SEMESTRAL ASSESSMENT 1
SCIENCE
2017

Name:	_____ ( )	**Marks:**	_____ / 60
Level:	**Primary 4**	**Total Time for Booklets**	
Class:	**Primary 4 ( )**	**A and B:**	**1 h 30 min**
Setter:	**Ms Sng Chee Hoon**	**Date:**	**9 May 2017**

Total Marks: ___/100

BOOKLET A

Instructions to pupils:

1. **Do not open this booklet until you are told to do so.**
2. **You are required to answer all the questions in this booklet.**
3. This question booklet consists of **18** printed pages, including the cover page.

Section A (30 x 2 marks)

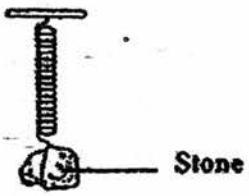
For each of the questions from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

1. **Which one of the following is not an example of matter?**

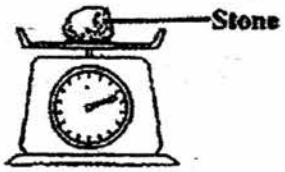
   (1) Air
   (2) Light
   (3) Plasticine
   (4) Cooking oil

2. **Which one of the following set-ups should John use to measure the volume of a piece of stone?**

(1)

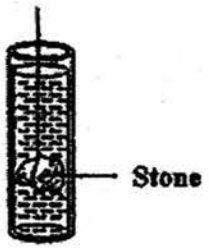


(2)

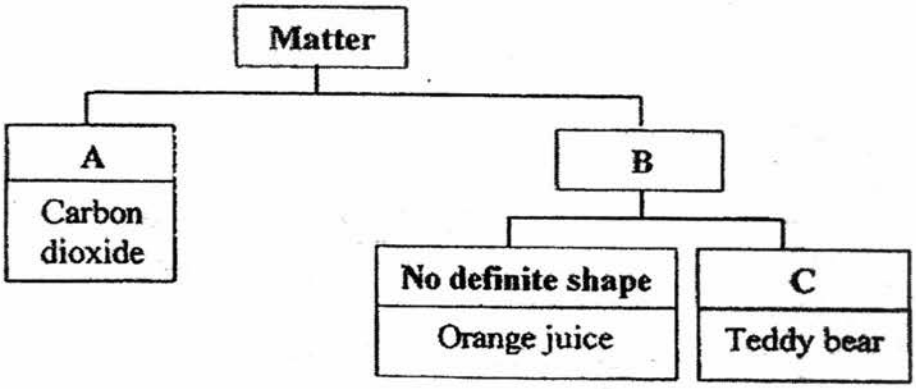


(3)

(4)



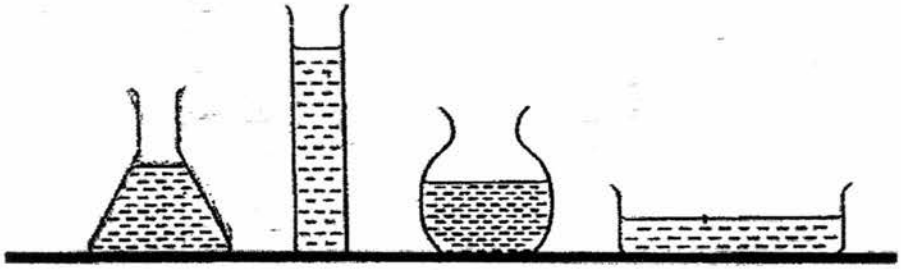
3. Study the classification chart below carefully.



Which one of the following sets of headings correctly represents A, B and C?

	A	B	C
(1)	Definite shape	No definite shape	No definite volume
(2)	No definite shape	Definite shape	No definite volume
(3)	Definite volume	No definite volume	No definite shape
(4)	No definite volume	Definite volume	Definite shape

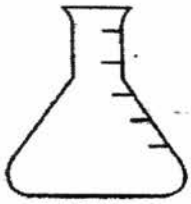
4. Praveen poured 120ml of water into each of the four containers as shown below.



What could he conclude from the experiment above?

(1) Water can be compressed.
(2) Water has no definite shape.
(3) Water has a definite volume.
(4) Water has no definite volume.

5. Study the diagrams below carefully.



Flask

Stapler

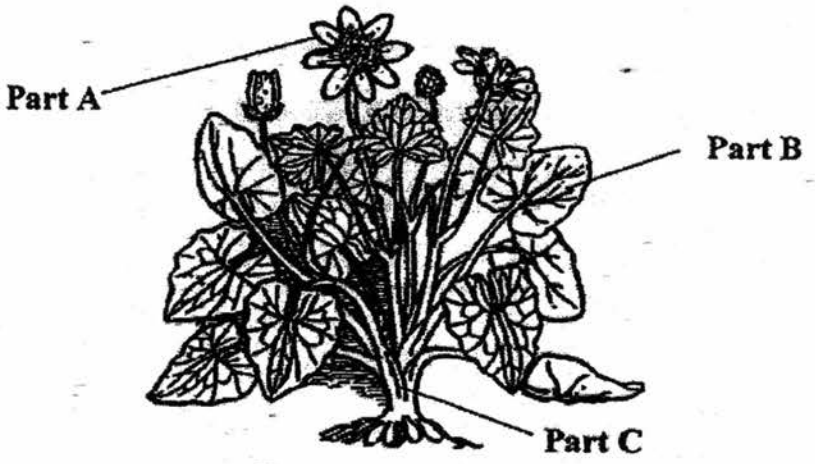
Paper clip

Fan

Which of the above are examples of a system?

(1) Stapler and fan only
(2) Flask and paper clip only
(3) Flask, stapler and fan only
(4) Stapler, paper clip and fan only

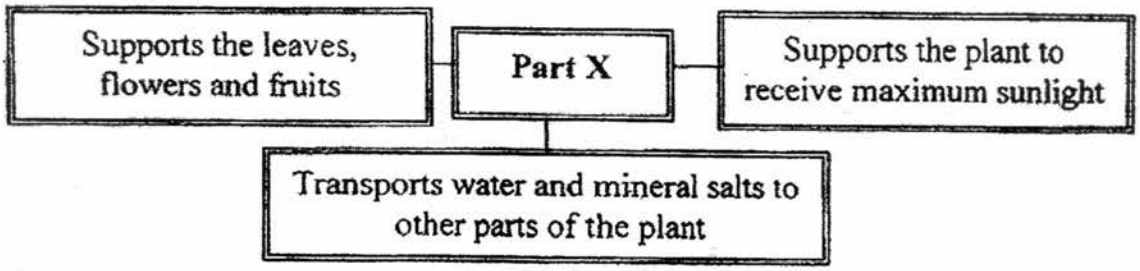
6. Study the plant below carefully.



Which of the plant parts above is / are responsible for gaseous exchange?

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

7. Study the concept map below carefully.



Which part of the plant does X represent?

(1) Stem
(2) Root
(3) Leaf
(4) Flower

8. The classification table below shows the various systems in the human body and their functions.

	Human Body		
System	**P**	**Q**	**Digestive**
Functions	Carries food, water and oxygen to all parts of the body.	Protects the delicate organs in the body.	S
	Carries waste materials away from different parts of the body.	R	

Some information was left out. Which one of the following sets best represents the letters P, Q, R and S?

