METHODIST GIRLS' SCHOOL

Founded in 1887

END-OF-YEAR EXAMINATION 2017
PRIMARY 3
SCIENCE

BOOKLET A

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES
Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: _____ ( )

Class: Primary 3._____

Date : 31 October 2017

This booklet consists of 20 printed pages including this page.

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

[56 marks]

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1 Which of the following shows the characteristics of living things?

A Water flowing in the river.

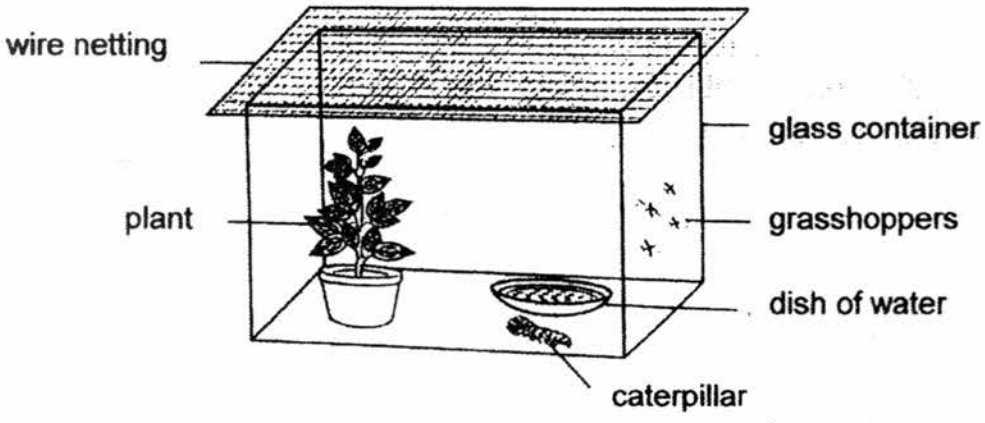
B A giraffe gives birth to its young alive.

C A balloon becomes bigger when it is blown.

D A kitten changing its appearance and size over time.

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

2 A caterpillar was put into a glass container with some grasshoppers and a pot of green plant as shown below.



At the end of eight hours what is most likely to happen to the number of insects and green leaves?

	Number of grasshoppers	**Number of leaves**
(1)	Remains unchanged	Decreases
(2)	Decreases	Remains unchanged
(3)	Remains unchanged	Remains unchanged
(4)	Decreases	Decreases

3 John had four similar plants, A, B, C and D in four identical pots. He placed each pot of plant under a different set of conditions as shown below.
A tick (√) shows the presence of the condition.

Plants	Conditions			
	Air	Sunlight	Water	Mineral salts
A		√	√	√
B	√	√	√	
C	√	√		√
D	√		√	√

Which one of the following sets of plants would **not** be able to survive for two weeks?

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

4 Observe the flowers of plants W, X, Y and Z as shown below.

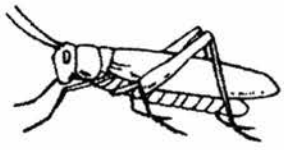
W X Y Z

Which one of the following shows the correct classification of plants based on their similar characteristics of flowers?

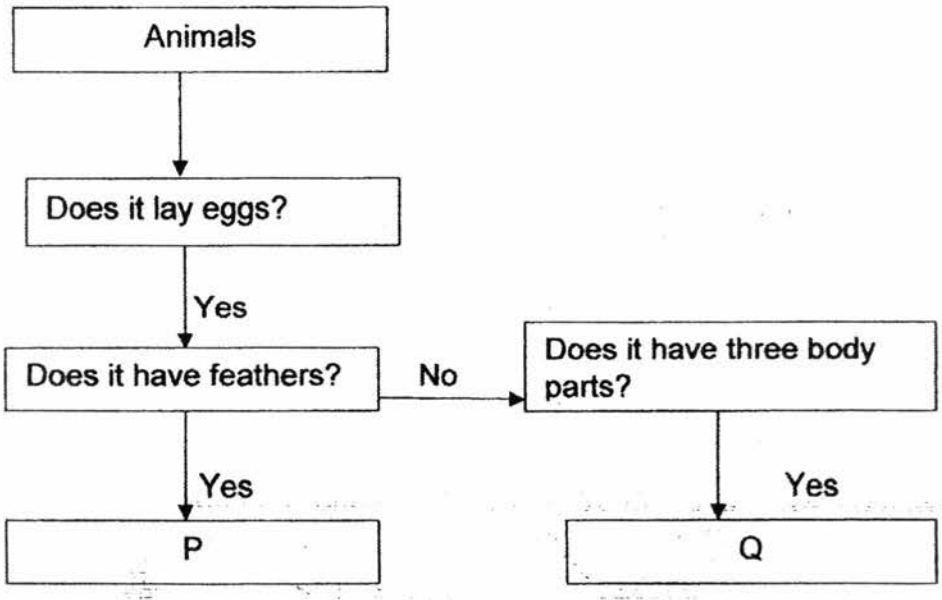
	Flower in a single stalk	Flower in a bunch
(1)	W and X	Z and Y
(2)	W and Y	Z and X
(3)	W and Z	X and Y
(4)	W, Z and X	Y only

5 Jenny classified the two animals, P and Q, as shown below.

P



Q



What is the similar characteristic between animals P and Q?

(1) They can fly.
(2) They lay eggs.
(3) They have feathers.
(4) They have three body parts.

6 Which one of the following correctly shows the part of the animal that helps it to move?

	Animals	**Part of the animal that helps it to move**
(1)	bee	wings
(2)	clownfish	gills
(3)	earthworm	skin
(4)	duck	beak

7 Which of the following statements about bacteria are **not** true?

A Bacteria can be harmful or useful.

B All bacteria can make their own food.

C Bacteria can be seen by the naked eye.

D Bacteria can only be found in very cold places.

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

8 Betty wants to find out if the amount of water given to four identical plants would affect their growth. She has four set-ups as shown below.

150 *ml* of water in the shade

Set-up A

50 *ml* of water in the shade

Set-up B

150 *ml* of water in the Sun

Set-up C

50 *ml* of water in the Sun

Set-up D

Which two set-ups should Betty use to ensure a fair test?

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

9 The diagrams below show three organisms.

mushroom

bird nest's fern

bracket fungus

What do these organisms have in common?

A They reproduce by spores.
B They can make their own food.
C They are non-flowering plants.
D They get their food from where they grow.

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

10 Three students, Ahmad, Chee Meng and Bala each made statements about a plant part and its function as shown in the table below.

Student	Plant part	Function
Ahmad	stem	Supports the branches and leaves of the plant.
Chee Meng	root	Transports water and mineral salts throughout the plant.
Bala	leaf	Helps in the making of food for the plant.

Whose statement(s) about the function of a plant part is/are wrong?

