



RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (1) 2018

Section A	56
Section B	44
Your score out of 100 marks	
Parent's signature	

Name : _____ Index No : _____ Class: P4 _____ Date: _____

8 May 2018

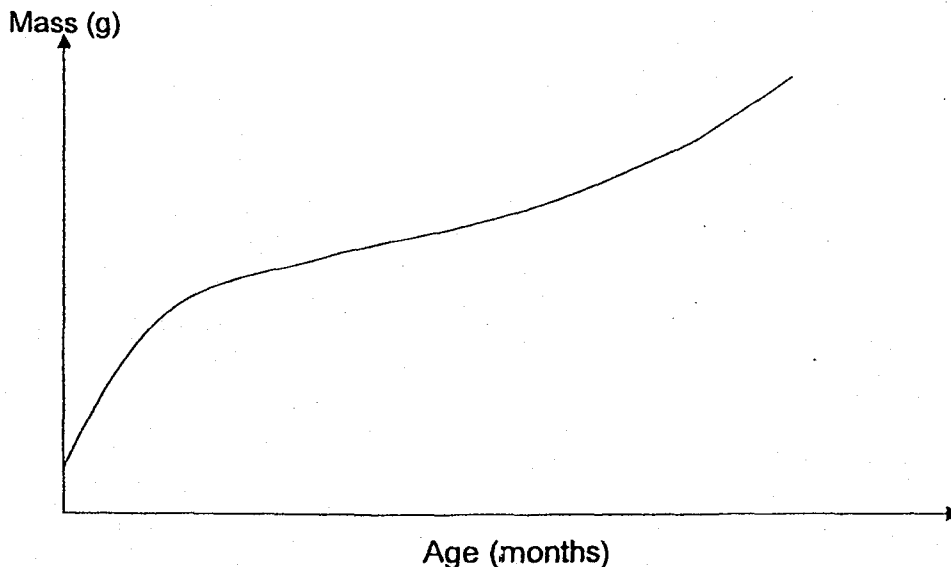
SCIENCE

ATT: 1 h 45 min

SECTION A (28 x 2 marks)

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

1. The graph below shows the mass of a baby over a period of twelve months.



The graph shows that living things _____.

- (1) grow
- (2) reproduce
- (3) need air, food and water
- (4) respond to changes in its surroundings

2. Which one of the following is **not** a characteristic of an insect?

- (1) They can fly.
- (2) They have feelers.
- (3) They have six legs.
- (4) They have three body parts.

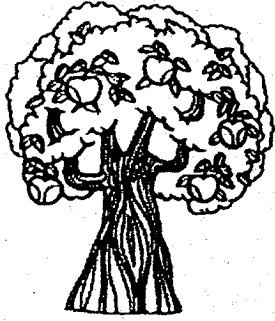


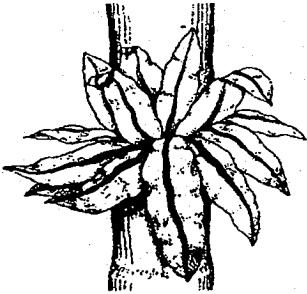
3. The table below shows some information on the characteristics of animals W, X, Y and Z. A tick (✓) shows the presence of the characteristic.

	W	X	Y	Z
Can it swim?	✓	✓		✓
Does it have gills?		✓		
Does it have an outer covering of scales?	✓	✓		

Which one of the following is a fish?

- (1) W
- (2) X
- (3) Y
- (4) Z

4. The table below shows how some living things can be grouped.

Group P	Group Q
 <p>apple tree</p>	 <p>bracket fungus</p>
 <p>daisy plant</p>	 <p>bird's nest fern</p>

Which one of the following shows the most suitable heading for groups P and Q?

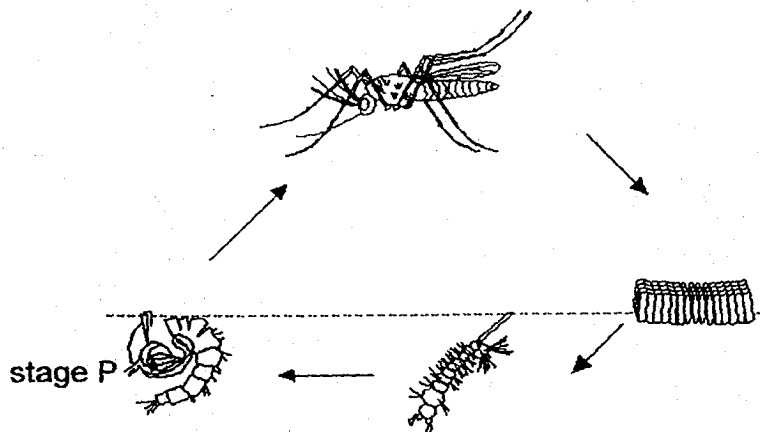
	Group P	Group Q
(1)	Has leaves	Does not have leaves
(2)	Flowering Plants	Non-Flowering Plants
(3)	Makes its own food	Does not make its own food
(4)	Reproduce by seeds	Reproduce by spores

5. Which of the following statement(s) describe(s) the similarities between plants and fungi?

- A They have a stem.
- B They reproduce by seeds.
- C They do not make their own food.
- D They respond to changes around them.

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

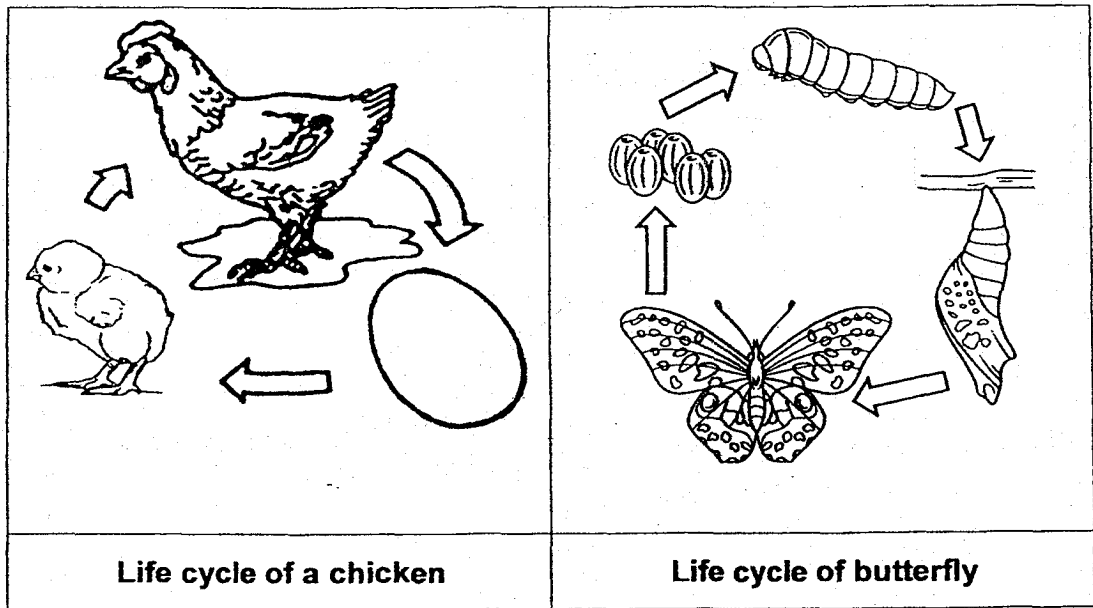
6. The diagram below shows the life cycle of a mosquito.



Which one of the following statements is true about stage P?

- (1) It can fly.
- (2) It does not feed.
- (3) It can reproduce.
- (4) It resembles the adult.

7. The diagrams below show the life cycle of a chicken and a butterfly.

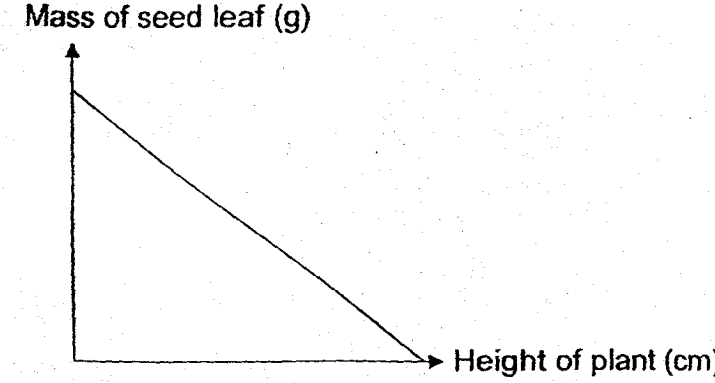
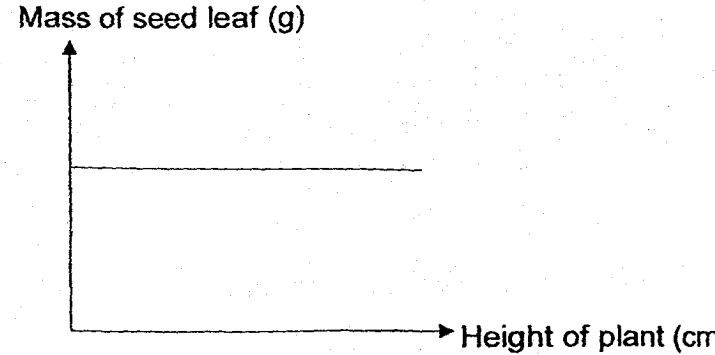
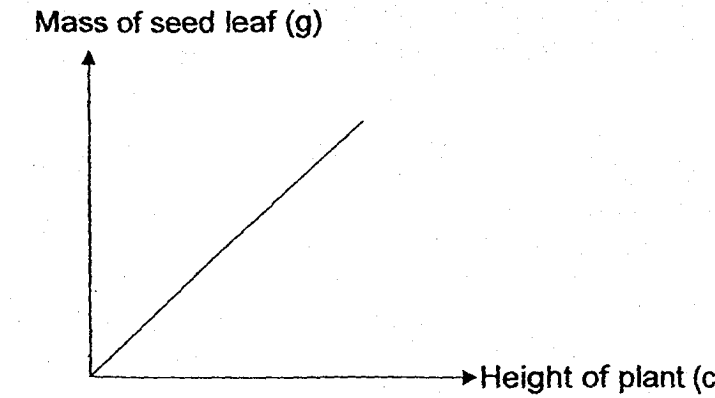
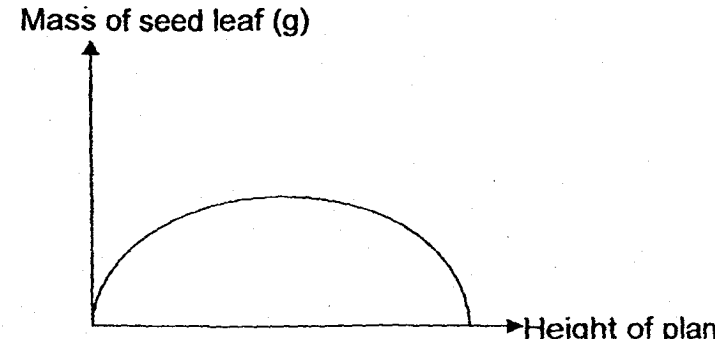


Which of the following statement(s) is/are correct?

