



RAFFLES GIRLS' PRIMARY SCHOOL
SEMESTRAL ASSESSMENT (1)

2013

Name : _____ Index No: _____ Class: P4 _____

7 May 2013

SCIENCE

Att: 1 h 45 min

Section A	60
Section B	40
Your score out of 100 marks	
Parent's signature	

SECTION A (30 x 2 marks)

For each question from 1 to 30, four options are given.

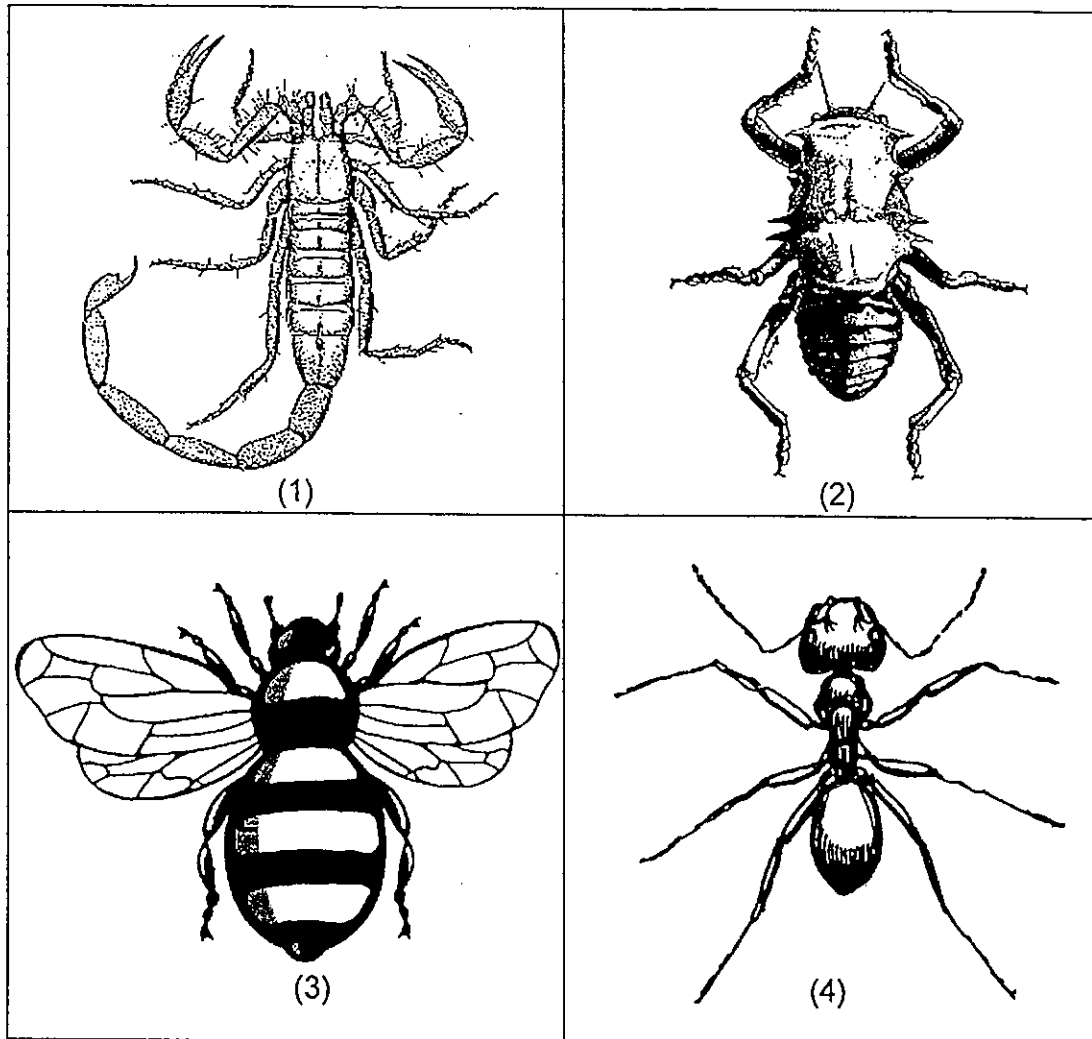
One of them is the correct answer. Make your choice (1, 2, 3 or 4).

Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.

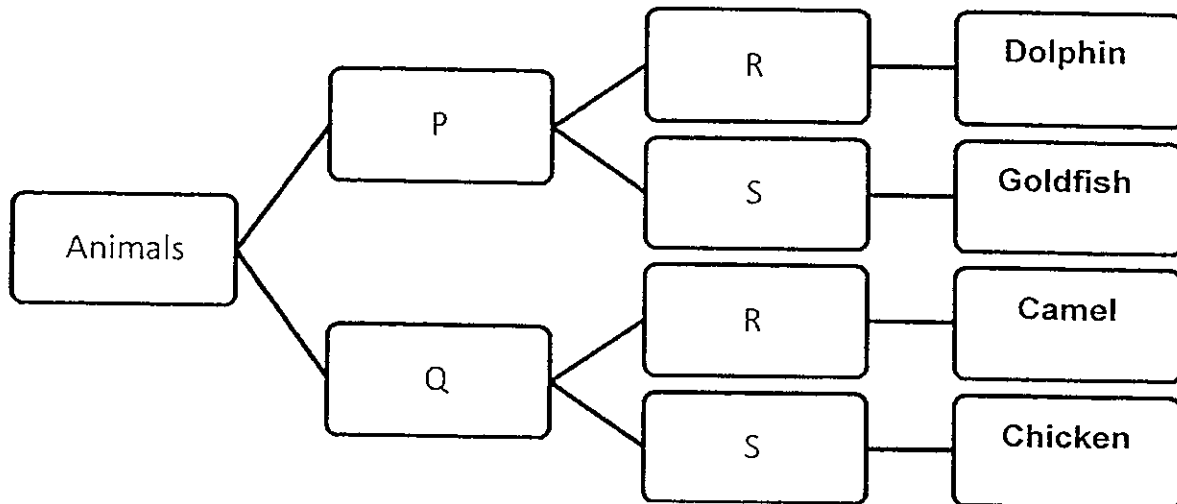
1. Which one of the following actions does not show a characteristic of a living thing?

- (1) A caterpillar eating a leaf .
- (2) A flame put out by the wind
- (3) A snail crawling on the ground
- (4) A mimosa folding its leaves when touched

2. Based on the pictures below, which one of the following is not an insect?



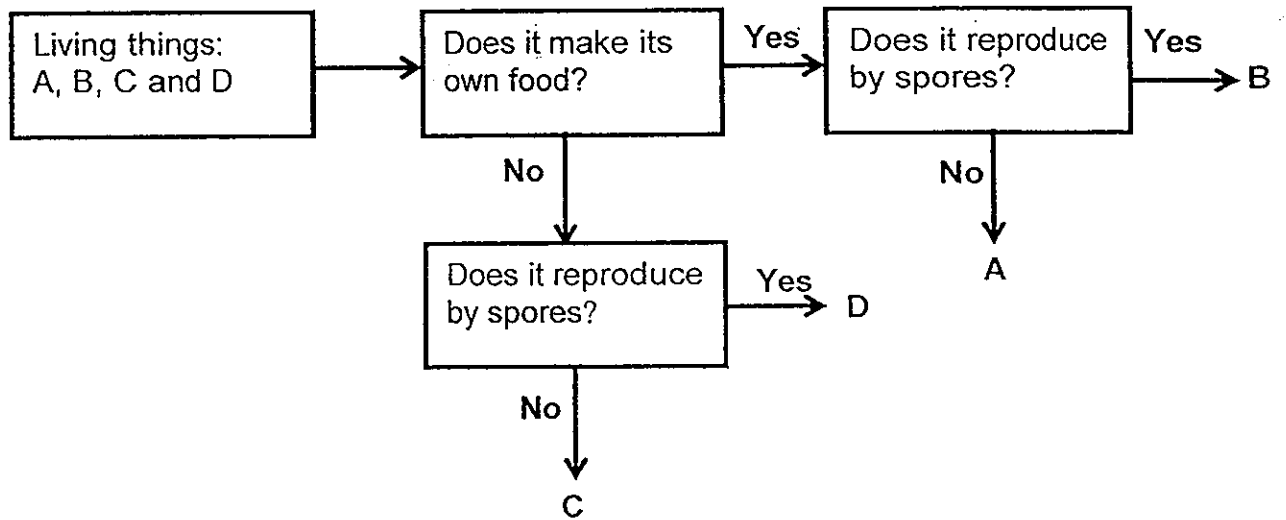
3. Some animals are grouped according to their similarities in the classification table below.



Which one of the following gives the correct sub-heading of P, Q, R and S?

	P	Q	R	S
(1)	Lives in water	Lives on land	Animals with hair or fur	Animals with scales
(2)	Animals with hair or fur	Animals with scales	Lives in water	Lives on land
(3)	Lives in water	Lives on land	Animals which give birth to their young alive	Animals which lay eggs
(4)	Animals with scales	Animals with hair or fur	Animals which lay eggs	Animals which give birth to their young alive

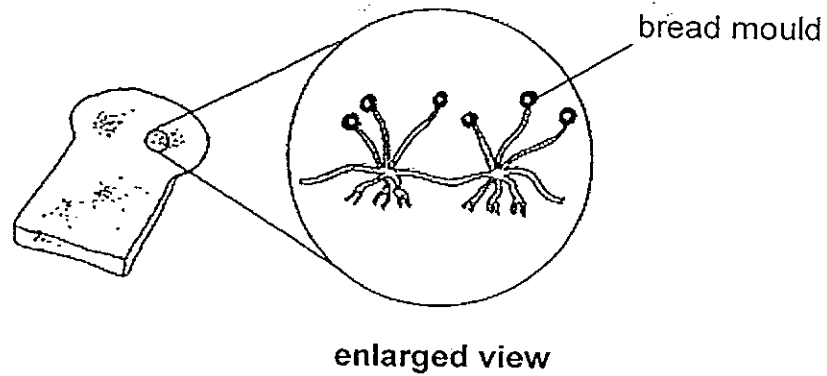
4. Four living things, A, B, C and D, are grouped using the flow chart below.