(1) Chee Meng only
(2) Ahmad and Bala
(3) Bala and Chee Meng
(4) Ahmad and Chee Meng

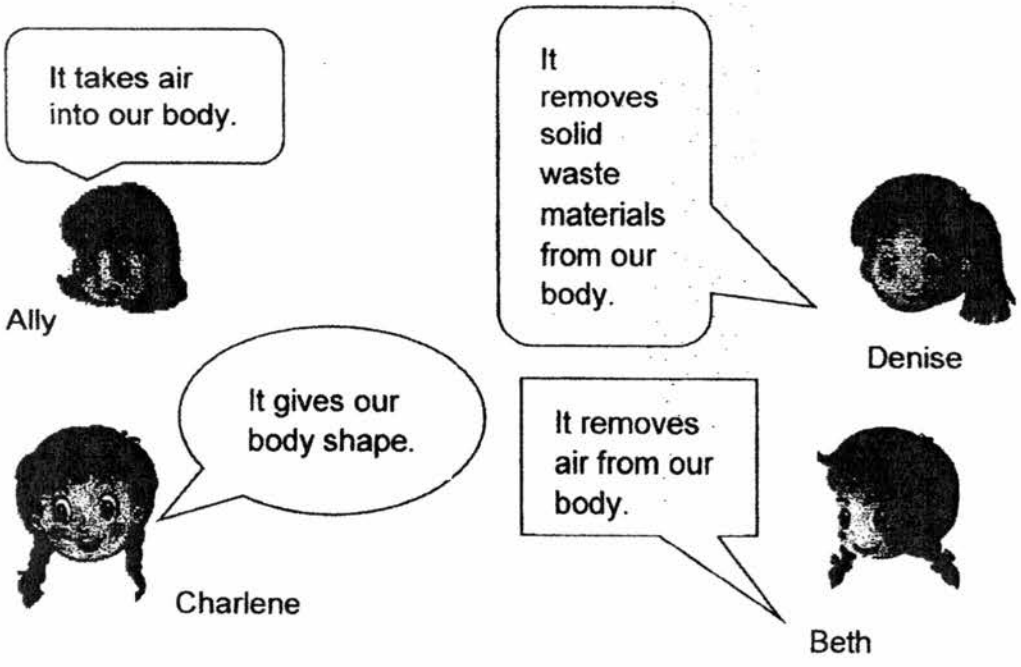
11 Devi wanted to conduct an experiment to find out if plants can take in water without roots.

Which of the following variables should she keep the same in order for the experiment to be fair?

A Type of plant
B Amount of water
C Number of leaves
D Presence of roots

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

12 Four children, Ally, Beth, Charlene and Denise each made a statement about the human body systems.



Which two children are talking about the same system?

(1) Ally and Beth
(2) Ally and Denise
(3) Charlene and Beth
(4) Charlene and Denise

13 Study the information given in the table shown below.

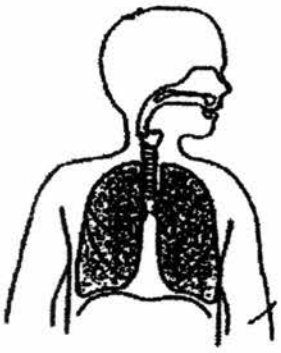
Parts of the digestive system	Functions
A	Pushes the chewed food down into the stomach
B	Passes out the waste materials
C	Allows the digested food to be absorbed
D	Absorbs liquid from the undigested food

Which of the following correctly identify parts A, B, C and D of the digestive system?

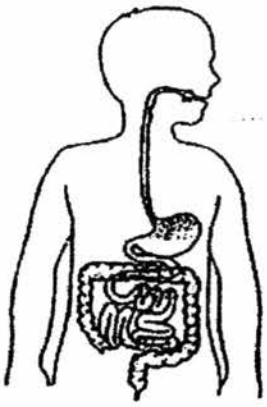
	A	B	C	D
(1)	Gullet	Mouth	Small intestine	Large intestine
(2)	Gullet	Anus	Small intestine	Large intestine
(3)	Mouth	Anus	Small intestine	Large intestine
(4)	Tongue	Mouth	Large Intestine	Small intestine

14 The diagrams below show four different body systems.

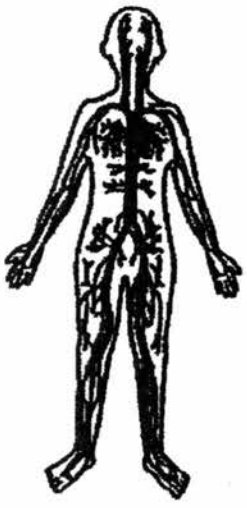
A



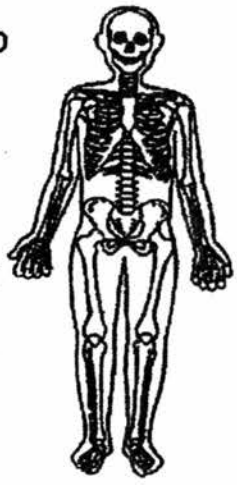
B



C



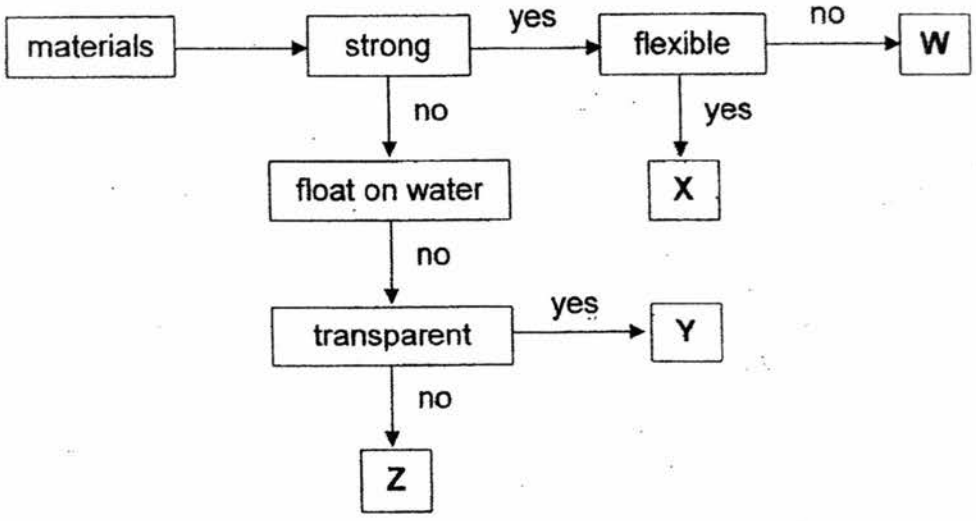
D



Jim was doing pull-up at a fitness corner on a sunny day. He realised that his heart was beating very fast. Which two body systems above caused Jim to feel this way?

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

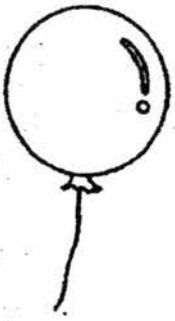
15 The flow chart below shows the properties of four materials, W, X, Y and Z.



What could be the four materials W, X, Y and Z?

