CATHOLIC HIGH SCHOOL
SEMESTRAL ASSESSMENT 2
2015
PRIMARY FIVE

SCIENCE

BOOKLET A

Name: _____ ( )

Class: Primary 5 - _____

Date: 3rd November 2015

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 21 printed pages, excluding the 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 Bob found organism X in the school garden and noted down some characteristics of the organism as shown below:

- needs air
- cannot fly
- can reproduce
- can make its own food

Which one of the following could organism X be?

(1) elephant

(2) cockroach

(3) rose plant

(4) mushroom

2 The diagram below shows two plants.



sunflower plant



bird's nest fern

What is/are the similarity/similarities between the two plants?

A Both reproduce from seeds.
B Both can make their own food.
C Both cannot move freely from place to place.

(1) A only

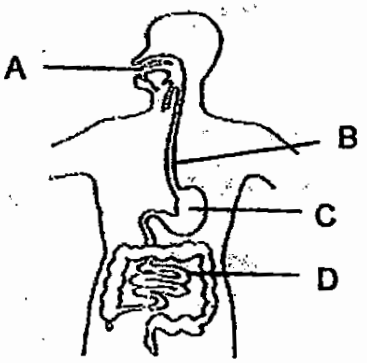
(2) B only

(3) A and C only

(4) B and C only

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3 The diagram below shows the human digestive system.



Which one of the following shows the changes in the amount of undigested food when it passes through parts A, B, C and D?

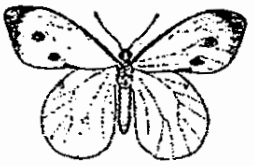
	A	B	C	D
(1)	decrease	no change	decrease	decrease
(2)	decrease	decrease	increase	increase
(3)	increase	no change	increase	no change
(4)	no change	no change	decrease	decrease

4 Amy wrote some descriptions of the young of organism Z as shown below.

- feeds on plants only
- moults several times
- looks like its adult in many ways

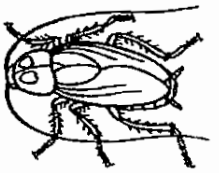
Which of the following could be organism Z?

(1)



butterfly

(2)



cockroach

(3)



mealworm beetle

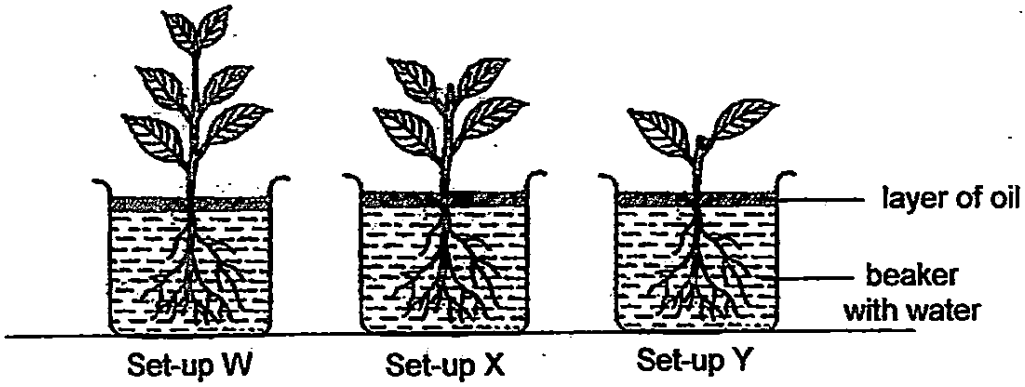
(4)



grasshopper

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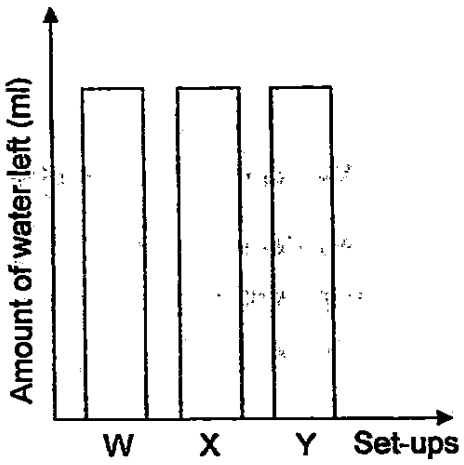
5 Lucien placed three similar plants in identical beakers. Each beaker contained an equal amount of water as shown below. The three set-ups W, X and Y were placed near a window for a day.



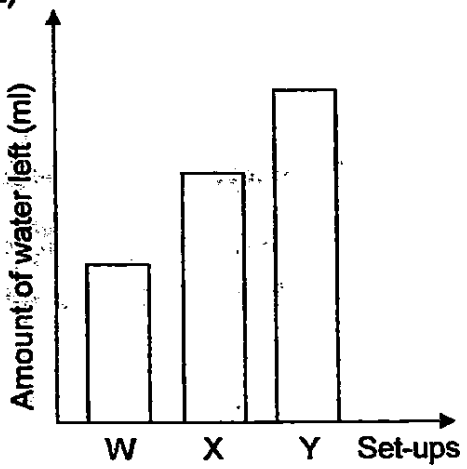
He then recorded the amount of water left in each beaker at the end of the experiment.

Which one of the following graphs below shows the amount of water left in set-ups W, X and Y at the end of the experiment?

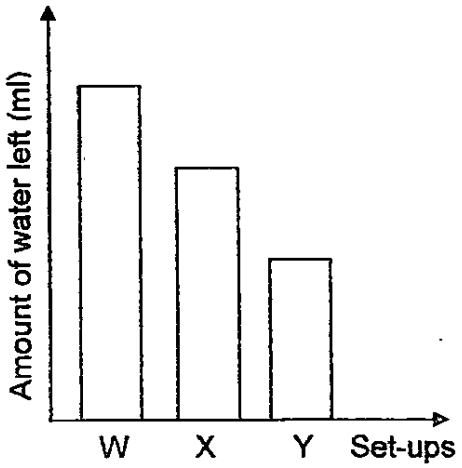
(1)



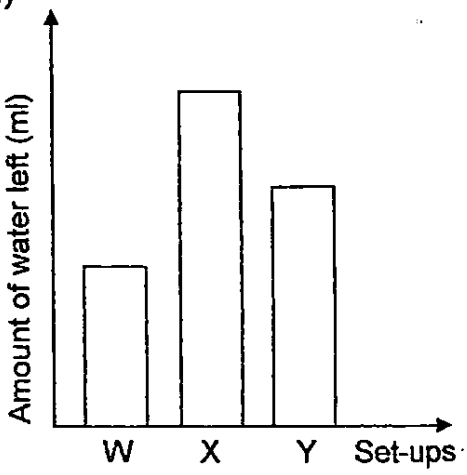
(2)



(3)

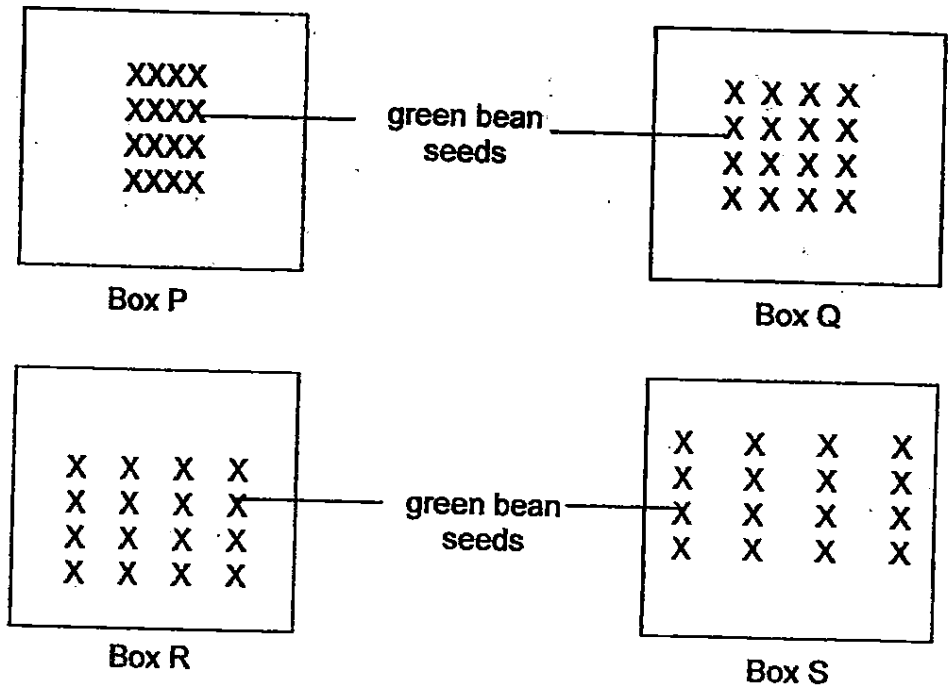


(4)



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6 Sanjiv placed an equal number of green bean seeds in 4 identical boxes with garden soil as shown below.



