



**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.

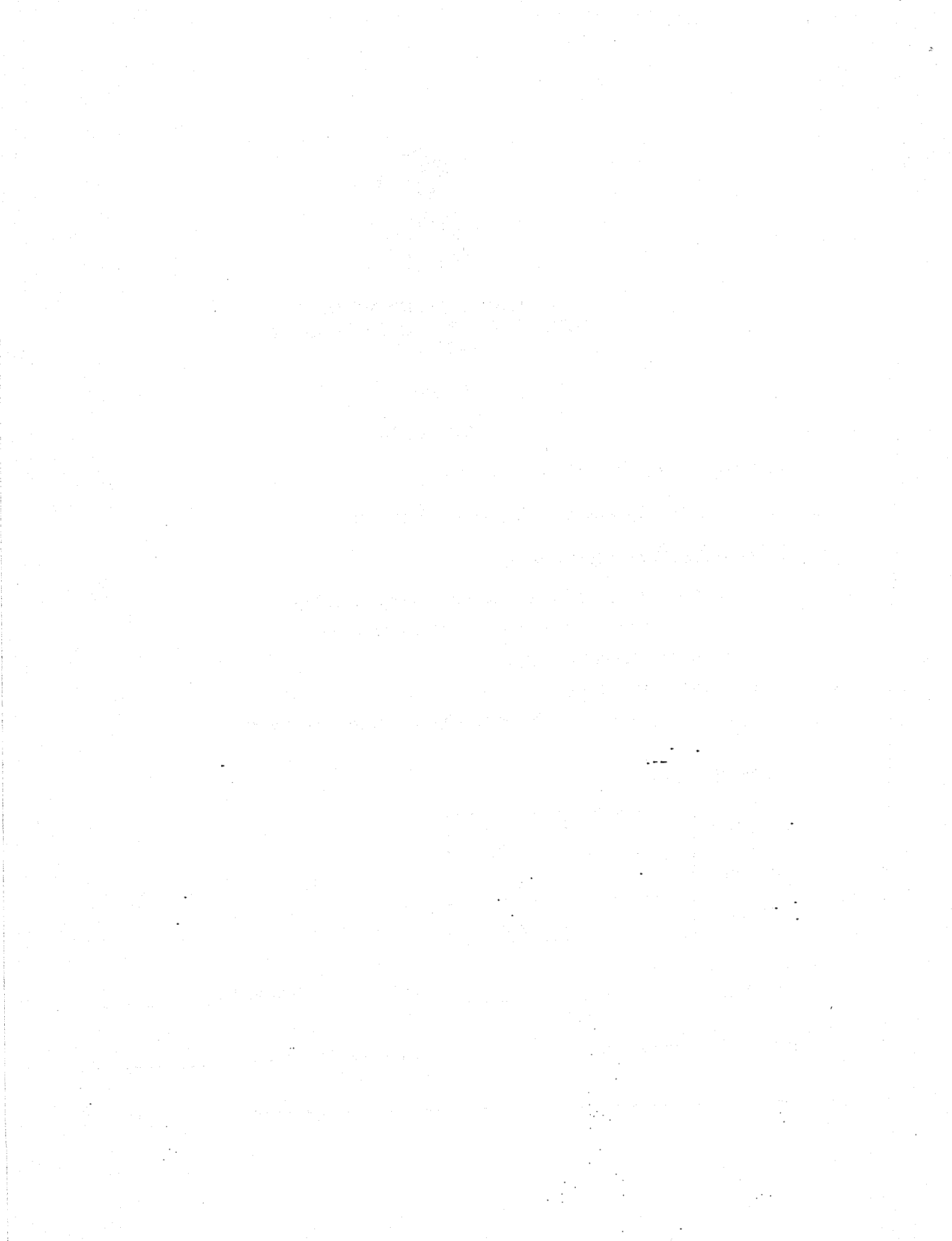
Marks Obtained

Booklet A		/ 56
Booklet B		/ 44
Total		/ 100

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

Date : 1 November 2018

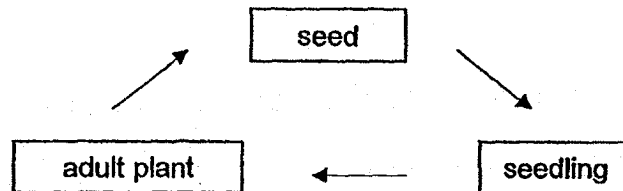
Parent's Signature: _____



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?

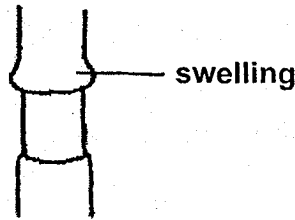
- A Plant A has 3 life cycles.
- B Plant A is a flowering plant.
- C The seed of plant A is dispersed by animals.

- (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?

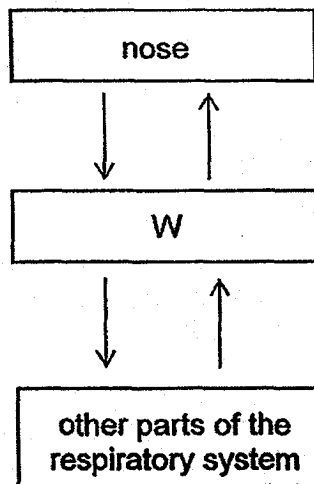
- (1) To fertilise many eggs at a time.
- (2) To show that the male is very healthy.
- (3) To increase the chance of a sperm fertilising an egg.
- (4) To shorten the time needed for the sperm to fuse with an egg.

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?

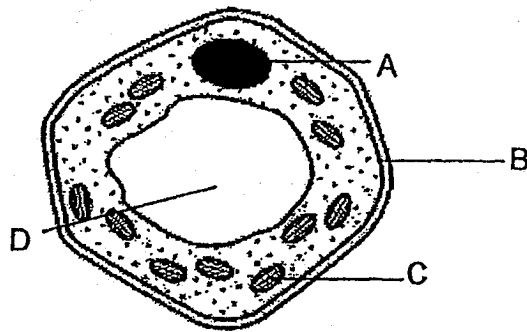
- (1) Water travelling up the stem was trapped above the ring.
 - (2) Food travelling down the stem was trapped above the ring.
 - (3) Food and water travelling up the stem was trapped above the ring.
 - (4) Food and water travelling down the stem was trapped above the ring.
4. The diagram below shows 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

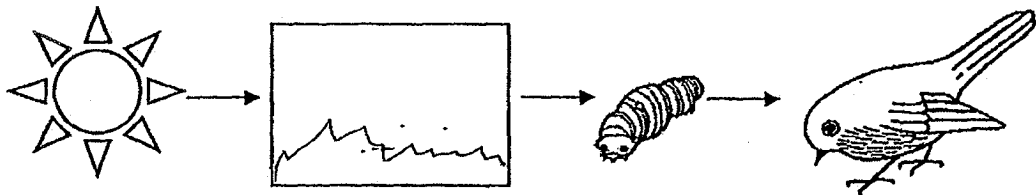
5. The diagram below shows a plant cell with its parts labelled.



Which part of the cell controls the movement of substances in and out of the cell?

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

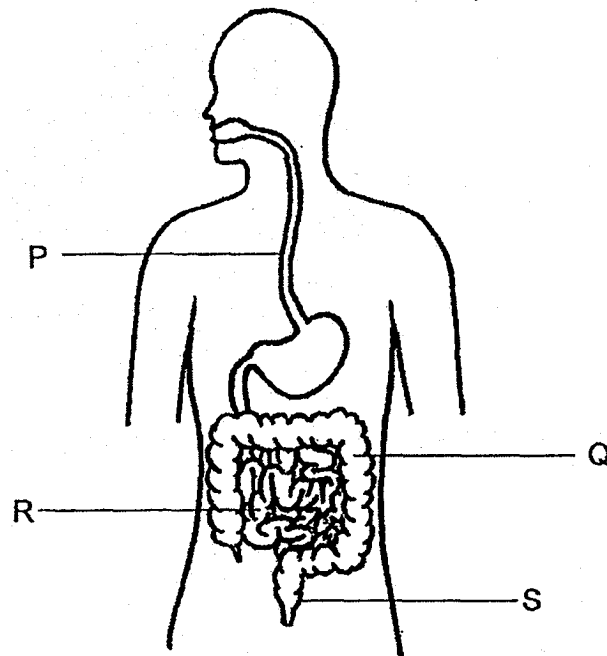
6. The diagram below shows how energy from the Sun is being transferred to the living things.



Which one of the following living things can be placed in the box?

