2018

P5 Science

1.	Anglo Chinese School (Junior)	SA1
2.	CHIJ St Nicholas Girls'	SA1
3.	Maha Bodhi School	SA1
4.	Methodist Girls'	SA1
5.	Nan Hua Primary	SA1
6.	Nanyang Primary	SA1
7.	Raffles Girls' Primary	SA1
8.	Rosyth School	SA1
9.	Rulang Primary	SA1
10.	Singapore Chinese Girls'	SA1
11.	Tao Nan School	SA1
12.	Anglo Chinese School	SA2
13.	CHIJ St Nicholas Girls'	SA2
14.	Maha Bodhi School	SA2
15.	Methodist Girls'	SA2
16.	Nan Hua Primary	SA2
17.	Nanyang Primary	SA2
18.	Raffles Girls' Primary	SA2
19.	Rosyth School	SA2
20.	Rulang Primary	SA2
21.	Singapore Chinese Girls'	SA2
22.	Tao Nan School	SA2

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Anglo-Chinese School (Junior)

SEMESTRAL ASSESSMENT 1 (2018)

PRIMARY 5

SCIENCE

BOOKLET A

Friday **11 May 2018** **1 hr 45 min**

Name: _____ ( ) Class: 5.( )

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 28 questions in this booklet.
4 Answer ALL questions.
5 Shade your answers in the Optical Answer Sheet (OAS) provided.

This question paper consists of 19 printed pages (inclusive of cover page).

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Booklet A (56 marks)

For each question from 1 to 28, 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. (28 x 2 marks)

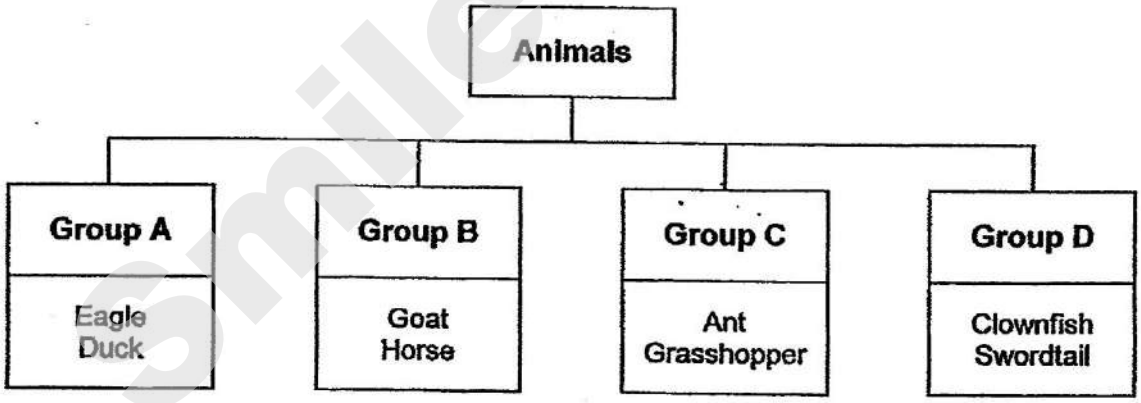
1. Jenny writes down some notes on Organism X.

Organism X
- *It is a micro-organism.*
- *It needs air, food and water.*
- *It can be used to make bread.*

What can Organism X be?

(1) yeast
(2) mould
(3) bacteria
(4) mushroom

2. Chris drew up a classification table as shown below.

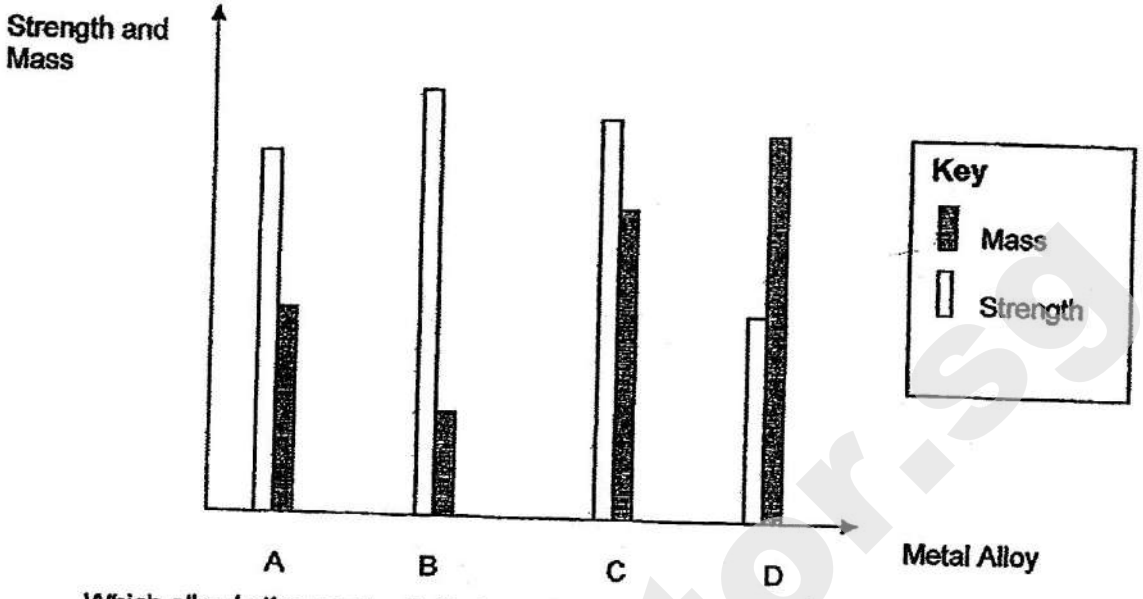


His brother showed him an organism, Animal G. It has 3 body parts and 3 pairs of legs. Which group does Animal G belong to?

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

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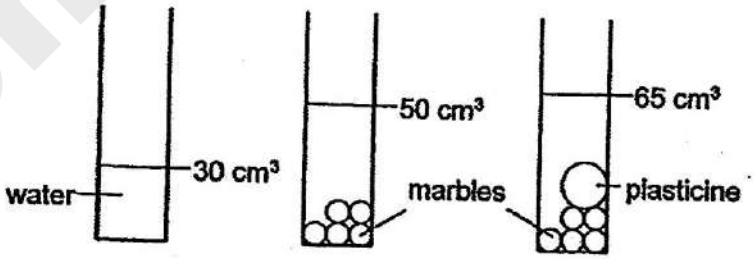
3. Metal alloys are mixtures of two or more metals. The graph below compares the strength and the mass of some metal alloys.



Which alloy is the most suitable to make a spectacle frame which is both strong and has the least mass?

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

4. Liming filled a measuring cylinder with 30 cm^3 of water at first. He placed 5 identical marbles into the measuring cylinder and the water level rose to the 50 cm^3 mark. Then he placed a big ball of plasticine into the beaker and the water level rose to 65 cm^3.



Which of the following can Liming conclude from his investigation?

(1) The volume of the water increased to 65cm^3.
(2) The combined volume of the solids is 65cm^3.
(3) The volume of the liquid is less than the combined volume of the solids.
(4) The volume of the liquid is more than the combined volume of the solids.

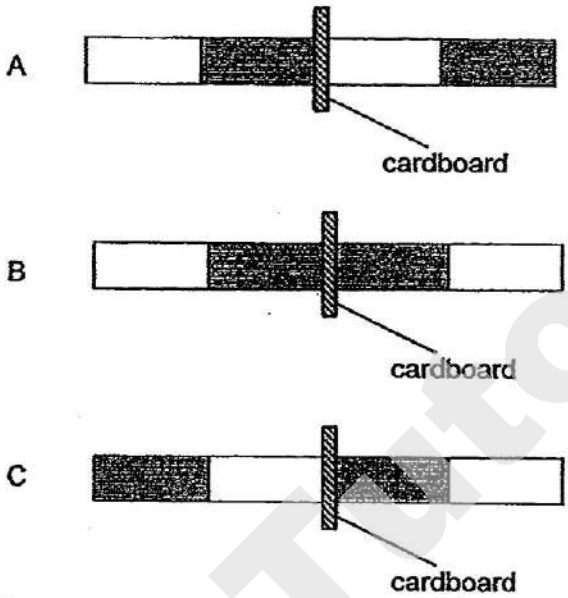
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5. Anwar was given 2 identical magnets. The diagram below shows one of them.

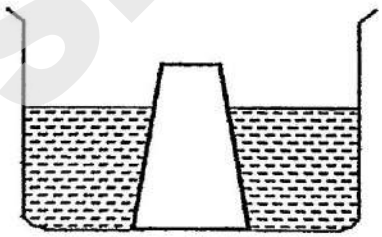


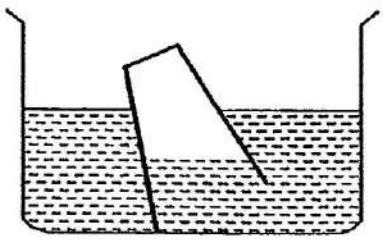
He used a cardboard and arranged it between each magnet. Which of the following arrangements is possible?



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

6. In diagram X, water is unable to enter the glass. When the glass is tilted in diagram Y, water rushes into the glass, filling part of the glass.


Diagram X

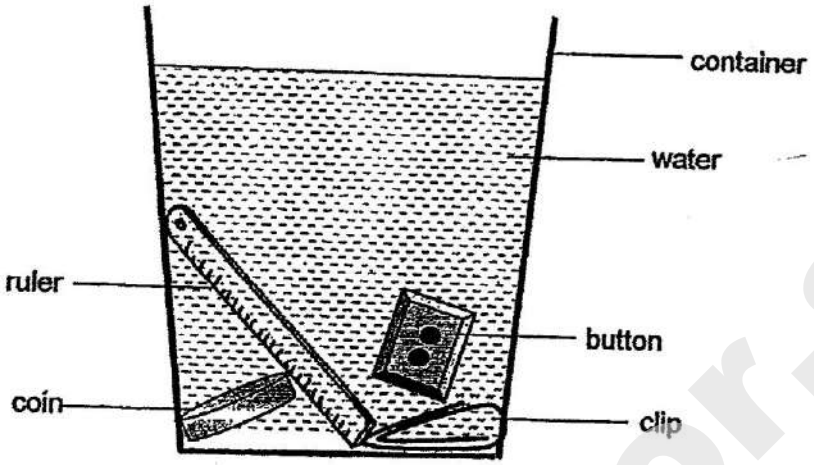

Diagram Y

What does this experiment show?

(1) Air has mass.
(2) Air is colourless.
(3) Air occupies space.
(4) Air can be compressed.

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7. Larry was told that a magnet could be used to remove objects from a container of water without touching the water. He tried it and observed that the magnet could only attract the ruler. He could not do so with the other objects.



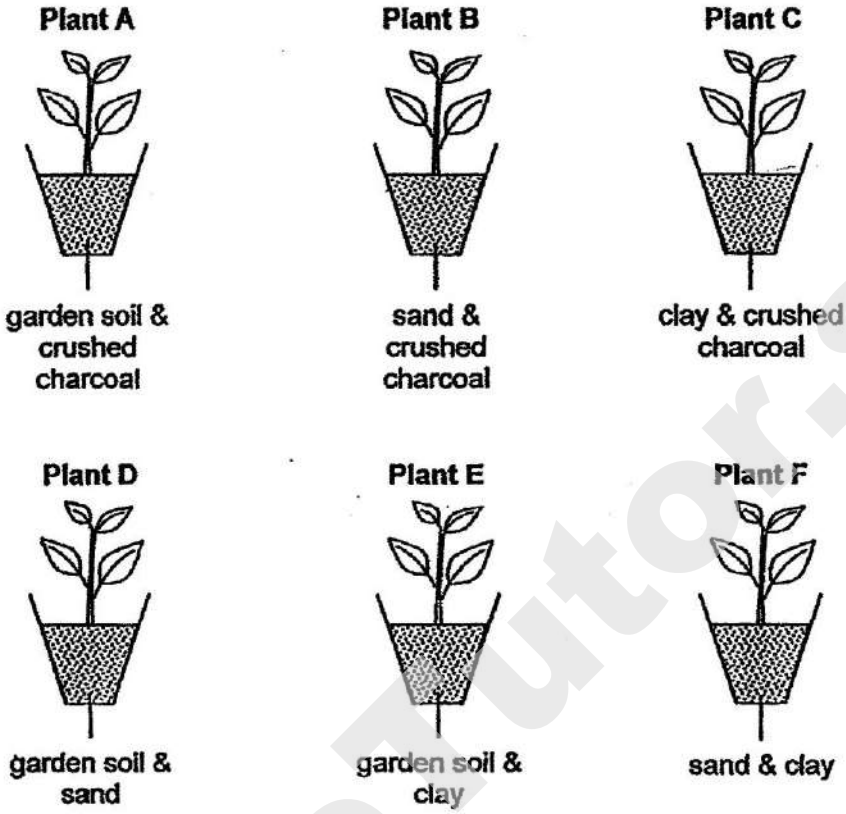
Which of the following show correctly the material that each object is made of?

	coin	ruler	clip	button
(1)	aluminium	steel	plastic	iron
(2)	steel	wood	aluminium	plastic
(3)	plastic	iron	steel	wood
(4)	copper	steel	wood	aluminium

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8. Farmer Lim grew 6 similar balsam plants using a combination of clay, sand, garden soil and crushed charcoal.



He watered the plants daily with equal amounts of water, observed their growth over 3 weeks and recorded his observations in the table below.

	Plant					
	A	B	C	D	E	F
Number of leaves at the start of the 3-week period	4	4	4	4	4	4
Number of leaves at the end of the 3-week period	15	10	9	5	7	6

Based on his observations, he can conclude that the addition of _____ will result in the fastest rate of growth of leaves in a balsam plant.

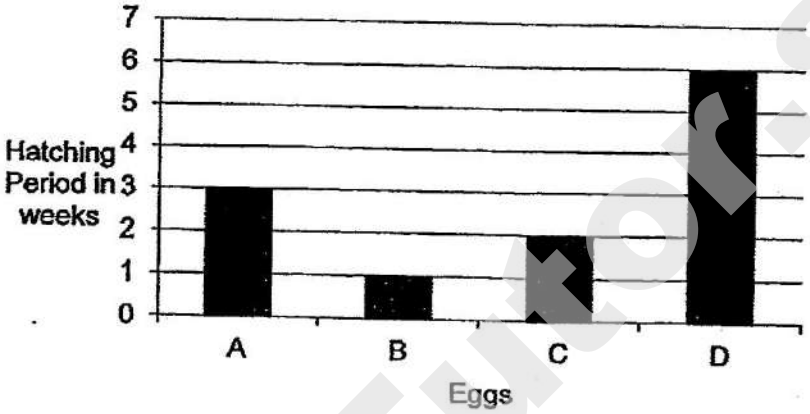
(1) clay
(2) sand
(3) garden soil
(4) crushed charcoal

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9. Molly observed the development of 4 freshly laid eggs (A, B, C and D) from 4 different animals and recorded her observations.

Observations
• The first to hatch was the egg of the grasshopper. • The last to hatch was the egg of the tortoise. • The egg of the lizard hatched before the egg of the chicken.

She then recorded the time taken for the eggs to hatch into their young in the graph below.



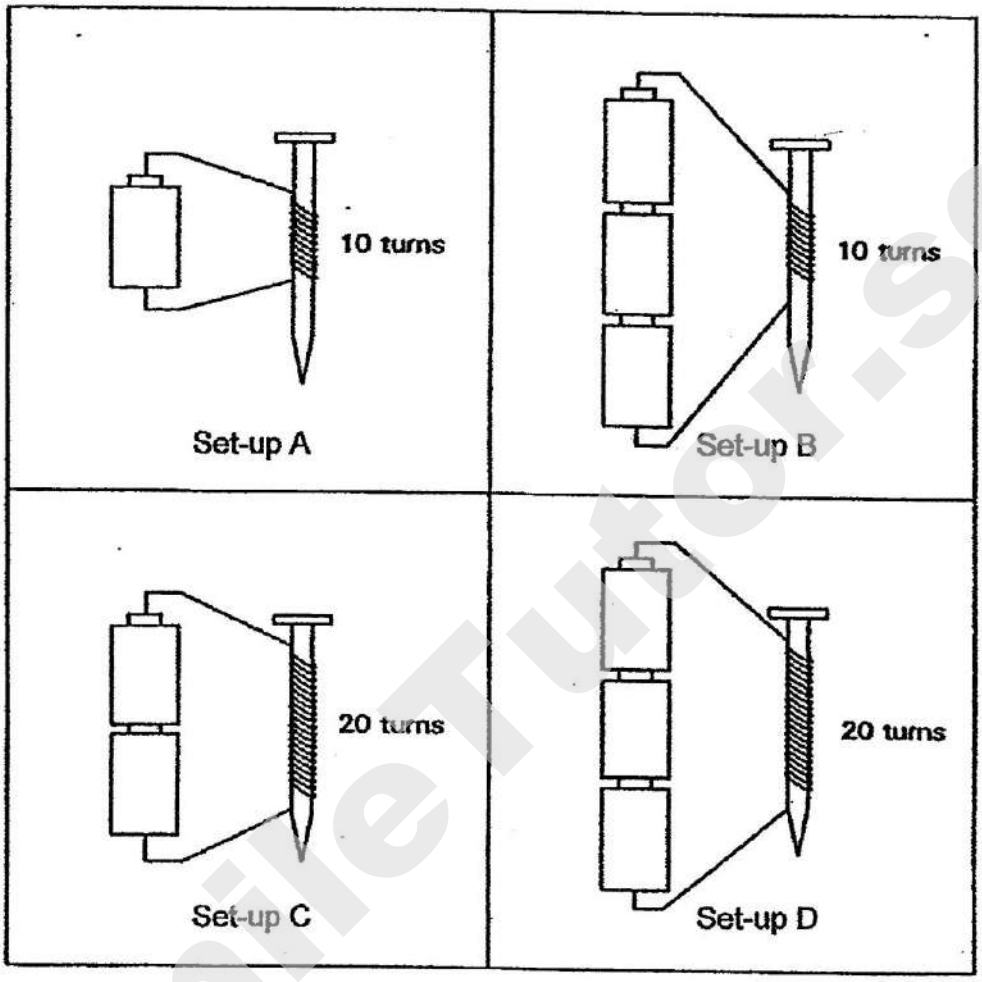
Which of the eggs hatched into a chick?

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

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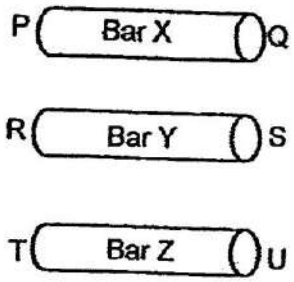
10. Lisa wants to find out if the number of turns of wire coiled around an iron nail affects the strength of an electromagnet. Which set-ups should she use to conduct a fair test?

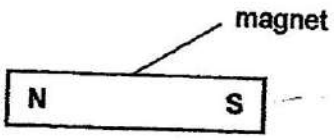


(1) A and B
(2) B and D
(3) C and B
(4) D and A

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11. Ali carried out an experiment with three bars (Bar X, Bar Y and Bar Z).He observed what happened when the ends of the bars, PQ, RS and TU were brought near to the pole of a magnet. He recorded his observations in the table below.





	Observation
P	attracted by the magnet
Q	attracted by the magnet
R	nothing happens
S	nothing happens
T	repelled by the magnet
U	attracted by the magnet

What can he conclude from his observations?

(1) Bar X is a magnet

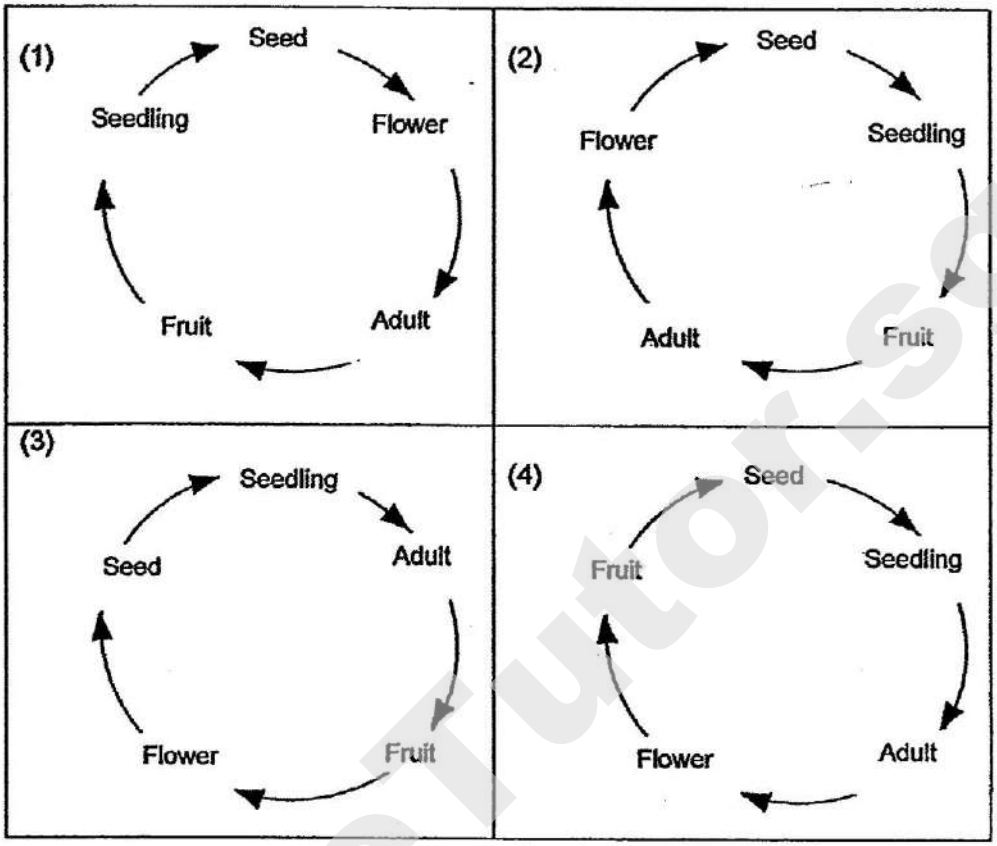
(2) Bar Z is a magnet

(3) Bar Y is made of magnetic material

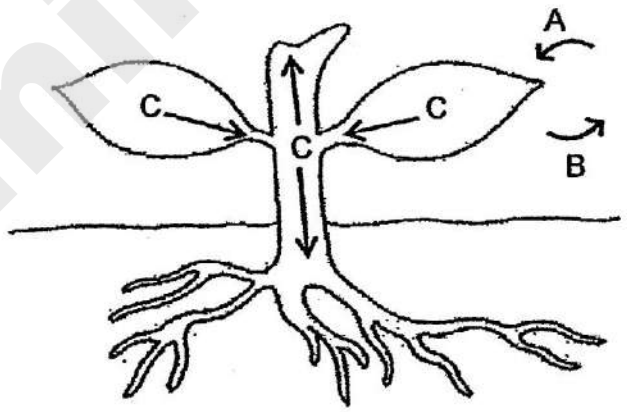
(4) Bar Z is made of non-magnetic material

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12. Which one of the following shows the correct order in the development of a string bean plant?



13. Study the diagram of a part of a plant below.

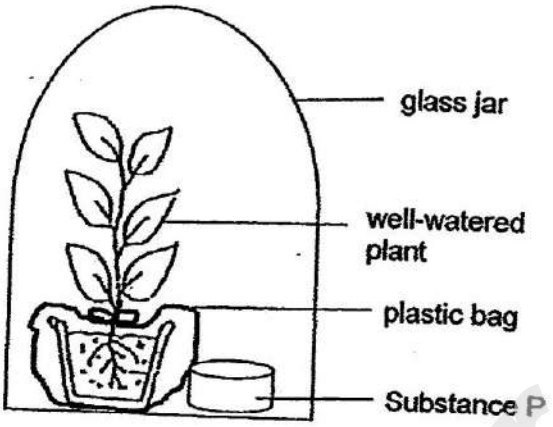


Arrows A, B and C represent the movement of substances during photosynthesis. Which of the following correctly represents A, B and C?

	A	B	C
(1)	oxygen	carbon dioxide	sugar
(2)	oxygen	carbon dioxide	water
(3)	carbon dioxide	oxygen	sugar
(4)	carbon dioxide	oxygen	water

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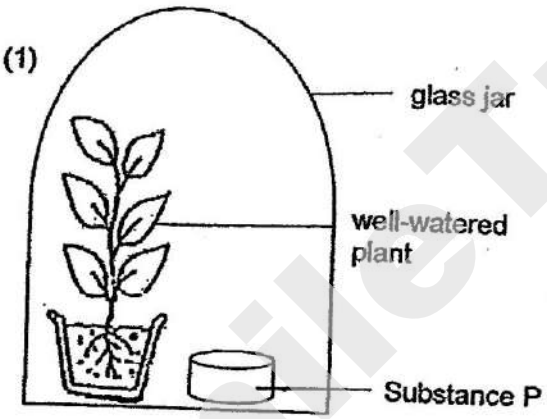
14. Jane wanted to prove to her friend that plants give out carbon dioxide. She prepared the set-up below and left it in a dark room for two days. Substance P is colourless and turns cloudy when it comes into contact with carbon dioxide.



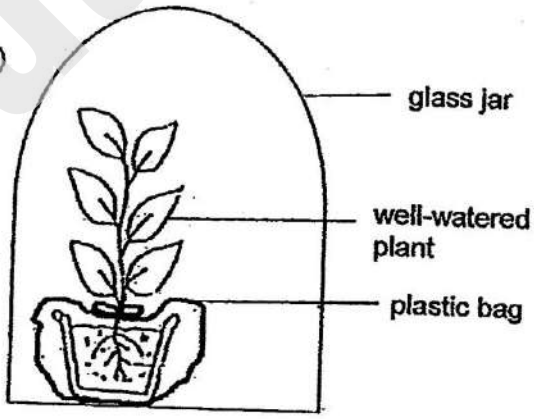
Her teacher told her that she needs a control set-up for her experiment.

Which one of the following set-ups should be her control set-up?

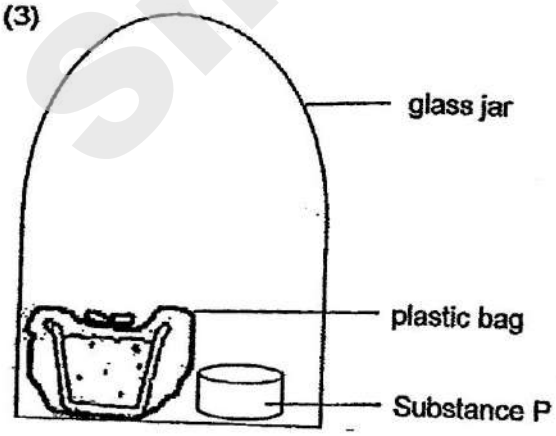
(1)



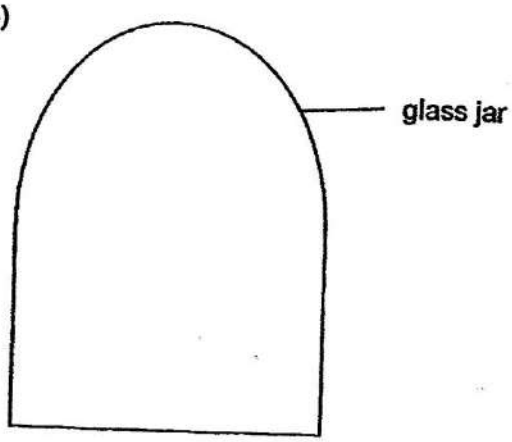
(2)



(3)

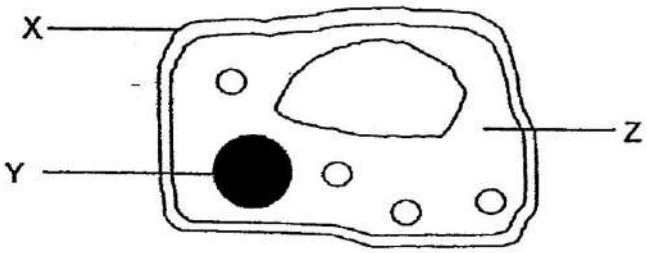


(4)



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15. Alan was asked to study the diagram of a cell as shown below. He then described the cell and its parts.



Which two of his statements are true?

A The cell is a plant cell.
B Y controls all activities in the cell.
C Z supports the cell and gives it a fixed shape.
D X allows only some substances to move in and out of the cell.

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

16. The diagram below shows part of a fish.



Which one of the following statements is **false** about X?

(1) It is protected with a cover.
(2) It has a rich supply of blood vessels.
(3) It allows water containing dissolved oxygen to pass through it.
(4) It does not allow dissolved carbon dioxide to be released into the water.

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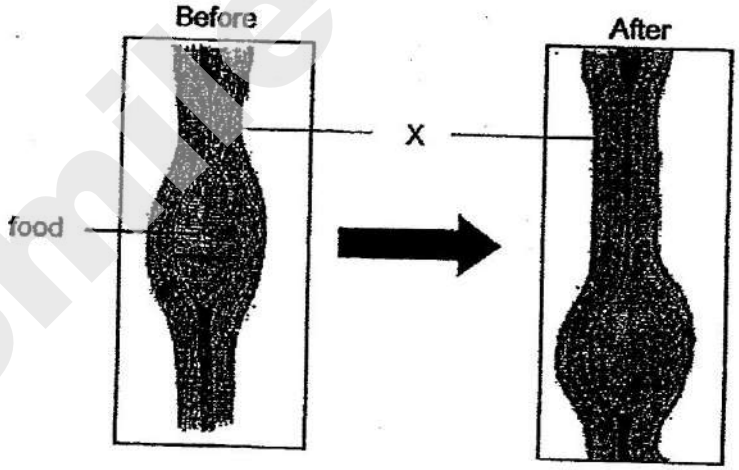
17. Mark was told to compare the similarities of the plant transport system and human circulatory system. He made the following statements.

	Plant transport system	Human circulatory system
A	The plant transport system can be found in the roots, stem, leaves, flowers and fruits.	The circulatory system extends from the heart to all parts of the body.
B	Oxygen is taken in through the chloroplasts.	The circulatory system is made up of the heart, blood vessels and blood.
C	Water is transported from the roots to the other parts of the plant by the water-carrying tubes.	Digested food and water are absorbed into the bloodstream to be transported to all parts of the body.
D	Sugar is transported from the fruits to the other parts of the plant by the food-carrying tubes.	Blood vessels transport only air to all parts of the body.

Which of his two statements are true?

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

18. The diagrams below show food moving down part X of the human body.



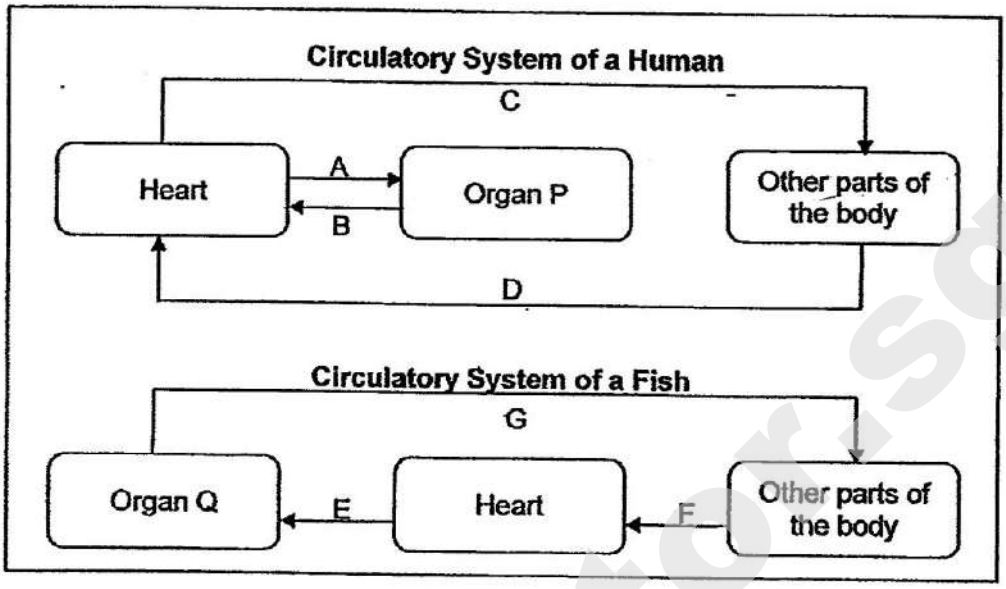
When you eat, the food in your mouth will move down the tube as shown above. What is part X and which body system does it belong to?

	Part X	Body system
(1)	gullet	respiratory system
(2)	windpipe	respiratory system
(3)	gullet	digestive system
(4)	large intestine	digestive system

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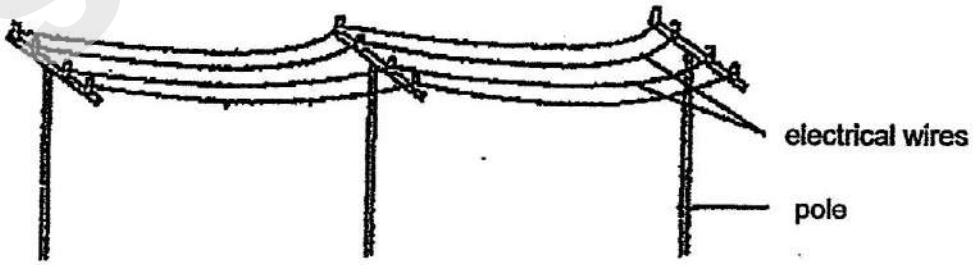
19. The diagrams below show the circulatory system of a human and a fish. The arrows represent the blood vessels in a human and a fish.



Which of the following correctly compares the differences between the circulatory system in a human and a fish?

	Circulatory System of a Human	Circulatory System of a Fish
(1)	The blood flows in a single loop.	The blood flows in a double loop.
(2)	Blood vessels carry blood rich in oxygen from the heart to other parts of the body.	Blood vessels carry blood rich in oxygen from other parts of the body back to the heart.
(3)	Organ P absorbs dissolved oxygen.	Organ Q absorbs oxygen from the surrounding air.
(4)	Organ P absorbs oxygen.	Organ Q absorbs dissolved oxygen.

20. Bob saw some electrical wires hung loosely on poles above the ground as shown in the diagram below.



The electrical wires were hung loosely to allow space for them to _____.

(1) expand on hot days

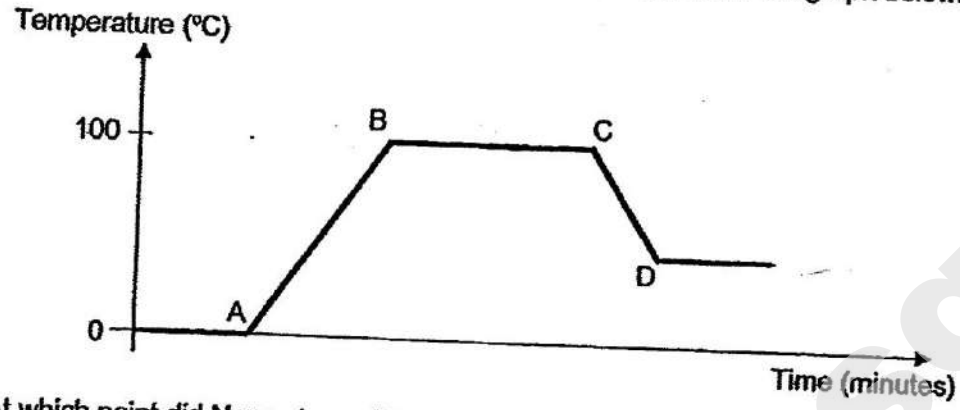
(2) contract on hot days

(3) expand on cold nights.

(4) contract on cold nights.

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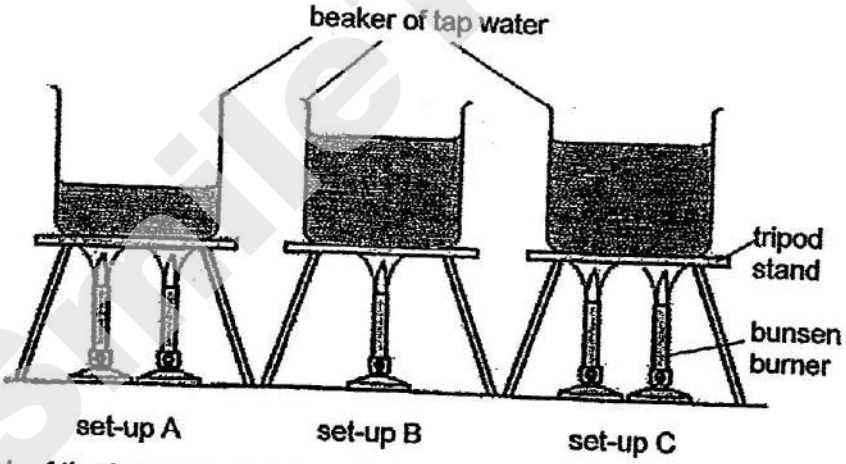
21. Nancy heated a beaker of ice for some time before turning off the heat. The changes in the temperature of the contents in the beaker are shown in the graph below.



At which point did Nancy turn off the heat?

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

22. Mrs Lim set up the experiment as shown below. She used tap water and lighted the bunsen burners at the same time and with the same amount of heat given off per second by each bunsen burner.

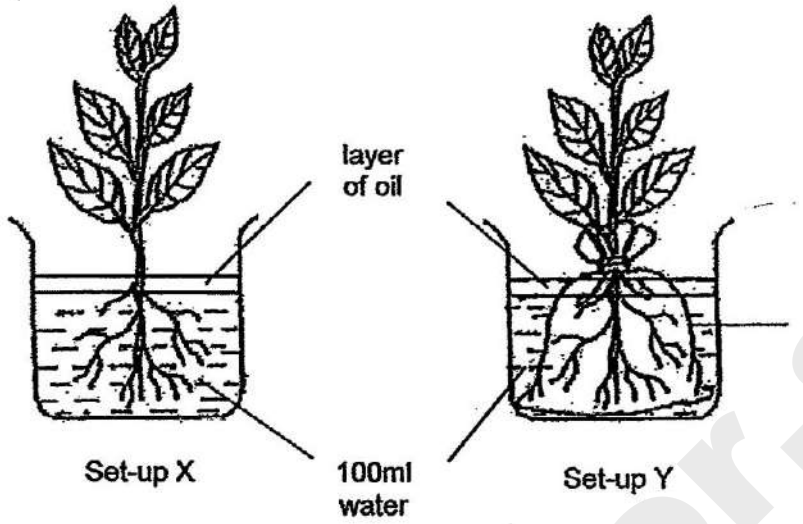


Which of the following explains which water in the set-ups would start to boil first?

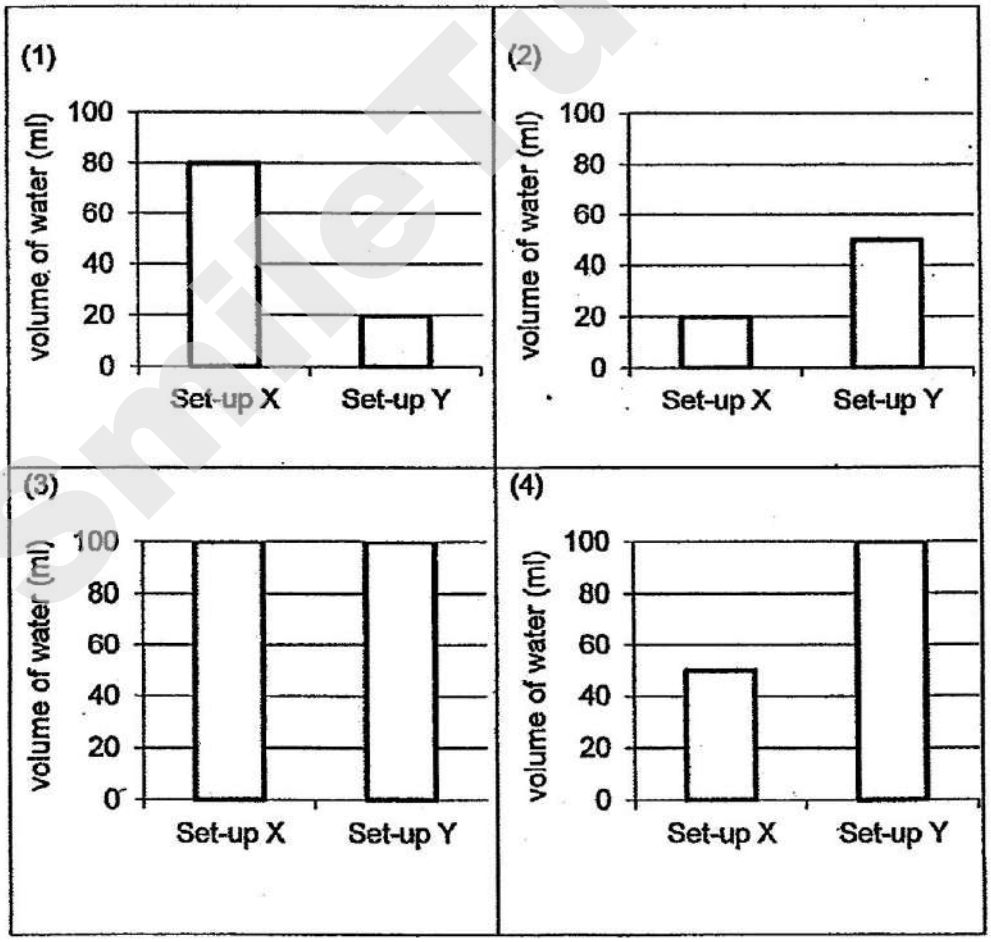
	Set-up	Explanation
(1)	A	It gained heat the slowest as it had two heat sources and less water
(2)	A	It gained heat the fastest as it had two heat sources and less water
(3)	B	It gained heat the fastest as it had one heat source and more water.
(4)	C	It gained heat the fastest as it had two heat sources and more water

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23. Jamie sets up an experiment as shown below. He wrapped the roots of the plant in set-up Y with a transparent plastic bag.

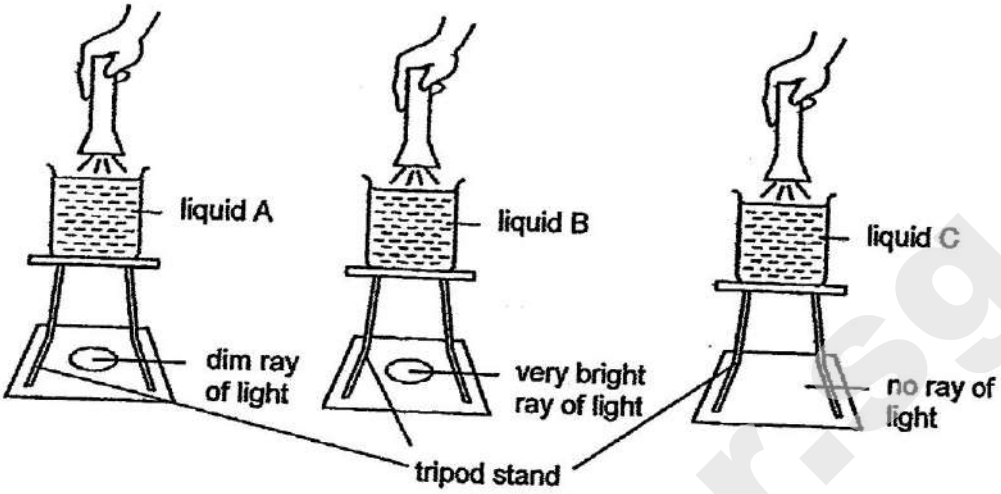


He left the set-ups in the school field for 5 days.
Which graph below shows the amount of water left in each beaker after 5 days?



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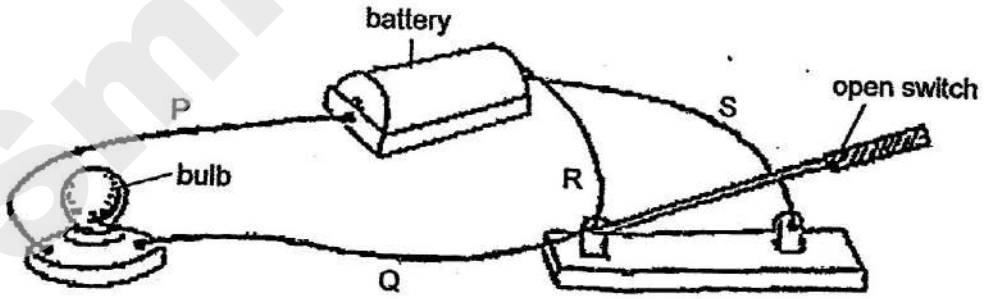
24. Charlie placed 200 ml of different liquids, A, B and C, in three identical beakers. He then placed each beaker on identical tripod stands and shined the same torch through each of them as shown below.



Based on the above observations, which of the following could liquids A, B and C most likely be?

	A	B	C
(1)	Milo	Water	Oil
(2)	Oil	Water	Milo
(3)	Oil	Milo	Water
(4)	Water	Oil	Milo

25. While experimenting with the electric circuit shown below, Alex discovered that the bulb lighted up even when the switch was open.

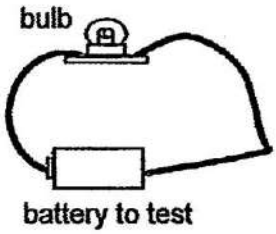


Which wire (P, Q, R or S) should Alex remove from the circuit if he wants to use the switch to control the bulb?

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

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26. Kenneth wanted to find out which of his 4 batteries, P, Q, R or S, could last the longest. He used the circuit shown below to test the batteries and recorded the duration of time the bulb was lit.

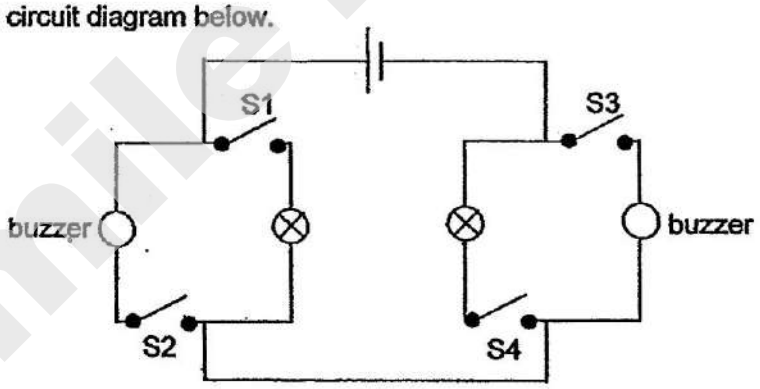


Which of the following should he do to ensure that his experiment is a fair test?

A Only new batteries should be used.
B Each circuit should have different number of bulbs.
C Each bulb must be lit for the same amount of time.
D Only one battery should be connected to the test circuit at each time.

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

27. Study the circuit diagram below.



Which combination of switches when closed allows only one bulb to light up and only one buzzer to sound?

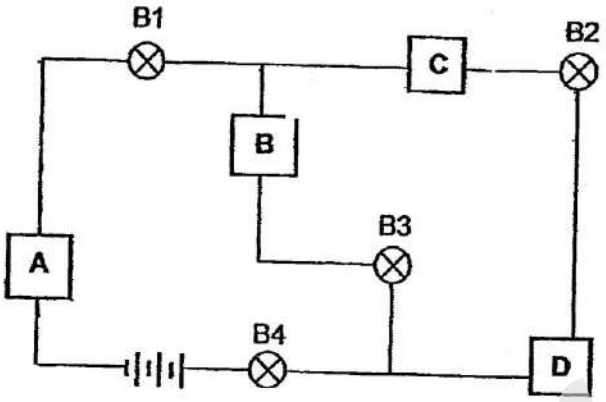
A S1 and S2
B S1 and S3
C S2 and S3
D S2 and S4

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

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28. Henry set up an electrical circuit. He used 4 objects (M1, M2, M3 and M4) made of different materials which can be placed at positions A, B, C and D in the circuit.



He conducted a test and recorded his findings.

Position	A	B	C	D	Bulb(s) that lighted up
Object	M4	M1	M2	M3	B1, B2 and B4

He then rearranged the positions of the objects and this time none of the bulbs lit up.
Which of the following shows this arrangement of the objects?

	A	B	C	D
(1)	M1	M3	M4	M2
(2)	M2	M1	M3	M4
(3)	M3	M2	M1	M4
(4)	M4	M3	M2	M1

End of Booklet A

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Anglo-Chinese School (Junior)

SEMESTRAL ASSESSMENT 1 (2018)

PRIMARY 5

SCIENCE

BOOKLET B

Friday **11 May 2018** **1 hr 45 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 13 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	56	
B	44	
Total	100	

This question paper consists of 17 printed pages (inclusive of cover page).

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Booklet B (44 marks)

For questions 29 to 41, write your answers in this booklet.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

29. Terry was given 9 cards as shown below.


A

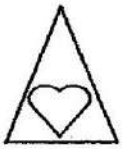

B


C


D


E

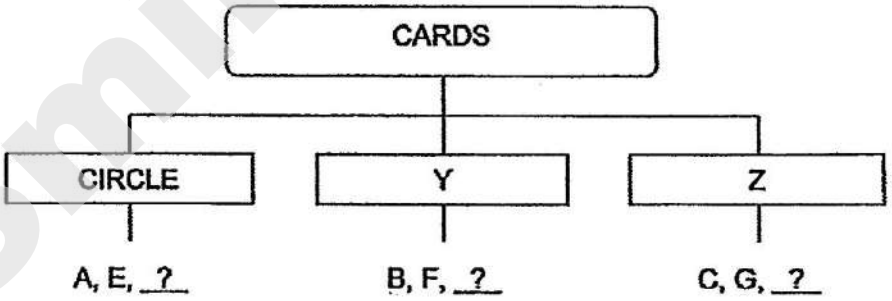

F


G


H


I

He classified them according to some characteristics in the chart below.



(a) Suggest a suitable sub heading for Y. [1]

(b) Which card can be placed in the same group as cards A and E? [1]

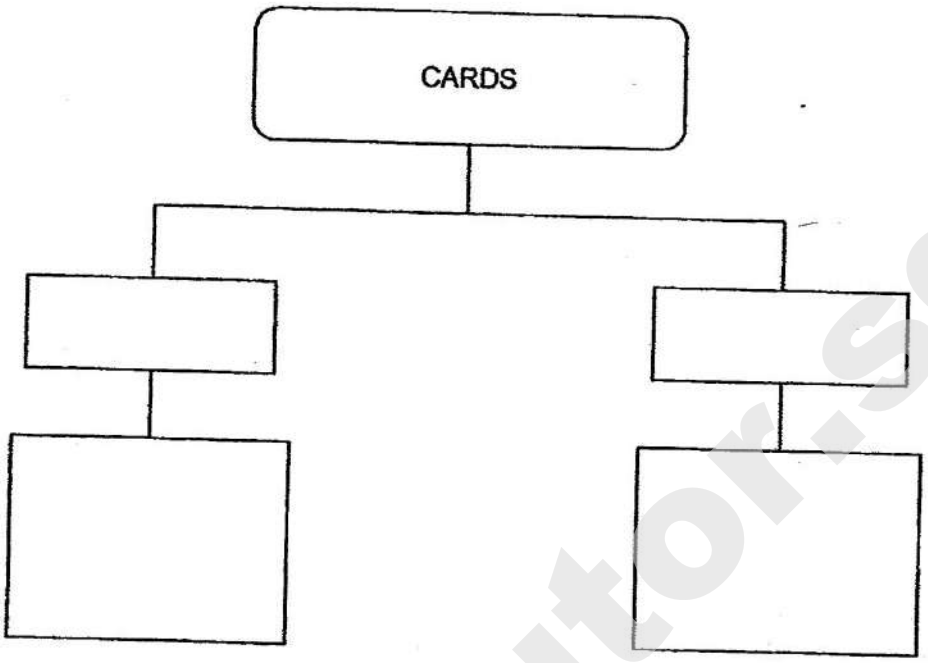
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SCORE	2

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(c) Reclassify all of the cards into 2 groups. Write suitable sub headings and letters in the chart below. (Do not compare size.) [2]



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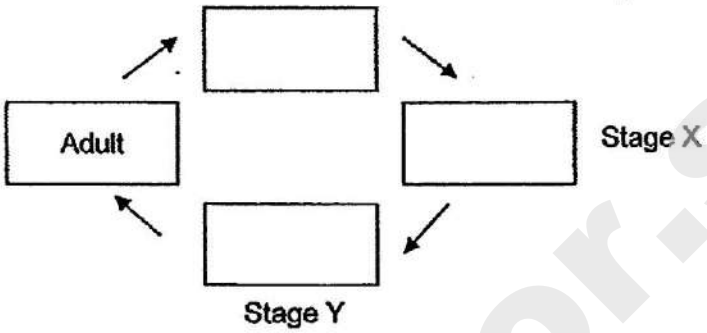
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SCORE	2

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30. Vivian put 5 mealworms in a beaker. She ensured that the mealworms had enough food, water and air. A month later, she found that there were only 2 mealworms left. However, she found 7 moulted empty shells.

(a) Complete the life cycle of the mealworm by writing the correct stages in the boxes below. [1]



(b) State a difference between Stage X and Stage Y. [1]

_____

_____

(c) Suggest an explanation for the 7 moulted empty shells. [1]

_____

_____

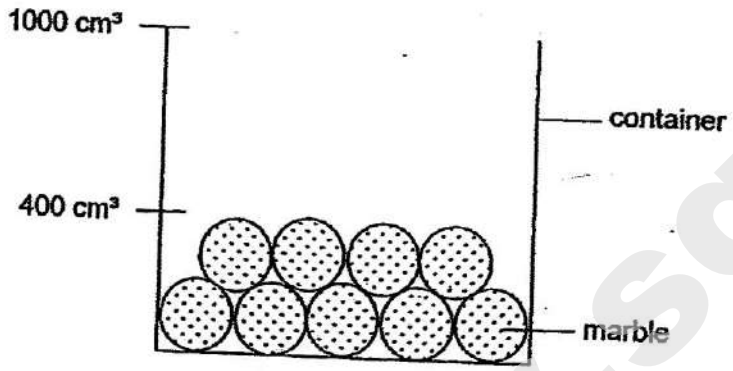
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SCORE	3

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31. Renny had an empty container with a capacity of 1000 cm³. He placed some marbles into the container until the marbles reached the 400 cm³ mark as shown in the diagram below.



Renny poured water into the container until the container became full.

(a) How much water did he use? Tick the correct answer. [1]

- Exactly 600 ml ( )
- Less than 600 ml ( )
- More than 600ml ( )

(b) What property of matter allowed that amount of water in (a) to fill up the container? [1]

_____

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

_____

_____

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SCORE	
	3

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32. Three ring magnets stayed apart when they were arranged on top of one another.

Diagram 1

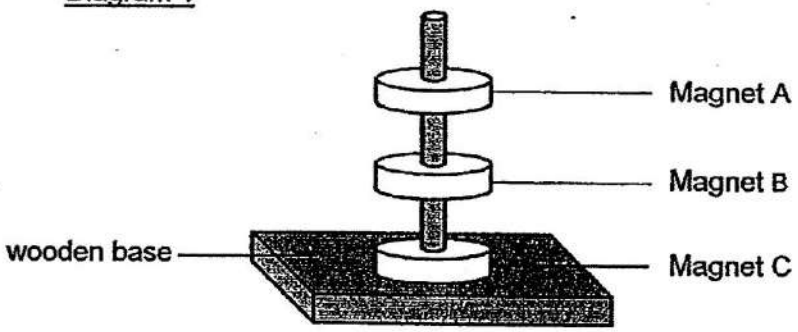
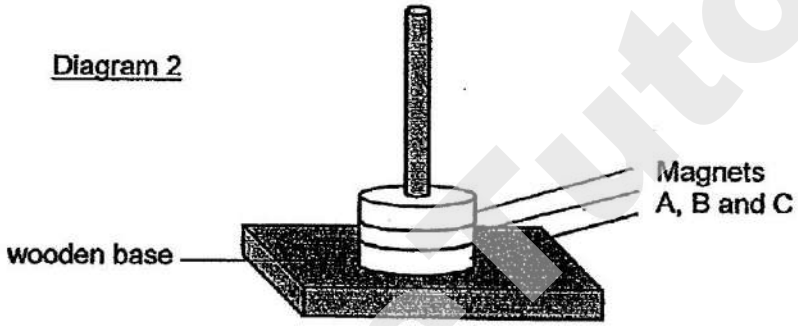


Diagram 2



(a) Explain why the magnets in Diagram 1 were not touching one another. [2]

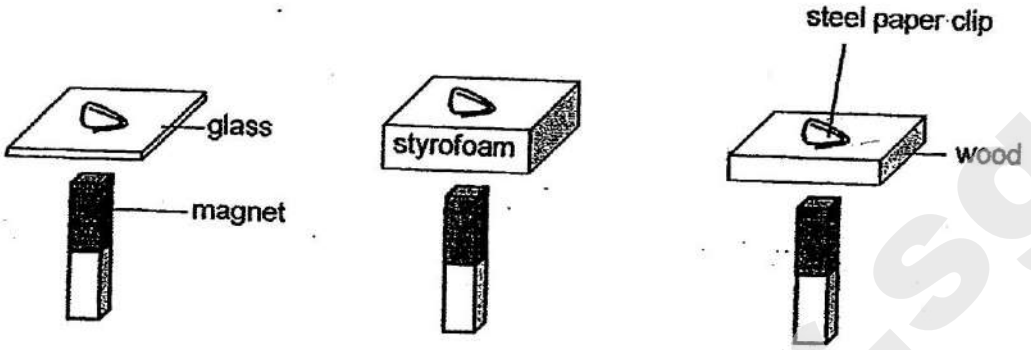
(b) Without demagnetizing the ring magnets, what must be done to the arrangement such that each magnet is touching one another to achieve Diagram 2? [1]

(Go on to the next page)

SCORE	/ 3

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33. Nancy arranged the set-up below to investigate the properties of a magnet. A steel paper clip was placed on each material and a magnet was placed under each material. She moved the magnet under each material and observed the steel paper clip.



(a) The set-up shown is not a fair test. What should Nancy do to make it a fair test?

[1]

(b) What will she observe if she conducts a fair test?

[1]

(c) What is the aim of the investigation?

[1]

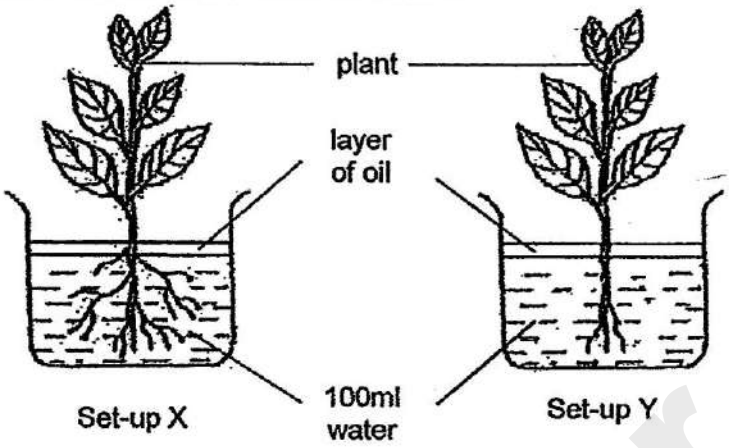
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SCORE / 3

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34. Susan wanted to find out if the number of leaves affects the amount of water loss by the plant. She sets up the experiment as shown below and left the set-ups in her garden and observed the water level for a week.



(a) State the functions of the leaves and the roots of a plant. [1]

Leaves: _____

Roots: _____

Susan's teacher told her that her experiment is a fair test but she would not be able to correctly conclude the outcomes of the aim of her experiment.

(b) Explain why Susan's experiment is a fair test. [1]

_____

_____

(c) What change(s) should Susan make to her experiment so as to reach a conclusion to the aim of her experiment? [1]

_____

_____

(d) After making the changes, predict the outcome of her experiment. [1]

_____

_____

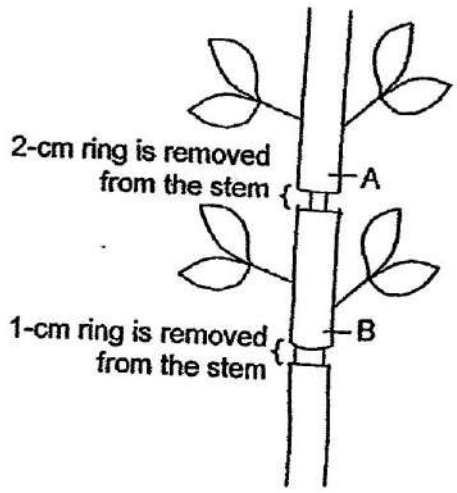
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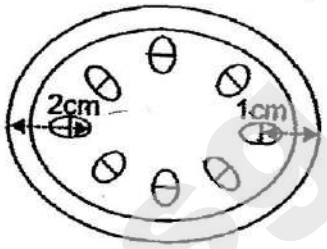
SCORE	/ 4

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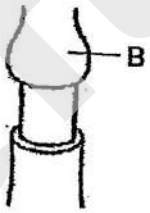
35. Ali removed part of the stem as shown in the diagram below and watered the plant with red-coloured water.





cross-section of the stem

After one day, he observed that only the leaves between part A and B of the stem had turned red. The diagram below shows his observation of part B after a few days.



(a) He noticed a bulge at part B. Explain his observation clearly. [2]

(b) Ali observed that the leaves above part A of the stem died after two days. Explain this observation clearly. [1]

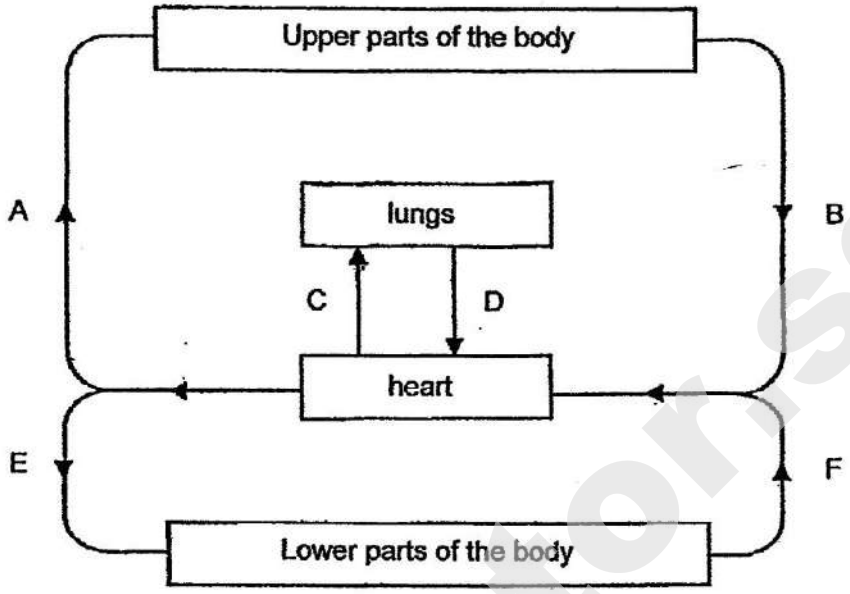
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SCORE	3

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36. The diagram below shows how blood travels in the human body.
A, B, C, D, E and F represent blood vessels.



(a) The lungs are part of the human respiratory system. Name two other main parts of the human respiratory system. [1]

_____

(b) State the function of the heart in the human body. [1]

_____

_____

(c) Compare the oxygen content in the blood in A with that in the blood in F. Explain why. [2]

_____

_____

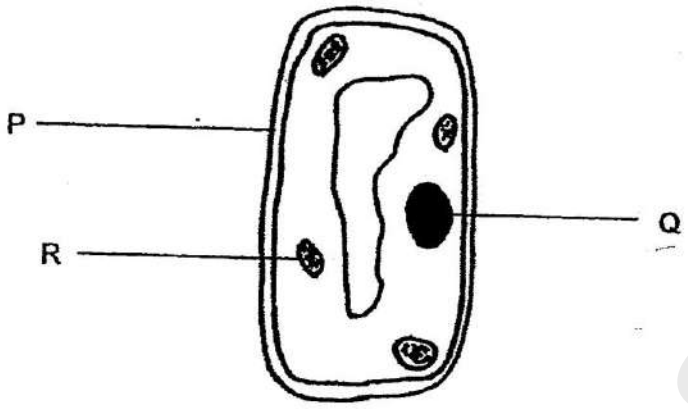
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SCORE	/ 4

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37. The diagram below shows a plant cell.



(a) Which part, P, Q or R, can be found in both animal and plant cells? Name the part. [1]

_____

(b)(i) Name Part R. [1]

_____

(ii) What is found in Part R? State its function. [1]

_____

_____

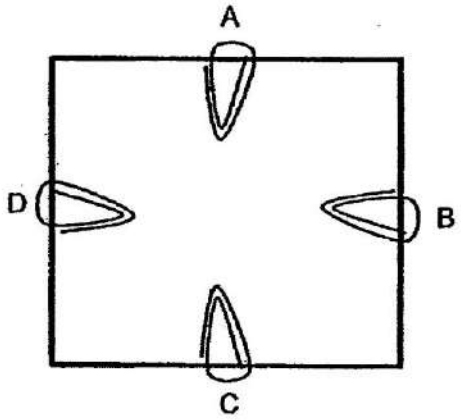
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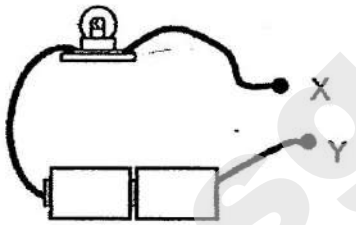
SCORE	
	3

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38. The diagrams below show a circuit card and a circuit tester. Colby wanted to find out the connection pattern of the wires in the circuit card, so he connected the contact points, X and Y, to two paper clips of different combinations at a time.



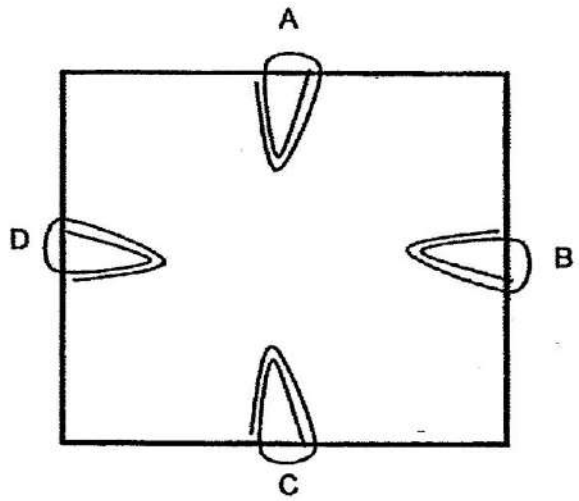


circuit tester

He recorded the results in the table below.

X	Y	Bulb of circuit tester
A	B	Did not light up
A	C	Lit up
A	D	Lit up
B	C	Did not light up
C	D	Lit up

(a) Based on the results, draw **two** lines in the diagram below to show how the wires in the circuit card are connected. [1]



(Go on to the next page)

SCORE	
	1

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(b) How will removing 1 battery from the circuit tester affect the bulb when it is lit? [1]

_____

_____

(c) Colby wrapped all the paper clips with sticky tape and conducted the experiment again without making any other changes to the setup. The bulb did not light up for any of the connection combinations. Explain why. [1]

_____

_____

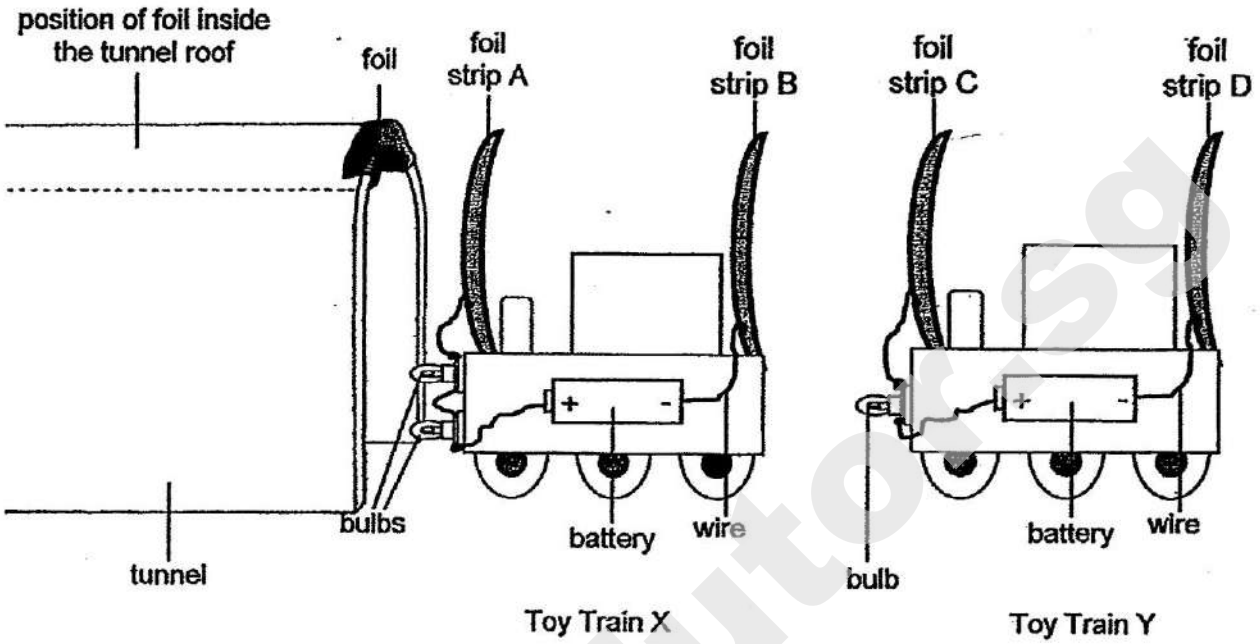
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(Go on to the next page)

SCORE	/ 2

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39. Peter has two toy trains as shown in the diagram below. He wants the bulb(s) to light up when his toy trains are pushed through a tunnel. He puts a strip of foil inside the tunnel roof. He used identical batteries for his toy trains.



The foil strips, A and B on toy train X, and C and D on toy train Y, act like switches. When both foil strips, A and B or C and D, touch the foil inside the tunnel roof, the bulb(s) light(s) up.

(a) Peter noticed that although toy train X has 2 bulbs and toy train Y has 1 bulb, the bulb of toy train Y shines more brightly when both toy trains are in the tunnel. Explain his observation. [1]

_____

_____

(b) State one property of the foil which makes it suitable to be used as a switch. [1]

_____

(c) When only foil strip A on toy train X is touching the foil in the tunnel, the bulbs do not light up. Explain why. [1]

_____

_____

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SCORE	/ 3

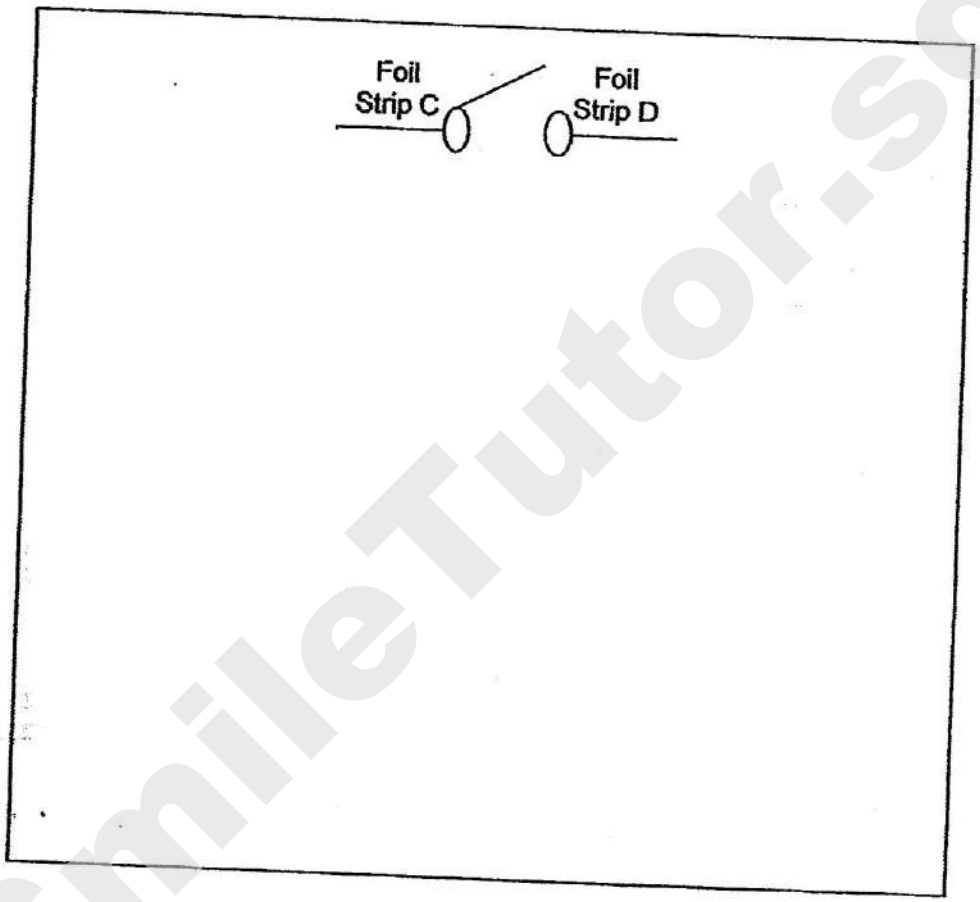
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(d) Peter wants to make improvements to his circuit in toy train Y to include the following points:

1. A brighter light when his train enters the tunnel.
2. A back-up bulb to remain lit in case 1 bulb fuses.

Given one more bulb, one more battery and wires, complete the circuit diagram to show the improved circuit on Peter's toy train Y. [1]



(e) Compare the brightness of the bulbs in your circuit in part (d) with those in toy train X. Which bulbs would be brighter? Explain your answer. [1]

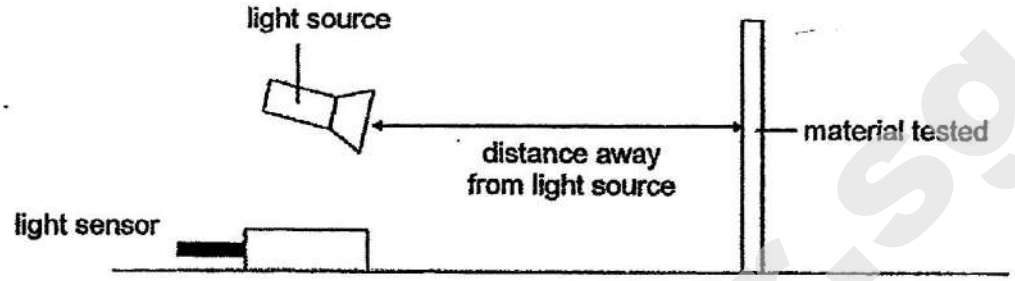
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SCORE 2

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40. Endy conducted an experiment to find out how the amount of light reflected by three materials, A, B and C is affected by the distance the materials are away from the light source. He set up his experiment as shown in the diagram below.



He placed the materials at different distances from the light source and used a light sensor to determine the amount of light that was reflected.
He recorded the results in the table below.

Distance away from light source (cm)	Amount of light reflected (unit)		
	A	B	C
50	100	50	300
30	300	100	600
10	600	300	800

(a) Based on his results, what is the relationship between the distance the material is away from the light source and the amount of light that was reflected? [1]

(b) Explain why Endy should conduct his experiment in a completely dark room to ensure a fair test. [1]

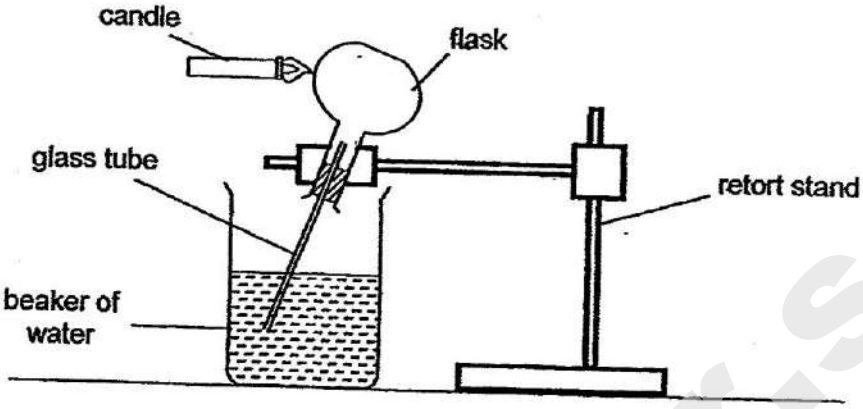
(c) Which material would be most suitable for making safety vests for motorists who travel at night? Explain your answer based on the results of his experiment. [1]

(Go on to the next page)

SCORE	/ 3

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41. Jack set up an experiment as shown in the diagram below. The flask was heated using a lit candle.



(a) After a short while, Jack observed bubbles coming out of the glass tube. Explain his observation. [1]

(b) What can Jack do if he wants to observe more bubbles coming out of the glass tube in the same amount of time? [1]

(c) When Jack stopped heating the flask, he observed that some of the water from the beaker moved up into the glass tube. Explain his observation. [1]

End of Paper

SCORE	
	3

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SCHOOL : ANGLO-CHINESE SCHOOL (JUNIOR)
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA1

CONTACT :

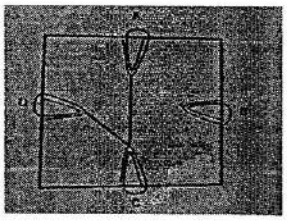
SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	3	2	3	3	3	4	4	1	2
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	4	3	3	1	4	2	3	4	4
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
3	2	4	2	3	1	2	1		

SECTION B

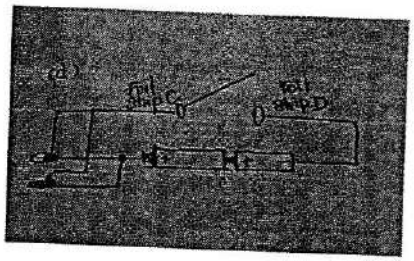
Q29)	a) Rectangle b) Card H c) Figures with hearts: A,B,G,I Figures without hearts: C,D,E,F,H
Q30)	a) Egg → larva → pupa → Adult b) Stage X moves around but stage Y does not. c) The 3 mealworms that were not mealworms anymore had moulted several times.
Q31)	a) More than 600ml b) Marbles occupy space. c) Water pushed the air out and took the space.
Q32)	a) Like poles of the magnets are facing each other, hence they will repel. b) Ensure that the poles of magnet are reversed. / Flip over Magnet B.

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Q33)	a) She should make the thickness of the materials the same. b) The steel paper clips can be moved about by the magnet. c) To see which one of the materials allow magnetism to pass through it.
Q34)	a) Leaves: to make food Roots: to absorb water b) There is only one variable change which is the number of roots. c) She should use a plant with the same number of roots and remove some leaves from one of the set-ups. d) Set-up X would have lesser water left.
Q35)	a) The phloem below part B has been removed so food made in the leaves between A and B could not be transported beyond point B. b) A died as the water-carrying tube was missing. Thus, no water was able to be transported to the leaves above part A.
Q36)	a) Nose and windpipe. b) The heart helps to pump blood to the lungs and all other parts of the body. c) Blood in A is richer in oxygen than blood in F. The lungs give blood rich in oxygen which is then pumped to A while the heart has to pump blood to the lower parts of the body than to F.
Q37)	a) Q b) Chloroplast c) Chlorophyll is found inside R which helps photosynthesis and make food for the plant.
Q38)	a)  b) The bulb will be dimmer. c) The sticky tape is an insulator of electricity, hence it prevents any electric current to flow through it resulting in the lamp not being able to light up.

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Q39)	a) One battery source is being shared with two light bulbs in X while only one bulb is being used in Y, hence more electric power is supplied to the bulb in Y and thus the bulb in Y is brighter. b) Flexible c) It is an open circuit. d)  e) Part (d) bulbs will be brighter as there is an additional battery and the batteries are arrange in series.
Q40)	a) The further away the light source, the less light material reflects. b) So that the light sensor captures only light from the light source and not from outside the room. c) C as it reflects the most light since the light sensor captured the most light reflected with the greatest distance away from the light source. Thus would be able to see the motorists from far.
Q41)	a) The flask gained heat and caused the air in the flask to gain heat and expand. Since air occupies space, the expanded hot air pushes out through the glass tube, causing bubbles to be seen. b) He could put 2 candle instead of one next to the flask. c) When Jack stopped heating the flask, the air in the flask began to lose heat and contract so it occupies lesser space. Since water is liquid and liquid occupies space and does not have a definite shape, it will move up to take the shape of the container.

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8

Name : _____ ( )

Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 5

Semestral Assessment 1

SCIENCE

BOOKLET A

10 May 2018

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

28 questions
56 marks

Do not open this booklet until you are told to do so.
Follow all instructions carefully.

This paper consists of 17 printed pages.

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Section A (28 x 2 marks = 56 marks)

For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.**

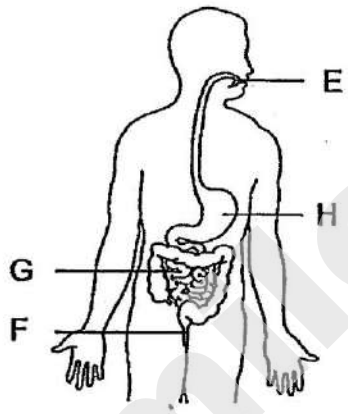
1. Study the table below.

	Part of the human digestive system			
Function	**E**	**F**	**G**	**H**
Digestion takes place here	✓	✓		✓
Digested food is absorbed into the bloodstream		✓		
Solid waste is passed out of the body			✓	

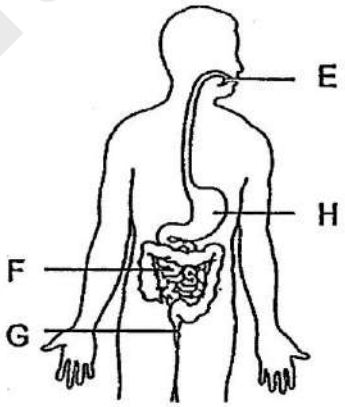
Key
✓ present

Which one of the following correctly shows the parts labelled E, F, G and H?

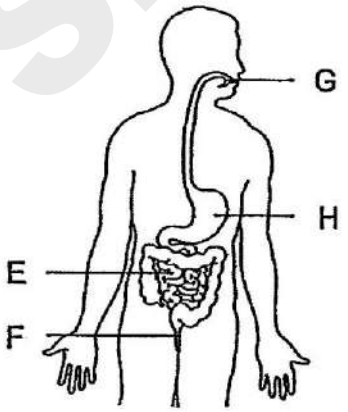
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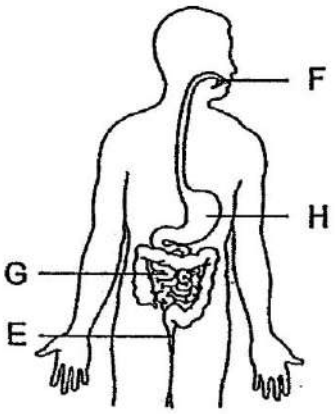
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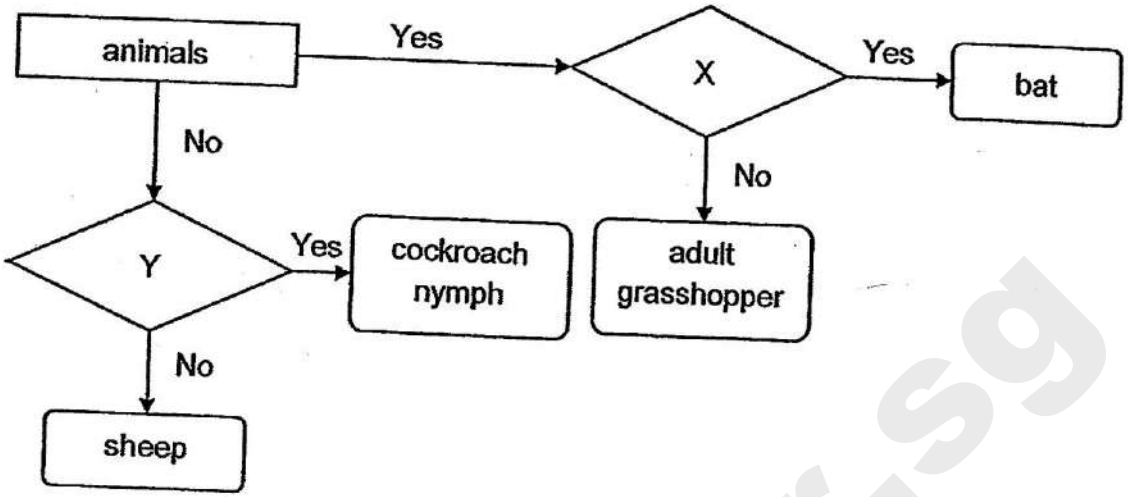
(4)



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2. Study the chart below.



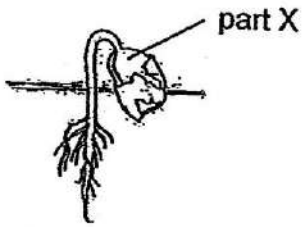
Which of the following shows the characteristics represented by X and Y?

	Characteristics	
	X	Y
(1)	lays eggs	has 3 body parts
(2)	breathes through lungs	has 3 body parts
(3)	has 6 legs	gives birth to its young alive
(4)	has feathers	gives birth to its young alive

3. What is generally common among birds and fish?

(1) They can swim.
(2) They can reproduce by laying eggs.
(3) They have the same outer covering.
(4) They have the same breathing method.

4. Study the diagram shown below.

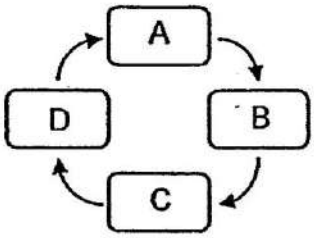


What is the function of part X?

(1) It provides air for the young plant.
(2) It provides food for the young plant.
(3) It provides water for the young plant.
(4) It provides protection for the young plant.

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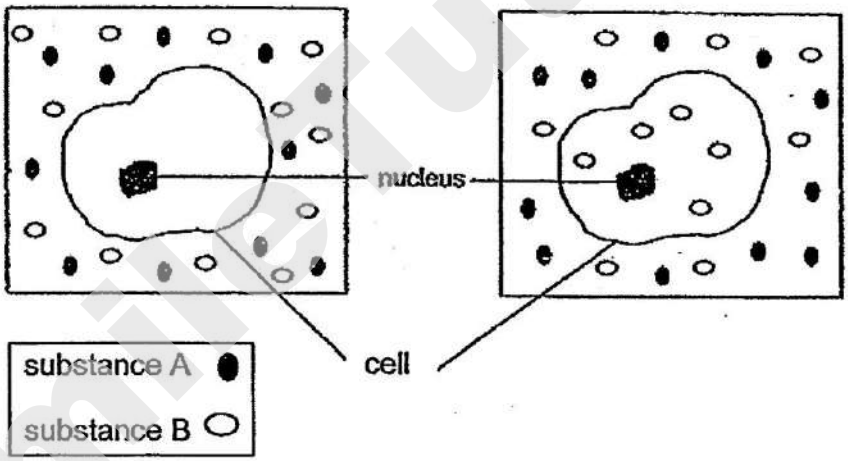
5. A, B, C and D represents the different stages in the life cycle of a butterfly.



If B represents the adult stage of the butterfly, what stage does D represent?

(1) Egg
(2) Larva
(3) Pupa
(4) Nymph

6. The diagram below shows movement of substances A and B in a cell.

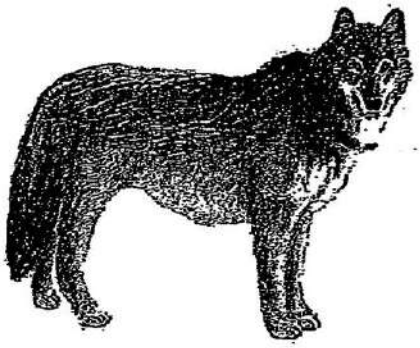


Which one of the following best explains the above observation?

(1) The cell membrane of the cell only allows substance A to pass through.
(2) The cell membrane of the cell only allows substance B to pass through.
(3) The cell membrane of the cell allows substance A and B to pass through.
(4) The cell membrane of the cell does not allow any substances to pass through.

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7. Study the diagram below.



organism W



organism S

Which of the following statement(s) about the organisms is/are true?

A Organism W has more cells than organism S.
B Both organisms have cells that carry out different functions.
C Organism W is bigger than organism S because its cells are much larger.

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

8. The table below lists the parts of a cell. Each tick (✓) represents the part of a cell that cells G, H and J have.

Part of the cell	Cell G	Cell H	Cell J
Cell Membrane	✓	✓	✓
Cell Wall	✓		✓
Chloroplasts	✓		
Nucleus	✓	✓	✓

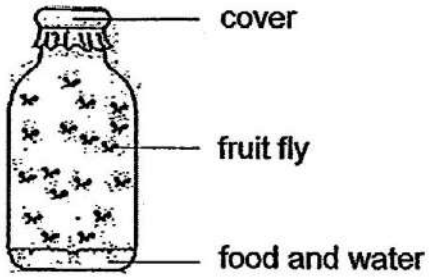
Where are cells G, H and J likely to be found?

	Cell G	Cell H	Cell J
(1)	cheek	leaf	root
(2)	root	cheek	leaf
(3)	leaf	root	cheek
(4)	leaf	cheek	root

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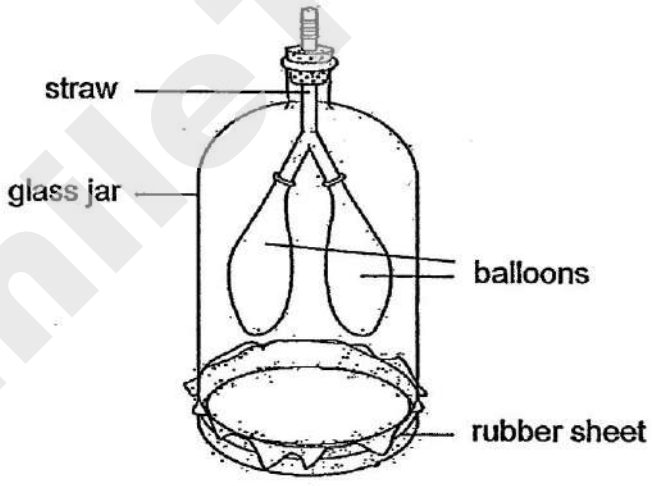
9. The diagram below shows some fruit flies kept in a sealed jar.



Which of the following correctly shows the changes in the amount of gases in the jar after five hours?

	Carbon dioxide	Oxygen	Nitrogen	Water vapour
(1)	decrease	increase	decrease	remain the same
(2)	increase	decrease	remain the same	decrease
(3)	decrease	increase	increase	remain the same
(4)	increase	decrease	remain the same	increase

10. Study the lung-model below.

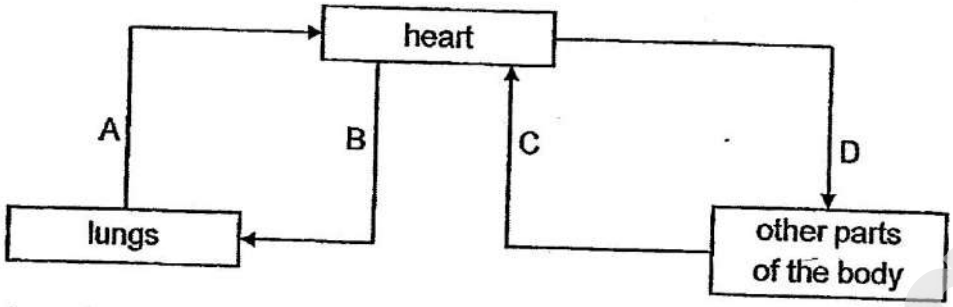


Which one of the following correctly matches the parts of the lung-model to the human respiratory system?

	Balloons	Rubber sheet	Straw
(1)	heart	diaphragm	gullet
(2)	lungs	heart	gullet
(3)	lungs	diaphragm	windpipe
(4)	diaphragm	lungs	windpipe

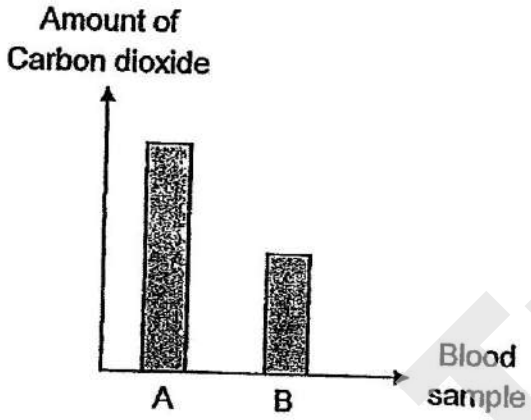
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11. The diagram shows the direction of blood flow in some parts of the body.

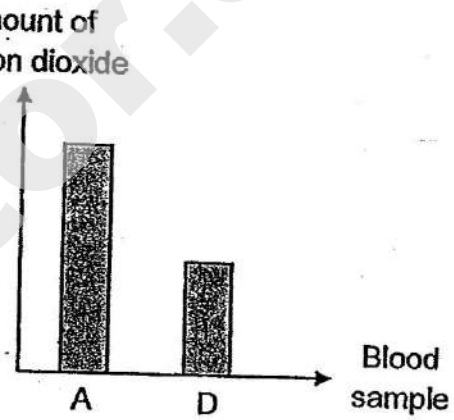


Which chart shows the correct comparison of the amount of carbon dioxide in the blood samples?

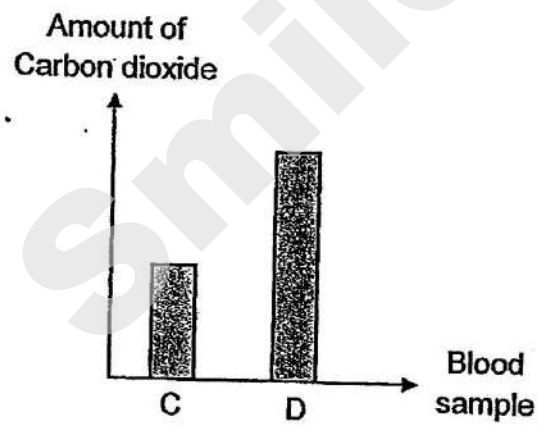
(1)



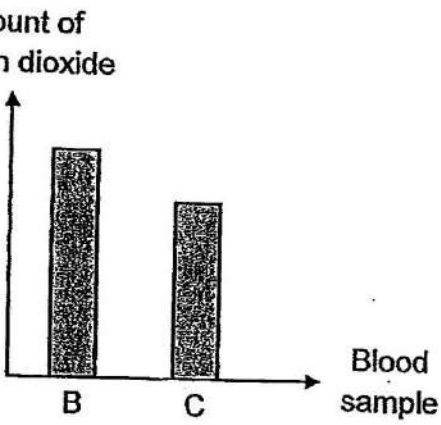
(2)



(3)



(4)



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12. The table below shows Steve's pulse rate when he carries out three different activities.

Activity	Pulse rate per minute
E	60
F	75
G	105

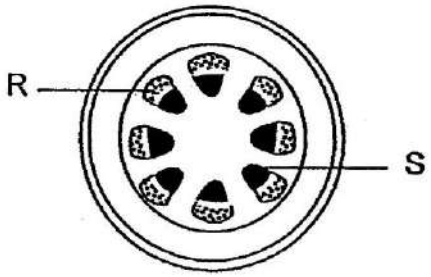
Which of the following is likely to represent the three activities correctly?

	E	F	G
(1)	sleeping	strolling in the park	playing basketball
(2)	playing hockey	strolling in the park	sleeping
(3)	reading a book	playing badminton	strolling in the park
(4)	strolling in the park	playing netball	reading a book

13. Which one of the following comparisons between the human circulatory system and the plant transport system is correct?

	Human circulatory system	Plant transport system
(1)	does not transport gases	transports gases
(2)	substances moves in two directions	substances moves in one direction
(3)	has an organ to pump substances around the body	does not have an organ to pump substances around the plant
(4)	has only one tube to carry substances around the body	has one tube to carry food and one tube to carry water

14. Arron put a plant in a beaker of blue-coloured water for 24 hours. The diagram below shows a section of the stem after 24 hours.

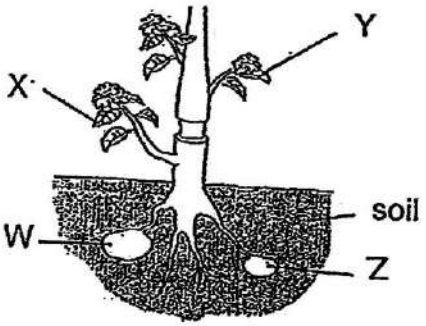


Arron observed that tube S turned blue but not tube R. Which of the following is a possible explanation for this observation?

(1) Tube S transports food from the roots to all parts of the plant.
(2) Tube S transports water from the roots to all parts of the plant.
(3) Tube S transports food from the leaves to all parts of the plant.
(4) Tube S transports water from the leaves to all parts of the plant.

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15. An outer ring of a stem was removed from a plant as shown below. As a result, the tubes carrying food and water were removed.



It was observed that part W of the plant grew bigger after one week.

Which of the following statement(s) best explains this observation?

A Food at Z is transported to W.
B Food made by X is transported to W.
C Food made by Y is transported to W.
D W absorbs water and becomes bigger.

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

16. The diagram below shows a car.



car

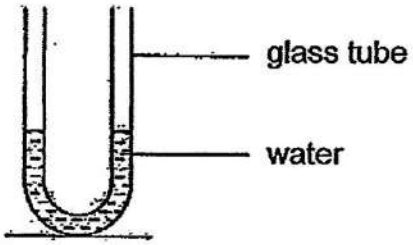
Part X helps to keep the rain away and allows the driver of the car to see the road ahead clearly.

Which of the following best represents the properties of part X?

	Properties of part X	
	waterproof	allows light to pass through
(1)	yes	yes
(2)	yes	no
(3)	no	yes
(4)	no	no

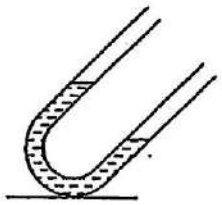
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17. Study the diagram below.

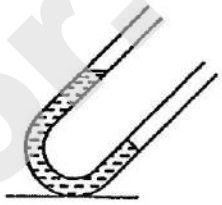


Which one of the following diagrams shows how the water in the tube would look like when the glass tube is tilted?

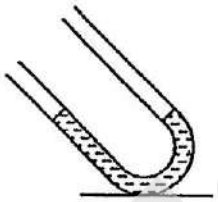
(1)



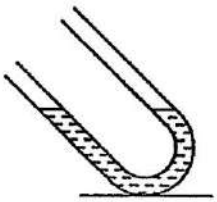
(2)



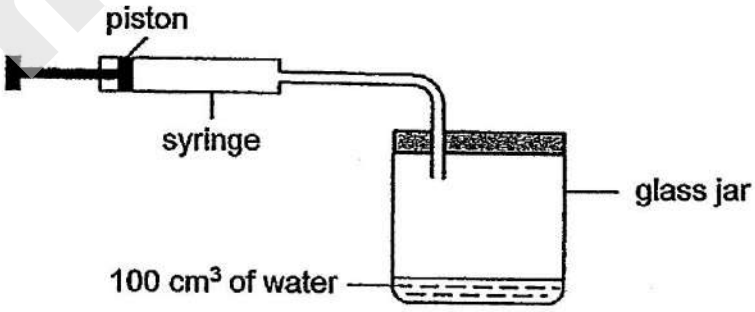
(3)



(4)



18. The diagram below shows a syringe connected to a glass jar. The capacity of the glass jar is 500 cm^3.

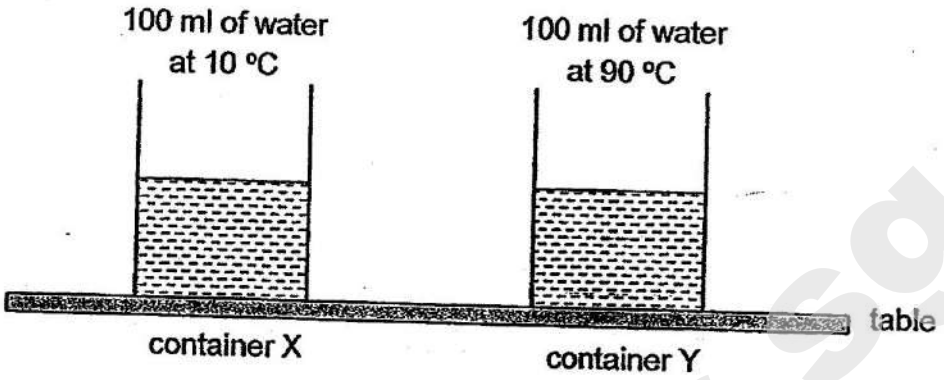


When the piston is pushed in completely, another 90 cm^3 of air is forced into the jar. What is the volume of air in the jar?

(1) 90 cm^3
(2) 400 cm^3
(3) 490 cm^3
(4) 500 cm^3

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19. The set-ups below show two similar containers with water at different temperatures. Both containers were left on the table for 30 minutes.



Which one of the following table shows what happened to the water in the containers after 30 minutes?

(1)

	Gained heat	Lost heat	Temperature
Water in container X	✓		Increased
Water in container Y		✓	Decreased

(2)

	Gained heat	Lost heat	Temperature
Water in container X	✓		Increased
Water in container Y	✓		Decreased

(3)

	Gained heat	Lost heat	Temperature
Water in container X		✓	Increased
Water in container Y		✓	Increased

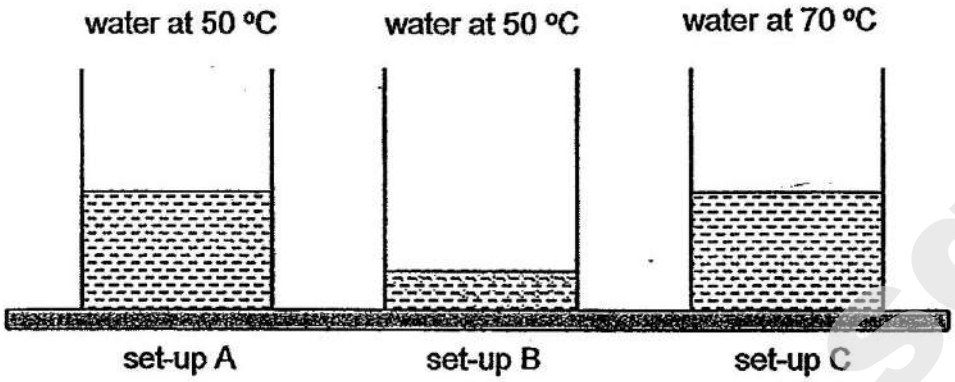
(4)

	Gained heat	Lost heat	Temperature
Water in container X		✓	Decreased
Water in container Y	✓		Decreased

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20. Study the set-ups below.



Which one of the following shows the correct order of increasing amount of heat in the water for set-ups A, B and C?

	least amount of heat ⟶ most amount of heat		
(1)	B	A	C
(2)	C	A	B
(3)	C	B	A
(4)	A	B	C

21. Study the table below.

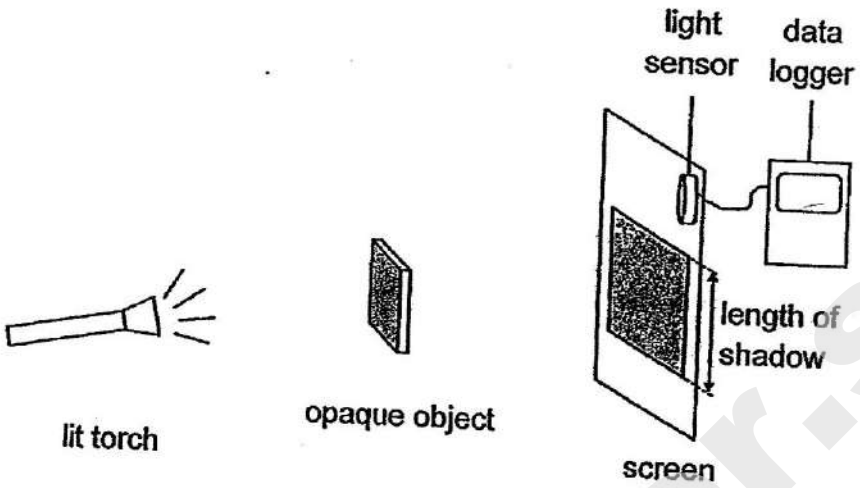
Metal	Temperature before heating (°C)	Temperature after heating (°C)
S	20	90
T	24	79
U	21	87
V	25	69

Which metal S, T, U or V is most suitable for making the base of a frying pan?

(1) S
(2) T
(3) U
(4) V

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22. Najmi used the set-up below to conduct an experiment on shadows in a dark room. He used a light sensor to measure the amount of light on the screen.



He changed the position of one of the items in the set-up and recorded his observations for each position as follows.

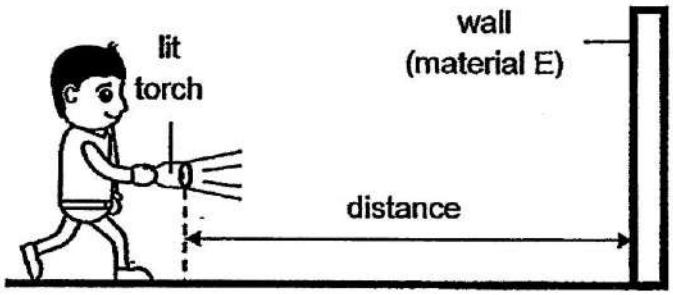
Length of shadow (cm)	Light sensor reading (units)
20	120
17	170
11	260
9	300

What change did Najmi make?

(1) Object was moved towards the torch.
(2) Torch was moved towards the object.
(3) Screen was moved towards the object.
(4) Object was moved away from the screen.

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23. Cheng Yee wanted to find out which material could reflect the most light. He conducted the following experiment in a dark room.



He shone the torch onto material E and walked towards it. When he could see the material clearly, he stopped and recorded the distance between the torch and the material. He repeated this experiment using materials F, G and H and recorded the results in the table below.

Material	E	F	G	H
Distance (cm)	80	120	160	200

Which one of the following statements is correct?

(1) Material E is better at reflecting light than material H.
(2) Material G is better at reflecting light than material F.
(3) Material H is poorer at reflecting light than material E.
(4) Material F is poorer at reflecting light than material E.

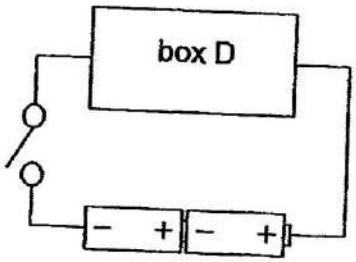
24. Siti tried to attract some steel clips using a nail which had been stroked by a bar magnet. She observed that no steel clips were attracted. Which of the following could be possible reason(s) for this observation?

A The nail was made of copper.
B The nail was stroked by the south pole of the bar magnet only.
C The nail was stroked many times in the same direction with the same pole of the bar magnet each time.
D The nail was stroked many times in different directions with the same pole of the bar magnet each time.

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

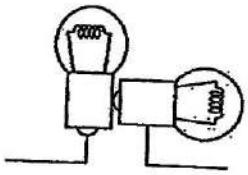
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25. Calista set up the circuit as shown below. She arranged two identical bulbs in box D. When she closed the circuit, both bulbs lit up.

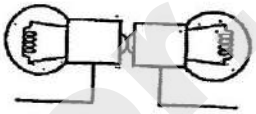


Which one of the following arrangements of bulbs in box D is **not** possible?

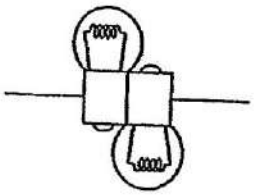
(1)



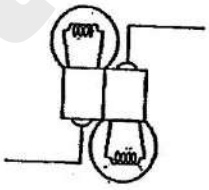
(2)



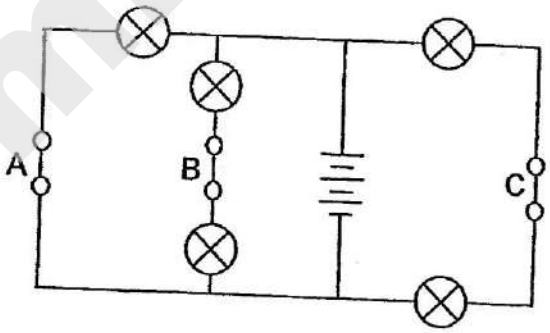
(3)



(4)



26. Firdaus set up a circuit as shown below. All the five identical bulbs lit up when all switches A, B and C were closed.

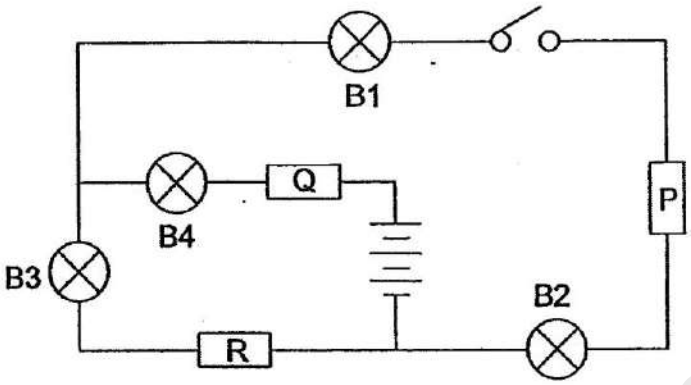


Which of the following switch(es) should be opened in order to have the least number of bulbs lit?

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

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27. Three rods P, Q and R each made of a different material were connected in a circuit as shown below.



The table below shows the results when the switch was closed.

Did the bulb light up?			
B1	**B2**	**B3**	**B4**
yes	yes	no	yes

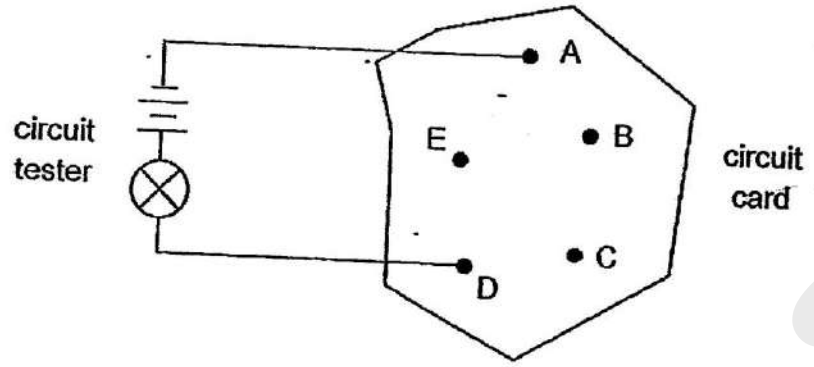
Which of the following describes P, Q and R correctly?

	P	Q	R
(1)	conductor	insulator	conductor
(2)	conductor	conductor	insulator
(3)	insulator	insulator	conductor
(4)	insulator	conductor	insulator

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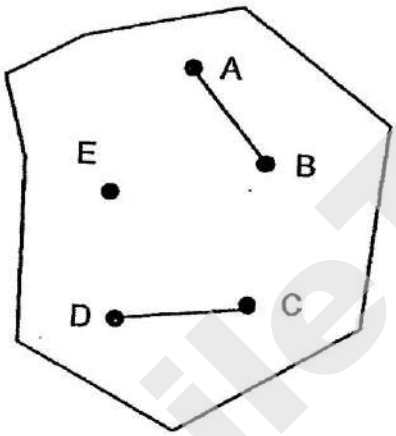
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28. Chee Hsiang was given a circuit card and a circuit tester as shown below. When one end of the circuit tester was clipped onto A and the other end onto D, the bulb lit up.

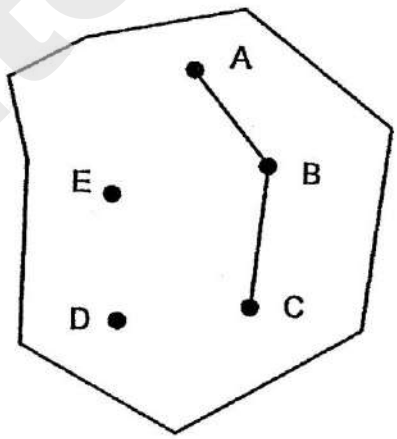


Which one of following connections correctly shows how the wires are connected on the reverse side of the circuit card?

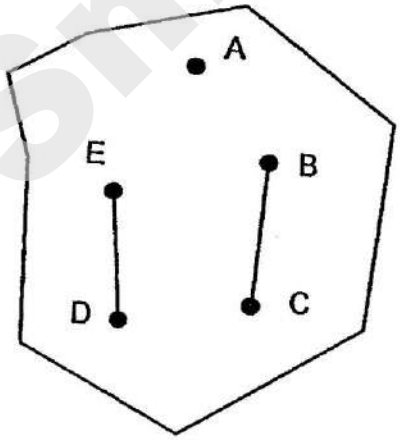
(1)



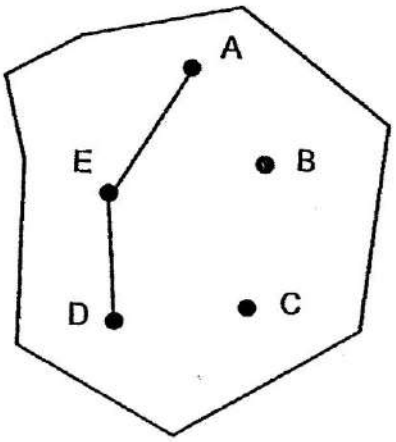
(2)



(3)



(4)



END OF BOOKLET A

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Name : _____ ( )

Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 5

Semestral Assessment 1

SCIENCE

BOOKLET B

10 May 2018

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

13 questions
44 marks

Booklet A	56
Booklet B	44
Total	100

Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

This booklet consists of 16 printed pages.

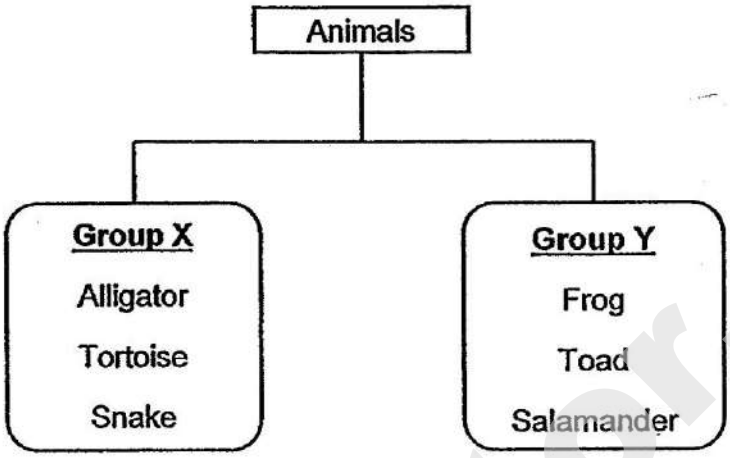
_____
Parent's Signature/Date

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Section B (44 marks)
For questions 29 to 41, 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.

29. Study the chart below carefully.

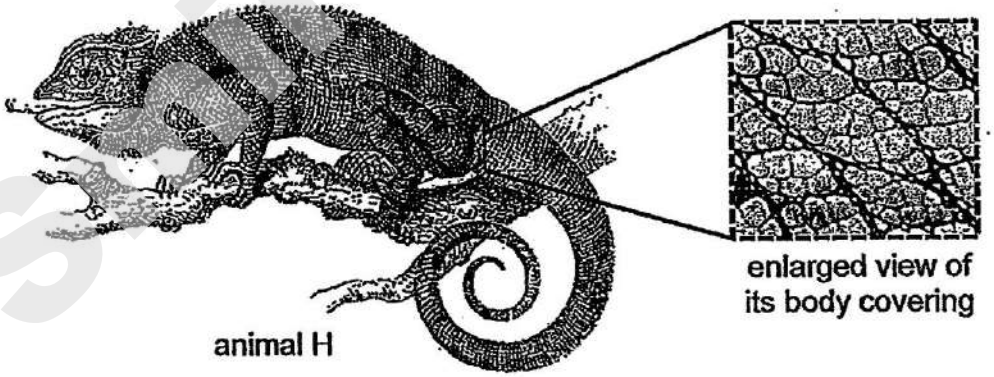


(a) State one similarity and one difference between the characteristics of the animals in the two groups above.

Similarity: _____ [1]

Difference: _____ [1]

(b) Study animal H below carefully.



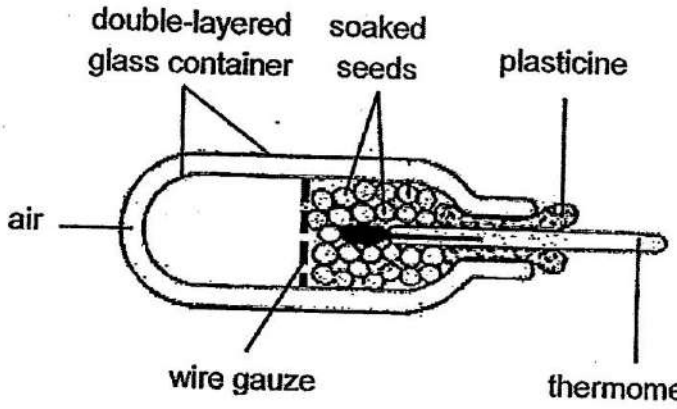
Which group X or Y should animal H be placed under? Give a reason for your answer. [1]

_____

_____

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30. Zhi Hui wanted to find out if germinating seeds produced heat. He soaked some seeds in water before placing them in a glass container as shown.



He measured the temperature in the container from time to time until all the seeds had germinated.

(a) Give a reason why Zhi Hui did not fill the container completely with seeds. [1]

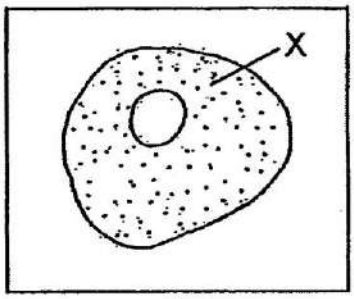
(b) Explain how using a double-layered glass container with air in between helps to make the results of the experiment more reliable. [1]

(c) As the seeds were germinating, the temperature in the glass container increased. What can Zhi Hui conclude from this observation? [1]

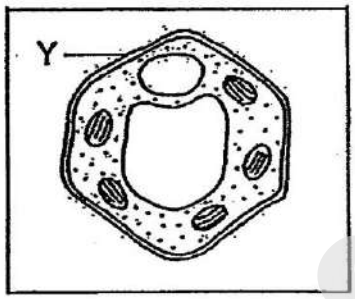
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31. The diagram below shows an animal cell and a plant cell.



cell A



cell B

(a) Identify which cell is a plant cell and which is an animal cell. [1]

Cell A: _____

Cell B: _____

(b) State the function of part X of cell A. [1]

_____

_____

(c) What will happen to the cell if part Y of cell B is removed? Explain your answer. [1]

_____

_____

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32. Diagram 1 below shows the movement of substances in a plant.

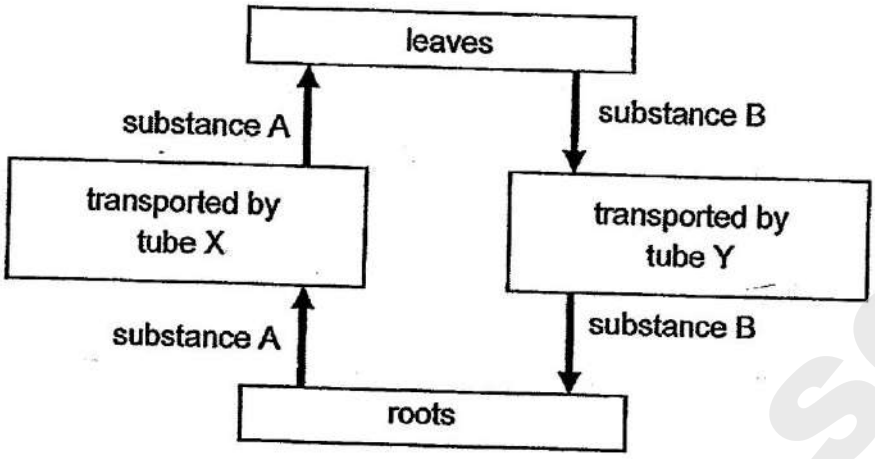


diagram 1

(a) (i) Identify tubes X and Y. [1]

Tube X: _____

Tube Y: _____

(ii) Identify the substances A and B. [1]

Substance A: _____

Substance B: _____

Diagram 2 below shows the circulatory system of organism K.

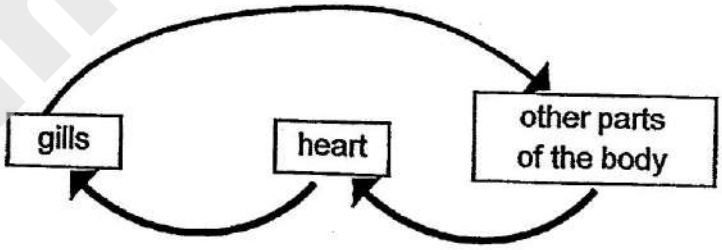


diagram 2

(b) Comparing diagrams 1 and 2, state one difference between the direction of transport system of the plant and the circulatory system of organism K. [1]

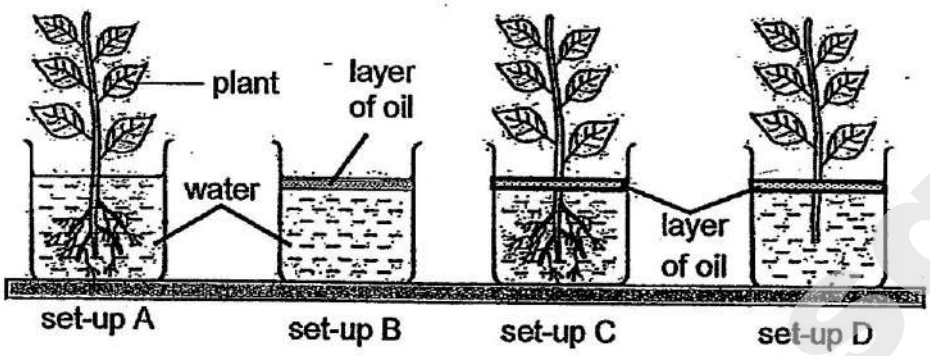
_____

_____

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33. Laura conducted an experiment in a classroom as shown below. She wanted to find out if roots take in water.



(a) Which pair of set-ups should she use to make a fair comparison? Explain your answer. [1]

Laura wanted to conduct another experiment to find out if the number of leaves affect the amount of water absorbed by the roots. She decided to use set-ups A and C to conduct the experiment.

(b) Suggest two changes that Laura should do to set-up A and C to make the experiment a fair test. [2]

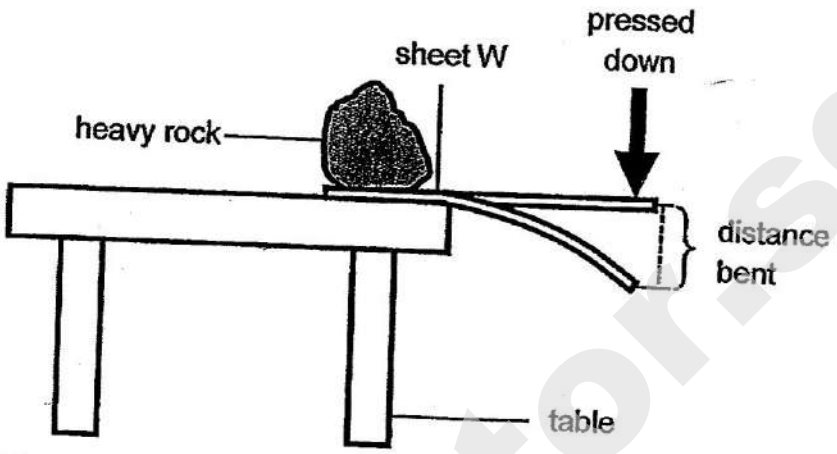
(i)

(ii)

(c) What is the purpose of the layer of oil in this experiment? [1]

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34. Wei Ling carried out an experiment on four sheets W, X, Y and Z each made of a different material. She placed sheet W on the side of a table and placed a heavy rock on it to hold it down firmly. Then she pressed the sheet down slowly until it broke. She repeated the experiment using sheets X, Y and Z.



She recorded the results in the table below.

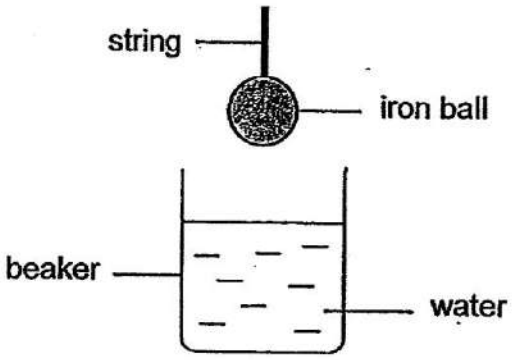
Sheet	Greatest distance bent before breaking (cm)
W	7
X	1
Y	5
Z	2

(a) State the property of material that Wei Ling was testing. [1]

(b) Based on the results of the experiment, which one of the materials W, X, Y or Z should Wei Ling use to make a pair of chopsticks? Give a reason for your answer. [1]

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35. Kim gently lowered an iron ball into a beaker of water as shown in the diagram below.



(a) What change to the water level will Kim observe when the iron ball is fully lowered into the beaker of water? [1]

_____

Kim then replaced the iron ball with a lighter glass ball of the same size and repeated the experiment.

(b) Will the water level be lower, higher or remain the same as in her previous experiment? Explain your answer. [2]

_____

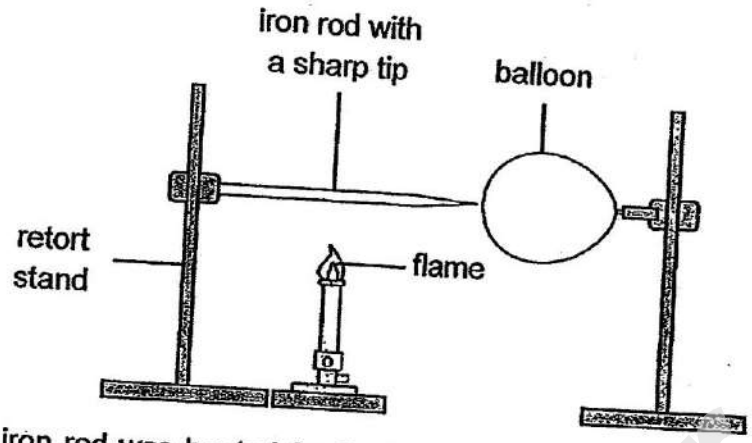
_____

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36. Study the set-up below.



(a) The iron rod was heated for 5 minutes and the balloon burst. Explain why the balloon burst.

[1]

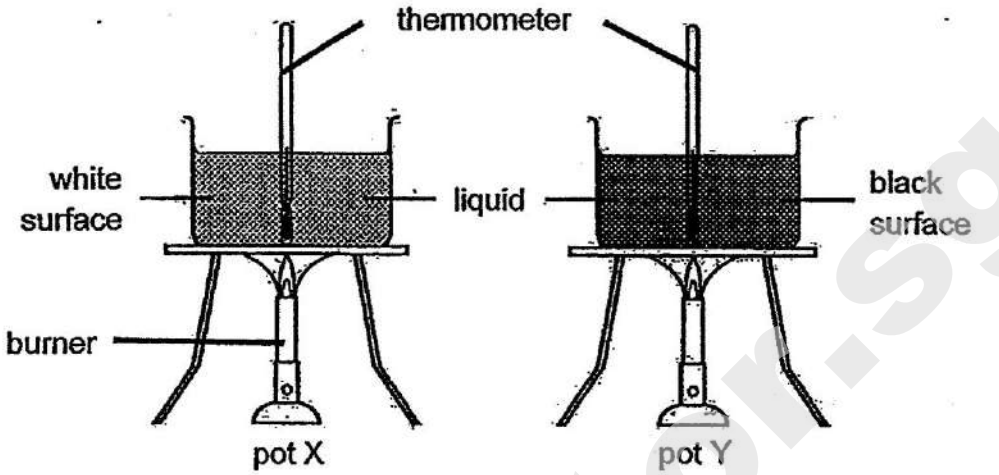
(b) The iron rod was changed to a ceramic rod and the experiment was repeated. After 5 minutes, the balloon did not burst. Explain why.

[2]

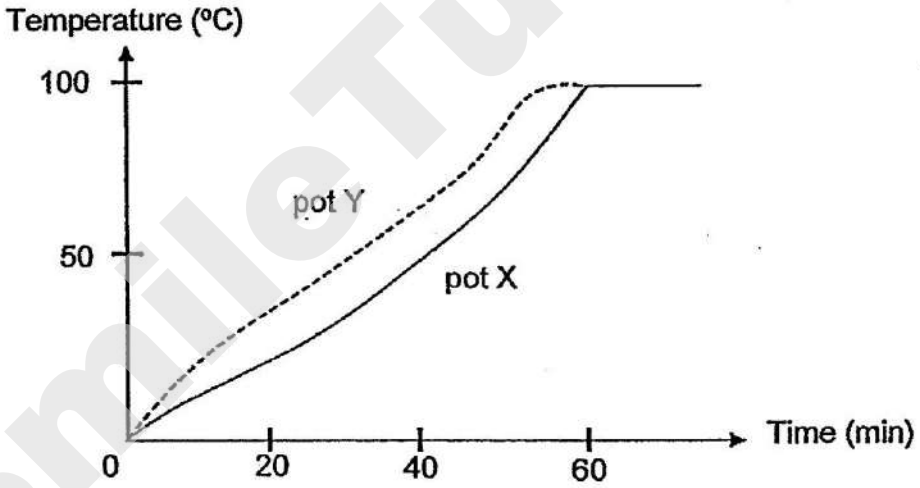
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37. Ken conducted an experiment using two identical pots as shown below. Pot Y has a black surface while pot X has a white surface. Both pots were filled with 200 cm^3 of water at 0 °C and heated with 2 similar burners.



The temperatures of water in both pots X and Y were recorded every minute for some time. The graph below shows the results of Ken's experiment.

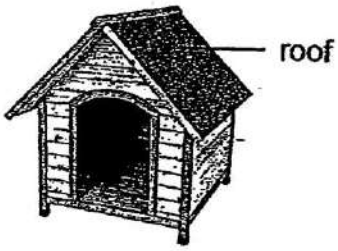


(a) Based on the results above, which pot X or Y can be used to cook soup in a shorter time? Explain your choice. [2]

(b) What will the temperature of the water be in **both pots** at the 65th minute? [1]

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The diagram below shows a dog house that is in the garden.



(c) Based on the results of Ken's experiment, should Ken paint the roof of the dog house black or white if he wants to keep his dog cooler on a sunny day? Explain your answer.

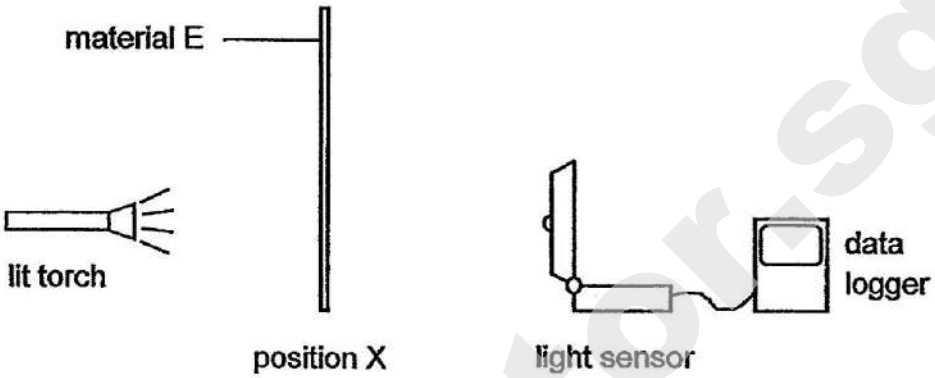
[2]

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38. Rina wanted to find out which material is the most suitable for making a bottle to store essential oils. Essential oils, usually used for scenting rooms, are best stored away from direct light to prevent a loss of quality.

She placed material E at position X and shone the torch on it as shown below. A light sensor attached to a data logger was used to record the amount of light that passed through the material.



She repeated the experiment with materials F, G and H. For each material, she conducted the experiment three times and recorded the results in the table below.

Material	Thickness (cm)	Average amount of light detected (units)
E	1	52
F	1	43
G	1	38
H	1	15

(a) Give a reason why Rina repeated the experiment three times on each type of material. [1]

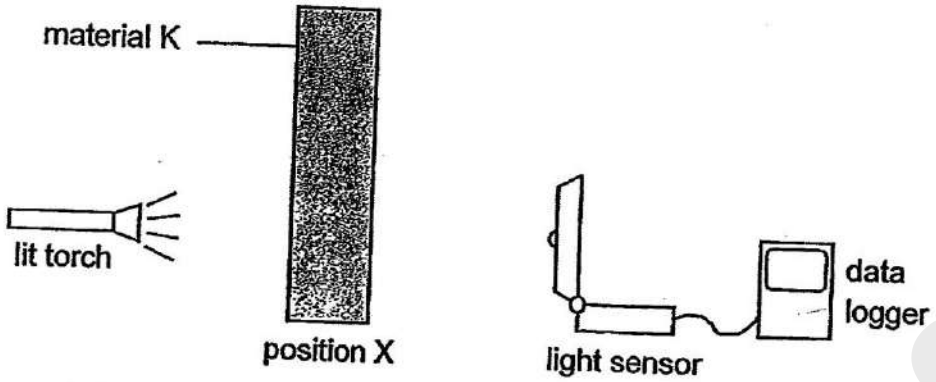
(b) State the changed variable in this experiment. [1]

(c) Based on the results in the table, which material E, F, G or H is most suitable for making bottles used for storing essential oils? Give a reason for your answer. [1]

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Rina conducted a similar experiment using different thickness of material K.



She recorded the results in the table below.

Thickness (cm)	Average amount of light detected (units)
5	42
6	32
7	25
8	8

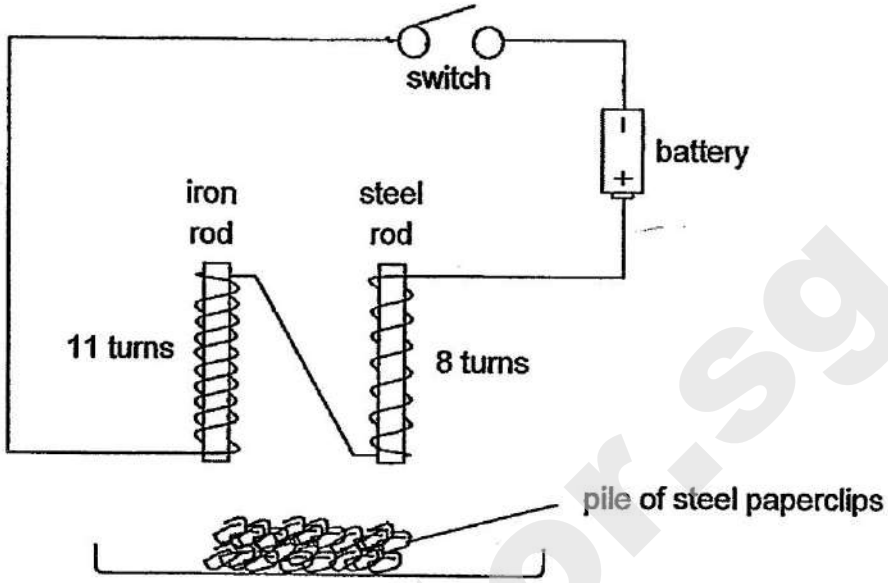
(d) Write down a suitable aim for the experiment. [1]

(e) What can she conclude from the experiment? [1]

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39. Tom conducted an experiment as shown below.



The two rods were placed 5 cm above a pile of steel paperclips before the switch was closed. The number of paperclips attracted to each rod are shown below.

	Iron Rod	Steel Rod
1st Trial	15	10
2nd Trial	14	8
3rd Trial	16	9

(a) Tom's friend said that the experiment was not fair and they were not able to conclude which rod, iron or steel, was an electromagnet with a greater magnetic strength. Explain why Tom's friend is right. [2]

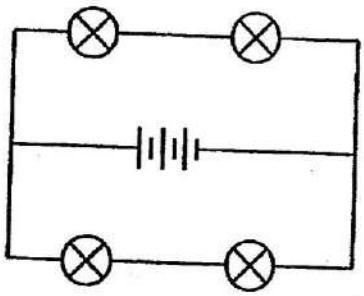
(b) List one change Tom can make to the set-up such that he can conclude which rod is an electromagnet with a greater magnetic strength. [1]

(c) What would be observed if two more batteries are connected in series to the circuit above? [1]

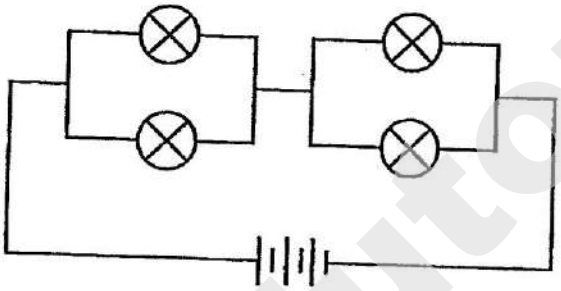
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40. Study the circuits below. In the given circuits, all the bulbs were lit.

circuit X



circuit Y



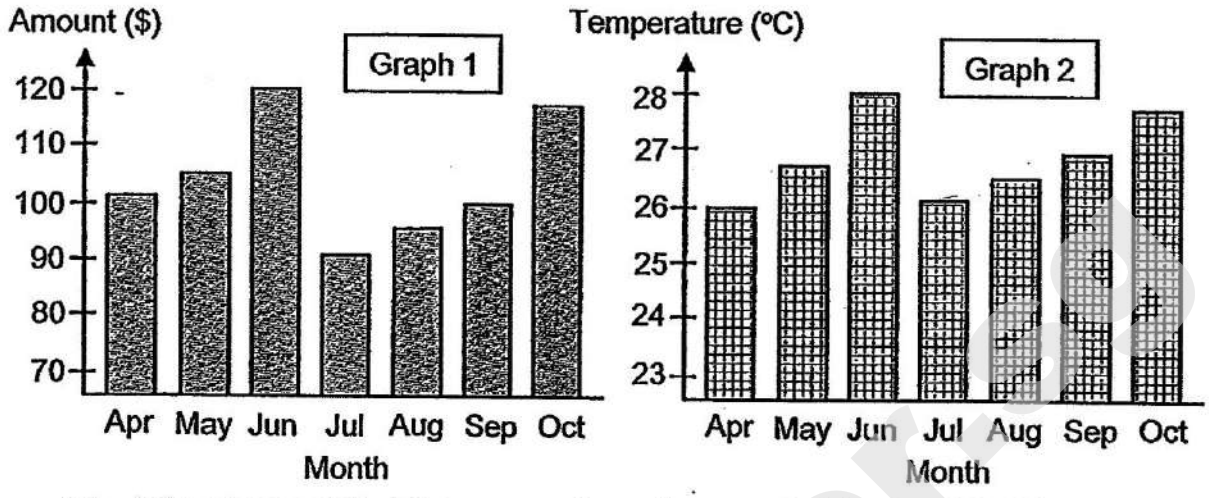
In the table below, write down the number of bulbs that would remain lit when one of the bulbs in each circuit is blown. [2]

	Circuit X	Circuit Y
Number of bulbs remaining lit		

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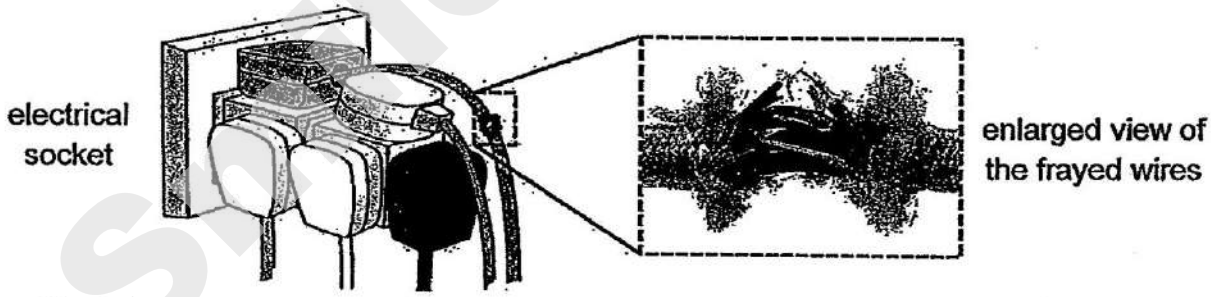
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41. Study the two graphs below. Graph 1 shows the average electricity bill for John's family. Graph 2 shows the average monthly temperature in Singapore.



(a) John observed that there was a large increase in his electricity bill for the months of June and October. Based on the graphs, give a possible explanation for this increase. [2]

The following situation was observed at an electrical socket in John's house.



(b) Based on the above diagram, state two electrical safety issues and give a possible precaution John can take to address each issue. [2]

	Safety Issue	Possible Precaution(s) to be taken
(i)		
(ii)		

END OF PAPER

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SCHOOL : CHIJ PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA1

CONTACT :

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	2	2	2	2	2	3	4	4	3
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	1	3	1	1	1	4	2	1	1
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
1	3	2	3	3	4	2	4		

SECTION B

Q29)	a)Similarity : They both reproduce by laying eggs. Difference: Y can breathe in water but X cannot breathe in water. b)X. All animals in X have scaly skin as a body covering like H but Y has moist skin as their body covering .
Q30)	a)So that there is space for air in the glass container for the seeds to germinate. b)Air is a poor conductor of heat and will not allow heat to enter or be lost . As his aim is to find out if germinating seeds produced heat, the heat the thermometer senses is only from the seeds. c)Germinating seeds produces heat.
Q31)	a)Cell A : Animal cell Cell B : Plant cell b)It allows substance to move within the cell c)The cell will not have a regular shape. Part Y is the cell wall and cell wall are structures that gives the cell its regular shape.

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Q32)	a)i)Tube X : Xylem tube Tube Y : Phloem tube a)ii)Substance A : Water Substance B : Food b)Plant transport system flows in one direction but the circulatory system of K flows in a circular direction.
Q33)	a)C and D. All other variables are kept constant except only the changed variable which is the presence of roots. b)i)A should have a larger of oil over the water. ii)There should be lesser leaves in one set-up and more leaves in the other. c)To ensure that the amount of water lost in the beaker is due to the presence of leaves and not due to water evaporation.
Q34)	a)The material's flexibility. b)X as it bends the least distant before breaking so that it will be firm to pick up the food.
Q35)	a)The water level will be higher. b)Remain the same. Both balls have the same size so they have the same volume and therefore the water level will remain the same.
Q36)	a)The iron rod gained heat form the flame and expanded until the tip of the rod reached the balloon and popped it. b)The ceramic rod did not gain as much heat and did not expand as much as the iron rod, as ceramic is not a good conductor of heat as compared to the iron rod.
Q37)	a)Y. The temperature of water increased faster to 100c than that of X. This shows that water in Y gained heat from the burner faster than in X thus is will be able to cook the soup in a shorter time. b)100℃. c)White. The pot with a black surface gained heat faster than the pot with the white surface. If he wants to keep his dog cool, a white painted roof will not gain heat as fast as a black painted roof.
Q38)	a)So that the results are more reliable as sometime there are different out comes.

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	b)The type of material c)H as it allowed the least amount of light to pass through which makes the essential oil not have a loss of quality as it is not under direct light. c)To find out if the thickness of a material affects the amount of light that can pass through it. d)The thicker the object, the lesser the amount of light that can pass through.
Q39)	a)There was another changed variable which was the amount of turns of coils around each rod. The more the number of turns of coils around an electromagnet, the stronger it is therefore Tom's friends was right. b)Have the same amount of turns of coils around each rod. c)There would be more paper clips attracted by each of the rods.
Q40)	2 / 3
Q41)	a)As it is warmer in June and October, John's family would have turned on the fan or air-conditioner for a longer period of time which uses more electricity therefore his electricity bill increases. b)i)Too many plugs in one socket --→Limit one socket to a maximum of two or three plugs. ii)Exposed wires -→Not to use this plug any more or get an electrician to fix it.

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17

MAHA BODHI SCHOOL
2018 SEMESTRAL ASSESSMENT 1
PRIMARY 5 SCIENCE
(BOOKLET A)

Name : _____ ( )

Class : Primary 5 _____

Date : 8 May 2018

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

INSTRUCTIONS TO CANDIDATES:

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

This booklet consists of 21 printed pages.

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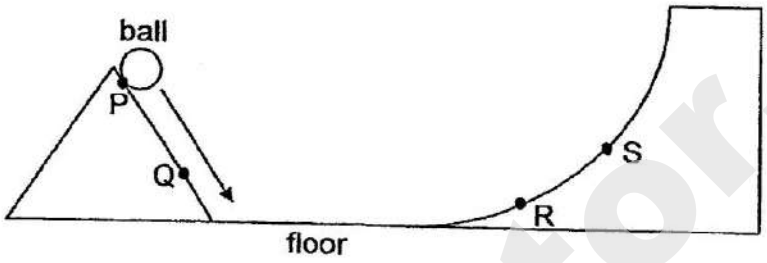
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BOOKLET A : [28 x 2 marks = 56 marks]

For each question from 1 to 28, 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.**

---

1. A ball at rest was released from the top of a slope at point P. It rolled down along the slope to Q, then to R before coming to a stop at S and sliding back down.



Which of the following statements about the ball is/are true?

A. The ball had only kinetic energy at point P.
B. The ball had both potential and kinetic energy at point R.
C. The ball did not have kinetic energy when it reached point S.
D. The amount of potential energy the ball had at point P was larger than that at point Q.

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

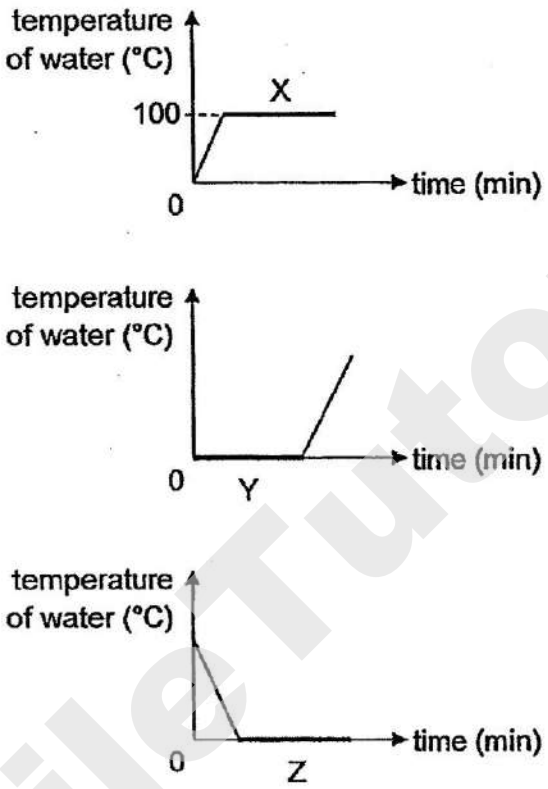
2. Which of the following correctly shows the useful form of energy when the energy source is used for the purpose as stated?

	Energy source	Purpose of usage	Useful form of energy
(1)	stretched rubber band	shoot an object	heat energy
(2)	battery	move a	kinetic energy
(3)	food	run a marathon	sound energy
(4)	charcoal	cook a fish	light energy

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3. The graphs below show how the temperature of water changed over three different periods of time, X, Y and Z.



Which two periods of time show that water was melting and freezing?

	melting	freezing
(1)	X	Y
(2)	Y	Z
(3)	Z	X
(4)	Z	Y

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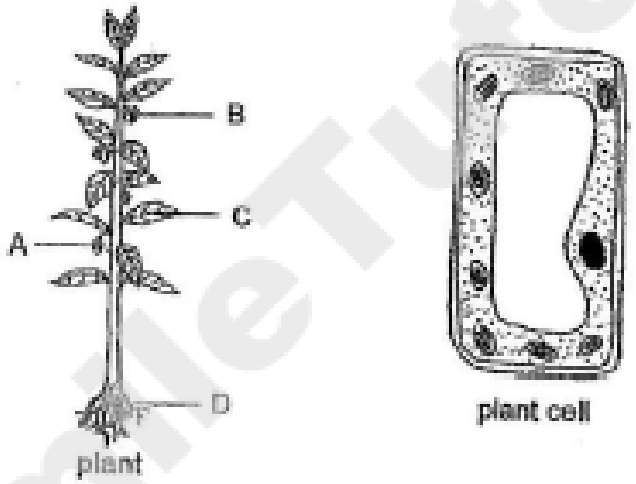
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4. Substance E has a melting point of 15°C and a boiling point of 337°C.

Which one of the following shows the correct state of substance E at 10°C and 100°C?

	10°C	100°C
(1)	solid	liquid
(2)	solid	gas
(3)	liquid	gas
(4)	liquid	liquid

5. The diagram below shows a plant and a cell that is taken from the plant.



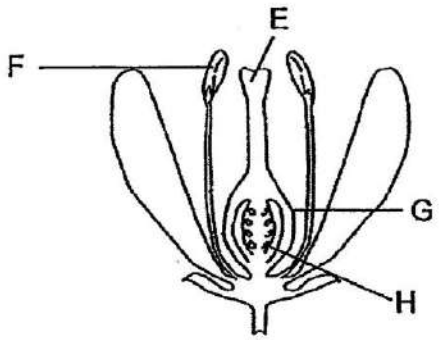
Which plant part, A, B, C or D, is the plant cell most likely to be taken from?

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

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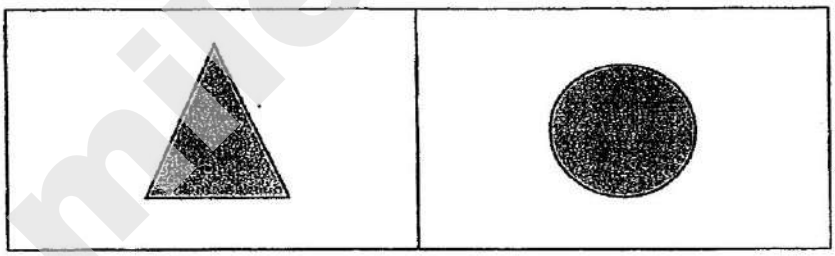
6. The diagram below shows the cross-section of a flower.



Which part of the flower represents the male part?

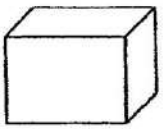
(1) E
(2) F
(3) G
(4) H

7. The diagram below shows the shadows cast by an object when light was shone at it from different sides.

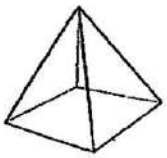


Which of the following objects below could produce such shadows?

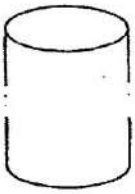
(1)



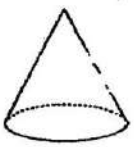
(2)



(3)



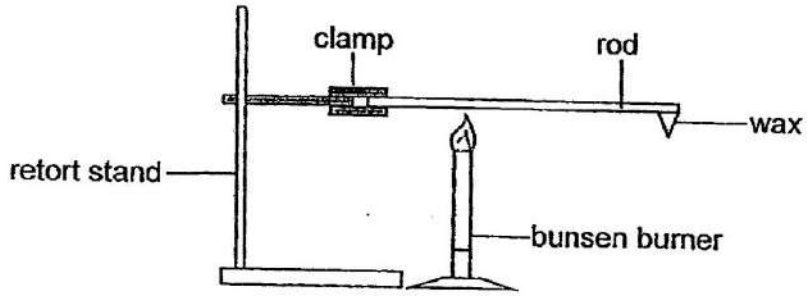
(4)



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8. An experiment was conducted to find out how quickly heat was conducted through rods made of different materials. The set-up is as shown below.



Using rods of different materials, the time taken for the wax to start melting is shown in the table below.

Material of rod	Time taken for wax to start melting (s)
H	75
I	35
J	56
K	113

Based on the results, which of the following shows the correct order of the materials starting from the best conductor of heat to the poorest conductor of heat?

	Best conductor of heat ⟶ Poorest conductor of heat			
(1)	H	I	J	K
(2)	I	J	H	K
(3)	J	K	I	H
(4)	K	H	J	I

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9. Nick filled two balloons with equal volume of air and hung them onto a stick as shown in Diagram 1.

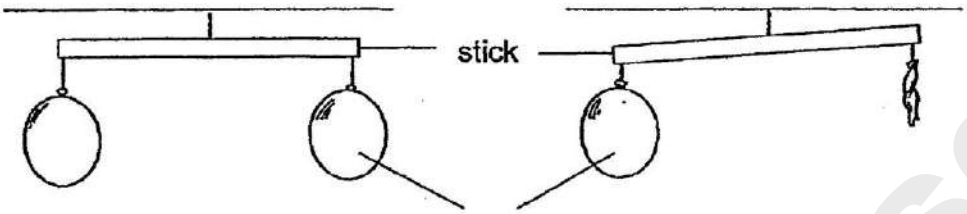


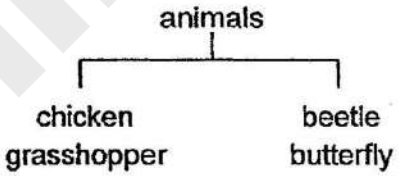
Diagram 1 **Diagram 2**

Diagram 2 shows the position of the stick after Nick had released all the air from one balloon.

Based on the observation, what could Nick conclude about the property of air?

(1) It has mass.
(2) It can be compressed.
(3) It has no definite shape.
(4) It has no definite volume.

10. Some animals are classified as shown below.



Which of the following characteristics is used to classify the animals?

(1) the number of legs
(2) the way they reproduce
(3) the number of body parts
(4) the number of stages in their life cycles

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11. Which of the following organ systems is wrongly matched to the function?

	Organ system	Function
(1)	skeletal	supports our body
(2)	muscular	moves different parts of our body
(3)	respiratory	takes in and removes air from our body
(4)	circulatory	removes undigested food from our body

12. Lionel wanted to find out if the presence of leaves on a plant would affect the amount of water absorbed. He used the following set-up in his experiment.

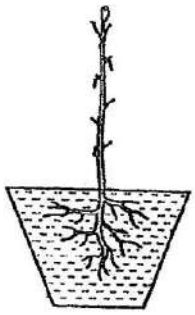


Which of the following set-ups should he use to compare so as to confirm the results of his experiment?

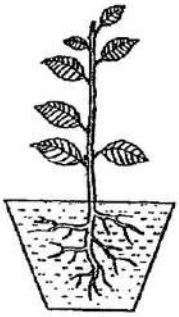
(1)



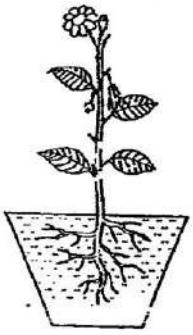
(2)



(3)



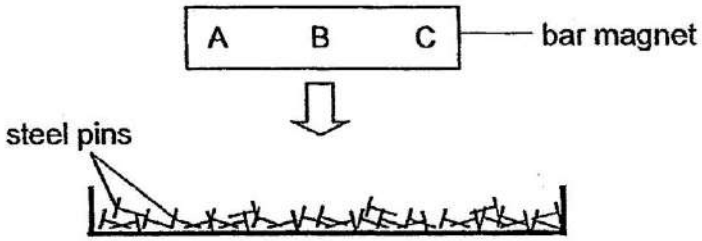
(4)



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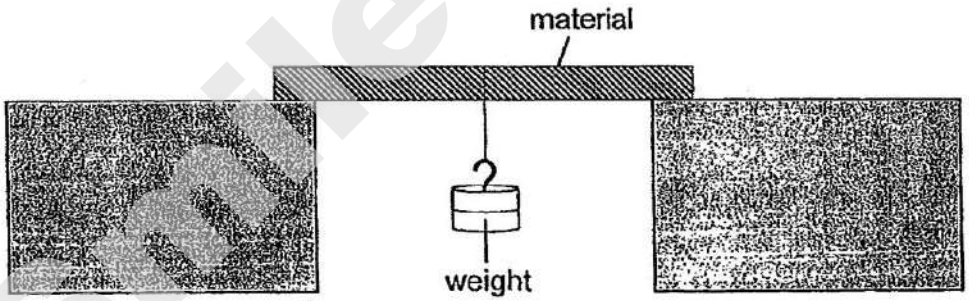
13. A bar magnet is lowered onto a tray of steel pins.



Which of the following most likely shows the number of pins attracted to the magnet at positions A, B and C?

	A	B	C
(1)	4	14	5
(2)	8	10	13
(3)	9	9	9
(4)	12	2	13

14. Aden conducted an experiment using the set-up shown below.



Weights were added until the material broke. He repeated the experiment using other materials.

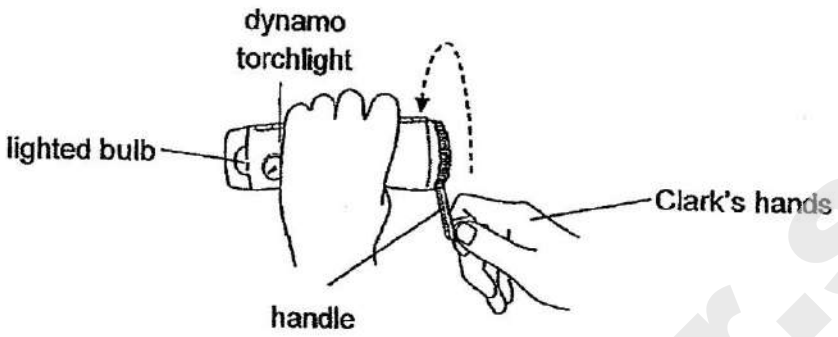
Which property of the materials was Aden trying to test?

(1) strength
(2) flexibility
(3) waterproof
(4) transparency

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15. As Clark turned the handle of the dynamo torchlight quickly, the torchlight warmed up and then lighted up.



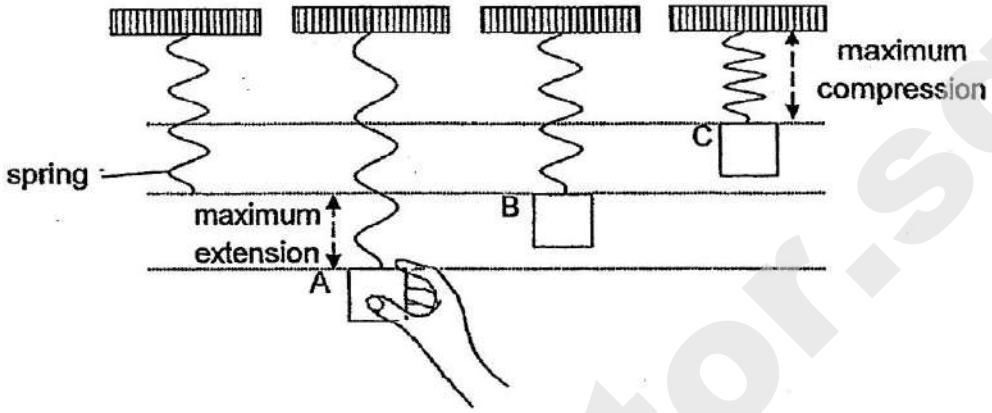
Which of the following shows the energy possessed by the objects correctly?

	Clark's hands	Handle	Lighted bulb
(1)	potential energy	kinetic energy	light energy
(2)	potential energy	kinetic and potential energy	sound and heat energy
(3)	potential and kinetic energy	kinetic energy	heat and light energy
(4)	kinetic energy	kinetic and heat energy	light energy

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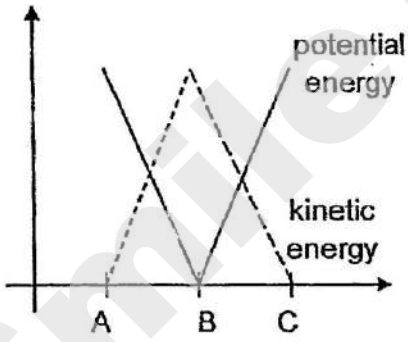
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16. A block was hung on a spring. When the block was pulled downwards until it reached point A, and then released, the block rose to point B and then to point C.

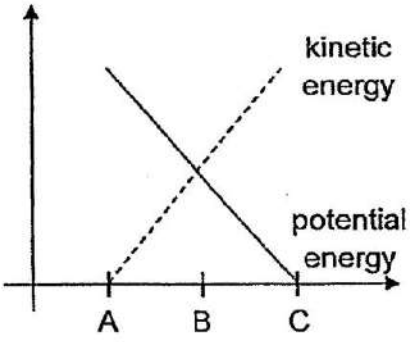


Which of the following graphs correctly shows how the potential energy and kinetic energy in the spring changed as it was compressed when the block moved from point A to C?

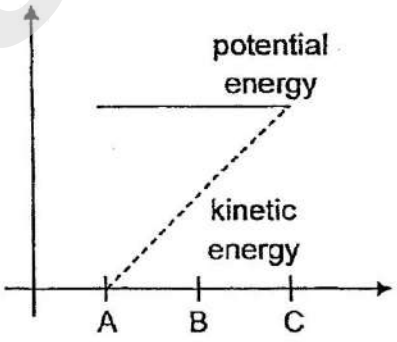
(1) Energy in the spring



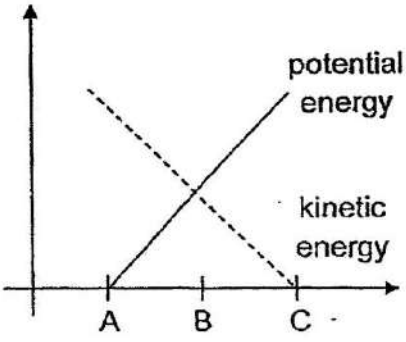
(2) Energy in the spring



(3) Energy in the spring



(4) Energy in the spring



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17. Abu prepared four set-ups P, Q, R and S using equal volumes of water. The table below shows the different conditions of the set-ups at the start of the experiment.

	Set-up			
	P	Q	R	S
Temperature of water (°C)	60	30	60	30
Material of container	steel	plastic	plastic	steel

Abu wanted to investigate how the rate of evaporation of water would depend on the material of container and the temperature of water.

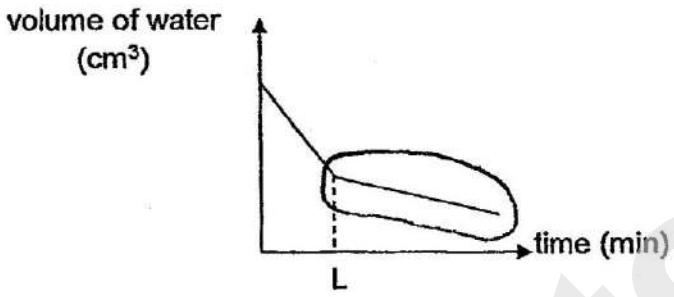
Which pairs of set-ups should he use in his investigations?

	To find out if the rate of evaporation depends on	
	material	temperature
(1)	P and R	Q and R
(2)	P and S	R and S
(3)	Q and R	P and S
(4)	Q and S	P and Q

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18. Belle carried out an activity to find out what would affect the rate of evaporation of water. She left a cup of water near the window of her room. After L minutes, Belle made a change to the set-up.

The graph below shows the change in the volume of water left in the cup over the period of time.



Which of the following is a possible change made by Belle after L minutes?

(1) Changed the cup into a wider plate.
(2) Placed the set-up near a heat lamp.
(3) Changed the location to a hot and dark room.
(4) Placed the set-up away from her room window.

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19. Four types of plants, G, H, I and J, were planted in an area as shown in Diagram A below.

A few years later, more of the four types of plants were found growing at different parts of the area as shown in Diagram B.

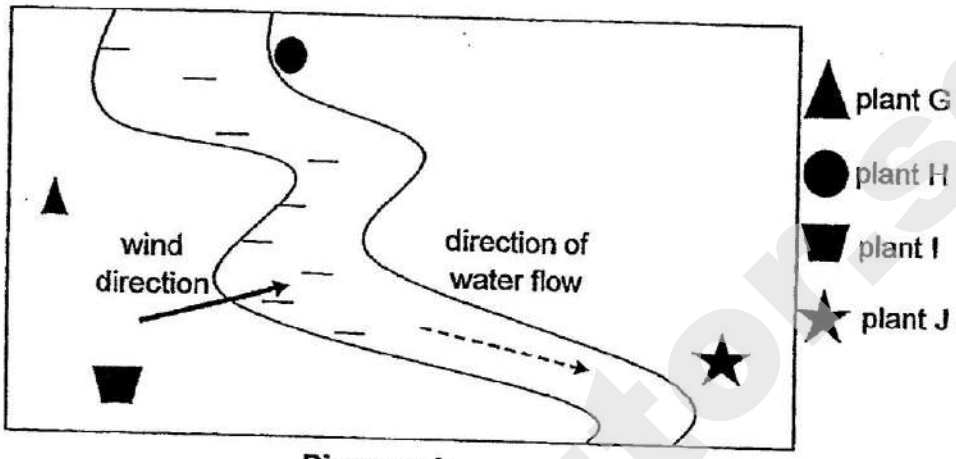


Diagram A

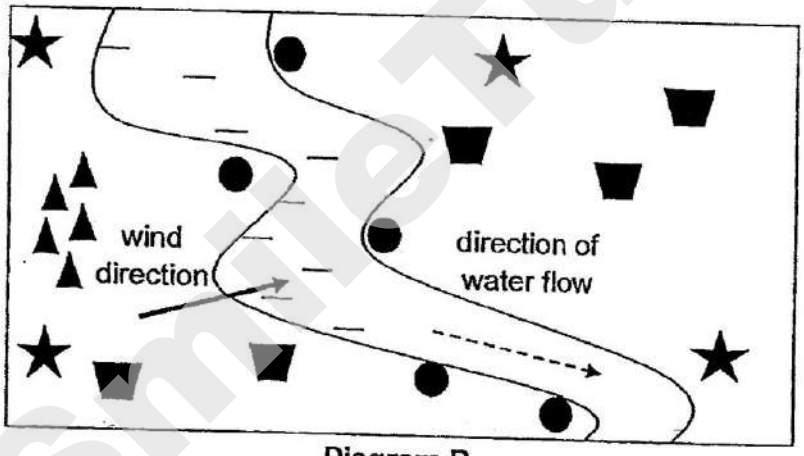


Diagram B

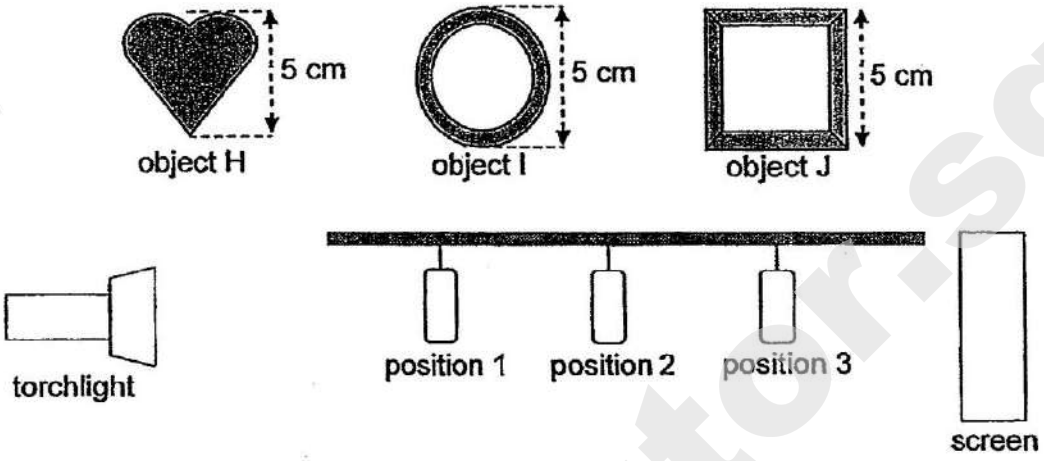
Based on the information given above, how are the fruits or seeds of each type of plant dispersed?

	Plant G	Plant H	Plant I	Plant J
(1)	wind	water	animal	splitting
(2)	splitting	water	wind	animal
(3)	water	animal	splitting	wind
(4)	animal	splitting	water	wind

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20. Trevor set up the experiment as shown below. He shone light at the objects H, I and J which were placed at different positions. These objects were made of cardboard.



The diagram below shows the shadows that were seen on the screen.



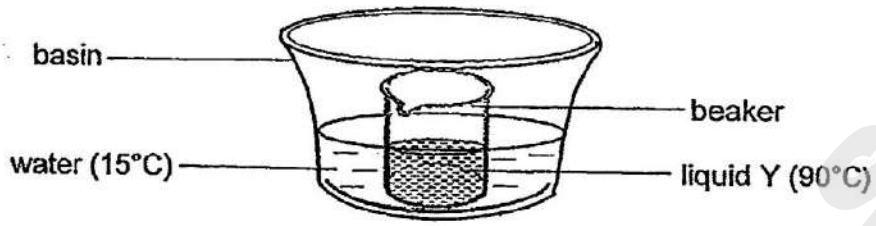
Which of the following shows the correct positions of the objects during the experiment?

	Position 1	Position 2	Position 3
(1)	Object H	Object I	Object J
(2)	Object I	Object H	Object J
(3)	Object I	Object J	Object H
(4)	Object J	Object I	Object H

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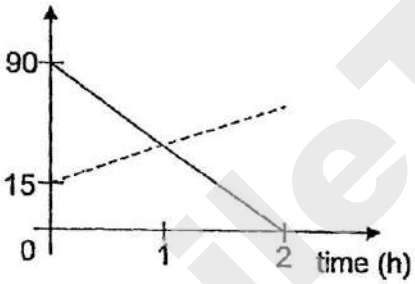
21. Xavier placed a beaker containing liquid Y at 90°C into a basin of cold water at 15°C as shown below. The set-up was left in a room for two hours. The temperature of both liquids was measured during this time.



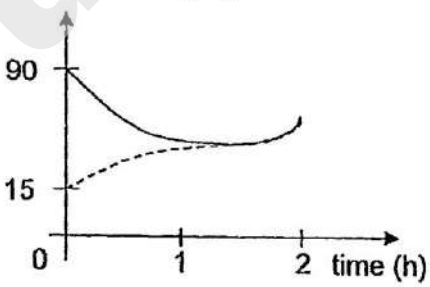
Room temperature: 25°C

Which of the following graphs correctly shows the change in temperature of liquid Y and water during the two hours?

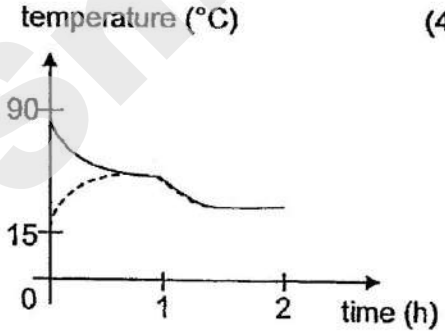
(1)



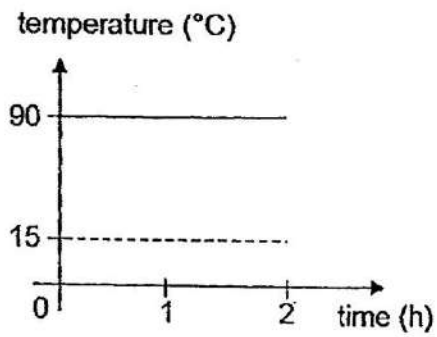
(2)



(3)

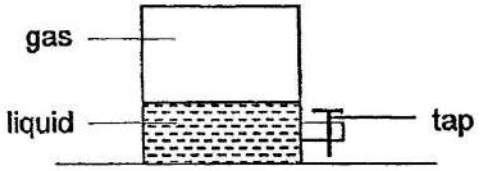


(4)



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22. A sealed metal container as shown below stores some liquid and gas.



When some liquid is removed from the container, which one of the following is correct about the remaining gas in the container?

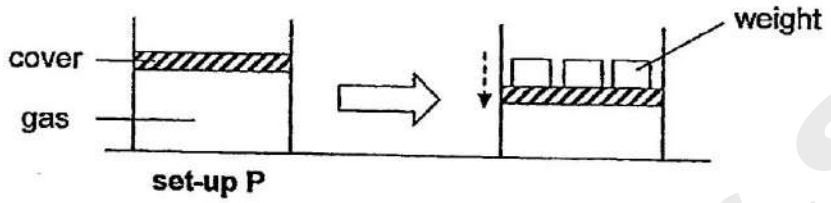
	Mass of gas	Volume of gas
(1)	increased	increased
(2)	increased	remained the same
(3)	remained the same	increased
(4)	remained the same	remained the same

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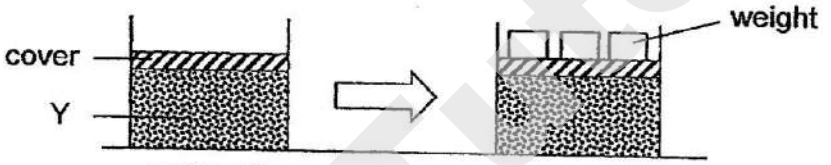
23. Cheshire conducted an experiment to find out the characteristics of two substances.

In set-up P, she observed that the cover moved downwards after she had placed weights on top of it.



set-up P

In set-up Q, Cheshire placed substance Y into a similar container. She observed that the cover did not move after weights were placed on top of it.



set-up Q

Based on her observations, what can Cheshire conclude about substance Y?

A. It occupies space.
B. It can be compressed.
C. It has a definite shape.
D. It has a definite volume.

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

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24. The table below shows how temperature affects the amount of time spent by insect F in different stages of its life cycle.

	Duration (h)		
Temperature (°C)	Egg stage	Larval stage	Pupal stage
25	14	180	192
30	10	132	108
35	8	84	84

Based on the information, which of the following statements are correct?

A. Insect F has a three-stage life cycle.

B. As the temperature increases, more insect F dies.

C. The duration spent in larval stage is longer than egg stage.

D. As the temperature decreases, insect F takes a longer time to hatch.

(1) A and B only

(2) B and C only

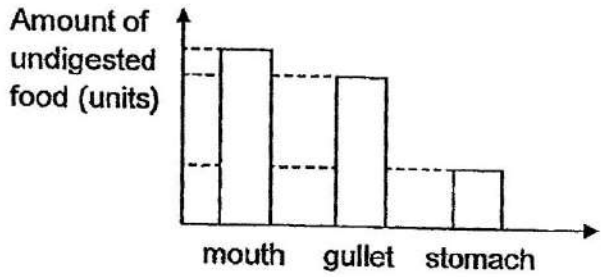
(3) C and D only

(4) B, C and D only

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25. Donald ate some food. The graph shows the amount of undigested food left at each part before it moved to the next part of his digestive system



Based on the information, which of the statement(s) is/are correct?

A. Some food is digested in the gullet.
B. Further digestion takes place in the stomach.
C. The gullet and stomach produce digestive juices.
D. Undigested food is absorbed in the gullet and stomach.

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

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26. Two metal bars, X and Y, and a bar magnet could be arranged as shown in Diagram 1.

Diagram 2 shows the observation when the three bars were rearranged. Bar Y dropped when the ends G and H were placed together.

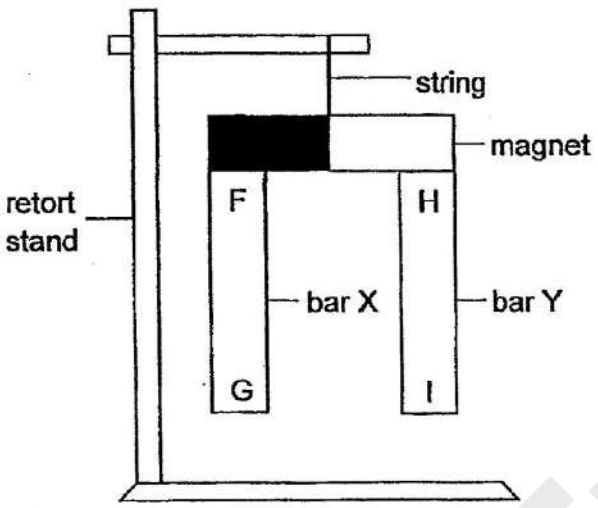


Diagram 1

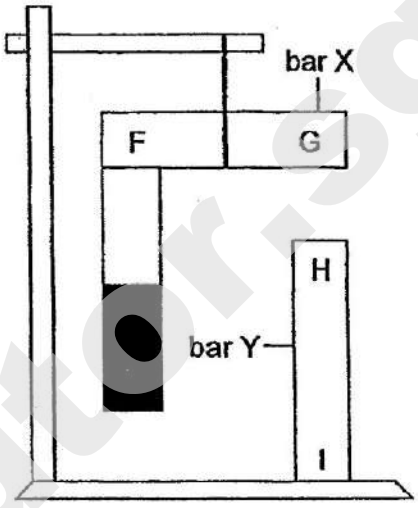


Diagram 2

Based on the observations, which of the following statements are correct?

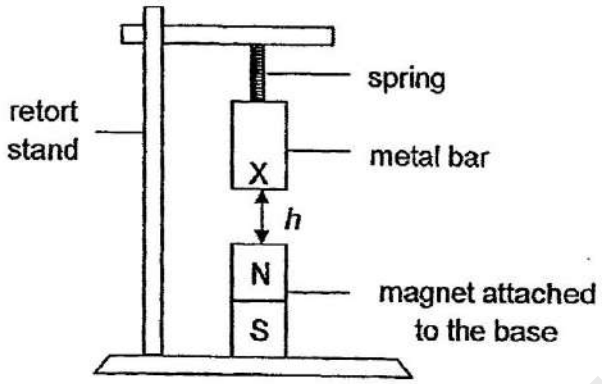
A. X is a magnet.
B. Y is a magnet.
C. X is not a magnet but its material is magnetic.
D. Y is not a magnet but its material is magnetic.

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

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27. A metal bar was hung on a retort stand by a spring as shown below.



Which of the following predictions is most likely to be incorrect?

(1) If the metal bar is made of iron, *h* will decrease.
(2) If the metal bar is made of copper, *h* will increase.
(3) If X is the north pole of a bar magnet, *h* will increase.
(4) If X is the south pole of a bar magnet, *h* will decrease.

28. John wishes to design an umbrella to shelter him from the rain.



Which of the following materials shown in the table below is most suitable for making part U of the umbrella?

	Material	Able to tear easily	Able to absorb water	Allows light to pass through
(1)	J	✓	✓	✓
(2)	K	✓	×	×
(3)	L	×	✓	✓
(4)	M	×	×	✓

END OF BOOKLET A
GO ON TO BOOKLET B

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MAHA BODHI SCHOOL
2018 SEMESTRAL ASSESSMENT 1
PRIMARY 5 SCIENCE
(BOOKLET B)

Name : _____( )

Class : Primary 5 _____

Date : 8 May 2018

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

INSTRUCTIONS TO CANDIDATES:

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

Booklet	Marks Obtained	Max Marks
A		56
B		44
Total		**100**

Parent's Signature : _____

This booklet consists of 19 printed pages.

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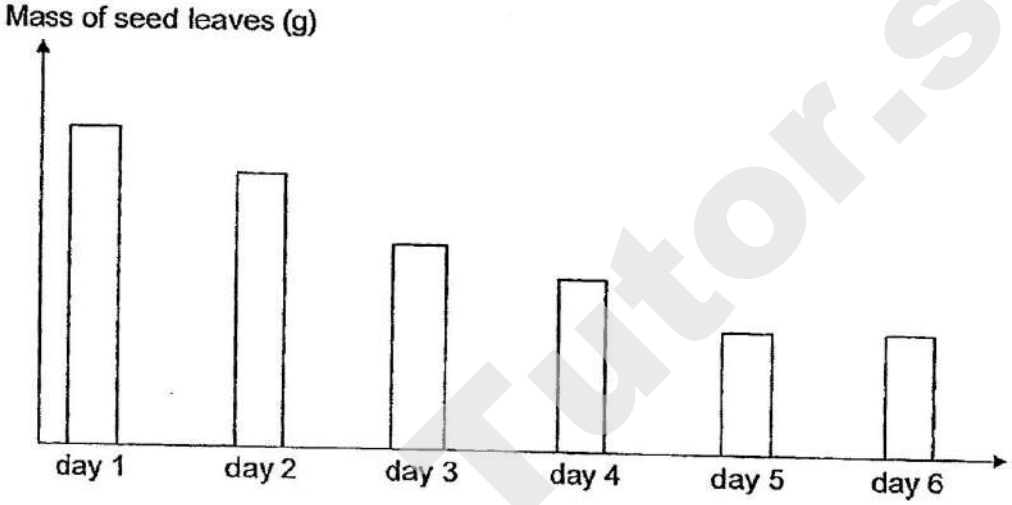
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BOOKLET B : [44 marks]
For questions 29 to 41, write your answers in this booklet.

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

29. The graph below shows how the mass of the seed leaves changed after the seed germinated.



(a) State how the mass of the seed leaves changed as the number of days passed from day 1 to day 4. [1]

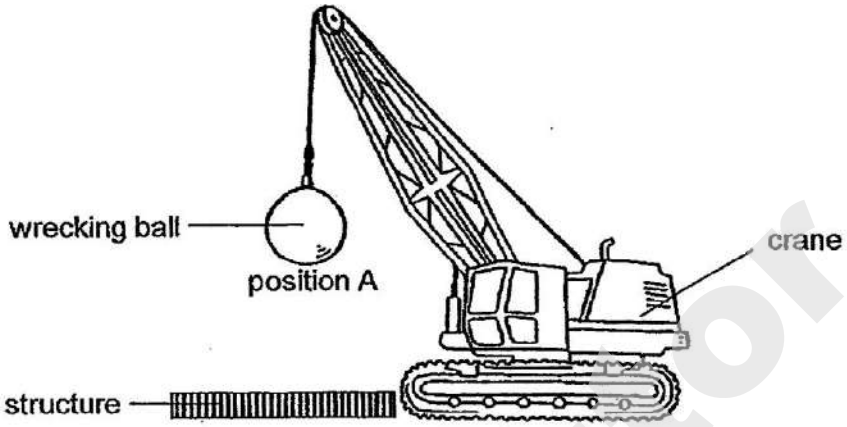
(b) What do you notice about the mass of the seed leaves from day 5 onwards? Explain why this happened. [2]

Marks : / 3

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30. Wrecking balls are used at construction sites to break structures. The ball is lifted up by the crane to position A, as shown in the diagram, before it is allowed to drop freely to the structure.