Based on the information above, which one of the following is a fern?

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

5. Ali left a slice of bread on a table for a week and found some bread mould on the bread as shown below.

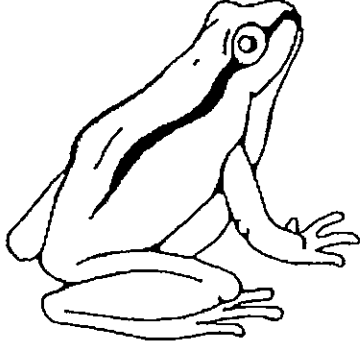


Which of the following statement(s) below is/are true about the bread mould?

- A: They need light to make food.
- B: They reproduce by seeds.
- C: They feed on dead plants and animals.

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

6. The pictures below show the young of Animal X and the adult Animal X.

Young of Animal X	Adult of Animal X
	

The following statements are made about the young and the adult of Animal X.

- A: The young of Animal X resembles the adult of Animal X.
- B: Both the young and adult of Animal X breathe through their gills.
- C: The young of Animal X has a tail but the adult Animal X does not.

Based on the pictures above, which of the following statement(s) is/are true?

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

7. The table below shows the number of days Animals P and Q, spend in each stage of its life cycle before developing into an adult.

Days spent in each stage of its life cycle	Animal P	Animal Q
Egg	4	6
Larva	7	4
Pupa	6	8

Both animals eat plants in their larval stage.

Based on the information given above, some students come up with the following conclusions about Animals P and Q.

Ali : Animal Q lives longer than Animal P.

Bala : Animal P will eat more plants than Animal Q.

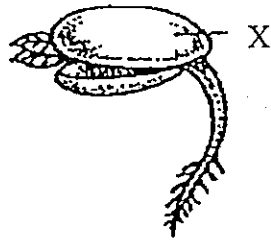
Cathy : Animal P and Q have 3 stages in their life cycles.

Devi : Animal P spends more days as a larva than Animal Q.

Whose statement(s) is/are definitely correct?

- (1) Ali only
- (2) Devi only
- (3) Ali, Cathy and Devi only
- (4) Ali, Bala, Cathy and Devi

8. The picture below shows a seedling. What is the function of the part marked X?



- (1) Grows into a new plant
 (2) Makes food for the seedling
 (3) Takes in water for the seedling
 (4) Provides food for the baby plant
9. The following statements show the different stages of a seed germinating into a seedling.

A: The shoot grows upwards.

B: The young plant uses sunlight to make food. ⁴

C: The root grows downwards.

D: The seedling develops its first leaves.

Which one of the following options shows the correct stages of growth?

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

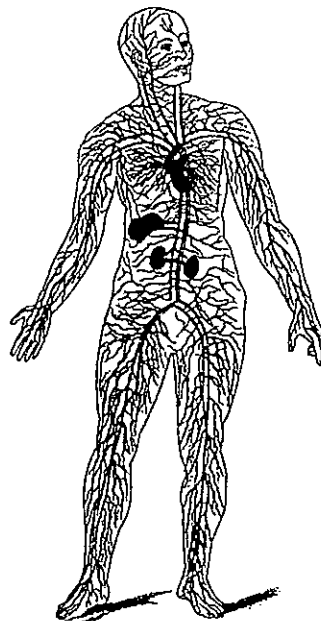
10. The following statements describe an organ in the human body system.

- It is the last stage of digestion
- It works with the circulatory system
- It contains juices to help break down food

Which organ best fits all the description above?

- (1) Anus
- (2) Stomach
- (3) Small intestine
- (4) Large intestine

11. The diagram below shows a human body system.



Which one of the following is not a function of the human body system shown above?

- (1) Carries blood to the different body parts
- (2) Transport nutrients to the different body parts
- (3) Stores waste products before it is removed through the anus
- (4) Carries wastes away from all parts of the body for removal

12. Which group of organs best represents the function for the exchange of gases in a human body?

- (1) heart, nose and gullet
- (2) lungs, nose and windpipe
- (3) skull, ribcage and backbones
- (4) blood vessels, gullet and lungs

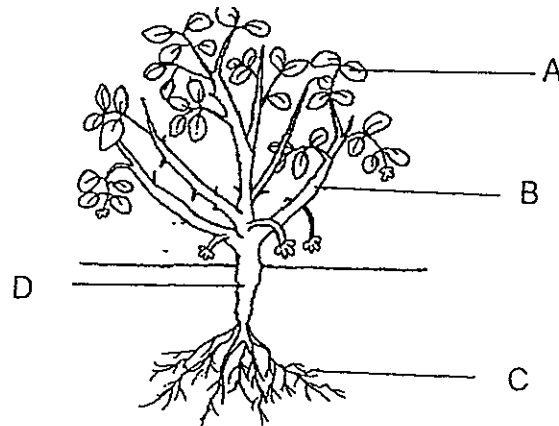
13. The following statements describe some processes in digesting a piece of bread in different parts of the digestive system.

- A: The bread travels down a muscular tube. No digestion happens here.
- B: The bread is broken into smaller pieces through chewing motion.
- C: The undigested parts of the bread are stored here to be removed from the body.
- D: Here, the digested food is passed into the blood stream.

Which of the followings has arranged the processes in the correct order of sequence?

Order of sequence →			
(1)	A	D	A 8 C
(2)	B	A	D C
(3)	B	C	D A
(4)	A	B	C D

14. The diagram below shows a plant.



Which part of the plant makes food for the plant?

- (1) A
(2) B
(3) C
(4) D
15. Germain took 4 similar balsam plants, W, X, Y and Z and placed them in the conditions as stated below

Balsam Plant	Location	Temperature	Water	Fertilizer
W	Inside dark cabinet	22°C	Yes	No
X	Inside dark cabinet	22°C	No	Yes
Y	Garden	29°C	Yes	No
Z	Garden	29°C	No	Yes

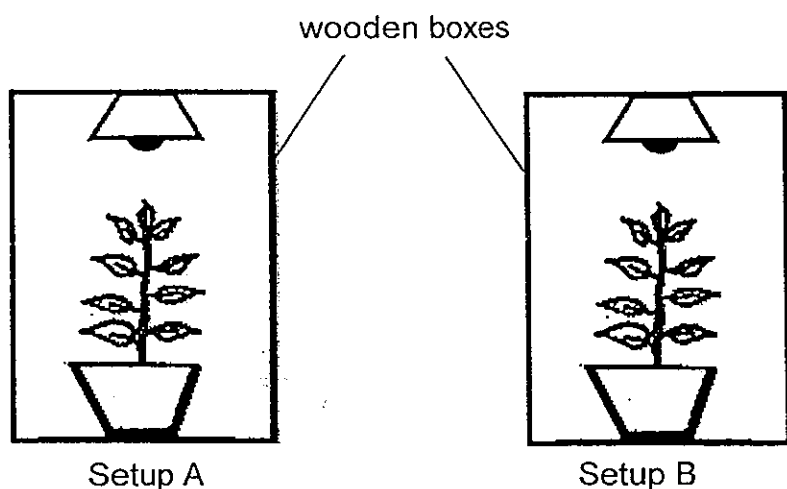
Which one of the balsam plants, W, X, Y or Z, would most likely survive after 3 months?

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

16. Which one of the followings statements below is correct about water-carrying and food-carrying tubes of a balsam plant?

	Water-carrying tubes	Food-carrying tubes
(1)	Transport water from the roots to the other parts of the plant	Transport food from the roots to the other parts of the plant
(2)	Transport food from the leaves to the other parts of the plant	Transports water from the roots to the other parts of the plant
(3)	Transports water from the roots to the other parts of the plant	Transport food from the leaves to the other parts of the plant
(4)	Transport food from the roots to the other parts of the plant	Transport food from the leaves to the other parts of the plant

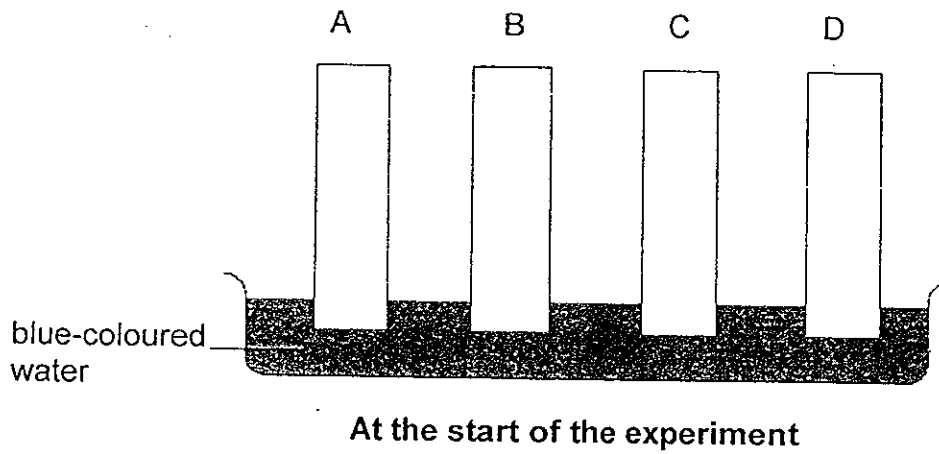
17. Jade had two identical potted plants. In setup A, she turned on the lamp for 12 hours each day. For setup B, she did not turn on the lamp throughout the experiment. The plants had sufficient water throughout the duration of the experiment. At the end of the experiment, Jade observed and recorded the number of dead leaves found in each setup.



