12

Anglo-Chinese School (Junior)

SEMESTRAL ASSESSMENT 1 (2019)

PRIMARY 4

SCIENCE

BOOKLET A

Friday **17 May 2019** **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 20 printed pages (inclusive of cover page).

Booklet A

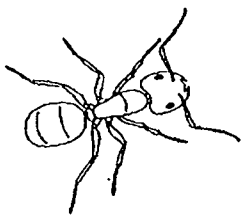
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade your answer on the Optical Answer Sheet.
(28 x 2 marks) **[56 marks]**

1. Which of the following statements is **not** true?

   (1) All living things lay eggs.
   (2) All living things can reproduce.
   (3) All living things can respond to changes.
   (4) All living things need air, food and water to survive.

2. James was having a walk with his parents in the park and saw an insect that could fly. Which of the following could the insect be?

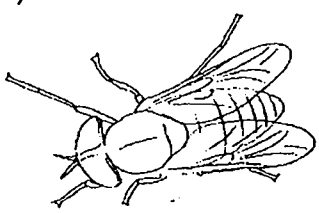
(1)



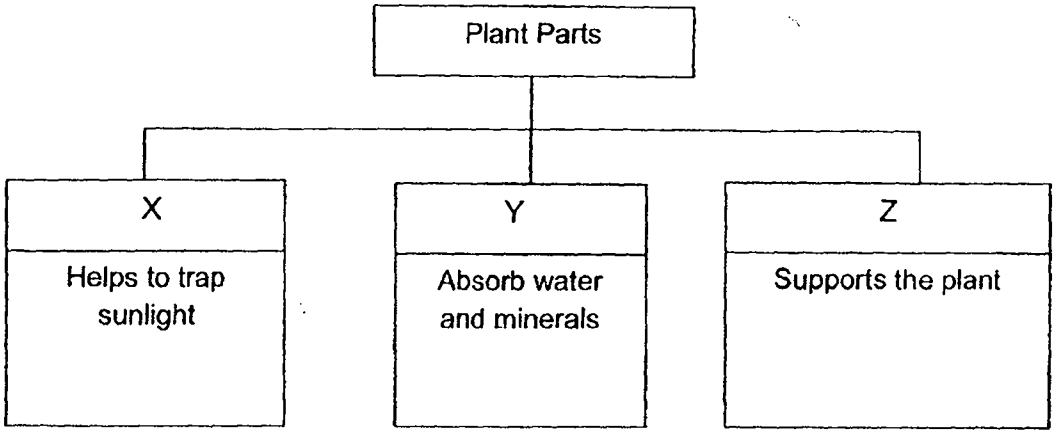
(2)

(3)

(4)



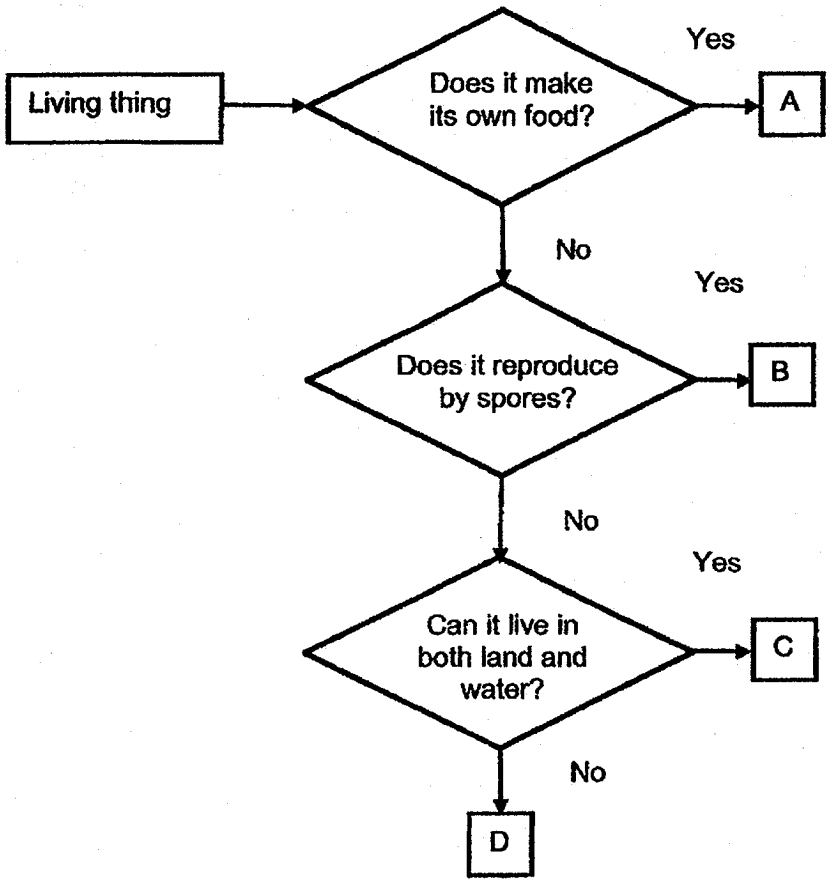
3. Study the classification chart.



What are plant parts X, Y and Z likely to be?

	X	Y	Z
(1)	Leaves	Stem	Roots
(2)	Roots	Flowers	Stem
(3)	Flowers	Leaves	Roots
(4)	Leaves	Roots	Stem

4. Study the chart below.



Based on the chart above, which letter best represents a mushroom?

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

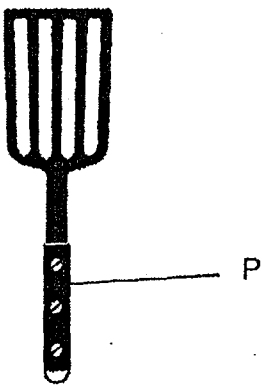
5. The characteristics of two living things are shown in the table.

Characteristic	Living Things	
	S	T
Has spore bags	No	Yes
Makes its own food	Yes	Yes

What could S and T be?

	S	T
(1)	Mould	Bacteria
(2)	Fern	Mould
(3)	Bacteria	Flowering plant
(4)	Flowering plant	Fern

6. Tom observed that his mother was using the following object to fry fish. Which material is **not** suitable for making Part P?



(1) Iron
(2) Wood
(3) Rubber
(4) Plastic

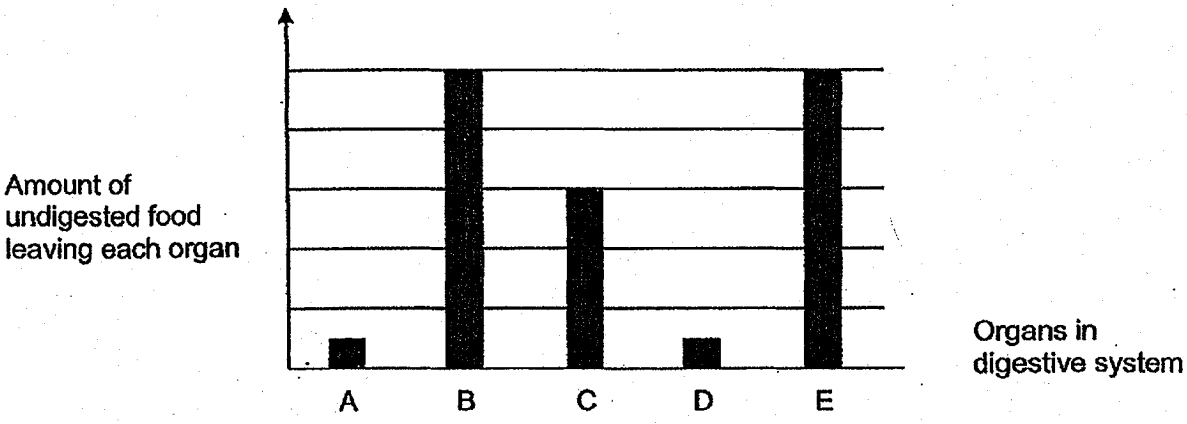
7. Penny carried out an experiment on three different types of materials. She poured 50 ml of water on each material and made the following observations.