(a) Name the energy possessed by the ball when it is at position A. [1]

_____

(b) Suggest how the set-up can be improved in order for the ball to break the structure faster. [1]

_____

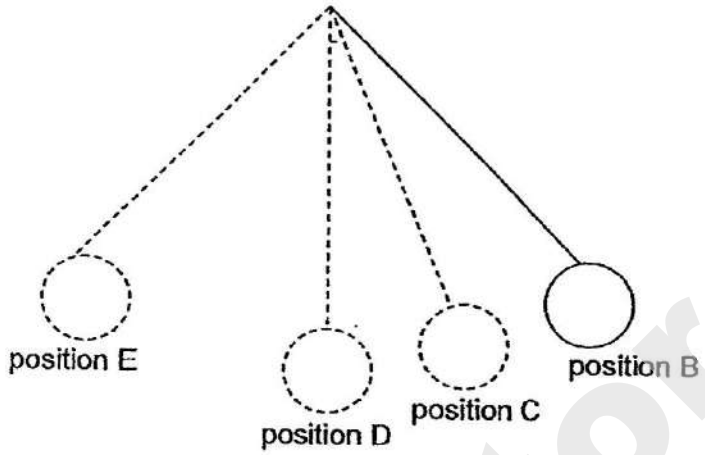
_____

Marks : /2

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The ball can also be used in another manner shown in the diagram below. When the ball is raised and released at position B, it swings to position C, position D and then position E.



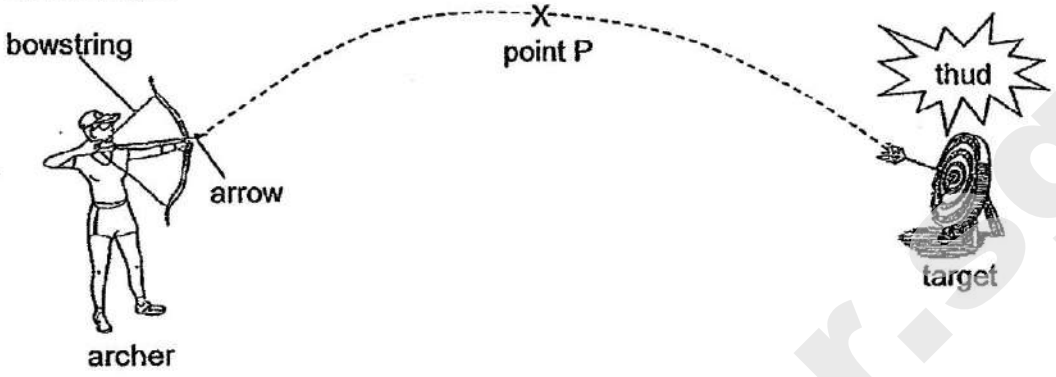
(c) Which position (C, D or E) should the swinging ball be at for it to break down a vertical wall most easily? Explain your answer. [2]

Marks: /2

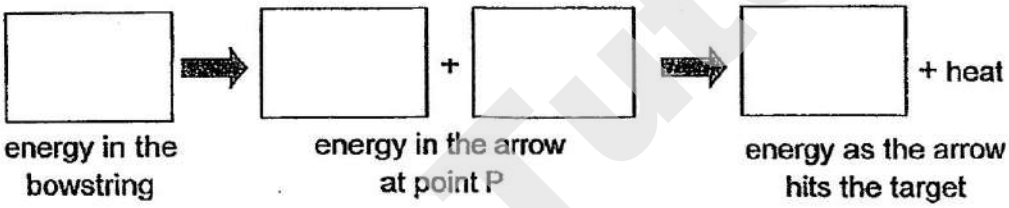
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31. An archer shot an arrow as shown in the diagram below. He pulled back the bowstring, together with the arrow, and then released it, allowing the arrow to hit the target.



(a) Fill in the boxes below to show the energy conversion involved in this activity starting from the time the bowstring was pulled. [2]



(b) An experiment was conducted to find out about the relationship between the distance the bowstring was pulled back and the distance travelled by the arrow. The results are shown below.

Distance the bowstring was pulled back (cm)	Distance travelled by the arrow (m)
45	15
50	18
55	25
60	30

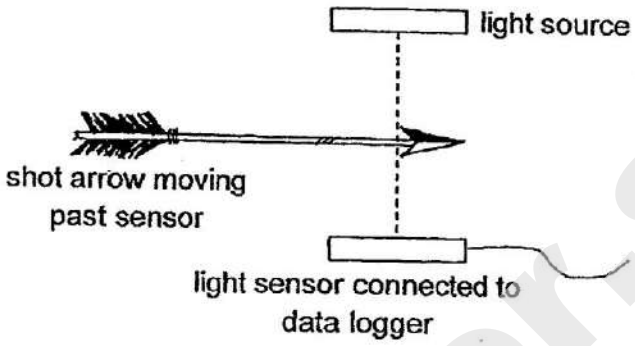
(i) Based on the results above, state the relationship between the distance the bowstring was pulled back and the distance travelled by the arrow. [1]

Marks : / 3

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(b) (ii) In a separate competition, the archer measured how fast his arrow moved using a light source and a light sensor as shown in the diagram below.



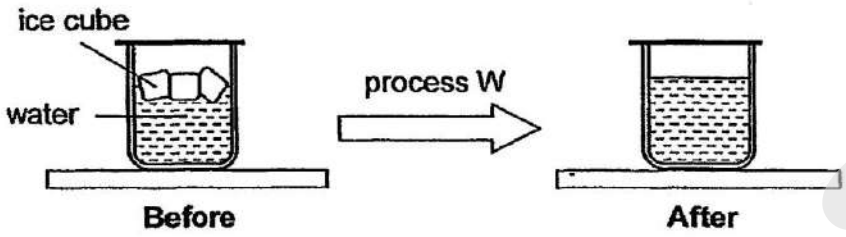
Using the same bow and arrow, what should the archer do to allow his arrow to move faster? Explain your answer. [2]

Marks : /2

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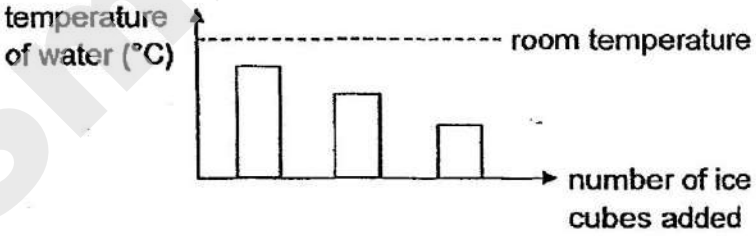
32. Some ice cubes were placed into a container of water at room temperature. The container was then left on a table in a room. The diagram below shows the observations of the set-up before and after process W had taken place.



(a) Name process W that had caused the ice cubes to change state. [1]

(b) How did heat flow between the ice cubes and water during process W? [1]

Rachel wanted to find out how the temperature of water was affected by the number of ice cubes added to it. She placed different number of ice cubes into containers of water. She measured the temperature of the iced water after some time. Her results are shown in the graph below.



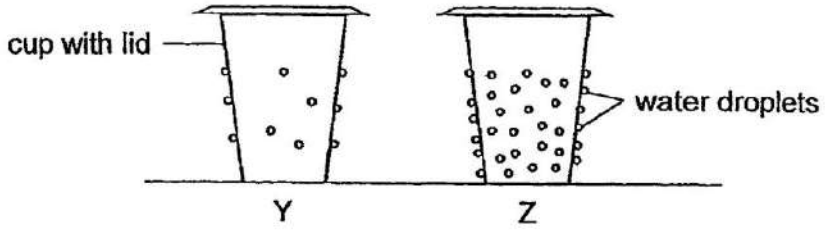
(c) How would using containers of the same material ensure a fair test? [1]

Marks : / 3

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Rachel left two cups of iced water, Y and Z, on a table in a room. The diagram below shows her observation of the cups after some time.



(d) Based on the observation above, explain why we could conclude that the water in cup Z had more ice cubes. [2]

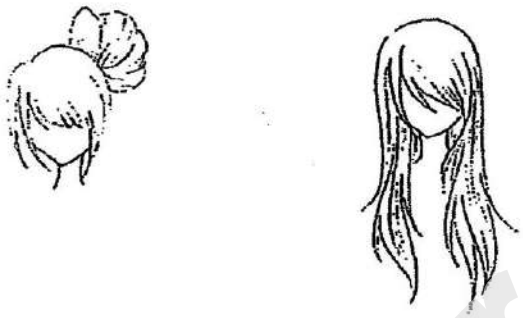
Marks : / 2

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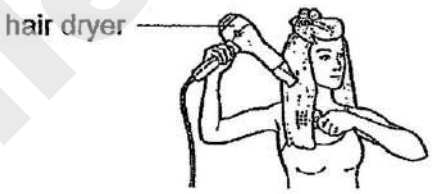
33. (a) (i) The diagram below shows two different hairstyles of Ai Swee.

Hairstyle J **Hairstyle K**



Explain why hairstyle J would cause Ai Swee's wet hair to dry slower than hairstyle K. [1]

(ii) A hair dryer that gives out hot moving air is used to dry wet hair.



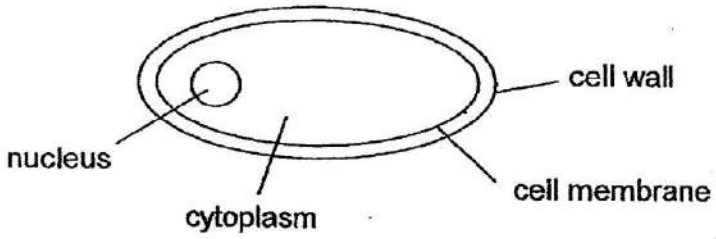
Explain how the hot moving air can dry Ai Swee's wet hair quickly. [1]

Marks : / 2

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34. Study the diagram of cell F below.



(a) Based on the diagram, state one difference between cell F and a typical animal cell. [1]

(b) The diagram below shows a mushroom and a fern.


mushroom


fern

Explain why cell F is more likely to be taken from the mushroom than from a leaf of the fern. [1]

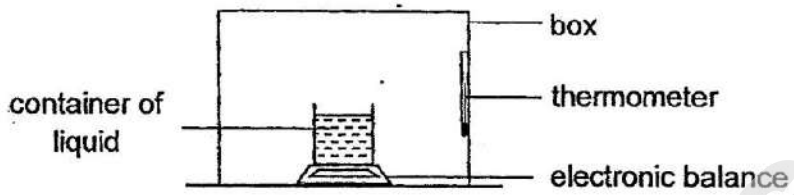
(c) The spores of mushroom will develop over time to look like their parent mushrooms.
State the cell part and its function that allows this characteristic of the spores. [1]

Marks : / 3

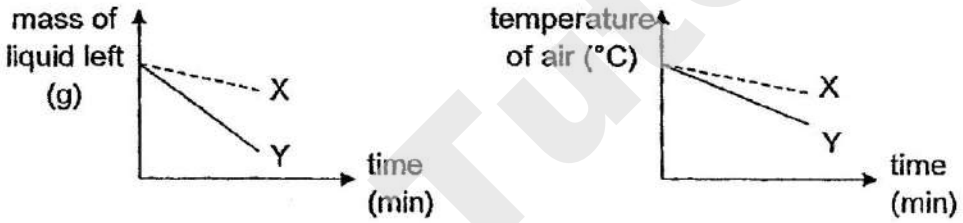
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(b) Tom wanted to find out how the type of liquid could affect its surrounding temperature. He placed a container of liquid X in a sealed box as shown below.



He recorded how the mass of liquid left and the temperature of air in the box changed over a period of time. He repeated the experiment with liquid Y. His results are shown in the graphs below.



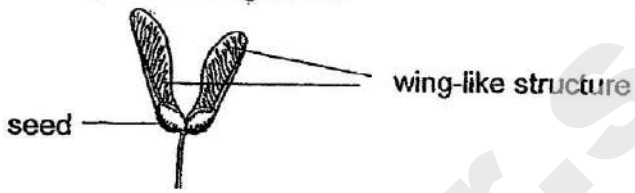
Based on the results, explain how liquid Y is better in cooling its surroundings. [2]

Marks : / 2

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35. (a) Why is it important for plants to disperse their seeds? [1]

(b) Paul saw some fruits from a plant in the garden.



Paul wanted to find out if the presence of the wing-like structure would affect the time taken for the fruit to reach the ground. He took two similar fruits, A and B, from the plant and removed the wing-like structure from fruit B. He then dropped the two fruits, as shown below, from the same height and measured the time taken for them to reach the ground.



fruit A
mass of fruit : 25g

fruit B
mass of fruit : 25g

The results were shown in the table below:

	Time taken to reach the ground (s)			
	Try 1	Try 2	Try 3	Average
Seed A	15.6	14.8	15.2	15.2
Seed B	3.5	4.2	3.9	3.9

(i) Based on the results, what can Paul conclude from his experiment? [1]

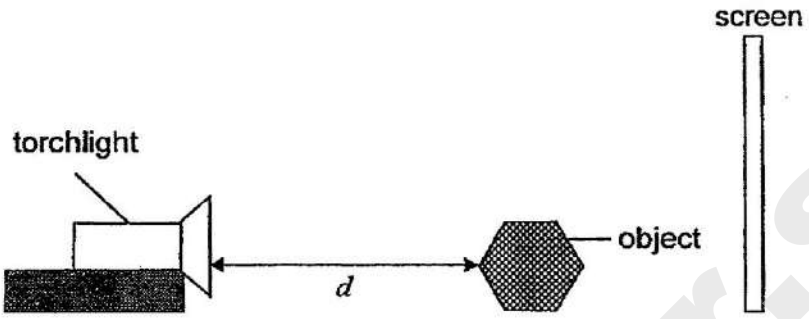
(ii) State how your answer in part (i) helps in the dispersal of the fruit. [1]

Marks : / 3

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36. Phillip conducted an experiment to investigate how the distance between the torchlight and object, *d*, would affect the height of the shadow. He used the set-up shown below.



He measured the height of the shadow formed on the screen and repeated the experiment three times before changing the distance. The results are shown in the table below.

	Height of shadow (cm)			
d (cm)	Try 1	Try 2	Try 3	Average
10	8.3	8.5	8.6	8.5
15	5.4	5.2	5.1	5.2
20	3.5	3.1	3.3	3.3

(a) Why did Phillip repeat his experiment three times for each distance? [1]

(b) If Phillip kept distance *d* at 10cm, how would the height of the shadow change if the screen was moved further away from the object? [1]

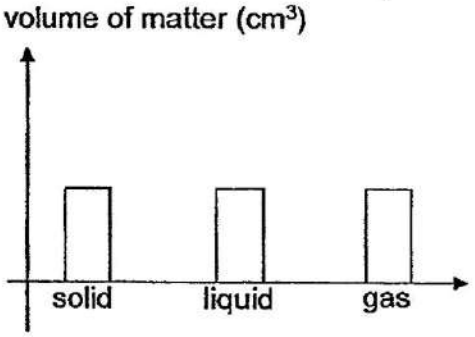
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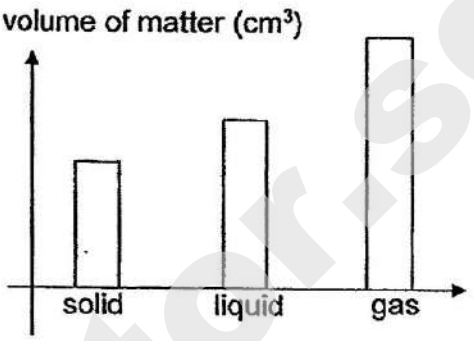
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37. An experiment was conducted to investigate how different states of matter would expand when they were provided with the same amount of heat over a fixed period of time.

The results of the experiment are shown in the graph below.



before heating



after heating

(a) What does the results above tell you about the expansion of gas as compared to the other states of matter upon heating? [1]

_____

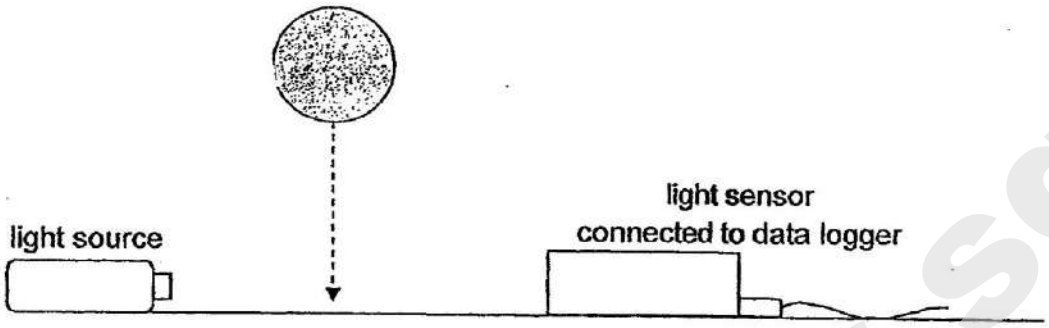
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Marks : / 1

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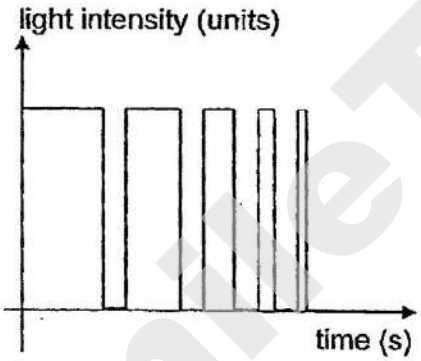
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In a separate experiment, a ball was dropped in between a light source and a light sensor as shown in the diagram below.

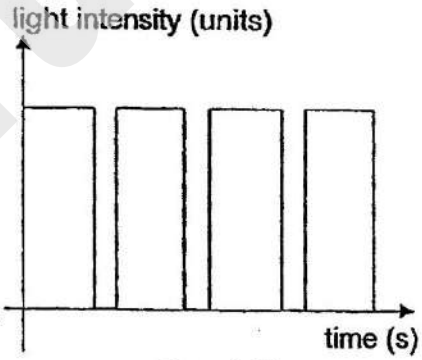


As the ball bounced, the amount of light detected by the light sensor was recorded.

(c) Which of the graphs, E or F, correctly shows the results of the experiment? Explain your answer. [1]



Graph E

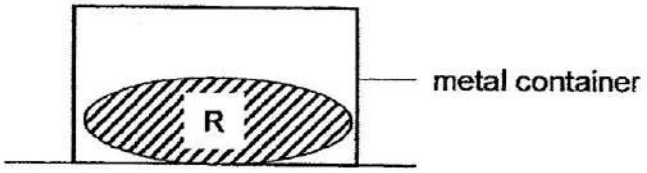


Graph F

Marks : /

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38. Substance R was placed into a sealed rectangular metal container as shown below.



(a) Based on your observation, what state of matter was substance R in? Give a reason for your answer. [1]

_____

_____

(b) The temperature in the container was raised to above the melting point of substance R, but below its boiling point, for some time.

What state of matter had substance R become? Explain your answer. [1]

_____

_____

(c) Next, the temperature in the container was finally lowered to be below the melting point of substance R for some time.

State the process that substance R underwent and suggest the final shape of substance R. [1]

Process: _____

Shape of substance R: _____

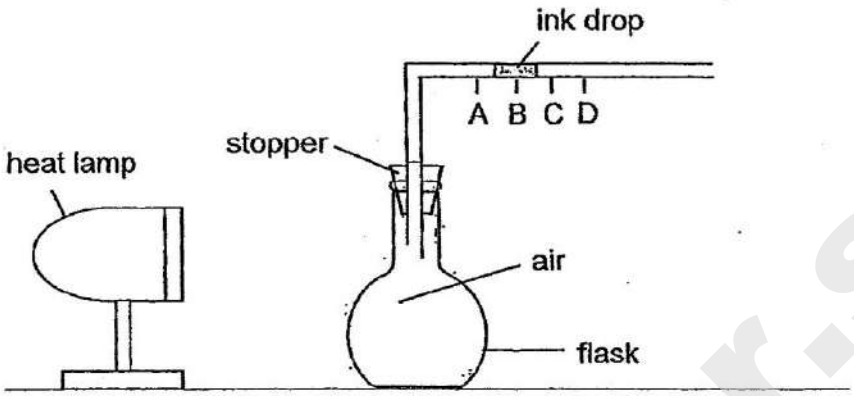
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Marks : ____ / 3

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(b) Faith conducted an experiment using the set-up shown below.



(i) When the heat lamp was switched on for two minutes, the ink drop moved to position D. Describe how this happened. [2]

(ii) Faith repeated the experiment by filling the flask completely with a liquid before switching on the heat lamp.

Predict where the ink drop would move from position B after two minutes. [1]

Marks : / 3

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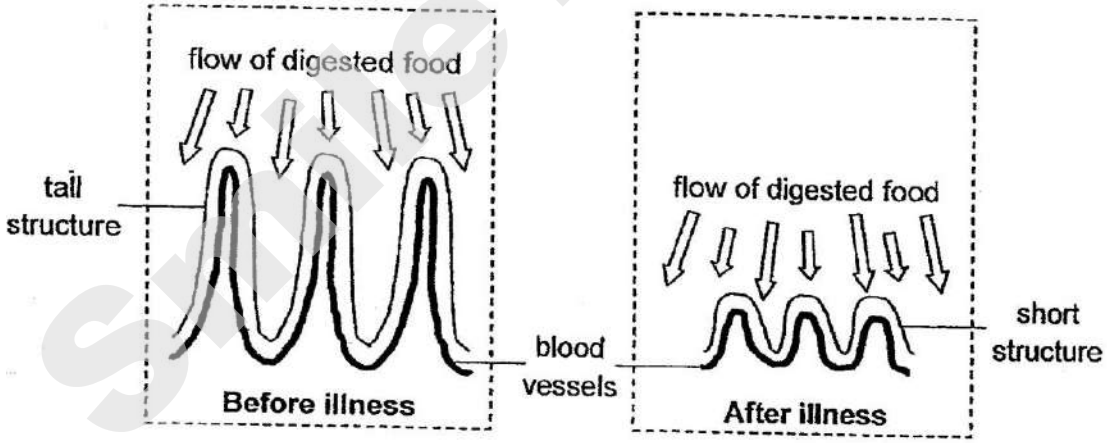
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39. Pete wanted to find out how the area of a cloth would affect the amount of water being absorbed. He poured water on a cloth and measured the amount of water absorbed by the cloth. He repeated the experiment with another cloth of a different area. His results are shown in the table below.

Cloth	Area of cloth (cm^2)	Amount of water absorbed (cm^3)
P	100	50
Q	400	70

(a) Based on the results, how did the amount of water absorbed change with the area of the cloth? [1]

Food from the stomach goes into the small intestine before moving into the large intestine.
The diagram below shows the magnified view of the structures found on the walls of small intestine in a person before and after his illness.



(b) Based on the information, explain why the blood vessels carry less digested food after the person had the illness. [1]

Marks : /2

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40. Diagram 1 shows rod X being suspended by a wire. Diagram 2 shows the observation made when an electromagnet was placed near rod X.

Diagram 1

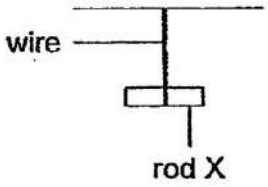
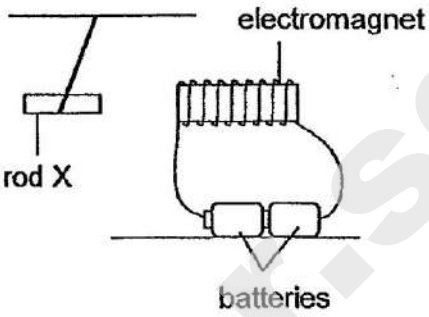


Diagram 2



(a) Based on the above information, explain why rod X was most likely to be a magnet? [1]

_____

_____

(b) Without replacing the electromagnet, suggest a change to the set-up so that the distance between rod X and the electromagnet could become shorter. [1]

_____

_____

(c) After removing the electromagnet set-up, rod X was suspended freely with a string.

What would be observe about rod X? [1]

_____

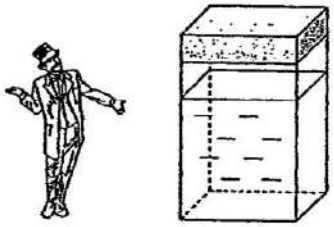
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Marks : / 3

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41. A magician wished to find a suitable material to build a water tank for his magic trick.



He conducted a test to find out how different materials would affect the amount of light passing through them. He wanted his audience to see what happened in the tank clearly.

The results of the test are as shown below.

	Amount of light passing through (units)		
Material	**Try 1**	**Try 2**	**Average**
X	134	144	139
Y	40	52	46
Z	185	201	193

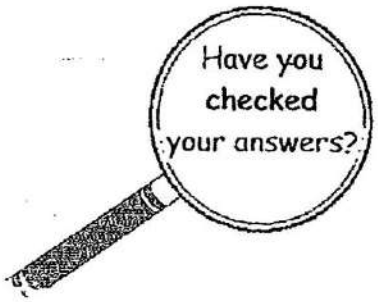
(a) The material used for the tank should allow light to pass through. State another property the material should also have. [1]

_____

(b) Which of the following materials X, Y or Z would be most suitable for making the tank? Explain your answer. [1]

_____

_____



~ END OF PAPER ~

Marks : / 2

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SCHOOL : MAHA BODHI PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA1

CONTACT :

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	2	2	1	3	2	4	2	1	4
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	2	4	1	3	1	1	4	2	4
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
3	3	3	3	2	4	2	4		

SECTION B

Q29)	a) The mass of the seed leaves decreases as the number of days passed from Day 1 to Day 4. b) It remains the same. The young plant does not need to absorb food from the seed leaves as it can make its own food when it develop leaves.
Q30)	a) Gravitational potential energy b) Lift the wrecking ball using the crane higher than position A. c) Position D. Position D has the largest amount of kinetic energy as most amount of gravitational potential energy will be converted to kinetic energy as it is the lowest position.
Q31)	a) Elastic potential energy – Gravitational potential energy – Kinetic energy – Sound energy b) i) As the distance the bowstring was pulled back increases, the distance travelled by the arrow increases. ii) Pull the bowstring back even more. More elastic potential

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	energy is converted to more kinetic energy. Therefore, the arrow will move faster.
Q32)	a) Melting b) The ice cube gains heat from the water and melts. c) The containers will conduct the same amount of heat d) There were water droplets on the outer surface of the cup. The water lost more heat to more ice cubes in the cup. The surface of the cup became cooler than cup Y as it lost more heat to the iced water. More water vapour can lose heat to cup Z and condense into water droplets.
Q33)	a) i) Hairstyle K has more exposed surface area than Hairstyle J. Therefore, the rate of evaporation of water in her wet hair is faster. ii) There is a larger amount of heat and presence of wind to increase the water's rate of evaporation. b) Liquid Y evaporates faster than Liquid X. When Liquid Y evaporates, more heat is gained by Liquid Y. Therefore, Liquid Y is better in cooling its surroundings.
Q34)	a) Cell F has a cell wall while typical animal cell doesn't b) Cell F doesn't have chloroplasts so it cannot make food. Mushrooms cannot make its own food but ferns can. c) Nucleus. It contains information that is passed on from parents to their young.
Q35)	a) The young plants will have less competition for space, water, sunlight and nutrients. b) i) Wing-like structure allows the seed to stay in the air for a longer period of time. ii) The seed can be carried further away from the parent plant.
Q36)	a) To ensure a reliable result. b) The height of the shadow will be larger. c) Graph E. As the ball bounces more, it bounces lower. The duration of the light captured by the light sensor decreases.
Q37)	a) Gas expanded the most when heated.

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	b) i) The air in the flask gained heat and expanded. The air in the flask pushed the ink drop to position D. ii) C
Q38)	a) Solid. It has a fixed shape. b) Liquid. R melted to become a liquid c) Process : Freezing Shape of substance R : Rectangular
Q39)	a) As the area of cloth increased, the amount of water absorbed increases. b) The short structure have smaller exposed surface area. Less digested food would be absorbed.
Q40)	a) Rod X repelled from the electromagnet. Only magnets can repel magnets. b) Remove a battery from the electromagnet. c) It would point in a North-South direction.
Q41)	a) It is waterproof. b) Z. It allowed the most amount of light to pass through. The audience will be able to see through the tank most clearly.

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METHODIST GIRLS' SCHOOL
Founded in 1887

MID-YEAR EXAMINATION 2018
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 : 8 May 2018

This booklet consists of 9 printed pages including this page.

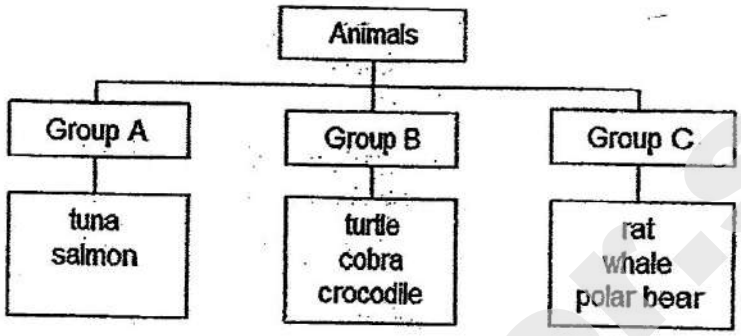
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For each question from 1 to 14, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS). [28 marks]

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1 Study the following classification chart.



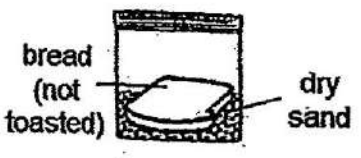
Which of the following statements are correct?

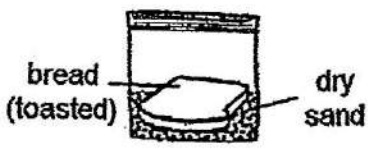
A Only the animals in Group B breathe through lungs.
B Only the animals in Group C give birth to their young alive.
C Only the animals in Group A will try to get away from their predators.
D Animals in Group A and B share at least one common characteristic.

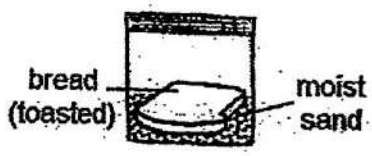
(1) A and B only
(2) A and D only
(3) B and C only
(4) B and D only

2 An experiment was carried out to see how fast bread mould will grow under different conditions. The plastic bags are all sealed.

In which set-up would the bread turn mouldy in the shortest time?

(1)


(2)


(3)


(4)


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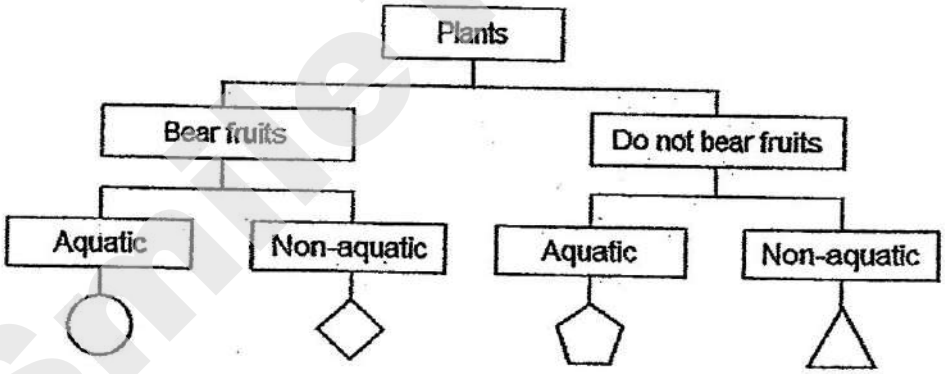
3 Which of the following statements about bacteria are true?

A All bacteria are organisms.
B All bacteria have chloroplasts.
C All bacteria can move by themselves.
D All bacteria are harmful and cause illness.

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

4 The table below shows information of three plants, A, B and C, based on two characteristics. A tick (✓) shows that the plant has the characteristic.

Characteristics \ Plants	A	B	C
Has flowers		✓	
Grows on land			✓



From the information given above, which of the following represent Plants A, B and C in the classification chart?

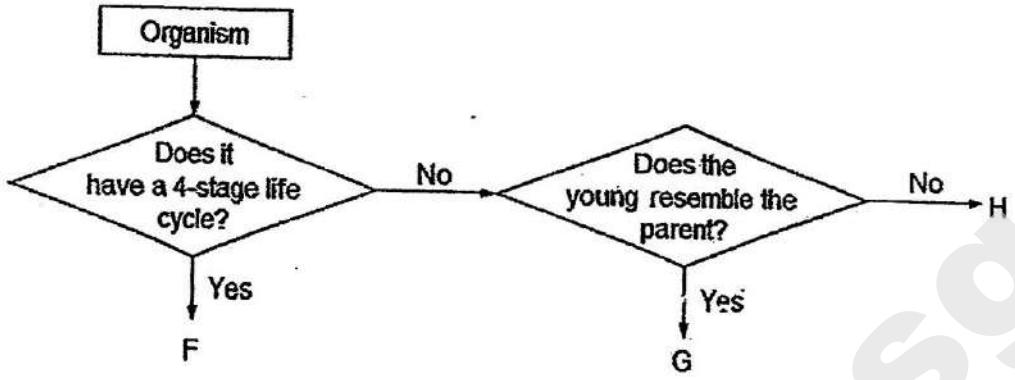
	Plant A	Plant B	Plant C
(1)	△	◇	○
(2)	◇	△	⬠
(3)	○	⬠	◇
(4)	⬠	○	△

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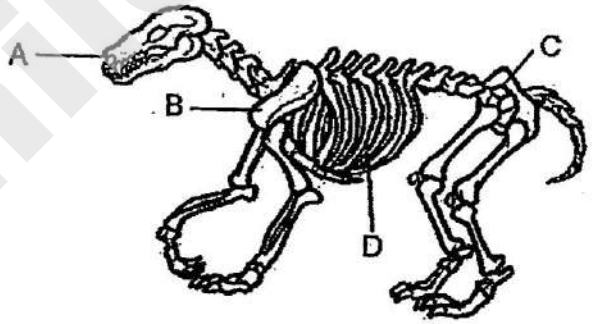
5 Study the following flow chart.



Which of the following represent organisms F, G and H correctly?

	F	G	H
(1)	moth	frog	housefly
(2)	butterfly	chicken	frog
(3)	dog	toad	butterfly
(4)	grasshopper	dog	mosquito

6 The diagram below shows the skeletal structure of a cat.



When a cat breathes, it takes in air into its lungs. Which part of the skeletal structure protect these organs?

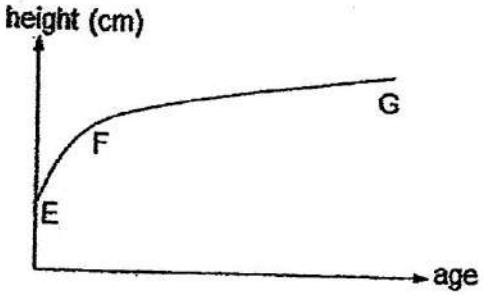
(1) A
(2) B
(3) C
(4) D

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7 The graph below shows the height of a person changing over a period of time.



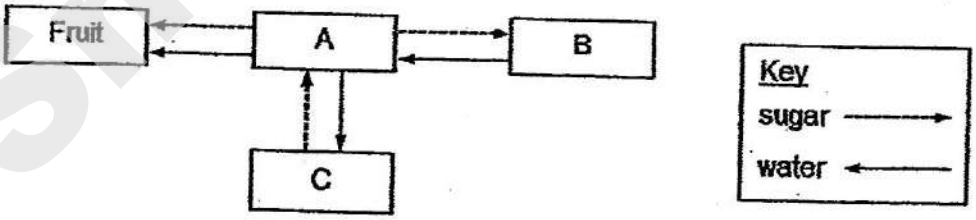
After studying the graph, the students made the following statements.

Arjun: There is an increase in height from E to F as the size of the cells in the body grow larger.
Beng: There is an increase in height from E to F as the number of the cells in the body increases.
Zukri: There is not much change in height from F to G because there is no cell division.

Whose statement(s) is/are correct?

(1) Arjun only
(2) Beng only
(3) Arjun and Zukri only
(4) Beng and Zukri only

8 The diagram below shows how sugar and water are transported to and from different parts of a plant.



Which of the following show the parts of the plant represented by A, B and C?

	A	B	C
(1)	leaves	stems	roots
(2)	stems	roots	leaves
(3)	roots	stems	leaves
(4)	roots	leaves	stems

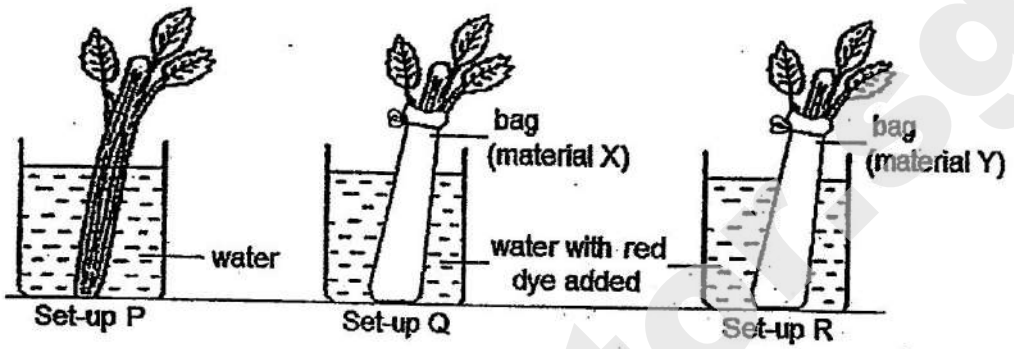
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9 An experiment was set up in the laboratory as shown below. Three identical celery stalks were used in an experiment.

The celery stalk in Set-up P was placed in tap water. The bases of the celery stalks in Set-ups Q and R were placed in bags, made from materials X and Y respectively, before placing them into the beakers of water with red dye added.



After five days, the following observations were made.

Set-up	P	Q	R
Observation	Leaves were green and did not wilt	Leaves were yellowish and wilted	Leaves did not wilt. Their edges were red.

Which of the following statements are correctly inferred from the observations?

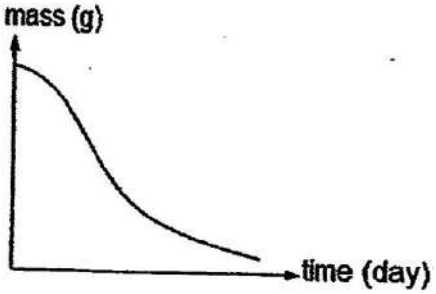
A Water could pass through material X.
B Water could pass through material Y.
C The food-carrying tubes of the celery could transport water to the leaves.
D The water-carrying tubes of the celery could transport red dye to the leaves.

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

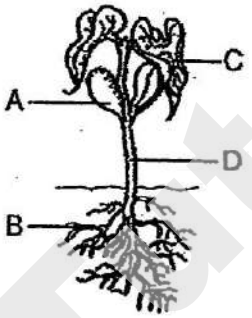
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10 The graph below shows the mass of a part of the plant as its seedling develops.

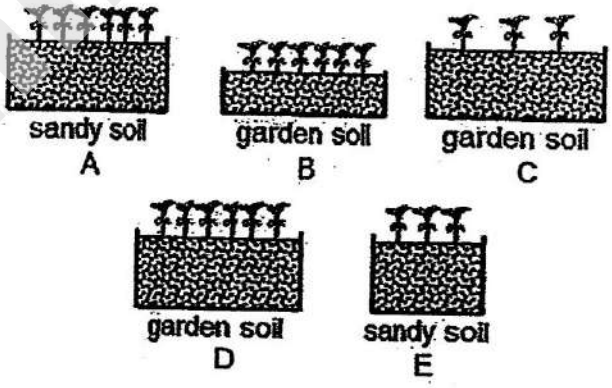


Which part of the plant, A, B, C or D, does the graph show?



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

11 Tim wanted to find out if overcrowding would affect the growth of seedlings.



He placed seeds of the same type in five pots of soil and placed them in a sunny part of a garden. He watered the seeds daily with the same amount of water. After a week, the seeds developed into seedlings.

Which two pots of seedlings should Tim observe to make a fair comparison?

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

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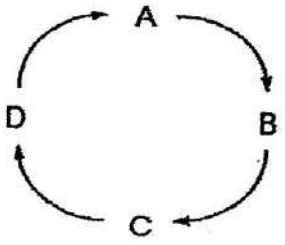
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12 A, B, C and D are processes occurring in the life cycle of a plant.

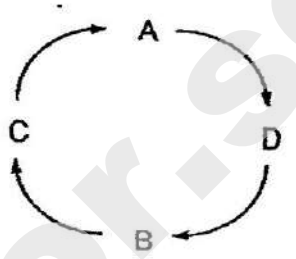
A Dispersal
B Pollination
C Fertilisation
D Germination

Which of the following shows the correct order of the processes?

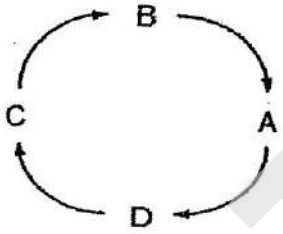
(1)



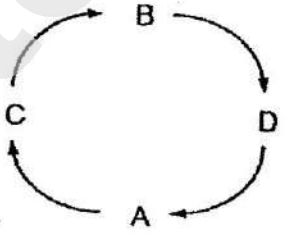
(2)



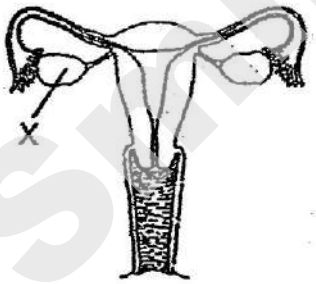
(3)

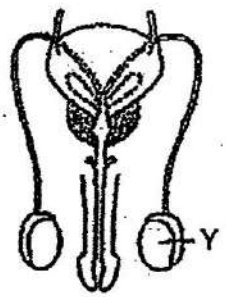


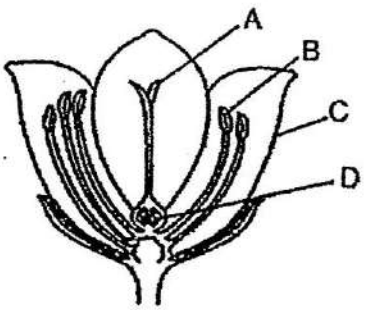
(4)



13 The diagram below shows the reproductive parts of human and plants.







Which of the following represents the parts of the flower which have the same function as X and Y respectively?

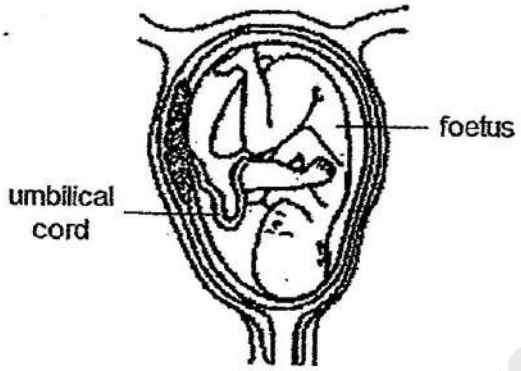
	X	Y
(1)	A	C
(2)	D	B
(3)	C	D
(4)	B	A

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14 The diagram below shows a developing foetus in its mother's womb.



Which of the following substances are transported from the foetus to its mother through the umbilical cord?

A blood
B carbon dioxide
C nutrients
D oxygen

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

End of Booklet A1

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MID-YEAR EXAMINATION 2018
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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 : 8 May 2018

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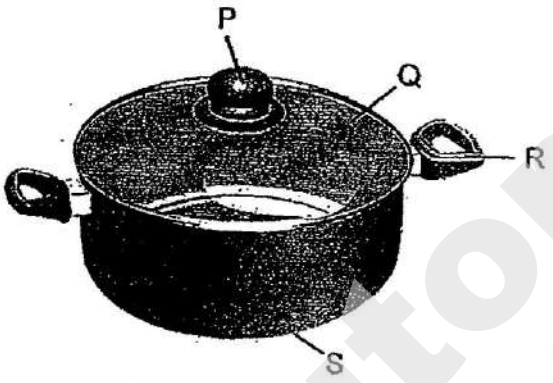
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For each question from 15 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS).

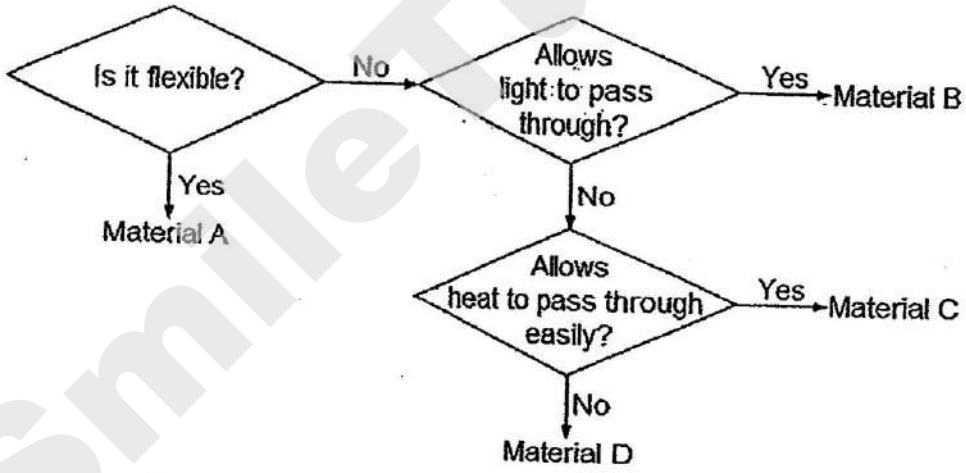
[28 marks]

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15 The diagram below shows a pot with parts P, Q, R and S. Without opening the cover, the user is able to see the interior of the pot.



The flow chart below shows the properties of four materials A, B, C and D.



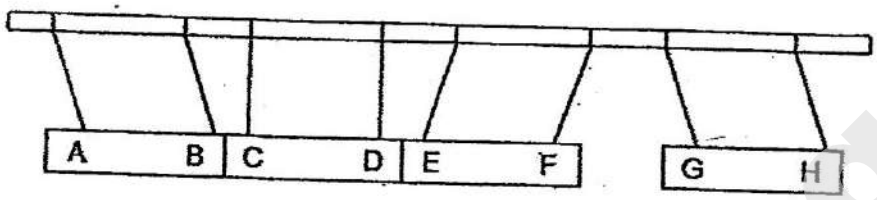
Which of the following shows the most suitable material to be used for each part of the pot?

	Part P	Part Q	Part R	Part S
(1)	A	C	D	B
(2)	B	D	A	C
(3)	D	B	D	C
(4)	D	B	A	C

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16 The diagram below shows the interaction of four magnets hanging from strings tied to a horizontal pole.

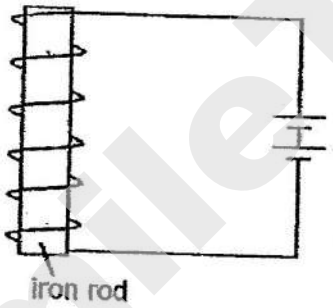


Which one of the following statements is **incorrect**?

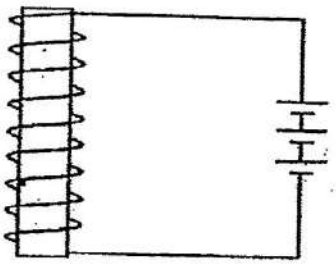
(1) C will repel H
(2) B and D are like poles
(3) G will be attracted to A
(4) A and H are unlike poles

17 The iron rods used in each of the following set-ups are identical. Which set-up will attract the most number of iron nails?

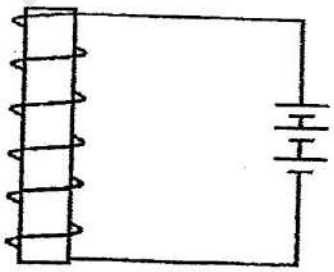
(1)



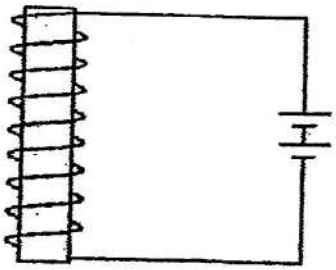
(2)



(3)



(4)



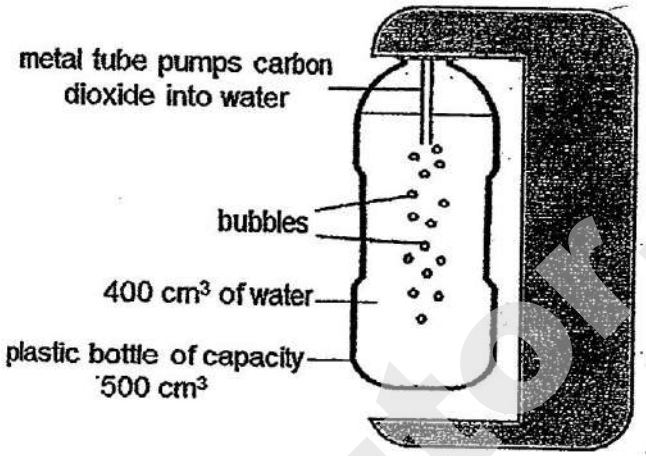
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18 Alan has a soda-making-machine at home. To make a bottle of soda, he filled a container of capacity 500 cm^3 with 400 cm^3 of water and placed it into the machine.

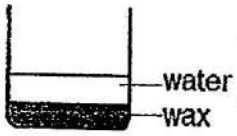
Alan then switched on the machine. The metal tube will pump 300 cm^3 of air into the bottle of water. Bubbles were seen in the water.



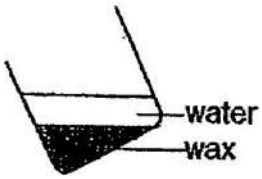
What is the volume of air in the bottle?

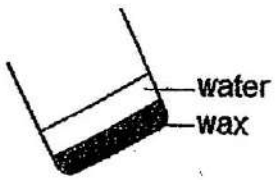
(1) 100 cm^3
(2) 200 cm^3
(3) 300 cm^3
(4) 400 cm^3

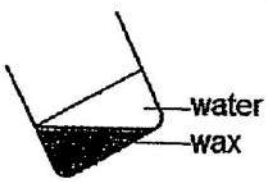
19 Anne melted some wax, which has a melting point of 37 °C, in a beaker. It was then left to cool at room temperature. The next day, she added cold water at 20 °C into the same beaker. She recorded her observation in the following diagram.

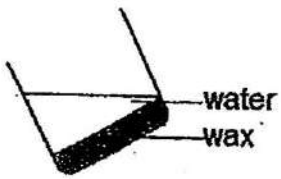


She then tilted the beaker slightly. Which one of the following diagrams correctly shows the content in the beaker when the beaker is tilted?

(1)


(2)


(3)


(4)


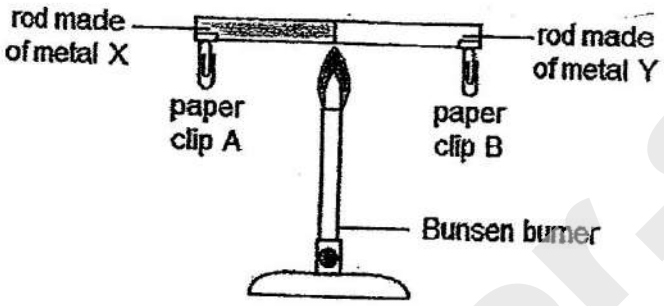
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20 Nila set up an experiment to find out which metal, X or Y, could conduct heat better.

She attached identical paper clips, A and B, at both ends of a rod made of metal X and Y respectively with candle wax. She heated the rod in the middle with a Bunsen burner as shown in the diagram below.



She conducted the experiment three times and recorded the time taken for each paper clip to drop. The results are as shown in the table below.

	Time taken for the pin to drop (second)		
Pin	1st reading	2nd reading	3rd reading
A	77	75	76
B	57	60	58

Based on the results, which of the following statements are true?

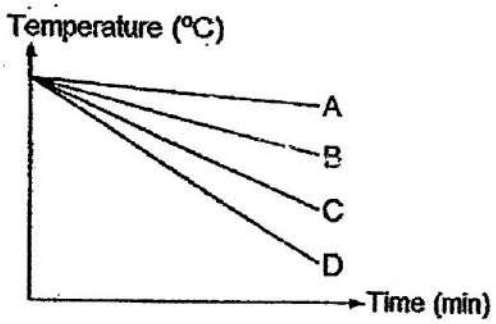
A Metal X gains heat faster than Metal Y.
B Metal Y gains heat faster than Metal X.
C Metal X is a better conductor of heat than Metal Y.
D Metal X is a poorer conductor of heat than Metal Y.

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

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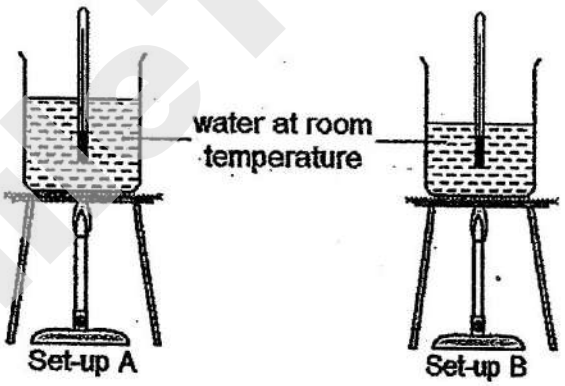
21 Melvin poured an equal amount of hot water of the same temperature into containers A, B, C and D. The temperature of hot water in each container is measured over a period of time. The graph below shows the results.



If Melvin is going on a picnic, and he wants to keep his ice cream cold for a longer period of time, which container should he used?

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

22 The diagram below shows two experimental set-ups.



Both beakers are heated until the water is boiling. Which of the following statements are true?

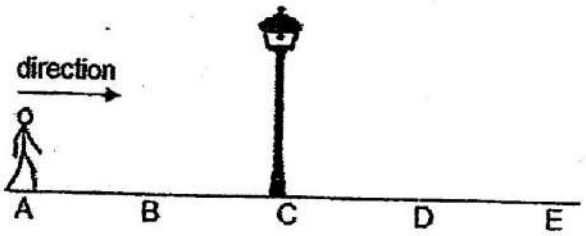
A The water in Set-up A is hotter than that in Set-up B.
B The water in Set-up A has more heat energy than that in Set-up B.
C The water in both set-ups contains the same amount of heat energy.
D The water in the set-ups will reach room temperature at different time after the Bunsen burners are removed at the same time.

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

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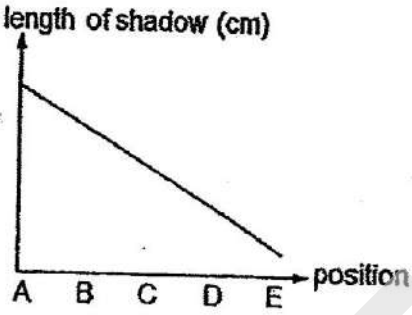
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23 Muthu walked past a lit street lamp from position A to E on a dark night as shown in the diagram below.

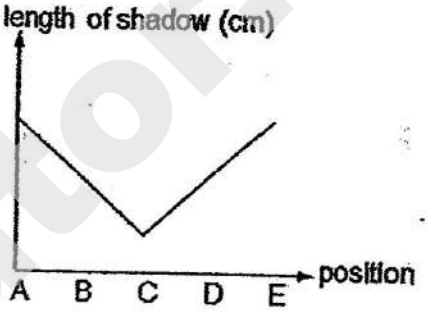


Which one of the following graphs shows the length of his shadow when he walked past the lit street from position A to E?

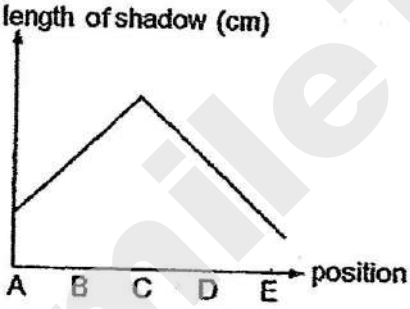
(1)



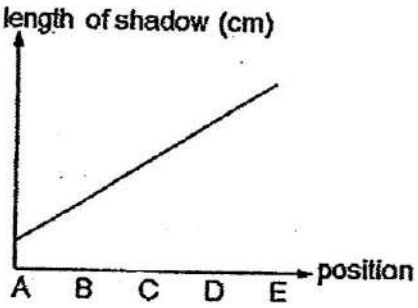
(2)



(3)



(4)

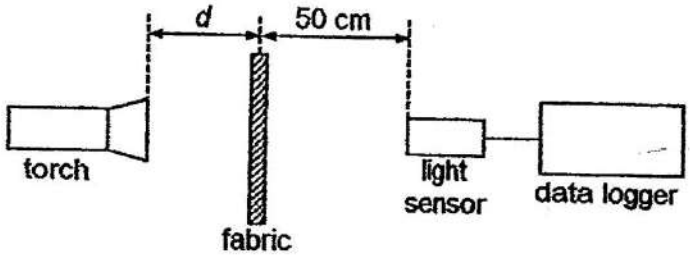


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24 Ah Meng wanted to make curtains to reduce the amount of light entering his bedroom. He conducted an experiment on 4 types of fabric, A, B, C and D.



The results are as shown. Which fabric should he choose to make curtains for his bedroom?

	Fabric	d, distance between the fabric and light source (cm)	Distance between the fabric and light detector (cm)	Amount of light detected (lux)
(1)	A	65	50	500
(2)	B	30	50	500
(3)	C	15	50	500
(4)	D	50	50	500

25 The table below shows the melting point and boiling point of two substances, X and Y.

Substance	Melting point (°C)	Boiling point (°C)
X	36	570
Y	15	400

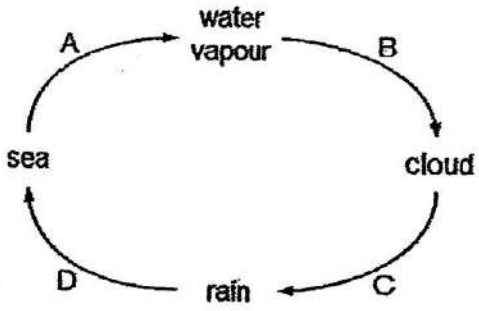
Which of the following shows the correct state of substances X and Y at 27°C and 413°C respectively?

	State of substance X at		State of substance Y at	
	27°C	413°C	27°C	413°C
(1)	liquid	gas	solid	gas
(2)	liquid	gas	solid	liquid
(3)	solid	gas	solid	liquid
(4)	solid	liquid	liquid	gas

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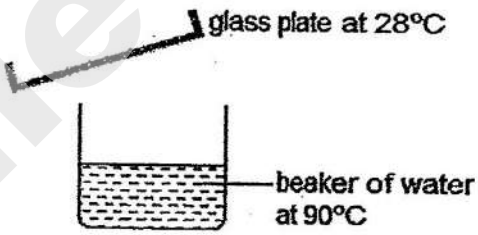
26 The diagram below shows the water cycle.



Which of the stages A, B, C and D involve a change of state?

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

27 The diagram below shows a set-up in which water changes from one state to another.



Which of the following will most likely result in an increase in the amount of water droplets formed on the glass plate?

A Add ice into the beaker
B Heat up the glass plate
C Put ice on top of the glass plate
D Add boiling water into the beaker

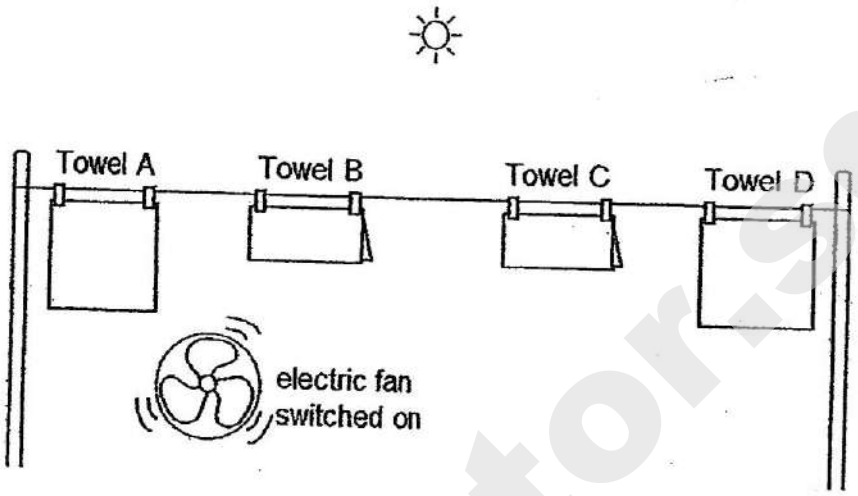
(1) A and B only
(2) A and C only
(3) B and D only
(4) C and D only

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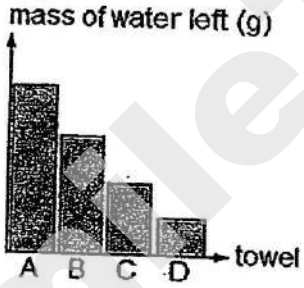
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28 Four identical towels, A, B, C and D, were soaked in the same amount of water for 10 minutes. They were then hung up under the sun, as shown below. An electric fan was switched on and directed at towels A and B only.

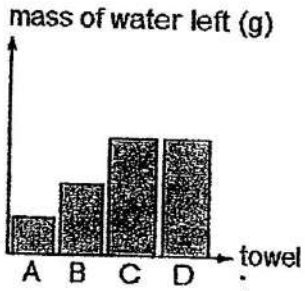


After an hour, the towels were weighed and the mass of water in each towel was calculated. Which one of the following graphs shows the mass of water left in the towels A, B, C and D?

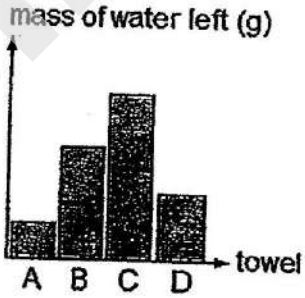
(1)



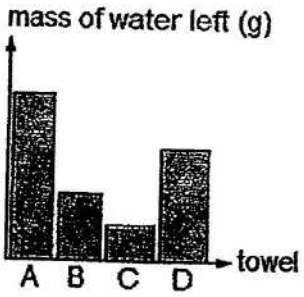
(2)



(3)



(4)



End of Booklet A2

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BOOKLET B1

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.

Name: _____ ( )

Class: Primary 5._____

Date : 8 May 2018

Booklet A1 & A2	/56
Booklet B1	/22
Booklet B2	/22
Total	/100
Parent's Signature	

This booklet consists of 9 printed pages including this page.

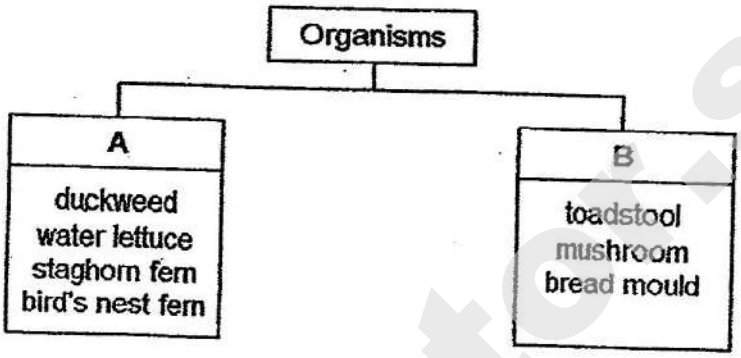
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For questions 29 to 34, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

[22 marks]

29 Naomi found some organisms and classified them into two groups as shown below.



(a) Which **group of organisms** do A and B represent? [1]

Group A: _____

Group B: _____

(b) Naomi classified moss in the same group as bread mould. Is she correct? Explain your answer based on the way the organisms obtain nutrients. [1]

_____

_____

(c) Suggest how the organisms in Group A can be further classified into two groups based on their characteristics. [1]

_____

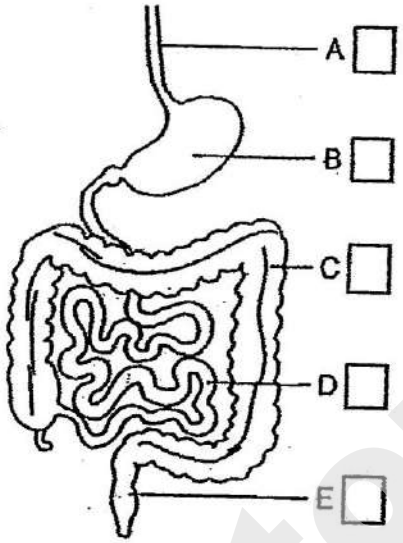
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30 The diagram below shows some organs, A, B, C, D and E, of the human digestive system.



(a) Refer to the diagram and answer the following questions [1]

(i) In which organ, A, B, C, D or E, does the digestion of food end?

_____

(ii) Put a tick in the box(es), A, B, C, D and/or E, where digestive juices are produced.

(b) How does the mouth help in the process of digestion? [1]

_____

_____

(c) Describe the function of organ A.

_____

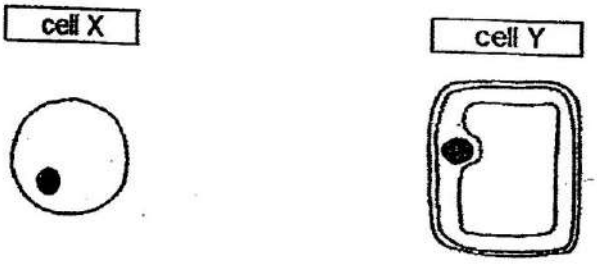
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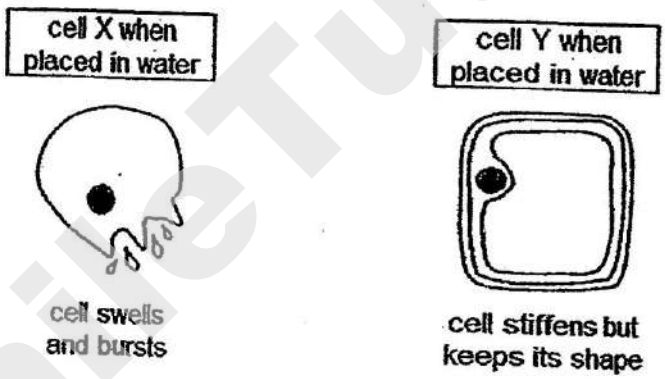
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31 The diagram below shows two cells, X and Y.



(a) Which cell, X or Y, is taken from a plant? Give a reason for your answer. [1]

An experiment was carried out on cells X and Y to find out what happened when they were placed in an equal amount of water for two days. The diagram below describes the results of the experiment.



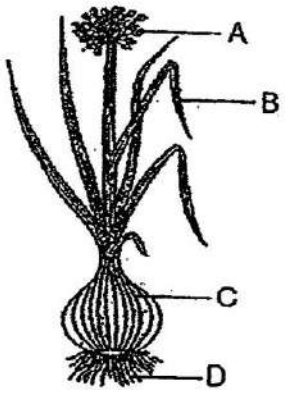
(b) Why does cell X burst but not cell Y at the end of the experiment? [2]

3

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The diagram below shows the parts of a spring onion plant.



The magnified cell below is taken from a certain part of the plant.



(c) Which part of the plant, A, B, C or D, is the cell most likely taken from? Explain your answer. [1]

(d) Why is the cell unable to survive if part T is removed? [1]

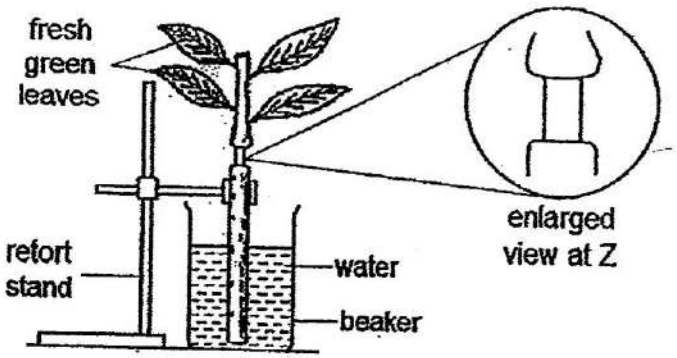
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32 Sam set up an experiment as shown below. He removed the outer ring of the stem at Z.



(a) After four days, he observed that the stem above Z was swollen but not the stem below. Explain why. [2]

(b) Why was the plant able to survive even after the outer ring was removed? [1]

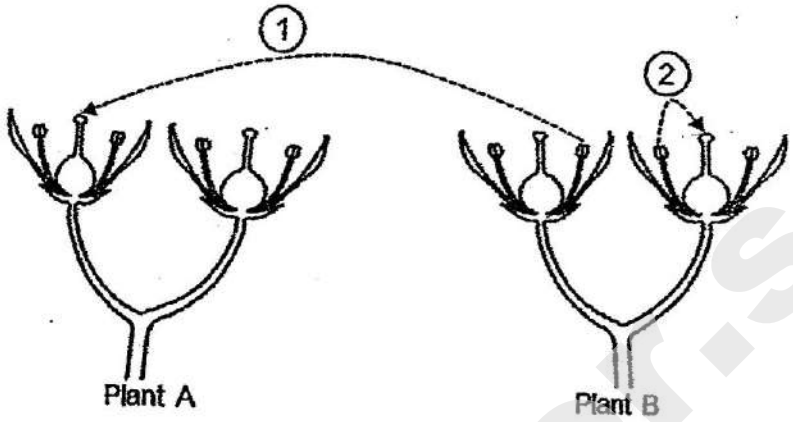
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33 The diagram below shows the flowers of two plants, A and B, of the same species. The two arrows, (1) and (2), show the process of pollination in the plants.



(a) What is the type of pollination represented by (1) and (2)?
Explain your answer. [2]

(b) Will the flowers develop into fruits immediately after pollination?
Explain your answer. [1]

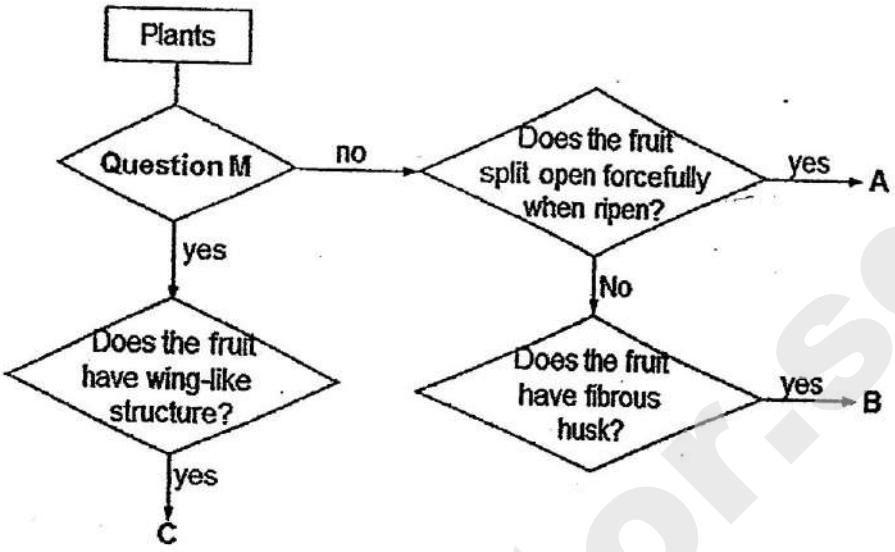
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34 Study the flowchart below carefully.



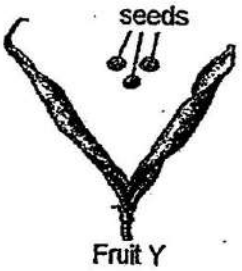
(a) What is **Question M**?

[1]

Ten years ago, plants A, B and C were found growing on Island S but none grew on Island T.

The two fruits below, X and Y, could be found on Island S.


Fruit X



Fruit Y

(b) Which fruit, X or Y, would be dispersed close to the parent plant? Explain your answer.

[1]

2

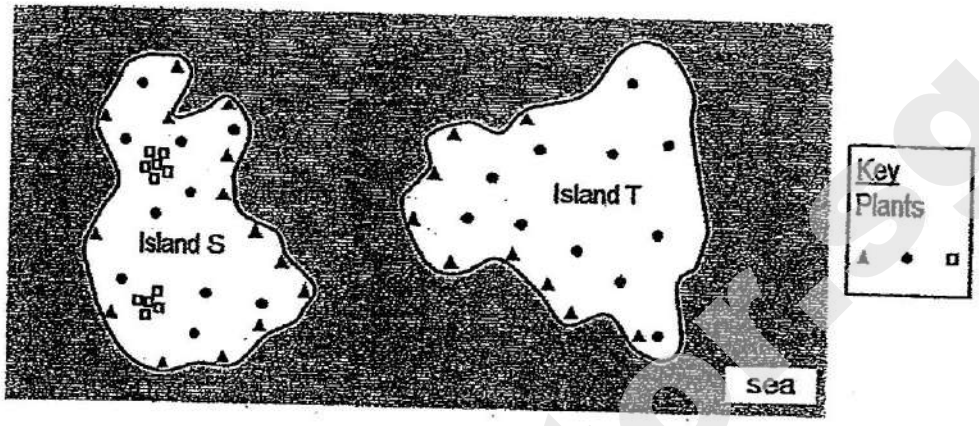
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One year ago, scientists found plants growing on Island T and believe that these plants originated from Island S.

The diagram below shows the location of the plants on Island S and Island T.



(c) Which plants, A, B and/or C, would be found growing on Island T? Explain your answer. [2]

(d) Explain the importance of seed dispersal for the survival of ... plants. [1]

3

End of Booklet B1

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BOOKLET B2

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.

Name:_____( )

Class: Primary 5._____

Date : 8 May 2018

Booklet B2	22

This booklet consists of 10 printed pages including this page.

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For questions 35 to 42, 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.

[22 marks]

35 Four materials J, K, L and M of equal mass were pushed into a container of water for 15 minutes. They were removed from the container and weighed. The readings are as shown in the table below.

Material	Mass of material (g)	
	At the start of experiment	At the end of experiment
J	50	75
K	50	50
L	50	63
M	50	68

The diagram below shows object X which is commonly used by children in the swimming pool.



(a) Which of the materials, J, K, L or M, is most suitable for making object X? Explain your answer based on the results above. [2]

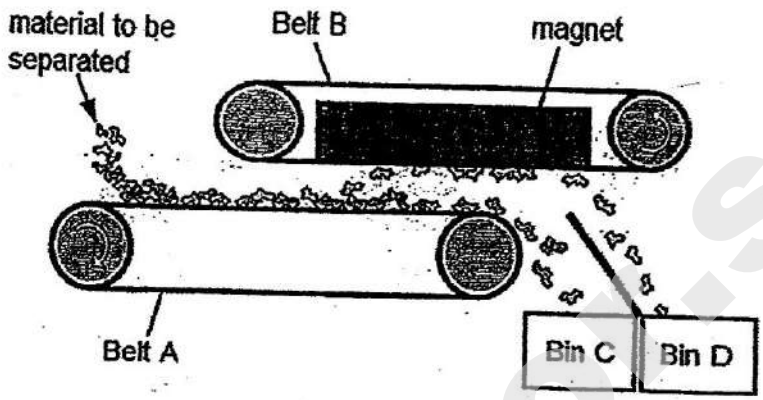
(b) Besides the property identified in (a), state two other properties that the material should have for making object X. [1]

3

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36 Mr Lin built a system to separate different types of material. The items to be separated were poured onto a moving conveyor Belt A. Belt B would attract some items and drop them into Bin D. Belt A would move the other items into Bin C.



(a) What is the property of the materials that would enable them to be separated into Bin C and Bin D? [1]

Bin C: _____

Bin D: _____

Mr Lin found the following items and poured them onto Belt A.

nickel coins	plastic discs	copper wire
steel nails	ceramic chips	glass beads

(b) What would be the items collected in Bin D? [1]

_____

(c) Would this system be able to separate metallic and non-metallic materials? Explain your answer. [1]

_____

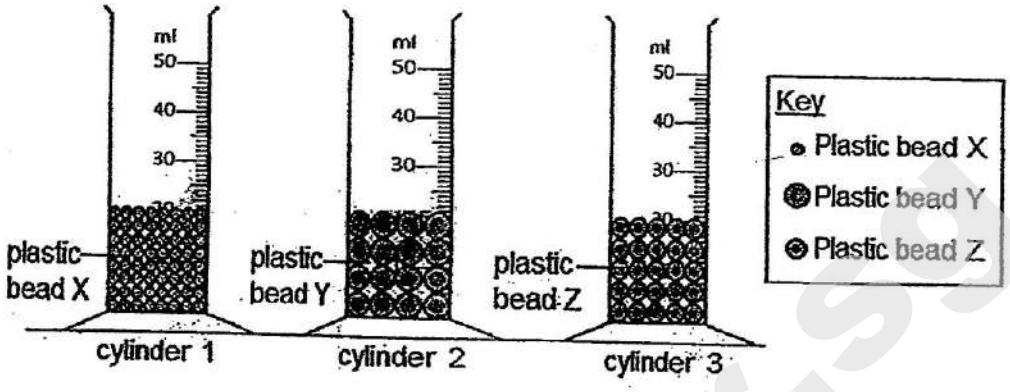
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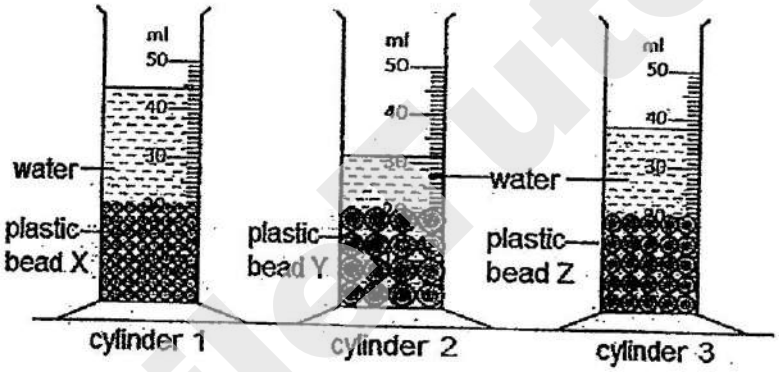
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37 Three identical measuring cylinders were filled with equal volume of plastic beads X, Y and Z, as shown in the diagram below.



30 ml of water was poured into each of the cylinders at the same time. The diagram below shows the observation one hour after the water was poured into the measuring cylinders.



(a) Explain why the total volume in cylinder 1 was less than 50 ml after the water was poured in. [1]

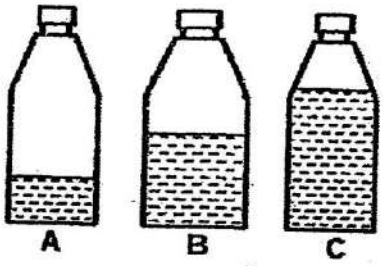
(b) Compare and explain the difference in the water level in cylinders 2 and 3. [1]

2

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38 Three identical 200 cm^3 plastic bottles were filled with different amount of water. They were sealed and placed into the freezer for 24 hours.



The volume of ice formed in each bottle was measured and recorded in the table below.

Bottle	Volume of water (cm^3)	Volume of ice (cm^3)
A	50	57
B	100	109
C	150	164

What happened to the volume of water when it was frozen? Explain your answer based on the results.

[1]

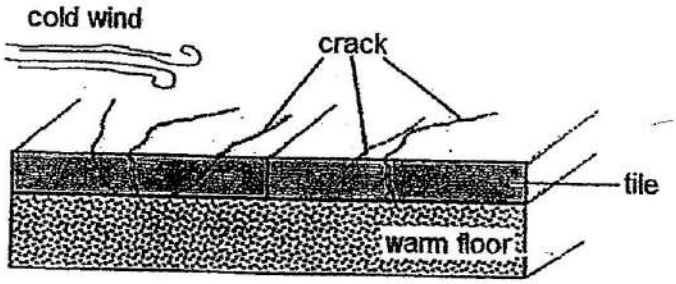
1

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39 When the weather became very cold suddenly, cracks appeared in some tiles in the house.



Explain how the sudden change in temperature caused the tiles to crack. [2]

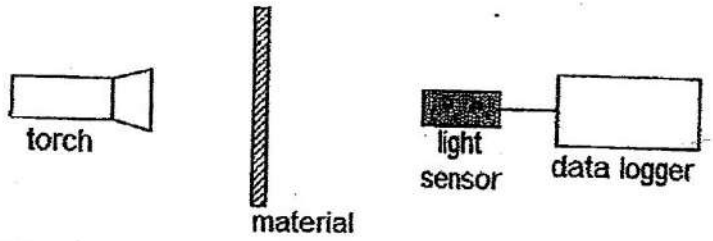
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2

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40 Ali measured the amount of light that passes through materials A, B and C. The readings are as shown in the table below.



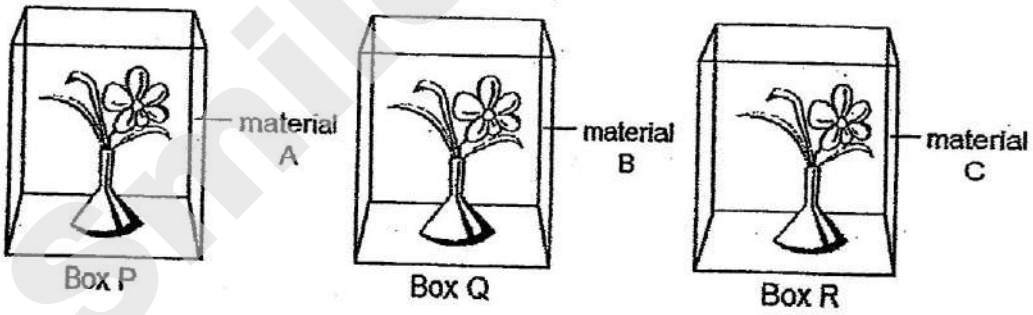
Material	Amount of light that passes through (lux)
A	300
B	100
C	700

(a) Rank the transparency of material by writing letters A, B and C in the boxes below.

[1]



Ali made 3 boxes, P, Q and R, with the three materials and placed a vase filled with an equal amount of water into each box. Each vase contains an identical stalk of flower. The boxes were placed in a shady location.



(b) In which box will the stalk of flower wither first after a week? Explain your answer.

[2]

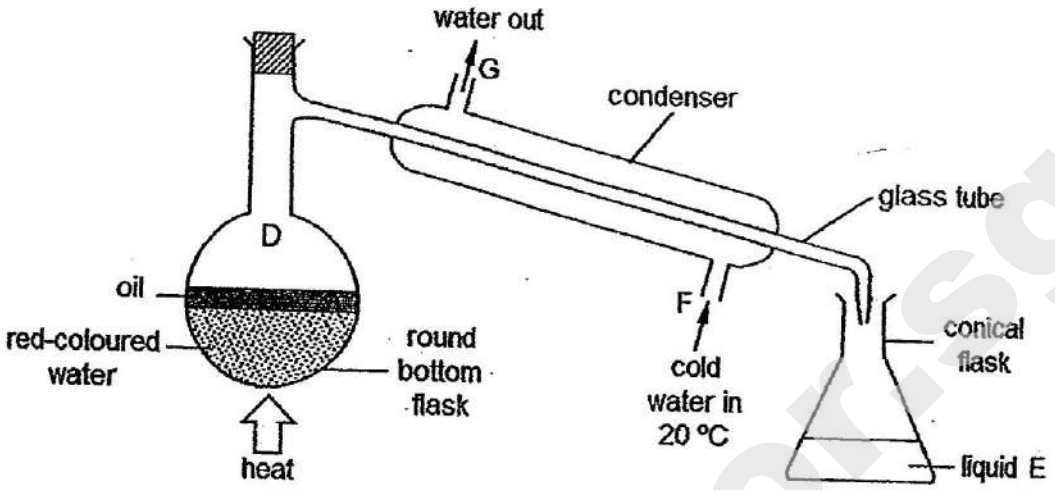
_____

_____

3

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41 A flask containing oil and red-coloured water was heated continuously for half an hour.



(a) What is the difference between evaporation and boiling? [1]

(b) What is liquid E which is collected in the conical flask? [1]

(c) Explain how matter D changed its state when it passed down the glass tube of the condenser. [1]

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Cold water at 20°C flowed into the condenser at F and flowed out of the condenser at G.

(d) Would the temperature of water at G be higher or lower than that at F? Explain the change in temperature. [1]

(e) What happened if the heat source was removed after half an hour? Explain your answer. [1]

2

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42 Lionel planted 30 identical water plants in each of the four tanks. Each tank was filled with equal amount of water taken from different rivers, W, X, Y and Z, and placed at the same location.

He removed the dead water plants from each tank and counted the number of water plants left in each tank after every 10 days. The results are as shown in the table below.

Water taken from river	Number of water plants left in tank			
	Day 0	Day 10	Day 20	Day 30
W	30	30	30	30
X	30	20	13	3
Y	30	25	21	15
Z	30	22	15	9

(a) Which river is the most polluted? Explain your answer based on the above results. [1]

(b) Is this experiment a fair test? Explain your answer. [1]

(c) Suggest a reason why water is important to the life processes of a plant. [1]

3

End of Booklet B2

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SCHOOL : MGS PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA1

CONTACT :

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	4	1	4	2	4	2	2	4	1
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	2	2	1	3	4	2	1	4	4
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
1	3	2	3	4	1	4	3		

SECTION B

Q29)	a)Group A : Plants Group B : Fungi b)No. Moss can make its own food and nutrients, it is a plant, while bread mould obtain its food and nutrients from living things or non-living things it is growing on. c)They can be classified into, Found in water lettuce ,duckweed and Not Found in water ,bird's nest fern staghorn fern.
Q30)	a)i)Organ D. ii) B , D b)The mouth help to chew the food into smaller pieces to increase the exposed surface area of the food so that digestive juice can break them down into simples substance work in them more effectively. c)Organ A does not have digestive juice. Hence it does not digest food it only transports the undigested food from the mouth to the stomach.

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Q31)	a)Cell Y. Cell Y has a cell wall, which only a plant cell has. b)Cell Y has a cell wall, which give the cell shape and support it cell X does not. Hence, when too much water enters cell X, it will swell and burst, while cell Y would only swell, to become more firm and full. c)Part B. B is the leaves, which makes food for the plant through photosynthesis. The cell has chloroplast, which capture sunlight to make food for the plant through photosynthesis. d)Part T is the nucleus, which controls all activites in the cell and allow cell division to take place.
Q32)	a)Sam has removed the food carrying tube so food made above Z cannot be transported to the roots but accumulated above Z. b)The water-carrying was not removed, so the water absorbed by the plant was still able to be transported to other parts of the plant, like the leaves to make food.
Q33)	a)1)The pollen grains of the flower on B is tranfered to the stigma of A. 2)The pollen grains of the flower on B is transferred within the same flower. b)No. After pollination, fertisation still need to occur before the flowers develop into fruits.
Q34)	a)It is dispersed by wind? b)Fruit Y. Fruit Y is dispersed by splitting, while Fruit X is dispersed by wind. The seeds will fall to the ground near the parent plant. c)Plants C and B. Plant C is dispersed by wind , as it has a wind-like structure so the wind can carry it to island T. Plant B is dispersed by sea, as it has a fibourous husk, so the sea can carry it to island T. The plants near the sea would be Plant B. d)Seed dispersed helps to reduce overcrowding and competition for light, space, water and nutrients between young and the parent plant.

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Q35)	a)Material K. J, K ,L and M had an equal mass. When they were pushed into the water, only K remained at 50g. This shows that it did not absorb any water and is water proof. Object X is a float and has to be waterproof, it cannot absorb water. Hence when the children use the float, float will not absorb water so the float would not sink. b)Flexibility and strength.
Q36)	a)Bin C : Magnetic material can be attracted to a magnet. Bin D : Non-magnetic material cannot be attracted to a magnet. b)Nickel coins and steel nails. c)No. Some metal such as gold, copper is a non-magnetic material, so they won't be attracted by the magnet.
Q37)	a)They was air spaces in between Plastic beads X. Liquid does not have a definite shape. Hence it will fill the remainding spaces, causing the total volume in cylinder 1 to be less than 50ml. b)The water level of cylinder 2 was more than cylinder 3. The holes between the beads in cylinder 2 was greater than the one in Cylinder 3. Hence more liquid in 2 was used to fill the holes. Causing 3 to have a higher water level than 2.
Q38)	The volume of water increased when it was frozen. Some of the warmer water vapour could have condensed on the cooler surface of the glass when it was put in the refrigerator, to form water droplets. Hence the water changed from a liquid to solid state, the volume of the solid state increased.
Q39)	The top of the tiles contracted when it came into contact with the cold wind, while the bottom of the tiles expanded when it came into contact with the warm floor. The difference in temperature caused the tiles to expand and contract at the same time which resulted in the cracks.

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Q40)	a)C A B b)Box Q. Box Q is made of material B, which allows the least light to pass through compared to A and C. Plant capture sunlight to make food for the plant through photosynthesis. Hence the plant in Box Q was unable to capture enough sunlight to make food and died. Causing it to wither first.
Q41)	a)Evaporation can take place at any temperature from 0℃ to 100℃, while boiling of water can only occur at 100℃ b)Plain, pure water c)Matter D gained heat from the heat source and evaporated into water vapour. The warmer water vapour came into contact and lost heat to the cooler surface of the glass tube. It then changed from a gaseous state to a liquid state. d)The temperature of water at G would be higher than F. The water at F gained heat and its temperature increased. e)Less liquid E will be collected as less water evaporated and condensed to form water droplets.
Q42)	a)X. There was the least number of plants after days in river X. Shows that it is the most polluted. b)Yes. All the variables are the same except for 1 changed variable, the type of water taken from each river. c)Water is needed in the germination of the seed.

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4

NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 – 2018
PRIMARY 5

SCIENCE

BOOKLET A

28 Multiple Choice Questions (56 marks)

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

INSTRUCTIONS TO CANDIDATES

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

Marks Obtained

Booklet A		/ 56
Booklet B		/ 44
Total		/ 100

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

Date : 3 May 2018 **Parent's Signature:**

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Section A: (28 x 2 marks = 56 marks)

For each question from 1 to 28, 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 statement(s) about cells is/are correct?

A A cell is the smallest living thing.
B Every living thing is made up of many cells.
C Cells in a living thing grow bigger as the living thing grows bigger.

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

2. Which statement(s) about reproduction of plant is/are correct?

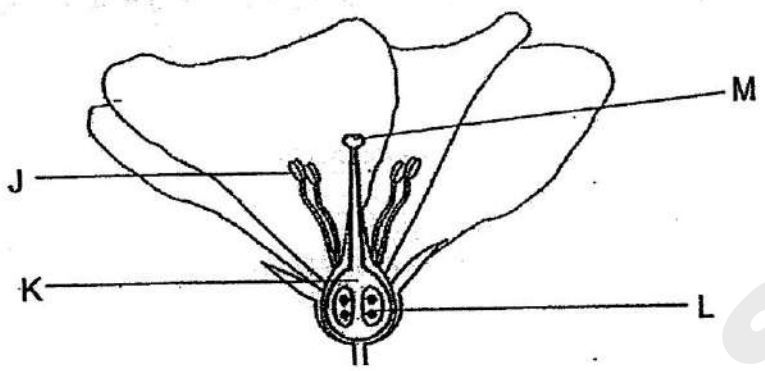
A Flowering plants only reproduce from spores.
B Plants reproduce so that their own kind will continue to exist.
C All the characteristics of the parent plants will be passed on to its offspring.

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

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



Which one of the labelled parts helps to receive pollen grains during pollination?

(1) Part J
(2) Part K
(3) Part L
(4) Part M

4. The table below shows the comparison between the sexual reproduction in humans and plants.

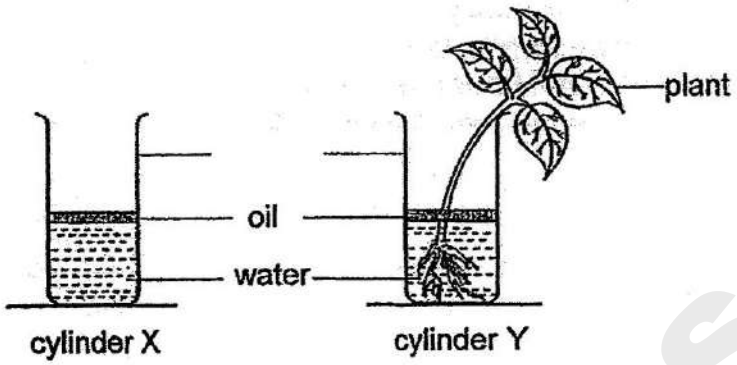
	Human	Plant
Organ that produces the male reproductive cell	Testis	A
Female reproductive cell	B	Egg
Process X	Fertilisation	C
After Process X	D	Seeds are formed

Which of the following correctly shows the missing information in the table above?

	A	B	C	D
(1)	Anther	Egg	Fertilisation	Baby is formed
(2)	Pollen grains	Ovary	Fertilisation	Fruit is formed
(3)	Pollen grains	Egg	Pollination	Fruit is formed
(4)	Anther	Ovary	Pollination	Baby is formed

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5. Mary carried out an experiment to find out if plants take in water. She poured equal amount of water into cylinders X and Y which are of the same size. She then placed both cylinders in the same location as shown below.

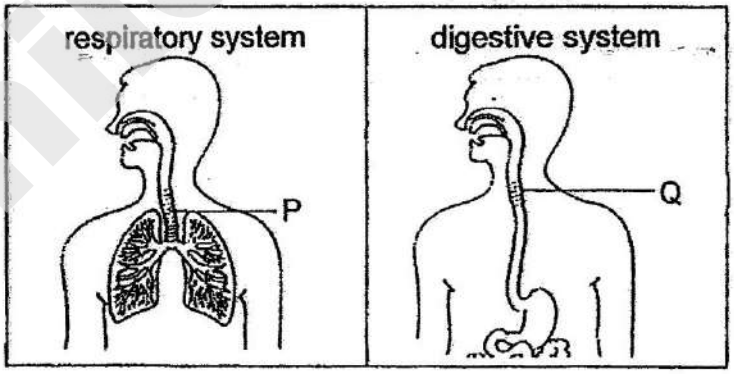


Why did Mary set up cylinder X?

A To confirm that the plant took in the water.
B To measure how much water had evaporated away.
C To act as a control for the experiment to compare the results against cylinder Y.

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

6. The diagrams below show the respiratory system and part of the digestive system.



Which of the following statements is/are true about organ P and organ Q?

A Organ Q transports food but not organ P.
B Organ P and Q transport both water and food.
C Organ P transports oxygen only but not organ Q.

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

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7. What will happen if we do not have bones in our body?

A We will faint constantly.
B We will not be able to move.
C Our body will not have any shape.
D Some of our organs will not be protected.

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

8. Which of the following are possible functions of the roots of the floating plant below?

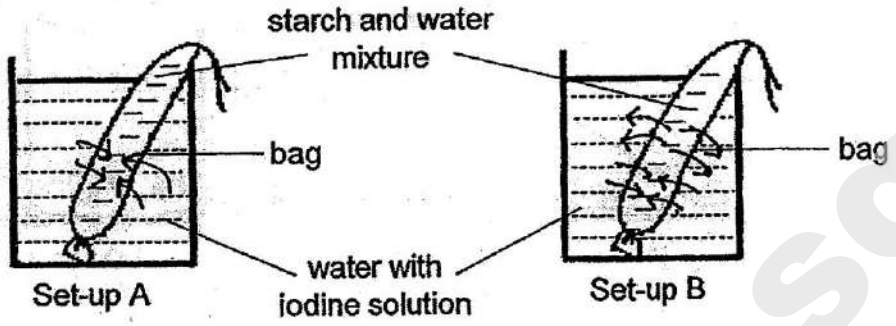


A Make food for the plant.
B Take in dissolved mineral salts.
C Hold the plant firmly to the ground.
D Take in water for all parts of the plant.

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

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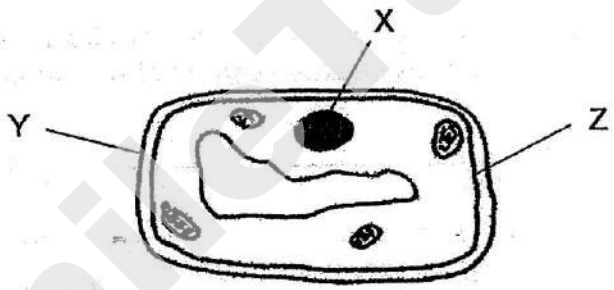
9. Janice conducted an experiment using bags made of two different materials. She poured starch and water mixture into the bags and left them in beakers of water with iodine solution. Iodine solution turns dark blue when it comes into contact with starch.



After one day, she recorded what she observed in the table below.

	Set-up A	Set-up B
Starch and water mixture	turned dark blue	turned dark blue
Water with Iodine solution	remained brown	turned dark blue

She related the experiment to what she had learnt about plant cells.

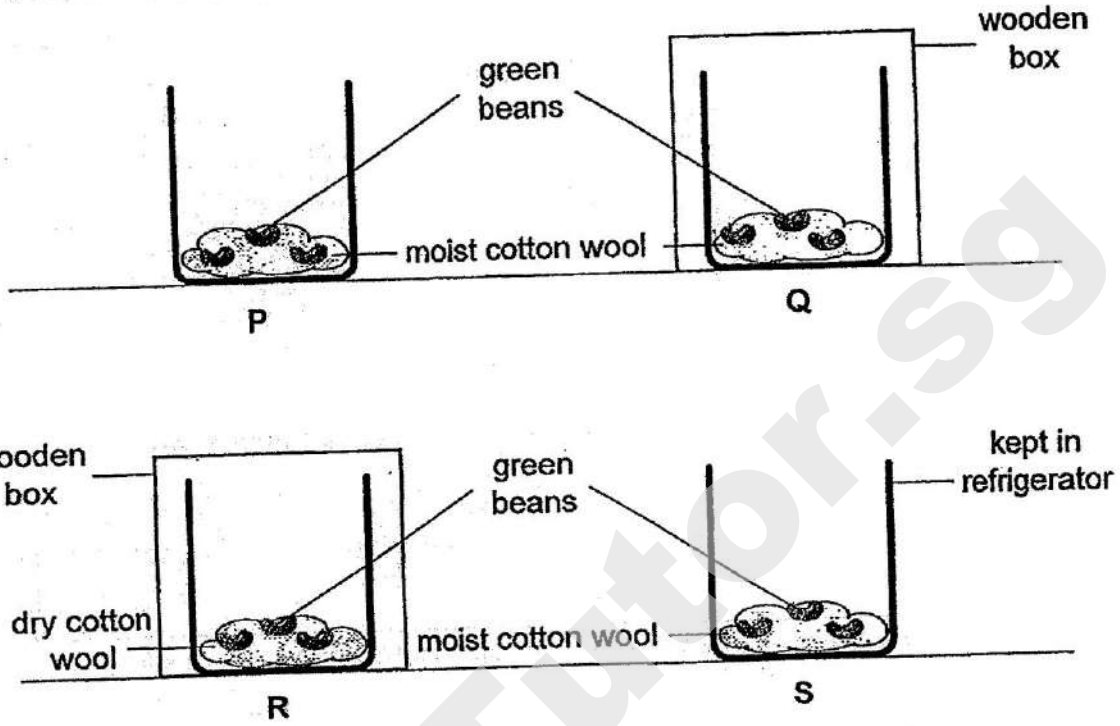


Which of the following statement best describes the experiment above?

(1) Both bags can be used to represent part Z of the cell.
(2) The bags can be used to represent part X which controls the movement of the starch particles.
(3) The bag in set-up A can be used to represent part Z of the cell while the bag in set-up B can be used to represent part Y of the cell.
(4) The bag in set-up A can be used to represent part Y of the cell while the bag in set-up B can be used to represent part Z

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10. Jia Xuan and Ben set up four beakers, P, Q, R and S, as shown below. Beakers P, Q and R were kept at room temperature while beaker S was kept in the refrigerator.



Jia Xuan would like to find out if water is needed for germination. Ben would like to find out if warmth is needed for germination. Which set-ups should each of them compare?

	Jia Xuan	Ben
(1)	P and R	Q and S
(2)	Q and R	P and S
(3)	Q and R	Q and S
(4)	P and R	P and S

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11. **Flowers A, B, C and D were wrapped in plastic bags for a week to prevent them from being pollinated. After the plastic bags were removed, one part was removed from each of the flowers. A tick (✓) shows that the part is present in the flower.**

	anther	stigma	ovary	petals
A	✓	✓	✓	removed
B	✓	✓	removed	✓
C	✓	removed	✓	✓
D	removed	✓	✓	✓

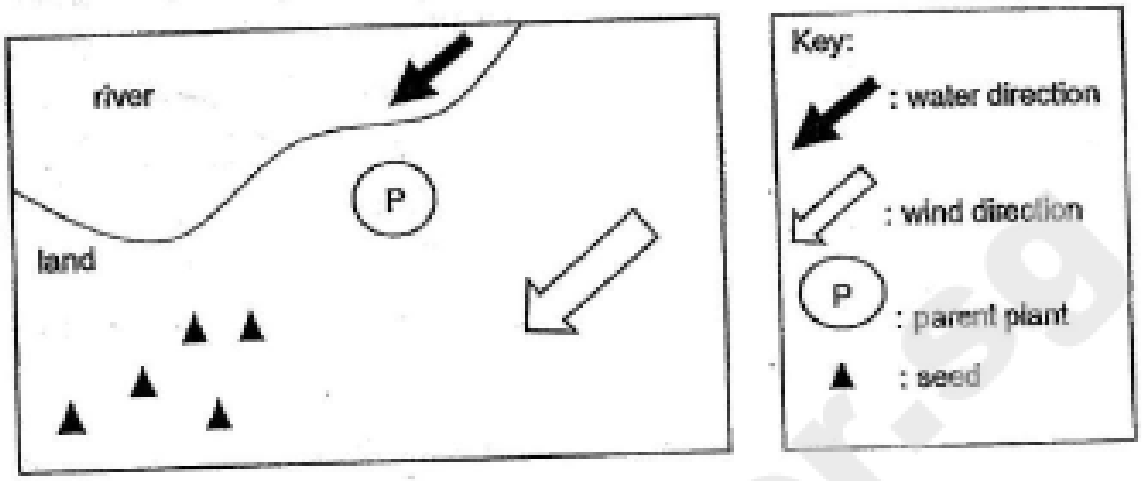
Which of the **flowers cannot be developed into a fruit?**

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

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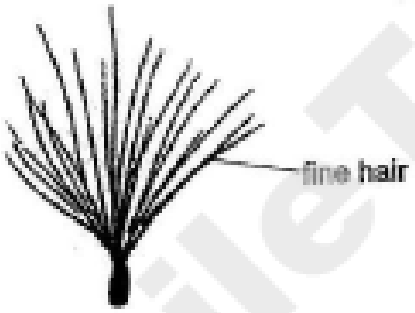
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12. Study the dispersal of seeds by plant P.

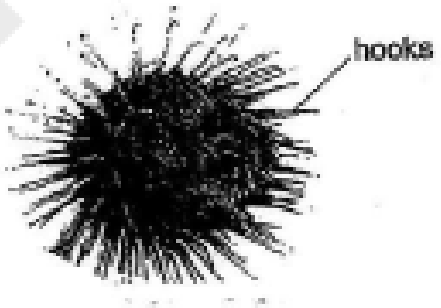


Which one of the following fruits belongs to plant P?

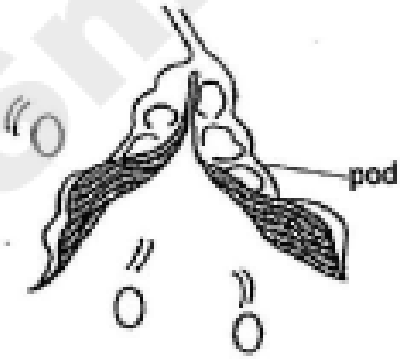
(1)



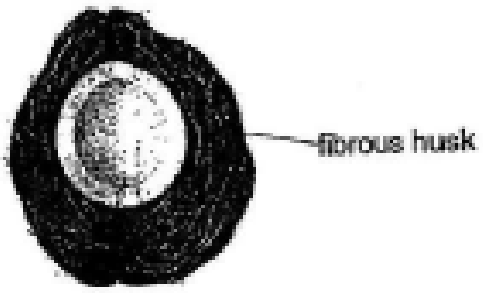
(2)



(3)



(4)



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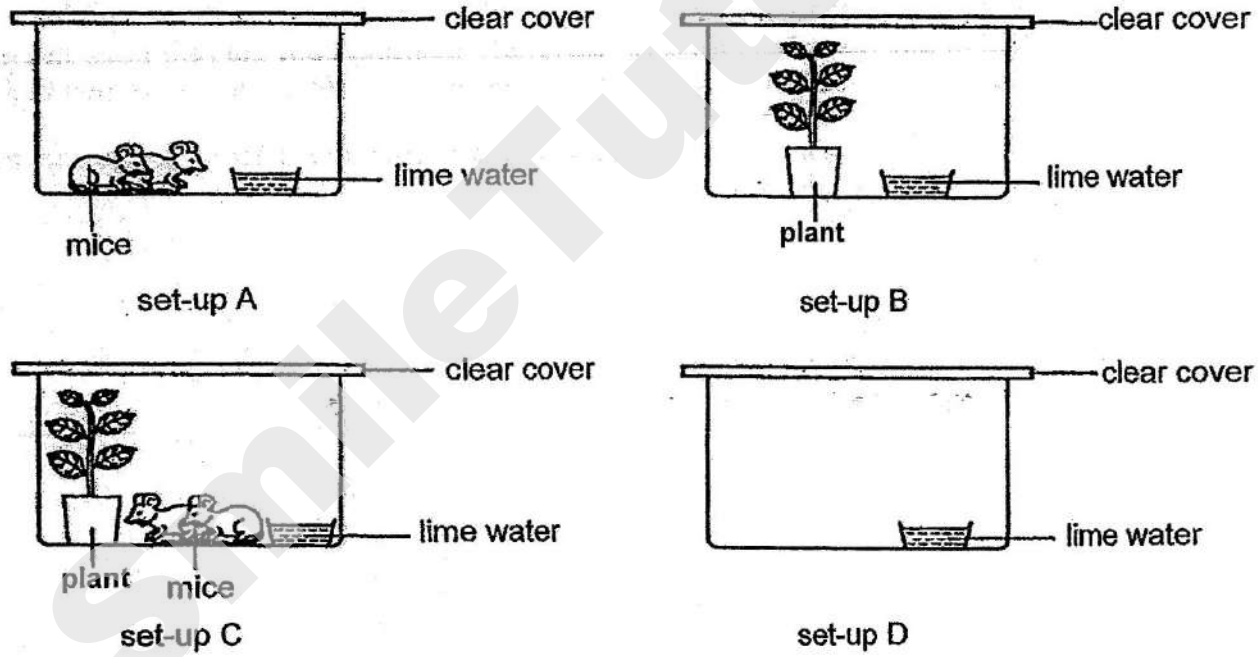
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13. Which of the following statements are true about the reproduction in humans?

A Fertilisation occurs in the female.
B Two sperms are needed to fuse with the egg.
C The fertilised egg develops in the male body.
D Male produces sperms while the female produces eggs.

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

14. John prepared four set-ups as shown below. He placed all the set-ups in a room which has sunlight. He wanted to find out if an animal gives off carbon dioxide.

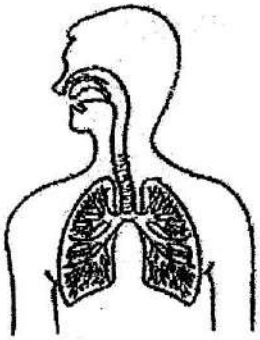


Which two set-ups should he use for his experiment?

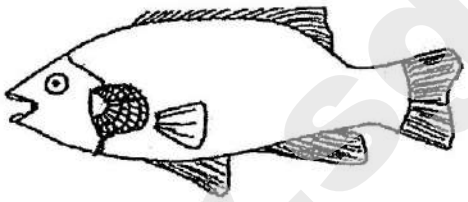
(1) Set-ups A and C
(2) Set-ups A and D
(3) Set-ups B and C
(4) Set-ups B and D

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15. The diagrams below show the human and fish respiratory system.



Human Respiratory System



Fish Respiratory System

Which statements about the two system are correct?

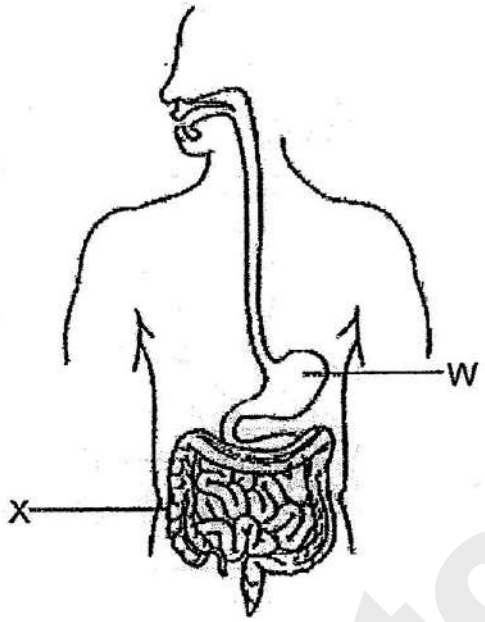
A Both human and fish take in oxygen from the air.
B The human uses the lungs for gaseous exchange but the fish uses the gills.
C The human takes in oxygen in the air whereas the fish takes in oxygen in the water.
D The amount of carbon dioxide is greater than the amount oxygen in the exhaled air of the human.

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

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16. Study the diagram below.



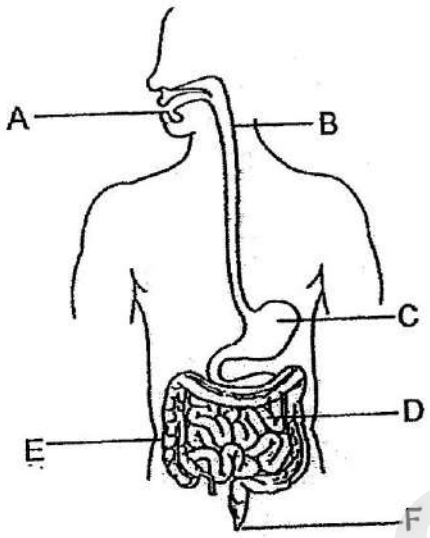
Identify the functions of W and X.

	W	X
(1)	Breaks down food into smaller pieces	Allow water to be absorbed into the bloodstream
(2)	Breaks down food into smaller pieces	Digested food is absorbed into the bloodstream
(3)	Breaks down food into simpler substances	Digested food is absorbed into the bloodstream
(4)	Breaks down food into simpler substances	Allows water to be absorbed into the bloodstream

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17. Study the human digestive system below.



Which parts of the digestive system do digestive occur?

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

18. The table below compares the properties of materials A, B, C and D. A tick (✓) shows the presence of the property in the materials.

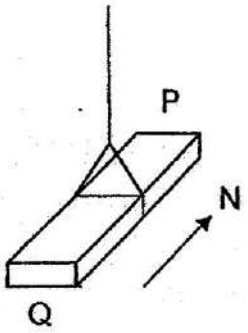
Material / Property	A	B	C	D
strong	✓	✓	✓	
flexible	✓	✓		✓
waterproof	✓		✓	✓

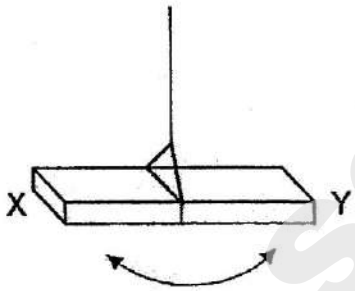
Which one of the materials is suitable for making a walking stick to help an elderly in walking?

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

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19. A metal bar PQ is hung by a thin thread, it always comes to rest with one end of the bar, P, pointing North as shown in the figure below. Another bar XY made of the same metal as PQ does not rest in a fixed direction.





What happens if the two bars are brought close to each other?

(1) End P attracts both end X and end Y.
(2) End P attracts end X but repels end Y.
(3) End P attracts end Y but repels end X.
(4) End P neither attracts nor repels end X.

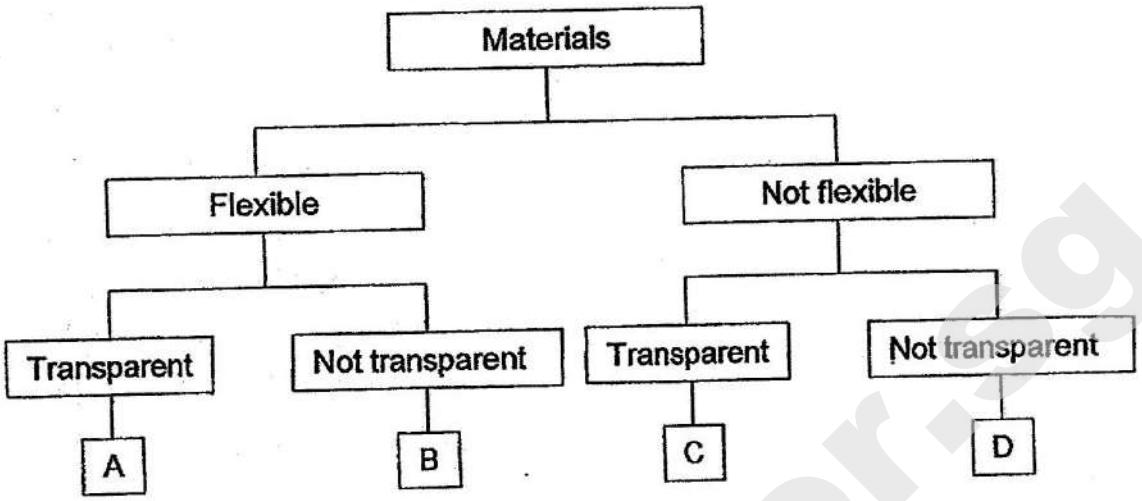
20. Living things require water to survive. Which of the following statements show(s) that water is important to living things.

A Water is home to many aquatic animals and plants.
B Water is needed by many living things to carry out life processes.
C Water is needed by plants to transport mineral salts in the water carrying tubes to all parts of the plant.

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

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21. Study the information provided in the classification chart below.



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

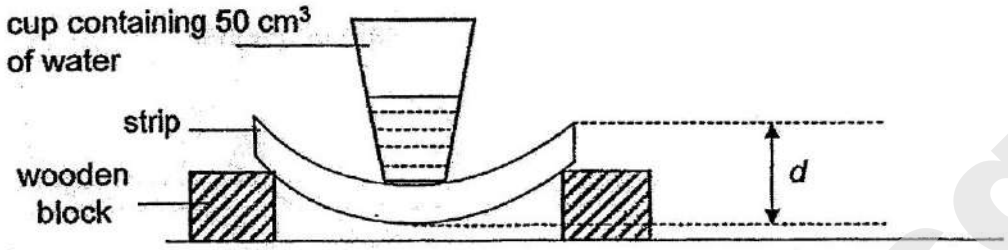
	A	B	C	D
(1)	cling wrap	car tyres	spectacle lens	aluminium foil
(2)	light bulb	aluminium foil	cling wrap	frying pan
(3)	light bulb	car tyres	cling wrap	aluminium foil
(4)	cling wrap	aluminium foil	spectacle lens	frying pan

22. Which of the following objects does not require the use of magnets?

(1) stapler
(2) compass
(3) computer
(4) refrigerator

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23. Josiah set up an experiment using four strips made of different materials. All the strips have the same size.

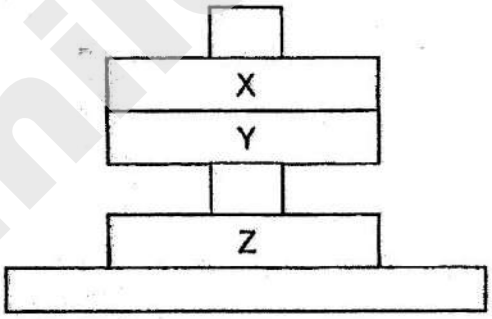


He placed a cup containing 50cm³ of water on each strip and measured the distance, ***d***, between the highest and lowest point of the strip.

What property of the strip was Josiah trying to find out?

(1) strength
(2) flexibility
(3) ability to absorb water
(4) ability to float or sink in water

24. The set-up below is made up of a plastic ring X and 2 ring magnets, Y and Z.



Which property/properties of magnet does /do the above set-up show?

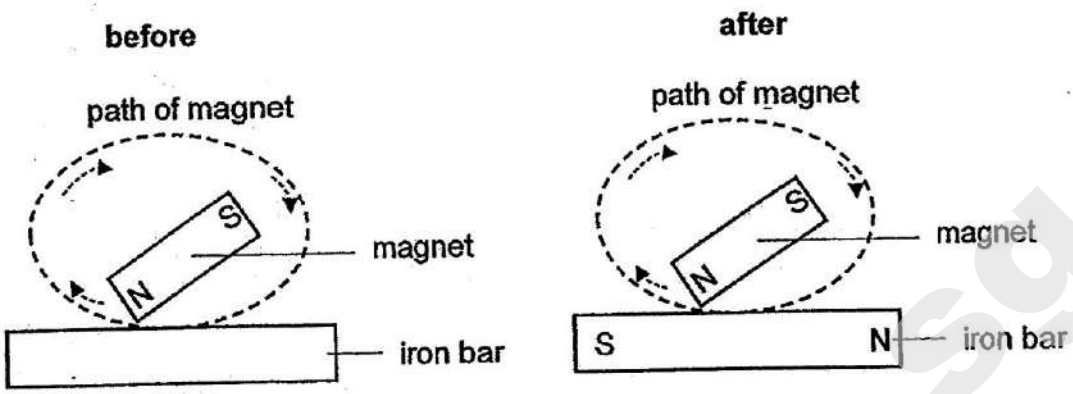
A Magnets attract magnetic materials.
B Like poles of magnets repel each other.
C Unlike poles of a magnet attract each other.

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

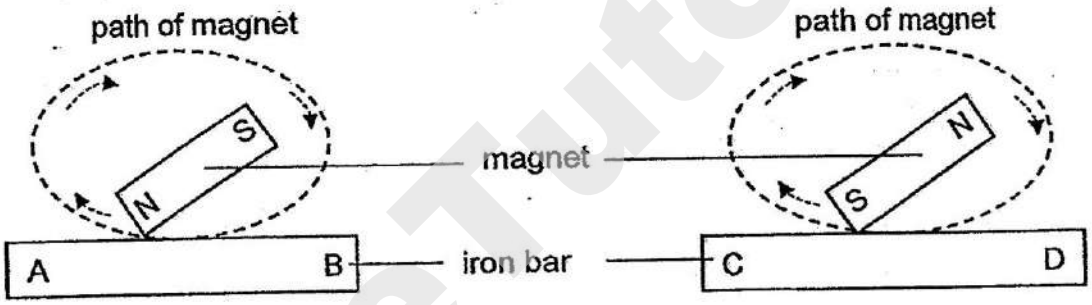
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25. The diagrams below show the poles of a magnetised iron bar using the "stroke" method of making magnets.

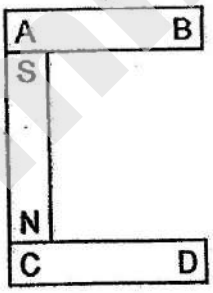


Janice made two magnets using the "stroke" method as shown below.

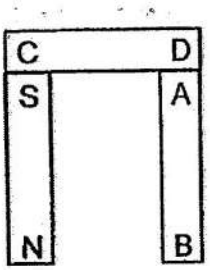


Which one of the following is a possible arrangement of the magnets?

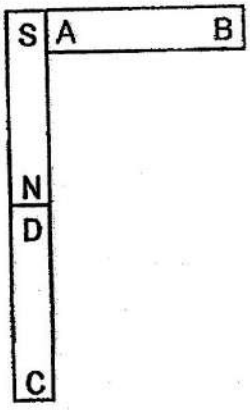
(1)



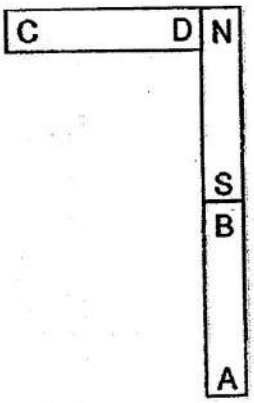
(2)



(3)

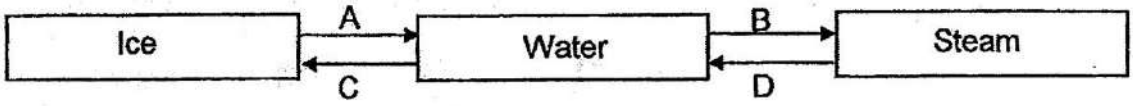


(4)



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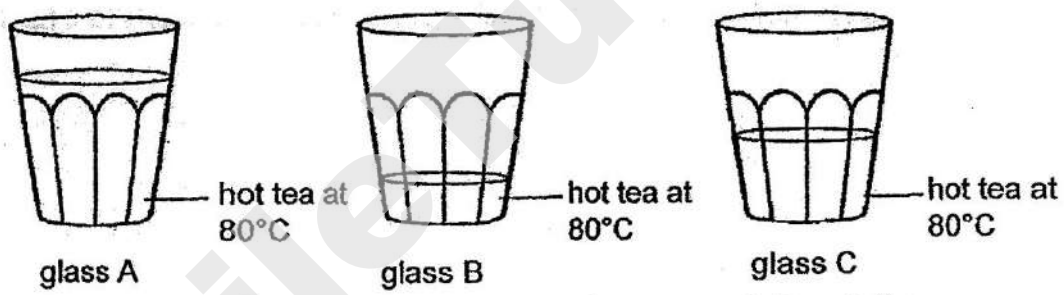
26. Study the diagram below.



Which one of the following correctly identifes the processes represented by the arrows A, B, C and D?

	A	B	C	D
(1)	melting	evaporation	boiling	condensation
(2)	freezing	boiling	condensation	evaporation
(3)	melting	boiling	freezing	condensation
(4)	condensation	evaporation	freezing	boiling

27. Study the three glasses of hot tea that were placed on a table in a room at 30°C.



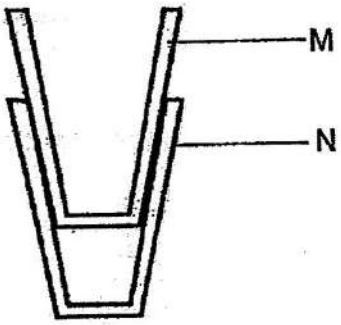
Which of the following statements are true about the glasses of hot tea?

A The hot tea in glass A has the most amount of heat energy.
B The hot tea in the three glasses have the same temperature.
C The hot tea in the three glasses have the same amount of heat energy.
D The hot tea in the three glasses will lose heat to the cooler surroundings.

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

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28. Glasses M and N were stuck together as shown in the diagram below.



Peter managed to separate glasses M and N. How did he manage to do it?

(1) He added ice water in glass M and put glass N completely in a basin of ice water.
(2) He added hot water in glass M and put glass N completely in a basin of hot water.
(3) He added ice water in glass M and put glass N completely in a basin of hot water.
(4) He added hot water in glass M and put glass N completely in a basin of ice water.

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NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 – 2018
PRIMARY 5

SCIENCE

BOOKLET B

12 Open-ended questions (44 marks)

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

INSTRUCTIONS TO CANDIDATES

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

Marks Obtained

Section B		/ 44

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

Date : 3 May 2018 **Parent's Signature:** _____

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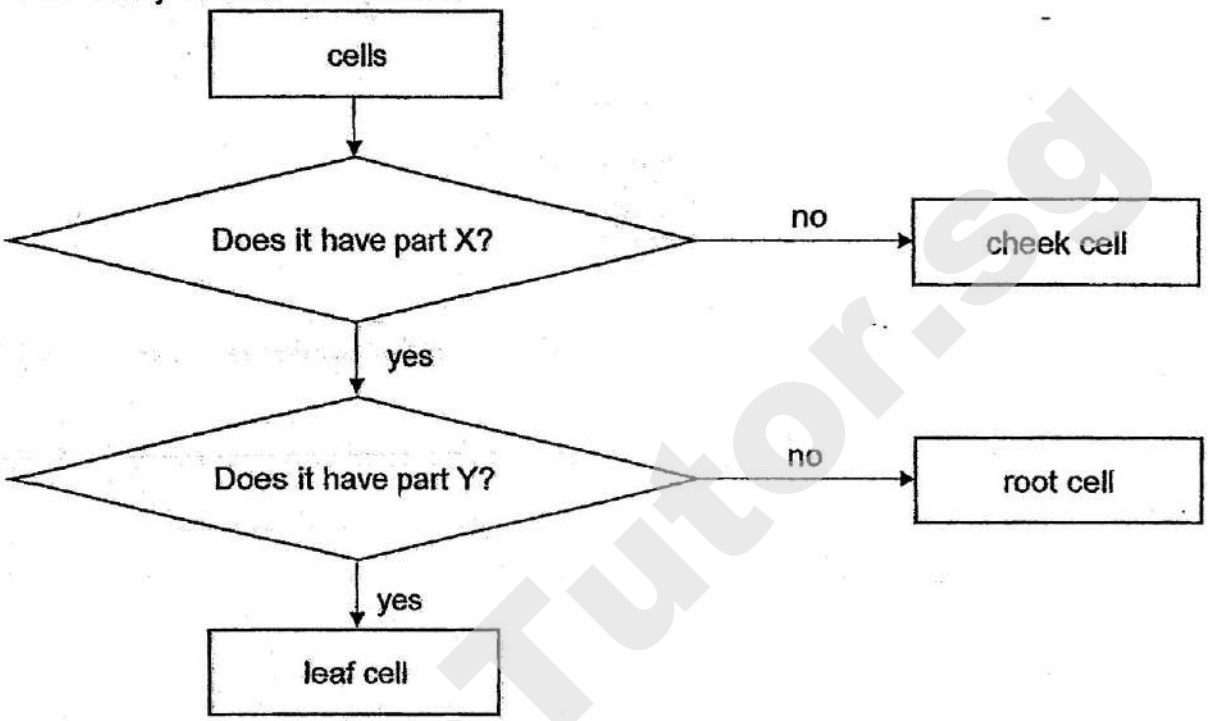
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Section B: (44 marks)
Write your answers to questions 29 to 40.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

29. Study the flow chart below.



(a) Identify part X and part Y. [2]

Part X : _____

Part Y : _____

(b) State the function of part X. [1]

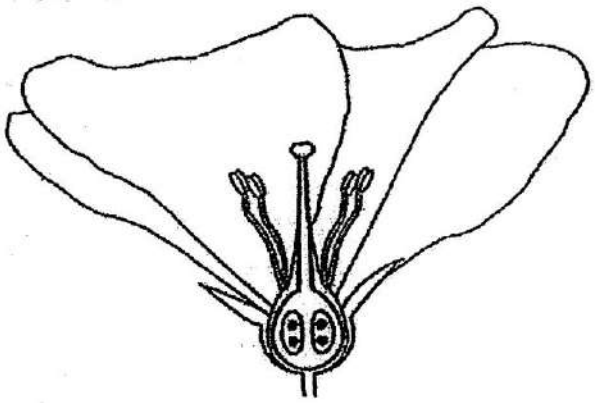
_____

Score	3

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



(a) In the diagram above, name and label the part that produces pollen grains [1]

(b) Give two reasons why the flower is likely to be pollinated by animals. [2]

_____

_____

(c) The bird shown below feeds on the nectar of the flower.



How does this bird help in one of the reproduction process of the plant? [1]

_____

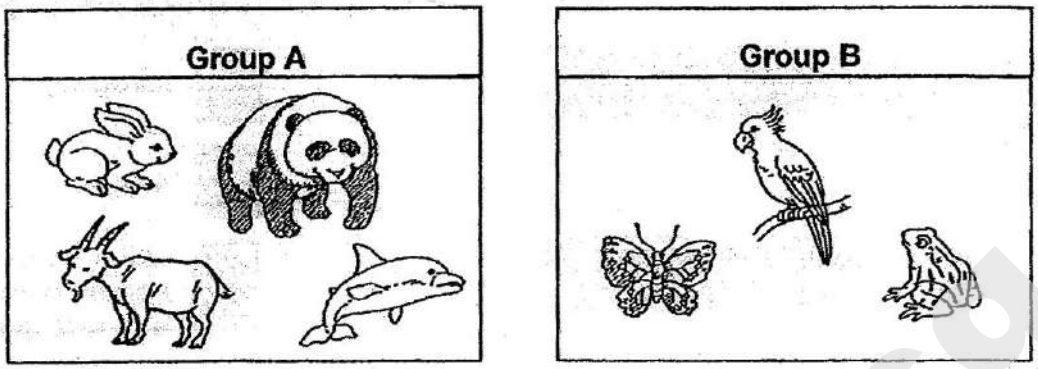
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Score	4

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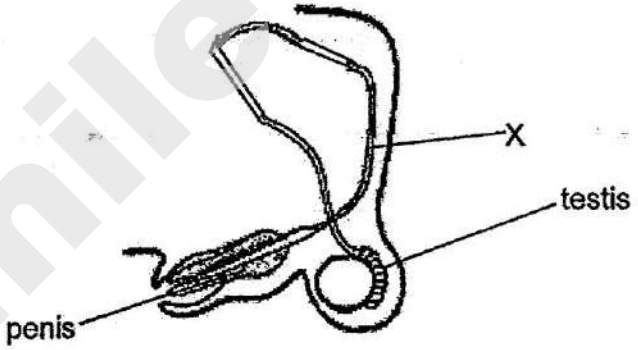
31. Study the two groups of animals below.



(a) How are the animals in Group A and Group B **different in the way they reproduce?** [1]

(b) Give a reason why reproduction is important to living things. [1]

The picture below shows the reproductive system of a male cat.



In order to control the cat population in the community, male cats will be caught and an operation will be done on the male cat to prevent it from reproducing. The operation involves cutting the tube at X.

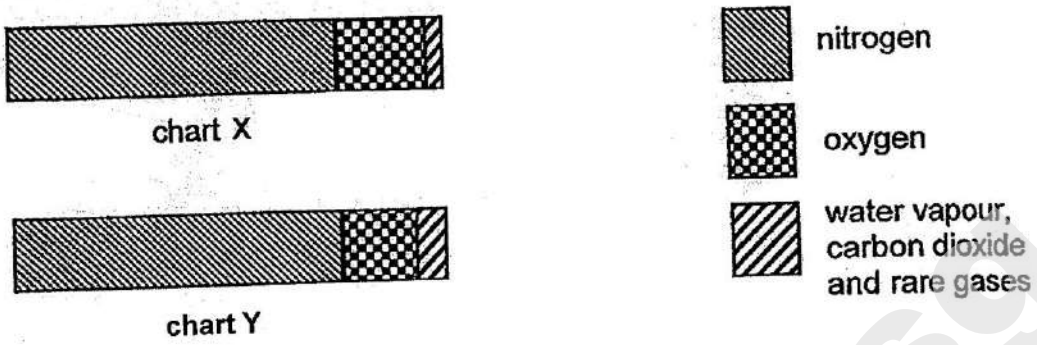
(c) Describe how does cutting the tube at X prevent the cats from reproducing? [2]

Score	4

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32. The two charts below show the composition of inhaled and exhaled air.



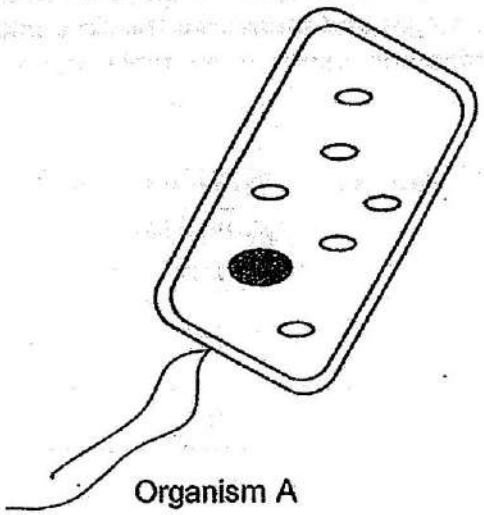
(a) Identify the chart that represents the composition of exhaled air. Explain your answer. [2]

(b) Explain why the amount of nitrogen is the same in both charts? [1]

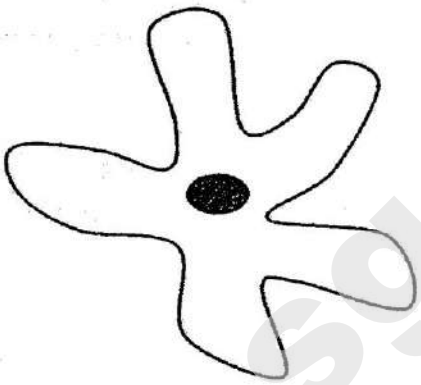
Score	3

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33. The diagram below shows two single-cell organisms.



Organism A



Organism B

(a) In the diagram above, name and label the part in **both cells** where cell activities take place. [1]

(b) Amy said that both organisms feed on other organisms based on the cell parts observed. Do you agree with her? Explain your answer for organisms A and B. [2]

Score	3

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34. Diana found three similar fruits, P, Q and R, with wing-like structures and decided to carry out an investigation on the fruits. She cut off parts of the wing-like structure of each fruit, dropped them found from a height and measured the time taken for each fruit to reach the ground. She recorded her results in the table below.

Fruit	Length of wing-like structure (cm)	Time taken for fruit to reach the ground (s)
P	2.5	4.1
Q	1.5	3.0
R	0.5	2.3

(a) State the dispersal method of the three fruits. [1]

_____

(b) What is the relationship between the length of the wing-like structure and the time the fruit can stay in the air? [1]

_____

_____

(c) Diane wanted to test out another fruit, S, by cutting the wing-like structure. The fruit took 2.8 seconds to reach the ground. What is the possible length of the wing-like structure? [1]

_____

Score	3

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35. Alan was observing the cross-section of a coconut below.



(a) Identify two characteristics of the coconut that enabled it to be dispersed by water. [2]

(b) Explain why seed dispersal is needed to ensure the survival of the coconut plant. [1]

(c) Alan observed a rubber tree which dispersed its seeds by splitting of the fruit. He concluded that the coconut had a higher chance of survival than the rubber tree. Explain why. [1]

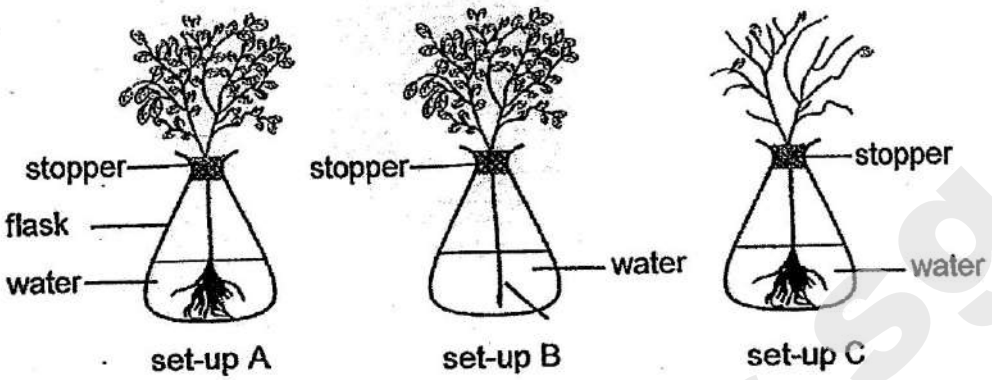
(d) How are the reproduction of human and flowering plant similar? [1]

Score	/ 5

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36. Alice set up the experiment below to find out if the number of leaves will affect the amount of water being absorbed.



(a) Which two set-ups should she use to test her aim? [1]

_____

(b) Besides the flask and stopper, identify two other variables that she must keep the same to ensure a fair test. [2]

_____

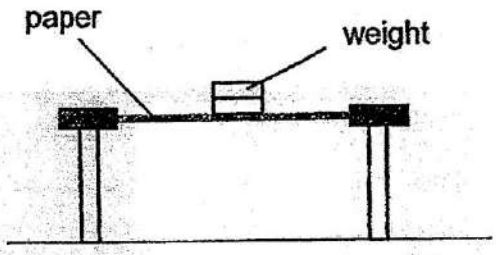
_____

Score	3

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37. Jason set up an experiment to rank different types of paper according to their strength. He clamped each piece of paper and added weights on the paper until the paper tear. Based on the number of weights it took to tear the paper, he ranked the strength of the different types of paper.



The results of his experiment are shown in the table below.

Type of paper	Number of weights needed to tear the paper
Paper A	Least number of weights ↓
Paper B	
Paper C	
Paper D	Most number of weights

(a) Which type of paper should Jason use to make a carrier bag for heavy gifts? Explain your answer using the result in the table. [1]

_____

_____

(b) What should Jason do to ensure that the results of his experiment are reliable? [1]

_____

(c) Using the same set-up, describe the steps that Jason can carry out to find out which type of paper is most suitable for wiping away water spills. [2]

1) Pour _____

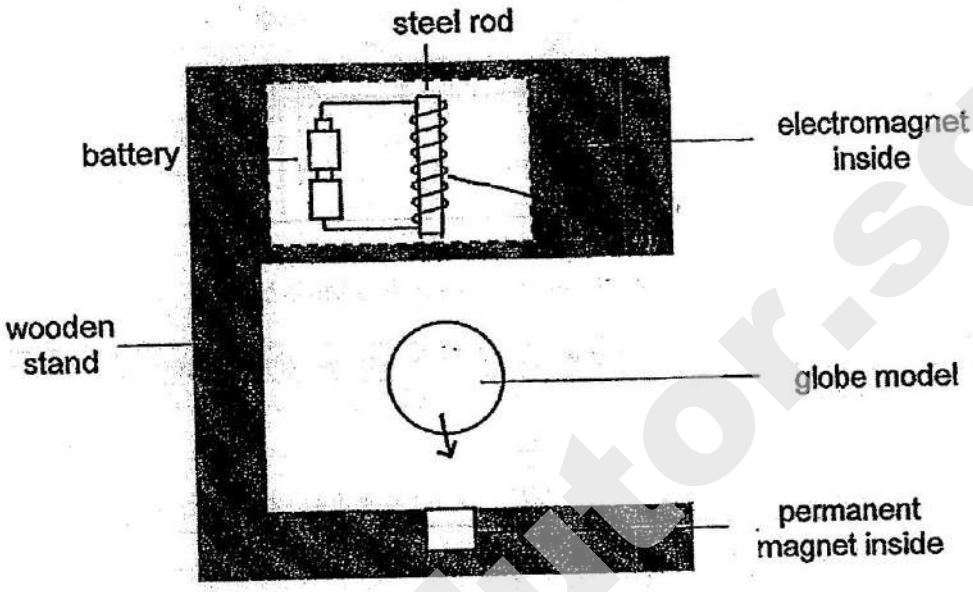
2) Measure _____

Score	/ 4

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38. A 'floating globe' desk ornament is made by fixing an electromagnet and a permanent magnet to a wooden stand as shown below. Both the electromagnets and permanent magnets are attracting the globe model causing it to float between them.



(a) Give an example of the material the globe model should be made of in order for it to be able to float between the two magnets? [1]

_____

(b) Explain what will happen to the globe model if the batteries become flat. [2]

_____

_____

(c) Name two changes that can be made to the electromagnet in order for the globe model to float lower. [2]

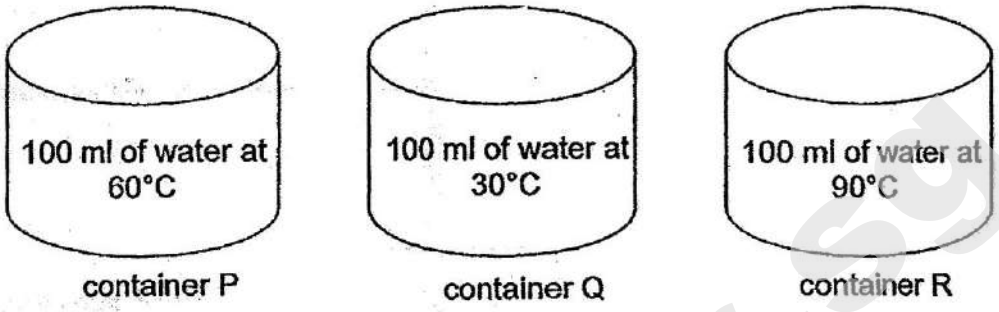
i) _____

ii) _____

Score	5

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39. Ali wanted to find out if the temperature of water will affect the rate of evaporation. He placed three similar containers with water of different temperature inside the living room which has a room temperature of 25°C for 30 minutes as shown in the diagram below.



(a) Arrange the containers according to the amount of water left after the experiment starting from the least to the most. [1]



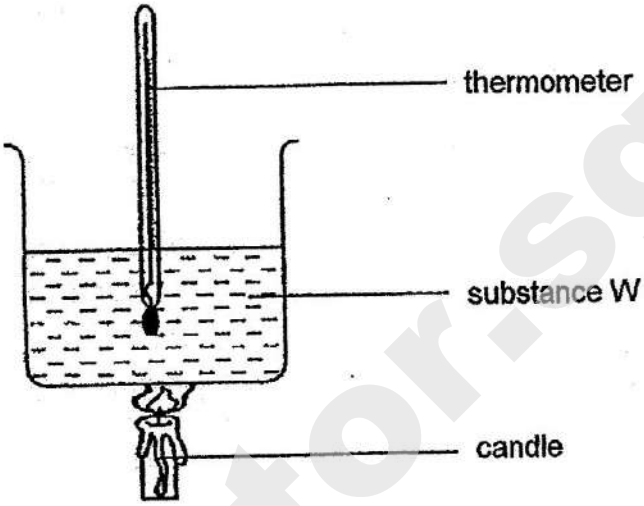
(b) Explain your answer in (a). [2]

(c) Ali's friend suggested that he poured the remaining water in each container into a measuring cylinder to find out the amount of water left after the experiment instead of observing the amount of water with his eyes. How does this help to improve the experiment? [1]

Score	/ 4

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40. Natasha had four substances which she wanted to make into an ice-pack to be used at home when her siblings are unwell. She heated each substance for 10 minutes and measured the temperature of the substances as shown in the diagram below.



She recorded the readings in the table below.

Substance	W	X	Y	Z
Temperature at the start (°C)	25	25	25	25
Temperature after 10 minutes (°C)	45	38	30	52

(a) Which substance is most suitable to be used in the ice-pack to apply on a child who is having a fever? Explain your answer. [2]

(b) Natasha wanted to change the amount of substance in each beaker but her father told her that if she had done that, it will no longer be a fair test. Explain why. [1]

End of paper

Score / 3

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SCHOOL : NAN HUA PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA1

CONTACT :

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	2	4	1	2	1	3	2	3	2
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	1	2	2	3	4	1	3	1	4
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
4	1	2	1	4	3	4	3		

SECTION B

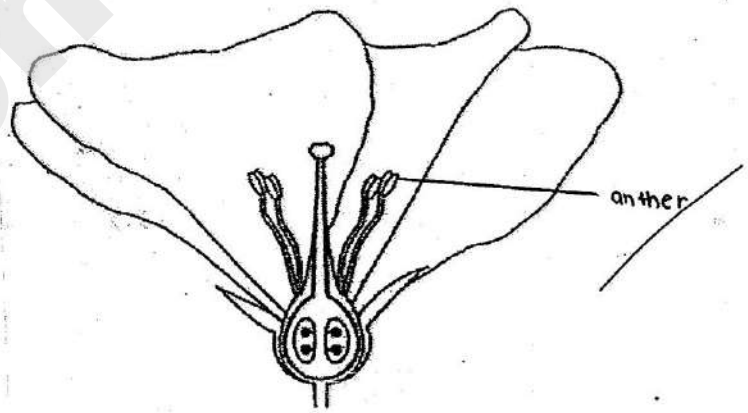
Q29)

a)Part X : cell wall
Part Y : chloroplasts

b)Gives a fixed shape to plant cell.

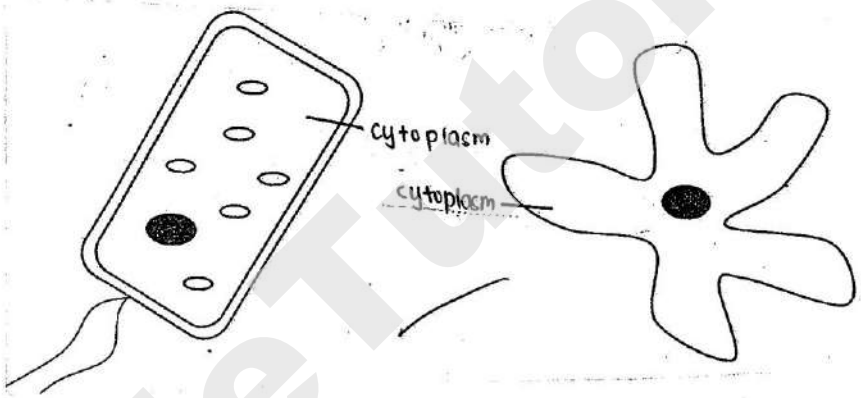
Q30)

a)



b)The flower has large petals to attract animals. The stigma and anthers are found inside the flowers.

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	c)It helps to pollinate the flower.
Q31)	a)Group A gives birth to young but group B lay eggs. b)To ensure the continuity of its kind. c)Cutting the tube at X will prevent the sperm from the testis from reaching the penis and to the female. This will prevent the eggs in the female from being fertilised.
Q32)	a)During cellular respiration, oxygen was used and water vapour and carbon dioxide were produced. There with be more carbon dioxide and water vapour and less oxygen in exhaled air inhaled air. b)Nitrogen is not needed for any life processes.
Q33)	a)  b)No. Organism A does not feed on other organism as it has chloroplast that contain chlorophyll to photosynthesis. Organism B has no chloroplast so it feeds on other organism.
Q34)	a)Wind dispersal. b)The longer the length of the wing-like structure, the longer it take for the fruit to reach the ground. c)1cm.
Q35)	a)The coconut has a fibrous husk and has an ability to float on water. b)This is to prevent overcrowding. c)By splitting, the seeds will stay together and a competition may happen and by water dispersal, the seeds will be able to separate more and less chance of competition will happen. d)Both of them need fertilisation and fusing for the new plant or baby to be produce.

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Q36)	a)Set-up A and C. b)Type of plant and temperature of water.
Q37)	a)D. The most number of weights is needed to tear it, hence it is the strongest. b)Jason should repeat the experiment. c)1)Pour 20cm3 of water onto each piece paper. 2)Measure the mass of the paper after it has absorbed the water.
Q38)	a)Iron. b)The globe modal will fall to the base of the wooden stand towards the magnet as it will be attracted by the magnet. c)i)Decrease the amount of coil around the steel rod. ii)Decrease the amount of battery to one battery only.
Q39)	a)R P Q b)The water in container R has the greater temperature difference between the water and the room temperature. The water will evaporate the faster into water vapour. c)This helps to obtain more accurate readings for the experiment.
Q40)	a)It gains heat from the candle the fastest so it is the best conductor of heat, the ice pack will gain heat from the sick child the fastest . b)By changing the amount of substance in each beaker, it will affect the amount of heat gained by the substance.

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6

NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SEMESTRAL ASSESSMENT 1
2018

BOOKLET A

Date: 8 May 2018

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 22 printed pages including this cover page.

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Section A (28 x 2 marks = 56 marks)

For each question from 1 to 28, 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 a bird's nest fern.



A single fern produces thousands of spores. Each spore has the ability to grow into an adult plant.

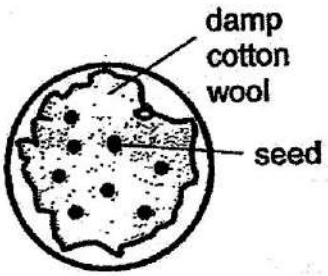
Which one of the following best explains why the fern needs to produce a large number of spores?

(1) To ensure the fern will grow more fruits.
(2) To ensure the fern can carry out wind pollination.
(3) To ensure the young plants can grow well together.
(4) To ensure some of the spores will grow into adult plants.

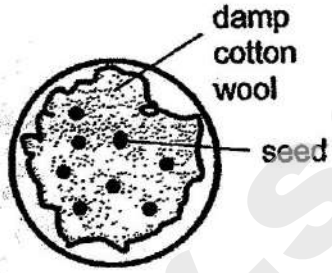
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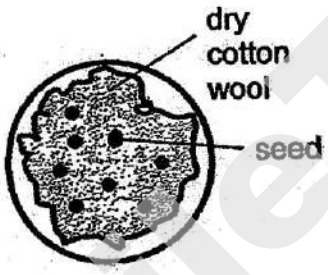
2. Arushi set up an experiment with 4 set-ups, W, X, Y and Z, as shown in the diagram below.



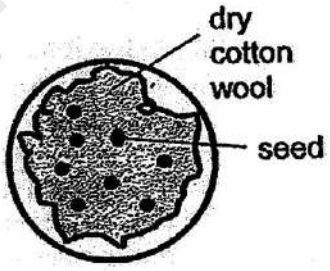
Set-up W
Placed next to the window



Set-up X
Placed in the cupboard



Set-up Y
Placed next to the window



Set-up Z
Placed in the cupboard

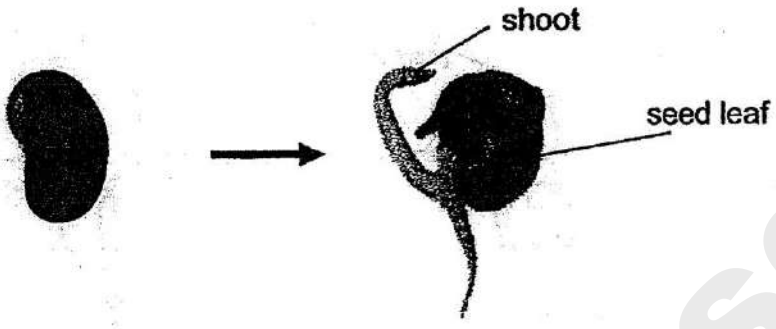
In which of the following set-up(s) will the seeds germinate after a week?

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

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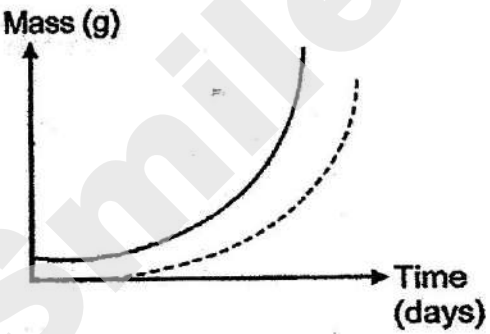
3. Xu Long carried out an experiment on a seed growing into a seedling as shown below.



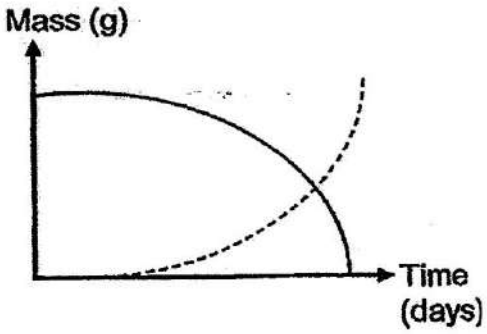
Which one of the following graphs correctly shows the changes in the mass of the seed leaf and the mass of the shoot of the seedling during the experiment?

Key:
Seed leaf _____
Shoot - - - - - - - - - - - -

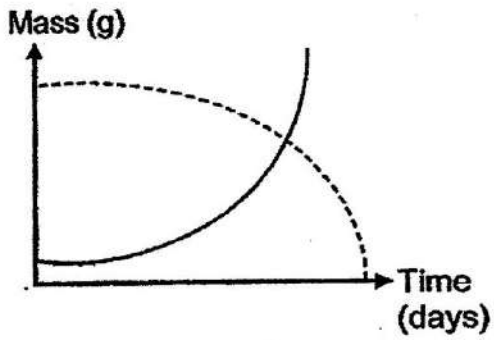
(1)



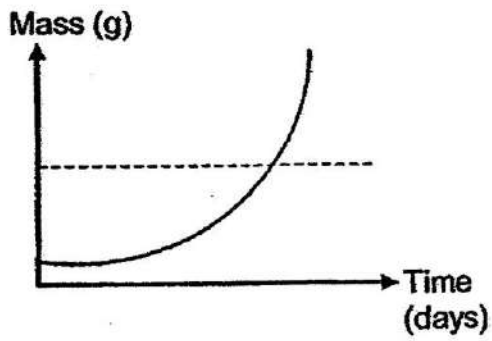
(2)



(3)

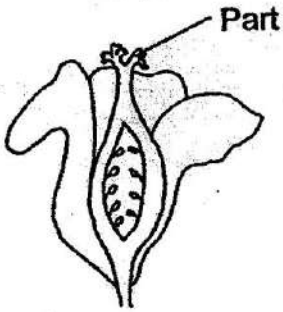


(4)

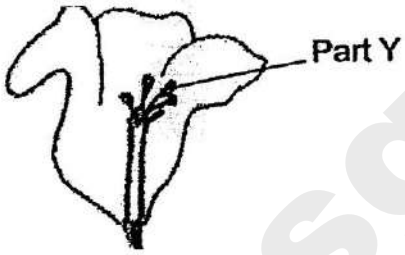


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4. Mike carried out an experiment with Plant W which produced 2 different types of flower, A and B. The diagrams below show the parts of Flower A and Flower B.



Flower A



Flower B

Mike rubbed Part Y of Flower B against Part X of Flower A. Then, he observed that there was some brown substance from Part Y that was left on Part X.

Which of the following statements are correct?

P Flower A might develop into a fruit as pollination and fertilisation could have taken place.
Q Flower B might develop into a fruit as pollination and fertilisation could have taken place.
R Flower A will not develop into a fruit as it does not have male reproductive parts.
S Flower B will not develop into a fruit as it does not have female reproductive parts.

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

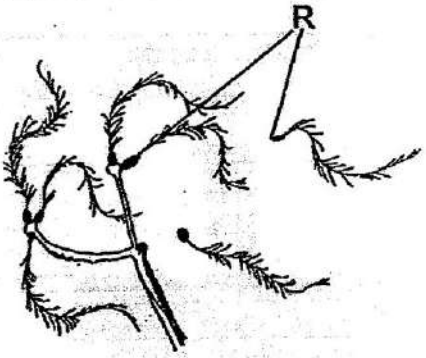
5. Many fruits and seeds have special structures to help in their dispersal.

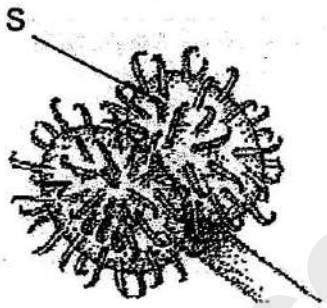
Which one of the following statements does **not** explain the importance of dispersal of seeds or fruits?

(1) It ensures extinction of the plants.
(2) It prevents overcrowding of the plants.
(3) It ensures that young plant will grow more healthily.
(4) It ensures that the plants will not compete with each other for basic needs.

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6. The diagrams below show 2 fruits, R and S.





Based on the above diagrams, what are their methods of dispersal?

	Fruit	Method of dispersal
A	R	Water
B	R	Wind
C	S	Animals
D	S	Wind

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

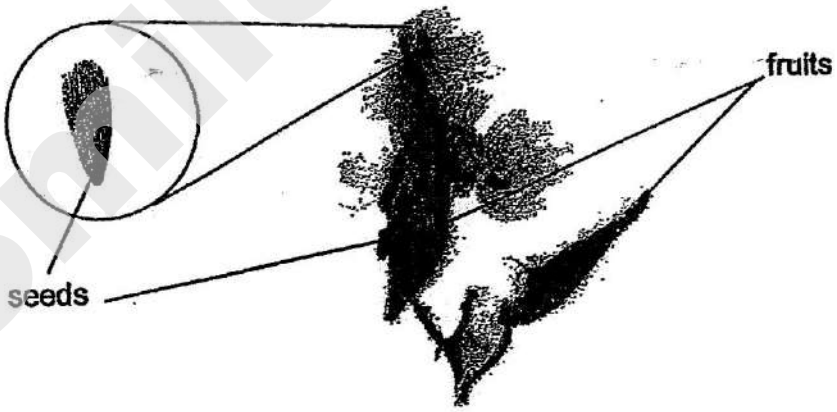
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7. The table below shows the method of dispersal of some fruits and seeds.

Method of dispersal	Fruits / Seeds
W	
X	
Y	
Z	

The diagram below shows the fruits and seeds of Plant F.



Based on the diagram above, which of the following are the methods of dispersal for Plant F?

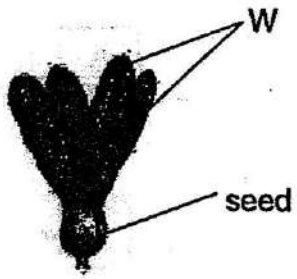
(1) W and X only
(2) W and Y only
(3) X and Z only
(4) Y and Z only

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Study the diagram and table below and answer Questions 8 and 9.

The diagram below shows fruit S.



Fruit S

Yusof carried out an experiment with the fruit. He used one fruit S with 4 part W and released the fruit from the same height above the ground and recorded the distance travelled from the starting point to the point the fruit landed on the ground. He then removed part W one at a time and repeated the experiment.

Number of Part W on Fruit S	Distance travelled (m)
4	5
3	3
2	1
1	0.5

8. What is the aim of Yusof's experiment?

(1) To find out the longest distance Fruit S can travel.
(2) To find out how the size of the seed affects the distance Fruit S travels.
(3) To find out how the length of part W affects the distance Fruit S travels.
(4) To find out how the number of part W affects the distance Fruit S travels.

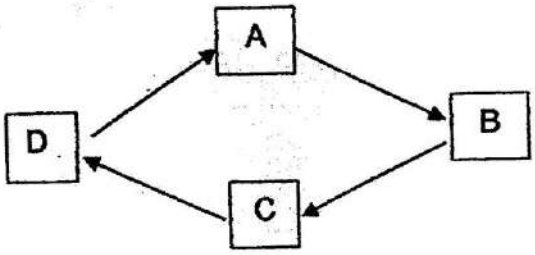
9. Which of the following should Yusof do to ensure that the experimental results are reliable?

A Measure the length of each part W.
B Measure the time taken for the fruit to land on the ground.
C Repeat each of the experiment at least 3 times.

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

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10. The diagram below shows processes, A, B, C and D, involved in the sexual reproduction of flowering plants.



Which one of the following could represent processes A, B, C and D?

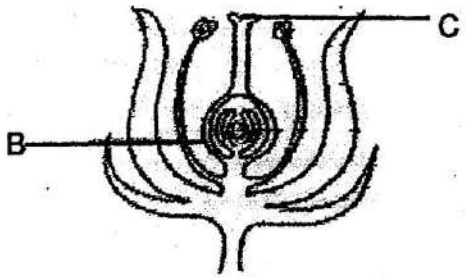
	A	B	C	D
(1)	seed dispersal	fertilisation	germination	pollination
(2)	fertilisation	seed dispersal	germination	pollination
(3)	seed dispersal	pollination	germination	fertilisation
(4)	germination	seed dispersal	pollination	fertilisation

11. Which one of the following sets of statements about pollination and seed dispersal is correct?

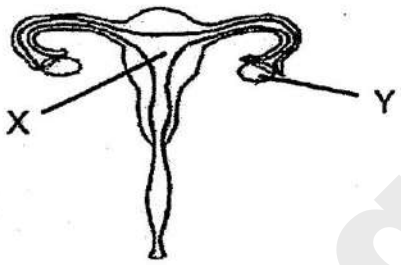
	Pollination	Seed dispersal
(1)	Pollen grains can only be transferred from the stigma to the anther by insects.	Some wind-dispersed seeds have wing-like structures.
(2)	Pollen grains are transferred by the wind only.	All juicy fruits are dispersed by explosive action.
(3)	Pollen grains are transferred from the anther to the stigma by wind or animals.	Fruits with fibrous husks are dispersed by water.
(4)	Pollen grains that are sticky are transferred by animals.	Seeds that are dispersed by animals must be small.

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12. The diagrams below show the reproductive parts of a flower and a female human.



Flower



Human (female)

Which of the following represents the parts where the female reproductive cells are produced?

(1) B and X
(2) B and Y
(3) C and X
(4) C and Y

13. Which of the following statements about reproduction in humans are correct?

A Many sperms are needed to fertilise the egg.
B Fertilisation takes place inside the body of the female.
C After fertilisation has taken place, the fertilised egg will develop into a baby.

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

14. Which of the following statement(s) about the development of a human baby in the womb is/are correct?

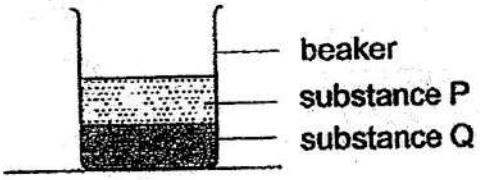
P The human baby developed from one fertilised egg cell.
Q It will take more than a year for the baby to develop and be ready for birth.
R The baby will have genetic information from only one of his or her parents.

(1) P only
(2) P and Q only
(3) Q and R only
(4) P, Q and R

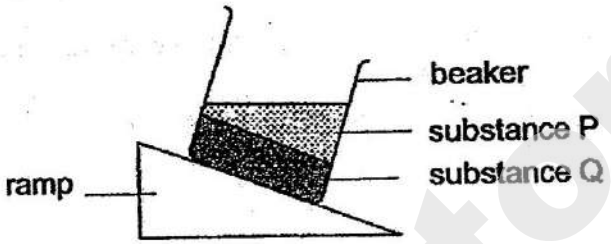
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15. The diagram below shows a beaker filled with two substances, P and Q.



The beaker was then placed on a ramp as shown below.



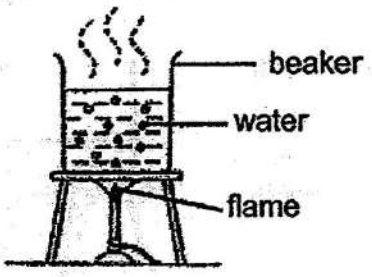
Which of the following correctly shows the states of matter that substances P and Q are in?

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

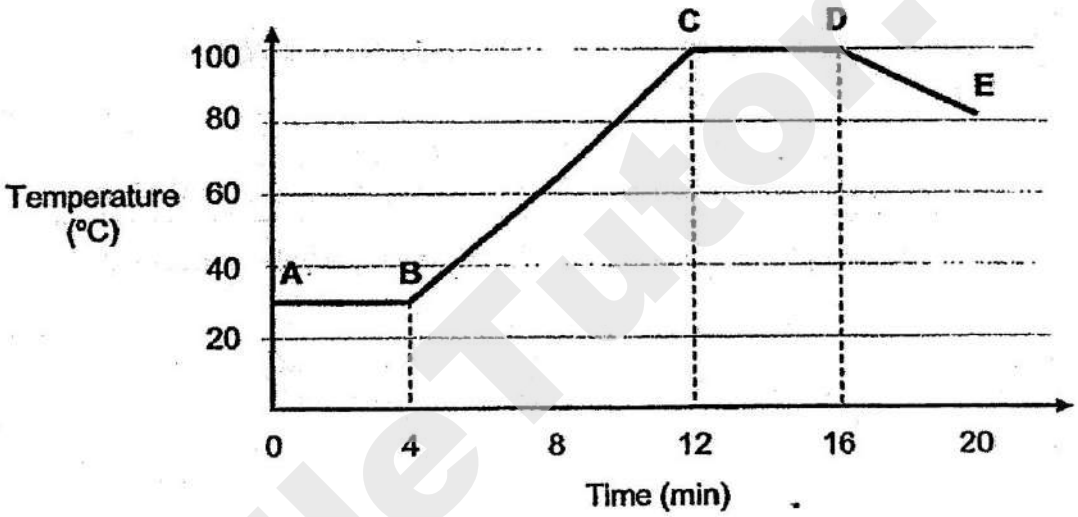
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16. Matthew heated a beaker of water until the water boiled as shown in the diagram below. He then turned off the flame and left the water to cool.



He recorded the temperature of the water and plotted a graph as shown below.

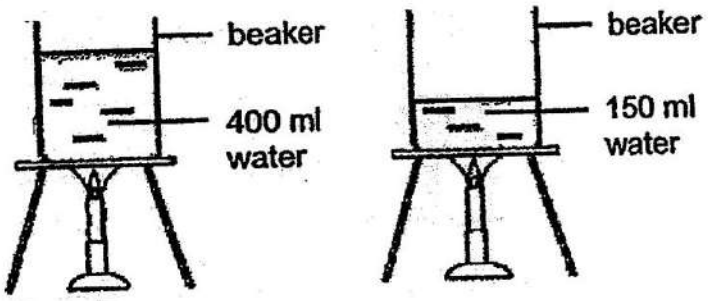


Based on the above experiment, which one of the following statements is correct?

(1) The water lost heat between DE.
(2) Water changed state during BC only.
(3) The water started boiling at 4 minutes.
(4) The water was in the solid state at the start of the experiment.

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17. Jie Ying heated two beakers of water, X and Y, at room temperature with the same amount of heat as shown in the diagram below.



Beaker X Beaker Y

Which of the following statement(s) about the two beakers of water is/are correct?

A Both beakers of water would boil at the same time.
B Both beakers of water would have the same temperature when they boil.
C The boiling water in Beaker X would have a greater amount of heat than the boiling water in Beaker Y.

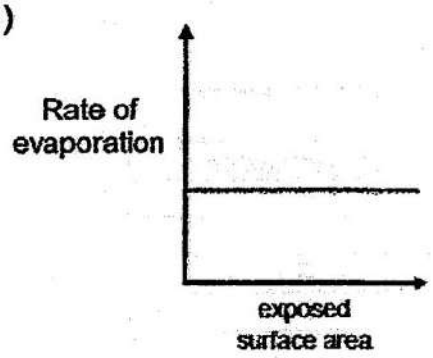
(1) A only
(2) A and B only
(3) B and C only
(4) A, B and C

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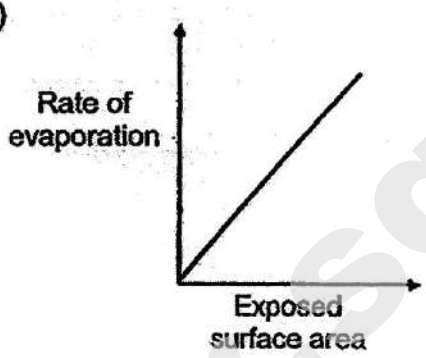
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18. Which one of the following graphs correctly shows the effect of increased exposed surface area on the rate of evaporation?

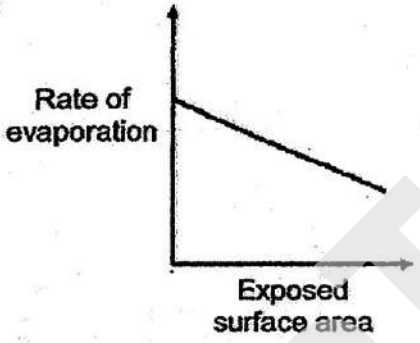
(1)



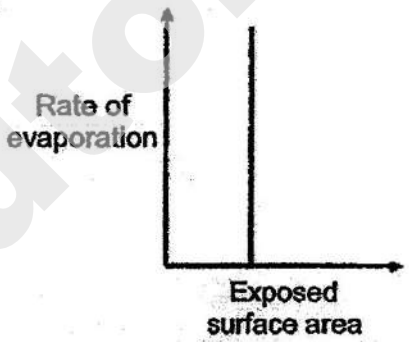
(2)



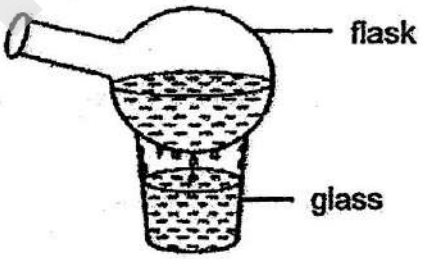
(3)



(4)



19. Rahim set up a model as shown in the diagram below to represent the water cycle.



In order for this model to work, which one of the following conditions must be met?

(1) Keep the temperature of the water in the glass and flask at 100°C.
(2) Keep the temperature of the air around the set-up lower than the temperature of the water in the glass.
(3) Keep the temperature of the water in the flask higher than the temperature of the water in the glass.
(4) Keep the temperature of the water in the glass higher than the temperature of the water in the flask.

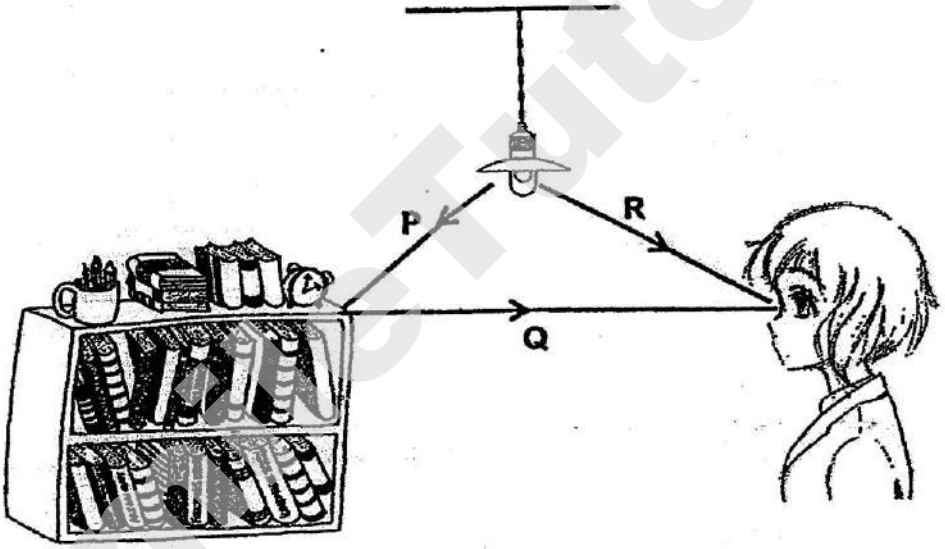
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20. In which of the following would water go through evaporation or condensation?

A Hanging a wet towel out to dry.
B Making ice cubes in the freezer.
C Water droplets forming on a cold glass surface.

	Evaporation	Condensation
(1)	A	B
(2)	A	C
(3)	B	A
(4)	B	C

21. The diagram below shows three rays of light, P, Q and R.



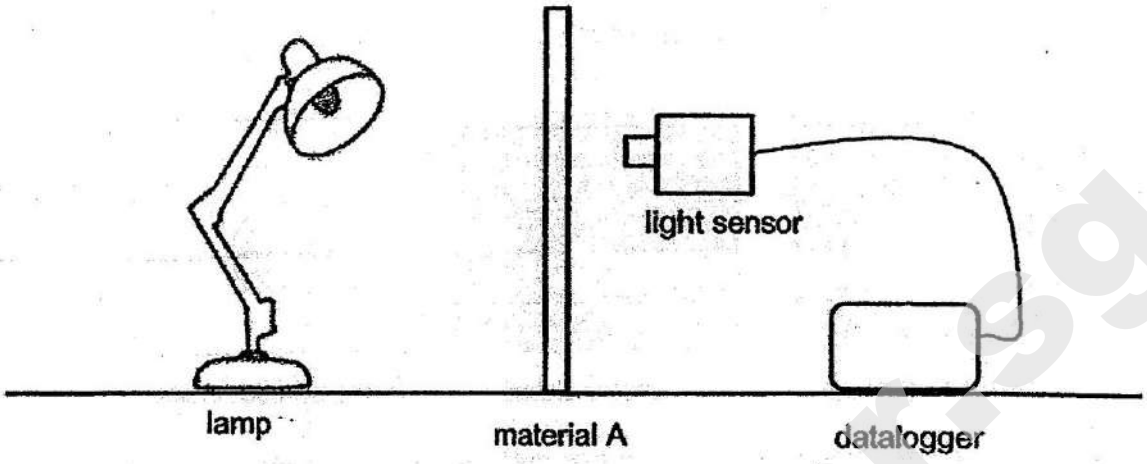
When Linda switched on the lamp in her room, she could see the lamp and the bookcase.

Which ray(s) of light best explain(s) why Linda was able to see the lamp and the bookcase?

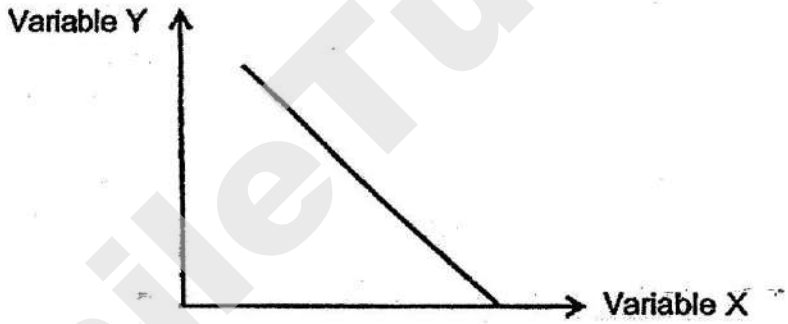
	To see the lamp	To see the bookcase
(1)	R	P and Q
(2)	P	R and Q
(3)	P and R	Q
(4)	Q and R	P

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22. The diagram below shows how the thickness of material A affects the amount of light passing through it.



The graph below shows the results obtained.



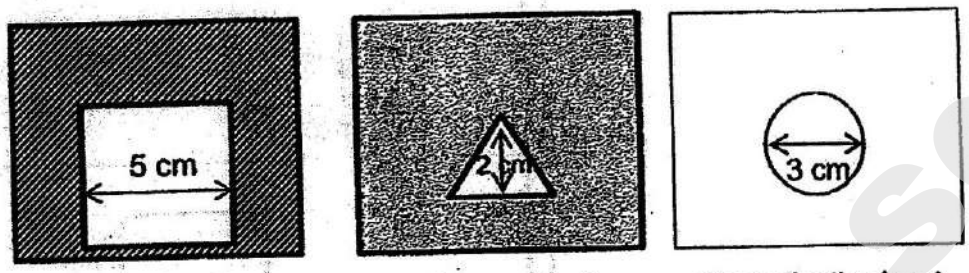
Based on the above experiment, what could Variables X and Y most likely be?

	Variable X	Variable Y
(1)	Thickness of material A	Amount of light passing through material A
(2)	Amount of light passing through material A	Thickness of material A
(3)	Type of material	Amount of light passing through material A
(4)	Amount of light passing through material A	Type of material

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23. Titus cut out a square, a circle and a triangle from 3 sheets of material which are of the same size.

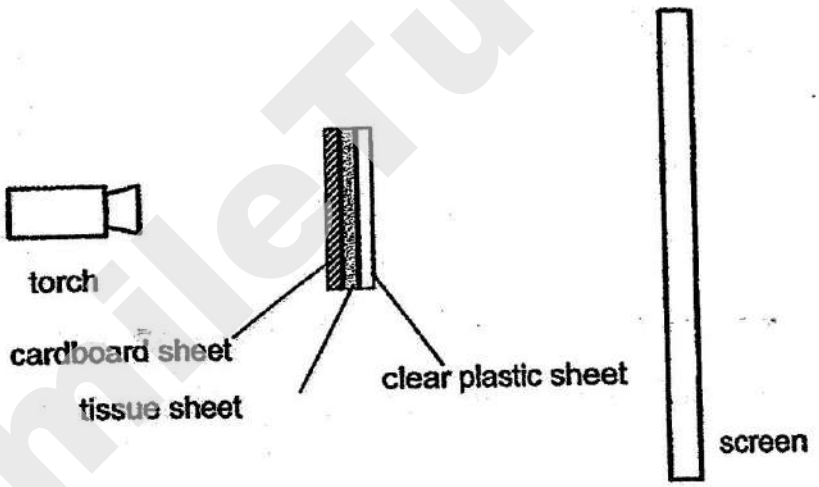
Front view



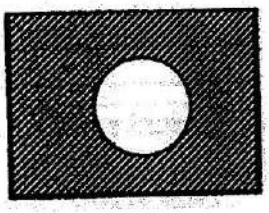
cardboard sheet tissue sheet clear plastic sheet

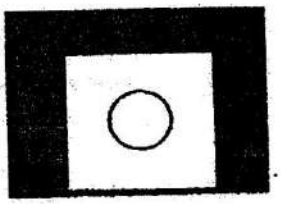
Then he glued the 3 pieces of rectangular sheets with the cut-outs together and placed them, one in front of the other, between a torch and a screen in a dark room as shown below.

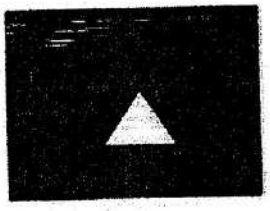
Side view

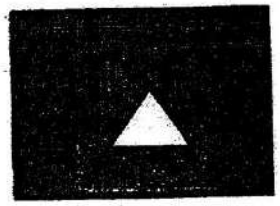


Which one of the following could be the shadow cast on the screen?

(1) 

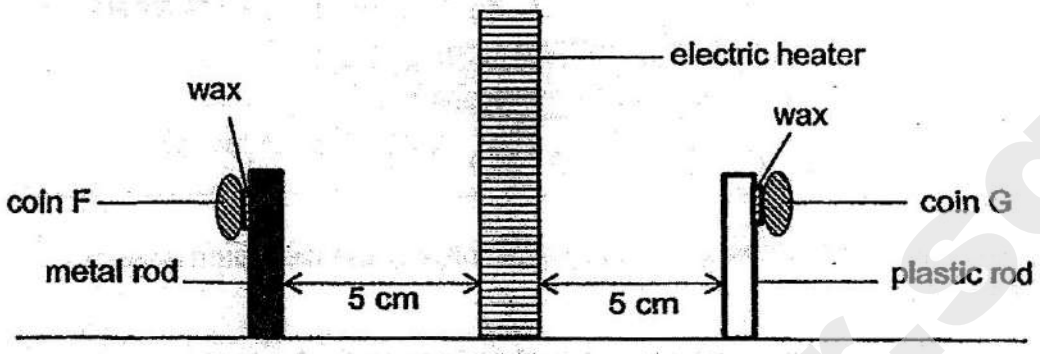
(2) 

(3) 

(4) 

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24. Two identical coins, F and G, were attached to the 2 similar rods of different materials by the same amount of wax as shown below.



The electric heater was then switched on for 10 minutes.

Which of the following is the correct observation and its reason?

A Coin F will drop first as metal is a better conductor of heat.

B Coin F will drop first as metal can absorb more heat.

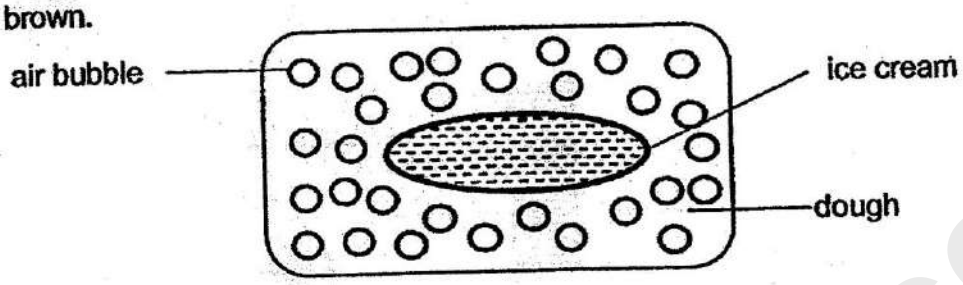
C Coin G will drop first as plastic is a better conductor of heat.

D Coin G will drop first as plastic surfaces can absorb more heat.

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

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25. Fried ice cream is made by wrapping ice cream with a layer of bread dough. It is then fried in hot oil till the outer layer of dough is golden brown.



Which one of the following correctly explains why the ice cream does not melt during frying?

(1) Air is a good conductor of heat and conducts the heat away from the ice cream quickly.

(2) Air is a poor conductor of heat and slows down the heat gained by the ice cream.

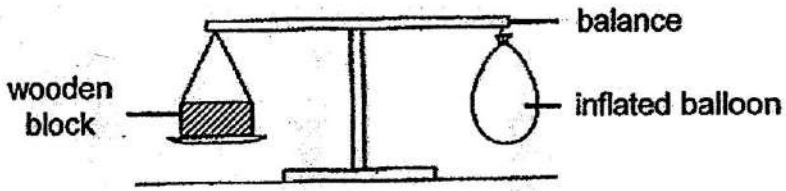
(3) The ice cream is a good conductor of heat and conducts the heat away from it quickly.

(4) The ice cream is a poor conductor of heat and slows down the heat gained.

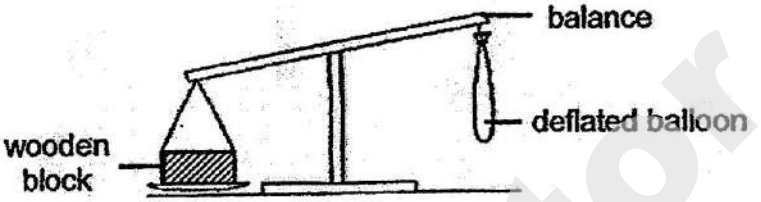
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26. An inflated balloon was balanced by a wooden block on a balance as shown in the diagram below.



After some time, the air in the balloon escaped and the balloon became deflated.



Which of the following statements correctly describe the observations shown above?

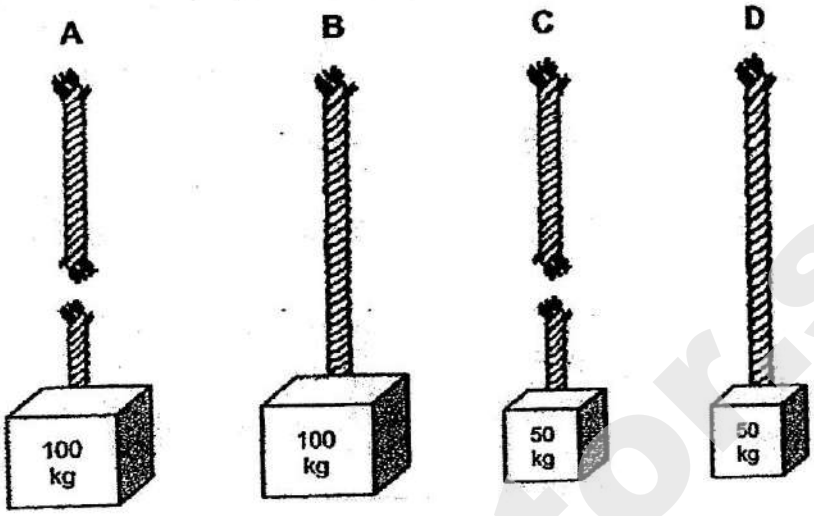
W Air has mass.
X Air occupies space.
Y The inflated balloon has the same mass as the wooden block.
Z The inflated balloon has the same volume as the wooden block.

