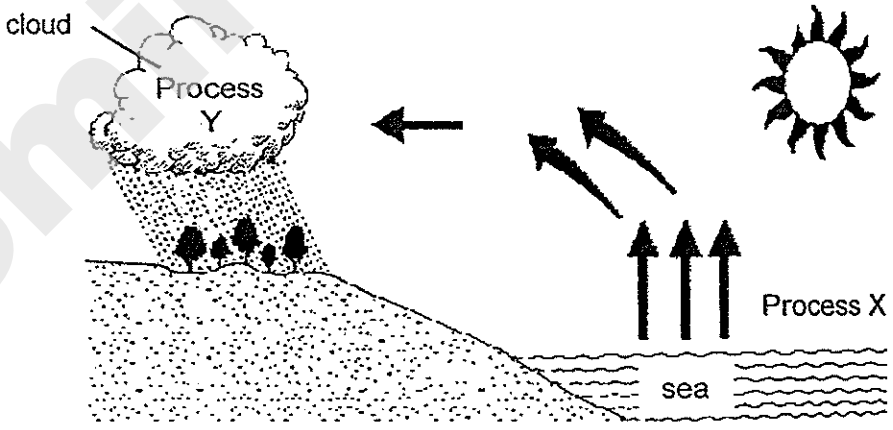


200 cm^3 of air was pumped into the conical flask through tap T before it was closed.

What was the final volume of air in the conical flask?

(1) 50 cm^3 (2) 150 cm^3
(3) 250 cm^3 (4) 400 cm^3

23. The diagram below shows the changes that take place before the formation of rain.



Which one of the following identifies the processes X and Y correctly?

	Process X	Process Y
(1)	evaporation	evaporation
(2)	evaporation	condensation
(3)	condensation	evaporation
(4)	condensation	condensation

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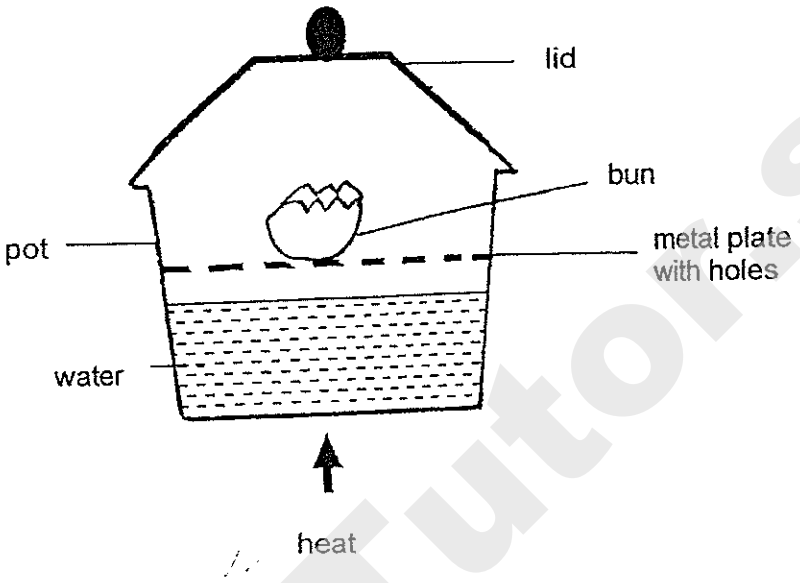
24. Cheryl switched off the stove after the bun had been steamed for half an hour.



After some time, Cheryl removed the lid.

Which one of the following observations would Cheryl most likely make?

(1) Water droplets were seen on the outer surfaces of the lid.

(2) Water droplets were seen on the outer surfaces of the pot.

(3) Water droplets were formed on the inner surfaces of the lid only.

(4) Water droplets were formed on the inner surface of the lid and on the inner surface of the pot above the water level.

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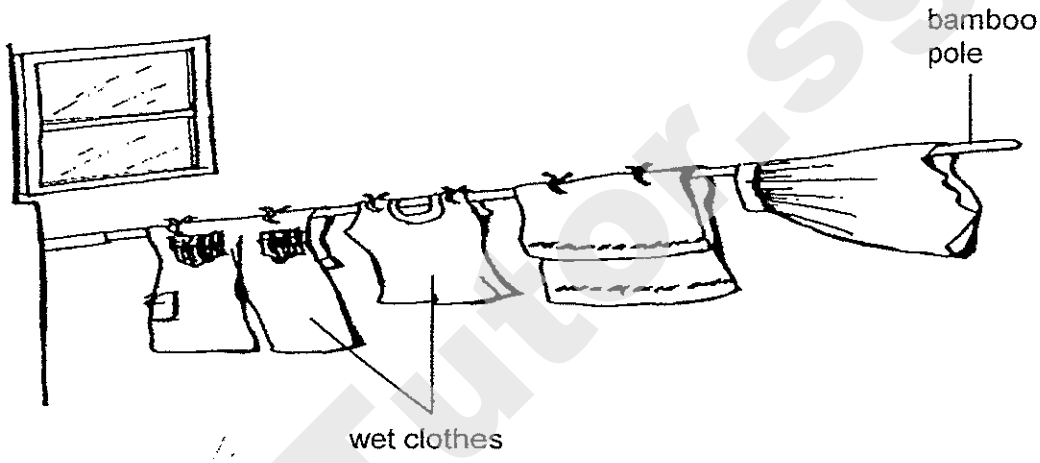
25. Reene hung some wet clothes outside her house. Her mother insisted that Reene spread the clothes out on the bamboo pole as shown in the diagram below.



How did spreading the wet clothes help them to dry faster?

(1) Greater exposed surface area of the clothes allowed more movement of the clothes.

(2) Greater exposed surface area of the clothes allowed more water on them to evaporate.

(3) Greater exposed surface area of the clothes allowed less heat from the sun to reach them.

(4) Greater exposed surface area of the clothes allowed less wind to come in contact with them.

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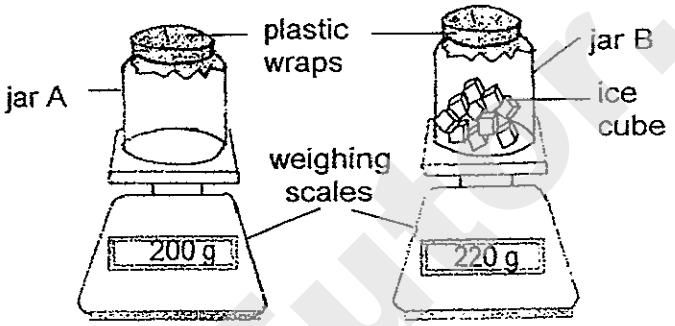
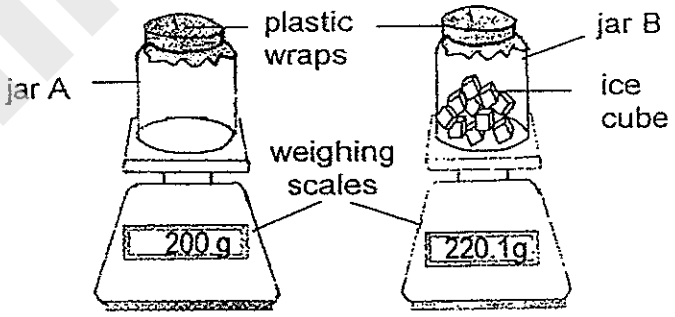
26. Alex used two identical empty glass jars, A and B, for an experiment. He covered the mouth of jar A with a plastic wrap. Next, he filled jar B with some ice cubes before he covered its mouth with a plastic wrap.

Then he placed both jars in a room at a constant temperature of 30°C. He weighed both jars on identical weighing scales as shown below.



After 2 minutes, Alex observed that jar B became heavier, while the mass of jar A remained the same.



Which one of the following explains why the mass of jar B increased?

(1) The ice cubes in jar B melted to form water.

(2) Water vapour from the melted ice cubes condensed on the cooler inner surface of jar B.

(3) Water vapour from the surroundings condensed on the cooler outer surface of jar B.

(4) The melted ice cubes formed water which evaporated and condensed on the underside of the plastic wrap.

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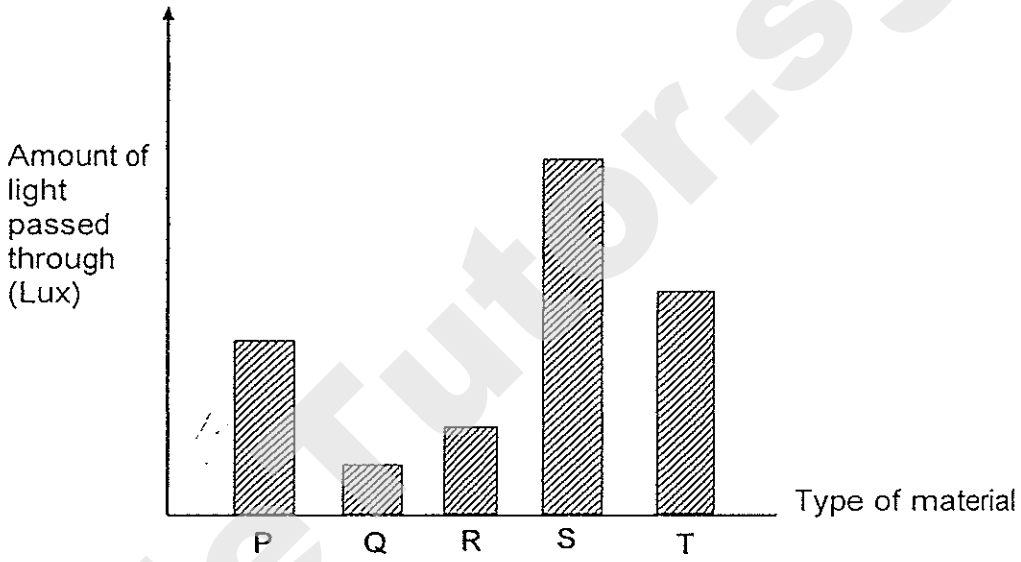
27. Mary used a light sensor connected to a data logger to measure the amount of light which passed through sheets P, Q, R, S and T, each made of a different material. The sheets were of similar size and thickness.

She plotted the graph below to show her results.



Which of these sheet(s) of material cast a darker shadow than T?

(1) S only

(2) P and S only

(3) Q and R only

(4) P, Q and R only

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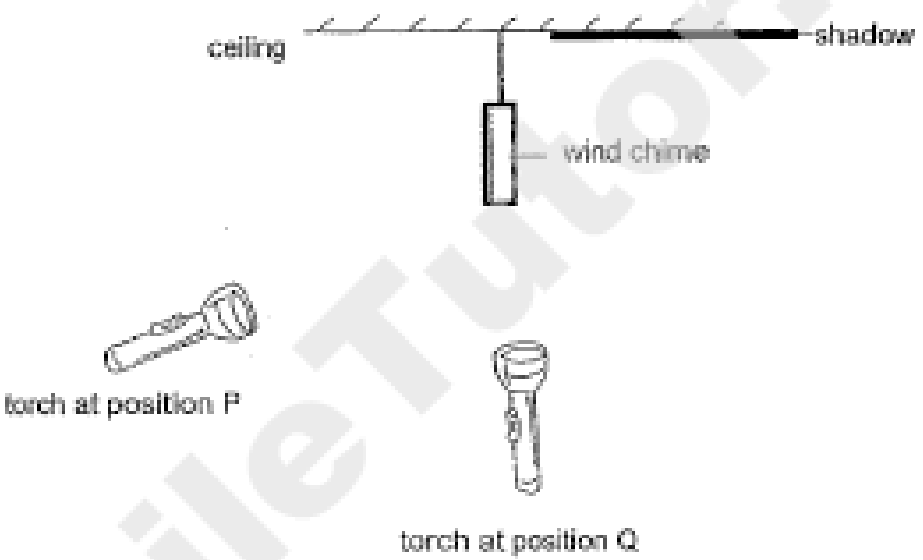
28. Betty hung a wind chime from a ceiling. A shadow of the wind chime was cast on the ceiling when Betty shone a light source at it.

She placed a torch at position P. She saw the shadow of the wind chime on the ceiling as shown in the diagram below. After that, she moved the torch to position Q and observed the shadow formed.



Which one of the following correctly describes the shadow of the wind chime as Betty moved the torch from position P to Q?

The length of the shadow of the wind chime _____.

(1) increased

(2) decreased

(3) remained the same

(4) decreased and then increased

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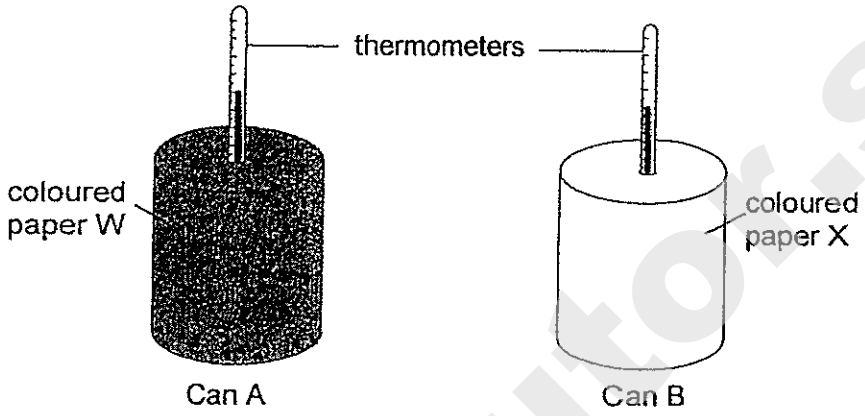
29. Kenneth wrapped two identical cans, A and B, with coloured paper W and X respectively. The coloured papers were of the same thickness. He put a thermometer in each can to measure the temperature of water in it.

Kenneth left the cans under the sun from 12 pm to 12.20 pm on the same day as shown in the diagram below.



Kenneth measured and recorded the change in temperature of the water in the cans at 5-minute intervals in the table shown below.

Time (min)	Temperature of water in the can (°C)	
	Can A	Can B
0	29.0	29.0
5	31.0	29.0
10	32.5	29.2
15	33.0	29.3
20	34.0	29.5

Based on the above set-ups, which of the following factors could possibly cause the temperature of the water to be different in the cans at the end of Kenneth's experiment?

A material of the cans

B amount of water in the cans

C coloured paper which wrapped the cans

D amount of time the cans were placed under the sun

(1) A and B only

(2) B and C only

(3) A, C and D only

(4) B, C and D only

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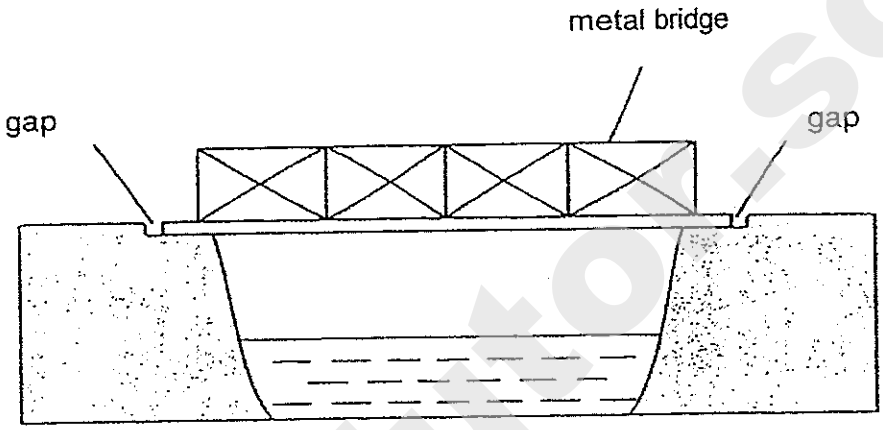
30. Wee Khim observed that the ends of a metal bridge had gaps as shown in the diagram below.



Which one of the following gives the correct explanation for the presence of these gaps?

(1) The gaps lose heat to the surrounding on cool days and need more space to contract.

(2) The gaps gain heat from the surrounding on hot days and need more space to expand.

(3) The metal bridge loses heat to the surrounding on cool days and needs more space to contract.

(4) The metal bridge gains heat from the surrounding on hot days and needs more space to expand.

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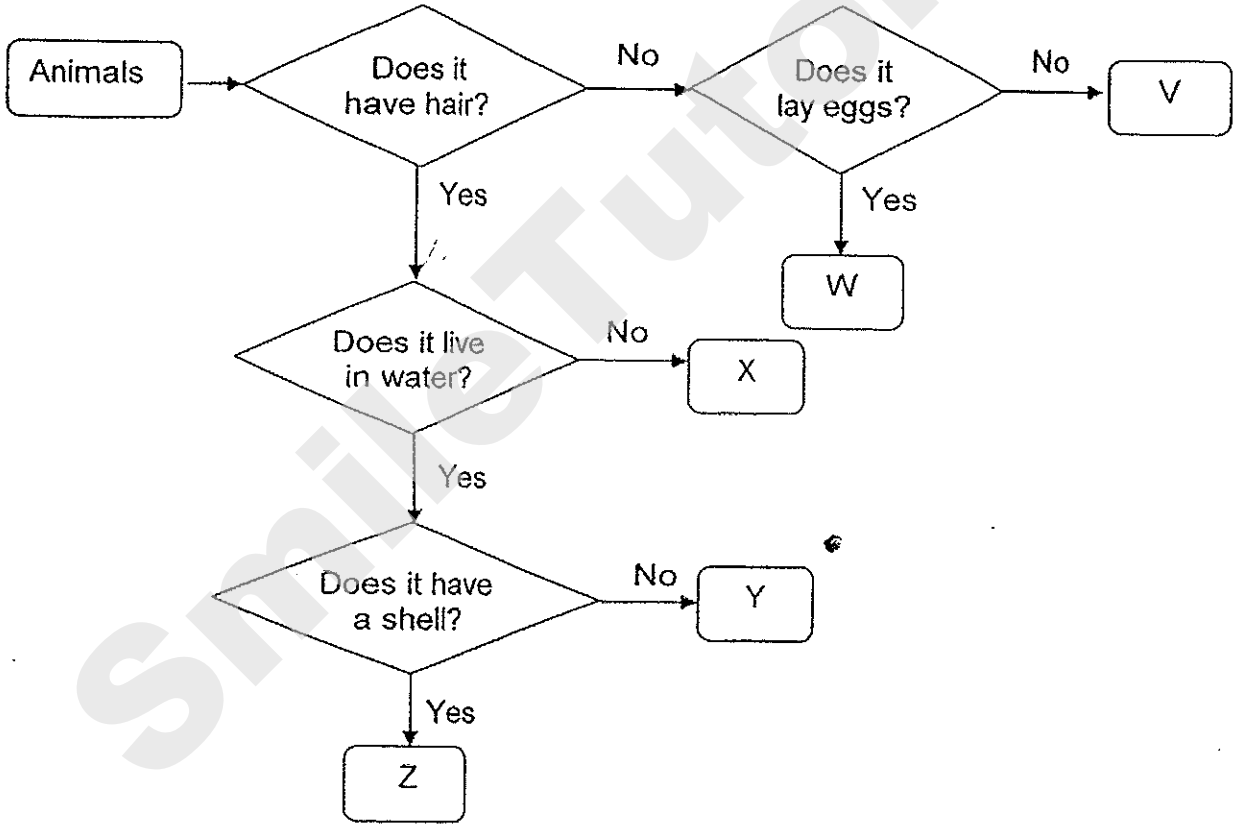
Name: _____ Index No: ____ Class: P5 ____ 40

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 brackets [ ] at the end of each question or part question.

31. The flow chart below shows the characteristics of 5 different animals represented by the letters V, W, X, Y and Z.



Based on the information above, answer the following questions:

(a) State one common characteristic between animals Y and Z. [1]

_____

_____

Score 1

Continue on Pg 28

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Continued from Pg 27.

(b) State one difference between the characteristic of animals V and X. [1]

_____

_____

(c) Wayne stated that animal W is a bat. Do you agree with him? Explain your answer clearly. [1]

_____

_____

Score	/ 2

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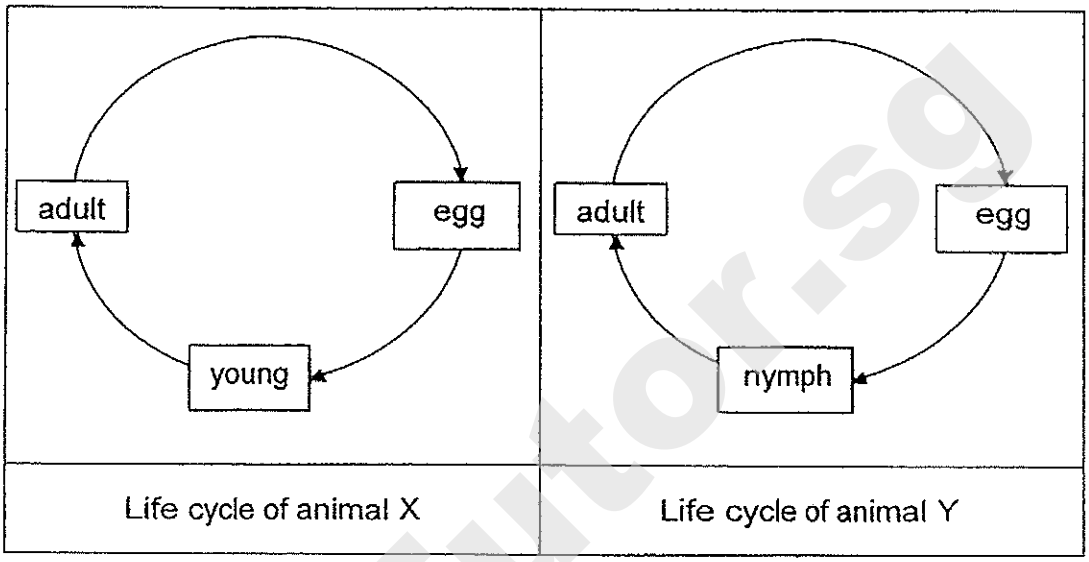
32. The diagrams below show the life cycles of animals X and Y.



Life cycle of animal X | Life cycle of animal Y

(a) Based on the diagrams above, state one similarity and difference between the two life cycles. [2]

Similarity	
Difference	

Continue on Pg 30

Score	2

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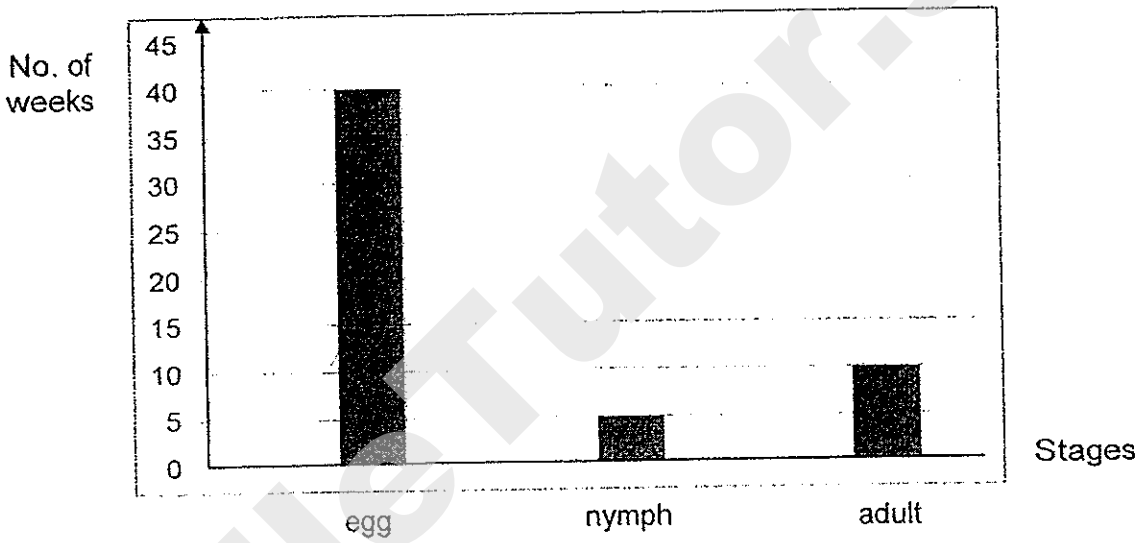
Continued from Pg 29

Lynn observed the length of time animal Y takes to remain in each stage of its life cycle.



(b) Based on Lynn's observations, how many weeks did Animal Y take to become an adult **after** the egg had hatched? [1]

_____

Score	1

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33. Siti wanted to conduct an experiment to find out the conditions needed for germination of seeds. She placed an equal number of seeds in containers A, B, C and D. The table below shows the conditions present in each container.

A tick in the box shows the presence of conditions in each container.

Container / Condition	A	B	C	D
Water	√	√	√	√
Air	√		√	√
Light	√	√		
Temperature (°C)	100	25	below 0	30

(a) State one variable which Siti must keep the same in her experiment . [1]

_____

(b) In which container(s), A, B, C and/ or D, would the seeds germinate after a few days? Explain your answer clearly. [1]

_____

_____

Score	2

Continue on Pg 32

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Continued from Pg 31

The table below shows the mass of the seed leaves and the height of the seedlings after germination.

No. of days	Y (units)	Z (units)
5	24	13
10	19	17
15	11	26

(c) Which column, Y or Z, contains data that shows the change in the mass of the seed leaves of the seedlings over time? Give a reason for your answer. [1]

_____

_____

34. A surgery was performed on an adult female to remove one of her ovaries from her reproductive system.

Will the adult female likely to able to get pregnant naturally with only one ovary? Explain your answer clearly. [2]

_____

_____

Score	3

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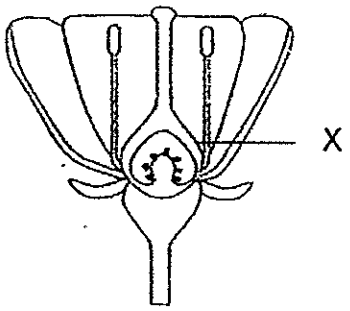
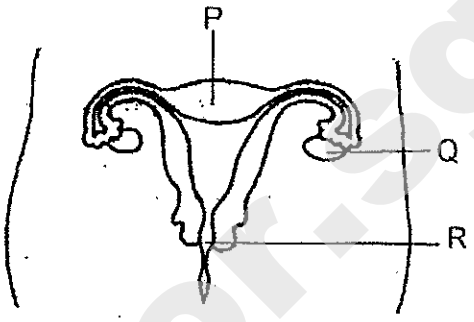
35. The following diagrams below show two sexual reproductive systems, A and B.



Reproductive system A



Reproductive system B

(a) Which part, P, Q or R, has a function similar to X? Give a reason for your answer. [1]

_____

_____

(b) State one difference between the sexual reproduction in plant and human reproductive systems. [1]

_____

_____

Score	2

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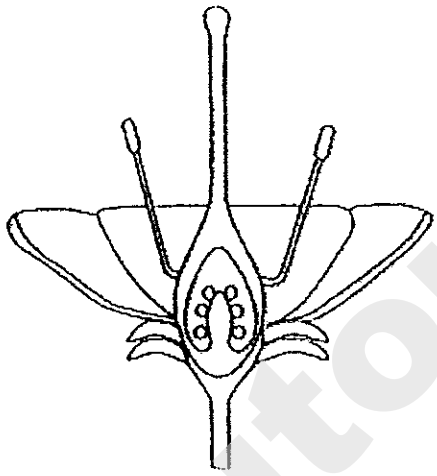
36. The diagram below shows the cross-section of Flower R growing on a plant.



Flower R

Jane
~~Jean~~ placed pollen grains from the same type of flowers on part X of Flower R to observe if it would develop into a fruit.

(a) In the diagram above, **label** the part, **X**, to show where Jane should place the pollen grains. [1]

(b) Describe clearly what change would be observed of Flower R after the process in (a) has taken place. [2]

_____

_____

(c) Name the part of the flower that Jane took the pollen grains from. [1]

_____

_____

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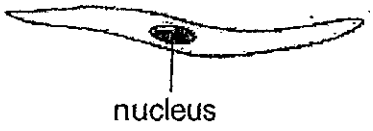
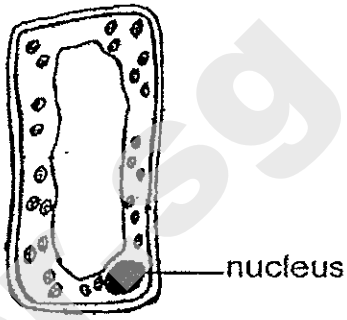
37. The diagrams below show two cells, R and S.



Cell R



Cell S

(a) Which cell, R or S, is a leaf cell? Explain your answer. [2]

_____

_____

(b) Based on the structure of cell R, can it reproduce? Give a reason for your answer. [1]

_____

_____

Score | 3

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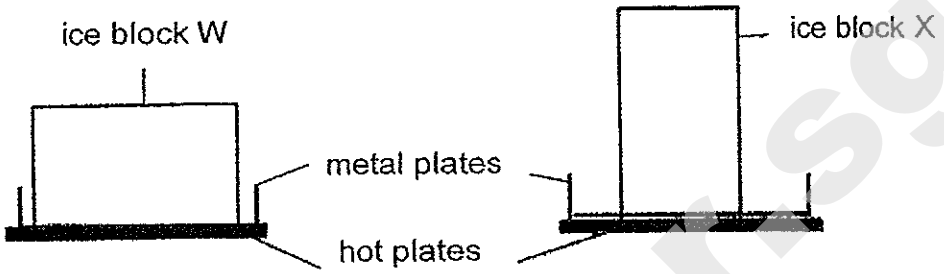
38. Bob placed two identical ice blocks, W and X, on identical hot plates in the manner as shown below.

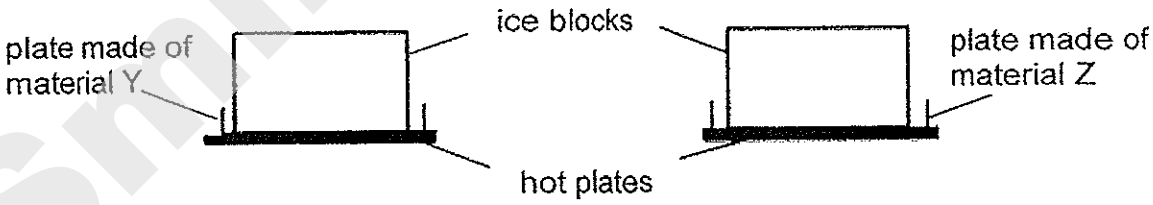


(a) Which ice block, W or X, would melt completely first? Explain your answer. [2]

_____

_____

Bob replaced the metal plates with another set of plates of the same size and thickness. Each plate was made of a different material, Y and Z.



Bob observed that with the same amount of heat from the hot plates, the ice block on the plate made of material Z melted more quickly.

(b) Give a reason to Bob's observations. [1]

_____

_____

Score	3

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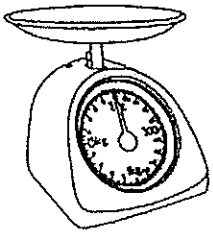
39. May wanted to find the volume of a marble. She used a kitchen scale to do so.



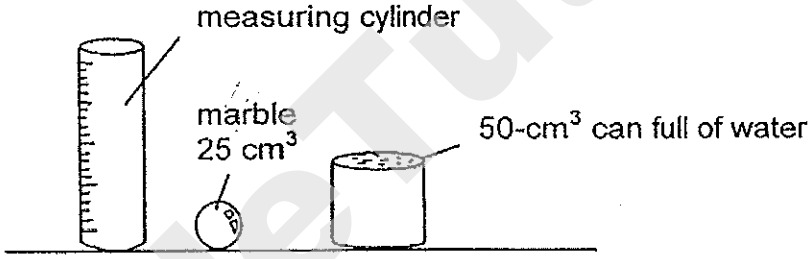
kitchen scale

marble

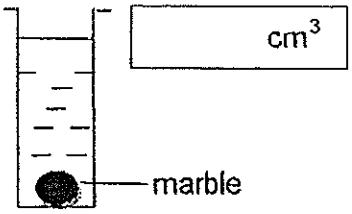
(a) Josh told May that she had used the wrong apparatus. What could the kitchen scale be used to find out about the marbles? [1]

_____

Josh told May to use the apparatus below.



May filled the can full of water and the marble into the measuring cylinder.
She drew her observations as shown in the diagram below.



(b) In the box shown in the diagram above, state the reading for the new water level observed. [1]

(c) What could May conclude about the marble in this experiment? [1]

_____

_____

Score	3

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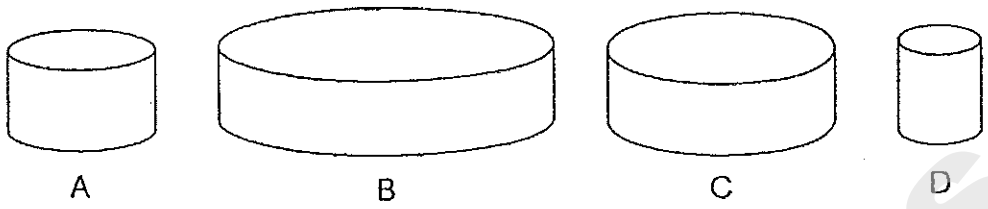
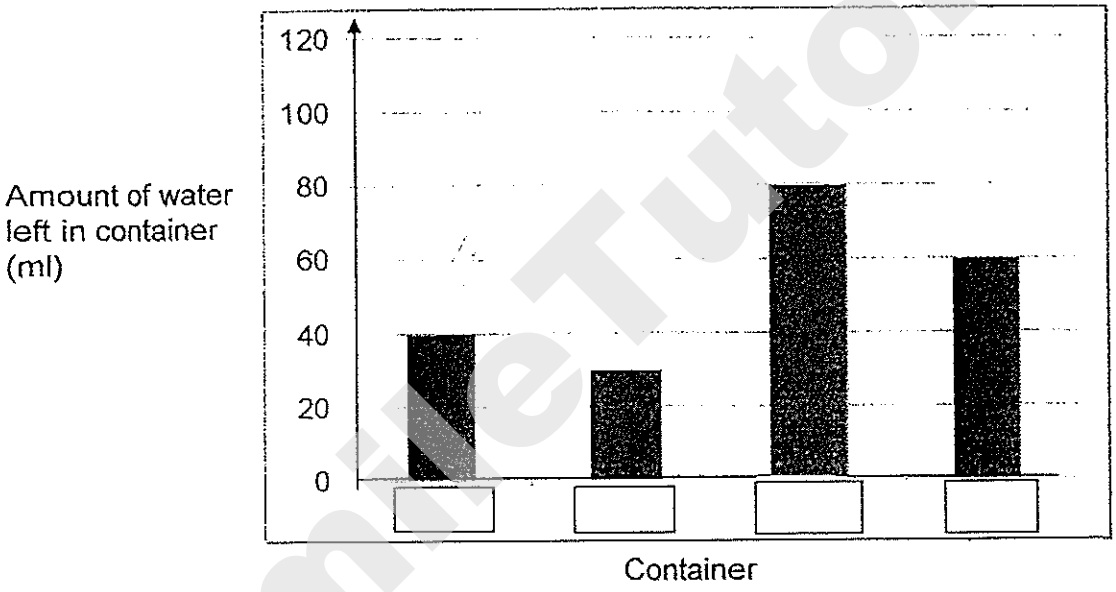
40. Xinyi filled 4 different containers, A, B, C, and D, each with 120 ml of water and left them in an open field as shown below.



After 3 hours, she observed the amount of water in each container and recorded her results as shown in the graph below.



(a) In the graph above, identify the correct amount of water left in each container by writing A, B, C and D correctly in each box shown above. [2]

(b) If Xinyi were to put container A in the refrigerator instead of the open field, would the amount of water left after 5 hours be the same?
Give a reason for your answer. [1]

_____

_____

Score	3

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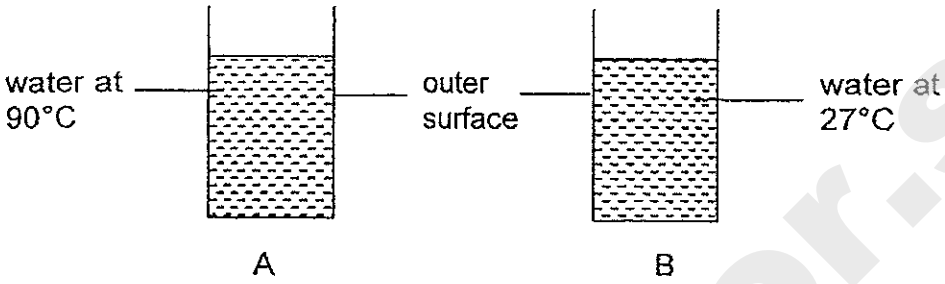
41. Jan poured the same amount of water into the two identical glasses, A and B, as shown below.



Next, she kept the filled glasses in the freezer for 5 minutes.

Jan removed glasses A and B from the freezer and placed them on her kitchen table. She saw droplets of water on the outer surface of glass B within a few seconds, however, the outer surface of glass A remained dry.

Explain why the outer surface of glass A remained dry. [2]

_____

_____

_____

Score	2

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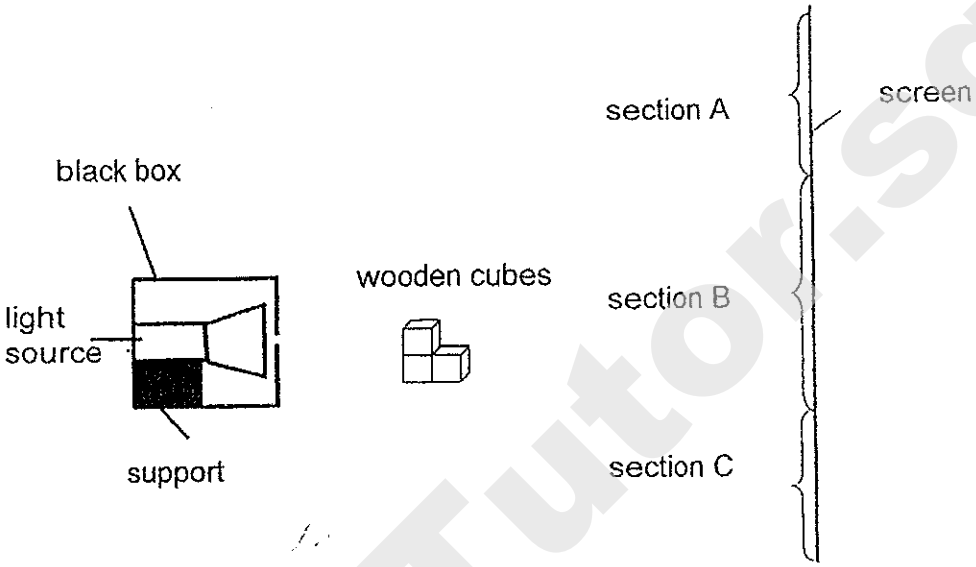
42. Agnes stacked the wooden cubes and placed them between the light source and screen as shown in the diagram below.



(a) Name the parts of the screen where the shadow of the wooden cubes was seen. [1]

_____

(b) Other than light cannot pass through opaque materials, state one property of light which caused the formation of the shadow of the wooden cubes. [1]

_____

_____

Agnes replaced the wooden cubes with plastic cubes. She could see a lighter shadow cast on the screen.

(c) Based on this experiment, what could Agnes conclude about the degree of transparency of the plastic cubes? [1]

_____

_____

Score	3

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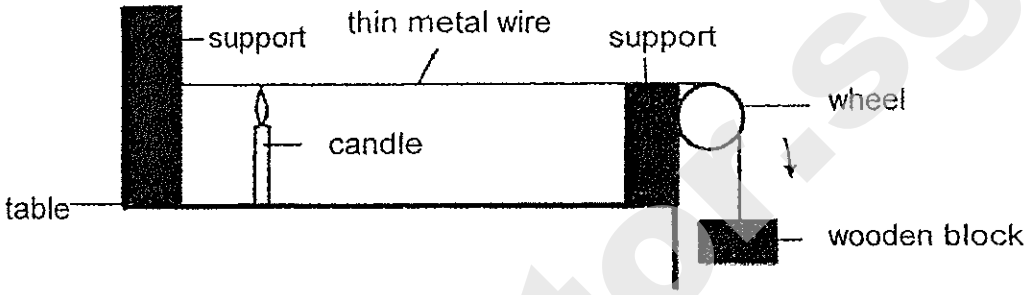
43. Leela placed a burning candle directly below a metal wire connected to a wooden block at its other end as shown in the diagram below.



After a while, Leela observed that the wooden block moved in the direction as shown by the arrow above.

(a) What caused the wooden block to move? Explain your answer. [1]

_____

_____

Next, Leela removed the burning candle.

(b) What would Leela observe about the wooden block after a while? Explain your answer. [2]

_____

_____

_____

Score	3

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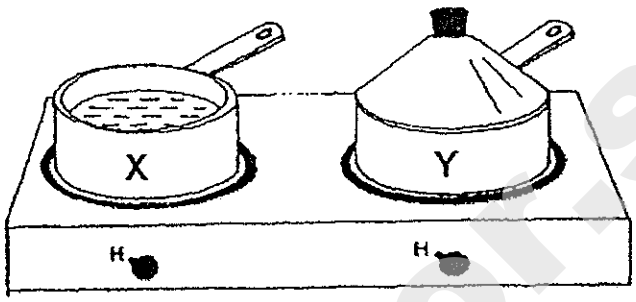
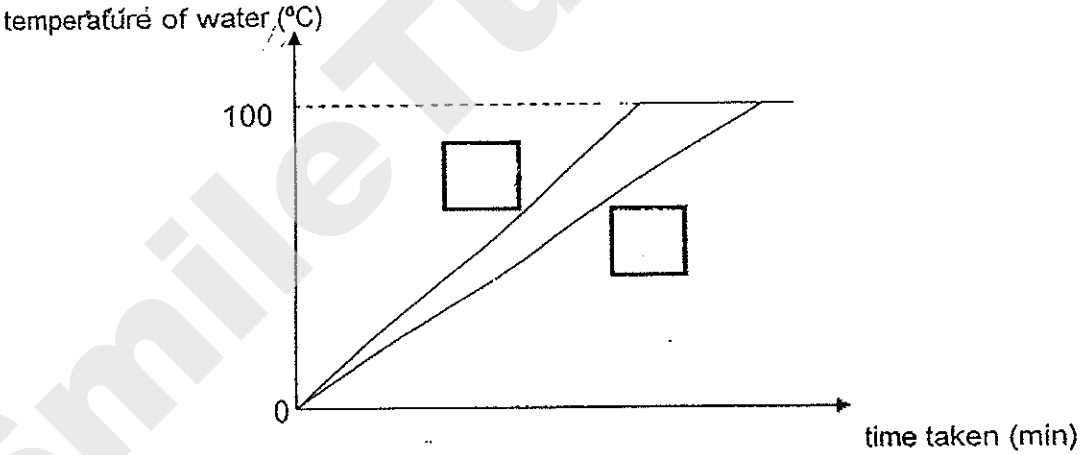
44. Seth poured an equal amount of water of the same temperature into two identical saucepans, X and Y. He put the saucepans on hot plates with the same amount of heat. He covered saucepan Y with a lid as shown below.



Seth recorded the time taken for the water in both saucepans to boil. He plotted a graph as shown below to show the results of his experiment.



(a) Identify the line which represents the change in the temperature of the water in the saucepan in which water boiled first.

In the graph above, label the line X or Y in the correct box to identify the saucepan in which water boiled first. [1]

Continue on Pg 43

Score	/ 1

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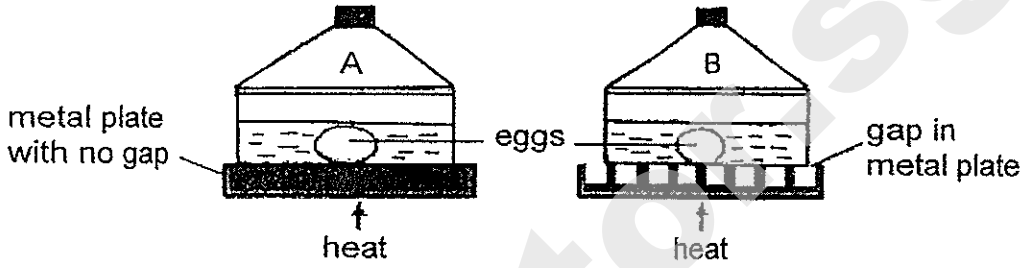
In another experiment, Seth placed an egg of similar size in identical saucepans with an equal amount of water of the same temperature. Identical lids were used to cover the saucepans.



Using the same amount of heat, one egg was cooked more quickly than the other.

(b) In which saucepan, A or B, would the egg cook first? Explain your answer. [2]

_____

_____

_____

Score	/ 2

- END OF PAPER-

Setters: Ms Chong Jieqi, Ms Ho Hsien Lin, Mrs Sharon Maggie Seet

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Exam Paper 2014 Answer Sheet

School: RAFFLES GIRLS' PRIMARY SCHOOL
Subject: PRIMARY 5 SCIENCE
Term: SA1

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

31. (a) Both animals live in water.
(b) X has a body covering of hair but V does not.
(c) No, I do not agree with him. Bat has a body covering of hair but W does not, thus W is not a bat.

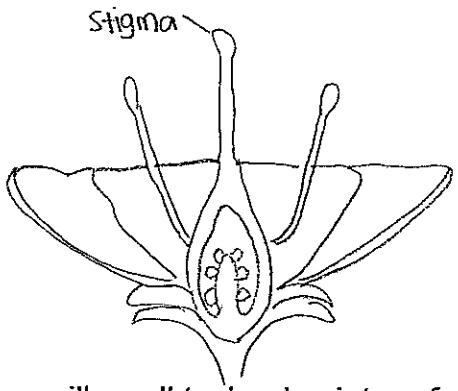
32. (a) Similarity: Both life cycles have 3 stages.
Difference: Y goes through a nymph stage but X does not.
(b) 5 weeks.

33. (a) The amount of water for each container.
(b) D would germinate after a few days. It has air, water and warmth which are the conditions needed for seed germination.
(c) Y. The seed leaves provide food for the germinating seed. Therefore, the mass of the seed leaves will decrease.

34. Yes. The ovary will contain egg and fertilisation can still occur.

35. (a) Q. Both parts contain female reproductive cells.
(b) Plant reproductive system will need to go through pollination before fertilization could take place but not in human reproductive system.

36. (a)



(b) The ovary will swell to develop into a fruit.
(c) Anther.

37. (a) S. It has a cell wall and chloroplasts containing chlorophyll that traps sunlight for the leaf to photosynthesis.

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(b) Yes. R has a nucleus which controls cell division.

38. (a) W. It has a larger surface area exposed to the hot plate so the ice gained heat more quickly.
(b) Z can conduct heat more quickly.

39. (a) It could find out the mass of marbles.
(b) 75
(c) The marble has a definite volume.

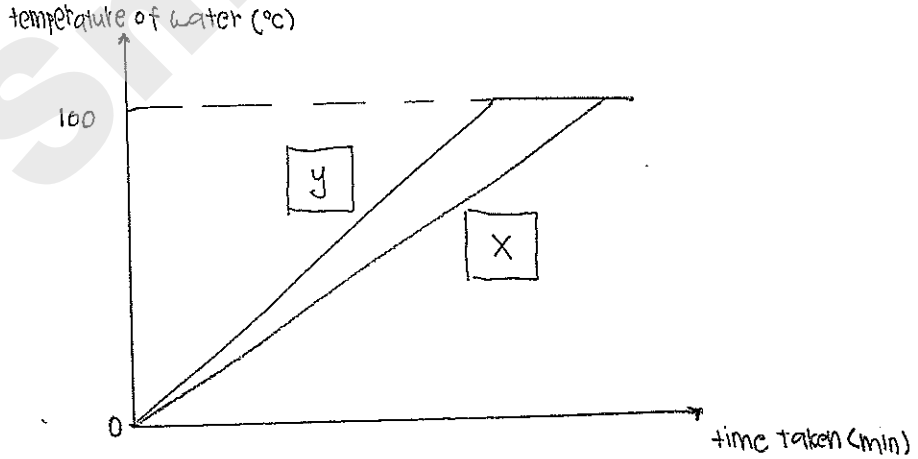
40. (a) C, B, D, A
(b) No, the temperature in the fridge is lower thus the rate of evaporation of water will be slower so more water will be left. The air in the fridge is cooler so the water evaporates slower.

41. The temperature of the outer surface of glass A was higher than water vapour in the air as the hot water in glass A did not lose much heat in 5 minutes and is still hotter than water vapour, hence condensation of water vapour did not occur. The temperature of the surface of glass A was higher than water vapour in the air so it cannot act as a cooler surface for the water vapour to lose heat and condense into water droplets.

42. (a) B and C.
(b) Light travels in a straight line.
(c) It is translucent and can allow some light to pass through.

43. (a) The candle flame heated the metal wire and the wire expanded.
(b) It moved upwards when the metal wire lost heat and contracted.

44. (a)



(b) A. There was a greater surface area of contact between the metal plate and the base of saucepan A than saucepan B. Thus, saucepan A gained more heat and cooked the egg first. More surface area of the base of A was in contact with the heated metal plate than B, so heat gained fast thus cooking the egg first.

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Rosyth School
First Semestral Examination for 2014
SCIENCE
Primary 5

Name: _____

Class: Pr 5 - _____ Register No. _____ Duration: 1 h 45 min

Date: 15th May 2014 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.

* This booklet consists of 20 pages.

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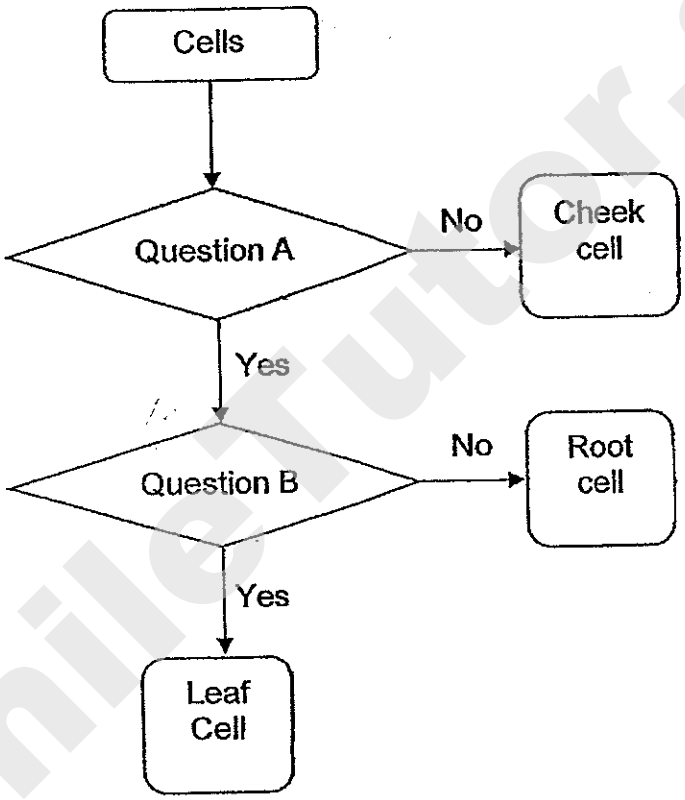
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.** (60 marks)

1. Study the flow chart below.



Which of the following can questions A and B be?

	Question A	Question B
(1)	Does the cell have chloroplast?	Does the cell have a cell wall?
(2)	Does the cell have a nucleus?	Does the cell have a cell membrane?
(3)	Does the cell have a cell wall?	Does the cell have chloroplast?
(4)	Does the cell have a cell membrane?	Does the cell have a nucleus?

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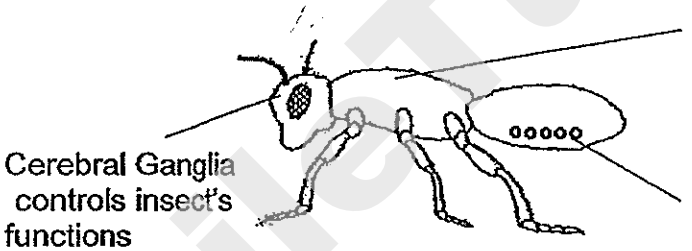
2. Study the two groups of living things below.

Group A	Lizard	Parrot	Earthworm
Group B	Paramecium	Yeast	C

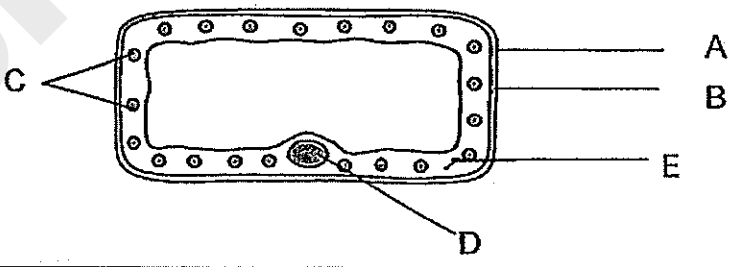
Which of the following represents A, B and C correctly?

	A	B	C
(1)	Has no choloroplast	Has chloroplast	Amoeba
(2)	Unicellular	Multicellular	Mushroom
(3)	Multicellular	Unicellular	Amoeba
(4)	Reproduces through cell Division	Does not reproduce through cell division	Toadstool

3. Cindy came across a Science poster in her school which contained information about an insect shown below.



Which of the following parts of the plant cell below share the same functions as that of the insect parts?



	Cerebal Ganglia	Spiracle	Exoskeleton
(1)	A	B	C
(2)	B	A	D
(3)	D	B	A
(4)	D	C	A

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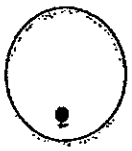
4. Cells P and Q are 2 different animals cells. Each of the cells is put into a beaker containing the same amount of Substance X and Y for 40 minutes.



Cell P

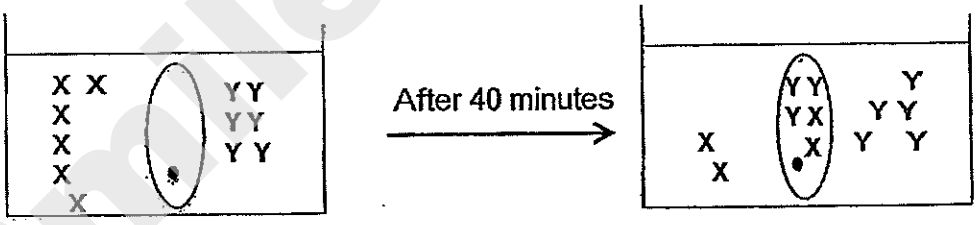
Cell Q

The diagrams below show Cell P and Cell Q before and after the experiment.

Beaker containing Cell P

Before After

Beaker containing Cell Q



Before After

Which of the following statements are possible based on the above results?

A: Cell P has a thicker cell membrane than Cell Q.
B: Substance X is not able to pass through the cell membrane of Cell P.
C: Substance Y can pass through the cell membrane of Cell P and Cell Q.
D: Substance Y is able to pass through the cell membrane of Cell P at faster rate than the cell membrane of Cell Q.

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

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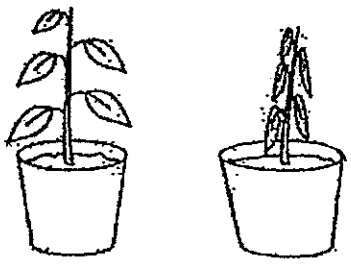
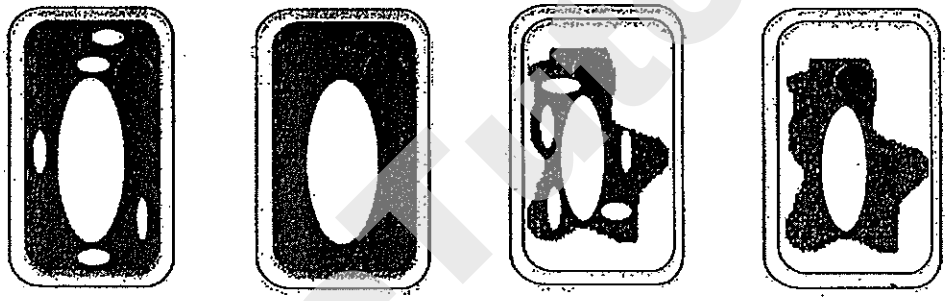
5. Sam conducted an experiment using 2 similar plants A and B. He watered Plant A only daily for a week. The diagram below shows how the 2 plants looked like after one week.



Plant A Plant B

Which one of the following correctly matches the leaf cell to the plant that it is taken from?



Cell W Cell X Cell Y Cell Z

	Plant A	Plant B
(1)	Cell W	Cell X
(2)	Cell W	Cell Y
(3)	Cell X	Cell Y
(4)	Cell X	Cell Z

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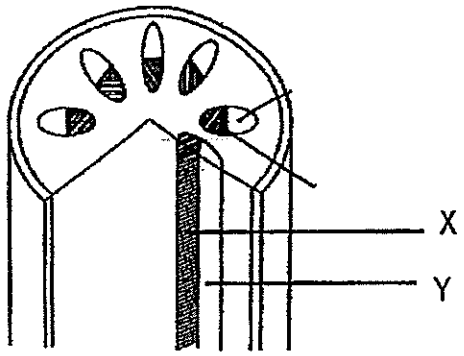
6 The diagram below shows a cross-section of a stem of a plant.

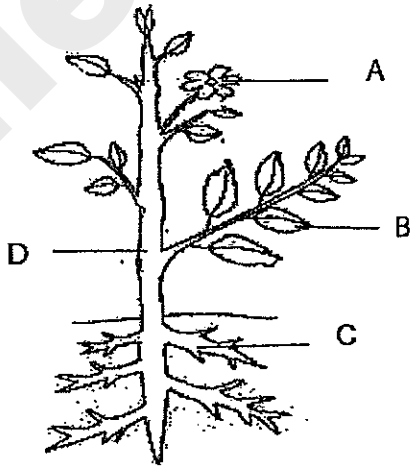


Which of the following statements are true for X and Y?

A: Y transports water from the roots to the leaves.
B: Y transports food from the leaves to the roots.
C: X transports water from the roots to the leaves .
D: X transports dissolved mineral salts from the leaves to the roots.

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

7. The diagram below shows a flowering plant.



At which parts of the plant can the water-carrying tubes be found?

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

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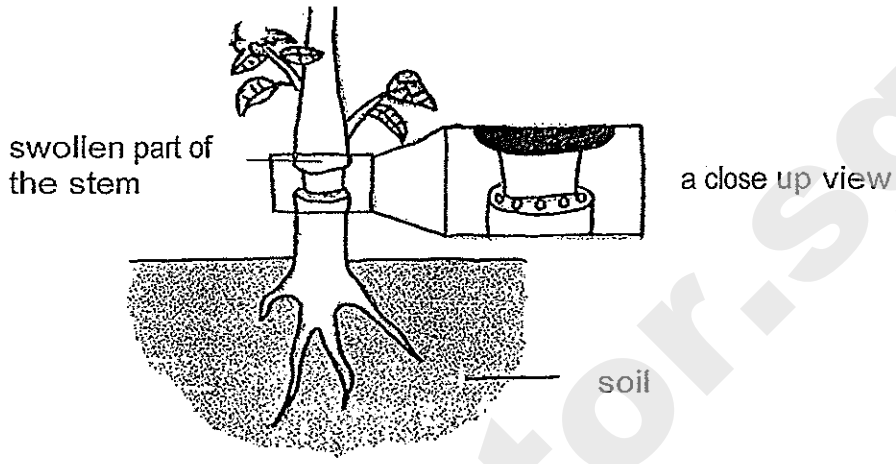
8. An outer ring of a stem was removed from a plant as shown below. A f days later, the stem above the cut-out area became swollen as shown below.



After sometime, the roots began to die in the above plant.
Which of the following explains the above observation?

(1) The roots did not receive water and food.
(2) The roots did not receive water from the leaves.
(3) The roots were not able to make food for the plant.
(4) The roots did not receive the food from the leaves.

9. Wei Han wanted to find out how temperature affects the growth of plants. He prepared several similar potted plants and put them in various locations for three weeks.The results were recorded in the table below.

Temperature of surrounding air (°C)	Amount of Water (ml)	Height of plant at the beginning (cm)	Height of plant at the end (cm)
25	200	100	125
35	200	100	130
45	200	100	130
55	200	100	120
65	200	100	120

What can be concluded based on the results of the experiment?

(1) The temperature of surrounding air does not affect the growth of plants.
(2) The plant grows best at a temperature range of between 35°C and 45°C
(3) The plant grows best at a temperature range of between 25°C and 65°C
(4) As temperature of the surrounding air increases, growth of plant increases.

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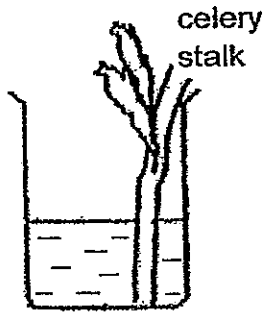
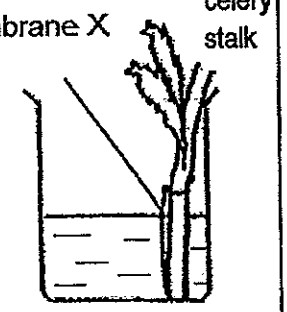
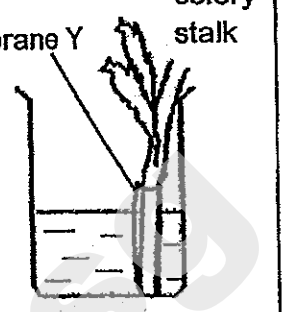
10. Karen set up an experiment as shown below.

 Blue-coloured water	 Blue-coloured water	 Blue-coloured water
Set-up A	Set-up B	Set-up C

The celery stalk in Set-up A was placed in blue-coloured water. The base of the celery stalks in Set ups B & C were wrapped with membranes, X and Y,respectively before placing them into beaker of blue-coloured water. Three days later, Karen noted her observation of the 3 celery stalks in the table below.

	Set-up A	Set-up B	Set-up C
Observations	Leaves are blue and firm	Leaves are yellowish and floppy	Leaves are blue and firm

Which of the following statement/s about from Karen's experiment is/are true?

A: Water can pass through Membrane Y.
B: The aim of the experiment is to find out if the celery takes in water.
C: Set up A is used as a control set-up to prove that the celery takes in blue-coloured water.
D: The leaves of the celery stalk set-up B will be firm if the base of the celery stalk was not wrapped with Membrane X.

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

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11. Which one of the following statements about digestion is not true?

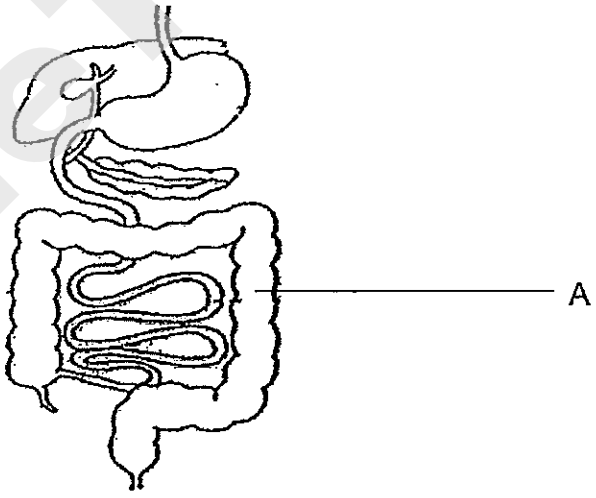
(1) Digestion takes place in the stomach.
(2) Digestive juices in the saliva helps to digest food.
(3) Digestive juices in the gullet helps to digest food.
(4) Digestion of food is completed in the small intestine.

12. A boy was playing a football game. Which of the following body systems interacted together to enable him to play the game?

A: Digestive System
B: Circulatory System
C: Respiratory System

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

13. The diagram below shows the human digestive system.



Which of the following takes place at the part labelled A?

(1) the storage of digested food
(2) the removal of waste
(3) the absorption of digested food
(4) the absorption of water

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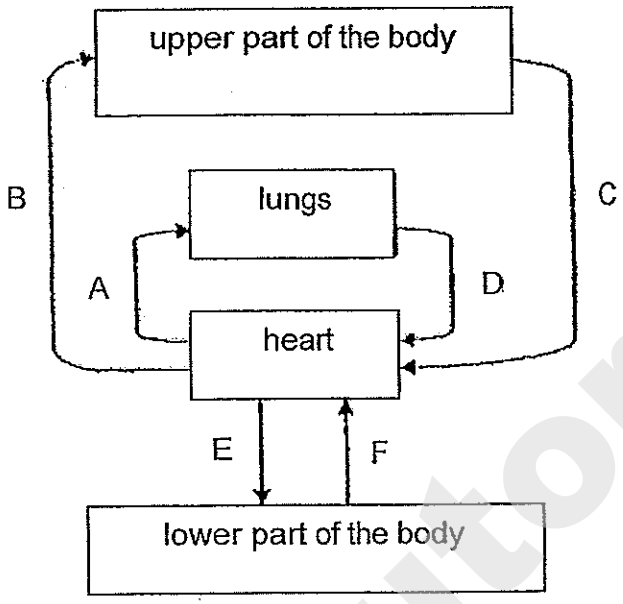
14. The diagram shows the circulatory system in Man.



Which arrows represent blood rich in oxygen?

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

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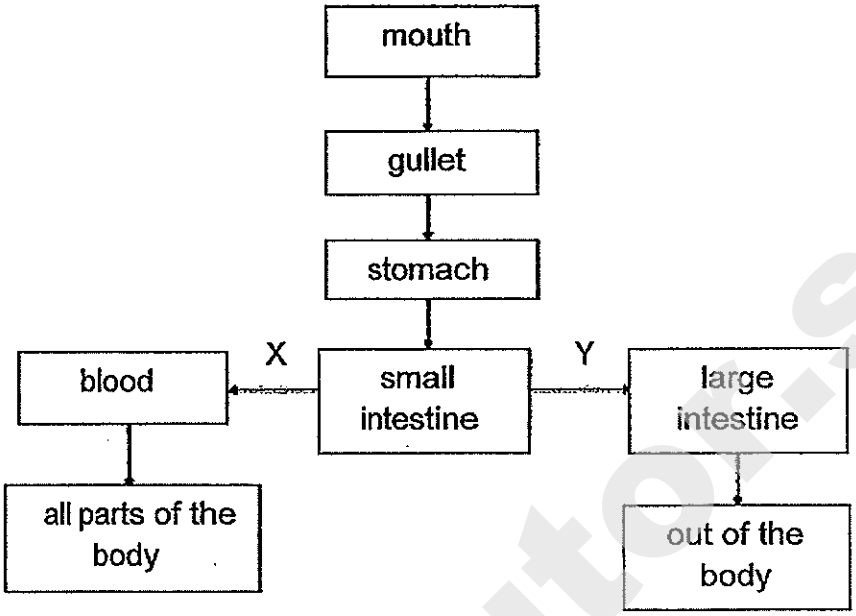
15. Study the flowchart below.



What do X and Y represent respectively?

	X	Y
(1)	water	undigested food
(2)	oxygen	carbon dioxide
(3)	digested food	carbon dioxide
(4)	digested food	undigested food

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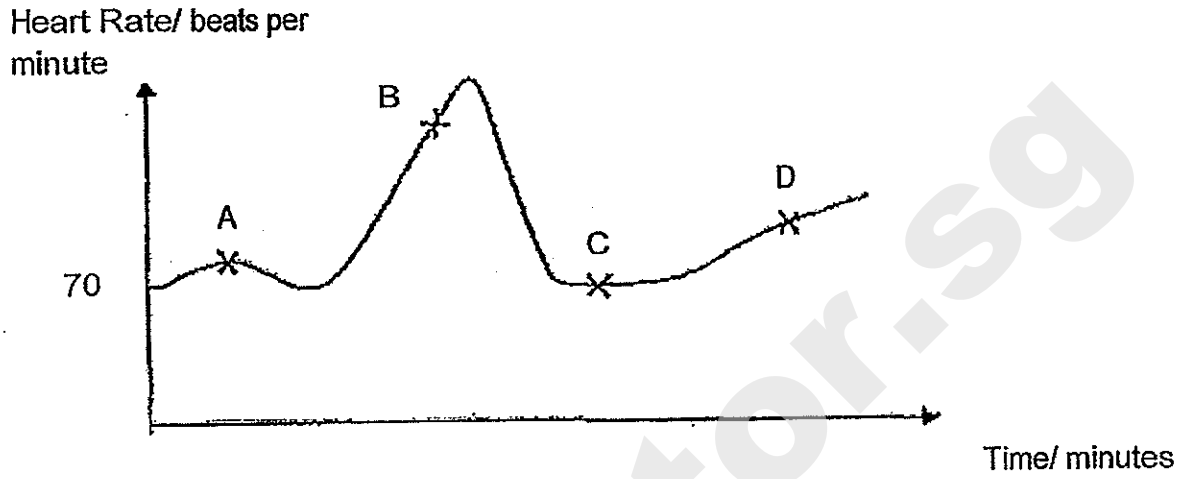
16. The heart rate of a person who is resting is about 70 beats per minute. The following graph shows Lucy's heart rate over a few hours.



Which one of the following correctly shows Lucy's activities in relation to her heart rate?

	A	B	C	D
(1)	sitting	running	sleeping	walking
(2)	sleeping	skipping	walking	sitting
(3)	sleeping	walking	running	sitting
(4)	walking	sitting	running	sleeping

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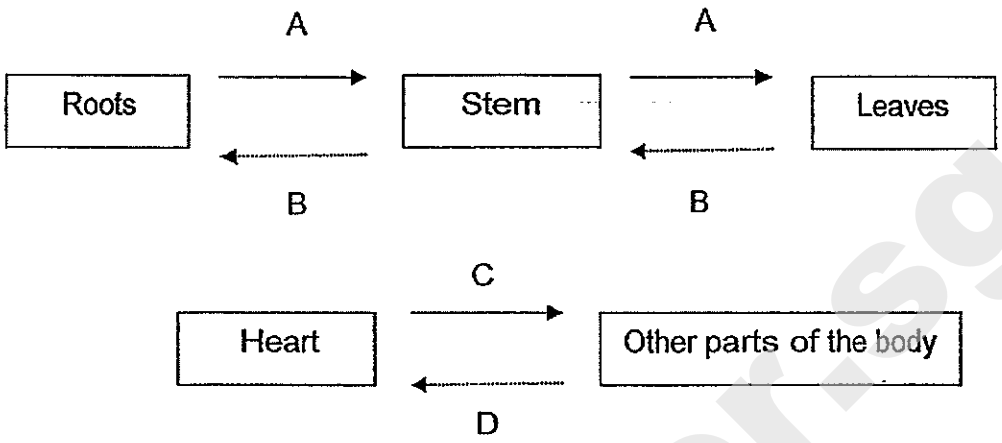
17. The diagrams below show how substances are transported in the plant transport system and the human circulatory system.



Which of the following substances can be represented by both arrows A and C?

