



NANYANG PRIMARY SCHOOL

PRIMARY 6 SCIENCE

**SEMESTRAL ASSESSMENT 1
2016**

BOOKLET A

**Date : 4th May 2016
Duration : 1 h 45 min**

Name : _____ ()

Class: Primary 6 ()

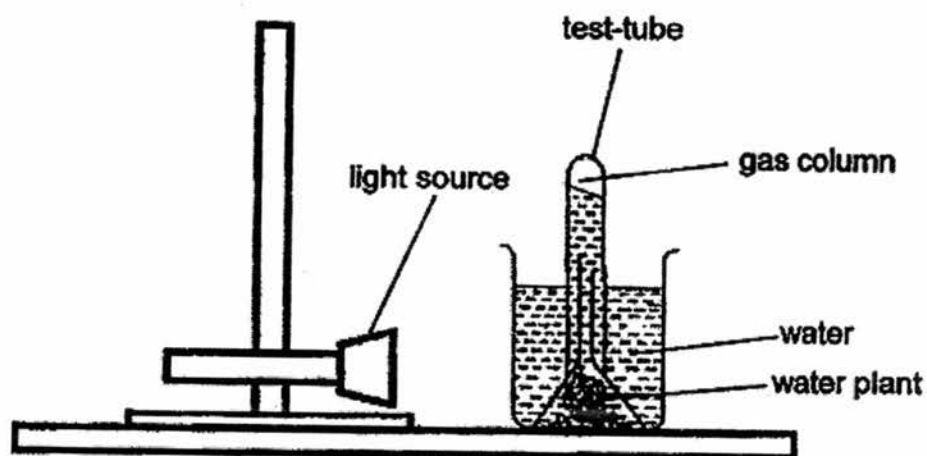
**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

Booklet A consists of 24 printed pages including this cover page.

Section A (30 x 2 marks = 60 marks)

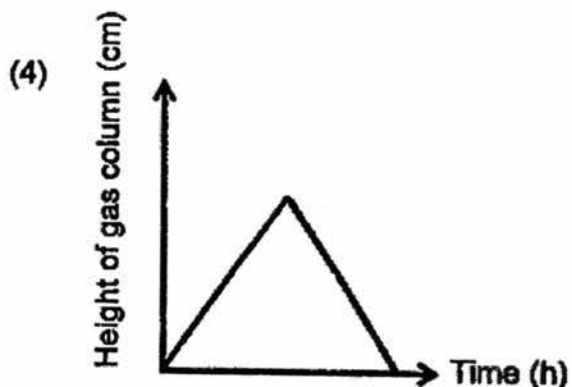
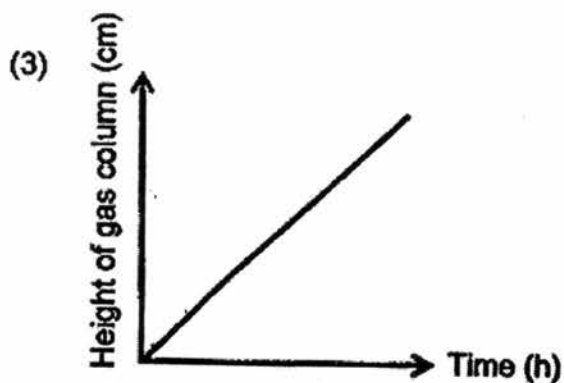
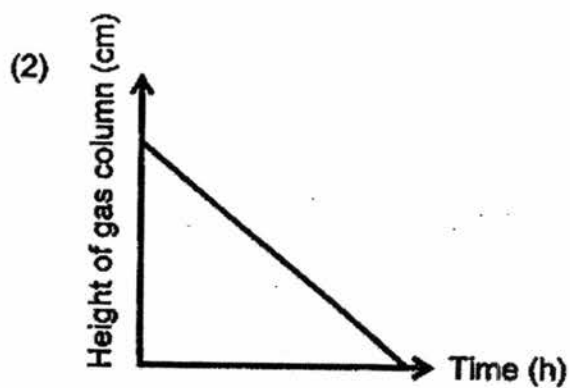
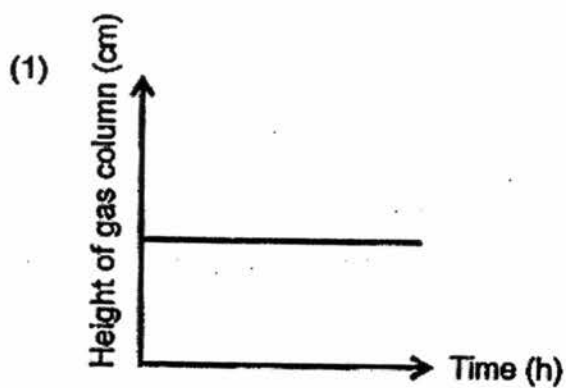
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.

1. Study the set-up below.

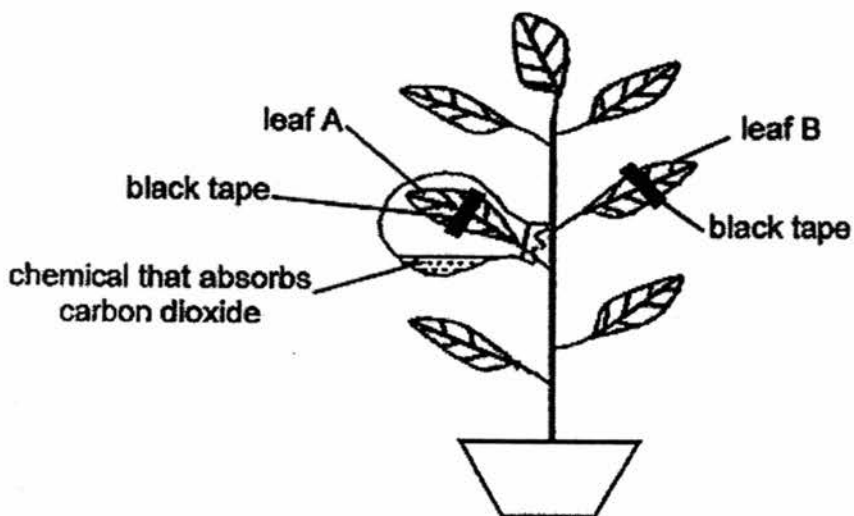


Bubbles were forming inside the test tube, forming a gas column.

Which one of the following graphs correctly shows the height of the gas column in the test-tube over a period of 2 hours?



2. Study the diagram below.



A potted plant was left in a dark room for 12 hours before being placed under the sun for 6 hours. The leaves were then decolourised and tested for starch using iodine solution.

Which of the following correctly shows the appearance of iodine on the leaves at the end of the experiment?

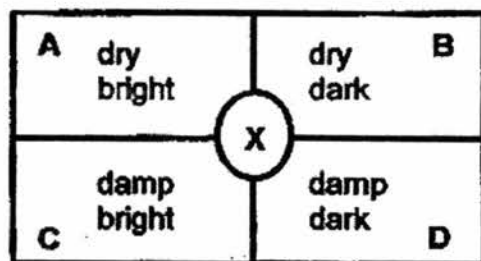
| | Leaf A | Leaf B |
|-----|------------------------------|------------------------------|
| (1) | yellowish-brown dark blue | dark blue yellowish-brown |
| (2) | yellowish-brown dark blue | yellowish-brown dark blue |
| (3) | dark blue yellowish-brown | dark blue |
| (4) | dark blue | dark blue |

3. Which of the following are necessary for photosynthesis to take place?

- A water
- B oxygen
- C sunlight
- D water vapour

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

4. Martin conducted an experiment to find out the preferred living conditions of Animal Z. The diagram below shows a closed glass box divided into four equal parts, A, B, C and D. Each part has a different condition.



top view of box

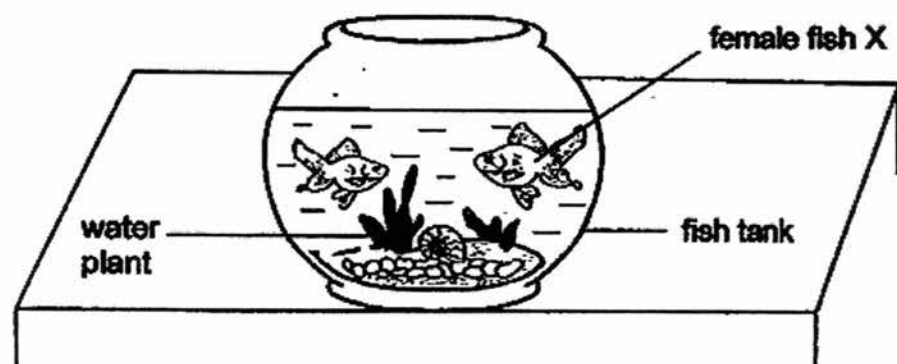
Martin put 16 Animal Z in the centre (X). The result below shows the number of Animal Z in different parts of the glass box after three hours.

| | A | B | C | D |
|--------------------------------------|---|---|---|---|
| Number of Animal Z after three hours | 0 | 8 | 0 | 8 |

Which one of the following reasons can be concluded about the preferred habitat of Animal Z based on the results above?

- (1) Animal Z is only affected by the amount of light.
- (2) Animal Z requires water to survive in the habitat.
- (3) Animal Z survives best in a dry and dark environment.
- (4) Animal Z can only survive in a dark and damp environment.

