

NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

**SEMESTRAL ASSESSMENT 2
2006**

BOOKLET A

Date : 30 October 2006

Duration : 1 h 45 min

Name : _____ ()

Class: Primary 4 ()

Marks Scored:

Booklet A:		60
Booklet B :		40
Total :		100

Parent's signature:

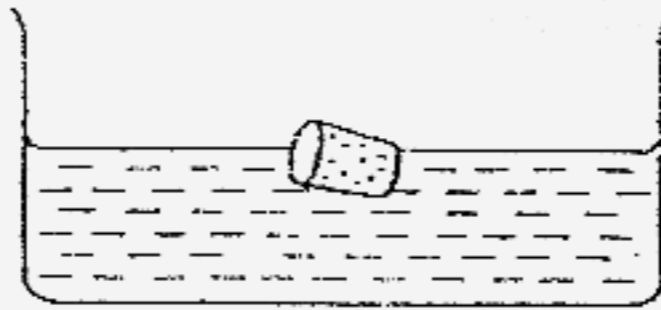
**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

Booklet A consists of 13 printed pages including this cover page.

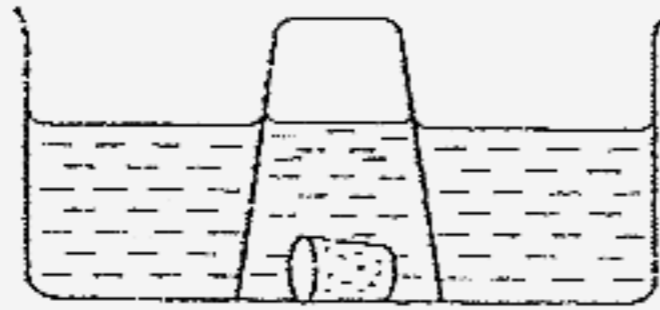
Section A (30 x 2 marks = 60 marks)

For each question from 1 to 40, 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.

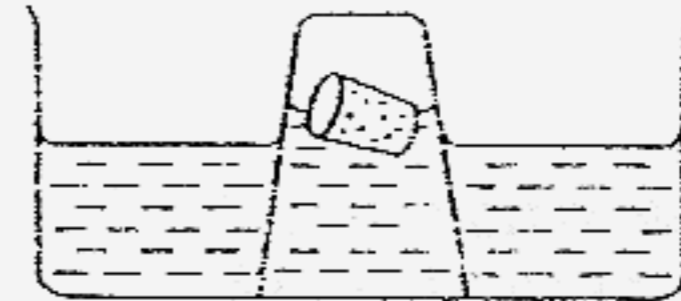
1. Sarah puts a piece of wooden cork on a basin of water. Which one of the diagrams below shows what happens when she inverts an empty glass directly over it?



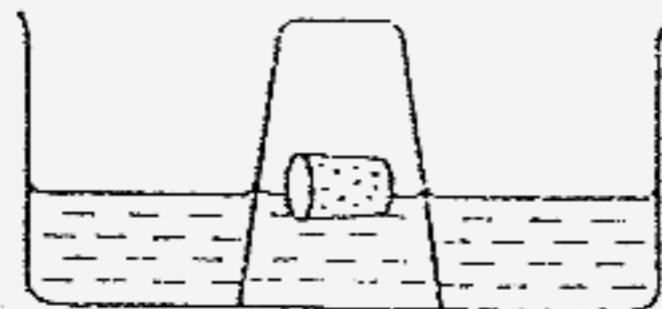
(1)



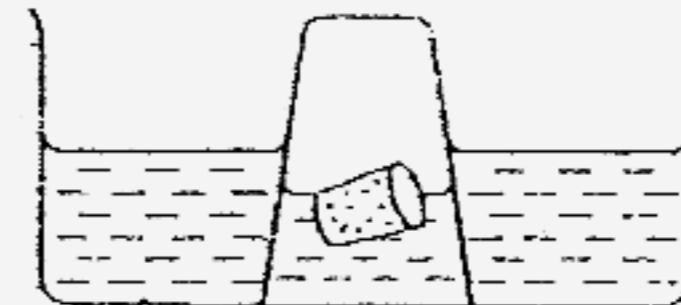
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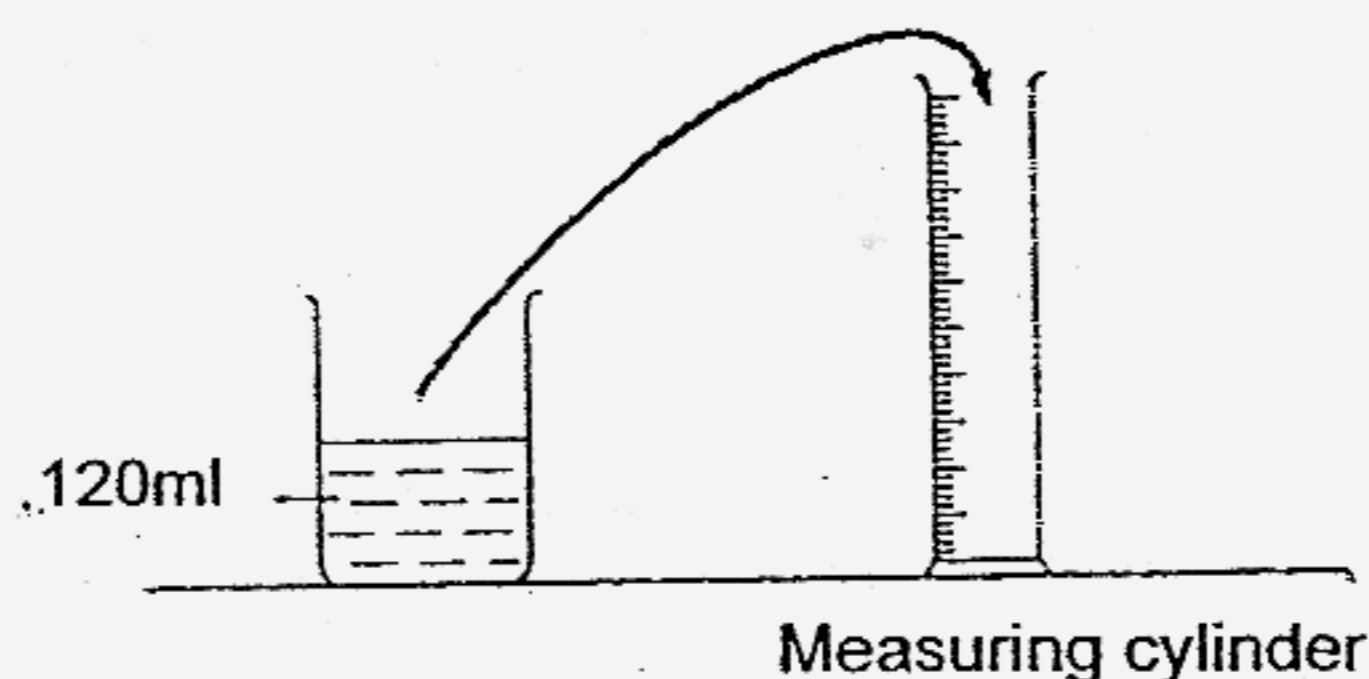
(3)



(4)



2. A beaker of milk is poured into the measuring cylinder as shown below.

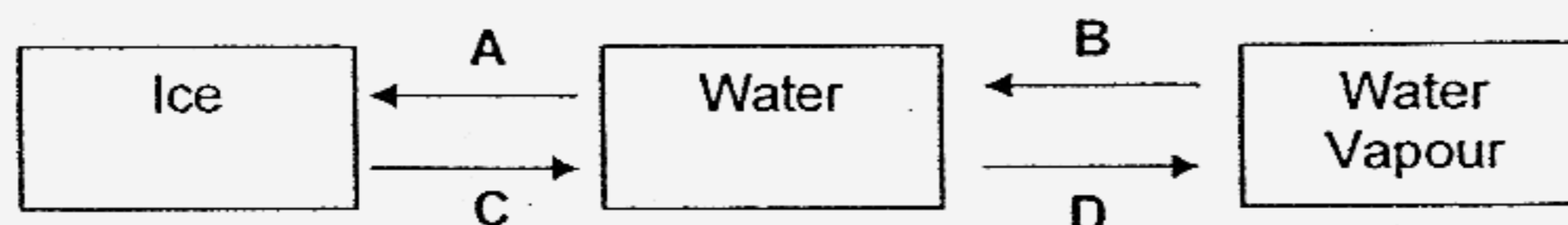


Which of the following property of milk explain(s) the observations above?

- (A) Milk has mass.
- (B) Milk can be compressed.
- (C) Milk has definite volume.
- (D) Milk does not have definite shape.

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

3. The diagram below shows the three states of water. A, B, C and D represent four different processes.



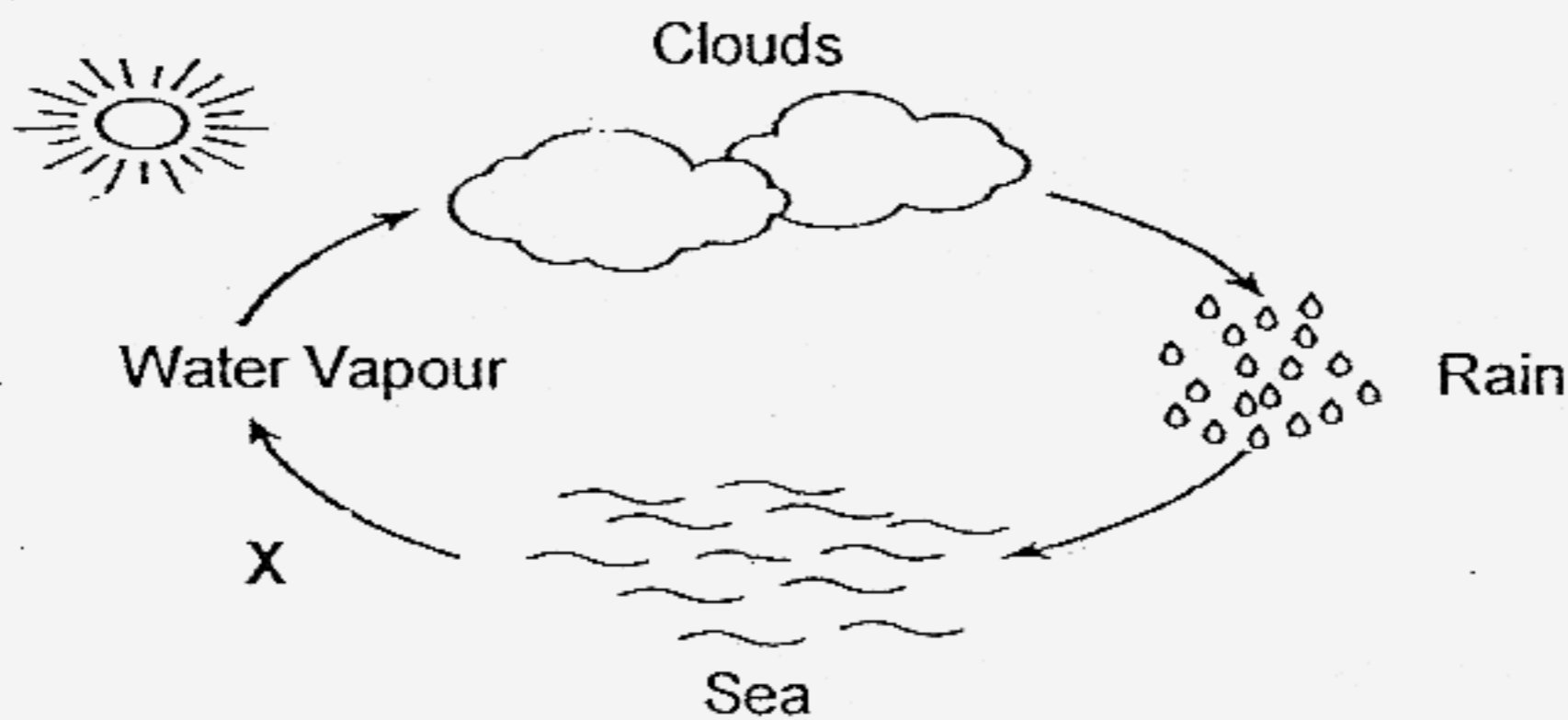
Which one of the following correctly indicates whether heat is gained or heat is lost during the processes A, B, C and D?

	A	B	C	D
(1)	Heat lost	Heat lost	Heat gained	Heat gained
(2)	Heat lost	Heat gained	Heat lost	Heat gained
(3)	Heat gained	Heat gained	Heat lost	Heat lost
(4)	Heat gained	Heat lost	Heat gained	Heat lost

4. Salim took out a beaker of ice cubes from the freezer and left it on the table. Which one of the following correctly describes what happened to the ice cubes after all the ice cubes had melted?

	Temperature	Mass	Volume
(1)	Increase	No change	Decrease
(2)	Increase	Increase	Increase
(3)	Decrease	Decrease	Decrease
(4)	No change	No change	Increase

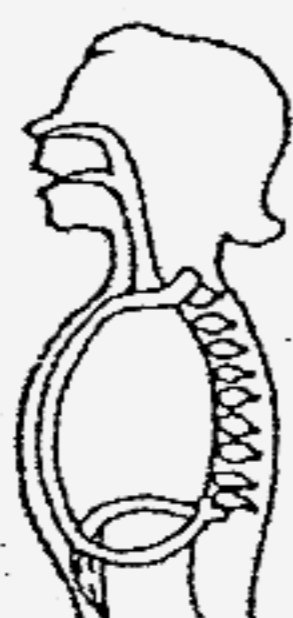
5. Look at the water cycle below.



