



**AI TONG SCHOOL**

**2010 SEMESTRAL ASSESSMENT (1)**

**PRIMARY FOUR SCIENCE**

**DURATION : 1hr 45 min**

**DATE: 13<sup>th</sup> MAY 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 :**

<b>Practical Assessment</b>	<b>15</b>
<b>Written Assessment</b>	<b>85</b>
<b>Total</b>	<b>100</b>

**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 of the following properties are common to solids, liquids and gases?

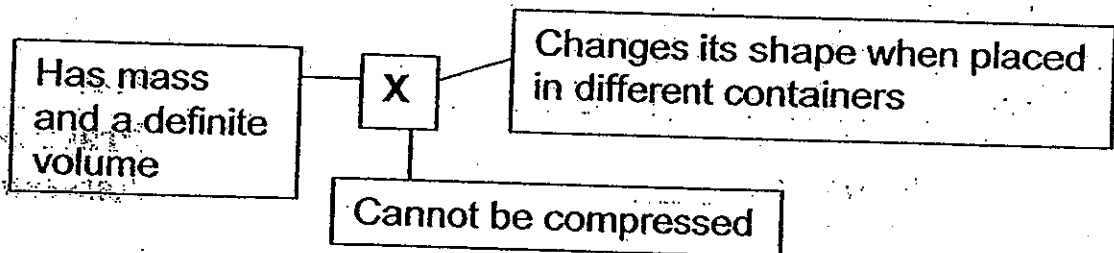
- A Have mass
- B Occupy space
- C Can be compressed
- D Have definite shape and volume

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

2. Which one of the following groups consists of a solid, a liquid and a gas?

- (1) Book, water, heat
- (2) Plasticine, oil, oxygen
- (3) Cup, ice, carbon dioxide
- (4) Honey, fruit juice, shadow

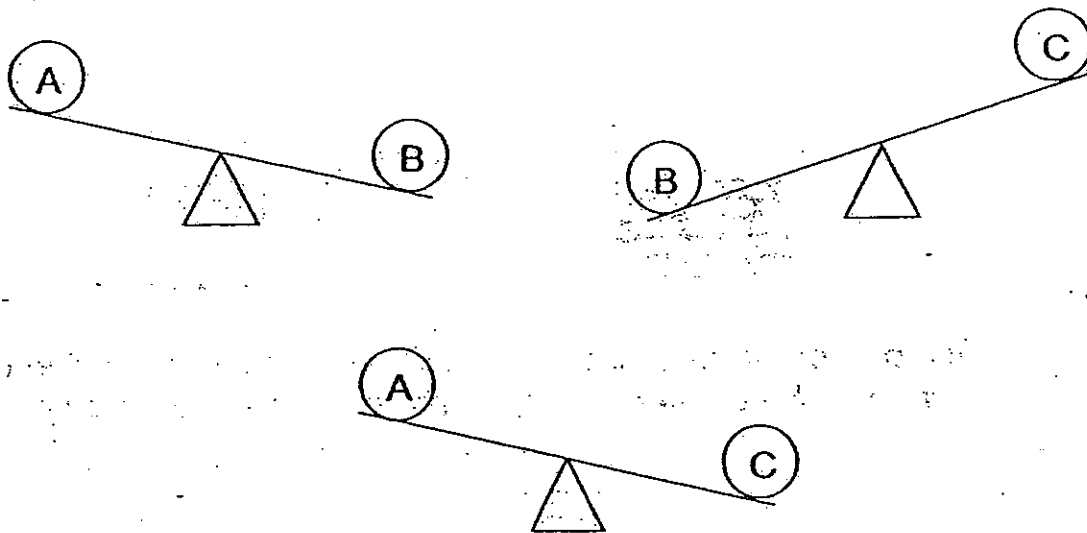
3. The diagram below shows some properties of X.



Which one of the following is X most likely to be?

- (1) Air
- (2) Syrup
- (3) Marble
- (4) Balloon

4. Lily compared the masses of 3 objects, A, B and C on balances as shown below.



Arrange the objects according to their masses from the lightest to the heaviest.

- (1) A, B, C
  - (2) B, C, A
  - (3) C, A, B
  - (4) A, C, B
5. A ball is fully pumped with  $250 \text{ cm}^3$  of air. Jerry pumps another  $50 \text{ cm}^3$  of air into the ball. What is the volume of the air in the ball now?
- (1)  $50 \text{ cm}^3$
  - (2)  $200 \text{ cm}^3$
  - (3)  $250 \text{ cm}^3$
  - (4)  $300 \text{ cm}^3$

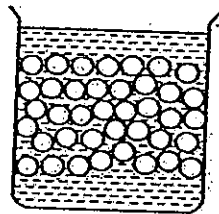
6

The diagram below shows 2 beakers of the same size. One beaker contains glass marbles while the other contains some water as shown in the diagram below.

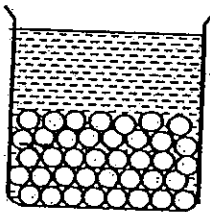


Which one of the following set-ups shows what can be observed when the water in the beaker is poured into the beaker of glass marbles?

