



SEMESTRAL ASSESSMENT 2 (2015)

PRIMARY 5

SCIENCE

BOOKLET A

Wednesday

4 November 2015

1 hr 30 min

Name: _____

Class: 5.()

INSTRUCTIONS TO PUPILS

- 1 Do not turn over the pages until you
- 2 Follow all instructions carefully.
- 3 There are 25 questions in this booklet.
- 4 Answer ALL questions.
- 5 Shade your answers in the Optical Answer Sheet (OAS) provided.

Booklet A (50 marks)

For each question from 1 to 25, four options are given. One of them is the correct answer. Choose the correct option (1, 2, 3 or 4) and shade the correct oval on the Optical Answer Sheet (OAS).
(25 x 2 marks)

- 1 Three living things, X, Y and Z were observed over a period of time. Michael recorded his observations in the table below:

Characteristics	X	Y	Z
Make its own food	No	Yes	No
Move from place to place	No	No	Yes
Respond to changes around it	Yes	Yes	Yes

Which one of the following could be X, Y and Z?

	X	Y	Z
(1)	Balsam Plant	Toadstool	Lion
(2)	Toadstool	Balsam Plant	Whale
(3)	Rain tree	Bacteria	Yeast
(4)	Squirrel	Grass	Mushroom

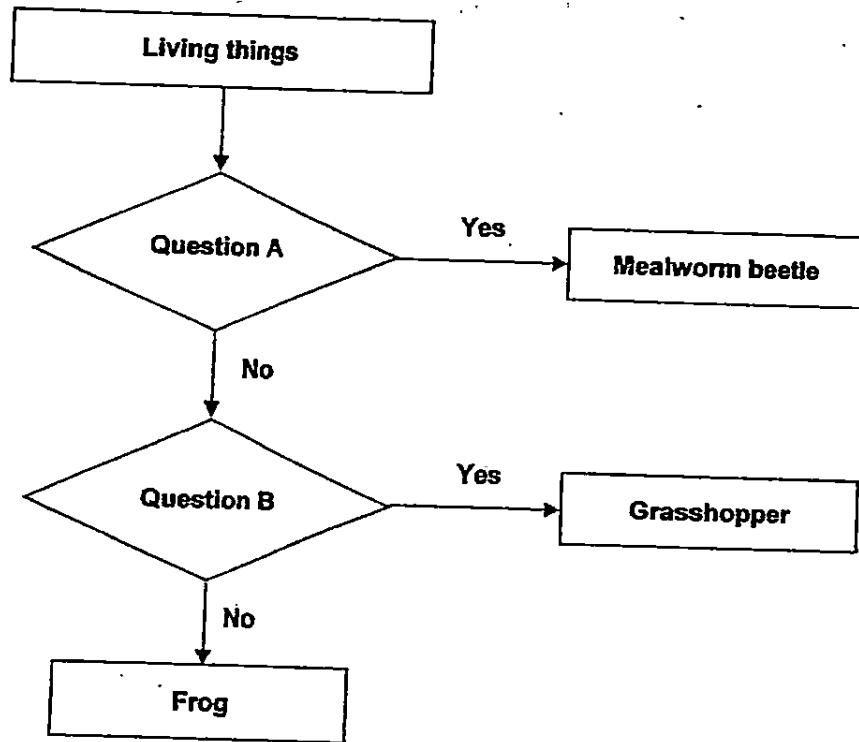
- 2 Suhaimi observed the life cycles of a cockroach and a mosquito over 2 months, September and October. Each time the animals changed from one stage to the next, he kept a record in his calendar as shown below.

September 2015						
		1 <i>Cockroach Egg laid (Stage 1)</i>	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30 <i>Mosquito Egg laid (Stage 1)</i>			
October 2015						
				1	2 <i>Mosquito (Stage 2)</i>	3
4	5	6 <i>Mosquito (Stage 3)</i>	7 <i>Cockroach (Stage 2)</i>	8	9 <i>Mosquito (Stage 4)</i>	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

On which day would Suhaimi see both a nymph and a pupa?

- 1) 30 September
- 2) 3 October
- 3) 8 October
- 4) 11 October

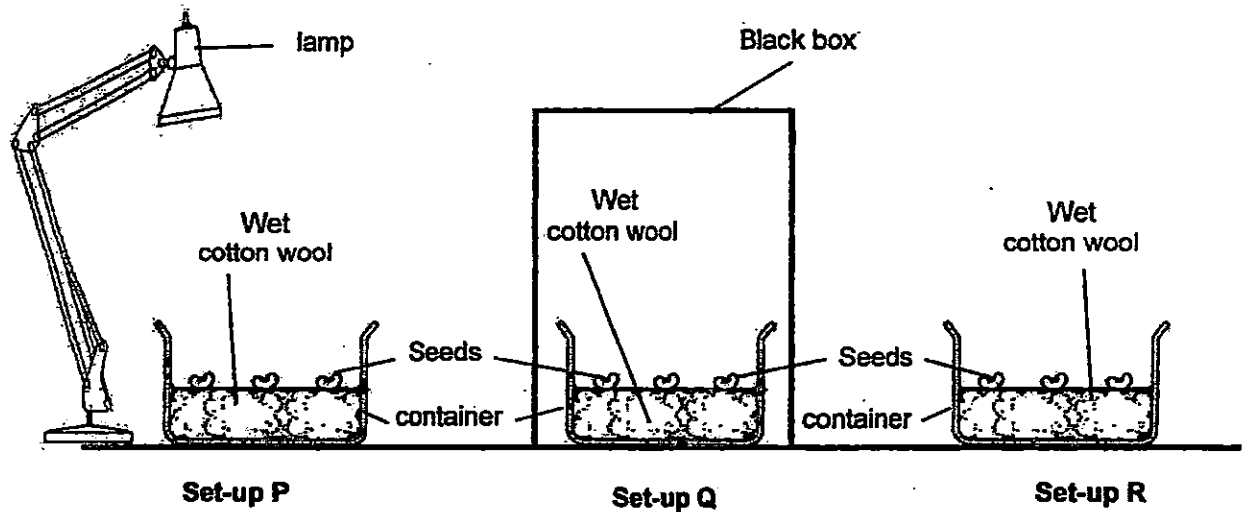
3 Study the flow chart below carefully.



What are Questions A and B?

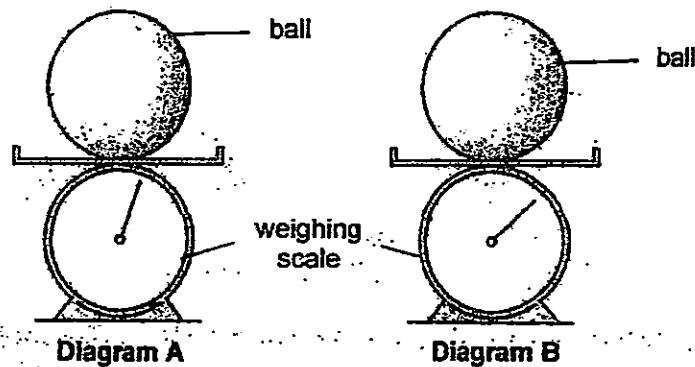
	Question A	Question B
(1)	Does the young have wings?	Does it go through a three-stage life-cycle?
(2)	Does the young resemble the adult?	Does it go through a four-stage life-cycle?
(3)	Does it go through a four-stage life-cycle?	Does the young resemble the adult?
(4)	Does it go through a four-stage life-cycle?	Can the young fly?

- 4 Marcus prepared three set-ups to investigate the conditions needed for seed germination. All the set-ups were placed in the classroom at constant room temperature.



In which of the above set-up(s) would the seeds germinate?

- (1) P only
 - (2) P and Q only
 - (3) Q and R only
 - (4) P, Q and R
- 5 George inflated a rubber ball and measured its mass as shown in Diagram A. He pumped more air into the ball and measured its mass as shown in Diagram B.



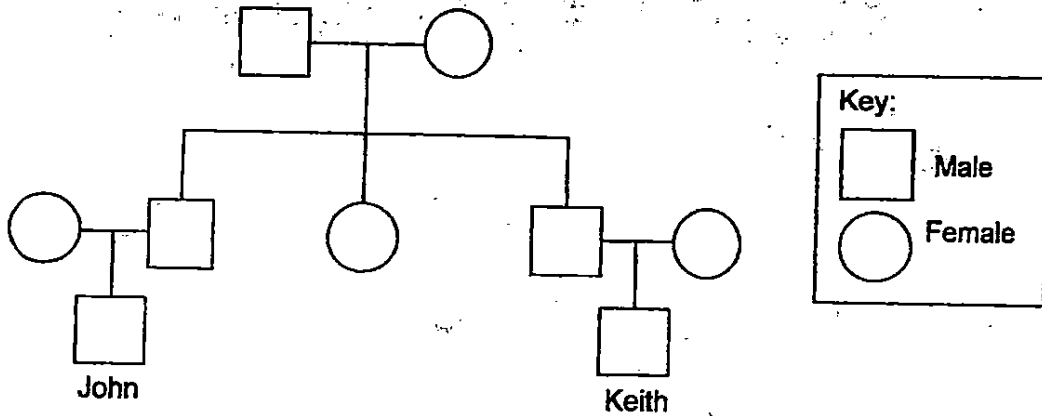
What can he conclude from this experiment?

- A Air has mass.
- B Air can be compressed.
- C Air has a definite shape.
- D Air does not occupy space.

Which of his conclusion(s) is/are correct?

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

6 The following shows a family tree.



John and Keith shared similar physical characteristics. Based on the family tree, this is because _____

- 1) their mothers are sisters
- 2) they have the same parents
- 3) they have the same grandparents
- 4) John's father and Keith's mother are related

7 Which of the following substances are carried away from the foetus blood to the mother's blood through the umbilical cord?