(1) food
(2) water
(3) oxygen
(4) carbon dioxide

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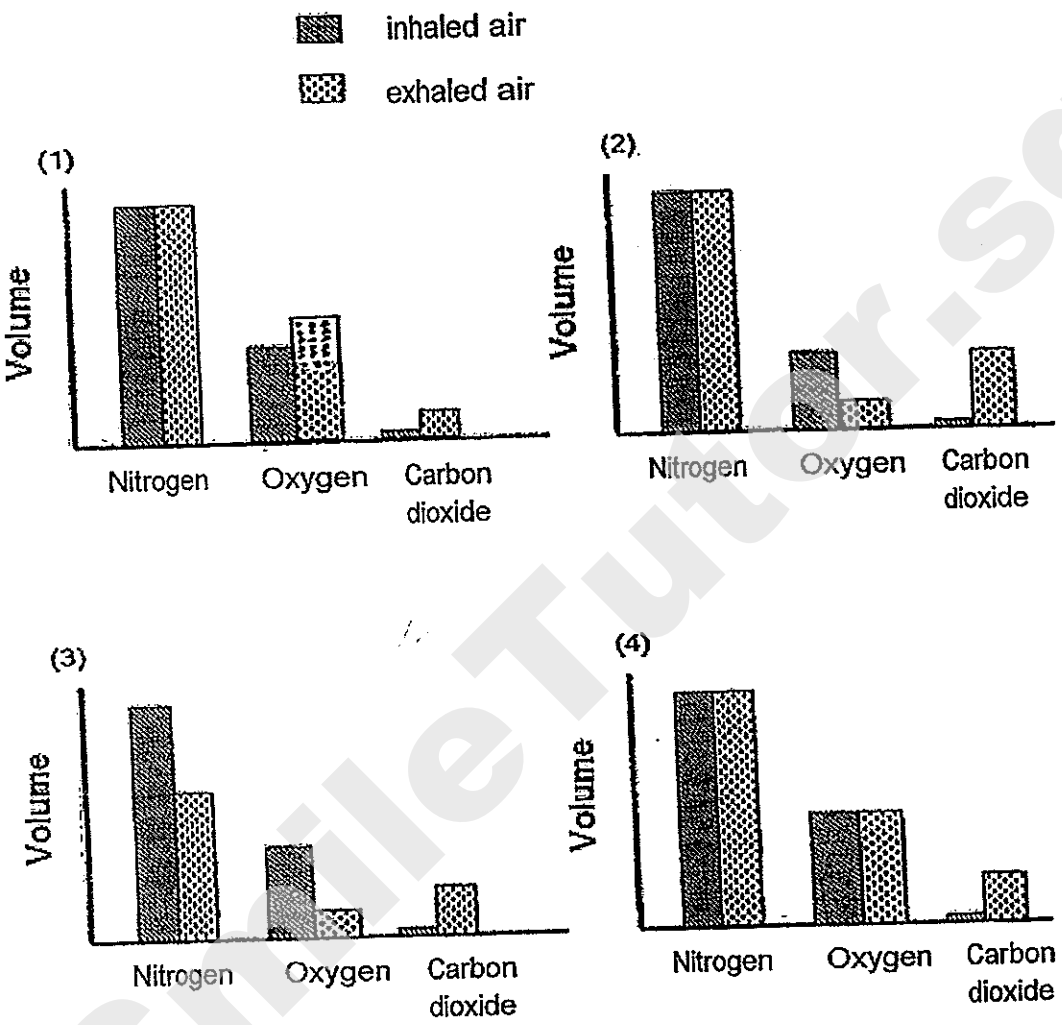
18. Which one of the following bar charts best represents the composition of nitrogen, oxygen and carbon dioxide in inhaled and exhaled air?



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19. Kate did a study on some living and non-living things, P, Q, R and S. She drew a checklist and placed a (√) based on the characteristics she had observed. At the end of the study, the completed checklist is as follows.

Observations	P	Q	R	S
cannot grow		√	√	
made up of dead cells			√	
can make its own food				√
can grow and reproduce	√			√
needs air, water and food to grow	√			√
wastes are produced from its body	√			√
can respond to changes in the environment	√			√

Which one of the following can be classified under Group S?

(1) mushroom
(2) dried flower
(3) bird nest fern
(4) bracket fungus

20. Siti compared a bird and an insect. Which of the following characteristics make a bird different from an insect?

A: It lays eggs.
B: It has wings.
C: It has a beak.
D: It has feathers.

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

21. Emily made the following observations about animal X in the garden.

A: It has brown hair on its body.
B: It has two pairs of legs.
C: It breathes through its nostrils.
D: It feeds on its mother's milk.

Which of the above observations can help Emily determine that animal X is a mammal?

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

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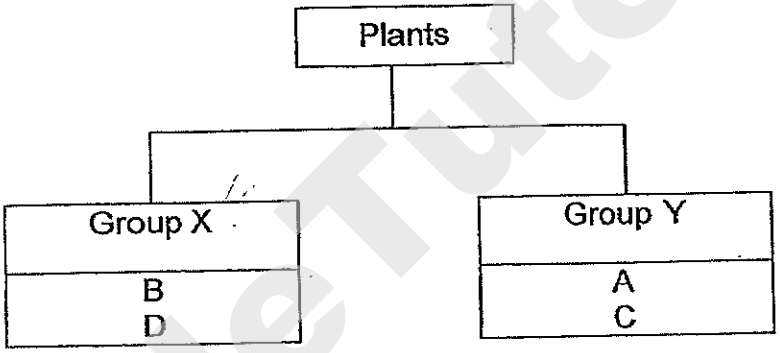
22. A tick (√) in the box indicates the presence of the characteristic.

Characteristics	Plants			
	A	B	C	D
Bears flowers	√		√	
Reproduces by spores		√		√
Lives on land	√	√		

Using the information above, Charlene classified them in the chart below.



What are the suitable sub-headings for group X and group Y?

	Group X	Group Y
(1)	ferns	fungi
(2)	fungi	flowering plants
(3)	land plants	water plants
(4)	non-flowering plants	flowering plants

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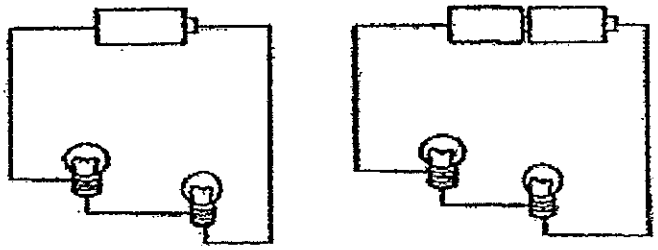
23. Study the 2 set-ups below.



Set up X Set up Y

Which of the following statements is/are true?

A: The bulbs in set-up Y are brighter than the bulbs in set-up X.
B: The battery in set-up X will last longer that the batteries in set-up Y.
C: If one of the bulbs in set-up X is fused, the other bulb will not light up.

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

24. Ken wants to find out if the arrangement of batteries affects the brightness of a bulb. Which of the following variables must be kept constant?

A: Type of wire
B: Length of wire
C: Number of batteries
D: Arrangement of batteries

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

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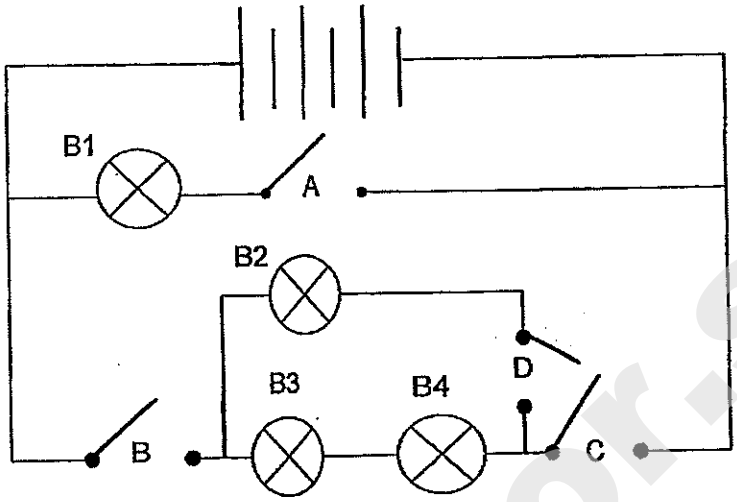
25. Study the circuit diagram below.



Which points A, B, C and D of the circuits should be closed so that only two bulbs will light up?

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

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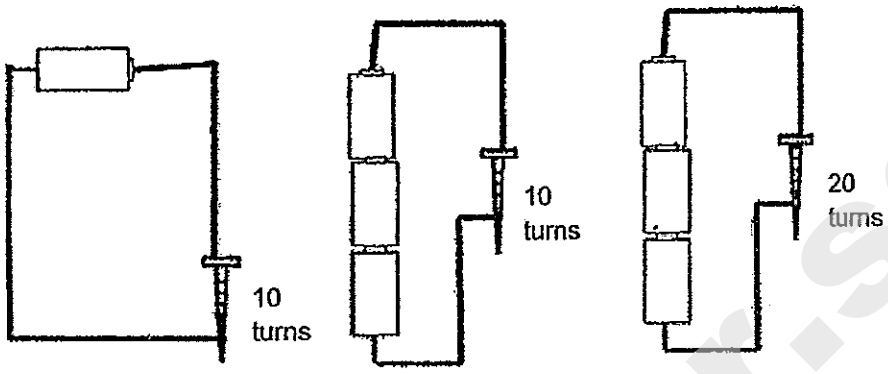
26. Fred used some new batteries, wires and 3 similar iron nails to make 3 electromagnets as shown below. The number of turns of the wire around the nails was stated in each set-up.



Set-up A Set-up B Set-up C

If Fred wanted to study how the number of batteries and the number of turns of wire around the nail affect the strength of the electromagnet, which set-up should he use?

	To find out if the number of batteries affects the strength of the electromagnet	To find out if the number of turns of wire around the nail affects the strength of the electromagnet
(1)	Set-ups A and B	Set-ups A and C
(2)	Set-ups A and C	Set-ups B and C
(3)	Set-ups A and B	Set-ups B and C
(4)	Set-ups B and C	Set-ups A and B

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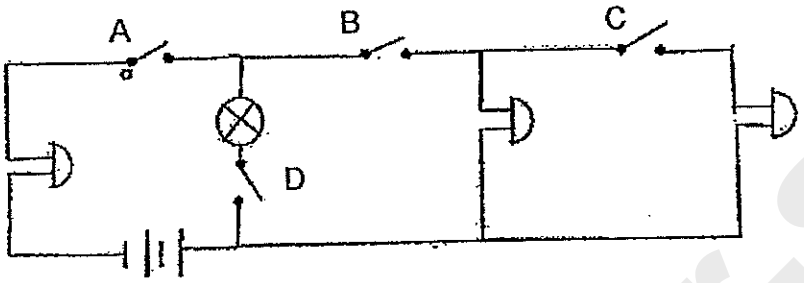
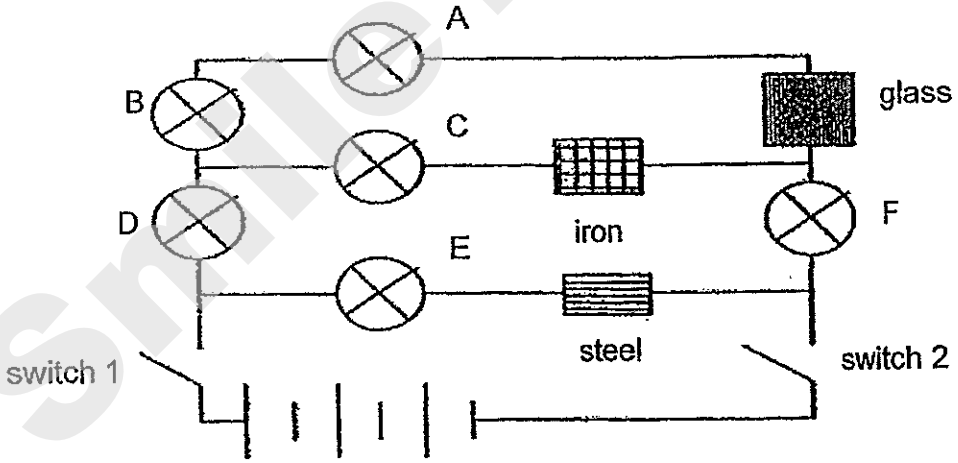
27. Study the circuit shown below.

Which switches should be closed in order to hear the sound of all the buzzers but not see the bulb light up?



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

28. Which of the following classification is correct when both switches are closed?



	Bulbs that will light up	Bulbs that will not light up
(1)	A,B,E	C,D,F
(2)	B,D,F	A,C,E
(3)	B,C,D,F	A,E
(4)	C,D,E,F	A,B

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29. The table below shows the properties of two materials, X and Y.

X	Y
air spaces are found natural material absorbs water	air spaces are not found man-made material waterproof

What materials are X and Y most likely to be?

	X	Y
(1)	Wood	Plastic
(2)	Glass	Aluminium
(3)	Sponge	Ceramic
(4)	Plastic	Rubber

30. Siti carried out an experiment to find out the hardness of four different materials C, D, E and F. She used the sharp ends of a plastic rod and a wooden rod to scratch each of these materials. She recorded her observations in the table below.

Rod used to scratch material	Are scratch marks observed on the material?			
	C	D	E	F
plastic	yes	no	no	no
wood	yes	no	yes	no

Which one of the following statements is true?

(1) E and F are harder than wood.
(2) C and E are harder than wood.
(3) D and F are harder than plastic.
(4) C and D are harder than plastic.

End of Booklet A

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Rosyth School
First Semestral Examination for 2014
SCIENCE
Primary 5

Total Marks: 100

Name: _____

Class: Pr 5 - _____ Register No. _____ Duration: 1 h 45 min

Date: 15th May 2014 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 14 pages.

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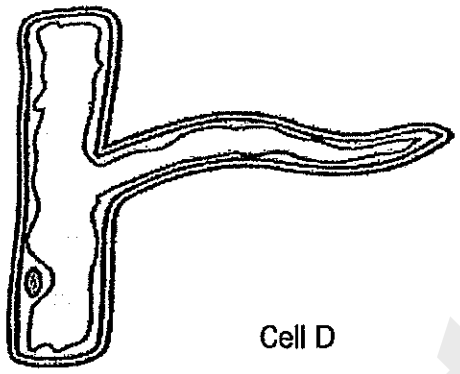
PART II

For questions 31 to 44, write your answers in this booklet. (40 marks)

31. Study Cell D as shown below.



Cell D

(a) Is Cell D a plant cell or an animal cell? Explain your answer. (1mark)

_____

_____

(b) In what way is the cell D not similar to a typical plant or animal cell? Explain why. (1mark)

_____

_____

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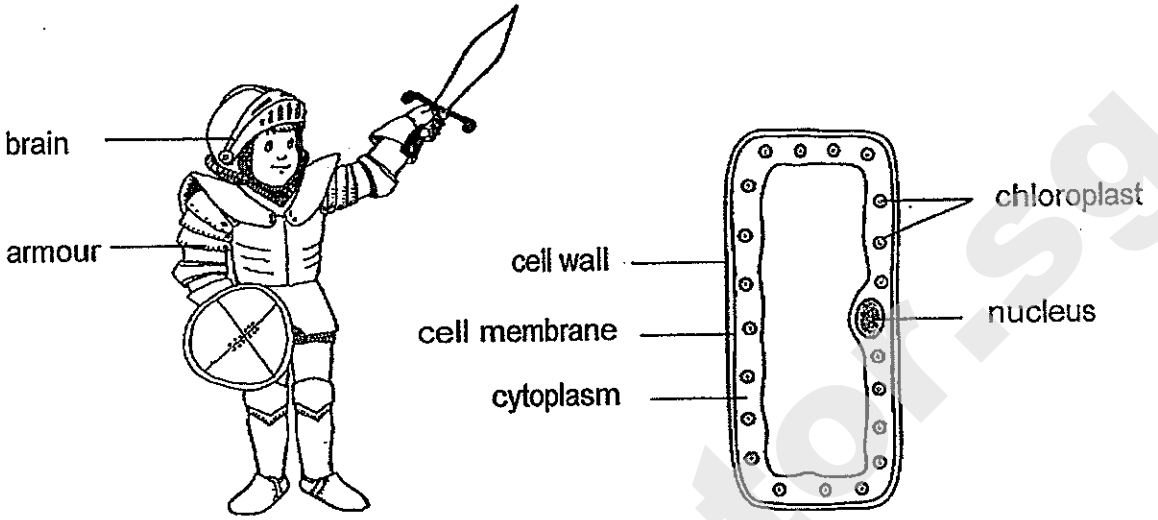
32. Amy drew a knight in his armour. She observed that there were some similarities between the knight and a plant cell.



(a) Identify the parts of a plant cell which are similar to the parts of the knight labelled below and give a reason for each of your choice.

Part of the knight	Part of a plant cell (1 mark)	Reason (2 marks)
armour		
brain		

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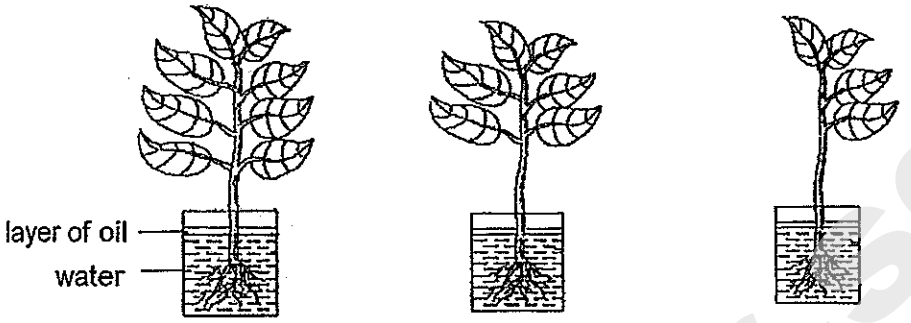
33. Mrs Tan placed three identical plants in similar measuring cylinders containing water at the same level as shown below. They were left near the window for a week.



At the end of the experiment, the height of the water in each measuring cylinder was measured as shown in the table below.

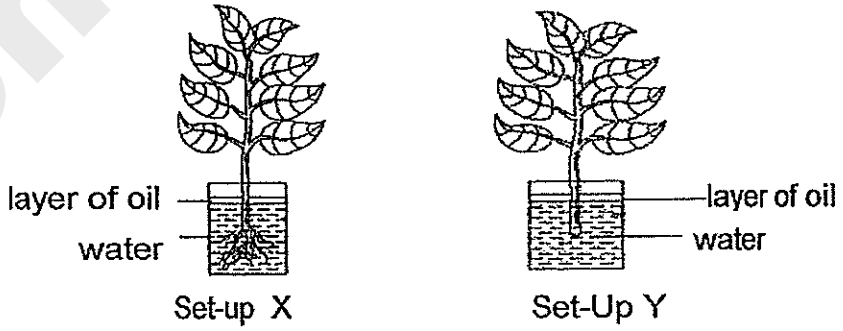
Set-Up	Original amount of water	Final amount of water
A	200ml	140ml
B	200ml	160ml
C	200ml	180ml

(a) State the relationship between the number of leaves and the amount of water taken in by the plants. (1mark)

_____

_____

A second experiment was carried out with two other set-ups, X and Y.



(b) What is the aim of the experiment? (1mark)

_____

(c) Why are the number of leaves kept the same for set-up X and Y? (1mark)

_____

_____

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34. Darren wanted to find out if different coloured light affects plant growth. He placed ~~three~~ four similar plants in ~~three~~ four similar pots and each pot was then placed into a box of the same size with different coloured light. He watered the plants daily.

Set-up	Type of soil	Colour of light
1	garden	blue
2	garden	green
3	garden	red
4	garden	white

(a) State two other variables that needs to be kept the same in this experiment. (2marks)

i) _____

ii) _____

(b) Which of the above set-up is a control experiment? Explain why. (1 mark)

_____

_____

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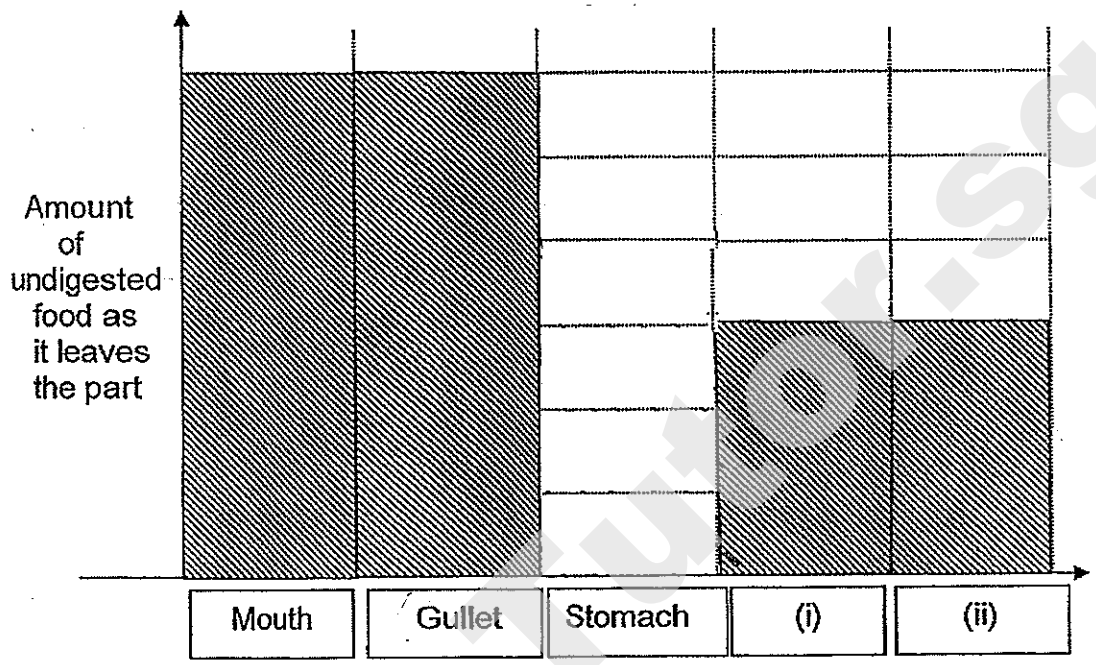
35. David learnt that the function of the human digestive system is to digest the food into simple substances. He drew a graph to show the amount of undigested food as the food leaves each part of the digestive system.



(a) Fill in the blanks to name the unlabelled parts of the digestive system. (2 marks)

Part (i) :_____ Part (ii):_____

(b) Complete the bar graph above to show the amount of undigested food at the stomach. (1 mark)

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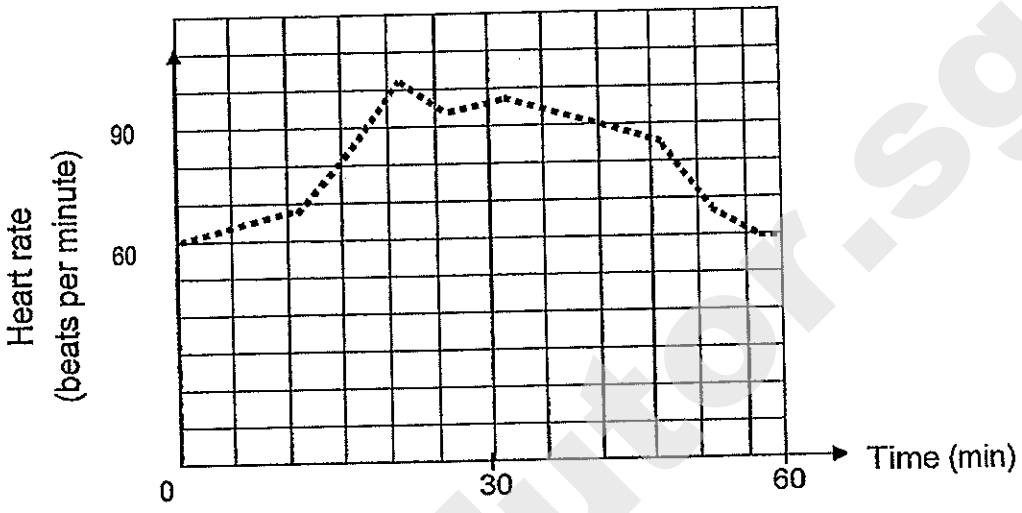
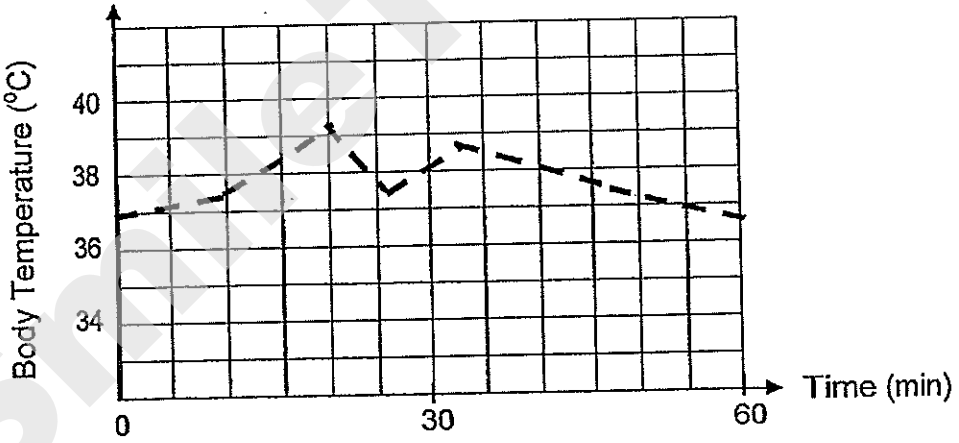
36. Fahim conducted an experiment to find out how a person's heart rate will affect the body temperature during exercise. He presented the results in the graphs below.

Graph A



Graph B



(a) Based on the above graphs, what is the relationship between the heart rate and body temperature of a person during exercise? (1mark)

_____

_____

(b) Explain why a person's heart rate increases during exercise. (1mark)

_____

_____

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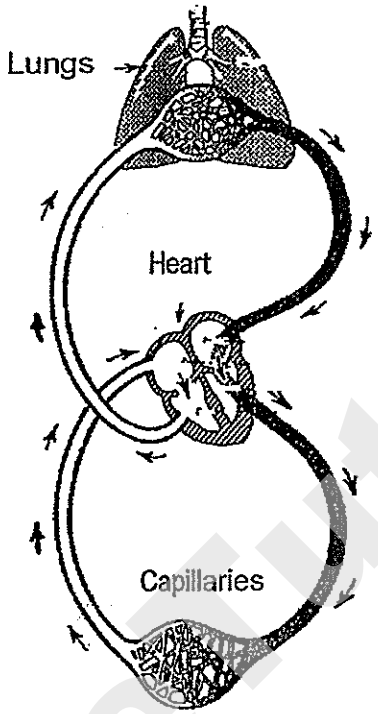
37. The diagram below shows the flow of blood in the human body.



Blood supply to and from the rest of the body

(a) Name the two systems shown in the diagram above. (1 mark)

i) _____

ii) _____

(b) Describe how these two systems work together in the human body. (2 marks)

_____

_____

_____

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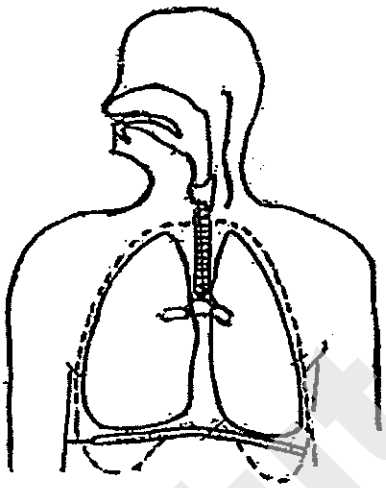
38. The diagram below shows the human respiratory system.



(a) Using arrows, draw how air enters from the surrounding air into our lungs on the diagram above. (1 mark)

(b) Explain why we breathe in and out faster when we exercise. (2 marks)

_____

_____

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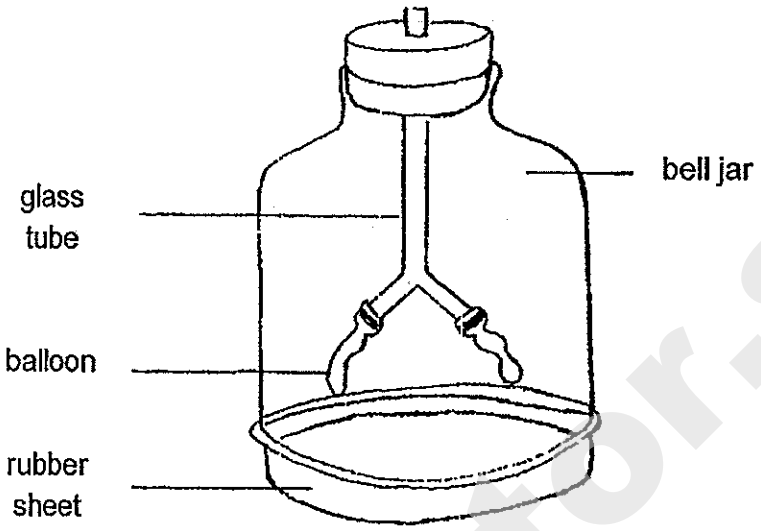
39. The diagram below shows a working model of a human chest. A rubber sheet is stretched across the bottom of the bell jar and tied firmly in place.



(a) Which parts of our respiratory system do the following parts of the model represent? (1 mark)

Model	Respiratory System
Glass Tube	
Balloons	

(b) What would you observe in the bell jar when the rubber sheet at the end of the jar was pulled and then let go? (2 marks)

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40. Sally conducted an experiment with four slices of fresh bread of the same size. She sprinkled different amounts of water on each slice of bread and placed them on a table. She recorded her observations as shown below.

Bread slice	Amount of water (in teaspoons)	Number of days before bread slice turned mouldy
A	X	Did not turn mouldy
B	2	4
C	3	3
D	4	2

(a) Based on the findings in the table above, what should X be? (1mark)

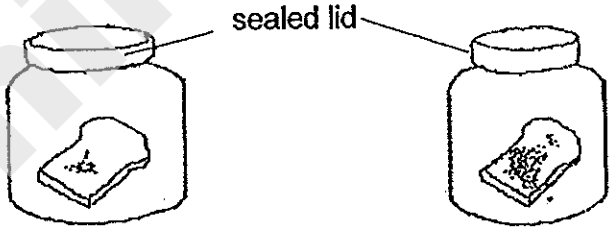
_____

(b) What can be concluded from the experiment? (1mark)

_____

_____

Sally decided to conduct another experiment. She took another two identical slices of bread, E and F. She toasted one slice and then left both pieces in identical sealed glass jars in a warm place. After a week, she found more mould growing one piece of bread than the other.



Bread E Bread F

(c) Which slice of bread was toasted? Explain your choice. (1mark)

_____

_____

(d) How does bread mould reproduce? (1mark)

_____

_____

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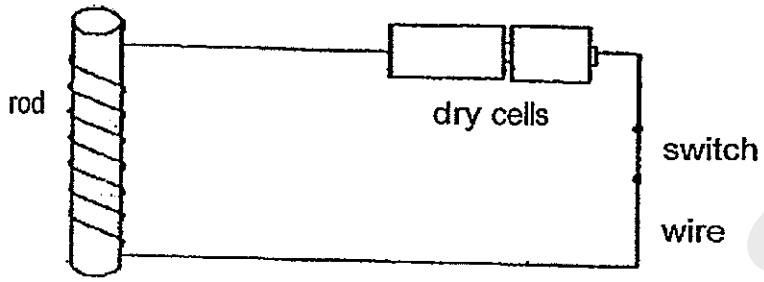
41. Kelly set up the electromagnet as shown below.



The electromagnet was brought near a tray of paper clips. The number of paper clips attracted to the electromagnet was recorded. After repeating the experiment with rods of different materials, they recorded their observation in the table below.

Material of rod	Number of paper clips attracted
A	10
B	0
C	5
D	2

(a) Other than the number of batteries, name two variables that Kelly would have to keep constant in this experiment. (1 mark)

i) _____

ii) _____

(b) Kelly concluded that material A is the best conductor of electricity. Do you agree with her? Explain your answer. (1 mark)

_____

_____

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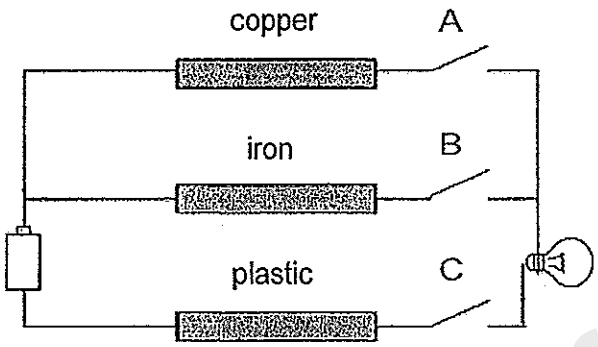
42. Matthias set up an electric circuit as shown below.



He made the following predictions about whether the bulb will light up when some switches are closed.

Prediction	Switches that are switched on	Did the bulb light up?
P	A and B only	Yes
Q	A and C only	Yes
R	B and C only	No

(a) Which one of the following predictions made are correct? (1 mark)

_____

(b) Explain your answer. (2 marks)

_____

_____

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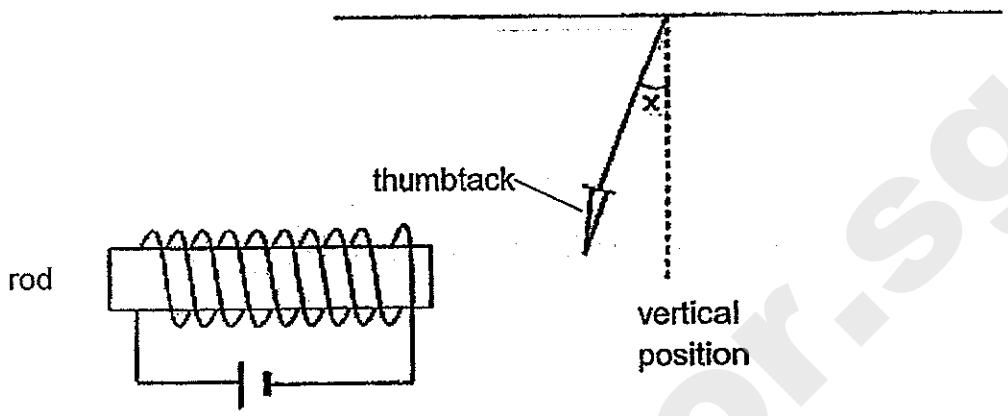
43. David set up an experiment as shown in the diagram below. He measured the angle made by the thumbtack from the vertical position as he increased the number of batteries. He recorded his observations in the table below.



Number of batteries	0	1	2	3
Angle x (degrees)	10	18	30	42

(a) State the aim of the experiment above. (1 mark)

_____

_____

(b) State the relationship between the number of batteries and the angle made by the thumbtack? (1 mark)

_____

_____

(c) State the measured variable in this experiment. (1 mark)

_____

(d) What is the conclusion of the experiment? (1 mark)

_____

_____

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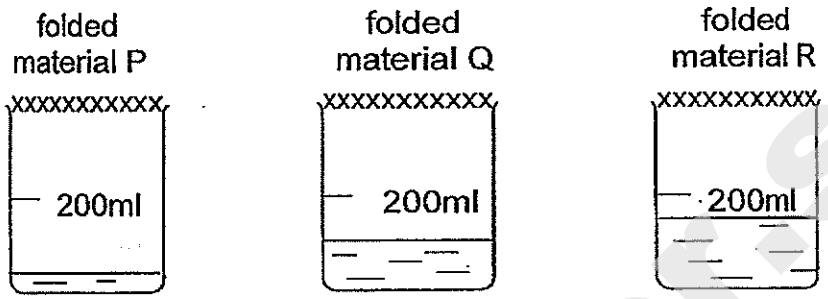
44. Jim carried out an experiment on 3 different materials P, Q, and R. He folded each material similarly and placed them on 3 similar empty beakers with a net over them. Then, he poured 200ml of water onto each type of material. The diagrams below show the observations at the end of the experiment.



(a) Explain why the amount of water collected in the three beakers were different. (1mark)

_____

_____

(b) Based on the above experiment, which material would you use to make a teabag. Explain your choice. (1mark)

_____

_____

End of Paper

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ANSWER SHEET

EXAM PAPER 2014
SCHOOL : ROSYTH
PRIMARY : P5
SUBJECT : SCIENCE
TERM : SA1

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

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

31)a)Plant cell. Cell D have a cell wall and only plant cells have cell walls.
b)A typical plant cell also have chloroplast but Cell D does not have chloroplast as it may be a root cell.

32)a)Cell wall — **The cell wall protects the cell like the armour protecting the knight.**

Nucleus — **The nucleus controls the cell like how the brain controls the body.**

33)a)As the number of leaves increases, the amount of water taken in by the plants increases.
b)To find out if roots is needed to take in water.
c)The presence of the roots is the only variable affecting the amount of water the plant take in.

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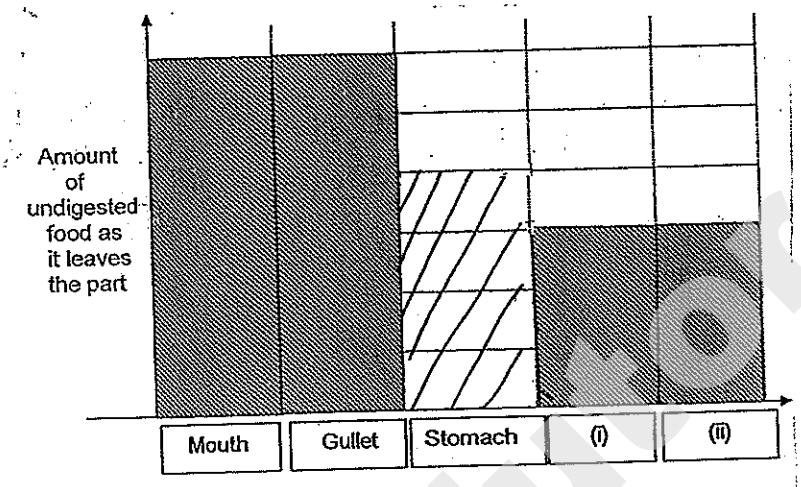
34)a)i)The amount of water given to the plants daily.
ii)The temperature of the surrounding air.
b)Set-up 4. The colour of the light is the same colour as the normal light, white.

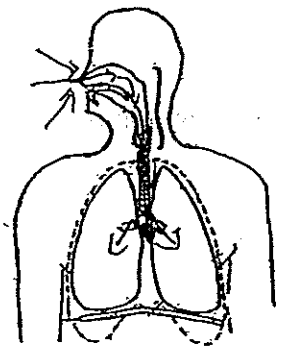
35)a)i)small intestine ii)large intestine
b)



36)a)As the heart rate increases, the body temperature increases.
b)During exercise, the respiratory system and circulatory system work harder to provide the body with more energy, as exercising requires more energy. The heart will pump faster to provide the body with more oxygen, thus the heart rate will increase.

37)a)i)Circulatory system. ii)Respiratory system.
b)The respiratory system takes in oxygen which is transported to the rest of the body by the circulatory system. The circulatory system pumps carbon dioxide to the lungs and the respiratory system helps remove carbon dioxide from the body.

38)a)



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38)b)It needs to take in more oxygen and give out more carbon dioxide.

39)a)windpipe
Lungs
b)The balloon would inflate when the rubber sheet was pulled, like our lungs when we breathe in. When the rubber sheet was let go, the balloon will deflate like our lungs when we breathe out.

40)a)X should be 0.
b)The more amount of water there in on the bread, the faster it would turn mouldy.
c)Bread E. The bread was toasted so there is less moisture, causing only a less growth of mould.
d)It reproduce by spores.

41)a)i)The size of the rod.
ii)The number of coils around the rod.
b)Yes. The rod made out of material A attracted the most number of paper clips, stating that the rod is the best conductor of electricity.

42)a)Prediction R.
b)When switch B and C are switched on, there are two pathways for electricity to flow through. As plastic is an insulator of electricity, electricity cannot pass through that path way. Even though iron is a conductor of electricity, there is an open circuit in the pathway where the electricity cannot flow through plastic, thus the bulb cannot light up.

43)a)To find out if the number of batteries affect the degree of Angle X.
b)As the number of batteries increases, the angle made by the thumbtack increases.
c)The degree of Angle X.
d)The number of batteries affect the degree of Angle X.

44)a)The materials allow different amount of water to pass through it.
b)R. It will allow most water to pass through the teabag.

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TAO NAN SCHOOL 道南学校

SINCERITY & PERSEVERANCE

PRIMARY 5 MID-YEAR EXAMINATION 2014

Name : _____ ( ) Date: 19 May 2014

Class : Primary 5 ( ) Time: 8.00 a.m – 9.45 a.m.

Duration: 1h 45min

Parent's Signature : _____ Marks: _____ / 60

SCIENCE
BOOKLET A

INSTRUCTIONS TO CANDIDATES

Write your name, register number and class.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

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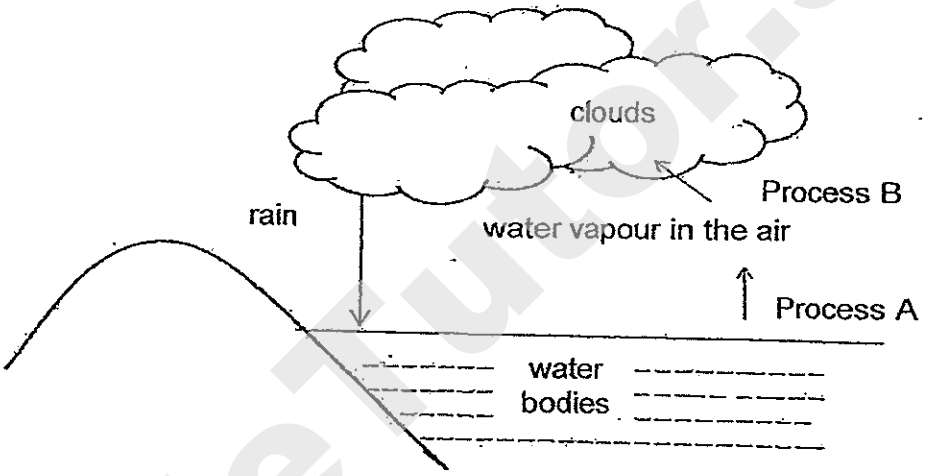
Section A (30 x 2 marks)

For each question from 1 to 30, four options are given. One of them is 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. Study the water cycle below.



Which of the following describes Process A and Process B?

	Process A	Process B
(1)	condensation	evaporation
(2)	evaporation	condensation
(3)	evaporation	freezing
(4)	boiling	condensation

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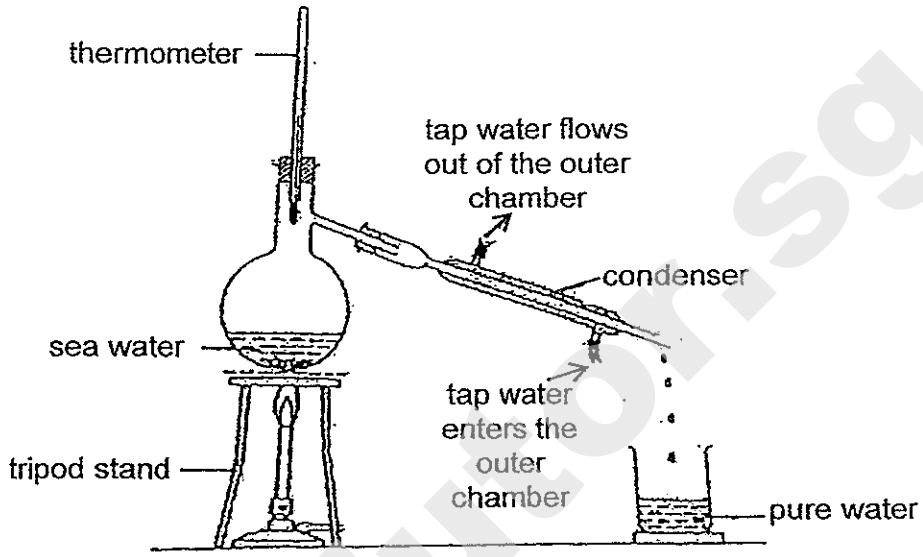
2. In the set-up below, the sea water is allowed to boil and pure water can be obtained at the end of the process. The steam from the boiling sea water enters the condenser.



The tap water flows around the outer chamber of the condenser and does 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 removes all the salt from the sea water.
(2) It controls the boiling point of 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.

3. Which 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) Leave the tap on when brushing teeth.
(4) Wash vegetables in a basin instead of a running tap.

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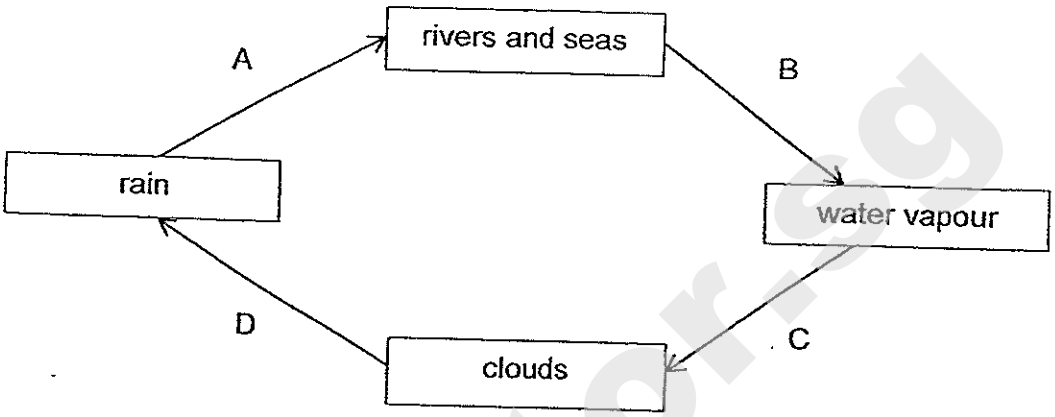
4. The diagram below shows the water cycle.



Which letter, A, B, C or D, represents a process that involves heat gain?

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

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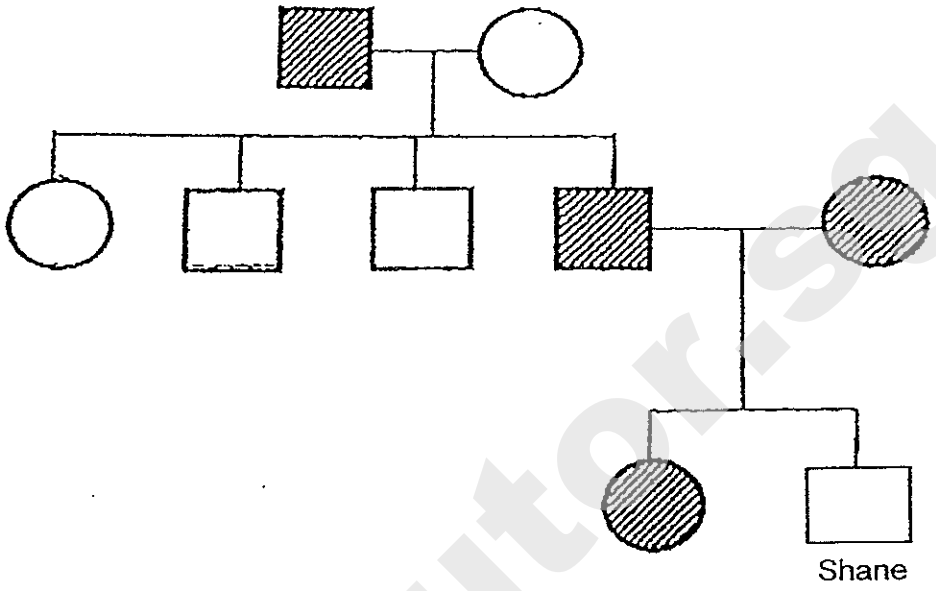
5. The diagram below shows Shane's family tree.



male with detached earlobes	female with detached earlobes
male with attached earlobes	female with attached earlobes

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

(1) Shane has 2 aunts with attached earlobes.
(2) Shane has 2 grandparents with detached earlobes.
(3) Shane inherited attached earlobes from his mother.
(4) Shane's sister inherited detached earlobes from her parents.

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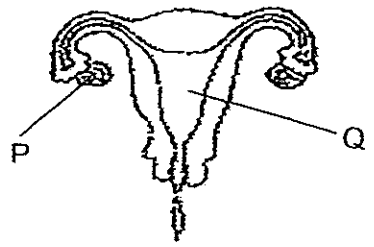
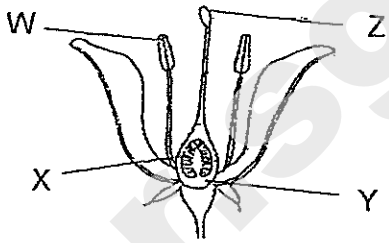
6. The diagrams below show the human and plant reproductive systems.

Human reproductive system	Plant reproductive system
	

Identify the parts where the female reproductive cells can be found in the human reproductive system and the plant reproductive system above.

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

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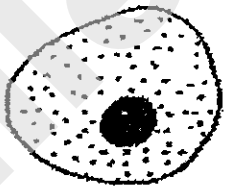
7. Which of the following statements is true about sexual reproduction in animals?

(1) The sperm is produced in the penis.
(2) After fertilisation, the foetus develops in the ovaries.
(3) The large intestine is part of the male reproductive organs.
(4) Fertilisation in humans occurs when a sperm fuses with an egg.

8. Which of the following is a unit of life for all living things?

(1) Cell
(2) Organ
(3) Tissue
(4) System

9. What is the cell shown below?



(1) Root cell
(2) Leaf cell
(3) Cheek cell
(4) Bacteria cell

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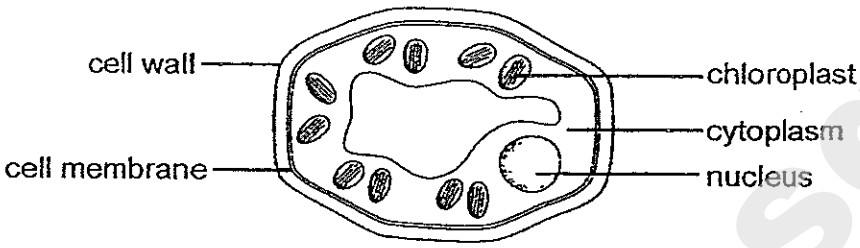
10. The diagram below shows a picture of a cell from a plant.



Which part of the plant is the cell most likely to be taken from?

(1) Root
(2) Leaf
(3) Tree bark
(4) Underground stem

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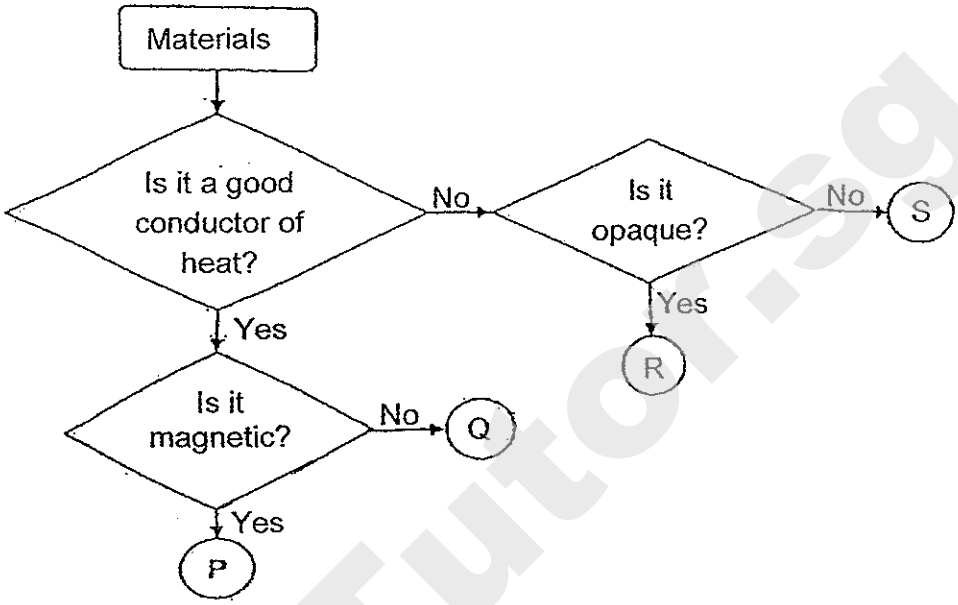
11. Study the flow chart below. Which materials are represented by P, Q, R and S respectively?



P

	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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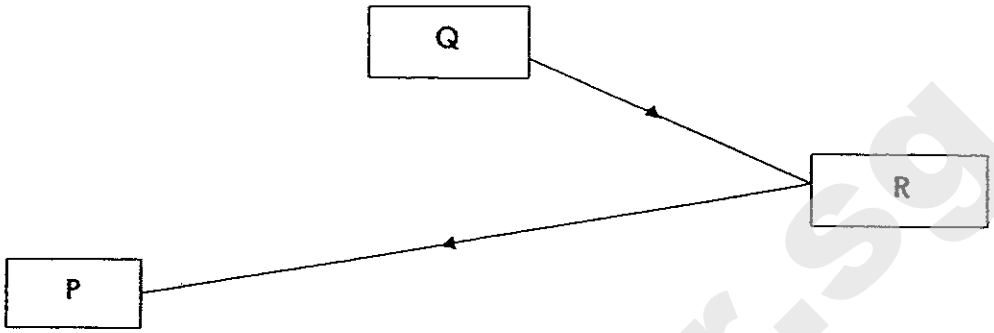
12. The diagram below shows the path of light that enabled Alexander to see the ball while playing soccer at the field.



What could **P**, **Q** and **R** be?

	P	Q	R
(1)	Ball	Sun	Alexander
(2)	Alexander	Ball	Sun
(3)	Sun	Alexander	Ball
(4)	Alexander	Sun	Ball

13. Which one of the following is **not** a source of light?

(1) Sun
(2) Stars
(3) Firefly
(4) Moon

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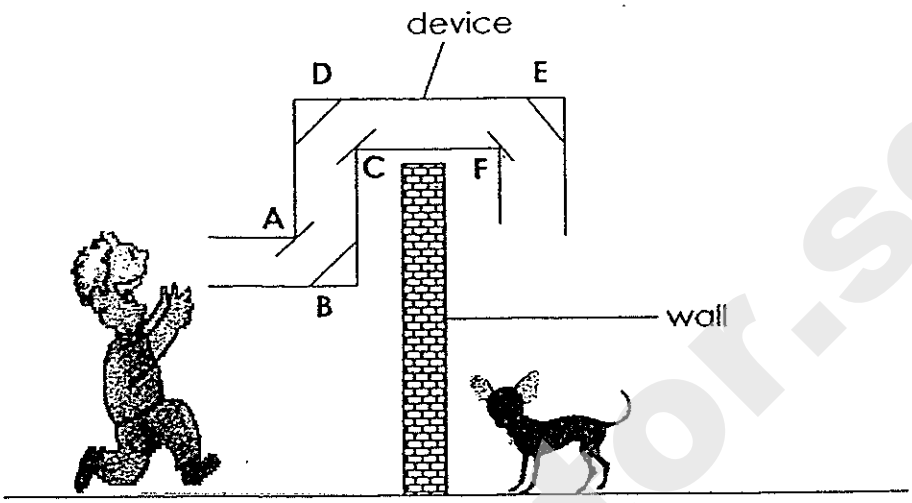
14. Wei Ming can hear a dog barking in his neighbour's garden. He wants to look at the dog but is blocked by a wall. He made a device to help him see the dog. A, B, C, D, E and F are mirrors.



Which mirrors will enable him to see the dog?

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

15. Sam placed both his hands into two containers of water at the same time. His right hand that was placed into container A felt warm. His left hand that was placed into container B felt cold. What were the temperatures of the water in the containers?

	Temperature of the water in container A (°C)	Temperature of the water in container B (°C)
(1)	25	15
(2)	45	40
(3)	15	40
(4)	40	15

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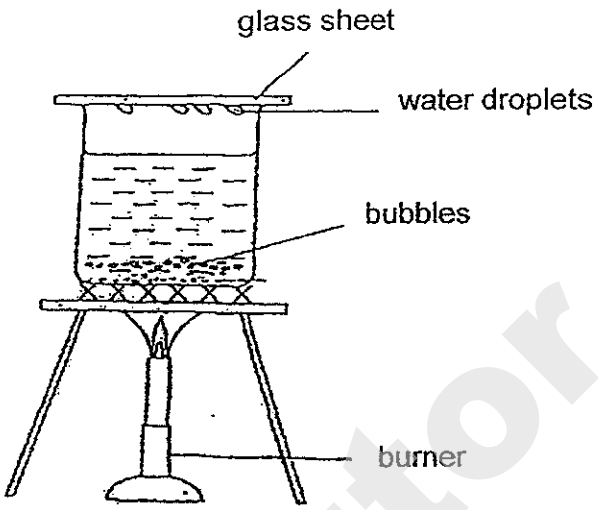
15. Study the experiment below.



Why did the water droplets appear on the inner surface of the glass sheet?

(1) The bubbles rose to the surface of the water and condensed into water droplets.

(2) The water vapour was cooler than the glass sheet and the water vapour condensed into water droplets.

(3) The glass sheet was cooler than the water vapour and the water vapour condensed into water droplets.

(4) The inner surface of the glass sheet was warmer than the outer surface so water droplets formed on it.

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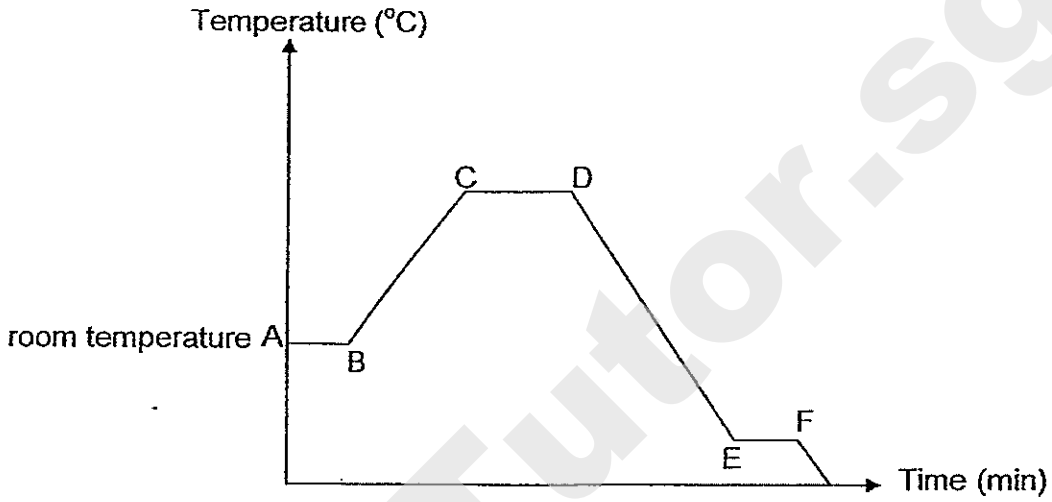
16. Veronica filled a beaker with tap water at room temperature and placed it on the stove to boil. She then placed the boiled water into the freezer immediately. She recorded the changes in temperature of the water over time throughout the experiment as shown in the graph below.



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

17. Which of the following statements about evaporation and boiling of pure water is true?

(1) Boiling involves water gaining heat but not evaporation.
(2) Evaporation takes places at any temperature but boiling takes place only at 100°C.
(3) Boiling involves a change from liquid state to gaseous state but evaporation does not.
(4) Evaporation takes place throughout the water but boiling takes place at the surface of the water.

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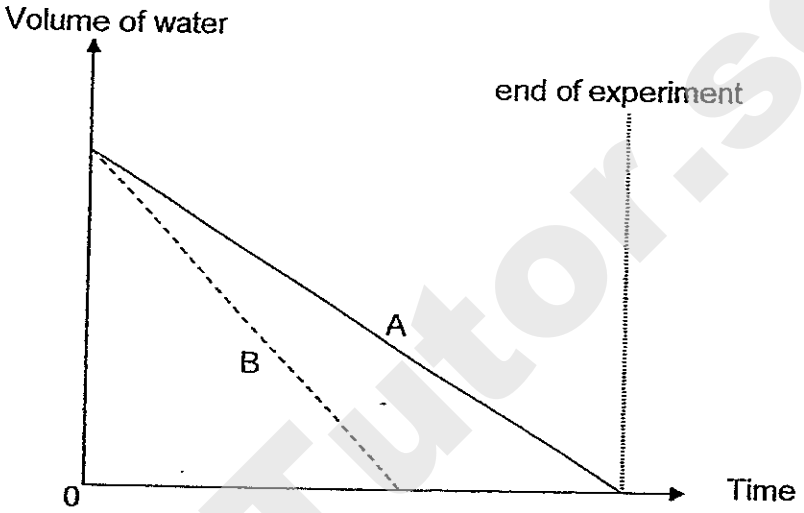
18. Lillian filled two identical containers with the same amount of water and then placed them in two different locations. She measured the volume of water left in each container at regular intervals over some time and plotted the graph below.



Based on the graph above, which of the following statement~~(s)~~ is/ ~~are~~ likely to be true?

(1) Container A was placed in a warmer location than Container B.
(2) Container B was placed in a more windy place than Container A.
(3) There was more water left in Container A than in Container B at the end of the experiment.
(4) The water in Container A but not that in Container B had evaporated completely at the end of the experiment.

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19. Geraldine conducted an experiment to find out if the temperature of water affects the rate of evaporation. She recorded the conditions in the set-ups for her experiment 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 she compare for her experiment?

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

20. Timothy saw a Bird's Nest Fern growing on the trunk of a tree at the Singapore Botanic Gardens.

How does the Bird's Nest 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 to make food.
(4) It gets water from the water-carrying tubes in the tree.

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21. Samantha went on a field trip and recorded the following characteristics of four different pollinators.

Pollinator	Characteristics
Organism A	• Attracted to large, strongly 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 flowers • Has a good sense of smell • Active at night

Samantha found two types of flowers and made some observations.

Flower	Observations
X	• White petals • Blooms in the evening • Produces a strong scent after the sun sets
Y	• Bright red petals • Blooms in the day • No scent

Based on the information above, which are the organisms that will most likely pollinate the 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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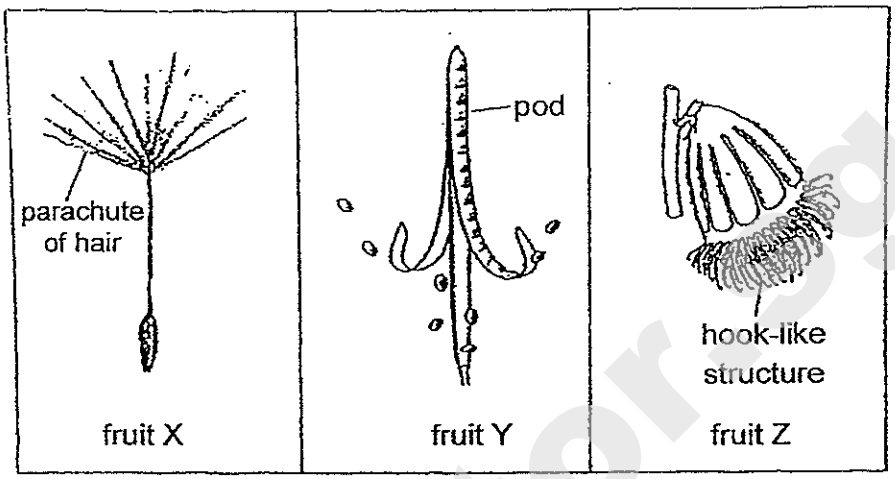
22. The diagrams below show some fruits (not drawn to scale).



Which 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 animal	By splitting	By wind
(3)	By water	By wind	By animal
(4)	By wind	By splitting	By animal

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23. Dylan 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 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) More seeds germinated when the temperature of the soil was higher.
(4) When the temperature of the soil increases, the number of seeds germinated decreases.

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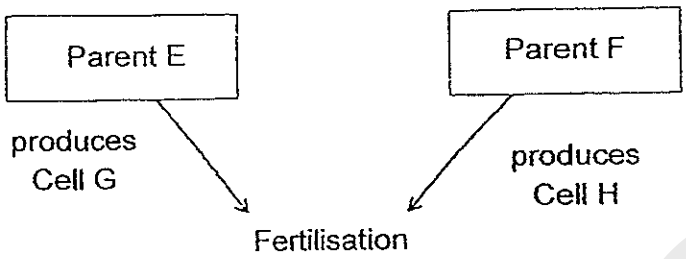
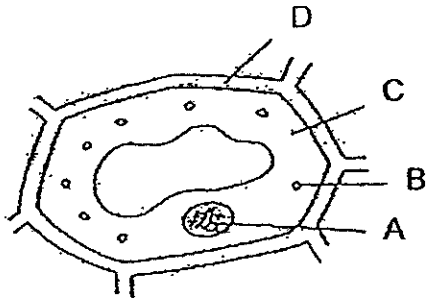
24. The diagram below shows the processes of human reproduction.



Which 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

25. In the cell diagram below, with the parts labelled, A, B, C and D, where is the genetic information stored?



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

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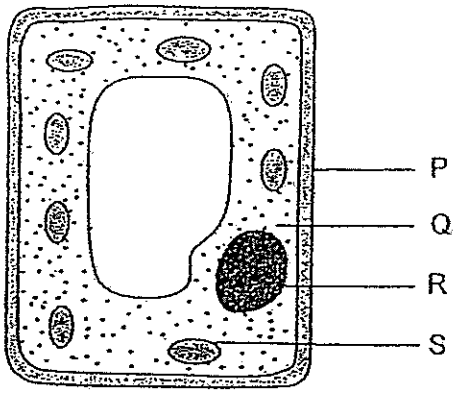
26. The diagram below shows a plant cell with the parts labelled, P, Q, R and S.



Which two parts of the plant cell are not found in animal cells?

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

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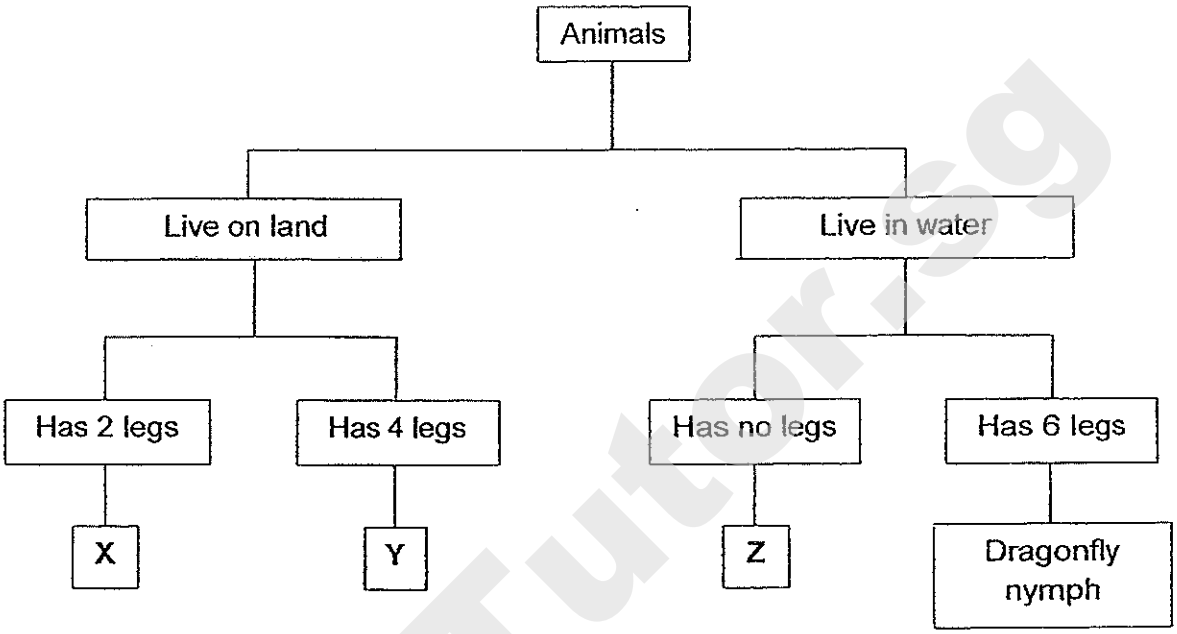
27. Study the classification chart below. X, Y and Z represent three different animals.



Which of the following shows correctly the animals represented by X, Y and Z?

	X	Y	Z
(1)	Chicken	Deer	Lizard
(2)	Fly	Dog	Frog
(3)	Penguin	Lizard	Toad
(4)	Chicken	Lion	Guppy

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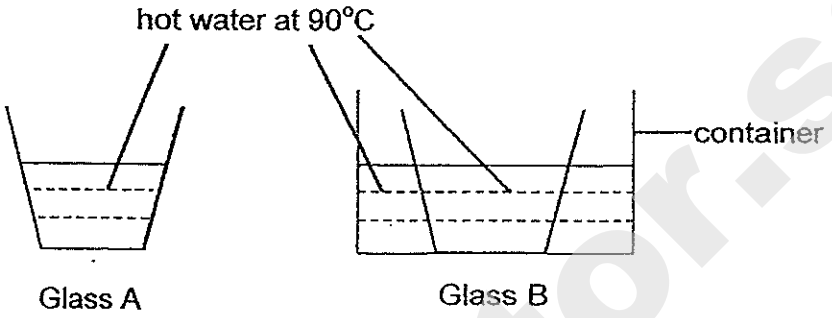
28 Amy carried out an experiment to find out how heat can affect matter. Hot water was poured into 2 glasses, Glass A and Glass B, of the same thickness as shown below. Glass B was placed in a container of hot water.



After some time, Glass A cracked but Glass B did not. Which of the following best explains what happened?

	Glass A	Glass B
1	Inner surface of glass expanded more than the outer surface.	Inner and outer surface of the 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.

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29. 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 surface of a hot plate (°C)	Time taken before his hand leaves the surface of the hot plate (min)
40	4
60	2
80	0.5

What conclusion can Martin make from the experiment?

(1) Heat travels from a hotter to a cooler place.

(2) Heat travels to Martin's hand faster if the temperature of the surface of the hot plate is lower.

(3) The hotter the surface of the plate, the faster Martin's hand leaves the surface of the hot plate.

(4) The temperature of the surface of the hot plate cannot be measured accurately by Martin's hand.

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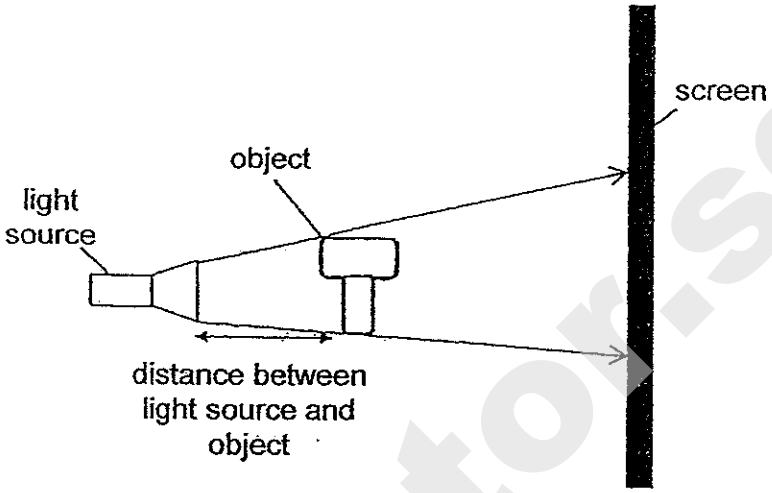
30. Karen placed an object between a light source and a screen as shown below.



Based on the diagram above, which of the following is correct?

(1) The shadow will be bigger if the screen is nearer the object.
(2) The shadow will be bigger if the object is nearer to the screen.
(3) The shadow will be bigger if the distance between the light source and object decreases.
(4) The shadow will be bigger if the distance between the light source and object increases.

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TAO NAN SCHOOL 道南学校

SINCERITY & PERSEVERANCE

PRIMARY 5 MID-YEAR EXAMINATION 2014

Name : _____ ( ) Date: 19 May 2014

Class : Primary 5 (Time: 8.00 a.m – 9.45 a.m.

Duration: 1h 45min

Parent's Signature : _____ Marks: _____ / 40

SCIENCE
BOOKLET B

INSTRUCTIONS TO CANDIDATES

Write your name, register number and class.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

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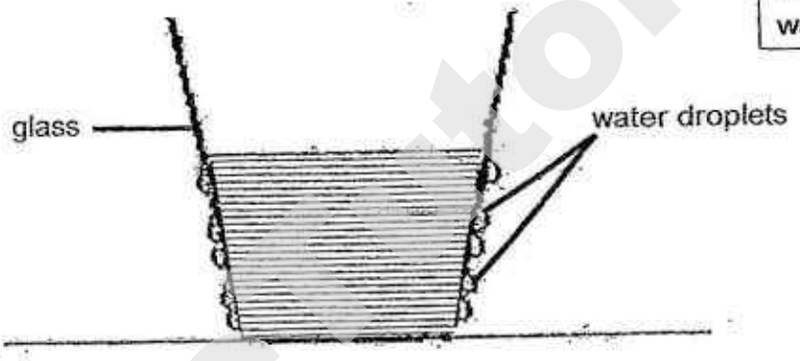
Section B (40 marks)

Write your answers to the questions, 31 to 44, in the spaces provided.