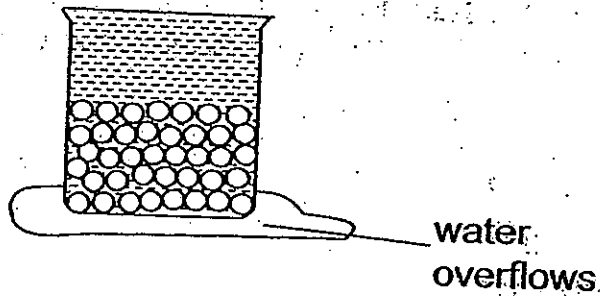
(1)



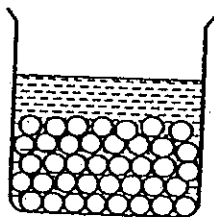
(2)



(3)



(4)

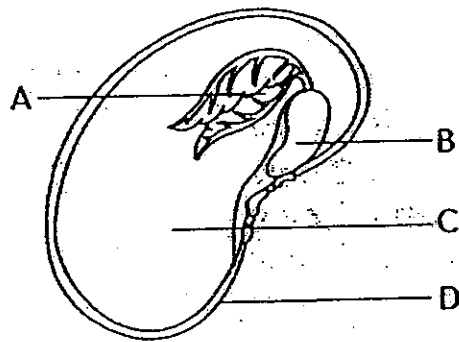


7. As a seedling grows, changes happen to its seed leaves.

Which one of the following correctly states what happens to the seed leaves?

- (1) They shrivel and drop off.
- (2) They develop into green leaves.
- (3) They grow bigger and begin to make food.
- (4) They develop into shoots of the young plant.

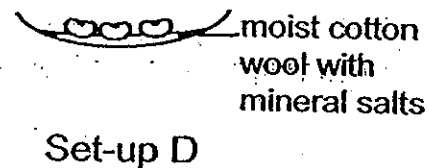
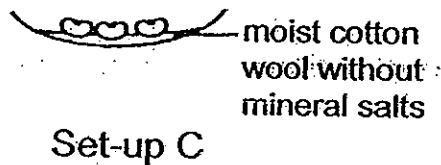
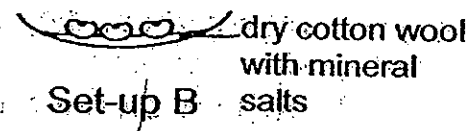
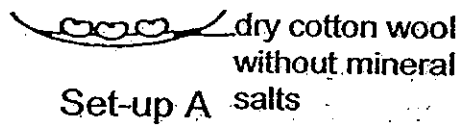
8. The diagram below shows a seed which has been cut open.



Which one of the parts A, B, C and D protects the seed?

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

9. Christina wanted to find out if mineral salts are needed for seeds to germinate. Which two of the following set-ups should she use to carry out a fair test?



- (1) Set-ups A and B only  
(2) Set-ups A and C only  
(3) Set-ups B and D only  
(4) Set-ups C and D only
10. The table below shows the growth of some bean seeds planted in a pot of soil by Aman.

No. of days	Height (cm)
Day 1	0
Day 2	0
Day 3	0

Which one of the following could explain the results shown in the table above?

- (1) Aman did not water the bean seeds.  
(2) Aman did not add fertiliser to the soil.  
(3) Aman left the pot of bean seeds in a sunny place.  
(4) Aman placed the pot of bean seeds in a cupboard.

11. Which of the following statements about plants are true?

- A: All plants reproduce from seeds.
- B: Some plants can reproduce from plant parts other than seeds.
- C: Different plant seeds take different number of days to germinate.
- D: The time between the different stages of the life cycle of different plants is the same.

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

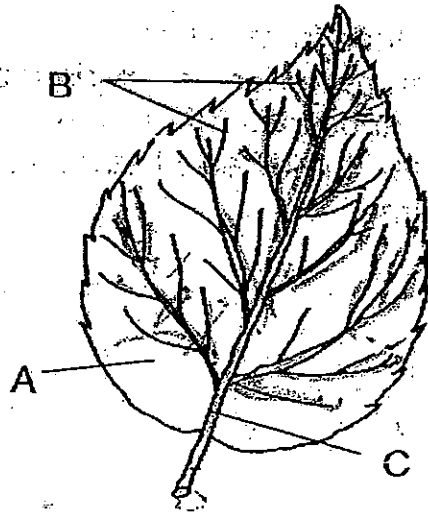
12. The following statements give the function of various plant parts.

- A. Stems hold the plant upright.
- B. Leaves trap sunlight and make food for the plant.
- C. Roots absorb water and oxygen for the rest of the plant.
- D. Flowers hold the leaves up to enable them to get enough sunlight.

Which of the statement(s) is/are false?

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

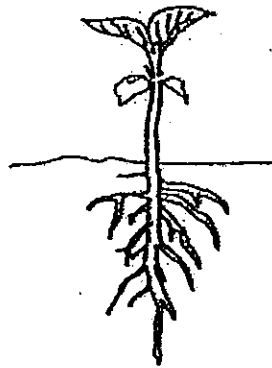
13. The diagram below shows a leaf with its parts labelled A, B and C.



