



**NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 2 – 2010
PRIMARY 4**

SCIENCE

BOOKLET A

30 Multiple Choice Questions (60 marks)

Total Time for Booklets A and B : 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers in the Optical Answer Sheet (OAS) provided.

Marks Obtained

Booklet A		/ 60
Booklet B		/ 40
Total		/100

Name: _____ () Class: P 4 _____

Date : 28 October 2010

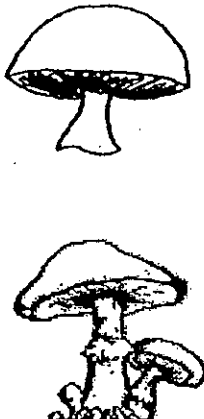
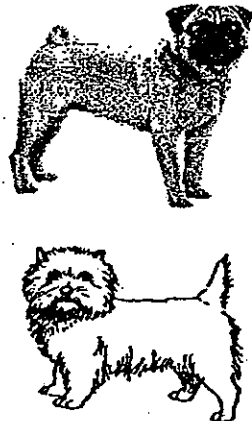
Parent's Signature: _____

For each question from 1 to 20, 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) grow (2) breathe
(3) respond (4) reproduce

- ```

graph TD
 A[Living Things] --> B[X]
 A --> C[dogs]
 B --> D
 C --> E

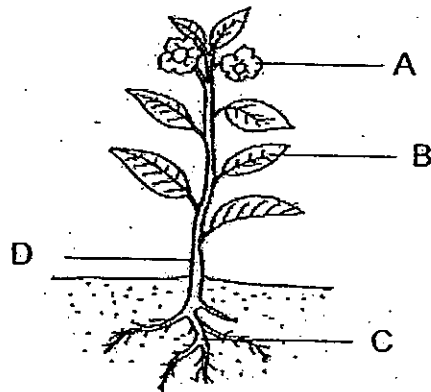
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(1) \_plant                      (2) fungi  
(3) yeast                        (4) bacteria

3. Clear glass is used to make the lens of glasses because clear glass is \_\_\_\_\_.

- |              |                 |
|--------------|-----------------|
| (1) shiny    | (2) hard        |
| (3) magnetic | (4) transparent |

4. The diagram shows a plant.



Which one of the following represents the leaf?

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

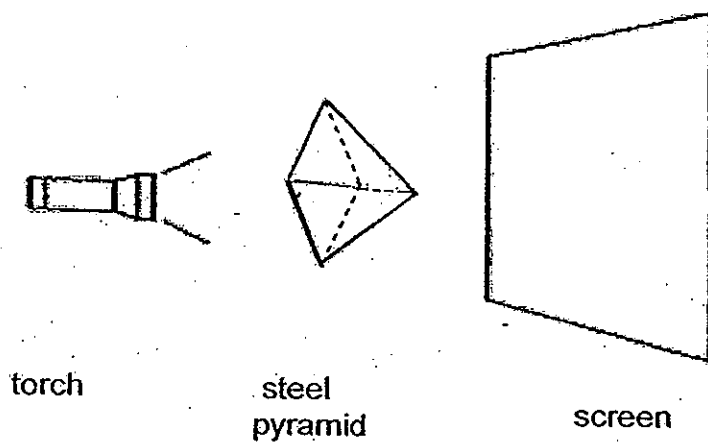
5. What is the main function of the large intestine?

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

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

- |                 |                |
|-----------------|----------------|
| (1) Plastic rod | (2) Rubber rod |
| (3) Steel rod   | (4) Wooden rod |

7. John shines a torch on the steel pyramid as shown below.



Which one of the following shows the shadow of the steel pyramid on the screen?

(1)



(2)



(3)

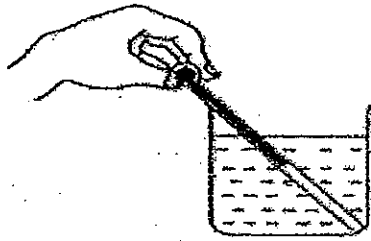


(4)

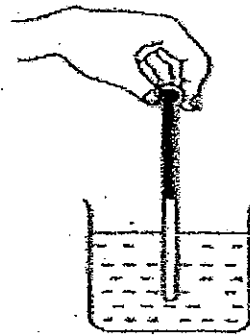


8. Peter wants to measure the temperature of warm liquid in a beaker. Which one of the following diagrams shows the correct position of the thermometer when taking the temperature reading?

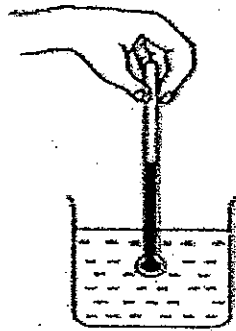
(1)



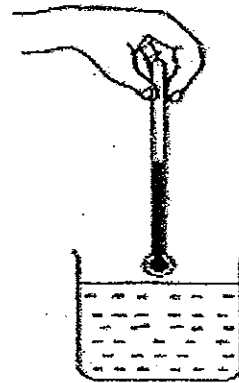
(2)



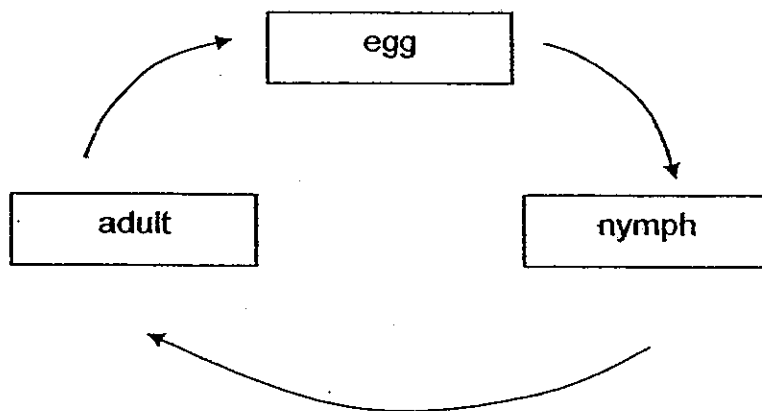
(3)



(4)



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



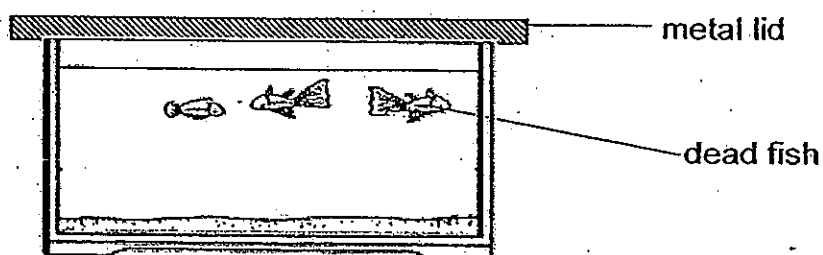
Which animal is likely to have the life cycle as shown above?

- |              |                 |
|--------------|-----------------|
| (1) duck     | (2) butterfly   |
| (3) mosquito | (4) grasshopper |

10. Matter is anything that has mass and occupies space. Which one of the following is **NOT** matter?

- (1) sand                      (2) oxygen  
(3) heat                      (4) orange juice

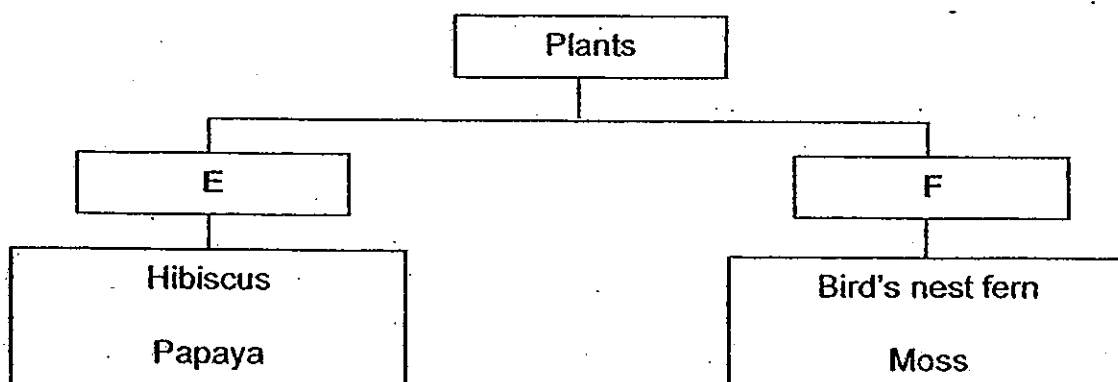
11. 3 fishes were placed in an aquarium as shown in the diagram below. The fishes were fed with some food before the opening was sealed with a metal lid.