The seeds were given the same amount of water daily. After a few weeks, he noticed that the plants had grown.

What will be the possible observation about the plants in the boxes?

(1) The plants in Box Q will have the weakest stems.

(2) The height of the plants in Box S will be the shortest.

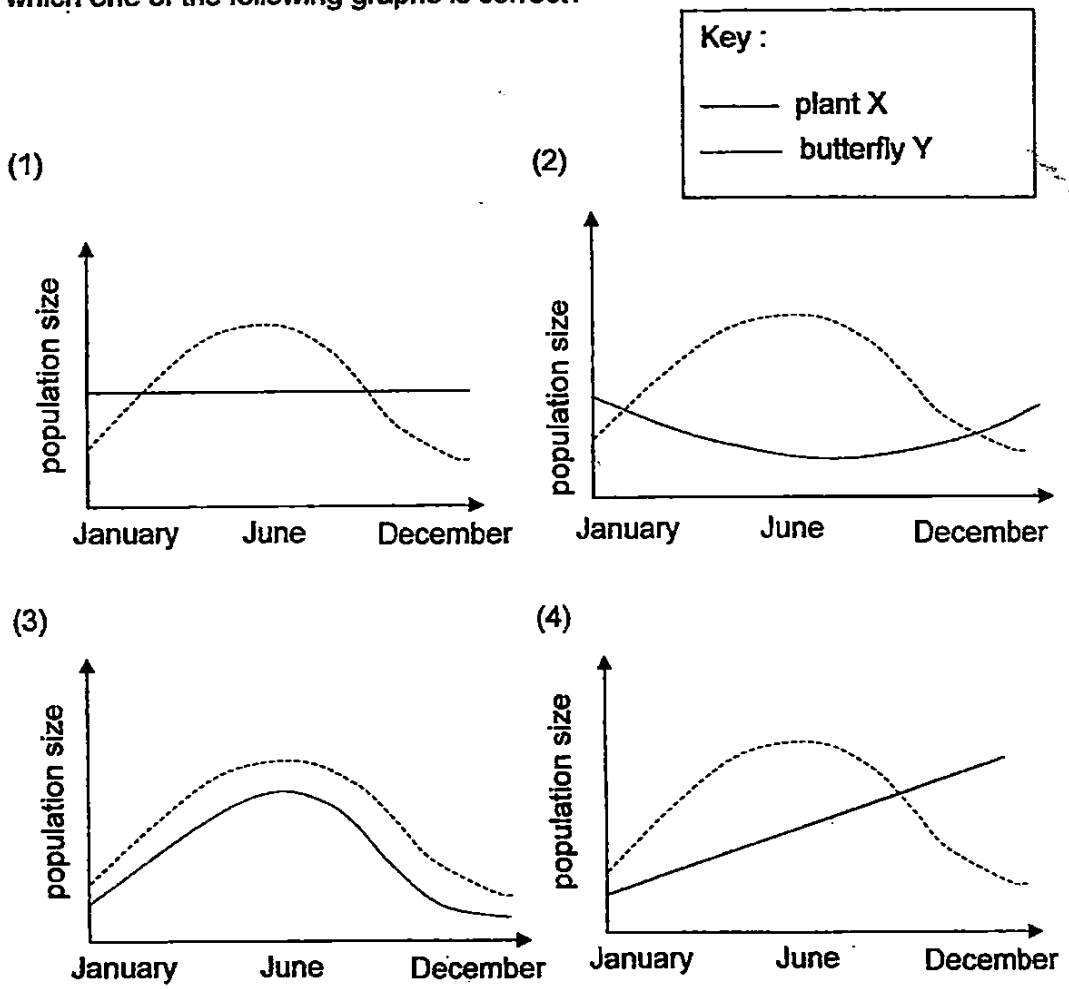
(3) The plants in Box Q will be taller than those in Box P.

(4) The plants in Box P will have thicker stems than those in Box R.

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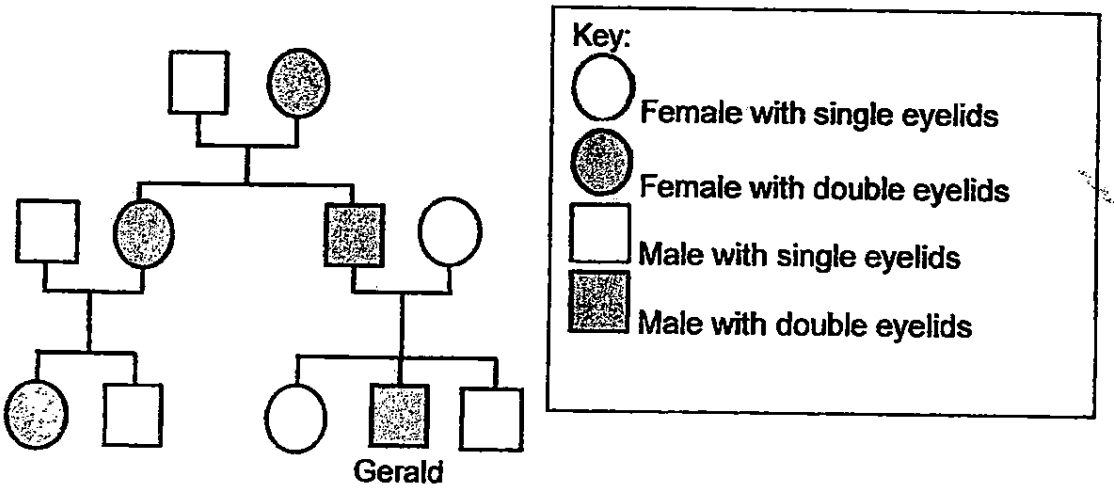
7 The graphs below show how the population size of plant X and the population size of butterfly Y change throughout the year.

Given that butterfly Y only feeds on the nectar of the flowers of plant X, which one of the following graphs is correct?



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8 The diagram below shows 3 generations of Gerald's family that carry the genetic trait of double eyelids.



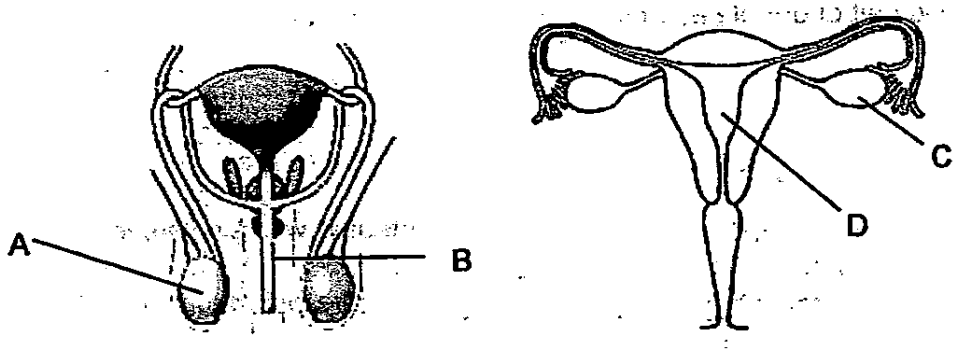
Based on the family tree above, which of the following statements is/are correct?

A Gerald has a cousin who has double eyelids.
B Gerald's mother inherited the double eyelids from his grandmother.
C This trait of double eyelids is passed on to only the female members of the family.

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

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9 The diagram below shows the human reproductive systems.



Which parts of the reproductive systems produce cells that have to be fused to produce a fertilised egg?

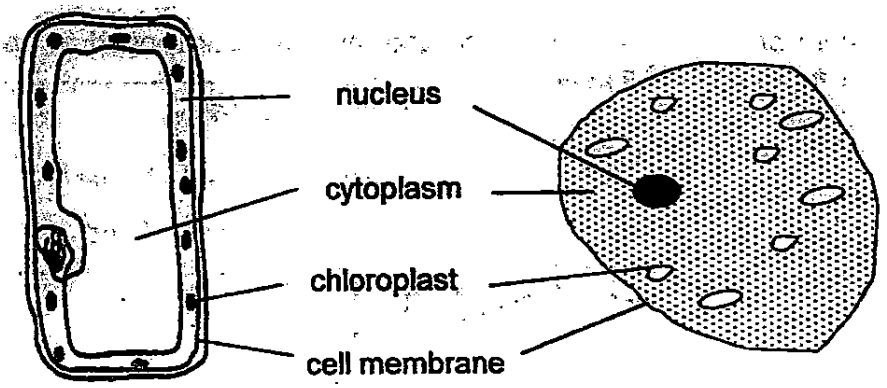
(1) A and C only

(2) A and D only

(3) B and C only

(4) B and D only

10 The diagram below shows two cells.



Rajiv labelled the 2 cells as shown above. Which of the following parts did Rajiv label correctly for both cells?