- (1) ant
- (2) frog
- (3) grass
- (4) mushroom

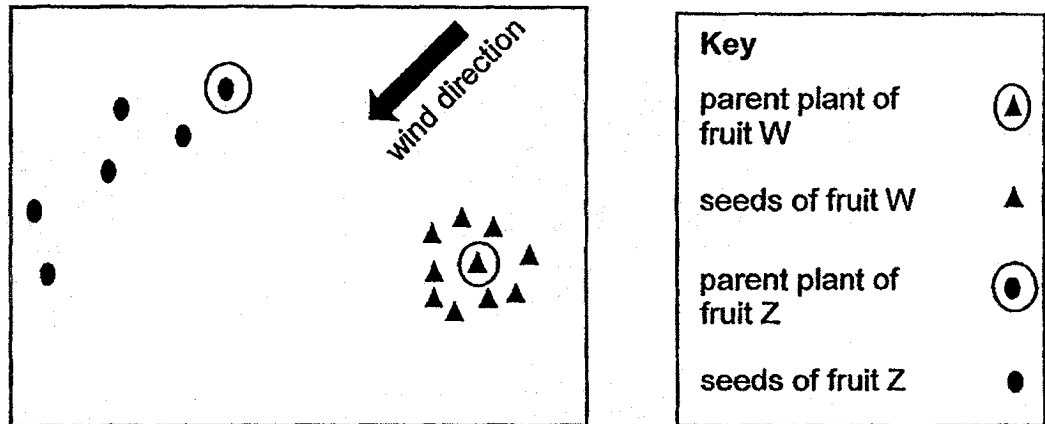
7. The diagram below shows the human digestive system.



Which one of the following parts does digestion take place in the system?

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

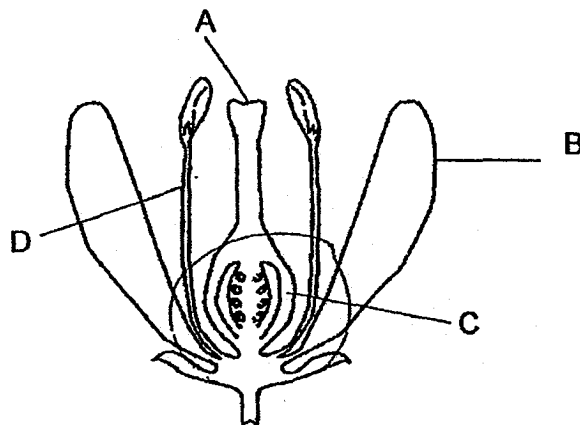
8. The diagram below shows how the seeds of fruit W and Z are dispersed from the parent plants.



It was observed that all the seeds of fruit Z germinated but only a few seeds of fruit W germinated.

Which one of the following statements explains why some seeds of fruit W did not germinate?

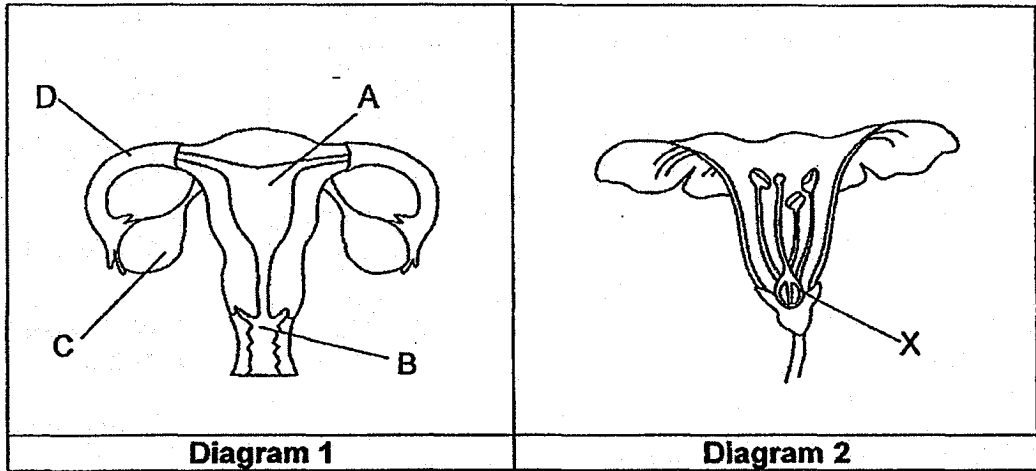
- (1) The seeds did not receive water.
 - (2) The seeds did not receive fertiliser.
 - (3) The seeds did not receive carbon dioxide.
 - (4) The seeds did not receive nutrients, light and space.
9. The diagram below shows the reproductive parts of a flower.



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

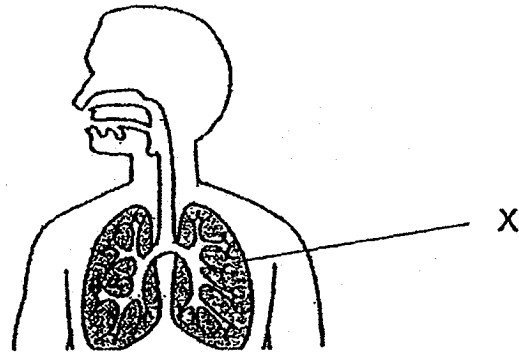
10. Sammy drew diagrams 1 and 2 below showing the reproductive parts of a human and a plant respectively.



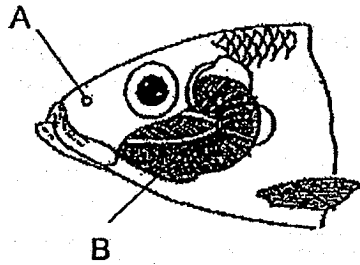
Which one of the following part in diagram 1 performs the same function as part X in diagram 2?

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

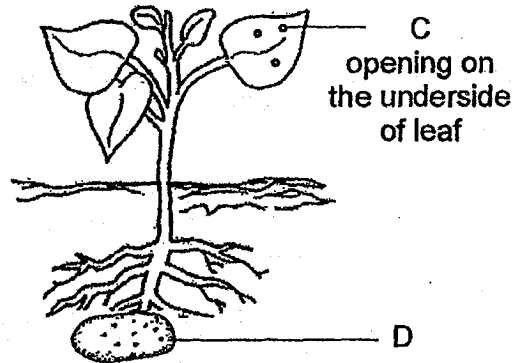
11. Study the diagrams below carefully.



human respiratory system



fish respiratory system

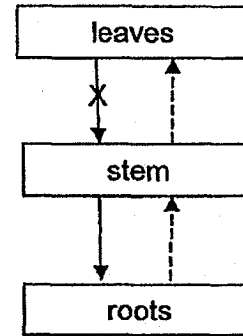
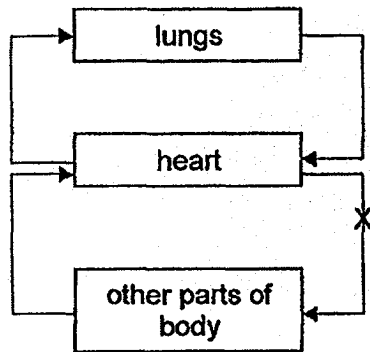


plant parts

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

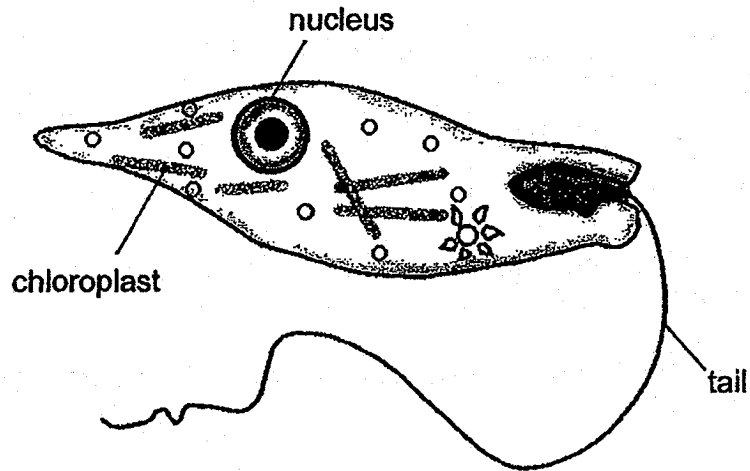
12. The diagrams below show the circulatory system of a human and the transport system of a plant.



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

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.

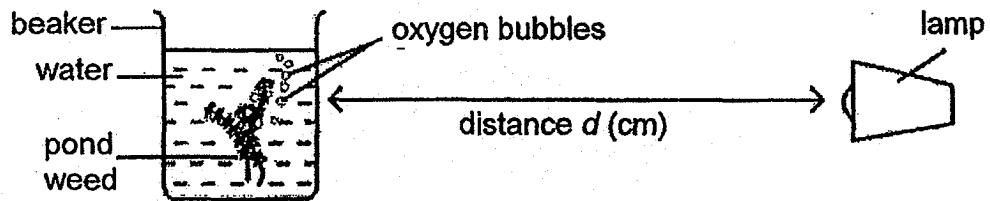


Which of the following reason(s) explain(s) why the organism needs to move to the surface of the pond in the day?

- 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

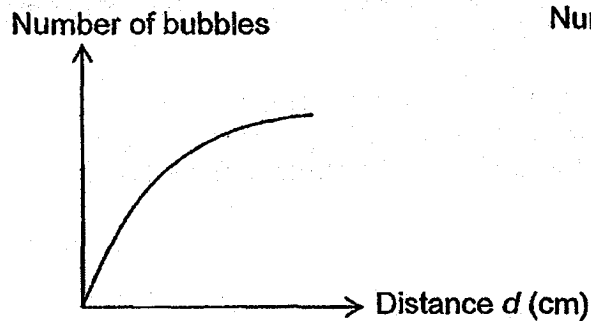
14. Tom conducted an experiment using the set-up below. He kept all the variables constant except the distance between the beaker and the lamp.



