



AI TONG SCHOOL

2010 SEMESTRAL ASSESSMENT (2)

PRIMARY FOUR SCIENCE

DURATION : 1hr 45 min

DATE: 1 November 2010

INSTRUCTIONS

Do not open the booklet until you are told to do so.

Follow all instructions.

Answer all questions.

Name : _____

Class : Primary _____

Parent's Signature : _____

Date : _____

| | |
|-------|-----|
| MARKS | 100 |
|-------|-----|

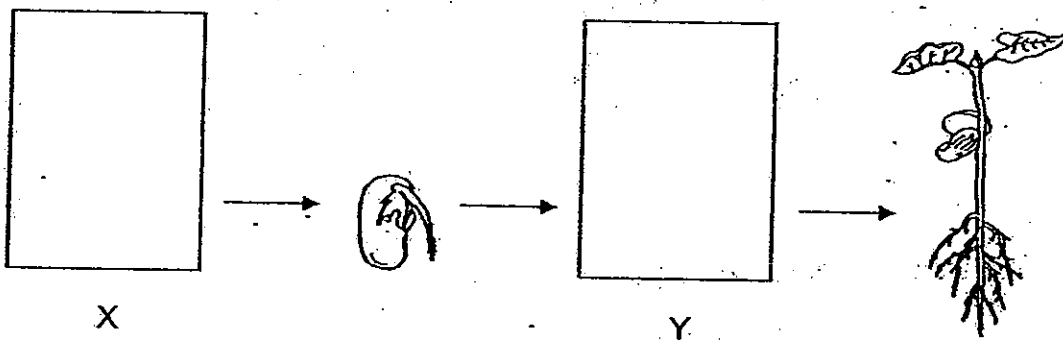
Section A (30 x 2 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

1. Which one of the following properties is true for both air and a ruler?

- (1) They can be seen.
- (2) They take up space.
- (3) They have fixed shapes.
- (4) They have fixed volumes.

2. The diagrams below show the growth of a young bean plant with two missing stages X and Y.



Which one of the following shows the correct stages for X and Y?

| | X | Y |
|-----|---|---|
| (1) | | |
| (2) | | |
| (3) | | |
| (4) | | |

3. What is the main function of the large intestine?

- (1) It removes digested food from the body.
- (2) It allows water to be passed into the blood.
- (3) It removes undigested food out of the body.
- (4) It allows digested food to be passed into the blood.

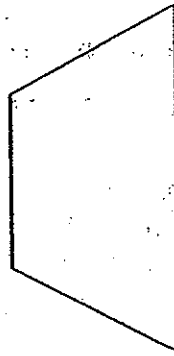
4. Peter shines a torch on the wooden container as shown below.



torch



wooden
container



screen

Which one of the following shows the shadow of the wooden container on the screen?

(1)



(2)



(3)

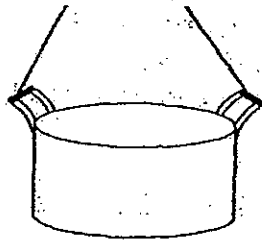


(4)



5. Izah boiled some water in the pot shown below.

plastic handles



He is able to hold the pot of boiling water using the plastic handles. This is because plastic is a _____.

- (1) light material
- (2) waterproof material
- (3) poor conductor of heat
- (4) good conductor of heat

6. Which one of the following is a living thing?

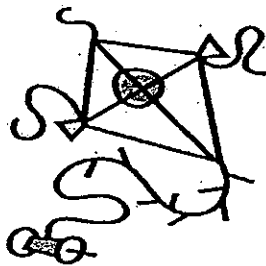
(1)



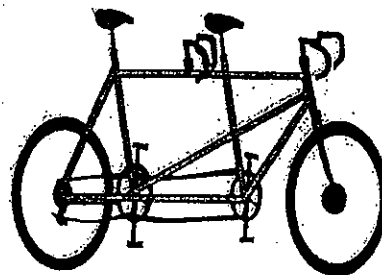
(2)



(3)



(4)



7. Which one of the animals shown below is **NOT** an insect?

(1)



(2)



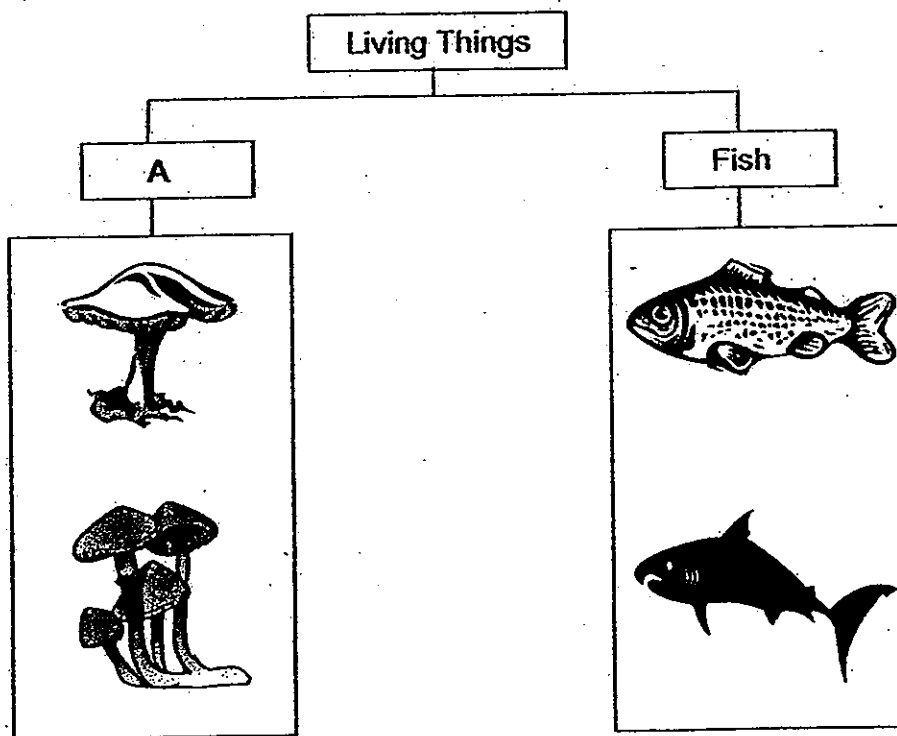
(3)



(4)



8. The table below shows how living things can be grouped.



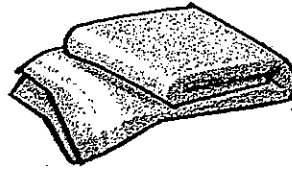
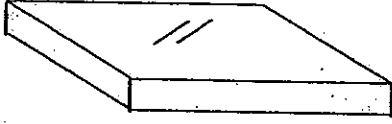
Which one of the following is the most suitable heading for group A?

- (1) fungi
- (2) insects
- (3) bacteria
- (4) mammals

9. Which one of the following objects can be bent easily without breaking?

(1) A sheet of glass

(2) A towel



(3) A plastic spoon

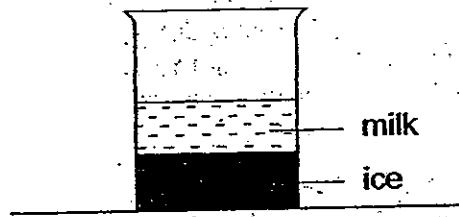
(4) A wooden ruler



10. Which one of the following can be attracted by a magnet?

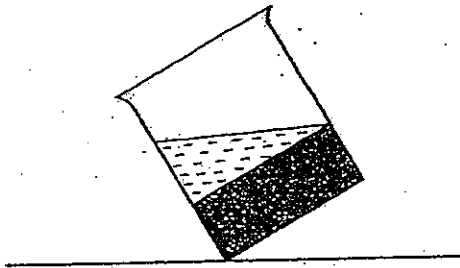
- (1) iron ball
- (2) plastic ball
- (3) rubber ball
- (4) wooden ball

11. Chelsea removed a container of ice from the freezer and poured some milk into the same container as shown below.

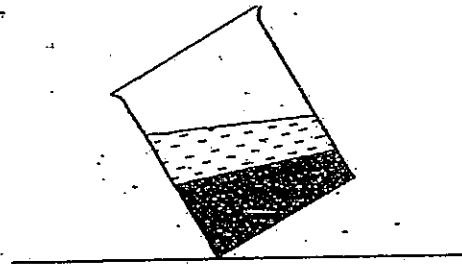


Which one of the following diagrams shows how the level of ice and milk would look like when tilted?

