

METHODIST GIRLS' SCHOOL (PRIMARY)

PRIMARY 5

END-OF-YEAR EXAMINATION 2008

SCIENCE

BOOKLET A

NAME : _____

CLASS : _____

Total time for Booklets A and B : 1 h 45 min.

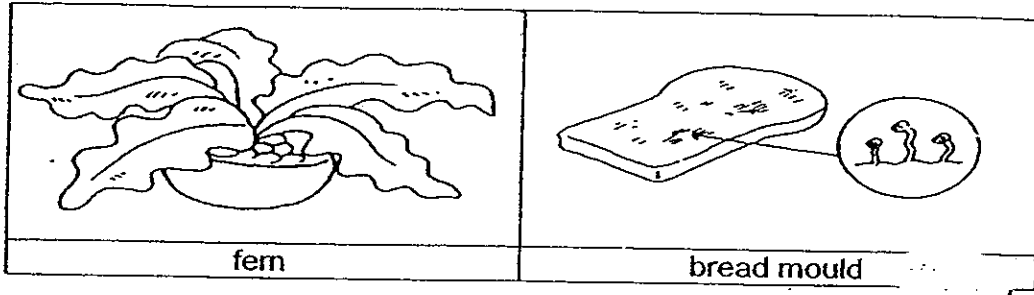
**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

Number of pages: 13

Section A (25 × 2 = 50 marks)

For each question from 1 to 25, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.

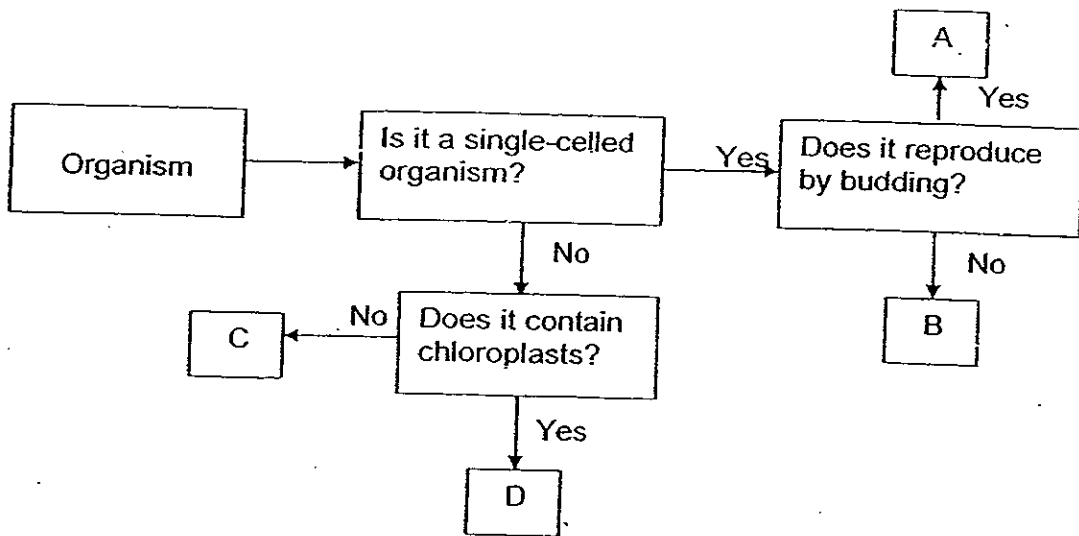
1. The diagram below shows the fern and bread mould.



In what ways are the fern and bread mould similar?

- A: They are living things.
 - B: They make their own food.
 - C: They reproduce from spores.
 - D: They are non-flowering plants.
- (1) A and C only
(2) B and D only
(3) A, C and D only
(4) A, B, C and D
2. Which of the following statements are true of a life cycle?
- A: All plants have the same life cycle.
 - B: Different animals have different life cycles.
 - C: The young go through the same life cycle as their parents.
 - D: The life cycle of a living thing is made up of a number of stages of growth and development.
- (1) B and D only
(2) A, C and D only
(3) B, C and D only
(4) A, B, C and D

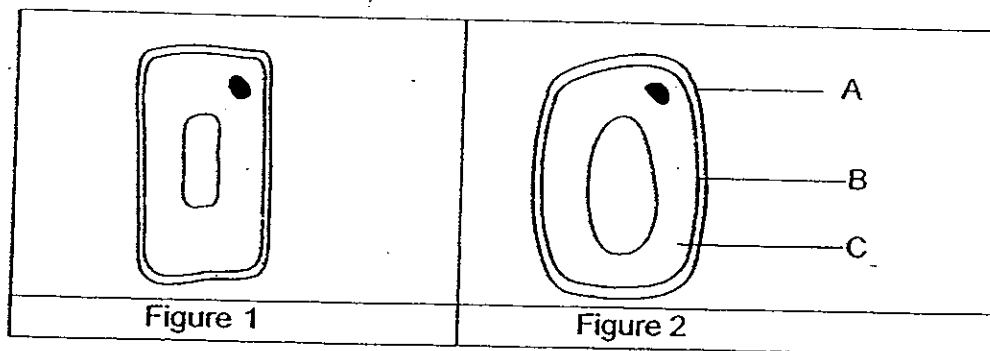
3. Study the flowchart below.



Based on the information given in the flow chart, what are A, B, C and D?

| | A | B | C | D |
|-----|------------|-----------|------------|-----------|
| (1) | yeast | amoeba | moss | mimosa |
| (2) | paramecium | bacterium | mushroom | mimosa |
| (3) | yeast | bacterium | mushroom | moss |
| (4) | amoeba | yeast | paramecium | bacterium |

4. Figure 1 shows a cell from an organism. Figure 2 shows the same cell after it has been placed in a certain solution for thirty minutes.



Which of the labelled structures is / are partially permeable?

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

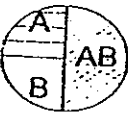
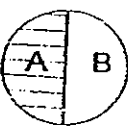
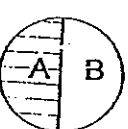
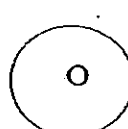
5. A fertilised human egg cell divides itself to form a mass of eight cells in a number of stages. The table below shows the number of cells at the different stages.

| Stage | Number of cells |
|-------|-----------------|
| 1 | 1 |
| 2 | 2 |
| 3 | 4 |
| 4 | 8 |

How many cells will there be at stage 6?

- (1) 15
 (2) 16
 (3) 32
 (4) 64

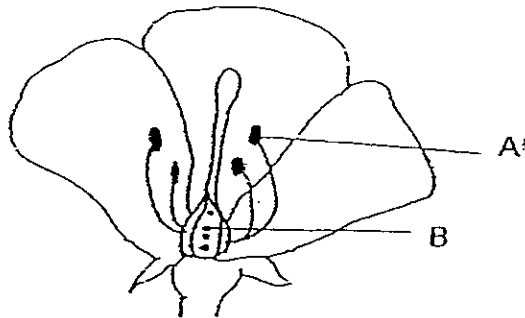
6. The table below shows the blood groups that children inherited from parents with various blood groups within a community.

| Blood group of parents | Mother – AB Father – AB | Mother – AB Father – O | Mother – O Father – AB | Mother – O Father – O |
|-----------------------------|---|---|--|---|
| Blood group of children (%) |  |  |  |  |

Which one of the following statements is correct about the inheritance of blood group by these children?

- (1) If the mother is of blood group O, then all her children are of blood group O.
 (2) If the father is of blood group AB, then at least 50 % of his children are of blood group AB.
 (3) If both parents are of blood group O, then they have no children who are of blood group A, B and AB.
 (4) If both parents are of the same blood group, then all their children will be of that same blood group.

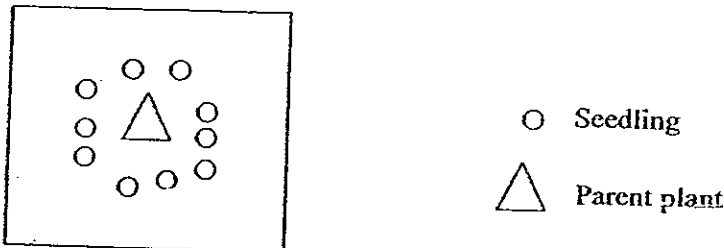
7. The diagram below shows the different parts of a flower.



