

Pei Chun Public School
Semestral Assessment 2 – 2007
Science
Primary 4

Name : _____ ()

Date : 26 October 2007

Class : Pri. 4 ()

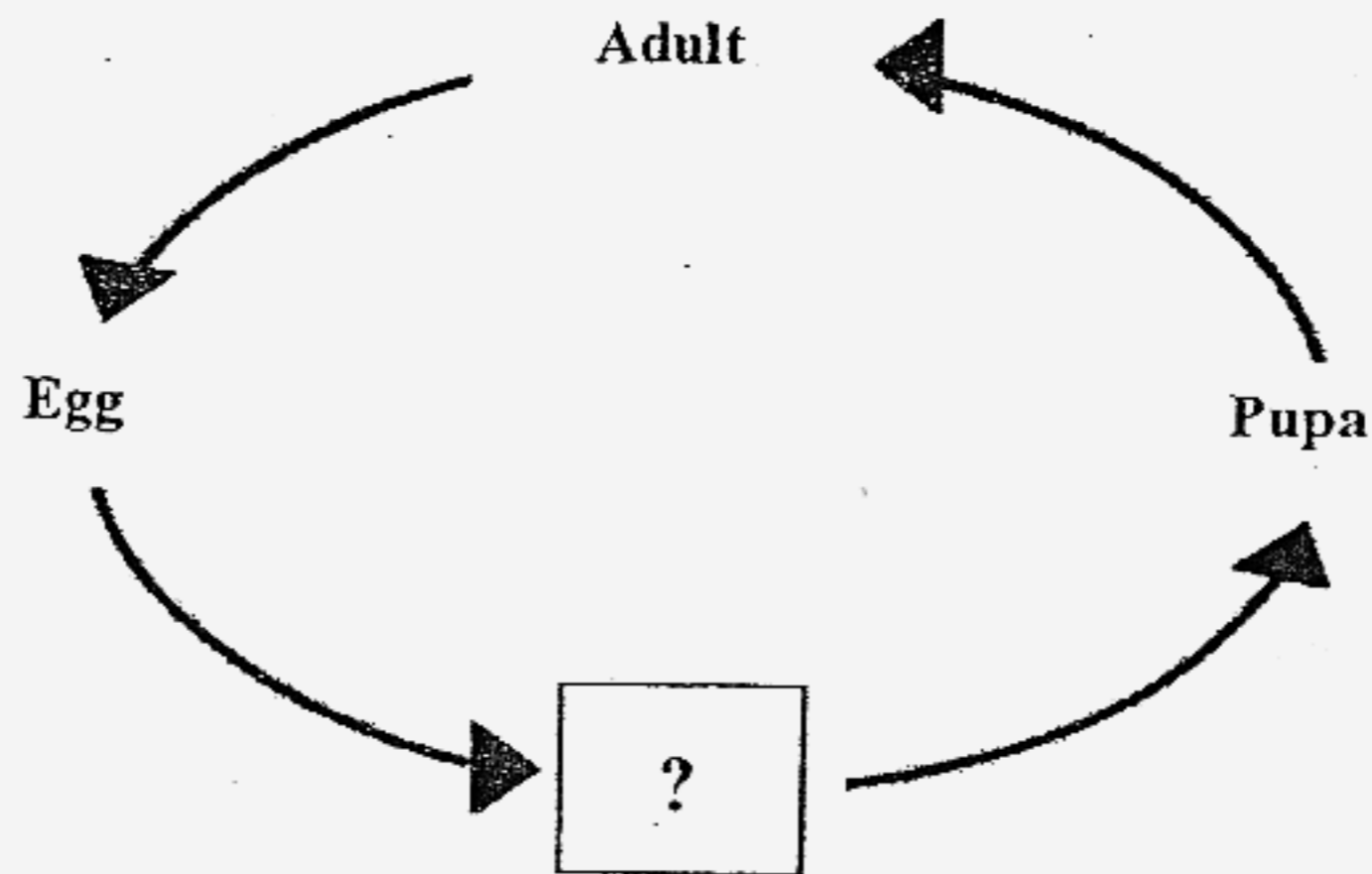
Science Teacher : _____

Time : 1 hr 30 min

Section A (25 × 2 marks)

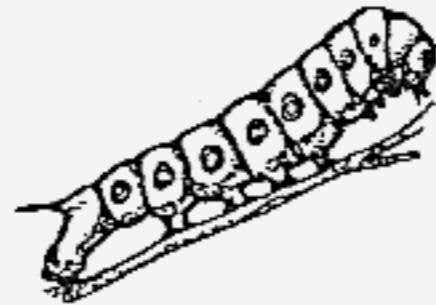
For questions 1 to 25, choose the most suitable answer and shade its number (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.

1. Study the life cycle below.



Which of the following can be used to complete the life cycle?

A)



B)



C)



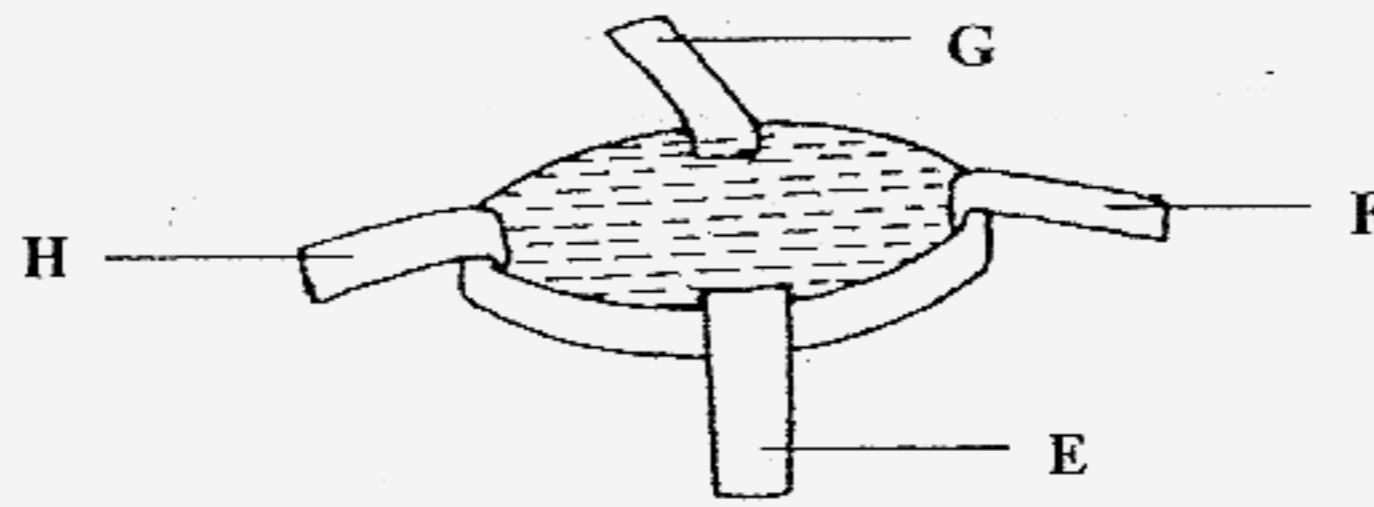
D)



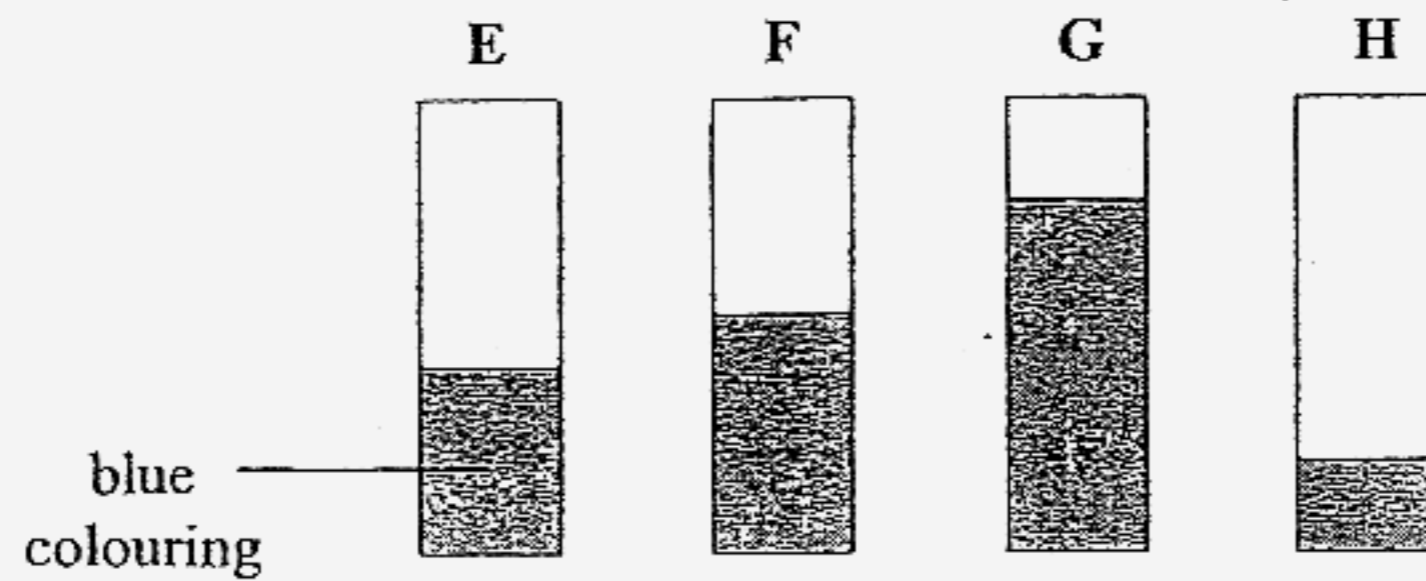
- (1) A and B only
- (2) C and D only
- (3) A, B and C only
- (4) B, C and D only

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2. E, F, G and H are four strips of different materials. Ahmad dipped them into a dish filled with blue colouring as shown below.



The diagram below shows the amount of blue colouring absorbed by E, F, G and H after one minute.



Which material is most suitable for making a towel?

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

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3. Gopal had to look for a type of tree in the school garden. He was given some descriptions about the tree:

- The tree bark is rough.
- The leaves are oval in shape.
- The fruits are bitter and poisonous.
- The flowers are white and have no smell.

Which of his senses should he use to help him locate the tree?

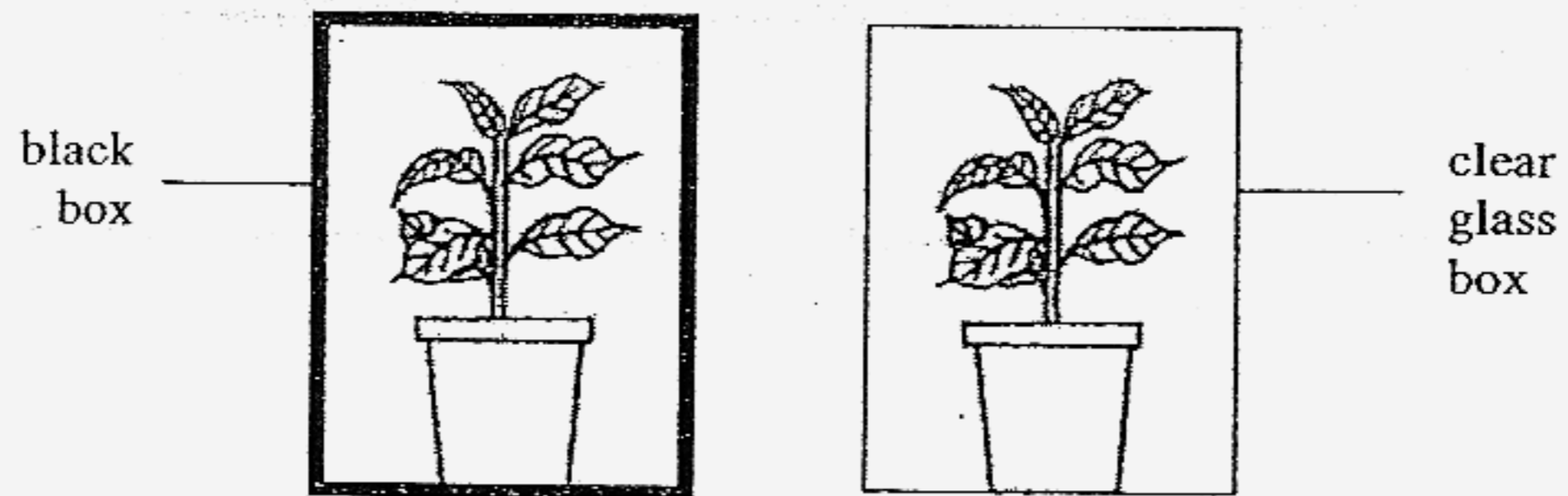
- A : Sense of sight
- B : Sense of taste
- C : Sense of smell
- D : Sense of touch

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

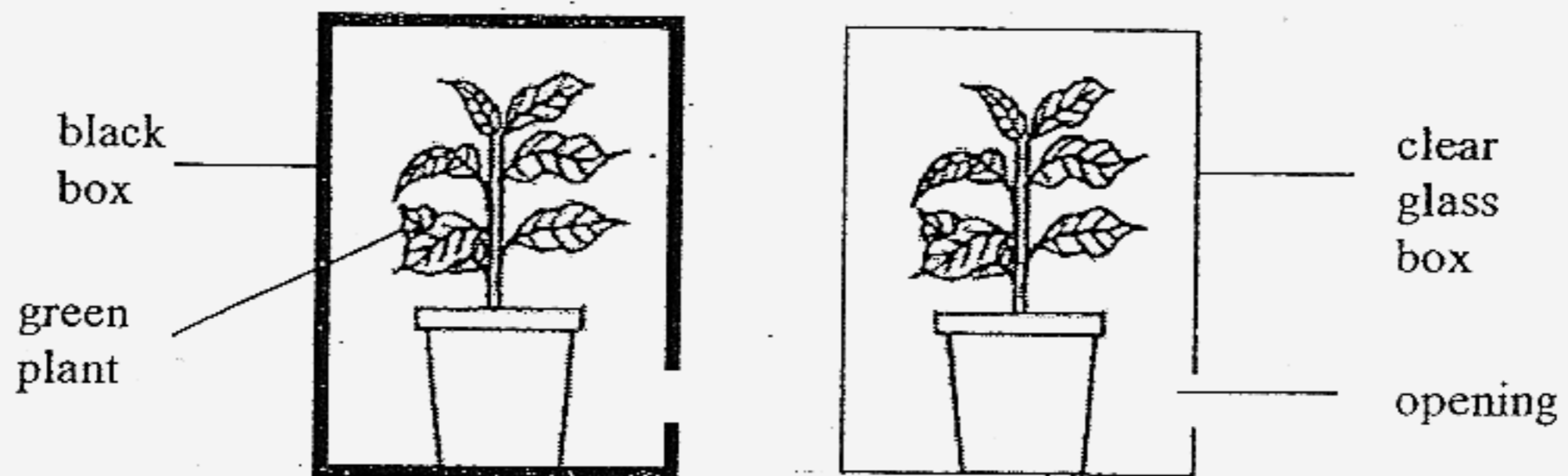
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4. Siti wants to conduct an experiment to find out if plants need sunlight to make food. Which of the following set-ups should she choose to carry out her experiment in the school field?