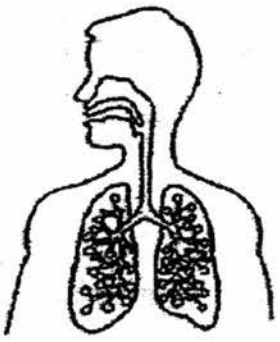
	P	Q	R	S
(1)	Respiratory	Muscular	Takes oxygen into the body	Removes carbon dioxide from the body
(2)	Respiratory	Skeletal	Helps different parts of the body to move	Takes oxygen into the body
(3)	Circulatory	Skeletal	Gives the body its shape	Absorbs simple food substances so that they can be used by the body
(4)	Circulatory	Muscular	Removes carbon dioxide from the body	Breaks down food into simpler substances

9. The picture below shows Javier skipping.

Which body systems work together to enable him to skip?

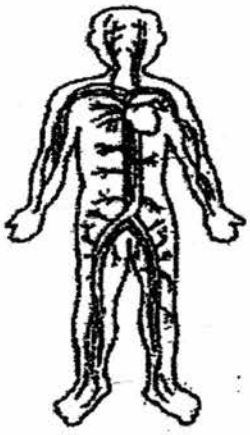
A:

B:



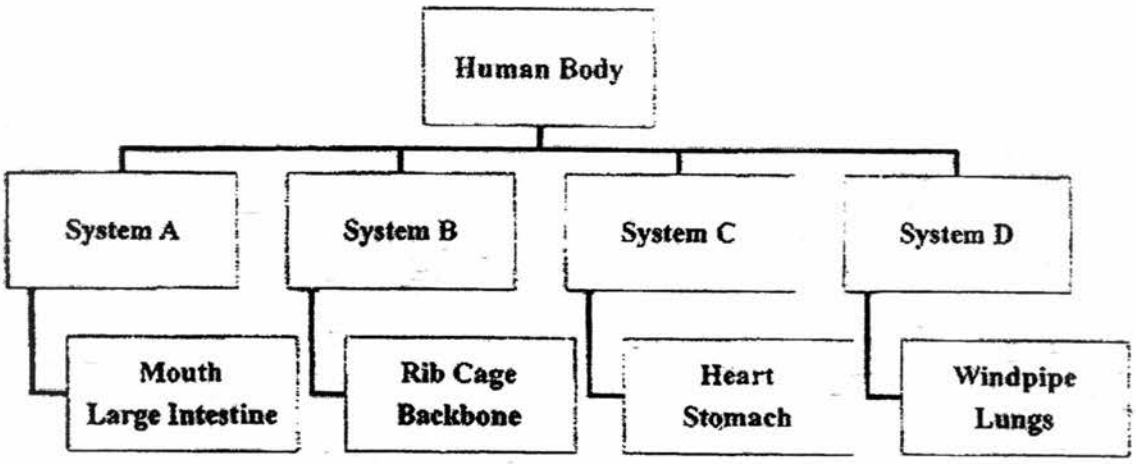
C:

D:



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

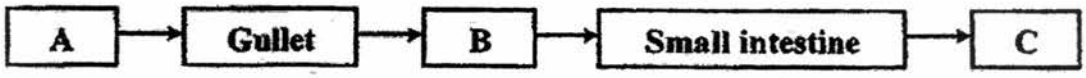
10. Study the classification chart below carefully.



Which one of the systems above has that wrongly classified?

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

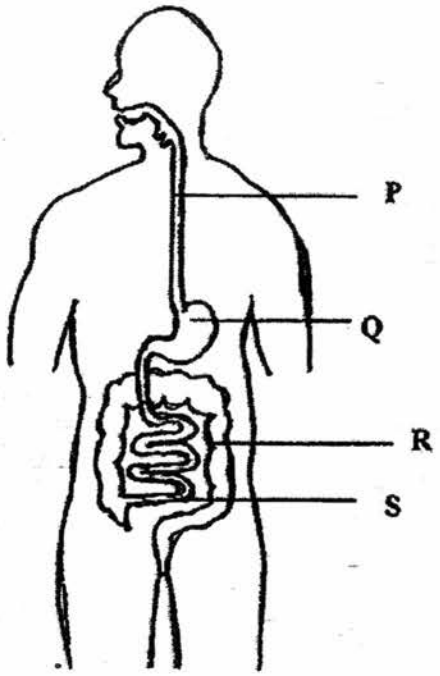
11. The flowchart below shows the path taken by the food in our digestive system.



Which one of the following sets correctly identifies A, B and C?

	A	B	C
(1)	Mouth	Liver	Anus
(2)	Nose	Windpipe	Lung
(3)	Mouth	Stomach	Large intestine
(4)	Lung	Heart	Blood vessel

12. Study the human digestive system below carefully.



Which one of the following tables correctly describes parts P, Q, R and S?

(1)

	P	Q	R	S
Produces digestive juices		✓		✓
Absorbs digested food	✓			✓
Absorbs excess water			✓	

(2)

	P	Q	R	S
Produces digestive juices		✓		✓
Absorbs digested food		✓		
Absorbs excess water			✓	

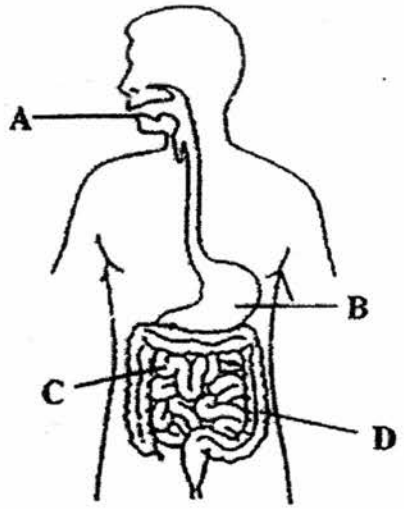
(3)

	P	Q	R	S
Produces digestive juices		✓		✓
Absorbs digested food				
Absorbs excess water			✓	✓

(4)

	P	Q	R	S
Produces digestive juices		✓		✓
Absorbs digested food				✓
Absorbs excess water			✓	

13. Study the diagram below carefully.



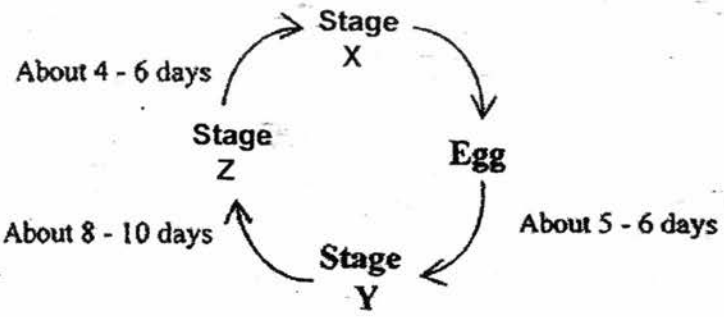
Which one of the organs is matched wrongly with its function?

	Organ	Function
(1)	A	It chews and grinds the food into smaller pieces to be swallowed.
(2)	B	It absorbs carbon dioxide and allows it to enter the bloodstream.
(3)	C	It allows the digested food to pass through its walls and into the bloodstream.
(4)	D	It removes water from the undigested food.

14. Kendrick compared the life cycles of a grasshopper and a cockroach as shown below. Which one of the following sets is true?

	Grasshopper	Cockroach
(1)	It has a 4-stage life cycle.	It has a 3-stage life cycle.
(2)	Its young moults several times.	Its young moults several times.
(3)	Its young looks like the adult.	Its young looks different from the adult.
(4)	It has a larva stage.	It has no larva stage.