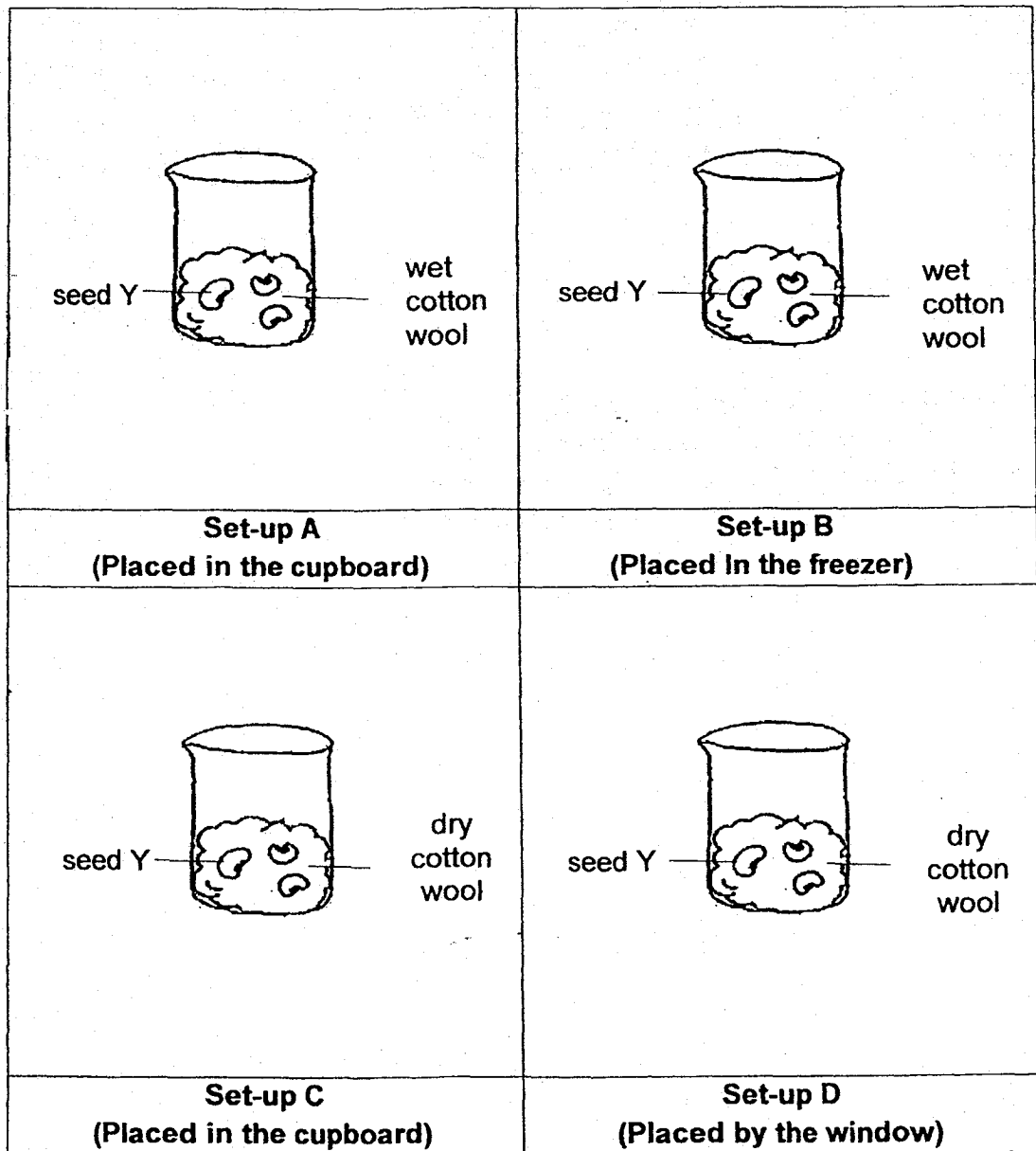
- A Both reproduce by laying eggs.
- B Both have three-stage life cycle.
- C Both the young resemble the adults.
- D Both have wings as soon as they are hatched.

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

8. Joshua grew some beans. Which of the following correctly shows the dry mass of the seed leaf as the seedling increases in height?

(1)	 <p>Mass of seed leaf (g)</p> <p>Height of plant (cm)</p>
(2)	 <p>Mass of seed leaf (g)</p> <p>Height of plant (cm)</p>
(3)	 <p>Mass of seed leaf (g)</p> <p>Height of plant (cm)</p>
(4)	 <p>Mass of seed leaf (g)</p> <p>Height of plant (cm)</p>

9. The diagram below shows four set-ups with identical number of seeds Y placed in different conditions.



In which of the following set-ups will seeds Y germinate?

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

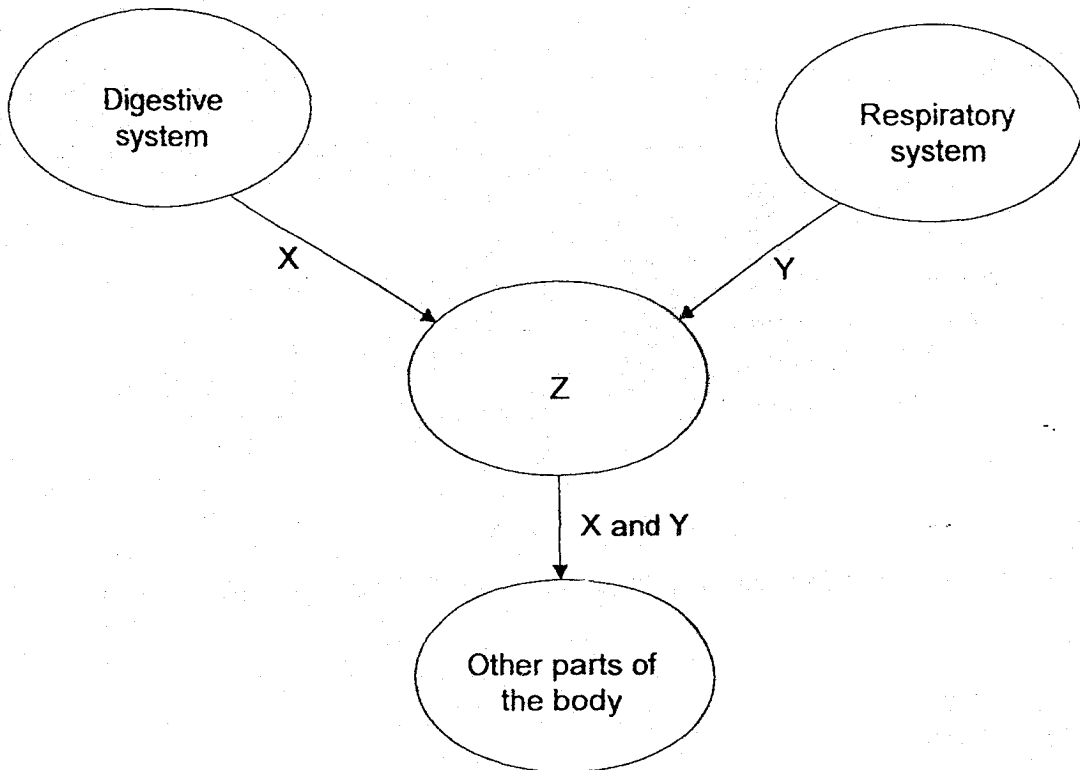
10. Which one of the following set of organs belongs to human digestive system?

(1)	nose	lungs	gullet	heart
(2)	heart	stomach	blood	blood vessels
(3)	mouth	windpipe	small intestine	large intestine
(4)	gullet	stomach	small intestine	mouth

11. Which one of the following shows the function of the skeletal system?

- (1) Remove carbon dioxide from the body.
- (2) Protect organs like the brains and lungs.
- (3) Breaks down food into simpler substances.
- (4) Transports nutrients to other parts of the body.

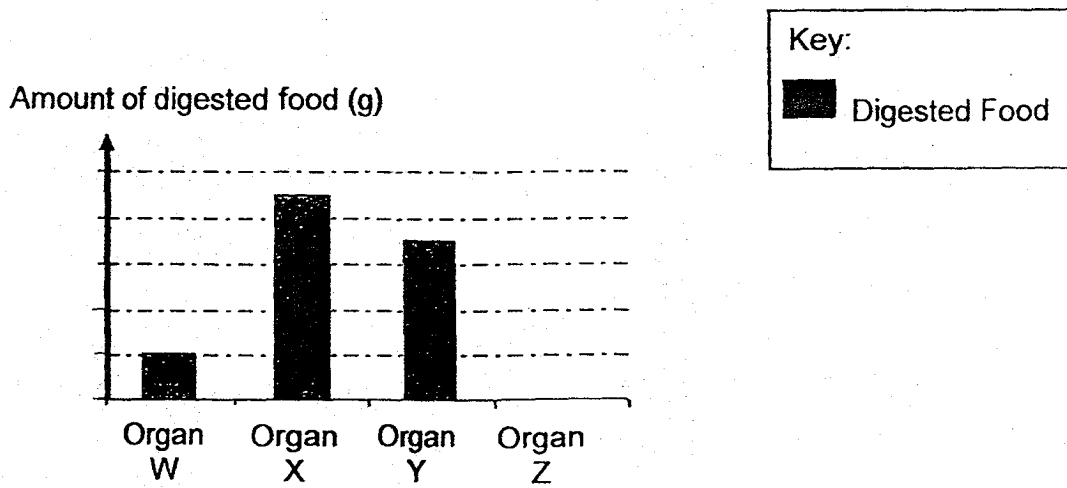
12. The diagram below shows how substance(s) is/are moved from one system to another. The arrow indicates the direction in which the substance(s) is/are moved.



Which of the following best represent substances X and Y and system Z?

	X	Y	Z
(1)	carbon dioxide	nutrients	Circulatory system
(2)	oxygen	nutrients	Muscular system
(3)	nutrients	oxygen	Circulatory system
(4)	oxygen	carbon dioxide	Muscular system

13. Jeremy ate a bowl of noodles for lunch. The graph below shows the amount of digested food in different organs of the digestive system.

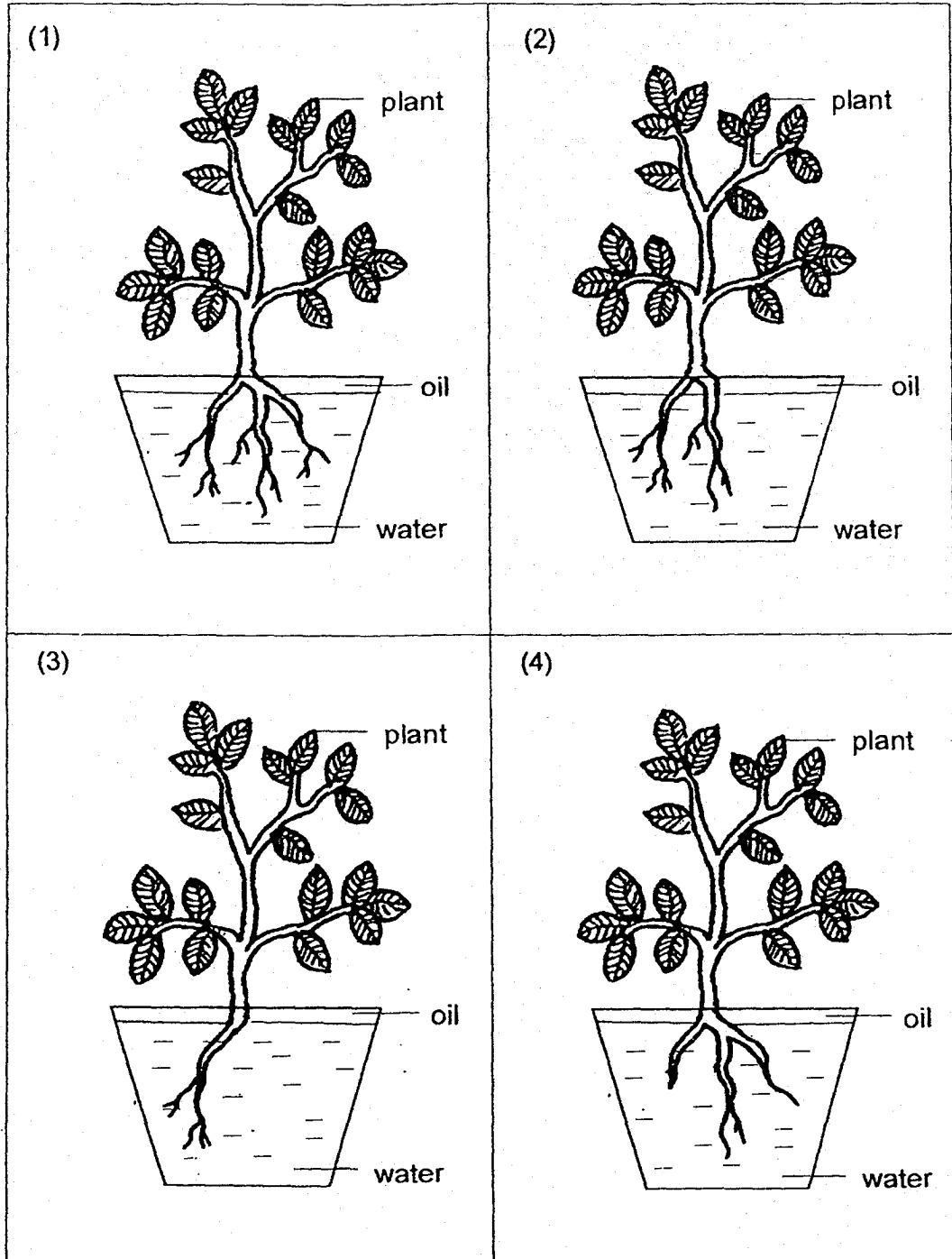


Which of the following organs is likely to be the small intestines?