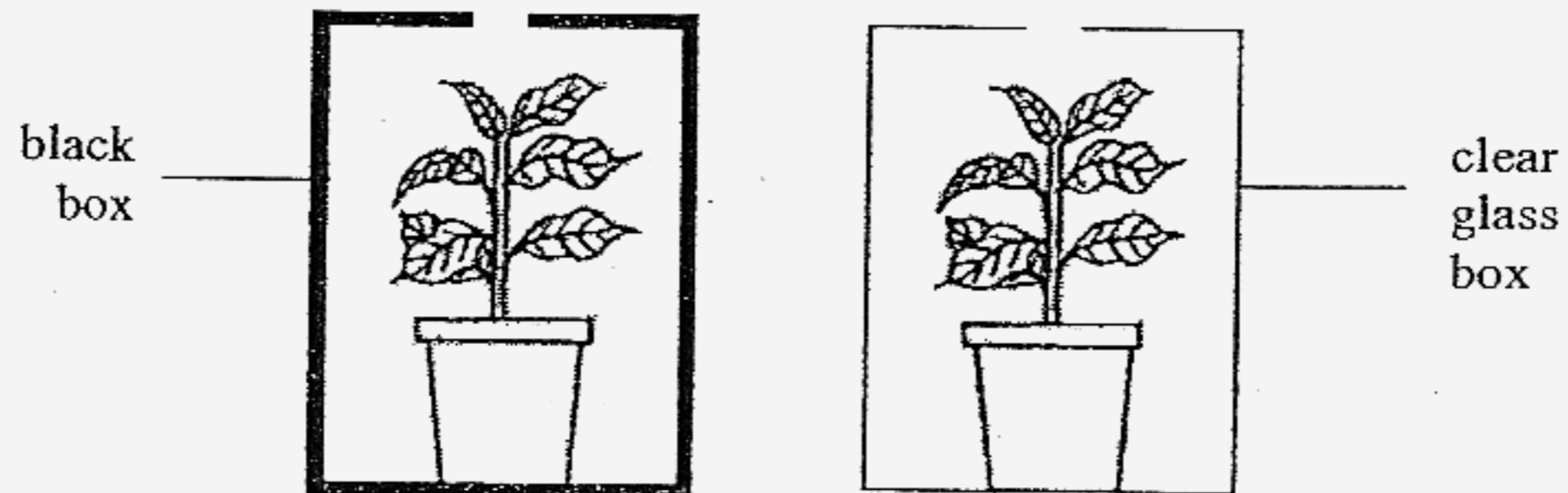
(1)



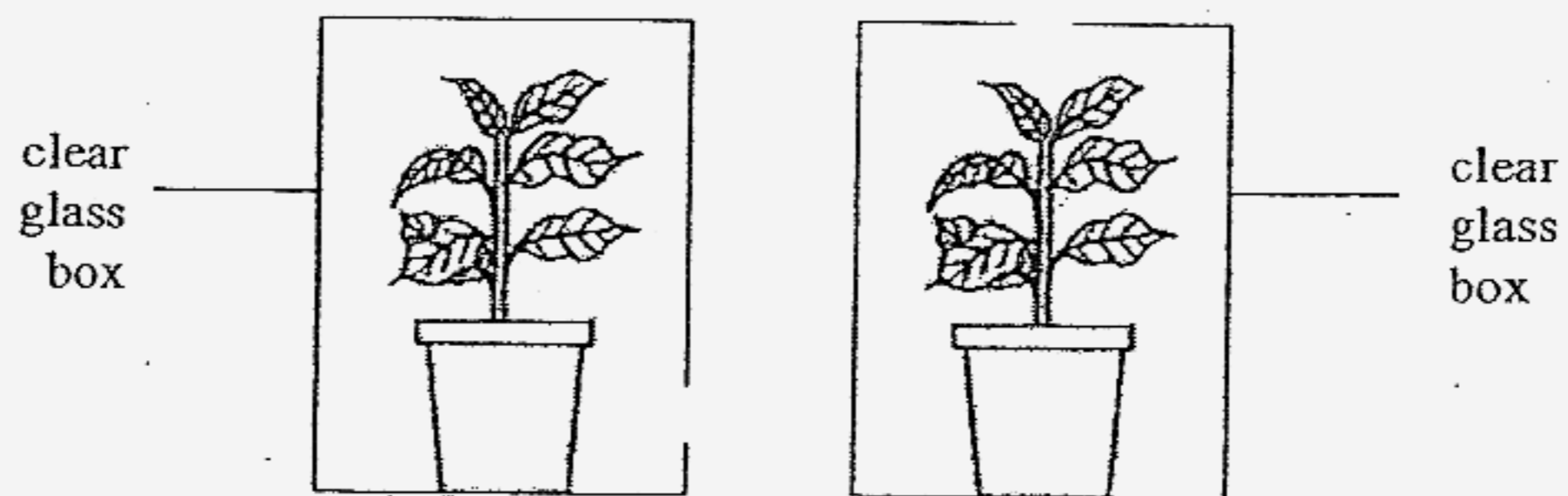
(2)



(3)



(4)

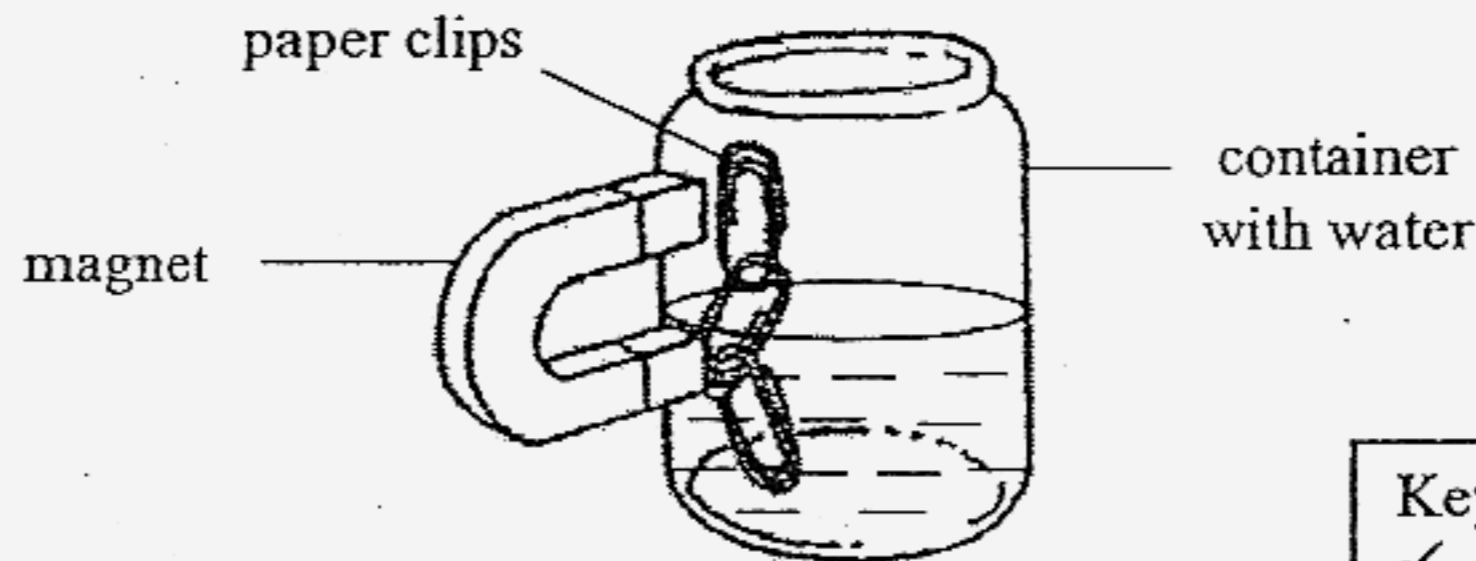


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5. Which of the following statements is false?

- (1) Our muscles usually work in pairs.
- (2) Most of the joints in our body allow free movement.
- (3) Food is not digested in every part of the digestive system.
- (4) We can control the movement of all the muscles in our body. ()

6. Meihua tried to remove some paper clips from 3 containers of water by placing a magnet on the outside of the container and sliding the magnet upwards as shown in the diagram below. The containers are made of steel, plastic and aluminium.



Key:
 ✓ - Succeeded
 ✗ - Failed

Which of the following results would she get?

	Steel Container	Plastic Container	Aluminium Container	
(1)	✓	✗	✓	
(2)	✗	✓	✓	
(3)	✓	✗	✗	
(4)	✗	✓	✗	()

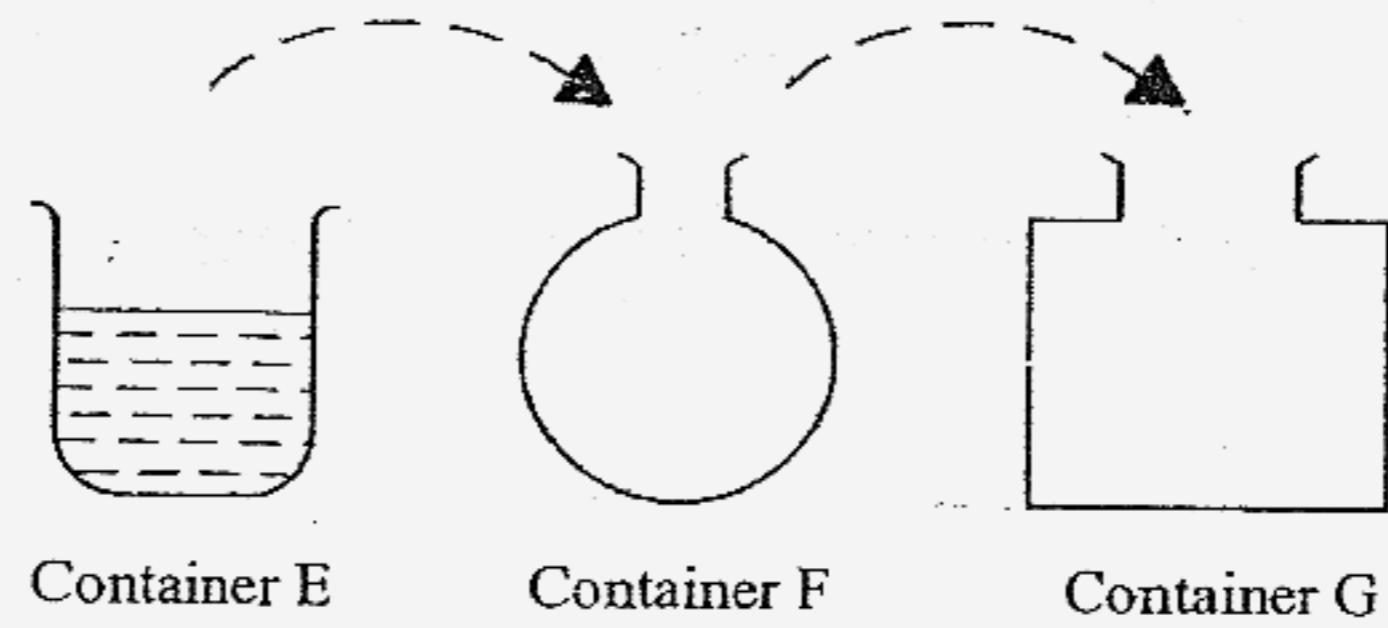
7. The table below shows the properties of X, Y, and Z.

Properties	X	Y	Z
Has mass	✓	✗	✓
Definite shape	✗	✗	✓
Can be compressed	✗	✗	✗

Which of the following best represents X, Y and Z?

	X	Y	Z	
(1)	wind	heat	rock	
(2)	honey	wind	glass	
(3)	oxygen	wind	rock	
(4)	honey	heat	glass	()

8. Study the diagram below. Container E contains 500 ml of water.



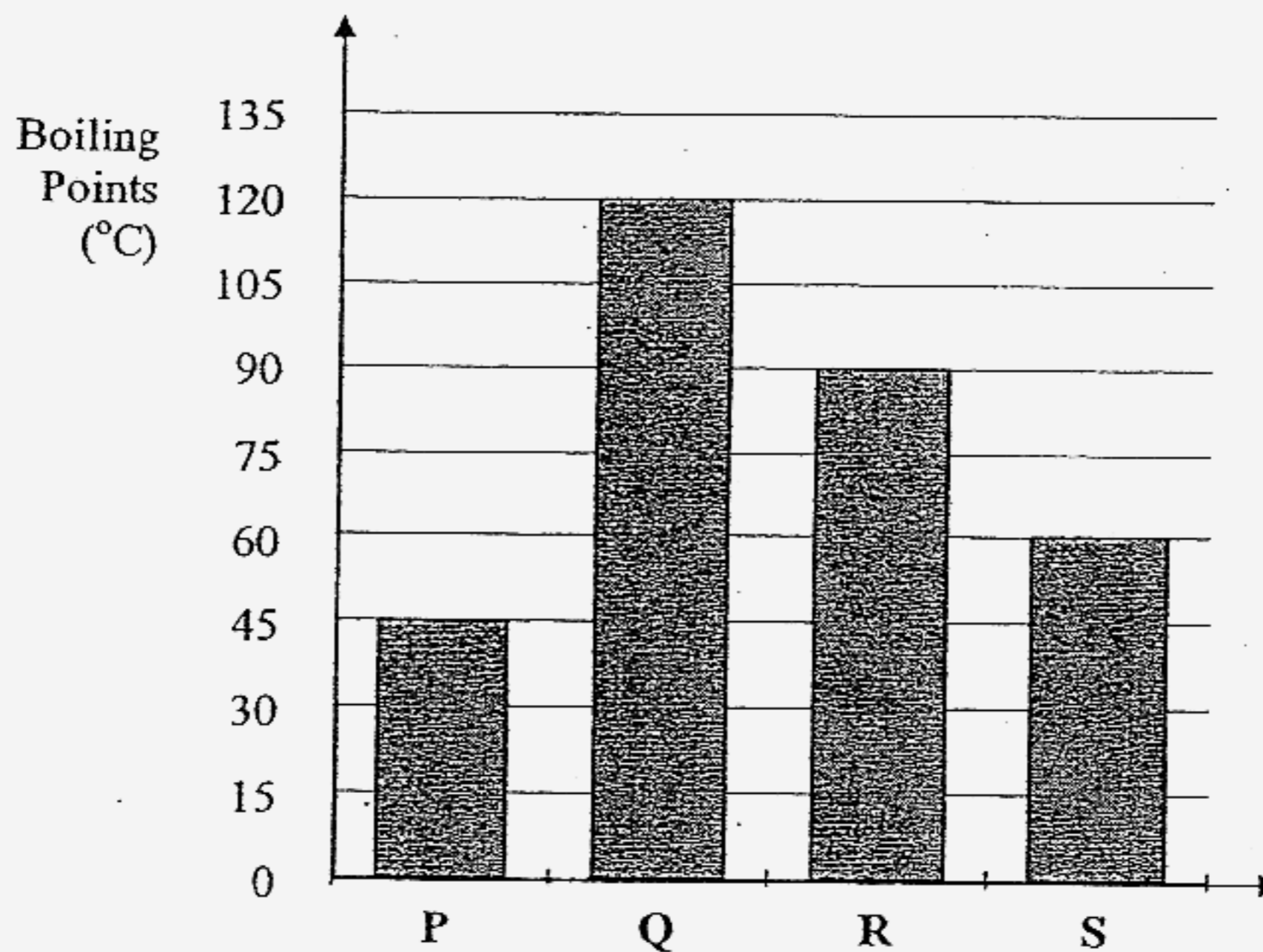
What changes will be observed when all the water is poured from Container E to Container F, then to Container G, with no loss of water?

