PAYA LEBAR METHODIST GIRLS' SCHOOL (PRIMARY)

SEMESTRAL ASSESSMENT 1, 2019

PRIMARY FOUR

SCIENCE

BOOKLET A

NAME : _____( )

CLASS : P4_____

DATE : 16 MAY 2019

TOTAL TIME FOR BOOKLETS A & B: 1 hour 45 minutes

INSTRUCTIONS TO PUPILS

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

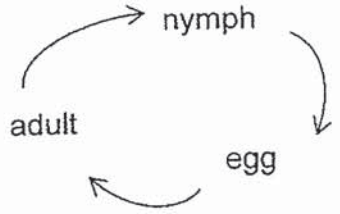
ANSWER ALL QUESTIONS.

Section A: Multiple Choice Questions (28 x 2 = 56 marks)

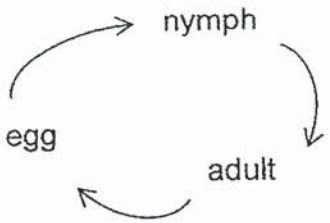
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.

1. Which one of the following correctly shows the life cycle of a cockroach?

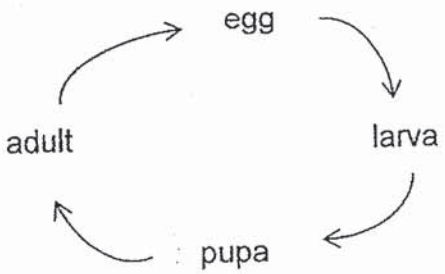
(1)



(2)



(3)



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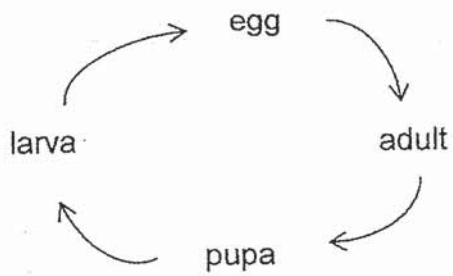


2. Which one of the following living things is not a fungus?

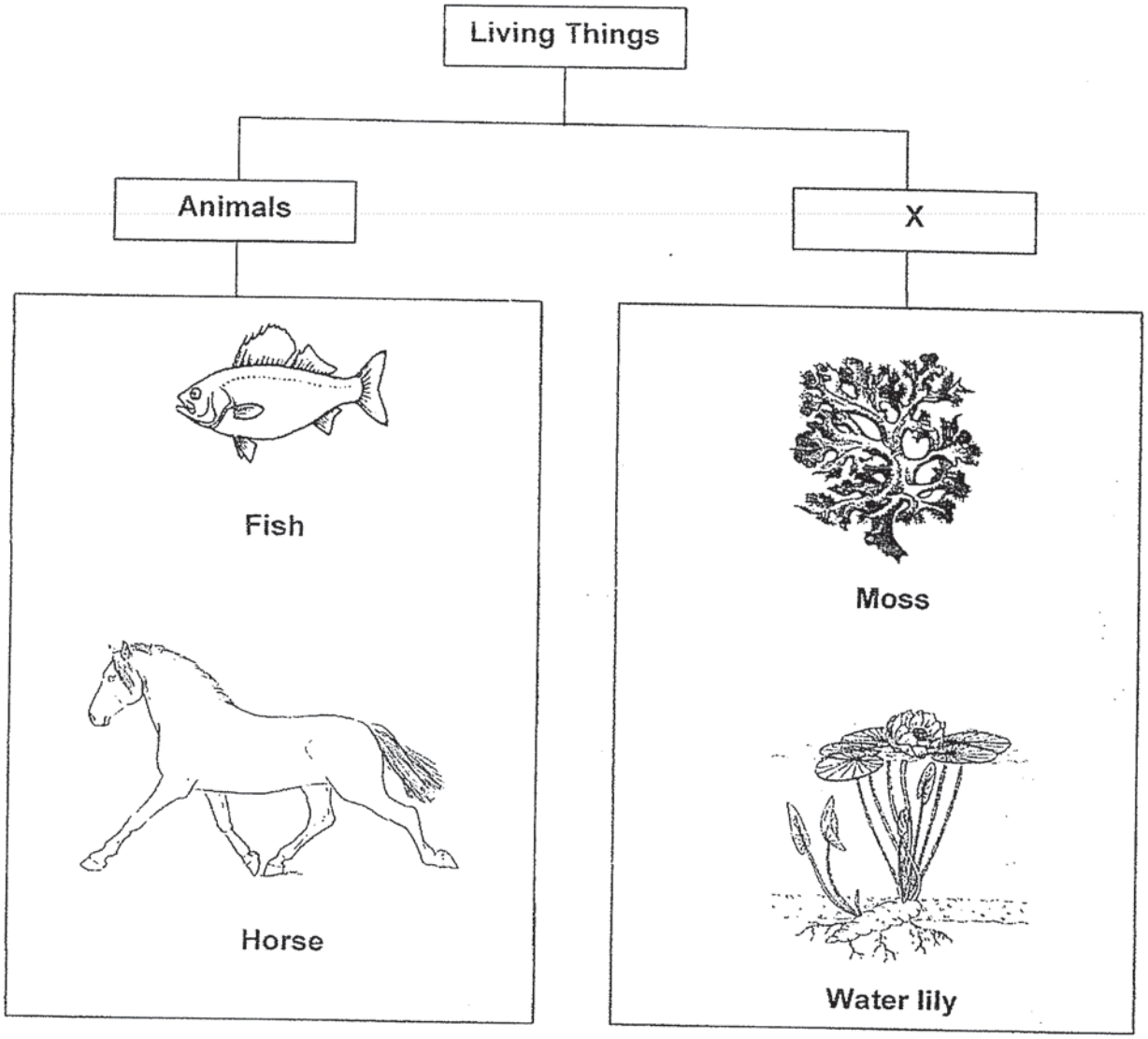
(1) fern
(2) yeast
(3) mould
(4) mushroom

3. Which of the following objects are made from plants?

A Rubber car tyre
B Cotton ball
C Glass mirror
D Leather jacket

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

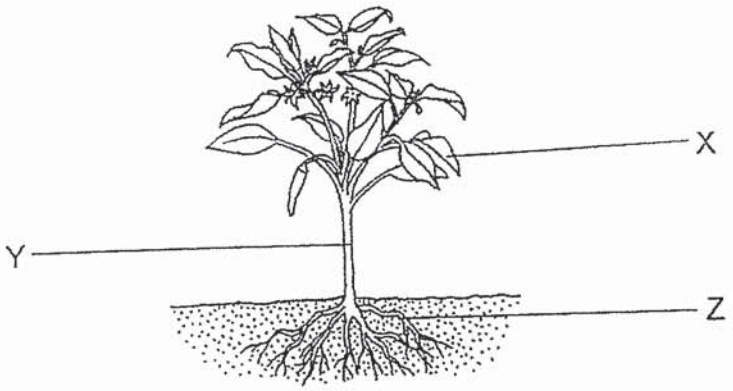
4. The table below shows how some living things can be grouped.



Which one of the following is the most suitable heading for group X?

(1) Fungi
(2) Plants
(3) Insects
(4) Bacteria

5. Study the plant shown below.



Which of the following statements is/are true?

A X makes food for the plant.
B Y takes in and gives out air.
C Z absorbs water from the ground.

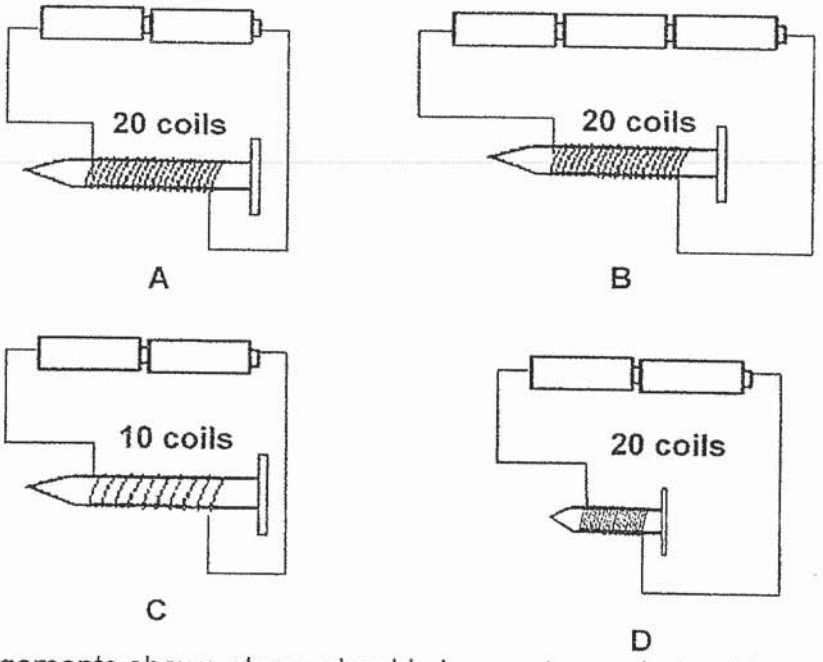
(1) A only
(2) B only
(3) A and C only
(4) A, B and C

6. Which two systems work together to supply oxygen to all parts of the body?

A Skeletal system
B Digestive system
C Circulatory system
D Respiratory system

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

7. Alyson wants to find out if the number of coils of wire around the nail affects the strength of an electromagnet.



Which two arrangements shown above should she use to conduct a fair test?