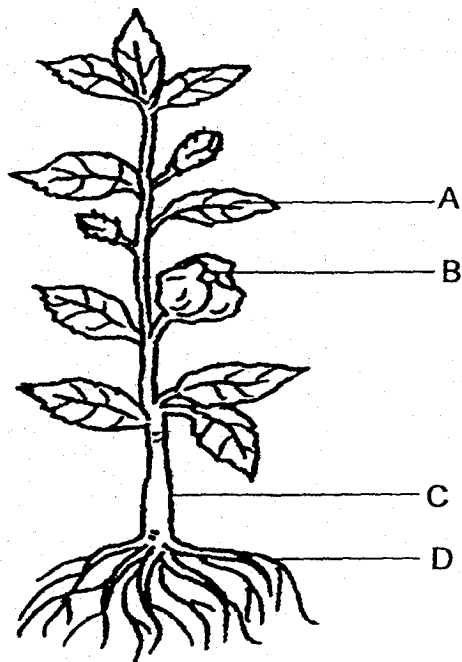
- (1) Organ W
- (2) Organ X
- (3) Organ Y
- (4) Organ Z

14. Four identical plants with different number of roots were placed into four identical pots filled with same amount of water.

Which one of the following set-ups would most likely have the least amount of water left in the pot after one week?



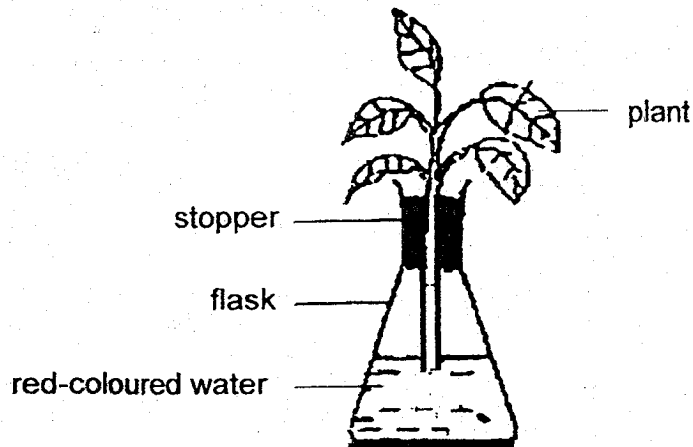
15. Four different parts of a plant, A, B, C and D are labelled as shown below.



Which one of the following parts helps to make food?

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

16. Jerry put a plant into a flask of red-coloured water as shown in the diagram below.



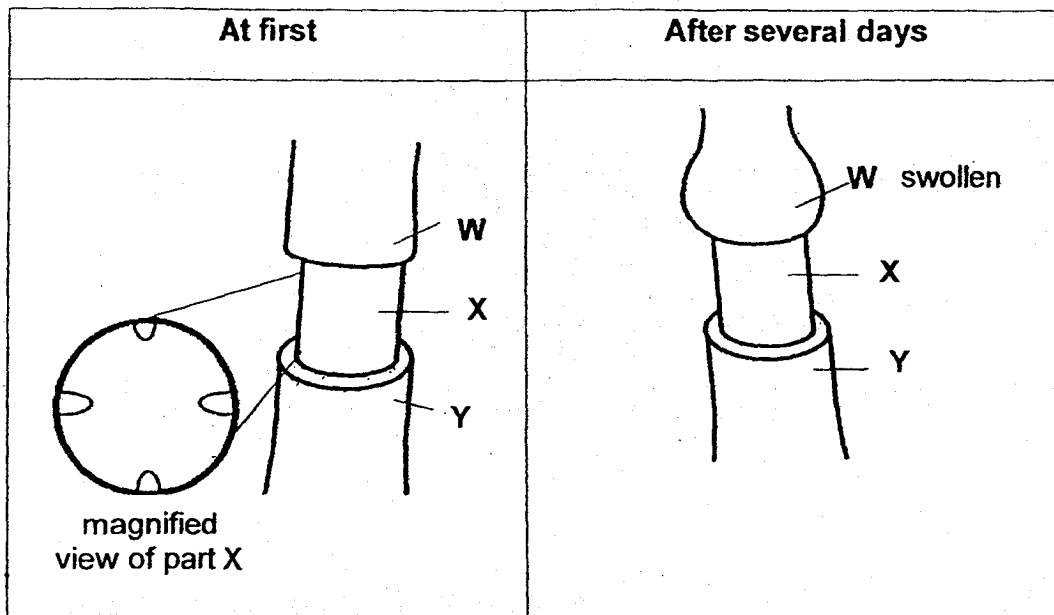
The table below shows some information of plants of the same type, A, B and C, that were placed in red-coloured water. A tick (✓) shows the presence of parts of the plant.

Parts of plants	Plants		
	A	B	C
Water-carrying tubes	✓	✓	
Food-carrying tubes	✓		

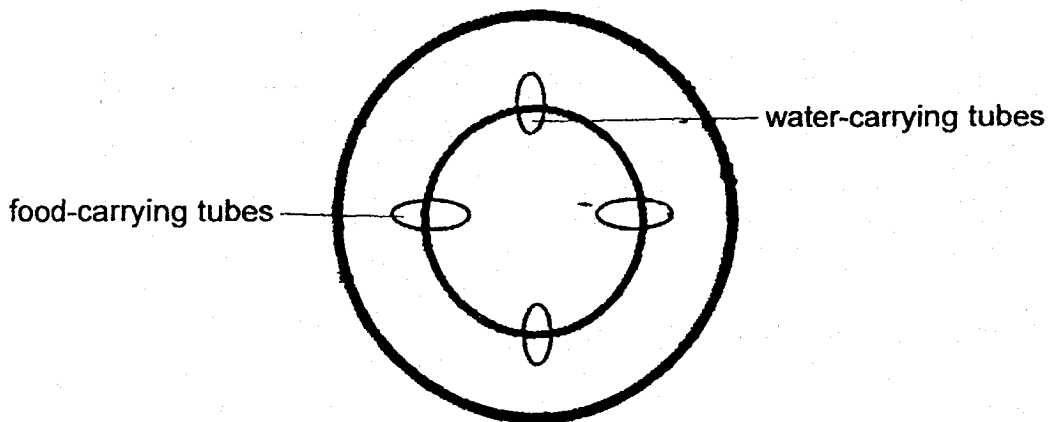
In which plant(s) would the leaves turn red after three days?

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

17. Allie removed part of the outer ring of a plant. After several days, she observed swelling near the top part of the stem where the ring was removed.



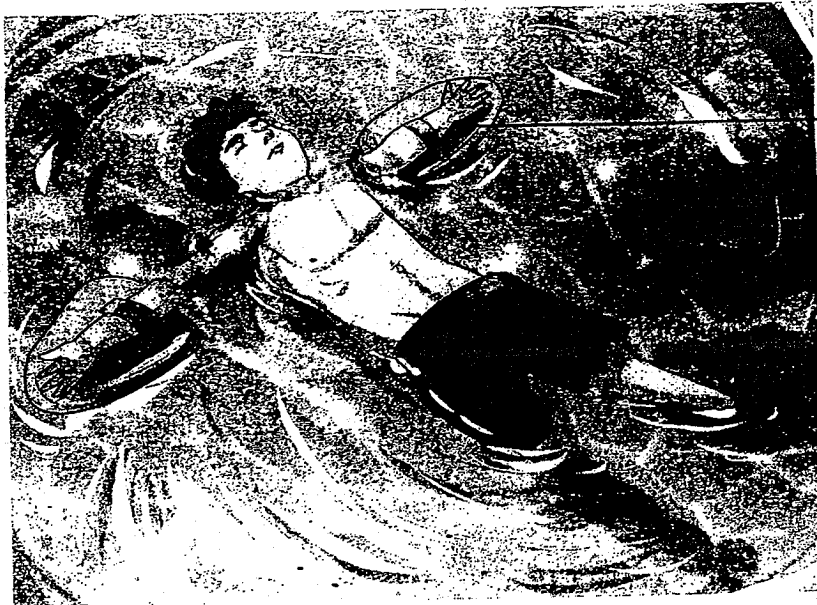
Cross section of a normal stem



Which one of the following is likely the explanation for the swollen part of the stem observed at W?

- (1) Food cannot be transported from W to Y.
- (2) Food cannot be transported from Y to W.
- (3) Water cannot be transported from W to Y.
- (4) Water cannot be transported from Y to W.

18. John uses a personal flotation device placed around his arms to help keep him float on his back while he relaxes in the pool as shown in the diagram below.



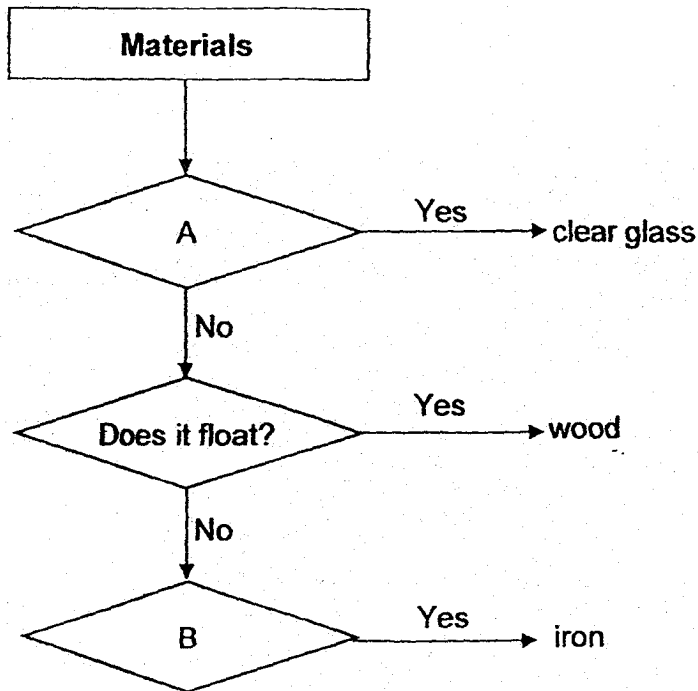
The table below shows some information on the properties of materials P, Q, R and S. A tick (✓) shows the presence of the property.

Property / Material	Flexible	Able to float	Waterproof	Allow light to pass through
P	✓			✓
Q			✓	✓
R		✓	✓	
S	✓		✓	

Which one of the following materials is most suitable to be used to make the flotation device?

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

19. The flow chart below shows how some materials are grouped.



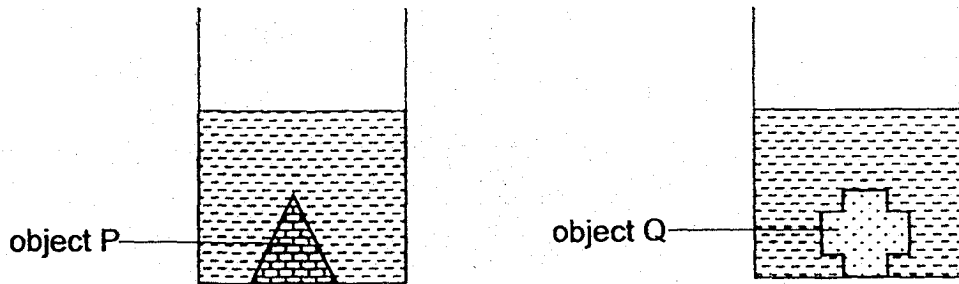
Which one of the following correctly represents questions in A and B?