(1) nucleus

(2) cytoplasm

(3) chloroplast

(4) cell membrane

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11 Four pupils observed some plant and animal cells under a microscope. They recorded their observations and their findings in the table below.

Name of pupil	Observations on cell parts seen	Function of mentioned cell parts
Ian	Both the plant and animal cells have cell membranes.	Place where many activities of the cell takes place.
Lucas	The plant cell has a cell wall but an animal cell does not have a cell wall.	Controls the movement of substances in and out of the cell.
Callum	Both the plant and animal cells have cell membranes.	Controls the movement of substances in and out of the cell.
Nathan	Both the plant and animal cells have cytoplasm.	Place where many activities of the cell takes place.

Which of the children made the correct conclusions?

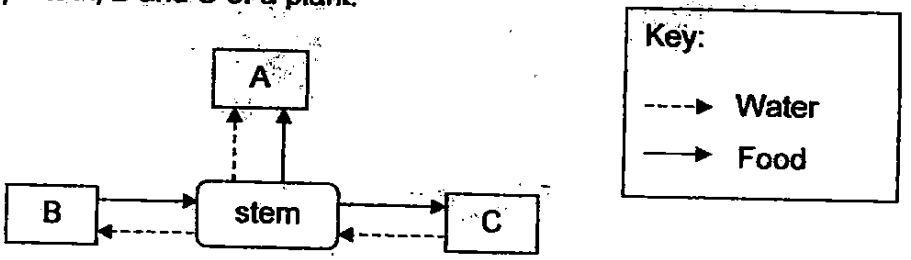
(1) Ian and Lucas only

(2) Callum and Nathan only

(3) Nathan, Ian and Lucas only

(4) Nathan, Callum and Lucas only

12 The diagram below shows how water and food are transported to and from parts A, B and C of a plant.



Which one of the following correctly represents the parts A, B and C?

	A	B	C
(1)	roots	flowers	fruits
(2)	flowers	leaves	roots
(3)	flowers	roots	flowers
(4)	leaves	flowers	roots

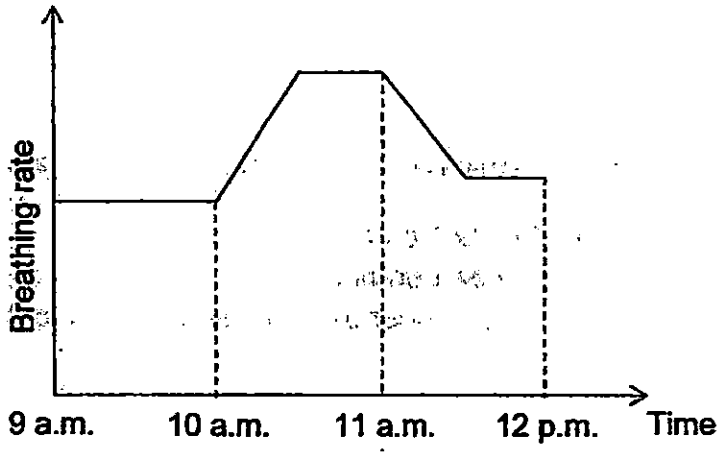
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13 In what ways are the plant transport system and human transport system similar?

A Both systems transport food and water.
B Both systems have tubes to transport materials.
C Both systems transport oxygen and carbon dioxide.
D Both systems need an organ to pump the materials in the tubes to different parts.

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

14 Mei Hui engaged in several activities and monitored the changes in her breathing rate. She then plotted her readings in the graph as shown below.



Which of the following explains why Mei Hui's breathing rate increased between 10 a.m. to 11 a.m.?

(1) Her heart needed to pump blood slower because she was exercising.
(2) Her body needed more oxygen-rich blood because she was sleeping.
(3) She needed to take in more oxygen because she was mountain-climbing.
(4) She needed less oxygen because she was resting after a vigorous activity.

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15 Figures 1 and 2 shows the blood flow in some parts of a human and a fish respectively.

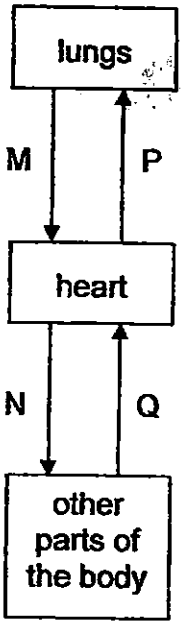


Figure 1
(human)

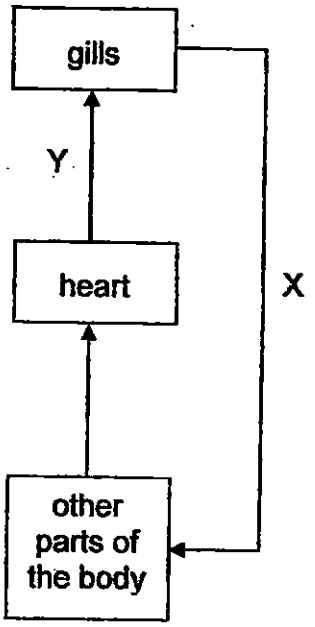


Figure 2
(fish)

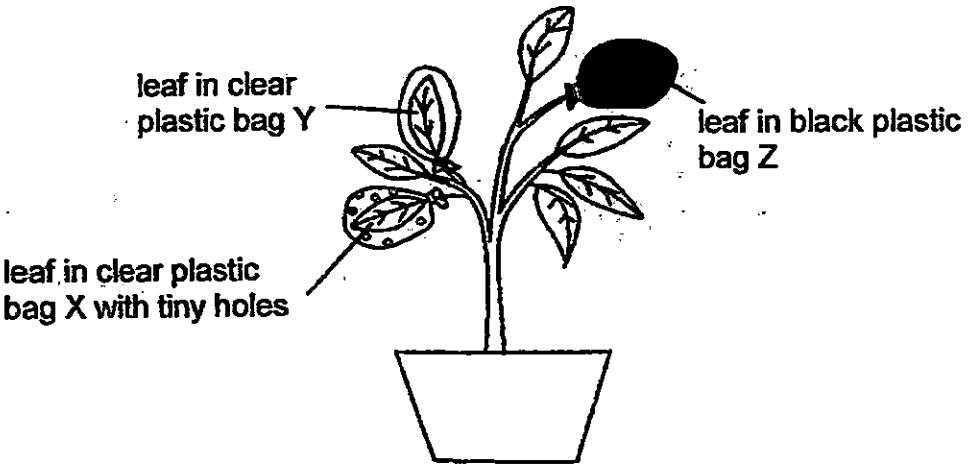
Based on the figures above, which of the following statements is/are correct?

A Blood at M, N and X are oxygen-rich.
B Blood at P, Q and Y are oxygen-poor.
C Oxygen-rich blood from the other parts of the body flow to the heart of the fish.

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

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16 Amanda wrapped three similar leaves on a plant in different types of plastic bags X, Y and Z as shown in the diagram below. The plastic bags were of the same size. She left the plant under bright light for several hours.

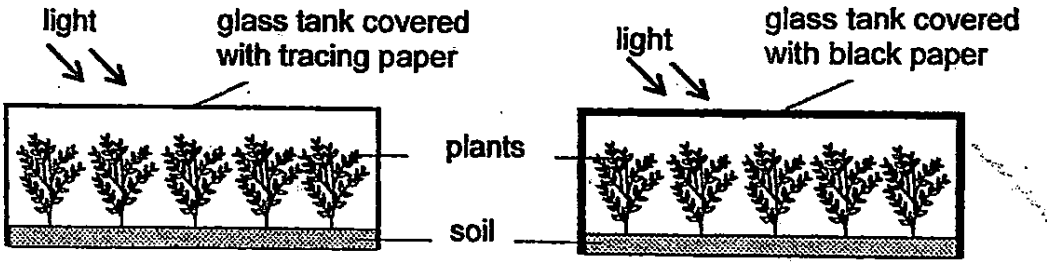


What would be the likely change in the amount of carbon dioxide in the plastic bags after several hours?

	Amount of carbon dioxide in plastic bag		
	X	Y	Z
(1)	increase	decrease	no change
(2)	decrease	no change	increase
(3)	no change	increase	decrease
(4)	no change	decrease	increase

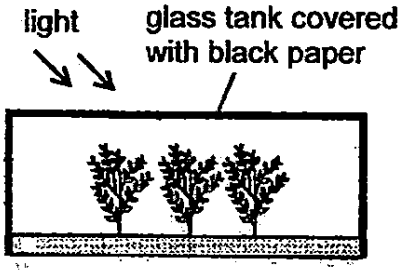
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17 Raju wants to investigate how the amount of light affects the growth of a type of plant. The diagram below shows each of his set-ups in a clear glass tank.