31. Michael placed a glass container on the kitchen table. After five minutes, he observed water droplets forming on the outer surface of the glass container as shown in the diagram below.

Temperature of surrounding air was 25°C.



Based on Michael's observation, what can you conclude about the temperature of the water in the glass container? Explain your answer. [2]

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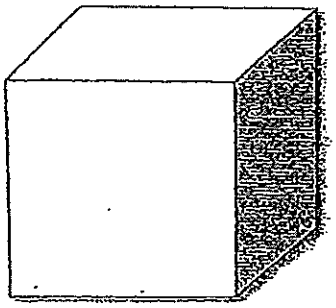
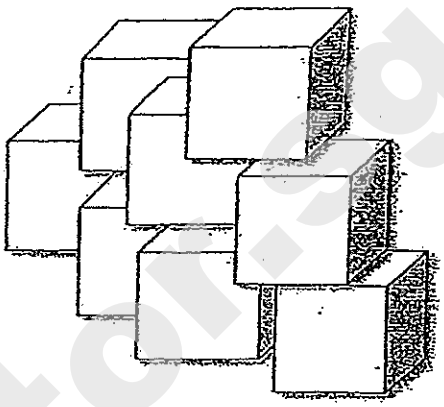
32. Bing Li had two litres of water. He used one litre of the water to make one ice cube A and the other litre of water to make eight identical ice cubes B.



Ice cube A
(one litre of water was used)



Eight ice cubes B
(one litre of water was used)

Bing Li observed that all eight ice cubes B took a shorter time to melt completely than ice cube A when they were left on the table for a period of time. Explain why this happened. [2]

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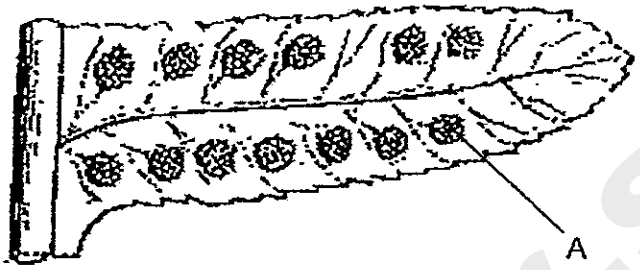
33. Study the picture of the underside of part of a fern leaf shown below.



(a) What are stored in the part labelled A? [1]

_____

[1]

_____

_____

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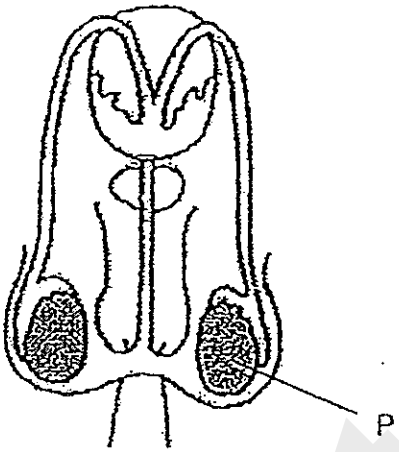
34. The diagram below shows the male reproductive system.



(a) Name the reproductive organ 'P' and state its function. [2]

Reproductive organ 'P'	Function
_____	_____ _____ _____

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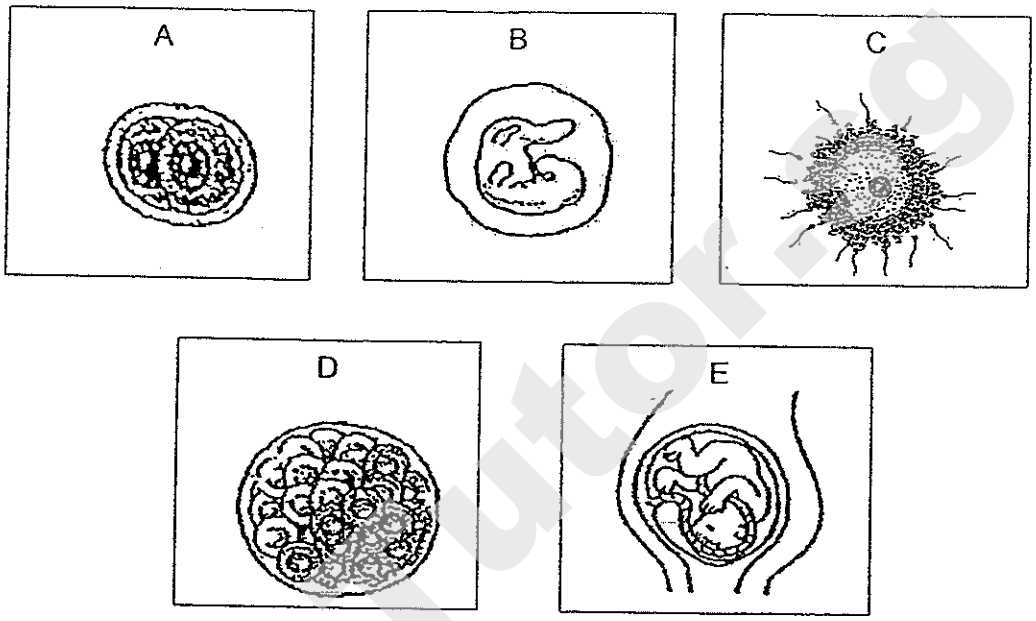
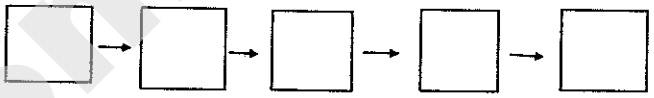
(b) The diagrams below show the different stages, A, B, C, D and E, in human sexual reproduction.



i. Fill in the boxes below with the letters, A, B, C, D and E, in the correct order to show the sequence of human reproduction. [1]



ii. At which stage does [1]

_____

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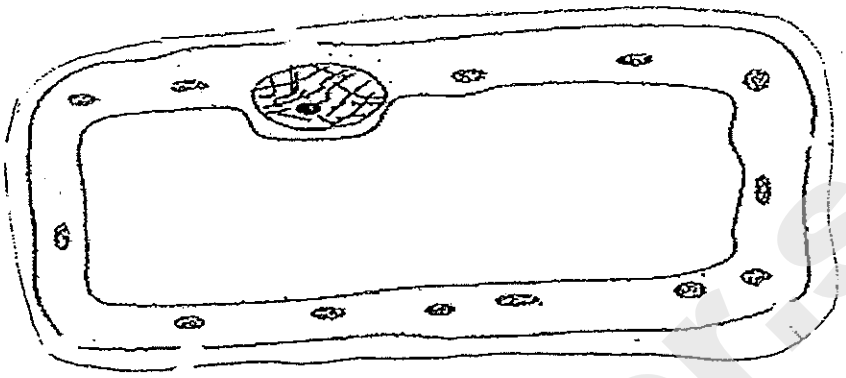
35. Study the plant cell drawn by Sally.



(a) Draw the missing part of the cell and label it. [2]

(b) State the function of the missing part in (a) [1]

_____

_____

(c) How is the typical root cell different from the cell shown in the diagram above? [1]

_____

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36. 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 accident was devastating. Marine life, like fishes and sea birds, were affected and died as a result.

(a) Give two possible reasons why the sea birds died due to the oil spill?. [2]

Reason 1:

_____

_____

Reason 2:

_____

_____

(b) Explain clearly how the oil spill will affect the fishes in the sea. [1]

_____

_____

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37. The table below shows the melting point 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

(a) Based on the information above, put a tick (✓) to indicate the state each of the substance will be in at 27°C. [2]

Substance	Solid	Liquid	Gaseous
A			
B			
C			
D			

(b) At what temperature will all four substances be in gaseous state? [1]

_____

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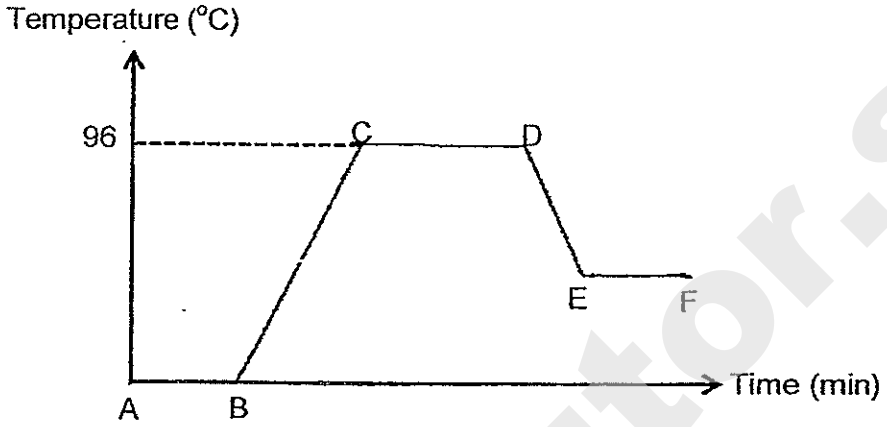
38. Substance X was heated and left to cool to room temperature. The graph below shows its temperature over time.



(a) What process is taking place from A to B? [1]

_____

(b) What is the change in state of Substance X from C to D? [1]

_____

(c) Tick (✓) the correct boxes to indicate whether Substance X gained or lost heat to the surroundings during the different time periods. [2]

	AB	BC	CD	DE
Heat Gain				
Heat Loss				

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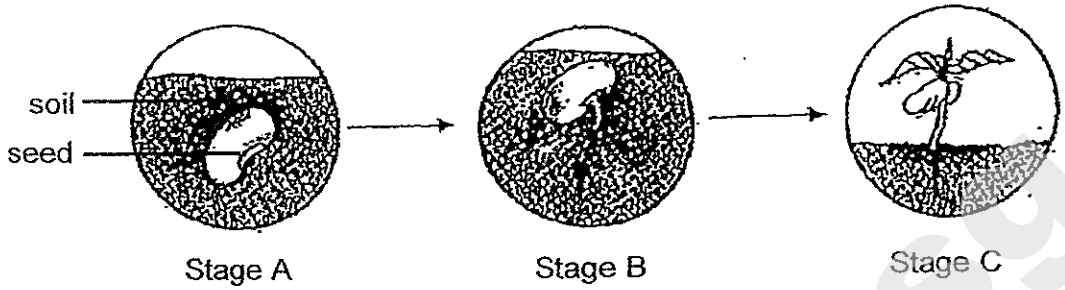
39. The diagram below shows the stages of growth of a green bean plant.



(a) At Stage B, where does the seedling get its food from? [1]

_____

(b) At which stage will the seedling be able to make its own food? Explain your answer. [1]

_____

_____

(c) Identify two conditions necessary for germination of green beans to take place. [1]

_____

_____

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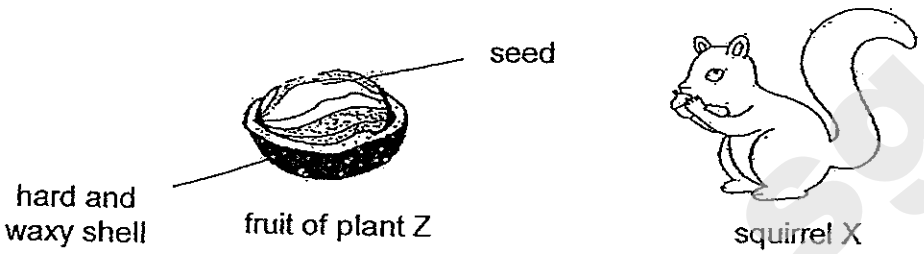
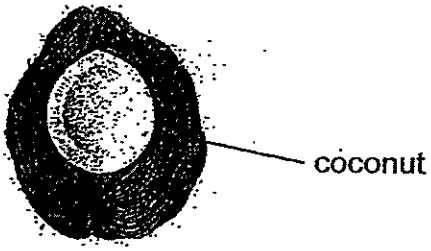
40. Squirrel X feeds on the seed of plant Z and helps in its dispersal.



During summer, squirrel X will break the shell of the fruit of plant Z and bury its seeds in different places to store food for winter. It will bury more seeds than it needs. Then, it does not return for some of them.

(a) Explain how the squirrel helps ~~to disperse the seeds of~~ plant Z when it buries each seed in a different place. ~~[2]~~ [1]

(b) The diagram below shows a coconut when it is cut in half.



Identify its method of fruit dispersal. Explain your answer. [1]

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41. A group of students carried out an experiment to find out the effectiveness of different types of herbs used in soap against bacteria. They put an equal amount of soap in four petri-dishes and measured the area of bacterial growth after two days.

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) What is the purpose of the set-up that contains only soap? [1]

(b) Which soap (Soap Only, Soap + Herb A, Soap + Herb B or Soap + Herb C) would you recommend for use against bacteria? Explain your choice. [1]

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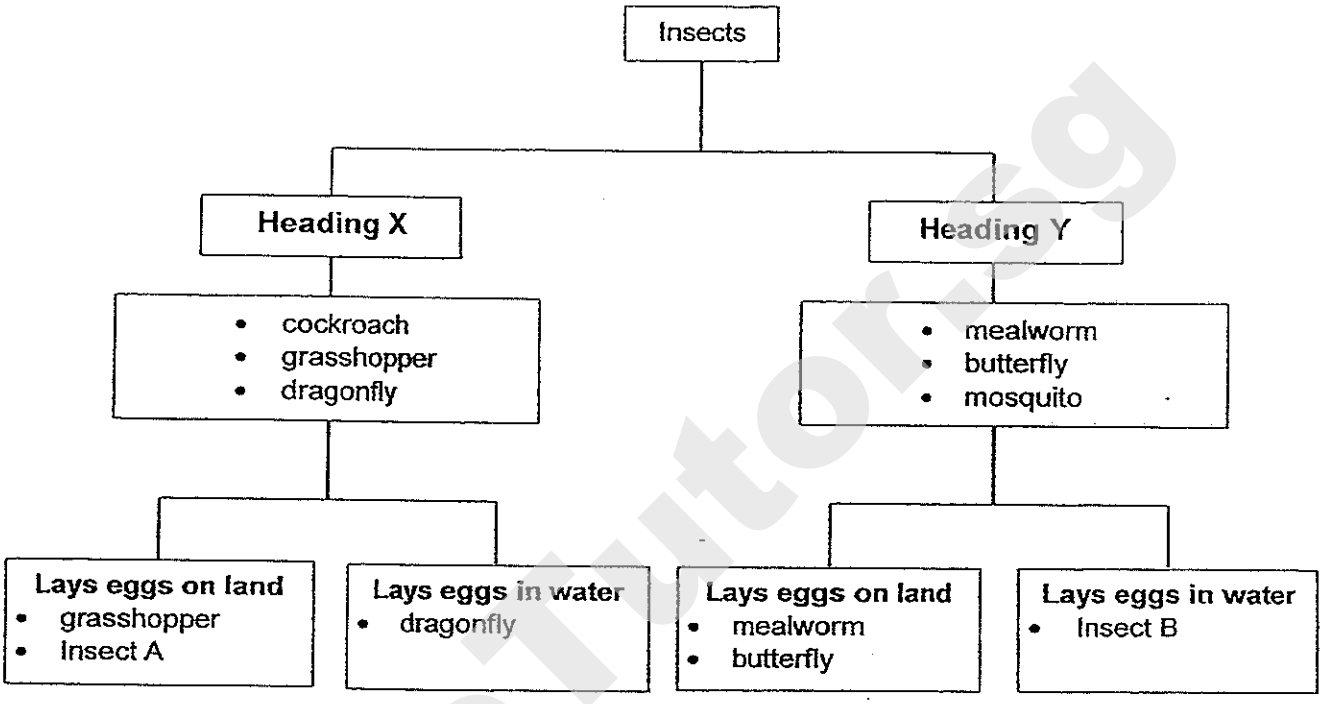
42. The classification chart below shows how some insects are classified.



(a) What do Heading X and Heading Y represent? [2]

Heading X: _____

Heading Y: _____

(b) Identify Insect A and Insect B. [1]

Insect A: _____

Insect B: _____

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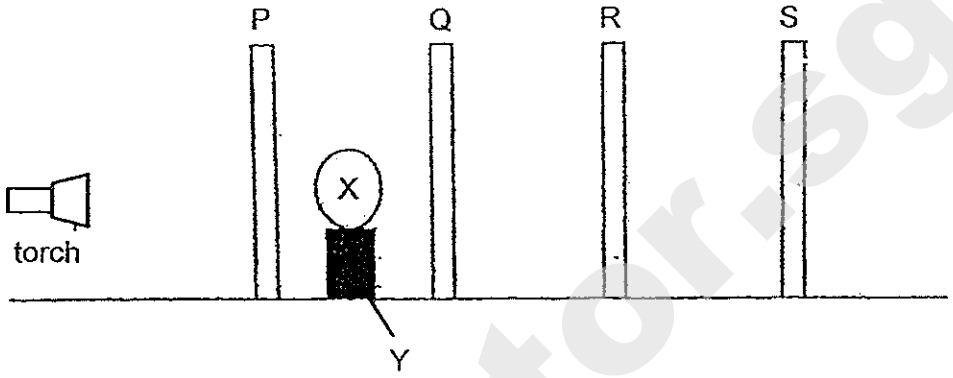
43. Edward sets up an experiment in a dark room as shown below. The screens, P, Q, R and S, are made of different materials. The objects, X and Y, are also made of different materials.



On Screen S, a dark shadow is formed for Object Y and a lighter shadow for Object X.

(a) Based on the information above, put a tick (✓) in the appropriate boxes. [2]

		True	False	Not Possible to Tell
i)	Screens Q and R allow light to pass through.			
ii)	Object Y is made of wood.			
iii)	Object X allows some light to pass through.			
iv)	Screen S does not allow light to pass through.			

(b) Identify the property of light shown by the experiment. [1]

_____

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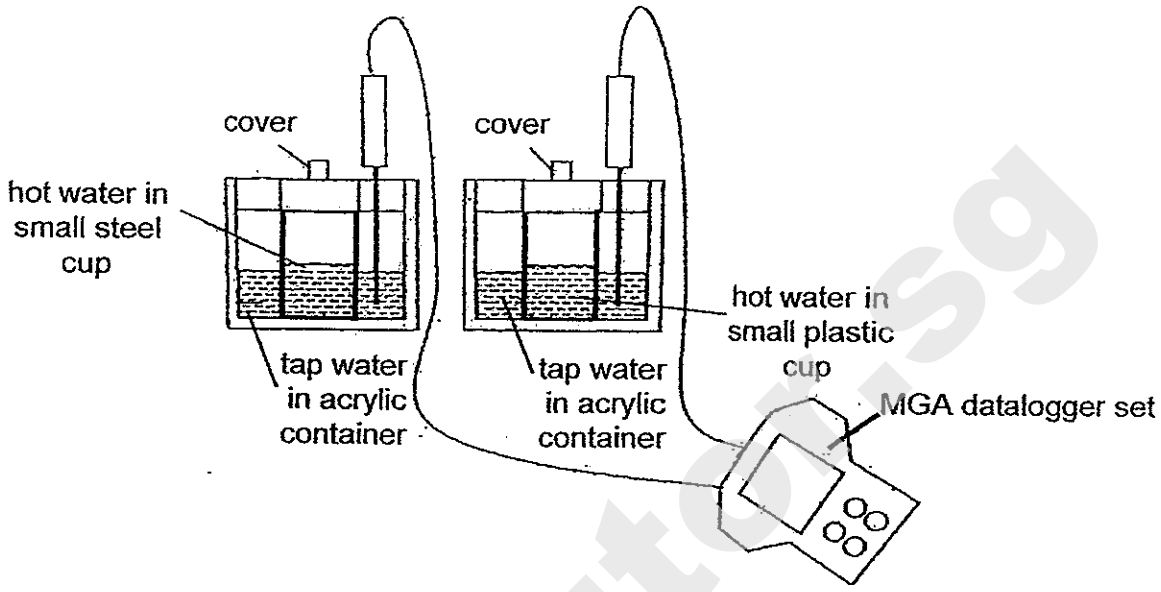
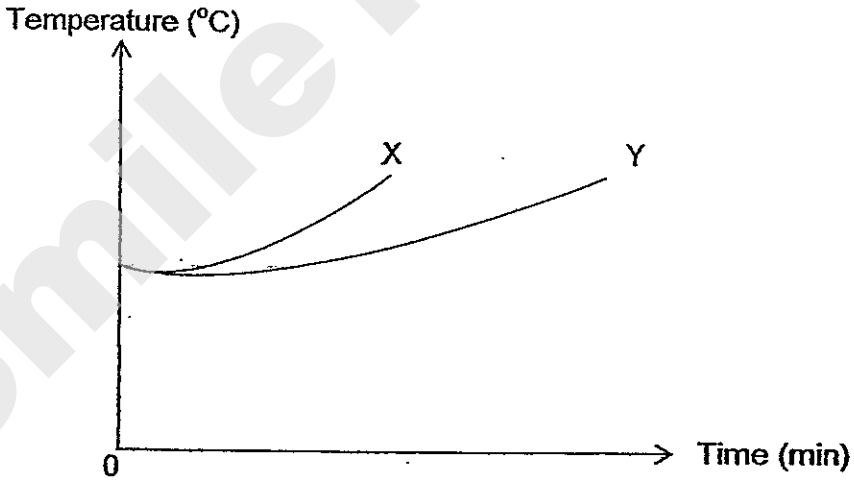
44. Ismail set up the following experiment in his classroom.



He recorded the change in temperature of tap water in each acrylic container as shown in the graph below.



(a) Which graph, X or Y, would represent the change in temperature of tap water in the acrylic container with the steel cup? Explain why. [2]

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(b) Based on the information given, which cup should Ismail use to store ice? [1]

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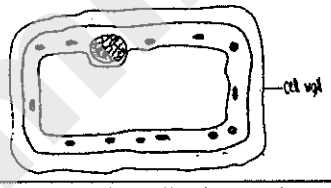
EXAM PAPER 2014
LEVEL : PRIMARY 5
SCHOOL : TAO NAN
SUBJECT : SCIENCE
TERM : SA1

Q1	2	Q7	4	Q13	4	Q19	4	Q25	1
Q2	3	Q8	1	Q14	3	Q20	3	Q26	2
Q3	4	Q9	3	Q15	3	Q21	3	Q27	4
Q4	2	Q10	2	Q16	3	Q22	4	Q28	1
Q5	4	Q11	4	Q17	2	Q23	1	Q29	3
Q6	1	Q12	1	Q18	2	Q24	3	Q30	3

Q31		The temperature of the water is lower than that of the surrounding air. There are water droplets on the surface of the glass container thus showing that condensation has taken place on the cooler surface of the glass container which has lost heat to the water.
Q32		The eight ice cubes B have larger exposed surface area than ice cube A. Therefore, they gained heat faster.
Q33	(a)	Spores are stored in the part labelled A.
	(b)	The spores of the fern will be dispersed and grow into adult ferns, so they are important to the ferns.
Q34	(a)	Testis → to produce sperms.
	(b)	(i) C→A→D→B→E (ii) Fertilisation occurs at stage C.
Q35	(a)	
	(b)	The cell wall gives the plant cell its shape.
	(c)	The cell shown in the diagram above has chloroplasts but the typical root cell does not have chloroplasts.
Q36	(a)	Reason 1: The oil clamped the sea birds' feathers and they could not fly to look for food so they died of starvation. Reason 2: The oil clamped the sea birds' feathers and the sea birds could not keep themselves warm so they died due to the cold.
	(b)	Fishes might die from the lack of dissolved oxygen as the oil floats on the water and forms a thin film on the surface.
Q37	(a)	Substance A → liquid Substance B → liquid Substance C → Solid Substance D → Gaseous
	(b)	600°C

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Q38	(a)	melting
	(b)	Substance X changes from the liquid state to the gaseous state from C to D.
	(c)	Heat Gain → AB,BC,CD Heat Loss → DE
Q39	(a)	At stage B, the seedling gets its food from the seed leaf.
	(b)	The seedling will be able to make its own food at Stage C. At stage C, the seedling have grown leaves so it will be able to make its own food.
	(c)	Water and warmth
Q40	(a)	The squirrel prevents overcrowding and when the seeds of plant Z germinate and grow into seedlings, they do not have to compete with one another for sunlight, water, space and mineral salts.
	(b)	Water. The coconut has a fibrous husk to help it float on water so its method of fruit dispersed is in water.
Q41	(a)	It is to act as a control set-up to prove that it is the herb that affects the area of bacterial growth.
	(b)	Soap + Herb C. The soap with Herb C used in it had the smallest area of bacterial growth, showing that Herb C is the most effective when used in soap against bacteria and would prevent bacteria from multiplying. Hence, I would recommend Soap + Herb C for the use against bacteria.
Q42	(a)	Heading X : 3-stages life cycle Heading Y : 4-stages life cycle
	(b)	Insect A : cockroach Insect B : mosquito
Q43	(a)	(i) True (ii) Not possible to tell (iii) True (iv) True
	(b)	Light travels in a straight line.
Q44	(a)	Graph X would represent temperature change. The steel cup is the better conductor of heat thus the heat was conducted from the hot water in the steel cup to the tap water in the acrylic container faster.
	(b)	Ismail should use the plastic cup to store ice.

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Anglo-Chinese School (Primary)

END-OF-YEAR EXAMINATION 2014
SCIENCE
PRIMARY FIVE
BOOKLET A

Name: _____ ( ) **Class: Primary 5** ___

Date: 30 October 2014 **Duration of paper: 1 h 45 min**

_____
Parent's/Guardian's signature

INTRUCTIONS TO CANDIDATES

1. This question paper consists of 26 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 you 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 the characteristics of animals P, Q and R.

Characteristics	P	Q	R
Does the animal lay eggs?	Yes	No	Yes
Does the animal have six legs?	No	No	Yes
Does the animal have hair or fur on their bodies?	No	Yes	No

Based on the information, which one of the following correctly identifies animals P, Q and R?

	Animal P	Animal Q	Animal R
(1)	Chicken	Frog	Cockroach
(2)	Ostrich	Whale	Mosquito
(3)	Grasshopper	Penguin	Mosquito
(4)	Duck	Monkey	Caterpillar

2 Which one of the statements below shows that living things respond to changes?

(1) A shoot growing into an adult plant.
(2) A boy running to the canteen for lunch.
(3) A hen laying eggs that hatches into chicks.
(4) A girl shivering after coming out from a cold room.

(Go on to the next page)

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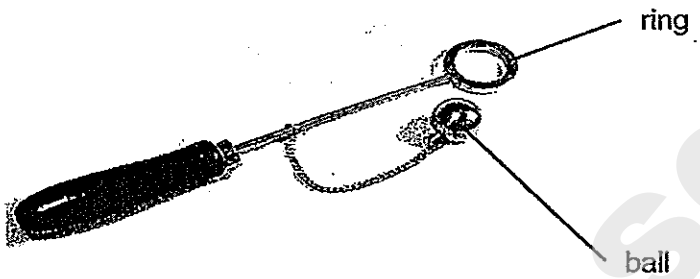
3 The ring and ball apparatus shown in the diagram below were made of the same metal.



At room temperature, the ball was able to pass through the ring. After the ball was heated for five minutes, the ball was unable to pass through the ring.

Which one of the following correctly explains this observation?

	The Ball	The Ring
(1)	remained the same size	expanded
(2)	expanded	contracted
(3)	expanded	remained the same size
(4)	contracted	remained the same size

(Go on to the next page)

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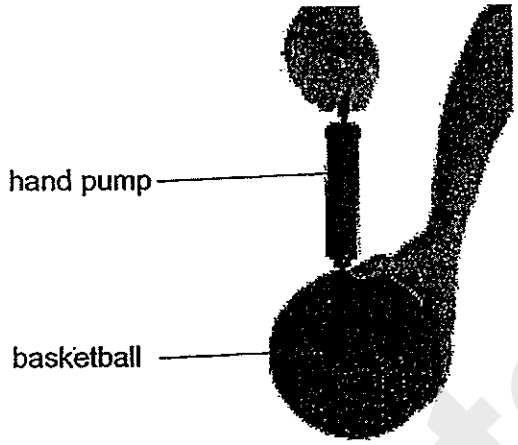
4 A basketball was pumped by a hand pump as shown in the diagram below. After the basketball was fully pumped, another 100cm^3 of air was pumped into it. The basketball retained its shape and did not burst with additional air being pumped into it.



Which characteristic of air is shown in this action?

(1) Air has mass.
(2) Air occupies space.
(3) Air can be compressed.
(4) Air does not have a definite shape.

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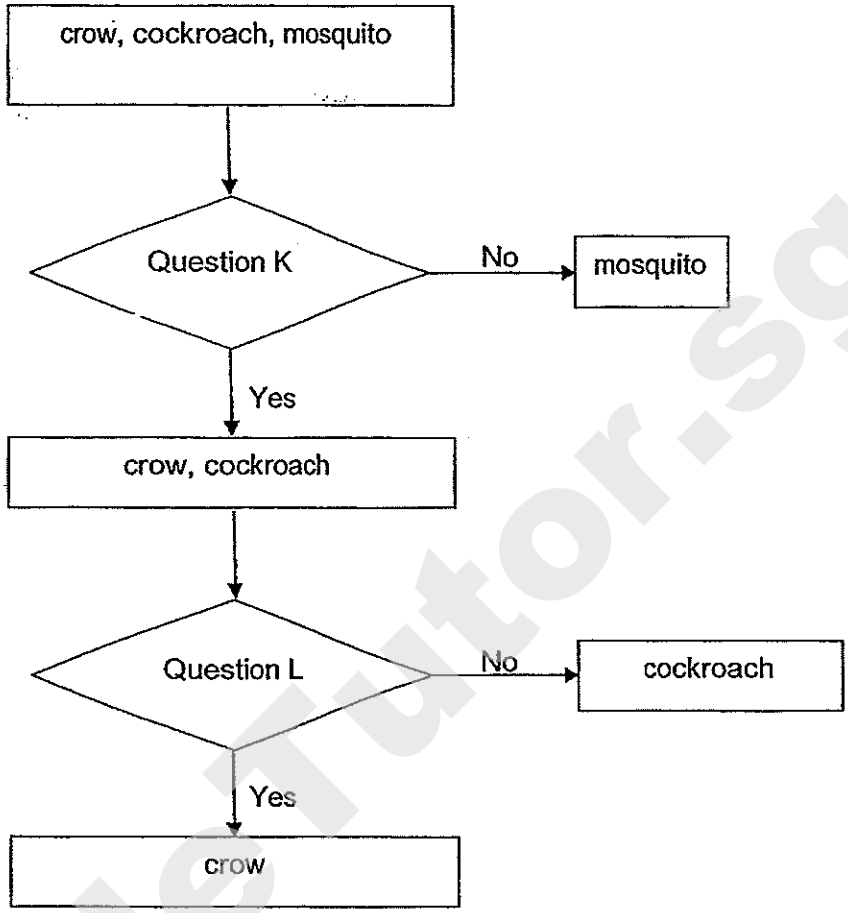
5 Study the flow chart below carefully.



Based on the flow chart above, what should questions K and L be?

	Question K	Question L
(1)	Does it go through a four-stage life cycle?	Does the young resemble its adult?
(2)	Does it go through a three-stage life cycle?	Does the young have wings?
(3)	Does the young resemble its adult?	Does it go through a three-stage life cycle?
(4)	Does the young have wings?	Does it go through a three-stage life cycle?

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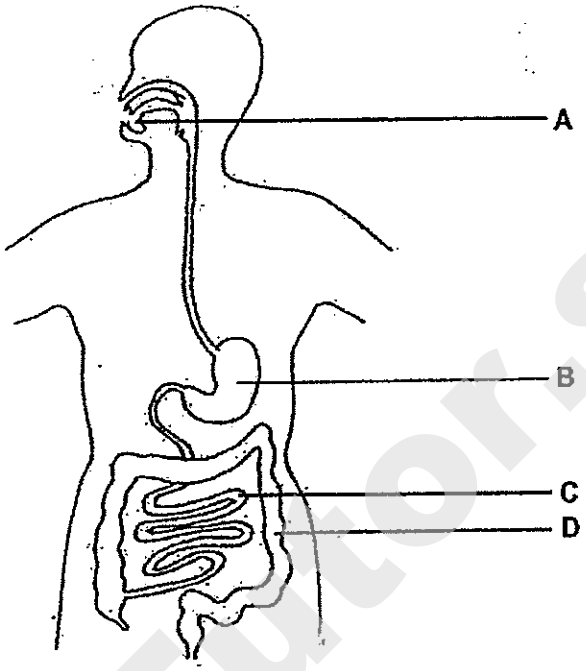
6 The diagram below shows the human digestive system.



At which part(s) of the system is/are the digestive juices produced?

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

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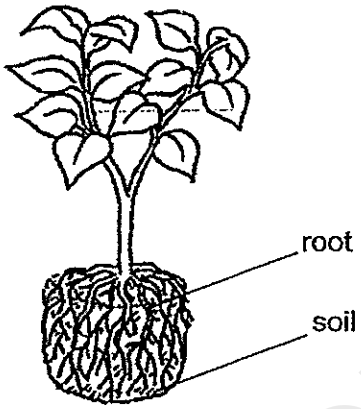
7 Gary observed a plant that was removed from a pot and noticed that the roots were wrapping the soil as shown below.



He made some notes on what he had observed:

A The roots help to hold the plant to the soil.

B The roots help the plant to hold onto the pot.

C The roots help to absorb water from the soil for the plant to grow.

Which of the statement(s) is/are correct?

(1) C only

(2) A and B only

(3) A and C only

(4) B and C only

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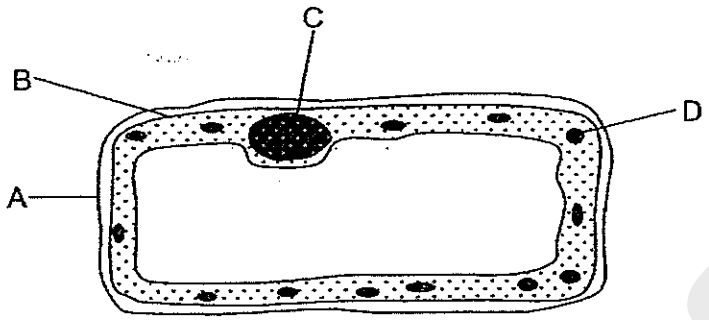
8 The diagram below shows the different parts of a plant cell.



Which cell parts can also be found in an animal cell?

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

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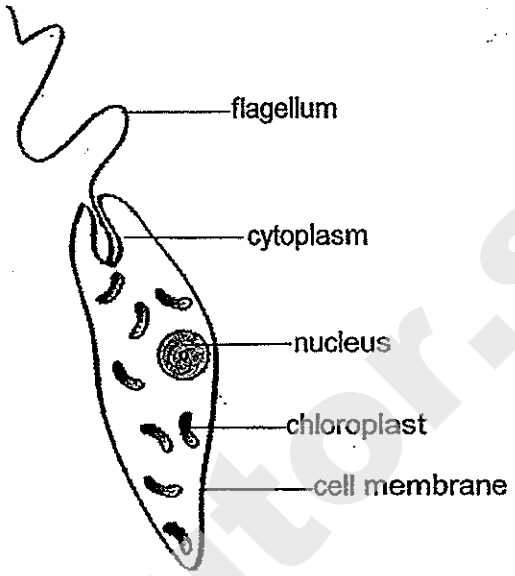
9 The diagram below shows a one-cell organism that lives in the pond. The flagellum helps the cell to move about in the water. It has been observed that this cell moves near the surface of the pond only in the day.



Which statement(s) explains why the cell needs to move to the surface in the day?

A The cell needs to look for food near the surface.

B The cell needs to gain heat from the sun to keep warm.

C The cell needs to trap sunlight near the surface for photosynthesis.

(1) A only

(2) C only

(3) A and C only

(4) B and C only

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10 The diagrams below show the cross-sections of a flower and the female reproductive system.

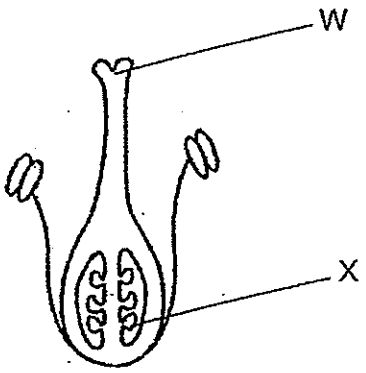

Diagram 1

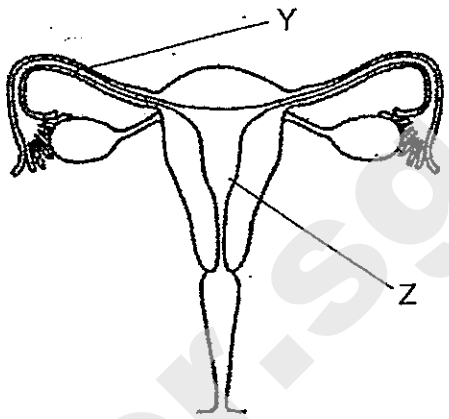

Diagram 2

Referring to the diagrams above, where does fertilisation take place in a flower and in a female reproductive system?

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

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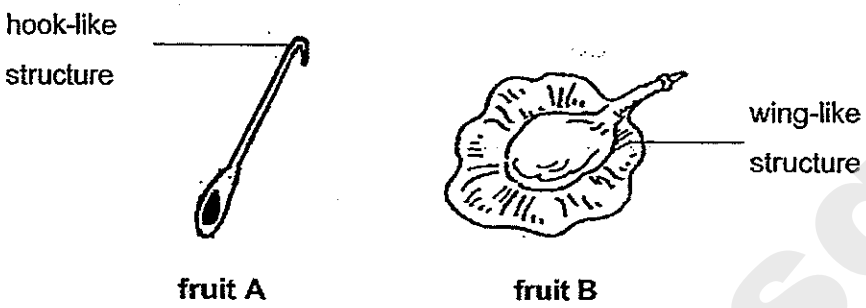
11 Compare the two fruits shown in the diagram below.



fruit A **fruit B**

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

A Fruit B is dispersed by wind.

B Both fruits are dispersed by water only.

C Fruit A clings onto the outer covering of animals.

(1) B only

(2) C only

(3) A and B only

(4) A and C only

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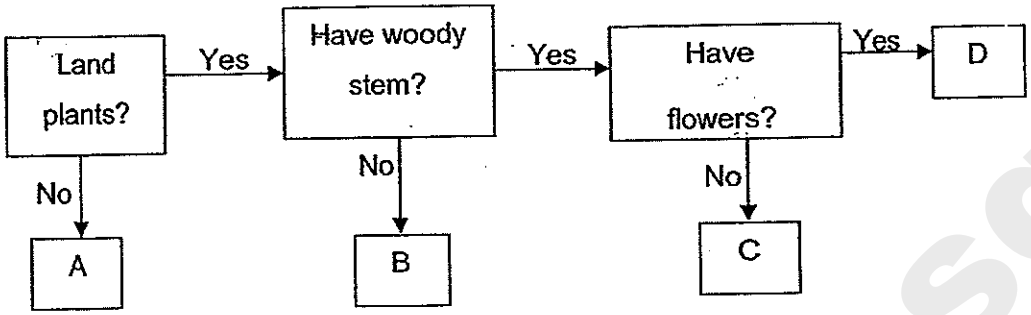
12 The flow chart below shows some of the characteristics of plants A, B, C and D.



Based on the flow chart above, which one of the following statements is correct?

(1) Plant A is a land plant.
(2) Plant B has a strong stem.
(3) Plant C has a woody stem and reproduces from seeds
(4) Plant D is a non-flowering plant that does not have a woody stem.

13 Which of the following statement(s) about the reproduction of flowering plants is/are true?

A All flowers have male and female parts.
B During pollination, pollen grains fuse with the stigma.
C The ovule becomes the seed before fertilisation takes place.
D Flower petals are brightly coloured to attract insects for pollination.

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

(Go on to the next page)

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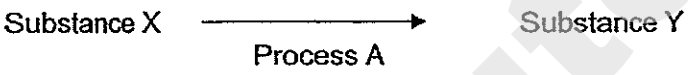
14 The table below describes two properties of substances X, Y and Z.

Substance	Property one	Property two
X	Definite shape	Definite volume
Y	No definite shape	Definite volume
Z	No definite shape	No definite volume

Substance X undergoes a process to become substance Y as shown in the diagram below.



Which one of the following is likely to be Process A?

(1) Boiling
(2) Melting
(3) Evaporation
(4) Condensation

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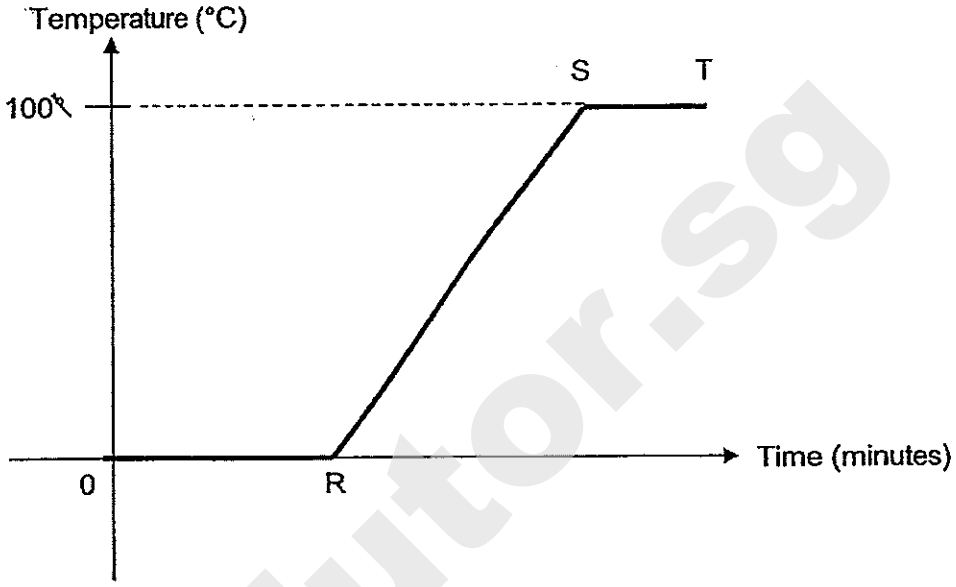
15 The graph below shows how the temperature of substance X changed when it was heated with a bunsen burner.



What happened to substance X from R to S?

A Substance X was melting to become liquid.
B The temperature of substance X was increasing.
C Substance X was gaining heat from the flame of the bunsen burner.

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

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16 Jim wanted to find out which type of material allows ice to melt the fastest. He wrapped some ice in each type of material and recorded the time taken for all of the ice to melt completely. Which two variables should he keep the same in order to have a fair test?

A Temperature of the surrounding air
B Type of material used to wrap the ice
C Amount of ice wrapped in each material
D Time taken for the ice to melt completely

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

17 Which one of the following statements describes how we can contribute to water conservation?

(1) John uses the water hose to wash his car.
(2) Lily turns on the tap while putting shampoo to her hair.
(3) Kathy takes a long bath after a hot day working at the farm.
(4) Peter uses the water that he had used to wash vegetables to water the plants.

(Go on to the next page)

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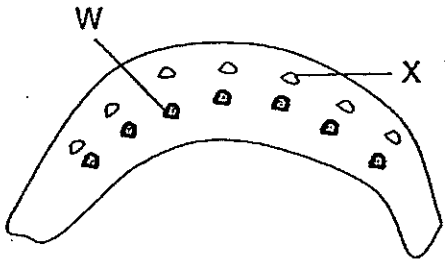
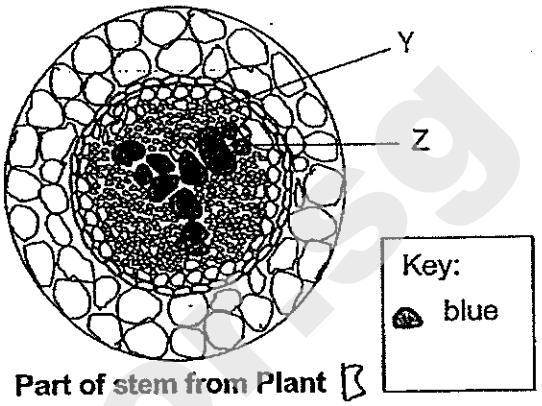
18 Mrs Tan put the stems of plant A and plant B in blue-coloured water. After a day, she cut a part of the stem from each plant and observed them under a microscope. The diagrams below show the cross-section of each plant part.



Part of stem from Plant A



Part of stem from Plant B

Based on the diagram above, which is/are the water-carrying tube(s)?

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

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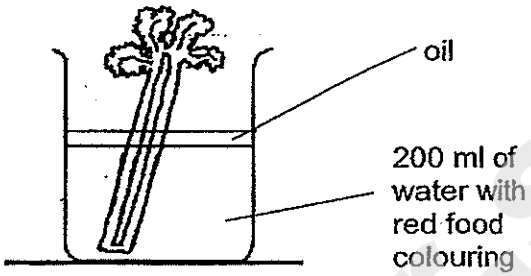
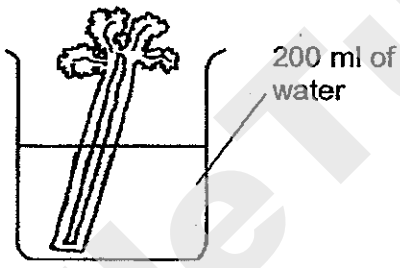
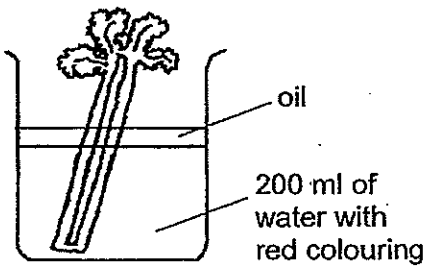
19 Juliet wants to find out if the tubes found in celery stalks transport water upwards. She sets up the experiment as shown below. Which one of the following should she use as a control?



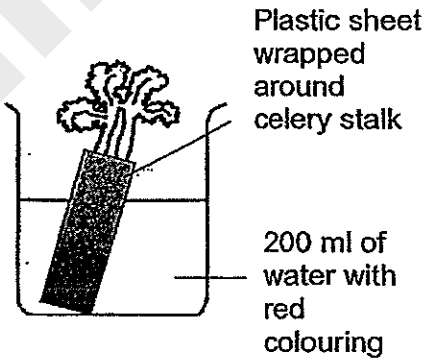
(1)



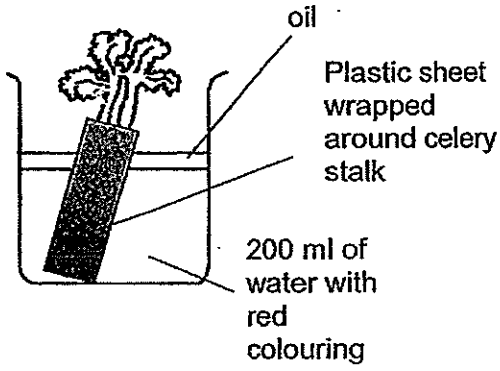
(2)



(3)



(4)



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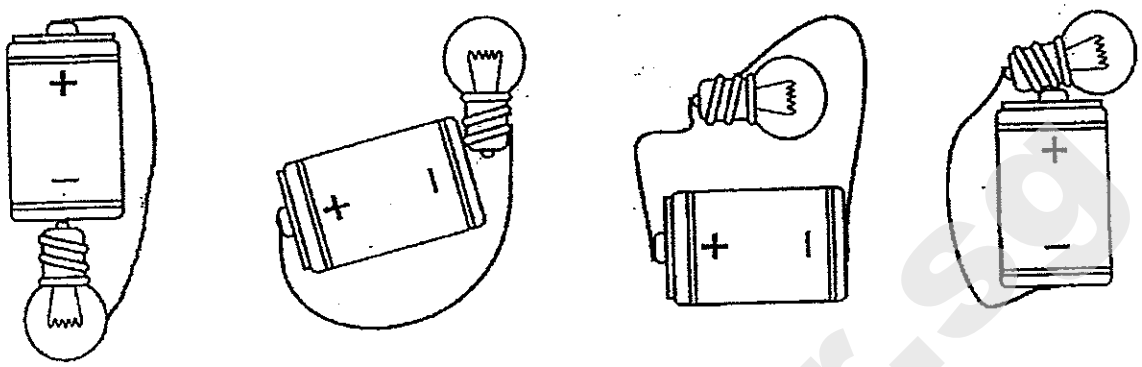
20 The diagrams below show different arrangements of a battery, a bulb and some copper wires. All components are in working conditions.



A B C D

In which two of the following circuits will the bulb light up?

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

21 Jian Yong ate a bowl of cereal before he went for a run at the stadium. Which two body systems work with the circulatory system to enable him to have energy to run?

(1) Muscular and skeletal systems
(2) Digestive and skeletal systems
(3) Muscular and respiratory systems
(4) Digestive and respiratory systems

(Go on to the next page)

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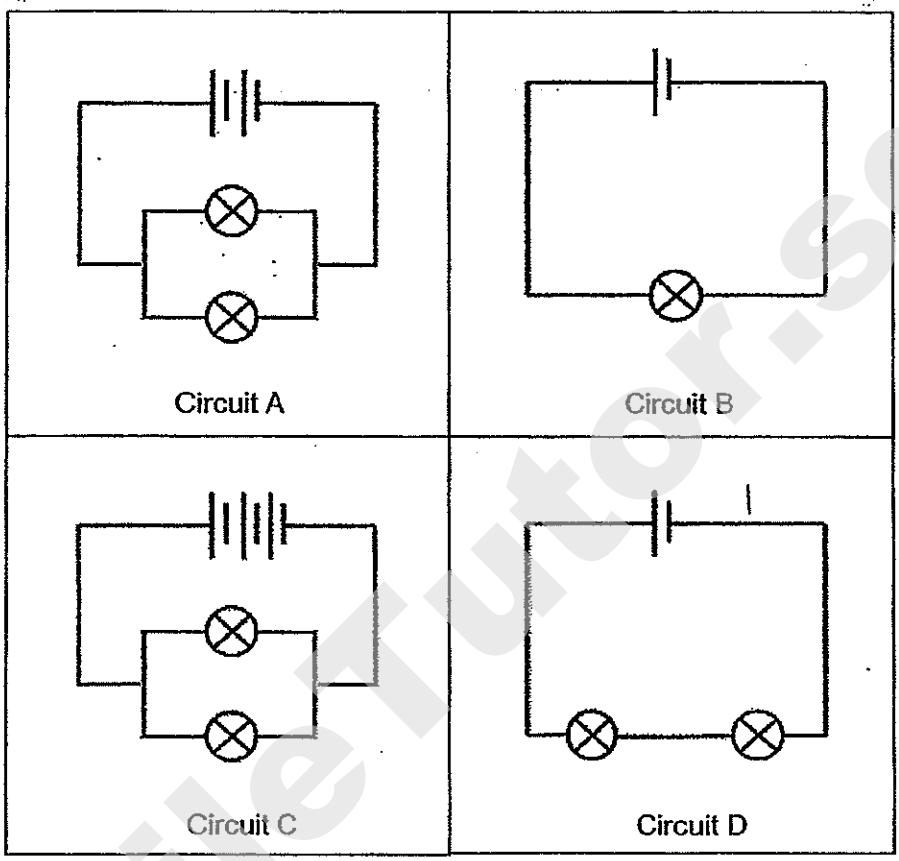
22 Study the four electric circuits A, B, C and D as shown below. The bulbs and the batteries in the four electric circuits are identical and are all in working conditions. All the bulbs in the four electric circuits are lit up.



Which one of the following correctly shows the brightness of the bulbs arranged from the dimmest to the brightest?

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

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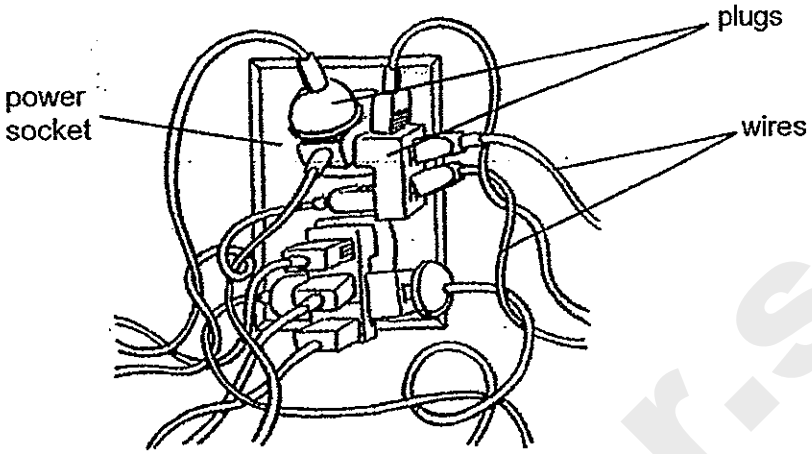
23 Study the diagram below carefully.



Overloading at the power socket can cause an electrical hazard because it _____.

(1) looks very untidy.
(2) may cause an electrical fire.
(3) may cause someone to trip over the wires.
(4) may cause the appliances to break down faster.

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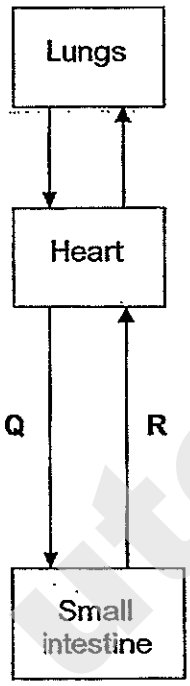
24 The diagram below shows the direction of blood flow in some parts of the human body.



What are the differences in the amount of oxygen and the amount of digested food between the blood in Q and the blood in R after a meal?

	Q		R	
	Oxygen	**Digested food**	**Oxygen**	**Digested food**
(1)	Less	More	More	Less
(2)	More	More	Less	Less
(3)	More	Less	Less	More
(4)	Less	Less	More	More

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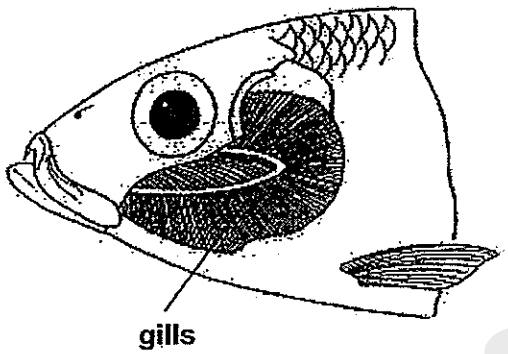
25 The diagram below shows the gills of a fish.



How do the gills help the fish to breathe in water?

A It allows gaseous exchange.
B It is able to remove carbon dioxide out of the body.
C It has a large surface area to take in dissolved oxygen.
D It contains many blood vessels which carry the oxygen to other body parts.

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

26 Which one of the following is not a trait that is passed on from parents to their offspring in a human being?

(1) Double eyelids
(2) Natural long hair
(3) Ability to roll tongue
(4) Presence of dimples

(Go on to the next page)

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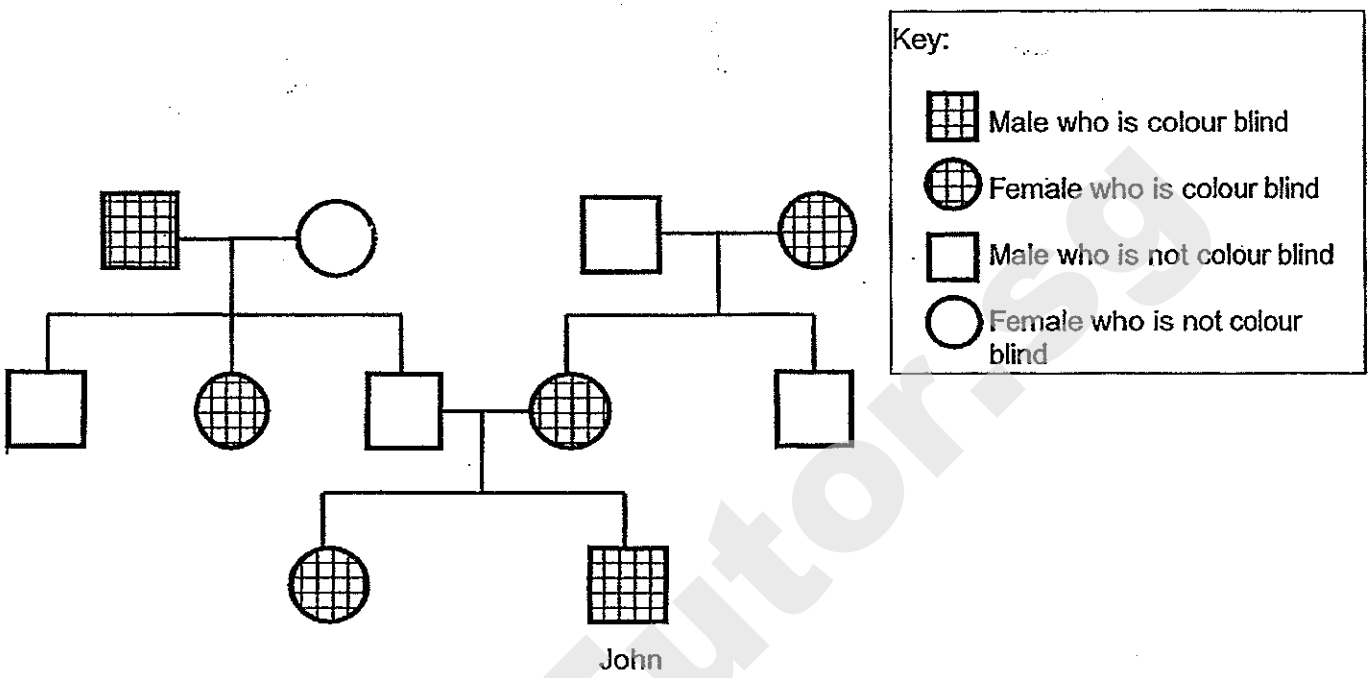
27 The family tree below shows John and his family members who are either with or without colour-blindness. Study the family tree below carefully.



Based on the information given in the family tree above, which statement(s) is/are true?

A Both John's parents are colour blind.

B All the males in John's family are colour blind.

C John inherits colour-blindness from his mother.

(1) B only

(2) C only

(3) A and B only

(4) B and C only

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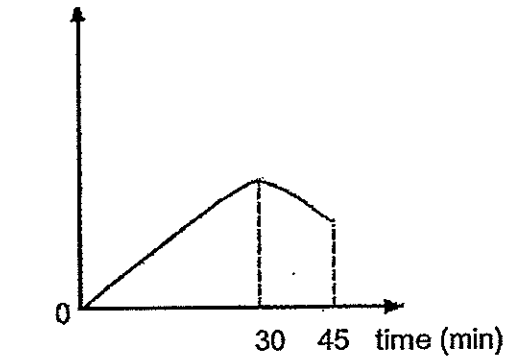
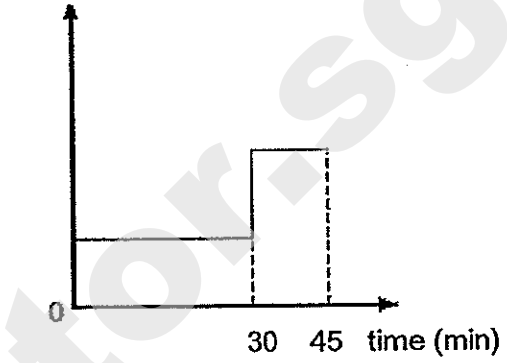
28 Rishi cycled continuously for half an hour on his bicycle up a hill and then took a break for 15 minutes. Which graph shows his heart rate during that 45 minutes?

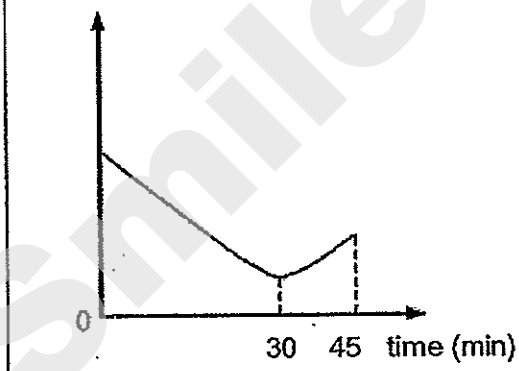
(1)



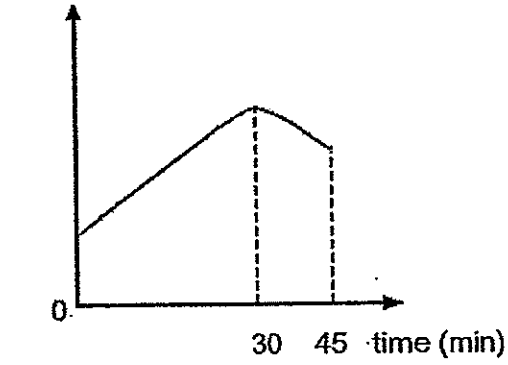
(2)



(3)



(4)



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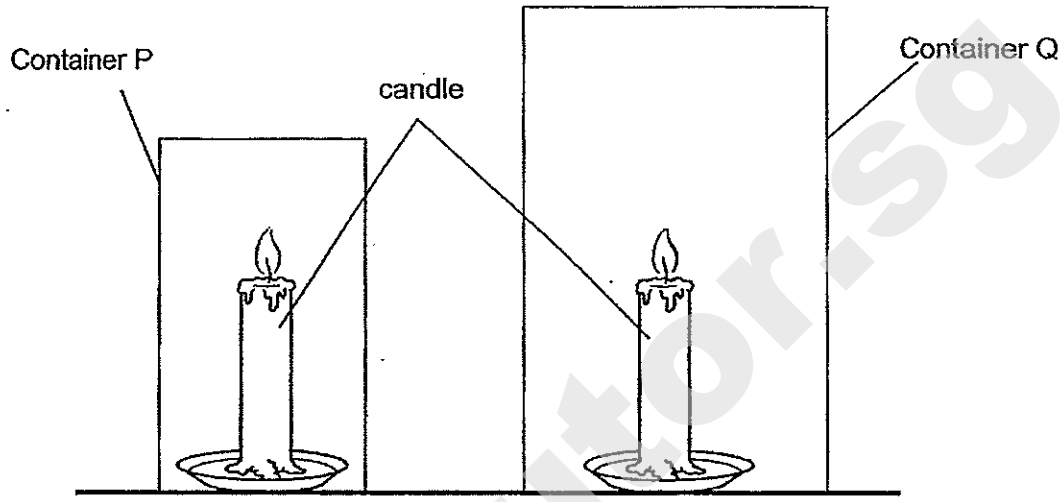
29 The diagram below shows two identical candles placed in containers of different sizes, P and Q. Both containers were filled with air and made of the same material. The time taken for each flame to go off was recorded.



Which one of the following correctly identifies the variable to be changed and the variable to be measured?

	Changed variable	Measured variable
(1)	Size of container	Temperature of flame
(2)	Volume of air	Time taken for the wax to melt
(3)	Size of container	Size of flame
(4)	Volume of air	Time taken for the flame to go off

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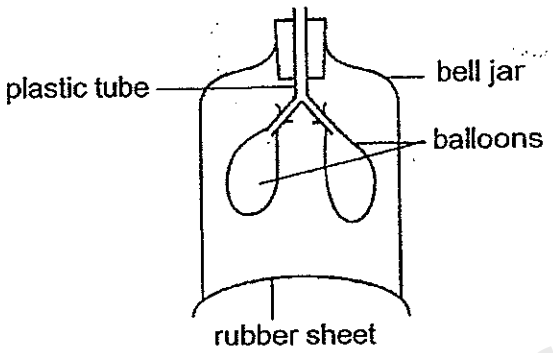
30 The diagram below shows a lung model.



Which parts of the human respiratory system can be represented by the plastic tube and balloons?

	Plastic tube	**balloon**
(1)	Gullet	Lungs
(2)	Windpipe	Stomach
(3)	Windpipe	Lungs
(4)	Gullet	Diaphragm

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Anglo-Chinese School (Primary)

END-OF-YEAR EXAMINATION 2014
SCIENCE
PRIMARY FIVE
BOOKLET B

Name: _____ ( ) **Class: Primary 5** ___

Date: 30 October 2014 **Duration of paper: 1 h 45 min**

_____
Parent's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 17 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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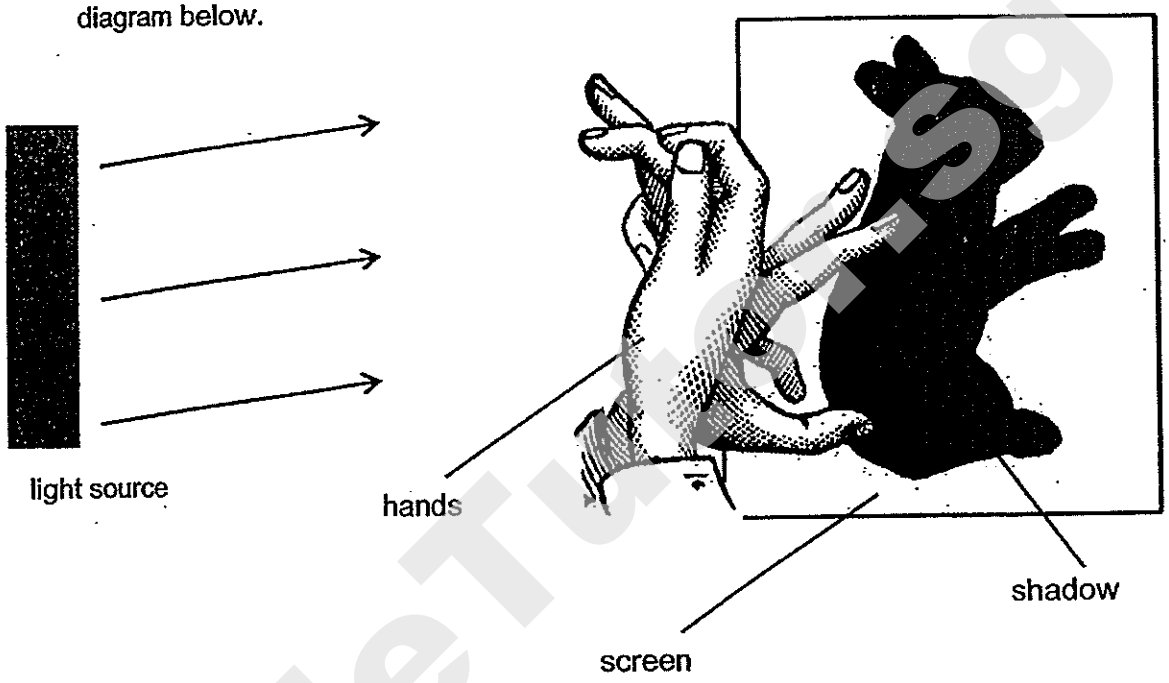
For questions **31** to **44**, write your answers in the spaces provided.

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

---

31 Kelvin made a shadow using a light source, his hands and a screen as shown in the diagram below.



(a) Suggest a way that Kelvin can make the shadow bigger? [1]

(Question 31 continues on page 3)

(Go on to the next page)

Score 1

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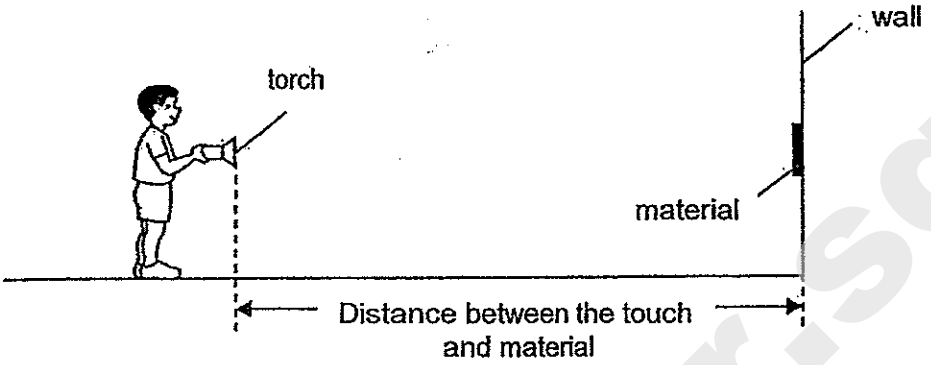
Ben wanted to investigate which material was best at reflecting light. He set up his experiment in a dark room as shown below.



He shone the light from the torch onto material A and walked towards it. He stopped walking when he saw the material clearly and measured the distance between the ~~touch~~ torch and the material. He repeated the experiment with three other materials B, C and D and recorded his results in the table below.

Material	A	B	C	D
Distance between the ~~touch~~ torch and material (cm)	250	270	230	280

(b) Based on his results in the table above, which material is the most suitable for making a reflective vest to be used at night? Give a reason for your answer. [1]

(Go on to the next page)

Score 1

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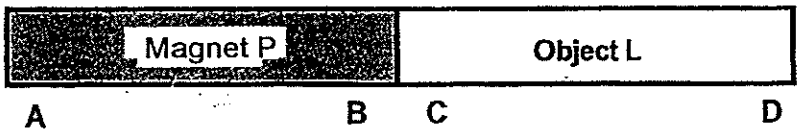
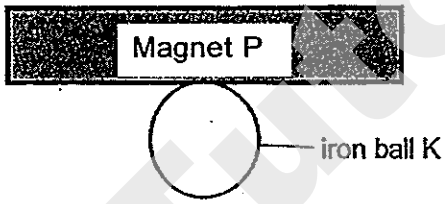
32 Gareth observed that magnet P attracts object L as shown in the diagram below.



(a) Give a reason why Gareth **cannot** conclude that object L is a magnet. [1]

Gareth used an iron ball, K, and placed it in the middle of magnet P as shown below.



He lifted up the magnet and found that iron ball K does not attach itself to the magnet.

(b) Explain why this could have happened. [2]

(Question 32 continues on page 5)

(Go on to the next page)

Score 1/3

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An iron bar WX was magnetized using the 'stroking' method as shown in diagram 1 below. The magnetic poles of WX were shown in diagram 2.

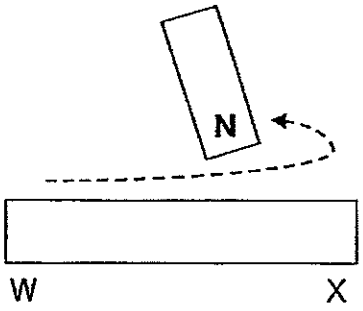

Diagram 1

Diagram 2

An iron bar YZ was magnetized using two magnets as shown in diagram 3 below.

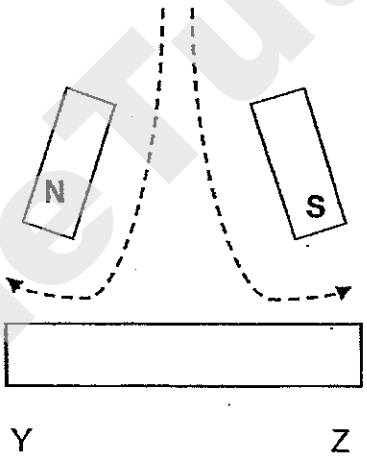

Diagram 3

(c) Identify the magnetic poles of the iron bar YZ after it has been magnetized. [1]

At Y: _____

At Z: _____

Score /1

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33 The table below provides some information of three different cells, A, B and C.

Parts of a cell	Cell A	Cell B	Cell C
Nucleus	Yes	Yes	Yes
Cell Wall	Yes	No	Yes
Chloroplast	Yes	No	No

(a) Based on the information above, where could the following cells most likely be found? [1]

Cell A: _____

Cell B: _____

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

_____

_____

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Score 2

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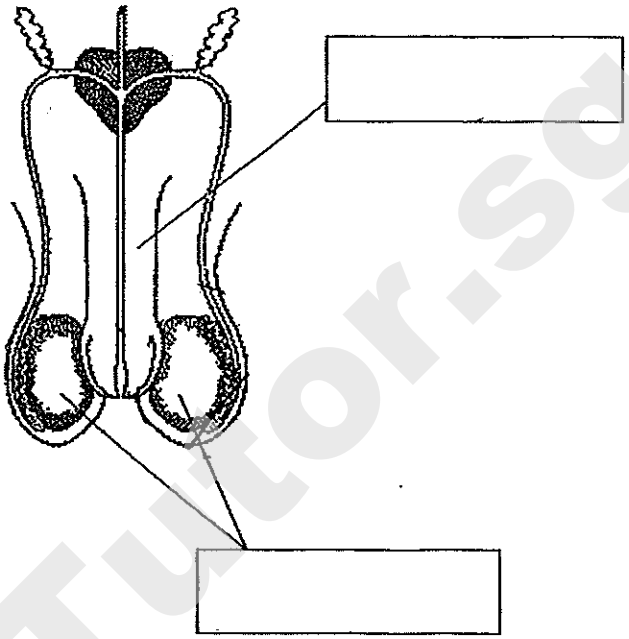
34 The diagram below shows the male reproductive system.