- A : Mass of water
- B : Shape of water
- C : Volume of water
- D : Exposed surface area of the water

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

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9. The graph below shows the boiling points of some substances.

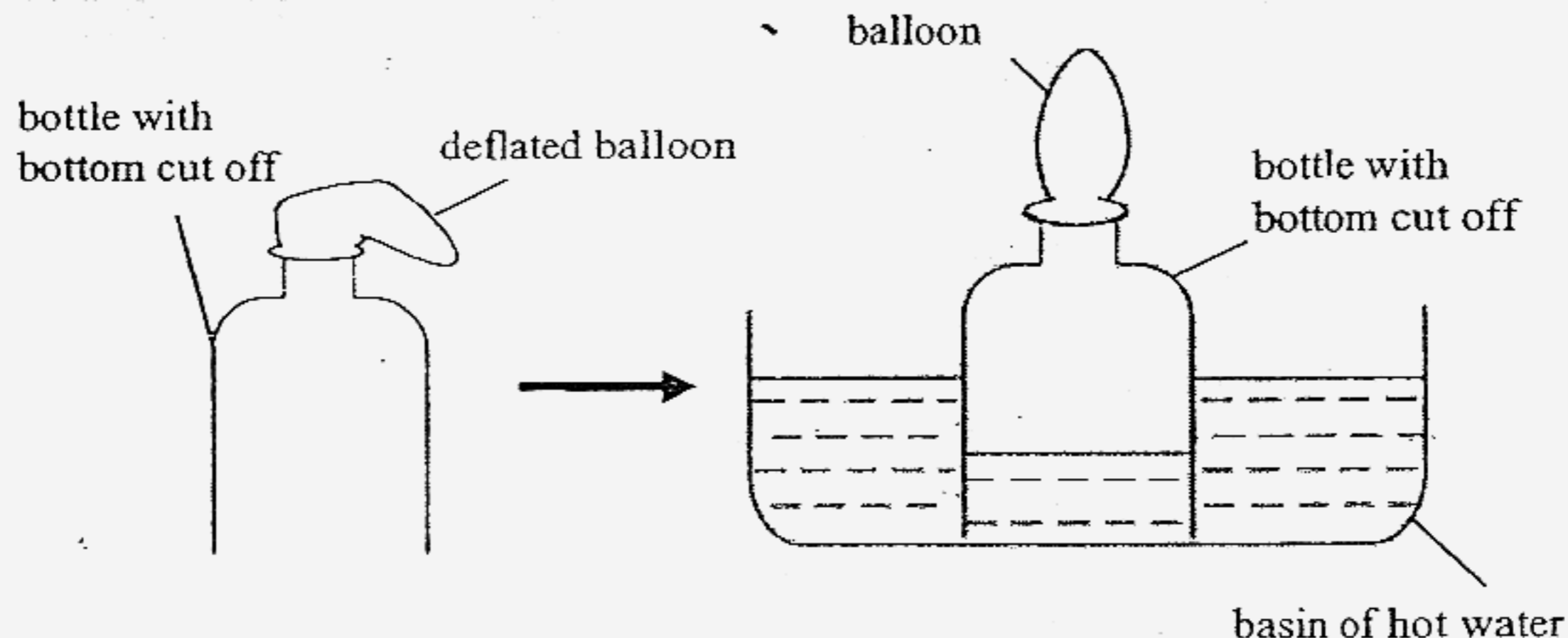


Which of these substances is/are in the gaseous state at 80 °C?

- (1) P only
- (2) P and S only
- (3) Q and R only
- (4) Q, R and S only

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10. Eugene set up the experiment as shown below. He cut the bottom of a plastic bottle and covered the mouth of the bottle with a balloon. He then pushed the bottle into a basin of hot water. The diagrams below show what he observed.



What does this experiment show?

- A : Air has mass.
- B : Air occupies space.
- C : Air can be compressed.
- D : Air does not have definite shape.

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

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11. One warm and humid afternoon, Yati, Aini, Devi and Tom were on board an air-conditioned bus. They observed that glass windows of the bus became misty as the air in the bus became colder. The explanations provided by them are listed below.

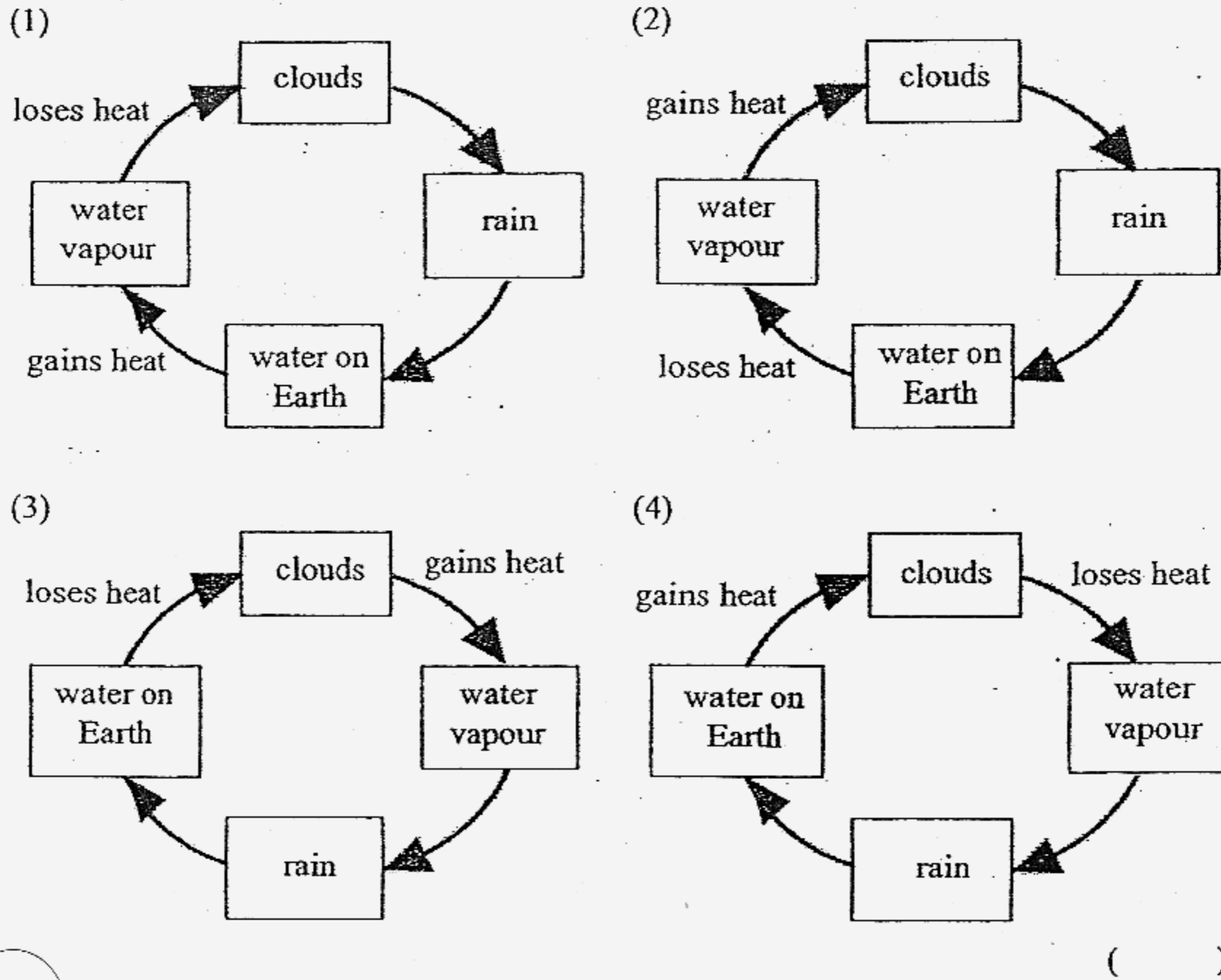
- Yati : The glass window is colder than the air outside the bus.
- Aini : The glass window is warmer than the air outside the bus.
- Devi : Warm water vapour inside the bus condenses on the cold glass window.
- Tom : Warm water vapour outside the bus condenses on the cold glass window.

Whose explanations are correct?

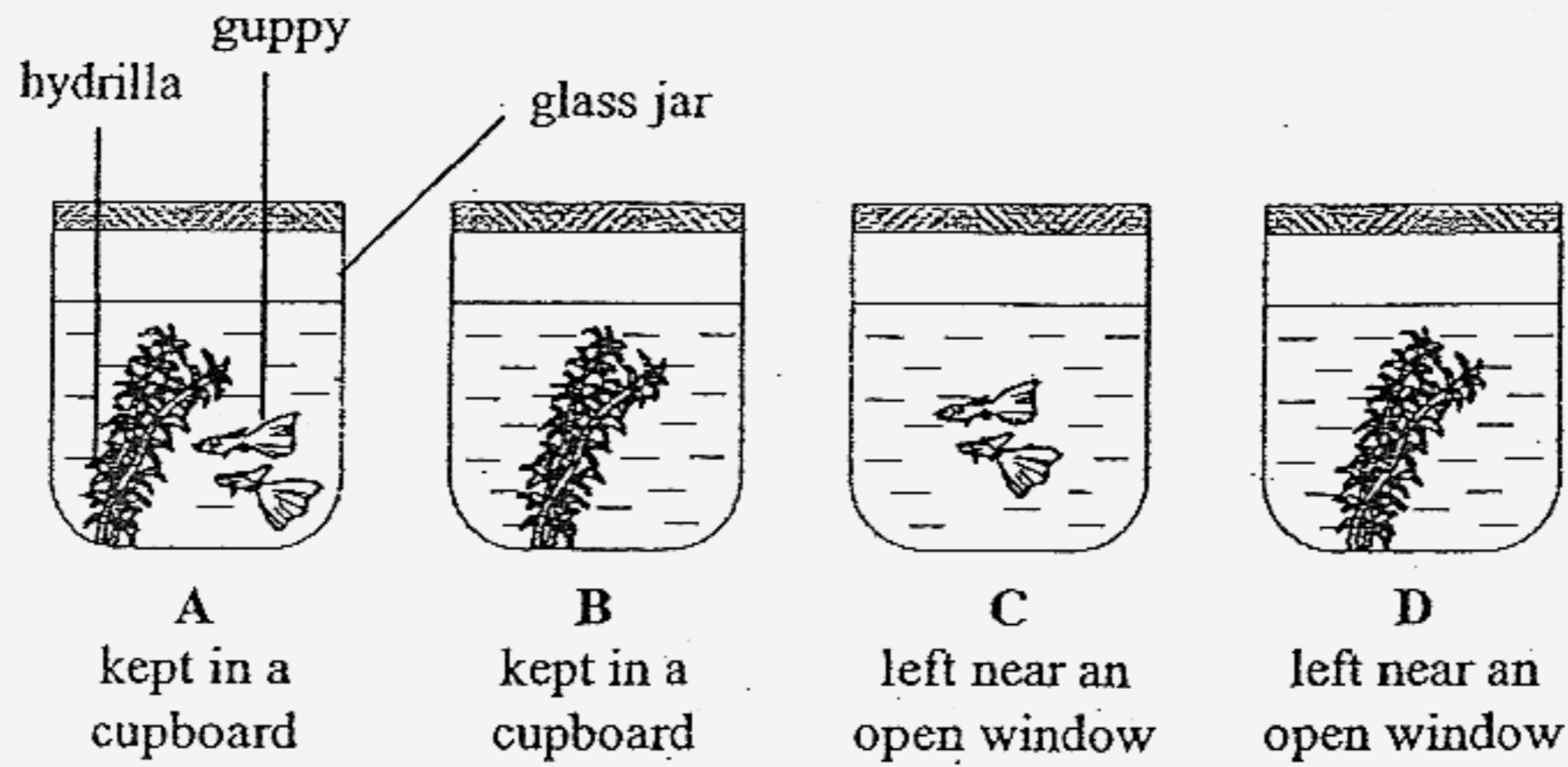
- (1) Yati and Devi
- (2) Yati and Tom
- (3) Aini and Devi
- (4) Aini and Tom

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12. Which of the following is a correct representation of the water cycle?