	W	X	Y	Z
(1)	wood	clear glass	plastic	rubber
(2)	clear glass	plastic	wood	fabric
(3)	metal	rubber	clear glass	fabric
(4)	metal	clear glass	wood	rubber

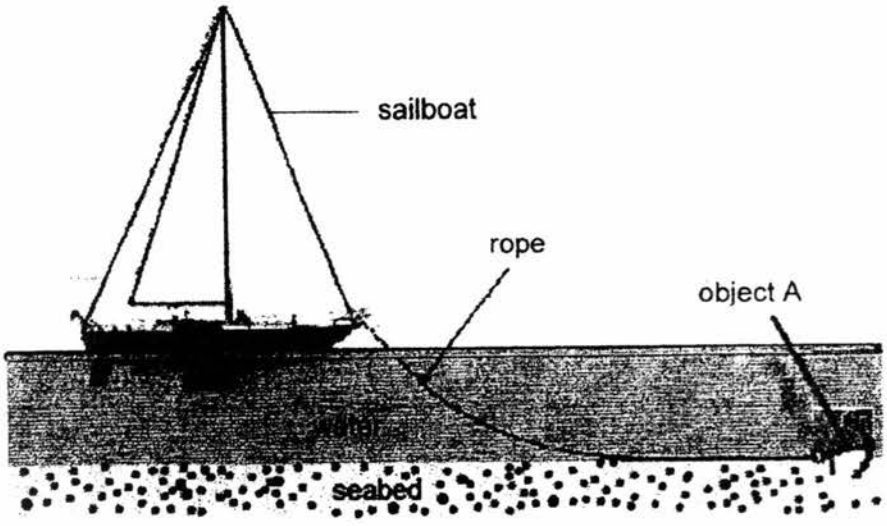
16 Four objects are classified into two groups as shown below.

Group A	Group B
 paper cup	 glass
 balloon	 sewing needle

The objects are grouped according to _____.

(1) how flexible they are
(2) whether they are waterproof
(3) whether light can pass through
(4) what materials they are made of

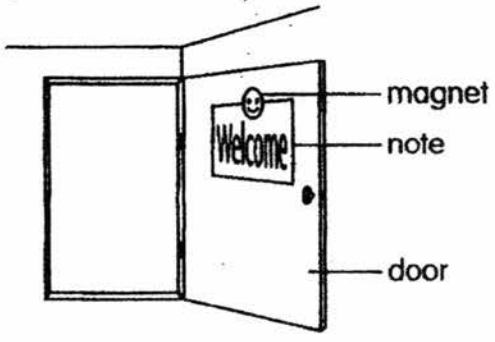
17 The picture shows a sailboat anchored in the seabed.



Which of the following shows the most suitable material used and its property to make object A?

	material	property
(1)	metal	strong
(2)	wood	waterproof
(3)	plastic	transparent
(4)	rubber	stiff

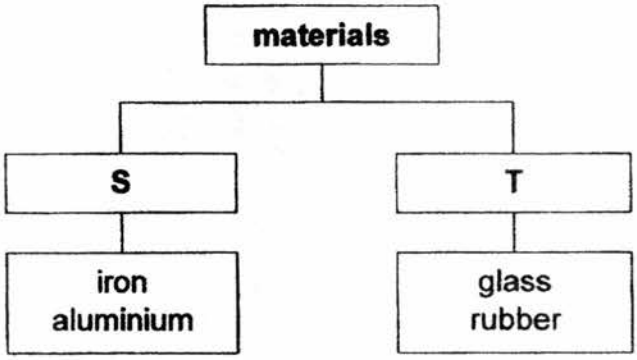
18 Jadine uses a magnet to hold a note on a door as shown below.



What could be the materials used to make the magnet and the door?

	magnet	door
(1)	iron	copper
(2)	steel	iron
(3)	clay	steel
(4)	aluminium	wood

19 The chart below shows the classification of some materials into group S and group T.



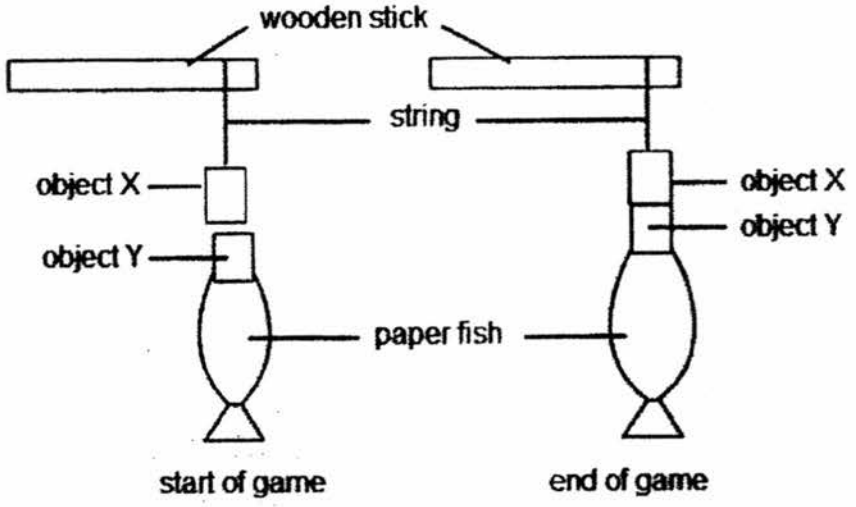
What are the most appropriate headings for group S and group T?

	S	T
(1)	metal	non-metal
(2)	magnetic	non-magnetic
(3)	sinks in water	floats in water
(4)	not transparent	transparent

20 Faisal was given a rod to test if it was a magnet. He could test the rod by bringing it near _____.

(1) some plastic cups to see if there was any interaction
(2) another similar rod to see if they were attracted together
(3) a freely suspended magnet to see if the magnet repelled the rod
(4) a freely suspended magnet to see if the magnet attracted the rod

21 Ali played a game as shown in the diagram below. The aim of the game is to make use of object X to pick up object Y, which is attached to a paper fish.

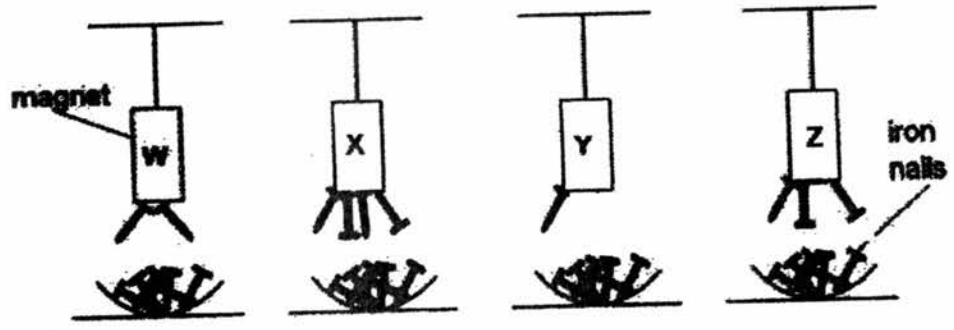


Which of the following could represent objects X and Y?