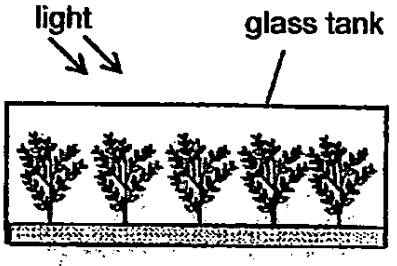


Which one of the following set-ups can he use as a control for his experiment?

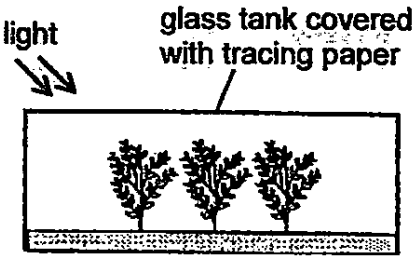
(1)



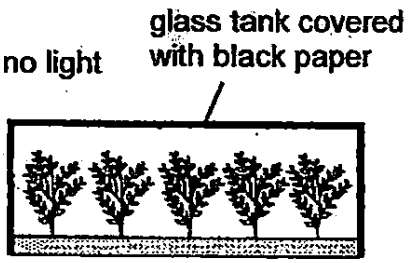
(2)



(3)

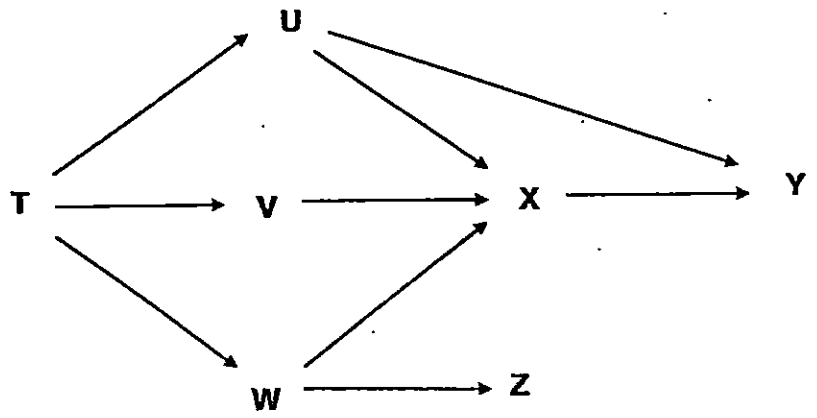


(4)



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Study the food web below and answer questions 18 and 19.



18 How many food chains are there in the food web above?

(1) 4

(2) 5

(3) 6

(4) 7

19 Which one of the following changes will have a direct and immediate impact on organism Z?

(1) An increase in the hunting of organism W.

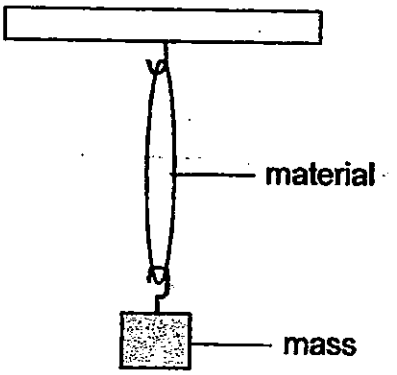
(2) A disease reducing population of organism Y.

(3) An increase in the reproduction of organism V.

(4) A prolonged period of drought affecting population of organism T.

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20 4 different types of materials, A, B, C and D, were tested to find out which was the most suitable to make object X which had to be able to withstand a mass of 35 kg.



The table below shows the results of the experiment.

Material	Mass at which material began to break (kg)
A	12
B	25
C	6
D	50

Which type of material is most suitable for making object X?

(1) Material A

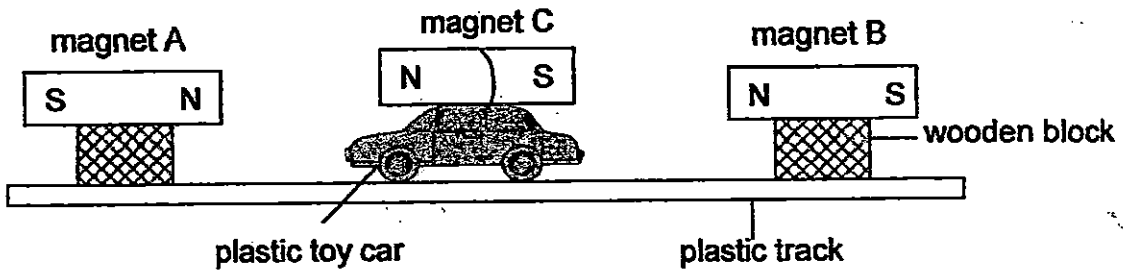
(2) Material B

(3) Material C

(4) Material D

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21 A plastic toy car with a magnet was placed on a plastic track as shown below. The toy car was then given a push towards Magnet B.



Which of the following is a possible observation of the above experiment?

(1) The car was attracted by Magnet A.

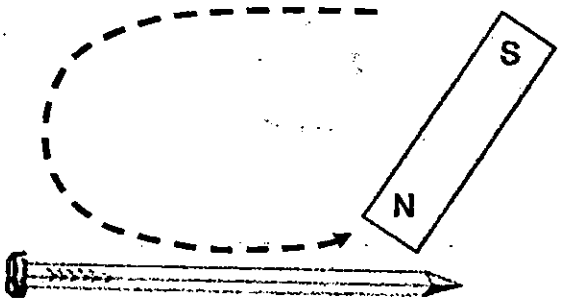
(2) The car was repelled by Magnet B and pushed away.

(3) The car stopped moving once it was attracted to Magnet B.

(4) The car moved continuously between Magnet A and Magnet B.

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22 Sally conducted an experiment with 4 identical iron nails, W, X, Y and Z, to find out how the number of strokes made by a magnet would affect the magnetic strength of an iron nail. She stroked each nail with a magnet in the same direction as shown below.



She observed the number of pins attracted by each magnetised nail and recorded her results in the table below.

Nail	Number of strokes	Number of pins attracted by magnetised nail
W	40	10
X	30	8
Y	20	6
Z	10	4

Based on her results above, which one of the following statements is false?

(1) If Nail Y were given more strokes, it could attract only 6 pins.

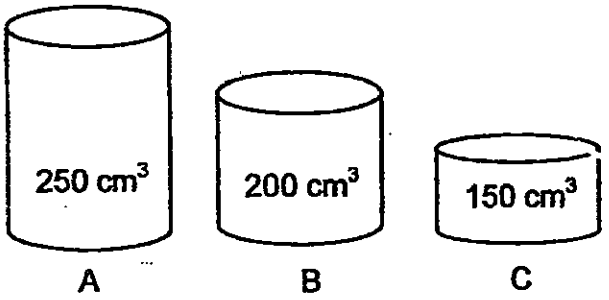
(2) An iron nail can become a magnet after stroking it with a magnet 10 times.

(3) Nail W had become the strongest magnet after stroking it 40 times with a magnet.

(4) The number of pins picked up by a magnetised nail is dependent on the number of times the nail was stroked with a magnet.

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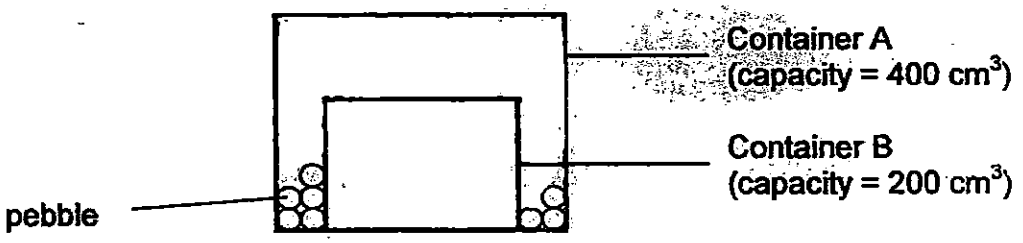
23 Zachary wants to transfer 200 cm^3 of air from a gas tank into a container.



Which of the above containers can he use to hold the air?

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

24 The diagram below shows 2 containers, A and B. Container B is placed inside Container A. Some pebbles, with a total volume of 70 cm^3, are also placed in Container A.

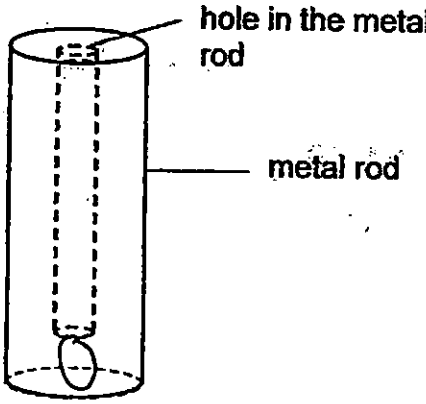


From the diagram above, what is the total volume of air in both containers?