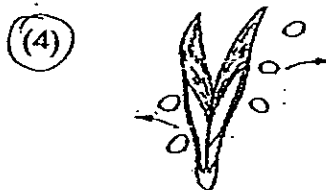
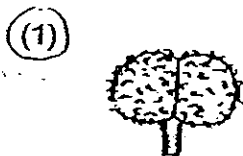
Which one of the following shows the functions of the parts "A" and "B" correctly?

| | Part "A" | Part "B" |
|-----|------------------------|-----------------------|
| (1) | Attracts insects | Produces nectar |
| (2) | Fertilises the flower | Protects the fruit |
| (3) | Receives pollen grains | Develops into a fruit |
| (4) | Produces pollen grains | Develops into a seed |

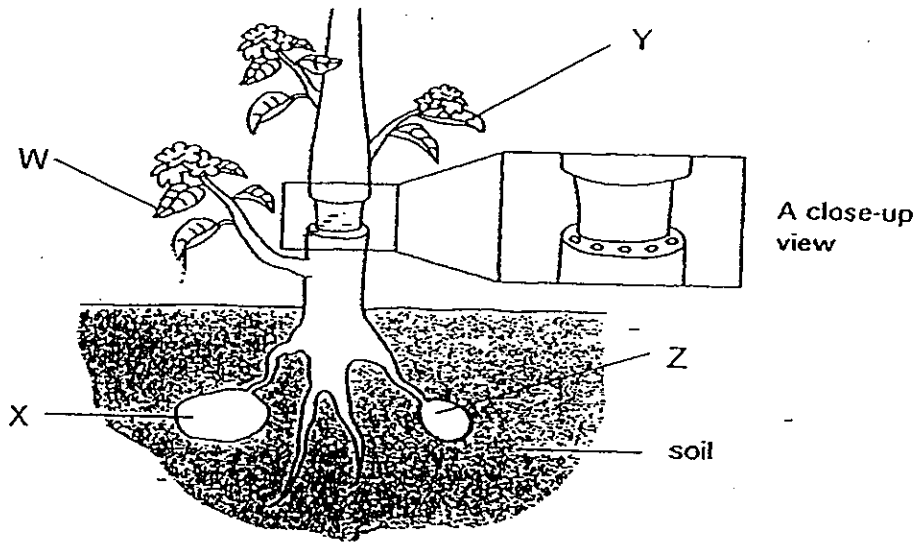
8. The diagram below shows the parent plant and its seedlings of a particular species of plant growing on a plot of land.



Which one of the following is most likely the fruit of the species of plant above?

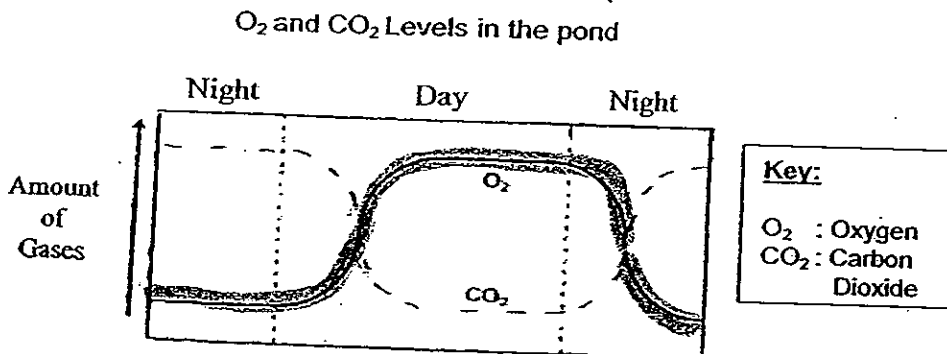


9. An outer ring of a stem was removed from a plant as shown below. As a result, the tubes carrying food and water were removed.



It was observed that Z grew bigger after one week. Which one of the following statements best explains the observation?

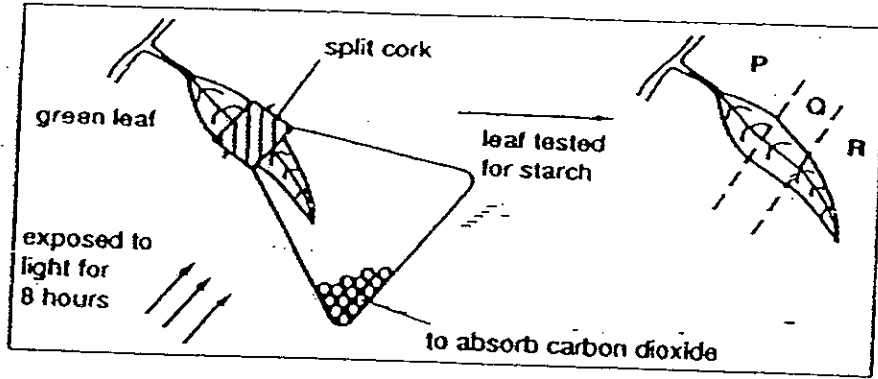
- (1) Food is made by Z itself.
 (2) Food is transported from W to Z.
 (3) Food is transported from X to Z.
 (4) Food is transported from Y to Z.
10. The following graph shows how the levels of dissolved oxygen and carbon dioxide in a pond changed over a 24-hour period.



Which one of the following is the most likely reason for the increase in the amount of carbon dioxide in the pond during the night?

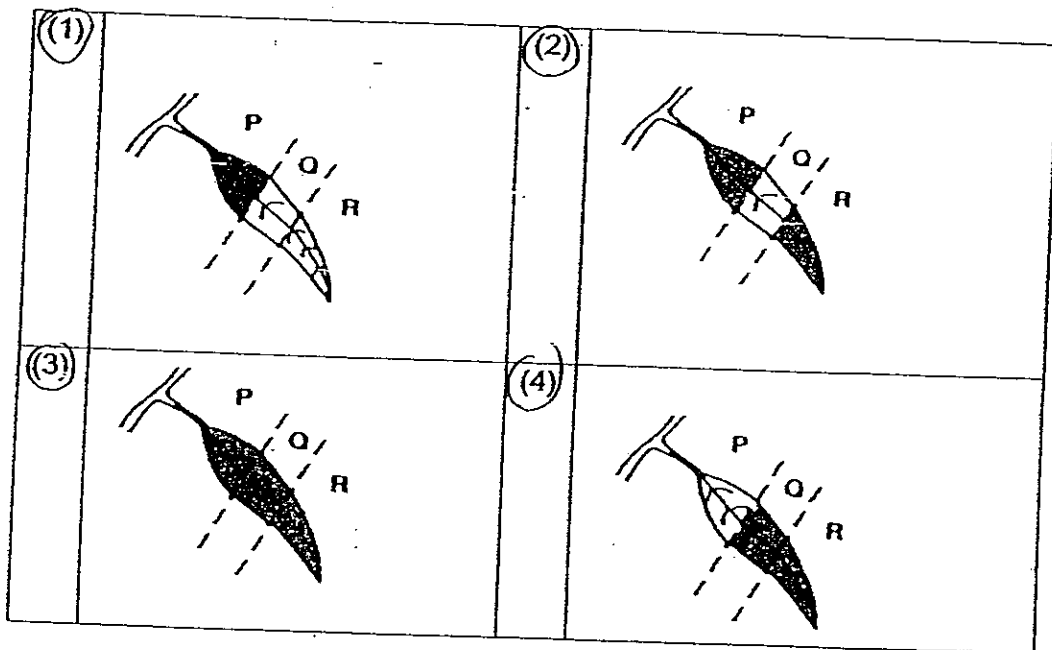
- (1) The plants start respiring.
 (2) The plants are photosynthesizing.
 (3) The plants stop photosynthesizing.
 (4) Both the plants and the pond organisms respire.

11. Bala carried out the following experiment to investigate the process of photosynthesis. The leaf was tested for starch using iodine solution at the end of eight hours.

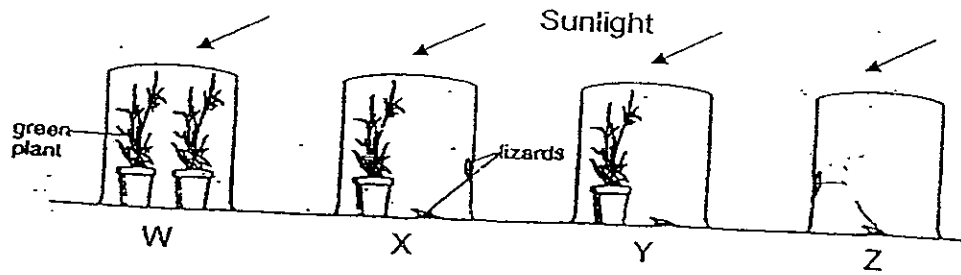


Which one of the following shows the result of the starch test?