Which of the following statements best explains the observation?

- (1) The fish need air to stay alive.  
(2) The fish need food to stay alive.  
(3) The fish need space to stay alive.  
(4) The fish need water to stay alive.

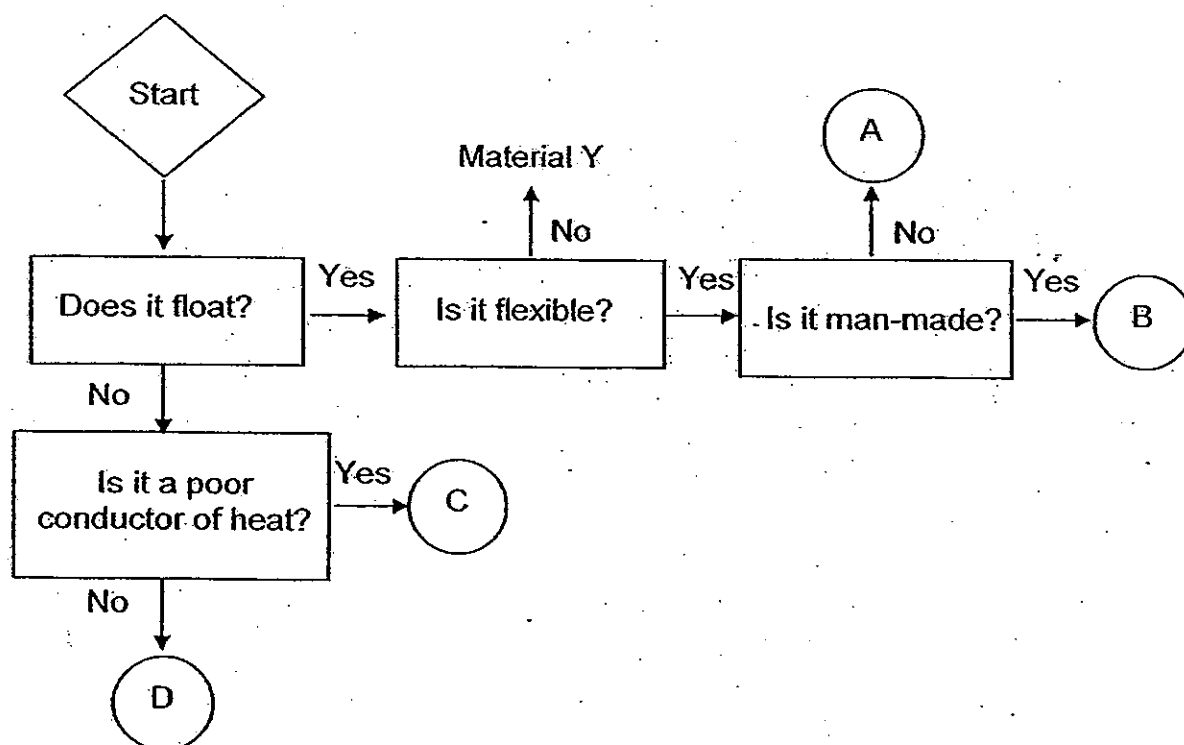
12. The table shows how plants can be grouped.



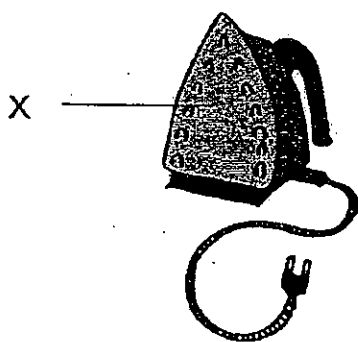
Which one of the following is the most suitable heading for group E and F?

|     | E                   | F                   |
|-----|---------------------|---------------------|
| (1) | Bear flowers        | Do not bear flowers |
| (2) | Can make food       | Cannot make food    |
| (3) | Reproduce by spores | Reproduce by seeds  |
| (4) | Non poisonous       | Poisonous           |

13. Study the flowchart below.



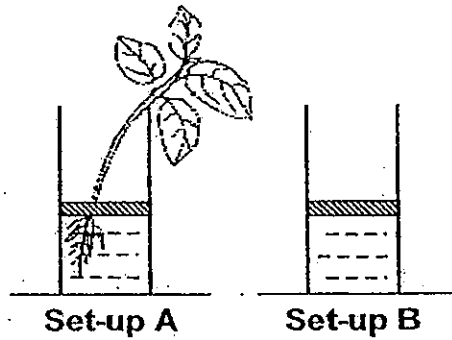
Which of the following is the most suitable for making part X of the iron?



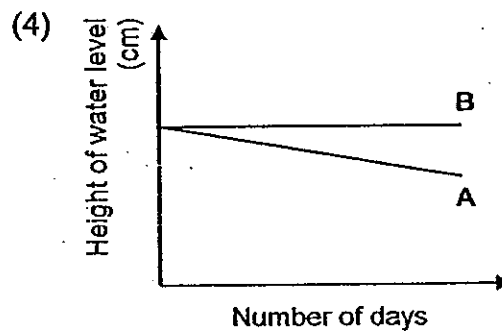
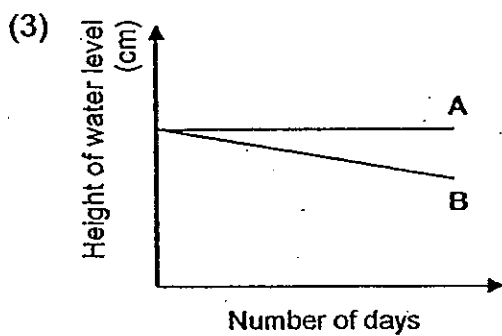
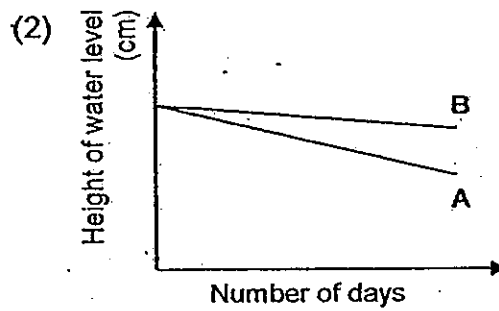
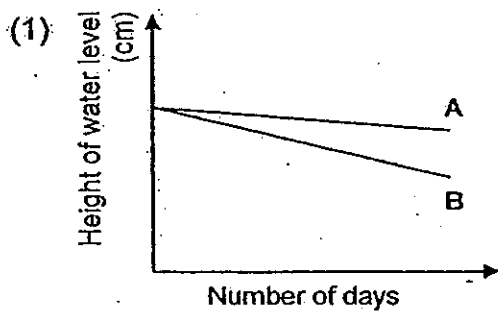
- (1) A  
(3) C

- (2) B  
(4) D

14. May prepared 2 setups, A and B, as shown in the diagram below. She added identical amount of oil in both setups to prevent the water from evaporating. She recorded the height of water level in each setup over three days and plotted a graph.

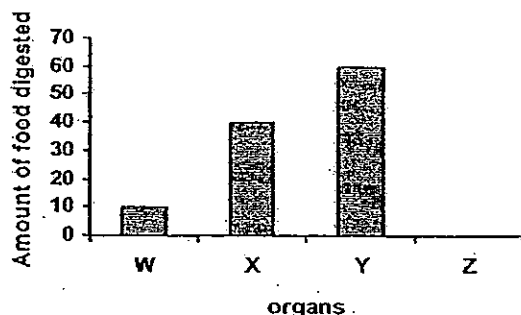


Which one of the following graphs correctly shows the changes in the water level in both set-ups after 3 days?



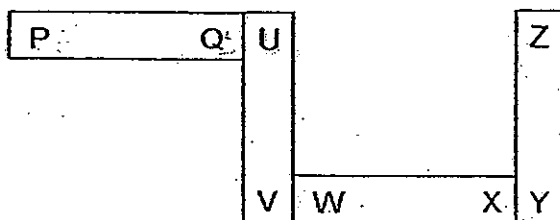


15. The graph shows the amount of food digested at the different organs, W, X, Y and Z, in the human digestive system.

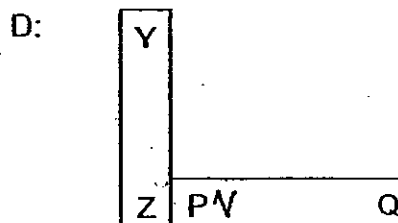
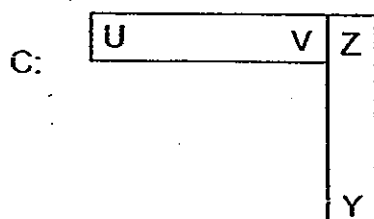
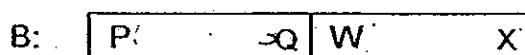
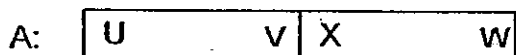


Based on the information shown in the graph above, which of the following is most likely to be organ Y?

