

Anglo-Chinese School (Junior)



SEMESTRAL ASSESSMENT 2 (2015)

PRIMARY 4

SCIENCE

BOOKLET A

Wednesday

4 November 2015

1 hr 30 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 25 questions in this booklet.
- 4 Answer ALL questions.
- 5 Shade your answers in the Optical Answer Sheet (OAS) provided.

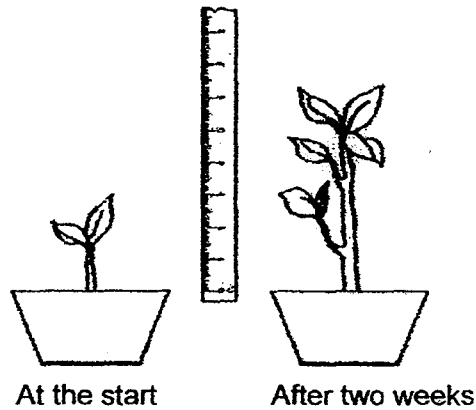
Booklet A (50 marks)

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. (25 x 2 marks)

1. Which one of the following statements is true for all insects?

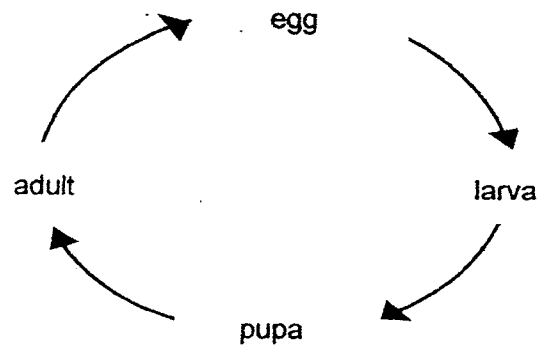
- (1) They have tails.
- (2) They have wings.
- (3) They have six legs.
- (4) They have two body parts.

2. Sarah found a plant in the garden and measured its height. After two weeks, she measured its height again. From her observation, Sarah concluded that the plant is a living thing because it can _____.



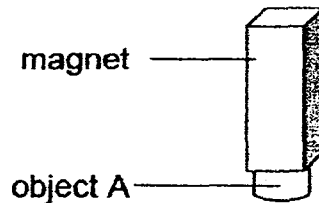
- (1) grow
- (2) breathe
- (3) respond
- (4) reproduce

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



Which animal is likely to have the life cycle as shown above?

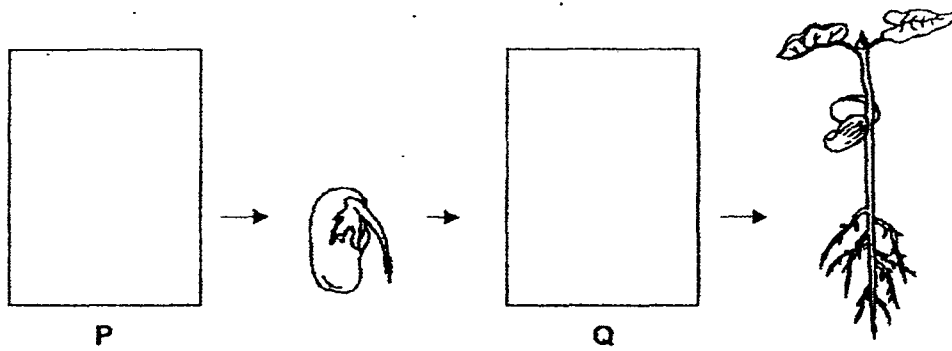
- (1) Frog
 - (2) Chicken
 - (3) Mosquito
 - (4) Grasshopper
4. Object A was attracted to a magnet, as shown in the figure below.



Object A is made of _____.

- (1) steel
- (2) wood
- (3) rubber
- (4) plastic

5. The diagram below shows the growth of a young plant.



Which one of the following shows P and Q?

	P	Q
(1)		
(2)		
(3)		
(4)		

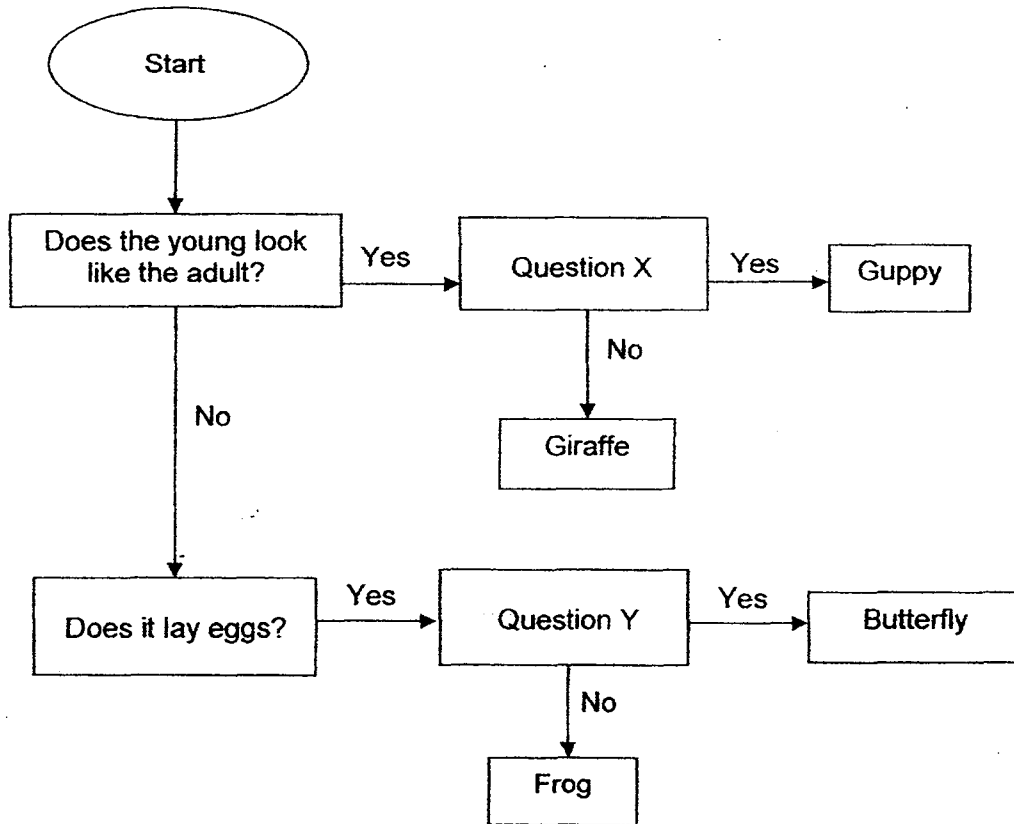
6. Which one of the following actions does not show the characteristic of a living thing?

- (1) A pole blown by the wind
- (2) Mosquito sucking blood from a man
- (3) Woman standing under a tree for shade
- (4) Creeper plant growing around a wooden stick

7. Which of the following is correct?

	Animals that can crawl	Animals that can fly
(1)	beetle, lizard, turtle	mosquito, eagle, bat
(2)	mosquito, eagle, bat	beetle, lizard, turtle
(3)	ant, caterpillar, crocodile	pigeon, parrot, penguin
(4)	pigeon, parrot, penguin	ant, caterpillar, crocodile

