Anglo-Chinese School (Junior)

SEMESTRAL ASSESSMENT 1 (2018)

PRIMARY 4

SCIENCE

BOOKLET A

Friday **11 May 2018** **1 hr 45 min**

Name: _____ ( ) Class: 4.( )

INSTRUCTIONS TO PUPILS

1 Do not turn over the pages until you are told to do so.

2 Follow all instructions carefully.

3 There are 28 questions in this booklet.

4 Answer ALL questions.

5 Shade your answers in the Optical Answer Sheet (OAS) provided.

This question paper consists of 15 printed pages (inclusive of cover page).

Booklet A (56 marks)

For each question from 1 to 25, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade your answer on the Optical Answer Sheet. (28 x 2 marks)

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1. Which one of the following statements about living things is true?

   (1) All living things can give birth to young.
   (2) A shadow is a living thing as it can move.
   (3) A toy robot is a living thing because it respond to changes.
   (4) Plants are living things even though they cannot move from place to place.

2. Which of the following characteristics are true about all insects?

   A They have wings
   B They have six legs
   C They have three body parts
   D They have hard outer covering

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

3. Which of the following **does not** describe the staghorn fern and mushroom?

   A Staghorn Fern and mushroom can make their own food.
   B Staghorn Fern and mushroom are both non-flowering plants.
   C Staghorn Fern and mushroom are fungi as they reproduce by spores.

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

4. Study the table below.

Characteristics	Animal W	Animal X	Animal Y	Animal Z
Has wings	Yes	Yes	No	Yes
Has 2 legs	No	Yes	No	No
Has feathers	No	Yes	No	No
Has scales as outer covering	No	No	Yes	No

Which animal, W, X, Y or Z is most likely a bird?

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

5. Which of the following statements is true about mould?

(1) Mould can only grow on bread.
(2) Mould can only grow in dark places.
(3) Mould can only reproduce by spores.
(4) Mould can only be seen under the microscope.

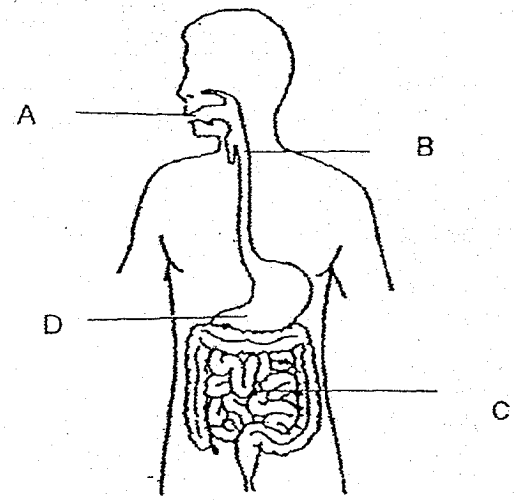
6. James' parents were watching television in the living room in the afternoon. They realized that the sun was very glaring and decided to buy some curtains to solve the problem. What is the most important property that they should consider when buying the curtains?

(1) Mass
(2) Strength
(3) Flexibility
(4) Transparency

7. Leo was bending his thin metal wires to form different shapes for his project. His younger brother tried to do exactly the same action as him by bending a stiff plastic ruler. The plastic ruler broke because it was not _____.

(1) soft
(2) stiff
(3) light
(4) flexible

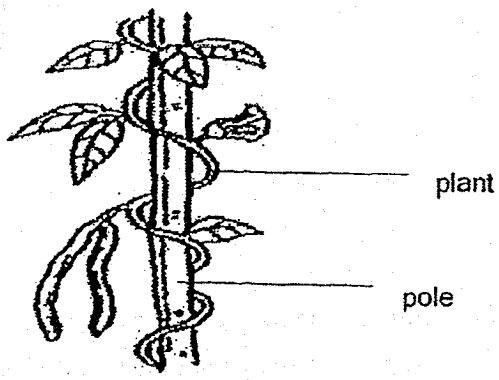
8. The diagram below shows the digestive system with parts labelled A, B, C and D.



Digestive juices are **not** found in part _____.

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

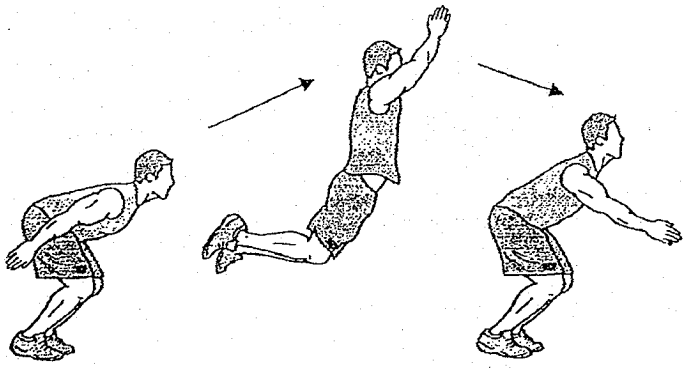
9. Study the picture of a plant on a pole.



Why did the plant climb up the pole?

(1) It wanted to get more air
(2) It wanted to get more warmth.
(3) It wanted to get more sunlight.
(4) It wanted to get more nutrients.

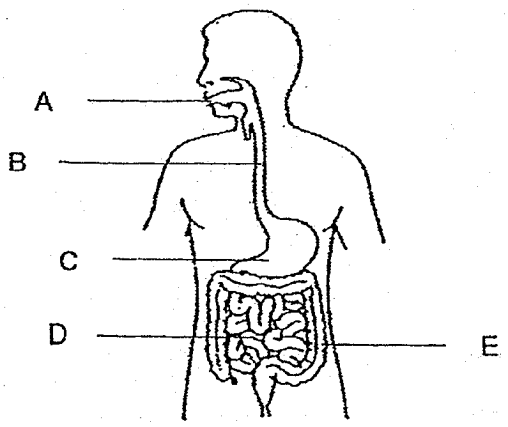
10. After taking a deep breath, Tom did the following action.



Which of the two main systems helped Tom jump?

(1) Muscular system and Skeletal system
(2) Digestive system and Respiratory system
(3) Digestive system and Circulatory system
(4) Respiratory system and Circulatory system

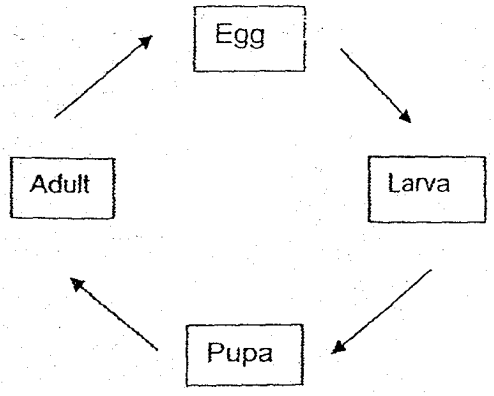
11. The diagram below shows the digestive system with parts labelled A, B, C, D and E.



In which parts of the body does digestion start and end?