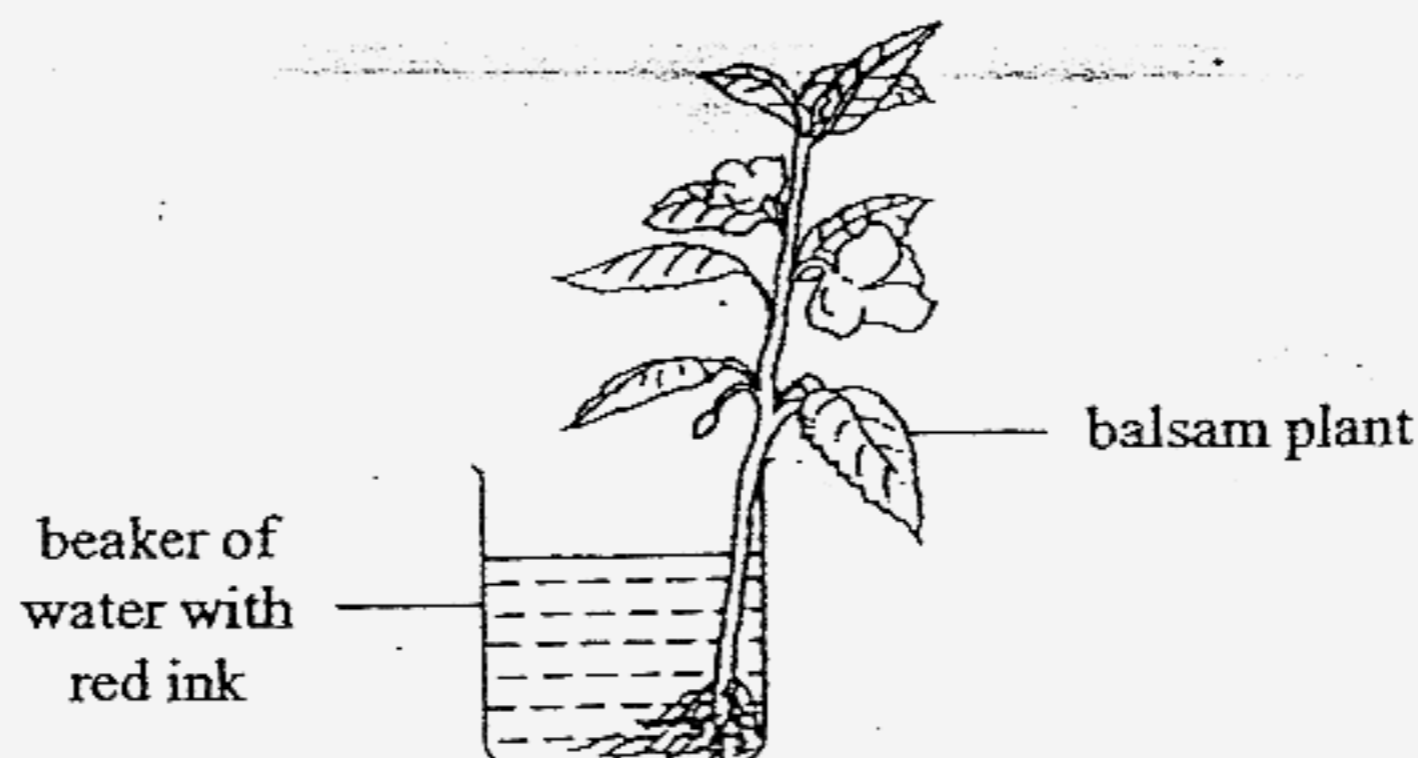
13. Four identical sealed glass jars, A, B, C and D, each containing an equal amount of water were set up and left at different places for 3 hours as shown below.



At the end of the experiment, which of the jars, A, B, C or D, would contain the greatest amount of oxygen?

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

14. Kumar puts a balsam plant into a beaker of water in which some red ink has been added. After two days, he observes that the edges of the flowers on the plant turned from white to red.



The aim of the experiment is to show that _____.

- (1) the balsam plant grows in water only
- (2) the stem allows the plant to carry water to the roots
- (3) water is absorbed by the plant only through its roots
- (4) the stem carries water from the roots to the rest of the plant ()

15. Respiration takes place in all living things. Which of the following occurs during respiration?

	Food	Carbon dioxide	Oxygen
(1)	is formed	is used	is produced
(2)	is formed	is produced	is used
(3)	is broken down	is used	is produced
(4)	is broken down	is produced	is used

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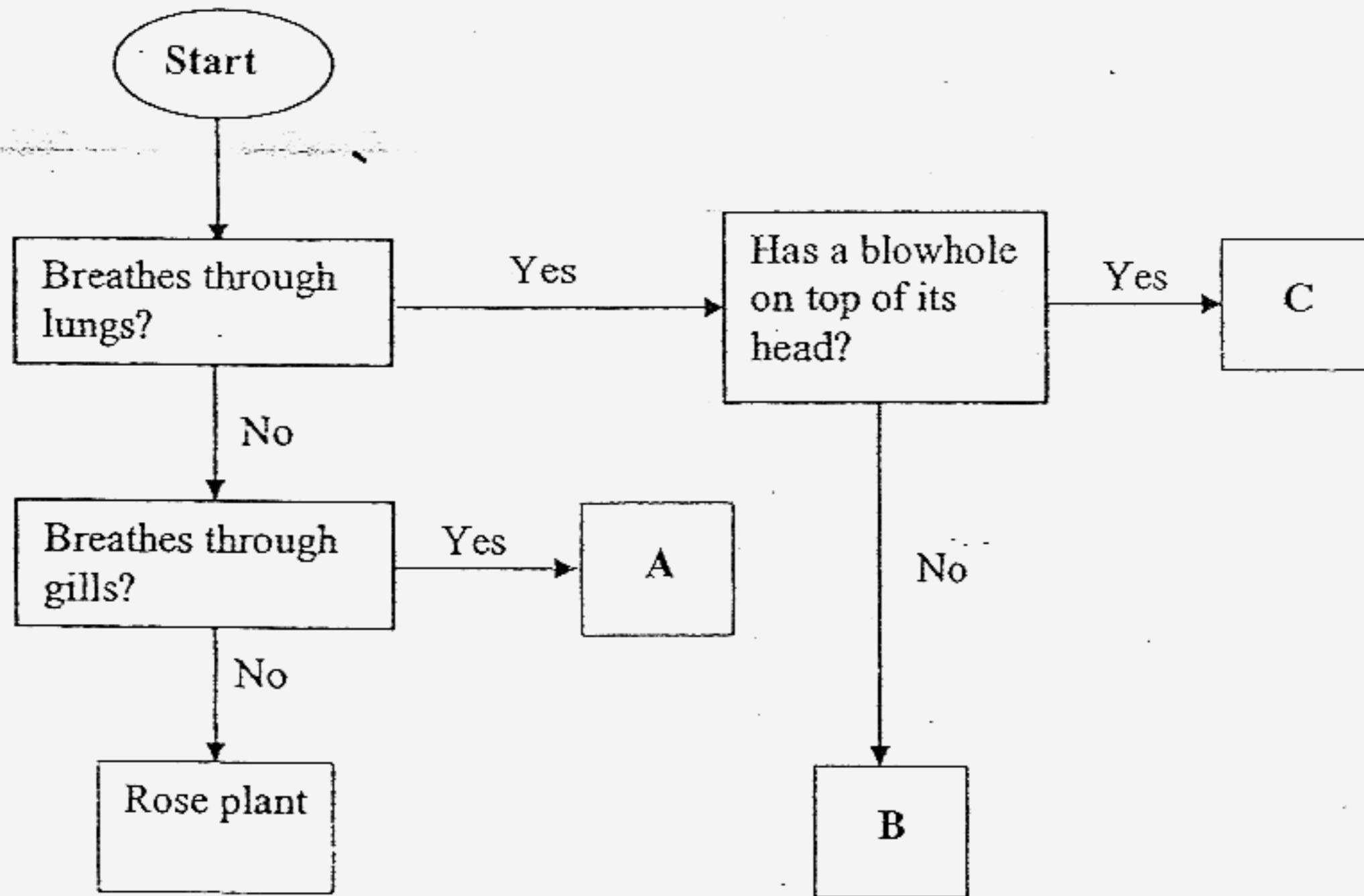
16. The heart rate of a mammal is dependent on its size. The table below shows the normal heart rate of some adult mammals at rest.

Mammal	Heart rate (beats per minute)
Elephant	30
Human	65
Hamster	400

Based on the table, which of the following is the most probable normal heart rate of an adult rabbit at rest?

- (1) 35
- (2) 75
- (3) 205
- (4) 405 ()

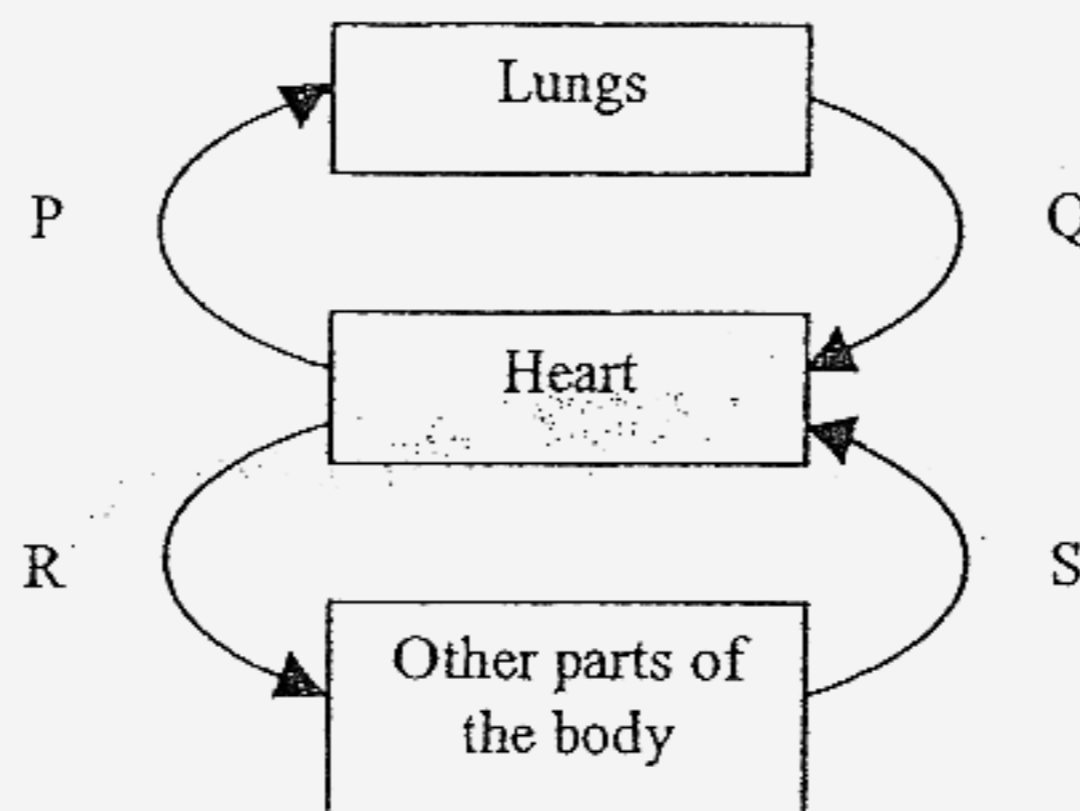
17. Study the flow chart below.



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

	A	B	C
(1)	dolphin	shark	polar bear
(2)	shark	polar bear	seal
(3)	shark	seal	dolphin
(4)	seal	polar bear	dolphin

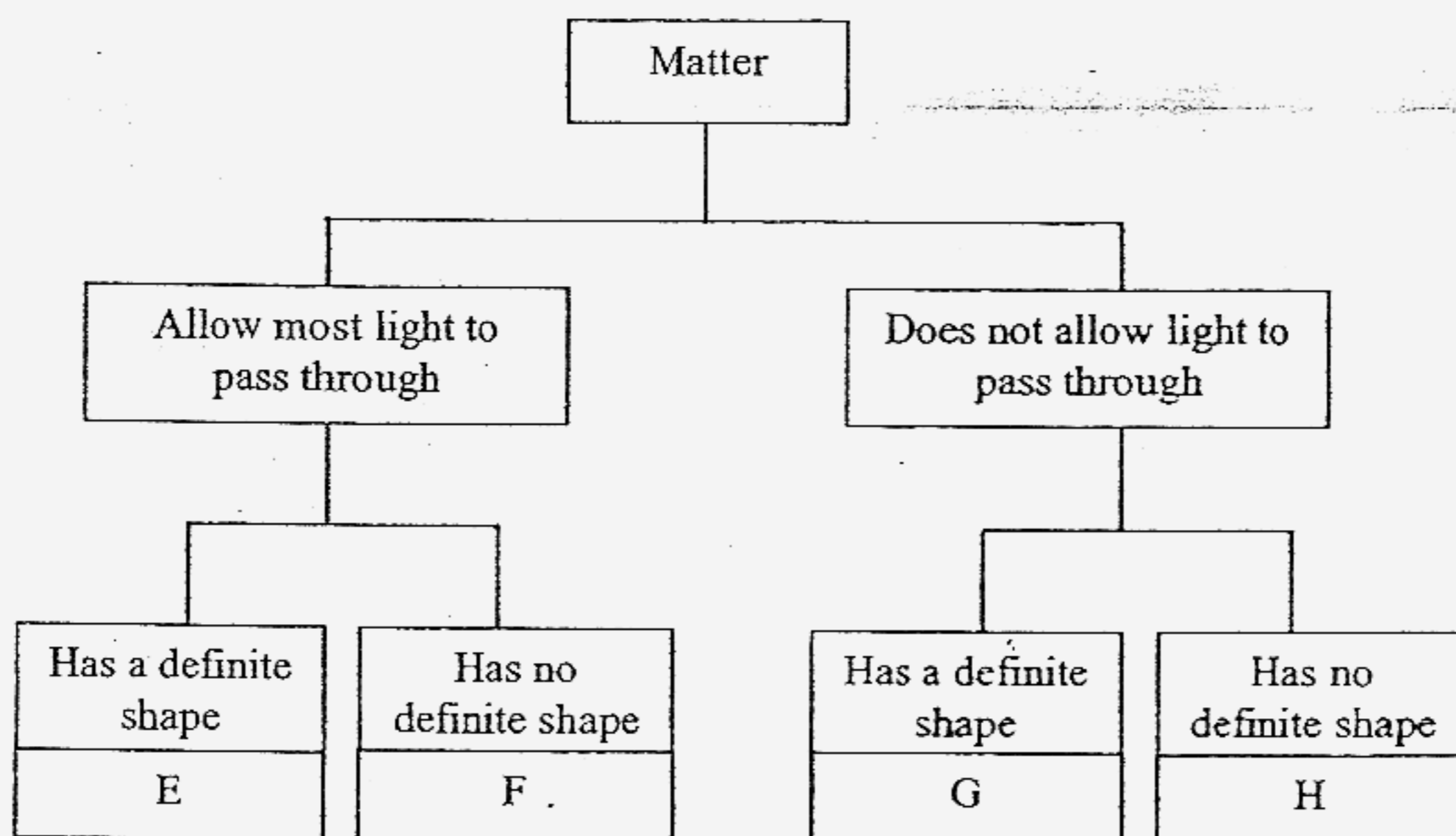
18. The diagram below shows the circulatory system in our body.



Which arrows show the flow of blood rich in carbon dioxide in our body?