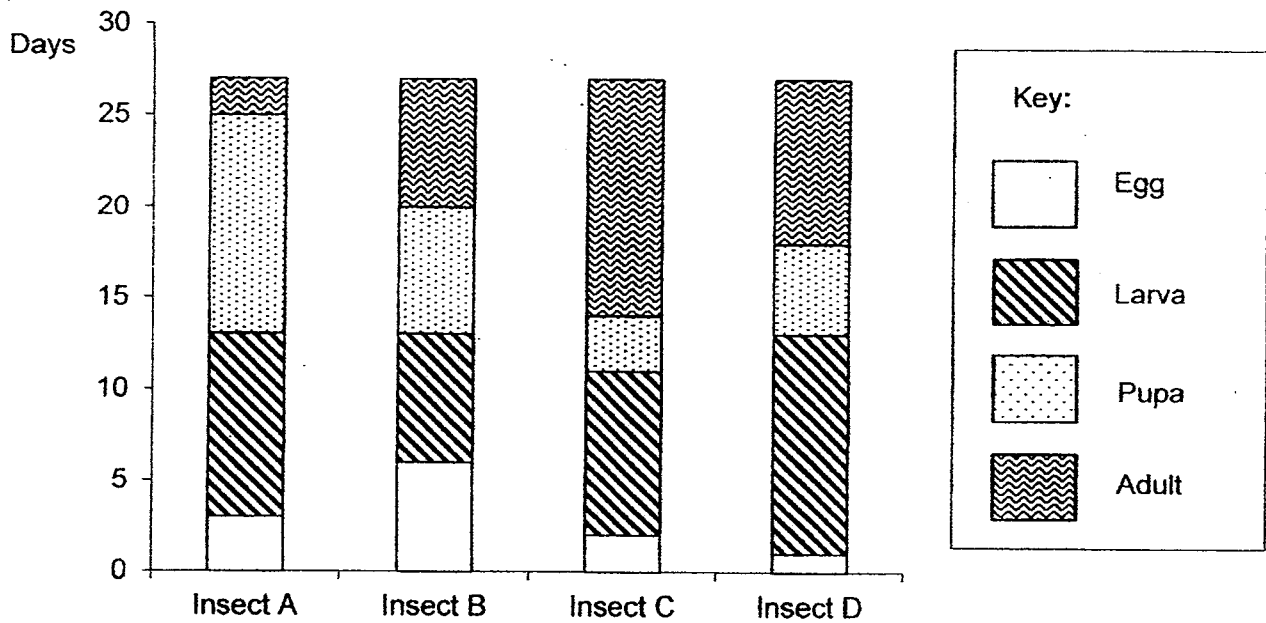
8. Four animals are grouped using the flow chart below.



Based on the information above, which one of the following best represent Questions X and Y?

	Question X	Question Y
(1)	Does it live in water?	Does it have 3-stage life cycle?
(2)	Does it live on land?	Does it have 3-stage life cycle?
(3)	Does it live in water?	Does it have 4-stage life cycle?
(4)	Does it live on land?	Does it have 4-stage life cycle?

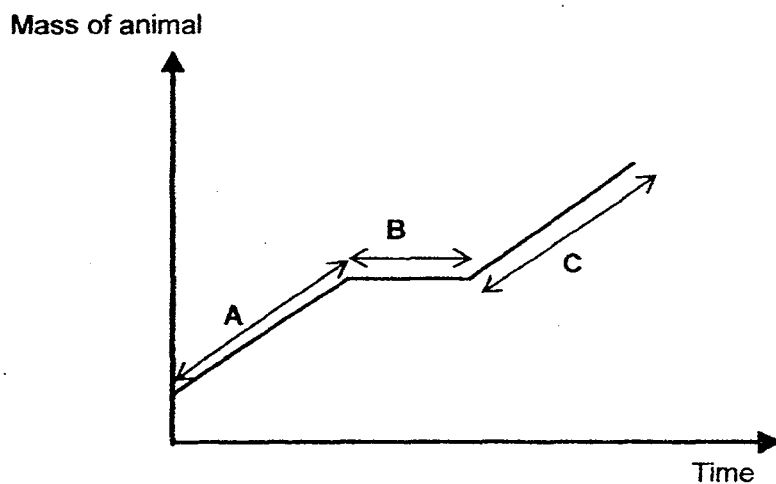
9. The graph below shows the number of days four insects, A, B, C and D were in the different stages of their life cycles. The eggs of the four insects were laid on the same day and they each have a 4-stage life cycle.



On which day are all four insects at the same stage in their life cycle?

- (1) Day 5
- (2) Day 10
- (3) Day 15
- (4) Day 20

10. The graph below shows the changes in the mass of an animal during some of the different stages in its life cycle.



Which of the following stages could parts A, B and C represent?

	A	B	C
(1)	egg	nymph	adult
(2)	larva	pupa	adult
(3)	egg	larva	pupa
(4)	pupa	adult	larva

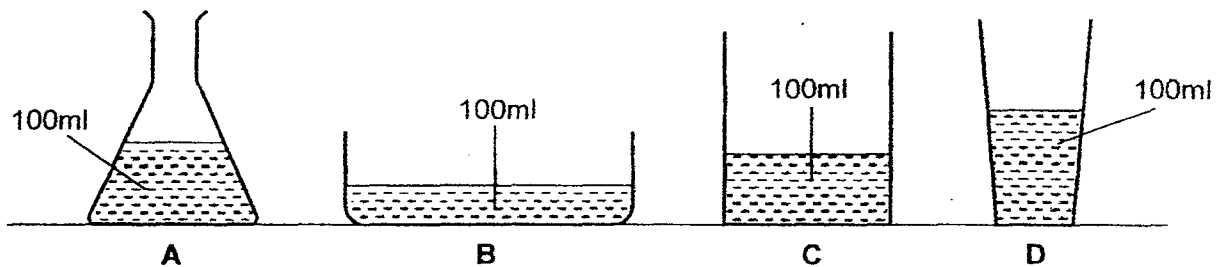
11. John listed the following statements about a germinating seed and an adult plant.

- A Make their own food
- B Get food from the seed leaves
- C Take in water through the roots

Which of the following is true for both the germinating seed and the adult plant?

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

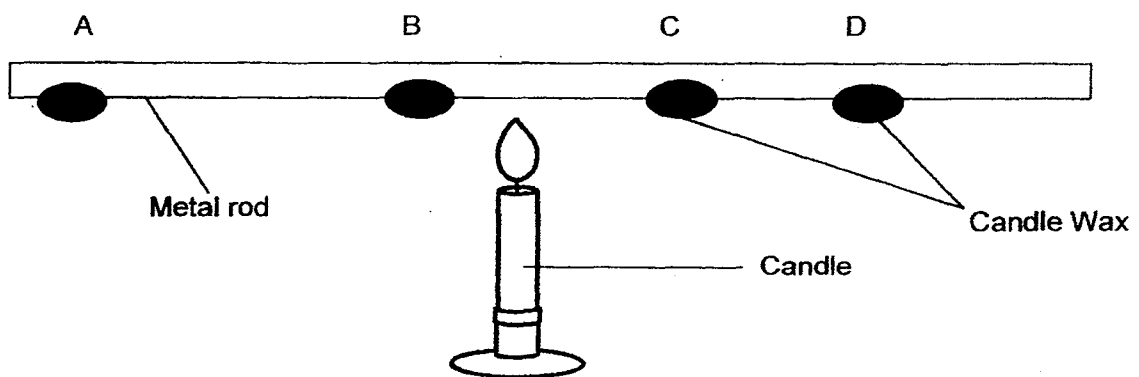
12. Susan poured 100ml of liquid into 4 different containers, A, B, C and D, of different shapes and sizes as shown below.



Based on the diagrams above, which of the following are properties of the liquid?

- A Takes up space
- B Can be compressed
- C Has a definite shape
- D Has a definite volume