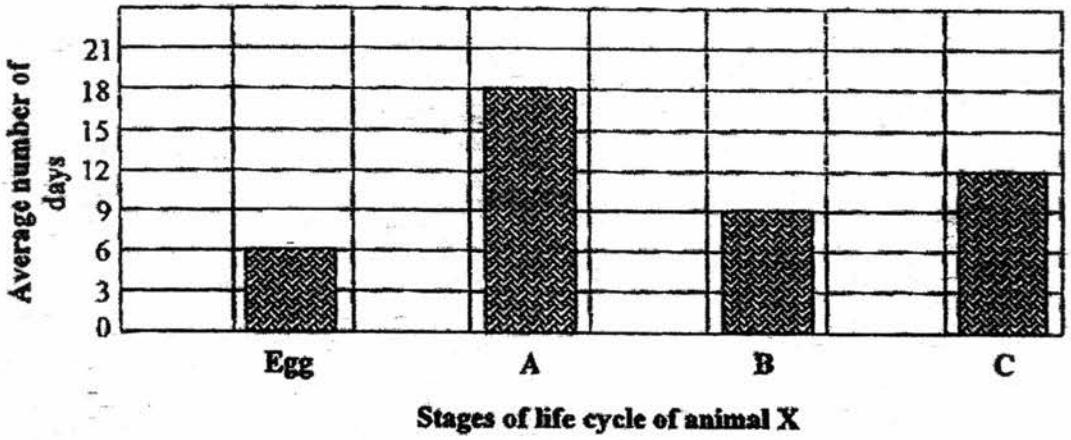
15. The diagram below shows the life cycle of organism A.



What is the least possible number of days organism A will take to develop from an egg to the pupa stage?

(1) 6
(2) 8
(3) 13
(4) 19

16. The graph below shows the stages in the life cycle of animal X and the lengths of time the animal remains in these stages. The stages, A, B and C, are not in order.

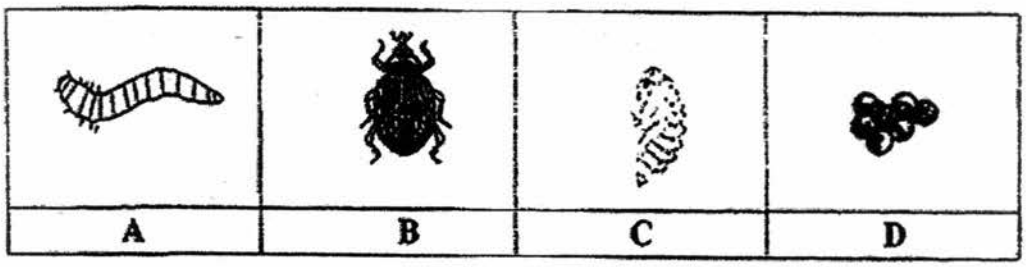


After the egg has hatched, it takes 21 days before it becomes an adult. It takes 12 days before the adult emerges from its previous stage

Which one of the following sets correctly identifies A, B and C?

	A	B	C
(1)	Pupa	Larva	Adult
(2)	Larva	Pupa	Adult
(3)	Adult	Pupa	Larva
(4)	Adult	Larva	Pupa

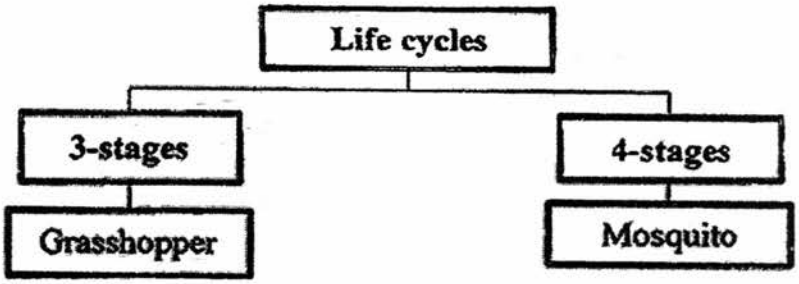
17. The picture below shows the life cycle of a mealworm. The stages are not arranged in the correct order.



At which stages does the mealworm need food?

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

18. Remy classified two animals in the classification chart below.



He noted some similarities and differences between the two life cycles and wrote the information in the table below.

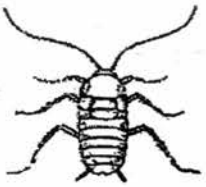
	Information
A	The young of the grasshopper and mosquito look like the adults.
B	The nymph of the grasshopper has wings and can fly.
C	The larva of the mosquito does not moult as it grows.
D	The adult grasshopper lays its eggs in the soil and the adult mosquito lays its eggs in the water.

Which one of the following is correct about the animals above?

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

19. Study the diagrams below carefully.

Beetle



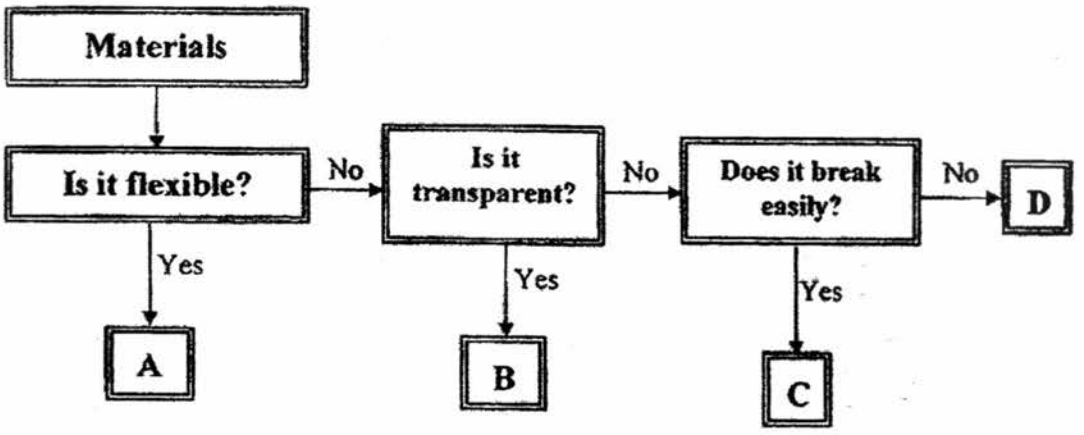
Nymph

Based on the diagrams only, which of the following can be observed?

A: The beetle and nymph have six legs each.
B: The beetle crawls but the nymph wriggles.
C: The beetle feeds on other insects but the nymph does not.

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

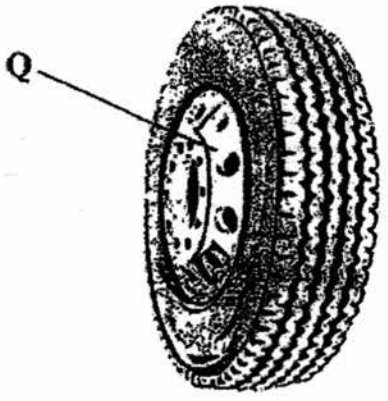
Study the flowchart below carefully to answer questions 20 and 21.



20. Which one of the following letters best represents "glass"?

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

21. Study the car tyre below carefully.



Which one of the following materials from the flowchart above is most suitable for making part Q of the car tyre?

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

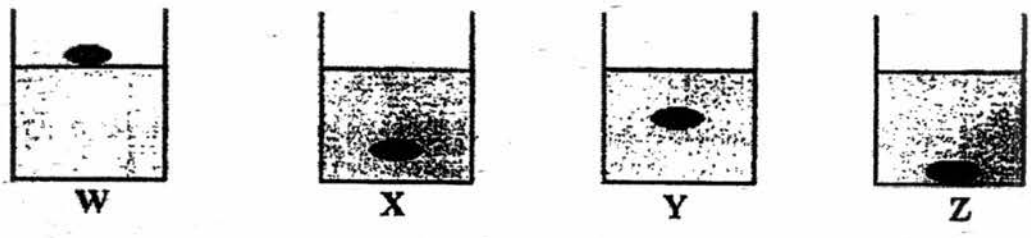
22. Teresa conducted a few experiments on objects A and B. She recorded the results in the table below.