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

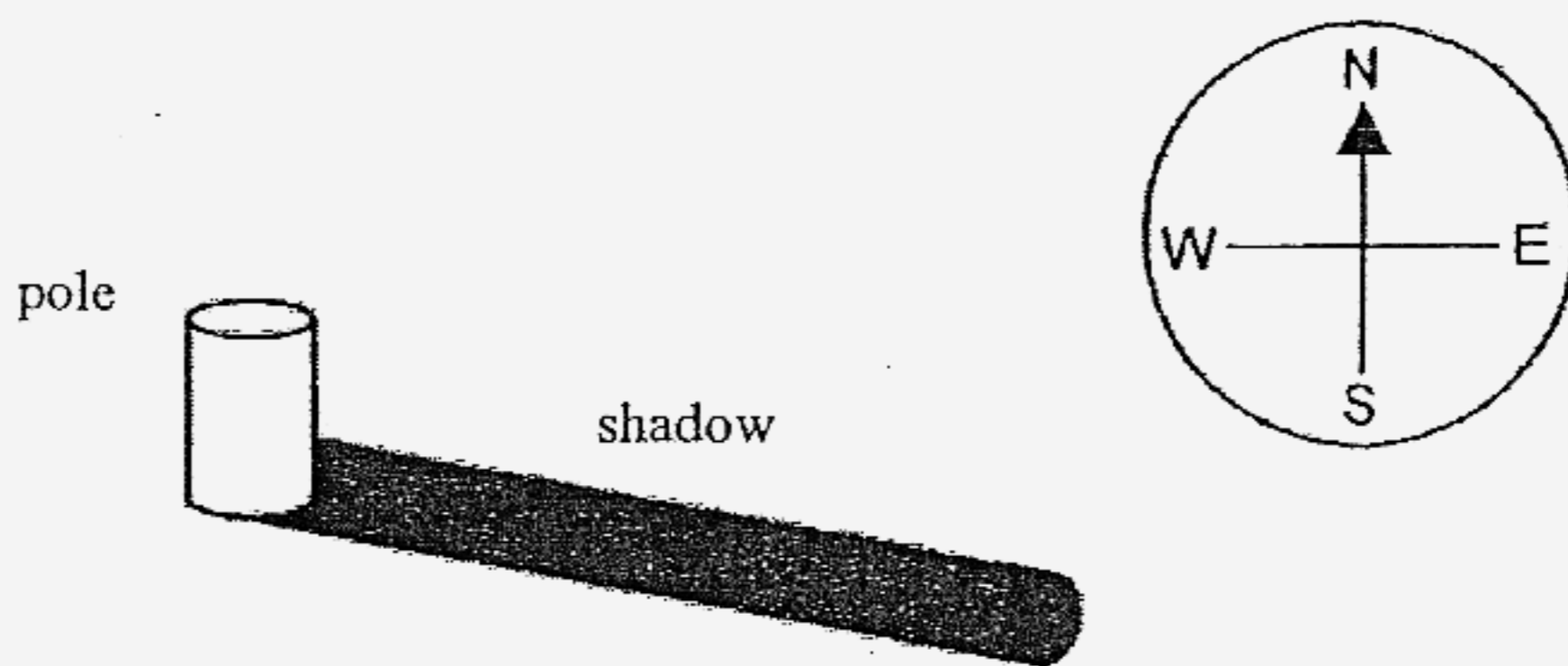
19. Study the classification chart below carefully.



Which of the following best represents E, F, G and H?

	E	F	G	H
(1)	clear glass	air	wood	plasticine
(2)	aluminium foil	water	plasticine	milk
(3)	clear plastic	air	aluminium foil	milk
(4)	mirror	water	wood	plasticine

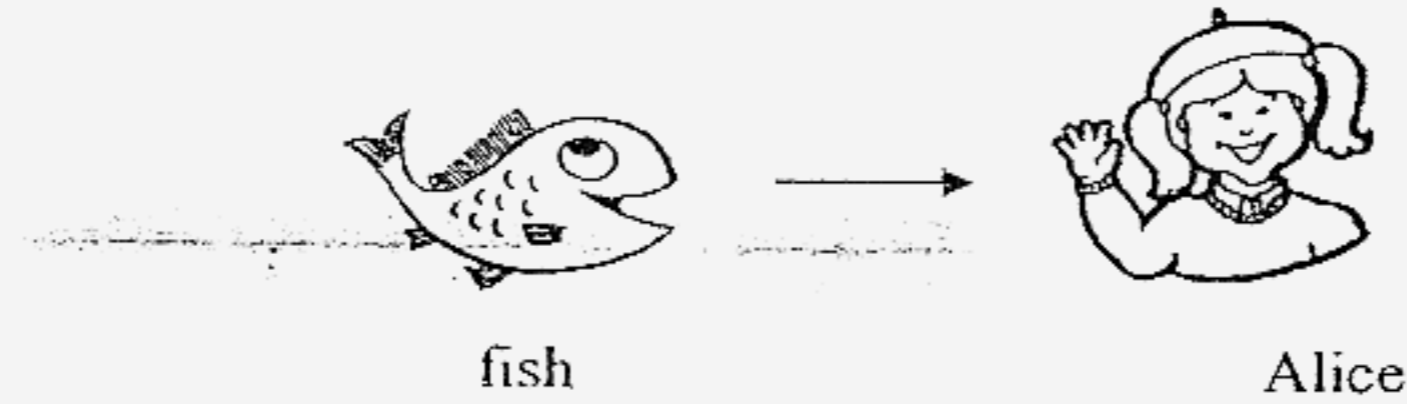
20. The sun rises in the East and sets in the West.
The diagram below shows the shadow cast by a pole.



What time of the day do you think this shadow was formed?

- (1) 8 a.m.
- (2) 12 noon
- (3) 2 p.m.
- (4) 6 p.m.

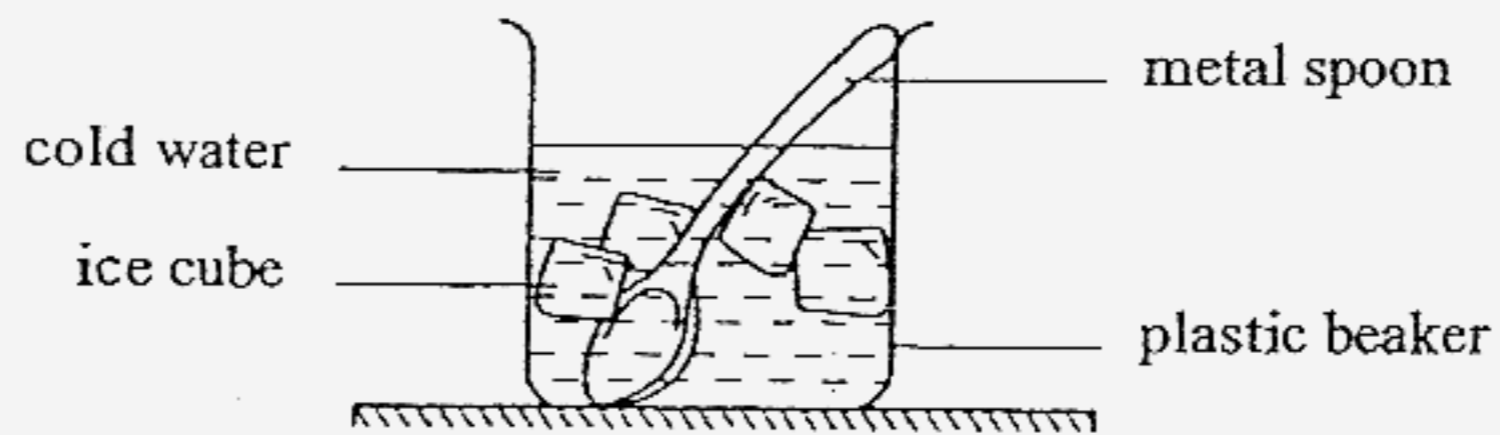
21. The diagram below shows that fish is a source of energy for Alice.



Which of the following shows the correct order in which energy is transferred?

- (1)
- (2)
- (3)
- (4)
- ()

22. Kitty placed a warm metal spoon into a beaker of cold water as shown below. After a while, the spoon became cold.



Which of the statements below explains what had happened?

- (1) Heat travelled from the ice cubes to the cold water.
- (2) Heat travelled from the metal spoon to the cold water.
- (3) Coldness travelled from the ice cubes to the cold water.
- (4) Coldness travelled from the cold water to the metal spoon.
- ()

23. Which of the following items give out light of their own?

- A : Stars
- B : Moon
- C : Fireflies
- D : Diamond

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

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24. Samuel had difficulty opening the metal lid of the glass jar shown below.

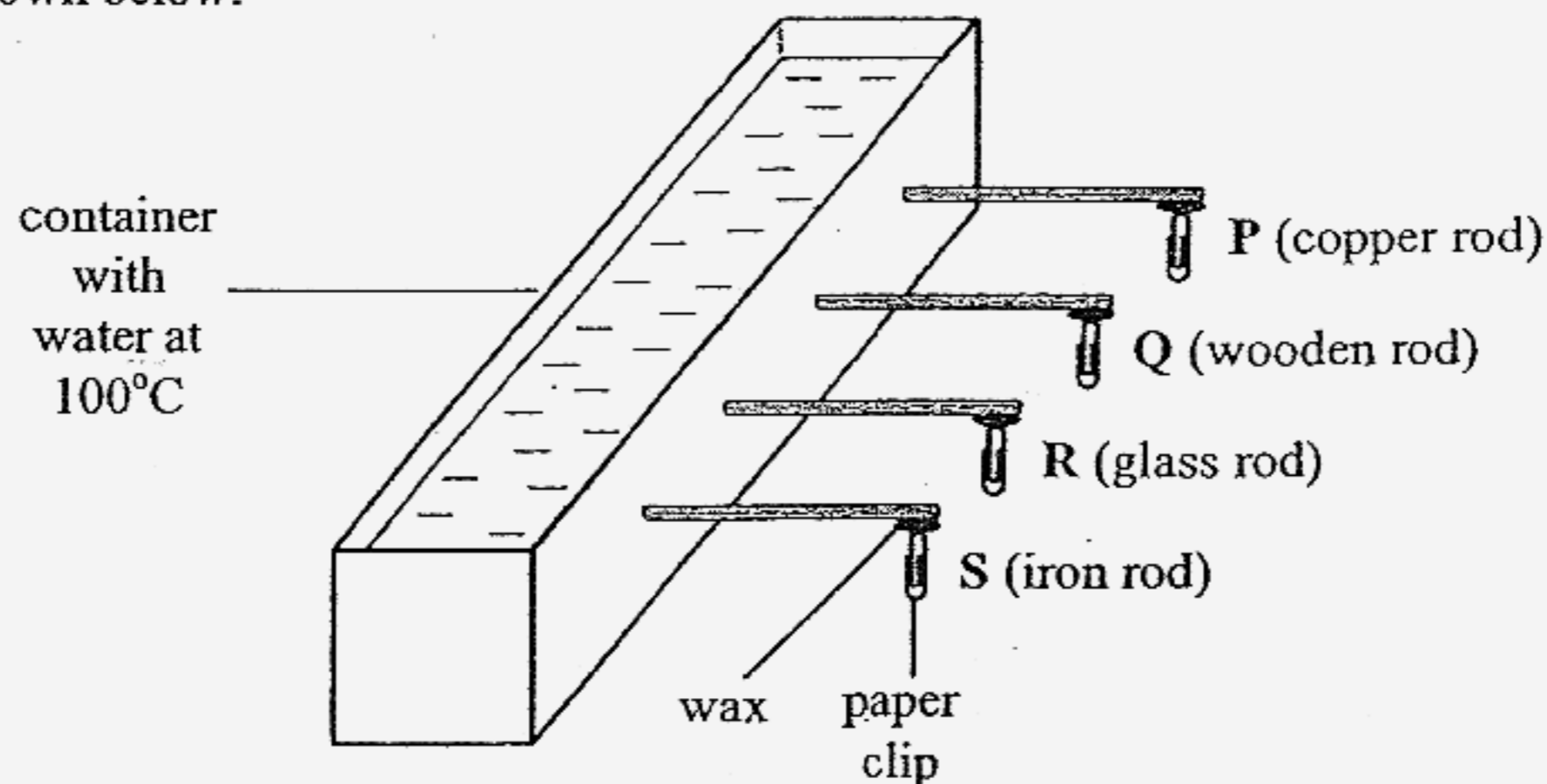


Which of the following actions can help him loosen the metal lid?

- (1) Place the jar in the refrigerator for a few minutes.
- (2) Run cold water over the glass jar for half a minute.
- (3) Run warm water over the metal lid for half a minute.
- (4) Place some ice cubes on top of the metal lid for a few minutes.

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25. Rashid had 4 rods ^{of the same size} made of different materials. He attached a paper clip onto each of the rod with some wax. The four rods were placed in a container of hot water at 100°C as shown below.



Which of the following correctly shows the order in which the paper clips would drop?

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

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For Questions 26 to 30, please refer to Booklet K.
End of Section A

Pei Chun Public School
Semestral Assessment 2 – 2007
Science
Primary 4

Name : _____ () Date : 26 October 2007

Class : Pri. 4 ()

Parent's Signature : _____

Science Teacher : _____

Time : 1 hr 30 min

Marks for Section A	60
Marks for Section B	30
Marks for Booklet K (exclude Section A Qns. 26 to 30)	10
Total Marks	100

Section B (30 marks)

For questions 31 to 42, write your answers in the spaces provided.

