



RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (2)

2005

Name: _____ Class: P5 _____ Index No _____

28 October 2005

SCIENCE

Att: 1 h 45 min

| | | |
|-------------------------------|-------|-------|
| Your Score Out of 90 marks | | |
| | Class | Level |
| Highest score | | |
| Average score | | |
| Parent's Signature | | |

SECTION A (25 X 2 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 on the Optical Answer Sheet (OAS).

1 The table below contains some information about five planets.

| Planets | Number of Moons | Surface | Speed around Sun (km/s) | Distance from Sun (millions of km) |
|---------|-----------------|---------|-------------------------|------------------------------------|
| P | 0 | solid | 48 | 58 |
| Q | 1 | solid | 30 | 150 |
| R | 15 | gas | 13 | 778 |
| S | 6 | gas | 5 | 4 496 |
| T | 1 | solid | 5 | 5 946 |

These tables show how Matthew and Mark grouped these planets.

| Matthew | |
|---------|---------|
| Group 1 | Group 2 |
| P | R |
| Q | S |
| T | |

| Mark | |
|---------|---------|
| Group 1 | Group 2 |
| P | S |
| Q | T |
| R | |

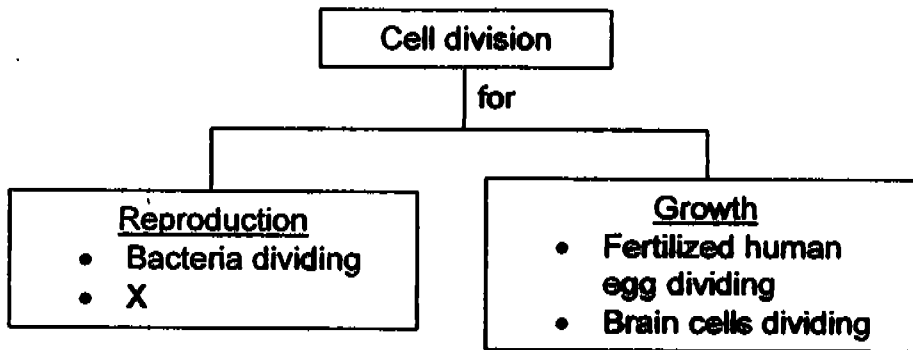
Which characteristics did Matthew and Mark use to group the planets?

| | Matthew | Mark |
|-----|----------------------|-----------------------|
| (1) | surface | distance from the Sun |
| (2) | speed around the Sun | distance from the Sun |
| (3) | surface | number of moons |
| (4) | speed around the Sun | number of moons |

2 Without the help of Man, which of the following organism(s) can produce young that have exactly the same genetic material as the parent?

- A Cow
 - B Grasshopper
 - C Paramecium
 - D Yeast
- (1) C only
(2) A and B only
(3) C and D only
(4) A, B and D only

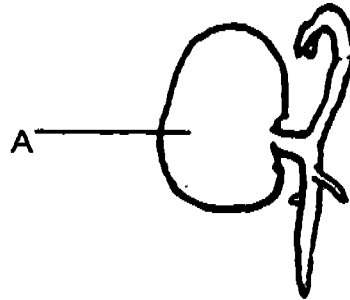
3 Study the classification table below carefully.



What do you think 'X' represents?

- (1) cheek cells dividing
- (2) yeast cells budding
- (3) baby growing in size
- (4) tree growing in height

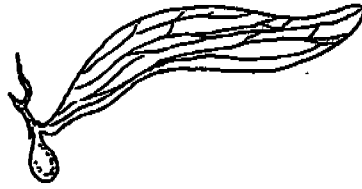
- 4 The diagram below shows a seedling.



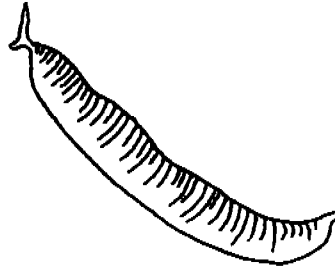
Which one of the following is correct?

| | Part A | Function |
|-----|-------------|---------------------------------|
| (1) | seed leaves | provide food for the plant |
| (2) | shoot | carries out photosynthesis |
| (3) | baby plant | absorbs water |
| (4) | new leaf | traps light energy to make food |

5 The diagram below shows four different fruits.



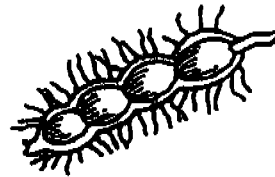
A



B



C

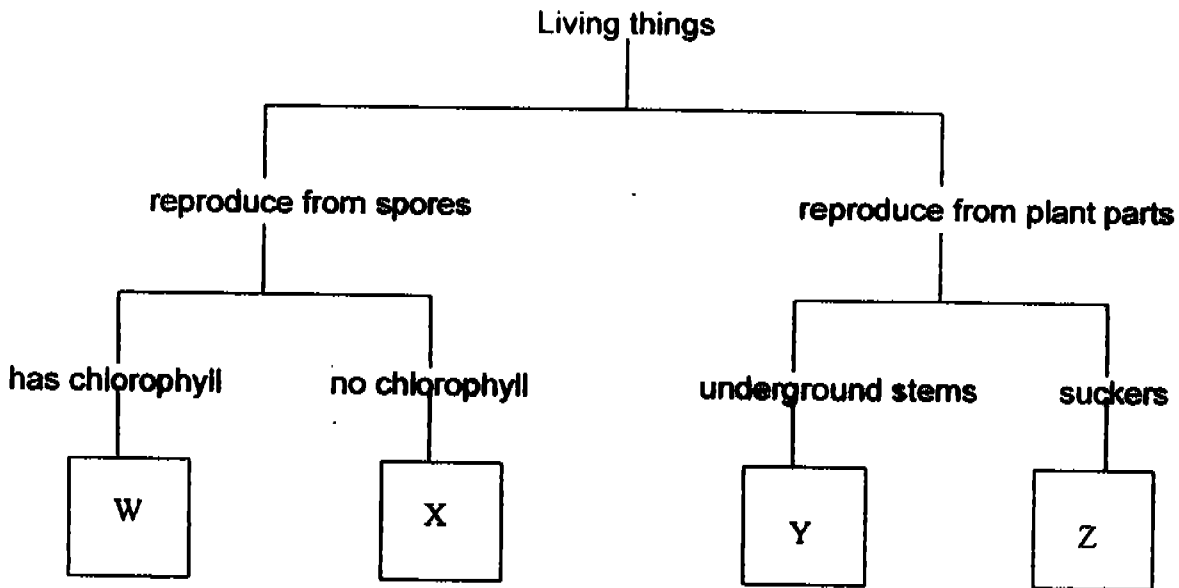


D

Which one of the following shows correctly the method of dispersal of their seeds?

| | A | B | C | D |
|-----|-----------|-----------|-----------|-----------|
| (1) | splitting | splitting | water | animals |
| (2) | wind | splitting | water | animals |
| (3) | wind | wind | water | splitting |
| (4) | animals | water | splitting | wind |

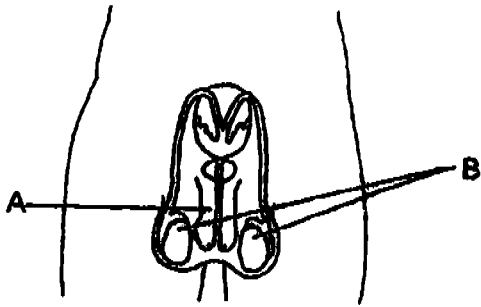
6 Study the classification table below.