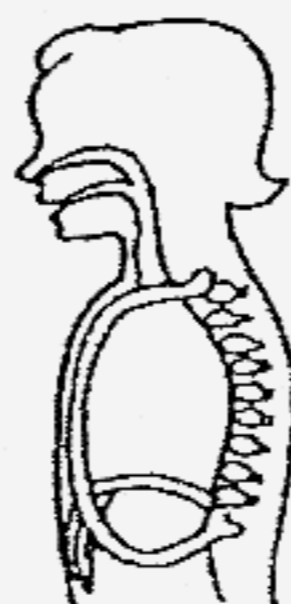
Which one of the following is going through the same process as X in the diagram above?

- (1) Leaving frozen meat on a table.
 - (2) Blowing wet hair using a hair dryer.
 - (3) A tub of butter turning soft when left on a table.
 - (4) Spectacles turn foggy when stepping out of an air-conditioned room.
6. Which one of the following activities does not contribute to an increase in the temperature of surrounding air?
- (1) Oil spill.
 - (2) Deforestation.
 - (3) Burning of fuels.
 - (4) Increase in the number of cars on the road.

7. The diagram below shows how Shuqi coughed.



A. Start of cough

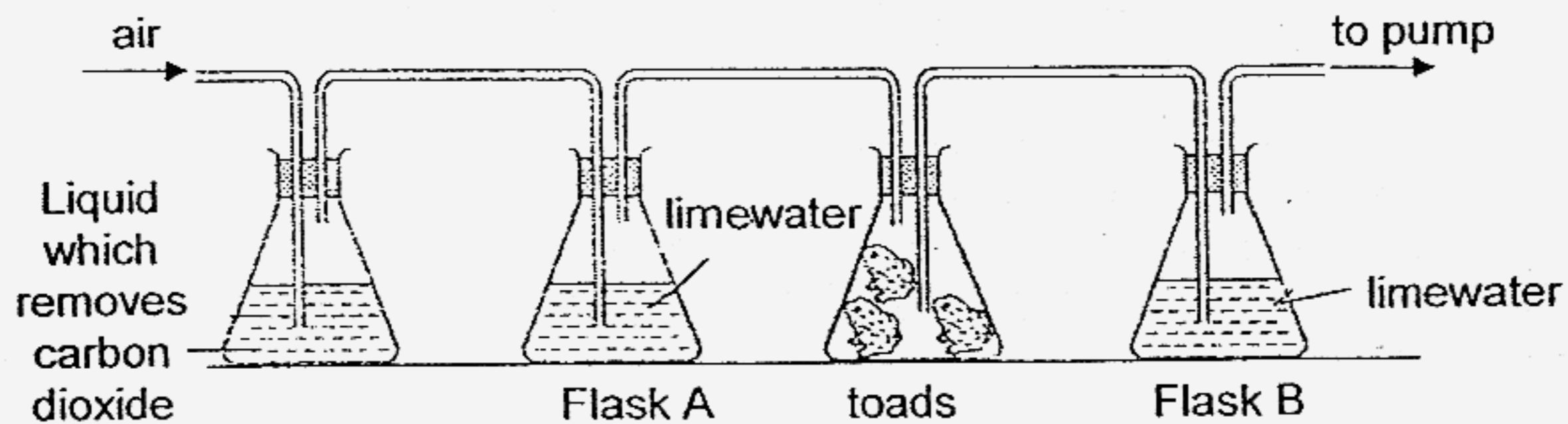


B. End of cough

Which one of the following shows what happened to her chest, diaphragm and ribs when she coughed out in diagram B?

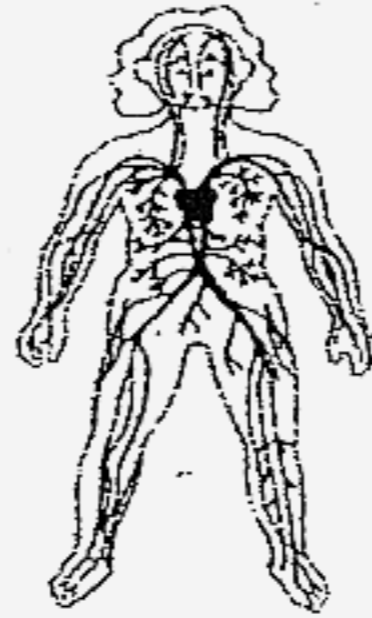
	Chest cavity	Diaphragm	Ribs
(1)	Becomes bigger	Move upwards	Move upwards
(2)	Becomes bigger	Move downwards	Move upwards
(3)	Becomes smaller	Move upwards	Move downwards
(4)	Becomes smaller	Move downwards	Move downwards

8. Look at the experiment set-up as shown below.



- | | Flask A | Flask B |
|-----|---------------|---------------|
| (1) | Turns chalky | Turns chalky |
| (2) | Turns chalky | Remains clear |
| (3) | Remains clear | Remains clear |
| (4) | Remains clear | Turns chalky |

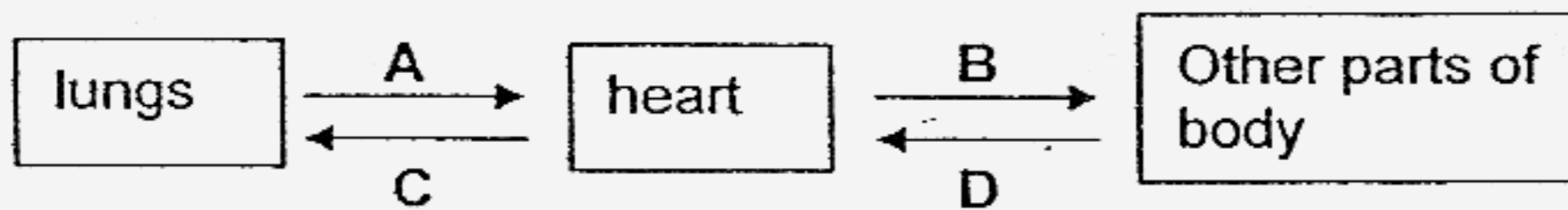
9. Look at the diagram below.



Which of the following body systems does the above diagram represent?

- (1) Skeletal system
- (2) Digestive system
- (3) Circulatory system
- (4) Respiratory system

10. Study the flow chart below.



Which 2 arrows indicate the movement of blood rich in oxygen?

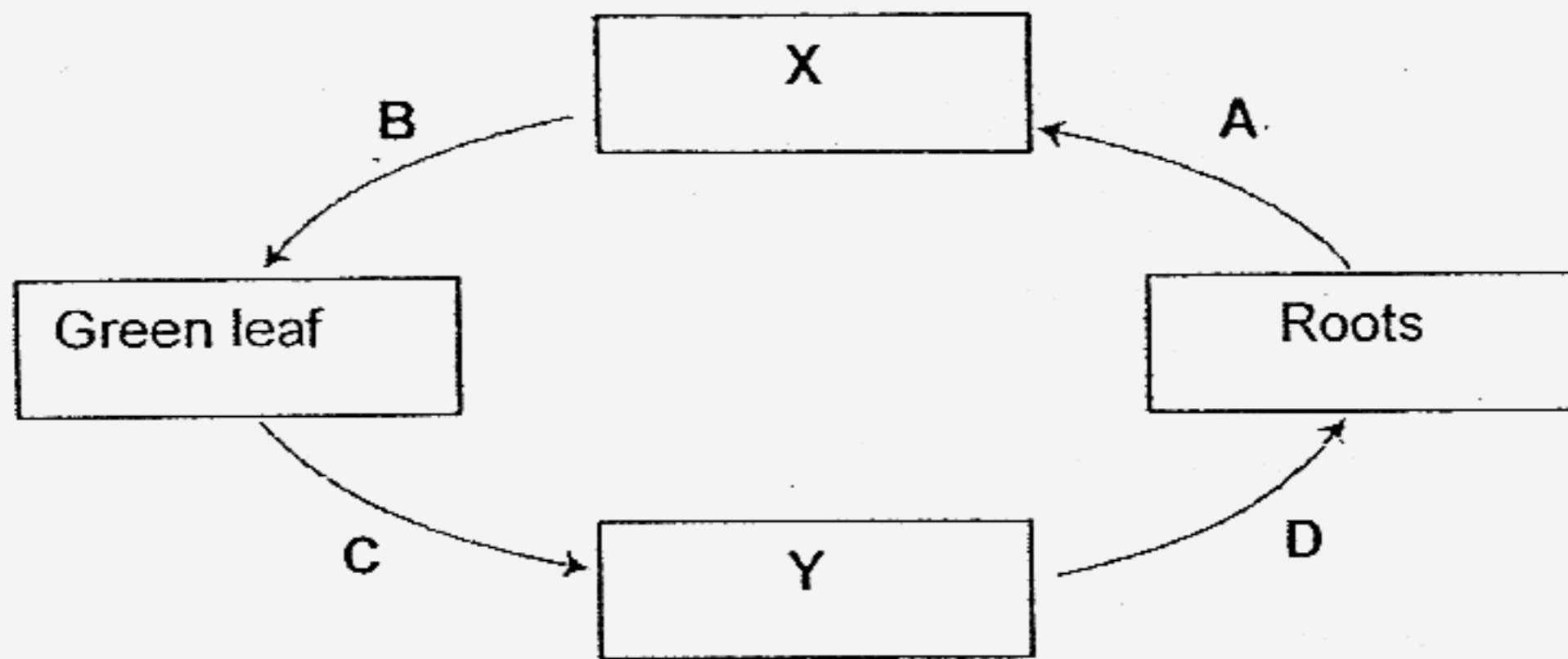
- (1) A and B
- (2) A and C
- (3) B and D
- (4) C and D

11. Which of the following are transported by blood?

- A Oxygen
- B Carbon dioxide
- C Water
- D Digested food substances
- E Waste substances

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

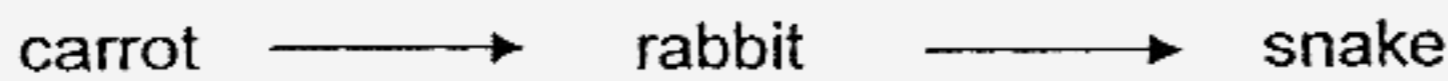
12. Study the flow chart below. X and Y are parts of a plant.