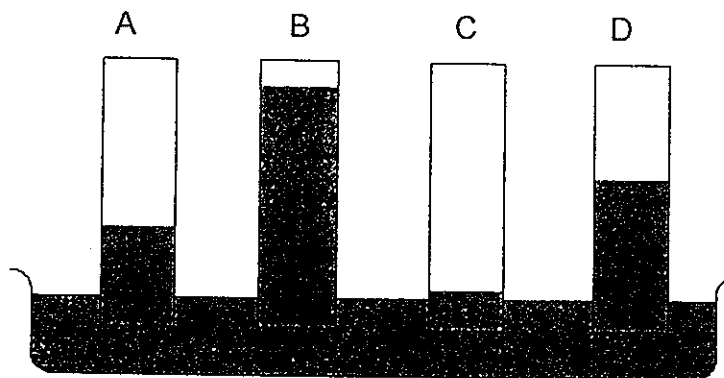
Which one of the following statements best suit the aim of Jade's experiment?

- (1) To find out if plants grow towards light.
- (2) To find out if plants need light to survive.
- (3) To find out if plants need water to survive
- (4) To find out if sunlight is needed for plant to stay alive.

18. Yi Ling set up an experiment to find out which material could absorb the most amount of water. Four strips made of different materials, A, B, C and D, were dipped into a basin of blue -coloured water for an hour.



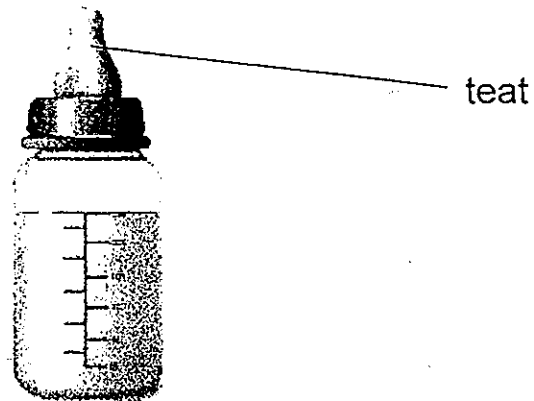
An hour later, the result of Yi Ling's experiment was as shown below.



Based on her results, which material is most suitable to be made into a mop?

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

19. Raju wanted to choose a suitable material to make the teat of a milk bottle.



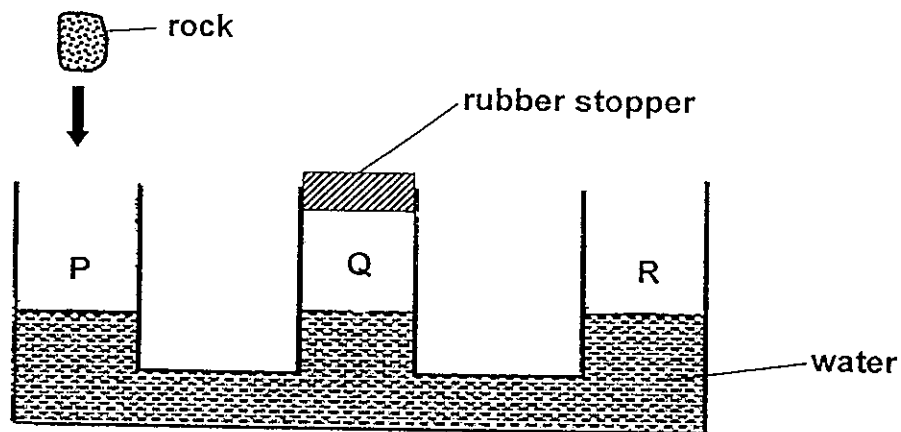
The material must have the following characteristics:

- Waterproof
- Flexible
- Strong

Which of the following materials should he choose to make the teat?

- | | |
|-----------|------------|
| (1) Metal | (2) Glass |
| (3) Wood | (4) Rubber |

- 20 The diagram below shows a container with some water in it. Part Q of the container is sealed with a rubber stopper.



A piece of rock is then slowly dropped into the container at Part P as shown above. What will happen to the water levels at P and R?

	P	R
(1)	decrease	increase
(2)	increase	decrease
(3)	increase	increase
(4)	increase	remains the same

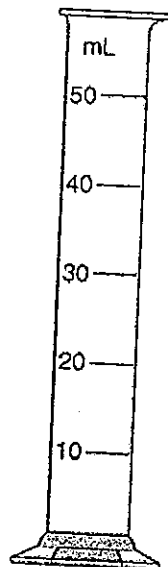
- 21 Which one of the following is most suitable to measure 15 ml of water accurately?



(1)



(2)

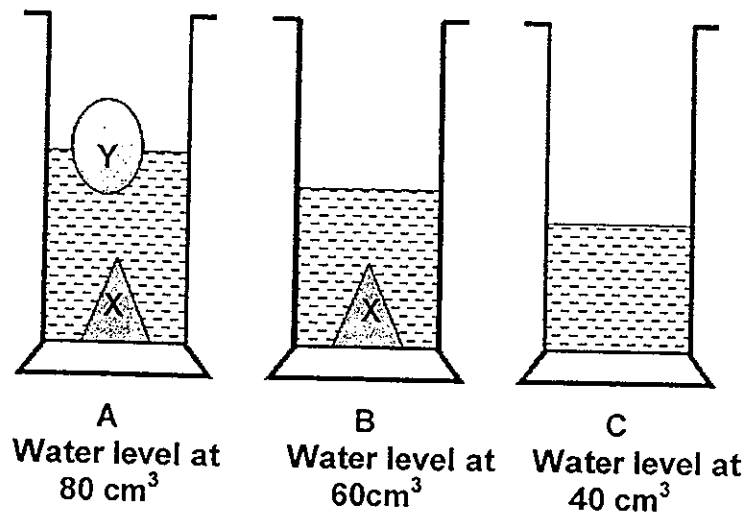


(3)



(4)

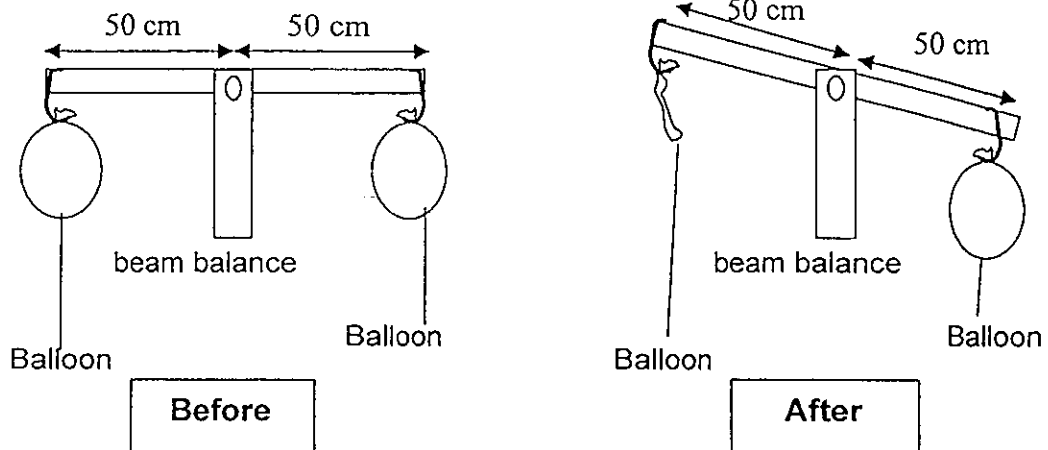
22. Jean poured the same amount of water into each of the 3 identical measuring cylinders, A, B and C. Next, she placed object X and object Y into A, and object X into B as shown in the diagram below.



Based on the information above, which one of the statements is not correct?

- (1) Volume of object X is 20 cm³
- (2) Volume of water and object X is 60 cm³
- (3) Volume of object Y is the same as object X
- (4) Volume of water, object X and object Y is more than 80 cm³ altogether.

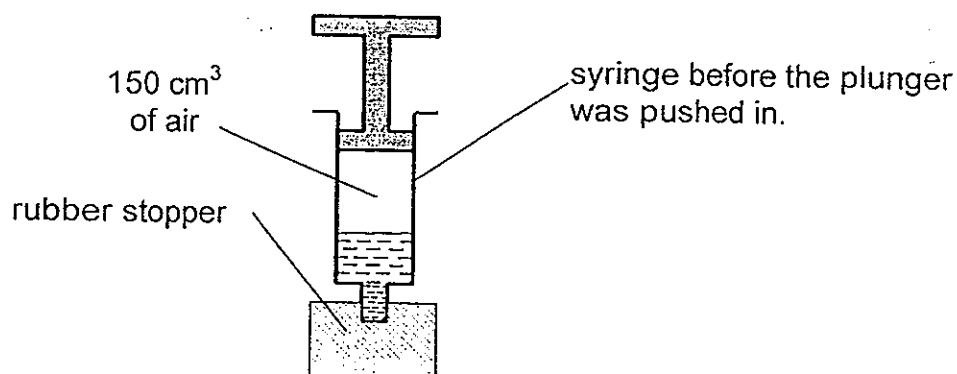
23. Cleo conducted her experiment with the set-up below. She pumped an equal amount of air into two identical balloons. Next, she deflated one of balloons.



What was the aim of her experiment?