(1) A and C

(2) A and D

(3) B and C

(4) B and D

8. Study the table below.

Matter	Non-matter
feather	wind
smoke	lightning
shadow	thunder

Which of the following are classified wrongly?

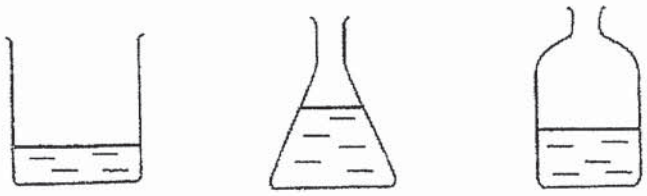
(1) shadow and wind

(2) wind and lightning

(3) shadow and smoke

(4) smoke and thunder

9. Jenny poured 200 ml of water into each of the three containers as shown below.



Which property of a liquid is she trying to demonstrate?

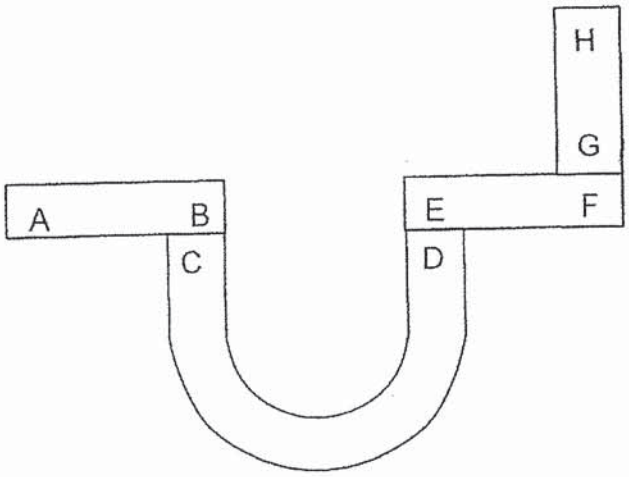
(1) A liquid has a definite mass.

(2) A liquid has no definite shape.

(3) A liquid has no definite volume.

(4) A liquid does not take up space.

10. Three bar magnets and a U-shaped magnet are placed together as shown in the diagram below.



Which one of the following statement is true?

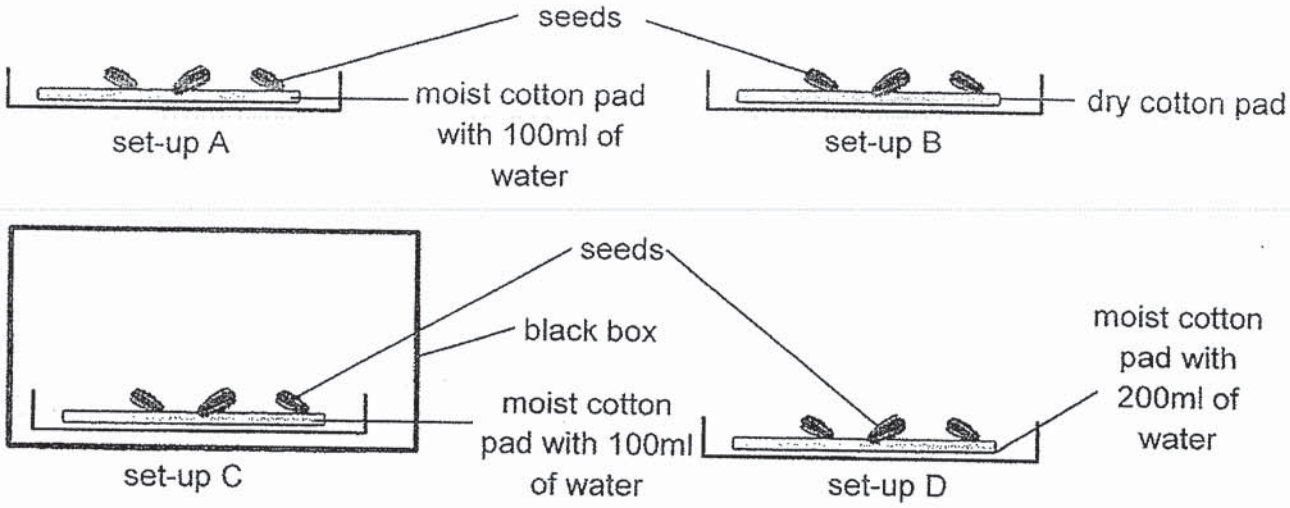
(1) D and E are like poles.

(2) B and E are unlike poles.

(3) A and H will repel each other.

(4) C and G will attract each other.

11. Fiona conducted an experiment to find out if the presence of water would affect the growth of bean seeds.



Which two set-ups should she choose in order to conduct a fair experiment?

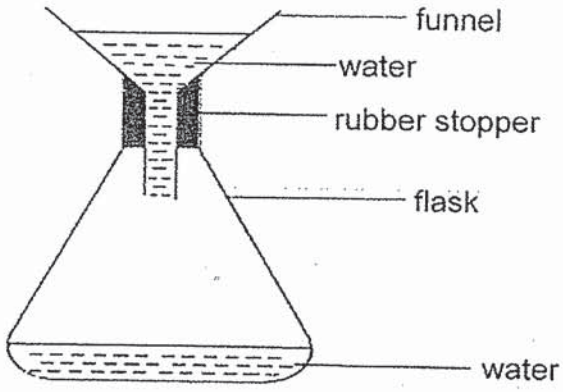
(1) B and D

(2) B and C

(3) A and D

(4) A and C

12. Sophia observed that the water had stopped dripping into the flask after some time as shown below.



Which one of the following statements best explains Sophia's observation?

(1) The air in the flask has mass.

(2) The water in the flask has mass.

(3) The air in the flask occupies space.

(4) The water in the flask has a definite volume.

13. Study the picture of the fern and hibiscus plant below.

fern

hibiscus

How is a fern similar to a hibiscus?

A Both bear flowers.

B Both need water to survive.

C Both need sunlight to make food.

D Both reproduce from seeds.

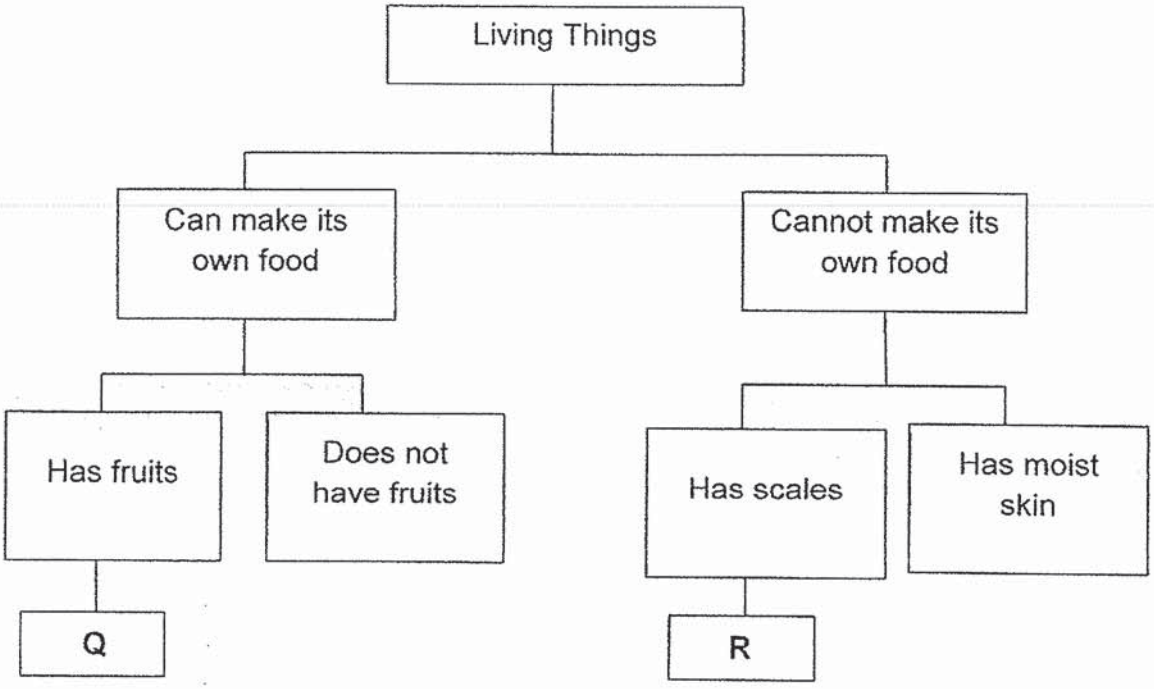
(1) A and B only

(2) B and C only

(3) B and D only

(4) C and D only

14. Study the classification table below.



Which living thing could Q and R represent?

	Q	R
(1)	Orange tree	Frog
(2)	Toadstool	Snake
(3)	Coconut tree	Toad
(4)	Apple tree	Snake

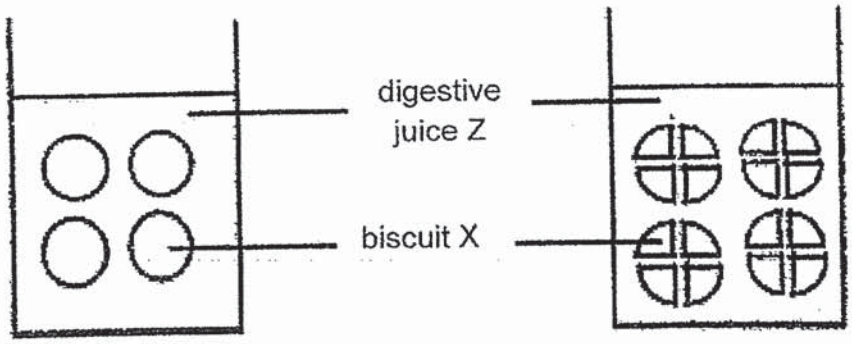
15. John found two objects, A and B, in his home and recorded their properties in the table below. A tick (✓) indicates the property the object has.