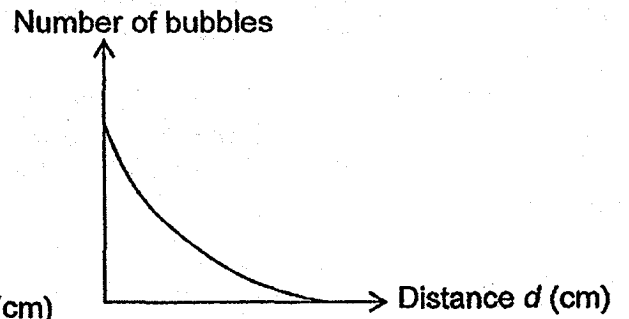
He counted the number of bubbles produced for five minutes. He repeated the experiment at different distances, d .

Which one of the following graphs most likely shows the results of Tom's experiment?

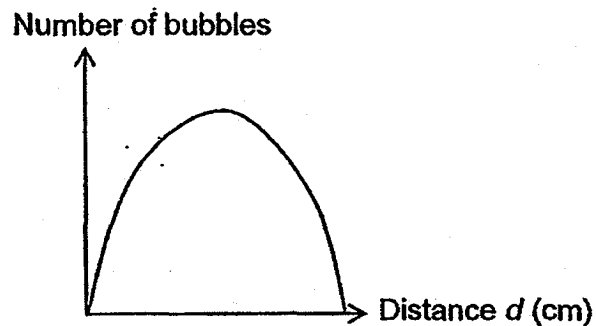
(1)



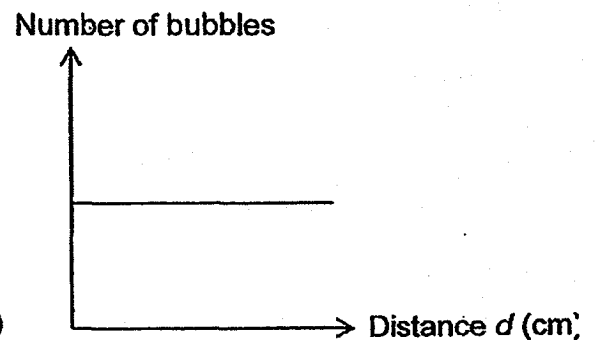
(2)



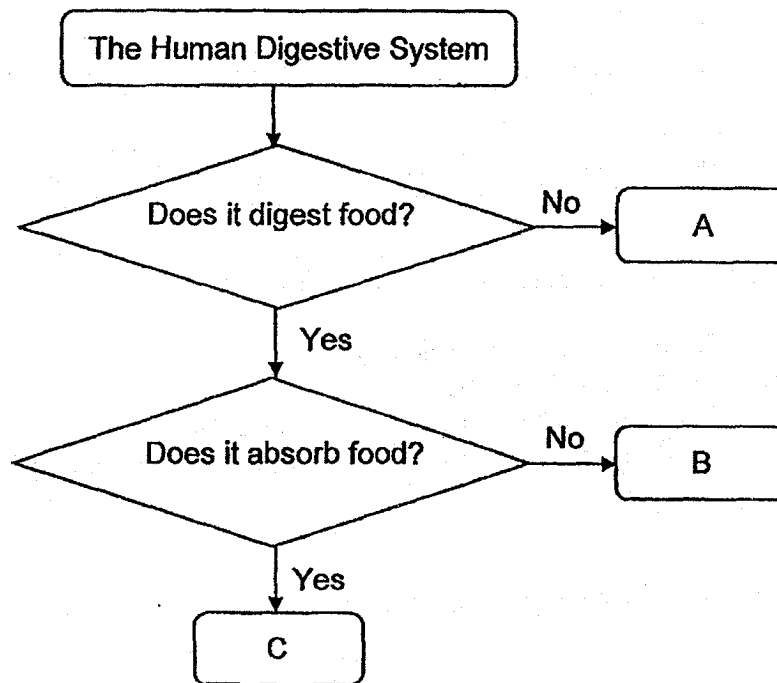
(3)



(4)



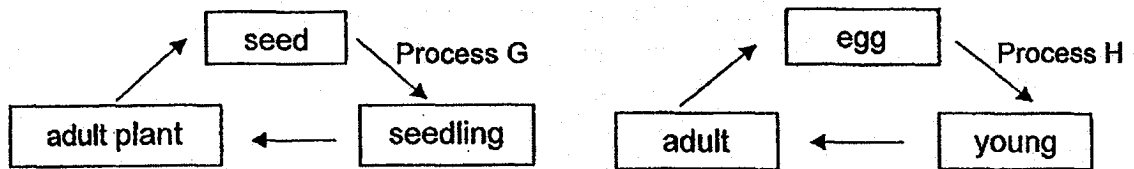
15. Study the flowchart below.



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

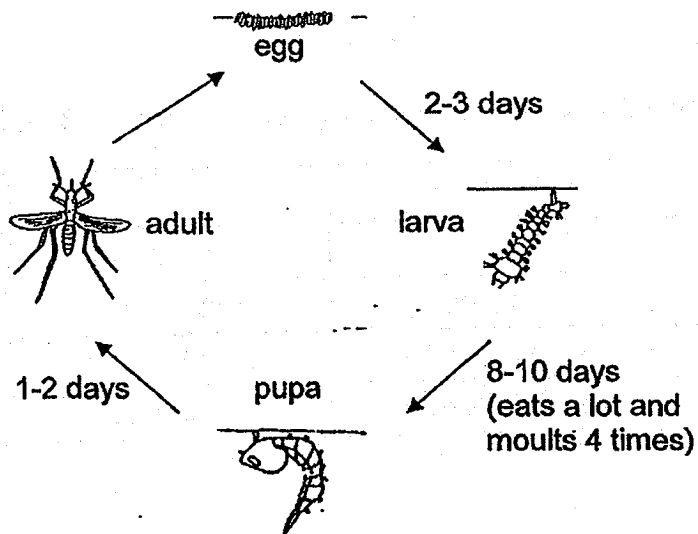
16. The diagram below shows the life cycle of a plant and the life cycle of a chicken.



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.



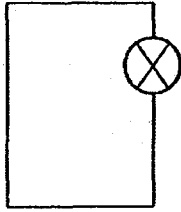
Which of the following statement(s) is/are correct?

- 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.

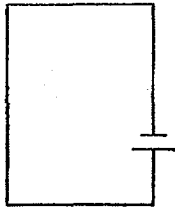
- (1) A only
- (2) C only
- (3) A and C only
- (4) A, B and C

18. The diagrams below show four electric circuits.

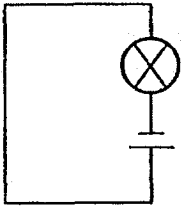
A



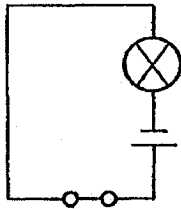
B



C



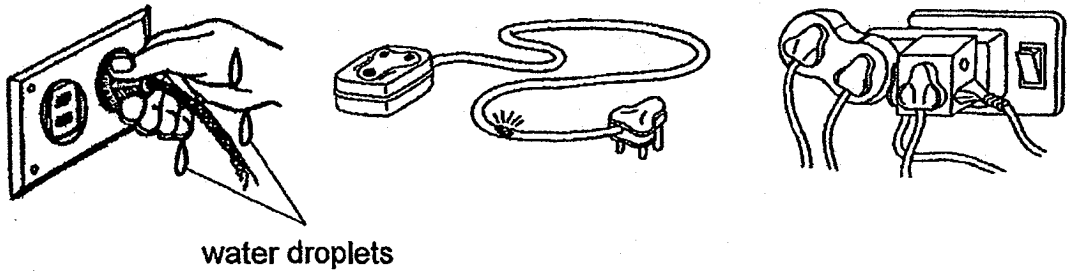
D



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

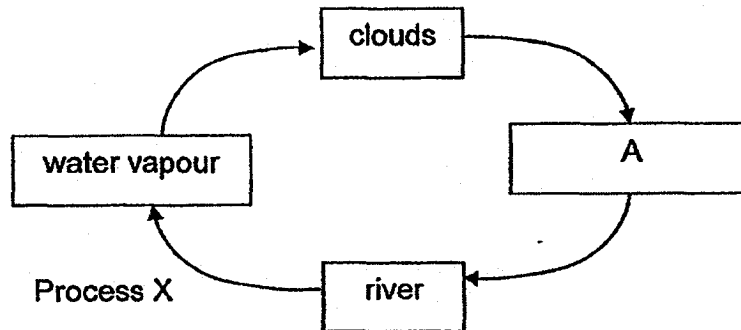
19. Study the diagrams below.