5. Some pupils set up a fish tank with two female fish X. They wanted to increase the population of fish X and suggested the following ways.

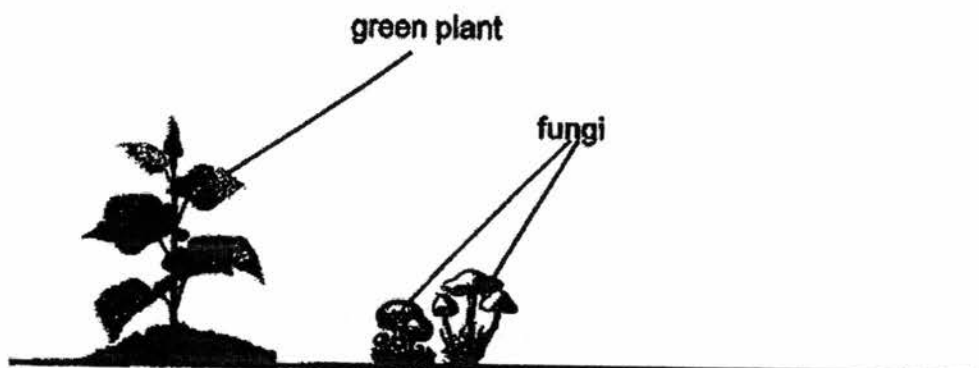


| | |
|---------|---|
| Pupil A | Add two male fish X. |
| Pupil B | Add two more female fish X. |
| Pupil C | Add more water plants and fish food. |
| Pupil D | Fix a light source beside the fish tank to be switched on at night. |

Which of the following pupils' suggestions would most likely help to increase the population of fish X after some time?

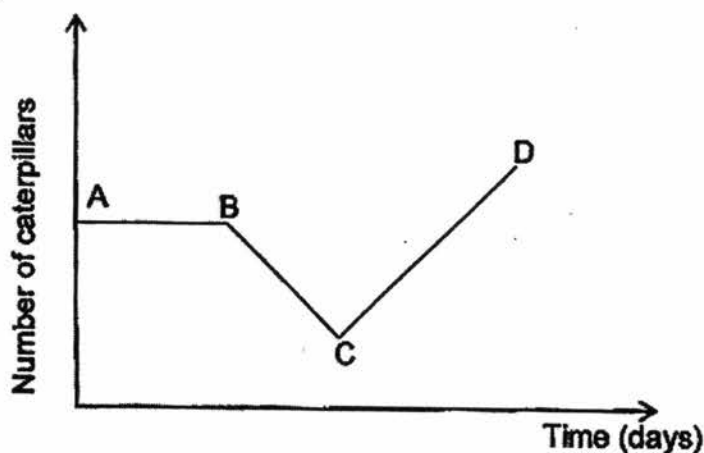
- (1) Pupils A and B only
- (2) Pupils C and D only
- (3) Pupils A, B and C only
- (4) Pupils A, B, C and D only

6. Xing Yan went to a park and observed that there were some fungi growing near a green plant.



Which of the following states the negative impact that the presence of fungi has on the green plant?

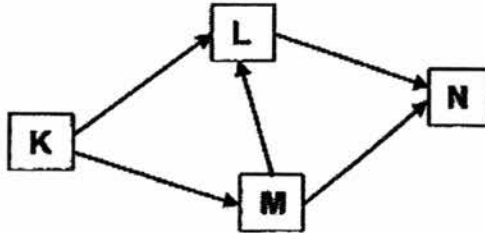
- (1) They compete with the plant for space and water.
 - (2) They help in the decaying of dead organisms near the plant.
 - (3) They give out carbon dioxide during decomposition which the plant could use to make food.
 - (4) They break down waste matter into simpler substances which the plant could use as mineral salts.
7. The graph below shows the change in the number of caterpillars in a garden.



Which of the following events could be taking place from B to C?

- A Some caterpillars were eaten by birds.
 - B Some caterpillars developed into pupae.
 - C Some caterpillars hatched from the eggs.
 - D Some caterpillars were killed by pesticides.
- (1) A and B only
 - (2) C and D only
 - (3) A, B and D only
 - (4) B, C and D only

8. The food web below shows the relationship among the organisms K, L, M and N in a habitat.



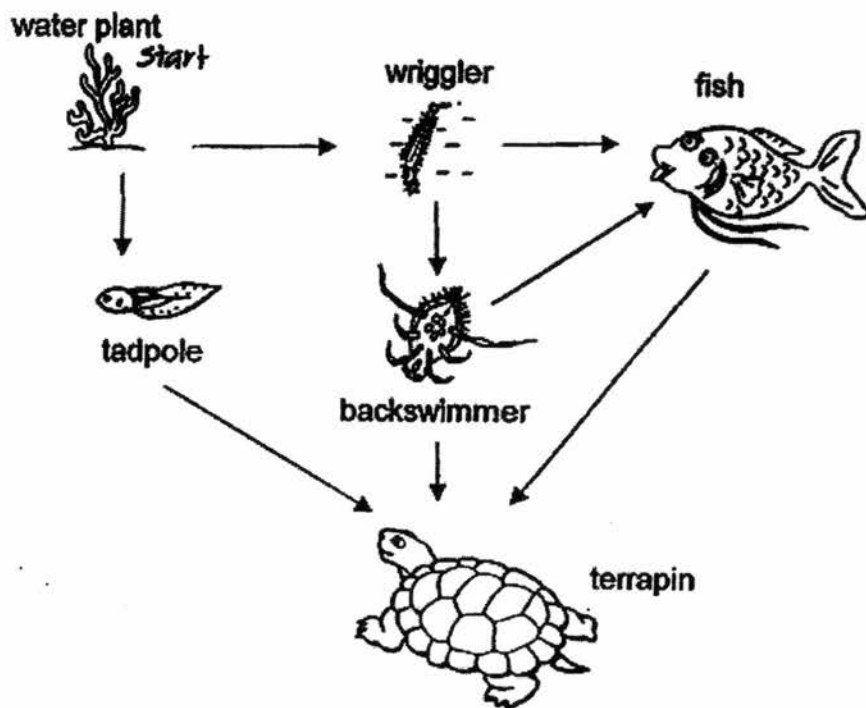
Organism X was then introduced into the habitat. It fed on only one type of organism in the food web.

After one month, all the other organisms decreased in number.

Which organism did X most likely feed on?

- (1) K
- (2) L
- (3) M
- (4) N

The food web below shows the relationship between the organisms found in a pond community in the park. Use the food web below to answer questions 9 and 10.



9. Which of the following statements about the food web are false?

- A The tadpole is both a prey and a predator.
- B There are only three food chains that could be formed from the food web.
- C There are only two organisms which get their energy directly from the water plant.
- D A decrease in the population of the water plants affects the populations of the wriggler and tadpole.

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

10. Which of the following states a direct impact on the organisms in the food web if there is an increase in the number of terrapins?

- A The number of fish will increase.
- B The number of tadpoles will decrease.
- C The number of mosquitoes will increase in the park.

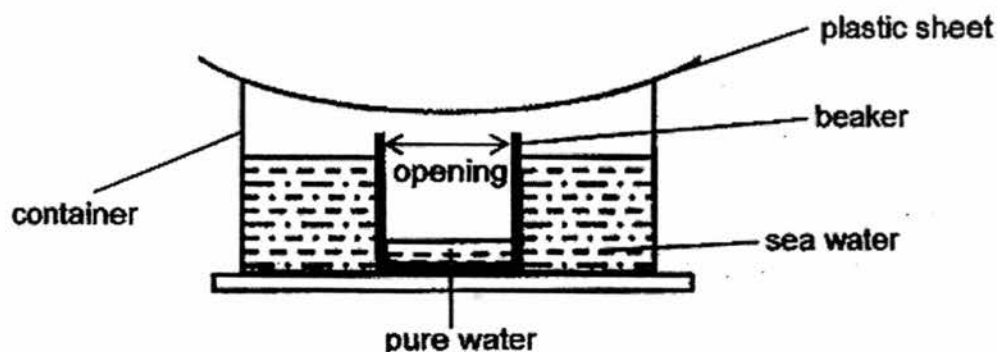
- | | |
|------------------|------------------|
| (1) A and B only | (2) A and C only |
| (3) B and C only | (4) A, B and C |

11. The diagram below shows a water cycle.



How many times does water undergo a change of state in 1 complete cycle?

- (1) 1
(2) 2
(3) 3
(4) 4
12. Jason made use of the set-up below to collect pure water in the beaker. He managed to collect 50ml of pure water in 1 hour.



Which of the following methods would enable him to collect more water in the beaker within 1 hour?

- A Heat up the sea water.
B Use a beaker with a smaller opening.
C Pour more sea water into the container.
D Place some ice cubes on top of the plastic sheet.
- (1) A and D only
(2) B and C only
(3) A, B and D only
(4) B, C and D only

13. Martin carried out an investigation on four similar flowers, A, B, C and D, to find out if a fruit can be developed when certain parts of a flower are removed. The four flowers contain both male and female parts.

In the table below, a cross (X) in the box indicates that the part had been removed from each of the flowers.

| | Flower | | | |
|--------------|--------|---|---|---|
| | A | B | C | D |
| Petals | X | | X | X |
| Male parts | X | | | |
| Female parts | | X | | X |

Which flower(s) will still be able to become a fruit if it is pollinated?