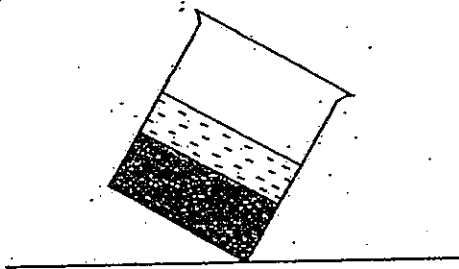
(1)



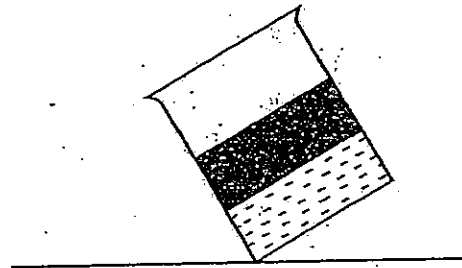
(2)



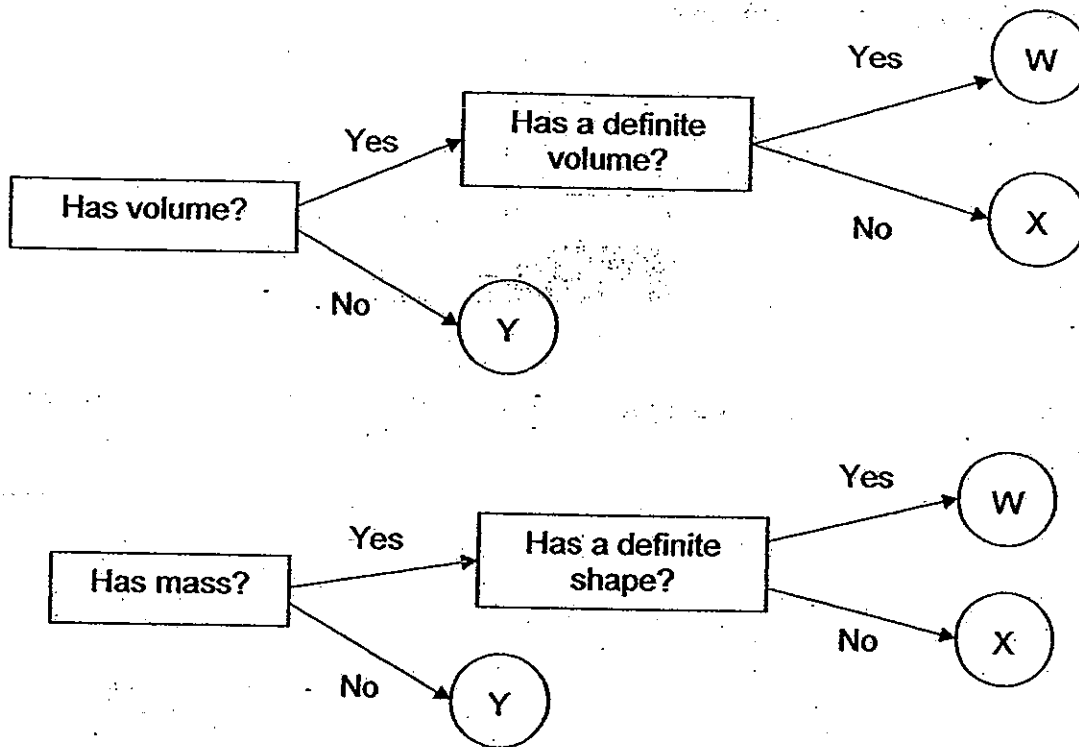
(3)



(4)



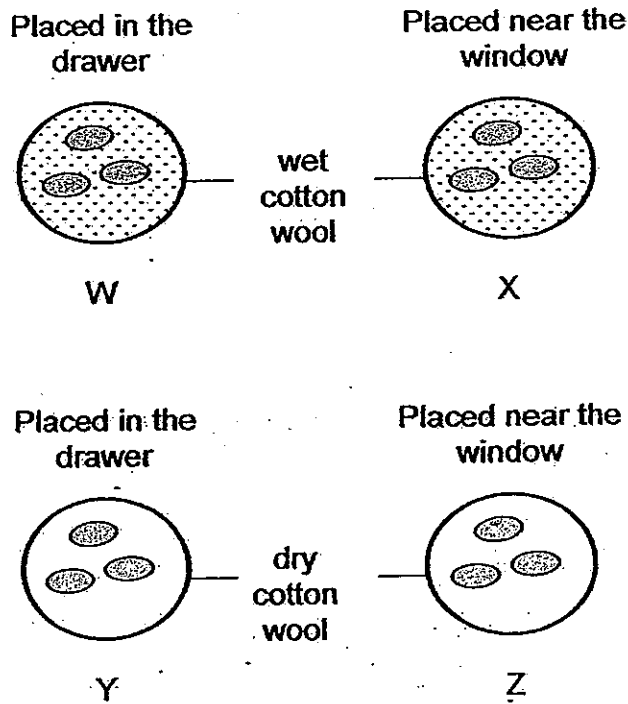
12. The flow chart below shows how W, X and Y can be classified.



Which one of the following statements is true?

- (1) X is a gas.
- (2) Y is a liquid.
- (3) W and X are solids.
- (4) W and Y are matter.

3. Gerald wanted to grow some bean seeds so he placed the seeds in set-ups W, X, Y and Z as shown below.



In which of the set-ups above will the seeds germinate first?

- (1) W and X
 (2) W and Y
 (3) X and Z
 (4) Y and Z
14. Sam carried out an experiment to study the germination of four types of seeds A, B, C and D. He observed the development of the seeds every day for two weeks. Then he recorded his observations as shown in the table below.

| Seed type | No. of days taken for the root to appear | No. of days taken for the first leaves to appear |
|-----------|--|--|
| A | 3 | 6 |
| B | - | 9 |
| C | 6 | 8 |
| D | - | - |

If Sam had made a mistake in his observation, which would be the incorrect observation?

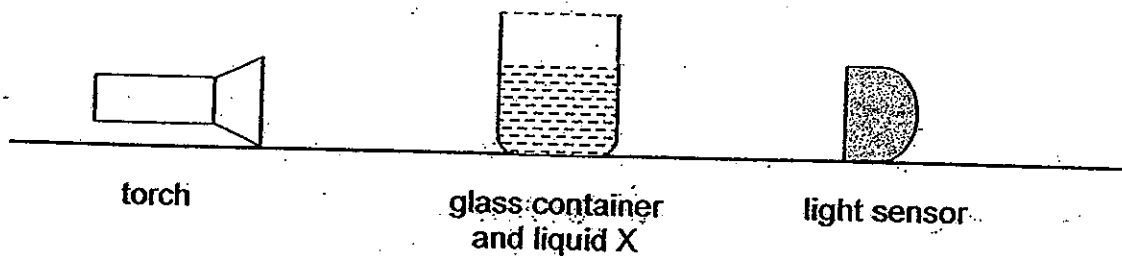
- (1) A
 (2) B
 (3) C
 (4) D

15. Which two systems in the human body work together to enable the fingers to pick up a pen?

- A: Skeletal system
- B: Digestive system
- C: Muscular system
- D: Respiratory system