Which of the parts help in the transportation of food and water?

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

14. The diagram below shows a young plant.

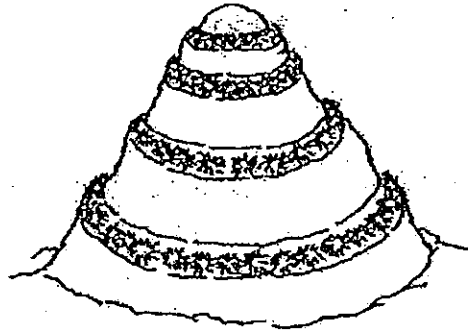


Which one of the following statements about the young plant at this stage of its life cycle is correct?

- (1) It is now able to reproduce.
- (2) It can start to make its own food.
- (3) It depends only on its seed leaves for food.
- (4) It does not depend on its roots to take in water.



15. During a drive around a countryside, Douglas noticed that steps were cut into some slopes and grass was planted on them. His father told him that this helps to prevent soil erosion and even if rainwater flows down the slopes, the soil will not be washed away.



Which one of the following is the reason for the explanation that Douglas' father gave?

- (1) The grass on the slope collects all rainwater.
  - (2) The roots of the grass hold the soil together.
  - (3) The roots take in water and mineral salts more easily.
  - (4) The grass makes food providing energy for it to stay on the slope.
16. Jane placed two guppies in a tank. She added an oxygen pump to provide air for the guppies. However, after a week, she found that the guppies still died.

What could have happened?

- (1) The guppies fought.
- (2) No food was given to the guppies.
- (3) There was not enough water for the guppies.
- (4) The guppies were not placed in a sunny place.

17. Only some living things \_\_\_\_\_

- (1) can grow
- (2) respond to stimuli
- (3) need water and air
- (4) can make their own food

18. The pictures below show 2 different objects.



Clay statue



Porcelain vase

Which one of the following statements is not true of the objects shown above?

- (1) They sink in water.
- (2) They cannot be bent.
- (3) They are made of opaque materials.
- (4) They are made of man-made materials.

19. Anna was blindfolded and instructed to hold and feel an object. She commented, "It is light, smooth and round."

Which one of the following is most likely to be the object that Anna was given?

- (1) an apple
- (2) a sponge
- (3) a dictionary
- (4) a mobile phone

20. The following table shows the properties of 4 materials, A, B, C and D.

Material	Is it strong?	Is it light?	Is it waterproof?	Is it hard?
A	Yes	Yes	Yes	Yes
B	Yes	No	No	No
C	No	No	Yes	No
D	Yes	Yes	No	No

Which material would be the most suitable in making the outer casing of a mobile phone?

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

21. Mother went to the supermarket and bought some groceries. She wanted to ensure that she could carry them home in bags that satisfy the following conditions:

- Waterproof
- Do not tear easily
- Can be easily folded

Which one of the following materials should Mother's bags be made of?

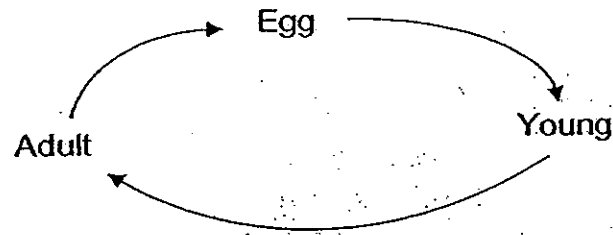
- (1) Paper
- (2) Plastic
- (3) Cotton
- (4) Styrofoam

22. The statements below were made about the life cycle of a butterfly. Which of the following statements are true?

- A The pupa is always eating and it grows rapidly.
- B A butterfly has wings in its larva and adult stages.
- C The larva moults several times before changing into a pupa.
- D A female butterfly usually lays its eggs on the underside of a leaf.

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

23. There are three stages in the life cycle of Animal X as shown in the diagram below.

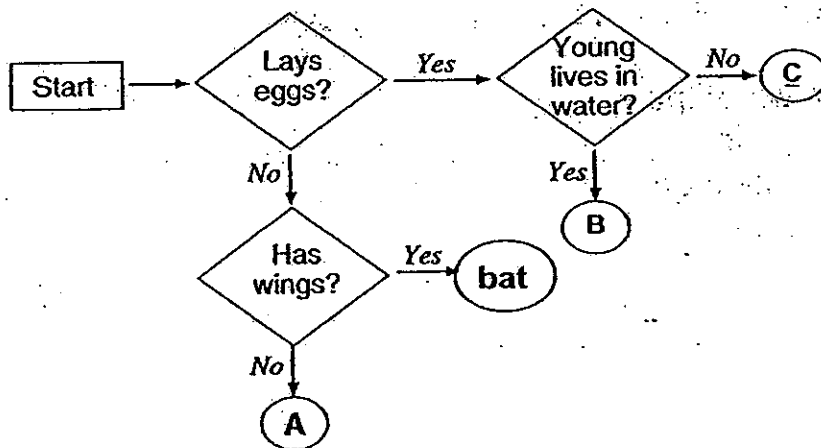


Which of the following could Animal X be?