- (1) Mouth  
(2) Stomach  
(3) Small intestine  
(4) Large intestine
16. 4 pieces of bar magnets are put together and their poles are marked as shown in the diagram below.

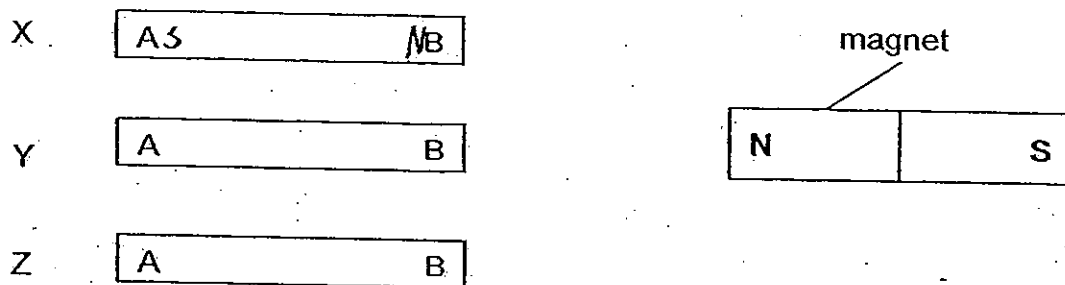


Which of the following diagrams show the interactions between the two magnets correctly when placed near each other?



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

17. The diagram below shows three bars namely, X, Y and Z.



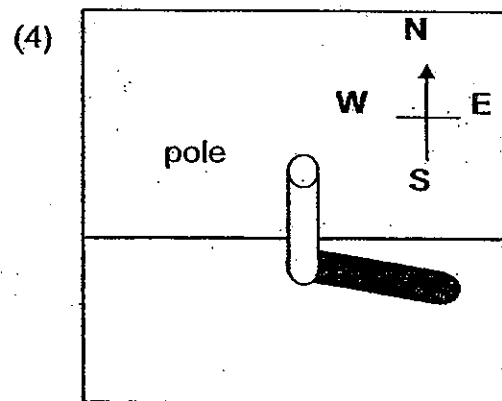
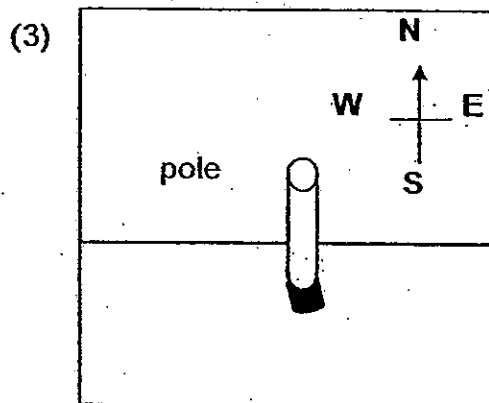
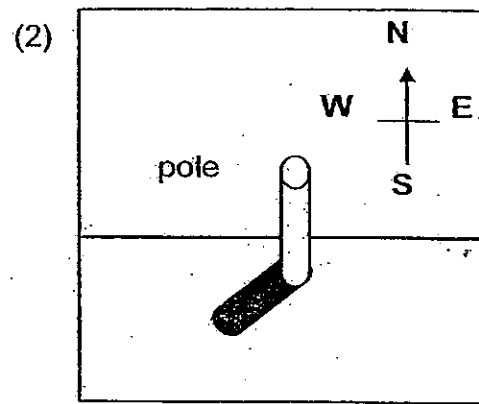
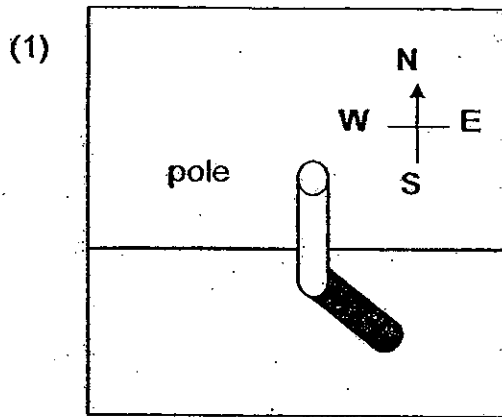
The table shows what happens when a magnet is placed near each bar X, Y and Z respectively.

| Bar | Outcome                                                                           |
|-----|-----------------------------------------------------------------------------------|
| X   | Part A was attracted to the north pole of the magnet but part B repelled from it. |
| Y   | Both Part A and B were attracted to the N and S poles of the magnet.              |
| Z   | Both Part A and B were not attracted to any poles of the magnet.                  |

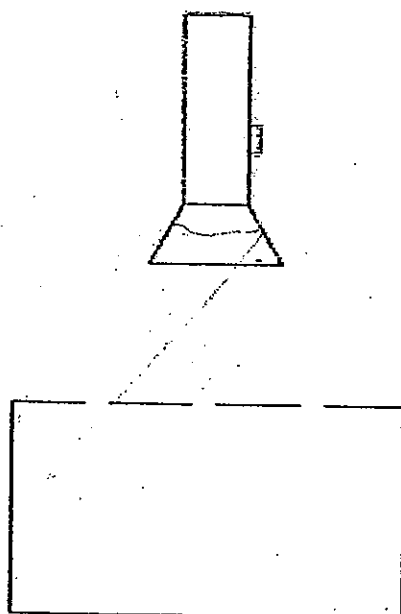
Which one of the following statements is most likely to be correct?

- (1) Bar X is a magnet.
- (2) Bar Z is not made of metal.
- (3) Bar X and Bar Y are magnets.
- (4) Bar X and Bar Y are made of non-magnetic materials.

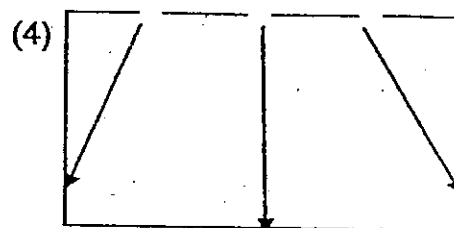
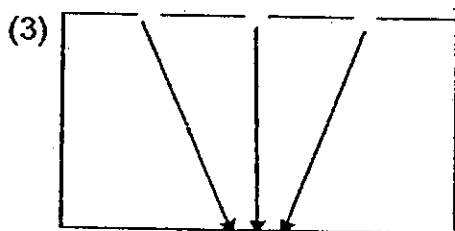
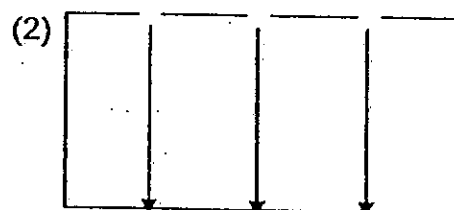
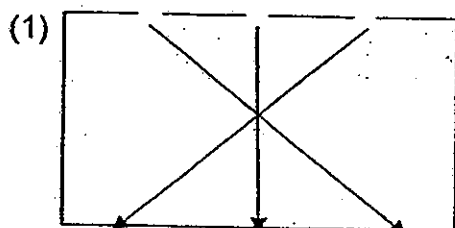
18. The shadow of a pole is observed at different parts of a day.  
Which one of the following diagrams shows the shadow of the pole formed at 6 pm?