Property	Object A	Object B
Is it waterproof?	Yes	Yes
Is it flexible?	Yes	No
Will it break into pieces when it is dropped?	No	Yes

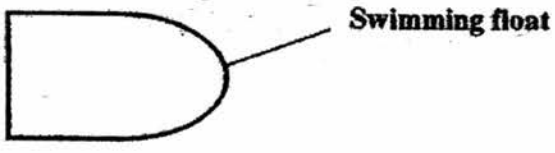
Which one of the following sets of objects best represents objects A and B?

	Object A	Object B
(1)	Plastic ruler	Glass bottle
(2)	Steel key	Rubber band
(3)	Clay cup	Ballpoint pen
(4)	Ballpoint pen	Cotton shirt

23. Muthu carried out an experiment by dropping objects W, X, Y and Z into a beaker of water each. The results are shown in the diagram below.



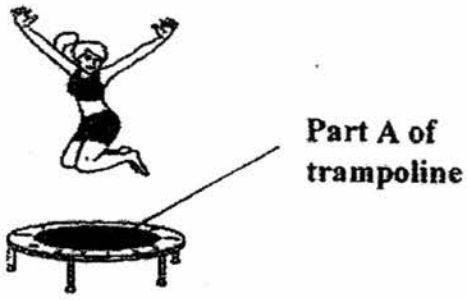
The diagram below shows a swimming float.



Which one of the following, W, X, Y or Z, will be the most suitable material to make a swimming float?

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

24. Phoebe carried out some tests to find out if a material is suitable for making part A of the trampoline.



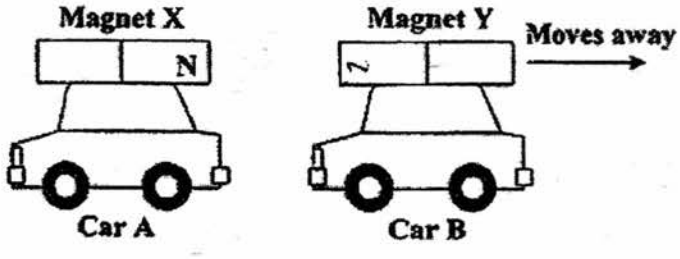
She came up with questions for some tests she would like to conduct and recorded them in the table below.

Test	Question
A	Is the material durable?
B	Is the material smooth or rough?
C	Does it allow light to pass through the material?
D	Is the material flexible or stiff?

Based on the table above, which two tests are important in deciding the most suitable material in making part A of the trampoline?

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

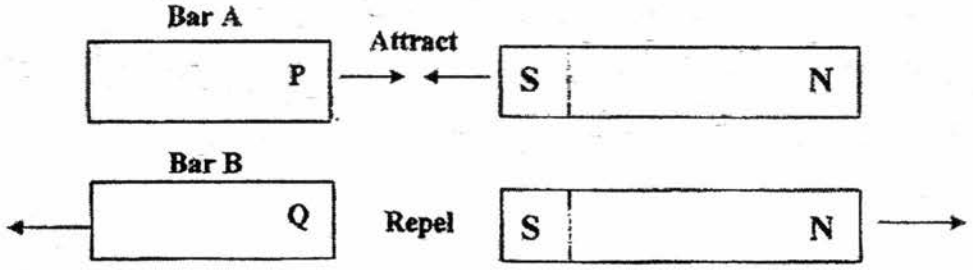
25. The diagram below shows two toy cars, A and B, with similar magnets attached on top. When magnet X from car A moves towards magnet Y on car B, car B moves slightly to the right.



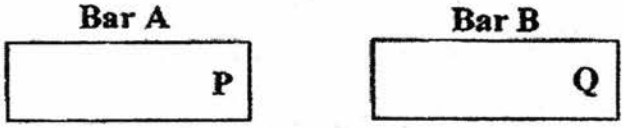
What could be the explanation for such an observation?

(1) Magnet Y on car B exerts a push on the magnet X on car A.
(2) Magnet Y on car B exerts a pull on the magnet X on car A.
(3) Magnet X on car A exerts a push on the magnet Y on car B.
(4) Magnet X on car A exerts a pull on the magnet Y on car B.

26. Study the following diagram carefully. Both bars A and B are magnets.



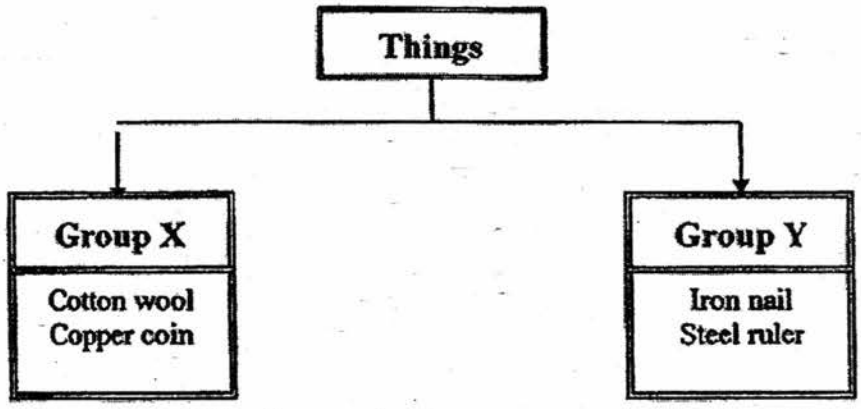
Bar A and bar B are brought close to each other as shown in the diagram below.



What will happen if bar A and bar B are placed close together with P and Q in the positions shown?

(1) Bar A and Bar B will repel.
(2) Bar A and Bar B will attract.
(3) Bar A and Bar B will attract first and then repel.
(4) Bar A and Bar B will repel first and then attract.

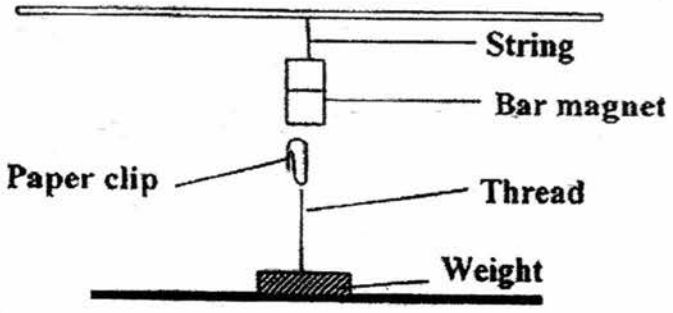
27. Study the classification chart below carefully.



Which one of the following sets best represents groups X and Y?

	Group X	Group Y
(1)	Float on water	Sink in water
(2)	Non-magnetic	Magnetic
(3)	Sink in water	Float on water
(4)	Magnetic	Non-magnetic

28. Putri carried out the experiment as shown below.



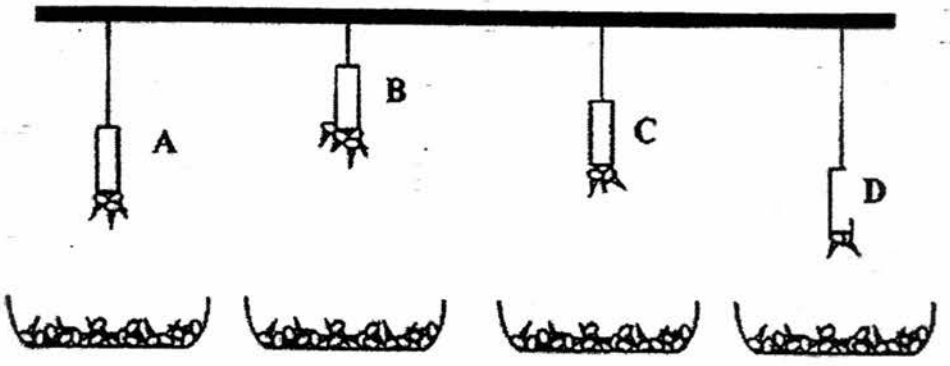
The paper clip was able to float in mid-air because the_____.