31. The properties of material P, Q, R and S are given in the table below.

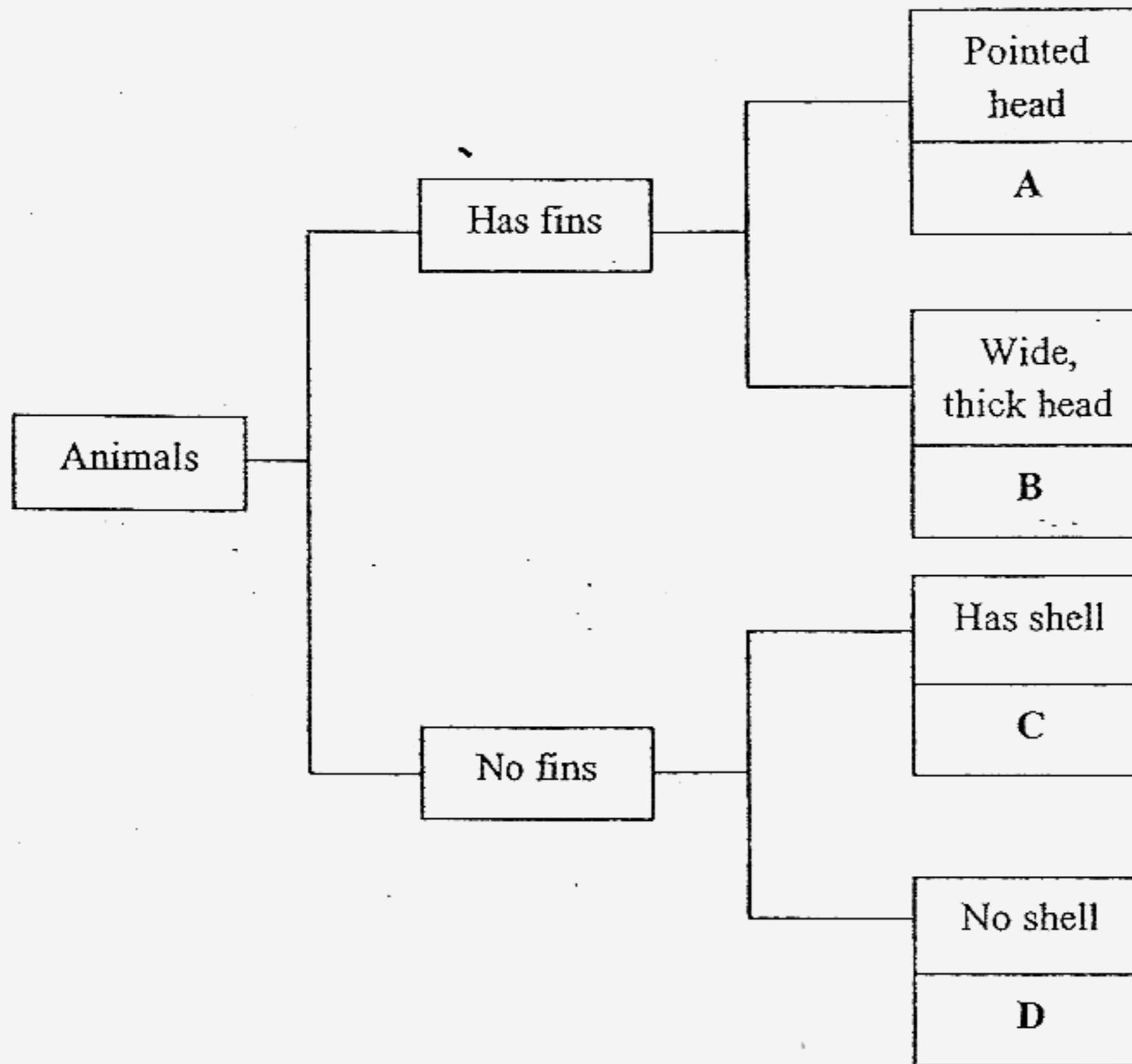
Type of material	Waterproof	Light in weight	Breaks easily
P	Yes	Yes	Yes
Q	Yes	Yes	No
R	No	Yes	No
S	Yes	No	No

a) Which material is most suitable for making water bottles for children? (½ m)

b) Give 3 reasons for your answer in (a). (1½ m)

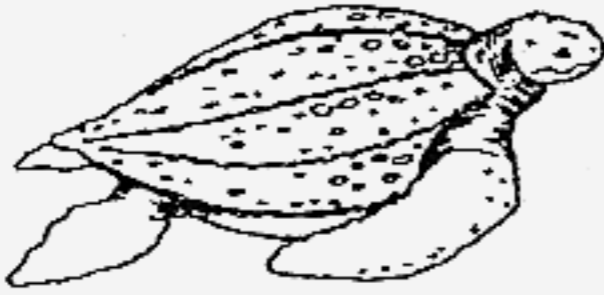
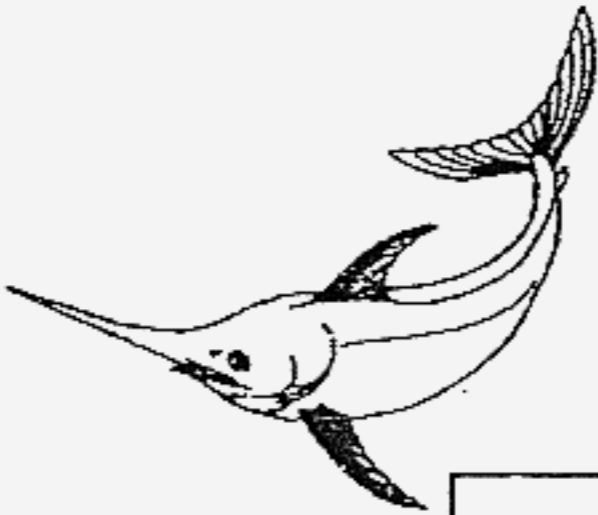
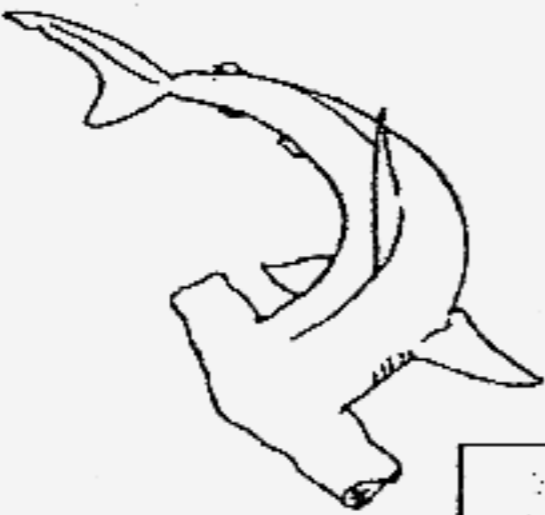

SCORE

32. Study the classification table below carefully.



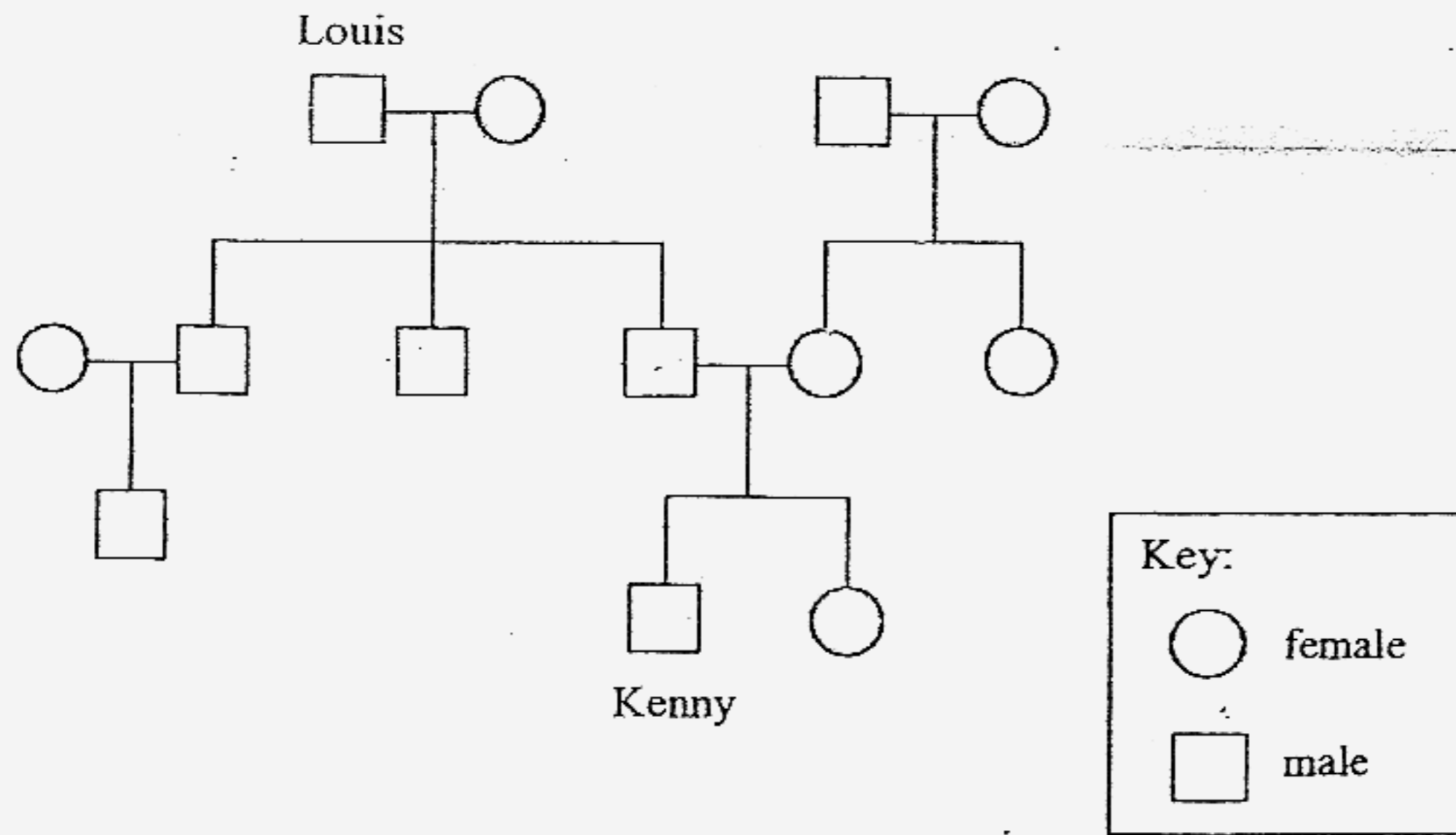
Match the animals with the correct letters given in the table. Write your answers in the given boxes.

(2 m)

 <input data-bbox="789 1846 974 2010" type="checkbox"/> A	 <input data-bbox="1389 1846 1574 2010" type="checkbox"/> B
 <input data-bbox="789 2363 974 2528" type="checkbox"/> C	 <input data-bbox="1389 2363 1574 2528" type="checkbox"/> D

SCORE

33. Study the family tree below

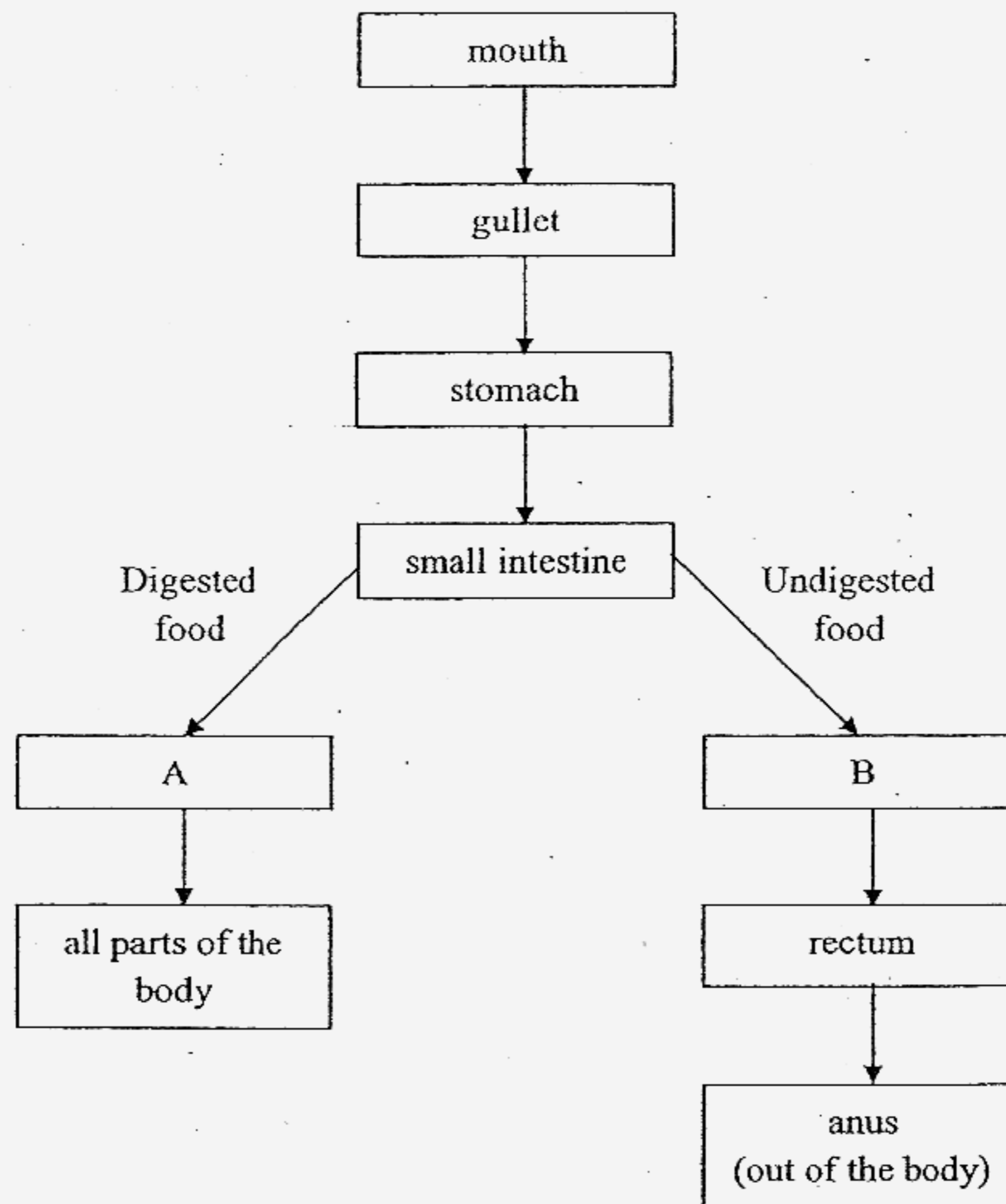


Put a tick (✓) in the correct column for each statement.

(2 m)

Statement	True	False	Not possible to tell
i) Kenny has 2 uncles.			
ii) Louis has 4 children.			
iii) Kenny's mother has a younger sister.			
iv) Kenny's father has a brother who is not married.			

34. Study the diagram below



a) What do A and B represent?

(2 m)

A: _____

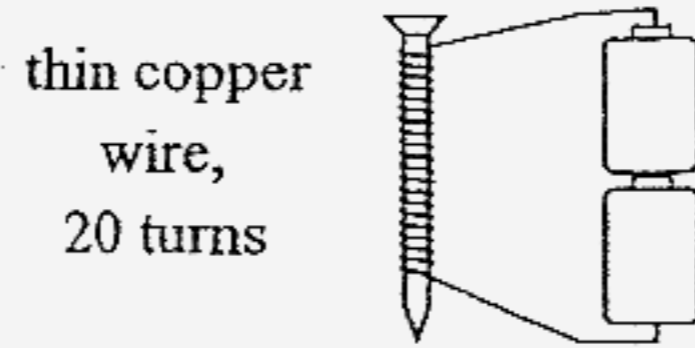
B: _____

b) Which two body systems are working together in this diagram?

(1 m)

35. An iron nail can be magnetised by electricity when it is placed in a coil of wire. Christine wanted to find out how the thickness of the wire coiled around the nail can affect the strength of the electromagnet.

She prepared the set-up as shown below.



- a) Using the North pole of a bar magnet, how can she prove that the nail is now an electromagnet? (1 m)

- b) In order for her experiment to be a fair one, she needed to have another set-up. Which of the following variables should she change and which are the ones should she keep the same?

Complete the table by putting a tick (✓) in the correct boxes.

