



Rulang Primary School

SEMESTRAL ASSESSMENT 1 SCIENCE 2015

Name: _____ ()

Marks: _____ / 60

Level: Primary 4

Total Time for Booklets

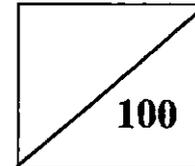
Class: Primary 4 ()

A and B: 1 h 30 min

Setter: Ms Sng Chee Hoon

Date: 14 May 2015

Total Marks:



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 **19** 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. Study the pictures below carefully.

Cat



A

Shadow of a girl



B

Bottle of water



C

Which one of the following statements is true about the three pictures?

- 1) B and C have mass but A does not have mass.
- 2) B does not have mass but A and C have mass.
- 3) A and B occupy space but C does not occupy space.
- 4) A does not occupy space but B and C occupy space.

2. Study the table below carefully.

Substance	Has mass	Can be compressed
A	✓	x
B	x	x
C	✓	✓
D	x	✓

Which of the following substances are examples of matter?

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

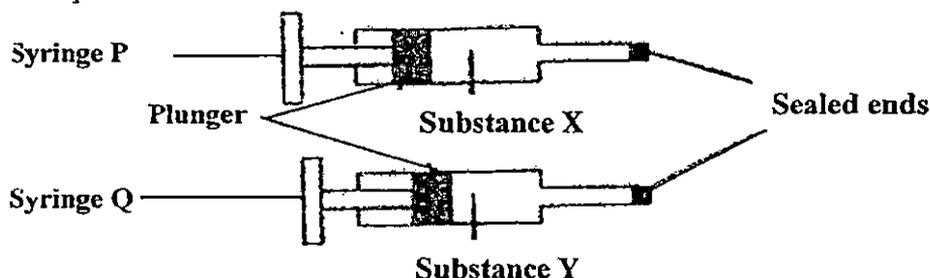
3. The table below shows the properties of objects E, F, G and H.

Property	Object			
	E	F	G	H
Can be compressed	✓	✓	✗	✗
Has a definite shape	✓	✗	✗	✓
Has a definite volume	✗	✗	✓	✓

Which one of the following objects represents a desk?

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

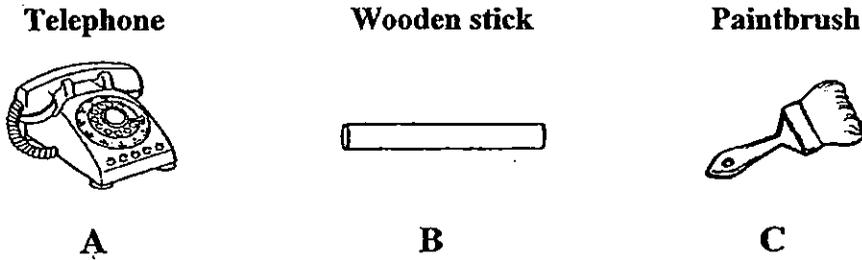
4. The diagram below shows two syringes, P and Q, containing substances X and Y respectively. The end of each syringe is sealed. The plunger in syringe Q can be pushed in slightly while the plunger in syringe P cannot be pushed in at all.



Which one of the following sets is most likely to be the states of substances X and Y?

	Substance X	Substance Y
1)	Liquid	Gas
2)	Solid	Liquid
3)	Gas	Solid
4)	Gas	Liquid

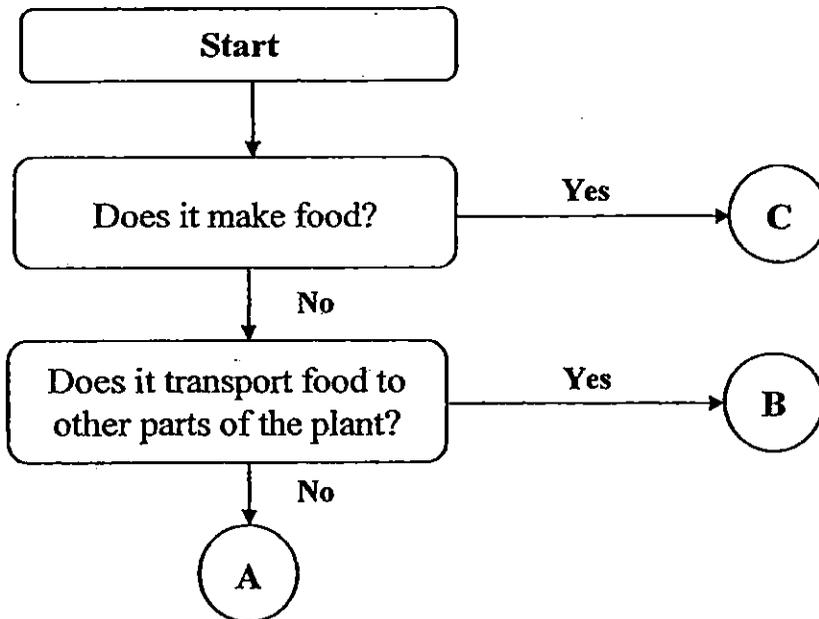
5. Study the diagrams below carefully.



Which of the following are examples of a system?

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

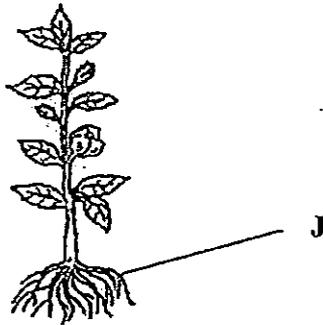
6. Study the flowchart below carefully. The letters, A, B and C, represent parts of a hibiscus plant.



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

	A	B	C
1)	stem	root	leaf
2)	leaf	stem	root
3)	root	stem	leaf
4)	leaf	root	stem

7. The diagram below shows a balsam plant.



The function of the plant part labelled J is to _____.

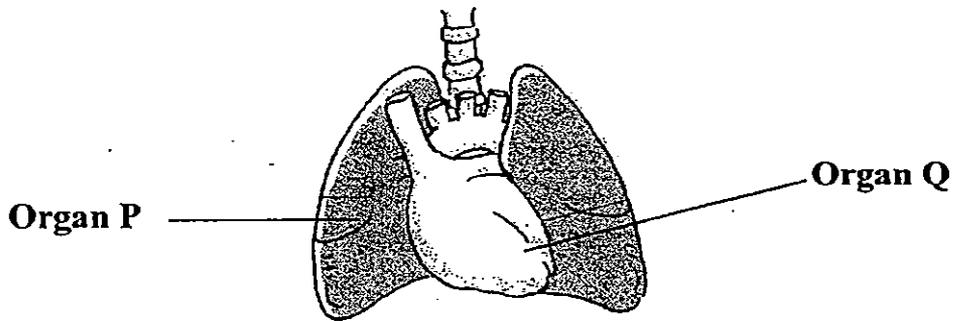
A: hold the plant upright

B: transport food to all parts of the plant,

C: absorb water and mineral salts from the soil

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

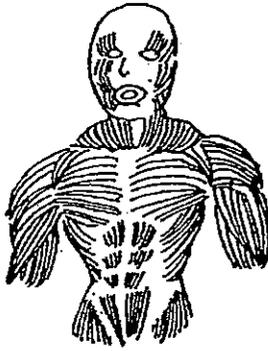
8. Study the diagram below carefully.



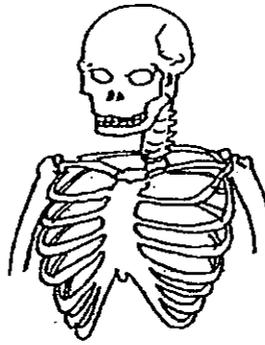
Which one of the following sets of body systems do organs P and Q belong to?