Property	A	B
It breaks easily.		✓
It is waterproof.	✓	✓
It allows light to pass through.		✓

Which of the following are objects A and B most likely to be?

	A	B
(1)	Steel pin	Glass cup
(2)	Metal spoon	Cotton shirt
(3)	Cotton shirt	Glass cup
(4)	Rubber band	Metal spoon

16. Susan set up 2 beakers, A and B, containing the same number of biscuit X but the biscuits in B were cut into smaller pieces. She then poured the same amount of digestive juice Z into each beaker and recorded the time taken for the biscuits to be digested.



Which one of the following statements best describes the aim of Susan's experiment?

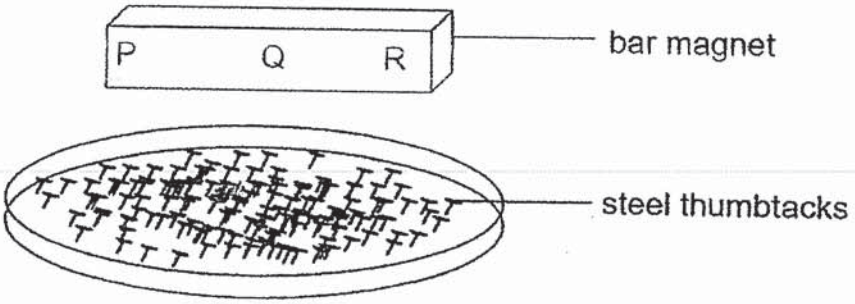
(1) To find out if the amount of digestive juice affects the rate of digestion.

(2) To find out if the type of digestive juice affects the rate of digestion.

(3) To find out if the type of food affects the rate of digestion.

(4) To find out if the size of food affects the rate of digestion.

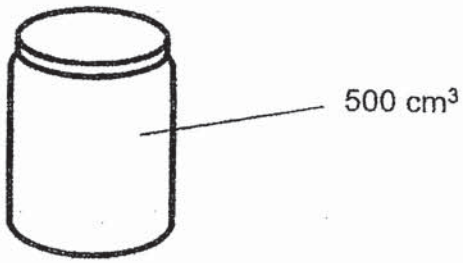
17. A bar magnet with parts labelled, P, Q and R, is placed on top of a tray of steel thumbtacks.



Which of the following most likely shows the number of thumbtacks attracted to parts P, Q and R of the magnet?

	P	Q	R
(1)	9	14	9
(2)	14	14	14
(3)	14	9	14
(4)	14	9	9

18. Natalie has a container with a capacity of 500 cm^3.



Which one of the following can be stored completely in Natalie's container?

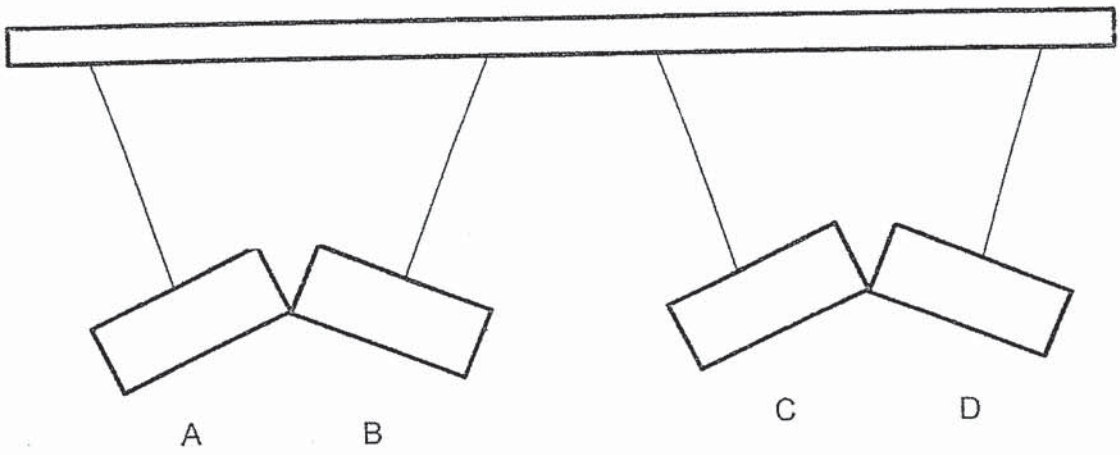
(1) 800 cm^3 of oxygen

(2) 600 cm^3 of marbles

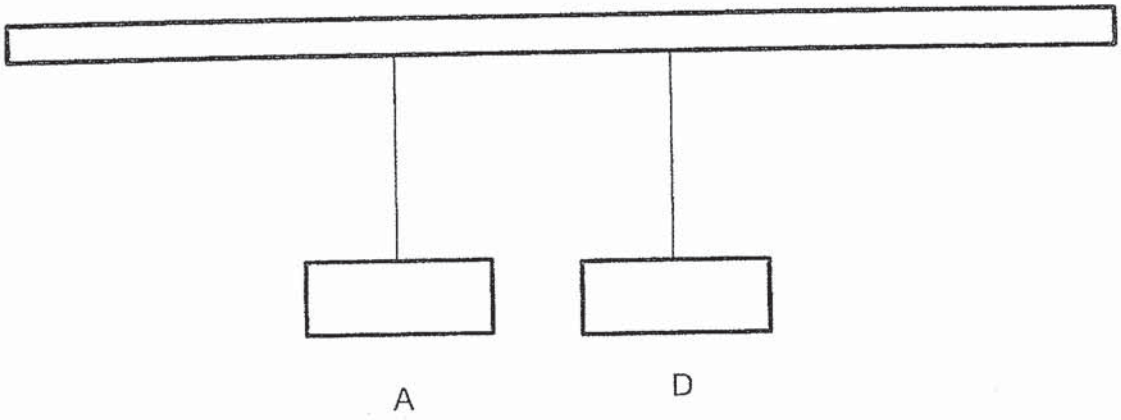
(3) 600 cm^3 of plasticine

(4) 800 cm^3 of apple juice

19. The diagram below shows the interactions between four metal bars A, B, C and D of the same size when Zack hung them on a pole.



After observing the interaction between the metal bars, Zack removed metal bars B and C and moved A closer to D. The new interaction between metal bars A and D is shown below.



Based on the observations shown, which of the metal bars are most likely magnets?

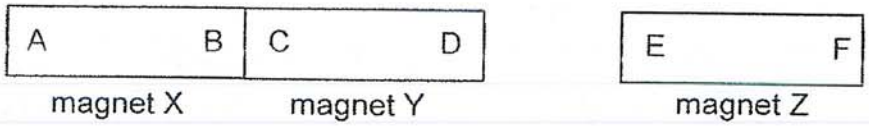
(1) A and B

(2) A and D

(3) B and C

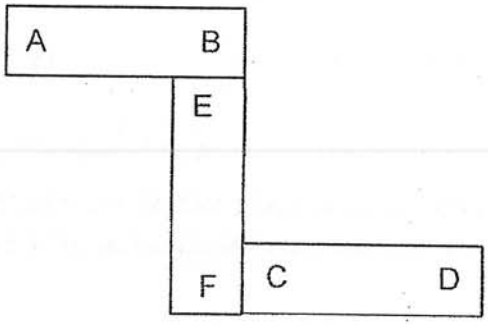
(4) B and D

20. Three bar magnets with their poles labelled A, B, C, D, E and F are placed near one another as shown below. Magnets X and Y attracted each other but magnets Y and Z repel each other.

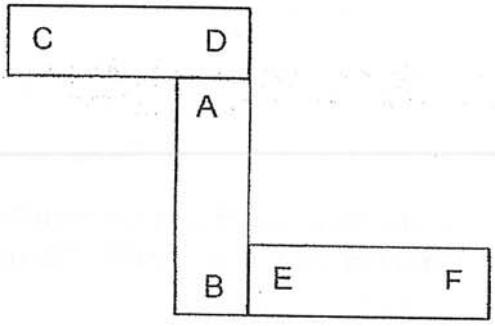


Which one of the following is a possible arrangement of the three magnets?

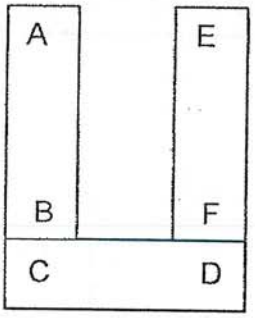
(1)



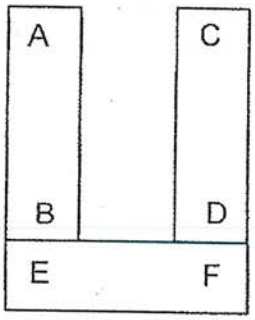
(2)



(3)



(4)



21. Ravi had four magnets made of the same material as shown below.

Magnet A Magnet B Magnet C Magnet D

He brought each of them 3 cm away from a box of pins and observed the number of steel pins attracted. He recorded his observations in the table below.