Material	Observation
A	The material did not absorb any water.
B	The material absorbed the water slowly.
C	The water was absorbed into the material immediately.

Based on the information, which material(s) is most suitable for making an umbrella?

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

8. A, B, C, D and E are organs in the digestive system. The graph shows the amount of undigested food leaving each organ after a meal.



Which of the following is correct?

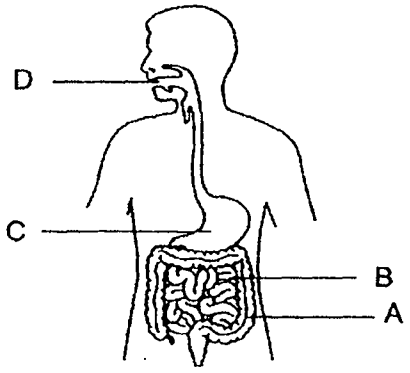
	Large Intestine	Stomach	Small Intestine	Mouth
(1)	E	D	B	A
(2)	A	C	D	B
(3)	D	E	C	B
(4)	D	E	A	B

9. Study the table below.

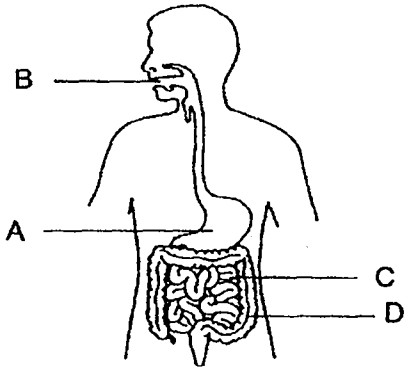
	Parts of the digestive system			
	A	B	C	D
Digestion takes place		✓	✓	✓
Removes water from undigested food	✓			
Digested food is absorbed into the bloodstream			✓	

Which of the following correctly shows the parts labelled A, B, C and D?

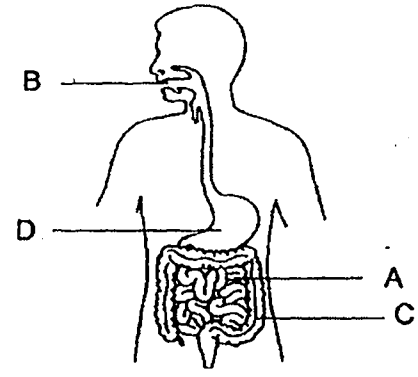
(1)



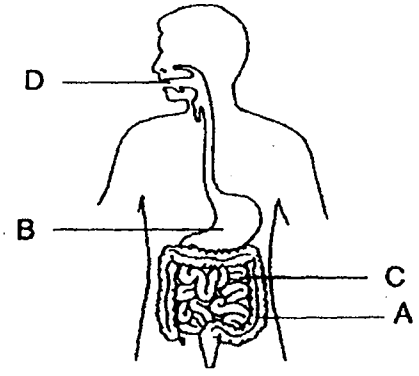
(2)



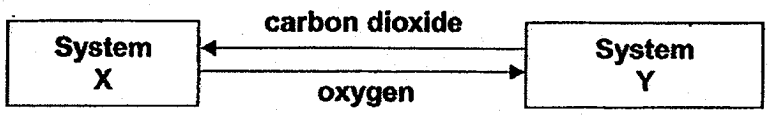
(3)



(4)



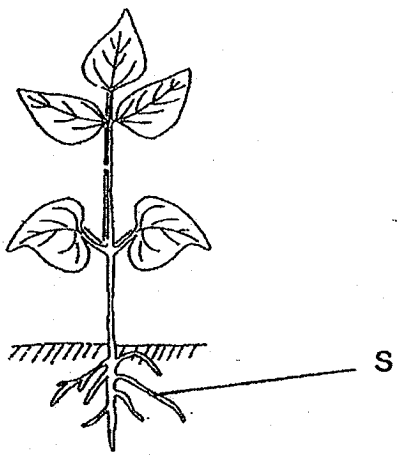
10. The diagram shows the exchange of gases between system X and system Y in a human body.



What of the following is system X and system Y?

	System X	System Y
(1)	Respiratory system	Digestive system
(2)	Digestive system	Circulatory system
(3)	Circulatory system	Respiratory system
(4)	Respiratory system	Circulatory system

11. Study the picture of a plant below.



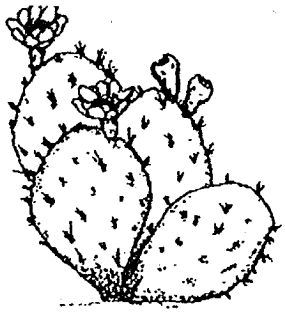
What is the function(s) of part S?

A Absorbs water for the plant
B Holds the plant firmly to the ground
C Transports water and food to other parts of the plant

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

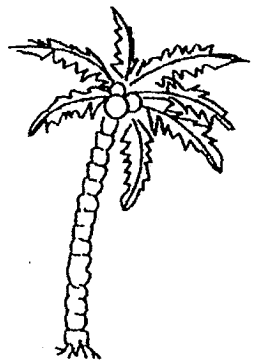
12. James researched Plants A and B and made some statements.

Plant A



Cactus

Plant B

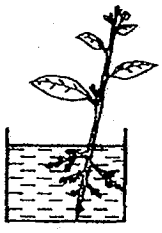


Coconut Tree

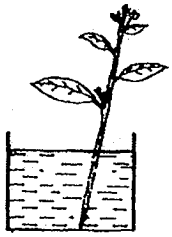
Which of the following statements is true about the plants?

(1) Plant A and Plant B are flowering plants.
(2) Plant A and Plant B reproduce by spores.
(3) Plant B has leaves but Plant A does not have leaves.
(4) Plant A does not need water to survive but Plant B does.

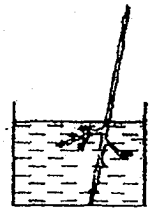
13. Jimmy wanted to find out how the number of leaves affect the amount of water taken in by the plant.



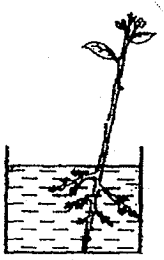
Set-up A



Set-up B



Set-up C

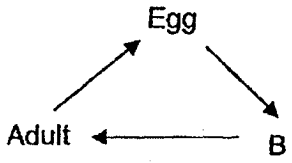


Set-up D

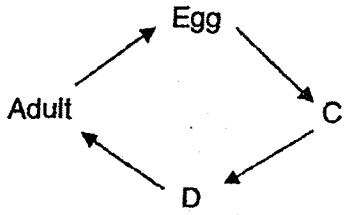
Which pair of set-ups must he use?