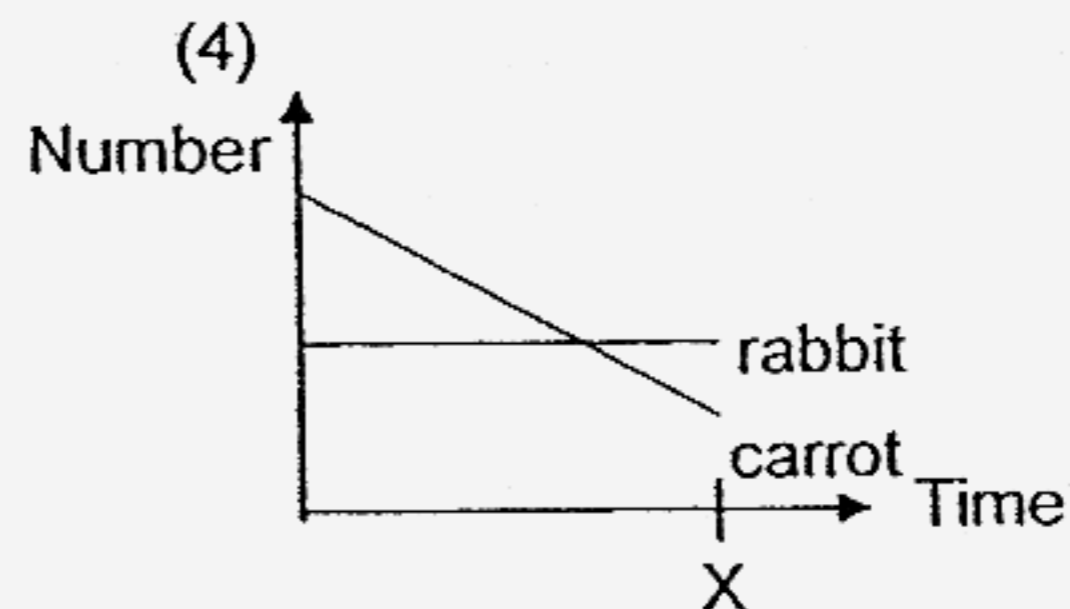
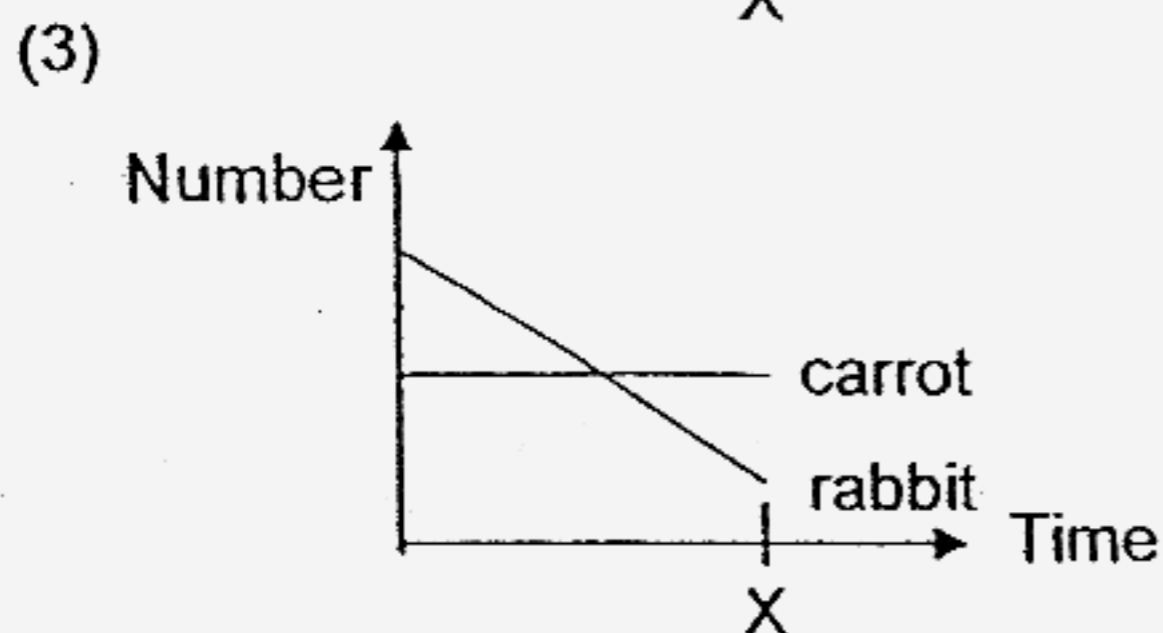
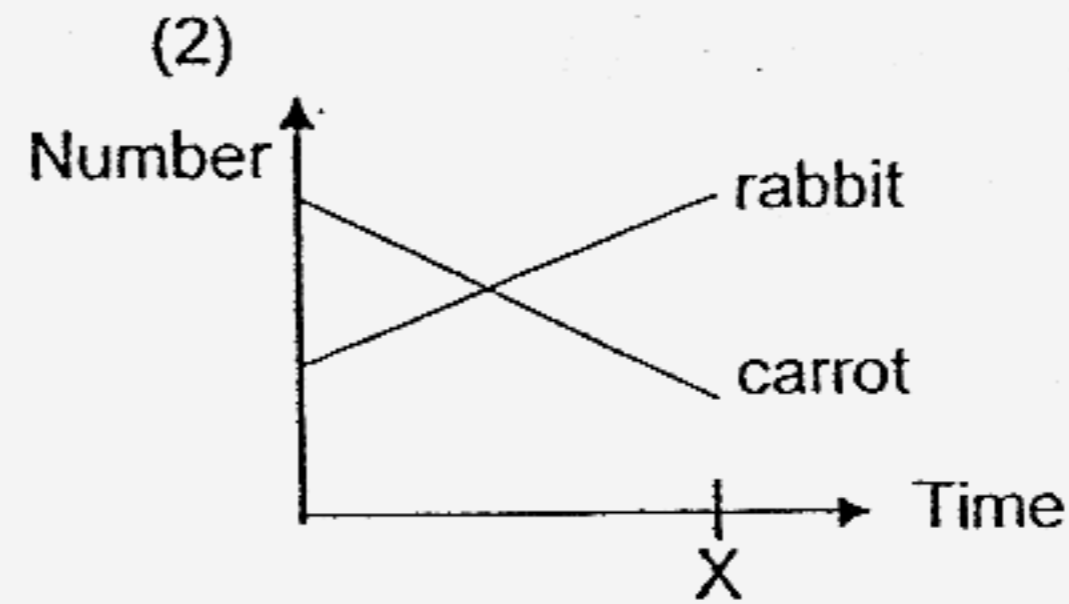
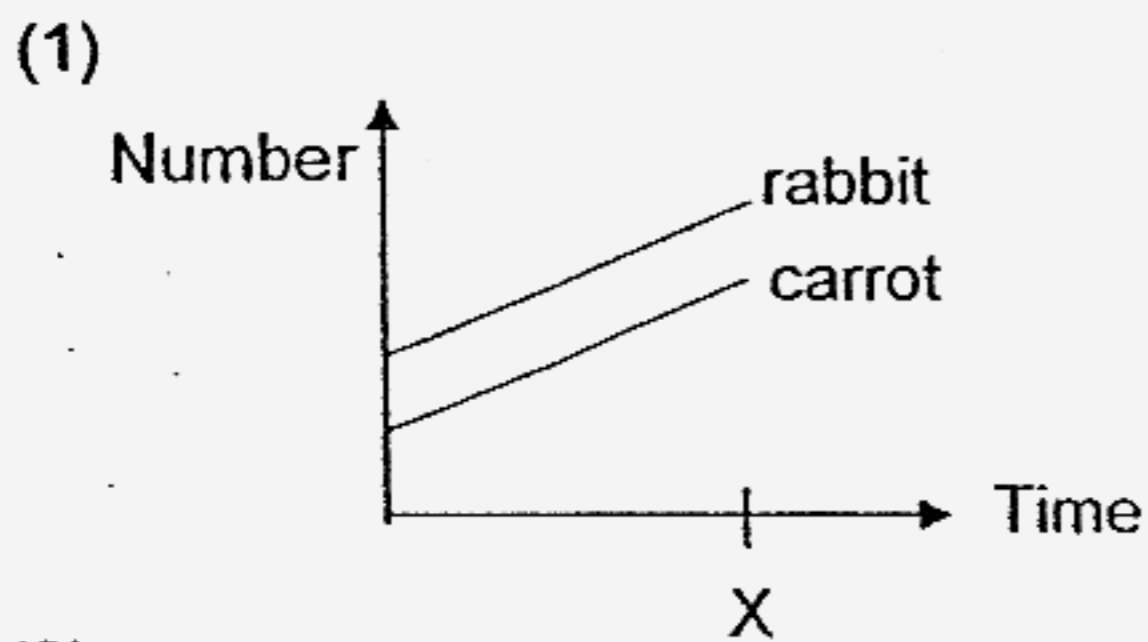
Which one of the following represents the substances transported by the arrows A, B, C and D?

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

13. Study the food chain shown below.



If the snake catchers were active in catching the snakes near the area, which one of the following graphs would correctly show the effects of the hunting on the population of carrots and rabbits?



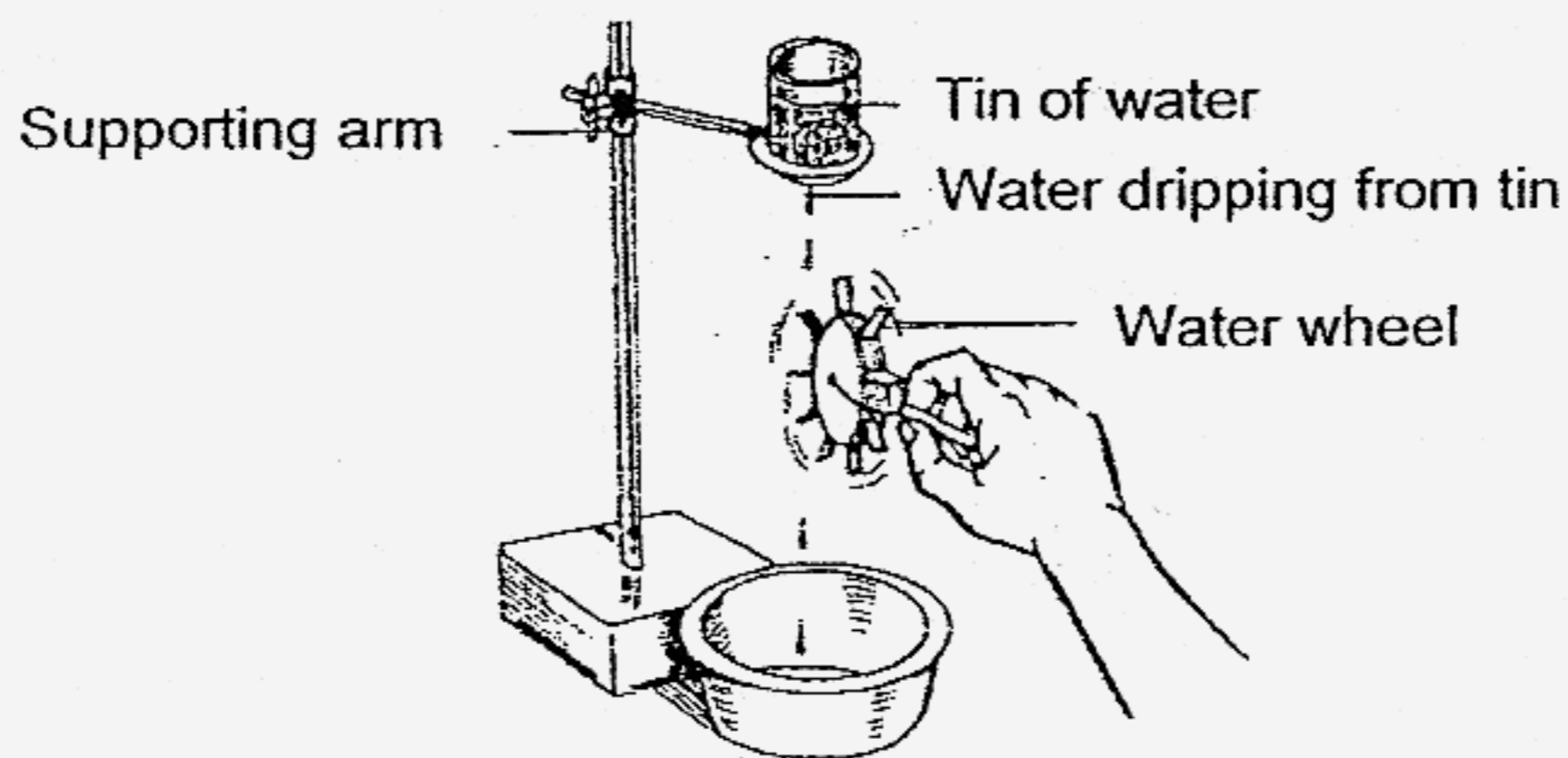
14. Read the information given about 4 organisms A, B, C and D in the table carefully.

A eats B.
B eats C and D.
D is eaten by C.

Which one of the following correctly identifies the organisms?

	Food producer	Herbivore	Carnivore	Omnivore
(1)	A	B	C	D
(2)	B	A	D	C
(3)	D	A	B	C
(4)	D	C	A	B

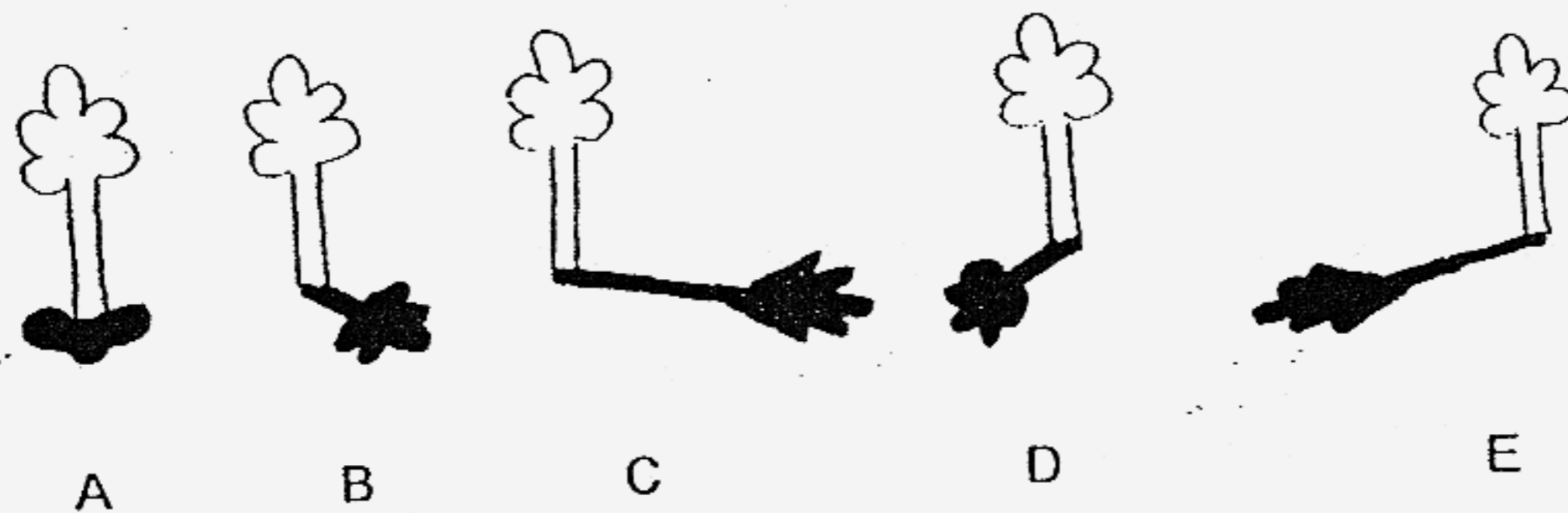
15. An experiment was set up as shown below.



Which one of the following will not cause the wheel to turn faster?

- (1) Use a fan to blow at the wheel.
- (2) Use a bigger tin to contain the water.
- (3) Attach a hose to supply water to the tin.
- (4) Poke a bigger hole at the bottom of the tin.

16. The diagrams, A, B, C, D and E, below show the shadow of a tree formed at different times of the day.



Arrange the shadows formed from dawn to dusk.

- (1) A, B, C, D, E
 (2) A, B, D, E, C
 (3) B, D, A, E, C
 (4) E, D, A, B, C
17. When Rasmin entered a dark room, he was not able to see anything for a few seconds. Slowly, he was able to see faintly a chair, which was placed at the back of the dark room. Then he made his way towards the chair without knocking into other furniture in the room. Which of the following sentence(s) explain/explains what Rasmin had experienced when he entered the dark room?
- A. There was some light in the room to allow him to see the faint outline of the furniture in the dark room.
 B. There was no light in the dark room so he was not able to see anything for a few seconds.
 C. His eyes were not able to respond fast enough to the sudden change so he was not able to see anything for a few seconds.
- (1) A only
 (2) B only
 (3) A and C only
 (4) B and C only
18. Object A appears white and Object B appears black because _____
- (1) Object A conducts light but not Object B.
 (2) Object B conducts light but not Object A.
 (3) Object A reflects all lights and Object B absorbs all light.
 (4) Object A reflects white light and Object B reflects black light.

19. Jason looked at the rear mirror of his father's car and noticed the number plate on the car behind them looked different. He turned back and read the car plate, SDY 2469 J. What do you think Jason saw in the rear view mirror of his father's car?