A: paper clip was magnetised
B: bar magnet attracted the paper clip
C: paper clip was made of a magnetic material

Which of the following statements are true?

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

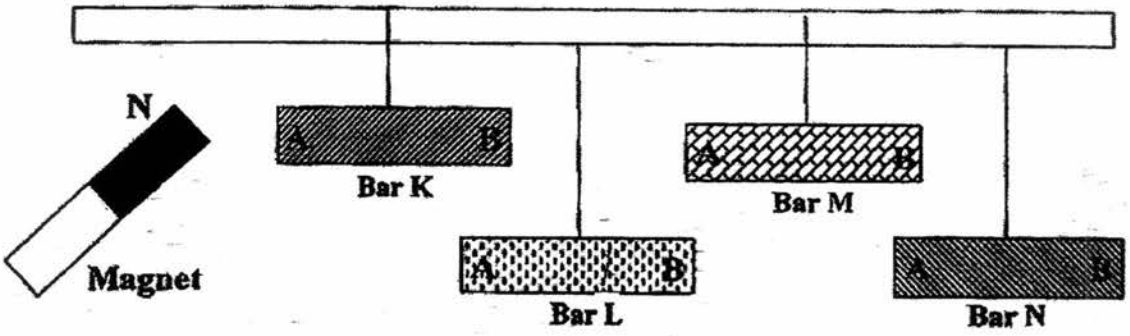
29. Quentin carried out an experiment below using 4 similar magnets, A, B, C and D. They were hung from strings of different lengths and they attracted different number of pins.



Based on the experiment, which of the magnets are the strongest and weakest?

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

30. Four metal bars, K, L, M and N, were left to hang freely as shown below.



Jaya brought the north-seeking pole of a bar magnet near end A and then end B of each metal bar.

He recorded his observations from the experiment in the table below.

	Observations	
Metal Bar	**N-pole of magnet and end A**	**N-pole of magnet and end B**
K	No reaction	No reaction
L	Repelled	Attracted
M	Attracted	Repelled
N	Attracted	Attracted

Based on the observations made in the table, which of the metal bars are not magnets?

(1) K and N only
(2) L and M only
(3) L, M and N only
(4) K, L and M only

SEMESTRAL ASSESSMENT 1
SCIENCE
2017

Name: _____( ) Marks: ____ / 40

Level: Primary 4 Date: 9 May 2017

Class: Primary 4 ( ) Parent's Signature: _____

BOOKLET B

Instructions to pupils:

1. **Do not open this booklet until you are told to do so.**
2. You are required to answer **all** the questions in this paper using your own words / expressions as far as possible.
3. All drawings / diagrams must be clearly shown and labelled.
4. Marks will be deducted for wrongly spelt key words.
5. This question booklet consists of **15** printed pages, including the cover page.

Section B (40 marks)
Write your answers to questions 31 to 44 in this booklet.

31. The table below shows three objects, A, B and C, and their properties.

Property / Object	Has a definite volume	Has a definite shape	Can be compressed
A	✓	✓	×
B	×	×	✓
C	✓	×	×

(a) Write down one similarity between objects A and C. (1 m)

_____

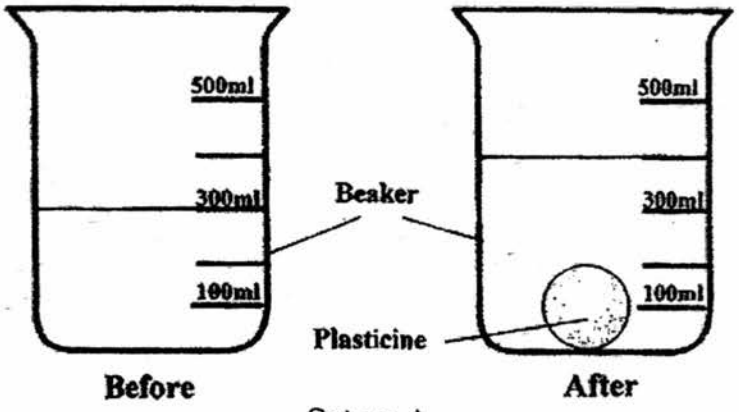
_____

(b) Write down one difference between objects A and B. (1 m)

_____

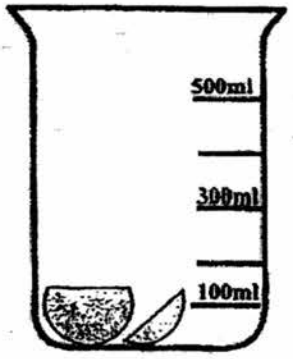
_____

32. Gopal places a ball of plasticine into a beaker of water in set-up A as shown below. He notices the water rise to a new level.



Set-up A

He then takes the ball of plasticine out of the beaker, cuts it into two pieces and lowers them gently into another similar beaker with the same volume of water as shown in set-up B below.



Set-up B

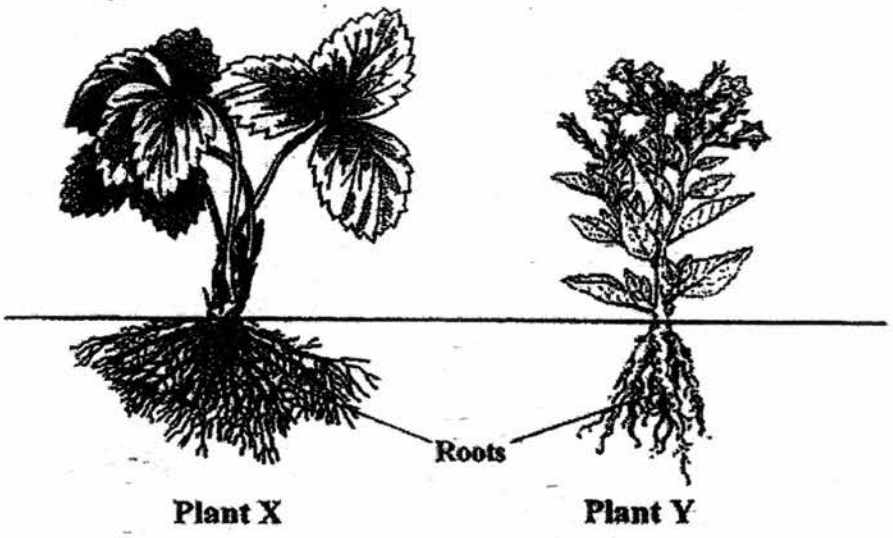
(a) Draw the water level in Set-up B. (1 m)

(b) Based on the experiment above, state two properties that Gopal can conclude about the ball of plasticine. (2 m)