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

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27. Four different materials, A, B, C and D, were used to make ropes. The ropes were of the same length and thickness. Each rope was attached to a load.



When each load was lifted, the ropes made of material A and material C snapped.

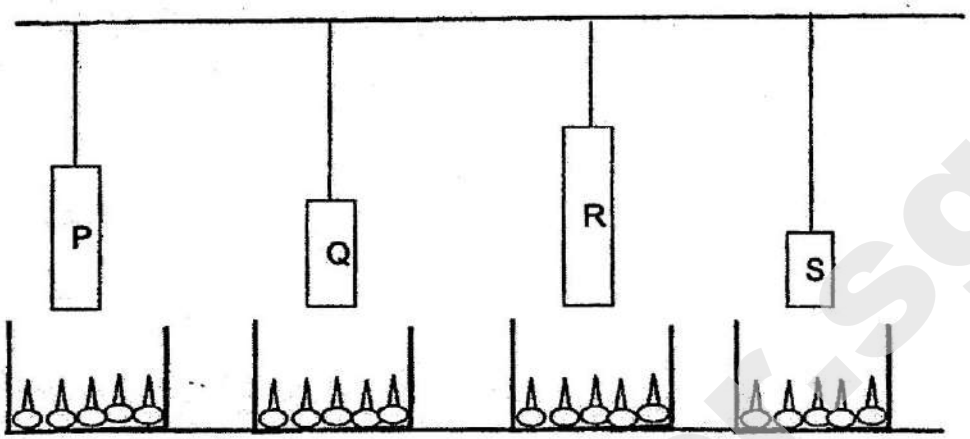
Based on the above observations only, which one of the following about materials A, B, C and D can be concluded?

(1) Material A is stronger than Material C.
(2) Material A is weaker than Material B.
(3) Material B is as strong as Material D.
(4) Material C is the weakest and Material B is the strongest.

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28. Debbie suspended four magnets, P, Q, R and S from the same height above four trays of equal number of thumbtacks as shown in the diagram below.



She observed the number of thumbtacks that each magnet was able to attract and recorded the results in the table below.

Magnet	P	Q	R	S
Number of thumbtacks attracted	5	3	7	9

Based on the above experiment, which of the following correctly explains the results in the table?

A Magnetism can act from a distance.
B Shorter magnets are weaker than longer magnets.
C The strength of a magnet does not depend on its size.

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

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NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SEMESTRAL ASSESSMENT 1
2018

BOOKLET B

Date: 8 May 2018

Duration: 1 h 45 min

Name : _____ ( )

Class: Primary 5 ( )

Marks Scored:

Booklet A:		**56**
Booklet B :		**44**
Total :		**100**

Any query on marks awarded should be raised by 17 May 2018. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.

Parent's signature: .....

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet B consists of 19 printed pages including this cover page.

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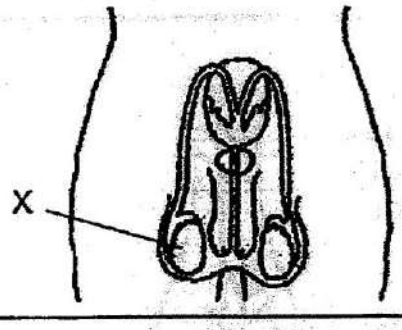
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Section B (44 marks)
Write your answers to questions 29 to 40 in the spaces provided.

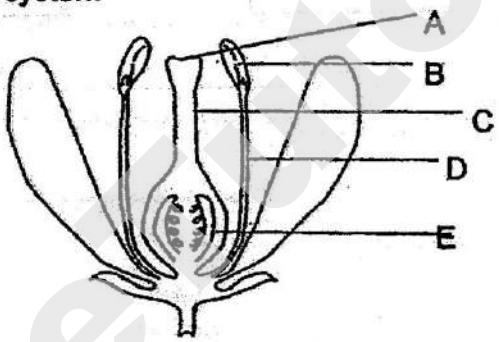
29. The diagrams below show the reproductive systems of human and plant.

Human reproductive systems





Plant reproductive system



The table below compares the reproductive parts of the human and the equivalent part in the flower.

(a) Fill in the reproductive parts (i) and (iii) in the table below with A, B, C, D or E. [2]

	Human	Plants
Male reproductive parts	X	(i)
Function	contains sperms	(ii)
Female reproductive parts	Y	(iii)
Function	contain eggs	(iv)

(b) Complete the table above by filling in the functions, (ii) and (iv). [2]

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30. Wayne carried out an experiment with 2 similar set-ups, A and B, as shown in diagram 1. Set-up A contains 50ml of chemical A and set-up B contains 50ml of water. Chemical A removes oxygen from the surroundings. Both set-ups were placed in the classroom.

Diagram 1 – Start of experiment

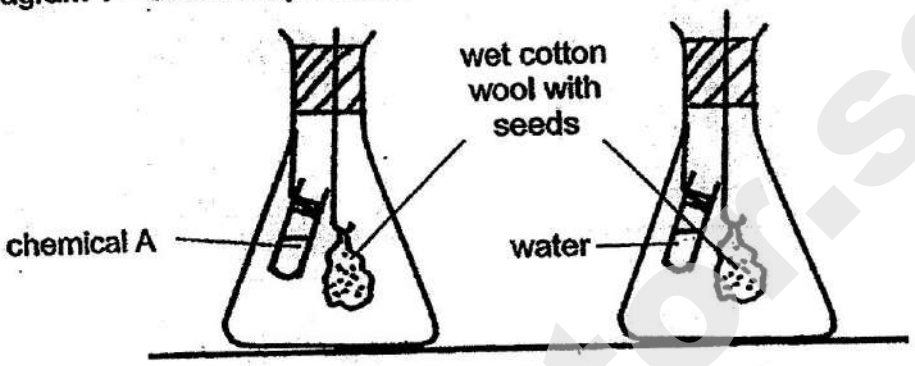
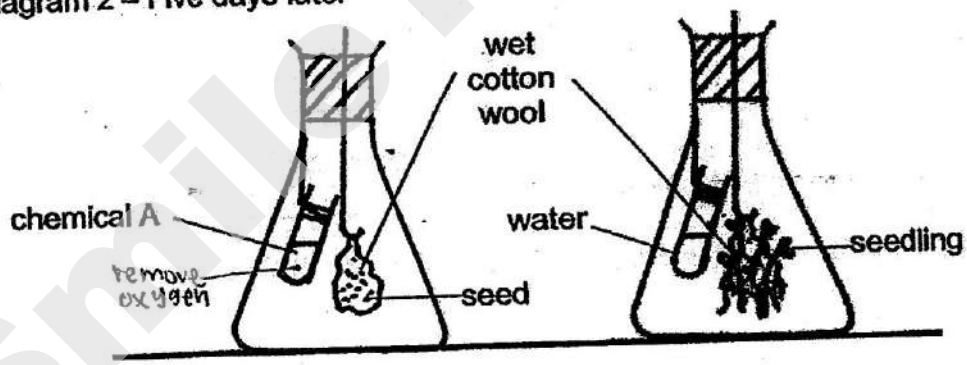


Diagram 2 – Five days later



(a) It was observed that the seeds in set-up A did not germinate. Give a reason for the observation. [1]

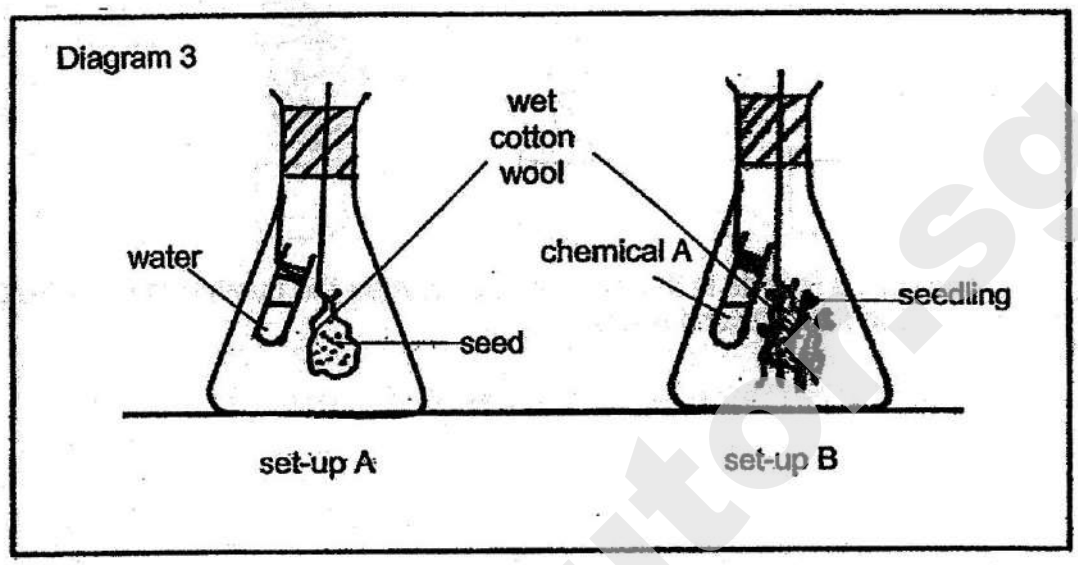
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(Continue from Question 30)

Wayne then replaced chemical A in Set-up A with 50ml of water and the water in set-up B with chemical A as shown in diagram 3 below.

Diagram 3



He left the above set-ups in the classroom for another 5 days.

(b) What will he most likely observe in each of the set-ups in diagram 3 after 5 days? [1]

Set-up A: _____

_____

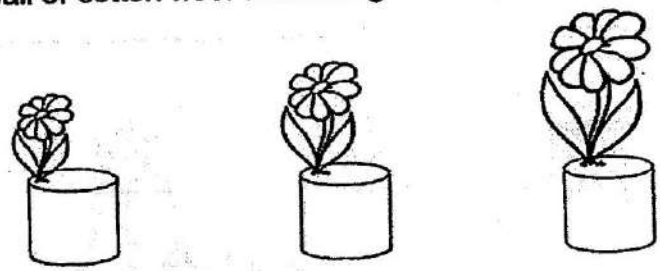
Set-up B: _____

_____

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31. Niki wanted to investigate if the size of flowers affects the number of bees that landed on them. She made flowers of 3 different sizes using the same type of yellow paper as shown in diagram below. In the centre of each flower, she attached a ball of cotton wool containing nectar from the same flower.



She placed the 3 flowers in the garden and counted the number of bees that landed on each flower over 4 hours.

(a) Is Niki's experiment a fair test? Explain your answer. [1]

Niki recorded her observations in the table below.



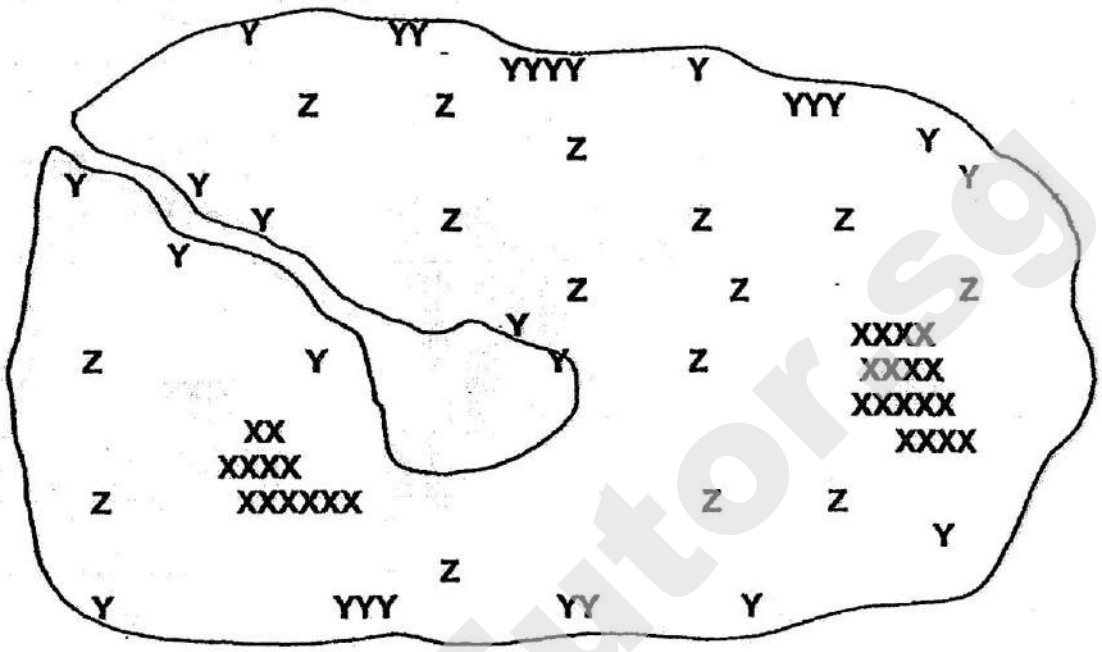
Length L (cm)	Number of bees that landed on the flowers
5	9
10	17
15	46

(b) Based on the results recorded in the table above, what is the relationship between the size of the flowers and the number of bees that landed on them? [1]

(c) Give a reason why her results were not reliable. [1]

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32. On island W, there were 3 types of plants, X, Y and Z. The locations of the 3 types of plants were indicated in the diagram below.



Island W

(a) Based on the locations of the 3 types of plants on island W, state a likely physical characteristic of the fruit of each plant which helps them in their dispersal of fruits. [3]

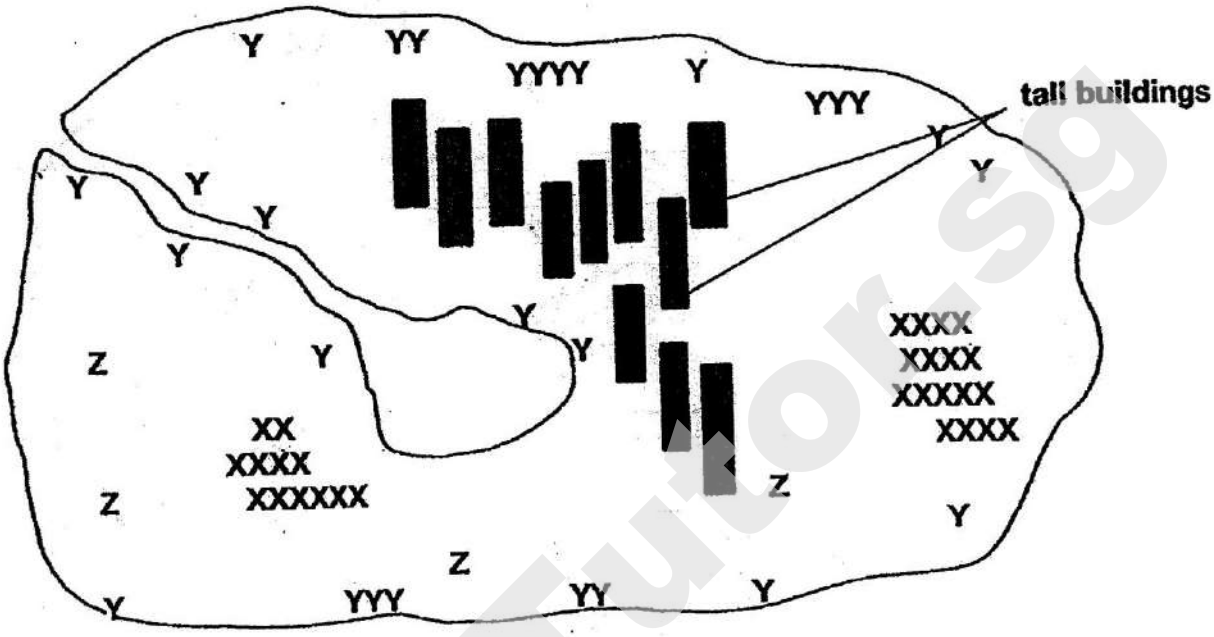
Plant	Physical characteristics of the fruit
X	
Y	
Z	

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(Continue from Question 32)

Construction works were carried out on island W and many tall buildings were built. The diagram below showed how the plants, X, Y and Z were affected.



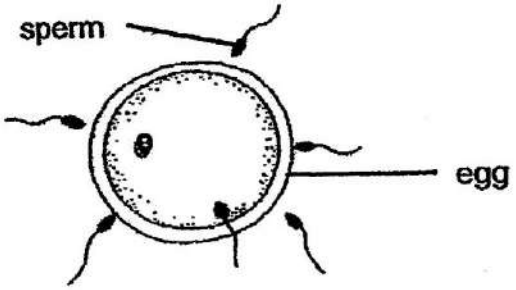
Island W

(b) Based on the method of dispersal, which plant is most affected by the construction work on the island? Explain your answer. [1]

_____

_____

The diagram below shows two types cells in the human reproductive system.



(a) Name the organs in which the sperms and the egg are produced. [2]

sperms : _____

egg : _____

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(b) (i) State the process shown in the diagram above. [1]

_____

(ii) Describe what happens during the process in b(i). [1]

_____

_____

34. Linda conducted an experiment to find out how the temperature of a liquid affects the time taken for it to evaporate. She poured 100ml of the liquid into four identical beakers, A, B, C and D. She then heated the liquid in each beaker to different temperatures as shown in the table below.
She placed the beakers in a room and recorded the time taken for the liquid in each beaker to evaporate completely in the table below.

Beaker	Temperature of liquid at the start of experiment (°C)	Time taken (h)
A	30	8
B	50	5
C	70	3
D	90	2

(a) Based on the results above, what can Linda conclude from her experiment? [1]

_____

_____

(b) Explain clearly why it is not a fair test if Linda had used 4 beakers of different sizes for her experiment. [2]

_____

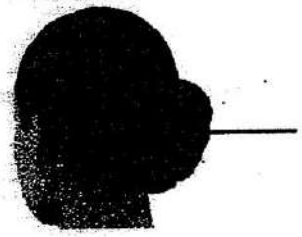
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(Continue from Question 34)

One day, after a shower, Linda tied her wet hair into a bun as shown below.



Linda's mother suggested that she let her hair down so that it would dry faster.



(c) Explain why her mother's suggestion would help her hair dry faster. [1]

_____

_____

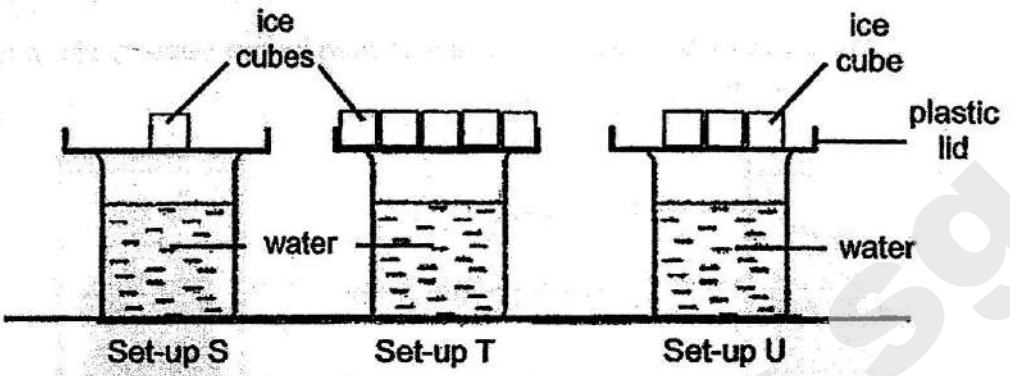
(d) Other than using a towel, suggest another method which Linda could use to dry her hair faster. [1]

_____

_____

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35. Irfan poured 400ml of water at 50°C into a beaker in each of the 3 set-ups, S, T and U, as shown in the diagram below. He covered each beaker with a plastic lid and placed a different number of ice cubes on the plastic lids.



He then observed the amount of water droplets formed on the underside of the plastic lid after 1 minute.

(a) Which set-up would have the most number of water droplets? Explain your answer. [2]

Irfan fried two pineapple pies and placed them into boxes A and B as shown in the diagrams below.



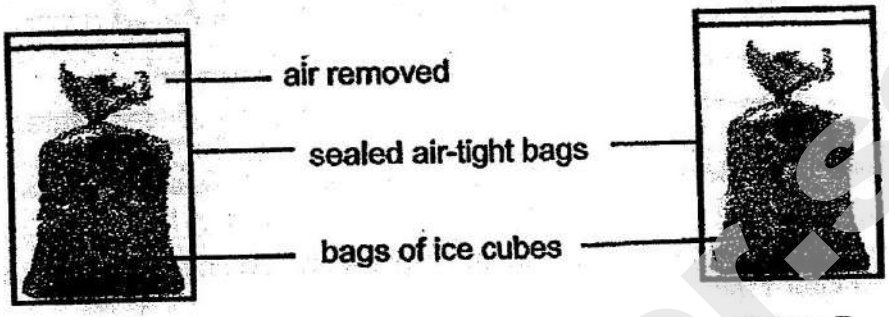
After some time, Irfan observed that the pineapple pie in box A became slightly wet compared to that in box B.

(b) Explain clearly how the holes in box B helped to keep the pineapple pie dry and crispy. [2]

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36. Zhiming put the same number of ice cubes into two plastic bags, A and B. The plastic bags were then placed into another air-tight bag as shown in the diagram below.

The air in the air-tight bag in set-up A was removed before sealing. He then left both bags in a room of 28°C.



Set-up A Set-up B

After 30 minutes, Zhiming observed a mixture of water and ice cubes in the two plastic bags.

(a) State the process that had taken in the two plastic bags. [1]

_____

(b) In which set-up, A or B, would Zhiming most likely observe more ice cubes left? Give a reason for your answer. [1]

_____

_____

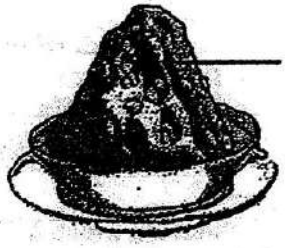
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(Continue Question 36)

One day, Zhiming sat outside a restaurant and was having his ice dessert.



At the same time, he observed another customer seated inside the restaurant having the same ice dessert as shown in the diagram below.

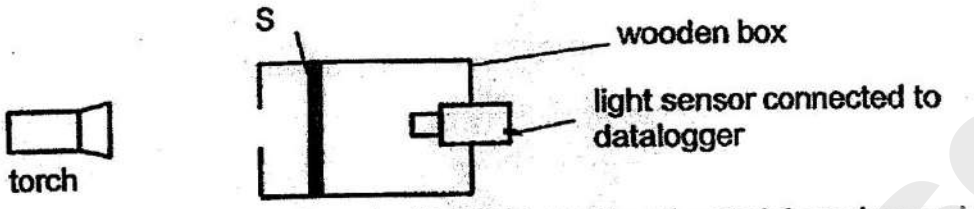


(c) Zhiming observed that his ice dessert turned to liquid faster than the other customer's ice dessert. Give a reason for this observation. [1]

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37. May used 3 different types of material, S, T and U, of the same thickness for her experiment. She positioned material S in a wooden box as shown in the set-up below and recorded the amount of light detected by the light sensor.



She repeated the experiment with different pairs of materials and recorded the amount of light detected by the light sensor in the table below.

Set-up	Materials placed in the box	Amount of light detected (units)
1	S	250
2	T	150
3	U	50

(a) Based on the experiment above, state one variable that May had to keep constant for it to be a fair test. [1]

_____

_____

(b) Using the same set-up and materials, suggest one way to increase the amount of light detected by the light sensor. [1]

_____

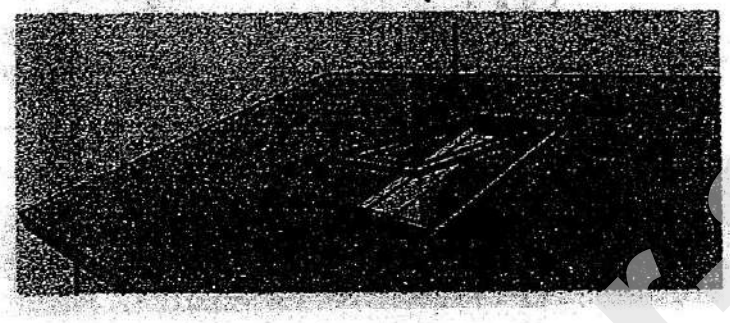
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(Continue from Question 37)

May wanted to use one of the materials from her experiment to make the rooftop windows of her house so that she would not need to switch on the lights during the day.

rooftop window

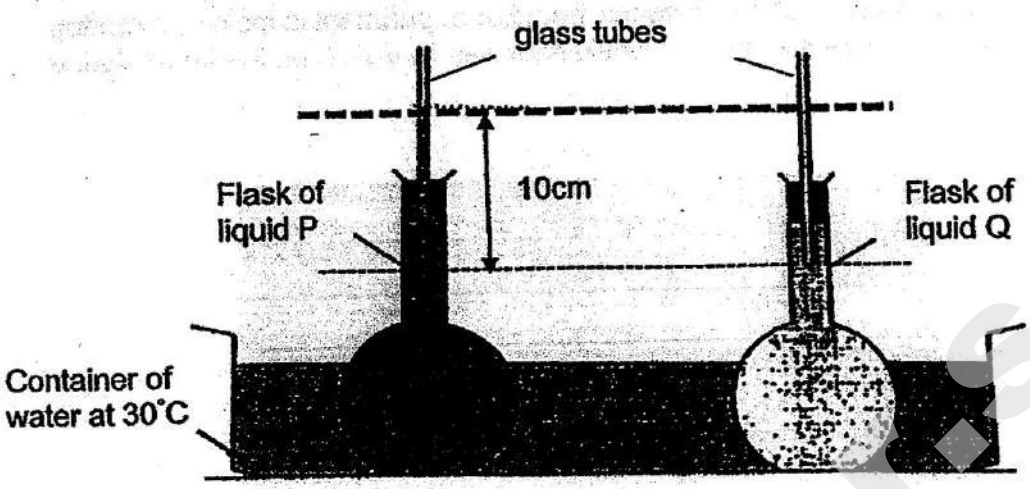


(c) Which material, S, T or U, is the most suitable for making the rooftop window? Give a reason for your answer. [1]

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38. Winnie set up the experiment as shown below.



Winnie made sure that when both flasks were immersed in the container of water at 30 °C, the levels of liquids P and Q in the glass tube were the same. Liquid P is a better conductor of heat than liquid Q.

Winnie observed the levels of liquid in both flasks when she added a bucket of ice cubes into the container of water and recorded her results in the table below.

Time (min)	Level of liquid P (cm)	Level of liquid Q (cm)
0	10	10
2	8	9
4	5	7
6	2	5

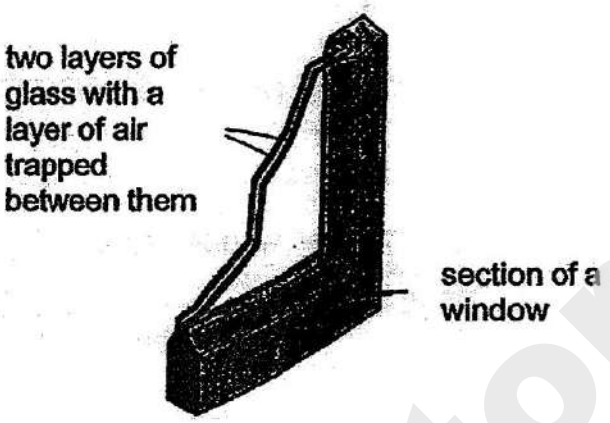
(a) Based on the table above, explain the results of her experiment. [1]

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

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(continue from Question 38)

Winnie discovered that houses in cold countries have windows that have two layers of glass, trapping a layer of air between them, as shown in the diagram below.

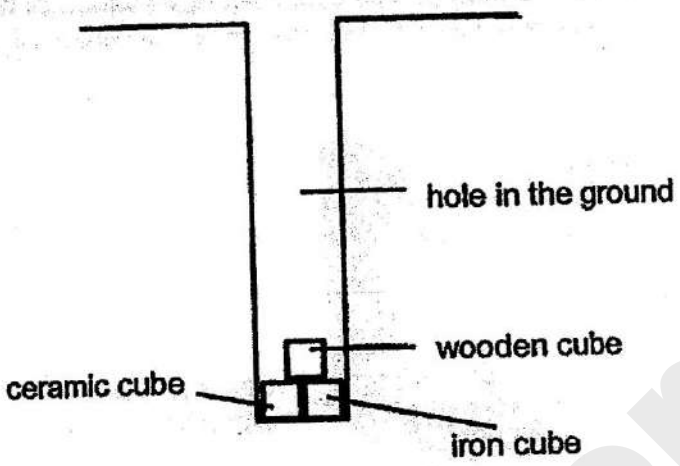


(c) Explain how windows with two layers of glass helps to keep the temperature inside the room higher than the temperature outside the house for a longer period of time. [1]

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39. Farah wanted to take back the following objects which she had dropped into a deep and narrow hole in the ground but her arms could not reach them.



Farah had a ball of cotton string, a pail of water and a bar magnet.

(a) With the above items, which of the object(s) would she be able to take out from the hole in the ground? [1]

_____

(b) Describe and explain how she could take out the object(s) you had stated in (a). [2]

_____

_____

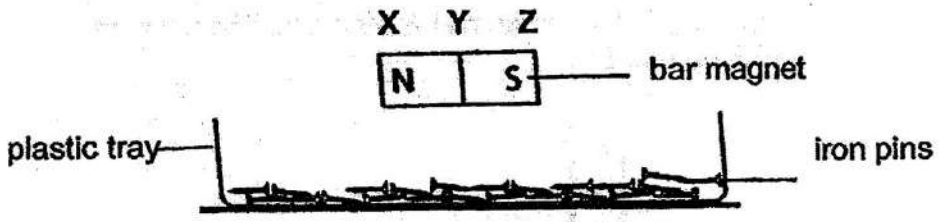
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40. Cheryl carried out an experiment as shown below.



She filled a plastic tray with iron pins and lowered a bar magnet into it. Then she lifted the magnet and recorded the number of iron pins attracted to the different parts of the bar magnet. The table below shows the results of the experiment.

Parts of the bar magnet	No of iron pins attracted
Part X	8
Part Y	2
Part Z	9

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

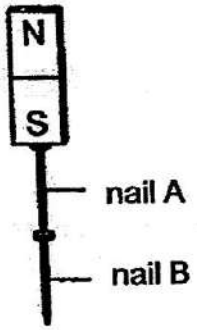
(b) Based on the above results, what can she conclude about the strength of the bar magnet? [1]

(c) What should Cheryl do in order to ensure reliable results? [1]

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(continue from Question 40)

Cheryl used the same bar magnet to stroke nail A 50 times. Then, it was observed that it could pick up nail B.



(d) Give a reason why nail A could attract nail B. [1]

Cheryl then used the same bar magnet to stroke nail B. When she brought nail A close to nail B again, she noticed that nail B moved away.

(e) Give a reason for her observations. [1]

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SCHOOL : NANYANG PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA1

CONTACT :

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	1	2	2	1	3	2	4	2	2
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	2	3	1	2	1	3	2	4	2
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
1	1	4	1	2	3	2	3		

SECTION B

Q29)	a) (i) B a) (ii) contain pollen grains a) (iii) E a) (iv) contain ovules
Q30)	a) Chemical A removes oxygen and it is in set-up A. Therefore, the seeds cannot germinate without oxygen. b) Setup A: seedlings grown from seeds as it has enough water to germinate. Setup B: Seedings die due to the lack of oxygen.
Q31)	a) Yes. All the flowers had a ball of cotton wool containing nectar in the centre, the only variable changed was the size of the flower. b) The longer the length of L, the number of bees that landed on the flowers are more. c) Niki cannot assume that what she recorded in her observations were correct as she did not repeat the experiment for at least 3 times, so the results were not reliable.

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Q32)	a) X: pod-like structure Y: waterproof covering Z: wing-like structure b) Plant Z. The tall buildings prevented the wind to disperse the seed of plant Z to other parts of the island.
Q33)	a) Sperms → Testes, egg → ovary b) i. Fertilisation ii. Only one sperm will get to fuse with the egg
Q34)	a) The higher the temperature of liquid, the faster the evaporation takes place. b) It is not a fair test because some of the beakers might have a larger exposed surface area so they will evaporate faster. Hence, more than 1 variable has changed. c) When Linda lets her hair down, there is more exposed surface area for the water in her hair to evaporate and dry faster. d) She could use a hair dryer for the water soaked in her to evaporate faster.
Q35)	a) Set-up T. It has the most number of ice cubes on the plastic lid, creating the coolest surface on the underside of the lid for most water vapour to lose heat and condense on. b) The holes in box B allow the hot water vapour in the box to escape. Thus preventing water vapour from losing heat to the cooler surface of the box and preventing condensation from forming water droplet.
Q36)	a) Melting b) There would be more ice cubes left in Set-up B as air is a poor conductor of heat and the layer of air around the ice cubes slows down heat gain by the ice cube from the surrounding. Hence, the cubes melted more slowly. c) The surrounding temperature outside is higher than the temperature indoors. The ice dessert gained more heat from the higher temperature outside and melted faster.
Q37)	a) Torch of the same light intensity for each set-up. b) Move the torch closer to the opening of the torch. c) S. It detected the most amount of light. Therefore, sunlight is able to pass through material S and May would not need to switch on the lights.

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Q38)	a) Both the levels of the liquids in P and Q decreased but the level of P was lesser than that in Q. b) When ice is added to the container of water, the water in the container will lose heat to the ice cube causing the temperature to decrease. Liquid P is a better conductor of heat than Liquid Q, it will lose heat faster to the cooler water than liquid Q and contracts more than liquid Q. c) The air that is trapped is a poorer conductor of heat and will reduce the amount of heat loss from room to the colder environment.
Q39)	a) Iron and wooden cube. b) Wood has the ability to float on water. Thus, Farah can pour water into the hole and the wooden cube would float on the water to the opening of the hole. Iron is magnetic material. Thus, Farah can use the cotton string to tie the bar magnet and lower it onto the hole to attract the iron cube out.
Q40)	a) To find out which part of the bar magnet has stronger magnetism. b) The two poles of the bar magnet has the strongest magnetism. c) Cheryl should conduct the experiment at least 3 times. d) Nail A has become a temporary magnet and is able to attract nail B which is made of a magnetic material. e) Nail B has become a temporary magnet when she bought Nail A close to Nail B, the two like poles are facing each other and one repelling each other.

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5

RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (1) 2018

Section A	56
Section B	44
Your score out of 100	100
Parent's signature	

Name : _____ Index No: ____ Class: P 5 ___

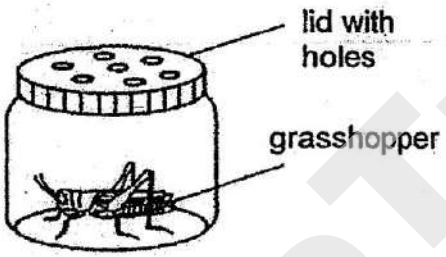
8 May 2018 **SCIENCE** **Attn:1 h 45 min**

SECTION A (28 X 2 marks)

For each question from 1 to 28, 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.

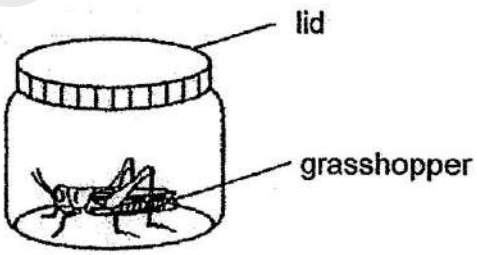
1. Roy caught a grasshopper and wanted to keep it. He prepared four set-ups, A, B, C and D, to try to keep it.

(1)



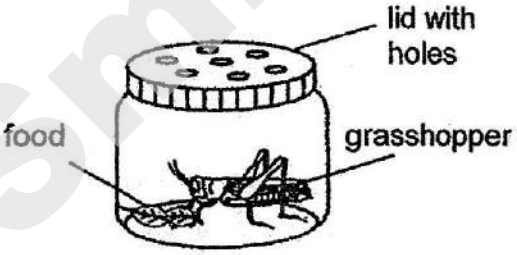
Set-up A

(2)



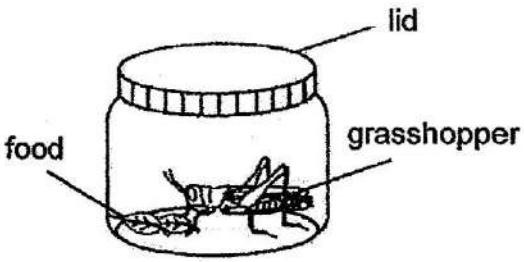
Set-up B

(3)



Set-up C

(4)



Set-up D

Which one of the set-ups, A, B, C or D, should he use to keep the grasshopper alive for the longest time?

(1) A

(2) B

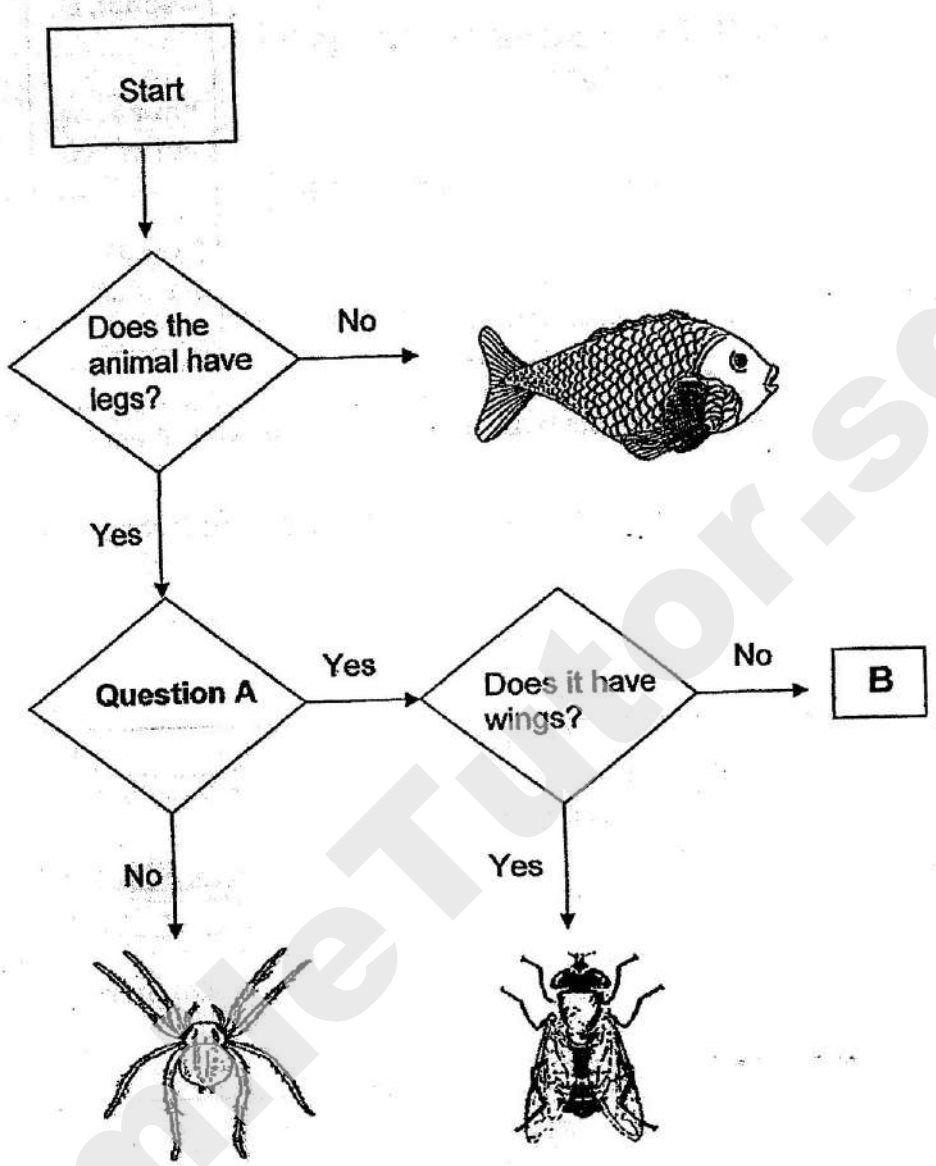
(3) C

(4) D

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2. Study the flow chart below.



Which one of the following is correct?

	Question A	B
(1)	Does it have 6 legs?	
(2)	Does it have 2 body parts?	
(3)	Does it have 2 body parts?	
(4)	Does it have 6 legs?	

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3. The table below shows the characteristics of animals W, X, Y and Z.

Animal	Has outer covering of hair	Lays eggs	Has wings	Has 3 body parts
W		✓		✓
X	✓	✓		
Y	✓		✓	
Z		✓	✓	✓

Based on the table above, which of the following statement(s) is/are possibly true?

A Animal W is an insect.

B Only animal X is a mammal.

C Both animals Y and Z are birds.

D Animal W is an insect but animal Y is a mammal.

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

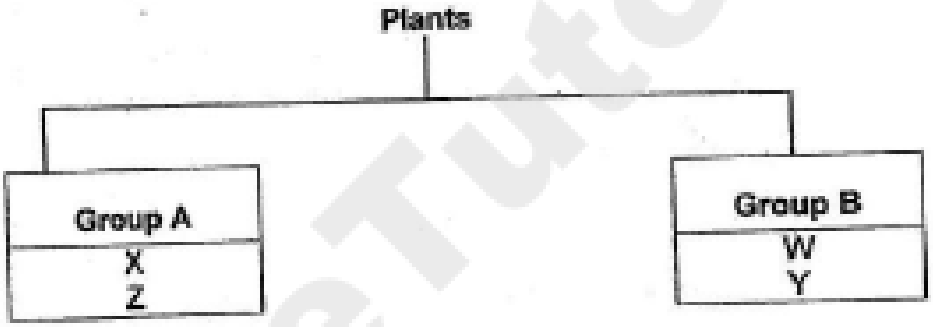
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4. Plants W, X, Y and Z have common characteristics as shown in the table below. A tick (✓) in the box indicates the presence of such a characteristic.

Characteristic / Plant	W	X	Y	Z
Produces flowers	✓		✓	
Bear edible fruits	✓			
Reproduces by spores		✓		✓

Using the information above, John grouped the plants in the classification table below.



What are the suitable sub-headings for Group A and Group B?

	Group A	Group B
(1)	moss	ferns
(2)	bears fruit	does not bear fruit
(3)	bears edible fruits	bears inedible fruits
(4)	non-flowering plants	flowering plants

5. Which one of the following statements is true about micro-organisms?

(1) Micro-organisms are not living things.

(2) Some micro-organisms are useful to us.

(3) All micro-organisms can make their own food.

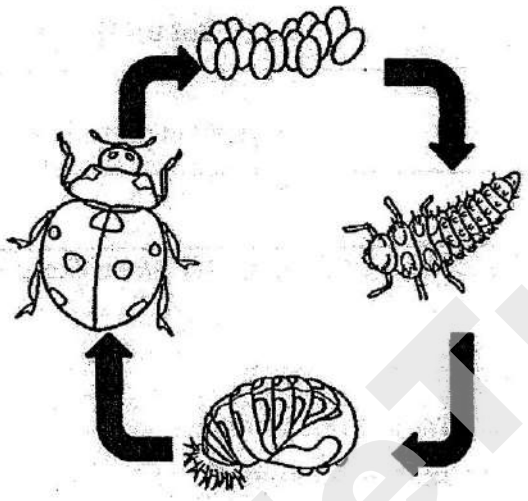
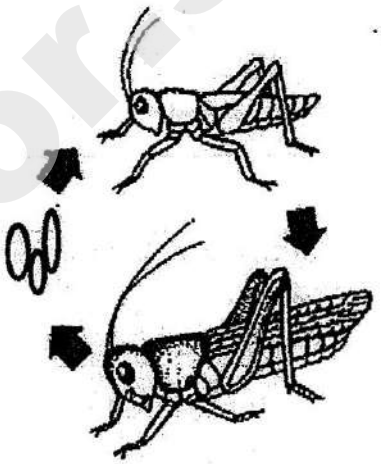
(4) Micro-organisms can only grow in an environment with a temperature of more than 25°C.

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6. Which one of the following statements is true about life cycles?

(1) All animals have three-staged life cycles.
(2) A life cycle of an animal begins with an egg.
(3) The young of an organism inherits characteristics from its parent.
(4) The life cycle of a young of an organism is different from its parents.

7. The diagram below shows the life cycle of organisms X and Y.

Organism X	Organism Y
	

Based on the information in the diagrams above, which of the following statement(s) is/are true?

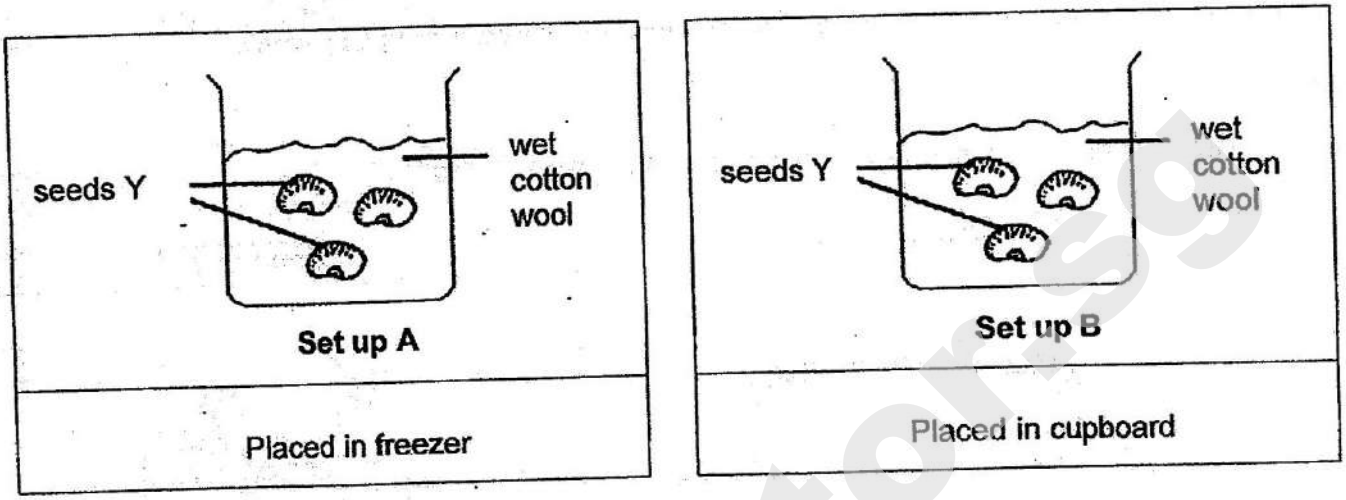
A The adults of organisms X and Y live on land.
B Organisms X and Y give birth to their young alive.
C The young of organism X does hot look like its parent.
D Organisms X and Y go through the same stages in their life cycles.

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

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8. Chris prepared set-ups A and B using similar seeds Y and placed them in different locations as shown below.



Based on the information above, which of the following statement(s) is/are likely to be correct?

A Seeds in set-up A will germinate because there is water.

B Seeds in set-up A will not germinate as there is no warmth.

C Seeds in set-up B will not germinate as there is no sunlight.

D Seeds in set-up B will germinate as there is water, oxygen and warmth.

(1) A only

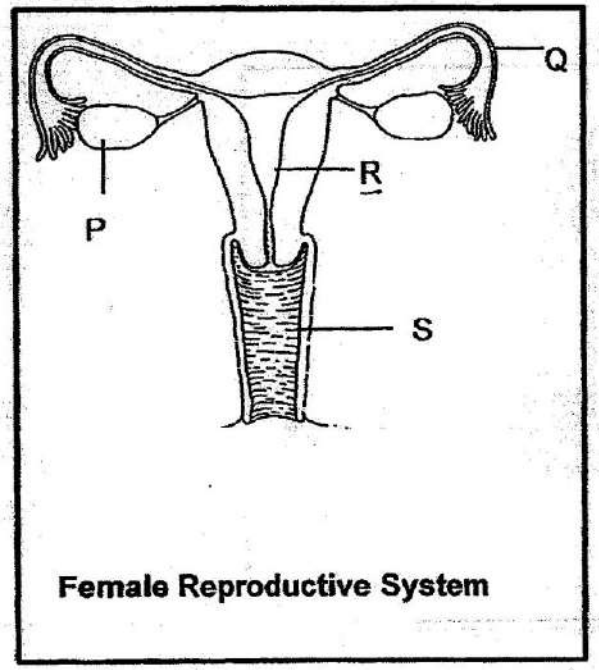
(2) D only

(3) A and C only

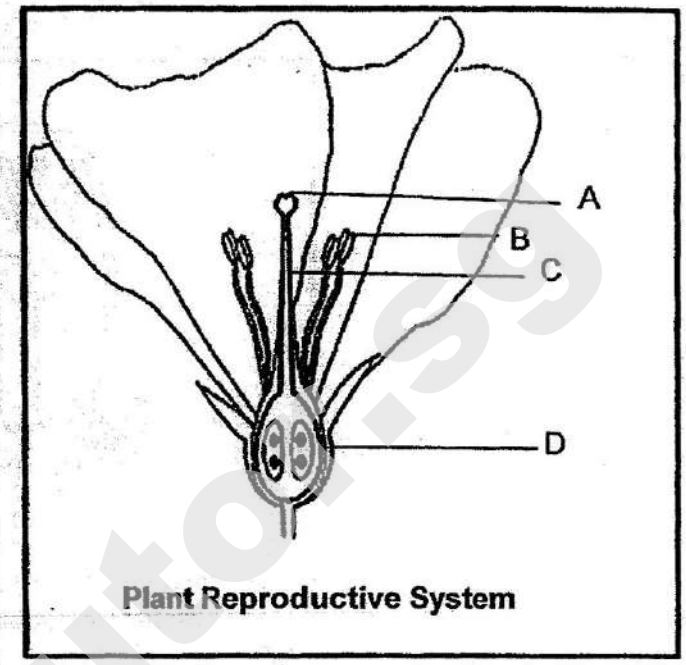
(4) B and D only

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The diagrams below show the reproductive system of a human and a plant respectively.



Female Reproductive System



Plant Reproductive System

Based on the diagrams above, answer questions 9 and 10.

9. Which of the following represents the part where the fertilized egg will develop?

	Female Reproductive System	Plant Reproductive System
(1)	P	A
(2)	P	B
(3)	Q	D
(4)	R	D

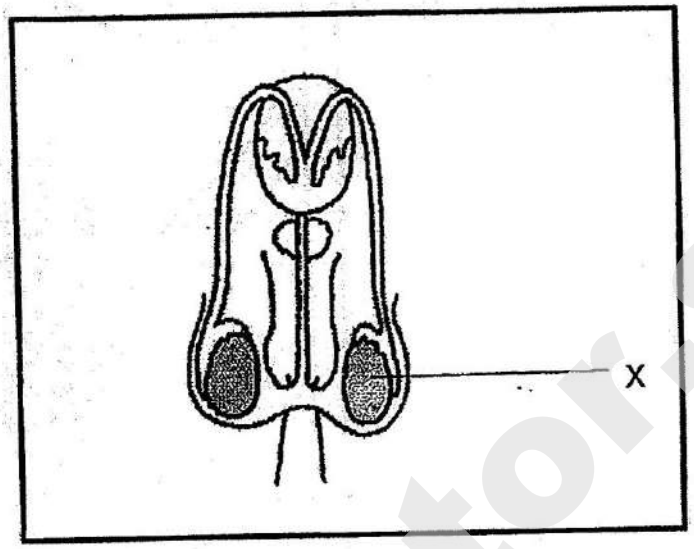
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Continued from previous page

10. Which one of the following parts in the plant reproductive system has the same function as part X in the male reproductive system?



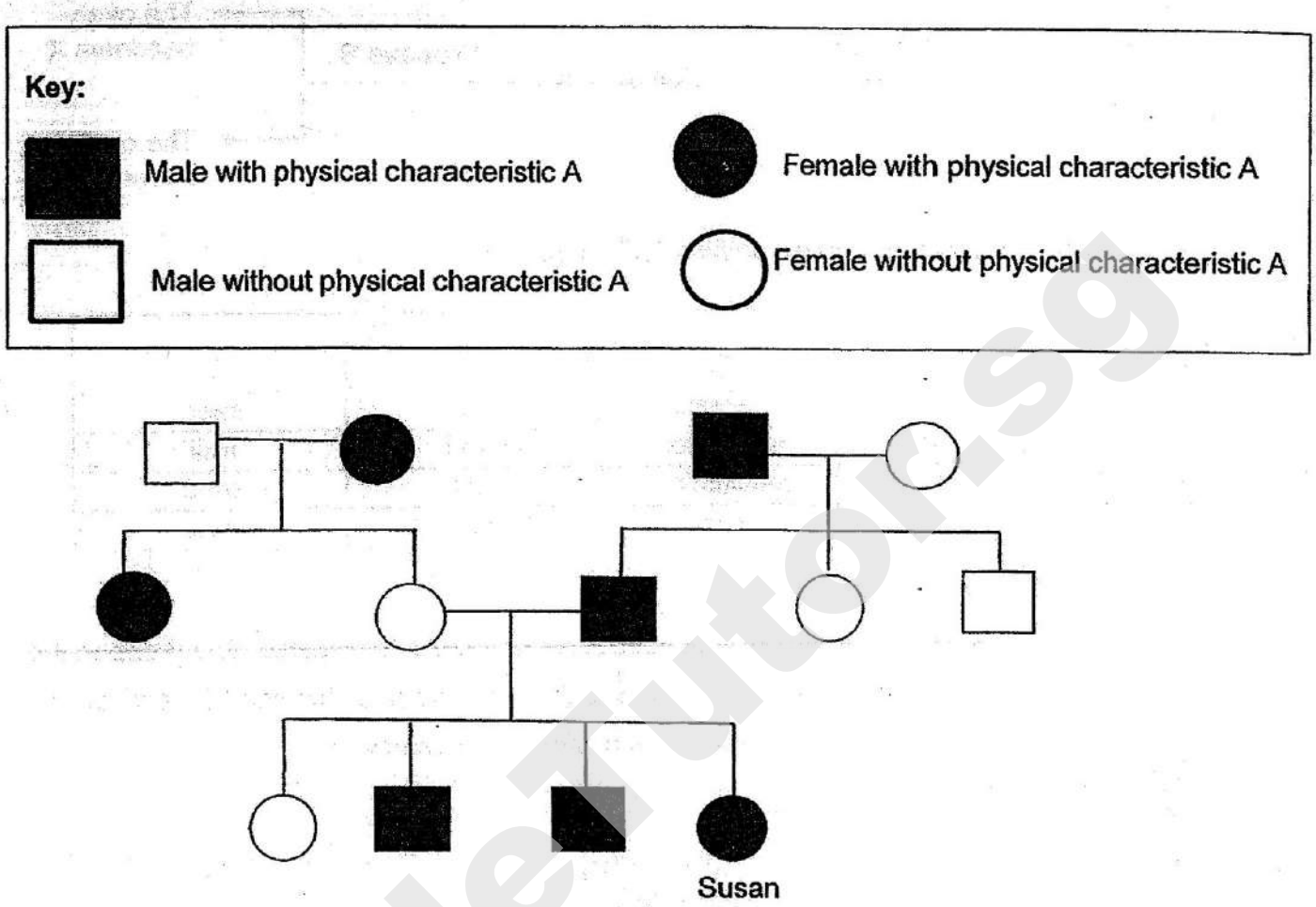
Male Reproductive System

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

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11. Study the family tree of Susan below. The family tree shows the members of the family who display physical characteristic A.



Based on the information above, which one of the following statements about the family tree is true?

(1) All of Susan's siblings have characteristic A.

(2) Susan's uncle has physical characteristic A.

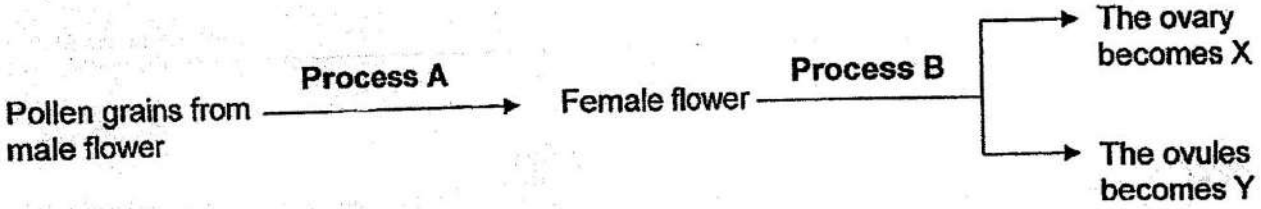
(3) Susan's aunts do not have physical characteristic A.

(4) Susan inherited physical characteristic A from her father.

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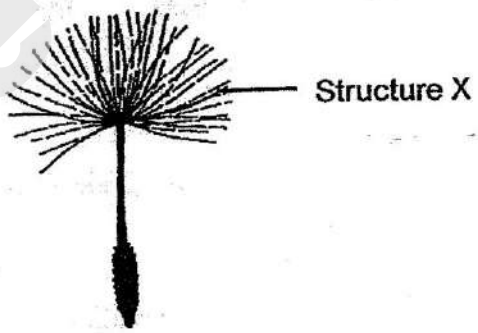
12. Study the diagram below.



Which of the following correctly identifies A, B, X and Y?

	A	B	X	Y
(1)	fertilisation	pollination	fruit	seed
(2)	fertilisation	pollination	seed	fruit
(3)	pollination	fertilisation	fruit	seed
(4)	pollination	fertilisation	seed	fruit

13. Lily wanted to find out how structure X of seed A below helps it to disperse. She dropped the seed from a height of ten metres and recorded the time taken for the seed to land on the ground. She then repeated the experiment with structure X removed.



Seed A

Which one of the following sets of results is most likely to be correct?

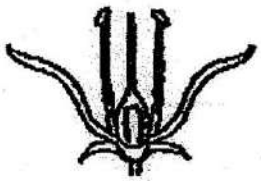
	Time taken for the seed to land on the ground (seconds)	
	Seed A (with structure X)	Seed A (without structure X)
(1)	7.5	5.8
(2)	7.5	7.5
(3)	5.8	7.5
(4)	6.0	6.5

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14. Some pollen grains were dusted on flowers A, B, C and D grown on a plant.



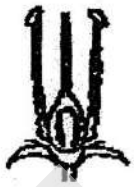
Flower A



Flower B



Flower C



Flower D

Which of the following flowers would most likely to develop into a fruit?

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

15. Which one of the following parts of a cell supports and protects the cell?

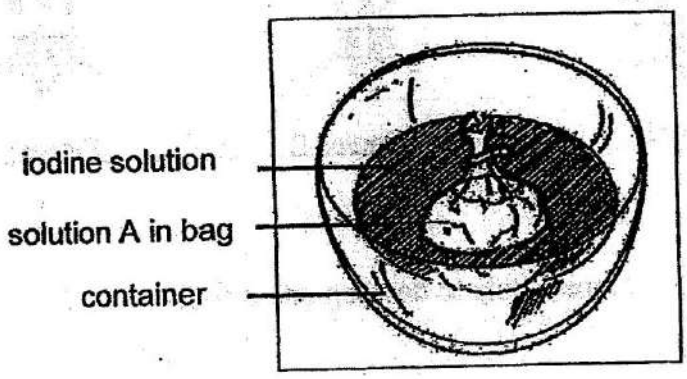
(1) nucleus
(2) cell wall
(3) cytoplasm
(4) cell membrane

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16. Ali placed solution A into a plastic bag and fastened it securely. He placed the bag into a container of iodine solution as shown in the diagram below.

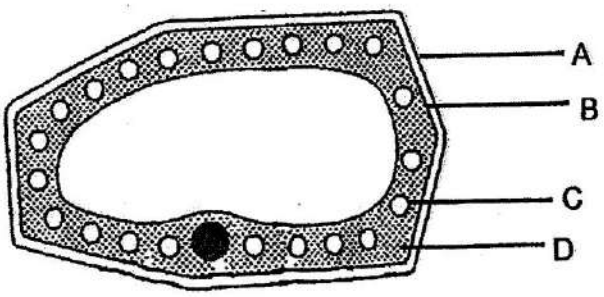
Iodine solution is a yellowish-brown solution which will turn blue-black when it interacts with starch.



He recorded his observations in the table below.

	At the start of the experiment	At the end of the experiment
Colour of Solution A in plastic bag	white	blue-black
Colour of iodine solution in container	yellowish-brown	yellowish-brown

Which one of the following parts of a plant cell has the same function as the bag?

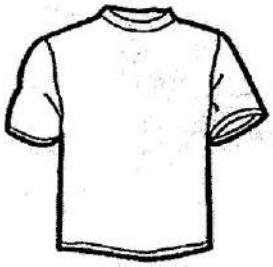
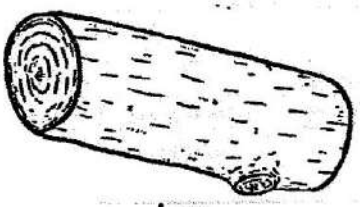
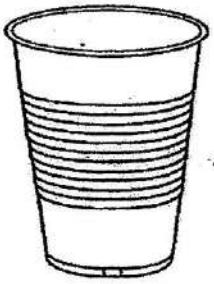


Plant cell

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

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17. Six objects are classified into two groups as shown below.

Group 1	Group 2
 T-shirt	 safety pin
 Log	 marble
 paper bag	 plastic cup

The objects are grouped according to whether they are _____.

(1) flexible
(2) waterproof
(3) transparent
(4) able to float in water

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18. The diagram below shows part X of a helicopter.



Study the properties of the following materials shown below.

Material	Property of material			
	Flexible	Waterproof	Strong	Floats on water
A	√	√	√	
B		√	√	
C	√	√		√
D		√		√

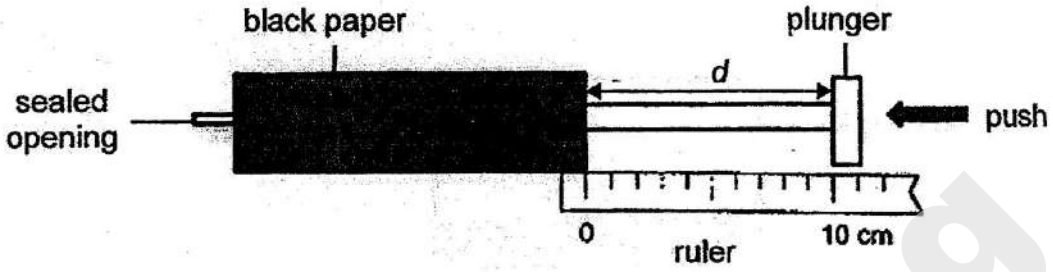
Which material is most suitable for making part X of the helicopter?

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

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19. Eileen used two identical syringes and filled them up completely with substances X and Y respectively. Each syringe was covered with black paper as shown in the diagram below.



She pushed the plunger as hard as she could. She then recorded the distance, d, in the table as shown below.

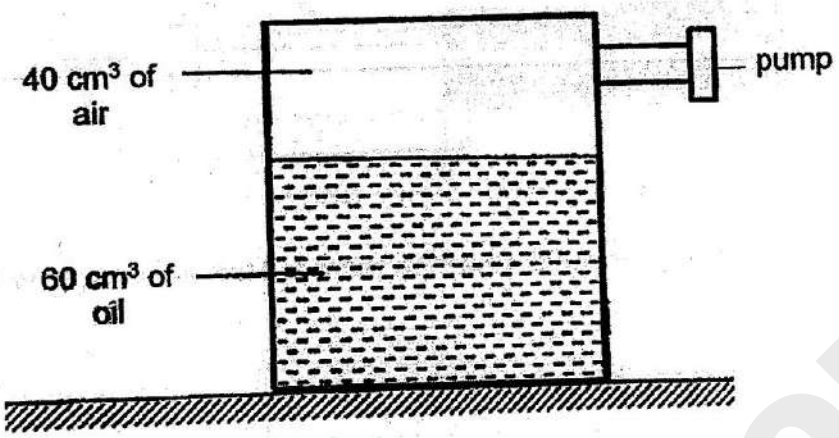
Syringe filled with Substance	Distance, *d* (cm)	
	Before	After
X	10	4
Y	10	10

Which one of the following represents the states of matter of substances X and Y?

	X	Y
(1)	Liquid	Solid
(2)	Liquid	Gas
(3)	Solid	Gas
(4)	Gas	Liquid

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20. A sealed container holds 60cm^3 of oil and 40cm^3 of air as shown below. Another 10 cm^3 of oil and 20 cm^3 of air is added to the container through the pump.



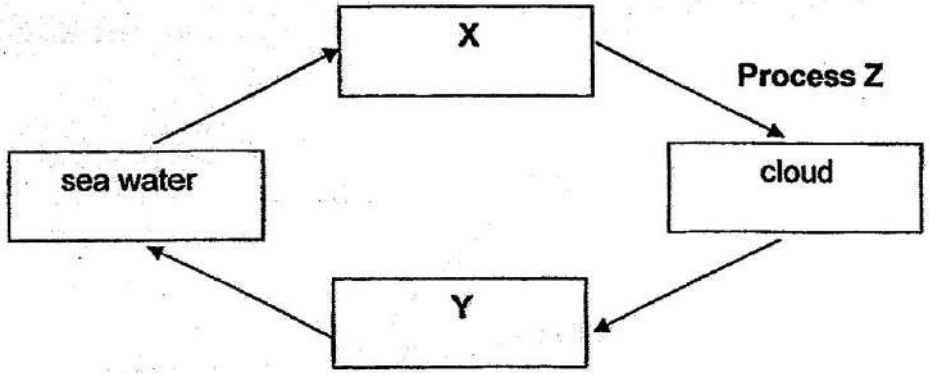
What is the final volume of oil and air in the container?

	Volume of oil (cm^3)	Volume of air (cm^3)
(1)	70	60
(2)	60	40
(3)	70	40
(4)	70	30

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21. The diagram below shows the water cycle.



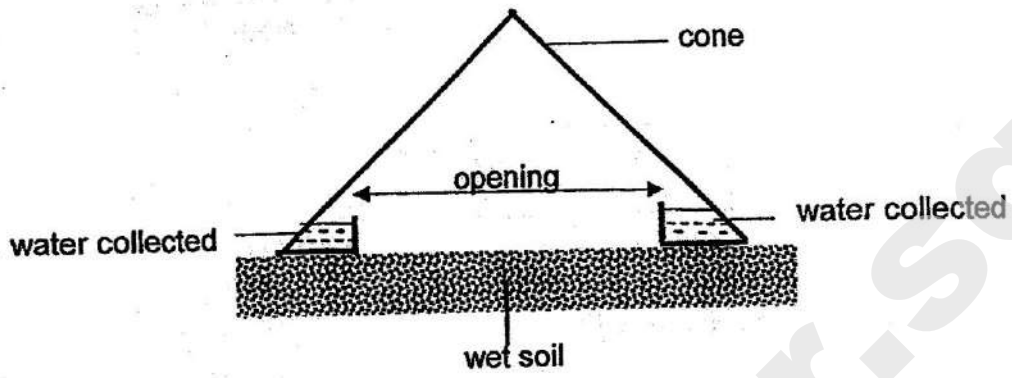
Which one of the following is correct?

	X	Y	Process Z
(1)	water vapour	rain	evaporation
(2)	rain	water vapour	condensation
(3)	rain	water vapour	evaporation
(4)	water vapour	rain	condensation

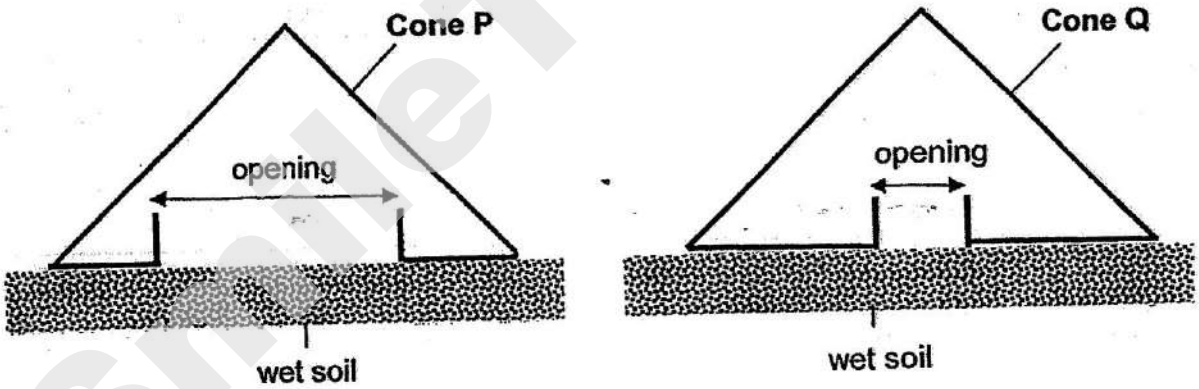
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22. Hannah had a plastic cone that was used to collect water from the environment. The diagram below shows how the cone works.



On a hot day, Hannah placed two such cones, P and Q, on wet soil. Cones P and Q were similar but P had a larger opening at the base than Q. Hannah left the cones overnight and collected the water the following morning.



Based on the information above, which of the following statement(s) is/are likely to be true?

A The air inside both cones lost heat and condensed.

B The water vapour outside the cones condensed and collected in the cones.

C There was more water vapour inside cone P which lost heat and condensed.

D There was a smaller exposed surface area of water inside cone Q hence less water lost heat and condensed.

(1) C only

(2) A and C only

(3) B and D only

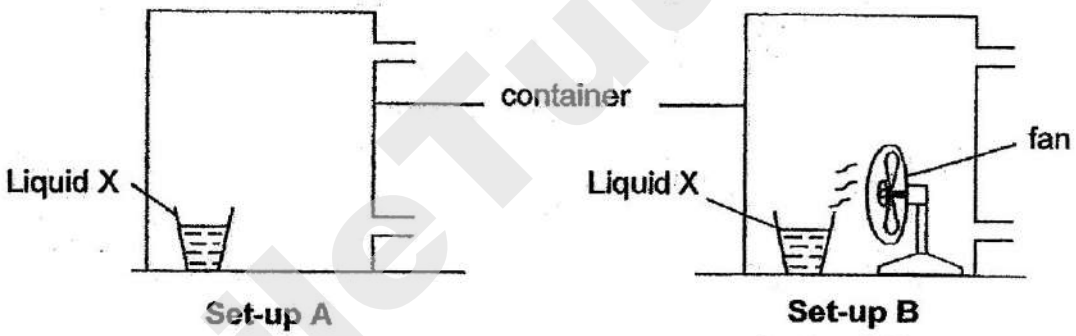
(4) A and D only

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23. Substance X is a solid at 40°C and a liquid at 300°C.
Which one of the following shows the possible melting and boiling point of X?

	Melting point of X (°C)	Boiling point of X (°C)
(1)	25	170
(2)	30	400
(3)	50	250
(4)	65	310

24. Alvin carried out the experiment as shown below. 50 ml of Liquid X at 30°C was placed in the same room.



Set-up A Set-up B

After five hours, Alvin compared the amount of liquid left in each glass. He observed that the two liquids were less than before.

Which of the following explain(s) his observations after five hours?

A There was more water vapour in set-up B so liquid X evaporated faster.

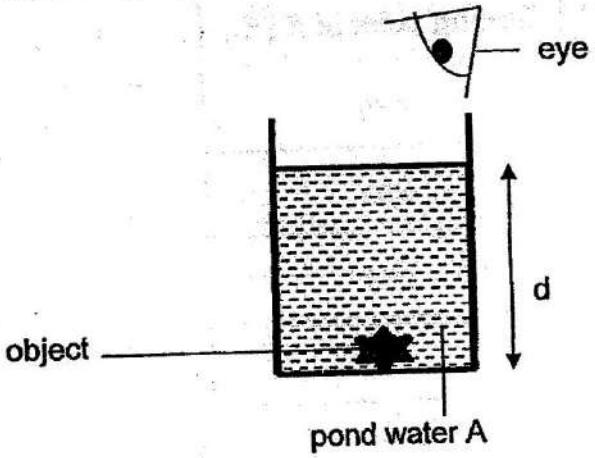
B There was lesser amount of liquid X left in set-up B than A as it evaporated faster due to the presence of wind from the fan.

C There was less amount of liquid X left in set-up A then B as it gained more heat from the higher surrounding temperature and evaporated faster.

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

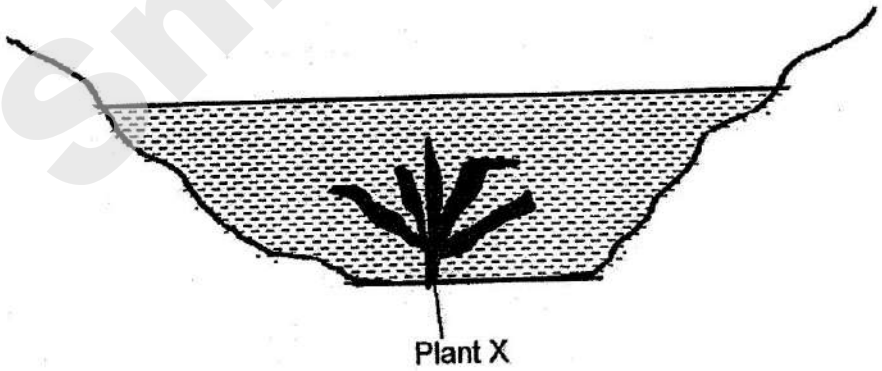
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25. Dolly collected water from four ponds A, B, C and D. She put an object into a beaker. Then she poured water from pond A slowly into the beaker until she could not see the object and recorded the water level, *d*, in the result table shown. She repeated the experiment with pond water B, C and D respectively.



Pond water	Water level , *d* (cm)
A	24
B	5
C	16
D	42

Plant X grows at the bottom of the pond. It requires plenty of sunlight in order to grow well.

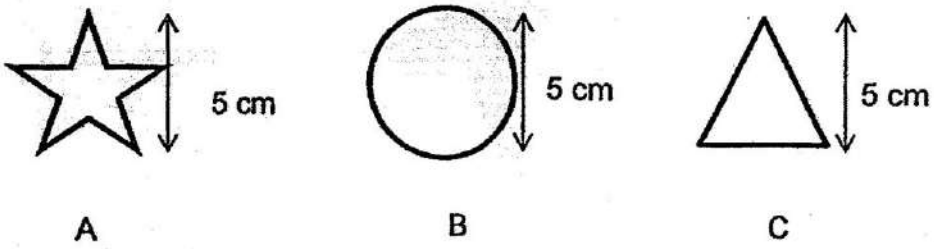


Based on the information above, in which pond would plant X most likely grow best in?

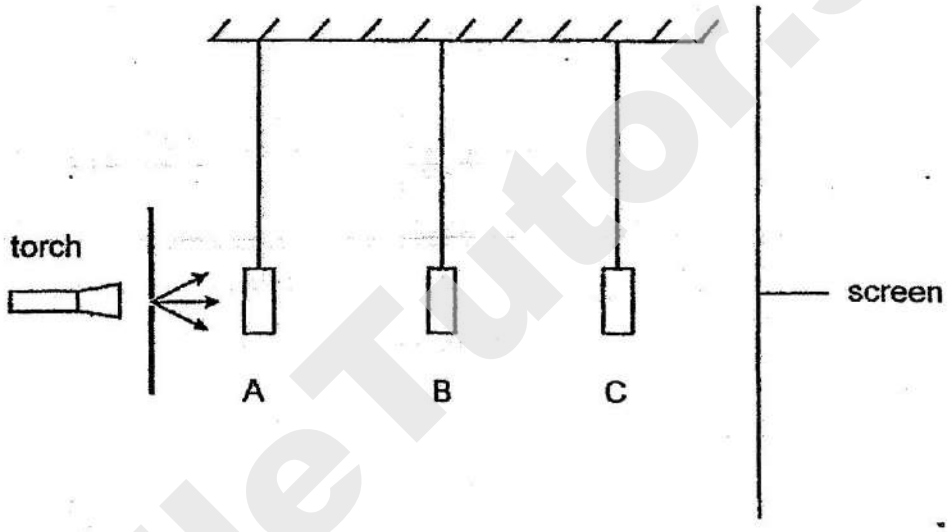
(1) A
(2) B
(3) C
(4) D

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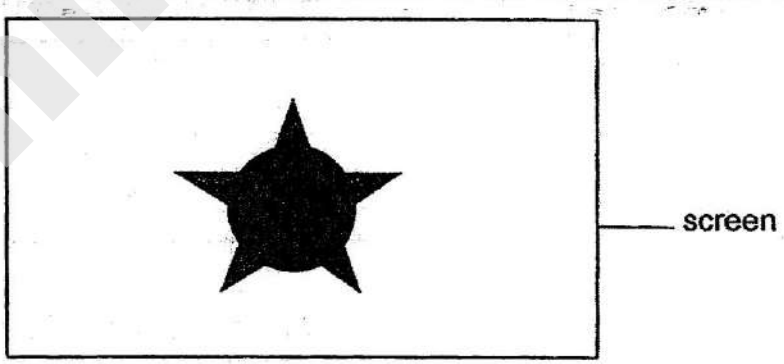
26. Tim cut out three shapes, A, B and C, which were made of different materials as shown below.



He hung the three shapes in different positions in the set-up below.



The following diagram shows the shadows formed on the screen when the torch was switched on.



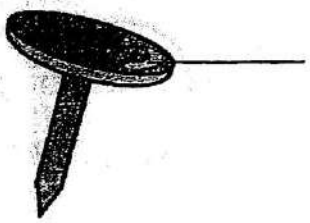
Based on the above observation, which one of the following most likely matches the shapes A, B and C to the properties?

	Opaque	Translucent	Not possible to tell
(1)	A	B	C
(2)	B	A	C
(3)	B	C	A
(4)	C	B	A

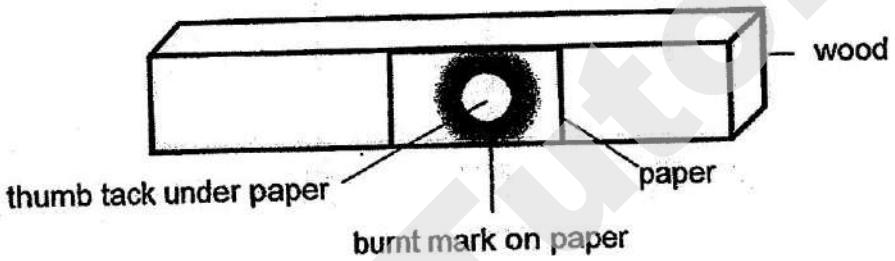
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27. The diagram below shows a thumb tack.



Stan nailed thumb tack X to the wood as shown in the diagram below. He wrapped paper over the thumb tack. Then, he placed a candle flame near the thumb tack and recorded the time taken for the burnt mark to first appear on the paper. He repeated the experiment with similar thumb tacks, Y and Z, made of different materials.



Stan recorded his results in the table below.

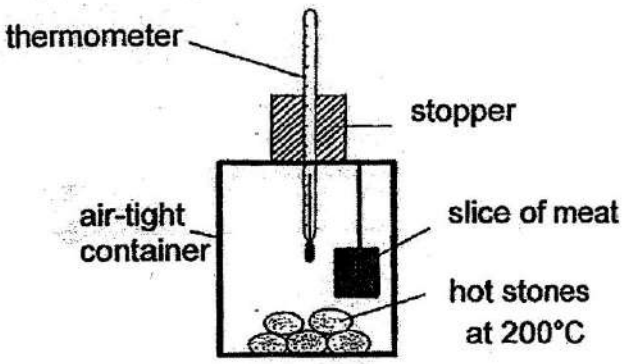
Material	Time taken for the burnt mark to first appear (seconds)
X	29
Y	12
Z	20

Based on the information above, which of the following correctly shows the 3 materials arranged from the best to the poorest conductor of heat?

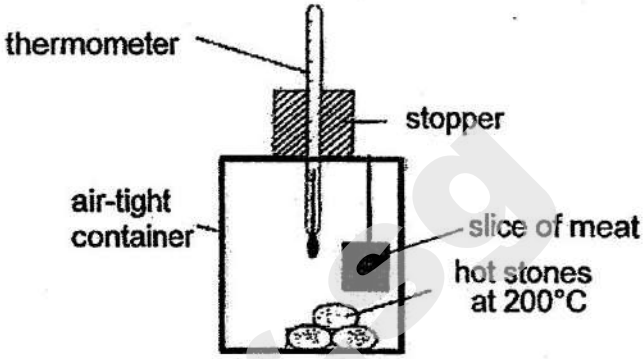
	Best conductor of heat ⟶ Poorest conductor of heat		
(1)	X	Y	Z
(2)	X	Z	Y
(3)	Y	X	Z
(4)	Z	X	Y

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28. Sally prepared two set-ups, A and B. The air inside the container was 28°C.
She hung identical slice of meat in each container. Then she placed some hot stones which were heated to 200°C and placed them inside each air-tight container as shown below.



Set- up A



Set- up B

Which of the following observation and corresponding explanation is most likely correct?

	Observation	Explanation
(1)	The temperature of air in both containers would rise to the same temperature.	The air in each container gained the same amount of heat from the hot stones.
(2)	Slice of meat in set-up A cooked faster.	The meat gained more heat from the hot stones as it is closer to the hot stones.
(3)	Slice of meat in set-up B cooked slower.	The meat gained less heat as there was lesser mass of hot stones.
(4)	Both slices of meat will be cooked at the same rate	Both slices of meat gained the same amount of heat as the hot stones in each containers are of the same temperature.

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Name: _____ Index No: _____ Class: P5 E

	44

SECTION B (44 marks)

For questions 26 to 38, write your answers clearly in the spaces provided.
The number of marks is shown in brackets [ ] at the end of each question or part question.

29. Tina wanted to find out the conditions that affected the growth of bread mould. She put water on different types of bread and recorded the conditions in the table below.

Set-up	Type of bread	Number of days before mould appears	Temperature of surrounding air (°C)	Amount of water on bread (mℓ)
1	A	9	30	0
2	B	8	5	4
3	C	7	0	4
4	D	4	30	20

(a) Which two set-ups should Tina compare to find out the effect of water on the growth of bread mould? [1]

_____

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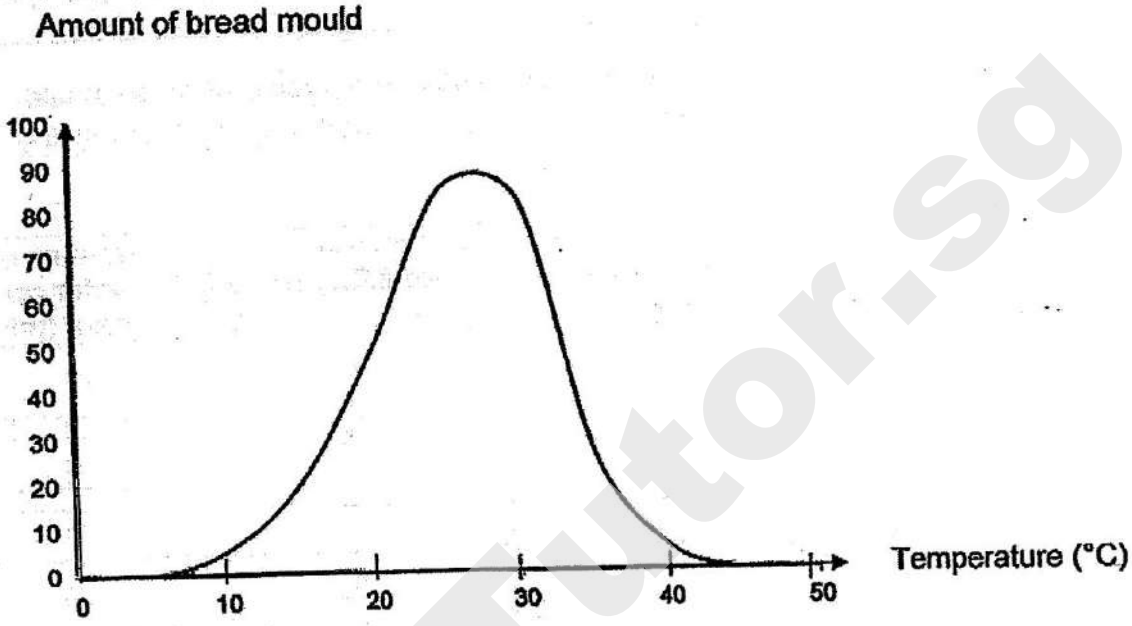
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Score	1

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Tina plotted a graph which shows how the growth rate of bread mould changes with temperature below.



(b) Based on the graph above, state the temperature that is most favourable for the bread mould to grow. [1]

_____

(c) How do mould and mushrooms reproduce? [1]

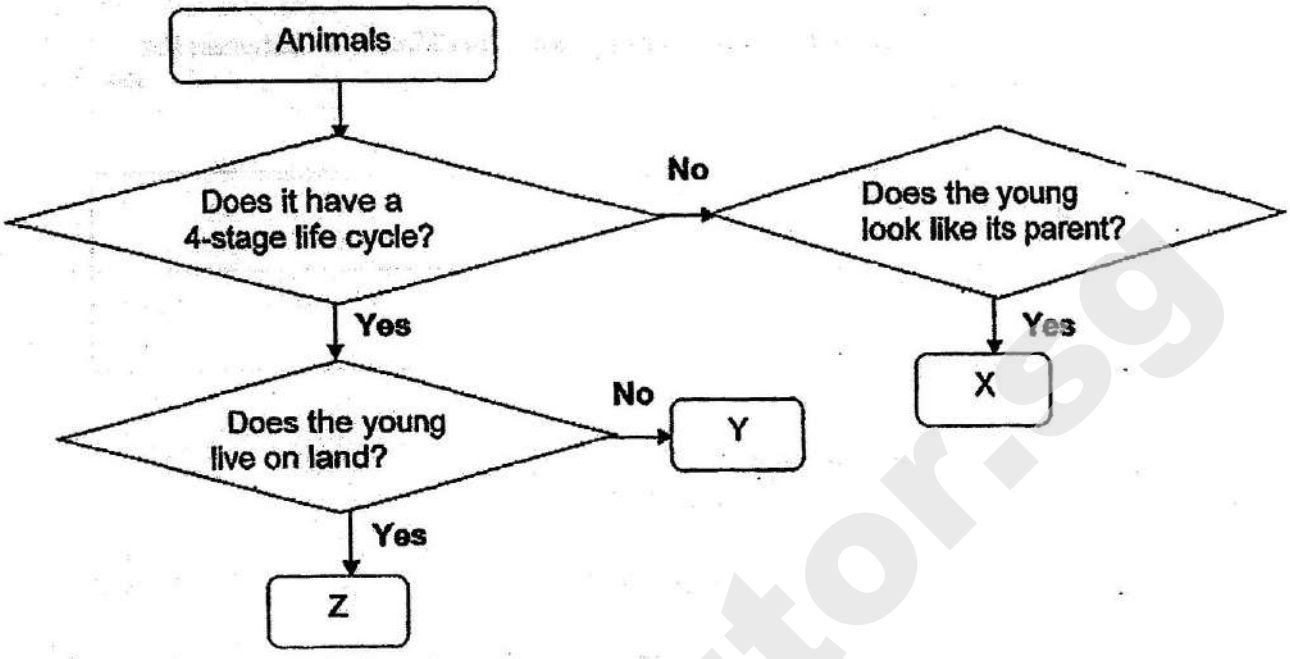
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30. Siti classified three animals using the flow chart below.



(a) Fill in the blanks with letters X, Y or Z. [2]

(i)  cockroach	
(ii)  butterfly	

Continue on next page

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(b) Based on the flowchart, state one similarity and one difference between the animals Y and Z. [2]

Similarity	
Difference	

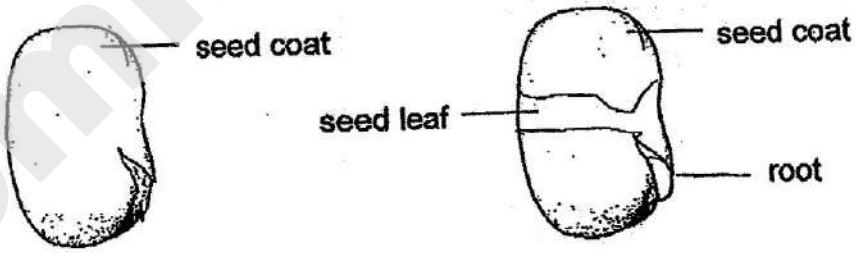
31. Study the diagram below carefully.



(a) What is the function of the seed leaf? [1]

_____

(b) Two stages, A and B, in the germinating process of a seed are shown below.



Stage A **Stage B**

Give a reason for the increase in the mass of seed from Stage A to Stage B. [1]

_____

_____

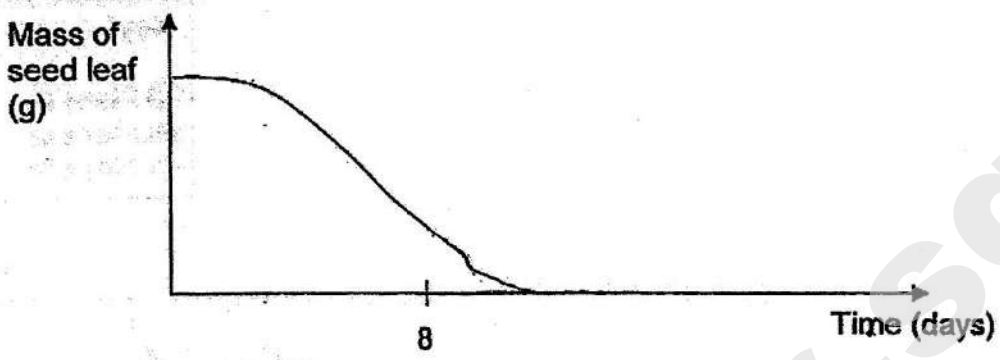
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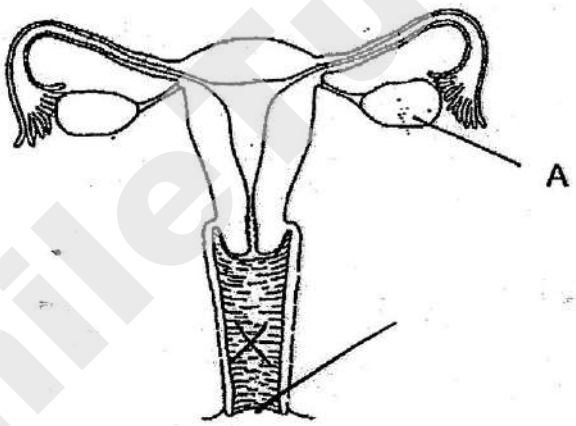
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(c) The following shows an incomplete graph showing the change in the mass of the seed leaf during its development.



It was observed that green leaves emerge on day 8. In the graph above, continue the graph to show the change in the mass of the seed leaf from day 8 onwards. [1]

32. The diagram below shows a female reproductive system.



(a) If part A in the diagram above was removed, can the female still reproduce? Give a reason for your answer. [2]

_____

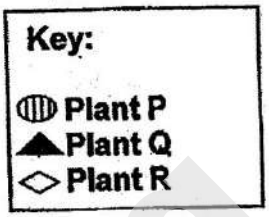
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(b) Label with an 'X' in the diagram to show the part which receives the male reproductive cells. [1]

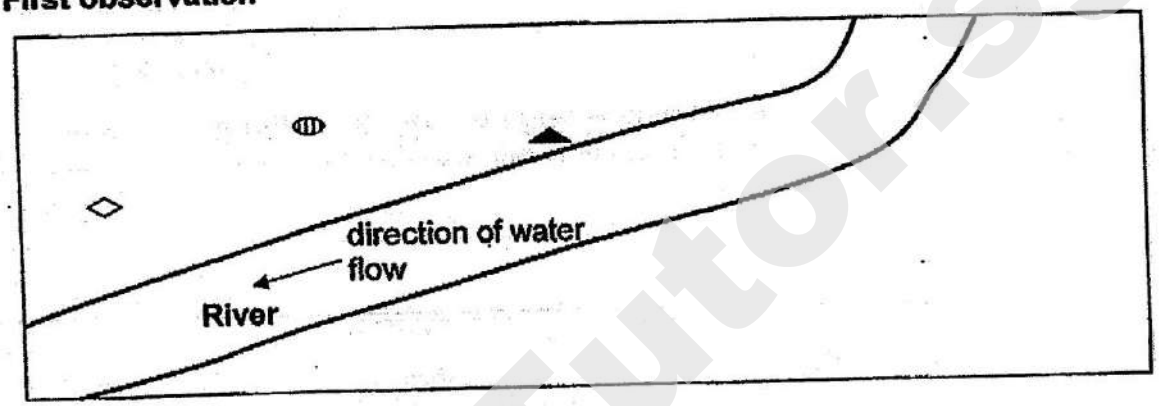
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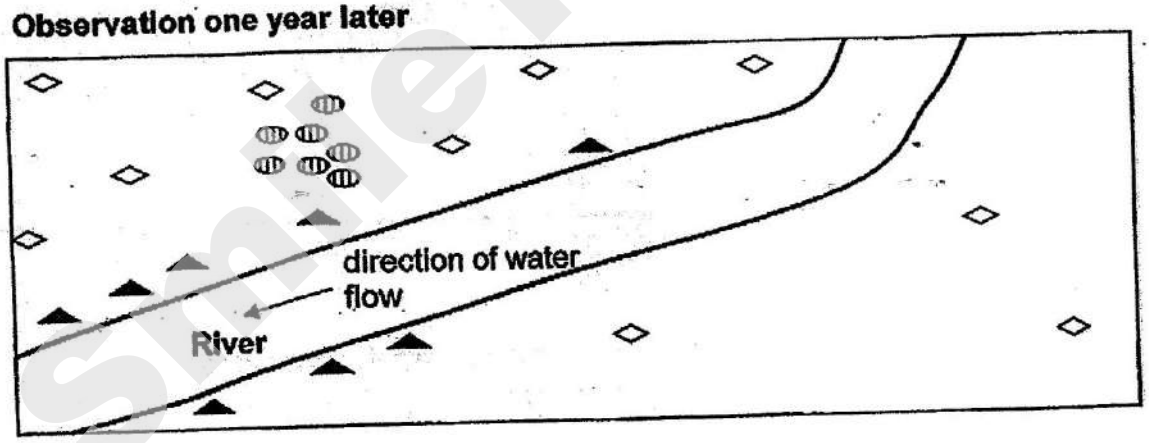
33. Hasan studied the distribution of plants P, Q and R in an area over a year. His observations are shown below.



First observation



Observation one year later



(a) Based on the diagram, state the method of seed dispersal of plants P, Q and R in the table below. [2]

Plant	P	Q	R
Method of seed dispersal	By _____	By_____	By_____

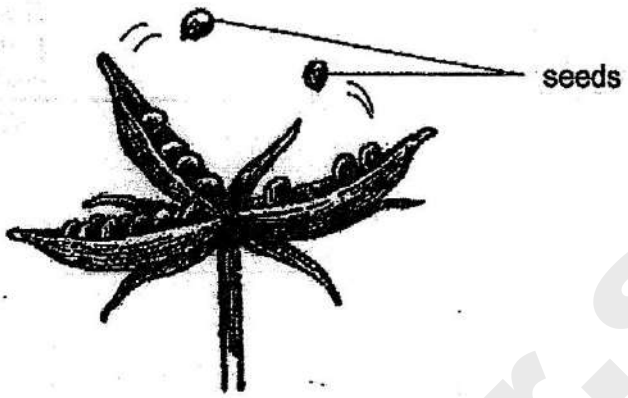
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The diagram below shows pod-like fruit X.



fruit X

(b) Which of the plants, P, Q or R, would produce fruit X? Give a reason for your answer. [1]

_____

_____

(c) The young of plant R grow healthier than those of plant P. Based on the information in the diagram, explain clearly why the method of seed dispersal of plant R has an advantage as compared to plant P. [2]

_____

_____

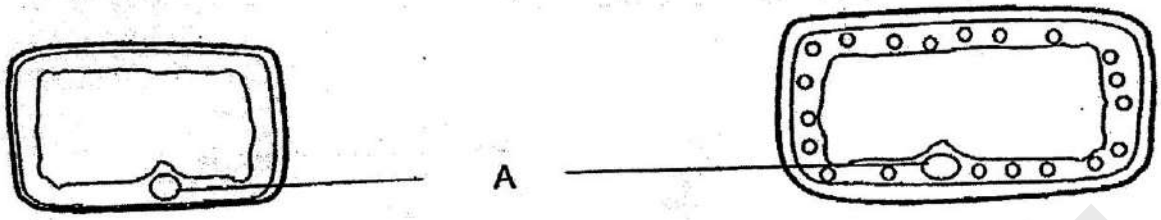
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34. The diagrams below show two plant cells, X and Y.



Cell X **Cell Y**

(a) What is the function of part A in Cells X and Y? [1]

_____

_____

(b) State one similarity between Cell X and Cell Y. [1]

_____

_____

(c) Which cell, X or Y, is taken from the leaf?
Give a reason for your answer. [1]

_____

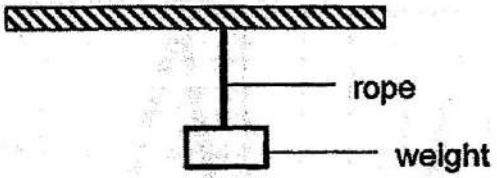
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35. Mrs Lee tested the strength of three types of ropes, X,Y and Z, by hanging weights onto each of them . She added the weights hung onto the rope one by one until the rope started to break.



The maximum weight that the ropes could hold is shown in the table below.

Ropes	**X**	**Y**	**Z**
Maximum weight the rope can hold before it starts to break (kg)	13	100	80

(a) Arrange the ropes, X, Y and Z, starting with the strongest rope. [1]

Strongest ⟶ Weakest

Rope ____	Rope ____	Rope ____

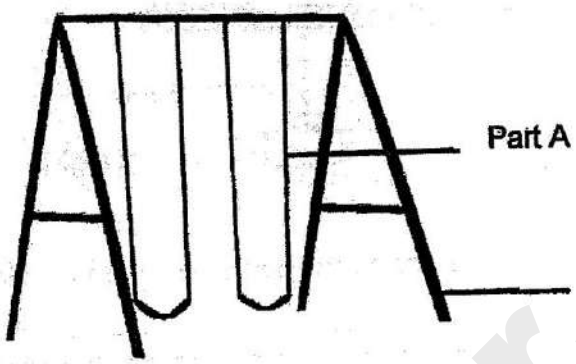
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Score	/ 1

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Mrs Lee wanted to make a pair of swings and placed them in her garden for her children of mass 20 kg and 14 kg respectively.



(b) Which rope, X, Y or Z, should Mrs Lee choose to make part A of her swings? Explain your answer clearly. [2]

_____

_____

The properties of materials P, Q and R are as shown in the table below.
A tick (√) shows the presence of the property.

Materials / Properties	P	Q	R
Strong	√	√	
Flexible	√		
Waterproof	√	√	√

(c) Is material P suitable material to be made into part B of the swing? Explain your answer clearly. [1]

_____

_____

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36. Harry prepared an experimental set-up as shown below.

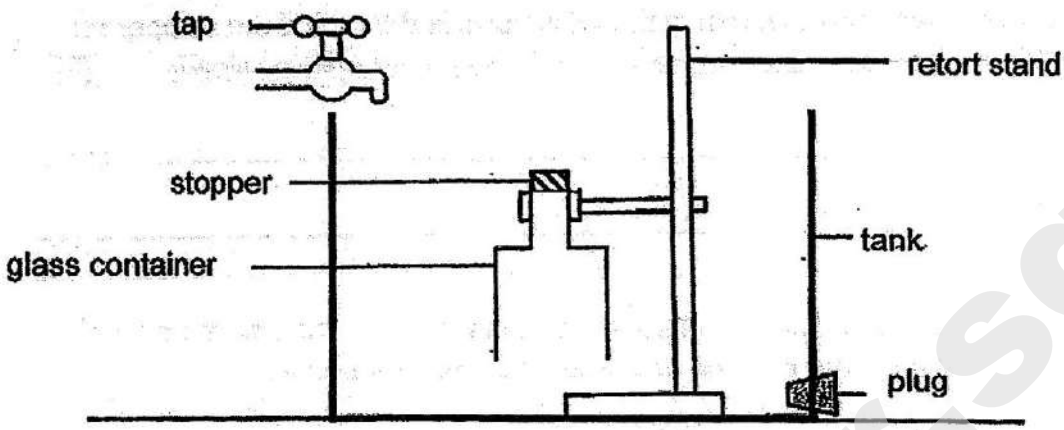


Diagram 1

At first, the tank was empty. Harry turned on the tap to fill the tank with water completely as shown in the diagram below.

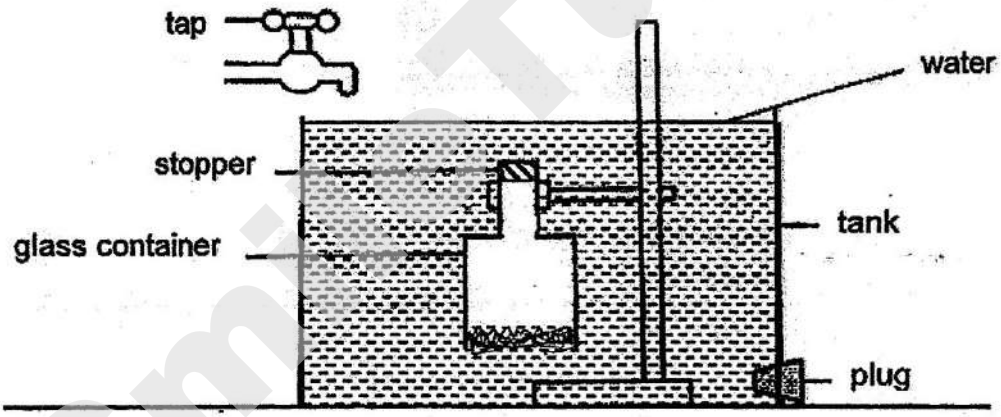


Diagram 2

(a) Harry observed that the water did not fill the glass container completely to the top where the stopper was. Explain his observation. [2]

_____

_____

Score	/ 2

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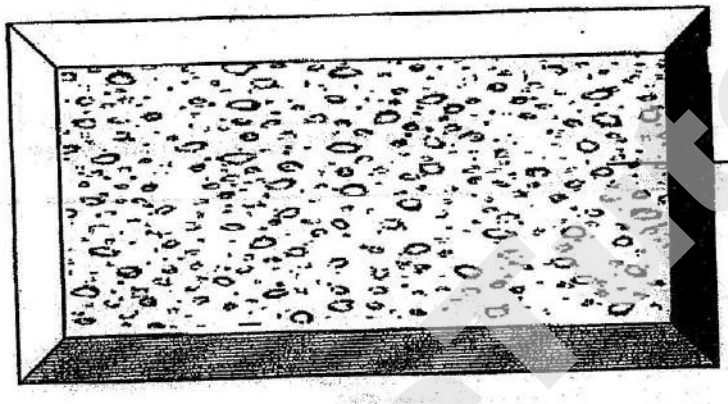
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(b) Describe what would happen to the water level in the tank if the stopper on top of the glass container was removed. Explain your answer clearly. [2]

37. After John had a hot shower, he observed that the mirror in the bathroom was fogged up with tiny water droplets as shown in the picture below.



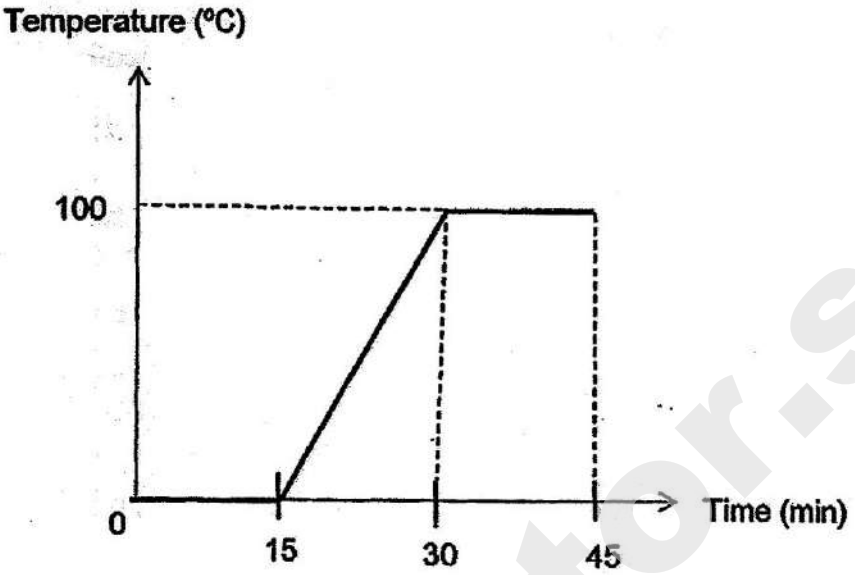
(a) Explain how the water droplets on the mirror were formed. [2]

(b) John used a hair dryer and blew on a part of the fogged up mirror. It was observed that part of the misty mirror that was blown on became clear again. Explain this observation clearly. [1]

Score	/ 5

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38. Mary heated a beaker of ice over a period of time. The graph below shows the change in temperature of the ice as it was being heated.



(a) Based on the graph above, how long did it take for the ice to melt completely? [1]

_____

(b) What would happen to the temperature of the water if the beaker of water was removed from the heat source at 100 °C and placed on a table in the room after one day? [1]

_____

_____

(c) Mary observed a decrease in the amount of water in the beaker after one day. Give a reason for her observation. [1]

_____

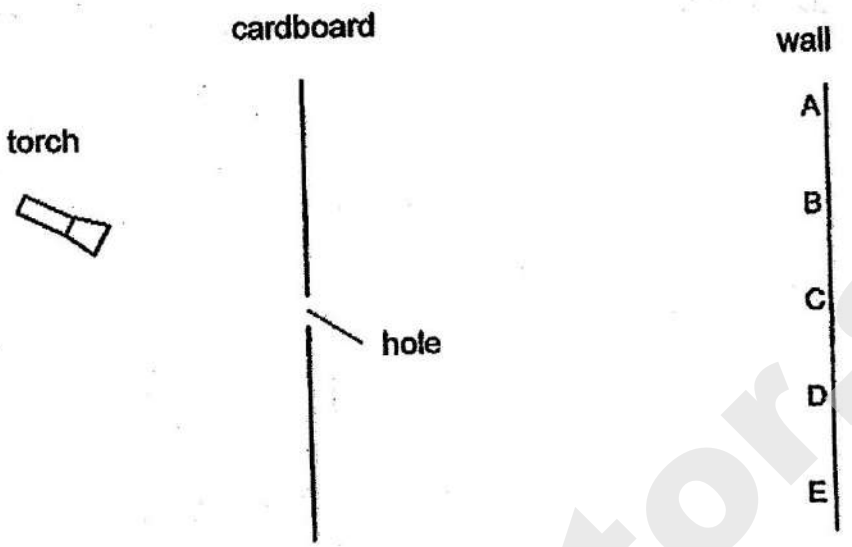
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Score	/ 3

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39. Siew Lee prepared an experiment set-up shown below. Light from the torch passes through the hole in the cardboard and forms a bright spot on the wall.



(a) Which part on the wall, A, B, C, D or E, will a bright spot of light be formed? [1]

_____

(b) State a property of light that explains your answer in (a). [1]

_____

_____

(c) Without moving the positions of items in the set-up above, suggest what Siew Lee could do so that a larger area of bright spot of light would be formed on the wall. [1]

_____

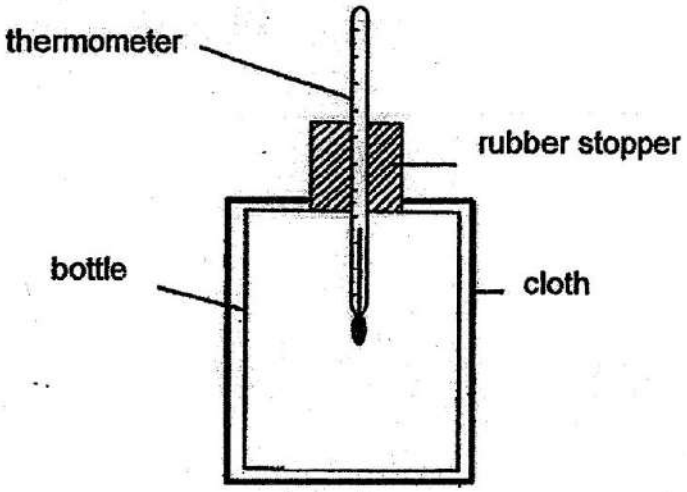
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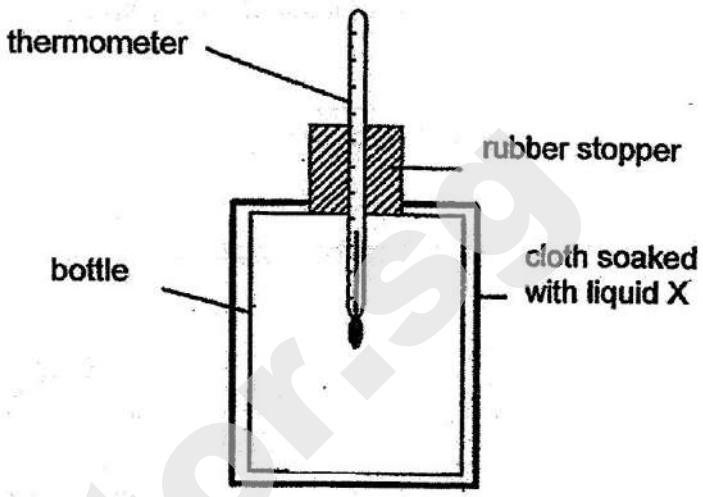
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40. Ashlyn set up an experiment as shown below. She wrapped the bottles with identical pieces of cloths.



Set--up A



Set-up B

She recorded the change in the temperature of air in Set-ups A and B in the table below.

Set-up	Temperature of air in the bottle (°C)	
	At first	After 20 minutes
A	30	30
B	30	25

(a) Based on the information above, what happened to the temperature of air in bottle B after 20 minutes? [1]

_____

_____

Ashlyn wiped her hands with a piece of tissue paper which was soaked with liquid X. After a while, her hands felt cooler than before.

(b) Explain why Ashlyn's hands felt cooler. [1]

_____

_____

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Score 2

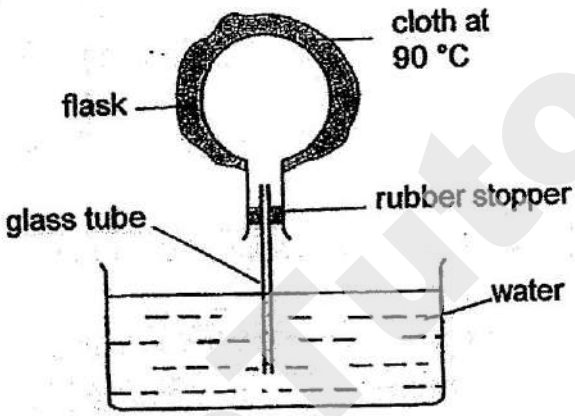
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Continue from previous page

(c) Without using any equipment, what could Ashlyn do to increase the rate of evaporation of liquid X on her hands? [1]

_____

41. Steven set up the experiment below.



(a) Steven observed bubbles escaping into the water from the glass tube after few seconds. Give a reason for his observation. [1]

_____

_____

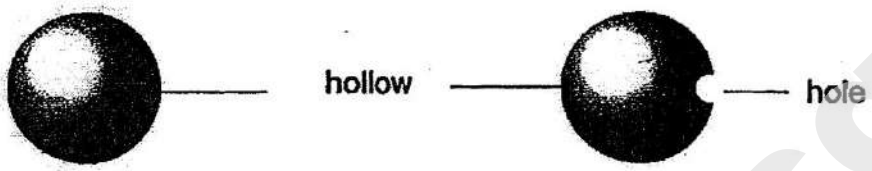
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Score	2

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Continue from previous page

Steven moulded two pieces of clay into two hollow spheres as shown below.



Sphere A Sphere B

He placed the two pieces of dried clay spheres into a kiln and fired them at high temperature. During the firing process, it was observed that one of the spheres cracked into pieces but not the other one.

(b) Which of the sphere, A or B, cracked? Explain your answer clearly. [2]

_____

_____

_____

END OF PAPER

Setters: Miss Ho W.N., Mdm Rozi

Score	/ 2

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SCHOOL : RAFFLES GIRLS' PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA1

CONTACT :

SECTION A

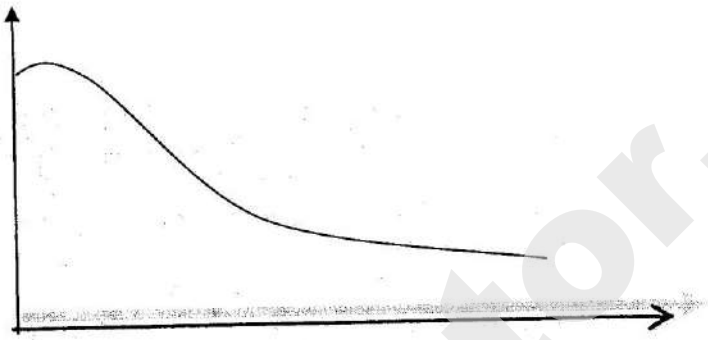
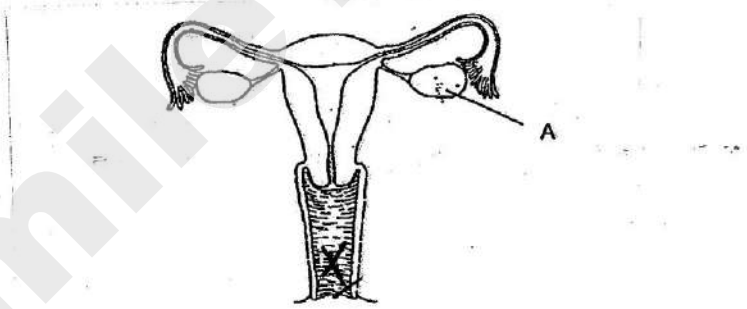
Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	4	2	4	2	3	1	4	4	2
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	3	1	2	2	2	2	2	4	4
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
4	1	4	2	4	2	2	4		

SECTION B

Q29)	a) Land 4 b) 28 C c) They reproduce by sperms.
Q30)	a) i) X ii) Z b) Similarity – Both have a 4-stagelife cycle. Difference – The young of Z lives on land but the young of Y does not.

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Q31)	a) To provide food for the germinating seed. b) The seed started germinating as the root is starting to appear. It absorbed water to germinate. c) 
Q32)	a) The female will be able to reproduce. There is ovary left to produce an egg cell to be fertilised by a sperm cell. b) 
Q33)	a) P – by splitting Q – by water R – by animals b) P. Nearest to the parent plant c) Less overcrowding, less competition for light, water, space, nutrients
Q34)	a) It is to control all activities the cell is doing b) Both have a cell wall c) Y. It has chloroplast which contains chlorophyll that can trap light to photosynthesis.
Q35)	a) Y – Z – X

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	b) It is the strongest, it can withstand the weight of both children without breaking. c) No. Because P is flexible . The structure will collapse.
Q36)	a) Air trapped in container and air occupies space. Some water can still enter because air can be compressed. b) It will decrease. The air that was trapped in the glass container will escape and the water will take up the space in the glass container.
Q37)	a) The surface of the mirror is cooler than the hot water vapour and the hot water vapour lost heat to the mirror and condensed. b) Water droplets gain heat from hot air and evaporated
Q38)	a) 15 minutes b) The temperature will decrease and become room temperature. c) Some of the water evaporation into water vapour.
Q39)	a) E b) Light travels in straight line. c) She could cut a bigger hole
Q40)	a) It lost heat to the liquid X in the cloth and so the temperature decreased. b) Ashlyn's hands lost heat as liquid X evaporates. c) She could blow her hands.
Q41)	a) The air in the flash in gained heat and expanded, so there will be air escaping the flask. b) A. Air trapped inside A gained heat and expanded.

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10

Rosyth School
Semestral Assessment 1 2018
SCIENCE
Primary 5

Name: _____ Total Marks: /56

Class: Pr 5 _____ Register No. _____ Duration: 1 h 45 min

Date: 9 May 2018 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 28 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 29 to 41, give your answers in the spaces given in the Booklet B.

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Part I

For each question from 1 to 28, 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.**

(56 Marks)

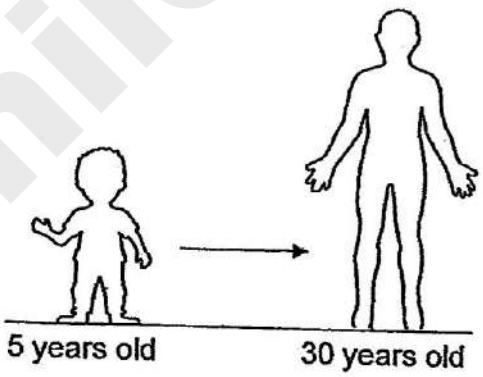
1 Four pupils Aida, Becky, Candice and Denise stated the importance of nucleus in cells as follows:

Aida: It stores genetic information for cell.
Becky: It allows substances to move within the cell.
Candice: It controls activities that happen in the cell.
Denise: It controls which substances can enter and leave the cell.

Whose statements are true about nucleus?

(1) Aida and Candice only
(2) Becky and Denise only
(3) Candice and Denise only
(4) Aida and Becky only

2 The diagram shows the physical growth of a boy.



What has/have caused the growth of the boy?

A: The cells increased in size.

B: The cells increased in number.

C: The cells died and replaced themselves.

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

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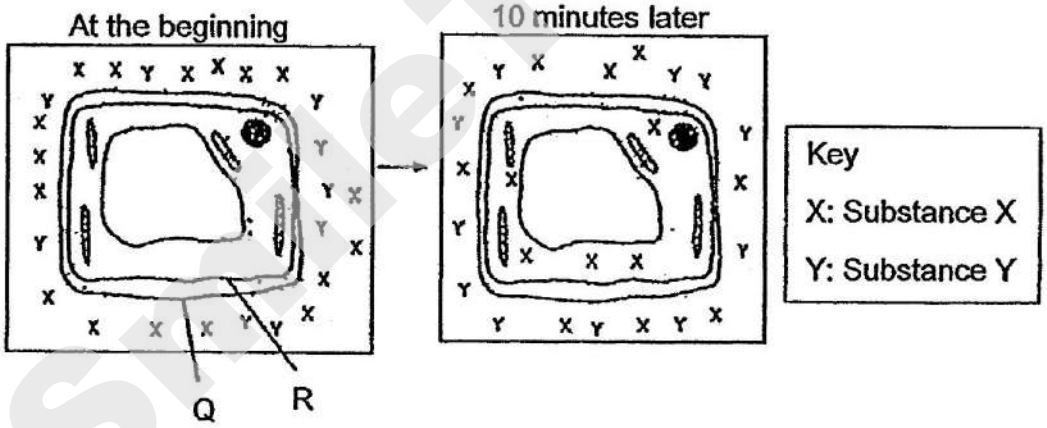
3 Ellie, Faye and Gwen recorded some parts of cells observed in three different cells as shown below.

	Parts of cells observed
Ellie	cytoplasm, nucleus, chloroplast, cell wall
Faye	cell membrane, cell wall, nucleus
Gwen	cell membrane, cytoplasm, nucleus

Who could have observed plant cells?

(1) Ellie only
(2) Gwen only
(3) Ellie and Faye only
(4) Gwen and Faye only

4 The diagram below shows what happened before and after a cell is placed in a container filled with substances X and Y.



Read the statements below.

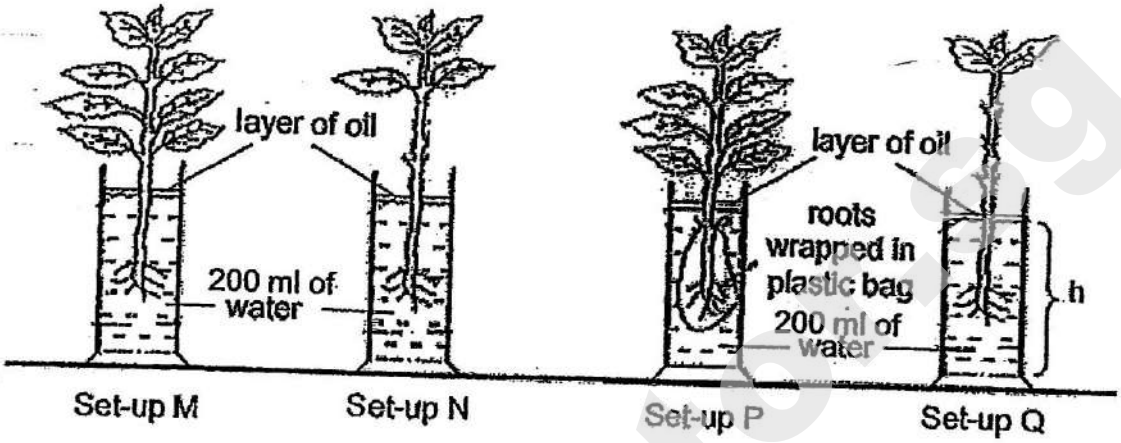
A: Part Q maintains the shape of the cell.
B: Part Q stops Substance X from entering the cell.
C: Part R stops Substance Y from entering the cell.

Which is/are the following statement(s) can be determined by the above diagram?

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

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5 Polly placed four plants of the same type in identical jars, each containing 200 ml water at the same level as shown below. She then placed the four set-ups, M, N, P and Q, next to the window for an hour. At the end of the experiment, Polly measured the height of water, h, in each jar.

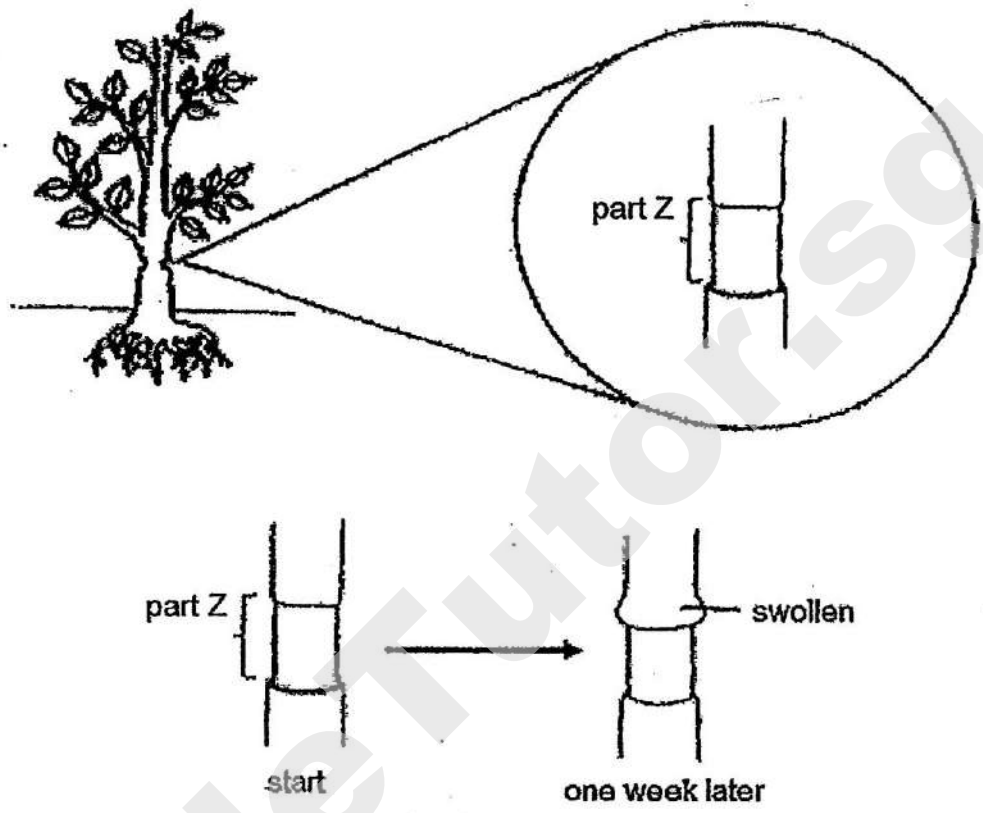


Which of the following shows correctly the height of the water in each of the above set-ups after an hour?

	Height of water after an hour (mm)			
	M	N	P	Q
(1)	200	190	180	185
(2)	190	185	200	180
(3)	185	180	190	200
(4)	180	185	200	190

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6 Jane removed the outer ring of a plant at part Z. After one week, she observed a swollen part above part Z.

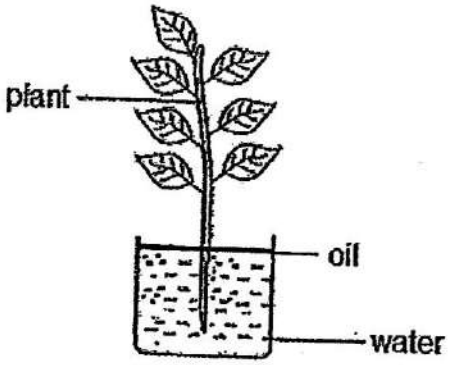


Which tube was removed and what was the correct explanation for her observation?

	Tube removed	Explanation
(1)	Food-carrying	Food from the leaves was not able to be transported downwards.
(2)	Food-carrying	Food from the leaves was not able to be transported upwards.
(3)	Water-carrying	Water from the roots was not able to be transported upwards.
(4)	Water-carrying	Water from the leaves was not able to be transported downwards.

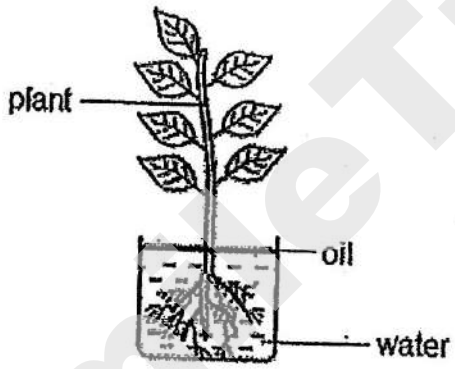
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7 Mary wanted to find out if plant take in water through their roots. She has prepared the set-up below.

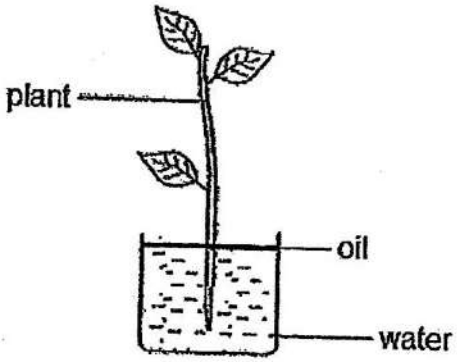


Which one of the following should Mary use as a control set-up for her experiment?

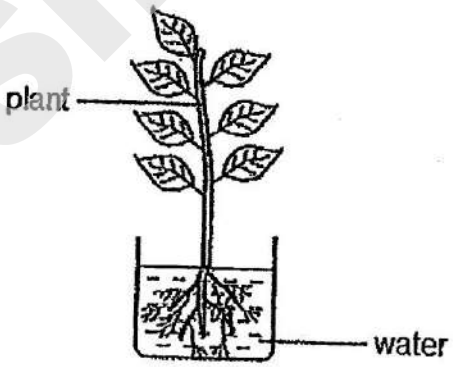
(1)



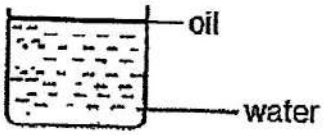
(2)



(3)

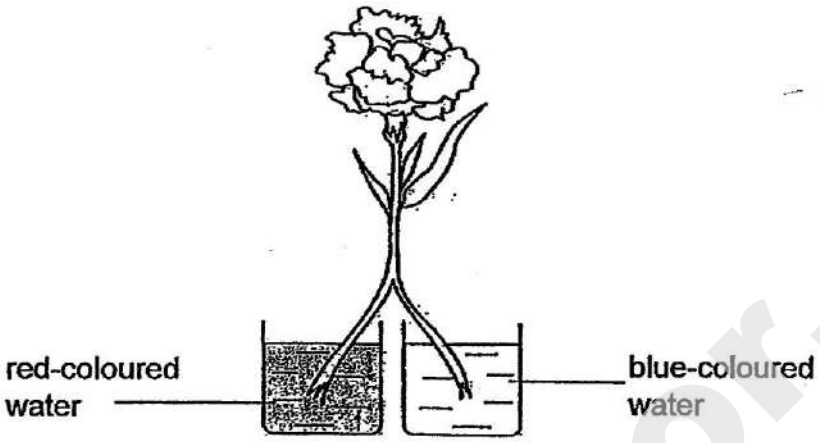


(4)



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8 Jialing cut a stalk of a white carnation and placed it in two separate beakers of red-coloured and blue-coloured water as shown below.



She left the stalk overnight. The next morning, one half of the flower became blue and the other half became red.

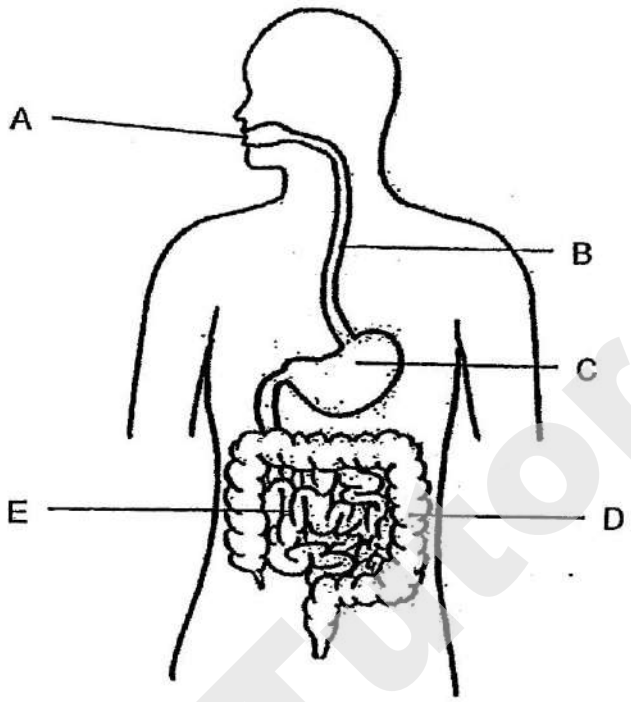
What can she conclude from the above experiment?

(1) There is only one water-carrying tube in the stem.
(2) There is more than one water-carrying tube in the stem.
(3) Cutting the stalk into half removed all the food-carrying tube.
(4) Cutting the stalk into half caused the food-carrying tube to carry water too.

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9 The diagram below shows the digestive system of a human body.

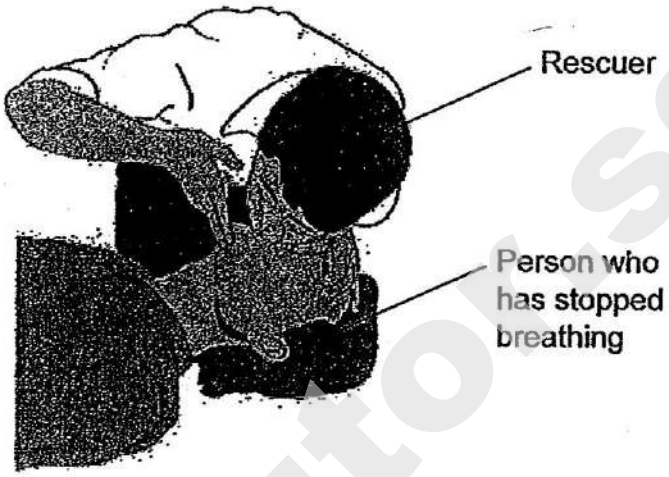


Based on the diagram above, which of the following correctly matches the parts of the human digestive system with their functions?

	Parts of the human digestive system where		
	digestion takes place	absorption of digested food takes place	absorption of water takes place
(1)	A, C	E	D
(2)	B, C, E	D	A
(3)	A, C, E	E	D
(4)	A, C, D, E	C	E

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10 An emergency procedure called mouth-to-mouth resuscitation is carried out on a person who has stopped breathing. In this procedure, the rescuer helps to keep the person alive by blowing exhaled air into the person's lungs.



Why does the rescuer blow exhaled air into the person's lungs?

(1) Exhaled air contains some heat needed by the lungs.
(2) Exhaled air contains some oxygen needed by the lungs.
(3) Exhaled air contains some water vapour needed by the lungs.
(4) Exhaled air contains some carbon dioxide needed by the lungs.

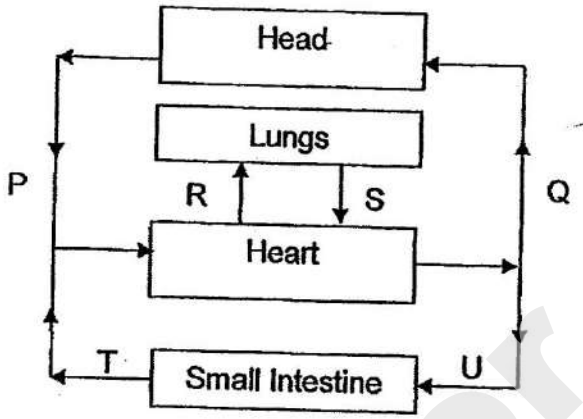
11 Which of the following systems in our body work together to transport oxygen and food around our body?

System A: Circulatory system
System B: Digestive system
System C: Respiratory system
System D: Skeletal system
System E: Muscular system

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

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12 The diagram below shows the movement of blood in the human circulatory system to certain parts of the body.



Which one of the following statements correctly describes the amount of substances in the blood in pathways P, Q, R, S, T and U?

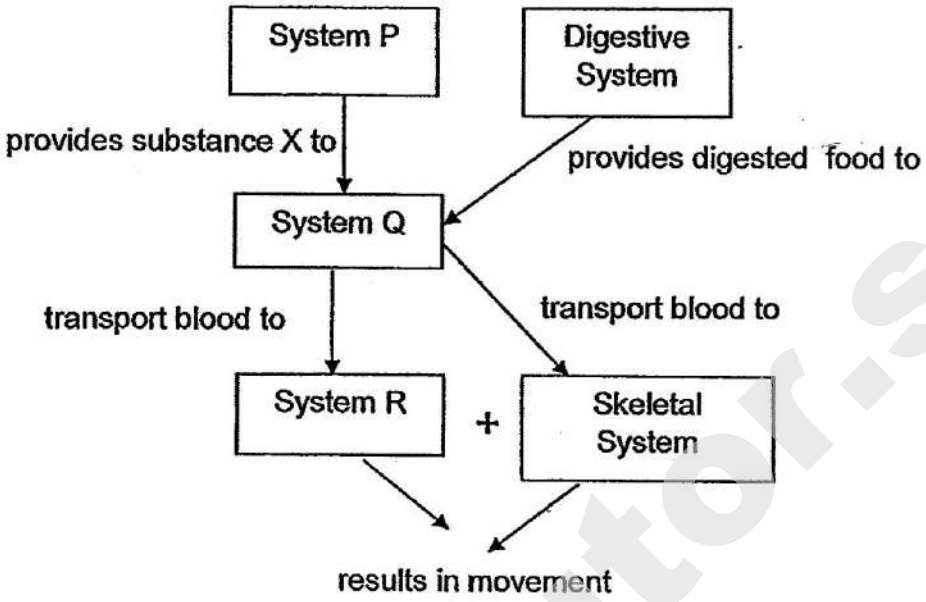
(1) Blood in S contains less oxygen than blood in R.
(2) Blood in U has less digested food than blood in T.
(3) Blood in P contains more oxygen than blood in Q.
(4) Blood in Q contains more carbon dioxide than blood in T.

13 Which one of the following correctly shows the path that oxygen takes when we breathe in by the nose?

(1) Air sacs in lungs → windpipe → blood vessels
(2) Windpipe → blood vessels → air sacs in lungs
(3) Blood vessels → air sacs in lungs → windpipe
(4) Windpipe → air sacs in lungs → blood vessels

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14 Study the flowchart of the human systems as shown below.

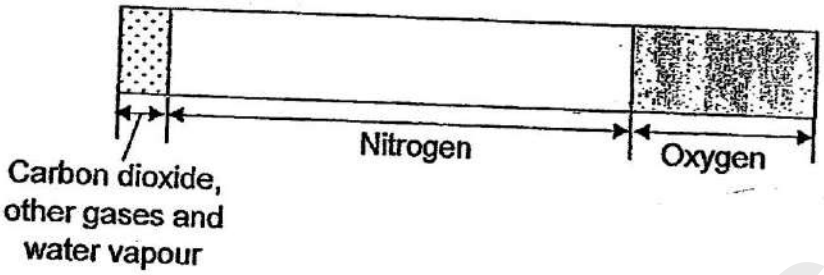


Which systems do P, Q and R represent and what is substance X?

	System P	System Q	System R	Substance X
(1)	circulatory system	respiratory system	muscular system	oxygen
(2)	respiratory system	circulatory system	muscular system	oxygen
(3)	circulatory system	muscular system	respiratory system	carbon dioxide
(4)	respiratory system	circulatory system	muscular system	carbon dioxide

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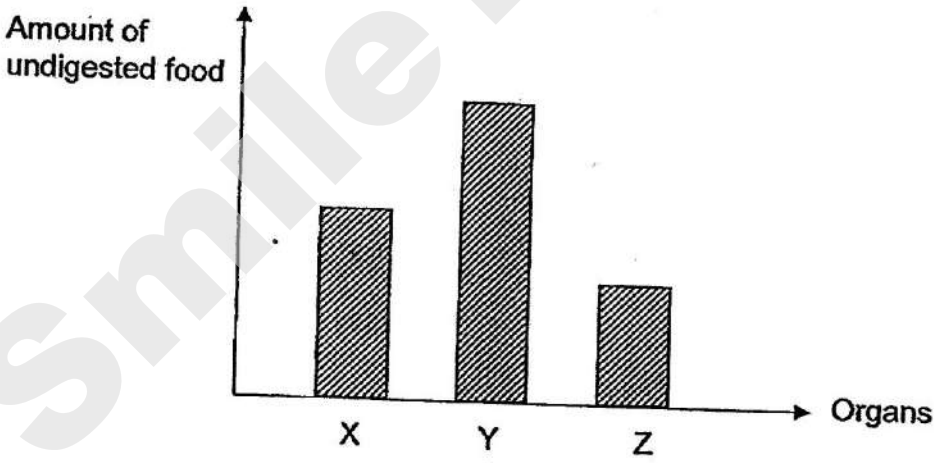
15 The diagram below represents the composition of gases in the air inhaled by a human.



Which of the following statements are **false** about the composition of gases in the exhaled air of a human?

(1) Amount of oxygen decreases.
(2) Amount of nitrogen remains the same.
(3) Amount of all the above gases decrease.
(4) Amount of carbon dioxide and other gases increases.

16 The graph below shows the amount of undigested food in organs X, Y and Z of the human digestive system.



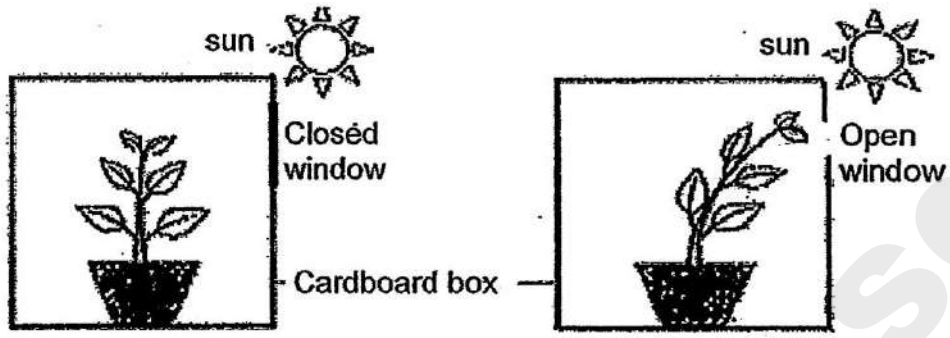
If organ Z is the small intestine, what could organs X and Y be?

	X	Y
(1)	Mouth	Stomach
(2)	Gullet	Stomach
(3)	Stomach	Mouth
(4)	Gullet	Large intestine

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17 The diagram below shows two similar plants growing in different conditions.



What does this tell you about living things?

(1) Living things can respond to changes.
(2) Living things can make their own food.
(3) Living things needs air, food and water.
(4) Living things can move from places to places by themselves.

18 Reanne observed some plants in her school garden. Which of the following observations did she make to conclude that the plants were non-flowering?

(1) The plants had big leaves
(2) The plants had weak stems.
(3) There were fruits on the plants.
(4) Spores were found on the underside of the leaves

19 Four pupils in a class made the following observation about animals.

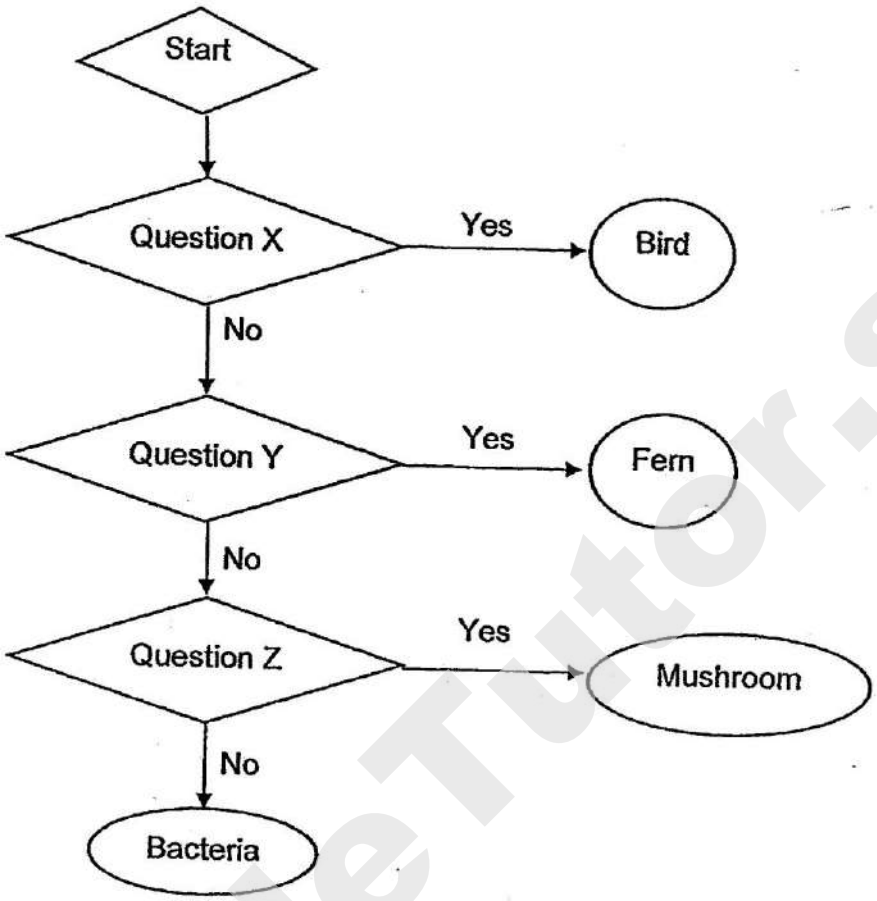
Lynn: All mammals have fur or hair.
Macy: All amphibians can live in water and land.
Noel: All birds have a beak, feathers and can fly.
Olivia: Some animals lay eggs while other give birth to young alive.

Whose statements are correct?

(1) Lynn and Noel only
(2) Noel and Olivia only
(3) Lynn, Macy and Olivia only
(4) Lynn, Macy, Noel and Olivia

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20 Study the flowchart below

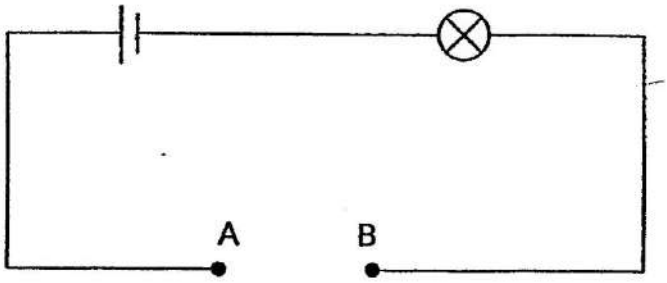


Which of the following can be Questions X, Y and Z?

	Question X	Question Y	Question Z
(1)	Is it an animal?	Does it reproduce by spores?	Does it make its own food?
(2)	Does it make its own food?	Is it an animal?	Can it be seen without a microscope?
(3)	Can it be seen without a microscope?	Does it make its own food?	Is it an animal?
(4)	Is it an animal?	Does it make its own food?	Does it reproduce by spores?

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21 John cut 4 pieces of copper wire, P, Q, R and S, each of different length and thickness. The circuit diagram below shows how he set up the experiment.



He placed each wire at connection points A and B to close the circuit. He observed the brightness of the bulb. Then he recorded his observations in the table below.

Wire	Length of wire (cm)	Thickness of wire (mm)	Brightness of bulb
P	10	1	Bright
Q	10	2	Very bright
R	20	1	Not bright
S	20	2	Bright

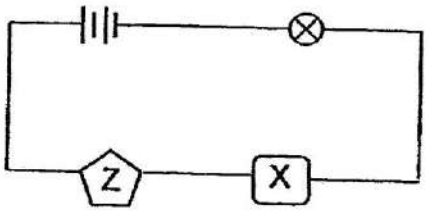
Based on the information given in the table, what can John conclude from his experiment?

A: As the length of the wire decreases, the brightness of the bulb increases.
B: As the length of the wire decreases, the brightness of the bulb decreases.
C: As the thickness of the wire increases, the brightness of the bulb increases.
D: As the thickness of the wire increases, the brightness of the bulb decreases.

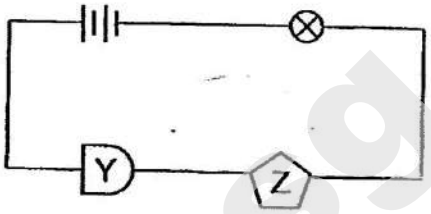
(1) A and C only
(2) A and D only
(3) B and C only
(4) B and D only

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22 Jacob set up the circuits below using a bulb, 2 batteries and 3 objects X, Y and Z.

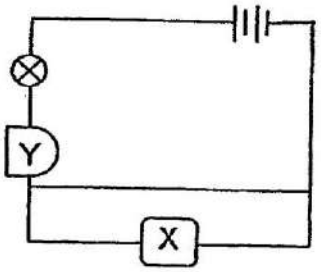


Bulb lights up

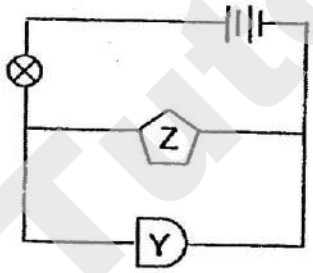


Bulb does not light up

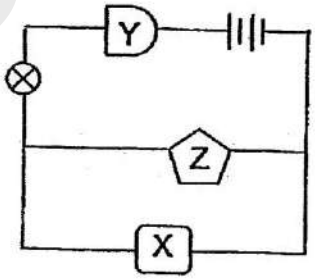
He used the objects X, Y and Z again to form the circuits below.



Circuit A



Circuit B



Circuit C

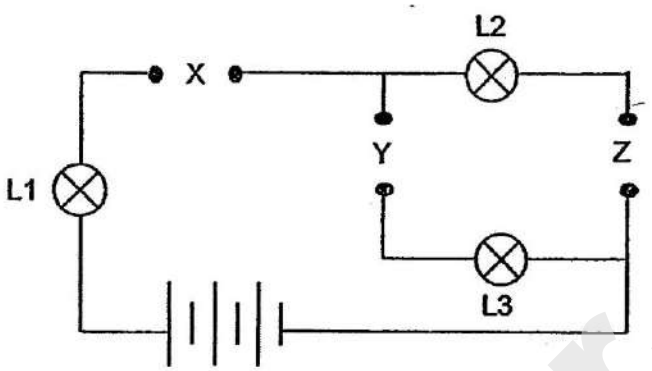
In which of the circuits A, B and C as shown above, would the bulb light up?

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

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23 Byran has three rods, P, Q and R, made of unknown materials. He placed them in various positions, X, Y and Z, in the circuit shown below.



The results of the experiment were shown in the table below. When any of the lamps, L1, L2 or L3, lit up during the experiment, a tick (√) was placed in the box.

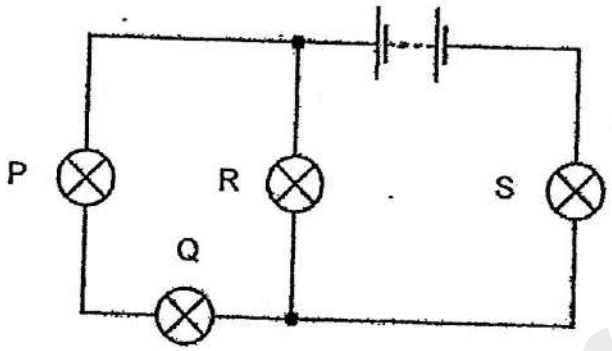
Positions where rods were placed			Lamp		
X	Y	Z	L1	L2	L3
P	Q	R	√	√	
Q	R	P			
R	P	Q	√		√

Based on the results above, which one of the following deductions is correct?

(1) Only rod R is not able to conduct electricity.
(2) Only rods P and Q are able to conduct electricity.
(3) Only rods P and R are able to conduct electricity.
(4) Rods Q and R are better conductors of electricity than rod P.

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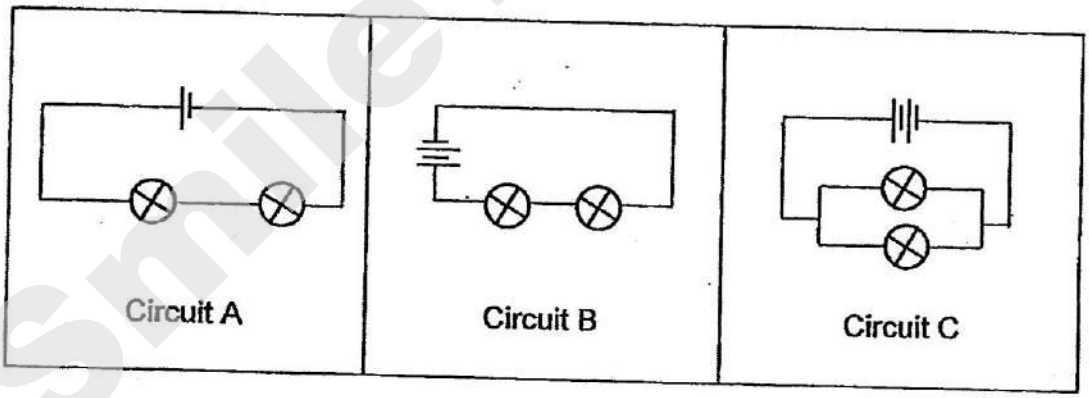
24 Study the circuit shown below. When one of the bulbs fuses, all the other bulbs will not light up.



Which one of the bulbs has fused?

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

25 Ravi arranged 3 closed circuits A, B, C, as shown below. He used identical batteries, bulbs and wires for each circuit.



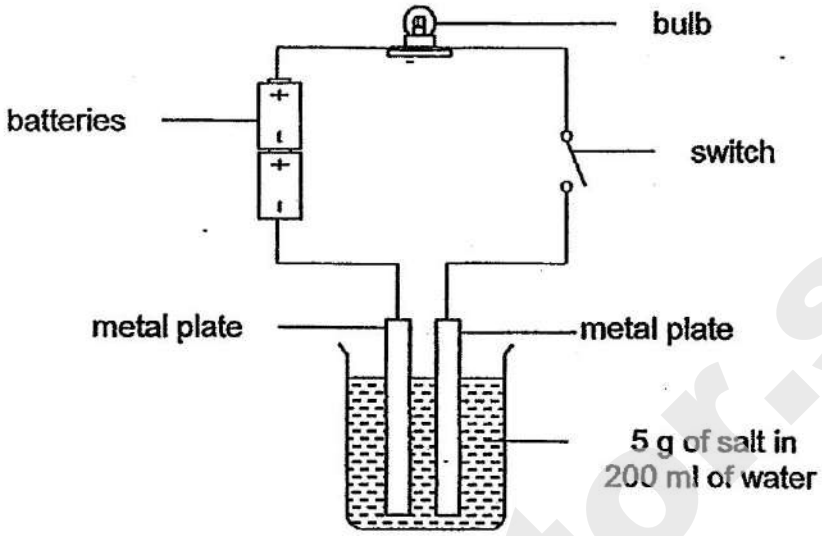
Arrange the bulbs in circuits A, B and C from the brightest to the dimmest.

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

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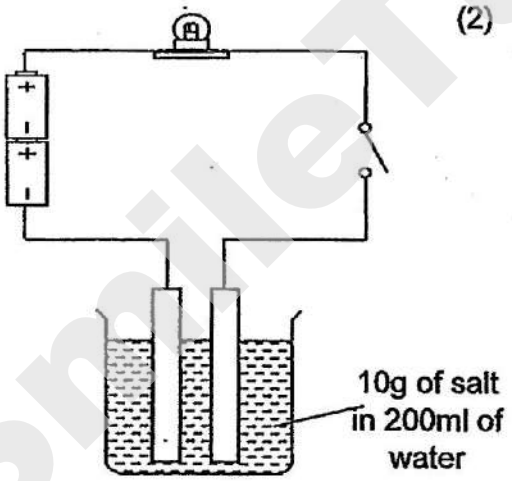
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26 Randy wanted to find out whether water conducts electricity when salt is dissolved in it. He used the set-up below.

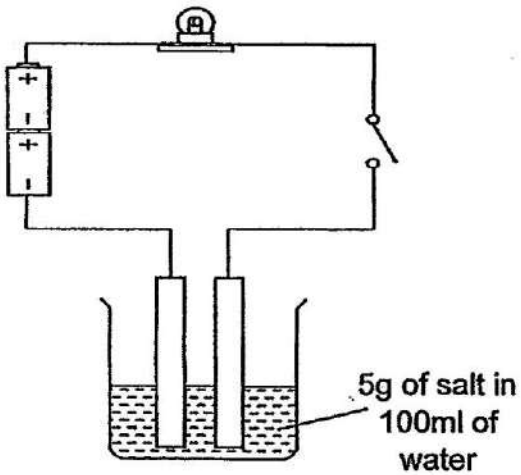


Which one of the following shows the most suitable set-up for a control to his experiment?

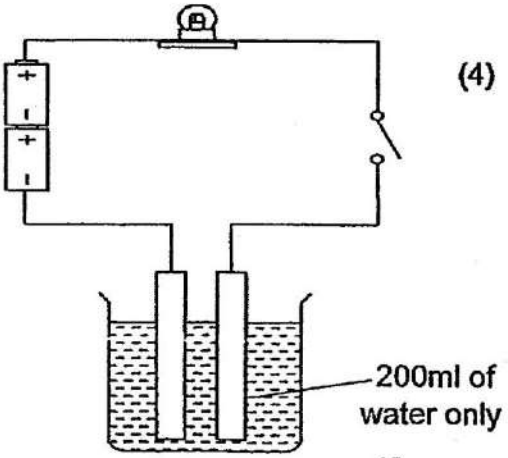
(1)



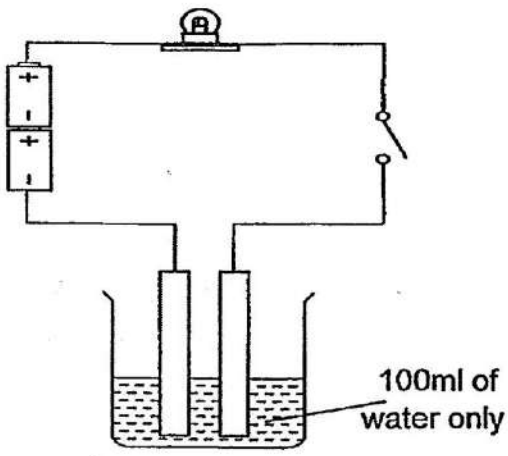
(2)



(3)



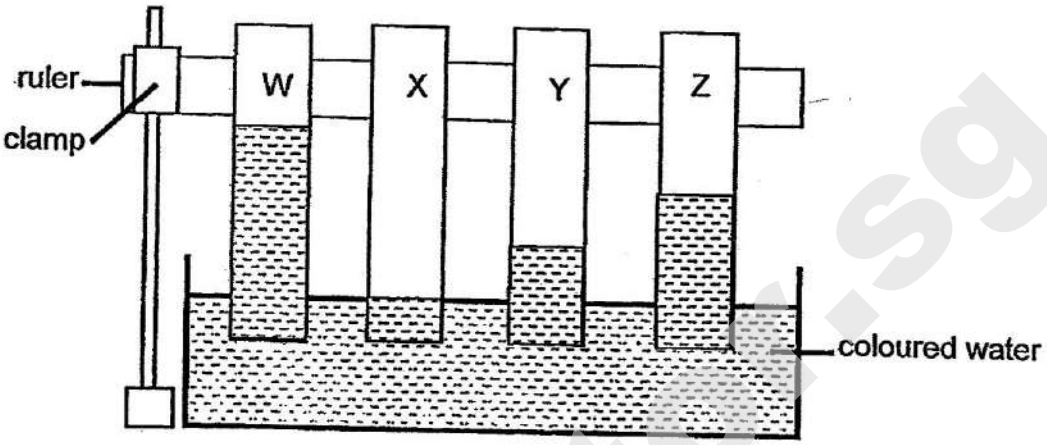
(4)



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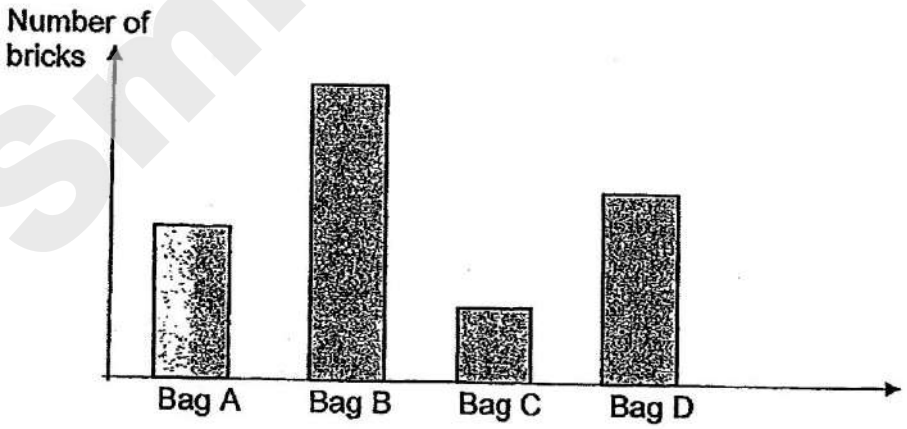
27 The set-up below is to find out the amount of coloured water that can be absorbed by four similar-sized strips of different materials, W, X, Y and Z. After ten minutes, the strips absorb water to different levels as shown in the diagram below.



Which one of the materials is most suitable for making a raincoat?

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

28 Four bags of different materials were used for this experiment. The graph below shows the maximum number of bricks that the different bags can hold before breaking.



Which of the following conclusions cannot be deduced from the graph?

(1) Bag B is the strongest.
(2) Bag A is stronger than bag C.
(3) Bag D is stronger than bag A.
(4) Bag C is made from the thinnest material.

End of Booklet A

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Rosyth School
Semestral Assessment 1 2018
SCIENCE
Primary 5

Name: _____ Total Marks: 100

Class: Pr 5_____ Register No. _____ Duration: 1 h 45 min

Date: 9 May 2018 Parent's Signature:

Booklet B

Instructions to Pupils:
1. For questions 29 to 41, give your answers in the spaces given in Booklet B.

	Maximum	Marks Obtained
Booklet A	56 marks	
Booklet B	44 marks	
Total	100 marks	

* This booklet consists of 15 printed pages (including cover page).

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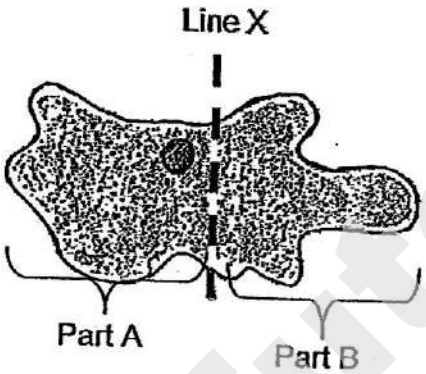
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Part II

For questions 29 to 41, write your answers in the space provided. **(44 Marks)**

29 Lily found a single cellular organism in the school pond. She wanted to do an investigation using the organism. She cut the cell at Line X as shown below.



After a few days, she recorded her observations in the table below.

Part A	Part B
Continued to grow a new Part B	Shrunk and died

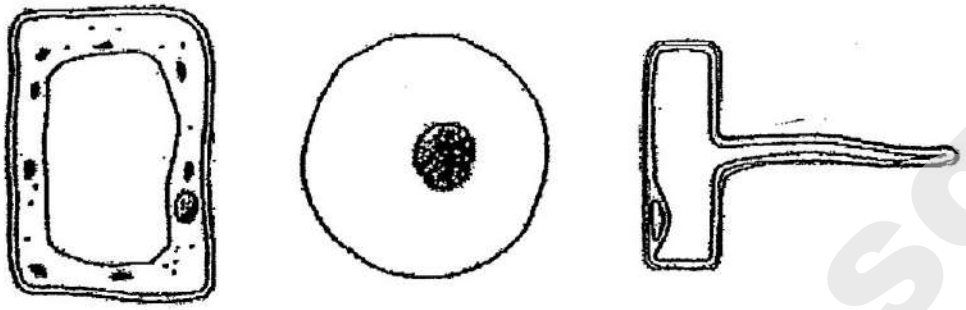
(a) Why was Part A able to grow a new Part B? [1]

(b) Explain why Part A of the cell is important for her investigation. [1]

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30 The diagram below shows some cells.



Cell A Cell B Cell C

(a) Which cell part is found in the cytoplasm of Cell A but not in Cell B and C? Give a reason for the absence of the cell part in Cell B and C. [1]

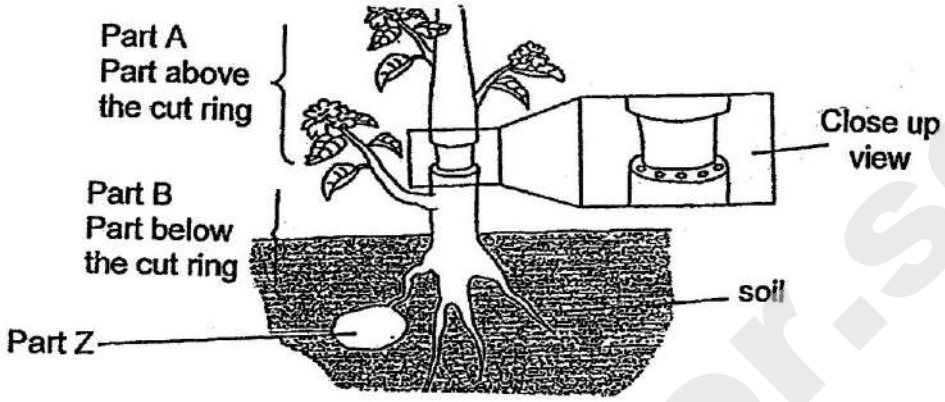
(b) Cell A, B and C are placed in a container of water. After some time, one of them burst.
Which cell burst? Explain your choice. [1]

(c) The shape of Cell C is different from a typical cell. Explain how the shape of Cell C enables it to carry out its function more effectively. [1]

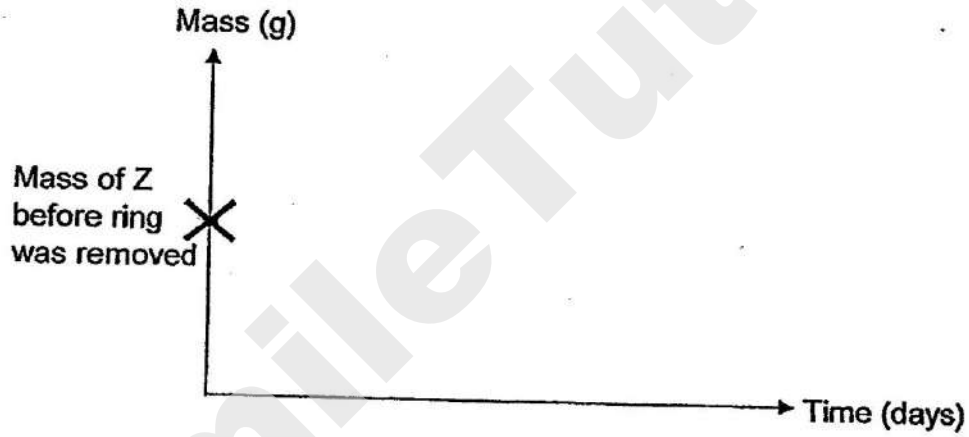
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31 An outer ring of a stem was removed from a green plant as shown below. As a result, the tube carrying food and water were removed. There is stored food in Part Z of the plant.



(a) In the graph below, draw a line graph to represent the mass of Part Z after the ring was removed. [1]

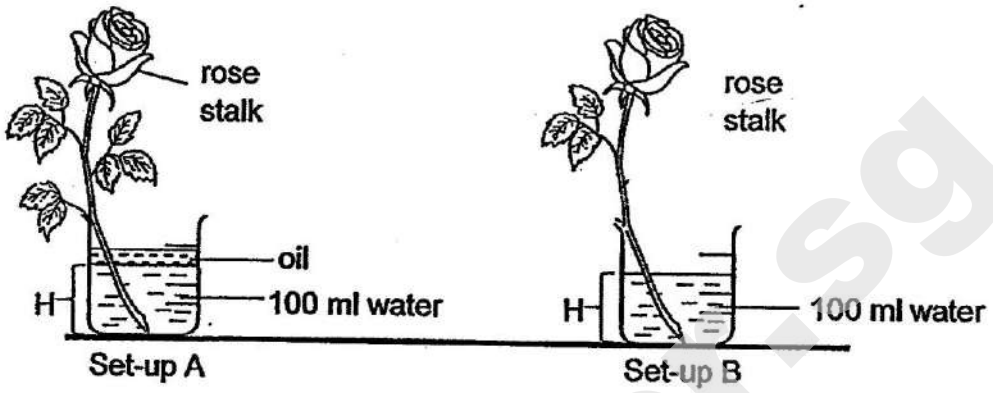


(b) After some time, Part A of the plant withered before Part B. Explain why. [2]

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32 Penny conducted an experiment in a classroom using set-ups A and B as shown. She removed most of the leaves from set-up B. She then recorded the height of water, H, at regular time intervals.



(a) Explain why her experiment is not a fair one. [1]

_____

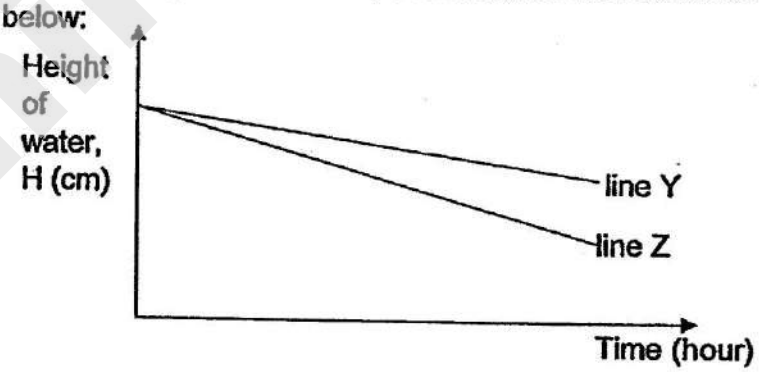
_____

(b) State the changed and measured variables. [1]

Changed variable: _____

Measured variable: _____

After ensuring that her experiment is fair, she obtained the results as shown in the graph below:



(c) Which line, Y or Z, represents the results obtained for set-up A? Explain your answer. [1]

_____

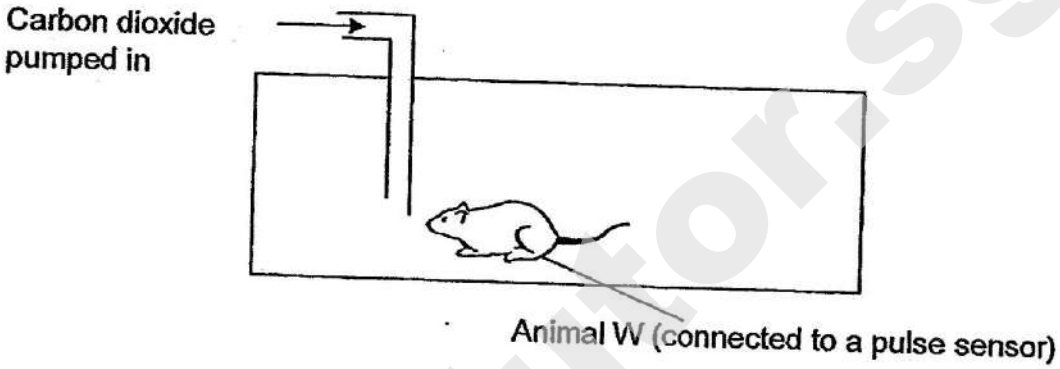
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Question 32 continues on the next page

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(d) What is the aim of this experiment? [1]

33 Animal W was placed in a tank as shown below. Different amounts of carbon dioxide were pumped into the tank.



The table below shows how different amounts of oxygen and carbon dioxide in the tank affect the breathing rate of animal W.

Percentage of carbon dioxide in the tank (%)	Percentage of oxygen in the tank (%)
0.03	21
1.00	20
3.00	18
5.00	16

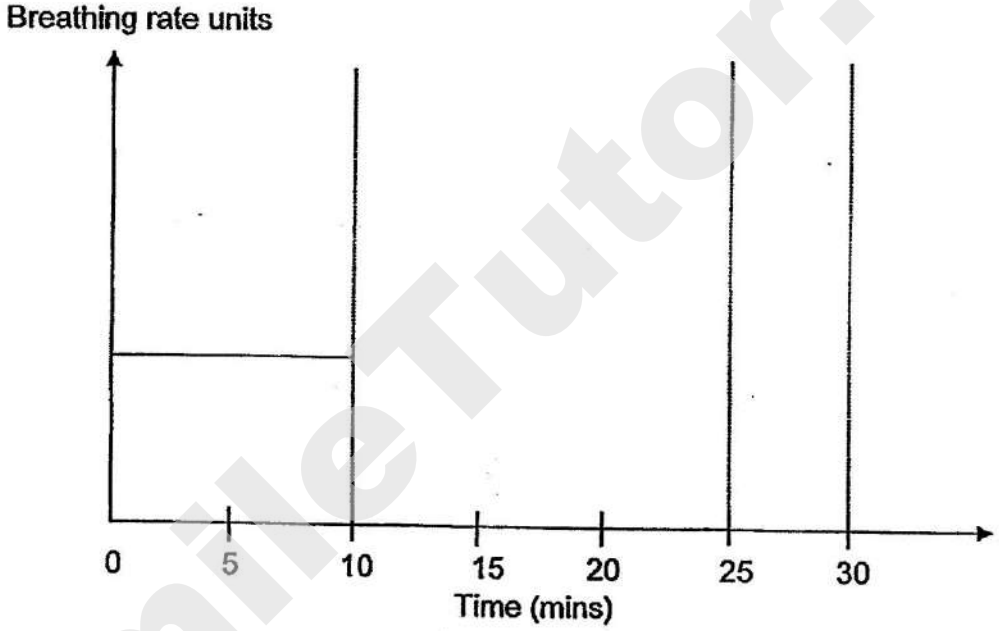
(a) Based on the table above, what is the relationship between different amounts of carbon dioxide and the amount of oxygen in the tank? [1]

(b) The breathing rate of Animal W increases as the amount of carbon dioxide increases. Explain why. [1]

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34 During a physical education lesson, Jordan remained seated for the first 10 minutes to listen to his teacher's instruction. He then played frisbee with his friends continuously for the next 15 minutes. After that, he rested on a bench for 5 minutes.

(a) Complete the graph below to show how Jordan's breathing rate changed between 10 minutes to 30 minutes. [1]



(b) Jordan's heart rate changed while playing frisbee with his friends. Explain why this happened. [2]

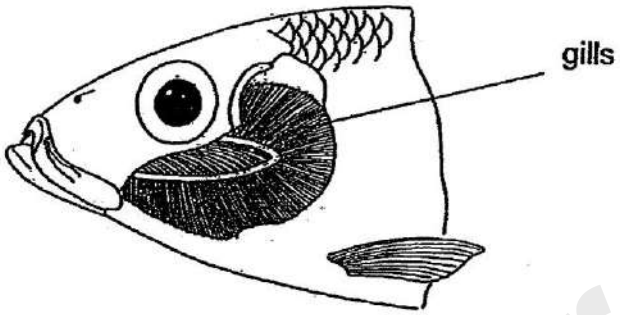
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35 Fish have special breathing organs called gills which are located on the sides of their heads as shown below.



(a) Indicate on the picture above using arrows to show how water enters and leave the fish when it breathes. [2]

(b) Give a reason why it is necessary for the gills to have many blood vessels. [1]

_____

_____

(c) Which part of the human respiratory system is similar to the fish gills? [1]

_____

(d) Why fish has gills and not lungs? [1]

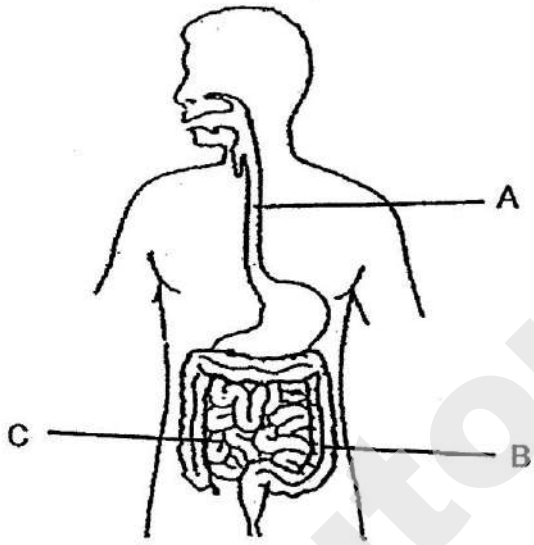
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36 The diagram shows the human digestive system.



(a) Name the parts labelled A and B. [2]

(i) A: _____

(ii) B: _____

(b) Why is it important for part C to be very long? [1]

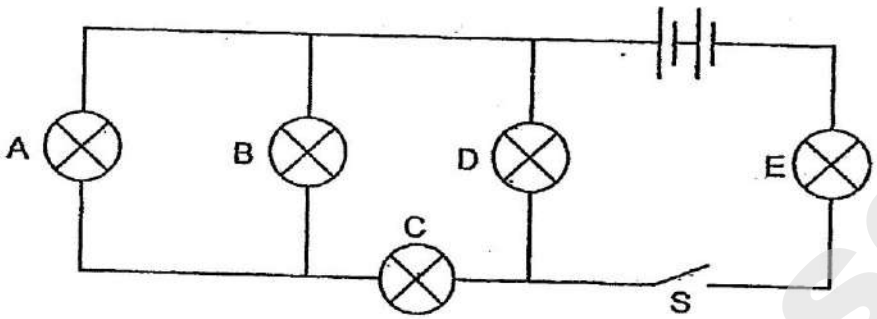
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37 Max constructed a circuit as shown below.



He closed switch S and observed that all the bulbs lighted up. However, after 20 seconds, bulb D fused.

(a) What will happen to the other bulbs when bulb D fused? Explain why? [2]

_____

_____

(b) Which bulb(s) will not light up when bulb E fuses? [1]

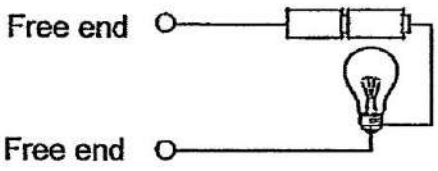
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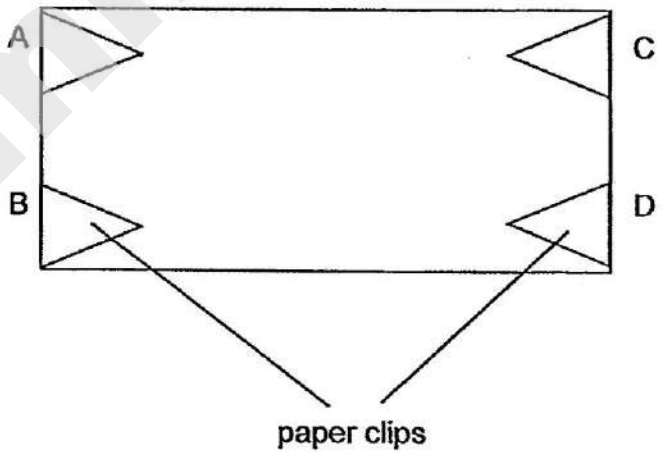
38 Jason had a circuit card with four metal paper clips, A, B, C and D which were connected on the underside by wires.



Jason connected the circuit tester to two paper clips of the circuit card each time. He recorded the results as shown in the table below.

Paper clips attached to free ends	Did the bulb light up?
A and B	No
A and C	Yes
A and D	Yes
B and C	No
B and D	No
C and D	Yes

(a) Based on the results, draw wires in the circuit card below to show how the paper clips were connected. [2]

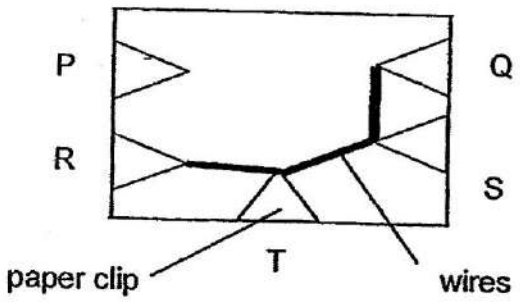


Question 38 continues on the next page

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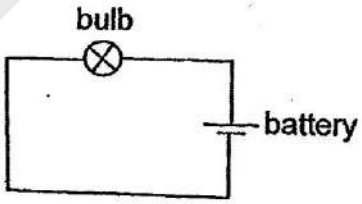
Jason had another circuit card with the arrangement of wires on the underside as shown below.



(b) Fill in the table below to show if the bulbs lighted up. Indicate your answer with a 'Yes' or 'No'. [1]

Paper clip tested in pairs	Did the bulb light up?
P and Q	No
P and S	
Q and S	Yes
Q and R	
S and T	Yes

In the second experiment, Jason took 4 types of wires, W, X, Y and Z of different thicknesses. He connected each of the wires to a bulb as shown in the diagram below.



(c) State the aim of the second experiment. [1]

_____

_____

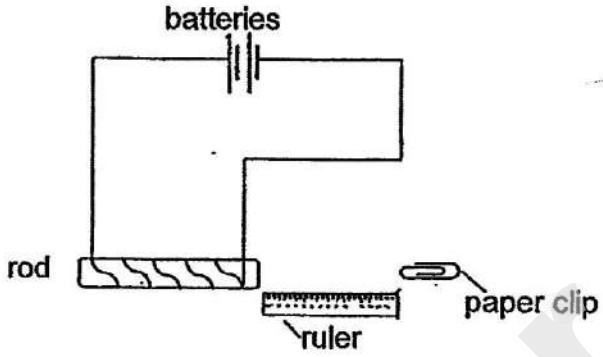
(d) Explain why Jason must keep the material and the length of the wires the same when he conducted the experiment. [1]

_____

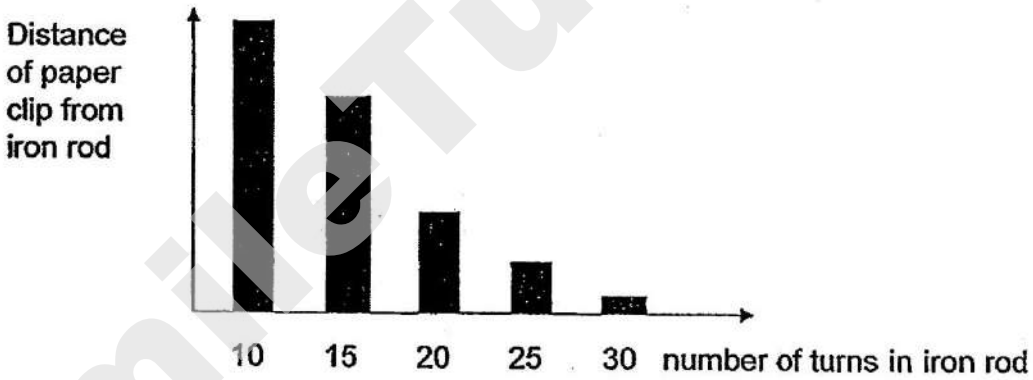
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39 The diagram below shows Jeremy's experiment using an electromagnet. When the electrical circuit was closed, the paper clip was slowly moved towards the iron rod.



The distance of the clip from the rod just before it was pulled was recorded. Jeremy increased the number of turns of wire around the iron rod and repeated the experiment.The results of the experiment are shown in the graph below.



(a) What was the variable that is changed in this experiment? [1]

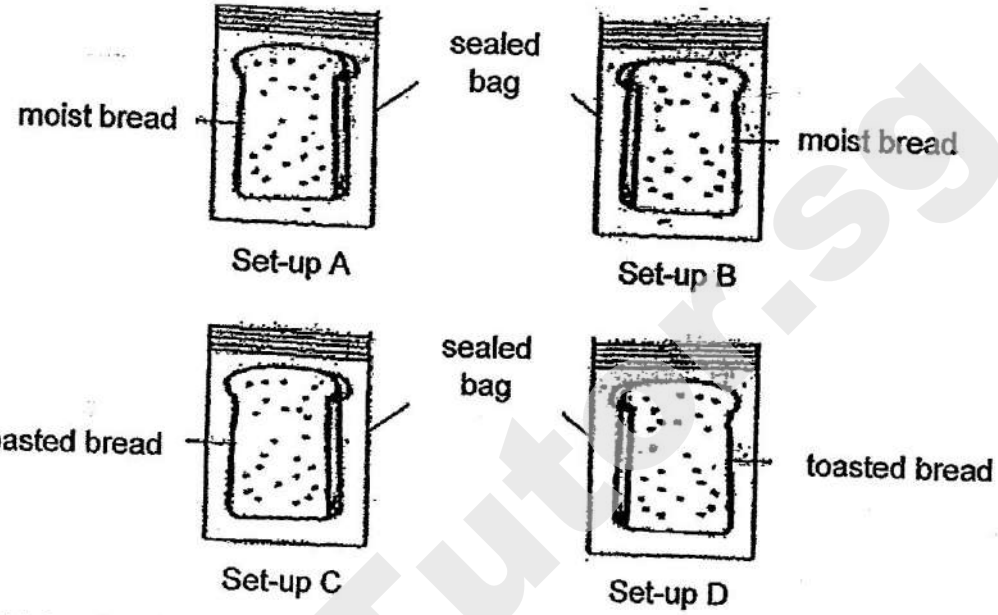
(b) Were the results obtained by Jeremy correct? Explain your answer clearly. [2]

(c) What material must the paper clip be made of? [1]

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40 Sharon set up the following experiment in her classroom to grow some bread mould. She and her classmates observe the four pieces bread every day. After one week, they observed some mould growing on some of the pieces of bread.