	Start	End
(1)	A	D
(2)	B	D
(3)	C	E
(4)	A	E

12. The diagram below shows the life cycle of an animal.



Which animals have the life cycle shown above?

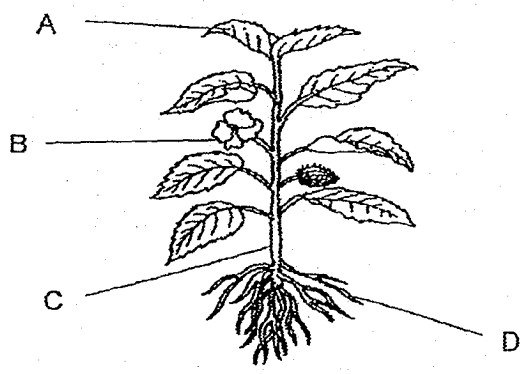
(1) Butterfly and frog

(2) Cockroach and mosquito

(3) Grasshopper and butterfly

(4) Beetle and mosquito

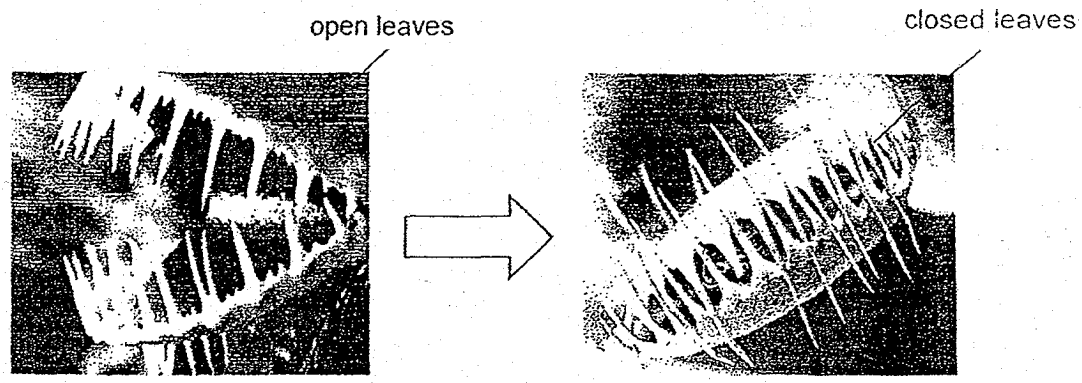
13. Study the picture of a plant below.



Which of the following parts of the plant matches its functions?

	A	B	C	D
(1)	Exchange gases	Become a fruit	Absorbs water for the plant	Anchor the plant to the soil
(2)	Make food	Beautify the garden	Anchor the plant to the soil	Support the leaves and stem
(3)	Make food	Become a fruit	Supports the plant	Anchor the plant to the soil
(4)	Exchange gases	Beautify the garden	Anchor the plant to the soil	Anchor the plant to the soil

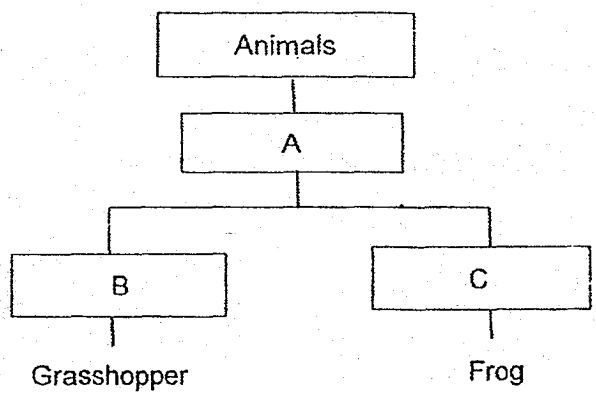
14. The Venus flytrap below only closes its leaves when an insect lands inside it.



This shows that the Venus flytrap is a living thing because _____.

(1) it can grow
(2) it can move
(3) it can trick insects
(4) it can respond to changes

15. The classification table below shows 2 animals grouped based on their characteristics.

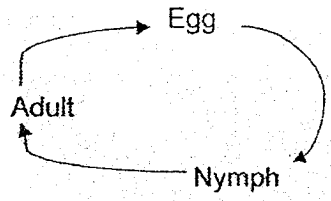


Which one of the following gives the correct sub-heading of A, B and C?

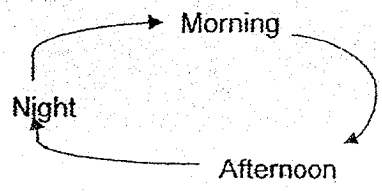
	A	B	C
(1)	Animals that lay eggs	Lives on land	Lives in water
(2)	Animals that can fly	Animals which lay eggs	Animals that give birth to their young alive
(3)	Lives on land	3-stage Life Cycle	4-stage Life Cycle
(4)	3-stage Life Cycle	Moult	Does not moult

16. Study the diagrams below. Which one of the following **does not** represent a life cycle?

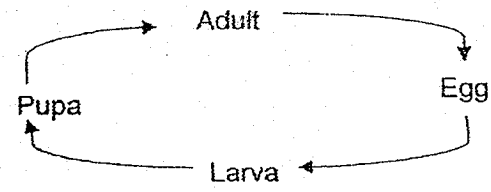
(1)



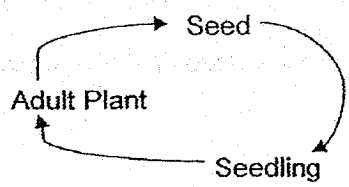
(2)



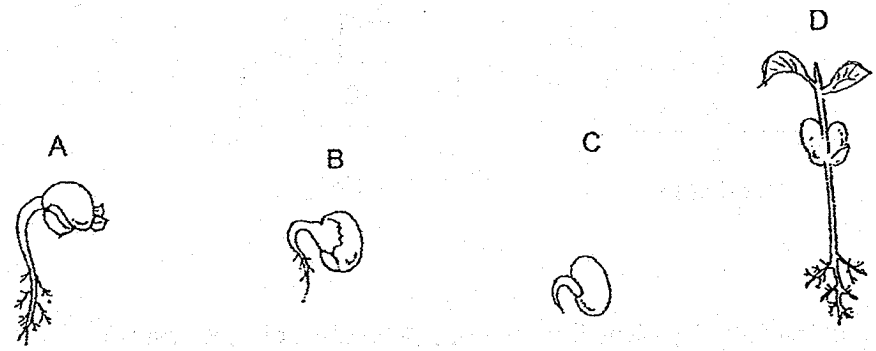
(3)



(4)



17. The diagram below shows parts of the growth of a green bean.

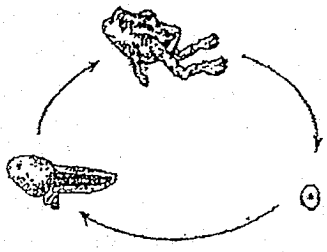


At which part of its growth (A, B, C or D) will it be able to make its own food?