	Organ P	Organ Q
1)	Circulatory system	Respiratory system
2)	Muscular system	Digestive system
3)	Digestive system	Circulatory system
4)	Respiratory system	Circulatory system

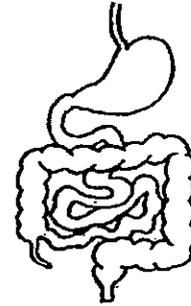
9. Study the diagrams below carefully.



System A



System B

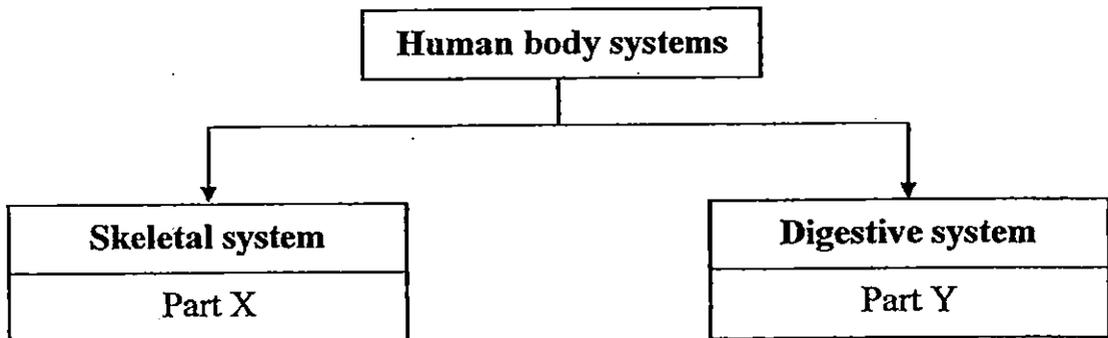


System C

What can the three systems, A, B and C, be?

	System A	System B	System C
1)	Skeletal system	Muscular system	Digestive system
2)	Respiratory system	Muscular system	Skeletal system
3)	Muscular system	Skeletal system	Digestive system
4)	Circulatory system	Muscular system	Respiratory system

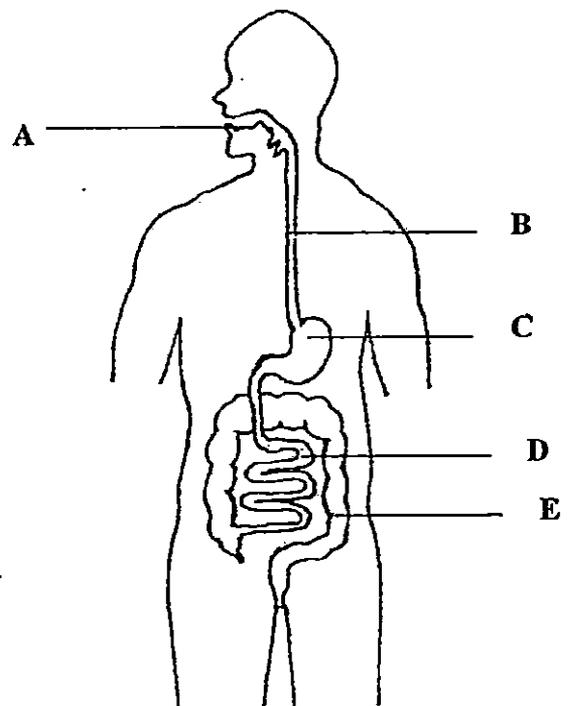
10. Study the classification chart below carefully.



Which one of the following pairs can parts X and Y be?

	Part X	Part Y
1)	Skull	Windpipe
2)	Heart	Mouth
3)	Backbone	Small intestine
4)	Muscle	Large intestine

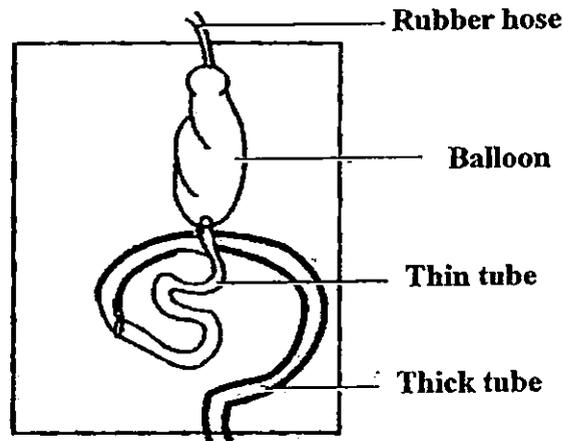
11. Study the diagram of the human digestive system below carefully.



In which parts of the digestive system does digestion of food take place?

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

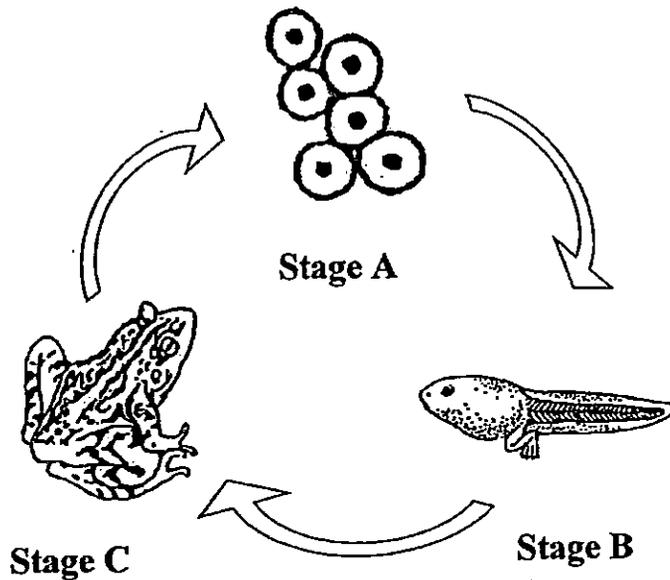
12. Vivian made a model of the human digestive system using some materials as shown below.



Which part of the model above represents the stomach?

- 1) Balloon
 - 2) Thin tube
 - 3) Thick tube
 - 4) Rubber hose
13. Which of the following statements is / are true about what takes place in the small intestine?
- A: Digestion is completed here.
B: Water is removed from the undigested food.
C: Digested food is carried by the blood to all parts of the body.
- 1) A only
 - 2) B only
 - 3) A and C only
 - 4) A, B and C

Study the diagram of the life cycle of a frog below and answer questions 14 and 15.