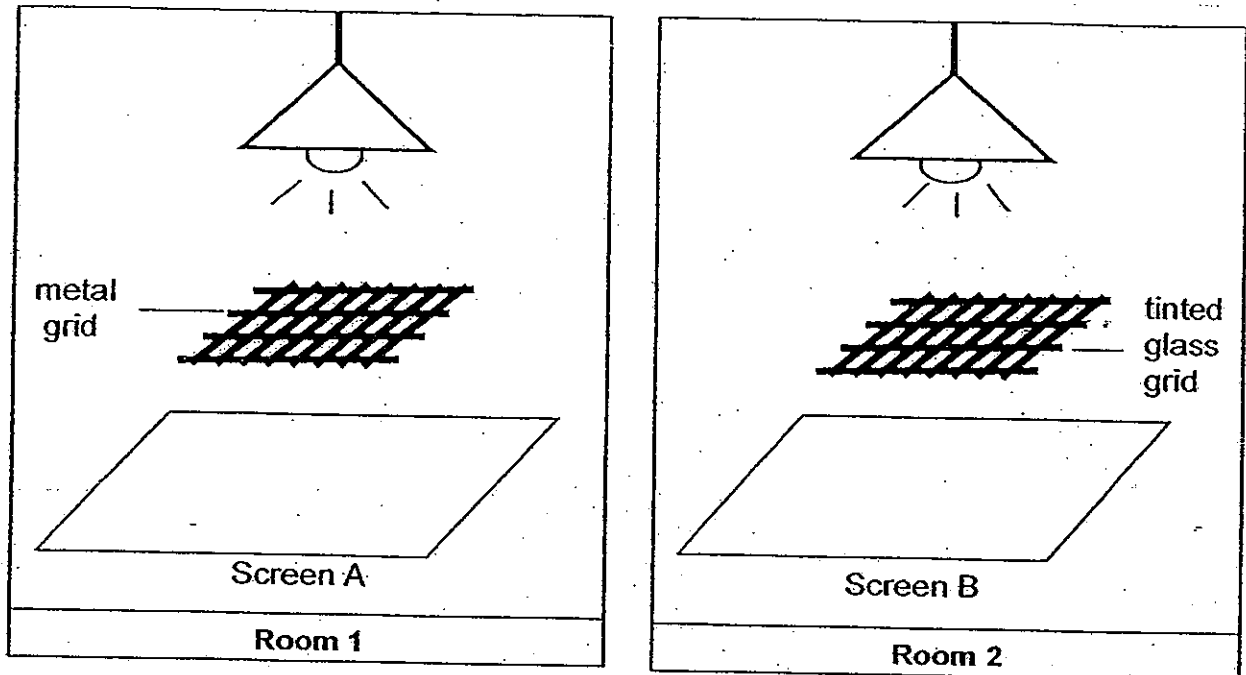
19. Three holes were made in a box and a torch was switched on.



Which one of the following diagrams shows the path of light through the box?



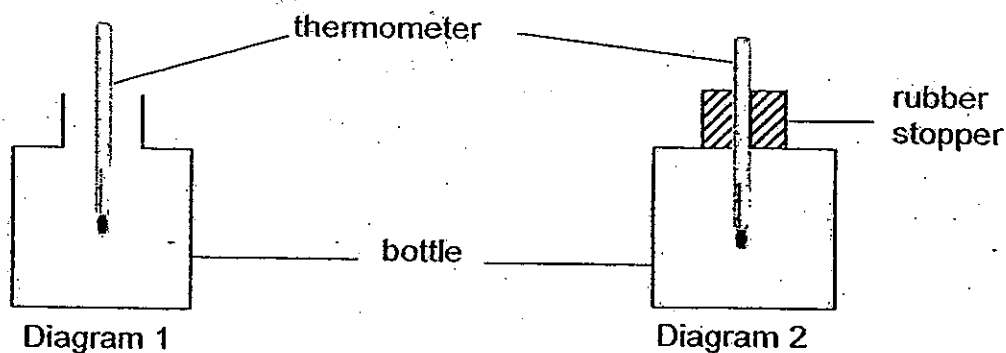
20. Cindy placed two grids of the same size made of different materials directly under a ceiling lamp in 2 identical dark rooms.



Which of the following shadows would be observed on each screen?

|     | Screen A | Screen B |
|-----|----------|----------|
| (1) |          |          |
| (2) |          |          |
| (3) |          |          |
| (4) |          |          |

21. Mary prepared 2 set-ups in a room with a constant temperature of  $30^{\circ}\text{C}$  as shown in the diagram below. She recorded the temperature of both set-ups after one hour.



Which of the following is most likely to be the temperature recorded in Set-up 1 and 2 respectively?

|     | Set-up 1             | Set-up 2             |
|-----|----------------------|----------------------|
| (1) | $30^{\circ}\text{C}$ | $40^{\circ}\text{C}$ |
| (2) | $30^{\circ}\text{C}$ | $30^{\circ}\text{C}$ |
| (3) | $40^{\circ}\text{C}$ | $30^{\circ}\text{C}$ |
| (4) | $20^{\circ}\text{C}$ | $40^{\circ}\text{C}$ |

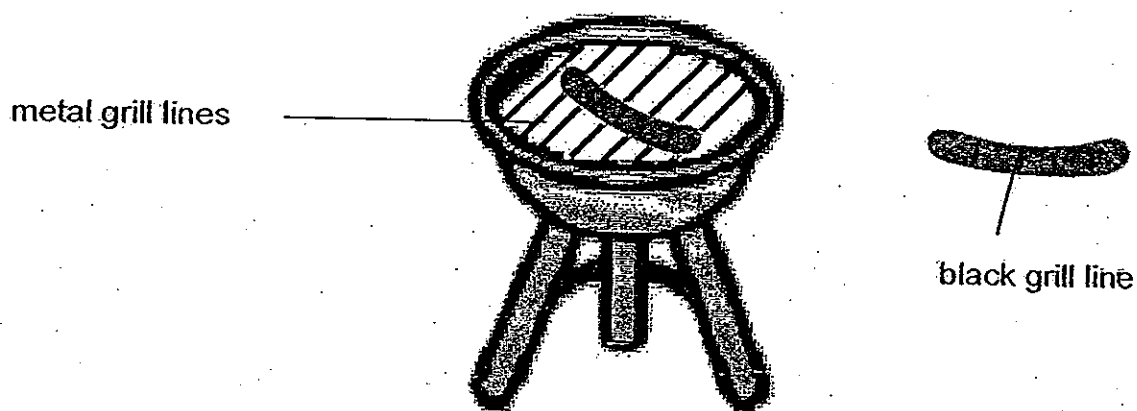
22. Jane could not turn the lid on a container. She placed the lid in a basin of hot water and soon she was able to turn the lid easily.



Why was Jane able to turn the lid easily?

- (1) The lid gained heat from the hand and expanded.
- (2) The lid gained heat from the hot water and expanded.
- (3) The lid gain heat from the hot water and the container contracted.
- (4) The lid and container gained heat from the hot water and expanded.

23. Look at the diagram of a piece of sausage and meat on a barbeque grill.



A piece of sausage was grilled on a metal grilling frame. The black grill lines on the sausage were observed on the sausage after 5 minutes of grilling.

Which of the following statement(s) correctly describe(s) why there <sup>are</sup> black grill lines on the sausage?

- A: Metal is a good conductor of heat so the area of the sausage that came in contact with the metal grid lines cooked faster.
- B: Air is a good conductor of heat so the area of the sausage that did not come in contact with the metal grid lines cooked slower.
- C: Air is a poor conductor of heat so the area of the sausage that did not come in contact with the metal grid lines cooked slower.

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

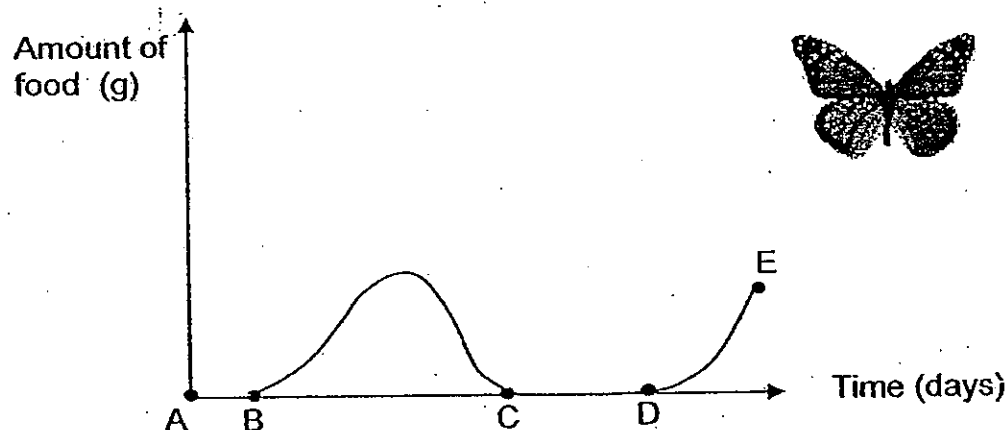
24. The table below shows the characteristics of Animal X and Animal Y.

| Characteristics                           | Animal X | Animal Y |
|-------------------------------------------|----------|----------|
| The life cycle has three stages           | ✓        |          |
| The young resembles the adult             | ✓        |          |
| It is a pest in one or more of its stages | ✓        | ✓        |

Which of the following animals best represent Animal X and Animal Y respectively?