Key  Starch present



12. Different organisms were put into four identical glass tanks, W, X, Y and Z as shown below.



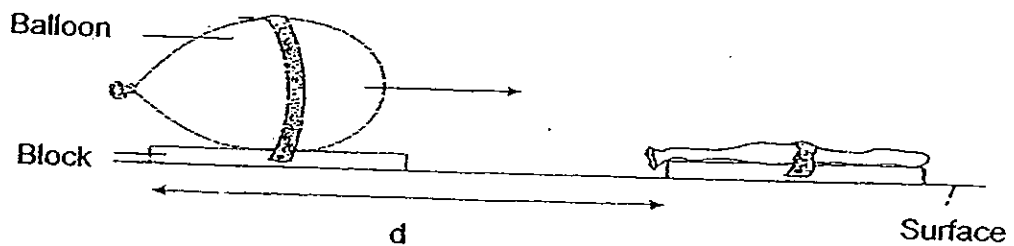
The four tanks were placed next to a window for a few hours. Which one of the following shows the correct arrangement of the tanks, W, X, Y and Z, in order of the amount of oxygen left in them after the experiment?

Least oxygen left

Most oxygen left

| | | | | |
|---|---|---|---|---|
| ① | W | Y | X | Z |
| ② | W | Z | Y | X |
| ③ | Z | Y | X | W |
| ④ | Z | X | Y | W |

13. James made a toy with a block and a balloon. He pumped 300 cm³ of air into the balloon and then released it. He then measured the distance, d , moved by the toy.



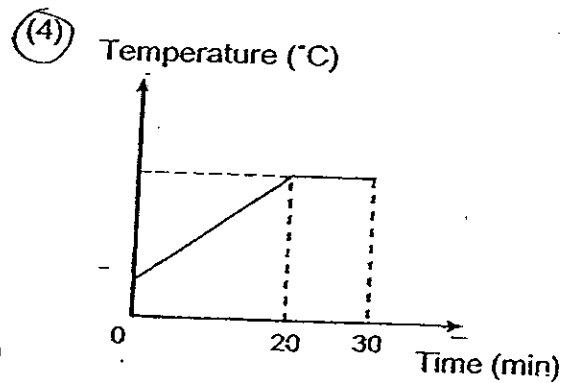
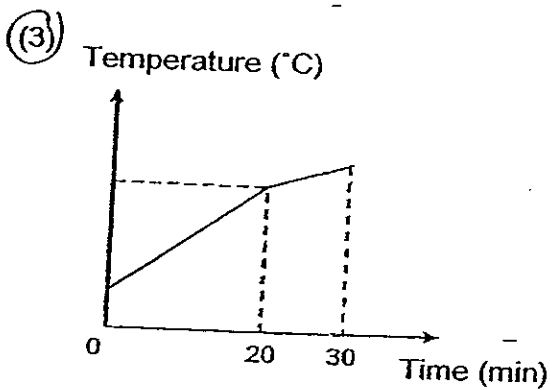
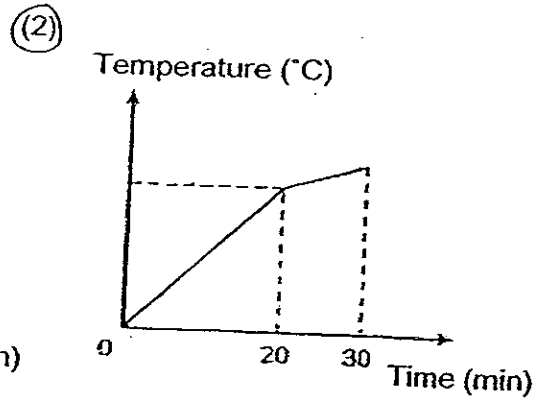
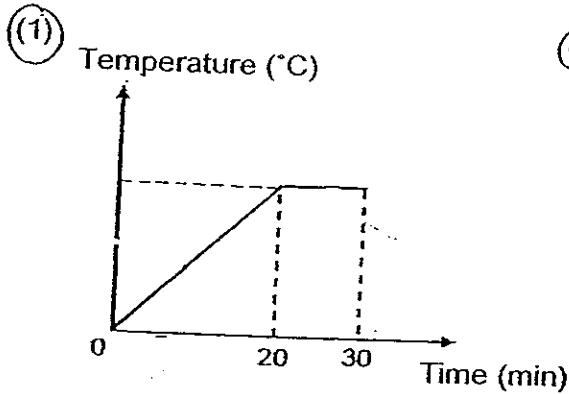
He repeated the experiment on different surfaces and recorded the measurements in the table below.

| Type of surface | Distance, d (cm) |
|-----------------|--------------------|
| Surface A | 5 |
| Surface B | 10 |
| Surface C | 7 |
| Surface D | 9 |

Which conclusion about this experiment is true?

- ① Surface B is most likely a glass
 ② Surface C produced the most friction
 ③ Surface D produced the least friction
 ④ Surface A is smoother than Surface D

14. Sean heated a beaker of tap water for 30 minutes. Which one of the following graphs shows the changes in the water temperature correctly if the water started to boil after the first 20 minutes?



15. Below is the description of four substances, W, X, Y and Z, at different temperatures.

Substance W: It melts at negative 20°C

Substance X: It boils at 80°C

Substance Y: It has a freezing point of 10°C

Substance Z: It has a boiling point of 120°C

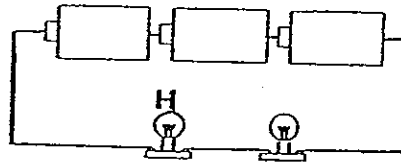
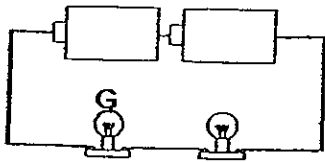
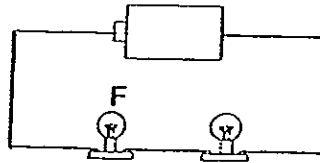
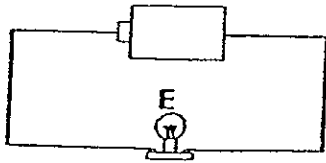
Based on the brief description, which substance is **definitely** a solid at 0°C ?

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

16. Joy observed a full moon on 1st of March. Which date is she most likely to spot a half moon?

- (1) 8th of March
- (2) 15th of March
- (3) 29th of March
- (4) 30th of March

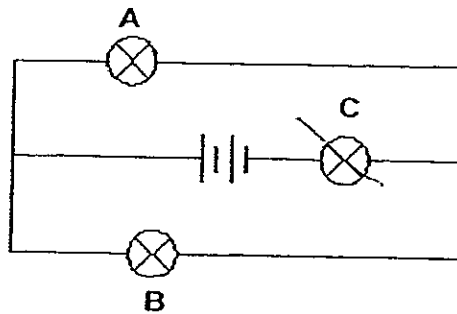
17. The diagram below shows four circuits with different arrangements of identical batteries and identical lamps. The lamps in all four circuits light up.



Which of the following shows the brightness of the lamps correctly?

| | Brightness of lamp | | |
|----------------|--------------------|--------|------|
| | Low | Medium | High |
| (X) | E | F | G |
| (2) | G | E | H |
| (3) | F | G | H |
| (4) | F | G | E |

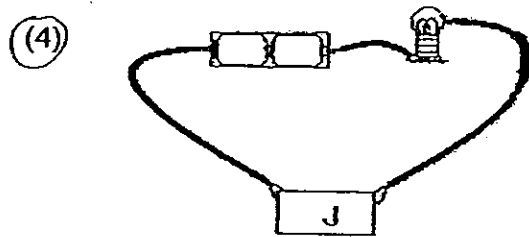
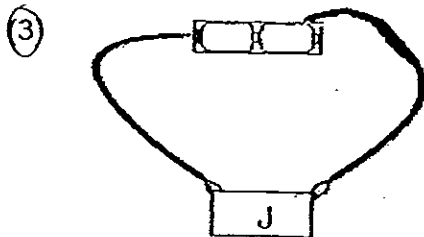
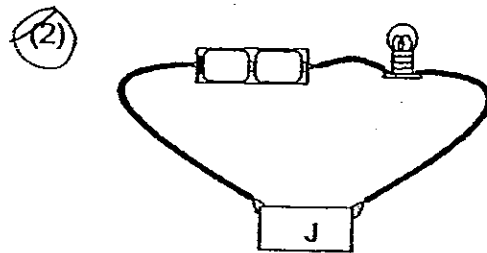
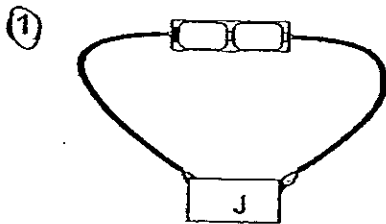
18. Study the circuit diagram below.



