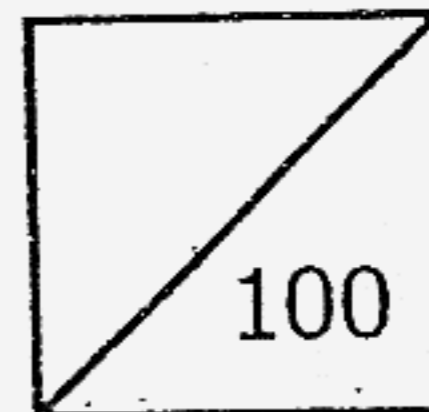




Rosyth School
Second Semestral Assessment for 2006
SCIENCE
Primary 4



Name: _____

Total
Marks:

Class: P4 - _____

Register No. _____

Duration: 1 h 30min

Date: 2nd November 2006

Parent's Signature: _____

Instructions to Pupils:

1. Do not open the booklet until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 sections, A and B.
4. For questions 1 to 30 in Section A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 31 to 46, give your answers in the spaces given in the Section B.

	Maximum	Marks Obtained
Section A	60 marks	
Section B	40 marks	
Total	100 marks	

* This booklet consists of 16 pages (Pg. 1 to 16)

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PART I (60 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3, or 4) on the Optical Answer Sheet.**

1. Which of the following is/are **not** matter?

- A: Fog
- B: Wind
- C: Cloud
- D: Rainbow

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

2. What does the state of a matter depend on?

- (1) Its shape.
- (2) Its colour.
- (3) Its volume.
- (4) Its temperature.

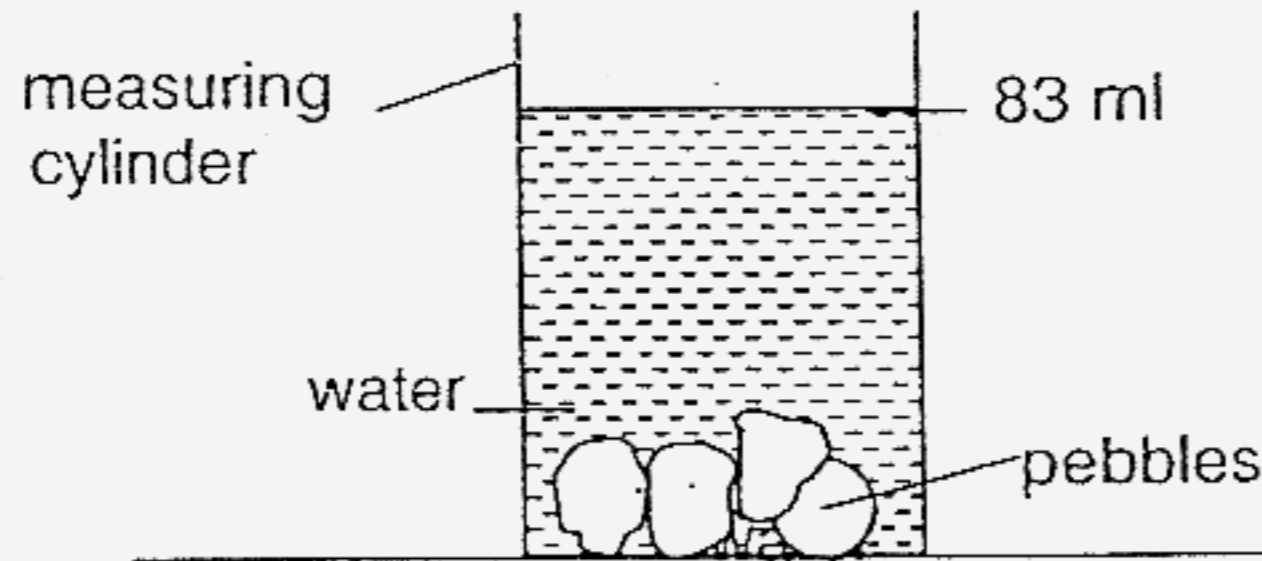
3. Annie took out a piece of butter from the refrigerator. She then left the butter on the table for twenty minutes.

Which of the following state(s) would you observe as the butter started to melt?

- A: Solid
- B: Liquid
- C: Gas

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

4. A 100 ml measuring cylinder was filled with 50 ml of water. 4 pebbles of different sizes were dropped one by one into the water in the following order A, B, C and D. The new water level was recorded after each pebble was dropped.



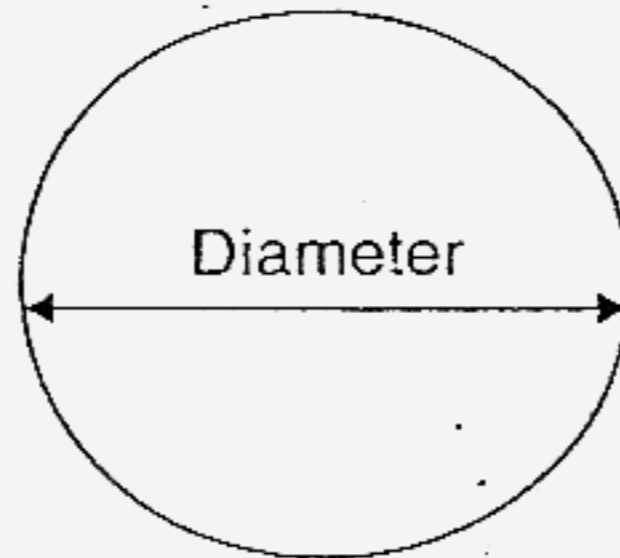
The table below shows the data collected.

Pebbles	Water level (ml)
A	55
B	65
C	68
D	83

Which of the following correctly shows the arrangement of the pebbles according to their size (from smallest to biggest)?

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

5. Gerald weighed a round, rubber ball and measured its diameter.



After that, he pumped more air into the ball. Then he weighed and measured its diameter again.

Which one of the following is most likely the set of results he recorded and the conclusion made from the above experiment?

	Mass of the ball (g)		Diameter of the ball (cm)		Conclusion
	Before pumping	After pumping	Before pumping	After pumping	
(1)	500	500	30	30	Air is light and can be compressed.
(2)	500	500	30	30	Air has no definite shape and can be compressed.
(3)	500	550	30	31	Air has mass and occupies space.
(4)	500	550	30	31	Air has mass and has no definite shape.

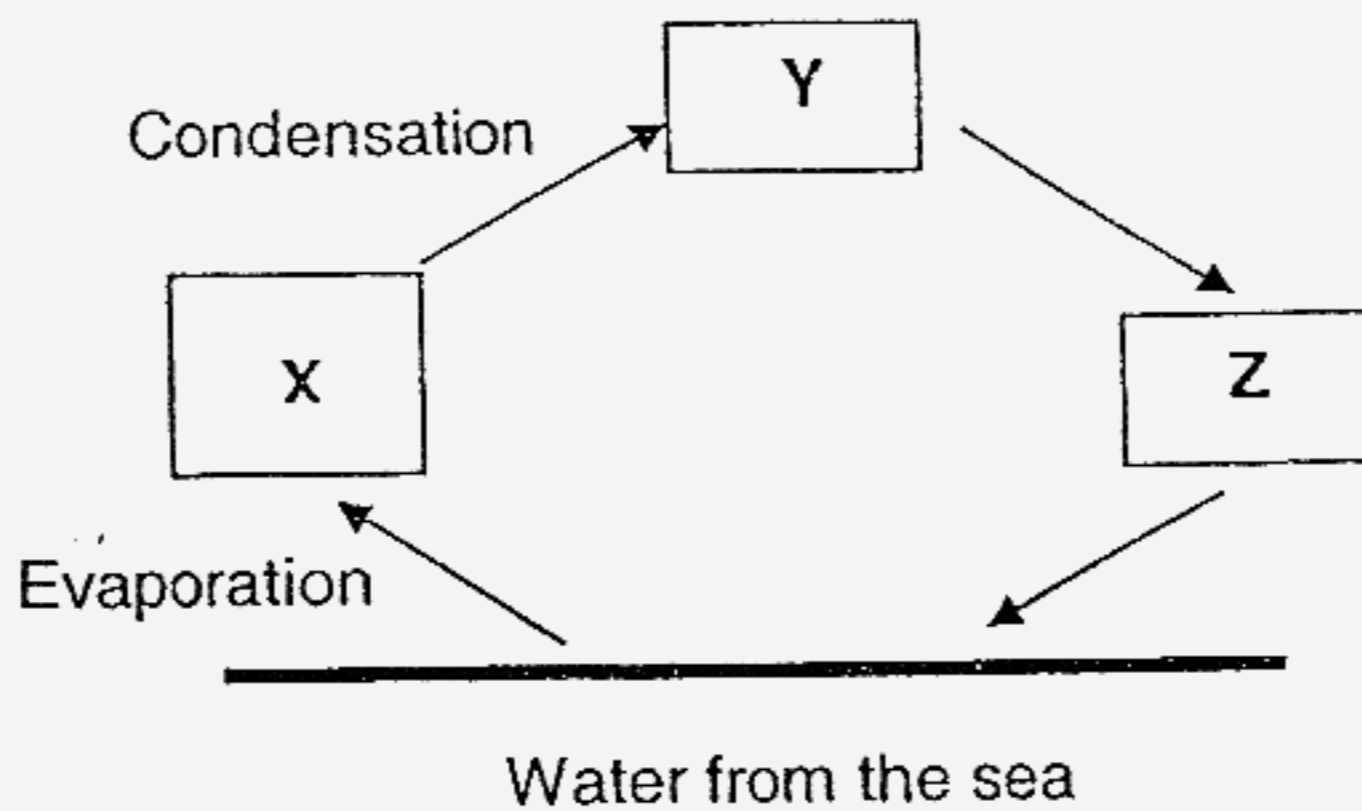
6. Which one of the following is a way of conserving water?

- (1) Throwing litter into the sea.
- (2) Using rainwater to wash the car.
- (3) Washing two T-shirts using a washing machine.
- (4) Washing the dishes under running water from a tap.

7. Which one of the following shows the correct changes of states of a block of ice when heat is supplied continuously?

- (1) Liquid → Gas → Solid
- (2) Gas → Liquid → Solid
- (3) Solid → Liquid → Gas
- (4) Solid → Gas → Liquid

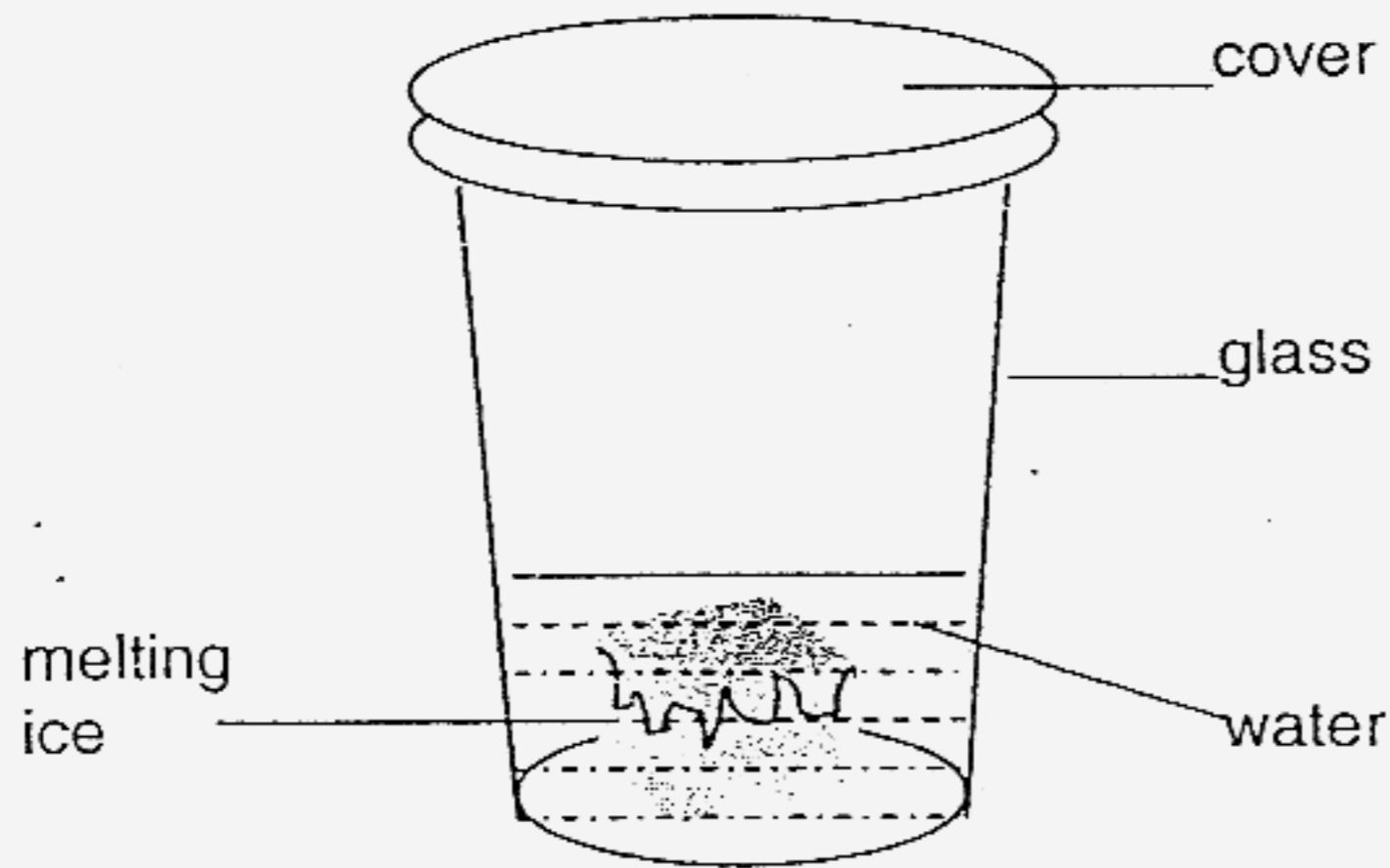
8. The diagram below shows the water cycle.