(a) Which set-up(s) would likely have mould growing after a few days? Explain your answer. [1]

_____

_____

(b) Where did the mould obtain its food? [1]

_____

(c) What could Sharon do to increase the rate of mould growing on the bread? [1]

_____

(d) After a hot shower, Sharon dropped her towel into a laundry basket. After a few days, she noticed patches of mould on it. Her mum told her that she should hang her wet towel on the towel rack instead.

How does hanging her towel prevent the growth of mould? [1]

_____

_____

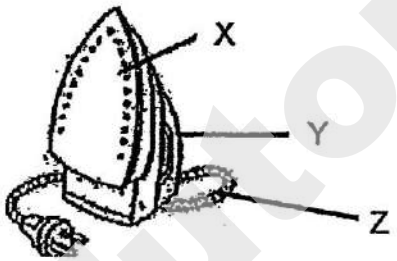
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41 The properties of four different materials, P, Q, R and S, are shown in the table below.

Material	Property of Material	
	Can bend easily	Can conduct heat easily
P	yes	yes
Q	yes	no
R	no	yes
S	no	no

The diagram below shows an iron for ironing of clothes.



(ai) Which one of the materials P, R and S is most suitable to make parts X?
(aii) Give a reason why material Q is suitable for part Z.
Write down the answers in the box given below. [2]

	Part	Material	Reason for one of the property of the material
(ai)	X		Its needs to be able to conduct heat easily to the clothes.
(aii)	Z	Q	

(b) Suggest a suitable material for Part Y. [1]

_____

End of Part II

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SCHOOL : ROSYTH PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA1

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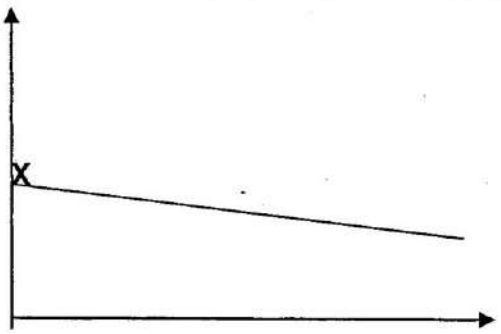
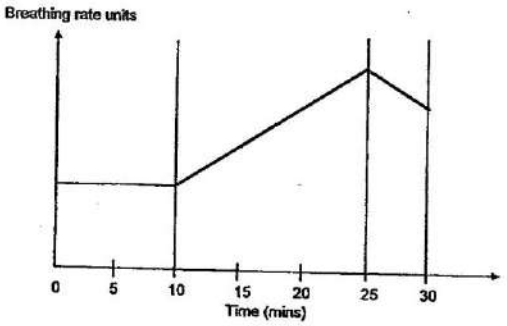
SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	1	3	1	4	1	1	2	3	2
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	2	4	2	3	3	1	4	3	4
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
1	1	3	4	3	3	3	4		

SECTION B

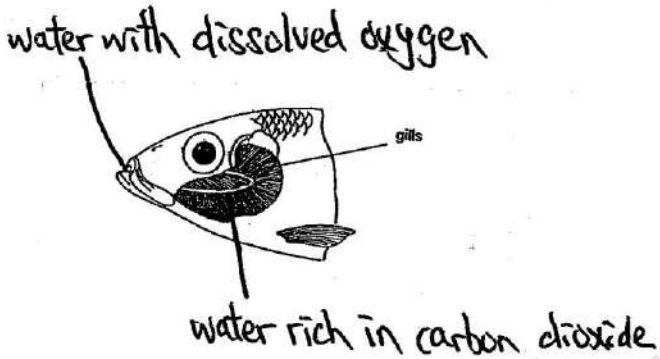
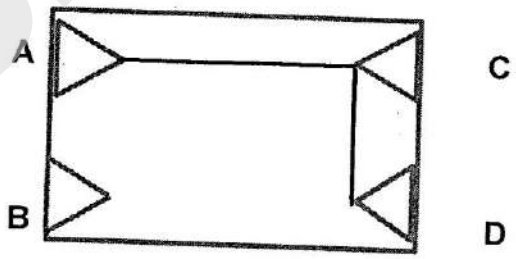
Q29)	a)To repair / replace the damaged part. b)To compare and confirm that the presence of nucleus is the only variable that is needed for the cell to repair the damaged part.
Q30)	a)Chloroplast. As cell A is found in the leaves of a plant, it needs to make food for the plant but Cell B and Cell C does not need to make food for the plant. b)Cell B, Cell B does not have a cell wall to protect itself from the water but cell C and Cell A does have a cell wall as it need to carry water. c)The shape of cell C increases its surface area to absorb more water/ substance at a faster rate.

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Q31)	a)  b)The leaves in part A could not receive water hence could not make food. The plant parts in parts in part B could not receive water from the soil and food form Z.
Q32)	a)Set-up B has a layer as oil while set-up A does not have a layer of oil. b)Changed variable : the number of leaves of the plants. Measured variable : the amount of water being absorbed by the roots of the plant. c)Hence the is a greater decrease in night of water at line Z than at line Y. d)To find out how the number of leaves affects the volume of water left in the beaker.
Q33)	a)The more carbon dioxide that is in the tank, the less oxygen there is in the tank. b)Animal W needs more oxygen so when there is more carbon dioxide in the tank there is lesser oxygen, so the heart must pump faster in order to get more oxygen to the rest of the body.
Q34)	a) 

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	b)When he played Frisbee, he needs more water and digested food and his hearts pumps faster and therefore his heart rate changed.
Q35)	a)  b)To increase the rate of gaseous exchange. c)Lungs. d)Gills take in dissolved oxygen in water.
Q36)	a)i)gullet ii)large intestine b)It It can absorb more digested food/ nutrients into the bloodstream.
Q37)	a)The other bulbs can still light up. When bulb D fused the other bulbs will still have a closed circuit and therefore, the other bulbs can still light up. b)No bulb will light up when bulb E fuses.
Q38)	a)  b)P and S ---- No Q and R---- No c)It is to find out if the thickness of wire affects the brightness of the bulb.

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	d)To ensure that the material and length does not affect the brightness of the bulb.
Q39)	a)The number of turns of wire around the iron rod. b)No. The greater the number of turn in the iron rod, the electromagnet force will become stronger and will be able to attract the paper clip from a longer distance. c)iron.
Q40)	a)Set-up A and B. Mould will grow on the moist bread. b)bread. c)Sharon could add more water on the moist bread. d)Hanging the towel will make the towel dry, bread mould cannot grow as mould needs water to grow.
Q41)	ai)R aii)It needs to be able to bend easily. b)Plastic.

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15

Rulang Primary School

SEMESTRAL ASSESSMENT 1
SCIENCE
2018

Name: _____ ( )

Level: Primary 5 _____

Class: Primary 5 ( )

Setter: Mr Dev Anand

Marks: _____ / 56

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

Date: 8 May 2018

Total Marks: / 100

BOOKLET A

Instructions to pupils:

1. **Do not open this booklet until you are told to do so.**
2. You are required to answer **all** the questions in this booklet.
3. This question booklet consists of **16** printed pages, including the cover page.

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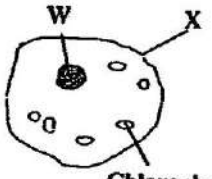
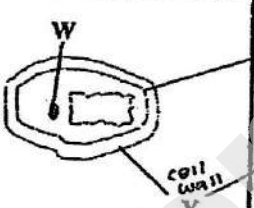
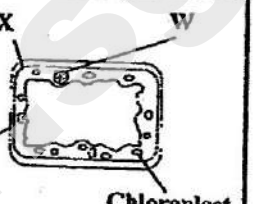
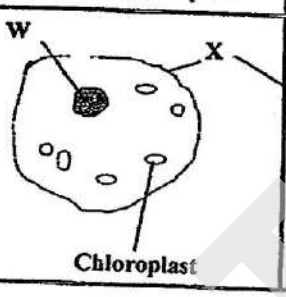
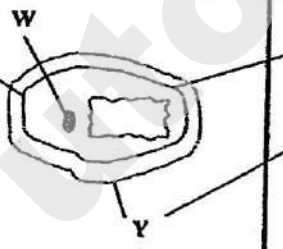
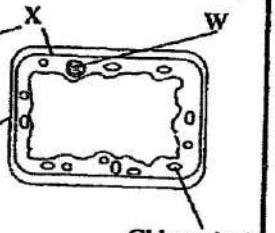
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Section A (28 x 2 marks)

For each of the questions from 1 to 28, 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.**

Refer to the table below and answer questions 1, 2 and 3.

	Cell P	Cell Q	Cell R
Before experiment			
After experiment			

1. Bala placed three cells, P, Q and R, in a beaker of pure water for several hours and recorded his observations on the appearance of each cell before and after the experiment as shown in the table above.

   Bala also labelled some observable parts, W, X, Y, and the chloroplast in all the cells. Which cells was / were not taken from the leaf of a plant?

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

2. He noticed that all the cells swelled when he placed them in pure water for a few minutes. Which part(s) controlled the movement of water into the cell?

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

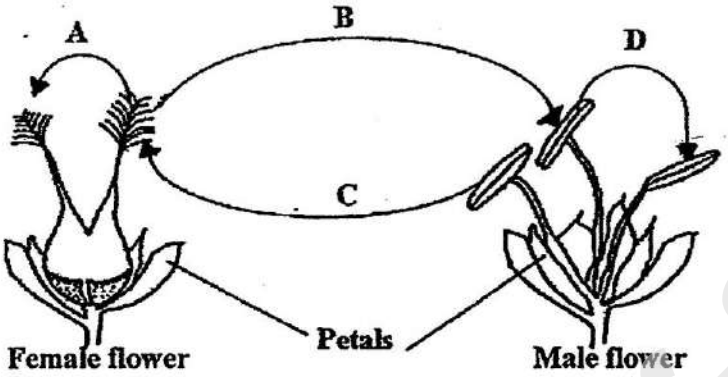
3. Which cells has / have been correctly identified with the correct explanation?

	Cells	Type of Cells	Explanation
(1)	P	Plant Cell	Chloroplast is present.
(2)	Q	Animal Cell	Chloroplast is absent.
(3)	Q and R	Plant Cells	Part Y is present.
(4)	P and R	Animal Cells	Parts X and W are present.

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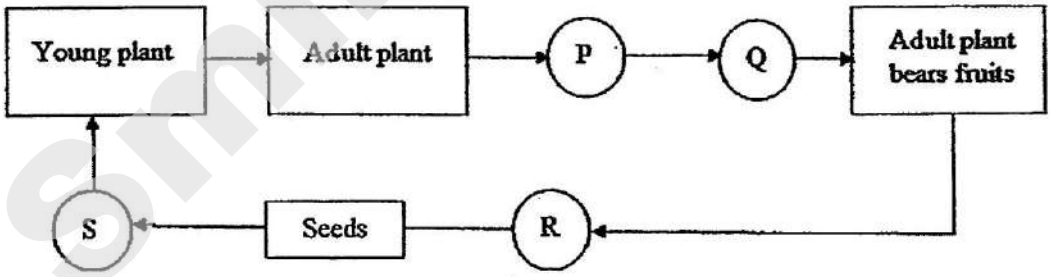
4. Cindy observed two flowers of the same species in her garden as shown below. She observed that the petals of both flowers were small, dull and odourless.



Which of the following arrows correctly shows the process of pollination and the likely agent of pollination?

	Process	Agent of pollination
(1)	A	Wind
(2)	B	Butterfly
(3)	C	Wind
(4)	D	Buterfly

5. In the flowchart below, P, Q, R and S represent the processes in the life cycle of a flowering plant.



Which of the following processes do not describe the dispersal of seeds?

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

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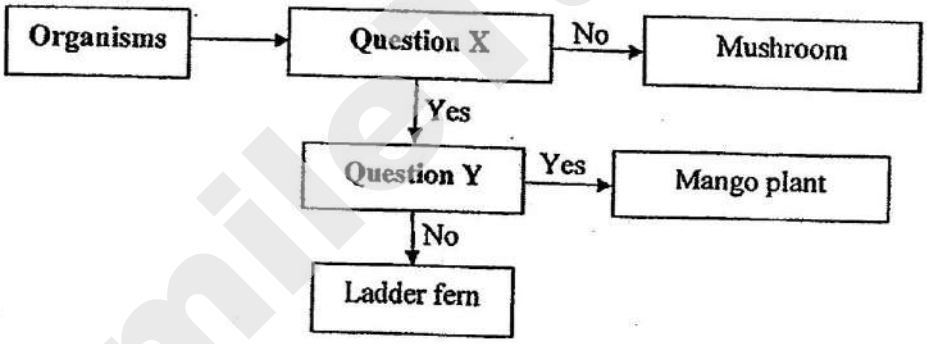
6. Sam prepared four set-ups of seeds for an experiment shown in the table below. He added an equal amount of water to each set-up daily.

Set-up	Location	Number of seeds	Presence of oxygen
E	Cold and dark	15	Yes
F	Cold and bright	10	No
G	Warm and dark	15	Yes
H	Warm and bright	10	No

Which one of the following sets correctly matches the aim of the experiment and the set-ups chosen?

	Aim	Set-ups
(1)	To investigate if light is needed for germination	E and H
(2)	To investigate if warmth is needed for germination	E and G
(3)	To investigate if oxygen is needed for germination	F and G
(4)	To investigate if overcrowding affects germination	F and H

7. Study the flowchart below carefully.



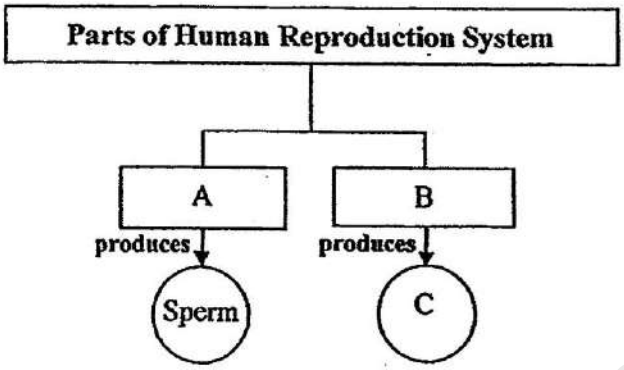
Which one of the following sets best represents questions X and Y?

	Question X	Question Y
(1)	Can it make its own food?	Is it a flowering plant?
(2)	Is it a flowering plant?	Does it produce edible fruits?
(3)	Does it bear flowers?	Does it reproduce from spores?
(4)	Does it reproduce from seeds?	Does it produce edible fruits?

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8. Study the diagram below carefully.



Which one of the following sets best represents A, B and C respectively?

	A	B	C
(1)	Ovary	Testis	Ovule
(2)	Ovary	Testis	Egg
(3)	Testis	Ovary	Ovule
(4)	Testis	Ovary	Egg

9. The table below shows the characteristics of Mr and Mrs Wee.

	Shape of eyes	Type of nose	Length of hair
Mr Wee	Almond	Flat	Short
Mrs Wee	Round	Sharp	Long

The table below shows the characteristics of their four children.

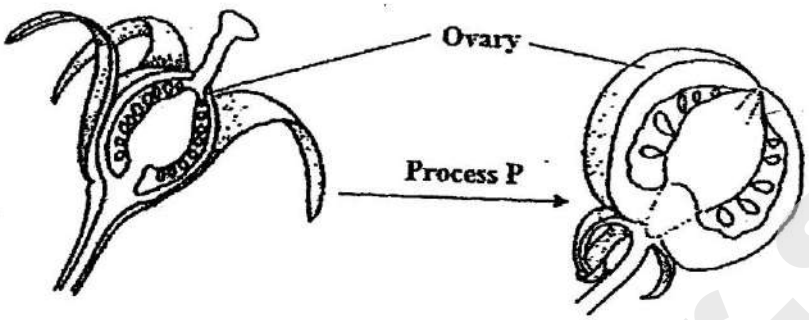
Abby	round eyes, short hair
Benny	round eyes, flat nose
Cathy	almond eyes, sharp nose
Denise	almond eyes, long hair

Which of the following children inherited only one characteristic from each parent?

(1) Abby and Benny only
(2) Benny and Cathy only
(3) Abby, Benny and Cathy only
(4) Abby, Benny, Cathy and Denise

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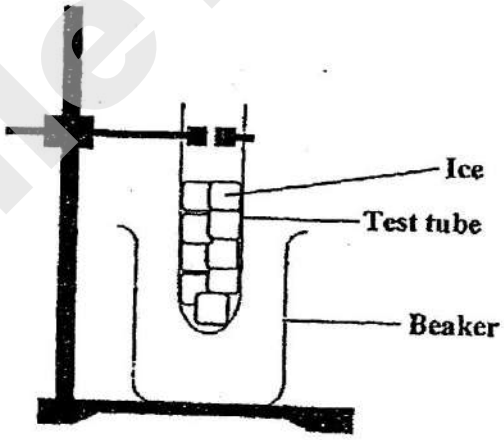
10. Tasha noticed that the ovary of a flower swelled and became bigger after undergoing process P as shown below.



In the human reproduction system, what happens after process P occurs?

(1) Cell division occurs.
(2) The sperm fuses with the egg.
(3) Eggs are released from the ovaries.
(4) The sperm is produced in the testes.

11. The following set-up was placed in a Science laboratory with a room temperature of 28°C.



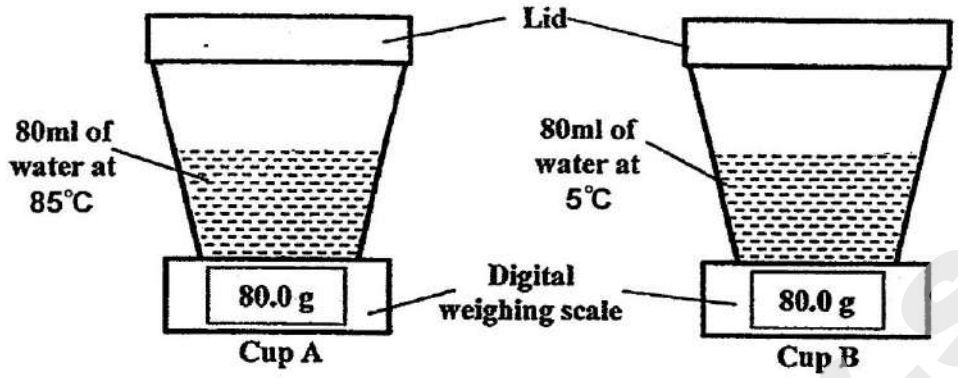
What state(s) of water might be observed in the test tube and in the beaker after 15 minutes and after 3 hours respectively?

	After 15 minutes		After 3 hours	
	Test tube	Beaker	Test tube	Beaker
(1)	Solid	Liquid	Liquid	Liquid
(2)	Solid and Liquid	Liquid	Liquid	Liquid
(3)	Solid and Liquid	Solid	Solid and liquid	Liquid
(4)	Liquid	Solid	Solid and liquid	Solid

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Study the diagram below and answer questions 12 and 13.



12. Sally poured 80ml of water at 85°C in cup A and 80ml of water at 5°C in cup B as shown in the diagram above. Where would she find water droplets for both cups after half an hour?

	Cup A	Cup B
(1)	Outer surface of lid	Inner surface of cup
(2)	Inner surface of lid	Outer surface of cup
(3)	Outer surface of cup	Inner surface of lid
(4)	Inner surface of cup	Inner surface of lid

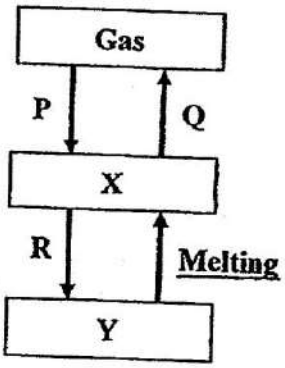
13. Sally weighed the two cups of water using similar digital weighing scales as shown in the diagram. The mass of each cup of water was 80.0g. Which one of the following sets correctly shows the masses of cups A and B half an hour later?

	Mass of cup A (g)	Mass of cup B (g)
(1)	80.0	80.0
(2)	80.8	80.8
(3)	80.0	80.8
(4)	80.8	80.0

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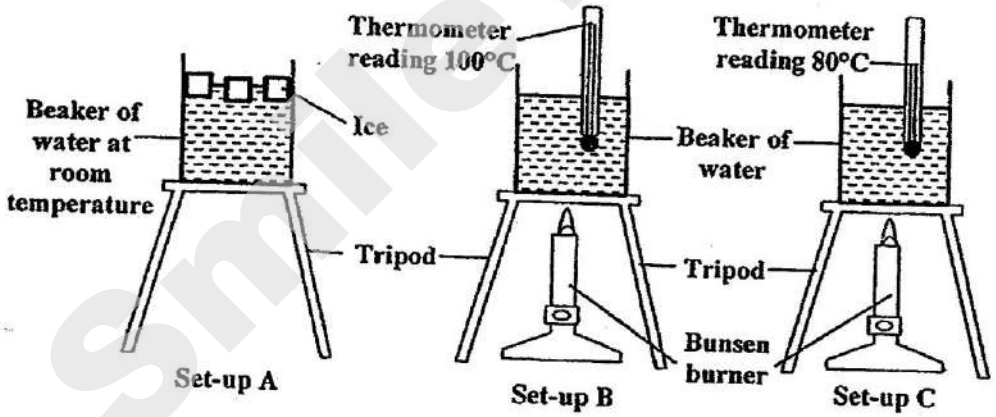
14. The diagram below represents the changes in the states of water.



Which one of the following correctly represents the processes P, Q and R and the states of water X and Y?

	Process			State of water	
	P	Q	R	X	Y
(1)	Condensation	Evaporation	Freezing	Liquid	Solid
(2)	Freezing	Condensation	Boiling	Solid	Liquid
(3)	Evaporation	Freezing	Condensation	Solid	Solid
(4)	Condensation	Boiling	Freezing	Liquid	Liquid

15. Study set-ups A, B and C below carefully.

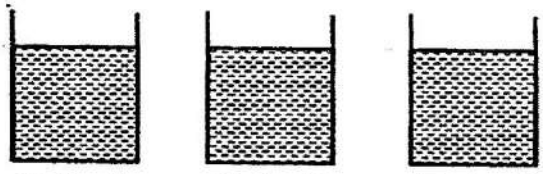


Which one of the following sets best represents set-ups where boiling and / or evaporation of the water is taking place?

	Set-up(s) where boiling is taking place	Set-up(s) where evaporation is taking place
(1)	B	A, B and C
(2)	B	A and C
(3)	B and C	A
(4)	A, B and C	A and B

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16. The diagram below shows three identical beakers containing 200ml of water each and kept at different temperatures as shown below. The three beakers are placed in the classroom with a room temperature of 28°C

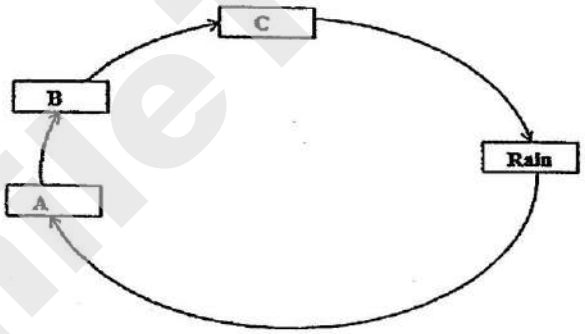


Beaker A (100°C) **Beaker B (60°C)** **Beaker C (40°C)**

Which one of the following sets shows the possible volumes of water left in the respective beakers after four hours?

	Volume of water left in beaker A (ml)	Volume of water left in beaker B (ml)	Volume of water left in beaker C (ml)
(1)	170	180	190
(2)	190	180	170
(3)	180	190	170
(4)	170	190	180

Study stages A, B and C, the various stages of the water cycle, and answer questions 17 and 18.



17. Which one of the following sets best represents A, B and C?

	A	B	C
(1)	Water in river	Cloud	Water vapour
(2)	Cloud	Water vapour	Water in river
(3)	Water in river	Water vapour	Cloud
(4)	Water vapour	Water in river	Cloud

18. Which one of the following statements is true?

(1) Evaporation occurs between A and B.
(2) Evaporation occurs between B and C.
(3) Condensation occurs between C and the rain.
(4) Condensation occurs between the rain and A.

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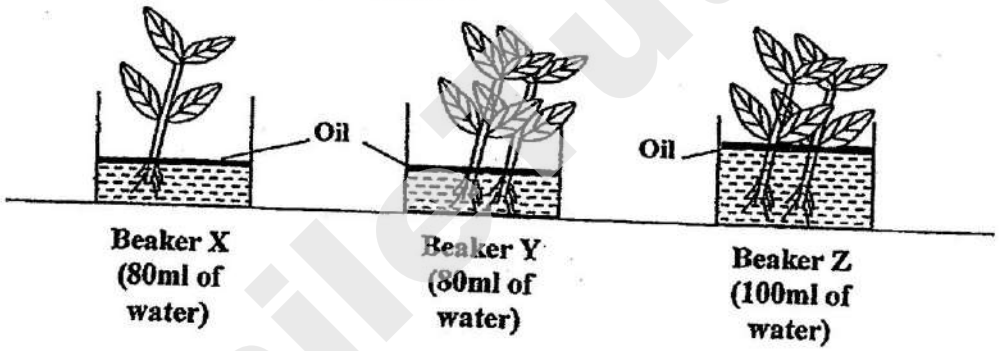
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19. Which one of the following sets of organs in the digestive system correctly indicates digestion taking place?

	Mouth	Stomach	Small intestine	Large intestine
(1)	✓	✓		
(2)			✓	✓
(3)	✓		✓	
(4)	✓	✓	✓	

20. Jonathan conducted an experiment to investigate how the number of balsam plants affec the amount of water that is absorbed. He poured 80ml of water into each beaker, X and Y, and 100ml of water into beaker Z.

He put 1 balsam plant with its roots in Beaker X. He put 2 similar balsam plants with their roots in beakers Y and Z respectively. He then added the same amount of oil on top of the water surfaces in all the three beakers.



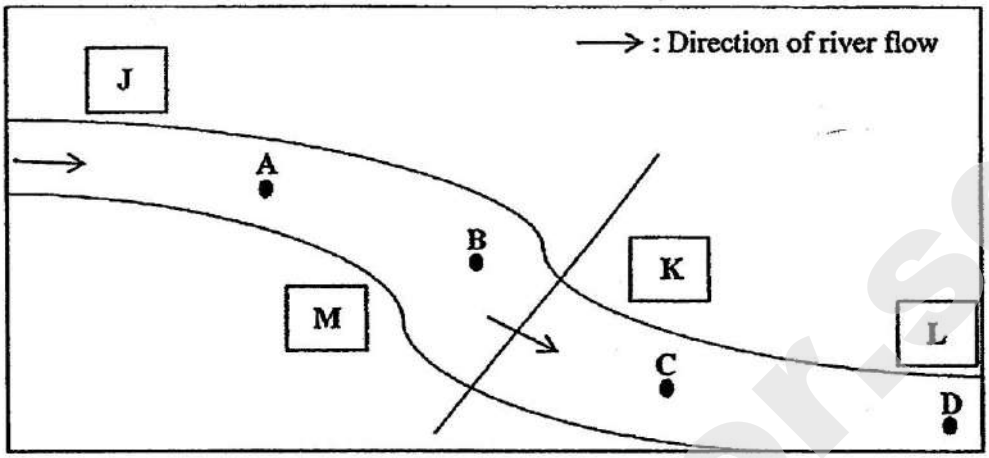
What changes must Jonathan make to his experiment to make it

A: Add one more balsam plant in beaker X.
B: Add one more balsam plant in beaker Z.
C: Reduce the amount of water in beaker Z to 80ml.
D: Have another similar beaker with 80ml of water and the same layer of oil but without any balsam plant as a control.

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

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21. The diagram below shows factories J, K, L and M located along a river.



It was found that harmful chemicals had been dumped into the river, which affected the survival of fish X in the river. The table below shows the number of fish X found at the four locations in the river.

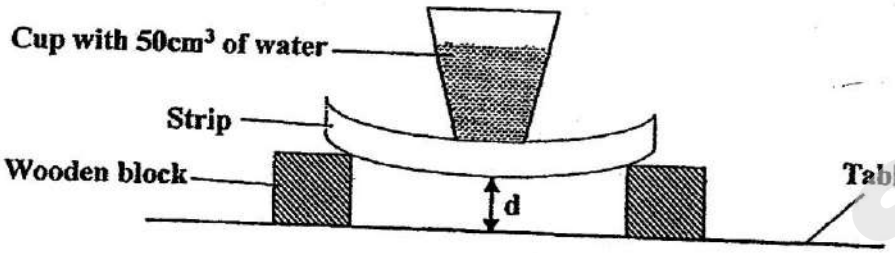
Number of fish X found at			
A	B	C	D
Many	Many	None	None

Which one of the following factories was most likely responsible for dumping these harmful chemicals in the river?

(1) Factory J
(2) Factory K
(3) Factory L
(4) Factory M

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22. Ravi prepared an experiment as shown below to compare the flexibility of four similar strips, A, B, C and D, each made of a different material.

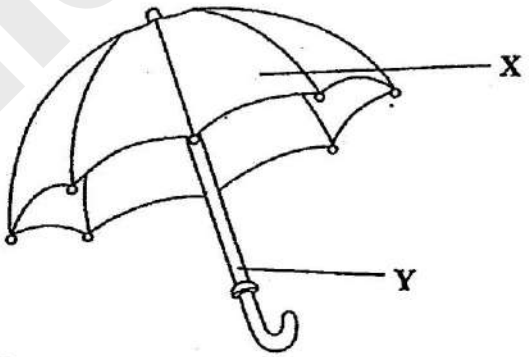


On each strip, he placed a cup containing 50cm³ of water. The distance, d, is between the lowest point of the strip and the table. Distance d was 8cm at the start of the experiment.

His results are shown below.

Strip	d (cm)
A	6
B	8
C	2
D	3

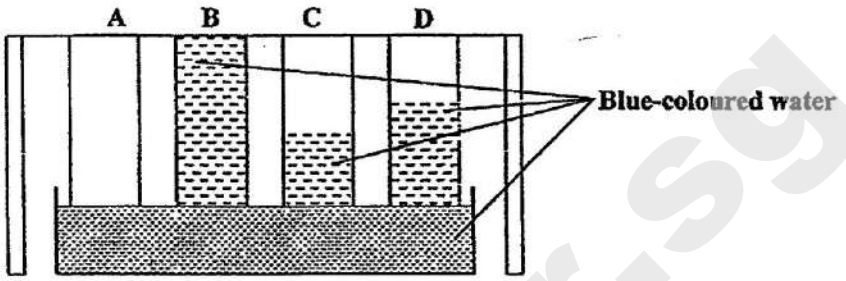
Based on the above results which material is the most suitable to make parts X and Y of the umbrella?



	Material	
	X	Y
(1)	A	D
(2)	B	C
(3)	C	B
(4)	D	A

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23. Christine conducted an experiment to compare how well different types of materials can absorb water. She placed four strips of materials, A, B, C and D, of identical sizes in a basin with blue-coloured water for 10 minutes. The results of the experiment are shown in the diagram below.



Christine had to decide which strip, A, B, C or D, she should use to make parts P and Q of a baby's diapers as shown in the diagram below.

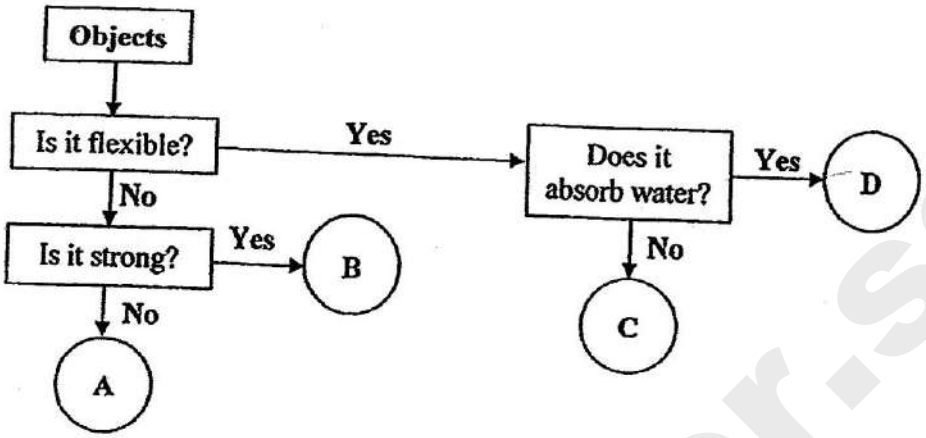


Part P has to absorb moisture and part Q has to prevent liquids from seeping through. Which materials, A, B, C or D, should Christine choose to make parts P and Q respectively?

	Part P	Part Q
(1)	A	D
(2)	B	A
(3)	B	D
(4)	D	C

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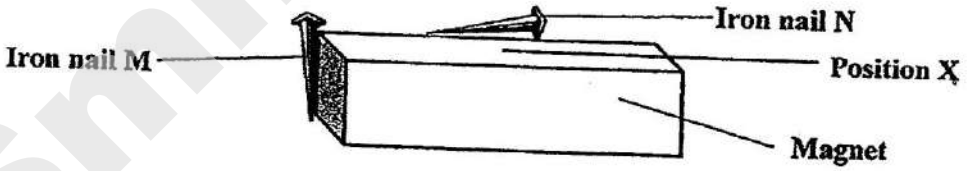
24. Study the flowchart below carefully.



Which one of the following best represents A, B, C and D?

	A	B	C	D
(1)	Chalk	Iron nail	Plasticine	Sponge
(2)	Sponge	Chalk	Iron nail	Plasticine
(3)	Plasticine	Sponge	Chalk	Iron nail
(4)	Iron nail	Plasticine	Sponge	Chalk

25. Daisy placed two similar iron nails, M and N, next to a magnet as shown below.



When she picked up the magnet, she realised that iron nail M remained attracted but iron nail N fell off. Which of the following statements explain(s) Daisy's observation?

A: Iron nail N was repelled by the magnet.
B: The magnet lost its magnetism at position X.
C: Iron nail M remained attracted because magnetism is strongest at the poles.

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

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26. Jack used a magnet to stroke steel bar XY repeatedly as shown in diagram 1 below.

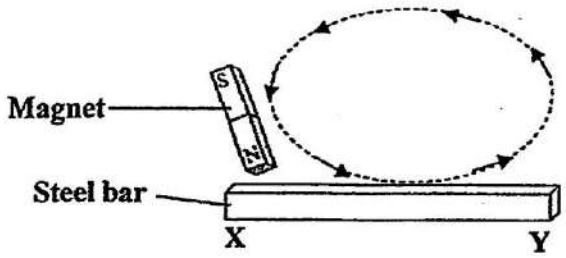
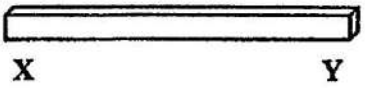
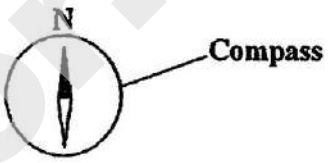


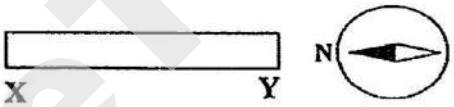
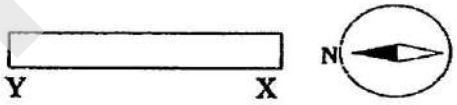
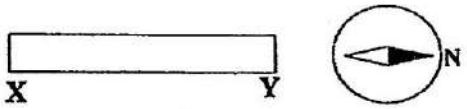
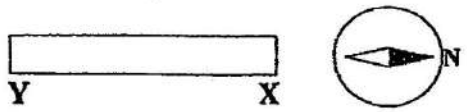
Diagram 1

He then brought the ends of steel bar XY close to a compass as shown below.





Which of the following are possible observations?

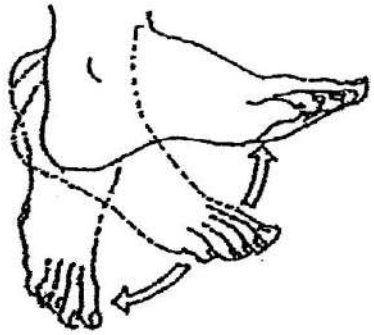
Possible observations	
A:	
B:	
C:	
D:	

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

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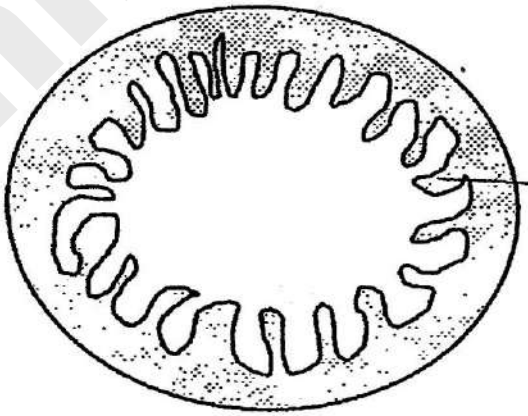
27. The diagram below shows how a foot moves.



Which one of the following systems needs to work together to allow the foot to move? A tick "✓" indicates that the system is needed to allow the foot to move.

	Digestive system	Circulatory system	Skeletal system	Muscular system
(1)	✓	✓	✓	
(2)			✓	✓
(3)	✓	✓		✓
(4)	✓	✓	✓	✓

28. The diagram below shows the cross section of the small intestine in the human body.



Why are there many folds in the intestinal wall?

(1) It allows food to stay in the small intestine for a longer time.
(2) It allows the undigested food to be pushed into the large intestine.
(3) It allows more digestive juices to be secreted in the intestinal wall.
(4) It allows a greater surface for digested food to be absorbed at a faster rate.

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Rulang Primary School

SEMESTRAL ASSESSMENT 1
SCIENCE
2018

Name: _____ ( ) **Marks:** _____ / 44

Level: Primary 5 _____ **Date:** 8 May 2018

Class: Primary 5 ( ) **Parent's**

Signature: _____

BOOKLET B

Instructions to pupils:

1. **Do not open this booklet until you are told to do so.**

2. You are required to answer **all** the questions in this paper using your own words / expressions as far as possible.

3. All drawings / diagrams must be clearly shown and labelled.

4. Marks will be deducted for wrongly spelt key words.

5. This question booklet consists of **16** printed pages, including the cover page.

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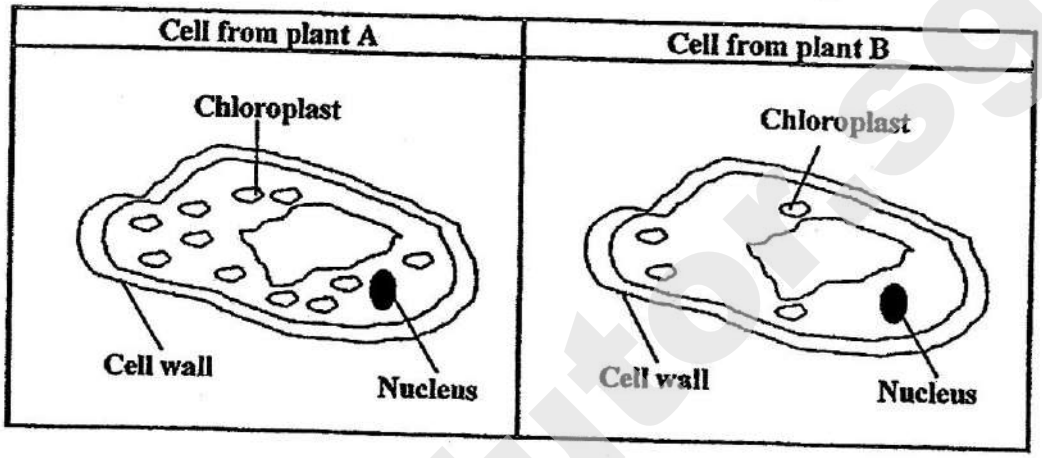
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Section B (44 marks)

Write your answers to questions 29 to 40 in this booklet.

29. Esther observed two cells from plants A and B respectively under a microscope as shown below.



(a) State one difference that Esther observed between the cell from plants A and B. (1 m)

_____

_____

(b) Plant A and plant B need to make the same amount of food to survive. Based on your observations in part (a), which plant needs more sunlight to survive? Explain your answer clearly. (2 m)

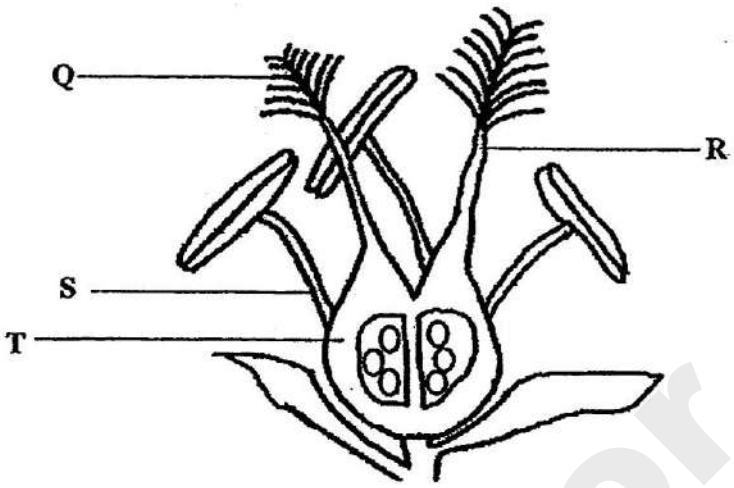
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30. The diagram below shows the cross section of a flower.



(a) In the diagram above, draw a line and label the part that produces the male reproductive cell with the letter "M". (1 m)

(b) In the diagram above, draw a line and label the part that produxes the female reproductive cell with the letter "F". (1 m)

(c) How is the function of "Q" in the diagram above different from the function of "M" in (a)? (1 m)

_____

_____

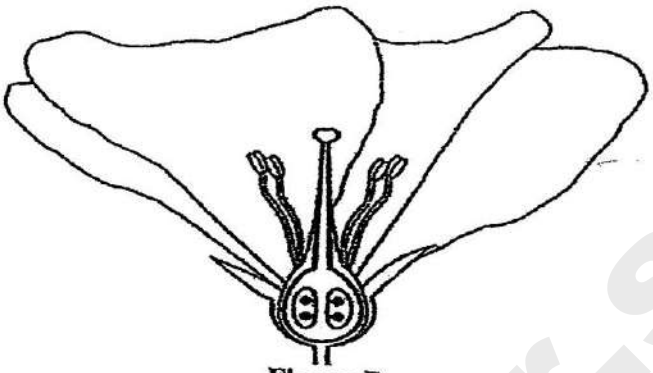
(d) Classify parts Q, R, S and T under male or female parts of the flower in the table below. (2 m)

Male part(s)	Female part(s)

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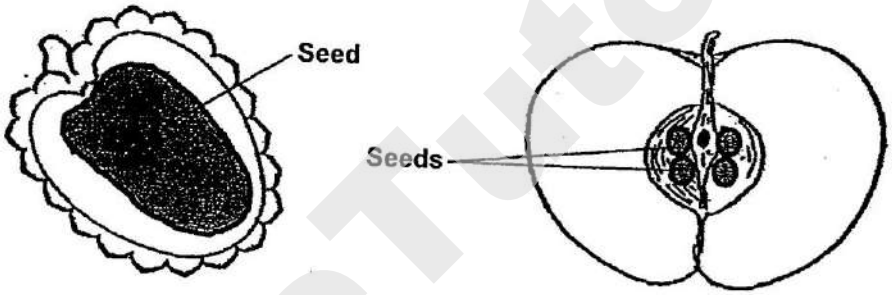
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31. John made a sketch of the cross-section of flower P as shown below.



Flower P

He also made a sketch of the cross-sections of fruits X and Y as shown below.



Fruit X

Fruit Y

(a) Based on what you can observe in the sketches above only, explain which fruit, X or Y, probably comes from flower P. (1 m)

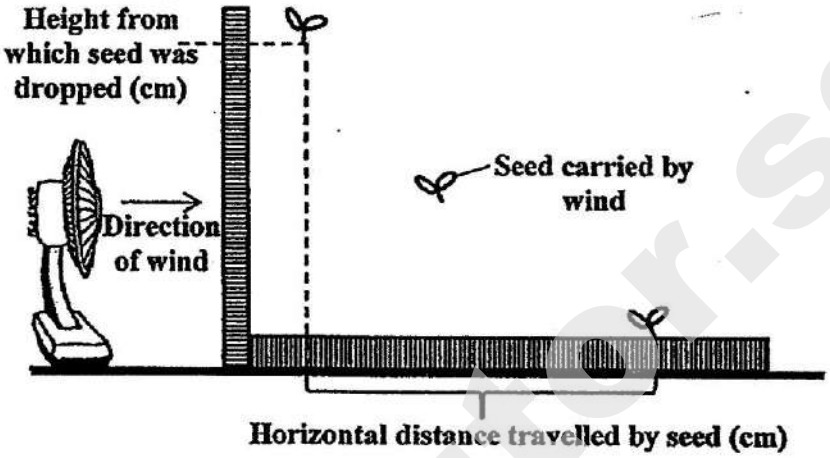
(b) Describe the process that takes place after flower P pollinated. (1 m)

(c) Explain how flower P becomes a fruit after the process described in (b). (1 m)

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32. Wendy carried out an experiment with a seed dispersed by wind from a fan in an enclosed room. She dropped the seed from various heights as show in the diagram below.



She recorded the horizontal distance travelled by the seed before it landed in the table below.

Height from which seed was dropped (cm)	Horizontal distance travelled by seed (cm)			Average Horizontal distance travelled by seed (cm)
	1st reading	2nd reading	3rd reading	
5	7	12	11	10
15	27	29	34	30
25	49	54	47	50

(a) Why did Wendy have to conduct the experiment three times? (1 m)

_____

_____

(b) Based on the results, what was the relationship between the height which the seed was dropped from and the average distance travelled by the seed? (1 m)

_____

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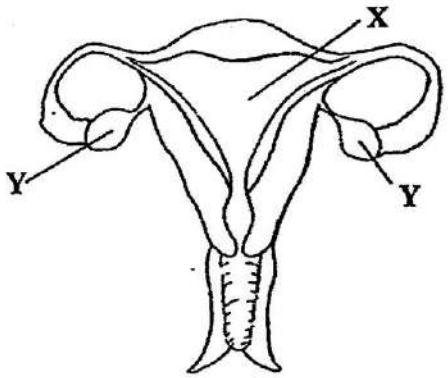
(c) State one other variable Wendy must keep constant to ensure that her experiment was fair.
(1 m)

(d) Based on Wendy's results, why was it an advantage for the seed to be found on a tall tree? Explain your answer clearly.
(2 m)

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33. The diagram below shows the female human reproductive system.



Female human reproductive system

(a) Describe the process that may happen after Y releases an egg and comes in contact with a male reproductive cell. (1 m)

(b) What happens after the process described in (a) occurs? (1 m)

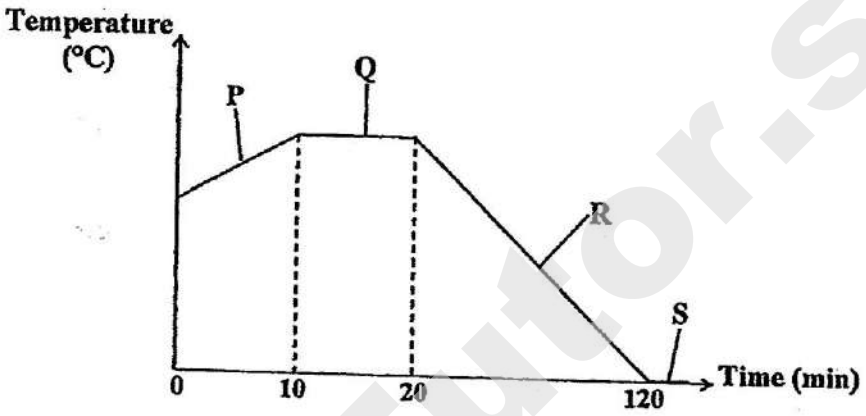
(c) Due to health complications, some women need to have the two parts Y removed. Will they still be able to have children? Explain your answer clearly. (2 m)

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34. Suzie heated some water at room temperature. After ten minutes, the water started boiling. She allowed the water to continue boiling for ten minutes before placing it immediately in the freezer. 100 minutes later, she noticed that the water had frozen completely.

Suzie plotted a graph to record the temperature of the water for the entire duration of her experiment.



(a) Which parts of the graph, P, Q, R or S, show the (2 m)

(i) boiling point of water: _____

(ii) freezing point of water: _____

(b) What could Suzie add to the water to shorten the time for the water to be frozen completely in the freezer? How would that help to shorten the time? (1 m)

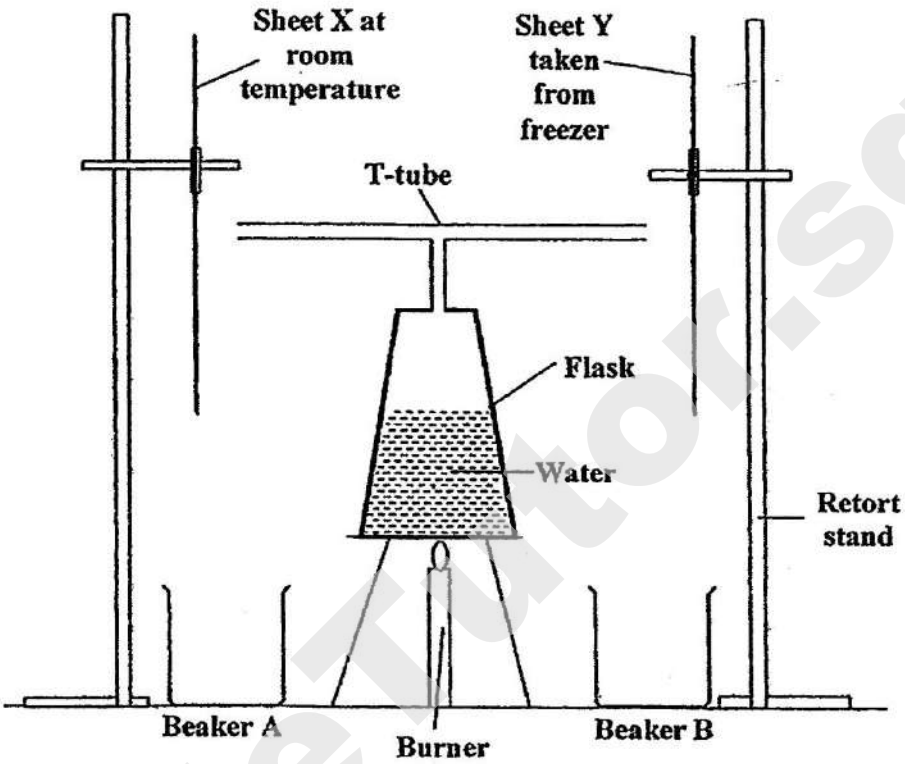
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35. Grace suspended two sheets, X and Y, of the same size and material, at the same distance from the ends of a T-tube attached to a flask containing water, as shown below.

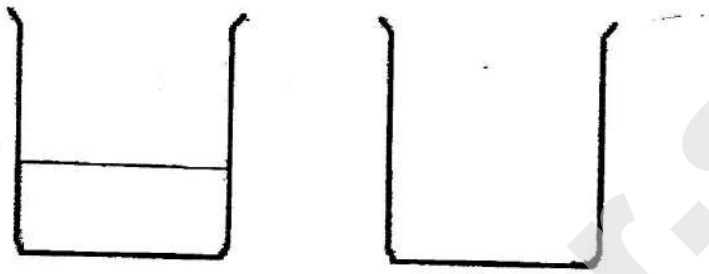


Before she started heating the water in the flask, sheet X was at room temperature and sheet Y was just taken out of the freezer. The water in the flask was heated until it boiled. She continued to let the water boil for another 10 minutes. 10 minutes later, she observed some water collected in both beakers A and B.

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(a) The amount of water collected in beaker A after 10 minutes of boiling is shown below. Draw the level of water Grace would observe in beaker B only. (1 m)



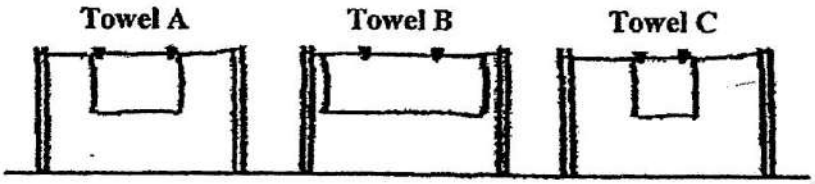
Beaker A Beaker B

(b) Why was the amount of water collected in beaker B different from the amount collected in beaker A? Explain your answer clearly with reference to the experiment on the previous page. (2 m)

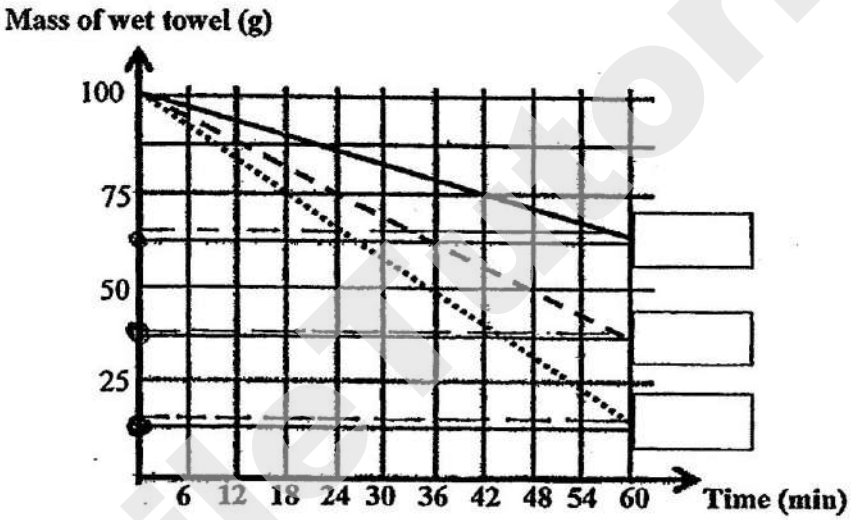
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36. Three towels, A, B and C, each of mass 10g and of the same shape and size, were folded differently. Each of them was completely soaked with 90ml of water and hung to dry at the same location as shown below.



The mass of each towel was measured every six minutes for an hour. A line graph was plotted using the results as shown below.



(a) Write down the letters, "A", "B" and "C" in the correct boxes above to indicate the respective graphs for towels A, B and C. (1 m)

(b) Suggest one more variable that should be kept constant to ensure a fair test. (1 m)

_____

_____

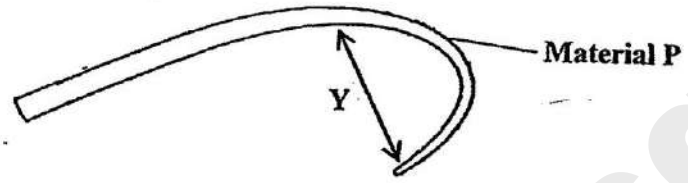
(c) Which towel took the longest time to dry? Explain your answer clearly. (2 m)

_____

_____

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37. Bala bent a pole made of material P as much as he could and measured the distance, Y, as shown in the diagram below. He then repeated the experiment for material Q and material R.



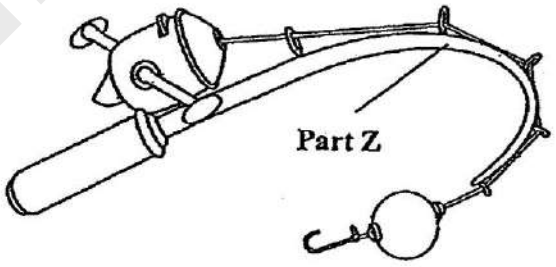
His results are shown in the table below.

Material	Y (cm)
P	19
Q	17
R	10

(a) State two variables Bala had to keep constant to make it a fair test. (2 m)

(b) Which property of materials was Bala trying to test? (1 m)

Bala wants to choose a material to make part Z of a fishing rod so that it can bend as much as possible to catch a big fish as shown below.



(c) Based on his results, which material, P, Q or R, should he use to make part Z? Explain your answer clearly. (1 m)

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38. Mary set up an experiment as shown below. When she gave a gentle push to the toy car at point A, the car moved down the ramp before stopping at point C as shown in diagram 1.

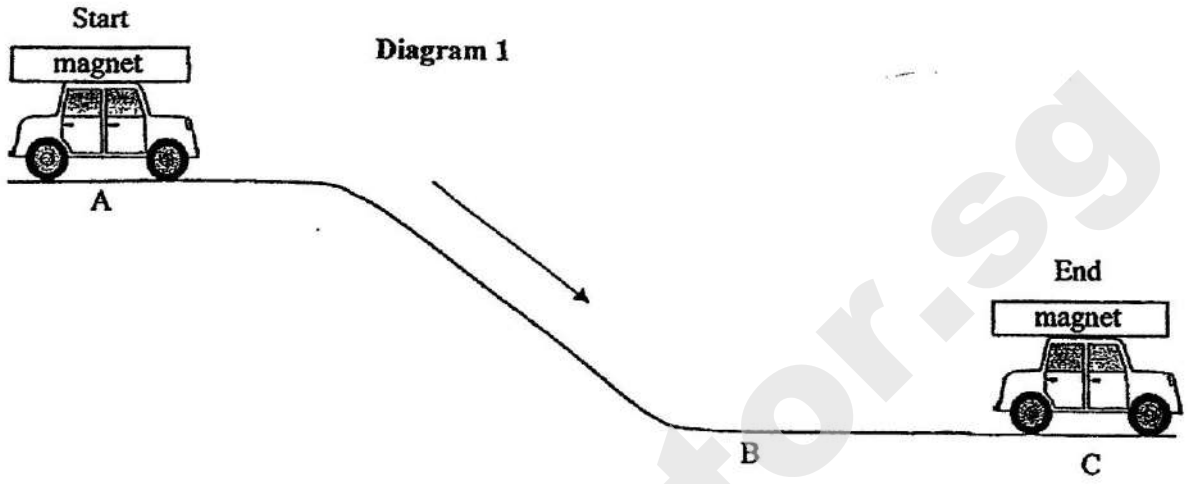


Diagram 1

Mary repeated the experiment. She stuck an object X on a wooden block at point Q. This time, when she gave the same gentle push to the car at point A, the car moved down the ramp and came to a stop at point B as shown in diagram 2. The magnet on the car did not touch object X.

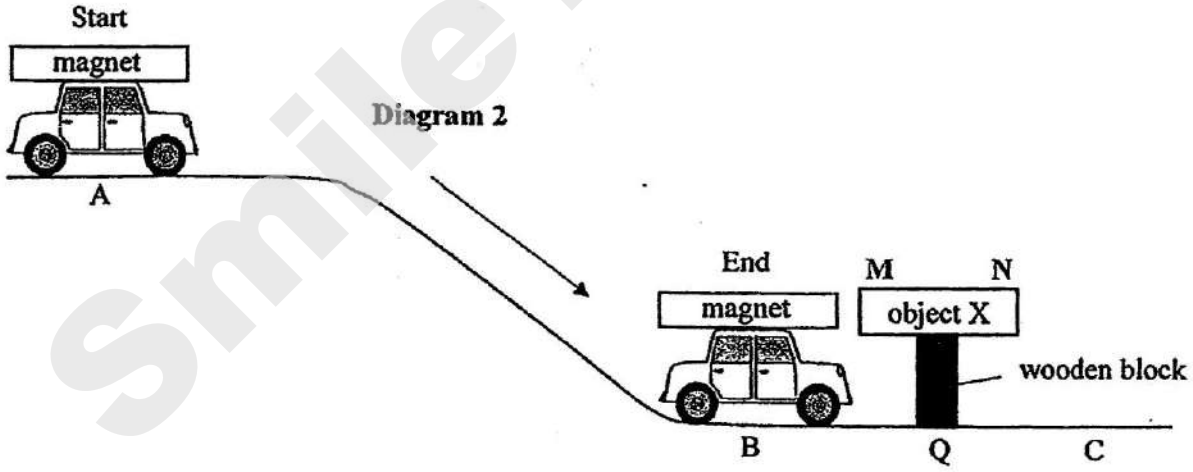


Diagram 2

(a) Write down what object X was. (1 m)

_____

_____

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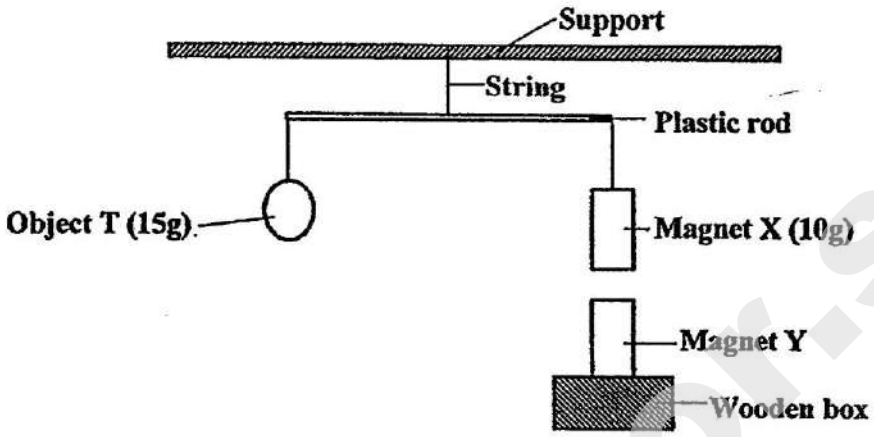
(b) Explain why the magnet on the car did not touch object X. (2 m)

(c) Mary moved the toy car from point B to point A and repeated the experiment below. However, object X is flipped around such that end N is facing the left while end M is facing the right. When Mary gave the same gentle push to the car at point A , what would she observe? Write down two different observations. (2 m)

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39. Object T, with a mass of 15g, and magnet X, with a mass of 10g, are balanced on a plastic rod as shown in the diagram below. Magnet Y is stuck on a wooden box below magnet X.

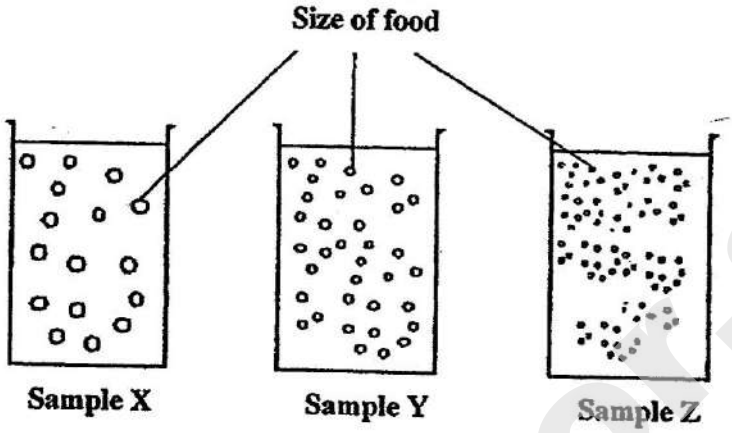


What will happen to the right side of the plastic rod when magnet Y is replaced by a copper rod of similar size and shape? Explain your answer clearly. (2 m)

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40. Three samples of partially-digested food were taken from three different parts of the human digestive system.



(a) If sample Y was taken from the stomach, where could samples X and Z be taken from? (1 m)

Sample X: _____

Sample Z: _____

(b) Compare the sizes of the partially-digested food particles in samples Y and Z. Why was there a difference in the sizes found in both samples? Explain your answer clearly. (2 m)

_____

_____

_____

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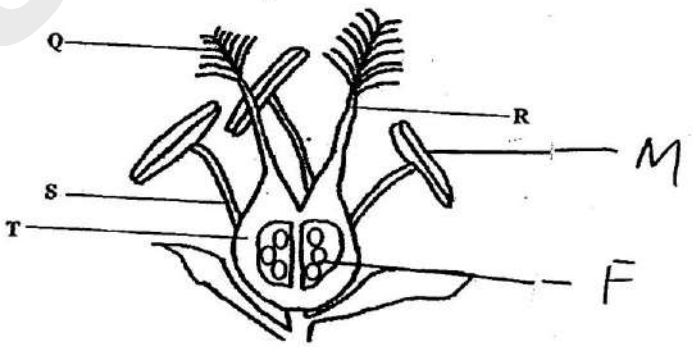
SCHOOL : RULANG PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA1

CONTACT :

SECTION A

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	2	3	3	4	2	1	4	2	1
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	2	3	1	1	1	3	1	4	4
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
2	3	2	1	2	2	4	4		

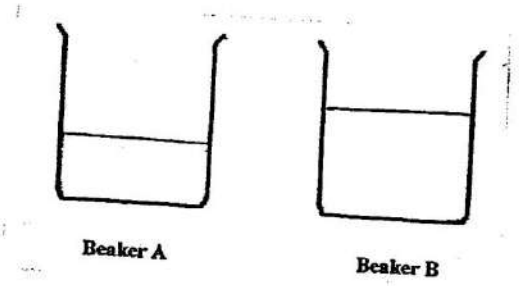
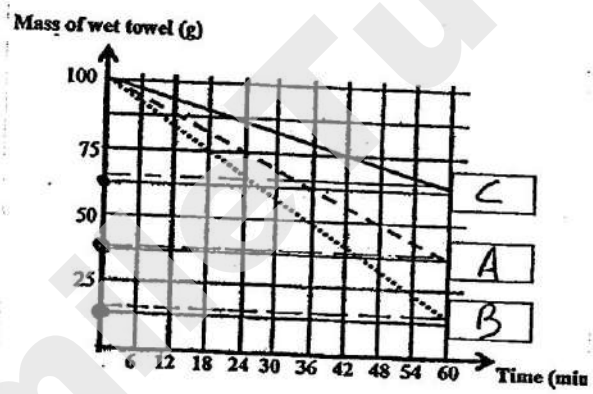
SECTION B

Q29)	a)The cell from Plant A has more chloroplasts in the cell from Plant B. b)Plant B needs more sunlight to survive. The cell from plant B has less chloroplasts so it needs to trap more sunlight to make the same amount of food to survive.
Q30)	a)b) 

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	c)Part Q receive the male reproductive cell whereas Part M produces the male reproductive cell. d)Male part (s) Female part (s) S Q R T
Q31)	a)Fruit Y. Fruit Y has more seeds than fruit X. Since flower P has many ovules, Fruit Y comes flower P. b)The male reproductive cell from the pollen grain will fuse with the female reproductive cell. c)The petals and male reproductive parts of flower P will wither and drop off while the ovary swells and develop into a fruit as the ovules develop into seeds.
Q32)	a)This is to reduce experimental errors and to ensure her results are reliable and consistent. b)As the height that the seed was dropped from, the average horizontal distance travelled by the seed also increases. c)The amount of wind speed of fan wind power strength of wind from fan distance between fan and seed. d)The seed was dispersed further away from the parent plants to reduce overcrowding and competition for space, water sunlight and nutrients.
Q33)	a)The male reproductive cell will fuse with the female reproductive cell. b)The cell will undergo cell division and it will then attach itself to the wall of the womb develop into a baby. c)They will not be able to have children .Without any ovary, they cannot produce any female reproductive cells for fertilisation to occur.
Q34)	a)i)Q ii)S b)She could add ice cubes to the water. The water lose heat to the ice tubes thus its temperature.
Q35)	

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	a)  b)When the warm water vapour or steam comes in contact with hot cooler sheet Y, it will lose heat faster and condense to become more water droplets.
Q36)	a)  b)The material of the towel should be kept constant. / The material of the towel./ The colour of the towel . / The type of fabric of the towel. c)It is towel C. It had the smallest exposed surface area water evaporated as the rate of evaporation is the slowest.
Q37)	a)The length of material. The thickness of material. The size of pole. The force used to bend each material . b)Bala was trying to test the flexibility of the materials. c)It is material R. It bent the most thus it is the most flexible.
Q38)	a)Object X was a magnet. It was a magnet.

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	b)As object X is a magnet and the two like poles of the two magnet are facing other, thus they would repel. c)The two magnets attracted each other. The toy car moved down even faster.
Q39)	The right side of the plastic rod will move up. Copper is a non-magnetic material. Hence, magnet X will not be attracted to the copper rod.
Q40)	a)Sample X : Mouth / gullet Sample Z : Small intestine / large intestine / rectum anus b)Food particles in sample Y one bigger than those in food sample Z. Food sample Z is broken down further to simples substances in the small intestine.

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14

SINGAPORE CHINESE GIRLS' SCHOOL (PRIMARY)

FIRST SEMESTRAL ASSESSMENT 2018

NAME: _____( ) DATE: 3 May 2018

CLASS: PRIMARY 5 SY

Parent's Signature:

_____

SCIENCE

BOOKLET A

28 questions

56 marks

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

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

FOLLOW ALL INSTRUCTIONS CAREFULLY.

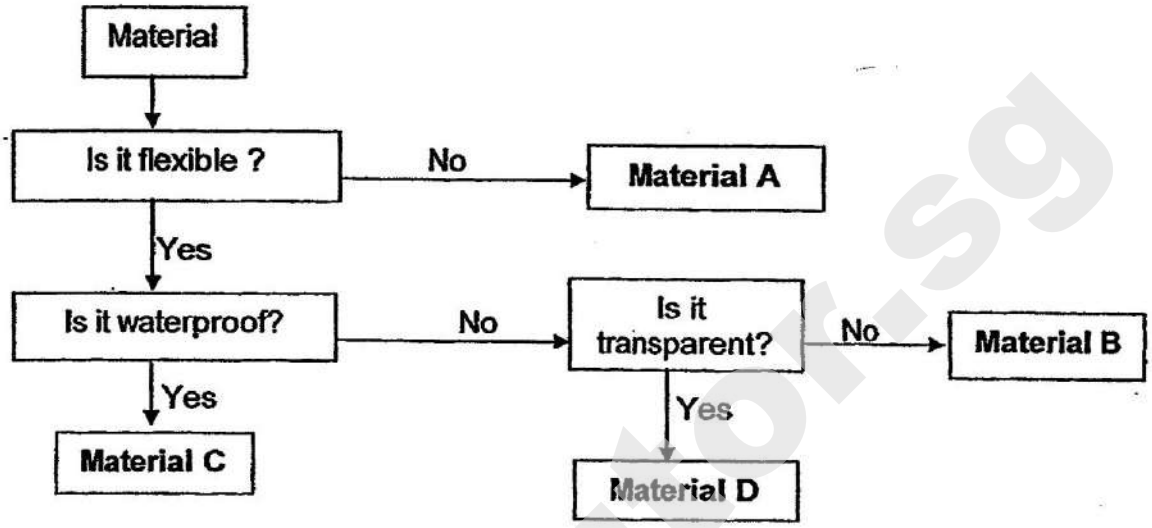
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Booklet A (56 marks)

For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

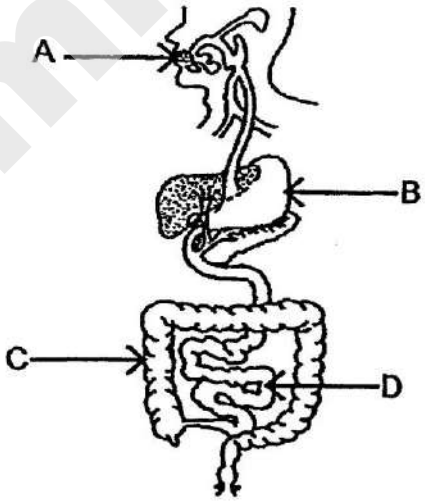
1. Study the classification chart below.



Which one of the materials should Calvin use to make a raincoat?

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

2. Study the diagram of the human digestive system shown below.

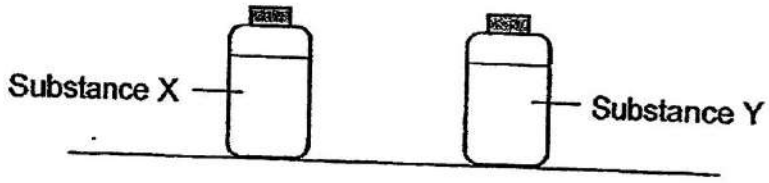


Which part of the human digestive system allows digested food to enter the bloodstream?

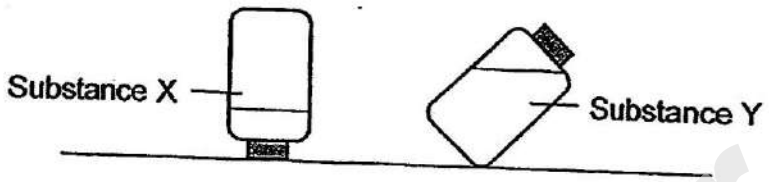
1) C only
2) D only
3) B and C only
4) A, B and D only

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3. The diagram below shows 2 substances, X and Y, in 2 identical bottles.



Alexis then changed the position of the bottles and observed what happened to substances X and Y as shown below.

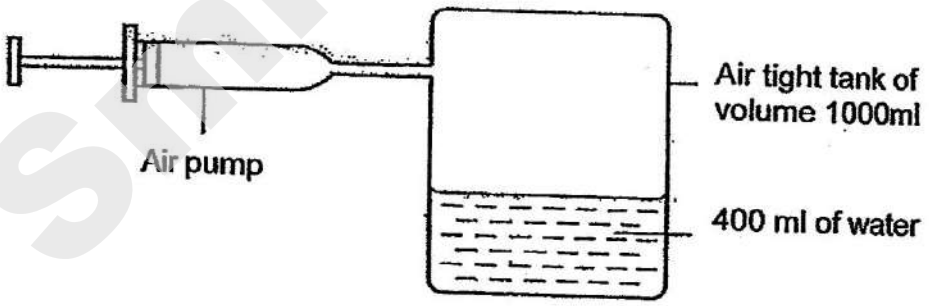


Which of the following statements are true about Substance X and Y?

A: Only Substance Y is a liquid.
B: Only Substance X is a gas.
C: Both Substance X and Y are liquids.
D: Substance X and Y cannot be compressed.

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

4. An experiment was set-up as shown below.



Which of the following will happen to the water and air in the tank after 3 more pumps of air was pumped into the tank?

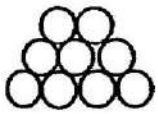
	Volume of water	Volume of Air	Mass of Air
1)	Decrease	Increase	Increase
2)	Remain the same	Remain the same	Remain the same
3)	Decrease	Increase	Remain the same
4)	Remain the same	Remain the same	Increase

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5. Which one of the following processes is common between human and plant reproduction?

1) Germination
2) Seed dispersal
3) Pollination
4) Fertilisation

6. Delia has 9 identical marbles as shown below.

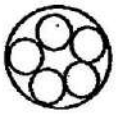


Marbles

She tried to put as many marbles as possible into different containers, P, Q and R, as shown below.



Container P
(9 marbles)



Container Q
(5 marbles)



Container R
(7 marbles)

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

1) The marbles cannot be compressed.
2) The marbles have no definite volume.
3) The marbles take the shape of the container.
4) The marbles have a definite volume but no definite shape.

7. Which one of the following diagrams below is the best representation of the composition of air in the surrounding?

Legend:


Nitrogen


Oxygen


Other gases

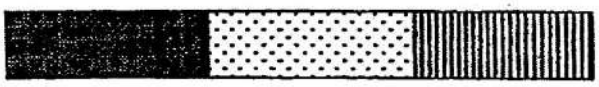
1)



2)



3)

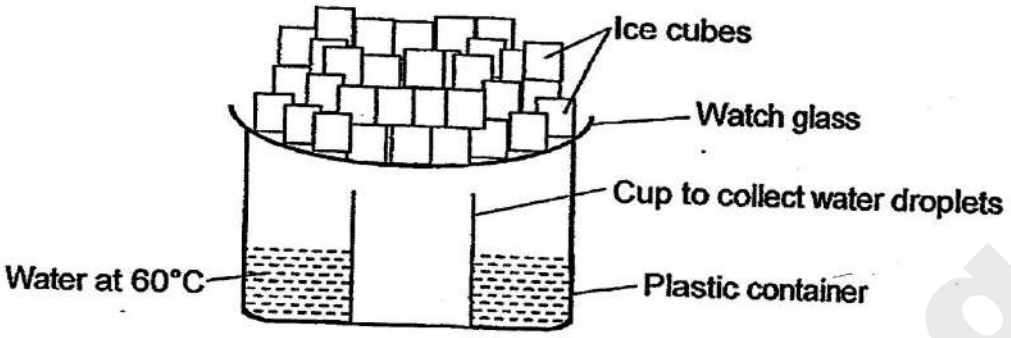


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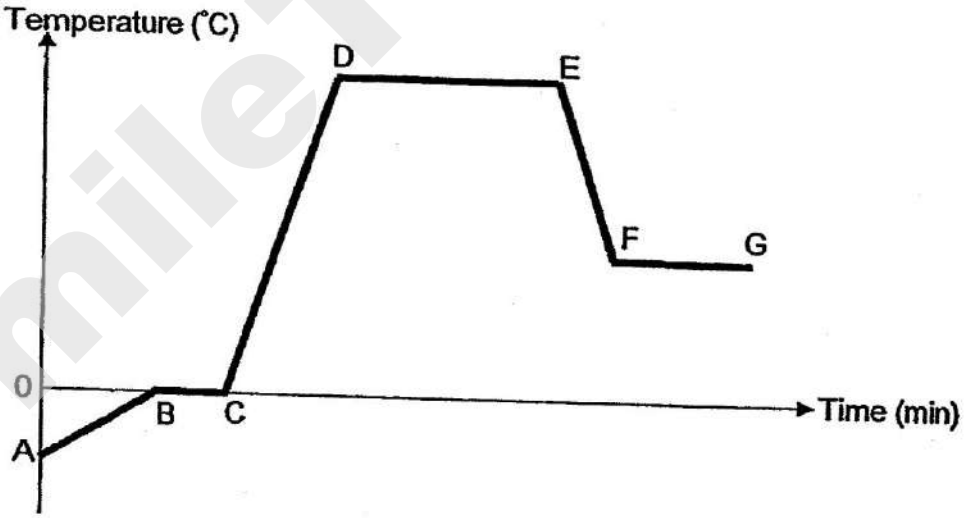
8. Janice set-up an experiment as shown below.



Which one of the following is the best method to increase the amount of water droplets collected in the cup?

1) Add more ice on the watch glass.
2) Use a bigger cup to collect the water droplets.
3) Increase the temperature of the water in the plastic container to 85°C.
4) Decrease the temperature of the water in the plastic container to 30°C.

9. The graph below shows how the temperature of water changed over a period of time.

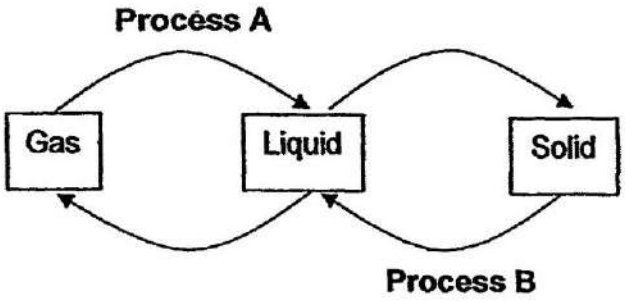


Based on the graph above, which one of the following statements is correct?

1) Water is freezing between FG.
2) Water is losing heat between AB.
3) Heat source is removed at point F.
4) Water is gaining heat between BC.

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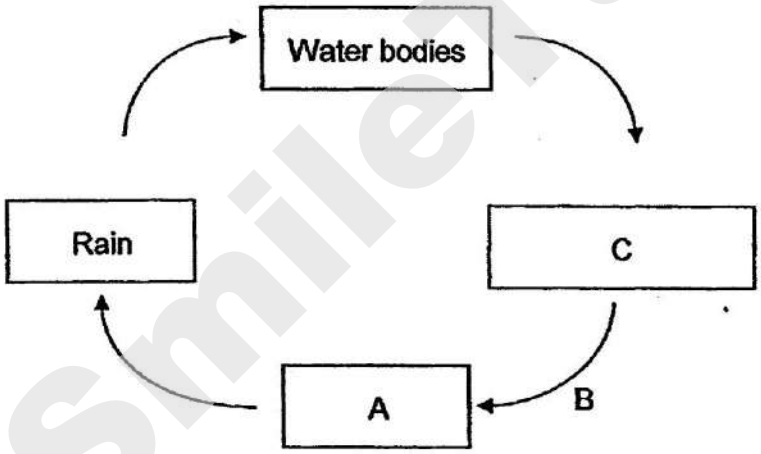
10. The diagram below represents the changes of state of water.



Which one of the following correctly represents processes A and B?

	Process A	Process B
1)	Condensation	Evaporation
2)	Freezing	Melting
3)	Evaporation	Freezing
4)	Condensation	Melting

11 The diagram below shows the water cycle.



What do A and B represent?

	A	B
1)	Water vapour	Evaporation
2)	Water vapour	Condensation
3)	Water droplets	Evaporation
4)	Water droplets	Condensation

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12. The boiling point and melting point of 2 substances, P and Q are shown in the table below.

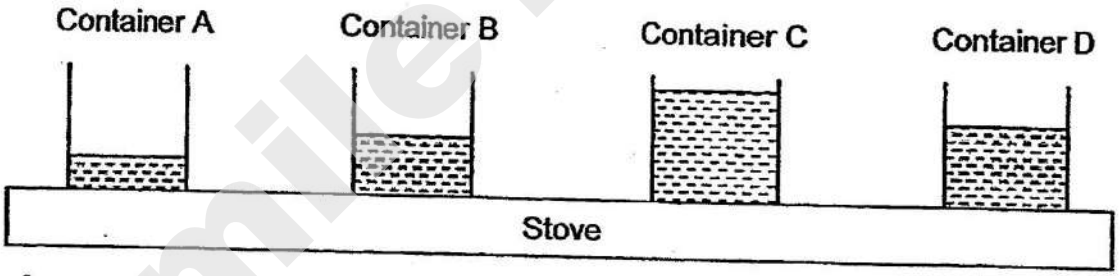
	Substances	
	P	Q
Boiling point	590°C	70°C
Melting point	2°C	5°C

At which temperatures are Substances P and Q liquids?

1) 0°C
2) 2°C
3) 15°C
4) 80 °C

13. Ivan heated Containers, A, B, C and D, on a stove for 30 minutes. The containers are made of different materials but are of the same size and thickness. They are filled with equal amounts of water at the start of his experiment.

After 30 minutes, Ivan recorded the amount of water left in each container as shown below.

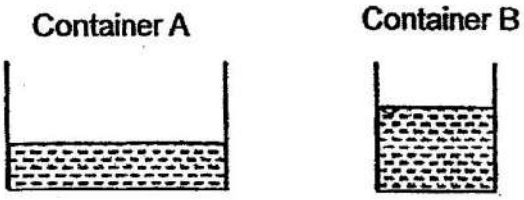


Arrange Containers, A, B, C and D, starting from the poorest conductor of heat to the best conductor of heat.

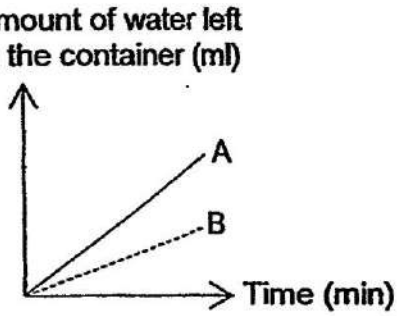
1) A, B, C, D
2) A, B, D, C
3) C, D, B, A
4) C, D, A, B

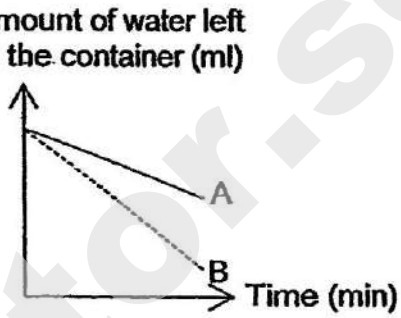
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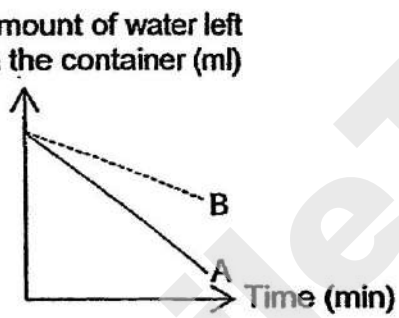
14. Wally poured an equal amount of water into 2 different Containers, A and B, as shown below. He placed them in the Science room and recorded how the amount of water in each container changed over a period of time.

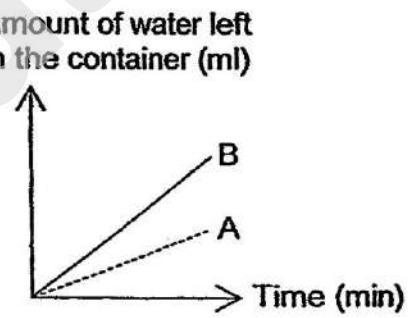


Which one of the following graphs correctly represents the above experiment?

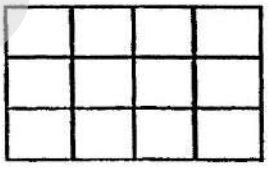
1) 

3) 

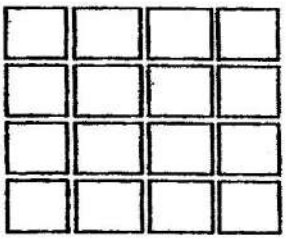
2) 

4) 

15. A worker laid identical floor tiles as shown in Layouts A and B below.



Layout A



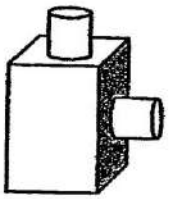
Layout B

Which one of the following correctly explains why the tiles in layout, A or B, crac on a hot day?

1) Layout B. The tiles lost heat and expanded.
2) Layout A. The tiles lost heat and contracted.
3) Layout A. The tiles gained heat and expanded.
4) Layout B. The tiles gained heat and contracted.

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16. Which one of the following shadows **cannot** be formed by Object A when a torch is shone on it?



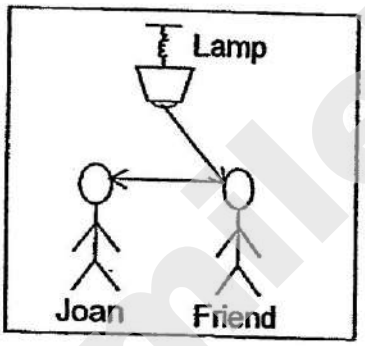
1)

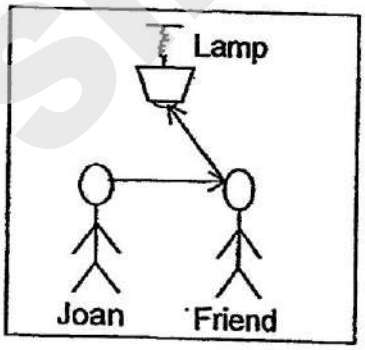

2)

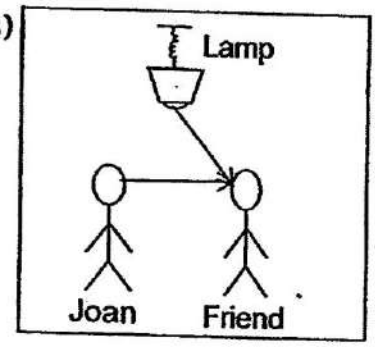

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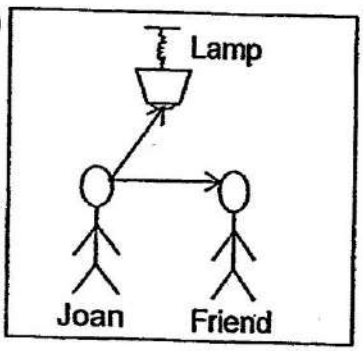

4)


17. Which one of the following diagrams shows how light travels to Joan's eyes to enable her to see her friend?

1)


2)


3)


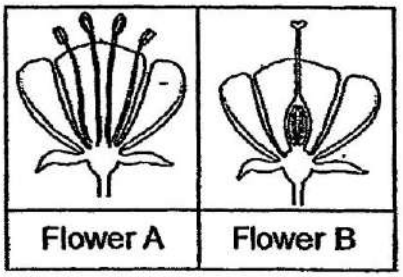
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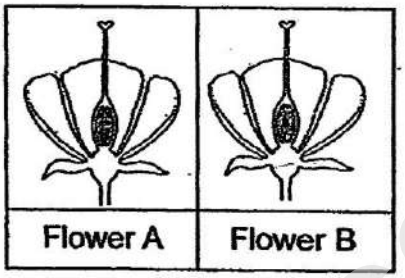
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18. Pollen grains from Flower A pollinated Flower B resulting in a fruit with many seeds. Which of the following would most likely represent Flower A and Flower B?

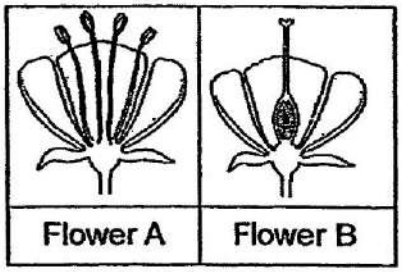
1)



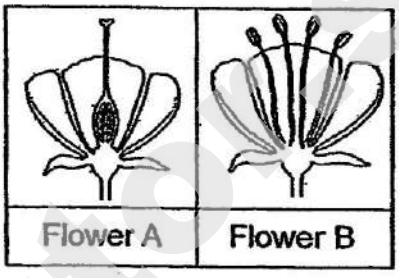
3)



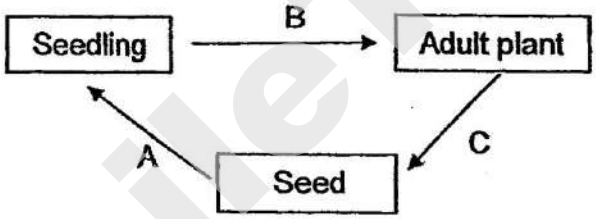
2)



4)



19. The diagram below shows the life cycle of a flowering plant.



At which stages do the processes of fertilisation, seed dispersal and germination take place?

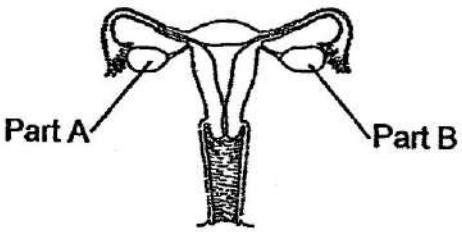
	Fertilisation	Seed dispersal	Germination
1)	A	B	C
2)	C	A	A
3)	C	B	C
4)	A	A	B

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20. Which of the following statements about the life cycle of the cockroach and the chicken is true?

1) Both the young moult.
2) Both the young resemble the adult.
3) The young of the cockroach can fly but the young of the chicken cannot.
4) The cockroach has 4 stages in its life cycle but the chicken has 3 stages.

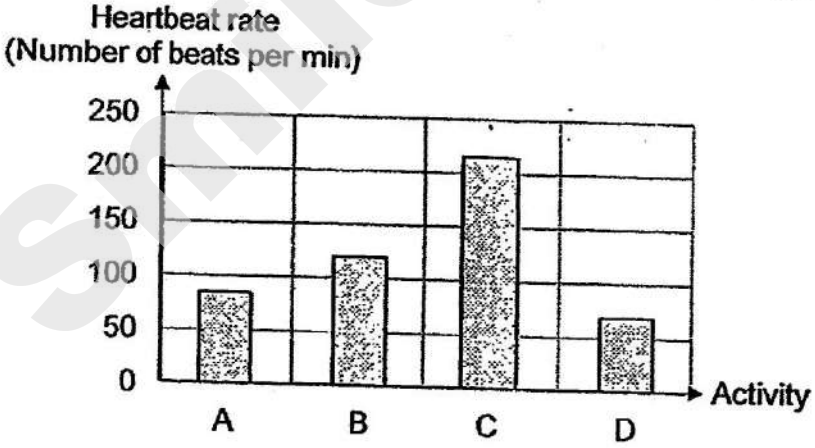
21. The diagram below shows the reproductive system of a human being.



Is the above system still able to function if only Part A has been removed?

1) No. The sperms will die.
2) No. There are no more eggs left.
3) Yes. Eggs can still be produced by Part B.
4) Yes. Sperms can still be produced by Part B.

22. Matthew carried out 4 activities, A, B, C and D. He carried out each activity for 10 minutes and rested for 30 minutes before starting the next activity. He then recorded his average heartbeats per minute as shown in the graph below.

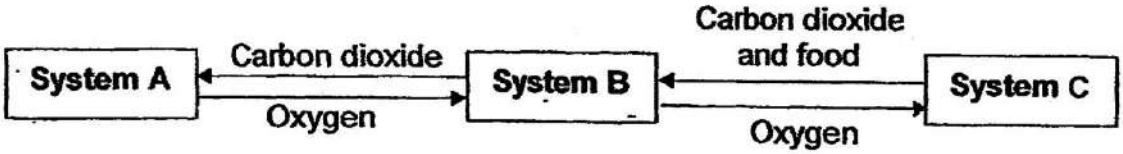


Based on the graph above, which one of the following, A, B, C and D matches his activities of sleeping, walking, running and reading?

	Activity A	Activity B	Activity C	Activity D
1)	running	walking	reading .	sleeping
2)	reading	sleeping	walking	running
3)	walking	sleeping	running	reading
4)	reading	walking	running	sleeping

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23. The flowchart below shows how the human body systems work together.



What do Systems, A, B and C represent in the flowchart above?

	System A	System B	System C
1)	Respiratory	Circulatory	Digestive
2)	Circulatory	Respiratory	Digestive
3)	Digestive	Respiratory	Circulatory
4)	Digestive	Circulatory	Respiratory

24. Which of the following correctly shows the differences between inhaled air and exhaled air?

		Inhaled air	Exhaled air
A:	Amount of carbon dioxide	Lower	Higher
B:	Amount of oxygen	Higher	Lower
C:	Amount of water vapour	Higher	Lower
D:	Amount of dust	Lower	Higher

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

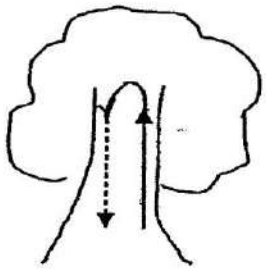
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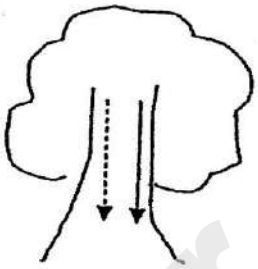
25. Which one of the diagrams below correctly represents the water-carrying tubes and food-carrying tubes in a plant?

Legend:
------ Food-carrying tubes
—— Water-carrying tubes

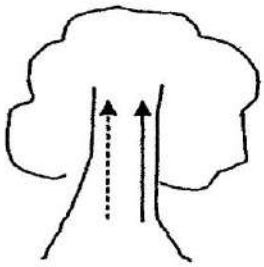
1)



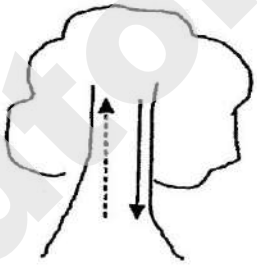
3)



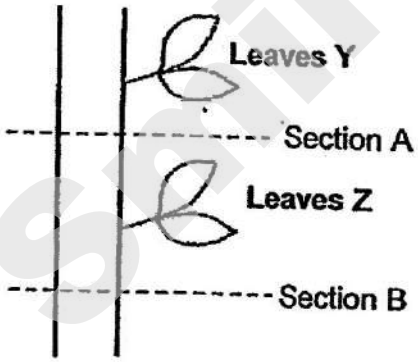
2)

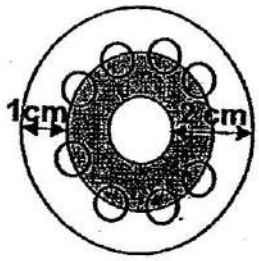


4)



26. Tania carried out an experiment using part of the stem of a plant as shown below.





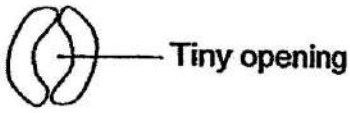
Cross section of stem

How should Tania cut Section A and B of the stem if her aim is to ensure that Leaves Y withered but Leaves Z are healthy?

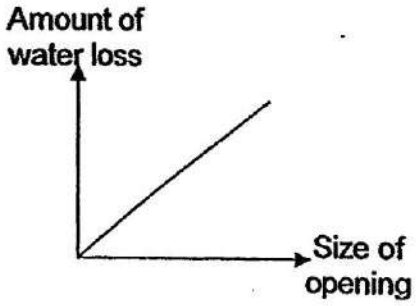
	Depth of cut at Section A	Depth of cut at Section B
1)	1 cm	1 cm
2)	1 cm	2 cm
3)	2 cm	2 cm
4)	2 cm	1 cm

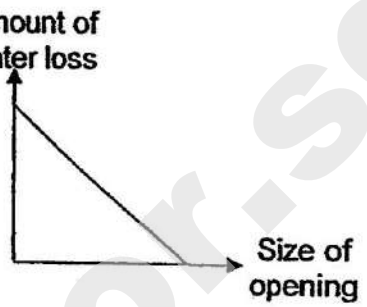
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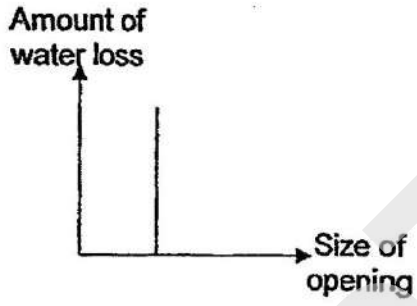
27. The diagram below shows a tiny opening found on a leaf surface observed through a microscope.

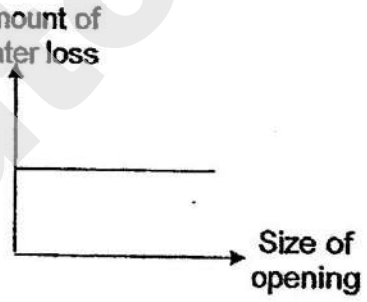


Which one of the following graphs correctly represents the relationship between the size of the tiny opening on the leaf and the amount of water loss?

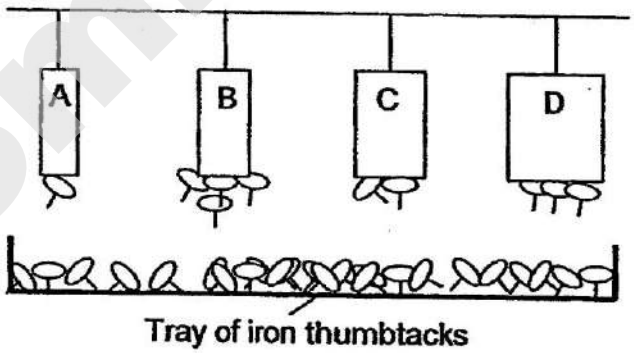
1)


3)


2)


4)


28. Stacy hung Magnets A, B, C and D from a pole. She then placed them above a tray of iron thumbtacks. Her observation is as shown below.



Based on the results above, which one the following could be the aim of her experiment?

1) To find out if magnets rest in North-South direction.
2) To find out if all magnets attract non-magnetic materials
3) To find out if the magnetic strength of a magnet is dependent on its size.
4) To find out if the number of thumbtacks affect the magnetic strength of a magnet.

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SINGAPORE CHINESE GIRLS' SCHOOL (PRIMARY)

FIRST SEMESTRAL ASSESSMENT 2018

NAME: _____( )

DATE: 3 May 2018

CLASS: PRIMARY 5 SY / C / G / SE / P

Parent's Signature:

SCIENCE

BOOKLET B

	Total Actual Marks	Total Possible Marks
Booklet A		56
Booklet B		44
Total		100

12 questions

44 marks

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

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

FOLLOW ALL INSTRUCTIONS CAREFULLY.

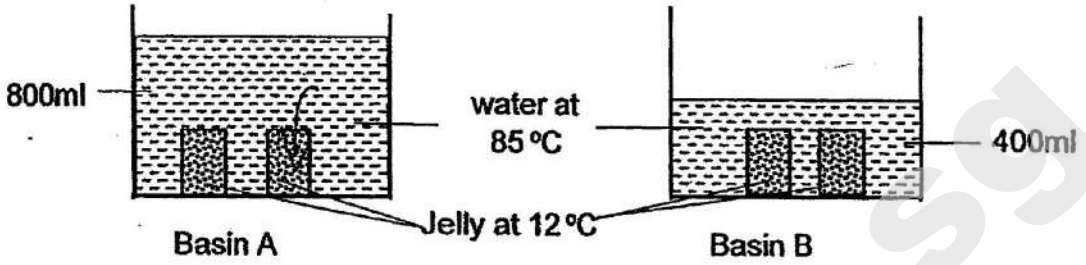
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Part II (44 marks)

Answer all the following questions.

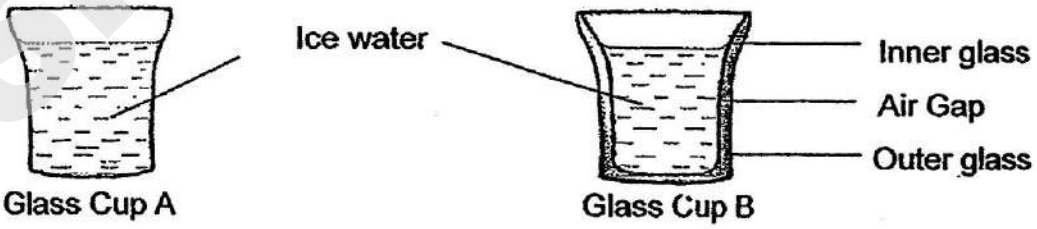
29. a) Sealed packets containing equal amounts of jelly at 12°C are put in 2 basins, A and B. Basin A contained 800ml of water and Basin B contained 400ml of water both at 85°C. The set-ups are shown below.



(i) In which basin, A or B, would the jelly gain more heat after 10 min? Explain your choice. (2m)

(ii) Without changing the basins, suggest one thing Elaine could do to make the jelly in both Basins A and B become hot faster. (1m)

b) Elaine had 2 types of glass cups, A and B. She poured equal amount of water at 3°C into both cups. She left both glass cups on the table and observed that water in Cup B was cooler than the water in Cup A after 5 minutes.



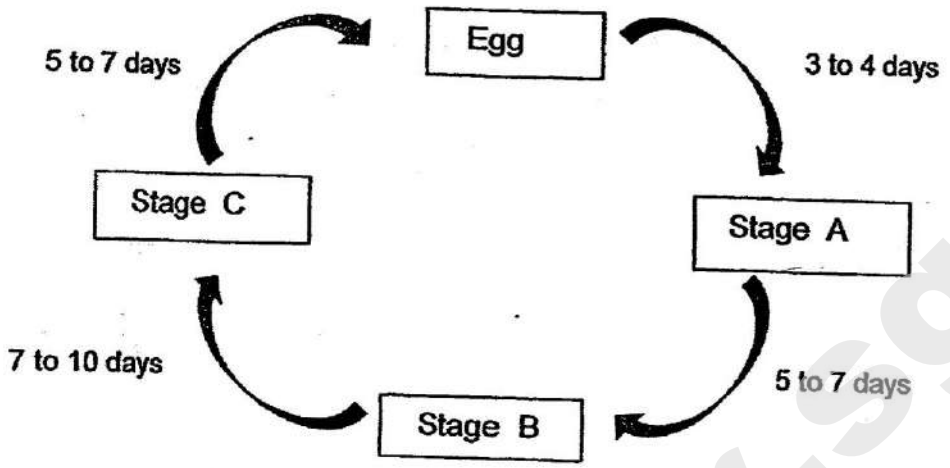
What helped the water in Glass Cup B remain cooler than the water in Glass Cup A? Explain. (2m)

5

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30. The diagram below shows the duration at each stage of the life cycle of Insect K.



a) Besides the egg stage, which Stages, A, B or C, is a stage which does not require any food intake by Insect K? (1m)

Stage _____

b) What is the **least** possible number of days for Insect K after hatching to develop into an adult? (1m)

_____

c) What will happen to the number of Insect K if all the eggs hatch into females only? (1m)

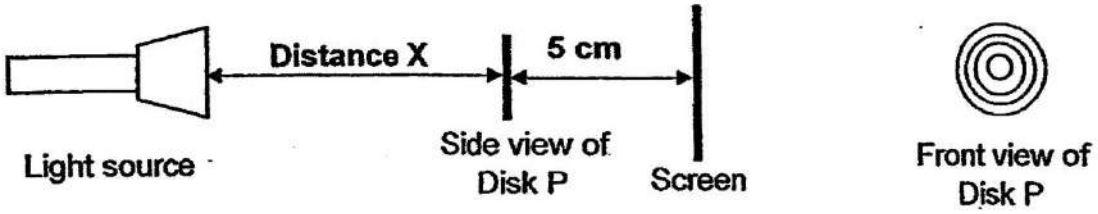
_____

_____

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31. Jason placed Disk P between the light source and the screen as shown below. Disk P was 5 cm away from the screen.



Jason recorded the height of the shadow formed on the screen in the table below as he changed Distance X.

Distance X (cm)	Height of shadow formed on the screen (cm)
5	10
10	6
15	2

a) What is the relationship between Distance X and the height of the shadow formed on the screen? (1m)

_____

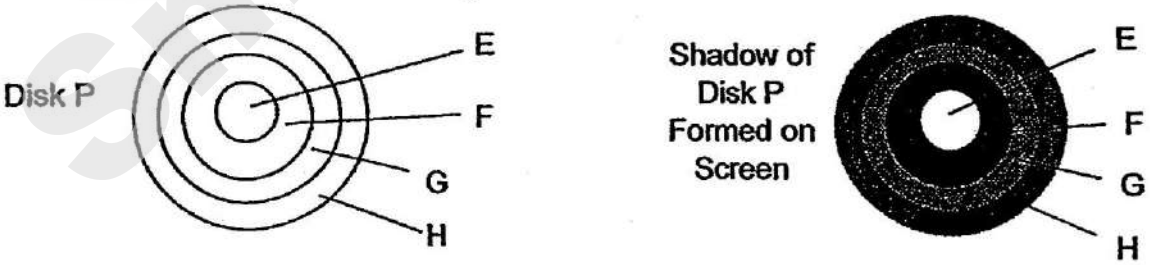
_____

b) With Distance X fixed and unchanged at 10 cm, what could Jason do to reduce the height of the shadow formed on the screen? (1m)

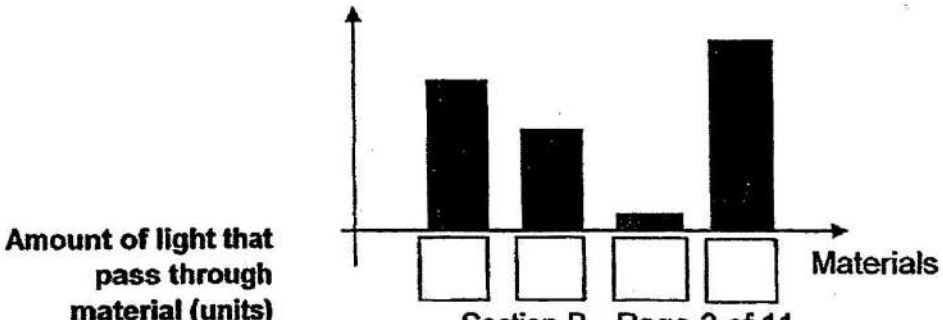
_____

_____

c) Disk P was made of different materials, E, F G and H. The shadow formed on the screen is shown on the right below.



On the bar graph below, fill in the boxes with E, F, G or H to show the amount of light that passes through Materials E. F, G and H. (2m)

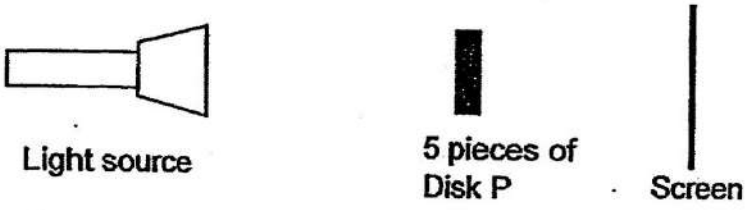


4

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(continue from page 3)

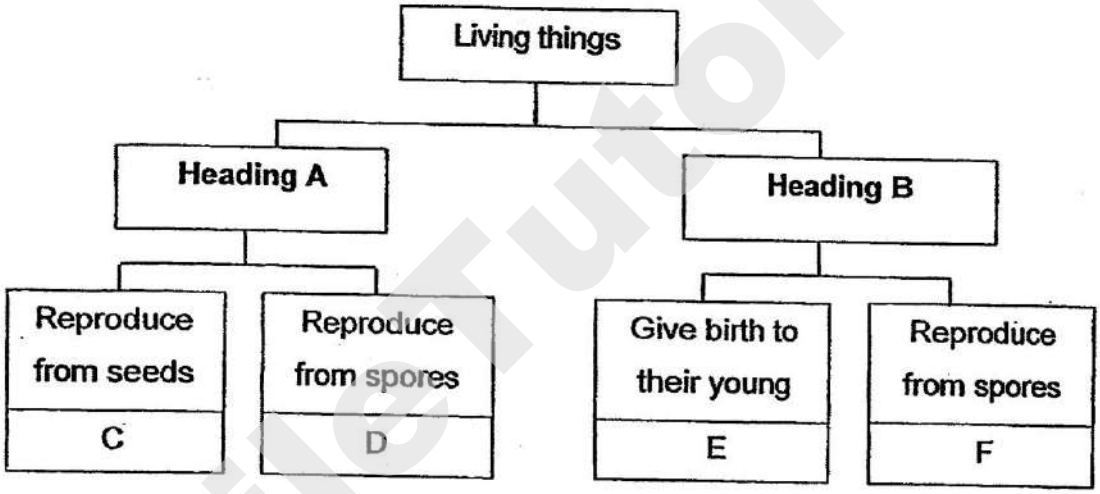
31.



d) What would happen to the amount of light that passed through Material G when 5 pieces of Disk P were stacked together as shown above? (1m)

_____

32. The chart below shows a classification of living things.



a) Write a suitable heading for A and B. (1m)

Heading A:	
Heading B:	

b) Based on the classification chart above, Elaine concluded that E is definitely a mammal. Do you agree with her? Explain you answer. (1m)

_____

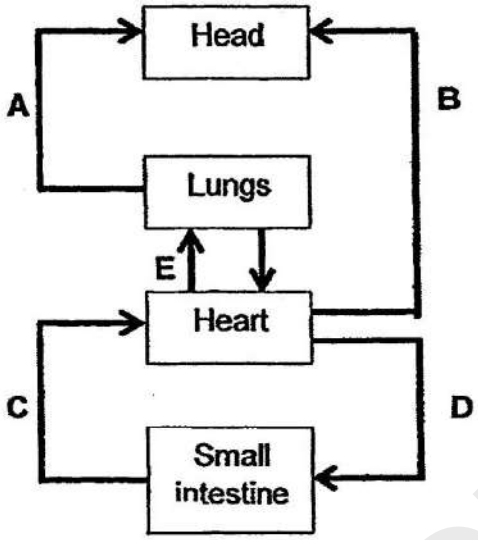
_____

c) Which groups, C, D, E and F, require fertilization to reproduce? (1m)

_____

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33. The diagram below shows how blood flows in different parts of the body in blood vessels, A, B, C and D.



a) Which arrow A, B, C or D is **wrongly** drawn? (1m)

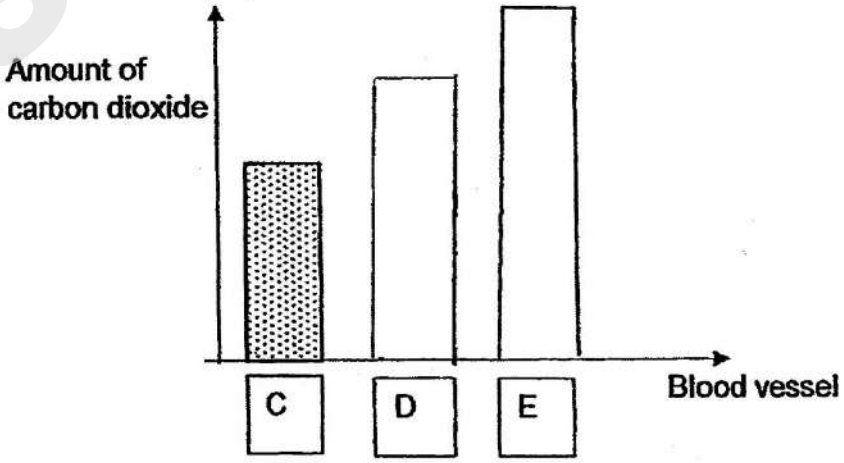
_____

b) Why is the amount of oxygen in Blood Vessel C less than at Blood Vessel D? (1m)

_____

_____

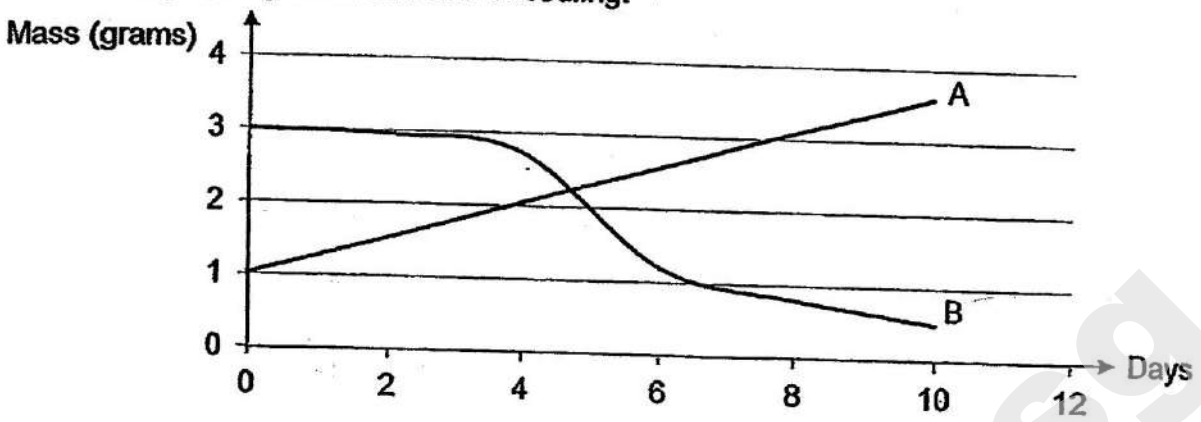
c) In the graph below, a bar has been drawn to show the amount of carbon dioxide present at Blood Vessel C.
Draw **2 more bars** to show the amount of carbon dioxide present at Blood Vessels D and E. (2m)



4

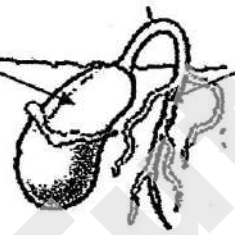
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34. a) The graph below shows how the masses of the Part A and Part B of a seed change as it germinates into a seedling.



Based on the graph above, identify the parts A and B, by filling in the boxes below with the letters. (2m)

Part _____



Part _____

ii) Explain why Part B loses its mass as the seed becomes a seedling. (1m)

_____

b) The table describes the conditions of 4 pots of seeds.

Pot	Number of Seeds	Water Given (cm^3)	Seeds Coated with wax	Temperature (°C)
P	20	20	Yes	30
Q	15	20	No	2
R	18	0	No	30
S	18	30	No	0

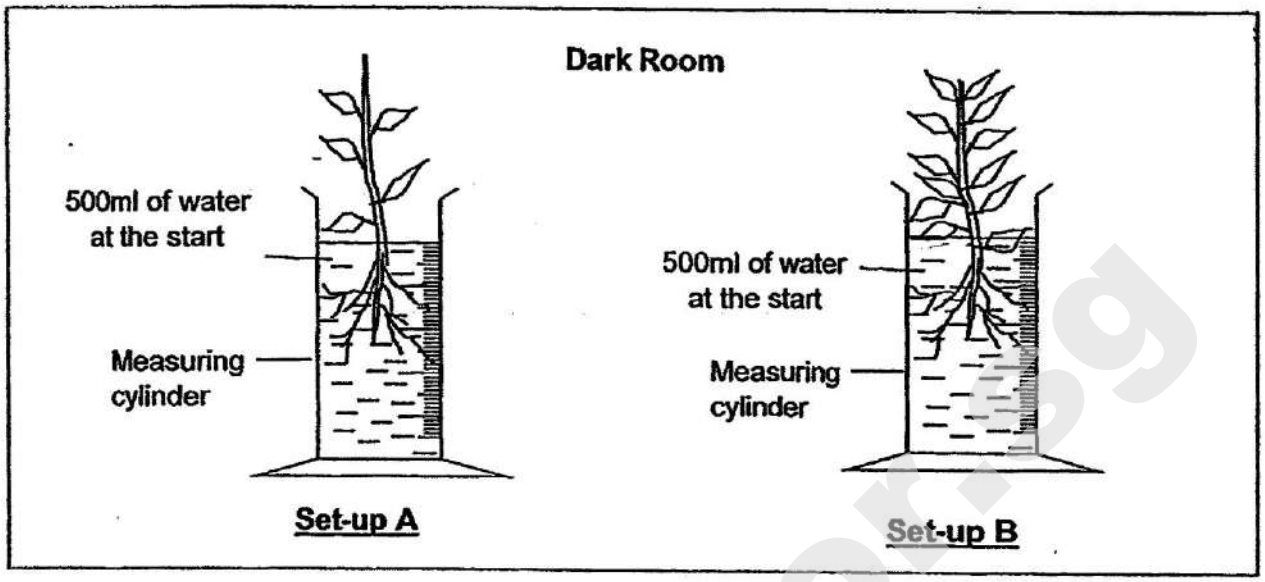
It was found that all the seeds could **NOT** germinate. In the table below, indicate what the seeds lacked in each pot which caused this to happen. (2m)

Pot	What prevented the seeds from germinating?
P	Lack of _____
Q	Lack of _____
R	Lack of _____
S	Lack of _____

5

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35. Lena prepared Set-ups A and B as shown below.
Both set-ups were placed in a dark room for 2 days.



a) In which set-up would there be more water left in the measuring cylinder after 2 days? Explain. (2m)

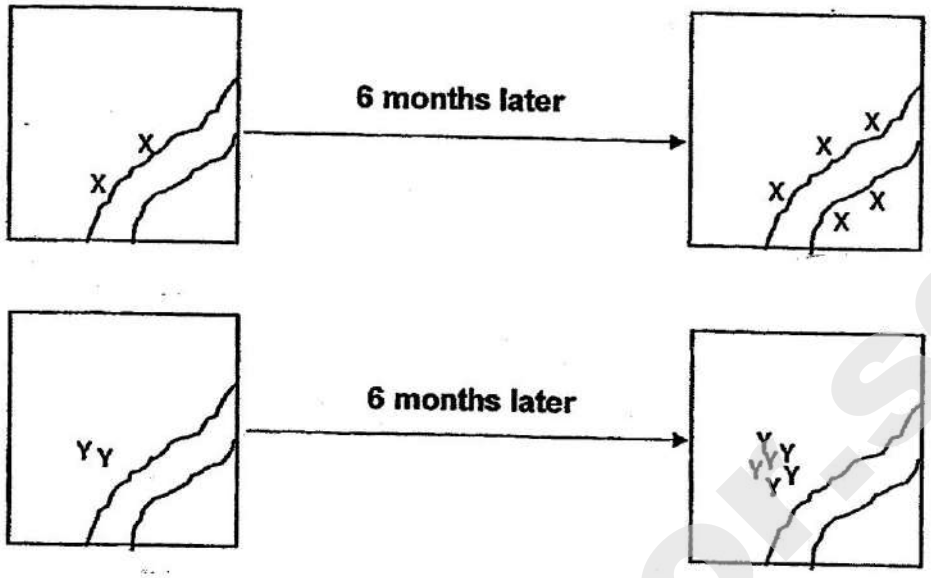
b) 470 ml of water was left in the Set-up A after 2 days. Lena concluded that 30 ml of water must be taken in by the plant.
Her teacher told Lena that she was wrong. Explain why Lena was wrong. (1m)

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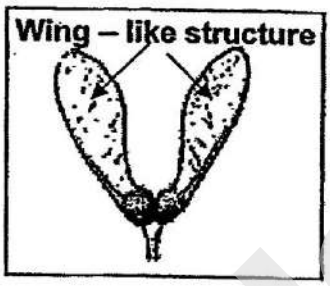
3

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36. Study the dispersal patterns, X and Y, of 2 fruits as shown below.



Study the 3 Fruits, A, B and C as shown below.



Fruit A



Fruit B



Fruit C

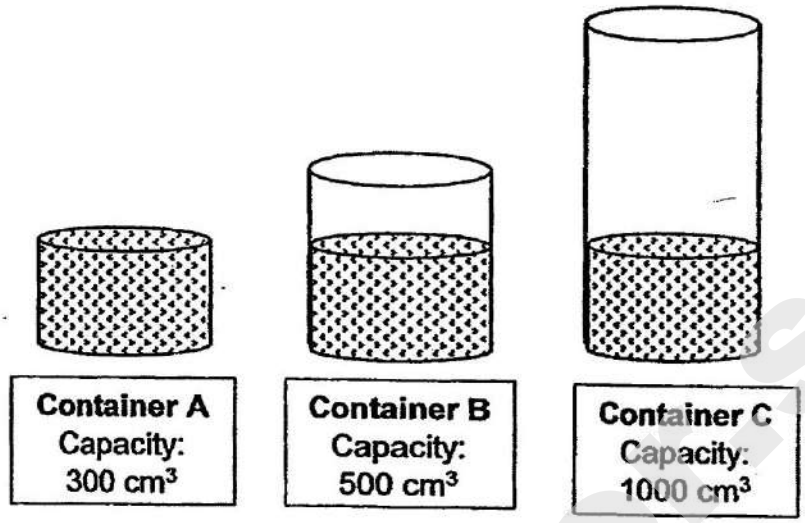
In the table below, indicate which fruit matches the dispersal patterns, X and Y, and specify the dispersal method used by the fruit. (2m)

	Dispersal Pattern	Fruit	Dispersal Method
(a)	X		
(b)	Y		

2

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37. Inez placed 300 cm^3 of cooked rice each into 3 containers of different capacities as shown below. All 3 containers are tightly sealed and placed at room temperature.



a) Which container would have the least amount of mould after 3 days? Explain. (2m)

_____

_____

b) Explain why the experiment cannot be done without sealing the containers. (1m)

_____

_____

c) Suggest what Inez could do to ensure all 3 containers of cooked rice would not grow mould after 3 days. (1m)

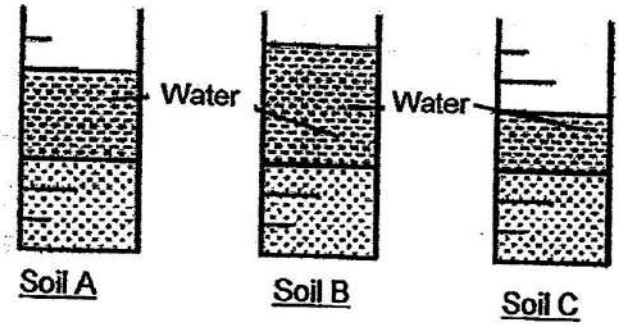
_____

_____

4

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38. An equal amount of Soil A, Soil B and Soil C, was each placed into identical measuring cylinders as shown below. An equal amount of water was then poured into each measuring cylinder containing the soil.
After 30 minutes, the water levels in the measuring cylinders for the different soils were as shown below.

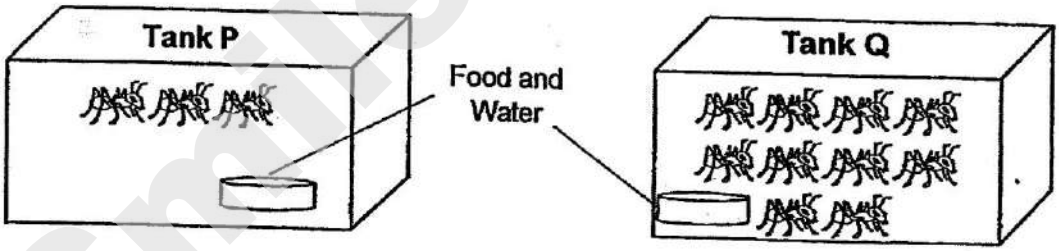


a) When water was first poured into each soil, air bubbles will appear at the soil surfaces. Most air bubbles will appear at the surface of Soil _____.1m)

b) Explain what caused the air bubbles to appear. (1m)

_____

39. Sally placed a different number of Insect K in Tanks P and Q as shown below. Both the tanks are sealed tightly and the insects are provided with enough food and water to last a week.



a) In the table below, indicate if the amount of the gases **increase, decrease or remain the same** in both tanks after 3 hours by putting a tick (✓) under the correct column. (3m)

Type of Gas	Increase	Decrease	Remain the same
Oxygen			
Nitrogen			
Carbon Dioxide			

b) After a week, Sally found that all the insects in Tank Q died but 2 of the insects in Tank P were still alive. Explain. (1m)

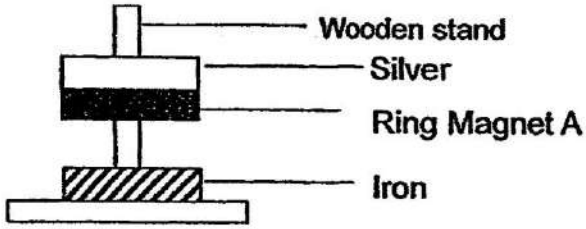
_____

_____

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40. a) A sliver ring, an iron ring and a ring magnet were slotted onto a wooden stand with the iron ring at the bottom, the ring magnet in the middle and the silver ring on top.

Leonard predicted the results by drawing the diagram shown below.

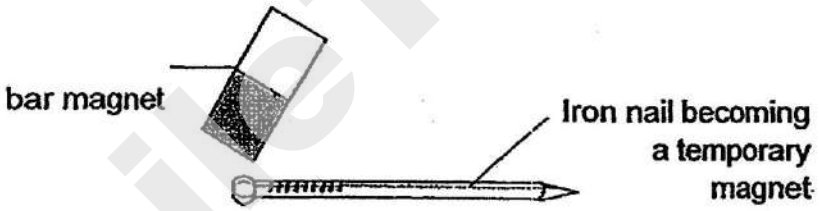


Leonard's teacher told him his prediction was wrong.
Help Leonard by replacing one of the rings with another type of ring and explain how this change will make his prediction possible. (2m)

_____

_____

b) Linda tried to make a temporary magnet by stroking an iron nail with a bar magnet as shown below.



After stroking 30 times, Linda tried to use the temporary magnet to attract some steel paper clips.
She found that it could **not** attract any paper clip at all.

Give 2 possible reasons why the steel paper clips could not be attracted. (2m)

Reason 1: _____

Reason 2: _____

4

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SCHOOL : SCGS PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA1

CONTACT :

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	2	2	4	4	1	2	1	3	4
Q 11	**Q12**	**Q13**	**Q14**	**Q15**	**Q16**	**Q17**	**Q18**	**Q19**	**Q20**
2	3	3	2	3	3	1	2	2	4
Q 21	**Q22**	**Q23**	**Q24**	**Q25**	**Q26**	**Q27**	**Q28**		
3	4	1	1	1	2	1	3		

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P5 SEMESTRAL ASSESSMENT 1 (SCIENCE) 2018
ANSWER KEY

Note:
All scientific concepts (in bold) must be clearly shown.
In cases where they are unclear or not shown, marks will not be awarded.

SECTION B (44 marks):

Qn	Correct/ Acceptable Ans
29ai	Jelly in Basin A would gain more heat because **Basin A contained more hot water than Basin B,** **Thus there was more heat in Basin A to be conducted/transferred from hot water to the jelly than in Basin B.**
29aii	Elaine could add **more water at/ above 85°C/ boiling water / add hotter water.**
29b	The air is a **poor conductor of heat** **and** **thus heat is conducted/ transferred more slowly from the surroundings to the water**
30a	Stage B
30b	12 days <min duration of larval and pupal stages – 5+7 =12)
30c	The number will **decrease/** become less/ fewer / become smaller number.
31a	When Distance X **increases,** the height of the shadow **decreases.**
31b	**Move the screen nearer to Disk P/ the object.** OR – Move both the torch and Disk P (keeping Dist X as 10cm) nearer to the screen.
31c	G H F E
31d	Amount of light passing through will **decrease/ become less.**
32a	Heading A: Plants / can make own food Heading B: Not Plants/ Non Plants / cannot make own food
32b	No. E may be a **fish/ reptile that gives birth to young alive.** OR No, guppy (or **specific animal) gives birth to live young** and **it is not a mammal.**
32c	C and E
33a	A
33b	The **small intestine used some of the oxygen** to function/ for energy, thus there is less oxygen at C
33c	Bar D to be lower than C (less CO_2) Bar E to be higher than C (more CO_2)
34ai	Box on left: Part B Box on right: Part A
34aii	The (baby) plant **used up/ used and depleted the food** in the seed leaves/ Part B as it germinates into a seedling.
34bi	**Concept: Seeds require water, warmth and air to germinate.**

P	Lack - Air/ Water/ Air and Water
Q	Lack - warmth
R	Lack - water
S	Lack - warmth

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Qn	Correct/ Acceptable Ans
35a	Set-up A as the plant A has fewer leaves , so it will lose less water/ water vapour / water through the leaves and take in less water through roots than the plant in Set-up B
35a 35b	Some of the water was not taken in by the plant only as some was lost through evaporation.
36	

	Dispersal Pattern	Fruit	Dispersal Method
(a)	X	C	By water
(b)	Y	B	By splitting

37a	Container A (1m). **AND** It has the least air / has less air than Containers B and C.
37b	They must be sealed so that air/ water vapour/ mould spores from outside won't enter the containers and affect the result. (Experiment must fix amount of test variable for set-ups so that results can be compared).
37c	Specify the action taken: Put all containers in the freezer / fridge/ Put substance to absorb water/ moisture in all 3 containers OR Vacuum out the air from the 3 containers
38a	C
38b	Air (in air spaces) took up space in the soil AND Water took up the space (previously) occupied by the air and cause the air to come out / escape as bubbles..
39a	**Concept:** **Oxygen is taken in and carbon dioxide given out by living things during respiration.** Ans:

Type of Gas	Increase	Decrease	Remain the same
Oxygen		v	
Nitrogen			v
Carbon Dioxide	v		

39b	There are more insects in Tank Q than in Tank P, using up the oxygen faster than in Tank P.
40a.	**Change the iron ring into another magnet** **AND** **Place the both the magnets with the like poles facing each other to make the 2 magnets can repel.**
40b	Any 2 of the following: - Paper clips are too heavy - Did not stroke enough times - Did not stroke in only one direction/ changed direction in stroking halfway/ changed the pole for stroking halfway

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16

TAO HAN SCHOOL 道南学校

SINCERITY & PERSEVERANCE

2018 PRIMARY 5 SEMESTRAL ASSESSMENT 1

Name : _____ ( )

Class : Primary 5 ( )

Parent's Signature: _____

Date: 10 May 2018

Time: 8.00 a.m. - 9.45 a.m.

Duration: 1 hour 45 minutes

Marks: _____ / 56

SCIENCE

BOOKLET A

INSTRUCTIONS TO CANDIDATES

1. Write your name, class and register number.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers on the Optical Answer Sheet (OAS) provided.

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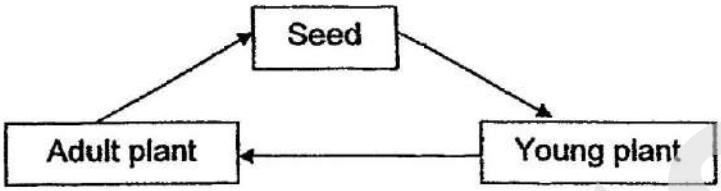
Booklet A (28 x 2 marks)

For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.

(56 marks)

---

1. Look at the life cycle of the plant below.



Which of the following has a similar life cycle as shown above?

A	Fern
B	Moss
C	Bean plant
D	Lady's finger plant

(1) A and B only

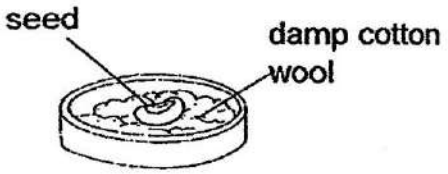
(2) C and D only

(3) A, C and D only

(4) A, B, C and D

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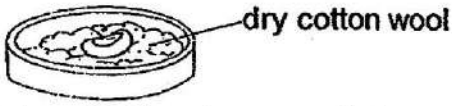
2. Study the set-ups shown below.



Set-up A: Placed near a window



Set-up B: Placed in a refrigerator

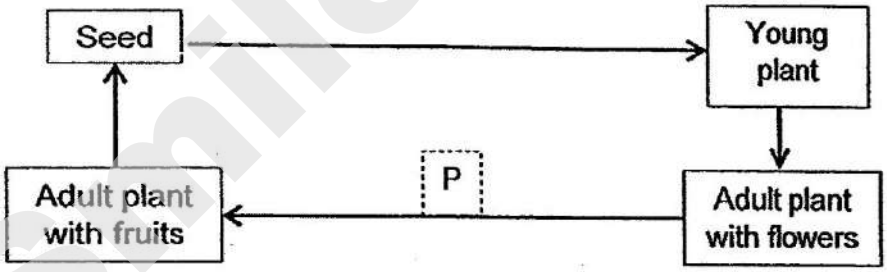


Set-up C: Placed near a window

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

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

3. The diagram below shows the life cycle of a flowering plant.



What process(es) is/are happening at P?

A	Fertilisation
B	Seed Dispersal
C	Pollination

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

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4. Three types of plants, A, B and C, were planted on an island near the sea as shown in Diagram A below.

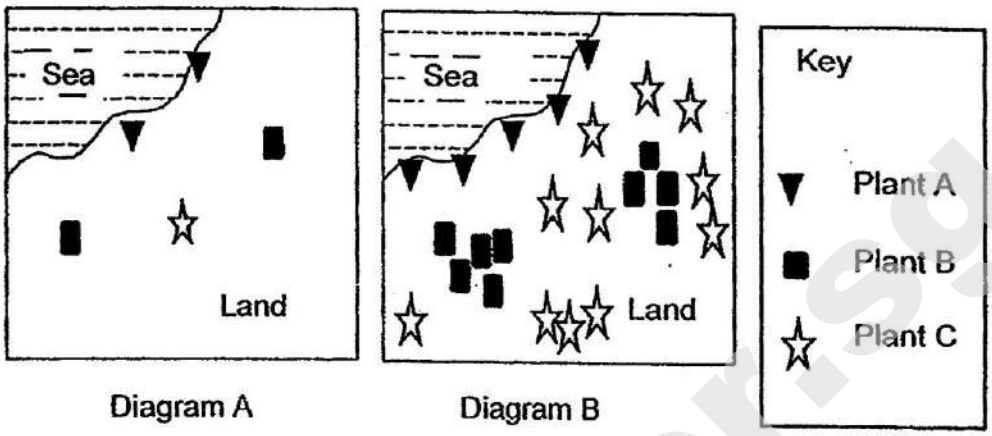


Diagram A Diagram B

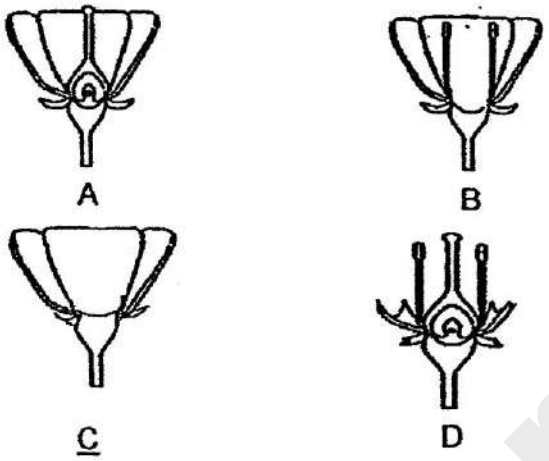
A few years later, young plants of the three types of plants were found growing at different parts of the island as shown in Diagram B. Based on the information given above, how are the fruits or seeds of each type of plant dispersed?

	Plant A	Plant B	Plant C
(1)	By splitting action	By animals	By water
(2)	By animals	By wind	By splitting action
(3)	By water	By splitting action	By animals
(4)	By wind	By splitting action	By water

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5. The diagram below shows four flowers, A, B, C and D, from the same plant. Certain parts of the flowers have been removed.



Which of the flowers are still able to develop into fruits?

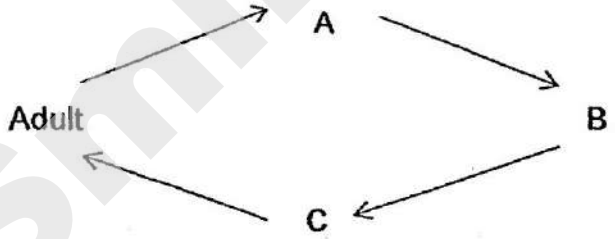
(1) A and B only

(2) B and C only

(3) C and D only

(4) A and D only

6. The diagram below shows the life cycle of an insect.

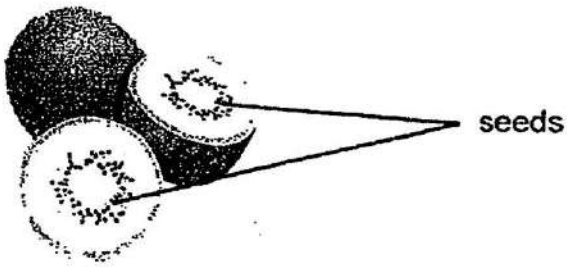


Which of the following shows the correct stages of its life cycle?

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

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7. The picture below shows the cross section of fruit X.



Based on the diagram, which of the following statements are definitely true about the flower of this fruit?

A	The flower is dull-coloured.
B	The flower is pollinated by wind.
C	Its ovary contains many ovules.
D	The flower has been pollinated.

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

8. Janet made the following statements about a fern, a mushroom and a moss.

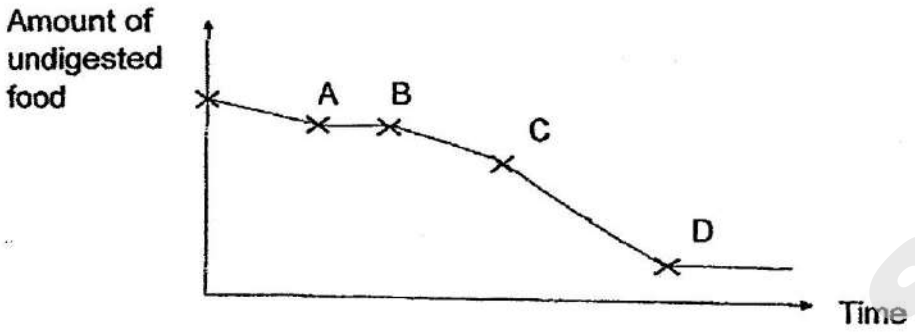
A	They cannot make their own food.
B	They reproduce by spores.
C	They do not bear flowers.
D	They absorb the food of the tree they grow on.

Which of the above statements are correct?

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

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9. The graph below shows the amount of undigested food at various stages in our digestive system after a meal.



Which of the stages, A, B, C or D, represents the stage when the undigested food enters the small intestine?

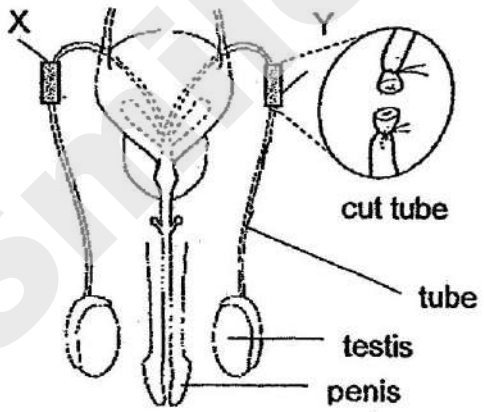
(1) Stage A

(2) Stage B

(3) Stage C

(4) Stage D

10. The diagram below shows Mr Chan's reproductive system.



Tubes at X and Y were cut off. Which of the following is the correct explanation why Mr Chan can no longer reproduce?

(1) The penis can no longer produce sperm.

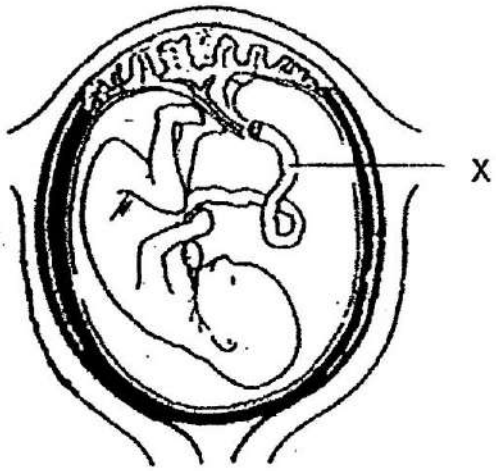
(2) The testes can no longer produce sperm.

(3) The eggs can no longer be sent to fertilise the sperm.

(4) The sperm can no longer be sent to fertilise the eggs.

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11. The diagram below shows an unborn baby.



Which of the following best describes the function of X?

(1) X sends nutrients to the mother.

(2) X sends oxygen to the unborn baby.

(3) X connects the unborn baby to the ovary.

(4) X helps to remove carbon dioxide from the mother's blood.

12. Which of the following characteristics is not passed on from parents to their young?

(1) dimples

(2) face shape

(3) hair length

(4) eye colour

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13. Study the energy transfer between the Sun and the organisms below.

Sun → plant → grasshopper → bird

Which of the following is a correct statement of the energy transfer shown above?

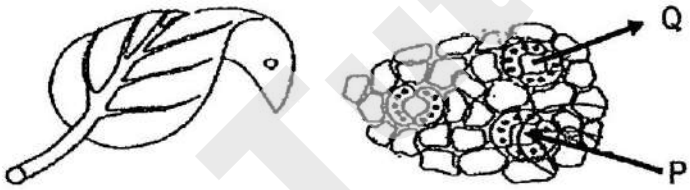
(1) The bird get its energy from the Sun indirectly.

(2) The grasshopper gets its energy from the bird.

(3) The bird gets its energy directly from the plant.

(4) The plant gets its energy from the grasshopper.

14. The diagram below shows a leaf of a plant under the Sun. The arrows show the movement of substances P and Q in and out of the leaf respectively.



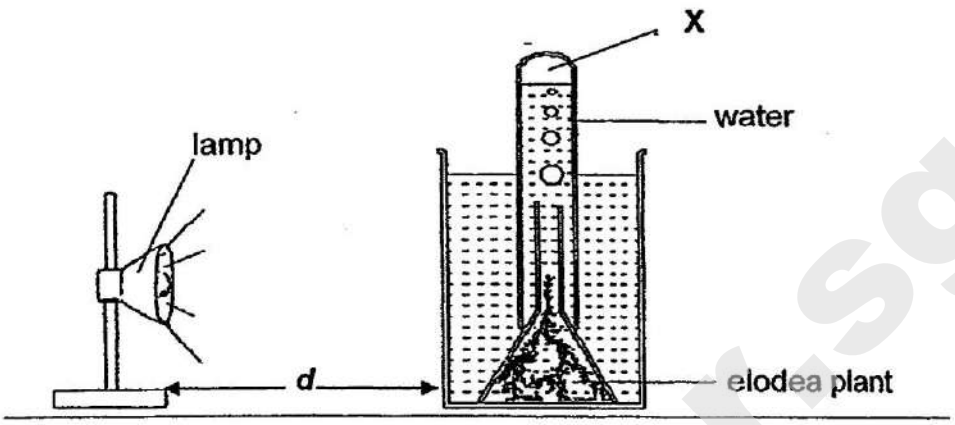
Magnified view of a section of the leaf

Which of the following substances are represented by P and Q, during photosynthesis?

	P	Q
(1)	carbon dioxide	oxygen
(2)	oxygen	carbon dioxide
(3)	oxygen	water vapour
(4)	water vapour	carbon dioxide

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15. Ali used the setup below to find out how the intensity of light could affect the rate of photosynthesis.



Which of the following shows the correct relationship between the amount of gas X collected and distance *d*?

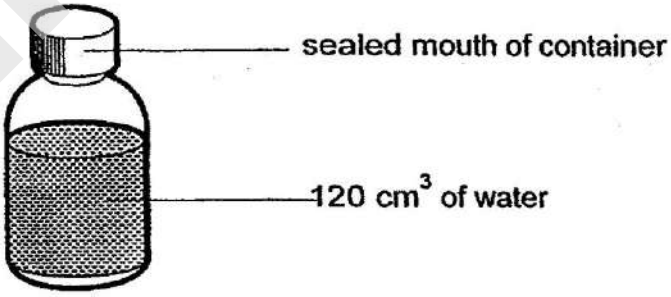
(1) As the amount of gas **X** increases, distance ***d*** decreases.

(2) As the amount of gas **X** decreases, distance ***d*** decreases

(3) As distance ***d*** increases, the amount of gas **X** decreases

(4) As distance ***d*** decreases, the amount of gas **X** decreases.

16. The container below has a capacity of 200 cm^3. It contains 120 cm^3 of water. 100 cm^3 of air was pumped in before the mouth of the container was sealed.



What is the final volume of air in the container?

(1) 80 cm^3

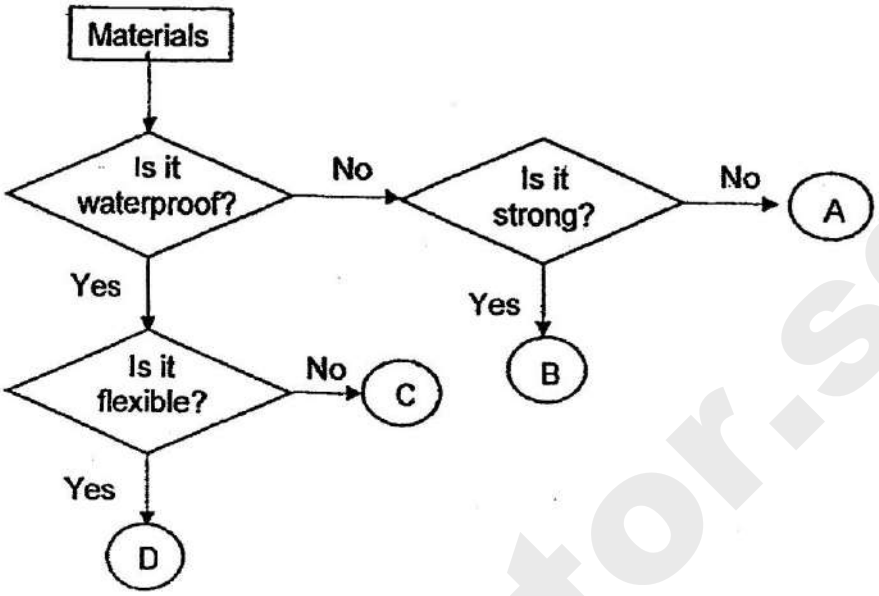
(2) 100 cm^3

(3) 200 cm^3

(4) 220 cm^3

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17. Study the flowchart below.



Adilah bought an umbrella to shelter herself from the rain.



Which letter, A, B, C or D, best represents the material most suitable in making part X and part Y of the umbrella as shown in the diagram above?

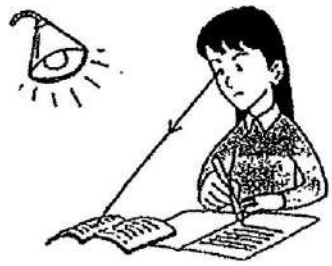
	Part X	Part Y
(1)	A	B
(2)	D	B
(3)	C	D
(4)	D	C

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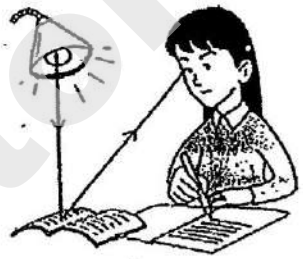
18. Cindy is reading from a book as she does her homework. Which of the following diagrams best shows how Cindy is able to see the textbook on the table?



(1)



(2)



(3)



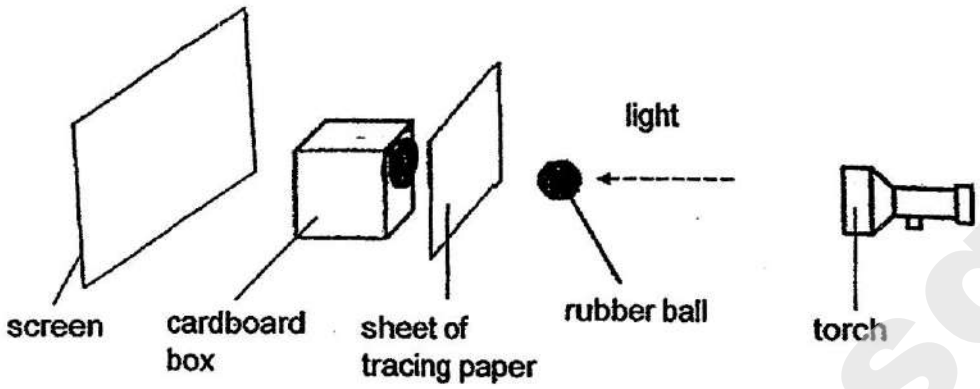
(4)



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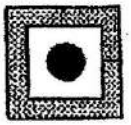
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19. Melissa shone a torch on some objects as shown below. The objects were placed in a straight line



Which of the following images will be cast on the screen?

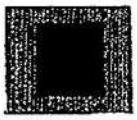
(1)



(2)



(3)



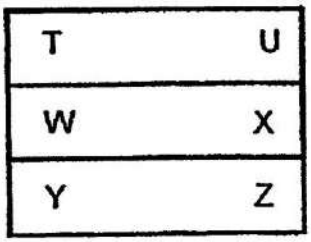
(4)



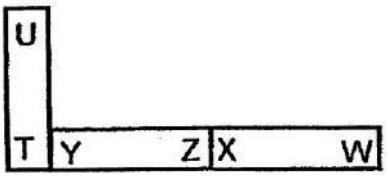
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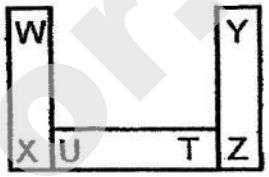
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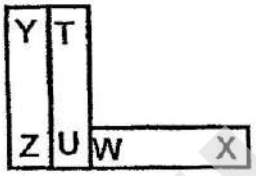
20. Three bar magnets can be arranged as shown below. Their poles are T,U,W,X,Y and Z.

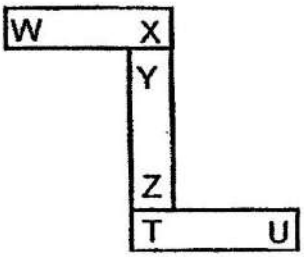


Which of the following is another possible arrangement for the magnets?

(1) 

(2) 

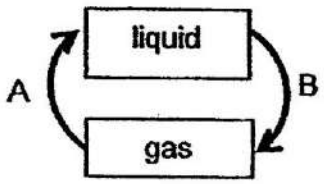
(3) 

(4) 

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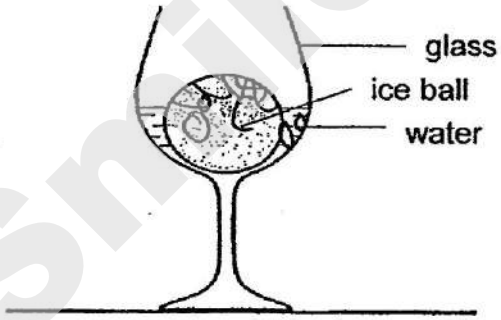
21. The diagram below represents the changes of state of water and the processes, A and B.



Which of the following correctly identifies the processes A and B?

	A	B
(1)	freezing	boiling
(2)	evaporation	condensation
(3)	condensation	melting
(4)	condensation	evaporation

22. An ice ball and some water in a glass was left in a kitchen at a room temperature of 28°C as shown in the diagram below.



Which of the following statements is correct when the ice ball and water were both at 0°C?

(1) The ice ball would not melt as it remained at 0°C.

(2) The ice ball would not melt as it did not gain heat.

(3) The ice ball would melt as it gained heat from the water.

(4) The ice ball would melt as it gained heat from the surrounding air.

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23. The following describes events in the water cycle:

A. Droplets of water form clouds
B. Earth's surface is warmed up by the heat from the Sun
C. Water droplets fall as rain when they get bigger and heavier
D. Water evaporates
E. Water vapour condenses

Which of the following describes events in the formation of rain in correct order?

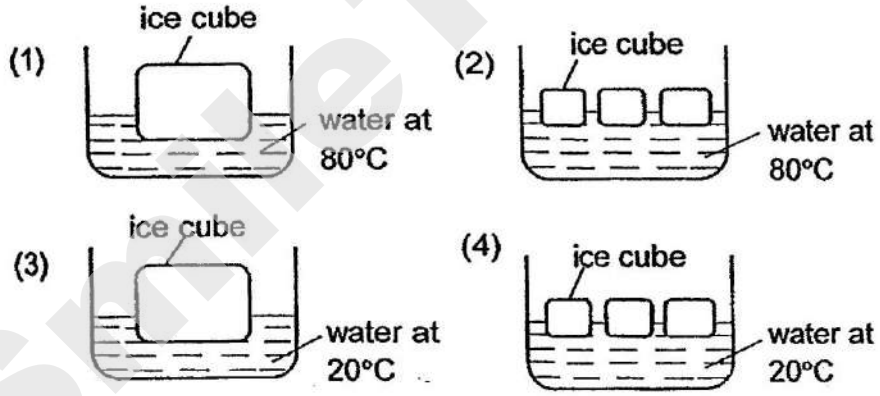
(1) C → B → D → A → E

(2) B → C → D → E → A

(3) B → D → E → A → C

(4) D → E → A → B → C

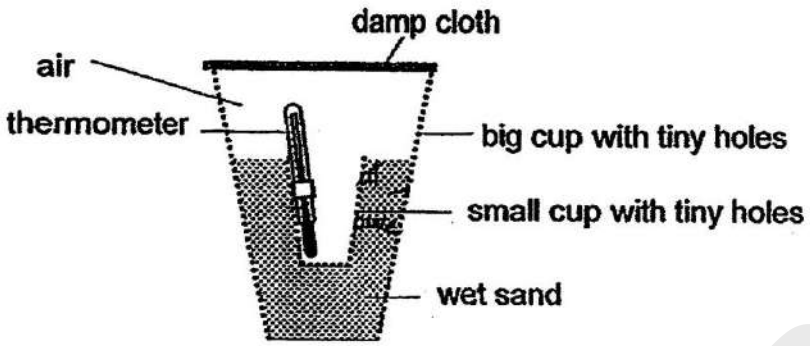
24. Kumar placed some ice cubes into four similar beakers of 300 ml of water of different temperature. The total mass of ice cube(s) in each beaker is the same. Which of the following set-ups will the ice cube(s) be completely melted first?



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25. Amy set up an experiment as shown below.



She placed the set-up in a dry place and recorded the temperature of the air inside the small cup over a period of 20 minutes. Her results are shown below.

Time (minute)	Temperature (°C)
0	30
10	28
20	27

What caused the drop in temperature of the air inside the small cup?

(1) Water in the sand lost heat and evaporated.

(2) Water vapour condensed on the damp cloth.

(3) Water in the wet sand gained heat and evaporated.

(4) Heat in the cup was conducted to the thermometer.

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26. Study the table below.

Substance	State of substance at	
	50°C	70°C
A	solid	solid
B	solid	liquid

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

(1) The boiling point of substance B is at 70°C.

(2) The freezing point of substance A is lower than 70°C.

(3) Substance A has a higher melting point than substance B.

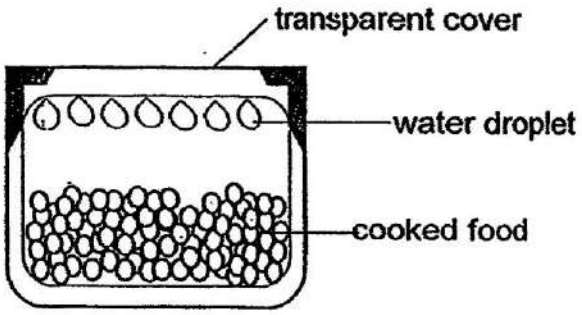
(4) The melting point of substance B is between 40°C and 70°C.

27. Alex filled four cylinders of different sizes, each with 200 ml of water and placed them at his balcony as shown below. Which of the following cylinders of water would evaporate the fastest.



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28. Doris packed a container of warm cooked food for her recess. Before she opened the container, Doris observed water droplets formed under the transparent cover of the enclosed container as shown in the diagram below.



Which of the statement below correctly explains how these condensed water droplets were formed?

(1) The water vapour from the cooked food gained heat from the container.

(2) The hot water vapour from the surrounding air lost heat to the container.

(3) The hot water vapour from the cooked food lost heat to the cooler cover.

(4) The water vapour from the surrounding air gained heat from the cooler cover.

End of Booklet A

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SINCERITY & PERSEVERANCE

2018 PRIMARY 5 SEMESTRAL ASSESSMENT 1

Name : _____ ( )

Class : Primary 5 ( )

Parent's Signature : _____

Date: 10 May 2018

Time: 8.00 a.m. – 9.45 a.m.

Duration: 1 hour 45 minutes

SCIENCE

BOOKLET B

INSTRUCTIONS TO CANDIDATES

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

Booklet A	56
Booklet B	44
Total	100

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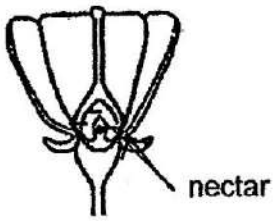
Booklet B (44 marks)

For questions 29 to 41, write your answers clearly in this booklet.

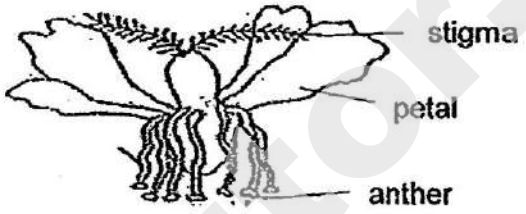
The number of marks available is shown in brackets [ ] at the end of each question or part question.

---

29. Peter studied the flowers of plant X and plant Y. Plant X has tiny brightly-coloured flowers. They have sweet nectar at the base of their petals and their pollen grains are sticky and rough.



flower of plant X



flower of plant Y

(a) How does having the nectar at the base of the flower of plant X help in insect pollination? [1]

(b) Based on the diagram of the flower of plant Y, what characteristics of this flower help it to be wind pollinated? [1]

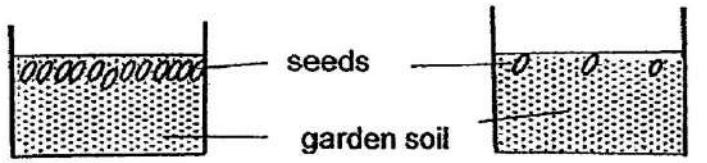
(c) How does the flower of a plant help to ensure continuity of its kind? [1]

Score	/ 3

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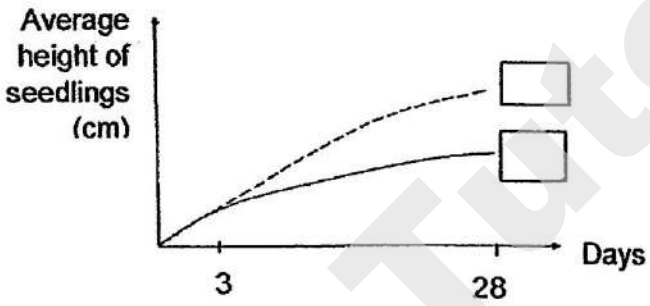
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30. Chris set up different number of seeds of the same type in the 2 identical pots of garden soil as shown below.



Pot P with 12 seeds Pot Q with 3 seeds

He placed both pots in a field and watered them daily with the same amount of water. The average heights of the seedlings in the pots were recorded in the graph shown below.



(a) Fill in the boxes above with "P" and "Q" to indicate which lines represented the seedlings in Pot P and Pot Q respectively. [1]

(b) Explain the difference in the average heights of the seedlings in both pots. [1]

_____

_____

(c) Based on the results of the experiment, explain why dispersing seeds by animals ensures that the seedlings have a higher chance of survival than dispersal by splitting. [1]

_____

_____

Score	3

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31. The diagram below shows two similar fruits, S and T. Some parts of fruit T have been cut off.



S



T

The two fruits were dropped from the same height and the time they took to land on the ground was recorded. The table below shows three sets of readings from the experiment.

	Time taken for the fruit to land on the ground (seconds)		
	1st Reading	2nd Reading	3rd Reading
Set A	3.3	3.1	3.2
Set B	6.4	7.5	7.0

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

_____

_____

(b) Why must three sets of readings be taken? [1]

_____

_____

(c) Based on the information given in the table above, which set of readings, A or B, represents the readings for fruit S? Explain why. [2]

_____

_____

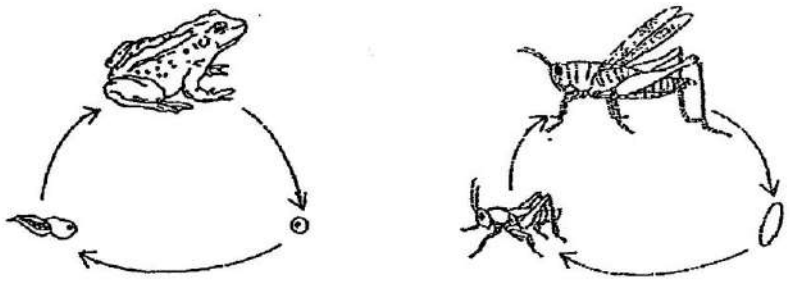
_____

Score	/ 4

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32. The diagrams below shows the life cycles of a frog and a grasshopper.



(a) Based on the diagrams above, state one similarity between the stages of the life cycles of a frog and a grasshopper. [1]

_____

_____

(b) Based on the diagrams above, state one difference between the stages of the life cycle of a frog and a grasshopper. [1]

_____

_____

(c) The animals in the table below have been grouped according to the number of stages in their life cycles. Complete the headings by filling in "3-staged" and "4-staged" in the blanks provided. [1]

Animals with _____ life cycle	Animals with _____ life cycle
Cockroach Chicken	Mosquito Mealworm beetle

Score	/ 3

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33. The diagrams below show the reproductive parts of a flowering plant (Diagram 1) and humans (Diagrams 2 and 3).

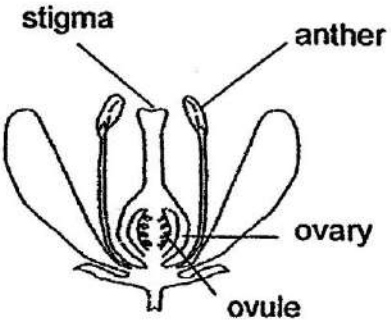


Diagram 1

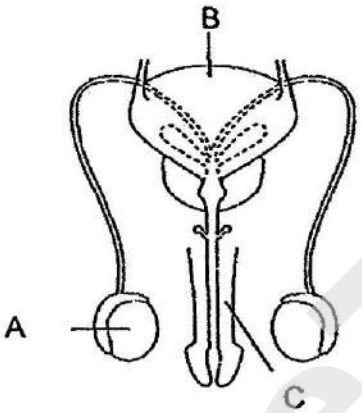


Diagram 2

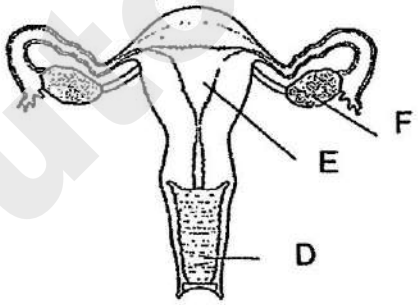


Diagram 3

(a) Write the letter representing the reproductive part of the human that has similar function as the plant reproductive part stated in the table below. [1]

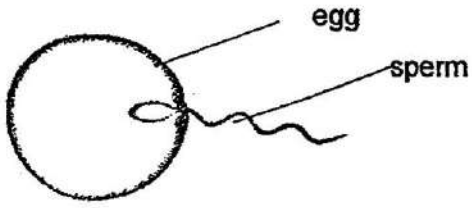
	Plant reproductive part (Diagram 1)	Human reproductive part (Diagram 2 or 3)
(i)	Anther	
(ii)	Ovary	

Score	/ 1

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The diagram below shows a process in sexual human reproduction.

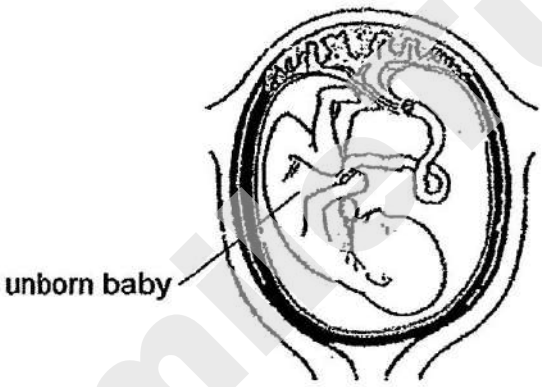


(b) Name the process. [1]

_____

_____

After the process mentioned in (b), an unborn baby will develop inside one of the reproductive organs as shown below.



(c) Which part, D, E or F in Diagram 3 is this organ? Name the organ. [1]

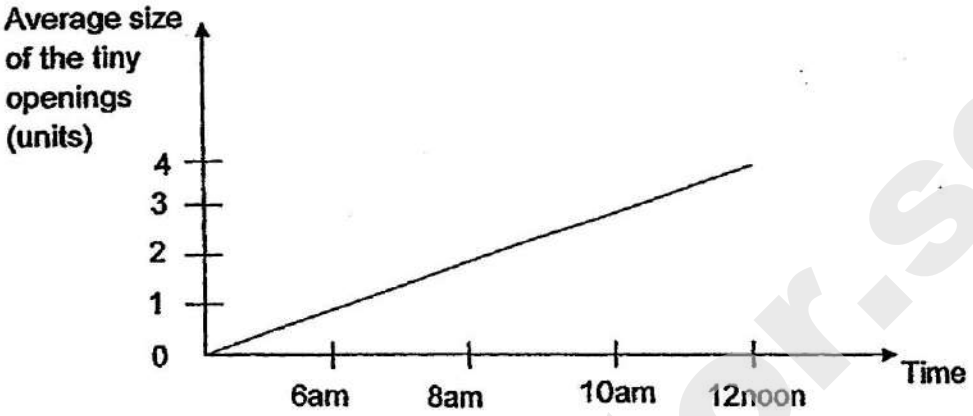
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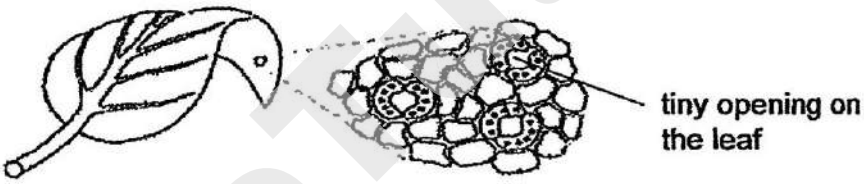
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Score	/ 2

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34. Bala placed a pot of plant by a window and measured the changes in the size of the tiny openings of its leaves at different times of the day. The results were shown below.





(a) Based on his results, what effect does the intensity of light have on the size of the tiny openings? [1]

_____

_____

(b) How does the change in the size of the tiny opening in (a) help in photosynthesis? [1]

_____

_____

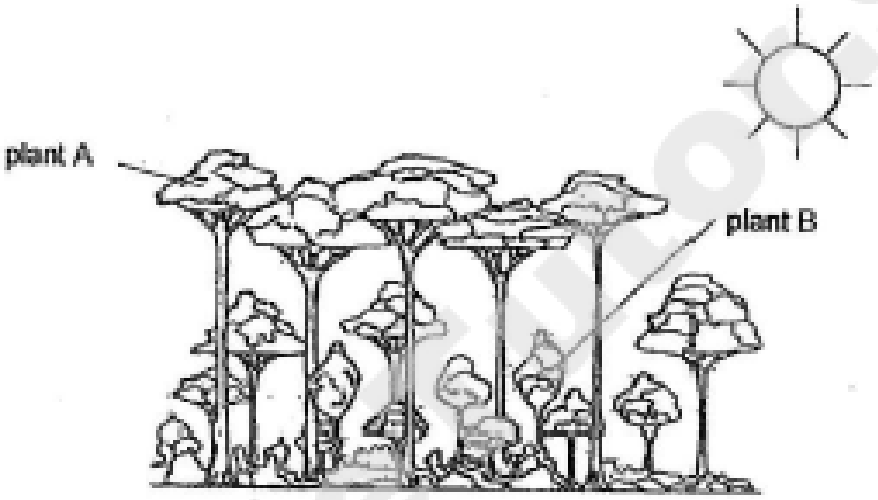
Score	/ 2

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(c) Besides gaseous exchange, water also evaporates from the tiny openings of the leaves. The change in size of the tiny openings in the presence of light can also be a disadvantage to a plant. What is the disadvantage? [1]

The diagrams below show plant A, plant B in a forest and their leaves.





leaf of plant A

leaf of plant B

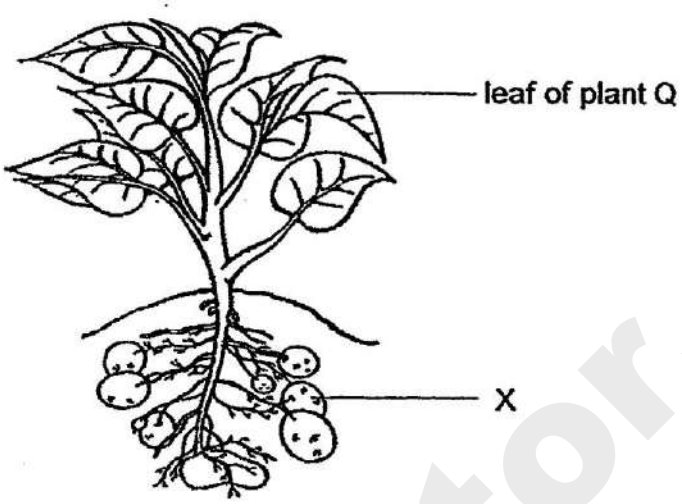
(d) Give a reason why plant B which grows below plant A has bigger leaves. [1]

Score	2

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35. Plant Q stores food in X as shown below.



(a) Explain in detail how plant Q made its food and stored the excess in X. [2]

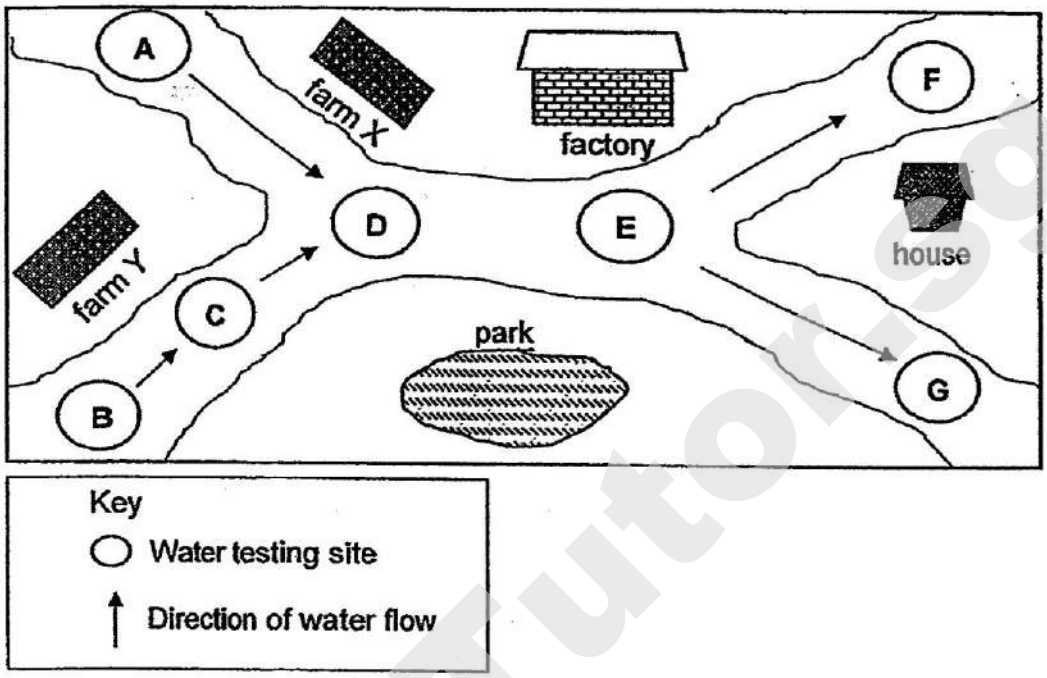
(b) At a farm, the farmers grow the plants in an area with a higher level of carbon dioxide in the air. Will the amount of food obtained from the plants be more, less, or the same as before? Explain your answer. [2]

Score / 4

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36. The map below shows a river that had been polluted. Water was collected and tested for pollutants at parts of the river A, B, C, D, E, F and G.



Water samples tested from three test sites led to the conclusion that farm X was the only source of the pollution.

(a) Based on the diagram, which three test sites had the water samples been taken from to make this conclusion? [1]

_____

_____

(b) Will the farmers at farm Y be able to use the water at test site C for watering its crops? Explain why. [2]

_____

_____

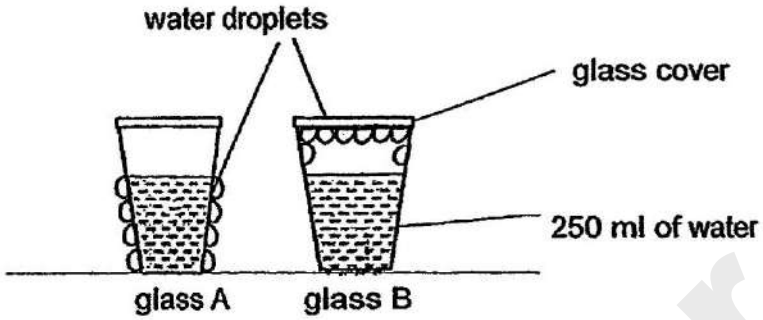
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Score	/ 3

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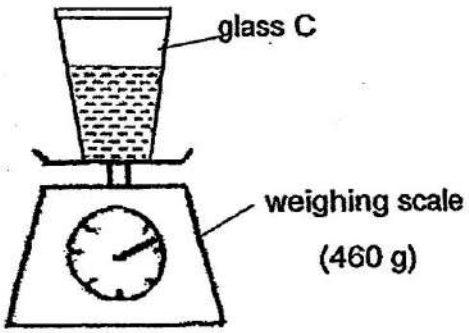
37. Mr Lee poured 250 ml of water of different temperature into two glasses and placed them on a kitchen top. Water droplets were soon observed forming on the two glasses in the diagram below.



(a) Based on the diagram above, indicate whether the temperature of the water in the glass is **'higher'** than, **'lower'** than or **'same as'** the room temperature by putting a (√) in the respective boxes provided below. [1]

Glass	Temperature of water in the glass as compared to room temperature		
	Higher	Same as	Lower
A			
B			

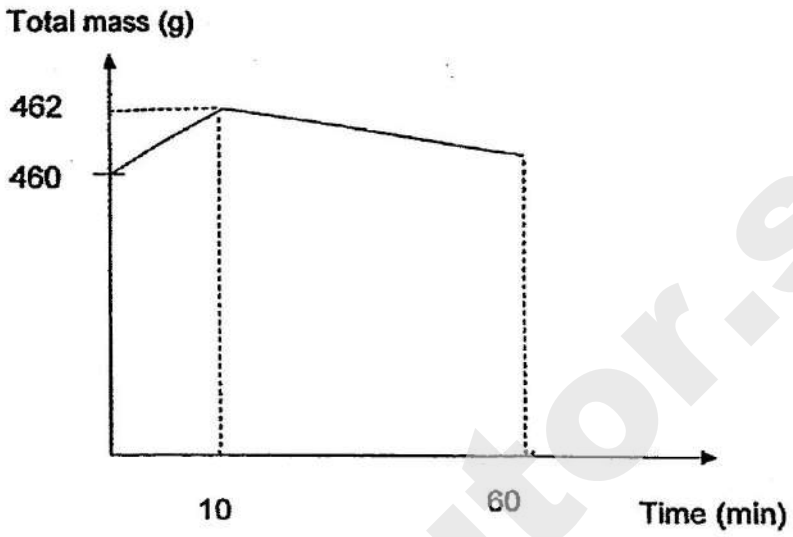
Mr Lee poured some cold water into glass C. He placed glass C on a weighing scale as shown below.



Score	1

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He recorded the mass of glass C on the weighing scale at one-minute interval and plotted the results in the graph below.



(b) Explain why the total mass of glass C increased during the first 10 minutes. [2]

(c) Explain why the total mass of glass C decreased after 10 min. [2]

Score	/ 4

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38. Sam conducted an experiment to compare the rate of evaporation of different types of liquid P, Q and R. He poured the same amount of each liquid into three beakers of different sizes.



beaker 1 beaker 2 beaker 3

He placed the three beakers in the school field and measured the time taken for each liquid to evaporate completely. His results are shown below.

Liquid	P	Q	R
Time (h)	2	2	2

(a) Sam realised that his experiment were conducted unfairly after looking at his results. Explain why. [1]

After correcting his set-ups, Sam repeated his experiment and his results are shown below.

Liquid	P	Q	R
Time (h)	3	5	2

(b) Complete the table below with P, Q and R. [1]

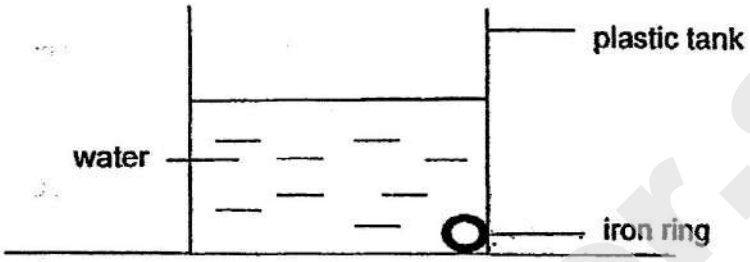
	fastest ← rate of evaporation → slowest		
Liquid			

(c) Sam wanted to use one of the liquids to make perfume. Based on his new results, which liquid would he use so that he would be able to smell his perfume more quickly when applied on his skin? Explain your answer. [1]

Score 3

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39. Sarah dropped an iron ring into a plastic tank filled with water as shown in the diagram below.



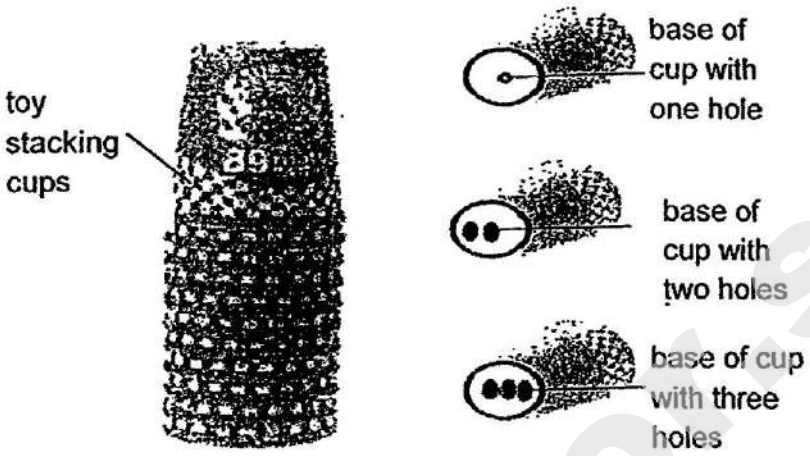
(a) She wanted to remove the iron ring from the plastic tank using a magnet. Describe how she can do so without getting the magnet wet or changing the set-up. [2]

(b) Joshua wanted to attract some copper coins placed in the same plastic tank using a strong magnet but was unable to do so. Give a reason for his observation. [2]

Score	4

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40. Kumar carries out an investigation, on how the number of holes at the base of each cup affects the number of cups stacked within a minute.



His results are shown below.

Number of holes at the base of each cup	Number of cups stacked in a vertical pile in one minute
1	10
2	12
3	15

(a) Assuming Kumar is able to stack the identical cups consistently in the same manner, using the same amount of force, state one variable that he must keep constant to ensure a fair test. [1]

_____

_____

(b) What is the relationship between the number of holes and the speed at which the cups can be stacked? [1]

_____

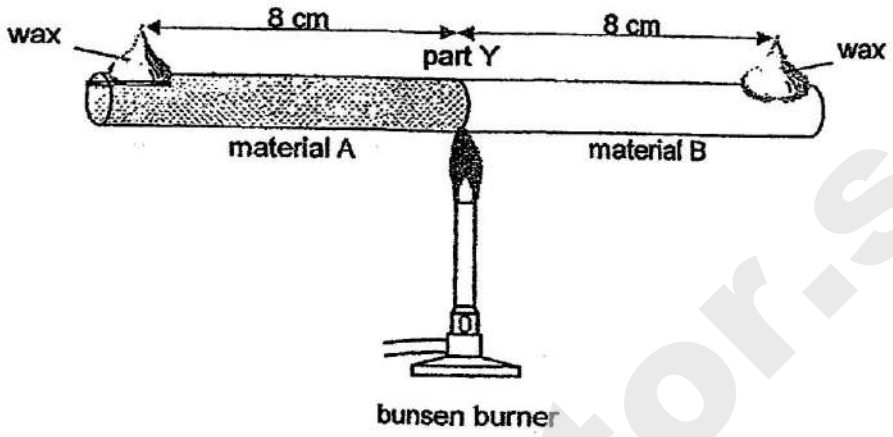
_____

Score	/ 2

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41. Two rods of the same size and thickness but made from different materials, A and B, are joined together at part Y. Same amount of wax is placed at one end of each rod. These rods are heated at part Y as shown below.