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

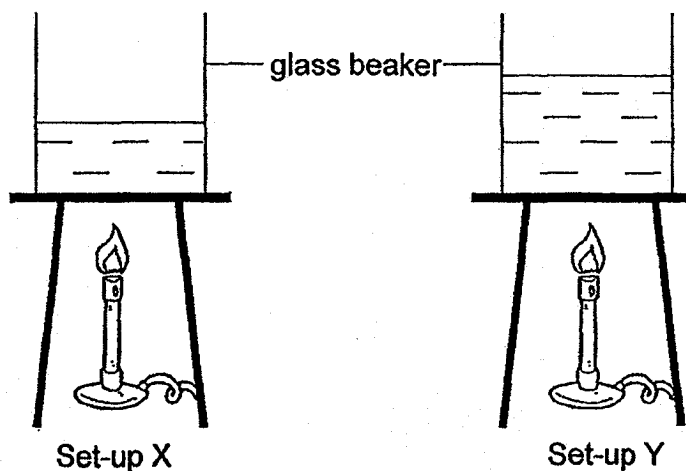
20. Study the diagram of the water cycle below.



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

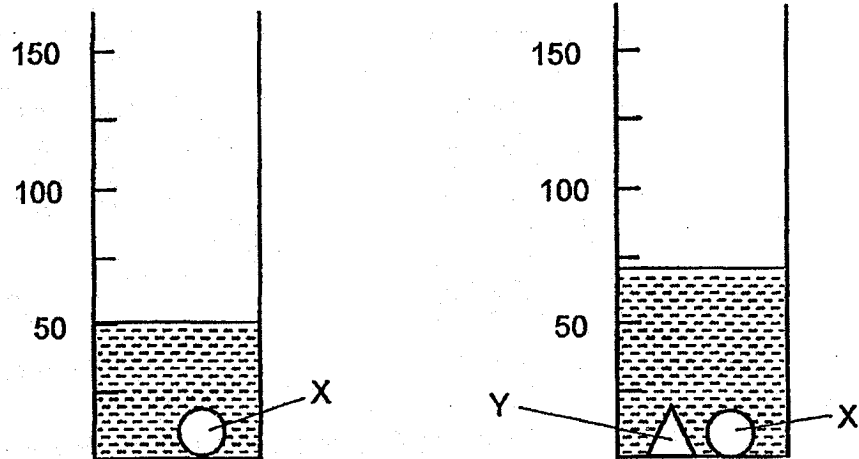
21. Ali set up the experiment as shown below. He heated the water until the water in the beakers was boiling.



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

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.

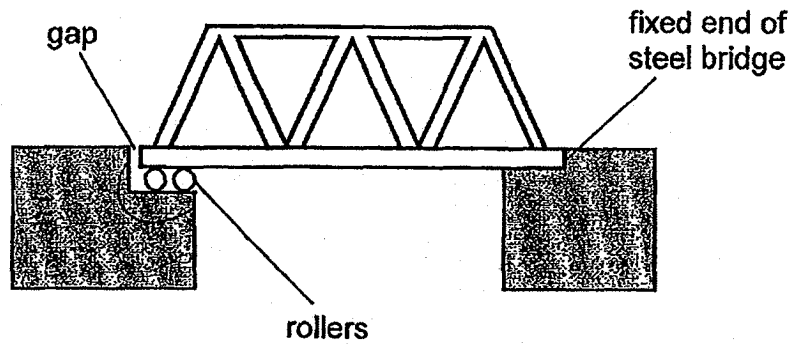


Which of the following conclusion(s) can be drawn from Mary's observations?

- 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.

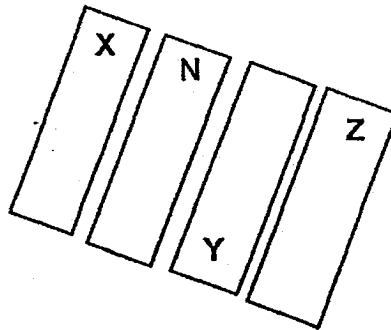
- (1) A only
- (2) B only
- (3) B and C only
- (4) A, B and C

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?

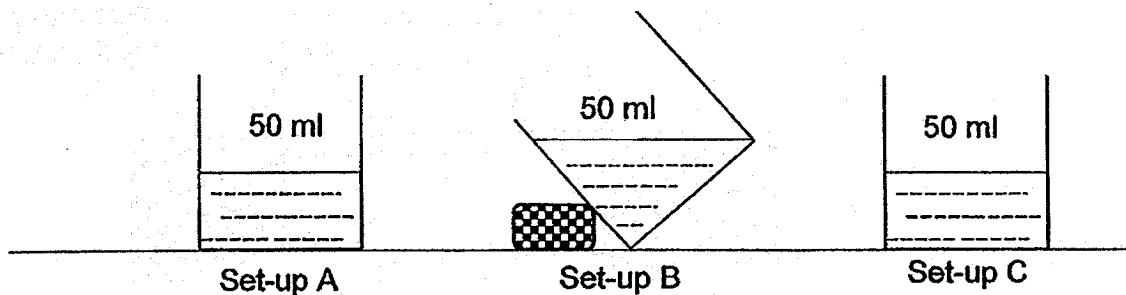
- (1) To allow the bridge to lose heat to the gap on a hot day.
 - (2) To allow the bridge to increase in mass due to expansion on a hot day.
 - (3) To allow the bridge to move towards the gap due to expansion on a hot day.
 - (4) To allow the bridge to move towards the gap due to contraction on a cold 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

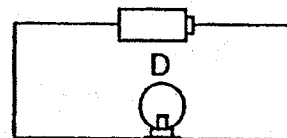
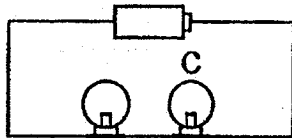
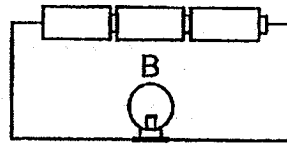
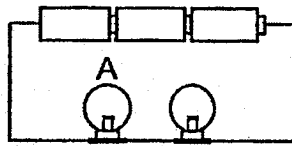
25. Sally set up an experiment below. She placed set-ups A and B in an open field with direct sunlight and set-up C in a completely dark room. After two days, she measured the amount of water left in the three set-ups.



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

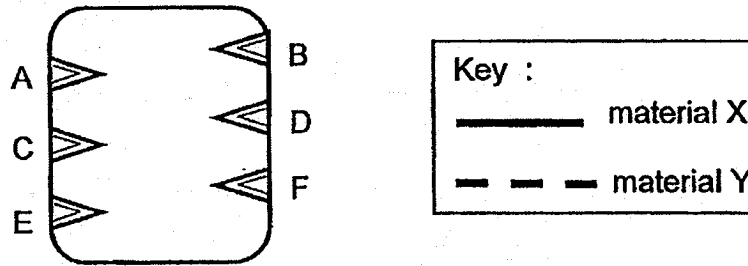
26. The diagrams below show four circuits.



Which of the following correctly represents the brightness of bulbs A, B, C and D in each circuit?

	Brightest bulb \longrightarrow		Dimmest bulb	
(1)	A	C	B	D
(2)	B	D	A	C
(3)	B	A	D	C
(4)	C	D	A	B

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.

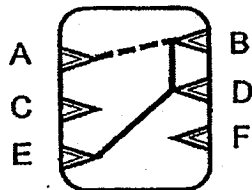


A circuit tester was used to connect to the paper clips on the circuit card and the following observations were recorded in the table below.

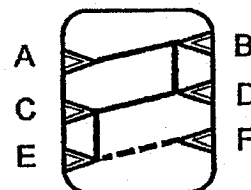
Paper clips connected	Did bulb light up?
A and B	Yes
B and C	Yes
C and D	Yes
D and E	No
E and F	Yes

Which one of the following shows how the paper clips on the circuit card were connected?

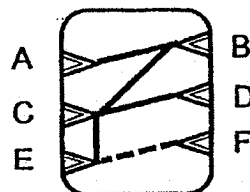
(1)



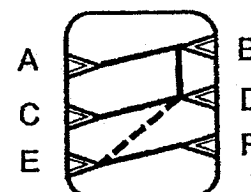
(2)



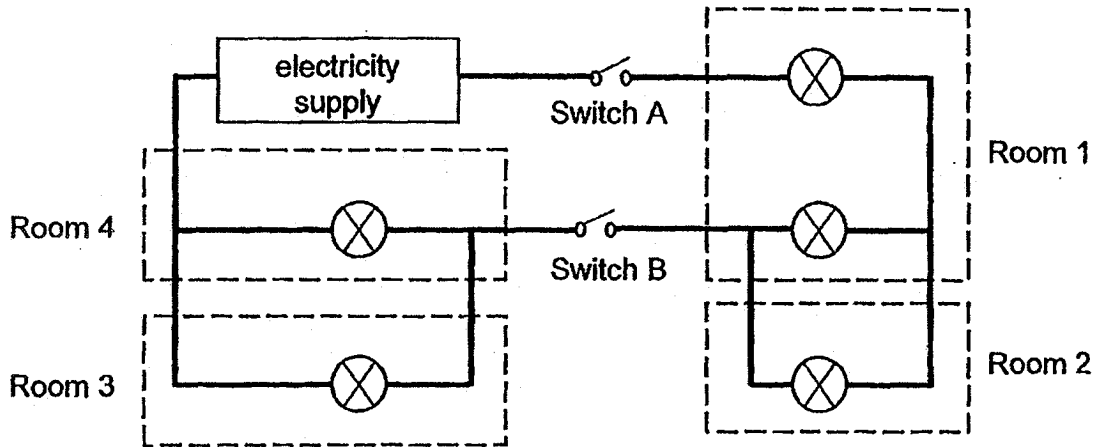
(3)