|     | Animal X       | Animal Y    |
|-----|----------------|-------------|
| (1) | Housefly       | Grasshopper |
| (2) | Cockroach      | Butterfly   |
| (3) | Frog           | Grasshopper |
| (4) | Mealworm Larva | Hen         |

25. The graph shows the amount of food that is eaten at different stages of the life cycle of a Monarch butterfly.



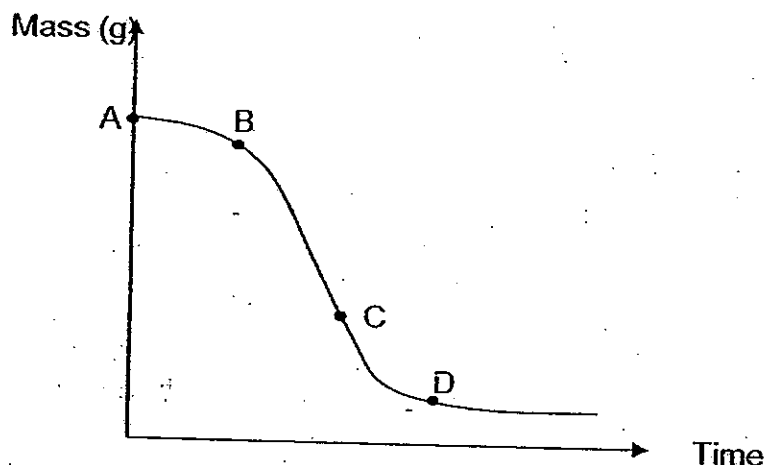
Which phase is the butterfly in its pupa stage?

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



Study the graph below and answer Questions 26 and 27.

John carried out an experiment on a seed growing into a seedling. The graph below shows the changes in the mass of the seed leaf during the experiment.



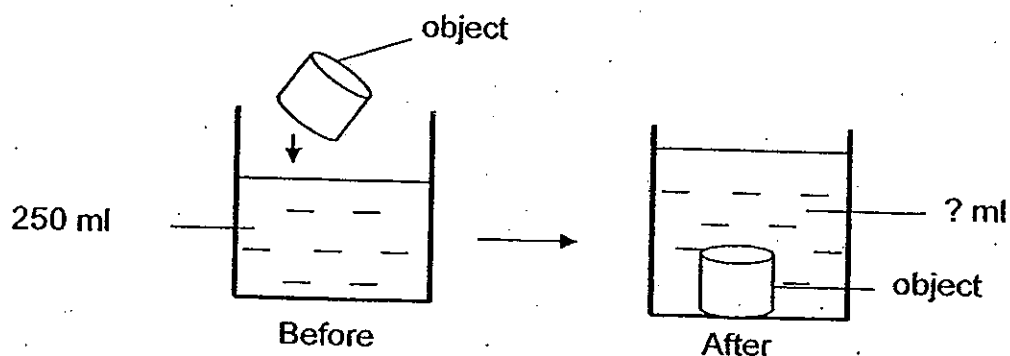
26. At which point(s) of the germination of the seed could most probably happen in a dark cardboard?

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

27. At which point of the graph shows the plant can start to make its own food?

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

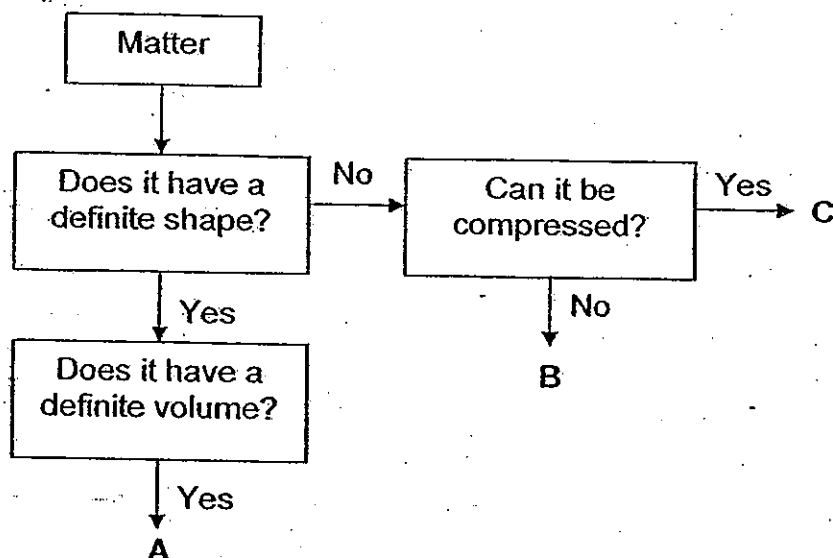
28. An object with a volume of  $50 \text{ cm}^3$  was placed into a beaker of water as shown in the diagram below.



What would be the volume of water after the object was placed into the beaker of water?

- |            |            |
|------------|------------|
| (1) 125 ml | (2) 200 ml |
| (3) 250 ml | (4) 300 ml |

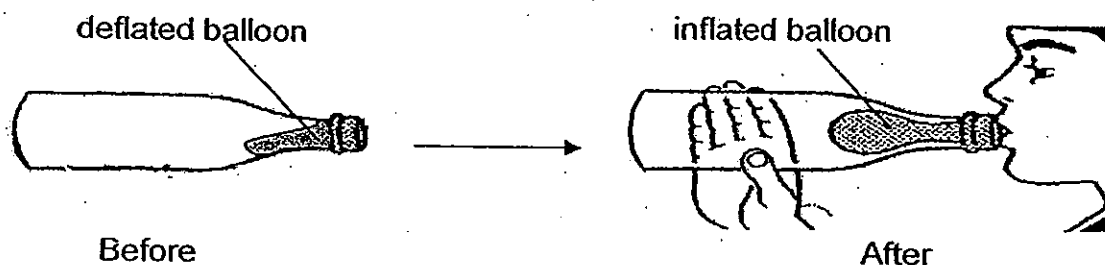
29. Study the flow chart below.



Which one of the following correctly represents A, B and C respectively?

|     | A      | B      | C      |
|-----|--------|--------|--------|
| (1) | Solid  | Gas    | Liquid |
| (2) | Gas    | Liquid | Solid  |
| (3) | Liquid | Solid  | Gas    |
| (4) | Solid  | Liquid | Gas    |

30. Study the diagram below.



Ali blew into a deflated balloon in a bottle. After a while, he found it hard to inflate the balloon further even though there was ample space in the bottle and the balloon was not stretched to the maximum.

What is the reason why Ali could not further inflate the balloon?

- (1) The air in the bottle has a definite volume.
- (2) The air in the balloon has indefinite volume.
- (3) The air in the bottle cannot be compressed anymore.
- (4) The air in the balloon cannot be compressed anymore.



**NAN HUA PRIMARY SCHOOL  
SEMESTRAL ASSESSMENT 2 – 2010  
PRIMARY 4**

**SCIENCE  
BOOKLET B**

**14 Open-ended questions (40 marks)**

**Total Time for Booklets A and B : 1 hour 45 minutes**

**INSTRUCTIONS TO CANDIDATES**

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

**Marks Obtained**

**Section B**

|  |     |
|--|-----|
|  | /40 |
|--|-----|

**Name:** \_\_\_\_\_ (      )

**Class:** P. 4 \_\_\_\_\_

**Date :** 28 October 2010

**Parent's Signature:** \_\_\_\_\_

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**Section B: (40marks)**

Write your answers to question 31 to 44.

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

31. Mary observed and grouped some living things as shown in the table.

| X              | Y             |
|----------------|---------------|
| Toad<br>lizard | Tree<br>Grass |

What are suitable headings for X and Y?