	object X	object Y
A	copper block	steel block
B	magnet	iron block
C	magnet	magnet

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

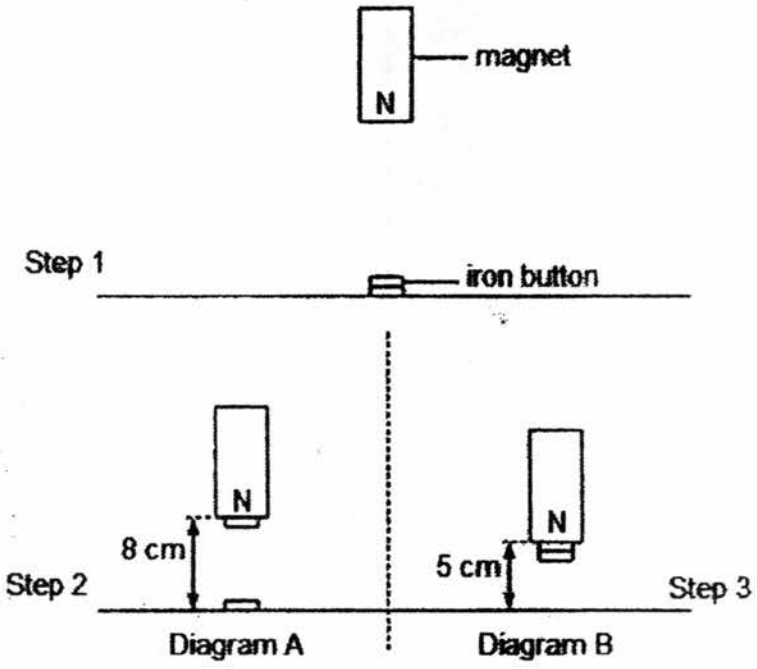
22 Four different magnets, W, X, Y and Z were each hung from strings of equal length. A tray with the same number of iron nails was placed at equal distance below each magnet. It was observed that a different number of iron nails was attracted as shown below.



Based on the observation above, which one of the options is correct?

	weakest magnet	strongest magnet
(1)	X	Y
(2)	W	X
(3)	Y	Z
(4)	Y	X

23 Ahmad set up an experiment in Step 1 as shown below to find out how many iron buttons a magnet can attract over different distances. Diagram A and Diagram B in Step 2 and Step 3 show the results of the experiment respectively.



What could Ahmad conclude from this experiment?

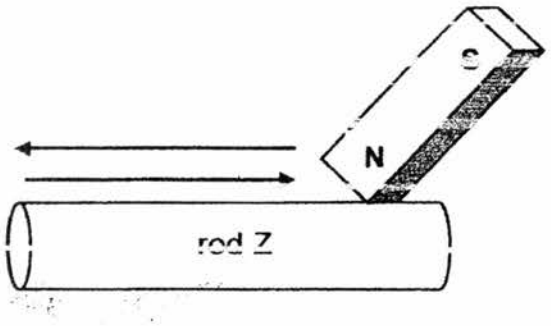
(1) The magnet has no effect on the iron button.

(2) The magnet can attract less iron buttons when it is nearer to them.

(3) The magnet can attract more iron buttons when it is nearer to them.

(4) The magnet is stronger when it is 8 cm away from the iron buttons.

24 Devi was trying to turn rod Z into a magnet by using the stroking method. She used a bar magnet with its north-pole in contact with rod Z as shown below. The directions of the stroking movements are represented by the two arrows.



She was unable to use this method to turn rod Z into a magnet. Which two of the following statements could be the possible explanations?

A Rod Z is not a **magnetic material**

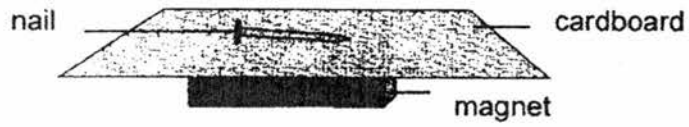
B The bar magnet must be the same size as rod Z.

C Devi should stroke rod Z with the south-pole instead.

D The bar magnet stroked rod Z in more than one direction.

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

25 Ling Ling placed an iron nail on a flat sheet of cardboard and held a magnet under the sheet as shown in the diagram.

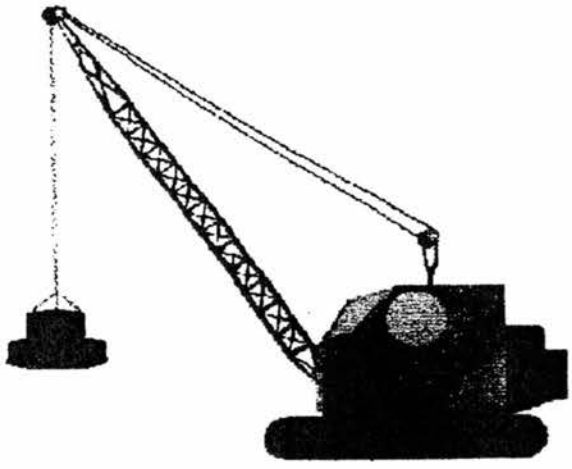


What would be observed if Ling Ling moved the magnet along the cardboard?

(1) The magnet would bend the iron nail.
(2) The magnet would repel the iron nail.
(3) The iron nail would move with the magnet.
(4) The iron nail remained in the same position.

26 Two objects, **X and Y, are shown** in the pictures below. Both objects made use of magnets to function. **[The pictures are not drawn to scale.]**

Object X



Object Y

In what **ways are the magnets** used in Objects X and Y different?

	X	Y
A	Ring shaped	Rod shaped
B	Shows direction	Lifts scrap iron
C	Strong magnetism	Weak magnetism
D	Permanent magnet	Temporary magnet

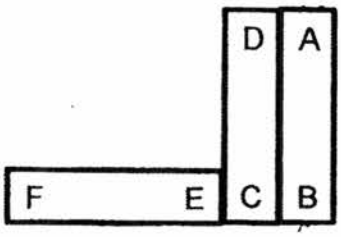
(1) A and B only

(2) B and C only

(3) B and D only

(4) C and D only

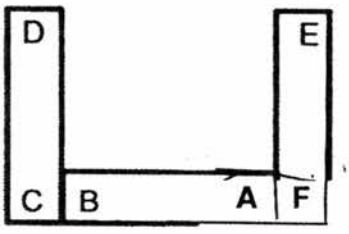
27 Wayne arranged three bar magnets together as shown below.



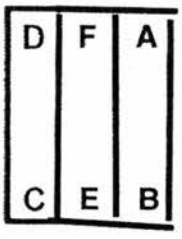
Later, he rearranged the magnets.

Which one of the following arrangements of the magnets is possible?

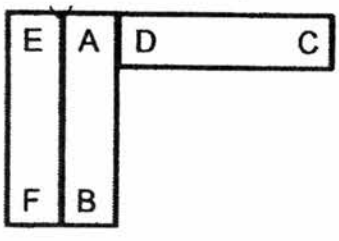
(1)



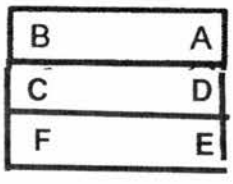
(2)