- (1) C only
 (2) A and C only
 (3) B and D only
 (4) A, B and D only
14. The diagram below shows plant A in the park. Tom made some notes in his diary after observing plant A.



Plant A

- Notes in his diary:
- green leaves
 - spore bags

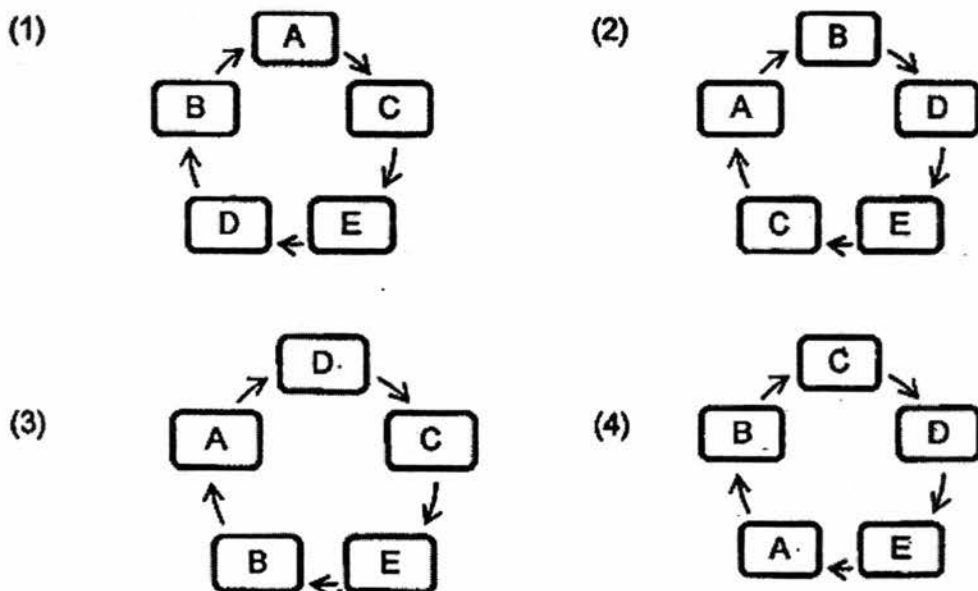
Which of the following statements are true about plant A?

- A It produces fruits.
 B It is not able to produce flowers.
 C It is able to carry out photosynthesis.
 D It disperses its spores with the help of insects or animals only.
- (1) A and C only
 (2) A and D only
 (3) B and C only
 (4) B, C and D only

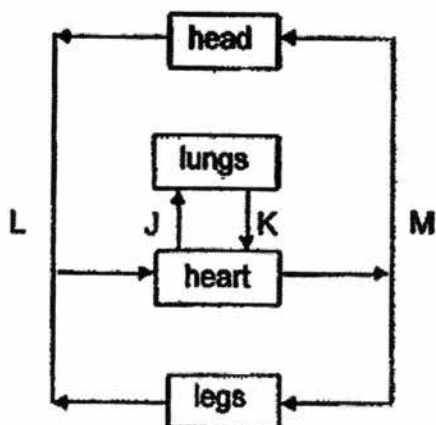
15. The statements below describe the stages of the sexual reproduction in a flowering plant.

| | |
|---|---|
| A | The ovules develop into seeds. |
| B | The anther releases pollen grains. |
| C | The pollen grains land on the stigma. |
| D | The male cell from the pollen grain travels to the ovary. |
| E | The male cell of the pollen grain fuses with the female cell. |

Which one of the following diagrams shows the stages in the correct order?



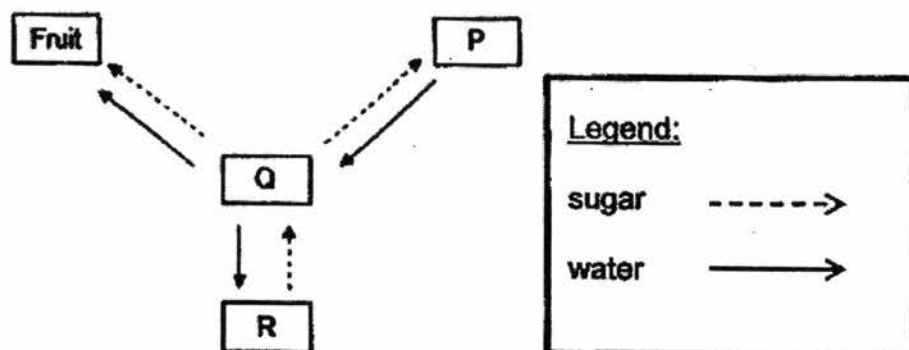
16. The diagram below represents the human circulatory system. The arrows represent blood vessels carrying blood to and from the head, lungs, heart and legs.



Which one of the following correctly matches the amount of oxygen in the blood with the blood vessels that are carrying it?

| | More oxygen in the blood | Less oxygen in the blood |
|-----|--------------------------|--------------------------|
| (1) | J and K | L and M |
| (2) | J and M | K and L |
| (3) | K and M | J and L |
| (4) | K and L | J and M |

17. The diagram below shows how sugar and water are transported to and from different parts of a plant.



Which one of the following correctly shows the parts of the plant that are represented by P, Q and R?

| | P | Q | R |
|-----|--------|--------|--------|
| (1) | stem | leaves | roots |
| (2) | roots | stem | leaves |
| (3) | roots | leaves | stem |
| (4) | leaves | roots | stem |

18. Four pupils, A, B, C and D, examined the following two types of cells, X and Y, under a microscope.



Cell X



Cell Y

They recorded their observations in a table as shown below.

A tick (✓) indicated the presence of the cell part.

| Pupil | Cell | Cell wall | Cytoplasm | Cell membrane | Chloroplast |
|-------|------|-----------|-----------|---------------|-------------|
| A | X | | ✓ | | ✓ |
| B | Y | ✓ | | ✓ | ✓ |
| C | X | ✓ | ✓ | ✓ | |
| D | Y | ✓ | ✓ | ✓ | ✓ |

Which pupils had made the correct observations about the two cells, X and Y?

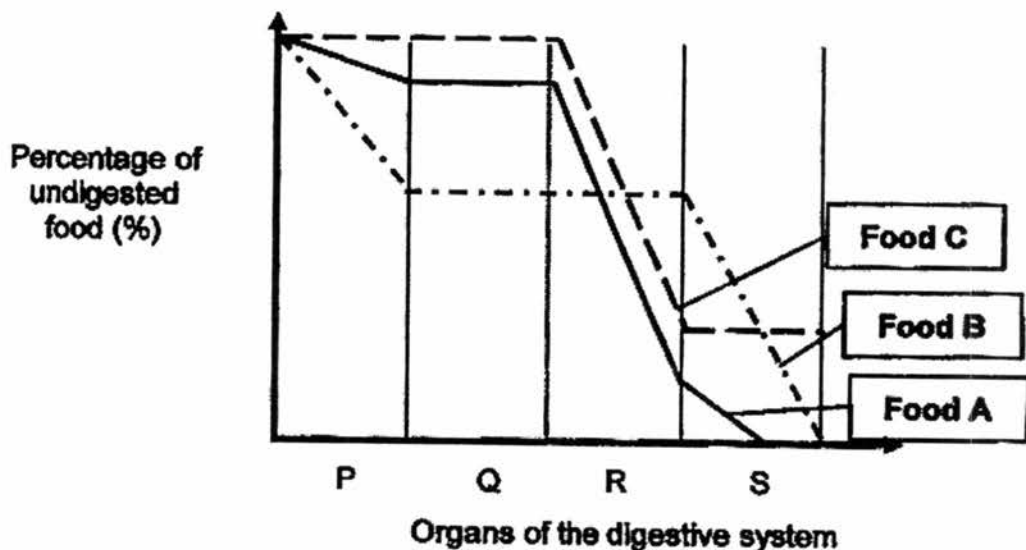
- (1) A and B only
 (3) A, B and D only

- (2) C and D only
 (4) B, C and D only

19. Some scientists wanted to study the digestive system of animal X. They fed animal X with the same amount of different food, A, B and C.

Animal X's digestive system was checked at each organ to find out how much of the food remains to be digested.