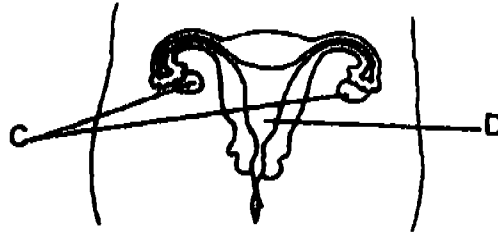
Which one of the following shows correctly what W, X, Y and Z are?

| | W | X | Y | Z |
|-----|------------------|----------------|--------------|------------------|
| (1) | maidenhair fern | bracket fungus | sweet potato | sealing wax palm |
| (2) | hibiscus | moss | ginger | pineapple |
| (3) | stag's horn fern | Jew's ears | potato | banana |
| (4) | bird's nest fern | mould | onion | begonia |

7 The diagrams below show the male and female human reproductive systems.



male human reproductive system



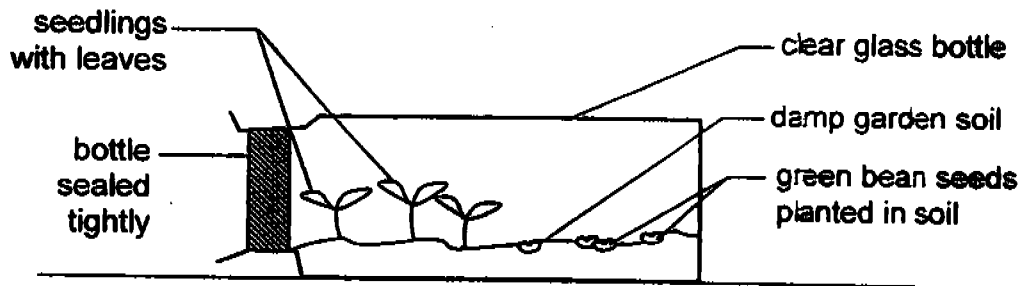
female human reproductive system

Which of the parts (A, B, C or D) produce the male sex cells and female sex cells?

| | Produce male sex cells | Produce female sex cells |
|-----|------------------------|--------------------------|
| (1) | A | C |
| (2) | A | D |
| (3) | B | C |
| (4) | B | D |

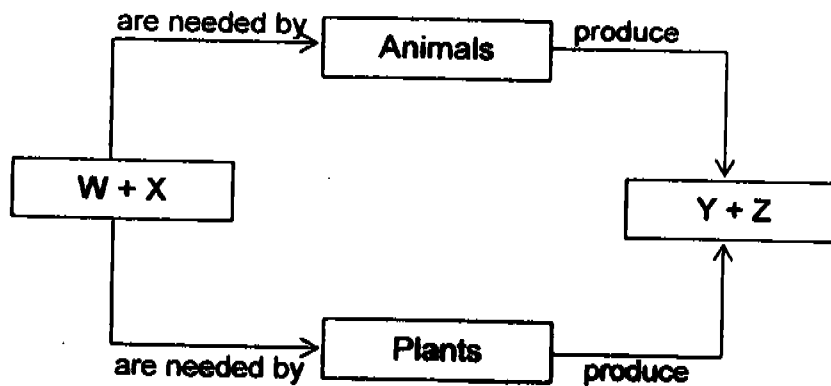
For questions 8 and 9, please refer to the diagram below.

Ahmad set up a bottled garden as shown in the diagram below. He sealed it so that no air can enter or leave the bottle. He then placed it beside an open window for a week.



- 8 What do you think Ahmad observed after one week?
- A The seedlings with leaves had died.
 - B New seedlings are seen emerging from the soil's surface.
 - C There are water droplets on the inner surfaces of the bottle.
- (1) A only
(2) B only
(3) A and C only
(4) B and C only
- 9 Which of the following processes would have taken place during the week?
- A Germination
 - B Photosynthesis
 - C Respiration
- (1) A only
(2) A and B only
(3) B and C only
(4) A, B and C

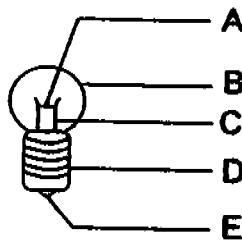
- 10 Study the diagram below carefully. It gives you information about a process carried out by both plants and animals.



What do W, X, Y and Z represent?

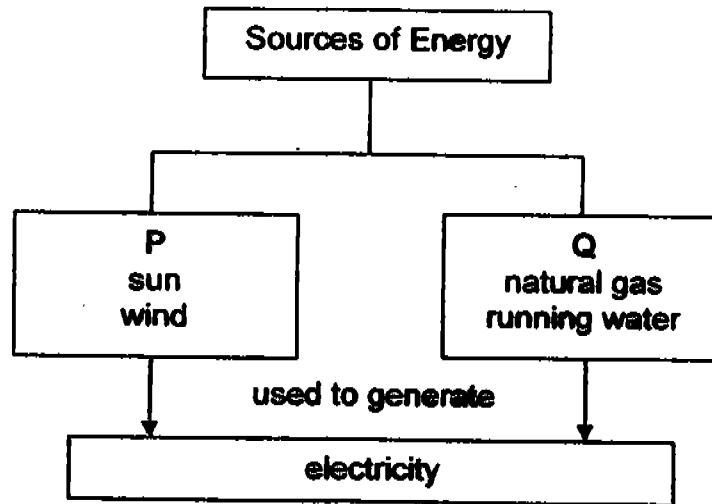
| | W | X | Y | Z |
|---|--------|----------------|--------|----------------|
| 1 | sugar | carbon dioxide | water | oxygen |
| 2 | oxygen | sugar | energy | carbon dioxide |
| 3 | water | carbon dioxide | starch | oxygen |
| 4 | starch | water | oxygen | energy |

- 11 Which of the following part(s) of a bulb is/ are made of conductors of electricity?



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

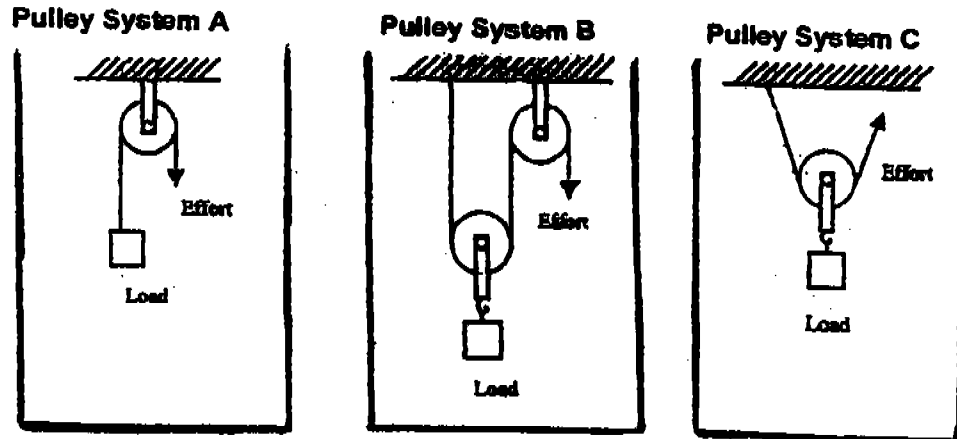
- 12 John drew the diagram shown below to summarise what he had learnt about sources of energy used to generate electricity. He classified the different types of energy into two groups, P and Q.



Which source of energy did he classify wrongly?

- (1) sun
 - (2) wind
 - (3) natural gas
 - (4) running water
- 13 All simple machines _____.
- A enable work to be done more easily
 - B need an effort to overcome the load
 - C change the direction of the force applied
- (1) A only
 - (2) A and B only
 - (3) B and C only
 - (4) A, B and C

- 14 Joey carried out an experiment using the three pulley systems shown below. For each system, he applied a force over different distances to lift a similar load.



Study the following table.