(1) Set-up A and Set-up B
(2) Set-up A and Set-up C
(3) Set-up A and Set-up D
(4) Set-up B and Set-up C

14. Study the life cycles of two organisms.



Life cycle of a cockroach



Life cycle of a mealworm beetle

Four students made the following statements:

Alvin	Stage D does not feed at all.
Ben	Stages B and C involve moulting.
Craig	A mealworm beetle spends part of its life cycle in water.
Dexter	Stage C resembles its adult but Stage B does not.

Whose statement(s) is definitely true?

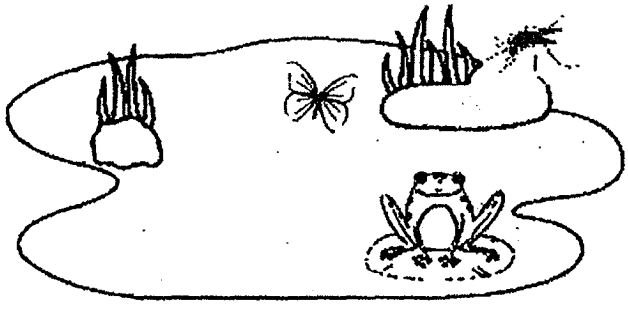
(1) Alvin and Ben only

(2) Ben and Dexter only

(3) Craig and Dexter only

(4) Alvin, Ben and Craig only

15. Devi observed three types of animals, mosquito, butterfly and frog laying eggs on the same day.



The number of days needed for their eggs to hatch is shown below.

	mosquito	**butterfly**	**frog**
Number of days needed for eggs to hatch	1	4	18

On Day 10, what would Devi most likely find in the pond?

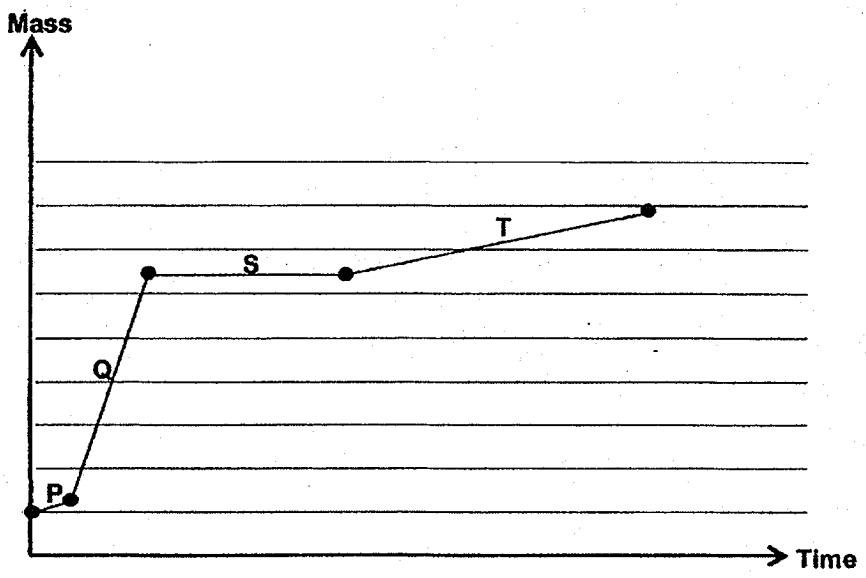
(1) frog eggs and butterfly larvae

(2) mosquito larvae and tadpoles

(3) frog eggs and mosquito larvae

(4) mosquito larvae and butterfly larvae

16. Kenneth plotted the graph below to show the mass of a ladybird beetle during the different stages of its life cycle.



What can Kenneth conclude based on the graph?

(1) Stage S is the pupal stage of the ladybird beetle.

(2) The ladybird beetle does not move during stage Q.

(3) The ladybird beetle stopped feeding during stage T.

(4) There are three stages in the life cycle of the ladybird beetle.

17. Which of the following is **not** an example of a cycle?

(1) Weather

(2) Day and night

(3) Growth of a baby to an adult

(4) Growth of a seed to an adult plant

18. Matthew grew some green beans on four trays inside a room. The experimental conditions and results are shown in the table.

Tray	Soil	Presence of light	Appearance of seeds on Day 3
A	dry	no	
B	dry	yes	
C	wet	no	
D	wet	yes	

Based only on the results shown, what can be concluded about what is needed for the germination of the green beans?

(1) Light is necessary for germination.

(2) Water is necessary for germination.

(3) Light, water and air are necessary for germination.

(4) Air, water and warmth are necessary for germination.

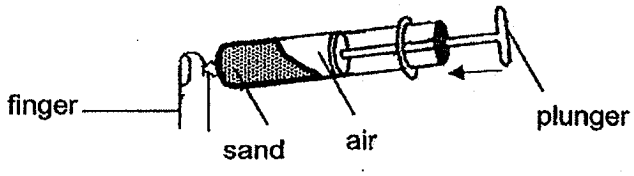
19. Mary observed the growth of some seeds of a plant and recorded her observations in the table shown.

Day	Observation
2	The seeds swelled
3	The seed coat broke
4	The roots started to appear
7	The shoots started to appear
13	The shriveled seed leaves dropped off

From which day onwards will the seedling most likely be able to start making its own food?

(1) Day 3
(2) Day 5
(3) Day 7
(4) Day 9

20. Sally filled a syringe with some sand and air. She then tried to push the plunger of the syringe inwards with her finger blocking the opening of the syringe, as shown in the diagram.



Which of the following correctly describes what happened to the volume of sand and air in the syringe?

	Volume of sand	Volume of air
(1)	decreased	decreased
(2)	decreased	remained the same
(3)	remained the same	decreased
(4)	remained the same	remained the same

21. Ahmad had a fully inflated soccer ball which had a volume of 500 cm^3. He then pumped an additional 20 cm^3 of air into the ball using a hand pump.

What would be the final volume of air in the soccer ball after pumping?

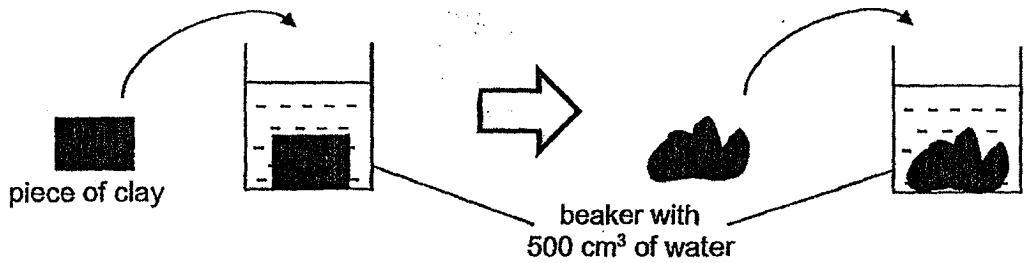
(1) 480 cm^3

(2) 500 cm^3

(3) 510 cm^3

(4) 520 cm^3

22. Philip carried out an experiment by fully submerging a piece of clay into a beaker filled with 500 cm^3 of water. The water level rose and he recorded a first reading of the water level. He then moulded the same piece of clay and fully submerged it in the same beaker of 500 cm^3 of water. He recorded a second reading of the water level.



He recorded the readings of the water level in the following table.