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

16. Kelly set up an experiment as shown in the diagram below to find out how much light can pass through liquid X.

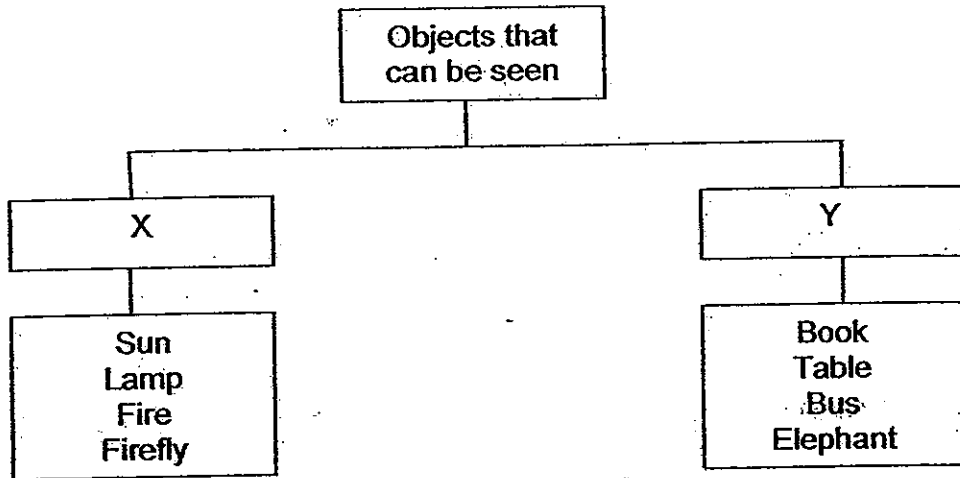


The container of the liquid X is made of glass and the source of light is the torch. She used a light sensor to measure the amount of light that passed through liquid X. The reading on the sensor was then recorded.

Why is it important that the container be made of glass in this experiment?

- (1) Glass can reflect light from the torch.
- (2) Glass allows most light to pass through it.
- (3) Glass is transparent so the liquid can be seen.
- (4) Glass allows some light to pass through it quickly.

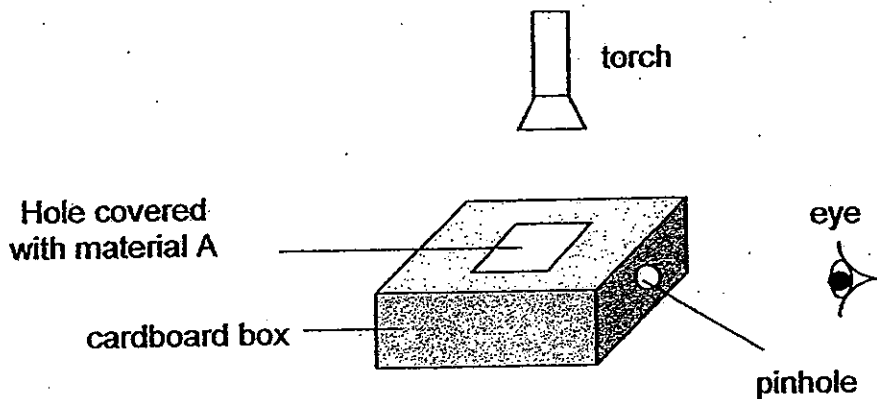
17. The concept map below shows how objects can be classified.



What could X and Y be?

| | X | Y |
|-----|-------------------------|------------------------|
| (1) | Natural | Man-made |
| (2) | Give off light | Reflect light |
| (3) | Non-living things | Living things |
| (4) | Have no definite volume | Have a definite volume |

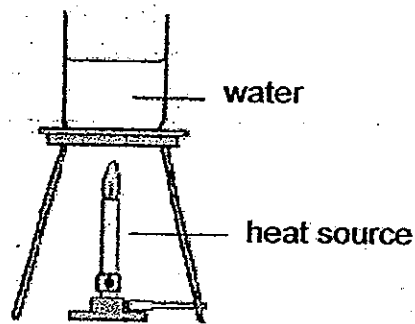
18. The diagram below shows a box made from cardboard. A pinhole is cut on one side of the box so that the eye can see into the box from it. Another hole is cut on the box and covered with material A. When light is shone from a torch through the hole, the eye is able to see the toy car that was placed inside the box clearly.



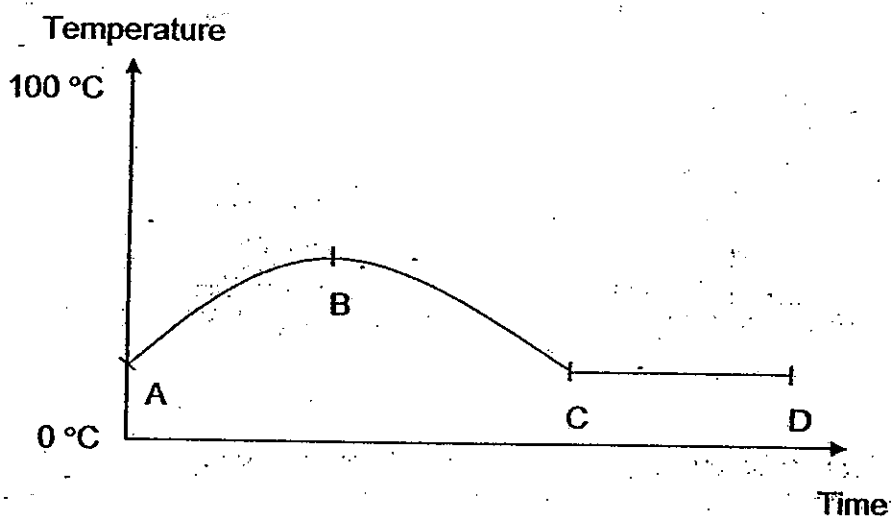
What could material A be?

- (1) cloth
- (2) cardboard
- (3) clear plastic
- (4) tracing paper

19. Serene set up the following experiment. Then she recorded her observation for 5 minutes.



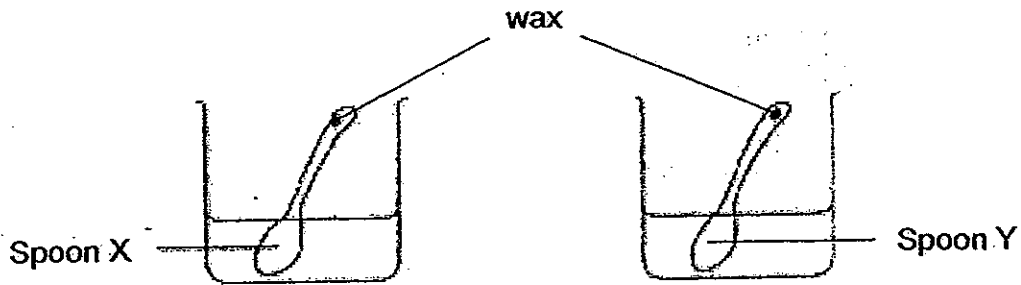
The graph below shows the change in temperature of the water during the 5 minutes.



At which point of the graph is the heat source removed?

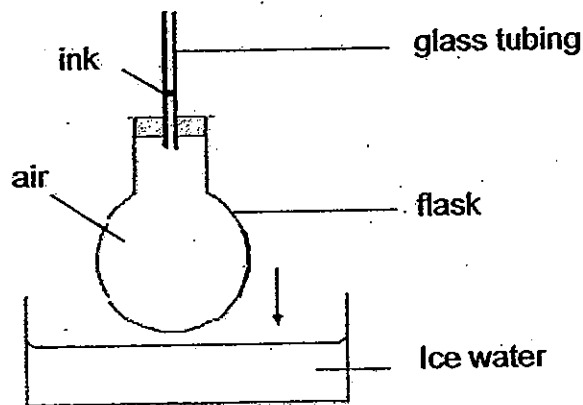
- (1) A
- (2) B
- (3) C
- (4) D

20. Keith melted a small amount of wax on the handles of two spoons X and Y. The wax then cooled and hardened on the handles. Then he placed the two spoons into a basin that contained some hot water as shown below.