- A oxygen
- B digested food
- C carbon dioxide
- D waste materials

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

8 The statements A, B, C and D describe the different stages of the life cycle of a flowering plant.

- A The fruits start to grow.
- B The flowers are pollinated.
- C The flowers start to appear.
- D The shoots start to grow from the seed.

Diagram 1 below shows and describes the life cycle of a flowering plant.

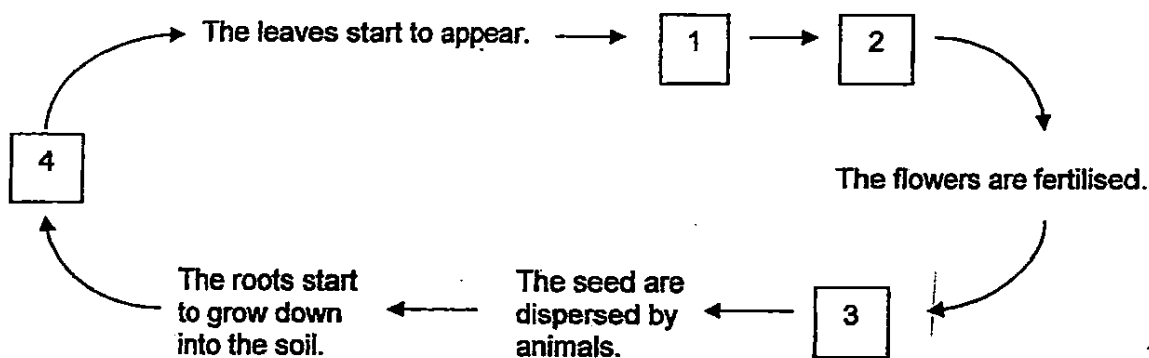


Diagram 1

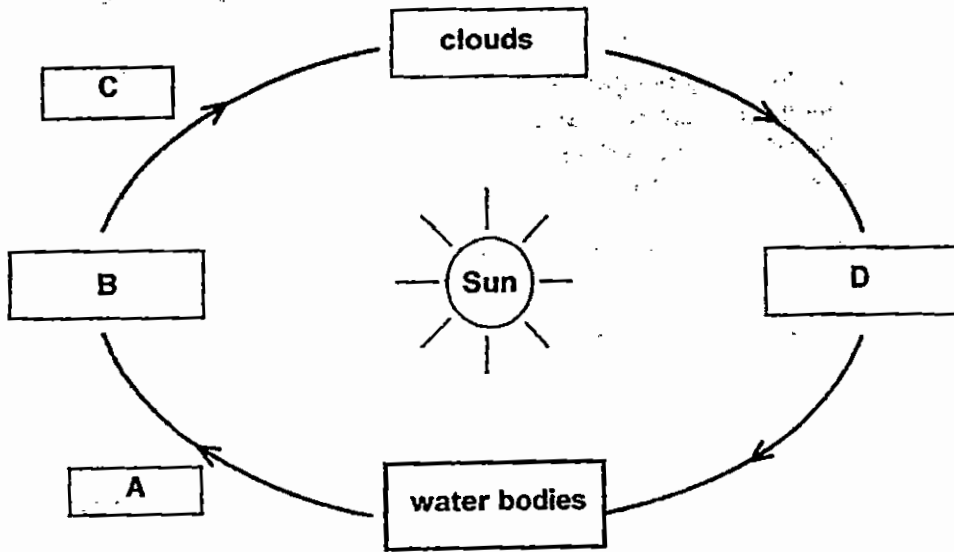
Which of the following correctly describes the complete life cycle of a flowering plant?

	Position in Diagram 1			
	1	2	3	4
(1)	D	A	B	C
(2)	A	C	B	D
(3)	B	C	D	A
(4)	C	B	A	D

9 Which of the following is/are true about water vapour, water or/and ice?

- A Ice has definite shape.
- B Water and water vapour are in the same state.
- C Water vapour, water and ice have definite volume.
- D Water vapour, water and ice are in different states of matter.

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



Which are the correct words to be placed in boxes A, B, C and D?

	A	B	C	D
(1)	evaporation	water vapour	melting	rain
(2)	condensation	rain	evaporation	water vapour
(3)	condensation	rain	melting	water vapour
(4)	evaporation	water vapour	condensation	rain

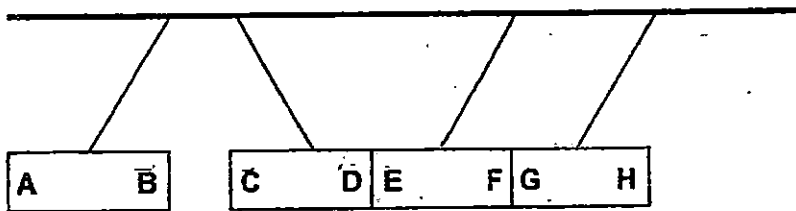
11 Tristan listed ways to conserve water at home.

- A Washing the car with a water hose.
- B Using water from a running tap to brush teeth.
- C Using the washing machine to wash only a pair of jeans.
- D Watering plants with the same water that was used to wash rice.

Which of the ways stated above did not help with the conservation of water at home?

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

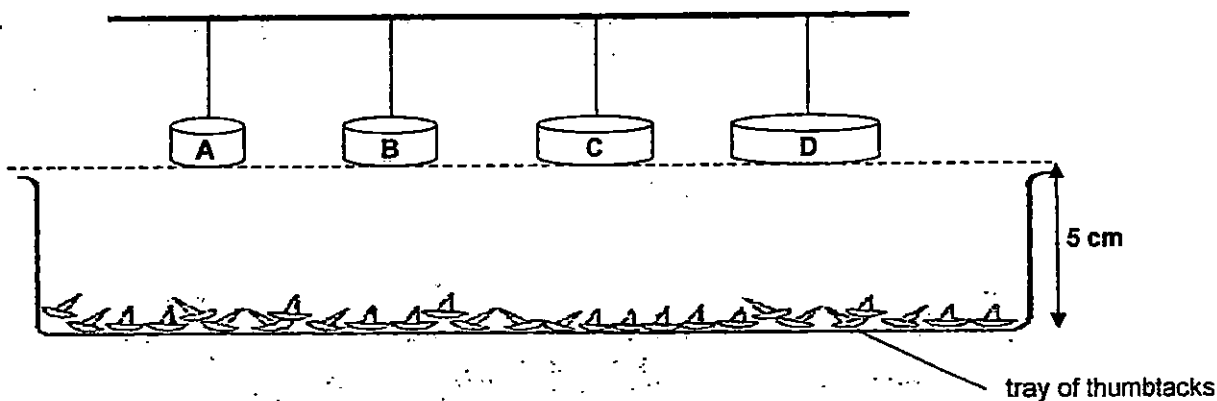
12 An experiment was set up with four magnets as shown below.



Which of the following correctly identifies the poles A, B, E and H?

	A	B	E	H
1)	South	North	South	South
2)	South	North	North	North
3)	North	South	South	North
4)	North	South	North	South

13 The diagram below shows four magnets, A, B, C and D of different sizes. Each of the magnets was placed at an equal distance of 5 cm from some thumbtacks. The number of thumbtacks attracted by each magnet was recorded in the table below.



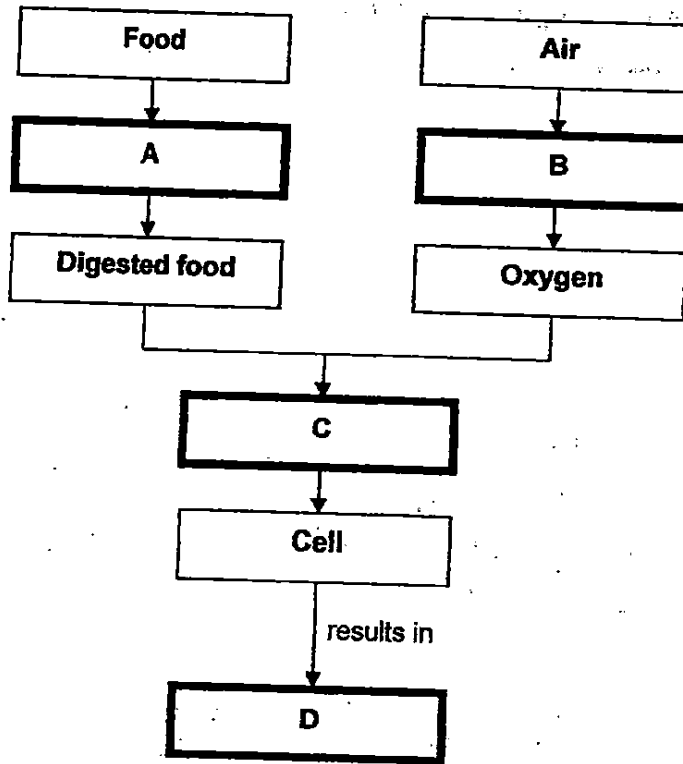
Magnet	A	B	C	D
Number of thumbtacks attracted	12	18	9	14

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

- A Magnet C is the weakest magnet.
- B Magnet B is as strong as magnet D.
- C Magnet A is stronger than Magnet C.
- D The strength of the magnet is not affected by its size.