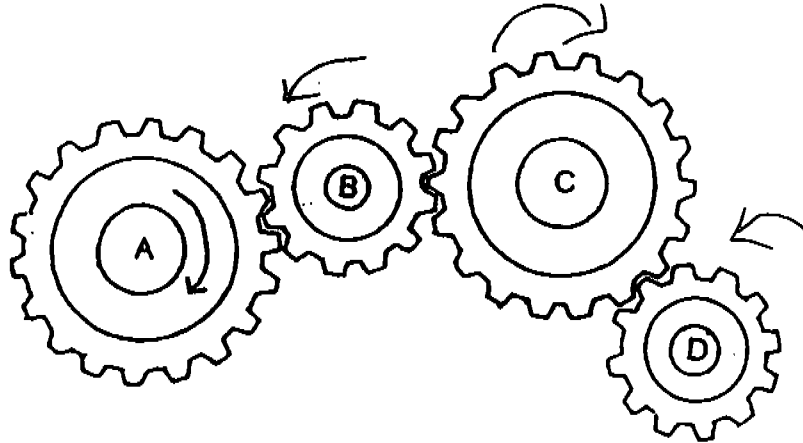
| Distance moved by the load (m) | Distance moved by the effort (m) |
|--------------------------------|----------------------------------|
| 0.5 | 1.0 |
| 1.0 | 2.0 |
| 3.0 | 6.0 |

Which pulley system(s) can give rise to the set of data shown in the table above?

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

15

The figure below shows four gears. Gear A has the same number of teeth as Gear C, while Gear B has the same number of teeth as Gear D. If Gear A turns in the clockwise direction, which of the following statements about the other gears is correct?



- (1) All the other gears turn in the same direction.
- (2) Gear C makes twice as many turns as Gear B in the clockwise direction.
- (3) Gear B makes half as many turns as Gear A in the anti-clockwise direction.
- (4) Gear D makes the same number of turns as Gear B in the anti-clockwise direction.

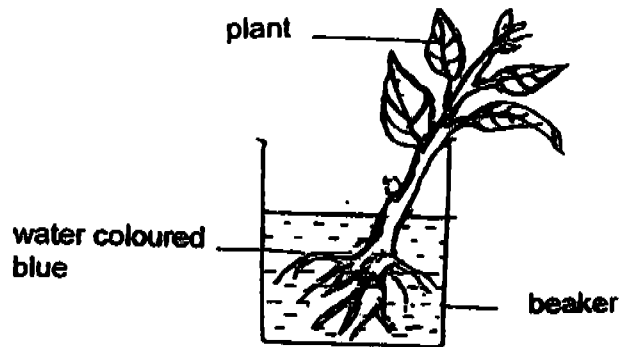
16 In the diagram below, mouth-to-mouth resuscitation is being carried out.



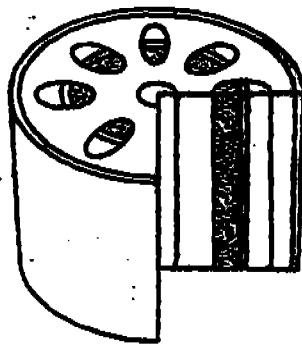
Mouth-to-mouth resuscitation is an emergency procedure carried out on a person who has stopped breathing. In this procedure, the rescuer helps to keep the person alive by blowing exhaled air into the person's lungs. This procedure is possible because exhaled air still has _____.

- (1) warmth
- (2) oxygen
- (3) water vapour
- (4) carbon dioxide

17 Joseph placed a plant in a jar of coloured water as shown below.



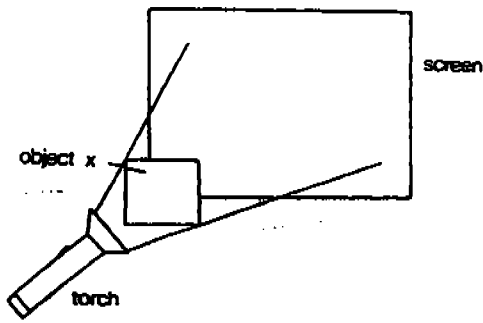
The plant was left aside for a day. It was then removed from the jar and a short length of the stem was cut. The diagram shows a section through the stem which reveals blue-coloured tubes.



Without the blue-coloured tubes, **A** cannot be absorbed by the **B** to be transported to the **C**

| | A | B | C |
|-----|-------------------------|--------|-------------------------------------|
| (1) | water and mineral salts | roots | leaves and other parts of the plant |
| (2) | food | roots | leaves and other parts of the plant |
| (3) | water and mineral salts | leaves | other parts of the plant |
| (4) | food | leaves | other parts of the plant |

- 18 A torch is shone onto an object X as shown. A dark shadow is formed on the screen.

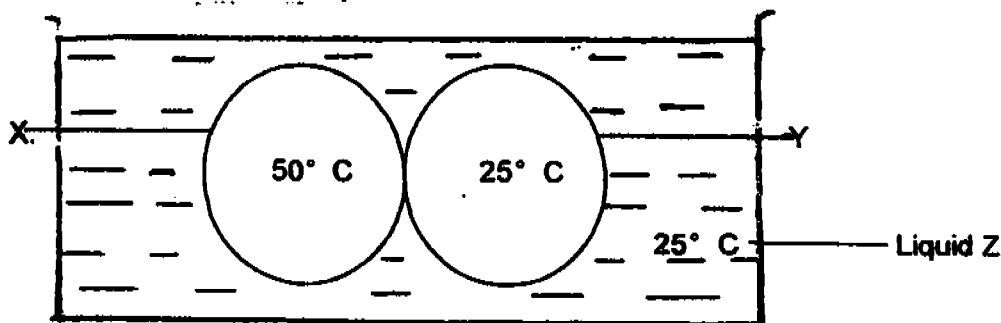


Object X is most likely _____.

- (1) a mirror
- (2) a glass slide
- (3) frosted glass
- (4) cellophane paper

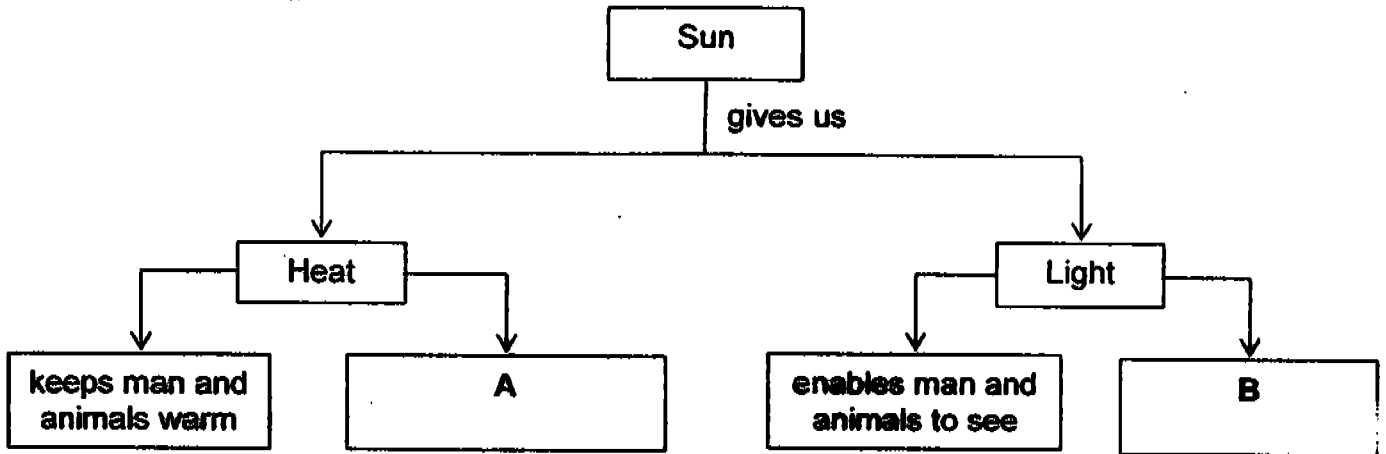
- 19 The diagram below shows two similar objects, X and Y, which have been heated to a temperature of 50°C and 25°C respectively. Both objects are made of the same material. Both objects are then immersed at the same time into Liquid Z which has a temperature of 25°C .

Which one of the following describes how heat will flow immediately after X and Y are immersed in Liquid Z?