- (1) To find out if air has mass.
- (2) To find out if air occupies space.
- (3) To find out if air has definite shape.
- (4) To find out if air can be compressed

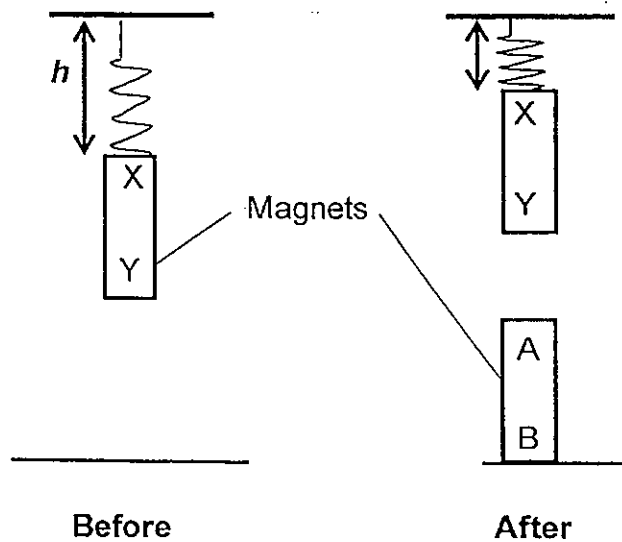
24. The diagram below, not drawn to scale, shows a syringe with a capacity of 200cm^3 .



Assuming that there was no water leakage, which of the following shows the possible volume of air and water **after** the plunger was pushed in ?

	Volume of Air (cm ³)	Volume of Water (cm ³)
(1)	150	50
(2)	80	40
(3)	60	50
(4)	50	25

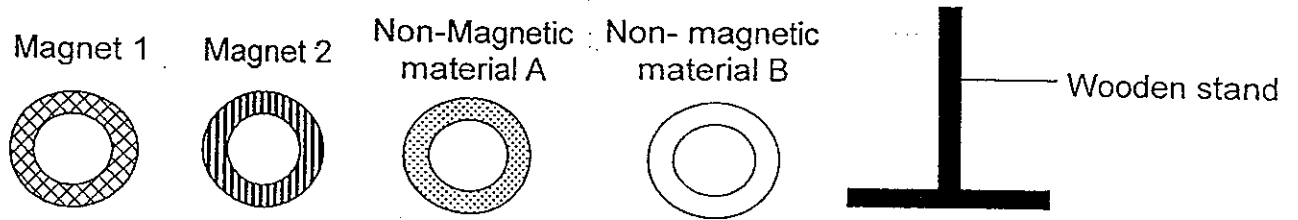
25. The diagram below shows a magnet which is attached to a spring. When another magnet is introduced, distance h is reduced.



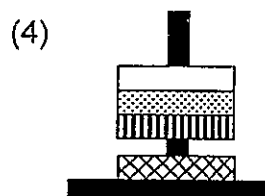
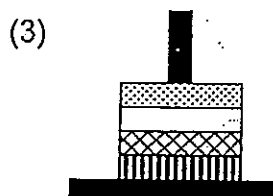
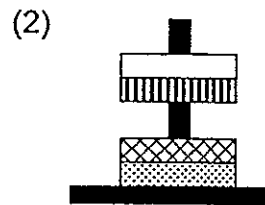
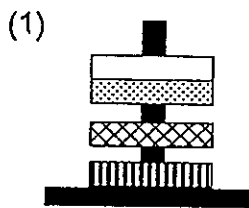
Based on the diagram above, which one of the following statements is correct?

- (1) "X" and "A" are both South-poles of the magnets.
- (2) "Y" is North-pole while "A" is South-pole of the magnets.
- (3) "Y" is North-pole while "B" is South-pole of the magnets.
- (4) "Y" is South-pole while "B" is South-pole of the magnets.

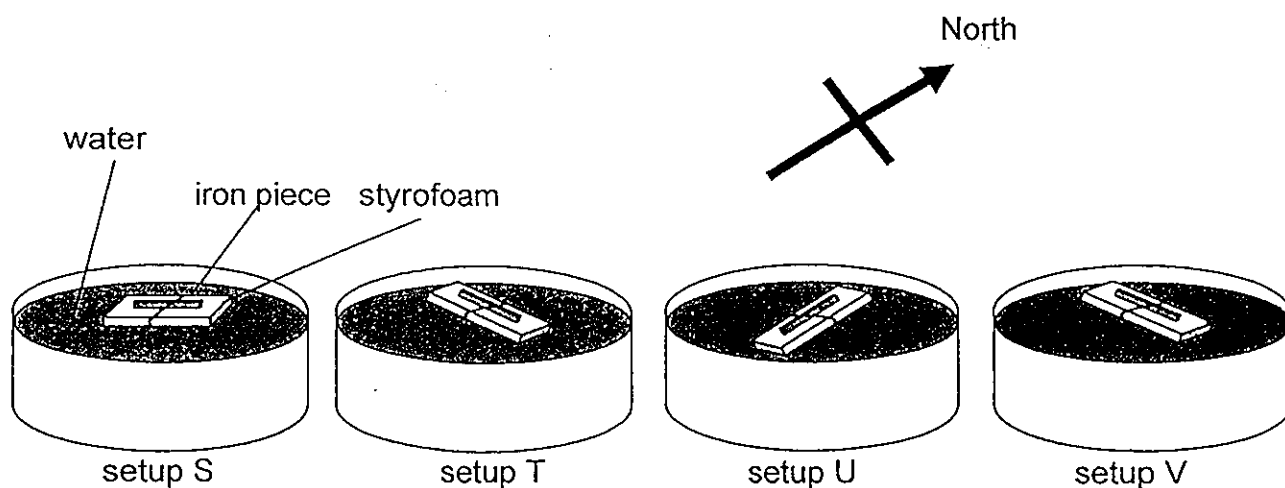
26. Megan used the five items given below to learn more about magnets.



Which one of the following is **not** a possible observation for Megan when all 4 rings are placed one on top of the other through the wooden stand?



27. Ruth had 4 identical iron pieces. Each piece of iron was taped to a piece of styrofoam and allowed to float in a basin of water. The diagrams below show their positions when they stopped turning.



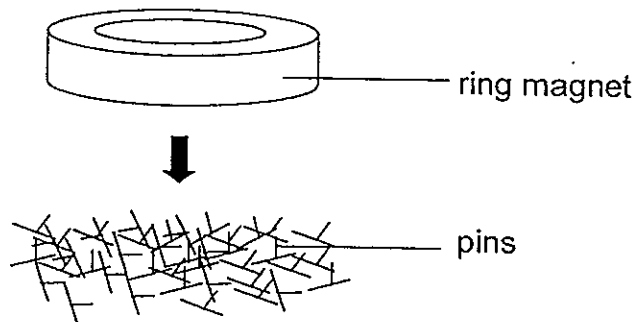
Based on Ruth's experiment above, in which setup(s), S, T, U, and/or V was/were the iron piece magnetised?

- (1) Setup S only
- (2) Setup T only
- (3) Setup U only
- (4) Setup T and V only

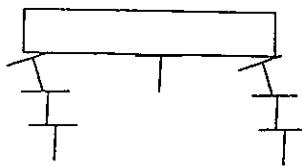
29. The diagram below show the **side view** of a ring magnet



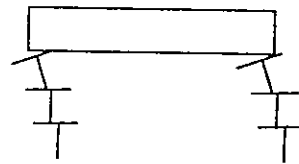
Rinnah lowered a ring magnet into a pile of pins and lifted it upwards.



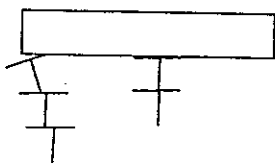
If the ring magnet is working properly, which one of the following diagrams will illustrate Rinnah's observation correctly?



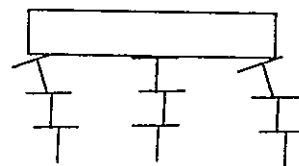
(1)



(2)

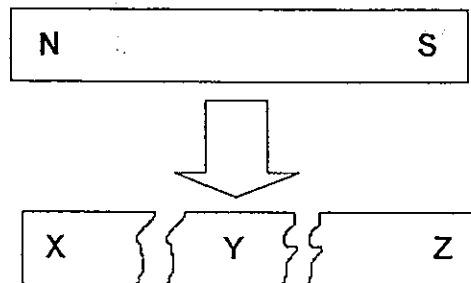


(3)



(4)

28. Megan dropped a bar magnet and it broke into 3 small pieces, X, Y and Z, as shown below.



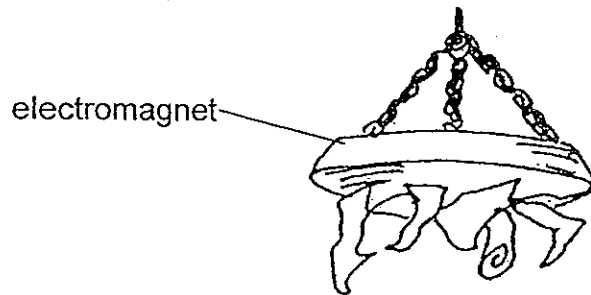
Megan's friends made some statements below.

- Ashley : "X does not have a south-seeking pole."
Beatrice : "Z does not have a north-seeking pole"
Claire : "Y has both a north-seeking pole and a south seeking pole"

Who made a correct statement?

- (1) Ashley only
- (2) Beatrice only
- (3) Claire only
- (4) Ashley, Beatrice and Claire

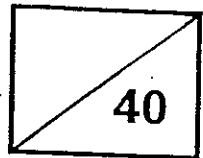
30. The diagram below shows an electromagnet which is used to separate items for recycling.



Which one of the following groups of items will be attracted by the electromagnet?