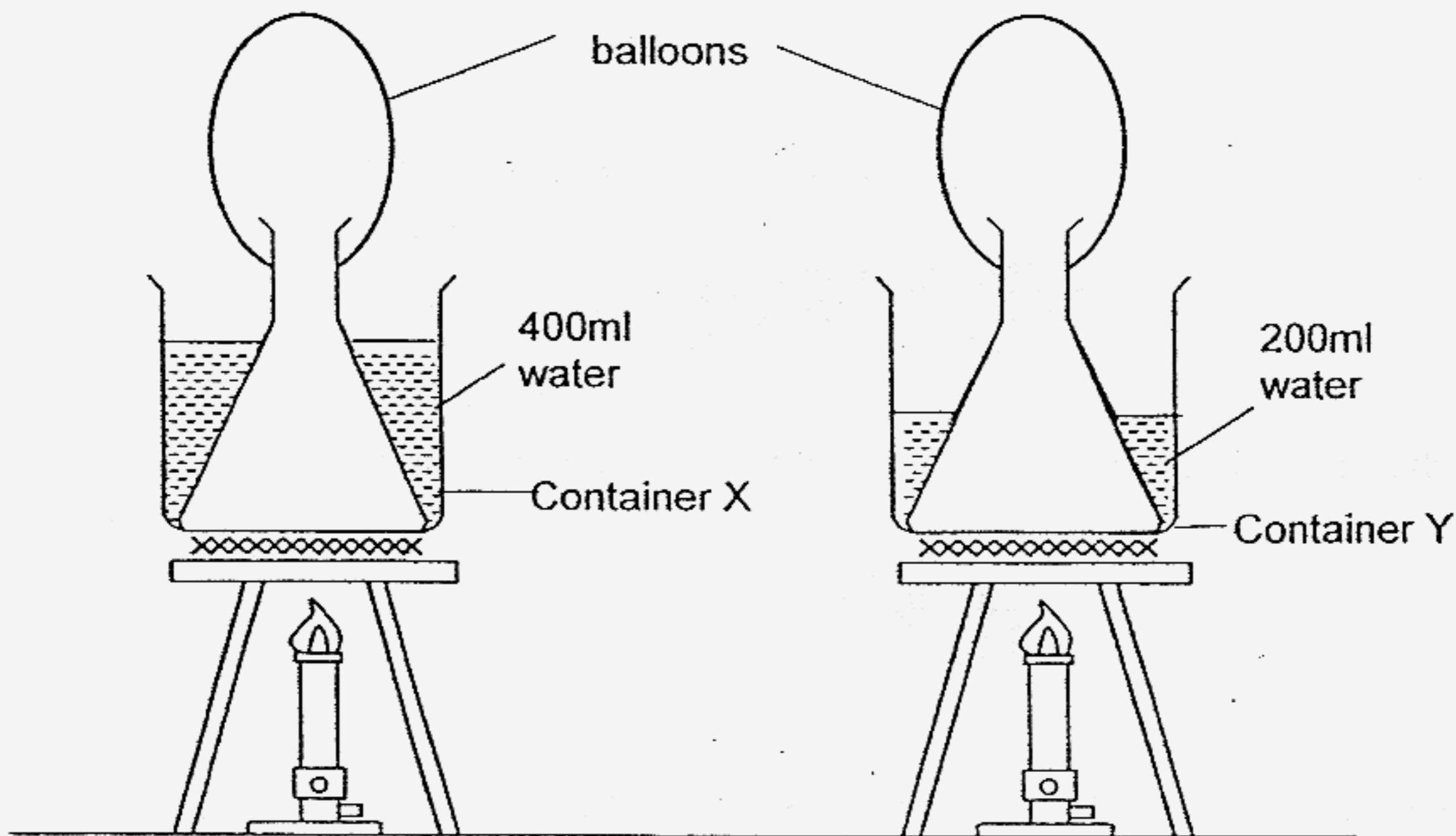
- (1) L e24S YD2
 (3) 2DY S46E J

- (2) 2DY S46E L
 (4) L e24S YD2

20. Which one of the following sentences explains importance of perspiring on a hot day?

- (1) Excess water in our body is expelled from our body.
 (2) More energy is obtained by the body when we perspire.
 (3) Heat is gained when perspiration is formed on our body.
 (4) Heat is lost from our body when our perspiration evaporates.

21. Leela set up an experiment as shown below.



She noticed that the balloons on both set-ups took the same time to be inflated to the same size.

Which of the following conclusions can Leela make from her experiment?

- (1) Container Y is heated by a stronger flame.
 (2) Water in Container Y is cooler than Container X
 (3) Container X conducts heat better than Container Y.
 (4) Container Y conducts heat better than Container X.

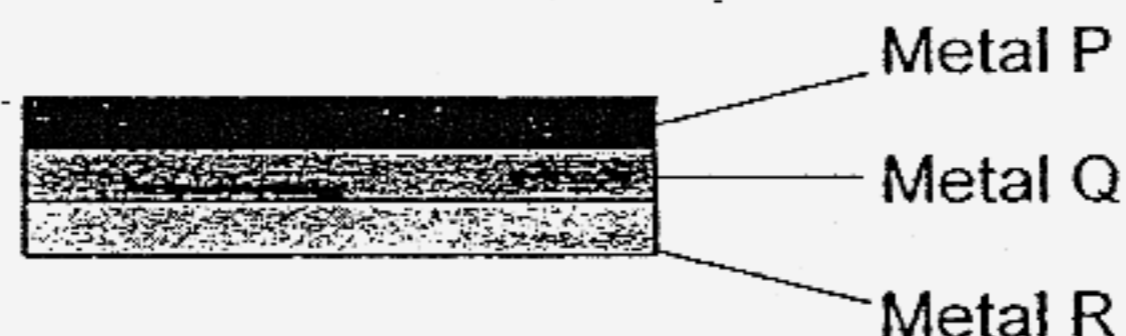
22. Which one of the following sentences best explains why a doctor uses a Clinical Thermometer instead of a Laboratory Thermometer?
- A Clinical Thermometer is more sensitive and accurate.
 - B Clinical Thermometer is shorter so it can be carried around easily.
 - C Clinical Thermometer has a short range of temperature which is enough to measure the body temperature.

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

23. While playing in the courtyard, Jamie and Xiaozhen noticed that there are gaps between the tiles on the ground. What is the main reason for this arrangement?

- (1) It is neater.
- (2) Fewer tiles will be used.
- (3) It is to allow for expansions of the tiles on a hot day.
- (4) It is to allow for contraction of the tiles on a cold day.

24. The metal bar shown below is made up of 3 types of metals.



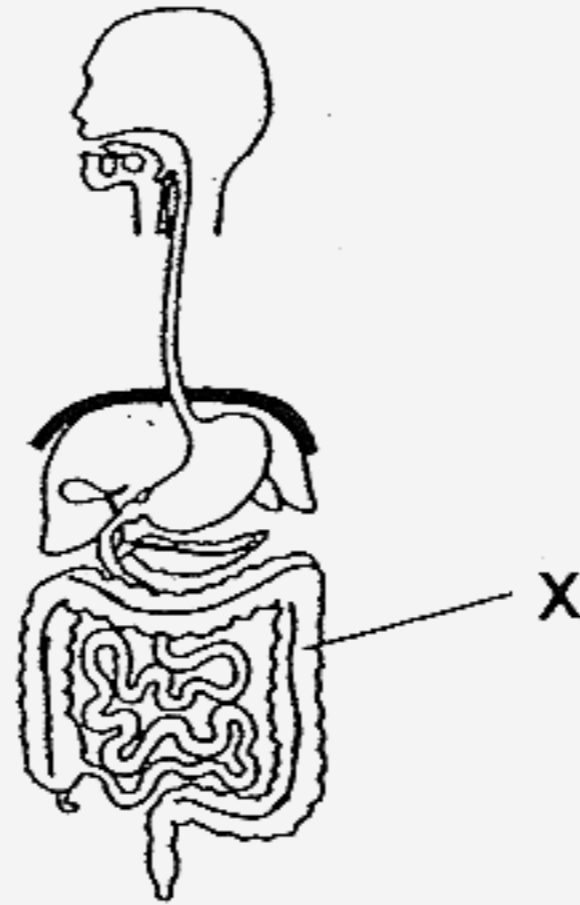
When heated, it becomes curved in the way as shown below.



Which one of the following is the best conclusion?

- (1) Only Metal P expands.
- (2) Metal P expands the most.
- (3) Metal R contracted the most.
- (4) Metal R expands more than Metal Q.

25. The diagram below shows part of the digestive system. Study it carefully.



What happens at the part labelled 'X'?

- (1) Digestion is complete.
 - (2) Undigested food is stored.
 - (3) Excess water is absorbed.
 - (4) Digested food is absorbed.
26. The muscular system and skeletal system of the human body work together to _____.
- (1) support the human body
 - (2) protect the organs in the human body
 - (3) enable the movement of the human body
 - (4) enable the five sense organs to work effectively
27. Which of the following parts of the human body consist of only muscle?
- A. arm
 - B. lungs
 - C. gullet
 - D. stomach
- (1) A and C only
 - (2) B and D only
 - (3) C and D only
 - (4) B, C and D only

28. Aminah noticed that after a thunderstorm, plants in her garden that survived and were still upright had 1 common characteristic. What is the common characteristic of Aminah's plants that survived the thunderstorm?

- (1) thin roots
- (2) small leaves
- (3) woody thick stem
- (4) wide spread branches

29. Which one of the following explains why hibiscus plant has flowers which are brightly coloured?

- (1) To protect itself from animals.
- (2) To produce brightly coloured fruits.
- (3) To attract birds to eat any caterpillars on it.
- (4) To attract insects collect nectar and spread its pollens.

30. Study the diagrams as shown below.



The leaves on Plant X and Plant Y are spread out to ensure that all the leaves get maximum _____.

- (1) air for respiration
- (2) space for growth
- (3) water for circulation
- (4) sunlight for photosynthesis

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PRIMARY 4 SCIENCE

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BOOKLET B

Date : 30 October 2006

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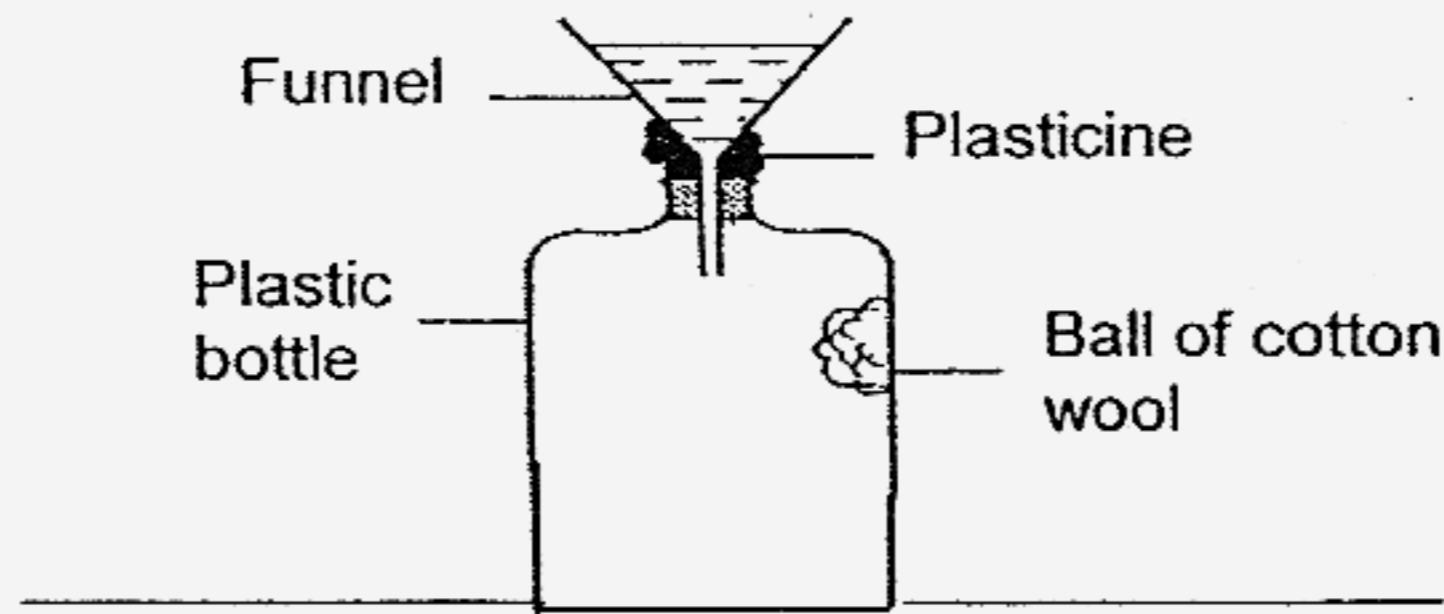
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Booklet B consists of 14 printed pages including this cover page.

Section B (40 marks)

Write your answers to questions 31 to 46 in the spaces provided.
Marks will be deducted for misspelt key words.