After 10 minutes, he noticed that the wax on Spoon X melted first. Which one of the following is a possible reason why the wax on Spoon X melted first?

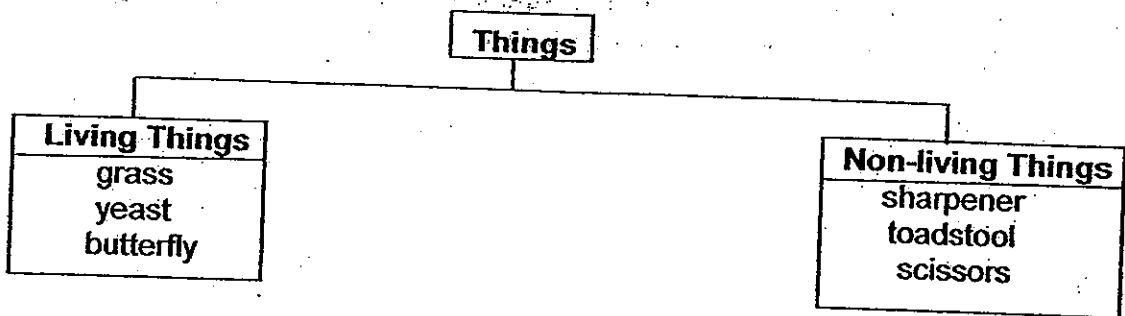
21. The diagram below shows a flask and a beaker of ice water.



What would happen when the flask is put into the ice water?

- (1) The air in the flask will expand.
- (2) The ink will move up the glass tubing.
- (3) The ink will move down the glass tubing.
- (4) The flask will contract quickly and then expand.

22. Charlene grouped some things as shown below.



Which one of the following is grouped wrongly?

- (1) grass
- (2) yeast
- (3) scissors
- (4) toadstool

23. Which of the following best describes a hamster and a spiny anteater?

| | Lays eggs | Body covered with hair | Eats other animals |
|---|-----------|------------------------|--------------------|
| A | No | No | No |
| B | No | Yes | No |
| C | Yes | No | Yes |
| D | Yes | Yes | Yes |

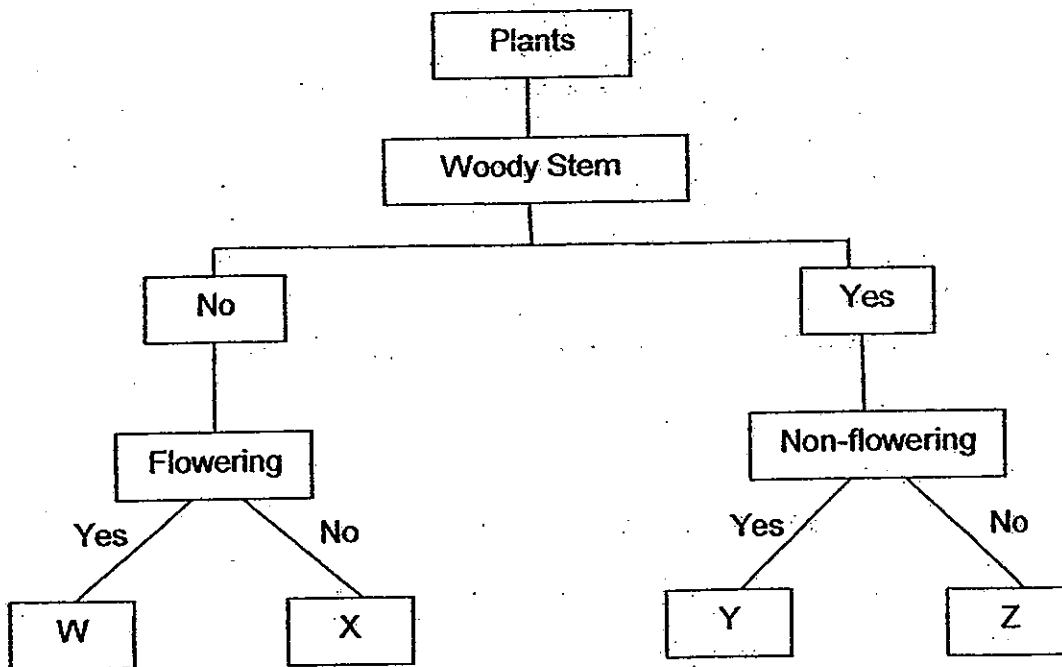
| | Hamster | Spiny anteater |
|-----|---------|----------------|
| (1) | A | B |
| (2) | B | C |
| (3) | B | D |
| (4) | C | A |

24. In what way are the leaves similar?



- (1) Both leaves are of the same size.
- (2) Both leaves are palm-shaped.
- (3) Both leaves have toothed edges.
- (4) Both leaves have smoothed edges.

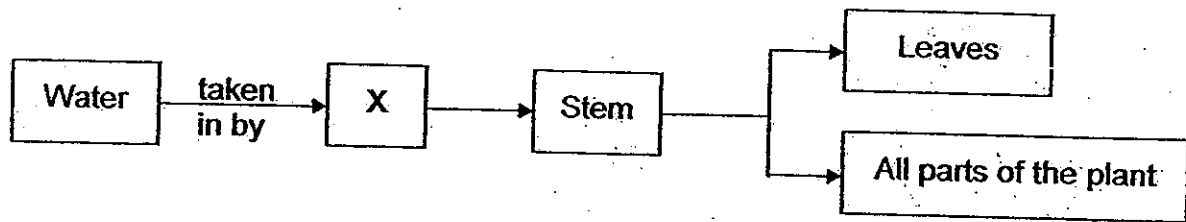
25. The chart below shows how plants can be classified.



Which one of the plants represents the hibiscus?

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

26. The diagram below shows how water is transported in plants.



Which one of the following best represents X?

- (1) Soil
- (2) Roots
- (3) Shoots
- (4) Flowers

27. Ryan placed two young plants of the same kind in different places. After a few days, plant X grew healthily while plant Y was dying.

The table below shows the living conditions of the plants.

| Plant | Type of soil | Amount of water given daily (ml) | Amount of fertiliser (g) | Location of the pot |
|-------|--------------|----------------------------------|--------------------------|---------------------|
| X | garden soil | 50 | 10 | In an open space |
| Y | garden soil | 50 | 10 | In the cupboard |

What can you conclude from the above information?

- (1) Plants need water to stay alive.
- (2) Plants need fertiliser to grow healthily.
- (3) Plant Y would grow better under the sun.
- (4) Plant X would grow healthier if it is put in the shade.

28. The table below provides some information on Organisms P and Q.

| Description | Organism P | Organism Q |
|---------------------------------|------------|------------|
| Lays eggs | yes | yes |
| Young resembles its parents | no | yes |
| No. of stages in its life cycle | 4 | 3 |

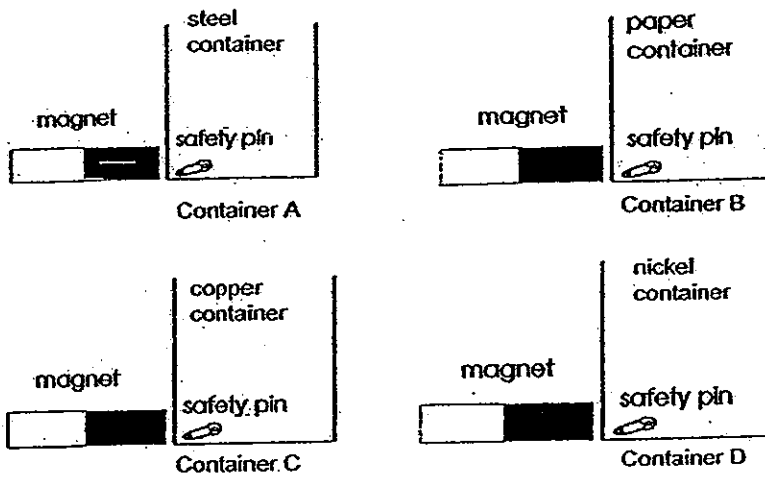
What could Organisms P and Q be?

| | Organism P | Organism Q |
|-----|------------|-------------|
| (1) | guppy | frog |
| (2) | butterfly | cockroach |
| (3) | dragonfly | grasshopper |
| (4) | hen | toad |

29. Johnny brought a caterpillar home from school one day. He feeds it with leaves everyday. After four days, the caterpillar changes into a/an _____ and _____

- (1) larva; moults
- (2) adult; flies away
- (3) larva; stops feeding
- (4) pupa; stops feeding

30. An iron safety pin is placed in containers A, B, C and D which are made of different materials. Linda wants to find out which container will enable her to retrieve the iron safety pin by sliding a magnet upwards along the side of the container. The thickness of each container is the same and the same magnet is used for each of the containers as shown below.