- A Moth
- B Mosquito
- C Eagle
- D Dragonfly

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

24. The flow chart below shows the characteristics of Animals A, B and C.



Which one of the following animals could be placed at A, B and C?

	A	B	C
(1)	dog	moth	bird
(2)	horse ✓	frog ✓	cockroach /
(3)	shark	toad ✓	crocodile
(4)	guppy	dragonfly ✓	squirrel

25. James, Jonathan and Jacob made the following comparisons between the life cycle of a human and a frog.

Name of boy	Comparison	Human	Frog
James	Develops from fertilised eggs	Yes	Yes
Jonathan	Young resembles the adult	Yes	No
Jacob	Uses lungs to breathe throughout its life cycle.	Yes	No

Who made a correct comparison?

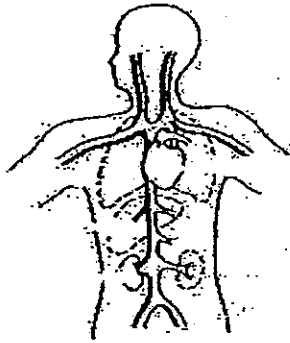
- (1) James and Jacob only
- (2) Jonathan and Jacob only
- (3) James and Jonathan only
- (4) James, Jonathan and Jacob

26. Which one of the following is not found in the human digestive system?

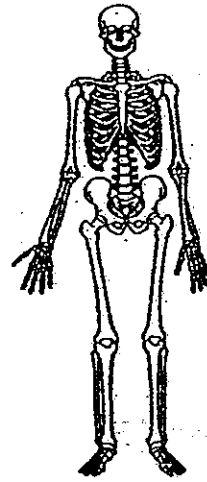
- (1) windpipe
- (2) gullet
- (3) stomach
- (4) anus

27. Which one of the following systems gives our body its shape and protects the important organs inside it?

(1)



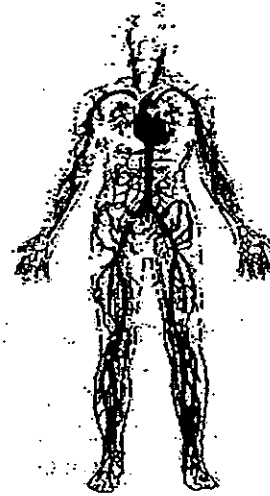
(2)



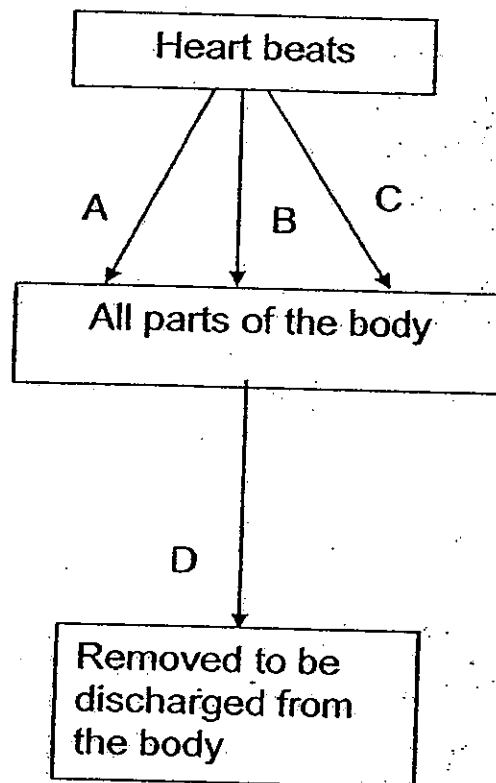
(3)



(4)



28. The diagram below shows the circulatory system when the heart beats. A, B, C and D represent materials carried by the blood.



Which of the following correctly represent A, B, C and D?

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
(1)	food	water	carbon dioxide	nutrients
(2)	water	oxygen	nutrients	wastes
(3)	oxygen	carbon dioxide	food	water
(4)	wastes	food	water	carbon dioxide

29. Which one of the following in the human body system has a similar function to the tubes in a stem that transports water from the roots to different parts of a plant?

- (1) mouth
- (2) lungs
- (3) blood vessels
- (4) small intestine



30. Which of the following human body systems are working together when a person is swimming?

- A Respiratory system
- B Circulatory system
- C Muscular system

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

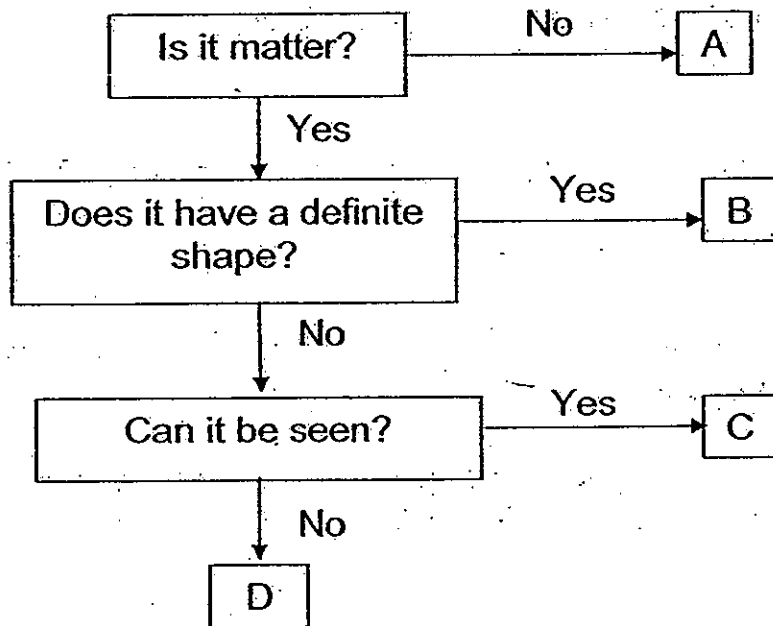
Name: \_\_\_\_\_ ( )