(4)

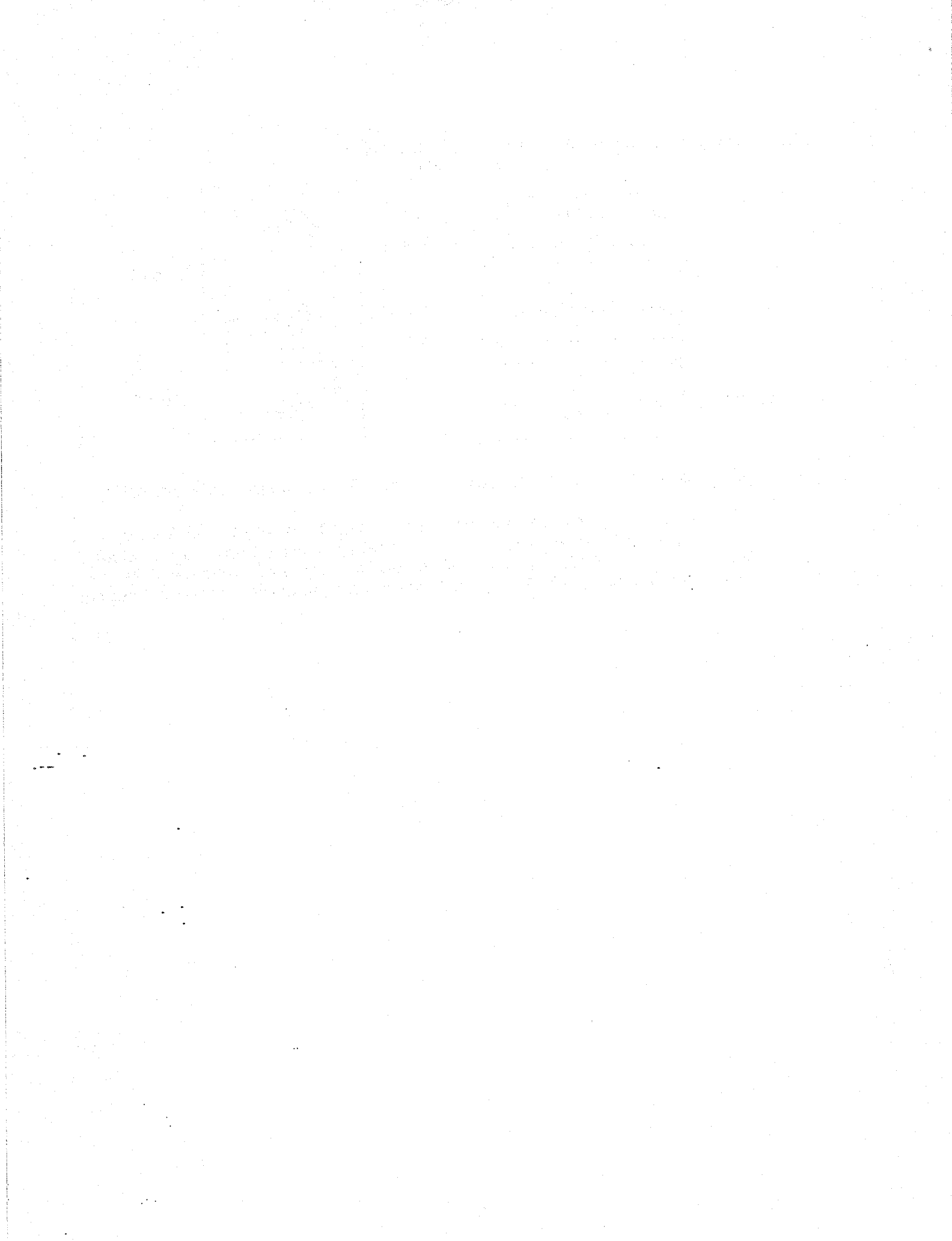


28. The diagram below shows a circuit with five bulbs.



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.





**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

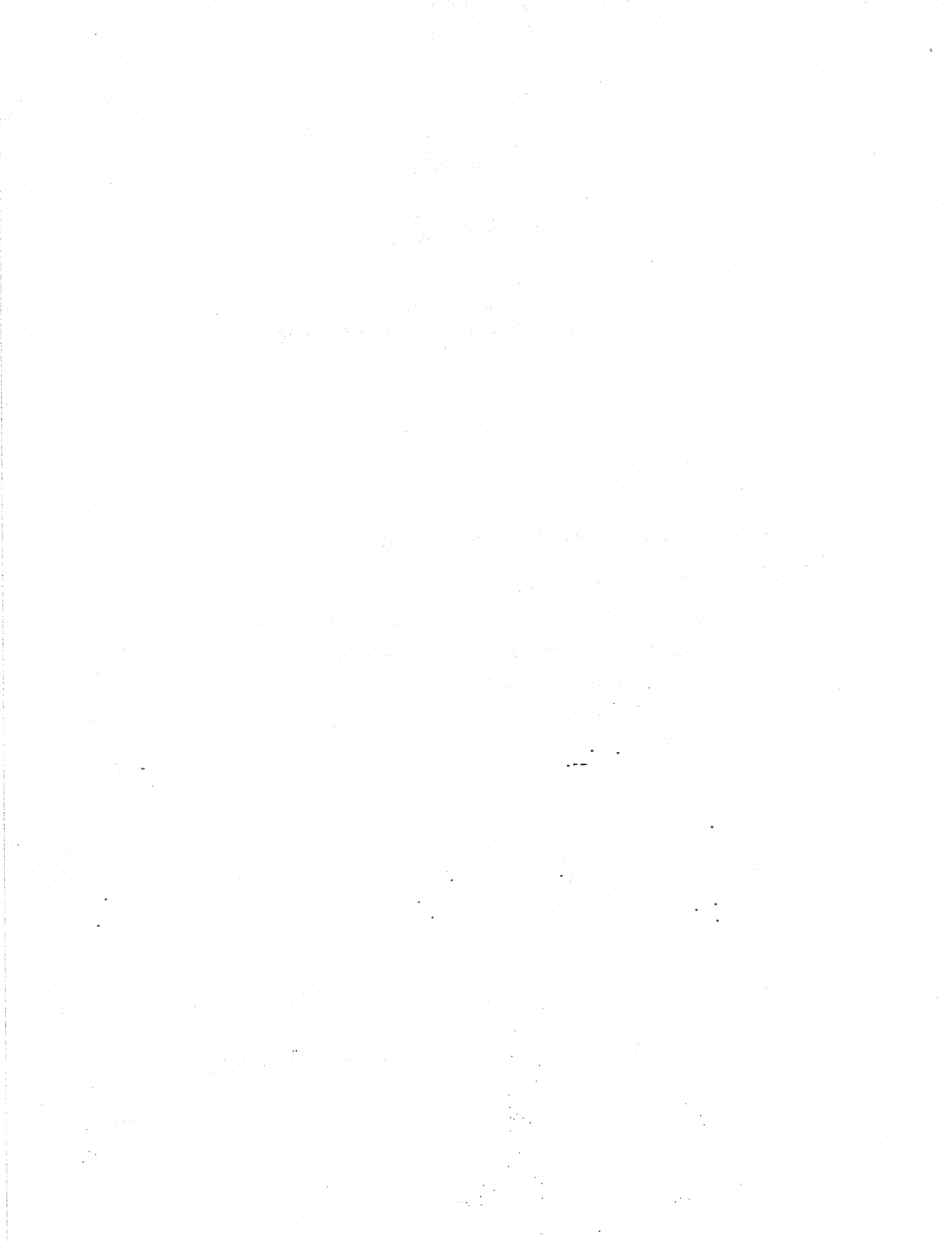
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Name: _____ ()

Class: P 5 _____

Date : 1 November 2018

Parent's Signature: _____

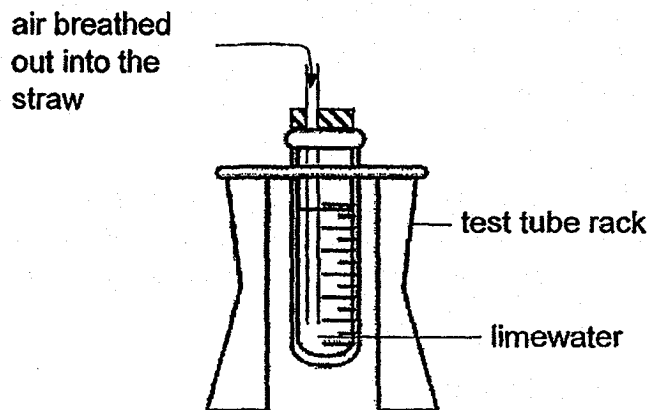


Section B: (44 marks)

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.