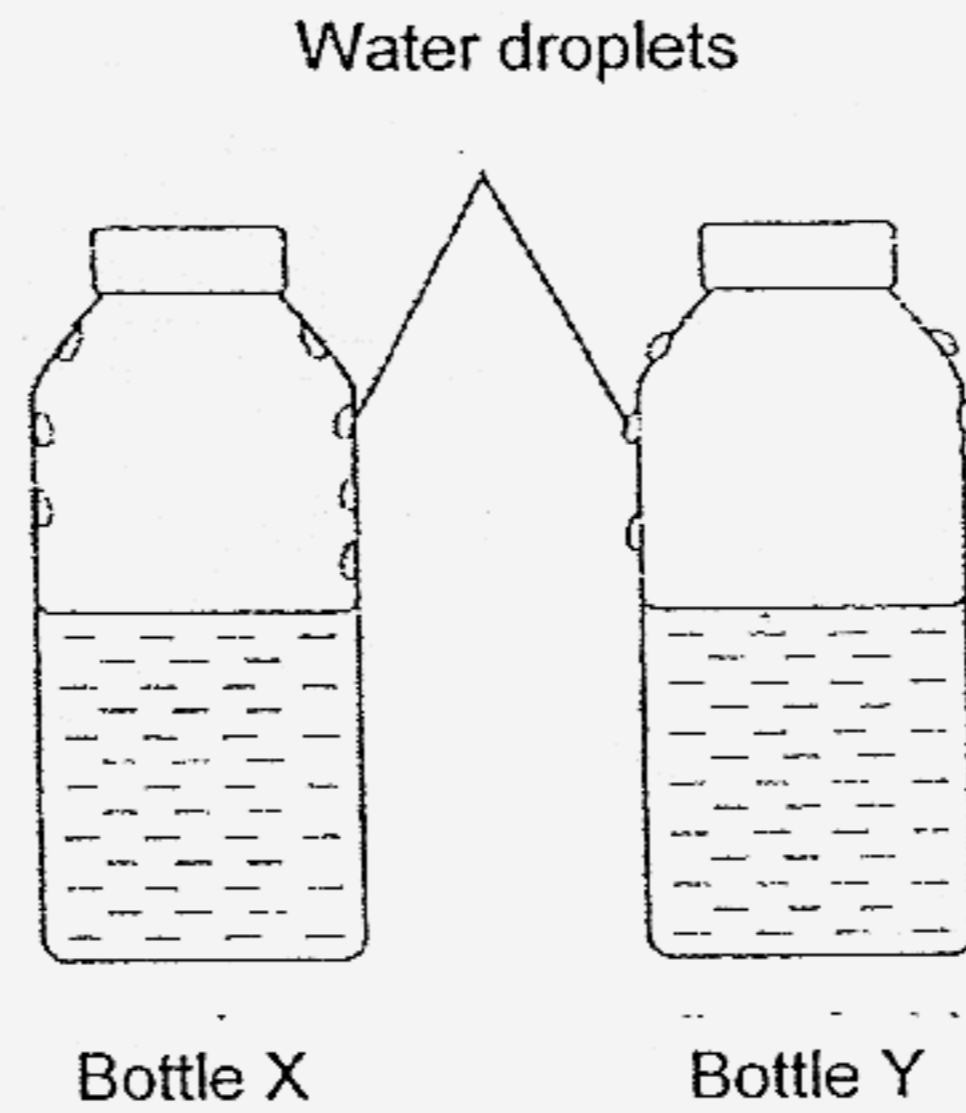
31. Bing Liang set up an experiment as shown below. He poured some water into the funnel quickly.



- (a) Describe what happened to the cotton wool. (1 mark)

- (b) Explain your answer to (a). (1 mark)

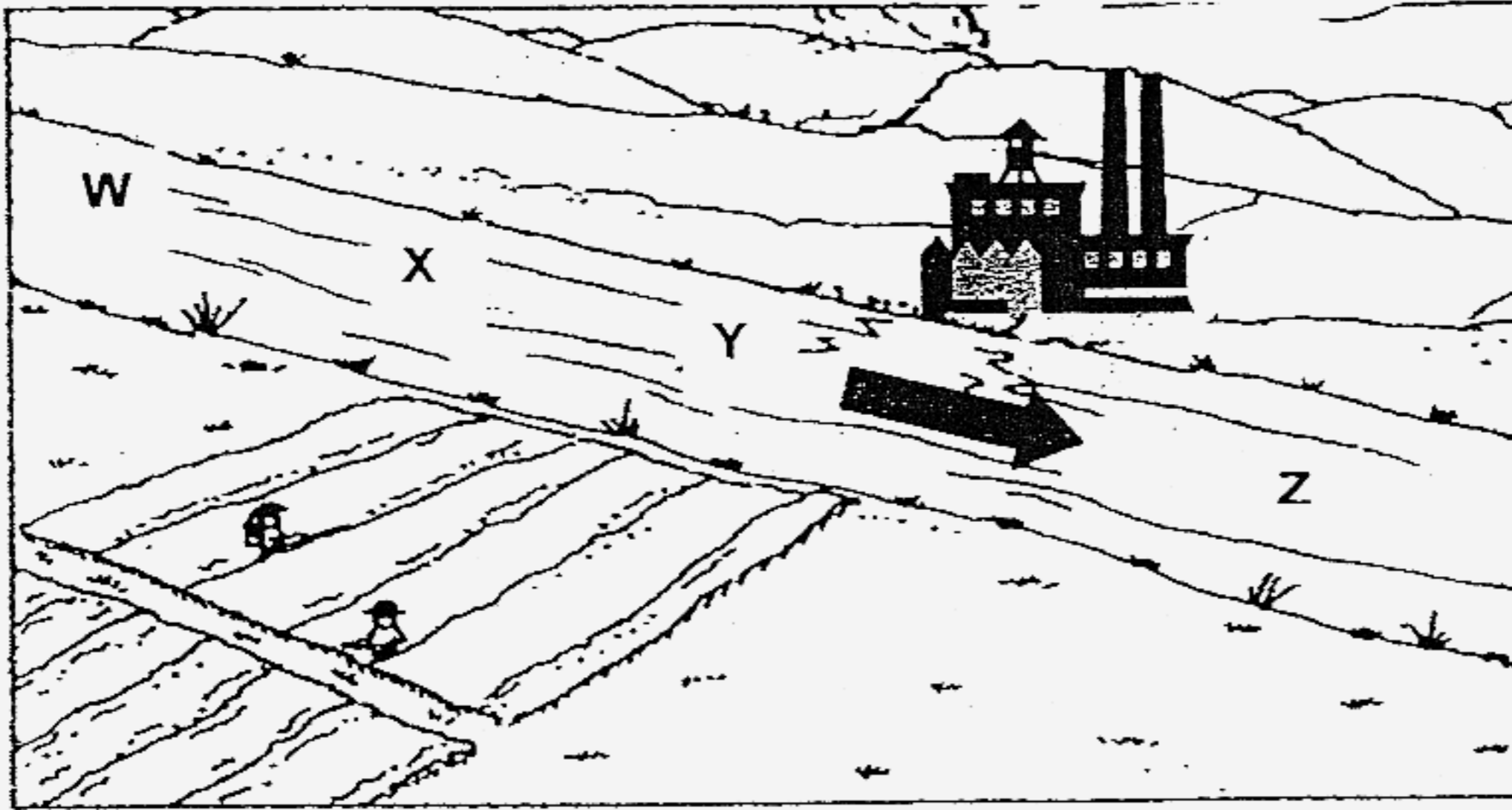
32. Two glass bottles, X and Y, were placed on a table. One bottle contained chilled coke and the other contained hot tea. (2 marks)



- (a) Which bottle contained hot tea? (½ mark)

- (b) Explain your answer to (a). (1½ mark)

33. The picture below shows a farm and a factory.



- (a) Some water samples were collected from the river and algae was found floating on all of them. The growth of algae was a result of the fertilizers discharged by the farm into the stream.

Describe how the growth of the algae will affect the water plants in the river. (1 mark)

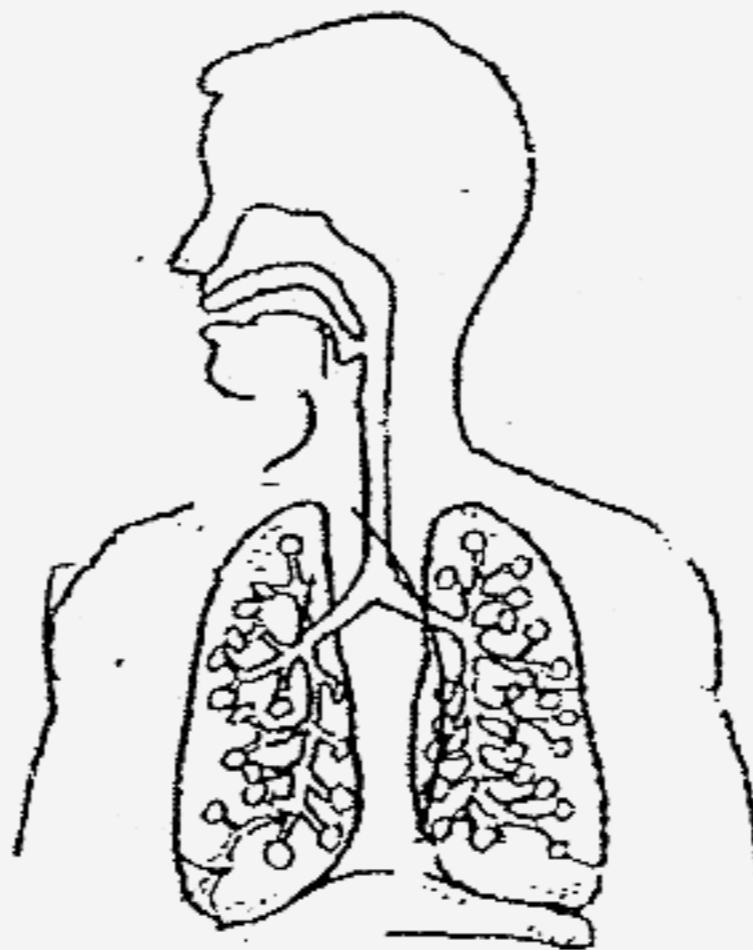
- (b) Based on the picture given above, indicate whether the statements below are 'True', 'False' or 'Not Possible to tell' by ticking the appropriate boxes. (1 mark)

		True	False	Not possible to tell
(i)	Water sample taken from W is free from contamination.			
(ii)	Water sample taken at point Z contains only pollutant from the factory.			

34. In the graph below, draw a **line graph** to show how the relationship of humidity affected the rate of evaporation. **Label the graph.** (2 mark)

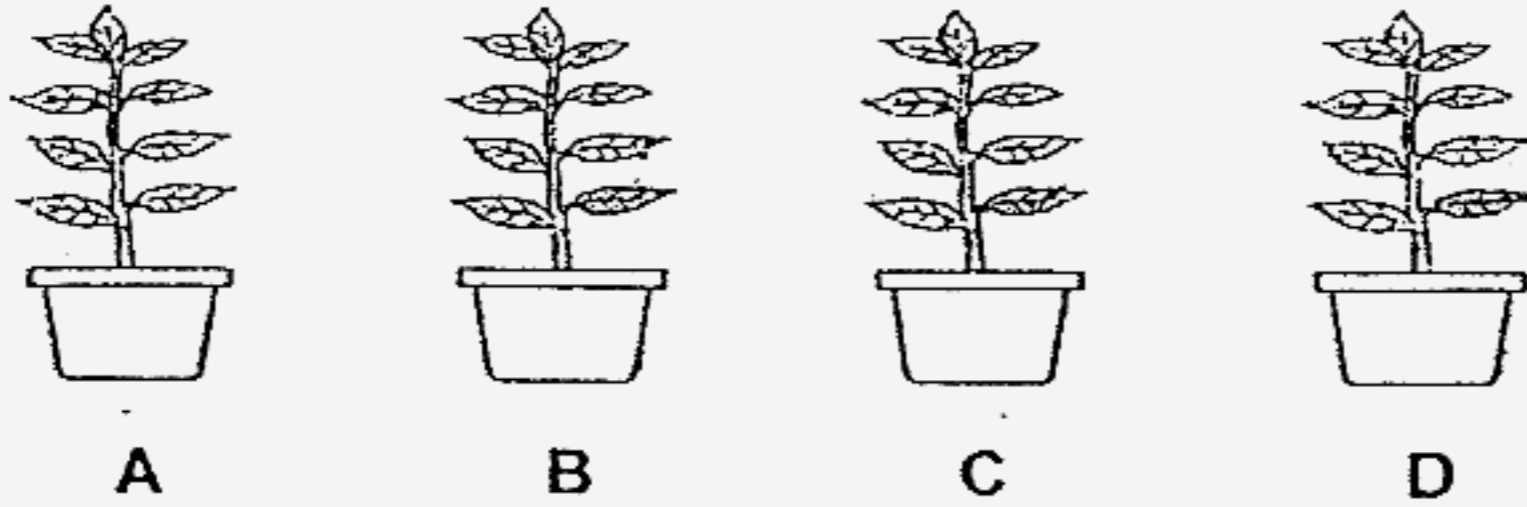


35. (a) Study the diagram below. Draw an arrow and label clearly the part of the lung in which gaseous exchange occurs. (1 mark)



- (a)(b) On the diagram above, circle where the man's right lung is. (1 mark)

36. Mrs Khoo conducted an experiment on four similar healthy balsam plants, A, B, C and D as shown below. She applied oil on different parts of the leaves as shown in the table below and placed the plants near the windows. She gave the plants equal amount of water daily.