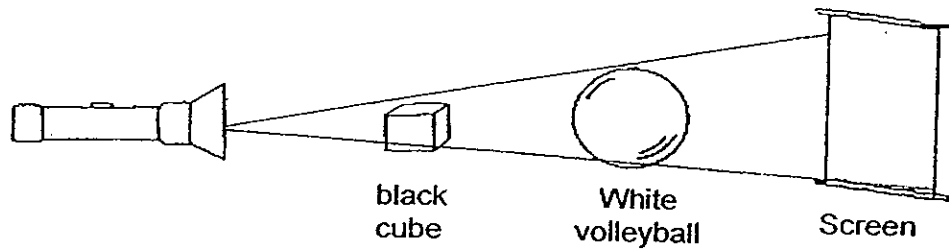
Which of the bulbs, A and B, will remain lit when bulb C blows?

- ① A only
- ② B only
- ③ A and B
- ④ None of the above

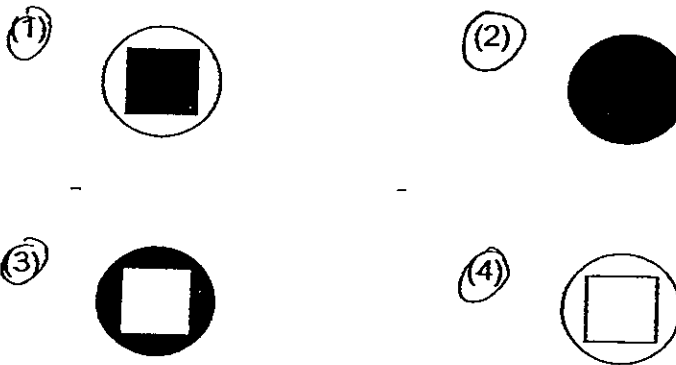
19. Jana wanted to find out whether object J is a conductor of electricity. Which one of the following shows the most suitable set-up for her investigation?



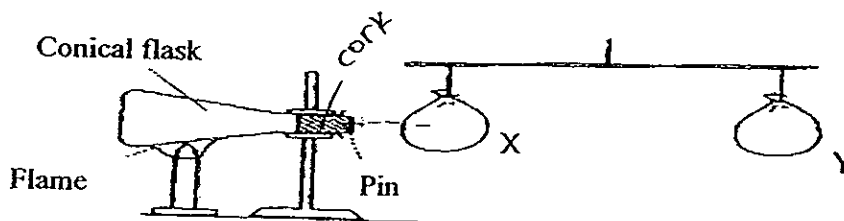
20. A torch is shone on a white volleyball and a black cube as shown below. The ball and the cube are in line with the torch.



Which one of the following shows the correct shadow cast on the screen? *Gfrage.*



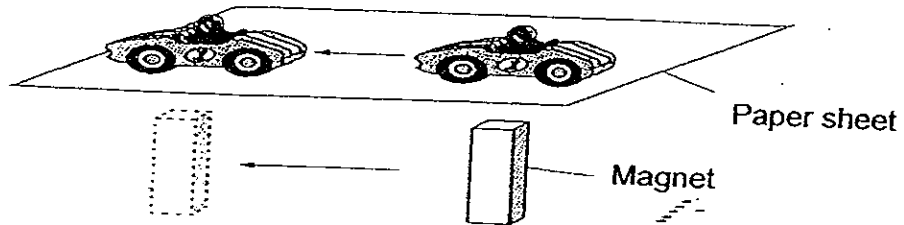
21. Mei Yin set up the apparatus as shown below.



After 3 minutes, the balance was tilted. What is the possible explanation for such an observation?

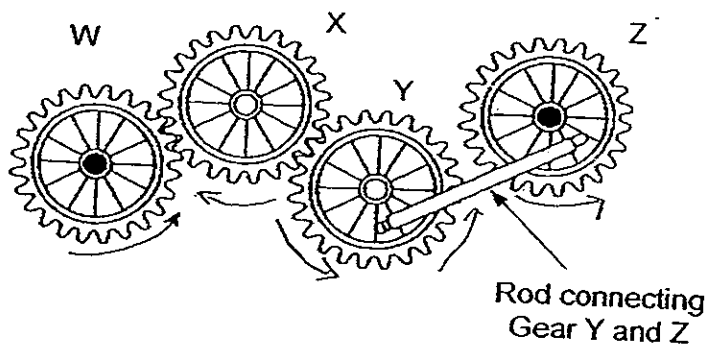
- (1) The air in the flask expanded and pushed the cork out to hit Balloon X
- (2) The air in the flask expanded and pushed the cork out to hit Balloon Y
- (3) The conical flask contracted and squeezed the cork out to hit Balloon X
- (4) The conical flask contracted and squeezed the cork out to hit Balloon Y

22. Ming Hong placed a steel toy car on a paper sheet and held a magnet under the sheet. He noticed that when the magnet was moved, the toy car moved in the same direction as shown in the diagram below.



He repeated the same experiment by replacing the paper sheet with sheets made of different materials. Which one of the following sheets **will not** produce the same effect as above?

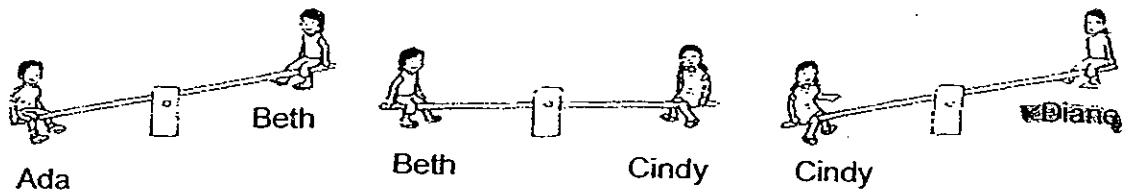
- (1) Iron sheet
 - (2) Glass sheet
 - (3) Plastic sheet
 - (4) Copper sheet
23. A simple machine is set up with four similar gears. Gear W is turning in the direction represented by the arrow.



Which one of the following correctly shows the direction of Gear X, Y and Z?

| | Gear X | Gear Y | Gear Z |
|-----|----------------|----------------|----------------|
| (1) | clockwise | anti-clockwise | anti-clockwise |
| (2) | clockwise | clockwise | anti-clockwise |
| (3) | anti-clockwise | anti-clockwise | clockwise |
| (4) | anti-clockwise | clockwise | clockwise |

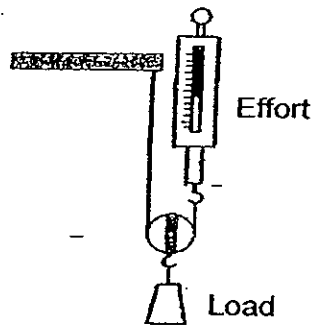
24. Four girls Ada, Beth, Cindy and Diane sat on the see-saws. Every pair sat at the same distance from the centre of the see-saw.



Which girl is the lightest among them?

- (1) Ada
- (2) Beth
- (3) Cindy
- (4) Diane

25. A class was doing an experiment on the movable pulley as shown below.



Pupils were told to try different loads of 100g, 200g, 300g and 400g on the pulley. Which reading is the most likely correct outcome of this experiment?

(1)

| Load / g | Effort/ g |
|----------|-----------|
| 100 | 100 |
| 200 | 200 |
| 300 | 300 |
| 400 | 400 |

(2)

| Load / g | Effort/ g |
|----------|-----------|
| 100 | 50 |
| 200 | 110 |
| 300 | 160 |
| 400 | 220 |

(3)

| Load / g | Effort/ g |
|----------|-----------|
| 100 | 200 |
| 200 | 390 |
| 300 | 580 |
| 400 | 810 |

(4)

| Load / g | Effort/ g |
|----------|-----------|
| 100 | 150 |
| 200 | 300 |
| 300 | 500 |
| 400 | 700 |

--- End of Booklet A. Please proceed to Booklet B ---

METHODIST GIRLS' SCHOOL (PRIMARY)

PRIMARY 5

END-OF-YEAR EXAMINATION 2008

SCIENCE

BOOKLET B1

| SECTION | MARKS |
|------------------|--------------|
| A | / 50 |
| B1 | / 20 |
| B2 | / 20 |
| PRACTICAL | / 10 |
| TOTAL | / 100 |

NAME : _____ ()

CLASS : _____

Total time for Booklets A and B : 1 h 45 min.