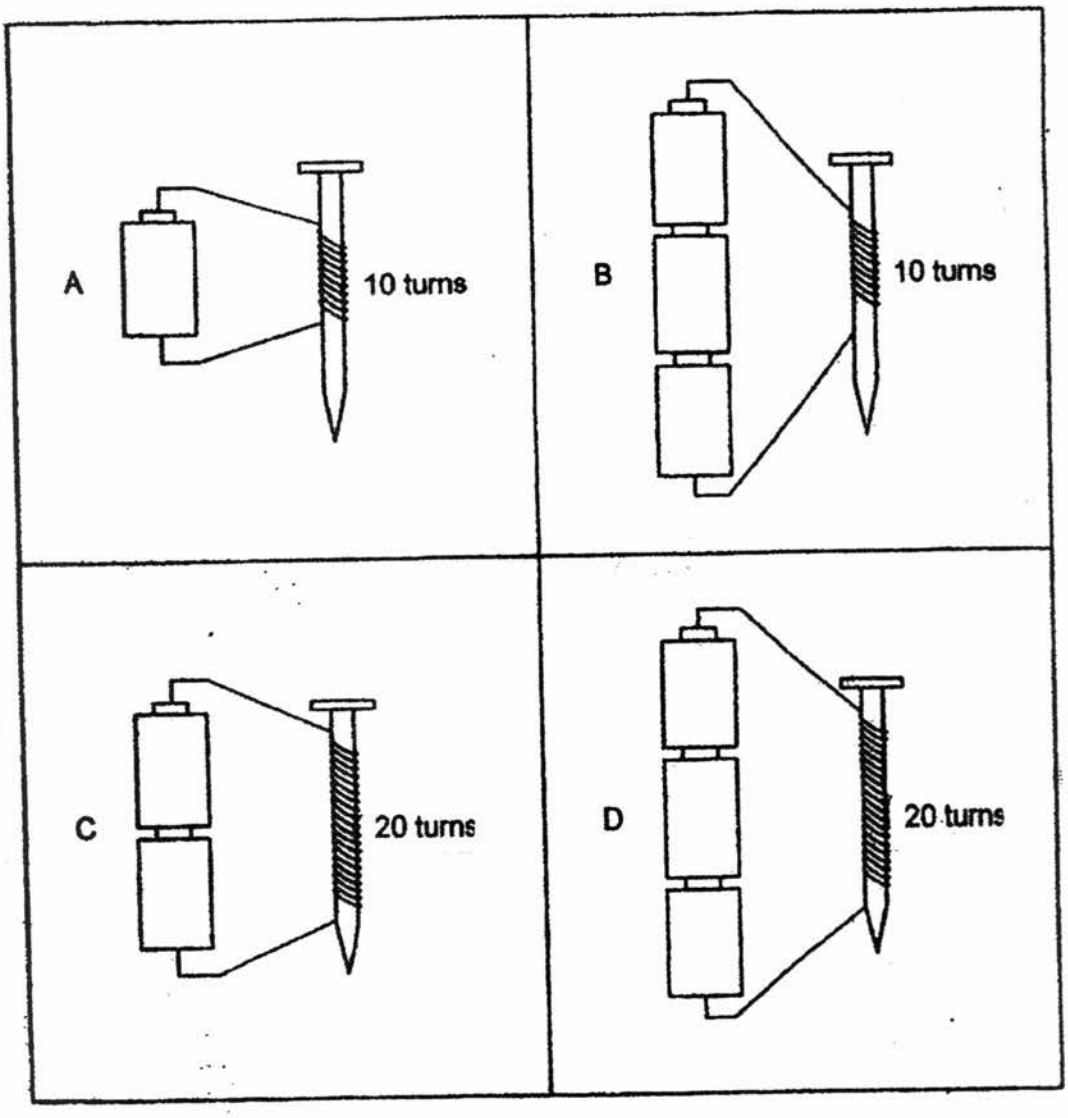
(3)



(4)



28 Gopal wanted to find out if the number of batteries affects the strength of the electromagnet. He prepared four set-ups as shown below.



Which two set-ups, A, B, C and D, should Gopal use to conduct a fair test?

(1) A and C

(2) A and D

(3) B and C

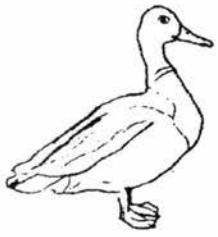
(4) C and D

End of Booklet A

For questions 29 to 40, 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.

[34 marks]

29 Salmah observed animals P, Q and R as shown below.



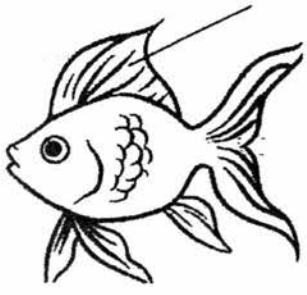
P

Q

R

(a) Which animal is not classified in the same group of living things as the other two animals? Give a reason for your answer. [1]

Study animals S and T as shown below.



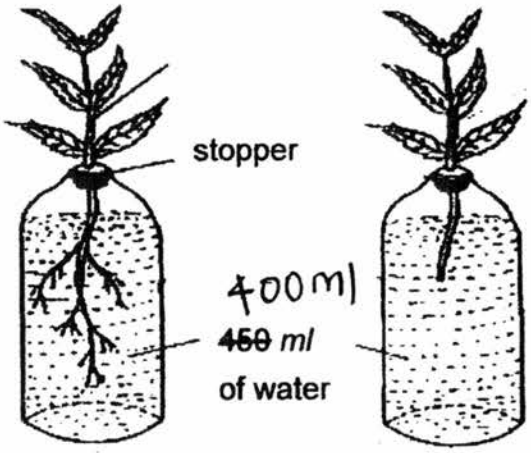
Animal S

Animal T

(b) What is the similarity between the function of part Y and Z of both animals S and T? [1]

(c) How do both animals S and T reproduce? [1]

30 Peggy carried out an experiment using two similar plants. The roots of the plant in Flask B were cut off while the roots of plant in Flask A were not cut. Both Flasks A and B contain the same amount of water. Peggy measured the amount of water left in each flask after seven days.



Flask A Flask B

~~Beaker~~ flaks	Volume of water at the start of the experiment (ml)	Volume of water at the end of the experiment (ml)
A	400	250
B	400	390

(a) What was Peggy trying to find out in this experiment? [1]

_____

(b) What was observed about the amount of water in the two flasks at the end of the experiment? [1]

_____

(c) What are two other functions of the roots not shown in the experiment? [2]

Function 1: _____

Function 2: _____

4

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31 Diagram 1 shows the parts of a plant with labels W, V, X, Y and Z. Diagram 2 shows tiny openings that can be found on a plant part.

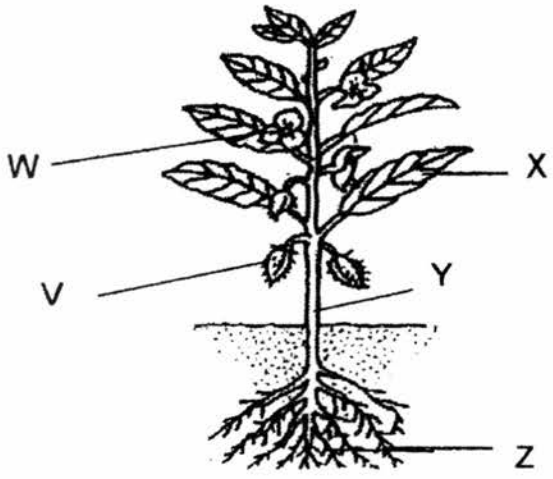

Diagram 1

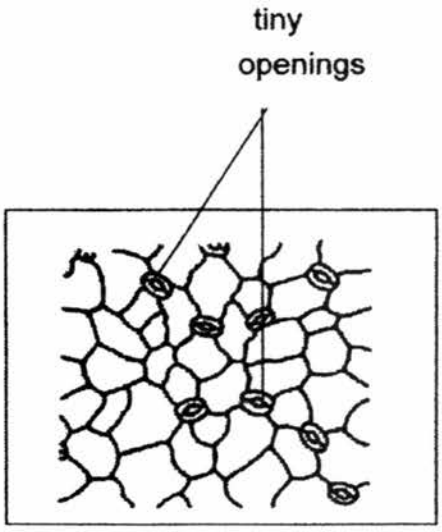

Diagram 2

(a) Which part of the plant can the tiny openings be found? [1]