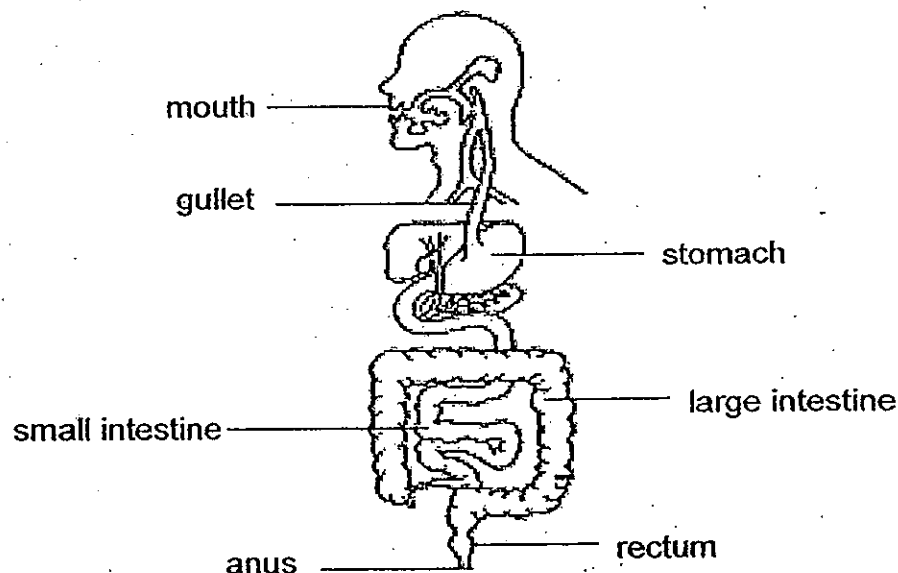
Group X: \_\_\_\_\_

[1]

Group Y: \_\_\_\_\_

[1]

32. The diagram shows the digestive system.



In a human digestive system, name the part where

(a) digestion first takes place : \_\_\_\_\_

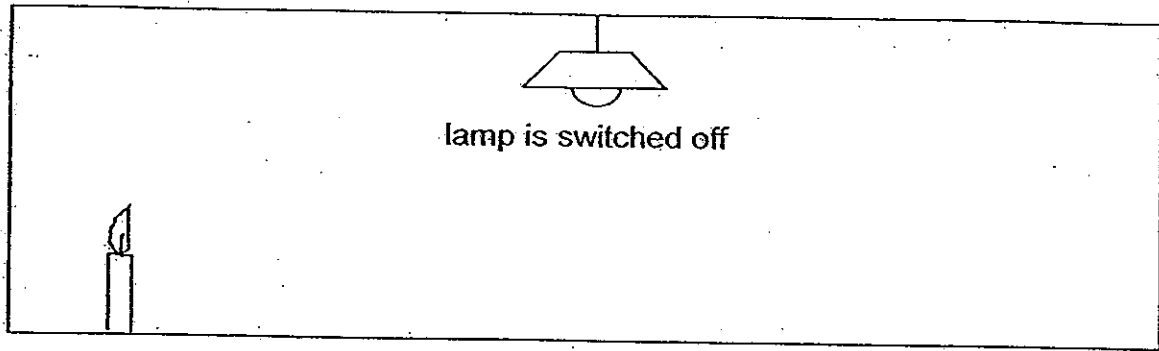
[1]

(b) digestion is completed : \_\_\_\_\_

[1]

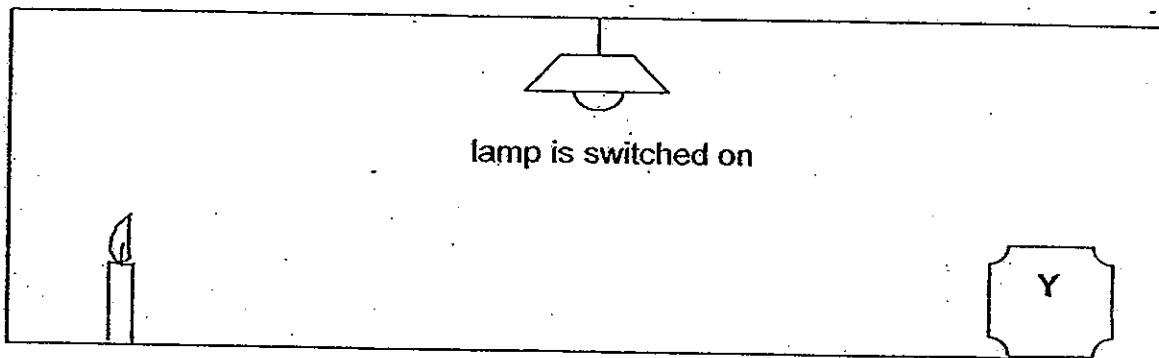
|       |   |
|-------|---|
| Score | 4 |
|-------|---|

33. John sees **only** a candle flame at a corner when he enters a complete dark room.



- (a) John can see the candle flame because it \_\_\_\_\_ light. [1]

When he switches on the light in the room, he sees both the candle flame and object Y.



- (b) John can see object Y because it \_\_\_\_\_ light from the lamp. [1]

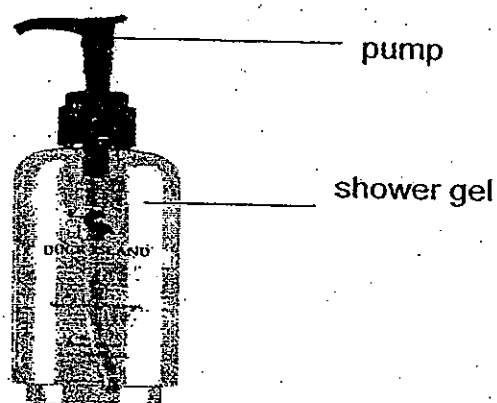
34. The diagram below shows a frying pan.



- (a) The handle is made of wood because it is a \_\_\_\_\_ conductor of heat. [1]
- (b) The pan is made of metal because it is a \_\_\_\_\_ conductor of heat. [1]

|       |   |
|-------|---|
| Score | 4 |
|-------|---|

35. The diagram below a bottle of shower gel.



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

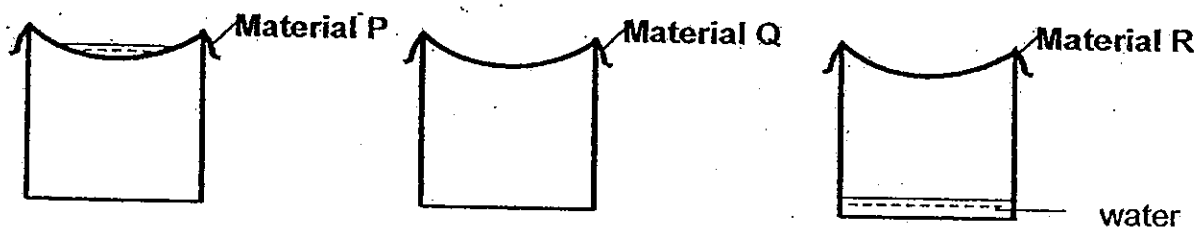
- (a) The pump is a \_\_\_\_\_ [1]
- (b) The shower gel is a \_\_\_\_\_ [1]

36. Three pieces of different materials, P, Q and R, are placed over the mouth of similar empty beakers. The same amount of water was poured onto each of the materials.

material felt dry and  
water remained on  
top of material

material felt wet

material felt wet



- (a) From the result, which one of the materials (P, Q or R) is most absorbent? [1]

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- (b) From the result, which one of the materials is suitable for making raincoat?  
Give a reason for your answer. [2]

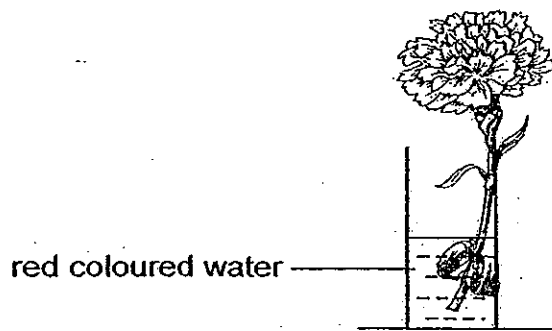
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|       |   |
|-------|---|
| Score | 5 |
|-------|---|

37. - The picture shows a stalk of white flower in a beaker of red coloured water.



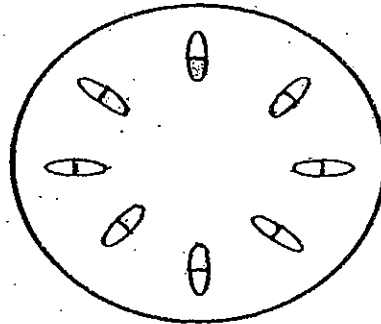
After 24 hours, it was observed that the whole stalk of white flower turned red in colour.

- (a) Explain why the stalk of white flower turned red? [2]

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- (b) After that, a cross-section of the stem of the above flower was examined under the microscope.  