14. In which stages of the life cycle can the frog move around from place to place on its own? _____

- 1) Stage A only
- 2) Stage B only
- 3) Stages A and C only
- 4) Stages B and C only

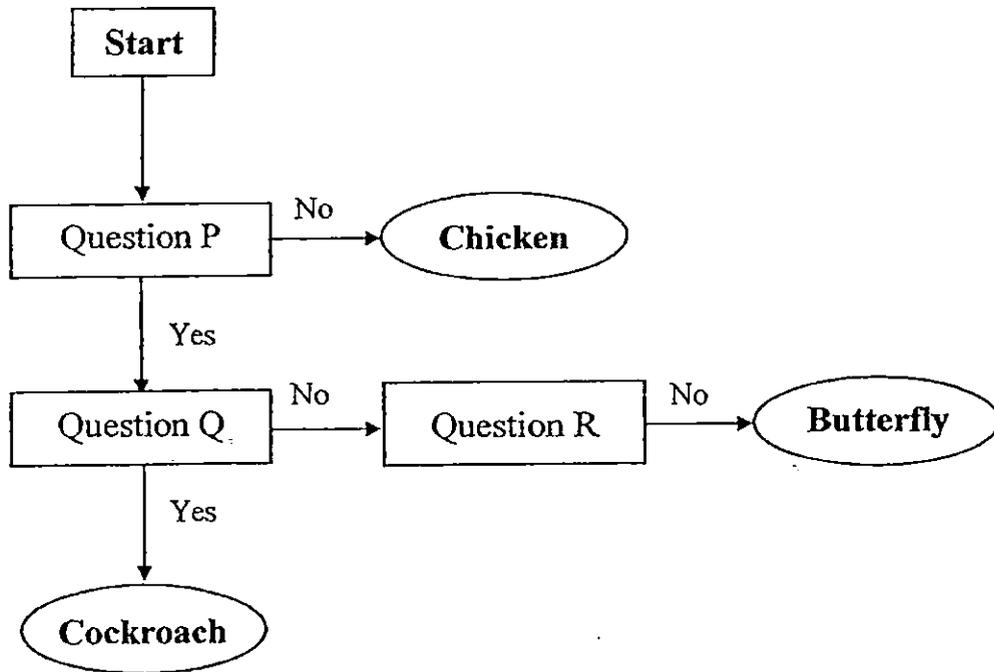
15. Anna made a comparison among the different stages of the life cycle of a frog and recorded her observations below.

- A: The frog lives in the water only during stages A and B
- B: The frog in stage A looks like the adult frog in stage C.
- C: The frog lives on land and in the water during stages B and C.
- D: The eggs in stage A have jelly-like covering but the adult frog in stage C has a moist skin.

Which of the following statements are true?

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

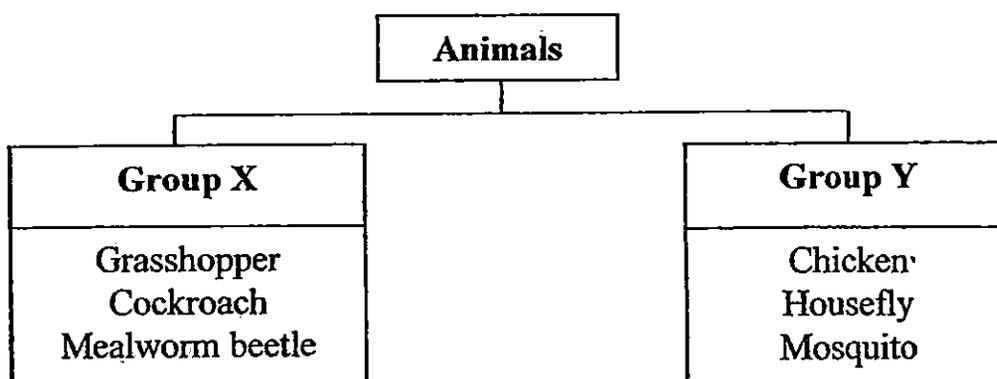
16. Study the flowchart below carefully.



Which one of the following sets of questions best represents questions P, Q and R respectively?

	Question P	Question Q	Question R
1)	Does it have six legs?	Does it have a three-stage life cycle?	Does the young resemble its parents?
2)	Does it have six legs?	Does it have a four-stage life cycle?	Does it moult several times as it grows?
3)	Does it have two legs?	Does it have a three-stage life cycle?	Does the young resemble its parents?
4)	Does it have two legs?	Does it have a four-stage life cycle?	Does it moult several times as it grows?

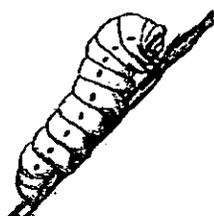
17. The animals in the classification chart below are grouped according to the number of stages in their life cycles.



Which of the following animals are in the wrong group?

- 1) Cockroach and housefly
- 2) Grasshopper and chicken
- 3) Grasshopper and mosquito
- 4) Mealworm beetle and chicken

18. Study the young of two animals below carefully.



Caterpillar



Larva

Which of the following describes the characteristics of the young of the two animals?

	Caterpillar	Larva
1)	It feeds on leaves.	It feeds on eggs.
2)	It lives on land.	It lives in the water.
3)	It feeds and grows into an adult.	It does not eat till it becomes an adult.
4)	It looks different from the adult butterfly.	It resembles the adult mosquito.

19. Caili recorded some observations on two animals, X and Y, in the table below.

Observation	Animal X	Animal Y
The young looks like its adult.	x	✓
It has a 4-stage life cycle.	✓	x
The eggs are found in egg cases.	x	✓

Which one of the following sets correctly represents animals X and Y respectively?

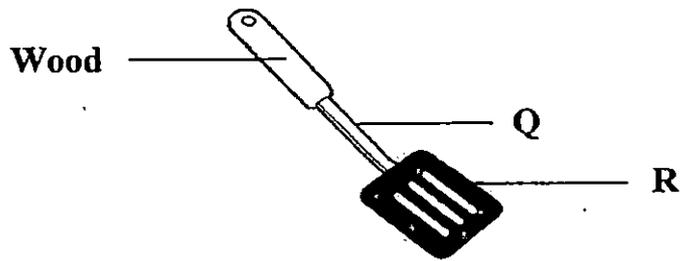
	Animal X	Animal Y
1)	Cow	Grasshopper
2)	Mosquito	Cockroach
3)	Eagle	Damselfly
4)	Horse	Housefly

20. Which one of the following objects, A, B, C or D, is most likely a glass vase?

Object	Properties		
	Is it flexible?	Does it absorb water?	Does it break easily?
A	Yes	Yes	Yes
B	No	No	No
C	No	No	Yes
D	Yes	Yes	No

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

Study the picture below carefully and answer questions 21 and 22.



21. Three pupils listed the properties of wood as shown below.

- Annie : It is flexible.
Bala : It is transparent.
Cathy : It can absorb water.

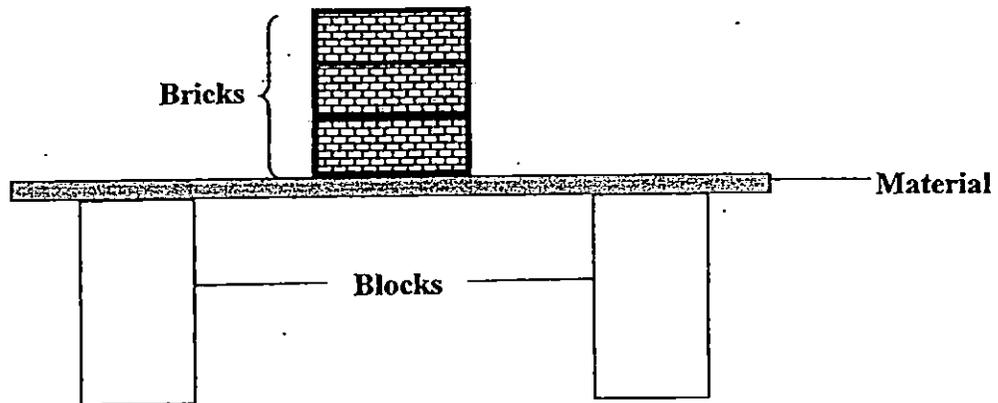
Which of the following pupils listed the properties of wood correctly?

- 1) Cathy only
- 2) Annie and Bala only
- 3) Bala and Cathy only
- 4) Annie, Bala and Cathy

22. Which materials are most suitable for making parts Q and R?

	Q	R
1)	Glass	Rubber
2)	Metal	Glass
3)	Rubber	Glass
4)	Metal	Plastic

23. Gina carried out an experiment using four different materials, P, Q, R and S, as shown in the diagram below. A piece of each material was first placed over two blocks. Bricks, weighing 2 kg each, were then stacked on the piece of material, one at a time, until it broke.