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

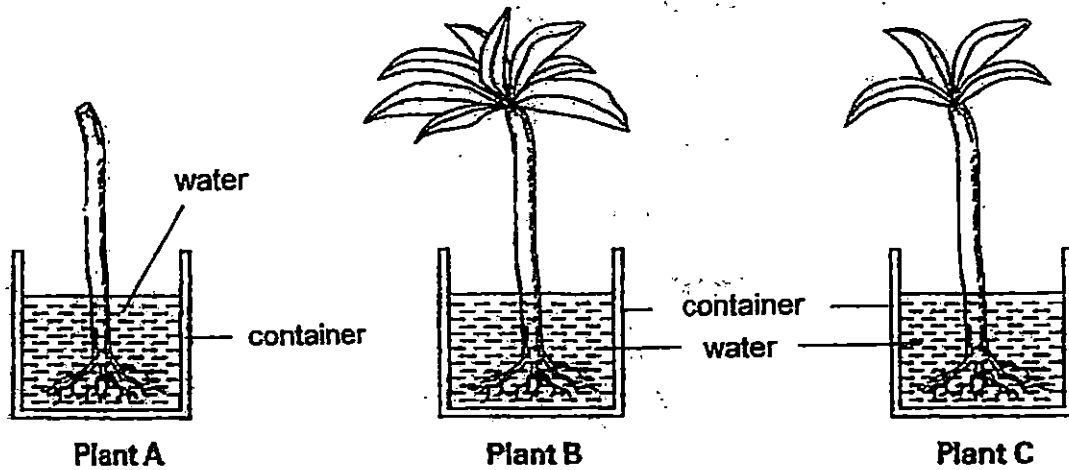
14 Study the diagram below.



A, B and C represent systems in the human body while D represents a process in the human body. Which of the following is most likely A, B, C and D?

	A	B	C	D
(1)	Circulatory	Respiratory	Digestive	Digestion
(2)	Digestive	Circulatory	Respiratory	Respiration
(3)	Circulatory	Digestive	Respiratory	Digestion
(4)	Digestive	Respiratory	Circulatory	Respiration

15 Nathan used three similar plants, A, B and C, to conduct an experiment. He trimmed off all the leaves from Plant A, and some leaves from Plant C. He then put the 3 plants in 3 identical containers and placed them in the same location. Each container was given the same amount of water each day.



After 4 days, Nathan measured the height of the water in each container.
The aim of his experiment is to find out if _____

- 1) the leaves of the plant absorb water
- 2) the plant needs roots to absorb water
- 3) the number of leaves affect the rate of absorption of water by the plant
- 4) the stem of the plant help to transport water from the roots to the leaves

- 16 Michael wants to find out the conditions that plants need to survive. He used 4 identical bell jars, J1, J2, J3 and J4 and 4 identical plants for his experiment. He placed each plant in a bell jar and put them under the specific set of conditions stated in the table below.

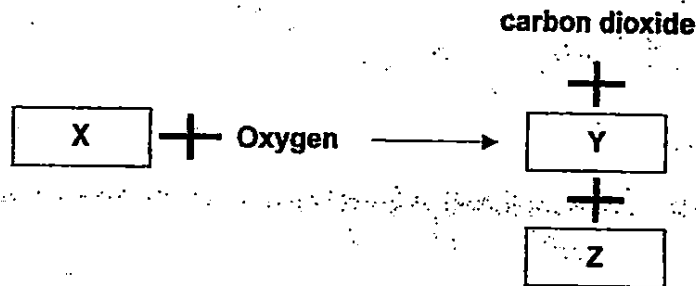
Bell Jar \ Conditions	J1	J2	J3	J4
Sunlight	x	✓	✓	x
Water	✓	✓	✓	✓
Fertilizer	✓	x	✓	x
Carbon dioxide	✓	✓	x	✓
Oxygen	✓	✓	✓	✓

Key : x - not present
 ✓ - present

Which 2 bell jars would he need to monitor if he wants to show that sunlight is needed by plants to make food?

- (A) J1 and J3
- (B) J1 and J4
- (C) J2 and J3
- (D) J2 and J4

- 17 The diagram shows the process of respiration in plants.



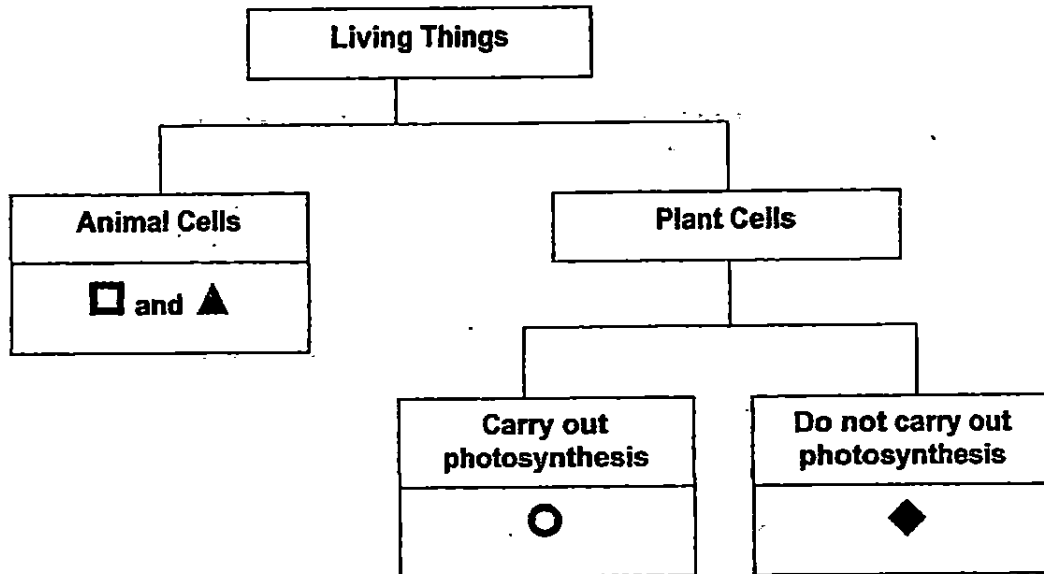
Which of the following X, Y and Z can be correctly placed in the diagram?

	X	Y	Z
1)	glucose	water	light
2)	water	light	energy
3)	glucose	water	energy
4)	light	energy	glucose

- 18 The table below shows the various parts present in 4 different cells, A, B, C and D. A tick (✓) shows the part present in the cell.

Part of cell	Cell A	Cell B	Cell C	Cell D
Nucleus	✓	✓	✓	✓
Cell Wall	✓		✓	
Cytoplasm	✓	✓	✓	✓
Chloroplasts	✓			
Cell Membrane	✓	✓	✓	✓

The chart below shows how the 4 cells, □ ▲ ○ ◆, can be classified:



Based on the above information, which of the following correctly represents cells A, B, C and D?

	□	▲	○	◆
1)	Cell C	Cell B	Cell A	Cell D
2)	Cell B	Cell D	Cell C	Cell A
3)	Cell B	Cell D	Cell A	Cell C
4)	Cell A	Cell B	Cell D	Cell C

Six metal clips, A, B, C, D, E and F were fixed on a circuit card as shown in Figure 1. Figure 2 shows a circuit tester with a battery and a bulb connected to two wires X and Y.

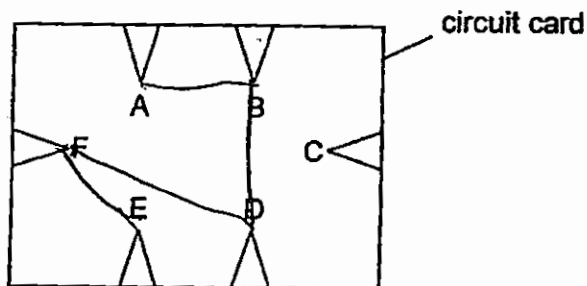


Figure 1

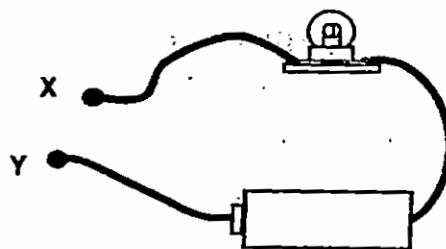


Figure 2

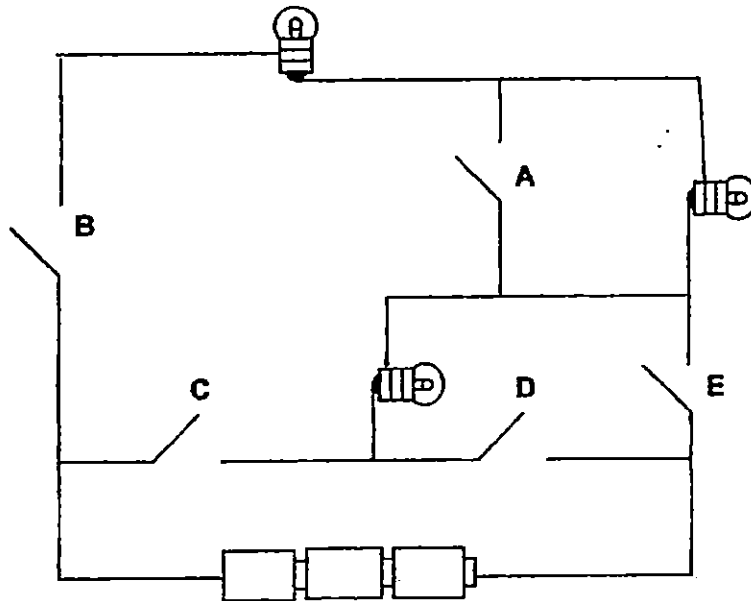
Malcolm connected some but not all of the clips on the circuit card in Figure 1 with wires X and Y. He then connected X and Y across different pairs of clips in turn. He recorded his results in the table below.

Clips connected to circuit tester	Bulb of circuit tester
A and B	Lights up
B and D	Lights up
D and F	Lights up
D and C	Does not light up
E and F	Lights up

The bulb will not light up when clips _____ are connected.