Magnet	A	B	C	D
Number of steel pins attracted	25	35	40	30

What can Ravi conclude based on his experiment above?

(1) The magnetic strength of a magnet does not depend on its size.

(2) The magnetic strength of B is greater than the magnetic strength of C

(3) The magnetic strength of a magnet depends on the material it is made of.

(4) The magnetic strength of a magnet depends on the distance the pins are placed.

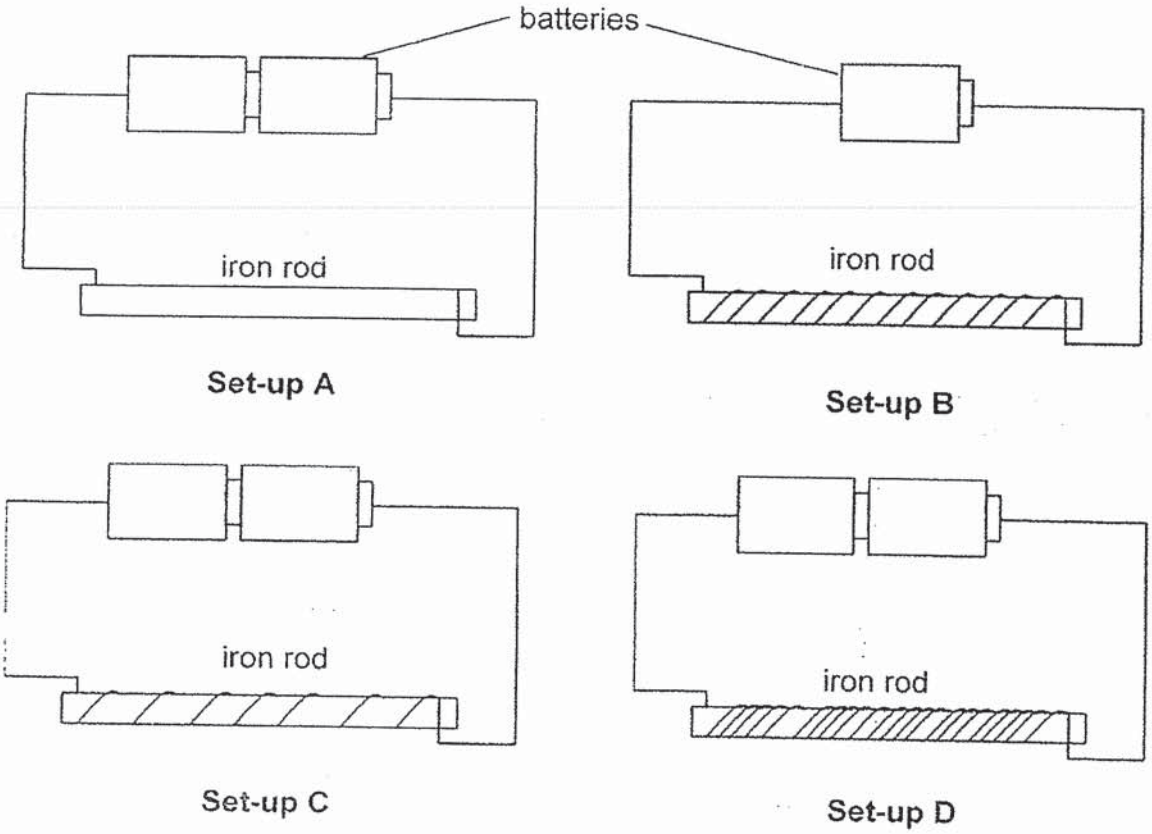
22. Three different rod objects, A, B and C were placed near a magnet. The table below shows the observations made on each object.

Observation	A	B	C
Attracted by a magnet	Yes	Yes	No
Repelled by a magnet	Yes	No	No
No interaction	No	No	Yes

Which of the following correctly represents what each object could be?

	A	B	C
(1)	rod magnet	steel rod	plastic rod
(2)	steel rod	rod magnet	plastic rod
(3)	plastic rod	rod magnet	rod magnet
(4)	rod magnet	plastic rod	steel rod

23. Study the set-ups below.



Which set-up has the strongest electromagnet?

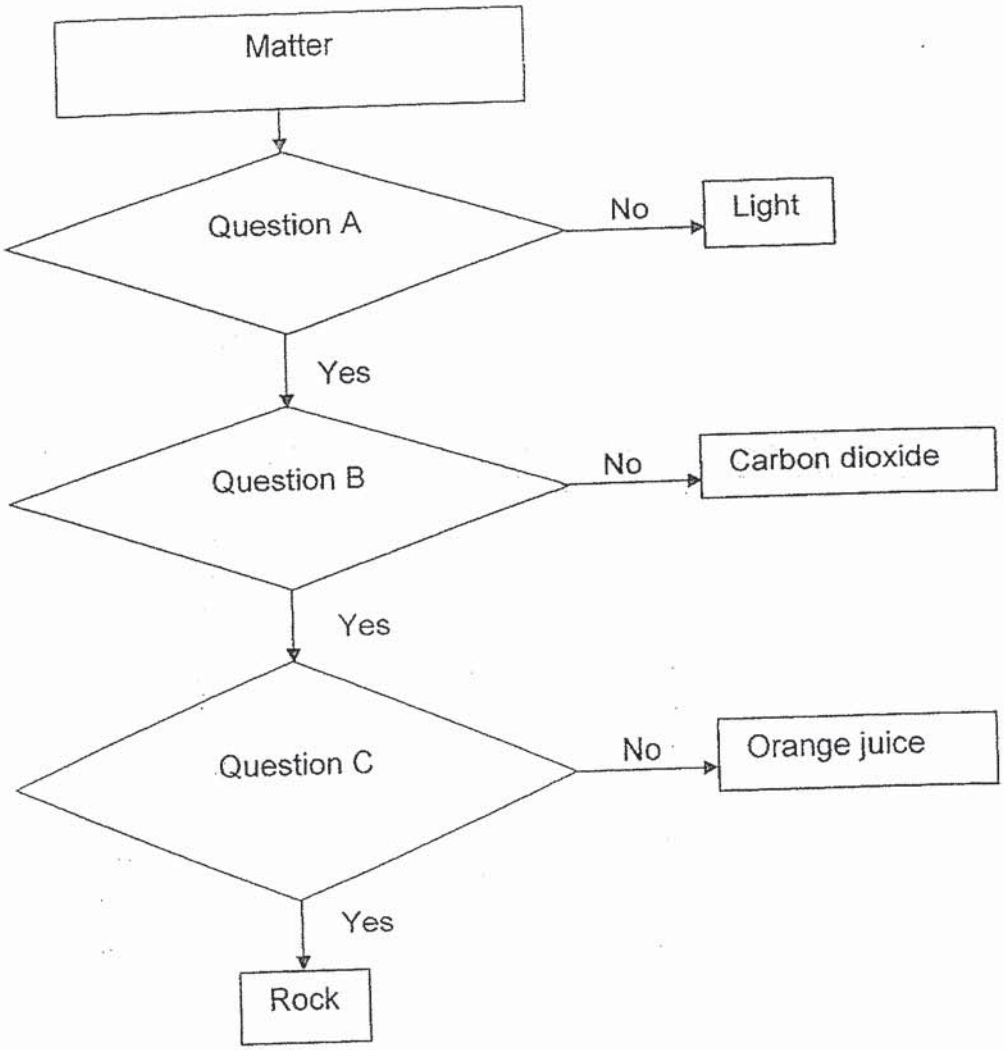
(1) A

(2) B

(3) C

(4) D

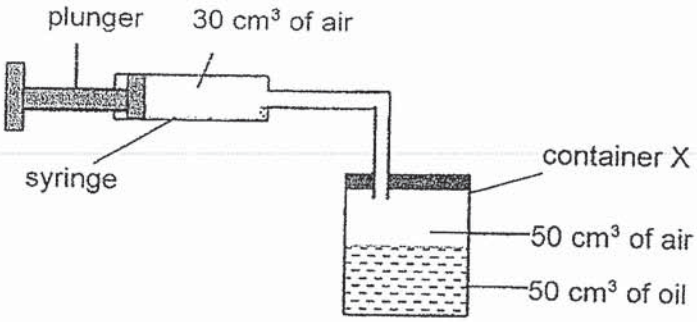
24. Study the flow chart below.



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

	A	B	C
(1)	Does it have mass?	Does it have a definite shape?	Does it have a definite volume?
(2)	Does it occupy space?	Does it have a definite volume?	Does it have definite shape?
(3)	Does it occupy space?	Can it be compressed?	Does it have a definite volume?
(4)	Does it have a definite volume?	Does it have a definite shape?	Does it have mass?