Which one of the following correctly represent X, Y and Z?

	X	Y	Z
(1)	Water vapour	Clouds	Rain
(2)	Rain	Dew	Clouds
(3)	Rain	Water vapour	Water droplets
(4)	Clouds	Rain	Water vapour

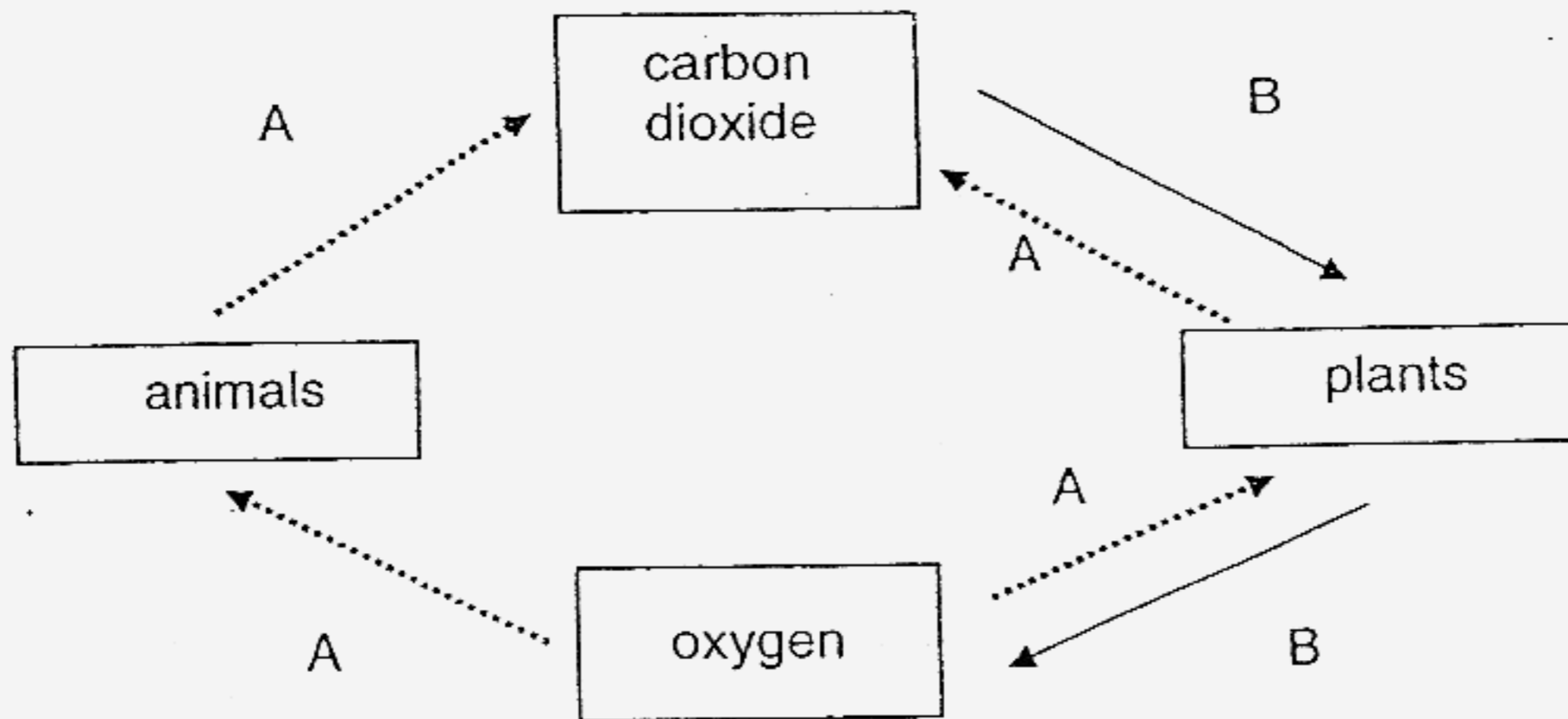
9. Look at the diagram below.



As the ice melts, what happens to the temperature of the ice and the water in the glass?

- (1) The temperatures of both the ice and water decrease.
- (2) The temperatures of both ice and water remain the same.
- (3) The temperature of the ice remains the same while the temperature of the water decreases.
- (4) The temperature of the ice increases while the temperature of the water decreases.

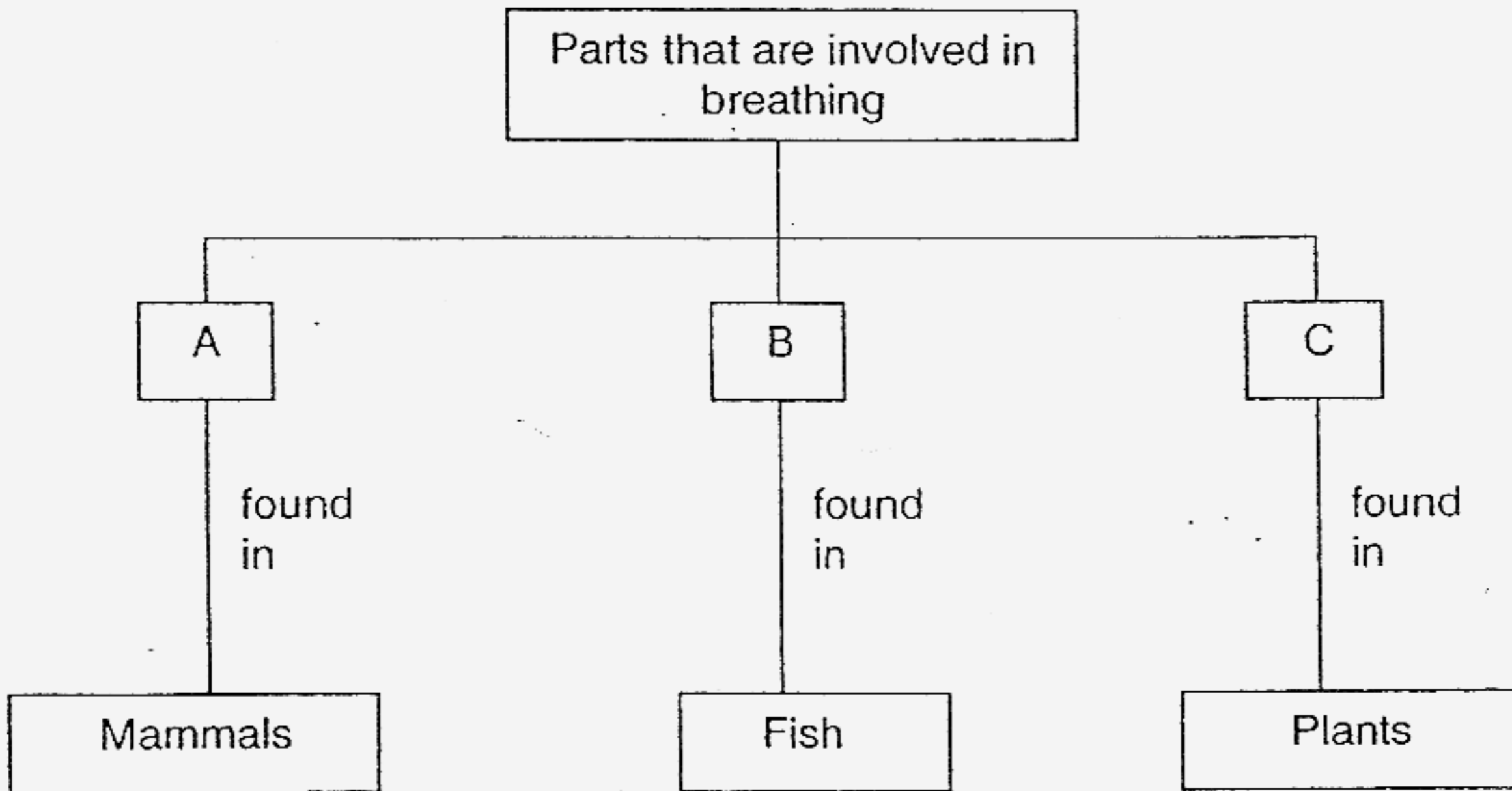
10. The diagram below shows the living organism exchanging matter with their environment during processes A and B.



What are processes A and B likely to be?

	A	B
(1)	Photosynthesis	Respiration
(2)	Respiration	Photosynthesis
(3)	Photosynthesis	Photosynthesis
(4)	Respiration	Respiration

11. Study the classification chart below.



What do A, B, ~~am~~ and C represent?

	A	B	C
(1)	Intestine	Gills	Stomata
(2)	Stomata	Lungs	Gills
(3)	Lungs	Gills	Stomata
(4)	Gills	Stomata	Lungs

12. The table below shows the rates of breathing of a healthy young man when he is carrying out four different activities W, X, Y and Z.

Activity	Number of breaths per minute
W	12
X	15
Y	18
Z	26

Which one of the following correctly represents activities W, X, Y and Z?

	Taking a nap	Doing aerobics exercise	Walking the dog	Taking a warm bath
(1)	W	X	Y	Z
(2)	X	Z	Y	W
(3)	Y	W	Z	X
(4)	W	Z	Y	X

13. Rosnah blew into a test tube of limewater by using a straw.

Which of the following describes the change that Rosnah observed?

	Appearance of limewater before blowing	Appearance of limewater after blowing
(1)	Clear	Clear
(2)	Clear	Black
(3)	Clear	Chalky
(4)	Chalky	Clear

14. Which of the following statements are true about the transport system in plants and animals?

- A : Both are made of tubes.
- B : Both transport materials.
- C : Both require a pump to work
- D : Both require energy to work.

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

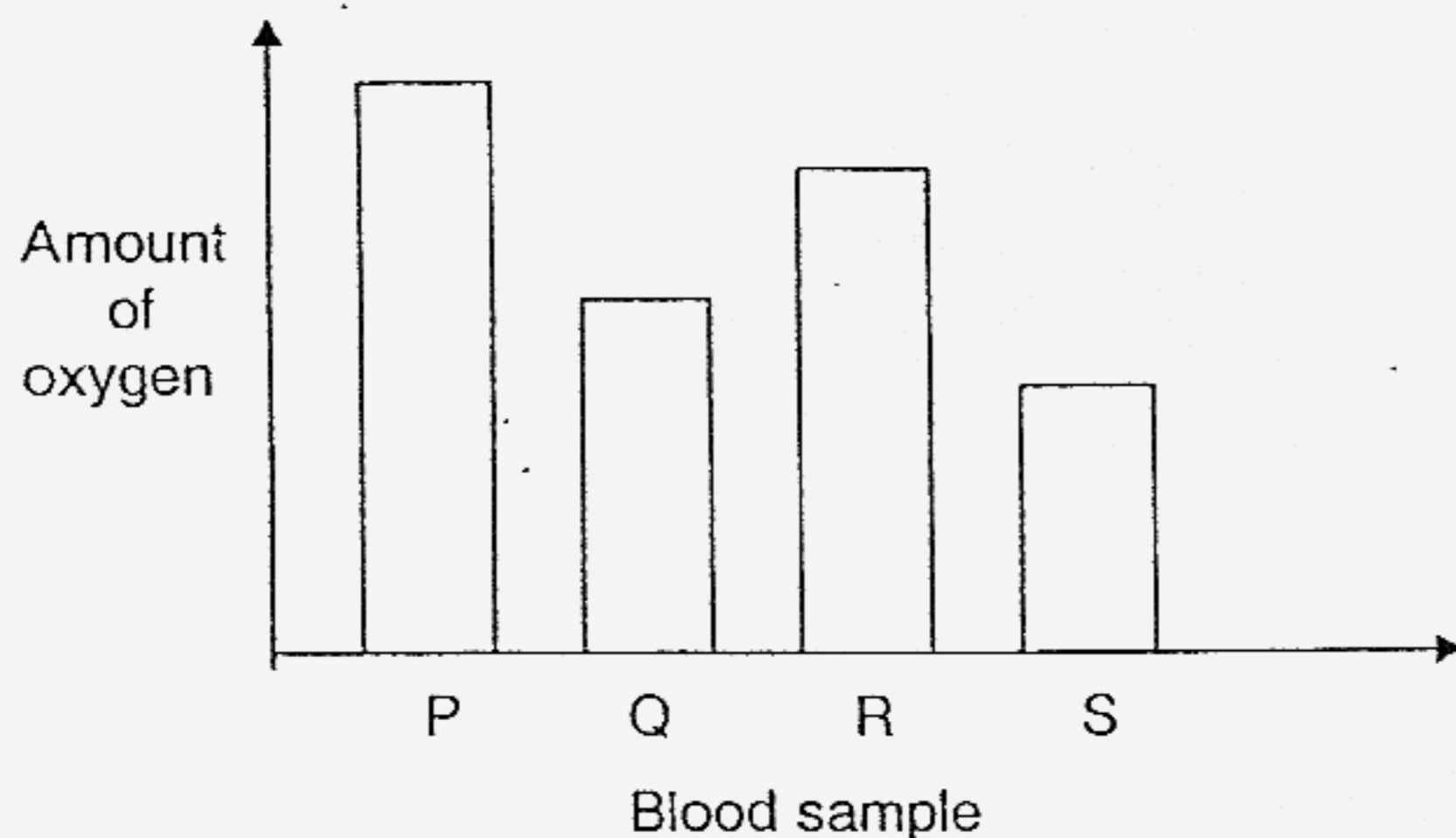
15. Which of the following statements are true?