(1) 330 cm^3
(2) 400 cm^3
(3) 530 cm^3
(4) 600 cm^3

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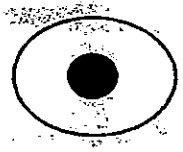
25 Sean carried out an experiment to investigate the shadows formed by the metal rod as shown below.

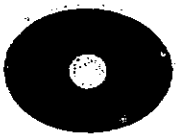


Which of the following are possible shadows that can be cast by the metal rod?

A 

B 

C 

D 

(1) A and B only

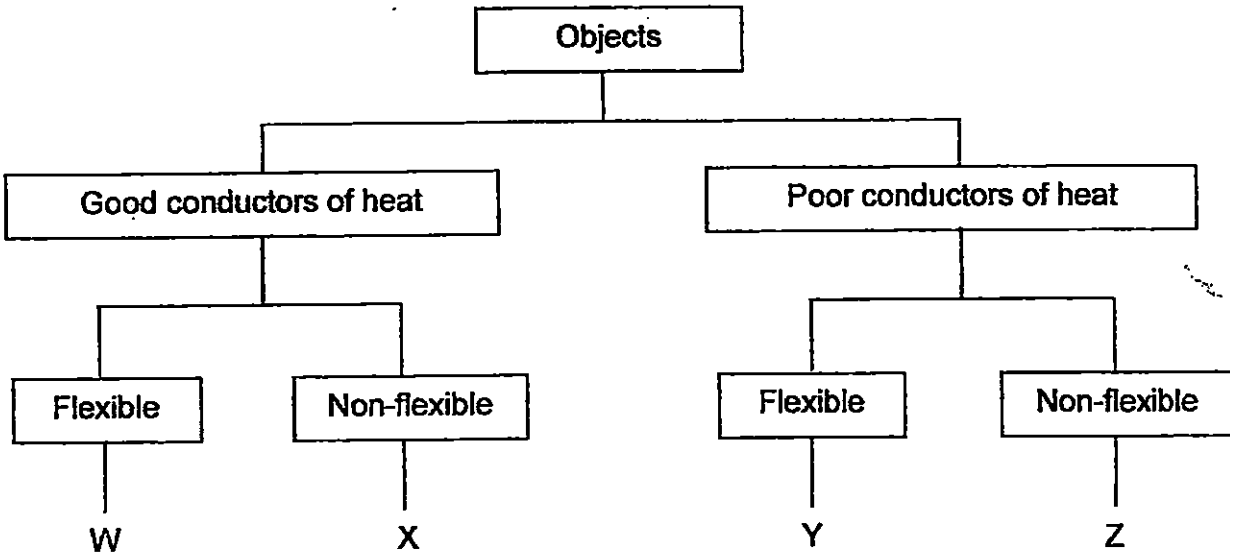
(2) B and C only

(3) A, B and D only

(4) A, C and D only

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26 Study the classification chart below.



Which of the following could possibly be objects W, X, Y and Z?

	W	X	Y	Z
(1)	silver wire	rubber hose	steel pipe	glass bowl
(2)	silver wire	steel pipe	rubber hose	clay pot
(3)	copper wire	iron nail	metal spring	ceramic mug
(4)	aluminium wire	metal spring	iron nail	ceramic mug

27 The table below shows the freezing points of three substances, A, B and C.

Substance	Freezing point (°C)
A	10
B	40
C	160

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

(1) A is a solid at 8°C.

(2) A and B are both liquids at 35°C.

(3) B and C are both solids at 170°C.

(4) C can be a liquid or a gas at 160°C.

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28 Amirah wanted to find out how the temperature of the surrounding air affects the rate of evaporation of water in a container. The following shows the variables in four set-ups W, X, Y and Z.

	Set-ups			
	W	X	Y	Z
Amount of water in container (cm^3)	100	200	100	200
Exposed surface area of water in the container (cm^2)	50	50	50	25
Temperature of water (°C)	5	28	5	28
Temperature of surrounding air (°C)	15	30	30	15

Which 2 set-ups should she choose for her investigation?

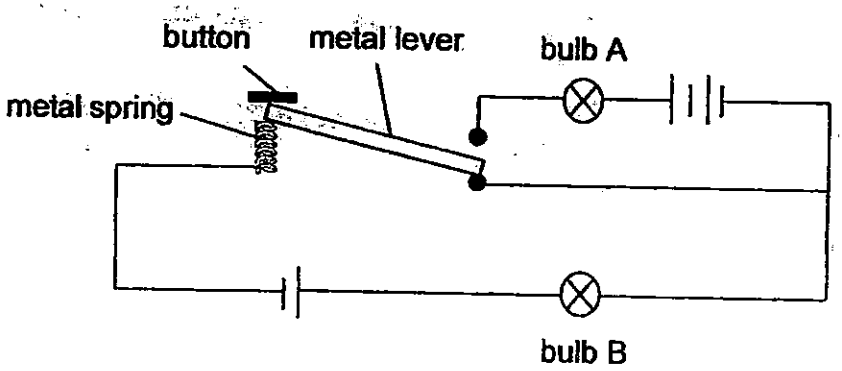
(1) W and Y

(2) W and Z

(3) X and Y

(4) Y and Z

29 Study the circuit below. Bulbs A and B are identical and the three batteries are identical. At first, bulb A is not lit while bulb B is lit with a brightness of 10 units.

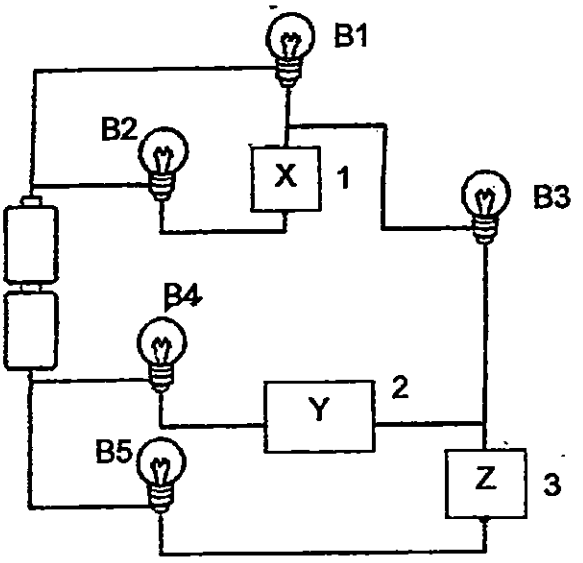


If the button is pressed and held down, what can you conclude about the brightness of bulbs A and B?

	bulb A	bulb B
(1)	as bright as 10 units	unlit
(2)	brighter than 10 units	unlit
(3)	as bright as 10 units	dimmer than 10 units
(4)	brighter than 10 units	brighter than 10 units

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30 Ian carried out an experiment to find out which materials, X, Y or Z, can conduct electricity. He connected materials X, Y and Z to the circuit at positions 1, 2 and 3 respectively as shown in the diagram below.



He observed that only bulbs B1, B3 and B4 lighted up.

He then rearranged the materials to different positions and recorded his observations.

Which one of the following connections and observations is possible?

	Position 1	Position 2	Position 3	Bulbs lit up
(1)	Y	Z	X	B1, B2 and B3
(2)	Z	X	Y	B1, B3 and B5
(3)	X	Z	Y	B2, B3 and B4
(4)	Y	X	Z	B1 and B2

End of Booklet A

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CATHOLIC HIGH SCHOOL
SEMESTRAL ASSESSMENT 2
2015
PRIMARY FIVE

SCIENCE

BOOKLET B

Name: _____ ( )

Class: Primary 5 - _____

Date: 3rd November 2015

Parent's Signature: _____

Booklet A	60
Booklet B	40
Total	100

14 questions

40 marks

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

This booklet consists of 14 printed pages, excluding the cover page.

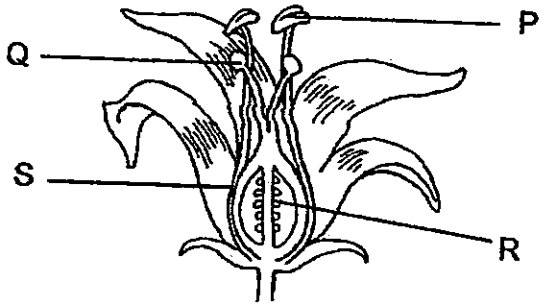
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Booklet B (40 marks)

For questions 31 to 44, write your answers in this booklet.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

(40 marks)

31 The diagram below shows the cross section of a flower.



(a) Which part, P, Q, R or S, performs a similar function as the testis in the human reproductive system? [1]

(b) What would happen to part S when the nucleus of the male reproductive cell fuses with the nucleus of the female reproductive cell? [1]

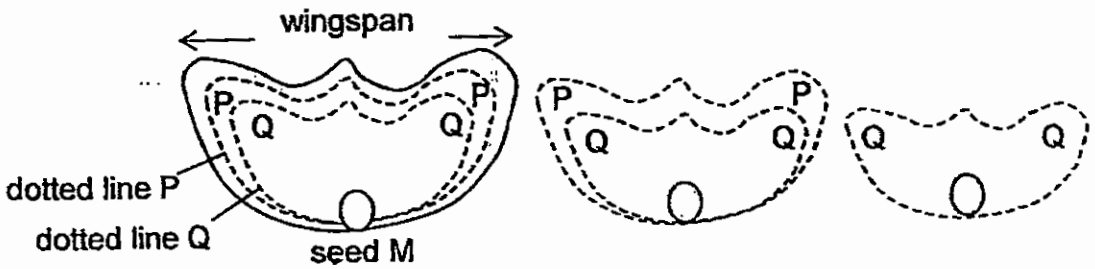
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SCORE / 2

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32 Jude found seed M as shown below. He carried out the following steps.