Which of the container(s) will NOT enable Linda to retrieve the safety pin using the magnet?

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

Case: 17-13183 Date Filed: 08/21/2018 Page: 1 of 1

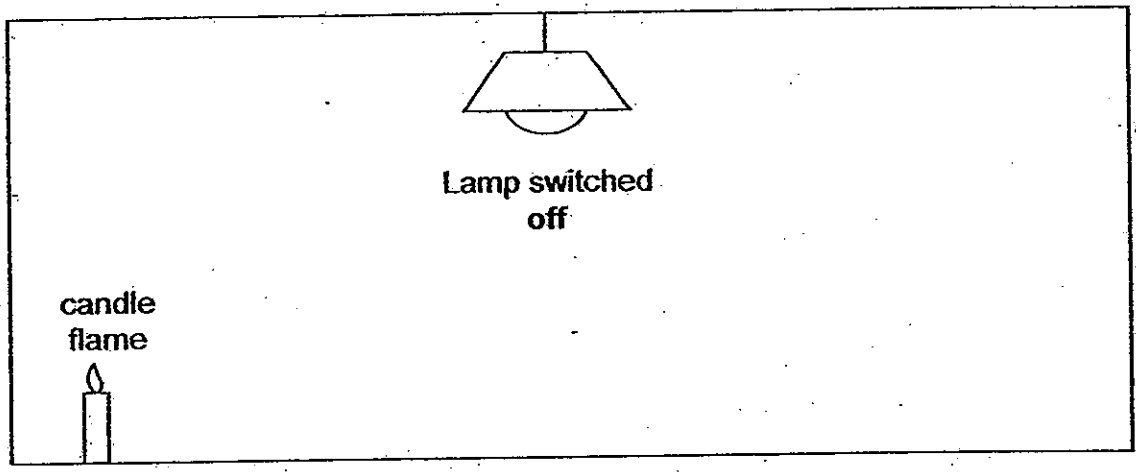
Case No. 17-13183
Date Filed: 08/21/2018
Page: 1 of 1

Name: _____ ()
Class P4

Section B: 40 marks

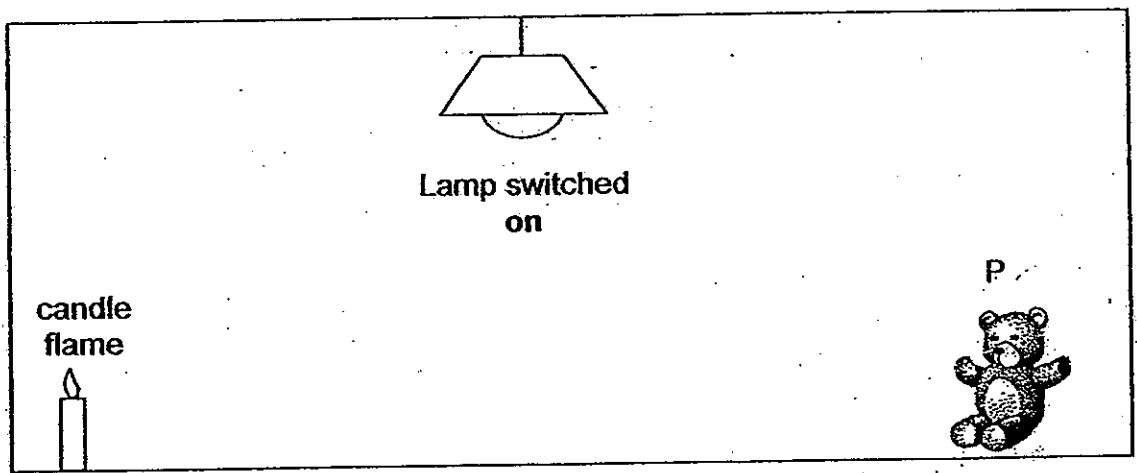
Read the questions carefully and write down your answers in the spaces provided.

31. Celine sees **only** a candle flame at a corner when she enters a completely dark room.

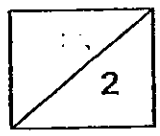


(a) Celine can see the candle flame because it _____ light. [1]

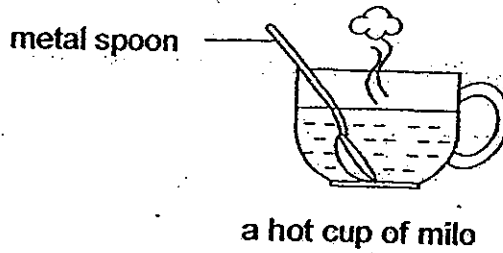
When she switches on the light in the room, she sees both the candle flame and object P.



(b) Celine can see object P because it _____ light from the lamp. [1]



32. Randy places a metal spoon in a cup of hot milo.

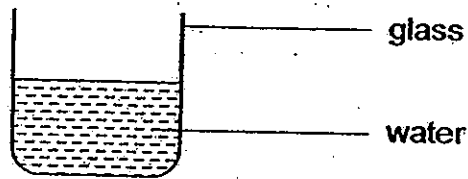


The spoon becomes hotter after a while.

(a) The metal spoon _____ heat from the hot milo. [1]

(b) The hot milo loses heat to the _____. [1]

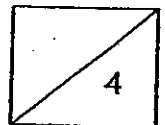
33. The diagram below shows a glass of water.