- A : Our heartbeat increases when we are excited.
- B : Our heartbeat slows down after a vigorous exercise.
- C : Our heart contracts and relaxes to pump blood to all parts of our body.
- D : Our blood transports digested food and oxygen to various parts of our body.

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

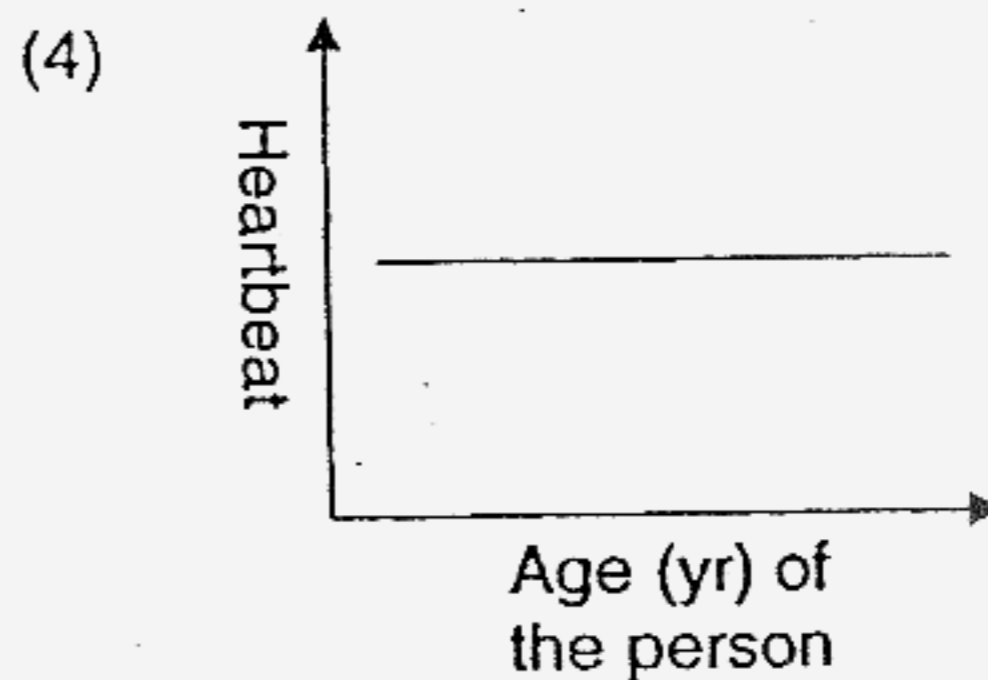
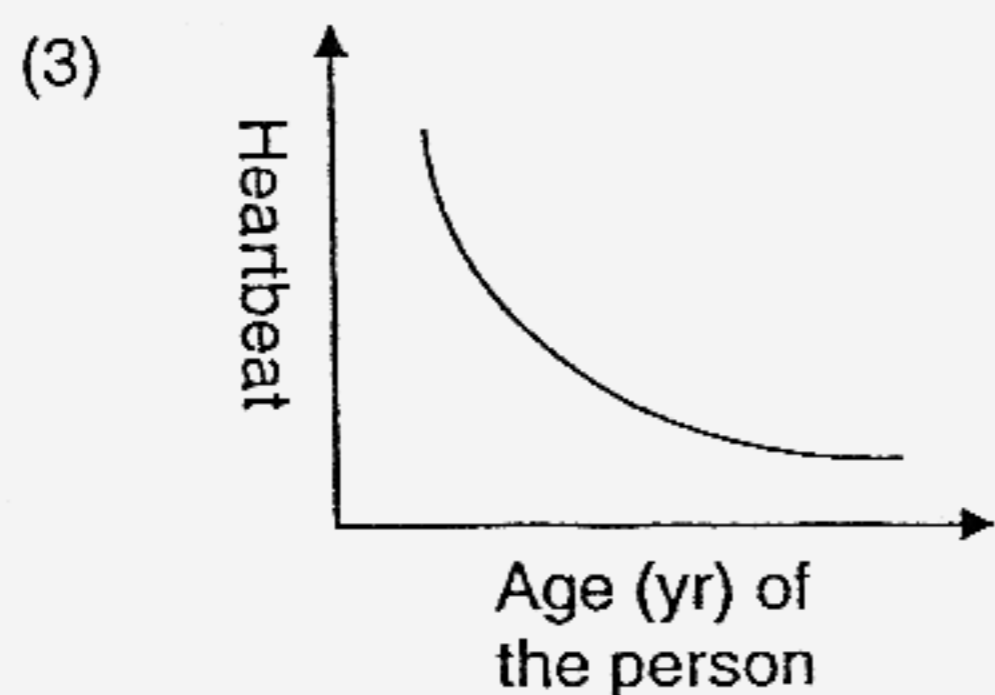
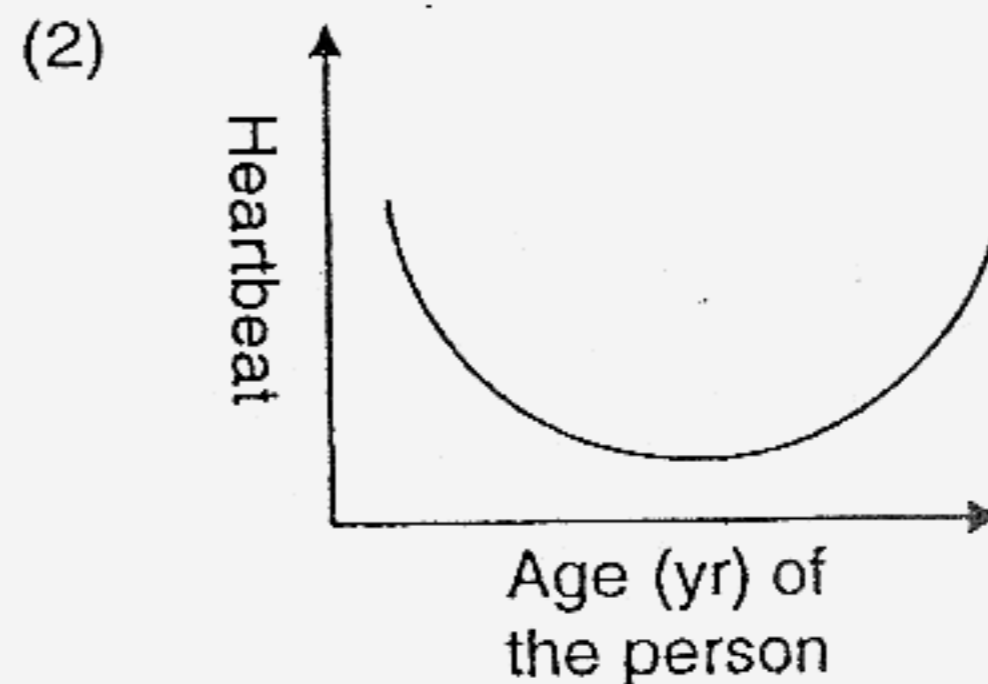
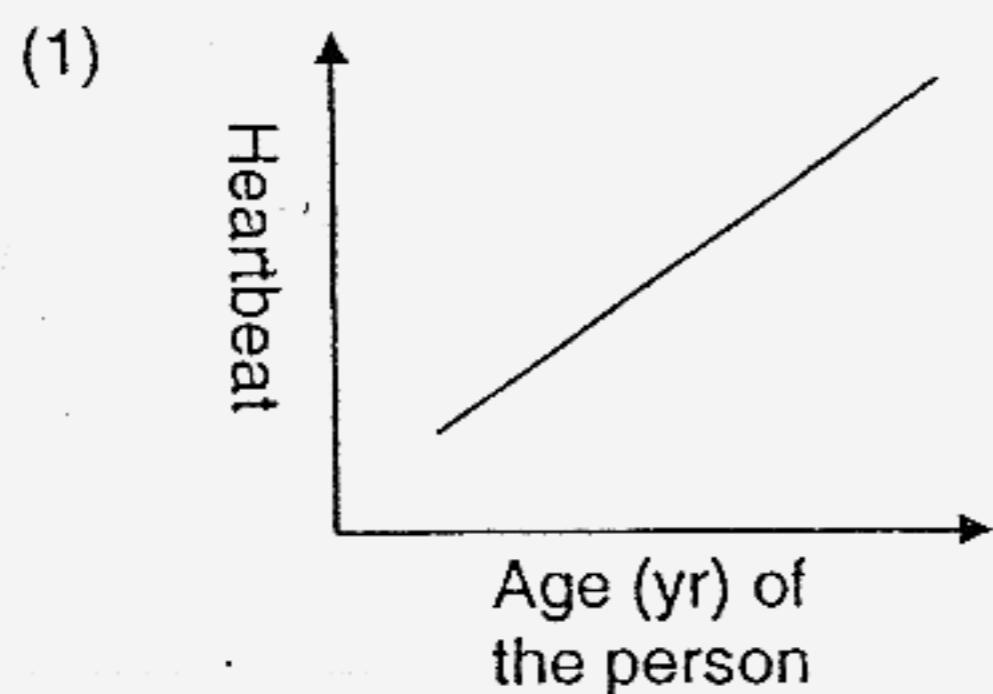
16. Four blood samples P, Q, R and S were taken from different blood vessels in the body.

The graph below shows the amount of oxygen in each of these blood samples:

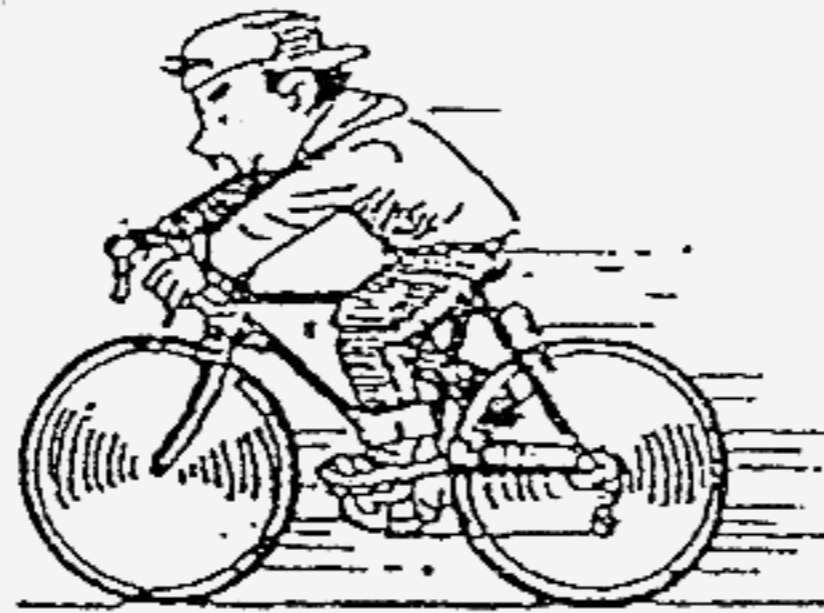


If blood sample R indicates the blood received by a body part, which blood sample was most probably taken from the blood vessel carrying blood from the lungs to the heart?

- (1) P (2) Q
(3) R (4) S
17. Which of the following heartbeat patterns is correct?



18. The diagram below shows a man cycling.



Where does the man get his energy from?

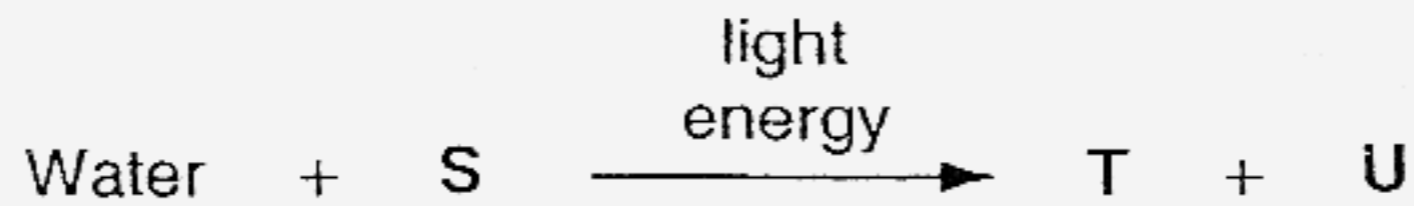
- (1) The food he eats.
 - (2) The air he breathes in.
 - (3) The road he cycles on.
 - (4) The pedals of the bicycle.
19. The diagram below shows how energy is transferred.



Which of the following are likely to be organisms **P** and **Q**?