1) He measured the wingspan of seed M and dropped it from a height.
2) He recorded the distance travelled by the seed.
3) He cut the same seed along dotted line P and repeated steps 1 and 2.
4) He then cut the same seed along dotted line Q and repeated steps 1 and 2.
5) He recorded the distance travelled by the seed with different wingspans in the table below.



Wingspan of seed (cm)	Distance travelled by the seed (cm)
8	49
6	38
4	27
2	

(a) If the wingspan of Seed M is 2 cm, would the distance travelled by Seed M be less than, equal to or more than 27 cm? [1]

_____

(b) Based on the results above, what is the relationship between the wingspan of the seed and the distance travelled by the seed? [1]

_____

_____

(c) State the dispersal method of Seed M. Explain your answer. [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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33 The table below shows some information about parts of cells A, B and C. Each of these cells has been taken from different organisms.

A tick (√) in the box indicates a part which is found in the cell.

Cell	Nucleus	Cell membrane	Cell wall	Chloroplast
A	√	√	√	
B	√	√	√	√
C	√	√		

(a) Which of the cells A, B and/or C matches the descriptions in the table below?
Write your answers A, B and/or C in the boxes provided. Each letter may be used more than once. [2]

	Description	Cell(s)
(i)	The cell(s) which is/are most likely to belong to that of an animal.	
(ii)	The cell(s) which is/are most likely to be found in a plant.	
(iii)	The cell(s) which is/are most likely to be able to produce oxygen.	
(iv)	The cell(s) which is/are most likely to be able to carry out life processes.	

(b) Other than the nucleus and cell membrane, what is another cell part which all 3 cells A, B and C have in common? [1]

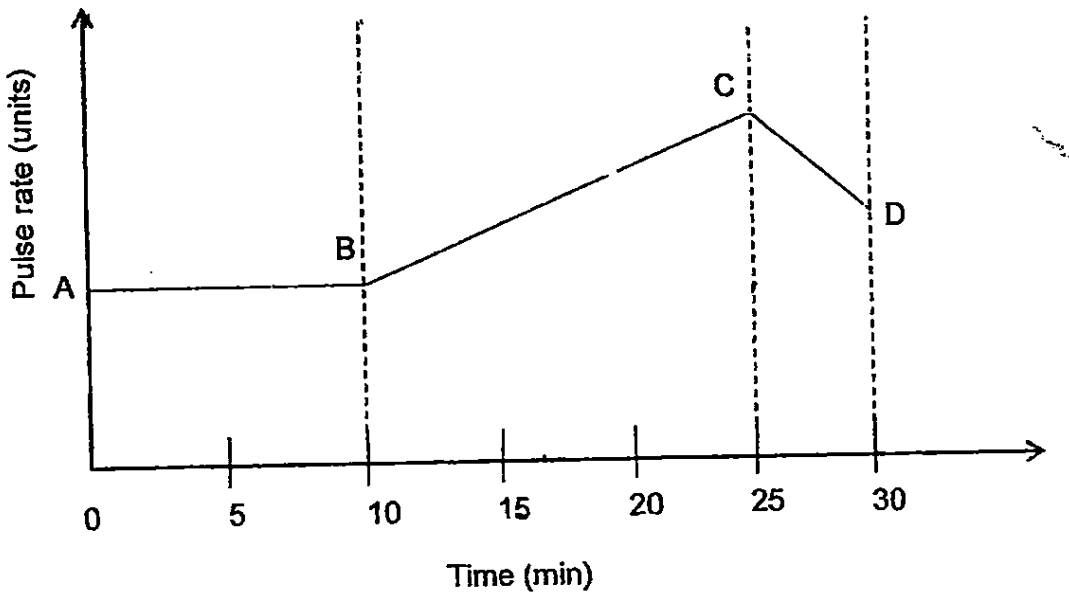
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SCORE	/ 3

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34 The graph below shows how Jessica's pulse rate changed over a period of 30 minutes.



(a) Match the activity given below to the graph above by filling in the blanks with the period, AB, BC or CD. [1]

Activity	Period in the graph
resting before a frisbee game	

(b) Jessica's pulse rate increased while playing frisbee with her friends. Explain why this happened. [2]

_____

_____

_____

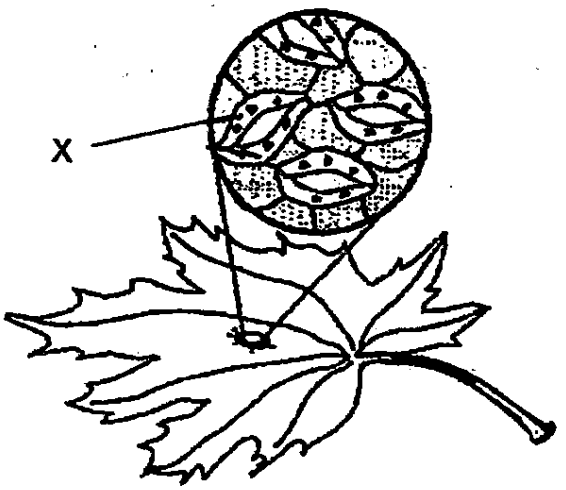
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SCORE	3

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35 Rose examined a leaf under a microscope and found tiny openings on the underside of the leaf. The picture below shows what she saw.



(a) Name structure X and state one of its functions. [1]

Structure X: _____

Function of X: _____

_____

Rose did a study on the behaviour of structure X during the day and night. She noticed that the tiny openings of structure X became larger during the day and smaller during the night.

(b) Why do you think the tiny openings of structure X were smaller in size during the night? [1]

_____

_____

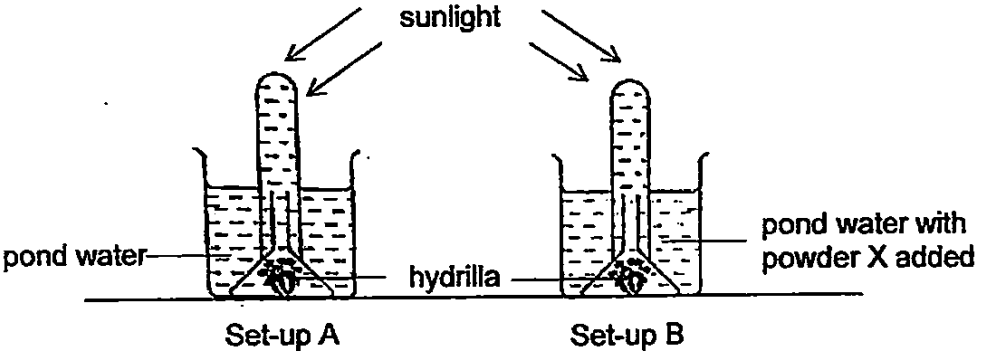
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SCORE	2

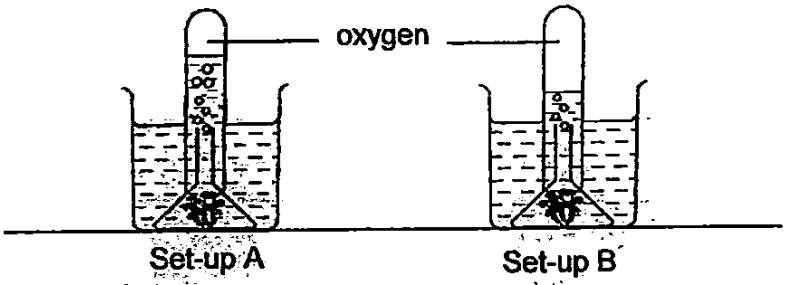
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36 Ben set up an experiment to find out if adding powder X to pond water has any effect on the rate of photosynthesis of the hydrilla.

Set-up A contained hydrilla in water collected from a pond while set-up B contained hydrilla with powder X added to the water collected from the same pond. Both set-ups were then placed under the sun, at the same location for a few hours.



After a few hours, he observed the amount of gas produced in the two test tubes as shown below.