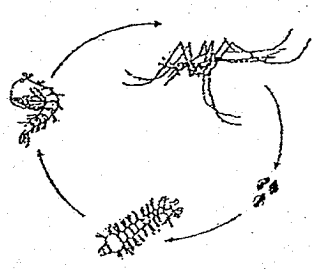
(1) D only
(2) A and B only
(3) B and C only
(4) All of the above

18. The diagrams below show the life cycles of two animals, X and Y.

Animal X



Animal Y



Which of the following statement(s) correctly state(s) the similarity between the life cycle of Animal X and Y?

A Both animals lay their eggs in water.

B The young of both animals lives in water.

C The young of both animals does not look like the adult.

D Both animals spend part of their life cycle on land and in water.

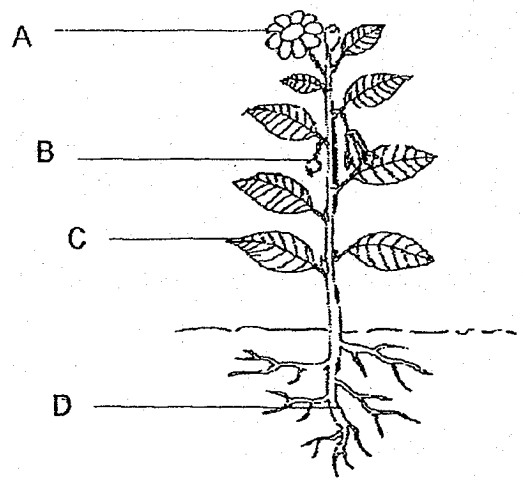
(1) A and B only

(2) B and C only

(3) A, B and C only

(4) All of the above

19. Study the diagram below. 4 plant parts are labelled A, B, C and D.



Which part enables the plant to carry out exchange of gases?

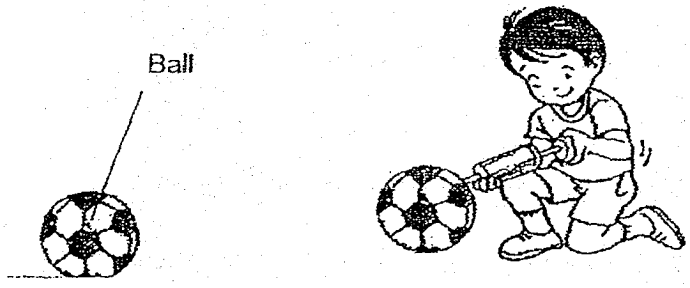
(1) A

(2) B

(3) C

(4) D

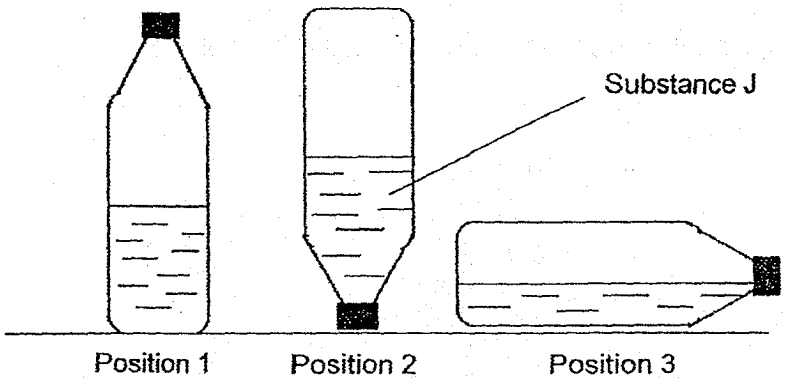
20. Ali carried out an experiment as shown in the diagram below. The volume of the ball is 300 cm^3. Then, he pumped an additional of 50cm^3 of air into the ball using a hand pump. The size of the ball remained the same.



Which of the following is correct?

	Mass of the ball	Volume of the ball
(1)	Increase	Remained the same
(2)	Decrease	Decrease
(3)	Increase	Decrease
(4)	Remained the same	Increase

21. A bottle was filled with substance J and placed in 3 different positions. The diagram below shows the water level at the respective positions.



Based on this experiment, what can you conclude about substance J?

A It does not have mass.

B It has no definite shape.

C It does not have a definite volume.

(1) B only

(2) A and B only

(3) B and C only

(4) A, B and C

22. Joseph carried out an experiment in the Science lab to find out how the amount of water given to red beans affects their growth. He watered the twenty beans daily and recorded the height of the seedlings after three weeks in the table below.

Amount of water given daily (ml)	Height after 3 weeks (cm)
6	4
8	6
10	7
12	9

Based on the results in the table above, Joseph can conclude that the height of the seedling is dependent on the _____.

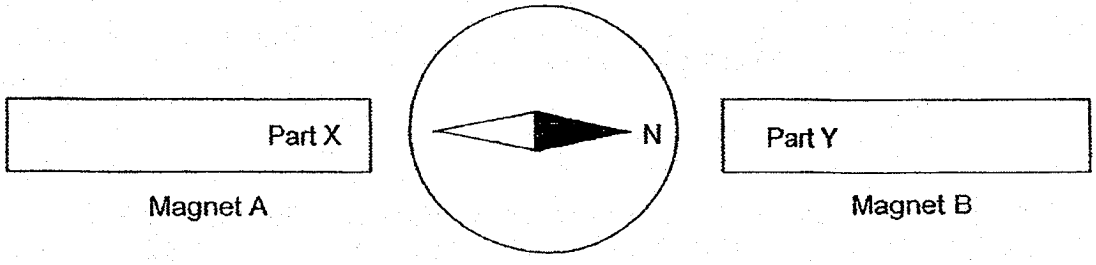
(1) location of the experiment

(2) number of beans used initially

(3) amount of water given to the beans

(4) the type of bean used in the experiment

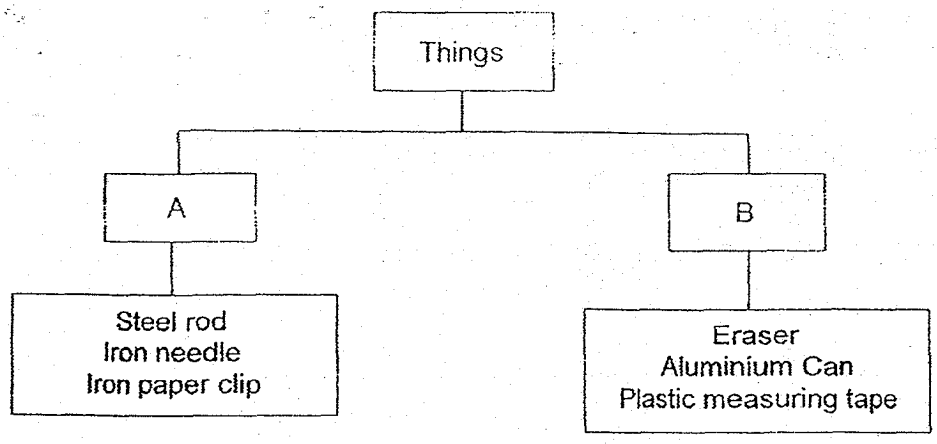
23. The diagram below shows a compass placed between two strong bar magnets, A and B.