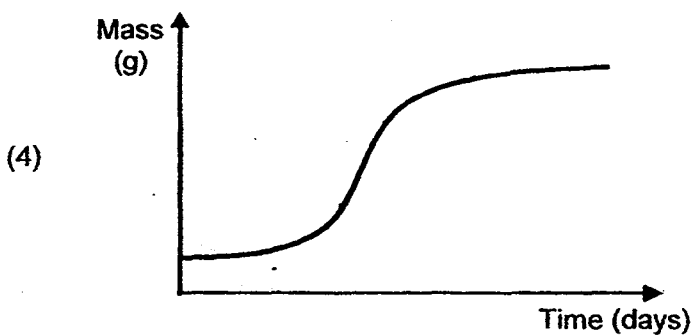
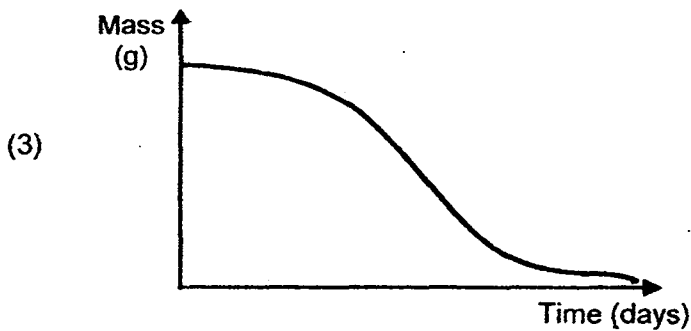
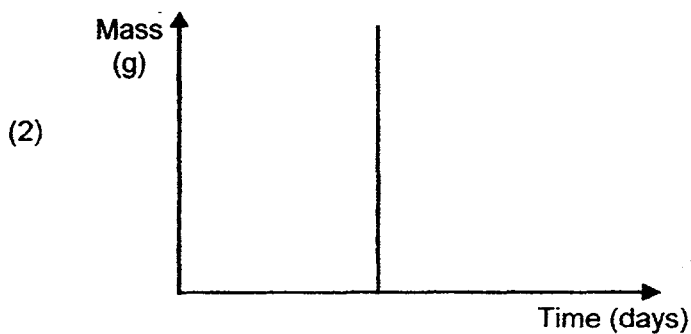
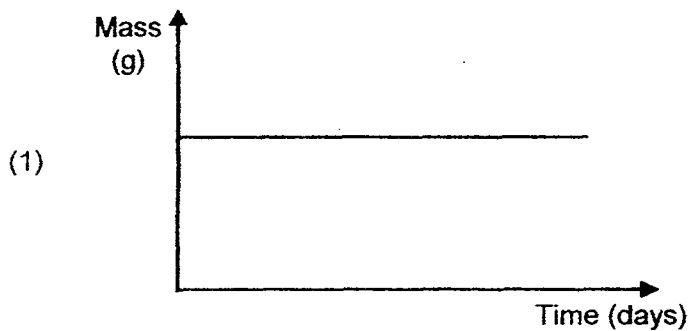
- (1) A and B only
 (2) A and D only
 (3) B and D only
 (4) C and D only
13. Jocelyn carried out the following experiment. She placed some candle wax at four positions, A, B, C and D, on a metal rod as shown below. She lighted a candle and observed the set-up for 20 minutes.



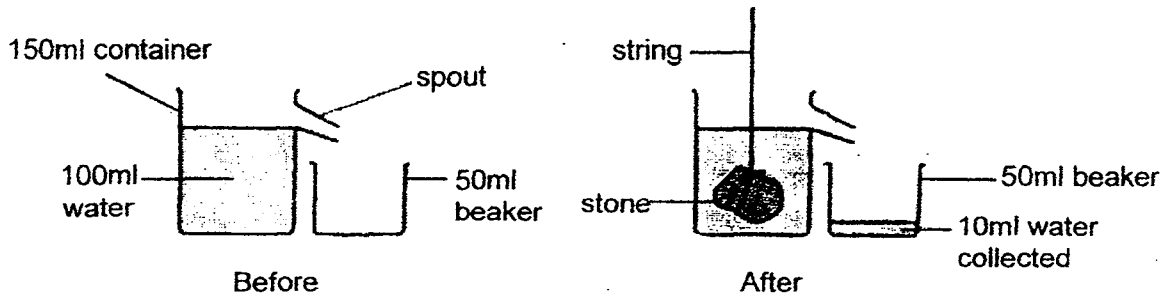
After 20 minutes, Jocelyn observed that the candle wax at all four positions had completely melted. In which order would she observe the candle wax melting?

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

14. Which one of the following graphs correctly shows the change in the mass of the seed leaf as a seed germinates?

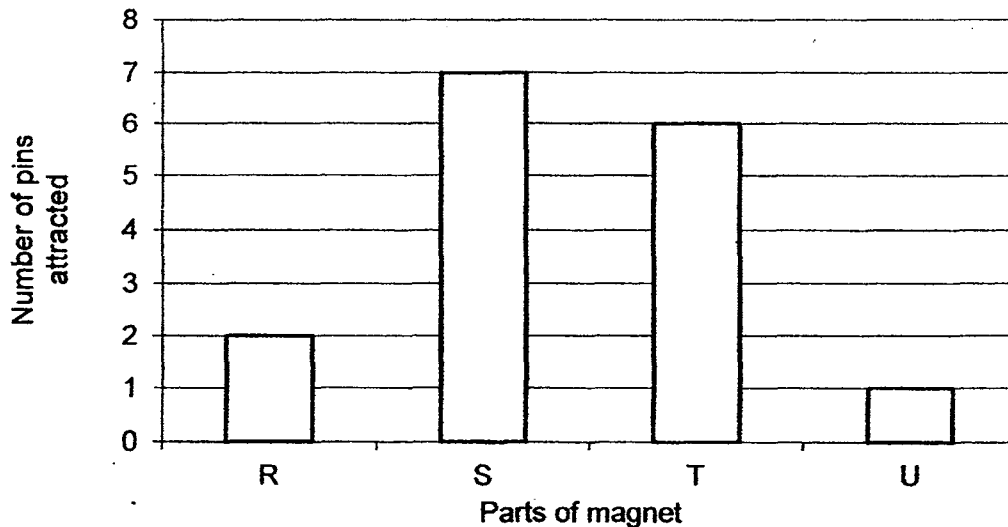


15. Joe carried out an experiment as shown in the diagram below. He filled a 150ml container with 100ml of water till the brim of the spout. He then lowered a stone into the container and some water flowed out of the spout and was collected in the 50ml beaker.



What is the volume of the stone from the experiment above?

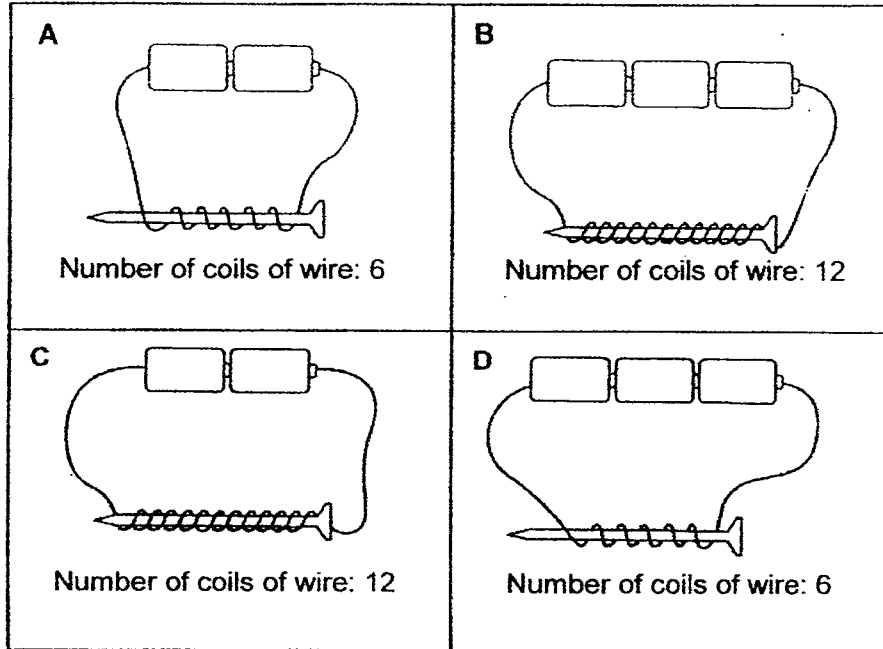
- (1) 10ml
 - (2) 50ml
 - (3) 100ml
 - (4) 150ml
16. Steward lowered a magnet into a tray of pins and then counted the number of pins attracted to the magnet. He repeated the experiment with the same magnet but each time he used a different part of the magnet to face the tray of pins. He then plotted his results in a bar graph below.



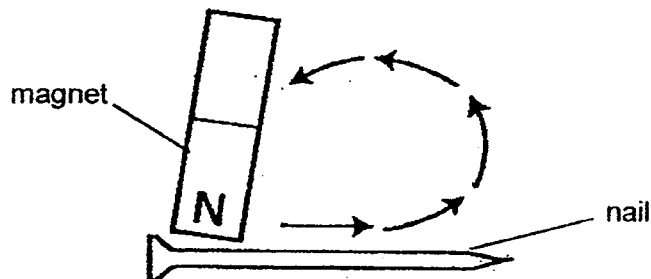
Based on his experiment, which of the parts, R, S, T and U, are most likely the poles of the magnet?

- (1) R and S
- (2) T and U
- (3) R and U
- (4) S and T

17. Sarah wants to find out if the number of coils of wire affects the strength of an electromagnet. Which two set-ups shown below should she prepare to conduct a fair test?