Original water level (cm^3)	First reading of water level (cm^3)	Second reading of water level (cm^3)
500	600	600

Based on the above experiment, what conclusions can Philip make about clay and water?

A Both clay and water have definite volume.

B Both clay and water have definite shape.

C Both clay and water occupy space.

D The clay has a volume of 100 cm^3.

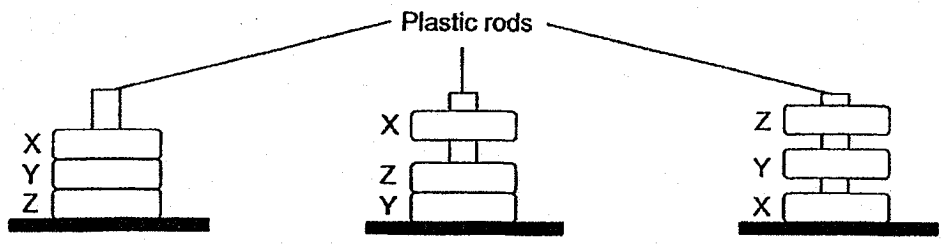
(1) A and C only

(2) B and D only.

(3) A, C and D only.

(4) A, B, C and D

23. Three different rings, X, Y and Z, are placed through a smooth plastic rod.



Based on the observations, which of the following statements is definitely **not** true?

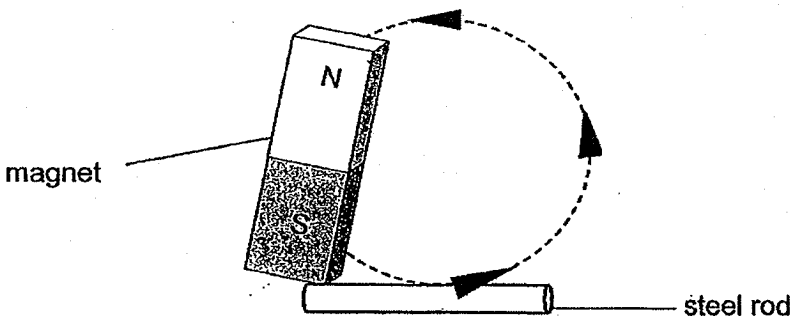
(1) X and Z are magnets.

(2) Y and Z are magnets.

(3) Only X is non-magnetic.

(4) All the rings are magnetic.

24. Meiling wanted to make a temporary magnet using the stroke method. After stroking the steel rod for a few times, she brought the rod near some iron nails. However, the rod was not able to attract any iron nails.



What change could Meiling make in the process of making the magnet so that the rod can attract iron nails?

(1) Use a longer steel rod

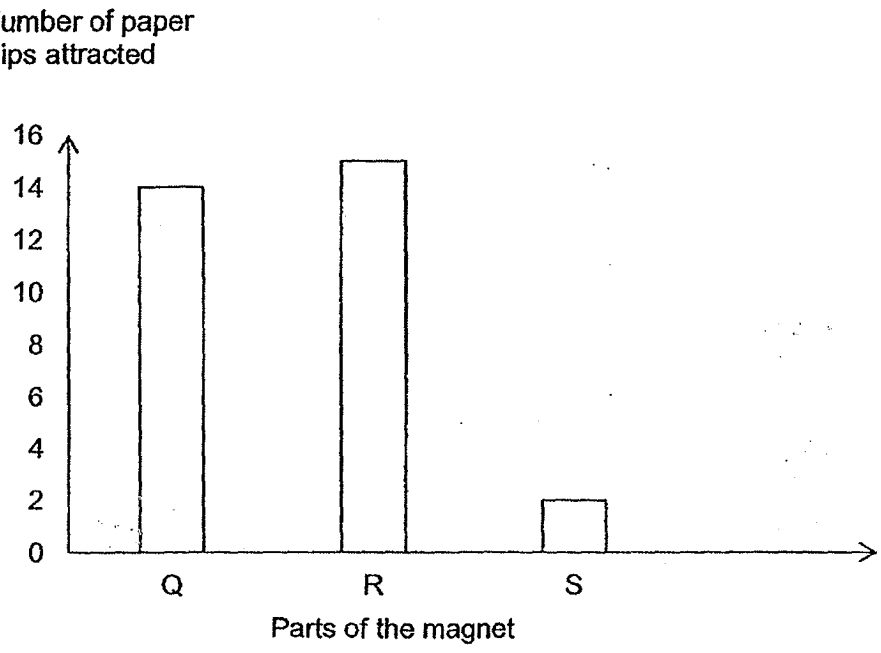
(2) Change the material of the rod

(3) Stroke the rod in the opposite direction

(4) Stroke the rod for a longer period of time

25. Rachel conducted an experiment to find out the magnetic strength of the different parts, A, B and C, of a rod magnet.

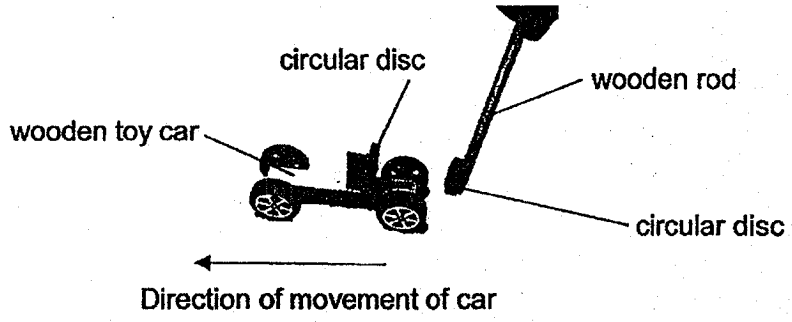
She placed the rod magnet into a bowl of iron paper clips and counted the number of paper clips attracted to parts A, B and C. She recorded the number of paper clips attracted to each of the parts A, B and C in the graph.



Which of the following options correctly identifies Q, R and S in the graph to the parts, A, B and C, of the rod magnet?

	Q	R	S
(1)	A	B	C
(2)	A	C	B
(3)	B	C	A
(4)	C	B	A

26. Mrs Ang wanted to create a moving toy car for her son using a wooden rod, wooden toy car and some circular discs. She planned to stick one of the circular discs on the wooden rod and the other on the wooden car. Mrs Ang has to make the toy car move without the wooden rod touching the car.

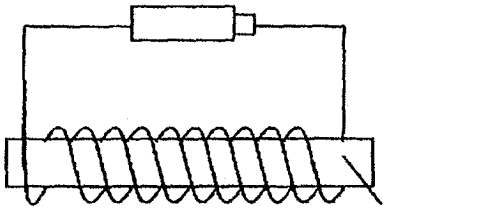


Which of the following are possible materials of the circular discs so that the toy car will be able to move?

	circular disc on wooden toy car	circular disc on wooden rod
(1)	Iron	Magnet
(2)	Iron	Steel
(3)	Magnet	Aluminium
(4)	Magnet	Magnet

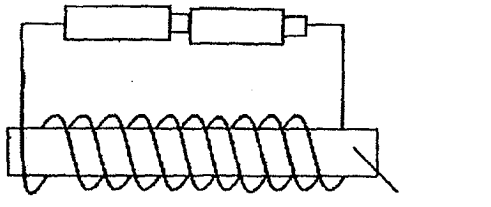
27. Bob conducted an experiment as shown using four set-ups, A, B, C and D. He used the same type of batteries, identical wires and identical iron bars.