Which of the following options correctly shows the label on the poles of the two bar magnets?

	Part X	Part Y
(1)	North	North
(2)	South	South
(3)	North	South
(4)	South	North

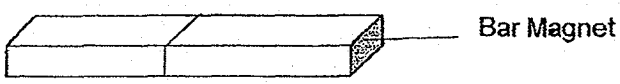
24. Study the classification table below of things made of different materials.



Which of the following options correctly represents A and B?

	A	B
(1)	Non-metal	Metal
(2)	Magnetic	Non-magnetic
(3)	Have definite shape	Do not have definite shape
(4)	Have definite volume	Do not have definite volume

25. Zaid conducted an experiment to find out the magnetic strength at different parts (W, X, Y, and Z) of the bar magnet.



He placed the bar magnet into a bowl of iron nails and counted the number of nails attracted at parts W, X, Y and Z. He recorded the number of paper clips attracted to each of the parts in the table below.

Parts of the magnet	Number of paper clips attracted
W	14
X	1
Y	5
Z	16

Based on the results in the table above, which parts are most likely to be at the two poles of the magnet?

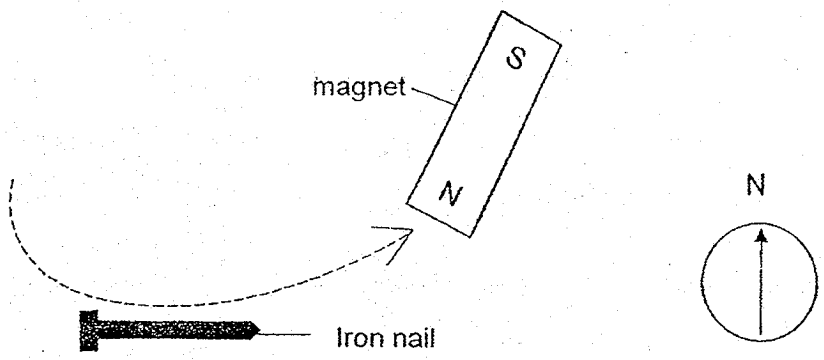
(1) W and X

(2) X and Y

(3) Y and Z

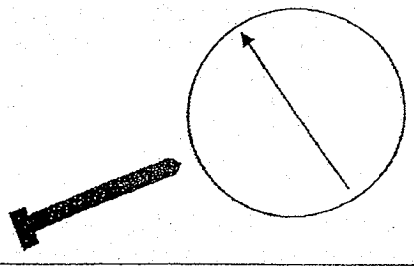
(4) W and Z

26. An iron nail is made into a temporary magnet by the stroke method as shown below.

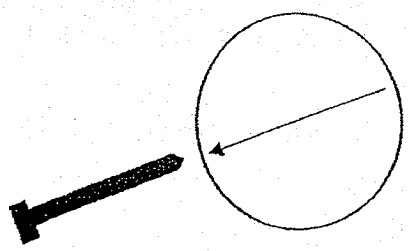


The nail is then placed near a compass. Which of the following correctly shows the direction the compass needle will point to?

(1)



(2)



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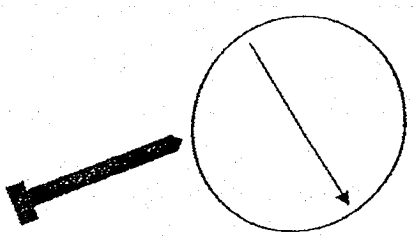

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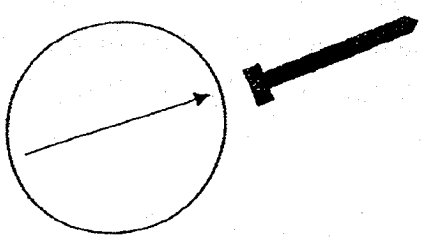
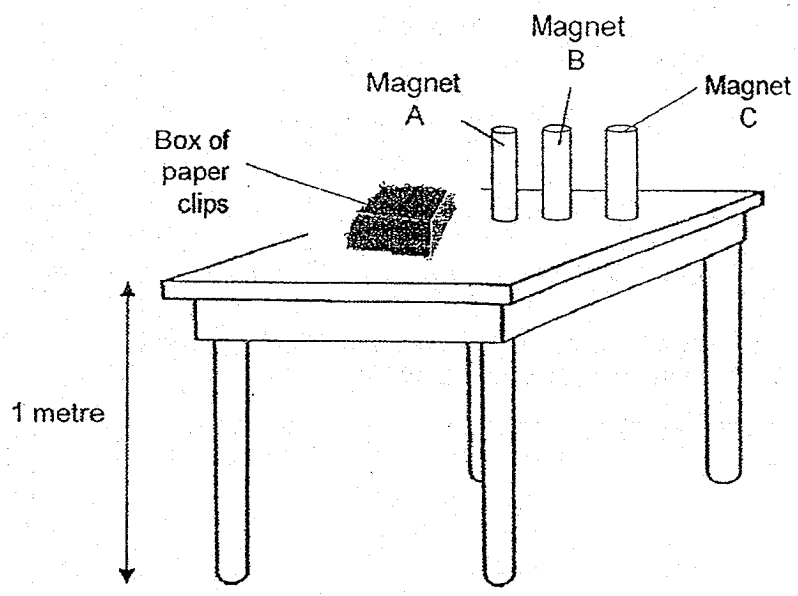


27. Thomas conducted an experiment with 3 magnets, A, B and C.



He placed each magnet into a box of paper clips and recorded the number of paper clips attracted to it. He then dropped each of the magnets 5 times from a table of height 1 metre. After which, he tested the number of paperclips attracted by each magnet again and recorded the results in the table below.

Number of paper clips attracted	Magnet A	Magnet B	Magnet C
Before dropping	8	10	16
After dropping	3	4	8

What can Thomas conclude based on the results?

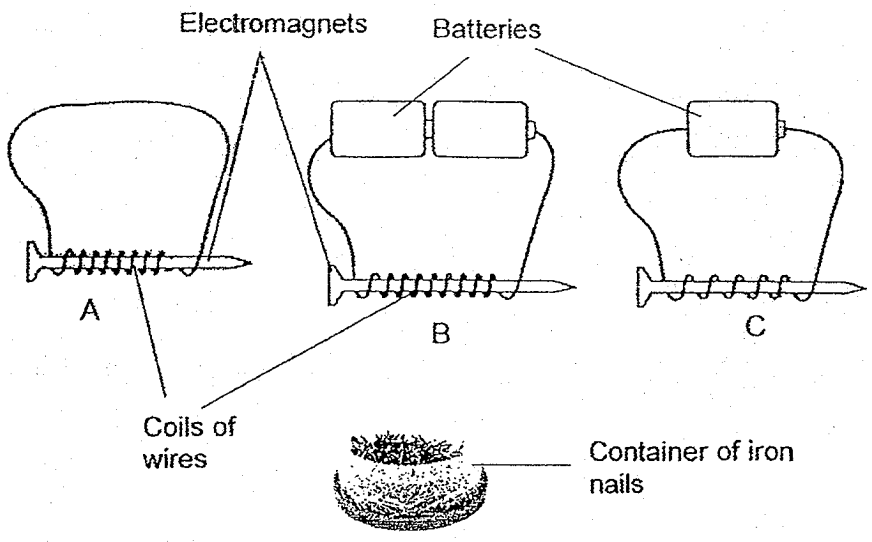
(1) Magnet C is the weakest magnet.