- (1) A and B
 - (2) A and D
 - (3) B and C
 - (4) B and D
18. Angel strokes a nail 20 times with a magnet as shown in the diagram below.



She then brought it near a pile of iron pins and observed that the nail did not attract any of the iron pins. Which one of the following could explain her observation?

- (1) The nail had become a temporary magnet.
- (2) The nail was stroked in the wrong direction.
- (3) The nail is made of a non-magnetic material.
- (4) The magnet used to stroke the nail is too strong.

19. Diagram 1 shows a torch shining light on 3 objects M, N, and O which are made of different materials. The objects come in different shapes and are placed at different distances from the torch. They are being arranged in a straight line one after another. Diagram 1 shows the side view of the set-up.

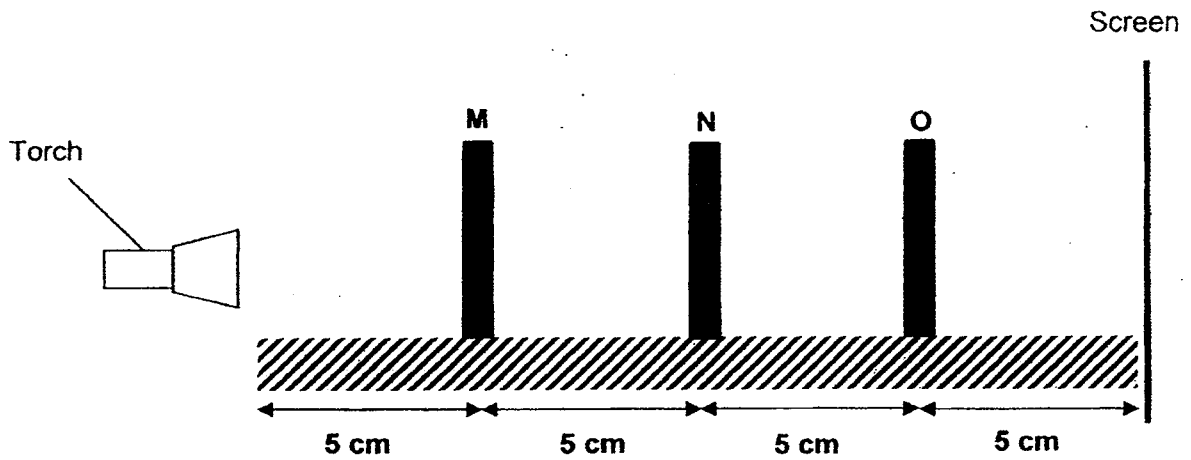


Diagram 1

Diagram 2 shows the front view of the 3 objects.

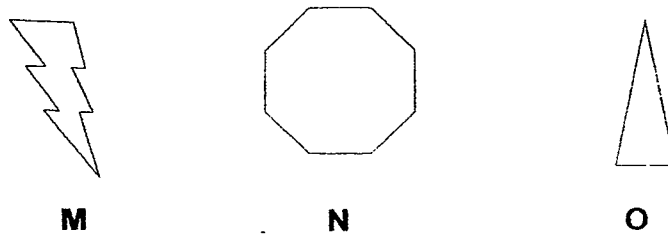


Diagram 2

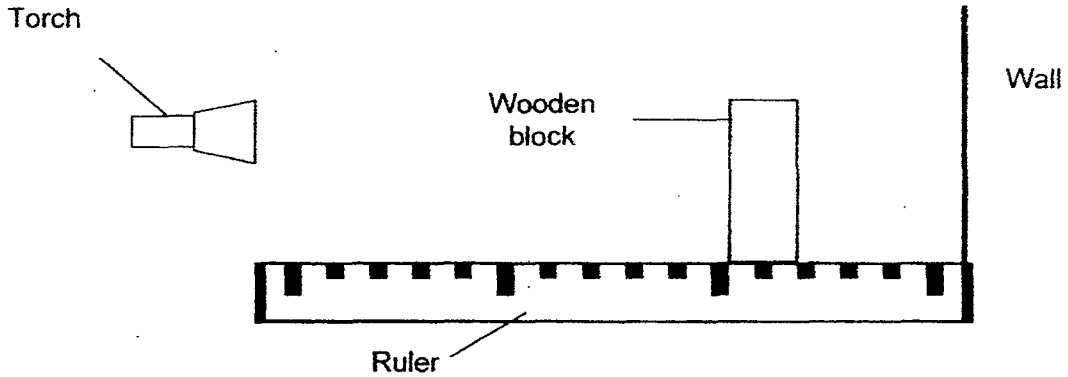
The table below shows the material that each shape is made of.

Shape	Material
M	Transparent
N	Translucent
O	Opaque

Which of the following correctly represents the shadow that was seen on the screen?

- (1) (2)
- (3) (4)

20. Hairi carried out an experiment to find out how the distance between the wall and the torch affects the height of the shadow formed on the wall.

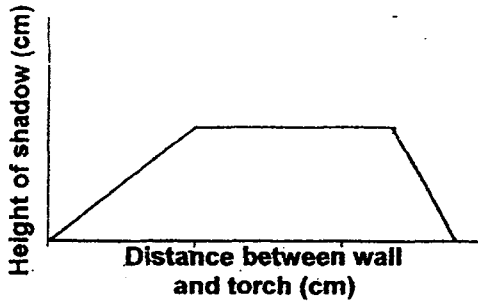


The table below contains the information he collected. Then, he used this information to draw a line graph.

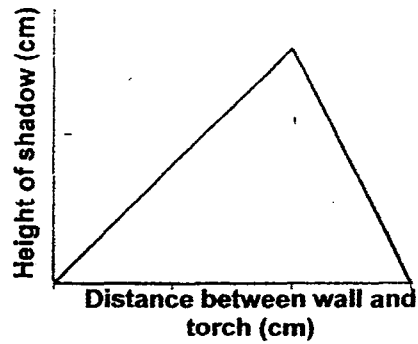
Distance between wall and torch (cm)	Distance between wall and wooden block (cm)	Height of shadow on the wall (cm)
10	5	18
15	5	16
20	5	12

Which one of the following line graphs best represents his results?

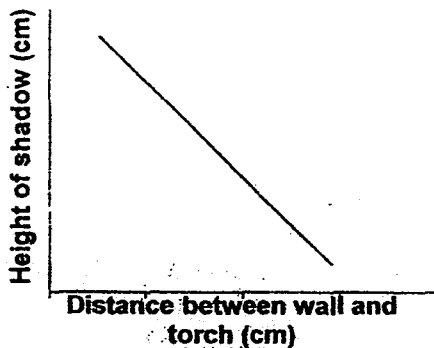
(1)



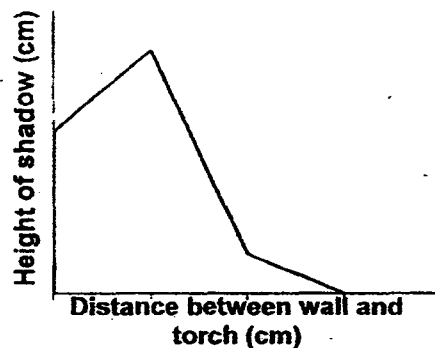
(2)



(3)

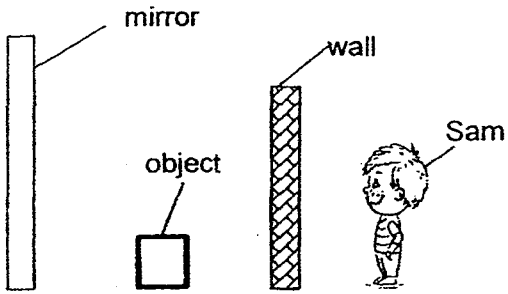


(4)

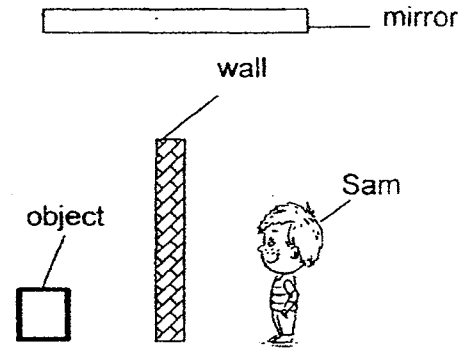


21. Sam wants to see the object that his sister had hidden behind a wall. Which of the following mirror arrangement would enable Sam to see the object?