(a) Fill in the boxes with the correct name of the organs. [1]



(b) Circle in the diagram above the organ(s) where sperm cells are produced. [1]

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(Go on to the next page)

Score 2

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35 The table below shows the melting and boiling points of substances W, X, Y and Z.

Substance	Melting Point (°C)	Boiling Point (°C)
W	1050°C	3918°C
X	221°C	685°C
Y	304°C	1473°C
Z	302°C	337°C

Put a tick (√) in the appropriate box in the table below to indicate the state of each of the substances, W, X, Y and Z at 400°C. [2]

Substances	Solid state	Liquid state	Gaseous state
W			
X			
Y			
Z			

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(Go on to the next page)

Score 2

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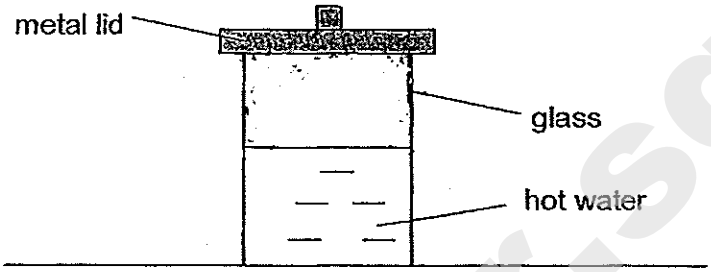
36 Alan put a glass of hot water on a table and covered the glass with a metal lid as shown in the diagram below. After a few minutes, he observed that some water droplets were formed.



(a) Draw in the diagram above to show where the water droplets were formed. [1]

(b) Explain how the water droplets were formed. [2]

_____

_____

_____

(c) What will be observed if hot chocolate milk is used instead of hot water? [1]

_____

_____

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Score	/ 4

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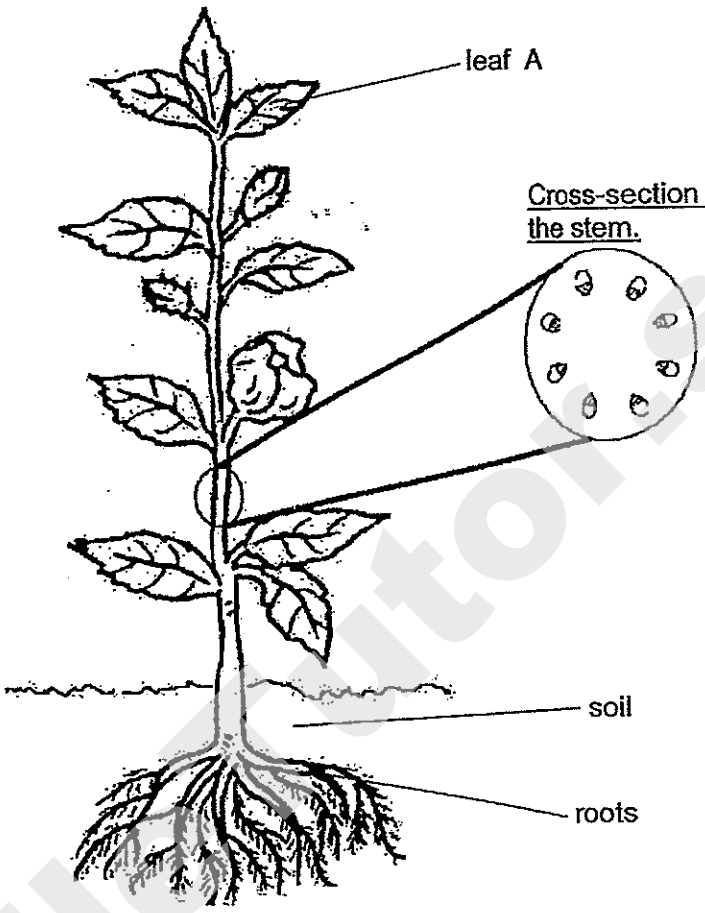
37 The diagram below shows a balsam plant and a cross-section view of its stem.



(a) Describe the path taken by water as it travels from the soil to leaf A. [1]

(b) State the important process that takes place in the leaves which requires water. [1]

(Go on to the next page)

Score / 2

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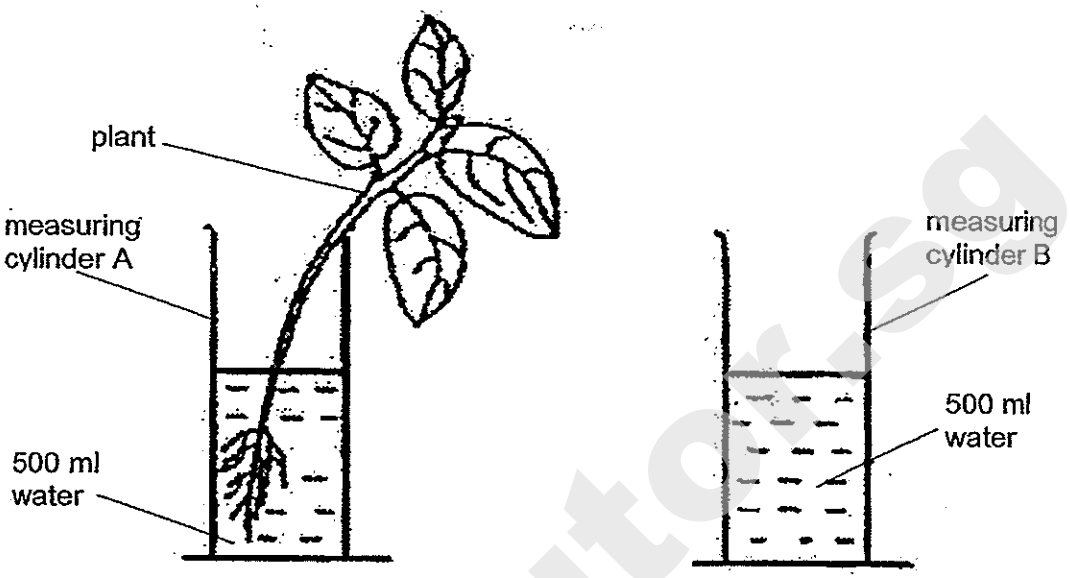
38 Mike wanted to find out if water is taken in by a plant. He placed a plant only in measuring cylinder A and set up measuring cylinder B as a control as shown in the diagram below.



The measuring cylinders were left in the open for a week at the same location. Mike observed that there was a significant difference in the amount of water left in cylinder A and cylinder B.

(a) Explain why there was a decrease in the amount of water in cylinder B. [1]

(b) Explain why there was a greater decrease in the amount of water in cylinder A as compared to cylinder B. [1]

(Go on to the next page)

Score / 2

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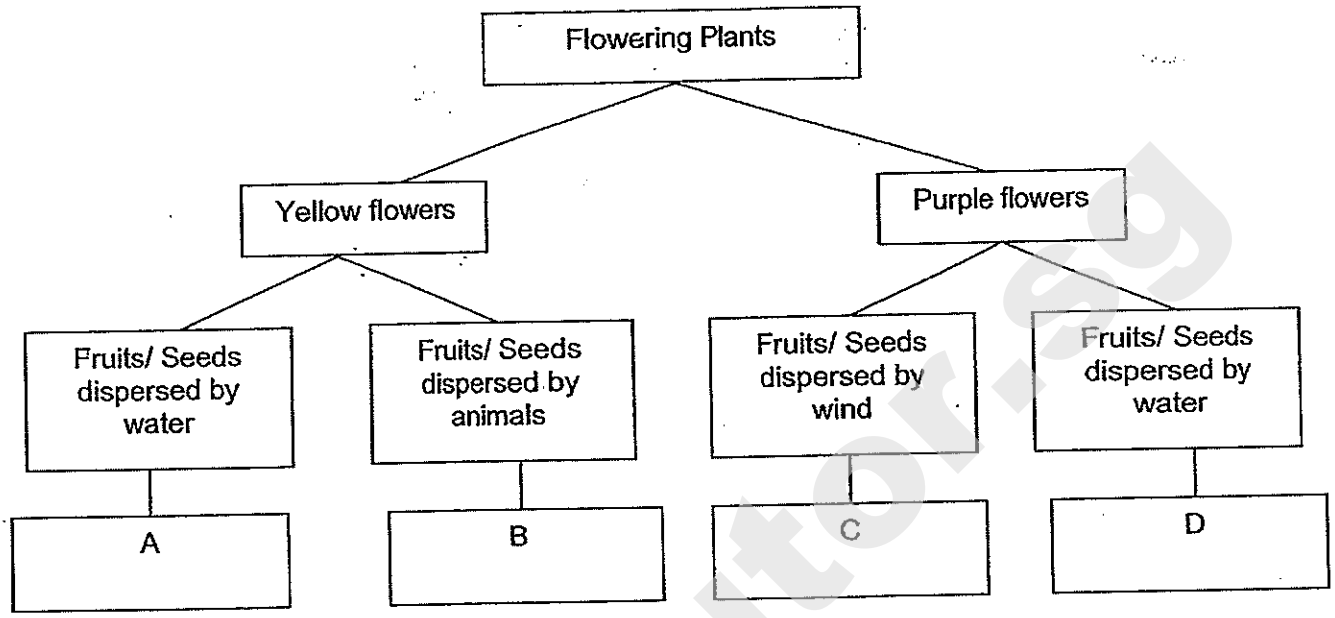
39 Amanda found four flowering plants, A, B, C and D on an island. They are classified in the classification chart as shown below.



(a) Based on the classification chart above, list two similarities between A and D. [2]

(b) Amanda found a plant which has purple flowers with wing-like structures. Which plant (A, B, C and D) should she classify this plant with? [1]

(c) Why is there a need for the seed to be dispersed from the parent plants? [1]

(Go on to the next page)

Score / 4

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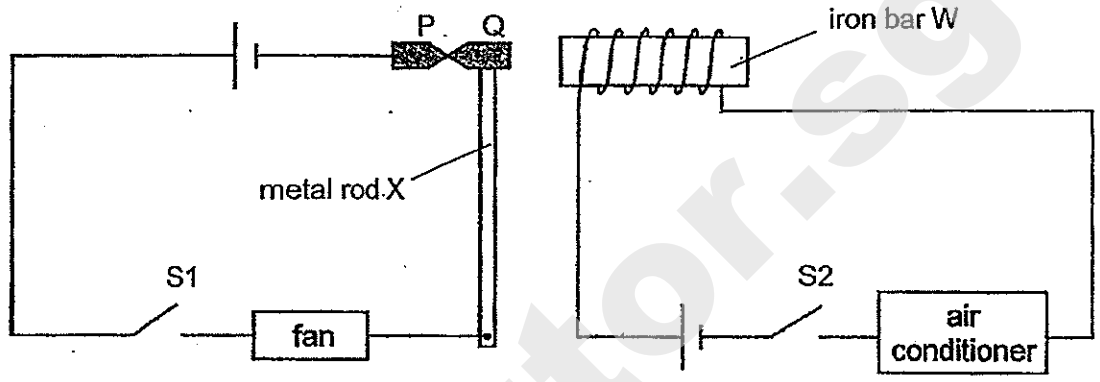
40 The diagram below shows an electrical system is made up of both circuit 1 and 2. It was designed to conserve electricity as only either the fan or the air-conditioner can function at any one time. Both circuits are placed side by side and close to each other. An iron bar W was placed inside a coil of wire. P and Q are two iron pins in contact with each other. Pin Q is attached to a soft metal rod X which can bend to move sideways.



Circuit 1 Circuit 2

On a hot day, the switch, S1, was closed to turn on the fan. After an hour, the switch, S2, was closed as well.

(a) The fan in circuit 1 stopped spinning after S2 was closed even though S1 remained closed. Explain why the fan stopped spinning. [2]

(b) What would happen to the fan and air conditioner if pin Q is made of aluminum instead of iron and both S1 and S2 are closed?

(c) Give a reason for your answer in (b). [1]

(Go on to the next page)

Score /4

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41 James collected the seeds of three different types of mango tree, X, Y and Z. He planted the seeds and allowed the trees to produce fruits after a few years. He noticed that the mango trees produce fruits that have different characteristics.
The table below shows the characteristics of the fruits of the three different types of mango trees.

	Tree X	Tree Y	Tree Z
Size of fruit	Small	Big	Big
Taste	Sweet	Sour	Sour
Time to ripe	Short	Short	Long

(a) James took the pollen from the flower of tree X to pollinate the flowers of tree Y and Z. Which tree's next generation, Y or Z, will he succeed in having big and sweet mango fruits that take a long time to ripe? [1]

(b) Give an explanation in your answer in (a). [1]

(c) James likes to eat mango and claims that he inherited this trait from his mother who likes to eat mango too. Do you agree with James? Give a reason for your answer.

(Go on to the next page)

Score / 3

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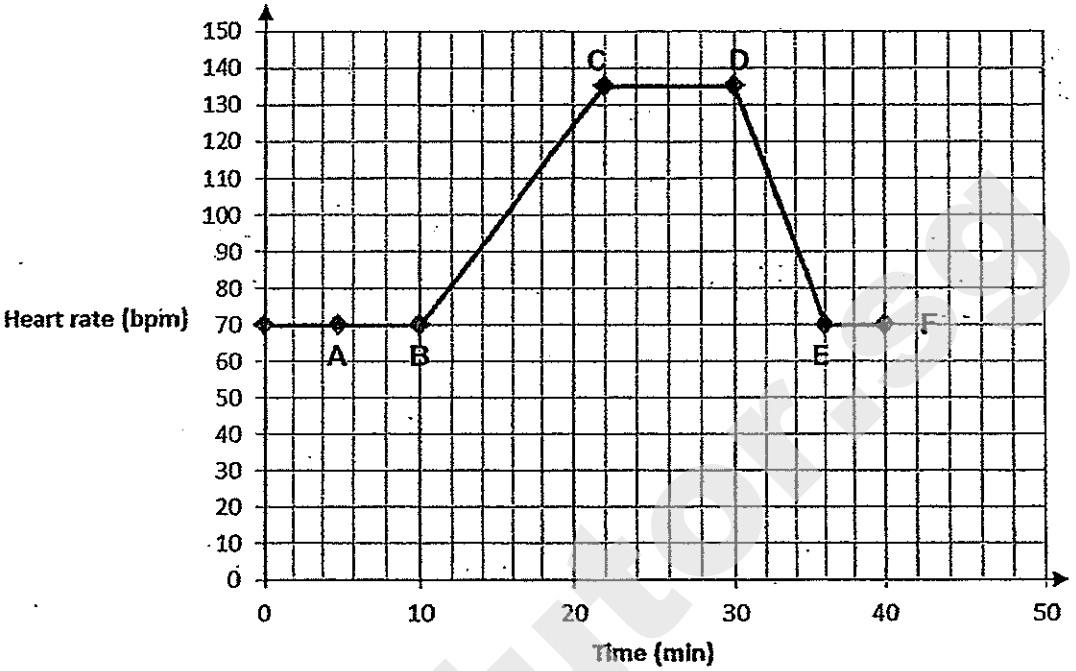
42 The graph below shows the change in heart rate of Krish before, during and after his 1.6 km run for NAPFA test.



(a) Based on the information given in the graph above only, explain how you can tell that Krish started running at point B. [1]

(b) Based on the information given in the graph above only, explain how you can tell that Krish stopped running at point D. [1]

(c) Why did Krish's heart rate increase when he was running? [2]

(Go on to the next page)

Score /4

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43 Several people were trapped in a lift for about 20 minutes. There was no fresh air entering the lift.

Based only on the information above, indicate whether each of the statements below is **True** or **False**. Put a tick (✓) in the correct box.

[2]

Statement	True	False
The amount of nitrogen increased.		
The amount of carbon dioxide remained the same.		
The amount of water vapour increased.		
The amount of oxygen decreased.		

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(Go on to the next page)

Score	/ 2

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44 Ali wanted to find out how the age of a person affects the lung capacity. He got three persons of different age to blow a balloon in one breath and measures the volume of air in the balloon.

The result is recorded in the table below.

Age (years)	Volume of air in balloon (cm^3)
7	400
14	600
21	800

(a) Based on the information in the table above, what is the relationship between the age of a person and the lung capacity. [1]

(b) What is one other variable that is not mentioned must Ali keep the same? [1]

(c) What can Ali do to ensure his results are reliable? [1]

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End of Booklet B

Score / 3

Check your answers carefully.

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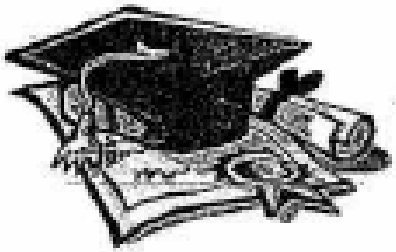

ANSWER SHEET

EXAM PAPER 2014
SCHOOL : ACS
PRIMARY : P5
SUBJECT : SCIENCE
TERM : SA2

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

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

31)a)Move the light source nearer to the hands.
b)It is because it can reflect light from the furthest distance compared to the other materials.

32)a)Object L did not repel from magnet P.
b)The magnetic pull is weakest at the center of the magnet and the object might be to heavy that it cannot attract the ball.
c)Y: South-pole Z: North-pole

33)a)A: In a plant cell. B: In an animal cell.
b)The function is to give the cell its regular shape.

34)a)penis
b)testes

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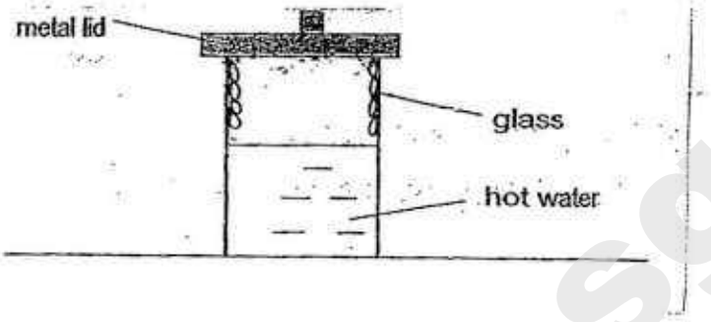
35)W: Solid state
X: Solid state
Y: Liquid state
Z: Gaseous state

36)a)



b)The warm water vapour evaporate from the hot water vapour and touches the cooler surface of the metal lid and condenses to form water droplets.

c)water droplets.

37)a)Water is absorbed by the roots and the water went through, the xylem tube to transport water to leaf A for photosynthesis.

b)The process is called photosynthesis.

38)a)The water in cylinder B evaporated.

b)The plants roots absorb the water in cylinder A and some of the water in it evaporated too.

39)a)They are dispersed by water and they are flowering plants.

b)C.

c)To prevent overcrowding to prevent competition for space.

40)a)Electricity will flow through circuit 2 as S2 is closed and turn bar W into an electromagnet which will attract P in Q as it is made of magnetic material. Circuit 2 will be open electricity will not flow through the fan.

b)It will still work.

c)P in Q will not be attracted to Bar W, aluminum is a good conductor of electricity, thus it allows electricity to pass through it and turn on the fan.

41)a)Tree Z.

b)The tree X will pass its fruit of having sweet fruits and tree Z pass its fruit of having fruits that are big and take along time to ripe.

c)No. Liking to eat something is not a benedictory fruit.

42)a)His heat rate increases.

b)His heart rate decreased.

c)He breathe in more oxygen while running as he needed to produce more energy to run.

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43)F
F
T
T

44)a)The older the person, the higher the lung capacity.
b)Gender the person doing before the experiment.
c)Repeat the same experiment a few more time and find the average to ensure his results are reliable.

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CATHOLIC HIGH SCHOOL
SEMESTRAL ASSESSMENT 2
2014
PRIMARY FIVE

SCIENCE

BOOKLET A

Name: _____ ( )

Class: Primary 5 - _____

Date: 29 October 2014

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 22 printed pages, excluding cover page.

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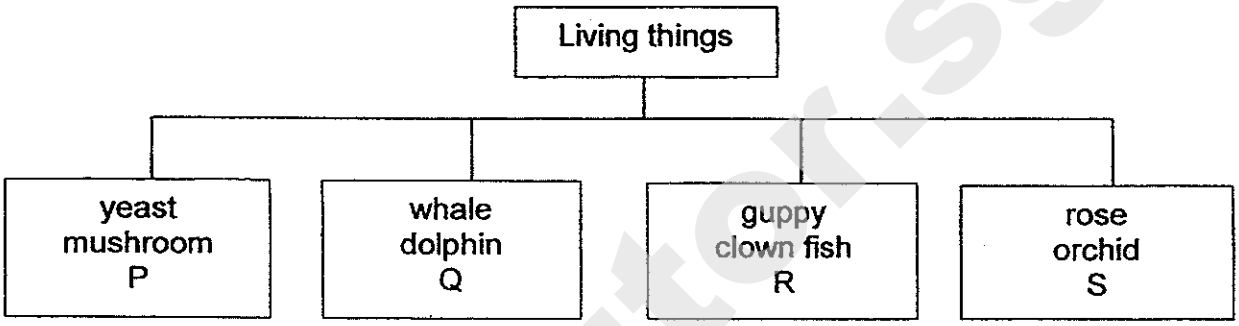
Booklet A (30 × 2 marks)

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 chart below shows how some living things are classified.



Based on the chart above, which one of the following identifies P, Q, R and S correctly?

	P	Q	R	S
(1)	cactus	shark	elephant	mould
(2)	cactus	elephant	shark	mould
(3)	mould	shark	elephant	cactus
(4)	mould	elephant	shark	cactus

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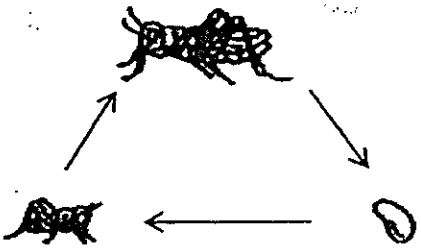
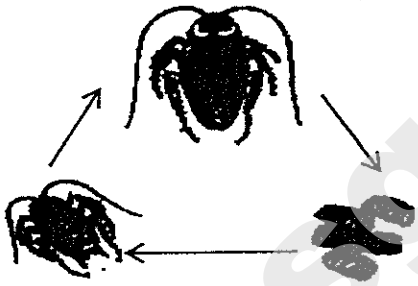
2 The diagrams below show the life cycles of a grasshopper and a cockroach.



grasshopper



cockroach

Which of the following statements correctly describe the similarities between the life cycle of a grasshopper and a cockroach?

A Their young do not have wings.

B Their young look like the adults.

C They moult a few times as they grow.

D Both have three stages in their life cycles.

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

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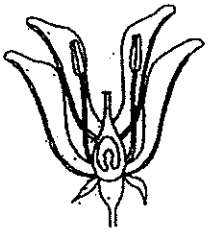
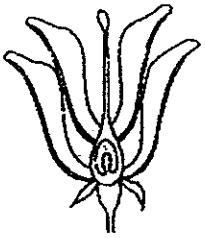
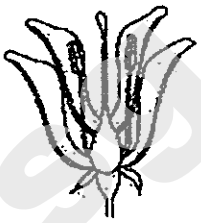
3 Ali wanted to find out if a fruit could still be developed when a certain part of the flower was removed. The diagram below shows the part of a flower removed from flowers W, X, Y and Z from the same plant.

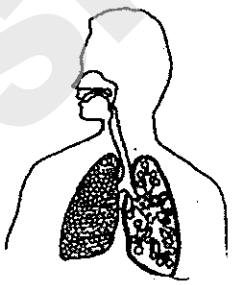
			
Flower W Petals removed only	Flower X Stigmas removed only	Flower Y Anthers removed only	Flower Z Ovules removed only

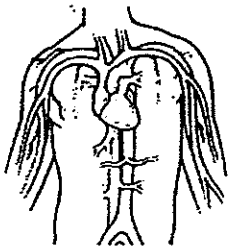
Pollen grains from the same type of flower were dusted over flowers W, X, Y and Z.

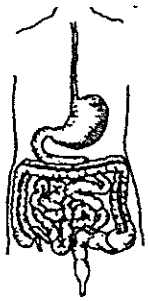
Which of the flowers, W, X, Y and Z, will develop into a fruit?

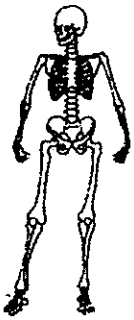
(1) W only
(2) X and Z only
(3) W and Y only
(4) W, X and Z only

4 The diagrams below show four different body systems.


A


B


C


D

Which of the systems work together to transport oxygen in our bodies?

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

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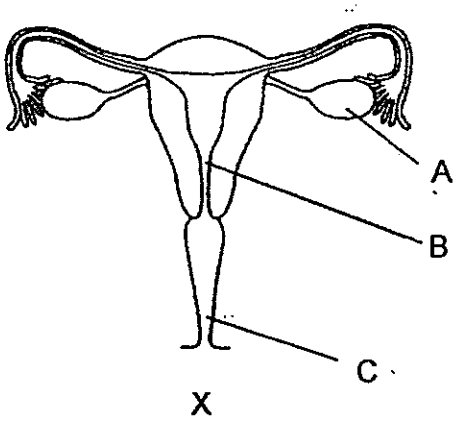
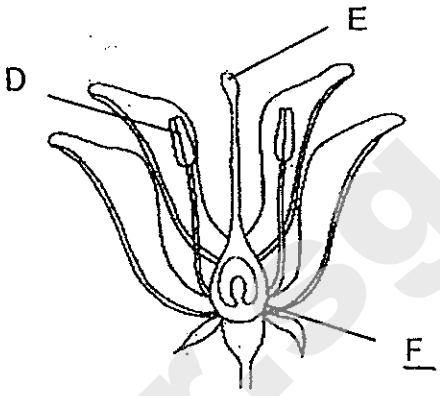
5 The diagrams below show the reproductive parts of a human X and a plant Y.



X



Y

Which one of the following shows where the female sex cells are found in X and Y?

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

6 Four friends made some statements about the digestive system.

Bala	Digested food is absorbed in the small intestine.
Sam	Large intestine stores digested food temporarily.
Peter	Food is completely broken down in our stomach.
Minah	Our mouth is not part of the digestive system because nothing is digested there.

Who has made the correct statement?

(1) Bala
(2) Sam
(3) Peter
(4) Minah

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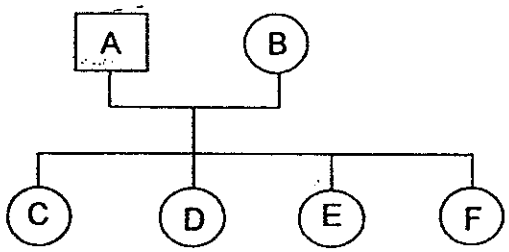
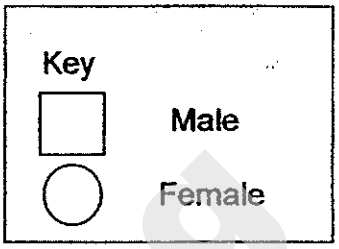
7 The diagram below shows Rachel's family tree.





The table below shows the characteristics of her family members and a tick (√) represents that the person has the characteristic. Rachel resembles her father the most.

Family member	Characteristics			
	Double eyelids	Round face	Hitch-hiker's thumb	Sharp nose
A	√		√	
B	√	√		√
C		√	√	√
D	√	√		√
E	√		√	√
F		√	√	

Which letter in the family tree best represents Rachel?

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

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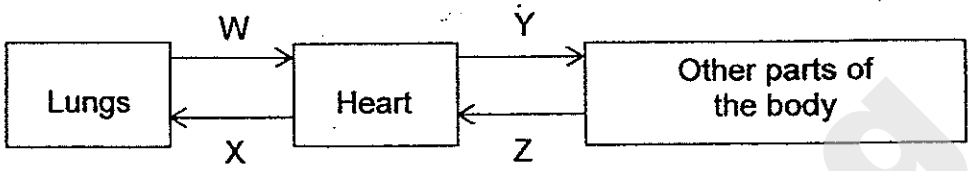
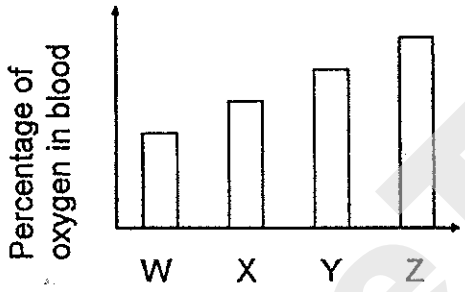
8 The diagram below is a representation of a blood circulation in a human body. The arrows W, X, Y and Z show the flow of blood to the various parts of the body.

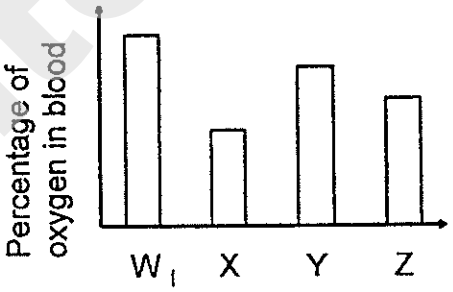


Which one of the following graphs correctly represents the percentage of oxygen in the blood flow at W, X, Y and Z?

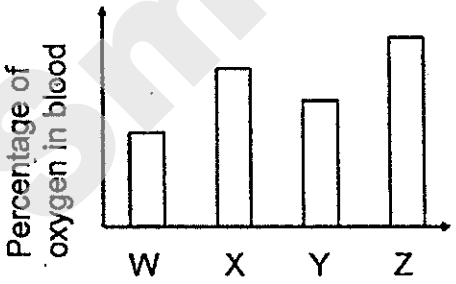
(1)



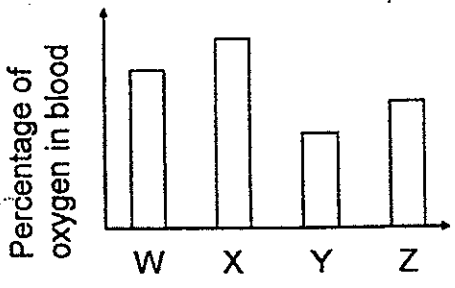
(2)



(3)



(4)



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9 Which of the following is/are the function(s) of leaves?

A Trap sunlight

B Take in water

C Carry out photosynthesis

D Allow the exchange of gases to take place

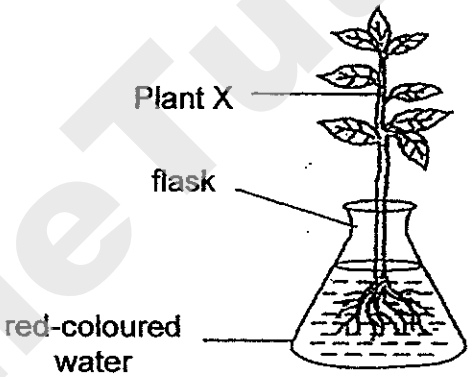
(1) A only

(2) B and C only

(3) A, C and D only

(4) B, C and D only

10 In the experiment below, Zara put Plant X into a beaker of red-coloured water. Three days later, she observed that the leaves had turned red.



Which of the following statements explain(s) her observation?

A The roots of Plant X absorbed the red-coloured water.

B The leaves of Plant X transported the red-coloured water to the roots.

C The food-carrying tubes of Plant X transported the food to the leaves.

D The water-carrying tubes of Plant X transported the red-coloured water to the leaves.

(1) A only

(2) A and D only

(3) B and D only

(4) B, C and D only

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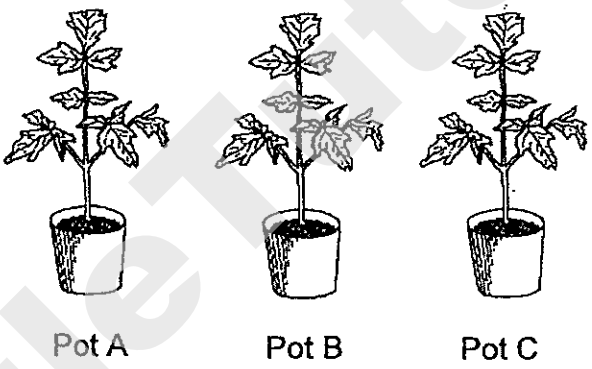
11 Jean wanted to find out which type of soil was suitable for growing balsam plants. She set up the experiment as shown in the table below.

	Pot A	Pot B	Pot C
Material of pot	plastic	plastic	plastic
Type of soil	garden	sand	clay
Amount of soil	1500 cm^3	1000 cm^3	500 cm^3
Amount of water watered everyday	200 cm^3	200 cm^3	200 cm^3

The 3 pots of similar balsam plants A, B and C were left in her garden.



Why was the experiment not a fair one?

(1) The type of soil in each pot was different.

(2) The amount of soil in each pot was different.

(3) The three pots were given the same amount of water.

(4) The amount of sunlight received by each pot was different.

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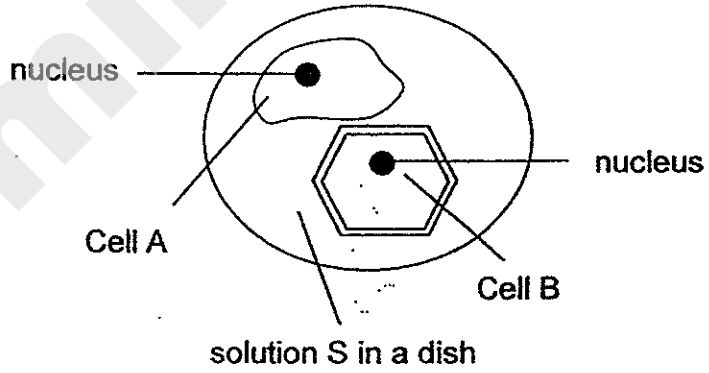
12 The table below shows some information on three cells A, B and C. A tick (√) indicates the presence of the part of a cell.

	Cell A	Cell B	Cell C
nucleus	√	√	√
cell wall	√		√
chloroplast	√		

Where are cells A, B and C likely to be found?

	Cell A	Cell B	Cell C
(1)	leaf	root	cheek
(2)	root	cheek	leaf
(3)	cheek	leaf	root
(4)	leaf	cheek	root

13 Amy placed 2 cells, A and B, in solution S. After an hour, Cell A swelled up and burst but Cell B remained the same.



What is the possible reason why Cell B did not swell up like Cell A?

(1) Cell B has a nucleus which controls the movement of solution S in the cell.

(2) Cell B has a chloroplast that prevents solution S from entering the cell.

(3) Cell B has a cell wall that keeps its shape and prevents the cell from swelling up.

(4) Cell B has a semi-permeable membrane that prevents solution S from entering.

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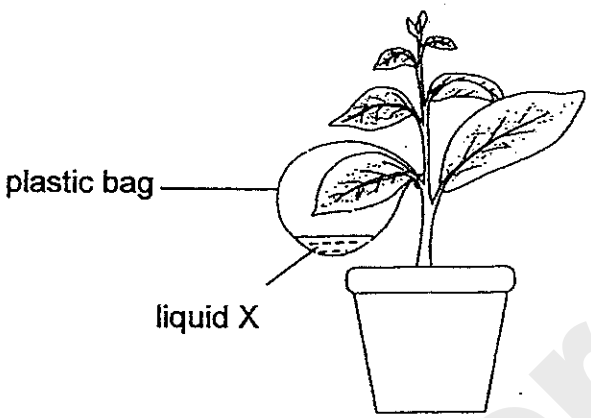
14 The diagram below shows a potted plant. A transparent plastic bag containing liquid X is tied around one of the leaves as shown below.



The table below shows the changes in the colour of liquid X with different amounts of carbon dioxide.

Amount of carbon dioxide	Colour
normal	red
more than normal	yellow
less than normal	purple

What colour would the liquid X be at midday and at midnight?

	At midday	At midnight
(1)	purple	yellow
(2)	yellow	purple
(3)	red	yellow
(4)	purple	red

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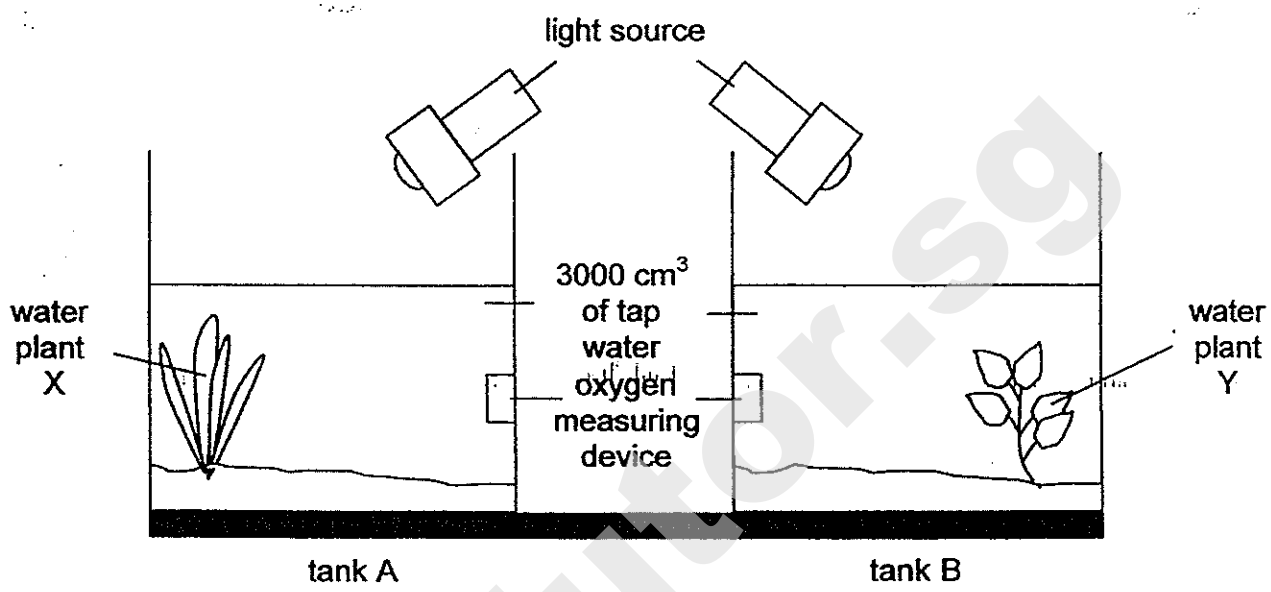
15 Bella has two tanks, A and B, each containing a different type of plant as shown in the diagram below. Both tanks were left under a similar light source for five hours. The amount of dissolved oxygen in each tank was measured at the start and the end of the experiment.



What was Bella trying to find out?

(1) To find out if carbon dioxide is given out during photosynthesis.

(2) To find out if the amount of light affects the rate of photosynthesis.

(3) To find out which type of plant has a faster rate of photosynthesis.

(4) To find out if different amounts of dissolved oxygen affects the rate of photosynthesis.

16 Jennifer studied a community living on a rotting log. She found the following organisms.

ants	earthworms	moulds	mushrooms

Which of the following classifications is correct?

	Decomposers	Organisms that help decomposers
(1)	ants, mushrooms	earthworms, moulds
(2)	moulds, mushrooms	ants, earthworms
(3)	moulds, earthworms	ants, mushrooms
(4)	moulds, mushrooms, earthworms	ants

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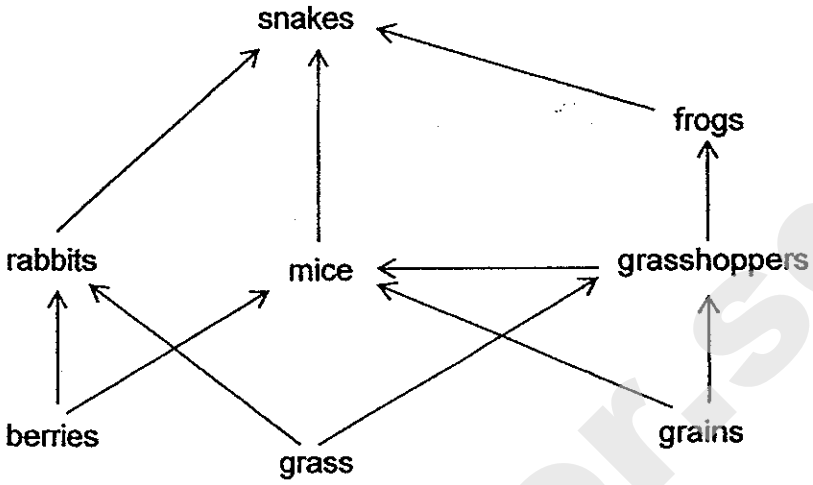
17 Study the food web below.



Based on the food web above, which of the following statements are true?

A Snakes are not preyed on by other predators.

B There is only one animal that eats plants and animals.

C There are less than 5 food chains that will end with the snake.

D Berries, grass and grains transfer the largest amount of energy to the other organisms.

(1) A, B and C only

(2) A, B and D only

(3) A, C and D only

(4) B, C and D only

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18 Indra compared the hardness of four tiles A, B, C and D by scratching them with rods made of different materials. She recorded her observations in the table below. A tick (√) indicates the presence of scratch marks on the tiles.

Rod	Presence of scratch marks			
	Tile A	Tile B	Tile C	Tile D
plastic		√		
wooden		√		√

Which one of the following statements is true?

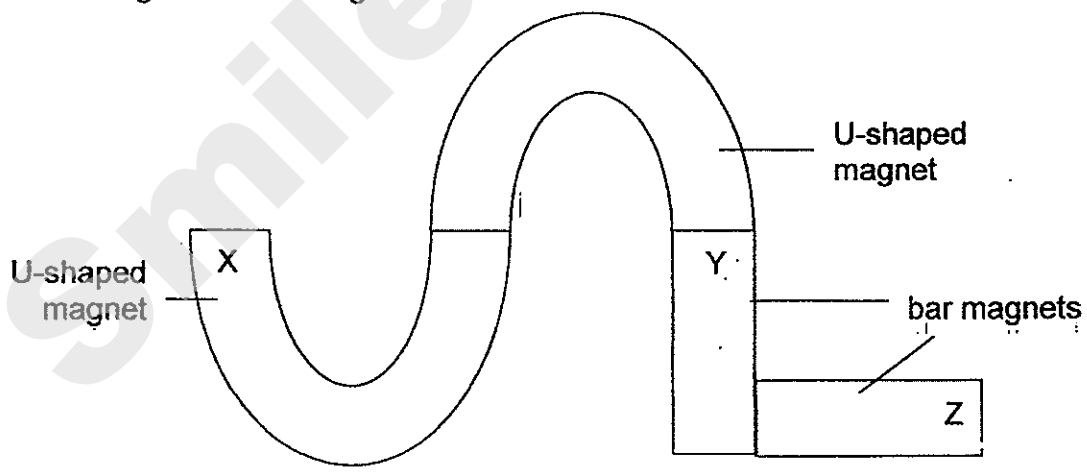
(1) B and D are harder than wood.

(2) C and D are harder than wood.

(3) A and B are harder than plastic.

(4) A and C are harder than plastic.

19 The diagram below shows how two U-shaped magnets and two bar magnets are arranged.



Which of the following shows the possible poles at positions X, Y and Z for the above arrangement?

	Position X	Position Y	Position Z
(1)	North	South	North
(2)	North	North	South
(3)	South	North	South
(4)	South	South	South

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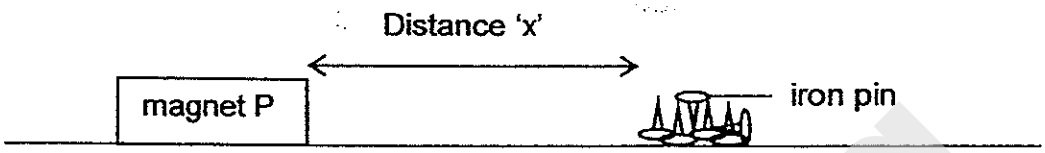
20 Tricia carried out an experiment to find out the magnetic strength of three magnets, P, Q and R, using the set-up as shown below.



She slowly moved magnet P towards some iron pins until the magnet first attracted the pins from a distance, 'x'. She then repeated the procedure twice and calculated the average distance. The experiment was then repeated with two other magnets, Q and R.

The results are shown in the table below.

Magnet	Distance 'x' (cm)			
	First attempt	Second attempt	Third attempt	Average
P	3.5	4.0	3.9	3.8
Q	1.2	1.5	1.8	1.5
R	2.4	2.2	2.6	2.4

Which one of the following shows the correct order of the magnetic strength of the magnets, P, Q and R, from the weakest to the strongest?

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

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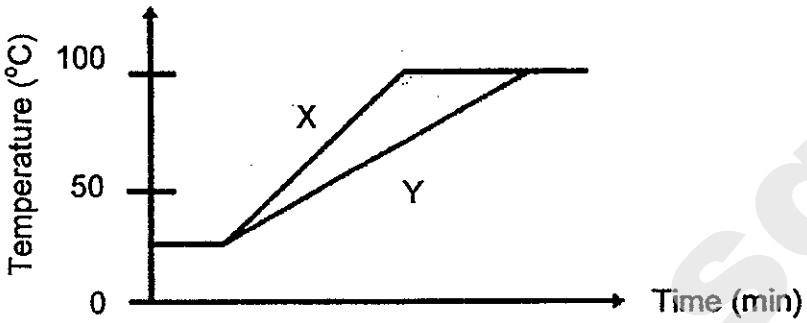
21 The graph below shows how the temperature of two beakers of water, X and Y, changes over time.



Which one of the following statements describes the graph correctly?

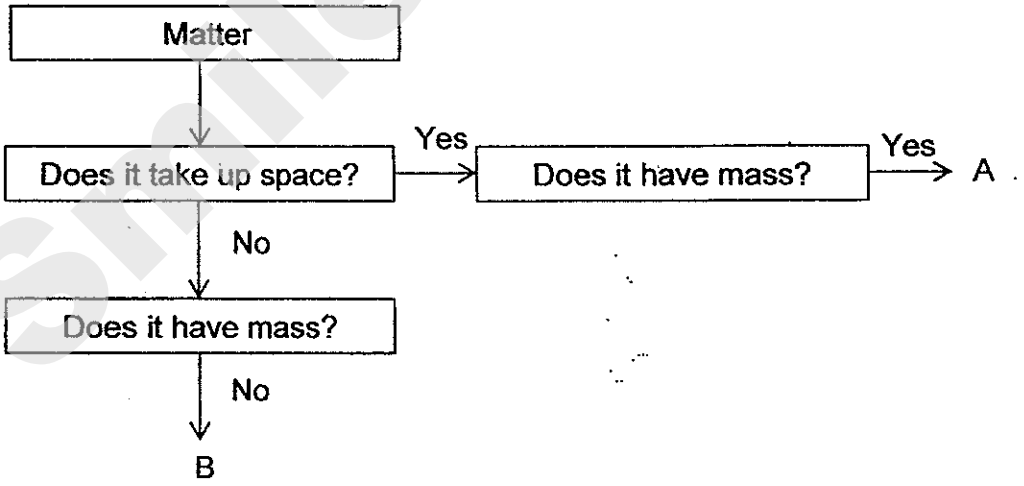
(1) Beaker X contained less water than Beaker Y.

(2) Both beakers of water boiled at the same time.

(3) Beaker X is a poorer conductor of heat than Beaker Y.

(4) Beaker Y was heated over a stronger flame than Beaker X.

22 Study the flow chart below.



Which of the following represents A and B?

	A	B
(1)	oxygen	rubber band
(2)	pencil	fire
(3)	sound	feather
(4)	light	heat

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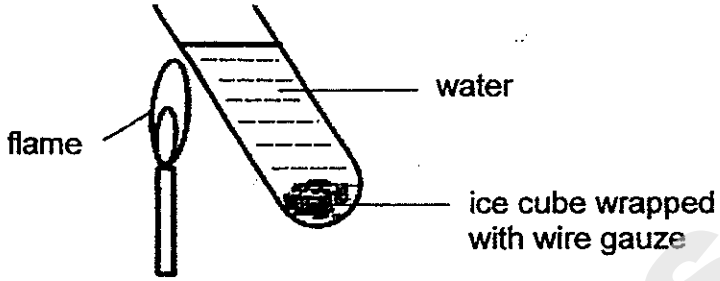
23 Joe conducted an experiment to find out if water or oil is a better conductor of heat.



He wrapped a piece of ice cube in wire gauze and placed it at the bottom of the test-tube. Next he put a flame next to the test-tube filled with water as shown above. He then recorded the time taken for the ice cube to melt completely. The experiment was repeated using oil.

Which of the following variables must be kept the same to ensure a fair test?

A size of the ice cube

B position of the ice cube

C time taken for the ice to melt

D amount of liquid in the test tube

(1) A and D only

(2) B and C only

(3) A, B and D only

(4) A, B, C and D

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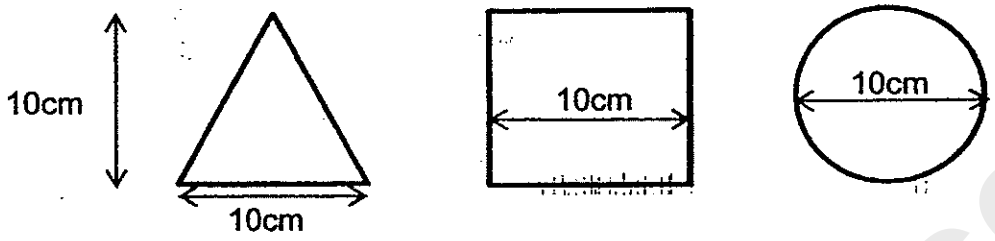
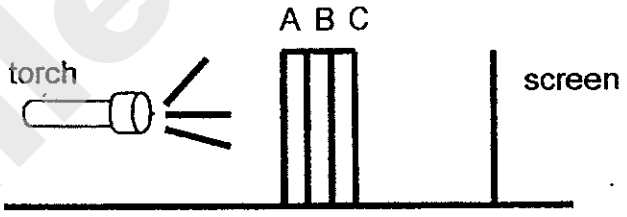
24 The diagram below shows three shapes cut out from three different materials of the same size and thickness.



The properties of the three materials are shown below.

Material A	allows some light to pass through
Material B	does not allow light to pass through
Material C	allows most light to pass through

The materials were glued together and placed between a lighted torch and a screen as shown below.



Which one of the following diagrams shows the shadow formed on the screen?

(1)

(2)

(3)

(4)

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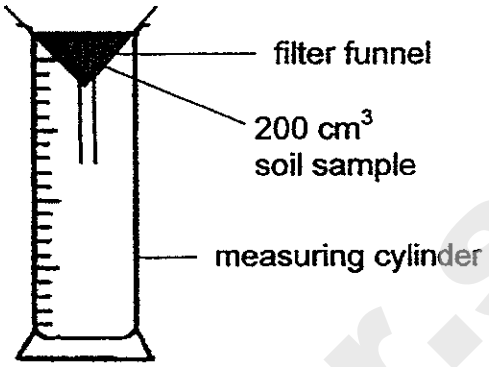
25 Zheng Kuang set up the experiment below to find out how quickly water can pass through two different types of soil, A and B.



The time taken for the water to pass through each type of soil was measured and recorded in the table below.

Type of soil	Soil A	Soil B
Time taken (s)	15	40

Which one of the following correctly represents the properties of Soil A and Soil B?

	Size of soil particles	Size of air spaces
(1)	Larger in A than B	Smaller in A than B
(2)	Larger in A than B	Larger in A than B
(3)	Smaller in A than B	Larger in A than B
(4)	Smaller in A than B	Larger in B than A

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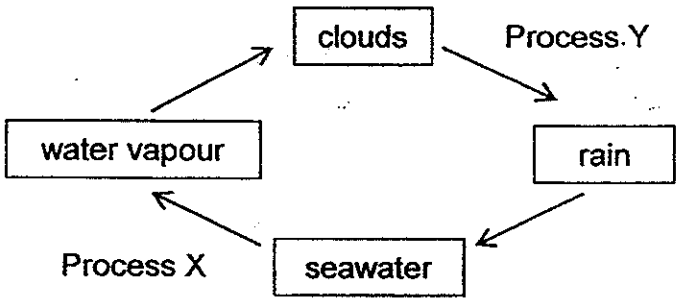
26 The diagram below shows the water cycle.



Which of the following correctly describe(s) the processes X and Y in the diagram above?

A Process X takes place all the time.

B Heat is lost by the water vapour during Process Y.

C Process X does not take place at a fixed temperature.

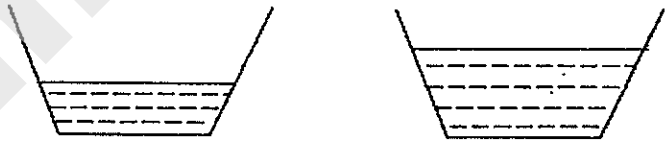
(1) A only

(2) A and C only

(3) B and C only

(4) A, B and C

27 David poured 200ml of water into two identical containers, X and Y, and left them outdoors. Five hours later, he found that there was less water left in container X than container Y as shown below.



container X container Y

Which of the following could explain the difference in the water level?

A Container X was left at a more windy place.

B Container X was left at a place with more sunlight.

C Container X was left at a place with lower temperature.

D Container X was filled with water at a higher temperature.

(1) A and C only

(2) B and D only

(3) A, B and D only

(4) B, C and D only

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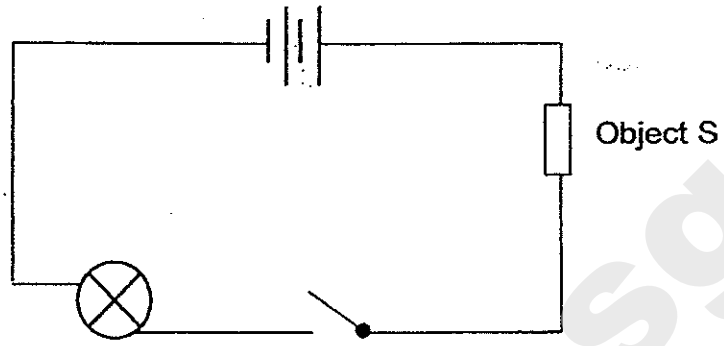
28 The diagram below shows an open circuit.



When the circuit is closed, the light bulb does not light up at all.
What could be the possible reasons?

A The light bulb has fused.

B Object S is a plastic ruler.

C The batteries are not connected properly.

D The wires are only connected to the metal casing of the bulb.

(1) A and B only

(2) A, C and D only

(3) B, C and D only

(4) A, B, C and D

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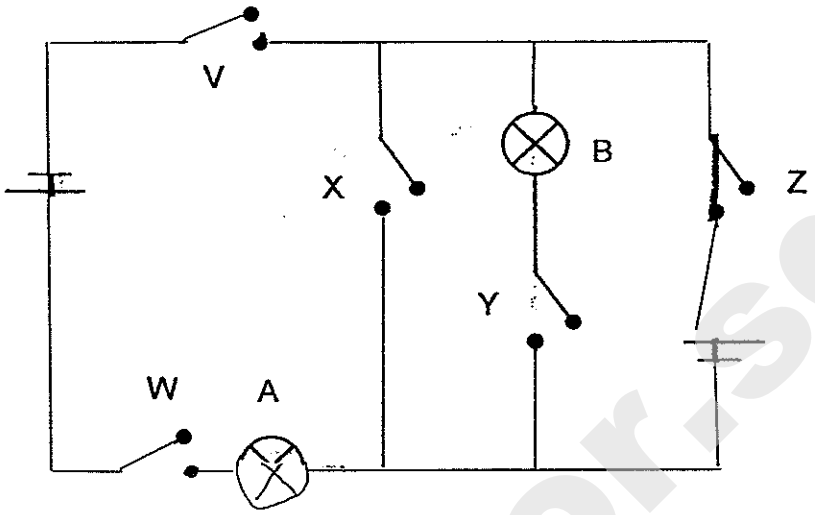
29 Look at the set-up below.



Which of the switches, V, W, X, Y and Z, should be open or closed so that both bulbs A and B light up at the same time?

	Switch				
	V	W	X	Y	Z
(1)	closed	closed	open	open	closed
(2)	closed	closed	open	closed	open
(3)	open	open	closed	open	open
(4)	open	open	closed	closed	closed

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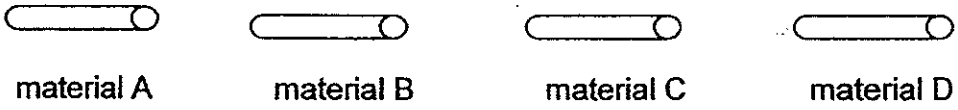
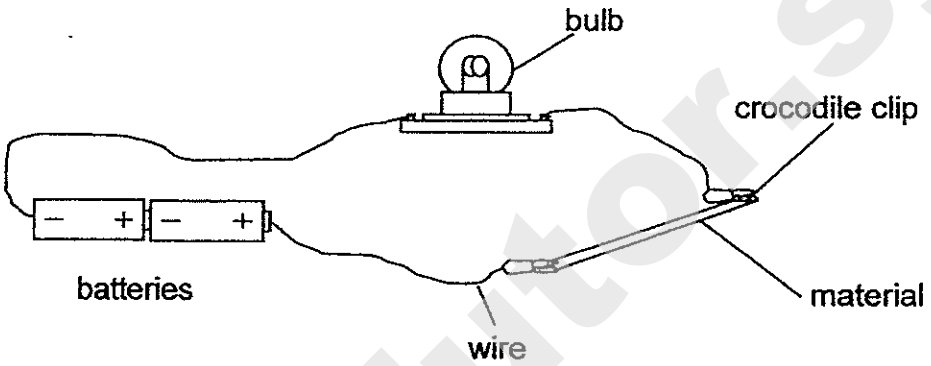
30 Rachel wanted to find out which material, A, B, C or D, is a conductor of electricity.



She set up an electrical circuit as shown below.



Rachel recorded the results in the table below.

Material	Does the bulb light up?
A	No
B	Yes
C	No
D	Yes

Which of the following shows what materials A, B, C and D are?

	A	B	C	D
(1)	steel	iron	paper	fabric
(2)	fabric	ceramic	plastic	carbon
(3)	copper	steel	glass	diamond
(4)	ceramic	iron	rubber	copper

End of Booklet A

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CATHOLIC HIGH SCHOOL
SEMESTRAL ASSESSMENT 2
2014
PRIMARY FIVE

SCIENCE

BOOKLET B

Name: _____

Class: Primary 5 - _____

Date: 29 October 2014

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 15 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 Mr Tan carried out an investigation in his farm with a particular fruit-bearing plant. He grew the plants in four similar fertile plots of land of equal size. He watered the plants every day with the same amount of water. After eight months, he calculated the average number of fruits produced per plant in each plot.

Plot	Number of plants per plot	Average number of fruits per plant
A	40	7
B	30	16
C	20	24
D	10	30

(a) What was Mr Tan trying to find out? [1]

_____

_____

(b) Name a variable that Mr Tan needs to keep constant to ensure that the experiment is a fair one. [1]

_____

_____

(c) Explain the result observed in Plot A. [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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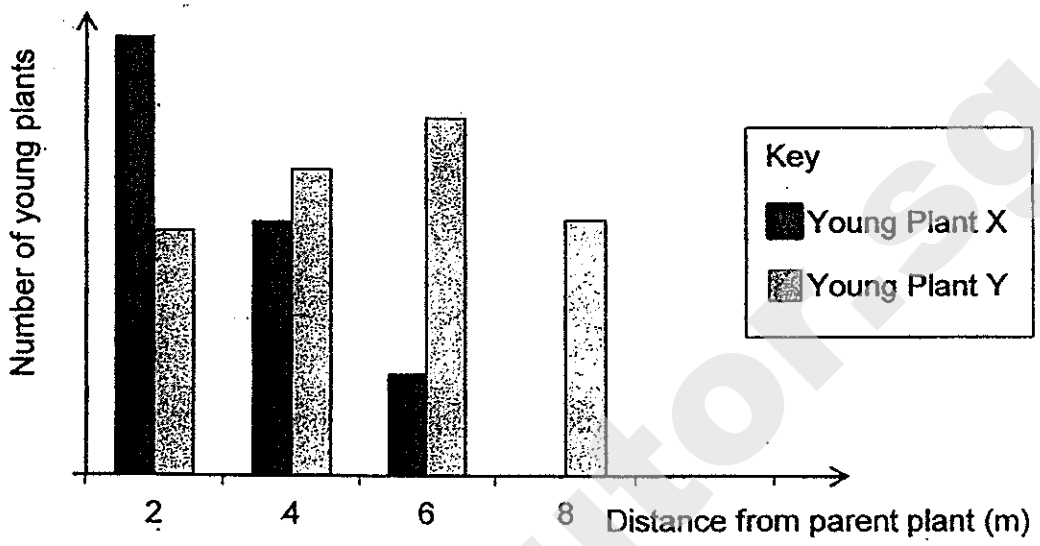
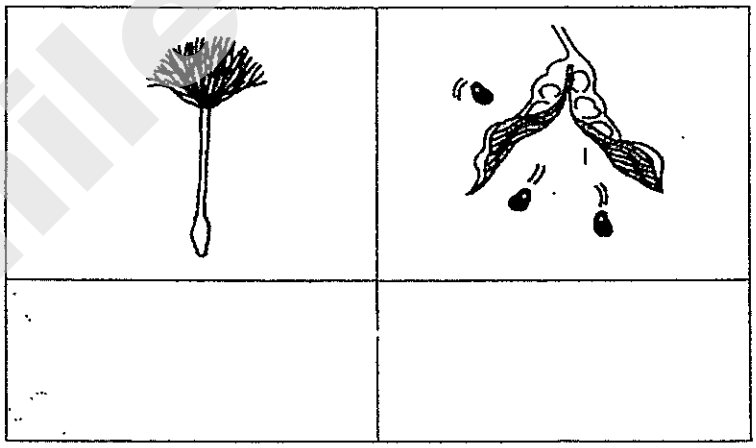
32 Ryan counted the number of two different types of young plants, X and Y, at various distances from their parent plants in a garden. The results are shown in the graph below.



Which one of the following is likely to be the fruit of Plant X?
Choose your answer and tick (√) in the corresponding box.



Explain your answer. [2]

(Go on to the next page)

SCORE	2

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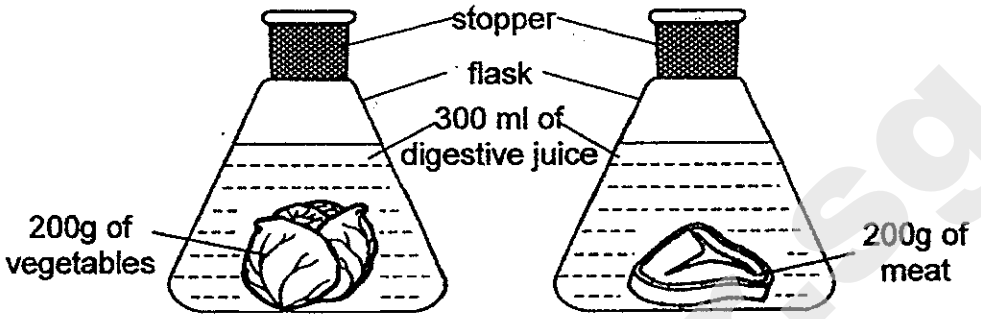
33 Muthu wanted to find out if vegetables are digested faster than meat. He placed 200g of vegetables and 200g of chicken meat into identical flasks, each containing 300ml of digestive juice, and left them in the laboratory for 4 hours.



(a) What does Muthu need to measure and record in order to arrive at the conclusion for the experiment? [1]

_____

_____

(b) In which part of the human digestive system is water removed from the undigested food? [1]

_____

_____

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(Go on to the next page)

SCORE	/ 2

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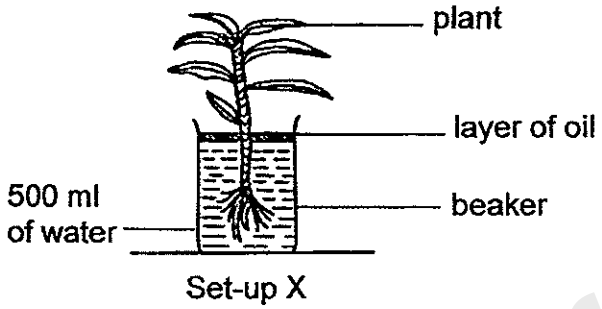
34 Ismail wanted to find out if roots take in water. He set up the experiment below and recorded the water level in the beaker over 5 days.

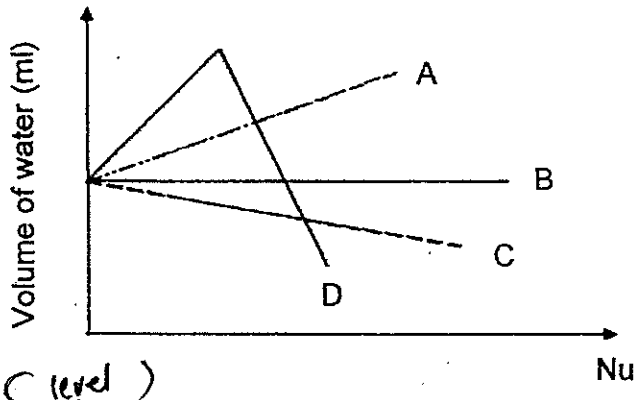


Set-up X

(a) In the box provided below, draw and label a suitable control for the experiment above. [1]

(b) What is the purpose of setting up a control? [1]

After 5 days, Ismail plotted a graph below to represent his results.



(c) Which one of the lines, A, B, C or D, represents the volume of water in Set-up X after 5 days? Explain your answer. [1]

(Go on to the next page)

SCORE	3

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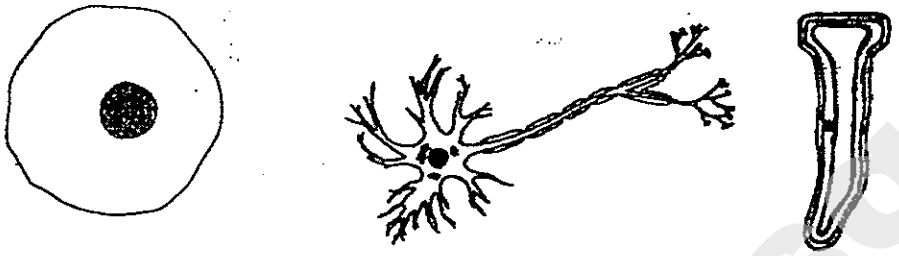
35 The diagram below shows three different groups of cells.



A B C

(a) Which of these cells, A, B and C, is a plant cell?
Give a reason for your answer. [1]

_____

_____

(b) The nucleus controls all activities of the cell. State one other function of the nucleus. [1]

_____

_____

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SCORE	/ 2

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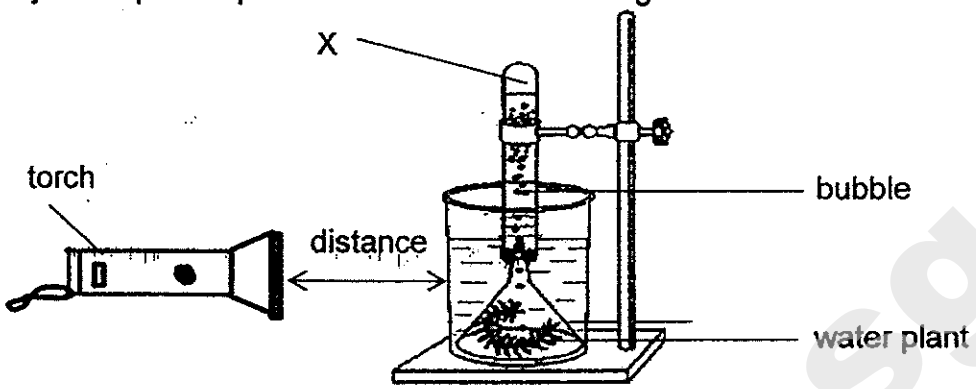
36 Evelyn set up an experiment as shown in the diagram below.



She placed a colourless, transparent filter in front of the torch and counted the number of bubbles produced in an hour. The plant produced 21 bubbles in an hour. She repeated the experiment by changing the colour of the filter. She recorded the results in the table below.

Type of filter	Number of bubbles per hour
A	19
B	15
C	0
D	10
E	19

(a) What was Evelyn trying to find out from her experiment? [1]

_____

_____

(b) After some time, Evelyn realised that fewer bubbles were produced for all the filters. Give a reason for her observation.

_____

_____

(c) Evelyn repeated her experiment by adjusting he. set-up without introducing or removing anything from the set-up. The plant produced 28 bubbles in an hour when she placed a colourless, transparent filter in front of the torch. What could Evelyn have done? Explain your answer. [2]

_____

_____

_____

(Go on to the next page)

SCORE	/ 4

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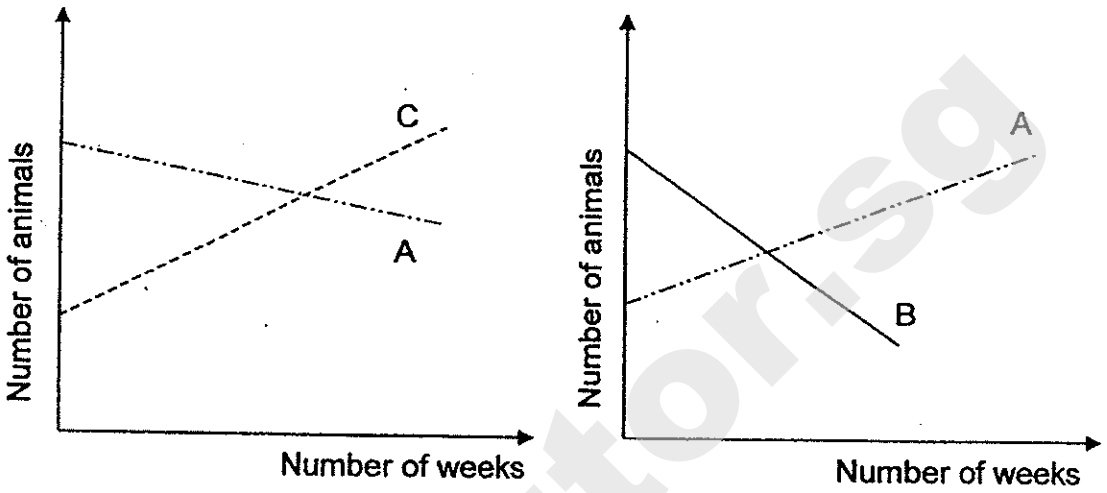
37 There are 3 types of animals A, B and C in a farm. One of the animals is a plant-eater. The animals have sufficient water and air. The 2 graphs below show the changes in their populations over time.



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

(b) Based on the graphs, what would happen if the population of organism A is removed? [2]

(Go on to the next page)

SCORE	/3

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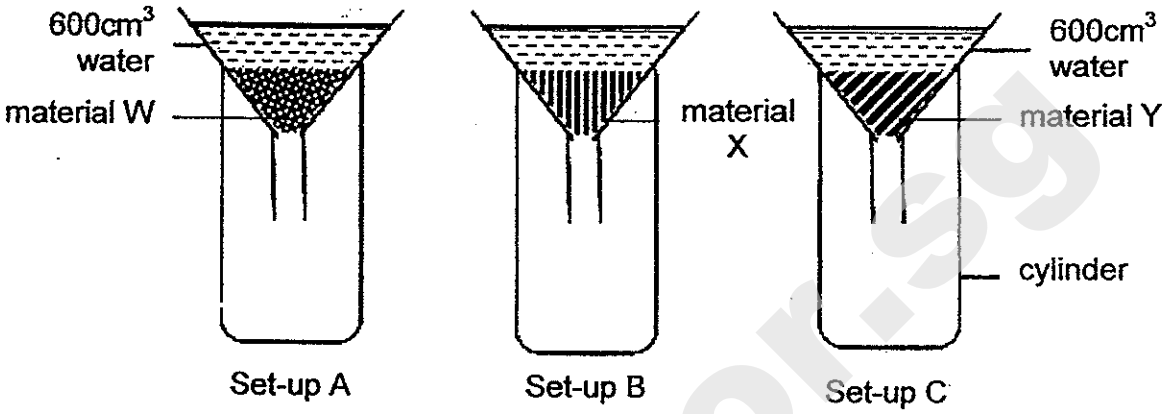
38 Three types of materials W, X and Y of equal mass were placed in the funnels as shown in the diagram below. 600cm^3 of water was poured into each funnel at the same time.