	P	Q
(1)	Grass	Cow
(2)	Caterpillar	Eagle
(3)	Corn plant	Ant
(4)	Earthworm	Snake

20. The equation below shows the photosynthesis process that takes place in plants.



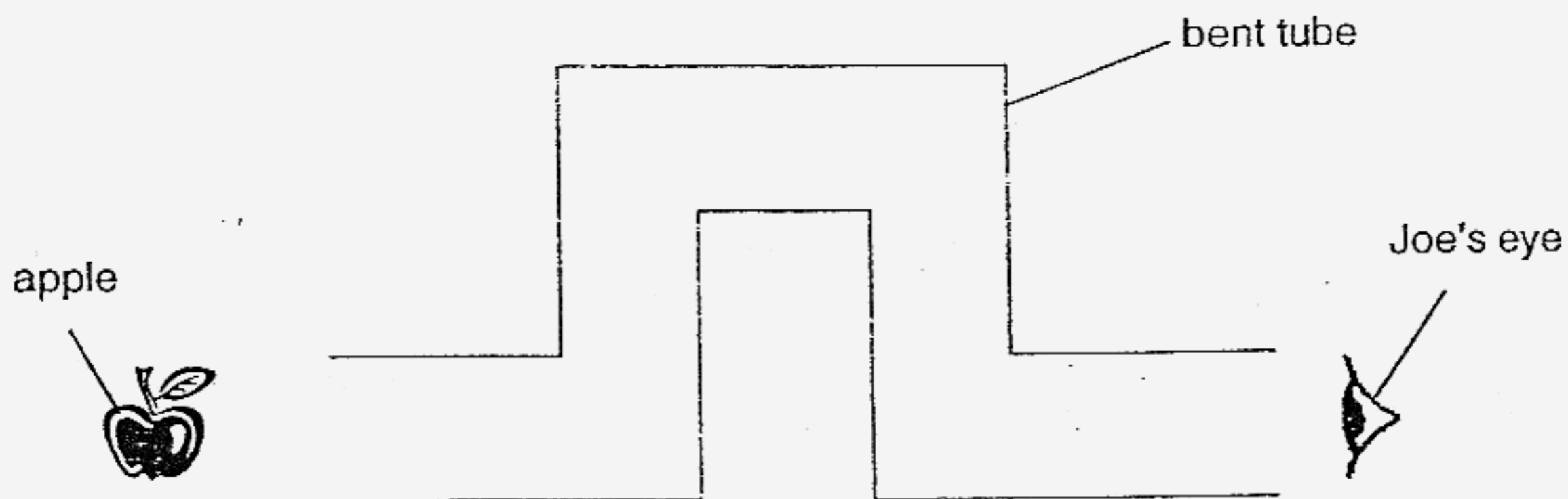
Based on the equation above, which of the following could be S, T and U?

	S	T	U
(1)	Oxygen	Sugar	Nitrogen
(2)	Carbon dioxide	Water	Nitrogen
(3)	Oxygen	Water	Carbon dioxide
(4)	Carbon dioxide	Sugar	Oxygen

21. Which one of the following is not a source of light?

- (1) Fire
 (2) Lightning
 (3) The Sun
 (4) The Moon

22. Look at the diagram below.

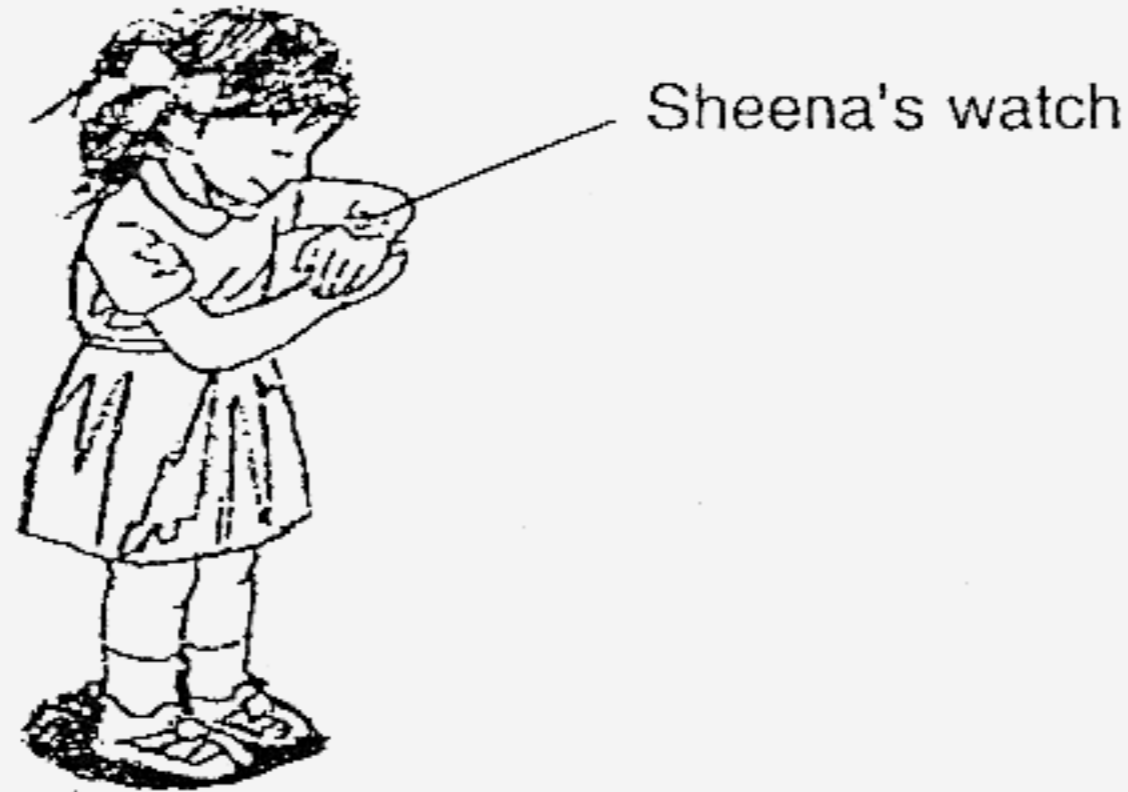


In order for Joe to see the apple through the bent tube, he needs to place mirror(s) in it.

What is the least number of mirror(s) he needs to use?

- (1) One
 (2) Two
 (3) Three
 (4) Four

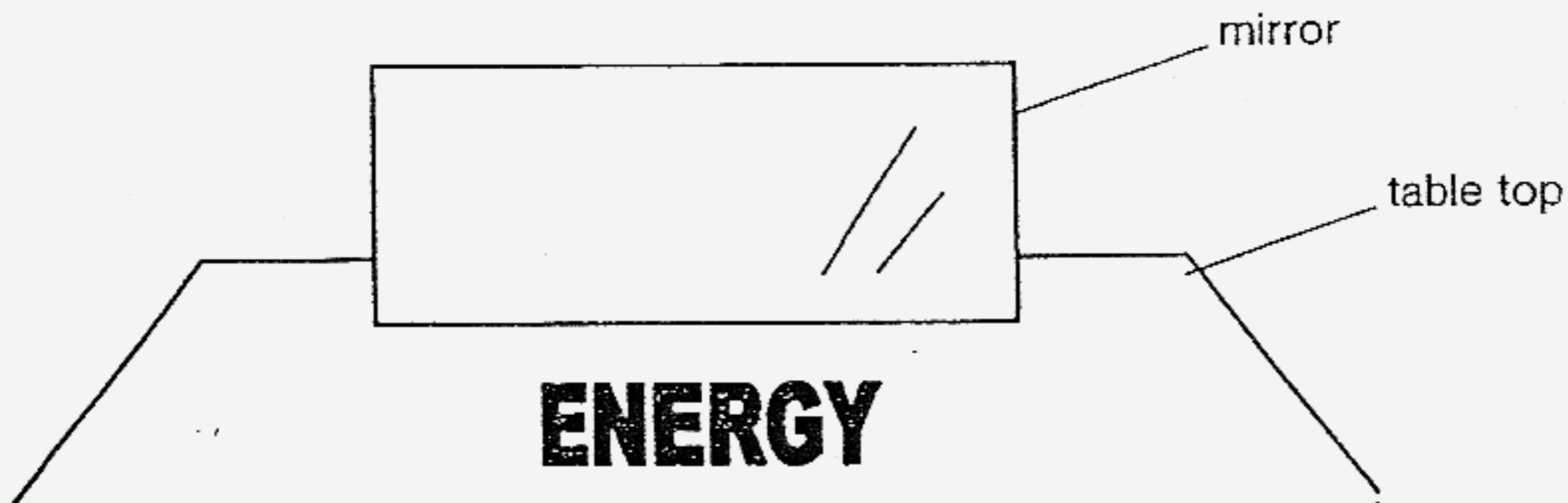
23. Sheena is checking the time on her watch.



By looking at Sheena's shadow, which one of the following is the most possible time shown on her watch?

- (1) 8 a.m.
- (2) 11 a.m.
- (3) 12 p.m.
- (4) 2 p.m.

24. The diagram below shows the cut out of the word 'ENERGY' being placed in front of a mirror on a table top.



Which one of the following shows the image of the word 'ENERGY' on the mirror?

- (1) **ENERGY**
- (2) **YORNEI**
- (3) **YBNEA**
- (4) **ENERGY**

25. Which one of the following pairs of objects are insulators of heat?

- (1) Staples and eraser
- (2) Bath towel and blanket
- (3) Needle and handkerchief
- (4) Iron nail and aluminium foil

26. Three bowls of the same size were filled with the same amount of hot porridge as shown in the diagram below. They were then left to cool for 10 minutes.



A : Aluminium bowl



B : Styrofoam bowl



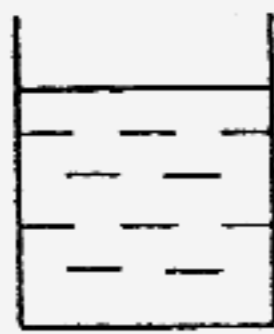
C : Plastic bowl

Which one of the following shows the correct order the rate at which the porridge loses heat (from the fastest to the slowest)?

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

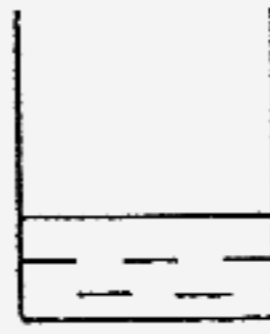
27. Which one of the following beakers of water has the most heat?

(1)



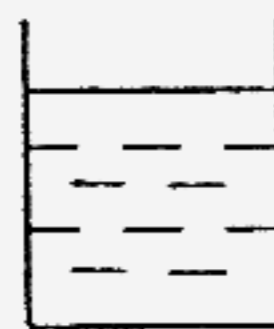
100ml of water at 50°C

(2)



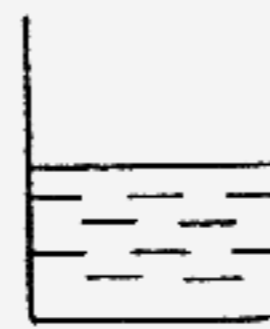
20ml of water at 50°C

(3)



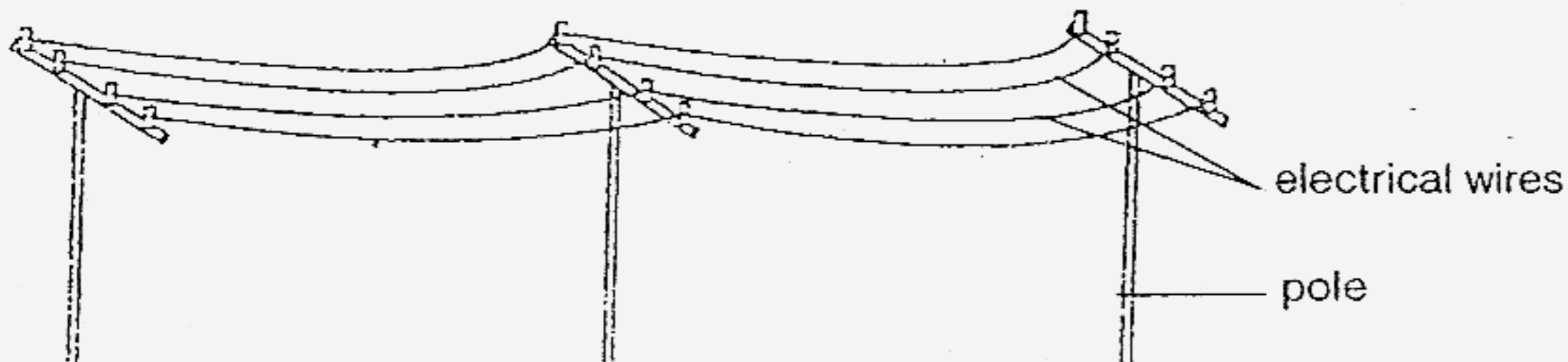
100ml of water at 80°C

(4)



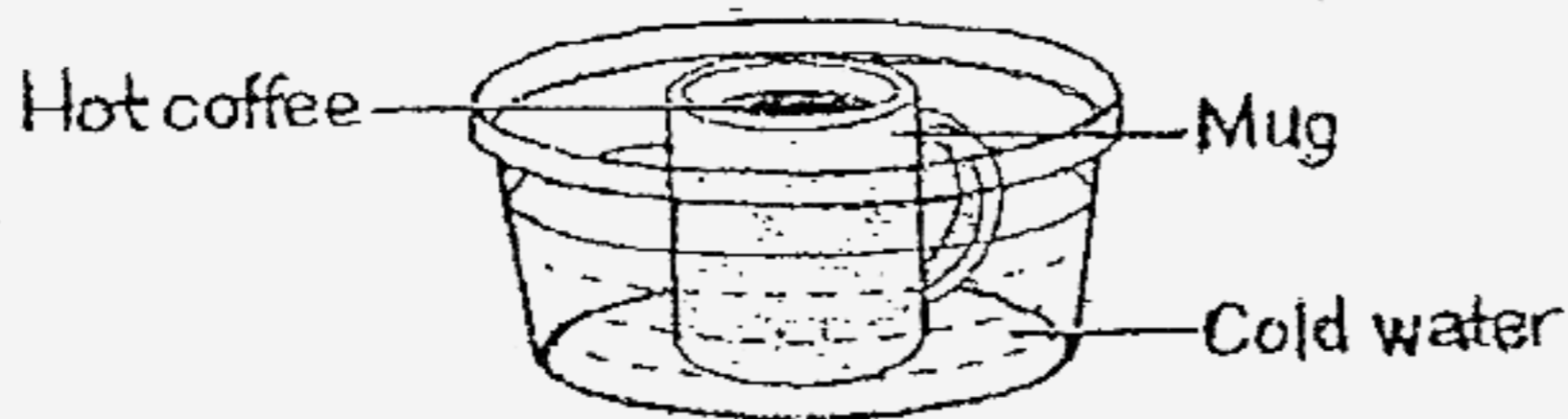
50ml of water at 50°C

28. In some places, electrical wires are hung on poles above the ground as shown in the diagram below. The wires are found to sag between the poles.