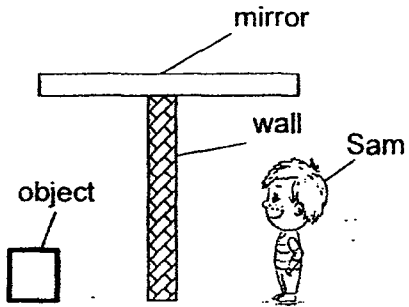
(1)



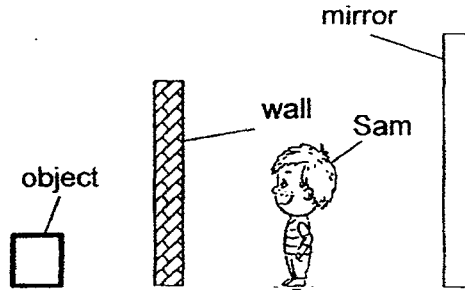
(2)



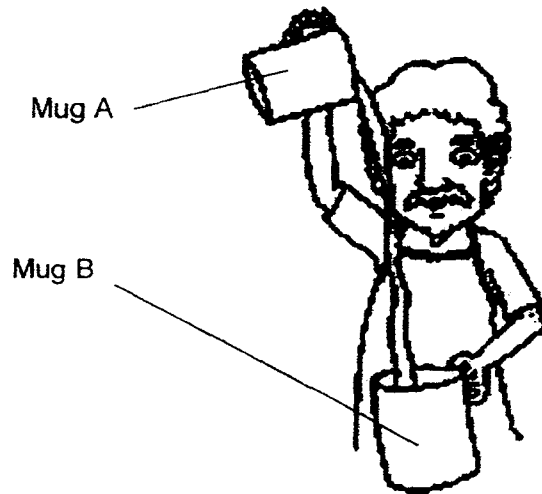
(3)



(4)

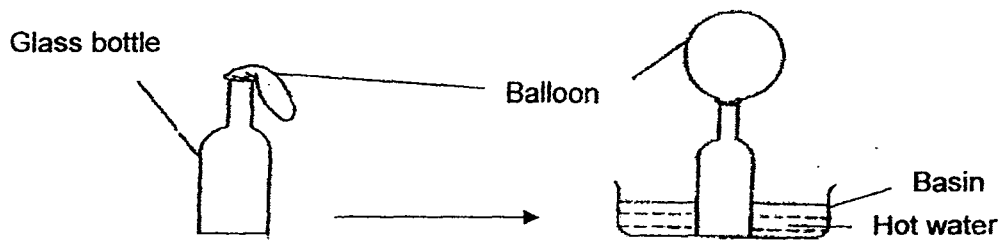


22. Raju saw a stall holder pour hot tea from Mug A to Mug B. Then he poured the hot tea from Mug B to Mug A. He repeated his actions a few times.



The purpose of transferring the hot tea from Mug A to Mug B is to _____.

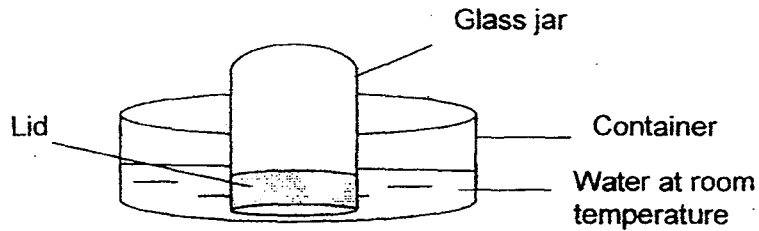
- (1) transfer heat from the hot tea to his hand
 - (2) increase the amount of hot tea in the mug
 - (3) decrease the amount of hot tea in the mug
 - (4) transfer heat from the hot tea to the surrounding air
23. A balloon is placed over the mouth of a glass bottle. When the glass bottle is placed in a basin of hot water, it becomes inflated as shown in the diagram below.



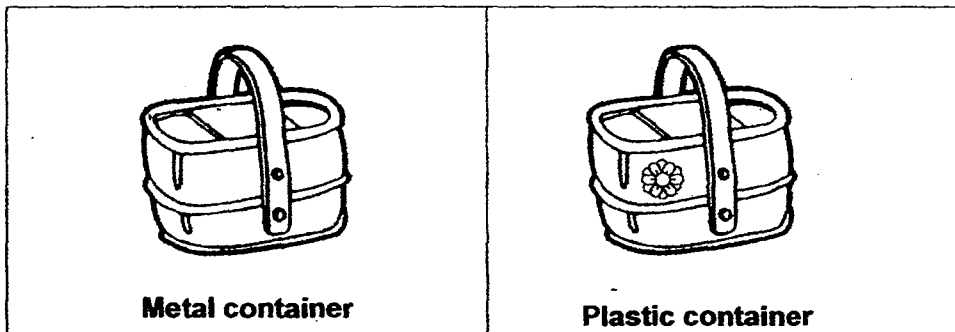
Which one of the following statements explains why the balloon is inflated?

- (1) The balloon loses heat to the hot water.
- (2) The hot water conducts heat away from the balloon.
- (3) Hot air in the glass bottle expands and inflates the balloon.
- (4) Hot air in the glass bottle contracts and inflates the balloon.

24. Cindy tried opening the tight lid of a glass jar by putting it into a container filled with water. After a while, she still wasn't able to open the lid. What should she do to open the lid of the glass jar?



- A She should use a bigger container.
 B She should remove some water from the container.
 C She should replace the water at room temperature with hot water.
- (1) A only
 (2) C only
 (3) B and C only
 (4) A and B only
25. Mrs Lim wanted to pack some hot soup for her husband to bring to work. However, she is confused which material is more suitable to keep the soup warm for a longer period of time.



Which explanation below would help her to decide which container to pack the hot soup in?

- (1) Metal is lighter than plastic.
 (2) Heat can easily pass through metal but not plastic.
 (3) The plastic container would float on water but the metal container would sink.
 (4) The design of the plastic container is more attractive than the metal container.

Anglo-Chinese School (Junior)



SEMESTRAL ASSESSMENT 2 (2015)

PRIMARY 4

SCIENCE

BOOKLET B

Wednesday

4 November 2015

1 hr 30 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 14 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	50	
B	40	
PBA	10	
Total	100	

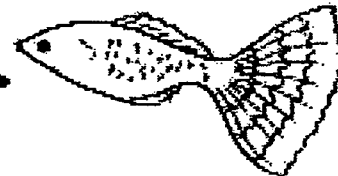
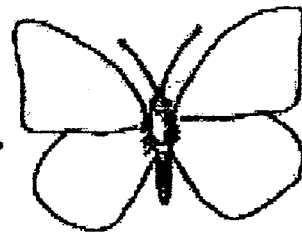
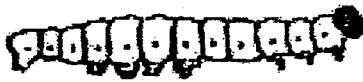
Booklet B (40 marks)

For questions 26 to 39, write your answers in this booklet.

The number of marks available is shown in brackets [] at the end of each question or part question.

26. The diagram below shows the young and adult of some organisms.
Draw lines to match the young with the correct adult.

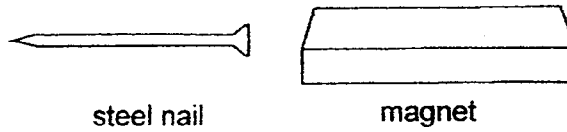
[3]

YoungAdult

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SCORE	
	3

27. Paul placed a magnet near a steel nail as shown below. The steel nail moved towards the magnet.

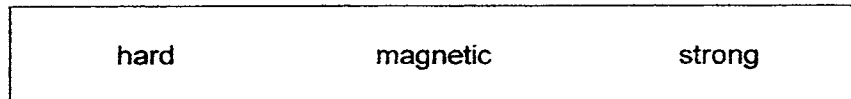


- (a) Fill in the blank with a suitable word.

The magnet exerted a _____ on the steel nail.