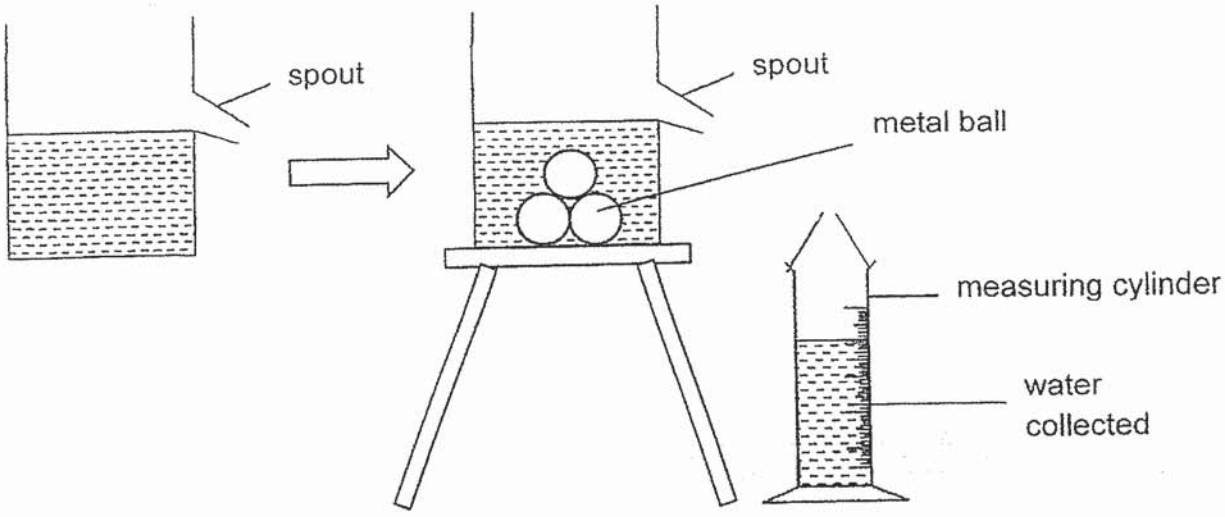
25. The diagram below shows a syringe attached to an airtight container X with a capacity of 100 cm^3. There is 50 cm^3 of air and 50 cm^3 of oil in the container.



When the plunger was pushed into the syringe, 30 cm^3 of air was added to container X. Which of the following shows the changes in the volume of air, oil and the total volume of air and oil in container X?

	Volume of air in container X	Volume of oil in container X	Total volume of air and oil in the container X
(1)	increased	increased	increased
(2)	remained the same	remained the same	remained the same
(3)	remained the same	increased	remained the same
(4)	increased	remained the same	increased

26. The diagram below shows what happened after three identical metal balls were lowered gently into the container.



Based only on the above investigation, which of the following statements is/are correct?

A The metal balls have mass

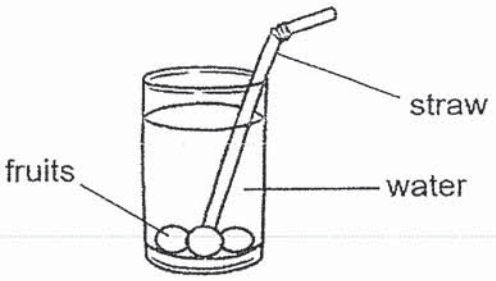
B The volume of water in the container increased.

C The metal balls occupied space in the container of water.

D The volume of water collected into the measuring cylinder is the total volume of the three metal balls.

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

27. Rachel bought a glass of drink containing some fruits as shown in the diagram below.



She realised that no matter how hard she tried, she could only suck the water up the straw. She was not able to suck the fruits up the straw.

Why was she not able to do so?

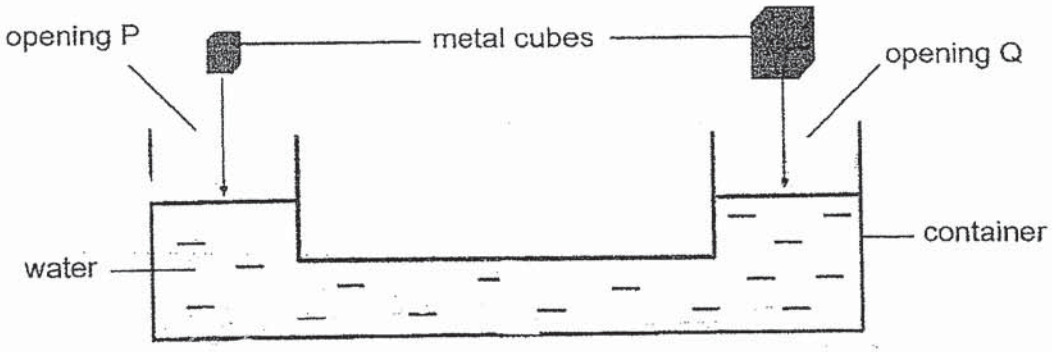
(1) The fruits can be compressed.

(2) The fruits have a definite shape.

(3) The straw has no definite volume.

(4) Water takes up the space inside the straw.

28. The container below has two openings, P and Q. It is filled with water and the water levels at the two openings are at the same height. Two metal cubes of different volumes are dropped into openings P and Q.



What will happen to the water levels at P and Q?

(1) There will be no change to the water levels.

(2) The water level at P will increase more than the water level at Q.

(3) The water level at Q will increase more than the water level at P.

(4) The water levels at both P and Q will increase by the same amount.

END OF BOOKLET A

PAYA LEBAR METHODIST GIRLS' SCHOOL (PRIMARY)

SEMESTRAL ASSESSMENT 1, 2019

PRIMARY FOUR

SCIENCE

BOOKLET B

NAME : _____( )

CLASS : P4 _____

DATE : 16 MAY 2019

TOTAL TIME FOR BOOKLETS A & B: 1 hour 45 minutes

BOOKLET A	/ 56
BOOKLET B	/ 44
TOTAL	/ 100

Parent's Signature: _____

INSTRUCTIONS TO PUPILS

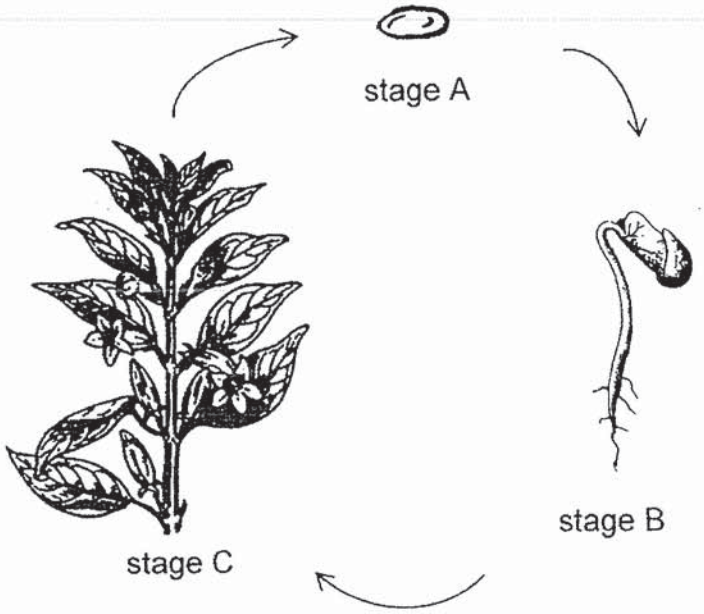
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

ANSWER ALL QUESTIONS.

SECTION B: 44 Marks

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

29. Study the life cycle of a plant below.



(a) Name stage C. [1]

_____

(b) What is the function of the seed leaves at stage B? [1]

_____

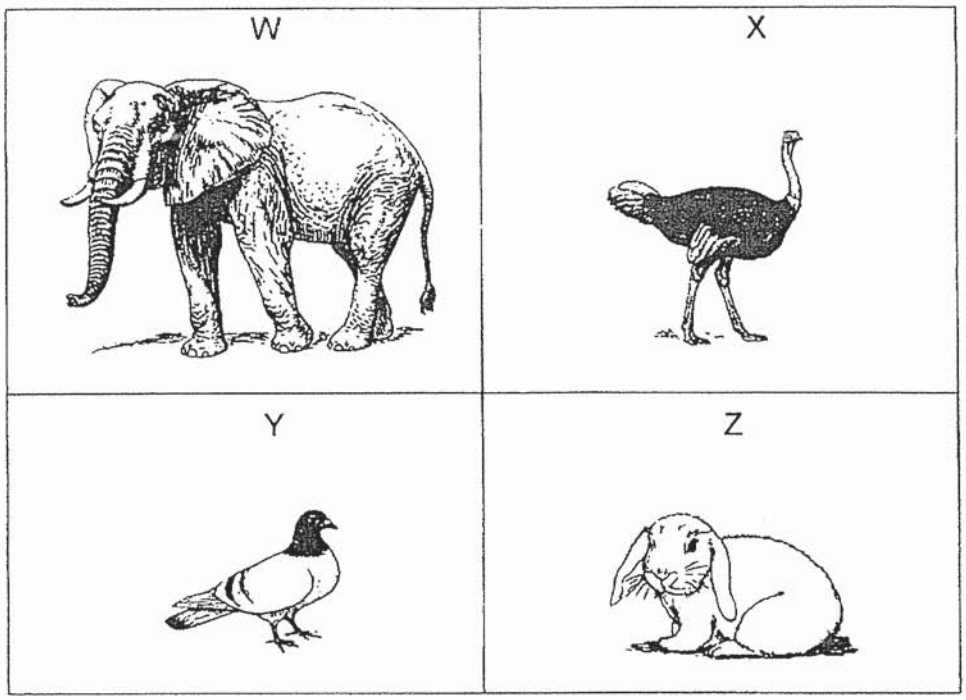
_____

(c) Tick (✓) the conditions needed for stage A to grow in the box below. [1]