Colour the part(s) that would appear red in the diagram below. [1]

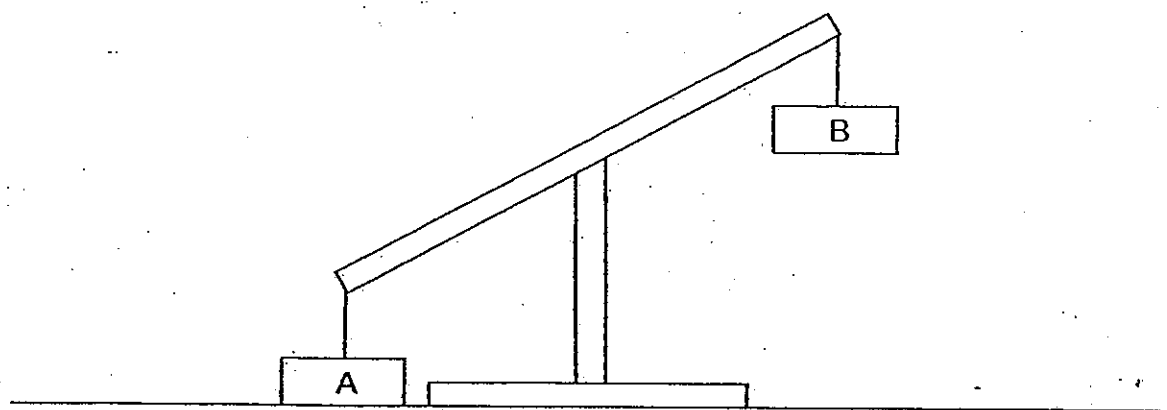


- (c) Name the human system which has the same function as the part(s) you have coloured. [1]

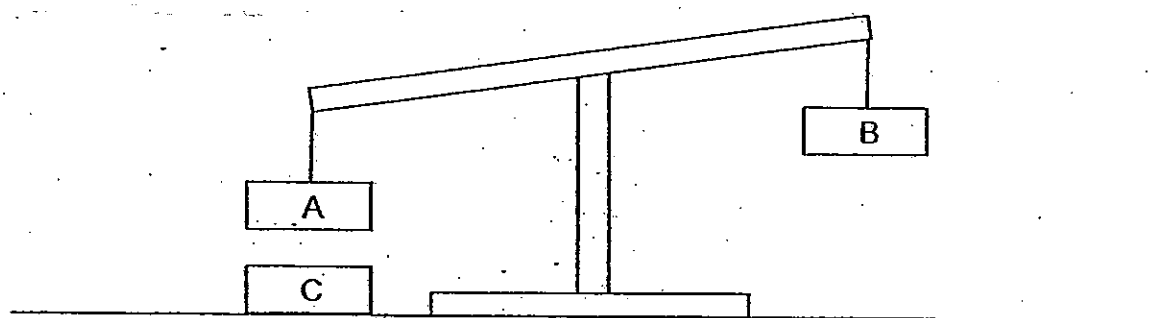
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|       |   |
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| Score | 4 |
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38. The diagram below shows two objects, A and B, hung on a balance.



Another Object, C, was then placed on the table and Object A floated above Object C.



- (a) Based on the results above, what was Object C likely to be? [1]

\_\_\_\_\_

- (b) Explain why Object A floated above Object C? [2]

\_\_\_\_\_

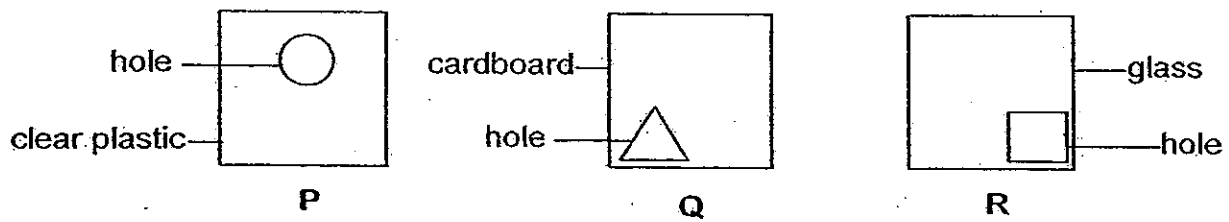
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\_\_\_\_\_

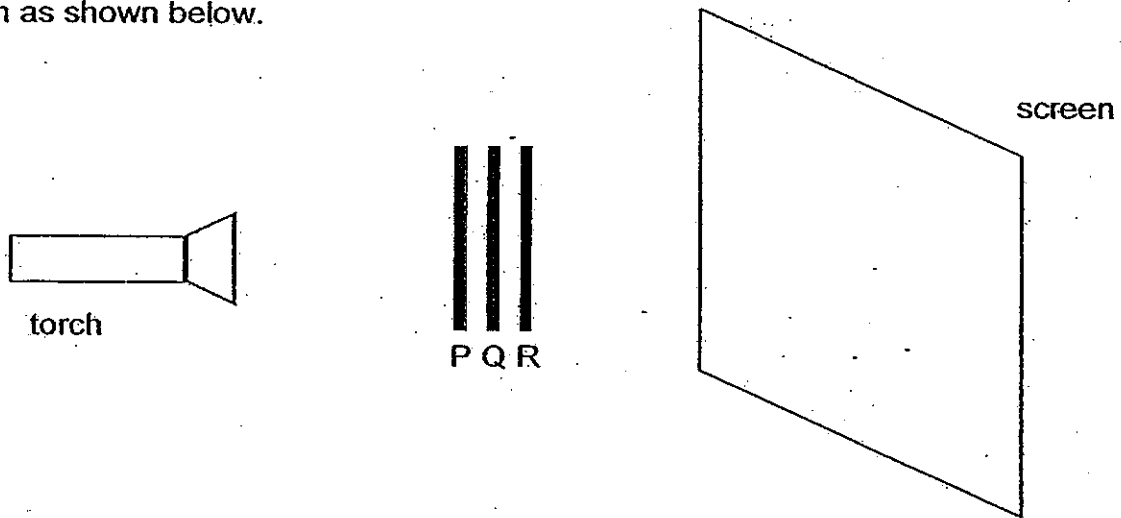
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| Score | 3 |
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39. Jane carried out an experiment in a dark room as shown in the diagrams below. P, Q and R are sheets of the same size and shape but made of different material. A hole of different shape was cut on sheets P, Q and R respectively.

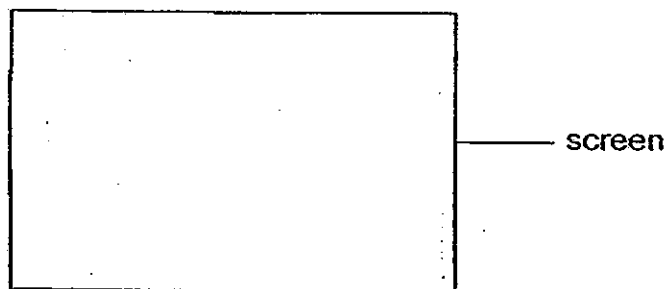


She placed all three sheets P, Q and R together in a straight line and turned on the torch as shown below.



- (a) Draw the shadow formed on the screen clearly.

[2]



- (b) Jane said that shadow is a matter. Do you agree with her? Give a reason for your answer.

[2]

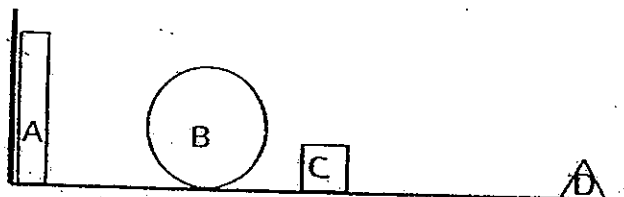
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| Score | 4 |
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40. Tom was looking into a wooden box from a distance. Four wooden objects, A, B, C and D were placed in the box as shown in the diagram below.



- (a) State whether the objects can be seen totally, partially or cannot be seen by placing a tick (✓) in the table below. [2]

| Object | Can be seen partially | Can be seen totally | Cannot be seen at all |
|--------|-----------------------|---------------------|-----------------------|
| A      |                       |                     |                       |
| B      |                       |                     |                       |
| C      |                       |                     |                       |
| D      |                       |                     |                       |

- (b) Explain your answer for Object C in part (a). [2]

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41. Tom removed his shoes and stepped on the cool marble tiles of his house. Instantly, his feet felt cold. Explain why Tom's feet felt cold. [2]

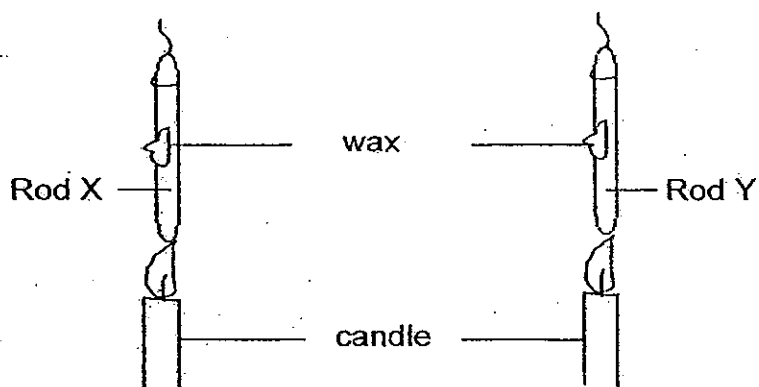
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| Score | 6 |
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42. Study the experiment set-up carefully. Two rods of similar length and size are placed at the same distances from the candle flame as shown in the diagram below.