	A	B
(1)	Is it hard?	Is it light?
(2)	Is it strong?	Does it break easily?
(3)	Does it allow light to pass through?	Is it strong?
(4)	Does it allow light to pass through?	Is it flexible?

20. Which one of the following is a matter?

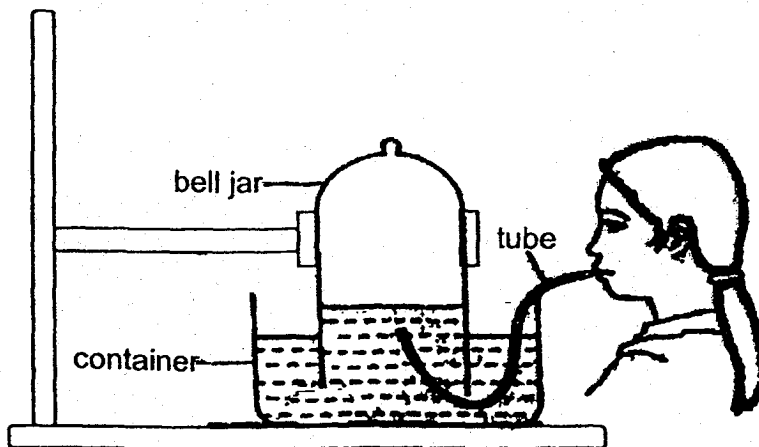
- (1) Sunlight
- (2) Thunder
- (3) Lightning
- (4) Raindrops

21. Meili filled two beakers with equal amount of water. She then placed objects P and Q in each of the beaker and observed that the water level rose to the same height as shown in the diagram below.



Which one of the following statements about objects P and Q is correct?

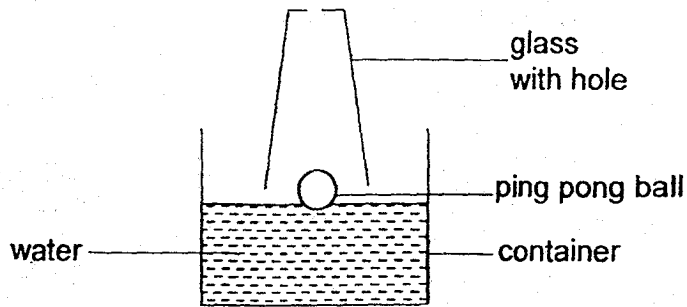
- (1) They have the same mass.
 - (2) They have the same volume.
 - (3) They have the same weight.
 - (4) They are made of the same material.
22. Izzy set up the experiment shown below.



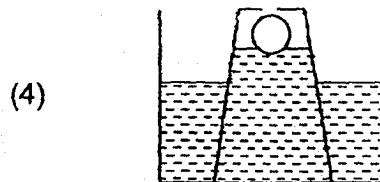
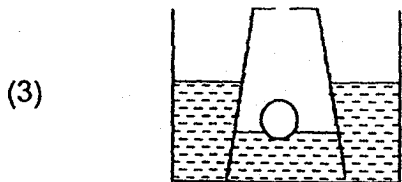
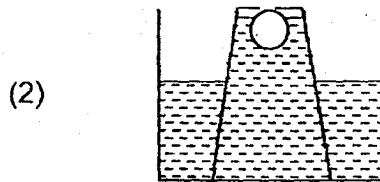
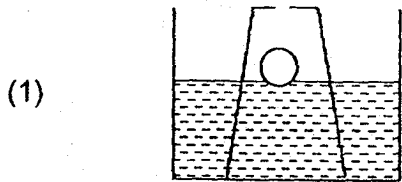
What would she observe after she had blown air into the tube for twenty seconds?

- A Water level in the bell jar would increase.
 - B Water level in the container would increase.
 - C Volume of air in the bell jar would increase.
 - D Volume of water in the container would decrease.
- (1) A and B only
 - (2) B and C only
 - (3) B and D only
 - (4) A, B, C and D

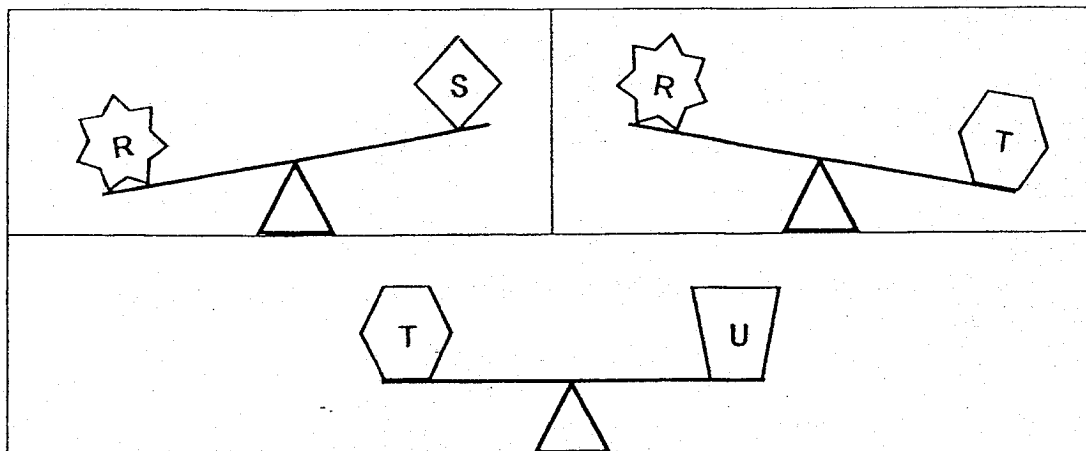
23. A ping pong ball was placed in a container of water as shown below. An empty glass with a hole was then pushed into the container.



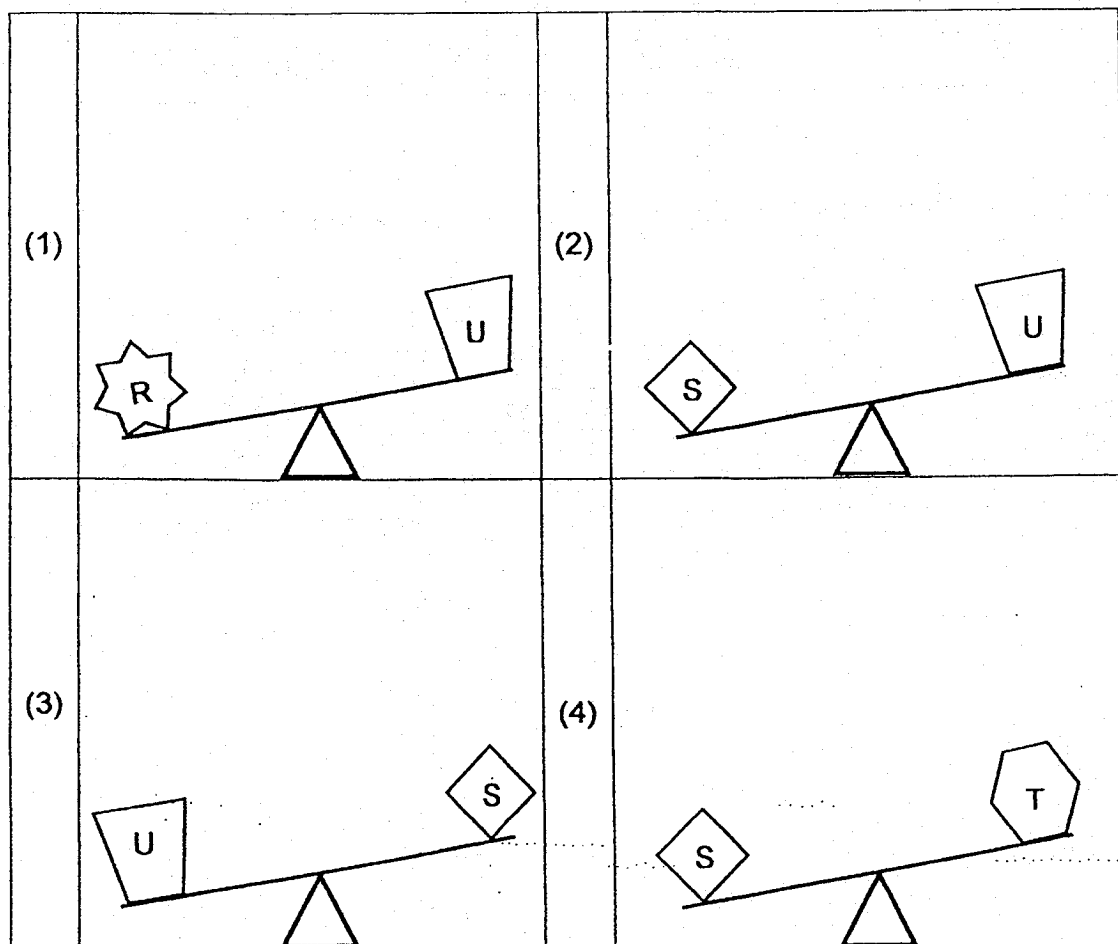
Which one of the following shows the correct observation after the glass was pushed into the container of water?



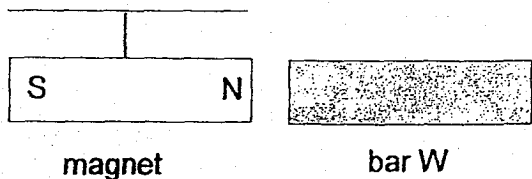
24. The diagrams below shows the results of placing objects R, S, T, and U on a balance.



Which one of the following shows the correct observation?



25. Isabella hung a magnet from the top of her table and labelled the north-pole and south-pole as N and S respectively. She then placed three bars, W, X, and Y, next to both poles of the magnet one at a time.



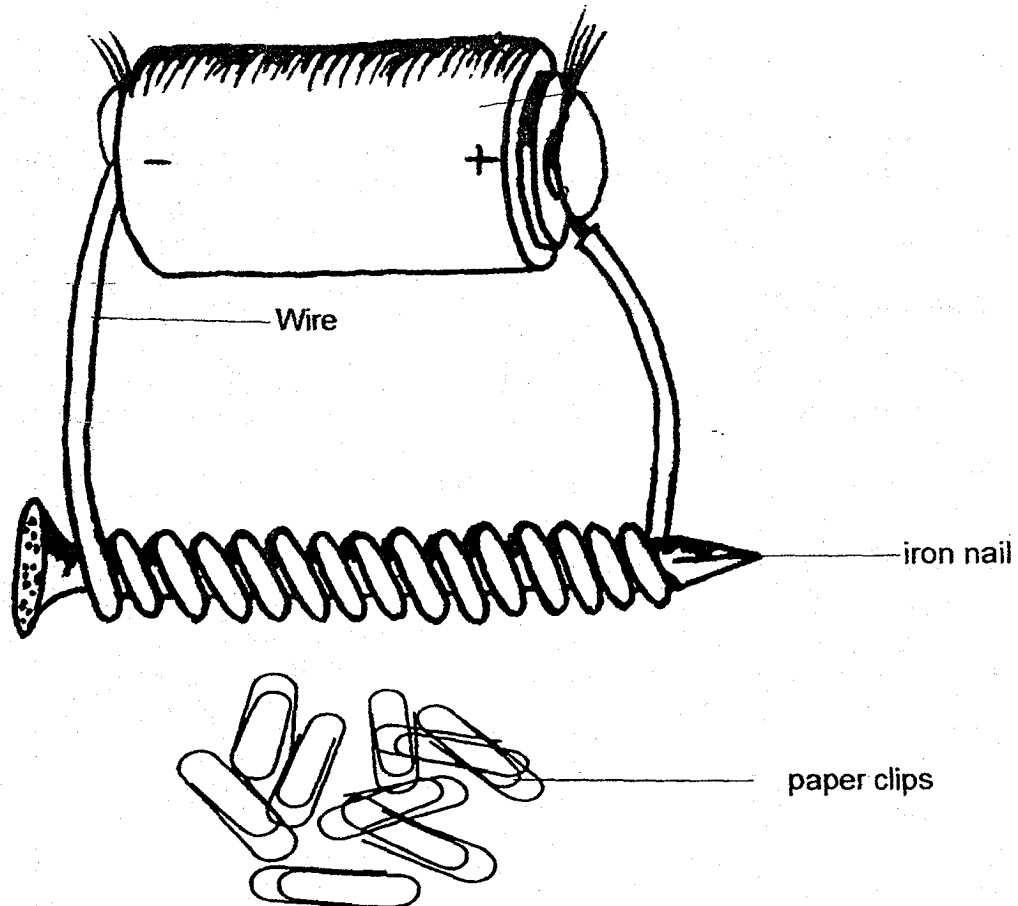
She then recorded the interactions between the magnet and the bars in the table below.