(a) Set-up A acts as a control. Why was it necessary to have a control set-up in the experiment? [1]

_____

_____

(b) What could Ben conclude from the experiment above? [1]

_____

_____

(c) Adding powder X increased the amount of a matter needed for photosynthesis. What was the matter? [1]

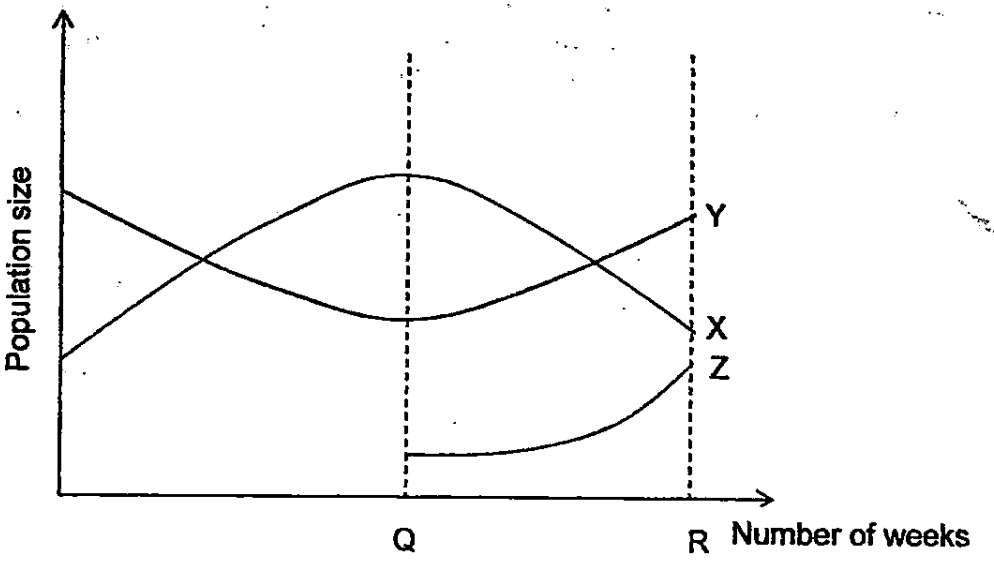
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SCORE 3

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37 The graph below shows the population size of 3 organisms X, Y and Z living in the grassland. Organism X feeds on Organism Y.



(a) At point Q, some organism Z was introduced to the grassland. Explain how the population of organism X was affected by the introduction of organism Z. [1]

(b) Using the above information, construct a possible food chain if the 3 organisms X, Y and Z were placed together with a plant during period QR.

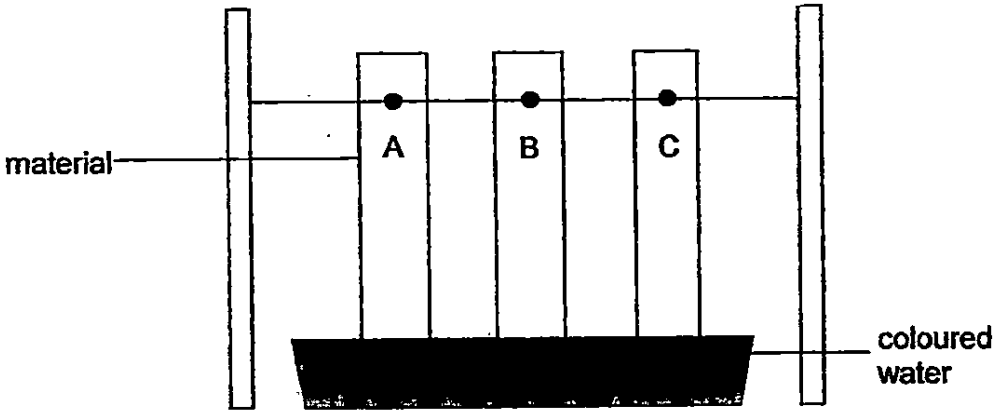
(c) From point R onwards, there was illegal hunting of organism Z. How would this illegal hunting activity affect the population of organisms X, Y and Z in the habitat? [2]

(Go on to the next page)

SCORE	/ 4

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38 Razak wanted to find out which material absorbs the most amount of water. He dipped three strips of different materials A, B and C with the same thickness into a basin of coloured water as shown in the diagram below.



He recorded his results in the table below after 10 minutes.

Material	Height of coloured water observed on each strip after 10 minutes (cm)
A	15
B	5
C	8

(a) If Razak wants to choose one of the materials to make a kitchen towel to wipe away water, which material A, B or C should he choose? Give a reason for your answer. [1]

_____

_____

(b) Give a reason why using the same thickness of materials helps him to make his experiment fair. [1]

_____

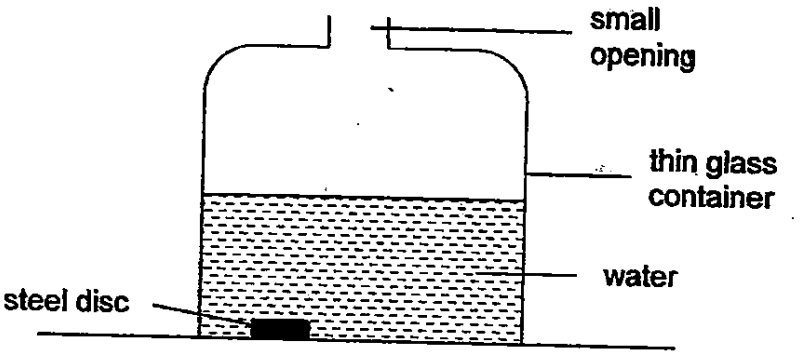
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SCORE	/2

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39 Henry accidentally dropped a steel disc into a thin glass container half filled with water, as shown in the diagram below.



(a) How could Henry remove the steel disc using a magnet only, without moving the glass container or putting the magnet into the container? [1]

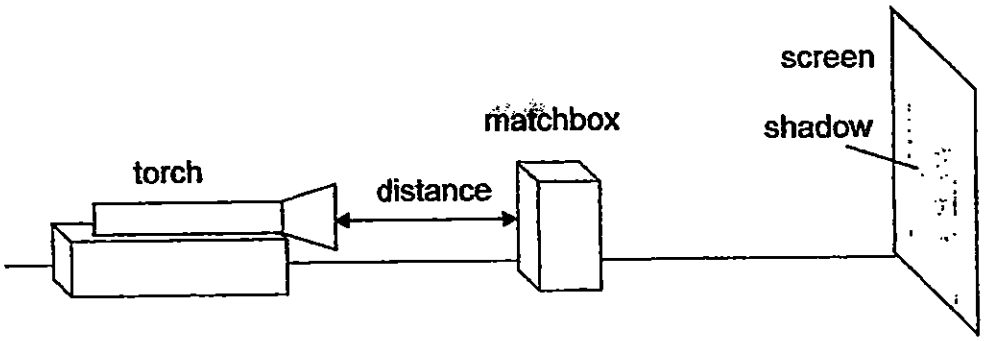
(b) If an aluminium disc was accidentally dropped into the thin glass container, would Henry still be able to remove the aluminium disc using only the magnet as mentioned in part (a)? Explain your answer. [1]

(Go on to the next page)

SCORE 2

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40 Ramu set up an experiment as shown below. He recorded the distance between the torch and the matchbox and the size of the corresponding shadow cast on the screen.



The table below shows the results of Ramu's experiment.

Shadow	Distance between torch and matchbox (cm)	Size of shadow (cm)
A	5	25
B	10	20
C	15	15
D	20	10

(a) Based on the results above, what is the relationship between the distance between the torch and the matchbox and the size of the shadow? [1]

_____

_____

(b) State the property of light that causes the formation of a shadow. [1]

_____

_____

(c) Using the same apparatus, how could Ramu make the shadow appear bigger, without moving the screen? [1]

_____

_____

(Go on to the next page)

SCORE / 3

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41 Lijie conducted an experiment by heating three similar rods made of metals P, Q and R for 15 minutes. He recorded the lengths of each rod before and after heating in the table below.

Metal	Length before heating (mm)	Length after 15 min of heating (mm)
P	300	305
Q	300	308
R	300	303

(a) Based on the results of the experiment, what could Lijie conclude about the effect of heating different materials? [1]

_____

_____

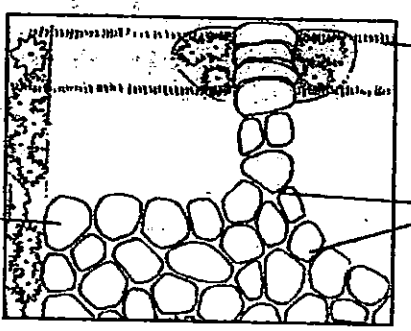
(b) In another experiment, Lijie heated a thicker rod made of metal R of length 300 mm for 15 minutes.