Which one of the following is the most possible reason for the wires to sag between the poles?

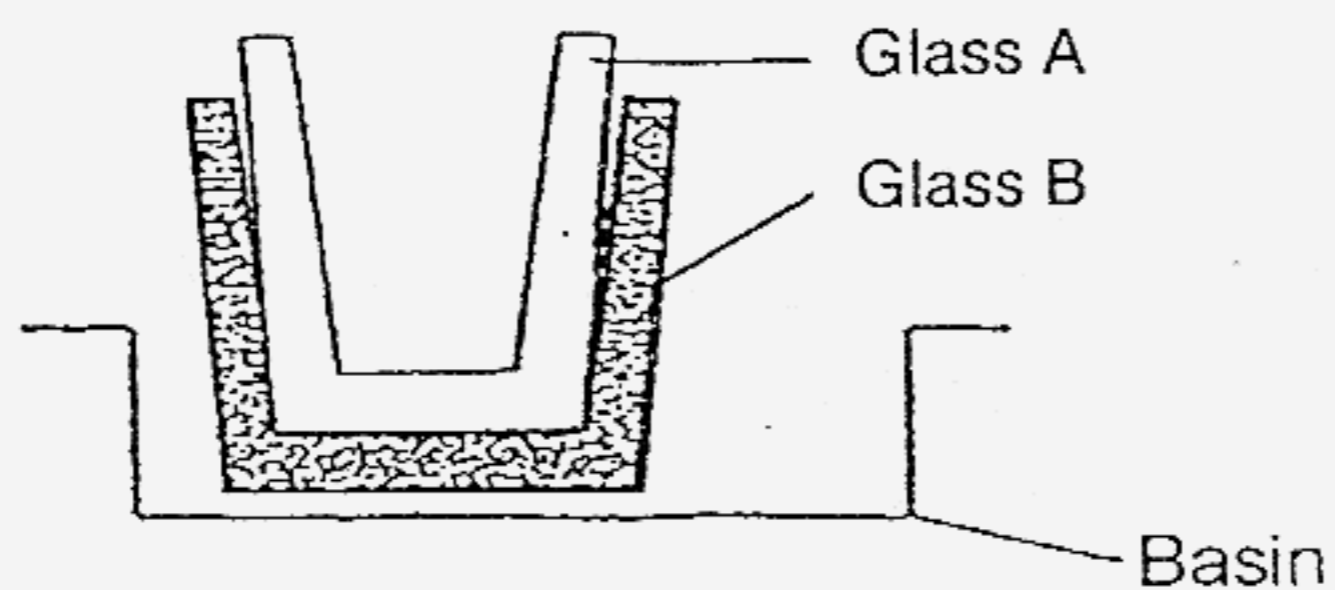
- (1) The workers did not tighten the wires properly.
 - (2) The sagging allows the wires to expand on hot days.
 - (3) The sagging allows the wire to contract on cold nights.
 - (4) The birds often rest on the wires and their weight make the wires sag.
29. A mug of coffee was taken out from a microwave oven and was placed in a basin of cold water as shown below.



Which one of the following correctly shows the objects in the above set up that had gained heat or lost heat after 20 minutes?

	Item		
	Mug	Hot coffee	Cold water
(1)	Gained heat	Lost heat	Gained heat
(2)	Gained heat	Gained heat	Lost heat
(3)	Lost heat	Gained heat	Gained heat
(4)	Lost heat	Lost heat	Gained heat

30. Glasses A and B are stuck together as shown in the diagram below.



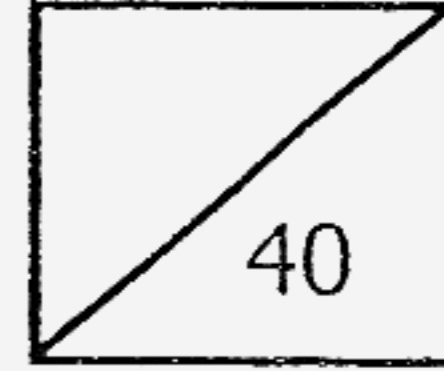
Which one of the following is the best way to separate the two glasses?

- (1) Put both Glass A and Glass B in the refrigerator.
- (2) Put both Glass A and Glass B in a basin of hot water.
- (3) Put ice cubes into Glass A and pour hot water into the basin.
- (4) Pour hot water into Glass A and put ice cubes in the basin.

End of Booklet A



Rosyth School
Second Semestral Assessment for 2006
SCIENCE
Primary 4



Total
Marks:

40

Name: _____

Class: Pr 4 – _____

Register No. _____

Duration: 1 h 30 mins

Date: 2nd November 2006

Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 31 to 46, give your answers in the spaces given in this Booklet B.

* This booklet consists of 14 pages (Pg. 17 to 30)

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PART II (40 marks)

For questions 31 to 46, write your answers in this booklet.

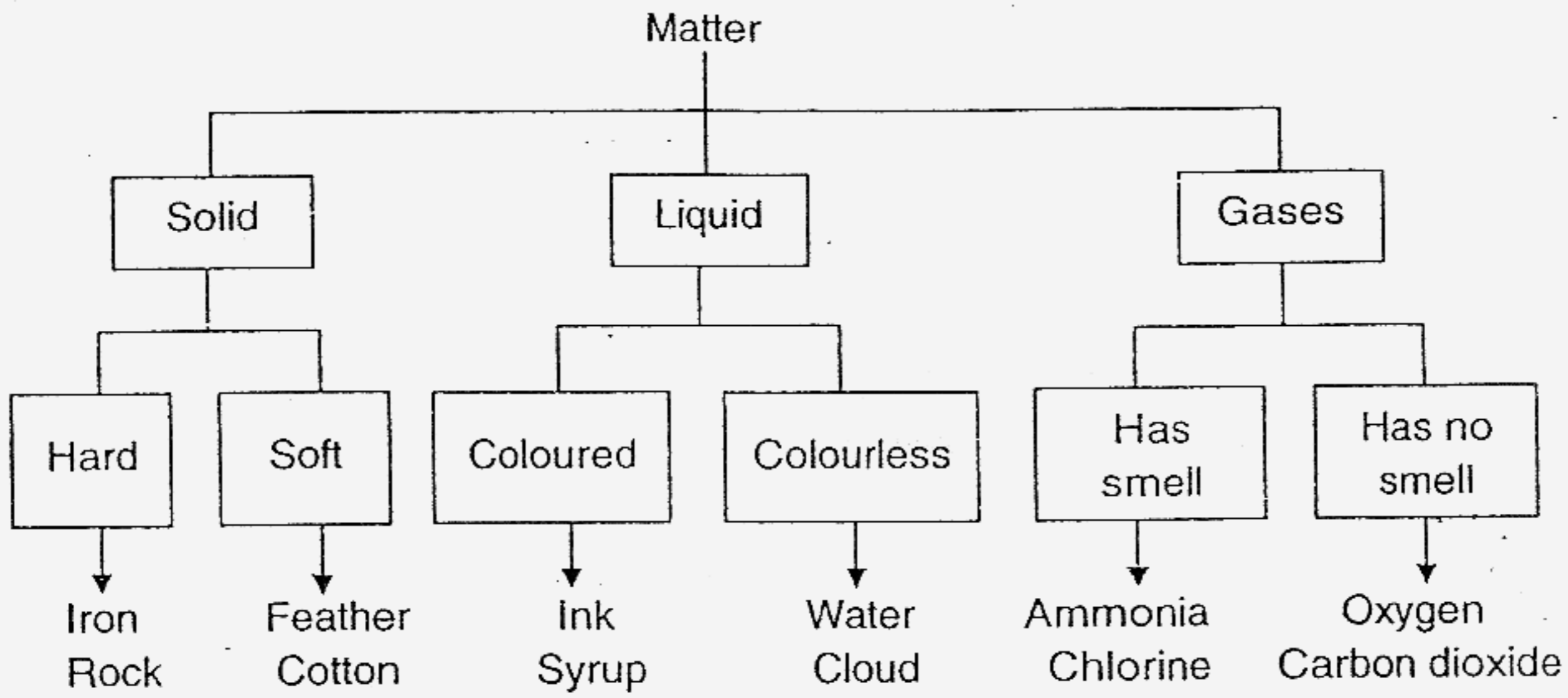
31. Study the table below on the properties of four types of matter. Complete the table by writing 'Yes' or 'No' in the spaces provided. (2 marks)

	Definite shape	Definite volume	Occupies space
Ruler	Yes		Yes
Carbon dioxide		No	Yes
Water vapour	No	No	
Milk	No		Yes

32. Write the words 'Gains heat' or 'Loses heat' in the table below to explain the cause of change in the given situations. (2 marks)

	Effect of change	Cause of change
A	Ice turns into water	
B	Water vapour becomes clouds	
C	Syrup turning into ice lollies	
D	Clothes being dried	

33. Study the classification table below carefully.



(a) Write down the characteristics of oxygen based on the above classification table. (2 marks)

(b) Based on the information given, state one difference between iron and water. (1 mark)

34. Four similar handkerchiefs were hung out to dry in different weather conditions, as shown in the table below.

Handkerchief	Weather Conditions	
	sunny	windy
A	X	X
B	✓	X
C	X	✓
D	✓	✓

- (a) Which handkerchief will dry the fastest? (1 mark)

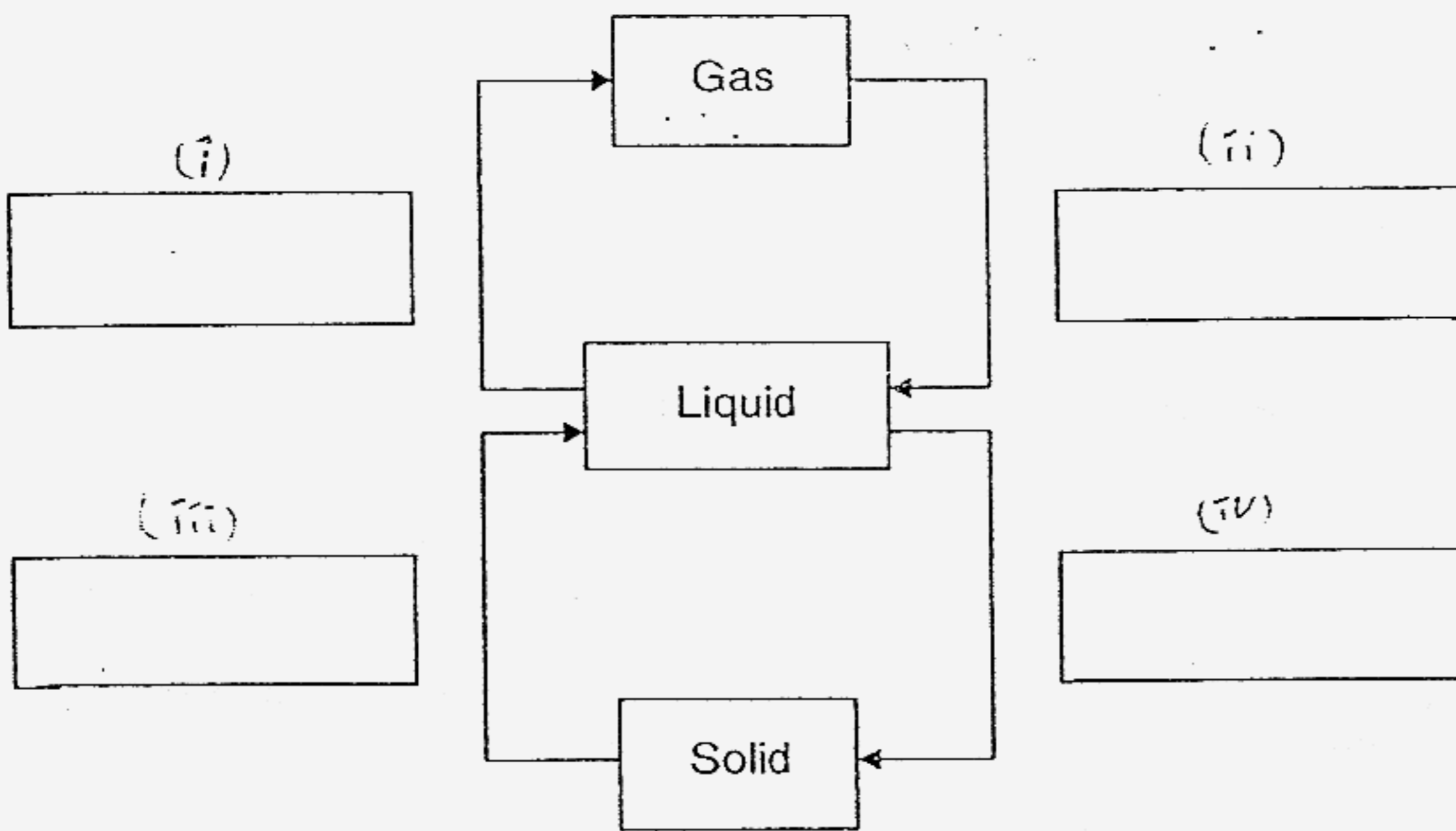
- (b) How does the humidity in the air affect the rate of water evaporation in the handkerchief? (1 mark)