(2) Magnet B is the strongest magnet.

(3) Dropping the magnets has no effect on their magnetism.

(4) Magnets lose some of their magnetism after being dropped.

28. Dayne wanted to find out if the number of batteries in a closed circuit affects the strength of electromagnets. He made 3 electromagnets, A, B and C, using different number of coils as shown below When he placed the electromagnets near a container of nails, electromagnet C attracted 8 iron nails.



Which of the following options shows the most likely observation Dayne would have made for electromagnet A and B?

	Number of iron nails attracted by:	
	Electromagnet A	Electromagnet B
(1)	0	8
(2)	3	7
(3)	8	4
(4)	0	12

Anglo-Chinese School (Junior)

SEMESTRAL ASSESSMENT 1 (2018)

PRIMARY 4

SCIENCE

BOOKLET B

Friday **11 May 2018** **1 hr 45 min**

Name:_____ ( ) Class: 4.( ) Parent's Signature:_____

INSTRUCTIONS TO PUPILS

1 Do not turn over the pages until you are told to do so.

2 Follow all instructions carefully.

3 There are 13 questions in this booklet.

4 Answer ALL questions.

5 The marks are given in the brackets [ ] at the end of each question or part question.

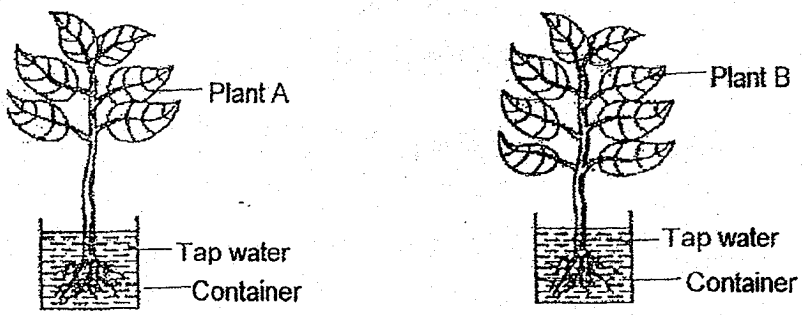
Booklet	Possible Marks	Marks Obtained
A	56	
B	44	
Total	100	

This question paper consists of 15 printed pages (inclusive of cover page).

Booklet B (44 marks)

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

29. Pazel bought 2 identical plants for his experiment. He filled the identical containers with the same amount of tap water. He did something to Plant A before placing it in the container. After 3 days, he made the following observations



Plant	Plant A	Plant B
Volume of water in the container (ml)	280	220

(a) What is the aim of Pazel's experiment? [1]

_____

_____

(b) Based on his observation, what can he conclude about the experiment? [1]

_____

_____

(c) Other than the variables stated in the question, name another variable that should be kept constant in order for the experiment to be fair. [1]

_____

_____

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SCORE	/ 3

30. Study the table below.

Group X	Group Y
Bean plant	Elephant
Orchid	Mushroom
Birds Nest Fern	Kingfisher
Moss	Snake

(a) Jeff classified some living things into 2 different groups as shown above. Give suitable headings for Groups X and Y. [1]

X:_____

Y:_____

(b) Give an example of a living thing that could be placed in group Y. [1]

_____

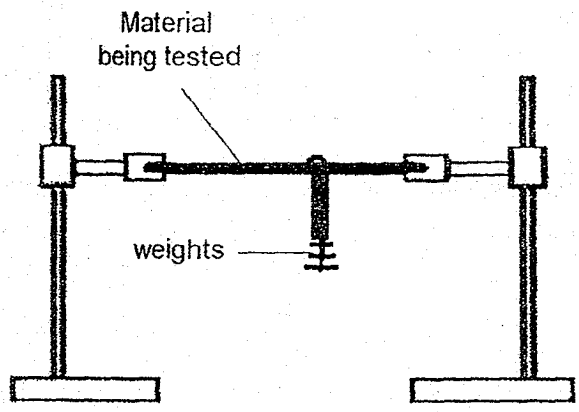
(c) Jeff classified the **6 animals** based on another characteristic in the table below. Give suitable headings for his classification by writing them in the boxes. [1]

_____	_____
Elephant	Bean plant
Kingfisher	Orchid
	Bird's Nest Fern
	Mushroom
	Moss
	Snake

(Go on to the next page)

SCORE	/3

31. James had 4 different pieces of materials, W, X, Y and Z. They are of the same thickness and size. He wanted to find out which material is most suitable to be made into a shelf for his collection of books. He set up an experiment as shown below.



(a) What property of materials was James testing? [1]

(b) He kept adding weights on the material until it broke and recorded his findings in the table below.

Material	W	X	Y	Z
Weights added before it broke (kg)	0	2	15	25

Which material is most suitable to be made into a shelf? Explain your answer based on the findings in the table. [1]

(c) Give an example of material Z. [1]

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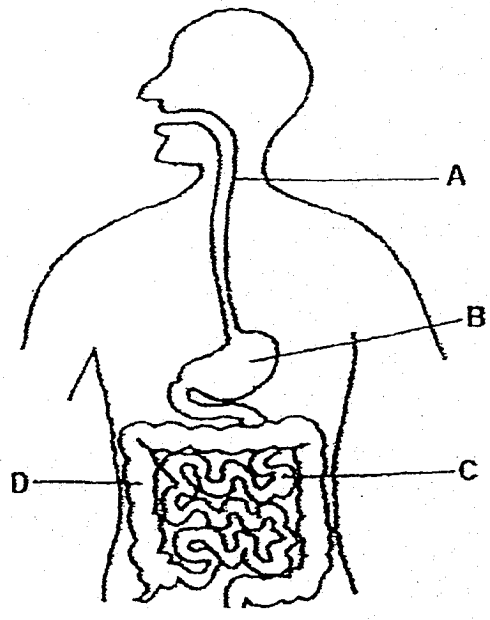
SCORE	
	3

32. The diagram below shows the human digestive system.



(a) Name the following parts: [1]

A: _____

B: _____

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

_____

_____

(c) State one difference between parts C and D based on their function. [1]