Set-up A



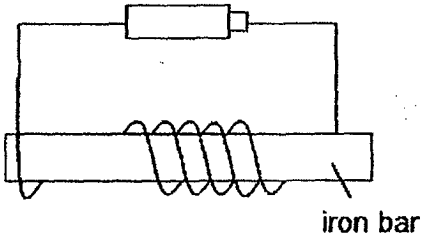
10 coils of wire

Set-up B



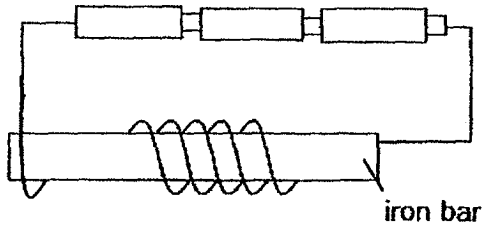
10 coils of wire

Set-up C



5 coils of wire

Set-up D

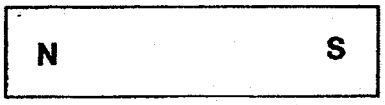


5 coils of wire

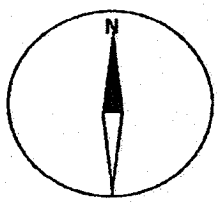
Bob wanted to find out whether the strength of an electromagnet is affected by the number of coils of wire around the iron bar. Which two set-ups should he use to conduct a fair experiment?

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

28. Peter placed a magnet next to a compass.

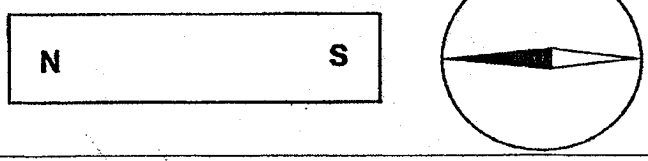
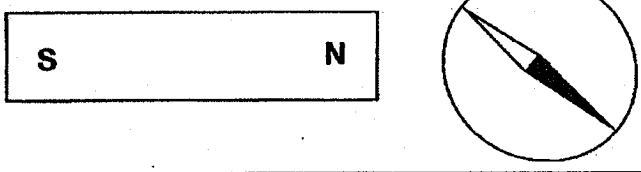
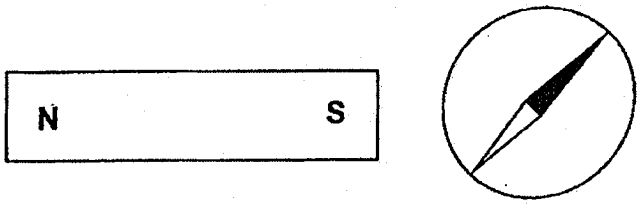
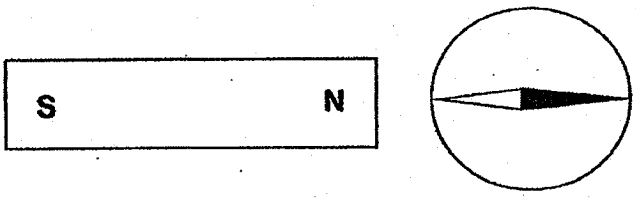


magnet



compass

Which of the following arrangement(s) is a possible observation?

	Set-up
A	
B	
C	
D	

(1) A only

(2) A and D only

(3) B and C only

(4) C and D only

End of Booklet A

Anglo-Chinese School (Junior)

SEMESTRAL ASSESSMENT 1 (2019)

PRIMARY 4

SCIENCE

BOOKLET B

Friday **17 May 2019** **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.

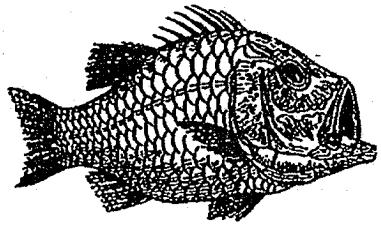
Booklet	Possible Marks	Marks Obtained
A	56	
B	44	
Total	100	

This question paper consists of 14 printed pages (inclusive of cover page).

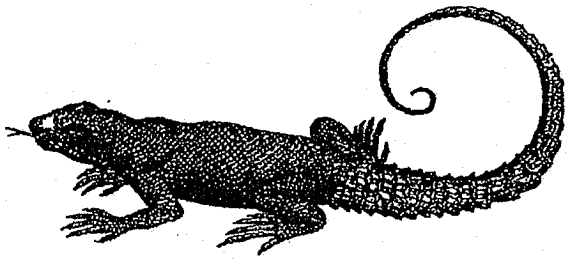
Booklet B

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. [44 marks]

29. Shane went to the zoo and saw the following animals.



Animal A



Animal B

(a) Based on your observation, state a similarity and a difference between the two animals. (Do not compare size, colour or shape) [2]

Similarity:

_____

_____

Difference:

_____

_____

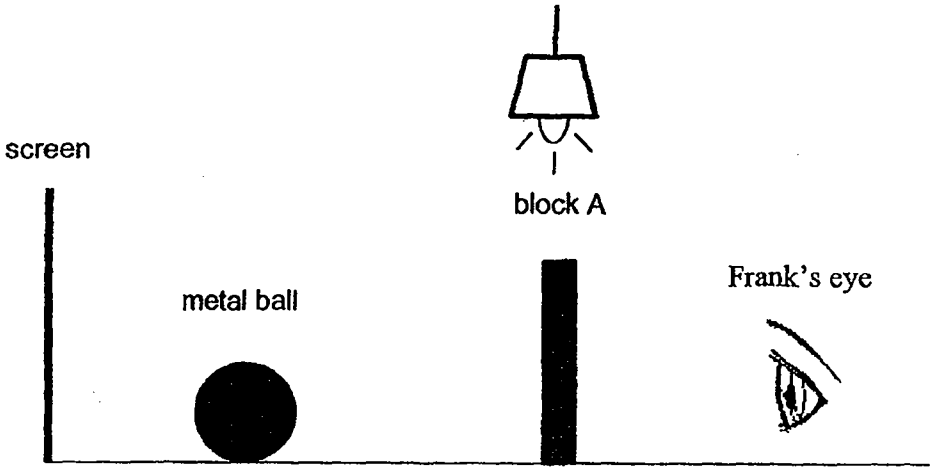
(b) Name another animal which reproduces in the same way as Animals A and B. [1]

_____

(Go on to the next page)

SCORE	3

30. Frank tried to look at a metal ball behind Block A as shown.



(a) Frank was unable to see the metal ball. What can he conclude about Block A? [1]

(b) Frank then repeated the experiment by replacing Block A with Block B. He was able to see the metal ball clearly. He then repeated the experiment by replacing Block B with Block C. This time round, he could only see a blur image of the metal ball. Arrange the three blocks accordingly in the table below. [1]

Transparent ⟶ Not transparent		

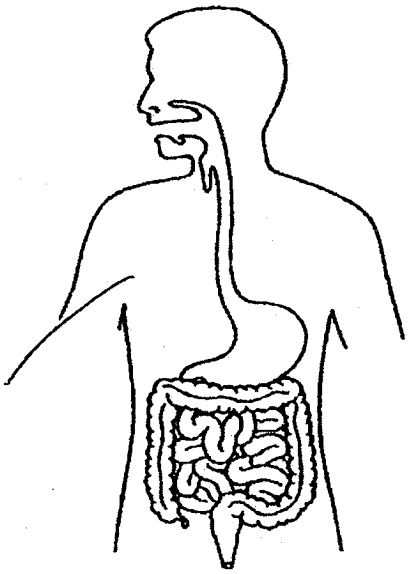
(c) Frank wanted to use the material of Block B to make curtains to keep his bedroom dark. Is that a good idea? Why? [1]