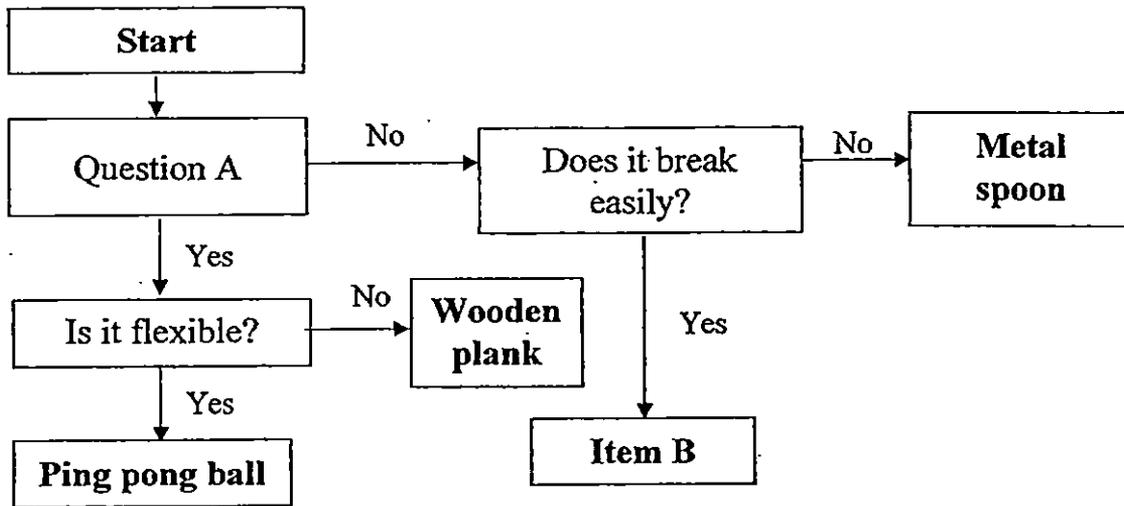
She recorded her findings in the table below to show the number of bricks needed to break each piece of material.

Material	Number of bricks needed to break the material
P	2
Q	4
R	6
S	8

Based on the information above, which materials could Gina choose if she wanted to make a box that would be able to hold a weight of up to 5kg?

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

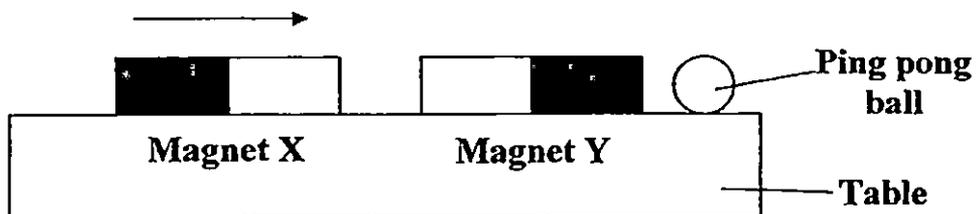
24. Study the flowchart below carefully.



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

	Question A	Item B
1)	Can it float on water?	Nail
2)	Can it float on water?	Ceramic cup
3)	Does it absorb water?	Rubber duck
4)	Does it absorb water?	Tennis ball

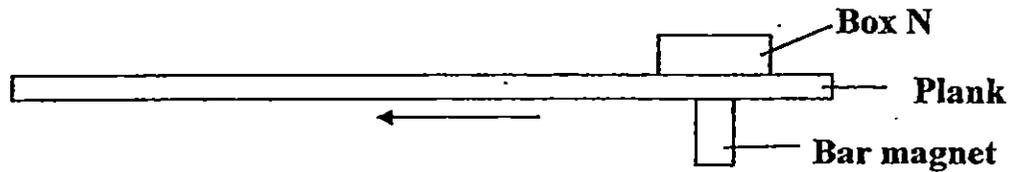
25. Study the diagram below carefully.



Walter brought magnet X close to magnet Y and noticed that the ping pong ball was pushed off the edge of the table when magnet Y moved to the right. What was a possible reason for this?

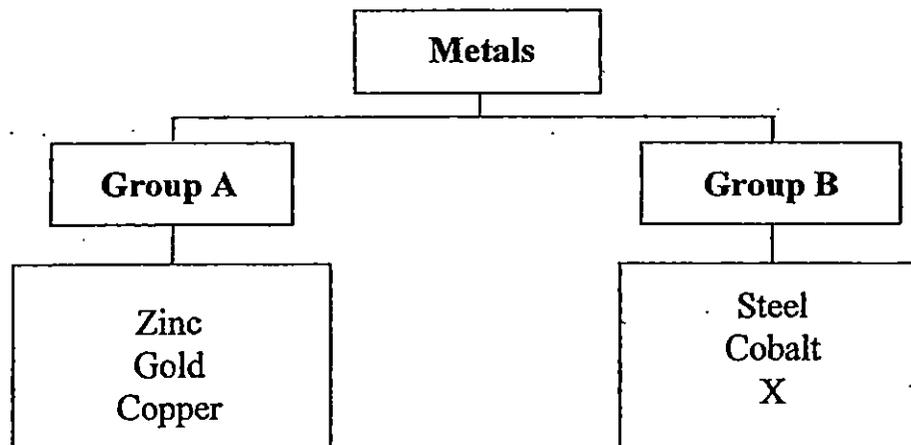
- 1) Magnet X had lost its magnetism.
- 2) The magnetism in magnet Y was stronger than that of magnet X.
- 3) Both the like poles of magnets X and Y were facing each other.
- 4) Both the unlike poles of magnets X and Y were facing each other.

26. When Wei En moves a bar magnet below a thin wooden plank as shown in the diagram below, she notices that box N moves along the wooden plank.



What is most likely the item found inside box N?

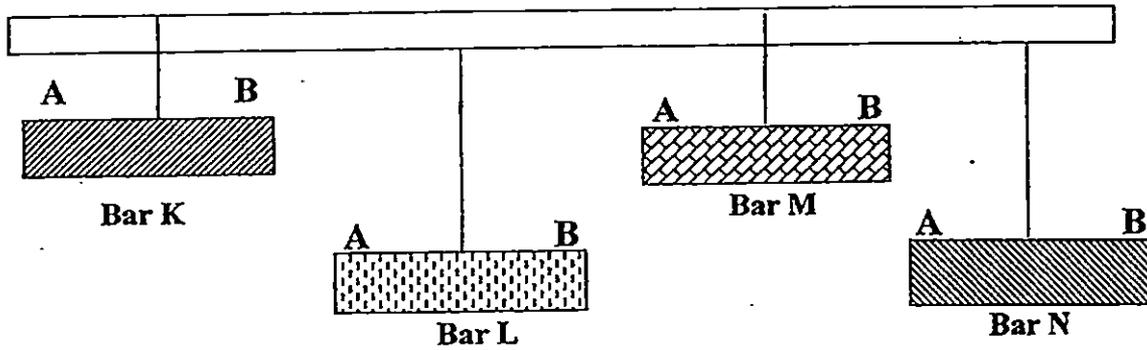
- 1) Iron nail
 - 2) Glass marble
 - 3) Aluminium foil
 - 4) Wooden matchstick
27. The metals in the classification chart below are grouped according to whether they can be attracted to a magnet or not.



Which one of the following metals could X be?