- (1) X to Y; X to Z
- (2) X to Y; Z to X
- (3) X to Z; Y to X
- (4) Y to X; Z to X

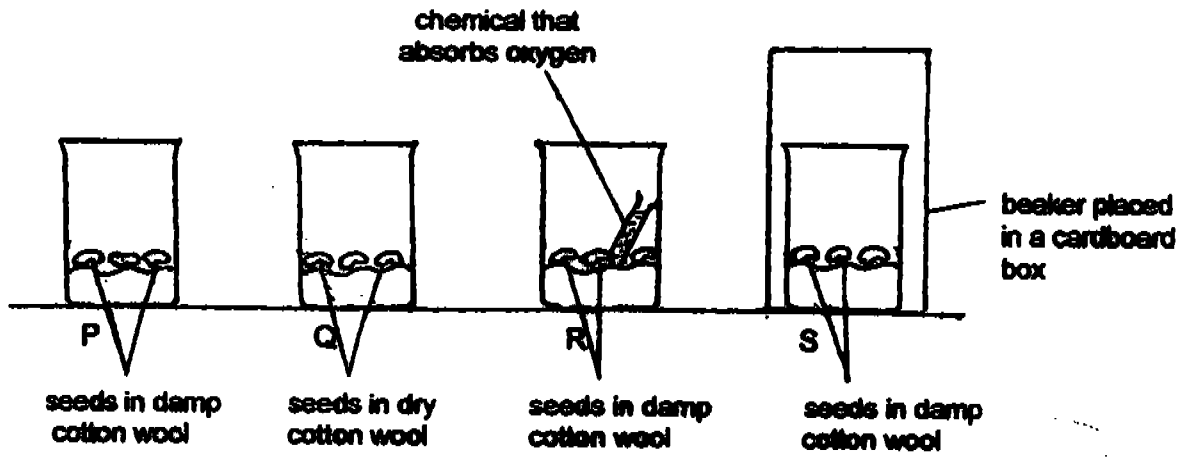
20 Study the concept map below carefully.



Which one of the following shows correctly what A and B represent?

| | A | B |
|---|---------------------------------------|---------------------------|
| 1 | required to form ice | needed for condensation |
| 2 | causes metals to melt | needed for respiration |
| 3 | enables us to boil water | needed for germination |
| 4 | enables the water cycle to take place | needed for photosynthesis |

21 Minah sets up an experiment as shown below to see which seeds will be able to germinate. She uses four similar glass beakers sealed with a lid each. In each beaker, there are fifteen similar green bean seeds. Beakers P, Q and R are placed near the window. Beaker S is placed in a cardboard box. In which container(s) will the seeds be able to germinate?



Legend:
 One  represents 5 beans

- (1) P only
- (2) Q and R only
- (3) P and S only
- (4) R and S only

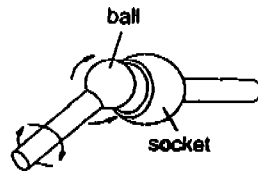
22 Study the situations below.

| | |
|--|--------------------------------|
| A. The ice-cube is cold, wet and slippery. | B. The coffee is bitter. |
| C. The shadow cast by the tree is long. | D. The perfume is very strong. |

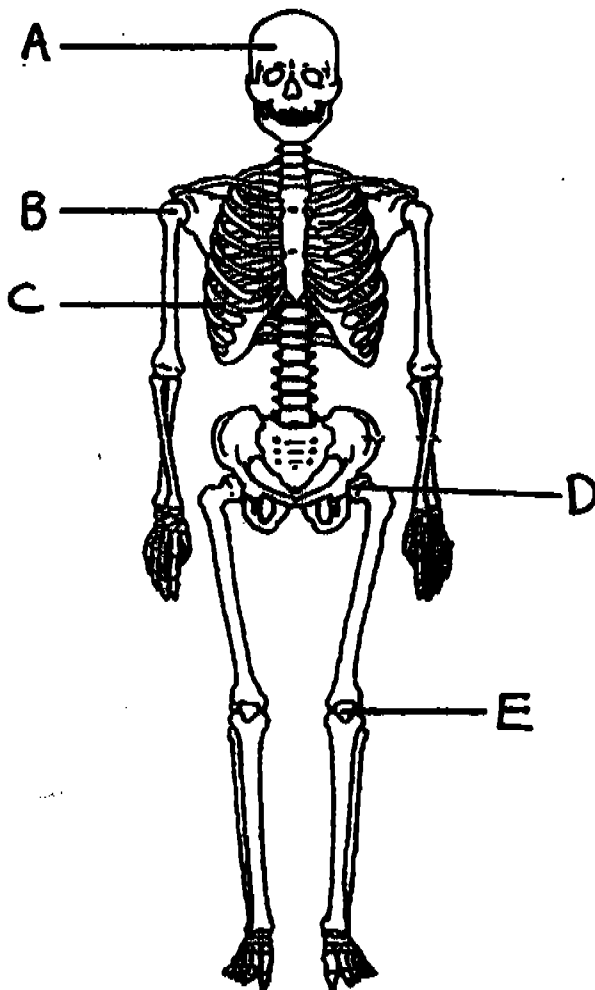
Which of the following correctly represents the senses Sally made use of in situations A, B, C and D?

| | A | B | C | D |
|-----|-------|-------|-------|-------|
| (1) | smell | sight | touch | taste |
| (2) | sight | smell | touch | taste |
| (3) | touch | taste | sight | smell |
| (4) | taste | sight | touch | smell |

- 23 Mei Mei made a model to resemble a certain part of our skeletal system as shown below.



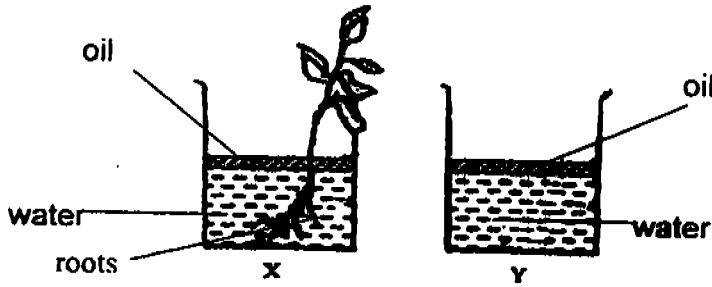
Which part(s) of the skeleton shown below does Mei Mei's model represent?



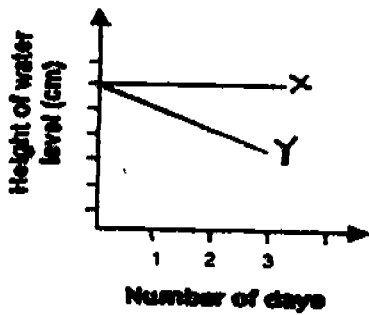
- (1) A only
- (2) B only
- (3) ~~B and~~ D only
- (4) D and E only

Li Ming labelled 2 identical beakers X and Y. She poured in 200 cm³ of water and 50 cm³ of oil in each beaker. A balsam plant with roots was placed in Beaker X. Both beakers were placed near the window. Li Ming recorded the height of the water level in Beakers X and Y over a period of 3 days. She then plotted the results in a graph.

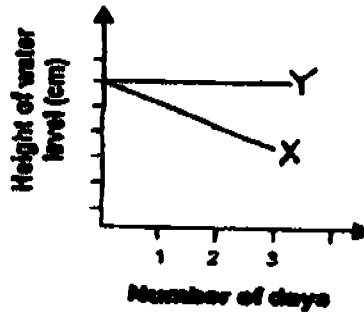
Which one of the following graphs shows correctly the changes in the water level in both Beakers X and Y?