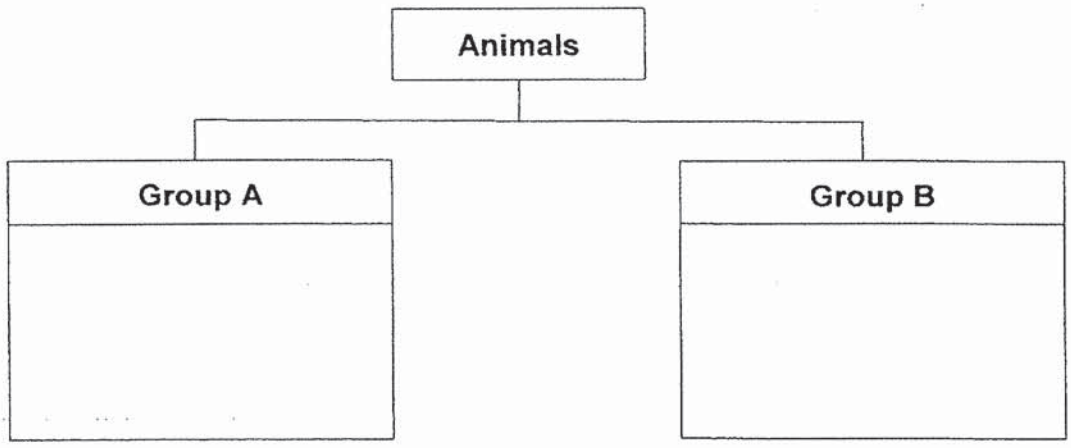
Conditions	
warmth	
sunlight	
air	
water	

3

30. Study the diagram carefully.



(a) Classify the above animals W, X, Y, Z into the classification table below. [2]



(b) State the animal group for Group A and B respectively. [1]

Group A: _____

Group B: _____

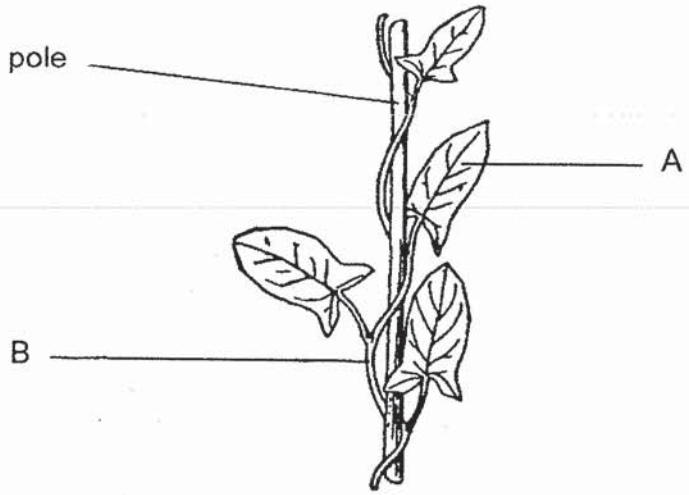
(c) State a difference in the physical characteristic between the two groups of animals. [1]

_____

_____

4

31. Study the picture of the plant below.



(a) State the name of parts A and B.

A: _____

B: _____

(b) What is the function of part A? [1]

_____

_____

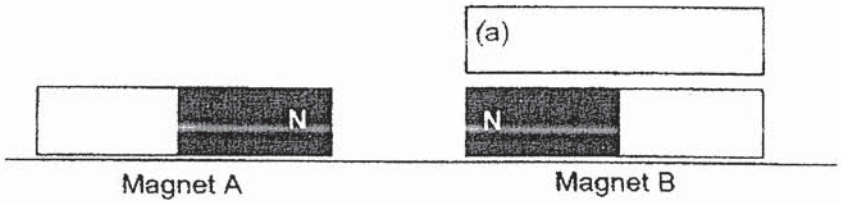
(c) The pole provides support to help the plant climb upwards. Explain why the plant needs to do so. [1]

_____

_____

3

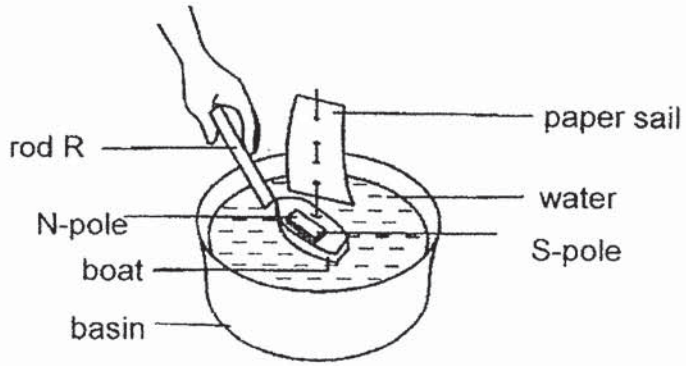
32. Brad pushed two magnets together.



When magnet B was released, it moved along the surface of the table.

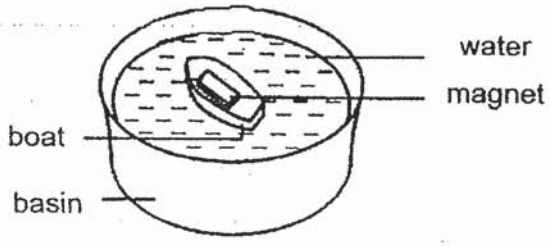
(a) Draw the direction of the movement of magnet B in the box above using an arrow. [1]

(b) Brad placed a magnet on a toy wooden boat and put it in a basin of water as shown in the diagram below.



When Brad placed rod R near the boat, the boat began to move towards rod R.
Brad concluded that rod R must be a magnet. Do you agree? Explain your answer. [1]

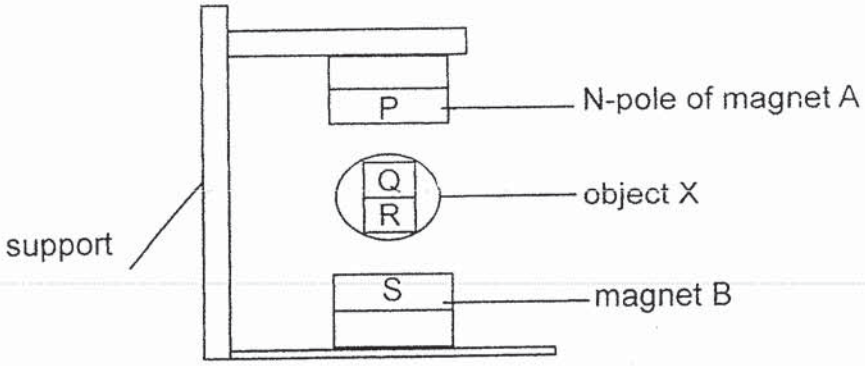
Brad then removed the paper sail from the toy wooden boat. He stated that the magnet on the boat could be used as a compass.



(c) Based on his observation, state the property of a magnet that allows Brad to use it as a compass. [1]

3

33. The diagram below shows object X floating between 2 button magnets A and B. There is a magnet in object X.

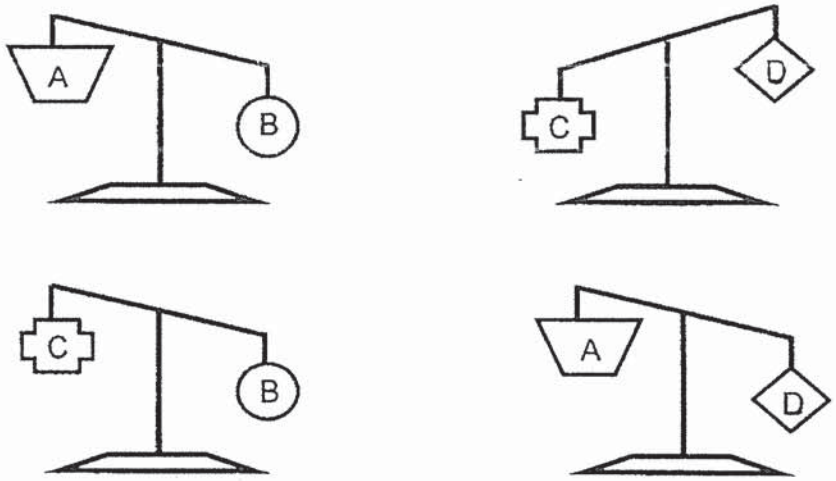


(a) If pole P is the N-pole of magnet A, what will pole S likely to be? [1]

(b) Explain why object X was able to float. [2]

3

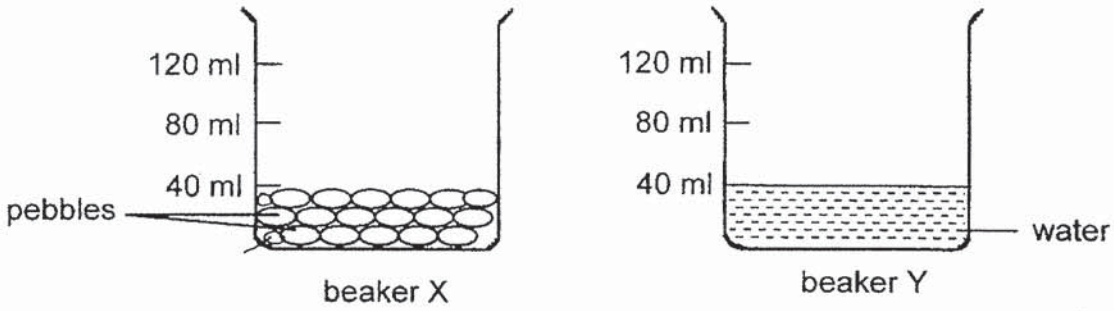
34. Four objects were hung on a lever balance, two at a time, as shown below.