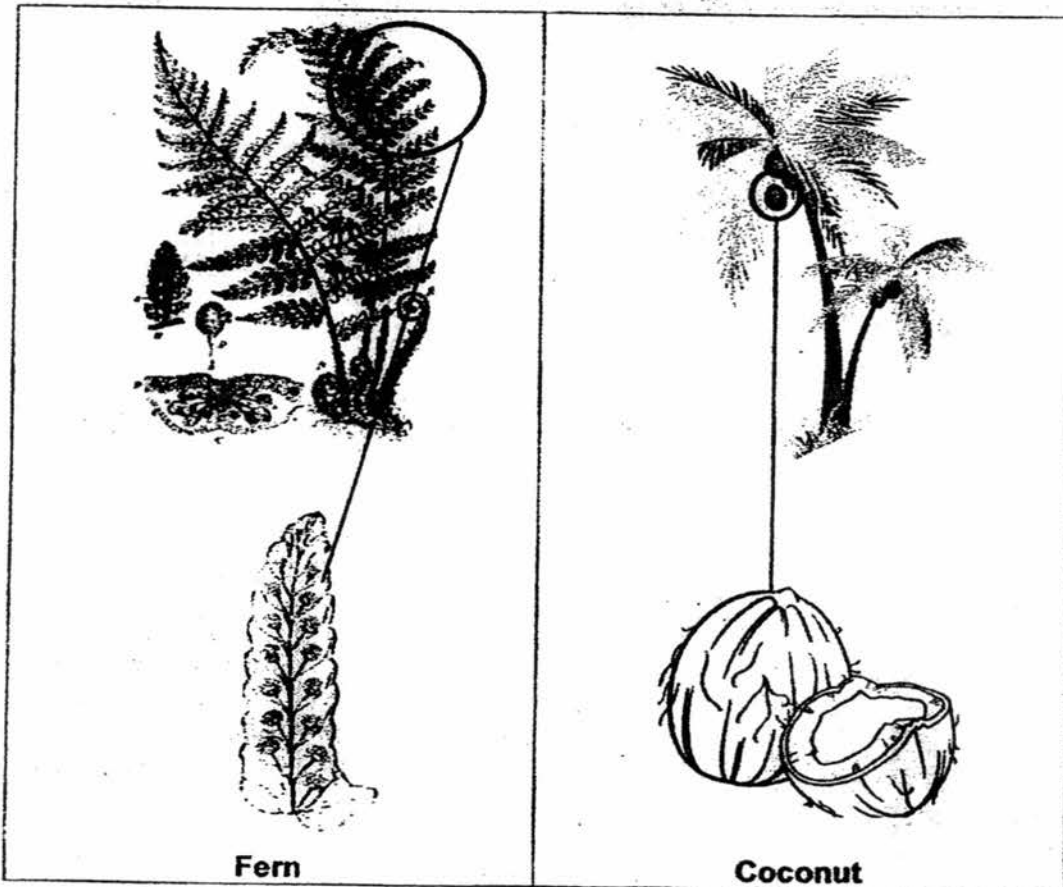
The results were plotted in the line graph as shown below.



Based on the above results, what can the scientists conclude at the end of the experiment?

- (1) Organ R is the most effective at digestion.
- (2) Food A is the most difficult to digest by Animal X.
- (3) Each organ of the digestive system digests all three types of food.
- (4) The type of food Animal X ate affects the rate of digestion of food.

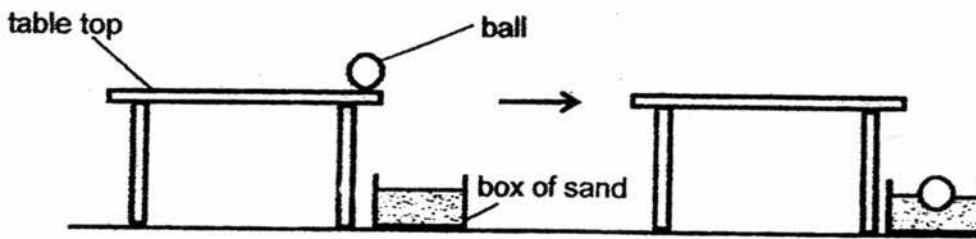
20. The pictures below show two plants.



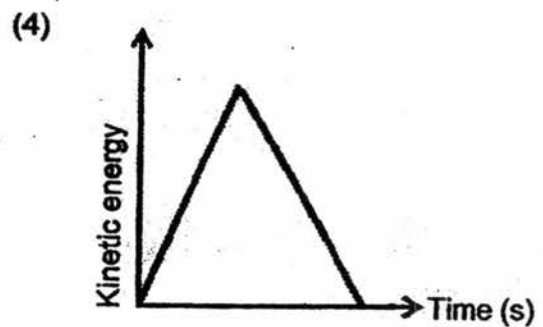
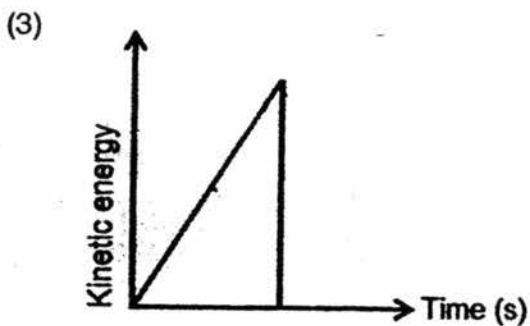
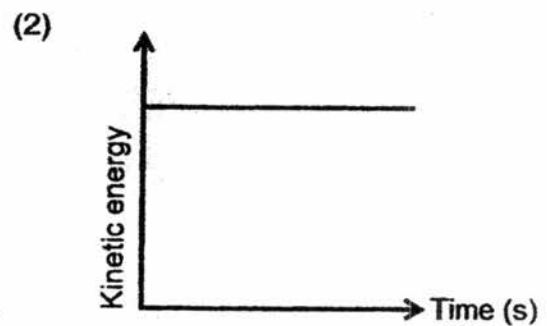
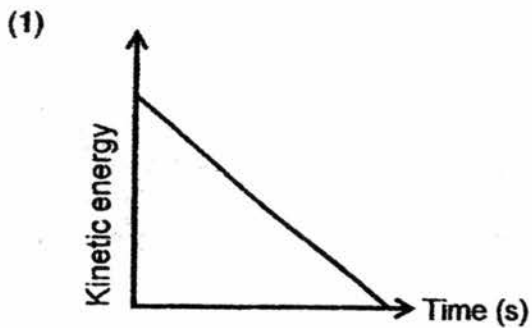
Which of the following statements are **true** about both plants?

- A Both of them can produce flowers.
 - B Both of their leaves have chlorophyll.
 - C The fern has spores while the coconut has seeds.
 - D The fern may grow on trees while the coconut grows on soil.
- (1) A and C only (2) B and D only
(3) A, B and C only (4) B, C and D only

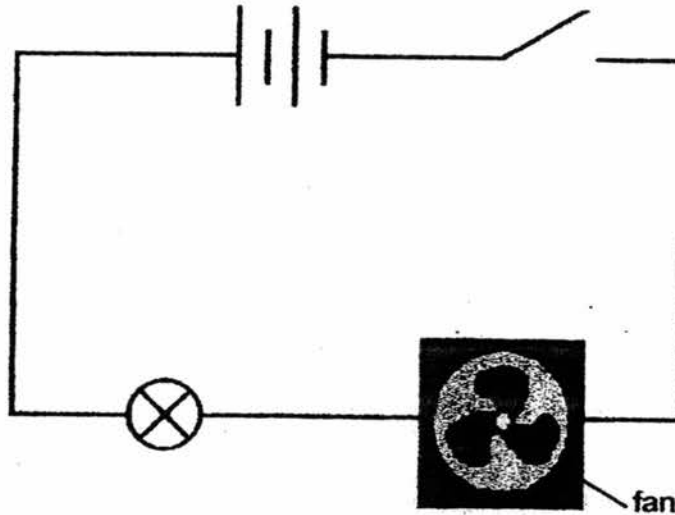
21. A ball was pushed off a table top and landed in a box filled with sand as shown in the diagram below.



Which of the following graphs correctly shows how the kinetic energy of the ball changed from the time it was pushed off the table to the time it landed in the box of sand?



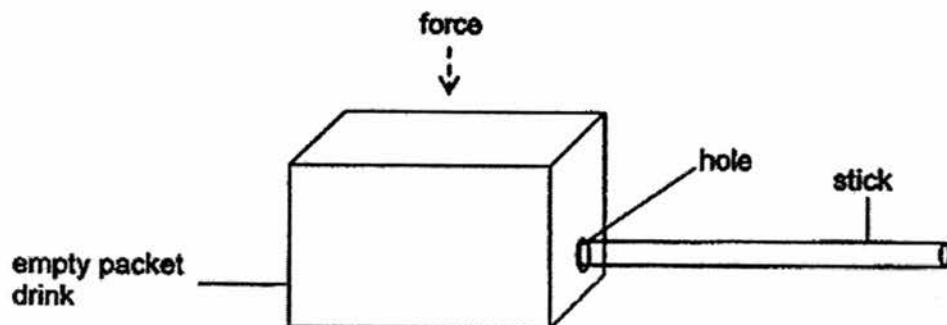
24. Study the set-up below.



Which of the following correctly shows the main energy conversion of the above set-up when the switch is closed?

| | <u>Battery</u> | | <u>Wire</u> | | <u>Bulb</u> | | <u>Fan</u> |
|-----|---------------------------|---|-------------------|---|--------------|---|----------------|
| (1) | Electrical energy | → | Electrical energy | → | Heat energy | + | Kinetic energy |
| (2) | Chemical potential energy | → | Electrical energy | → | Heat energy | → | Kinetic energy |
| (3) | Electrical energy | → | Electrical energy | → | Light energy | + | Heat energy |
| (4) | Chemical potential energy | → | Electrical energy | → | Light energy | + | Kinetic energy |

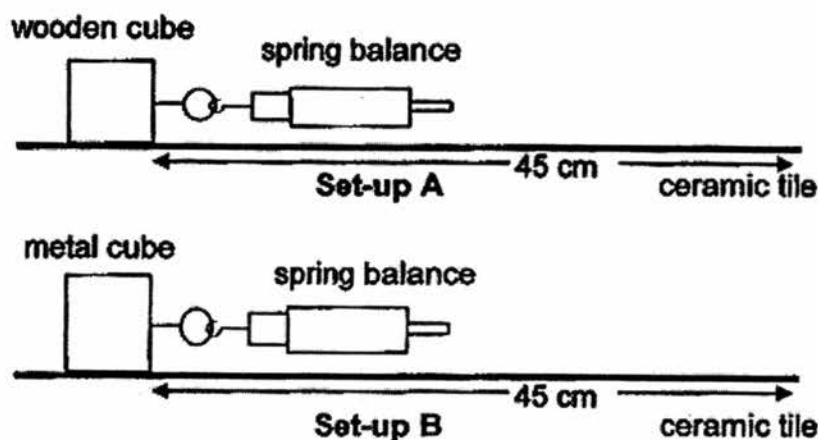
25. The diagram below shows an empty packet drink and a stick. When a force is applied on the empty packet drink, the stick pops out.