- 1) Iron
- 2) Brass
- 3) Silver
- 4) Bronze

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



Justin brought the North-seeking pole of a bar magnet near poles A and B of each metal bar.

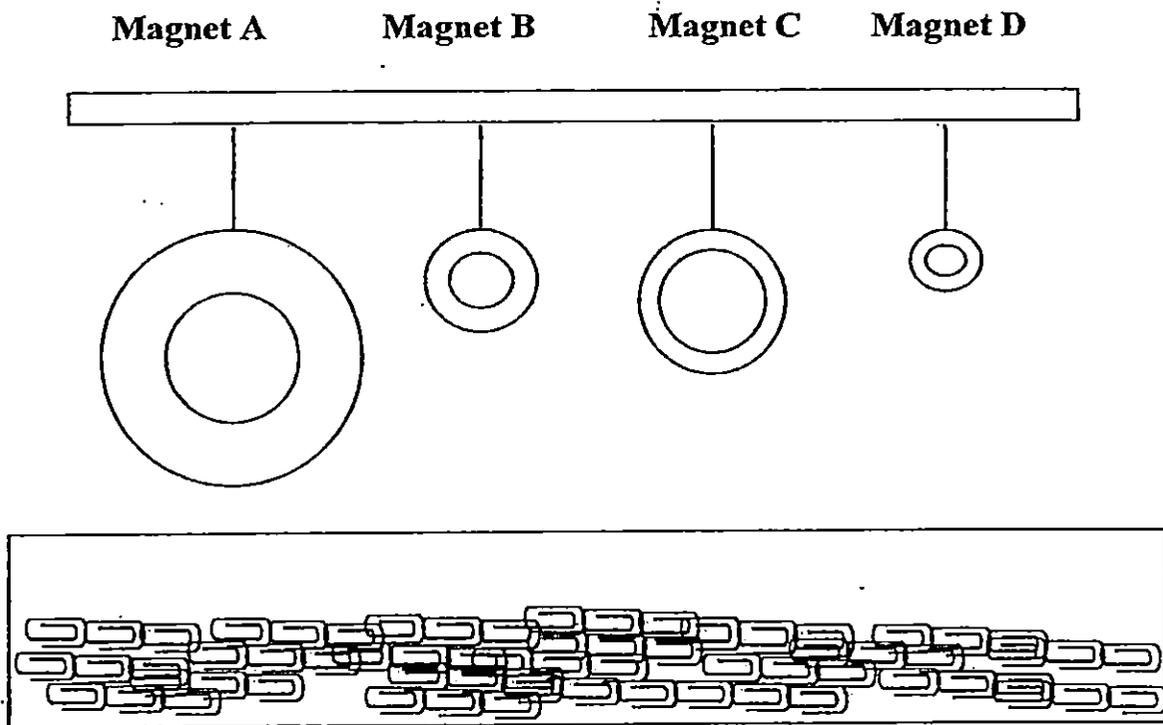
He recorded his observations in the table below.

Metal Bar	Observations	
	North-seeking pole and end A	North-seeking pole and end B
K	Attracted	Attracted
L	Repelled	Attracted
M	Attracted	Repelled
N	No reaction	No reaction

Based on the observations made in the table, which of the metal bars are most likely magnets?

- 1) K and N only
- 2) L and M only
- 3) L and N only
- 4) M and N only

29. Jolene conducted an experiment using four ring magnets, A, B, C and D. Each magnet was lowered down into a box of paper clips as shown in the diagram below.



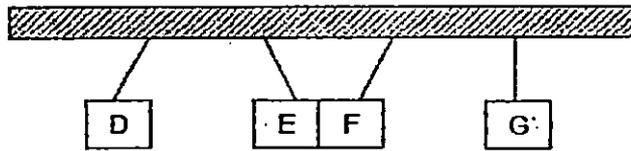
She recorded the number of paper clips attracted to each magnet in the table below.

	Magnet A	Magnet B	Magnet C	Magnet D
Number of paper clips attracted	9	15	21	30

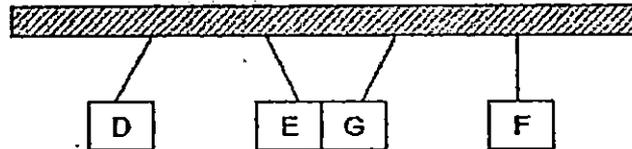
What can Jolene conclude from the findings of the experiment?

- 1) The strength of a magnet depends on its size.
- 2) Smaller magnets are stronger than bigger magnets.
- 3) Bigger magnets are stronger than smaller magnets.
- 4) The strength of a magnet does not depend on its size.

30. Susan hung four objects, D, E, F and G, on a wooden rod. The diagram shows what she observed.



She then exchanged the positions of F and G. The diagram below shows her new observations.



Which one of the following sets correctly describes the objects?

	Object D	Object E	Object F	Object G
1)	Magnet	Magnet	Magnet	Non-magnetic material
2)	Magnet	Magnet	Magnetic material	Magnetic material
3)	Non-magnetic material	Non-magnetic material	Magnet	Magnetic material
4)	Non-magnetic material	Magnet	Magnetic material	Magnet



Rulang Primary School

SEMESTRAL ASSESSMENT 1 SCIENCE 2015

Name: _____ () Marks: _____/40
Level: Primary 4 Date: 14 May 2015
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

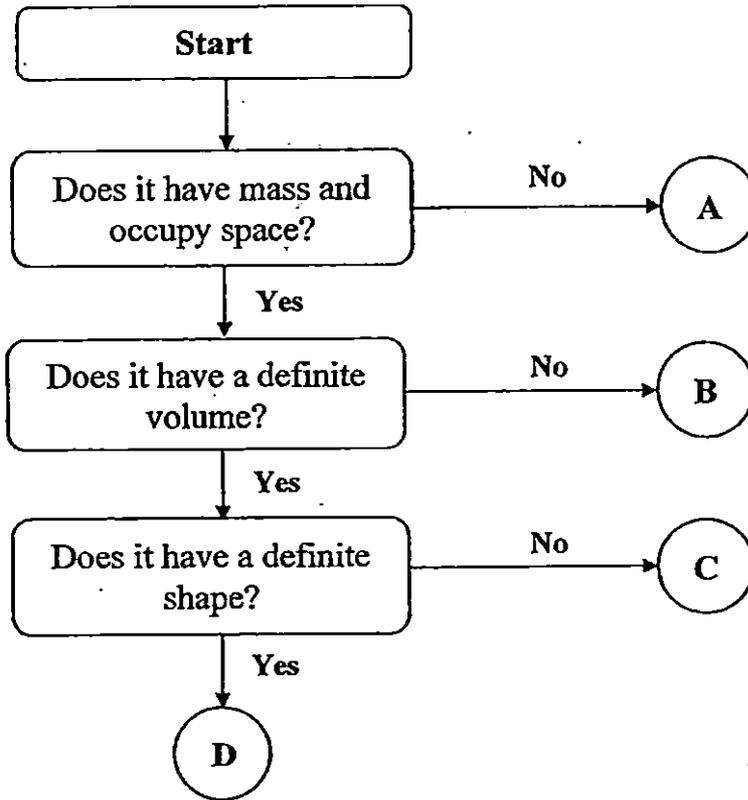
15

 printed pages, including the cover page.

Section B (40 marks)

Write your answers to questions 31 to 44 in this booklet.