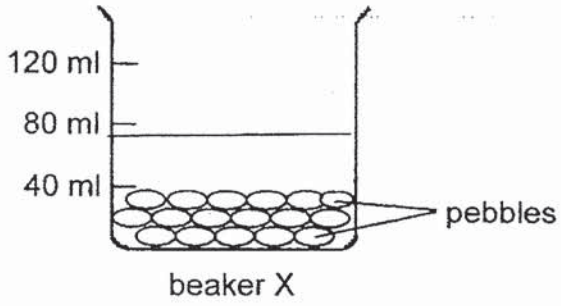
(a) Arrange the objects, A, B, C and D, in increasing order of their mass. [1]

lightest heaviest

(b) Gerald filled beaker X with pebbles and beaker Y with water as shown in the diagram below.



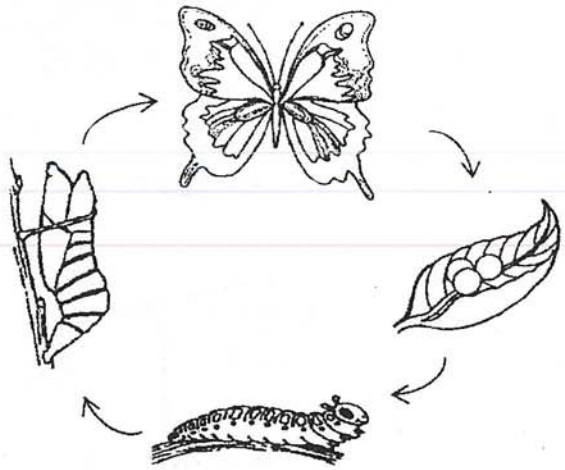
If he poured all the water from beaker Y into beaker X, what would the new water level be? Draw the new water level in the diagram below. [1]



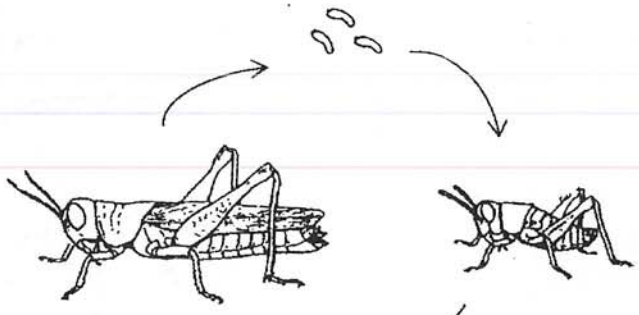
(c) Explain your answer in part (b). [1]

3

35. Study the two life cycles of animal X and animal Y below.



animal X



animal Y

(a) Based on the diagram above, state two differences between the two life cycles. [2]

Difference 1: _____

_____

Difference 2: _____

_____

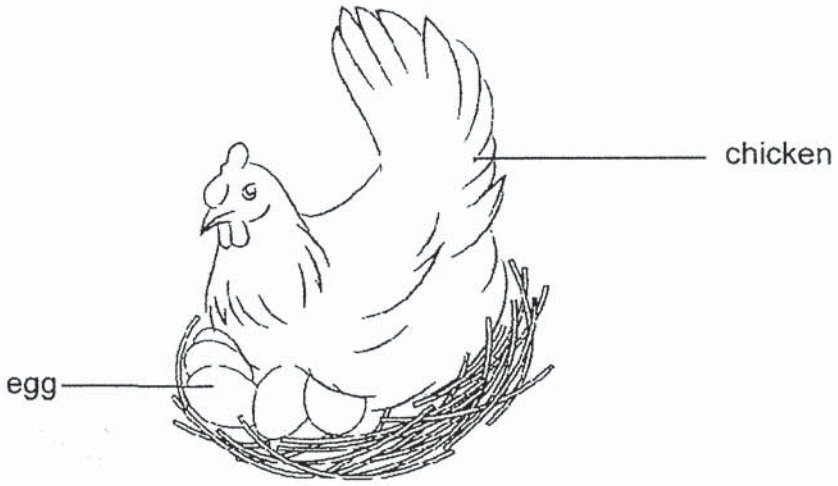
(b) Animal X is considered a pest at one stage of its life cycle. Name the stage and explain why it is considered a pest. [1]

_____

_____

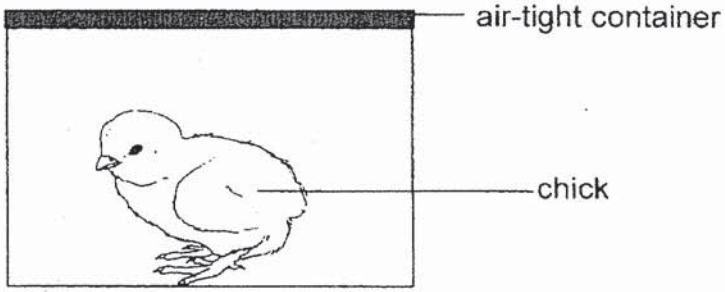
3

36. Jane observed a chicken laying its eggs and then sitting on them.



(a) Which characteristic of living things did she observe? [1]

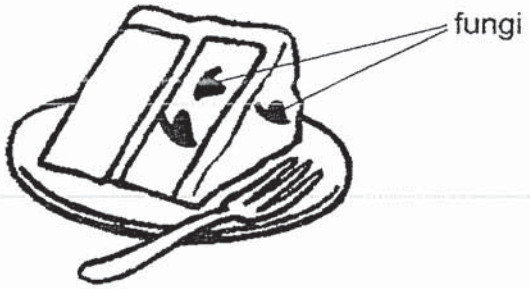
One of the eggs hatched into a chick.



(b) Jane's friend, Bala, said that it is best to keep the chick in an air-tight container as shown above. Do you agree with him? Give reasons for your answer. [2]

3

37. Justin left a cake on the table. After a few days, he noticed some fungi growing on the cake as shown below.



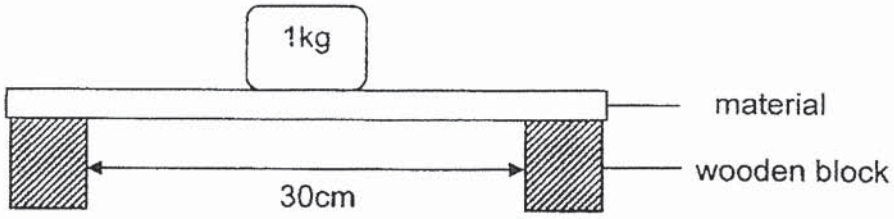
(a) State the three conditions needed for fungi to grow. [1]

(b) How do fungi reproduce?

(c) Justin told his mother that if he had placed the cake in the freezer, the fungi would continue to grow. Do you agree with Justin? Explain your answer. [1]

3

38. Pauline conducted an experiment on four materials, W, X, Y and Z as shown below.



She placed each material on two wooden blocks and placed 1kg weights, one at a time, on the centre of each material before it breaks. She recorded her results in the table below.

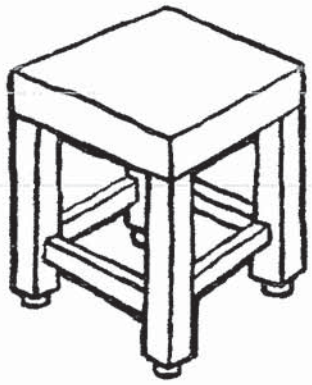
Material	Number of 1kg weights to cause the material to break
W	10
X	7
Y	6
Z	16

(a) Based on the results above, which property of material was Pauline trying to investigate? [1]

(b) Put a tick (✓) in the appropriate box(es) to indicate the variables that Pauline must keep the same to ensure a fair test. [1]

Variable	Keep the same
Type of material	
Thickness of material	
Number of weights placed on the material	
Distance between the two wooden blocks	

(c) Pauline wanted to use one of the materials, W, X, Y or Z, to make a stool for a small child with a mass of 14 kg.



Based on the results of her experiment, which material is most suitable to make the seat of the stool? Explain your choice. [2]

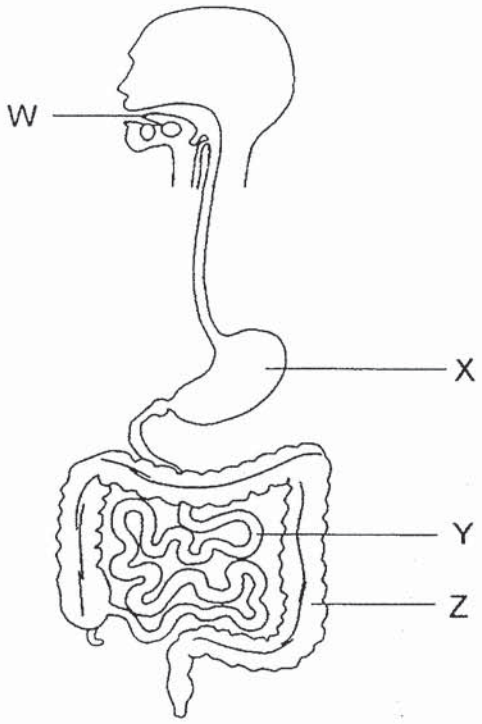
_____

_____

_____

4

39. The diagram below shows the human digestive system.



(a) Identify the organs in the digestive system represented by W and X. [1]

W: _____

X: _____

(b) What is the function of Organ Y? [1]

_____

(c) Explain why there was no digested food present in Organ Z. [1]