Which of the following statements can be concluded based on the experiment?

- (1) The air in the packet expands and pushes the stick out.
- (2) The air in the packet exerts a force on the stick and forces it out.
- (3) The air outside the packet exerts a force on the stick and pulls it out.
- (4) The hole in the packet becomes slightly bigger and pushes the stick out.

26. Mike carries out an experiment to find out how the type of surface affects the amount of force needed to move a wooden cube over a certain distance as shown in the set-ups below.



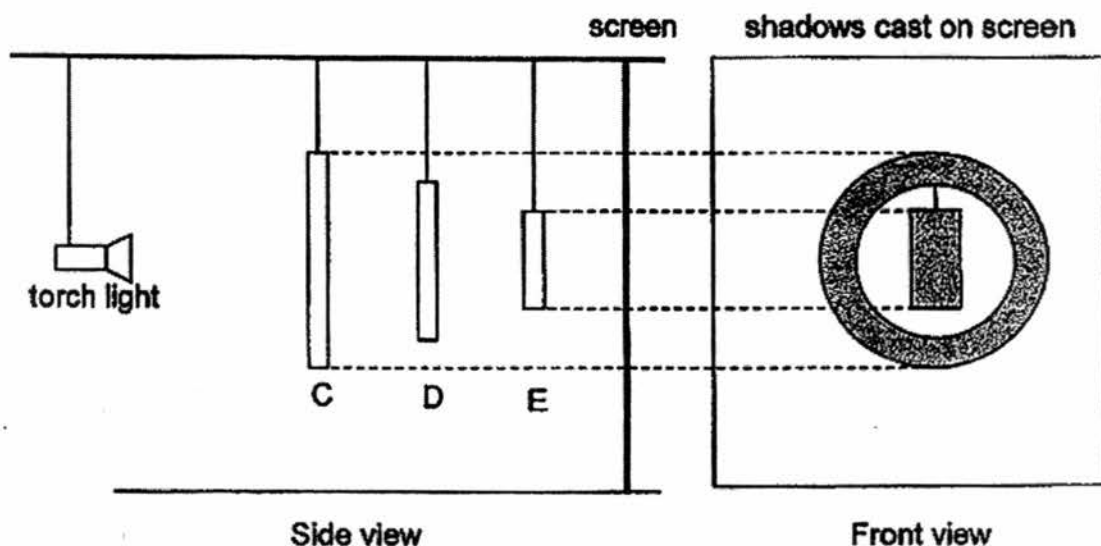
However, he was told that he should change two of the variables in set-up B.

Which one of the following shows the correct change in the two variables to be done in set-up B?

| | Variable 1 | Variable 2 |
|-----|------------------------------------|-------------------------------------|
| (1) | Remove spring balance | Use a shorter distance of 35 cm |
| (2) | Change metal cube to a wooden cube | Replace ceramic tile with sandpaper |
| (3) | Use a smaller metal cube | Use a shorter distance of 35 cm |
| (4) | Remove spring balance | Replace ceramic tile with sandpaper |

27. Justin used 3 different materials, C, D and E, to make 3 cut-outs of different shapes and heights but of the same thickness.

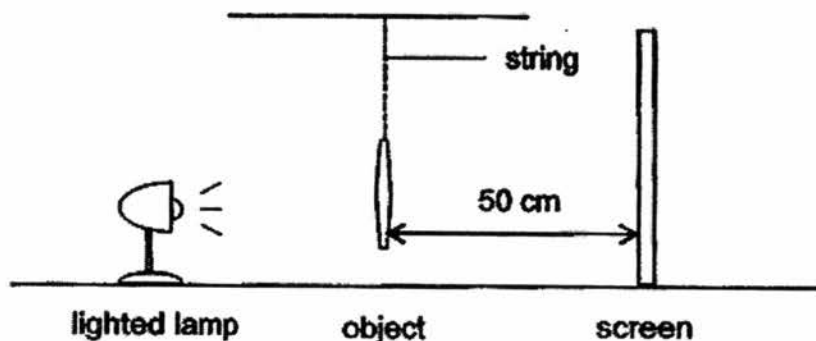
He hung the 3 cut-outs from a support between a screen and a torchlight. When he switched on the torchlight, the shadows cast on the screen are shown below. [The diagrams are drawn to scale]



Which one of the following best represents the materials, C, D and E, based on the observation of the shadows formed on the screen?

| | Material C | Material D | Material E |
|-----|---------------|---------------|---------------|
| (1) | cardboard | wood | tracing paper |
| (2) | wood | clear glass | aluminium |
| (3) | iron | cardboard | frosted glass |
| (4) | clear plastic | frosted glass | clear glass |

28. The following experiment was set in a darkened room.



The distance between the lighted lamp and the object remained unchanged. The distance between the object and the screen was changed and the size of the shadow on the screen was measured.

Which one of the following results shows the correct relationship?

(1)

| Distance between object and screen (cm) | Size of shadow of object (cm) |
|---|-------------------------------|
| 50 | 55 |
| 100 | 68 |
| 150 | 81 |

(2)

| Distance between object and screen (cm) | Size of shadow of object (cm) |
|---|-------------------------------|
| 50 | 81 |
| 100 | 68 |
| 150 | 55 |

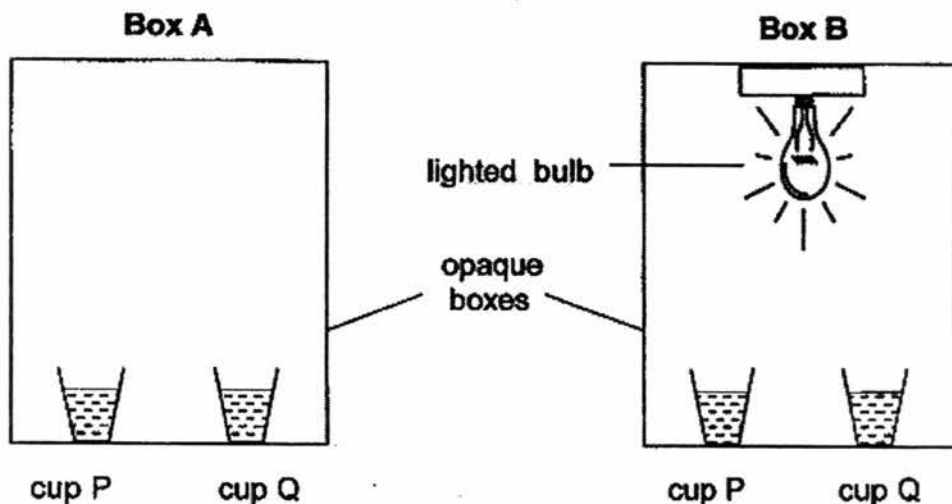
(3)

| Distance between object and screen (cm) | Size of shadow of object (cm) |
|---|-------------------------------|
| 50 | 68 |
| 100 | 68 |
| 150 | 68 |

(4)

| Distance between object and screen (cm) | Size of shadow of object (cm) |
|---|-------------------------------|
| 50 | 81 |
| 100 | 55 |
| 150 | 68 |

29. An experiment was conducted using 2 opaque boxes, A and B, as shown below. Box B had a bright bulb attached to the top. There were 2 open cups in each box. The cups were made of 2 different materials, P and Q. The 4 cups were each filled with 20ml of water at 1°C and left in the boxes for 6 hours at room temperature in a room.



The amount of water left in each cup was then compared and recorded in the table as shown below.

| Box A | | Box B | |
|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Amount of water left in cup P (ml) | Amount of water left in cup Q (ml) | Amount of water left in cup P (ml) | Amount of water left in cup Q (ml) |
| 19 | 19.5 | 16 | 18 |