After 5 minutes, the volume of water in each cylinder was measured and the results were recorded in the table below.

		Volume of water (cm^3) in the cylinder
Set-up	Material	After 5 minutes
A	W	540
B	X	250
C	Y	600

(a) Based on the results above, what can you tell about Materials W, X and Y? [1]

_____

_____

_____

(b) Which material will be most suitable to be made into a diaper? Explain your answer. [1]

_____

_____

(Go on to the next page)

SCORE	2

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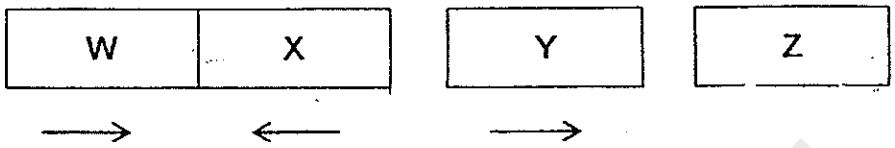
39 Ahmad had four metal bars W, X, Y and Z. He carried out an experiment with the four bars and recorded his findings in his Science Journal.



- Bar W was attracted to Bar X.
- Bar Y was attracted to Bar W.
- Bar X repelled Bar Y.
- There was no attraction or repulsion between Bar Y and Bar Z.

(a) From Ahmad's findings, what do you think were Bars X and Y? [1]

_____

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

_____

_____

(c) Which bar was made of gold? Why? [1]

_____

_____

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SCORE 3

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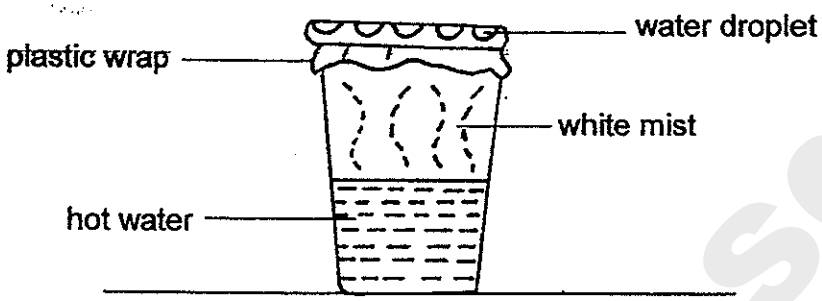
40 Kasini carried out the following experiment in her kitchen. She left a glass of hot water sealed with plastic wrap, on the table. After a while, she saw water droplets forming on the underside of the plastic wrap.



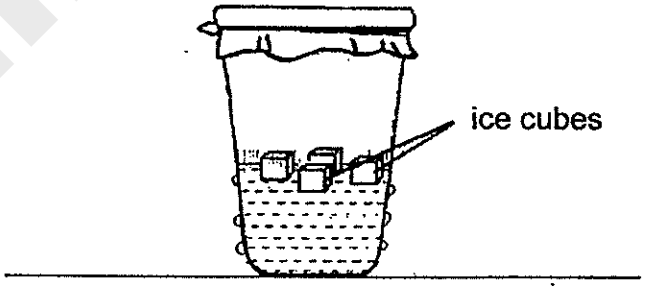
The hot water in the experiment changes from one state to another as shown by the flowchart below.

(a) Name the processes A and B. [1]

(i) A: _____

(ii) B: _____

Kasini repeated the experiment with a sealed glass of water with ice cubes.



(b) Draw water droplets on the diagram above to show where the droplets would be formed. [1]

(c) Explain your answer. [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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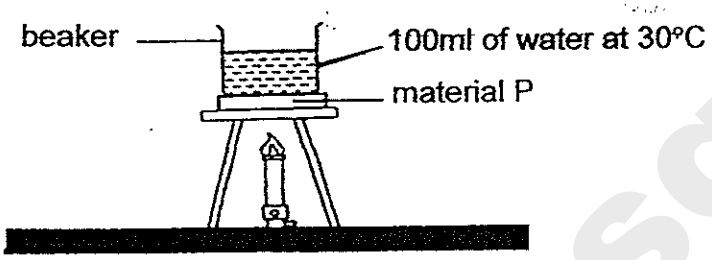
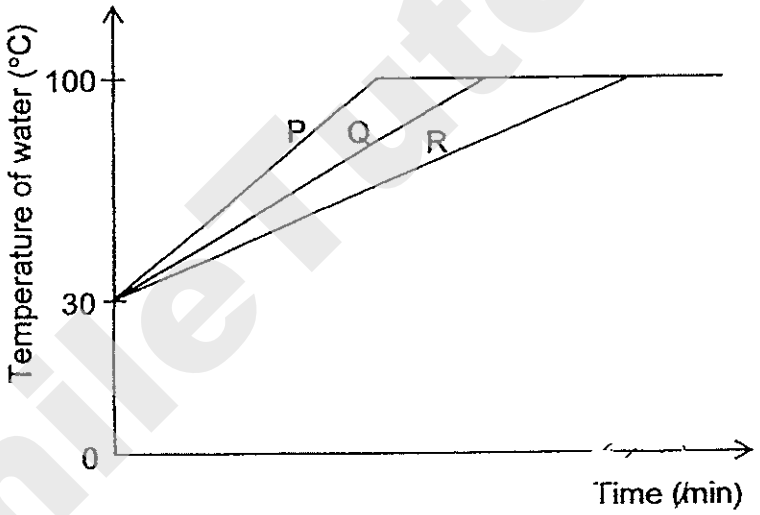
41 Matthew conducted an experiment to compare the heat conductivity of materials, P, Q and R. He placed material P under the beaker of water before heating it as shown in the diagram below. He then recorded the time taken for the water to boil.



He repeated the experiment using materials, Q and R. The graph below shows the results he collected.



(a) Give a reason why the amount of water in the beaker, must be kept the same. [1]

_____

_____

(b) What can you conclude about the heat conductivity of the three materials, P, Q and R? [1]

_____

_____

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SCORE	2

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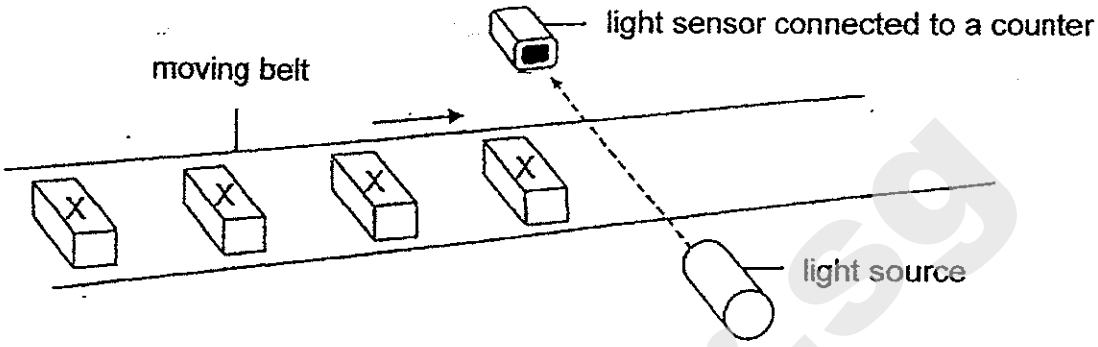
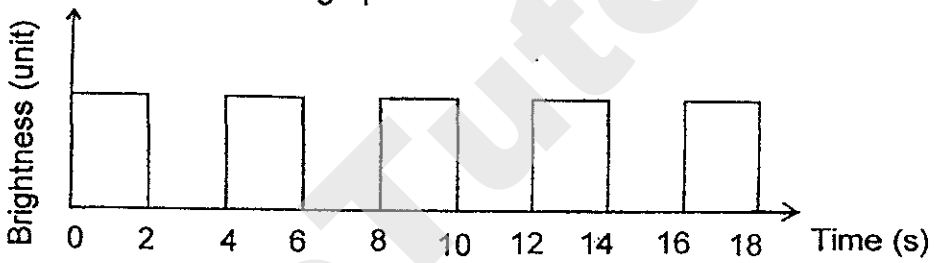
42 The set-up below uses a light sensor to count the number of identical object X on a moving belt.



The belt moves at a constant speed. When an object X is between the light source and sensor, it blocks the light from reaching the sensor. The data recorded is shown in the graph below.



(a) Based on the graph, how many object X passed the sensor in 18 seconds? [1]

_____

(b) The light source and the sensor are placed 3 cm above the belt. Can an object that is less than 3 cm in height be detected? Give a reason for your answer. [1]

_____

_____

(c) The set-up shown above can count 20 object X in a minute when the belt is moving at its maximum speed.
Suggest one way to count more than 20 object X in a minute without changing the speed of the belt. [1]

_____

_____

(Go on to the next page)

SCORE	3

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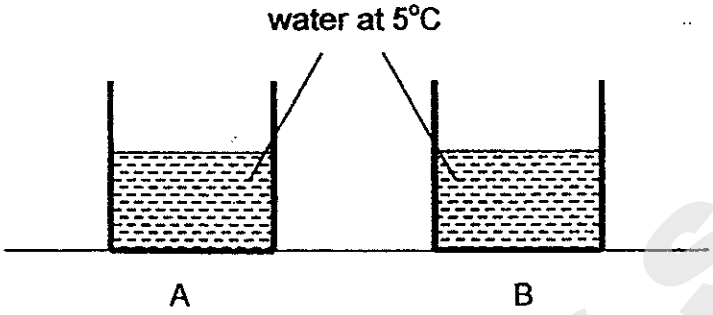
43 Containers A and B, each made of a different material, were filled with the same amount of water at 5°C at the same time. Container A felt colder than B when touched.



Both containers were left in a classroom at 25°C. The temperature of water in the beaker was measured every five minutes.
The table below shows the temperature of water in Container B over a period of 20 minutes.

Time (min)	0	5	10	15	20
Temperature of water in Container B (°C)	5	8	11	14	18

(a) Would the temperature of water in Container A at the 20th minute be more than, less than or equal to 18°C? [1]

_____

_____

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

_____

_____

(Go on to the next page)

SCORE	2

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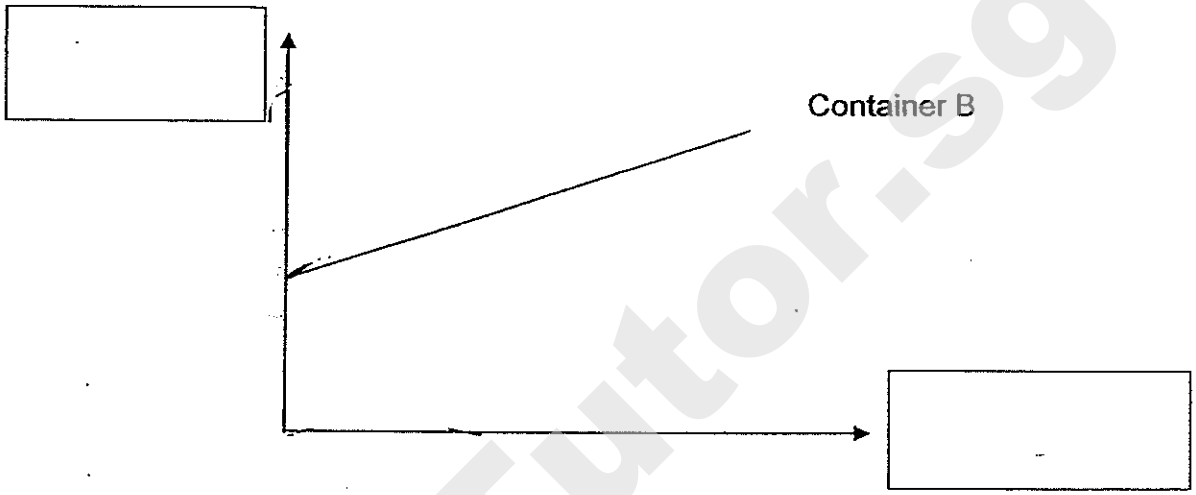
(c) *(Continue from Question 43)*
The graph below shows the temperature changes of the water in the beakers over a period of time. The line that shows the changes in the temperature of water in Container B has been drawn for you.

(i) Label the x-axis and y-axis clearly in the boxes provided. [1]



(ii) Draw and label a line in the graph above to show the changes in the temperature of water in Container A over time. [1]

(d) Which container, A or B , would be more suitable to use as a lunchbox to keep food warm? Explain your answer. [1]

_____

_____

_____

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SCORE	/ 3

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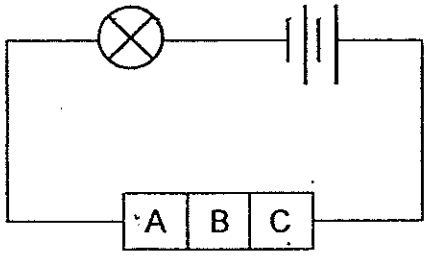
44 Susan was given 3 rods of different materials A, B and C to test whether they could conduct electricity. She joined them together and connected them to an electric circuit as shown in the diagram below.



Test 1

She observed that the bulb did not light up. Keeping the rest of the circuit unchanged, she re-arranged the order of the materials in the circuit two more times according to the order shown in the diagram below.

A	C	B

Test 2

C	A	B

Test 3

(a) In the table below, indicate whether the bulb will light up for Test 2 and Test 3. [1]

	Will the bulb light up? (State Yes or No)
Test 2	
Test 3	

(b) Using two batteries, one bulb and all the three rods, Susan then re-arranged the electric circuit so that the bulb might light up. Draw the circuit diagram, using circuit symbols, of one such possible arrangement, in the box below. [2]

End of Booklet B

SCORE	3

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EXAM PAPERS 2014

SCHOOL: CATHOLIC HIGH SCHOOL
SUBJECT: SCIENCE
LEVEL: PRIMARY 5
TERM: SA 2

BOOKLET A

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	3	3	1	4	1	3	2	3	2
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	4	3	1	3	2	2	4	2	3
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
1	2	3	4	2	2	3	4	2	4

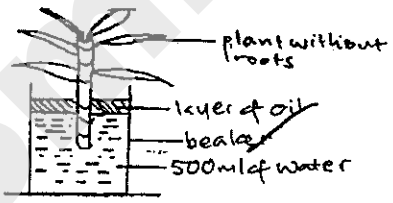
BOOKLET B

Q31 a) He was trying to find out if the number of plants per plot affects the average number of fruits per plant.
b) The type of soil must be the same.
c) There is overcrowding, so each plant does not have enough water and air, so the average number of fruits per plant is lower than usual.

Q32 As the distance of the young plants from the parent plant increases, the number of plants decreases. Plant X is dispersed by splitting as most young plants were found near the parent plant.

Q33 a) He needs to measure the amount of food after the experiment.
b) Large intestine.

Q34 a)



b)To compare with X and to confirm that water loss in the beaker is solely due to the roots taking in water and nothing else.
c) C.The water level will decrease as the roots will slowly take in the water in the beaker for life processes such as photosynethsis.

Q35 a) C. It has a cell wall which is in a plant cell but A and B do not have cell walls.
b) The nucleus carries genetic information to be passed down from one generation to another.

Q36 a) To find out if the type of filter used affects the rate of photosynethesis.
b) The amount of dissolved carbon dioxide in the water in the beaker has decreased as the plant has used up most of it for photosynthesis, so photosynthesis takes place at a slower rate.

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c) She moved the torch closer to the plant. When the intensity of light increases, photosynthesis takes place at a faster rate.

Q37 a) plant→B→A→C

b) The population of B will increase. The population of C will decrease and eventually there is more C. The population of plants decreases.

Q38 a) X is the most absorbent as it has the least amount of water collected in the cylinder followed by W and Y.

b) X. It is the most absorbent and will absorb as much of the child's urine as possible and urine will not leak out quickly and easily.

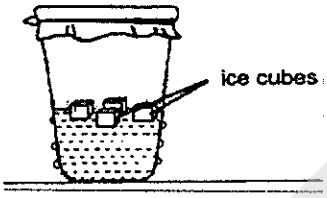
Q39 a) Magnets.

b) Only magnets can repel each other when their like poles are facing each other, and X and Y repelled each other, so they are magnets.

c) Z. Gold is not a magnetic material, so it will not attract or repel any magnet and Z did not attract and repel Y, which is a magnet.

Q40 a)(i) A: evaporation (ii) B: condensation

b)



c) The warm water vapour from the surroundings touch and then lose heat to the cooler surface of the glass containing the ice water, condense and form tiny water droplets.

Q41 a) So that the difference in increase of temperature of water taken to boil is soley due to the different heat conductivity of the material, and nothing else.

b) P is the best conductor of heat, followed by Q then R.

Q42 a) 4.

b) No. The path of light will not be blocked by the object, so the object will not be detected as the light sensor can still sense the light.

c) Move the objects closer to each other.

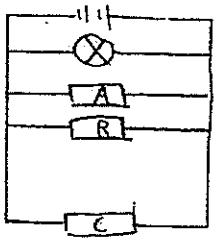
Q43 a) More.

b) A is a better conductor of heat than B, so heat pass through A faster than B to heat up the water, so A will gain heat faster than B.

d) B. B is a poorer conductor of heat and loses heat more slowly than A to the surrounding.

Q44 a) No. No.

b)



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CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 5
Semestral Assessment 2 – 2014
SCIENCE

BOOKLET A

30 October 2014

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 29 printed pages.

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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. Which of the following statement(s) about the spores of a mushroom and the seeds of lady's finger are correct?

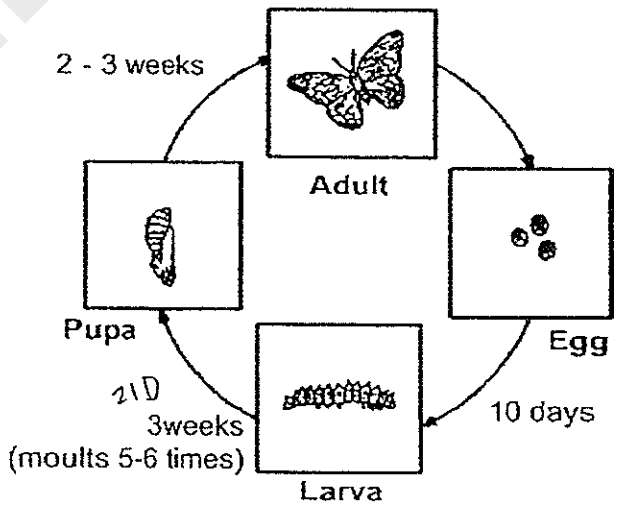
   A A seed can be seen by the naked eye but a spore cannot.

   B It takes one seed to grow into a plant but many spores to grow into a mushroom.

   C Both spores and seeds will grow into new organisms under the right conditions.

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

2. According to the life cycle given below, when does the young of a butterfly stop feeding completely?



   (1) About 10 days after the egg is laid.
   (2) About 21 days after the egg is laid.
   (3) About 31 days after the egg is laid.
   (4) About 45 days after the egg is laid.

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3. Three organisms, A, B and C, were observed over a period of time. Their characteristics were recorded in the table below.

	Organisms		
Characteristics	**A**	**B**	**C**
Able to reproduce	Yes	Yes	Yes
Able to make its own food	No	Yes	No
Able to respond to changes around them	Yes	Yes	Yes
Able to move freely from place to place	No	No	Yes

Which one of the following is the most suitable headings for each group of organisms?

	A	B	C
(1)	Plant	Fungi	Animal
(2)	Fungi	Plant	Animal
(3)	Plant	Bacteria	Fungi
(4)	Animal	Plant	Fungi

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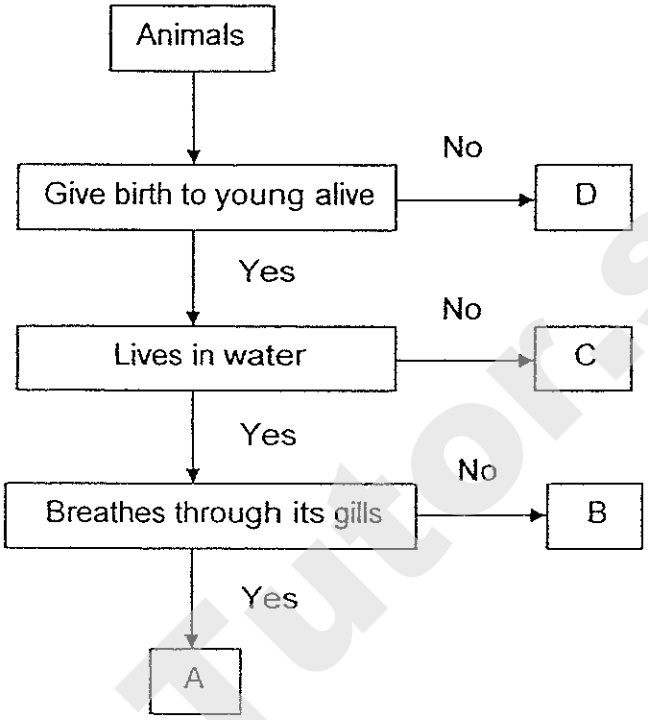
4. The flowchart below shows some characteristics of 4 animals.



Which letter, A, B, C and D, matches the whale?

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

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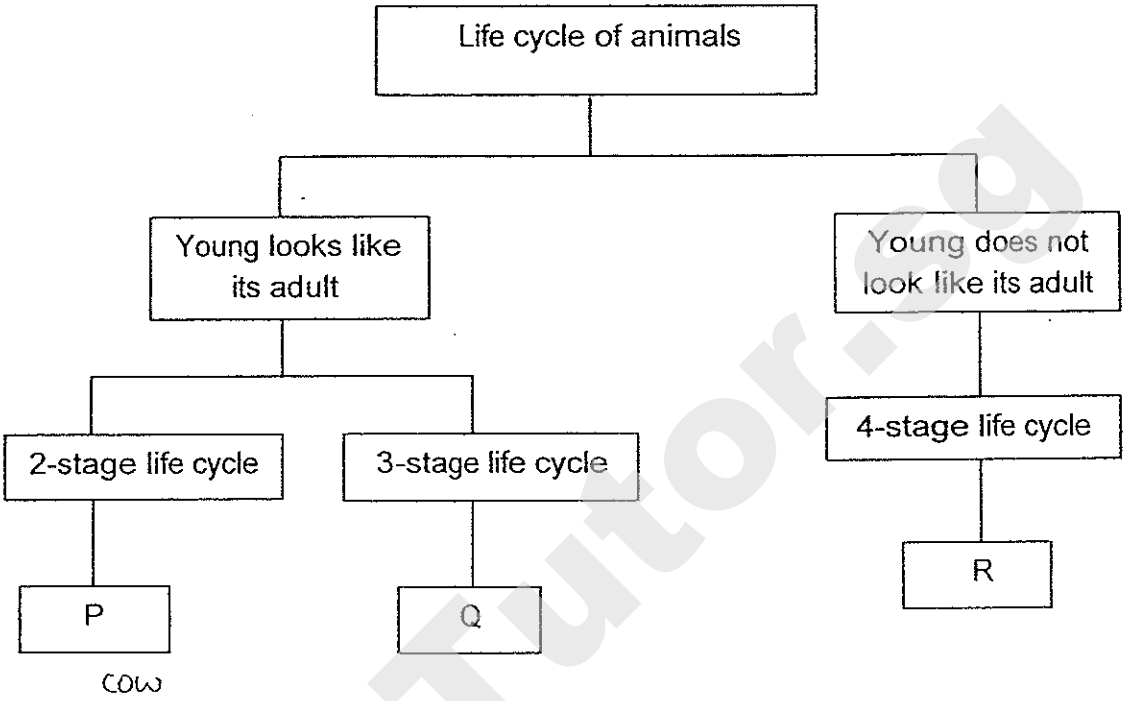
5. The classification chart below shows the life cycle of animals.



Which one of the following represents P, Q and R?

	P	Q	R
(1)	Dog	Housefly	Cockroach
(2)	Chicken	Butterfly	Dragonfly
(3)	Cow	Grasshopper	Butterfly
(4)	Duck	Cockroach	Mosquito

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6. The picture below shows droplets of water on blades of leaves.

Which of the following could have caused the droplets of water to be found on the blade of a leaf?

A Condensation of water vapour in the air.
B The temperature of the surrounding air is cool.
C The leaves are giving out water to cool the plant.
D Evaporation of water from the plant had taken place.

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

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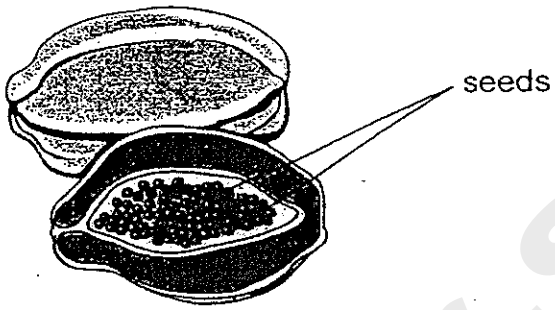
7. The diagram below shows the cross-section of a papaya fruit.



Based on the diagram above, what conclusion/s can we draw on the papaya plant?

A The papaya flowers grow in clusters.

B The papaya flower has many ovaries.

C The papaya flower has many colourful petals.

D The ovary of the papaya flower contains many ovules.

(1) B only

(2) D only

(3) A and D only

(4) B and C only

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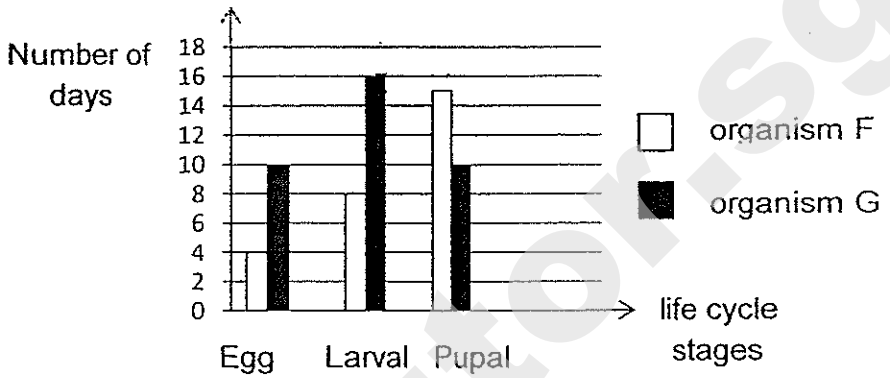
8. The graph below shows the number of days for each stage of life cycle of organisms, F and G.



Based on the graph above, which stage would organisms, F and G, be on the 13th day after the eggs were laid?

	Organism F	Organism G
(1)	Larval	Larval
(2)	Pupal	Larval
(3)	Pupal	Pupal
(4)	Adult	Adult

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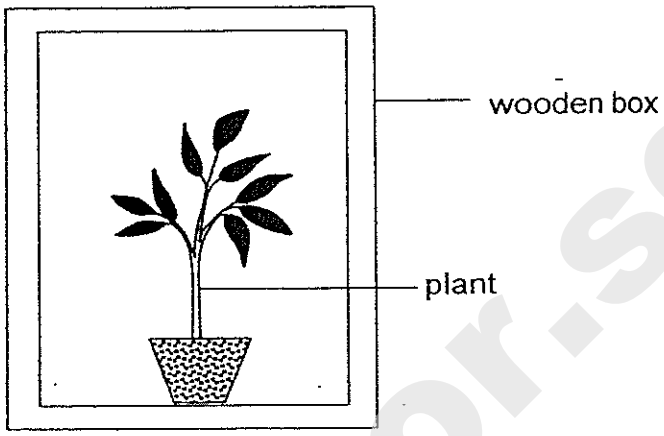
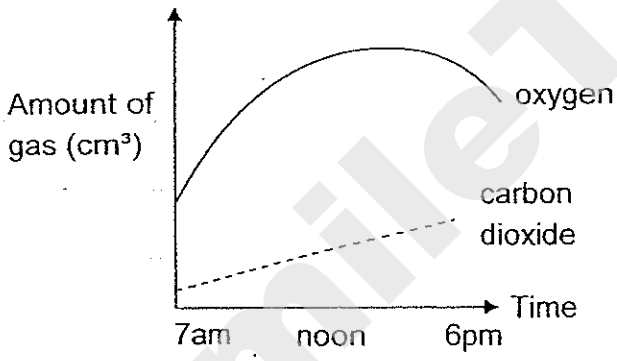
9. A potted plant with sufficient amount of water was placed in an air-tight wooden box as shown below.

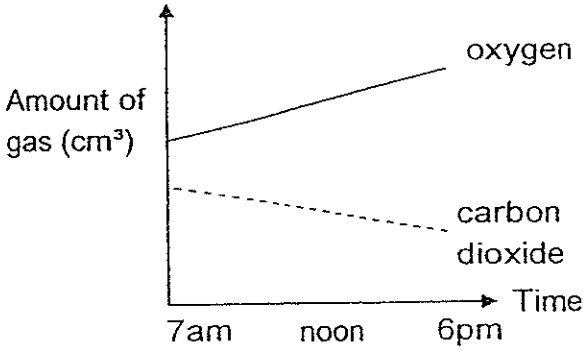


Which one of the following graphs shows the correct amount of oxygen and carbon dioxide present in the box during the day?

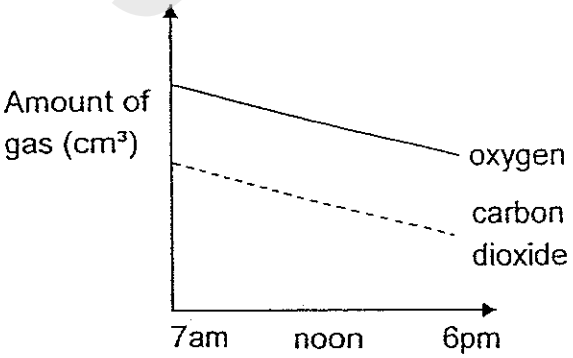
(1)



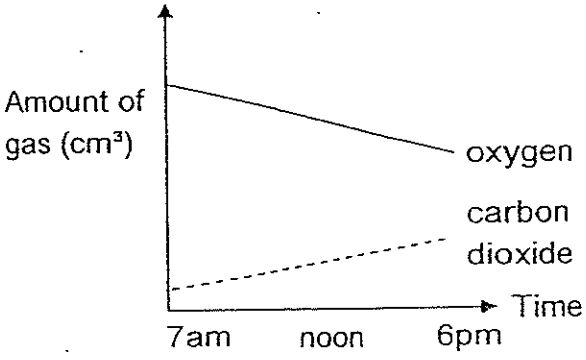
(2)



(3)



(4)



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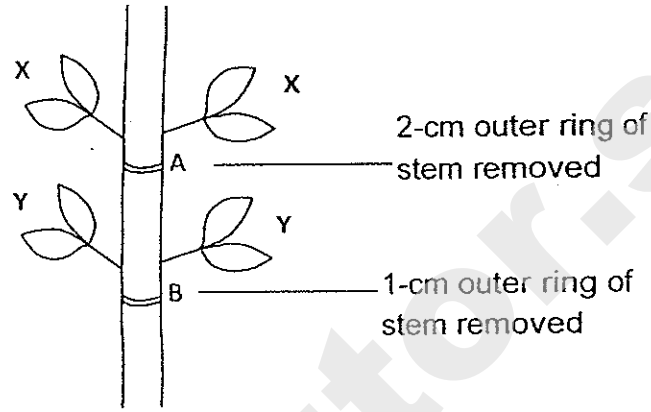
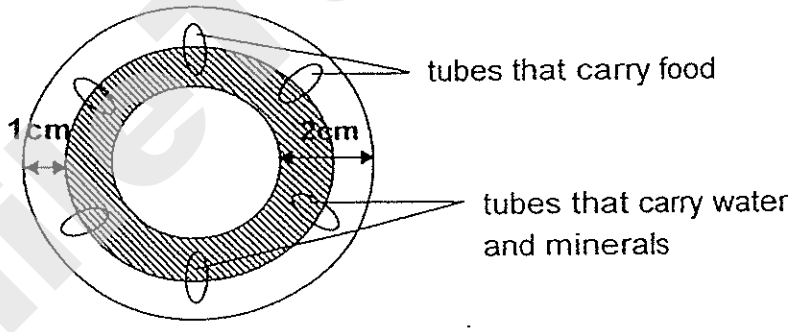
10. Two rings were cut at A and B on the stem of a potted plant. At A, a 2-cm outer ring of the stem was removed. At B, a 1-cm outer ring of the stem was removed.



The diagram below shows the cross-section of the stem. The shaded part shows the location of the water-carrying tubes in the plant.



The plant was then watered and left under the sun for an hour. Which one of the following statements is true?

(1) All the leaves on the plant would wither and die.

(2) No water could be carried to the leaves at X and Y.

(3) The leaves at Y could not carry out photosynthesis.

(4) The leaves at X could not carry out photosynthesis.

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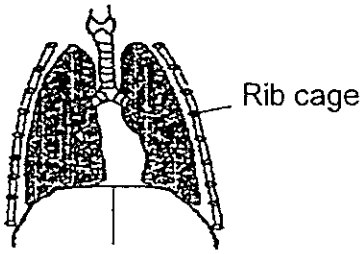
11. The diagram below shows part of a human respiratory system.



Which one of the following shows the correct movement of the rib cage and diaphragm during inhalation and exhalation of air?

	Rib cage		Diaphragm	
	Exhalation	**Inhalation**	**Exhalation**	**Inhalation**
(1)	Move out and upwards	Move in and downwards	Moves upwards	Moves downwards
(2)	Move in and downwards	Move out and upwards	Moves upwards	Moves downwards
(3)	Move in and downwards	Move out and upwards	Moves downwards	Moves upwards.
(4)	Move out and upwards	Move in and downwards	Moves downwards	Moves upwards

12. Which of the following statement(s) is/are true?

A A mother cannot pass her characteristics to her son.

B A grandfather can pass his characteristics to his granddaughter

C Parents can only pass down physical characteristics to their children.

D When children become adults, they may change their traits by changing the cells in their body.

(1) B only

(2) C only

(3) C and D only

(4) A, B, C and D

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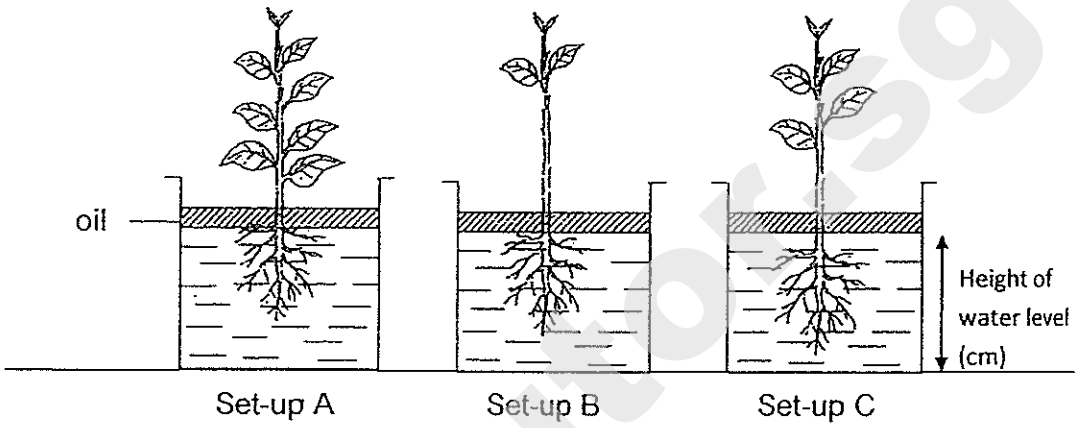
13. Robbie placed three plants of the same species in identical beakers, each containing an equal amount of water as shown in the diagram below. She then placed set-ups, A, B and C, on a table near a window for a week, away from direct sunlight.



At the end of the experiment, Robbie observed the changes in the water level in the three set-ups. Which of the following would she observe?

A There is no change in the water level in the three set-ups.

B The water level in Set-up A dropped more than Set-up B and C.

C The water level in Set-up B dropped the least amount compared to Set-up A and C.

D The water level in the three set-ups decreased by the same amount.

E The water level in Set-up C dropped less than Set-up A.

(1) A, B and C only

(2) A, C and D only

(3) B, C and E only

(4) B, D and E only

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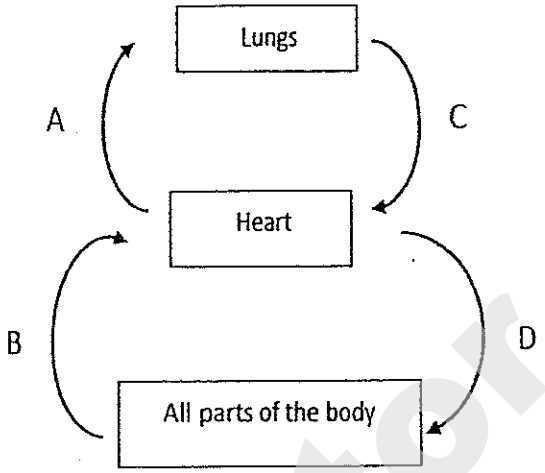
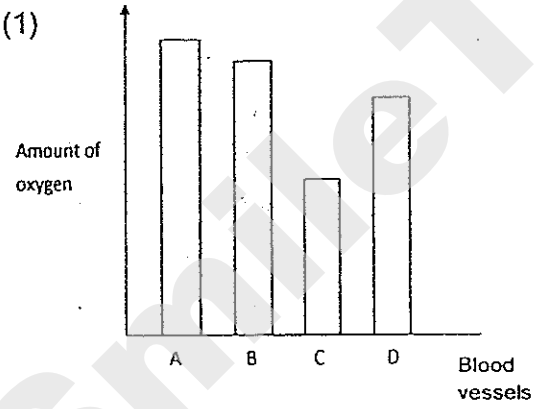
14. The diagram below shows how blood circulates in the human body. Arrows, A, B, C and D, represent the flow of blood to the various parts of the body.

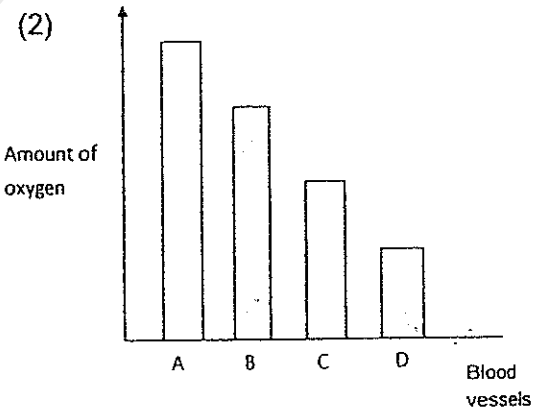


Which one of the following bar graphs shows the amount of oxygen in the different blood vessels?

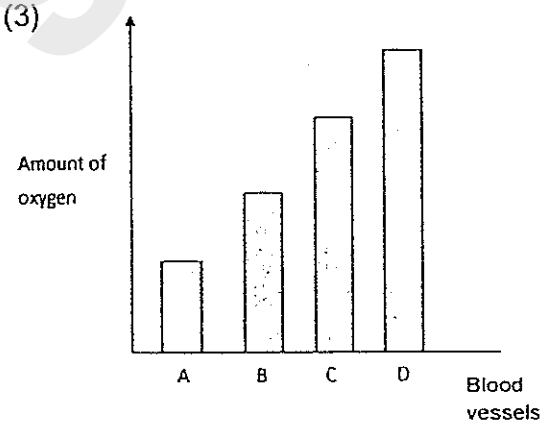
(1)



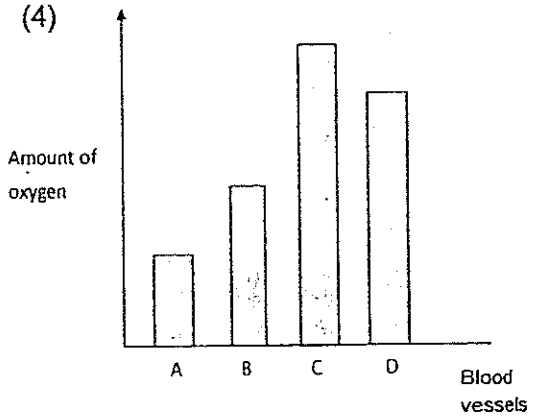
(2)



(3)



(4)



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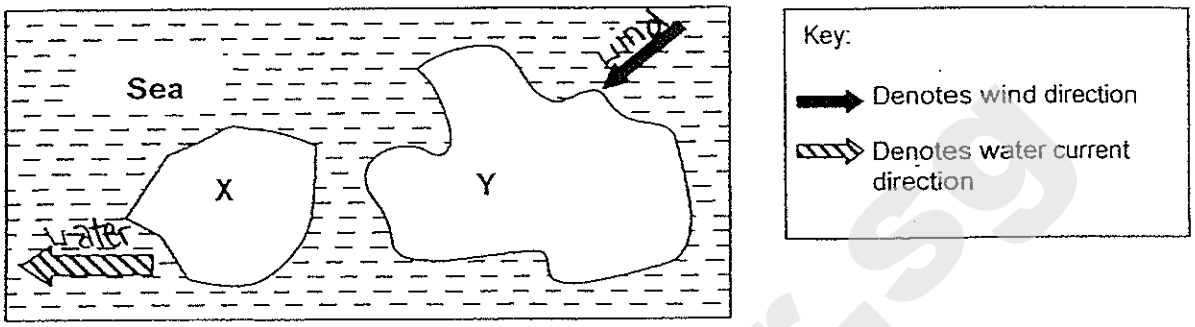
15. The diagram below shows two deserted islands, X and Y.



In 2012, four types of plants were found on island X but only grass was found on island Y. Some features of the four plants on island X are shown in the table below.

Plant	Features
A	Has sweet and juicy fruits with small seeds.
B	Has fruits that are waterproof and float on water
C	Has fruits with wing-like structures
D	Has fruits that split open

In 2014, new plants were found growing on island Y. They were believed to have originated from island X. Which plant(s) could this/these be?

(1) A only

(2) A and B only

(3) B and D only

(4) C and D only

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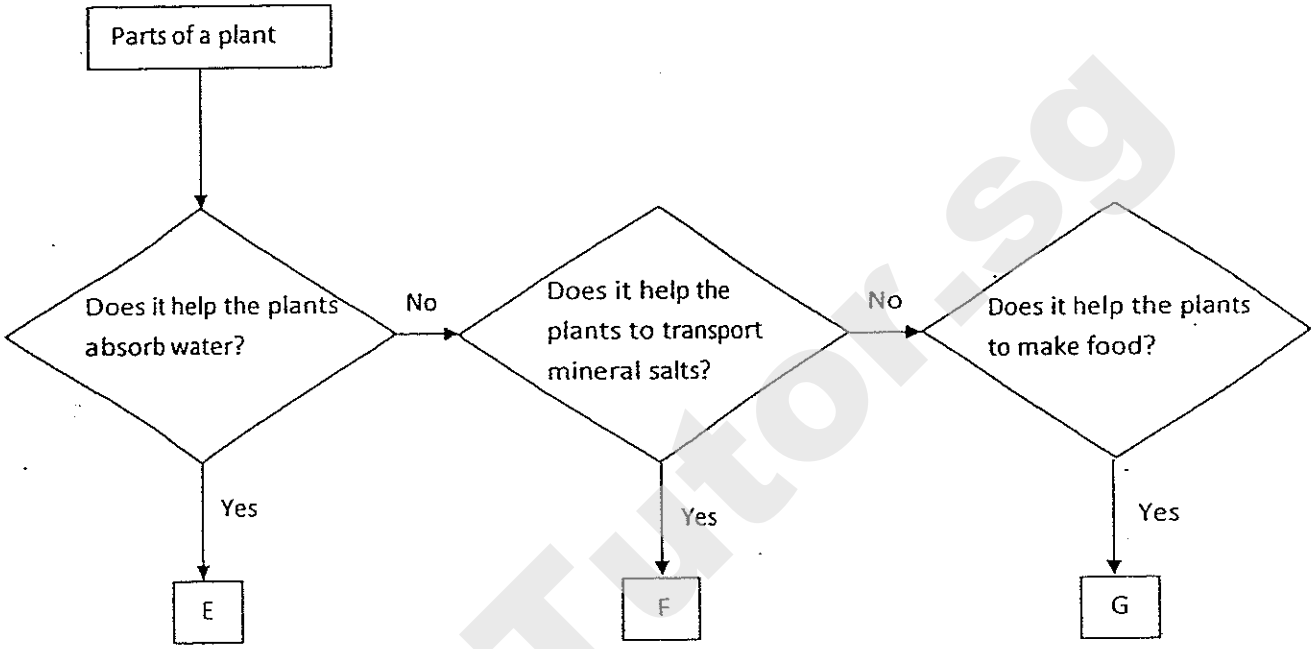
16. Study the flowchart below



Which one of the following correctly identifies E, F and G?

	E	F	G
(1)	Roots	Water-carrying tubes	Leaves
(2)	Roots	Leaves	Food-carrying tubes
(3)	Water-carrying tubes	Food-carrying tubes	Leaves
(4)	Water-carrying tubes	Roots	Food-carrying tubes

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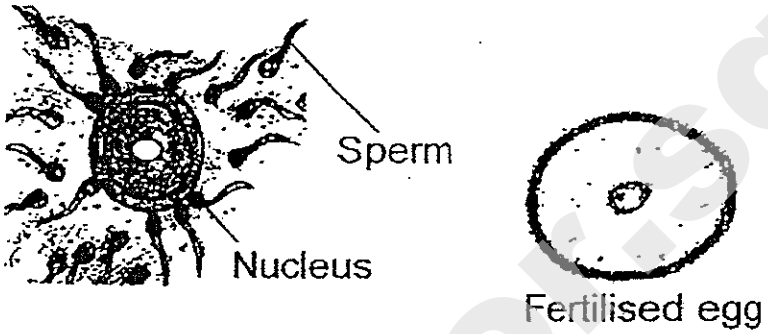
17. The diagram shows the fertilisation of a human egg.



Four statements were made on the above diagram:

A The sperm developed in the testes of the male reproductive system.

B The fertilised egg developed in the ovary of the female reproductive system.

C Usually more than one sperm will enter the egg to increase the chances of fertilisation.

D The nucleus of the fertilised egg consists of genetic materials from both the sperm and the egg.

Which of the following statements are true?

(1) A and D only

(2) B and D only

(3) A, B and C only

(4) A, C and D only

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18. Jess wanted to find out how temperature affects the rate at which ice melts.

She placed an ice cube each in cups, A and B, which are filled with milk at different temperatures. He recorded the results in the table below.

	Cup A	Cup B
Temperature of milk (°C)	40	80
Time taken for ice cube to melt completely (minutes)	6	3

In order to conduct a fair test, which of the following variables should Jess keep the same?

A Volume of milk

B Temperature of milk

C Volume of ice cubes

D Material of the cups

(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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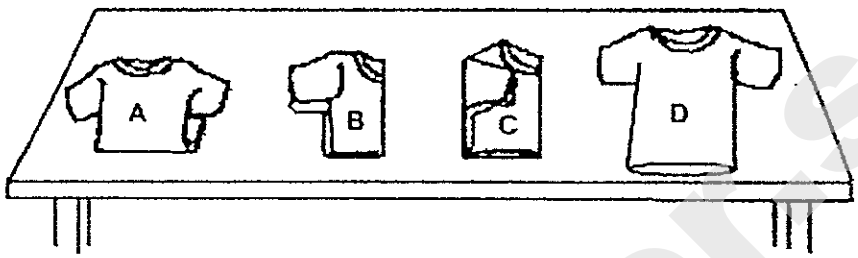
19. Thomas carried out an experiment with 4 similar T-shirts, A, B, C and D. Each T-shirt was soaked with an equal amount of water.

He then arranged the T-shirts as shown in the diagram below.



What measurement should he take in order to find out how the size of the exposed surface area affects the rate of evaporation of water?

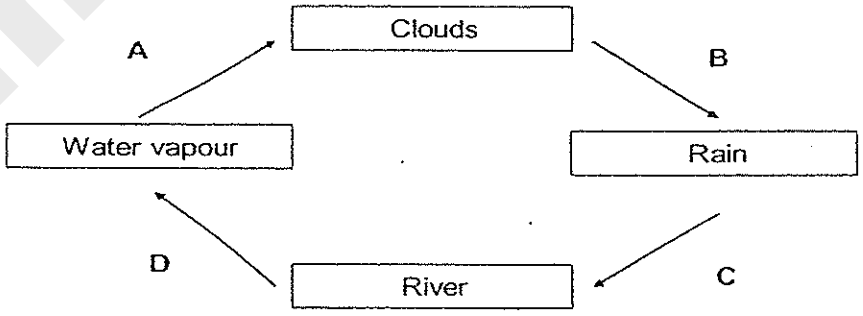
(1) Temperature of the surrounding air.

(2) Temperature of each T-shirt after 6 hours.

(3) Difference in mass of the T-shirts after 6 hours.

(4) Difference in the size of the exposed surface area of the T-shirts.

20. The diagram below shows the water cycle.



A, B, C and D represent the processes in the water cycle. Which processes. A, B, C or D involve a change in the state of water?

(1) A and B only

(2) A and D only

(3) B and C only

(4) C and D only

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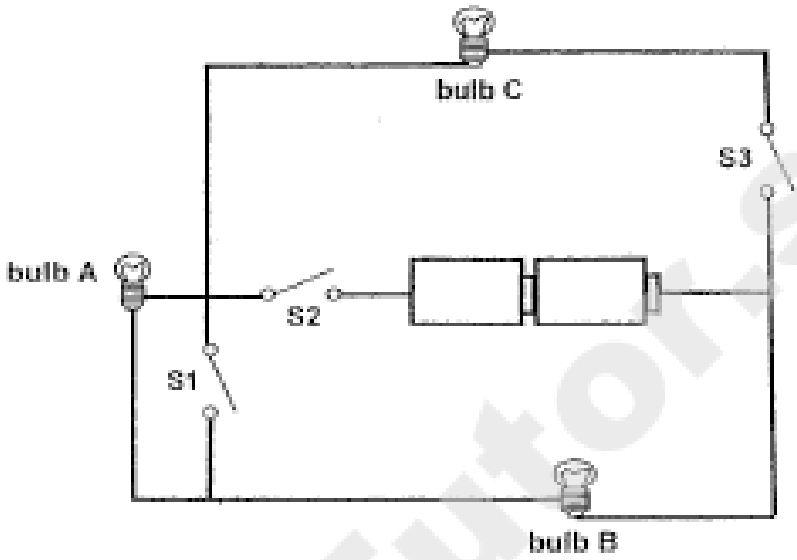
21. Bulbs A, B and C, and switches, S1, S2 and S3, are connected in a circuit as shown below. All switches and bulbs are working properly.



Which one of the following is correct?

	Switches			Does the bulb light up?		
	S1	S2	S3	Bulb A	Bulb B	Bulb C
(1)	Closed	Open	Closed	No	No	Yes
(2)	Open	Closed	Open	Yes	No	No
(3)	Closed	Closed	Open	No	Yes	Yes
(4)	Open	Closed	Open	Yes	Yes	No

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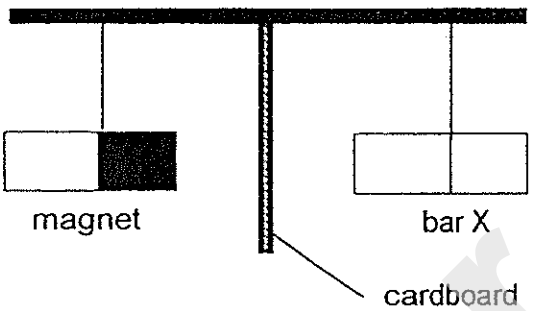
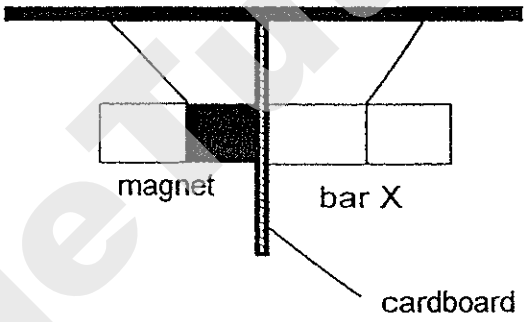
22. When a magnet and Bar X were released to hang freely, they moved towards each other as shown in the diagram below.

Before



After



Which of the following conclusions can be made from the above experiment?

A Magnetic force can pass through the cardboard.

B Bar X is a magnet.

C Bar X is made of a magnetic material.

D Cardboard is a magnetic material.

(1) A and D only

(2) A and C only

(3) B and C only

(4) B and D only

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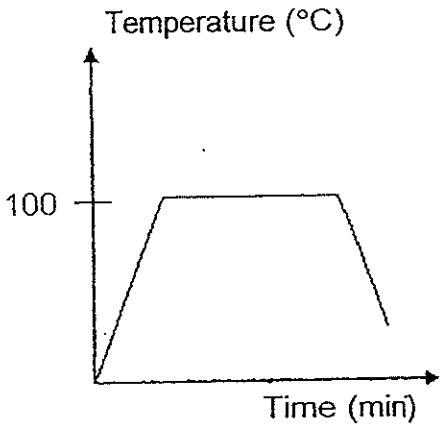
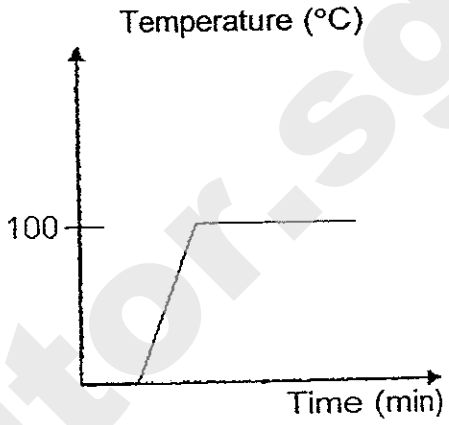
23. Emma heat a beaker of ice cube until it changed from solid state to gaseous state. Which one of the following graphs shows the change in temperature of the ice cube as it changes its state over time correctly?

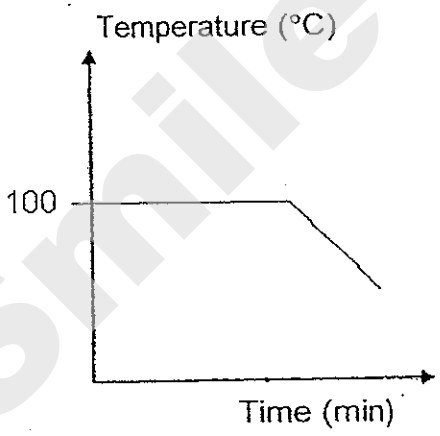
(1)



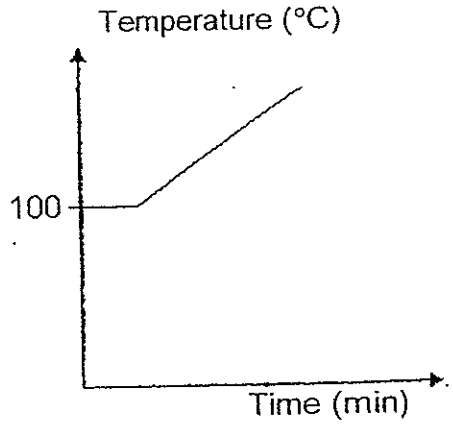
(2)



(3)



(4)



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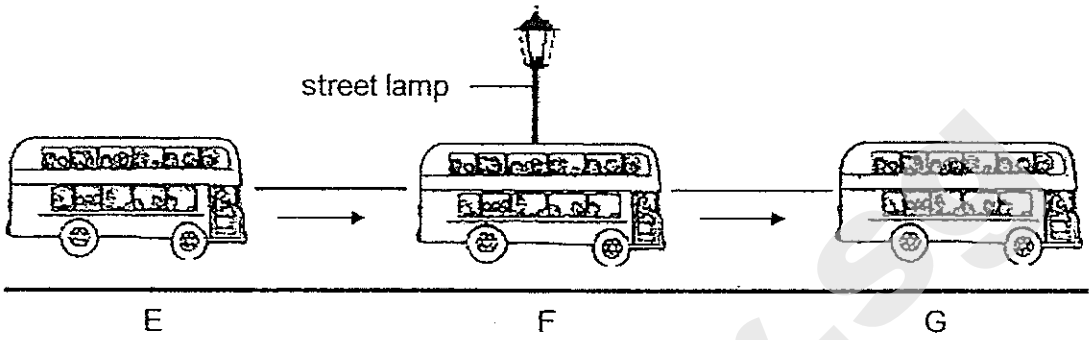
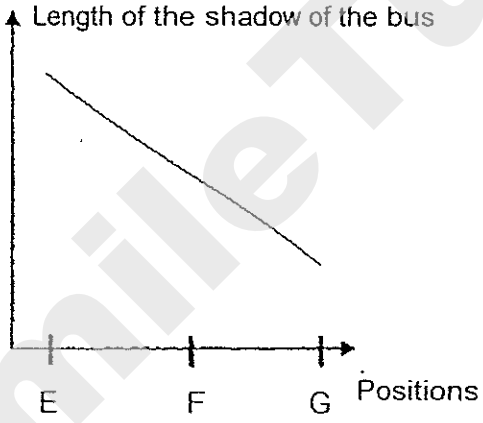
24. A bus was travelling past a street lamp from point E, F and G as shown below.

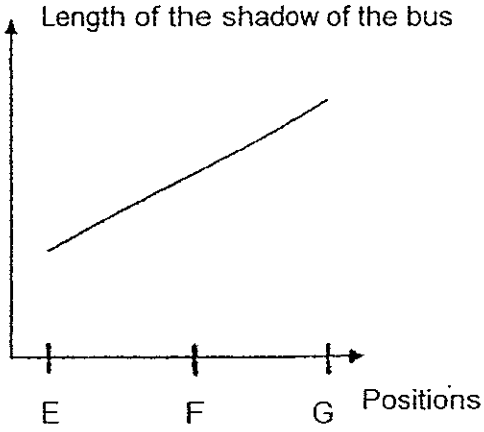


Which one of the graphs below represents the length of the shadow of the bus correctly as it passes the street lamp from position E to G?

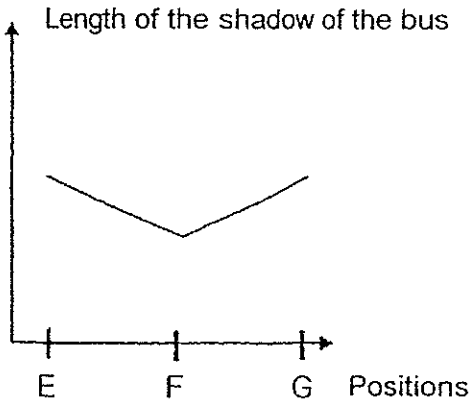
(1)



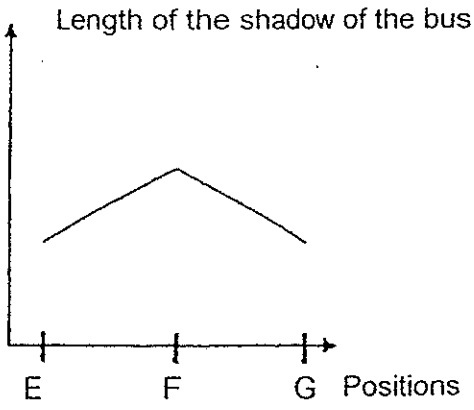
(2)



(3)



(4)



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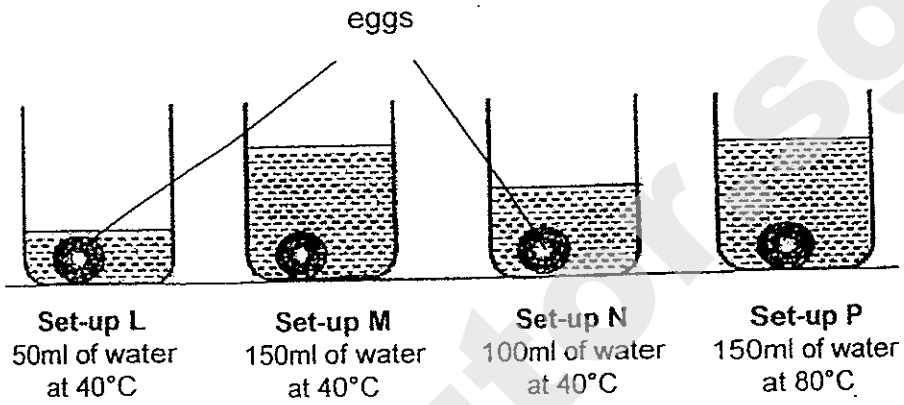
25. The 4 beakers in the set-ups below were filled with different amounts of water at different temperatures as shown in the diagram below. 4 identical eggs were each gently put into each of the beakers. They were left in the beakers for 5 minutes. After 5 minutes, the eggs were taken out and cracked to see how cooked each of the eggs was.



Arrange the set-ups above according to the set-up with the egg that was most cooked to the set-up with the egg that was least cooked. Which one of the following shows the correct arrangement?

(1) P, N, M, L

(2) L, N, M, P

(3) L, M, N, P

(4) P, M, N, L

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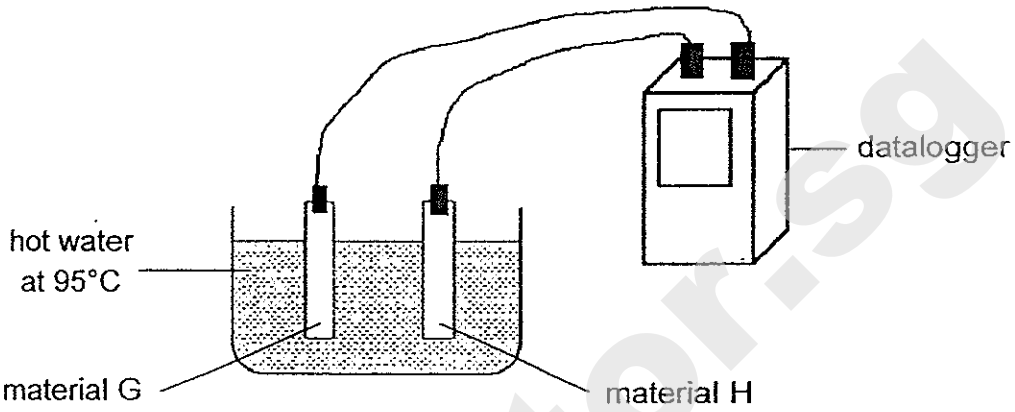
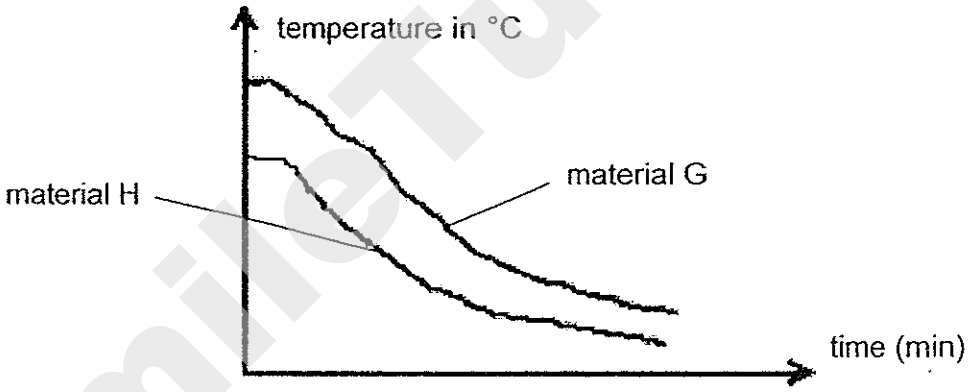
26. Ana conducted an experiment using the set-up below. She measured the temperature of materials, G and H, over a period of time with a datalogger. The results are recorded as shown in the graph below.





Ana wanted to use two containers for two different purposes. One container is to help to cool her porridge quickly. The other container was to keep her cold orange juice cold for a longer period of time. Which material(s) would be more suitable for making the two containers?

	Material for containers	
	To keep her cold juice cold for a longer time	To cool her porridge quickly
(1)	G	G
(2)	H	H
(3)	G	H
(4)	H	G

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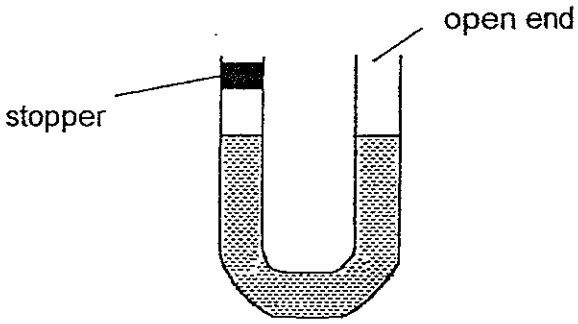
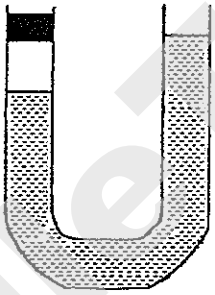
27. The diagram below shows a U-shaped tube with a stopper at one end. The tube is filled with some water.

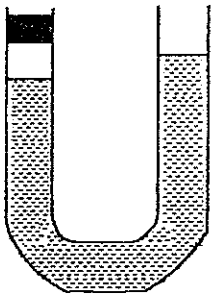


Which of the following shows the correct water level in the tube after more water is added to the tube from the open end?

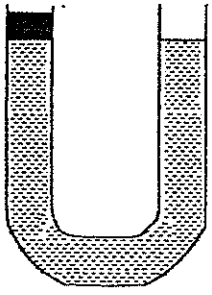
(1)



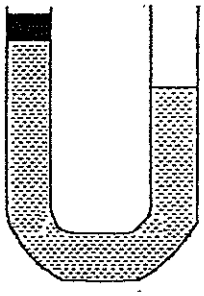
(2)



(3)



(4)



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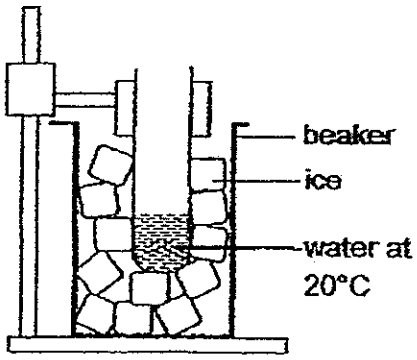
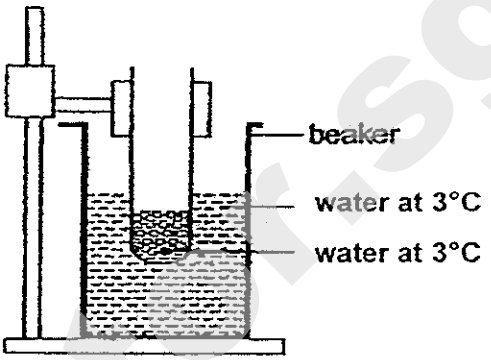
28 Amanda carried out an experiment as shown below. A test tube containing some water at 20°C was placed in the centre of a beaker with some ice. The beaker was then left in the science laboratory with a constant room temperature at 30°C for 15 minutes.



At the start



At the end of 15 minutes

Which of the following statement(s) is/are most likely to be correct based on the experiment above?

A The test tube lost heat to the ice and become cooler.

B The beaker lost heat to the surroundings and become cooler.

C The ice gained heat from the water in the test tube and melted.

D The water in the test tube lost heat to the ice and became cooler.

(1) A only

(2) B and D only

(3) C and D only

(4) A, C and D only

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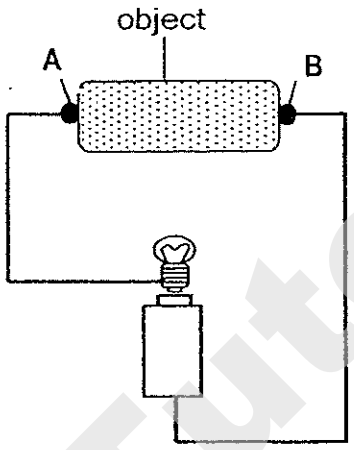
29. Jeremy set up an electric circuit as shown in the diagram below. He connected three different objects, P, Q and R, each made from a different material but of the same size. The objects were connected, one at a time, at the points, A and B, and left in the circuit for 30 minutes each.



The table below shows the observations he made.

	Object		
	P	Q	R
Did the bulb light up?	Yes	No	Yes
Was the object hot?	Yes	No	No

Based on the observations made, which one of the following statement is correct?

(1) Object P gives off less heat than Object R.
(2) Object Q is a conductor of electricity.
(3) Object R is an insulator of electricity.
(4) Objects P and R are conductors of electrcity.

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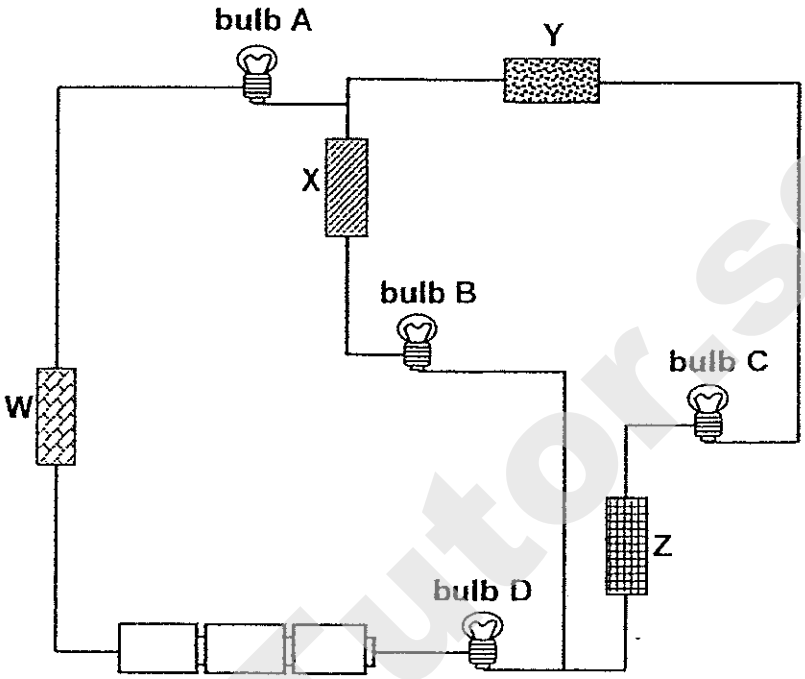
30. Mica set up the circuit shown below



She observed that only bulbs, A, C and D, lit up. What materials could rods, W, X, Y and Z, be made of?

	W	X	Y	Z
(1)	iron	aluminium	steel	copper
(2)	copper	iron	aluminium	plastic
(3)	steel	wood	iron	copper
(4)	iron	plastic	copper	wood

End of paper

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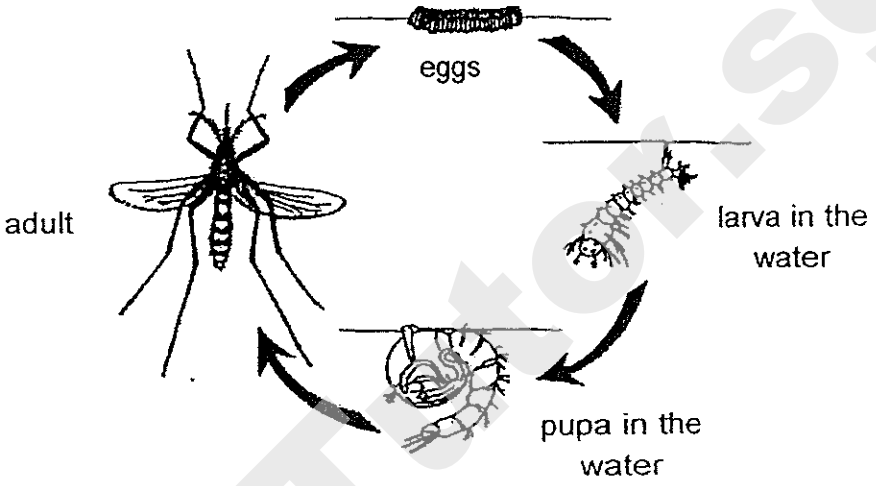
Section B (40 marks)
For questions 31 to 44, write your answers in this booklet.