(1 m)

Variables	Keep the same	Change
i) Number of batteries		
ii) Thickness of the wire used		
iii) Material that the wire is made of		
iv) Number of turns of wire around the nail		

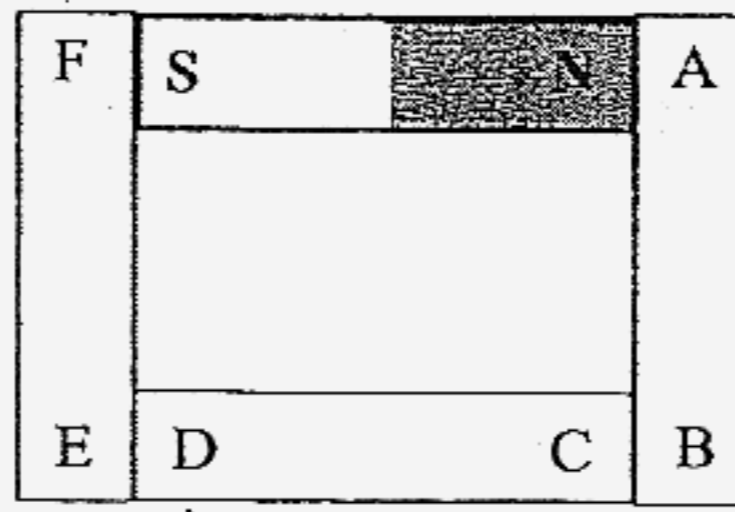
- c) Christine coiled the wire around a glass rod. She connected the wire to the ends of the two batteries. She brought the glass rod near to a paperclip.

Would the paper clip be attracted to the glass rod? Give a reason for your answer.

(1 m)

SCORE

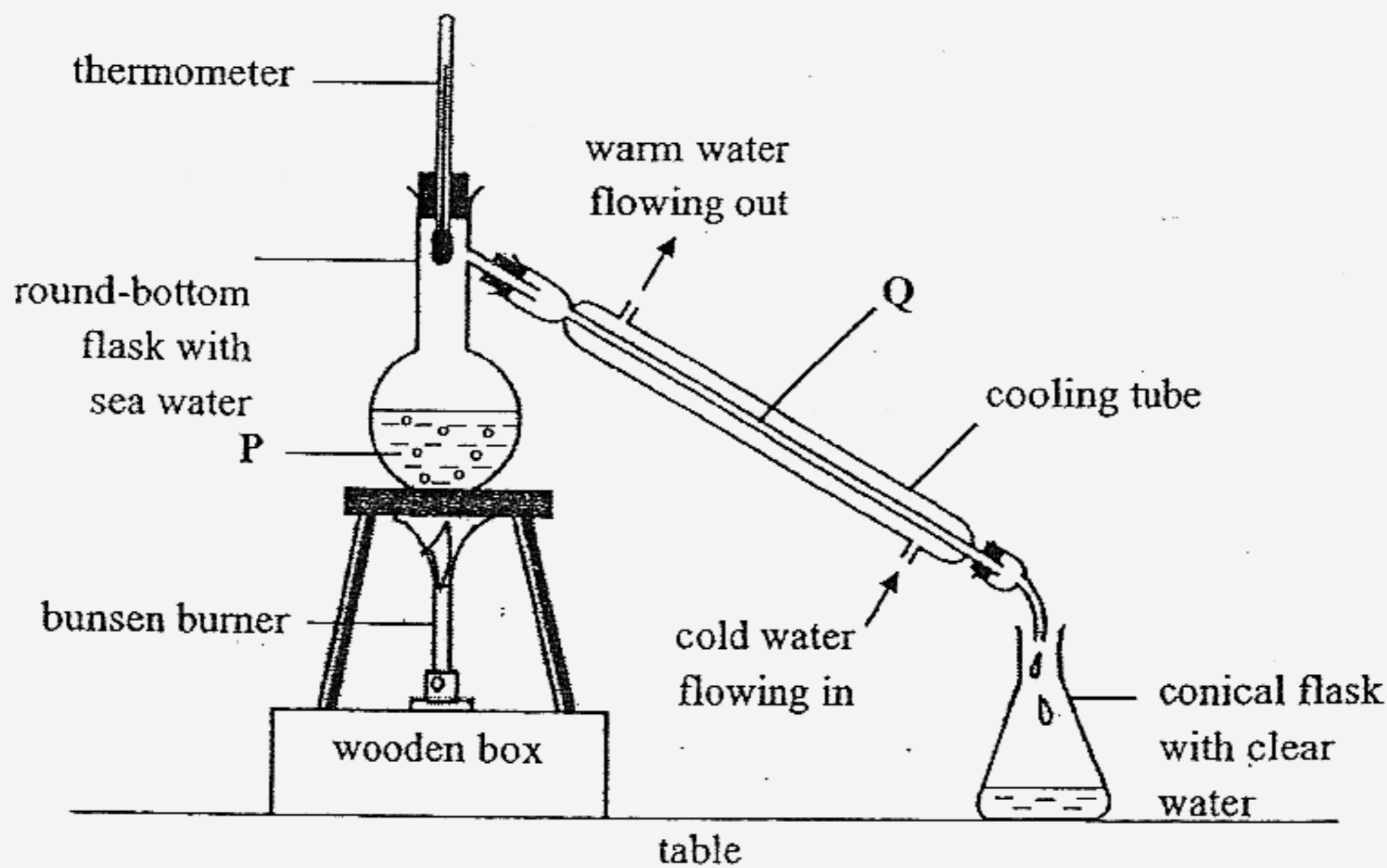
36. Four bar magnets are placed together and their ends are marked as shown in the diagram. Only the poles of one of the magnets have been identified.



What would happen when the ends of the magnets stated in the table below (2 m) are brought close to each other? Put a tick (✓) in the correct boxes.

Ends that are brought close together	Attract	Repel
a) A and D		
b) A and F		
c) B and D		
d) C and F		

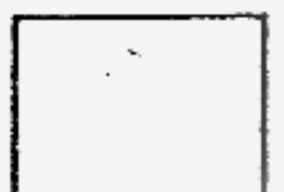
37. Study the diagram below carefully.



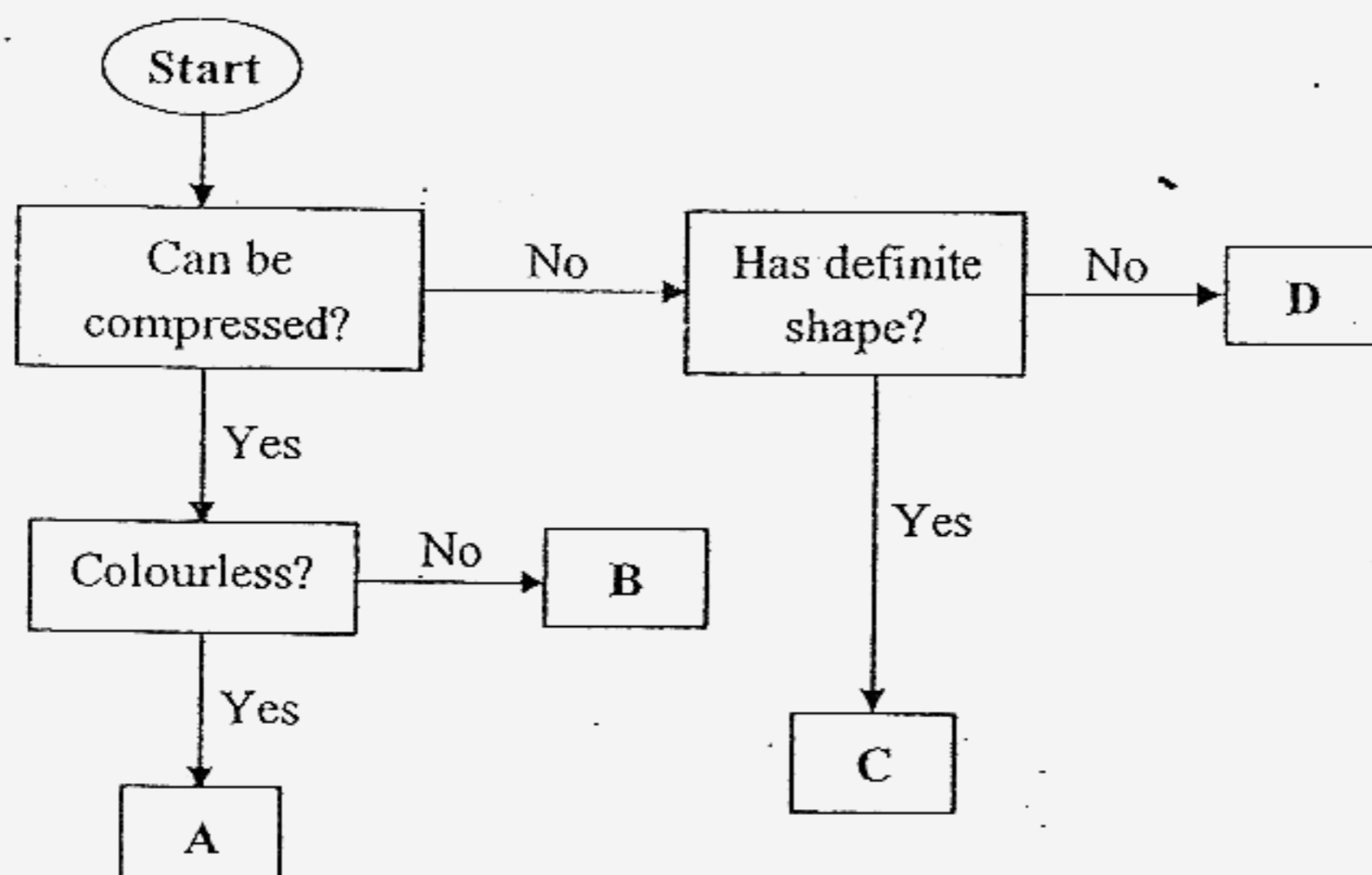
Name the processes that are taking place at part P and Q of the set-up.

(2 m)

Part	Process
P	
Q	



38. The flow chart below describes the properties of some materials at 25°C.



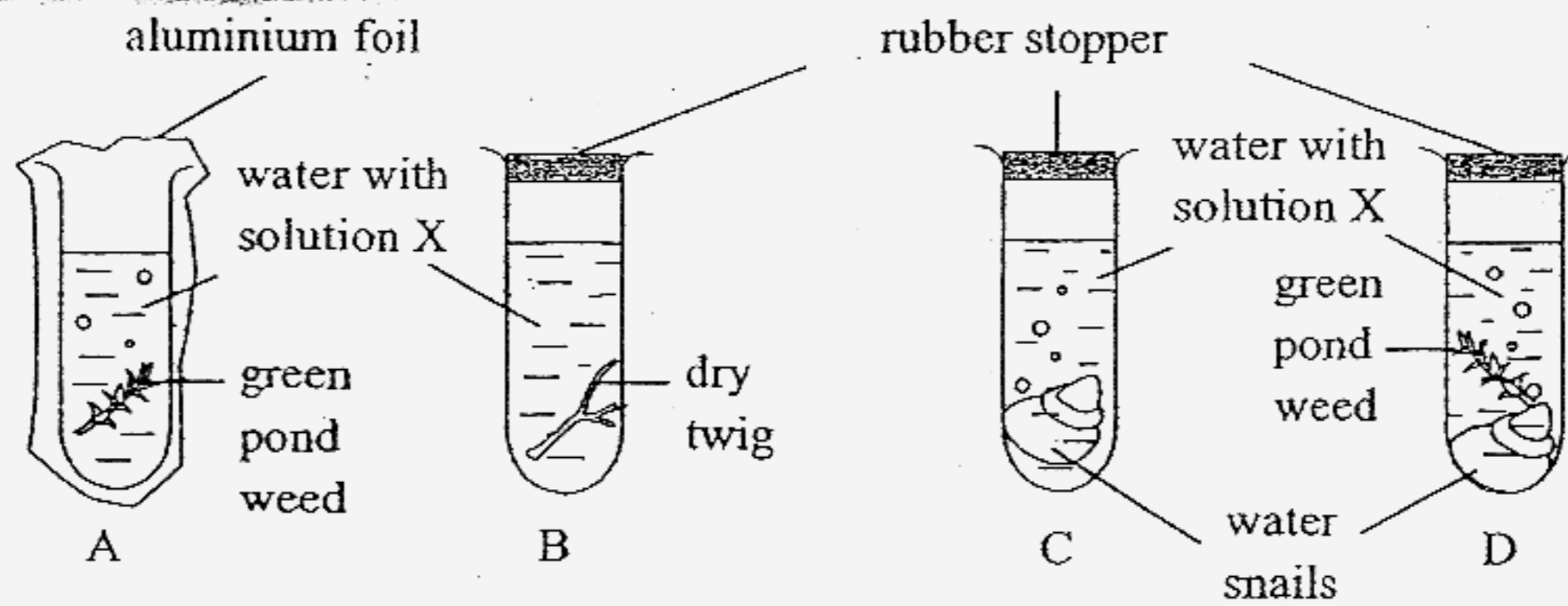
a) Based on the flow chart, what are the properties of B? (1 m)

b) The freezing point of substance X is 18 °C and its boiling point is 65 °C. (1 m)
Which state of matter is substance X in at 25°C?

c) Match the following substances with the letters, A, B, C and D. (1½ m)

Substance	Letter
X	
Candle wax	
Carbon dioxide	

39. Four identical boiling tubes, each with 20 ml of solution X, were placed side by side in a sunny place for a few hours.



When the level of carbon dioxide in the water changes, the colour of solution X changes as shown in the table below.