[1]

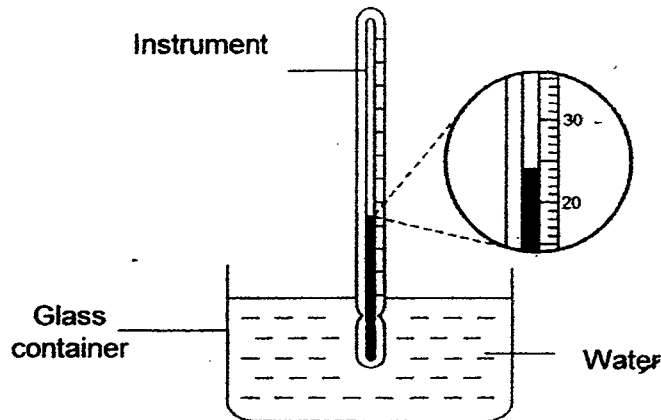
- (b) Choose the correct word from the box to fill in the blank below.



Paul's observation shows that steel is a _____ material.

[1]

28. Jane used an instrument to measure the temperature of water in a glass container.



- (a) What is the instrument called? _____

[1]

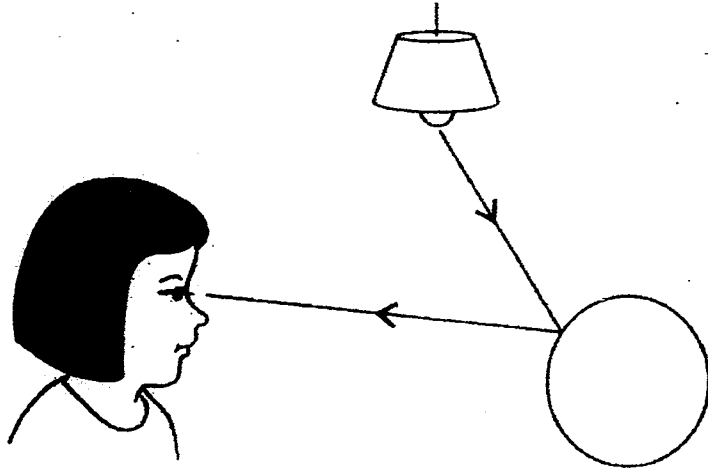
- (b) What is the temperature of the water in the glass? _____

[1]

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SCORE	4
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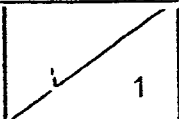
(c)



The diagram below shows how Mary sees the ball. The light from the lamp is _____ by the ball and enters Mary's eye.

[1]

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SCORE	
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29. Fill in the boxes with the correct plant parts.

[2]

(a)

Functions of plant parts	Plant parts
It holds the plant upright.	
It obtains water for the plant.	

(b) Zack recorded the characteristics of three different types of plants M, N and O in the table below. A tick (✓) indicates that the plant has the characteristic.

Types of Plants	Characteristics				
	Reproduces from seeds	Reproduces from spores	Bears fruit	Flowers grow singly	Flowers grow in clusters
Plant M	✓		✓	✓	
Plant N		✓			
Plant O	✓		✓		✓



Unknown plant

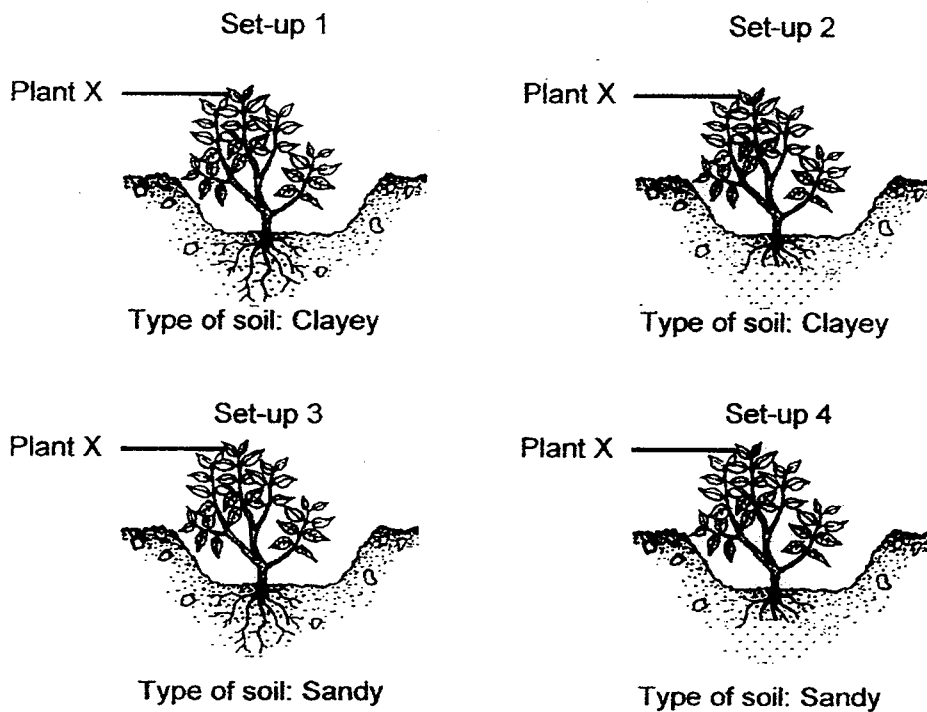
Which plant M, N or O best describes the above unknown plant?

[1]

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SCORE	3
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30. Roy wanted to find out which type of soil is more suitable for Plant X to grow well. He prepared the set-ups shown below in his garden and watered the plants daily.

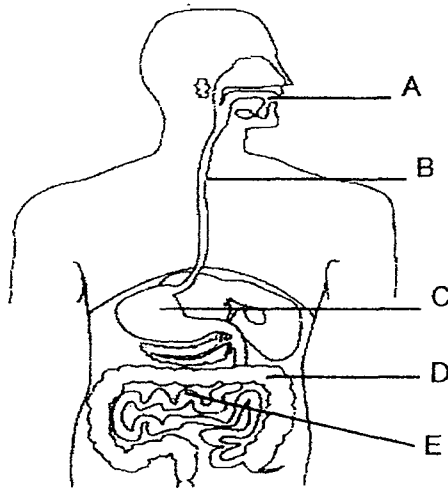


- (a) Which pair of set-ups should he use to conduct the experiment? [1]
-
- (b) Explain your choice in (a). [1]
-
-
- (c) If Roy conducted a second experiment with set-up 3 and 4, what is the aim of Roy's experiment? [1]
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SCORE	3
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31. The diagram below shows the human digestive system.



(a) Which parts in the above diagram contain digestive juices? [1]

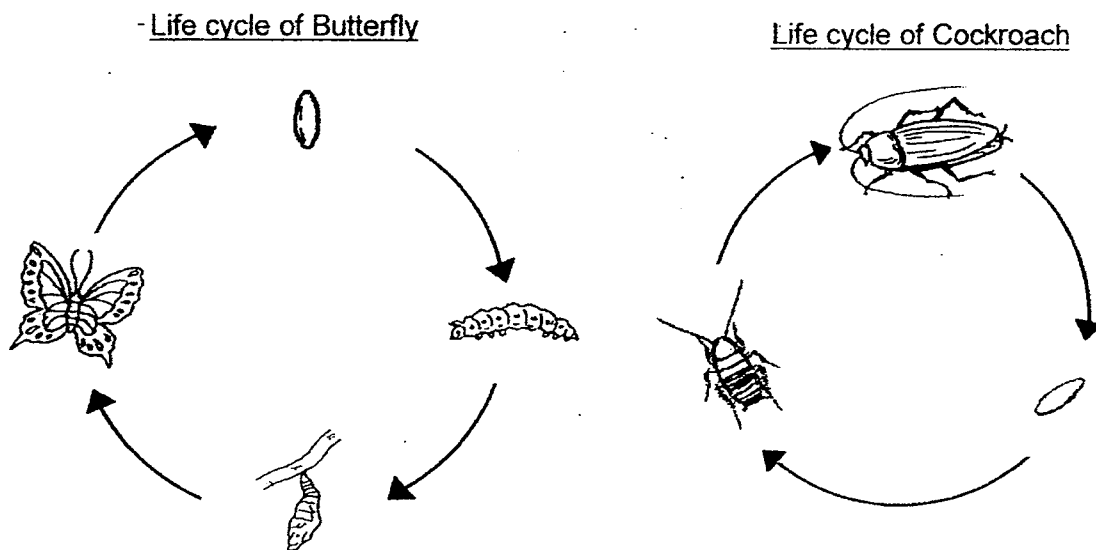
(b) Explain how digestive juices help in digestion. [1]