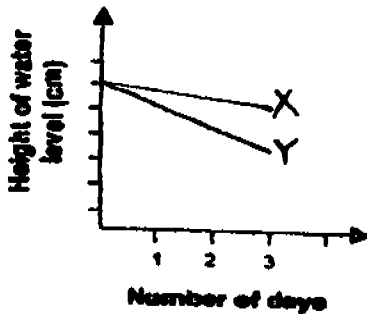
(1)



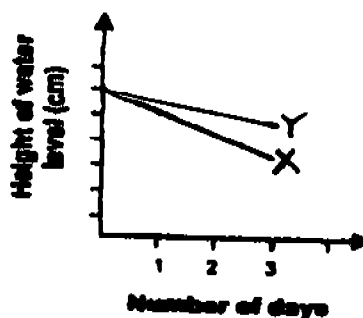
(2)



3)



(4)



25 Danny was able to arrange 3 magnets as shown below.



Which of the following shows another possible arrangement?

| | |
|---|--|
| <p>(1)</p> <p>A vertical magnet with 'A' at the bottom and 'B' at the top. A horizontal magnet with 'C' and 'D'. A vertical magnet with 'E' at the bottom and 'F' at the top.</p> | <p>(2)</p> <p>A horizontal magnet with 'E' and 'F'. A vertical magnet with 'A' at the top and 'B' at the bottom. A horizontal magnet with 'C' and 'D'.</p> |
| <p>(3)</p> <p>A vertical magnet with 'E' at the top and 'F' at the bottom. A horizontal magnet with 'C' and 'D'. A horizontal magnet with 'A' and 'B'.</p> | <p>(4)</p> <p>A horizontal magnet with 'C' and 'D'. A vertical magnet with 'E' at the bottom and 'F' at the top. A horizontal magnet with 'A' and 'B'.</p> |

NAME : _____

DATE : 28.10.05

CLASS : _____

| WRITE | | SHADE OVALS | | | | | | | | | |
|--------------|--|-------------|---|---|---|---|---|---|---|---|---|
| INDEX NUMBER | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | | A | B | C | D | E | F | G | H | I | J |

SUBJECT :

EXAMPLE: IF YOU THINK THE 2ND OPTION IS THE CORRECT ANSWER SHADE THE OVAL 2 LIKE THIS :

1 2 3 4

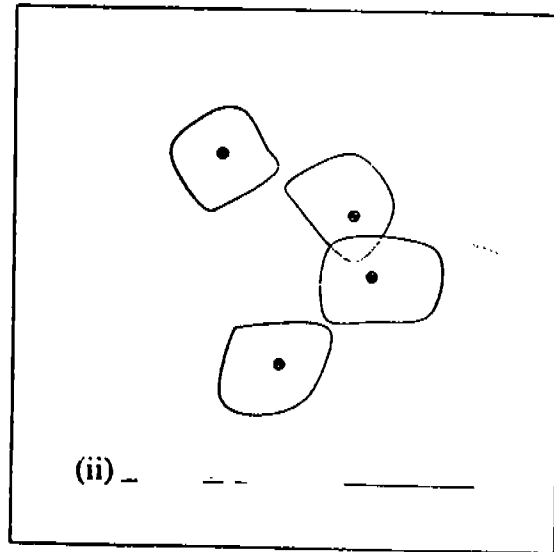
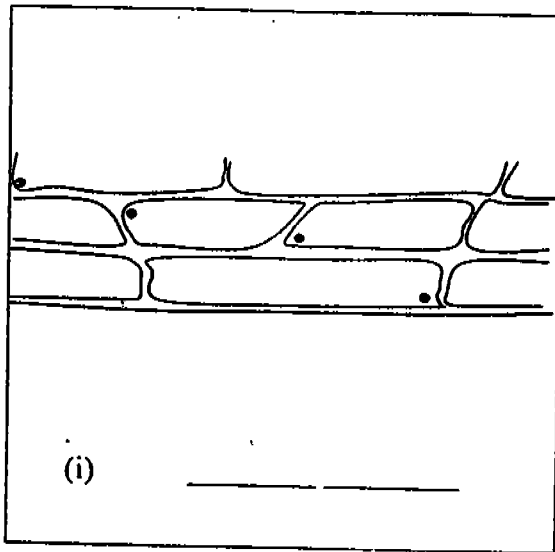
- | | | | | | | | | | | | | | | |
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| 11 | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input checked="" type="radio"/> 4 | 31 | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 | 51 | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
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| 14 | <input type="radio"/> 1 | <input type="radio"/> 2 | <input checked="" type="radio"/> 3 | <input checked="" type="radio"/> 4 | 34 | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 | 54 | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
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| 17 | <input checked="" type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input checked="" type="radio"/> 4 | 37 | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 | 57 | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 18 | <input checked="" type="radio"/> 1 | <input checked="" type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 | 38 | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 | 58 | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 19 | <input checked="" type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input checked="" type="radio"/> 4 | 39 | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 | 59 | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |

Name: _____ Class: P 5() Index No: ()

SECTION B (40 marks)

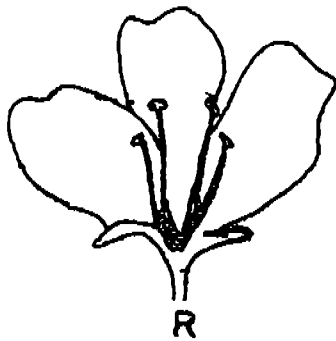
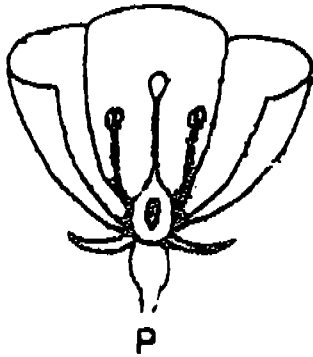
There are 16 questions in this section. Answer all of them.
Write the answers in the spaces provided.

- 26 Jane made the following drawings of cheek cells and onion skin cells during a science lesson. However, she forgot to give each drawing a title.
- (a) Please help Jane identify the cells she drew by writing 'cheek cells' and 'onion skin cells' in the spaces provided below each drawing. [1]



- (b) Explain how you were able to identify the two different types of cells from Jane's drawings. [1]

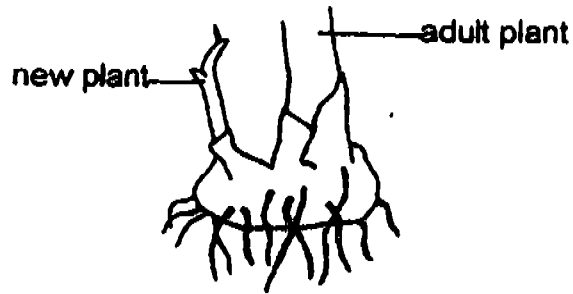
27 Study the diagrams below.



(a) Which of the flowers above can never develop into a fruit? [1]

(b) Explain why. [2]

- 28 The diagram below shows a new plant growing from the bud at the base of an adult plant.



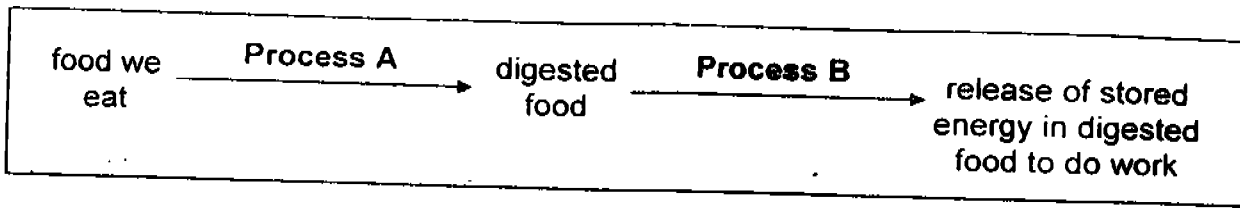
- (a) State one advantage of using this method of reproduction. [1]

- (b) State one disadvantage of using this method of reproduction. [1]

- 29 Bob is given a table to fill in.
Help him to identify the parts in which the male and female sex cells in plants are found. [2]

| | Plant part |
|------------------|------------|
| Male sex cells | |
| Female sex cells | |

- 30 Study the diagram below carefully. The diagram shows how two processes that take place in our bodies enable us to make use of the stored energy in the food we eat.