(Go on to the next page)

SCORE	3

31. The diagram shows the human digestive system.

(a) Draw a line touching the organ where digestion of food starts. Label the organ. [1]



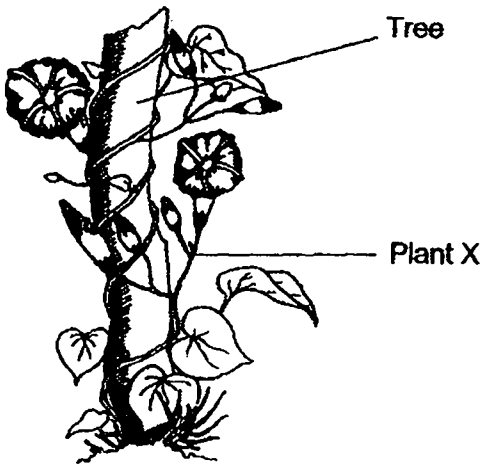
(b) Complete the table by stating the correct human systems based on their functions. [3]

Function	Human System
It transports digested food and oxygen to all parts of the body.	
It protects our vital organs such as the lungs and heart.	
It helps different parts of the body to move.	

(Go on to the next page)

SCORE	
	4

32. Samuel was walking along the road when he saw Plant X growing around a tree.



(a) Based on your observation of Plant X, what can he conclude about the stem of Plant X? [1]

(b) Explain why Plant X needs to grow upwards around the tree. [1]

(c) Samuel then encountered another plant on his way back. The plant did not have any flowers. He concluded that it was a non-flowering plant. Do you agree with Samuel? Why? [1]

(Go on to the next page)

SCORE	/ 3

33. Pierre found some insect X in a dish of water during its different stages and observed them over a period of time and recorded his observations. Each box represents a stage in insect X's life cycle.

(A)	(B)
• Long and worm-like • Seems to be hanging down from the water surface	• Wings have formed • Flies around

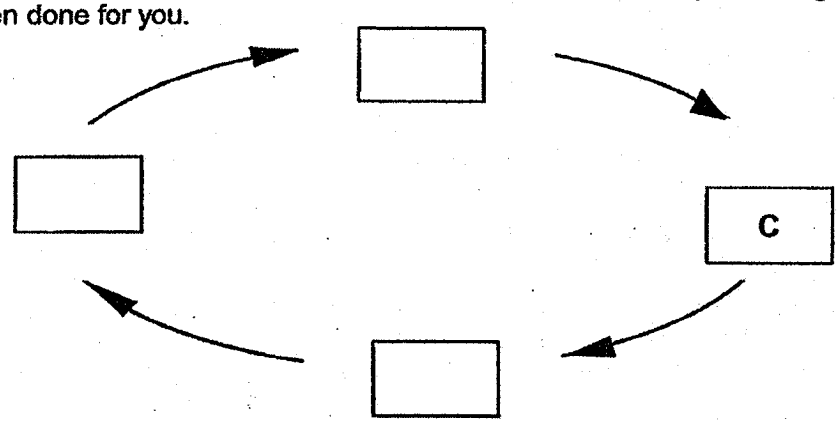
(C)	(D)
• Almost invisible tiny white objects found on the water surface.	• Does not move • Curled up in the water

(a) Name stages A and D. [1]

A: _____

D: _____

(b) Rearrange Pierre's observations in the correct order of the stages of life cycle of insect X by indicating A, B and D in the boxes in the diagram. Stage C has been done for you. [1]



(c) If insect X were to spread diseases, at which stage(s) of its life cycle (A, B, C or D) would you be most successful in killing it? Explain your answer. [1]

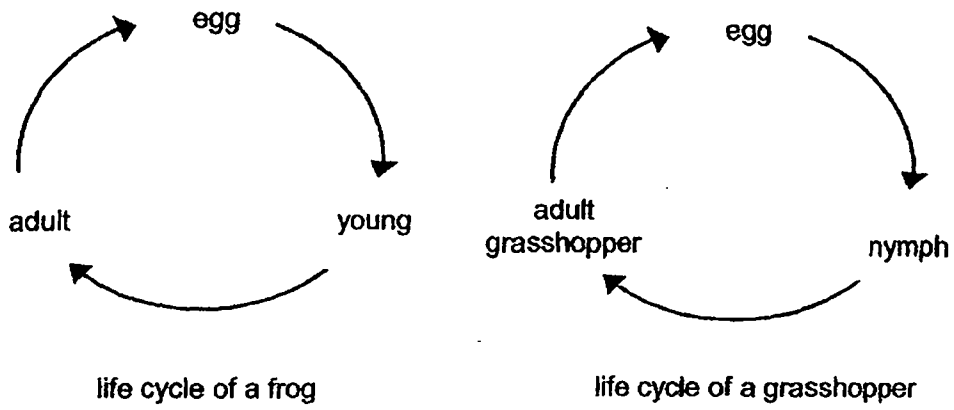
_____

_____

(Go on to the next page)

SCORE	
	3

34. Study the two cycles in the diagram.



life cycle of a frog

life cycle of a grasshopper

(a) State two differences between the two life cycles. (Do not compare size, colour or shape) [2]

Difference 1:

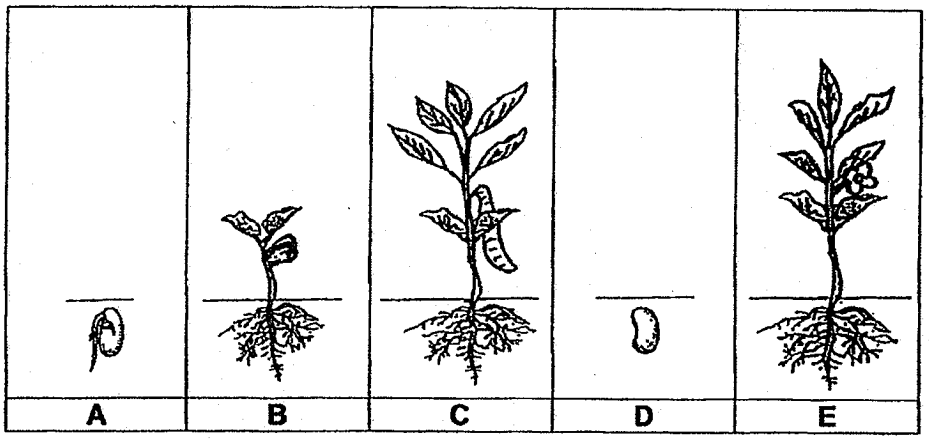
Difference 2:

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

(Go on to the next page)

SCORE	
	3

35. The diagram shows the growth of a bean plant, but in the wrong order.



(a) Arrange the growth of the bean plant in the correct order by filling in the boxes below with A, B, D and E. [1]

C → ☐ → ☐ → ☐ → ☐

(b) James planted the seed at D in a pot of soil and placed in a dark cupboard for 5 days. He watered it daily. Describe and explain clearly what would happen to it over the period of 5 days. [1]