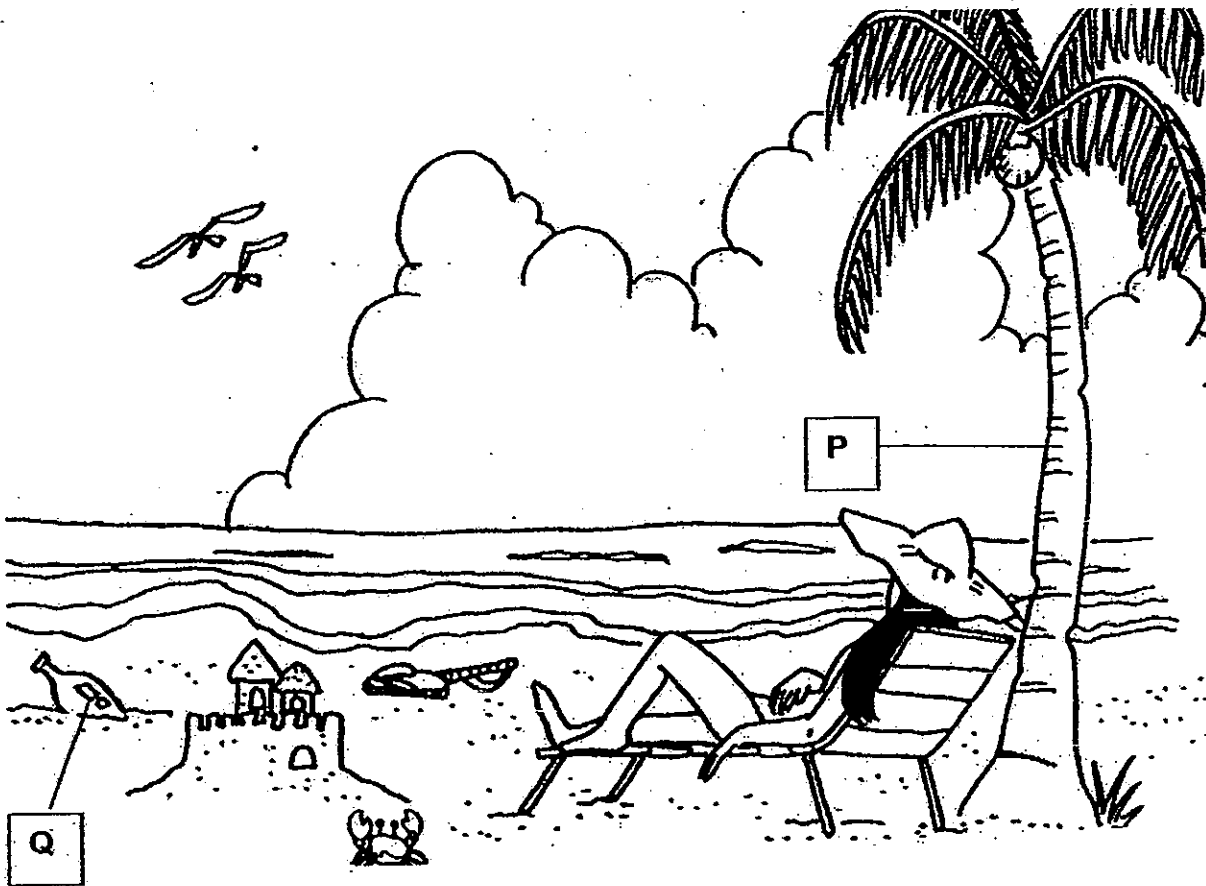
Complete the sentences to state if the parts are solid, liquid or gas.

(a) The glass is a _____. [1]

(b) Water is a _____. [1]



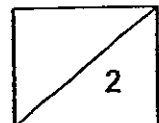
34. Nicholas saw some living and non-living things on the beach.



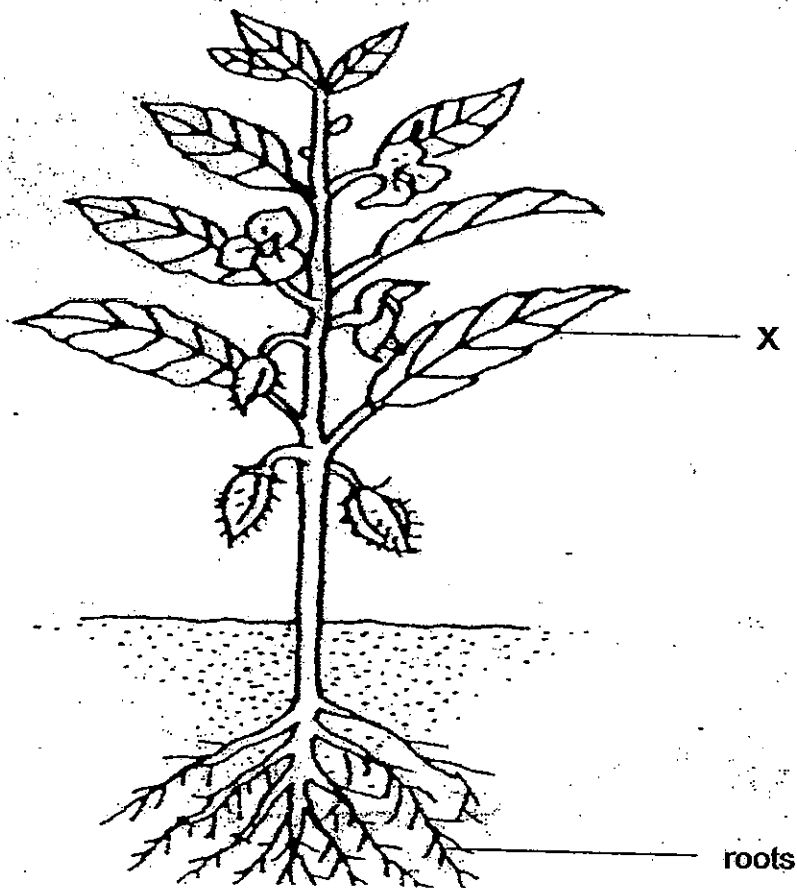
State if P and Q are living or non-living things

(a) P is a _____ [1]

(b) Q is a _____ [1]



35. The diagram shows a plant.

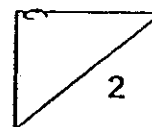


(a) What is plant part X?

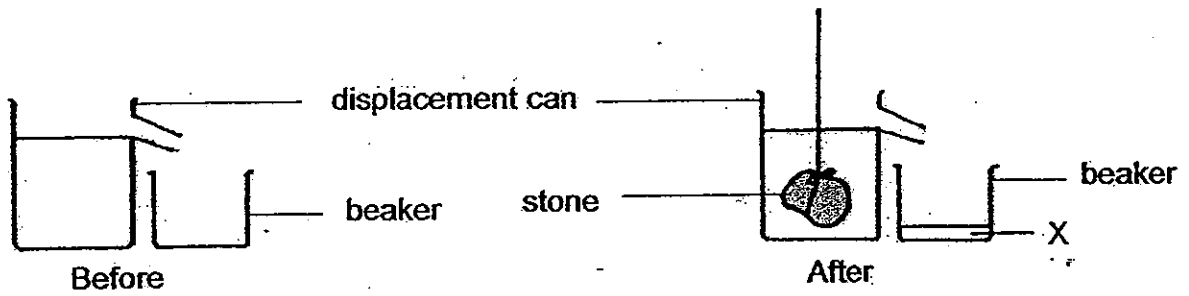
X: _____

[1]

(b) One substance that the roots of plant take in from the soil is _____ [1]



36. Steve carried out an experiment as shown in the diagram below. When he lowered a stone into the displacement can, some water was collected in the empty beaker. This amount of water was labeled as X.

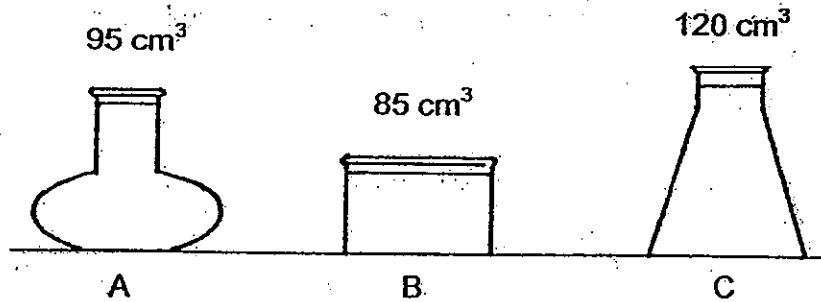


- (a) What can Steve find out about the stone from X? [1]

- (b) What will happen to X if the stone that was put into the displacement can was bigger? [1]

- (c) What property does the stone have based on Steve's observation of the above experiment? [1]

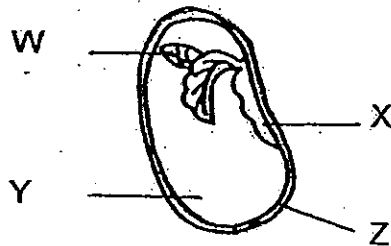
37. Mr Sami put three containers of different volumes A, B and C on the table as shown below.