- (a) What are Process A and Process B? [1]

Process A: _____

Process B: _____

- (b) Where do Process A and Process B take place in our body? [1]

Process A takes place _____

Process B takes place _____

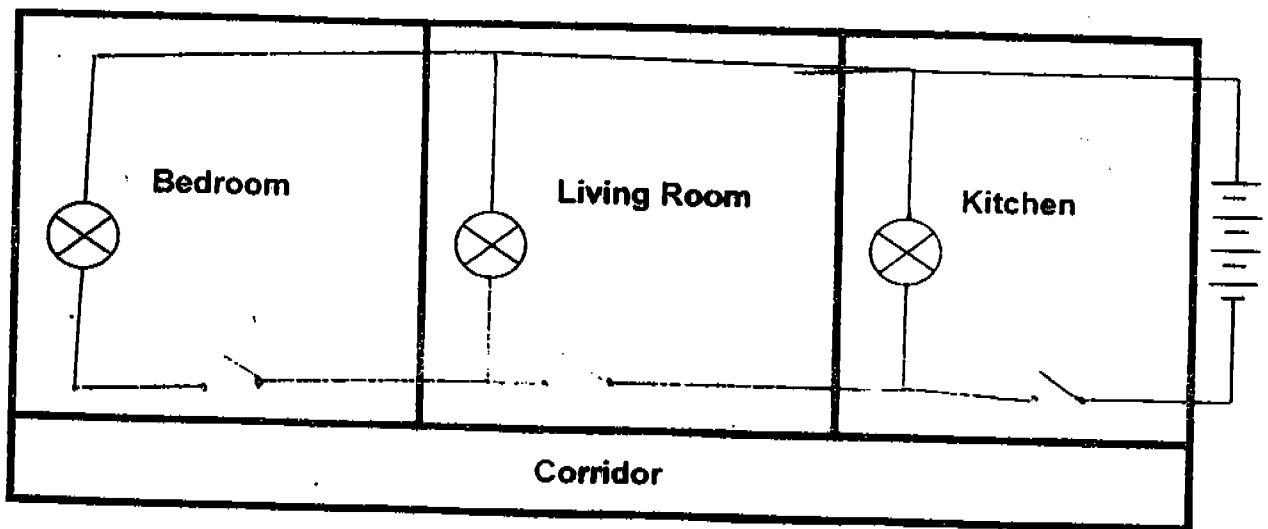
- (c) Which process, A or B, takes place in plants as well? [1]

- (d) What is the original source of the stored energy in the food we eat? [1]

- 31 The diagram below shows the layout of Siti's doll house. There is one lamp in the kitchen, one in the living room and another in the bedroom.

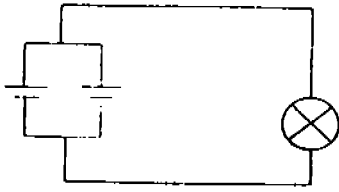
Draw a circuit diagram on the layout shown below to show the lamps connected in a closed circuit with each controlled individually by a switch. The symbol for a bulb representing each lamp has been drawn in for you. The batteries that supply the electricity needed to light the bulbs have been drawn in with two wires connecting them to one side of the doll house. Complete the circuit diagram by using the appropriate symbols for open switches and wires.

[3]

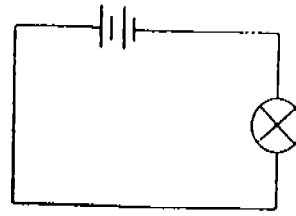


32

Johnny set up the electric circuits shown below. He is planning to carry out an experiment with these circuits.



Circuit A



Circuit B

- (a) What do you think the aim of his experiment is? [1]

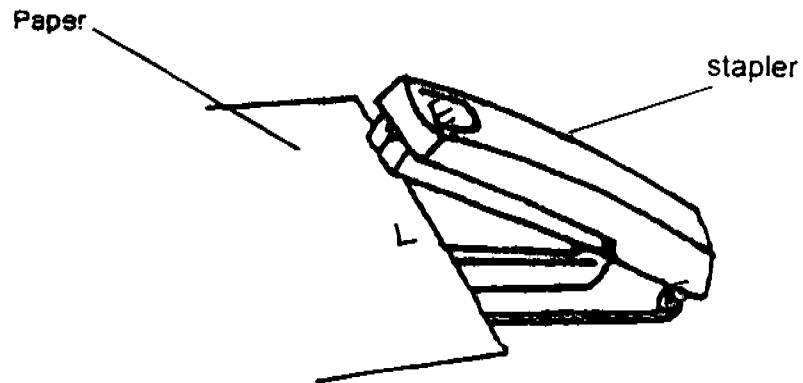
- (b) What variable(s) must he keep the same? [1]

- (c) What variable(s) must he change? [1]

- (d) What observation must he make in order to draw a conclusion from his experiment? [1]

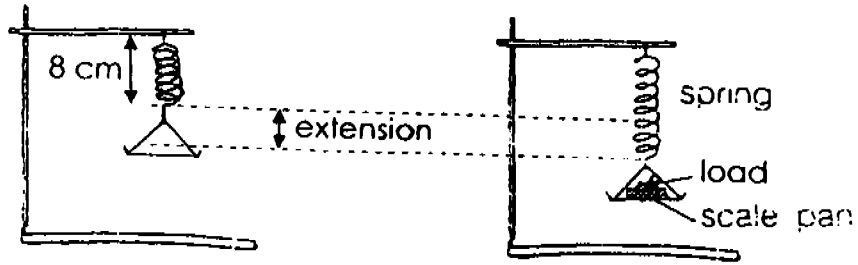
33

The diagram below shows a stapler which works on the principle of a lever.

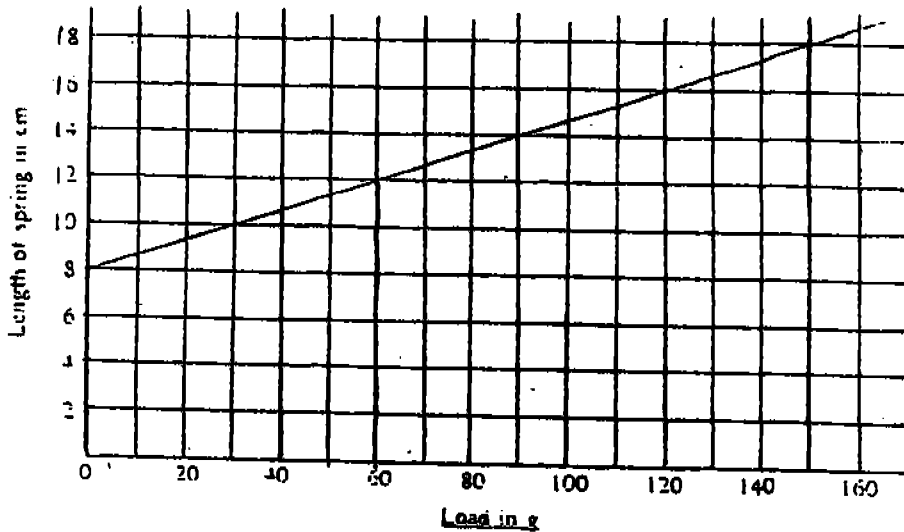


- (a) On the diagram, label the positions of the effort, load and fulcrum using the letters 'E', 'L' and 'F' respectively. [1]
- (b) Explain how a stack of paper can be stapled using the least force. [1]

34 Wenwu set up an experiment as shown below.



The spring was 8 cm long before any load was placed on the scale pan. He recorded the length of the spring for different loads placed on the scale pan and plotted a graph as shown.