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

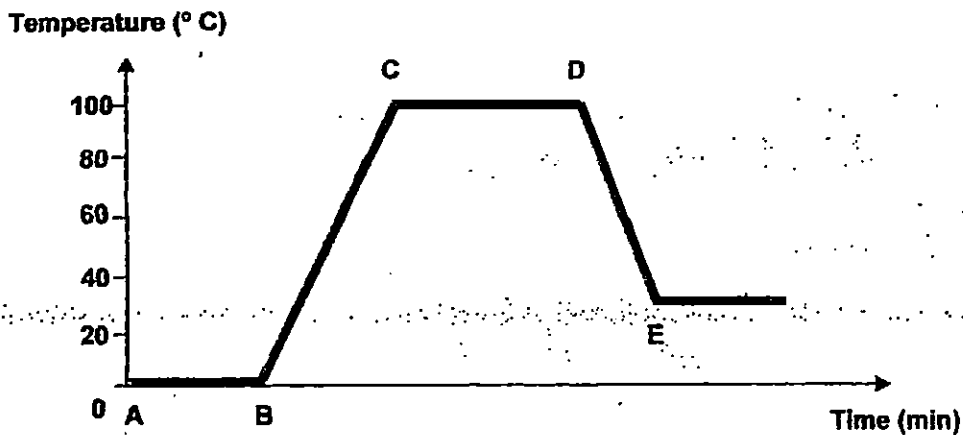
20 Study the circuit shown below.



What is the least number of switches that must be closed for all the bulbs to light up?

- 1) 2 switches only
- 2) 3 switches only
- 3) 4 switches only
- 4) 5 switches only

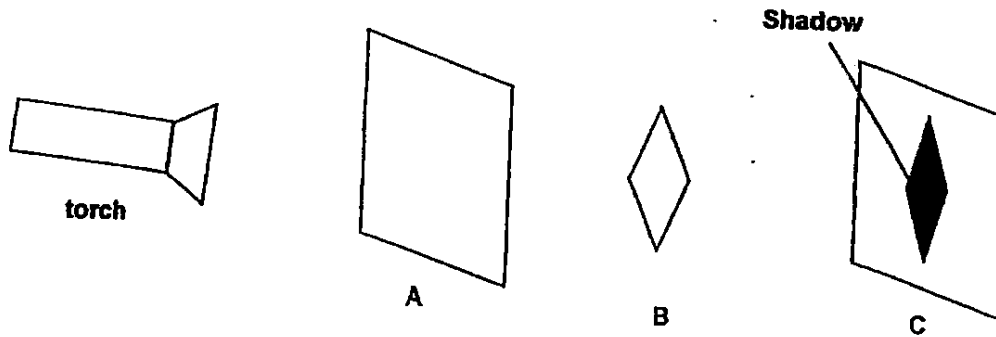
21 A beaker of ice cubes was heated over a fire at point A and left to cool to room temperature. Daniel recorded its temperature over time in the graph below.



Based on the graph above, which of the following shows the time period(s) of heat gain?

- 1) BC only
- 2) AB and BC only
- 3) CD and DE only
- 4) AB, BC and CD only

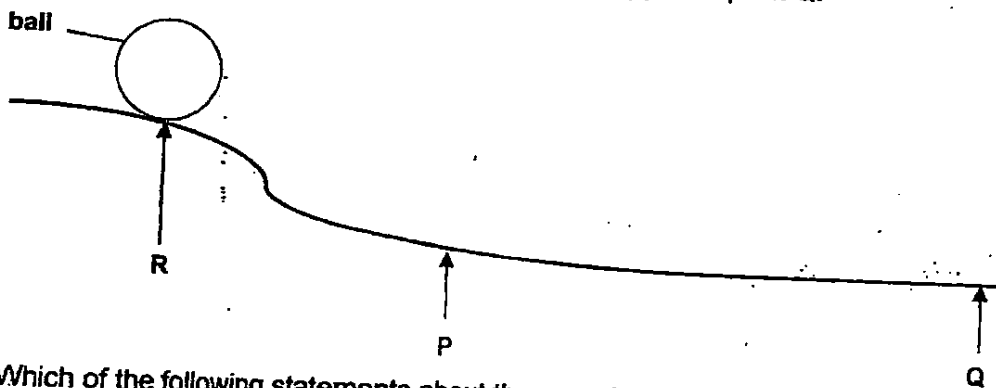
- 22 The experiment below was set up in a dark room. Objects A, B and C were lined up in a straight line. When the torch was switched on, a shadow was seen on object C.



Which of the following materials are objects A, B and C made of?

	A	B	C
(1)	Rubber	Clear plastic	Wood
(2)	Clear plastic	Wood	Rubber
(3)	Wood	Clear plastic	Rubber
(4)	Clear plastic	Clear plastic	Wood

- 23 Donald set up an experiment as shown below. He released the ball at point R. The ball rolled down the slope, slowed down and finally stopped at point Q.

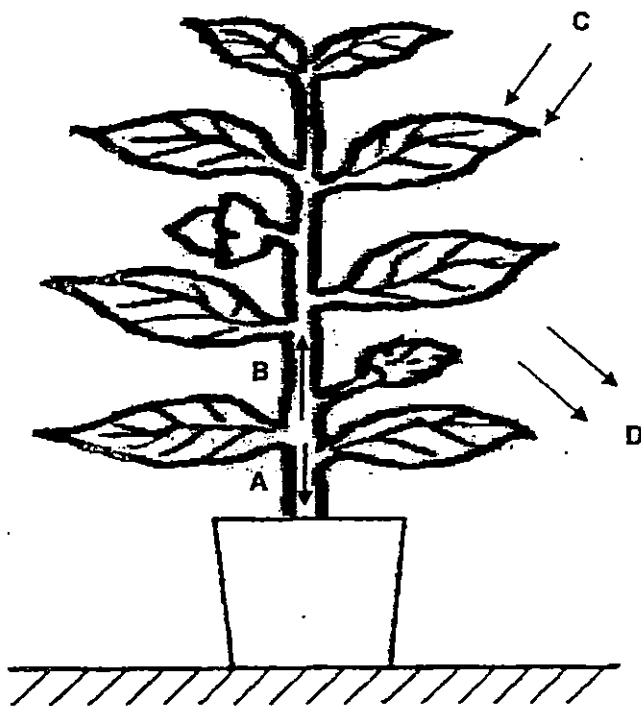


Which of the following statements about the experiment are correct?

- A The ball had kinetic energy at point P.
- B The ball had gravitational potential energy at point R.
- C The kinetic energy of the ball decreased as it moved from R to Q.
- D The ball had the highest amount of gravitational potential energy at point Q.

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

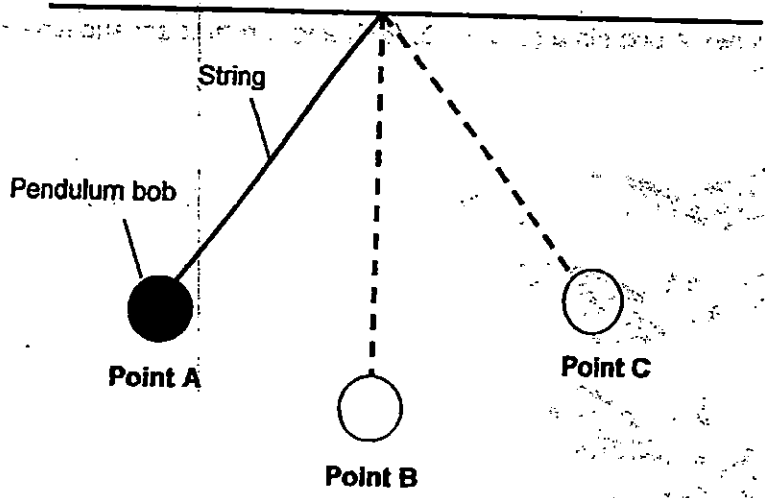
- 24 The diagram below shows a plant in a garden. A, B, C and D represent substances involved in photosynthesis.



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

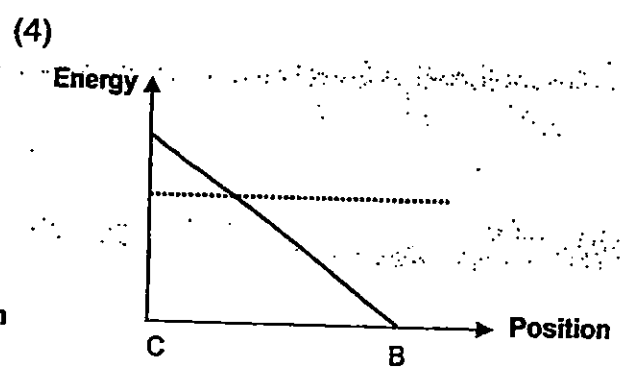
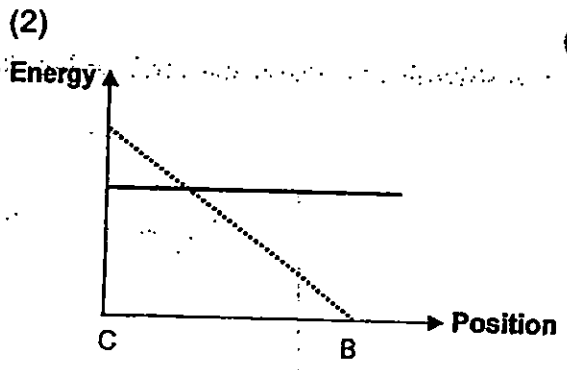
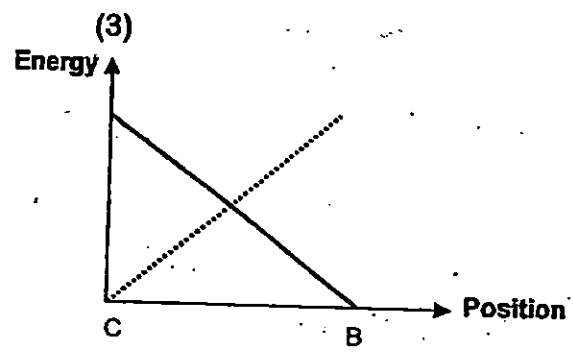
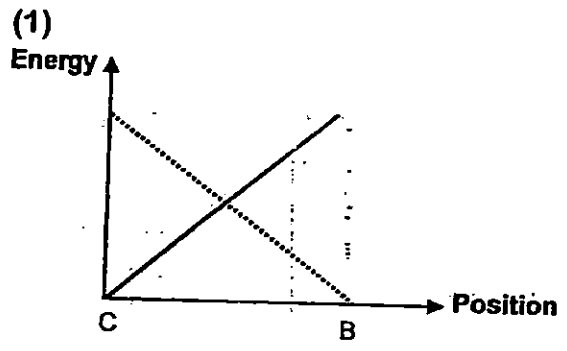
	A	B	C	D
(1)	Food	Water	Carbon dioxide	Oxygen
(2)	Food	Water	Oxygen	Carbon dioxide
(3)	Water	Food	Oxygen	Carbon dioxide
(4)	Water	Food	Carbon dioxide	Oxygen

A pendulum bob is released from Point A and swings to Point B then Point C as shown in the diagram below. It then swings back to Point B and finally to around Point A.