(a) The wax at the end of material A melted first. Explain why. [2]

Yong Xiang wants to keep his chilled pepsi drink cold for the longest period of time in one of the mugs made of material A and B as shown below.



mug

(b) Which mug should he use? Explain why. [1]

Score	3

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SCHOOL : TAO NAN SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA1

CONTACT :

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	1	3	3	4	3	4	3	3	4
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	3	1	1	3	1	4	2	3	2
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
4	4	3	2	3	3	3	3		

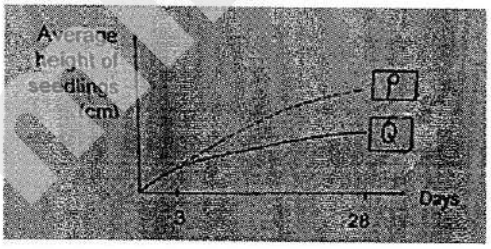
SECTION B

Q29)

a) The nectar attracts insects so that they can help them pollinate.
b) They are the hanging stigmas and the feathery stigmas.
c) It produces seeds for the new plant of its kind to grow.

Q30)

a)



b) As there are many seeds in Pot Q, the seeds do not need to compete for sunlight so they do not need to grow as tall as possible.
c) Dispersing seeds by animals would mean that seedlings are further from the parent plant and there will be less overcrowding.

Q31)

a) Presence of wing-like structure.
b) It is to ensure that the readings are reliable.
c) Set B. Fruit S has a wing-like structure which allows it to stay afloat for the longest time compared to set A.

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Q32)	a) They both have the egg stage. b) The young of the grasshopper looks like the adult while the tadpole does not look like the adult. c) 3-staged , 4-staged
Q33)	a) i) A ii)F b) fertilisation c) E. Womb
Q34)	a) The higher the intensity of the light, the higher the average size of the tiny openings. b) The bigger stomata size allows more carbon dioxide to enter the plant for photosynthesis. c) The plant loses more water. d) As they are below the tall trees, they cannot absorb much sunlight. So they increase the surface area so that they can trap more sunlight for photosynthesis.
Q35)	a) The leaves trap sunlight and carbon dioxide and water are taken in to make food and stored excess food as starch. b) More. More carbon dioxide will be taken in by the plant and the rate of photosynthesis will be higher.
Q36)	a) A, C, D b) Yes. It has not flowed past farm X.
Q37)	a) A → Lower, B → higher b) Water in glass C is cooler than the surrounding air, the water vapour from the warmer surrounding air condensed on glass C, causing an increase in mass. c) The water droplets gained heat from the surroundings and evaporated.
Q38)	a) The surface area of the liquids are not the same so the amount of time taken for the liquids to evaporate may not be accurate. b) R, P, Q c) Liquid R. it is the fastest to evaporate so the nice smelling substance is quickly left on the skin.

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Q39)	a) She can place the magnet at the side of the tank to attract the iron ring, then move up the magnet up. b) Copper is not a magnetic material.
Q40)	a) The type of cup. b) As the number of holes at the base of each cup increases, the number of cups stacked in a vertical pile in one minute increases.
Q41)	a) Material A is a better conductor of heat. Wax gained more heat from material A which conducted more heat from the flame. b) Material B. It is a poorer conductor of heat and pepsi will gain het slower from the surroundings.

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26

Anglo-Chinese School (Junior)

SEMESTRAL ASSESSMENT 2 (2018)
PRIMARY 5

SCIENCE

BOOKLET A

31 October 2018 **1 HOUR 45 MINUTES**

Name : _____ **( )**

Class : P5 _____

INSTRUCTIONS TO PUPILS

DO NOT TURN OVER THE PAGES UNTIL YOU ARE TOLD TO DO SO

Follow all instructions carefully.

There are 28 questions in this booklet.

Answer **ALL** questions.

INFORMATION FOR PUPILS

The total marks for this booklet is 56.

The total time for Booklets A and B is 1 hour 45 minutes.

This question paper consists of 21 printed pages (inclusive of cover page).

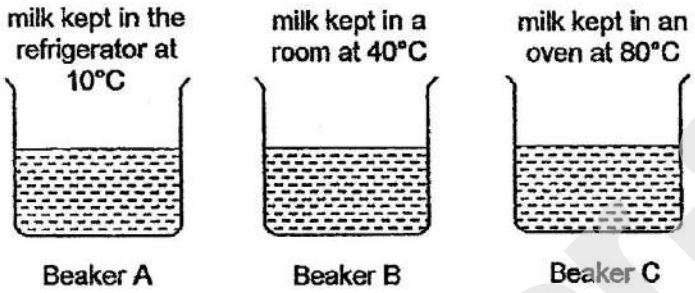
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For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.

(56 marks)

1. Yogurt is made by adding bacteria to milk at the correct conditions. John conducted an experiment to find out the right conditions for making yogurt. He used beakers with the same amount of milk at different temperatures as shown.



John added the same amount of bacteria to the three beakers and recorded his observation after 4 hours in the table below.

Beaker	Observation after 4 hours
A	No change to milk.
B	Milk turns into yogurt.
C	A thick layer forms on the surface of the milk. Rest of the milk remains the same.

Based on John's experiment, which of the following can John conclude?

(1) Bacteria became yogurt in 4 hours.

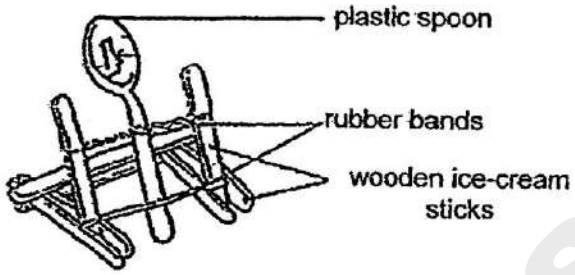
(2) Bacteria needs any temperature to turn milk into yogurt.

(3) Bacteria needs a temperature of 40°C to turn milk into yogurt.

(4) Bacteria needs a temperature of 40°C and above to turn milk into yogurt.

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2. Allan built a catapult using rubber bands, wooden ice-cream sticks and a plastic spoon as shown in the diagram. He placed an eraser on the plastic spoon and pulled the plastic spoon back. When he released the spoon, the eraser flew forward.



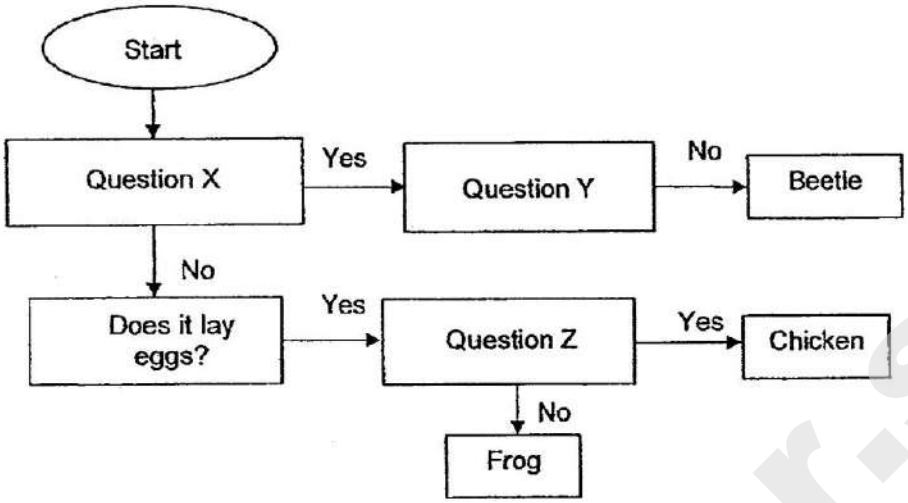
Which of the following properties of materials is necessary for making the catapult?

	Plastic Spoon	Rubber bands	Ice-cream sticks
(1)	waterproof	floats in water	flexible
(2)	flexible	strong	floats in water
(3)	strong	flexible	strong
(4)	transparent	waterproof	waterproof

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3. Study the flowchart.

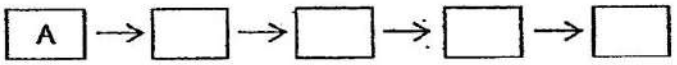


Which of the following represents questions X, Y and Z?

	X	Y	Z
(1)	Does it have a 3-stage life cycle?	Does the young look like the adult?	Does it moult?
(2)	Does it have a 4-stage life cycle?	Does the young look like the adult?	Does the young look like the adult?
(3)	Does it have a 3-stage life cycle?	Does it spend part of its life cycle in water?	Does the young look like the adult?
(4)	Does it have a 4-stage life cycle?	Does it moult?	Does it spend part of its life cycle in water?

4. Read the following statements regarding the growth of a plant.

A Fruit contains seeds.
B Shoot starts to grow out of the seed.
C Root starts to grow out of the seed.
D Flowers appear.
E Make its own food.

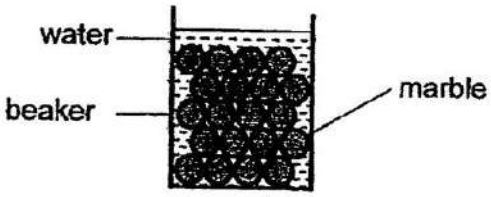


Arrange the above statements in the correct order in the growth of a plant.

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

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5. Jack pour some water into a beaker with marbles.

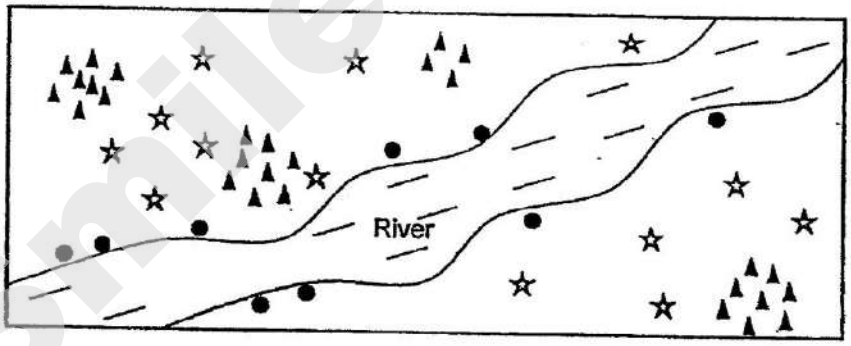


Which of the following can Jack conclude based on the property of matter?

A The volume of the water did not change.
B The marbles do not have a definite shape.
C Water filled up the gaps between the marbles.
D The marbles takes the shape of the beaker that it is placed in.

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

6. The diagram shows an area in the forest where three types of plants (▲, ☆, ●) are growing.



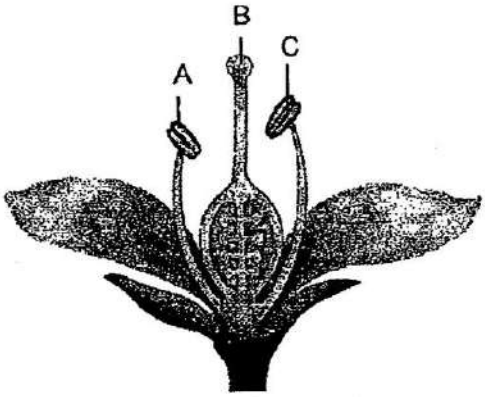
How are the fruits or seeds of the three plants most likely dispersed?

	Plant ▲	Plant ☆	Plant ●
(1)	Wind	Animal	Splitting
(2)	Splitting	Wind	Water
(3)	Wind	Splitting	Water
(4)	Splitting	Animal	Wind

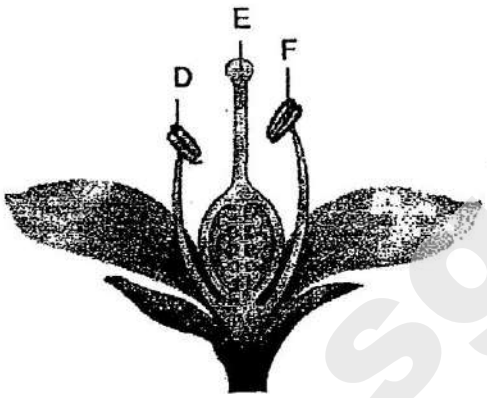
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7. The diagrams show the flowers of two plants.



Flower from plant X



Flower from plant Y

Pollination takes place when pollen grains are transferred from _____.

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

8. The diagrams show the reproductive systems of a human and a plant respectively.

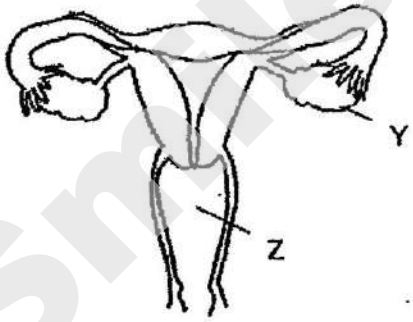


Diagram 1

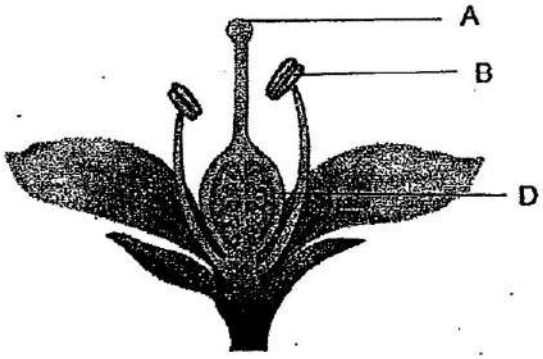


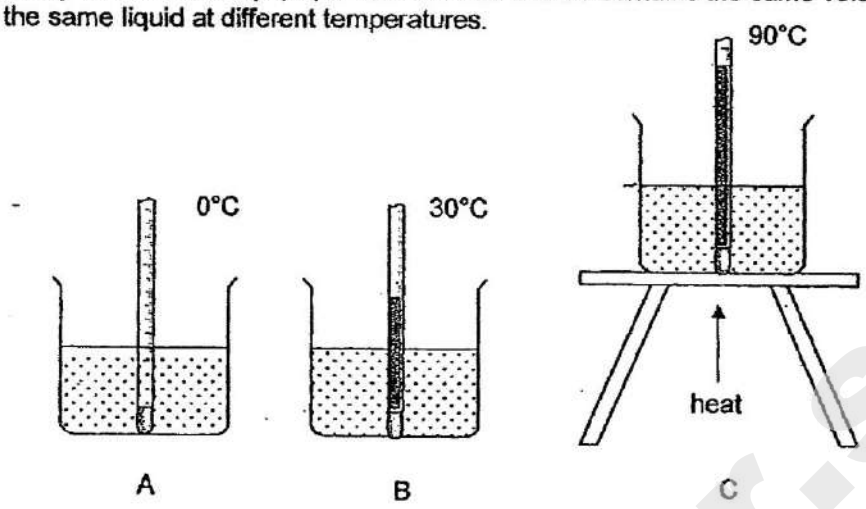
Diagram 2

Which of the parts in the diagrams have similar functions?

	Diagram 1	Diagram 2
(1)	Z	B
(2)	Z	D
(3)	Y	D
(4)	Y	A

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9. Study the three set-ups, A, B and C. Each beaker contains the same volume of the same liquid at different temperatures.



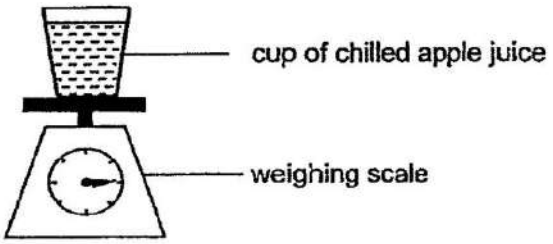
In which of the set-ups would evaporation occur?

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

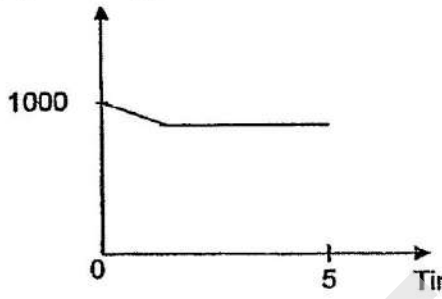
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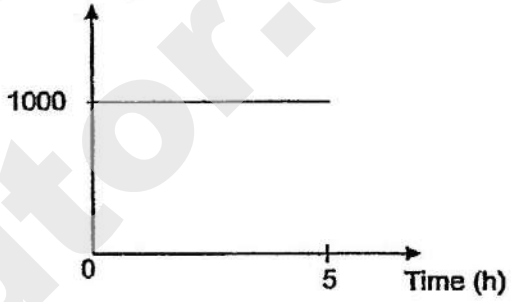
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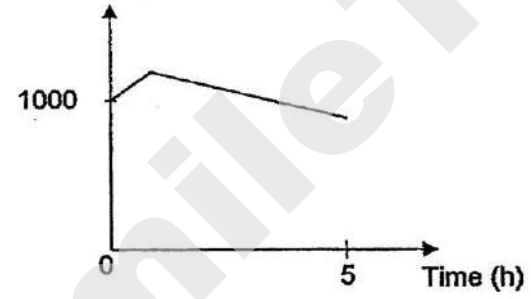
10. Diana placed a cup of chilled apple juice onto a weighing scale as shown. She left the set-up on the kitchen table and recorded the mass every hour for the next 5 hours.

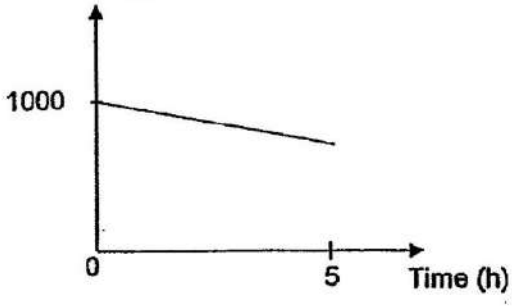


Which of the graphs correctly shows the change in the mass over a period of 5 hours?

(1)


(2)


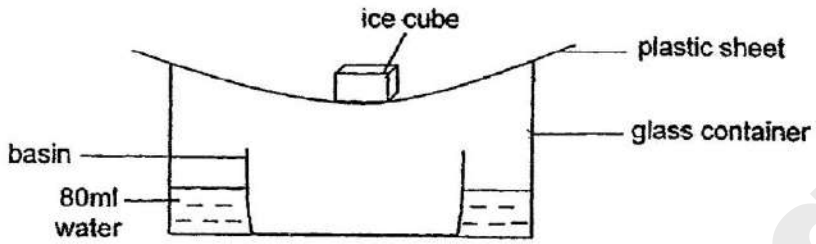
(3)


(4)


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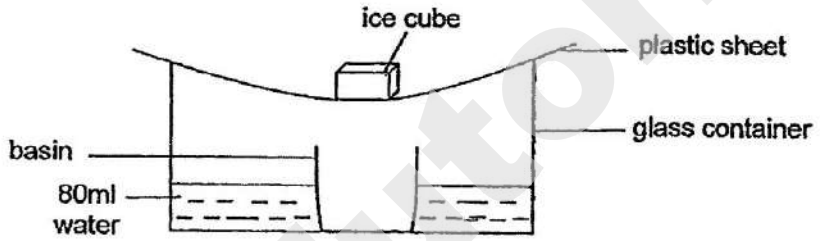
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11. Mr Koh conducted an experiment as shown in set-up A.



Set-up A

After 3 hours, he observed that 50 ml of liquid was collected in the basin.
Mr Koh repeated the experiment with a smaller basin as shown in set-up B below.



Set-up B

Which of the following is the correct explanation about the amount of liquid collected in set-up B as compared to set-up A?

	Amount of liquid collected in basin of set-up B (ml)	Explanation
(1)	50	The rate of evaporation is the same in both set-ups as the surrounding temperature is the same.
(2)	75	The rate of evaporation in set-up B is faster as there is a larger exposed surface area of water.
(3)	25	The rate of evaporation in set-up B is slower as there is a smaller exposed surface area of water.
(4)	100	The rate of evaporation in set-up B is faster as there is a larger exposed surface area of water.

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12. Mei Ling suspended a bar magnet on a string and waited until it stopped turning. She observed that the magnet did not point in a north-south direction. What could be the possible reasons for this?

A There was another magnet near the bar magnet.

B The magnetic strength of the bar magnet was too strong.

C She had used a defective compass to determine the direction.

D She conducted her experiment in the school field instead of in the science laboratory.

(1) A and C only

(2) B and D only

(3) A, B and C only

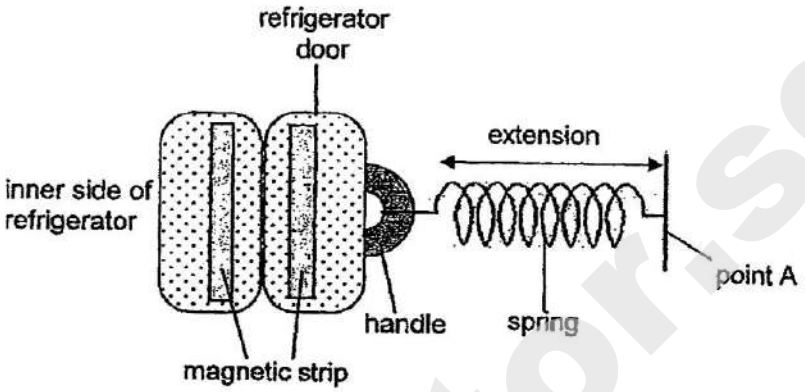
(4) A, B, C and D

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13. Paul noticed that most refrigerators have a magnetic strip around the door. Paul wanted to investigate the magnetic strength of the magnetic strips of four different models of refrigerators.

He attached a spring to the handle of the door of refrigerator A as shown. He pulled the spring at point A and measured how long the spring extended before the door opened.



He repeated his experiment with refrigerators B, C and D and recorded his results in the table below.

Refrigerator model	Extension of spring (cm)
A	25
B	40
C	30
D	65

Which of the following shows the arrangement of the refrigerators according to the magnetic strength of the magnetic strips beginning from the strongest magnetic strength?

(1) A, C, B, D

(2) A, B, C, D

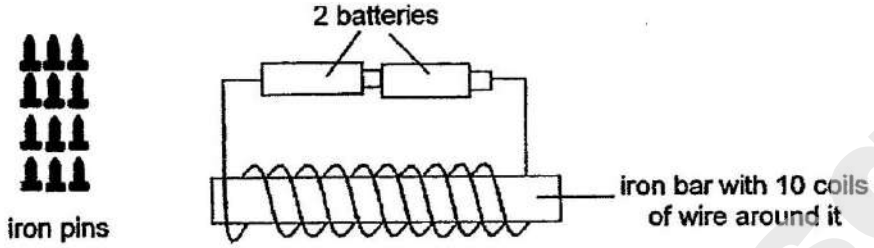
(3) D, B, C, A

(4) D, C, B, A

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14. Tristan conducted an experiment with the electromagnet as shown. He brought the electromagnet near a pile of iron pins and records the number of pins attracted by the electromagnet.



Number of pins attracted	10

Tristan made one change to his set-up each time and repeated his experiment. Predict the number of pins that would be attracted to the electromagnet when Tristan makes each change.

	Number of coils around the iron bar	Number of batteries	Number of pins attracted
(1)	10	1	5
(2)	10	3	10
(3)	5	1	10
(4)	15	2	5

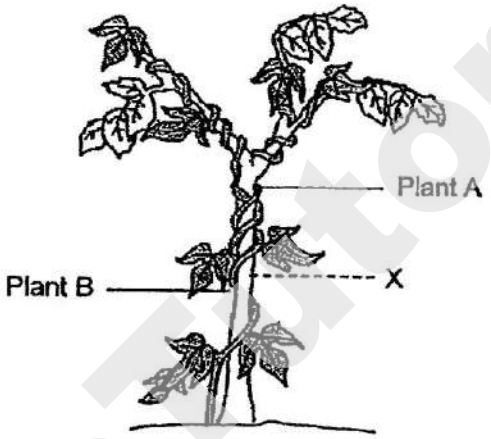
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15. Which of the following is a function of the human skeletal system?

(1) Protects the vital organs in the body
(2) Transports food in the digestive system
(3) Carries waste material away from the body
(4) Absorbs oxygen and passes it to the bloodstream

16. Plant A is a creeper that climbs around Plant B to get more sunlight.



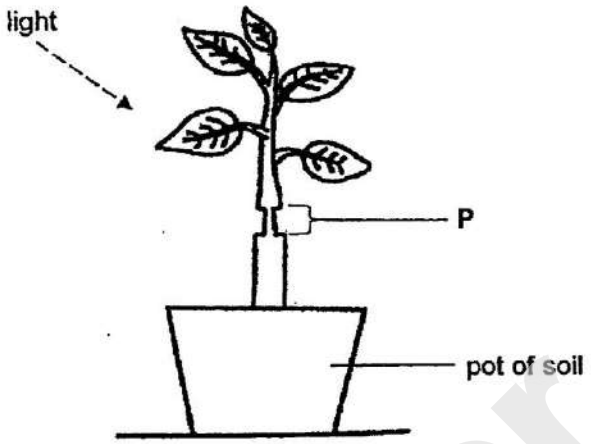
The stem of Plant A was cut at X. The parts of Plant A above X withered and died after some time. Why?

(1) It could not get enough sunlight.
(2) There was insufficient chloroplasts.
(3) The parts above X did not receive water.
(4) Plant A cannot get support from Plant B above X.

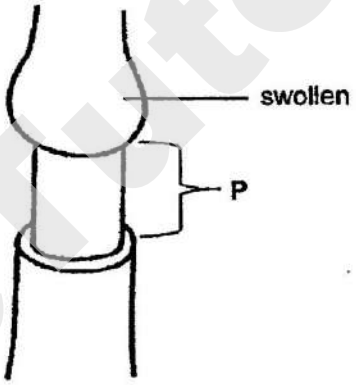
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17. Andrew removed the outer ring of the stem of a plant at part P.



He then placed the plant in the garden under the Sun and watered it regularly.



After a few days, Andrew observed that the plant was alive but the part of the stem above P was swollen. Why?

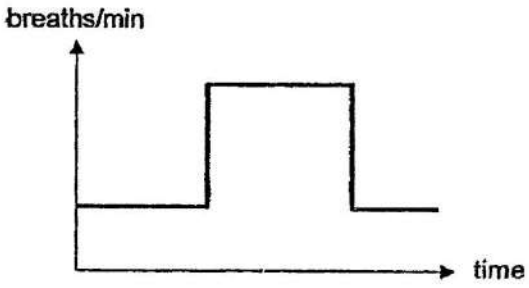
(1) Only the food-carrying tubes were removed at P.
(2) Only the water-carrying tubes were removed at P.
(3) Both the food and water carrying tubes were removed at P.
(4) Neither the food nor the water carrying tube was removed at P.

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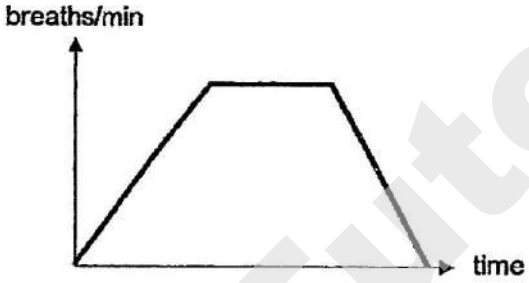
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18. Which of the graphs most likely represents the changes in the breathing rate of an athlete before, during and after a run?

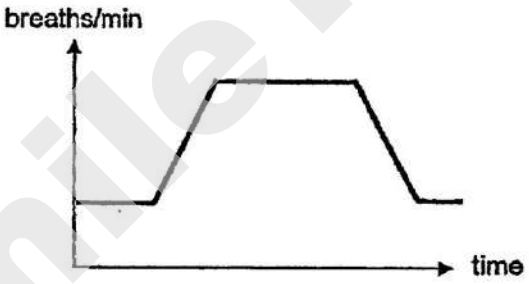
(1)



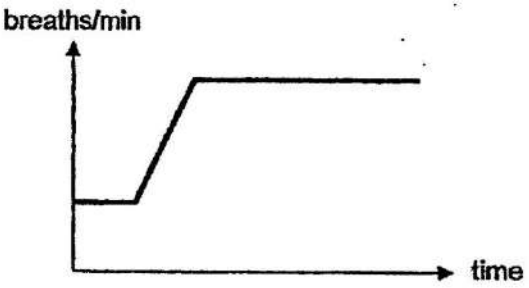
(2)



(3)



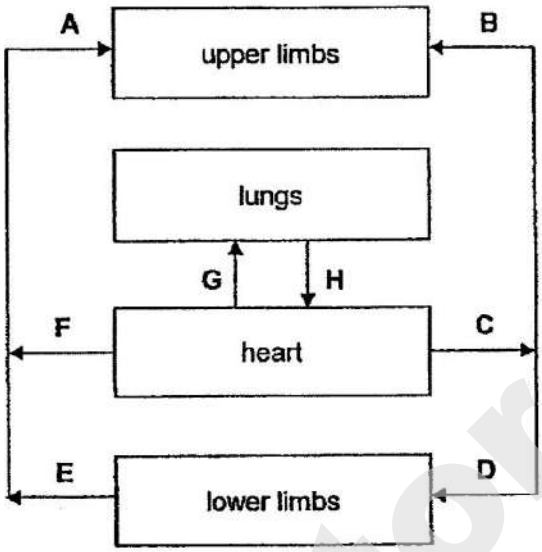
(4)



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19. Daniel drew the diagram below to show the blood flow in the human body.

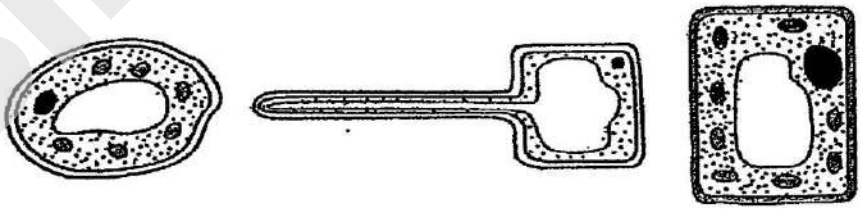


His teacher commented that his diagram is incorrect and he needs to change the direction of two arrows in the diagram.

Which two arrows should be corrected in the diagram?

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

20. Study the three plant cells.



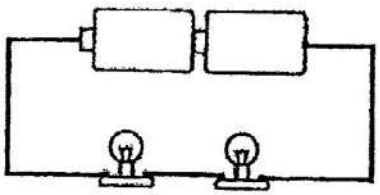
Which of the following part(s), cell wall, chloroplast and cytoplasm, is /are found in all three cells?

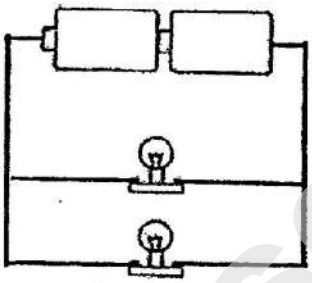
(1) chloroplast only
(2) cell wall and cytoplasm only
(3) cytoplasm and chloroplast only
(4) cell wall, cytoplasm and chloroplast

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21. Aidan constructed two circuits, X and Y, using the identical bulbs and batteries which are in working condition.

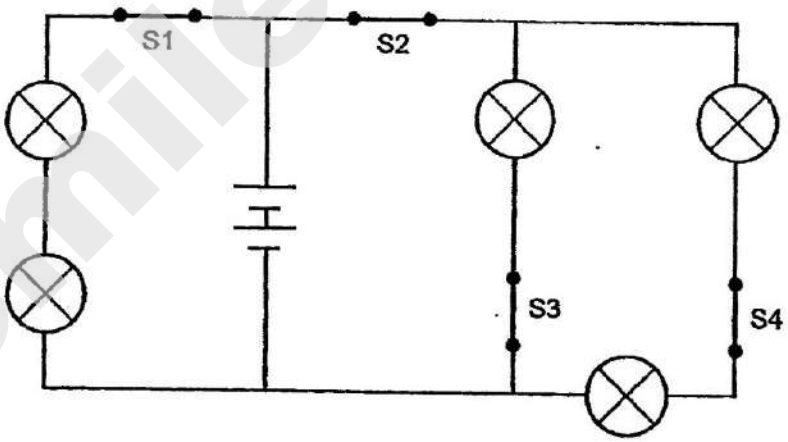

Circuit X


Circuit Y

Which of the following observations is correct when circuit X is compared with circuit Y?

(1) All bulbs will have the same brightness.
(2) Each bulb will have different brightness.
(3) Bulbs in Circuit X will be dimmer than those in Circuit Y.
(4) Bulbs in Circuit X will be brighter than those in Circuit Y.

22. Evan set up the circuit shown.



All five bulbs were lit when all four switches, S1, S2, S3 and S4, were closed. Evan wanted the least number of bulbs to be lit when only one switch is open.

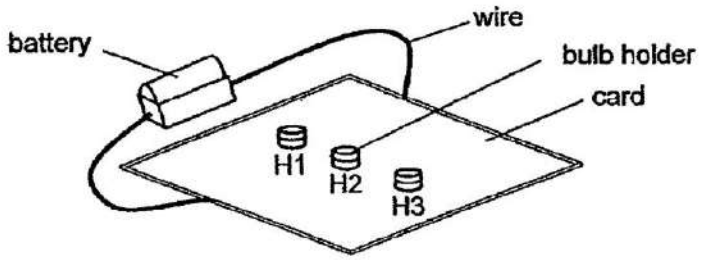
Which switch should he open?

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

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23. Jeremiah created a game using a battery and three light bulb holders H1, H2 and H3. The wires were hidden behind a card such that only the bulb holders can be seen.

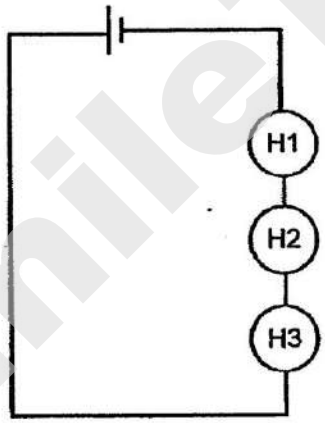


He then asked his classmate, Kyler, to find out how H1, H2 and H3 were connected using two identical light bulbs.
Below are Kyler's observations.

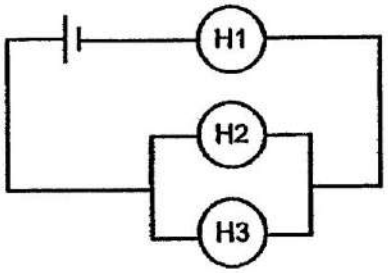
When no bulb at	Observation
H1	bulbs at holders H2 and H3 lit up
H2	bulbs at holders H1 and H3 lit up
H3	bulbs at holders H1 and H2 did not light up

Which of the following shows the correct circuit of the game?

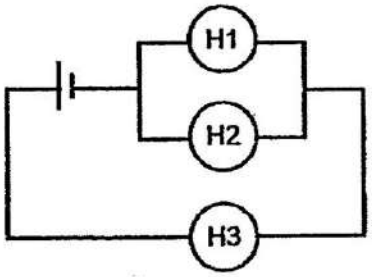
(1)



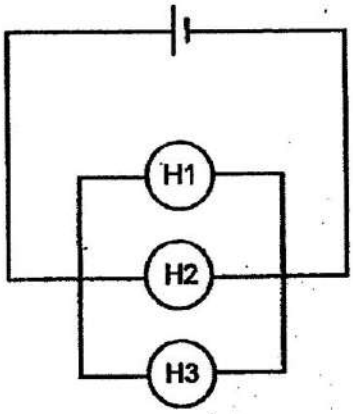
(2)



(3)



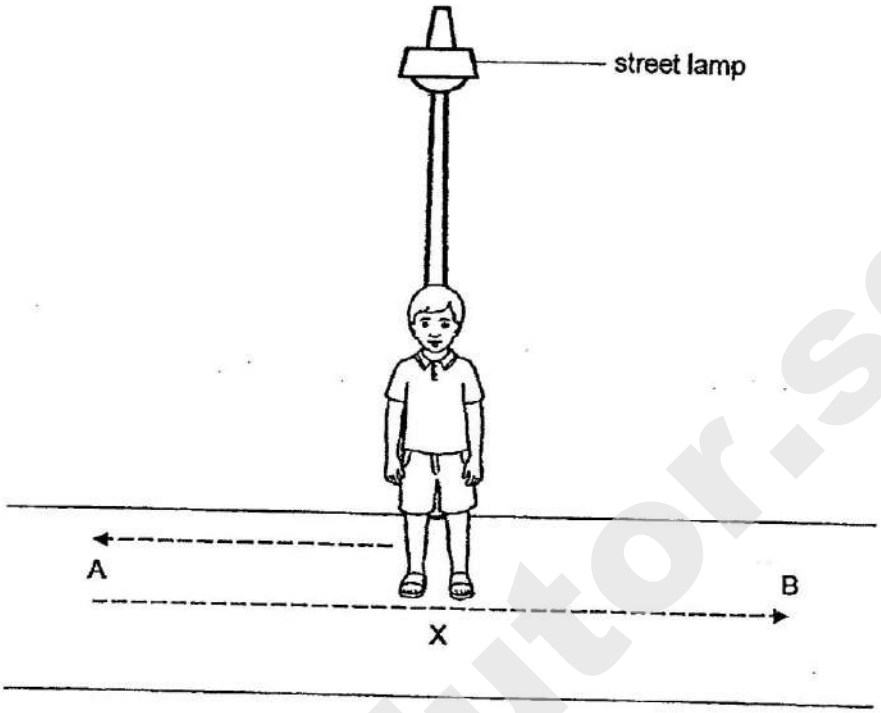
(4)



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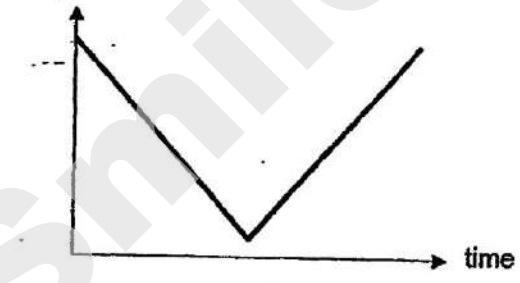
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24. Gabriel was standing under a street lamp. He walked to A and then to B.

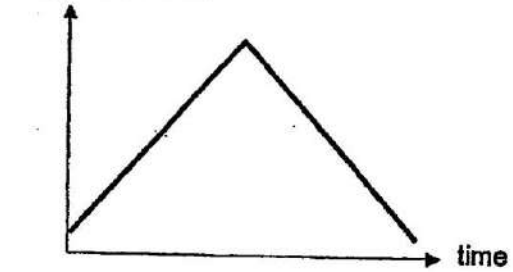


Which of the following graphs correctly represents the changes in the length of his shadow as he walked from X to A then to B?

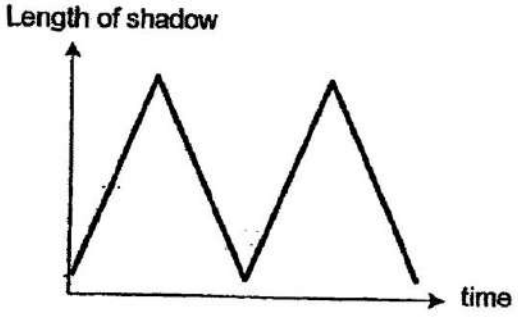
(1)



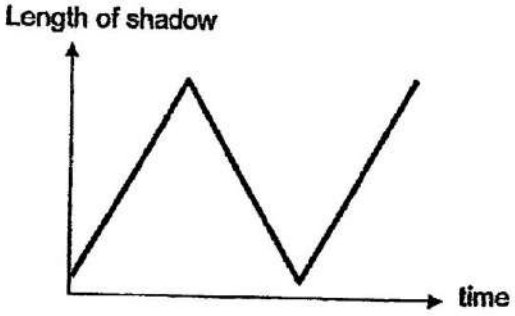
(2)



(3)



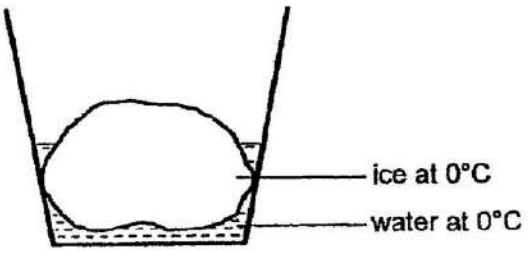
(4)



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25. Chris placed a block of ice into a glass containing some water at a room of 28°C.



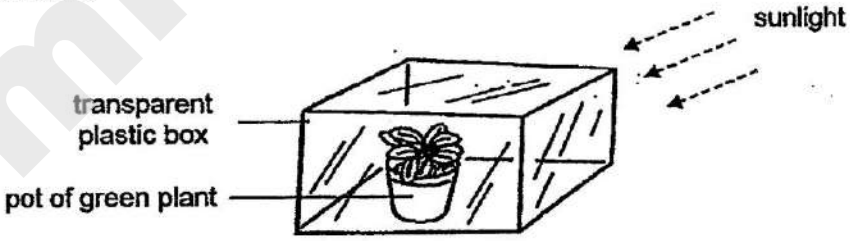
Chris made the following statements when the ice and the water were at 0°C.

A The ice is not melting as it remains at 0°C.
B The ice does not melt as it did not gain heat.
C The ice melts as it gains heat from the water.
D The ice melts as it gains heat from the surrounding air.

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

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

26. Benjamin placed a pot of green plant in a transparent plastic box as shown. He measured the amount of oxygen and carbon dioxide in the box at the start of the experiment.



After some time, Benjamin measured and recorded the amount of oxygen and carbon dioxide again. Which of the following best represents the change in the amount of oxygen and carbon dioxide in the box after some time?

	Oxygen	Carbon dioxide
(1)	decrease	decrease
(2)	increase	decrease
(3)	increase	increase
(4)	decrease	increase

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27. Casey pushed a toy, which was attached to a spring, into a cylindrical container and closed it with a lid as shown in Diagram 1. When he opened the lid, the toy jumped up as shown in Diagram 2.

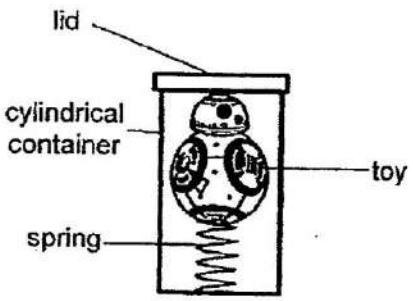


Diagram 1

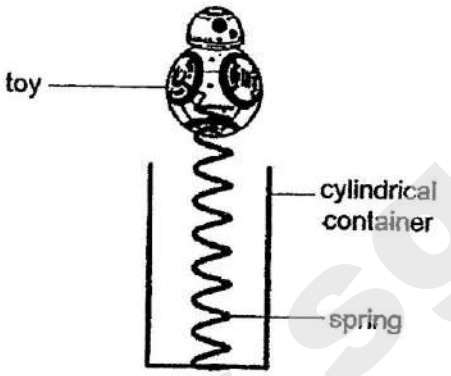


Diagram 2

He wanted the toy to jump higher. What should he do?

(1) Use a lighter lid
(2) Use a smaller toy
(3) Use a longer spring
(4) Use a taller container

28. Natural gas, coal and oil are examples of _____.

(1) energy
(2) organisms
(3) fossil fuels
(4) living things

End of Booklet A

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Anglo-Chinese School (Junior)

SEMESTRAL ASSESSMENT 2 (2018)
PRIMARY 5

SCIENCE

BOOKLET B

31 October 2018 **1 HOUR 45 MINUTES**

Name : _____ ( )

Class : P5 _____

INSTRUCTIONS TO PUPILS

DO NOT TURN OVER THE PAGES UNTIL YOU ARE TOLD TO DO SO

Follow all instructions carefully.

There are 13 questions in this booklet.

Answer **ALL** questions.

INFORMATION FOR PUPILS

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

The total marks for this booklet is 44.

The total time for Booklets A and B is 1 hour 45 minutes.

This question paper consists of 15 printed pages (inclusive of cover page).

BOOKLET A	**/ 56**
BOOKLET B	**/ 44**
TOTAL	**/ 100**
Parent's signature/ Date:	

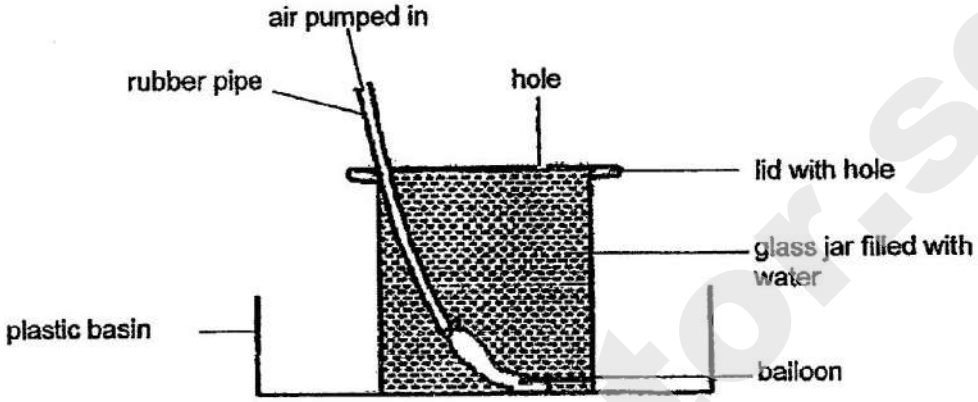
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For questions 29 to 41, write your answers in this booklet.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

(44 marks)

29. Mrs Tan set up an experiment as shown. She filled the glass jar to the brim with water. She then pumped five pumps of air into the balloon.



(a) State two observations that Mrs Tan would make. Explain your answer. [2]

(b) Describe how Mrs Tan can measure the volume of air in the balloon. [1]

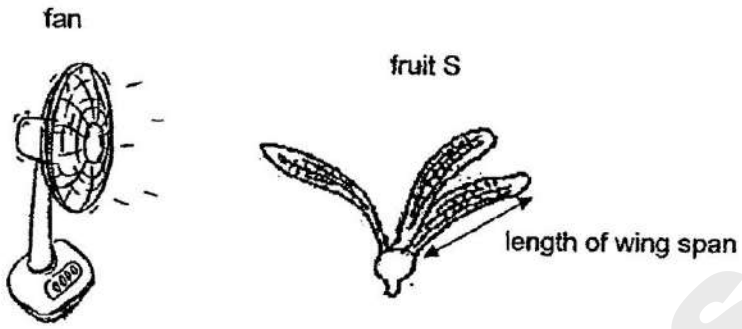
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SCORE / 3

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30. Sam wants to find out how the length of the wing span a fruit S affects the distance it travels when dropped from a fixed height. He dropped the fruit from a height in front of a fan and measured the distance travelled by the fruit as shown.



Sam used the same fruit and cut away some of the wing each time and repeated his experiment. He recorded the results in the table below.

Length of wing span (cm)	10	7	4	2
Distance travelled (cm)	50	38	20	12

(a) When the length of the wingspan is longer, the distance travelled by the fruit is further. How is this advantageous to fruit S? [1]

_____

_____

(b) Sam used a constant wind speed for the fan throughout his experiment. Explain why this ensures that his experiment is a fair test. [1]

_____

_____

(c) Sam now wants to conduct another experiment. He wants to find out if the height at which fruit S is dropped affects the distance it travels. Complete the table by placing a (✓) next to the variables that are to be kept the same. [1]

Variables	Keep the same
Length of wing span	
Wind speed	
Height at which fruit is dropped	
Mass of fruit	

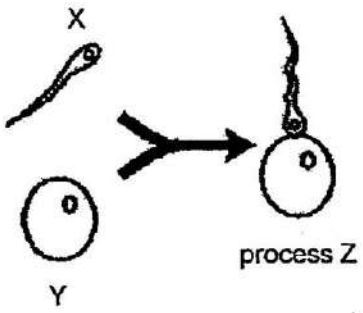
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SCORE	/ 3

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31. The diagram below shows the process in human reproduction.



(a) Name the parts X and Y. [1]

X: _____

Y: _____

(b) Name process Z and describe what happens during this process. [1]

_____

_____

(c) How does the developing foetus obtain nutrients after process Z? [1]

_____

_____

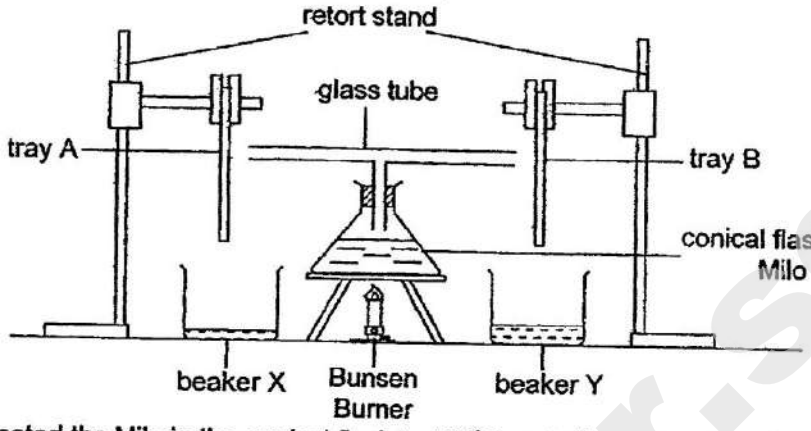
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32. Peter suspended two trays, Tray A and Tray B, at equal distances from the ends of a glass tube attached to a conical flask. Both trays are of the same size and at room temperature but made of different materials, plastic and metal.



Peter heated the Milo in the conical flask to 100°C and allowed the Milo to continue boiling for 10 minutes.

(a) After 5 minutes, Peter observed droplets of liquid on both trays. Explain Peter's observation. [2]

(b) After 10 minutes more liquid was collected in Beaker Y than Beaker X. Which tray, Tray A or Tray B, is made of metal? Explain your answer. [2]

(c) If Peter turned up the flame of the bunsen burner, will the amount of liquid collected in the same period of time in both beakers be more or less than the experiment above? Explain why. [1]

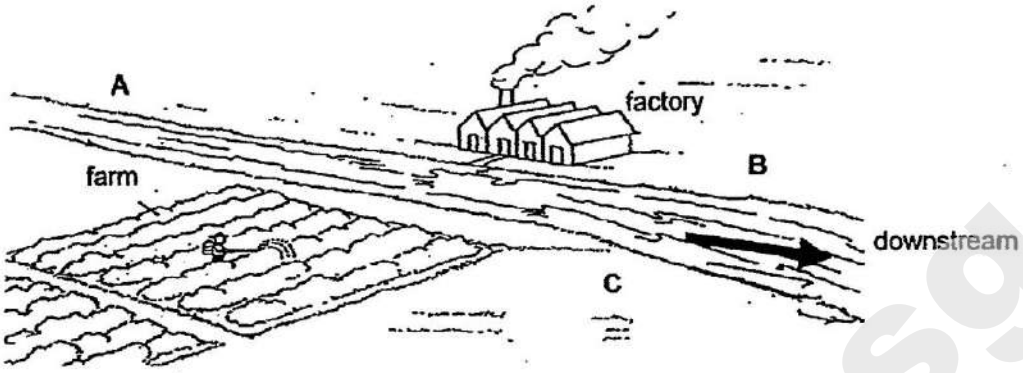
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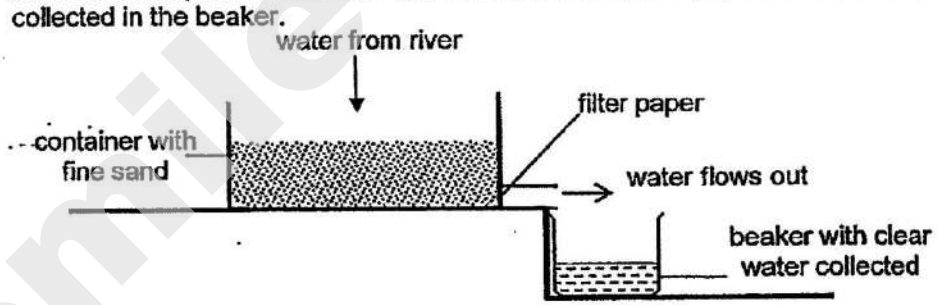
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33. The picture shows a factory and a farm situated along a river flowing downstream.



(a) Company X wants to build a water treatment plant which supplies water for home use. The water that is to be treated is pumped to the treatment plant from the point in the river nearest to it.
Why is location A a better location than locations B or C to build the water treatment plant? [1]

Ben wanted to find out whether the water collected from point C could be cleaned. He used the set-up shown. He poured 100 cm^3 of water collected from the river near point C onto the fine sand. After some time, clear water was collected in the beaker.



(b) Give a reason why Ben used fine sand instead of big rocks in his experiment. [1]

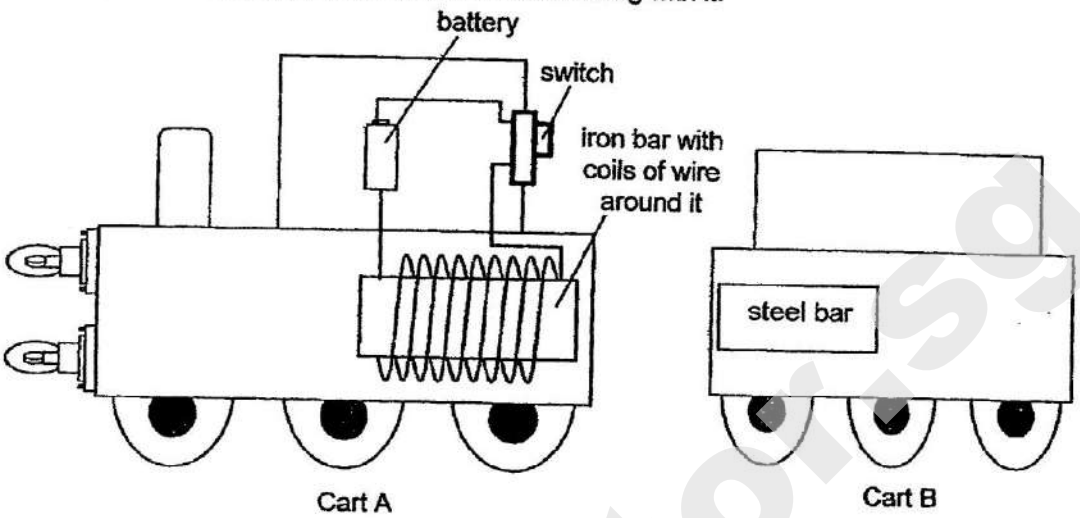
(c) Which method of water conservation is Company X using? [1]

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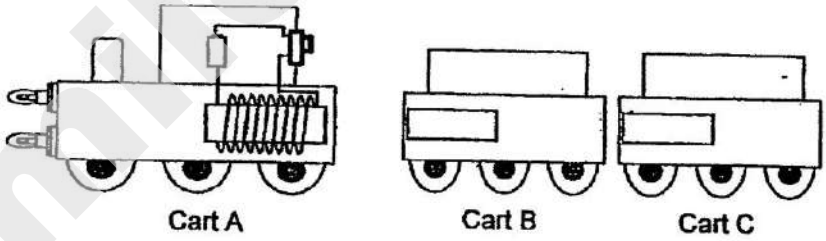
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34. Thomas has a toy train set. The diagram shows part of the circuit inside the trains. The train carts are not attached to each other. When he switches on cart A, it will start to move forward and cart B will move along with it.



(a) Explain why Cart B moves along with Cart A when it is switched on. [1]

(b) Thomas placed Cart C, which is identical to Cart B, behind Cart B as shown.



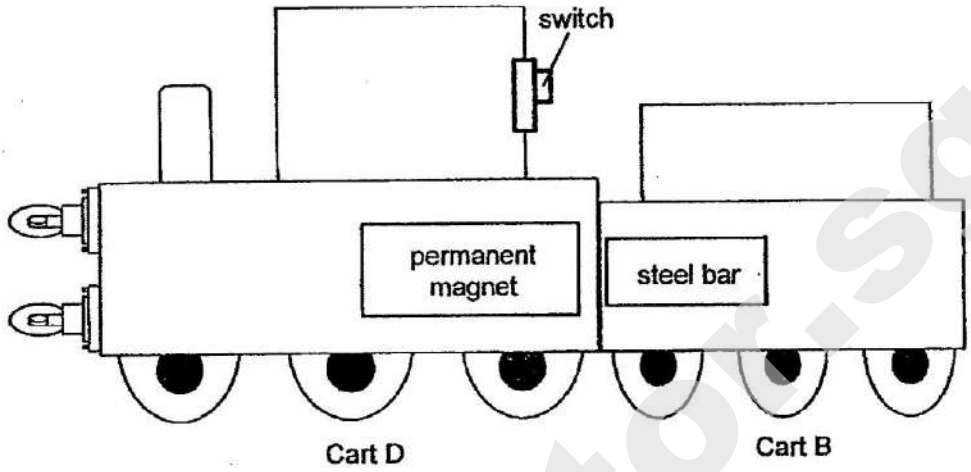
When Thomas switched on Cart A, Cart B moved along with Cart A but not Cart C. Explain clearly why. [1]

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(c) Thomas replaced Cart A with Cart D that had a permanent magnet as shown.



Thomas noticed that even before the switch on Cart D was switched on, Cart B was attracted to Cart D. He tried to separate Cart B from Cart D but had a lot of difficulty doing so.
From Thomas' observation, why it is better for him to use Cart A instead of Cart D. [1]

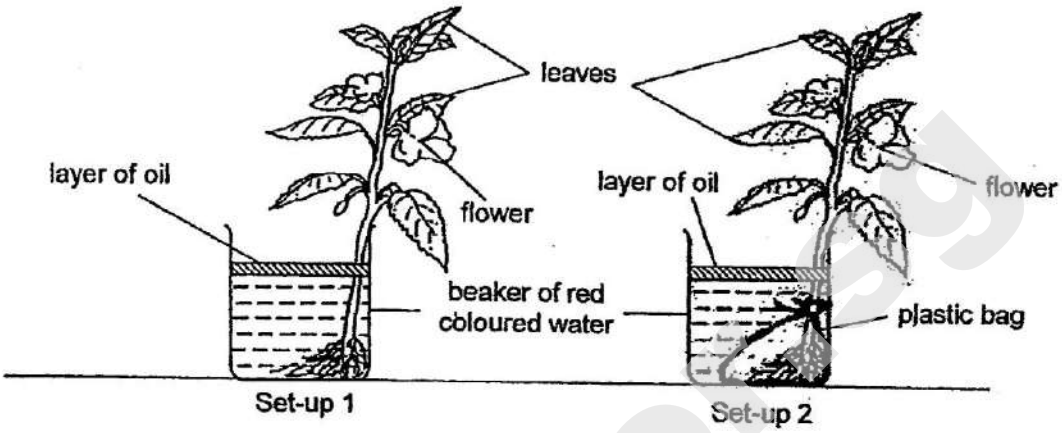
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SCORE	3

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35. Kelvin prepared 2 set-ups. He placed a healthy plant in both beakers of red coloured water as shown in the diagram. He then poured a layer of oil into the beakers.



(a) What changes would be observe in the flower and leaves in set-up 1 after two days? [1]

_____

_____

(b) Why did Kelvin pour oil into the water? [1]

_____

_____

(c) What was the aim of Kelvin's experiment? [1]

_____

_____

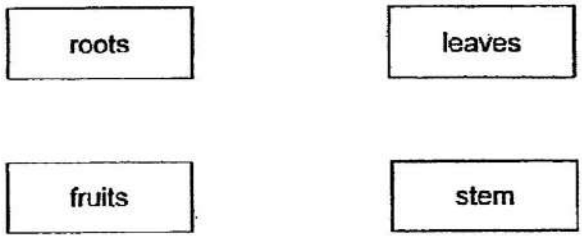
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SCORE	
	3

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36. (a) Four parts of a plant are shown. Draw arrows (→) in the diagram to show how water is transported in a plant. [1]



(b) (i) What is needed for photosynthesis in green plants? [1]

_____

_____

(ii) Insect X eats its way into a tree trunk. This affects the growth of the roots of the tree. Explain why. [1]

_____

_____

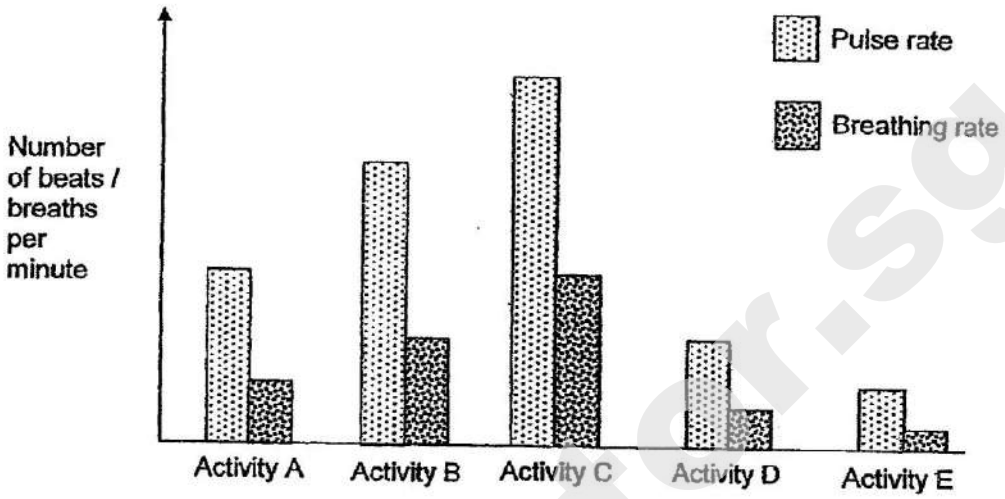
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SCORE	3

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37. Dominic recorded his pulse rates and breathing rates during five different activities, A, B, C, D and E. He presented the data in the bar graph as shown. Each activity was carried out on different days under similar conditions.



(a) What is the relationship between Dominic's pulse rate and breathing rate? [1]

(b) Which activity needs the least energy? Explain your choice. [2]

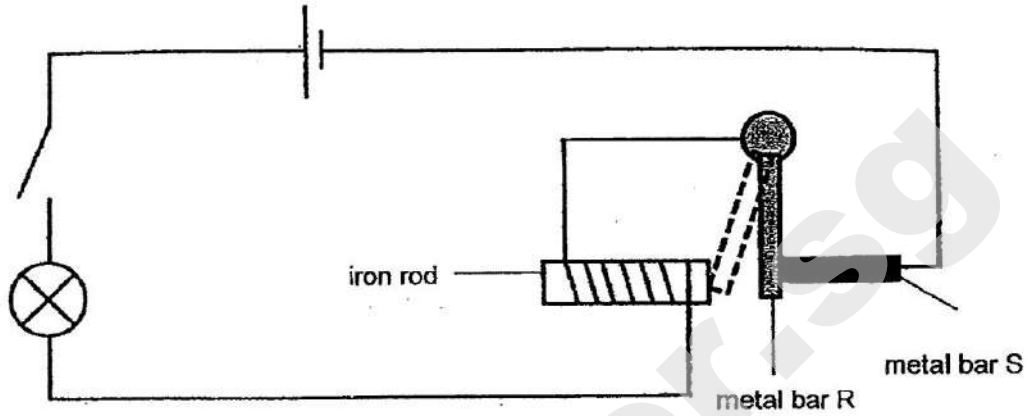
(c) Name the two human systems involved in producing the pulse rate and breathing rate. [1]

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SCORE 4

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38. Jonas set up a circuit as shown. When he closed the switch, the bulb lit up. After a short while, metal bar R moved away from the metal bar S and touched the iron rod.



(a) Why did metal bar R move away when the switch was closed? [1]

(b) When bar R touched the iron rod, what happened to the bulb? Explain your answer. [1]

(c) Jonas replaced bar R with another bar, bar T. Bar R and T are made of different materials. When he closed the switch, the bulb lit up but bar T did not move. State two properties of the material of bar T. [1]

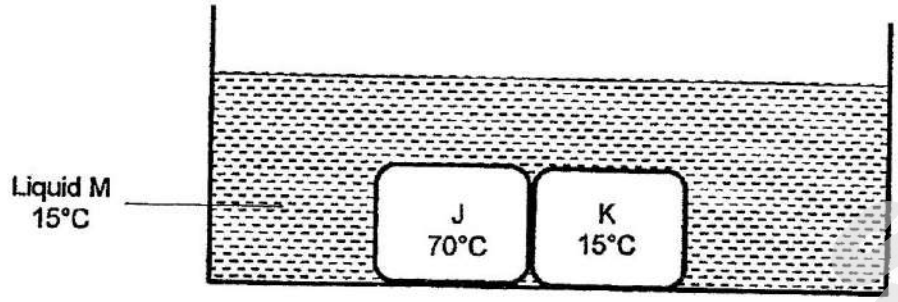
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SCORE	/ 3

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39. Jonathan placed two identical sized objects, J and K, made of different materials and at different temperatures into a container filled with liquid M at a 15°C. Both J and K are in contact with each other as shown in the diagram. He left the set-up in a room at 25°C.



(a) What will happen to the temperature of objects J and K and liquid M? Circle the correct answer. [1]

(i) Temperature of J will decrease / increase / remain the same.

(ii) Temperature of K will decrease / increase / remain the same.

(iii) Temperature of liquid M will decrease / increase/ remain the same.

(b) Explain your answer for (a)(iii)? [1]

_____

_____

(c) Jonathan left the set-up overnight and measured the temperature of liquid M.

What is most likely the temperature of liquid M? Explain your answer. [1]

_____

_____

(d) Jonathan removes J and K from the container and heats them to a temperature of 80°C. He then placed them on a table in the same room for 15 minutes. He touched both objects at the same time with each hand and felt that K was warmer than J.

What can you conclude about the heat conductivity of K compared to J? [1]

_____

_____

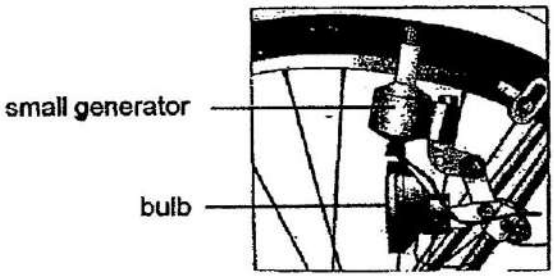
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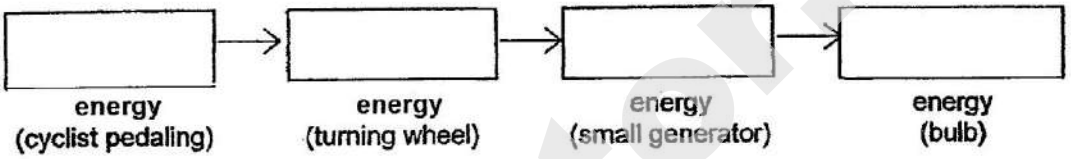
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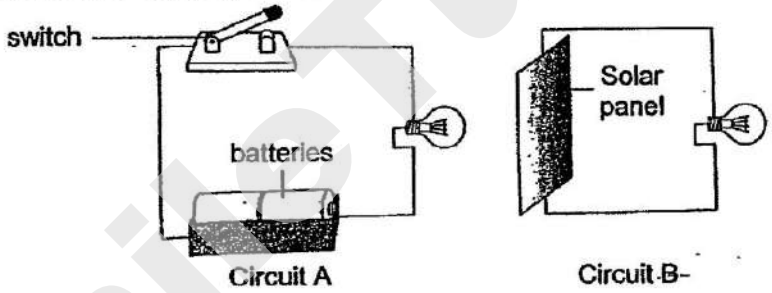
40. Zachary fixed his bicycle with a small generator connected to a light bulb in the picture. The bulb gives out light while the cyclist is pedaling.



(a) Fill in the main forms of energy in the boxes to show the conversion of energy that takes place when the cyclist pedals at night. [1]



Zachary then sets up two circuits, A and B that also gives out light. He placed both circuits next to each other as shown.



(b) State two observations Zachary will make when he closes the switch in Circuit A [1]

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

(d) Without changing the bulb or adding batteries to Circuit B. What can Zachary do to Circuit B to increase the brightness of its bulb? [1]

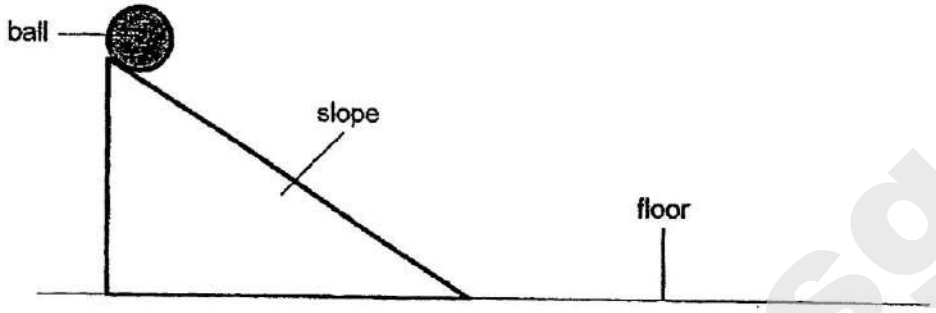
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SCORE	/ 4

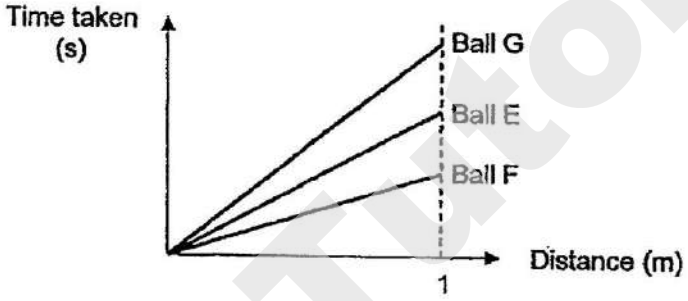
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41. Denzel carried out an experiment on his classroom floor. He released a ball down the slope. He then repeated the same procedure using two similar sized balls of different masses.



He plotted a graph to show the time taken for the balls to roll the same distance on the floor. The graph shows the results of his experiment.



(a) What is the relationship between the mass of the balls and the time taken to travel 1 metre? [1]

_____

_____

(b) Based on the graph, arrange the balls, E, F and G, from the heaviest to the lightest. [1]

_____

(c) State two things that Denzel must do to ensure the experiment is fair. [1]

_____

_____

End of Paper

SCORE	/ 3

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SCHOOL : ACS PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA2

CONTACT :

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	3	2	2	2	2	4	3	4	3
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	1	3	1	1	3	1	3	1	2
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
3	2	3	4	2	2	3	3		

SECTION B

Q29)	a)The balloon will inflate and water will spill out of the jar. When the air is pumped in the air occupies the space in the balloon which than displaces the water. b)She could measure the volume of the water before putting the balloon in then measure the volume of the water with the balloon in the glass jar.
Q30)	a)It is advantageous to fruits S as it would be further away from the parent plant causing less competition for water ,mineral salts and sunlight. b)This ensure the distance travelled by the fruit is due only to the length of its wing span. c)Length of wing span Wind speed Mass of fruit
Q31)	a)X: Sperm Y: Egg

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	b)Fertilisation. The sperm fuses with the egg. c)It obtains nutrients from the mother's blood stream through the umbilical cord.
Q32)	a)Water from the Milo gained heat and evaporated into water vapour which lost heat to the cooler surface of the tray and condensed into tiny water droplets. b)B. Metal is a better conductor of heat and will lost heat faster than plastic. c)It will be more. The rate of evaporation will be faster as the water will gain heat faster.
Q33)	a)Water at A is cleaner that that B and C as the wastage from factory will contaminate the water at B and C when it flows downstream. b)The air spaces between the sand will be smaller and can trap more impurities. c)rectcling
Q34)	a)There is an electromagnet inside cart A attracting the steel bar in cart B when it is turned on. b)C did not more along as the electromagnet was not strong enough to pull cart C from that distance. c)It is so because when the switch is switched off the iron bar will no longer be magnetised and will not attract the steel bar.
Q35)	a)The flower and leaves will turn red as the roots are absorbing red water and the water-carrying tube would transport red coloured water to the flowers and the leaves. b)To ensure that no water evaporates. c)To find out if plants take in water from the roots.
Q36)	a)roots → leaves fruits ← stem b)Water, carbon dioxide and light. c)The leaves would not be able to transport food to the roots if the food-carrying tubes are eaten.
Q37)	a)The higher his pulse rates, the higher his breathing rate.

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	b)Activity E. He had the least amount of pulse per minute and breathes per minute. Therefore he did not need as much digested food, water or oxygen compared to the other activities. c)The circulatory system and respitory system.
Q38)	a)It moved away as the iron rod had become an electromagnet which attracted metal bar R. b)When bar R touched the rod, the bulb did not light up as the circuit was not completed. c)Bar Tis an electrical conductor and a non-magnetic material.
Q39)	a)i)decrease ii)increase iii)increase b)Liquid M gained heat from object J and the surrounding air. c)25℃ . M gained heat from the surrounding air and reached room temperature. d)K is a poorer conductor of heat than J.
Q40)	a)Kinetic energy →kinetic energy →electrical energy →light energy b)The bulb in circuit A will light up as while as the bulb in circuit B. c)When the switch is closed electricity flows through the circuit and the light bulb lights up. The solar panel converts the light energy to electrical energy which flows through the circuit and light up the bulb. d)He could add another solar panel.
Q41)	a)The heavier the ball, the shorter amount of time the ball takes to travel one metre. b)F, E , G c)Same material of slope and same release point.

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22

Name : _____ ( )

Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 5

Semestral Assessment 2

SCIENCE

BOOKLET A

25 October 2018

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

28 questions
56 marks

Do not open this booklet until you are told to do so.
Follow all instructions carefully.

This paper consists of 18 printed pages.

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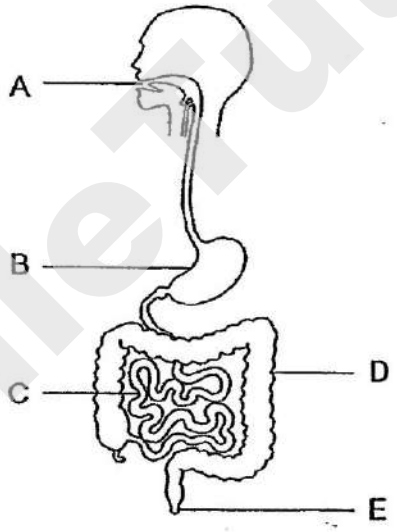
Section A (28 x 2 marks = 56 marks)
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.**

1. Which of the following characteristics could be used to tell the difference between mammals and insects?

   A number of legs
   B presence of wings
   C number of body parts
   D colour of outer covering

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

2. The diagram below shows the human digestive system.



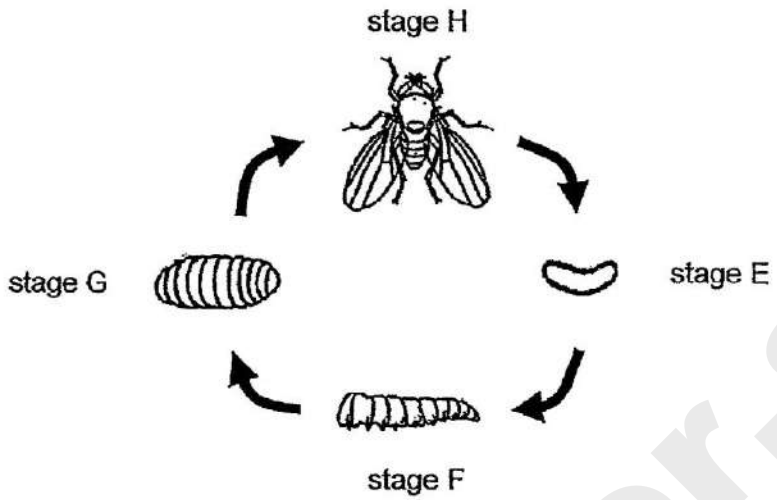
Based on the diagram above, which one of the following is correct?

	Organ where digestion begins	Organ where digestion is completed
(1)	A	E
(2)	A	C
(3)	B	C
(4)	B	D

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3. The diagram below shows the stages in the life cycle of a housefly.



Which of the following statements are correct?

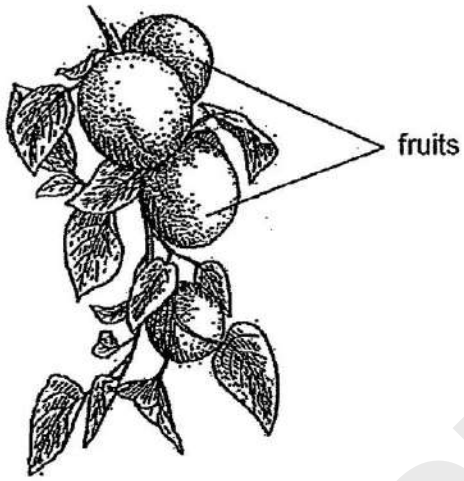
A It moults at stage E.
B It is a larva at stage F.
C It does not need air at stage G.
D It is able to reproduce and fly at stage H.

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

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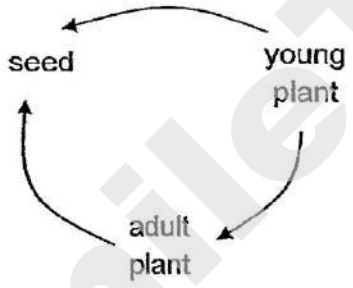
4. The diagram below shows part of plant X.



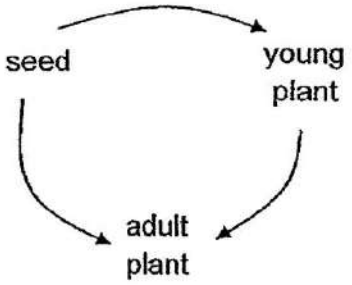
part of plant X

Which one of the following correctly shows the stages in the life cycle of plant X?

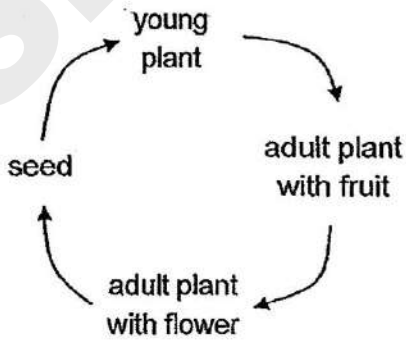
(1)



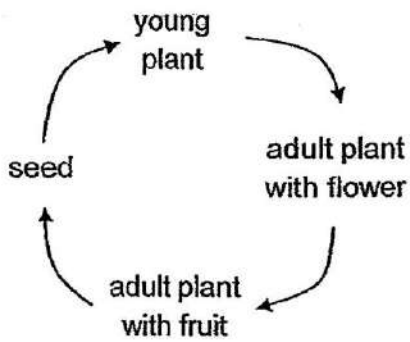
(2)



(3)



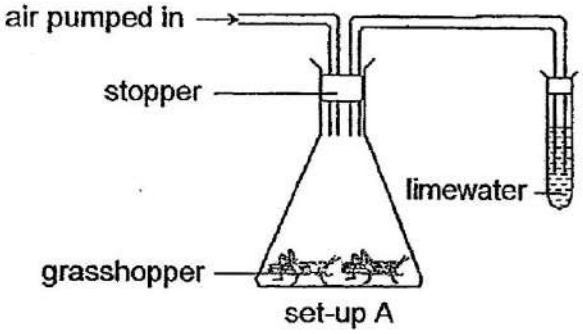
(4)



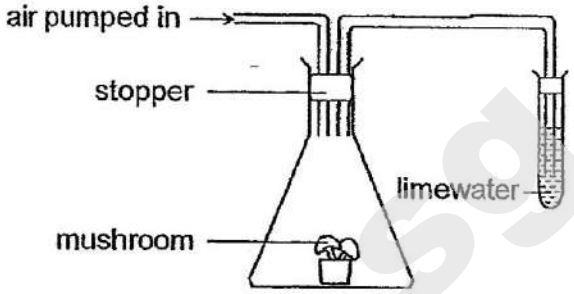
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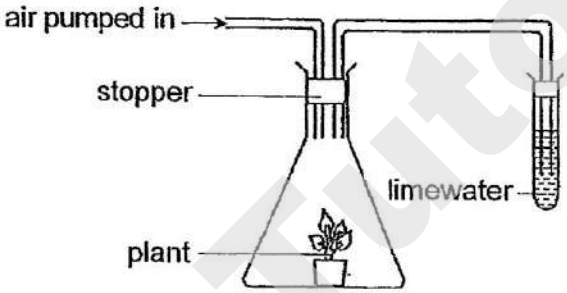
5. Yao Ming placed different organisms in each set-up shown below and added limewater to each test tube. Limewater changes from clear to chalky when in contact with carbon dioxide. The three set-ups were placed beside the window from 12 noon to 4 pm.



set-up A



set-up B



set-up C

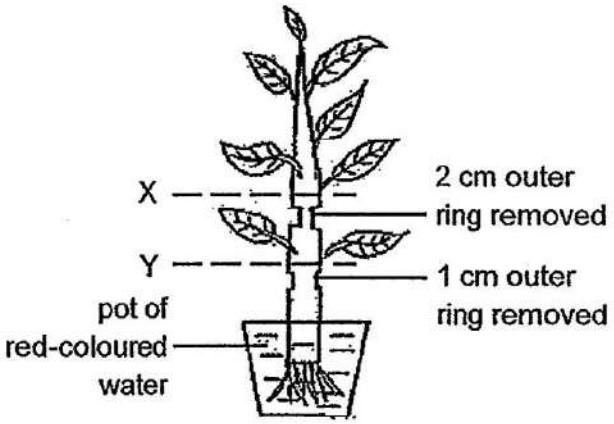
Which one of the following show the correct observation of limewater in the three set-ups at the end of the experiment?

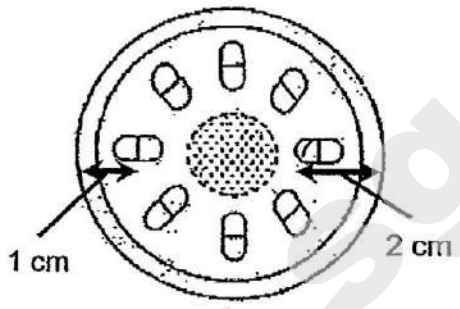
	Set-up		
	A	B	C
(1)	chalky	chalky	no change
(2)	chalky	no change	no change
(3)	no change	chalky	chalky
(4)	no change	no change	chalky

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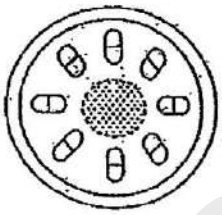
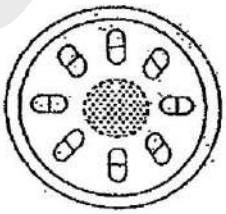
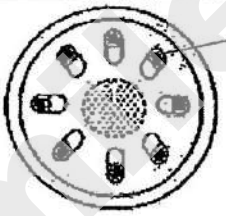
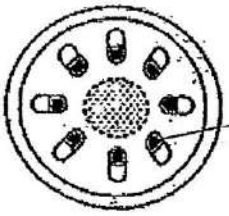
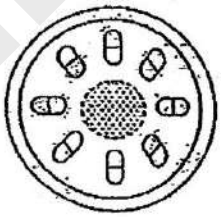
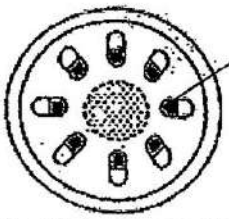
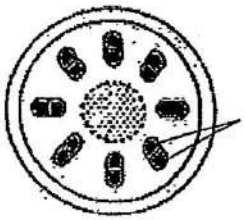
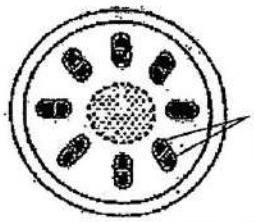
6. Ismail made a 1-cm and 2-cm cut to the stem of a plant and placed it in a pot of red-coloured water as shown below.





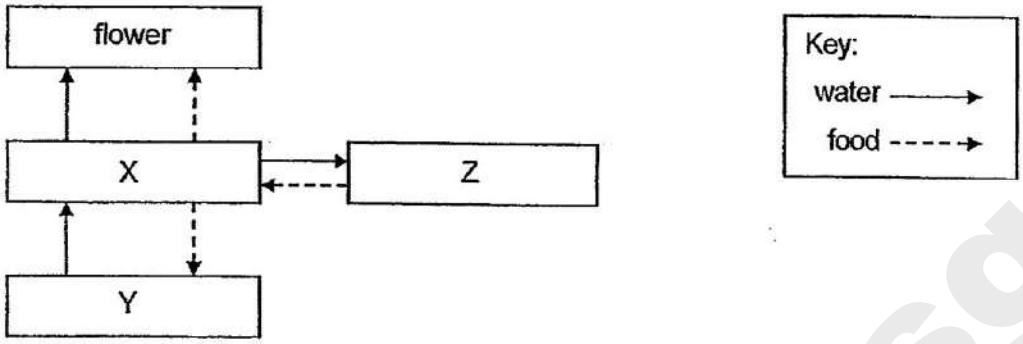
cross-section view of the stem

Which one of the following shows his observation after 1 day?

	X	Y
(1)		
(2)		
(3)		
(4)		

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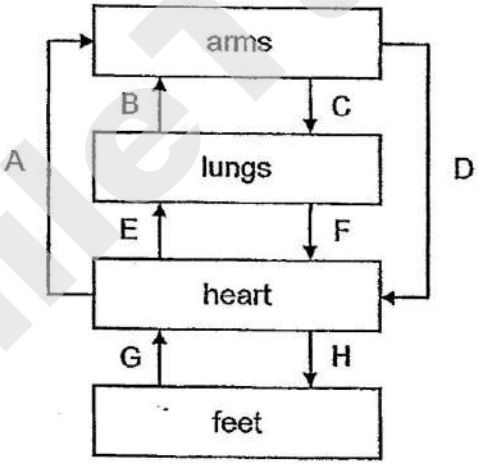
7. Study the plant transport system below.



Which one of the following is correctly represented by X, Y and Z?

	X	Y	Z
(1)	leaves	stem	roots
(2)	stem	leaves	roots
(3)	roots	stem	leaves
(4)	stem	roots	leaves

8. The diagram below shows the blood flow in some parts of the human body.



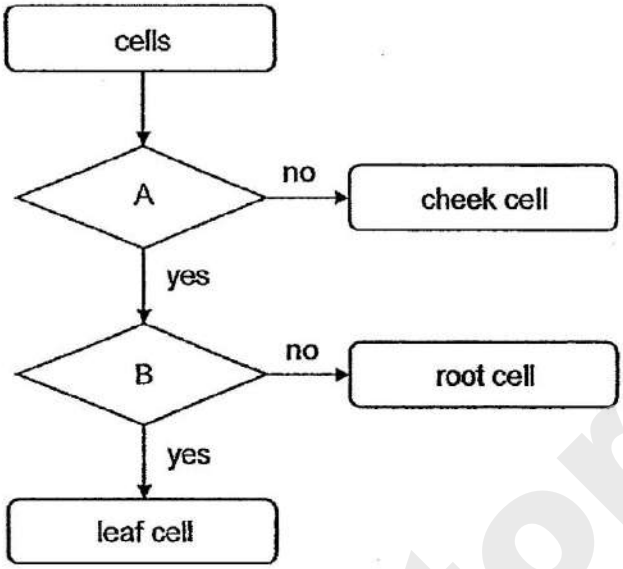
Which two arrows are <u>not</u> drawn correctly?

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

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9. Study the chart below.



Which one of the following correctly represents A and B?

	A	B
(1)	Does the cell have chloroplasts?	Does the cell have a cell wall?
(2)	Does the cell have a cell wall?	Does the cell have chloroplasts?
(3)	Does the cell have a cell wall?	Does the cell have a nucleus?
(4)	Does the cell have a nucleus?	Does the cell have chloroplasts?

10. Prakash recorded the cell parts present in cell samples A, B, C and D taken from plants and animals. A tick (✓) indicates that the cell part is present.

	Cell Sample			
Cell Part	**A**	**B**	**C**	**D**
nucleus	✓	✓	✓	
cell wall	✓		✓	
cytoplasm	✓	✓		✓
chloroplasts			✓	
cell membrane	✓	✓		✓

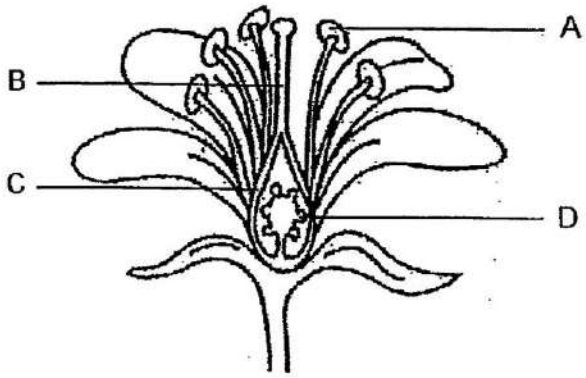
His teacher told him that there is a mistake in his observation.

Which cell did he record **wrongly**?

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

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11. The diagram below shows the different parts of a flower.

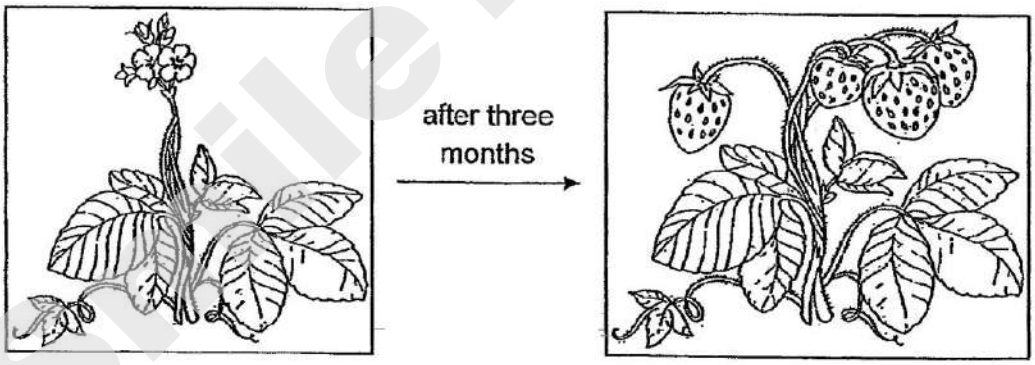


flower

Which one of the following correctly shows the development of the flower parts after fertilisation?

	Develops into the seeds	Develops into the fruit
(1)	A	B
(2)	B	A
(3)	C	D
(4)	D	C

12. The diagram below show the development of a plant after three months.



Based on the development shown above, which of the following processes would have taken place during the three months?

A Pollination
B Fertilisation
C Seed dispersal
D Seed germination

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

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13. Shu En observed some flowers and recorded her observations in the table below. A tick (✓) shows that the flower has the characteristic.

Characteristics	Flowers			
	A	B	C	D
Has sweet-smelling nectar.	✓			✓
Has stigma hidden in the flower.	✓			
Has small and dull-coloured petals.		✓		
Has anthers that stick out of the flower.		✓	✓	

Which of these flowers are most likely insect-pollinated?

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

14. Which of the following characteristics can be passed on from parents to their offsprings?

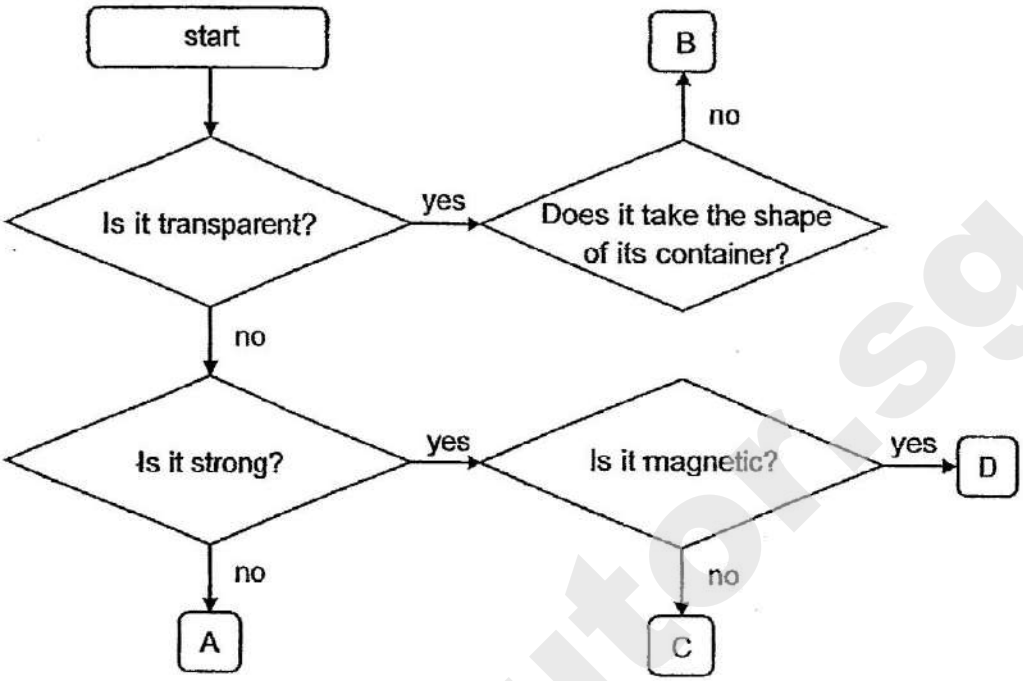
A Fingerprints
B Hair colour
C Eye colour
D Ability to swim

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

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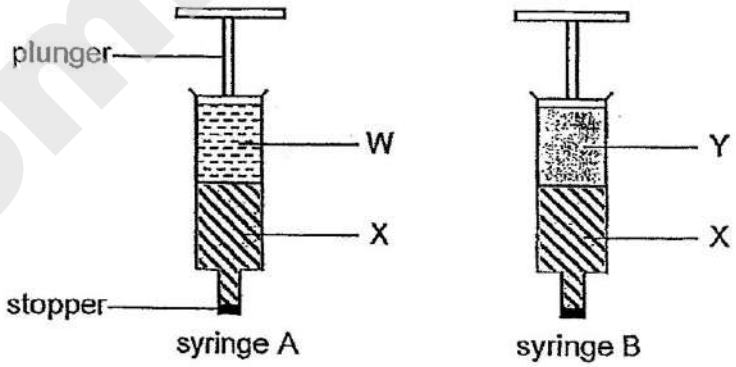
15. Study the chart below.



Which letter represents an iron nail?

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

16. Two syringes containing some substances are shown below.

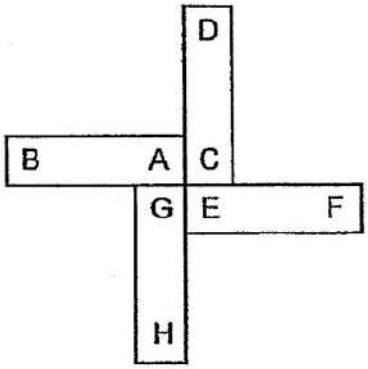


Which one of the following best explains why only the plunger in syringe B could be pushed down?

(1) Only X can be compressed.
(2) Only Y can be compressed.
(3) W, X and Y have a definite shape.
(4) W, X and Y have no definite volume.

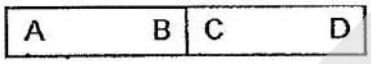
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17. The diagram below shows the arrangement of four identical bar magnets.



Based on the above, which one of the following arrangements is **not** possible?

(1)



(2)



(3)



(4)



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18. Study the experimental set-up below. At the start of the experiment, the wooden rod was horizontal when magnet X was fixed at one end of the rod as shown in diagram 1. Magnet P which is of identical shape and size was then placed directly below magnet X. The wooden rod was observed to tilt as shown in diagram 2.

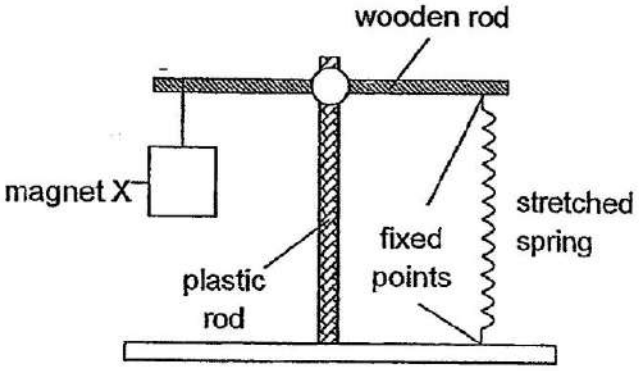


diagram 1

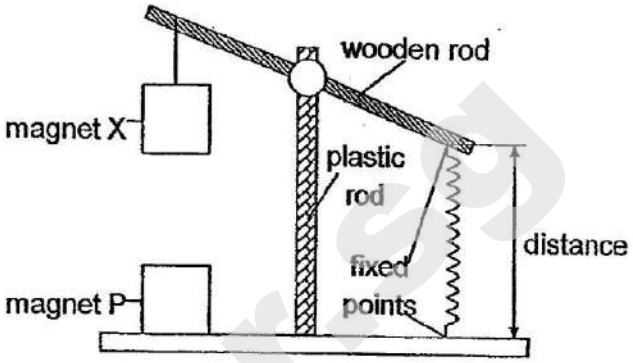
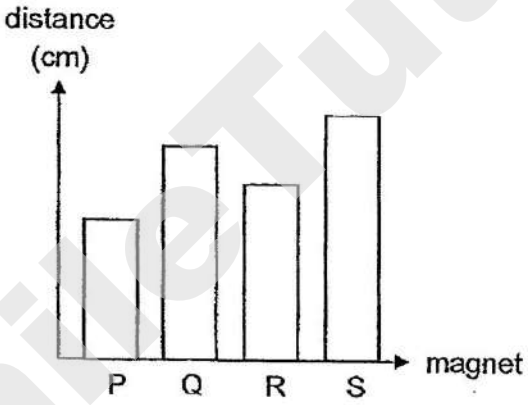


diagram 2

The experiment was repeated using other magnets Q, R and S, each of identical shape and size, to replace magnet P. The results are recorded in the graph below.

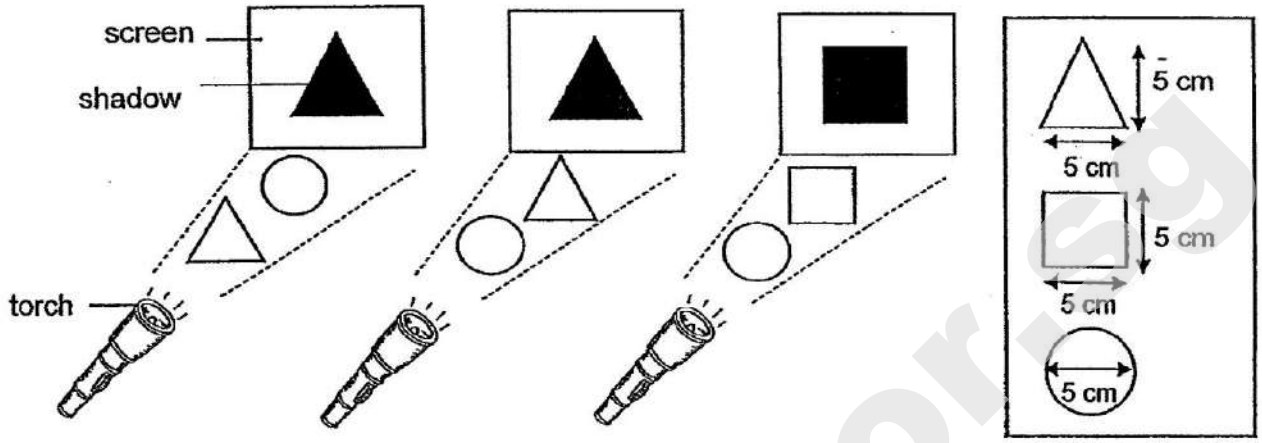


Based only on the results above, which one of the following correctly shows the arrangement of magnets P, Q, R and S from the magnet with the greatest magnetic strength to the magnet with weakest magnetic strength?

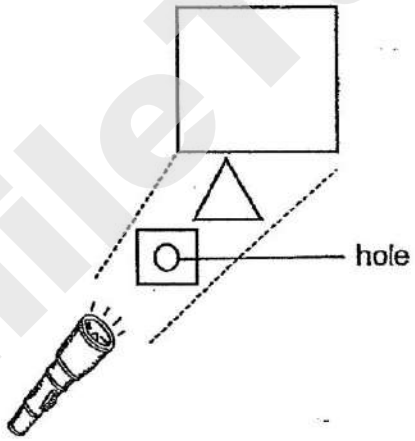
	Greatest magnetic strength → Weakest magnetic strength			
(1)	S	Q	R	P
(2)	S	R	Q	P
(3)	P	Q	R	S
(4)	P	R	Q	S

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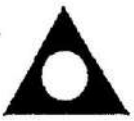
19. The diagram below shows the shadows on the screens when two different shapes of different materials are placed between the screens and the torches as shown.



A hole is made on the square-shaped material and placed in the set-up as shown below.



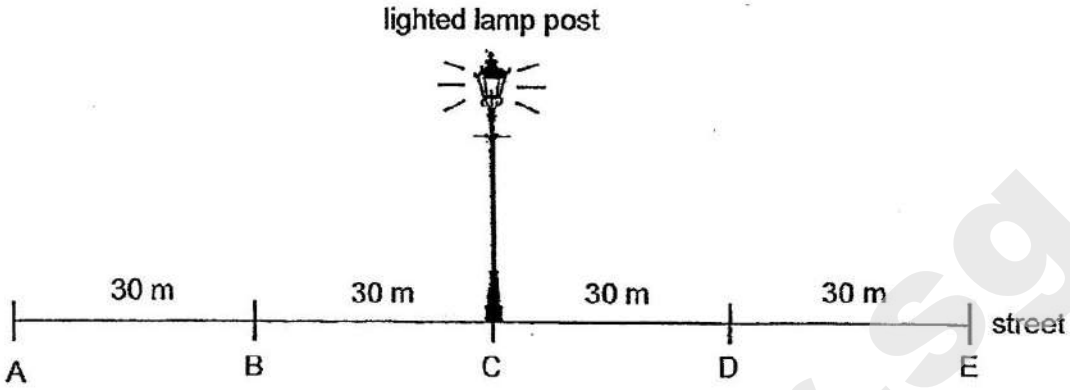
Which of the following shows the shadow on the screen?

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

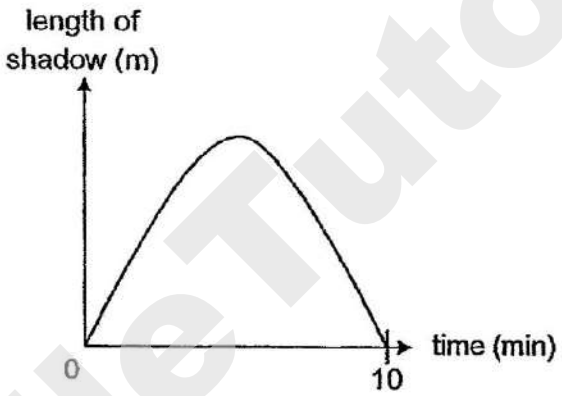
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20. Study the diagram below.



As Siti walked along the street at night, it was observed that the length of her shadow changed as shown in the graph below.

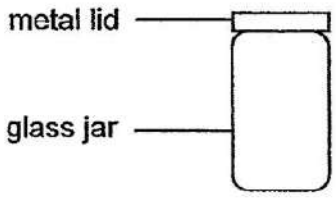


Based on this observation, which one of the following most likely shows the route taken by Siti as she walked along the street?

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

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21. Zainab could not remove the metal lid from a glass jar.



Which of the following would help her remove the metal lid most easily?

(1) Place the metal lid in ice water.
(2) Place the metal lid in hot water.
(3) Place ice cubes on the metal lid only.
(4) Place the glass jar in hot water and wrap the metal lid with a cold towel.

22. Three beakers containing some water are shown below.



beaker D
200 ml of water
at 70°C

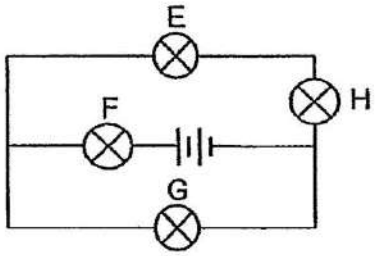
beaker E
200 ml of water
at 50°C

beaker F
400 ml of water
at 50°C

Which of the following statement is true about the water in the beakers?

(1) Water in beaker F has more heat than E.
(2) Water in beakers E and F have the same amount of heat.
(3) Water in beaker D will reach room temperature the fastest.
(4) Water in beakers D, E and F will reach room temperature at the same time.

23. Study the electrical circuit below.



When two of the bulbs fused, the other two bulbs remained lit. Which were the two bulbs that had fused?

(1) E and F
(2) E and H
(3) G and F
(4) G and H

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24. Vimala wanted to find out which material of an **object** affects the brightness of the **bulbs in a circuit**. Which of the following variables must **be kept the same in order** for the experiment to be fair?

A Type of batteries used
B Number of batteries used
C Material of the object being tested
D Number and arrangement of bulbs

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

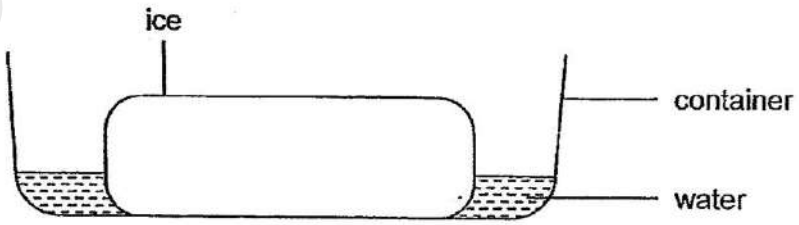
25. The table below shows the melting and boiling points of four substances A, B, C and D.

Substance	Melting Point (°C)	Boiling Point (°C)
A	63	267
B	15	84
C	90	300
D	5	30

Which of the following substances are in solid state at room temperature?

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

26. A block of ice was placed in a container and left near the window. After a while, the ice started to melt as shown below.



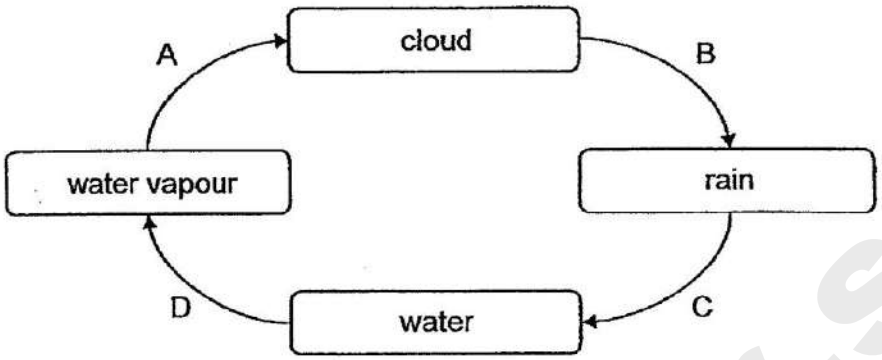
Which one of the following statements is true?

(1) The ice loses heat to the surrounding air.
(2) The temperature of the block of ice is 0°C.
(3) The temperature of the block of ice increases.
(4) Water in the container gained heat from the ice.

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27. The diagram shows the water cycle.



Which one of the following is correct?

	Heat Gain	Heat Loss
(1)	A	C
(2)	A	B
(3)	D	B
(4)	D	A

28. Which one of the following helps to reduce water usage?

(1) Taking a long bath.
(2) Washing dishes under a running tap.
(3) Using water from a hose to wash the car.
(4) Turning off the tap while brushing your teeth.

END OF BOOKLET A

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Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

SIMPLE IN VIRTUE

STEADFAST IN DUTY

Primary 5

Semestral Assessment 2

SCIENCE

BOOKLET B

25 October 2018

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

13 questions
44 marks

Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

Booklet A	56
Booklet B	44
Total	100

This booklet consists of 16 printed pages.

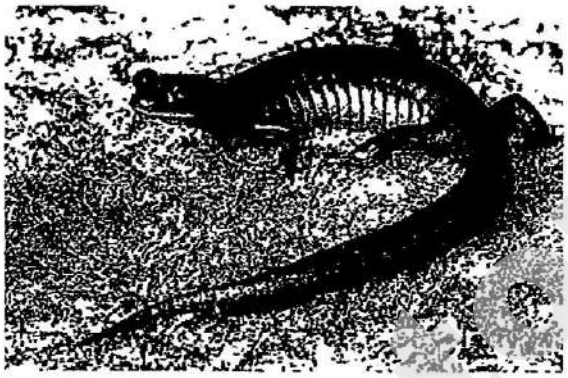
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Parent's Signature/Date

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Section B (44 marks)
For questions 29 to 41, 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.

29. Organism Z lives both on land and in water. It needs to live near a water body to keep its skin moist.



Organism Z

(a) Which group of animal would organism Z be classified as? [1]

_____

(b) The young of organism Z can only live in water and takes in dissolved oxygen. Which organ allows it to do so? [1]

_____

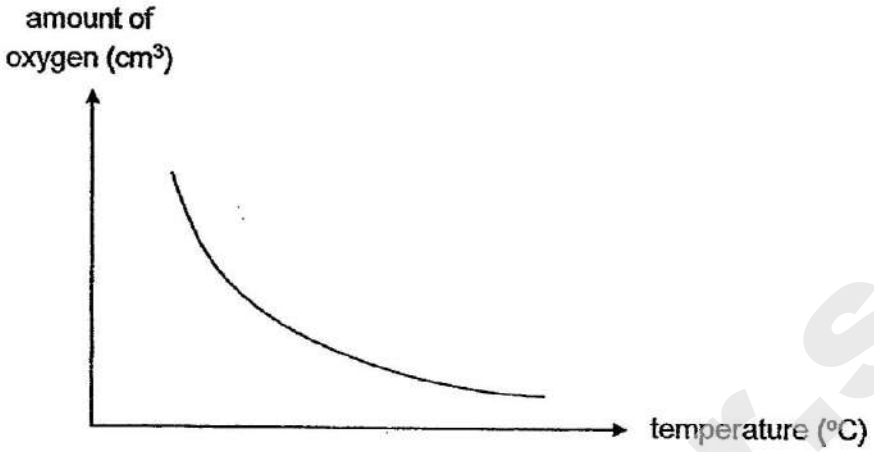
(c) Organism Z can lay up to 400 eggs at one go. What is one advantage of doing so? [1]

_____

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30. Ban Pin conducted an experiment to find out how the amount of oxygen changes in his fish tank at different temperatures. His results are shown in the graph below.



(a) Based on the graph above, state the relationship between temperature and amount of oxygen. [1]

Ban Pin then observed that the breathing rate of the fish increased when the temperature of the water in the fish tank increased.

(b) Using the results above, explain this observation. [1]

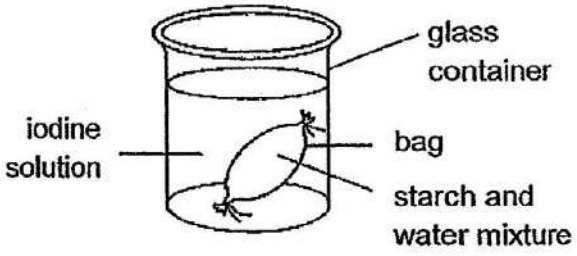
His friend suggested that adding some plants into the tank and placing the tank by the window would help the fish survive better.

(c) How does the suggestion affect the amount of oxygen in the tank? Give a reason for your answer. [1]

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31. A bag filled with starch and water mixture was lowered into a glass container filled with some iodine solution. Iodine solution changes from yellowish brown to dark blue in the presence of starch. Six hours later, the mixture in the bag turned dark blue. However, the iodine solution in the glass container remained unchanged.



(a) What could have caused the mixture in the bag to turn dark blue? [1]

_____

_____

(b) Why did the colour of iodine solution in the glass container remain unchanged? [1]

_____

_____

(c) Which cell part has the same function as the bag? [1]

_____

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32. Ganesh collected three different types of inedible seeds X, Y and Z. He wanted to find out how easily seeds X, Y and Z are dispersed by animals. He placed 20 seeds of each type into an uncovered box and covered this box with a furry towel.

Next, he shook the covered box for 30 seconds. He then removed the towel and recorded the number of each type of seed stuck onto the towel. The table below shows the results of this experiment.

Type of seed	Number of seeds	
	Remained in the box	Stuck onto the towel
X	20	0
Y	3	17
Z	15	5

(a) Based on the results shown, what is the relationship between the number of seeds stuck on the towel and how easily the seeds are dispersed by animals? [1]

_____

_____

(b) What conclusion can you draw from the experiment? [1]

_____

_____

(c) State one characteristic or structure that can be found on seeds X and Y. [1]

On seed X: _____

On seed Y: _____

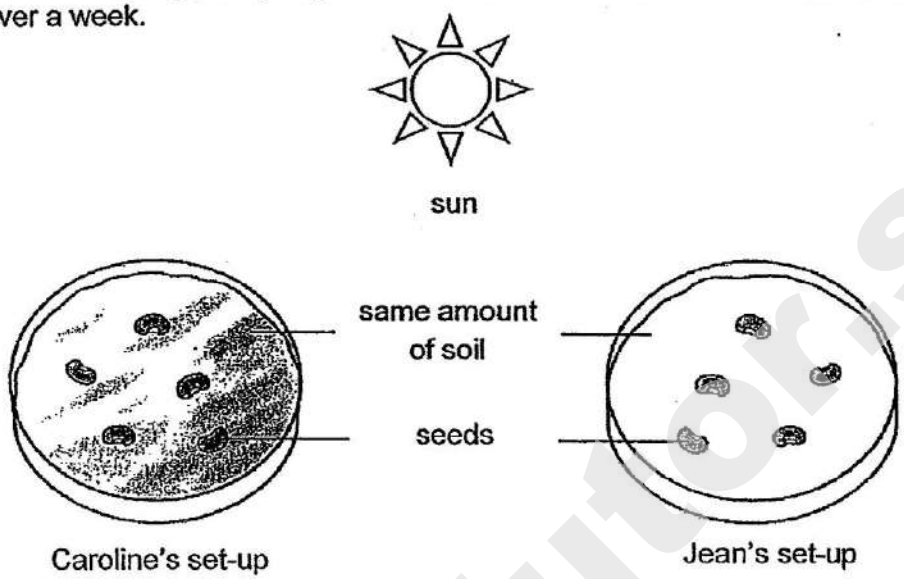
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33. Caroline and Jean wanted to investigate the conditions necessary for seeds to germinate. They carried out the experiment with the set-ups shown.

Both the set-ups were placed near a window. Caroline added a little amount of water to her set-up every day. Both Caroline and Jean then observed their seeds for over a week.



(a) What is a likely aim for the experiment? [1]

_____

(b) In whose set-up would the seeds be more likely to germinate? Explain your answer. [1]

_____

_____

(c) Caroline and Jean wanted to modify their experiment to find out whether light is needed for seeds to germinate. State one change that they each have to make in the experiment to achieve their aim. [2]

Caroline's set-up: _____

_____

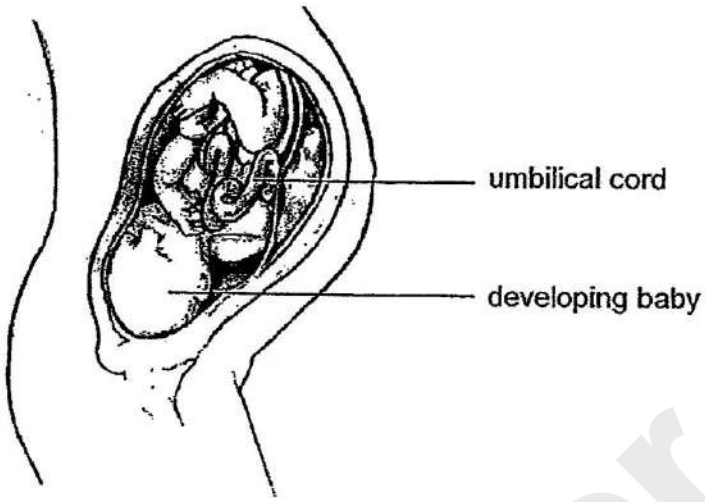
Jean's set-up: _____

_____

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34. The diagram below shows a developing baby inside a mother's womb.



inside a mother's womb

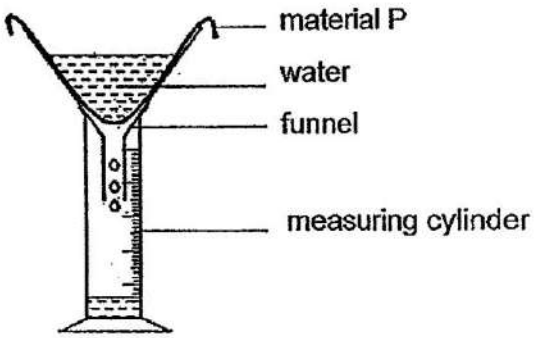
State whether each of the following statements is 'True' or 'False'. [2]

	Statement	Write either 'True' or 'False'
(a)	Millions of sperms are needed to fertilise one egg cell.	
(b)	As the baby develops inside the mother's womb, it does not require air or water.	
(c)	The developing baby obtains its nutrients from the mother's blood which flows through the umbilical cord.	
(d)	After fertilisation, the fertilised egg will attached itself to the wall of the womb and then divides to form more cells.	

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35. A thin layer of material P was lined on a funnel. Water was poured into the funnel and left to stand for 2 minutes. The volume of water collected in the measuring cylinder was recorded. The experiment was repeated with materials Q and R.



The table below shows the results recorded.

Material	Volume of water collected (ml)
P	50
Q	0
R	80

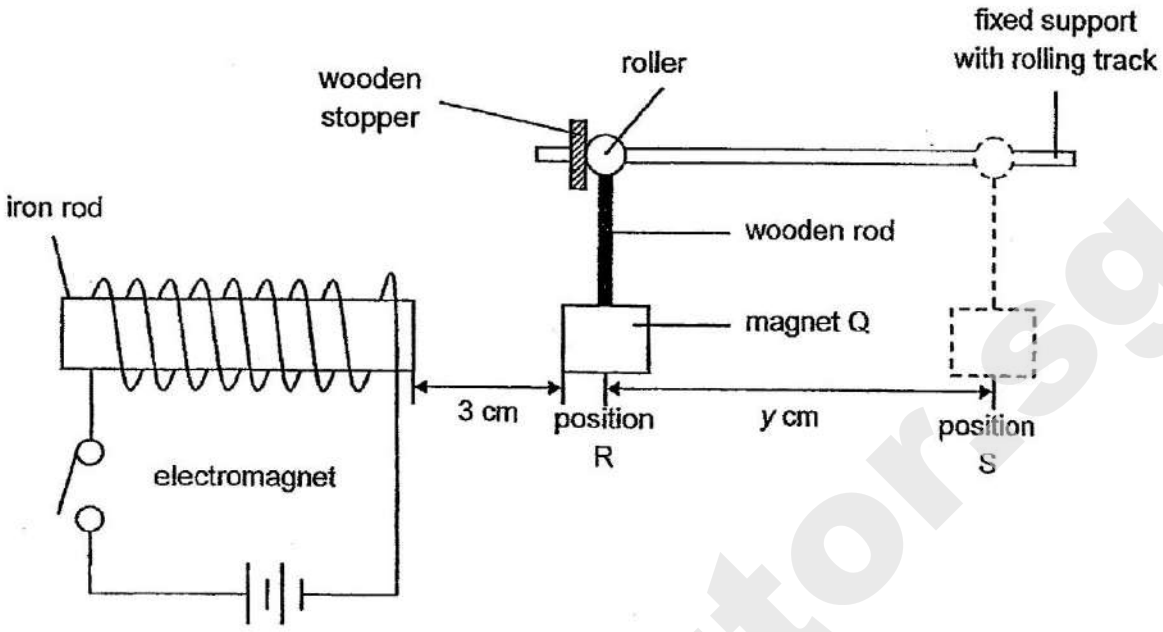


umbrella

Based on the results, which material should be chosen to make part X of an umbrella? Explain your answer. [2]

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36. Study the diagram below. When the switch in the circuit was closed, magnet Q was observed to have moved a distance of *y* cm from position R to position S.



(a) Explain the above [2]

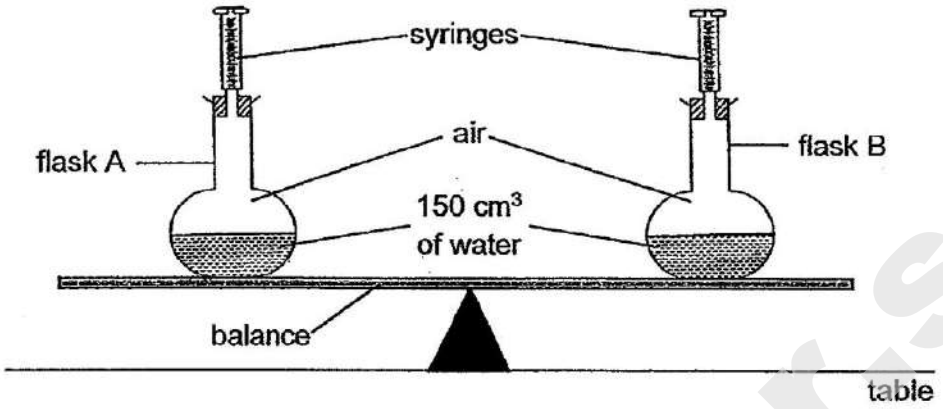
(b) Suggest **one change to be made to the** circuit above such that distance *y* can be **increased**. [1]

(c) The experiment was repeated three times before the average distance moved by magnet Q was calculated and recorded. Give a reason for this. [1]

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37. Two similar flasks A and B were placed on a balance as shown below. Each flask has a capacity of 300 cm^3 and was filled with 150 cm^3 of water. The syringe attached to each flask allows air to be pumped in and removed.



50 cm^3 of air was then removed from flask A only.

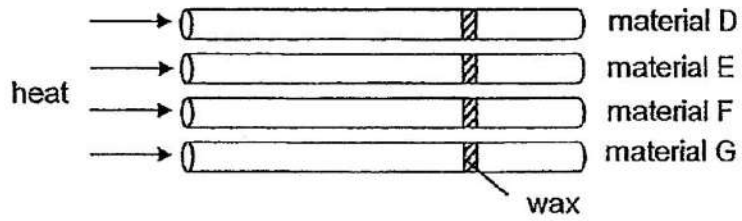
(a) What will be observed about the balance? Explain your answer. [2]

(b) What is the volume of air in flask A? [1]

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38. Four rods of similar size D, E, F and G were marked with the same amount of wax at the same position and heated as shown below.

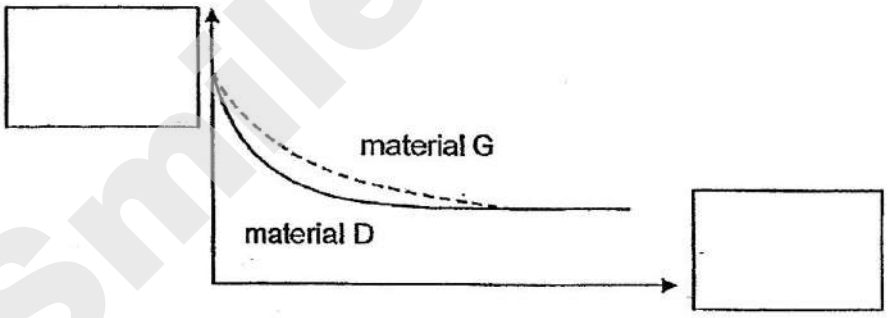


Only two rods were made of the same material. The table below shows the results of the experiment.

Material	Time taken for wax to melt completely (min)
D	5
E	10
F	10
G	38

(a) Based on the **above** results, which two rods were made of the same material? Explain **your** answer. [2]

Equal volume of boiling water was poured into two containers made from materials D and G. The water was allowed to cool. The graph below shows the changes in the temperature of water in the two containers over a period of time.



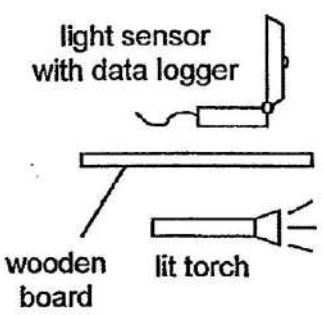
(b) Label axes in the graph with **'Time (min)'** or **'Temperature of Water (°C)'**. Write your answers in the boxes above. [1]

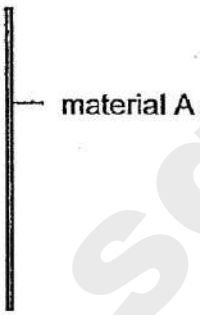
(c) Which material D or G is more suitable to be made into a container for keeping food warm? Explain your answer. [1]

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39. An experiment was conducted in a dark room using the set-up below. Steven wanted to find out if the type of material affects the amount of light reflected as shown below.





He conducted the same experiment using other materials B, C and D and recorded the average amount of light detected in the table below.

Material	Average amount of light detected (units)
A	33
B	100
C	64
D	85

(a) Explain why it was necessary for the experiment to be conducted in a dark room. [1]

_____

_____

(b) State two other changes to be made to the experiment such that the light sensor can detect more light reflected by the materials. [2]

Change 1: _____

_____

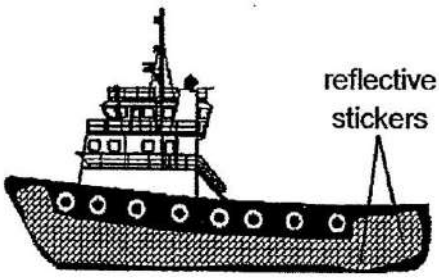
Change 2: _____

_____

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(c) The diagram below shows the side of a ship.



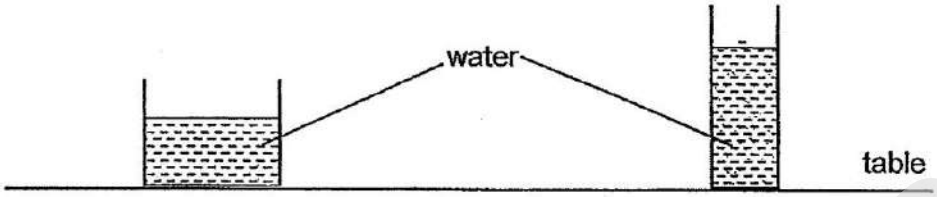
ship

Based only on the results in the table, which material is suitable for making the reflective stickers for ships travelling at night? Explain your answer. [2]

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40. Faizal wanted to find out if the exposed surface area of water affects the rate of evaporation. He placed two containers P and Q, each filled with 200 ml of water in his room for 6 hours.



The results of his experiment were recorded in the table below.

Container	Volume of water left in the container (ml)
P	100
Q	150

(a) Based on the above experiment, explain why the volume of water left in container P was less than that in container Q. [1]

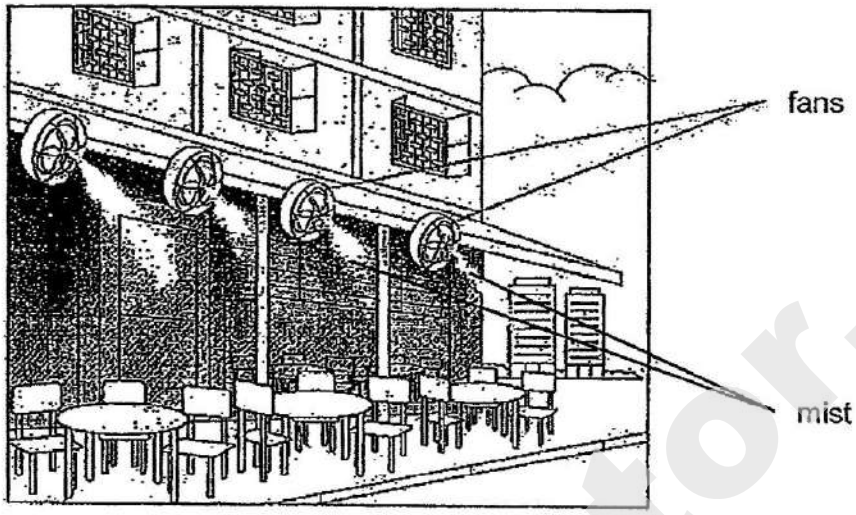
(b) Give a reason why placing both containers in the same room help to make the experiment a fair one. [1]

(c) Faizal then repeated the experiment with the two containers placed under a fan. Will the amount of water left in the containers be less than, equal to or more than the results in the table above? [1]

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At some hawker centres, water mist systems are used to cool the surrounding air on a hot day. Tiny water droplets are produced in the form of mist. Fans are added to the water mist systems as shown below.

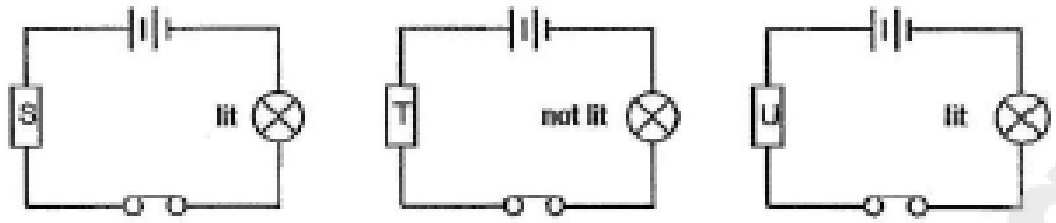


(d) Explain how adding the fans would help the water mist systems to cool the surrounding air more effectively. [2]

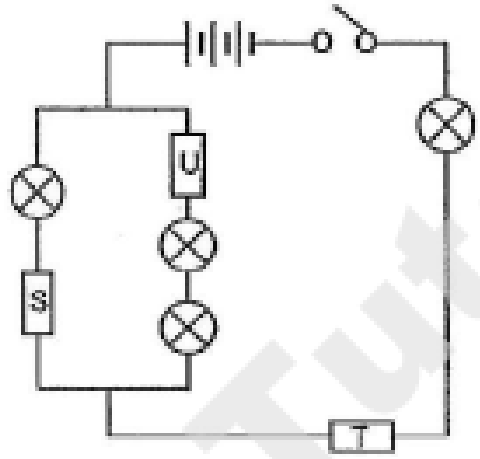
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41. The diagram below shows what happens when different materials S, T and U are each connected in a separate circuit.



The three materials are then connected in circuit A as shown below.



circuit A

(a) How many bulbs will light up when the switch is closed? Give a reason for your answer. [1]

Replacement items, each made of a different material were brought in to replace S, T and U in circuit A as shown in the box below.

Replacement items: iron nail, plastic cup, bar magnet

(b) In the table below, match each replacement item to S, T and U so that the greatest number of bulbs will light up in circuit A. [2]

Material	S	T	U
Replacement item			

END OF PAPER

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SCHOOL : CHIJ PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA2

CONTACT :

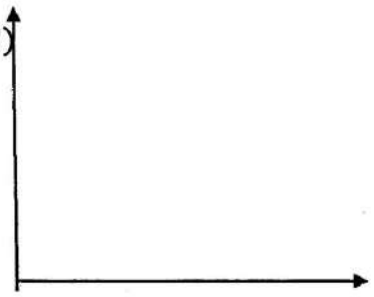
SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	2	2	4	1	3	4	2	2	3
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	1	1	2	4	2	1	4	2	3
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
2	1	2	3	2	2	4	4		

SECTION B

Q29)	a)Amphibian b)Gills. c)It increases the chance of the eggs hatching and develop into adults.
Q30)	a)As the temperature increases, the amount of oxygen decreases. Or)As the temperature decreases, the amount of oxygen increases. b)There is less dissolved oxygen in the water so the fish have to breathe faster/move to take in more oxygen. c)The amount of oxygen in the tank increases as the plants produce oxygen when making/ during photosynthesis.
Q31)	a)The iodine solution entered the bag. b)Starch could not go out of the bag. c)Cell membrane.
Q32)	a)The greater number of seeds stack on the towel, the easier it is for the type of seed to be dispersed by animals.

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	b)Seeds of Y can be easily dispersed by animals. c)X : Smooth texture/no hooks/no stiff hairs Y : has hooks/ has stiff hair
Q33)	a)To find out if water is needed for seeds to germinate. b)Caroline set-up. The seeds in that container has enough water from the daily watering ,warmer from the sun and oxygen from the surrounding air to enable the seeds to germinate. c)Caroline's set-up : Place it somewhere dark. Jean's set-up : Add the same amount of water as Caroline's to the seeds.
Q34)	a)False b)False c)True d)True
Q35)	The volume of water collected is the least, which shows that it is water proof hence it should be made into a umbrella to keep its user dry.
Q36)	a)When the switch was closed, a closed circuit was formed and electricity could flow through which caused the iron to be magnetized . Since the like poles of both the electromagnet and Q were facing each their directly they repelled. b)Increase the number of batteries (connected in series). c)To ensure that the result of the experiments are reliable.
Q37)	a)The balance will tilt towards B. Air was removed so there is lesser air in A hence it will have a lighter mass. b)150cm3
Q38)	a)E and F. The time taken for the wax to melt completely on both rods was the same which shows that both rods transferred heat from the heat source to the wax at the same rate. b)Temperature of water (℃)  Time (min)

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	c)G it took a longer time for the wax to melt completely which shows that it is a poorer conductor of heat. Hence it will transfer heat from food to the surrounding slower.
Q39)	a)To ensure that any light detected by the light sensor comes only form the light reflected off the material and not from any other light sources. b)Change 1: Move the tested material closer to the lit torch. Change 2: Use a larger torch with greater light intensity. c). B. It reflected the most amount of light so at night, other ships can see it easily and would not crash into the ship.
Q40)	a)P has a greater exposed surface area of the water so the rate of water evaporation is smaller. b)To ensure that the surrounding temperature remains constant. c)Less than. d)The fans blow the water vapour in the air further away, reducing the amount of water vapour in the surrounding ait. Hence more water droplets will be evaporated faster and more heat will be lost from the surroundings.
Q41)	a)No bulbs will light up as T is an electrical insulator and does not allow electricity to pass. b) S T U plastic cup iron nail bar magnet

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3|

MAHA BODHI SCHOOL
2018 SEMESTRAL ASSESSMENT 2
PRIMARY FIVE SCIENCE
(BOOKLET A)

Name : _____ ( )

Class : Primary 5 _____

Date : 26 October 2018

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

INSTRUCTIONS TO CANDIDATES:

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

This booklet consists of **24** printed pages.

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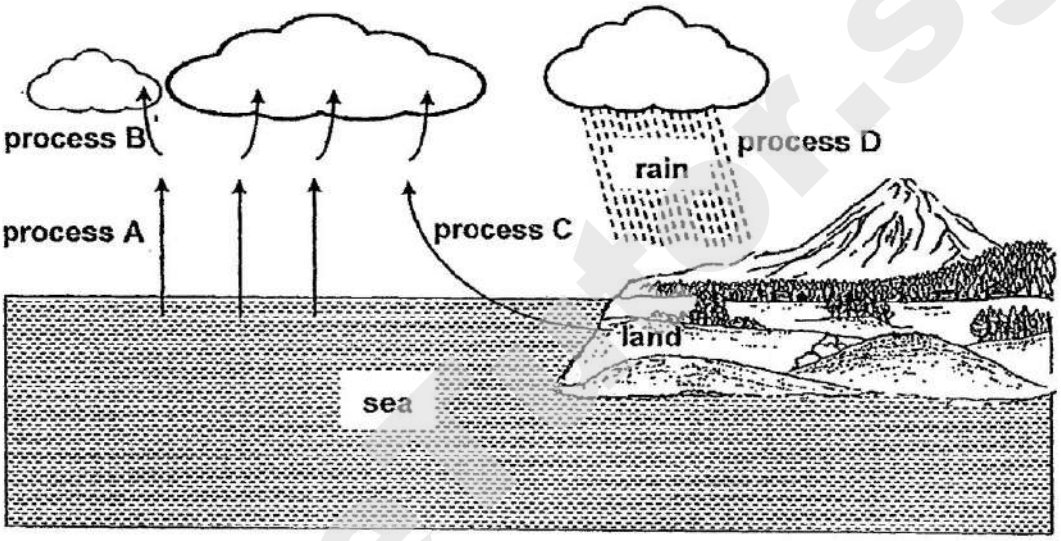
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BOOKLET A : [28 x 2 marks = 56 marks]

For each question from 1 to 28, 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.**

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1. The diagram below shows the water cycle.

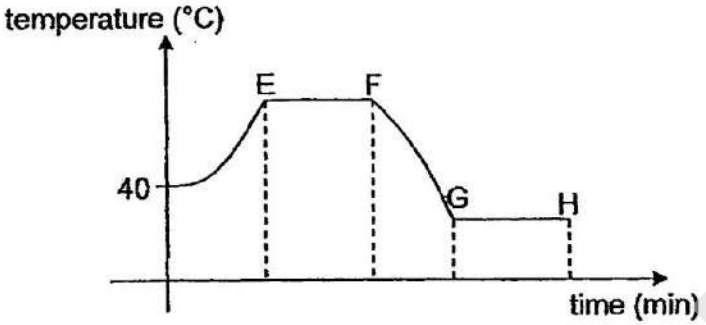


Which of the processes above involve(s) heat loss from water?

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

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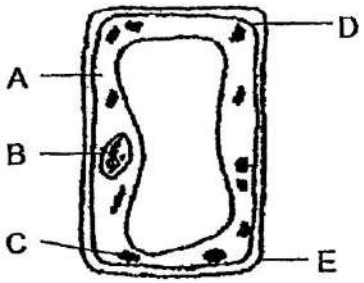
2. Substance X has a freezing point of 23°C and a boiling point of 85°C. The graph below shows how the temperature of the substance changes over time in an experiment.



Which of the following shows the correct state(s) of substance X during the time period EF?

(1) solid only
(2) liquid only
(3) solid and liquid only
(4) liquid and gas only

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



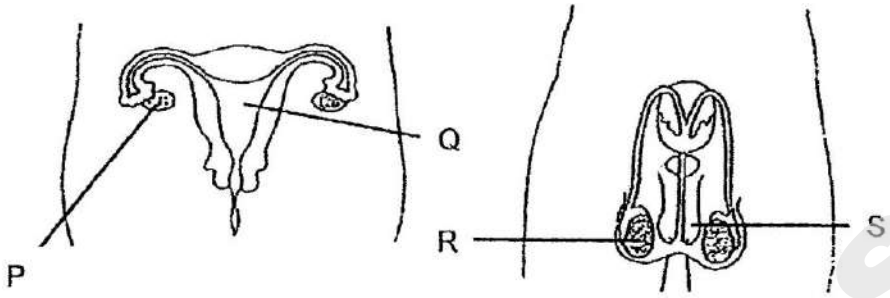
Which of the following headings best matches the cell parts A to E?

	supports the cell	controls activities in the cell	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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4. The diagram below shows the male and female reproductive systems.



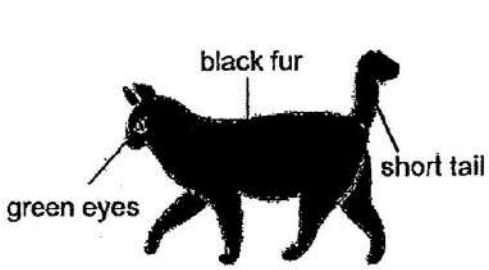
Which parts stated above produce the reproductive cells?

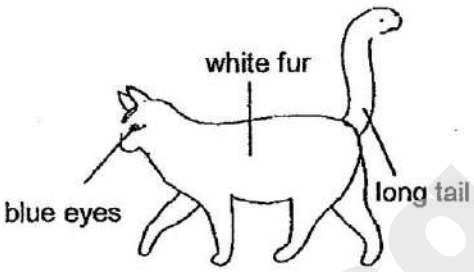
(1) P and R
(2) P and S
(3) Q and R
(4) Q and S

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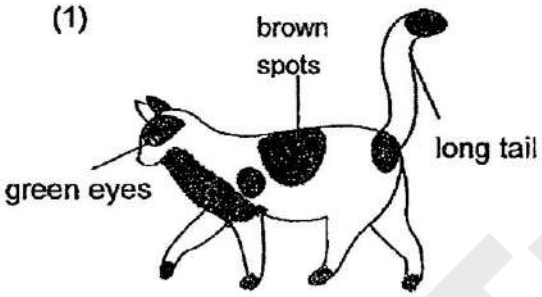
5. The diagram below shows two cats.



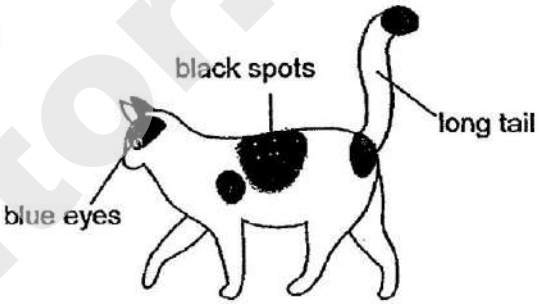


Which one of the following kittens shown below would most likely be the young of the two cats?

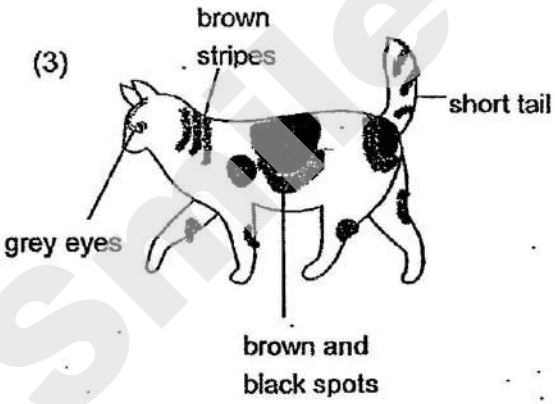
(1)



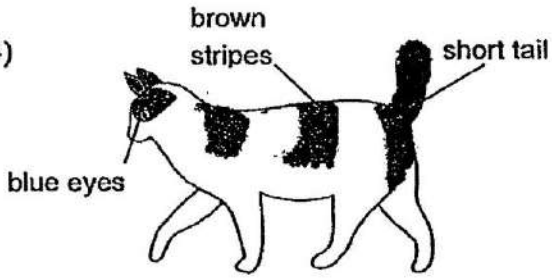
(2)



(3)



(4)



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6. The diagram below shows a fruit from plant P.



Jamie wanted to find out if the fruit could be dispersed by water.

Which of the following actions could be used to help her in her investigation?

A. Measure the mass of the fruit.
B. Place the fruit in water to observe if it floats.
C. Open the fruit to see if it contains a fibrous husk.

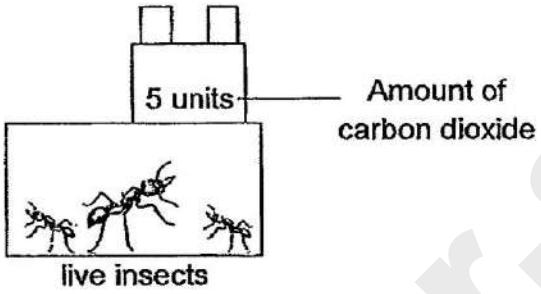
(1) A and B only
(2) B and C only
(3) A and C only
(4) A, B and C

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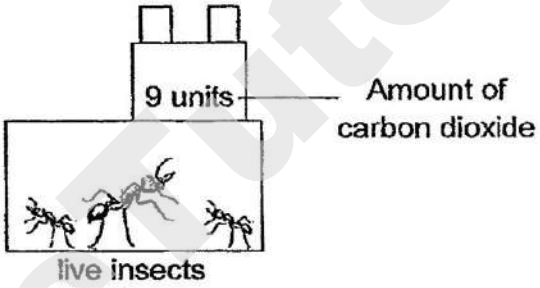
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7. Jenny wanted to find out if living things give out carbon dioxide. She set up an experiment, as shown in the diagram below, to measure the amount of carbon dioxide in the air.

At the start of the experiment:



At the end of the experiment after three hours:



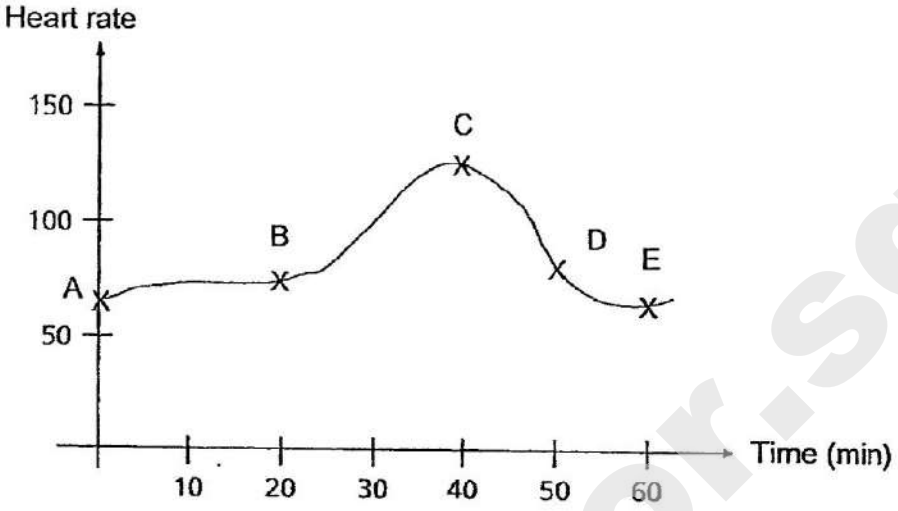
Based on the data collected, what could Jenny conclude from the experiment?

A. Living things take in oxygen.
B. Living things give out carbon dioxide.
C. As the number of insects increases, the amount of carbon dioxide given out increases.

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

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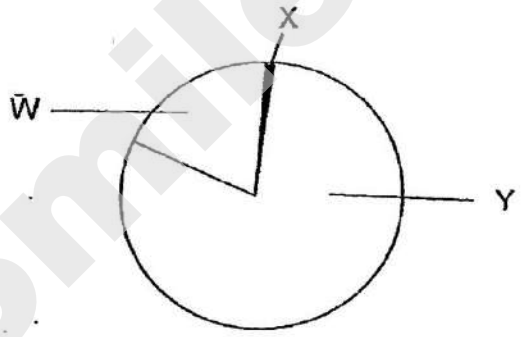
8. The graph shows Ahmad's heart rate over a period of one hour.



Which part of the graph shows that he was exercising?

(1) AB
(2) BC
(3) CD
(4) DE

9. The diagram shows the amount of different gases, W, X and Y, in the air.



Which of the following statements is/are true?

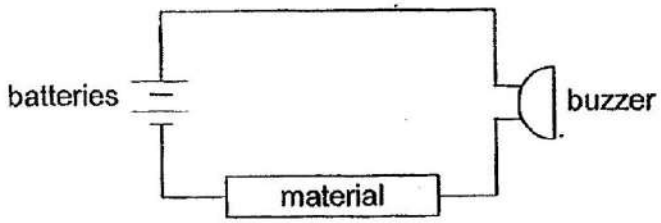
A. Plants take in W all the time through the leaves.
B. Animals breathe out only X to their surroundings.
C. Animals take in W, X and Y during gaseous exchange.

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

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10. Kimi set up a simple electric circuit as shown in the diagram below.



She changed the material in the circuit and recorded her observations in the table below.

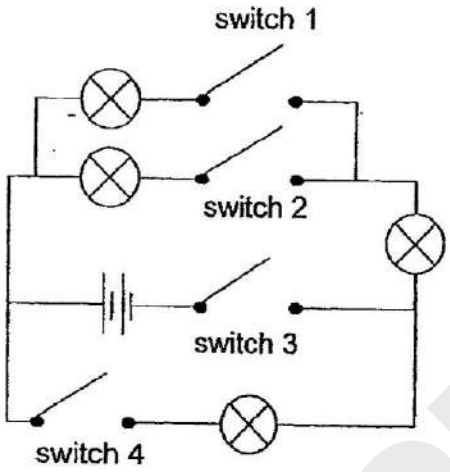
Material	Did the buzzer ring?
H	Yes
I	No
J	Yes
K	No

Which of the following options in the table below shows the correct classification of the materials?

	Conductor of electricity	Insulator of electricity
(1)	H	I, J and K
(2)	H and J	I and K
(3)	I and J	H and K
(4)	I and K	H and J

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11. The diagram below shows a circuit.



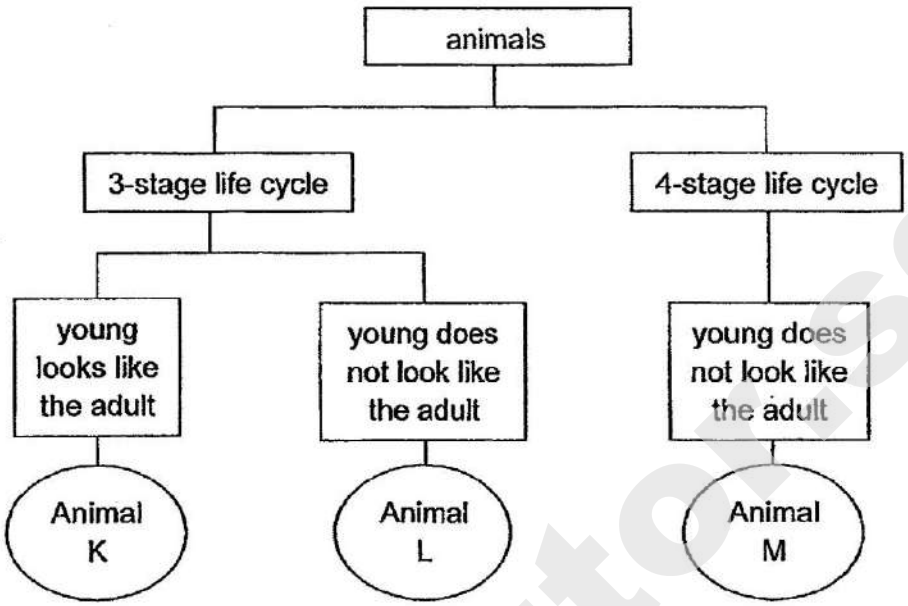
Which of the following shows the correct number of light bulbs lighted up when the different switches were closed?

	Switches closed	Number of light bulbs lit
(1)	1 and 2	2
(2)	1 and 3	3
(3)	2 and 4	3
(4)	3 and 4	1

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12. Study the chart below.



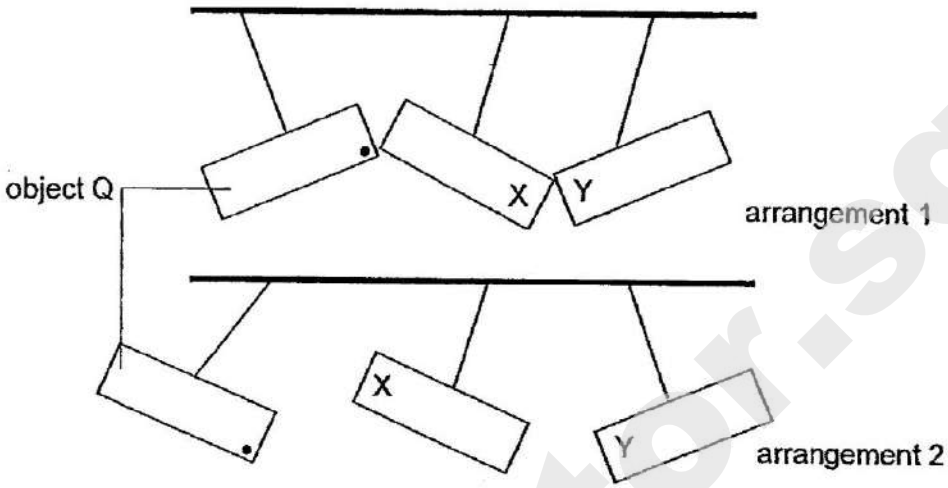
Which of the following shows correctly the animals K, L and M?

	Animal K	Animal L	Animal M
(1)	grasshopper	chicken	cockroach
(2)	beetle	chicken	grasshopper
(3)	frog	grasshopper	butterfly
(4)	grasshopper	frog	beetle

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13. Two bar magnets and object Q are placed near one another in two different arrangements, as shown below.



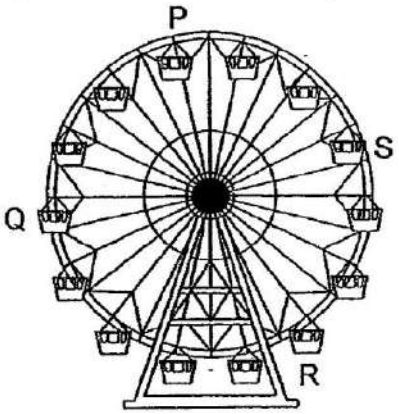
Which of the following correctly describes object Q and the poles, X and Y, of the two bar magnets?

	Pole X	Pole Y	Object Q
(1)	north	north	magnet
(2)	north	south	magnet
(3)	south	south	magnetic object
(4)	south	north	non-magnetic object

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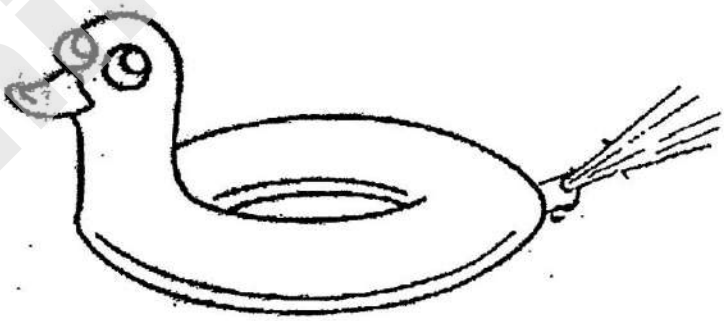
14. The diagram below shows a Ferris wheel.



Which point, P, Q, R or S, on the Ferris wheel has the **lowest** gravitational potential energy?

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

15. Emily released the air in a swimming float. She heard a hissing sound as the air was released and she felt the escaping air on her hand.



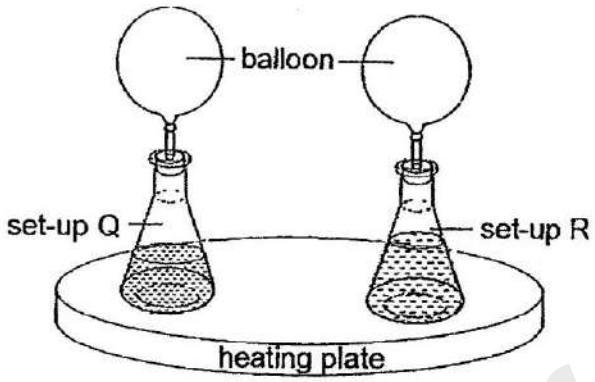
Which of the following describes the energy change?

(1) potential energy → heat energy
(2) kinetic energy → potential energy
(3) potential energy → kinetic energy + sound energy
(4) kinetic energy → sound energy + potential energy

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16. Keith prepared two set-ups as shown in the diagram below.



Two minutes after the heating plate was switched on, the balloons attached to the flasks inflated. Keith noticed the balloon in set-up Q was larger than the balloon in set-up R.

Which of the following statements could explain Keith's observation?

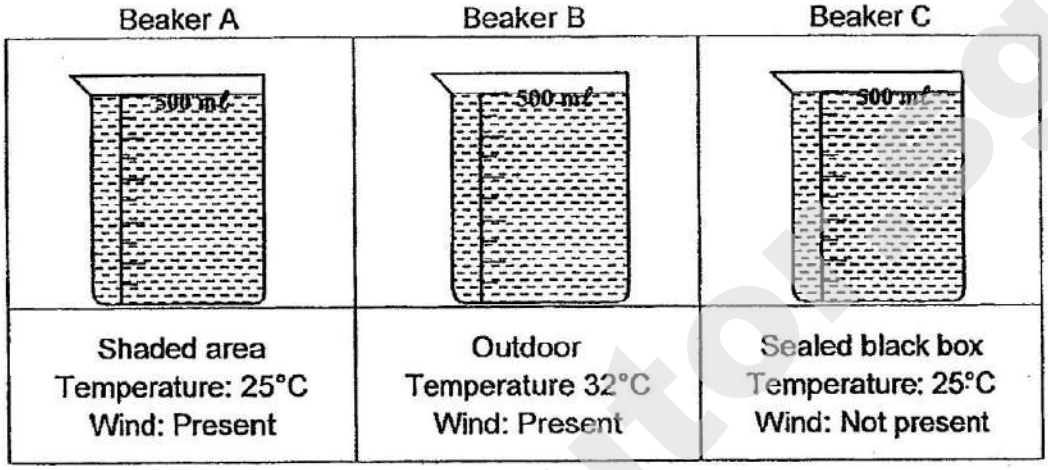
A. The water in set-up Q was warmer.
B. The water in set-up Q had a larger exposed surface area.
C. The water in set-up Q received more heat than set-up R.

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

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17. Daniel wanted to find out how different conditions in the environment would affect the rate of evaporation of water.

He placed three similar beakers containing 500 ml of water in different locations as shown in the diagram below.



At the end of the experiment, he measured the volume of water left in the beakers and recorded them in a table.

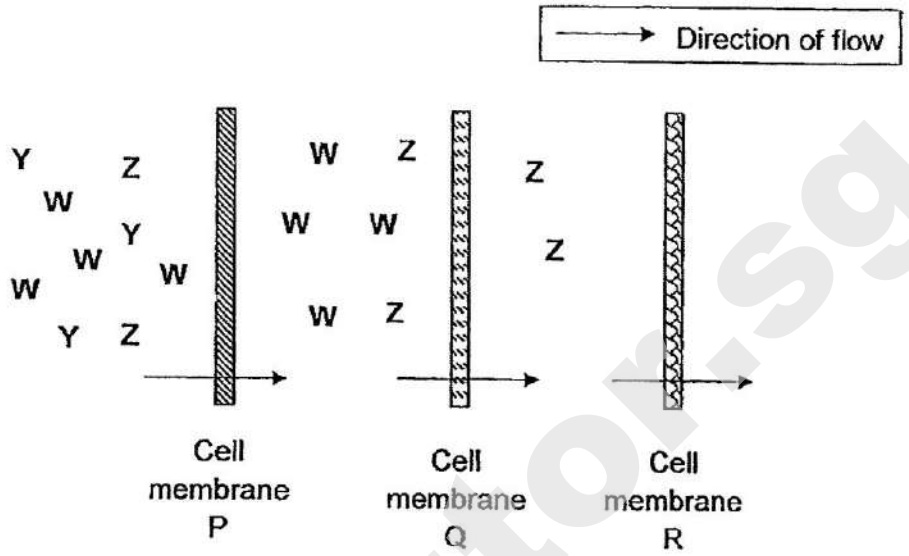
Which of the following shows the correct order of the beakers based on the amount of water left?

	Highest volume of water left →		Lowest volume of water left
(1)	A	B	C
(2)	B	A	C
(3)	C	A	B
(4)	C	B	A

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18. The diagram below shows the flow of substances W, Y and Z.



Which of the following statements are most likely to be true?

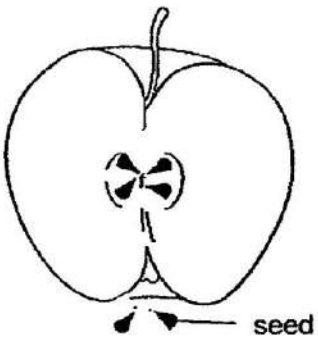
A. Q allows Z to pass through.
B. P does not allow Y to pass through.
C. P and Q allow W and Z to pass through.
D. R does not allow W and Z to pass through.

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

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19. Jane was collecting seeds for her project. She found six seeds in the apple that she ate.



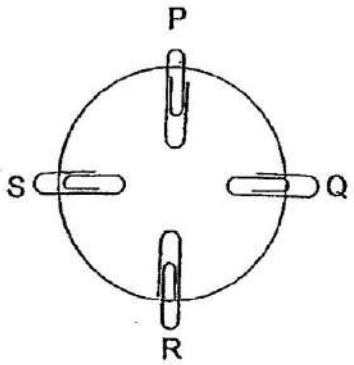
In how many ovules were the eggs fertilized in order to form the apple that she ate?

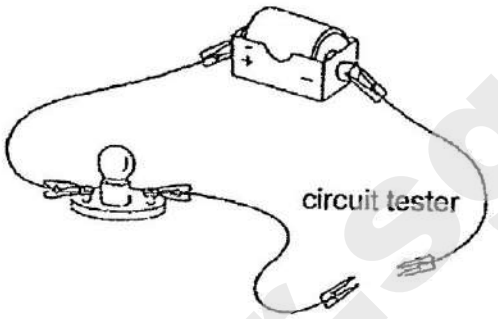
(1) three
(2) six
(3) eight
(4) twelve

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20. A circuit card was made with four steel paper clips, P, Q, R and S, attached to it. Some of the paper clips were connected to one another with wires.



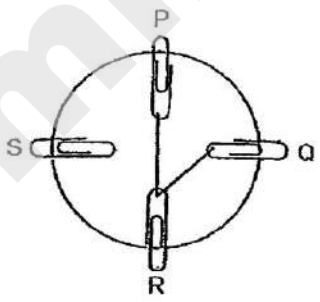


A circuit tester was used to find out how the paper clips were connected. The results of the tests are shown below:

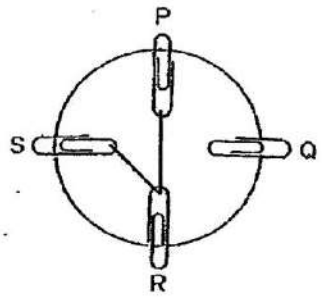
Clips connected	Did the bulb light up?
P and Q	No
P and R	Yes
Q and R	No
Q and S	No
R and S	Yes

Which of the following shows the correct connection between the clips?

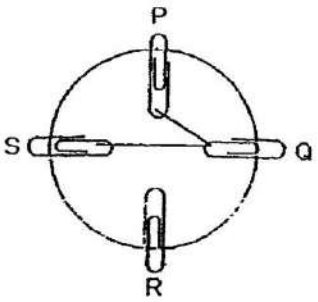
(1)



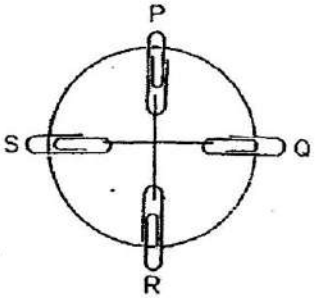
(2)



(3)



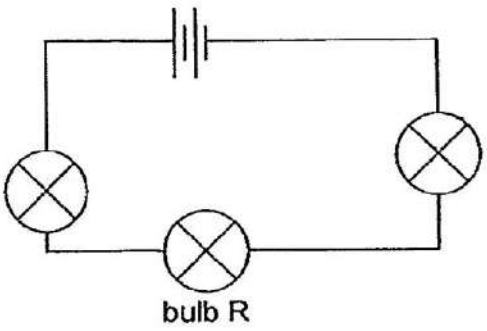
(4)



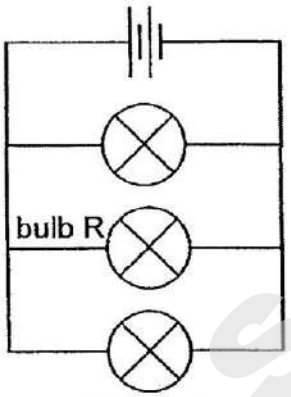
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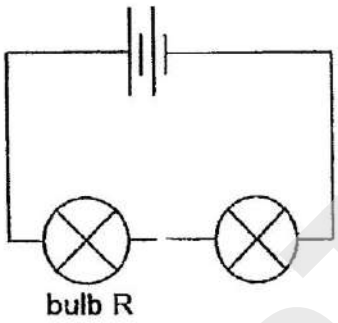
21. Observe the electric circuits shown below.



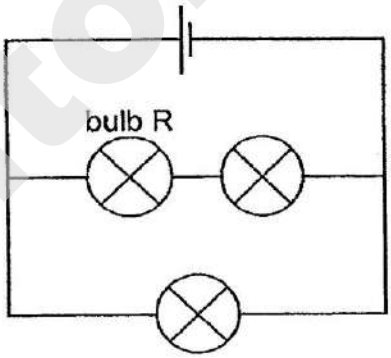
Circuit L



Circuit M



Circuit N



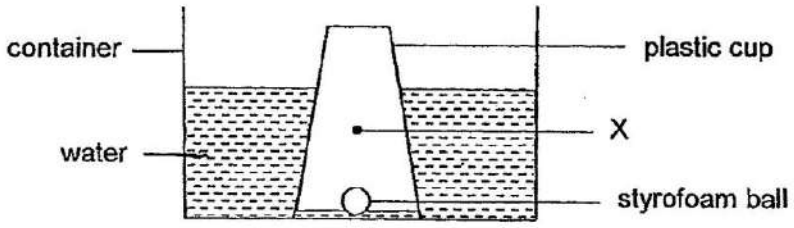
Circuit O

Which of the following shows the arrangement of the circuits based on the ascending order of the brightness of bulb R?

(1) O, L, N, M
(2) L, M, N, O
(3) M, N, L, O
(4) N, O, M, L

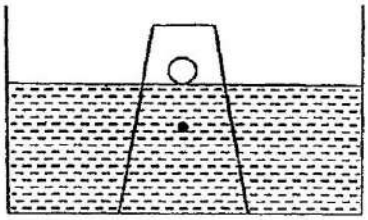
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22. The diagram below shows the position of a styrofoam ball inside an inverted plastic cup.

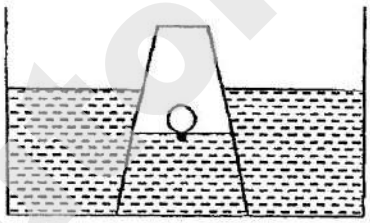


If a hole is pricked at position X of the plastic cup, which one of the following diagrams shows the correct position of the styrofoam ball?

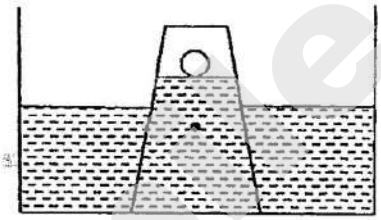
(1)



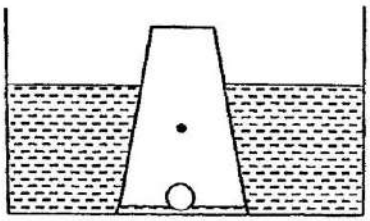
(2)



(3)



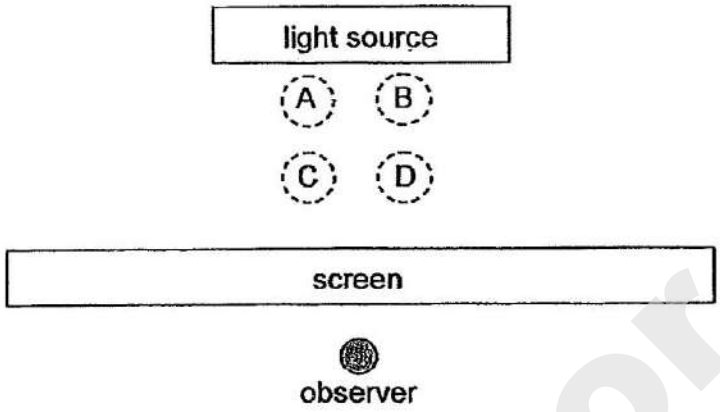
(4)



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23. In a shadow puppet show, the puppet handler often shifts the position of the puppets to change the size of the shadow formed on the screen. The puppets are all of the same size.



The observer sees the shadows, as shown below, during the show.



Which of the following are the correct positions of the puppets on the stage which would form the shadows as seen by the observer?

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

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24. Shufen could not loosen the metal lid of a jam jar and so she placed the lid in a basin of hot water and soon she was able to turn the lid easily.



Why was Shufen able to turn the lid easily?

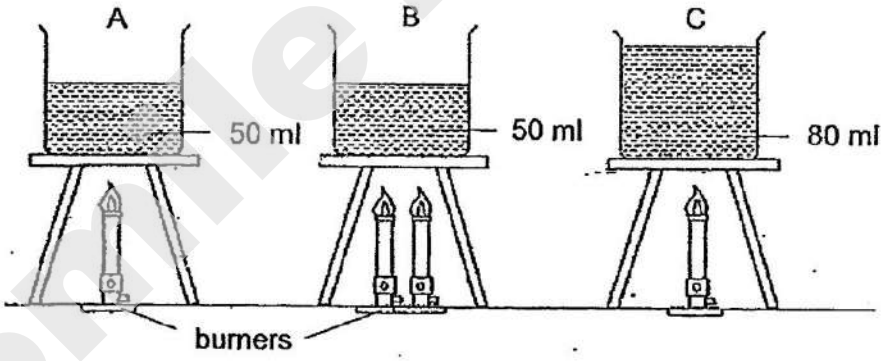
(1) The lid gained heat from the hand and contracted.

(2) The lid gained heat from the hot water and expanded.

(3) The lid gained heat from the hot water and the jar contracted.

(4) The jar gained heat from the hot water and expanded and the lid contracted.

25. Identical burners were used to heat three beakers with different amounts of tap water in the same room as shown in the diagram below. The water in each beaker was heated until it just started to boil and the time taken was recorded.



Which one of the following is a **correct** statement on the set-ups at the time when the water just started to boil?

(1) Set-up B had the highest temperature.

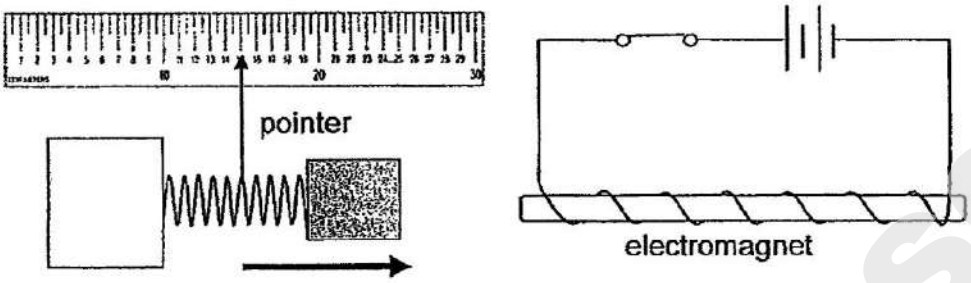
(2) Set-up A had less heat than Set-up B.

(3) Set-up C had more heat than Set-up A and Set-up B.

(4) Set-up A took the longest time to reach the boiling point of water.

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26. Bobby set up an experiment as shown in the diagram below.



The pointer attached to the spring moved when the circuit was closed.

The number of coils of wire around the electromagnet was then increased.

Which of the following correctly shows how the pointer would move and the change in the strength of the electromagnet?

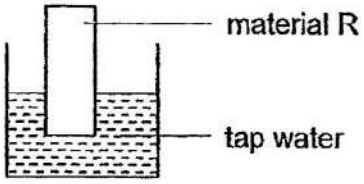
	How the pointer moved	Strength of the electromagnet
(1)	left	decreased
(2)	left	increased
(3)	right	decreased
(4)	right	increased

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27. Ailing wanted to find out which material, R, S, T and U, would be most suitable to make a pair of gloves that would keep her hands dry.

She dipped material R into a container of 200 ml of tap water as shown in the diagram below.



The amount of water left in the container after R was removed was recorded.

She repeated the experiment with materials S, T and U and recorded the results in the table below.

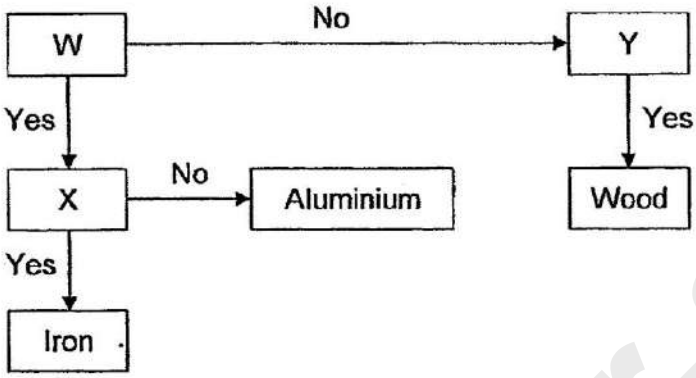
Material	Amount of water left (ml)
R	155
S	200
T	135
U	175

Based on the information, which material should Ailing choose to make the gloves?

(1) R
(2) S
(3) T
(4) U

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28. Study the flowchart below.



Which of the following are the questions that should be placed in boxes W, X and Y to identify the three materials shown?

	W	X	Y
(1)	Can it float on water?	Is it a good conductor of heat?	Is it magnetic?
(2)	Is it magnetic?	Is it a good conductor of heat?	Can it float on water?
(3)	Is it magnetic?	Can if float on water?	Is it a good conductor of heat?
(4)	Is it a good conductor of heat?	Is it magnetic?	Can it float on water?

END OF BOOKLET A

GO ON TO BOOKLET B

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MAHA BODHI SCHOOL
2018 SEMESTRAL ASSESSMENT 2
PRIMARY FIVE SCIENCE
(BOOKLET B)

Name : _____ ( )

Class : Primary 5 _____

Date : 26 October 2018

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

INSTRUCTIONS TO CANDIDATES:

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

Booklet	Marks Obtained	Maximum Marks
A		56
B		44
Total		**100**

Practical Test		**10**

Parent's Signature : _____

This booklet consists of 22 printed pages.

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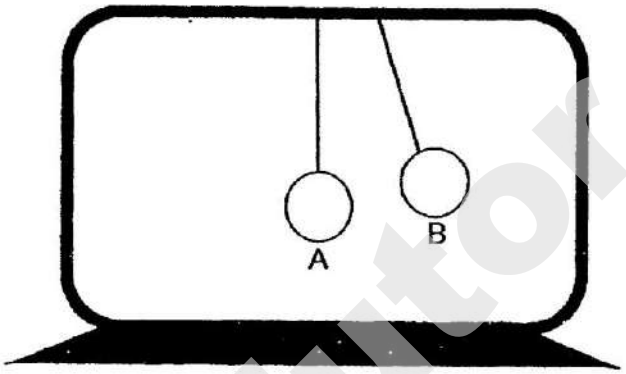
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BOOKLET B : [44 marks]

For questions 29 to 41, write your answers in this booklet.

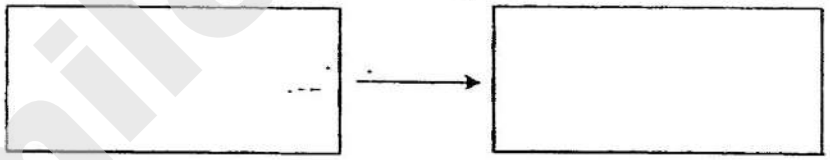
The number of marks available is shown in the brackets [ ] at the end of each question or part-question.

29. (a) A student has a toy as shown in the diagram below. In the toy, there are two balls, A and B, which are suspended with strings.



He observes that when he releases ball B from a certain height, it hits ball A which then swings.

(i) State the energy change occurring in ball B after it is released. [1]



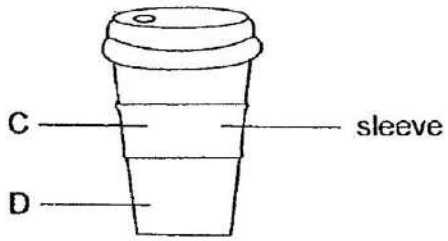
(ii) The student observes that both balls stop moving after some time. Explain why the balls stop moving. [1]

Marks : /2

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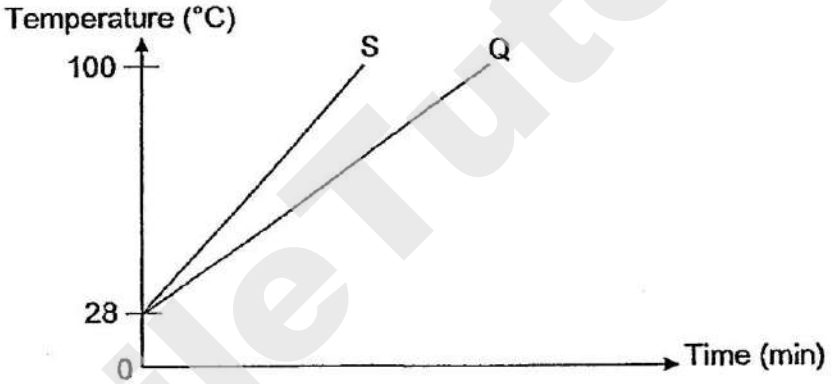
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(b) Mrs Lee ordered a cup of hot tea and it was served in a paper cup with a sleeve. She held the cup at two positions, C and D, and found that there was a difference.



At position D, she felt the heat from the hot tea but at position C, where the sleeve was, she did not feel as much heat.

The graph below shows the increase in temperature of two materials, S and Q, when they were heated with the same amount of heat till they reached 100°C.



(i) Using the graph, state which material (S or Q) is more suitable for making the sleeve. Explain your answer. [2]

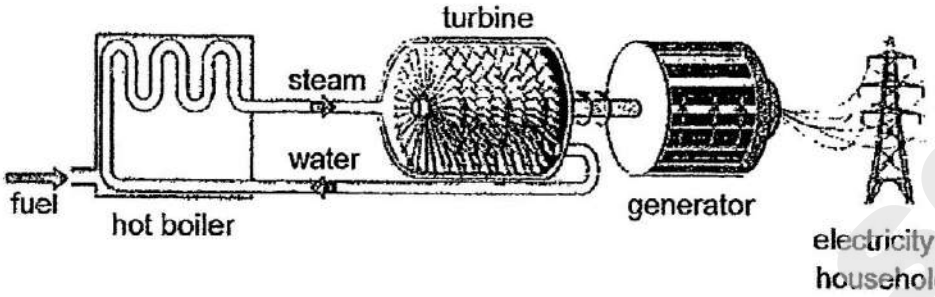
(ii) After holding the cup of hot tea with her right hand, Mrs Lee then placed both hands into a basin of water at room temperature. Which of her hands would feel warmer? [1]

Marks : / 3

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30. (a) The diagram below shows the main parts of a power station.



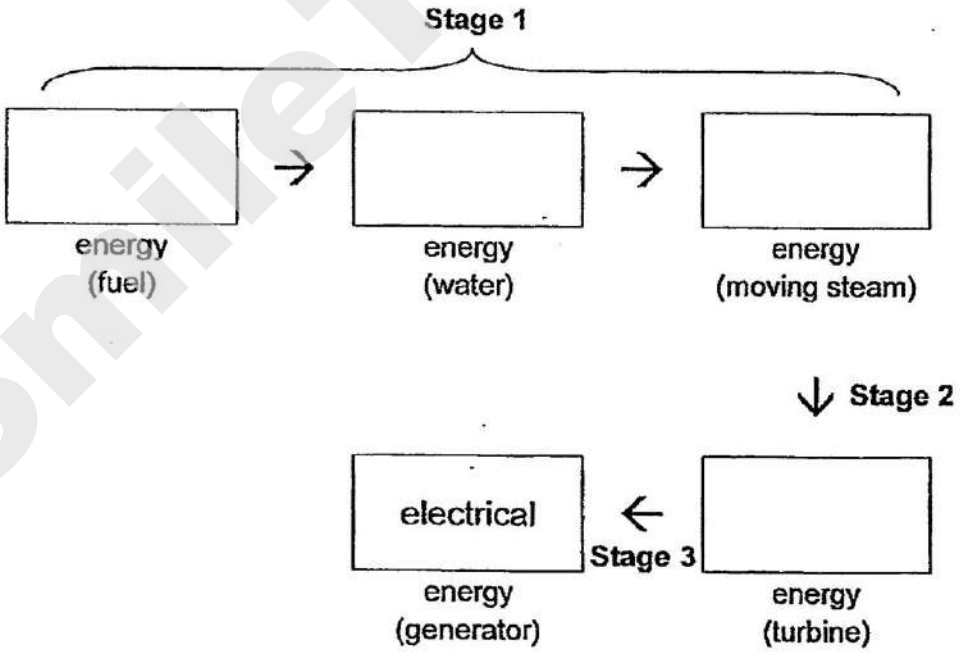
There are three main stages in the production of electricity:

Stage 1 - fuel is burned to boil water to make steam

Stage 2 - steam makes a turbine spin

Stage 3 - spinning turbine turns a generator which produces electricity

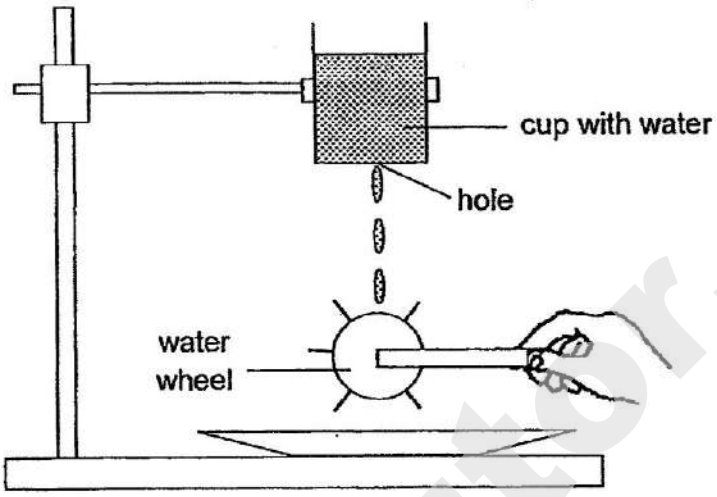
Based on these stages, show the energy changes that take place in the power station by filling in each box with the correct form of energy. [2]



Marks : ____ / 2

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(b) Randy carries out an experiment to see how a water wheel turns by water dripping from a cup with a hole at the base. The diagram below shows the experimental set-up.



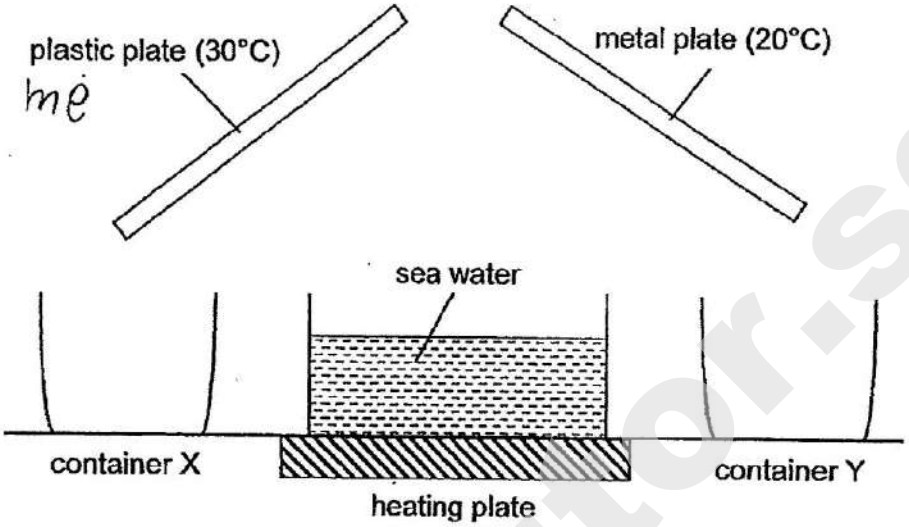
Explain why the water wheel will turn faster if the hole is made bigger. [2]

Marks : /2

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31. Jamie tried to obtain clean water from sea water, using the set-up as shown below.