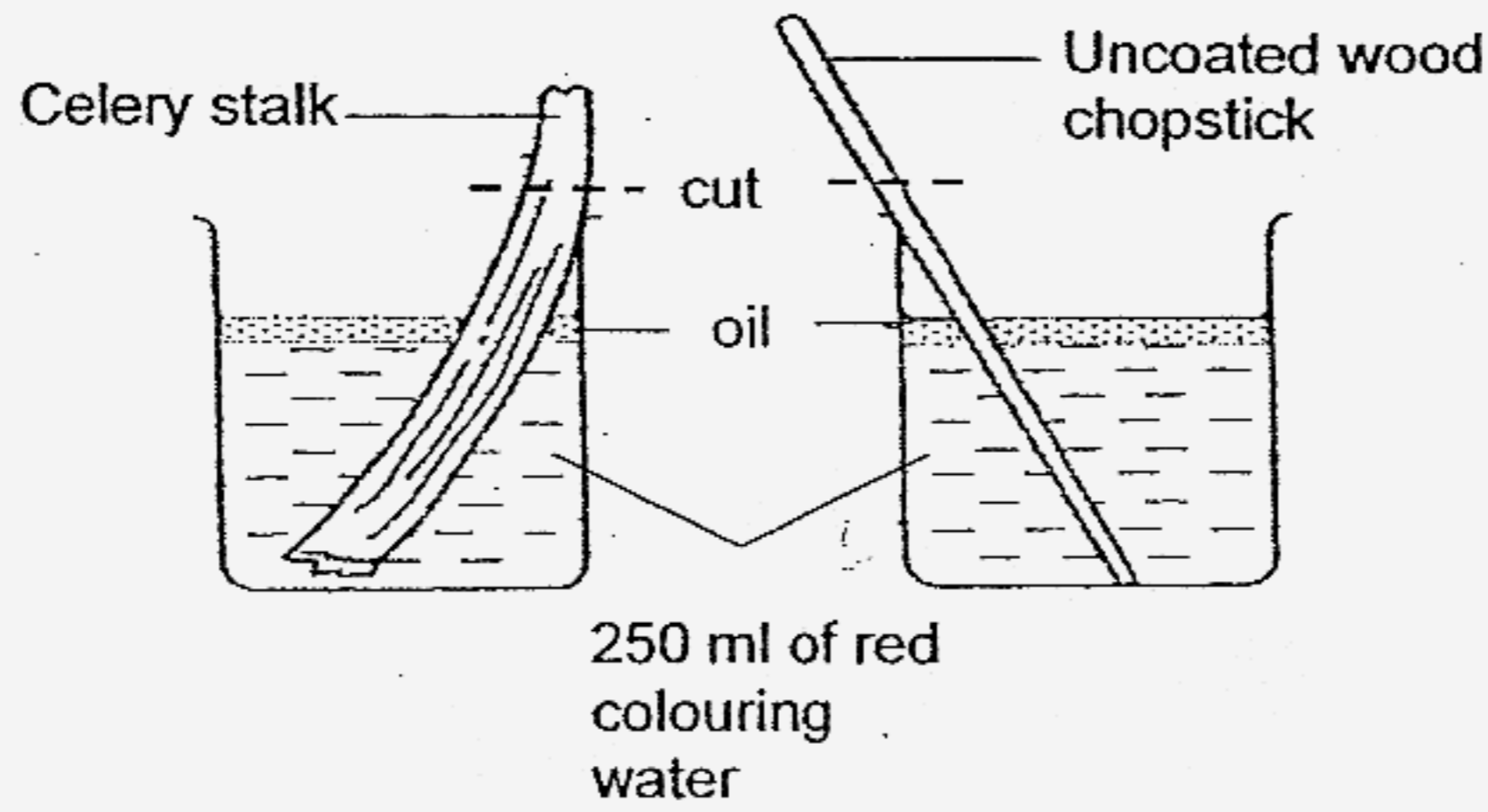
	Plant A	Plant B	Plant C	Plant D
Parts of the leaves coated with oil	No oil was coated on it	Lower leaf surfaces only	Upper leaf surfaces only	Both upper and lower leaf surfaces

(a) Arrange in ascending order of the life span of the plants above. (1 mark)

Shortest life span Longest life span

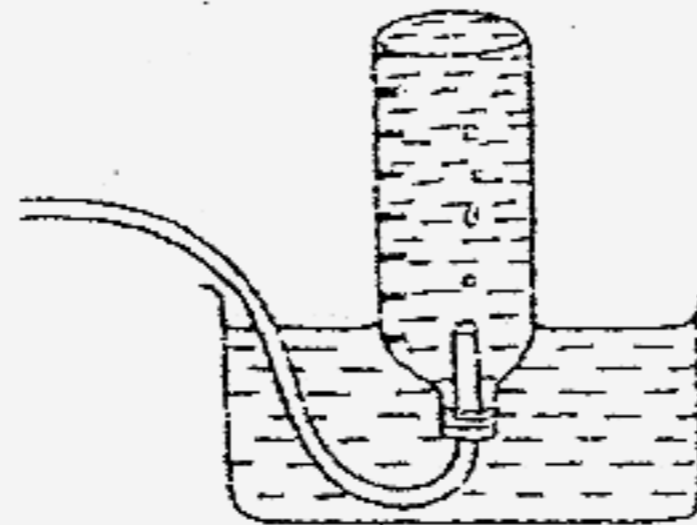
(b) What is the aim of the experiment? (1 mark)

37. Study the experiment set up below.



Describe what would be observed of the cross section of the celery and the chopstick. (2 marks)

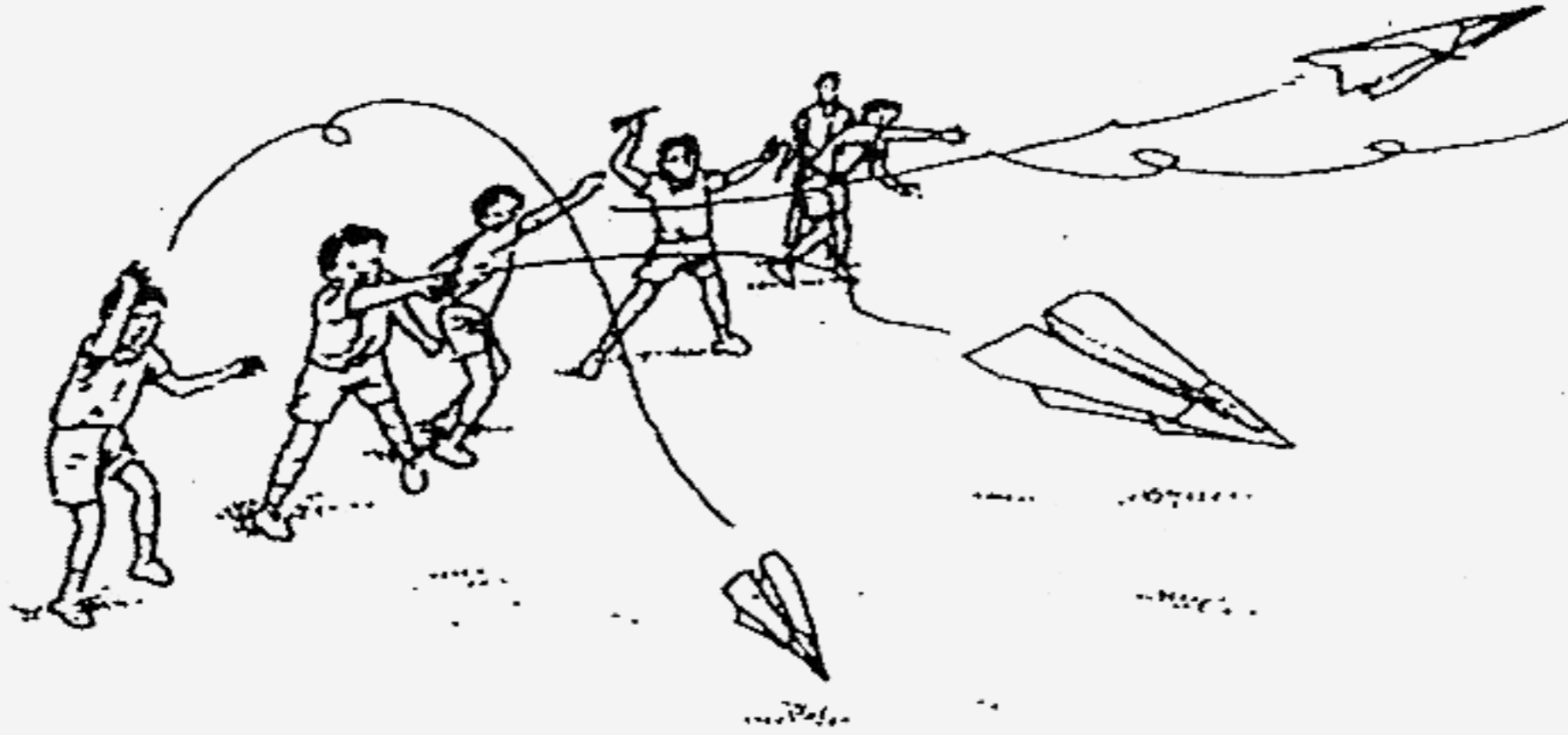
38. During Science lesson, both Lily and May were asked to take a deep breath and blow into the delivery tube in the apparatus as shown below.



(a) What is the aim of the experiment? (1 mark)

(b) What should they measure to find the results of the experiment? (1 mark)

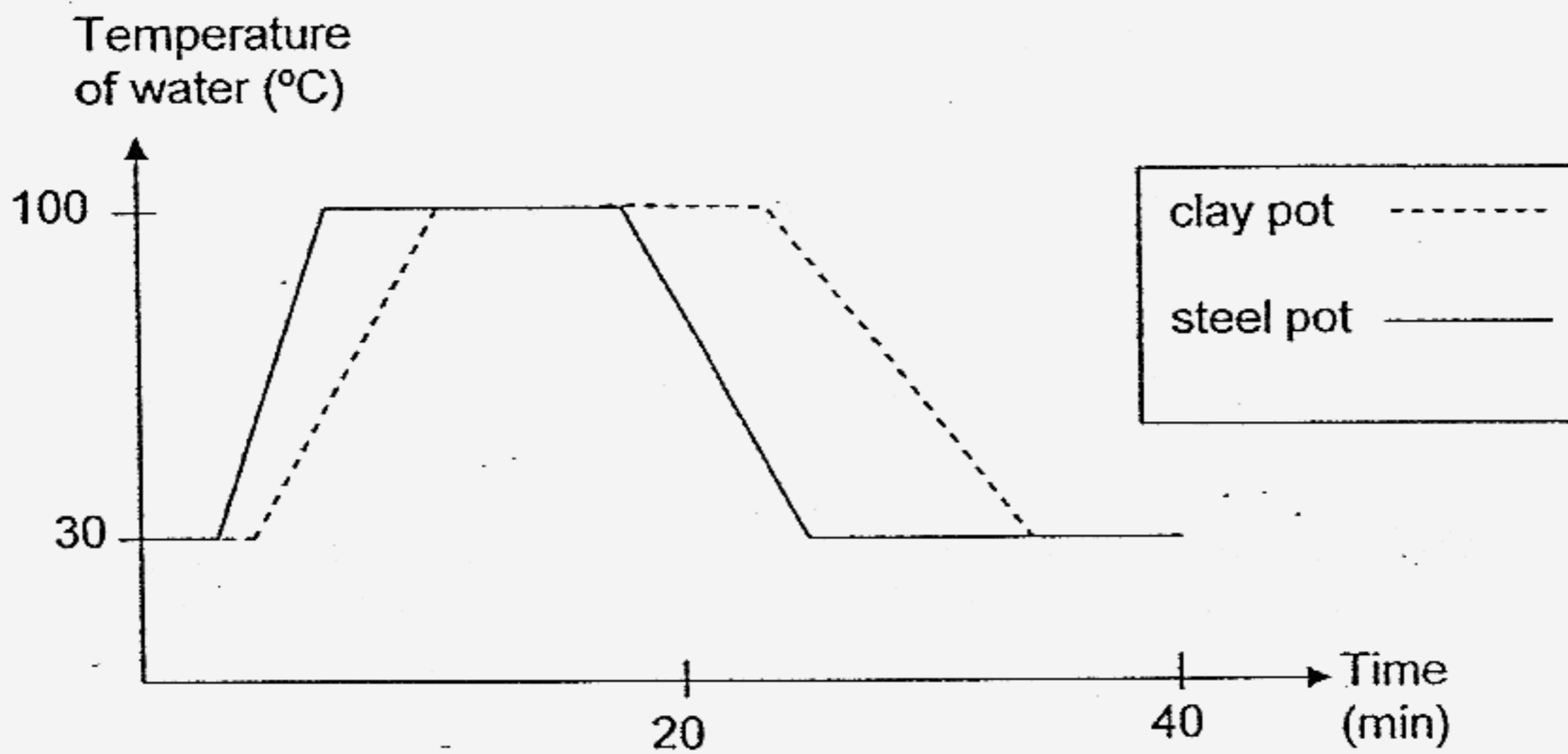
39. Douglas and some of his classmates bought some identical paper aeroplanes and were flying them on the field.



- (a) Where did the paper aeroplane get its energy to fly? (1 mark)

- (b) State two ways the boys can do to make their paper aeroplanes fly at a greater distance. (2 marks)

40. Yen Ming had a clay pot and a steel pot. In each pot, he put the same amount of water. He heated both pots on a stove for 20 minutes. After 20 minutes, he removed the pots and left them to cool on a table. He took the temperature of water in both pots throughout the 40 minutes. He then recorded the temperature of water in both pots in the graph below.