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

31. The lifecycle of a mosquito is shown below.



(a) At which stage of the life cycle is the mosquito most difficult to get rid of. Give your reason [1]

_____

_____

(b) Oil can be used to reduce mosquito breeding. Explain how it works. [1]

_____

_____

_____

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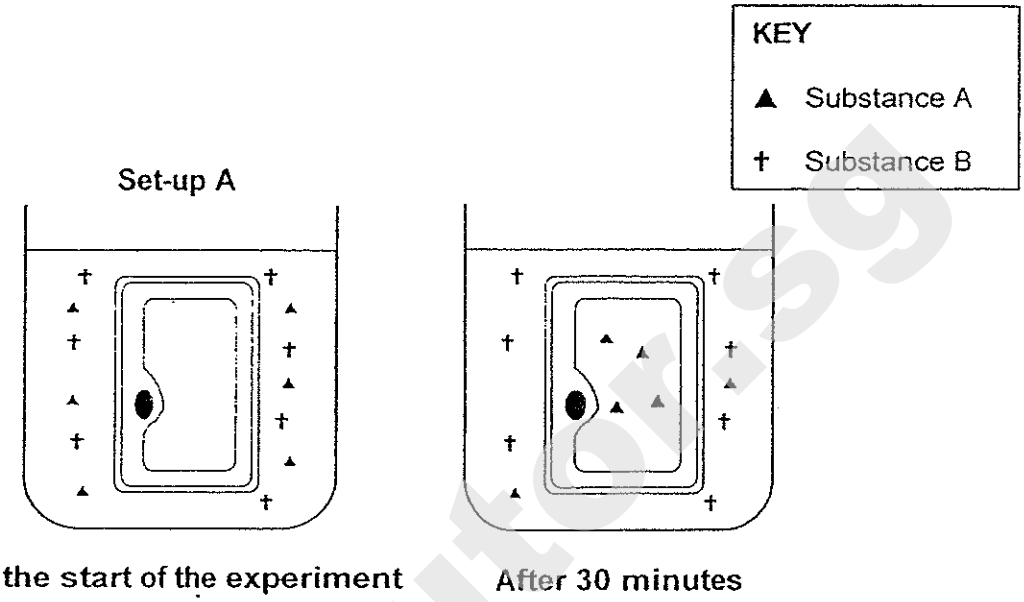
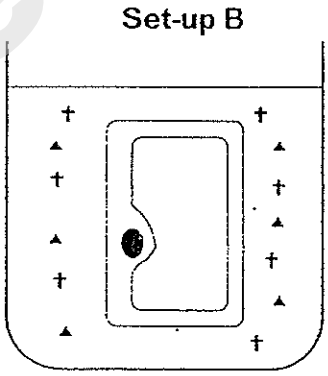
32. A cell was placed in a container filled with solution that contained dissolved substances, A and B, as shown in the diagram below. After 30 minutes, it was observed that only some traces of substance A can be found in the cell.



The experiment was repeated on another one of the same cell with one part of the cell being removed as shown in set-up B.



(a) What do you think could be observed in the cell after 30 minutes? [1]

_____

_____

(b) What is the aim of the experiment?

_____

_____

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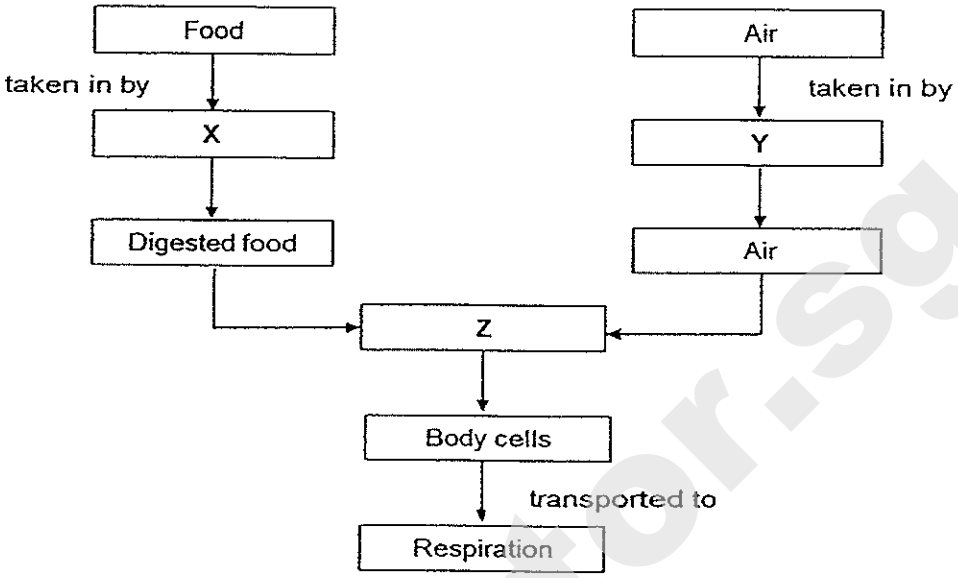
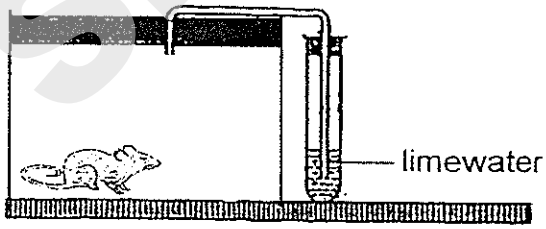
33. The chart below shows how three of our body systems work together to allow respiration to be carried out.



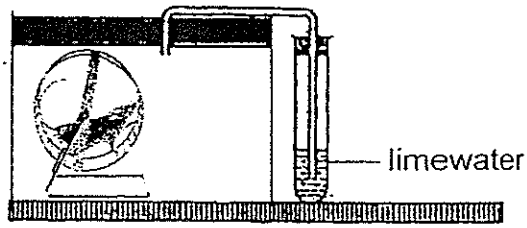
(a) In the given table below, write down the missing systems that represents X, Y and Z. [1]

	System
X	
Y	
Z	

Perry placed two healthy mice separately in clear, plastic tanks. Each tank contained a test-tube of limewater. He added an exercise wheel in the tank for set-up B.



Set-up A



Set-up B

(b) Perry observed that the limewater in set-up B turned chalky faster than set-up A. Explain why the limewater in set-up B took a shorter time to turn chalky than set-up A. [2]

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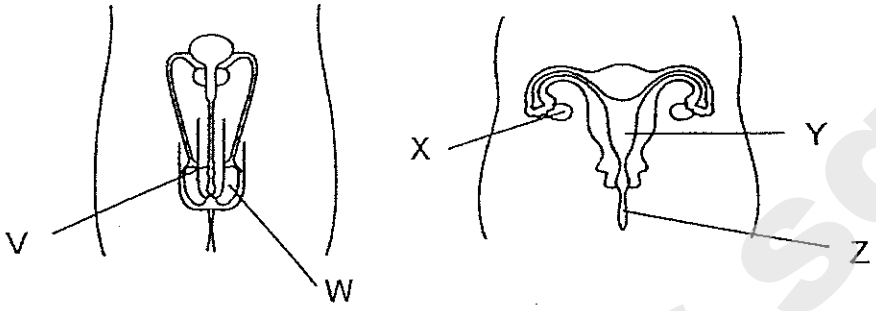
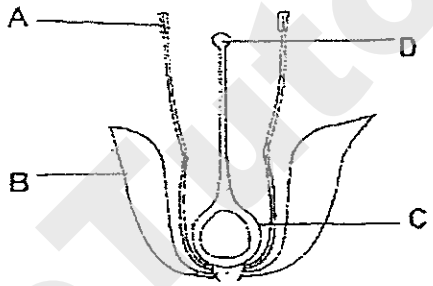
34. The diagram below shows the reproductive systems of a human and a flower.



Male reproductive system Female reproductive system



Reproductive system of a flower

(a) Write the letters that represent the organs that <u>produce</u> the male and female sex cells from both the systems in the table below. [2]

	Human	Flower
Male sex cell		
Female sex cell		

(b) What is the function of Y in the female reproductive system? [1]

_____

_____

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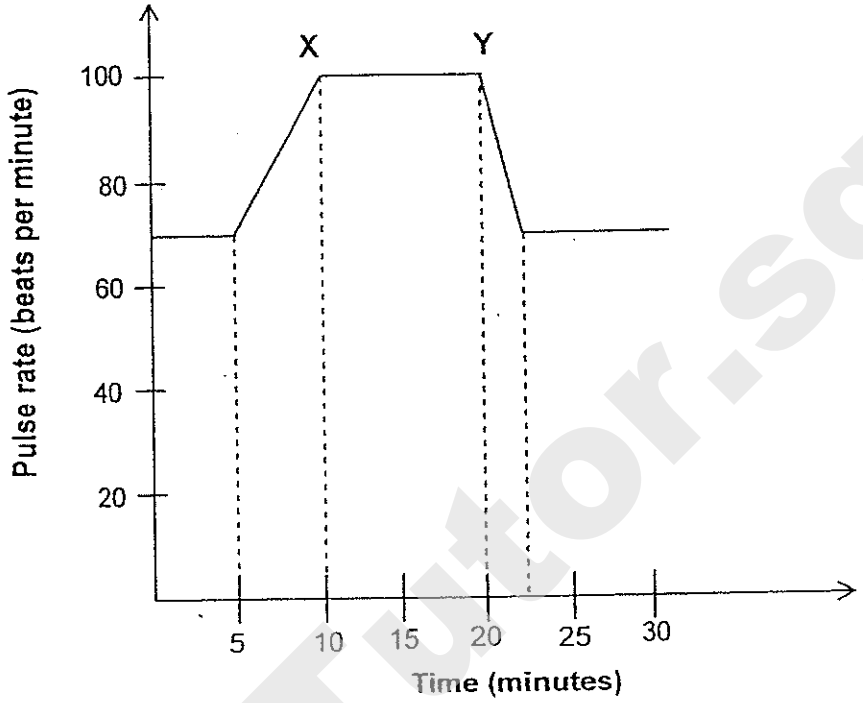
35. The graph below shows Duncan's pulse rate over a period of one hour.



(a) What is Duncan's pulse rate when he is at rest? [½]

_____

(b) For how long was Duncan running at his maximum speed? [½]

_____

(c) Duncan's pulse rate is at a constant high between X and Y. Explain why his pulse rate need to remain high during this time? [2]

_____

_____

_____

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36. Squirrels consume large quantities of seeds and nuts. They often gather seeds and nuts and bury them at different places. When they need food, they will locate these places to retrieve the seeds and nuts.

(a) State one benefit for the squirrel when it buries its food in many places. [1]

_____

_____

(b) Write down 2 benefits for the plants of the seeds/nuts that are being buried by the squirrel at different places. [2]

Benefit 1: _____

_____

Benefit 2: _____

_____

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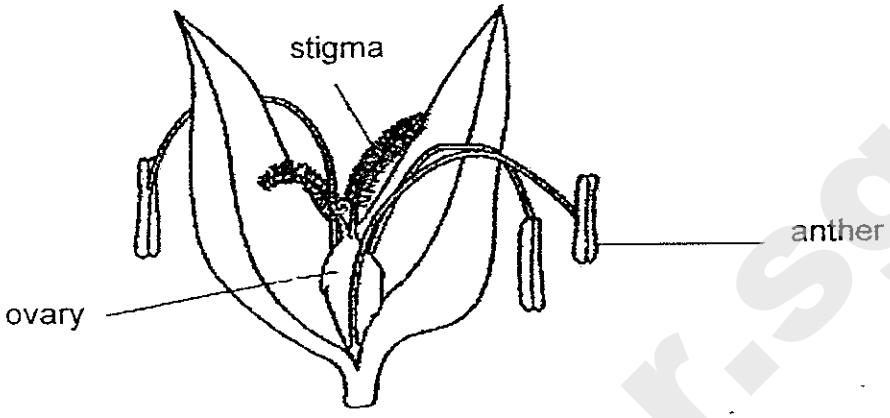
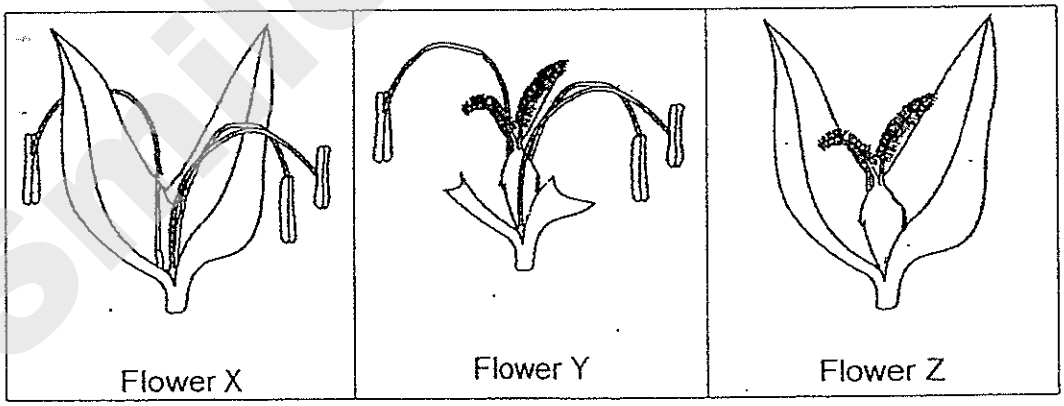
37. The diagram below shows the flower of a plant. The plant has both male and female parts on each flower.



(a) State one characteristic of the flower that help it to be wind pollinated [1]

_____

(b) Ai Ling wanted to find out if a fruit could still be produced even when certain parts of the flower were removed. She labelled 3 flowers, X, Y and Z, from the same plant. She cut a certain part from the three flowers as shown below.



After a few weeks, which flower(s) did not turn into fruit(s). Explain your answer. [1]

_____

_____

_____

_____

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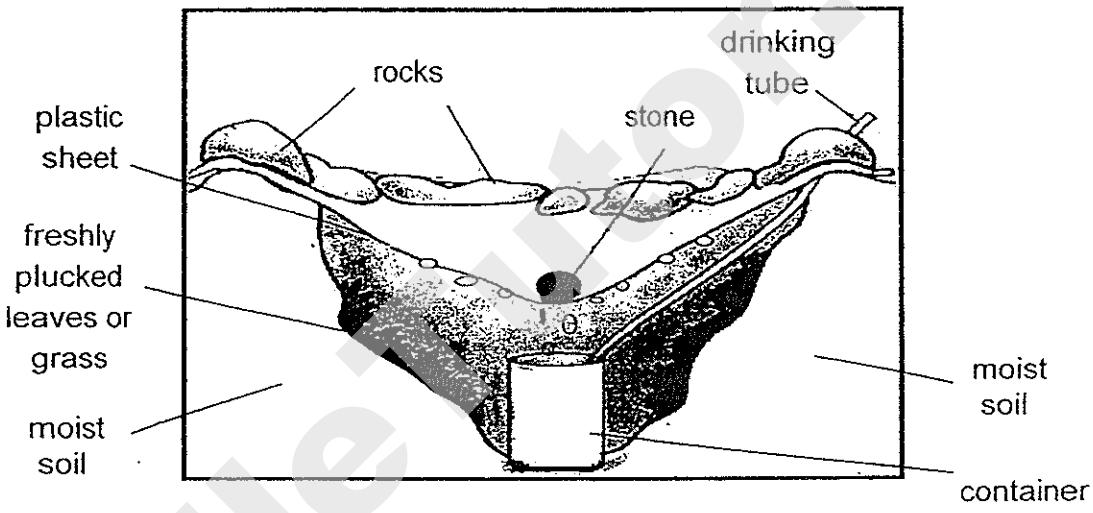
38. One of the survival skills of climbers and trekkers (people who like outdoor adventure activities) is to be able to obtain fresh water in the wild. The diagram below shows how a 'Solar Still' is constructed to help these climbers and trekkers to obtain fresh water.

A hole is dug about 50cm in the ground and a container is placed in the centre. Freshly plucked leaves and grass are placed around the container. A piece of clear plastic sheet is placed over the hole and a stone is put in the centre to form a cone. Water can then be obtained by drinking from the drinking tube after about 48 hours.



Solar still – cross-section view

(a) Explain how fresh water is collected in the container after about 48 hours. [2]

(b) Is the stone important in the whole process? Explain your answer. [1]

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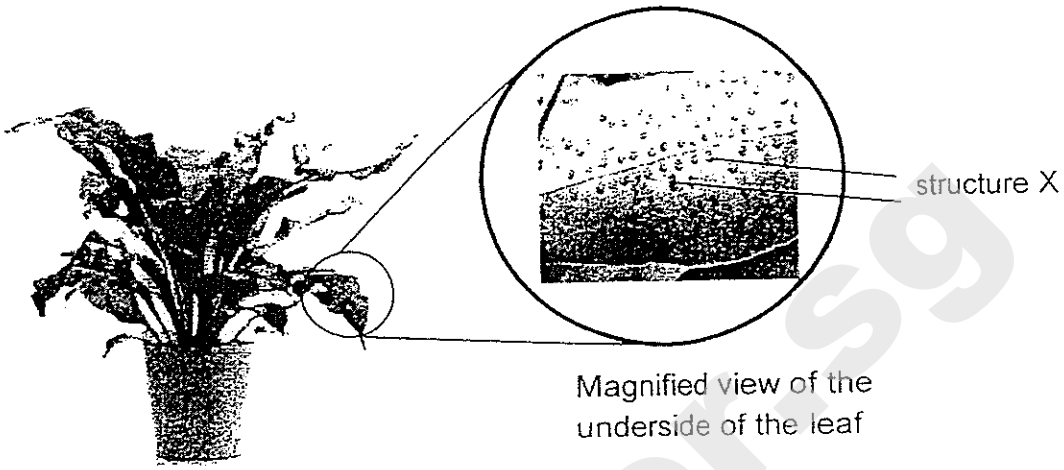
39. Peter observed the plant shown below at his school's Eco-garden.



He noticed that the plant has structure X under each leaf. This structure felt powdery when he touched it. It also left a brown stain on his fingers.

(a) What could structure X be? [1]

_____

(b) Would the plant be able to produce fruits and seeds? Explain your answer.

[1]

_____

_____

_____

Peter observed some flowers in the Eco-garden as shown below.

(c) He concluded that these flowers are pollinated by insects or animals. Do you agree with Peter? Explain your answer. [1]

_____

_____

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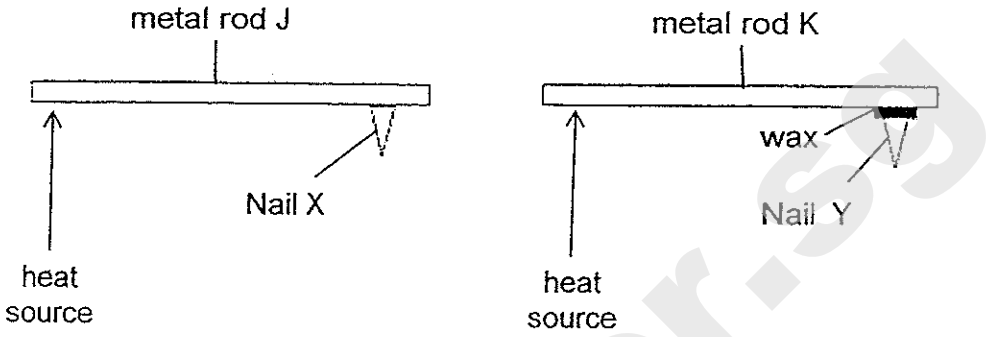
40. In an experiment, two similar ~~paperclips~~ nails X and Y were each attached to one end of metal rods, J and K, in two different ways. Heat was applied to the other ends of the two rods as shown in the diagram below.



(a) Based on the diagram above, explain why Nail X can be attached to the metal rod J without using any wax. [1]

_____

_____

(b) From the diagram above, describe what will happen to both nails, X and Y, after heating for 20 minutes. Explain your answer. [2]

Nail ~~Paperclip~~ X : _____

_____

_____

Nail ~~Paperclip~~ Y : _____

_____

_____

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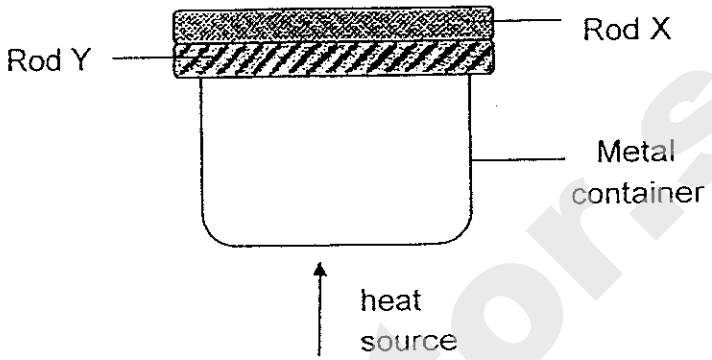
41. An experiment was conducted with the set-up shown below. Rods, X and Y, were made of the same material. They were placed on top of a metal container. The container was heated for 15 minutes. It was observed that Rod Y was longer than Rod X immediately after the experiment.



(a) Why was Rod Y longer than Rod X at the end of the experiment? [1]

The picture below shows a glass with thick glass walls. When hot boiling water is being poured into the glass quickly, it cracked.

(b) Why did the glass crack when hot boiling water is poured into it? [2]

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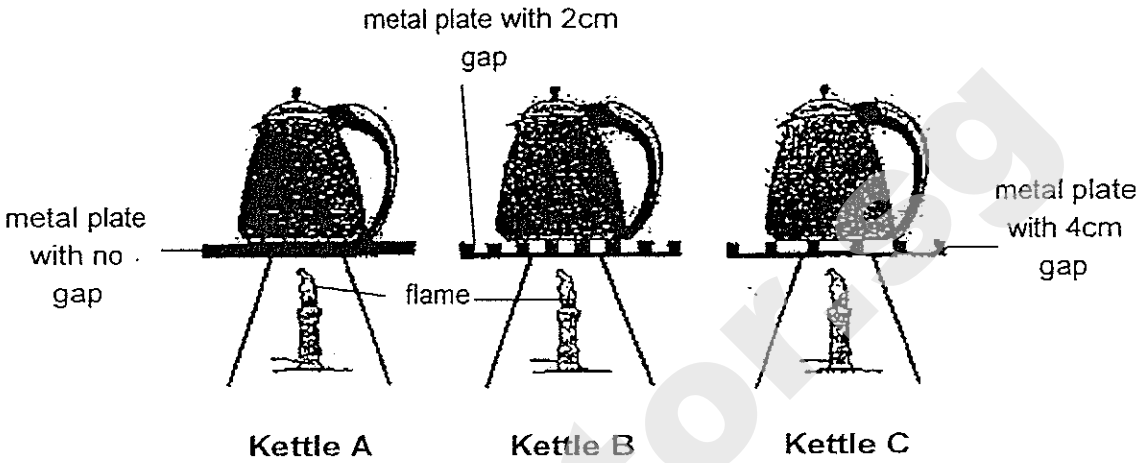
42. Paul placed three identical kettles, A, B and C, on three metal plates of the same material with different surfaces. The kettles contained the same amount of water at room temperature. The metal plates were then heated with the same amount of heat from below as shown in the diagram.



He then recorded the time taken for the water in each kettle to boil at 100°C in the table below.

Kettle	A	B	C
Time taken for the water to boil (min)	10	15	20

(a) Based on the results shown, Kettle A took the shortest time to boil the water. Explain why. [2]

_____

_____

_____

(b) Paul repeated the experiment with another identical Kettle D on a metal plate with 3 cm gap. Predict the time taken for the water in Kettle D to boil at 100 °C. [1]

_____ mins

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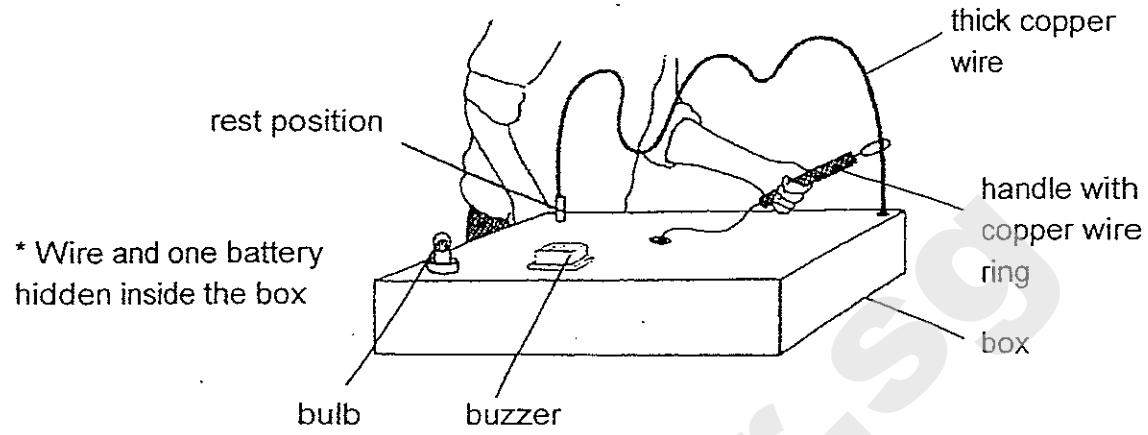
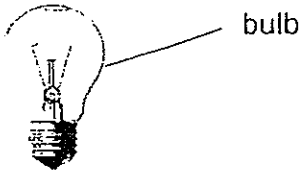
44. Matthew made a game using an electric circuit as shown below.



In his game, he has to move a metal ring along a thick wire until it reaches the rest position. When he is moving the metal ring, it must not touch the wire. If it touches the wire, the bulb will light up and the buzzer will make a noise.

(a) At first, the bulb could not light up even when the metal ring touched the wire. Mathew's friend told him that he had connected the wires to the bulb incorrectly.

Draw 2 wires to show how the bulb should be connected with the wires so that it will be able to light up. [1]



(b) Explain why the bulb will light up and the buzzer will sound when the copper wire ring touches the wire. [1]

_____

_____

(c) If Matthew wants to make the bulb brighter when the game is played, how can he change his circuit so that the same bulb becomes brighter? [1]

_____

_____

End of paper

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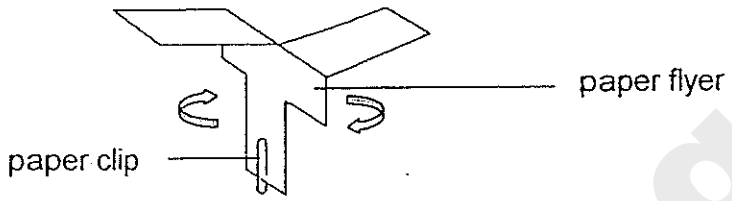
43. Soo Ching made a paper flyer using a strip of paper and a paper clip as shown below.



She wanted to find out if the number of paper clips on the paper flyer would affect the time it takes for the paper flyer to fall to the ground. Soo Ching recorded her results in the table below.

Number of paper clips on paper flyer	Time taken to fall to the ground (s)	Put a cross (X)
1	10	
2	8	
3	2	X
4	4	

Based on the information above, answer the following questions.

(a) Soo Ching made one mistake in the data collection shown above. Put **ONE** cross (X) in the box to indicate the mistake she had made. [1]

(b) Suggest what Soo Ching could do to ensure that her results were reliable to enable her to arrive at a logical conclusion. [1]

_____

_____

(c) Name two variables that Soo Ching should keep the same to ensure that she conducted a fair test. [1]

Variable 1 : _____

Variable 2 : _____

(d) What could Soo Ching conclude from the results of her experiment? [1]

_____

_____

_____

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Exam Paper 2014 Answer Sheet

School: CHIJ ST NICHOLAS GIRLS' SCHOOL
Subject: PRIMARY 5 SCIENCE
Term: SA2

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

31. (a) At the adult stage. When the mosquito is at the adult stage, it has wings to fly so the mosquito is most difficult to get rid at the adult stage.

(b) Oil is less dense than water so it floats, when it floats, it blocks the breathing tubes of the larva an pupa so the young of the mosquito cannot breathe and will die, reducing mosquito breeding.

32. (a) Only substance A could be found in the cell after 30 minutes.

(b) It is to find if the presence of the cell wall affects the type of substance to enter the cell.

33. (a) X: Digestive system
Y: Respiratory system
Z: Circulatory system

(b) When there is an exercise wheel, the mouse in set-up B will exercise. When the mouse exercises, it breathes faster for its cells to respire and when it breathes faster, it gives out carbon dioxide faster than the mouse in set-up A which was not exercising. Hence, the limewater in set-up B turned chalky faster than set-up A.

34. (a) W; A
X; C

(b) If an egg is fertilized, the fertilized egg will develop at part y.

35. (a) 70 beats per minute.

(b) 10 minutes.

(c) Duncan is at his maximum speed. The heart pumps more oxygen rich blood and digested food to the muscle cells, greater respiration to produce more energy.

36. (a) The squirrel can find food easily, other animals will not find its food.

(b) 1: The squirrel helps to disperse the seeds over a greater distance to increase the chance of germination.
2: To prevent overcrowding.

37. (a) The anther of the flower is hanging outside the flower so the wind can carry the pollen grains and land on the stigma of the flower or another flower of the same type for fertilization to occur.

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(b) Flower X did not turn into a fruit after a few weeks. Flower X does not have female reproductive parts for fertilization to take place and develop into a fruit, so flower X did not turn into a fruit.

38. (a) Water vapour given out by the freshly plucked leaves or grass and water in the moist soil which will evaporated, comes into contact with cooler inner surface of the plastic sheet, lost heat and condenses into water droplets which will be collected in the centre and drip into the container to collect fresh water.

(b) The stone is important in the whole process. The stone creates a gradient which allows the water droplets on the inner surface of the plastic sheet to be collected in the centre and drip into the container more quickly.

39. (a) Spore bags.

(b) The plant would not be able to produce fruits and seeds. As the plant produces spores, it is a non-flowering plant and does not reproduce by seeds, so the plant would not be able to produce fruits and seeds.

(c) The anthers and stigmas are hidden in the flowers.

40. (a) Nail X could be magnetized by a magnet to become temporary magnet and metal rod J is a magnetic material, so nail X can be attached to the metal rod J without using any wax.

(b) Nail X: It will drop off when heated. When heated, it will lose its magnetism and will not attract the metal rod J and hence it will drop off after 20 minutes.

Nail Y: It will drop off. When the wax is melted, it will not stick to metal rod K anymore and nail Y will also drop off after 20 minutes.

41. (a) Rod Y expanded more than rod X as it receives more heat than rod X, so rod Y was longer than rod X at the end of the experiment.

(b) Inner glass gain heat and expanded more than the outer glass.

42. (a) Surface contact area between kettle A and the hot metal plate is the greatest as more heat is transferred to A faster.

(b) 18

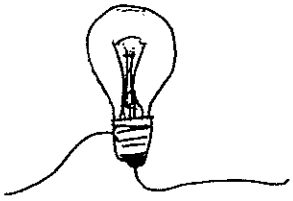
43. (a) Cross at number 3.

(b) She should repeat the experiment 3 more times and calculate the average results.

(c) 1: The type of paper clips used.

2: The height where the paper flyer is dropped.

(d) The lesser the number of paper clips on the paper flyer, the longer the time taken for the paper flyer to fall to the ground.

44. (a) 

(b) When the copper wire rind touches the wire, it becomes a closed circuit and electricity can flow so the bulb will light up and the buzzer will sound.

(c) Add in more batteries in series to the circuit.

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HENRY PARK PRIMARY SCHOOL

2014 SEMESTRAL EXAMINATION 2

PRIMARY 5 SCIENCE

Booklet A

Name: _____ ( )

Class: Primary 5 _____

60

30 Questions
60 Marks

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

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

READ AND FOLLOW INSTRUCTIONS CAREFULLY.

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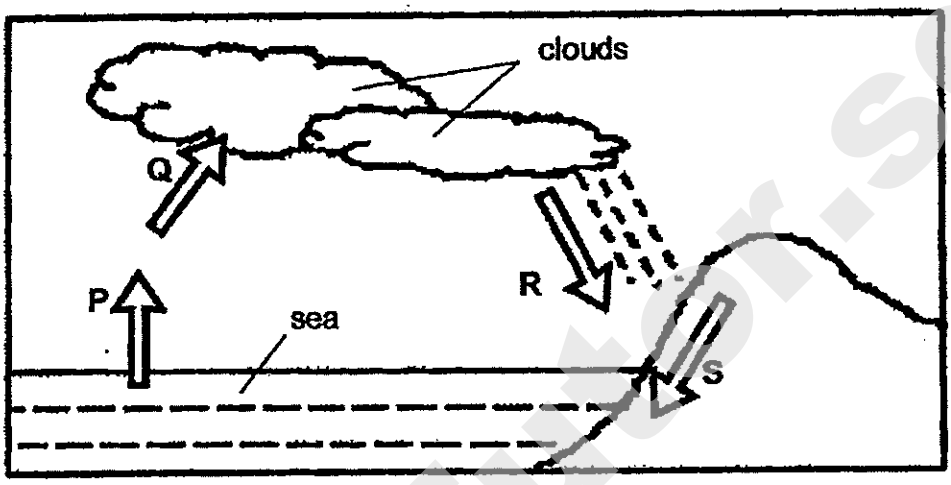
Booklet A (60 marks)

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 shows the water cycle. The letters P, Q, R and S represent the different processes in the water cycle.



Which one of the following processes from the diagram correctly explains why a wet pair of socks will dry completely when left directly under the sun?

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

2. Atira breathed out onto a mirror and a layer of mist formed on it. After 1 minute, the mist disappeared.

Which one of the following correctly explains her observation after 1 minute?

(1) The water vapour had evaporated.
(2) The water vapour had condensed.
(3) The water droplets had evaporated.
(4) The water droplets had condensed. ( )

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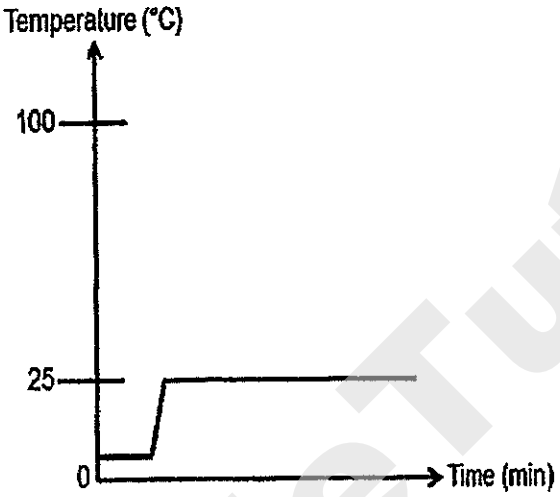
3. Jimmy took a beaker of ice from the freezer and placed it on a table in the kitchen for 1 hour.

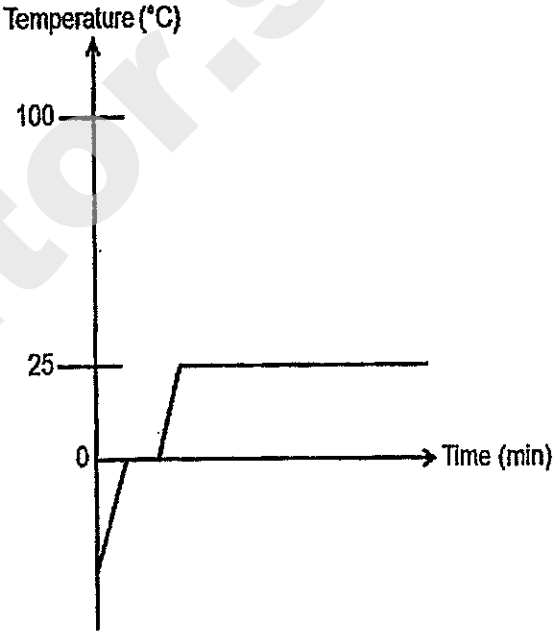
He recorded the temperature of the ice every 10 minutes for 1 hour.

Which one of the graphs below best represents the temperature changes in the beaker of ice over a period of 1 hour after the beaker of ice was removed from the freezer?

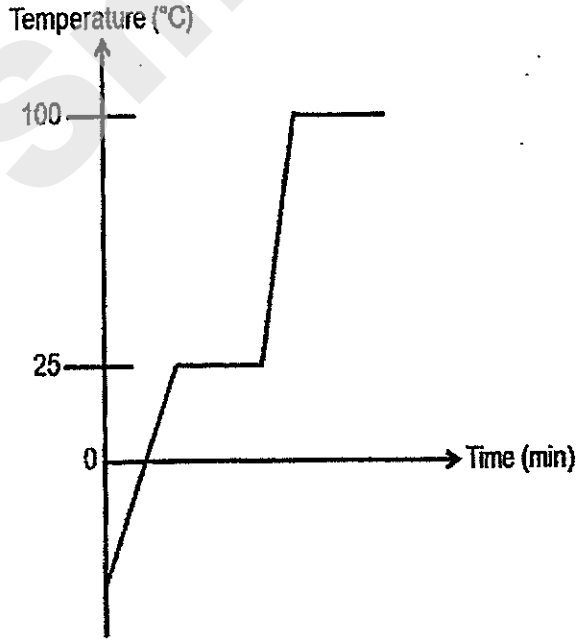
(1)



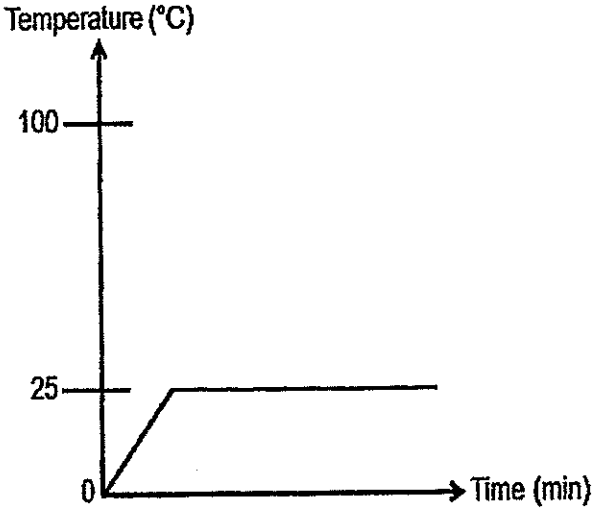
(3)



(2)



(4)



( )

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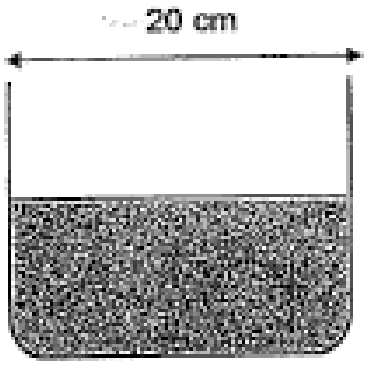
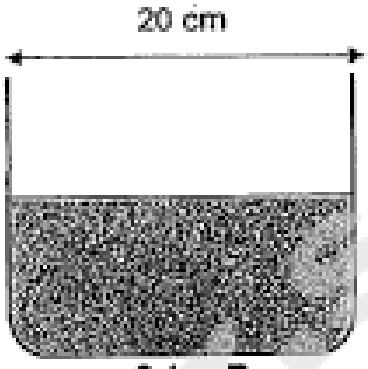
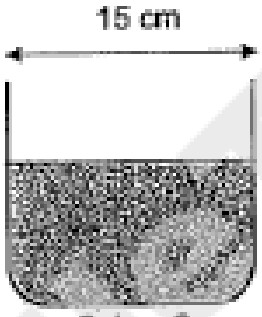
4. Billy wants to find out how water at different temperatures will affect its rate of evaporation.



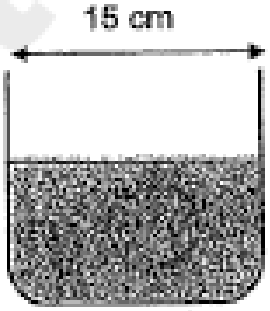
Set-up A
Plastic container with water at 30°C



Set-up B
Metal container with water at 60°C



Set-up C
Metal container with water at 60°C



Set-up D
Metal container with water at 90°C

Which two set-ups should he use in a fair test?

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

( )

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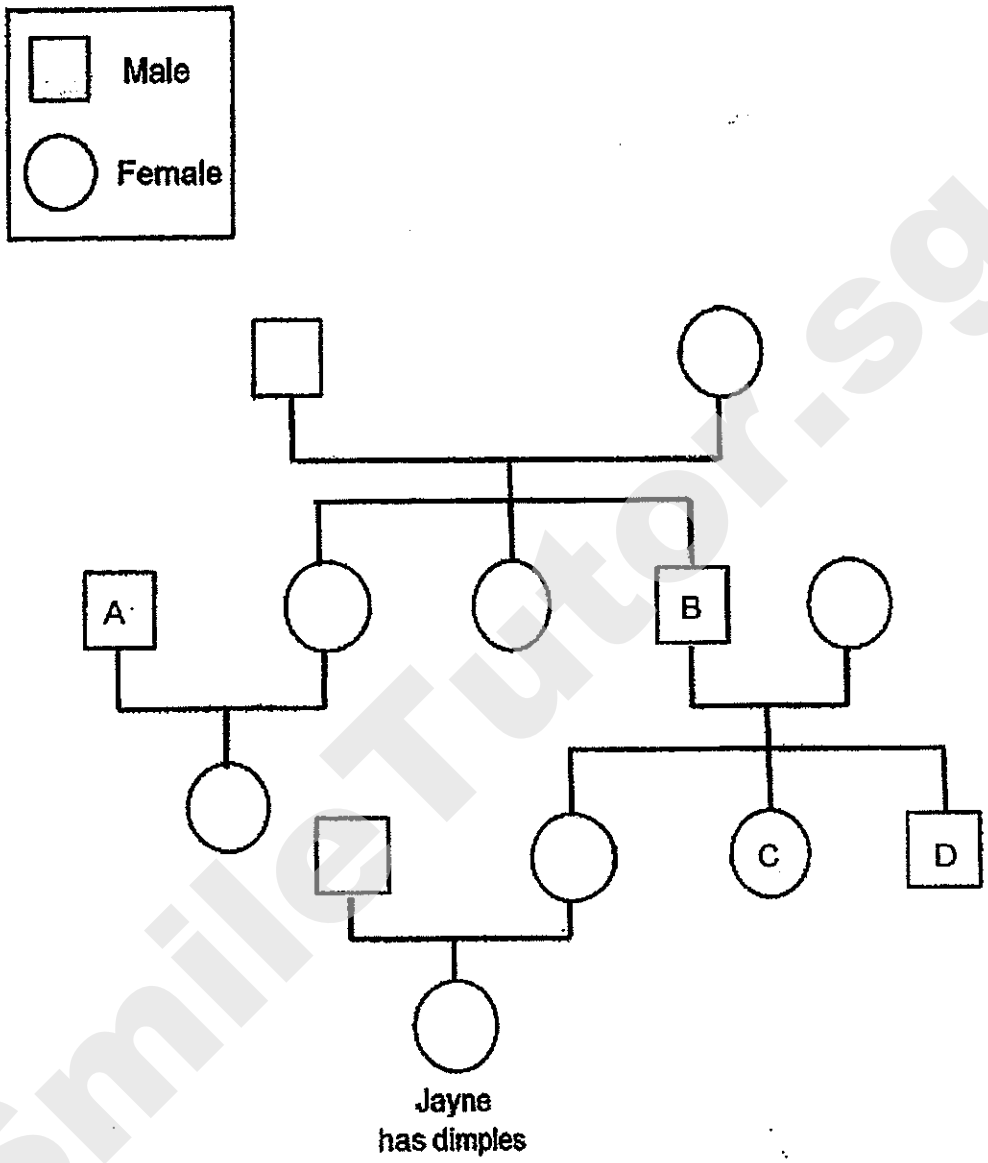
5. Study Jayne's family tree below carefully.



It was observed that Jayne's parents do not have dimples.

From whom, A, B, C, or D, did Jayne likely inherit that trait from?

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

( )

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6. Diagram A shows a human female reproductive system and Diagram B shows a plant reproductive system.

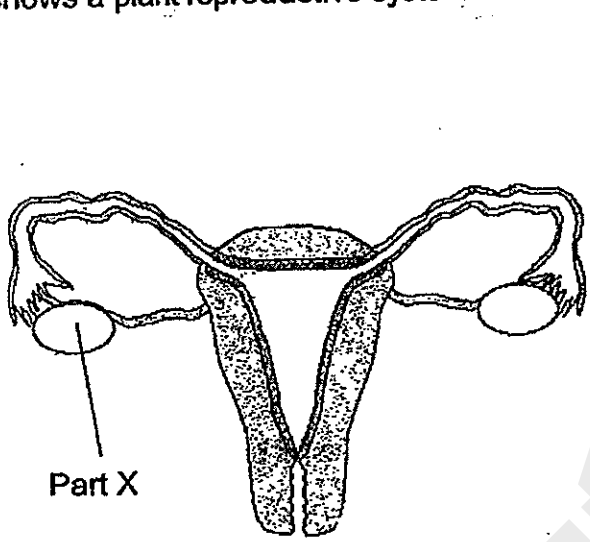

Diagram A

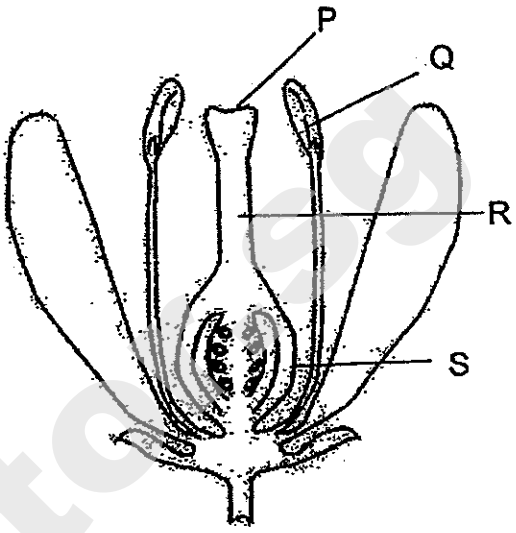

Diagram B

Which part of Diagram B has the same function as Part X?

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

( )

7. Lucas wanted to show how overcrowding affects the growth of hibiscus plants.

He placed some seeds belonging to a hibiscus plant into two identical pots filled with soil.

Which other important variable(s) should he keep the same in order to conduct a fair test?

A: Type of soil used
B: Number of seeds
C: Temperature of the surrounding
D: Amount of water given to the seeds

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

( )

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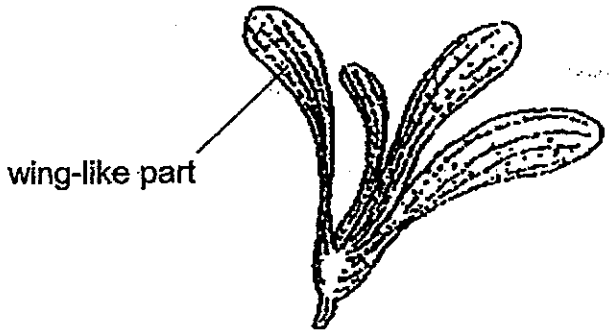
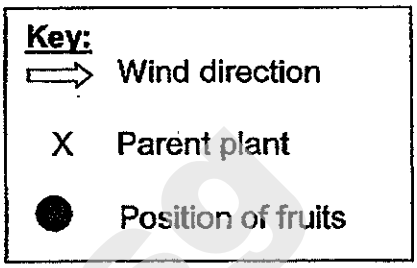
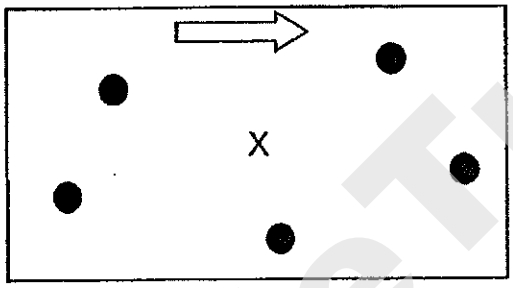
8. Joshua found a fruit, shown below, while walking in the school compound one day.



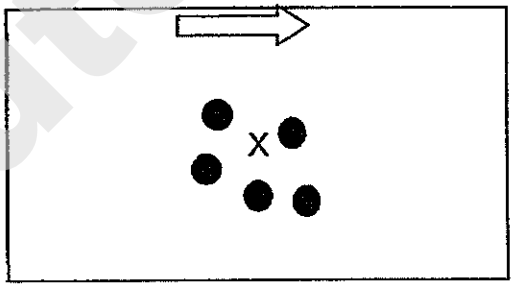


Based on the structure of the fruit, which of the diagrams best represents the way the fruit would be dispersed?

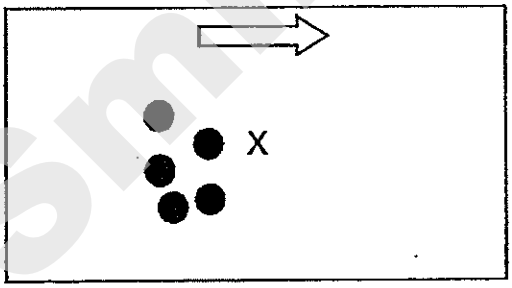
(1)



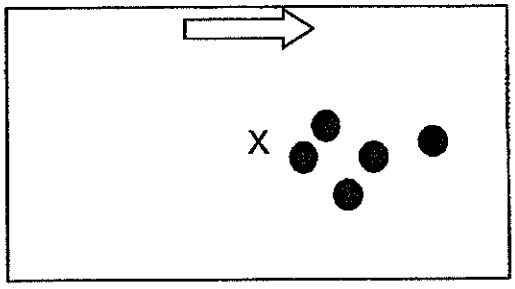
(2)



(3)



(4)



( )

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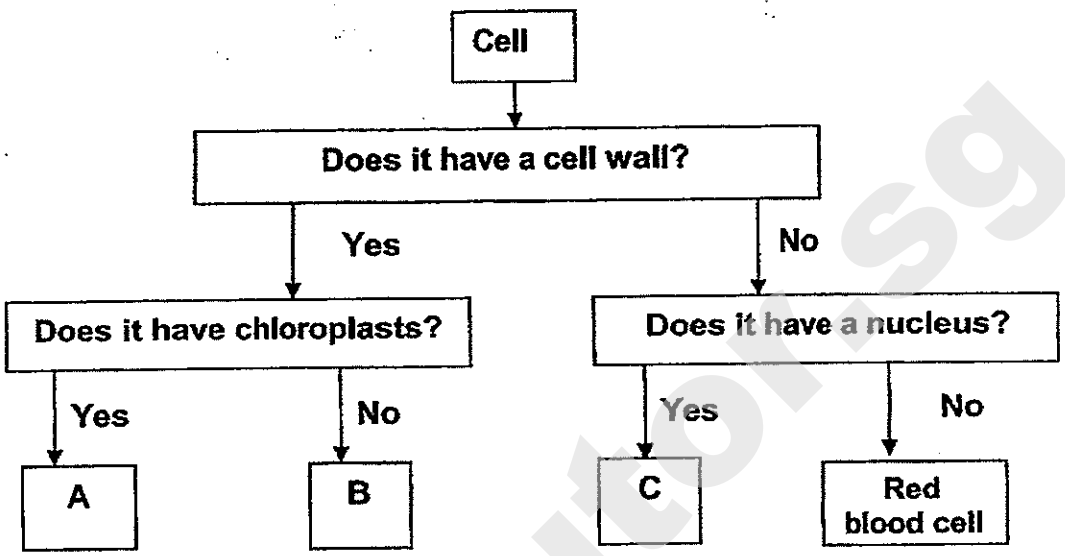
9. Jim observed and grouped three cells according to the chart below.



Based on Jim's grouping, where were cells A, B and C likely taken from?

	A	B	C
(1)	Leaf	Sperm	Egg
(2)	Root	Leaf	Cheek
(3)	Onion	Root	Sperm
(4)	Leaf	Onion	Cheek

( )

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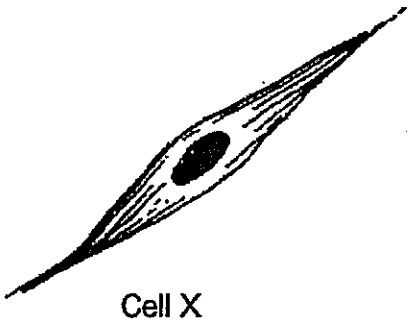
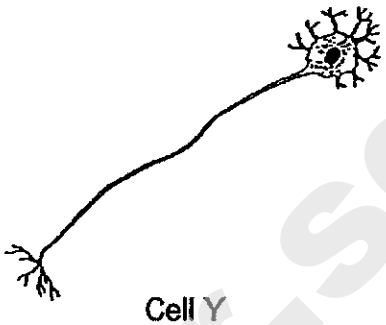
10. The diagram below shows cells X and Y.



Cell X



Cell Y

A tick (✓) means the cell is able to carry out the function.
A cross (X) means the cell is not able to carry out the function.

Cell Function	Cell X	Cell Y
Controls cell activities (nucleus)	✓	✓
Allows certain substances to enter	✓	✓
Maintains a fixed shape	X	X
Traps light	X	X

Based on the table above, which cell parts are **not** likely to be present in both cells X and Y?

A: Nucleus
B: Cell wall
C: Chloroplast
D: Cell membrane

(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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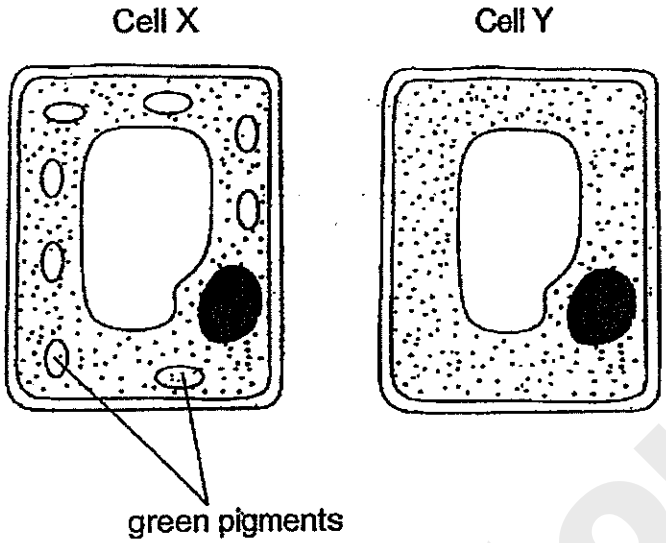
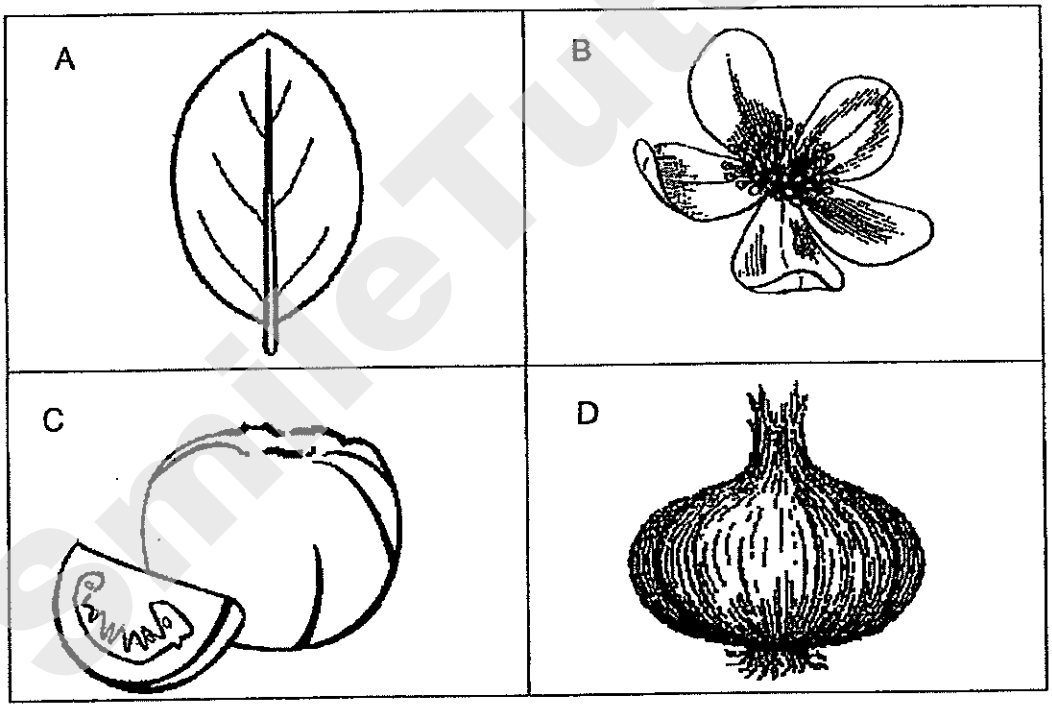
11. Under the microscope, Tim observed green pigments in Cell X but not in Cell Y. Cells X and Y were taken from different parts of different plants.





Which of the following correctly identifies the parts of the plants where cells X and Y were likely to be taken from?

	Cell X	Cell Y
(1)	A, D	B, C
(2)	A, B, C	D
(3)	A	B, C, D
(4)	B, C, D	A

( )

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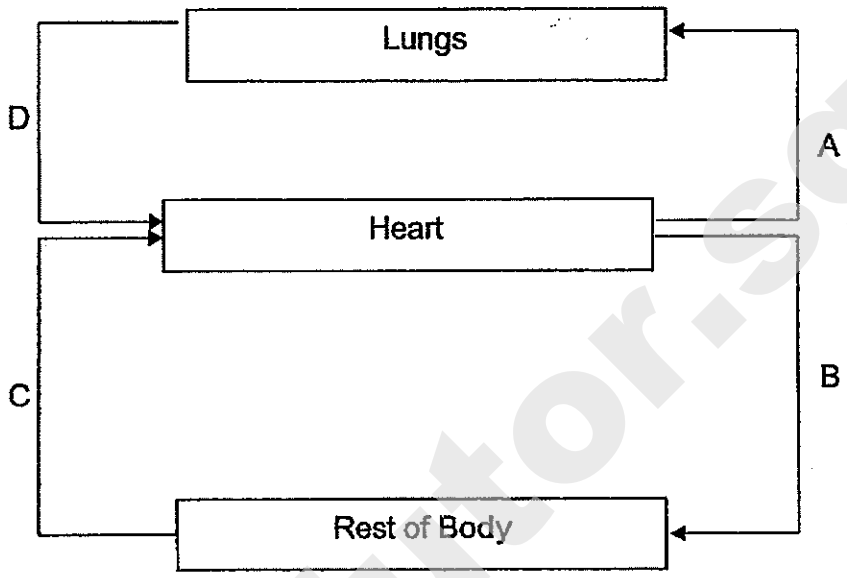
12. The diagram below shows the direction of blood flow in a human body. A, B, C and D are blood vessels.



Which two blood vessels are carrying blood high in carbon dioxide to be **removed** from the body?

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

( )

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13. Jackie put a mouse in an air-tight container as shown below.

Which one of the following correctly shows how the composition of gases in the container changed after 10 minutes?

	nitrogen	carbon dioxide	oxygen
(1)	no change	increase	decrease
(2)	decrease	decrease	increase
(3)	increase	increase	decrease
(4)	no change	decrease	increase

( )

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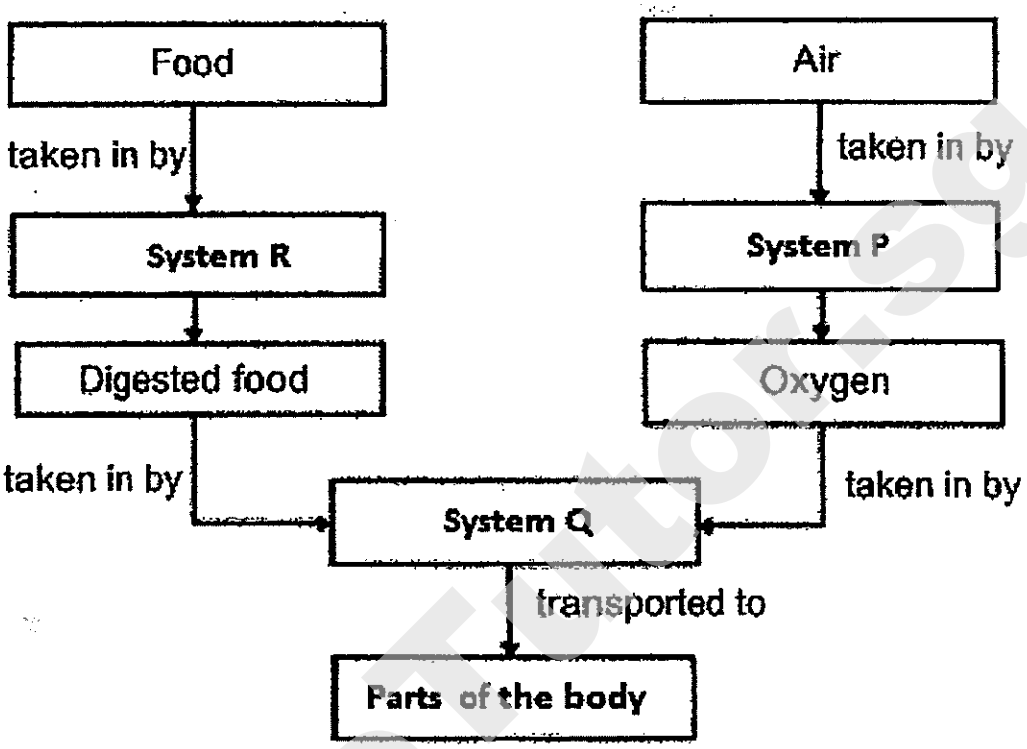
14. The diagram below shows how food and air are taken in and transported by three systems, P, Q and R, in the human body.



Which human systems do P, Q and R are likely to represent?

	System P	System Q	System R
(1)	circulatory	muscular	digestive
(2)	respiratory	circulatory	digestive
(3)	circulatory	muscular	respiratory
(4)	respiratory	circulatory	muscular

( )

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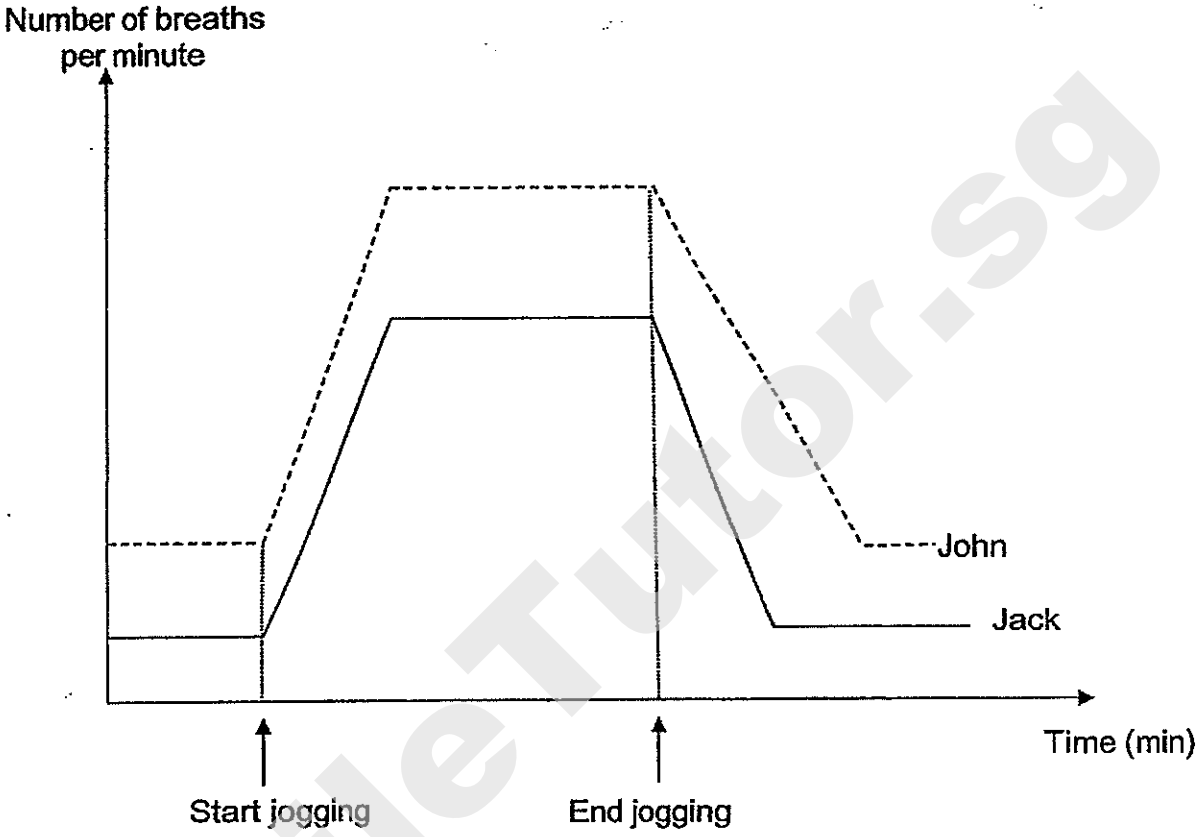
15. The graph below shows the breathing rates of two boys, while they rest, jog and then rest again.

John does not exercise regularly and is unfit while Jack exercises regularly and is fit.



Based on the graph, which one of the following correctly compares the breathing rates of the two boys?

	Breathing rate (number of breaths per minute)			
	Unfit boy		Fit boy	
	Resting	Time taken to return to resting rate	Resting	Time taken to return to resting rate
(1)	Lower	Slower	Higher	Faster
(2)	Higher	Slower	Lower	Faster
(3)	Lower	Faster	Higher	Slower
(4)	Higher	Faster	Lower	Slower

( )

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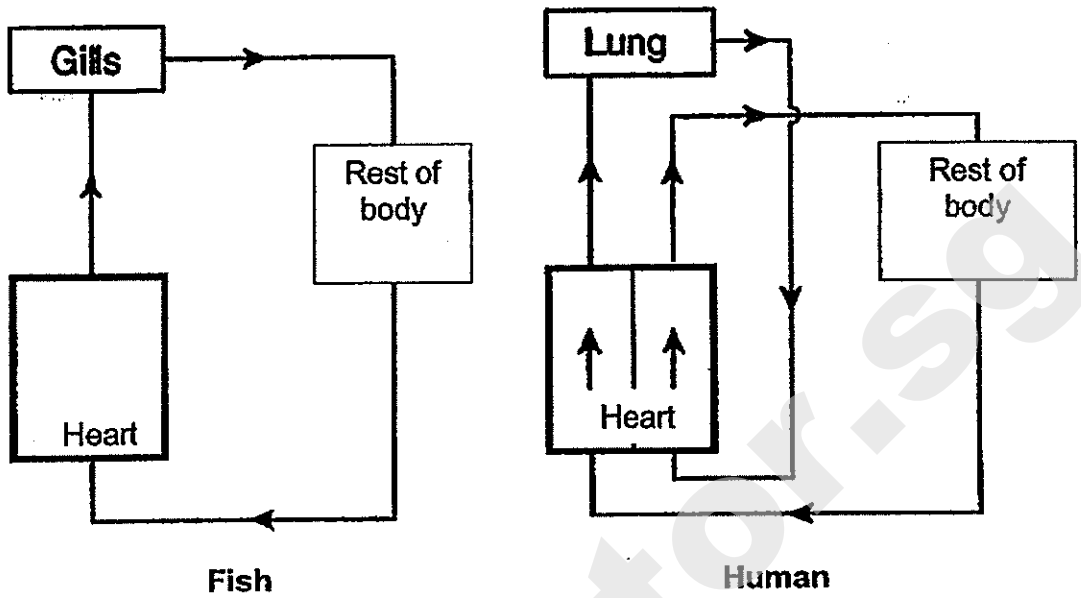
16. The diagrams of the circulatory systems of a fish and a human are shown below.



Fish Human

Which one of the following comparisons is correct?

Blood flow in the circulatory systems of a fish and a human		
	Similarity	**Difference**
(1)	The heart pumps blood to the rest of the body	Blood is transported in blood vessels to the lungs but not to the gills
(2)	Blood from the lungs and gills flows back to the heart	The heart pumps blood to the lungs but not to the gills
(3)	Blood is transported in blood vessels	Blood flows through the heart twice in a human and once in a fish
(4)	Blood from the rest of the body flows back to the heart	Oxygen from the air is taken in by both lungs and gills

( )

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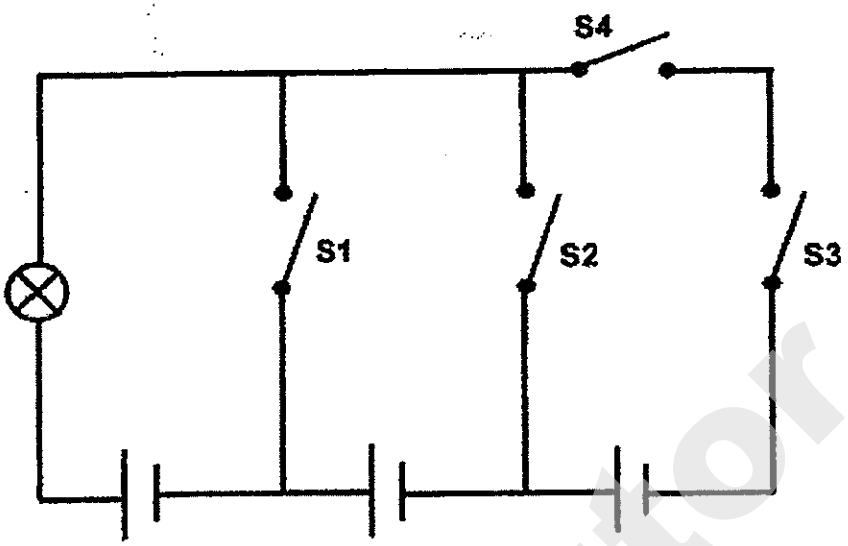
17. The diagram below shows a circuit diagram with identical batteries.



Which one of the following switches, when closed, will allow the bulb to light up the brightest?

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

( )

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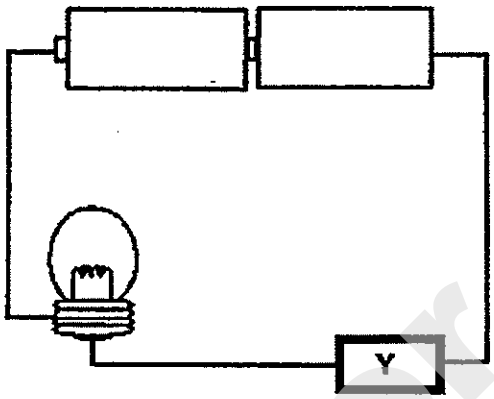
18. Jim set up a circuit tester as shown in the diagram below.



He placed different materials at position Y and recorded his observations in the table below after 5 minutes.

Material	Bulb lights up	Temperature of the material (°C) after 5 minutes
P	Yes	55
Q	No	30
R	No	28
S	Yes	75

Based on the data, which one of the following materials are grouped correctly under the respective headings?

	Good conductor of electricity	Good conductor of heat
(1)	P, S	Q, R
(2)	P, S	P, S
(3)	Q, R	Q, R
(4)	P, Q	R, S

( )

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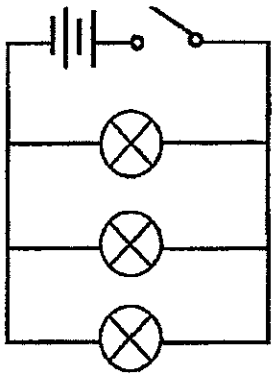
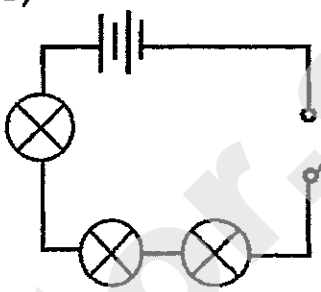
19. Ben set up four circuits as shown below using identical bulbs and batteries.