(a) State the process taking place on the surfaces of the plates which allowed water to be obtained. [1]

(b) During the first two minutes of the experiment, which of the containers, X or Y, would collect more water? Explain your answer. [2]

(c) Jamie observed that fewer water droplets formed on the metal plate after 10 minutes. Explain why this happened. [1]

Marks : / 4

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32. (a) Farmer Kell had a plot of plants in his farm.

He recorded his observations of the plants over a period of 40 days in the table below.

Days	Number of type A flowers observed	Number of fruits that grow from type A flowers	Number of type B flowers observed	Number of fruits that grow from type B flowers
10	20	0	35	0
20	50	0	55	0
30	80	0	75	30
40	90	0	95	50

(i) Based on Farmer Kell's observations, which type of flower **A** or B is female and which is male?

Female : _____ Male : _____

(ii) Farmer Kell always notices bees flying around the plants growing in his farm.

How are these bees helpful to the plants in their reproduction? [1]

_____

_____

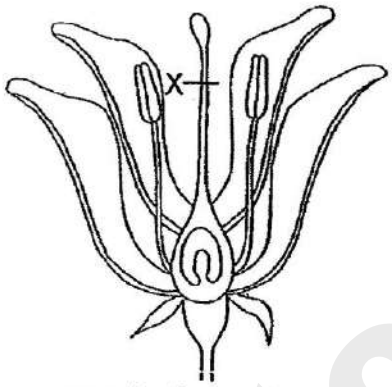
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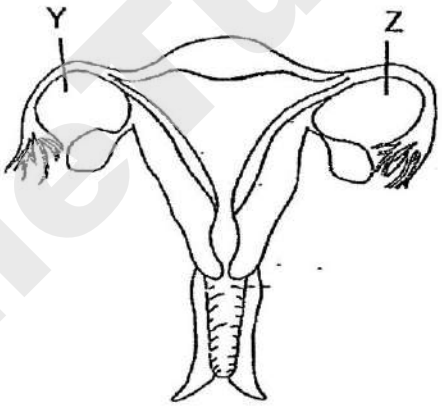
(b) Fertilisation in flowering plants and human beings can be prevented by certain methods.

Cutting the flower at X, as shown, prevents fertilisation of the flower.



reproductive system A

Unlike reproductive system A, reproductive system B must be cut at two points, Y and Z, as shown to prevent fertilisation from taking place.



reproductive system B

Explain why two cuts have to be made in reproductive system B while only one cut is needed for reproductive system A to prevent fertilisation.

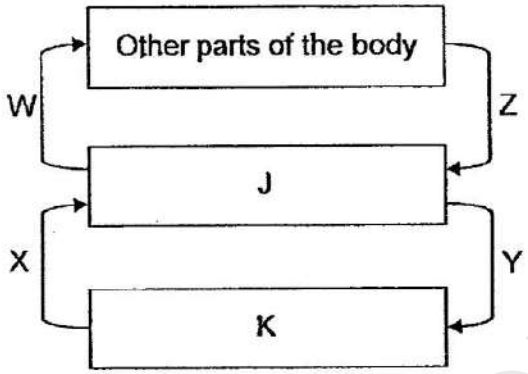
[1]

Marks : / 1

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33. The diagram below shows how blood flows in our body. Arrows W, X, Y and Z represent the movement of blood. Boxes J and K represent two organs.



(a) Name the two organs which J and K represent. [1]

J : _____ K : _____

(b) Which two arrows represent the movement of blood rich in oxygen? [1]

_____

(c) Name the organ in which digested food is absorbed into the blood. [1]

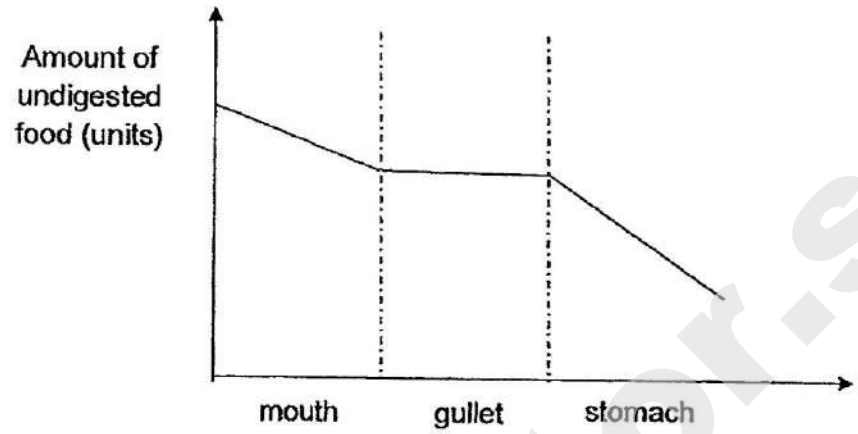
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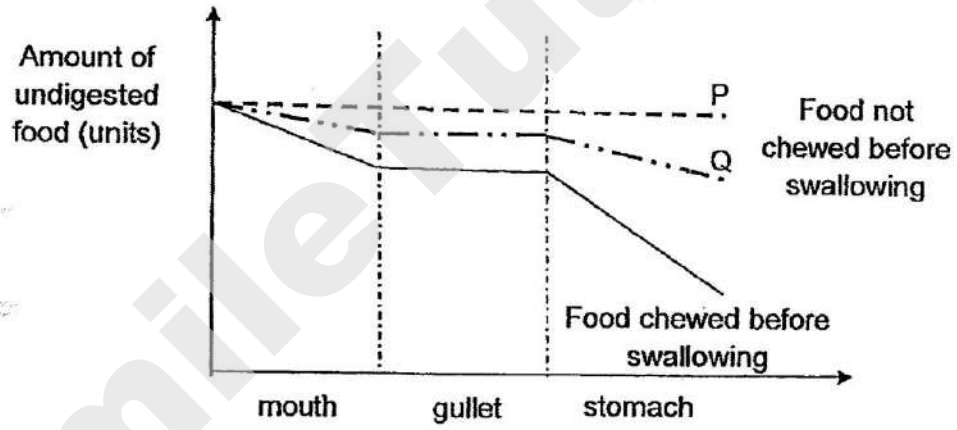
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(d) The graph below shows the change in the amount of undigested food as it passed through some parts of the human digestive system after a meal when the food was chewed before swallowing.



Two additional lines, P and Q, are shown in the graph below.



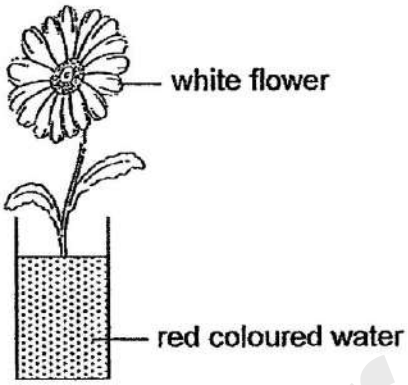
Which line, P or Q, shows the change in the amount of undigested food in the various parts of the digestive system after a meal when the food was not chewed before swallowing? Explain your answer. [1]

Marks : / 1

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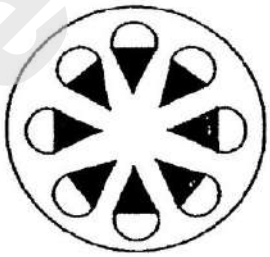
34. The diagram below shows a stalk of white flower in a beaker of red coloured water.



After 24 hours, it was observed that the whole stalk of white flower had turned red.

(a) Explain why the stalk of white flower turned red. [1]

(b) A section of the stalk of the above flower was examined under the microscope. The parts that appeared red in the stalk are shown as shaded in the diagram below.



What do the shaded parts represent in the stalk? [1]

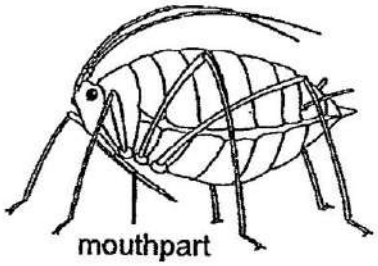
(c) Name the part in the human body that has the same function as the parts shaded in (b). [1]

Marks : / 3

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(d) Aphids have a specialized mouthpart called proboscis, as shown in the diagram below.



They tend to use their proboscis to pierce into the stem of plants more often during the day, when plants make food, than at night.

Explain this behaviour of the aphids. [1]

_____

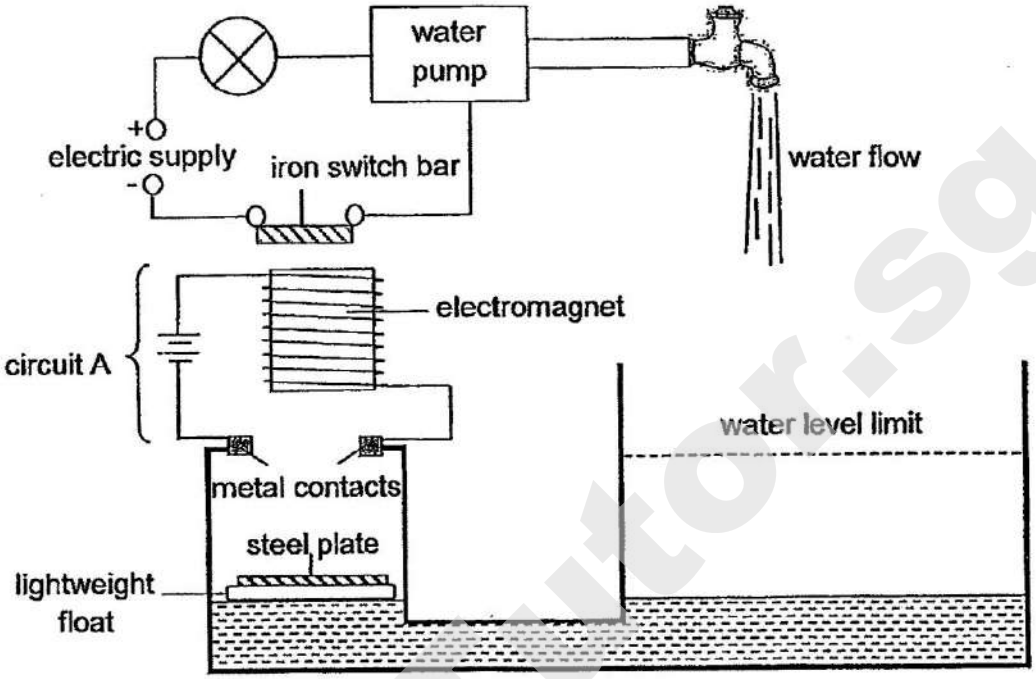
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Marks : / 1

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35. Charles has built an automatic electric circuit breaker which helps him to switch off his water pump when the water level reaches the limit in his aquarium.



(a) State a property of the iron switch bar which allows the circuit connected to the water pump to work [1]

(b) Describe how the water pump is switched off when the water level in the aquarium gets too high. [2]

Marks : / 3

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(c) At a later time, Charles observes that even though the water level has dropped, the steel plate remains at the metal contacts. As a result, he is not able to start the water pump to refill the tank.

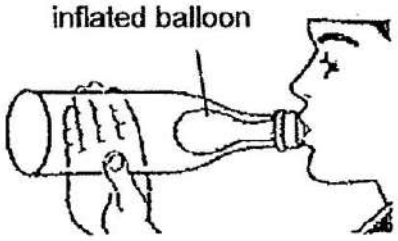
Explain why this happens. [2]

Marks : / 2

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36. (a) Angus put a balloon in a bottle and tried to inflate the balloon by blowing air into it, as shown in the diagram.



(i) Explain why Angus could inflate the balloon at first. [1]

_____

_____

(ii) Explain why Angus could only inflate the balloon a little even though there was enough space in the bottle. [1]

_____

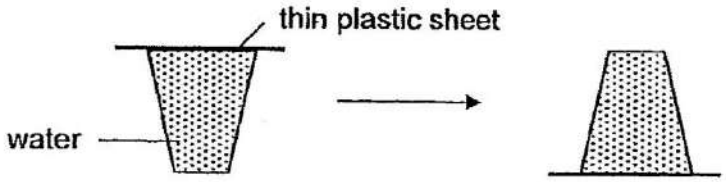
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Marks : /2

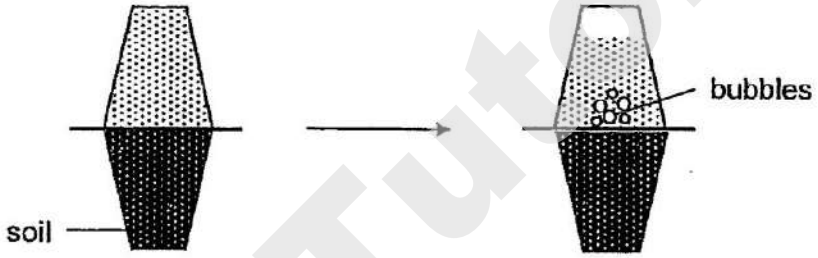
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(b) Angus conducted another experiment to find out if soil contains air. First, he placed a thin plastic sheet on a glass completely filled with water and inverted the glass.



He then placed the inverted glass on top of a cup of soil. When he removed the sheet, water entered the soil and bubbles appeared in the water.



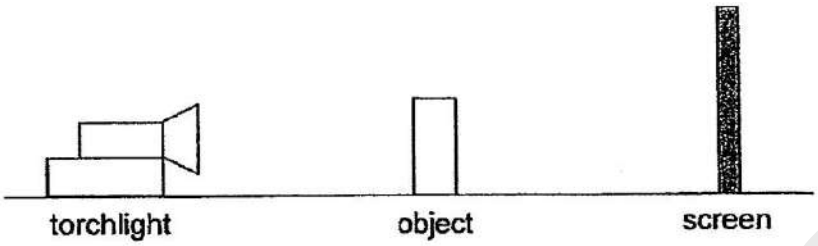
Explain why the bubbles appeared in the water. [2]

Marks : ____ / 2

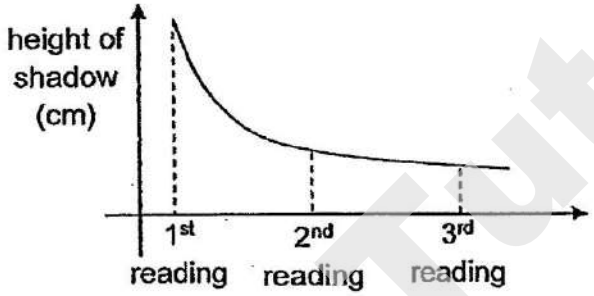
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37. Ching Yee prepared a simple set-up as shown below to find out how a change in a variable would affect the shadow formed by the object.



The graph below shows the results of her experiment due to the change in the variable.



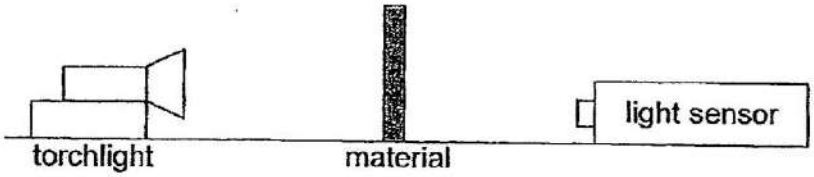
(a) Based on the graph, state what was the variable that Ching Yee had changed. [1]

Marks : / 1

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(b) A light sensor was placed behind different materials to record the amount of light passing through them.



The results are as shown below.

Material	Amount of light recorded (units)
W	0
X	156
Y	300

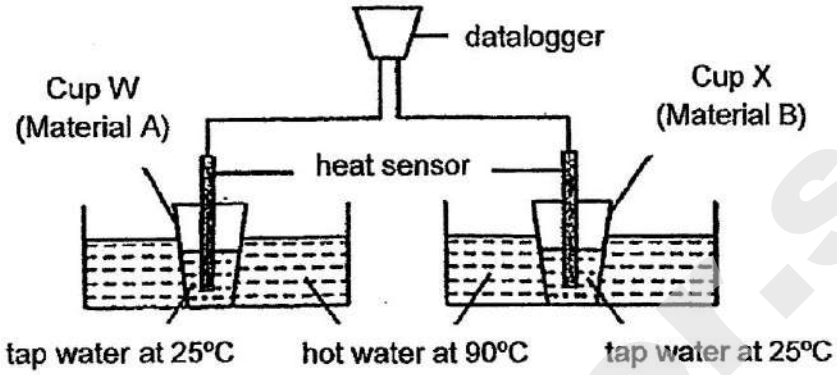
Which of the materials is most suitable for making the screen used in the experiment? Explain your answer [2]

Marks : /2

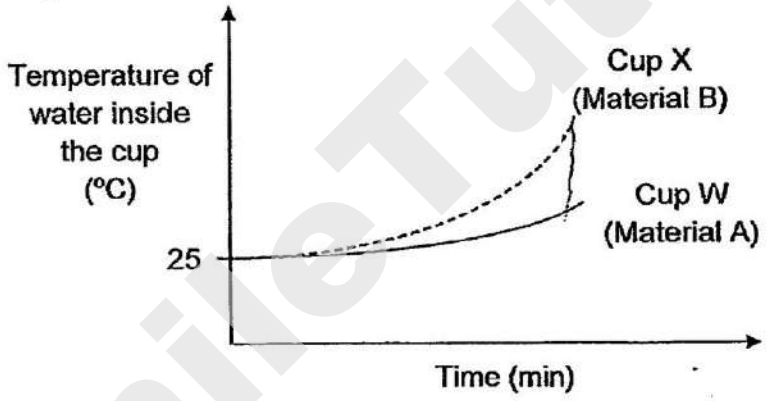
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38. Jack conducted an experiment using two cups W and X made of different materials A and B respectively. He filled both cups with the same volume of tap water at a temperature of 25°C and placed them each into a basin of hot water at 90°C.



Jack then used a heat sensor to measure and record the temperature of water inside cups W and X for ten minutes. The results are shown in the graph below.



(a) Which material, A or B, is a better conductor of heat? Explain your answer. [1]

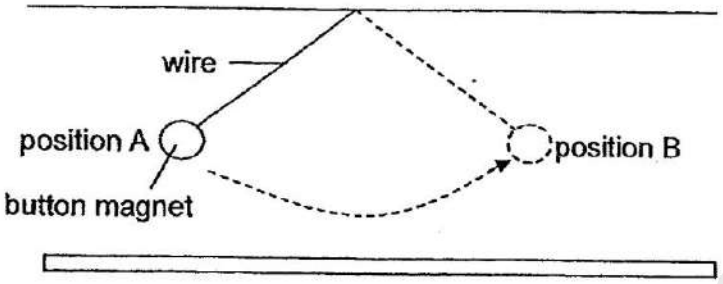
(b) If Jack wanted to keep his drink cold for the longest time, which cup would he choose to use? Explain your answer. [1]

Marks : / 2

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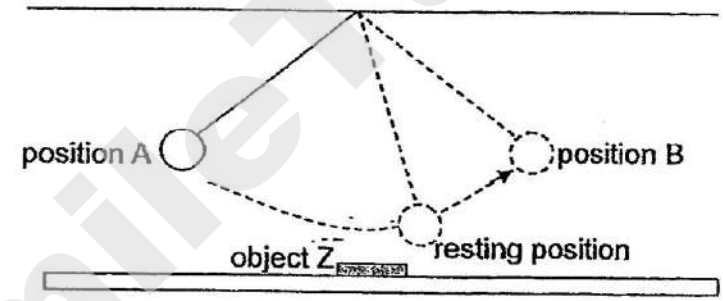
39. Lucy hung a strong button magnet using a wire and allowed the magnet to swing freely as shown in the diagram below.



She recorded the time taken for the magnet to swing from position A to B in the table shown below.

Time taken for ball to swing from A to B (s)			
Try 1	Try 2	Try 3	Average
1.0	1.3	1.6	1.3

She placed an object Z below the swinging magnet and repeated the experiment again. The results taken for the magnet to swing from position A to B was recorded again. The magnet came to a stop at the resting position as shown.



Time taken for ball to swing from A to B (s)			
Try 1	Try 2	Try 3	Average
2.5	2.3	2.7	2.5

(a) State an example of the material in which object Z could be made of [1]

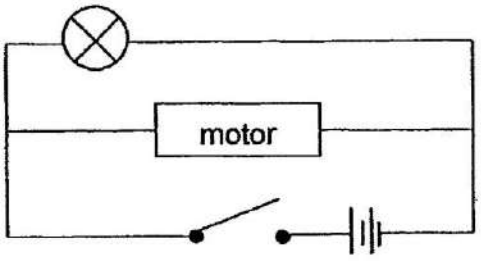
(b) Explain why there was a change in the time required for the magnet to swing from position A to position B. [1]

Marks : /2

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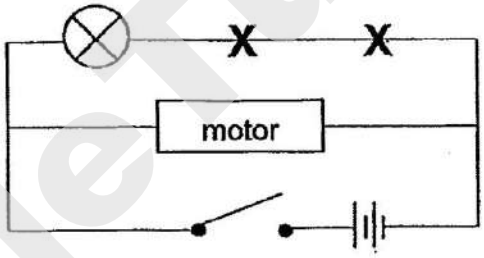
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40. John has a toy airplane. When it is switched on, an indicator bulb lights up and the motor moves the toy at the same time. The diagram shows how the electric components are connected in the circuit.

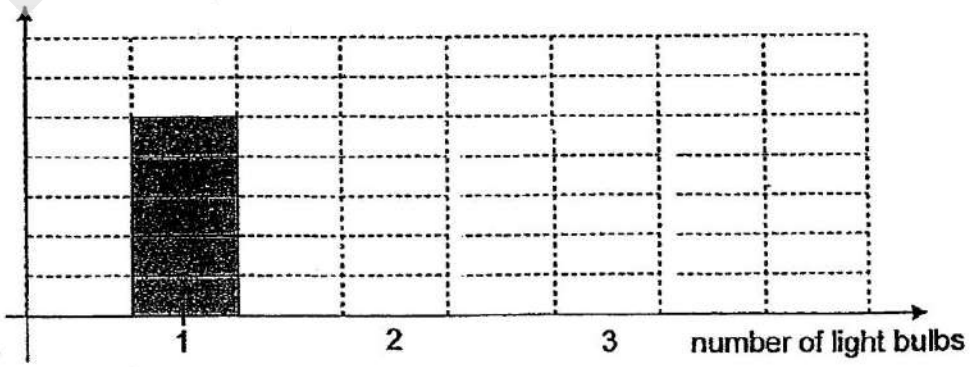


(a) Based on the diagram shown above, give a reason why the motor continues to work even though the bulb is fused. [1]

(b) John decides to add two more light bulbs to the circuit at the locations marked with a cross.



Using the graph below, show how the brightness of the light bulb will change as he adds these bulbs one at a time. [1]

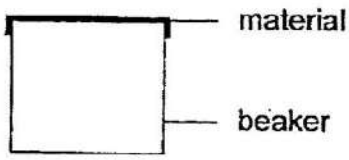


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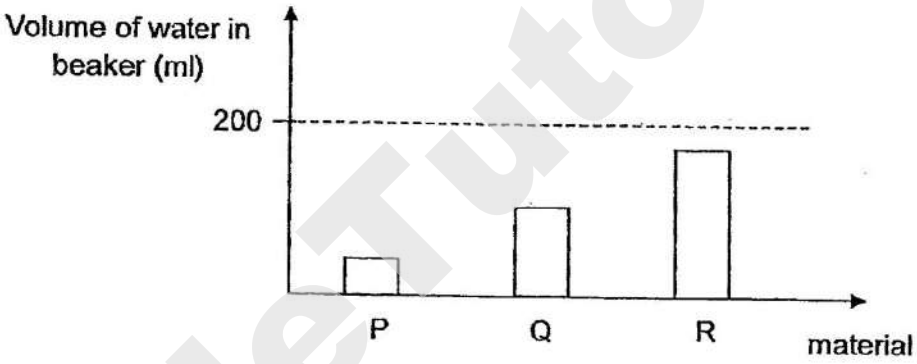
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41. Jim conducted an experiment with three different materials P, Q and R of similar thickness. He wrapped each material over an empty beaker, as shown in the diagram below.



He then gently poured 200 ml of water onto each type of material.
The graph below shows the volume of water observed in each beaker at the end of the experiment.



(a) Explain why the amount of water collected in the three beakers were different.

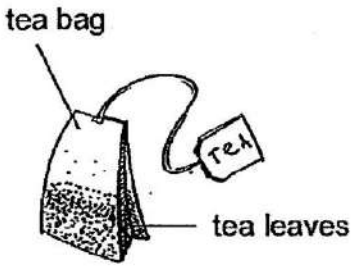
[1]

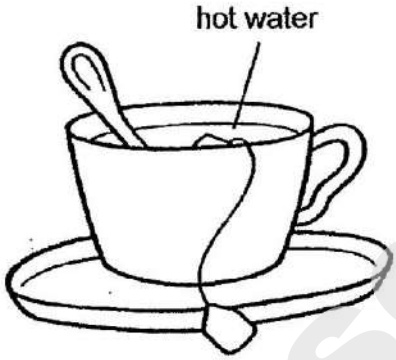
Marks : / 1

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(b)



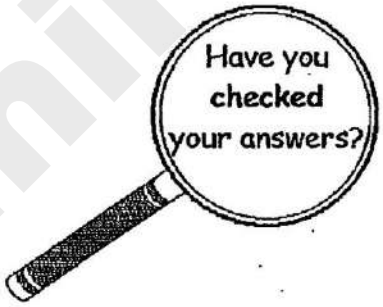


Based on the above experiment, explain which material is the most suitable to be used to make a tea bag for making a cup of tea. [1]

_____

_____

~ END OF PAPER ~



Marks : / 1

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SCHOOL : MAHA BODHI PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA2

CONTACT :

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	4	4	1	2	2	1	2	1	2
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	4	2	3	3	3	3	1	2	2
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
1	2	2	2	3	4	2	4		

SECTION B

Q29)	a) i) Gravitational Potential – Kinetic ii) There was not enough kinetic energy as some energy was lost as heat and sound. b) i) Material Q. Material Q took a longer time to reach 100 C so if it was used to make the sleeve, Material Q would take a longer time to become the same temperature as the hot tea. ii) Left hand
Q30)	a) Chemical Potential – Heat – Kinetic – Kinetic b) More water will flow out. There is a greater mass of water resulting in more potential energy in the water. More energy is converted to kinetic energy to potential energy in the water which is transferred to the water wheel to make it turn faster.
Q31)	a) Condensation b) Container Y. The metal plate was colder, so water vapour can lose more heat to it. The rate of condensation is higher.

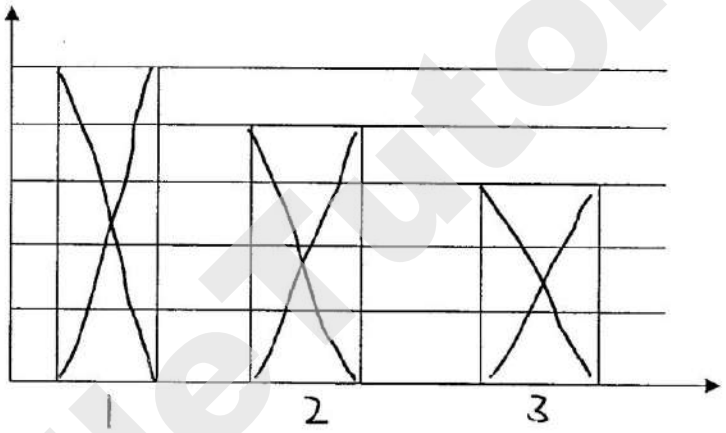
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	c) The metal plate became warmer. Less water vapour could lose heat to it.
Q32)	a) i) Female : B Male : A ii) The bees help to carry pollen grains from the anther to stigma of a flower, helping plants in pollination b) System B has two ovaries but system A only has one.
Q33)	a) J : Heart K : Lungs b) Arrows W and X c) Small intestines d) Line Q. The mouth and the stomach would digest the food so the amount of undigested food should decrease.
Q34)	a) The water-carrying tubes in the stalk transported the red-coloured water to the flower. b) Water-carrying tubes c) Blood vessel d) They feed on food made by the leaves which is transported by the food-carrying tubes in the stem.
Q35)	a) The iron switch bar is a conductor of electricity. b) When the water level is too high, the steel plate would float up and would connect the metal contacts together. Electric current would flow through the coils of wire around the magnet stronger to attract the iron switch bar so the circuit where the water pump is placed will become an open circuit and the water pump will stop. c) The steel plate is attracted by the electromagnet, causing circuit A to remain closed. The iron switch bar is still attracted to the electromagnet even if the water level drops, causing the water pump circuit to be enable to be closed.
Q36)	a) i)The air in the bottle could be compressed. ii)Air in the bottle could not be compressed further. b) Water occupied the space in between the soil. Air in the soil was pushed out, forming the bubbles.
Q37)	a) The distance between the object and the torchlight.

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	b) Material W. No light could pass through W. The shadow of the object will be the clearest.
Q38)	a) B. The temperature of the water in the cup increased faster. b) Cup W. It is made of a material which is a poorer conductor of heat. The cold drink would gain heat from the surroundings slower.
Q39)	a) Iron b) Z is a magnet. It repelled the button magnet.
Q40)	a) Electric current can still flow through the motor as the circuit is still a closed circuit. b) 
Q41)	a) The three beakers absorb different amounts of water. b) Material R. It allows the most water to pass through it.

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25

METHODIST GIRLS' SCHOOL

Founded in 1887

END-OF-YEAR EXAMINATION 2018
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 2018

This booklet consists of 9 printed pages including this page.

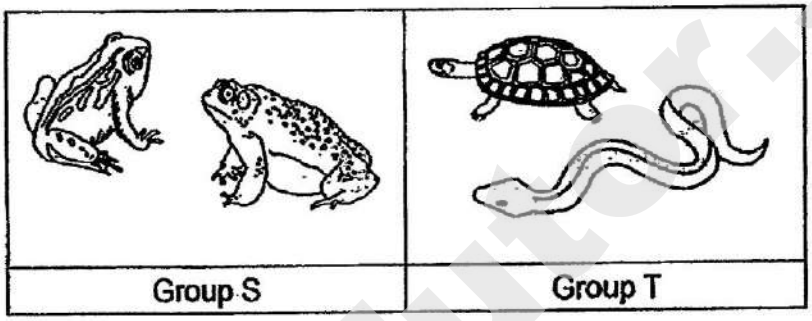
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For each question from 1 to 14, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS).

[28 marks]

1 Study the two groups of organisms, S and T below.



Group S	Group T

Which one of the following correctly describes animal group S or T?

	Group	Covered with scales	Give birth to live young
(1)	S	Yes	Yes
(2)	S	No	No
(3)	T	No	Yes
(4)	T	Yes	Yes

2 Which one of the following organisms is not a fungus?

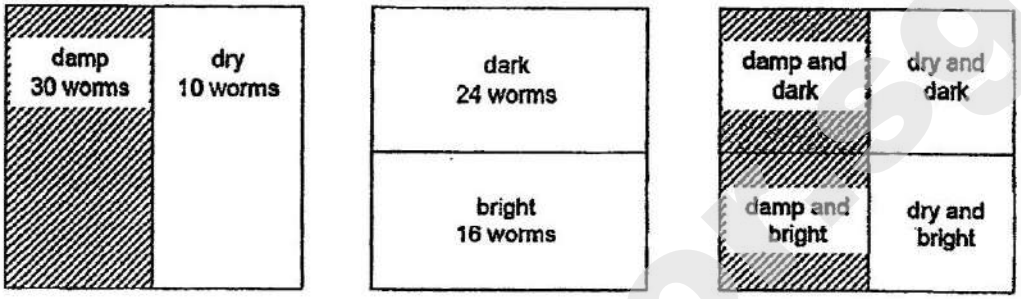
(1) moss
(2) yeast
(3) mould
(4) mushroom

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3 Ruhi carried out an experiment to find out how the worms respond to changes in the environment. 40 worms were placed in the middle of Container X. After ten minutes, the number of worms in each section of Container X was counted. The experiment was repeated with Container Y using the same number of worms and the results of the experiment were shown below.



Container X Container Y Container Z

Based on the results from Container X and Y, which one of the following shows the likely number of worms found in each section of Container Z?

(1)

12	2
22	4

(2)

22	2
12	4

(3)

18	8
12	2

(4)

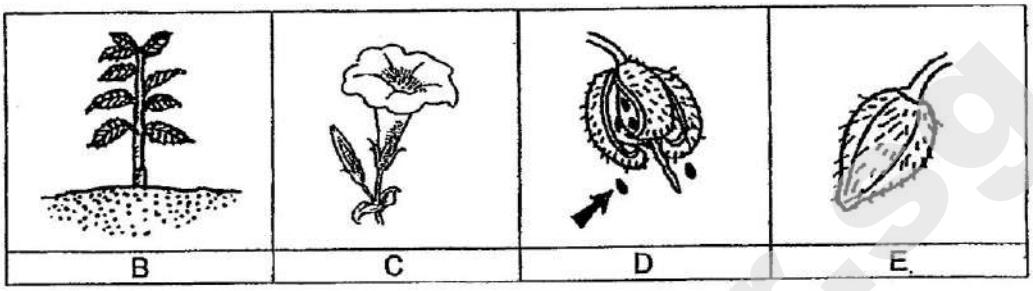
18	2
12	8

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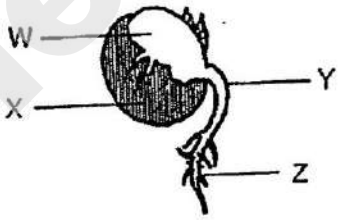
4 The diagrams below show the stages of development of a flowering plant.



Which one of the following shows the stages in the correct order?

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

5 The diagram below shows a seedling.



Which part, W, X, Y or Z, provides food for the seedling before the leaves are developed?

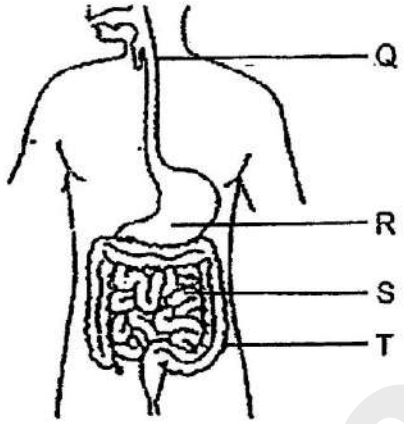
(1) W
(2) X
(3) Y
(4) Z

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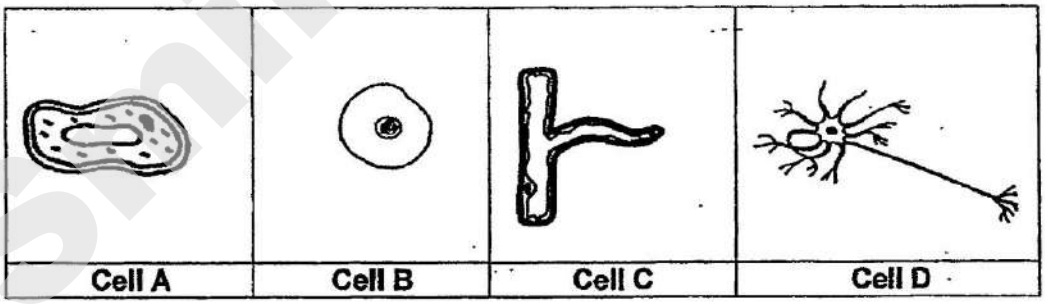
6 The diagram below shows part of a human digestive system.



Which one of the following shows the correct function of the organs?

	Absorption of water	Absorption of digested food
(1)	Q	R
(2)	R	Q
(3)	S	T
(4)	T	S

7 Four different types of cells are shown below.



Which one of the following classifies the cells correctly?

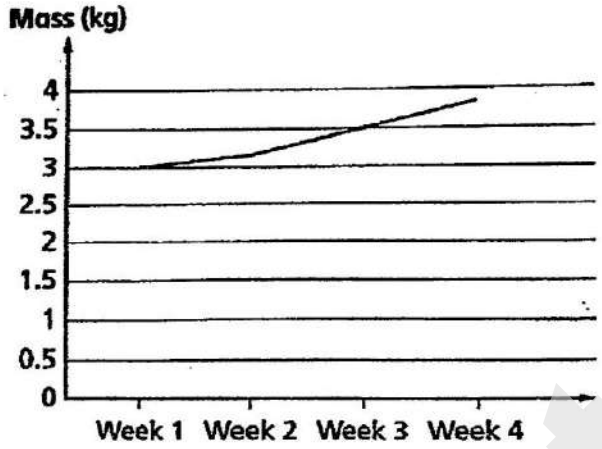
	Plant cells	Animal cells
(1)	A	B, C and D
(2)	A and B	C and D
(3)	A and C	B and D
(4)	A, C and D	B

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8 The graph below shows the mass of a baby over four weeks.



Based on the graph, some pupils made the following statements.

Raj: The baby's mass increased because there are many types of cells.

Ben: The baby's mass increased because the size of the cells increased.

Zul: The baby's mass increased because the number of cells increased.

Whose statement(s) is/are correct?

(1) Ben only
(2) Zul only
(3) Raj and Zul only
(4) Raj and Ben only

9 Meiling made some statements about sexual reproduction in humans and plants.

X Reproductive cells are found in the ovary.
Y Reproductive cells are found in the testes.
Z Fertilisation occurs in a female reproductive part.

Which of the following is correct?

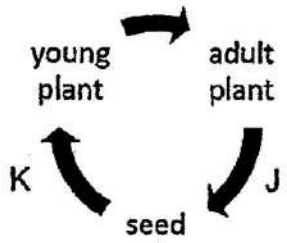
	Humans	Plants
(1)	Y	X, Z
(2)	X, Y	Z
(3)	X, Y, Z	X, Z
(4)	X, Y, Z	Y

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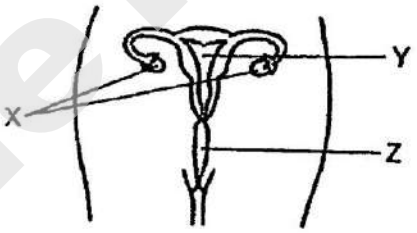
10 The diagram below shows the life cycle of a flowering plant.



Which one of the following correctly states the process(es) involved at J and K?

	Process(es) at J	Process(es) at K
(1)	pollination	fertilisation
(2)	pollination and fertilisation	dispersal and germination
(3)	fertilization and dispersal	pollination and germination
(4)	dispersal and germination	pollination and fertilisation

11 The diagram below shows a female reproductive system.



Which of the following statement(s) is/are **false**?

P The fertilised eggs are found in X.
Q The baby develops in part Y.
R The baby develops in part Z.

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

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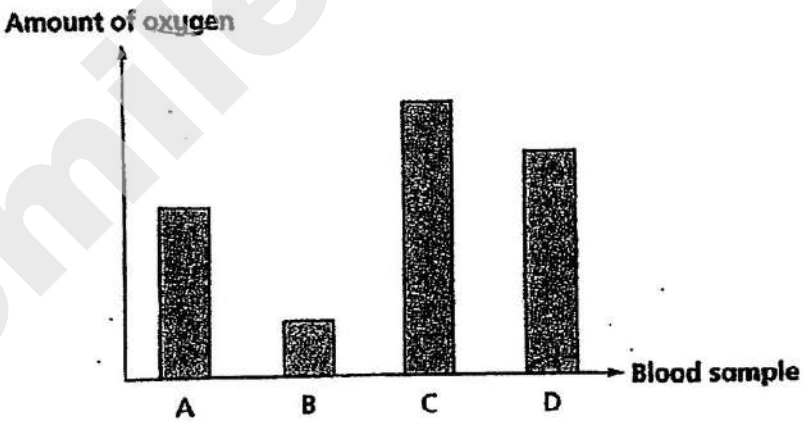
12 A hamster was placed in a sealed glass tank. What would happen to the various gases in the tank after half an hour?

	carbon dioxide	oxygen	water vapour
(1)	decrease	increase	increase
(2)	increase	decrease	decrease
(3)	increase	decrease	increase
(4)	decrease	increase	decrease

13 The diagram below shows the circulatory system of a human. The arrows represent the flow of blood between the different parts of the circulatory system.



The bar chart below shows the amount of oxygen in four blood samples taken from different blood vessels in the circulatory system.



Which blood sample A, B, C or D is likely to be taken from blood vessels X and Y?

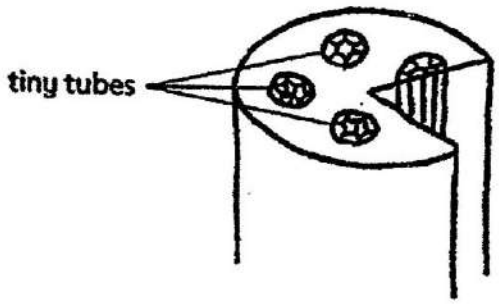
	Blood Vessel X	Blood Vessel Y
(1)	A	D
(2)	B	A
(3)	C	B
(4)	D	C

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14 The diagram below shows the cross-section of a stem.



Which of the following statement(s) is/are correct?

E Some of the tiny tubes absorb water for the plant.

F All the tiny tubes help to hold the plant upright.

G Some of the tiny tubes transport food from the leaves to all parts of the plant.

H The tiny tubes exchange gases between the plant and the surroundings.

(1) E only
(2) G only
(3) E and F only
(4) F and H only

End of Booklet A1

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METHODIST GIRLS' SCHOOL

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END-OF-YEAR EXAMINATION 2018
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 : 30 October 2018

This booklet consists of 10 printed pages including this page.

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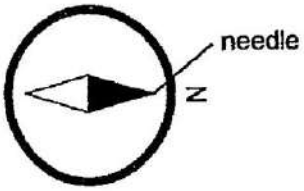
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For each question from 15 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS).

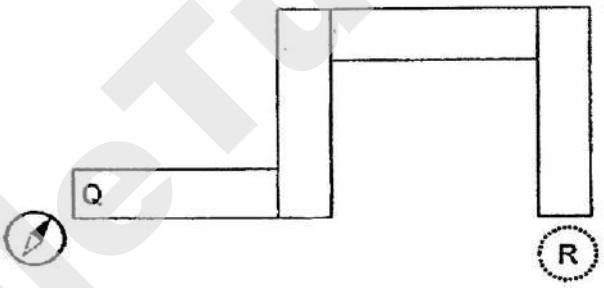
[28 marks]

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15 The picture below shows a compass.



Four bar magnets were arranged such that they were attracted to one another. A compass was then placed near Q and the direction of the compass needle is as shown below.



Which one of the following would be the direction of the needle when the compass was placed at R?



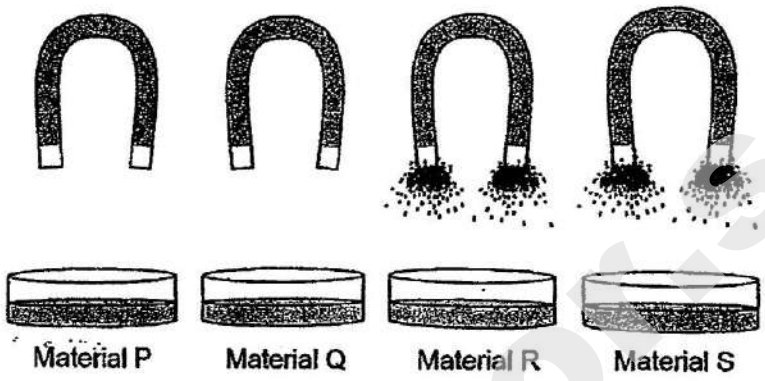
(1) (2) (3) (4)

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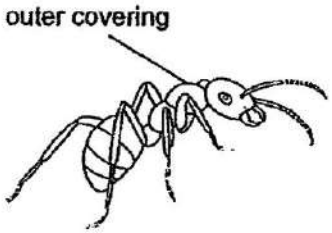
16 Four identical magnets were dipped into four different materials, P, Q, R and S. The results are shown below.



Based on the results, which one of the following correctly shows the material that could be separated from the mixture of materials indicated in the table?

	Material that could be separated	Mixture of materials
(1)	P	P, Q, R
(2)	Q	Q, P, S
(3)	R	R, P, Q
(4)	S	S, R, Q

17 The insect below has an outer covering that supports its body and protects its organs.



Which one of the following properties allows the outer covering to perform the functions described?

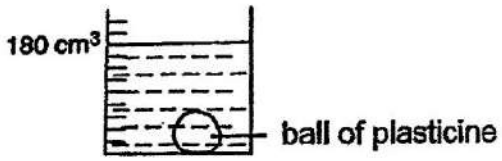
(1) strength
(2) flexibility
(3) absorbency
(4) ability to float

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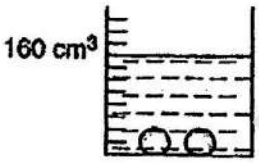
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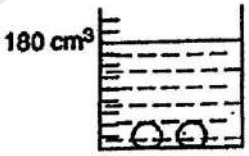
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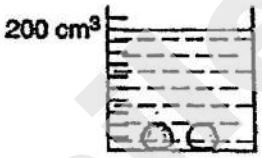
18 Zulfri placed a ball of plasticine into a container of water. He observed that the water level rose to the 180 cm^3 mark as shown below.

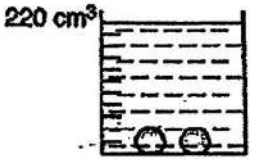


He then took the ball of plasticine out of the water, cut it into two pieces and carefully lowered them into the water again. Which one of the following diagrams shows the correct water level in the container?

(1) 

(2) 

(3) 

(4) 

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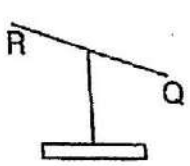
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19 The table below shows the masses of object P, Q and R.

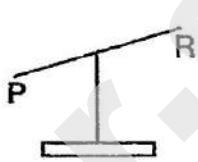
Object	P	Q	R
Mass (g)	65	145	250

Which one of the following diagrams shows the relationship between two of the objects?

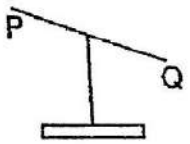
(1)



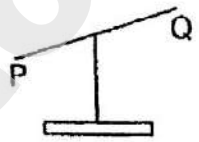
(2)



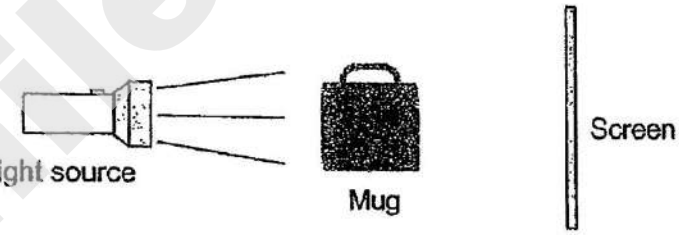
(3)



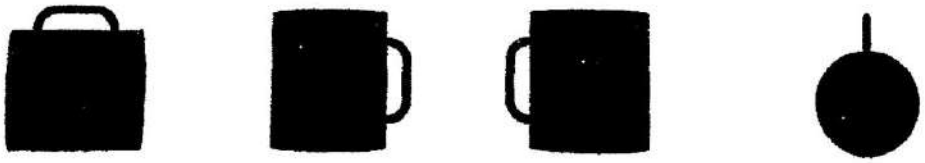
(4)



20 Sam set up the experiment as shown below.



Which one of the following is the shadow formed on the screen?

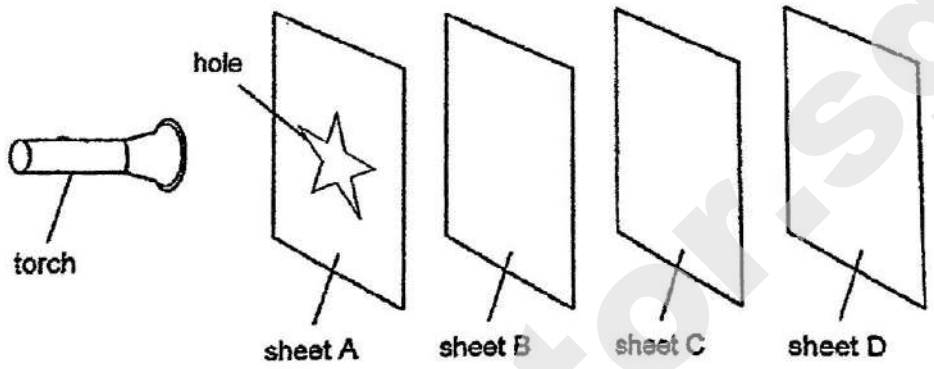


(1) (2) (3) (4)

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21 The experiment below was carried out in a dark room.



Sheets A to D were arranged in a straight line. When the torch was switched on, a bright star patch of light was seen on sheet C only.

Which one of the following correctly describes the properties of the materials that sheets A, B, C and D are made of?

	Does not allow light to pass through	Allows light to pass through	Not possible to tell
(1)	A and C	B	D
(2)	C	B	A and D
(3)	C	A and D	B
(4)	D	A and B	C

22 The table below shows the freezing points of three substances X, Y and Z.

Substance	Freezing point (°C)
X	10
Y	50
Z	125

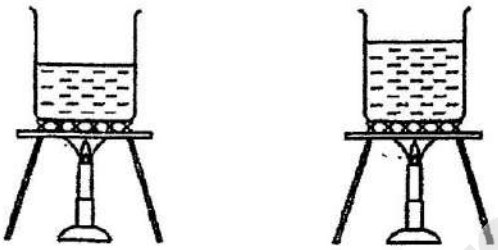
Based only on the information given, which one of the following is correct?

(1) X is a solid at 7 °C.
(2) X and Y are both liquids at 45 °C.
(3) Y and Z are both solids at 140 °C.
(4) Z can be a liquid or a gas at 125 °C.

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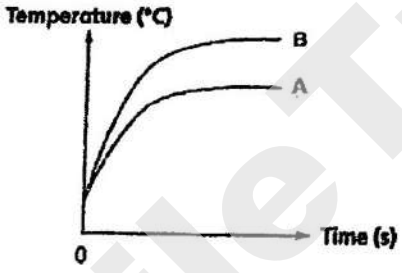
23 The diagrams below show two beakers, A and B, containing different amounts of water at room temperature. Both beakers of water are heated until boiling point.



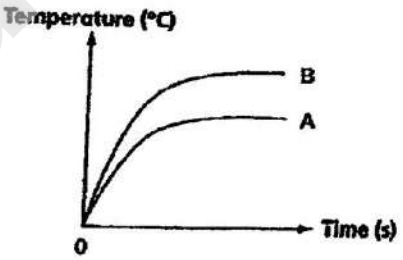
Beaker A Beaker B

Which one of the following graphs shows the temperature of the water in the two beakers over time?

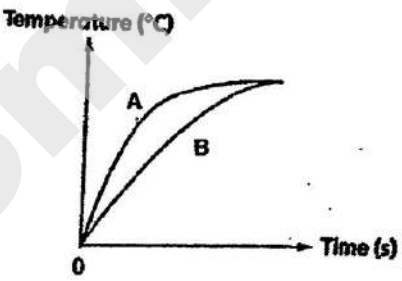
(1)



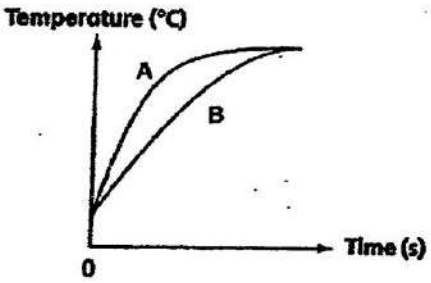
(2)



(3)



(4)

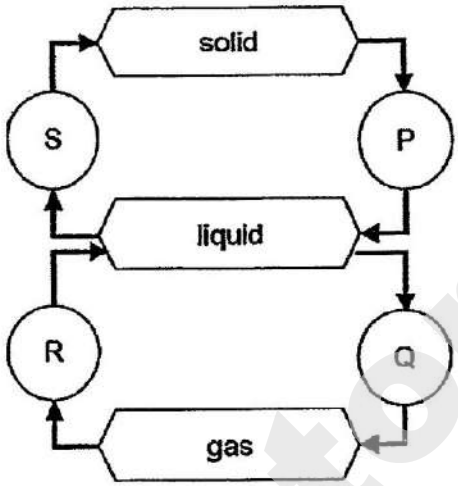


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24 The diagram below shows the changes of state of water.



If P represents melting, which of the following correctly describe processes Q, R and S?

	Q	R	S
(1)	evaporating	condensing	freezing
(2)	evaporating	freezing	condensation
(3)	condensing	evaporating	freezing
(4)	freezing	evaporating	condensing

25 Rina wanted to find out how the exposed surface area of a container affects the rate of evaporation of water.

Set-up	Volume of water in container (ml)	Temperature (°C)	Wind	Exposed surface area of container (cm^3)
J	280	31	absent	200
K	350	25	absent	90
L	280	31	absent	90
M	350	25	present	200

Which two set-ups should Rina use for her investigation?

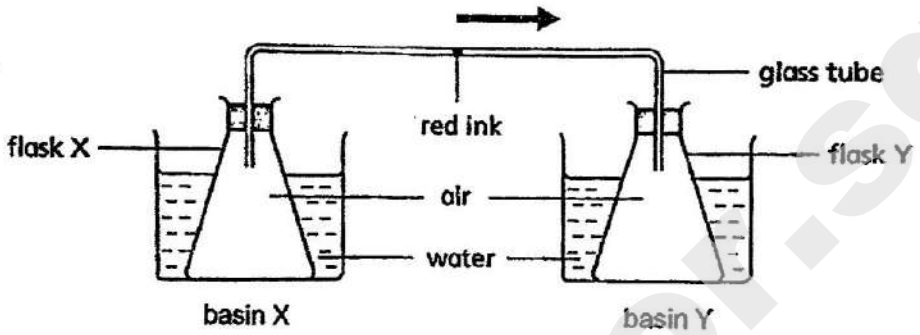
(1) J and K
(2) J and L
(3) K and M
(4) L and M

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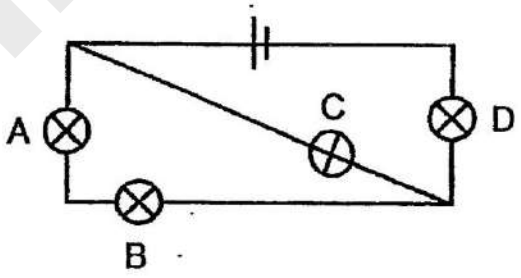
26 Two identical flasks were placed into two basins, X and Y, containing water of different temperatures as shown below. After a while, the red ink moved towards flask Y.



Which one of the following shows the temperature of water in the two basins?

	Temperature of water in basin X (°C)	Temperature of water in basin Y (°C)
(1)	25	75
(2)	40	90
(3)	75	25
(4)	80	80

27 Study the circuit below.



When one of the bulbs had blown, all the other bulbs did not light up. Which one of the bulbs had blown?

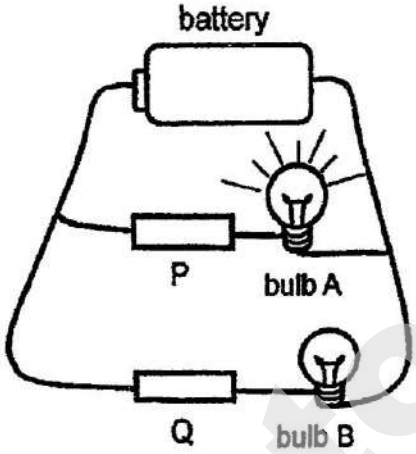
(1) A
(2) B
(3) C
(4) D

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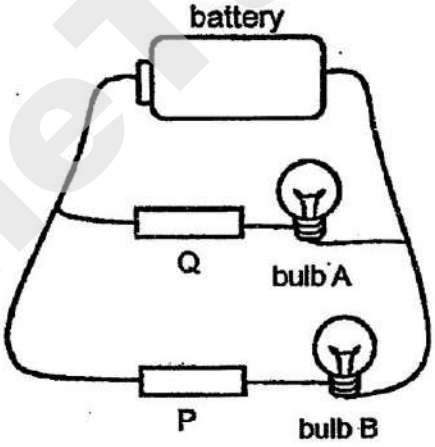
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28 Shu Ning set up a circuit as shown below. She observed that only bulb A lit up.



She then swapped P and Q and observed that none of the bulbs lit up.



Which one of the following is correct?

	Bulb not working	Electrical insulator
(1)	A	P
(2)	B	P
(3)	A	Q
(4)	B	Q

End of Booklet A2

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BOOKLET B1

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.

Name: _____( )

Class: Primary 5._____

Date : 30 October 2018

Booklet A1 & A2	56
Booklet B1	22
Booklet B2	22
Total	100
Parent's Signature	

This booklet consists of 8 printed pages including this page.

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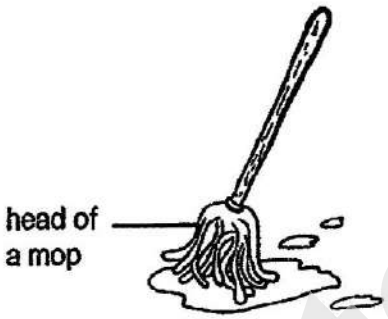
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For questions 29 to 34, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

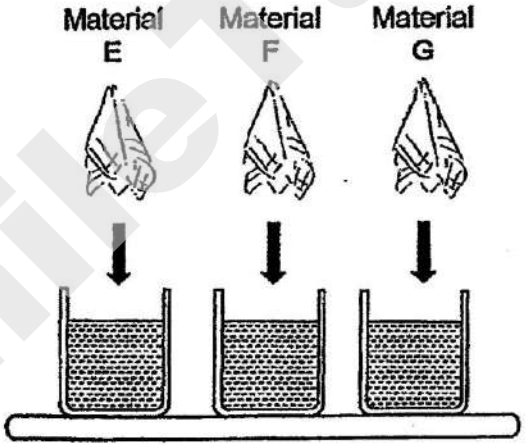
[22 marks]

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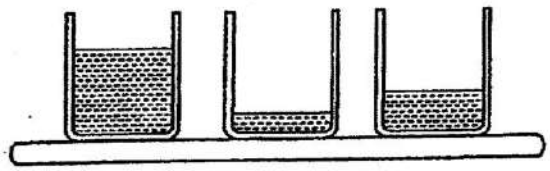
29 Zacchary wanted to choose a material to make the head of a mop as shown below.



He conducted an experiment with 3 pieces of material, E, F and G of the same size. He dipped each piece of material into the same amount of water for 5 minutes as shown below.



After 5 minutes, he removed the materials and observed the amount of water left in the beakers. The results are shown below.



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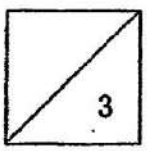
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(a) From the results shown above, which material, E, F or G, is the most suitable for making the head of a mop? Explain your answer clearly. [2]

After the experiment, Zacchary placed the mop into the cupboard. One week later, he opened the cupboard and noticed some black spots growing on the head of the mop.

(b) What are these black spots and where did they come from? [1]

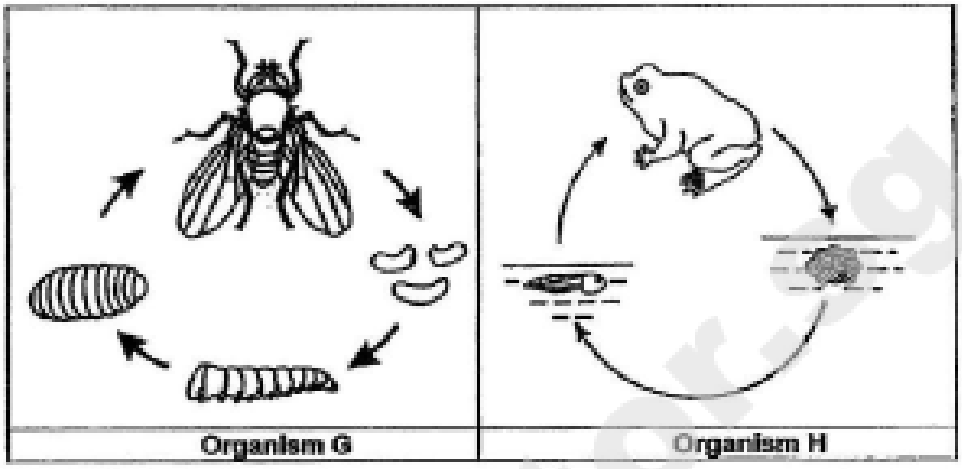
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30 The diagrams below show the life cycle of organisms G and H.



(a) Which group of animals does organism G belong to? Give a reason for your answer. [1]

(b) Based only on the diagrams, what is one similarity and difference between the life cycles of organism G and H? [2]

Similarity:

Difference:

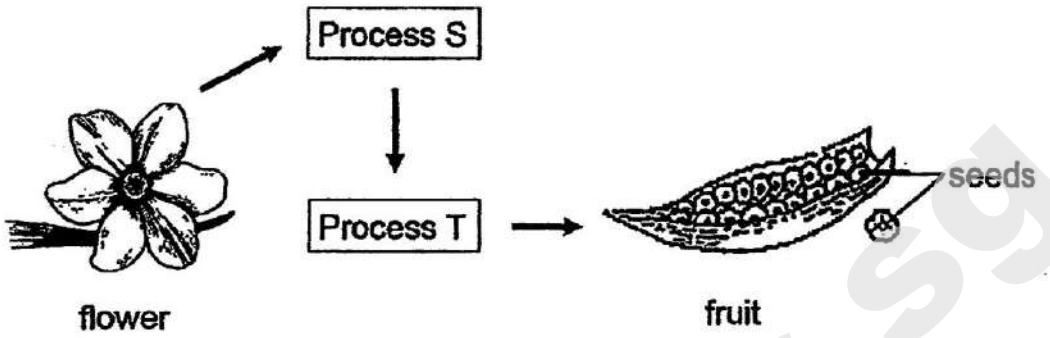
22/3

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31 The diagram below shows how a fruit is formed from a flower of a certain plant.



(a) Which process. S or T, is similar to the reproduction of humans? Name the process. [1]

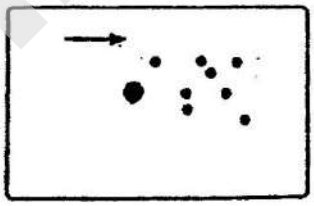
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(b) Explain why process S is important in the reproduction of flowering plants. [1]

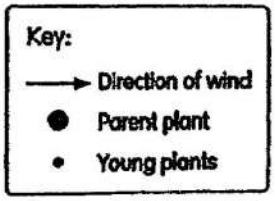
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The diagram below shows the dispersal pattern of the plant.



Dispersal pattern



(c) How are the seeds dispersed? State a characteristic of the seed that allows it to be dispersed this way. [1]

_____

_____

3

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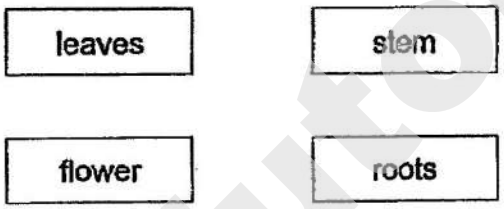
(d) Why do the new plants bear similar fruits as the adult plant? [1]

_____

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32 Some parts of a plant are shown below.

(a) Draw arrows (⟶) in the diagram to show how food is transported in a plant. [1]



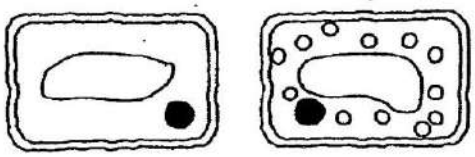
(b) Some insects ate their way into the stem of a plant. This affected the growth of the roots of the plant. Explain why. [2]

_____

_____

_____

The diagram below show cells X and Y observed under a microscope.



cell X cell Y

(c) Which cell is likely taken from the roots of the plant? Explain why. [1]

_____

_____

5

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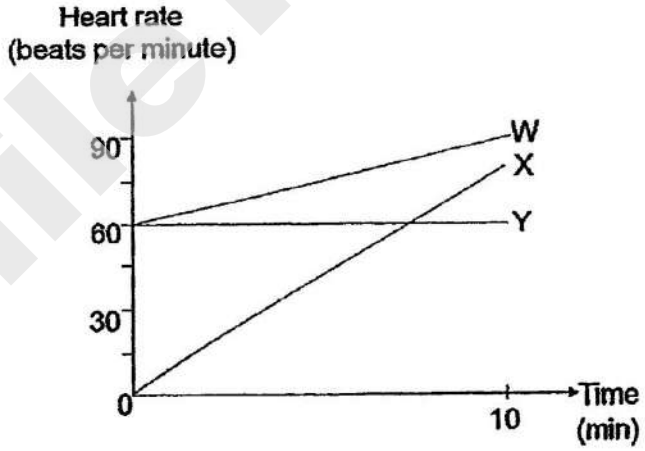
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33 Nathaniel used his legs to pedal his bicycle when he delivered parcels.



(a) Describe clearly how the organs in his body enable oxygen in the environment to reach his legs. [2]

W, X and Y, in the graph below shows the possible heart rate when Nathaniel rode on the bicycle for 10 minutes.



(b) Which letter, W, X or Y, in the graph shows Nathaniel's possible heart rate when he was riding his bicycle? Explain your answer clearly. [2]

4

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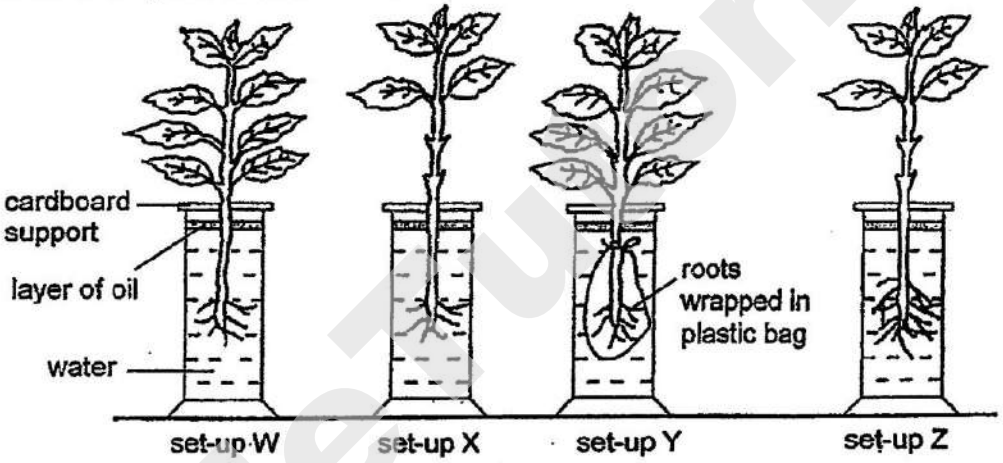
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(c) Which letter, W, X or Y, in the graph suggests that Nathaniel is sleeping? Explain why. [1]

_____

_____

34 Four plants were placed next to the window for a few hours in identical containers with the same amount of water as shown below to show that the roots of the plant absorb water.



(a) Which two set-ups should be compared to ensure a fair test? Give a reason for your answer. [1]

_____

_____

(b) How does adding a layer of oil make the result accurate? [1]

_____

(c) What is another function of the roots of the plant? [1]

_____

4

End of Booklet B1

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BOOKLET B2

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.

Name: _____ ( )

Class: Primary 5_____

Date : 30 October 2018

Booklet B2	22

This booklet consists of 10 printed pages including this page.

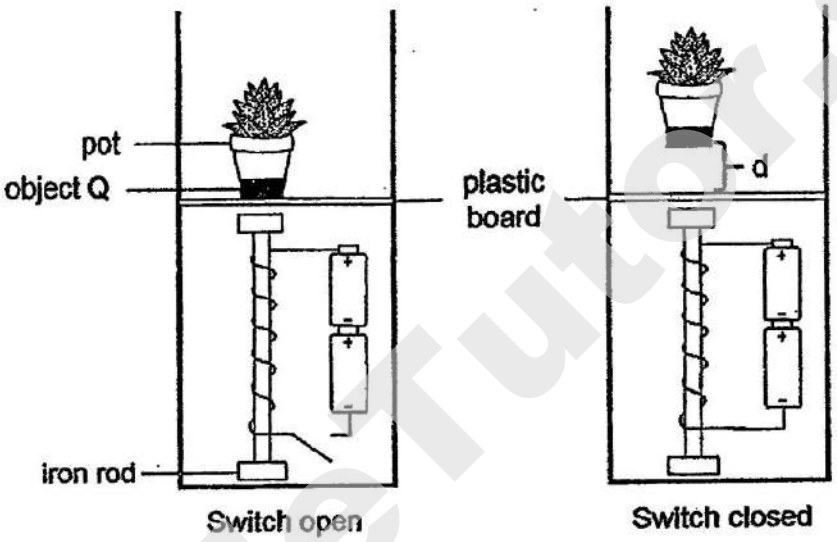
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For questions 35 to 41, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

[22 marks]

35 An electric circuit was set up underneath a plastic board as shown below. When the switch was closed, the pot attached to object Q was able to float on the surface of the plastic board.



(a) What is object Q? Explain why the pot could float above the plastic board when the circuit was closed. [2]

(b) Suggest one way to reduce the distance between the plastic board and the pot (d) without making any changes to object Q? Give a reason for your answer. [1]

3

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36 Gopal taped a piece of paper to the inner side of the glass. He then lowered the glass into a basin of water as shown in Diagram 1 below. Diagram 2 showed what was observed after Gopal lowered the glass into the basin of water.

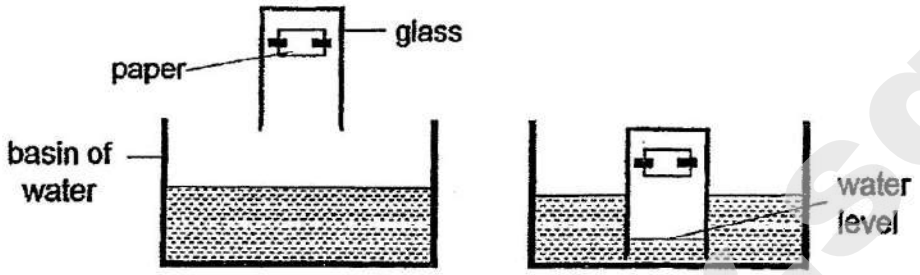


Diagram 1 Diagram 2

(a) What did Gopal observe about the paper in Diagram 2? Explain your answer. [1]

(b) What did Gopal observe about the water level in the glass? Explain your answer. [1]

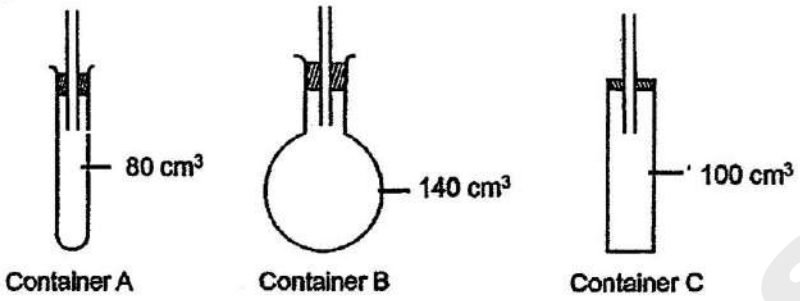
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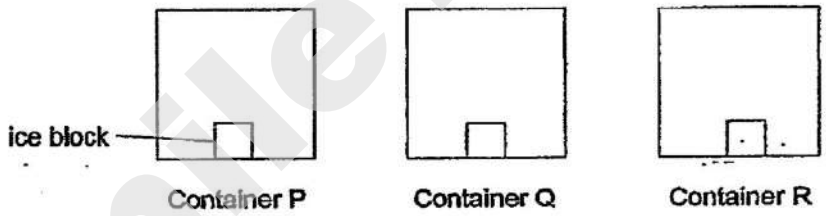
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Gopal then tried to pump 100cm^3 of gas into the three containers as shown below.

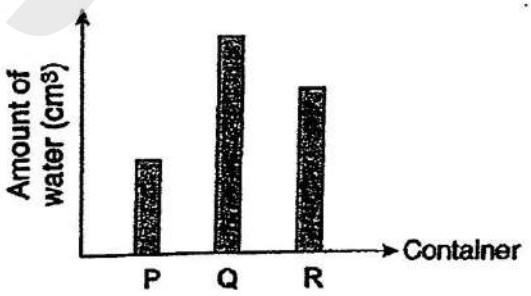


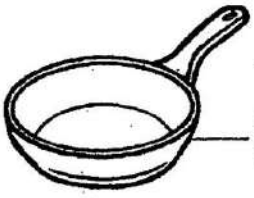
(c) Which containers would Gopal be able to pump in another 100cm^3 of gas? Explain your answer. [1]

37 June set up an experiment as shown below. She placed three identical ice blocks into each container made of a different material.



After 30 minutes, she removed the ice blocks from each container and measured the amount of water collected in each container. The results are shown below.



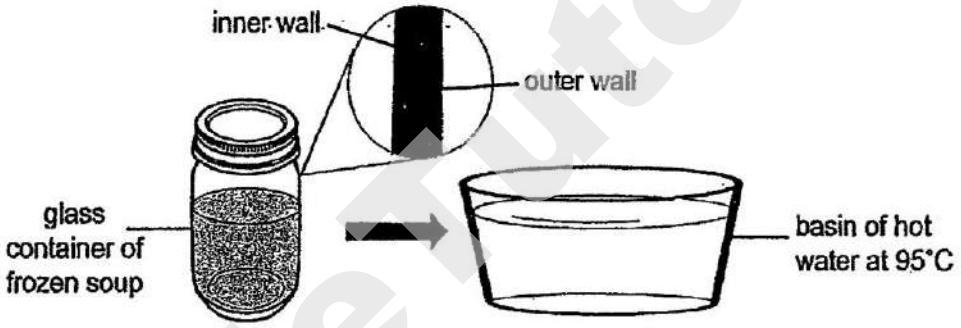


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(a) Which container, P, Q or R is made of a material that is suitable to make the base of a frying pan? Explain your answer based on the results obtained. [2]

June wanted to heat up some frozen soup for lunch. She placed the soup in a glass container with thick walls into a basin of hot water immediately after taking it out from the freezer.



(b) Explain why the glass container of frozen soup cracked after it was placed into the basin of hot water. [1]

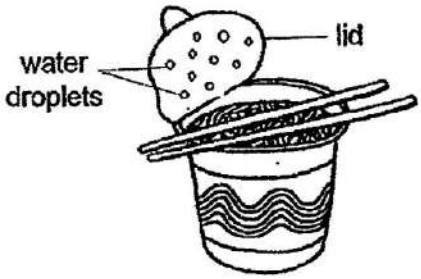
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38 Tim made some cup noodles by pouring hot water into the container and closed the lid. After 3 minutes, he opened the lid of the cup noodles and noticed some water droplets on the underside of the lid as shown below.



(a) Explain how the water droplets on the underside of the lid were formed. [2]

Tim was in a rush to finish the cup noodles but it was too hot. His brother suggested pouring the noodles onto a plate as shown below.



(b) Explain why Tim's brother gave that suggestion. [1]

3

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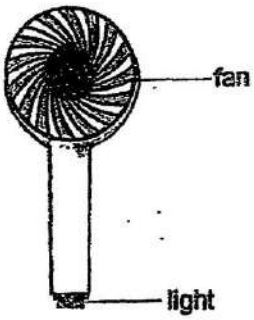
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39 Sheryl took out a spray bottle containing some water from her bag on a hot day. When she sprayed the water on her face, tiny water droplets in the form of mist came into contact with her skin and she felt cool.



(a) Explain why Sheryl's face felt cool after she sprayed some water on it. [2]

After spraying the water on her face, Sheryl switched on her handheld fan as shown below.



(b) Why did Sheryl's face feel cooler when she held the fan near it? [1]

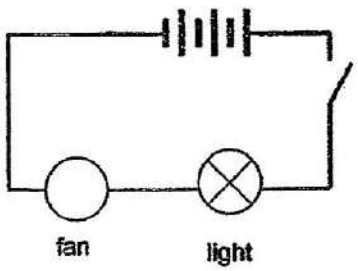
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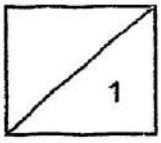
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The handheld fan has a light bulb which functions as a torch. The light bulb is connected to the handheld fan at the bottom. The circuit is as shown below.



(c) What is the arrangement of the fan and light in the circuit shown above? Suggest one disadvantage of this arrangement. [1]

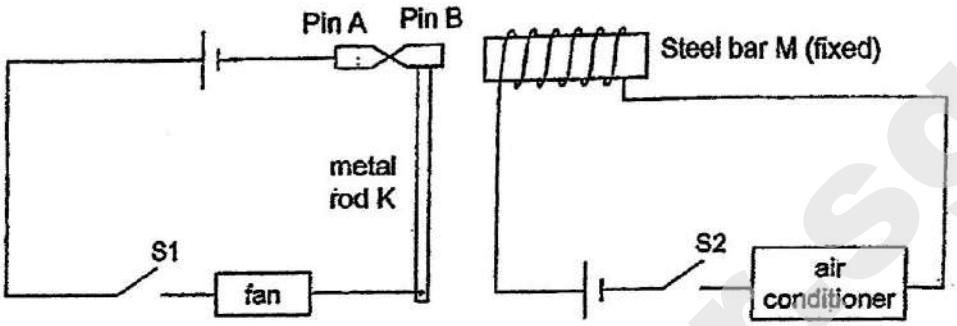


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40 Josh designed an electrical system for a fan and an air conditioner in his bedroom as shown below. The system prevents both the fan and air conditioner from being turned on at the same time.



Circuit 1 Circuit 2

M is a steel bar placed inside a coil of wire. A and B are two steel pins in contact with each other. Pin A is fixed while Pin B is attached to metal rod K and can move sideways.

On a hot afternoon, Josh closed switch S1 to turn the fan on. Ten minutes later, he still felt very warm and closed switch S2 to turn the air conditioner on.

(a) State the movement of Pin B when switch S2 was closed. [1]

(b) What would happen to the fan when Josh closed switch S2? Explain your answer. [2]

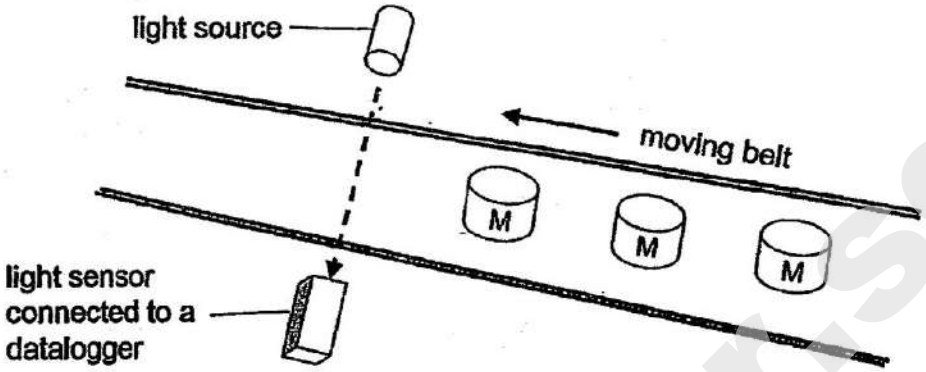
3

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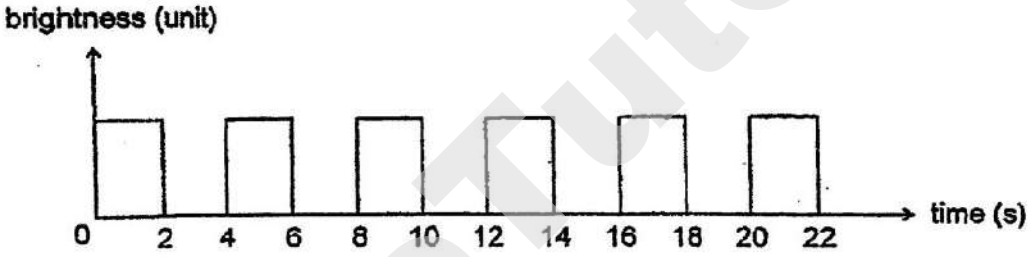
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41 In a factory, a light source and a light sensor were set up to count the number of identical container M on a moving belt as shown below.



The following results were recorded as shown below.



(a) How could the number of container M be counted using the set-up above? [2]

(b) Based on the above results, what is the number of container M that passed the sensor in 14 seconds? [1]

3

End of Booklet B2

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SCHOOL : MGS PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA2

CONTACT :

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	1	3	2	1	4	3	2	3	2
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	3	3	2	4	3	1	2	3	4
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
1	1	4	1	2	3	4	4		

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Name: _____( ) Class: _____

A.C.E. your Open-ended questions!

P5 SA2 2018 Booklet B

Qn	A.C.E	Elaboration
29a	ANALYSE	• Material F is the most absorbent and Material E is the least absorbent.
	CONCEPT	**A material that is absorbent will take in the most amount of water.**
	EXPLAIN	Material F. The amount of water left is the least so it is the most absorbent since the head of the mop must be able to absorb water.
29b	ANALYSE	• The water present on the mop allows the mould to grow.
	CONCEPT	**Mould /fungus reproduce from spores in the presence of warmth, moisture and oxygen.**
	EXPLAIN	The black spots are mould/fungi. The spores in the cupboard / air in the cupboard.
30a	ANALYSE	• Organism G has a 4-stage life cycle and Organism H has a 3-stage life cycle. • Organism G has the characteristics of an insect. • Compare the life cycle of Organism G and H.
	CONCEPT	**The characteristics of insects.**
	EXPLAIN	Organism G is an insect. It has 6 legs / 3 body parts / feelers.
30b	ANALYSE	• Similar to 30a.
	CONCEPT	**The similarities and differences between the life cycle of a 4-stage life cycle and a 3- stage life cycle.**
	EXPLAIN	Similarity: Both their young does not look like the adult. Difference: Organism G has 4 stages in its life cycle but Organism H has 3 stages in its life cycle.

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Name: _____( ) Class: _____

31a	ANALYSE	• Process S – pollination • Process T – fertilisation
	CONCEPT	**The processes that need to occur for flowering plants to reproduce are pollination and fertilisation. Fertilisation is a common process for the reproduction of humans and flowering plants.**
	EXPLAIN	T, fertilisation
31b	ANALYSE	• Similar to 31a
	CONCEPT	**Pollination needs to take place in order for fertilisation to occur.**
	EXPLAIN	The pollen grain needs to be transferred from the anther to the stigma of the flower in order for fertilisation / Process T to take place.
31c	ANALYSE	• The young plants are found in one direction, similar to the direction of the wind.
	CONCEPT	**The characteristics of fruits and seeds determine the methods of fruits and seed dispersal.**
	EXPLAIN	They are dispersed by wind. It has a feathery structure / wing-like structure / is light so it can be easily carried by the wind.
31d	ANALYSE	• Parents and their young share similar characteristics.
	CONCEPT	**Characteristics are passed down from parents to young during reproduction.**
	EXPLAIN	The traits/characteristics of the fruits are stored in the nucleus of the cell of the adult plant and they are passed down/inherited by the new plants.
32a	ANALYSE	• Leaves make food and transports via the stem to the rest of the plant.
	CONCEPT	**Food is transported via the stem to all parts of the plant.**
	EXPLAIN	Leaves → stem Flower ← stem → roots

Name: _____ ( ) Class: _____

32b	ANALYSE	• The stem contains the water-carrying tubes and food-carrying tubes. • The food-carrying tube must be damaged as the growth of roots are damaged.
	CONCEPT	**Food from the leaves cannot be transported to the different parts of the plant if the food-carrying tubes are damaged.**
	EXPLAIN	The food carrying tubes (phloem) will be damaged so food / sugar made in the leaves cannot be transported to the roots.
32c	ANALYSE	• Cell X does not have chloroplasts.
	CONCEPT	**There are many parts of a plant cell that have different functions.**
	EXPLAIN	Cell X. It does not have chloroplasts as roots do not make food for the plant.
33a	ANALYSE	• The organs from the respiratory and circulatory systems work together to ensure that the oxygen reaches his legs.
	CONCEPT	**Air enters the nose and moves through the windpipe to the lungs, where it is absorbed into the blood and pumped by the heart to all parts of the body.**
	EXPLAIN	Air (oxygen) from the surrounding enters the nose/mouth and windpipe into the lungs. Oxygen is absorbed into the blood and the heart pumps the oxygenated blood/blood rich in oxygen through the blood vessels to the legs.
33b	ANALYSE	• Line W – starts from 60 to 85 bpm • Line X – starts from 0 to 75 bpm • Line Y – maintains at 60 bpm
	CONCEPT	**During exercise, the heart rate increase as the heart pumps faster so as to pump more digested food and oxygen to all parts of the body.**
	EXPLAIN	Line W. When Nathaniel cycles, his heart pumps faster / heart rate increases to allow blood to reach the different parts of his body more quickly so that his body could get more oxygen and digested food.

Name: _____ ( ) Class: _____

33c	ANALYSE	• Similar to 33b
	CONCEPT	**During rest/sleep, our heart rate is constant.**
	EXPLAIN	Line Y as the heart rate is constant (at 60 beats per minute) when he is resting.
34a	ANALYSE	• Changed variable is the roots wrapped in plastic bag as it does not allow the roots in the plant to absorb water. • The set-ups chosen must have the same variables except for the changed variable.
	CONCEPT	**For a fair test, only the variable to be measured should be changed.**
	EXPLAIN	Set-up W and Y. The roots in set-up W can absorb water but not the roots in set-up Y and this is the only variable change in the experiment.
34b	ANALYSE	• There are other factors that affect the amount of water in the set-up.
	CONCEPT	**A layer of oil on water helps to prevent evaporation of water.** **Roots absorb water.**
	EXPLAIN	To prevent evaporation of the water so that any change in the amount of water is due to the absorption of water by the roots.
34c	ANALYSE	• Recall other functions except the one stated in the question.
	CONCEPT	**Roots anchor plants firmly to the ground.**
	EXPLAIN	To anchor the plant firmly to the ground. OR To store food for the plant.

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Name:_____( ) Class:_____

35a	ANALYSE	• The pot was lifted what the switched was closed.
	CONCEPT	**An iron rod can become a temporary magnet using the electrical method.** **Only magnets can repel.** **Magnets repel when their like poles are facing each other.**
	EXPLAIN	It is a magnet. The iron rod becomes magnetized/ an electromagnet and repels object Q because the like poles are facing each other.
35b	ANALYSE	• The magnetic strength of the electromagnet needs to be reduced.
	CONCEPT	**To reduce the magnetic strength of an electromagnet, we can** **(1) reduce the number of batteries** **(2) reduce the number of coils around the iron rod**
	EXPLAIN	She could decrease the number of wire coils around the nail / the number of batteries in the circuit in order to reduce the magnetic strength of the electromagnet.
36a	ANALYSE	• Air is present inside the cup.
	CONCEPT	**Air occupies space.**
	EXPLAIN	The paper remained dry. Air occupied space so water could not enter the glass.
36b	ANALYSE	• Some water entered the glass.
	CONCEPT	**Air has no definite volume and can be compressed.**
	EXPLAIN	The water level increased (a little). Air can be compressed / has no definite volume so it allowed some water to enter the glass.
36c	ANALYSE	• Relate the property of gas to the context provided.
	CONCEPT	**Air has no definite volume and can be compressed.**
	EXPLAIN	All of the containers (A, B and C). Gas does not have a definite volume or can be compressed.

Name:_____( ) Class:_____

37a	ANALYSE	• Container P – ice melt the least • Container Q – ice melt the most
	CONCEPT	**Ice in container Q melted the fastest as most water is collected so it is the best conductor of heat.** **A frying pan needs to gain heat fast to cook the food quickly.**
	EXPLAIN	Container Q. The amount of water collected is the most as the ice melted the fastest so it is the best conductor of heat. Thus, the food can gain heat at the fastest rate from the frying pan.
37b	ANALYSE	• Heat travels from a hotter region to a cooler region. • The thick walls of the container will gain heat at different speeds and expand at different rate.
	CONCEPT	**Heat travels from a hotter region to a cooler region. The outer wall of the container is closer to the heat source as compared to the inner wall so it gained heat and expanded first.**
	EXPLAIN	The outer wall gained heat and expanded first/faster causing the glass to crack.
38a	ANALYSE	• There will be a change of state of water when there is a temperature difference.
	CONCEPT	**Water vapour would lose heat upon contact with a cooler surface and condense.**
	EXPLAIN	The warm water vapour in the cup came into contact with the cooler inner surface of the lid. It lost heat and condensed into water droplets.
38b	ANALYSE	• Pouring the noodles onto a plate increases the exposed surface area.
	CONCEPT	**Increasing the exposed surface area of the noodles will increase heat loss to the surrounding.**
	EXPLAIN	Pouring the noodles onto a plate increases the exposed surface area of the noodles so it lost heat to the surroundings faster.

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Name: _____ ( ) Class: _____

39a	ANALYSE	• Heat source – Sheryl's face • When the water droplets gained heat, Sheryl's face lost heat.
	CONCEPT	**Water will gain heat and evaporate. The source of heat (object) will lose heat and decrease in temperature.**
	EXPLAIN	The water droplets gained heat from Sheryl's face and evaporated, causing her face to lose heat and became cool.
39b	ANALYSE	• When the fan was switched on, wind was generated.
	CONCEPT	**The presence of wind increases the rate of evaporation.**
	EXPLAIN	The wind generated by the fan increased the rate of evaporation of the mist (tiny water droplets) causing her face to lose more heat.
39c	ANALYSE	• The arrangement of the bulb and fan is arranged in series.
	CONCEPT	**The bulb and fan are arranged in series in a circuit. As the bulb and fan are arranged in series, when either one is not working, the other one cannot be turned on.**
	EXPLAIN	Series arrangement. When either the fan or light bulb is spoilt/not working, the other also cannot be turned on / work.
40a	ANALYSE	• The electromagnet will attract Pin B.
	CONCEPT	**An electromagnet is a temporary magnet that will attract magnetic materials.**
	EXPLAIN	Pin B will move away from Pin A. / It will move towards Steel bar M.

Name: _____ ( ) Class: _____

40b	ANALYSE	• Circuit 1 will be an open circuit.
	CONCEPT	**An electromagnet will attract magnetic materials. An open circuit will not allow current to pass through.**
	EXPLAIN	M will become an electromagnet/magnetised and will attract Pin B. This creates an open circuit and the fan will be switched off.
41a	ANALYSE	• An opaque object will result in a zero reading by the datalogger.
	CONCEPT	**Light will be completely blocked by an opaque object.**
	EXPLAIN	When object M is between the light sensor and the light source, it blocks the light from reaching the sensor. The number of times the light sensor cannot detect any light/reading is zero would be the number of object M counted.
41b	ANALYSE	• Similar to 41a.
	CONCEPT	**The objects can be counted when light is completely blocked by it using a sensor.**
	EXPLAIN	3

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NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 2 – 2018
PRIMARY 5

SCIENCE

BOOKLET A

28 Multiple Choice Questions (56 marks)

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

INSTRUCTIONS TO CANDIDATES

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

Marks Obtained

Booklet A		/ 56
Booklet B		/ 44
Total		/ 100

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

Date : 1 November 2018 **Parent's Signature:** _____

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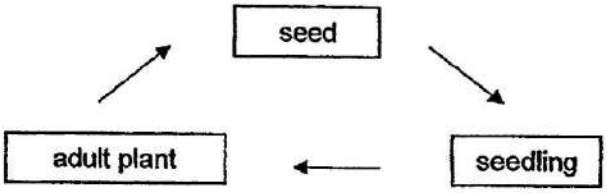
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Section A: **(28 × 2 marks = 56 marks)**

For each question from 1 to 28, 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 life cycle of plant A.



Which of the following statements is/are correct based on the diagram?

A Plant A has 3 life cycles.
B Plant A is a flowering plant.
C The seed of plant A is dispersed by animals.

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

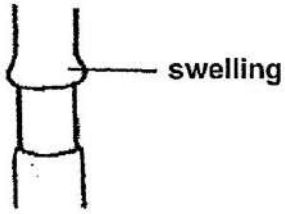
2. Which of the following statements is most likely the reason for a large amount of sperms to be produced?

(1) To fertilise many eggs at a time.
(2) To show that the male is very healthy.
(3) To increase the chance of a sperm fertilising an egg.
(4) To shorten the time needed for the sperm to fuse with an egg.

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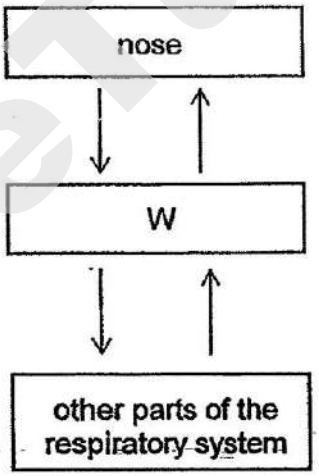
3. A small and thin ring of the bark is removed from the stem of a plant in an open field. A few days later, a swelling above the ring of the bark that was removed was observed.



Which statement correctly explains the presence of the swelling?

(1) Water travelling up the stem was trapped above the ring.
(2) Food travelling down the stem was trapped above the ring.
(3) Food and water ravelling up the stem was trapped above the ring.
(4) Food and water travelling down the stem was trapped above the ring.

4. The diagram below shows the human respiratory system.



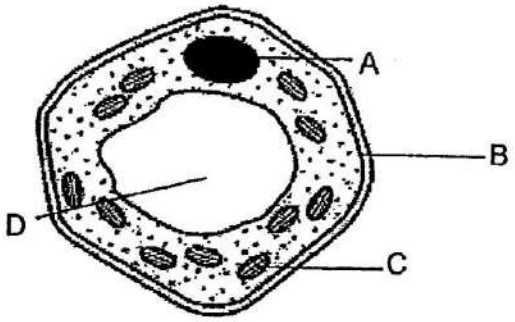
Which one of the following correctly identifies W and its function?

	W	Function
(1)	lungs	allow for gaseous exchange
(2)	heart	pumps blood to all parts of the body
(3)	mouth	produces saliva to moisten the air
(4)	windpipe	provides passage for air to flow to and away from the lungs

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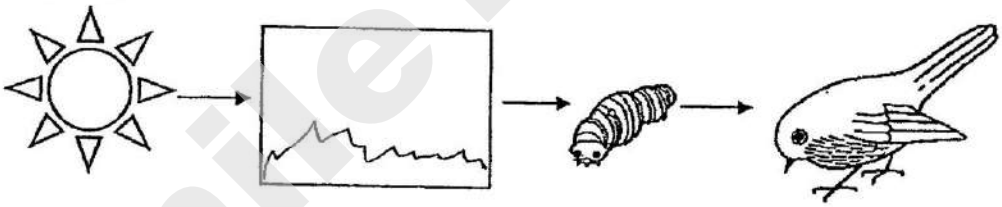
5. The diagram below shows a plant cell with its parts labelled.



Which part of the cell controls the movement of substances in and out of the cell?

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

6. The diagram below shows how energy from the Sun is being transferred to the living things.



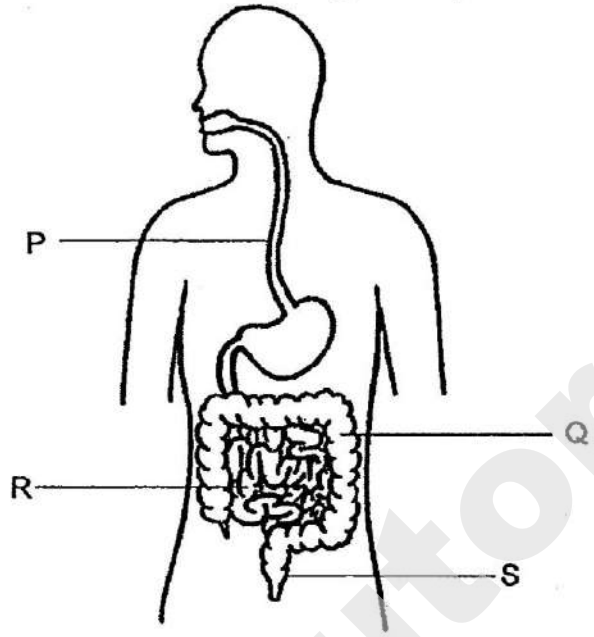
Which one of the following living things can be placed in the box?

(1) ant
(2) frog
(3) grass
(4) mushroom

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7. The diagram below shows the human digestive system.



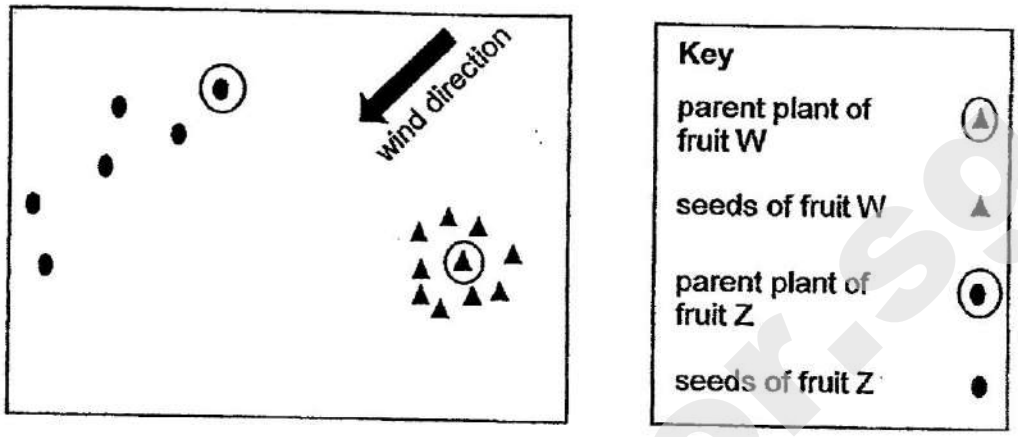
Which one of the following parts does digestion take place in the system?

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

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8. The diagram below shows how the seeds of fruit W and Z are dispersed from the parent plants.

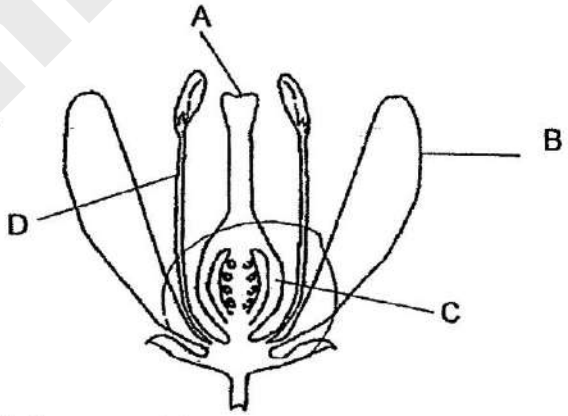


It was observed that all the seeds of fruit Z germinated but only a few seeds of fruit W germinaed.

Which one of the **followingstatements** explains why some seeds of fruit W did not germinate?

(1) The seeds did not receive water.
(2) The seeds did not receive fertiliser.
(3) The seeds did not receive carbon dioxide.
(4) The seeds did not receive nutrients, light and space.

9. The diagram below shows the reproductive parts of a flower.



Which part(s) will dry up and drop off after fertilisation?

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

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10. Sammy drew diagrams 1 and 2 below showing the reproductive parts of a human and a plant respectively.

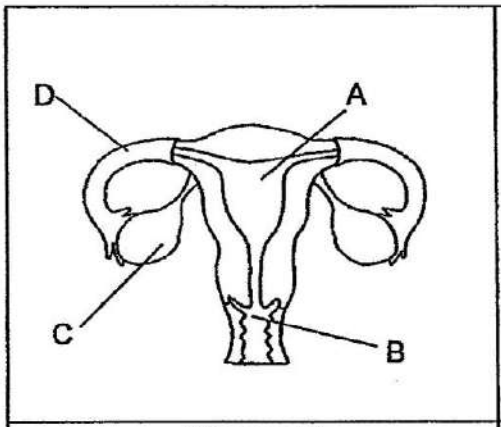


Diagram 1

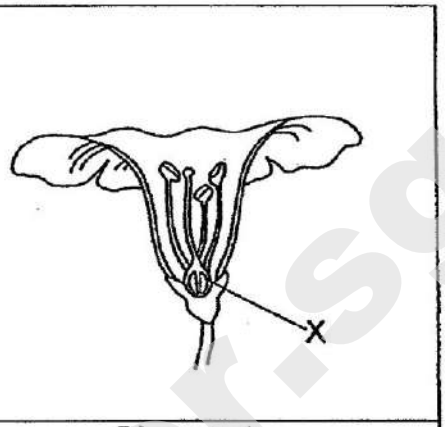


Diagram 2

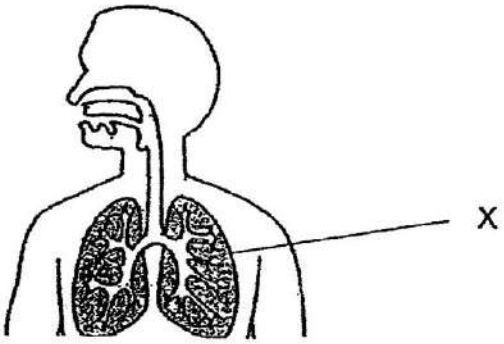
Which one of the following part in diagram 1 performs the same function as part X in diagram 2?

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

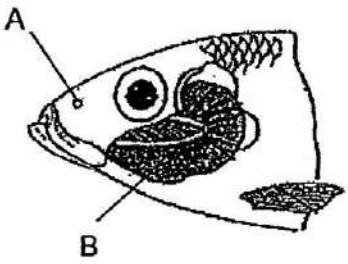
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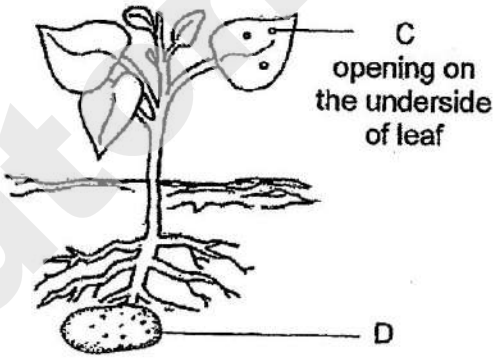
11. Study the diagrams below carefully.



human respiratory system



fish respiratory system



plant parts

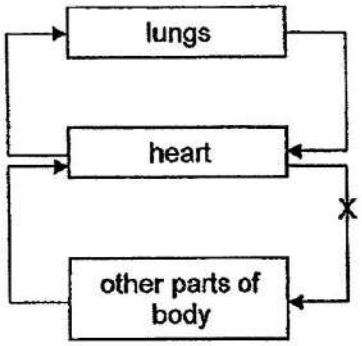
Which parts of the fish and plant have the same function as X?

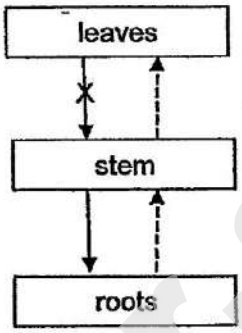
(1) A and D only
(2) A and C only
(3) B and C only
(4) B and D only

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12. The diagrams below show the circulatory system of a human and the transport system of a plant.



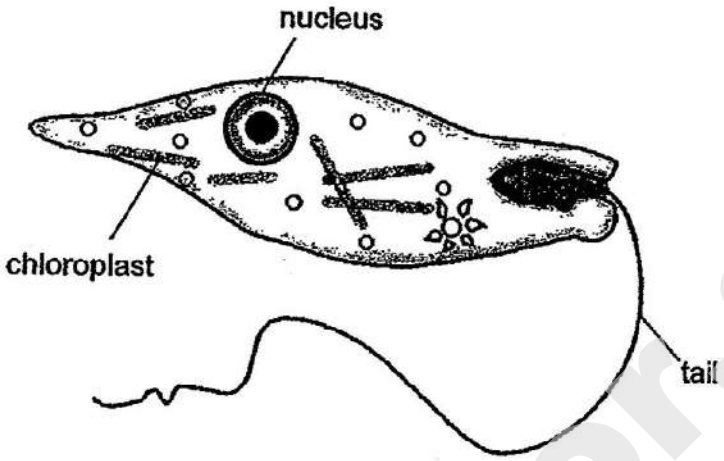


The tubes of the two systems are damaged at the point marked with a "X" as shown above. Which one of the following statements is correct?

	Human circulatory system	Plant transport system
(1)	Only carbon dioxide and oxygen cannot be carried to other parts of the body	Food cannot be carried to all parts of the plant
(2)	Carbon dioxide, oxygen, digested food and water cannot be carried to other parts of the body	Food cannot be carried to all parts of the plant
(3)	Carbon dioxide, oxygen, digested food and water cannot be carried to other parts of the body	Air and food cannot be carried to all parts of the plant
(4)	Only digested food and water cannot be carried to other parts of the body	Water cannot be carried to all parts of the plant

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13. Lifen observed a single-celled organism as shown in the diagram below. She noticed that the organism moved to the surface of the pond only in the day.



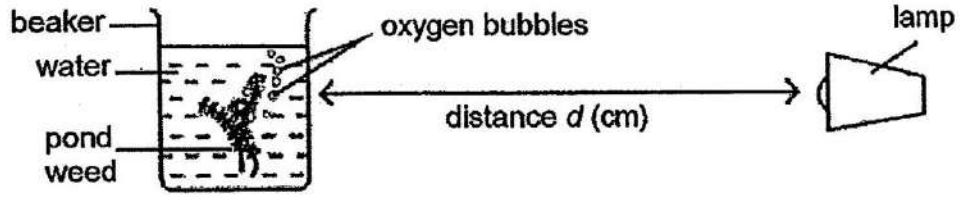
Which of the following reason(s) explain(s) why the organism needs to move to the surface of the pond in the day?

A It needs to trap light for photosynthesis.
B It needs to take in more oxygen for photosynthesis.
C It needs to look for food near the surface of the pond.

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

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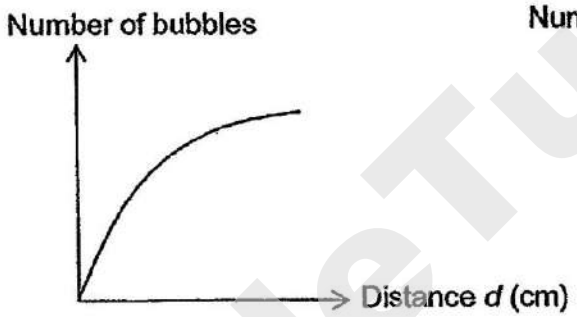
14. Tom conducted an experiment using the set-up below. He kept all the variables constant except the distance between the beaker and the lamp.



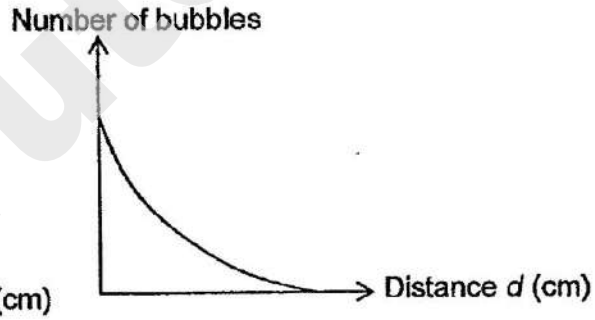
He counted the number of bubbles produced for five minutes. He repeated the experiment at different distances, *d*.

Which one of the following graphs most likely shows the results of Tom's experiment?

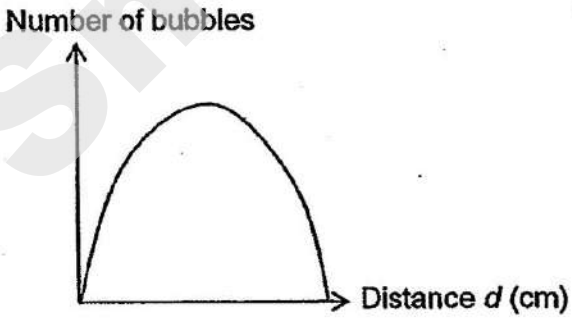
(1)



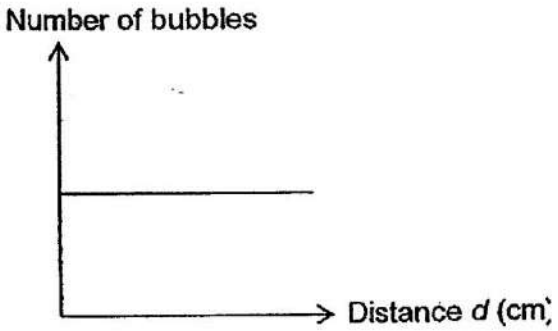
(2)



(3)

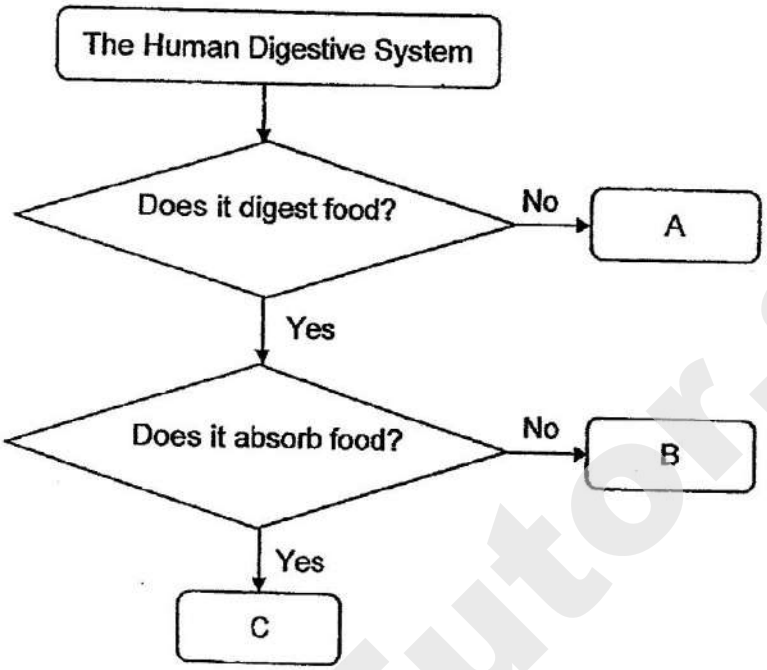


(4)



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15. Study the flowchart below.



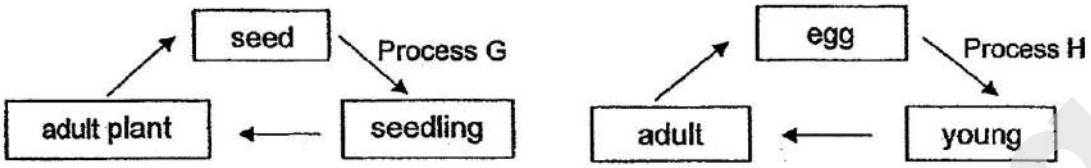
Which of the following correctly represent parts A, B and C?

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

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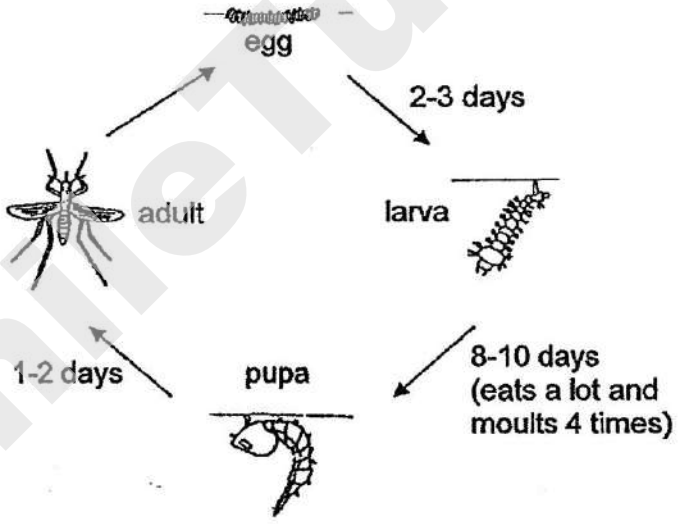
16. The diagram below shows the life cycle of a plant and the life cycle of a chicken.



How are the processes G and H similar?

(1) Both processes require light.
(2) Both processes require warmth.
(3) Both processes take place in the dark.
(4) Both processes take place before fertilisation.

17. Study the diagram of the life cycle below.



Which of the following statement(s) is/are correct?

A Only the adult has wings.
B The pupa moults 4 times before turning into an adult.
C The whole life cycle will take more than 10 days to complete.

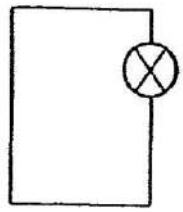
(1) A only
(2) C only
(3) A and C only
(4) A, B and C

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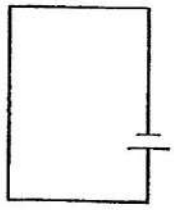
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18. The diagrams below show four electric circuits.

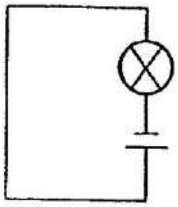
A



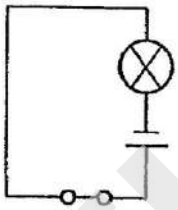
B



C



D



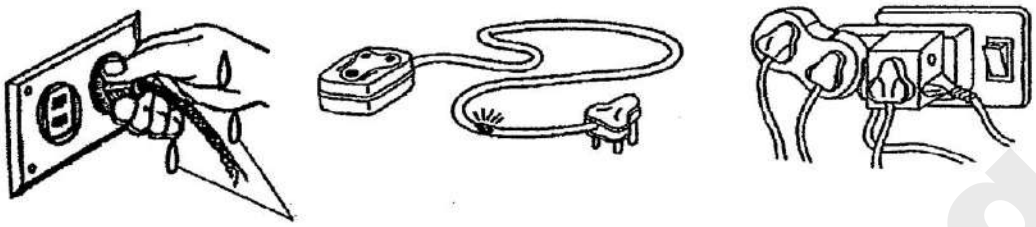
Which of the following circuits allow electric current to flow in the circuit?

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

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19. Study the diagrams below.

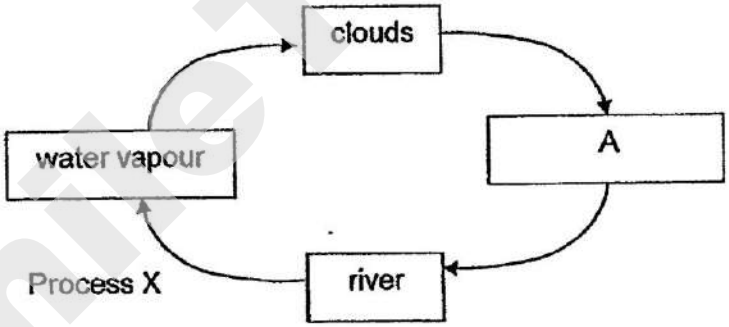


water droplets

Which one of the following statements correctly describes the diagrams above?

(1) Reduce consumption of electricity
(2) Increase consumption of electricity
(3) Proper handling of electrical component
(4) Improper handling of electrical component

20. Study the diagram of the water cycle below.



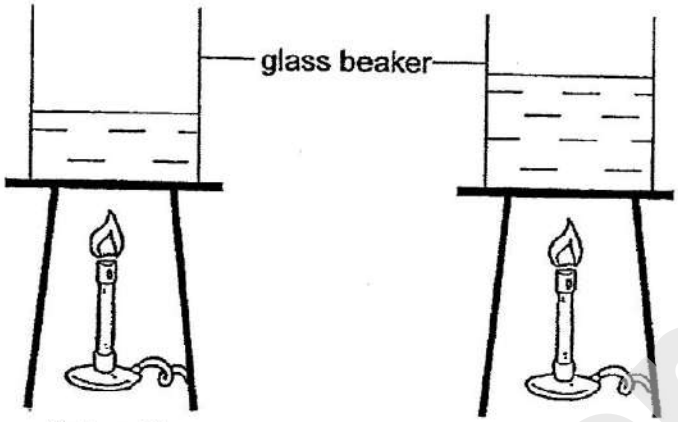
What would be the likely change in the rate of 'Process X' and the amount of 'A' in the diagram when the temperature of the surrounding air increases?

	Process X	A
(1)	Decreases	Decreases
(2)	Increases	Increases
(3)	Increases	Decreases
(4)	Decreases	Increases

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21. Ali set up the experiment as shown below. He heated the water until the water in the beakers was boiling.



Which of the following statements about the set-ups are correct?

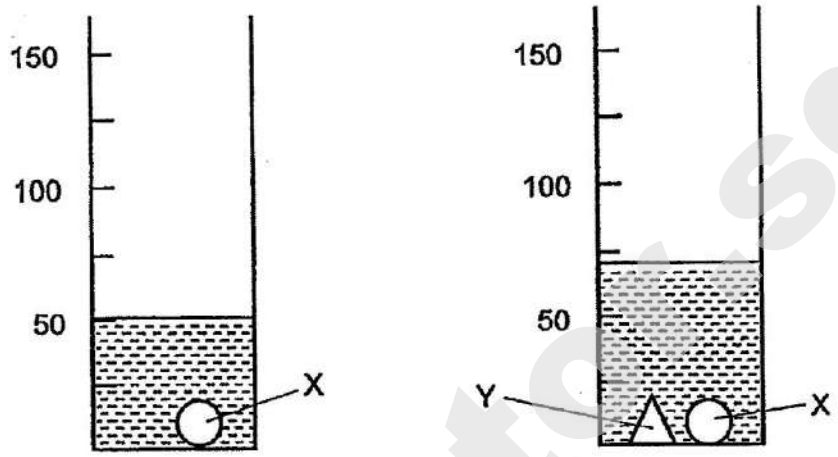
A The temperature of the boiling water in both beakers is the same.
B The amount of heat in the boiling water of both set-ups is the same.
C The amount of heat in the boiling water is greater in set-up Y than in set-up X.
D The temperature of the boiling water in set-up Y is higher than set-up X.

(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. Mary conducted an experiment with objects X and Y. She put object X into a measuring cylinder with 20 ml of water. Then she put object Y into the same measuring cylinder. The diagram below shows the observation made by Mary when each object was put in.



Which of the following conclusion(s) can be drawn from Mary's observations?

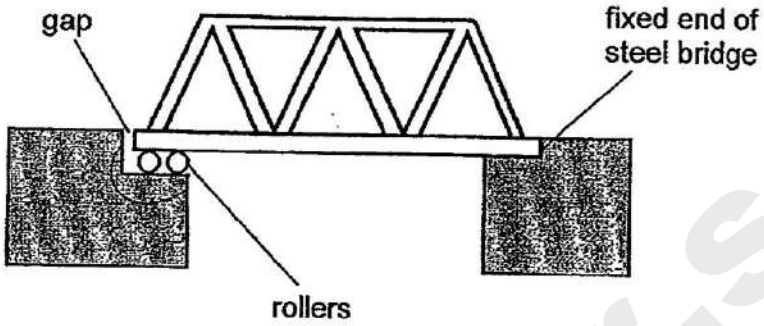
A Object X is heavier than object Y.
B Object X occupies more space than object Y.
C Only objects X and Y occupy space in the measuring cylinder.

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

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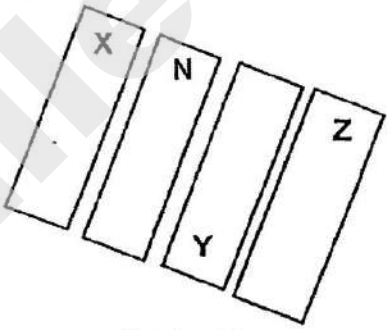
23. The diagram below shows a steel bridge with one end of the bridge fixed while a gap is left at the other end supported by rollers.



Why is there a gap at one end of the steel bridge?

(1) To allow the bridge to lose heat to the gap on a hot day.
(2) To allow the bridge to increase in mass due to expansion on a hot day.
(3) To allow the bridge to move towards the gap due to expansion on a hot day.
(4) To allow the bridge to move towards the gap due to contraction on a cold day.

24. Rusli brought four magnets near each other and observed that they were attracted to each other.

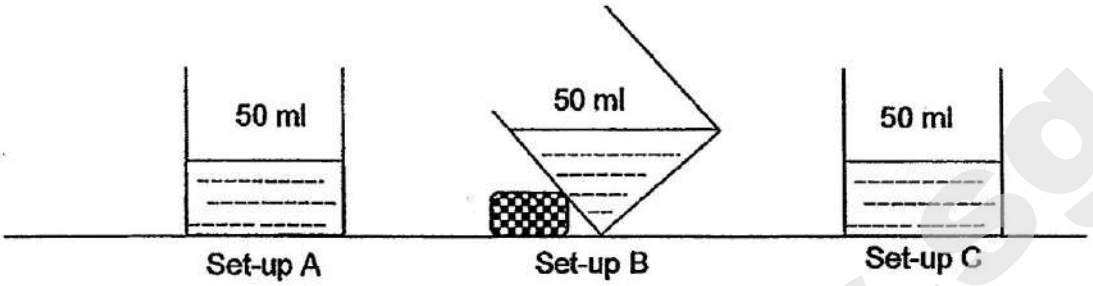


Which of the following correctly identifies poles, X, Y and Z?

	Pole X	Pole Y	Pole Z
(1)	north	north	south
(2)	north	south	north
(3)	south	south	north
(4)	south	north	north

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25. Sally set up an experiment below. She placed set-ups A and B in an open field with direct sunlight and set-up C in a completely dark room. After two days, she measured the amount of water left in the three set-ups.



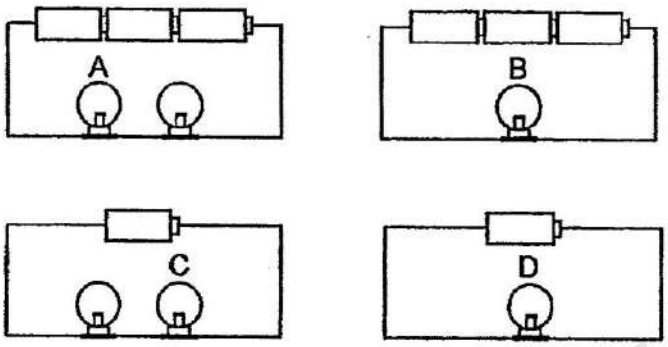
Which of the following shows the correct order of the set-ups based on the amount of water left after two days?

	Most amount of water left ⟶ Least amount of water left		
(1)	Set-up A	Set-up B	Set-up C
(2)	Set-up B	Set-up C	Set-up A
(3)	Set-up C	Set-up B	Set-up A
(4)	Set-up C	Set-up A	Set-up B

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26. The diagrams below show four circuits.



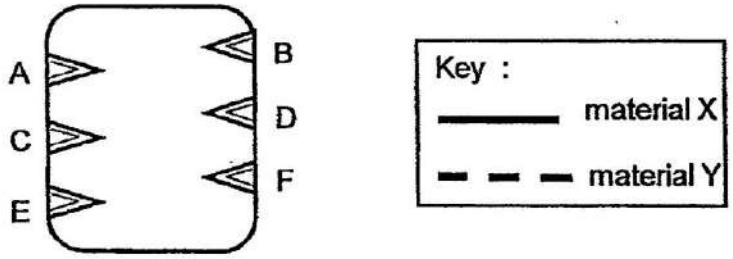
Which of the following correctly represents the brightness of bulbs A, B, C and D in each circuit?

	Brightest bulb → Dimmest bulb			
(1)	A	C	B	D
(2)	B	D	A	C
(3)	B	A	D	C
(4)	C	D	A	B

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27. The diagram below shows a circuit card with six paper clips, A to F. The paper clips were connected with material X and Y. Material X is an electrical conductor while material Y is an electrical insulator.

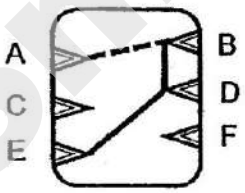


A circuit tester was used to connect to the paper clips on the circuit card and the following observations were recorded in the table below.

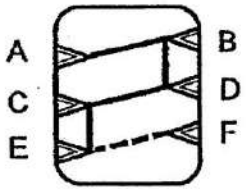
Paper clips connected	Did bulb light up?
A and B	Yes
B and C	Yes
C and D	Yes
D and E	No
E and F	Yes

Which one of the following shows how the paper clips on the circuit card were connected?

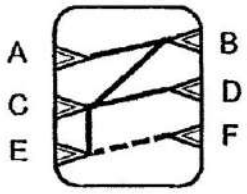
(1)



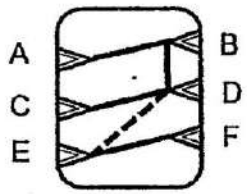
(2)



(3)



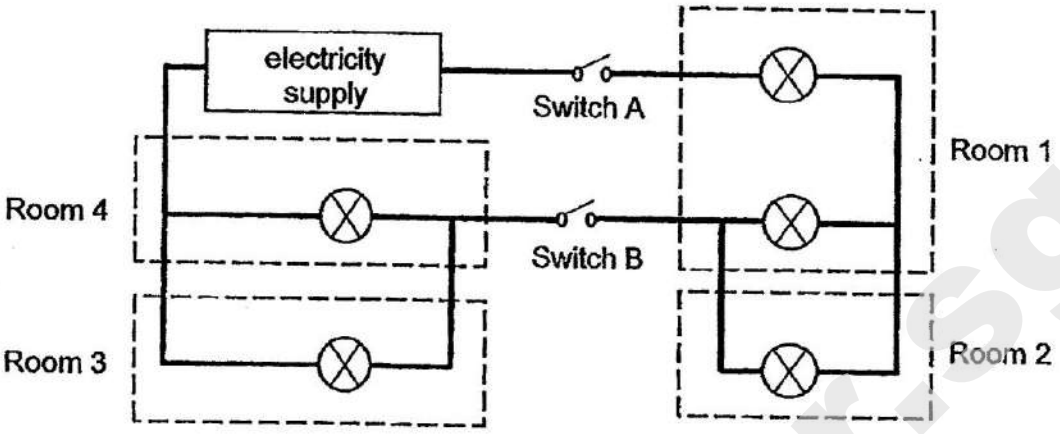
(4)



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28. The diagram below shows a circuit with five bulbs.



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

(1) When only switch A is closed, all the bulbs in the rooms will light up.
(2) When only switch A is opened, the bulbs in rooms 3 and 4 will light up.
(3) When only switch B is closed, the bulbs in rooms 2, 3 and 4 will light up.
(4) When only switch B is opened, all the bulbs in the rooms will not light up.

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NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 2 – 2018
PRIMARY 5

SCIENCE

BOOKLET B

12 Open-ended questions (44 marks)

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

INSTRUCTIONS TO CANDIDATES

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

Marks Obtained

Section B		/ 44

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

Date : 1 November 2018 **Parent's Signature:** _____

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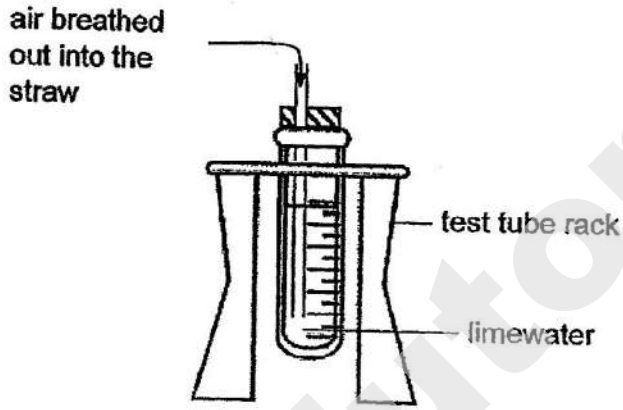
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Section B: (44 marks)
Write your answers to question 29 to 40.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

29. The diagram below shows a test tube filled with some limewater. Limewater turns chalky when it interacts with carbon dioxide.



(a) After breathing out into the straw several times, the limewater in the test tube turned chalky. Explain why. [1]

(b) Besides nitrogen and carbon dioxide, name 2 other gases that can be found in the air that is breathed out into the test tube. [1]

Go to the next page

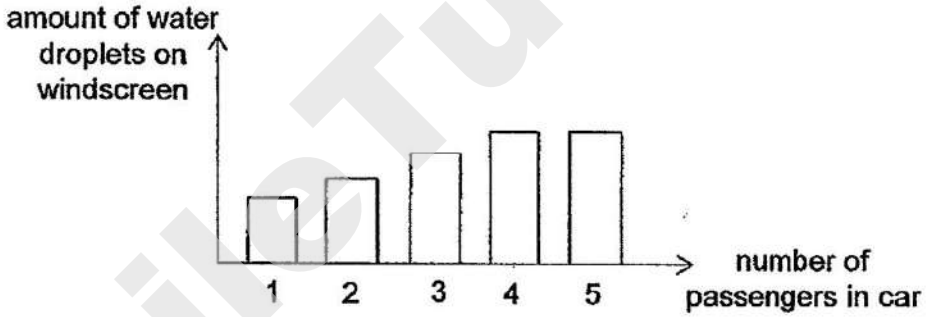
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The diagram below shows a car in a thunderstorm.



After some time in the thunderstorm, the windscreen inside the car started to have water droplets, even though no rain could get inside the car. It was also observed that the number of passengers affect the amount of water droplets formed on the windscreen.



(c) What is the relationship between the number of passengers in the car and the amount of water droplets on the windscreen? [1]

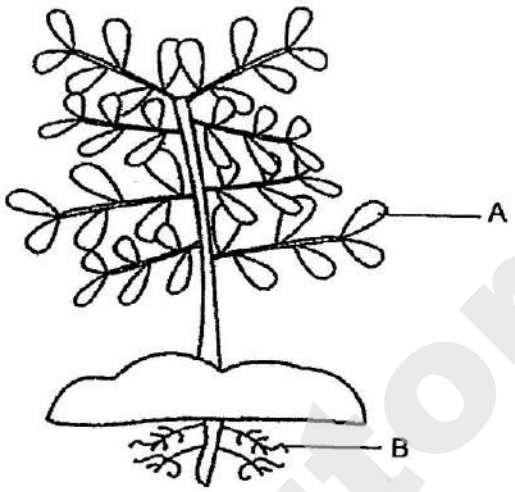
(d) Explain the relationship between the amount of water droplets formed on the windscreen and the number of passengers in the car up to 4 passengers. [2]

Score / 5

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30. Jim prepared specimens of cell X and cell Y. Cell X is taken from part A of the plant and cell Y is taken from part B of the plant. He used an apparatus to observe the cells.



(a) What apparatus was used to observe the cells? [1]

_____

_____

(b) State one difference between cells X and Y that Jim would observe. (Do not mention colour or size.) [1]

_____

_____

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

_____

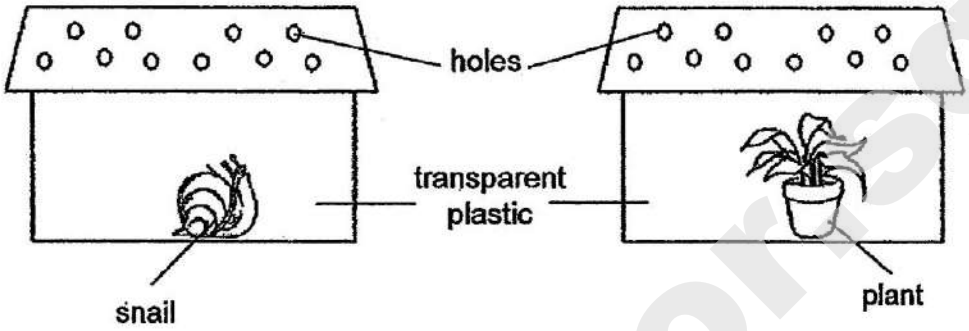
_____

Score	
	3

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31. Jane kept two living things in two similar containers and gave each of them enough water daily. She placed both containers in an open space with light.



(a) What do the two living things need to carry out life processes? [1]

_____

_____

(b) Which living thing will most likely survive for a longer period of time? Explain your answer. [2]

_____

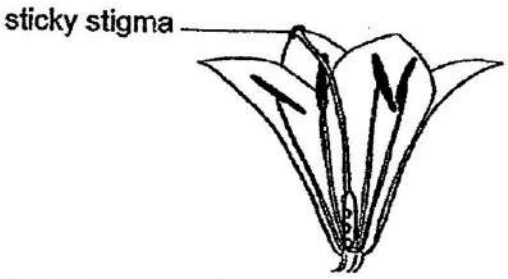
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Score	
	3

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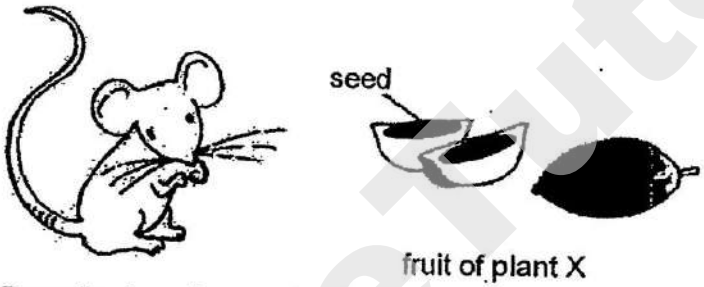
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32. The diagram below shows flower X which has a sticky stigma.



(a) What is the advantage of having a sticky stigma in the process of pollination? [1]

The fruit of plant X is juicy and contains seeds that are hard and stone-like.



fruit of plant X

(b) Describe how the seeds of plant X can be dispersed by the mouse. [1]

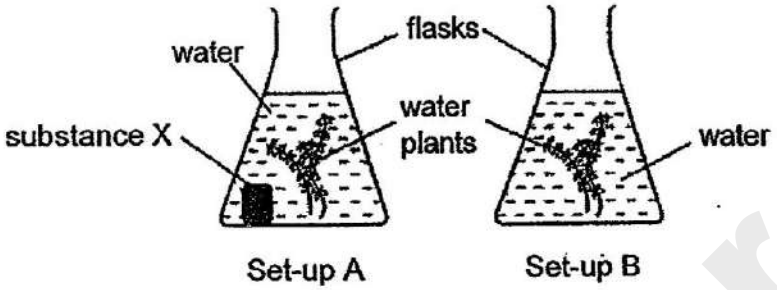
(c) Why is it important for seeds to be dispersed away from the parent plant? [1]

Score 3

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33. Kelly set up an experiment as shown below. She wanted to find out if substance X would affect the rate of photosynthesis of the water plants. She put the two set-ups near a window with light.



(a) Identify the independent variable (changed variable) in the experiment. [1]

_____

(b) What would Kelly observe if photosynthesis was taking place in the two set-ups? [1]

_____

_____

(c) What results could lead Kelly to conclude that substance X increases the rate of photosynthesis of the water plants? [1]

_____

_____

(d) Suggest two changes that Kelly can make to set-upA if she wants to find out if light is needed for photosynthesis. [1]

_____

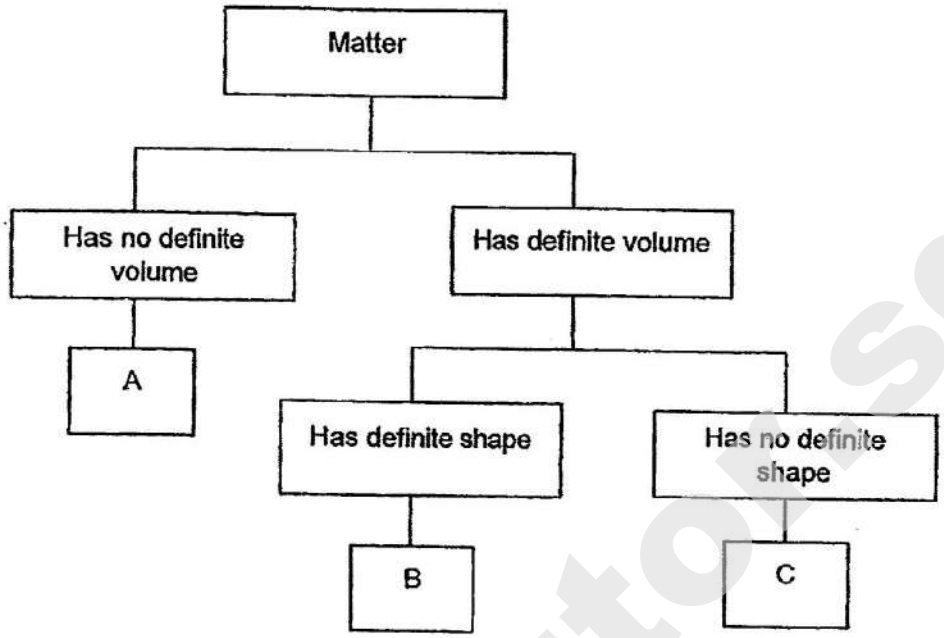
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Score	4

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34. Study the flow chart below.

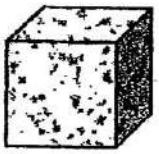


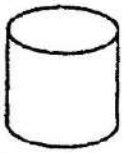
(a) Identify the letter, A, B or C, that can represent each of the following matter. Write the letter in the box next to the matter. [2]

Matter	letter
clouds	
water vapour	

(b) Sumin has a wooden cube, a sponge cube and a glass cylinder.


wooden cube


sponge cube


glass cylinder

Sumin cannot squeeze the wooden cube into the glass cylinder but can squeeze the sponge cube into the glass cylinder. Explain why this is so. [2]

_____

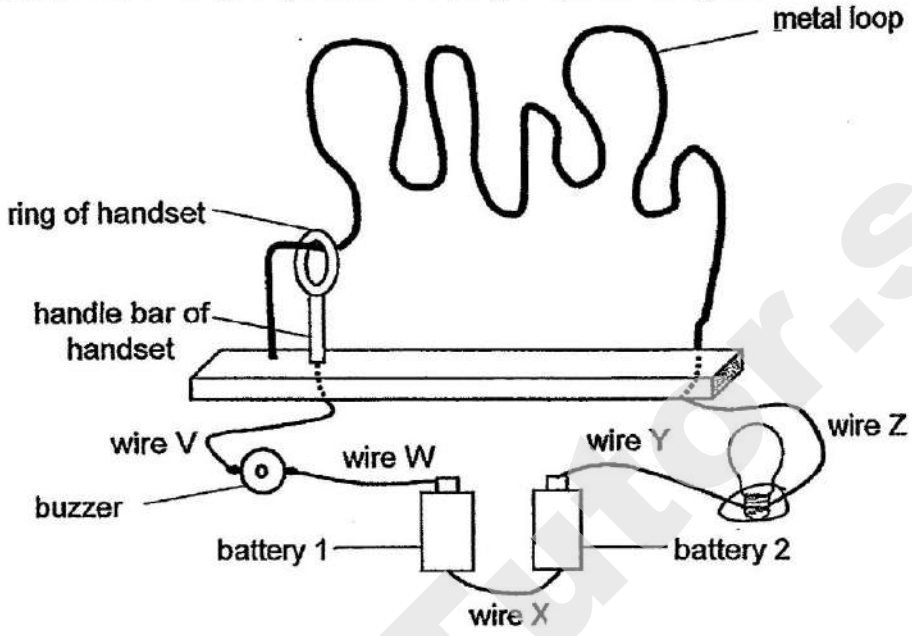
_____

Score	
	4

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35. Sally set up a metal loop game as shown in the diagram below. The player has to move the handset along the metal loop from one end to the other end. When the ring of the handset touches the metal loop, the buzzer will sound and the bulb will light up. Then the player has lost the game.



(a) State two reasons why the metal loop game will not work as intended. [2]

Reason 1 : _____

_____

Reason 2 : _____

_____

(b) In order to play the game, what property should the material used to make the ring of the handset have? Explain your answer. [2]

_____

_____

_____

(c) Without changing the metal loop, suggest a change to the set-up that will make it more difficult to win the game. [1]

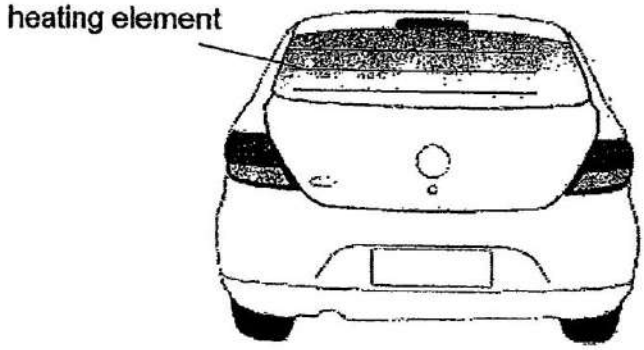
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Score	5

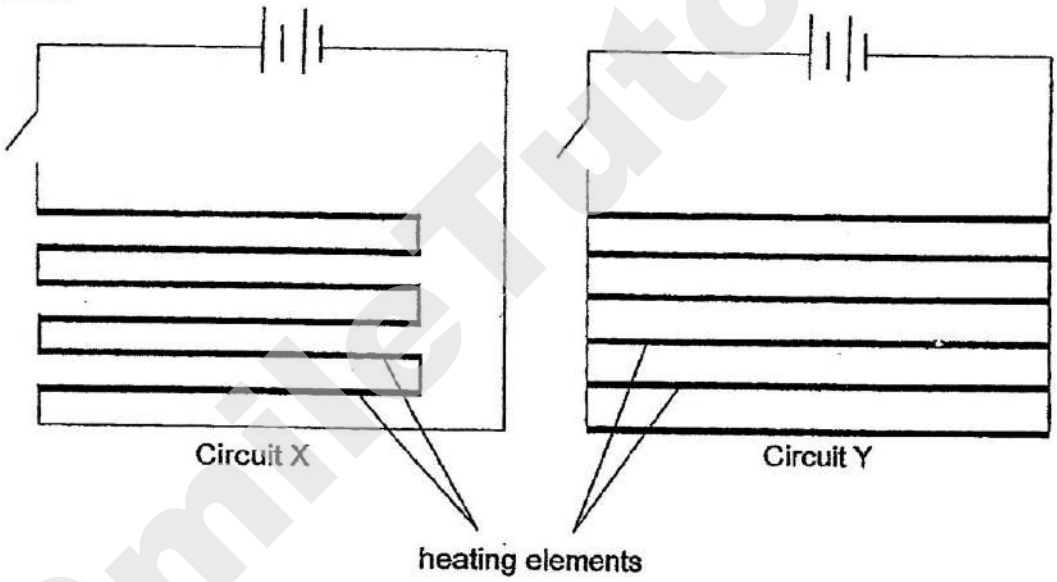
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36. In cold countries, the back window of a car usually contains heating elements. The heating elements are part of an electrical circuit connected to the battery of the car.



There are **two** ways of connecting the heating elements in a circuit as shown below.



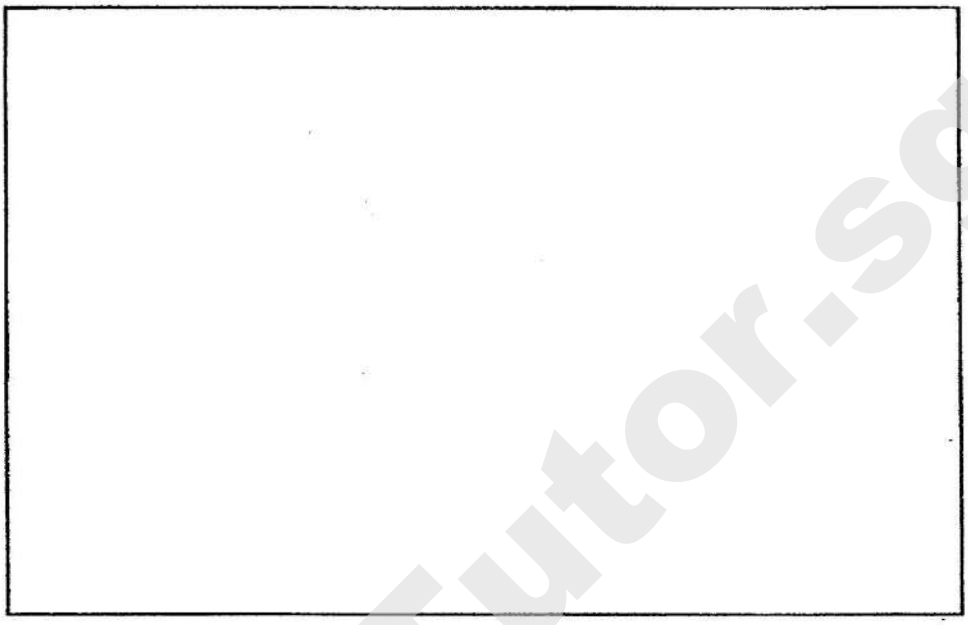
(a) What is the advantage of using circuit Y when one of the heating elements is broken? Explain your answer. [2]

Go to the next page

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(b) In the box below, draw a circuit diagram that has two bulbs, two batteries, two switches and some connecting wires. Each of the bulbs in the circuit can be controlled independently and the bulbs must shine as brightly as possible. [2]

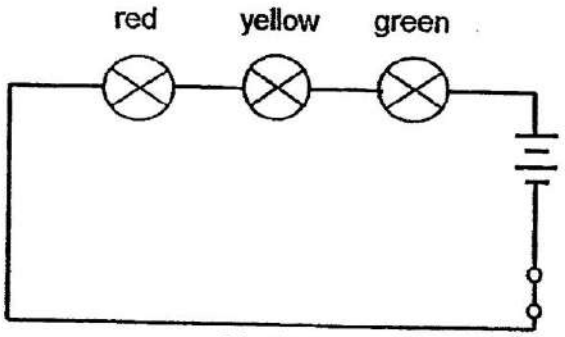


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Score	4

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37. The circuit diagram below shows a switch and three coloured bulbs.



Circuit A

(a) Explain clearly why the bulbs cannot change from red to yellow and then to green, similar to the traffic lights. [1]

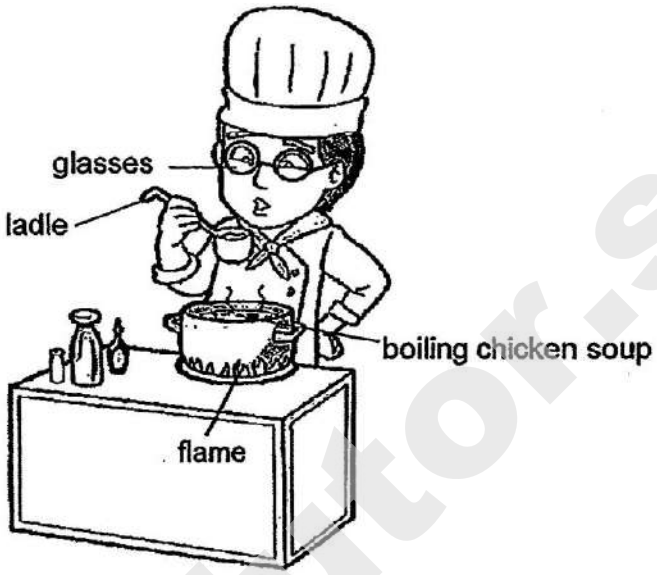
(b) When one more bulb is added in series to circuit A, what will happen to the brightness of the existing bulbs? [1]

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Score 2

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38. Weiming put some chicken meat into a pot of water to make chicken soup. When the soup boiled, he used a ladle to scoop up the soup but he realised that he was not able to see the soup clearly with his glasses.



(a) What substance had formed on his glasses to prevent him from seeing clearly [1]

_____

_____

(b) Weiming continued to boil and stir the soup for another 10 minutes. He observed that less of the substance in part (a) was formed on his glasses. Give a reason for his observation. [1]

_____

_____

(c) What would happen to the volume of the soup after Weiming continued to boil the soup for another 10 minutes? Explain your answer. [2]

_____

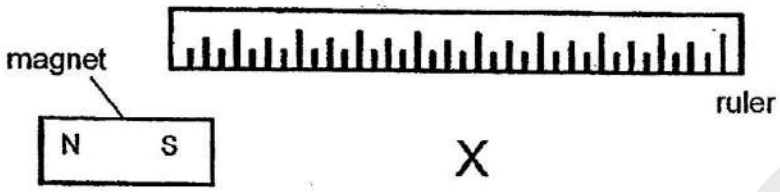
_____

Score	/ 4

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39. Mrs Lee conducted an experiment with the set-up below. She placed two blocks made of different materials at the position marked 'X' and observed the interaction between the blocks and the magnet.



She recorded her observations in the table below.

Block	Observations
A	did not move
B	moved towards the magnet

(a) Other than the shape and colour of the blocks, suggest two variables about the blocks that Lina has to keep constant to ensure a fair test. [2]

_____

_____

(b) Based on the observations, Mrs Lee concluded that block B is definitely a magnet. Do you agree with her? Explain your answer. [2]

_____

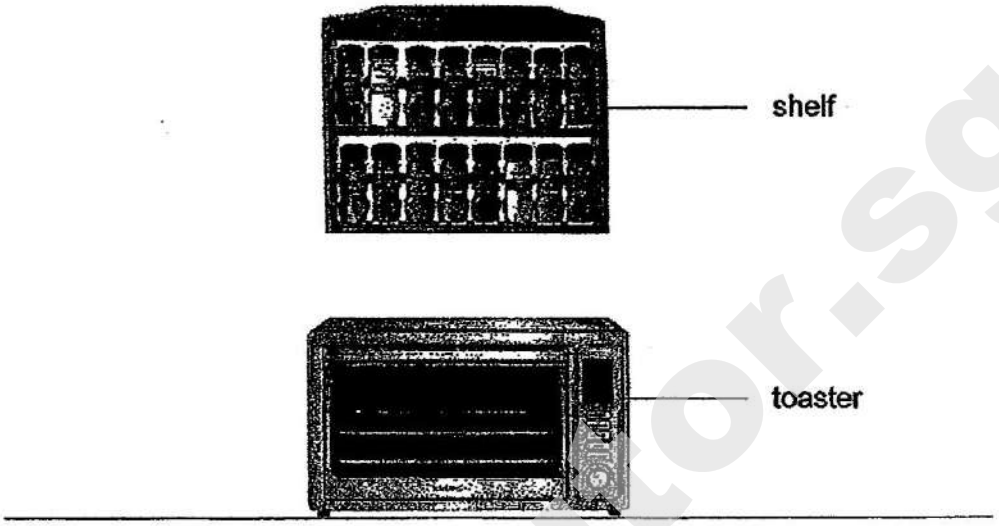
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Score	
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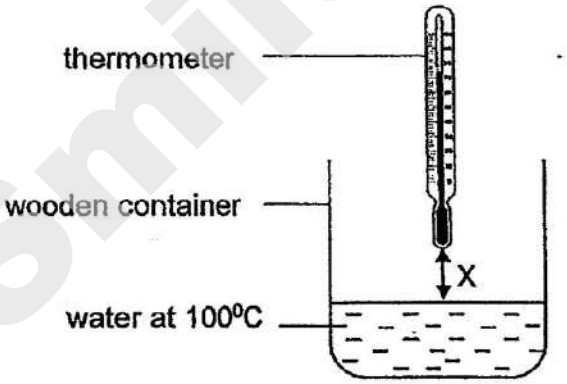
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40. Sally wants to build a shelf above her toaster to place some food items. The toaster is usually set at a temperature of 100°C. She does not want the heat given off by the toaster to affect the food items as they are best kept at room temperature.



She conducted the following experiment to find out the suitable height to build the shelf above the toaster. She filled a wooden container with water at 100°C. The experiment has to be conducted over a short period of time so that the temperature of water remained at 100°C throughout the experiment.

She measured the temperature of the air at various distance, X, from the water surface.



The results are shown below.

Distance X (cm)	2	4	6	8	10	12
Temperature of air (°C)	95	85	65	40	30	30

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(a) Based on the results of the experiment, what is the lowest height to build the shelf above the toaster so that the heat from the toaster will not affect the food items?

[1]

_____

(b) Explain how using a wooden container allowed Sally to obtain more accurate results of the experiment?

[2]

_____

_____

End of paper

Score	/ 3

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SCHOOL : NAN HUA PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA2

CONTACT :

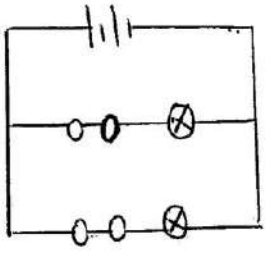
SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	3	2	4	2	3	3	1	4	3
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	2	1	2	4	2	3	4	4	2
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
1	2	3	4	4	3	4	4		

SECTION B

Q29)	a)When out, carbon dioxide is produced and carbon dioxide turns limewater to a chalky colour. b)Water vapour and oxygen. c)As the number of passengers in the car increases, the more the amount of water droplets on windscreen until it reaches to 4 passengers in the car where the amount of water droplets on the windscreen stayed constant. d)More passengers in the car will give out more water vapour. More water vapour will lose heat to the cooler surface of the windscreen and condense into more water droplets.
Q30)	a)Microscope b)Cell X will have chloroplasts in it but cell Y would not. c)As A is the leaf, it has chloroplasts to help it trap sunlight for photosynthesis. B does not need to carry out photosynthesis, therefore, the cell taken from B should not have chloroplast.

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Q31)	a)Air, food and water. b)The plant can survive longer as it can made food in the presence of light ,water and carbon dioxide.
Q32)	a)The pollen grain will stick on the stigma better so there is higher chances of pollination. b)The mouse will eat the (juicy) fruit and throw away the (hard)seeds. c)To avoid a competition for nutrients, sunlight, water and space.
Q33)	a)The presence of substance X. b)Oxygen bubbles would be produce from the water plants. c)More oxygen bubbles would be produce than set-up B. d)Remove substance X and place the set-up in a dark room.
Q34)	a)C A b)The wooden cube has a definite volume and cannot be compressed so it cannot be squeezed into the cylinder. The sponge cube has air spaces that can be compressed so it can be squeezed into the cylinder.
Q35)	a)Reason 1: wire is not connected to the metal tip of the bulb. Reason 2: wire W and wire Y will both connected to the positive terminal of the battery. b)Electrical conductor when the handset touches the metal loop, it must be able to send electric current for the buzzer to ring and the bulb to light up as it will be able to make a complete circuit. c)Use a smaller ring for the handset.
Q36)	a)It will still be able to work properly. If one of the heating elements is broken, it will still be able to let electric current flow through the other heating elements and make a complete circuit as it is arranged in parallel formation. b) 

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Q37)	a)The bulb are arranged in series. They will light up at the same time. b)The existing bulbs will become dimmer.
Q38)	a)Water droplets. b)The glasses would gain heat from the steam (water vapour at 100c) and become warmer and the rate of condensation would decrease. c)The volume of the soup would decrease. The water from the soup would gain more heat from the flame and boiled to steam.
Q39)	a)Same mass and same surface area of the block in contact with the ground. b)No. Object B can be made of a magnetic material and is attracted by the magnet.
Q40)	a)10cm. b)The wooden container is a poor conductor of heat so heat will not be able to escape from the water at 100c in the wooden container to the surrounding air as fast as a material of a good conductor of heat like metal.

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20

NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SEMESTRAL ASSESSMENT 2
2018

BOOKLET A

Date: 29th October 2018

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.

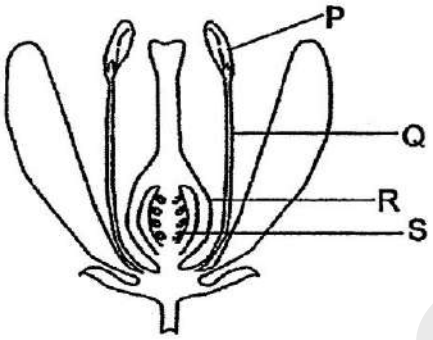
Booklet A consists of 19 printed pages including this cover page.

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Section A (28 x 2 marks = 56 marks)
For each question from 1 to 28, four options are given. One of them is the correct answer. **Indicate your choice and shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.**

1. The diagram below shows a flower.



Which of the following is correct after pollination and fertilisation have taken place?

	Will develop into a seed	Will develop into a fruit
(1)	P	Q
(2)	Q	S
(3)	R	P
(4)	S	R

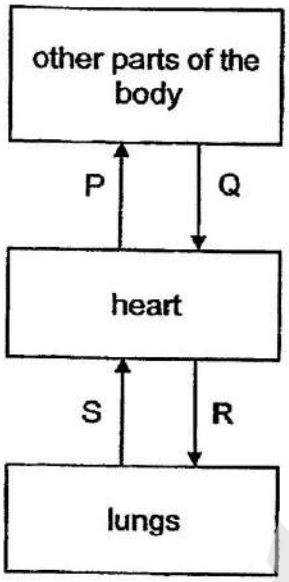
2. Which one of the following characteristics is **not** inherited from the parents?

(1) Dimples
(2) Length of nails
(3) Type of eyelids
(4) Type of earlobes

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3. Study the diagram below. P, Q, R and S represent blood vessels.



Direction of blood flow in a human

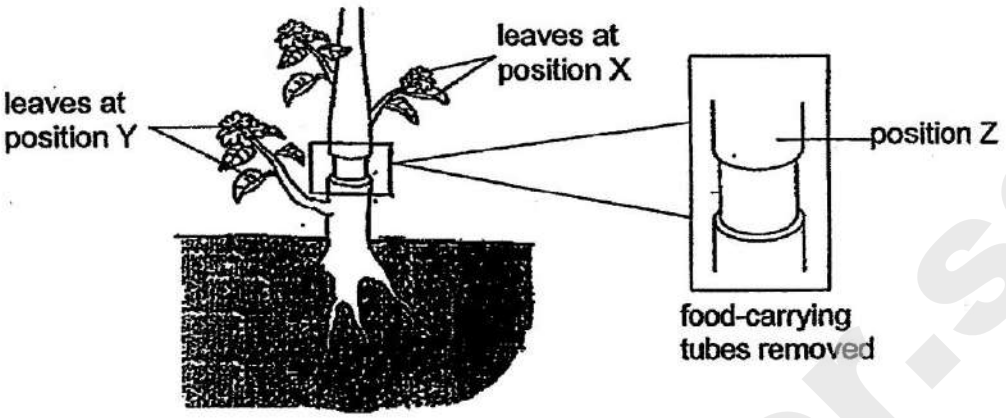
Based on the diagram above, which one of the following statements is correct?

(1) R contains more oxygen than S.
(2) Q and R contain only carbon dioxide.
(3) R contains more digested food than Q.
(4) Q contains more carbon dioxide than S.

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4. Sally removed the food-carrying tubes of a plant as shown in the diagram below.

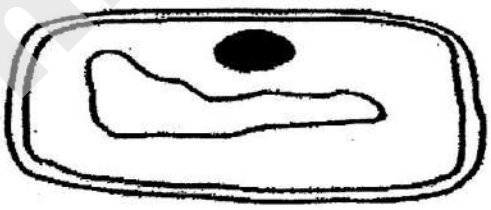


Sally observed the plant after one week and made the following statements. Which of the following statements are correct?

A The leaves at position X will remain green.
B The food-carrying tubes at position Z will swell.
C The leaves at position Y will die due to the lack of food.

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

5. The diagram below shows a cell.

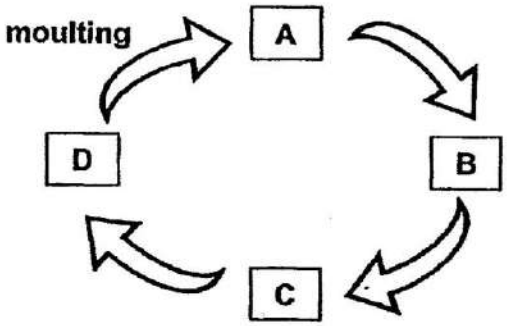


Which part of a living thing is this cell likely to be taken from?

(1) hair of a cat
(2) root of a tree.
(3) leaf of a rose plant
(4) skin of a human

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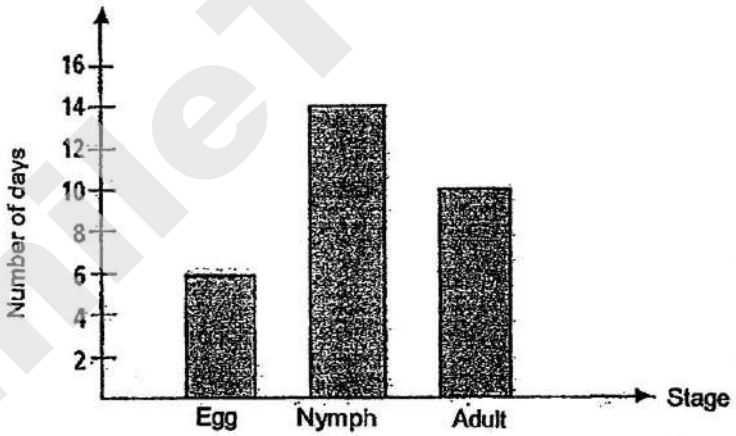
6. The diagram below shows the stages in the life cycle of a mosquito.



Which one of the following correctly represents A, B, C and D based on the diagram above?

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

7. The graph below shows the number of days insect G spent in each stage of its life cycle.



Based on the graph above, which of the following statement(s) is/are true of the life cycle of insect G?

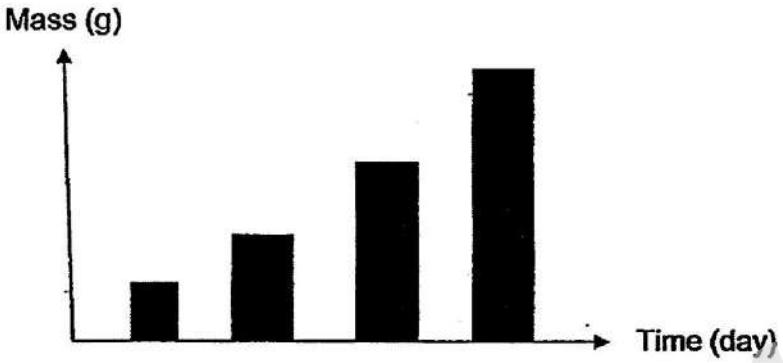
A There are three stages in its life cycle.
B The number of days spent in the adult stage is shorter than in the nymph stage.
C After the egg hatches, insect G takes another 24 days to become an adult.

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

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8. The graph below shows the changes in the mass of one part of a seedling as it develops into an adult plant.

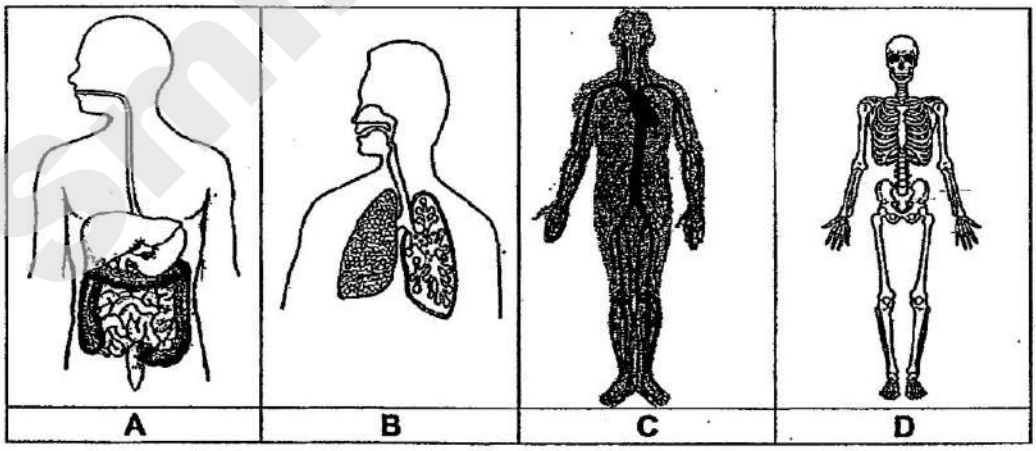


Which of the following are the possible parts of the seedling that the graph above represents?

A root
B shoot
C seed leaf

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

9. Study the diagrams below.



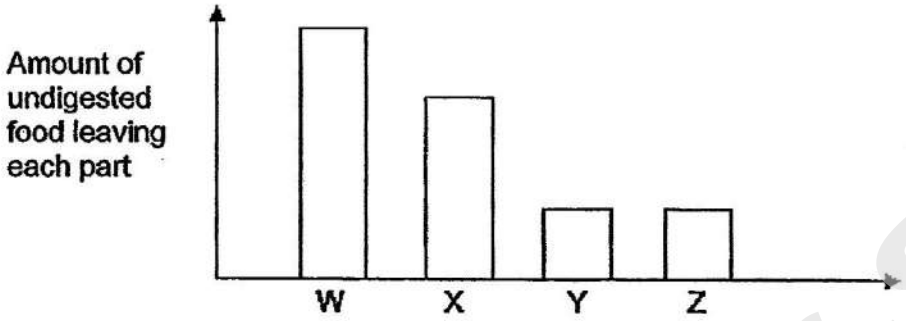
Which one of the systems, A, B, C and D, are at work when Jacob is taking a nap after his lunch?

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

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10. The graph below shows the amount of undigested food found leaving the different parts of the human digestive system. Parts W, X, Y and Z are in sequence.



Which of the following correctly identify parts W, X, Y and Z?

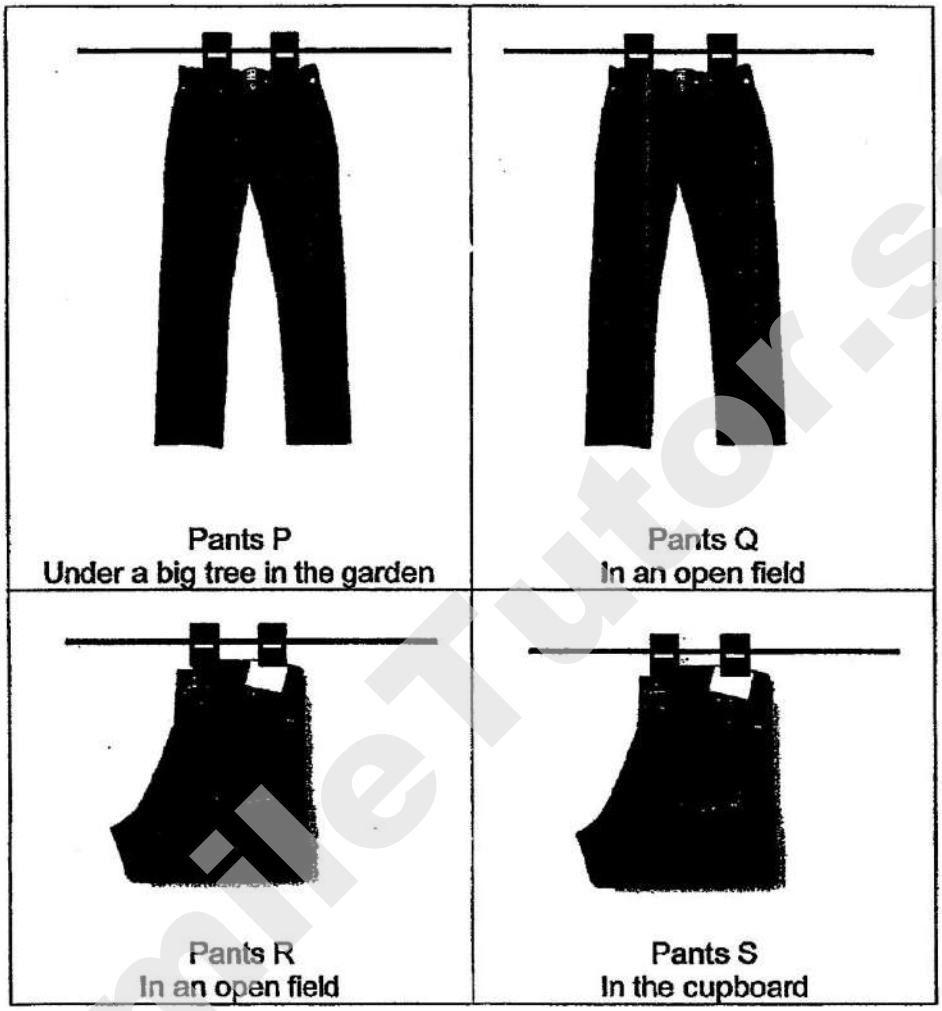
	W	X	Y	Z
(1)	mouth	gullet	stomach	small intestine
(2)	mouth	gullet	small intestine	large intestine
(3)	gullet	stomach	small intestine	large intestine
(4)	gullet	small intestine	large intestine	stomach

11. Which one of the following actions helps to conserve water?

(1) Fixing a leaking tap
(2) Using the water hose to wash a car
(3) Turning off the lights when you leave the room
(4) Switching off and unplugging appliances when not in use

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12. John poured the same amount of water on four identical pants, P, Q, R and S. He hung the pants to dry in different conditions as shown in the diagrams below.



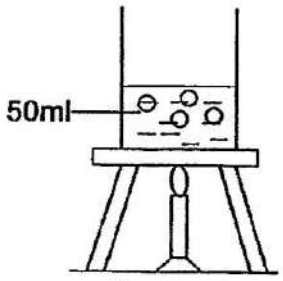
Based on the information above, which of the following statements are correct?

A Evaporation takes place only in pants P, Q and R.
B Evaporation takes place faster in pants P than pants Q.
C Evaporation takes place faster in pants Q than pants R.
D Evaporation takes place faster in pants R than pants S.

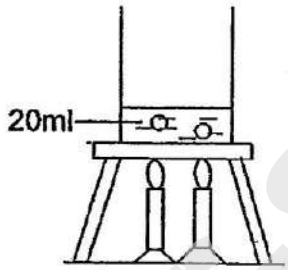
(1) A and B only
(2) C and D only
(3) A, B and D only
(4) B, C and D only

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13. Janice poured different amounts of pure water at room temperature into beakers A and B. Both beakers were heated until the water boiled as shown in the diagram below. The temperature in each beaker was measured over time and the readings were plotted on a graph.



Beaker A

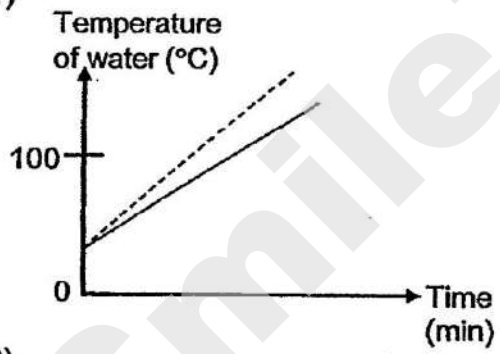


Beaker B

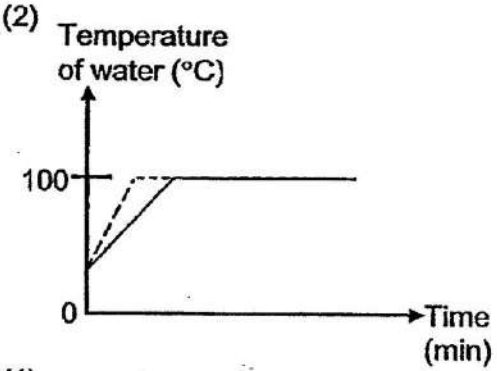
Which one of the following graphs correctly shows the temperature of water over a period of time?

Key:
Beaker A ——————
Beaker B - - - - - - - - - - -

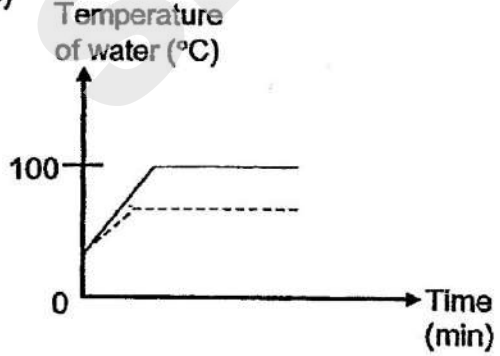
(1)



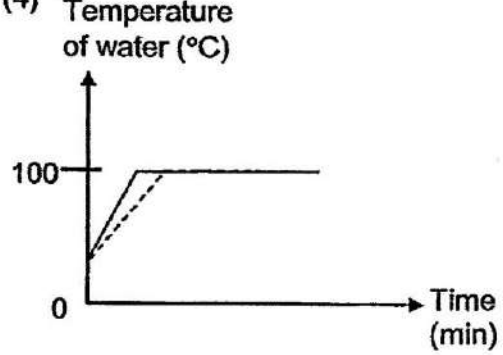
(2)



(3)

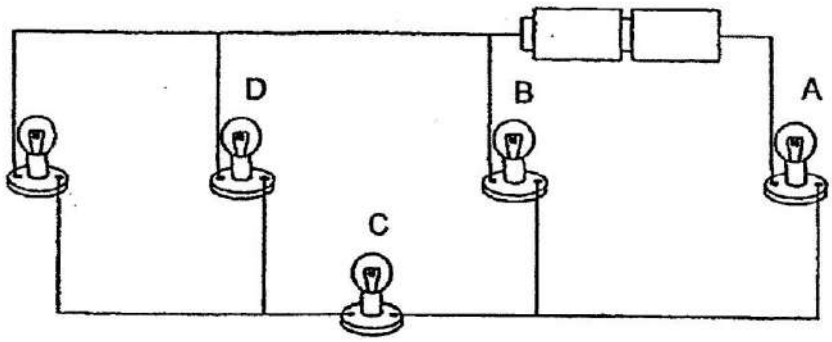


(4)



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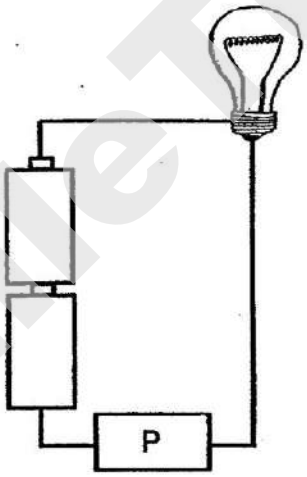
14. The diagram below shows five identical bulbs connected to two batteries. One of the bulbs was faulty and only two bulbs remained lit up.



Which bulb, A, B, C or D, was faulty?

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

15. Ruth sets up an electric circuit using a bulb, some batteries and an object P, as shown below.



She wants to find out how the number of bulbs arranged in series affects the brightness of each bulb. In order to ensure a fair test, which of the following variables must she keep constant?

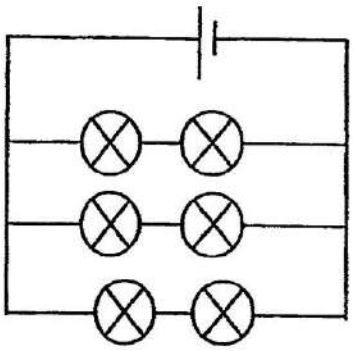
A Number of bulbs
B Brightness of bulbs
C Number of batteries
D Type of material for object P

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

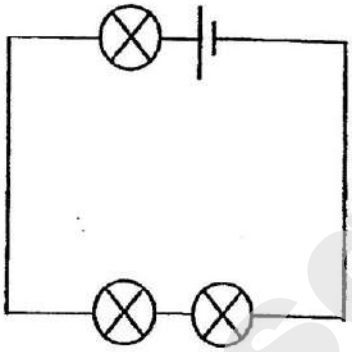
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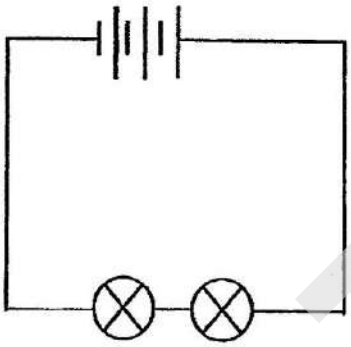
16. Study the circuit diagrams below.



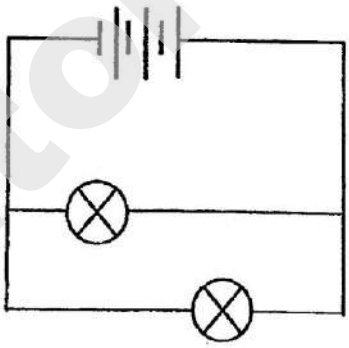
circuit E



circuit F



circuit G



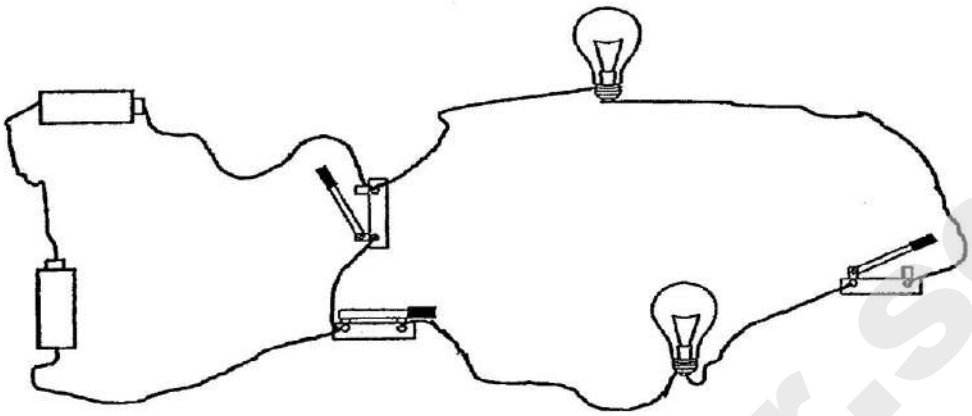
circuit H

Which one of the following correctly arranges the bulbs in each circuit from the dimmest to the brightest?

	Dimmest → Brightest			
(1)	E	F	G	H
(2)	F	E	G	H
(3)	F	H	G	E
(4)	H	G	E	F

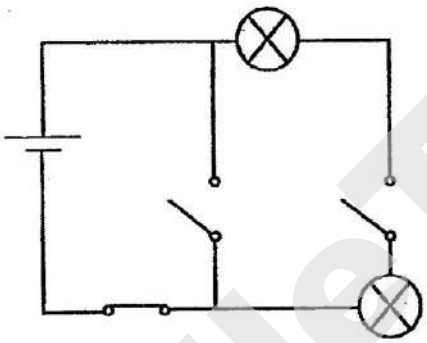
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17. Study the circuit below.

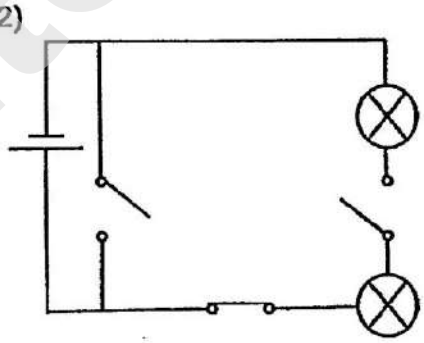


Which one of the following circuit diagrams correctly represents the set-up above?

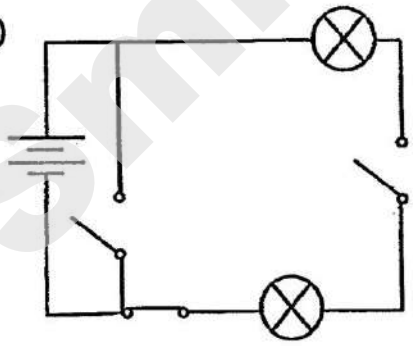
(1)



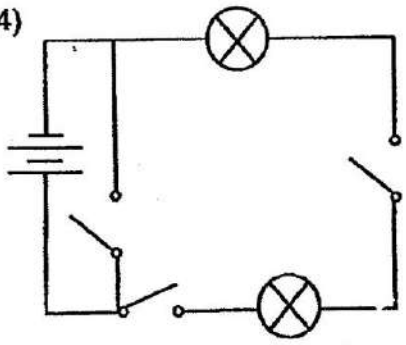
(2)



(3)



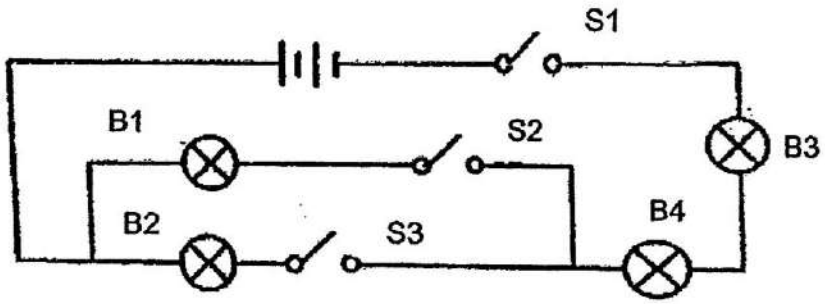
(4)



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18. Study the circuit below.



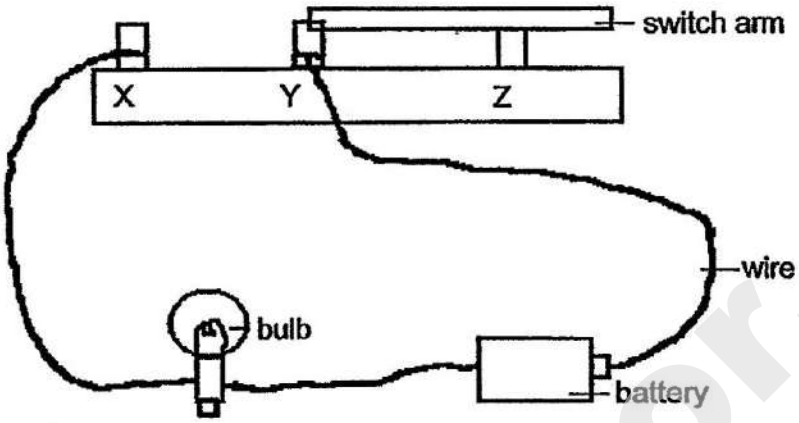
Which one of the following is correct?

	Switches closed	Bulbs that would light up
(1)	S1 only	B3 only
(2)	S1 and S3	B2, B3 and B4 only
(3)	S2 and S3	B1 and B2 only
(4)	S1, S2, S3	B1, B2 and B3 only

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19. Keith connected the circuit as shown below using a battery, a bulb, a switch and some wires which were all in working condition. He observed that the bulb did not light up.



What should Keith do to get the bulb to light up?

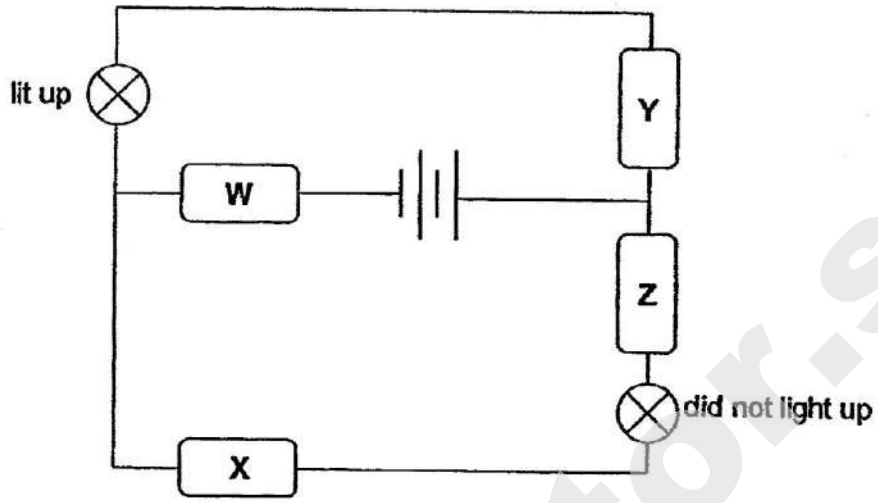
A Swing the switch arm from point Z to X.
B Connect the wire from point Y to point Z.
C Connect one of the wires to the metal tip of the bulb instead of connecting both to the metal casing.