Class: P4 ( )

**Section B: 25 marks**

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

31. The flow chart below classifies 4 things, A, B, C and D according to their properties.



Match the words 'ball', 'wind', 'electricity' and 'tea' correctly to the letters A, B, C and D.

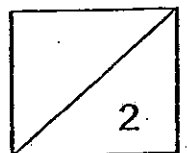
[2]

A: \_\_\_\_\_

B: \_\_\_\_\_

C: \_\_\_\_\_

D: \_\_\_\_\_



32. A round ball of plasticine was pressed until it became flat. Alex and Bill made comments about the plasticine after it was pressed.

Alex said, "The size of the plasticine has changed."

Bill said, "The shape of the plasticine has changed."

(a) Which child made the correct statement?

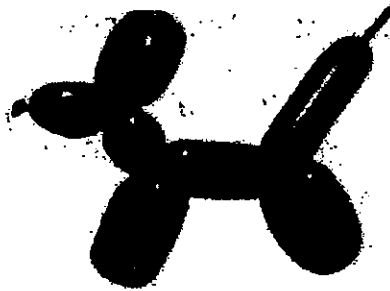
[1]

(b) Write down one other property of the plasticine that remained the same.

[1]

33. Carrie went to a funfair and saw a clown twisting a balloon into the shape of a dog as shown below.

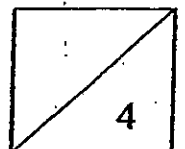
She exclaimed, "Wow! How is that possible?" The clown replied, "The balloon that I'm using is very flexible."



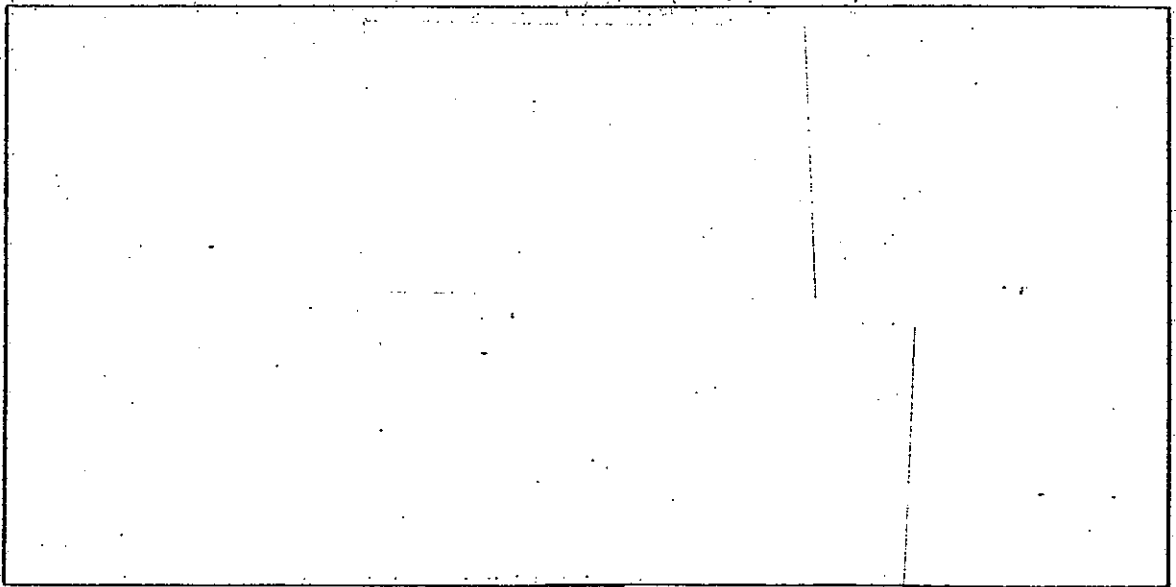
Besides the flexibility of the balloon, state two properties of air which allow the clown to twist the balloon into the shape shown above. [2]

i) \_\_\_\_\_

ii) \_\_\_\_\_



- 34 (a) In the box below, draw a diagram to show the life cycle of a green bean plant by writing the different stages and connecting them in order using arrows. [1]



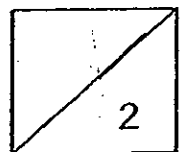
- (b) Celina put some green bean seeds in a container with moist cotton wool and placed it in her cupboard. After three days, she was surprised that her green beans had germinated even though there was no light in her cupboard.