31. Study the flowchart below carefully.

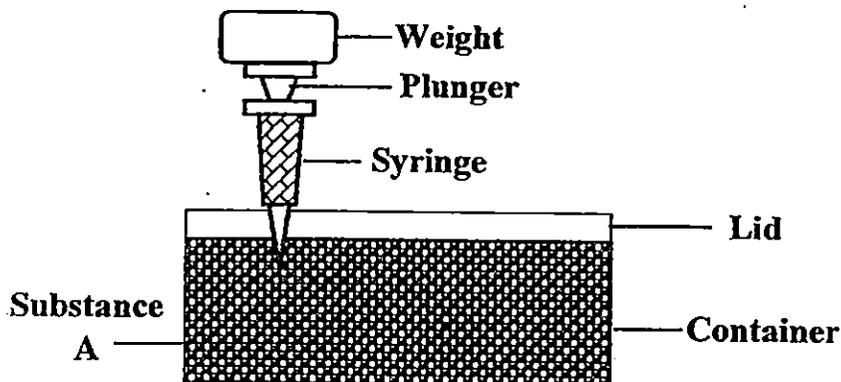


What could the states of objects C and D be? (2 m)

Object C: _____

Object D: _____

32. Siew Leng carried out several investigations using the container shown below.



She filled the container with substance A and used the lid to seal the container completely. She then attached a syringe with 75ml of water to the container. She placed a 1-kg weight on the plunger and observed the amount of water that could be forced into the container. She repeated the experiment using different weights and recorded her results in the table below.

Weight used to force plunger in (kg)	Amount of water forced into container (ml)
1	25
2	50
3	75

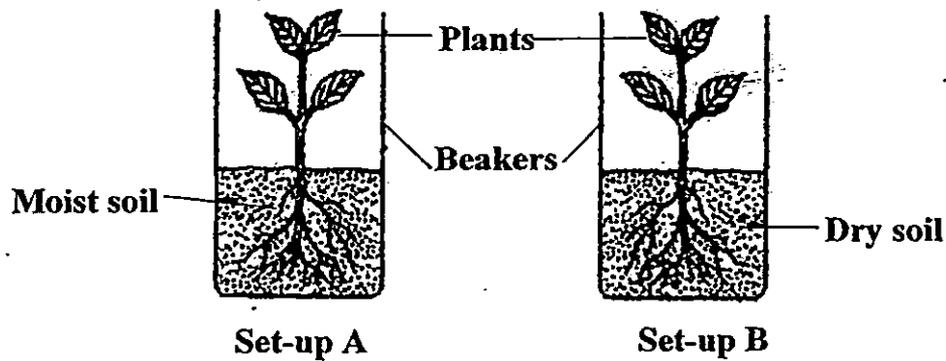
Next, she emptied substance A and replaced the container with substance B. She sealed the container with the lid completely and repeated her experiment. She recorded her results in the table below.

Weight used to force plunger in (kg)	Amount of water forced into container (ml)
1	0
2	0
3	0

- (a) Based on her results, what can Siew Leng conclude about the properties of substances A and B? (2 m)

- (b) Which substance is more likely a solid? (1 m)

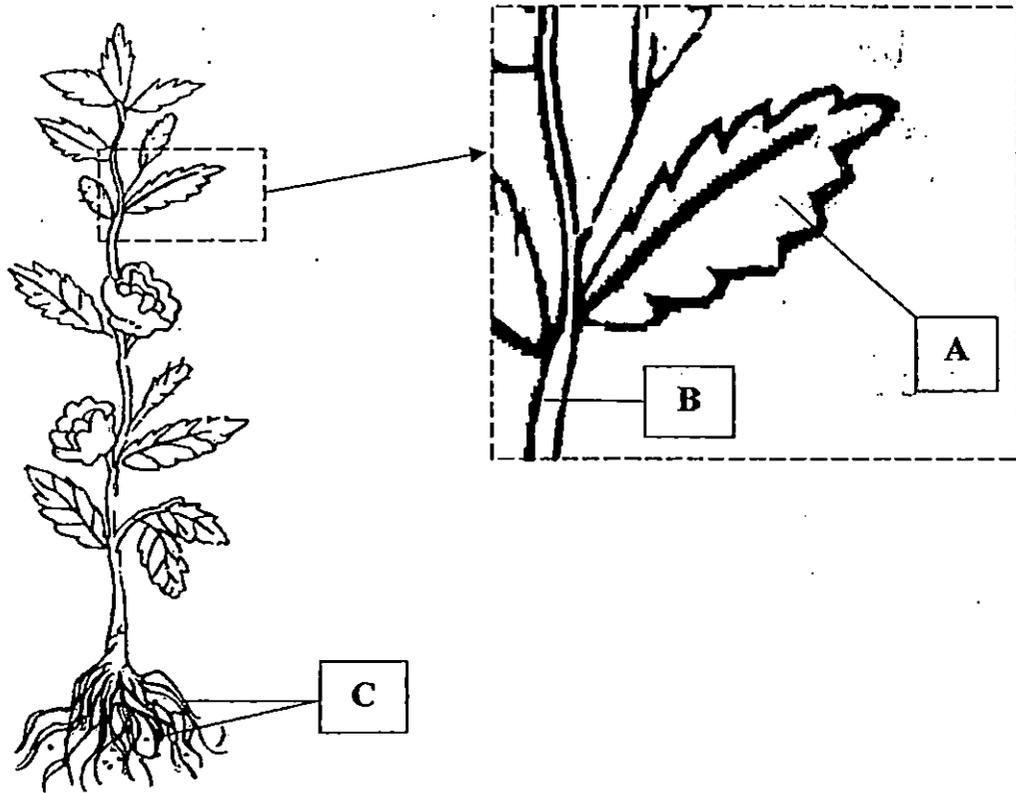
33. Cindy set up an experiment as shown in the diagram below. She placed both set-ups beside her bedroom window. She kept the soil in set-up A moist by watering it daily.



- (a) What is the aim of her experiment? (1 m)

- (b) Name one other variable that must be kept the same to ensure that the experiment is a fair one. (1 m)

34. Study the pictures below carefully.

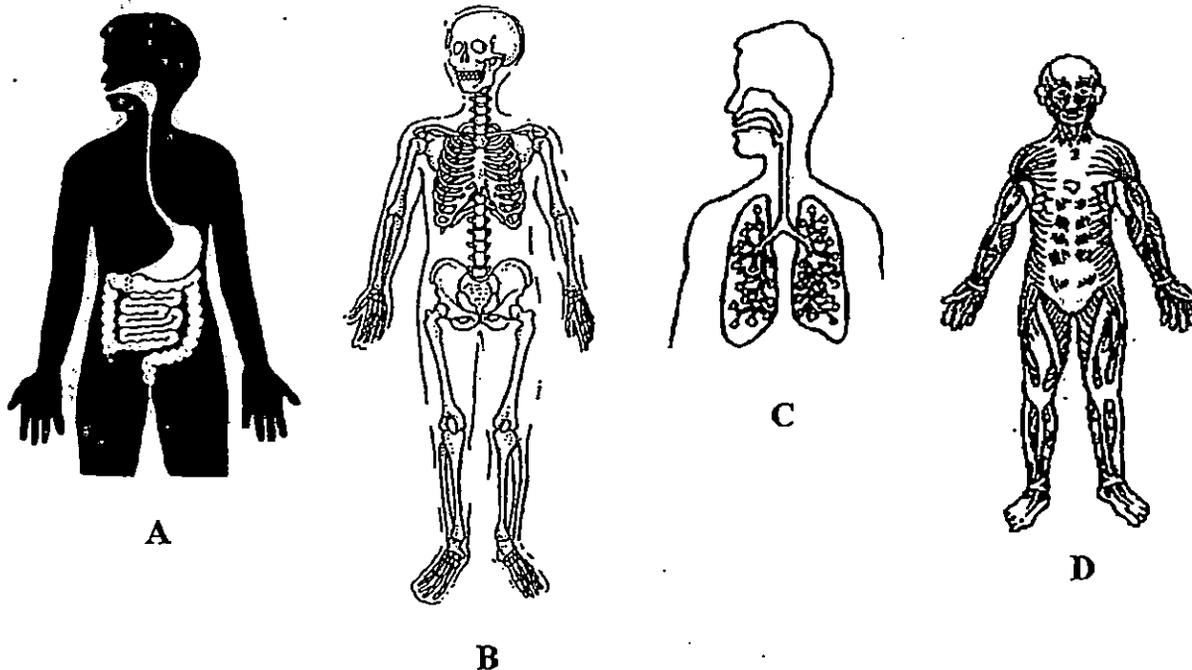


Name the plant parts and their functions in the table below.