(a) In which container(s) can Mr Sami pump 120 cm^3 of air into? [1]

(b) Give a reason for your answer in (a). [1]

38. The diagram below shows the parts of a seed.



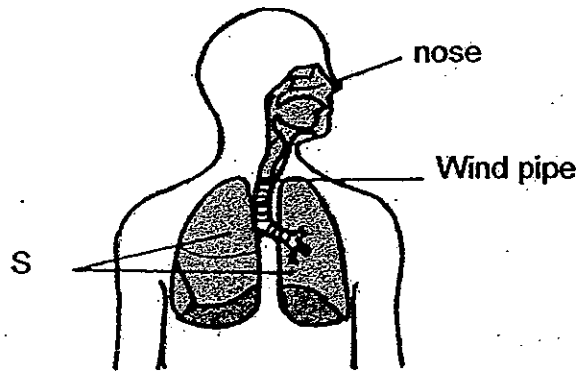
(a) Which part of the seed W, X, Y or Z does the developing seed first get its food? [1]

(b) Name two conditions that are necessary for the germination of the seed. [1]

(i) _____

(ii) _____

39. The diagram below shows the human respiratory system.

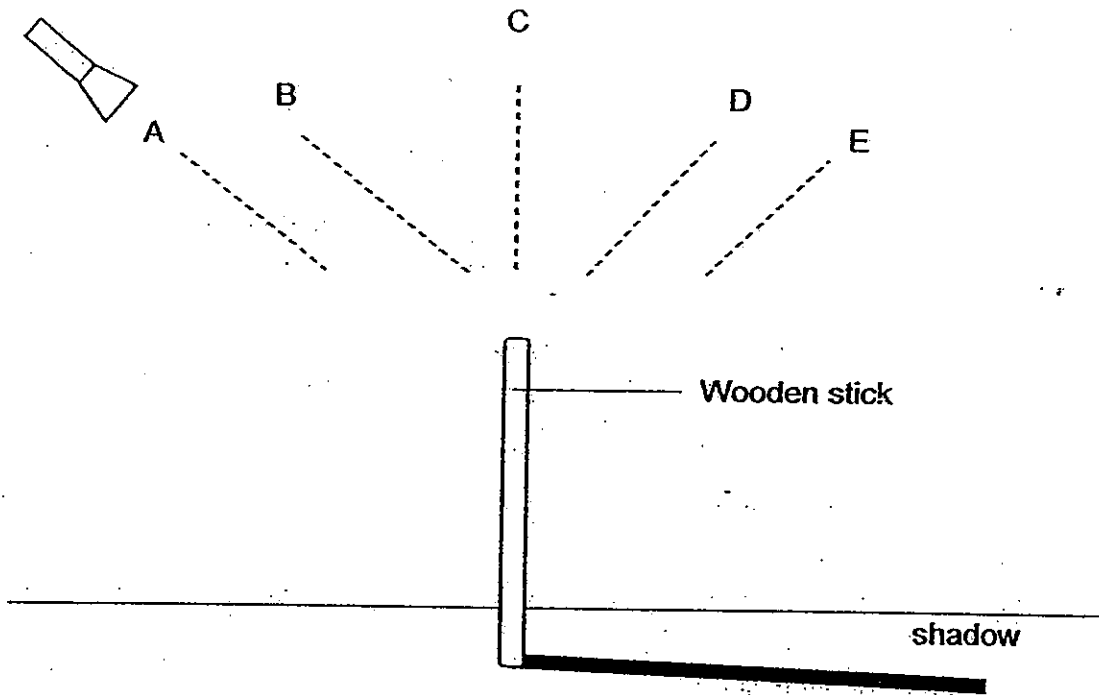


(a) Name the part labelled S in the diagram. [1]

(b) What is the function of part S? [2]

(c) The human circulatory system works closely with the respiratory system. Describe what the circulatory system does when it works with the respiratory system. [2]

40. Mr Lee set up an experiment as shown in the diagram below. He shone a torch at an upright wooden stick from positions A, B, C, D and E, one at a time.

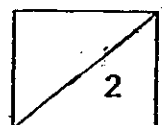


Then he recorded the length of the shadow formed at each position in the table below.

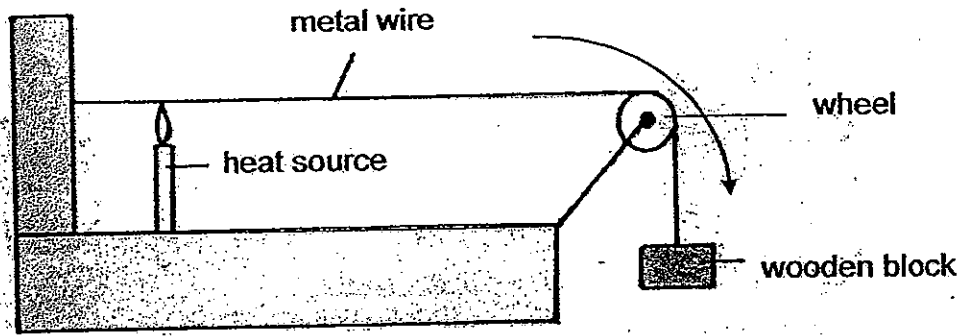
| Position of Torch | Length of shadow (cm) |
|-------------------|-----------------------|
| A | 50 |
| B | 38 |
| C | 25 |
| D | 39 |
| E | 51 |

- (a) Based on Mr Lee's results, what happened to the length of the shadow when the position of the torch was changed from positions A to C? [1]

- (b) Why was a shadow formed? [1]



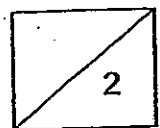
41. Xiao Fen set up an experiment as shown in the diagram below.



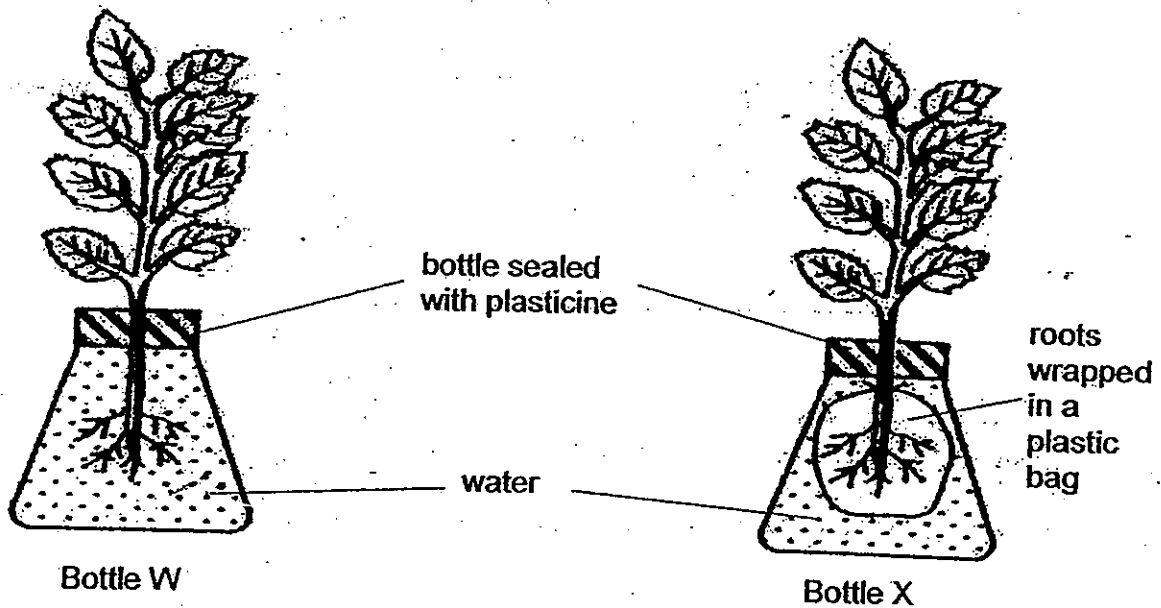
The metal wire was heated for 40 minutes and after that, Xiao Fen observed that the wooden block moved in the direction of the arrow as shown above.