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

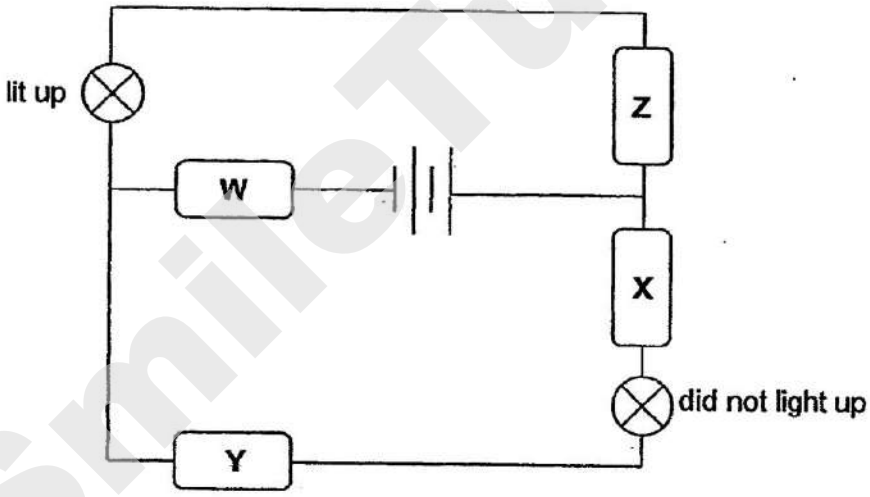
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20. Emilie had four bars of different materials, W, X, Y and Z. She connected them in a circuit and recorded her observations as shown in the diagram below.



She then rearranged the positions of the 4 bars as shown in the diagram below and recorded her observations again.



Based on her results, which of the following show the possible materials that bars W, X, Y and Z could be made of?

	Bar W	Bar X	Bar Y	Bar Z
(1)	aluminium	glass	copper	iron
(2)	plastic	rubber	glass	aluminium
(3)	glass	plastic	wood	iron
(4)	copper	wood	iron	rubber

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21. Which one of the following statements is an example of safety in using electricity?

(1) Switch off the lights when not in use.
(2) Plug in multiple appliances into the same socket.
(3) Use energy-saving electrical appliances.
(4) Dry your hands before handling electrical appliances.

22. The table below shows the amount of electricity used in one minute by an ordinary light bulb and a LED bulb to produce different degrees of brightness.

	Amount of electricity used per minute	
Brightness (units)	One ordinary light bulb (units)	One LED bulb (units)
450	40	10
800	60	15
1100	75	20

Based on the table above, which one of the following can be concluded?

(1) The ordinary light bulb is able to last longer than the LED bulb.
(2) The ordinary light bulb conserves more electricity than the LED bulb.
(3) The LED bulb is dimmer than the ordinary light bulb as it uses less electricity.
(4) The LED bulb produces the same brightness as the ordinary light bulb but it uses less electricity.

23. Study the following actions.

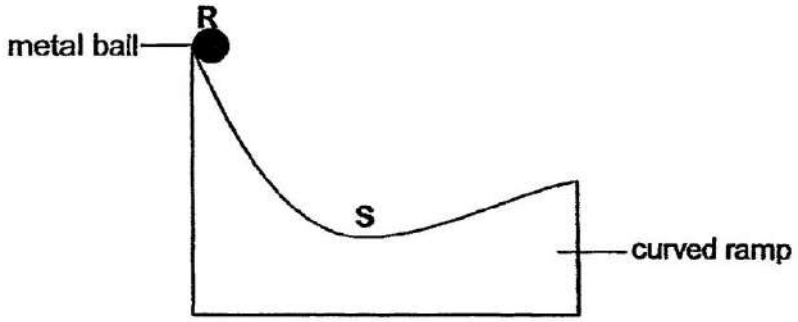
A Push a 5 kg bag of flour up a slope over a distance of 2 m.
B Push a 2 kg bag of flour on a flat ground over a distance of 2 m.
C Push a 5 kg bag of flour on a flat ground over a distance of 2 m.
D Push a 2 kg bag of flour in a trolley on a flat ground over a distance of 2 m.

Arrange the above actions according to the amount of force required to perform each action, starting with the action that uses the most amount of force.

	Most force ⟶ Least force			
(1)	A,	B,	C,	D
(2)	A,	C,	B,	D
(3)	D,	B,	C,	A
(4)	D,	C,	B,	A

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24. Mr Lim set up the experiment as shown in the diagram below to find out how liquids, A, B, C and D, will reduce the amount of friction between the ball and the surface of the curved ramp.



He coated the ramp with a certain amount of liquid A and released the metal ball from point R. The ball rolled up and down the curved ramp for some time before it came to rest at point S.

He repeated the test with liquids B, C and D, and recorded the time taken for the ball to come to rest in the table below.

Liquids	Time taken for the ball to come to rest (s)
A	10
B	9
C	26
D	38

Which liquid should Mr Lim choose to apply to a door hinge so that he could open the door most smoothly?

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

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25. Wen Jun was playing with a piece of rubber tube as shown in diagram X below.

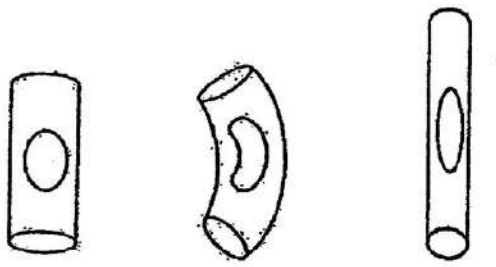


Diagram X Diagram Y Diagram Z

He bent and stretched the tube as shown in diagram Y and Z respectively.

Which of the following statements are correct about what has happened to the rubber tube?

A Both pulling and pushing forces were applied on the tube.
B Both pulling and pushing forces had changed the mass of the tube.
C Both pulling and pushing forces had changed the shape of the tube.

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

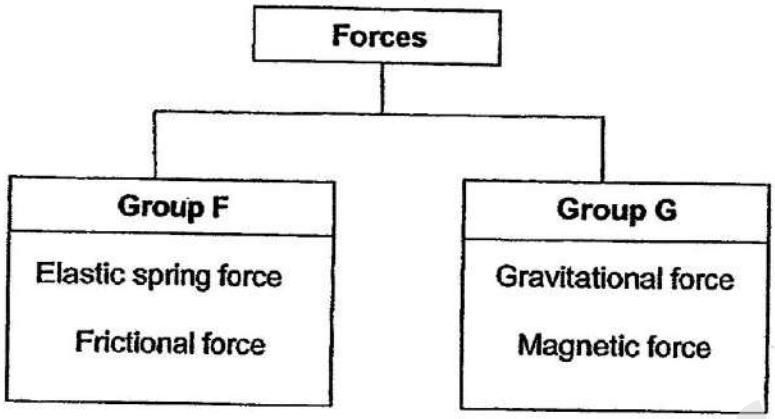
26. Which of the following activities require friction to be present?

A Climbing the stairs
B Driving on the road
C Running on the track

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

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27. Study the classification chart below.



Which of the following is the most suitable heading to represent Groups F and G?

	Group F	Group G
(1)	Cause objects to have mass	Cause objects to have weight
(2)	Contact forces	Forces act at a distance
(3)	Do not produce heat	Produce heat
(4)	Push force	Pull force

28. The diagram below shows a man surfing.



Which one of the following changes **cannot** be caused by the waves on the surfboard?

(1) Change in mass
(2) Change in speed
(3) Change in position
(4) Change in direction of movement

End of Booklet A

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NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SEMESTRAL ASSESSMENT 2
2018

BOOKLET B

Date: 29th October 2018

Duration: 1 h 45 min

Name : _____ ( )

Class: Primary 5 ( )

Marks Scored:

Booklet A:		**56**
Booklet B :		**44**
Total :		**100**

Any query on marks awarded should be raised by 5th November 2018. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.

Parent's signature: _____

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FOLLOW ALL INSTRUCTIONS CAREFULLY.

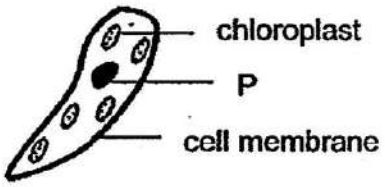
Booklet B consists of 16 printed pages including this cover page.

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Section B (44 marks)
Write your answers to questions 29 to 40 in the spaces provided.

29. The diagram below shows a single-celled organism.



(a) Part P controls all cell activities. Identify part P. [1]

_____

(b) Other than the function stated in (a), state another function of part P.[1]

_____

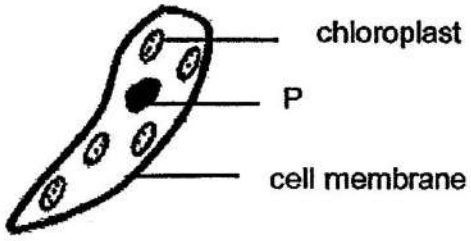
_____

(c) State one difference between the organism above and a leaf cell. [1]

_____

Study the diagram below. [1]

(d)(i) **Label** the **cytoplasm**, in the diagram below.



(ii) State the function of the cell membrane.

_____

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30. Mrs Lim measured Elaine's heart rate after Elaine had engaged in two different activities for 10 minutes. They repeated each activity 3 times and recorded the results in the table below.

	Heart rate (beats per minute)		
Activities	**1st try**	**2nd try**	**3rd try**
Reading	68	70	71
Cycling	95	100	120

(a) State the aim of their experiment.

_____

_____

(b) Based on the results above, **compare** and **explain** the differences in Elaine's heart rate during the two activities. [2]

_____

_____

_____

_____

Elaine went on a holiday to City X. The air in City X contains lower oxygen level than the air in Singapore. When she reached City X, she realised that her breathing rate had increased.

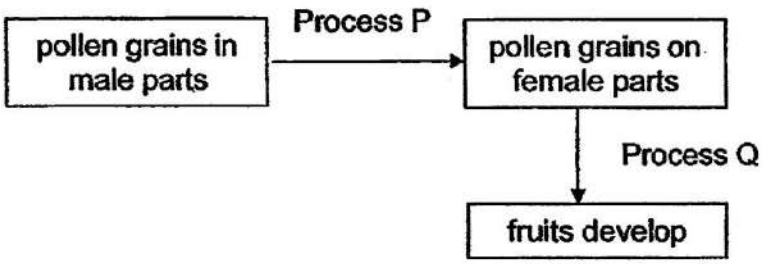
(c) Based on the information above, explain why Elaine's breathing rate had to increase when she reached City X. [1]

_____

_____

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31. Study the diagram below.



(a) Identify processes P and Q. [1]

Process P: _____

Process Q: _____

(b) Describe what happen during processes P and Q. [2]

Process P:

_____

_____

Process Q:

_____

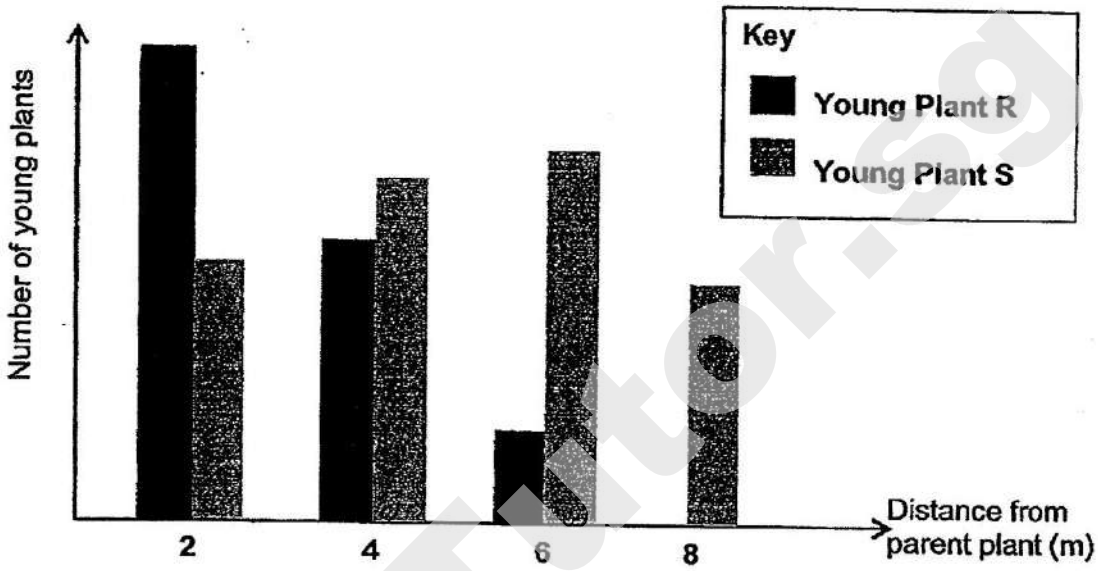
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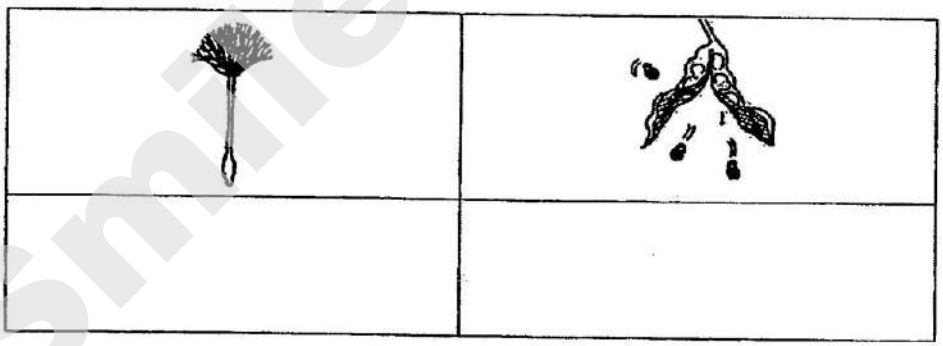
(Continue Question 31)

Jun Qi carried out an experiment with two types of young plants, R and S. She measured the number of young plants at different distance from their parent plants in a garden. The results are shown in the graph below.



(c)(i) Put a tick (V) in the box that most likely represents the fruit of Plant R.

[1]



(c)(ii) Using the results shown in the graph above, explain your answer in part (i).

[1]

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32. The life cycles of a frog and a cockroach are shown in diagrams 1 and 2 below.

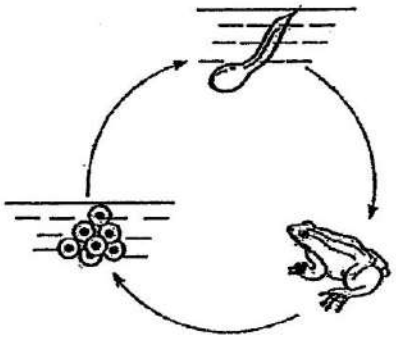


Diagram 1

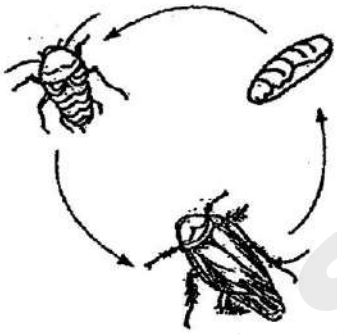


Diagram 2

(a) Based on the diagrams above, state one similarity between the life cycle of the frog and the life cycle of a cockroach. [1]

_____

(b) Based on the diagrams above, state two differences between the life cycle of the frog and the life cycle of a cockroach. [2]

i) _____

_____

ii) _____

_____

(c) In what way is the life cycle of the cockroach different from the life cycle of a mosquito? [1]

_____

_____

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33. Shi Qi carried out the following steps for her Science project.

Step	Method
1	Put the same type and amount of soil into five similar pots
2	Plant five soya bean seedlings in each pot
3	Place the pots in the same area in her garden
4	Water each pot with the same amount of water each day

Shi Qi added different amount of fertilisers to each of the pots daily. She then measured and recorded the height of the seedlings in each pot on the tenth day.

The table below shows the results.

Pot	A	B	C	D	E
Amount of fertiliser given per day (ml)	10	20	30	40	50
Average height of seedlings in each pot (cm)	8	11	14	10	7

(a) What was the changed variable in Shi Qi's experiment? [1]

_____

_____

(b) Using the table above, state the relationship between the average height of seedlings in each pot and the amount of fertiliser given per day? [2]

_____

_____

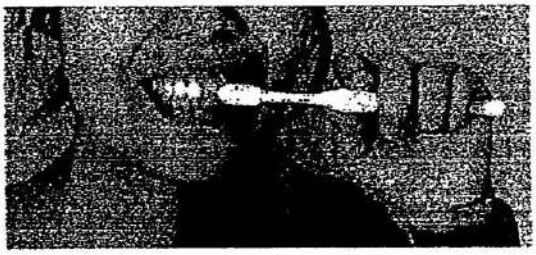
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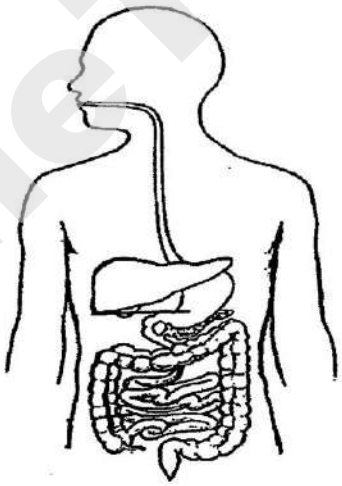
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34. The diagram below shows Kelly brushing her teeth.



Explain how the muscular system and skeletal system work together to enable Kelly to brush her teeth. [2]

35. The diagram below represents the human digestive system.



(a) In the diagram above, **label all** the parts to show where digestion takes place. [2]

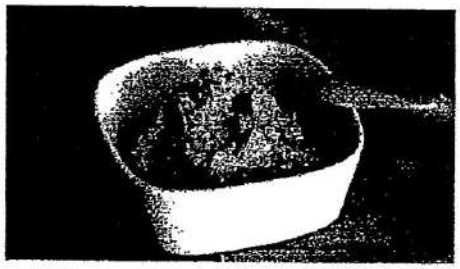
(b) State what happens to the digested food when digestion had been completed. [1]

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(Continue from Question 35)

A baby's digestive system is not fully developed. Many baby food are cut into smaller pieces before feeding them to the baby.



(c) Explain how cutting the food into smaller pieces help in their digestion. [1]

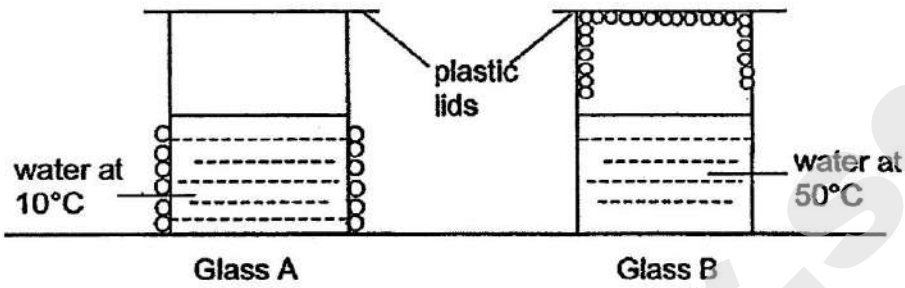
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36. Mark put two identical glasses, A and B, on the table in his garden. He poured the same amount of water into each glass. The temperatures of the water in glasses A and B were 10°C and 50°C respectively. After 10 minutes, he observed that there were tiny water droplets as shown in the diagram below.



(a) Based on his observation, state a possible surrounding temperature in his garden. [1]

_____

(b) Based on your answer in (a), explain how the water droplets in glass A and B were formed. [2]

Glass A: _____

_____

_____

_____

Glass B: _____

_____

_____

_____

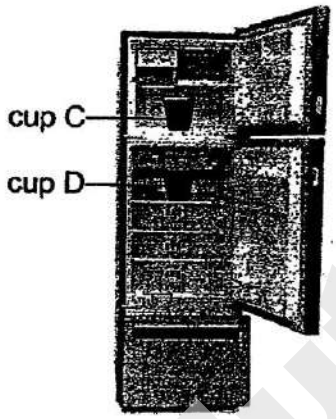
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(Continue Question 36)

Mary has two identical cups of water, C and D, as shown in the diagram below. She placed cup C in the freezer and cup D in the chiller compartment of the refrigerator.

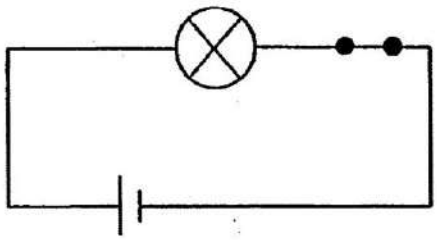
After five hours, she observed that the water in cup C turned into ice while the water in cup D remained in the liquid state.



(c) Explain why the water in cup C turned into ice while the water in cup D remained in the liquid state. [1]

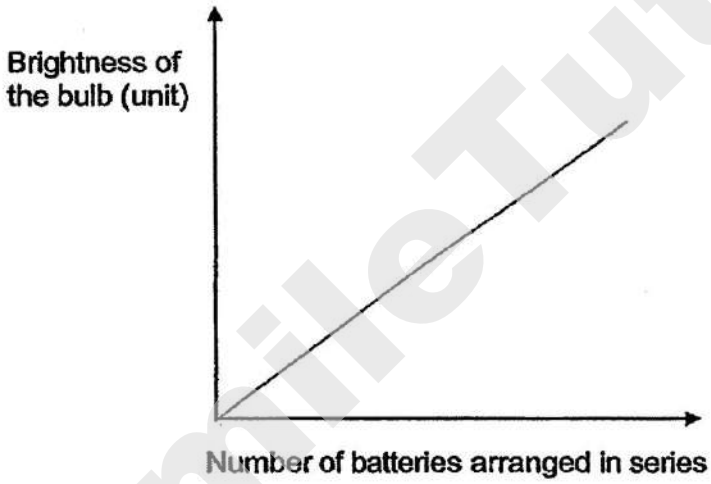
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37. Keshia set up the circuit as shown below.



She added one battery at a time, in series, to the circuit. She measured the brightness of the bulb with a datalogger and light sensor until she had used four batteries in total. The datalogger still detected light at this point.

(a) **Draw** a line graph below to show the relationship between the number of batteries arranged in series in the circuit and the brightness of the bulb. [1]



(b) When she added the fifth battery, the brightness of the bulb became zero. Explain her observation. [1]

_____

_____

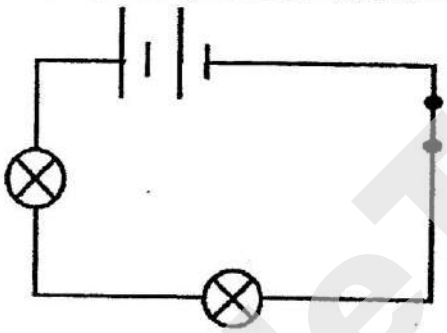
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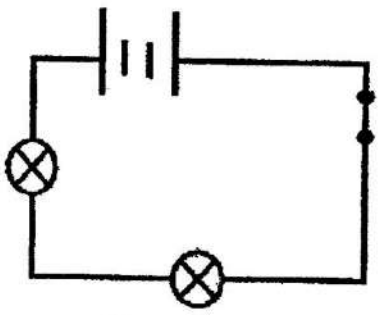
38. During a Science competition, students were asked to construct circuit B such that:

- **all** the bulbs, batteries and switch are used in the circuit
- the brightness of each bulb in circuit B is the same as each bulb in circuit A.

(a) **Using symbols, draw** a circuit diagram in the box below to represent **circuit B.** [2]

Circuit A	Circuit B
Items given: • two batteries • two bulbs • some wires • one switch	Items given: • two batteries • four bulbs • some wires • one switch
	(a)

Circuit A was re-arranged to form circuit C as shown in the diagram below.



Circuit C

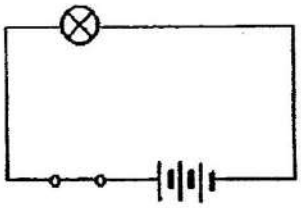
(b) Give a reason why the bulbs in circuit C did not light up.

_____

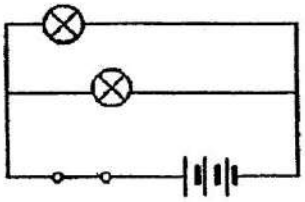
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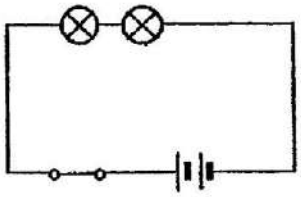
39. Four electric circuits, A, B, C and D, using identical batteries and bulbs are shown below.



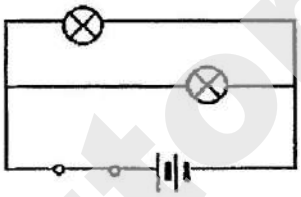
Change A



Change B



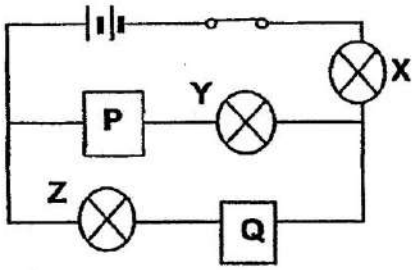
Change C



Change D

(a) Based on the diagram above, which two electrical circuits are the bulbs of equal brightness? [1]

Malcom constructed another circuit with two rods, P and Q, of unknown materials as shown in the diagram below. He observed that bulb X and Z lighted up but bulb Y did not light up.



(b) Based on the Malcom's observations, state a possible reason why bulb Y did not light up. [1]

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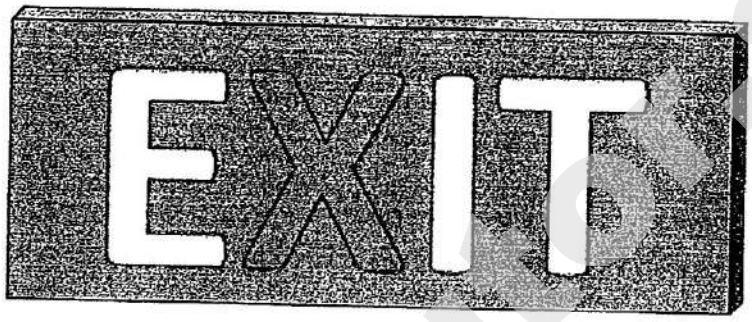
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(Continue from Question 39)

(c) Based on your answer in (b), state the possible material of rod P. [1]

_____

While shopping, Malcom saw a sign with a faulty signboard as shown in the diagram below. Only letters 'E', 'I' and 'T' lit up but letter 'X' was not lit up.



(d) Explain, based on circuit arrangement, how the three letters, 'E', 'I' and 'T' could light up even though X did not light up. [2]

_____

_____

_____

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40. Lily conducted an experiment, as shown below, to show the effects of different type of forces. Object V and W were made of different materials.

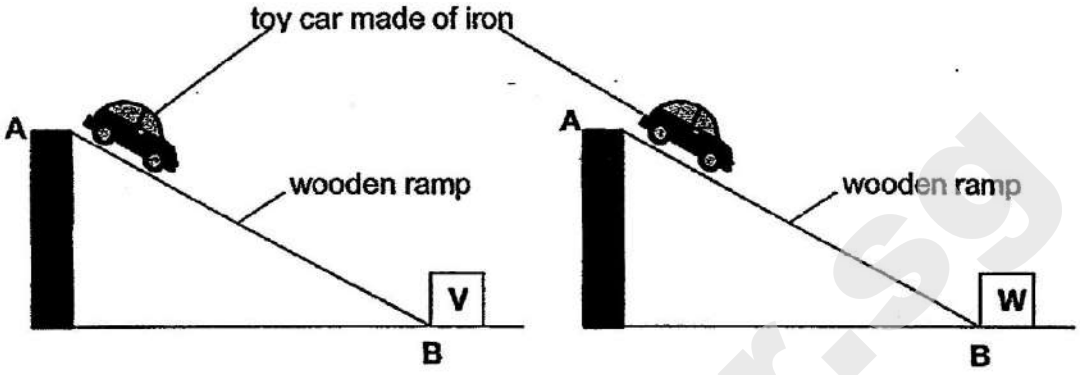


Diagram 1 Diagram 2

She released the toy cars from the top of the ramp and recorded the time taken for the toy car to move from A to B.

	Time taken (s)		
	1st try	2nd try	3rd try
Diagram 1	10	11	10
Diagram 2	8	7	7

(a) State all the forces acting on the toy car in Diagram 1 when it was placed at the top of the ramp. [1]

_____

(b) Explain, in terms of forces, the difference in the time taken for the toy car to travel from A to B in Diagram 1 and 2. [2]

_____

_____

_____

(c) Suggest what object W could be. [1]

_____

End of Paper

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SCHOOL : NANYANG PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA2

CONTACT :

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	2	4	2	2	2	2	1	4	3
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
1	2	2	3	2	2	3	2	2	1
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
4	4	2	4	2	4	2	1		

SECTION B

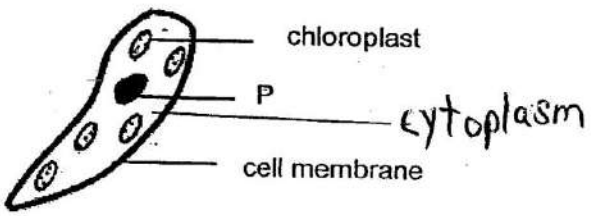
Q29)

a)Nucleus

b)Part P contain genetic information.

c)A leaf cell has a cell wall whereas the organism does not have a cell wall.

d)i)



ii)The cell membrane controls the movement of substance going in and out of the cell.

Q30)

a)To find out how the heart rate is affected by the different activities.

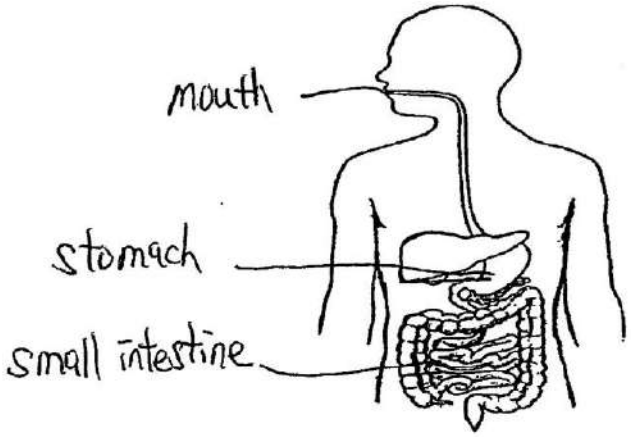
b)When Elaine was cycling, her body needs more energy. Thus, her heart rate increases to take in more oxygen and carbon dioxide

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<table>
<tr><td></td><td>transported by the blood vessels to all parts of the body to release more energy and to remove more carbon dioxide.
c)When Alain was in City X, her heart pumps faster to take in the same amount of oxygen her body requires as in Singapore.</td></tr>
<tr><td>Q31)</td><td>a)P : Pollination
Q : Fertilisation
b)Process P : The pollen grains landed on the anther will he transferred to the stigma.
Process Q : The male reproductive cell fuses with the female reproductive cell.
c)i)<table><tr><td></td><td></td></tr><tr><td></td><td>√</td></tr></table>
c)ii)The distance between young Plant R and the parent plant is the 2cm. When the distance from the parent plant is longer, the number of young Plant R is lesser. Thus, it is dispersed by splitting as young Plant R is usually found near the parent plant.</td></tr>
<tr><td>Q32)</td><td>a)Both have a 3 – stage life cycle.
b)i)The young of a cockroach looks like the parent while the tadpole does not look like the frog.
ii)The young of frog does not resemble the adult frog but the young of a cockroach resemble the adult cockroach.
c)The cockroach has three stages in their life cycles but the mosquito has four stages in their life cycles.</td></tr>
<tr><td>Q33)</td><td>a) Different amount of fertilisers.
b)The average height of the seedling increases as the amount of fertiliser given increases until it is 30ml. When the amount if fertilizer given is more than 30ml, the average height at the seedling decreases.</td></tr>
<tr><td>Q34)</td><td>The muscular system and the skeletal system enables Kelly to move her hands and mouth when they work together.</td></tr>
<tr><td>Q35)</td><td>a)</td></tr>
</table>

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b)The digested food will be absorbed into the bloodstream and transported to the heart.

c)Food are cut into smaller pieces to increase the surface area to increase digestion rate.

Q36)

a)25℃

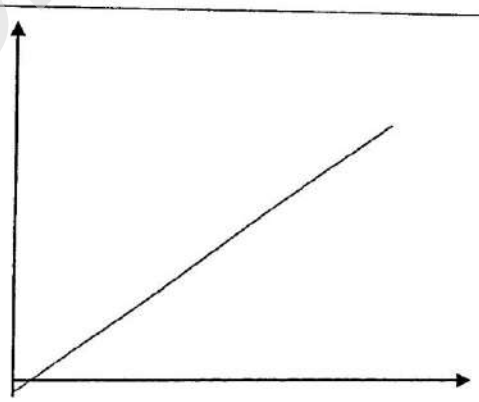
b)Glass A : The water in Glass A is 10℃ . The warmer water vapour in the surrounding air will lose heat and condense on the cooler outer surface of Glass A.

Glass B : The water in Glass B is 50℃ . The hot water rises up to evaporate to form water vapour and condenses at the cooler surface of the plastic lid and lose heat.

c)The water in Cup C turned into ice as the temperature of the freezer was at 0℃ which allows water to lose heat and turn into ice but the chiller is above 0℃ , so Cup D's water could not turn into ice.

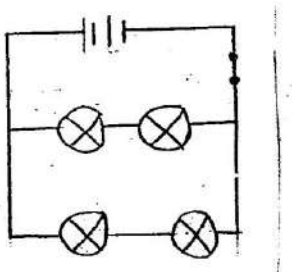
Q37)

a)



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	b)When number of batteries were too many, it will cause the bulb to fuse and stop electric current from flowing through the bulb, forming an open circuit.
Q38)	a)  b)Both negative terminals of the batteries are facing each other.
Q39)	a)Circuit A and B. b)Rod P is an insulator of electricity. c)Plastic. d)They were in a parallel circuit meaning that when X fused E. I and T causing them to remain lit.
Q40)	a)Gravitational and frictional forces. b)The toy car in Diagram 1 had only frictional and gravitational force acting on it but the toy car in Diagram 2 had frictional, gravitational and magnetic force acting on it causing it to move faster. c)Rubber.

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19

RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (2) 2018

Section A	50
Section B	40
Your score out of 90	90
Parent's signature	

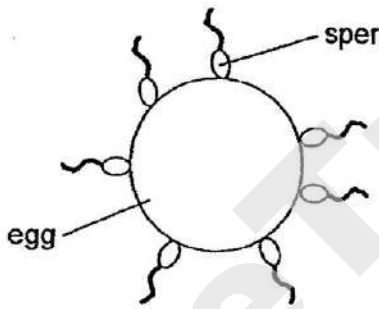
Name . _____ Index No: ____ Class: P 5 ___

25 October 2018 **SCIENCE** **Attn:1 h 30 min**

SECTION A (25 X 2 marks)

For each question from 1 to 25, 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.

1. The diagram below shows a process in the human reproduction system.



Which one of the following statements about the process of human reproduction is correct?

(1) One egg is fertilised by many sperms.
(2) Pollination occurs before the fertilisation of the egg.
(3) The foetus will develop in the womb for nine months.
(4) The male reproductive cell will fuse with the female reproductive cell in the womb.

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2. The table below shows some physical characteristics of Mr and Mrs Ben and their four children. A tick (✓) shows the presence of the characteristics.

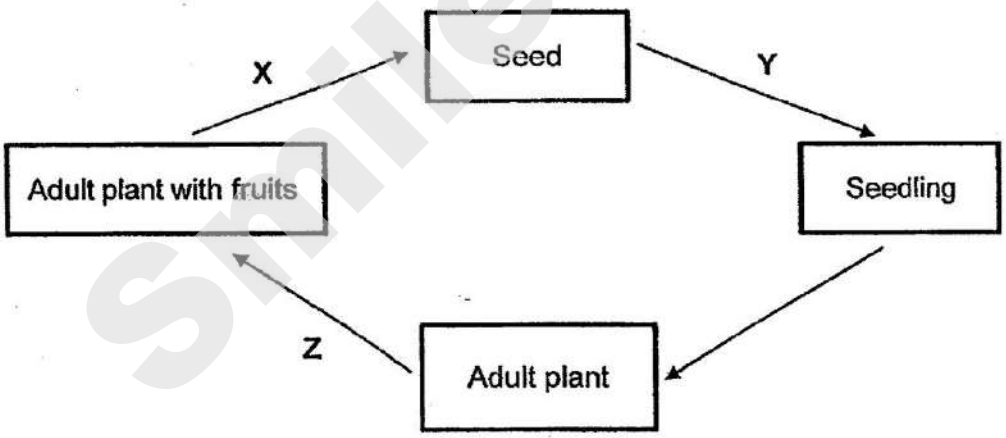
	Short hair	Curly hair	Dimples	Attached earlobes
Mr Ben	✓	✓		✓
Mrs Ben			✓	
Alex	✓			
Billy	✓	✓		✓
Cindy		✓	✓	
Elly		✓	✓	

Based on the information above, which of the following statement(s) is/are definitely correct?

A Cindy and Elly are a pair of twins.
B Billy and Alex inherited the short hair from Mr Ben.
C Billy did not inherit any physical characteristics from Mrs Ben.
D Cindy and Elly each inherited more than two physical characteristics from Mrs Ben.

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

3. The cycle below show the stages of the growth of a plant.

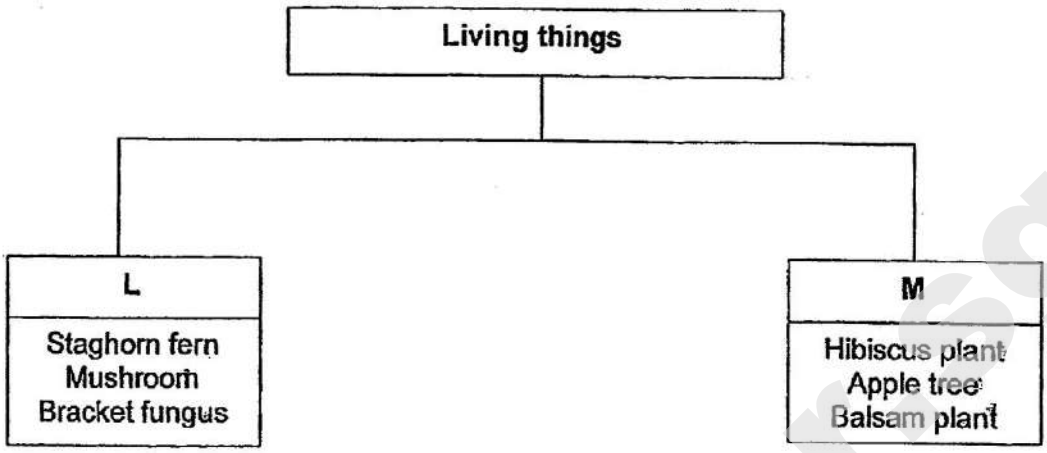


Which of the following represents the stages correctly?

	X	Y	Z
(1)	Dispersal	Germination	Fertilisation
(2)	Fertilisation	Dispersal	Germination
(3)	Germination	Fertilisation	Dispersal
(4)	Germination	Dispersal	Fertilisation

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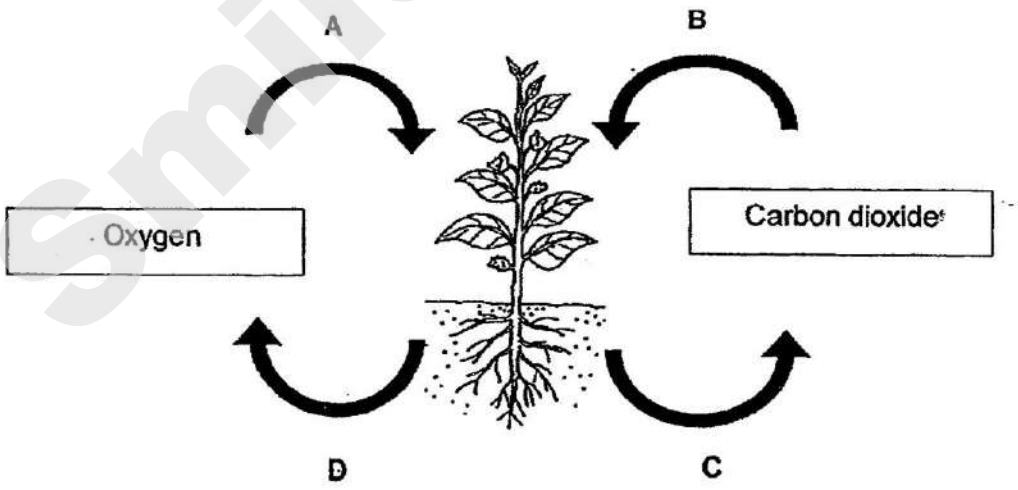
4. The chart below shows classification of some living things.



Which of the following is the most suitable headings for L and M?

	L	M
(1)	Inedible	Edible
(2)	Non-flowering plants	Flowering plants
(3)	Non-green plants	Green plants
(4)	Reproduce from spores	Reproduce from seeds

5. Study the diagram below.



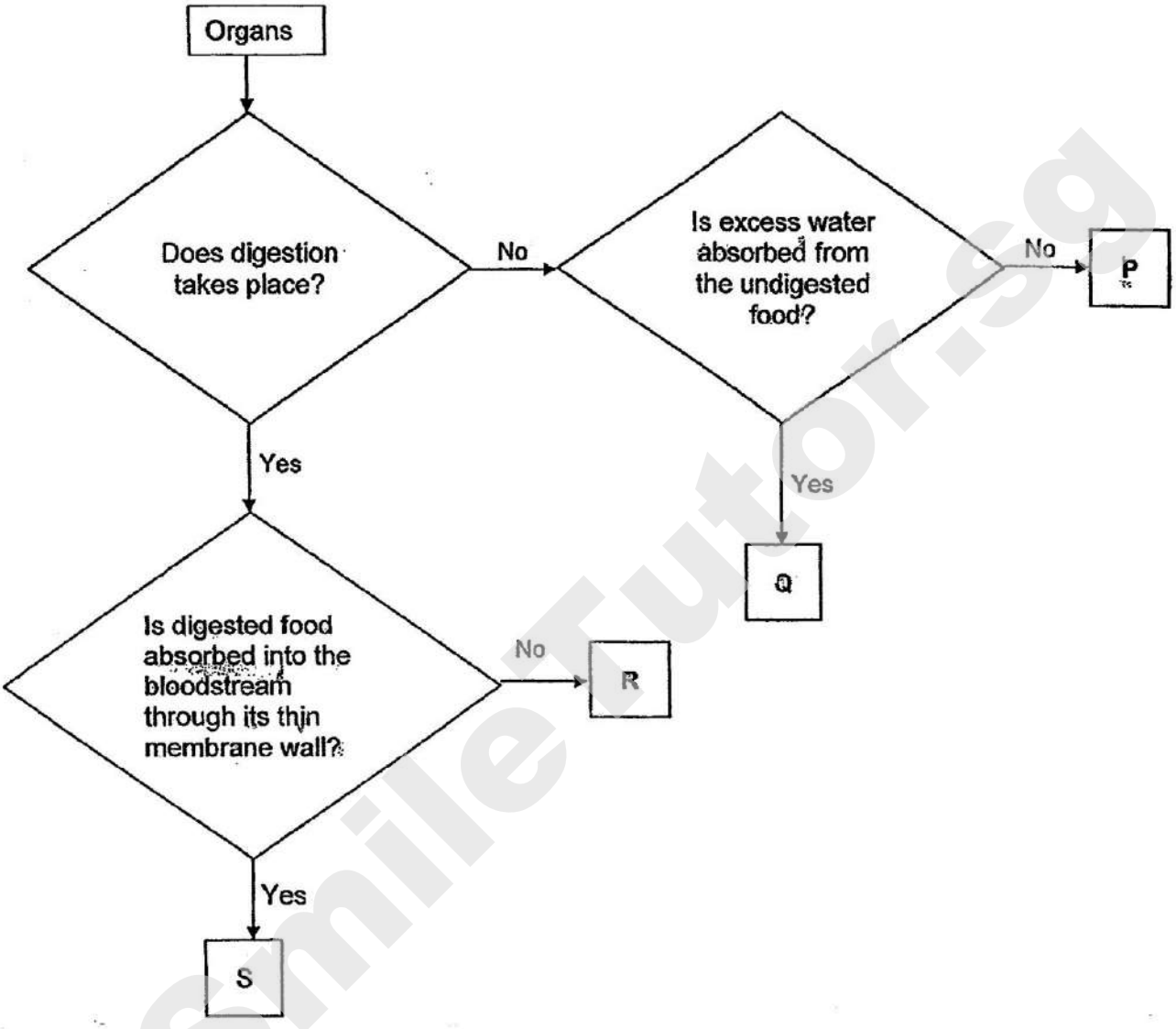
Which pair of arrows shows the exchange of gases during respiration correctly?

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

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6. Study the flow chart about different parts P, Q, R and S in human digestive system below.



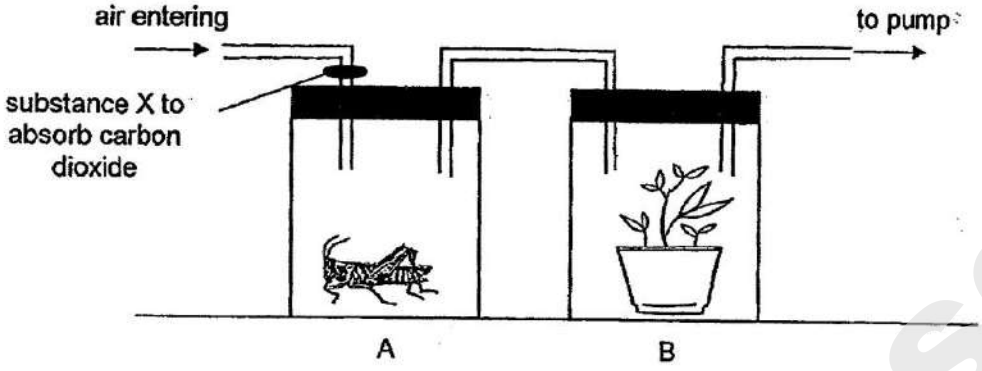
Which of the following best represents P, Q, R and S respectively?

	P	Q	R	S
(1)	Anus	Large intestine	Mouth	Small intestine
(2)	Gullet	Mouth	Small intestine	Large intestine
(3)	Mouth	Small intestine	Stomach	Small intestine
(4)	Large intestine	Small intestine	Stomach	Mouth

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7. The experimental set-up below was placed beside an open window during a sunny and bright day.



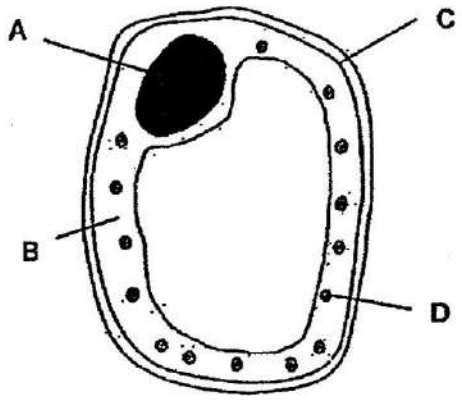
Which of the following pairs shows the gases that enter and leave container B?

	Entering	Leaving
(1)	Oxygen, carbon dioxide	Oxygen, water vapour
(2)	Oxygen, water vapour	Oxygen, water vapour
(3)	Oxygen, carbon dioxide, water vapour	Oxygen, carbon dioxide, water vapour
(4)	Oxygen, carbon dioxide, water vapour	Oxygen, water vapour

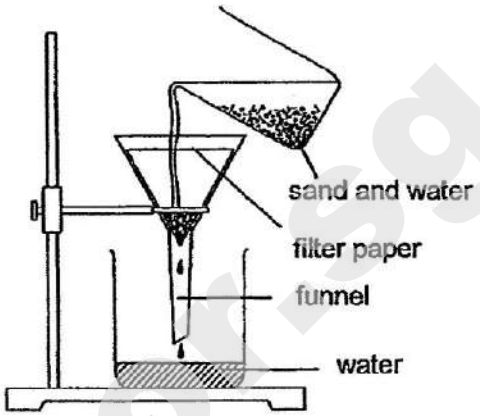
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8. Set-up X shows how sand is separated from water using filter paper. The filter paper only allows some substances to pass through it.



Plant cell



Set-up X

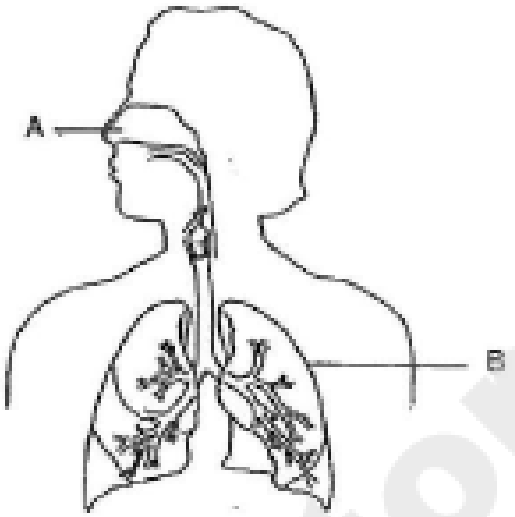
Which part of the plant cell has the same function as the filter paper in set-up X?

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

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9. The diagram below shows the human respiratory system with parts labelled A and B.



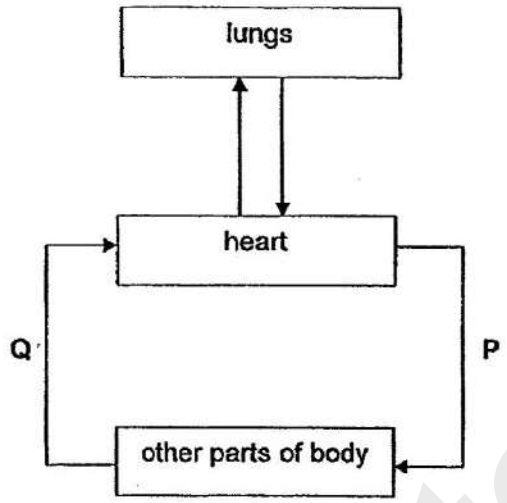
Which one of the following correctly states the functions of A and B during breathing?

	A	B
(1)	Controls the types of gases that enter the lungs	Controls the rate of breathing
(2)	Enables us to detect smell	Prevents the ribcage from collapsing
(3)	Filters the air before it enters the lungs	Takes in oxygen and remove carbon dioxide
(4)	Leads air in and out of the respiratory system	Makes the chest cavity air-tight

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10. The diagram below shows how blood flows through the blood vessels from P to Q.



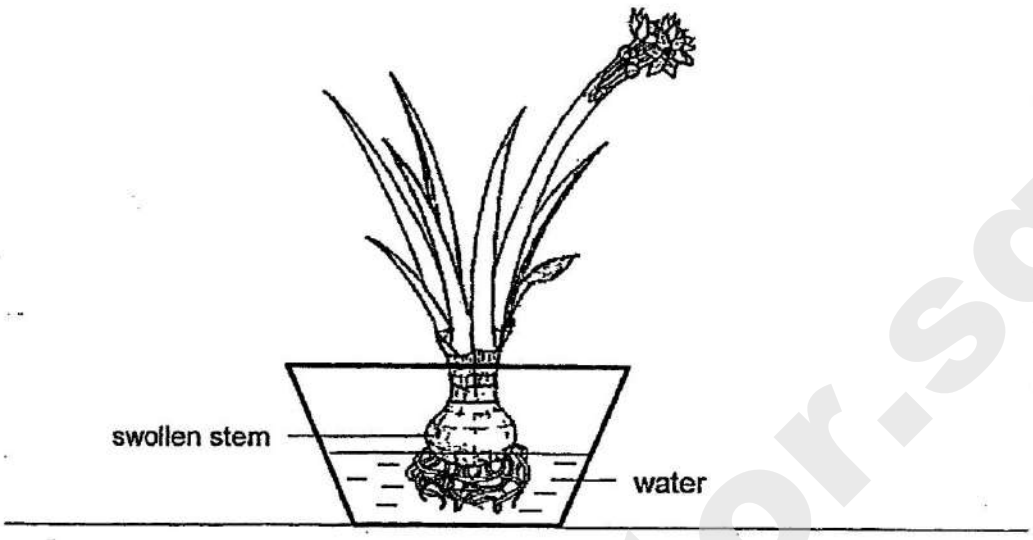
Which of the following best describe the differences between the blood at blood vessels P and Q?

	Blood at P	Blood at Q
A	more oxygen	less oxygen
B	less carbon dioxide	more carbon dioxide
C	less waste materials	more waste materials
D	more digested food	less digested food

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

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11. Mary took plant X from the garden and placed in a container filled with water as shown below.



Plant X

Mary noticed that plant X in her garden grew more healthily but plant X left in the living room withered in a month.

Which of the following is/are the reason(s) for her observation?

A There was insufficient mineral salts present in the water to be absorbed by the roots of the plant X.

B There was insufficient light present in the room for the leaves of the plant to make food.

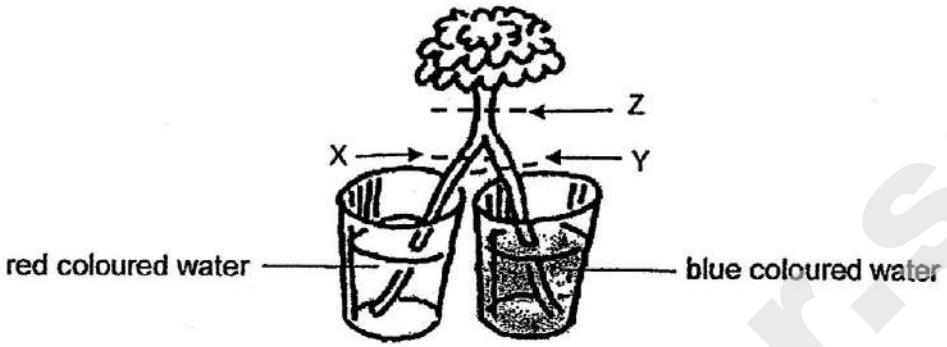
C The stem of plant X became swollen and could not transport water from the roots to the leaves.

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

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12. Peter placed a celery stalk as shown in the picture below. The two glasses had different coloured water, one red and the other blue. After half an hour, he cut across the stalks at positions X, Y and Z, as shown in the diagram below.



He noticed that the cross-sections cut at X, Y and Z had different coloured dots.



Cross-section of celery stalk

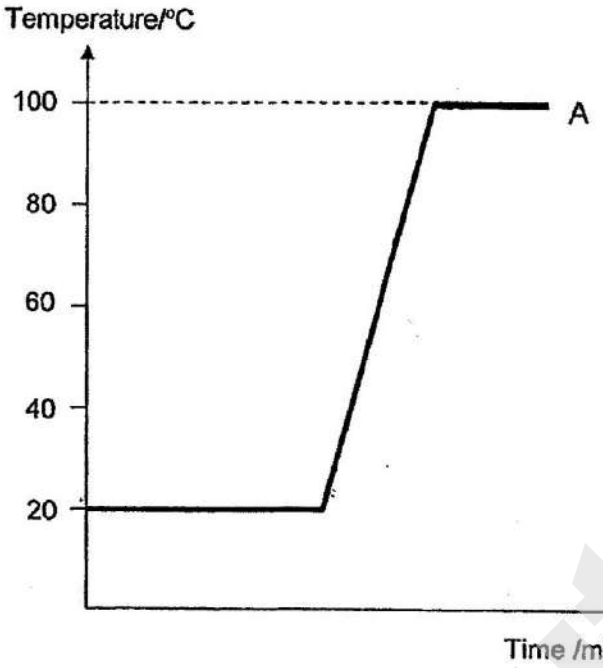
Which of the following shows the possible colour dots observed at parts X, Y and Z of the stem?

	X	Y	Z
(1)	All red	All blue	Some red and some blue
(2)	All blue	All red	All purple
(3)	All purple	All purple	Some red and some blue
(4)	All red	All blue	All purple

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13. The graph below shows the melting point and boiling point of Substance A.



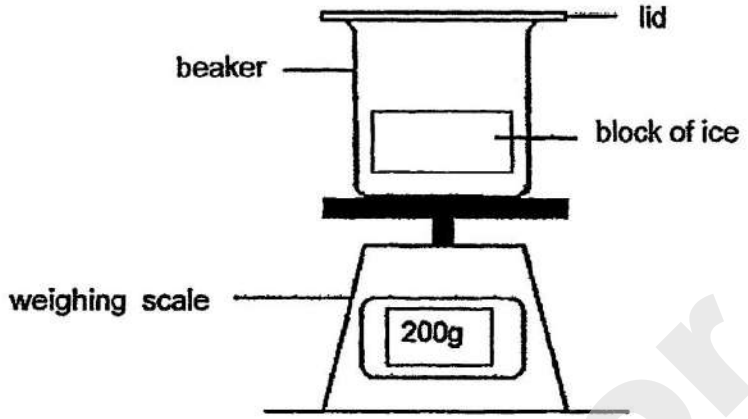
Which one of the following statements about the graph above is not correct?

(1) Substance A is a solid at 10 °C.
(2) Substance A is a liquid at 80 °C.
(3) The melting point of substance A is 0 °C.
(4) The boiling point of substance A is 100 °C.

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14. Siti left a block of ice in a beaker on an electronic weighing scale in the kitchen as shown below.



Which of the following statement(s) is/are the most likely observation(s) when the block of ice was left on the weighing scale for five minutes?

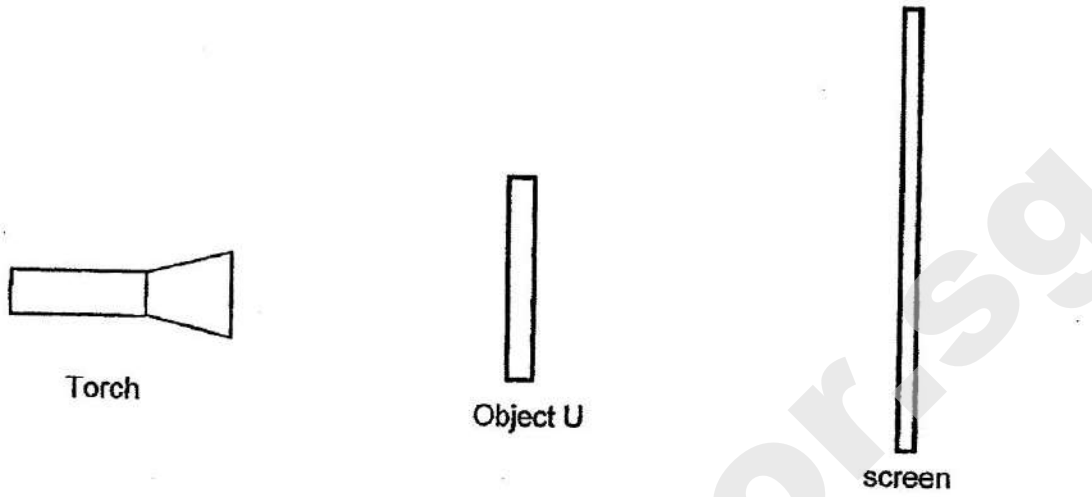
A Water droplets are formed on the underside of the lid.
B Water droplets are formed on the outside of the beaker.
C The reading in the weighing scale shows more than 200g.

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

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15. When object U is placed in front of a light source, Peter observed a circular shadow formed on the screen.



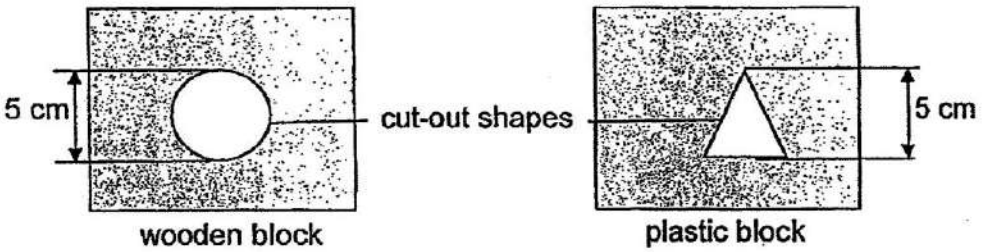
Which one of the following actions will have a bigger shadow be cast on the screen?

(1) Move the torch nearer to object U
(2) Move the screen nearer to object U.
(3) Move the torch further from object U.
(4) Move object U further from the torch.

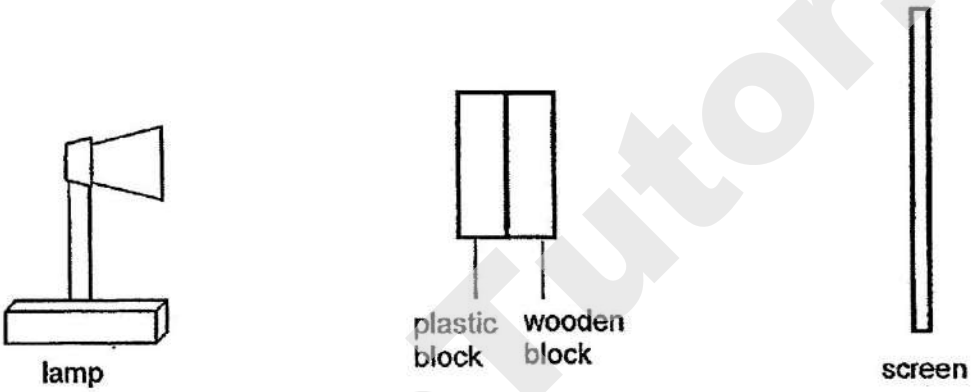
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16. Ali cut out a circular shape from a wooden block and a triangular shape from a clear plastic block as shown below.

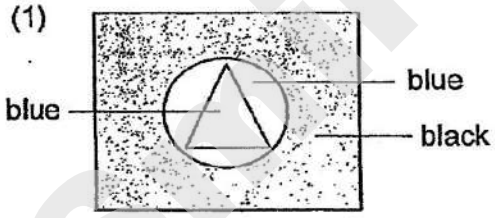


He glued the two blocks together and a lamp with blue light was brought near the two blocks which were glued together as shown in the diagram below.

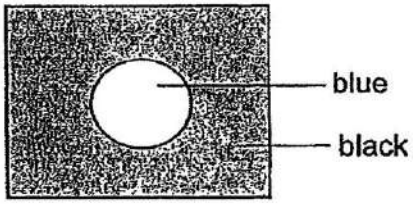


Which one of the following is most likely to be the shadow formed on the screen?

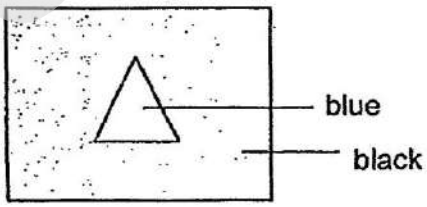
(1)



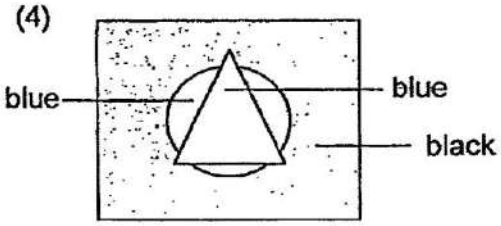
(2)



(3)



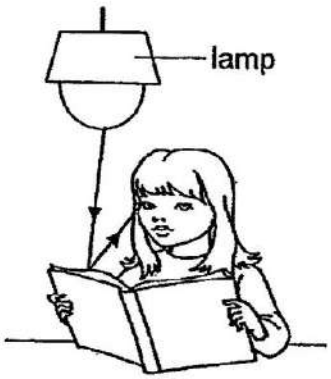
(4)



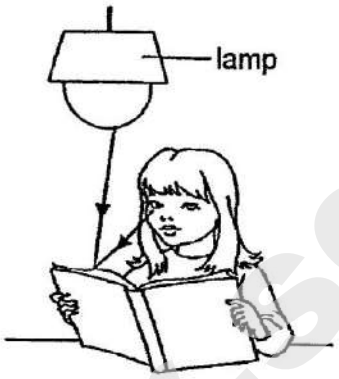
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17. Which one of the following diagram explains why Judy can see the book on the table when the lamp is switched on?*

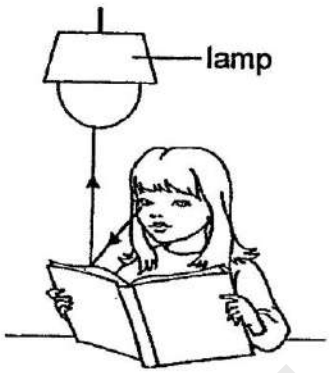
(1)



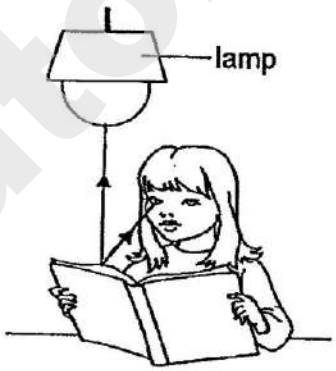
(2)



(3)



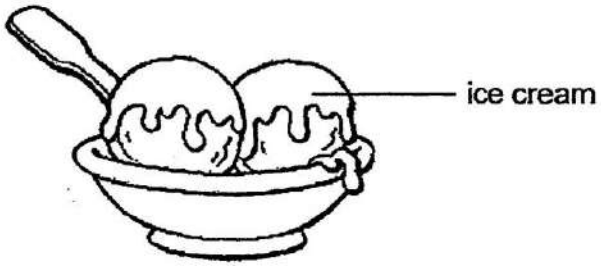
(4)



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18. Joseph placed a bowl of ice-cream on the table. After three minutes, he observed his ice-cream melting slowly.



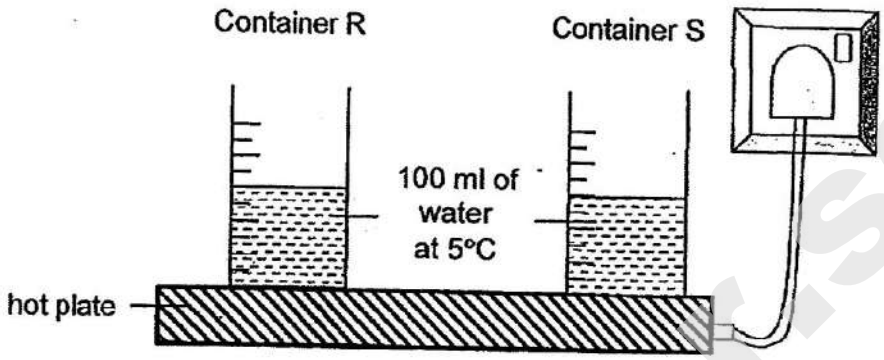
Which of the following correctly shows the transfer of heat between the ice-cream and the surrounding air?

	Surrounding air	Ice-cream
(1)	gains heat	gains heat
(2)	gains heat	loses heat
(3)	loses heat	loses heat
(4)	loses heat	gains heat

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19. Winson conducted an experiment using two containers, R and S, made of different materials. He placed an equal amount of water at 5°C in each container as shown below. He used a hot plate to heat the two containers of water to boiling point.



He measured the time taken for the water in each container to reach boiling point and recorded the readings in the table below.

Container	Time Taken (s)
R	70
S	120

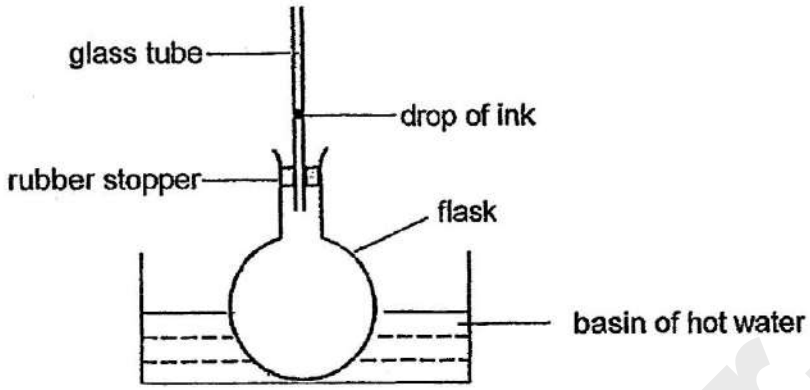
Based on the information above, which of the following statement(s) is/are correct?

A Container R is a poorer conductor of heat than container S.
B The water in container S gained heat from the hot plate more slowly than the water in container R.
C The water in both containers would have the same amount of heat energy at boiling point.

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

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20. Mrs Wong set-up an experiment as shown below.

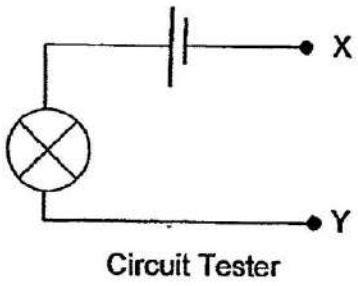


Which of the following statements correctly shows the observation and explanation of what happen to the drop of ink after the flask was placed in the basin of hot water?

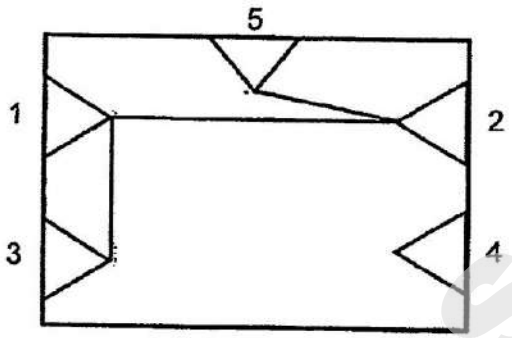
	Observation	Explanation
(1)	The drop of ink will rise.	The air in the flask loses heat to the basin of hot water and expands and pushes the drop of ink upwards.
(2)	The drop of ink will rise.	The air in the flask gains heat from the basin of hot water and expands and pushes the drop of ink upwards.
(3)	The drop of ink will drop.	The air in the glass tube contracts and loses heat to the basin of hot water and pushes the drop of ink downwards.
(4)	The drop of ink will drop.	The air in the flask and glass tube expands and gains heat from the basin of hot water and pushes the drop of ink downwards.

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21. Mary placed points X and Y of the circuit tester shown below on different points 1, 2, 3, 4 and 5 of a circuit card. She observed if the bulb lit up and recorded her observations.



Circuit Tester



Circuit Card

	Points in contact with circuit tester	Bulb lit up	Bulb did not light up
A	1 and 5	✓	
B	1 and 2		✓
C	3 and 4	✓	
D	5 and 3	✓	

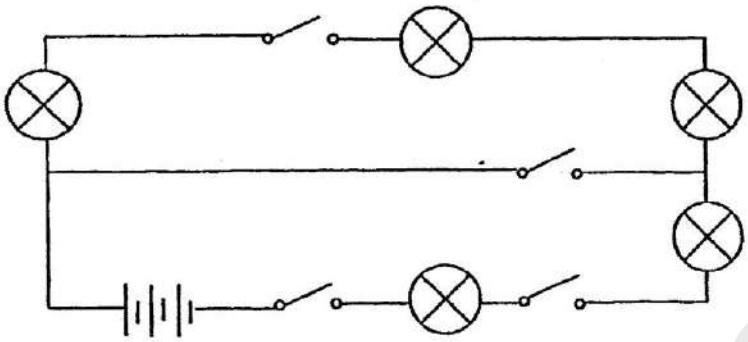
Which of the following are correct observations made by Mary?

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

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22. The diagram below shows an electrical circuit.



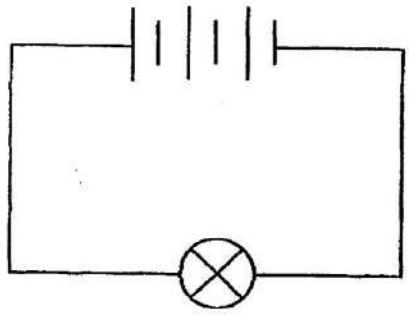
What is the minimum number of switches which need(s) to be closed to light up **only** two bulbs?

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

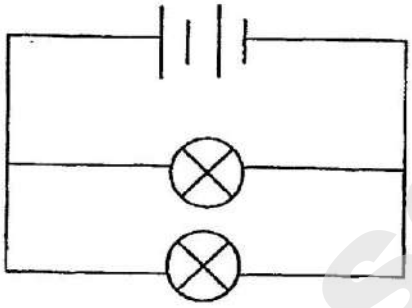
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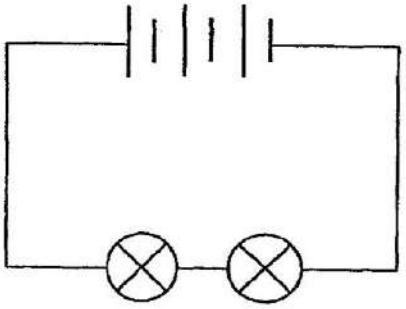
23. Adam set up four circuits, P, Q, R and S, using identical batteries, bulbs and wires.



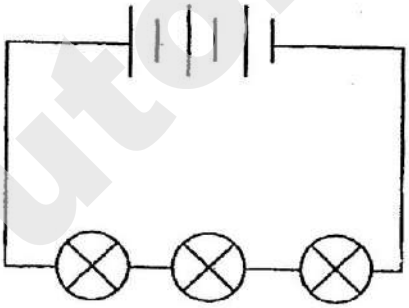
Circuit P



Circuit Q



Circuit R



Circuit S

The following statements are made about the circuits above.

A The bulb in circuit P is the brightest.

B The bulbs in circuit P and R have the same brightness.

C The bulbs in circuit Q are brighter than the bulbs in circuit S.

D The bulbs in circuit S are less bright than the bulbs in circuit R and Q.

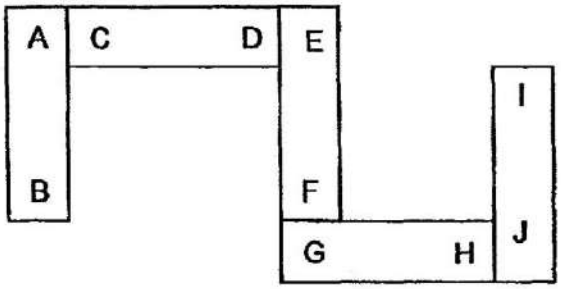
Which of the following statements is/are incorrect?

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

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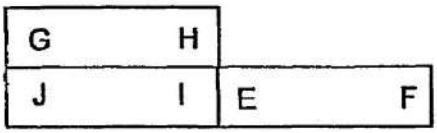
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24. Five bar magnets are placed together and their poles are marked as shown in the diagram below.

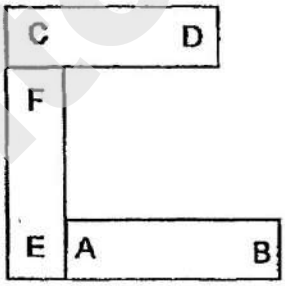


Which of the following diagrams shows the correct interaction when three of the bar magnets from the above set-up are brought close together?

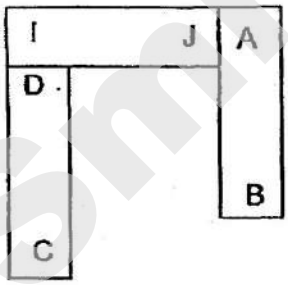
(1)



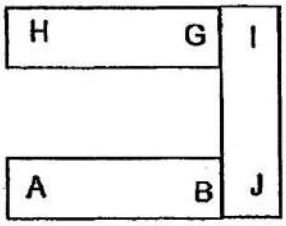
(2)



(3)



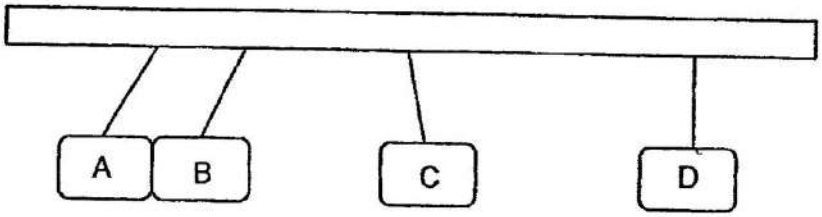
(4)



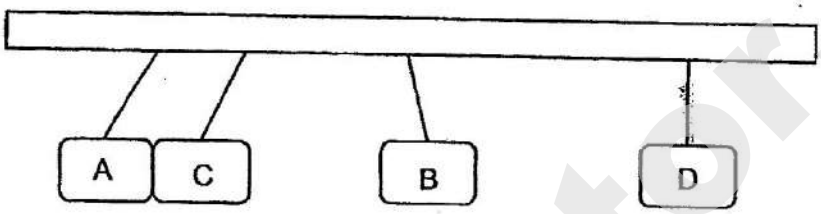
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25. Devi hung four objects, A, B, C and D, on a wooden rod. The diagram shows what she observed.



She then exchanged the positions of B and C. The diagram below shows her new observation.



Which of the following correctly describes the objects?

	Object A	Object B	Object C	Object D
(1)	magnetic material	magnetic material	magnetic material	magnet
(2)	magnet	magnet	magnetic material	magnetic material
(3)	magnetic material	magnet	magnet	non magnetic material
(4)	magnetic material	magnetic material	magnet	non magnetic material

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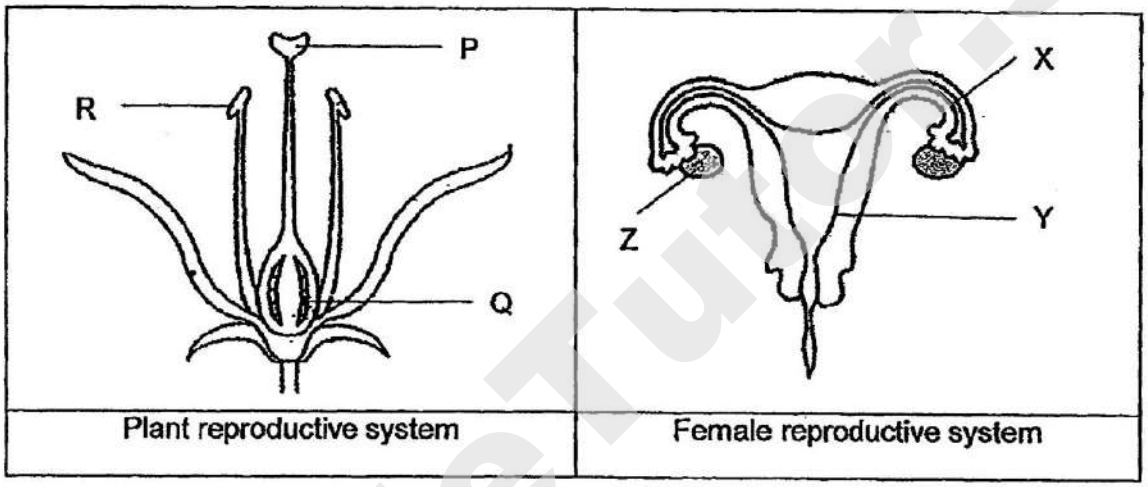
Name: _____ Index No: _____ Class: P5 _____ 40

SECTION B (40 marks)

For questions 26 to 38, write your answers clearly in the spaces provided.

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

26. The diagram below shows the parts of the plant and female reproductive systems respectively.



Plant reproductive system | Female reproductive system

(a) Identify the part labelled Z and state its function.

_____

_____

(b) Identify the parts where the male reproductive cell fuses with the female reproductive cell in the plant and female reproductive system respectively. [2]

(i) Plant reproductive system: _____

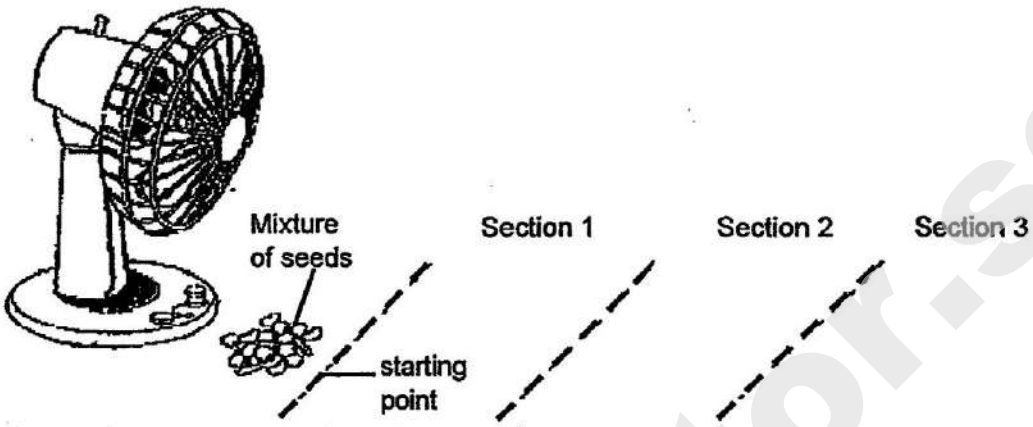
(ii) Female reproductive system: _____

SCORE 3

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27. Cheryl carried out an experiment using three different types of seeds. She took some seeds of each type, mixed them together and placed them on a table in front of a fan. After some time, she counted the number of each type of seed in each of the sections marked 1, 2 and 3.



Her results were recorded in the table below.

		Number of seeds			
Type of seeds	Average mass of seed (g)	Number of seeds at starting point	Section 1	Section 2	Section 3
A	1	10	0	1	9
B	1.6	10	2	8	0
C	2.1	10	0	0	0

(a) Based on the results from the experiment, what is the relationship between the mass of the seed and the distance travelled by the seed? [1]

(b) Identify the type(s) of seeds that is/are more likely dispersed by wind. [1]

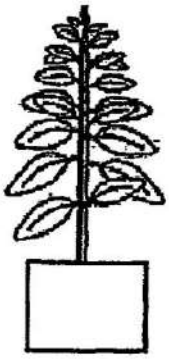
(c) What should Cheryl do to ensure her results are reliable? [1]

SCORE	3

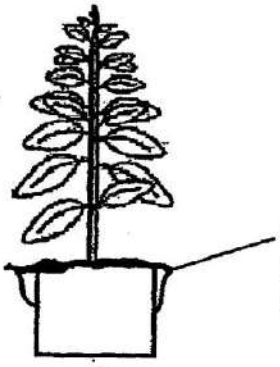
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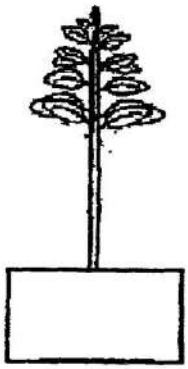
28. Sarah prepared four set-ups, A, B, C and D, using identical plants. The pots are filled with the same type of soil to their brims.



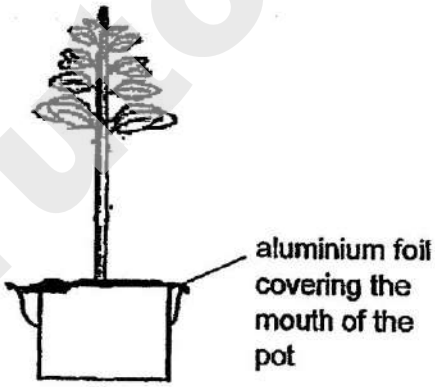
A



B



C



D

Sarah wanted to investigate how the number of leaves affected the rate of water loss by the plant over a week.

(a) Which two set-ups should Sarah use to conduct a fair test?

_____

(b) What should Sarah measure in order to find out how the number of leaves affected the rate of water loss by the plant? [1]

_____

_____

SCORE	2

Continue on next page

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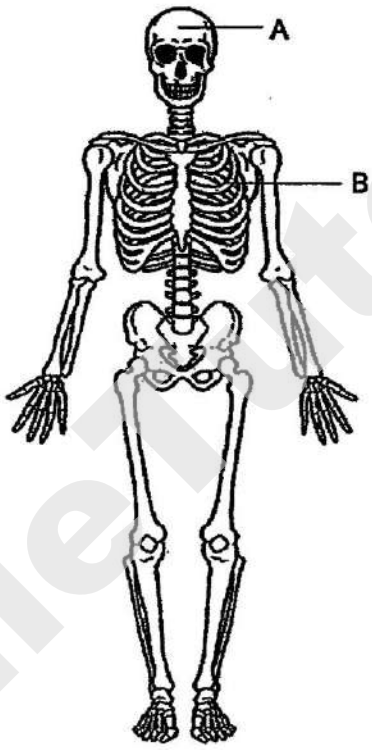
Continued from previous page.

(c) What is the purpose of covering the mouth of the pot with an aluminium foil? [1]

_____

_____

29. The diagram below shows a skeletal system.



(a) Name the following parts in the skeletal system. [1]

Part A: _____

Part B: _____

(b) State two functions of the skeletal system. [2]

(i) _____

(ii) _____

SCORE	4

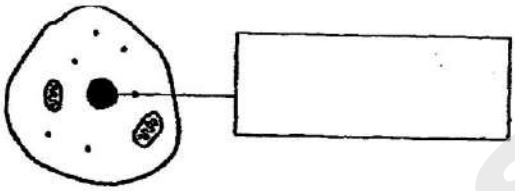
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30. Sam was provided with pictures of two different types of cells as shown below.



Cell A



Cell B

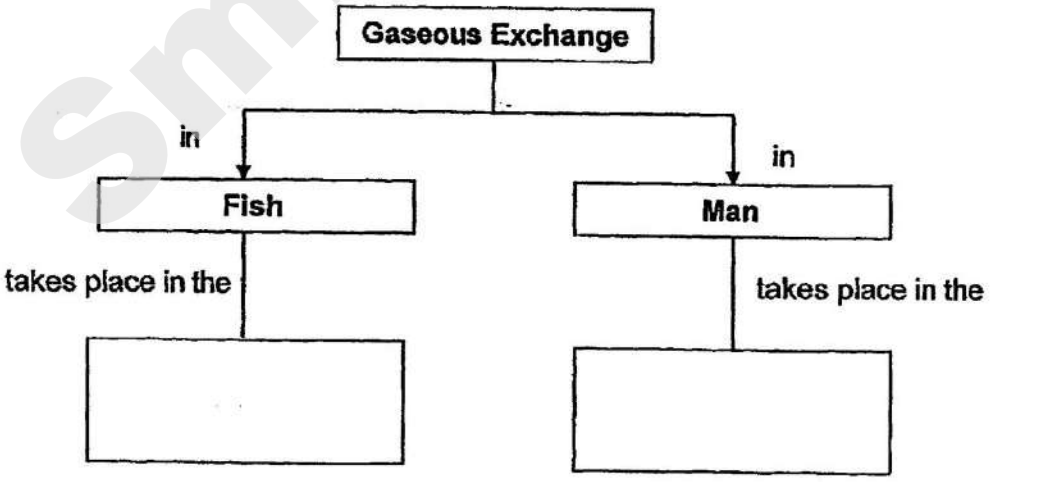
(a) Based on the observation above, state two differences that will enable Sam to identify the plant cell. [2]

_____

_____

(b) In the diagram above, label and name the part that carries genetic material in cell B. [1]

31. The flowchart below shows the respiratory system in both fish and humans. Complete the chart by filling in the boxes below using the correct organs. [2]

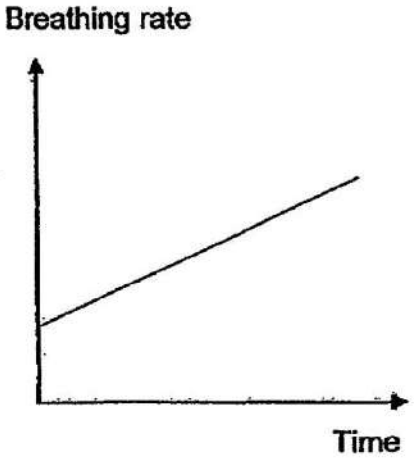


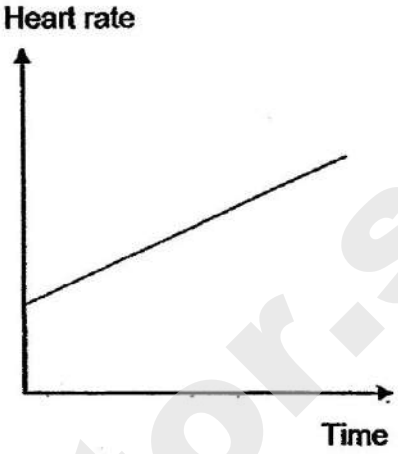
SCORE	5

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32. The graph below show the breathing rate and heart rate of a man who started running.





(a) Based on the graphs above, what is the relationship between the breathing rate and heart rate of the man? [1]

_____

_____

(b) Explain the increase in his heart rate while he is running. [2]

_____

_____

SCORE	3

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33. Look at Diagram A as shown below.

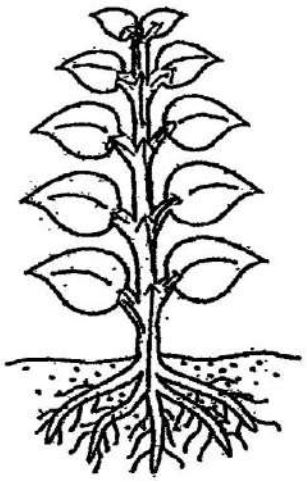


Diagram A

(a) Draw arrows in Diagram A above to show the direction in which water is transported in plant. [1]

Diagram B below shows the transport system of an animal.

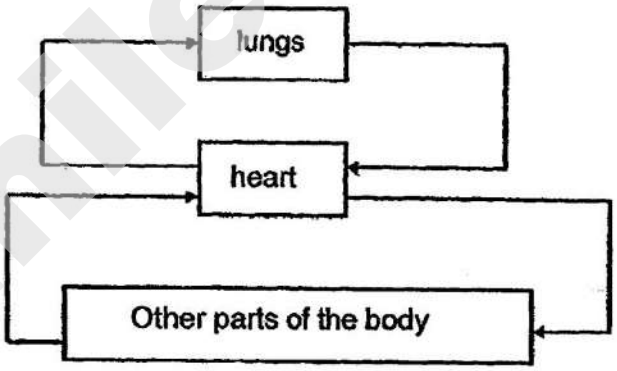


Diagram B

(b) Based on the information in Diagrams A and B, state a difference in the direction between the transport of water in an animal and in a plant. [1]

_____

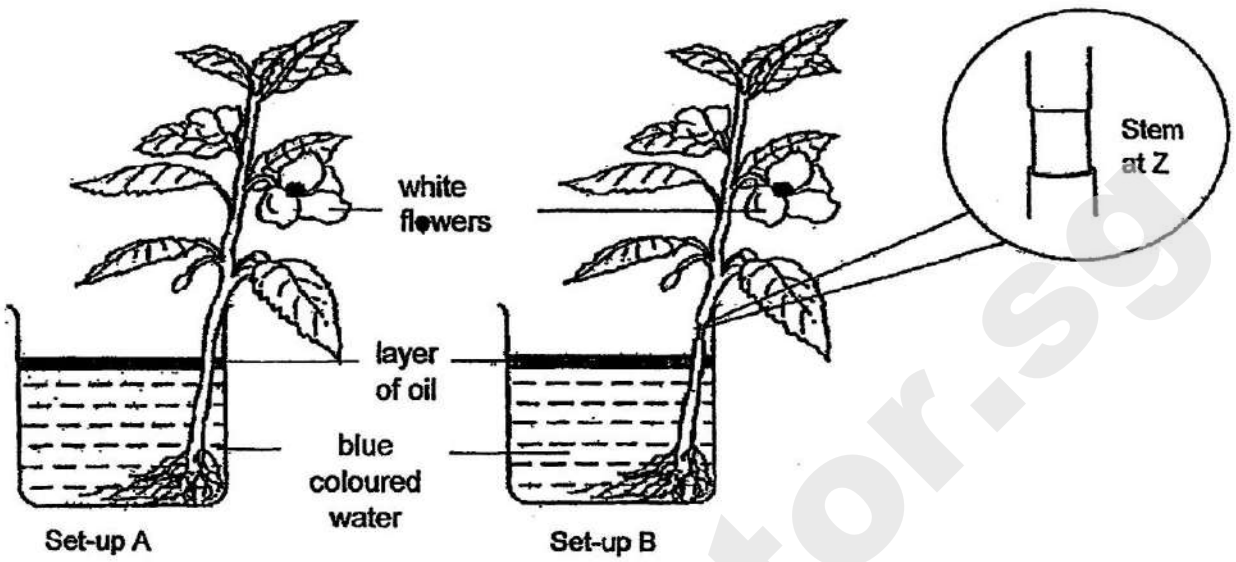
_____

SCORE	2

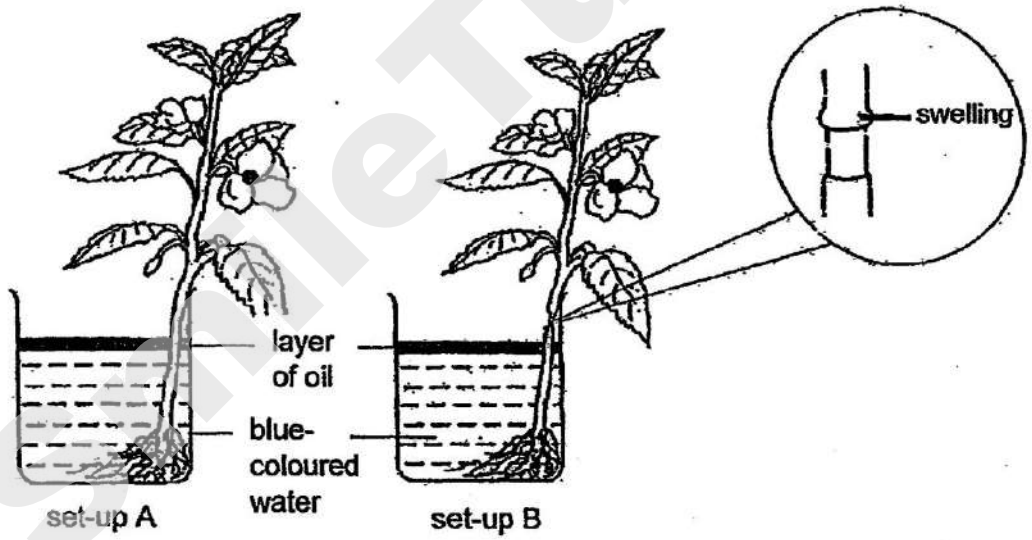
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34. Mary conducted the experiment as shown below. A small ring of the outer layer of the stem in set-up B has been removed.



Both set-ups were placed in an open field. After two days, Mary observed swelling only above the ring of the stem at Z in set-up B as shown below.



Based on the information above, answer the following questions.

(a) Explain the presence of the swelling above the ring of the stem in set-up B. [1]

_____

_____

SCORE	/ 1

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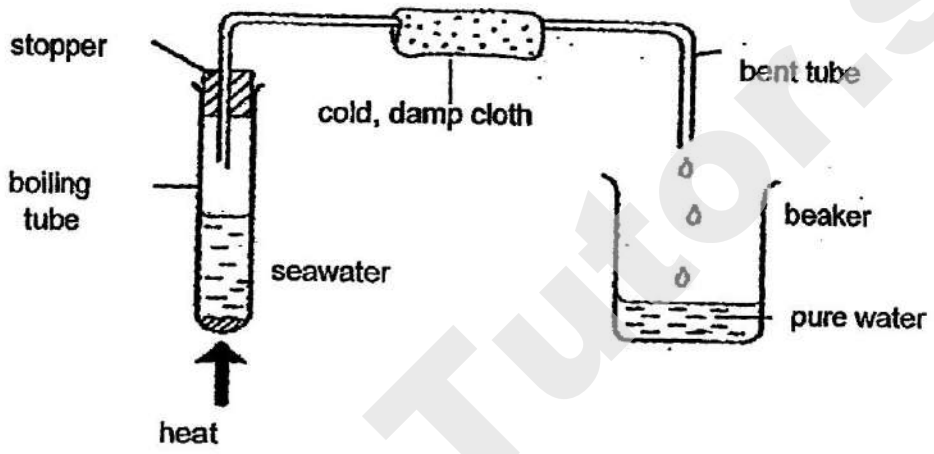
Continued from previous page

(b) Would Mary observe any changes to the flowers in both set-ups A and B after two days? Explain your answer. [2]

_____

_____

Tiffany wanted to collect some pure water from the seawater. She set up an experiment using the given apparatus. The diagram below shows her observation after fifteen minutes.



(a) What would be left in the boiling tube after all the water has been boiled completely? [1]

_____

(b) What are the two important processes that must have taken place for pure water to be collected? [2]

(i) _____

(ii) _____

(c) Suggest two ways she could make to the set-up above in order to collect more water within fifteen minutes of her experiment? [2]

(i) _____

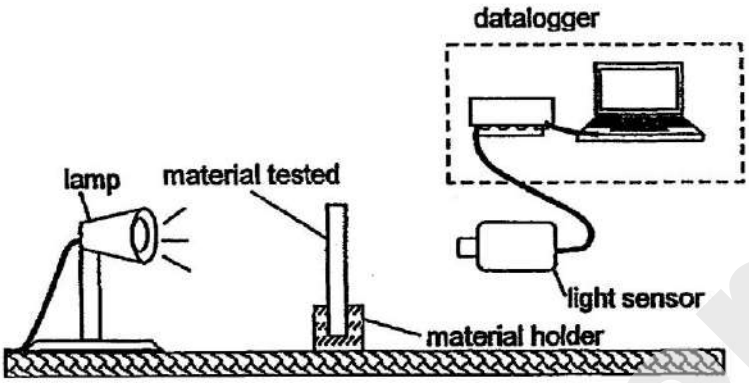
(ii) _____

SCORE	/ 7

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36. Fariq used a datalogger to measure the amount of light that passed through different types of materials, D, E and F. The amount of light from the torch is 1000 lux. He set up the experiment in a dark room as shown in the diagram below.



He recorded the results in the table below

Materials	Amount of light detected (lux)
D	750
E	0
F	156

(a) Based on the results, which material is most suitable to be used to make curtains to block out light completely? Give a reason for your answer. [1]

_____

_____

(b) Suggest a reason why the amount of light detected by each material is different. [1]

_____

_____

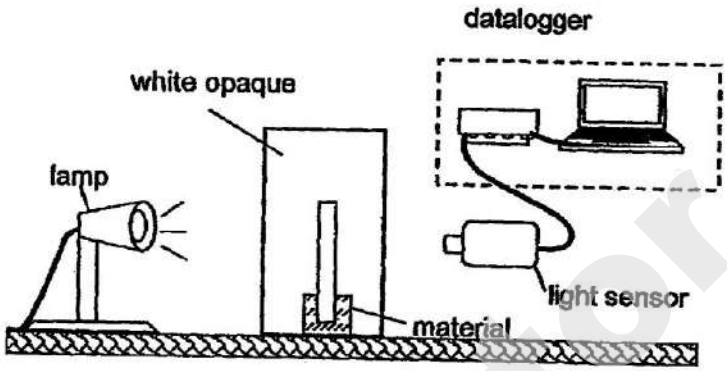
SCORE	2

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(c) Fariq added a white opaque card in front of the lamp. What would he Observe about the amount of light detected by the light sensor for materials D and F? Explain your answer. [2]

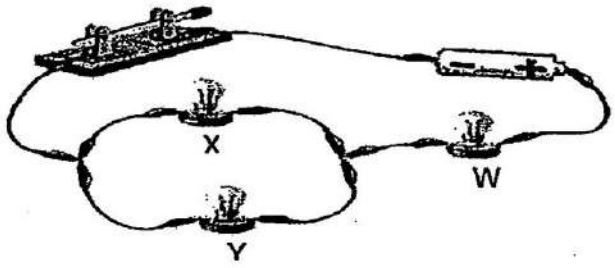


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SCORE	2

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37. Joseph set up an electrical circuit as shown in the diagram below.



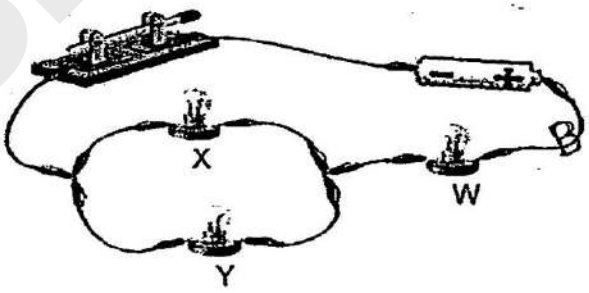
(a) What will Joseph observe if bulb Y fuses? Give a reason for your answer. [1]

_____

_____

(b) Using all the three bulbs, battery and switch, draw a circuit diagram where the bulbs are rearranged such that they are brighter than the circuit above. [2]

(c) Joseph observed that the three bulbs became dimmer when he added a bulb to the circuit. Label the additional bulb with the letter "B" on the electrical circuit below to indicate where he placed the bulb. [1]

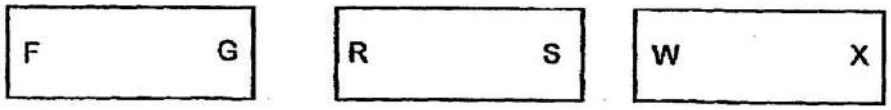


SCORE	/ 4

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38. Sally's teacher wrapped three objects A, B and C individually with the ends labelled as shown below.



Object A Object B Object C

The three objects are iron rod, copper rod and a magnet.

(a) Sally used a bar magnet to test and found out that Object B is a magnet. What observations should be made to confirm that object B is a magnet? [1]

_____

_____

(b) Using only the three objects given above, what can Sally do to find out if object A is an iron rod? [1]

_____

_____

SCORE	/ 2

END OF PAPER

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SCHOOL : RAFFLES GIRLS' PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA2

CONTACT :

SECTION A

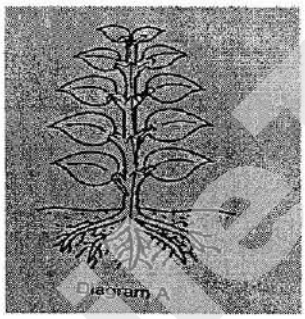
Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	1	1	4	2	1	3	3	3	4
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	1	3	2	1	2	1	4	3	2
Q 21	Q22	Q23	Q24	Q25					
1	3	2	2	3					

SECTION B

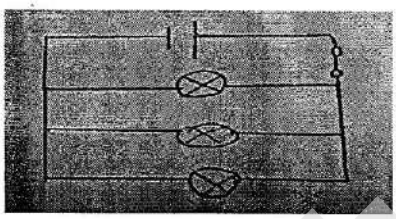
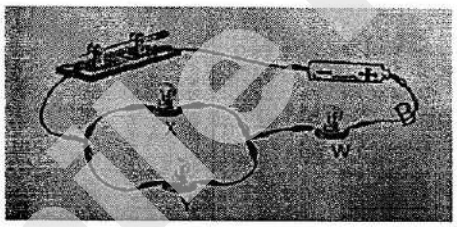
Q26)	a) It is the ovary. It produces female reproductive cells and releases the female reproductive cells to the womb. b) i. Q ii. X
Q27)	a) As the mass of the seed is lesser, the distance travelled by the seed is further. b) Seeds A and B. c) She should repeat the experiment a few times and calculate the average.
Q28)	a) Set-up B and D. b) Measure the mass of the potted plant at the beginning and the end of the week. c) It is to prevent the water from evaporating and ensuring it is a fair test for the water will not escape.

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Q29)	a) Part A → Skull, Part B → ribcage b) i. to give the body its shape ii. to protect the organs in the body like the heart and the lungs
Q30)	a) The plant cell has a cell wall and large vacuole but an animal cell does not have both b) Nucleus.
Q31)	Fish → Gills, Man → lungs
Q32)	a) As the breathing rate of the man increases, the heart rate of a man also increases. b) Any activity that is vigorous, more energy is needed at the cells so the heart will pump faster so more blood can deliver more oxygen and digested food to cells for respiration to release more energy.
Q33)	a)  b) The plant only has the water and food going in one direction where as the human has water transported with double circulation.
Q34)	a) The food that was made by the leaves needs to be transported to all parts of the plant but the food-carrying tubes were cut off. Thus the food was stored there. b) Both flowers turn blue. The xylem is still intact so blue water absorbed by the roots can be still transported.
Q35)	a) Salt. b) i. evaporation ii. condensation c) i. make the flame bigger ii. increase surface area of the container

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Q36)	a) E. The amount of light detected was zero which shows that it is an opaque material. b) They are made of different materials and might be transparent, translucent or opaque. c) Zero lux. Light cannot pass through opaque things and it is surrounding the material.
Q37)	a) The other light bulbs are still up. It is still a closed circuit and allow electricity to flow through it. b)  c) 
Q38)	a) Either end R or end S of object B should repel with one end of the magnet to confirm that object B is a magnet. b) Observe if a magnet is attracted to A.

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24

Rosyth School
Second Semestral Examination for 2018
SCIENCE
Primary 5

Name: _____

Total Marks: 56

Class: Pr 5 - ____ Register No. _____ Duration: 1 h 45 min

Date: 31 Oct 2018 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 28 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.

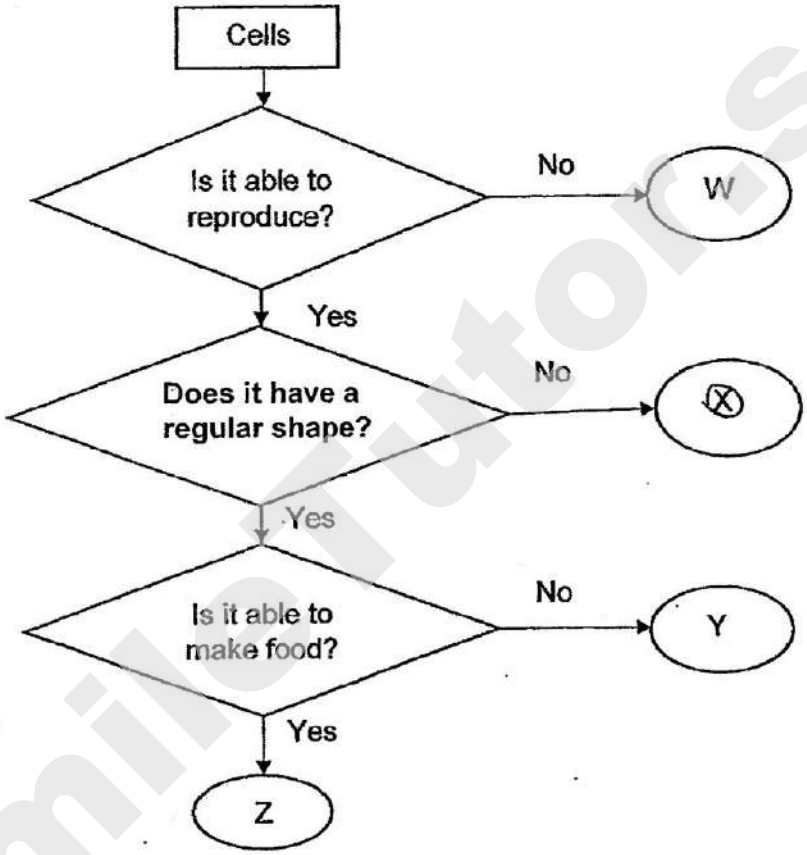
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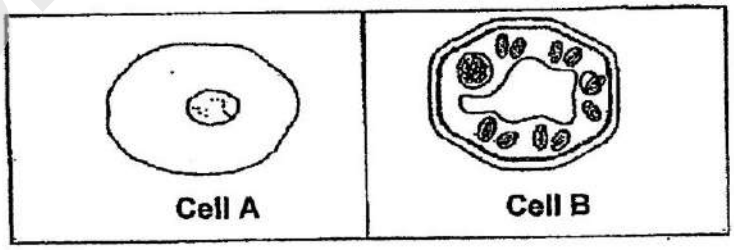
Part I

For each question from 1 to 28, 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.** **(56 Marks)**

1. Study the flowchart below.



Which one of the following identifies Cells A and B correctly?

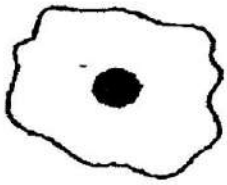
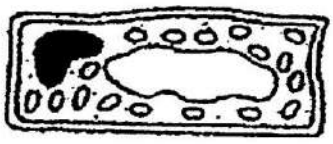
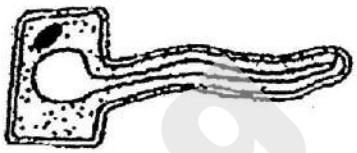


	Cell A	Cell B
(1)	W	Z
(2)	X	Y
(3)	Y	Z
(4)	X	Z

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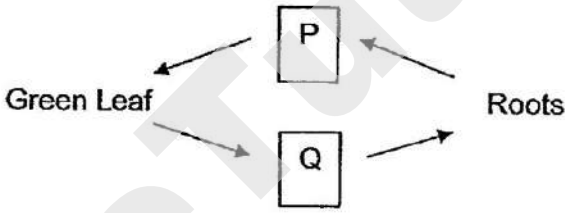
2. Study the three different cells below.

Which of the following statements is true for all the three cells?

(1) They can make food.
(2) They are animal cells.
(3) They have a nucleus and cell membrane.
(4) They contain cytoplasm and have cell wall.

3. Study the diagram below.



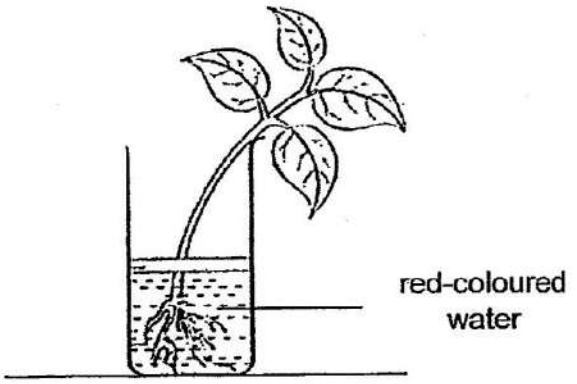
Which of the following correctly represents P and Q?

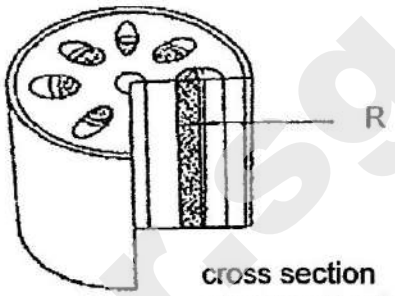
	P	Q
(1)	water carrying tube	water carrying tube
(2)	water carrying tube	food carrying tube
(3)	food carrying tube	food carrying tube
(4)	food carrying tube	water carrying tube

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4. A plant was placed in a beaker of red-coloured water. After a few hours, a cross section of the stem was cut out and part R was observed to be stained red.



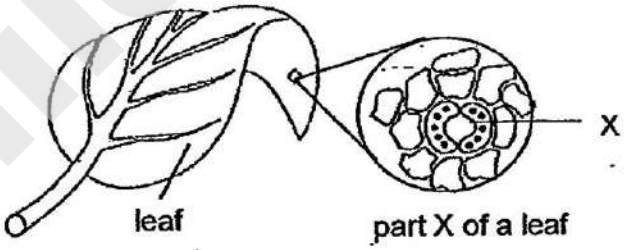


cross section of stem after 3 hours

Which one of the following statements describes why part R was stained red?

(1) Water was carried from the leaves to the root.
(2) Sugar was carried from the leaves to the roots.
(3) Sugar was carried from the roots to the leaves.
(4) Water was carried from the roots to the leaves.

5. The diagram below shows part X of a leaf.



leaf

part X of a leaf

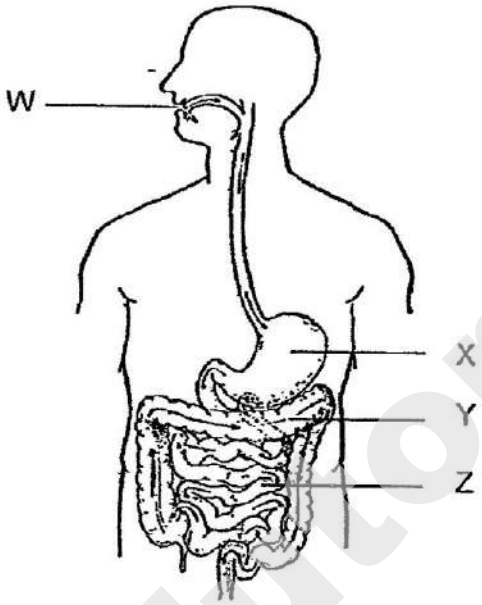
Which one of the following statements is correct about X?

(1) Sunlight is trapped by part X.
(2) Gaseous exchange occurs at X.
(3) Only water vapour is lost through part X.
(4) Only carbon dioxide is taken in through part X.

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6. The diagram below shows the parts of a human digestive system.



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

(1) Digestion of food ends at X.
(2) Digestion of food begins at W.
(3) Digestive juices are produced at W, X and Y.
(4) Water is removed from undigested food at Z.

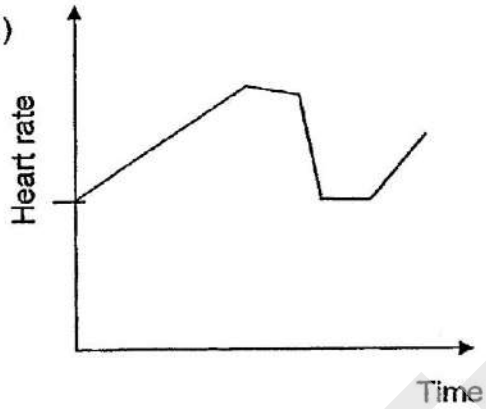
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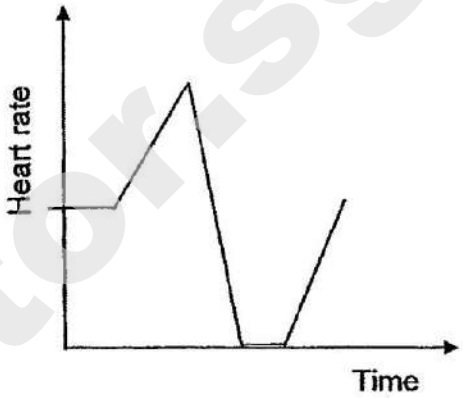
7. Joel went for his morning exercise. He ran to the entrance of a park. Then, he took a brisk walk in the park before resting on a bench. After that, he decided to run home.

Which one of the following graphs shows the changes in Joel's heart rate from the time he left his house to the time he reached home?

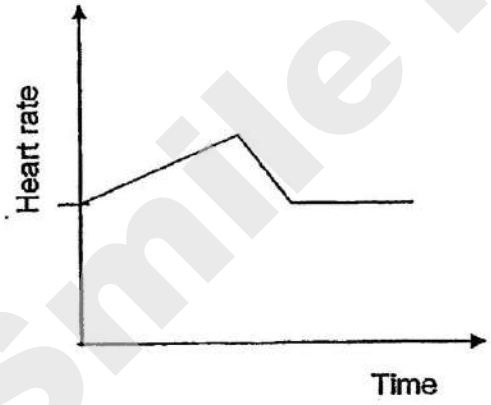
(1)



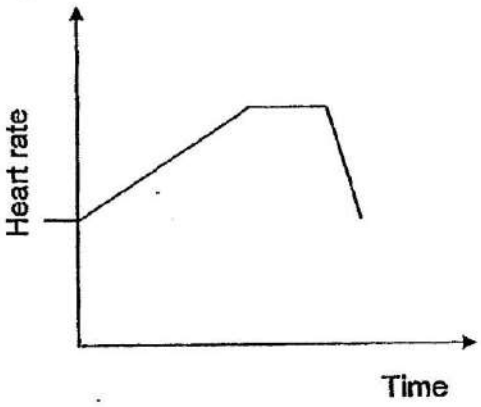
(2)



(3)



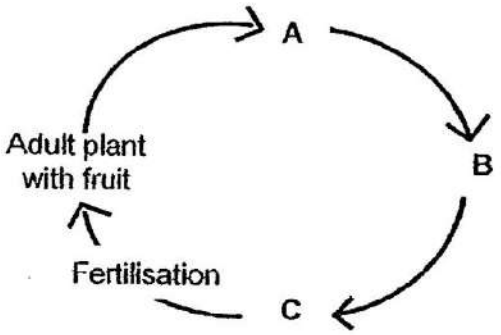
(4)



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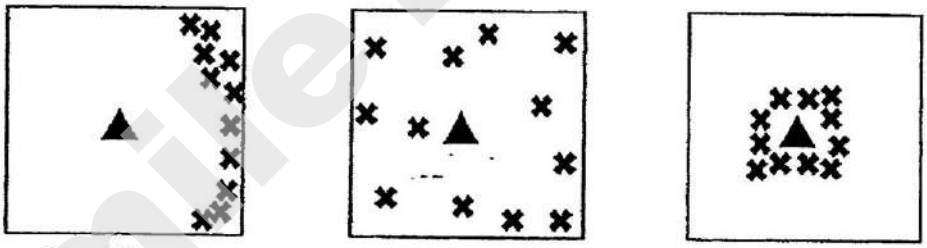
8. The diagram below shows the developmental stages of a flowering plant and the point at which fertilisation occurs.

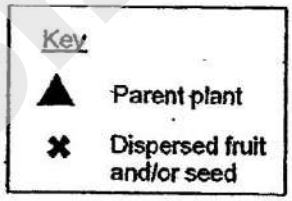


Which one of the following shows the correct stages?

	A	B	C
(1)	young plant	adult with flowers	seed
(2)	seed	young plant	adult with flowers
(3)	adult with flowers	young plant	seed
(4)	seed	adult with flowers	young plant

9. Three different types of plants, P, Q and R, dispersed their fruits and/or seeds on land as shown below. The seeds germinated and grew into young plants.



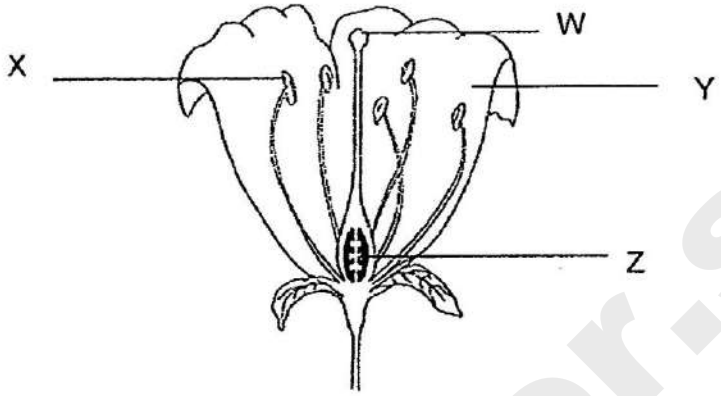


Which one of the following are likely characteristics of the fruits and /or seeds of the plants?

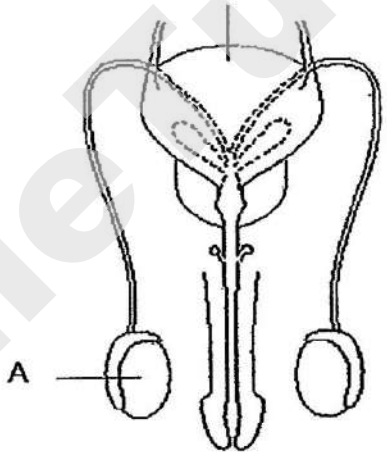
	Plant P	Plant Q	Plant R
(1)	wing-like structure	stiff hairs	splits open when ripe
(2)	splits open when ripe	brightly-coloured fruit	dries when ripe
(3)	pod-like structure	stiff hairs	wing-like structure
(4)	stiff hairs	fibrous husk	wing-like structure

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10. The diagram below shows a plant and human reproductive system



Plant Reproductive System



Male Reproductive System

Which part X, Y, W or Z, has the same function as part A?

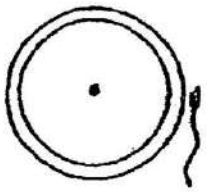
(1) X
(2) Y
(3) W
(4) Z

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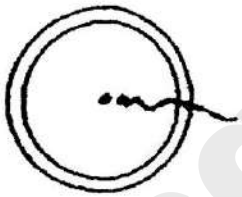
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11. Which one of the following diagrams correctly shows that fertilisation of a human egg by a sperm is about to take place?

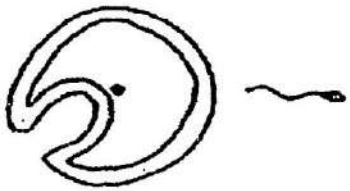
(1)



(2)



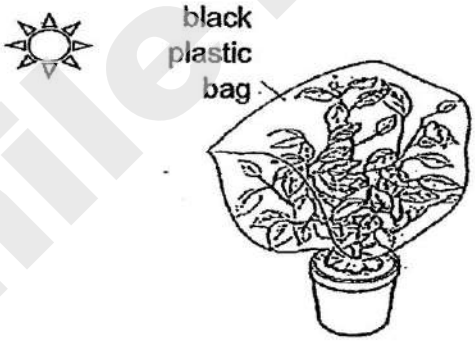
(3)



(4)



12. Susie put a well-watered plant into a black plastic bag. Then she tied the bag with a string and placed it under the Sun for several hours.



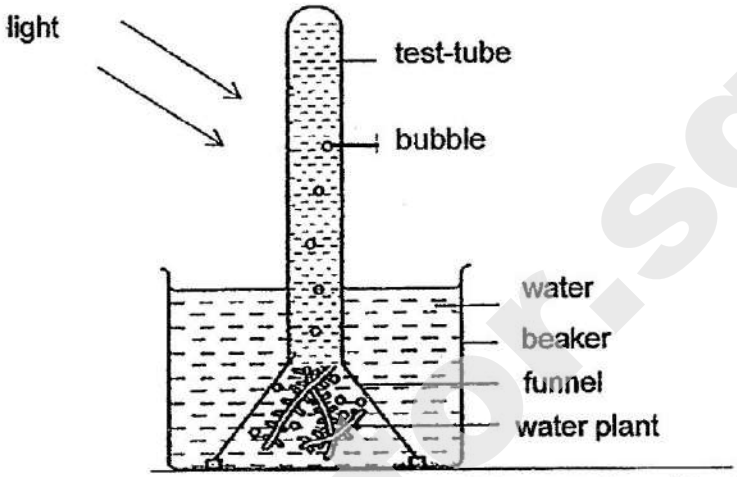
Which one of the following shows the changes in the amount of oxygen and carbon dioxide in the bag during that period of time?

	Amount of oxygen	Amount of Carbon dioxide
(1)	Increased	Increased
(2)	Decreased	Decreased
(3)	Increased	Decreased
(4)	Decreased	Increased

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13. Phyllis carried out an experiment to find out about the relationship between the colour of light and the rate of photosynthesis. The diagram below shows her set-up.



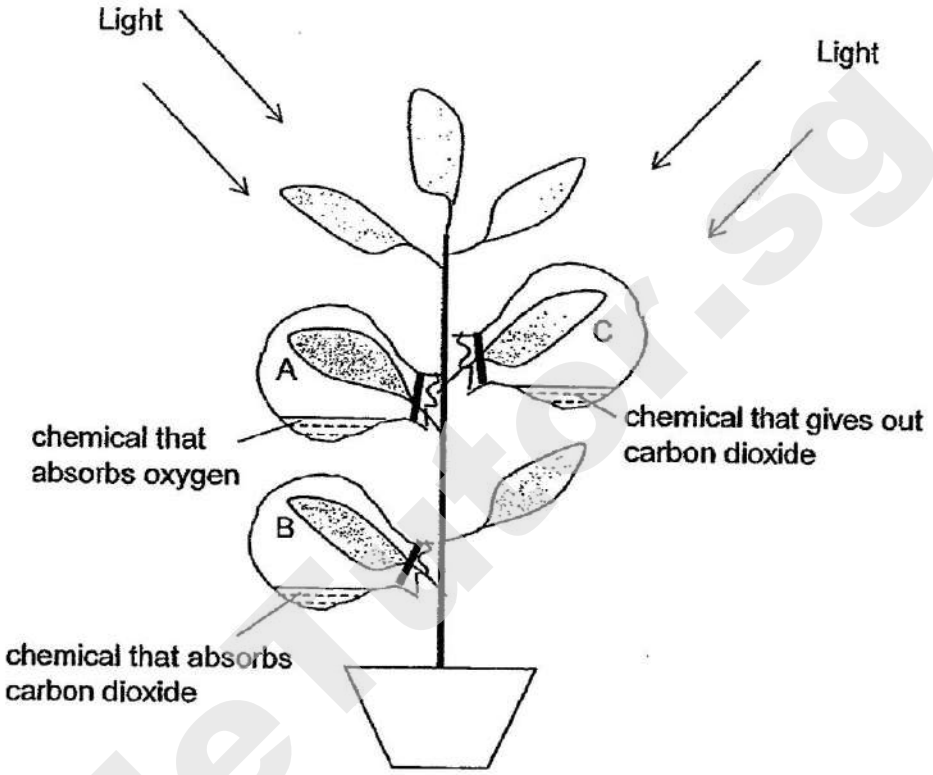
Which of the following must she record at the end of the experiment for her results?

(1) Intensity of light
(2) Volume of water in the beaker
(3) Amount of oxygen collected in the test tube
(4) Amount of carbon dioxide bubbles in the test tube

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14. Ruby wanted to conduct an experiment on photosynthesis. Before she started her investigation, she left a plant in a dark cupboard for 48 hours. She then set up her experiment in the garden as shown below.

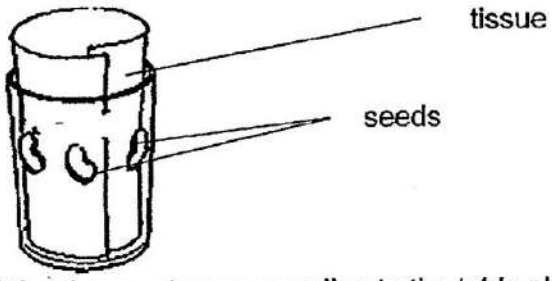


After four hours, Ruby removed leaves A, B and C, and conducted a starch test on the leaves. Iodine is a brown liquid that turns dark blue in the presence of starch.
Which one of the following sets of results would she most likely obtain?

	Leaf A	Leaf B	Leaf C
(1)	It turned dark blue.	It turned dark blue.	It remained brown.
(2)	It turned dark blue.	It remained brown.	It turned dark blue.
(3)	It remained brown.	It turned dark blue.	It remained brown.
(4)	It remained brown.	It remained brown.	It turned dark blue.

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15. Halim prepared three set-ups similar to the one shown below.



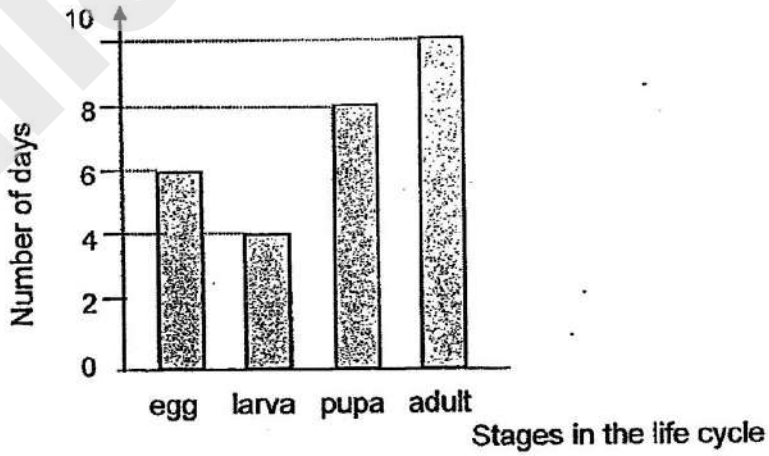
He prepared the three set-ups according to the table shown below.

Set-up	Presence of Water	Place
E	Yes	Refrigerator
F	Yes	Near Window
G	No	Refrigerator

Which one of the following is a possible aim of his experiment?

(1) To find out if seeds need air to germinate
(2) To find out if seeds need water to germinate
(3) To find out if seeds need warmth to germinate
(4) To find out if seeds need warmth and water to germinate

16. The graph below shows the duration of each stage of the life cycle of an organism.

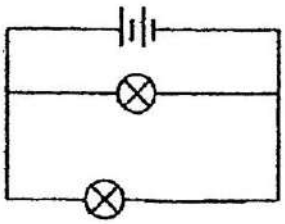


Based on the graph above, at what stage of development will the organism be on the 5th day after it has hatched?

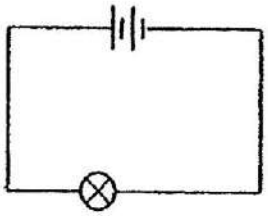
(1) egg
(2) larva
(3) pupa
(4) adult

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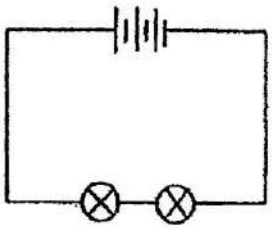
17. Miguel set up four electrical circuits as shown below.



Circuit E



Circuit F



Circuit G



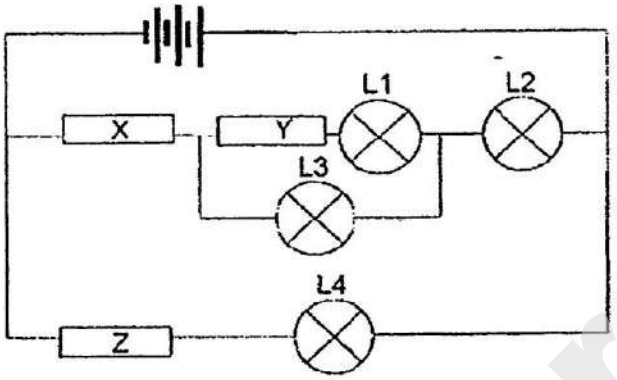
Circuit H

Which of the following set-ups correctly match the experimental aim?

	Set-ups	Experimental aim
(1)	E and G	To find out how the number of bulbs affects the brightness of the bulbs
(2)	E and H	To find out how the arrangement of bulbs affects the brightness of the bulbs
(3)	F and G	To find out how the number of bulbs affects the brightness of the bulbs
(4)	F and H	To find out how the arrangement of bulbs affects the brightness of the bulbs

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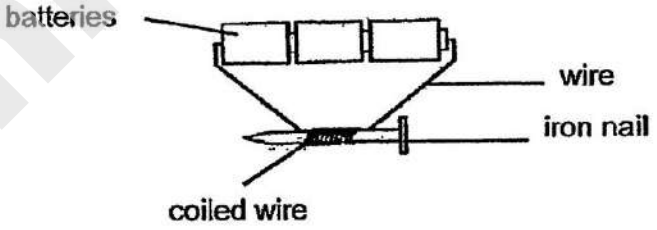
18. Three rods, X, Y and Z, of unknown materials were placed in the circuit below.



The only light bulbs that lit up were L2, L3 and L4.
Which one of the following shows the most likely materials used for each rod?

	X	Y	Z
(1)	Steel	Glass	Copper
(2)	Glass	Copper	Wood
(3)	Glass	Wood	Copper
(4)	Steel	Copper	Copper

19. The diagram below shows an electromagnet.



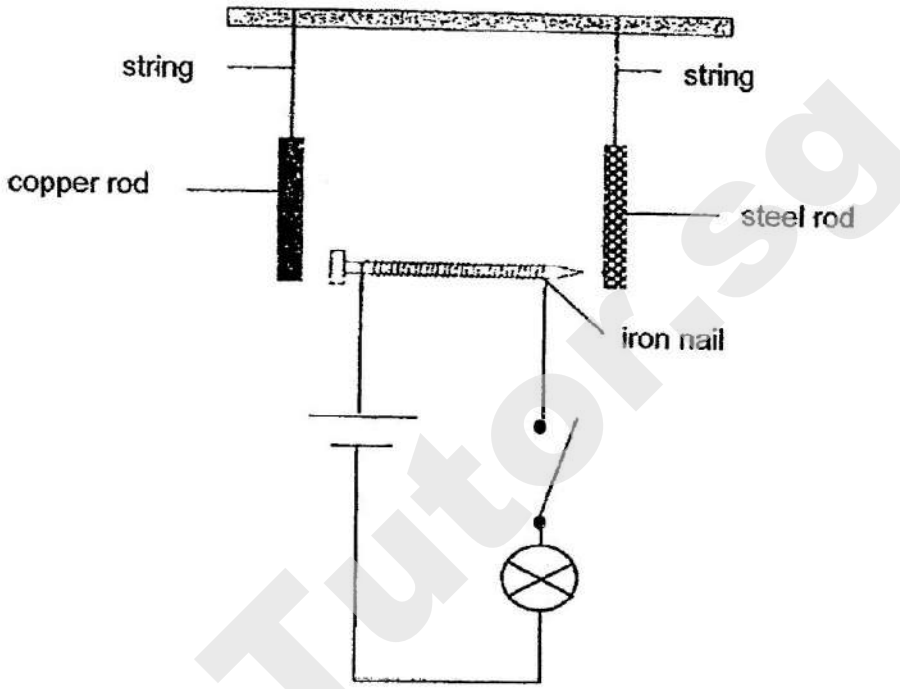
Which of the methods below will increase the strength of the electromagnet?

(1) Increase the length of wire used
(2) Change the iron nail to a plastic nail
(3) Change the direction of the batteries
(4) Increase the number of wire coils around the iron nail

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20. An iron nail was placed near a copper rod and a steel rod as shown in the set-up below.



Which of the following is/are observed when he closes the switch?

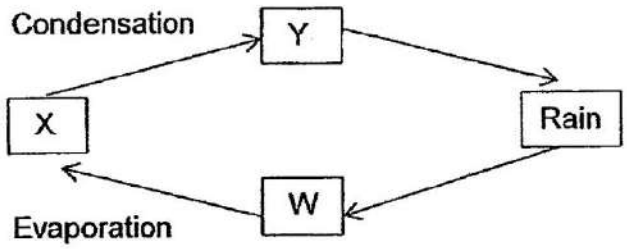
A: The bulb lights up.
B: The steel rod moves towards the iron nail.
C: The copper rod remains at the same position.
D: Both the steel rod and copper rod will move towards the iron nail.

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

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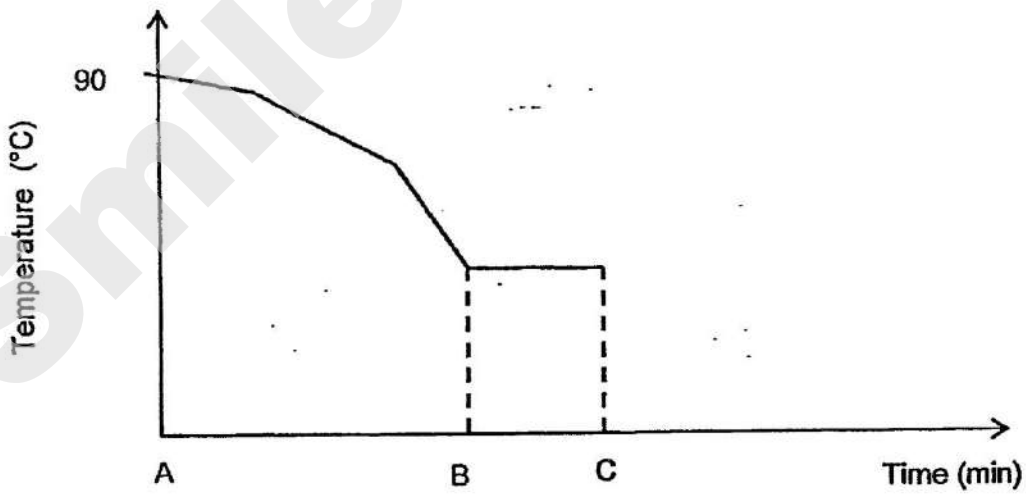
21. The diagram below shows the water cycle. The arrows show the different stages of water in motion.



In which stage(s), X, Y or W, in the water cycle does water exist in the liquid state?

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

22. The graph below shows the changes in the temperature of a bowl of water at 90°C which was left on the table over a period of time.



Which one of the following statements is correct?

(1) Water freezes from B to C.
(2) Water loses heat from B to C.
(3) Evaporation takes place from A to C.
(4) A change in state of water takes place only at B.

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23. The table below shows the melting points and boiling points of substances P, Q, R and S.

Substance	Melting Point (°C)	Boiling Point (°C)
P	48	189
Q	20	115
R	5	79
S	10	55

At which temperature will two of the above substances be in its liquid state?

(1) 45 ^{0}C
(2) 70 ^{0}C
(3) 110 ^{0}C
(4) 130 ^{0}C

24. Jane placed some freshly baked cookies from the oven into a covered glass jar as shown in the diagram below.



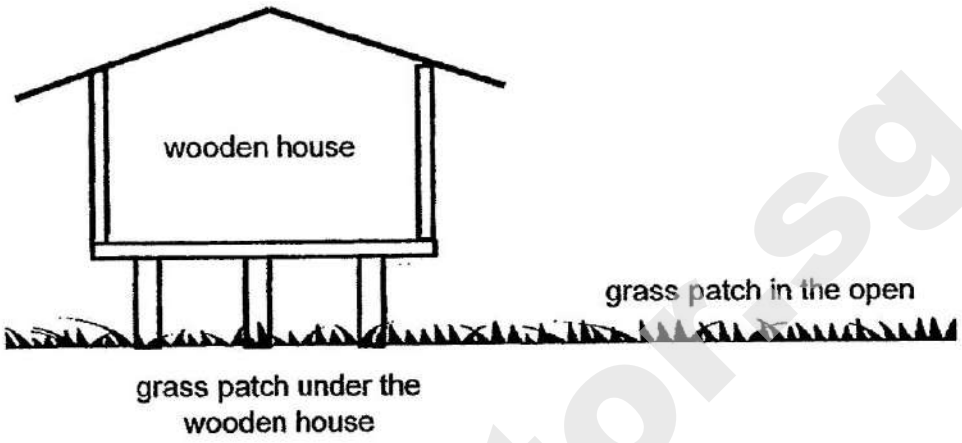
After 30 minutes, she removed the lid to take a cookie to eat but she noticed that the cookies on the top layer were damp.

Which one of the following correctly explains her observation?

(1) Water vapour in the jar condensed onto the warm cookies.
(2) The surrounding air in the jar condensed onto the warm cookies.
(3) The surrounding air in the jar gained heat and condensed onto the cool lid.
(4) Hot water vapour from the cookies lost heat and condensed onto the cool lid.

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25. A wooden house was built on a grass patch.



After two months, it was observed that the grass patch under the wooden house turned yellow while the grass patch in the open was still green.

Which of the following best explains the observation for the grass patch under the wooden house?

(1) There was not enough water.
(2) There was not enough oxygen.
(3) There was not enough sunlight.
(4) There was not enough chlorophyll.

26. What are the properties of matter?

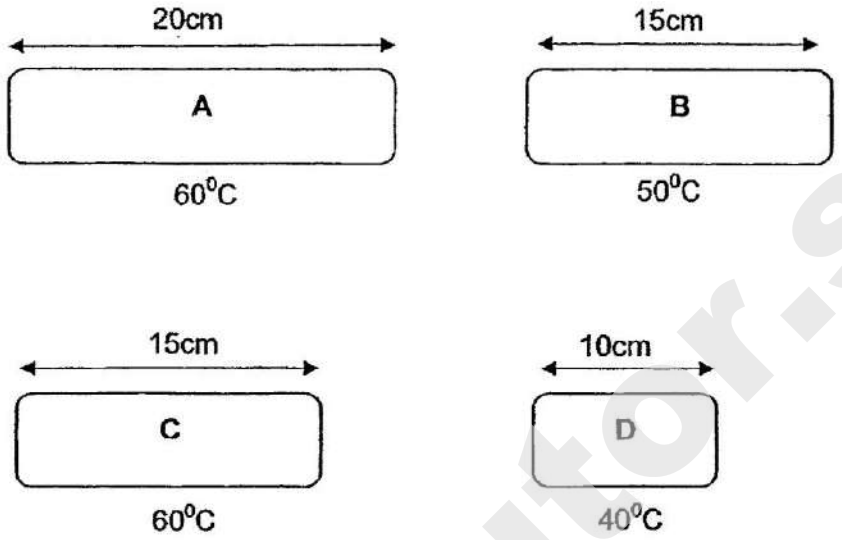
A: It has mass.
B: It occupies space.
C: It cannot be compressed.

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

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27. Four steel rods of equal thickness but different lengths were heated to the temperatures indicated in the diagrams below.

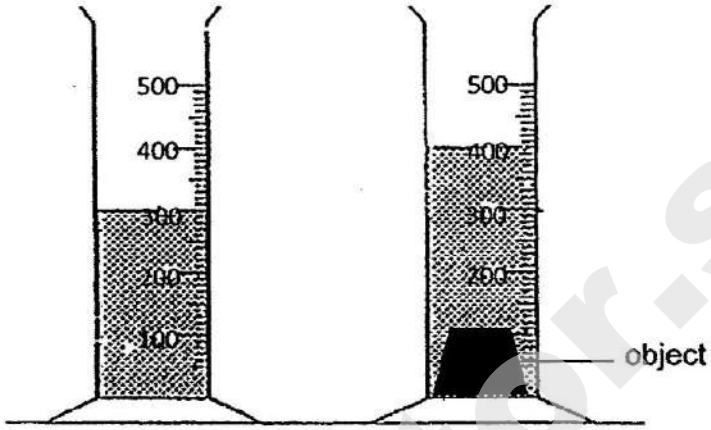


Ali wanted to investigate if the amount of heat the object has is affected by the mass of the object and its temperature. Which one of the following should he compare?

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

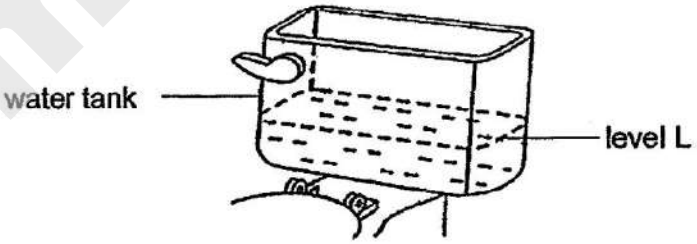
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28. Ali recorded the water level before and after four objects were placed in a measuring cylinder.



Object	Water level before object is placed (cm^3)	Water level after object is placed (cm^3)
W	300	310
X	300	320
Y	300	330
Z	300	315

Ali studied the water tank used for flushing a toilet bowl in his house as shown below. After flushing, water enters and re-fills the tank. The tank will stop filling when the water reaches level L.



Based on the results above, which object W, X, Y or Z should Ali put inside the water tank so that he would use the least water to flush the toilet?

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

End of Booklet A

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Rosyth School
Second Semestral Examination for 2018
SCIENCE
Primary 5

Total Marks: ____ / 100

Name: _____

Class: Pr 5 - _____ Register No. _____ Duration: 1 h 45 min

Date: 31 Oct 2018 Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 29 to 41, write your answers in the spaces given in this booklet.

	Maximum	Marks Obtained
Booklet A	56 marks	
Booklet B	44 marks	
Total	100 marks	

*** This booklet consists of 15 printed pages (including cover page).**

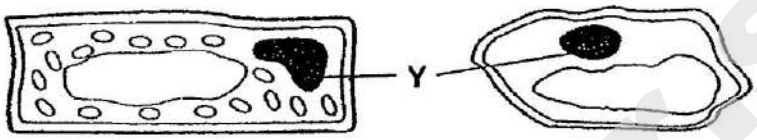
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Part II

For questions 29 to 41, write your answers in the space provided. **(44 Marks)**

29. The diagram below shows two different types of cells, A and B, from the same plant.



cell A cell B

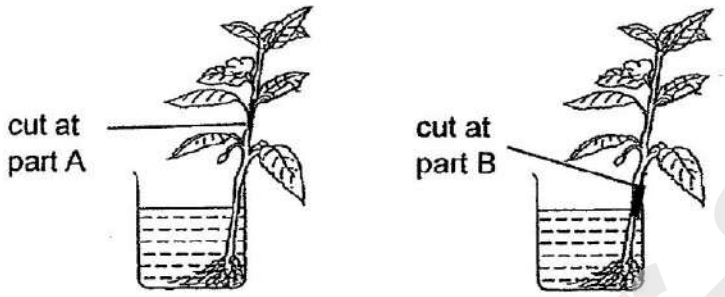
(a) What is the function of Part Y? [1]

(b) In which part of the plant are you likely to find cell A? [1]

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30. Study the diagram below. In plant X, the food carrying tube was removed from the stem at part A, while in plant Y, food carrying tube was removed at part B. The two plants were placed in beakers containing the same amount of water.



The observations of plants X and Y were recorded in the table below.

Plants	Observations made after 1 week
X	• The stem above the cut ring swells a little.
	• The roots were healthy.
Y	• The stem above the cut swells a little.
	• The roots were unhealthy.

(a) What is stored in the swollen part of the stem? [1]

_____

(b) Based on the observation in the table, explain why the roots of plant X remained healthy while the roots of plant Y did not. [2]

_____

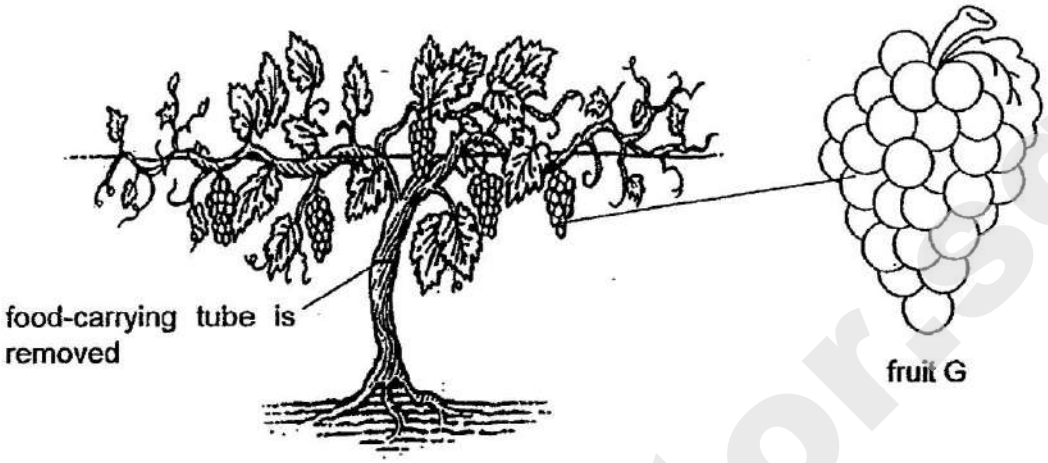
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Question 30 is continued on page 4

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Study the diagram below.

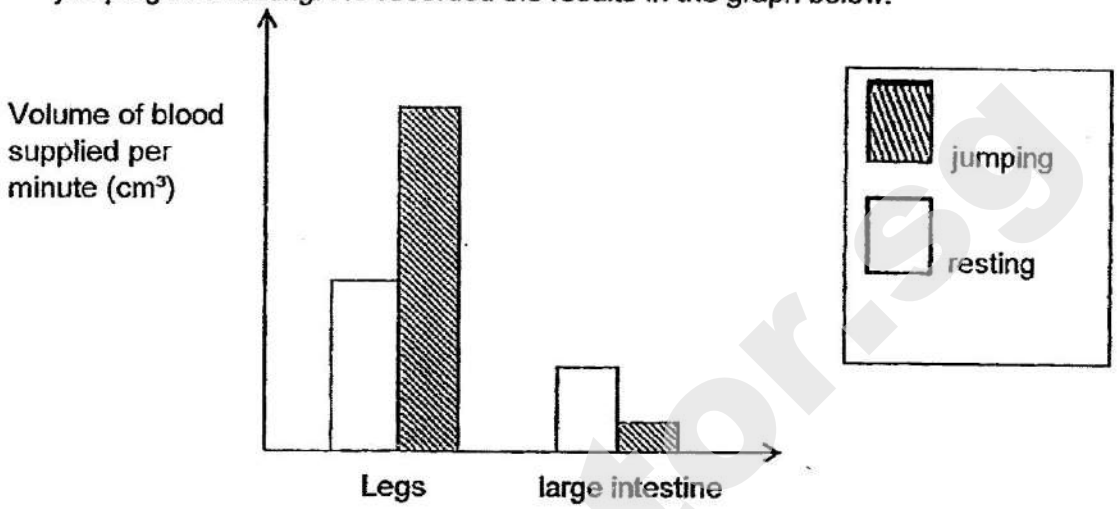


(c) A farmer said that if the food-carrying tube is removed, fruit G will grow bigger. Do you agree? Explain why. [1]

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31. Doctor Tan carried out an investigation to measure the volume of blood supplied per minute to different parts of the human body during two activities, jumping and resting. He recorded the results in the graph below.



(a) Besides oxygen, name two other substances that are transported in the blood. [2]

i) _____

ii) _____

(b) Based on the graph, would the amount of water absorbed by the large intestine decrease, increase or remain the same during the jumping activity? Explain why. [1]

_____

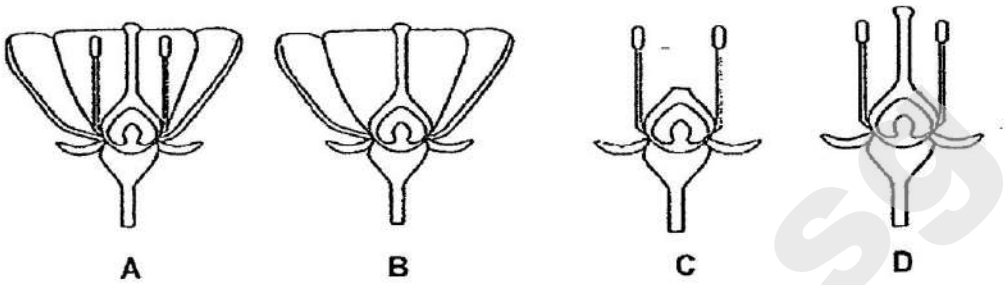
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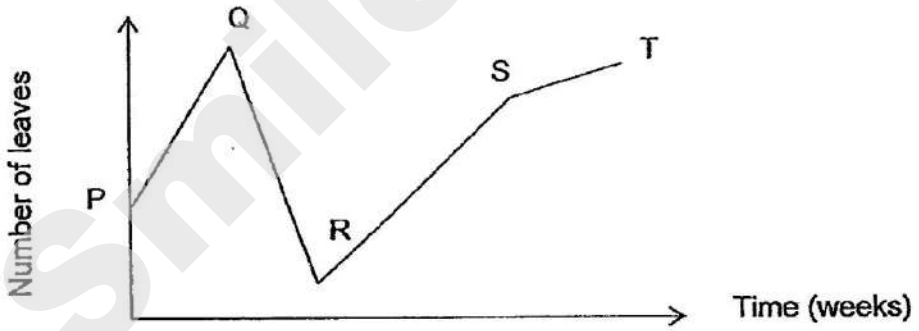
32. The diagram below shows four large and brightly-coloured flowers A, B, C and D from the same type of plant. Some parts of the flower have been removed.



(a) Which of the above flower(s) cannot develop into a fruit? [1]

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

This plant is grown in a garden where butterflies are found. The flowers from this plant are pollinated by butterflies. The graph below shows the number of leaves on this plant over a period of time.



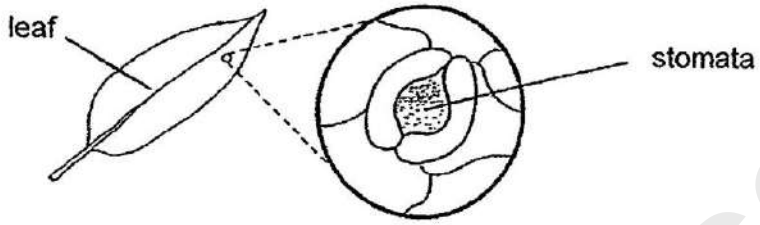
(c) At which part PQ, QR, RS or ST most possibly show the butterflies in the larva stage? [1]

(d) Pesticide was sprayed to kill the caterpillars found on the plant. How would this action affect the number of fruits produced? [1]

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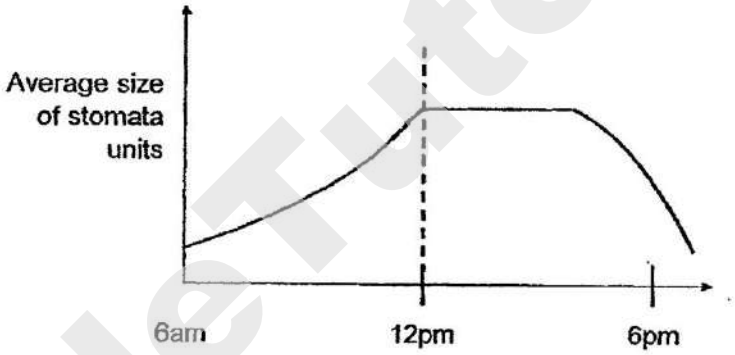
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33. Leaves have tiny openings called stomata on their surfaces.



Some of the gases that move through the stomata are oxygen, carbon dioxide and water vapour.

Ray measured the changes in the size of the stomata of a plant placed by the window at different times of a clear sunny day. He plotted the results as shown below.



(a) Based on his results, what effect did light have on the size of the stomata from 6 am to 12pm? [1]

_____

_____

(b) How does the change in the size of the stomata in (a) help in photosynthesis? [1]

_____

_____

(c) The change in size of the stomata in the presence of light can also be a disadvantage to the plant. What is this disadvantage? [1]

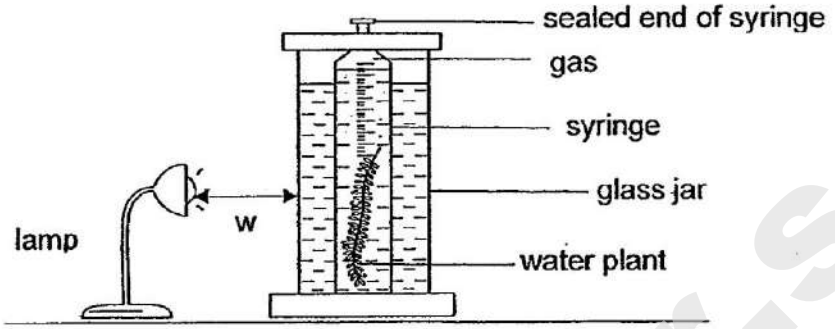
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34. Anna set up an experiment in a dark room as shown below. Light from the lamp was shone at the plant at a distance, w.



She repeated the experiment by placing the lamp at different distances from the glass jar. The results are shown in the table below.

W (cm)	Volume of gas collected after 1 hour (cm^3)
20	6
30	4
40	3

(a) Name the gas that was collected in the syringe. [1]

(b) Explain how the gas was formed. [1]

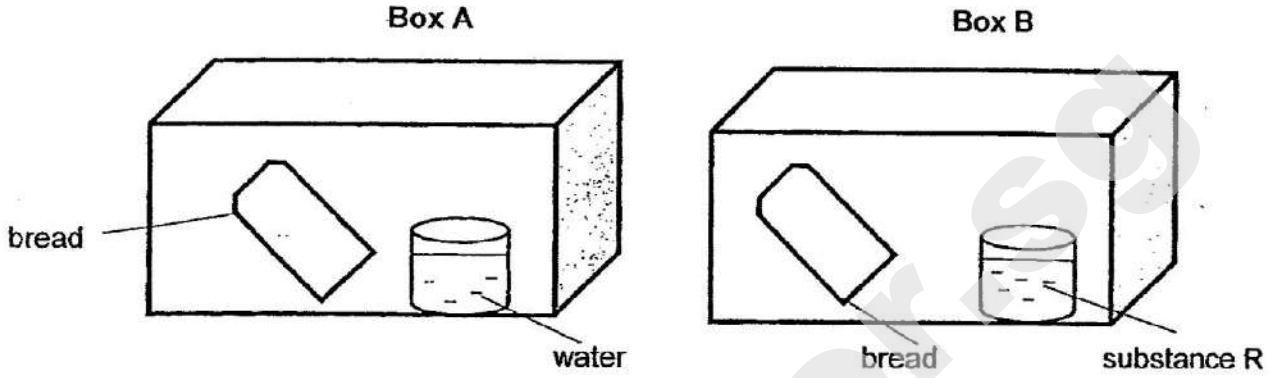
(c) Based on his results, what was the relationship between the distance, W, and the volume of gas collected? [1]

(d) Why must the experiment be conducted in a dark room? [1]

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35. Jane placed 2 identical slices of bread into two identical airtight boxes, A and B. She placed the boxes in a warm place. Substance R absorbs water vapour from the air.



(a) In which box, A or B, would fungus first appear on the bread? Give a reason for your answer. [1]

Jane bought a pair of leather shoes. When she opened the box, she found a packet of drying agent as shown in the diagram below.



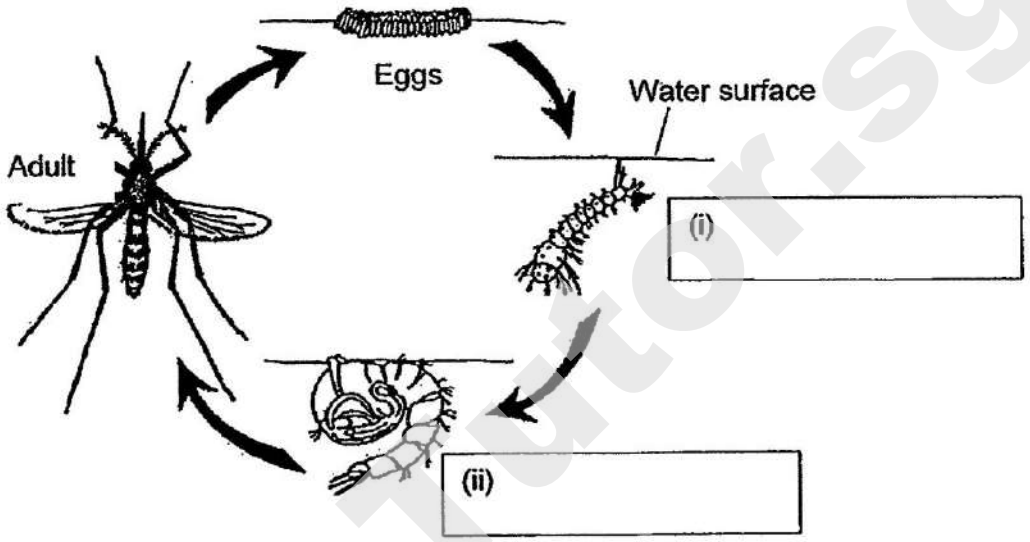
(b) Why was the drying agent included in the box? [2]

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36. Dengue fever is an illness caused by infection transmitted by the *Aedes* mosquito. Mandy studied the life cycle of the *Aedes* mosquitoes at different temperatures to investigate the relationship between the temperature of surrounding air and the number of dengue cases.

(a) Fill in the stages in the diagram above to complete the life cycle of a mosquito. [2]



The results of her study are shown below:

	Duration of stages across different temperatures (number of days)				
	16 °C	22 °C	28 °C	33 °C	36°C
egg	13	8	3	3	4
larva	20	13	6	7	6
pupa	7	4	2	3	4

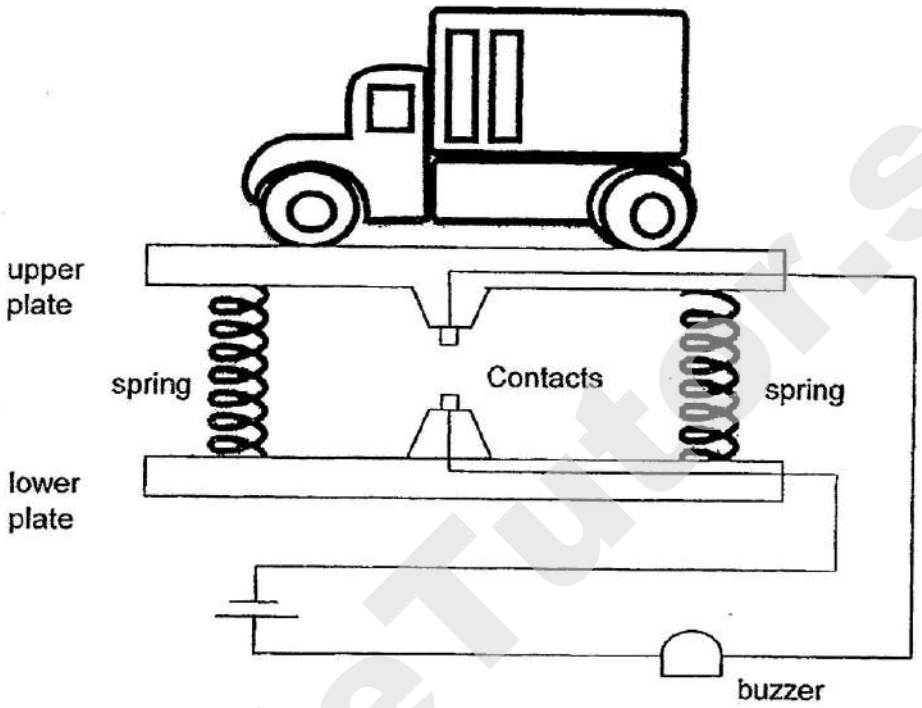
(b) Based on the results in the table above, what is the relationship between the temperature of the surroundings from 16°C to 28°C and the hatching period of the eggs of the *Aedes* mosquito? [1]

(c) At which temperature of surrounding air, will the cases of dengue most likely be the greatest? Explain your answer. [2]

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37. All trucks must not be more that 4000kg in mass in order to travel on a bridge. A device, set-up X, is used to check the mass of the truck before it is allowed to cross the bridge. If the truck is more that 4000kg, the springs will be pressed down and the buzzer will sound.



set-up X

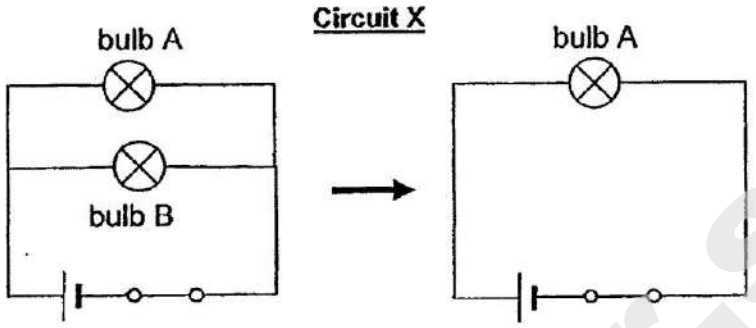
(a) What type of material are the contacts made of? [1]

(b) Explain how the buzzer will sound. [1]

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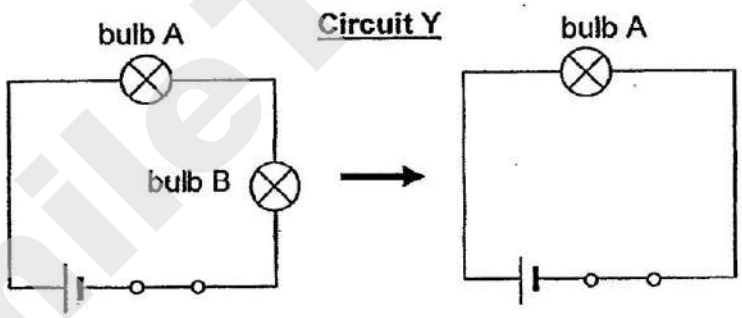
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38. The diagram below shows electric circuit X.



(a) Will bulb A remain lit when bulb B is removed as shown above? Give a reason. [1]

The electric circuit is rearranged to form circuit Y as shown below.



(b) What is the difference you observe in bulb A when bulb B is removed? Explain why. [2]

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39. State a similarity and a difference between evaporation and boiling. [2]

Similarity: _____

_____

_____

Difference: _____

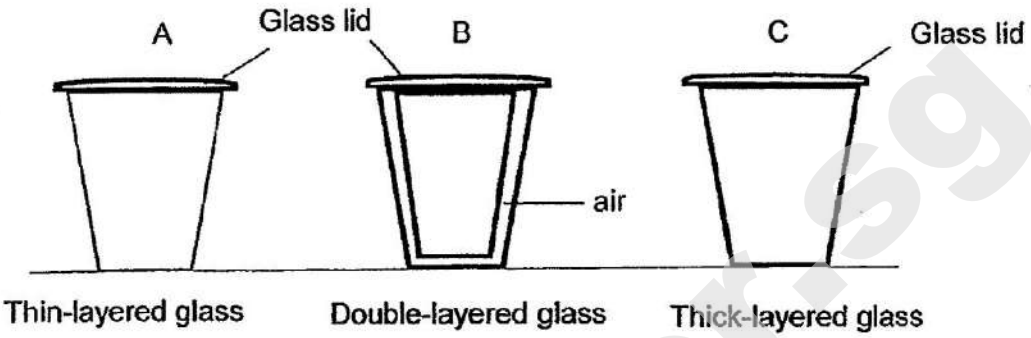
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40. Jimmy poured equal amounts of cold water into 3 cups, A, B and C. The cups were made of the same type of glass. He wanted to find out which cup is the best to keep the cold water cold for the longest time.



He placed the cups in the same place and observed the amount of water droplets formed on the outer surface of the cups over a period of 10 minutes. He recorded his observations as shown below.

Cup	Observations
☐	Some water droplets were formed.
☐	Very few water droplets were formed
☐	A lot of water droplets were formed.

(a) Write A, B and C in the table above to match the cups with the respective observations. [1]

(b) Explain why water droplets appeared on the outer surface of all the cups. [2]

_____

_____

_____

(c) The windows of most houses are made of glass.
Which glass A, B or C would be most suitable for the windows to keep a house warm during winter? Explain why. [2]

_____

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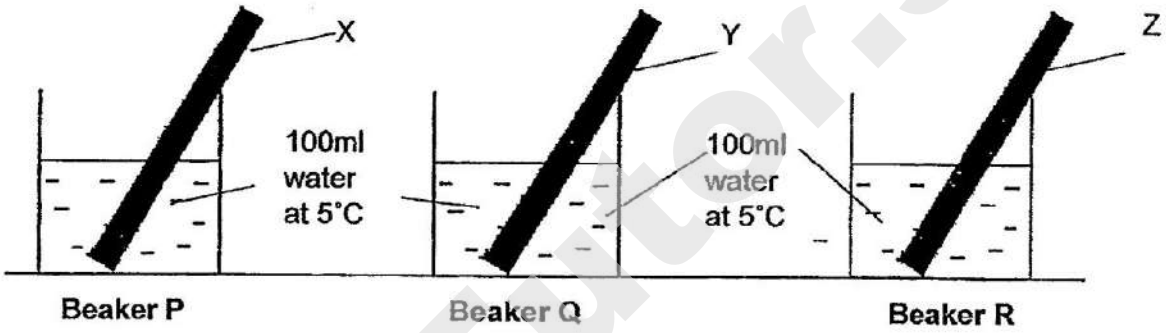
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41. Joyce was given three rods, X, Y and Z, which were made of different materials. When she touched the rods with her bare hands, X was the coldest, followed by Z and then Y.

(a) Explain why Joyce's hand felt cold when she touched the rods. [1]

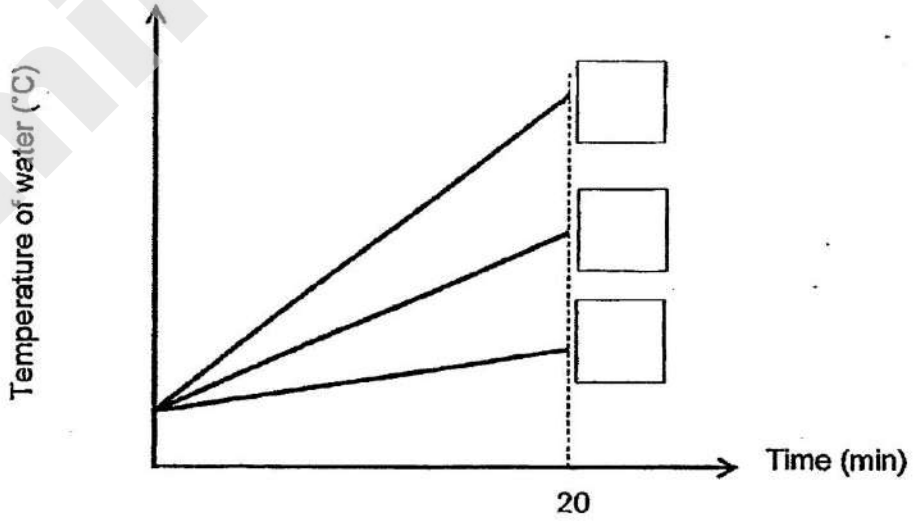
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Joyce then heated the three rods to 85°C. Then she placed each of them into a beaker of water as shown below.



She left the beakers in her room and measured the temperature of the water in each beaker over 20 minutes. The line graphs below show the results of her experiment.

(b) Label the line graphs below by writing P, Q and R in the correct boxes. [2]



End of Booklet B

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SCHOOL : ROSYTH PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA2

CONTACT :

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	3	2	4	2	2	1	2	1	1
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	4	3	2	3	3	2	1	4	4
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
2	3	3	4	3	2	1	3		

SECTION B

Q29)	a)Part Y controls all activities in the cell. b)Cell A can be found mostly in the leaves.
Q30)	a)Sugar made by the plant. b)IN plant X, there are leaves below the cut that can make food for the roots. While in plant Y, there are no leaves below the cut to make food for the roots. c)Yes, if the food carrying tubes are removed the food made by the leaves would not be transported downward and more food will be stored to the fruits.
Q31)	a)i)water ii)digested food b)Decrease Less blood is pumped to the large intestine.
Q32)	a)C. b)The stigma in C has been removed and pollination cannot take place. c)QR.

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	d)There will be fewer butterflies available fewer flowers will be pollinated, thus fertilization will decrease and fewer fruits will be developed.
Q33)	a)The size of stomata will increase. b)When bigger opening, more carbon dioxide can be absorbed, hence the rate of photosynthesis increases. c)Plant will lose too much water.
Q34)	a)Oxygen. b)Plants need light and carbon dioxide to photosynthesis and during the process, the plant also produces oxygen. c)The further the distance W, the volume of gas collected after 1 hour decreases. d)the other source of light.
Q35)	a)Box A. It has more water for fungus to survive and grow faster. b)The drying agent absorbs water and prevents fungus from growing.
Q36)	a)i)larva ii)pupa b)The higher the temperature of the surroundings from 16℃ to 28℃, the hatching period of the eggs of the Aedes mosquito decreases. c)28℃. The life cycle takes the shortest to develop into adult.
Q37)	a)Metals. b)When the trucks are more than 4000kg, the spring will be pushed down and the contacts will touch each other. When that happens, there will be a close circuit and the buzzer will sound.
Q38)	a)Yes. The circuit is closed so electric current can flow through the circuit. b)The brightness of bulb A will be brighter. The electricity produced by the batteries will be only needed to share with one electrical appliance instead of two.
Q39)	Similarity : Both are heat gain process. Both involves change in state from liquid to gaseous state.

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	Difference: Evaporation occurs at any temperature but boiling occurs at a fixed temperature.
Q40)	a)C B A b)The cup lost heat to the cold water, making the surface cooler for the water vapour in the surrounding air to lose heat and condense into water droplets. c)B. Air is a poor conductor of heat. This slows down heat transfer form warm house to colder surrounding.
Q41)	a)His hand lost heat to the rods, allowing his hands to be cold. b)P R Q

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29

Rulang Primary School

SEMESTRAL ASSESSMENT 2
SCIENCE
2018

Name: _____ ( ) **Marks:** ____ / 56

Level: Primary 5 **Total Time for Booklets**

Class: Primary 5 ( ) **A and B: 1 h 45 min**

Setter: Ms Poon Yin Foong **Date: 30 Oct 2018**

Total Marks: /100

BOOKLET A

Instructions to pupils:

1. **Do not open this booklet until you are told to do so.**
2. You are required to answer **all** the questions in this booklet.
3. This question booklet consists of **20** printed pages, including the cover page.

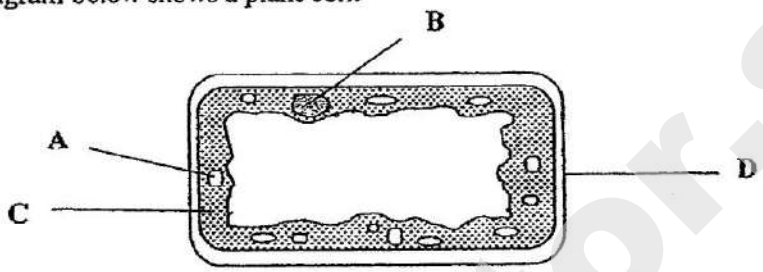
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Section A (28 x 2 marks)

For each of the questions from 1 to 28, 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 a plant cell.



Four pupils made the following statements about the plant cell.

Alex: Part A traps sunlight to make food.
Bala: Part B controls all activities of the cell.
Chloe: Part C controls the movement of substances in and out of the cell.
Danny: Part D protects the cell by preventing harmful substances from entering it.
↳ cell wall

Whose statements are correct?

(1) Alex and Bala only
(2) Alex and Chloe only
(3) Alex, Bala and Danny only
(4) Bala, Chloe and Danny only

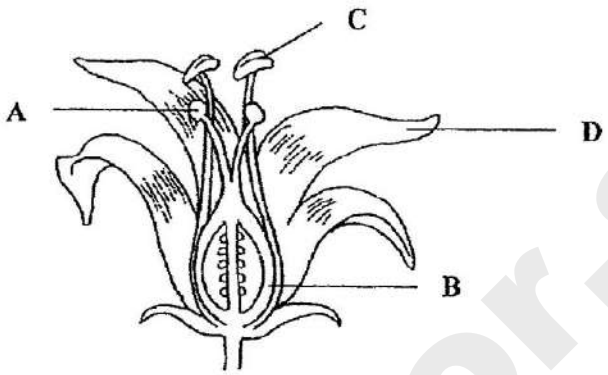
2. Ron accidentally cut himself while he was helping his mother with some chores. A few days later, the wound healed. Which one of the following statements best explains why the wound healed by itself?

(1) Cells grew bigger to replace the damaged cells.
(2) New cells are produced to replace the damaged cells.
(3) Cells around the wound grew bigger to cover up the wound.
(4) Cells from other parts of the body moved to cover up the wound.

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3. Bala wanted to find out which parts of a flower must be present in order for it to become a fruit. He removed two parts from flower X and then transferred some pollen grains from the anther of another flower of the same kind to the remaining parts of flower X. After some time, flower X developed into a fruit.



Flower X

Which two parts of flower X did Bala remove at the start of the experiment?

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

4. Study the table below carefully.

Dish	Number of Seeds	Amount of Water given (ml)	Location	Presence of Air
A	3	30	Garden	Yes
B	3	5	Garden	Yes
C	5	30	Garden	Yes
D	5	5	Cupboard	Yes
E	3	30	Cupboard	Yes

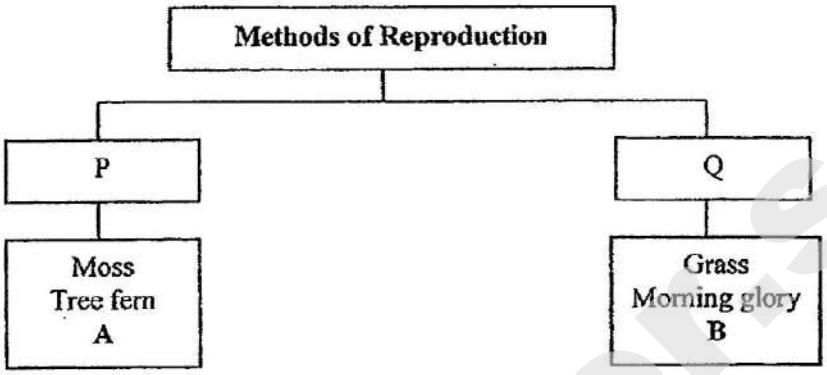
Raju wanted to find out if light is needed for germination. Which two dishes should he compare in order to conduct a fair test?

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

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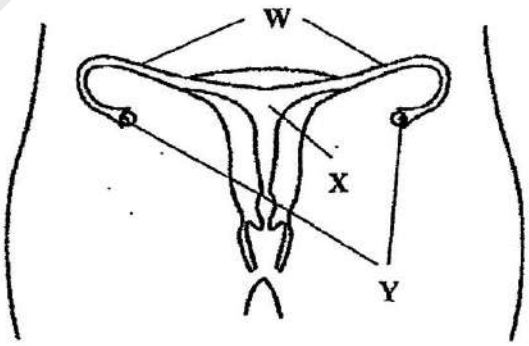
5. The diagram below shows the classification of some plants according to the methods of reproduction.



Which one of the following sets of organisms best represents organisms A and B respectively?

	A	B
(1)	Chilli	Mushroom
(2)	Bird's nest fern	Hibiscus
(3)	Watermelon	Tomato
(4)	Mould	Bird's nest fern

6. The diagram below shows a female human reproductive system.

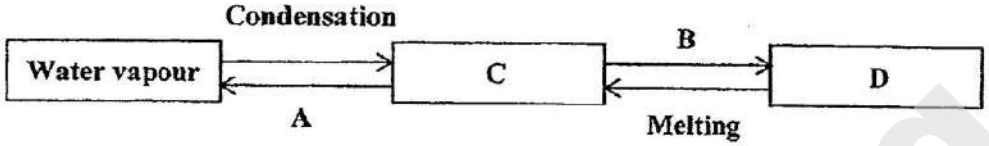


Which one of the following statements is correct?

(1) Fertilisation takes place in W.
(2) W produces one reproductive cell at a time.
(3) Y produces reproductive cells in large numbers.
(4) X releases a large number of reproductive cells at any one time.

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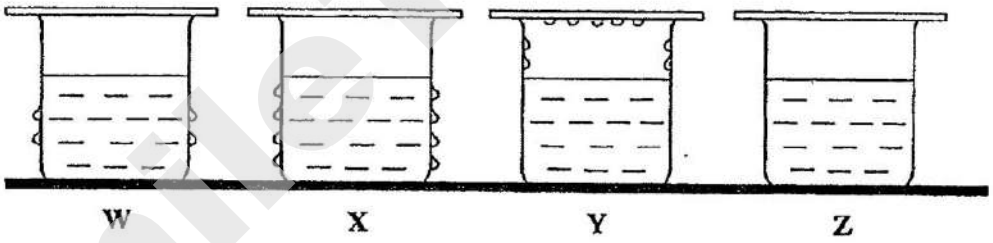
7. The diagram below shows the changes in the different states of water.



Which one of the following sets correctly represents processes A and B and states C and D?

	A	B	C	D
(1)	Freezing	Evaporation	Ice	Water
(2)	Evaporation	Boiling	Water	Steam
(3)	Evaporation	Freezing	Water	Ice
(4)	Boiling	Freezing	Steam	Ice

8. Four identical containers, W, X, Y and Z, containing the same amount of water at different temperatures were placed on a table as shown below.



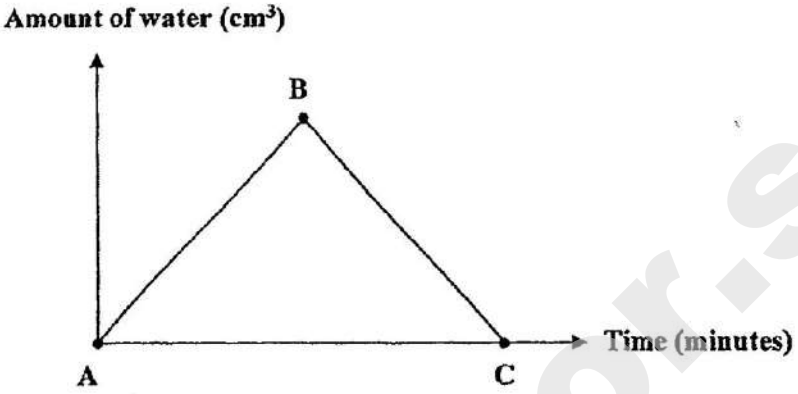
Which one of the following sets shows the temperature of the water in each beaker from the highest to the lowest?

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

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9. Adeline heated a block of ice in a beaker. She then measured the amount of water in the beaker during the process and plotted the graph as shown below.



Which one of the following correctly represents the states of water at A, B and C respectively?

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

10. The table below shows the boiling points and melting points of 4 different substances, P, Q, R and S.

Substance	Melting point (°C)	Boiling point (°C)
P	-5	20
Q	15	68
R	26	105
S	52	178

Which substances, P, Q, R or S, are at liquid state at 30°C?

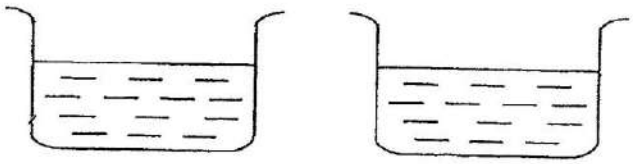
(1) P and Q only
(2) Q and R only
(3) P, Q and R only
(4) Q, R and S only

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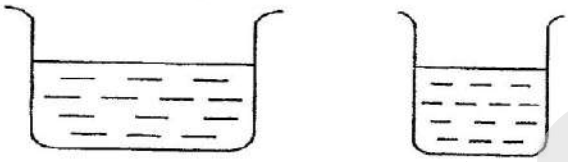
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11. Jonathan wanted to investigate how exposed surface areas affect the rate of evaporation. Which one of the following sets of experiments should he use?