_____

_____

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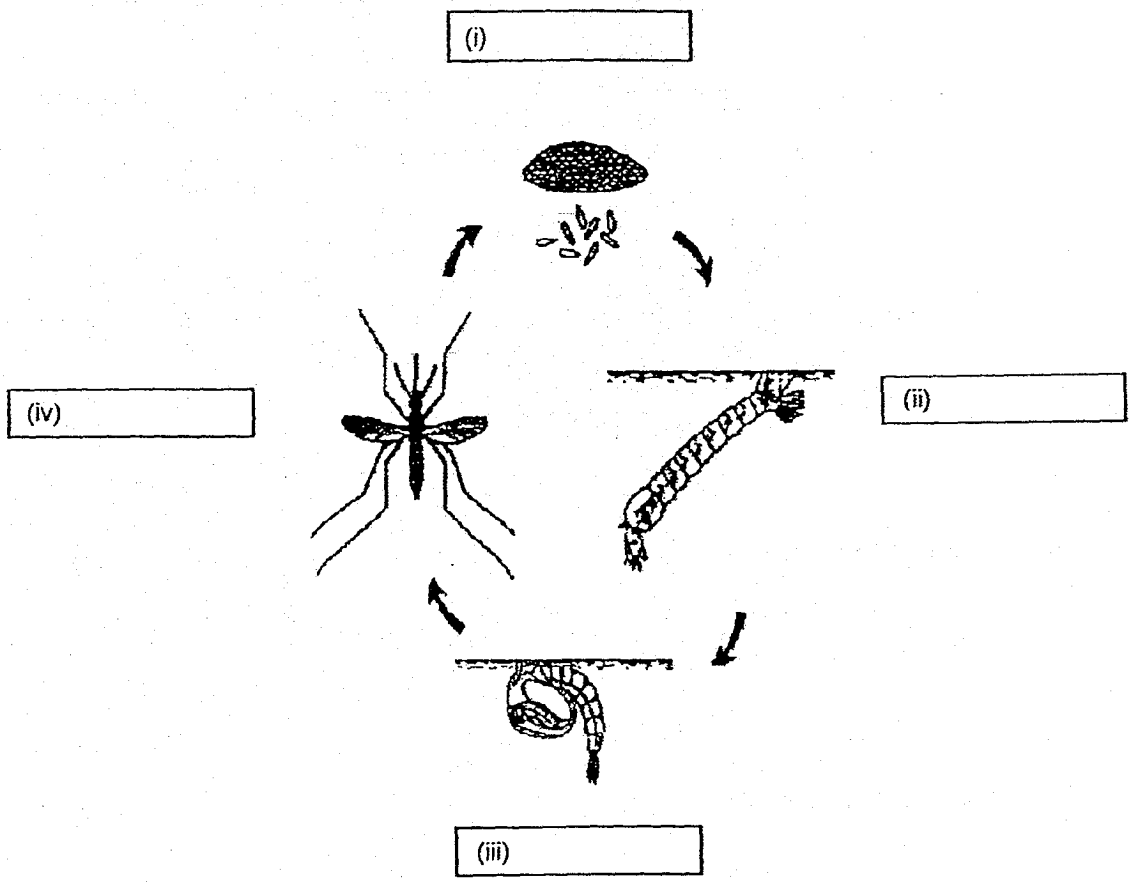
SCORE	/ 3

33. The diagram below shows the life cycle of a mosquito.

(a) Name the stages in the boxes provided. [1]



(b) At which stage is the mosquito harmful? [1]

_____

_____

(c) State two ways to prevent mosquitoes from breeding. [1]

_____

_____

_____

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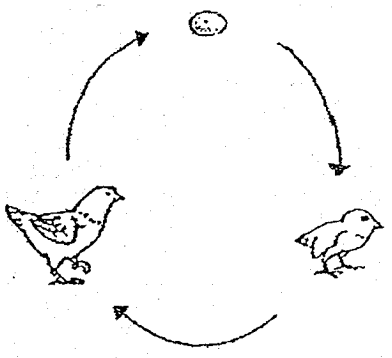
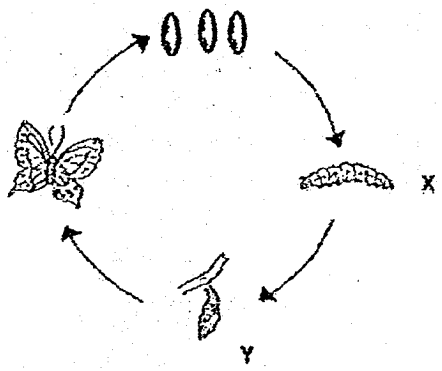
SCORE	/ 3

34. The diagram below shows the life cycles of a chicken and a butterfly.



Life cycle of a chicken



Life cycle of a butterfly

(a) How is the life cycle of a chicken different from that of a butterfly? [1]

_____

_____

(b) How is the life cycle of a chicken similar to that of a butterfly? [1]

_____

_____

(c) State a difference between Stage X and Y in the life cycle of a butterfly. [1]

_____

_____

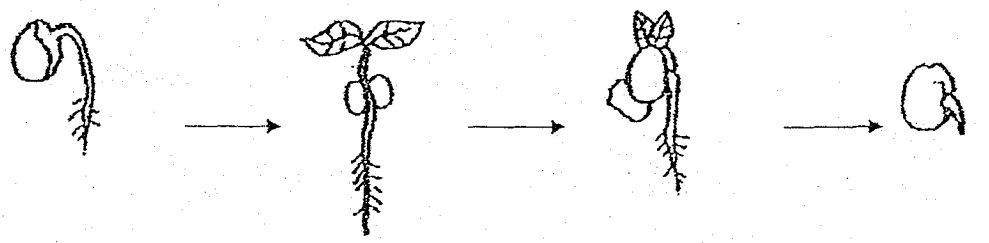
(d) Name another animal that has a similar life cycle as the chicken. [1]

_____

(Go on to the next page)

SCORE	

35. The diagram below shows the growth of a green bean seed. However, it is in the wrong order.



A B C D

a) State the correct growth order starting with C. [1]

_____

b) What will happen to the seed at D if it was planted in a pot of soil and placed in the storeroom where there is no light for a month? Explain your answer. [2]