(a) How does heating the metal wire cause the movement of the wooden block? [1]

(b) What would happen to the wooden block if the heat source was removed from under the metal wire for 20 minutes? [1]



42. Elaine and Sarah carried out an experiment on the plants as shown below. They observed the water level in both bottles daily.



(a) Why did they seal the bottles with plasticine?

[1]

(b) After a few days, what happened to the water level in Bottle W? Give a reason for this.

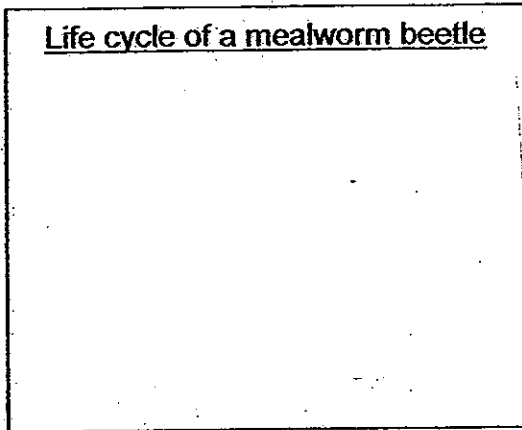
[2]

(c) What will happen to the water level in Bottle X after a few days? Explain your answer.

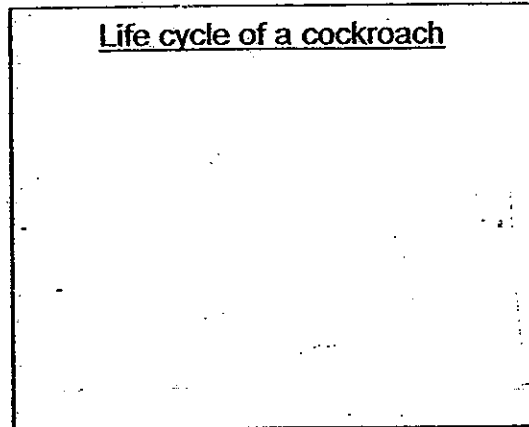
[2]

43(a). Draw and name the stages of the life cycle of a mealworm beetle and a cockroach. (Do not draw the pictures of the animals). [2]

Life cycle of a mealworm beetle



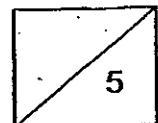
Life cycle of a cockroach



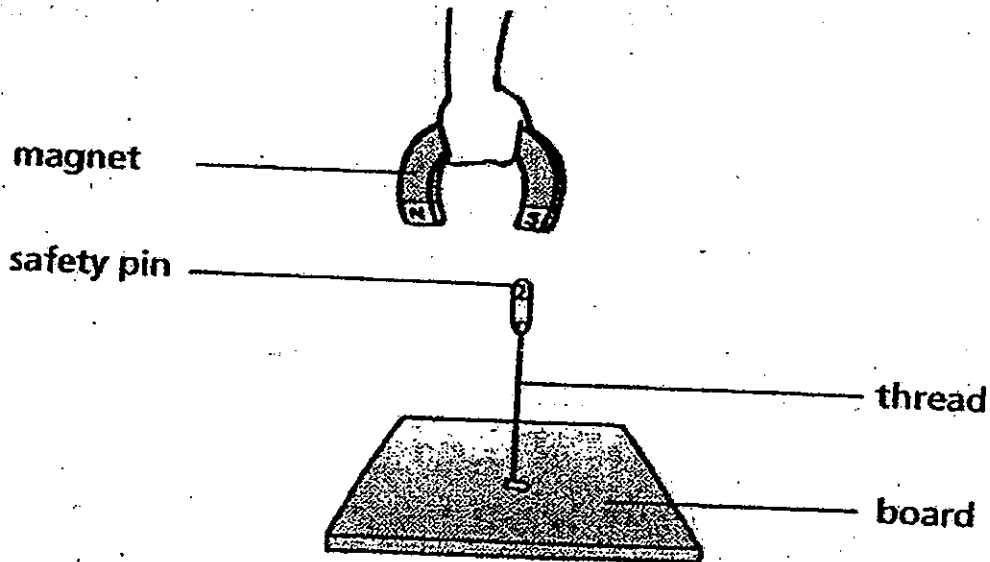
(b) (i) State one similarity between the life cycle of the mealworm beetle and that of a cockroach. [1]

(ii) State one difference between the life cycle of the mealworm beetle and that of a cockroach. [1]

(c) Give another example of an animal that has the same life cycle as the mealworm beetle. [1]



44. Patrick set up an experiment as shown below.



(a) What do you think will happen if a piece of drawing paper is placed between the magnet and the safety pin?

[1]

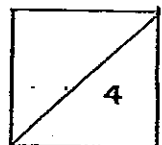
(b) Give a reason for your answer in (a).

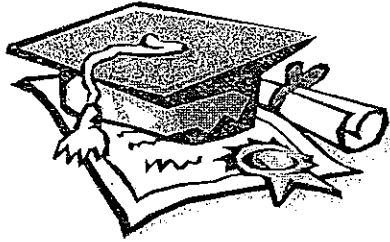
[2]

(c) What will happen if the board is moved away from the magnet? Explain your answer.

[1]

End of Paper



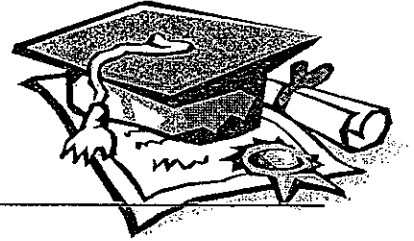


ANSWER SHEET

EXAM PAPER 2010

**SCHOOL : AITONG PRIMARY
SUBJECT : PRIMARY 4 SCIENCE**

TERM : SA2



| | | | | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 | Q16 | Q17 |
| 2 | 3 | 2 | 3 | 3 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 |

| | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Q18 | Q19 | Q20 | Q21 | Q22 | Q23 | Q24 | Q25 | Q26 | Q27 | Q28 | Q29 | Q30 |
| 3 | 2 | 4 | 3 | 4 | 3 | 3 | 4 | 2 | 3 | 2 | 4 | 2 |

31)a) gives off b) reflects

32)a) gains b) metal spoon

33)a) solid b) liquid

34)a) living things b) non-living things

35)a) Leaves b) Water

36)a) He can find out stone's volume from X.
b) X will increase
c) the stone occupies space

37)a) A, B, C
b) Air has no definite shape and can be compressed.

38)a) plant Y
b) i) warmth ii) moisture

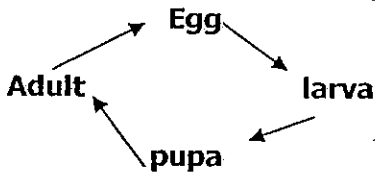
39)a) Lungs
b) They take in O₂ from the air and remove carbon dioxide from the body.
c) It moves O₂ to all parts of the body and removes carbon dioxide from the body to the lungs to be removed.

40)a) The shadow became shorter.
b) Light cannot pass through the wooden stick.

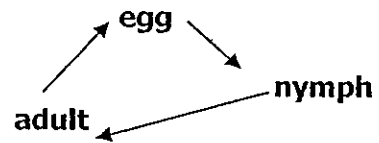
41)a) The metal wire expanded, became longer.
b) The wooden block will move up a bit.

- 42)a) To stop the H₂O from evaporating to make sure that it is a fair test.
 b) The H₂O level in bottle W will decrease. The roots of the plant in bottle W take in water.
 c) The water level will stay the same. The roots of the plant in bottle X are wrapped in a plastic bag so it can't absorb H₂O.

43)a) Life cycle of a mealworm



Life cycle of a cockroach



- b)i) They both have an egg stage.
 ii) The life cycle of a mealworm beetle has four stages while the life of a cockroach has three stages.
 c) Butterfly.

- 44)a) The safety pin will still be suspended in the air.
 b) Magnetism can still pass through non-magnetic materials like paper.
 c) The safety pin will fall onto the board. The magnetism of a magnet cannot reach the safety pin from a long distance.