- (1) steel spoon, copper coin and iron nail
- (2) iron nail and steel spoon
- (3) aluminum can and copper coin
- (4) steel teapot and gold ring

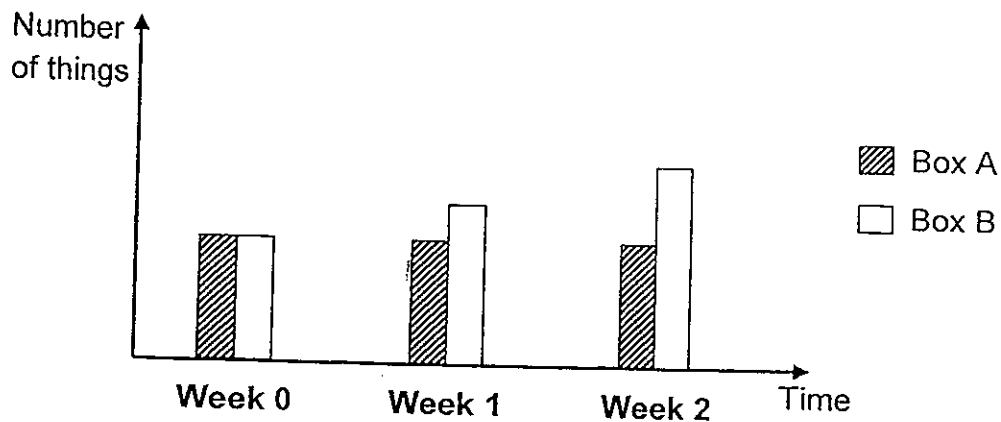
Name : _____ Index No: _____ Class: P4 _____

**SECTION B (40 marks)**

For questions 31 to 44, 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.

31. Bala set up two boxes, A and B. He placed some living things in one box and an equal number of non-living things in another box. Both boxes were provided with air, water and food.

Every week Bala counted the number of things in both boxes and drew the graph as shown below.



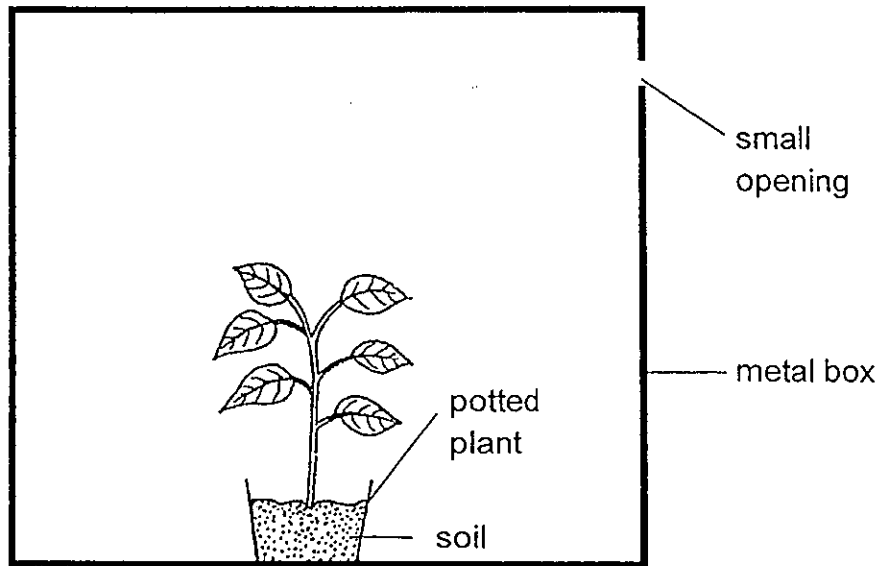
- (a) Based on the graph above, which box contained the living things and which box contained the non-living things? [1]

Living things : Box _____

Non-living things : Box _____

- (b) State the characteristic of living things that you use to arrive at your answer in (a). [1]

- (c) Siti placed a potted plant in a metal box with a small opening at the side as shown in the diagram below.



After a few days, she noticed the plant growing towards the direction of the opening.

Based on Siti's observation, state the characteristic of living things the plant has shown. [1]

32. Mei Ling classified some plants as shown in the table below.

Plants	
A	Reproduce by spores
Balsam	Moss
Coconut Palms	Bird's Nest Fern
Sunflower	Mosquito Fern

- (a) What could be the possible heading for A?

[1]

A:	
----	--

- (b) Mei Ling later found some mushrooms. She classified the mushrooms together with moss and mosquito fern in the table above. Do you agree? Give a reason for your answer.

[1]

33. The table below gives information on two different types of animals, X and Y.
A tick (✓) in each box indicates the characteristic which the animal possesses.

Characteristic	Animal	
	X	Y
Both the young and adult live on land	✓	✓
Has a 4-stage life cycle		✓
Young resembles its parents	✓	
Young of animal feeds on plants		✓

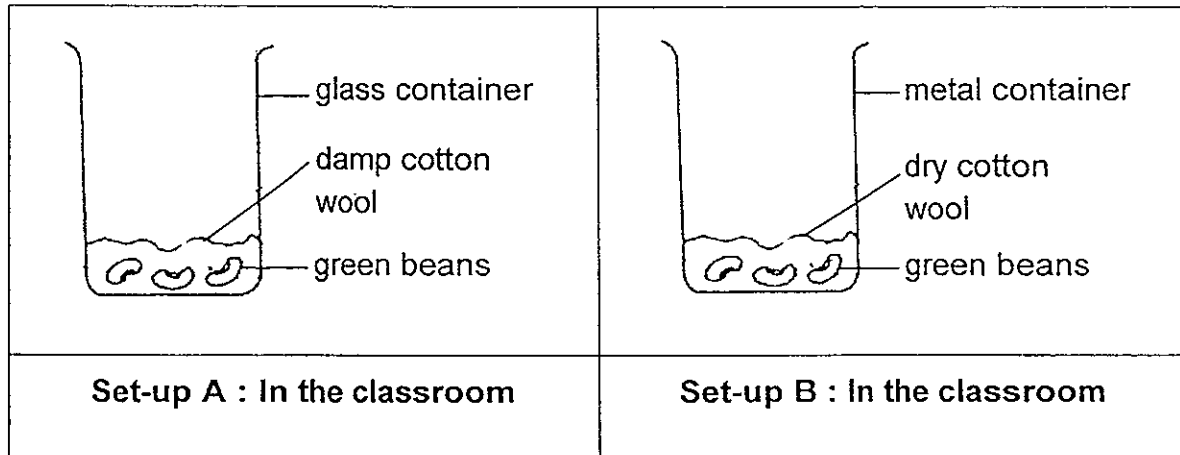
Based on the information given above, answer the following questions:

- (a) State one similarity between Animals X and Y. [1]

- (b) State one difference between Animals X and Y. [1]

- (c) Name an animal that could represent Animal Y. [1]

34. Raju set up an experiment to find out whether green beans need water to germinate. He set up his experiments as shown in the diagrams below.

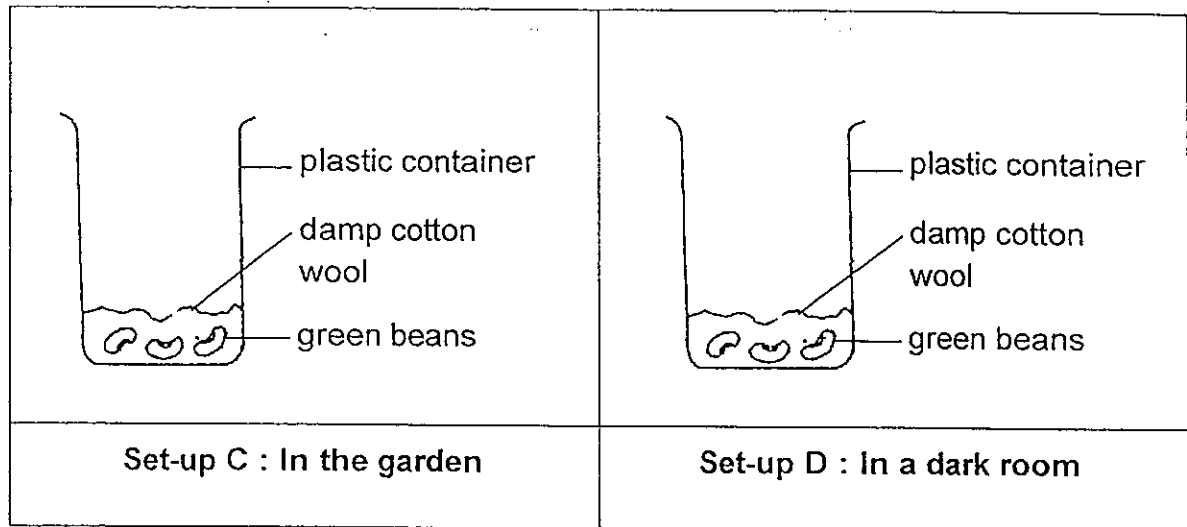


- (a) Raju's teacher said that he has not conducted a fair test.
Explain why this is so.

[1]

(Continue Q34 on the next page)

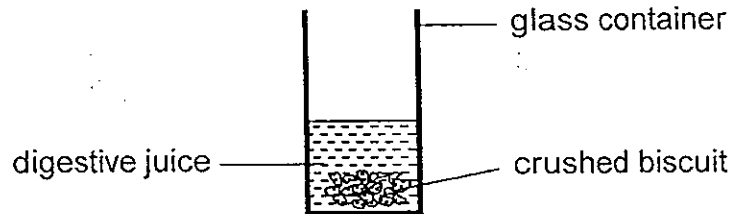
Raju's friend, Ali, set up another experiment as shown in the diagram below.



- (b) Based on set-up C and D, what is Ali trying to find out? [1]

- (c) In which of the set-up(s), C or/and D, will the green beans germinate?
Give a reason for your answer. [1]

35. Peter crushed a piece of biscuit 5 times and placed it into a container containing some digestive juice as shown in the diagram below.