Bar	Interaction between the bar and poles of magnet	
	N-Pole	S-pole
W	Attraction	Attraction
X	No interaction	No interaction
Y	Attraction	Repulsion

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

	Bar W	Bar X	Bar Y
(1)	Steel	Wood	Magnet
(2)	Steel	Magnet	Wood
(3)	Magnet	Steel	Wood
(4)	Magnet	Wood	Steel

26. Sam made an electromagnet using an iron nail placed in an electric circuit as shown below. He observed that only some paper clips were attracted to it.

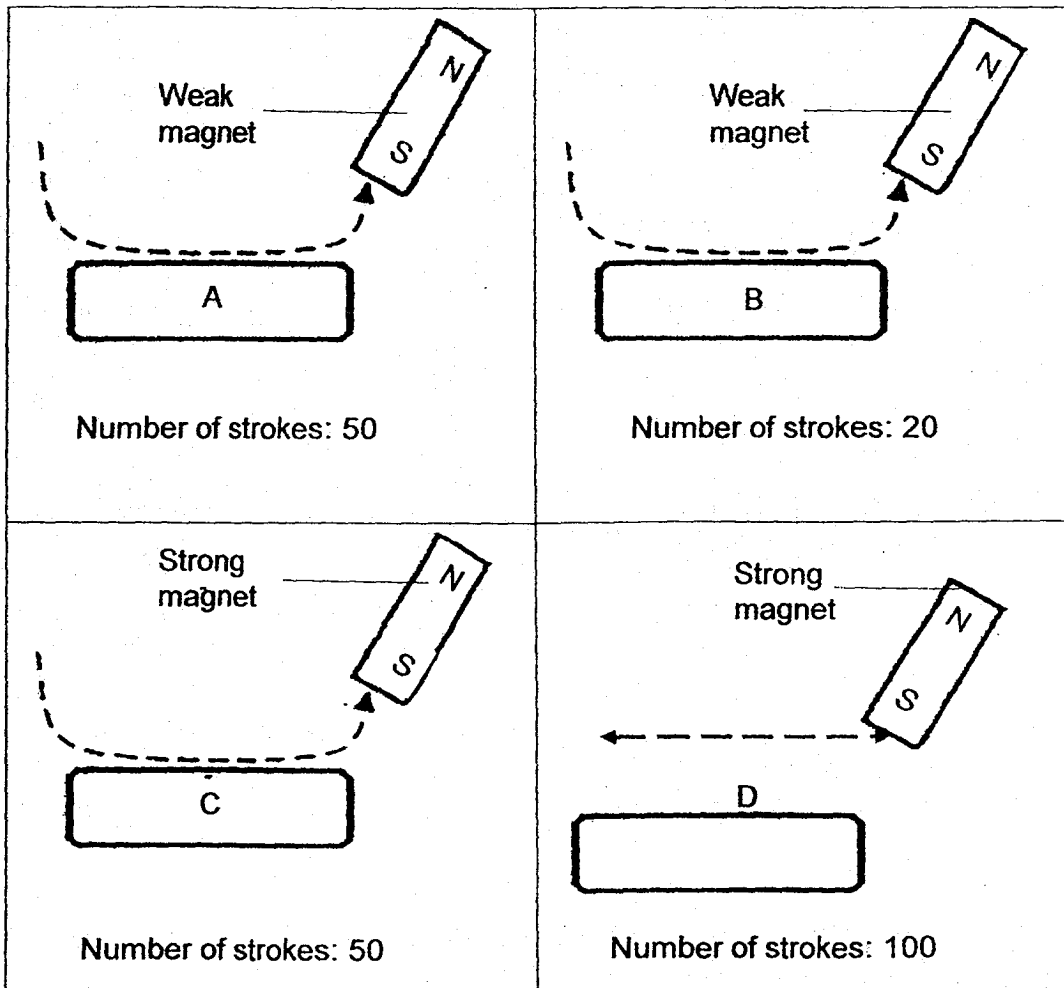


Which of the following statement(s) suggest(s) way(s) of increasing the number of paper clips attracted by the electromagnet?

- A Increase the size of the nail.
- B Increase the length of the wire.
- C Increase the number of batteries.
- D Increase the number of coils around the nail.

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

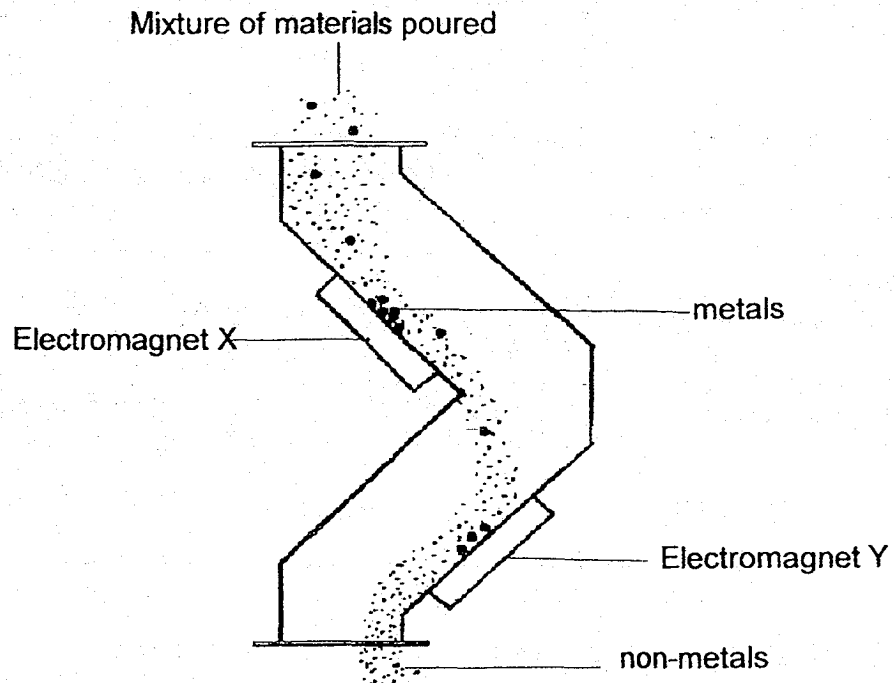
27. Estelle stroke four identical iron rods, A, B, C and D, using magnets of different magnetic strength in the directions indicated by the arrows shown below.



Which one of the following shows the correct arrangement in order of strength for the temporary magnets, starting with the weakest magnet?

	Weakest → Strongest			
(1)	A	B	C	D
(2)	D	A	B	C
(3)	D	B	A	C
(4)	B	A	C	D

28. The diagram below shows a separator used in a recycling plant to separate metals from non-metals.



Unfortunately, one of the electromagnets was damaged and a replacement had to be used.

Allen placed electromagnets same distance above a tray of nails and observe the number of nails attracted to each of them in the table below.

Electromagnets	Number of iron nails attracted
A	6
B	15
C	8
D	12

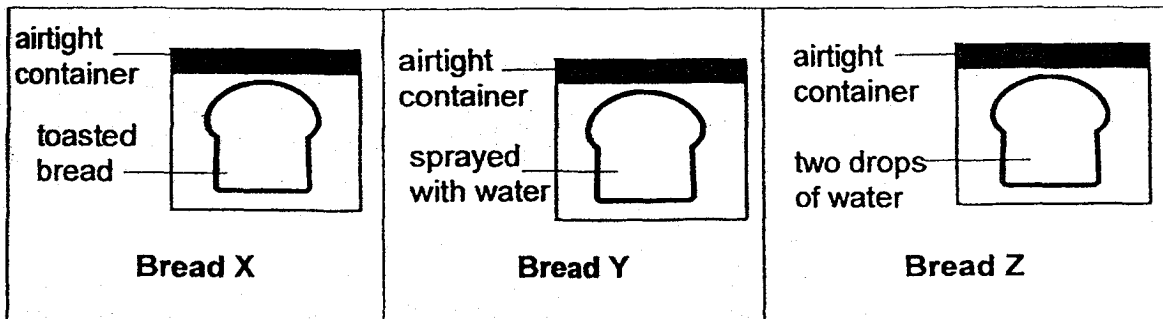
Which one of the following electromagnets would be the most suitable as the replacement?

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

SECTION B (44 marks)

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

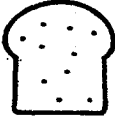

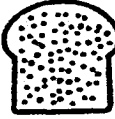
29. The experiment below aims to find out if water affects the growth of moulds on bread. Three slices of bread, X, Y and Z, were kept in an airtight container and left on a table top for a week.



- (a) State one other condition needed for moulds to grow. [1]

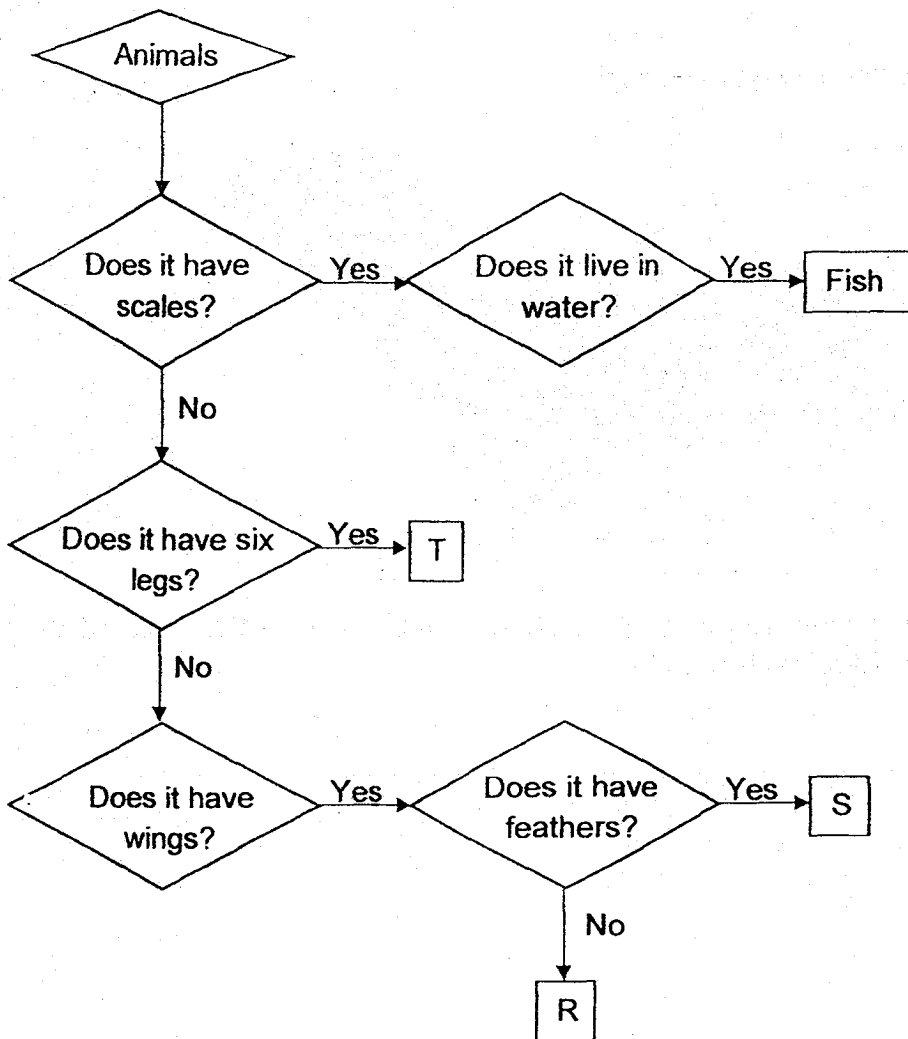
- (b) Toasting bread will help to remove a substance from the bread. Name the substance. [1]

- (c) The table below shows the observations of the three slices of bread after one week. The black spots indicate the presence of moulds. Identify breads X, Y and Z. [1]

		
Bread _____	Bread _____	Bread _____

Score	3
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30. The flow chart below shows how some animals were classified.