_____

(b) What is the function of the tiny openings? [1]

_____

_____

2

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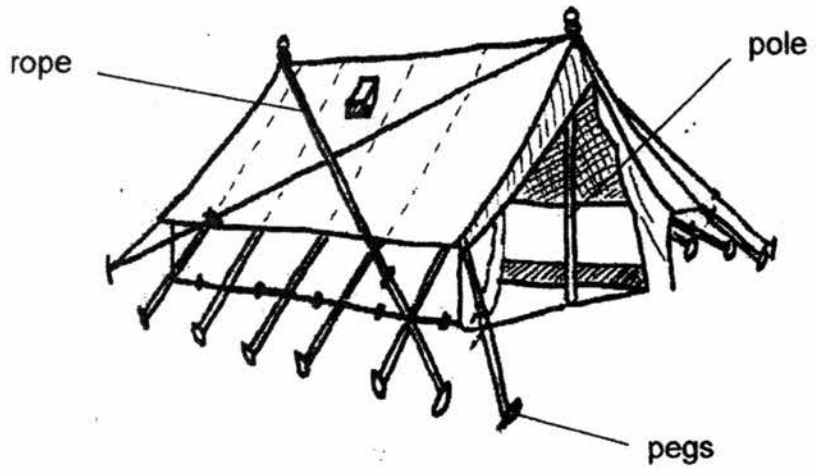
32 The picture below shows a tent. The poles, ropes and the pegs hold the tent together. This gives the frame to the tent.



(a) Name the human body system that serves the same function as the frame of the tent. [1]

_____

(b) How is the function of the frame of the tent similar to the human body system you have identified in part (a)? [1]

_____

_____

(c) What are two important organs that this human body system protects? [1]

_____

3

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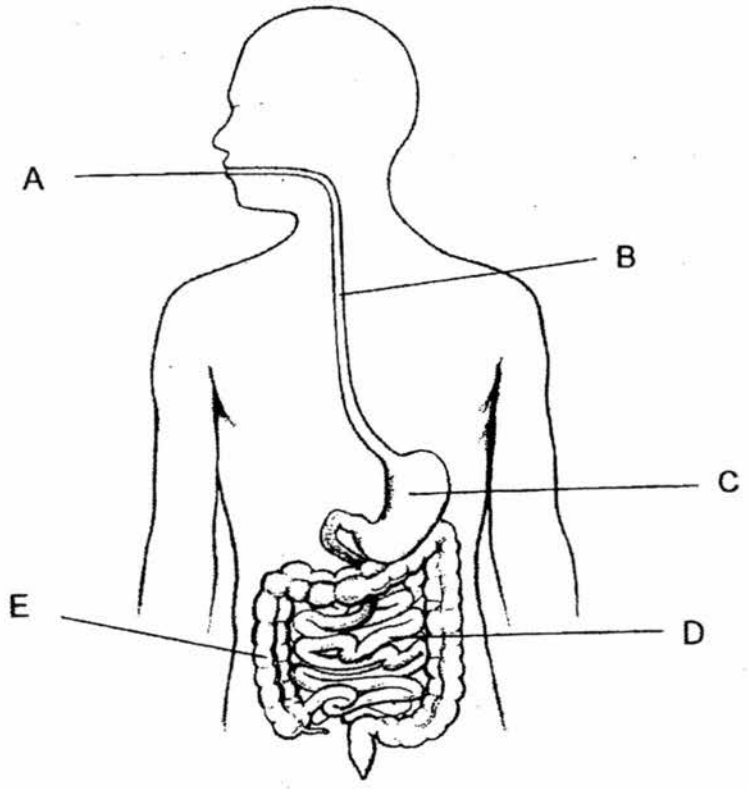
33 The diagram below shows a human body system with its parts labelled A, B, C, D and E.



(a) At which part does digestion begin? Describe what happens to the food at this part. [2]

_____

_____

_____

(b) What happens at Part C? [1]

_____

3

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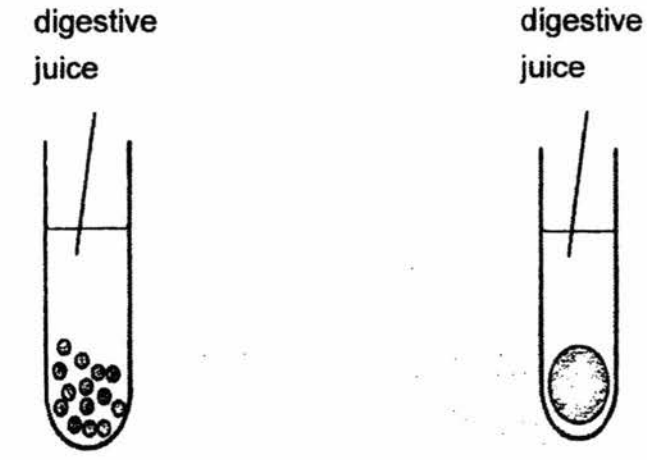
34 Ravi was planning an experiment to find out if breaking food into smaller pieces can help digest food quickly. He used two similar pieces of biscuits and two test tubes containing an equal amount of digestive juice for his set-ups. The piece of biscuit added to set-up A was broken into smaller pieces while the piece added to set-up B was not broken.



Set-up A Set-up B

(a) What difference in results would Ravi observe in the two set-ups at the end of the experiment? [1]

(b) What is digestion? [1]

2

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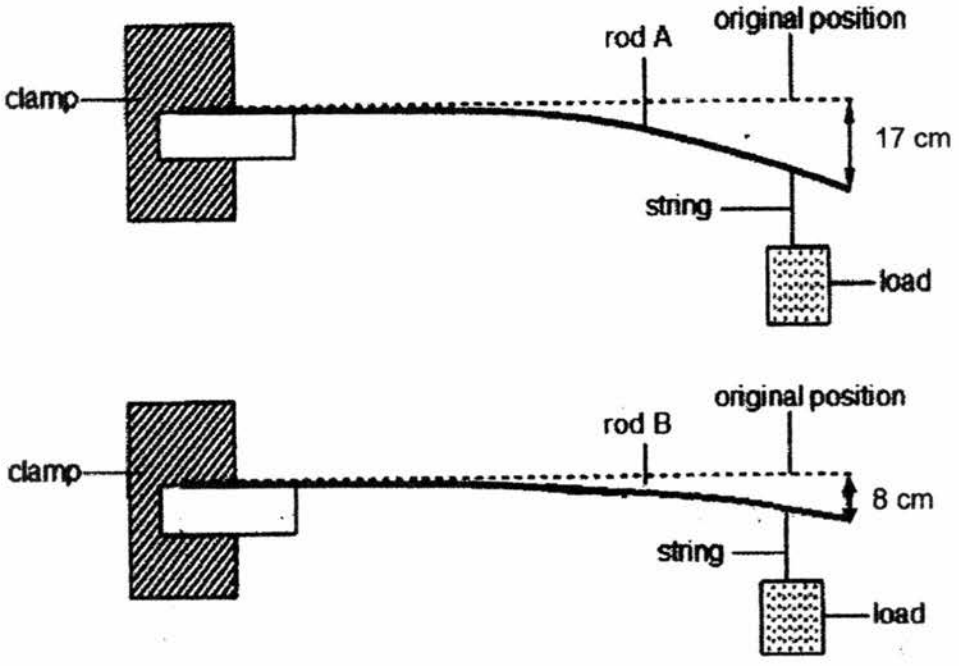
35 Jaya set up an experiment using two rods, A and B, of the same thickness. Each rod was fixed to a clamp at one end and a load was hung at the other end.