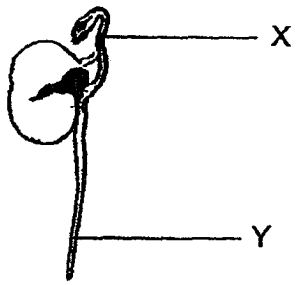
(c) James also planted the young plant at B in a pot of soil and placed it in the same dark cupboard for 3 weeks. He watered it daily. Describe and explain clearly what would happen to it at the end of 3 weeks. [1]

(d) At which growth stage(s), A, B, C, D and/or E, is the plant an adult plant. Explain why. [1]

(Go on to the next page)

SCORE	/4

36. The diagram shows a germinating seed.



(a) Label parts X and Y. [1]

X: _____

Y: _____

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

_____

_____

(c) Study the diagram of the young and adult plant.

young plant

adult plant

State a difference between the young plant and adult plant. (Do not compare size or shape). [1]

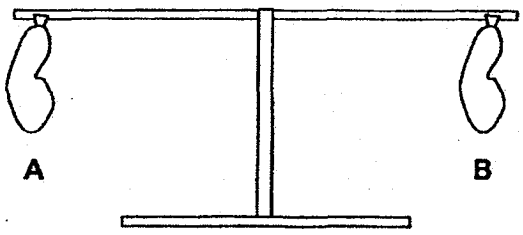
_____

_____

(Go on to the next page)

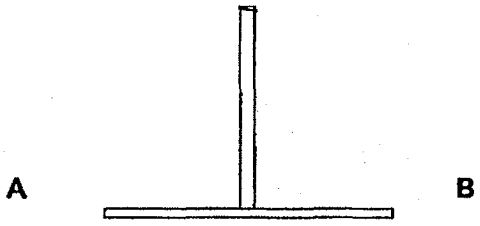
SCORE	
	3

37. John hung two identical deflated balloons on a balance as shown.



He then inflated balloon B.

(a) In the diagram below, draw how the balance will look like when balloon B is inflated. [1]

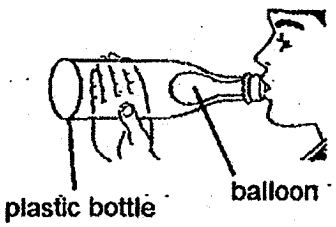


(b) State a property of air that is shown in your answer in (a). [1]

_____

_____

(c) John then tried to inflate a balloon in a plastic bottle as shown. However, no matter how hard he tried, he could not inflate the balloon fully. Using the property of air, explain why this is so. [1]



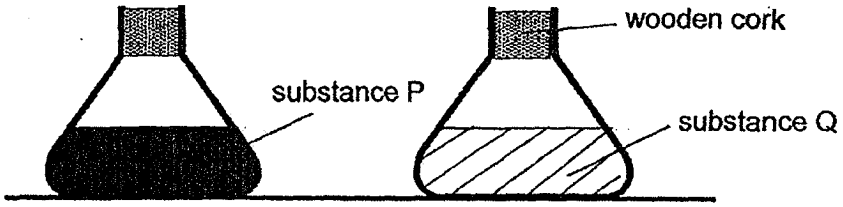
_____

_____

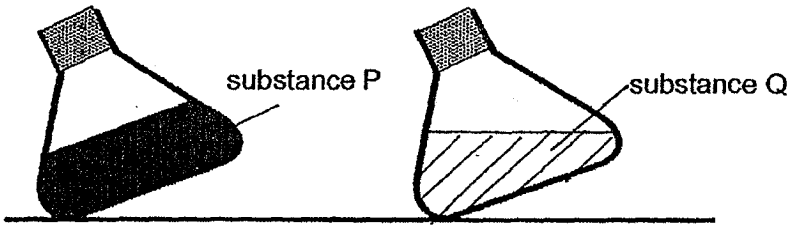
(Go on to the next page)

SCORE	
	3

38. Jill placed 200 m*l* of substances P and Q respectively into two identical flasks.



Jill then tilted the flasks.



(a) What is the state of substances P and Q? [1]

P : _____

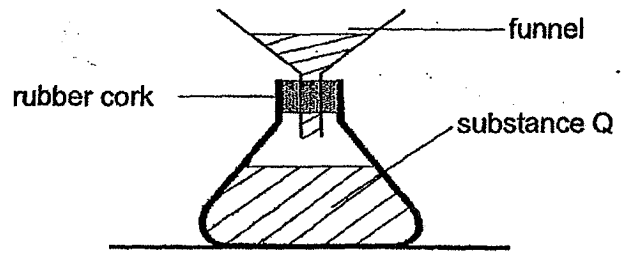
Q: _____

(b) Explain your answers in (a) for both substances. [1]

P: _____

Q: _____

(c) Jill used a funnel to add more substance Q into the sealed flask. After some time, substance Q stopped flowing into the flask as shown.



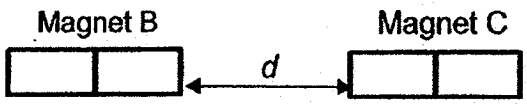
Explain clearly what Jill can do to allow substance Q to fill the flask completely. [1]

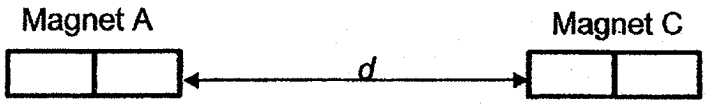
_____

_____

SCORE	/ 3

39. Farhana had three magnets, A, B, and C, of similar size but different strengths. When the magnets were brought close to each other, she observed the interactions between the magnets as shown in the diagram. She then measured the distance (*d*) between them.



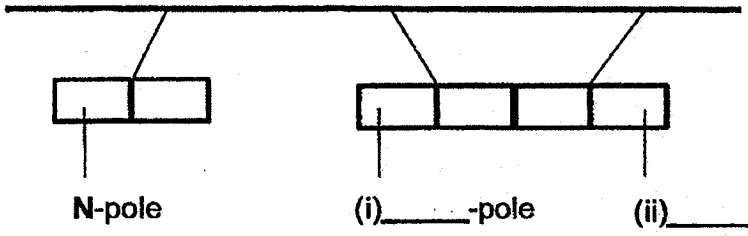


(a) Which is a stronger magnet, A or B? Explain your answer [1]

(b) Using only the bar magnets and a pile of paper clips, describe and explain another method which Farhana can use to find out whether magnet A or B is the stronger magnet. [2]

(c) Farhana then placed the magnets side by side. The diagram below shows what happened immediately after she released the magnets.

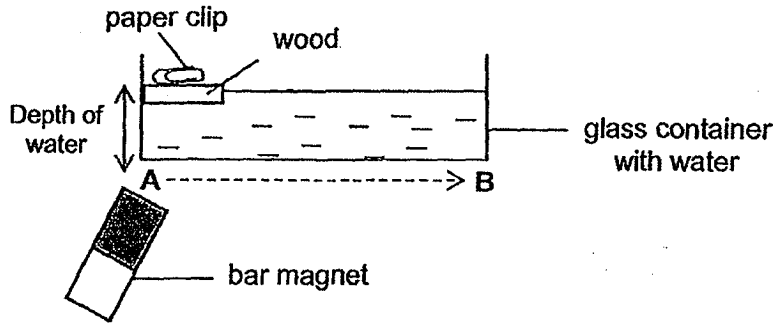
Show clearly the poles of the magnets at locations (i) and (ii) in the diagram by writing the letter **N** or **S**. [1]



(Go on to the next page)

SCORE	/ 4

40. Leon glued a paper clip onto a thin piece of wood and allowed it to float on water in a glass container as shown in the diagram. When he moved the bar magnet from point A to B, the paper clip on the piece of wood moved with the magnet.