(a) State one similarity between animals T and S. [1]

(b) State one difference between animals R and T. [1]

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Score	2
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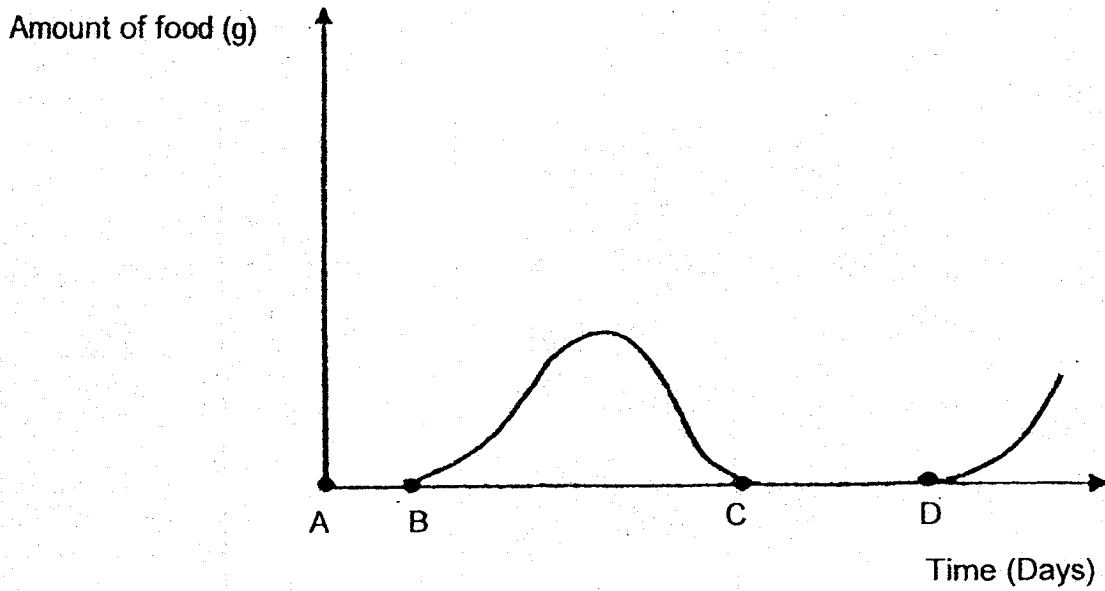
The diagram below shows an animal.



- (c) Based on the information on the flowchart, which group of animals, R, S or T does this animal belong to? [1]
-

Score	1
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31. The graph below shows the amount of food consumed by organism X during different stages of its life cycle.



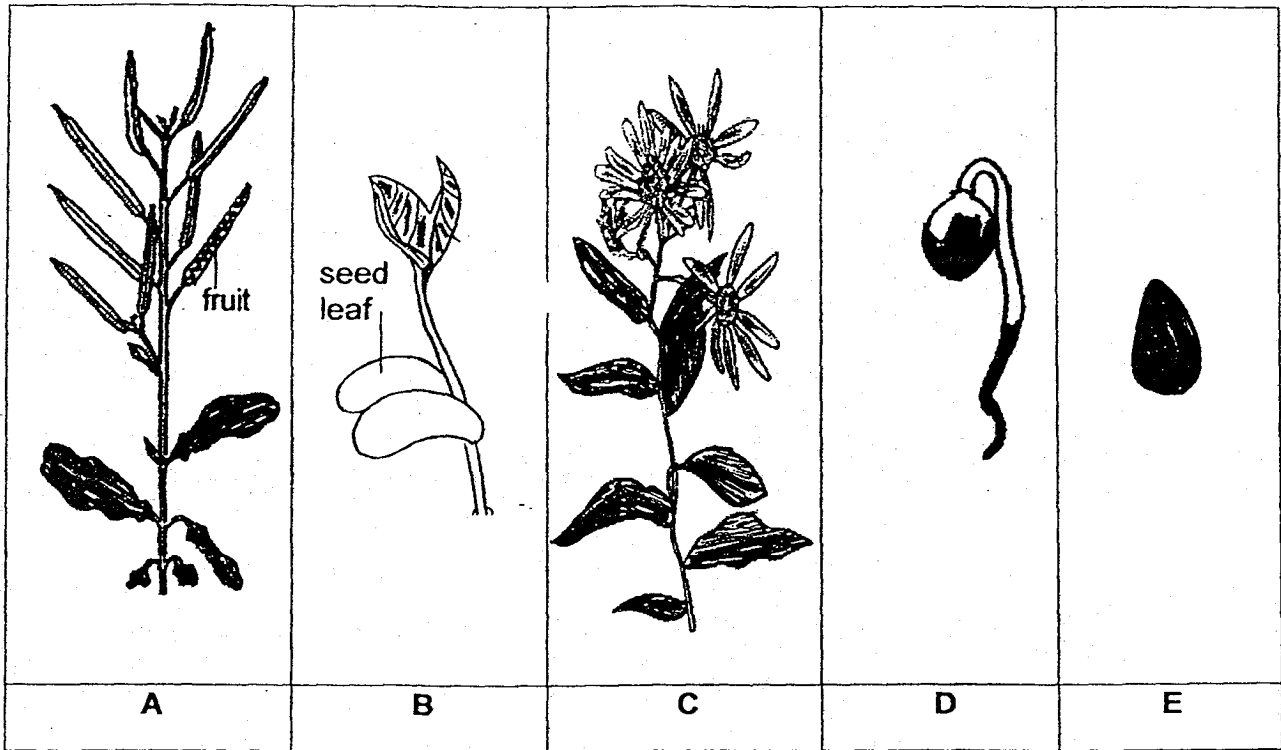
What stages of the life cycle of organism X are represented from A to B and C to D? [2]

- (i) A to B _____
- (ii) C to D _____

- (a) Name one animal which goes through a similar life cycle as organism X. [1]

Score	3
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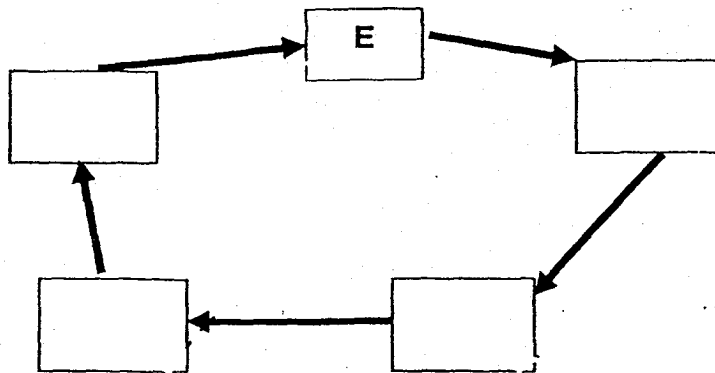
32. The diagram below shows the different stages of development of a plant.



(a) Arrange the stages of development of the plant correctly by writing the letters A, B, C, and D in the correct boxes in the diagram below.

Use the letter **ONCE** only.

[2]



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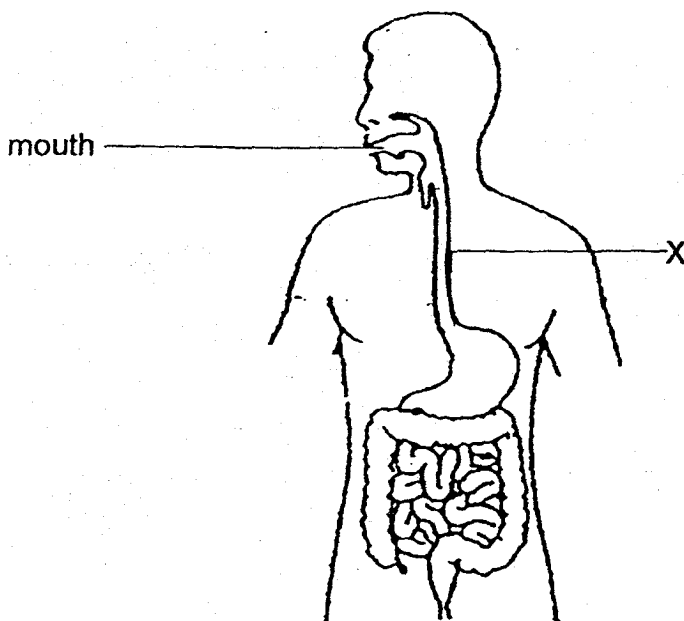
Score	2
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- (b) James commented that when the seed leaves in stage B are removed, the plant will die.
Do you agree? Give a reason for your answer. [2]

Score	2
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33. The diagram below shows the human digestive system.



(a) Identify part X in the diagram above. [1]

X: _____

(b) Identify the parts where, [1]

(i) Digestion begins: _____

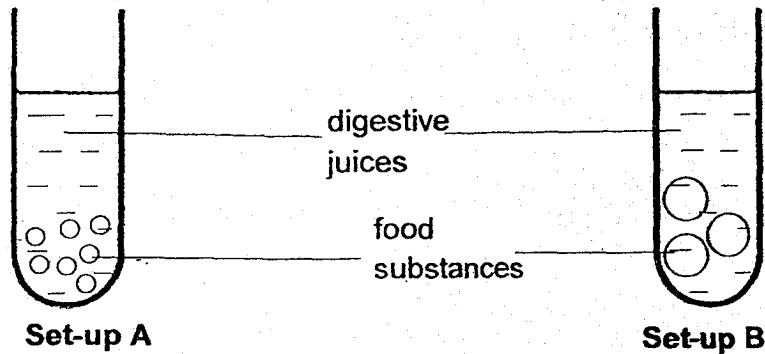
(ii) Digestion ends : _____

(c) Name the parts of the digestive system where digestive juices are secreted. [1]

Score	3
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34. Joseph's grandmother said that her rate of digestion had slowed down because she had lost most of her teeth. She claimed to have chewed the same number of time as compared to when she had all teeth.

Joseph set up the experiment as seen below to test if her claim was true. He prepared set-ups A and B with identical amount of food substances put in identical amount of digestive juice as shown in the diagram below.



He repeated the experiments and recorded the results in the table below.