- (c) Suggest one other factor (not mention^{ed} in this investigation) that would affect the rate of evaporation. (1 mark)

35. The diagram below shows the changes of water and its processes.

Fill in the empty boxes with the following words to complete the diagram.
(2 marks)

evaporation condensation melting freezing



36. The heart of an average healthy adult beats about 60 to 70 times in a minute.

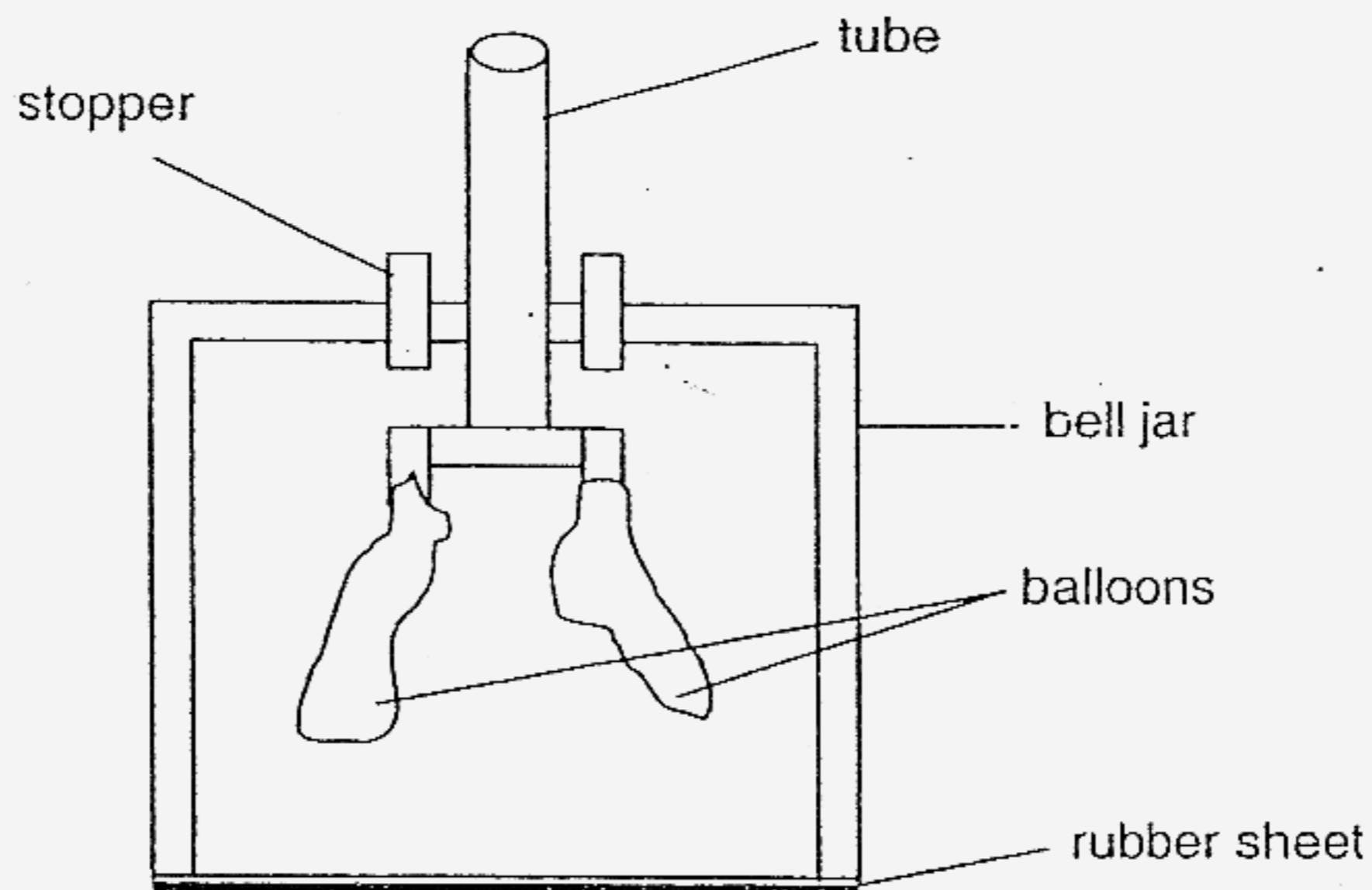
List down 3 factors that affect the heart rate of a person. (3 marks)

(a) _____

(b) _____

(c) _____

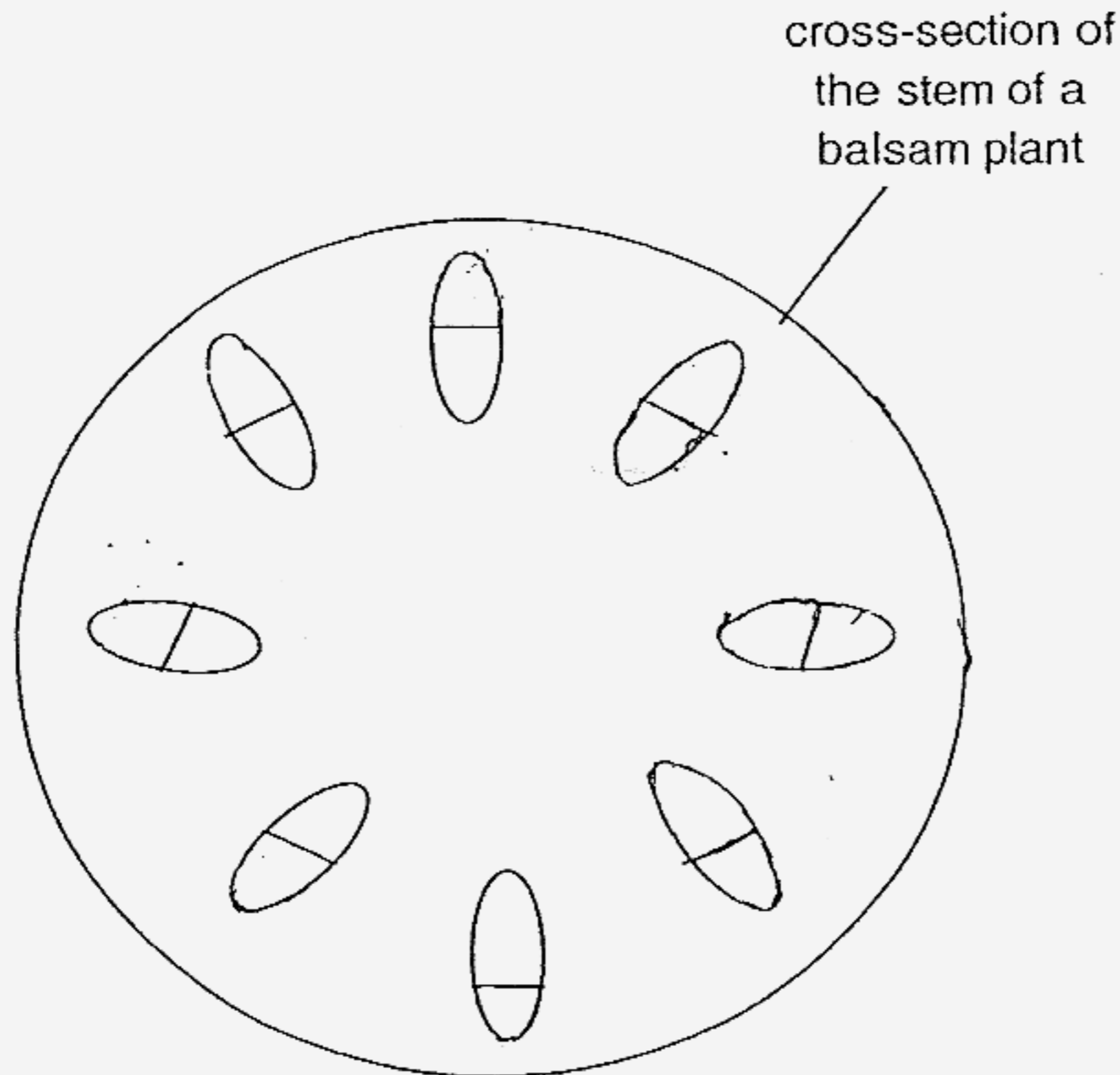
37. Lay Lee set up the equipment below to show how the respiratory system of Man works.



- (a) Name the structure in the respiratory system represented by the rubber sheet. (1 mark)

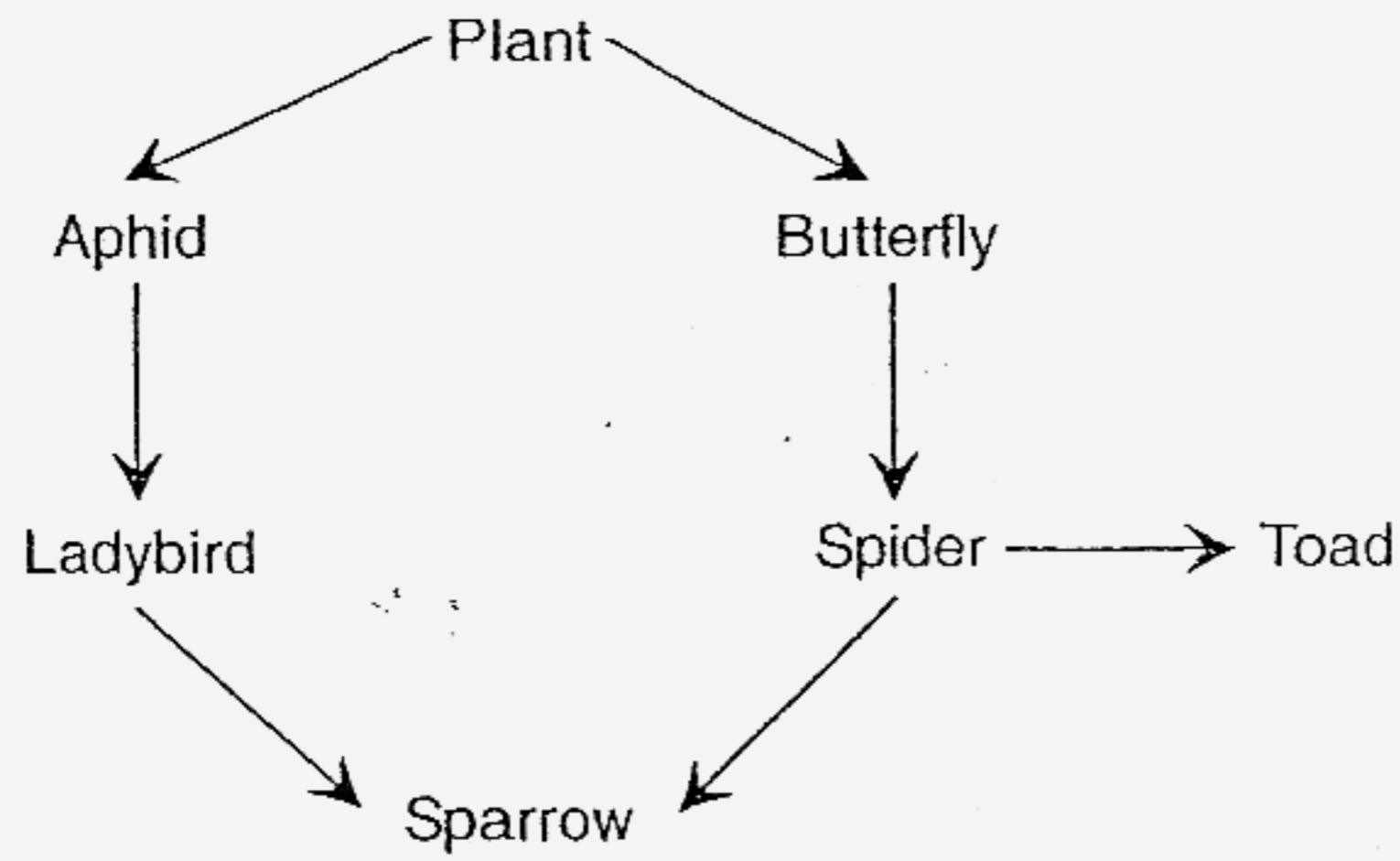
- (b) What happens to the rubber sheet when we breathe into the tube? (1 mark)

38. A balsam plant was placed in a beaker containing red-coloured water. After several hours, the stem was cut and the cross-section is shown below.