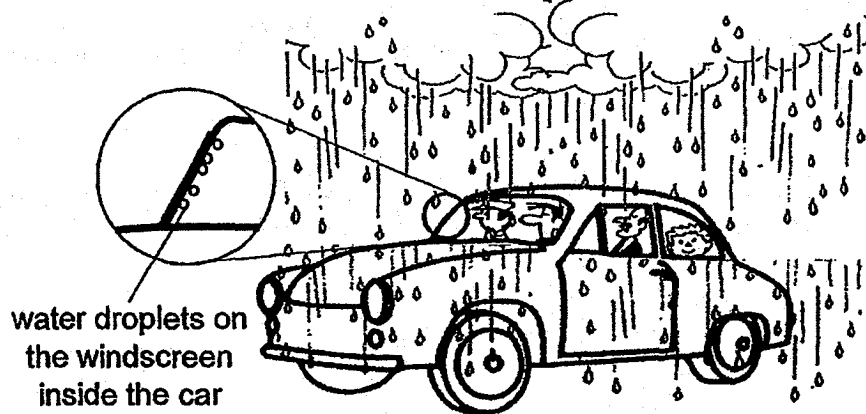


- (a) After breathing out into the straw several times, the limewater in the test tube turned chalky. Explain why. [1]

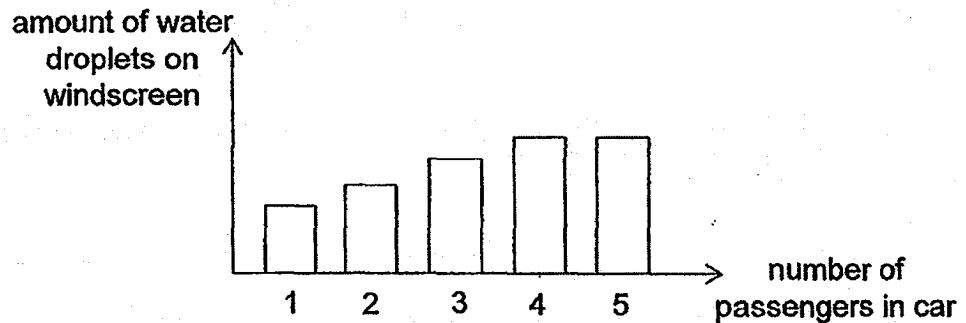
- (b) Besides nitrogen and carbon dioxide, name 2 other gases that can be found in the air that is breathed out into the test tube. [1]

Go to the next page

The diagram below shows a car in a thunderstorm.



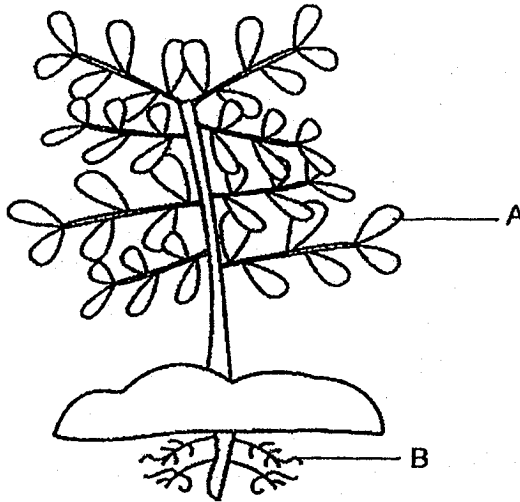
After some time in the thunderstorm, the windscreen inside the car started to have water droplets, even though no rain could get inside the car. It was also observed that the number of passengers affect the amount of water droplets formed on the windscreen.



- (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]

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.



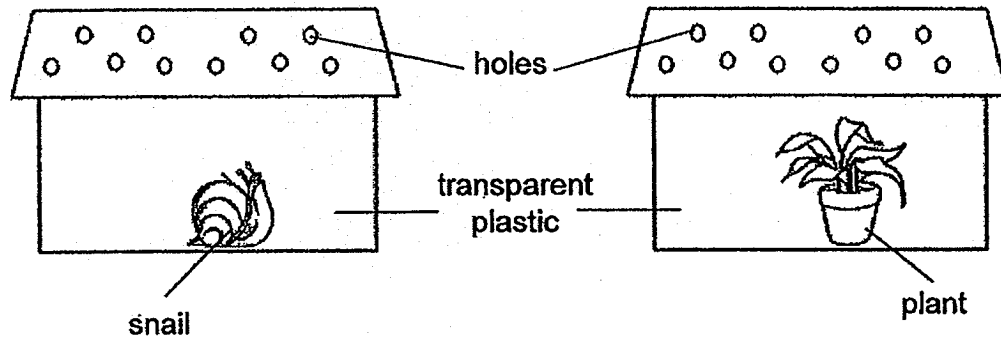
- (a) What apparatus was used to observe the cells? [1]

- (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	<hr/>
	3

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.

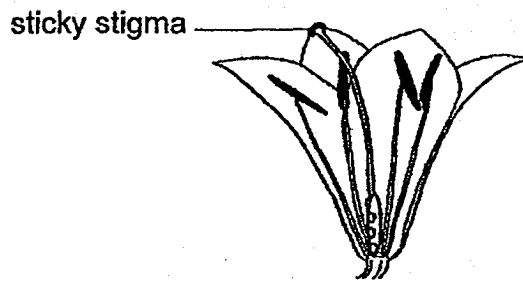


- (a) What do the two living things need to carry out life processes? [1]

- (b) Which living thing will most likely survive for a longer period of time? Explain your answer. [2]

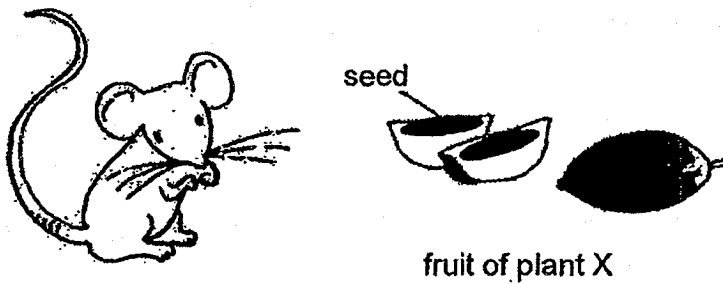
Score	3
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32. The diagram below shows flower X which has a sticky stigma.



(a) What is the advantage of having a sticky stigma in the process of pollination? [1]

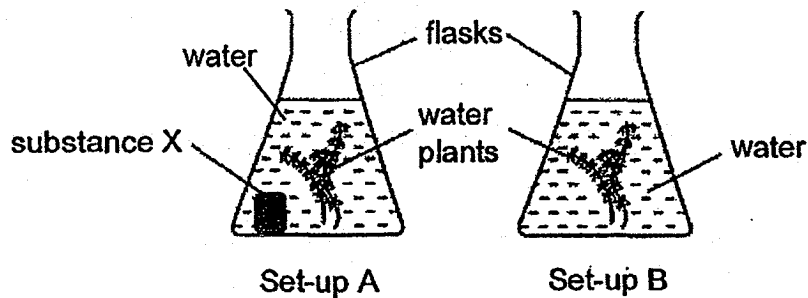
The fruit of plant X is juicy and contains seeds that are hard and stone-like.



(b) Describe how the seeds of plant X can be dispersed by the mouse. [1]

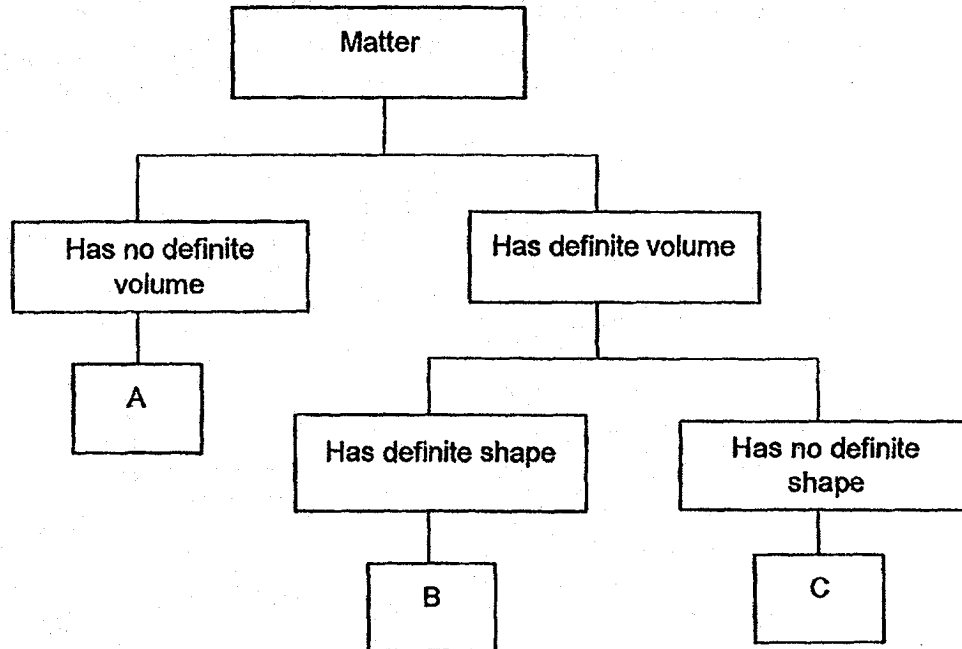
(c) Why is it important for seeds to be dispersed away from the parent plant? [1]

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-up A if she wants to find out if light is needed for photosynthesis. [1]
-
-

34. Study the flow chart below.



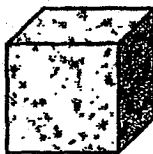
(a) Identify the letter, A, B or C, that can represent each of the following matter. Write the letter in the box next to the matter. [2]