Result	Time taken for food substance to digest completely (mins)		
	1 st try	2 nd try	3 rd try
X	3	2	3
Y	15	14	16

- (a) Based on the information above, which set of test results, X or Y, most likely belongs to set-up A? Give a reason for your answer. [2]

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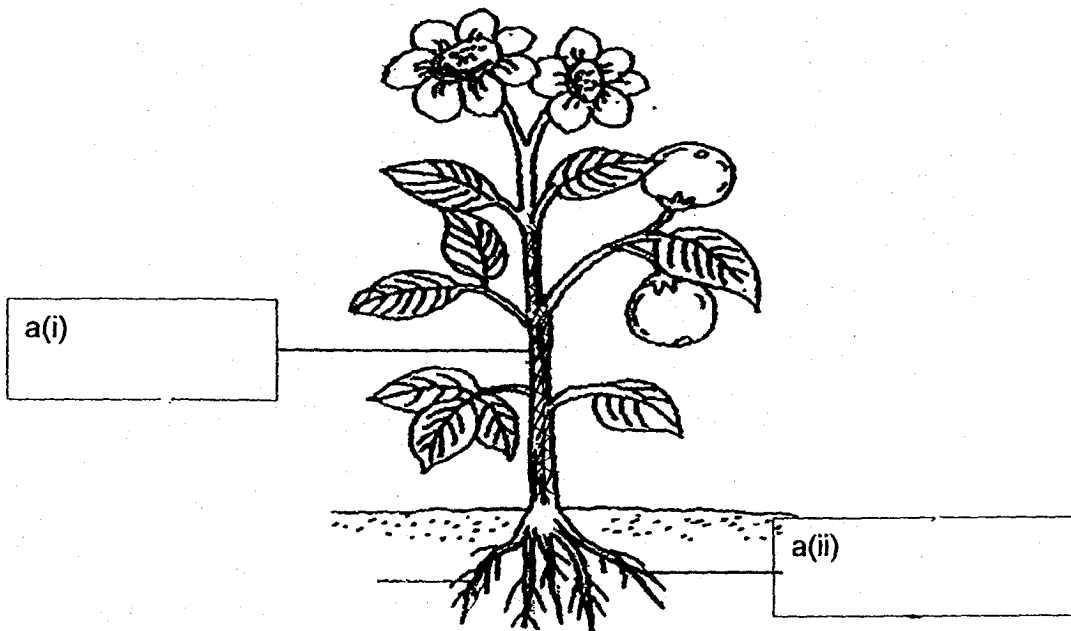
Score	2
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- (b) Joseph chewed a piece of apple twenty times, while his sister chewed an identical piece of apple of the same size forty times. Who would take a shorter time to digest the piece of apple? [1]
-

35. The diagram below shows parts of a plant system.

Based on the diagram below, answer the following questions:

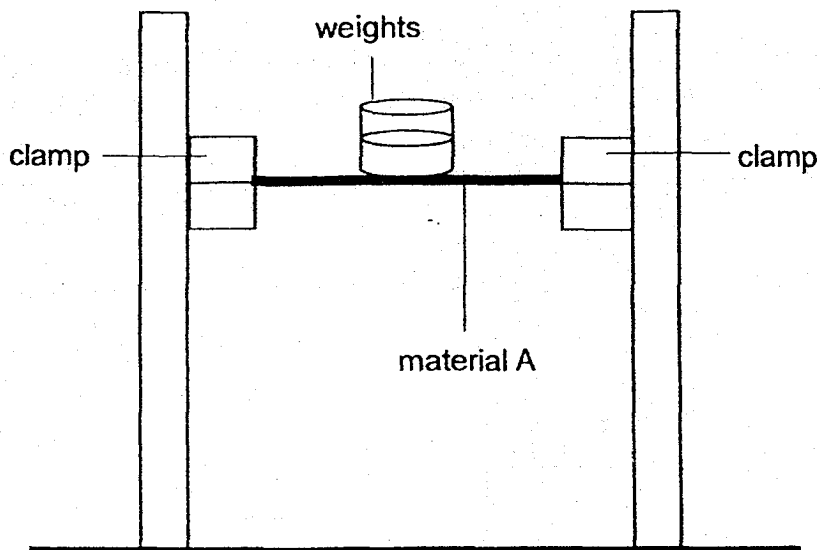


(a) In the diagram above, write the name of the plant parts in the boxes. [2]

(b) State one function of plant part stated in your answer in a (i). [1]

(c) What would happen if plant part stated in your answer in a(ii) are totally removed? Give a reason for your answer. [1]

36. Kelly wanted to find out the most suitable material to make a shopping bag. She prepared a set-up using material A and added weights onto material A until it started to tear.



She repeated the experiment with materials B, C and D respectively and recorded the maximum weight the material could hold before it started to tear in the table below.

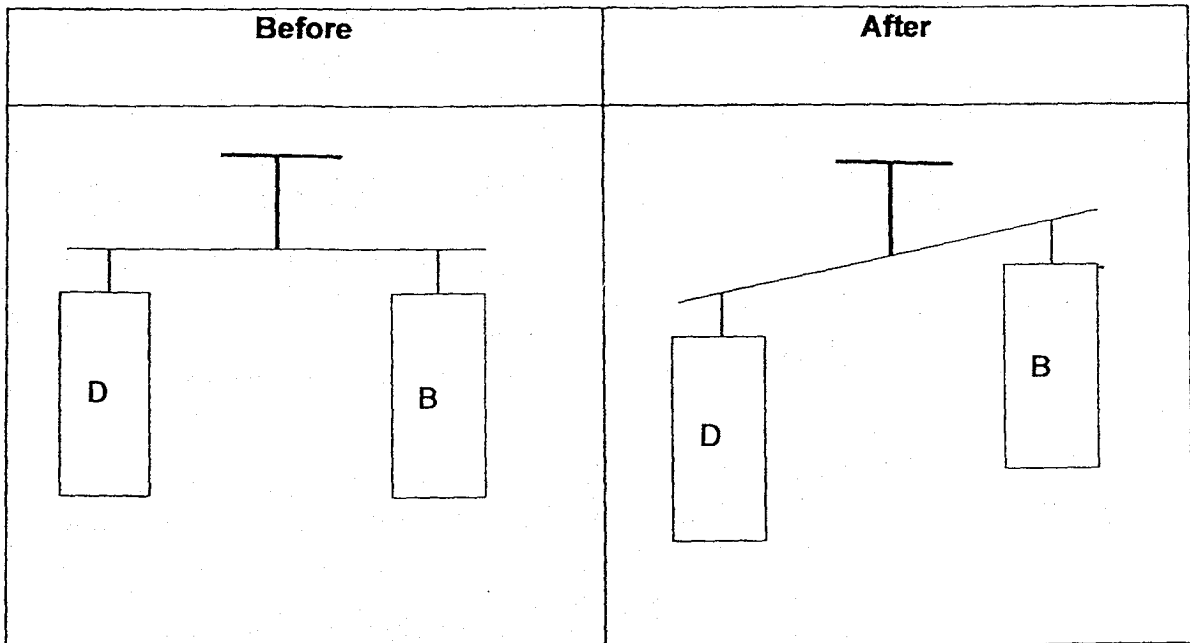
Materials	Maximum weight it can hold before it start to tear (g)
A	300
B	100
C	160
D	100

Continue on next page

Continue from previous page

- (a) Based on the information above, which material(s) is/are most suitable to be made into a shopping bag that can hold a content with a mass of 150g? Give a reason for your answer. [1]

Kelly dipped two materials, B and D, of same size and mass in container containing same amount of water. She then removed them at the same time and hung them on a balance as shown below.



- (b) Explain why there was a change in mass in materials B and D. [1]

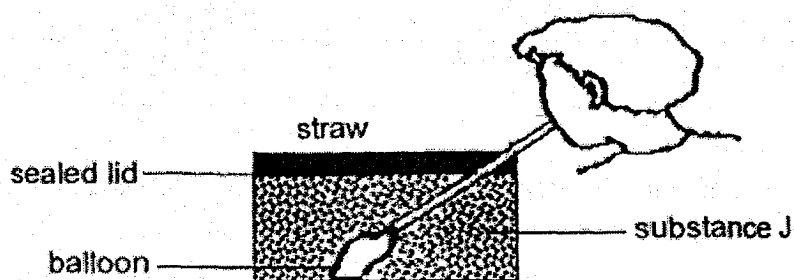
Continue on next page

Score	2
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Continue from previous page

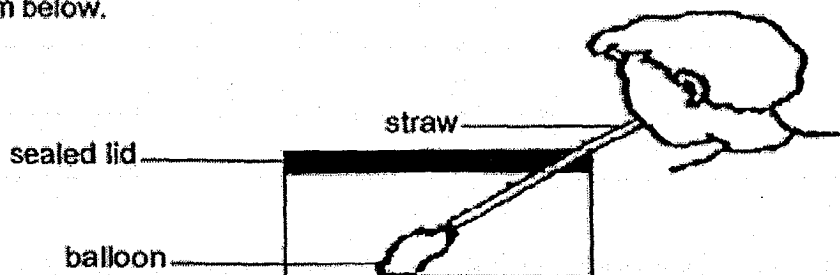
- (c) Which material, B or D, would be more suitable to make into a bathing towel?
Explain your choice clearly. [2]

37. A deflated balloon was fixed to a straw using rubber band. It was then placed in a container filled with substance J. The container was then sealed tightly and air was then blown into the straw as shown in the diagram below. The balloon did not inflate.



- (a) Based on the information above, what is the state of matter of substance J?
Explain your answer. [2]

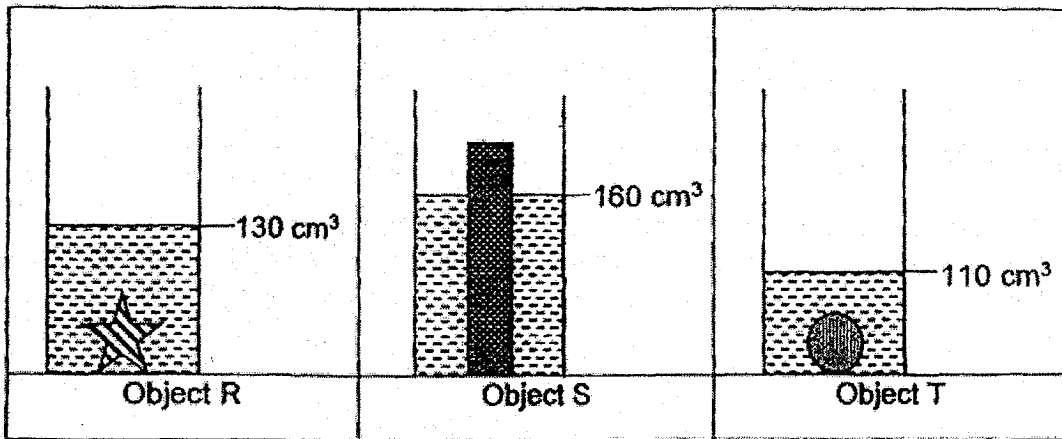
Substance J was then removed and air was blown into the straw as shown in the diagram below.



- (b) The balloon inflated in the container. Give a reason for this observation. [1]

Score	5
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38. A beaker was filled with 100 cm^3 of water. Three objects, R, S and T were lowered into the beaker and the new volume was recorded as shown below.



- (a) Based on the results above, arrange the objects according to their volume, starting with the smallest volume. [1]

Smallest \longrightarrow largest

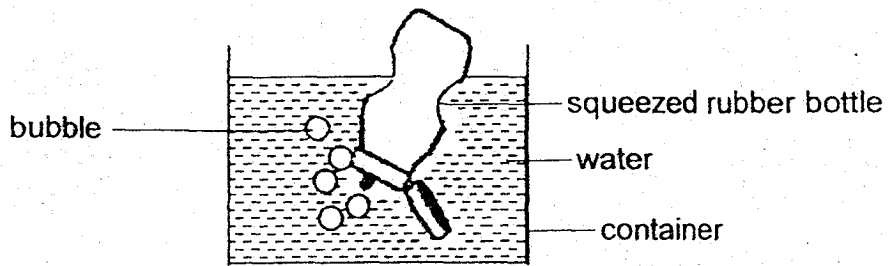
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- (b) Devi commented that it is not possible to tell the exact volume of object S. Do you agree with Devi? Explain your answer. [1]

- (c) Without removing any parts of the set-up, suggest one way to find the volume of object S. [1]

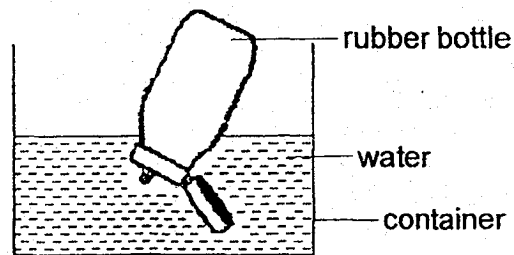
Score	3
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39. Peter placed a rubber bottle in a container of water as shown below. When he squeezed the bottle, bubbles were observed.



- (a) Explain why bubbles were formed.