(c) What happens to the digested food in Part E? [1]

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SCORE	/
	3

32. The following diagrams show the life cycle of a butterfly and a cockroach.



- (a) State a difference between the life cycles of the butterfly and the cockroach. [1]

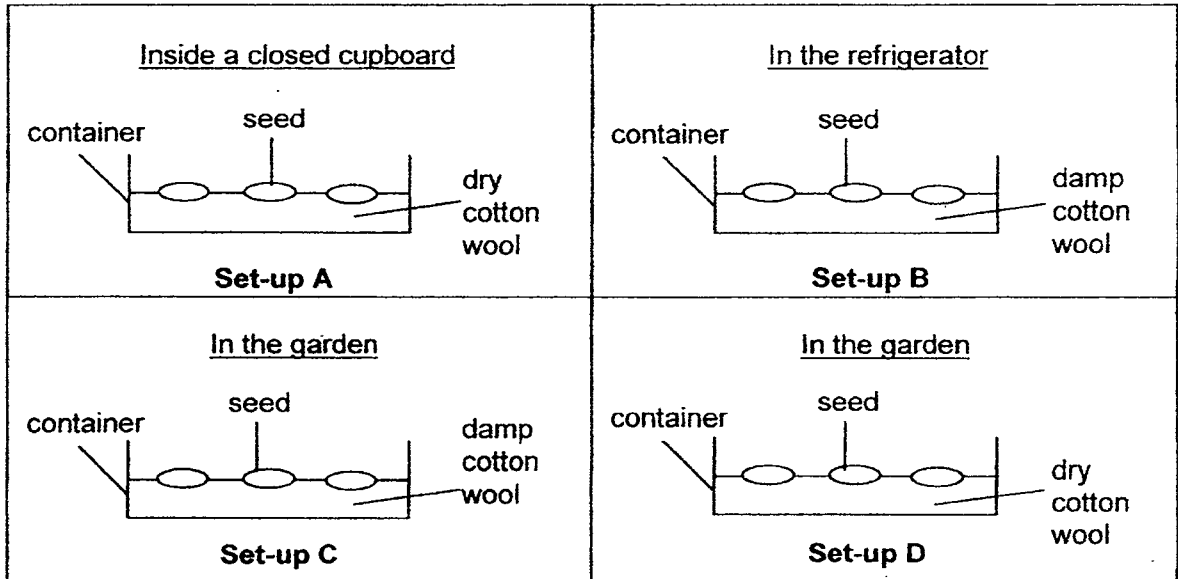
- (b) State a similarity in the way the adult of the butterfly and the adult of the cockroach move. [1]

- (c) Why is the young of the butterfly harmful to plants? [1]

(Go on to the next page)

SCORE	3
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33. Albert prepared four identical containers with three seeds of the same type and size in each container. He then placed them at different locations as shown in the diagram below.



(a) Albert wanted to conduct two experiments to test if seeds need water and warmth to germinate. Which two set-ups should he use for comparison for each experiment? [1]

	Changed Variable	Set-ups
(i)	Water	_____ and _____
(ii)	Warmth	_____ and _____

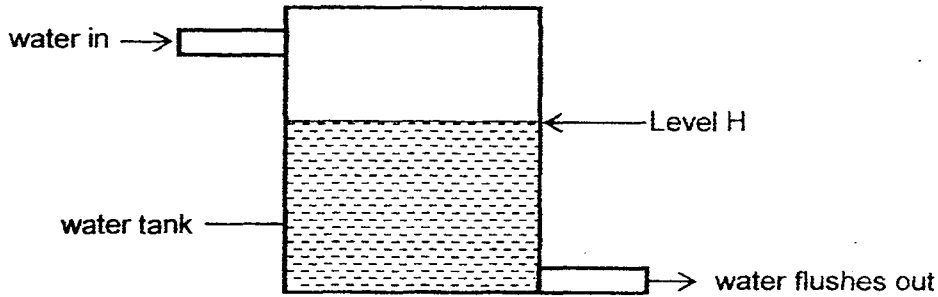
(b) What other condition(s) must the seeds have to germinate? [1]

(c) A few days after the seeds germinated, Albert saw that the seed leaf had dropped. Explain why. [1]

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SCORE	3
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34. A water tank is shown below. After all the water is flushed out, water enters and re-fills the tank. The tank will stop filling once the water reaches level H.

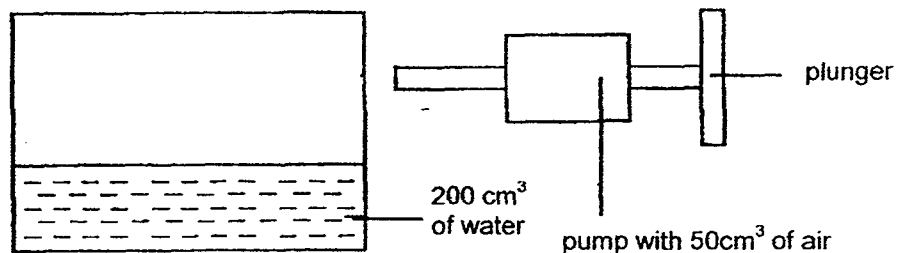


John wants to use less water every time the water is flushed out of the tank. Nathan suggests placing a plastic bottle filled with stones into the water tank.

- (a) Explain how Nathan's suggestion will help to reduce the amount of water used each time the water is flushed out of the tank. [1]

- (b) Nathan's method is based on a property of matter. State this property. [1]

- (c) John uses another water tank with a volume of 500cm^3 . It contained 200cm^3 of water. He connected a pump containing 50cm^3 of air to the water tank as shown in the diagram below.

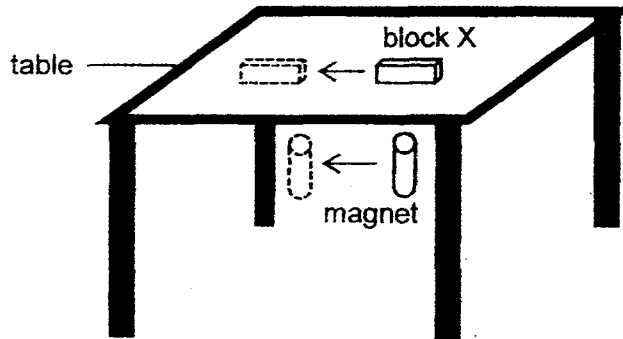


- What is the volume of the air in the water tank after the plunger of the pump is pushed in completely? [1]

(Go on to the next page)

SCORE	3
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35. Robert conducted an experiment as shown in the diagram below. Robert placed block X on a table and held a magnet under it as shown in the diagram below.



He noticed that block X moved in the same direction as the magnet when he moved the magnet as shown in the diagram.

- (a) Give an example of a material that the table and block X could be made of in order to obtain the results above. [1]

Table: _____

Block X: _____

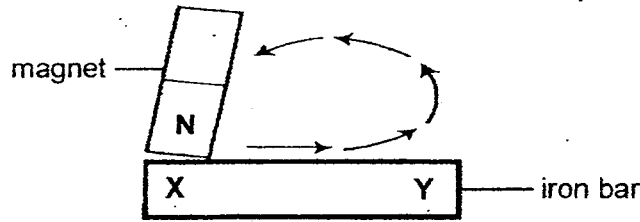
- (b) If Robert replaced the table with a steel table, will block X move when he moves the magnet as shown in the diagram? Explain your answer. [1]

- (c) If Robert replaced block X with a glass block, will the glass block move when he moves the magnet as shown in the diagram? Explain your answer. [1]

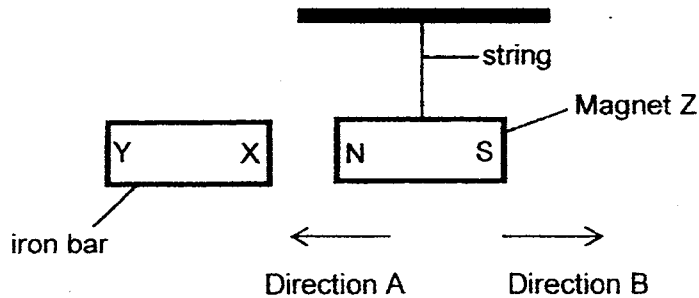
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SCORE	3
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36. Alex made a temporary magnet using the stroke method as shown below.