Matter	letter
clouds	
water vapour	

(b) Sumin has a wooden cube, a sponge cube and a glass cylinder.



wooden cube



sponge cube

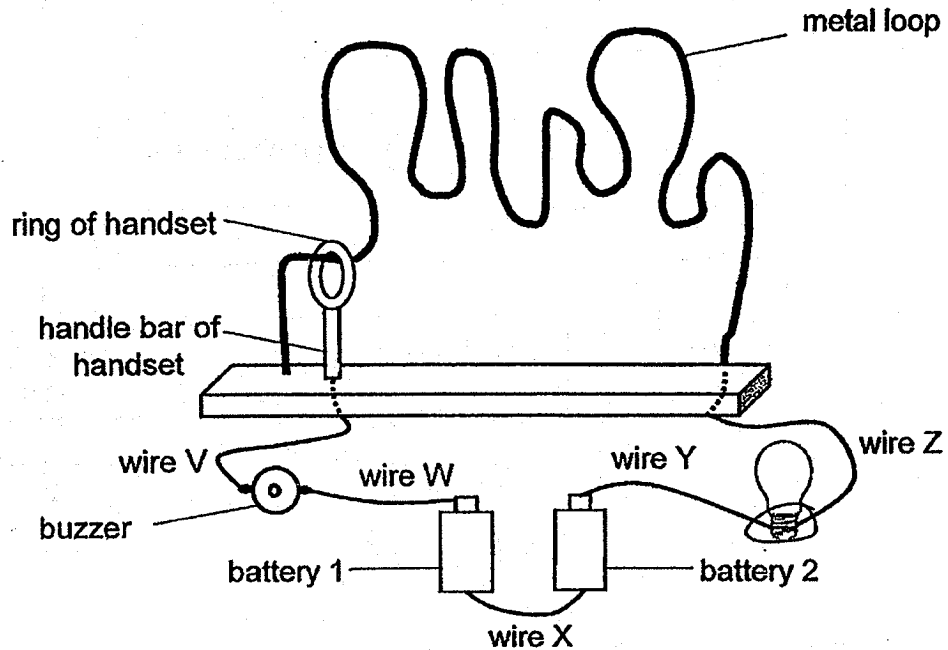


glass cylinder

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 : _____

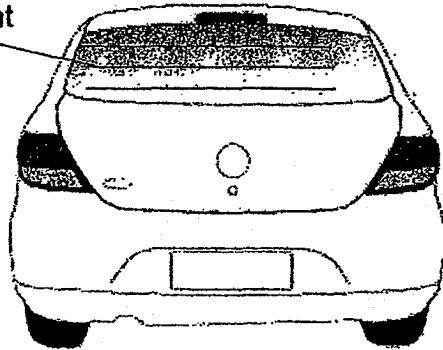
Reason 2 : _____

- (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]

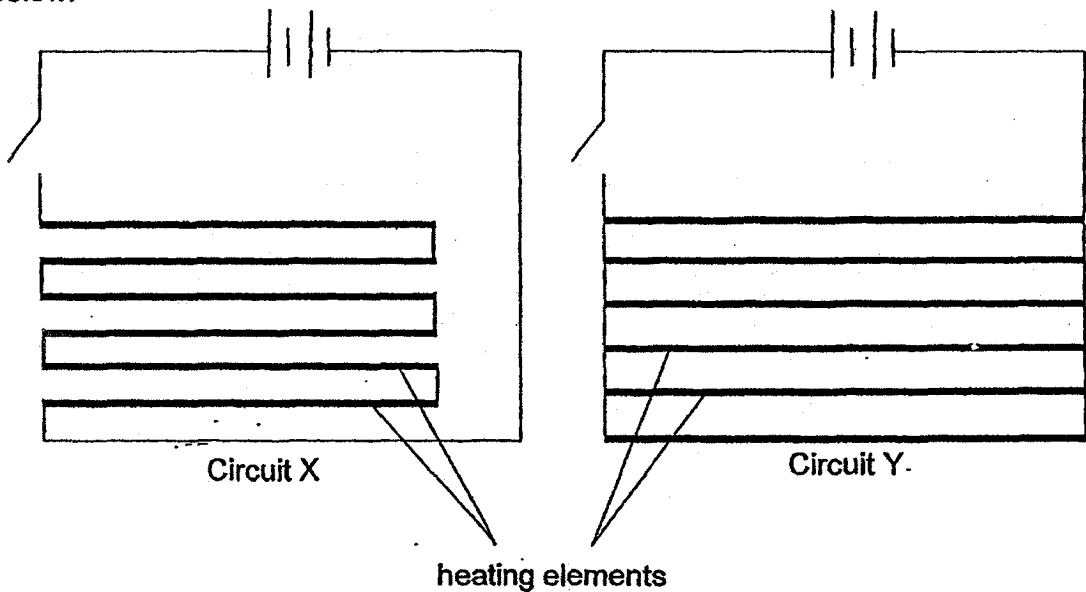
- (c) Without changing the metal loop, suggest a change to the set-up that will make it more difficult to win the game. [1]

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.

heating element



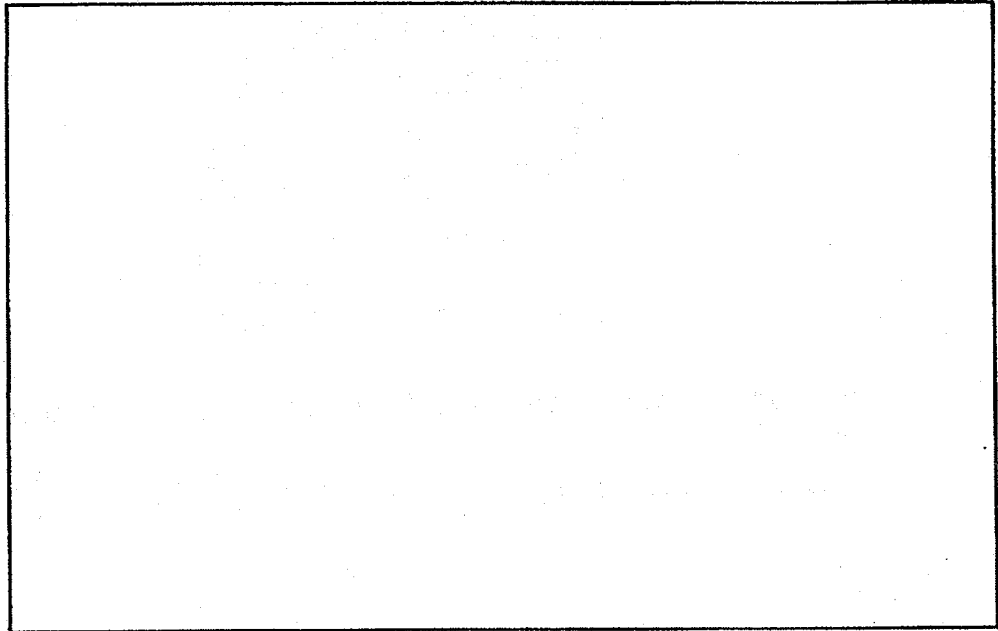
There are two ways of connecting the heating elements in a circuit as shown below.



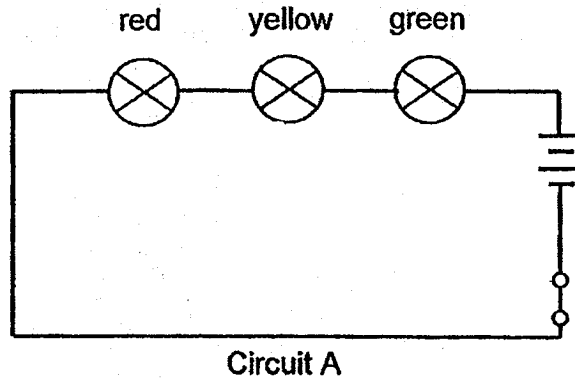
- (a) What is the advantage of using circuit Y when one of the heating elements is broken? Explain your answer. [2]

Go to the next page

- (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]



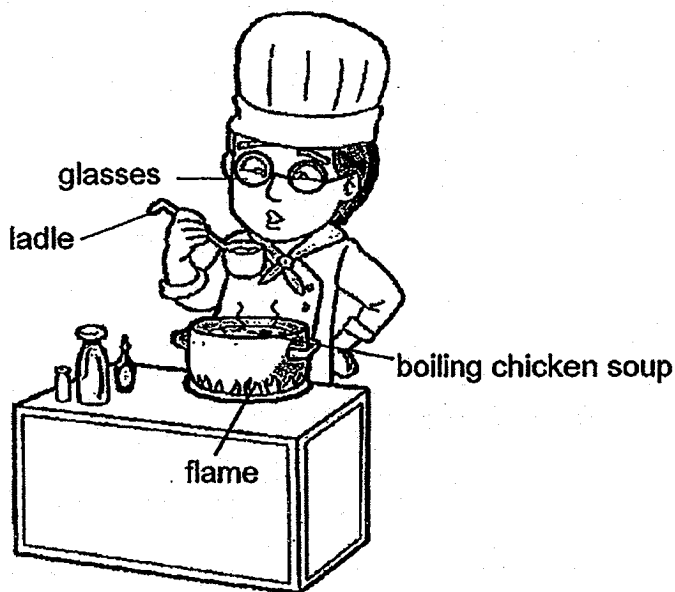
37. The circuit diagram below shows a switch and three coloured bulbs.