(3 m)

Part	Name of plant part	Function
A		
B		
C		

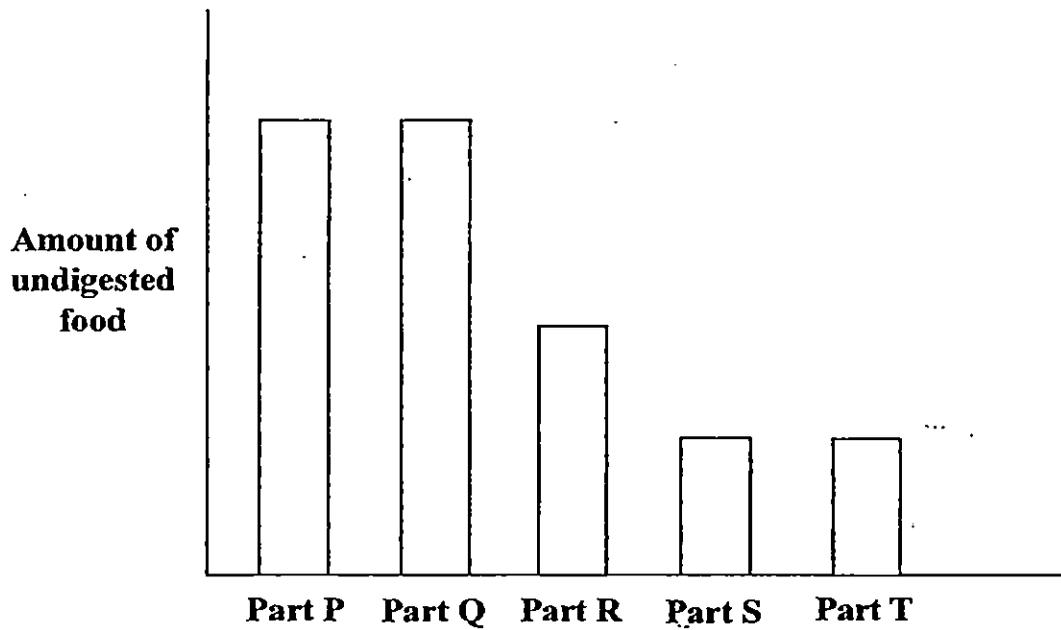
35. Study the pictures of the different human body systems below carefully.



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

S/N	Description of the system	System
(i)	It breaks food down into simpler substances before they can be absorbed into the blood.	
(ii)	It protects the delicate organs in the body.	
(iii)	It helps different parts of our body to move.	

36. Yihan ate a cheese burger for lunch. The graph below shows the amount of undigested food left in the various organs as it leaves the organs in his digestive system.



- (a) Identify parts P, Q, R and S. (2 m)

Part	Name of part in digestive system
P	
Q	
R	
S	

- (b) Explain why there is a decrease in the amount of undigested food from the moment it leaves part Q to the moment it leaves part R. (2 m)

37. The diagrams below show four animals P, Q, R and S.



P



Q



R



S

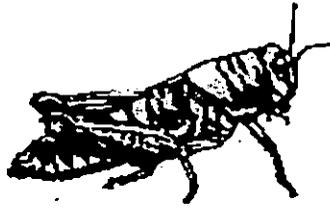
(a) Which two animals are not in their adult stage? (1 m)

Animals _____ and _____

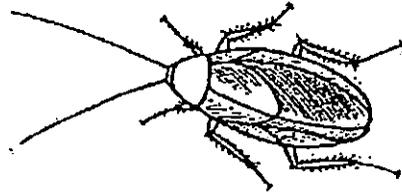
(b) Which two animals have a four-stage life cycle? (1 m)

Animals _____ and _____

38. The diagrams below show a grasshopper and a cockroach.



Grasshopper



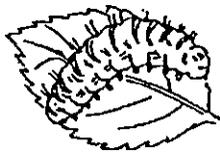
Cockroach

(a) List two similarities between the life cycles of the grasshopper and the cockroach in terms of: (2 m)

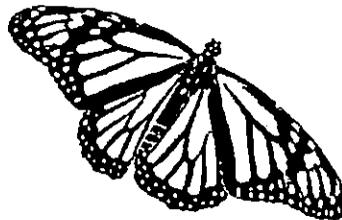
(i) the stages in their life cycle;

(ii) their young.

(b) The diagrams below show a caterpillar and a butterfly.



Caterpillar



Butterfly

Write down one difference between the caterpillar and the butterfly in terms of their movements. (1 m)

39. Wendy weighed 4 pieces of materials, P, Q, R and S, which were similar in size. She soaked them into a bowl of water for two minutes and removed them, shook off any droplets of water on their surfaces and weighed them again. She recorded her findings in the table below.

Material	Mass before putting into water (g)	Mass after shaking off water droplets (g)
P	50	72
Q	50	84
R	50	60
S	50	52

- (a) Which material (P, Q, R or S) absorbed the most amount of water?
(1 m)

Material _____

- (b) Which material (P, Q, R or S) is suitable for making umbrellas? Explain your answer clearly.
(2 m)

40. Study the table below carefully.

Material	Waterproof	Flexible	Able to float on water
E	Yes	No	Yes
F	No	No	Yes
G	No	Yes	Yes

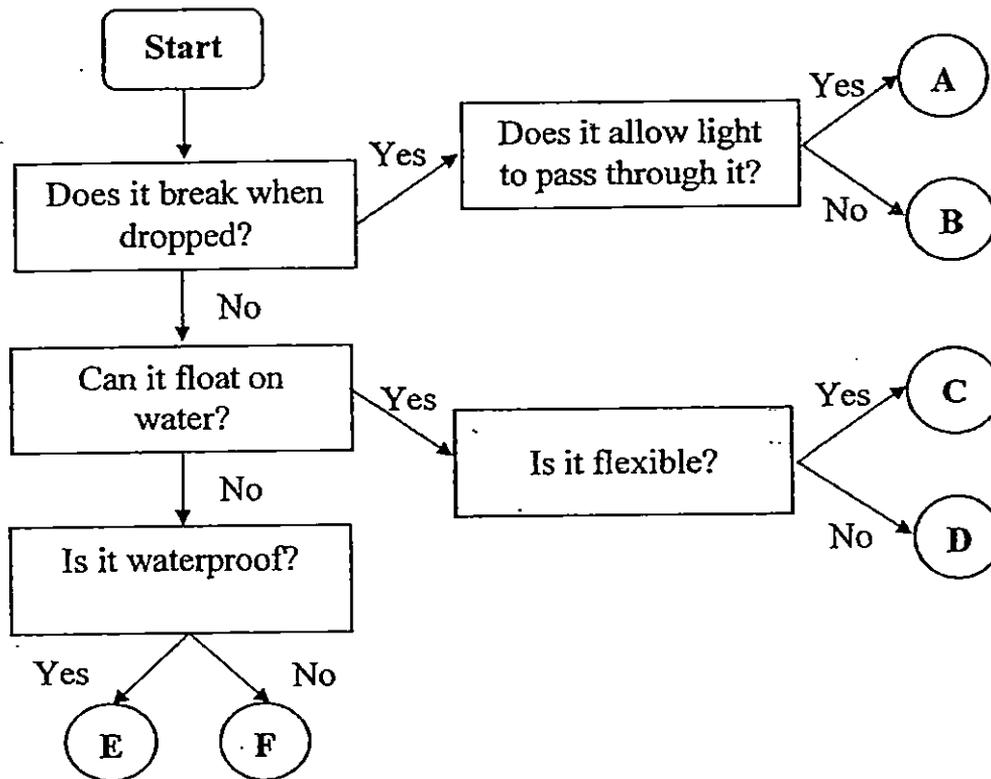
(a) Write down two differences between materials E and G based on the table above. (2 m)