- (a) Shade the areas of the cross-section where you would expect to see red stains. (1 mark)
- (b) Besides water, what do these red-stained tubes transport? (1 mark)
-
- (c) Mark with the letter 'X' those areas of the cross-section where you would expect to find food made by the leaves of the balsam plant. (1 mark)
- (d) Which part of the human circulatory system has the same functions as the xylem and phloem tubes in the plant circulatory system? (1 mark)
-

39. The diagram below shows the energy transfer between a group of organisms.



Based on the above energy transfer diagram,

(a) Name two organisms that get their energy by eating other animals.
(1 mark)

(i) _____

(ii) _____

(b) Name two organisms that are not the source of energy for other organisms. (1 mark)

(i) _____

(ii) _____

40. Ben conducted an experiment. He shone a torchlight at some objects. After that, he classified the objects into three groups, E, F and G, as shown in the table below.

E	F	G
Coins Plywood	Tap water Food film wrap	Tracing paper Tissue paper

How did Ben classify the objects?

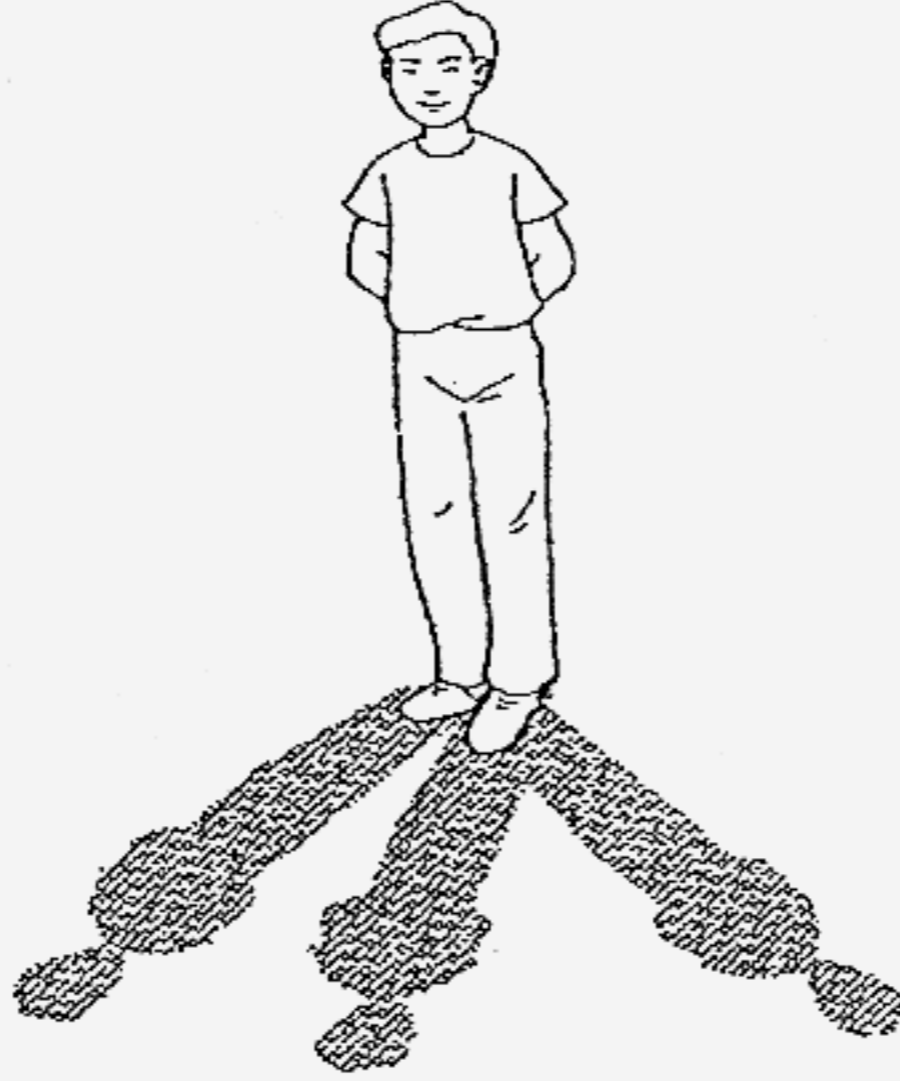
Give a suitable heading for E, F and G. (3 marks)

E: Objects that _____

F: Objects that _____

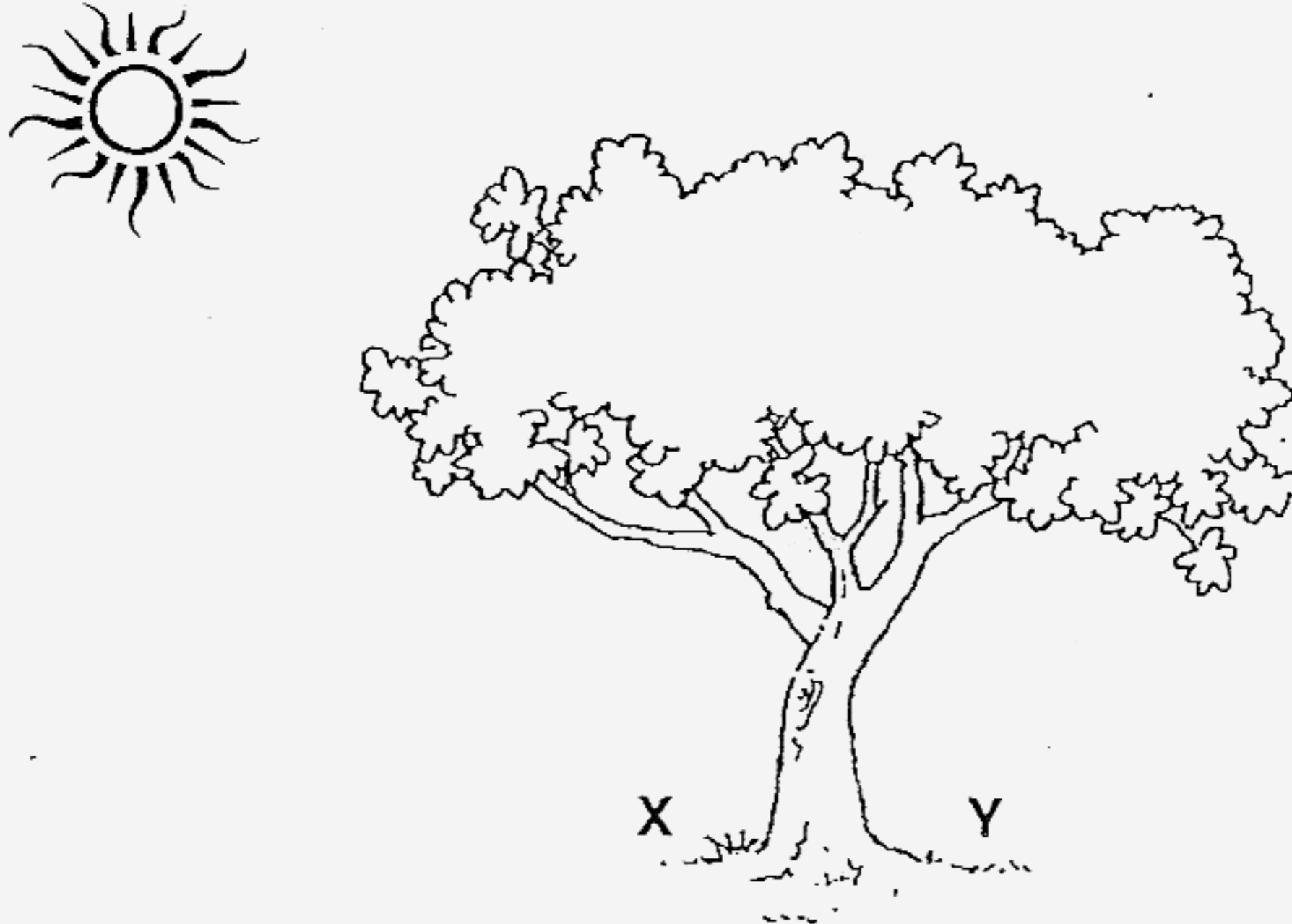
G: Objects that _____

41. The diagram below shows a man with three shadows.



Suggest a way to cast three shadows of the man at the same time. (2 marks)

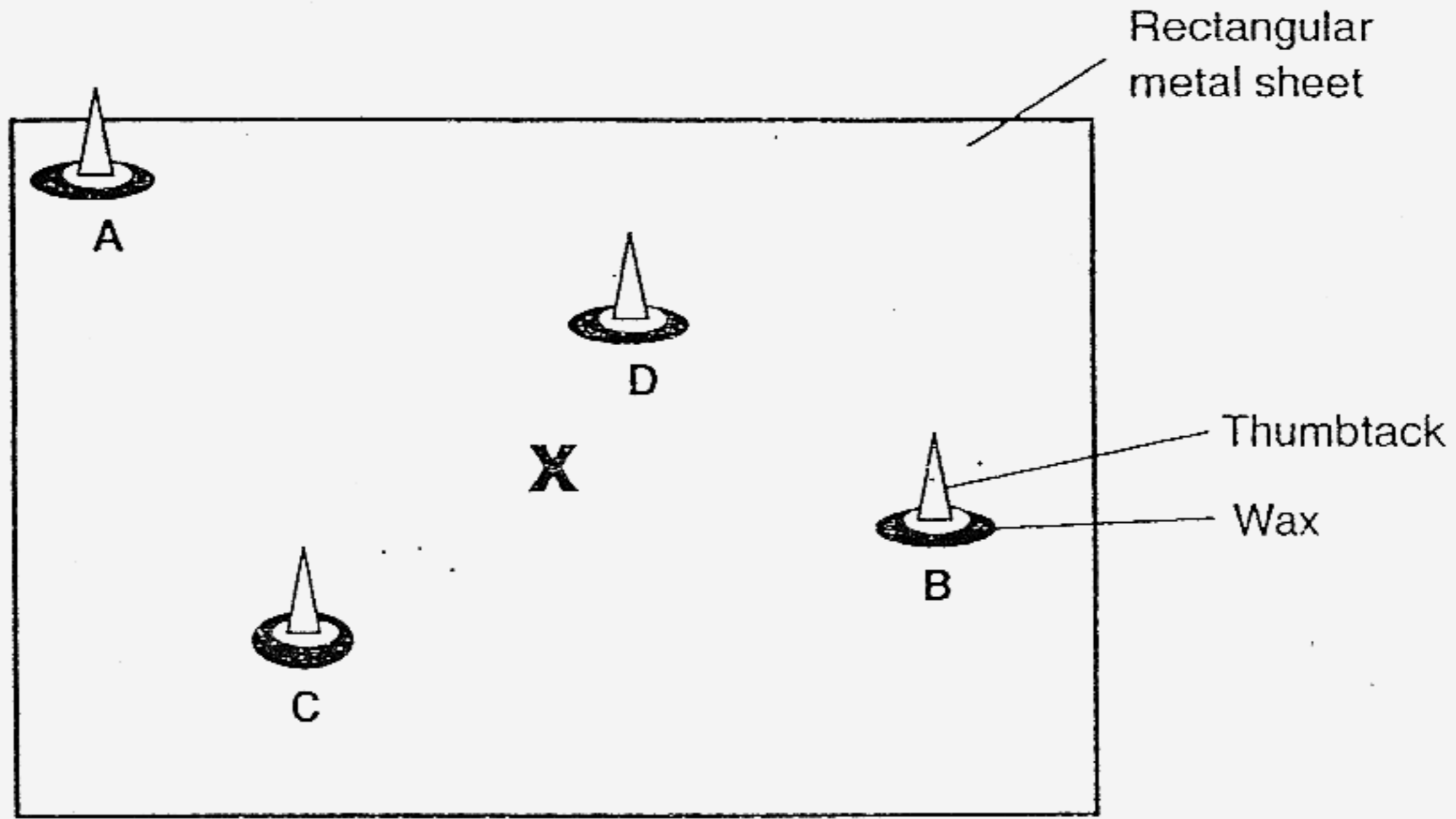
42. Look at the diagram below.



(a) At which position, X or Y, would you choose to sit if you want to be in the most shade? (1 mark)

(b) Give a reason for your answer in (a). (1 mark)

43. The diagram below shows four thumbtacks, A, B, C and D that were attached firmly with hardened wax to a rectangular sheet of metal.