If he wants to find out how the **arrangement of the bulbs affects the brightness** of the bulbs, which two set-ups should he use?

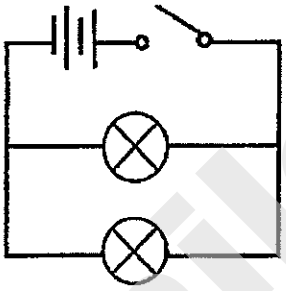
(A)



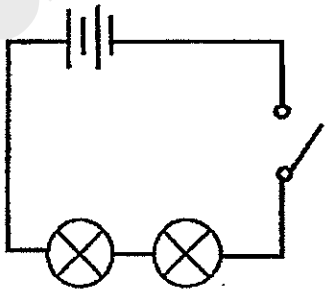
(C)



(B)



(D)



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

( )

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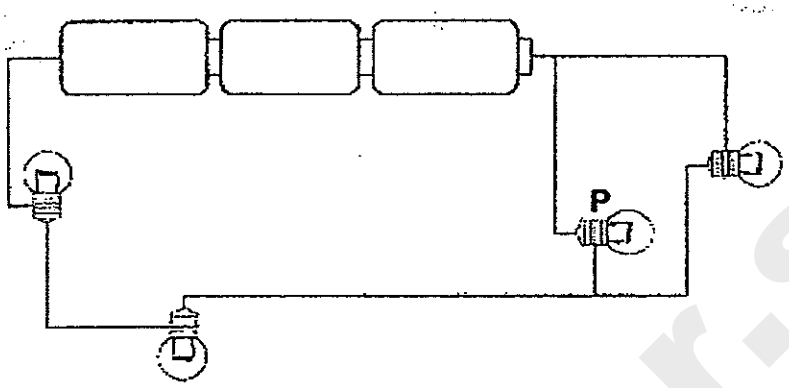
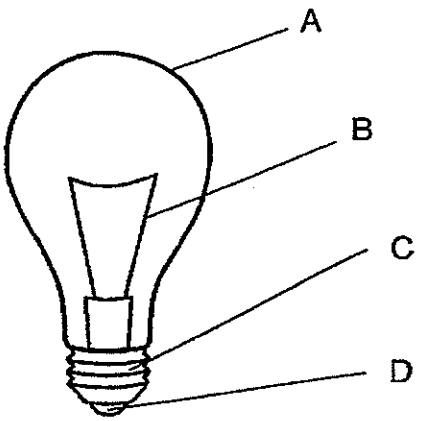
20. The diagram below shows an electrical circuit.



If bulb P is damaged, how many bulbs will still be lit?

(1) 1
(2) 2
(3) 3
(4) None ( )

21. The diagram below shows a light bulb.



Which parts of the light bulb are good conductors of electricity?

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

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22. Diagram X shows a circuit.

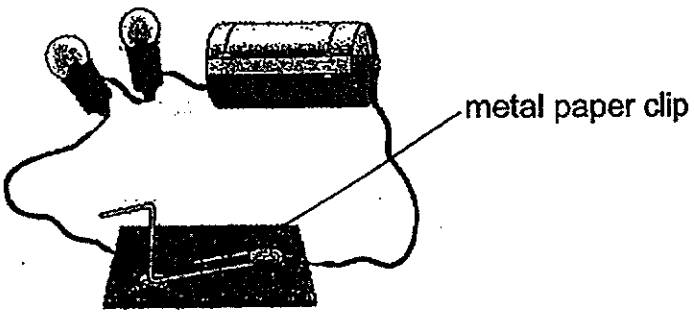
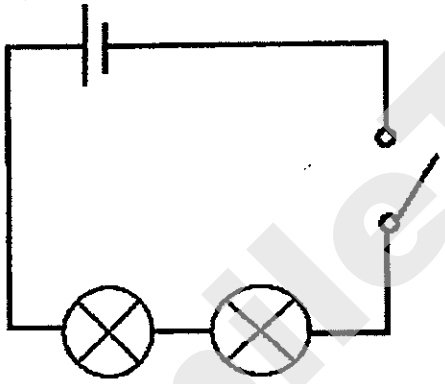


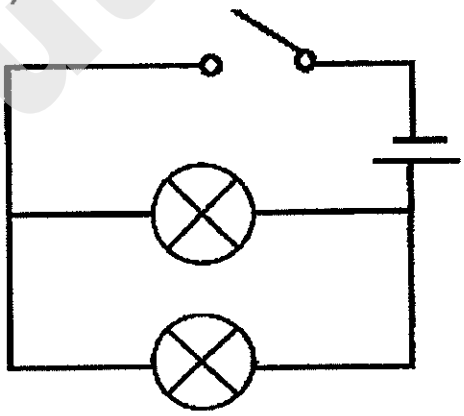
Diagram X

The circuit diagrams below use identical bulbs and batteries as Diagram X.
In which of the following circuit diagram(s) below will all the bulbs light up with the same brightness as the bulbs in Diagram X when the switch is closed?

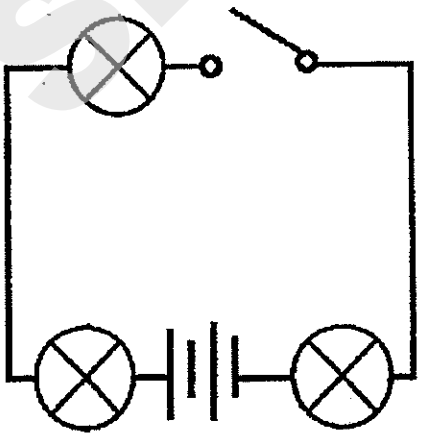
(A)



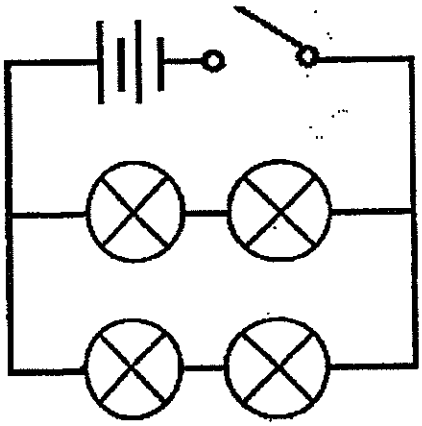
(C)



(B)



(D)



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

( )

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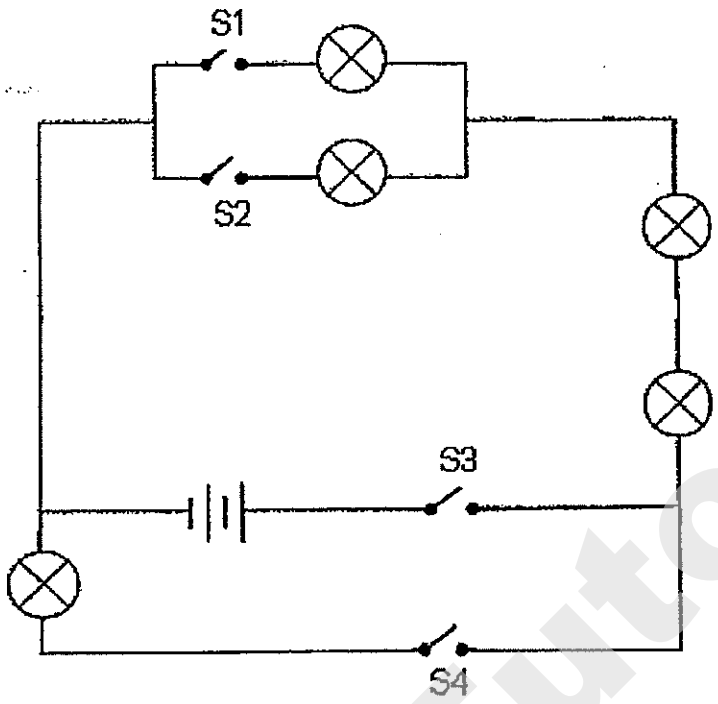
23. Tim set up a circuit as shown in the diagram below.



Which of the following 2 switches, when closed, will allow the **least number of bulbs** to light up?

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

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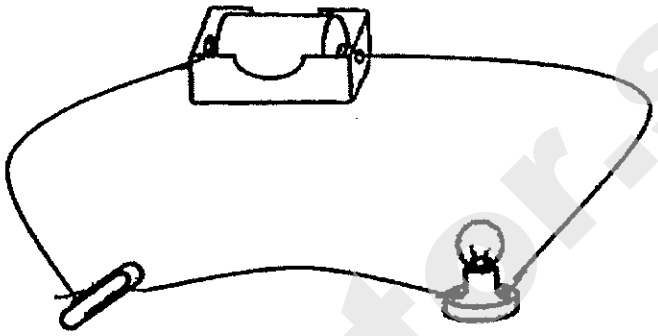
24. Jim set up the electrical circuit below using a battery, a bulb, a metal clip and some wires.

He observed that the bulb did not light up.



Which of the following best explains why the bulb did **not** light up?

A: The battery was damaged.
B: The filament in the light bulb had melted.
C: A switch was missing in the above circuit.

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

( )

25. Four students shared the following suggestions on how to save electricity at school.

	Student	Suggestions
A	Ali	Turn off all lights in classrooms during recess.
B	Ben	Use air-conditioners instead of fans.
C	Clara	Turn off computers when not in use.
D	Donald	Install energy-saving light bulbs in all classrooms.

Whose suggestions will result in a reduction in the electrical energy usage in the school?

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

( )

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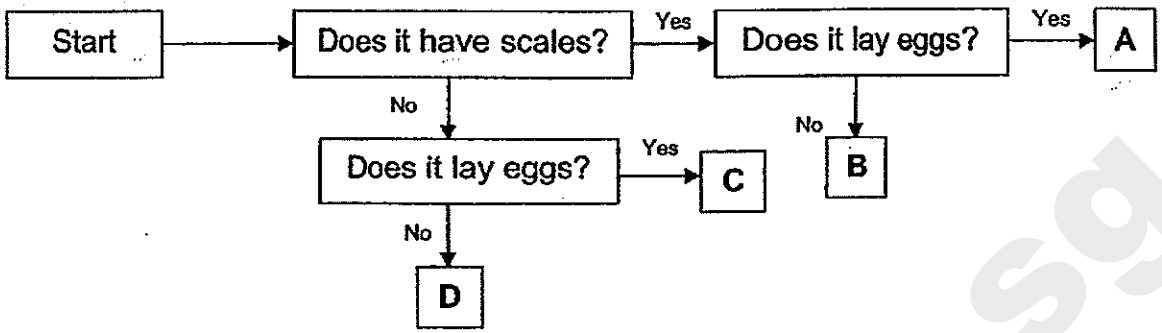
26. The flow chart below shows the characteristics of Animals A, B, C and D.



Based on the flow chart above, how are the Animals **A** and **B** similar?

(1) They both lay eggs.
(2) They both have scales.
(3) They both do not lay eggs.
(4) They both do not have scales. ( )

27. Both ferns and fungi are able to _____.

A: bear flowers
B: make their own food
C: reproduce from spores

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

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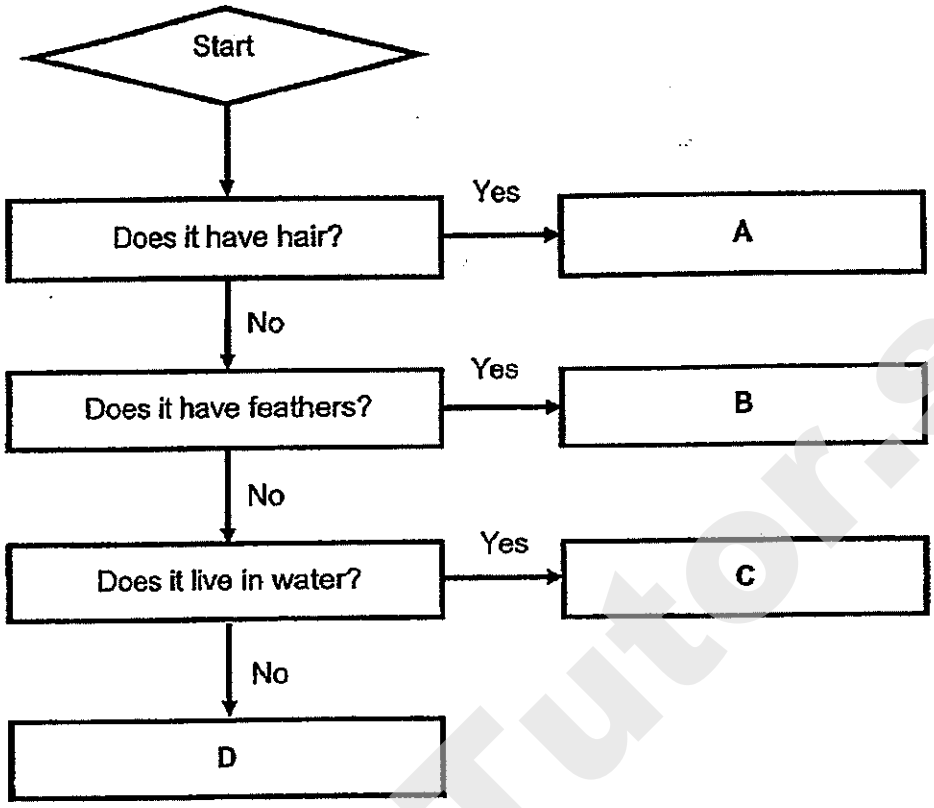
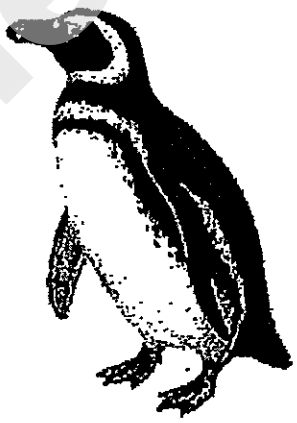
28. The diagram below shows a flow chart.



The diagram below shows Animal P.



Animal P

Based on the flowchart, which one of the following letters most likely represents Animal P?

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

( )

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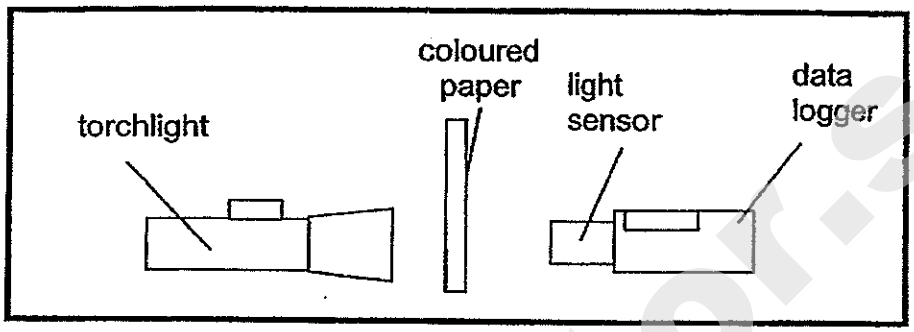
29. Sam used the set up below to find out how four different types of coloured paper affects the amount of light that passes through it.



Which of the following states the **correct** way to carry out the experiment?

(1) He should conduct the experiment in a dark room.
(2) He should conduct the experiment in a bright room.
(3) He should use four papers of the same colour for the set up.
(4) He should measure the colour of the light with a light sensor. ( )

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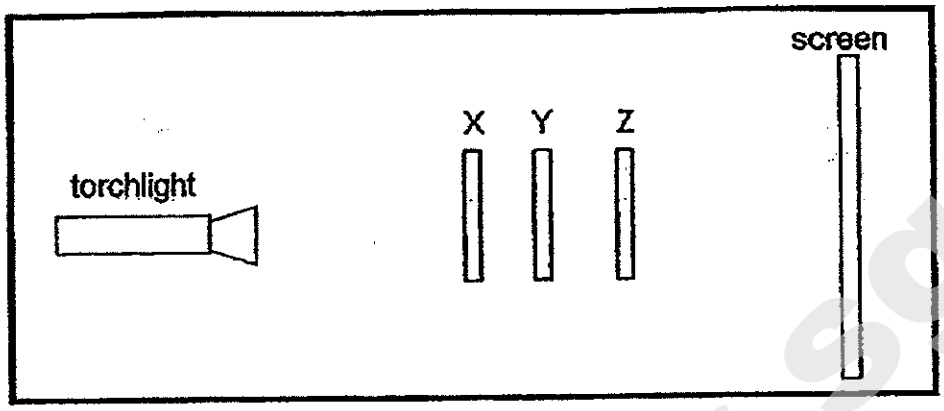
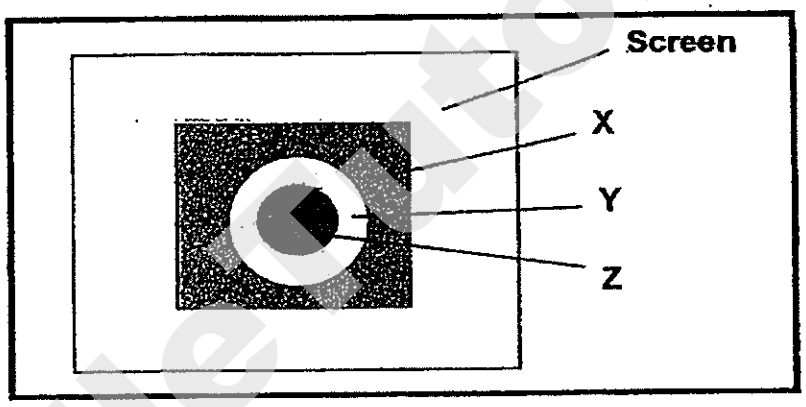
30. Desmond carried out an experiment to find out more about the properties of shadows. He set up his experiment as shown in the diagram below.



When he shone the torchlight at object X, Y and Z, he saw the shadows as shown on the screen below.



What could X, Y and Z be?

	X	Y	Z
(1)	Tracing paper	Frosted glass	Clear plastic
(2)	Frosted glass	Cardboard	Clear plastic
(3)	Tracing paper	Clear plastic	Frosted glass
(4)	Frosted glass	Clear plastic	Cardboard

( )

End of Booklet A

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HENRY PARK PRIMARY SCHOOL

2014 SEMESTRAL EXAMINATION 2

PRIMARY 5 SCIENCE

Booklet B

Name:_____ ( )

/ 40

Class:Primary 5_____

14 Questions
40 Marks

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

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

READ AND FOLLOW INSTRUCTIONS CAREFULLY.

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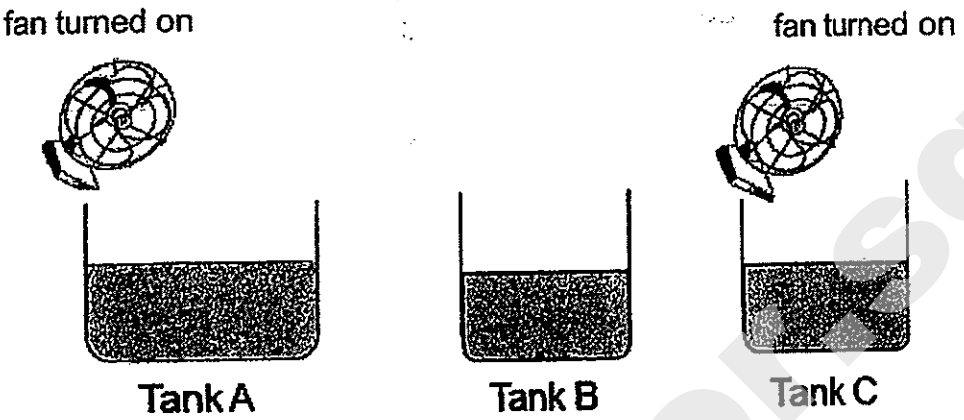
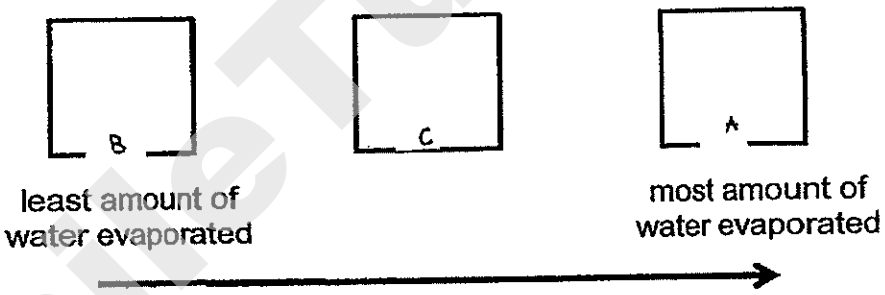
Booklet B (40 marks)
Write your answers to questions 31 to 44 in the spaces given.

31. Nathaniel set up three tanks with the same amount of water as shown below.



a) Fill in the boxes below with the letters **A**, **B** and **C** to represent the correct amount of water ~~left~~ evaporated in each tank shown above after 3 hours. *(1m)*



b) Explain clearly your answer in (a). *(2m)*

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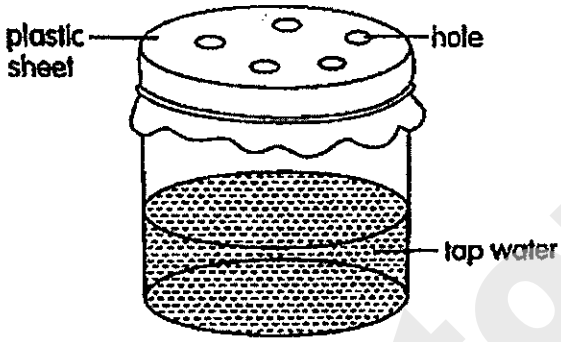
32. Aryan used the set up below to represent a model of the water cycle.

He placed it in a warm and dark cupboard.

However, his sister said that his set up does <u>not</u> correctly represent a model of the water cycle.



a) State what Aryan must do to the plastic sheet to improve the set up. *(1m)*

_____

b) Explain your answer in (a) *(1m)*

_____

c) What can he add to the se-up incerease the rate evaporation and condensation? *(1m)*

Evaporation: _____

Condensation: _____

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33. The table below shows the physical traits of the Chung family.

Joseph and Ada are Mr and Mrs Chung's children.

Trait	Joseph	Ada	Mr Chung	Mrs Chung
Brown hair	✓		✓	
Curly hair	✓	✓		✓
Dimples		✓	✓	
Single eyelids	✓	✓		✓
Attached earlobes	✓		✓	

a) Name the trait(s) that Ada inherited from her father, Mr Chung. *(1m)*

_____

b) How many **observable traits** did Joseph inherit from his mother, Mrs Chung? *(1m)*

_____

c) Ada has single eyelids. Who passed the characteristic to her? *(1m)*

_____

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34. Tim collected five identical fruits, A, B, C, D and E, from the same rubber tree.

He heated the fruits to different temperatures to find out how temperature will affect the time taken for the rubber fruit to split open and how far the seeds will be scattered.

He recorded the data in the table below.

Rubber fruit	A	B	C	D	E
Temperature of the ~~seed~~ fruit (°C)	20	25	30	35	40
Time taken for fruit to split (hours)	Did not split	24	3	2	0.5
Distance seeds were scattered (m)	-	1	2.5	4	6

a) Based on his observations, what can Tim correctly conclude about the effect of temperature of the fruit on the time taken for it to split? *(1m)*

_____

_____

b) At which temperature when the fruit splits, did its seeds travel the furthest? *(1m)*

_____

_____

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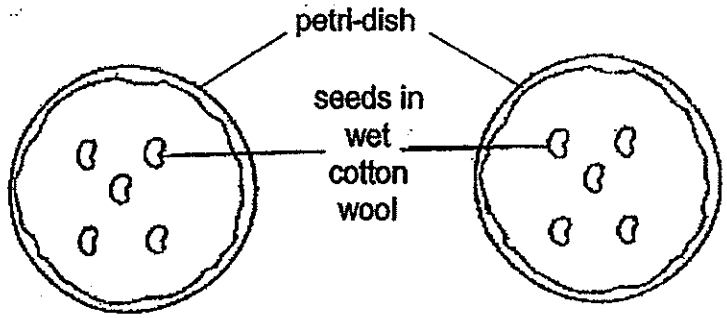
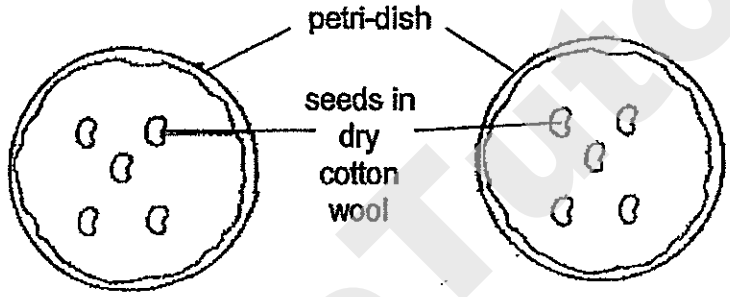
35. Yan Yi carried out an experiment in the school's Science room using the four set-ups shown below.



Set-up 1: placed in the light

Set-up 2: placed in the dark



Set-up 3: placed in the light

Set-up 4: placed in the dark

a) In which set-up(s) did the seeds germinate? *(1m)*

_____

b) If Yan Yi wanted to find out whether water is needed for the germination of seeds, which two set-ups should she use for a fair test? *(1m)*

_____

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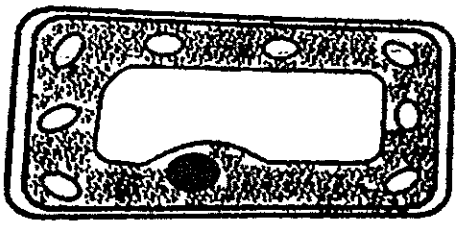
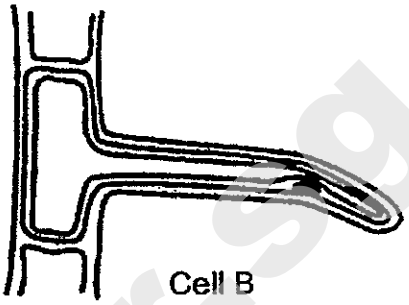
36. Jim examined the cell parts of two cells, A and B, shown below under the microscope. He concluded that both cells are plant cells.



Cell A



Cell B

a) Which cell part was present in both cells which support Jim's conclusion? *(1m)*

_____

b) Besides the difference in the shape of the cells, in what way is Cell A different from Cell B? *(1m)*

_____

_____

c) What is the function of Cell A? *(1m)*

_____

_____

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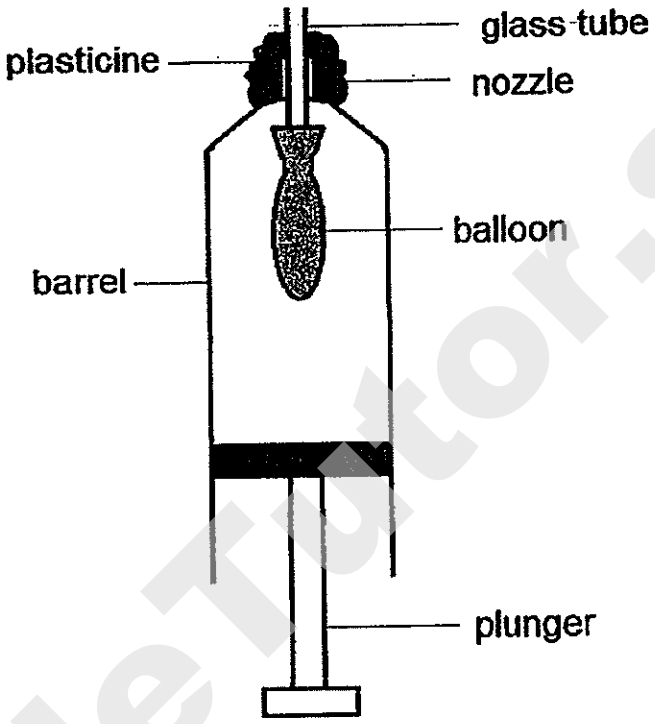
37. The diagram below shows a model of the human respiratory system using a large syringe.
John inserted a glass tube into the nozzle and attached a balloon to it as shown in the diagram below.



a) Which parts of the model represent the following parts of the human respiratory system? *(2m)*

	Parts of the respiratory system	Parts of the Model
(i)	Lung	
(ii)	Windpipe	

b) When the plunger is moved downwards, the balloon is filled with air.
What life process does this action represent during respiration? *(1m)*

_____

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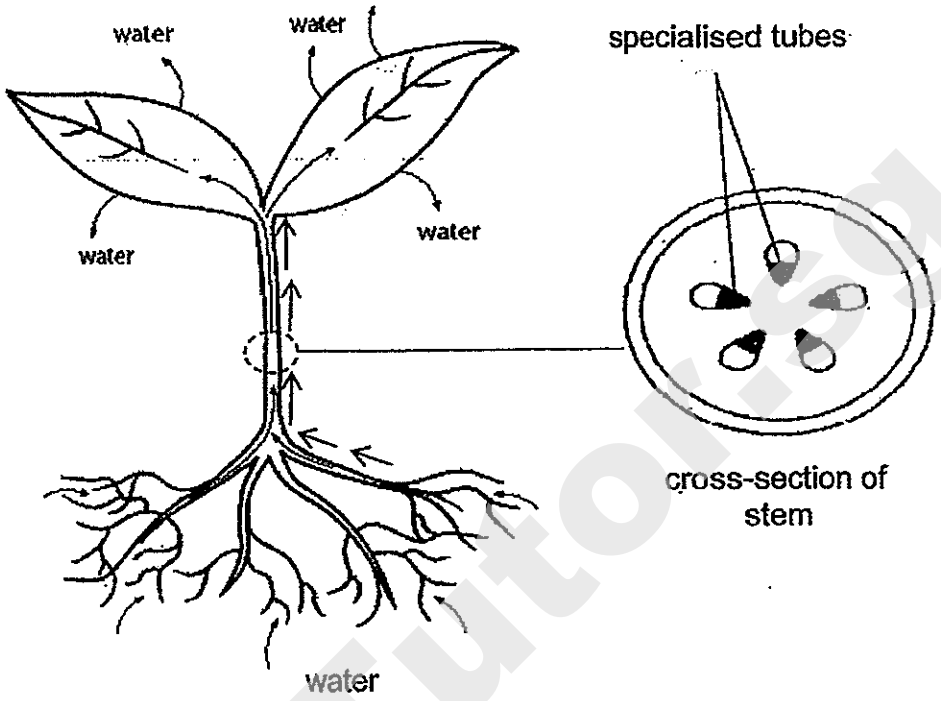
38. The diagram below shows movement of water in a plant.
The arrows show the movement of water.



a) Describe how water is taken in by the plant and transported to the leaves. *(2m)*

_____

_____

_____

b) How is food made in the leaves transported to other parts of the plant? *(1m)*

_____

_____

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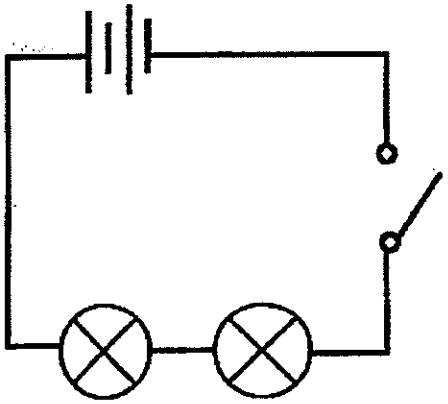
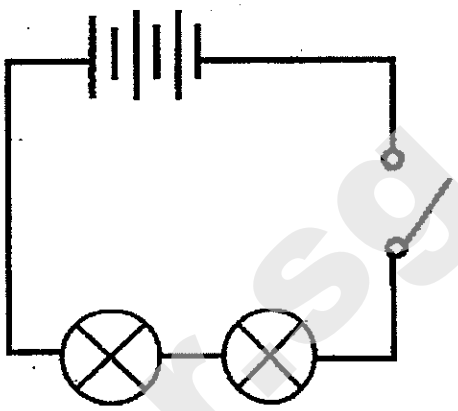
39. Kim set up the two circuits below using identical batteries and bulbs to find out **how the number of batteries affects the brightness of the bulbs.**





a) State one **similarity** in the **arrangement of the bulbs** between the two set ups. *(1m)*

_____

_____

b) Explain clearly how keeping the arrangement of the bulbs the same will ensure that Kim's test is fair. *(1m)*

_____

_____

_____

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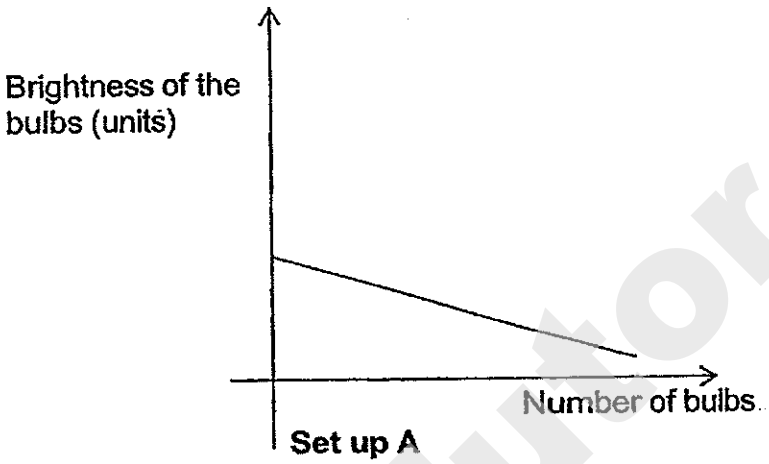
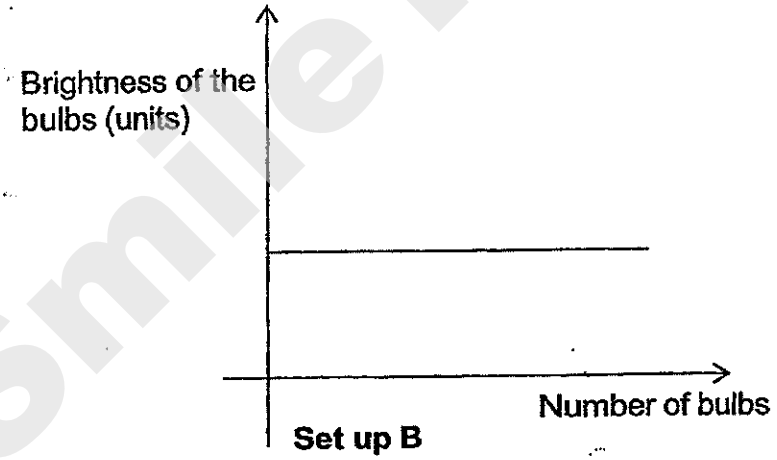
40. Ken used two set ups, A and B to find out how the arrangement of the bulbs will affect their brightness.

He used the same number of batteries in both set ups, and identical bulbs and batteries.

He recorded his observations in the graphs below.





a) Based on his observation, how did he arrange the bulbs in each set up? *(1m)*

_____

_____

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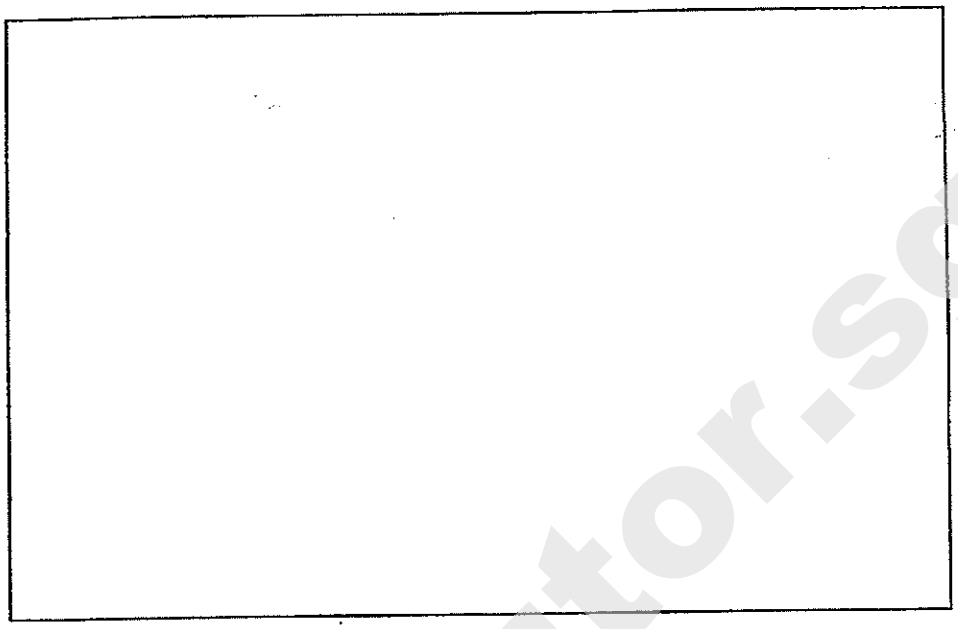
b) Using the symbols for **one battery** and **two bulbs** and some **wires**, draw a circuit diagram to represent the arrangement of the bulbs in Set up B. *(1m)*



c) Suggest one **advantage** of the bulb arrangement in Set up B. *(1m)*

_____

d) State the electrical component Kenny can add to the circuit in Set up A to stop the flow of electricity. *(1m)*

_____

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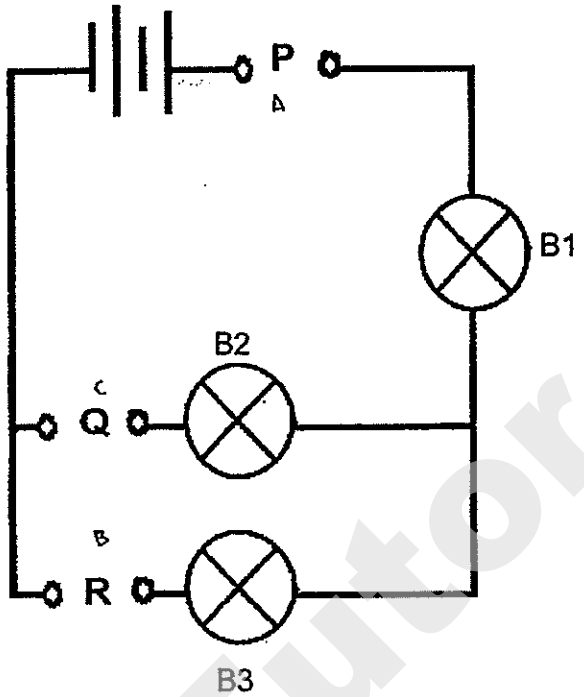
41. Jim used the set up below to test the electrical conductivity of three materials, A, B and C.



He placed the materials at points P, Q, R and recorded his observations in the table below.

			Bulbs light up		
Point P	**Point Q**	**Point R**	**B1**	**B2**	**B3**
A	C	B	**Yes**	**Yes**	**No**
B	A	C	**No**	**No**	**No**
C	B	A	**Yes**	**No**	**Yes**

Based on his data above, classify the materials, A, B and C in the table below. *(2m)*

Allows electricity to pass through	**Does not allow electricity to pass through**

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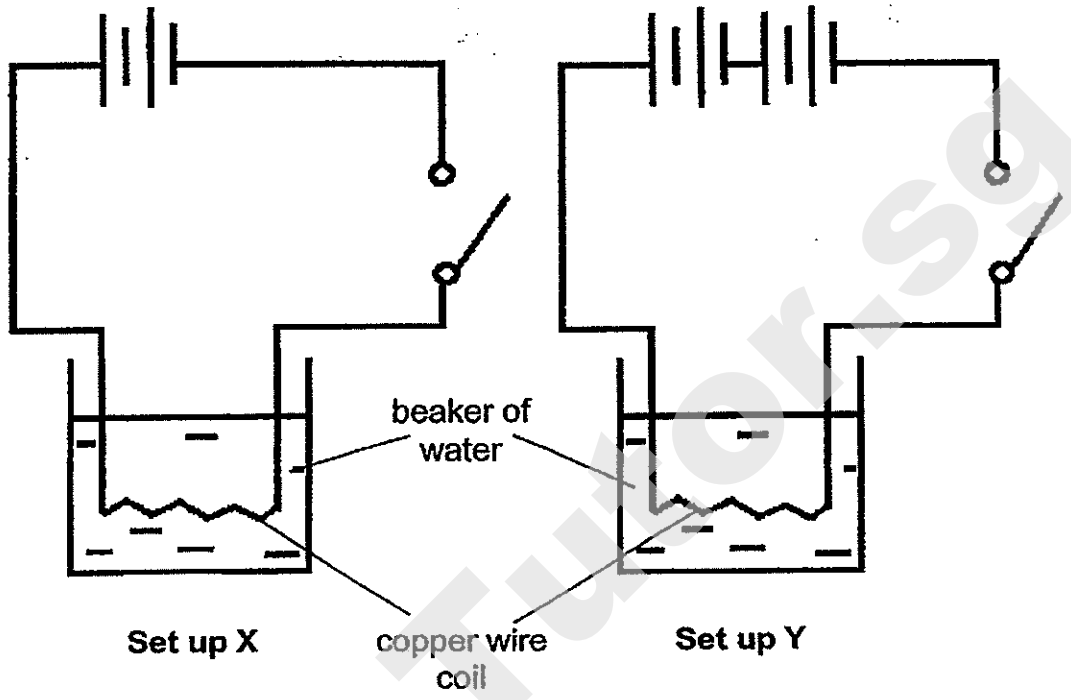
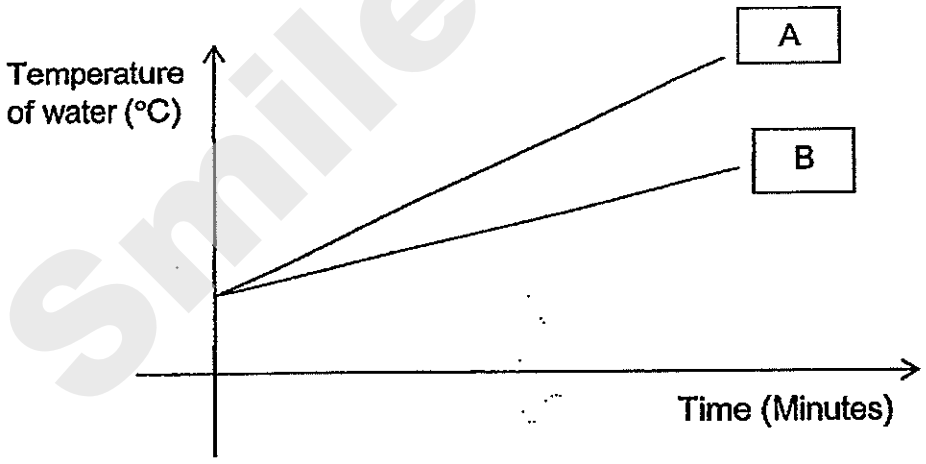
42. Jenny used identical batteries and same length of wire in the two set ups, X and Y, below.
The copper wire coil is immersed into two identical beakers with the same volume of water.





a) State which graph, **A** or **B**, best represents the temperature of the water in the beakers in Set ups **X** and **Y**, after the same period of time. *(1m)*

Set up **X**: _____

Set up **Y**: _____

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b) Explain your answer in (a). *(1m)*

_____

_____

c) Suggest a way to further increase the temperature of the water in the beaker in Set up Y. *(1m)*

_____

_____

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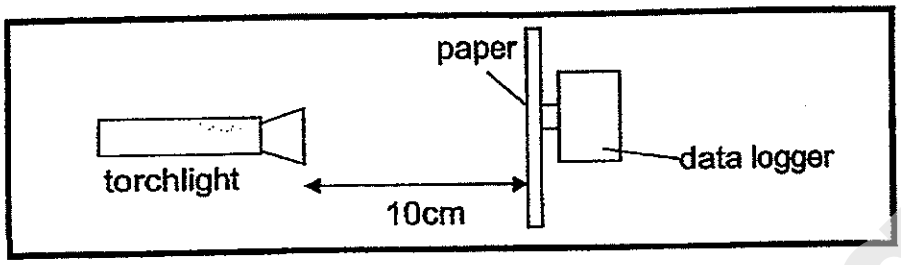
43. Jack set up an experiment as shown below.



He collected information on the amount of light passing through different thickness of white paper as shown in the table below.

	Thickness of white paper			
	A (1 mm)	B (2 mm)	C (3 mm)	D (4 mm)
Amount of light passing through (units)	700	400	200	50

a) Which paper, A, B, C or D allows the most light to pass through? *(1m)*

_____

b) Give a reason for your answer in (a). *(1m)*

_____

_____

c) If Jack were to use another set of paper of 5mm, what would the amount of light (in units) be? *(1m)*

Tick the correct box.

☐ Less than 50 units ☐ 50 units ☐ More than 50 units

d) Explain why the colour of each paper used in the experiment must be the same. *(1m)*

_____

_____

_____

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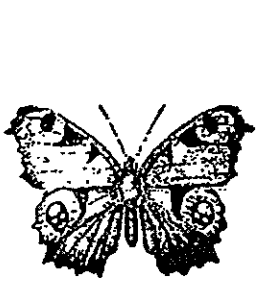
44. The diagram below shows three different organisms.



Organism A

Organism B

Organism C

The three organisms shown above obtain their food in different ways.

a) (i) Which organism feeds on decaying matter? *(1m)*

_____

(ii) Which organism needs to move from place to place for food? *(1m)*

_____

b) There was no rain for two months in Singapore and ferns found along the roadside received lots of sunlight. However, many of these ferns were dying.

How did the weather over the two months affect the survival of these ferns? *(1m)*

_____

_____

End of Booklet B

Setters: Ms Grace Chan, Mr Nicholas Sin, Ms Rebecca Lo, Ms A Ruchika,

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ANSWER SHEET

EXAM PAPER 2014
SCHOOL : HENRY PARK
PRIMARY : P5
SUBJECT : SCIENCE
TERM : SA2

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

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

31)a)B, C, A
b)B has the most amount of exposed surface area of water, followed by C then A, Tank A and C has the fan turned on so that will increase the rate of evaporation for tank A and C.

32)a)a)He should cover up the holes.
b)Water can evaporate and go through the holes to outside.
c)He can put hot water instead of tap water.
put ice on the plastic sheet.

33)a)Dimples.
b)2.
c)Mrs Chung.

34)a)The lower the temperature of the rubber fruit, the longer the time taken for fruit to spilt.
b)40°

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35)a)Set-up 1 and 2.
b)Set-up 2 and 4.

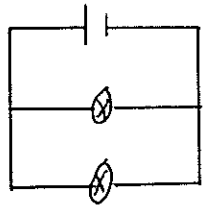
36)a)Cell wall.
b)Cell A has chloroplasts but cell B does not have.
c)To trap sunlight to make food.

37)a)i)balloon. ii)glass tube.
b)Gaseous exchange.

38)a)Water is taken in by the roots and transported up by the xylem to the leaves.
b)Food made in the leaves will be transported by the phloem in the stem.

39)a)Both are arranged in series.
b)If Kim change the arrangement of the bulbs to parallel, the number of batteries would not affect the brightness of the bulbs, thus through arranging the circuit in series would determine how the number of batteries affects the brightness of the bulbs.

40)a)A: Series B: Parallel
b)



c)The brightness is the same.
d)Switch.

41)A and C B

42)a)X : B Y : A
b)Set-up Y has more batteries than set-up X thus the temperature of Y would be higher than set-up X.
c)Add more batteries in set-up Y.

43)a)A.
b)Paper D is the thickest followed by C, B and A, and based on the graph, the paper that allows most light to pass through is A.
c)The colour might affect the results and we want a fair test with reliable and accurate results.

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44)a)i)C. ii)A.

b)The ferns lack of water to both survive and photosynthesis, the ferns also received too much sunlight thus the weather over the two months affected the survival of these ferns.

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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: 30 October 2014

This booklet consists of 14 printed pages including this page.

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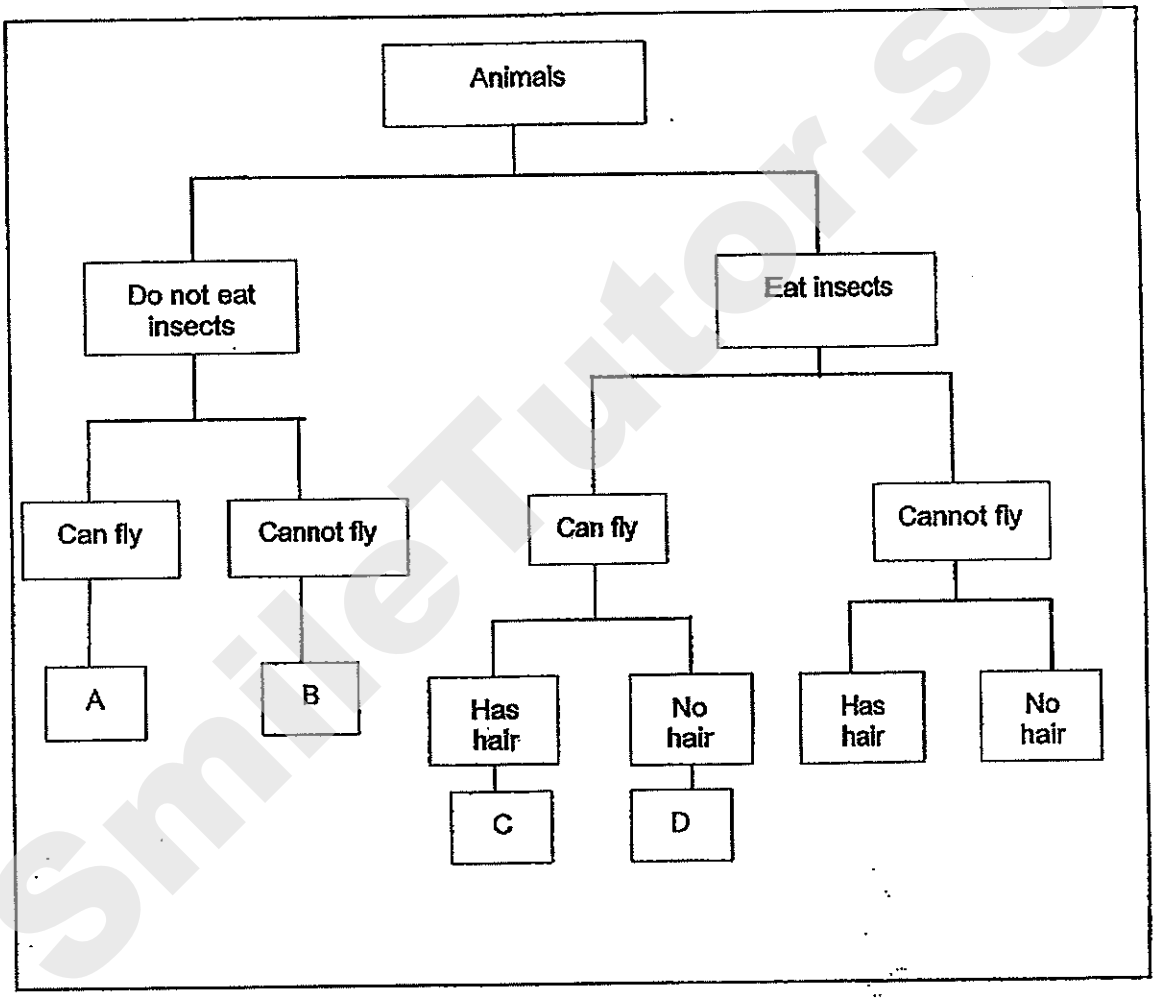
For each question from 1 – 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet. [60 marks]

---

1. Samy saw a flying animal. He observed that it fed on insects and had an outer covering of hair. He then drew a classification chart to classify this animal as shown below.



Based on the classification table above, which letter, A, B, C or D best represents the group which the animal belongs to?

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

(Go on to the next page)

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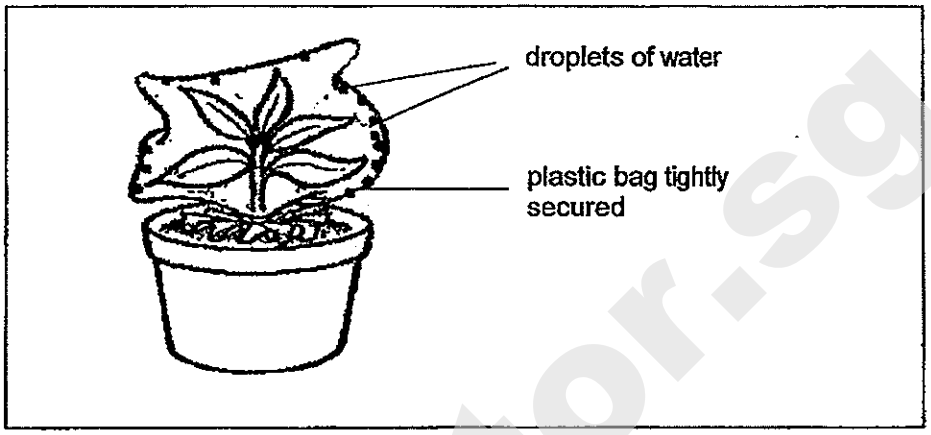
2. In the diagram below, the leaves of a plant were wrapped with a plastic bag and left overnight. Droplets of water were seen on the inside of the plastic bag the next day.



Which one of the following statements correctly describes the formation of the water droplets?

(1) The water from the soil condensed on the plastic bag.
(2) The morning dew condensed on the inside of the plastic bag.
(3) Water droplets from the surrounding air condensed and entered the plastic bag.
(4) The leaves gave off water vapour which condensed on the inside of the plastic bag.

3. Ali pasted a different number of paper wings on four identical seeds, A, B, C and D. He dropped them from the same height above the ground and measured the time taken for each seed to drop to the ground. The table shows his results.

Seed	A	B	C	D
Time taken (sec)	3.5	8.6	4.2	7.8

Which one of the following correctly matches the number of paper wings each seed has?

	Seed A	Seed B	Seed C	Seed D
(1)	4	3	5	2
(2)	5	2	4	3
(3)	2	5	3	4
(4)	3	4	2	5

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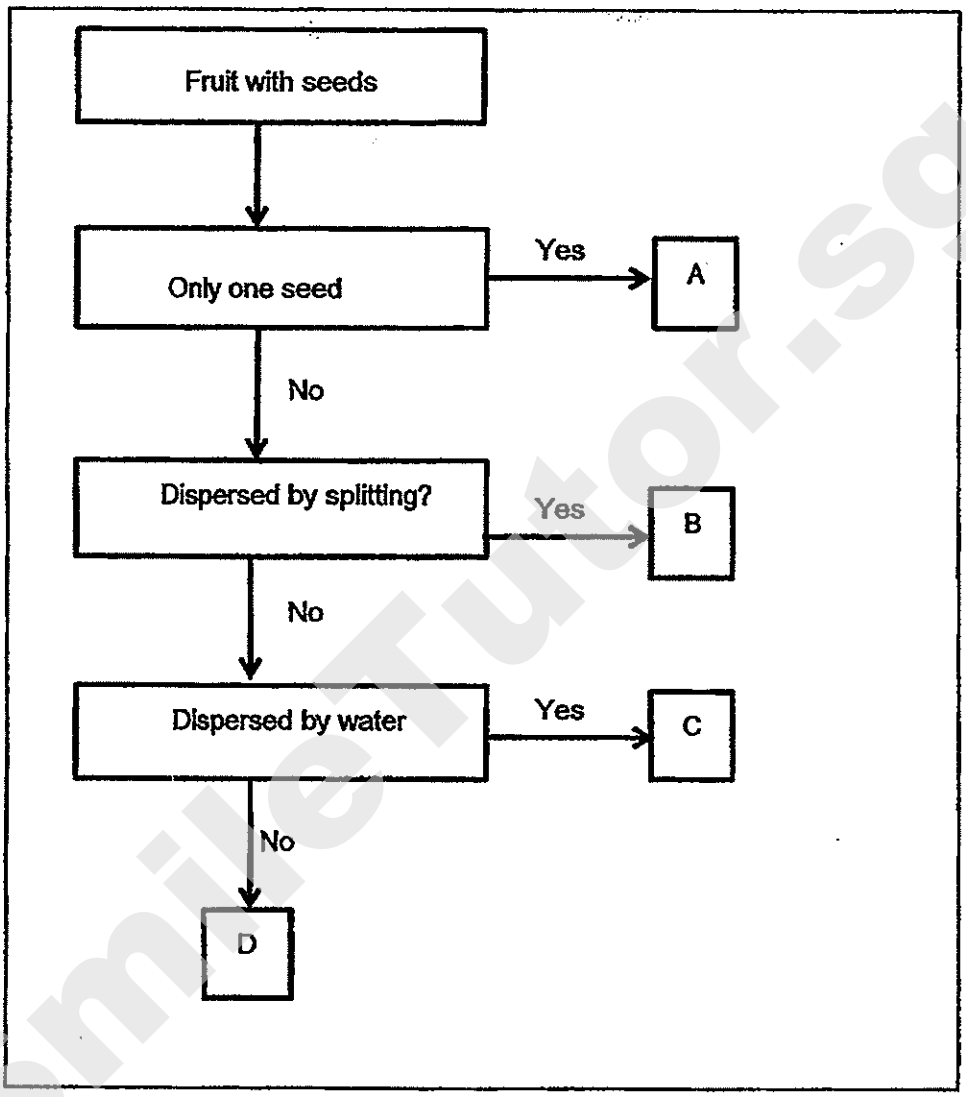
4. Study the flow chart below.



Which of the following best represents seeds A, B, C and D?

	A	B	C	D
(1)	Saga	Lotus	Apple	Longan
(2)	Longan	Saga	Lotus	Apple
(3)	Longan	Lotus	Apple	Saga
(4)	Apple	Longan	Saga	Lotus

(Go on to the next page)

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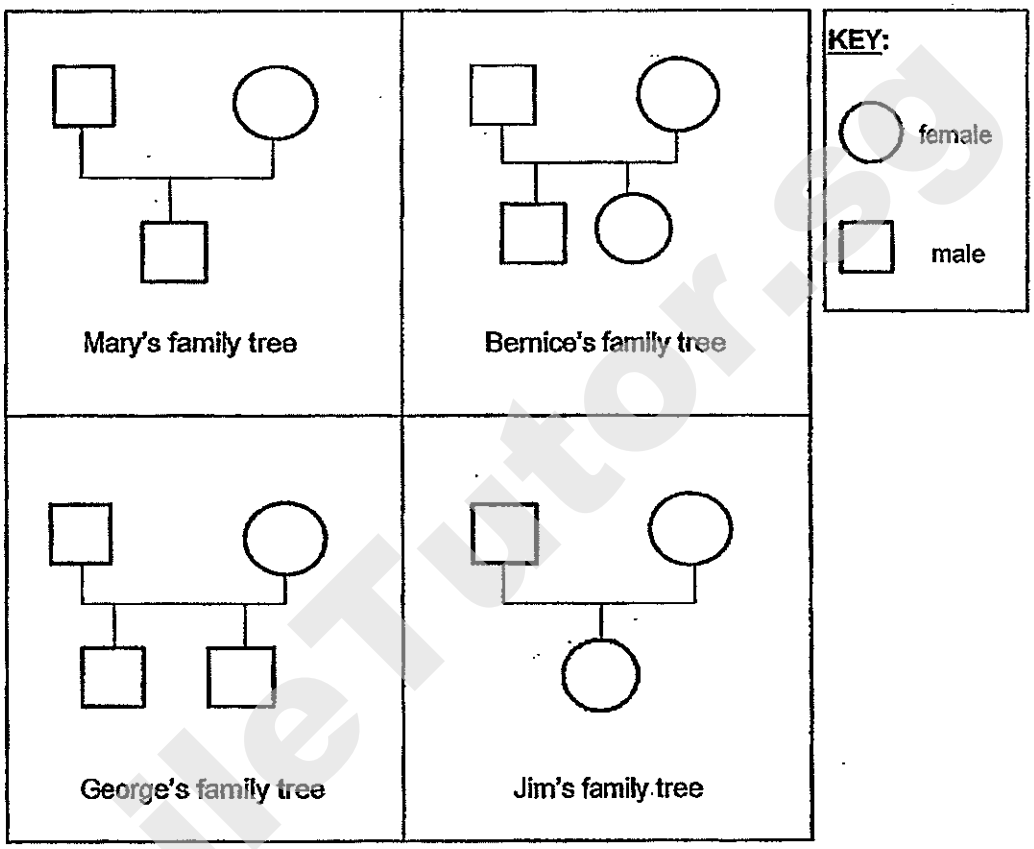
5. Mary asks her friends, Bernice, George and Jim to draw their family trees. The diagrams below show what they have drawn.



Based on the diagrams above, which children have incorrectly drawn their family trees?

(1) Mary and Jim only
(2) Jim and George only
(3) Mary and Bernice only
(4) Bernice and George only

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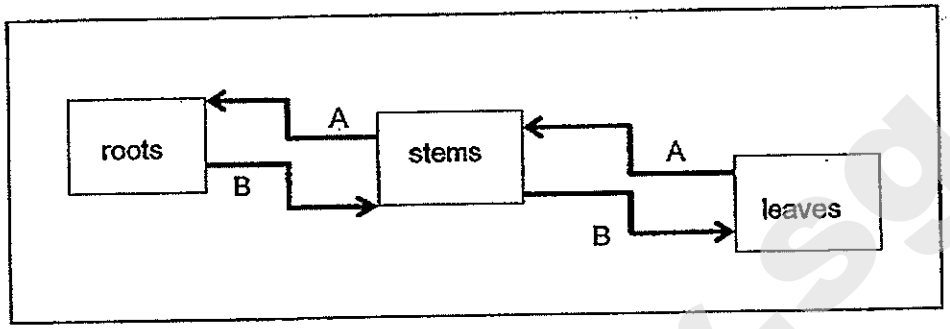
6. The diagram below shows how both substances, A and B, are transported in a plant.



What do substances A and B represent?

	A	B
(1)	water	sugar
(2)	sugar	water
(3)	mineral salts	sugar
(4)	mineral salts	water

7. The following table shows the comparison between sexual reproduction in humans and plants.

	Humans	Plants
Female reproductive cell	X	Y
Male reproductive cell	sperm	pollen grains
After fertilisation	a baby is formed	Z

What missing information do X, Y and Z represent in the table above?

	X	Y	Z
(1)	ovary	egg	seeds are formed
(2)	ovum	stigma	fruits are formed
(3)	ovary	ovary	fruits are formed
(4)	ovum	egg	seeds are formed

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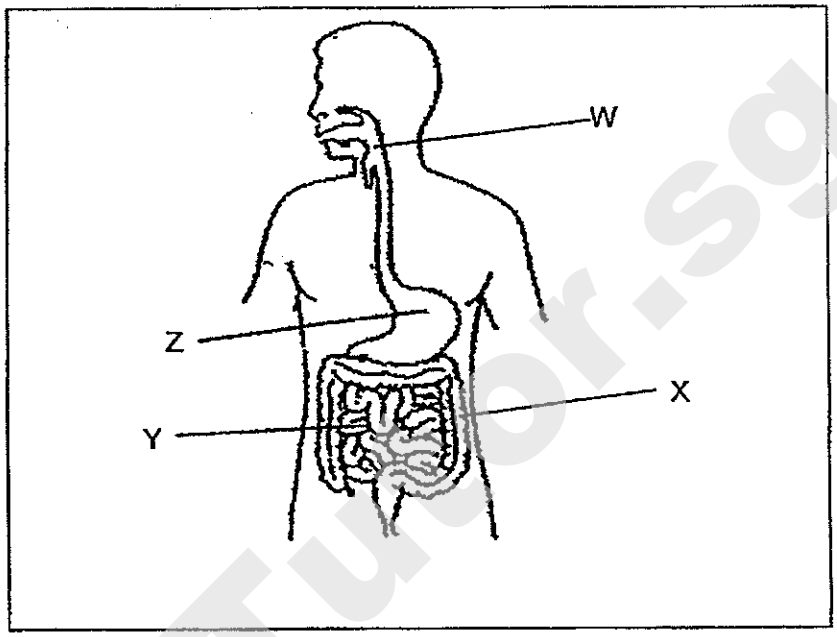
8. The diagram below shows the human digestive system.



At which part of the digestive system does most of the food enter the circulatory system?

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

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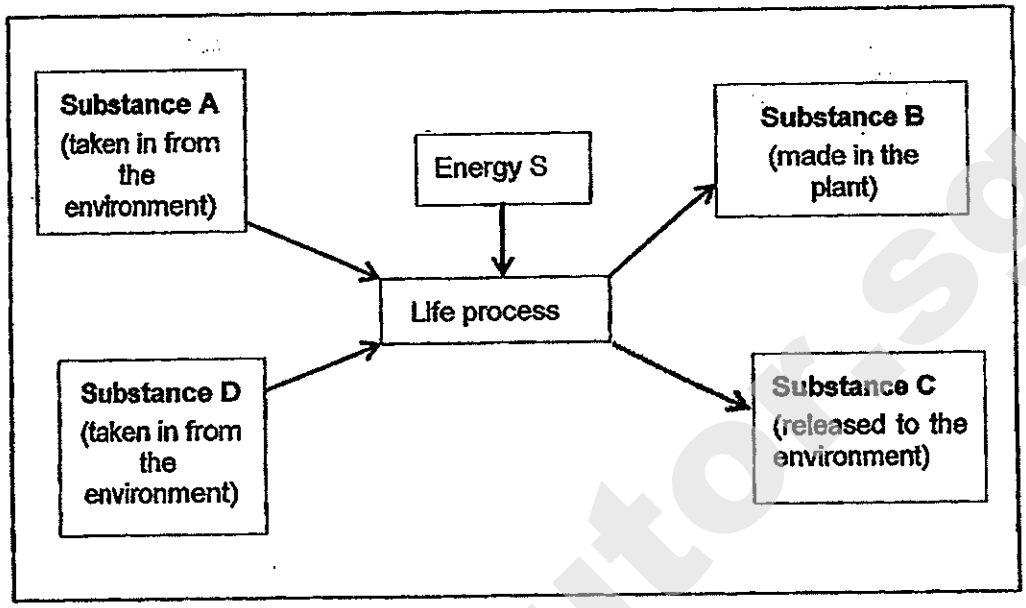
9. The diagram below represents a certain life process that takes place in green plants.



Which one of the following correctly identifies substances, A, B, C and D and Energy S?

	Substance				Energy S
	A	B	C	D	
(1)	food	water	oxygen	carbon dioxide	light
(2)	oxygen	food	carbon dioxide	water	heat
(3)	carbon dioxide	food	oxygen	water	light
(4)	oxygen	water	food	carbon dioxide	heat

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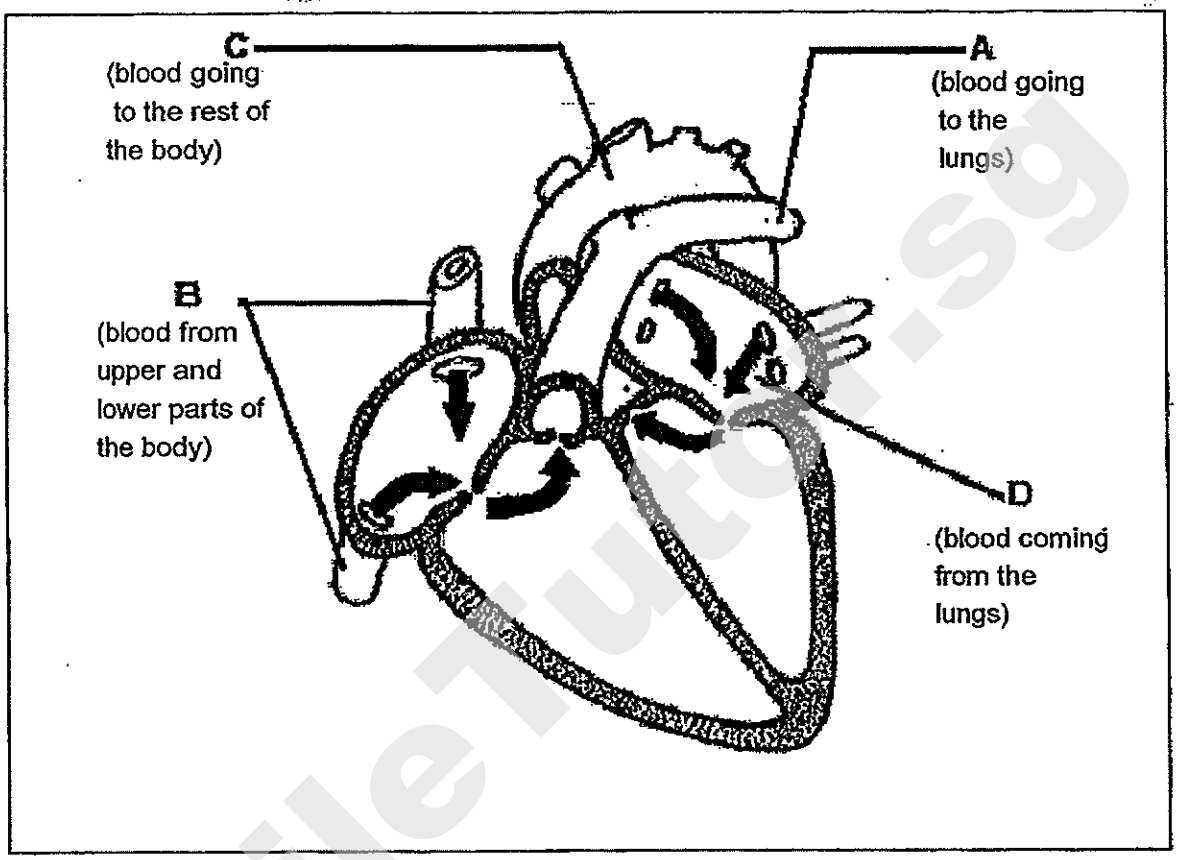
10. The diagram below shows the flow of blood in and out of the heart.



Which one of the following correctly indicates oxygen content in the blood at A, B, C and D?

	More oxygen	Less oxygen
(1)	A and B	C and D
(2)	B and D	A and C
(3)	A and D	B and C
(4)	C and D	A and B

(Go on to the next page)

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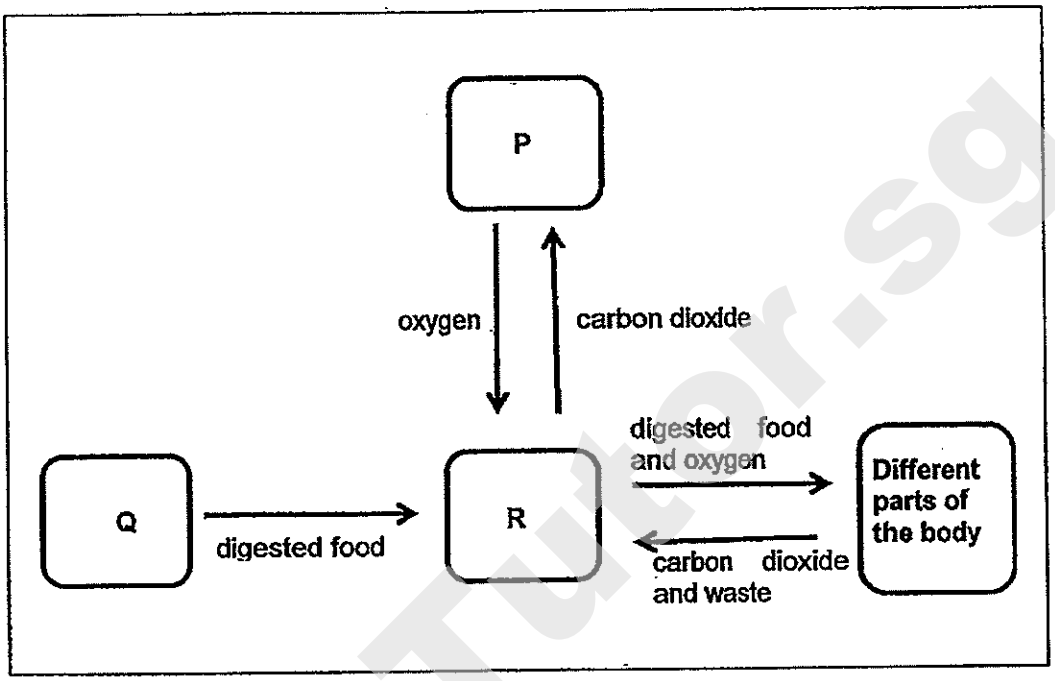
11. In the diagram below, P, Q and R represent the different systems working together in the human body.