Alex then brought the temporary magnet near Magnet Z that was freely hung from a string as shown in the diagram below.



(a) In which direction, A or B, will the freely hung magnet move? Explain your answer. [1]

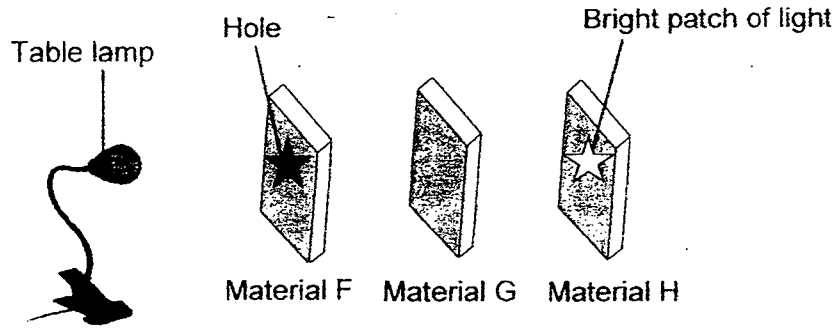
(b) Without adding or removing anything from the set-ups above, state what Alex can do to make Magnet Z move further in the same direction as in part (a). [1]

(c) State a way to make Magnet Z move in the opposite direction from that in part (a). [1]

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SCORE	3
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37. Jasmine carried out the experiment below in a very dark room.



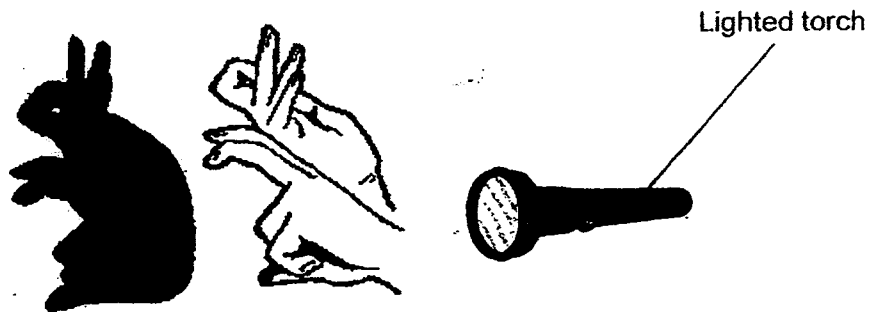
The materials F, G and H were arranged in a straight line. When the table lamp was switched on, a bright patch of light was seen on Material H only.

(a) Put a tick (✓) in the box that correctly describes the properties of the materials F, G and H.

[2]

Properties of material	True	False
F is an opaque material		
G is an opaque material		
G is a transparent material		
H is an opaque material		

(b) Jasmine wanted to form a hand puppet shadow for her Show and Tell lesson. She used her fingers to create the shadow of a rabbit on the wall as shown below.



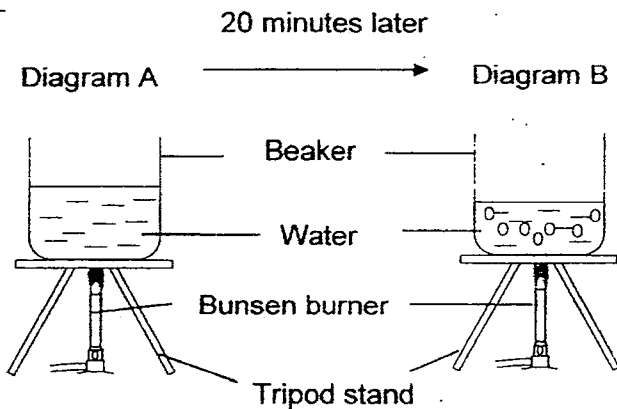
She wanted to make the shadow smaller. State one thing that she could do to make the shadow appear smaller (the position of light source remains unchanged).

[1]

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SCORE	3
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38. Liza wanted to observe what happens when water boils.



(a) After 20 minutes, she noticed that the water level in the beaker had decreased. Explain why.

[1]

(b) State one thing Liza could have done to allow a smaller decrease in the water level in the beaker at the end of 20 minutes.

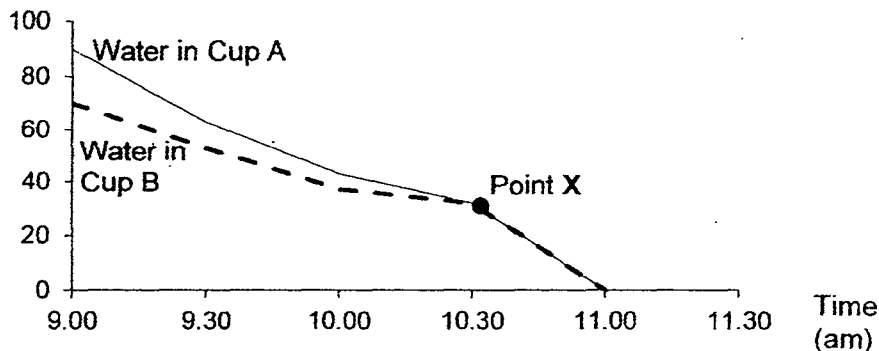
[1]

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SCORE	2
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39. Zack cooled two identical cups marked A and B, containing equal amounts of warm water. The temperature of water in both cups is different at the start of the experiment. He plotted the line graph below to record the changes in the temperature of water in both cups over a period of time.

Temperature (°C)



- (a) Based on the graph above, which cup, A or B, is a better conductor of heat? Explain why.

[1]

- (b) Explain why the water in both cups reach the same temperature after some time at around 10.30 a.m.

[1]

- (c) What did Zack do at point X that caused temperature of water in both cups to decrease to 0°C?

[1]



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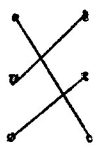
SCHOOL : ANGLO-CHINESE SCHOOL

SUBJECT : P4 SCIENCE

TERM : SA2

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

26)



27) a) magnetic pull

b) magnetic

28) a) Thermometer

b) 24°C

c) reflected

29) a) Stem

Roots

b) Plant M

30) a) Set-up 1 and set-up 3

b) Since Roy wanted to find out which type of soil is more suitable for plant X to grow well, the only changed variable in his experiment should be the type of soil.

c) It is to find out which plant can survive longer with more roots or with less roots.

31) a) Parts A, C and E.

b) It helps to soften the food and break the food into simpler substances to be further digested.

c) The digested food will pass through the walls of the small intestine into the blood stream to be used as energy.

32) a) The butterfly has 4 stages in its life cycle while the cockroach has 3 stages in its life cycle.

b) Both have wings that enable them to fly.

c) The young of the butterfly eats a lot to prepare for the next stage which is the pupa stage. Hence, it eats the leaves of plants. The plants will not have leaves to trap sunlight to make food for the plant. Eventually, the plants might wither.

33) ai) C and D

aii) C and B

b) Oxygen

c) The germinating seedling has used up all the food in the seed leaves and its first leaves have developed to trap sunlight and make food for the plant. Hence, the seed leaf is of no use, so it withers and drops off.

34) a) The plastic bottle will take up space, causing the water to be reduced, reducing the amount of water needed to fill up the tank.

b) Matter occupies space

c) 300cm^3

35) a) Table : Wood

Block X : Steel

b) No. Steel is a magnetic material and does not allow the magnetic pull of the magnet to pass through it, to attract block X and move it.

c) No. Glass is a non-magnetic material which cannot be attracted to the magnet. Magnets can only attract magnetic materials.

36) a) Direction B. The poles of the temporary magnet and the freely hung magnet facing each other are like poles, causing the magnet and the freely hung magnet to repel each other.

b) Stroke the temporary magnet more times.

c) Turn the temporary magnet around such that the poles of each magnet are unlike poles and attract and that magnet Z will move towards direction A.

37) a) True

False

True

True

b) She can move her hand closer to the wall

38) a) When the water was boiling, the water gained heat and turned to gaseous state.

b) Liza could have covered the beaker with a lid.

39) a) Cup A is a better conductor of heat. The water in cup B losses heat faster than the water in cup A. The water in cup A gains heat faster than the water in cup B.

b) The water in both cups lost heat such that the temperature reached room temperature and both waters reached the same temperature.

c) She could have placed both cups of water into the refrigerator.