Which of the following graphs shows the change in kinetic energy and gravitational potential energy of the pendulum bob as it swings from Point C to Point B?

Key	
	kinetic energy
	gravitational potential energy



Anglo-Chinese School (Junior)



SEMESTRAL ASSESSMENT 2 (2015)

PRIMARY 5

SCIENCE

BOOKLET B

Wednesday

4 November 2015

1 hr 30 min

Name: _____

Class: 5.()

Parent's Signature: _____

INSTRUCTIONS TO PUPILS

- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 14 questions in this booklet.
- 4 Answer ALL questions.
- 5 The marks are given in the brackets [] at the end of each question or part question.

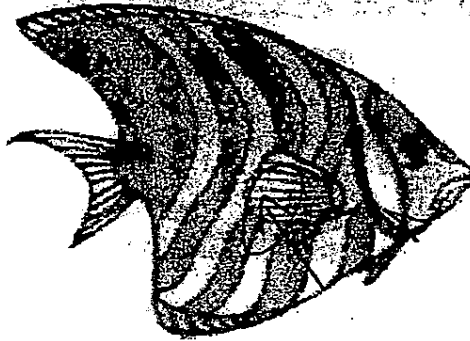
Booklet	Possible Marks	Marks Obtained
A	50	
B	40	
PBA	10	
Total	100	

Booklet B (40 marks)

For questions 26 to 39, write your answers in this booklet.

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

- 26 The diagram below shows Animal M.



Animal M

- (a) Mickey said that Animal M is a fish. Tick (✓) the statement(s) that support(s) what Mickey said. [2]

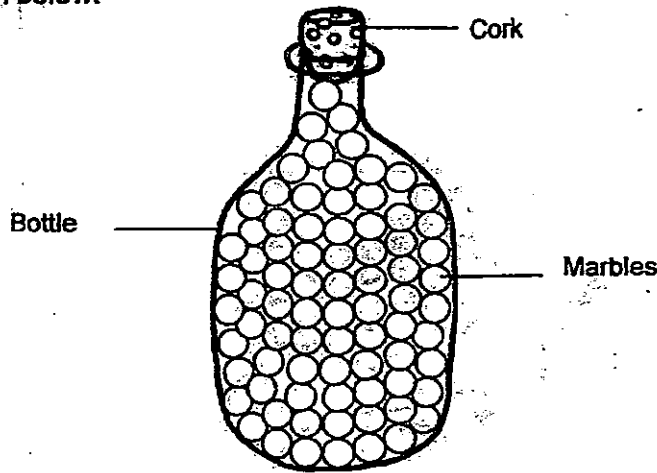
Statement	Put a tick (✓) if the statement(s) is/are true.
It lives in water.	
It has 3 body parts.	
It uses gills to breathe.	
It uses its fins to swim.	
It is covered with scales.	

- (b) Draw an arrow (→), in the diagram above, pointing to the part of Animal M where the absorption of oxygen occurs. [1]

(Go on to the next page)

SCORE	3
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27 Mary wanted to find out the volume of the bottle. She filled it to the brim with 300cm^3 of marbles as shown below.



(a) Tick (✓) the box that shows the most likely volume of the bottle. [1]

Volume of bottle	Tick (✓) the most likely volume
Less than 300cm^3	
Is equal to 300cm^3	
More than 300cm^3	

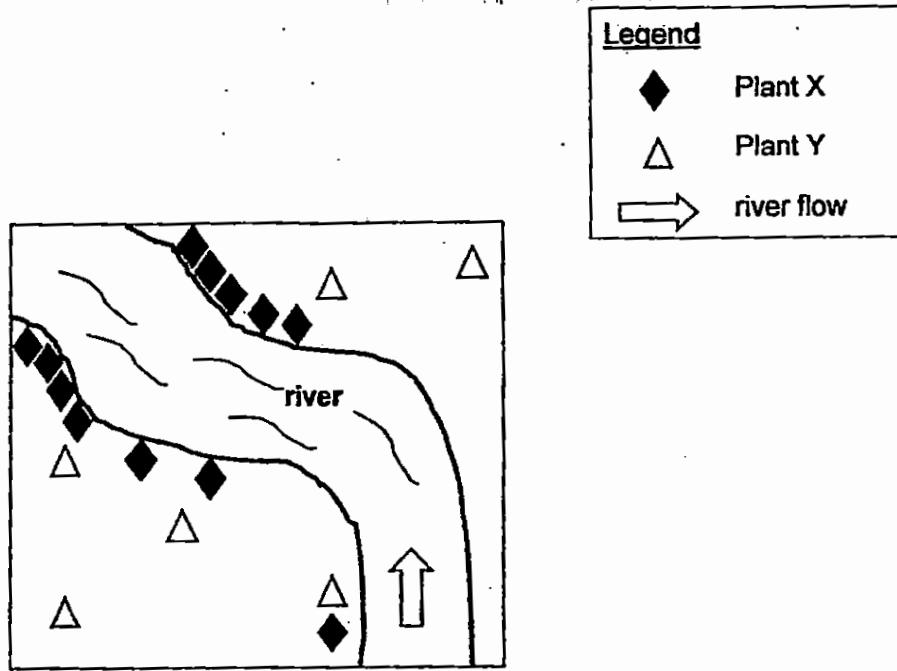
(b) Explain your answer in (a). [1]

(c) Mary uncorked the bottle above and tried to squeeze 10 more marbles into it. Did she succeed? Explain your answer in terms of property of matter. [1]

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SCORE	3
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The diagram shows parts of a river where two types of plants (◆ and △) are growing.



(a) State the method of dispersal for plants X and Y. [1]

(i) X: _____

(ii) Y: _____

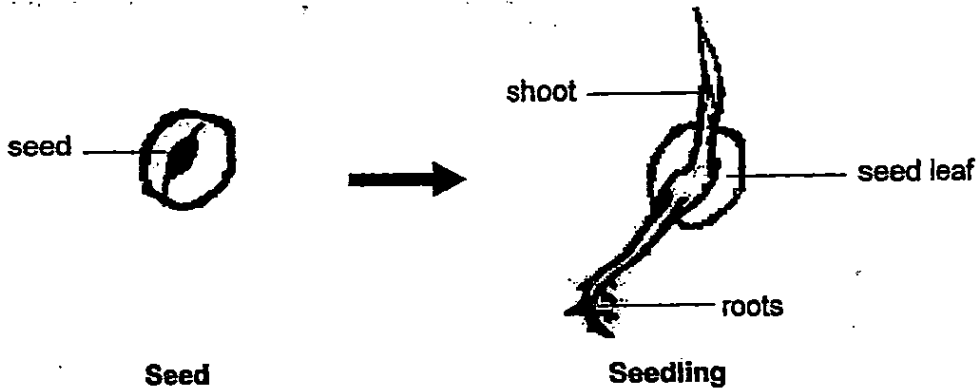
(b) Give a reason for your answer to (a)(i). [1]

(c) Name two characteristics of the fruit of plant X. [1]

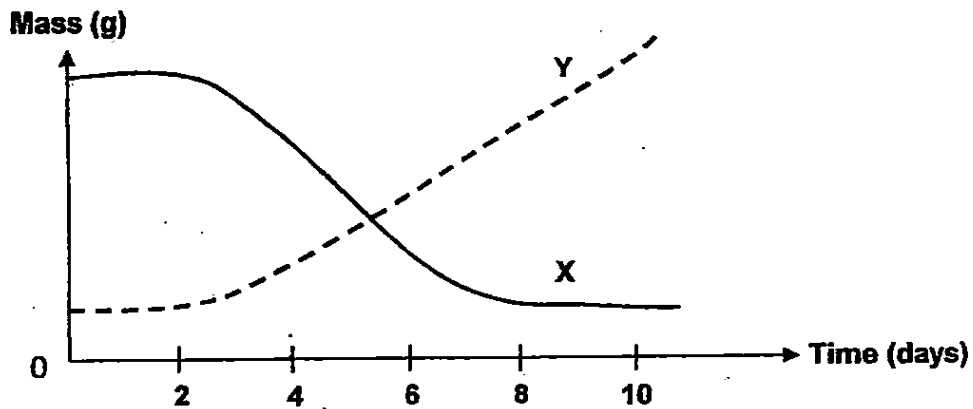
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SCORE	3
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29 John carried out an experiment on germination of a seed as shown below.