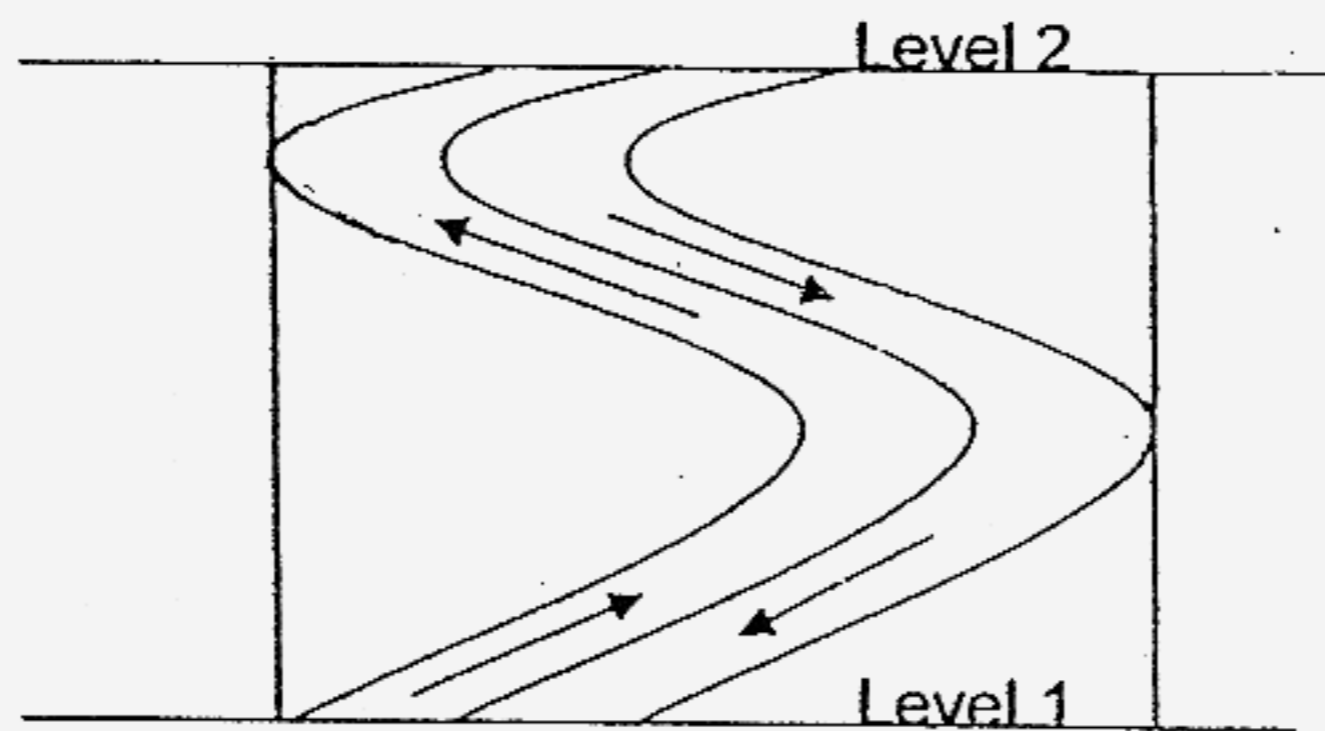
- (a) Which pot is a better conductor of heat? (1 mark)

- (b) Explain your answer in (a). (1 mark)

- (c) Give an advantage of using the steel pot to cook food. (1 mark)

- (d) Give an advantage of using the clay pot to cook food. (1 mark)

41. Mr Yong was driving his car up a winding slope of a multi-storey car park. When he was turning at a bend, he almost knocked into a truck which was coming down the slope in the opposite direction.



- (a) Which property of light explains why Mr Yong could not see the truck coming in the opposite direction until he was at the bend?

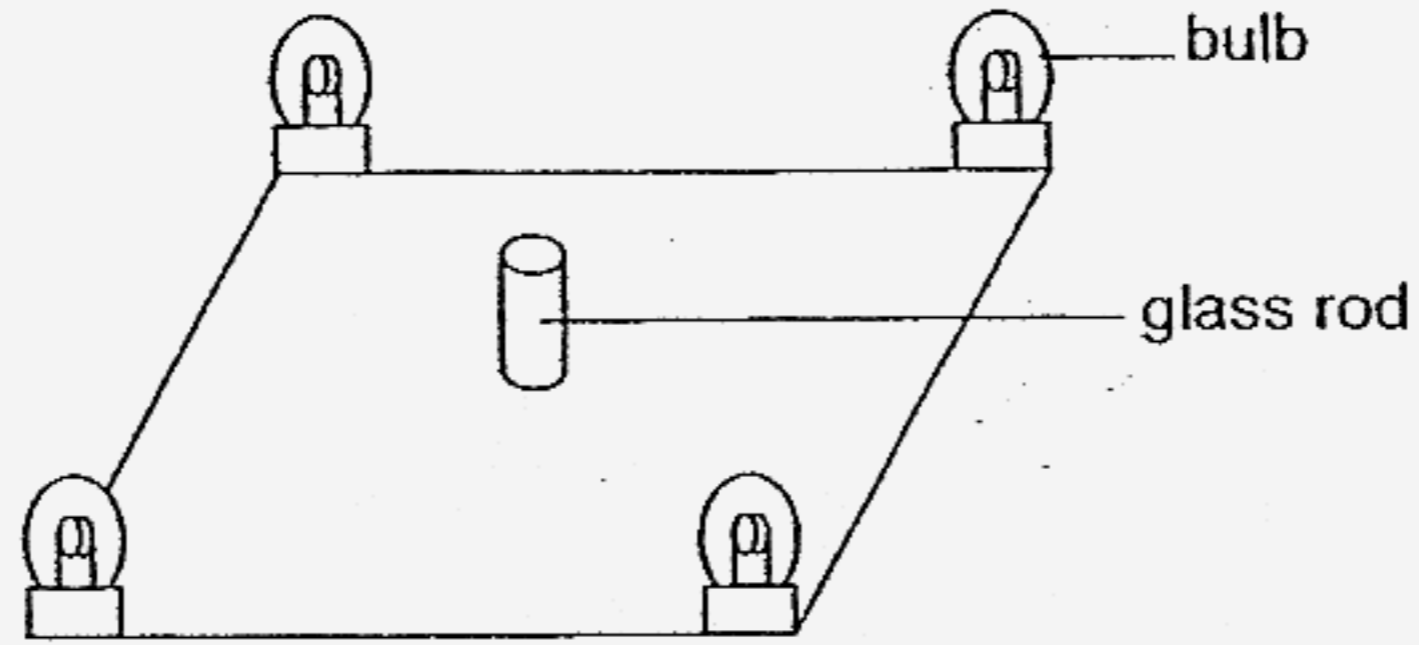
(1 mark)

- (b) Mr Yong then wrote a letter to the management to put up 2 mirrors on the slope so that vehicles approaching the bend in opposite direction would be able to see each other.

Mark the positions of the 2 mirrors with letter 'X' on the diagram above.

(2 marks)

42. Emily set up an experiment as shown below.

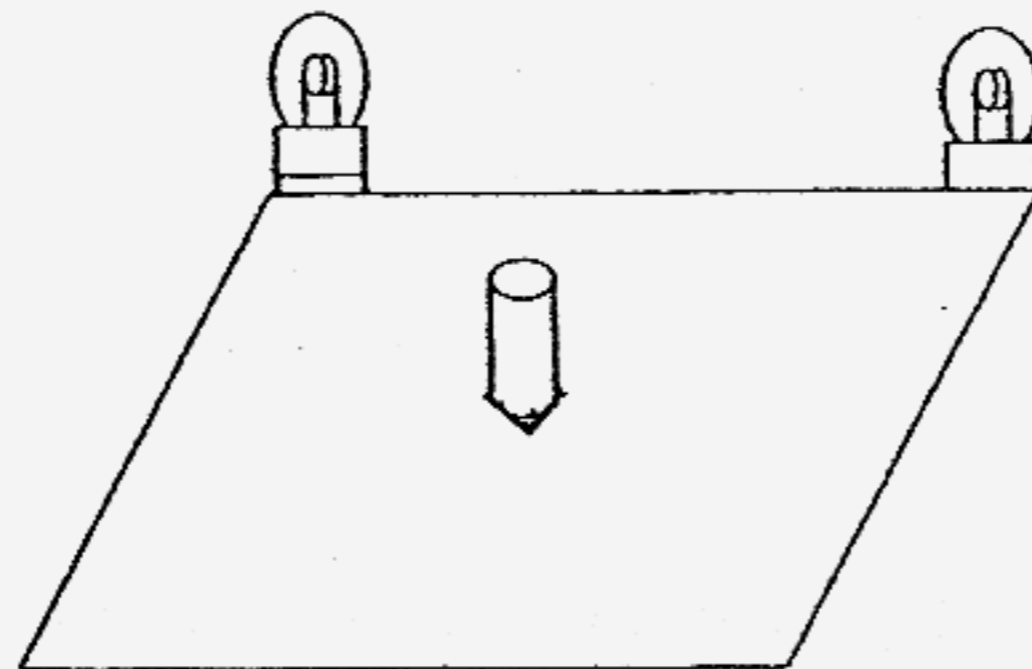


When Emily switched on all the lights, there was no shadow formed.

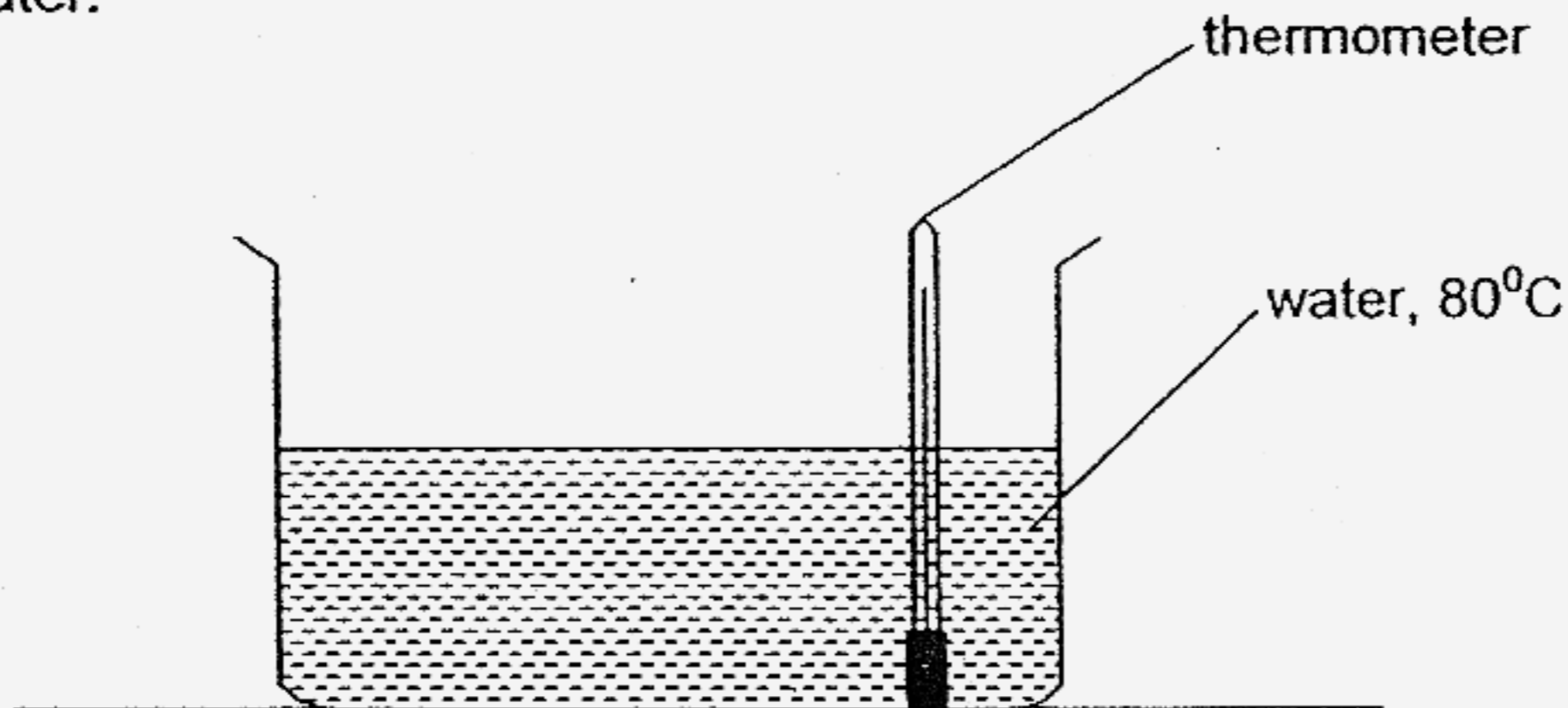
(a) Give an explanation to the above observation. (1 mark)

Emily then replaced the glass rod with a wooden one and removed 2 bulbs.

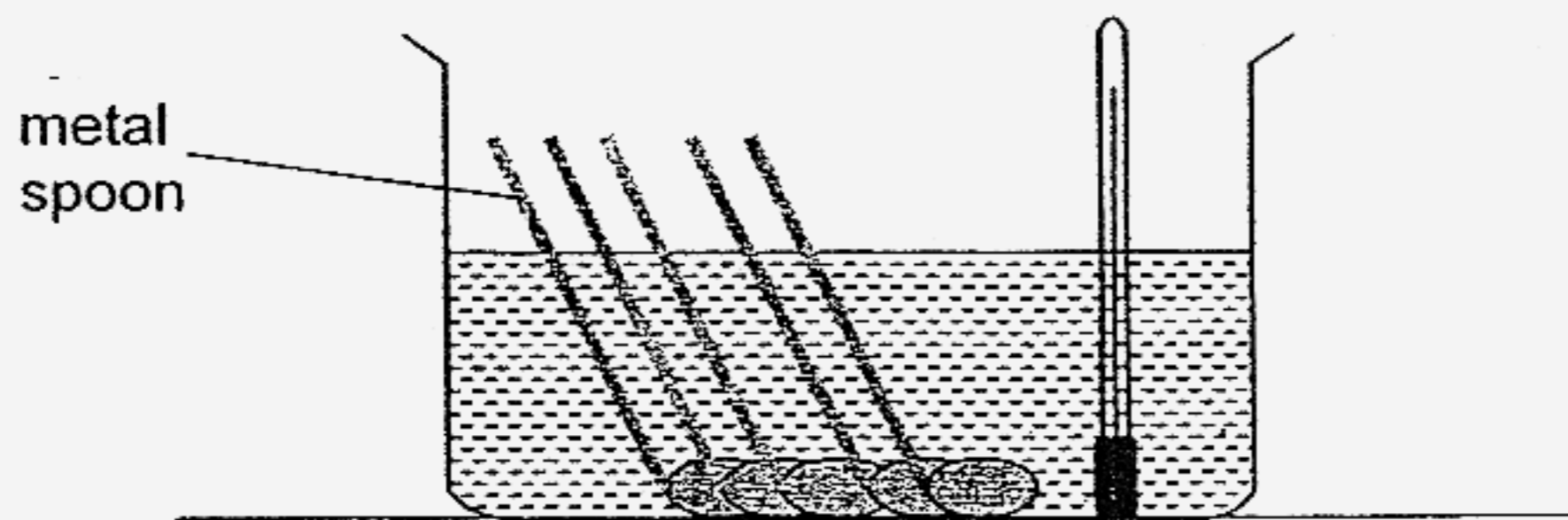
(b) Draw the shadow(s) of the wooden rod in the diagram below when the remaining 2 lights were switched on. (1 mark)



43. In the diagram below, the thermometer measured the temperature of the water.



Sally then put a few metal spoons into the container as shown below.