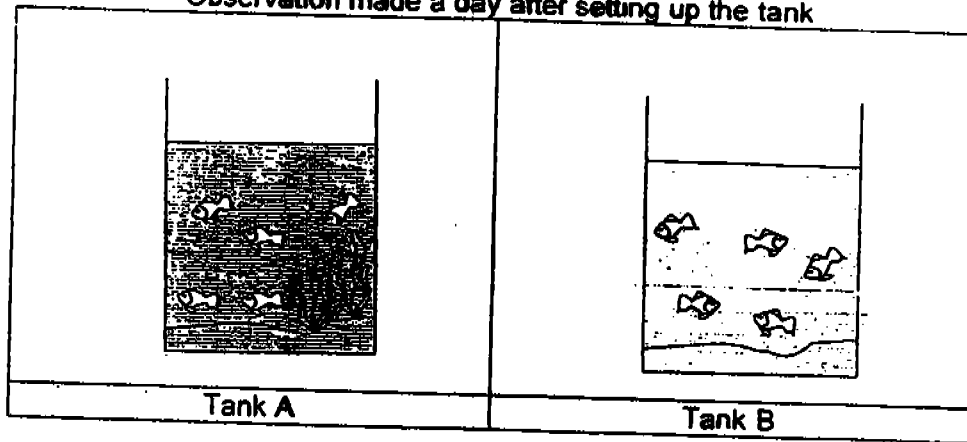
(a) What pattern did he notice between the load placed on the scale pan and the length of the spring? [1]

(b) What would the length of the spring be if a 60-g load is placed on the scale pan? [1]

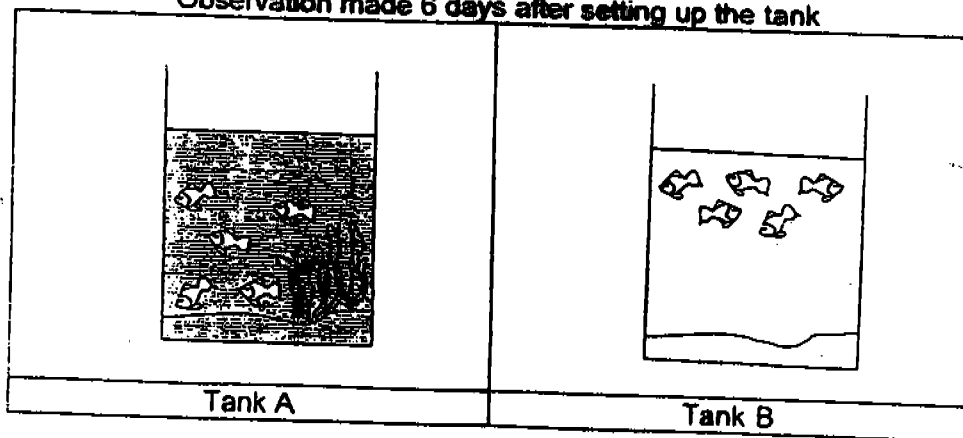
(c) If the extension of the spring is 10 cm, what would the load on the scale pan be? [1]

- 35 Shanthi set up 2 similar fish tanks; one with water plants, the other without. For each tank, she observed the section of the tank where the fish swam in. She then sketched the following observations.

Observation made a day after setting up the tank



Observation made 6 days after setting up the tank



- (a) Based on his observations over this period of time, explain why the fish in both tanks swam in similar sections of the tank on the first day the tanks were set up? [1]

- (b) Explain why the fish swam in different sections of the tank a few days later? [1]

36 The table below shows the normal pulse rate of some mammals at rest.

| Mammal | Resting Pulse Rate (heartbeats per minute) |
|----------|---|
| Cat | 250 |
| Man | 73 |
| Hamster | 950 |
| Elephant | 45 |

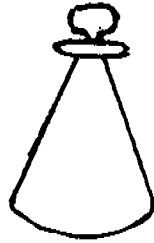
(a) Based on the information in the table above, what can you conclude about the size of the mammals and their pulse rates?

[1]

(b) The lion's pulse rate is likely to be between _____ heartbeats per minute and _____ heartbeats per minute.

[1]

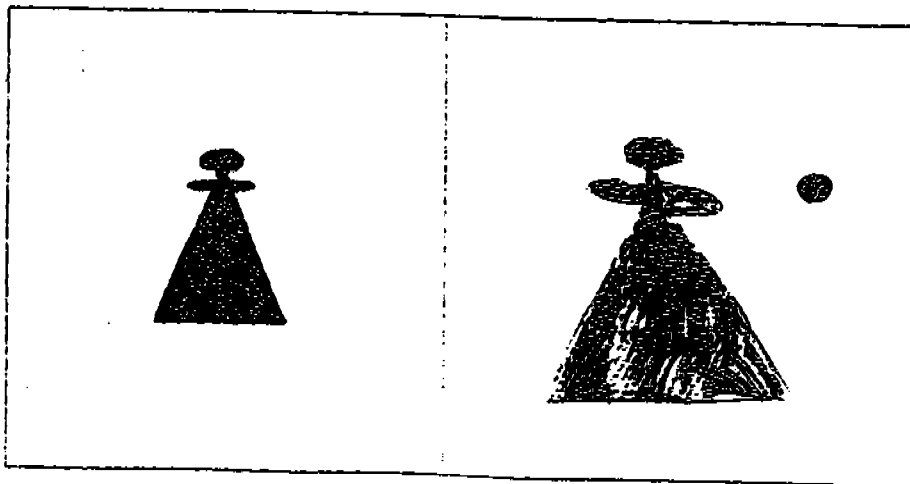
Amy has a perfume bottle as shown below.



Different shadows are formed when she shines her torch on it from various angles.

- (a) The space below shows one possible shadow that is formed. In the space next to it, draw in another shadow which can be formed by the perfume bottle. Draw the outline of the shadow and then shade the inside of the shadow.

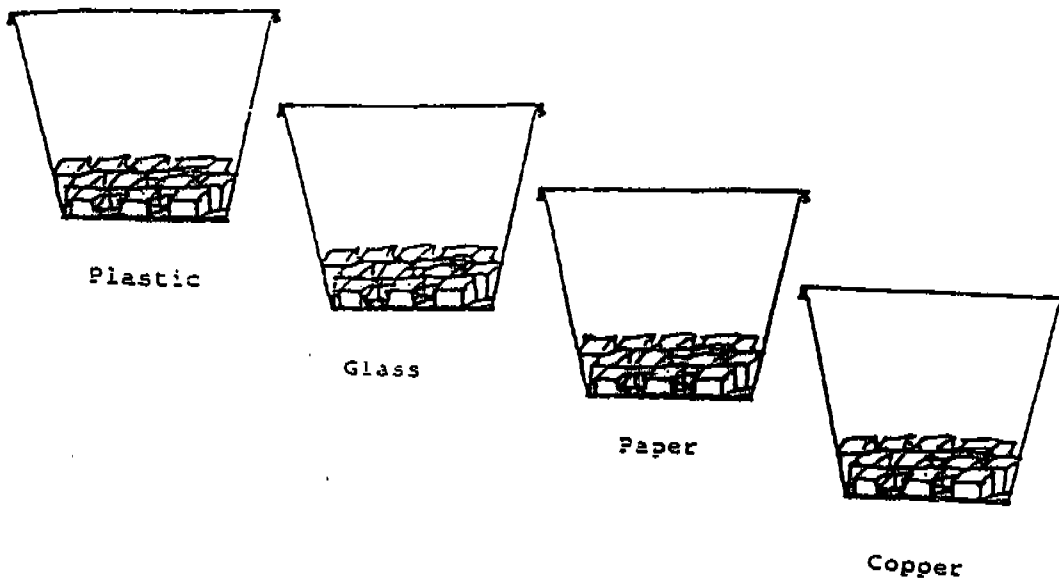
[1]



- (b) How is a shadow formed?

[1]

- 38 An equal number of ice cubes, all of the same size, were placed in each of the 4 cups shown below. The 4 cups are similar in size but are made from different materials. The cups were all placed in the same room.



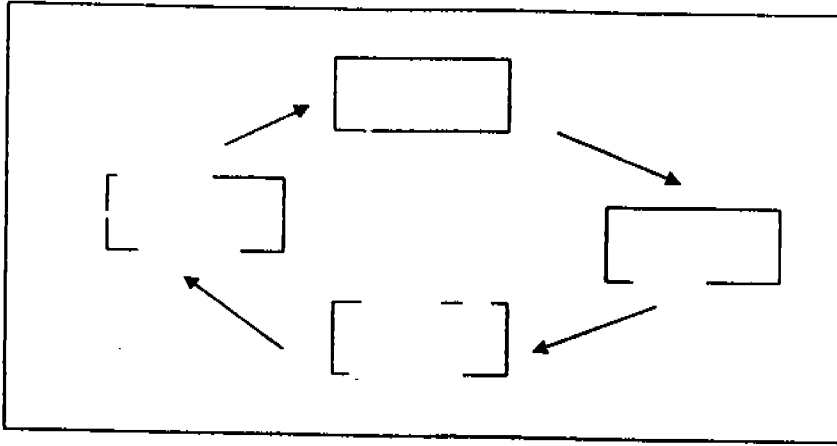
- (a) In which cup will the ice cubes take the shortest time to melt completely? [1]

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

39 The life cycle of a mosquito has the same number of stages as a butterfly.
Write the stages of

(a) Draw the life cycle of the mosquito in the box below.