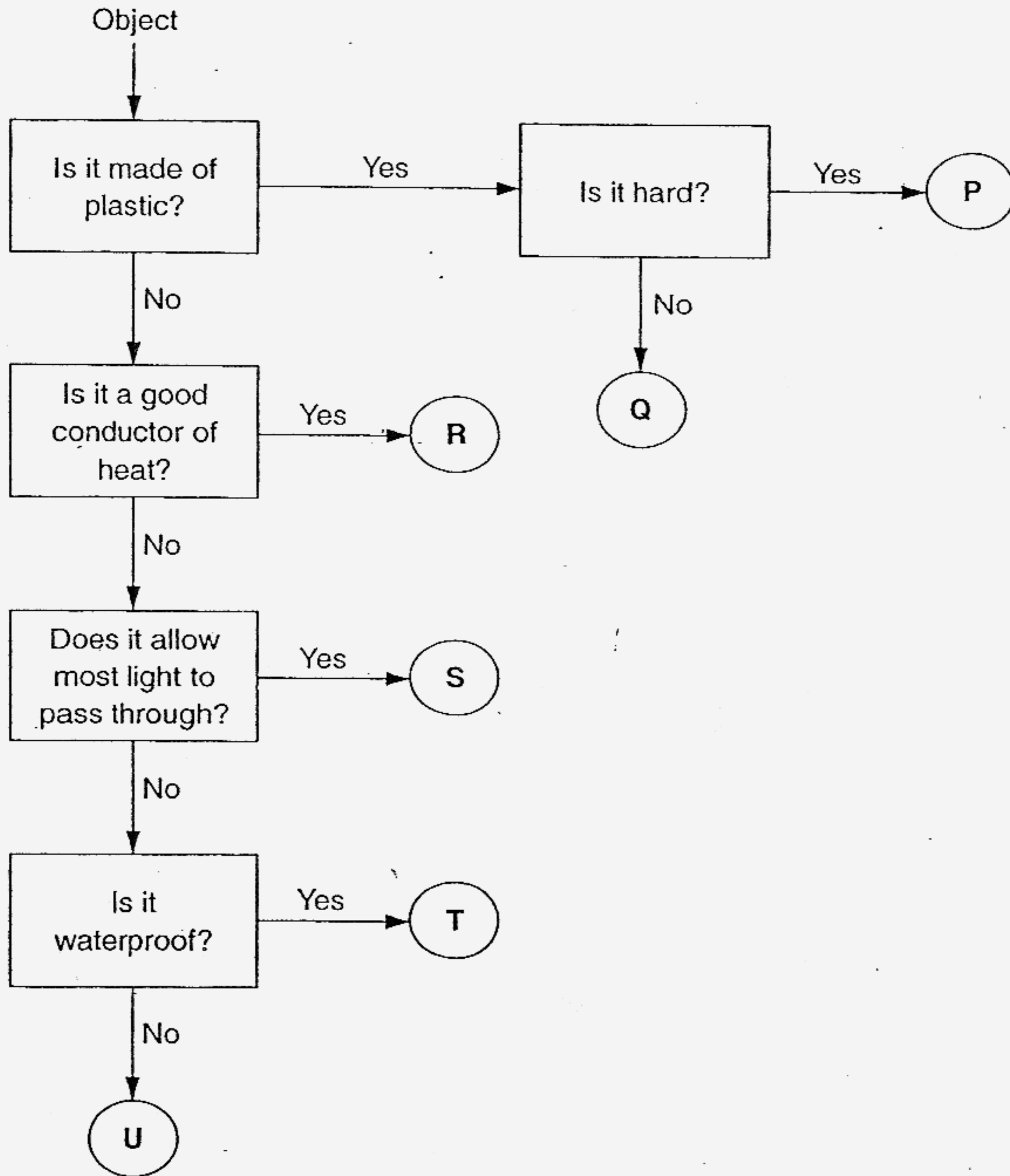
A lit candle was then placed directly below point X of the metal sheet.

- (a) In which order would the thumbtacks fall off the metal sheet?
Arrange in the correct order, beginning with the thumbtack that would fall off first. (1 mark)

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Fall off first			Fall off last

- (b) Why did the thumbtacks fall off in the above manner in (a)? (2 marks)

44. Study the flow chart below carefully.



Identify the letter P, Q, R, S, T or U that represents each of the following objects. (2 marks)

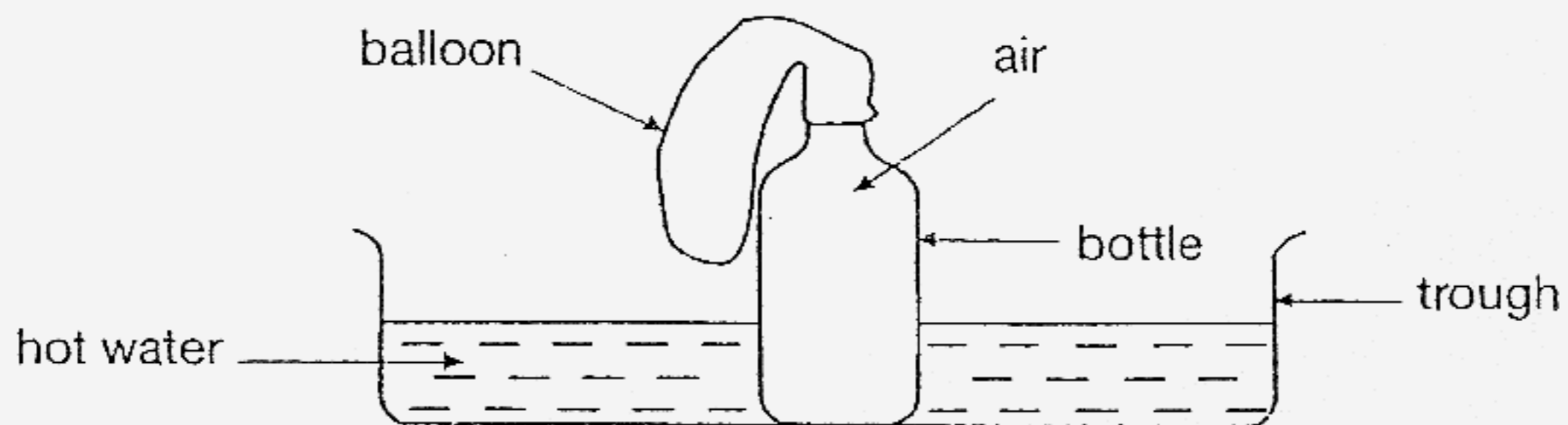
(i) Steel wire : _____

(ii) Window pane : _____

(iii) Wooden spoon : _____

(iv) Food film wrap : _____

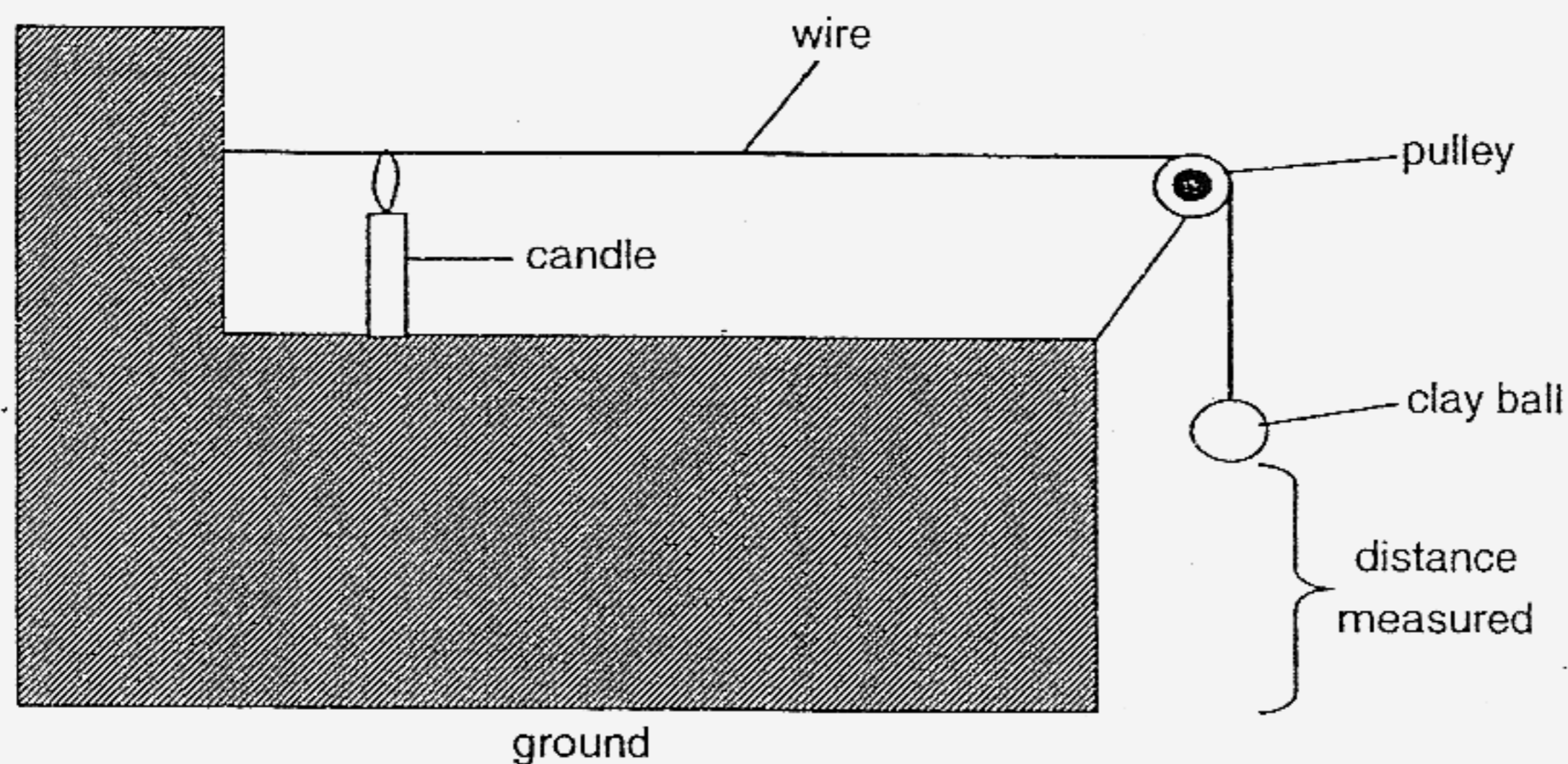
45. The diagram below shows a balloon attached across the mouth of a bottle.



(a) What will happen to the balloon when the bottle is placed in a trough of hot water? (1 mark)

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

46. Jerry carried out an experiment using four different wires made from different materials, J, K, L and M. He heated each wire for exactly 20 minutes. Then he measured the distance between the clay ball and the ground.



He recorded the results of the experiment in the table below.

Material of wire	J	K	L	M
Distance measured (cm)	10	6	24	15

- (a) Which material expanded the most? (1 mark)

Material _____

- (b) In order to make this a fair experiment, which variable must be kept the same and which variable does not need to be kept the same?

Put a tick (✓) in the correct box. (2 marks)

Variable	To be kept the same?	
	Yes	No
(i) Strength of the flame		
(ii) Thickness of the wire		
(iii) Material used for the wire		
(iv) Length of the wire before heating		

-- End of paper --

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

31) Ruler: Yes
 Carbon dioxide: No
 Water vapour: Yes
 Milk: Yes

32) A: Gains heat
 B: Loses heat
 C: Loses heat
 D: Gains heat

33) a) It is a gas and has no smell.
 b) Iron is a solid while water is a liquid.

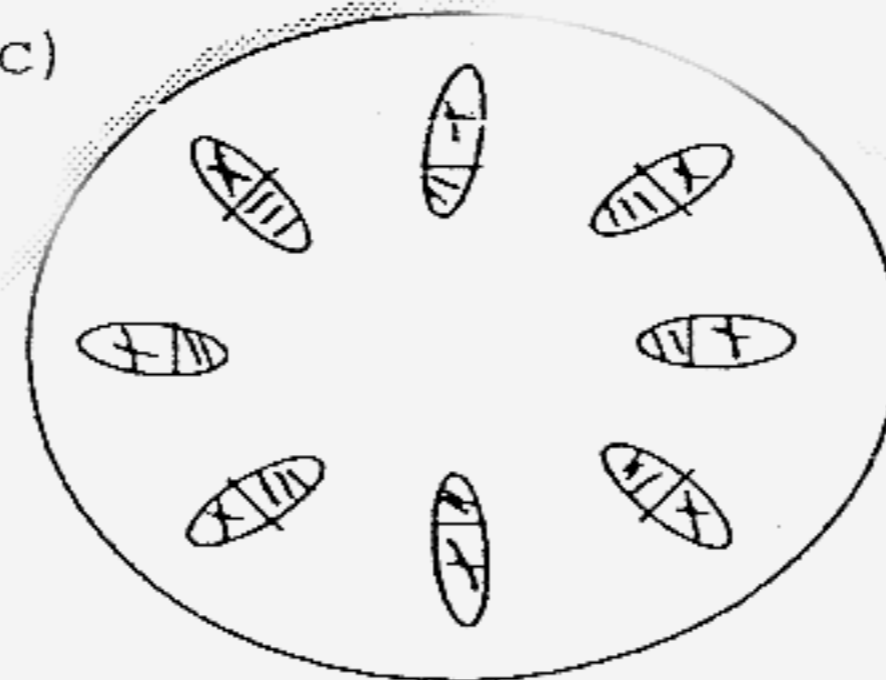
34) a) Handkerchief D will dry the fastest.
 b) The higher the humidity, the slower the rate of evaporation. The lower the humidity, the faster the rate of evaporation.
 c) The area of exposed surface area.

35) i) evaporation ii) condensation
 iii) melting iv) freezing

36) a) How young the person.
 b) The exercise the person is doing.
 c) If the person is sick.

37) a) The diaphragm.
 b) It will move downwards.

38) a) c)



38)b) It also transports mineral salts.
d) The blood vessels.

39)a) i) sparrow ii) Toad
b) i) Sparrow ii) Toad

40)E: are opaque.
F: are transparent.
G: are translucent.

41) Put three sources of light shining at him in different directions.

42)a) Y
-b) The tree blocked most light from the sun in a way that cannot reach I.

43)a) D, C, B, A
b) Heat travels from a hotter place to a colder place. Thus the nearer the thumbtack is to the heat source, the shorter is the time taken for the wax to melt.

44)i) R ii) S iii) U iv) Q

45)a) The balloon will expand.
b) The heat from the hot air causes the air inside the bottle to expand.

46)a) Material
b) i) Yes ii) Yes iii) No iv) Yes