In the graph below, the two lines, X and Y, show changes in the mass of the seed leaf and the shoot of the seedling during the period of germination.



- (a) Which line, X or Y, shows how the mass of the seed leaf changes during the experiment? Explain your answer. [1]

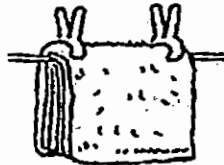
- (b) What would happen to the seed if there were no sunlight throughout the first eight days? Explain your answer. [1]

- (c) Using the information from the graph, how will the seedling survive after day 8 onwards? [1]

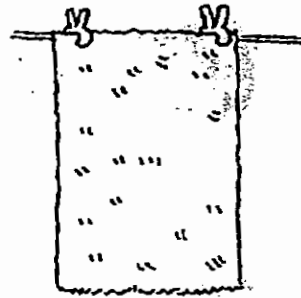
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SCORE	
	3

Kieran wanted to find out if the exposed surface area of a towel affects the rate of evaporation of water from the towel. He soaked two towels, T1 and T2 in water for one minute and hung them at different locations.



Towel T1 placed under the shade in a garden



Towel T2 placed in an open field

- (a) Kieran's teacher commented that the experiment was not a fair test. What was the mistake that Kieran had made? [1]

- (b) Put a tick (✓) against the variables that are to be kept the same for the test to be a fair one. [1]

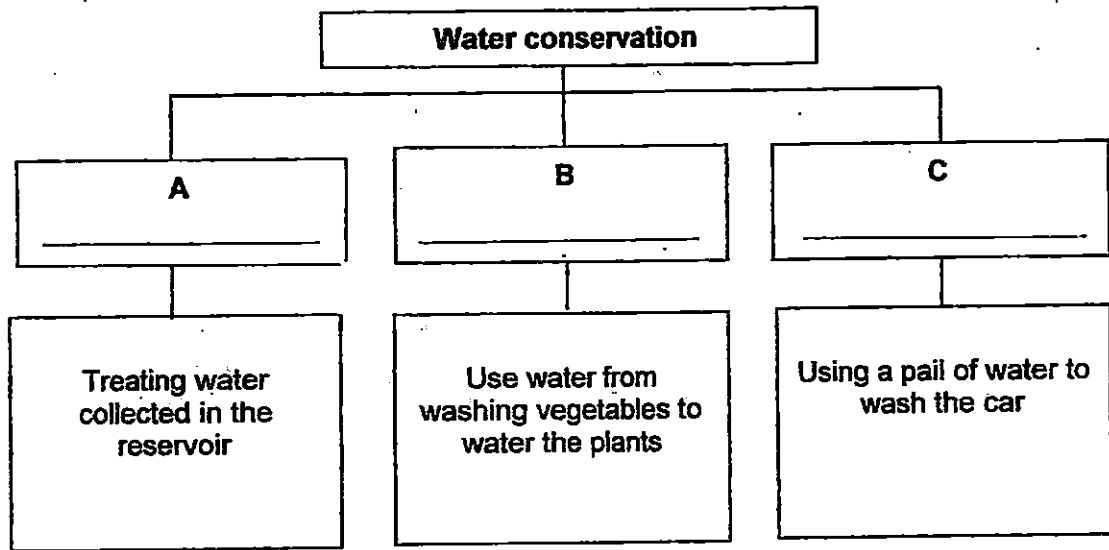
	Variables to be kept the same	Indicate with a tick (✓)
(i)	Type and material of the towels.	
(ii)	Amount of water each towel is soaked in.	
(iii)	Mass of the towels after the experiment.	
(iv)	The exposed surface area of both towels.	

- (c) Name two other factors that affect the rate of evaporation. [1]

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SCORE	3
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31 The classification chart below shows the different ways of conserving water.

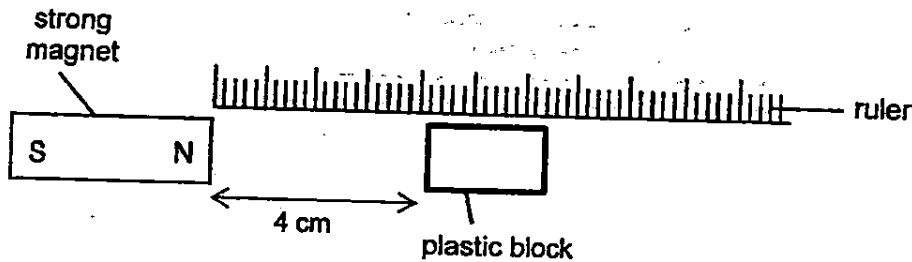


- (a) Based on the examples given, write 'Reuse', 'Reduce' and 'Recycle' for the sub-headings A, B and C in the chart above. [1]
- (b) List two man-made activities that are harmful to water sources. [1]

(Go on to the next page)

SCORE	2
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- 32 David set up an experiment as shown below. He placed a strong magnet and a plastic block 4 cm apart on the table.



He recorded his observation in the table below. He repeated the experiment by replacing the plastic block with Blocks B and then Block C which are of the same size.

His results are shown below.

	Observation
Plastic Block	Did not move.
Block B	Moved towards the magnet
Block C	Moved away from the magnet.

- (a) David said that Block B is made from aluminum. Is he correct? Explain your answer.

[2]

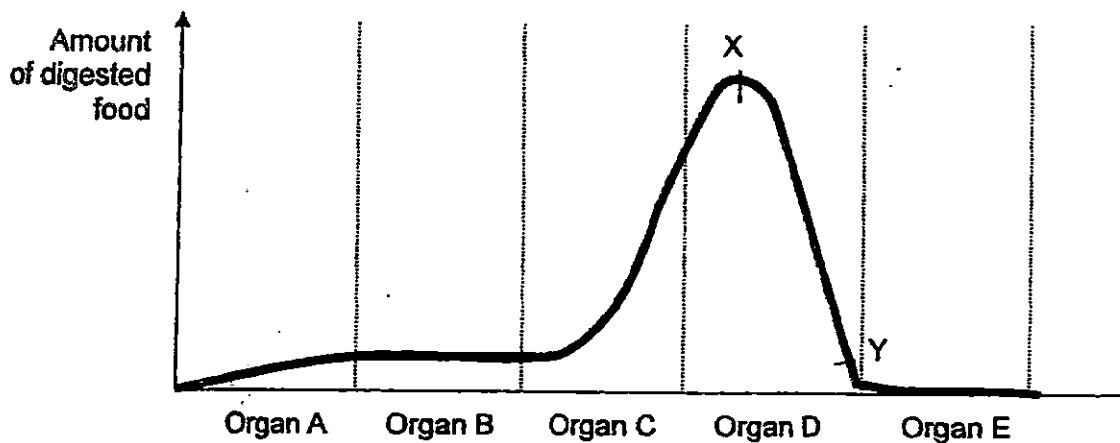
- (b) What can Block C be? Explain your answer.

[1]

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SCORE	3
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33 The graph below shows the path of food through different organs in the digestive system.



(a) What can Organ E possibly be? Explain your answer. [1]

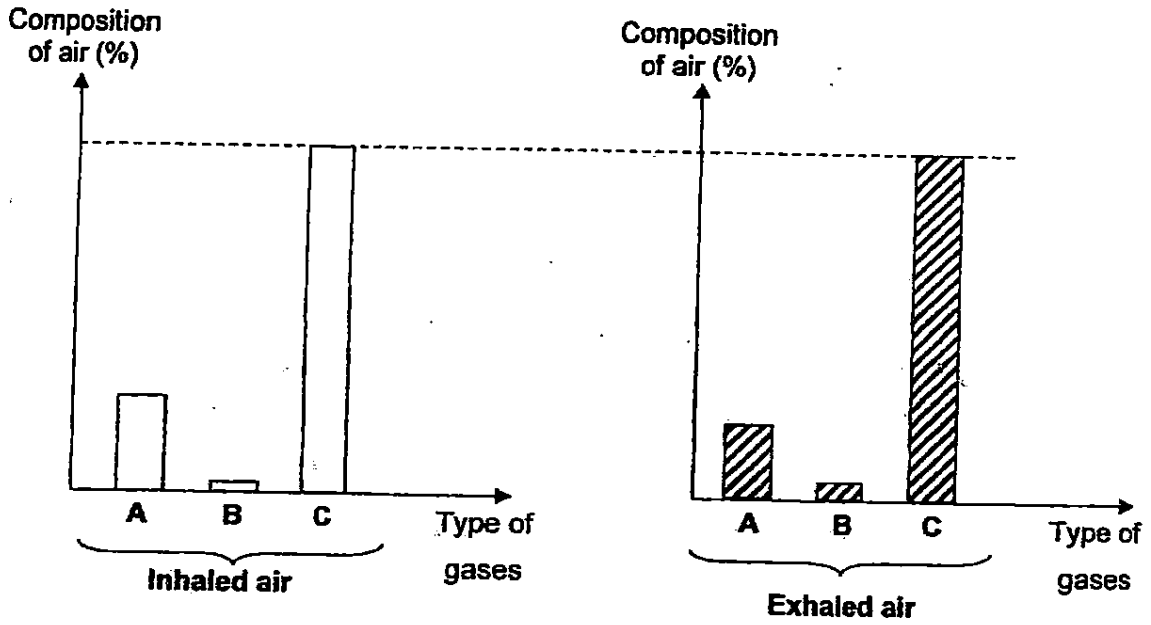
(b) Identify Organ B. [1]

(c) Explain the decrease in the amount of digested food between points X and Y. [1]