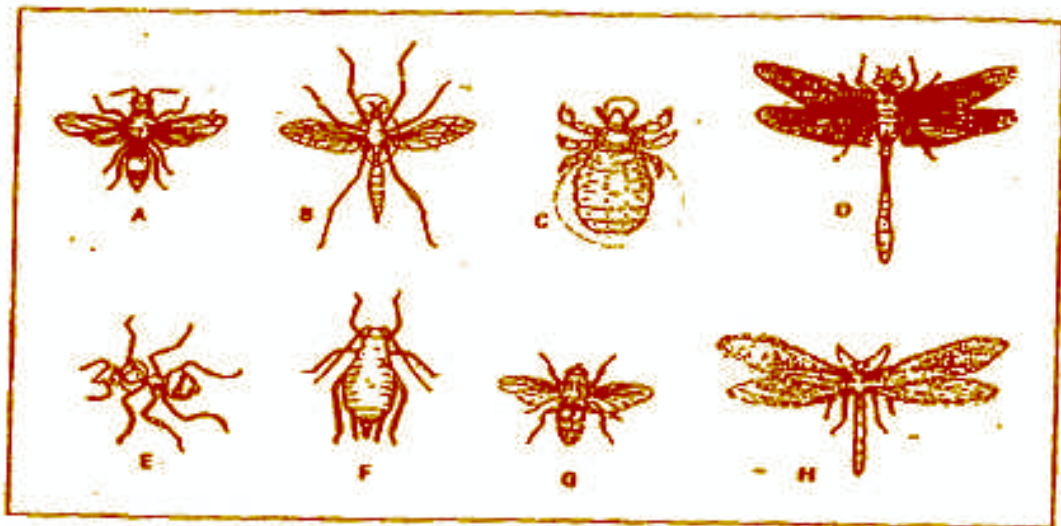
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Number of pages: 9

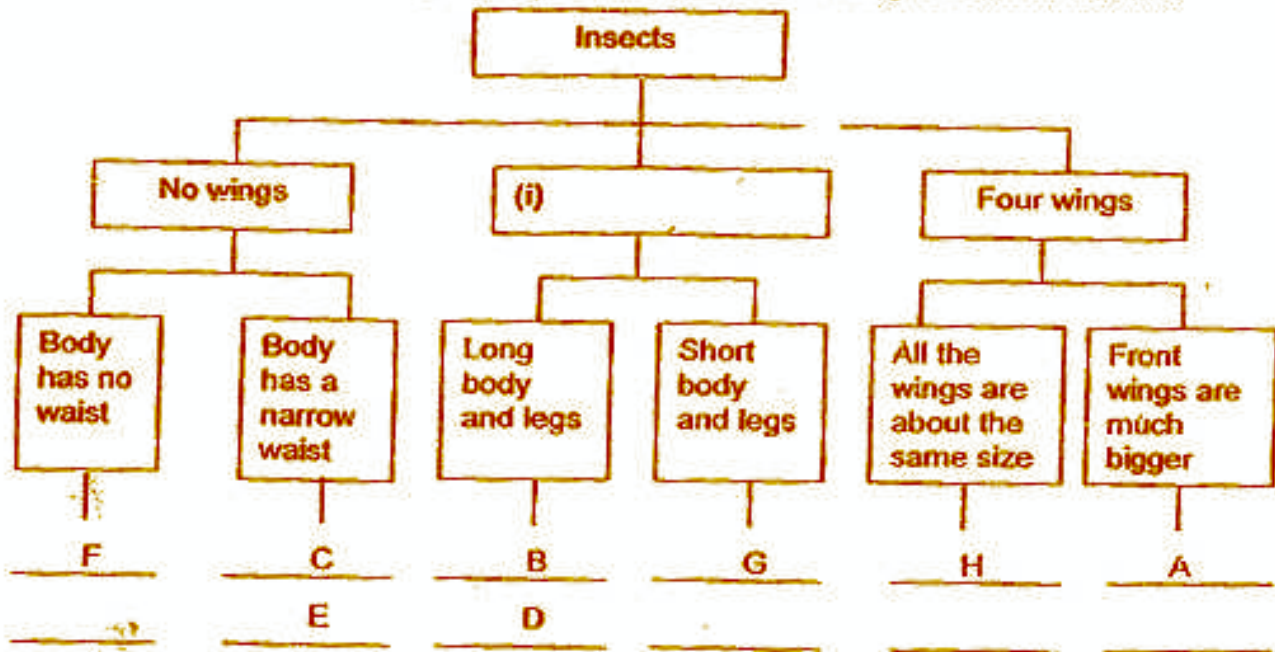
Section B1: Open-ended (8 questions = 20 marks)

Read each question carefully and write your answers in the spaces provided.

26. The diagrams below show eight insects, A, B, C, D, E, F, G and H.



The insects can be grouped according to the following classification chart.



a) Write a suitable heading for (i) in the classification chart above. (1 m)

b) Two insects in the classification chart have been grouped wrongly. Name the two insects by writing the correct letters below. (1 m)

_____ and _____

27. Some features of cells are given in the table below.

| Feature | Animal cell | Plant cell |
|---------------|-------------|------------|
| Cytoplasm | | |
| Cell wall | | |
| Nucleus | | |
| Cell membrane | | |

a) Put a tick (\checkmark) in the boxes above to show the presence of the features in the animal and plant cell. (1 m)

b) Name another feature that can be found in a plant cell but not in an animal cell. State the function of the feature that you have named. (1 m)

Feature : _____

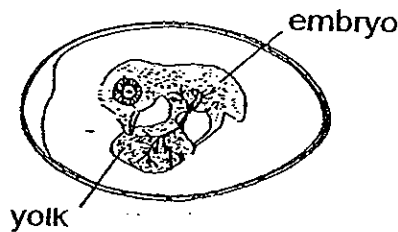
Function: _____

28. It takes 21 days for fertilized hen eggs to develop into chicks. Throughout the 21 days of development, the mother hen takes very good care of the eggs. She incubates the eggs by sitting on them.

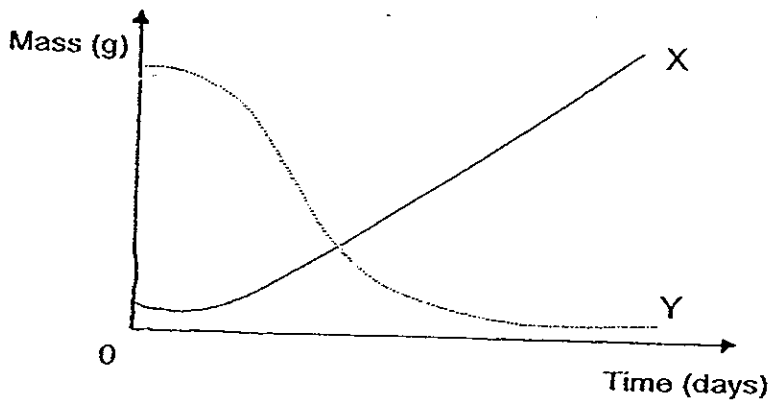


a) Explain why the mother hen incubates the eggs by sitting on them. (1 m)

b) When the embryo in the egg is growing into a chick as shown below, some changes in the mass of the embryo and the yolk take place.



In the graph, the two curves show changes in the mass of the embryo and the yolk.

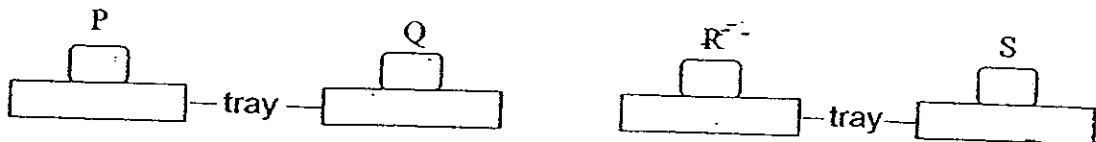


Which curve, X or Y, shows how the mass of the yolk changes? Explain your answer.

(1 m)

29. Mary carried out an experiment using the potato as shown below.

She cut the potato into 4 pieces P, Q, R and S. She put each piece into a similar tray filled to the brim with soil and watered each piece daily with the same amount of water. Then she placed the 4 trays beside a window.



a) Mary placed the 4 trays beside a window. How does this make the experiment a fair test?

(1 m)

b) After two weeks, new plants grew from pieces Q, R and S but not from piece P. Suggest a reason why a new plant did not grow from piece P. (1 m)

c) Which plant below has the same method of reproduction as the potato plant? Circle the correct answer.