Explain why light is not required for germination. [1]

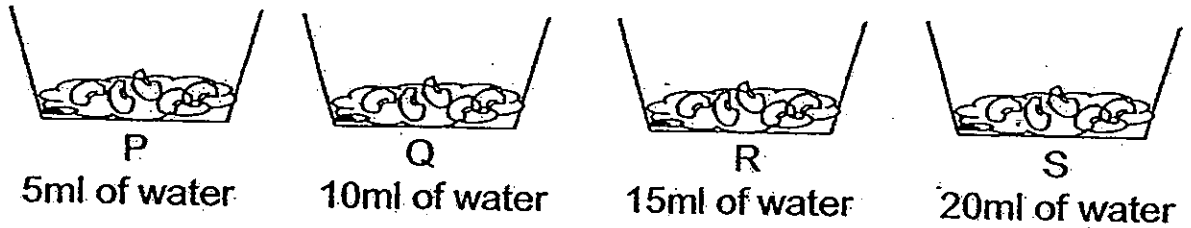
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35. Sue placed five kidney beans on top of moist cotton wool in containers P, Q, R and S. Each container contained the same amount of the same type of cotton wool. She placed all the containers at the same spot in her garden but watered them every day with different amounts of water. She then took note of the number of days each bean took to germinate.



(a) What do you think was the aim of Sue's experiment? [1]

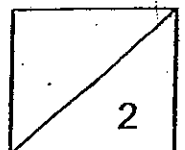
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(b) How would Sue know that a seed had germinated? [1]

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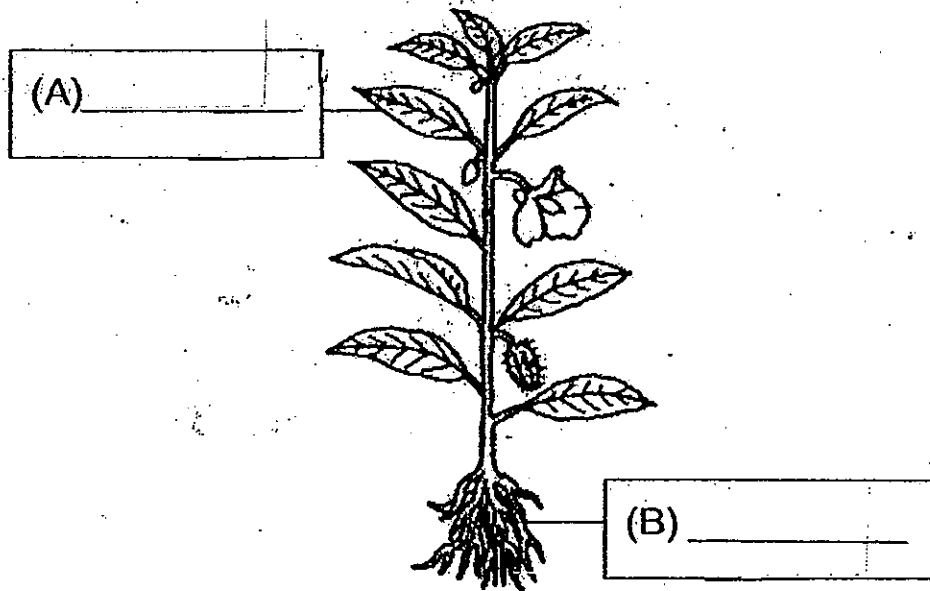
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36. The diagram below shows a plant.

(a) Write the parts of the plant in the boxes provided.

[1]



(b) Part A of the plant above carries out an important function for the plant. Part B helps Part A carry out this function.

(i) What is the function of Part A?

[1/2]

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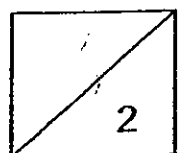
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(ii) How does Part B help Part A carry out this function?

[1/2]

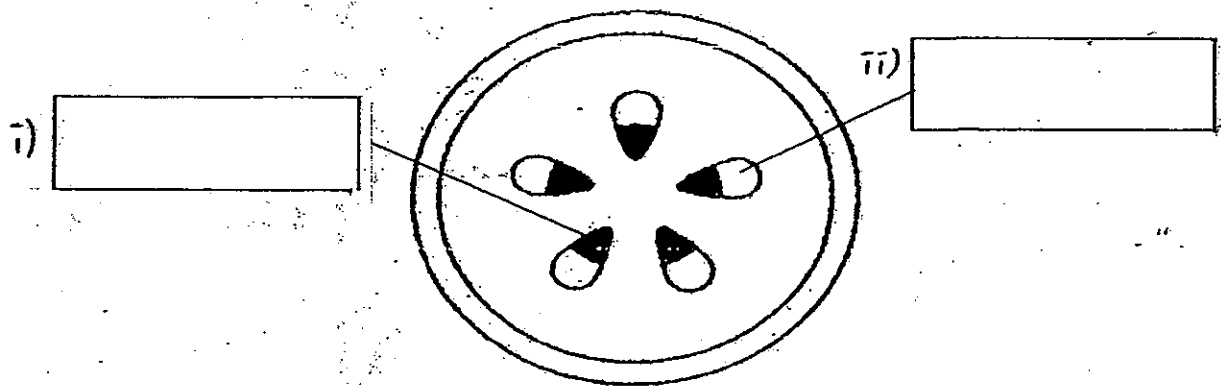
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37. Paul placed the roots of Plant A into a beaker filled with red-coloured water. After a few hours, he cut the stem of the plant and noticed that parts of the cut surface of the stem were stained red.