(i) _____

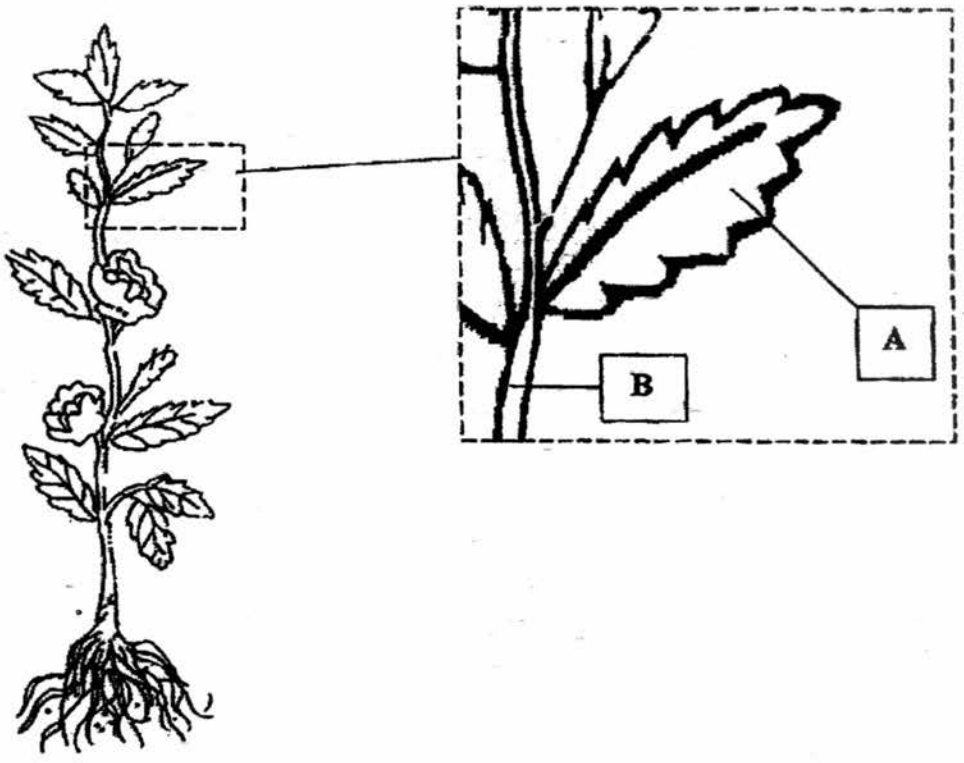
(ii) _____

33. The diagram below shows the roots of two different plants, X and Y, planted in the garden.



Based on the diagram above, which plant will most likely be uprooted from the soil **after a heavy thunderstorm**? Explain your answer clearly. (2 m)

34. Study the diagram below carefully.



(a) Identify the plant parts labelled A and B. (1 m)

A: _____

B: _____

(b) What happens when part B of the plant stops carrying out its functions? (2 m)

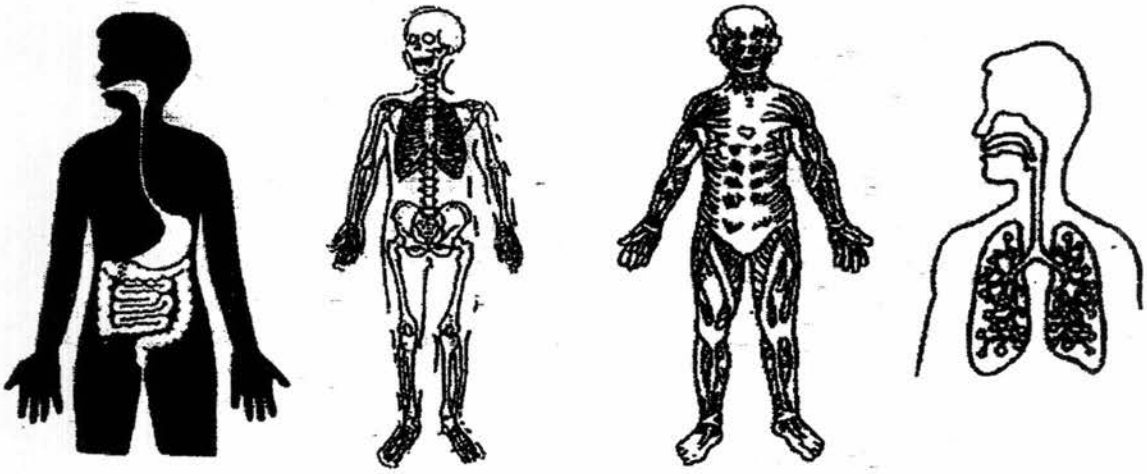
(i) _____

_____

(ii) _____

_____

35. The diagrams below show different human body systems.

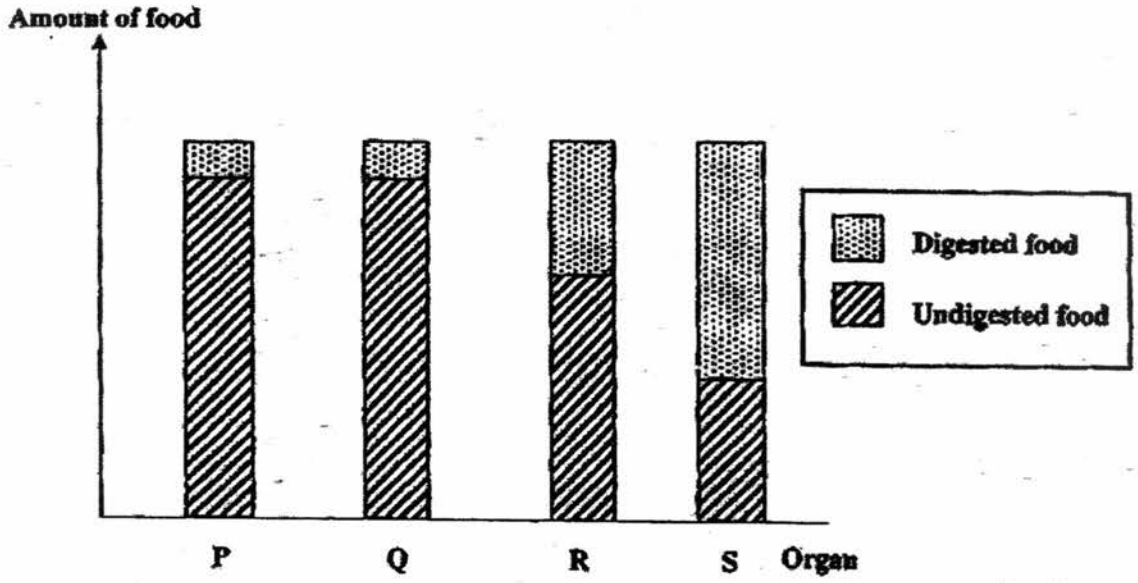


A B C D

Match the descriptions to the correct systems (A, B, C or D). (3 m)

No	Description of the system	System
(i)	It protects the delicate organs in the body.	
(ii)	It helps different parts of our body to move.	
(iii)	It takes in oxygen to all parts of our bodies.	

36. The graph below shows what happened to an amount of food as it moved through the different organs, P, Q, R and S, of the human digestive system.