(1 m)

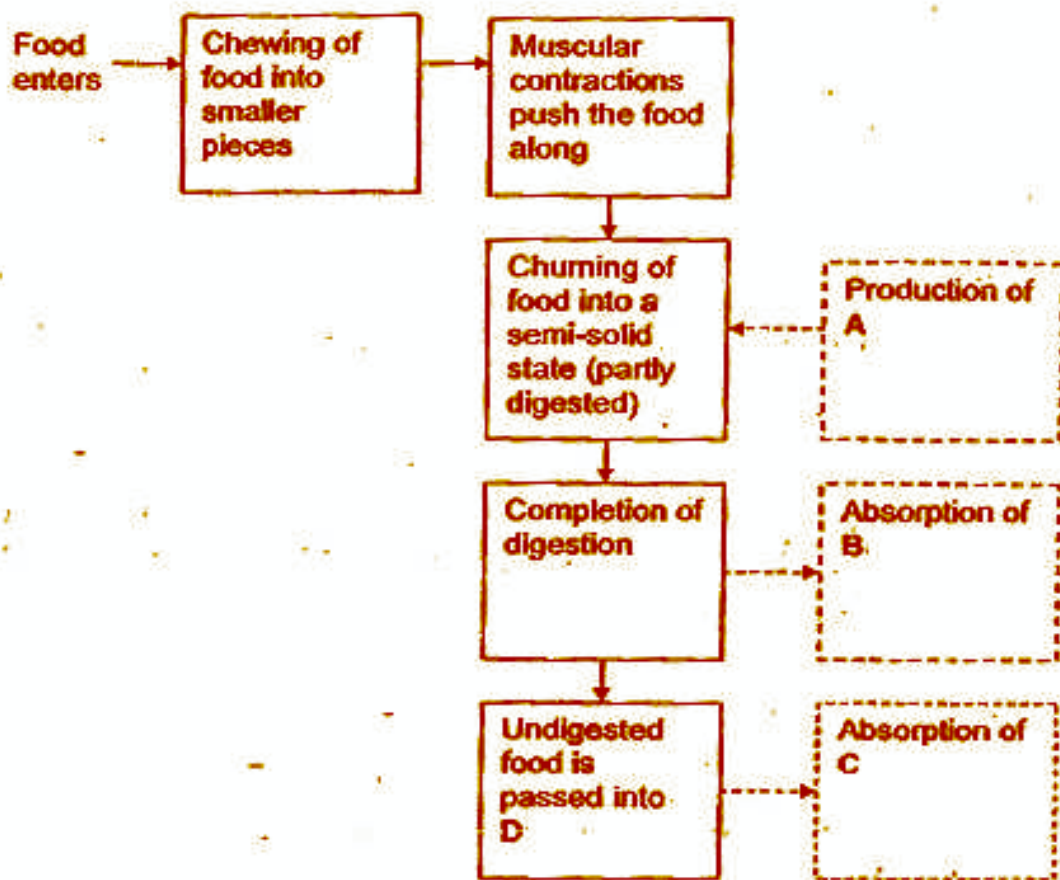
pineapple

bryophyllum

ginger

tomato

30. The flow chart below shows the processes involved in the human digestive system.



Based on the information given in the flow chart, identify A, B, C and D. (2 m)

A: _____

B: _____

C: _____

D: _____

31. The diagram below shows Kim running.



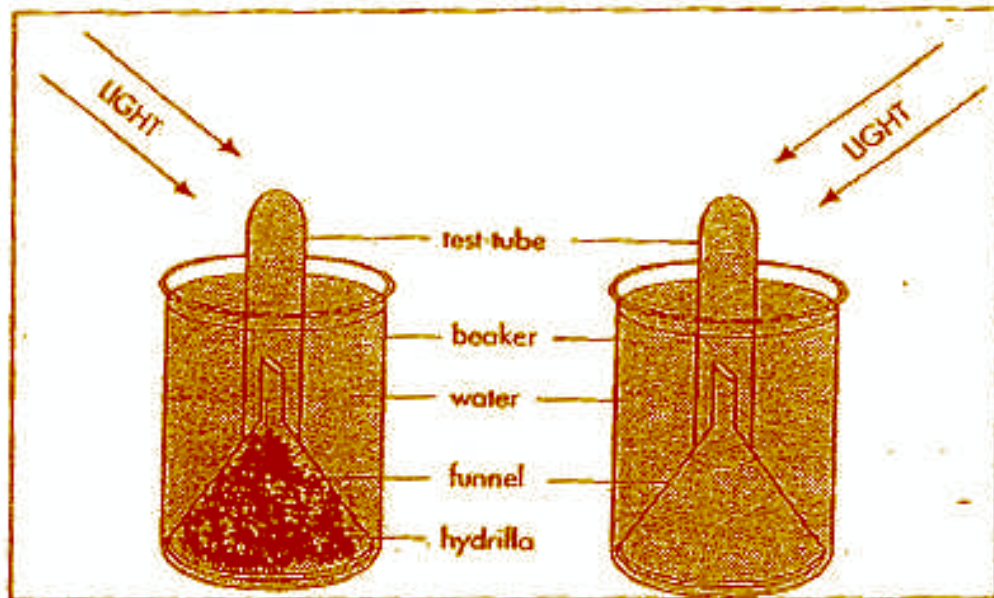
a) Kim knows that her heartbeat increases after running. Using a stop-watch, what steps should she take to find out the change in her heartbeat? (2 m)

b) Why does Kim's heartbeat increase when she is running? (1 m)

32. The table below shows two differences between respiration and photosynthesis. Complete the table by giving two other differences. (2 m)

| Differences between | | |
|---------------------|------------------------------|-----------------------------|
| | respiration | photosynthesis |
| 1 | Oxygen is taken in. | Oxygen is given out. |
| 2 | Carbon dioxide is given out. | Carbon dioxide is taken in. |
| 3 | | |
| 4 | | |

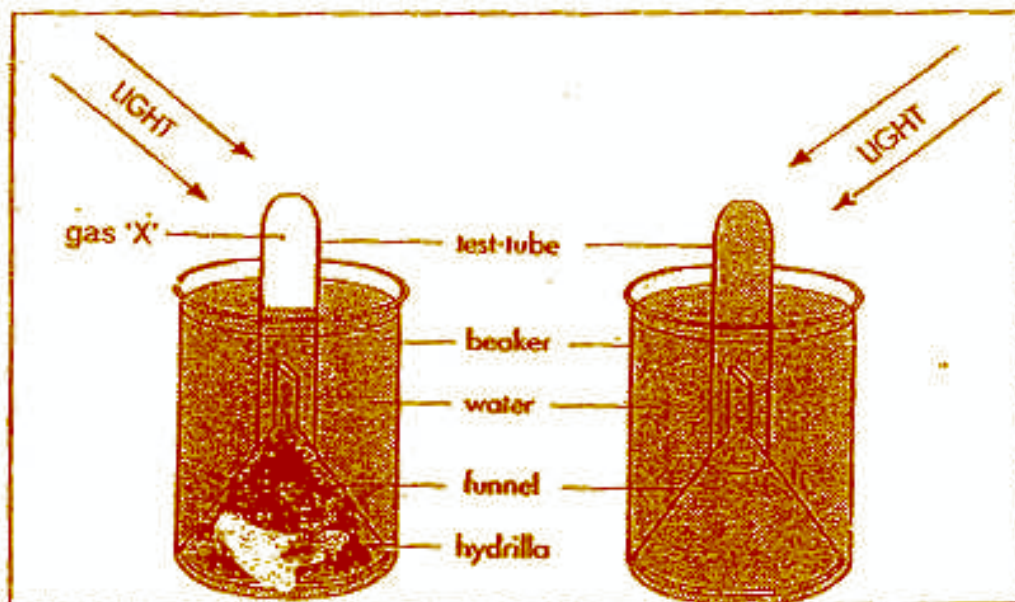
33. An experiment was carried out as shown below. Some hydrilla plants were placed in set-up A but not in set-up B. Then both set-ups were placed in sunlight.



Set-up A

Set-up B

Beginning of experiment



Set-up A

Set-up B

End of experiment

a) At the end of the experiment, gas 'X' was collected in the test-tube of set-up A. What was gas 'X'? (1 m)

b) Set-up B acted as a control in the experiment. What was the purpose of this control? (1 m)

c) If set-up A was placed in the dark, what would the result be? Explain why this was so. (2 m)

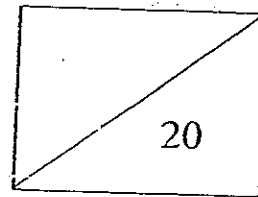
METHODIST GIRLS' SCHOOL (PRIMARY)

PRIMARY 5

END-OF-YEAR EXAMINATION 2008

SCIENCE

BOOKLET B2



NAME : _____ ()

CLASS : _____

Total time for Booklets A and B : 1 h 45 min.

**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

Number of pages: 8

Section B2: Open-ended (8 questions = 20 marks)

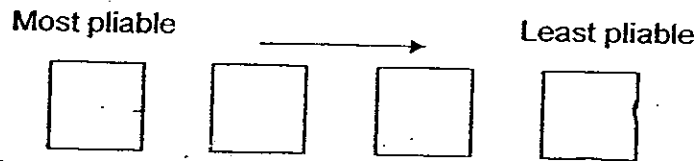
Read each question carefully and write your answers in the spaces provided.