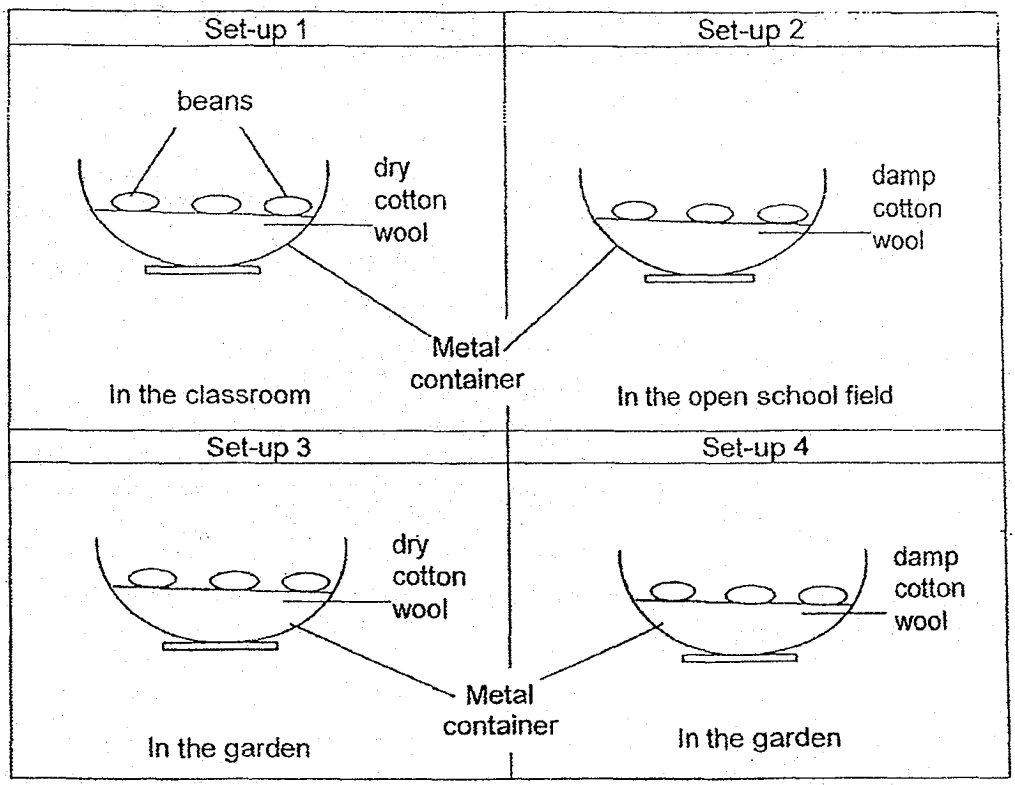
_____

_____

(Go on to the next page)

SCORE	/ 3

36. Jack set up an experiment to find out if **seeds** need water to grow into a seedling. He set up his experiment at different locations as shown below.



(a) Which of the set-up(s) should Jack use for the experiment? [1]
Give a reason for your answer.

_____

_____

(b) State 2 other variables that Jack has to keep the same to ensure a fair test. [1]

_____

_____

(c) What are the 3 conditions needed for the beans to grow? [1]

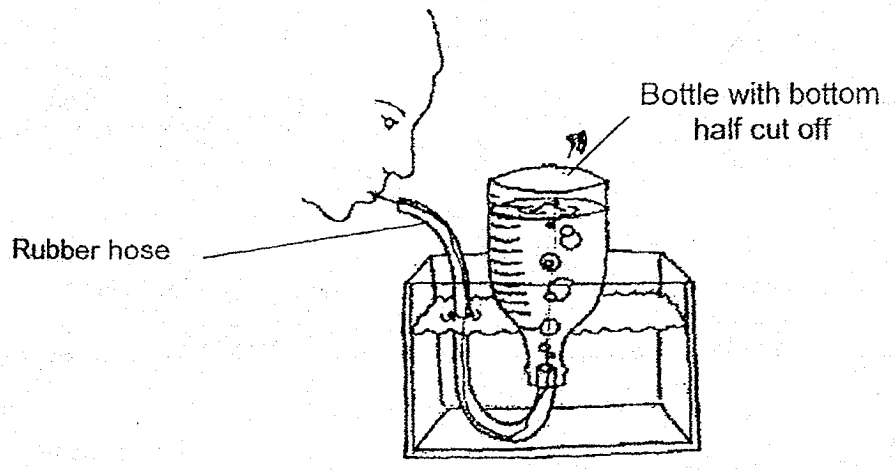
_____

_____

(Go on to the next page)

SCORE	
	3

37. Daniel filled a tank with water. He cut the bottom of a plastic bottle and placed it into the tank as shown below. The rubber tube was sealed at the tip of the bottle. Daniel made a marking on the level of the water in the bottle. Then, he gave 5 blows into the tube and bubbles could be seen in the water.



(a) What will happen to the water level in the bottle after he blew 5 times into the hose? Explain your answer. [2]

_____

_____

(b) Predict what would be observed if the bottle is completely filled with water to the brim and Daniel drops a big stone into the plastic bottle. Explain your prediction. [2]

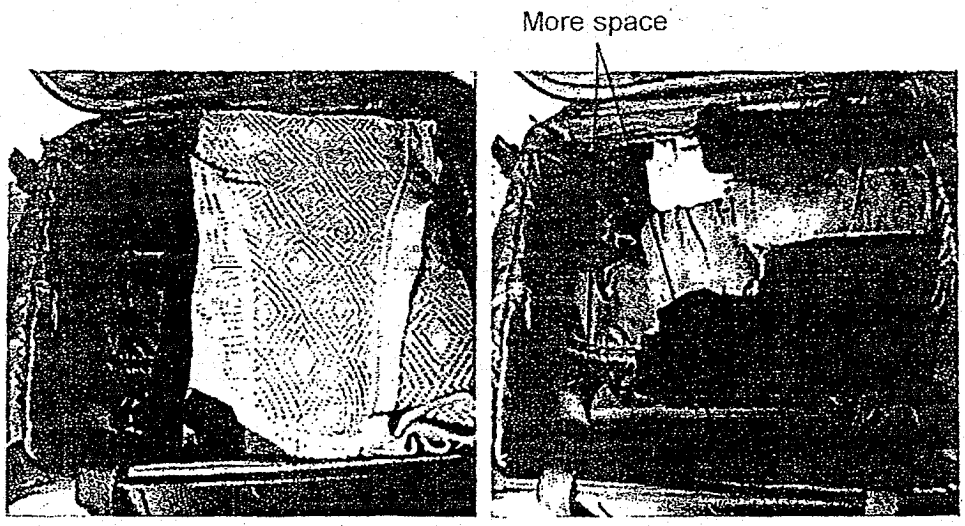
_____

_____

(Go on to the next page)

SCORE	/4

38. Judy prepared her trolley bag for travel by folding her clothes as shown in Diagram A. However, her mother commented that she should roll the clothes instead of folding them as there will be more space for other things in the bag.



Clothes folded
Diagram A

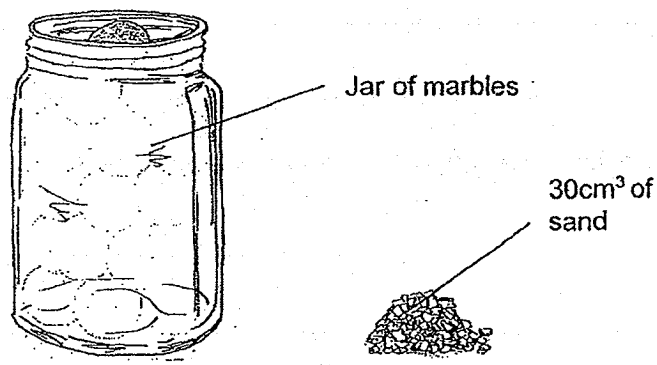
Clothes rolled
Diagram B

(a) Give a reason why there was more space in her trolley bag when Judy rolled up her clothes instead of folding them. [1]

_____

_____

(b) Judy placed some marbles into a jar as shown below.