Peter then repeated the same process for another 3 pieces of biscuits, each crushed for a different number of times. He recorded the time taken for the biscuits to be completely broken down into simpler substances.

The results were shown in the table below.

Mass of the biscuit (gram)	15	15	15	15
Number of times the biscuit was crushed	5	8	14	20
Time taken for the biscuit to be completely broken down into simpler substances (minutes)	46	42	35	29

- (a) Name a part in the human digestive system that produces digestive juice. [1]
- _____
- (b) Based on the information in the table above, what is the relationship between the number of time a piece of biscuit is crushed and the time taken for it to be completely broken down into simpler substances? [1]
- _____
- _____
- (c) Besides the type of biscuit and container used, what must Peter do to ensure the experiment above is a fair test? [1]
- _____

36. The table below shows the amount of undigested food that enters some parts of the digestive system.

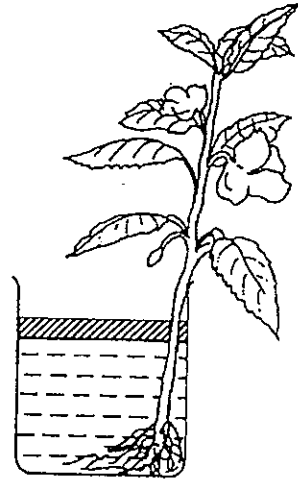
Part of digestive system	Amount of undigested food as it enters the part of the digestive system (g)
W	50
X	70
Y	80
Z	70

- (a) Based on the information in the table above, which part, W, X, Y or Z, best represent the mouth? Give a reason for your answer. [2]

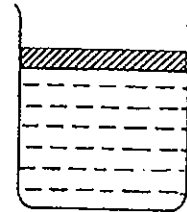
- (b) Which two parts, W, X, Y and Z, best represent the gullet and the stomach? [1]

- (c) Give a reason for your answer in (b) [1]

37. Natalie wanted to find the amount of water a particular plant took in within the duration of 2 hours. She conducted an experiment in a room with the set-ups as shown in the diagram below and recorded the results in the table.



Set-up A



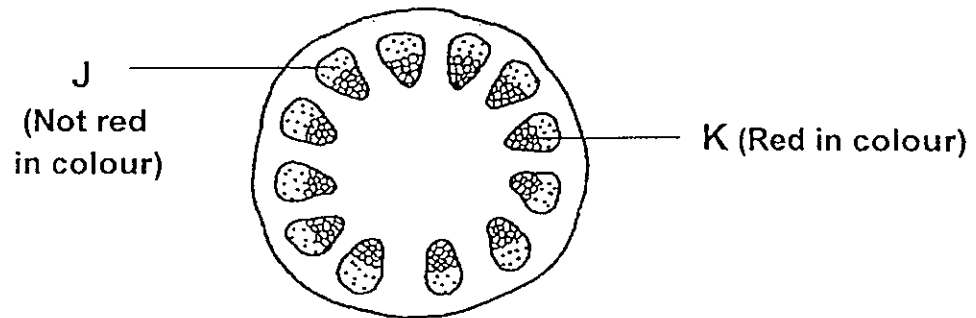
Set-up B

	Set-up A	Set-up B
Amount of water at the start of the experiment	250 ml	250 ml
Amount of water at the end of the experiment	220 ml	250 ml

- (a) Based on the information given in table above, what was the amount of water taken in by the plant? [1]

(Continue Q37 on the next page)

Natalie next put some red colour dye into the water in set-up A.
After 1 hour, she cut the stem of the plant and drew the cross-section of the stem as shown in the diagram below.

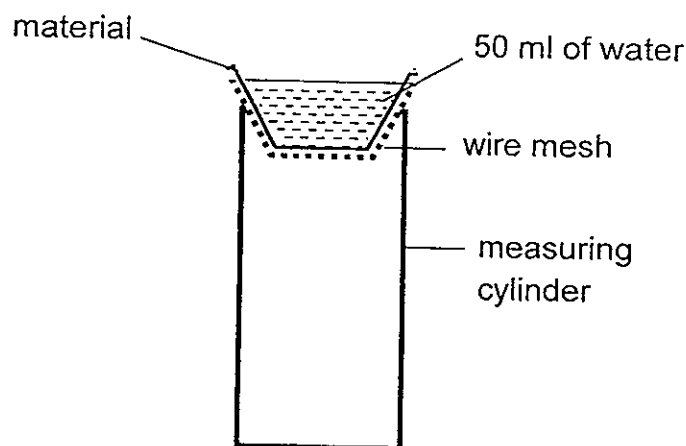


(b) Based on the diagram above, what do Part J and Part K represent? [2]

(i) Part J : _____

(ii) Part K : _____

38. Ali had 4 different pieces of materials, A, B, C and D of similar size and thickness. He wanted to find out which material is most suitable to be made into a raincoat. He set up his experiment using the apparatus as shown in the diagram below and poured 50 ml of water on each material.



After 5 minutes, he recorded his readings in the table below.

Material	Amount of water in the measuring cylinder (ml)	Amount of water left on the material (ml)
A	0	50
B	0	0
C	17	11
D	50	0

- (a) Which material, A, B, C or D is most suitable to be made into a raincoat?
Give a reason for your answer. [1]

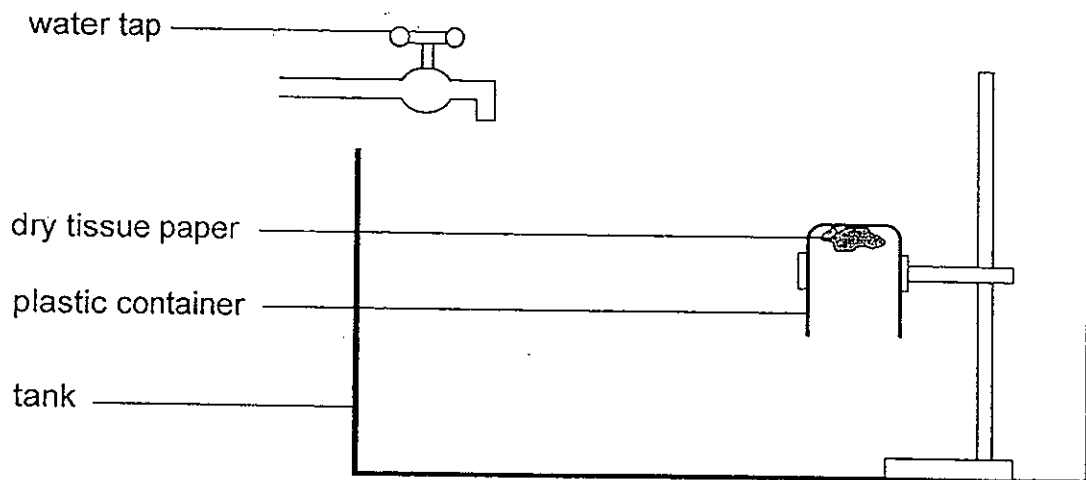
(Continue Q38 on the next page)

- (b) Other than the property that Ali has tested in the experiment, state **ONE OTHER** property of the material that is important in making raincoats. [1]

- (c) Based on the result Ali had obtained, which material, A, B, C or D, is most suitable to be made into a bath towel? [1]

Score www.sgexam.com	2
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39. Richard used the following setup in an experiment.
A piece of dry tissue paper was glued to the inside of the plastic container.



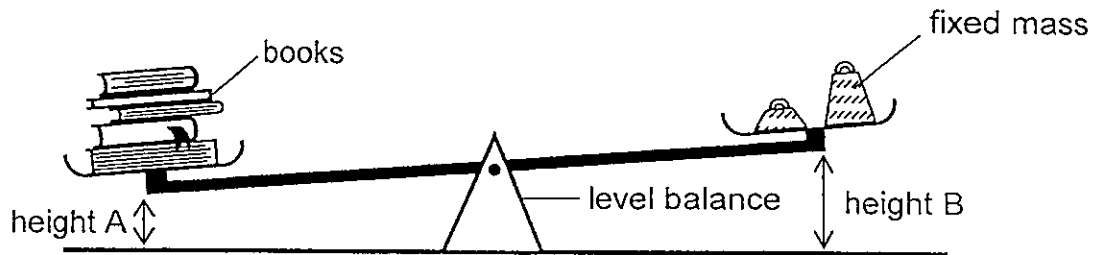
At first, the tank was empty. Richard turned on the tap to allow water to flow slowly into the tank until the tank was fully filled with water.

- (a) What would be the condition of the piece of dry tissue paper in the plastic container when the tank was fully filled with water? Put a tick in the box below to indicate your answer [1]

Condition of the tissue paper in the plastic container	My answer (✓)
The tissue paper will remain dry.	
The tissue paper will become wet.	

- (b) Explain your answer in (a). [1]

40. Siti used a level balance to find out the mass of some books as shown in the diagram below.



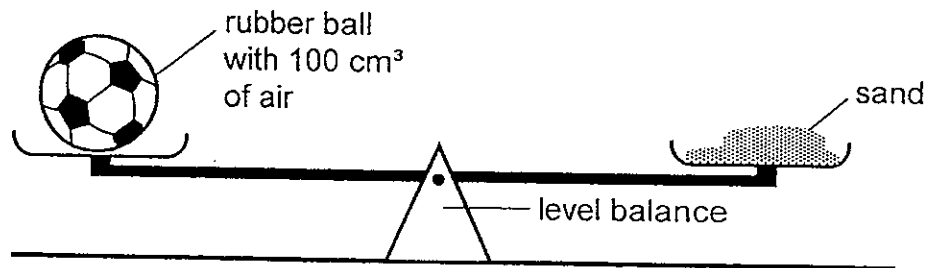
Siti recorded the change in height A and height B when a fixed mass is added to the level balance each time.