Leon then repeated the experiment by moving the bar magnet from point A to B with different depths of water in the glass container. He observed what happened to the paper clip and recorded his observations in the table

Depth of water (cm)	Observation on paper clip
4	Moved from A to B with magnet
7	Moved from A to B with magnet
9	Moved from A to B with magnet
11	Did not move with magnet
13	Did not move with magnet

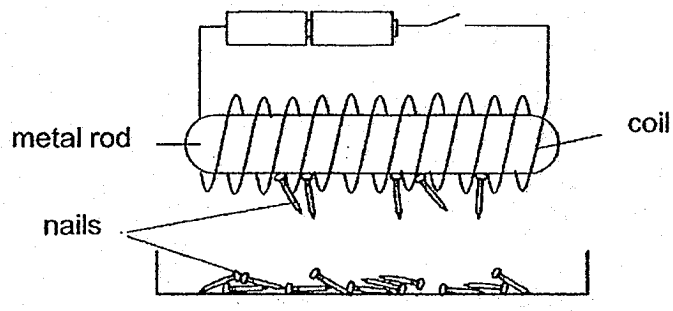
(a) Based on his data, Leon concluded that the maximum depth of water which the paper clip would still be attracted to the magnet and move along with it is 9 cm. Do you agree with Leon? Explain your answer. [1]

(b) Dylan repeated the exact same experiment but used a steel container with water instead. Would he obtain the same results as Leon? Explain your answer clearly. [2]

(Go on to the next page)

SCORE 3

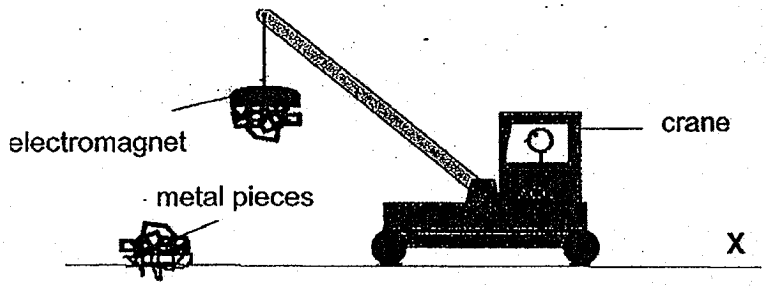
41. Anna conducted an experiment by coiling some wires around a metal rod and connecting it to a circuit as shown in the diagram.



(a) What material is the metal rod most likely made of? Explain why. [2]

(b) Anna would like more nails to be attracted to the metal rod. Describe two ways to modify the circuit so that more nails would be attracted to the metal rod. [2]

The diagram shows a crane that uses an electromagnet to collect metal pieces for recycling. When the crane driver turns on the switch, the electromagnet attracts the metal pieces. The crane driver then moves the crane above position X and turns off the switch. The metal pieces fall to position X. He does this until all the metal pieces are moved to X.



(c) Can the above electromagnet be replaced by magnet? Explain your answer. [1]

End of Paper

SCORE	5

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SCHOOL : ACS (J) PRIMARY SCHOOL

LEVEL : PRIMARY 4
SUBJECT : SCIENCE
TERM : 2019 SA1

SECTION A

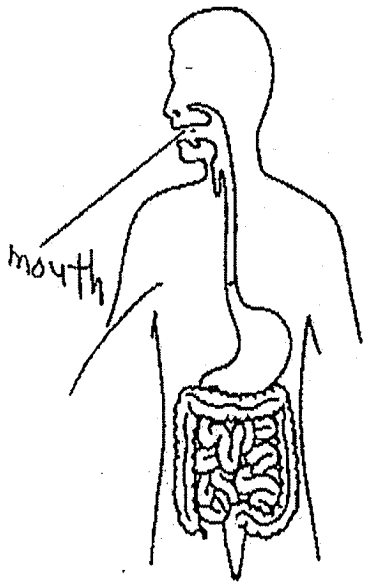
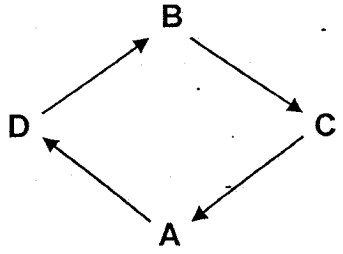
Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	4	4	2	4	1	1	2	4	4

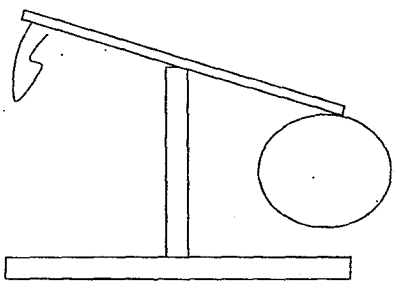
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	1	3	1	1	1	1	2	3	4

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

SECTION B

Q29)	a)Similarity : Both of them have scales. Difference: Animal B has legs but animal A does not have legs. b)crocodile
Q30)	a)Block A does not allow light to pass through it. b)B . C , A c)No. Block B is transparent and allows light to pass through it. Thurs, it will not be able to keep the room dark.

Q31)	a)  b)circulatory system skeletal system myscular system
Q32)	a)The stem of plant X is weak. b)It did not have a strong stem so it needed the tree as a support. It grew upwards to obtain maximum sunlight to make food. c)No. Some plants bear flowers at certain times of a year.
Q33)	a)A: larva D: Pupa b)  c)Stage A, C and D as it does not more much and can be easily caught.

Q34)	a)1)The young of a frog does not moult by the nymph of a grasshopper moults. 2)The frog spent its egg stage in water but the grasshopper spents its egg stage on land b)cockroach
Q35)	a)C→D→A→B→E b)It will continue to grow healthily as it got its food from the seed leaf. c)It will continue to grow for a while but it would start to die as it has no sunlight to make food. d)Stage E and C. A flowering plant will bear flowers and fruits at the adult stage.
Q36)	a)X: shoot Y: root b)It absorbs water and mineral salts for the plant. c)The adult plant has a size stem than the young plant.
Q37)	a)  b)Air has mass. c)Air takes up space.
Q38)	a)P: solid Q: liquid b)P: which is a solid Q: has a definite shape

	c)Jill can poke holes in the rubber cork so the air can escape and substance Q can enter.
Q39)	a)Magnet A. It was able to repel magnet C further the magnet B. b)She can hang the magnets above the paper clips and see which magnet is able to attract more paper clips. c)i)S-pole ii)N-pole
Q40)	a)No. The maximum depth can be 10cm. b)No. Magnetic strength cannot pass through magnetic materials such as steel
Q41)	a)Iron. b)By adding more batteries. By coiling more wires around the metal rod. c)No, if the electromagnet is replaced by the magnet, metal pieces will remain stuck to the magnet as the magnet cannot be switched on and off like an electromagnet, hence a magnet will be unable to perform this function of separating sand and metal pieces due to its inability to attract and release the metal pieces.