Explain whether it is possible to pour 30cm³ of sand into the jar. [2]

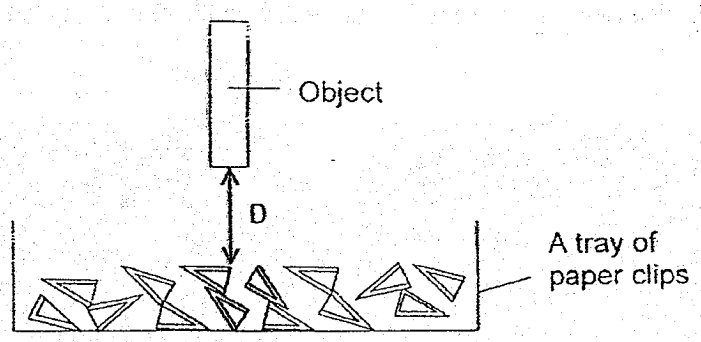
_____

_____

(Go on to the next page)

SCORE	3

39. Tom placed objects X, Y and Z at different distance from the tray of paper clips and recorded the number of paper clips attracted in the table below.



	Number of paper clips attracted		
Distance D (cm)	Object X	Object Y	Object Z
1	20	0	10
2	18	0	8
3	15	0	6
4	?	0	2
5	10	0	0

(a) Predict the number of paper clips attracted when Object X was 4cm from the paper clips. [1]

_____

(b) What is the relationship between distance D and the number of paper clips attracted by Z? [1]

_____

_____

(c) Compare the difference in the results for Object X and Z. [1]

_____

_____

(d) What can you conclude about Object Y? Explain your answer. [1]

_____

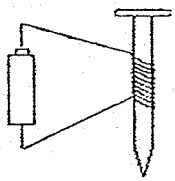
_____

(Go on to the next page)

SCORE	/ 4

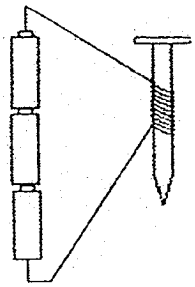
40. Lucy wanted to carry out an experiment to find out if the number of turns of coils of wire around an iron nail would affect the strength of an electromagnet.

Set-up A



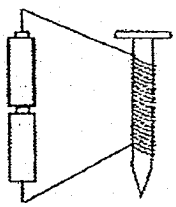
15 coils

Set-up B



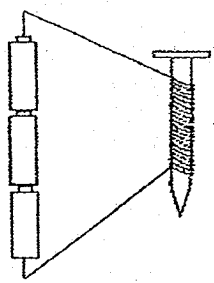
15 coils

Set- up C



25 coils

Set-up D



25 coils

(a) Which two set-ups shown above should she use to conduct a fair test? [1]

_____

_____

(b) Will the set-up work if Lucy were to use a rubber nail? Explain your answer. [1]

_____

_____

(c) What would be the changed variable if Lucy were to use Set-up A and B to test the strength of the electromagnet? [1]

_____

_____

(d) Suggest another way to increase the strength of the electromagnet. [1]

_____

_____

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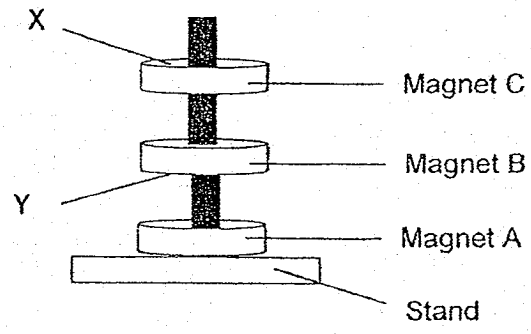
SCORE	
	4

41. Sam placed 3 rings on a stand as shown below. Magnet B is floating between Magnet A and C.



[1]

(a) What are the poles of X and Y.

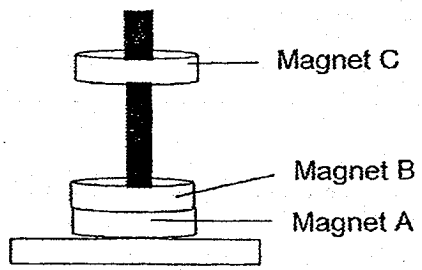
X:_____ Y:_____

(b) Explain why the magnet B is floating in the middle. [1]

_____

_____

(c) [1]



What must be done to the magnets on the stand so that they are as shown above?

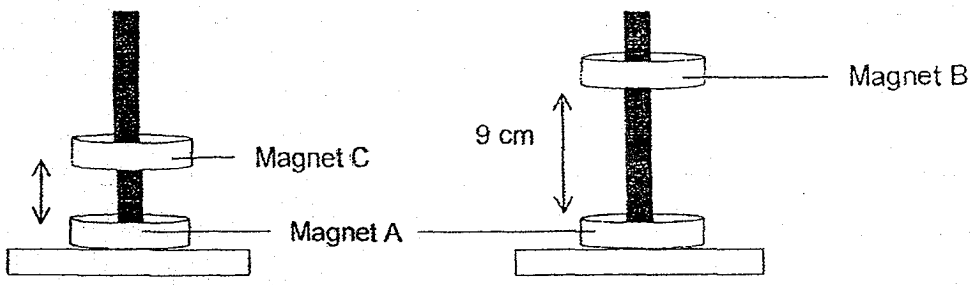
_____

_____

(Go on to the next page)

SCORE	3

(d) The diagram below shows what happened when Magnet B and C were placed above Magnet A.



Explain why Magnet B and C are floating at different distances from Magnet A. [1]

End of Paper

SCORE		1

Q34. (a) The life cycle of a chicken has 3-stages while the life cycle of a butterfly has 4-stages.

(b) They both have an egg stage.

(c) Stage X eats, while stage Y does not eat.

(d) Grasshopper.

Q35. (a) C -> B -> D -> A.

(b) It will continue to grow until it has leaves, but it will start to die as it has no light to make food.

Q36. (a) Set-up 3 and 4. The only changed variable is the presence of water.

(b) The same type of beans and the same amountof cotton wool.

(c) Water, warmth (temperature), and air.

Q37. (a) The water level will remain the same. The air bubbles will escape through the bottom of the bottle as it is opened.

(b) The water will spill out of the container. As a stone occupies space and water occupies space because the stone is heavier than water so the stone will sink to the bottom. Hence, the water will spill out of the container.

Q38. (a) When the clothes are rolled, air trapped in between the clothes is removed. Hence, it take up less space.

(b) Yes, it is possible. There are air gaps between the marbles and the sand so it can take up its space.

Q39. (a) 13 paper clips.

(b) As the distance increase, the number of paper clips attracted by Z decreases.

(c) Object X is a stronger magnet than object Z./ Object X attracts paper clips is more than object Z.

(d) Object Y is not a magnet as it does not attract paper clips.

Q40. (a) Set-up B and D.

(b) No. The rubber nail is non-magnetic material, hence, the nail cannot become a electro magnet.

(c) The number of batteries affect the strength of electro-magnet.

(d) Use more batteries.

Q41. (a) X: South Y: South

(b) The like poles pole of the magnets are facing each other and thus they repel each other.

(c) Flip magnet A

(d) Magnet B has stronger magnet than magnet C.