(a) Identify organ P. (1 m)

_____

(b) Which organ (P, Q, R or S) represents the gullet? Give a reason for your answer. (1 m)

_____

_____

(c) As food travelled from organs R to S, what happened to the amount of digested food? (1 m)

_____

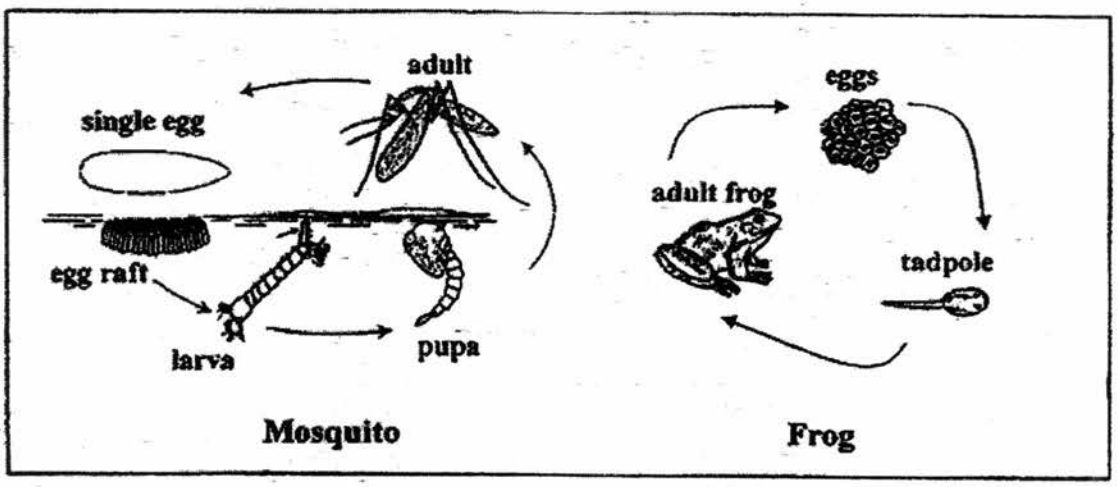
_____

(d) Why was the amount of undigested food in organ R different from that in organ Q? (1 m)

_____

_____

37. The diagrams below show the life cycles of a mosquito and a frog.



(a) Write down a difference between the adult mosquito and the adult frog in (1 m)

_____

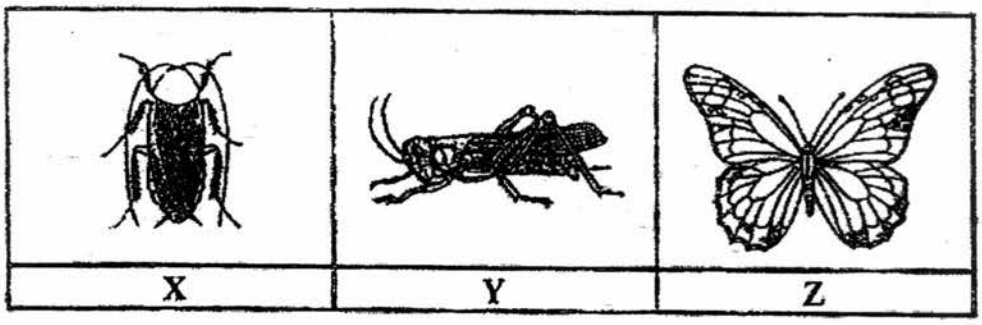
_____

(b) The tadpole breathes through its gill. How does an adult frog breathe? (1 m)

_____

_____

38. The diagrams below show three animals, X, Y and Z.



(a) Write down the difference between animals X and Z in terms of the number of stages in their life cycles. (1 m)

_____

_____

(b) Write down two **similarities** between the life cycles of animals X and Y based on the following: (2 m)

(i) their young;

_____

_____

(ii) number of stages in their life cycles.

_____

_____

39. Mr Tan conducted an experiment on four materials, W, X, Y and Z, and recorded the results in the table below.

Material	Properties		
	Is it flexible?	Does it break easily?	Is it waterproof?
W	×	×	✓
X	×	✓	✓
Y	×	✓	×
Z	✓	×	✓

(a) Which materials (W, X, Y or Z) best represent "steel" and "rubber"? (1 m)

(i) Steel : _____

(ii) Rubber : _____

(b) Name two differences between materials W and Y based on the information in the table above. (2 m)

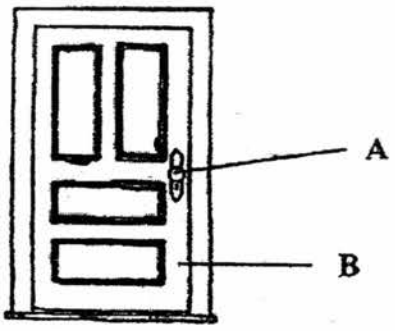
(i) _____

_____

(ii) _____

_____

40. The diagram below shows a front door.

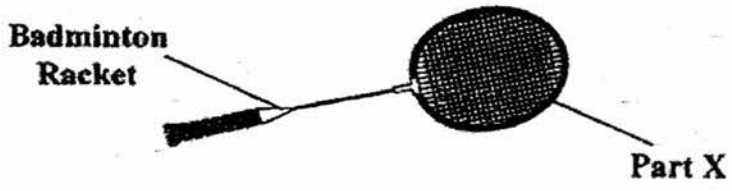


(a) Write down one suitable material used to make parts A and B. (1 m)

A: _____

B: _____

(b) Study the diagram below carefully.



(i) Put two ticks in the boxes below against the possible materials used to make part X of the badminton racket. (1 m)

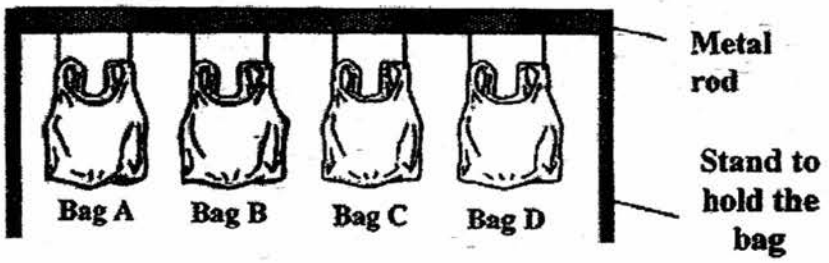
Material	Tick (✓)
Metal	
Plastic	
Glass	

(ii) Which property of the materials is considered before making the choice for part X? (1 m)

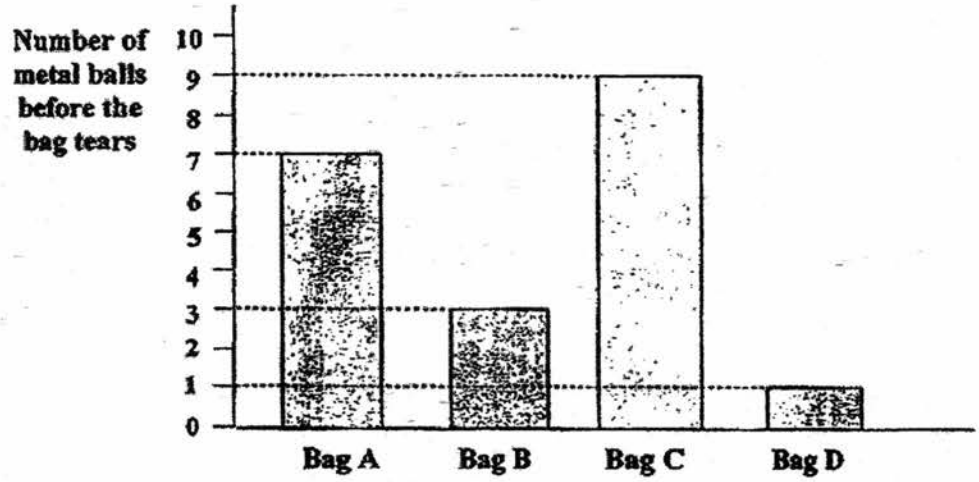
_____

_____

41. Josephine wanted to find out which material makes a good grocery bag that does not tear easily when she carries a lot of groceries. She used four identical bags, A, B, C and D, made of different materials as shown below. She then added metal balls into each of the respective bags until the bag was torn.