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SCORE	
	3

34 The graph below shows the difference between the compositions of inhaled air and exhaled air.



(a) Choose the correct words from the box to fill in the blanks below. [2]

nitrogen carbon dioxide oxygen

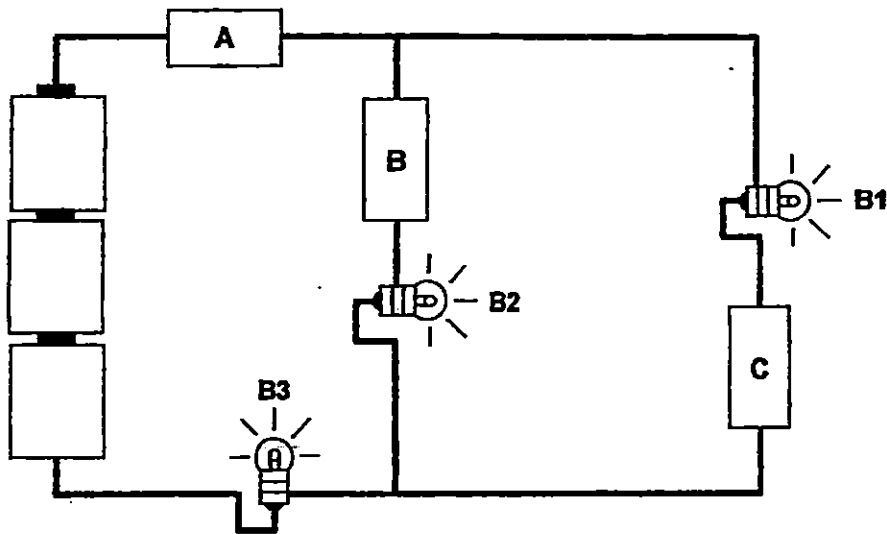
Types of Gases	
A	
B	
C	

(b) Based on the graph, there is no change in the percentage of Gas C when inhaled and exhaled. Explain why there is no change in Gas C. [1]

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- 35 Matthew had three rods, R1, R2 and R3, made of different materials. He placed them at various positions, A, B and C, of the circuit shown below.



Rods R2 and R3 are electrical conductors while Rod R1 is an electrical insulator. Matthew arranged the rods in three different combinations as shown below.

- (a) In the table below, only put ticks (✓) in the boxes for the bulbs that will light up. [2]

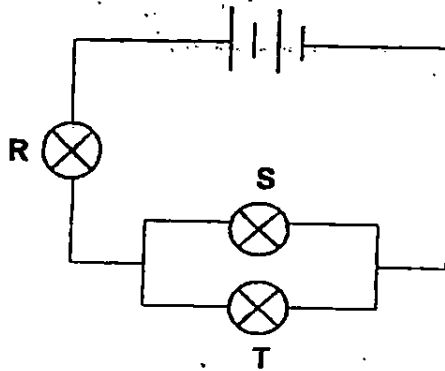
Combination	Positions where the rods were placed			Would the bulbs light up?		
	A	B	C	B1	B2	B3
1	R2	R3	R1			
2	R1	R2	R3			
3	R3	R1	R2			

- (b) What would happen to bulbs B1 and B2 in the circuit if bulb B3 is being replaced with Rod R1? Explain your answer. [1]

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SCORE	3
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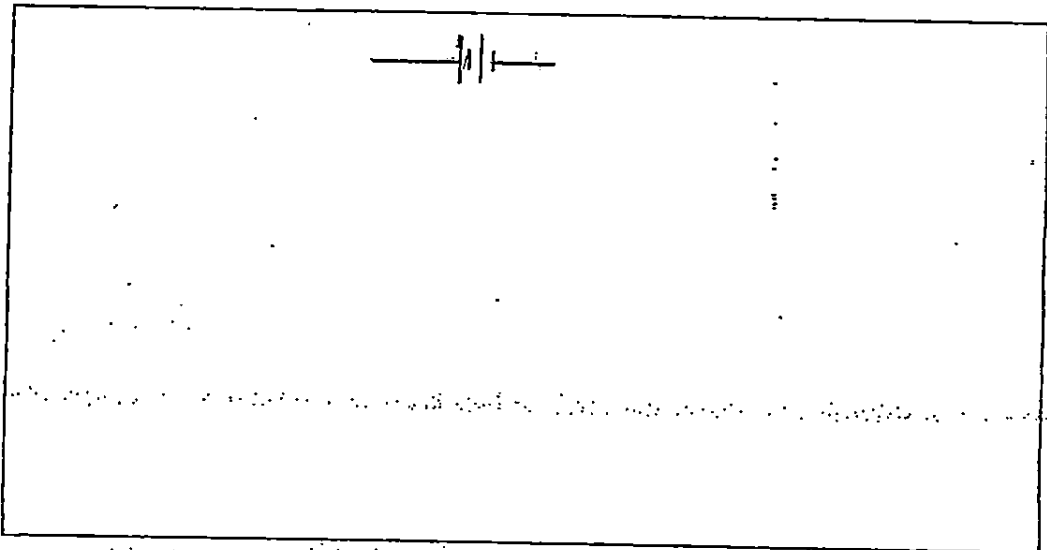
36 Jasper set up an electric circuit as shown in the circuit diagram below.



(a) What will happen to Bulb R if Bulb T is fused? [1]

(b) Jasper removed one of the bulbs from the circuit and the remaining bulbs did not light up. Which bulb did he remove? [1]

(c) In the box provided below, draw a circuit diagram to show how Jasper can connect 2 batteries, 3 bulbs and some wires such that all the bulbs will shine with the same brightness. [1]

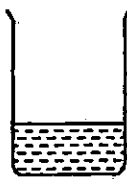


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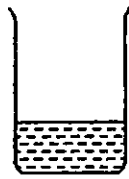
SCORE	
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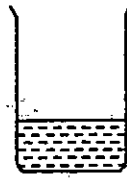
Liquid W helps in digestion by speeding up the breaking down of starch into simple sugars. John set up an experiment, as shown below, to investigate the effects of temperature of liquid W on the speed at which liquid W breaks down starch. He poured equal amounts of starch, water and liquid W into each of the 4 containers.



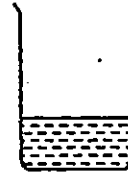
Container with starch, water and liquid W at 20°C



Container with starch, water and liquid W at 40°C



Container with starch, water and liquid W at 60°C



Container with starch, water and liquid W at 80°C

After 10 minutes, John put a few drops of iodine solution into each container and recorded his observations below.

Temperature of content in container / (°C)	20	40	60	80
Colour of solution in container after iodine is added in	Brown	Brown	Blue-black	Blue-black

- (a) What is the changed variable in the experiment above? [1]

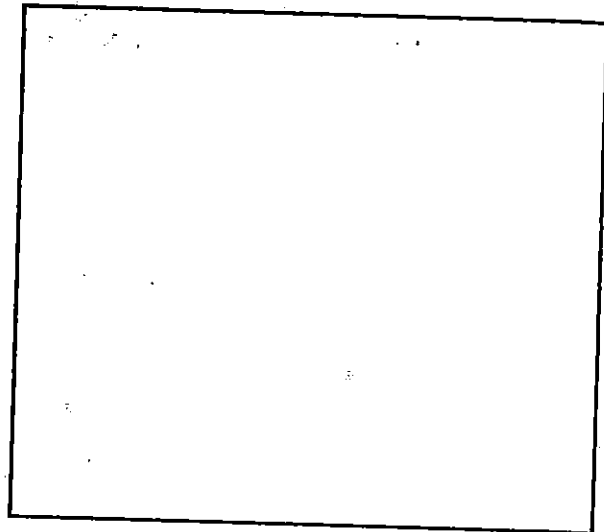
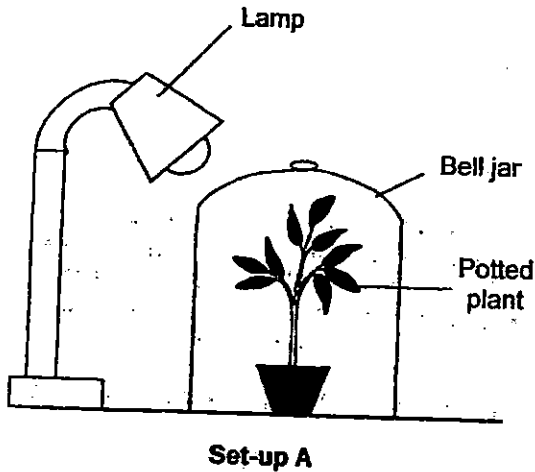
- (b) State two variables that John needs to keep constant to ensure that the experiment is a fair test. [1]

- (c) Based on the results above, what can John conclude about his experiment? [1]

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SCORE	3
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38 John set up an experiment in a dark room as shown below to find out if plants need light for photosynthesis.



Control

- (a) Draw and label the control set-up in the space given above. [1]
- (b) John moved the lamp further and further from the potted plant and measured the amount of oxygen produced by the plant in the table below.