He observed that the two rods bent downwards from its original position at different distances as shown in the diagram.

(a) Based on Jaya's observation, which rod is more flexible? Give a reason for your answer. [1]

_____

(b) In this experiment, what are two **other** variables that must be kept the same in order for the experiment to be fair? Tick the box accordingly in the table below. [1]

variables	keep the same	change
material of rod		
length of rod		
mass of load		

(c) What must Jaya do to ensure his results are reliable for this experiment?

_____ [1]

3

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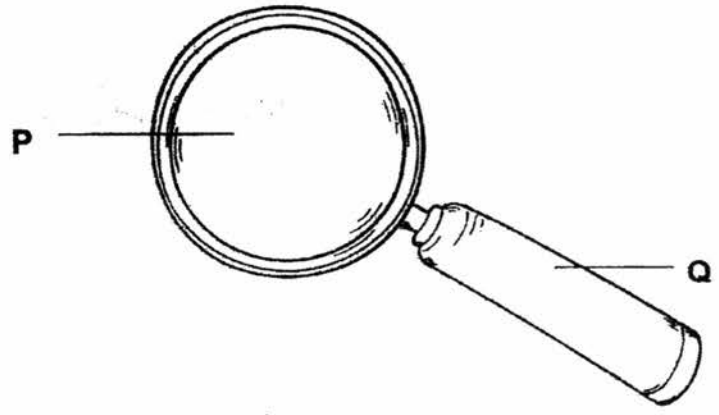
36 The picture below shows a magnifying glass with parts P and Q.



(a) What property of material is suitable to make part P of the magnifying glass? Give a reason for your answer. [1]

_____

_____

(b) Is the material used for making part P suitable to be used for part Q? Explain your answer. [1]

_____

_____

2

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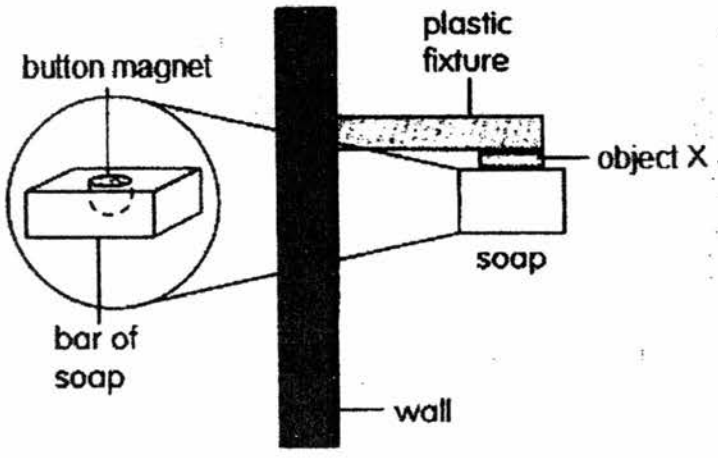
37 Becky set up an experiment using a light steel trolley supported by some wooden pipes and a magnet as shown below.

When Becky moved the magnet near to the steel trolley, she observed an interaction between the steel trolley and magnet.

(a) What interaction would Becky observe between the steel trolley and magnet? [1]

Next, Becky decided to make a 'soap-holder' by inserting a button magnet into a bar of soap and attaching it to a plastic fixture connected to object X and fixed on a wall as shown below.



(b) What property must the material of object X have to ensure the bar of soap is held in place and does not drop? [1]

2

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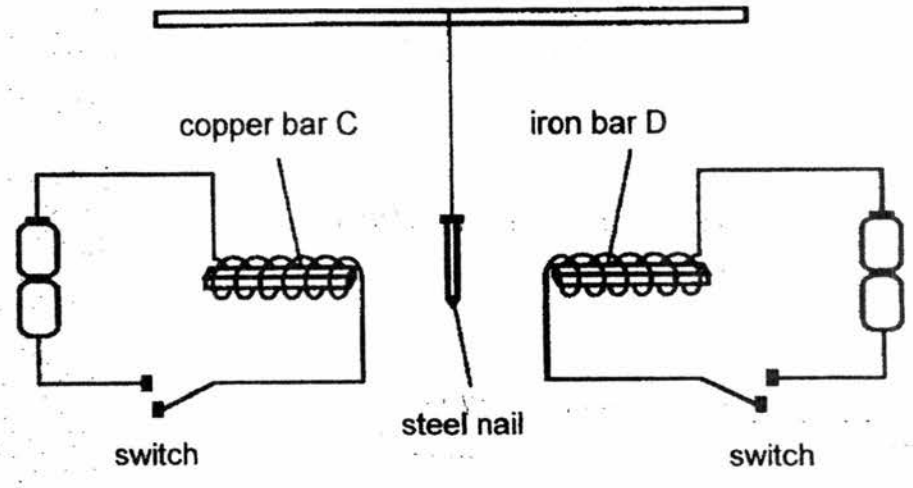
(c) Becky replaced object X with a magnet and she observed that the soap dropped immediately and could not be held in place. Suggest a possible reason for Becky's observation. [1]

_____

_____

38 Jamal set up an experiment as shown below. A steel nail is freely suspended in the middle, between a copper bar C, and an iron bar D.



(a) Jamal observed that the steel nail moved towards iron bar D when both switches were closed at the same time. Give a reason for his observation. [2]

_____

_____

_____

3

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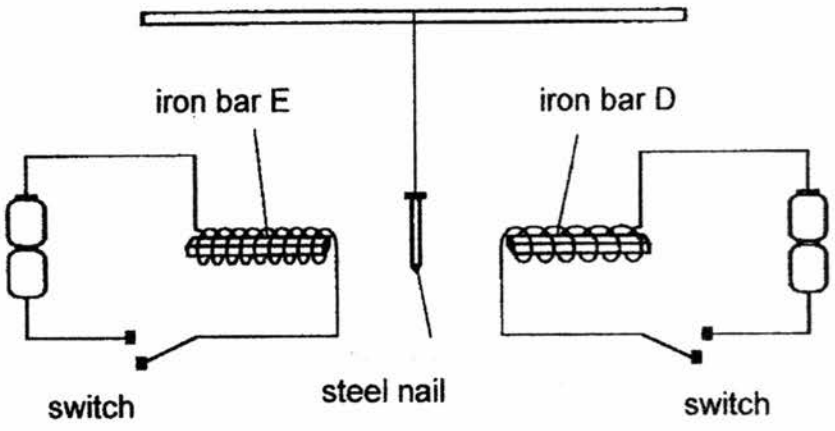
(b) Next, Jamal had a new set up as shown below.