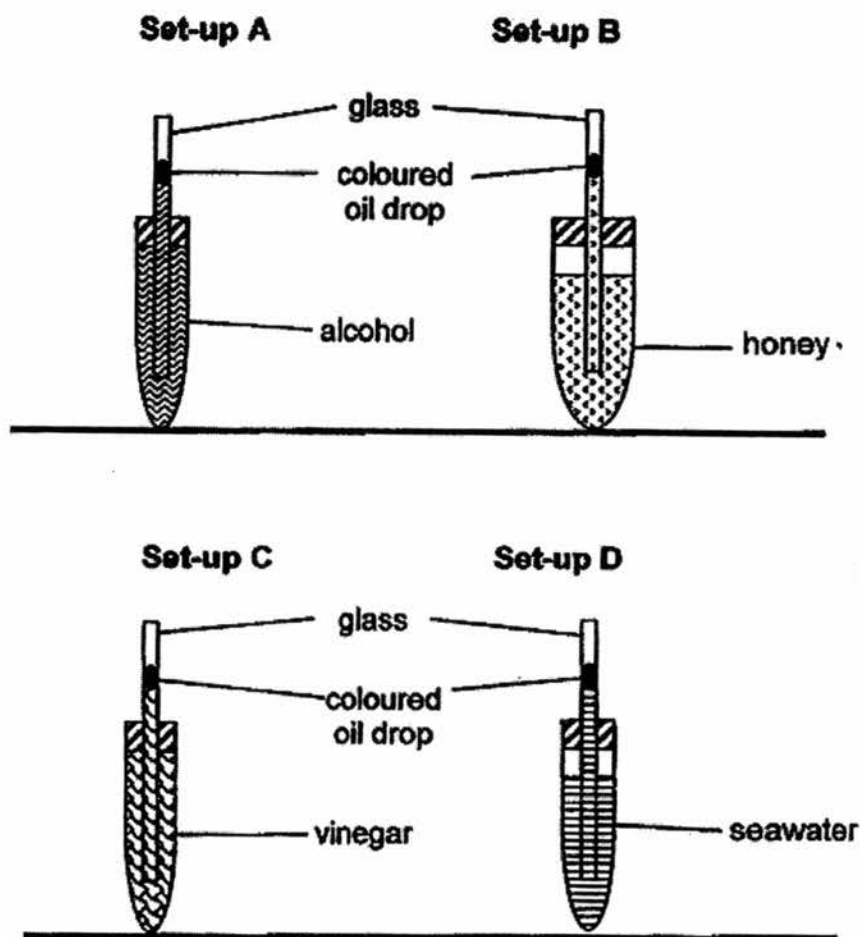
Which of the following statements about the above experiment are correct?

- A Cup P is a better conductor of heat than Cup Q.
- B Cup Q in box A conducts more heat than Cup Q in box B.
- C Water in cup P in box B has gained the most heat from the surroundings as compared to the other 3 cups.

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

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

30. Samantha wanted to conduct an experiment to find out which liquid expanded the most when heated.



In order to conduct the experiment, Samantha planned to heat the set-ups over a bunsen burner and note the time taken for the coloured oil drop to move 5cm up the glass tube.

Which two of the above set-ups should she use to ensure a fair test?

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



NANYANG PRIMARY SCHOOL

PRIMARY 6 SCIENCE

**SEMESTRAL ASSESSMENT 1
2016**

BOOKLET B

Date : 4th May 2016

Duration : 1 h 45 min

Name : _____ ()

Class: Primary 6 ()

Marks Scored:

| | | |
|--------------------|--|------------|
| Booklet A: | | 60 |
| Booklet B : | | 40 |
| Total : | | 100 |

Any query on marks awarded should be raised by 18th May 2016. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.

Parent's signature:

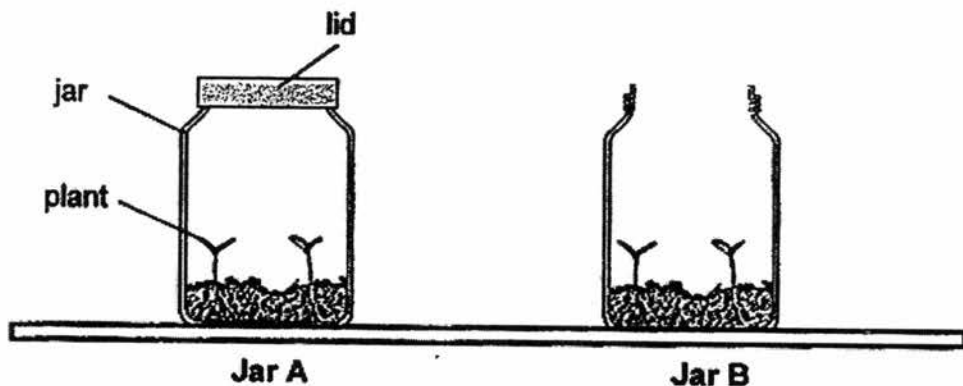
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Booklet B consists of 15 printed pages including this cover page.

Section B (40 marks)

Write your answers to questions 31 to 44 in the spaces provided.

31. Jason grew similar plants in two different clear glass jars as shown in the diagram below.



The plants in both jars were watered with the same amount of water before placing them near the window. After a few weeks, the plants in one of the jars died.

- (a) Which jar most likely contained the plants that died? Explain your answer [1]

Two similar seeds were planted in a similar jar wrapped with a sheet of black paper. 50ml of water was poured into the jar before closing the lid. After a week, it was observed that the seedlings which had germinated from the seeds had died.

- (b) Explain why the seedlings died after a week. [1]

32. A group of pupils studied the development of eggs of fish S. They placed 50 fertilised eggs in each fish tank. The water in each fish tank was kept at different temperature. The eggs were observed for a month and the number of hatched eggs in each fish tank was recorded in the table as shown below. **result**

| Fish tank | Temperature of water (°C) | Number of hatched eggs |
|------------------|----------------------------------|-------------------------------|
| 1 | 20 | 0 |
| 2 | 22 | 5 |
| 3 | 24 | 21 |
| 4 | 26 | 47 |
| 5 | 28 | 15 |
| 6 | 30 | 9 |
| 7 | 32 | 0 |

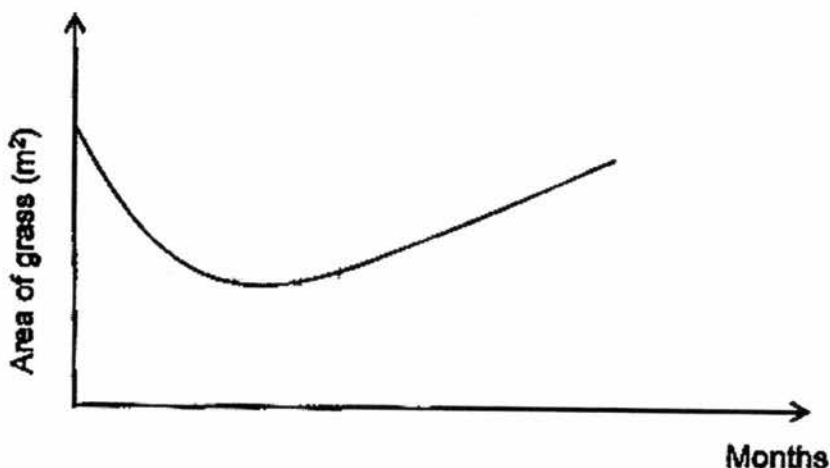
- (a) State the aim of the experiment. [1]

- (b) Based on the results above, state the relationship between the temperature of water and the number of hatched eggs. [2]

33. The food chain below shows the relationship of two organisms in a habitat.

Grass \longrightarrow B

The graph below shows the area of grass found in the habitat in the first six months.

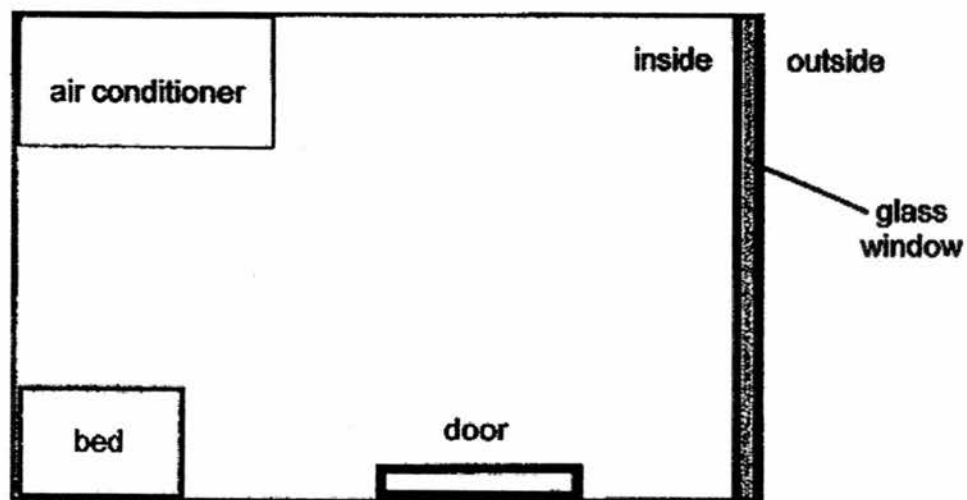


- (a) Organism C was introduced into the habitat after some time and the population of B decreased over time. Mark with an 'X' on the graph above to show when organism C was introduced to the habitat. [1]

State the food relationship between organisms B and C. [1]

- (c) Organism D was then introduced into the habitat. It feeds on organism B only. Explain how this would affect the populations of grass and organism B. [2]

34. The diagram below shows the layout of Tom's room. The air-conditioner is used to keep the room cool.



Tom switched on the air-conditioner before he went to bed. He observed that there were tiny droplets of water on the glass window the next morning.