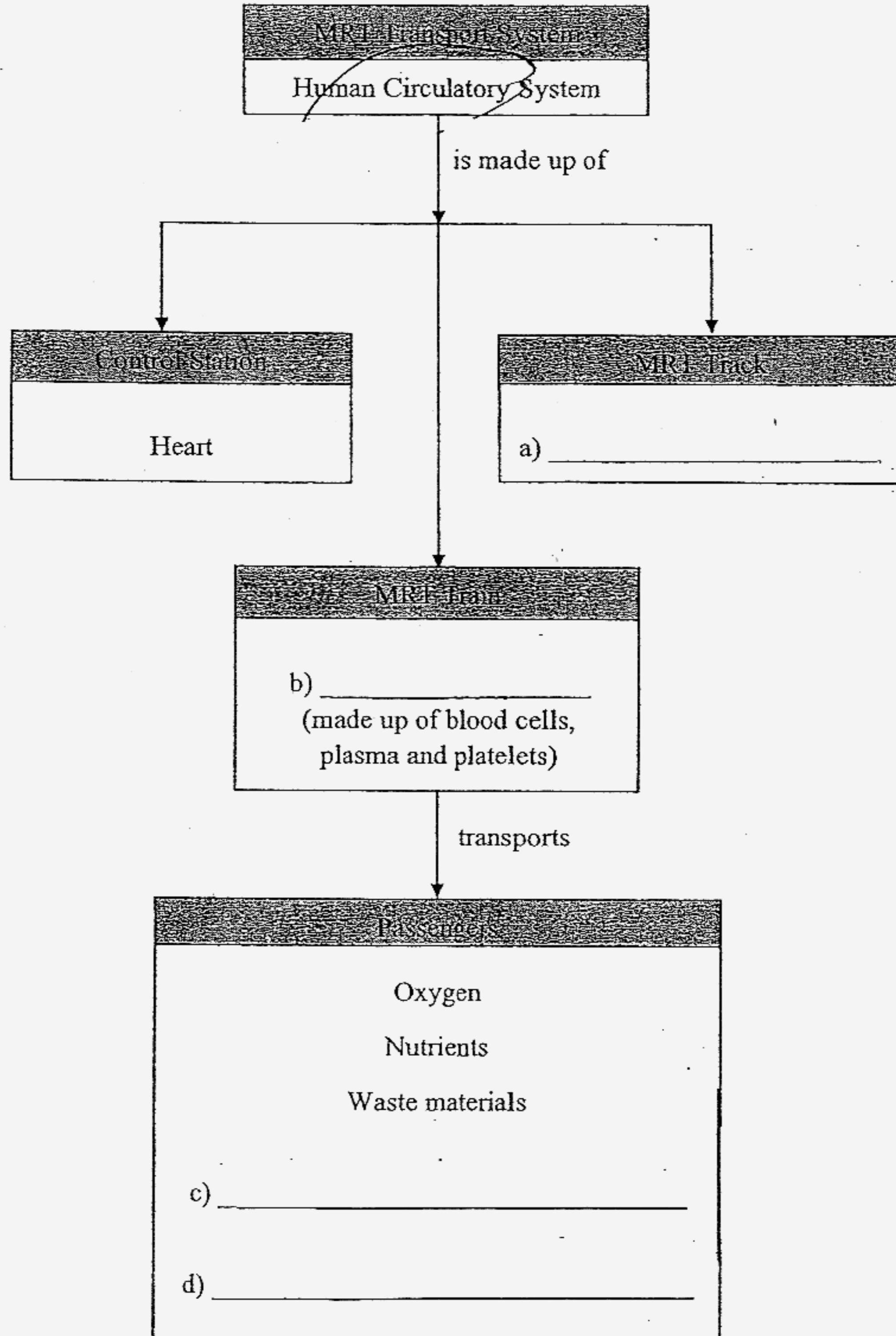
Carbon dioxide level	Colour of solution X
No change	red
Increase	yellow
Decrease	purple

Indicate the colour of solution X in each of the boiling tube in the table below. Put a tick (✓) in the correct boxes. (2 m)

Boiling tube	Red	Yellow	Purple	Impossible to tell
A				
B				
C				
D				

SCORE

40. Mandy is revising for her exam. She compared the human circulatory system to the Mass Rapid Transit (MRT) system to help her better remember how the system works. Complete the concept map below by filling in the blanks. (2 m)



SCORE

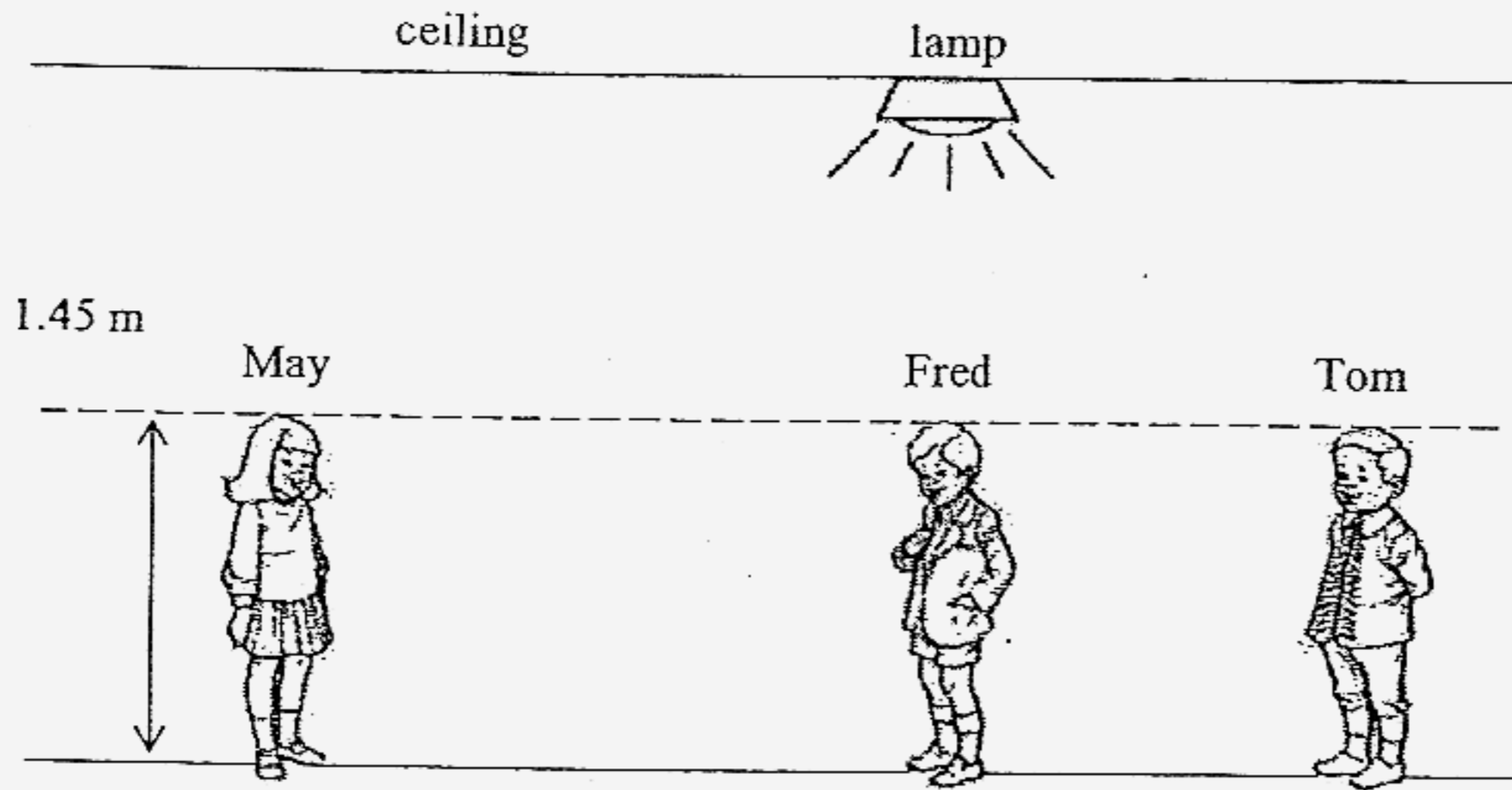
41. Sumin shone a torch through a thin piece of wood onto a red plastic mug as shown below.



ai) Using two crosses (×), indicate on the wall the length of the shadow on the wall. (1 m)

ii) What would happen to the shadow if the mug was moved nearer to the wall? (1 m)

- b) Three children of the same height, May, Fred and Tom, stood under a lamp as shown below. They wanted to find out how the lengths of their shadows were affected by where they stood. They had to stand straight with both their feet on the ground and were not allowed to raise their hands in the air.

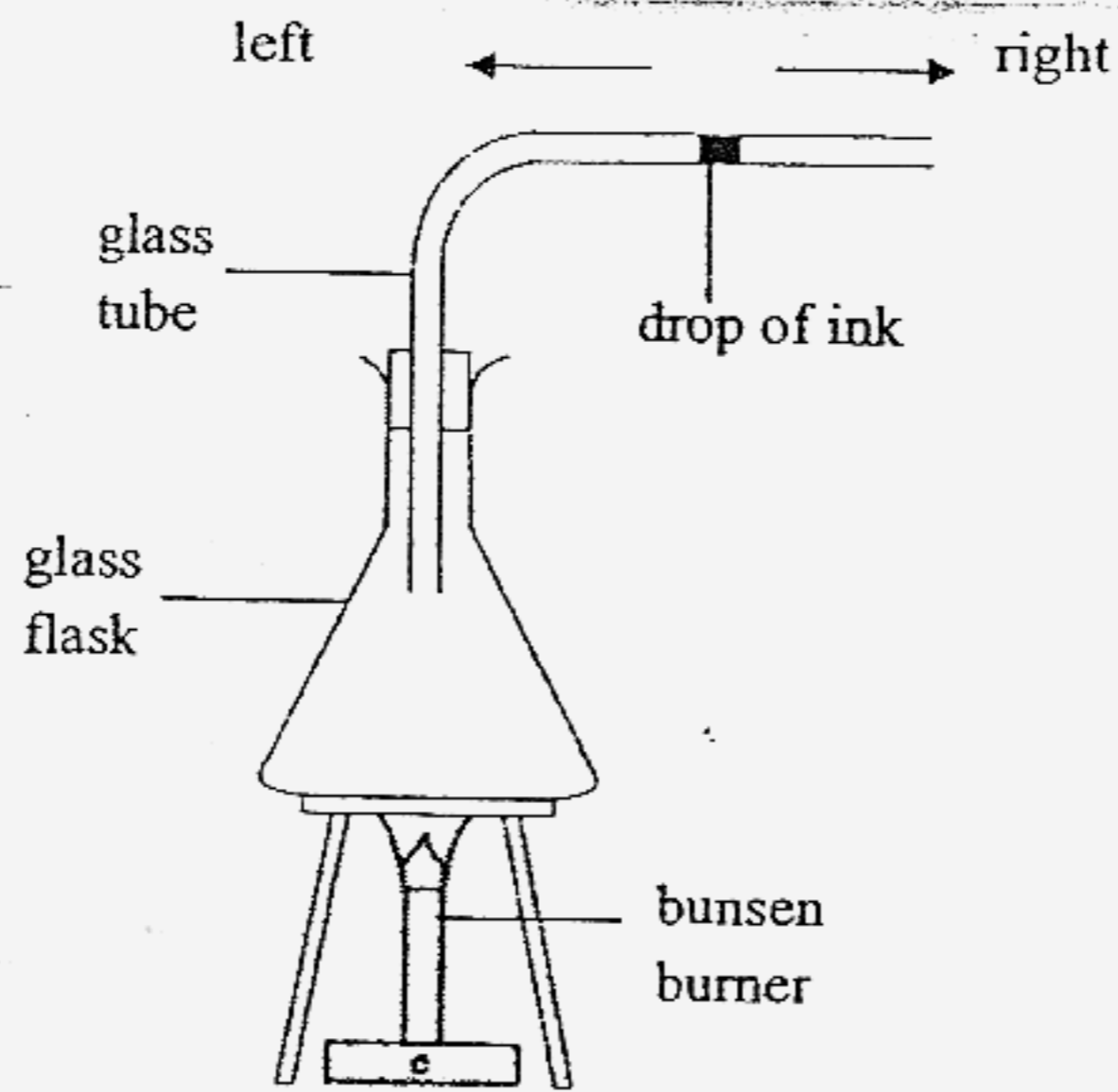


- i) Based on the diagram, which child had the shortest shadow? (½ m)

- ii) Based on the diagram, which child had the longest shadow? (½ m)

- iii) What should Tom do to make his shadow longer? (1 m)

42. James set up the experiment ~~shown~~ shown below. A drop of red ink was placed in the tube connected to a glass flask. The flask was heated for 5 minutes.



- a) What will happen to the drop of ink? (½ m)

- b) Explain your answer in (a). (2 m)

For Questions 43 to 46, please refer to Booklet K.

End of Paper

Set by : Ms Samantha Gooi
Vetted by: P4 and P6 Science Committee teachers

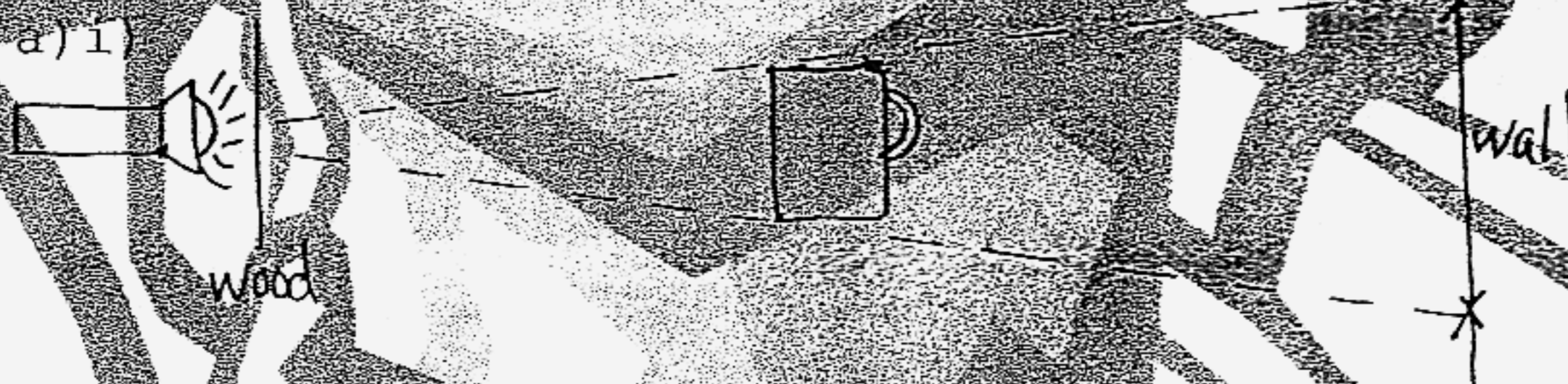
1. 1 31) a) Material Q.
2. 3 b) It the material is not waterproof
3. 4 the material will absorb the water.
4. 1 It must be light in weight so that
5. 4 it can be carried around easily.
6. 2 It the child drops it, it will not
7. 4 break easily.
8. 3
9. 2 32) A: C B: A C: B D: D
10. 3
11. 2 33) i) T ii) F iii) N iv) T
12. 1
13. 4 34) a) A: blood vessels.
14. 4 B: large intestine.
15. 4 b) The digestive system and the
16. 3 circulatory system.
17. 3
18. 2 35) a) Bring the North pole of the magnet
19. 3 to both ends of the iron nail. If
20. 4 it repels one end of the iron nail,
21. 1 the nail is now a magnet.
22. 2 b) i) Keep the same ii) Change
23. 1 iii) Keep the same iv) Keep the same
24. 3 c) No. As glass is not a magnetic
25. 1 material it will never be magnetized
by electricity.
36) a) Attract b) Attract c) Repel
d) Attract
37) P: Boiling Q: Condensation

38) a) It is not colourless but can be compressed.
b) Liquid.
c) X: D
Candle wax: C
Carbon dioxide: A

39) A: Yellow B: Red C: Yellow D: Impossible to tell

40) a) blood vessels b) blood c) carbon dioxide
d) water

41) a) i)



ii) The shadow will become smaller and sharper.
b) i) Fred ii) May iii) Stand further away from the lamp.

42) a) The drop of ink will move slightly to the left, then towards the right.

b) When the flask is heated, it expands slightly, causing the drop of ink to move left slightly. Then, when the air in the flask is heated, it expands, causing the drop of ink to move right.