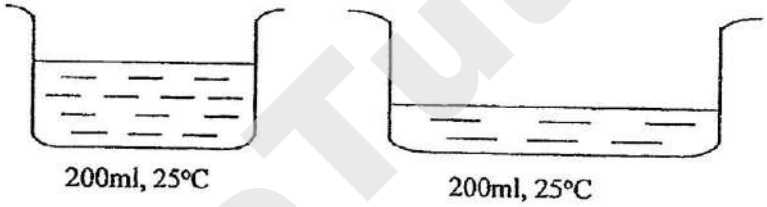
(1)



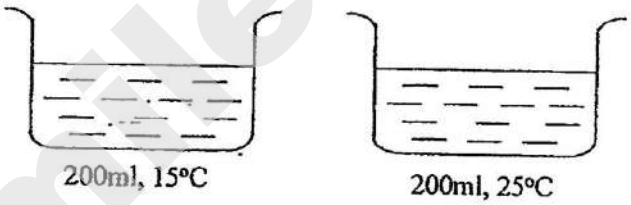
(2)



(3)



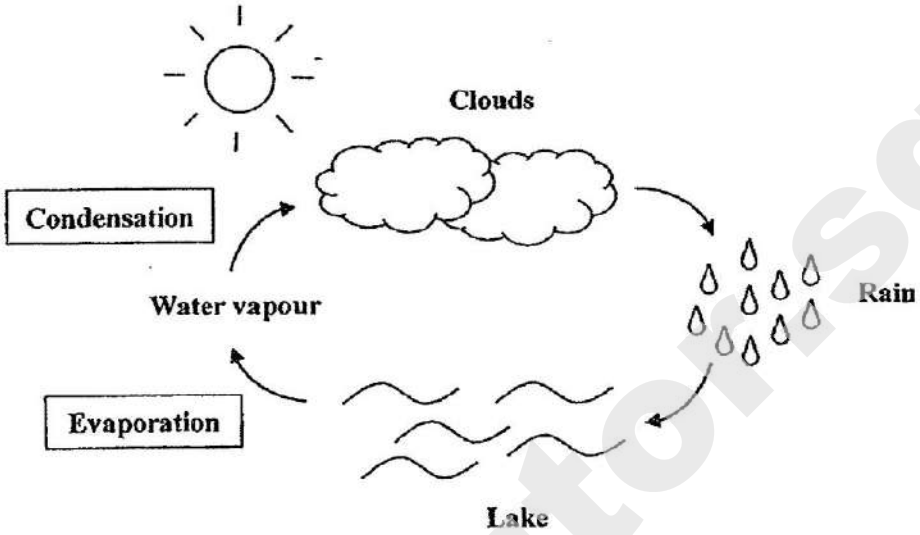
(4)



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12. Study the diagram below carefully.



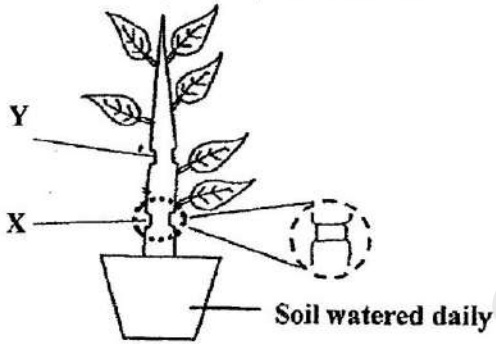
Yong Jian asked his classmate what is likely to happen when the temperature of the water in the lake increases. Which one of the following statements by his classmate is not correct?

(1) There will be a faster formation of clouds.
(2) The rate of evaporation of water in the lake will decrease.
(3) There will still be a constant supply of fresh water on earth.
(4) Water from the lake will still evaporate and condense to form clouds.

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13. Two rings are removed from the stem of a plant at parts X and Y.



Which one of the following sets of observations and conclusions is correct?

	Observations	Conclusions
(1)	The leaves above Y turn yellow and the leaves between X and Y remain green.	The water-carrying tubes are removed at Y and the food-carrying tubes are removed at X.
(2)	All the leaves remain green.	Only the water-carrying tubes are removed at X and Y.
(3)	The leaves above Y remain green and the leaves between X and Y turn yellow.	The water-carrying tubes are removed at X and the food-carrying tubes are removed at Y.
(4)	All the leaves grow larger.	Only the water-carrying tubes are removed at X and Y.

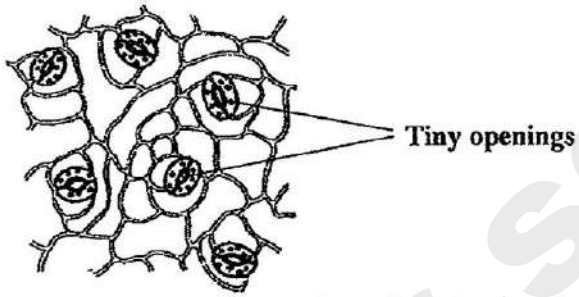
14. The table below compares the respiratory systems of both a fish and a human. Which of the following pairs of statements are correct?

	Respiratory System of a Fish	Respiratory System of a Human
A	Takes in dissolved oxygen from the water	Takes in oxygen from the surrounding air
B	Carbon dioxide is removed from the blood	Carbon dioxide is removed from the blood
C	Gaseous exchange takes place in the gills	Gaseous exchange takes place in the lungs
D	Gills are protected by the gill covers	Lungs are protected by the ribcage

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

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15. Rebecca found some tiny openings on the underside of a leaf using a microscope and sketched her observation as shown below.



She then made the following statements about the functions of the tiny openings.

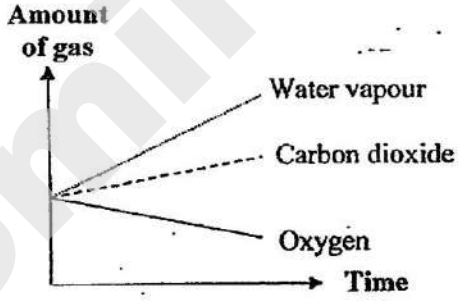
A: Water vapour is lost through these openings.
B: They trap sunlight to carry out photosynthesis.
C: They take in only carbon dioxide during the day.
D: They take in oxygen and give out carbon dioxide all the time.

Which of the above statements are correct?

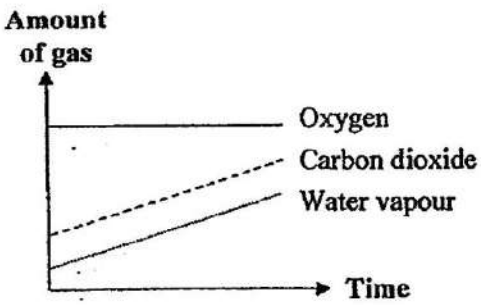
(1) A and D only
(2) B and C only
(3) A, C and D only
(4) A, B, C and D

16. Brian wanted to find out which gases are taken in and given out by animals. He put twenty beetles in an enclosed tank for one hour. Which one of the following graphs below most likely shows how the amount of the different gases in the tank changed after one hour?

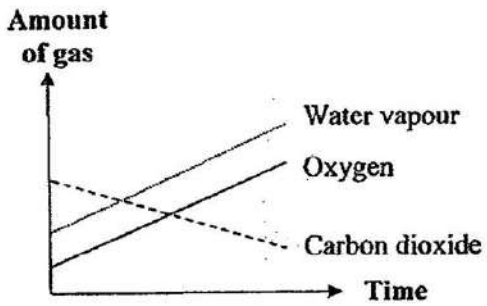
(1)



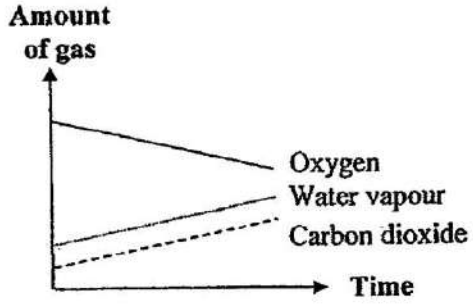
(2)



(3)



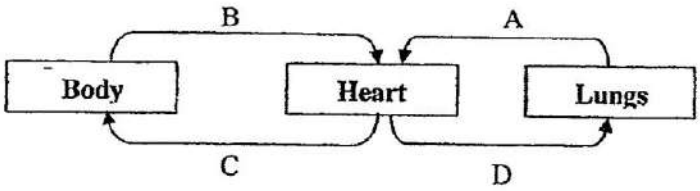
(4)



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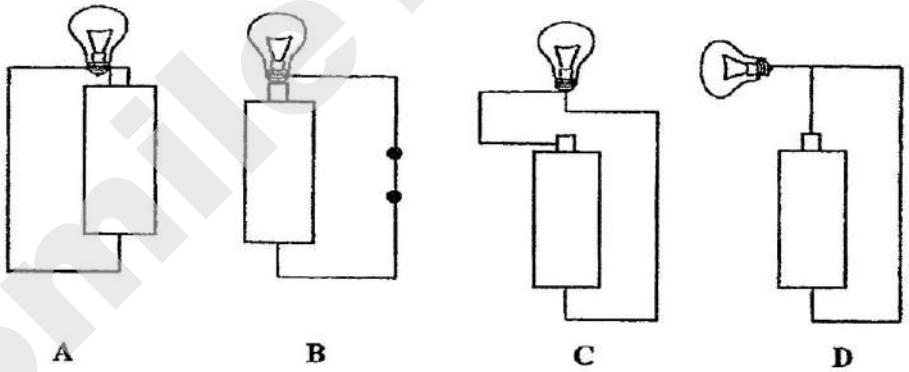
17. The diagram below shows the human circulatory system.



Which one of the following sets correctly represents blood vessels A, B, C and D?

	Blood rich in oxygen		Blood rich in carbon dioxide	
(1)	A	D	C	B
(2)	B	C	A	D
(3)	C	D	B	A
(4)	A	C	B	D

18. Travis set up the following circuits, A, B, C and D. All the bulbs and batteries are identical and working properly.



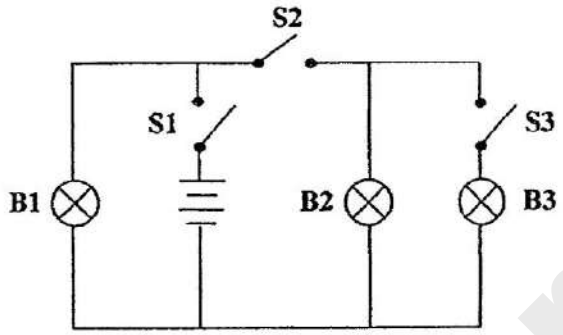
In which of the following circuits, A, B, C and D, will the bulb not be able to light up?

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

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19. Bulbs B1, B2 and B3 and switches S1, S2 and S3 are connected in a circuit shown below. All the bulbs and batteries are identical and working properly.



Which one of the following sets is correct?

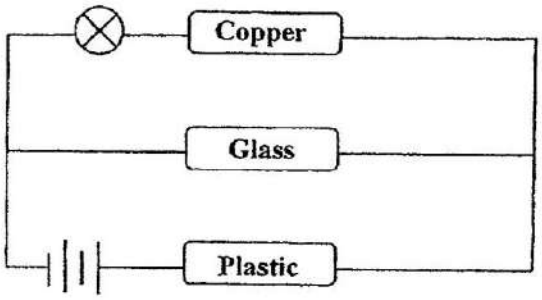
	Switches			Do the bulbs light up?		
	S1	S2	S3	B1	B2	B3
(1)	Closed	Open	Closed	Yes	No	Yes
(2)	Open	Open	Closed	No	No	Yes
(3)	Closed	Closed	Open	Yes	Yes	No
(4)	Open	Closed	Open	No	Yes	No

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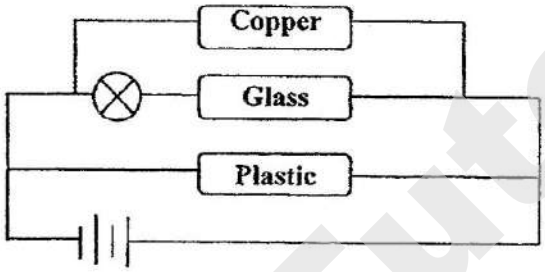
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20. All the bulbs and batteries in the four circuit diagrams below are identical and working properly.

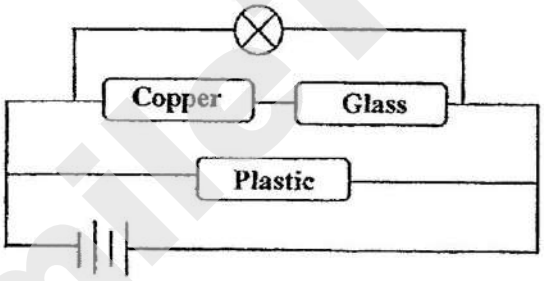
A:



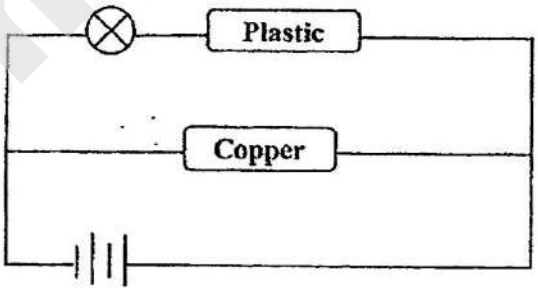
B:



C:



D:



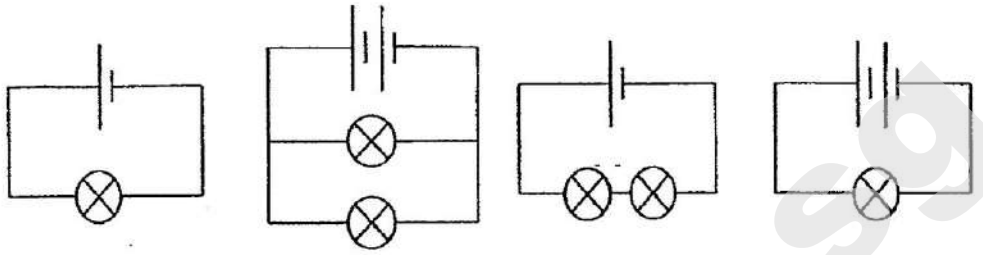
In which one of the following circuits will the bulb light up?

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

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21. Tommy wanted to investigate if the number of batteries in an electric circuit would affect the brightness of the bulbs. All the bulbs and batteries are identical and working properly.

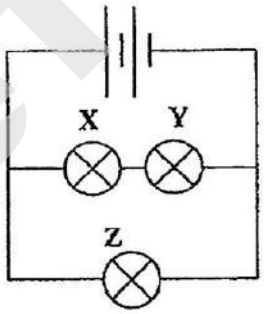


Set-up A **Set-up B** **Set-up C** **Set-up D**

Which two set-ups, A, B, C and D, should he use to ensure a fair test?

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

22. Martin drew the circuit diagram shown below.



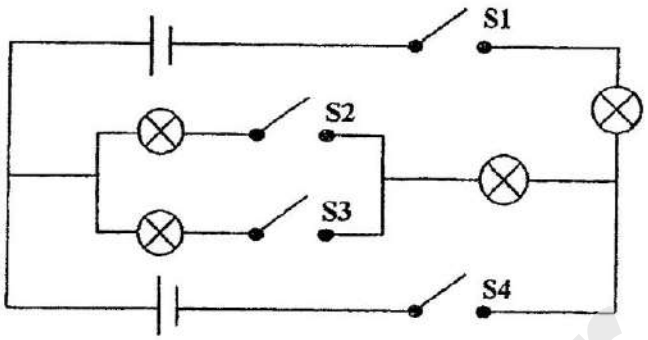
Which of the following statements, A, B, C or D, about the electric circuit are true?

A: Bulb Y is as bright as bulb Z.
B: Bulb Z is brighter than bulb X.
C: If bulb X fuses, bulbs Y and Z will still light up.
D: If bulb Z fuses, bulbs X and Y will still light up.

(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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23. In the circuit diagram below, all the bulbs and batteries used are identical and working properly.



Which of the following switches should be closed so that only two bulbs will light up at any one time?

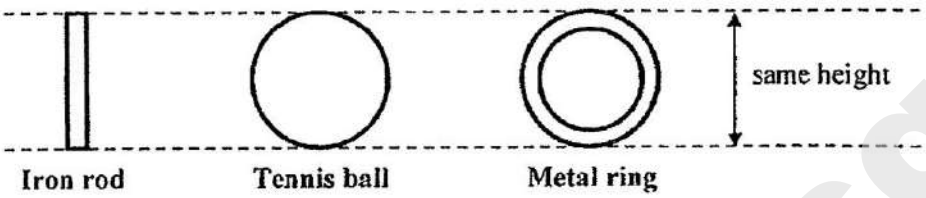
A: S1 and S2 only
B: S2 and S3 only
C: S2 and S4 only
D: S3 and S4 only

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

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24. Ahmad has three objects which are of the same height.



He placed each object at one of the positions, X, Y and Z, between a torchlight and a white screen as shown in the diagram below.



Which of the following shadows, A, B, C or D, are possible shadows of the three objects that were cast on the screen?

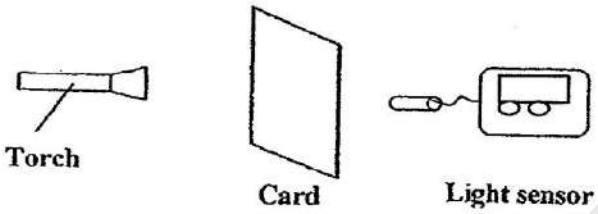
Shadow A	Shadow B	Shadow C	Shadow D
			

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

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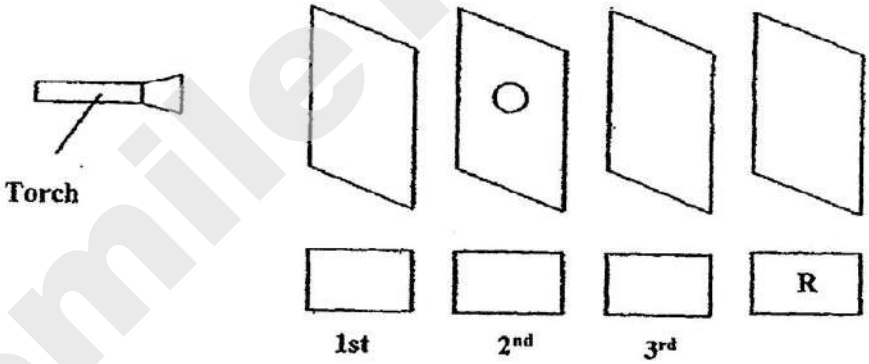
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25. A light sensor which reads from a scale of 0 to 10 was used to determine the amount of light that was able to pass through four cards, P, Q, R and S, made of different materials as shown below. The results were recorded in the table below.



Card	Reading on the sensor (unit)
P	9
Q	1
R	0
S	10

A high reading indicates that a greater amount of light was detected. The cards were then arranged in a straight line. A circular hole was cut out from one of the cards. When a torch was switched on, a bright circular patch of light was observed on card R only.

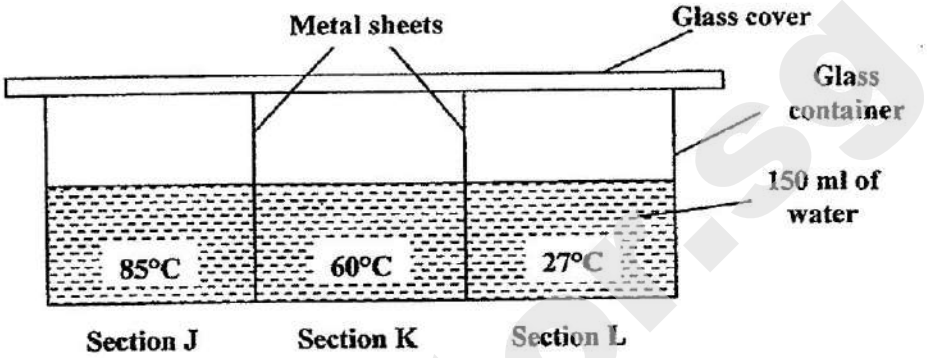


By using only the information from the experiment and the readings from the light sensor, how were the cards arranged?

	1st	2nd	3rd
(1)	S	Q	P
(2)	Q	S	P
(3)	P	S	Q
(4)	S	P	Q

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26. A large glass container is separated by two similar metal sheets into sections J, K and L. It is covered with a glass cover. Each section is filled with 150ml of water at different temperatures as shown below. The room temperature is 27°C.



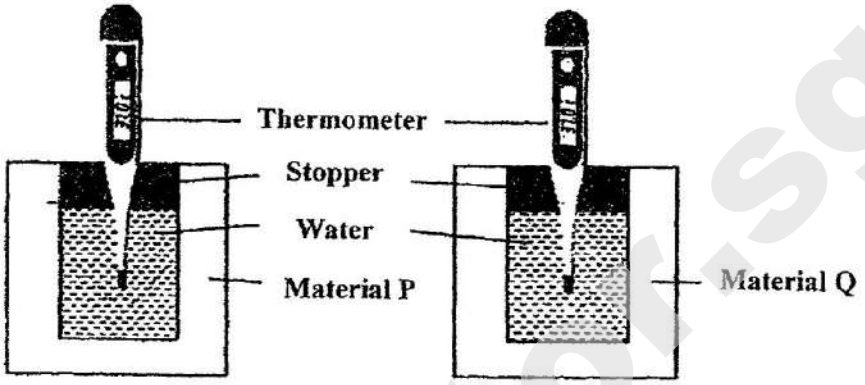
Which of the following statements about what would be observed after a period of time are correct?

A: Heat flows from section J to section K to section L.
B: Water in section K gains heat from water in section J.
C: The temperature of water in section L will drop after an hour.
D: The temperatures of water in sections J, K and L will be the same after one day.

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

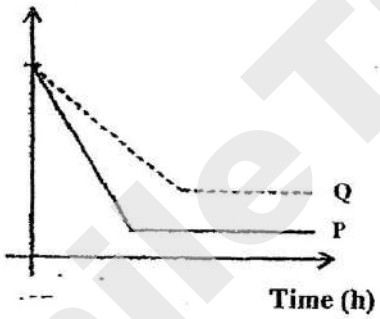
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27. Mark has two similar blocks each made of two different materials P and Q. Material P is a better conductor of heat than material Q. Both blocks are placed in the same compartment in a refrigerator at the same time and their temperatures monitored using a thermometer as shown below.

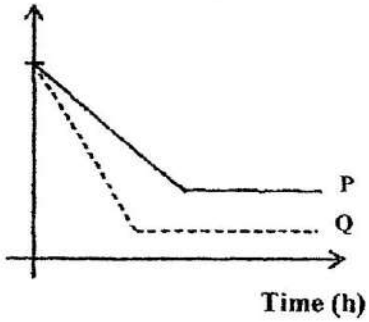


Which one of the following graphs shows the temperatures of both blocks over time?

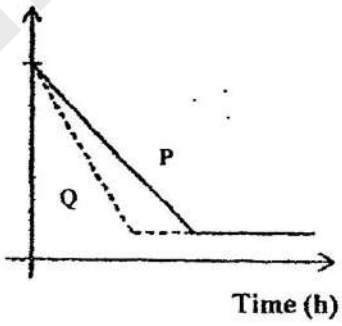
(1)



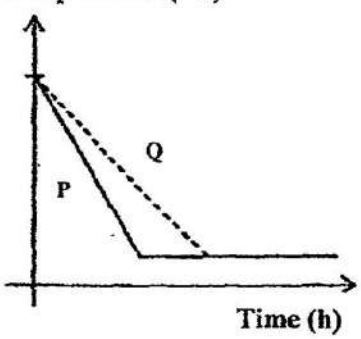
(2)



(3)



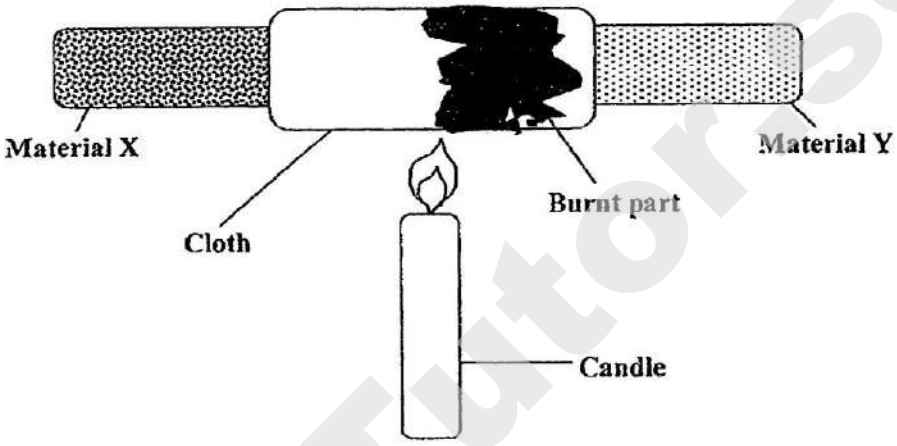
(4)



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28. Paul carried out an experiment on a piece of rod. Half of the rod is made of material X and the other half is made of material Y. The rod was wrapped in the middle with a thin cloth. A candle flame was placed underneath the middle of the rod as shown below. After a short while, the part of the cloth covering material Y was burnt, but not the part covering material X.



Which one of the following statements best concludes what was observed from the experiment above?

(1) Material X felt cooler than material Y.
(2) Material Y gains heat faster than material X.
(3) Material X is a better conductor of heat than material Y.
(4) Material Y is a better conductor of heat than material X.

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Rulang Primary School

SEMESTRAL ASSESSMENT 2
SCIENCE
2018

Name: _____ **Marks:** _____ / 44

Level: Primary 5 **Date: 30 Oct 2018**

Class: Primary 5 ( ) **Parent's Signature:** _____

BOOKLET B

Instructions to pupils:

1. **Do not open this booklet until you are told to do so.**

2. You are required to answer **all** the questions in this paper using your own words / expressions as far as possible.

3. All drawings / diagrams must be clearly shown and labelled.

4. Marks will be deducted for wrongly spelt key words.

5. This question booklet consists of **16** printed pages, including the cover page.

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Section B (44 marks)

Write your answers to questions 29 to 40 in this booklet.

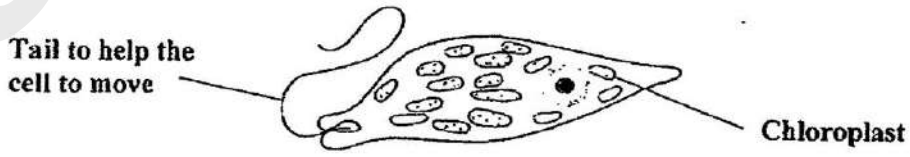
29. Daryl observed three types of cells under the microscope. He recorded his observations in the table below. A tick (✓) indicates the presence of the cell part.

Cell part	Cell A	Cell B	Cell C
Nucleus	✓	✓	✓
Cell wall			✓
Chloroplast		✓	
Cell membrane	✓	✓	✓

(a) Daryl made a mistake in his observation. Which cell, A, B or C, did he most likely observe wrongly? Give a reason for your answer. (2 m)

(b) Daryl indicated that cell A was taken from the root of a plant but his teacher said that it was incorrect. Give a reason why his teacher said that the answer was incorrect. (1 m)

(c) Daryl found a single-celled organism taken from the school pond as shown in the diagram below.

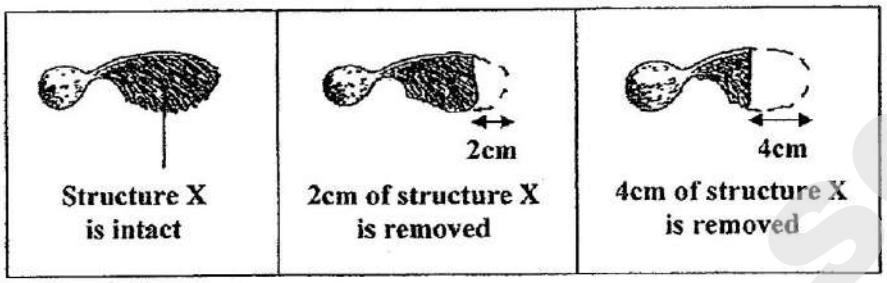


Explain why the organism needed to move towards a light source to survive. (1 m)

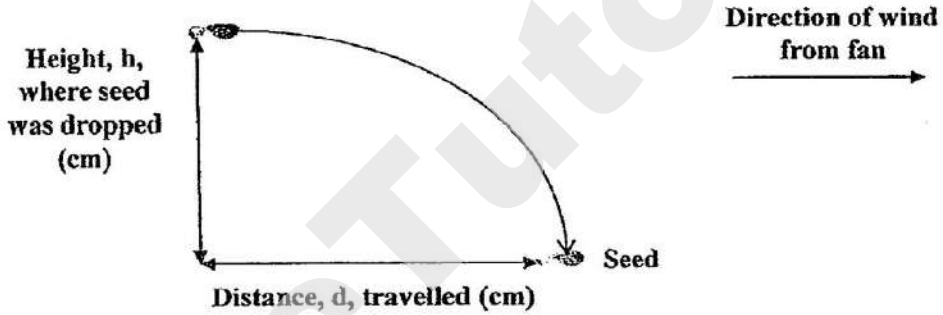
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30. Wendy wanted to find out if the distance travelled by the seed of plant P was affected by the length of its structure when dropped from a height in front of a fan.



She dropped the seed with structure X intact from a height, h, and measured the distance, d, travelled by it. She repeated the experiment twice by using the same seed, first with 2cm of structure X removed, and finally with 4cm of structure X removed.



She recorded the distance travelled by the seed in the table below.

Length of structure X removed from the seed (cm)	Distance travelled by the seed (cm)
0	125
2	85
4	20

(a) Based on the information above, what is the relationship between the distance, d, travelled by the seed and the length of structure X removed from the seed? (1 m)

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Wendy removed the whole of structure X from the seed as shown below.



Structure X removed

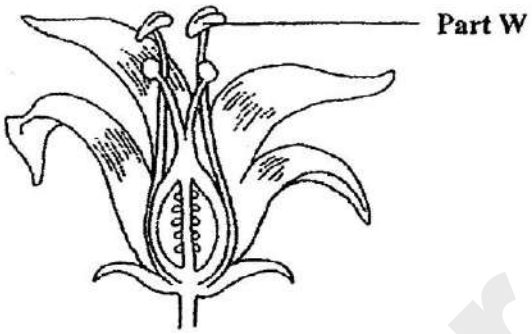
(b) What would be a possible distance, d, travelled by the seed when dropped from the same height? Explain your answer clearly. (2 m)

(c) Wendy concluded that not removing structure X will allow the young of plant P to grow healthily. Explain why this is so. (2 m)

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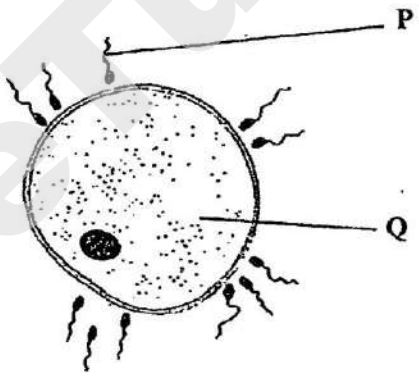
31. The diagram below shows the cross section of a flower.



(a) Which organ of the human reproductive system performs the same function as part W? (1 m)

_____

(b) Study the diagram below and identify P and Q. (1 m)

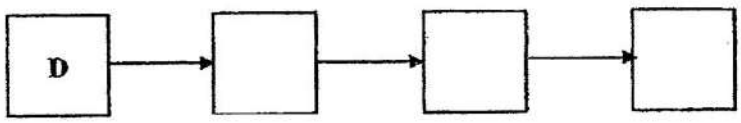


P: _____

Q: _____

(c) Arrange the following statements in the correct order and write the corresponding letters in the boxes provided. Statement D has already been indicated in the first box. (1 m)

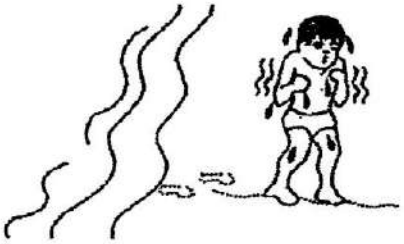
A: The fertilised Q divides to form many cells.
B: A foetus develops and grows in the womb.
C: P fuses with Q.
D: P travels into the female reproductive organ.



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32. John went for a swim at the beach. When he came out of the water, he felt cold.



John's body was wet after swimming

A gust of wind blew all of a sudden and he felt even colder.

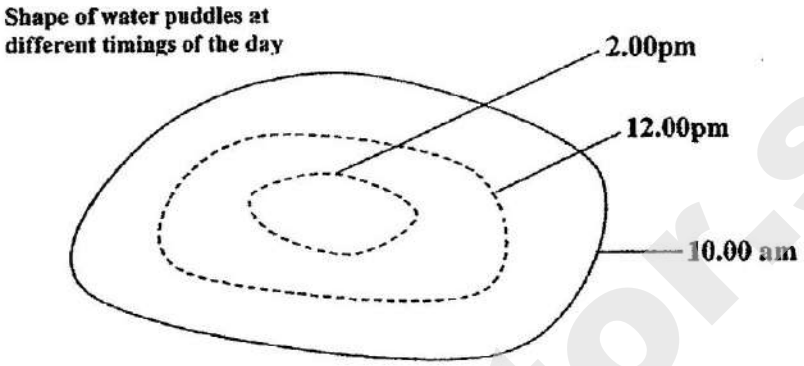


A gust of wind blew over his body

Explain clearly why he felt even colder with the sudden gust of wind. (2 m)

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33. After a heavy rain, Paul noticed a puddle of water in the playground at 10.00am. The puddle became smaller as time passed by. He measured the width of the puddle at different times of the day and recorded them in his notebook.



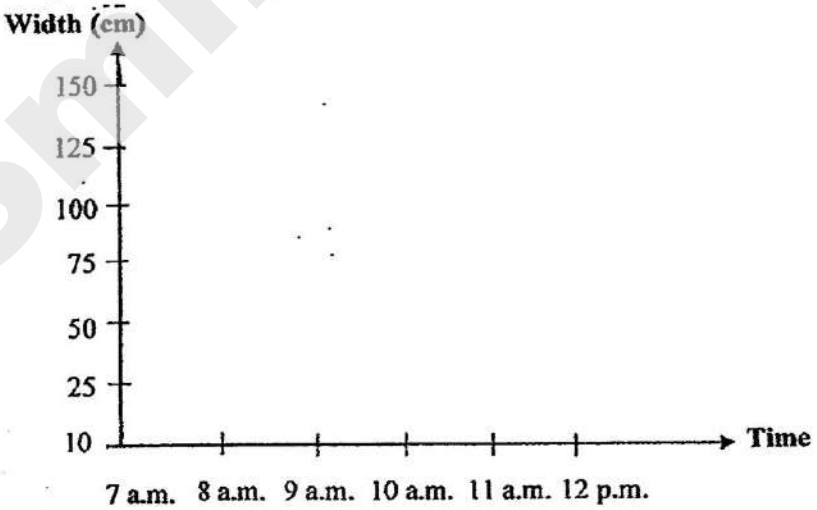
(a) Draw a ring in the above diagram to show the size of the puddle at 11.00a.m. (1 m)

(b) What could have caused the puddle to become smaller if no water was soaked into the ground? (1 m)

_____

_____

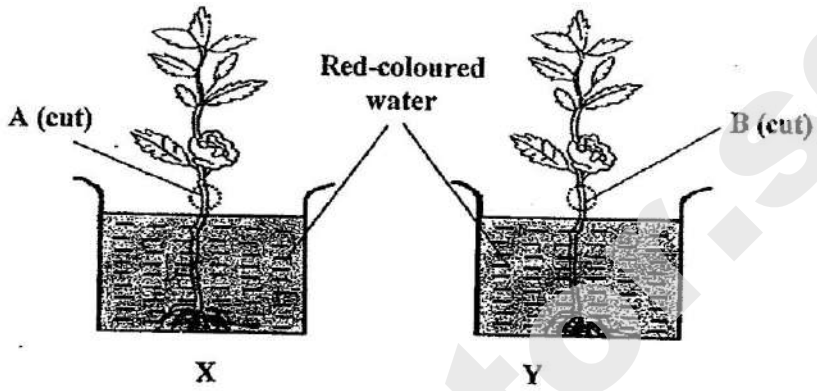
(c) The graph below shows how a puddle of water of a width of 150cm changed on a cold day. Draw a different graph below to show how a puddle of water of a width of 150cm changed on a warmer day. (1 m)



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34. Chantel set up an experiment by removing parts of either food-carrying tubes or water-carrying tubes or both tubes of two similar plants, X and Y. The plants were then placed in beakers containing the same amount of red-coloured water as shown in the diagram below.



The observations of the plants were recorded in the table below.

Plant	Observations after three days
X	Swelling on the stem above A observed. The plant is still growing well.
Y	Swelling on the stem above B observed. The plant withered and dried up on the fifth day.

(a) Explain why the stem above A of plant X swelled. (2 m)

(b) Chantel observed that plant Y withered and dried up on the fifth day. Explain what had happened. (2 m)

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35. Study the figures below. Diagrams A and B show how gases are transported in a fish and human respectively.

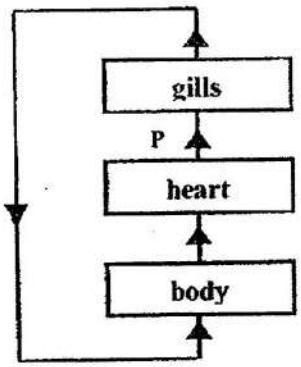


Diagram A (fish)

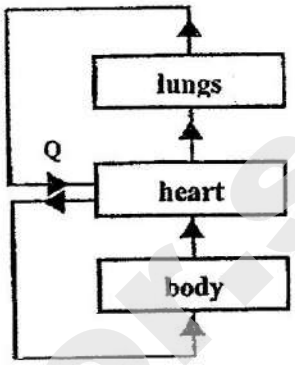
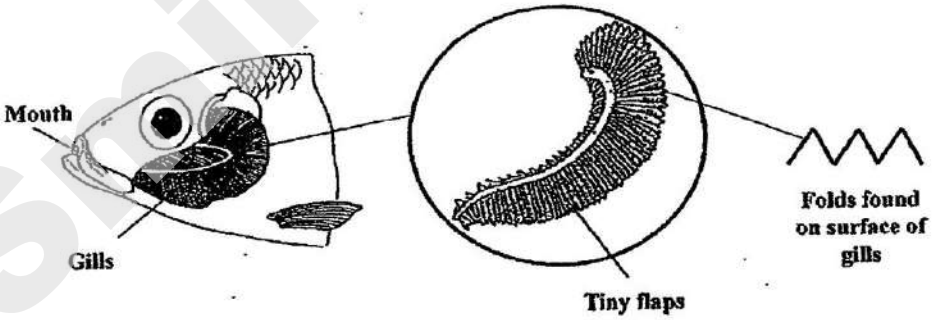


Diagram B (human)

(a) State a difference between the amount of carbon dioxide found in the blood flowing in P and Q. (2 m)

Fish use gills to breathe in water. The diagram below shows the gills of a fish.

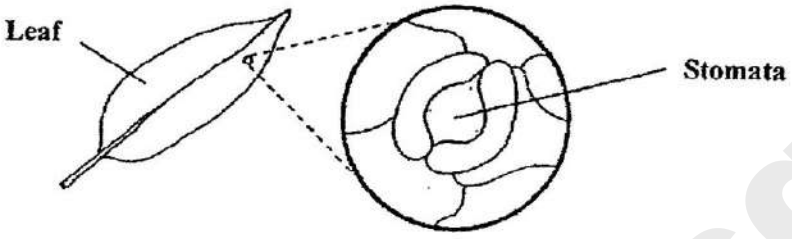


(b) The tiny flaps are folds found on the surface of the gills. Explain why the gills of a fish have many tiny flaps. (1 m)

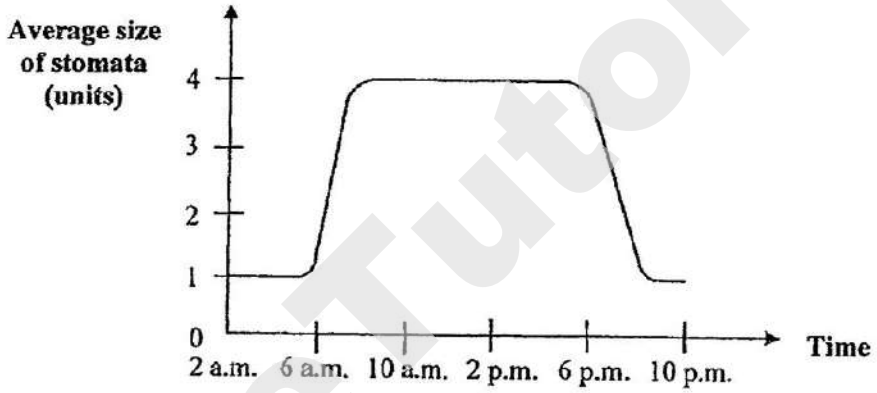
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36. Leaves have tiny openings called stomata on their surfaces. Some gases like oxygen, carbon dioxide and water vapour move through the stomata.



Radhika measured the changes in the size of the stomata on the underside of a leaf of a plant placed near the window at different times of the day. She plotted her results as shown below.



(a) Based on her results, what effect did light have on the size of stomata? (1 m)

_____

_____

(b) How does the change in the size of stomata in (a) help in photosynthesis? (1 m)

_____

_____

(c) The change in the size of stomata in the presence of light can also be a disadvantage to the plant. What is this disadvantage? (1 m)

_____

_____

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37. Students from ABC Primary School made an electrical game for their school's carnival. To win a prize, the player has to pass a loop from point A to point B without touching the copper wire. Diagram 1 shows the electrical game while diagram 2 shows a close-up view of how the plastic loop and insulating handle are connected. The light bulb, battery and buzzer are all in good working condition.

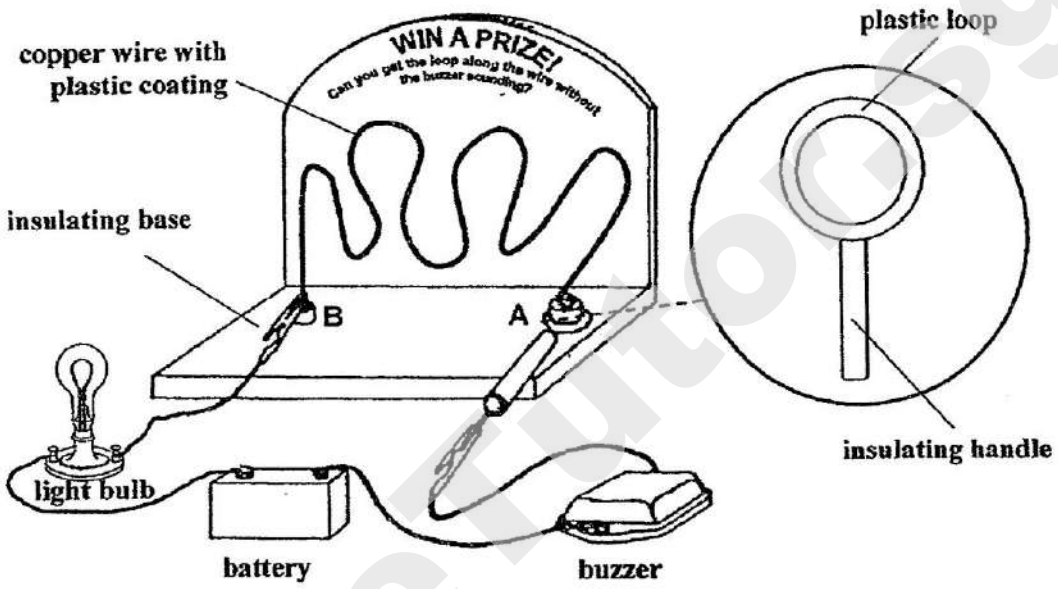


Diagram 1 Diagram 2

(a) When the students tried to play the game, they realised that it did not work. List two changes that needed to be made to the game so that it would work. (2 m)

_____

_____

_____

(b) The students made the changes and the game worked. The students then blindfolded their teacher and asked him to guess if a participant won or lost the game.
Explain how their teacher was able to conclude accurately that the participant had lost the game. (2 m)

_____

_____

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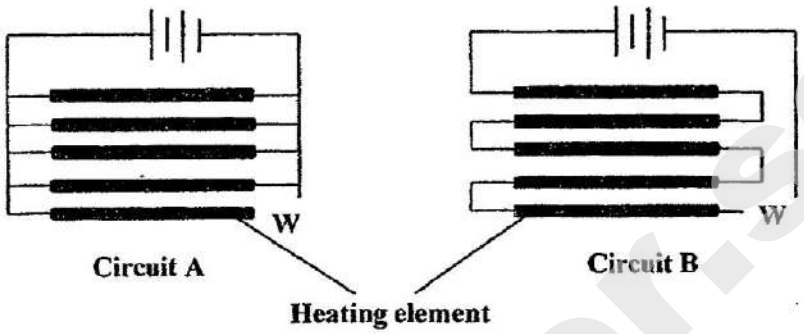
(c) Instead of having both the bulb light up and the bell ring at the same time to indicate the participant had lost the game, the students wanted to be able to choose to make either the bulb light up or the bell ring instead. How should they modify the set-up to achieve this?

(1 m)

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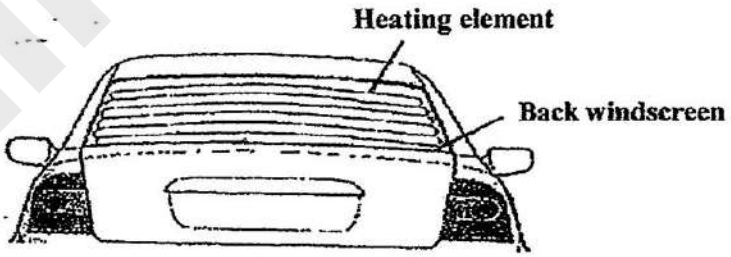
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38. A heating element gives out heat when electricity flows through it. The diagrams below show how a heating element can be connected in a circuit in two different ways.



(a) There is a gap marked "W" in both circuits. In which circuit, A or B, would the heating element work? Explain your answer. (2 m)

A heating element is usually installed at the back windscreen of a car as shown below. It is connected to the car battery and used during heavy rain.

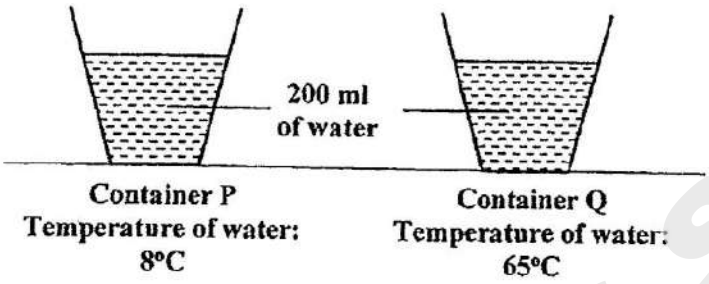


(b) State two advantages of using circuit A to connect the heating element to the car battery. (2 m)

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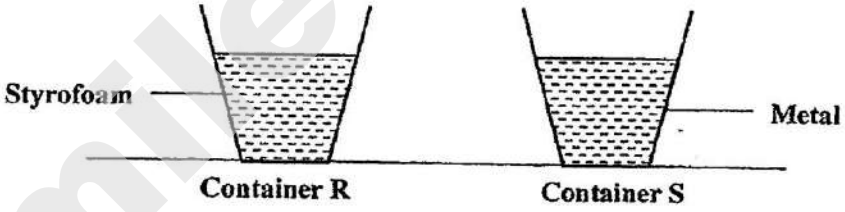
39. Faizal filled two identical containers, P and Q, made of the same material with equal amounts of water at different temperatures. He then placed them in a room with a temperature of 27°C.



(a) The set-up was left in the room for about 30 minutes. Put a tick (✓) in the correct boxes to indicate the possible changes taking place during the 30 minutes. (1 m)

	Loses heat	Gains heat	Temperature increases	Temperature decreases
Water in container P				
Water in container Q				

Faizal then set up another experiment with containers R and S, made of different materials. He filled each container with water at 70°C.



(b) What was the aim of Faizal's second experiment? (1 m)

_____

_____

(c) What should Faizal do to ensure that a fair test was conducted? (1 m)

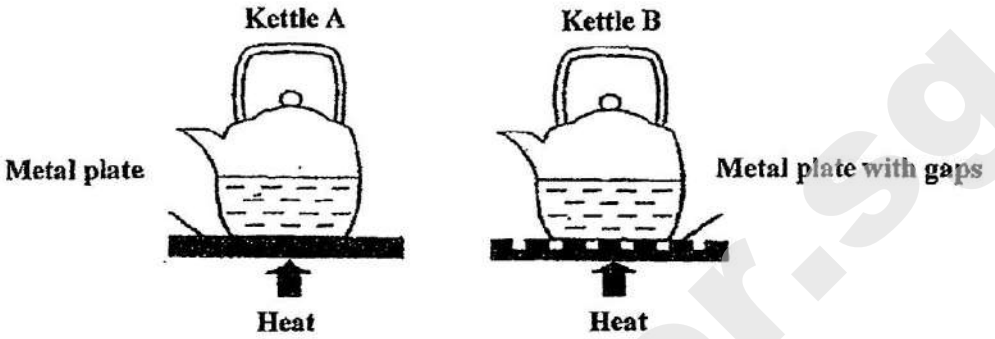
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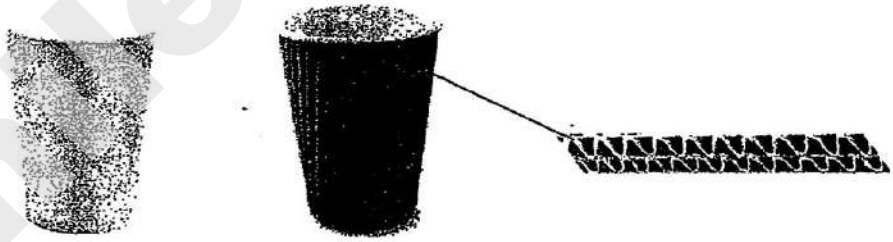
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40. Nurul placed two identical kettles, A and B, on two metal plates made of the same material. The kettles contained the same amount of water at room temperature. The plates were heated as shown below.



(a) In which kettle, A or B, did the water boil first? Explain your answer. (2 m)

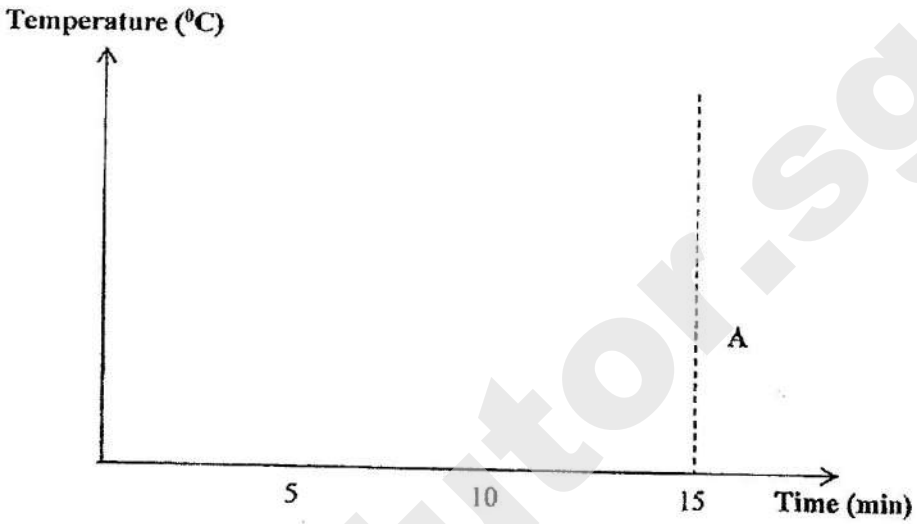
Jon started a cafe and decided to use paper cup B instead of paper cup A to contain the hot coffee.



(b) Explain why Jon used paper cup B to contain the hot coffee for his customers. (2 m)

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(c) The graph below shows the change in temperature of the coffee in cup A. Draw the graph in the diagram below to show the temperature of the coffee if a similar cup made of a better conductor of heat was used. (1 m)



END OF PAPER

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SCHOOL : RULANG PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA2

CONTACT :

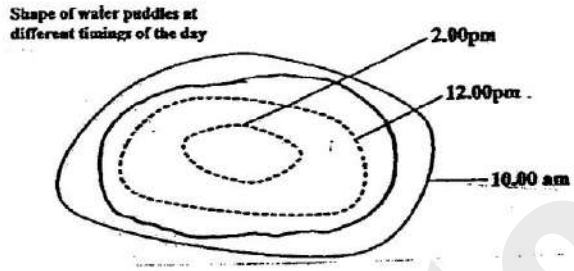
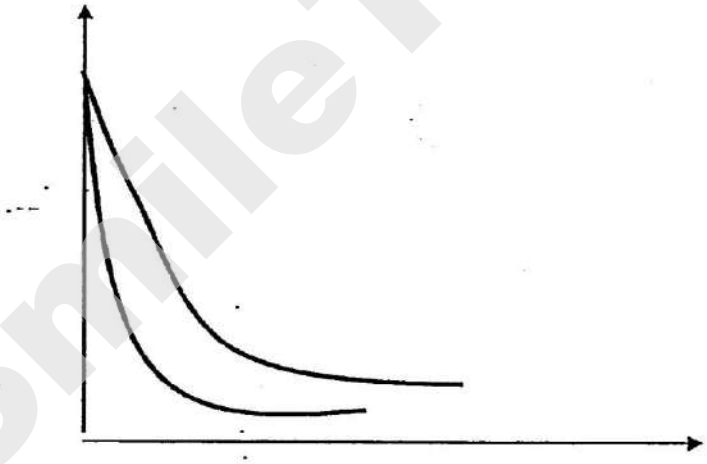
SECTION A

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	2	4	2	2	1	3	3	4	2
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	2	1	4	1	4	4	4	3	3
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
2	2	3	4	1	3	3	3		

SECTION B

Q29)	a)He observed cell B wrongly. Cell B ahs chloroplasts which contain chlorophyll, thus cell B is part of a plant and must have a cell wall. b)Cell A has no cell wall but a root cell should have a cell wall. c)The organism has chloroplasts which contain chlorophyll to trop sunlight to make food for the organism.
Q30)	a)As distance, travelled by the seed decreased, the length of structure X removed from the seed increases. b)It is 5cm. There is no wing-like structure to help it stay afloat for a longer period of time. c)If structure X is not removed from the fruit, it will travel further away from the parent plant. This will prevent overcrowding and reduce competition for space, sunlight, nutrients, mineral salts and water.
Q31)	a)It is the testes. b)P: Sperm Q: Egg

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	c)D→C→A→B
Q32)	When the strong wind blew, water evaporates faster to become water vapour. During the process, more heat is lost from his body to the surrounding air.
Q33)	a)  b)The water gained heat from the sun and evaporated into water vapour. c) 
Q34)	a) Only the food-carrying tubes were cut in plant X. The food made by the leaves cannot travel down to the roots and accumulated there. b) As Chantel had removed the water-carrying tube from plant Y, water absorbed by the roots cannot be transported to the leaves of plant Y. The leaves of plant Y cannot photosynthesis and make food for the plant so plant Y eventually withered.

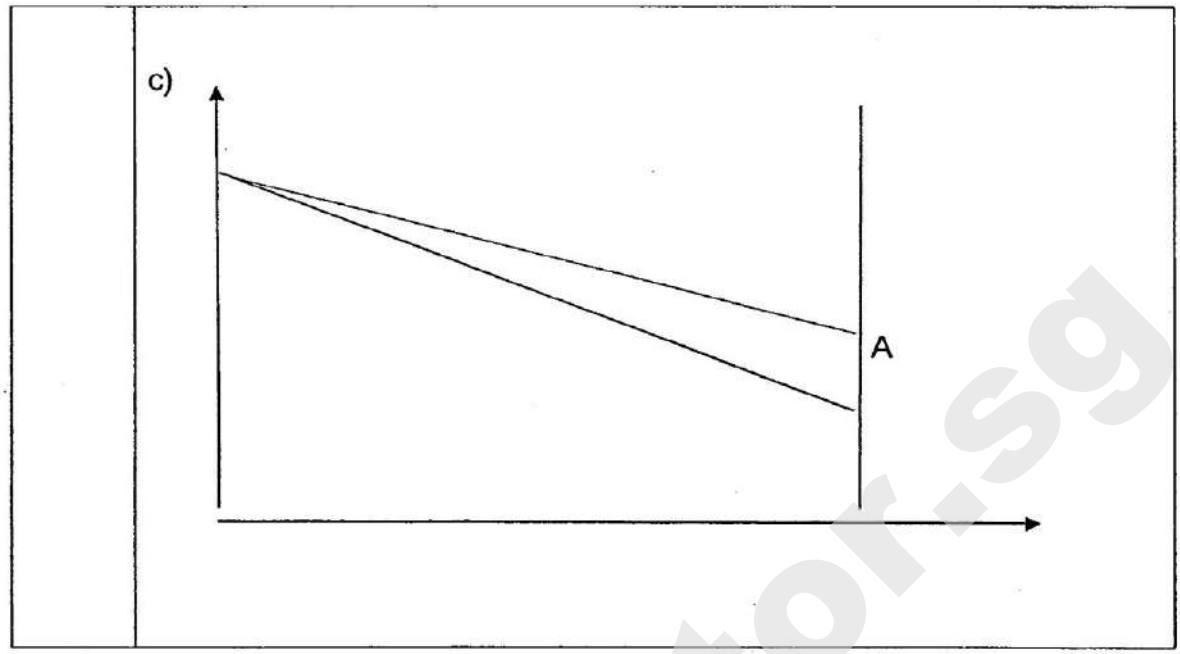
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Q35)	a) The blood is richer in carbon dioxide in P but the blood is poorer in carbon dioxide in Q. b) The tiny flaps allows a larger exposed surface area for dissolved oxygen from the water to be absorbed into the bloodstream of the fish. The increases the rate of respiration for the fish.
Q36)	a) Light causes the size of stomata to increase. b) More carbon dioxide is taken in when the plant makes food. c) If the stomata are bigger, more water vapour will be lost through the stomata.
Q37)	a) The plastic loop should be changed to a conductor of electricity. b) Their teacher was able to hear the buzzer and feel the heat from the light bulb when a participant lost the game . When the loop touched the copper wire, the circuit was closed. Hence, the buzzer made a sound which the teacher heard when blindfolded. c) They should connect the bulb and buzzer in parallel arrangement with a switch for each of them.
Q38)	a) It is circuit A. Circuit A can still work as the circuit is closed and the elements are arranged in parallel. b) The elements will be hotter. If one of the elements is not working well, the other elements can still be heated up.
Q39)	a) Water in container P – Gains heat , Temperature increases Water in container Q – Loses heat , Temperature decreases b) The aim of his experiment is to find out which material, Styrofoam or metal is a better conductor of heat. c) The thickness of the containers must be the same.
Q40)	a) Kettle A. There is a larger surface area of contact with the metal plate so there is more heat gain by kettle A. b) The corrugated surface provides less surface area in contact with the hand. Hence, there is less heat gain by the hand from the coffee.

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28

SINGAPORE CHINESE GIRLS' SCHOOL
SECOND SEMESTRAL ASSESSMENT 2018
PRIMARY 5 SCIENCE

Name: _____ ( ) Date: 19 October 2018

Class: Primary 5 SY / O / G / SE / P

SCIENCE

BOOKLET A

28 questions

56 marks

Total Time For Booklets A & B: 1 h 45 min

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

FOLLOW ALL INSTRUCTIONS CAREFULLY.

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Booklet A (56 marks)

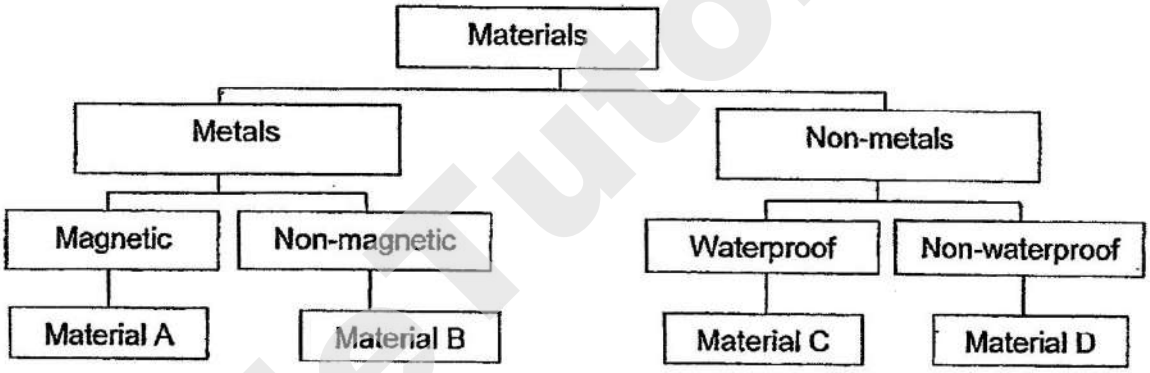
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

1. Which of the following are characteristics of birds?

A: Can fly
B: Lay eggs
C: Have gills
D: Have feathers

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

2. Study the classification chart below.



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

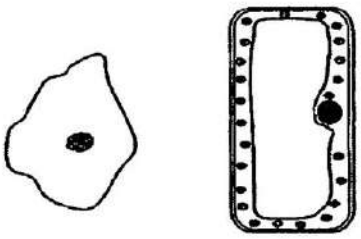
1) Material A can conduct electricity.
2) Material B can be made into a magnet.
3) Material C can absorb water.
4) Material D is a good conductor of heat.

3. Which one of the following cell part is matched correctly to its function?

	Cell Part	Function
1)	Cytoplasm	Absorbs light energy
2)	Cell wall	Gives the cell its regular shape
3)	Cell membrane	Controls everything within the cell
4)	Nucleus	Controls substances that enter and exit the cell

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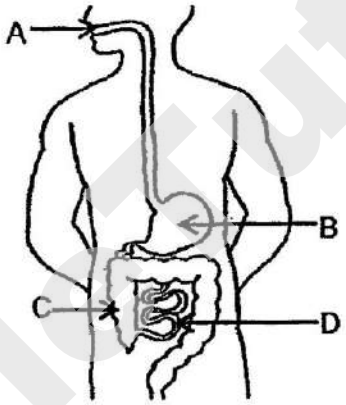
4. Observe the 2 cells below.



Which one of the following statements is true about both cells?

1) Both are plant cells.
2) Both are animal cells
3) Both have cell membrane.
4) Both can carry out photosynthesis.

5. The diagram below shows the human digestive system.



Which one of the following correctly shows the functions of A, B, C and D?

	Digest food	Absorbs digested food	Absorbs excess water
1)	B	A and D	C
2)	A	B, C and D	D
3)	C and D	B and C	D
4)	A, B and D	D	C

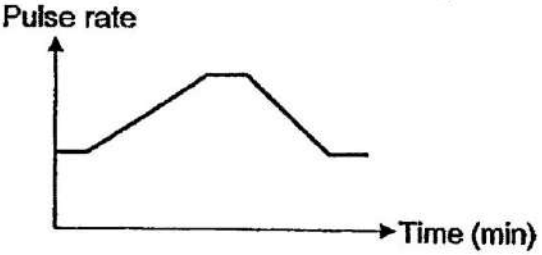
6. Which of the following belong to the human circulatory system?

A: Heart
B: Blood
C. Lungs
D: Blood vessels

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

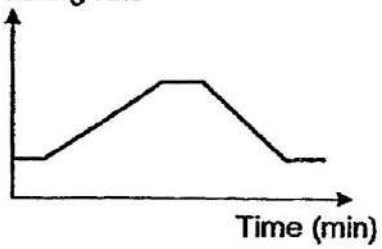
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7. The graph below shows the pulse rate of John over a period of time.

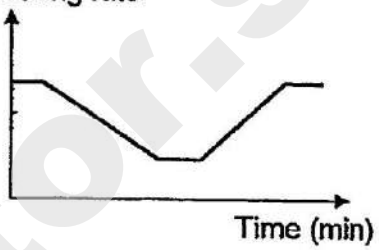


Which one of the following graphs most likely shows John's breathing rate over the same period of time?

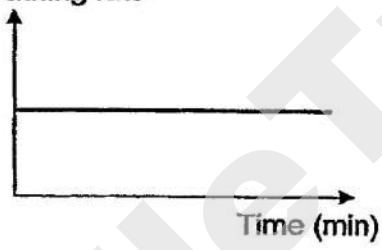
1) Breathing rate



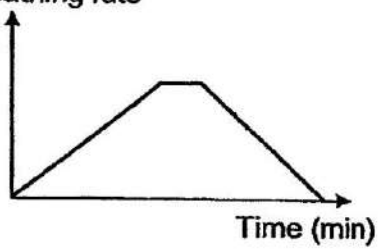
3) Breathing rate



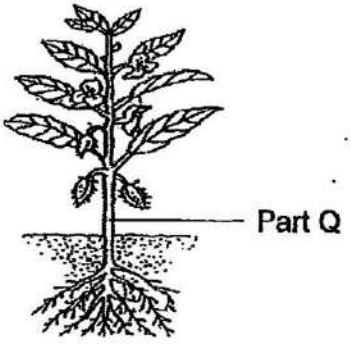
2) Breathing rate



4) Breathing rate



8. Which of the following statement/s about Part Q is correct?

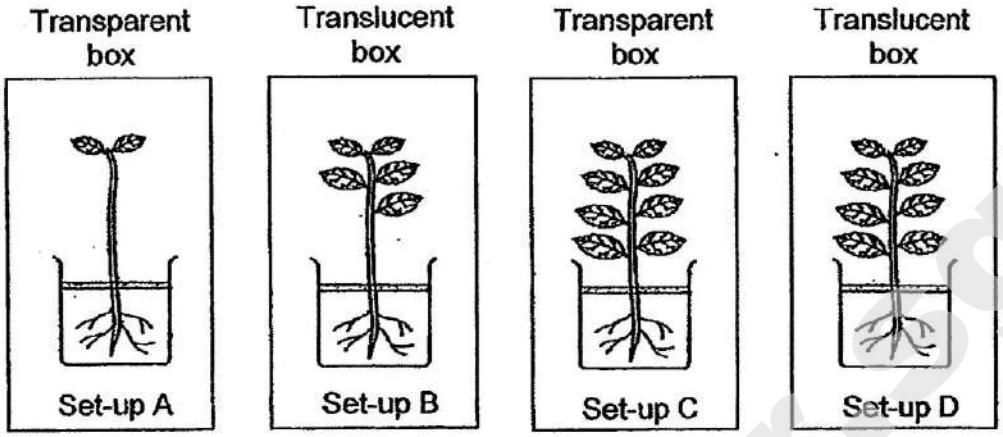


A: Take in water
B: Transport food
C: Holds the plant upright
D: Anchor the firmly plant to the ground

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

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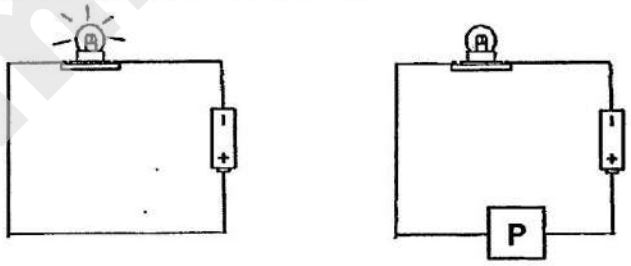
9. Sue Min has 4 set-ups as shown below.



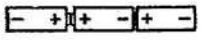
Sue Min wanted to conduct 2 experiments. Which one of the following correctly shows the correct set-ups used for each aim of her experiment?

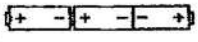
	Aim of experiment	
	To find out if the number of leaves affects the amount of water taken in by the plant	**To find out if the amount of light affects the amount of water taken in by the plant**
1)	Set-up A and Set-up B	Set-up B and Set-up C
2)	Set-up A and Set-up C	Set-up B and Set-up D
3)	Set-up B and Set-up D	Set-up C and Set-up D
4)	Set-up B and Set-up C	Set-up A and Set-up B

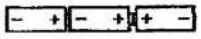
10. Yanni set up the circuit as shown below.

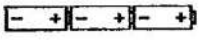


The bulb lit up at first. However, when P was connected to the circuit, the bulb did not light up. What could P most likely be?

1) 

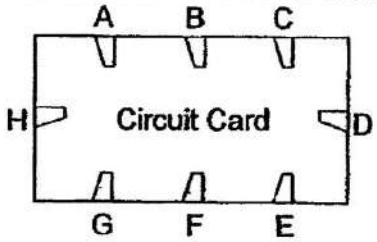
3) 

2) 

4) 

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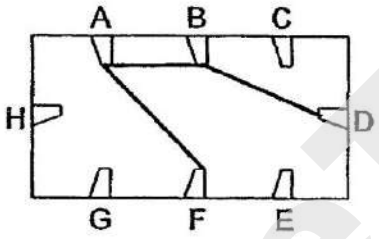
11. Sammy used a circuit tester to test the circuit card below.

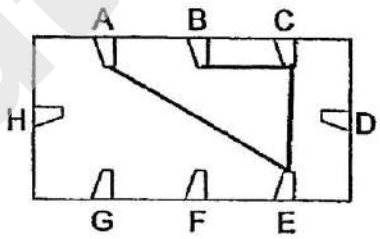


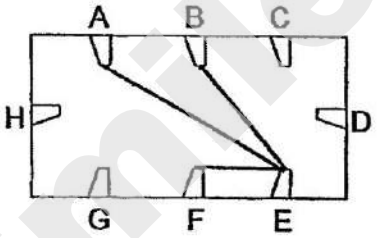
The table below shows the results of Sammy's test.

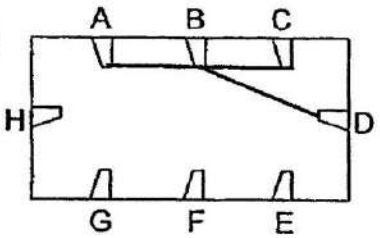
Clips tested	Did the bulb light up?
A and B	Yes
B and E	Yes
C and D	No
D and H	No
E and F	No
G and H	No

Which one of the following correctly shows the connections of the circuit card that Sammy has tested?

1)


3)


2)


4)


12. The table below shows the states of Substances X and Y at different temperatures.

Substance	40°C	60°C	80°C
X	Solid	Liquid	Liquid
Y	Solid	Liquid	Gas

Which one of the following statements is definitely correct?

1) X has a higher boiling point than Y.
2) X has a higher melting point than Y.
3) X and Y are in the liquid state at 70°C.
4) X and Y melt at the same temperature.

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13. Minmin placed the ends of Objects W, X, Y and Z together. She recorded her observations as shown in the table below.



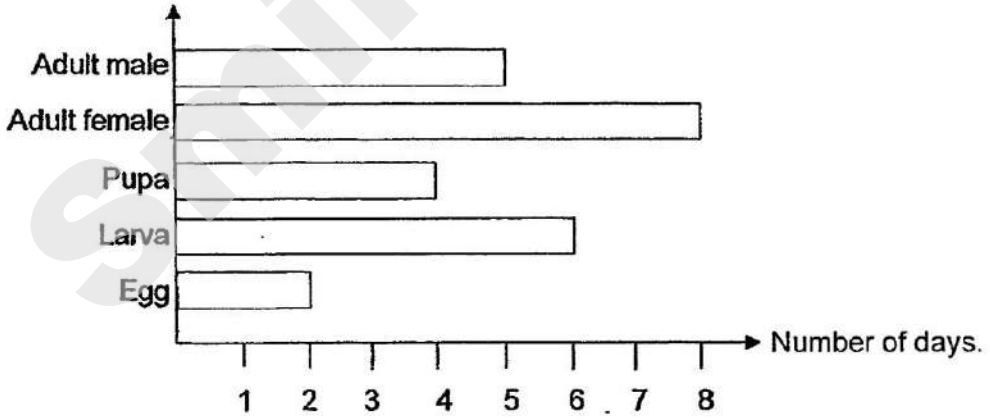
Ends placed together	Observations
B and C	Attracted
D and E	Neither attracted nor repelled
F and G	Attracted
E and G	Attracted
H and A	Attracted
B and H	Repelled

Which of the following can be concluded from Minmin's observations?

A: Object W and Object Z are magnets.
B: End A of Object W will repel End G of Object Z.
C: End A of Object W will attract End E of Object Y.
D: Object X and Object Y are non-magnetic materials.

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

14. The graph below shows the duration of each stage in the life cycle of Insect A.

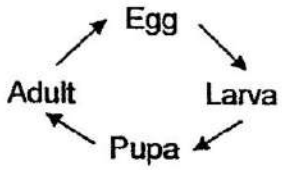


How many days did Insect A take to become an adult after hatching?

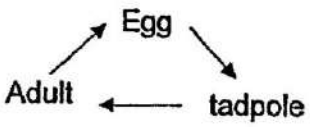
1) 6
2) 10
3) 12
4) 17

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15. The diagrams below show the life cycles of Animal A and Animal B.



Animal A

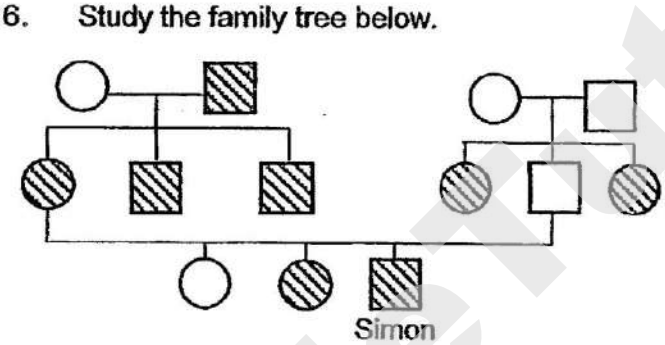


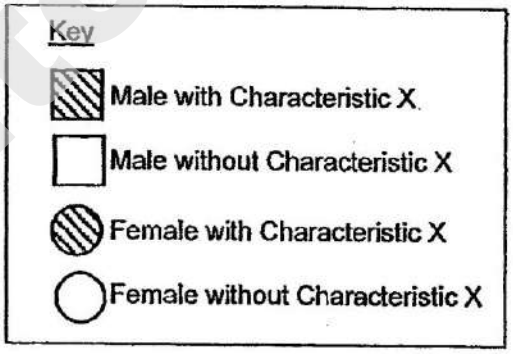
Animal B

Which one of the following statements about Animal A and Animal B is definitely true?

1) Both Animal A and Animal B lay eggs in water.
2) Animal A has 3 stages in its life cycle while animal B has 4 stages.
3) Both the young of Animal A and Animal B do not look like their adults.
4) Animal B and spends part of its life cycle in water but Animal A does not.

16. Study the family tree below.

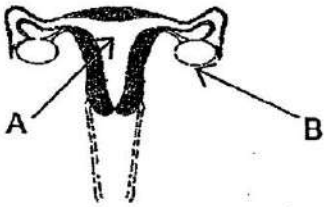




Which one of the following statements about the family tree is correct?

1) Simon has a brother with Characteristic X.
2) Simon's parents both have Characteristic X.
3) Simon's uncles do not have Characteristic X.
4) Simon's grandmothers do not have Characteristic X.

17. The diagram below shows the human reproductive system.

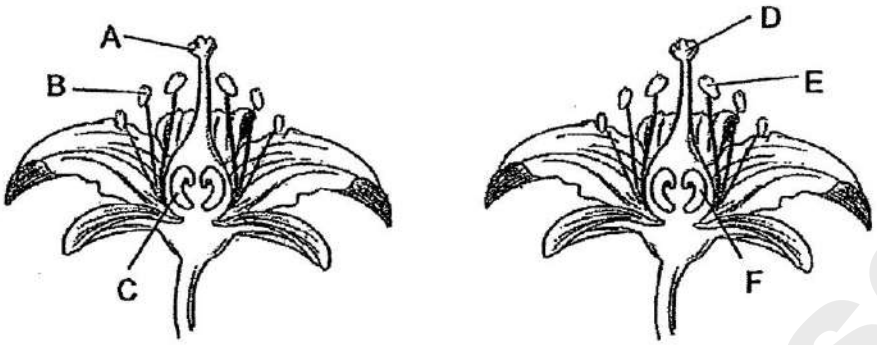


Which of the following correctly indicates parts A and B respectively?

	A	B
1)	Womb	Ovary
2)	Vagina	Ovary
3)	Ovary	Vagina
4)	Vagina	Womb

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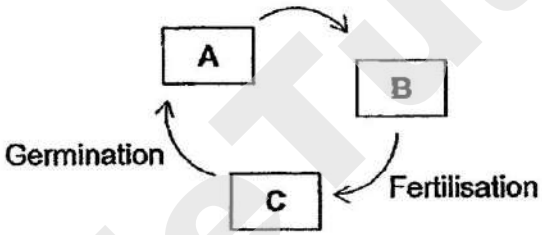
18. Study the diagram below.



Pollination occurs when pollen grains are transferred from _____.

1) A to E
2) B to D
3) C to F
4) B to F

19. The diagram below shows the life cycle of a plant.



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

	A	B	C
1)	Seed	Adult plant	Young plant
2)	Seed	Young plant	Adult plant
3)	Adult plant	Seed	Young plant
4)	Young plant	Adult plant	Seed

20. A melting block of ice was placed on a table in the kitchen.



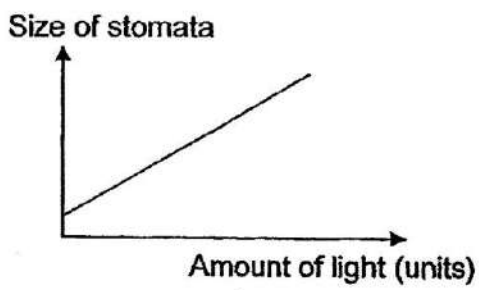
Which one of the following statements is correct?

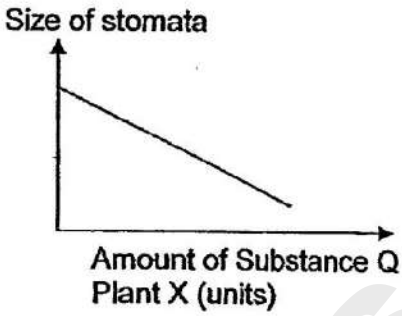
1) The ice will increase in temperature.
2) The ice will decrease in temperature.
3) The ice will gain heat from the water around it.
4) The water around the ice will gain heat from the ice.

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21. The graphs below show the relationship between the amount of Substance Q in the plant and the amount of light and the size of stomata of Plant X.





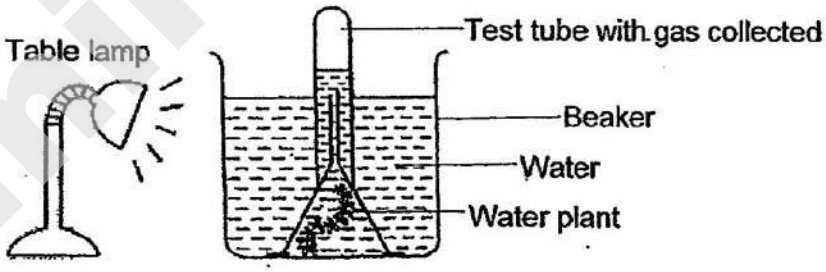
The table below show Plant X in different set-ups.

Set-ups	Amount of light (units)	Amount of Substance Q in Plant X (units)
A	Low	High
B	High	High
C	High	Low
D	Low	Low

In which set-up will Plant X have the largest stomata?

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

22. Mr Tan set up an experiment in a dark room as shown below.



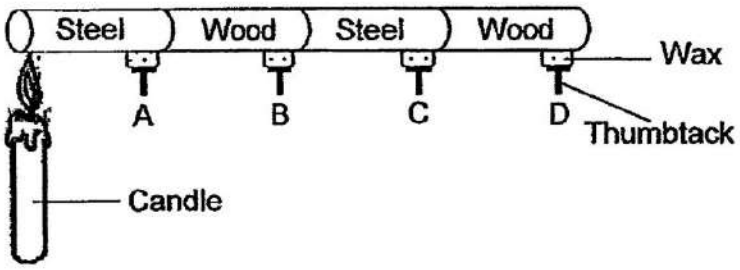
He placed a table lamp at a distance of 40 cm from the beaker with water plant. After 30 minutes, he observed that the test tube had collected 8 cm^3 of gas. He repeated the experiment by placing the lamp at different distances from the beaker.

Which one of the following shows the most likely result of this experiment?

	Distance between the lamp and beaker (cm)	Volume of gas collected (cm^3)
1)	15	8 cm^3
2)	15	3 cm^3
3)	65	8 cm^3
4)	65	3 cm^3

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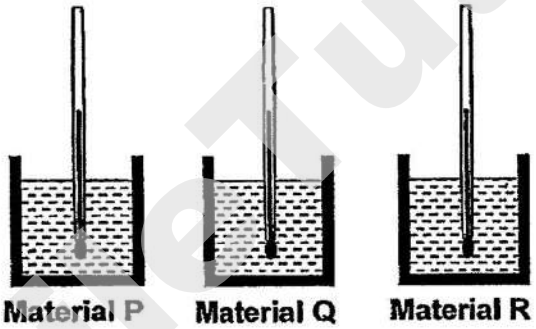
23. Sam had a rod with 4 segments as shown in the diagram below. Each segment had a piece of wax and a thumbtack.



Which one of the following correctly shows the sequence in which the thumbtacks will drop?

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

24. Sarah conducted an experiment as shown below.



She recorded the time taken for the water to boil for each set-up in the table below.

Materials	Time (minutes)
P	25
Q	12
R	38

Which one of the following correctly shows how well the materials conduct heat?

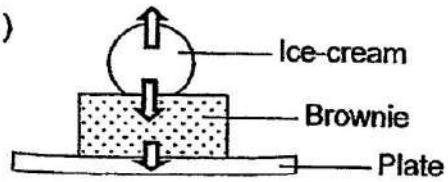
	Material P	Material Q	Material R
1)	Good	Poor	Very good
2)	Poor	Good	Very good
3)	Very good	Poor	Good
4)	Good	Very good	Poor

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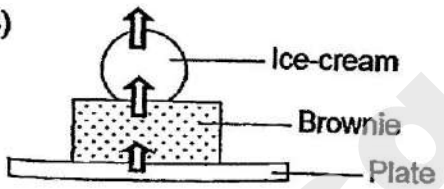
25. Mei Ling took out a piece of warm brownie from the oven and placed it on a plate. She then placed a scoop of ice-cream onto the brownie.

The arrows show the direction of heat flow. Which one of the following correctly shows how heat travels?

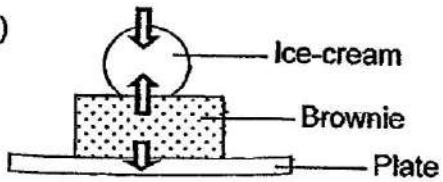
1)



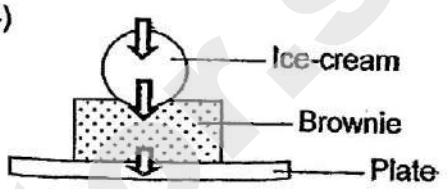
3)



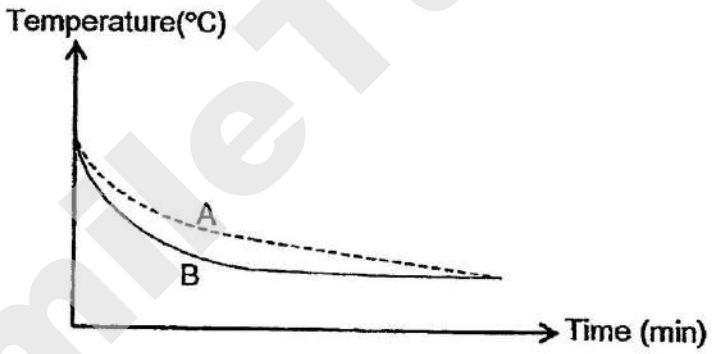
2)



4)

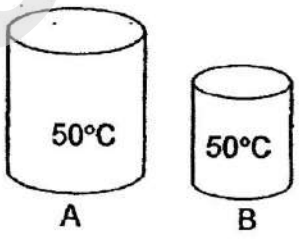


26. Linda conducted an experiment with 2 iron cylinders in the Science room. The graph below shows the rate of cooling of the cylinders.

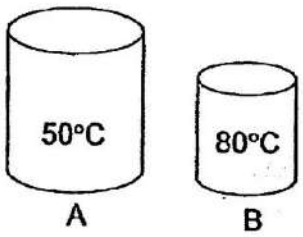


Which one of the pairs of cylinders correctly shows the ones used in Linda's experiment at the start?

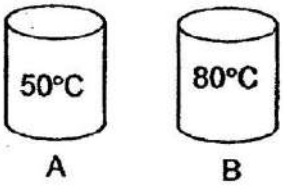
1)



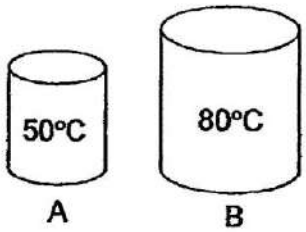
3)



2)

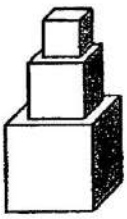


4)



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27. Which of the following are possible shadows cast by the wooden cubes below?



A: 

C: 

B: 

D: 

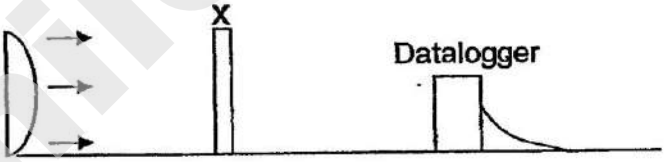
1) A and B only
2) A and C only
3) B and D only
4) C and D only

28. Seng Huat has 4 sheets made of different materials as shown below.



Frosted glass

He first placed Sheet X in between a light source and a datalogger and observed that the amount of light detected by the datalogger was 200 units.



He then repeated the experiment by placing different sheets of materials, A, B and C between the light source and datalogger and recorded the results of his experiment as shown below.

	Sheets used		
	A	B	C
Amount of light detected by datalogger (units)	240	0	85

Which one of the following most likely shows the degree of transparency of each material?

	A	B	C
1)	Transparent	Transparent	Opaque
2)	Opaque	Translucent	Transparent
3)	Translucent	Opaque	Opaque
4)	Transparent	Opaque	Translucent

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SINGAPORE CHINESE GIRLS' SCHOOL
SECOND SEMESTRAL ASSESSMENT 2018
PRIMARY 5 SCIENCE

Name: _____ ( ) Date: 19 October 2018

Class: Primary 5 SY / O / G / SE / P

Components	Marks Obtained	Total Marks
Booklet A		56
Booklet B		44
Total		100

_____
Parent's Signature

SCIENCE

BOOKLET B

12 questions

44 marks

Total Time For Booklets A & B: 1 h 45 min

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

FOLLOW ALL INSTRUCTIONS CAREFULLY

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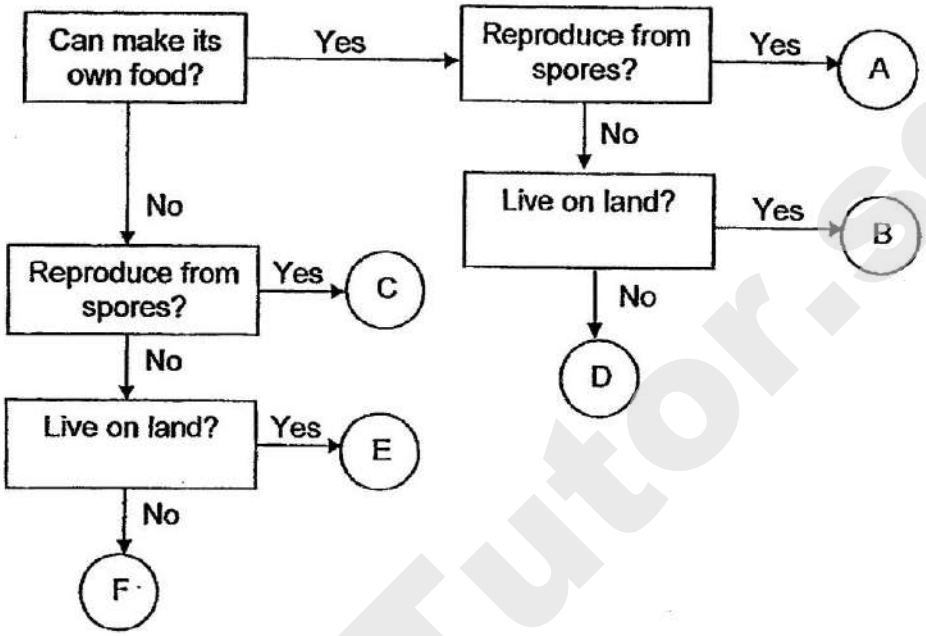
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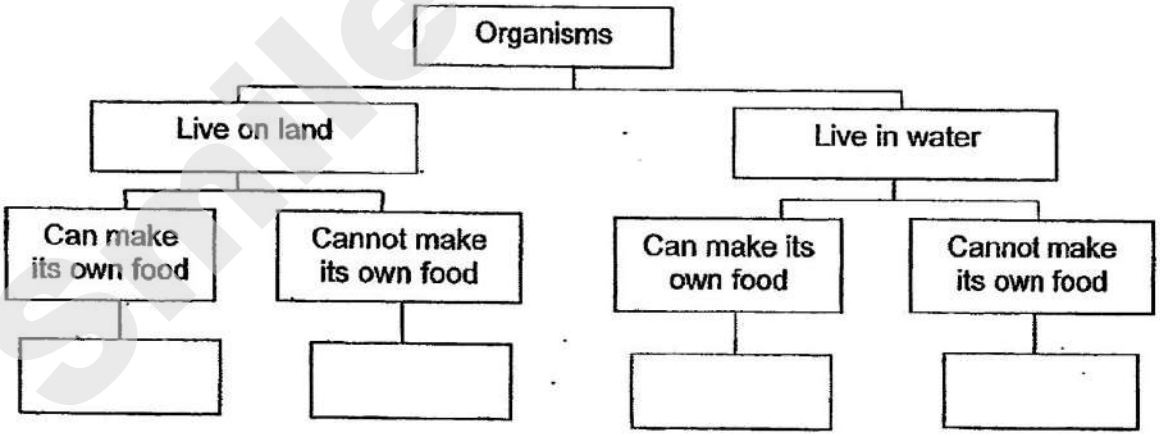
Booklet B (44 marks)

Answer all the following questions.

29. The flowchart below shows 6 organisms, A, B, C, D, E and F.



a) Classify Organisms B, D, E and F in the chart below. (2m)



b) Explain why Organisms A and C cannot be classified in the chart above. (1m)

_____

_____

3

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30. The table below shows the parts of Cells W, X, Y and Z.

Cell Parts	W	X	Y	Z
Cell Wall	✓	✓		
Cell Membrane	✓	✓	✓	✓
Cytoplasm	✓	✓	✓	✓
Nucleus	✓	✓	✓	
Chloroplast		✓		

a) Which of the cell/s above is/are plant cell/s? Explain your answer. (1m)

b) State 2 differences between Cell X and Cell Y. (1m)

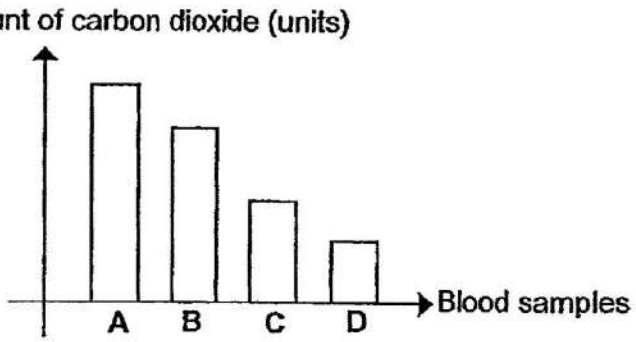
c) State what Cell Y can do but Cell Z cannot. (1m)

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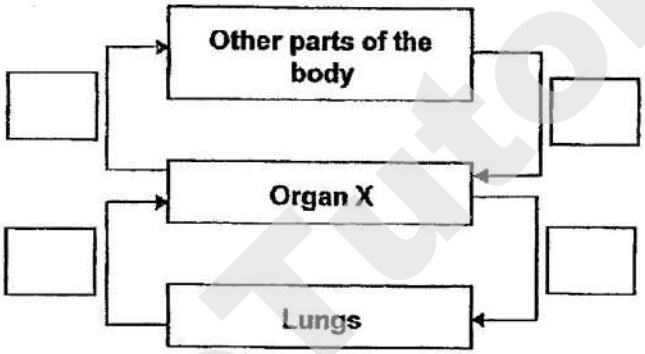
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31. The graph below shows the concentration of carbon dioxide in 4 blood samples taken from different blood vessels in the human body.



a) In the 4 boxes below, fill in A, B, C or D to indicate where the blood samples were taken from. (2m)



b) Name Organ X. (1m)

_____

c) Explain why the air we breathe out is warmer than the air we breathe in. (1m)

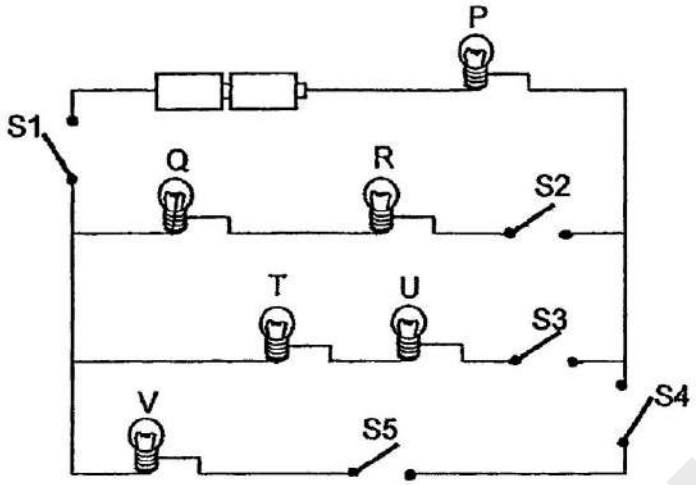
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32. Study the circuit below.



a) Which bulb/s will light up if only S1, S2 and S5 are closed? (1m)

_____

b) Which switch/es must be closed for Bulb T and Bulb U to light up? (1m)

_____

c) If all the switches are closed, which bulb when fused will cause all the other bulbs not to light up? (1m)

_____

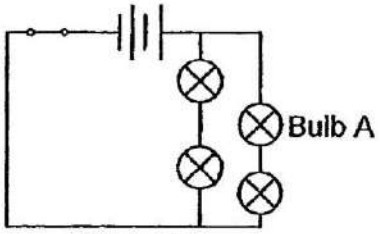
d) Which bulb/s will light up if Bulb R is fused and only S1, S2 and S3 are closed? (1m)

_____

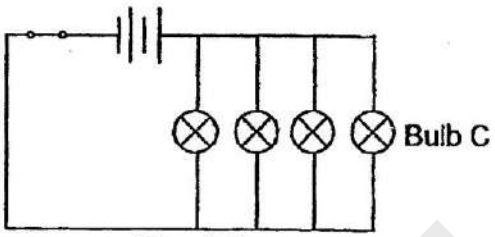
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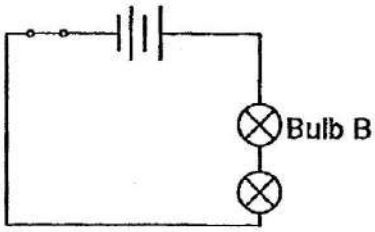
33. Raju formed Circuits A, B, C and D as shown below.



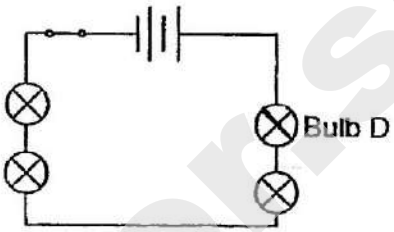
Circuit A



Circuit C



Circuit B



Circuit D

a) Which bulb will have the same brightness as Bulb A? (1m)

_____

b) Which bulb will be dimmer than Bulb A? (1m)

_____

c) Which bulb will be brighter than Bulb A? (1m)

_____

d) If Bulb D is fused, will the remaining bulbs in Circuit D still light up? Explain your answer. (1m)

_____

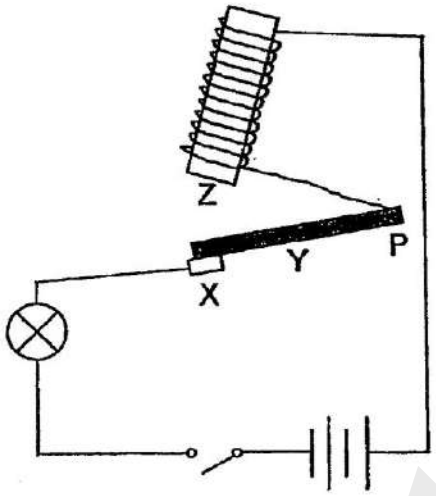
_____

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34. Luke designed a circuit that produces blinking light. X, Y and Z are made of iron. X and Z are fixed. Y can be rotated at Point P. When Luke closed the switch, Y moved up and down between X and Z repeatedly.



a) In the diagram, Y was touching X. Explain why the bulb lit up when the switch was closed. (1m)

b) Explain why Y moved and touched Z when the switch was closed. (1m)

c) Explain what would happen after Y touched Z. (2m)

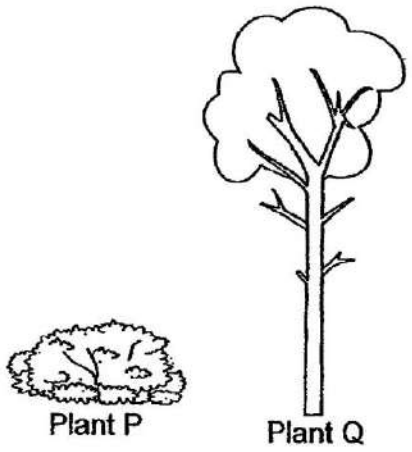
d) Will the circuit still produce blinking light if X is changed into aluminium? Explain your answer. (1m)

5

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35. Anna observed Plant P and Plant Q as shown below.



She recorded her observations of Plant P and Plant Q in the table below.

Plant	Characteristics of Plant	Characteristics of Seeds
P	Short	Seeds are light and have hooks
Q	Tall	Seeds have wing-like structures

a) State the method of seed dispersal for Plant P and Plant Q. (1m)

i) Plant P: _____

ii) Plant Q: _____

b) List one advantage Plant Q has over Plant P if they are grown next to each other. (1m)

_____

c) Explain how it is an advantage for the seeds of Plant P to be grown on a short plant. (1m)

_____

_____

_____

d) Explain how it is an advantage for the seeds of Plant Q to be grown on a tall plant. (1m)

_____

_____

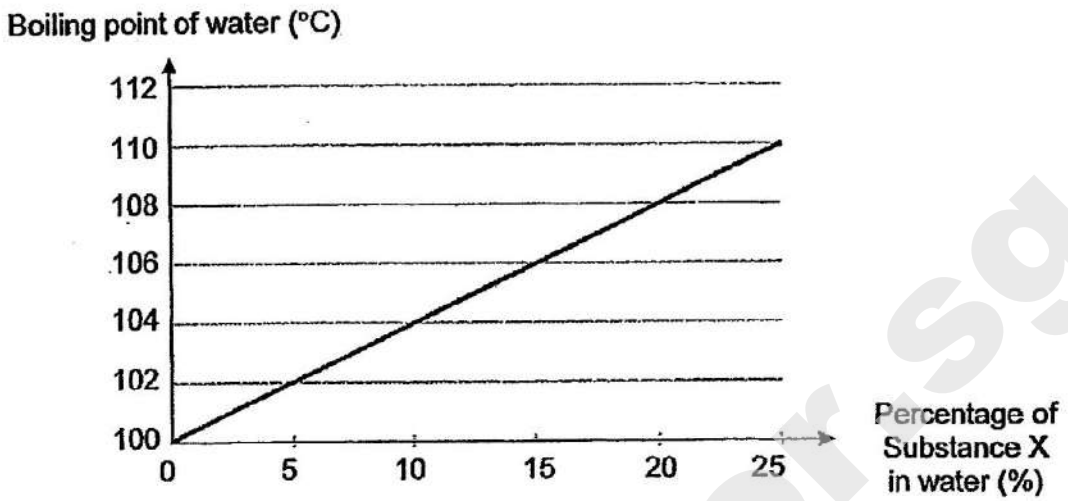
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36. The graph below shows how the boiling point of water changes when different amounts of Substance X are added.

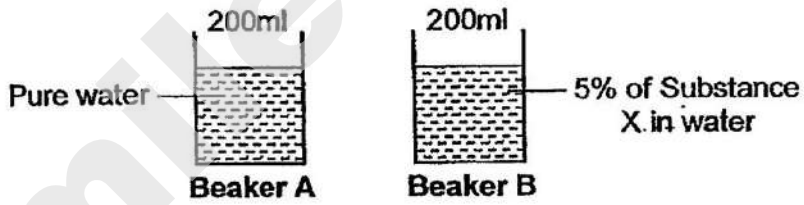


a) What is the relationship between the percentage of Substance X in water and the boiling point of water? (1m)

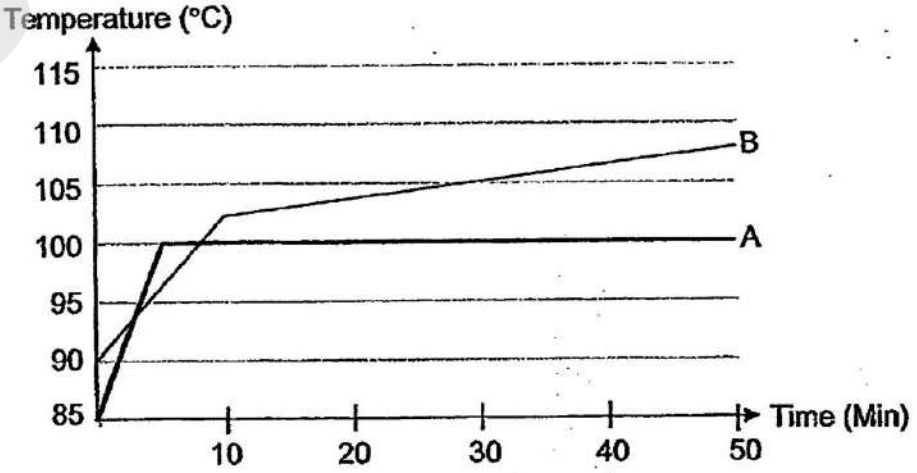
_____

_____

b) The diagram below shows glass beakers A and B.



Amin heated both beakers and recorded the temperature of water over a period of time.



1

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i) Amin noticed that the volume of water in both beakers was less than 200ml at the end of 50 minutes. Explain what caused this to happen. (1m)

_____

ii) Explain why the temperature of the water in Beaker A remained the same after the 5th minute. (1m)

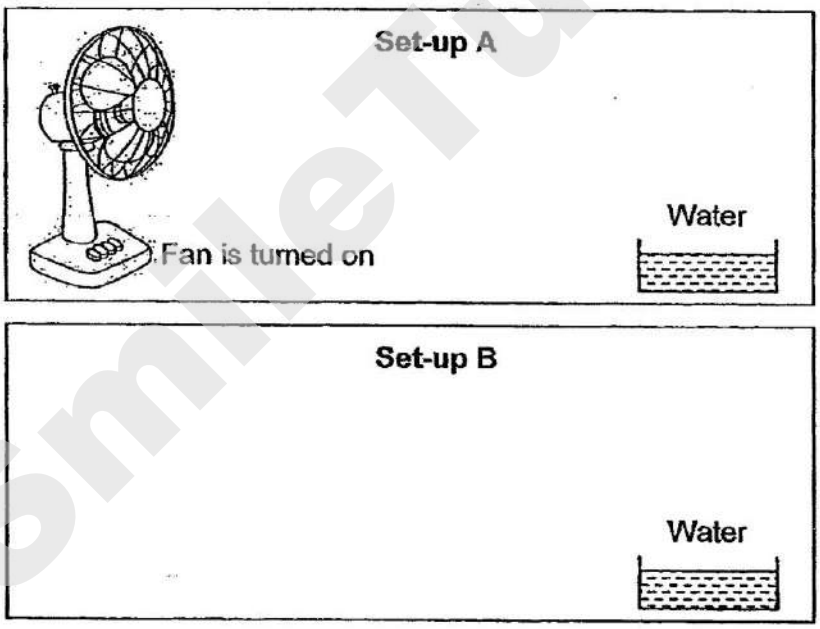
_____

iii) Based on the 2 graphs, explain why the temperature of water in Beaker B does not stay the same during boiling. (2m)

_____

_____

37. Mohan carried out an experiment as shown below. After 5 hours, he compared the amount of water left in each container.



Which set-up would have more water left after 5 hours? Explain your answer. (2m)

_____

_____

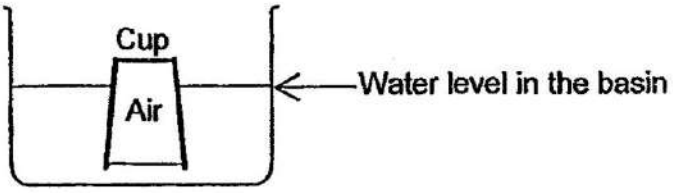
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38. A cup was inverted into a basin of water as shown below.



a) State the property of air which prevented water from entering the cup. (1m)

_____

b) What will happen to the water level in the basin when the cup is removed from the water? (1m)

_____

Meihua found that it was easier to wash the food containers if she were to fill them with water half an hour before washing them. The diagram below shows the 2 containers Meihua had.



c) Meihua's mother told her that she should place Container B into Container A so that she can save water. Do you agree with Meihua's mother? Explain your answer. (2m)

_____

_____

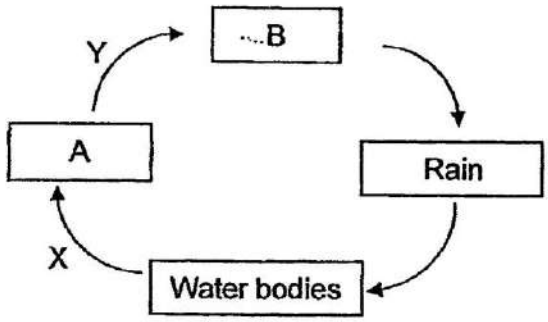
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39. The diagram below shows the water cycle.



Based on the diagram above, put a tick (✓) in the appropriate column to indicate if each of the following statement is **'True'** or **'False'**. (3m)

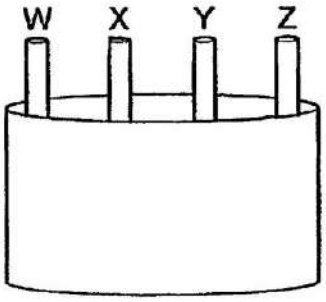
	Statements	True	False
a)	B represents water vapour.		
b)	A represents water droplets.		
c)	Process X represents evaporation.		
d)	Water loses heat during Process X.		
e)	Process Y represents condensation.		
f)	Water gains heat during Process Y.		

3

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40. Deena placed 4 rods of different materials into a container of hot water for 15 minutes. The lengths of the 4 rods were recorded in the table below.



Material	Length of rods at the start of the experiment (cm)	Length of rods after 15 minutes (cm)	Temperature of rods after 15 minutes (°C)
W	20	20.2	90
X	20	20.5	100
Y	20	21.3	80
Z	20	20.8	90

a) Why did Deena use rods of the same length? (1m)

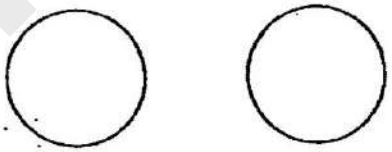
_____

b) Based on the results of the experiment, Deena concluded that the best conductor of heat will be the longest after 15 minutes. Explain why her conclusion was wrong. (1m)

_____

_____

c) Deena had 2 disc made of Material W and Material Z as shown below.



Material W Material Z

Which disc, W or Z will be a bigger disc when heated? Explain your answer. (1m)

_____

_____

END OF PAPER

3

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SCHOOL : SCGS PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA2

CONTACT :

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	1	2	3	4	3	1	3	3	2
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	1	4	2	3	4	1	2	4	3
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
3	4	1	4	2	1	2	4		

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P5 SEMESTRAL ASSESSMENT 2 (SCIENCE) 2018
ANSWER KEY

NAME: _____ CLASS: _____

Qn	Suggested Answers
29a	B, E, D, F
29b	The chart did not provide information on whether Organisms A and C live on land or in water.
30a.	W and X. They both have cell walls.
30b	Cell X has cell wall and chloroplast but Cell Y does not.
30c	Cell Y can control all the activities in the cell but Cell Z cannot. Cell Y can pass on genes/DNA but Z cannot.
31a	C B D A
31b	Heart
31c	The air that we breathe in gain heat from our body /lungs before we breathe it out.
32a	P, Q and R
32b	S1 and S3
32c	P
32d	P, T and U
33	a)Bulb B b)Bulb D c)Bulb C
33d	No. Bulb D is connected in series, thus when it fused, it will cause an open circuit/ incomplete circuit.
34a	When the switched was closed, there was a closed circuit/ complete circuit so the bulb lit up. *'Electricity can flow through' – no marks if concept of complete circuit is not stated.*
34b	When switch is closed, Z becomes an electromagnet which will attract Y.
34c	When Y touched Z, circuit is broken /open, thus the bulb

Qn	Suggested Answers
	cannot light up and Z is no longer an electromagnet. As Z can no longer attract Y, Y will move back to touch X.
34d	Yes. Aluminium is an electrical conductor / can conduct electricity.
35a	i) By man/ animals ii) By wind
35b	Plant Q will be able to obtain **more** light/sunlight for photosynthesis/ to make food. *Must show comparison.*
35c	P is short /low enough for its seeds to hook onto fur of short animals **more easily.** *Must show comparison.*
35d	Seeds of Q are high up to stay in the air **longer** to travel a longer distance before they drop.
36a	The higher the **percentage** of X in water, the higher the boiling point. OR When the **percentage** of X in water increases, the boiling point increases. *Amount is not the same as percentage.*
36bi	Some of the water has turned into steam /boiled off. *Answer must show understanding that boiling has occurred and not just evaporation which can happen at any temperature.*
36b ii	The water has reached its boiling point / is boiling. *Water is changing from liquid to gas – has no marks as it does not specify the process. Evaporation is also changing state.*
36b iii	As the water in Beaker B turns into steam, less water remains in the beaker. Thus, the percentage of X in the water increases causing the boiling point of water to increase.

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Qn	Suggested Answers
37	Setup B. Set-up A was exposed to wind but Set-up B was not. Thus the rate of evaporation in Setup B will be slower, leaving more water behind. *'Fan' is not one of the 4 factors affecting rate of evaporation, 'WIND' is one of the 4 factors.*
38a	Air in the cup takes up /occupy space.
38b	It will decrease / become lower.
38c	Yes. Container B (and water inside) will occupy space in Container A , thus Container A needs less water to fill up. OR No. Container B occupies space and cause the water to overflow. As the water overflows, there is no saving of water. *BOD on 2nd answer which takes place after A is fully filled.*
39	a. False b. False c. True d. False e. True f. False
40a	To ensure a fair test.
40b	Material Y expanded the most/ became the longest but it did not it conduct heat the fastest/ best conductor of heat. OR X is the best conductor of heat / conducted heat fastest but it did not become the longest/ expand the most. *Must show comparison and infer from table.*
40c	Z. Material Z expanded more than W (based on the results/ table) upon heating. *Must show comparison.*

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30

TAO NAN SCHOOL 道南学校

SINCERITY & PERSEVERANCE

2018 PRIMARY 5 SEMESTRAL EXAMINATION 2

Name : _____ ( )

Class : Primary 5 ( )

Parent's signature: _____

Date: 22 October 2018

Time: 8.00 a.m. - 9.45 a.m.

Duration: 1 hour 45 minutes

SCIENCE

BOOKLET A

INSTRUCTIONS TO CANDIDATES

1. Write your name, class and register number.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers on the Optical Answer Sheet (OAS) provided.

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Booklet A (28 x 2 marks)

For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.

(56 marks)

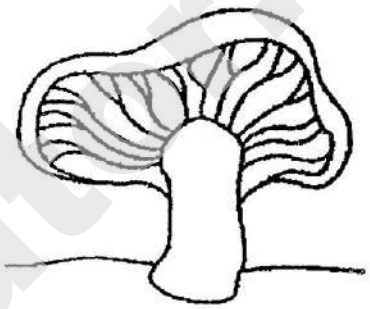
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1. Which of the following organisms reproduces by seeds?

(1) Fern



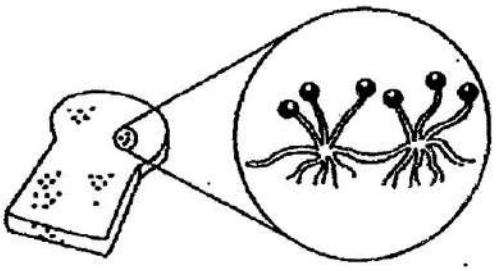
(2) Mushroom



(3) Balsam plant



(4) Bread mould



2. Which of the following is true about cells?

(1) All cells have a cell wall.

(2) All cells can be seen with the naked eye.

(3) Some living things are made up of one cell only.

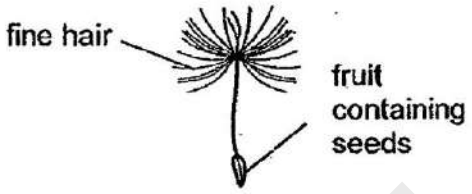
(4) The leaf cell of a papaya plant has all the cell parts as its root cell.

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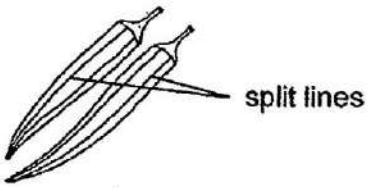
3. The following shows the fruits of four plants.



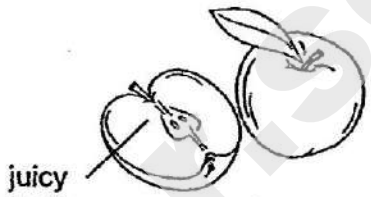
coconut



dandelion

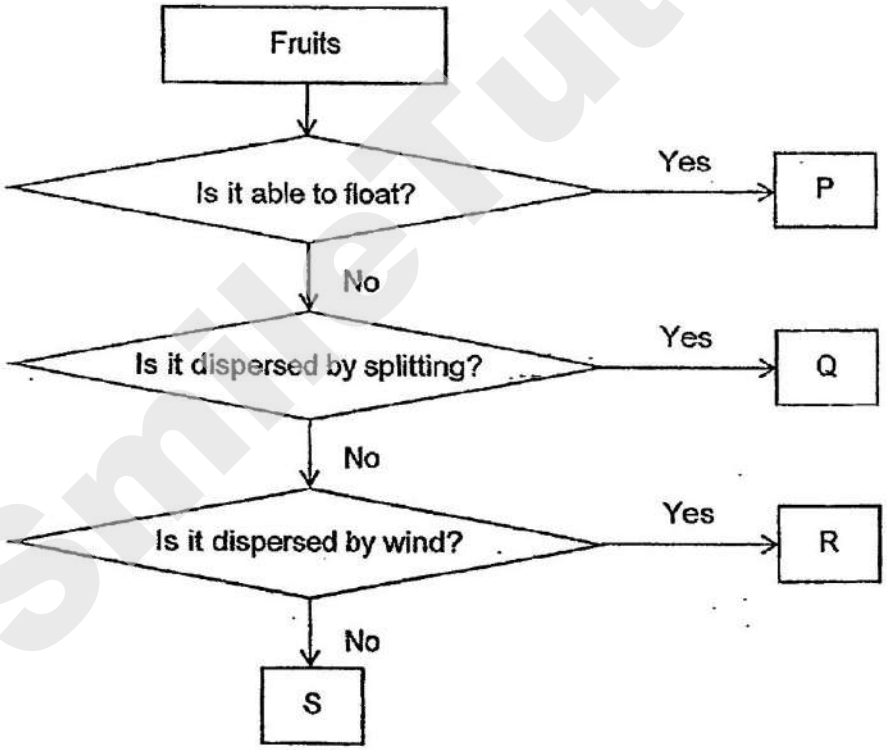


lady's finger



apple

Study the flow chart below. P, Q, R and S represent the four fruits shown above.



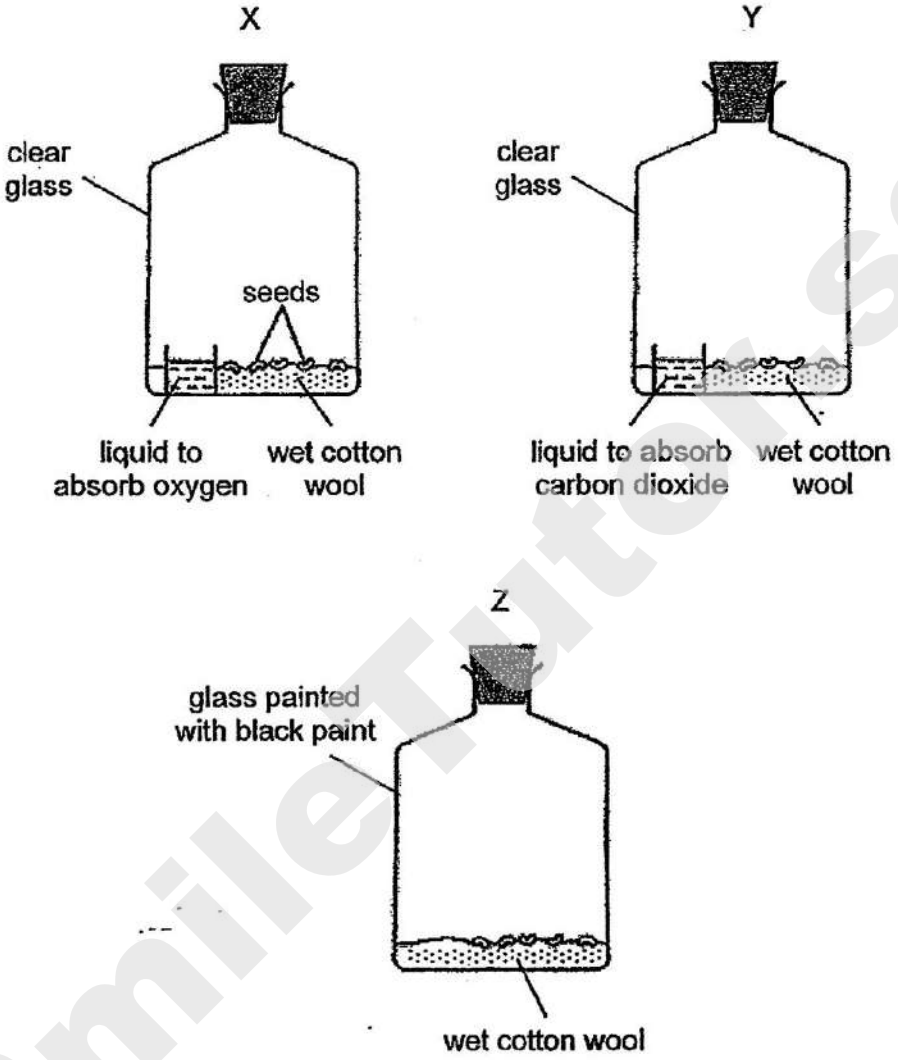
Which of the following is represented by P, Q, R and S?

	P	Q	R	S
(1)	coconut	apple	lady's finger	dandelion
(2)	dandelion	lady's finger	coconut	apple
(3)	apple	dandelion	coconut	lady's finger
(4)	coconut	lady's finger	dandelion	apple

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4. Seeds were placed in three bottles X, Y and Z, in a well-lit room at room temperature as shown below.



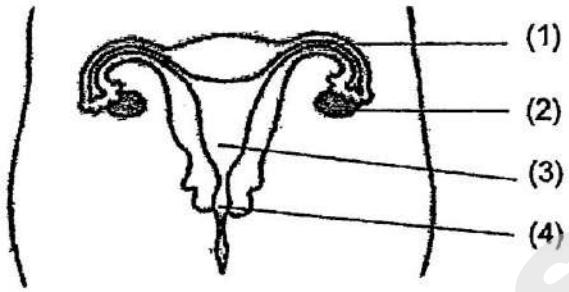
In which bottle(s) would the seeds most likely germinate?

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

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5. The diagram below shows the female human reproductive system. Which part of the system releases eggs?



6. Gopal made three statements about sexual reproduction in plants and humans.

A: The fertilised egg develops in the womb.

B: The male reproductive cells are produced in the testes.

C: Characteristics are passed on from parents to their young.

Which of the above is correct in plants and/ or humans?

	Plants	Humans
(1)	C	A, B, C
(2)	C	A, B
(3)	A, C	B, C
(4)	A, B	C

7. Which of the following are transported by the blood in the human body?

A: oxygen

B: carbon dioxide

C: water

D: digested food

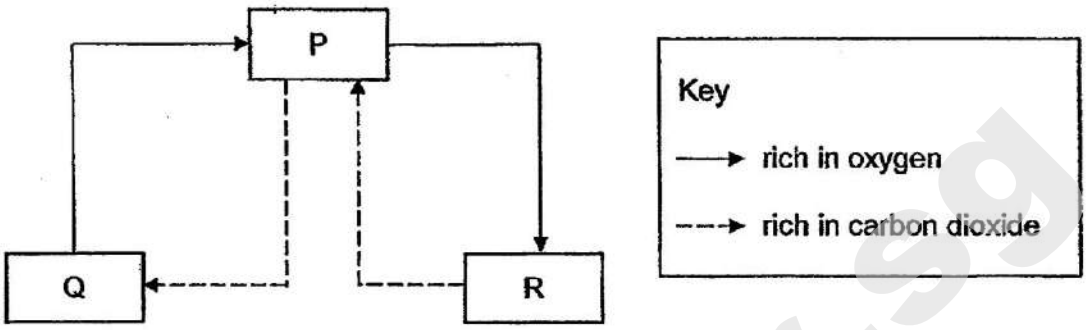
E: waste product

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

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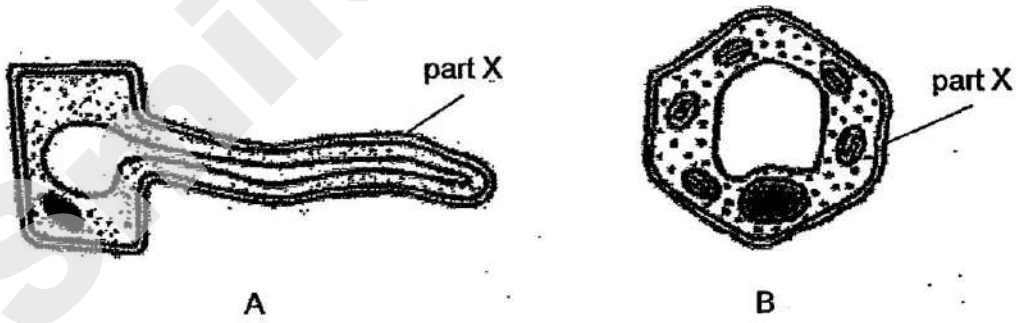
8. The diagram below shows the direction of blood flow and the amounts of oxygen and carbon dioxide in some parts of the human body.



Which of the following are the body parts represented by P, Q and R?

	P	Q	R
(1)	heart	brain	lungs
(2)	lungs	heart	brain
(3)	heart	lungs	brain
(4)	brain	heart	lungs

9. Part X of two cells, A and B, is shown below.



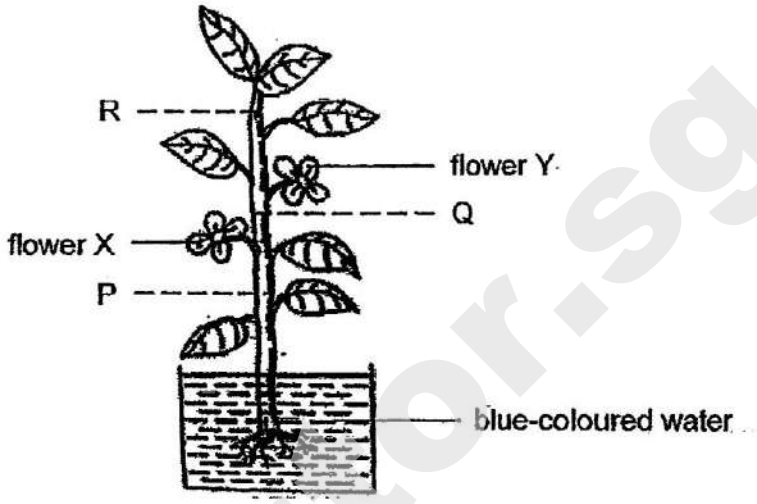
Which of the following is correct of the cells, A and B, and part X?

	Cell A	Cell B	Part X
(1)	animal cell	plant cell	cell membrane
(2)	plant cell	animal cell	cell wall
(3)	plant cell	plant cell	cell wall
(4)	plant cell	plant cell	cell membrane

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10. In an experiment, David put a plant with two white flowers, X and Y, into a beaker containing blue-coloured water. After a few hours, flower X turned blue while flower Y remained white. He made three cuts, P, Q and R, as shown in the diagram below.



Which of the following diagrams show the cut-sections of the water-carrying tubes David would observe at P, Q and R?

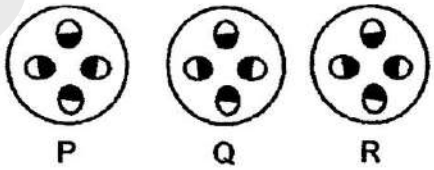
(1)



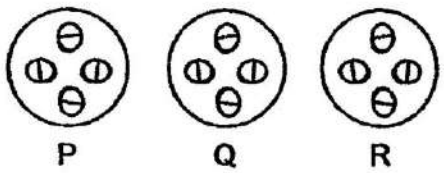
(2)



(3)



(4)



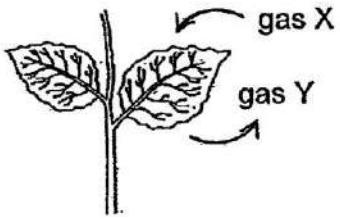
Key

⊖ without blue-coloured water

◒ with blue-coloured water

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11. The diagram below shows the gaseous exchange of the leaves of a plant in a dark room.

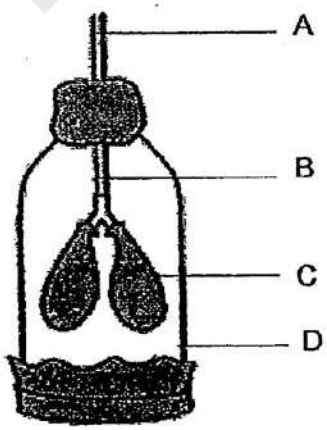


in a dark room

Which of the following represents gas X and gas Y?

	Gas X	Gas Y
(1)	carbon dioxide	oxygen
(2)	oxygen	carbon dioxide
(3)	water vapour	oxygen
(4)	oxygen	oxygen

12. Siti made a model of the human respiratory system with four main parts, A, B, C and D.



Which of the following correctly matches A, B, C or D to the correct part of the body and its function?

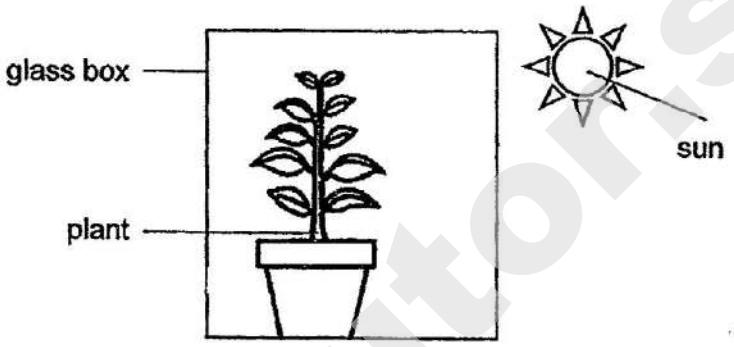
	Part		Function
(1)	A	nose	where air leaves the body when we breathe in
(2)	B	windpipe	transfers air from the nose to the lungs
(3)	C	ribcage	protects the lungs
(4)	D	lung	where oxygen is absorbed from the air into the blood

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13. Which of the following does **not** affect the amount of food absorbed after a meal?

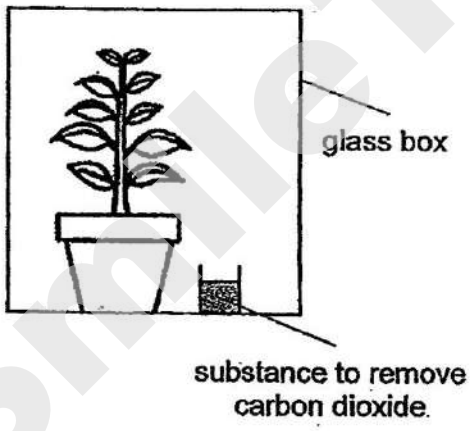
(1) length of gullet
(2) length of small intestine
(3) amount of digestive juice in the stomach
(4) number of times a person chews his food before swallowing

14. Yati conducted an experiment to find out whether carbon dioxide is needed for photosynthesis. She used the set-up below.

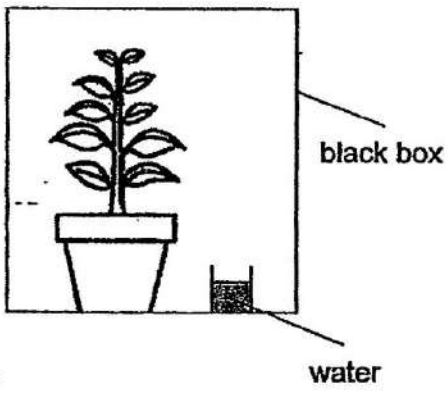


Which of the following should Yati use as a control for her experiment?

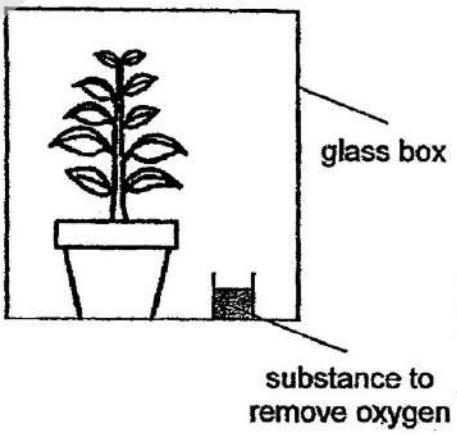
(1)



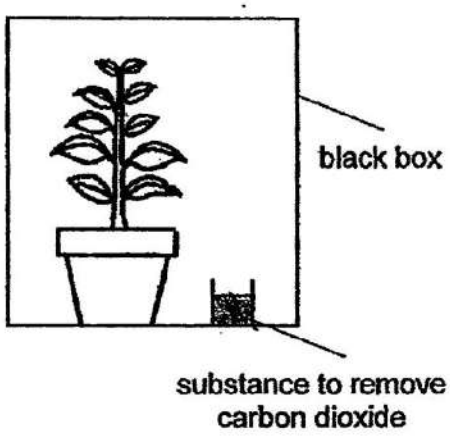
(2)



(3)

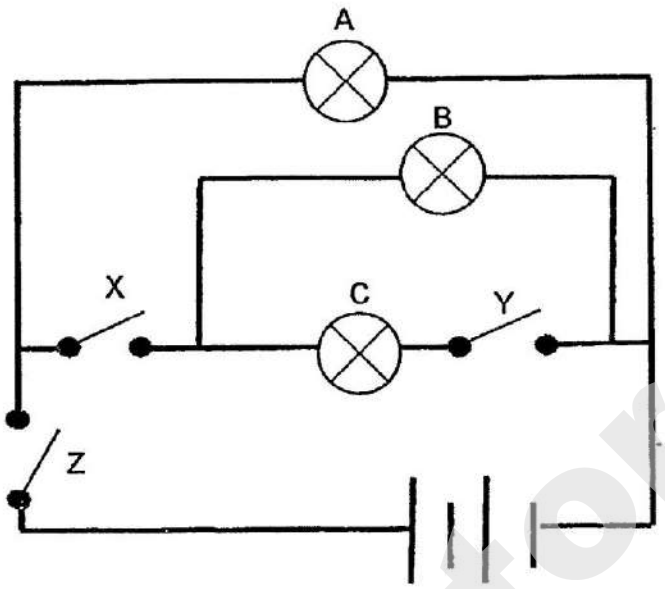


(4)



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15. The diagram shows an electric circuit.



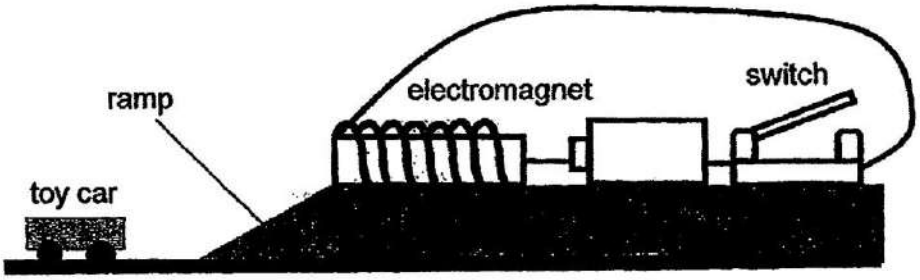
In which order must the switches be closed so that Bulb A lights up first, follow by Bulb B and then Bulb C?

	1st switch to close	2nd switch to close	3rd switch to close
(1)	X	Z	Y
(2)	Y	Z	X
(3)	Z	Y	X
(4)	Z	X	Y

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16. The diagram below shows an electromagnet and a toy car.



When the switch is closed, the toy car moves up the ramp towards the electromagnet.
Based on the above information, which of the following statement(s) is/ are true?

A: The toy car is made of magnetic material.

B: As the number of batteries increases, the toy car will move up the ramp faster.

C: As the number of coils around the electromagnet decreases, the toy car will move up the ramp faster.

(1) A and B only

(2) B and C only

(3) A and C only

(4) A, B and C

17. Which of the following pictures shows that water is being conserved?

(1)



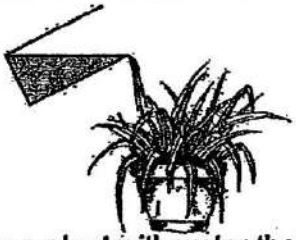
Using a hose to wash a car

(2)



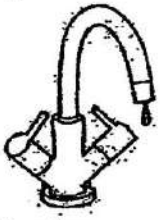
Bathing in a bath tub

(3)



Watering a plant with water that has been used to wash rice grains

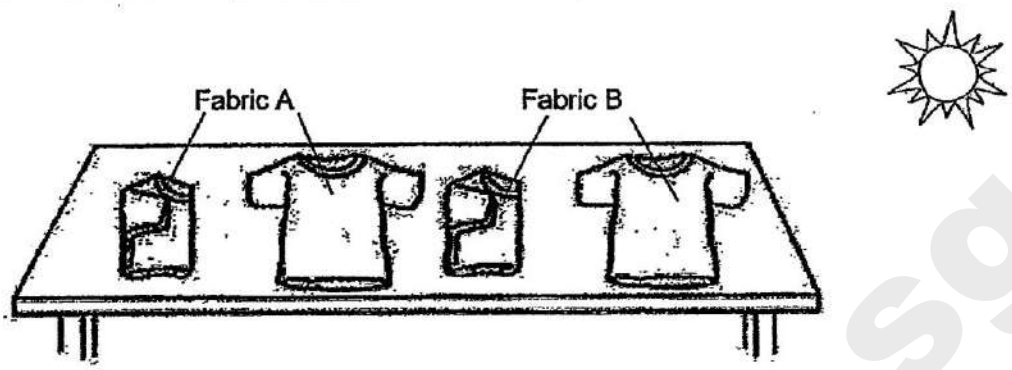
(4)



Leaking tap

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18. Doreen set up an experiment as shown. 100 ml of water was poured on each of the four shirts which are made of different materials.



All the shirts were placed under the Sun and Doreen measured the amount of time taken for each shirt to be completely dry.

Which are the possible aims of the experiment?

A: To find out if type of fabric affects the rate of evaporation.

B: To find out if the amount of water affects the rate of evaporation.

C: To find out if the exposed surface area of the fabric affects the rate of evaporation.

(1) C only

(2) A and B only

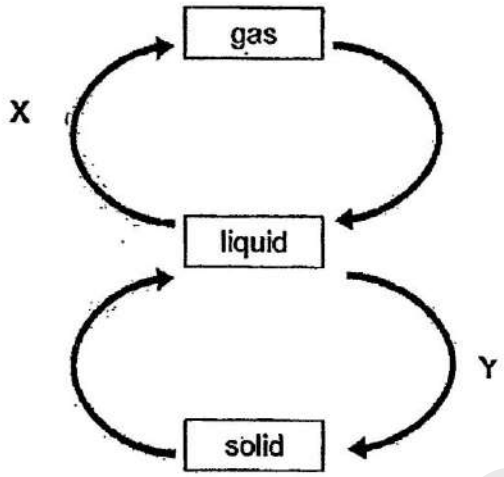
(3) A and C only

(4) A, B and C

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19. The diagram below shows the changes of the state of water.



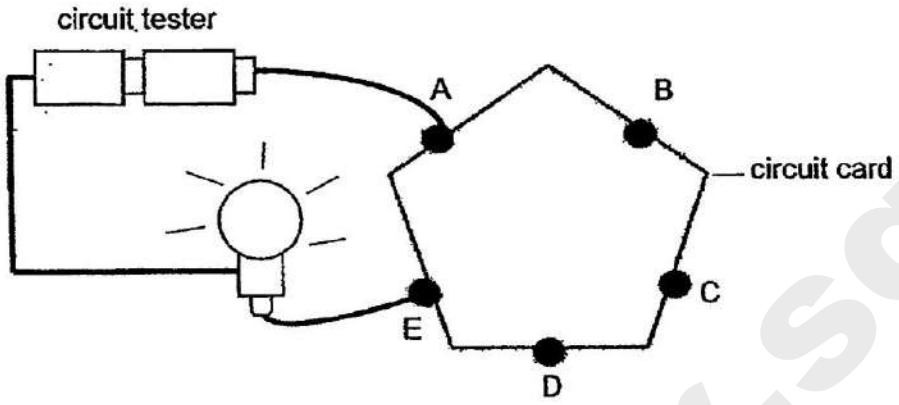
What are processes X and Y?

	X	Y
(1)	condensation	freezing
(2)	boiling	melting
(3)	evaporation	freezing
(4)	evaporation	melting

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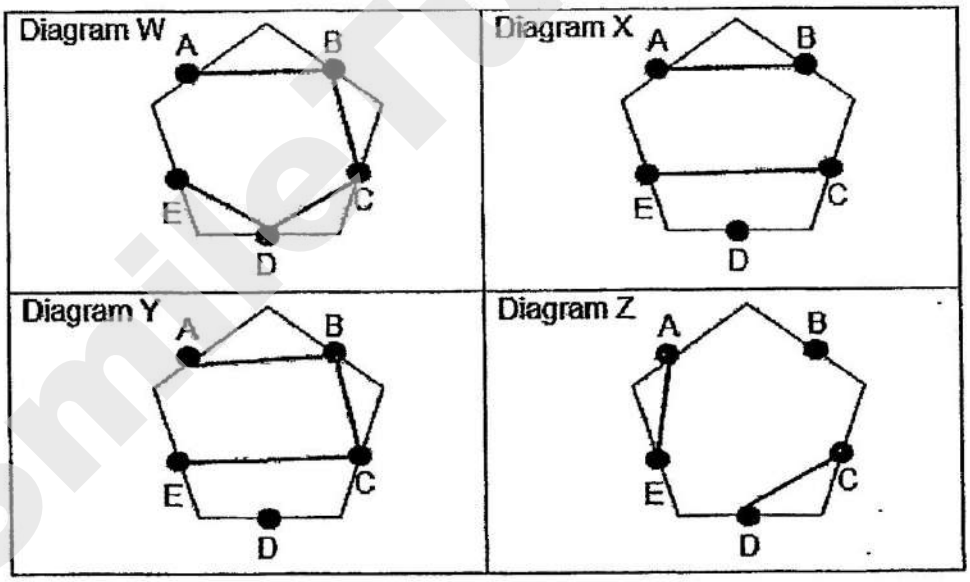
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20. The diagram below shows a circuit tester and a circuit card.



The bulb lights up when the circuit tester is connected to the points, A and E, of the circuit card as shown above.

Which of the following diagrams, W, X, Y or Z, show(s) the possible connection of the wires of the circuit card?



(1) Z only

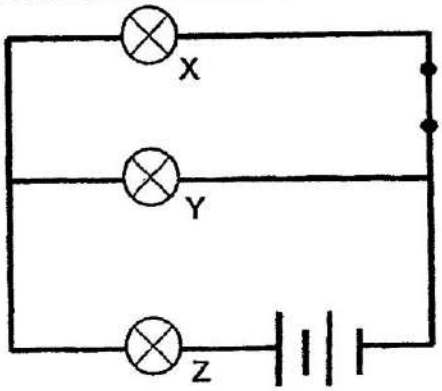
(2) Y and Z only

(3) W, X and Y only

(4) W, Y and Z only

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21. The diagram shows a circuit with three identical bulbs, X, Y and Z.



Which of the following is correct?

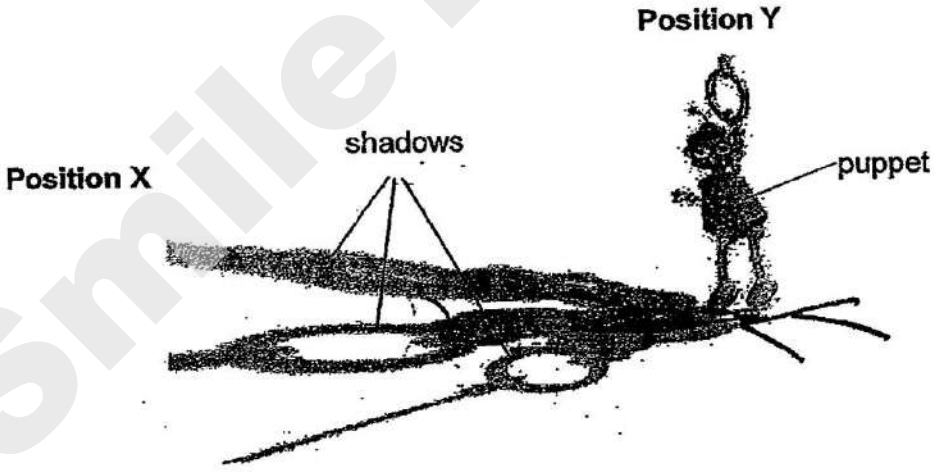
(1) The switch control bulbs, X and Z.

(2) There are four batteries in the circuit.

(3) Bulbs X, Y and Z are arranged in series.

(4) When bulb X fuses, bulb Y and Z will remain lit.

22. The picture below shows the effect of light shining on a puppet.



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

(1) The light source is at Position X.

(2) The light source is at Position Y.

(3) The puppet allows all light to pass through.

(4) There are more than one light source shining on the puppet.

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23. Laura conducted an experiment using three similar bowls of soup, all at the same temperature of 30°C. She placed the bowls in rooms with different surrounding temperatures.

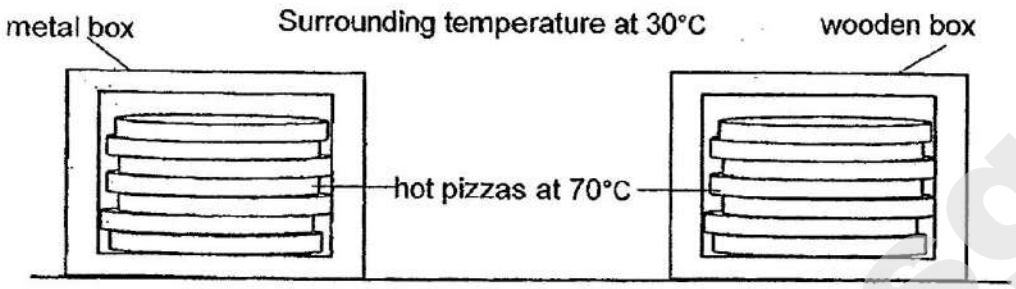
Which of the following correctly shows "white mist" being present?

	Surrounding temperature at 0°C	Surrounding temperature at 30°C	Surrounding temperature at 60°C
(1)			
(2)			
(3)			
(4)			

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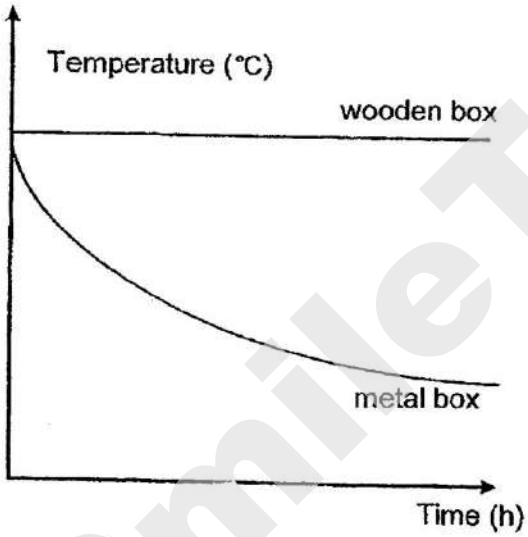
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24. Sasha put same number of hot pizzas inside two boxes made of different materials as shown below.

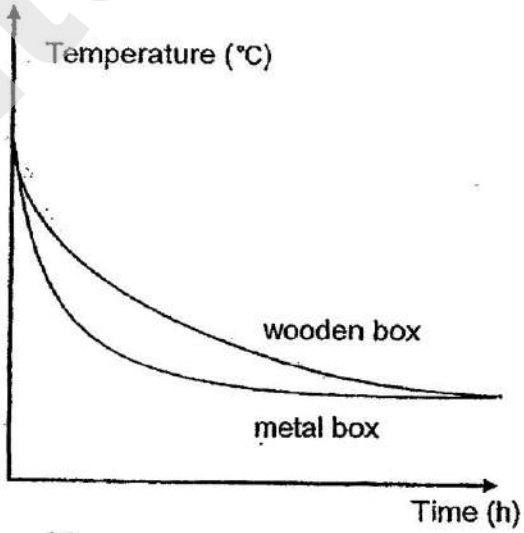


Based on the above, which of the following graphs represents the temperature change of the hot pizzas in the two boxes over a few hours?

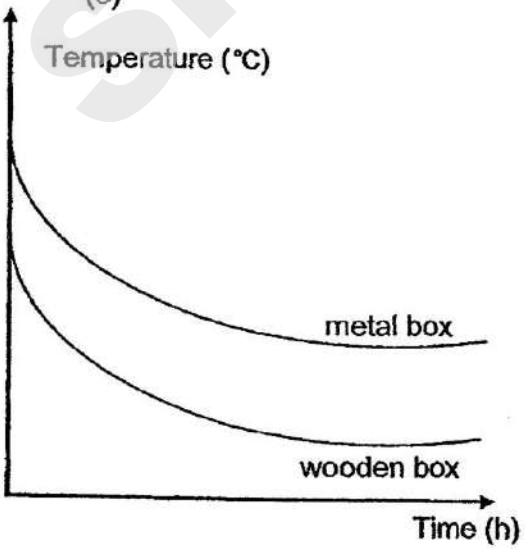
(1)



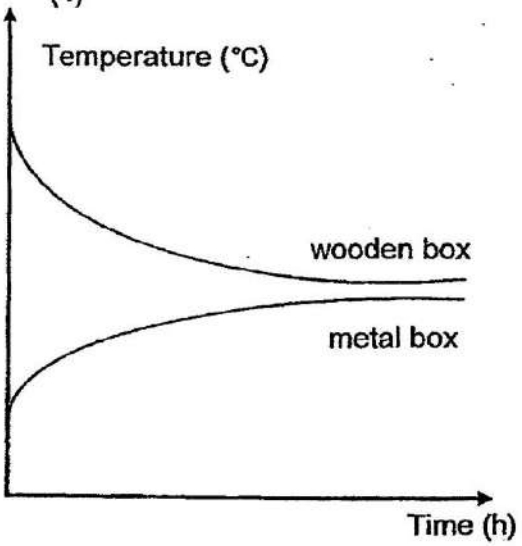
(2)



(3)

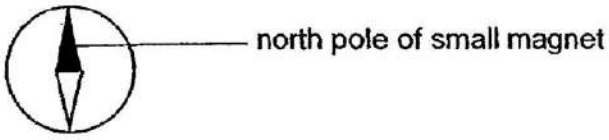


(4)

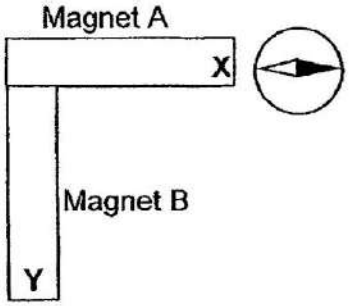


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25. A compass has a small magnet that can rotate freely as shown.



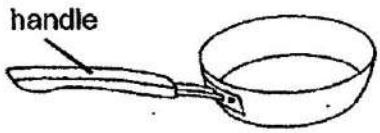
Magnets A and B are attracted as shown below.
The compass shows its direction when it is placed near X of Magnet A.



Which one of the following correctly represents the poles, X and Y?

	X	Y
(1)	north	south
(2)	south	north
(3)	south	south
(4)	north	north

26. A frying pan used for cooking is shown below.



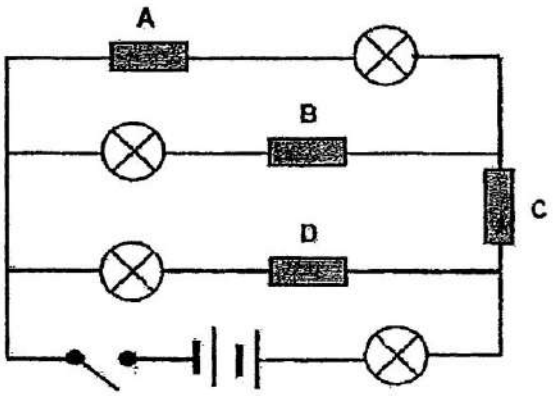
Which of the following most correctly states the properties of the handle?

	Flexible	Freezing point below 100°C
(1)	yes	yes
(2)	yes	no
(3)	no	yes
(4)	no	no

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27. A circuit diagram is shown below.



There are four blocks, A, B, C and D. Only one of the four blocks is an insulator of electricity.

When the switch is closed, only two bulbs light up.
Which of the blocks is the insulator of electricity?

(1) A

(2) B

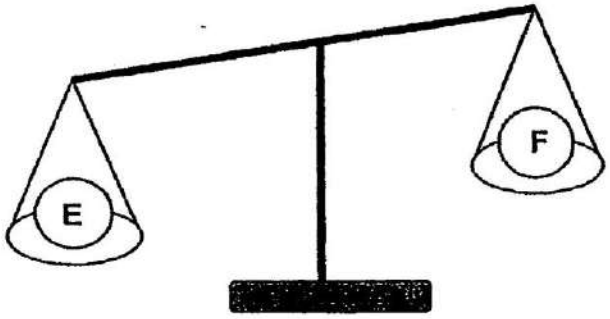
(3) C

(4) D

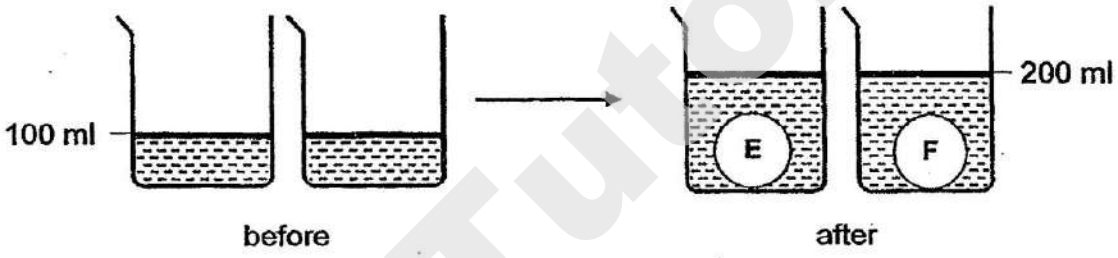
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28. Jack used the following set-ups to find out more about the objects, E and F. First, he placed both objects on the balance as shown below.



Then he placed both objects into two similar beakers containing 100 ml of water as shown below.



Based on Jack's observations of the above set-ups, what conclusions can he make about the objects, E and F?

(1) Objects E and F are not matter.

(2) Objects E and F has similar mass.

(3) Object E has smaller mass than Object F.

(4) Objects E and F occupy the same amount of space.

End of Booklet A

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TAO NAN SCHOOL 道南学校

SINCERITY & PERSEVERANCE

2018 PRIMARY 5 SEMESTRAL EXAMINATION 2

Name : _____( )

Class : Primary 5 ( )

Parent's Signature : _____

Date: 22 October 2018

Time: 8.00 a.m. – 9.45 a.m.

Duration: 1 hour 45 minutes

SCIENCE

BOOKLET B

INSTRUCTIONS TO CANDIDATES

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

Booklet A	56
Booklet B	44
Total	100

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Booklet B (44 marks)

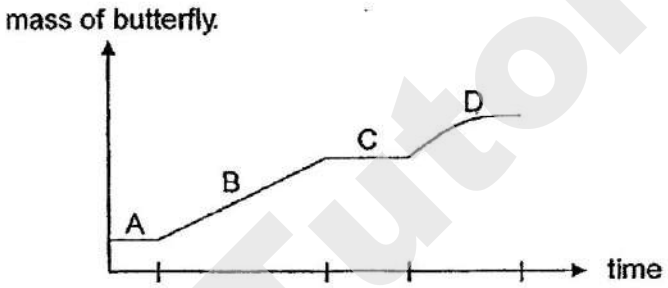
For questions 29 to 40, write your answers clearly in this booklet.

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

(44 marks)

---

29. The graph below shows the mass of a butterfly during the four different stages of its life cycle. D is the adult stage.



(a) Name stage C in the life cycle of the butterfly. [1]

(b) Suggest a reason why the mass of the butterfly at stage B has the greatest increase. [1]

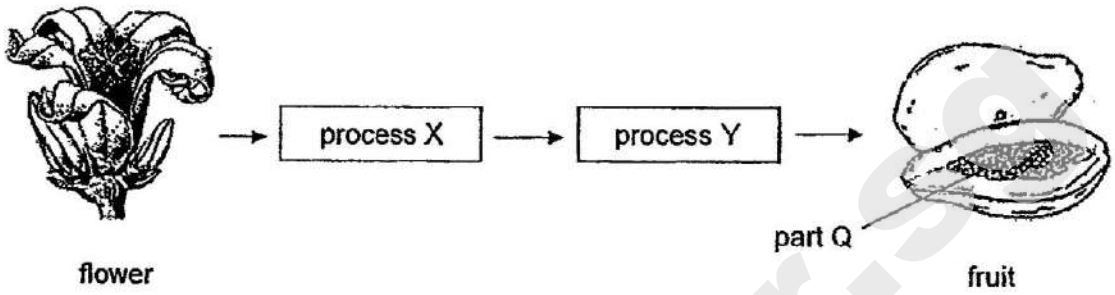
(c) Name an insect that has the same number of stages in its life cycle as that of a butterfly. [1]

Score	3

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30. The diagram below shows how a fruit is formed from the flower of a plant in Location A. The fruit has been cut open.



(a) Name process X. [1]

_____

(b) State the part of the flower that part Q developed from. [1]

_____

(c) The fruit is fleshy and it contains seeds that are hard and stone-like. Describe how the seeds can be dispersed by a monkey to another far away location, B. [1]

_____

_____

(d) How does dispersal of seeds help the young plant? [1]

_____

_____

Score	/ 4

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31. The diagrams below show the reproductive parts of a flowering plant (Diagram 1) and a human (Diagram 2).

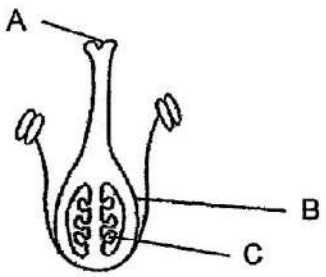


Diagram 1

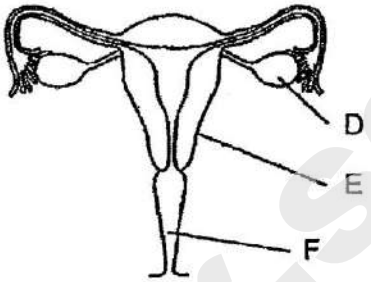


Diagram 2

(a) Write the letters, A, B, C, D, E or F, that represent the ovary in Diagram 1 and Diagram 2 in the table below. [1]

Diagram 1	Diagram 2
ovary: _____	ovary: _____

The diagram below shows sperms swimming towards an egg cell.

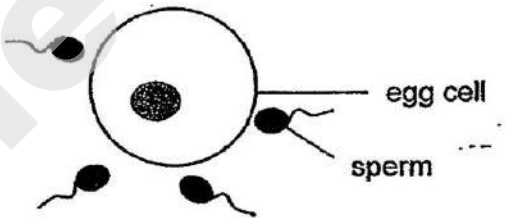


Diagram 3

(b) Describe the process that will happen in Diagram 3. [1]

_____

_____

(c) After the process you have described in (b), describe what happens to the egg cell as it moves to part E of Diagram 2. [1]

_____

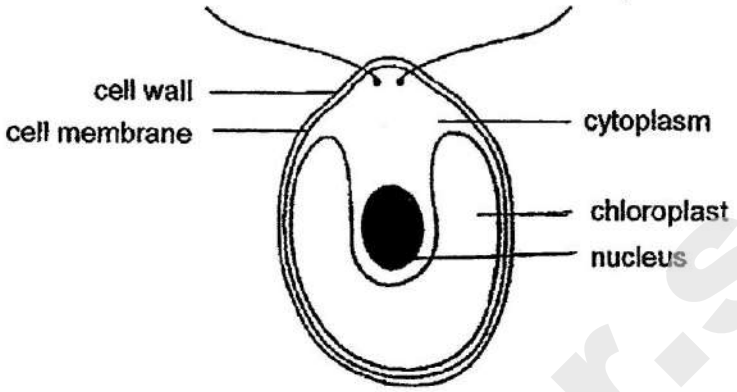
_____

Score 3

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32. The diagram below shows a single-celled organism which lives in a pond.



organism E

(a) Which part(s) of organism E enables it to function like a plant cell? [1]

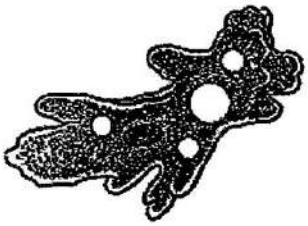
_____

(b) State the function of the chloroplast. [1]

_____

_____

(c) The diagram below shows organism F.



organism F

Based on the diagram, give a reason why organism F can be classified as an animal cell. [1]

_____

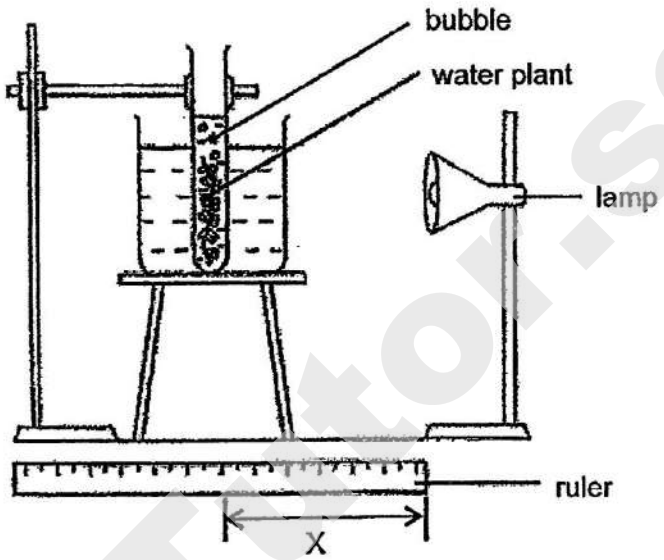
_____

Score	/ 3

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33. Sophie wanted to find out how the distance between the lamp and the water plant affects the number of bubbles produced by the plant.



She switched on the lamp and set its brightness at 100 units. She counted the number of bubbles produced per minute for different distances, X.

(a) Complete the table below which shows the number of bubbles produced per minute with different distances X. [1]

Distance X (cm)	Number of bubbles produced per minute
50	200
100	
150	100

(b) What can she conclude on the relationship between the number of bubbles produced per minute and distance X? [1]

_____

_____

Score	/2

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(c) Diagram A below shows a tree in an open field during the day time.

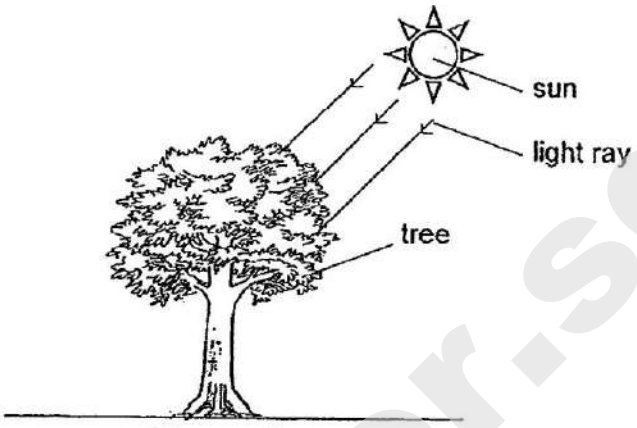


Diagram A

After a while, a thick cloud appeared above the tree as shown in Diagram B.

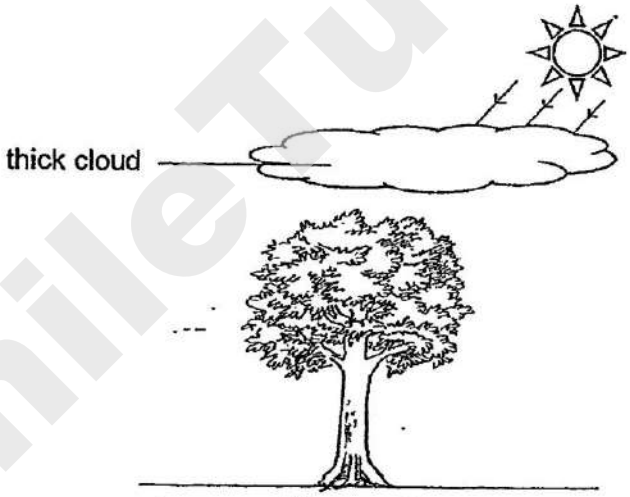


Diagram B

Explain how the rate of photosynthesis is affected in Diagram B when a thick cloud is above the tree. [2]

Score	/2

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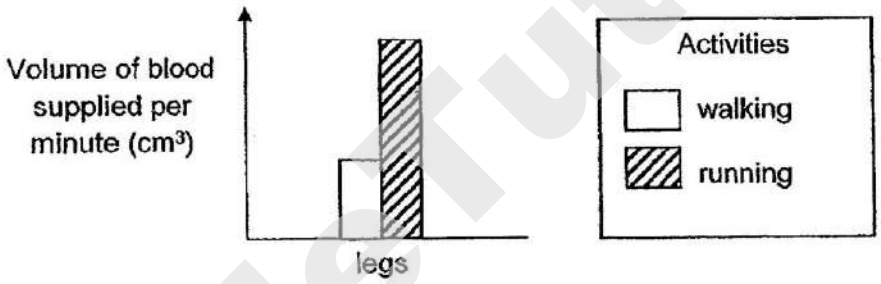
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34. The diagram below shows the direction of blood flow in the blood vessels, X and Y, in Samuel's legs.



(a) Compare the difference between the amount of oxygen at X and at Y. [1]

Samuel carried out an experiment to measure the volume of blood supplied per minute to the legs during two activities, walking and running.



(b) Describe how oxygen in the surroundings reaches Samuel's legs. [2]

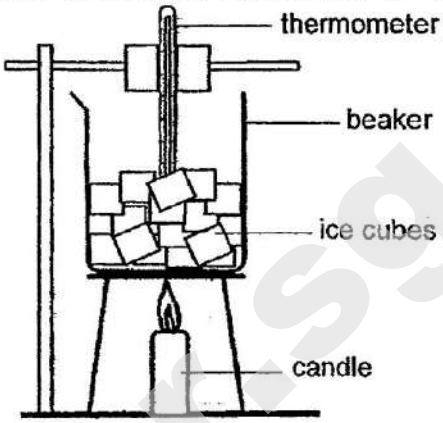
(c) Based on the graph above, explain how running affects the amount of oxygen supplied to the legs. [2]

Score 5

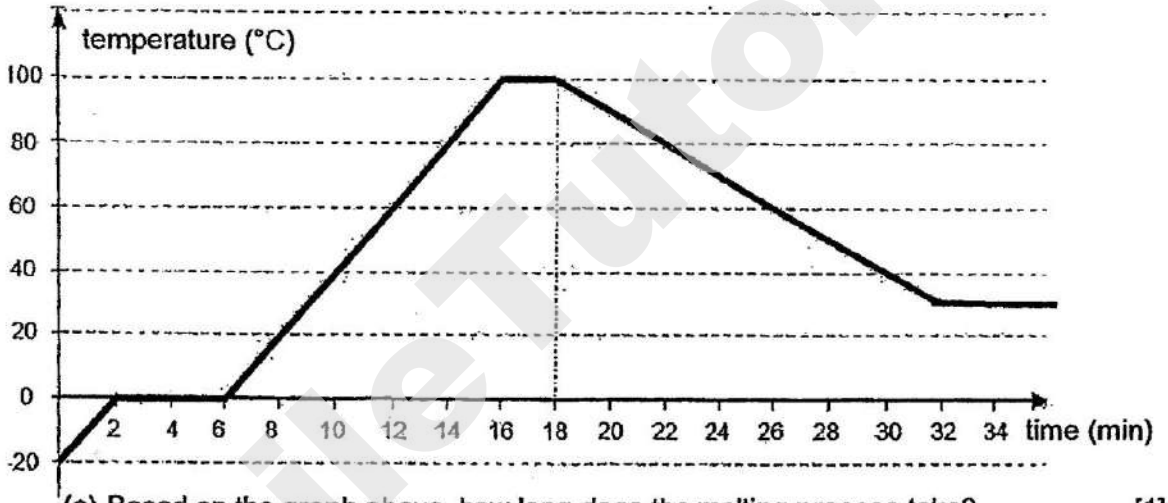
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35. Kumar heated some ice cubes in a beaker. After some time, he removed the candle and left the beaker to cool in the same room.



Based on his observations, he plotted a graph as shown below.



(a) Based on the graph above, how long does the melting process take? [1]

_____

(b) The maximum temperature recorded is 100°C at the 16th minute.

Why did the temperature remain constant at 100°C from 16th to 18th minute even though Kumar continued to heat the beaker? [1]

_____

(c) What do you think Kumar did to his set-up after 18th minute? [1]

_____

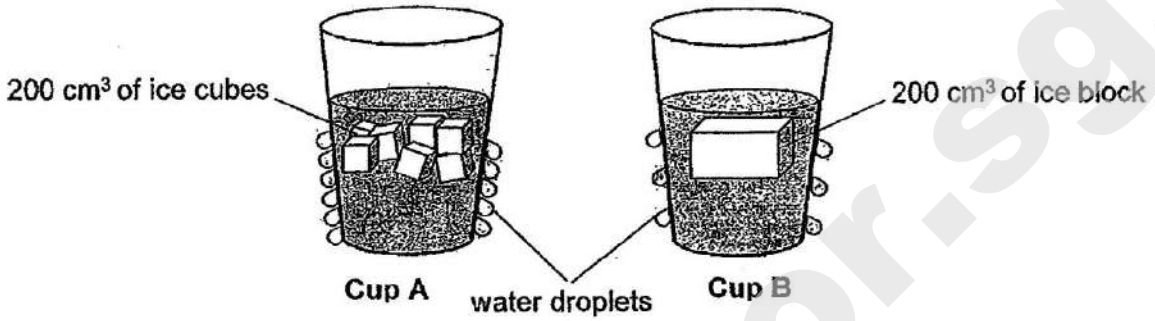
Score	3

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36. Mary poured same amount of tap water into Cup A and Cup B and added 200 cm^3 of ice into each cup. The ice in Cup A is in smaller cubes while the ice in Cup B is in a single big block.

The diagrams below show the results of the experiment after two minutes.



(a) Explain how water droplets are formed on the outer surface of Cup A. [2]

(b) From the observations above, Mary concluded that the water in Cup A is colder than the water in Cup B after two minutes.

Describe what she had observed in the above diagrams to make her conclusion. [1]

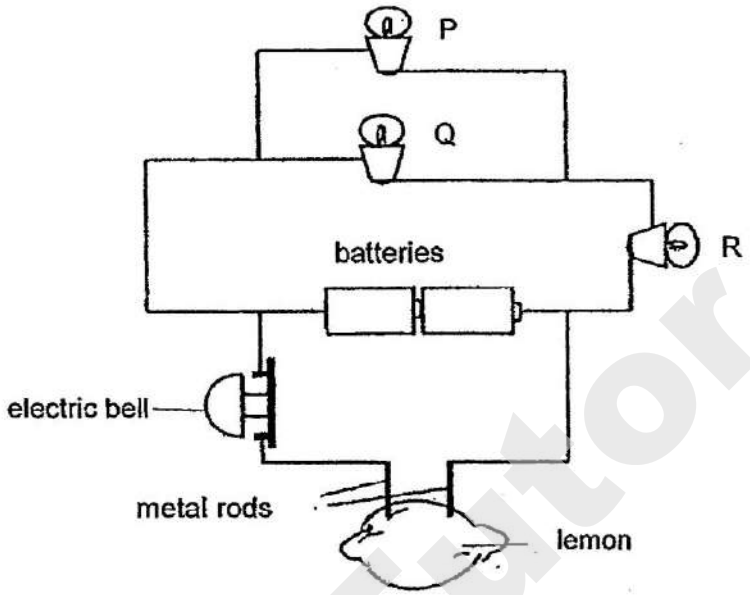
(c) Explain why the water in Cup A will be colder than water in Cup B after two minutes. [2]

Score	/ 5

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37. Ming Han set up the circuit shown below. He observed that bulbs, P, Q and R, lit up while the electric bell buzzed.



(a) Based on the above, state one property of the lemon. [1]

_____

(b) Ming Han wants to turn off the bell without turning off any of the bulbs.
Mark a cross (X) on the part of the wire in the above electric circuit to indicate where you would place the switch to turn off the bell without turning off any of the bulbs.

[1]

(c) Which of the bulbs (if any) would remain lit if bulb Q fused? [1]

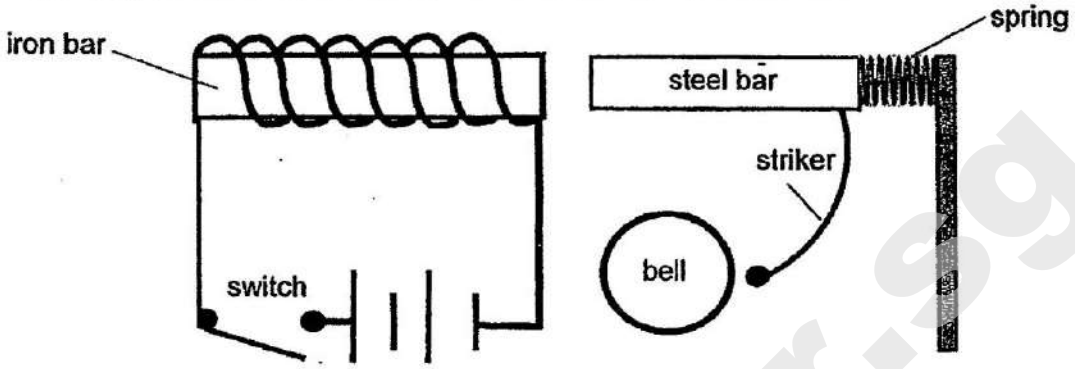
_____

Score	/ 3

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38. The diagram below shows an electric circuit of a simple doorbell.



(a) Describe what will happen when the switch is closed. [2]

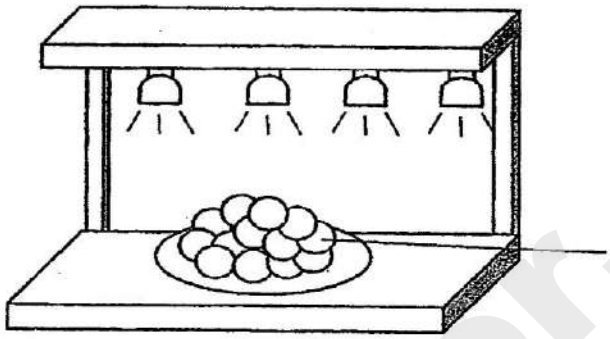
(b) The metal bar is now replaced with a wooden block. Will the doorbell still work? Explain. [1]

Score	/ 3

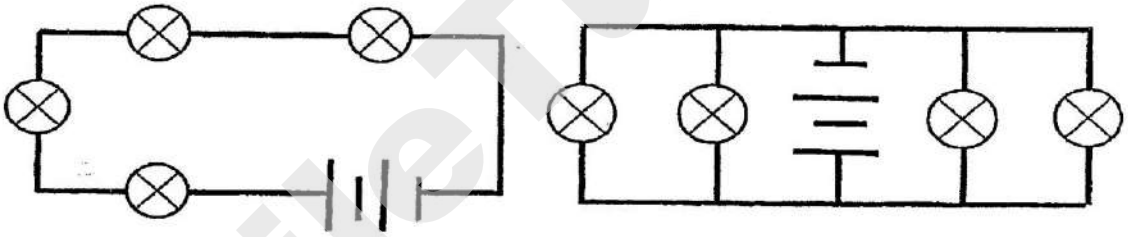
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The diagram below shows a set-up that uses four identical lamps to heat food. When the lamps are brighter, they give out more heat.



An engineer has prepared two circuits as shown below.



circuit A

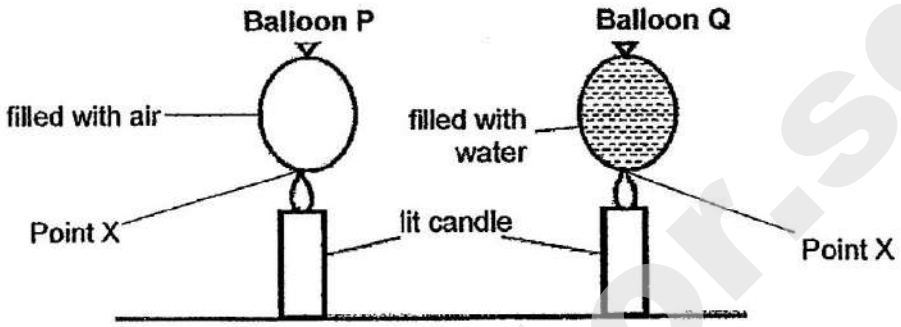
circuit B

(c) Which circuit, A or B, will be able to keep the fish balls warmer? Explain your answer. [1]

Score 1

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39. Xiao Ming wants to find out whether air or water is a better conductor of heat. He sets up an experiment as shown below using similar balloons, P and Q. The balloon, P, is filled with air while the balloon, Q, is filled with water.



Xiao Ming placed both balloons over a candle flame at Point X and recorded the time taken for each balloon to burst. The balloon burst when the rubber has gained too much heat.

Balloon	Time taken for balloon to burst (sec)
P	3
Q	100

(a) From the above results, does air or water conduct heat faster away from the balloon?

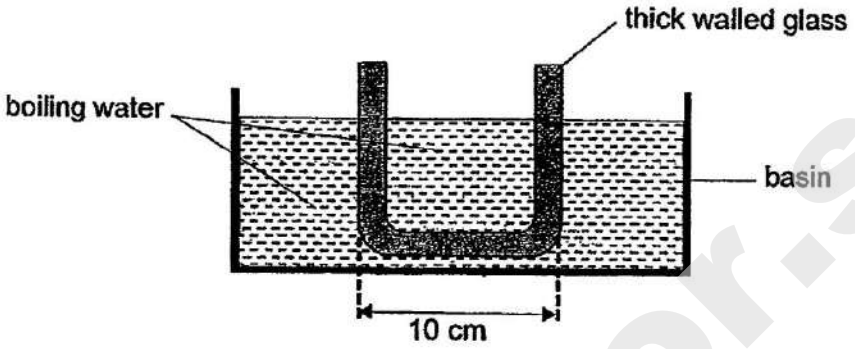
Explain why. [1]

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Score 1

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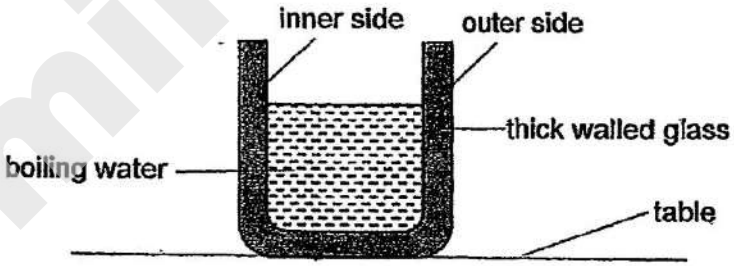
Xiao Ming took a cold thick-walled glass from a refrigerator. He poured boiling water into the glass and placed it into a basin of boiling water.



He observed that the width of the base of the glass changed from 10 cm to 11.5 cm.

(b) Explain what had happened to the glass. [1]

Xiao Ming now took a cold thick-walled glass from a refrigerator and poured boiling water into it and left it on a table at room temperature as shown below.



He observed that the glass cracked.

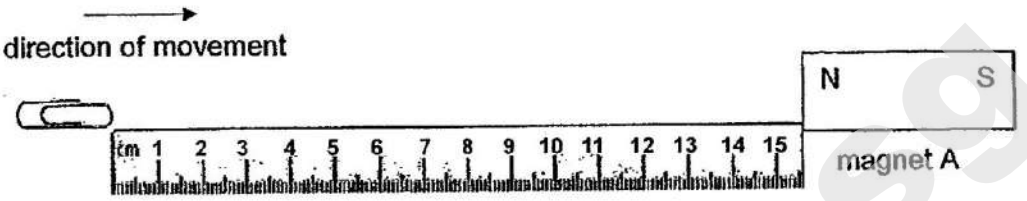
(c) Explain the above observation. [2]

Score / 3

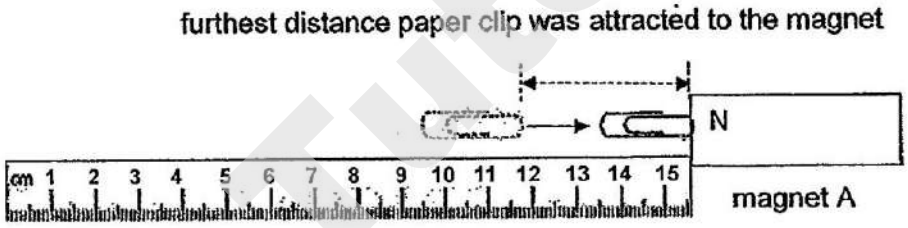
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40. Susan moved a paper clip towards a magnet slowly until the paper clip was attracted to the magnet as shown below.



She measured the furthest distance at which the paper clip was just attracted to the magnet.



She repeated the experiment to get two more readings with magnets, B and C.

The table below shows her results.

	Distance(cm) at which paper clip was attracted to magnet			
	1st try	2nd try	3rd try	Average
Magnet A	10.0	9.9	10.1	10.0
Magnet B	6.2	5.9	5.9	6.0
Magnet C	3.2	0.4	3.3	2.3

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(a) Susan's teacher told her that the results for one of the magnets is not reliable. Identify the magnet and give a reason why you selected the magnet. [1]

_____

_____

(b) Based on the table above, which magnet has the strongest magnetic pull? Explain why. [1]

_____

_____

(c) How would the distance at which the paper clip was attracted to magnet A be affected if a heavier paper clip was used? [1]

_____

Score	/ 3

End of Paper

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SCHOOL : TAO NAN PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA2

CONTACT :

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	3	4	4	2	1	4	3	3	2
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	2	1	1	4	1	3	3	3	4
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
4	4	4	2	1	4	3	4		

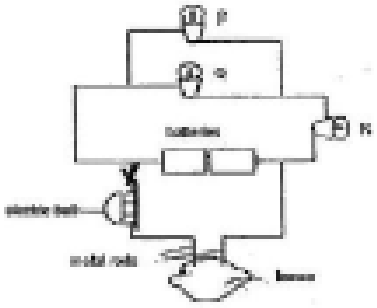
SECTION B

Q29)	a)Pupa b)The butterfly at stage B needs to eat a lot so that it will not die of starvation when it is at the pupa stage. c)Mosquito.
Q30)	a)Pollination. b)Ovules. c)As the seeds are indigestable, the seeds will end up in the Monkey's waste. When the monkey discharge its waste, somewhere else the seed is dispersed away from its parents. d)It helps the young plant by dispersing it far away from its parents so there will be a lower chance of overcrowding.
Q31)	a)Diagram 1 : B Diagram 2: D b)The sperm cell will fertilise the egg. c)The fertilised egg develops into a foetus.

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Q32)	a)Cell wall and chloroplast. b)To allow the plant to trap light to photosynthesis so that is can make food by itself. c)It does not have a regular shape.
Q33)	a)150 b)As distance X increases, the number of bubbles produced per minute decreases. c)As there was a cloud above the tree, sunlight form the sun could not through. As a result light could not be trapped and the tree could not photosynthesis.
Q34)	a)The amount of oxygen at X is more than the amount of oxygen at Y. b)The nose take in the oxygen in the surrounding and the oxygen goes through the windpipe and reaches the lungs. The oxygen is then absorbed into the blood stream and is brought to the legs when the heart pumps the blood there. c)When Samuel run's the amount of oxygen supplies to his legs increases as his legs needs more oxygen to produce energy so that he can run.
Q35)	a)4 min b)All the heat was used on turning the water into water vapour. c)He removed the candle and left the beaker to cool.
Q36)	a)Water vapour from surrounding touches the cooler Glass A and condenses. b)The amount of water droplets on the outside surface of cup A is more then the amount of water droplets on the outside surface of cup B. c)As the surface area of the ice cubes in A is cause larger than the ice is B to the water the rate of heat loss will be faster, so ice will gain heat from the water.

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Q37)	a)It is an electrical conductor. b)  c)P and R.
Q38)	a)The circuit will become closed, making the iron bar an electro magnet. When the iron bar becomes an electro magnet, the steel bar is attracted , when it moves to ward, the striker hits the bell. b)No, it wont. The wooden block is made out of a non-magnetic material thus when the switch is closed, the wooden bar won't because an electro magnet and cannot attract the wooden block and cannot cause the striker to hit the bell and make it ring. c)Circuit B. The bulbs are arranged in parallel, more electricity flows through each bulb so that each bulb in B is brighter than each bulb in A.
Q39)	a)Water conductor heat faster away from the balloon as balloon Q took a longer time to burst. b)The glass gained heat and expanded. c)The inner side of the glass gains more heat than the outer side. The uneven expansion caused the glass to crack.
Q40)	a)Magnet C. The difference between 2nd reading and the rest of the readings are very big. b)Magnet A. It managed to attract the paper clip from the longest distance amount the 3 magnets. c)The distance at which the paper clip was attracted to the magnet will decrease.

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