[1]



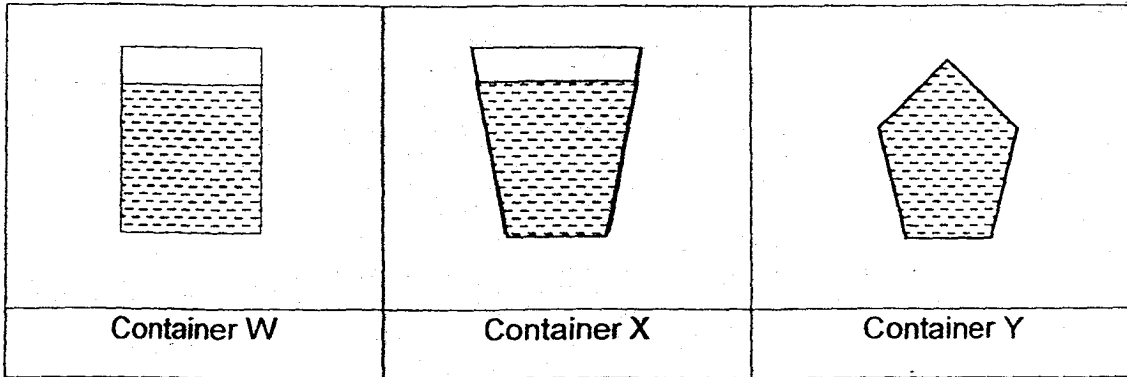
- (b) After all the bubbles had disappeared, he released his grip on the bottle until the bottle returned to its original shape as shown in the diagram above. He then observed that there was a decrease in the water level in the container.

Explain the decrease in the water level in the container.

[2]

Score	3
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40. Three containers were filled with equal amount of water as shown below.

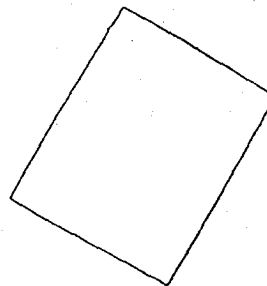


(a) Based on your observation, state one property of liquid. [1]

(b) Container W was placed in the freezer overnight.

The water has turned into ice. Container W was tilted as shown in the diagram below.

In the diagram below, draw a line to show what would be observed immediately after removing container W from the freezer. [1]



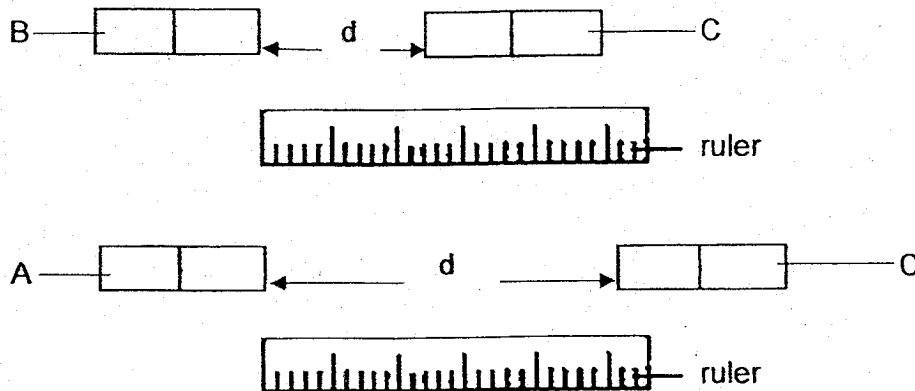
(c) Explain your answer in (b). [2]

Score	4
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41. Jaime had three magnets, A, B, and C, of similar size. Each of these magnets had different strength.

When the magnets were brought close to each other, Jamie observed the interactions between the magnets and measured the distance(d) between them.

The diagrams below show Jaime's observations.

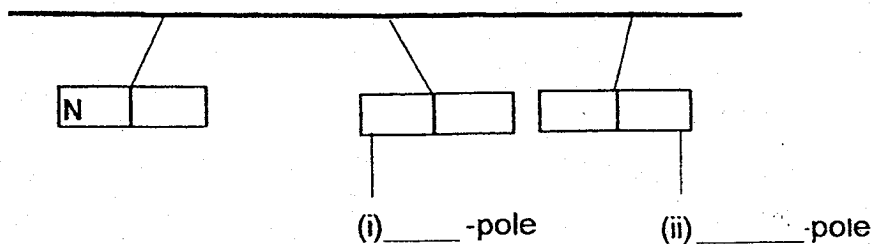


Based on the information above, answer the following question:

- (a) Which of the magnets, A or B, was stronger? Explain your answer. [2]

- (b) Jaime then tried to place the magnets side by side.

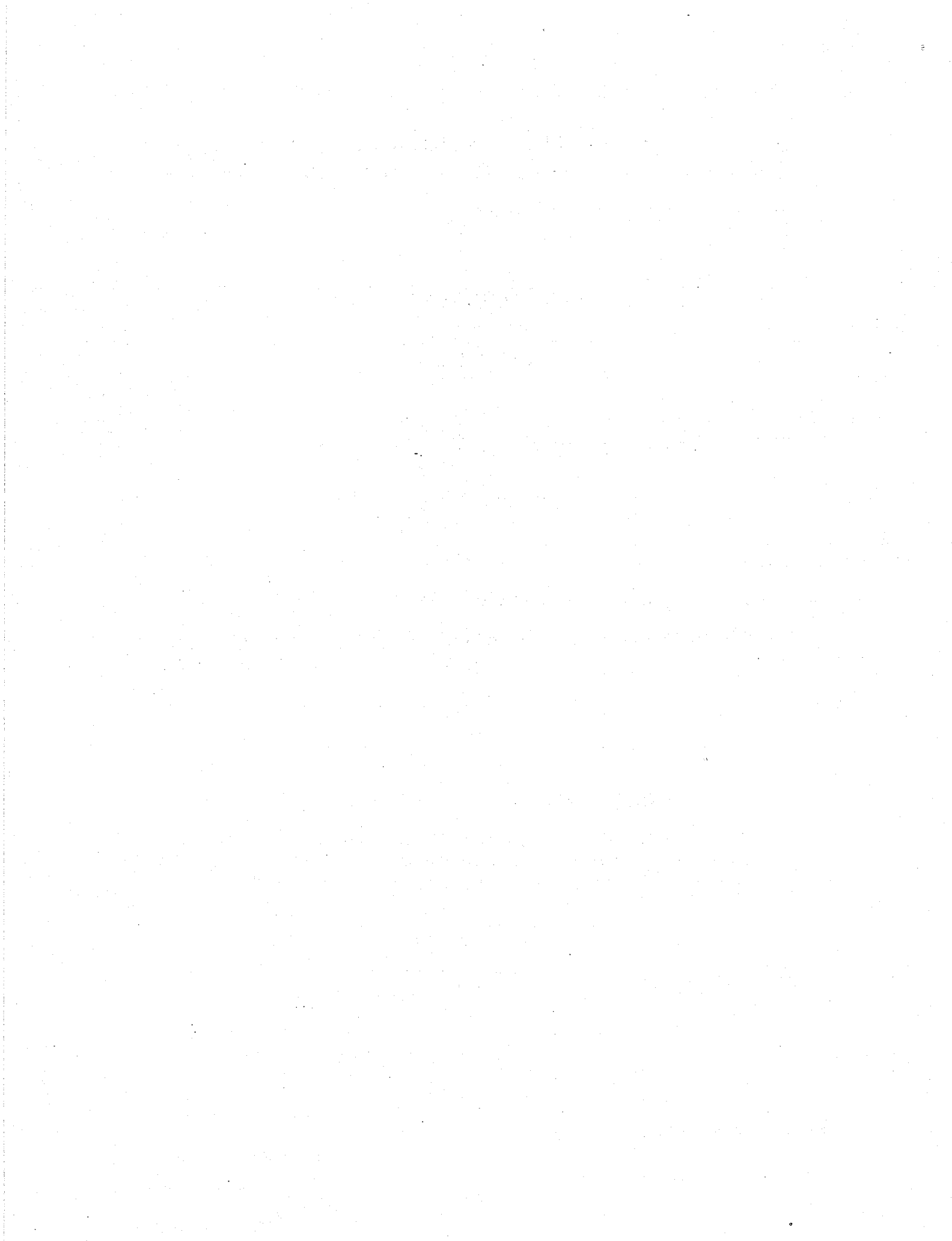
The figure below shows what happened when she released the magnets. Write letter N or S in the diagram below to show clearly the poles of the magnets at locations (i) and (ii). The first one has been done for you. [2]



End of Paper

Setters: Ms K. Shaheena, Mr Yeo Siah Ong

Score	4
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ANSWER KEY

YEAR : 2018
LEVEL : PRIMARY 4
SCHOOL : RAFFLES GIRLS' PRIMARY
SUBJECT : SCIENCE
TERM : SA1

Section A

Q1	Q2	Q3	Q4	Q5	Q6	Q7
1	1	2	4	1	2	1
Q8	Q9	Q10	Q11	Q12	Q13	Q14
1	1	4	2	3	2	1
Q15	Q16	Q17	Q18	Q19	Q20	Q21
1	2	1	3	3	4	2
Q22	Q23	Q24	Q25	Q26	Q27	Q28
2	1	3	1	3	3	2

Section B

29 (a) One other condition is warmth.

(b) Moisture / water

(c)

Bread <u>Z</u>	Bread <u>X</u>	Bread <u>Y</u>
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30 (a) Both animals T and S do not have scales.

(b) Animal T has six legs but animal R does not have six legs.

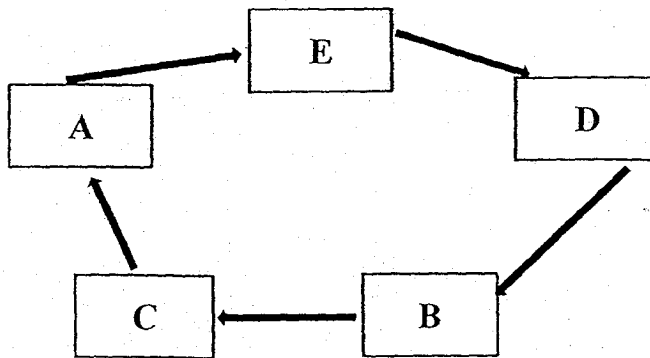
(c) This animal belongs to group R.

31 (i) A to B egg.

(ii) C to D pupa.

(a) The butterfly.

32 (a)



(b) No, I do not agree. Stage B's plant has leaves. The leaves can help the plant make food to survive.

33 (a) X : Gullet

(b) (i) Digestion begins : mouth

(ii) Digestion ends : small intestine

(c) The parts are the mouth, stomach and small intestine.

34 (a) Test results X. The same amount of food substances is cut into smaller pieces to increase the exposed surface area of increased the rate of digestion.

(b) Joseph's sister would take a shorter time to digest the piece of apple.

35 (a) (i) Stem
(ii) Roots

(b) The stem transports water and mineral salts from the roots to other parts of the plant.

(c) The plant would wither and die. If the roots are removed, it will not be able to take in water and mineral salts for the plant to stay healthy.

36 (a) Materials A and C. They were the only materials that could withstand the weight until more than 150g before it started to tear.

(b) Material B and D absorb water.

(c) Material D. It has a greater mass after soaking in water. This shows that it absorbs more water than B.

37 (a) Solid / Liquid. Substance J has a definite volume, hence no air could enter to occupy space taken up by substance J as there was no space for air to enter the balloon.

(b) The air in the container does not have a definite volume so it could be compressed.

38

(a)

Object T

Object R

Object S

(b) Yes, I do. Object S was not fully submerged in the water so it is not possible to tell.

(c) Increase the amount of water in the beaker so that object S is completely submerged in water.

39

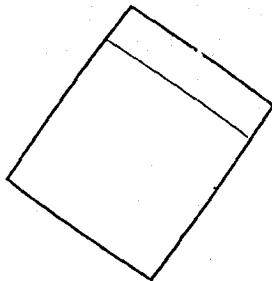
(a) The bubbles formed as air escaped from the bottle and water entered the bottle.

(b) Some water from the container entered the bottle to take up the space which was previously occupied by the air.

40

(a) Liquids do not have a definite shape.

(b)



(c) Ice is a solid and solids have a definite shape.

41

(a) Magnet A is the stronger magnet, it repelled magnet C further.

(b) (i) South-pole

(ii) North-pole