Distance of lamp away from the potted plant / cm	Amount of oxygen produced / units
0	18
5	15
10	11
15	7
20	4

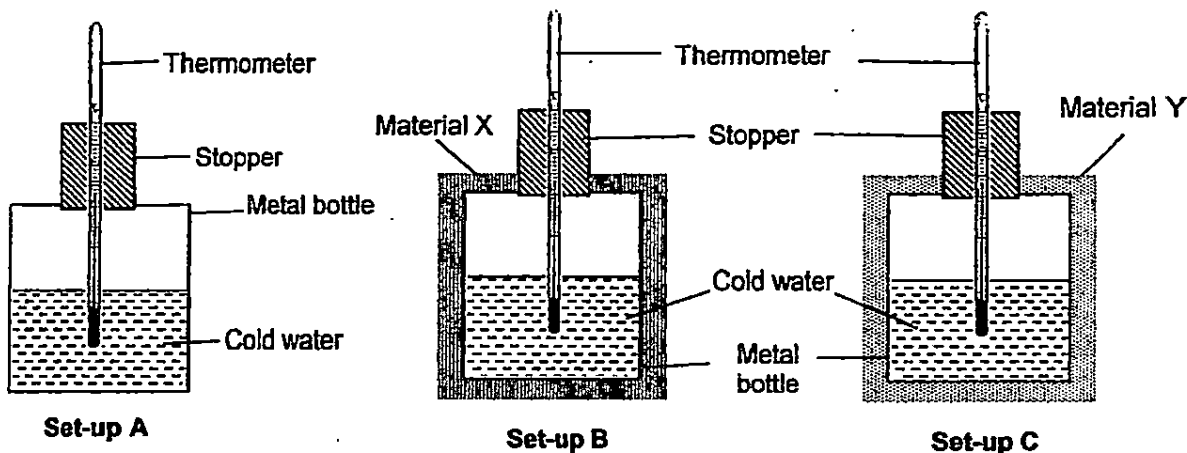
From the results, describe the relationship between the distance of the lamp from the potted plant and the amount of oxygen produced. [1]

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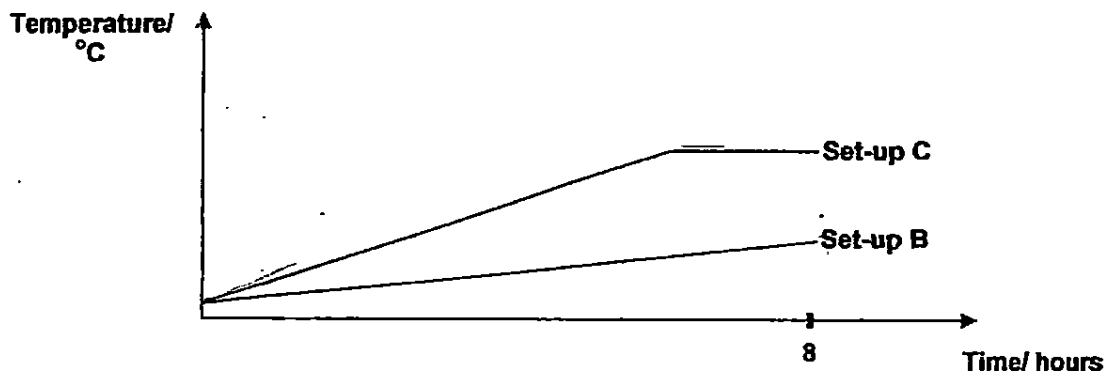
SCORE	2
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39

Johnny set up an experiment as shown below. An equal volume of cold water at 2°C was added to all 3 set-ups. Set-up B and Set-up C were wrapped around with Material X and Material Y respectively.



Johnny recorded the temperature of the water in Set-up B and Set-up C over 8 hours in the graph below.



(a) Draw and label a line on the graph above to indicate the change in temperature of set-up A over 8 hours. [1]

(b) Compare the rate of heat gain between the water in set-up B and set-up C. [1]

(c) Johnny wanted to go for a picnic and needed a container to keep drinks cold for the longest period of time. Which material, X or Y, is more suitable for the container to be made of? Explain why. [1]

End of Paper

SCORE	
	3



LEVEL : PRIMARY 5
SCHOOL : ANGLO – CHINESE SCHOOL (JUNIOR)
SUBJECT : SCIENCE
TERM : SA2

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10
2	3	3	4	1	3	2	4	1	4
Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20
3	3	4	4	3	4	3	3	3	1
Q 21	Q 22	Q 23	Q 24	Q 25					
4	2	1	1	1					

Q26a. It lives in water. Q26a. It uses 3 body parts.
Q26a. It uses its fins to swim. Q26a. It is covered with scales

Q26b. See Picture - Answer (arrow) in question sheet.

Q27a. More than 300cm^3

Q27b. As many filled the bottle with 300cm^3 of marbles in it, the air spaces between them causing the volume of the bottle to be more than 300cm^3

Q27c. No. As marble are solids, they cannot be easily compressed to squeeze in another 10 more marbles.

Q28ai. X: Water Q28aii. Y: Animals

Q28b. The off springs of Plant X has a fibrous husk and it is waterproof.

Q28c. The frit of Plant X has a fibrous husk and it is waterproof.

Q29a. Line X. The seed leaf provides nutrients for the seedling as it grows causing its mass to decrease overtime.

Q29b. The seed would continue to grow. The seed does not need sunlight for growth as it has its seed leaf to provide nutrients for it.

Q29c. The seedling's true leaves would appear and would make its own food during photosynthesis if sunlight is present.

Q30a. He had made an extra variable changed which B the location of the two experiments.

Q30b. Type and material of the towels

Q30b. Amount of water each towel is soaked in

Q30c. The presence of wind and the humidity.

Q31a. A – Recycle Q31a. B – Reuse Q31a. Reduce

Q31b. Throwing excess fertilisers into rivers and throwing unwanted items into the sea such as empty bottles, used tissue paper and empty cans.

Q32a. No. Aluminum is a non-magnetic material and it should not be attracted to the magnet.

Q32b. A magnet. Only magnets with like poles can move away from each other.

Q33a. Digestion does not take place here.

Q33b. Gullet.

Q33c. Digested food at Point X have been absorbed into the bloodstream to be transported to other parts of the body causing there to be a decrease in amount of digested food between Points X and Y.

Q34a. A – Oxygen

Q34a. B – Carbon dioxide

Q34a. C – Nitrogen

Q34b. Gas C is neither produced nor used in the body causing there not to be change in Gas C.

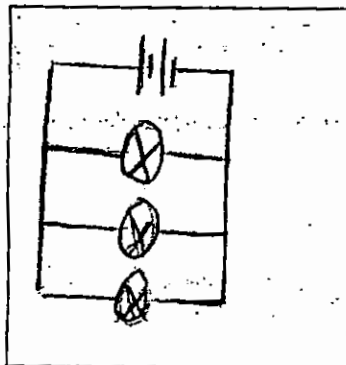
Q35a. 1- B2 n B3 Q35a. 3 – B1 n B3

Q35b. Bulbs B1 and B2 would not light up. As Rod R1 is an electrical insulator, it does not allow electricity to pass through causing an open circuit to be formed and Bulbs B1 and B2 not to light up.

Q36a. Bulb R would remain lits.

Q36b. Bulb R

Q36c. See Picture

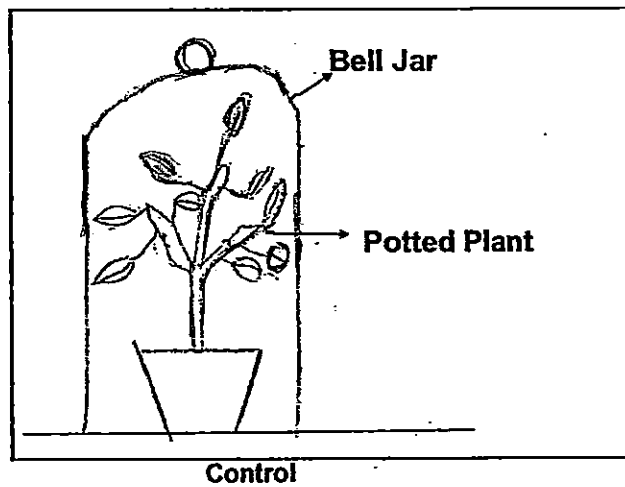


Q37a. The temperature of Liquid W.

Q37b. The material of the containers. The number of drops of iodine solution added in each container.

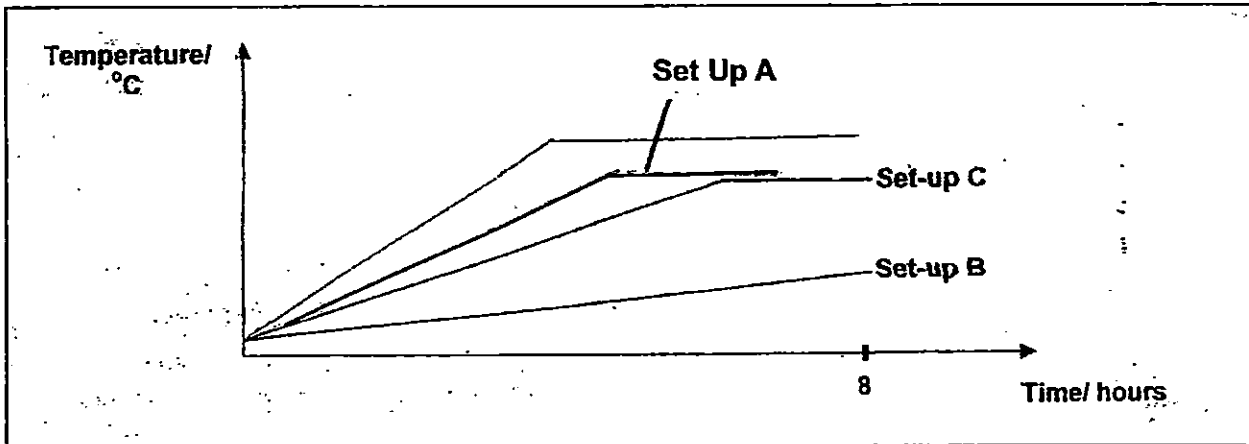
Q37c. Liquid W break down starch at 20 degree and 40 degree Celsius.

Q38a. See picture



Q38b. As the distance of the lamp from the potted plant increases, the amount of oxygen produced decreases.

Q39a. See picture



Q39b. The water in Set up B gained heat slower than the water in Set up C.

Q39c. Material X. As material X gained heat the slowest, it is more suitable for the container to be made of material X to keep cold drinks cold for the longest period of time.

THE END