34. Dona compared the pliability of four metals, M, N, O and P, by bending them in different ways.

She recorded her observations in the table below, using a '✓' to indicate that the metal can be bent in the stated way.

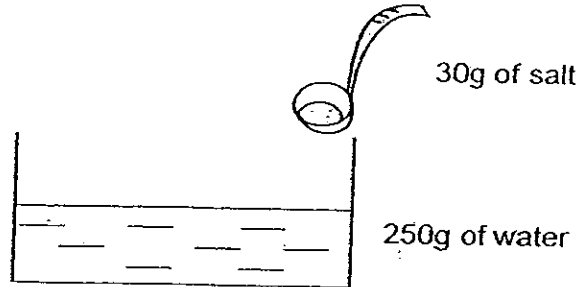
| Metal | Metal can be bent by using | | |
|-------|----------------------------|--------|--------|
| | Bare hands | Pliers | Hammer |
| M | ✓ | ✓ | ✓ |
| N | | | ✓ |
| O | | ✓ | ✓ |
| P | | | |

- a) Arrange the four metals according to their pliability by writing the respective letters in the boxes below. (1 m)



- b) State one reason why the base of a frying pan is usually made of metal. (1 m)

35. A basin contained 250g of water. 30g of salt was dissolved in the basin of water.



- a) After 2 days, it was found that only 250g of the solution was left in the basin. Tick [] what the remaining solution would most likely to contain:

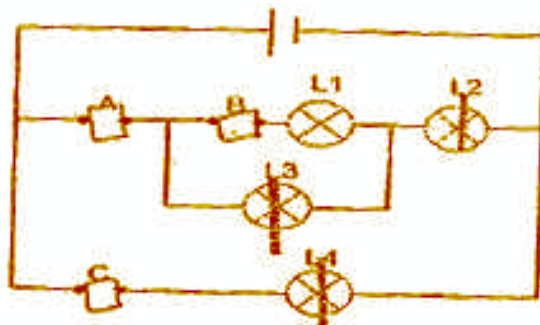
- 250g of water only
- 220g of water and 30g of salt
- 230g of water and 20g of salt
- 240g of water and 10g of salt

(1 m)

- b) Based on your answer in (a), explain what has happened to the solution.

(1 m)

36. Three objects, A, B and C, of unknown materials are placed in various positions in the circuit as shown below:



The table below shows whether the lamps, L1, L2, L3 or L4, lit up during the experiment.

| Lamp | L1 | L2 | L3 | L4 |
|---------|----|-----|-----|-----|
| Lit up? | | Yes | Yes | Yes |

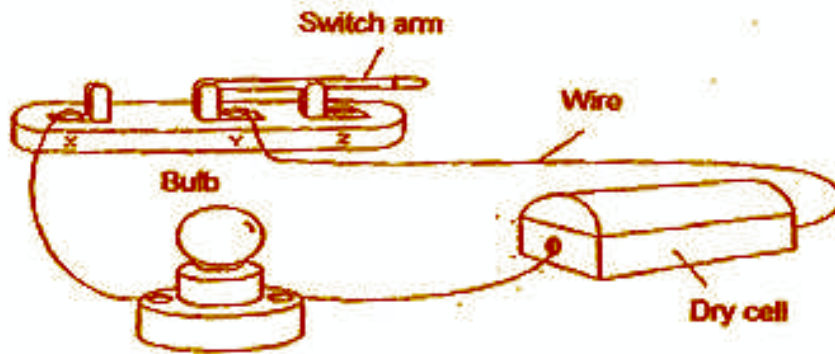
- a) From the result above, state the object(s), A, B or C, that is/are good conductor(s) of electricity. (1 m)

- b) If object A is replaced by a glass rod, indicate in the table below the possible result by filling in the appropriate box(es) with the word "Yes" for the lamp(s) that may fit up. (1 m)

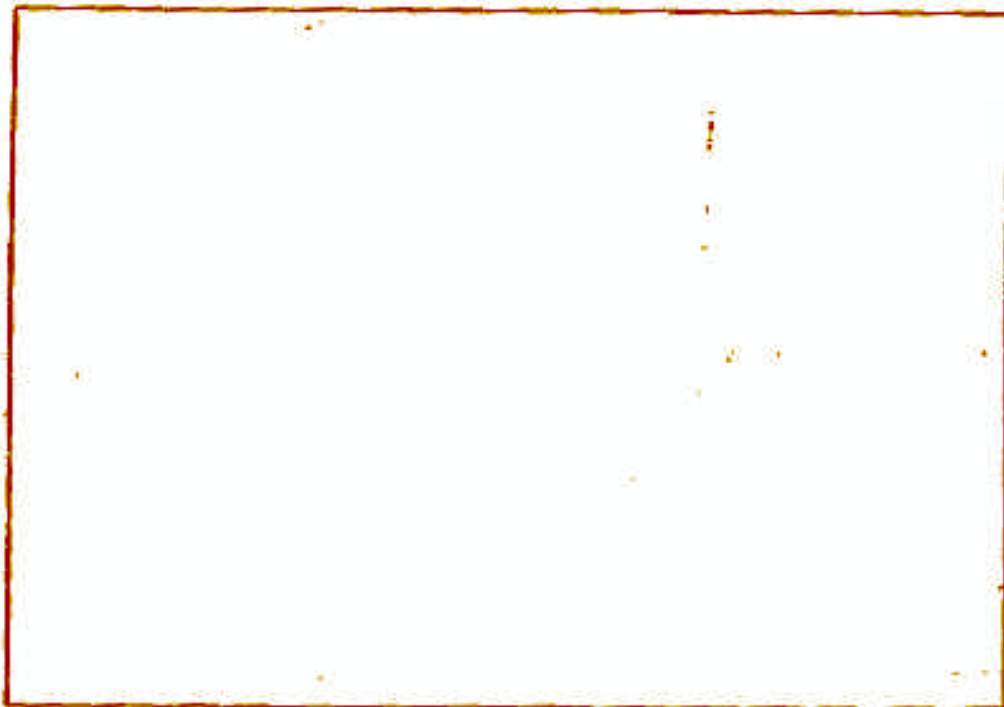
| Lamp | L1 | L2 | L3 | L4 |
|---------|----|----|----|----|
| Lit up? | | | | |

- c) State one safety rule about using electricity (1 m)

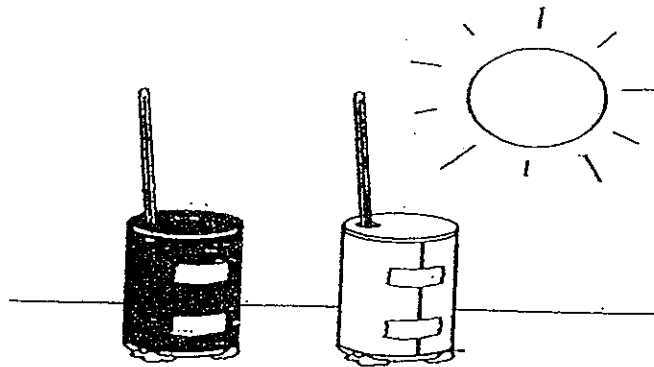
37. During the first lesson on the topic "Electricity", Mr. Dong showed the class how to set up a simple circuit. In his demonstration, he introduced a switch, wires, a light bulb and a dry cell. He closed the circuit by moving the switch arm from the position Z to X.



Draw in the box below, a circuit diagram that can possibly represent the closed circuit above. Your diagram must include all the electrical components that Mr. Dong had introduced. (2 m)



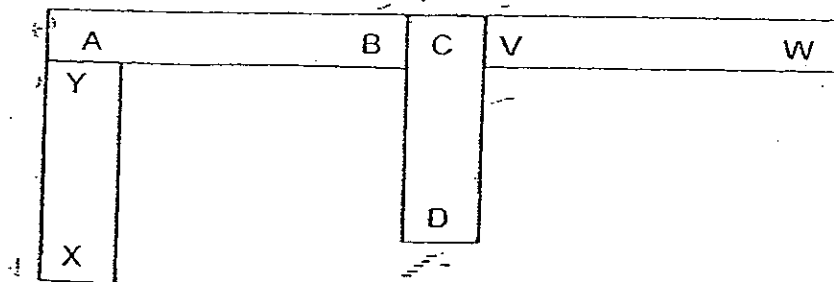
38.Krishna carried out an experiment to investigate the effect of the colour of the can's surface on its temperature as shown below.