Fixed mass (g)	Height A (cm)	Height B (cm)
50	3	17
100	5	15
200	8	12
300	11	9
420	15	5

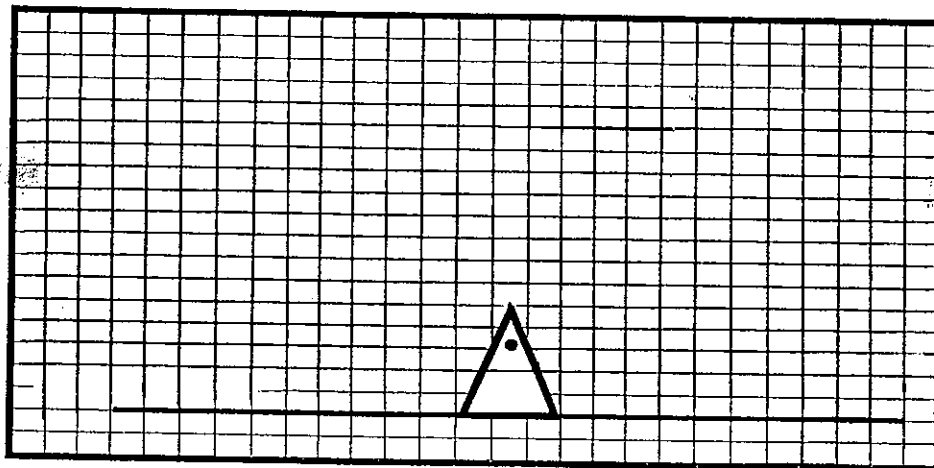
- (a) Based on the table above, what is the mass of the books likely to be? [1]

(Continue Q40 on the next page)

Siti next placed a rubber ball one end of the level balance. She added some sand at the other end until the level balance was balanced as shown in the diagram below.

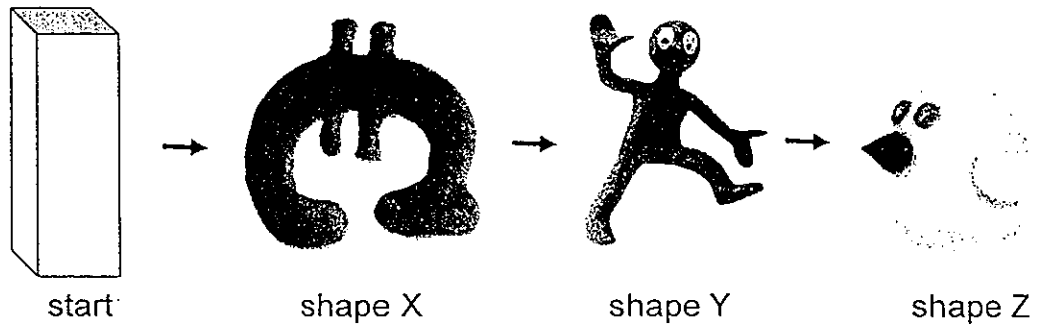


- (b) Draw what she would observe of the level balance after 200 cm³ of air was pumped into the rubber ball in the box below. **Label** your diagram clearly. [1]



- (c) What is the volume of air in the rubber ball now? [1]

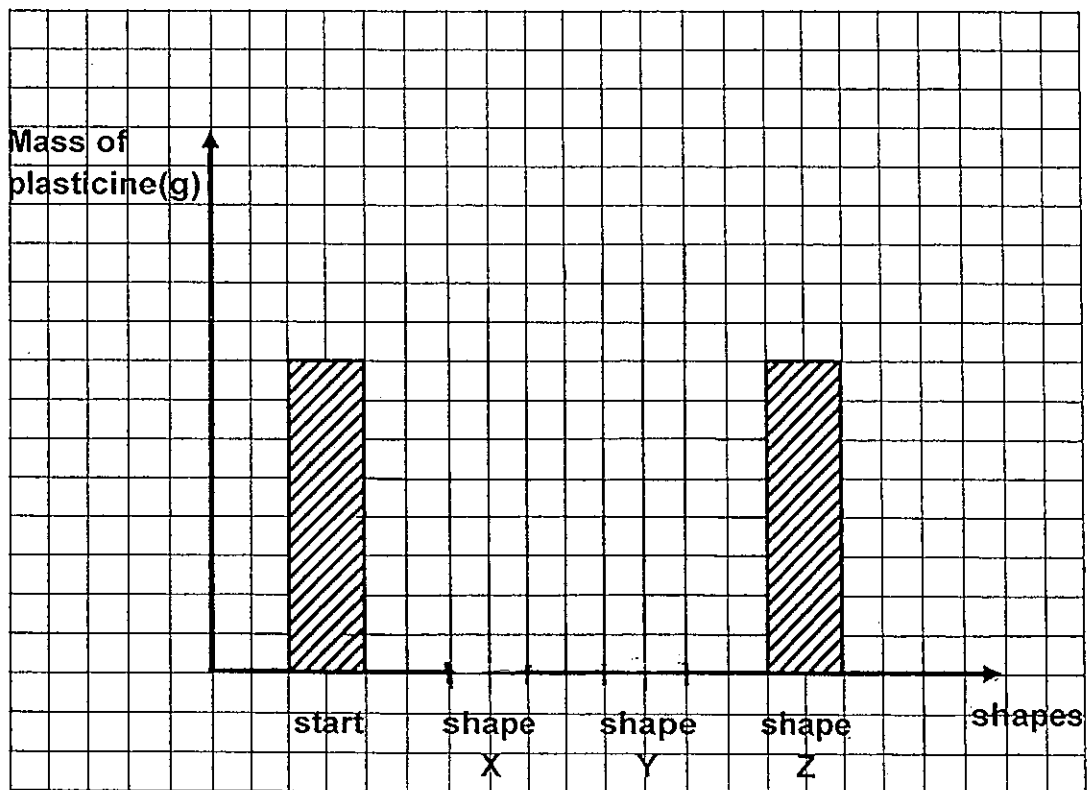
41. (a) Fatimah took a piece of plasticine and moulded the entire piece into shape X, then into shape Y, and finally into shape Z as shown in the diagrams below.



She measured the mass of each shape every time she has moulded it and drew the bar graph below.

Complete the bar graph for shape X and shape Y below.

[2]



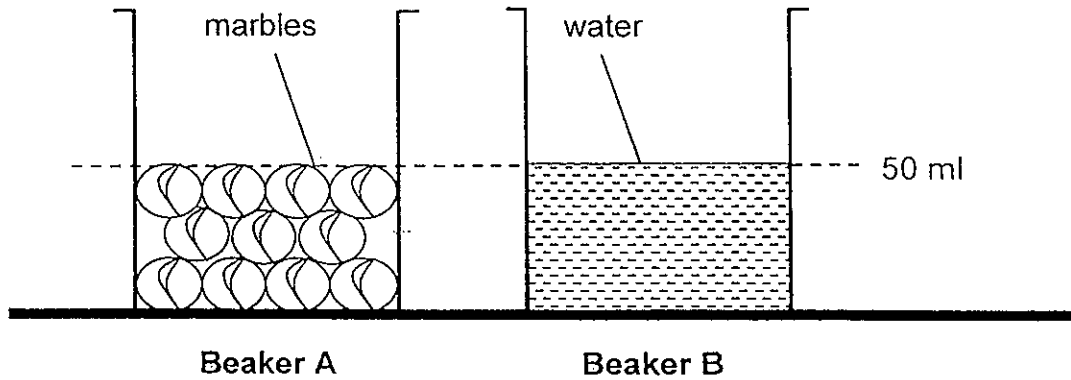
(Continue Q41 on the next page)

- (b) Fatimah next took substance K and measured its volume. She then tried to press substance K and measured its volume again. She recorded her findings in the table below

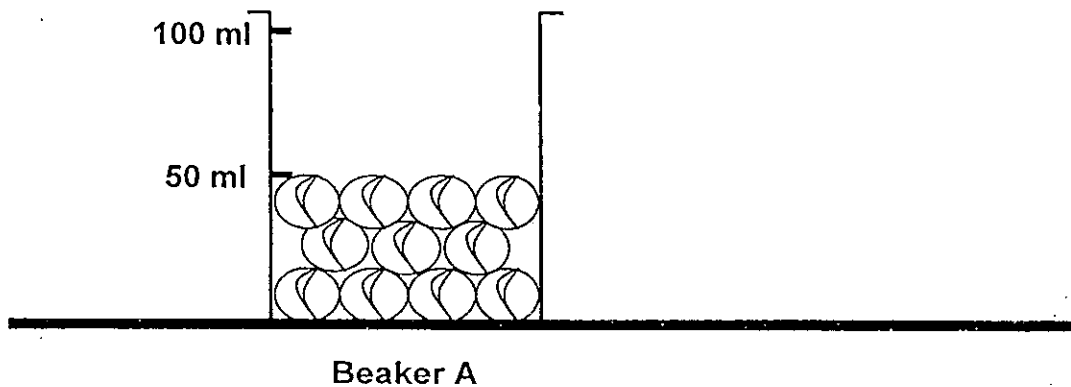
	Volume of substance K (cm ³)
When not pressed	150
After it was pressed	150

From the table above, what can Fatimah infer about the state of the matter that substance K is in? Explain your answer. [1]

42. The diagrams below show 2 similar beakers, A and B, each containing marbles and water respectively.



- (a) Draw a straight line in the diagram below to indicate the water level in the beaker after all the water in beaker B is poured into the beaker A. [1]



- (b) Explain your answer in part (a) [2]

43. A iron bar was magnetised using the "stroke" method as shown in Diagram 1 below.

Diagram 2 shows the magnetic poles of the iron bar after it was magnetised.