- (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]

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.



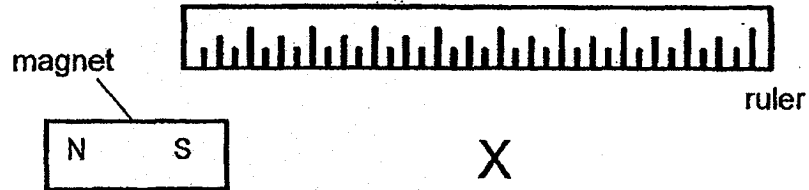
- (a) What substance had formed on his glasses to prevent him from seeing clearly [1]

- (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.



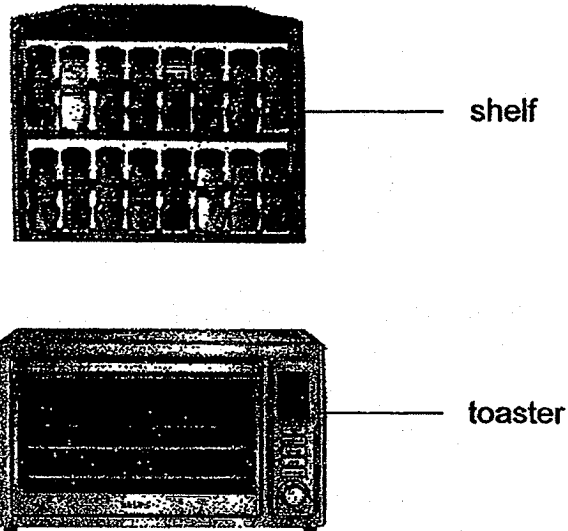
She recorded her observations in the table below.

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]

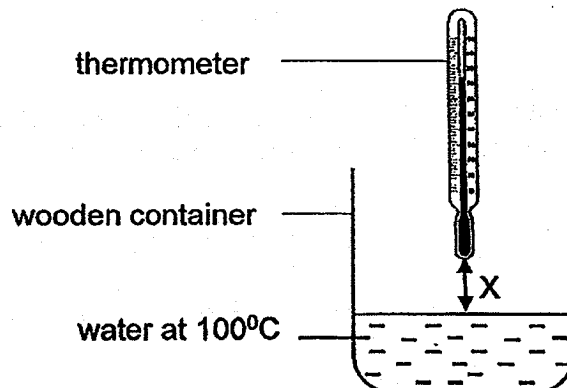
- (b) Based on the observations, Mrs Lee concluded that block B is definitely a magnet. Do you agree with her? Explain your answer. [2]

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.

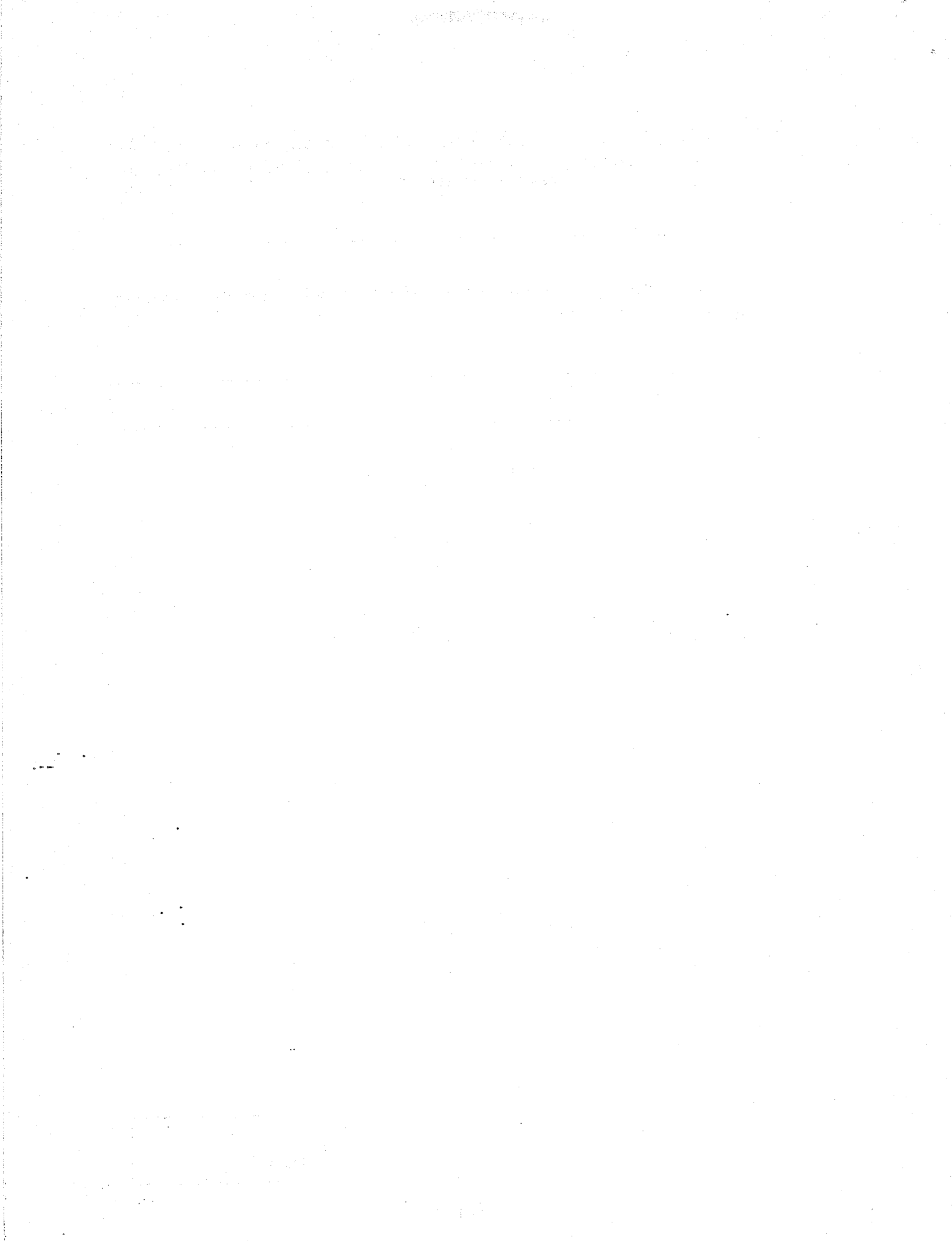
Distance X (cm)	2	4	6	8	10	12
Temperature of air ($^{\circ}\text{C}$)	95	85	65	40	30	30

- (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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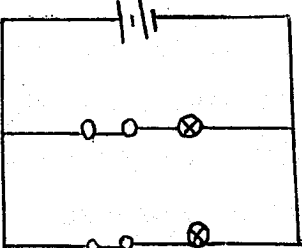
SCHOOL : NAN HUA PRIMARY SCHOOL
 LEVEL : PRIMARY 5
 SUBJECT : SCIENCE
 TERM : 2018 SA2

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)	<p>a)When out, carbon dioxide is produced and carbon dioxide turns limewater to a chalky colour.</p> <p>b)Water vapour and oxygen.</p> <p>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.</p> <p>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.</p>
Q30)	<p>a)Microscope</p> <p>b)Cell X will have chloroplasts in it but cell Y would not.</p> <p>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.</p>

Q31)	<p>a) Air, food and water.</p> <p>b) The plant can survive longer as it can make food in the presence of light, water and carbon dioxide.</p>
Q32)	<p>a) The pollen grain will stick on the stigma better so there is higher chances of pollination.</p> <p>b) The mouse will eat the (juicy) fruit and throw away the (hard) seeds.</p> <p>c) To avoid a competition for nutrients, sunlight, water and space.</p>
Q33)	<p>a) The presence of substance X.</p> <p>b) Oxygen bubbles would be produced from the water plants.</p> <p>c) More oxygen bubbles would be produced than set-up B.</p> <p>d) Remove substance X and place the set-up in a dark room.</p>
Q34)	<p>a) C A</p> <p>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.</p>
Q35)	<p>a) Reason 1: wire is not connected to the metal tip of the bulb. Reason 2: wire W and wire Y will both be connected to the positive terminal of the battery.</p> <p>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.</p> <p>c) Use a smaller ring for the handset.</p>
Q36)	<p>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.</p> <p>b) </p>

Q37)	<p>a)The bulb are arranged in series. They will light up at the same time.</p> <p>b)The existing bulbs will become dimmer.</p>
Q38)	<p>a)Water droplets.</p> <p>b)The glasses would gain heat from the steam (water vapour at 100c) and become warmer and the rate of condensation would decrease.</p> <p>c)The volume of the soup would decrease. The water from the soup would gain more heat from the flame and boiled to steam.</p>
Q39)	<p>a)Same mass and same surface area of the block in contact with the ground.</p> <p>b)No. Object B can be made of a magnetic material and is attracted by the magnet.</p>
Q40)	<p>a)10cm.</p> <p>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.</p>