He observed that the steel nail now moved towards iron bar E when both switches were closed at the same time. Why was there a change in the movement of the steel nail? [2]

_____

_____

_____

2

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39 **(a)** Diagram 1 below shows a ring magnet lowered onto a tray of steel pins. Diagram 2 shows the bottom view of the magnet.

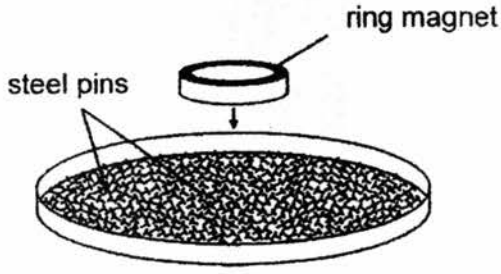


Diagram 1

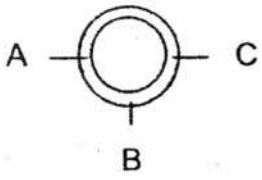


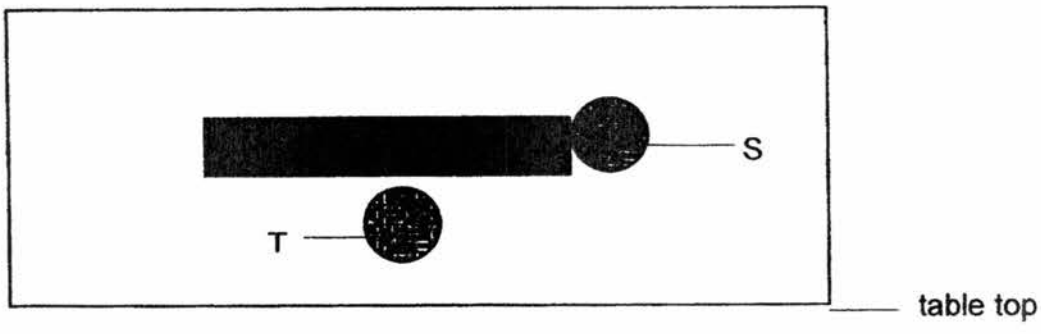
Diagram 2

The same number of steel pins were attracted at positions A, B and C of the ring magnet. Give a reason for this observation. [1]

_____

_____

(b) Ting Ting conducted another experiment. She placed a magnet, R, on a table and then moved two similar steel balls, S and T, next to magnet R as shown below.

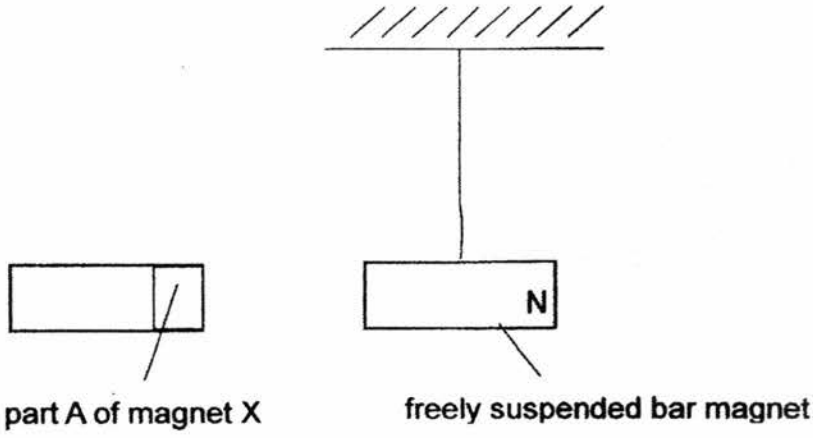


When she lifted up magnet R, ball S remained attached to R but ball T did not. Explain why ball T did not remain attached to magnet R. [1]

_____

_____

40 A bar magnet is suspended freely from a string as shown in the diagram below. It was observed that the north-pole of the bar magnet is pointing in a certain direction as shown.



When part A of magnet X was brought near to the freely suspended bar magnet, it was observed that both magnets push each other away.

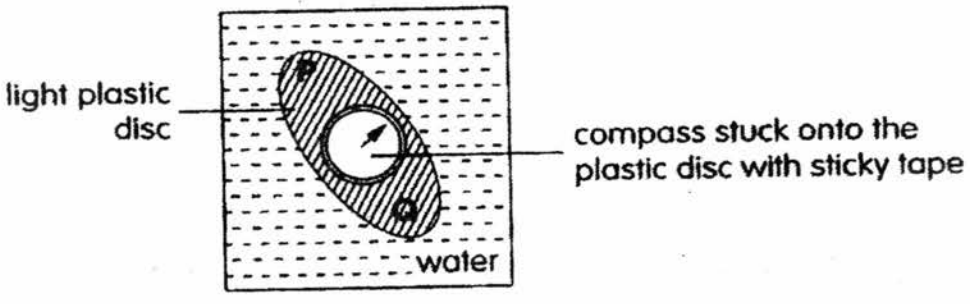
(a) What is the likely pole of magnet X at part A? [1]

_____

(b) Give a reason for this observation [1]

_____

A round compass was fixed onto a piece of light oval-shaped plastic disc and allowed to float on water as shown below. The oval-shaped plastic disc has two markings, P and Q, at each of its ends.



(c) What would be the new position of the arrow pointer on the compass when the north-pole of a bar magnet is placed near to position Q? [1]

_____

End of Booklet B

EXAM PAPER 2017

LEVEL : PRIMARY 3
SCHOOL : METHODIST GIRLS' SCHOOL (PRIMARY)
SUBJECT : SCIENCE
TERM : END-OF-YEAR EXAM

BOOKLET A

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

BOOKLET B

Q29. (a) R. It is a mammal.
(b) The part help them to move.
(c) They reproduce by laying eggs.

Q30. (a) She was trying to find out if the roots of the plant take in the water.
(b) The water left in flask A was less than Flask B.
(c) Function 1: The roots take in mineral salts.
Function 2: It helps to anchor the plant firmly to the ground.

Q31. (a) Part X
(b) To allows gaseous exchange.

Q32. (a) Skeletal System

(b) The frame gives shape and provide support for the tent.

(c) brain / heart / lungs

Q33. (a) Mouth. The teeth chew the food into smaller pieces while saliva soften the food.

(b) Digestion continues at Part C.

Q34. (a) The biscuit in set-up A is digested faster than the biscuit in set-up B.

(b) Digestion is the breaking down of food into simple substances.

Q35. (a) Rod A. It bent more than Rod B.

(b)

Variable	Keep the same	Change
Material of rod		✓
Length of rod	✓	
Mass of rod	✓	

(c) He must repeat the experiment a few more times.

Q36. (a) It is transparent. It allows light to pass through so that you can see through it.

(b) No, it is fragile.

Q37. (a) They attracted each other.

(b) It has to be magnetic.

(c) Like poles are facing each other so they repel.

Q38. (a) Iron is magnetic so iron bar D can become electromagnet when the switch was closed.

(b) Iron bar E has more coils of wire around it so it has a stronger magnetism.

Q39. (a) **A, B and C are poles of the ring magnet and they have equal magnetism.**

(b) **The middle part of magnet R is the weakest so there was not enough magnetism to attract ball T.**

Q40. (a) **South pole.**

(b) **Like poles repel.**

(c) **Position P**

END-OF-PAPER