(i) _____

(ii) _____

(b) Write down one similarity between materials F and G. (1 m)

41. Study the flowchart below carefully.



(a) Based on the information in the flowchart only, which letters (A, B, C, D, E or F) best represent the objects correctly? Each letter can only be used once or not at all. (2 m)

Letter	Object
E	Metal Key steel ruler
A	Glass bottle clay bowl
C	Paper boat
B	Ceramic mug

(b) Write down one property of material B that makes it unsuitable for making a window pane. (1 m)

42. The following pairs of objects are placed close together to see how they interact with each other.

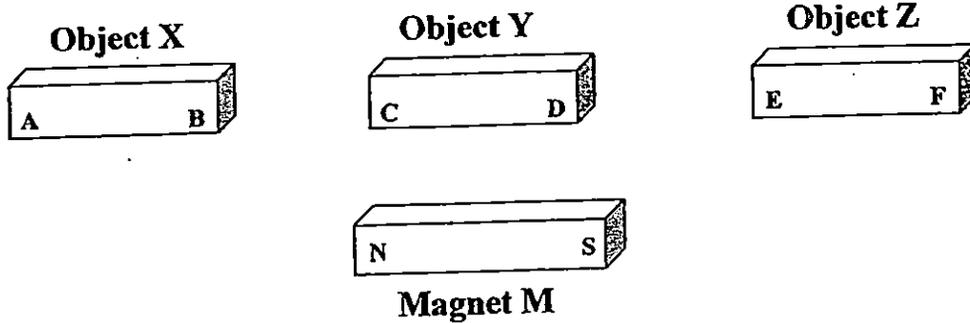
Objects		Observations
A	B	Repel
A	C	Attract
C	B	Attract

- (a) Bala says that object B is definitely a magnet. Do you agree with him? Explain your answer. (2 m)

- (b) Bala places object D, which is a plastic bar, near objects B and C. What do you think will happen? Write "Repel", "Attract" or "No reaction" in the table below. (1 m)

Objects		Observations
D	B	
D	C	

43. Benny carried out an experiment using objects X, Y and Z and magnet M. He brought magnet M to the ends of objects X, Y and Z. The table below shows the results of his experiment.

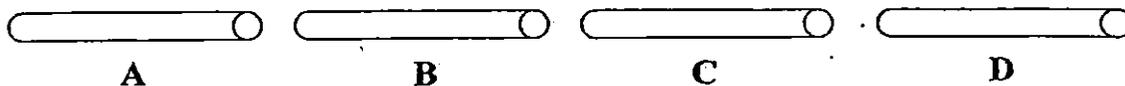


End of object brought near to the South pole of magnet M	Attract	Repel	No reaction
A			✓
B			✓
C		✓	
D	✓		
E	✓		
F	✓		

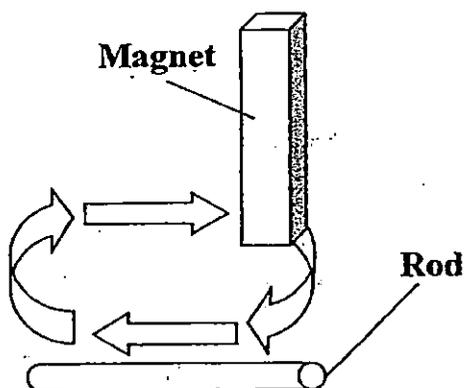
- (a) What was the aim of Benny's experiment? (1 m)

- (b) What conclusion could Benny make from the experiment about the materials that were used to make objects X and Z? (2 m)

44. Jeremy prepared four rods, A, B, C and D, made from different materials but were of similar length and thickness.



He then used a magnet to stroke the four rods, one at a time, as shown below.



He found out that rods A and D could attract some paper clips but rods B and C could not attract any paper clips.

- (a) What could Jeremy conclude about the materials used to make rods B and C from the experiment? (1 m)

- (b) List two other variables that must be kept the same to ensure a fair test. (2 m)

- (i) _____
- (ii) _____

END OF PAPER



EXAM PAPER 2015

LEVEL : PRIMARY 4

SCHOOL : RULANG PRIMARY SCHOOL

SUBJECT : SCIENCE

TERM : SA1

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10
2	2	4	1	2	3	2	4	3	3
Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20
2	1	3	4	2	1	4	2	2	3
Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30
1	4	4	2	3	1	1	2	4	2

Q31. Object C: Liquid Q31. Object D: Solid

Q32a. Substance A can be compressed and has no definite volume but substance B cannot be compressed and has a definite volume.

Q32b. Substance B is more likely a solid.

Q33a. The aim of her experiment is to find out whether plants need water to survive.

Q33b. The number of leaves on each plant must be kept the same to ensure that the experiment is a fair one.

Q34a. Leaf – The leaves trap light to make food for the plant.

Q34b. Stem – The stem transports water and mineral salts from the roots, food from the leaves to all other parts of the plant.

Q34c. Roots – The roots anchor the plant firmly to the ground and absorb water and mineral salts from the soil.

Q35i) Digestive system Q35ii) Skeletal system Q35iii) Muscular system

Q36a. P- Mouth, Q- Gullet, R- Stomach, S- Small intestine

Q36b. The food which exits part Q is the same when it enters part P as no digestion takes place at part Q and the undigested food was broken down into simpler substances in part R. More digestive juices are added to break down the food.

Q37a. Animals P and S

Q37b. Animals R and P

Q38ai) Both animals have a life cycle of 3 stages.

Q38aii) Both young of the grasshopper and the cockroach resembles its adult.

Q38b. The butterfly has wings to fly but the caterpillar has legs to crawl.

Q39a. Material Q.

Q39b. Material S. Material S absorbed the least amount of water as the mass after shaking off water droplets was the lightest.

Q40ai) Material E is waterproof but material G is not waterproof.

Q40aii) Material G is flexible but material E is not flexible.

Q40b) Both materials F and G is able to float on water.

Q41a. Letter E – steel ruler, Letter B – Clay bowl

Q41b. Material B does not allow light to pass through it.

Q42a. Yes, object B is a magnet. The like poles of object A and B are facing each other and repelled each other.

Q42b. No reaction Q42b. No reaction.

Q43a. The aim of the experiment is to find out whether which object is a magnet.

Q43b. He could conclude that object X and Z is made out of a magnetic material. Object X is made of a non-magnetic material but Z is made of a magnetic material.

Q44a. He could conclude that rod B and C is made out of a non-magnetic material.

Q44bi) The magnet used to magnetise the rod.

Q44bii) The number of times the rod is stroked.

THE END