She recorded her observation in the bar graph below.



(a) Which variable did Josephine change? (1 m)

_____

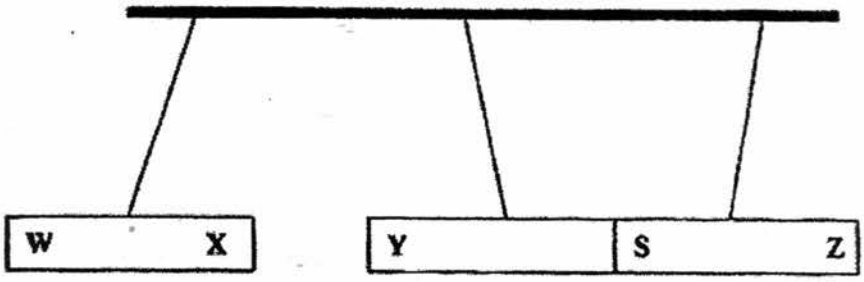
_____

(b) Which bag do you think Josephine would choose as her grocery bag? Explain your answer clearly. (2 m)

_____

_____

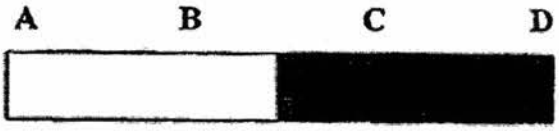
42. Three magnets are suspended from a rod. The results of their interaction are shown below.



(a) Write down the poles of the magnets, W, X, Y and Z, given that S represents the South pole. (2 m)

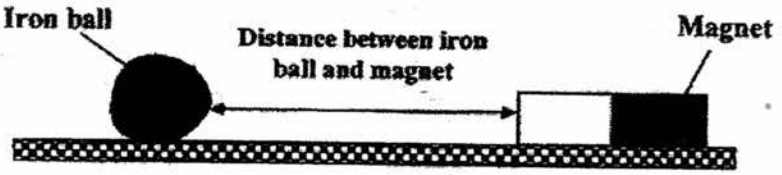
W	X	Y	S	Z
			South pole	

(b) Ryan marked out four different parts, A, B, C and D, on a large bar magnet as shown below.



He recorded the number of thumbtacks attracted to the four different positions of the magnet and noticed that two positions of the magnet attracted the most number of thumbtacks. Which were the two positions? Write down the reason why they attracted the most thumbtacks. (1 m)

43. Keith wants to investigate the strength of four bar magnets, P, Q, R and S, by observing whether the iron ball is attracted and moving towards the bar magnet at different distances between them. He sets up an experiment as shown below.



He then records the results in the table below. A tick (✓) means that the iron ball is attracted and moving towards the bar magnet.

Distance between iron ball and magnet	Magnet P	Magnet Q	Magnet R	Magnet S
2cm	✓	✓	✓	✓
4cm	✓	×	✓	✓
6cm	✓	×	✓	×
8cm	×	×	✓	×

(a) Based on the results above, which is the weakest magnet? Explain your answer clearly. (2 m)

_____

_____

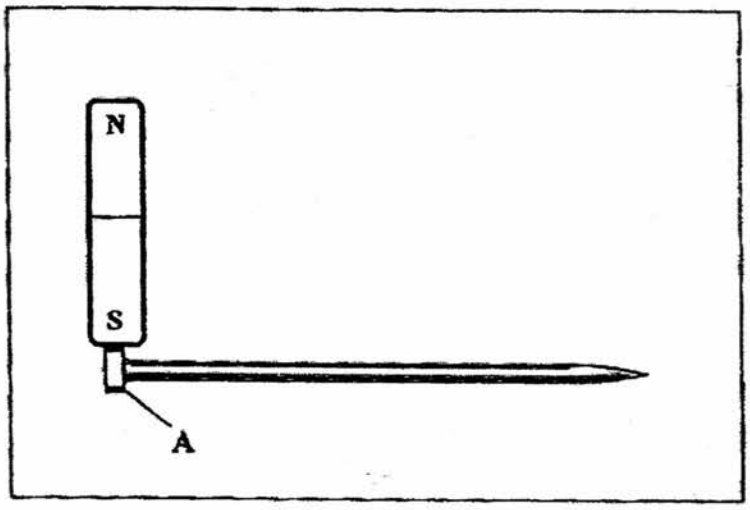
_____

(b) Which one of the magnets (P, Q, R or S) is the strongest magnet? (1 m)

Magnet _____

44. A nail can be made into a temporary magnet by stroking it with a strong magnet as shown in the diagram below.

(a) Complete the diagram by drawing arrows to show the circular movement of the strokes. (1 m)



(b) Name the pole of part A of the nail. (1 m)

Part A: _____ pole

(c) Rose wants to magnetise a copper bar using one of the poles of the magnet above. However, no matter how many times she strokes the copper bar, it is not able to attract any steel paper clips. Give a reason why it is so. (1 m)

_____

_____

END OF PAPER

SCHOOL : RULANG PRIMARY SCHOOL

LEVEL : PRIMARY 4
SUBJECT : SCIENCE
TERM : 2017 SA1

CONTACT :

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	4	4	2	1	2	1	3	4	3

Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	4	2	2	3	4	1	4	1	2

Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	1	1	2	3	1	2	4	3	1

SECTION B

Q31)	(a) Other Object A and C have a definite volume. (b) Object A has definite shape while Object B does not have definite shape
Q32)	(a) {Draw the water level at 400 ml} (b) i) The ball of plasticine takes up space ii) The ball of plasticine has definite volume
Q33)	Plant Y. During t thunderstorm, Plant X can hold firmly onto the ground as it has more roots hairs than Plant Y whereas Plant Y will have lesser root hairs, therefore Plant Y will most likely to be uprooted from the soil.

Q34)	a) A : Stem B : Leaves b) i) Water and mineral salts absorbed by the roots cannot be transported to different parts of the plant. ii) The plant cannot support itself and will not be able to obtain sunlight.
Q35)	a) i) B ii) C iii) D
Q36)	a) Mouth b) Organ Q. No digestion has taken place at Organ Q c) The amount of digested food became higher d) There is a decrease in undigested food as more digestion has taken place in the stomach.
Q37)	a) The adult mosquito lives on land only while the adult frog lives on land and water. b) The adult frog breathes through its lungs and skin.
Q38)	a) Animal X has 3-stage life cycle while Animal Z has 4-stage life cycle. b) i) The young of Animal X and Animal Y moults ii) Both Animal X and Y have 3-stage life cycle
Q39)	a) i) W ii) Z b) i) Material Y breaks easily while Material W does not break easily ii) Material W is waterproof while Material Y is absorbent
Q40)	a) A : Steel B : wood b) i) Metal √ Plastic √ ii) The material does not break easily and is not flexible
Q41)	a) She changed the types of material that are used to make the bags b) Bag C. Josephine would choose Bag C as it could hold the most number of metal balls among the four bags.

Q42)

a)

W	X	Y	S	Z
North pole	South pole	South pole	South pole	North pole

b) Parts A and D. A magnet is strongest at its poles.

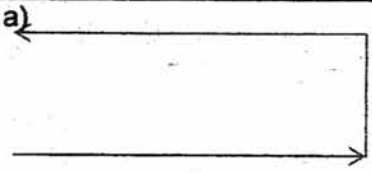
Q43)

a) Magnet Q. It attracts the iron ball from the shortest distance.

b) R

Q44)

a)



b) South

c) Copper is a non-magnetic material and only non-magnetic materials can be made into a temporary magnet.