The table below records the time taken for the wax to melt on Rod X and Y respectively.

| Time taken for wax to melt | Rod X (minutes) | Rod Y (minutes) |
|----------------------------|-----------------|-----------------|
| 1 <sup>st</sup> attempt    | 3               | 5               |
| 2 <sup>nd</sup> attempt    | 4               | 5.2             |
| Average                    | 3.5             | 5.1             |

- (a) From the result above, which rod is a better conductor of heat?  
Give a reason for your answer.

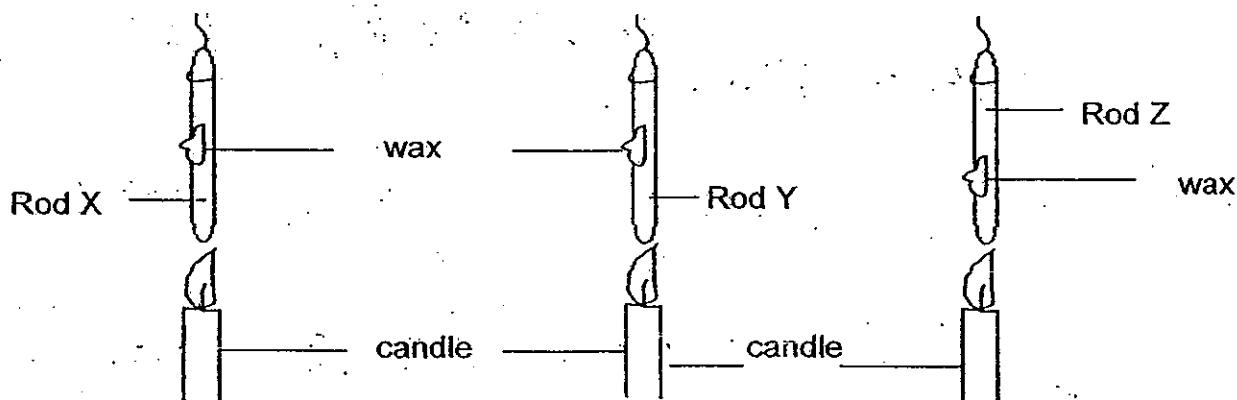
[1]

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To compare the rate of conductivity, the same experiment is repeated with an additional rod, Rod Z as shown in the diagram below.



- (b) It was remarked that it was not a fair test. Suggest a change that should be made to the set-up to ensure a fair test.

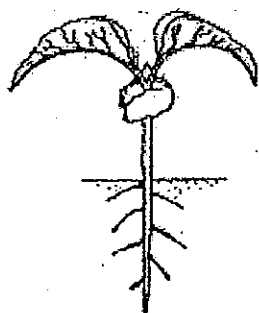
[1]

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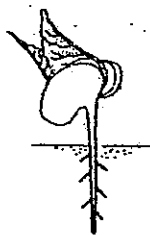
43. The pictures, which are not in sequence, show the life cycle of a plant.



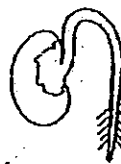
A



B



C



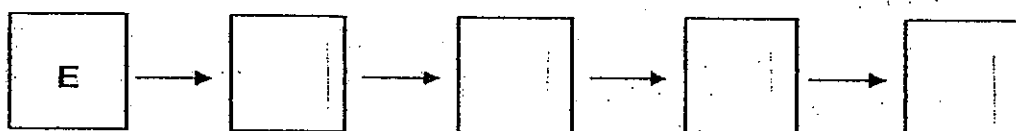
D



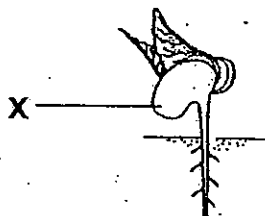
E

- (a) Arrange the pictures to show the correct sequence of the growth of a plant. Write the letters A, B, C, D and E in the boxes below correctly.

[2]



- (b) The picture below shows a growing seedling.



Name structure X and state its function.

[2]

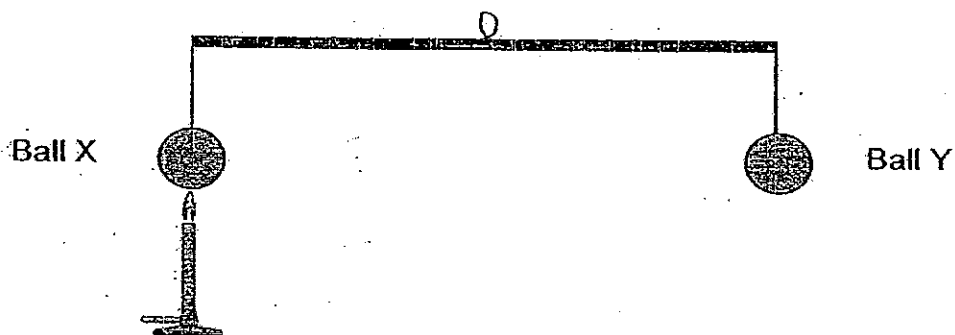
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| Score | 4 |
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- 44.- Ali hung two similar metal balls, Ball X and Ball Y, on a balanced rod. Ball X was heated as shown in the diagram below.

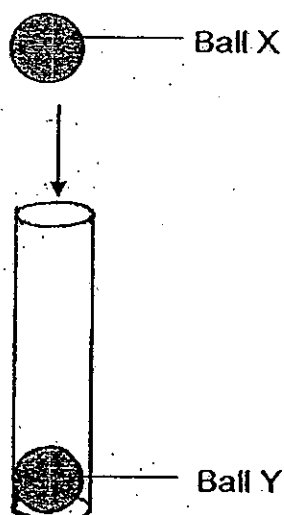


- (a) Ali predicted that the ball will tilt downward after being heated. Do you agree with him? Give a reason for your answer. [2]

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Immediately after the experiment, Ali wanted to return the metal balls in the storage container as shown below. He managed to put Ball Y into the bottle but Ball X could no longer go through the opening of the bottle.



- (b) Give a reason for the above observation on Ball X. [2]

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End of paper

|       |   |
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| Score | 4 |
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# Ans

## EXAM PAPER 2010

**SCHOOL : NAN HUA PRIMARY**  
**SUBJECT : PRIMARY 4 SCIENCE**

**TERM : SA2**

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

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

31)X: cannot make their own food.

Y: can make their own food.

32)a)mouth

b)small intestine

33)a)gives out

b)reflects

34)a)poor

b)good

35)a)solid

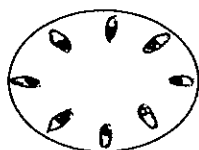
b)liquid

36)a)Material Q

b)Material P because it is waterproof and feels dry even when there is water.

37)a)The flower took in the red coloured water, xylem carried the red water to all parts of the flowers. Thus, the flower turned red.

b)

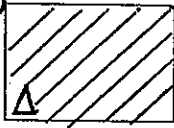


c)Circulatory system.

38)a)A magnet.

b)Because object A and C are magnets and their like poles are facing one another and object A repelled there for A floated above C.

39)a)



b)No. Because shadow do not have mass and do not take up space.

40)a)A: Cannot be seen at all

B: Can be seen partially

C: Cannot be seen at all

D: Can be seen totally

b)The path of light is blocked by the opaque circle.

41)Tom's feet lost heat to the cool marble tiles.

42)a)Rod X. Because the wax on rod X melted faster than the one on red.

b)Shift the was on Rod Z to the similar position as that on Rod X and Y.

43)a)E→B→D→C→A

b)Seed leave. It gives the seeding the food it needs when it still cannot make its own food.

44)a)No. Because even if you heat up the ball it will just expand but the mass will not change.

b)Because ball X was heated and expand therefore it cannot fit into the hole.