Would the length of this rod after the heating be less than, equal to, or more than 303 mm? Give a reason for your answer. [1]

_____

_____

Lijie noticed that there were gaps in between the concrete slabs in his garden as shown below.



(c) What would happen to the concrete path on a very hot day if there were no gaps? Give a reason for your answer. [1]

_____

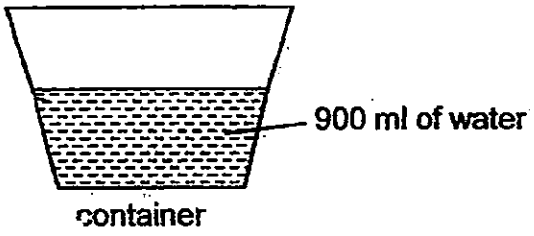
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SCORE	3

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42 Rachel wanted to find out the rate of evaporation at different times of a day. She filled 3 similar containers with 900 ml of water each and placed each container in a garden at different time periods of the day.



At the end of each time period, the amount of water left in the container was recorded in the table below.

Time period	7 a.m. – 9 a.m.	1 p.m. – 3 p.m.	7 p.m. – 9 p.m.
Amount of water left in the container (ml)	840	780	860

(a) Based on the results of the experiment, what is the relationship between the surrounding temperature and the rate of evaporation? [1]

_____

_____

(b) Based on the results above, state an appropriate time period to hang your wet clothes out to dry.



Explain your answer. [2]

_____

_____

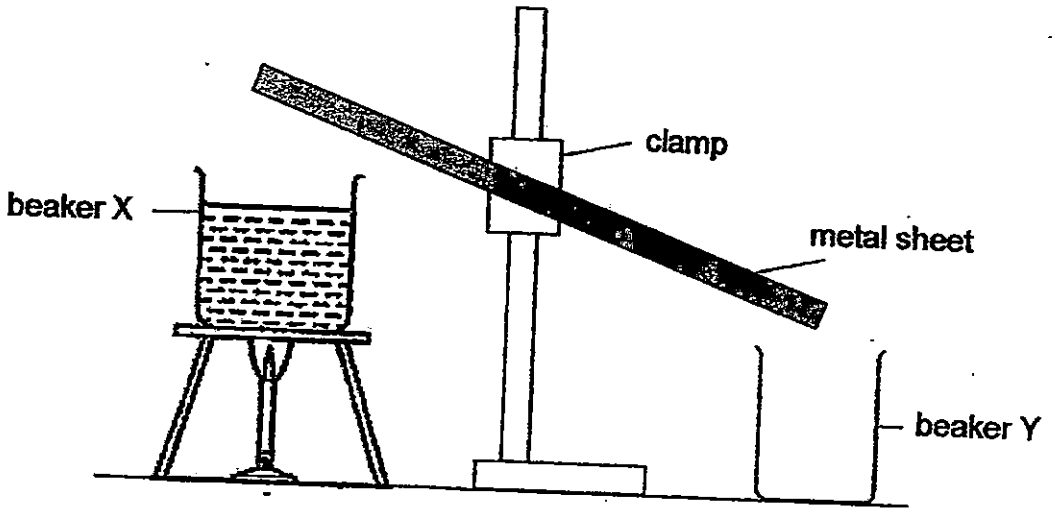
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SCORE	/ 3

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43 Phoebe set up an experiment to transfer water from beaker X to beaker Y as shown below. Beaker X contained 80 ml of water at first.



(a) Based on the set-up above, explain how the water was transferred from beaker X to beaker Y. [2]

(b) After some time, beaker X was empty but there was only 45 ml of water in beaker Y. Explain her observation. [1]

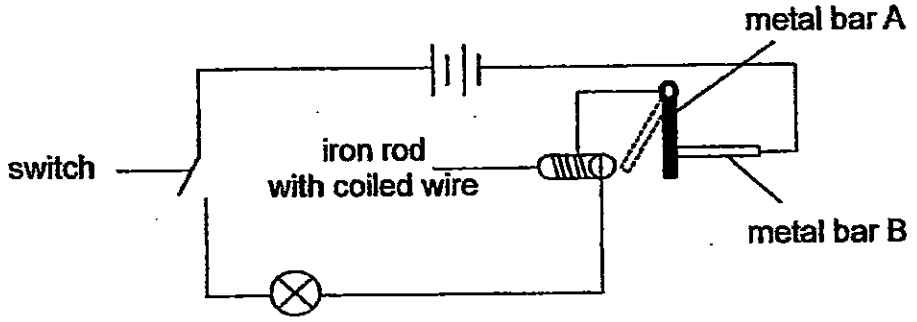
(c) Suggest one change that would allow Phoebe to collect more water in beaker Y in a shorter time. [1]

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SCORE / 4

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44 Diane set up a circuit as shown below. The wire was coiled around the iron rod. When she closed the switch, the bulb lit up. Metal bar A moved away from metal bar B and touched the iron rod.



(a) Explain why metal bar A touched the iron rod after Diane closed the switch. [1]

_____

_____

(b) What would happen to the bulb when metal bar A came into contact with the iron rod? Give a reason. [1]

_____

_____

(c) Diane replaced metal bar A with bar C. Bars A and C are made of different materials. When she closed the switch, the bulb lit up and bar C did not move at all.
Based on the above results, state two properties of the material of bar C. [1]

(i) _____

(ii) _____

SCORE	3

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LEVEL : PRIMARY 5
SCHOOL : CATHOLIC HIGH SCHOOL
SUBJECT : SCIENCE
TERM : SA2

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
3	**4**	**1**	**4**	**2**	**2**	**3**	**1**	**1**	**4**
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
2	**2**	**1**	**3**	**3**	**4**	**2**	**2**	**1**	**4**
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	**1**	4	**1**	**1**	**2**	**1**	**1**	**4**	

Q31a. Part P Q31b. It would swell and develop into a fruit.

Q32a. Less than 27cm

Q32b. As the wingspan of the seed decreases, the distance travelled by the seed decreases.

Q32c. Wind. It has a wing-like structure that helps it to stay in the air for a longer period of time.

Q33ai) C Q33aii) A and B Q33aiii) B Q33aiv) A B and C

Q33b. Cytoplasm Q34a. A ,B

Q34b. As she played Frisbee with her friends with her friends her heart has to beat faster to pump blood faster to the muscles to supply them with more oxygen and more digested food so that more energy can be released through respiration.

Q35a. Structure X: Stoma Q35b. Function of X: To allow gaseous exchange to take place.

Q35b. It is to reduce water loss to the surrounding air when the leaf is not phtosynthesising.

Q36a. To ensure that the amount of oxygen produced at the end of the experiment is solely due to the presence of powder X and not any other factors.

Q36b. Adding Powder X to pond water increases the rate of photosynthesis of the hydrilla.

Q36c. Carbon dioxide.

Q37a. The population of organism X decreases once organism Z was introduced to the area because organism Z preys on organism X.

Q37b. Plant → Y → X → Z

Q37c. The population of organism Z will start to decrease as the illegal hunting activity began. This will lead to an increase in the population of X as there is less Z to prey on them. And population Y will decrease as a result of an increase in their predator X.

Q38a. A. Material A absorbed the most amount of water compared to materials B and C.

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thickness of the material.

Q39a. He could use the magnet and put it outside the glass container. The steel disc will be attracted to the magnet and he could now lift the steel disc towards the small opening.

Q39b. No. Steel is a magnetic material and thus could be attracted to a magnet while aluminum is not a magnetic material and cannot be attracted to a magnet.

Q40a. As the distance between the torch and the matchbox increases, the size of the shadow decreases.

Q40b. Light travels in a straight line.

Q40c. He could move the torch closer to the matchbox.

Q41a. Different metals expand at different rates.

Q41b. Less than 303mm. The rod is thicker and more heat was need to expand.

Q41c. It would crack. The concrete would expand and push against itself and hence crack.

Q42a. As the temperature of the surrounding air increases, the rate of evaporation increases.

Q42b. 1.pm to 3pm. The amount of water left in the container is the least so the rate of evaporation is the highest during this period, thus the wet clothers will dry fastest.

Q43a. The water would gain heat, evaporate into warm water vapour, rise, come into contact with the cooler underside of the metal sheet, lose heat, condense into water droplets, flow down the metal sheet and drop into beaker Y.

Q43b. Some of water in beakers X and Y evaporated into water vapor and rose into the air.

Q43c. Use a stronger flame. Put ice on the metal sheet to cool it.

Q44a. The electric current flew through the iron rod, turning it into and electromagnet and it attracted metal bar A.

Q44b. It would not light up. When the metal bar A moved towards the iron rod, it created an open circuit and electric current could not flow through and light up the bulb.

Q44c.i) It was an electrical conductor

Q44cii) It was a non – magnetic material.

THE END

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