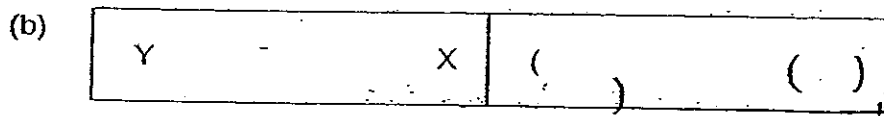
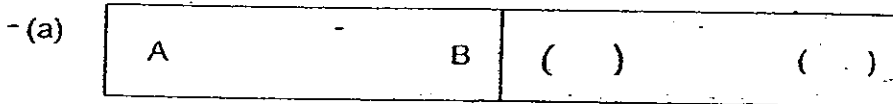
a) What difference would Krishna observe about the temperature of both cans after 20 minutes? (1 m)

b) If both cans are transferred to a cooler place, which can will lose heat faster? Why? (1 m)

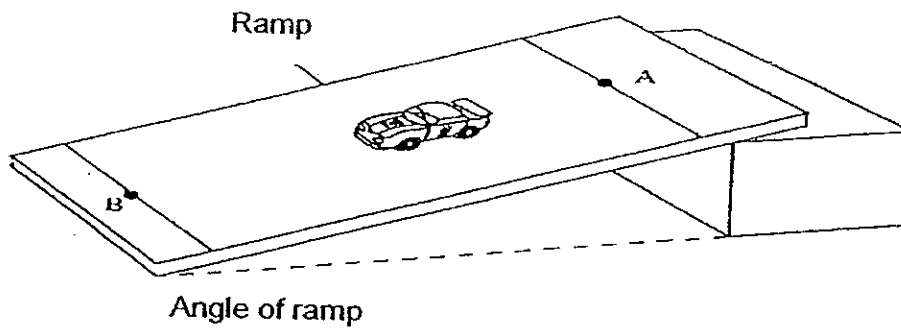
39. Four bar magnets are put together and their ends are marked as shown in the set-up below.



The magnets are then rearranged as shown below. Indicate in the brackets in parts (a) and (b) the letters, C, D and V, W to show the correct interaction when each pair of magnets are brought close together. **ONE BAR MAGNET CAN ONLY BE USED ONCE:** (2 m)



40. Jonas carried out an experiment using the set up as shown below.



He did the experiment twice and recorded down all the information and results in the table below:

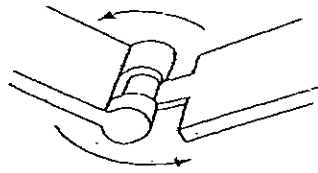
| | First experiment | Second experiment |
|-------------------------------|------------------|-------------------|
| Length of ramp (cm) | 80 | 80 |
| Distance between A and B (cm) | 20 | 20 |
| Angle of ramp (°) | 60 | 40 |
| Surface of ramp | Wood | Wood |
| Mass of car (g) | 35 | 35 |
| Time recorded (s) | 5.1 | 6.5 |

a) What is the aim of this experiment? (1 m)

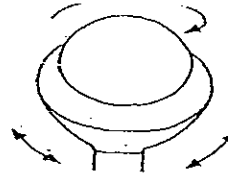
b) What conclusion can you deduce from this experiment? (1 m)

c) What would Jonas observe if he were to change the car to a bigger one that weighs 50 g? (1 m)

41. The diagram below shows gadgets L and P. Look at these gadgets to answer part (a) and (b).



Gadget L



Gadget P

- a) Circle the joint in the Human System that moves in the same way as gadget L in the table below.

(1 m)

| | | | |
|-------------|-----------|--------------|-----------|
| Elbow joint | Hip joint | Pelvic joint | Toe joint |
|-------------|-----------|--------------|-----------|

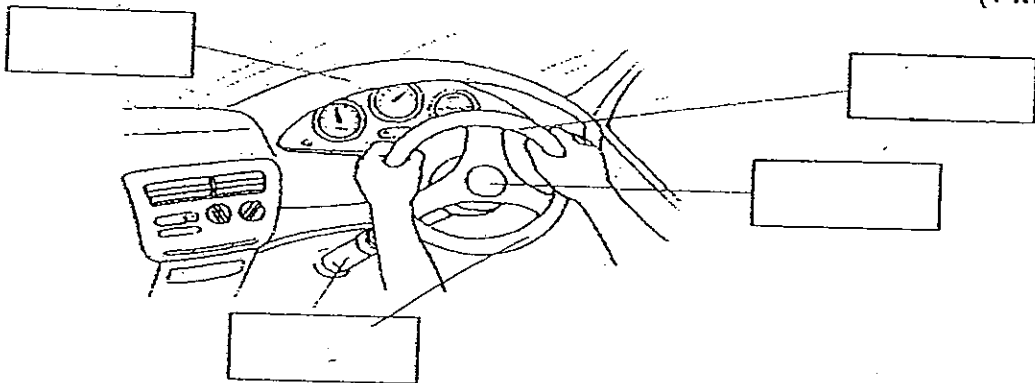
- b) Circle the joint in the Human System that moves in the same way as gadget P in the table below.

(1 m)

| | | | |
|------------|------------|--------------|----------------|
| Neck joint | Knee joint | Finger joint | Shoulder joint |
|------------|------------|--------------|----------------|

- c) The picture below shows parts of a car. Fill in the boxes with the words 'Wheel' and 'Axle' appropriately.

(1 m)

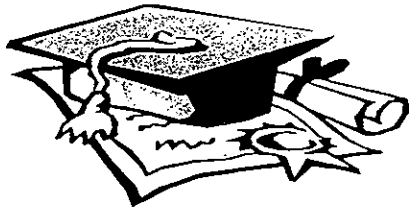


- d) What is the advantage of the wheel and axle in the car as shown above?

(1 m)

End of Booklet B2





ANSWER SHEET

EXAM PAPER 2008

SCHOOL : MGS HIGH PRIMARY SCHOOL
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA 2

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

| | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|
| Q18 | Q19 | Q20 | Q21 | Q22 | Q23 | Q24 | Q25 |
| 4 | 2 | 2 | 1 | 1 | 1 | 4 | 2 |

26)a) i) 2 wings b) D and C.

27)a) Cytoplasm: Animal cell, Plant cell
Cell wall : Plant cell.
Nucleus : Animal cell, Plant cell
Cell membrane: Animal cell, Plant cell

b) Feature: Chloroplasts

Function: They contain chlorophyll that traps sunlight for photosynthesis.

28)a) Incubation provides the warmth which is necessary for the development of the embryo.

b) Y. The yolk is used up by the developing chick.

29)a) All of the pieces of potatoes will be in the same conditions.

b) Piece P did not have a bud.

c) ginger

30) A: digestive juice. B: digestive food C: water
D: large intestine

31)a) After running, she should measure her heartbeat again for a minute. The difference in the two measurements will give the change in her heartbeat.

b) When Kim is running, her body needs more oxygen and digested food (to produce more energy). Her different parts of her body move more quickly so that her body could get more oxygen and digested food (to produce more energy).

32)3) Energy, water and carbon dioxide is produced.
Oxygen and sugar is produced.

4) Oxygen and sugar are the raw materials.
Water and carbon dioxide are the raw materials.

33)a) Oxygen.

b) It was to confirm that the bubbles of oxygen came from the hydrilla plants.

c) No oxygen would be collected. Plants cannot carry out photosynthesis in the dark.

34)a) M, O, N, P

b) It is a good conductor of heat, so the food on the frying pan can be cooked faster.

35)a) 220g of water and 30g of salt.

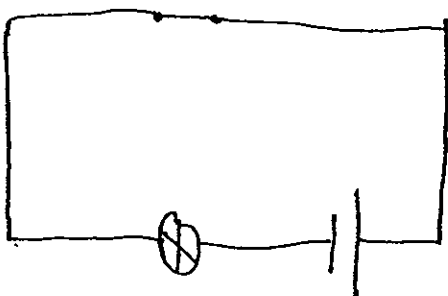
b) The salt in the solution still remains but some water in the solution has evaporated.

36)a) C and A

b) L4

c) We should not touch electrical appliances with our wet hands.

37)



38)a)The dark-coloured would have a higher temperature than the light-coloured can.

b)Black can. There is a greater temperature difference.

39)a)C, D b)V, W

40)a)It is to find out if the angle of the ramp affects the time needed for the toy car to travel down the ramp.

b)The bigger the angle of the ramp, the faster the speed of the car.

c)The time will decrease.

41)a)Elbow joint.

b)Shoulder joint.

c)ii)Wheel.

iv)axle.

d)It reduces the amount of effort needed to overcome the load.