- (a) The diagram below shows the cross-section of the stem and the parts which were stained red have been shaded. Put the labels "water-carrying tube" and "food-carrying tube" in the correct boxes below. [2]



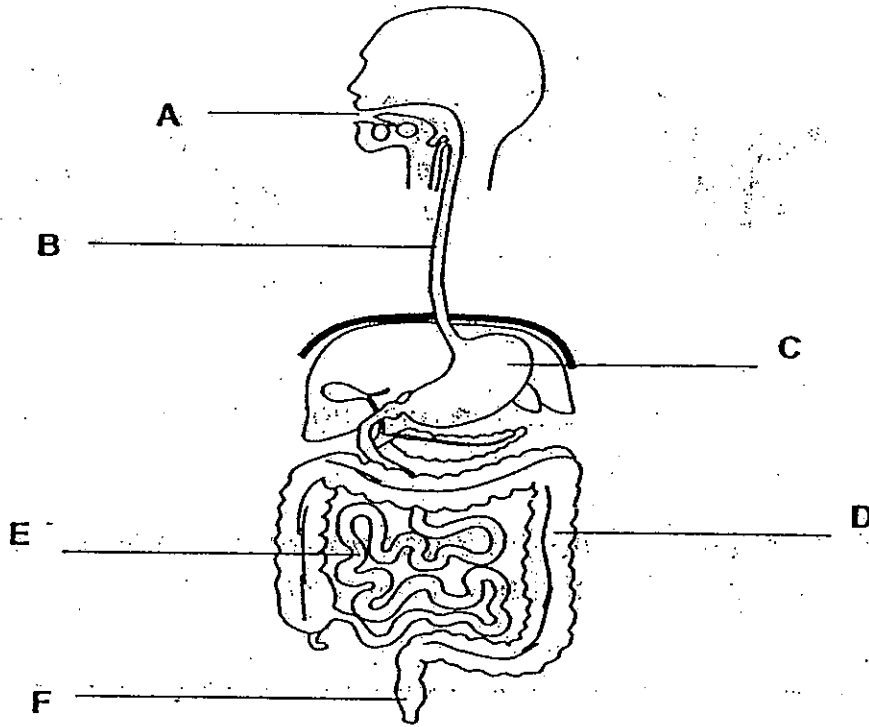
Cross-section of stem

- (b) Where do the water-carrying tubes in the stem carry the water to? [1]

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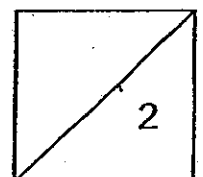
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38. The diagram below shows the human digestive system.



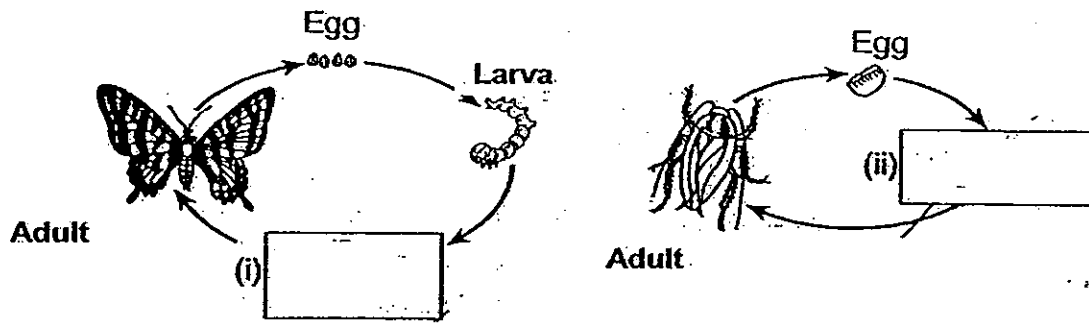
Read the statements below. Choose from the letters A – F and write your answers in the spaces provided. [2]

- (a) Food is moved down this passageway to the body here.
- (b) Food is broken down into a soupy liquid by digestive juices here.
- (c) Food is completely digested and absorbed into the blood vessels here.
- (d) Waste leaves the body here.