Based on the diagram above, what are systems P and R?

	P	R
(1)	Circulatory	Digestive
(2)	Circulatory	Respiratory
(3)	Digestive	Respiratory
(4)	Respiratory	Circulatory

(Go on to the next page)

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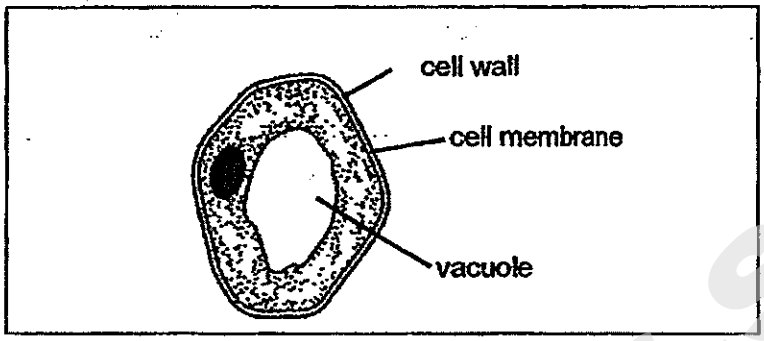
12. Samy observed a cell under a microscope as shown in the diagram below.



From which part of a multicellular organism could the above cell be taken from?

A	:	leaf of a plant
B	:	skin of an animal
C	:	petal of a flower
D	:	cheek of an animal

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

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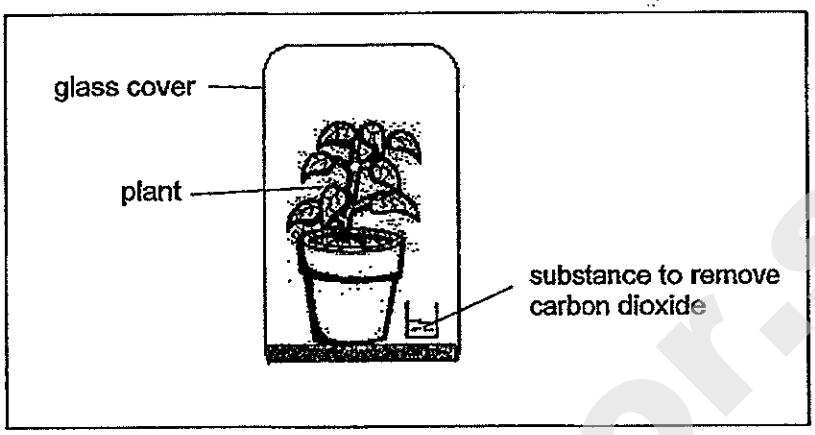
13. Wei Ling conducted an experiment to find out if carbon dioxide is needed for photosynthesis. She prepared the set-up as shown below and left it for two days.



Which one of the following set-ups should Wei Ling use as a control for her experiment?

(1)

(2)

(3)

(4)

(Go on to the next page)

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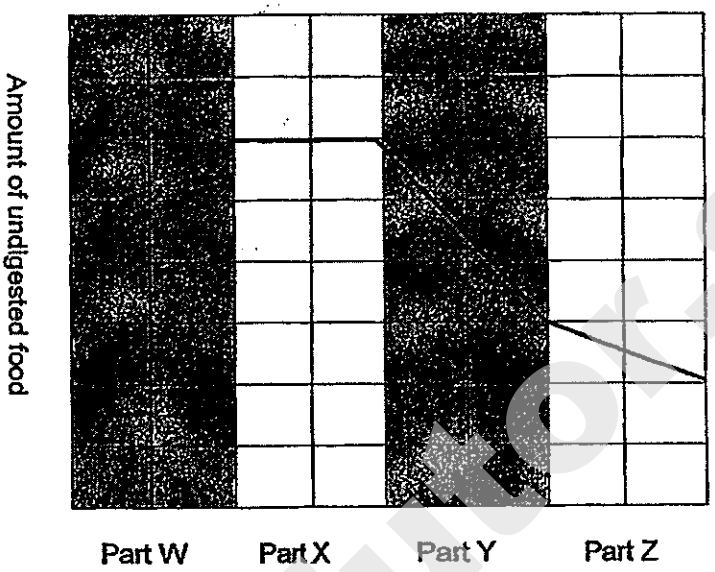
14. The line graph shows the amount of undigested food as it passes through the different parts of the human digestive system.



The organs represented by Part X and Part Z are _____.

(1) Gullet and stomach
(2) Gullet and small intestine
(3) Stomach and large intestine
(4) Small intestine and large intestine

(Go on to the next page)

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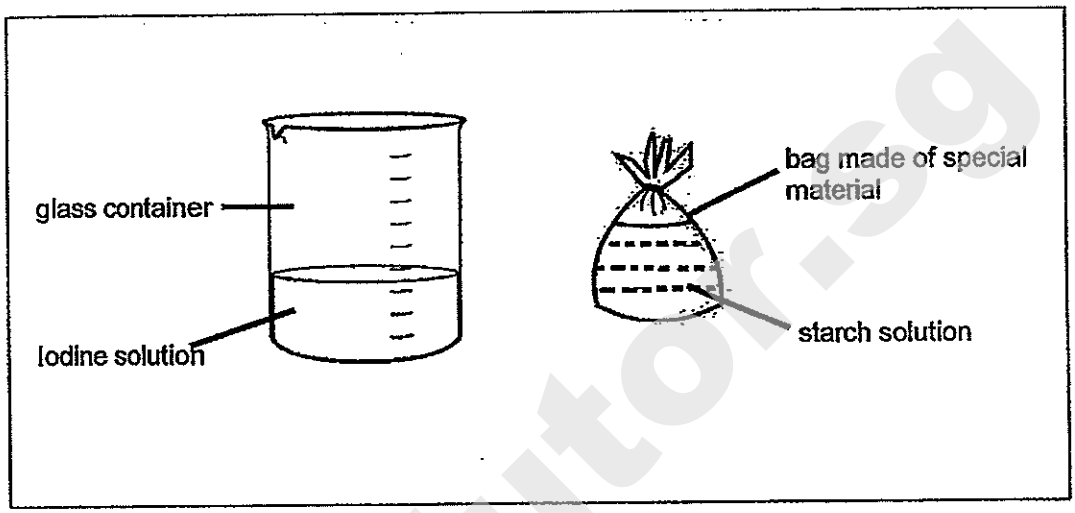
15. Lucy made a bag from a special kind of material and filled it with a starch solution. The bag was then lowered into a glass container filled with some iodine solution. Six hours later, the ~~sugar~~ starch solution in the bag turned dark blue. However, the iodine solution in the glass container remained unchanged.



What caused the ~~sugar~~ starch to turn dark blue?

(1) The material of the bag interacted with the iodine solution.
(2) The material of the bag interacted with the ~~sugar~~ starch solution.
(3) The iodine solution entered the bag and interacted with the ~~sugar~~ starch solution.
(4) The ~~sugar~~ starch solution was able to exit from the bag and interacted with the iodine solution.

END OF BOOKLET A1

(Go on to the next page)

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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: 30 October 2014

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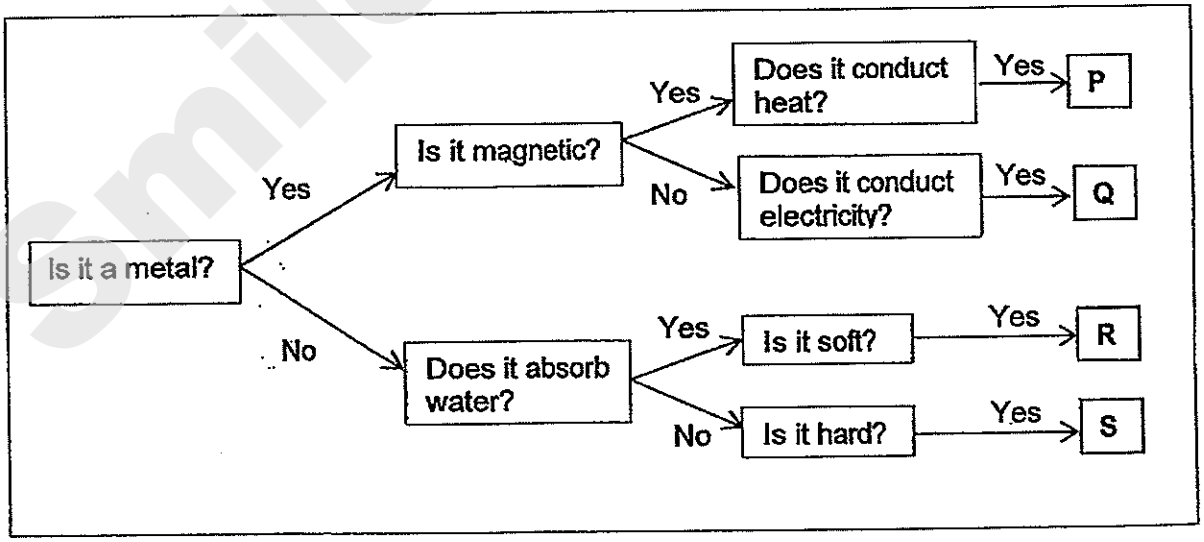
16. The table below shows the classification of materials based on their origins.

Natural materials			Man-made materials
From plants	From animals	From the ground	
Paper	Wool	Limestone	Nylon
Wood	Silk	Lead	Plastic
W	**X**	**Y**	**Z**

Based on the classification above, what do materials **W**, **X**, **Y** and **Z** represent?

	W	X	Y	Z
(1)	rubber	cork	ceramic	glass
(2)	rattan	leather	gold	ceramic
(3)	glass	rubber	clay	synthetic leather
(4)	cork	synthetic leather	rattan	gold

17. The diagram below shows how materials P, Q, R and S can be classified.



Which of the following statements is true?

(1) R is a soft metal.
(2) Q can possibly be steel.
(3) P and Q are magnetic metals.
(4) S is a hard, non-metallic material that is waterproof.

(Go on to the next page)

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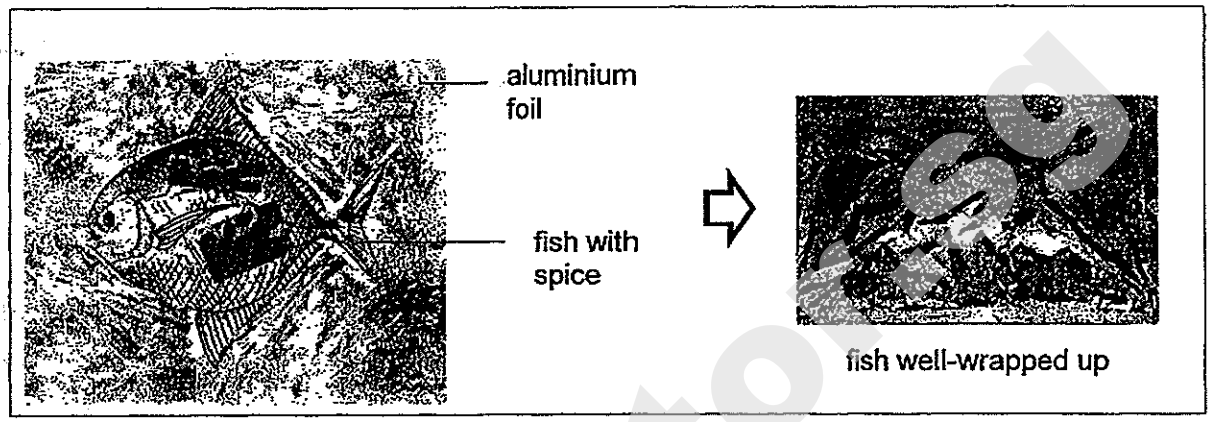
18. Ranjit loves to eat spicy grilled fish. Her mother usually buys the ready-made spicy grilled fish from the supermarket. The fish, which has been marinated with spices, is wrapped with a piece of aluminium foil as shown in the diagram below.



The sheet of aluminium foil is made of a reflective surface on one side and a matte surface on the other side.
How should his mother wrap the fish to put into the oven to cook it? What is the reason?

	Wrapping method	Reason
(1)	The reflective surface of the aluminium foil is on the outer side.	More heat will be trapped in the foil.
(2)	The reflective surface of the aluminium foil is on the outer side.	More heat will be absorbed by the fish.
(3)	The reflective surface of the aluminium foil is on the inner side.	More heat will be transferred out from the fish.
(4)	The reflective surface of the aluminium foil is on the inner side.	More heat in the foil will be transferred to the fish.

(Go on to the next page)

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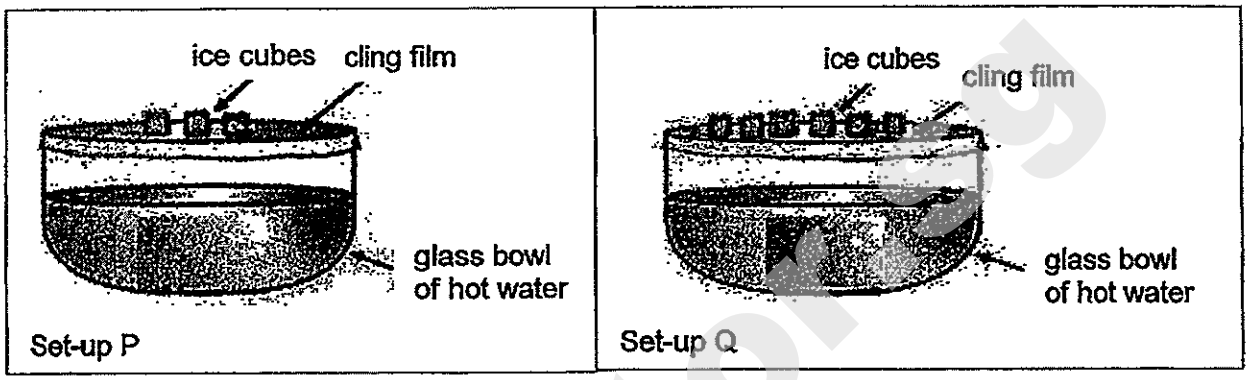
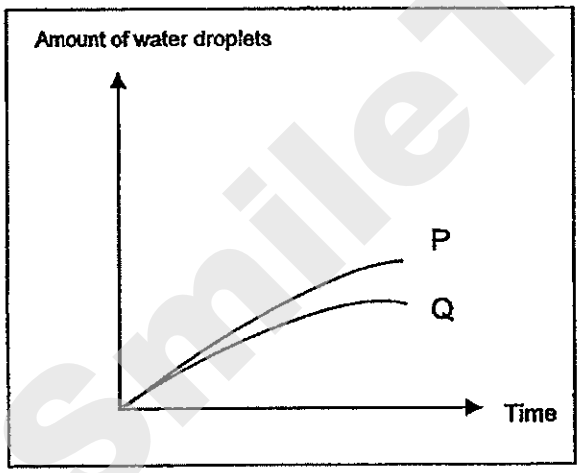
19. May wanted to conduct an experiment to find out if adding a different number of ice cubes on a cling film would affect the amount of water droplets formed on the underside of the cling film and on the inner surface of the glass bowl. She prepared two set-ups, P and Q, as shown in the diagram below.

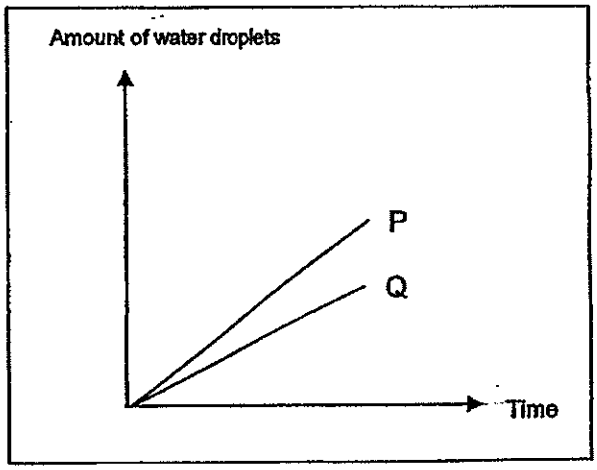


May left the two set-ups in the Science Laboratory for an hour. She then recorded the number of water droplets formed in each set-up and plotted the graph.
Which one of the following graphs correctly represents the set-ups P and Q?

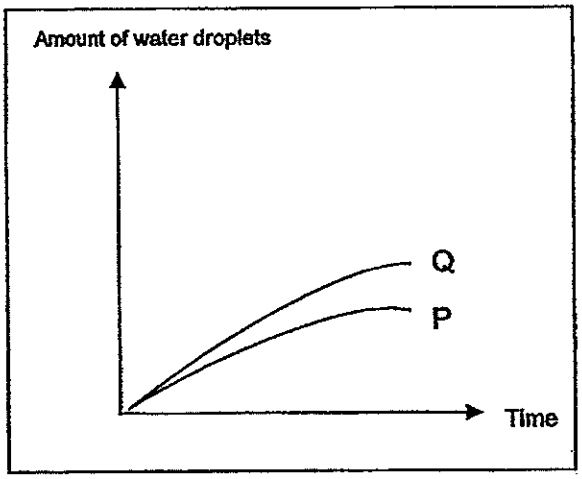
(1)



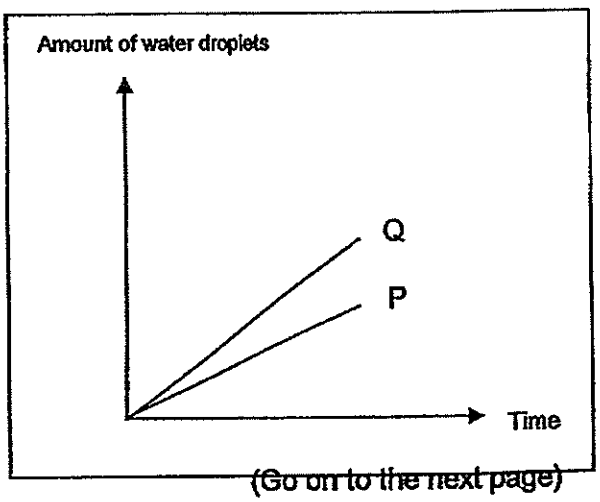
(2)



(3)



(4)



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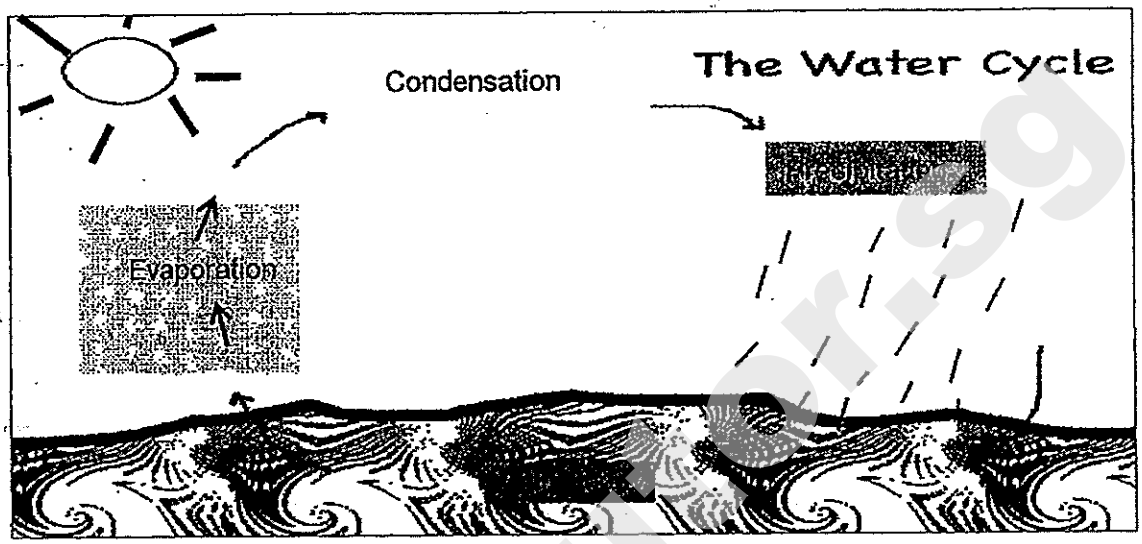
20. Reese drew a water cycle diagram as shown below.



She then posed the following question to her classmates:

> "What will happen to the water cycle when the earth's temperature increases?"

Which one of the following classmates gave her the correct answer?

	Classmate	Answer
(1)	Lisa	There will be less rain and the water cycle will slow down.
(2)	Raju	The water cycle is not affected by the earth's temperature.
(3)	Huipin	The rate of evaporation will increase and the water cycle will speed up.
(4)	Nassim	The rate of condensation will decrease and the water cycle will slow down.

(Go on to the next page)

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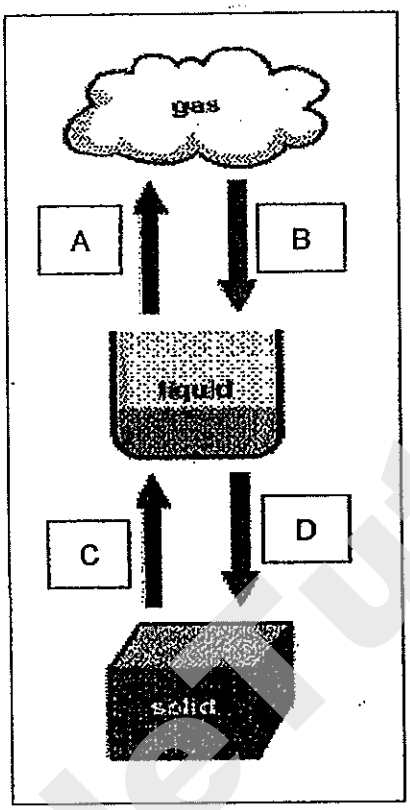
21. The diagram below shows the changes in the states of water.



Which one of the following correctly describes the heat transfer involved in processes A, B, C and D?

	Heat gain	Heat loss
(1)	A and C	B and D
(2)	A and B	C and D
(3)	B and C	A and D
(4)	B and D	A and C

(Go on to the next page)

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Four identical handkerchiefs, A, B, C and D, were soaked in water and left to dry in the sun. The masses of the wet handkerchiefs were measured at the beginning and at every hour interval, and recorded in the table as shown below.

Time	Handkerchief A	Handkerchief B	Handkerchief C	Handkerchief D
11:00am	2.5kg	2.5kg	2.5kg	2.5kg
12:00noon	2.0kg	1.6kg	1.4kg	1.8kg
1:00pm	1.5kg	1.2kg	0.8kg	1.4kg
2:00pm	1.2kg	1.0kg	0.8kg	1.2kg

Use the information in the table given above to answer questions 22 and 23.

22. What was the mass of the handkerchief when it was completely dry?

(1) 2.5kg
(2) 1.2kg
(3) 1.0kg
(4) 0.8kg

23. Each handkerchief was either folded into 1, 2, 3 or 4 folds. Which of the following shows the correct order of the amount of exposed surface area each handkerchief had, beginning with the largest?

	largest exposed surface area ⟶ smallest exposed surface area
(1)	A ⟶ B ⟶ C ⟶ D
(2)	B ⟶ A ⟶ D ⟶ C
(3)	C ⟶ B ⟶ D ⟶ A
(4)	D ⟶ A ⟶ B ⟶ C

(Go on to the next page)

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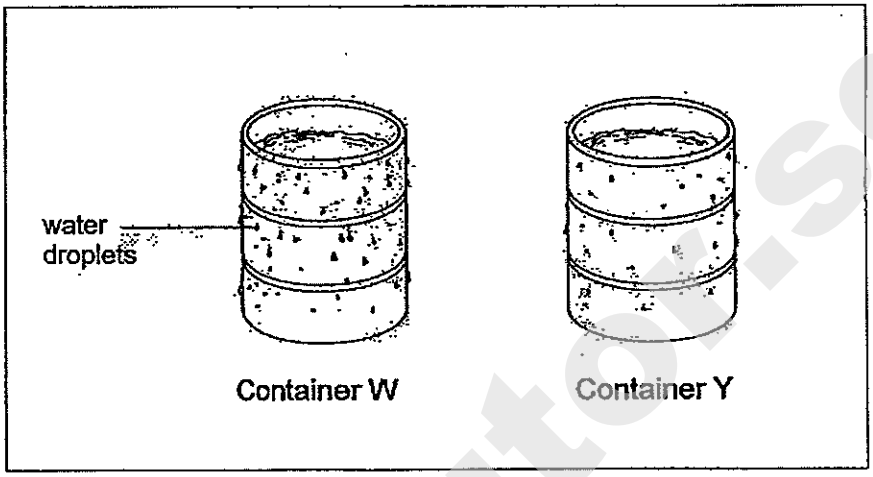
24. Two similar containers, W and Y, were filled with an equal amount of water. They were left on the table next to each other for an hour. The diagram below shows what happened to the two containers of water after one hour.



Which one of the following statements best explains why Container W has more water droplets formed on its outer surface compared to Container Y?

(1) The water in Container W condensed faster than the water in Container Y.
(2) The water in Container W evaporated at a slower rate than the water in Container Y.
(3) The air surrounding Container W is more humid compared to the air surrounding Container Y.
(4) The temperature of water in Container W was lower than the temperature of water in Container Y.

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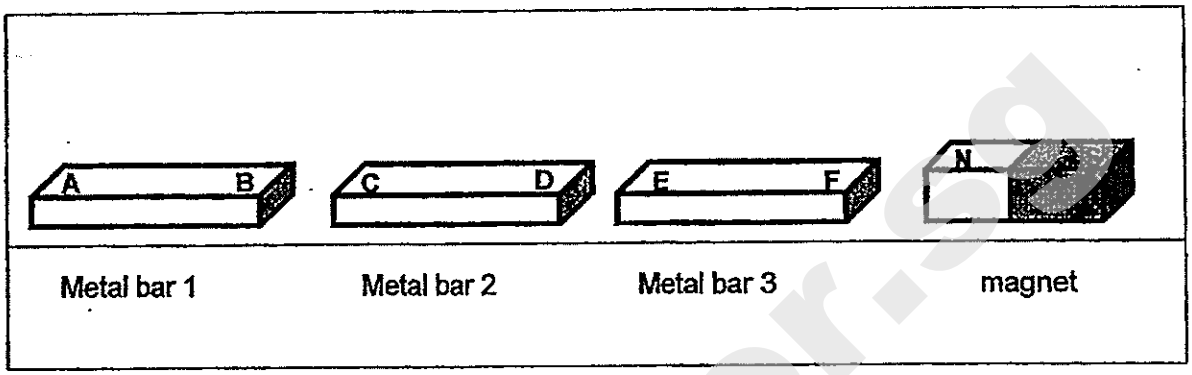
25. A magnet and 3 metal bars were placed side by side on the table. Their ends were labelled as shown in the diagram.



The ends of the magnet and the 3 metal bars were then placed close to one another to test whether they would attract or repel. The observations were recorded in the table below.

	End of bar	Metal bar 1		Magnet	
		A	B	N	S
Metal bar 2	C	attract	attract	repel	attract
	D	attract	attract	attract	repel
Metal bar 3	E	attract	attract	attract	repel
	F	attract	attract	repel	attract

Based on the information in the table, which of the following is a correct conclusion?

(1) End C of Metal bar 2 is a South-seeking pole.
(2) There are altogether two magnets on the table.
(3) There are altogether three magnets on the table.
(4) End D of Metal bar 2 will attract end E of Metal bar 3.

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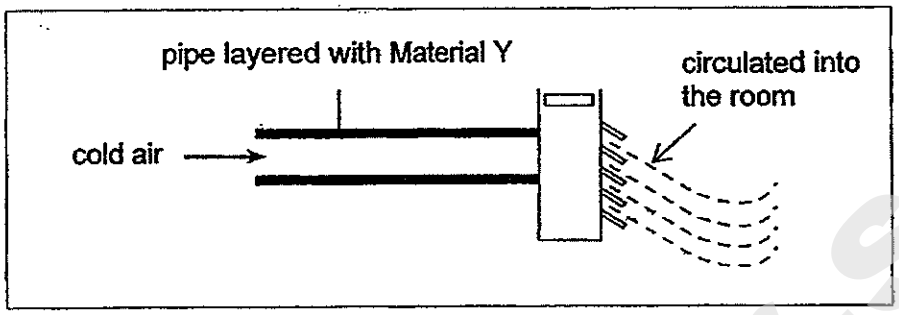
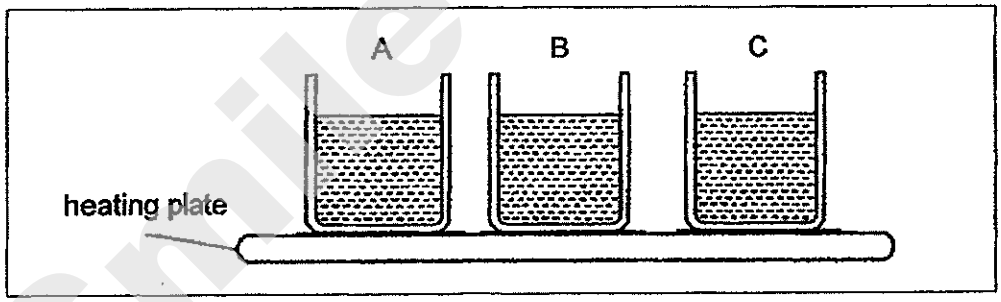
26. The picture shows a part of an air conditioner. Cold air passes through the pipe before it is circulated into the room. The pipe is layered with Material Y.



What property should Material Y have to cover the pipe of the air conditioner?
Material Y should be a _____.

(1) poor conductor of heat
(2) good conductor of heat
(3) poor conductor of electricity
(4) good conductor of electricity

27. Three containers made of different materials were filled with the same amount of water. They were placed on a heating plate at the same time for five minutes.



The table below shows the temperature of the water in each container after they were heated.

Container	Temperature of water before heating (°C)	Temperature of water after 5 minutes of heating (°C)
A	20	40
B	20	30
C	20	25

Which one of the following statements is ~~not~~ **true**?

(1) Container A gained the least amount of heat.
(2) Container C gained the most amount of heat.
(3) Container B is a better heat conductor than Container C.
(4) Container C is a better heat conductor than Container A.

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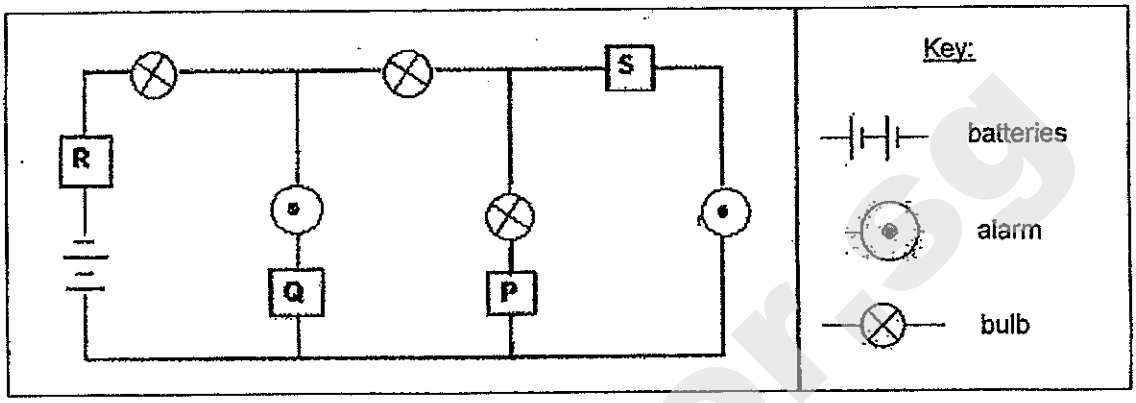
28. The diagram below shows an electrical system which has batteries, switches, bulbs and alarms.



Which two switches, P, Q, R or S should be opened while the others are closed so that the three bulbs could light up without triggering the alarms?

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

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29. The diagrams below show 4 different types of circuit arrangements.

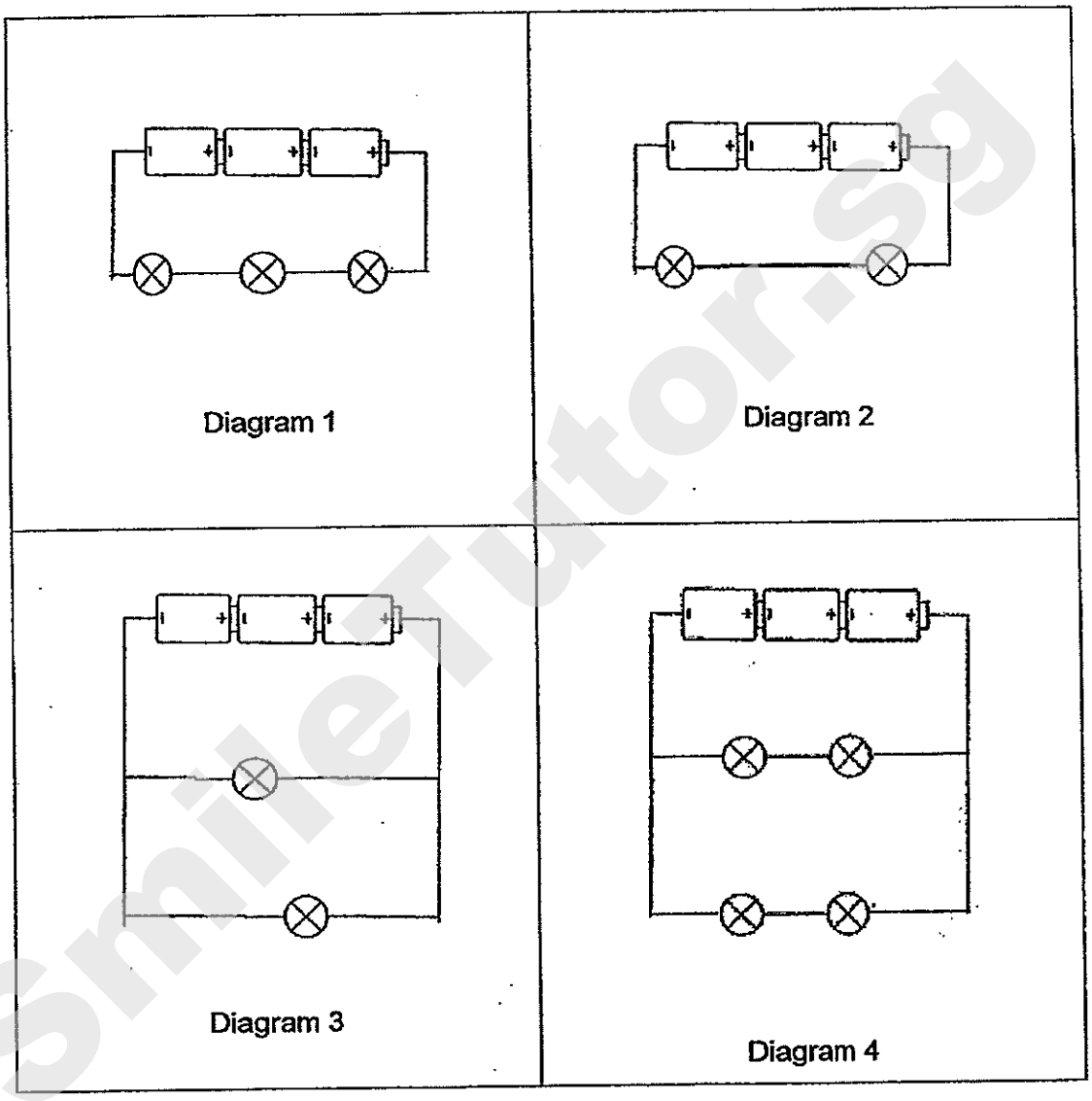

Diagram 1

Diagram 2

Diagram 3

Diagram 4

In which diagram would the bulbs light up the brightest?

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

(Go on to the next page)

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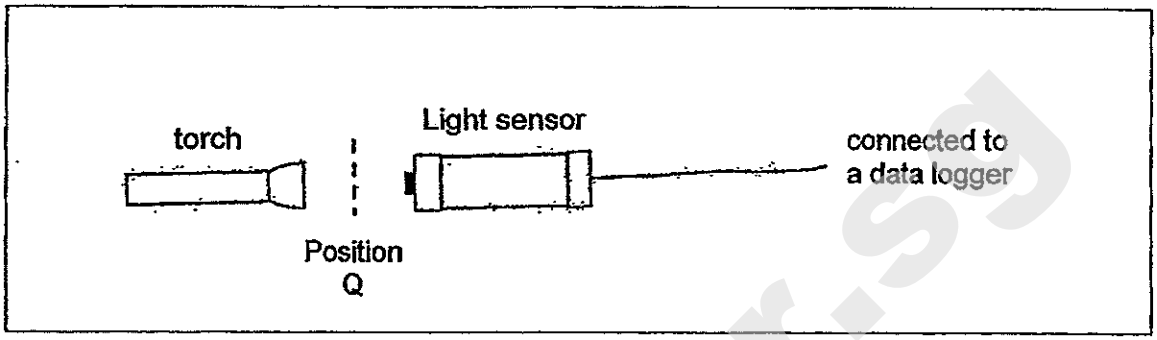
30. Miss Edison set up an experiment as shown below to test the amount of light that can pass through different materials when they are placed at Position Q.



She recorded the amount of light detected when each material was placed at position Q in the table below.

Material	Amount of light (units)
W	80
X	32
Y	57
Z	0

Which one of the following options most likely represents the above materials?

	Material W	Material X	Material Y	Material Z
(1)	clear glass	frosted glass	tracing paper	wood
(2)	wood	tracing paper	clear plastic	frosted glass
(3)	clear glass	frosted glass	wood	tracing paper
(4)	frosted glass	tracing paper	wood	clear glass

End of Booklet A2

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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: 30 October 2014

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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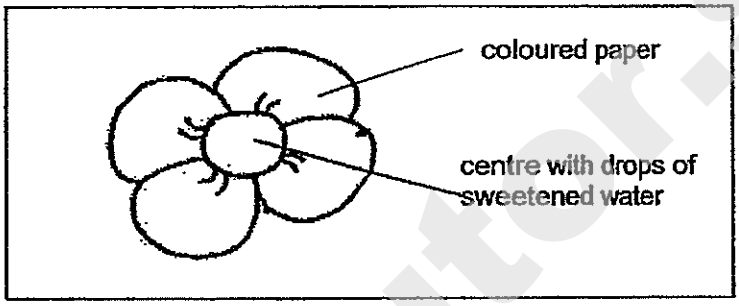
For questions 31 to 37, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question. [20marks]

31. Daisy wanted to find which colour of flowers butterflies prefer. She cut paper flowers of the same size but of different colours. She dropped 10 drops of the same sweetened water in the centre of the paper flower. She then left the flowers in her garden for three hours.



Daisy then counted the number of butterflies that visited the paper flowers over three hours. She recorded the results in the table below.

	Number of butterflies visiting the flower		
Colour of flower	**8-9 am**	**9-10am**	**10-11am**
red	8	5	1
yellow	15	11	7
white	7	5	2

(a) Based on Daisy's results, which colour did the butterflies prefer? [1]

Her friend, Jane, on the other hand wanted to find out the relationship between the size of the flowers and the number of butterflies visiting the flowers.

(b) What changes to Daisy's experiment must Jane make? [2]

3

(Go on to the next page)

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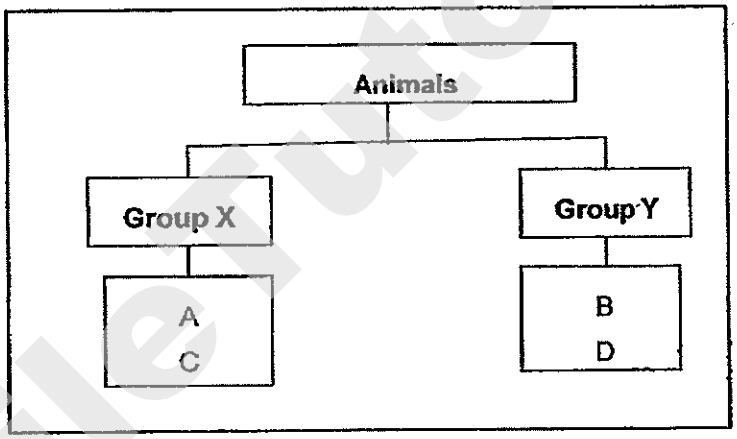
32. The characteristics of four animals, A, B, C and D are given in the table below.

Characteristics	Animal A	Animal B	Animal C	Animal D
Number of wings	two wings	two wings	two wings	no wings
Number of legs	two legs	two legs	two legs	four legs
Outer covering	feathers	hair	feathers	hair
Ability to fly	can fly	can fly	cannot fly	cannot fly

The animals are then classified into 2 different groups, X and Y, as shown in the diagram below.



(a) Which group of animals is represented by X and Y? [1]

(i) Group X : _____

(ii) Group Y : _____

(b) What are the differences between Animal D and the rest of the animals? [2]

_____

_____

3

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33. Mr Tan collected 5 identical rubber fruits, A, B, C, D and E. He subjected each fruit to different temperatures to find out if the temperature of the surrounding has an effect on the splitting of the rubber fruit and the distance the seeds were scattered from the parent tree.

He recorded his observations as shown in the table below.

Rubber fruit	Temperature of surrounding (°C)	Effect	Distance of scattered seed from parent plant (m)
A	20	Does not split	-
B	25	Splits after 1 day	1.0
C	30	Splits after 3 hours	1.5
D	35	Splits after 2 hours	2.5
E	40	Splits after 30 minutes	4.0

(a) From the results of Mr Tan's experiment, what is the relationship between the temperature of the surrounding and the time taken for the fruit to split? [1]

(b) Which rubber fruit splits with the greatest force? Explain your answer. [1]

2

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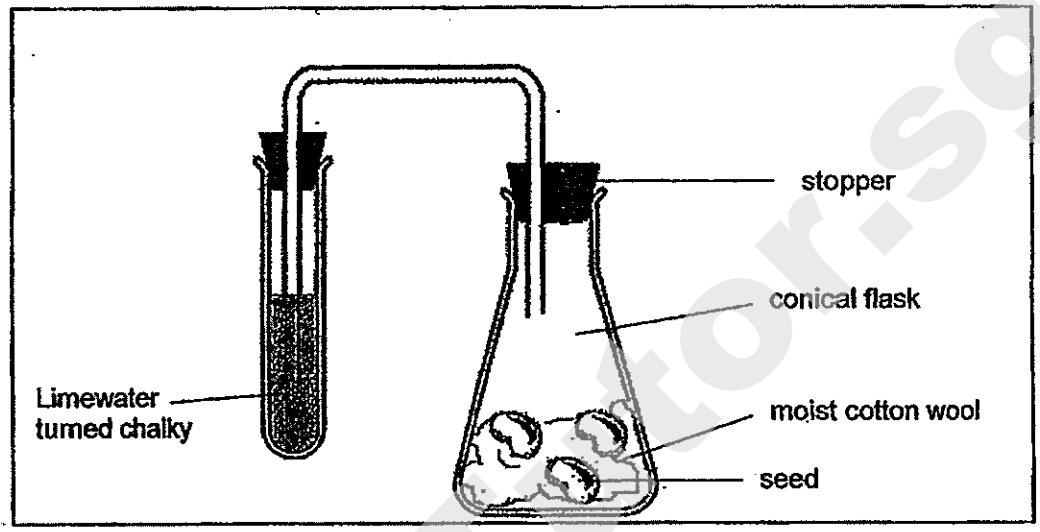
34. Bala set up an experiment as shown in the diagram below. He placed moist cotton wool with a few germinating seeds in a conical flask.



After a few hours, he observed that the limewater in the test tube had turned chalky.

(a) What had caused the limewater to turn chalky? [1]

Mary also set up a similar experiment. However, she replaced the germinating seeds with some seedlings which had green leaves. A few hours later, the limewater in the test tube remained clear.

(b) Explain why Mary's observation was different from Bala's. [2]

3

(Go on to the next page)

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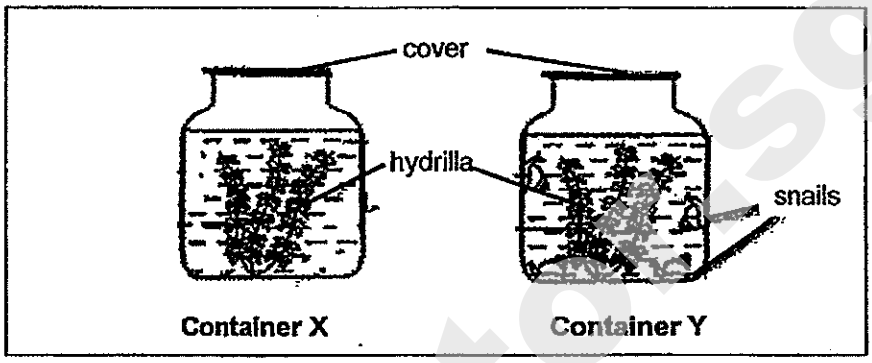
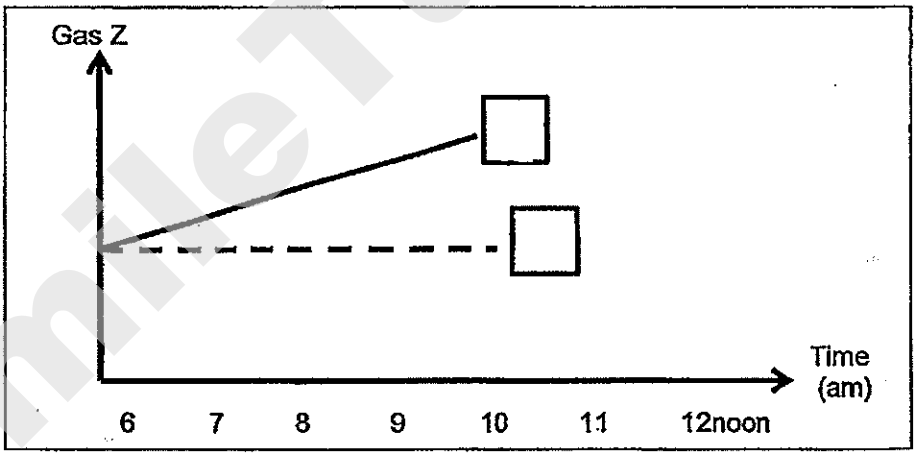
35. Samy put the same amount of hydrilla and water into two identical covered containers, X and Y. Snails are placed into Container Y. He then placed the two containers by the window from 6a.m to 12 noon. He measured the amount of Gas Z produced by the hydrilla in both containers. He tested Gas Z and found it did not turn lime water chalky.



The graph below shows the level of Gas Z in each container over a given period of time.



(a) In the graph above, **write** "X" or "Y" in the appropriate boxes to indicate the correct containers. [1]

(b) To obtain the above results, what must be the property of the material used to make the containers? [1]

_____

(c) Explain why the dotted line remain constant over the period of 6 hours? [1]

_____

_____

3

(Go on to the next page)

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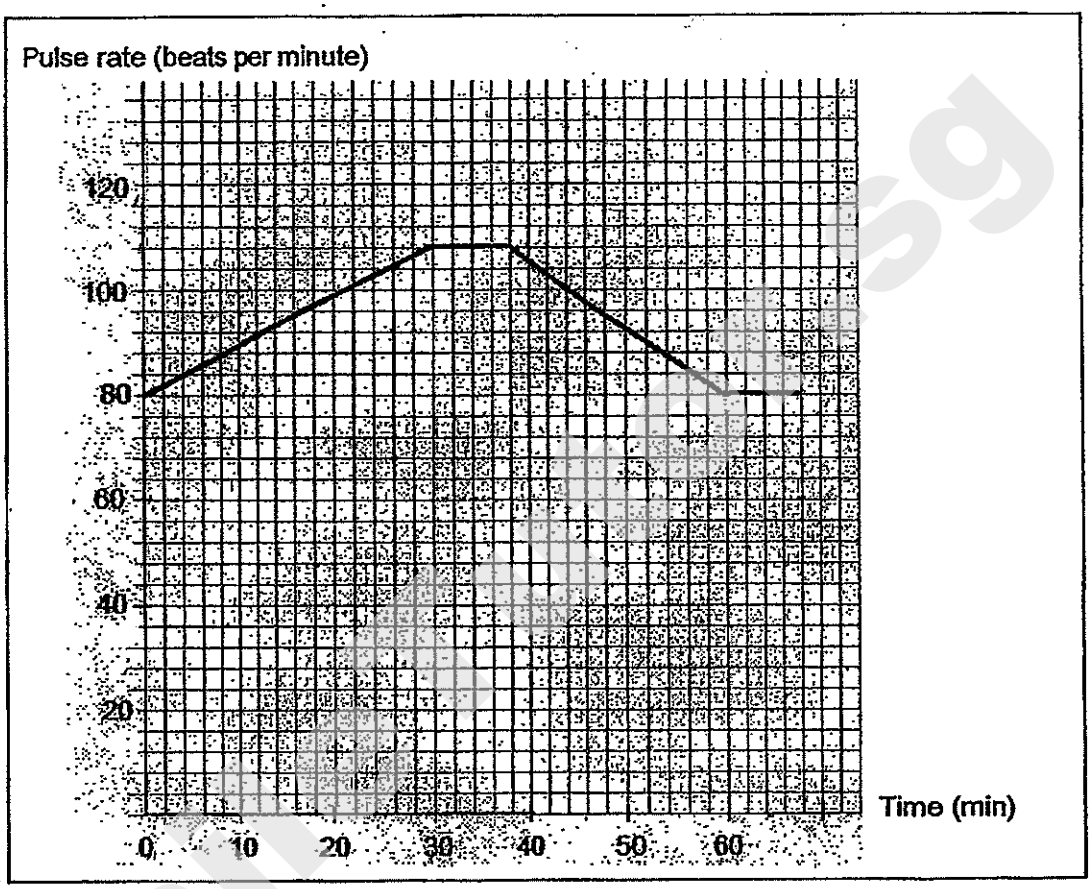
36. Mr Lim started from rest and jogged for 30 minutes before he decided to stop. The graph shows Mr Lim's pulse rate over a period of more than one hour.



(a) What is Mr Lim's pulse rate when he is at rest? [1]

(b) Why does Mr Lim's pulse rate increase during his jog? [2]

3

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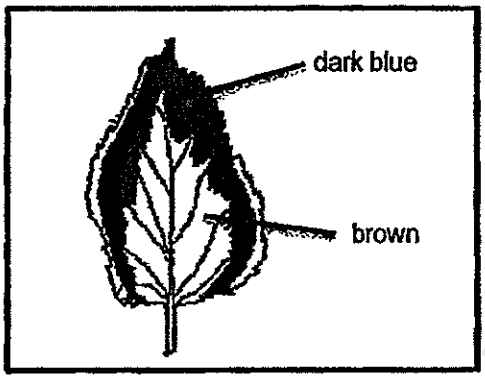
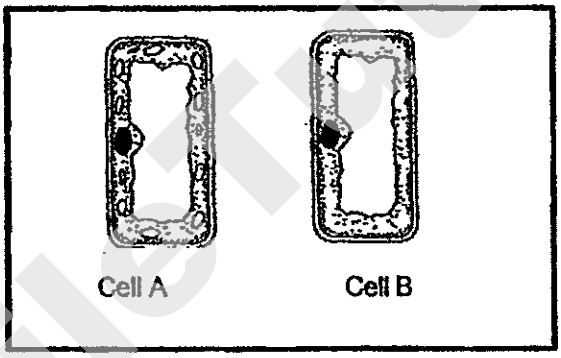
37. The diagram below shows the colours observed on a variegated leaf after it was tested for starch using iodine solution.



The diagram below shows two cells taken from the leaf and observed under a microscope. The cells are labelled A and B.

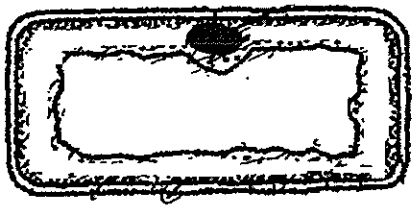


(a) Which cell is taken from the part of the leaf that turned dark blue? Give a reason for your choice. [1]

_____

_____

(b) In the diagram below, **shade** the cytoplasm and **label** the nucleus. [2]



END OF BOOKLET B1

3

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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: 30 October 2014

Booklet B2	**/ 20**

This booklet consists of 10 printed pages including this page.

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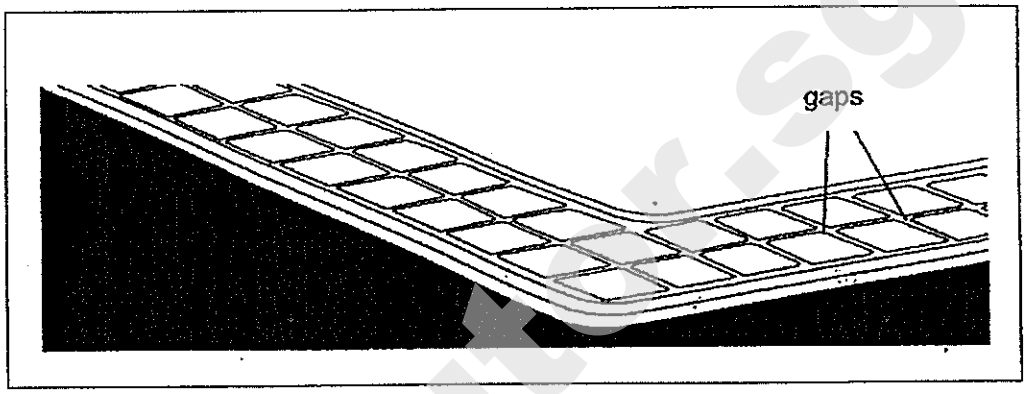
For questions 38 to 44, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

[20 marks]

38. When Jonas was walking along the school pavement, he noticed small gaps between the tiles in the pavement as shown in the diagram below.



(a) What will happen to the gaps when the weather becomes hotter? [1]

(b) What is the purpose of having gaps in between the tiles? [1]

2

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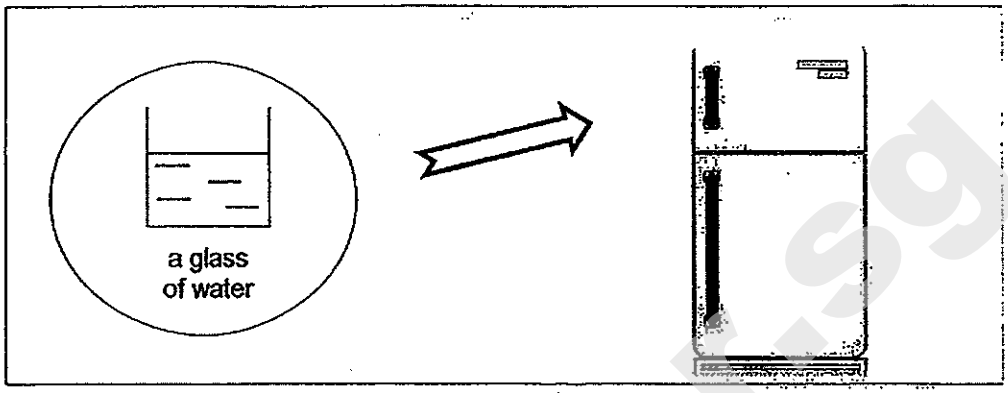
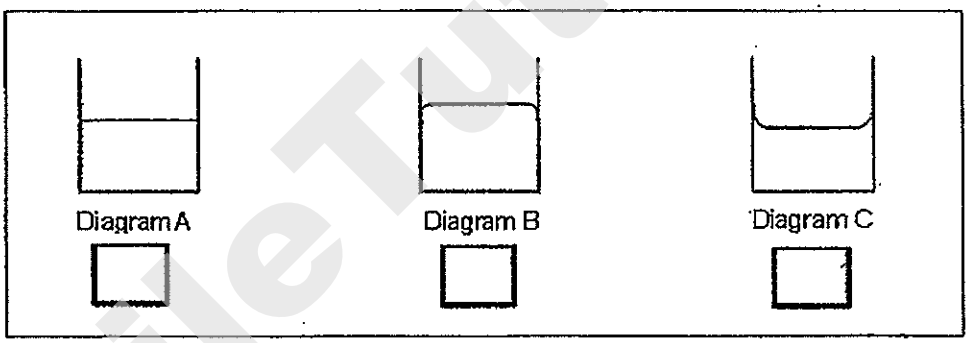
39. Rahim was taught that when water freezes, there would be a physical change. To prove this, he poured some water into a glass and placed it in the freezer overnight.



(a) Which of the diagrams below would Rahim observe when he removed the glass from the freezer? **Tick** (√) the correct box. [1]



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

_____

_____

(c) If the mass of the water in the glass is 200g before freezing, what would the mass of the ice in the glass be when it was taken out from the freezer?
Explain your answer. [1]

_____

_____

_____

3

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40. Water is precious and very important to life processes. However, many human activities can cause harm to our water sources.

(a) Deforestation is the cutting down of large amount of trees. Explain how deforestation harms our water sources. [1]

(b) Using water carefully and not wasting it is known as water conservation and there are many ways to conserve water. Name one way to conserve water at home. [1]

2

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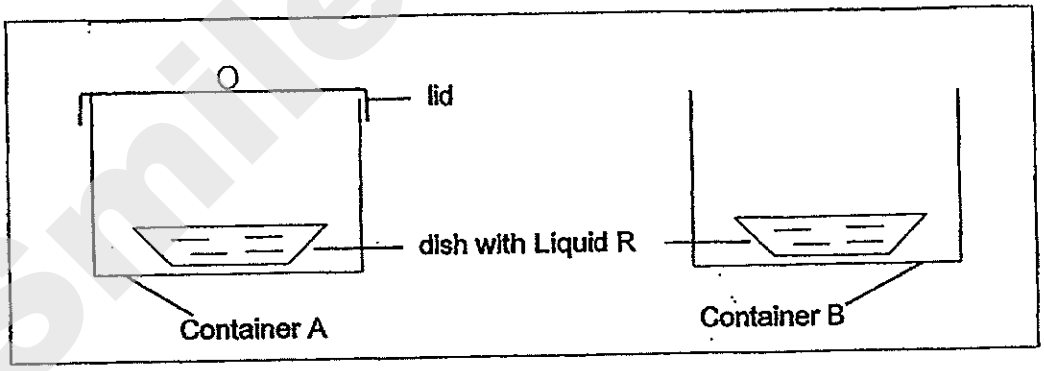
41. Haimin carried out an experiment to find out the rate of evaporation of three types of liquid, R, S and T. He recorded his observations in the table as shown below.

	Liquid R (g)	Liquid S (g)	Liquid T (g)
Weight of dish	50	50	50
Weight of (dish + liquid) before evaporation	60	57	55
Weight of (dish + liquid) after evaporation	58	53.9	53.5

(a) Based on the table above, arrange the liquids in the correct order beginning with the liquid which has the highest rate of evaporation. [1]

Haimin tried out another experiment with the 2 set-ups as shown below. Two similar dishes with the same amount of Liquid R were heated up to 30°C. He placed the dishes into two similar containers, one with a lid and one without.



(b) Which container will have a slower rate of evaporation? Explain why. [2]

3

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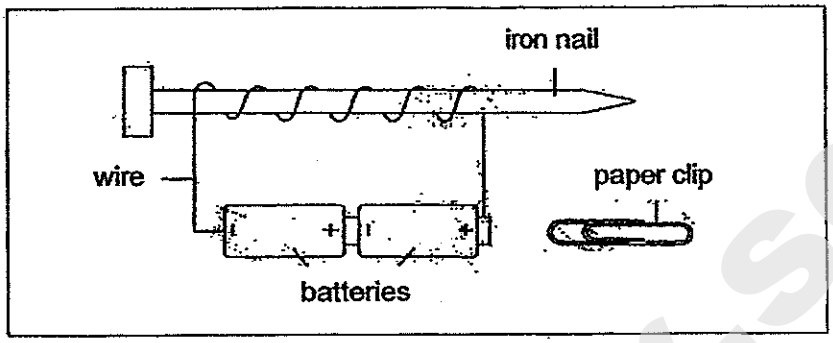
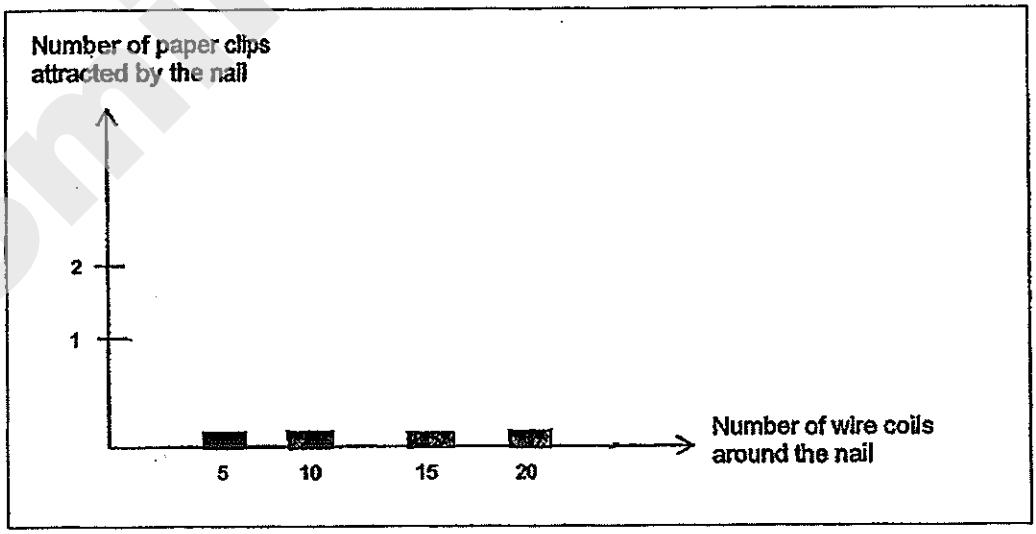
42. Therisa made an electromagnet using two batteries, an iron nail and a wire as shown in the diagram below.



She wanted to find out whether the number of wire coils around the nail affects the strength of the magnet. She carried out a few tests and recorded the results in the table as shown below.

Number of wire coils around the nail	5	10	15	20	?
Number of paper clips attracted by the nail	1	1	2	2	3

(a) Based on the data given above, **complete** the graph below **by drawing the bars** to represent the results. [1]



1

(Go on to the next page)

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(b) What is the minimum number of wire coils needed around the nail to attract 3 paper clips? [1]

(c) After experimenting for about an hour, Therisa noticed that her electromagnet could no longer attract any paper clips although she had 30 wire coils around the nail. What could possibly be the reason? [1]

2

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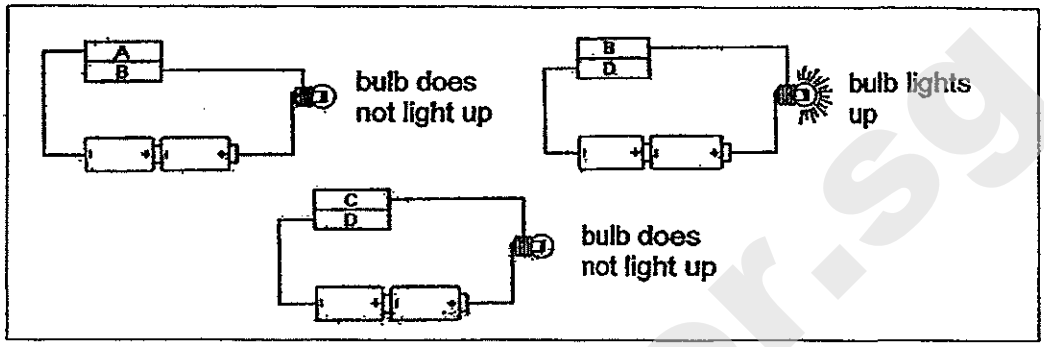
43. The diagram below shows three circuits with different arrangements of identical batteries, identical bulbs and rods A, B, C and D.



(a) Based on the diagram above, classify the rods, A, B, C and D into conductors or insulators of electricity. [2]

Conductors of electricity	Insulators of electricity
(i) Rod _____	(ii) Rod _____
(iii) Rod _____	(iv) Rod _____

2

(Go on to the next page)

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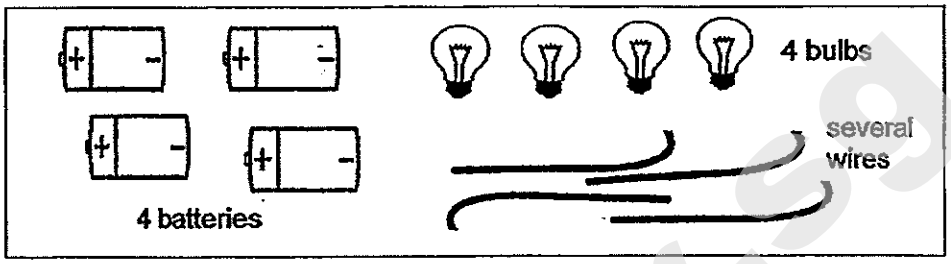
(b) Using the materials given below, complete 2 different circuits in the boxes below to show how the arrangement of bulbs can affect the brightness of the bulbs. (Use standard electrical symbols.) [2]



Circuit 1 (2 batteries and 2 bulbs)

Circuit 2 (2 batteries and 2 bulbs)

2

(Go on to the next page)

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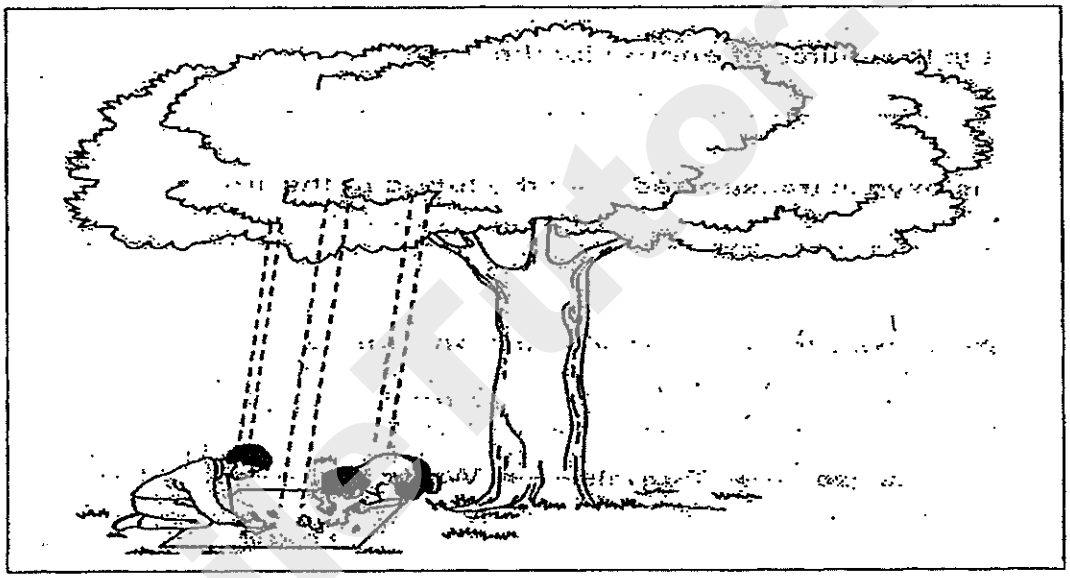
44. Thomas and his friend were told to carry out an experiment to find out the amount of shade some trees in the school field would provide. They have to follow the instructions given below.

Instructions:

1. Choose a big tree in the field
2. Place a large piece of paper under the tree
3. Use a pencil to trace the patches of light on the paper
4. Choose a second tree and repeat the first 3 steps
5. Cut out the patches of light from both papers



(a) How are shades formed under the tree? [1]

(b) They were also given a weighing machine. Explain how Thomas and his friend could find out which tree provides more shade? [2]

3

End of Booklet B2

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ANSWER SHEET

EXAM PAPER 2014
SCHOOL : MGS
PRIMARY : P5
SUBJECT : SCIENCE
TERM : SA2

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

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

31)a)Yellow.
b)Jane must keep the colour of the flowers the same and change the size of the flowers.

32)a)i)Birds. ii)Mammals.
b)Animal D has no wings and has four legs while the rest of the animals has wings and two legs.

33)a)The higher the temperature, the faster the fruit will spilt.
b)Rubber fruit E as the distance of the scattered seed has the greatest distance away from the parent plant.

34)a)The carbon dioxide turns chalky.
b)The seedlings has green leaves which could photosynthesize by taking in the carbon dioxide.

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35)a)X Y

b)Transparent.

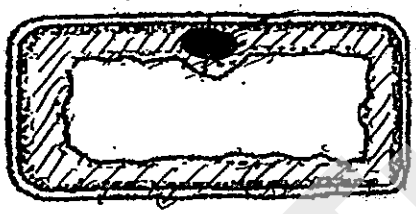
c)Container Y has snails in it which takes in oxygen. The plant gives out oxygen which the snail would take in Container X does not have any snails in it. Therefore, container X would remain constant.

36)a)80.

b)As he jogs, his heart needs to beat faster to supply more oxygen and digested food/blood for the cells to generate more energy and remove carbon dioxide at a faster rate.

37)a)Cell A. Cell A might have been taken from the part of the leaf that turned dark blue as it has chloroplast which means that it is part of the food the leaves makes which contains starch.

b)



38)a)They will become smaller.

b)During hotten weather, the tires will expand, the gaps provide space for the tires to expand without being damaged.

39)a)Diagram B.

b)When water freezes, its volume increases, unlike most matter.

c)The mass of ice in the glass will remain in the same because the change of state does not affect the mass.

40)a)Soil erosion occurs soil to be exposed to rain and wind. Without the roots of the trees to hold on to the soil, soil is loosened and are easily washed into nearly water sorces.

b)Water plants with the water used to wash rice.

41)a)Liquid S→Liquid R→Liquid T

b)Container A as the presence of wind speed up the rate of evaporation. In container B, whereas there is no wind within the enclosed container A.

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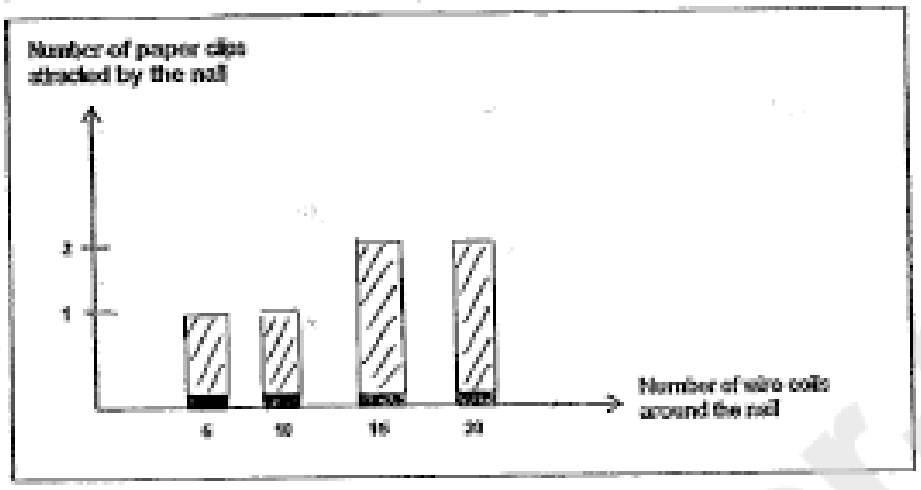
42)a)

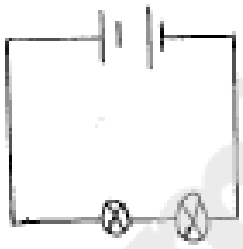


b)25.

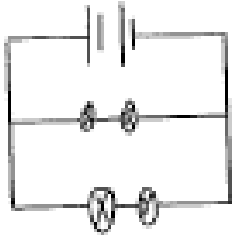
c)The batteries no longer worked.

43)a)i)B ii)A iii)D iv)C

b)Circuit 1



Circuit 2



44)a)The trees block light from passing through them as they are opaque.

b)They could have weighed the patches of light they had cut out. After cutting out the patches of light, they could weight the remaining paper, they could weight the remaining paper. The tree with the remaining paper that weight heavier provides more shade.

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