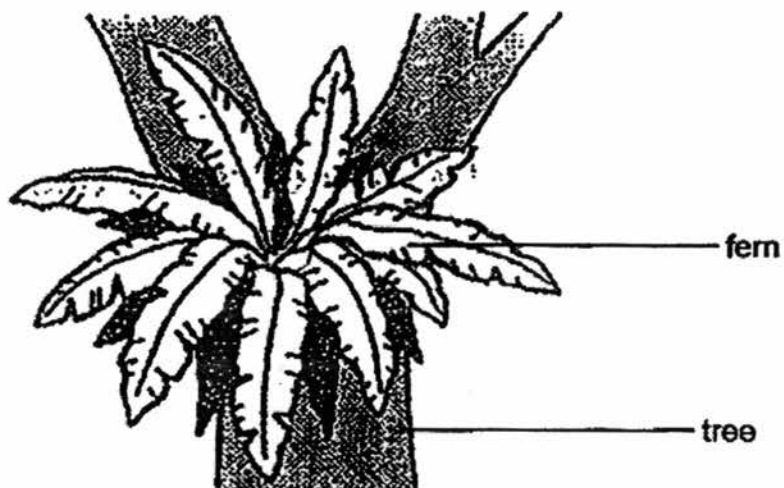
- (a) Did the water droplets form on the inside or outside of the glass window? Explain your answer [2]

- (b) Without switching off the air conditioner and using only items found in the room, suggest a method to reduce the amount of water droplets forming on the glass window. Explain your answer. [2]

Method:

Explanation:

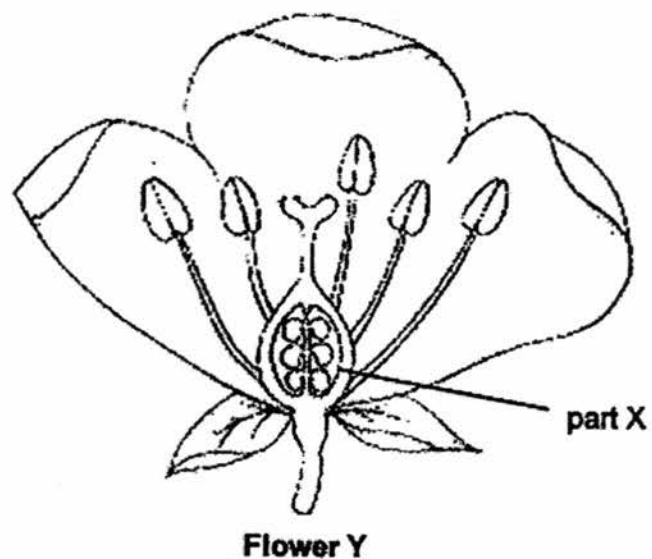
35. Yuxuan noticed that a fern had grown on the big tree outside his school after a few months.



- (a) How did the fern manage to grow on the tree? [1]

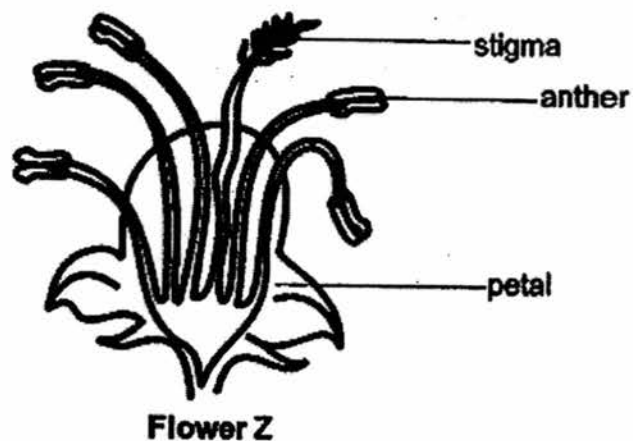
- (b) Explain how the tree is useful for the fern to grow well. [1]

36. The diagram below shows the cross-section of flower Y.



- (a) It was observed that flower Y developed into a fruit even after its male parts had been removed. Explain how this was possible [1]

- (b) The diagram below shows the cross-section of flower Z.

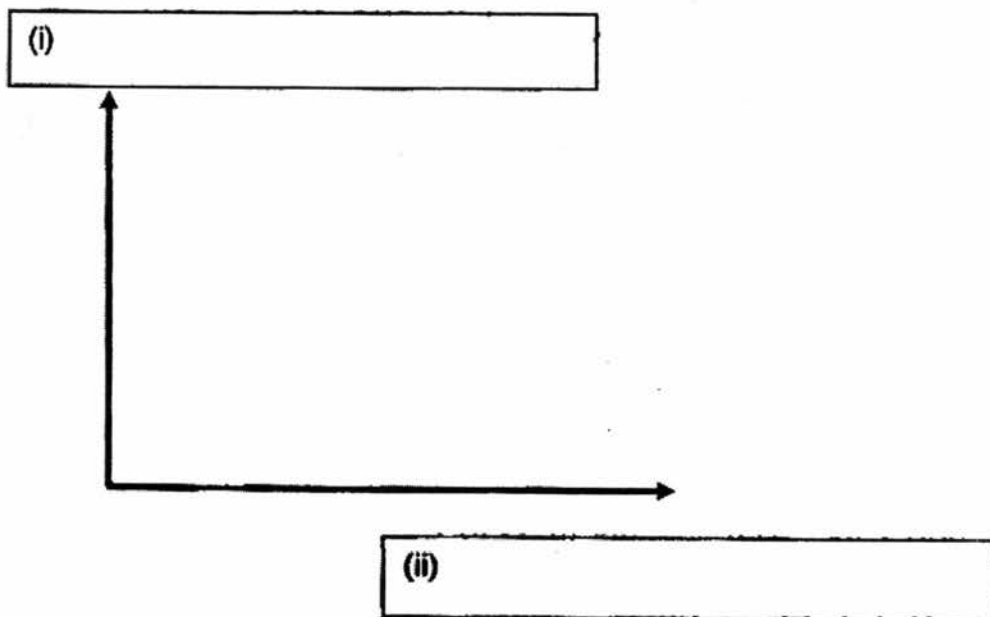


- Based on the diagram above, state one characteristic of flower Z to show that it is pollinated by wind. [1]

37. Luke conducted an experiment using a syringe to push air out when the plunger is pushed in. The force exerted by the air from the syringe would cause the ping pong ball to move along the table and hit a cone. He then measured the distance moved by the cone. The experiment was repeated by pulling the plunger to different distances.

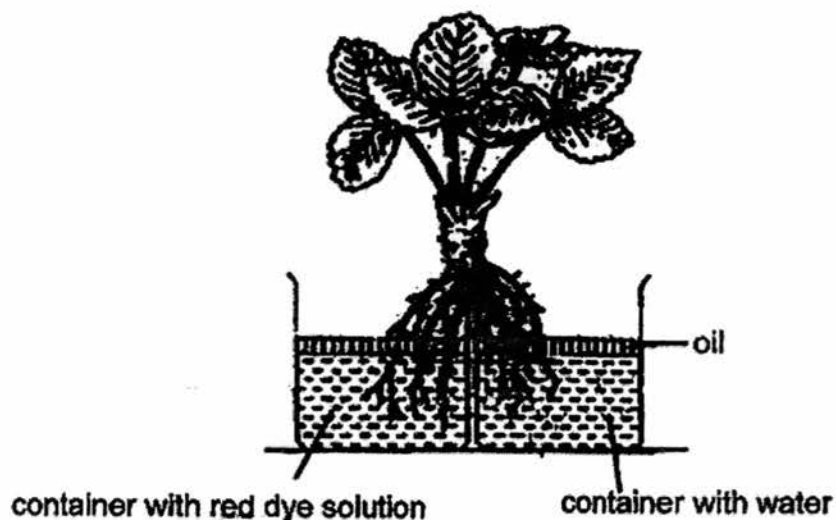


- (a) In the incomplete graph below, fill in the boxes for the 2 axes and draw a line graph to show the relationship between the force of air on the ball and the distance travelled by the cone when hit by the ping pong ball. [2]



- (b) Explain why the experiment must be repeated at least 3 times for each distance. [1]
-

38. Study the diagram below.

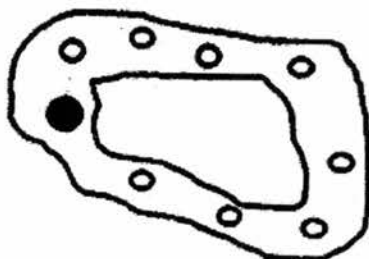


Half of the roots of the plant were placed in each container which contained a red dye solution and clear water respectively. The set-ups were placed in an open area for 2 days.

- (a) Describe and give a reason for the change in the amount of water in the 2 containers after 2 days. [1]

- (b) It was observed that the stem and leaves of the plant turned red. Explain how these parts turned red. [1]