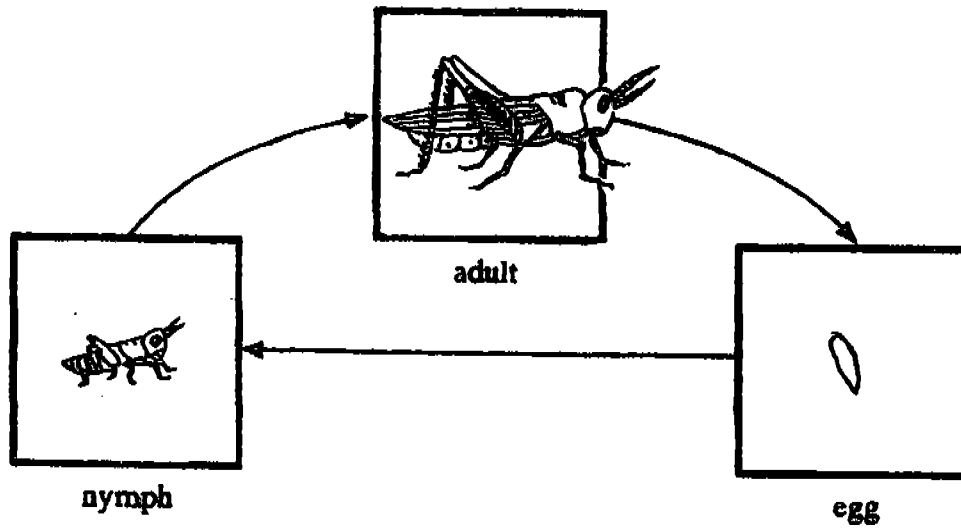
[1]



(b) State one difference between the life cycle of a mosquito and the life cycle of a cockroach.

[1]

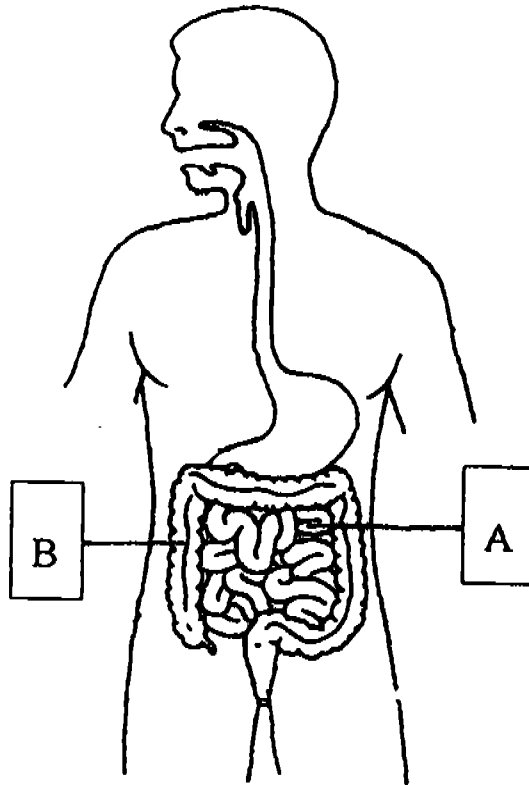
(c) The following diagram shows the life cycle of a grasshopper.



State one difference between the adult stage and the nymph stage of a grasshopper. (Do not compare sizes)

[11]

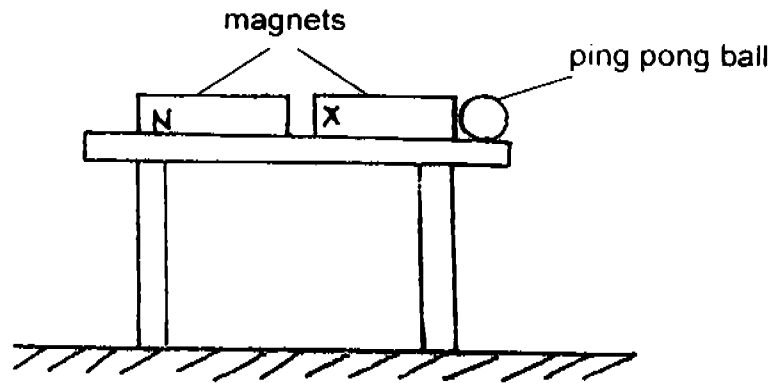
40 The diagram below shows the human digestive system.



Use the diagram to complete the table below by naming the parts of the digestive system marked A and B and describing their functions. [2]

| Part | Name | Function |
|------|------|----------|
| A | | |
| B | | |

- 41 Jeremy placed a ping pong ball, next to a magnet, at the edge of a table. He then put a second magnet near to X as shown in the diagram below.



- (a) If 'X' is the south pole of the magnet, what will most likely happen to the ping pong ball?

[1]

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

[1]

End of paper

Setters:
Mrs M. John
Mrs C. Quek
Mdm Lim S. P.


Raffles Girls Primary School
Primary 5 Science SA2 Exams (2005)



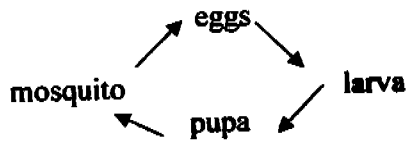
Answer Sheets

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

- 26a (i) Onion skin cells
(ii) Cheek cells
- 26b Plant cell: cell wall (gives its shape) - onion skin cells.
Animal cell: no cell wall - cheek cells.
- 27a R
- 27b No female part of flower, no ovary, so cannot develop into a fruit.
- 28a Reproduction from the seed is very slow, suckers are grow into new plants easier and faster.
- 28b It is comparatively slow compared to plants grow by man through artificial methods.
- 29 Pollen gains
Eggs/ovules
- 30a Digestion (chewing)
Absorption
- 30b Mouth
Small intestine
- 30c B
- 30d Plants

- 31 Drawing
- 32a Test for the brightness of bulb using parallel / series arrangement.
- 32b The bulb, the voltage of the battery.
- 32c The arrangement of batteries.
- 32d The degree of brightness
- 33a The nearer you place the load from the fulcrum, the less effort you need to apply.
Here, less effort is needed to staple no. stack of paper.
The further the point at which you apply the effort from the fulcrum, the less effort you need to exert.
- 34a The heavier the load, the larger the length of the spring.
- 34b 12cm
- 34c 150g
- 35a There are sufficient and ample oxygen throughout the whole tank, so the fishes swim freely to absorb oxygen.
- 35b Since Tank A have a plant. It releases oxygen in the tank during photosynthesis, so the tank is still filled with oxygen, the fish can swim freely; whereas Tank B run out of oxygen and the fishes need to swim at the surface in order to get more oxygen.
- 36a The smaller the size of mammals, the faster the resting pulse rate.
- 36b 73, 250
- 37a 
- 37b Shining the torch on top of the perfume bottle cap.
- 38a Copper
- 38b Good conductor of heat

39a



39b

For cockroach, it is from egg to nymph then to adult cockroach. 3 stages cycle only whereas mosquitoes, it is from to larva, pupa then to adult mosquito. 4 stages of life cycle

39c

The nymphs do have wings

40a

Small intestine:

Digestion of food is completed in small intestine. Digested food is used to provide the body with energy and material for growth and repair.

40b

Big Intestine :

Most water and mineral salts are absorbed from the undigested food. And the solid waste is then passed out of the body through anus.

41

The ping pong ball will fall to the ground. Because like poles repel, this action pushes the ping pong ball, resulting it landing on the floor.