_____

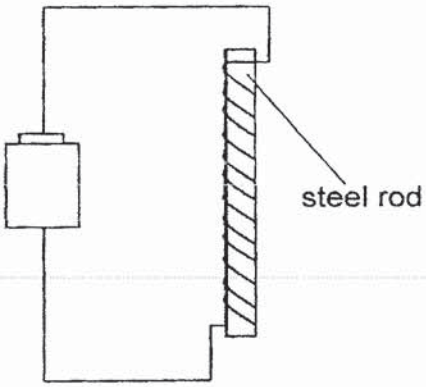
_____

(d) Identify the human system that works together with the digestive system to transport digested food to all parts of the body. [1]

_____

4

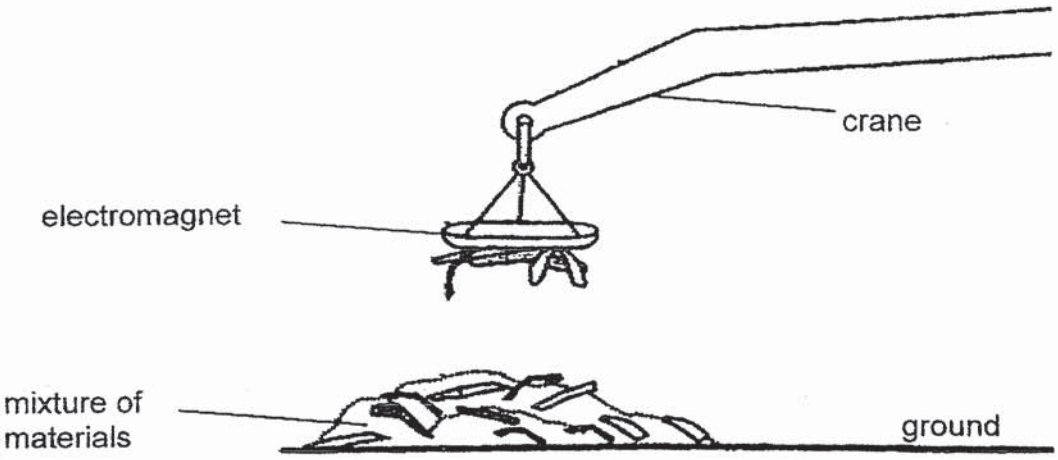
40. The diagram below shows an electromagnet.



(a) An electromagnet is made by coiling wire around a steel rod. Give a reason why a steel rod is used. [1]

_____

(b) The diagram below shows part of a crane that uses an electromagnet to collect metal pieces for recycling.



On a particular day, the recycling plant processes five different types of waste materials, **steel, aluminium, iron, glass** and **plastic**. In the table below, classify these 5 materials into where they can be found. [1]

on the electromagnet	on the ground

(c) Explain how the crane is able to separate the waste materials. [1]

(d) Some metals will still be left behind in the mixture of materials. Explain why this is so. [1]

4

41. Angie placed a ping pong ball in a basin of water. She held an inverted plastic cup just above the water as shown in Diagram A. She then pushed the inverted plastic cup fully into the water as shown in Diagram B.

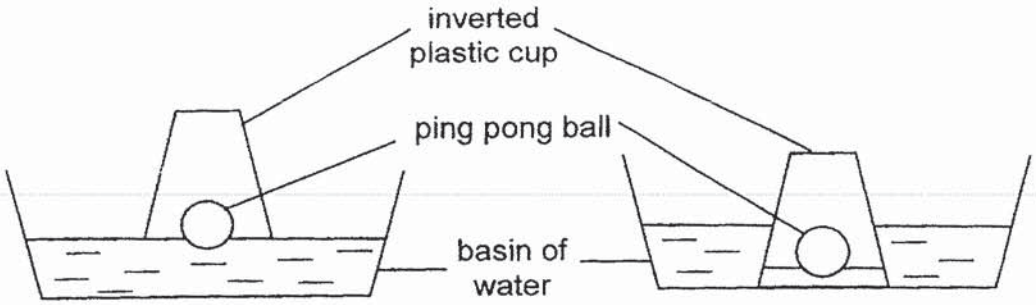
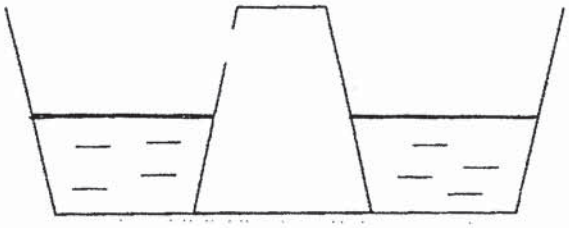


Diagram A Diagram B

(a) She observed that some water entered the inverted plastic cup when she pushed it into the water. Explain why. [2]

(b) Angie created a hole on the side of the inverted plastic cup and pushed it into the basin of water. Draw the water level and the ping pong ball after some time in the diagram below. [1]



(c) Explain your answer in (b). [1]

END OF BOOKLET B

4

ANSWER KEY

YEAR : 2019
LEVEL : PRIMARY 4
SCHOOL : PAYER LEBAR METHODIST GIRL'S SCHOOL
SUBJECT : SCIENCE
TERM : SA1

SECTION A

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

BOOKLET B

(29a) Adult plant

(29b) It provides food for the young plant at stage B.

(29c) warmth

Air

Sunlight

(30a) Group A: W,Z

ıp B:Y,X

(30b) Group A: Mammals

Group B: Birds

(30c)The animals in Group B has a beak but the animals in Group A does not have a break.

(31a) leaf

Stem

32 a) ⟶

(31b) It traps sunlight to make food for the plant.

(31c) To set maximum sunlight to make food.

(32b) No, rob R may be a magnetic object. It needs to repel the magnet to show that it is a magnet.

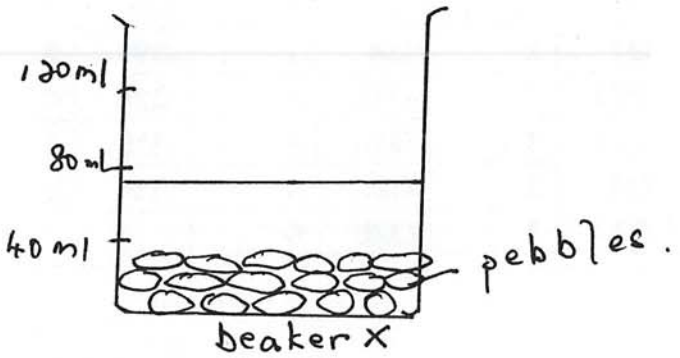
(32c) A freely suspended magnet rest in the North-South direction.

(33a) S-pole

(33b) P and Q are like poles. R and S are also like poles. Since the like poles of the magnets were facing each other, the magnets repelled.

(34a) A→D→C→B

(34b)



(34c) This was because the water could take up the air spaces in between the pebbles that was previously occupied by air.

(35a) Difference 1: Animal X has a 4-stage life cycle while animal Y has a 3-stage life cycle.

Difference 2: The young of animal Y resembles its adult but the young of animal X does not.

(35b) The larva stage, as it will eat leaves and without leaves the plant will die as it does not have food.

(36a) Living things reproduce.

(36b) No, as the chick will not survive as it does not have enough air, food and water.

(37a)Warmth, oxygen and water

(37b) Fungi reproduce by spores.

(37c) No, this is because fungi need warmth to grow and if he put the plant into the freezer there will be no warmth, therefore fungi cannot grow.

(38a) Strength.

(38b) Thickness of material

Distance between the two wooden blocks.

(38c) Z, it can hold the most weights before it breaks. Z is the strongest material so it can support the mass of 14kg without breaking.

(39a) W: mouth

X : stomach

(39b) Organ Y produce digestive juices and is where digestion ends.

(39c) This was because organ Z takes the water from undigested food as organ Y had already absorbed the digested food In the blood.

(39d) The circulatory system.

(40a)This was because the steel rod is a magnetic object.

(40b) On the electromagnet: steel iron

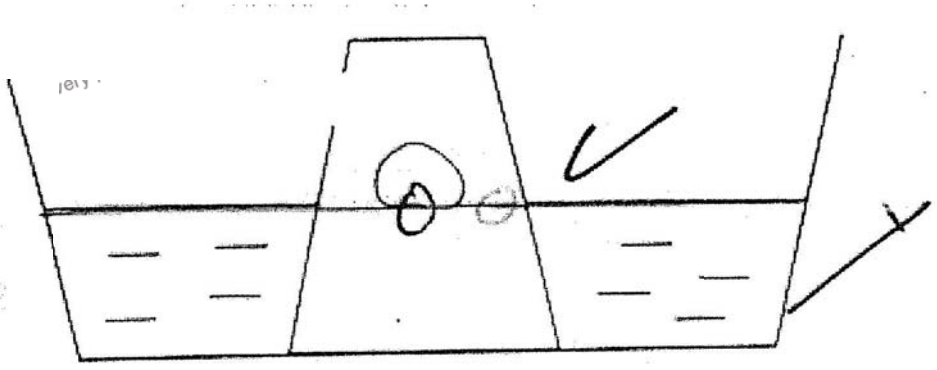
On the ground: aluminium glass plastic

(40c) The electromagnet will attract only magnetic objects leaving behind the non-magnetic objects.

(40d) This is because not all metals are magnetic and the electromagnet only attracts magnetic objects.

(41a) Air in the cup can be compressed, allowing water to enter the cup to occupy space.

(41b)



(41c) Air in the cup can escape through the hole, hence water can take up the space previously occupied by air.