- (a) What would happen to the temperature of water? (1 mark)

- (b) Explain your answer in (a).

(2 marks)
(1 mark)

- (c) If Sally repeats the experiment with metal ball bearings which have the same temperature as the water, what would she observe about the temperature of the water as compared to that in (a)? (1 mark)

44. List 4 things that are taking place in the mouth from the time a person put some food into his mouth until he swallowed the food. (4 marks)

(i) _____

(ii) _____

(iii) _____

(iv) _____

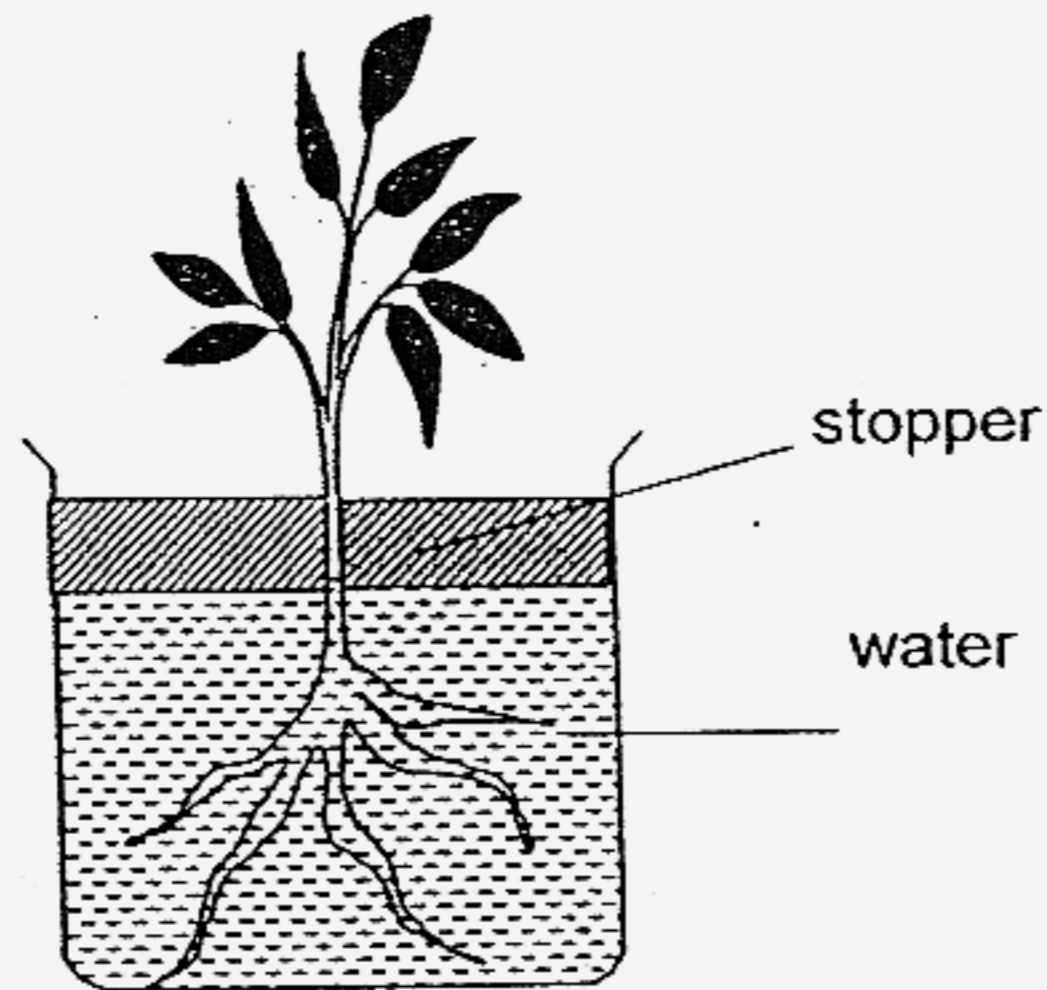
45. (a) Tanya and Yi Ting were playing a game. While blindfolded, Tanya was supposed to tell apart 2 types of food without biting them. Then, Yi Ting fed Tanya a piece of marshmallow followed by a piece of chocolate of the same taste. Tanya was able to tell apart the two types of food.

Give a reason why Tanya was able to tell apart the marshmallow from the chocolate. (1 mark)

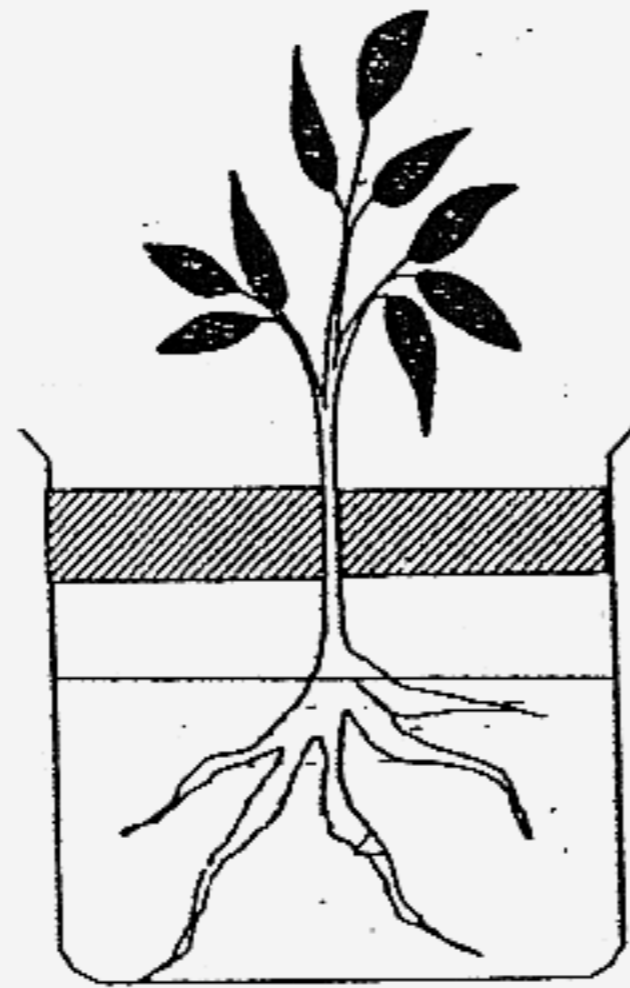
(b) Xiao yen drank some honey drink. Then she ate a bar of chocolate and continued drinking the honey drink. She discovered that the honey did not taste as sweet as before when she had the chocolate.

Give a reason why Xiao Yen's glass of honey did not taste the same before and after eating the chocolate. (1 mark)

46. Kate set up an experiment as shown below. She put up the set up in the open field for 3 days.



- (a) Draw in the diagram below the water level of experimental set up after 3 days. (1 mark)



- (b) What conclusion could Kate make on the experiment after 3 days? (1 mark)

Setters : Ms Alice Chong
Mdm Chia Li Hoon

1. 3
2. 4
3. 1
4. 2
5. 2
6. 1
7. 3
8. 4
9. 3
10. 1
11. 4
12. 3
13. 2
14. 4
15. 2
16. 4
17. 3
18. 3
19. 1
20. 4
21. 4
22. 2
23. 3
24. 2
25. 3
26. 3
27. 3
28. 4
29. 4
30. 4

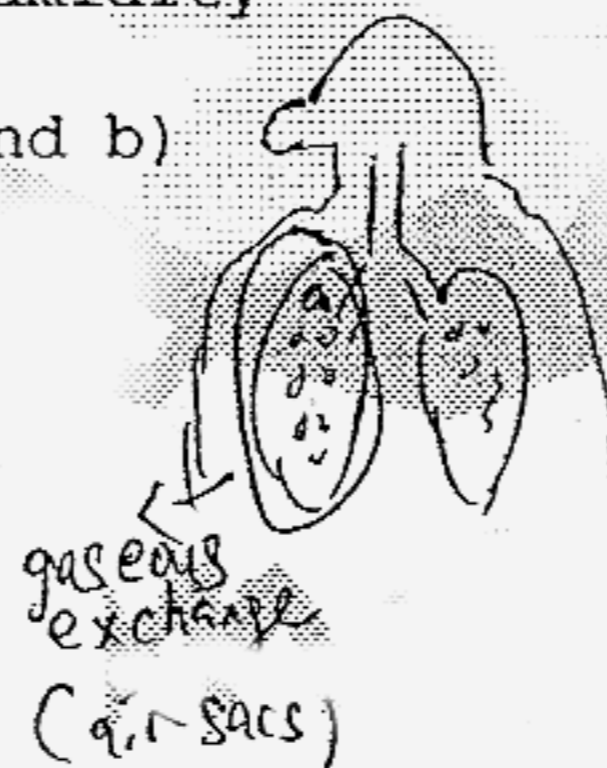
31) a) The cotton wool remained dry.
 b) Air occupies space so water cannot enter.

32) a) Bottle X
 b) The hot water vapour was trapped inside the bottle. It condensed into water droplets. When it touched the cooler interior surface of the bottle.

33) a) It kills the plants as it reduces the amount of sunlight for them to photosynthesize.
 b) i) Not possible to tell.
 ii) False.

34) i) rate of evaporation
 ii) Humidity

35) a) and b)



36) a) plant D, plant B, plant C, plant A
 b) She wants to find out stomata are needed for gaseous exchange for the plant.

37) The xylem tube in the celery and the chopstick will turn red.

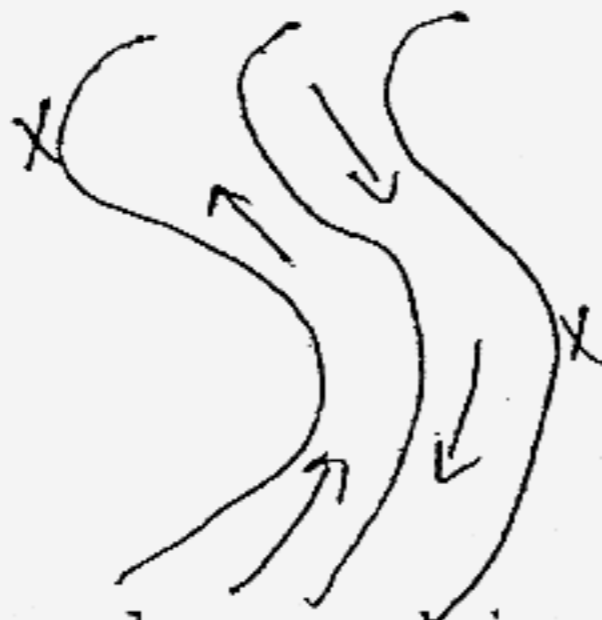
38) a) To find out who has a larger lung capacity.
 b) They should measure the water level in the bottle.

- 39) a) From the boy's hand.
b) Fly it in a windy place or use more force.

- 40) a) The steel pot.
b) It took a shorter time to reach the boiling point.
c) It will take a shorter time to cook food.
d) Food could be kept warm for a longer period of time.

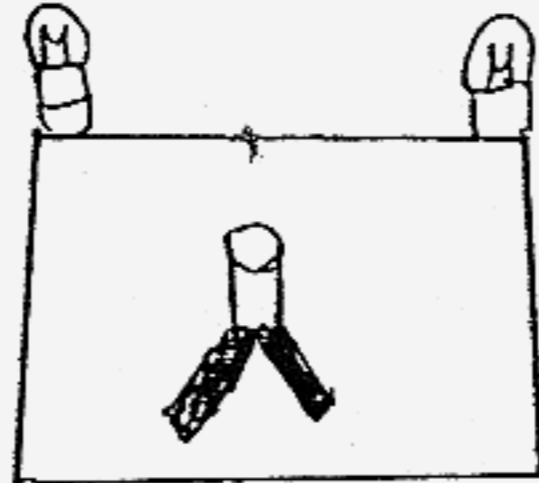
- 41) a) Light travels in a straight line.

b)



- 42) a) The glass rod is transparent, so there won't be any shadow.

b)

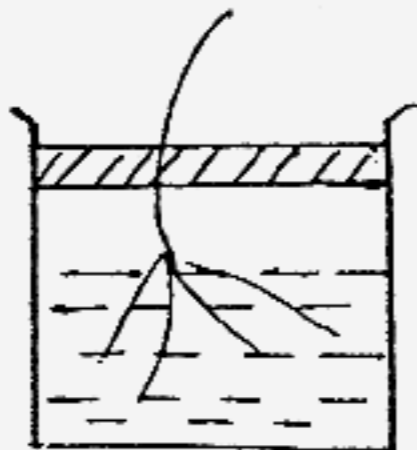


- 43) a) The temperature will drop.
b) The metal spoons will conduct the heat from the water away to the surrounding air.
c) The temperature remains the same.

- 44) i) Saliva is being mixed with the food.
ii) The teeth chew the food into smaller substances.
iii) Digestion starts.
iv) We taste the food.

- 45) a) Our tongue also has a sense of touch.
b) The tongue got used to the sweetness.

46) a)



- b) The roots of the plants absorb water.