39. The diagrams below show the life cycles of a butterfly and a cockroach.



- (a) Write the names of the missing stages in the boxes provided. [1]
- (b) By observing the diagrams above only, state one difference between the life cycles of the two animals above. [1]

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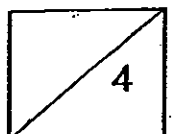
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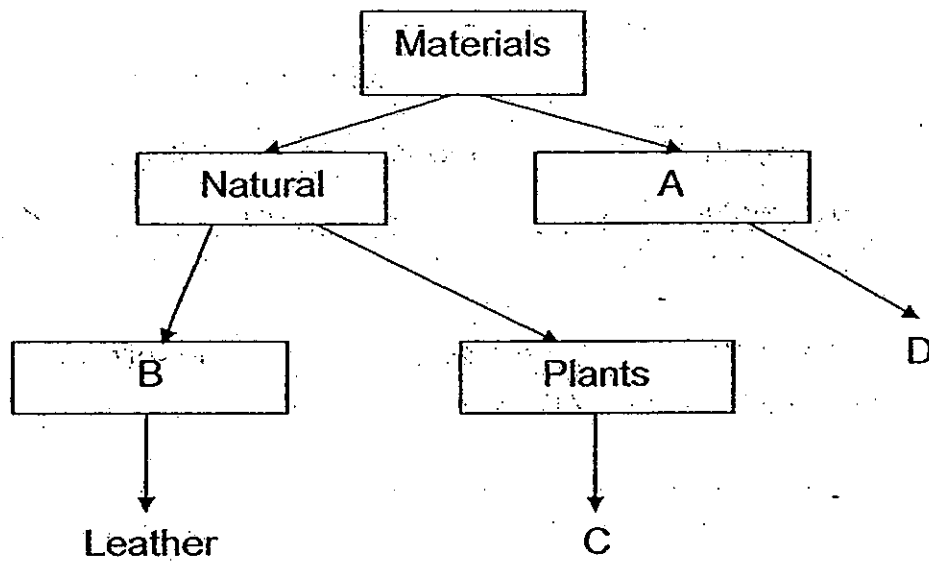
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40. The following statements are about the life cycle of a chicken and a frog. Write 'T' in the boxes provided for each statement that is true and 'F' for each statement that is false. [2]

Statements	'T' or 'F'
(a) The tadpole has a tail and breathes through its lungs.	
(b) The frog's eggs are covered in a jelly-like coating that is not very tasty.	
(c) Both the chicken's eggs and the frog's eggs need to be kept warm in order for them to hatch.	
(d) There is a store of food in the chicken's egg for the young chick to feed on before it is born.	



41. Study the following flowchart which classifies materials according to their properties:



Write down what each of the following letters represents.

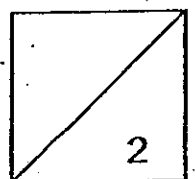
[2]

(a) A: \_\_\_\_\_

(b) B: \_\_\_\_\_

(c) C: \_\_\_\_\_

(d) D: \_\_\_\_\_



42. The table below shows how some living things have been classified.

a) Fill in the blanks with suitable headings for groups X and Y. [1]

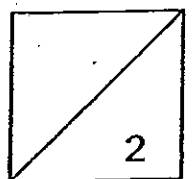
Living Things			
Group W <u>Animals</u>	Group X (i) _____	Group Y (ii) _____	Group Z <u>Bacteria</u>
goldfish dogs	hibiscus bird's nest fern	mushroom yeast	Salmonella E. coli

b) What can the living things in Group X do that the living things in the other groups cannot? [1]

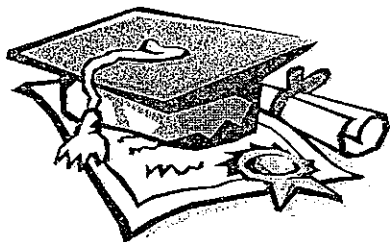
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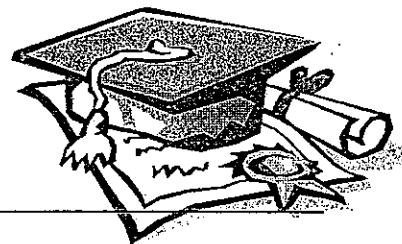


# ANSWER SHEET

## EXAM PAPER 2010

SCHOOL : AITONG PRIMARY  
SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1



Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
1	2	2	4	3	4	1	4	4	1	2	3	4	2	2	2	4

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	1	1	2	2	4	2	4	1	2	2	3	4

31)A: electricity      B: ball      C: tea      D: wind

32)a)Bill made the correct statement.  
b)The mass of the plasticine remained the same.

33)i)Air has no definite shape.  
ii)Air has no definite volume.

34)a)

```
graph TD
    seed --> adult_plant[adult plant]
    seed --> young_plant[young plant]
    young_plant --> adult_plant
```

b)A seed relies on its seed leaves for food and does not make food so sunlight is not needed.

35)a)The aim of Sue's experiment is to find out if the amount of water affects the time of germinate of the kidney beans.

b)Sue would know that a seed had germinated by looking at if the roots of the young plant has came out.

36)a)A: leaves      B: roots

b)i)The function of part A is it trap sunlight to make food for the plant.  
ii)Part B absorbs water and mineral salts, water is required for Part A to make food in the present of sunlight.

37)a)i)water-carrying tube      ii)food-carrying tube  
b)The water-carrying tubes carry the water to all parts of the plant.

38)a)B    b)C    c)E    d)F

39)a)i)Pupa      ii)Nymph

b)The life cycle of a butterfly has four stages but the life cycle of a cockroach has four stages.

40)a)F   b)T   c)F   d)T

41)a)Man-made      b)Animals      c)cotton      d)Glass

42)a)i)Plants      ii)Fungi

b)The living things in Group X can made their own food but the living in the other Groups can.