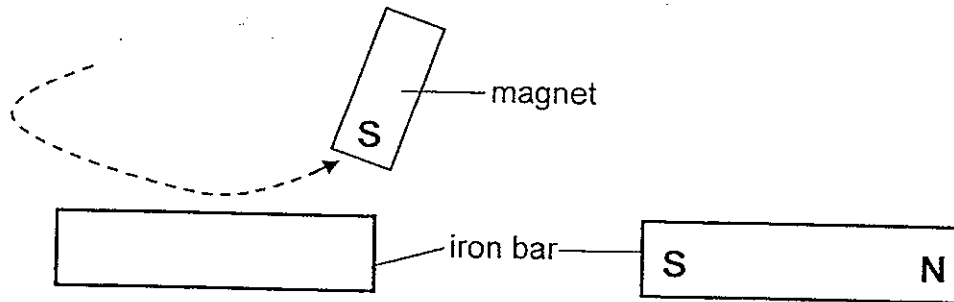


Diagram 1

Diagram 2

Two magnets were used to stroke **another** iron bar as shown in Diagram 3 below.

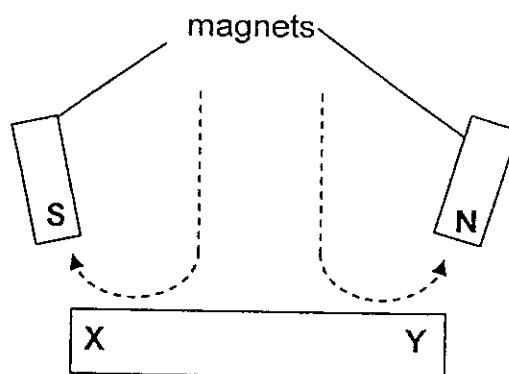


Diagram 3

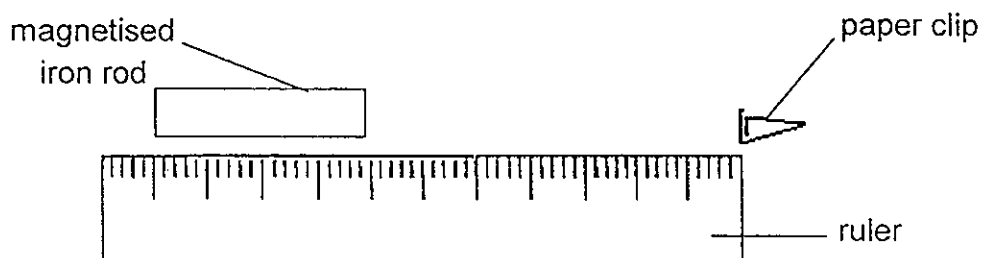
- (a) Identify the poles of the magnetised iron bar at X and Y respectively. [1]

At X: _____

At Y: _____

(Continue Q43 on the next page)

Darren used the "stroke" method to magnetise 4 identical iron rods, P, Q, R and S. After magnetizing the iron rod P, Q, R and S, Darren used the setup as shown below to find out the magnetic strength of the magnetized iron rods.



Darren placed the paper clip and magnetized iron rod beside the ruler as shown above. Next, he pushed the iron rod slowly towards the paper clip until the paper clip is attracted to it and recorded the distance. He repeated the above steps with the other 3 magnetised iron rods.

(Continue Q43 on the next page)

	Distance the paper clip is attracted to the magnetised iron rod (cm)		
Iron rods	1 st try	2 nd try	3 rd try
P	6	7	7
Q	10	10	11
R	14	14	14
S	9	9	10

- (b) Based on the information in the table above, which one of the 4 iron rods, P, Q, R or S, did Darren stroke the most number of times with a magnet? Explain your answer. [1]

- (c) Why did Darren carry out 3 tries when measuring the distance the paper clip was attracted to each of the magnetised iron rod? [1]

44. Sarah has a magnet that can attract 20 iron nails. She heats the magnet over a candle flame and records the number of iron nails it can attract after every 5 minutes. The table below shows her results.

Amount of time taken magnet is heated over a candle flame (minutes)	Number of iron nails attracted
0	20
5	14
10	7
15	0
20	0

- (a) How many iron nails does the magnet attract after 15 minutes of heating? [1]

- (b) From the above information, what can Sarah conclude about the effect of heat on a magnet? [1]

End-of-paper

~ Check your work carefully ~

Setters: Mr Tan Siew Whatt, Mdm Roziyana

ANSWER SHEET

EXAM PAPER 2013

SCHOOL : RAFFLES GIRLS'

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
2	1	3	2	2	1	2	4	3	3	3	2	2	1	3	3	2

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
1	4	3	2	3	1	3	3	1	3	3	4	2

31)a)Living things : Box : B

Non-living things : Box : A

b)Living things reproduce.

c)Living things respond to changes.

32)a)Reproduce by seeds.

b)No. Mushrooms are not plants. It does not have a stem, roots, nor can it make food for itself as a plant should.

33)a)Both the adult and young live on land.

b)Animal Y has a 4-stage life-cycle, Animal X does not.

c)Butterfly.

34)a)There are 2 changed variables in the set-ups. Raju should use the same type of containers for Set-up A and B.

b)Ali is trying to find out if the green beans need sunlight to germinate.

c)Set-up C and D. All conditions are present for the green beans to germinate.

35)a)The stomach.

b)The more number of times the biscuit is crushed, the shorter the time for the biscuit to be completely broken down into simpler substances.

c)He can use the same amount of digestive juice in the container.

36)a)Part Y. The mouth is the first part of the digestive system. Therefore, the amount of undigested food is the most.

b)Part X represents the stomach and part X represents the gullet.

c)The amount of undigested food exit that outlet that is the same when it enters the stomach.

37)a)The amount of water taken in by the plant is 30ml.

b)i)Food-carrying tubes.

ii)Water-carrying tubes.

38)a)Material A. No water fell down into the measuring cylinder, so it is waterproof, thus it is suitable to be made in a rain coat.

b)It must be light-weight.

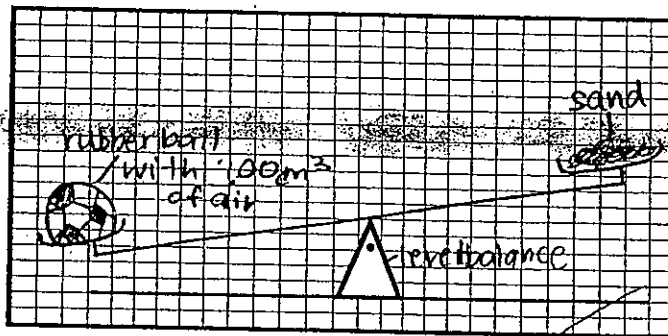
c)Material B.

39)a)The tissue paper will remain dry.

b)As air and water occupy space, the cup would have no opening to let the air escape for the water to come in. Thus, air would be trapped in it and the tissue paper would not become wet.

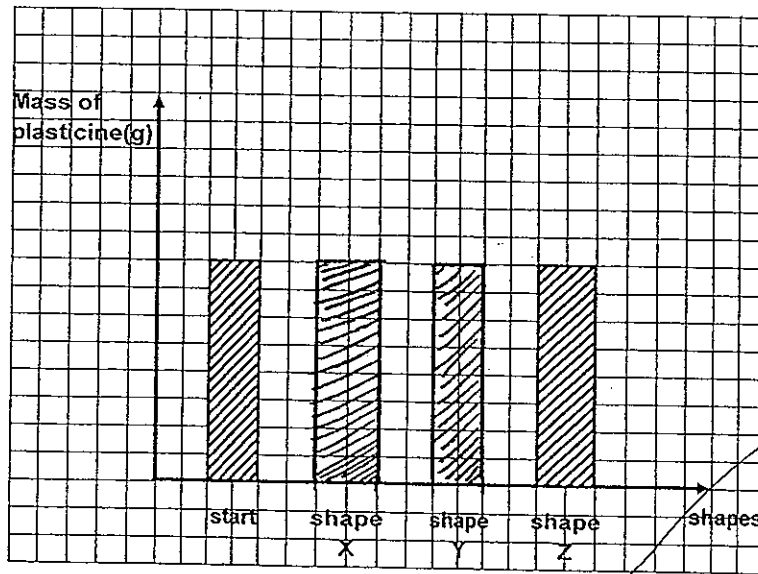
40)a)It is 250 grams.

b)



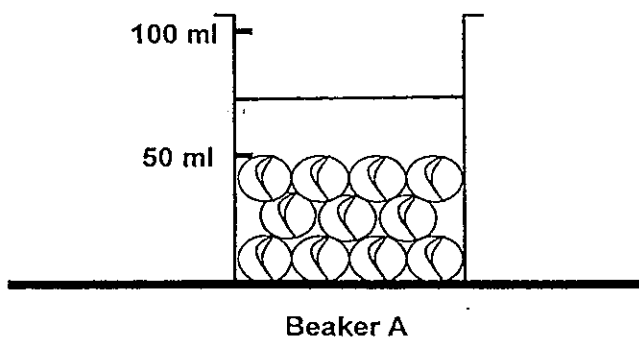
c)It is still 100cm³

41)a)



b) It is in the liquid state. Liquid cannot be compressed. Therefore, the volume is still the same.

42)a)



b) In between the marbles are air spaces. Water would easily flow in and the amount of water would look like it had decreased.

43)a) At X : North pole

At Y : South pole

b) Rod R. It is able to attract the paper clip from the furthest distance.

c) To ensure the reliability of the data.

44)a) It does not pick up anything any more.

b) A magnet loses its magnetism when heated.