39. The diagram below shows cell X which is from a plant. One part had been removed from the cell.



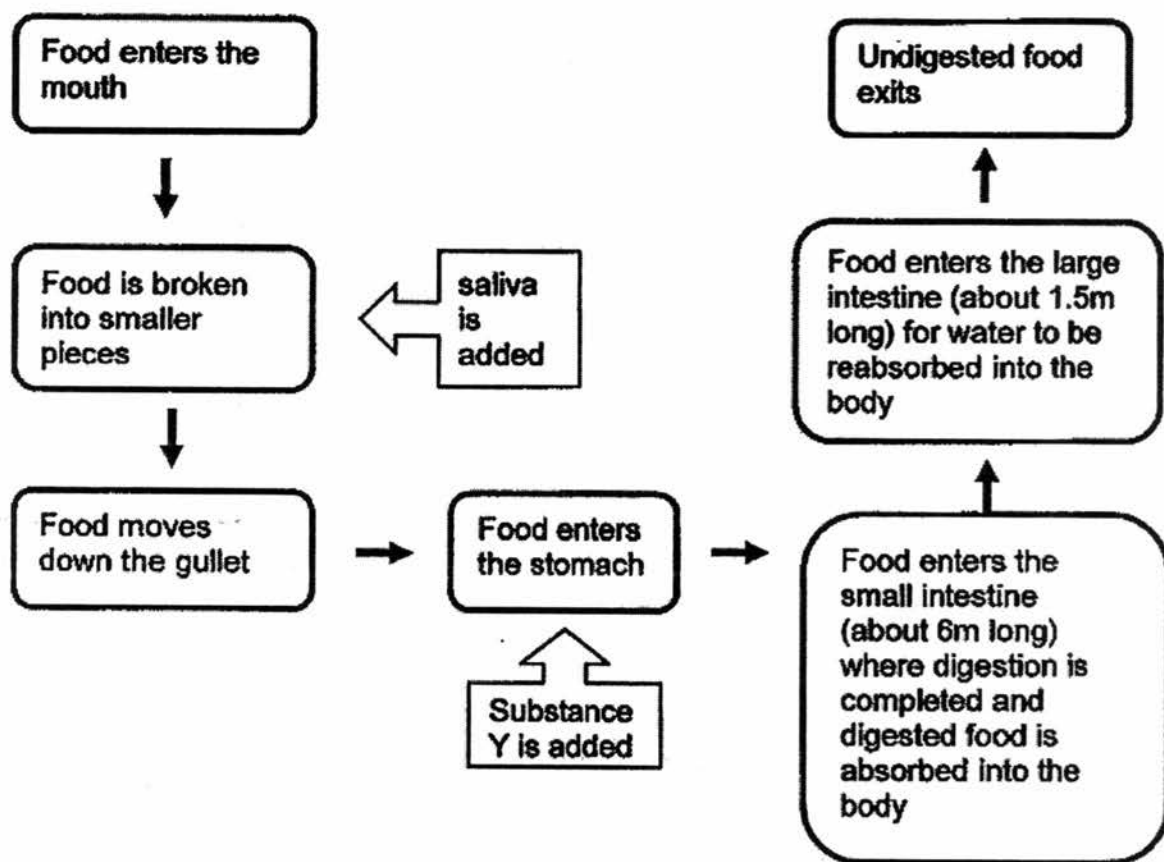
Cell X

- (a) State the cell part which had been removed. State the function of that cell part. [1]

- (b) Tom's teacher used the nucleus from cell X to confirm that the cell came from a plant.

State the function of the nucleus which enables him to do so. [1]

40. Study the following flow chart carefully.



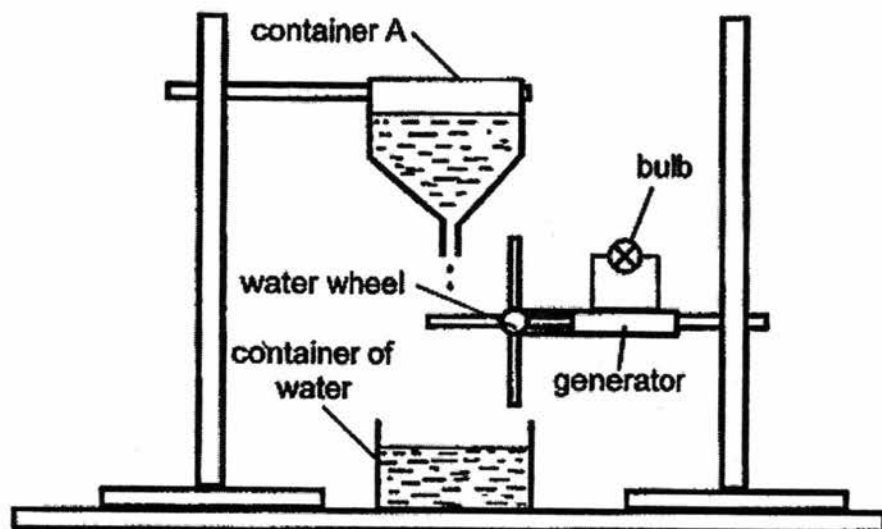
- (a) Identify substance Y and state its function in the digestion of food in the stomach. [2]

Substance Y: _____

Function: _____

- (b) Based on the above flowchart, explain in terms of their function in the digestive system, why the small intestine is much longer than the large intestine? [1]

41. Study the set-up below. When the water dripped from container A, the water wheel would spin and the generator would generate energy for the bulb to light up.



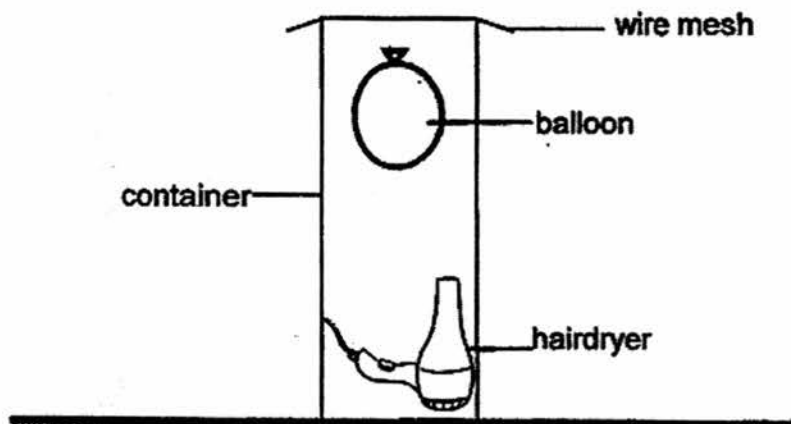
- (a) Using the concept of energy conversion, describe how the water in container A enabled the bulb to light up. [2]

- (b) Using the same items in the set-up, suggest and explain one modification to the set-up to enable the bulb to light up more brightly. [2]

Method:

Explanation:

42. A hair dryer was used to blow a balloon to keep it suspended in the air as shown below.



The height of the balloon from the ground was measured and the results were recorded in the table below.

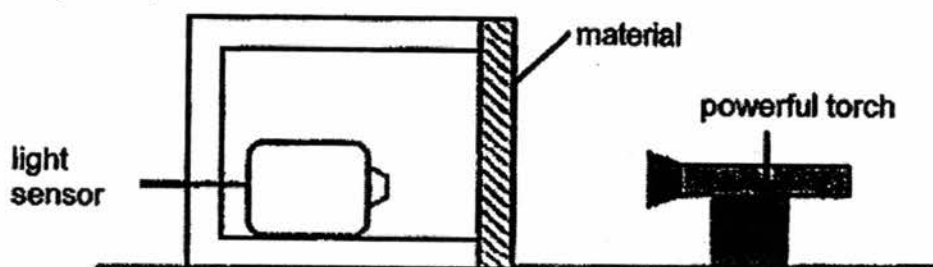
| Speed of hair dryer | Height of balloon (cm) | | | |
|---------------------|-------------------------|-------------------------|-------------------------|-----------------|
| | 1 st reading | 2 nd reading | 3 rd reading | Average reading |
| Low | 33 | 34 | 32 | 33 |
| Medium | 42 | 40 | 44 | 42 |
| High | 57 | 50 | 55 | 54 |

- (a) What is the relationship between the speed of the hair dryer and the height of the balloon? [1]

- (b) State 2 forces that were acting on the balloon while it was suspended in the air. [1]

- (c) When the balloon is blown at low speed for 4 minutes, it bursts. Explain clearly why this happens. [1]

43. Anne set up the experiment as shown below. She covered the open side of a darkened box with material A and then recorded the amount of light detected by the light sensor.



She repeated the experiment using materials B and C of the same thickness as material A. The table below shows her results.

| Materials | Light detected by light sensor (lux) |
|-----------|--------------------------------------|
| A | 50 |
| B | 240 |
| C | 120 |

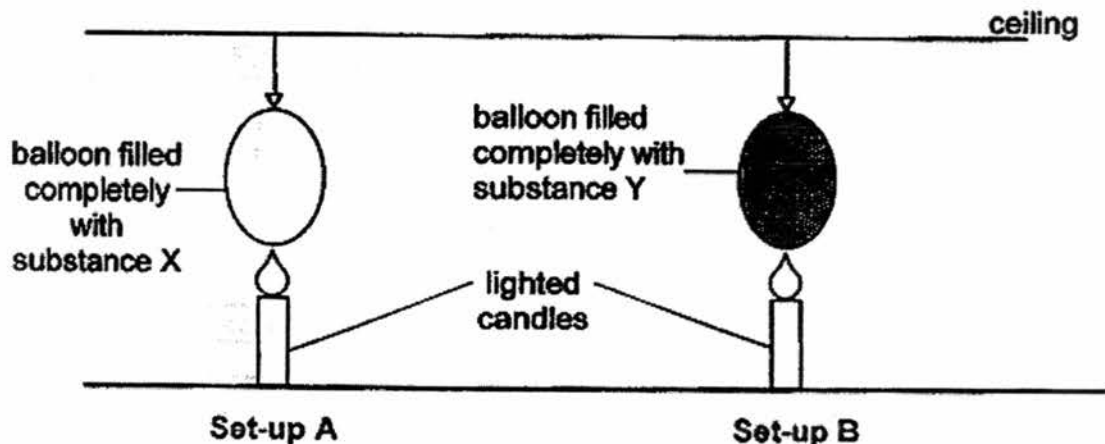
- (a) Based on the set-up above, state the aim of Anne's experiment. [1]

- (b) Why did Anne ensure that the materials were of the same thickness each time she carried out the experiment? [1]

Anne works the night shift. When she returns home after work in the morning, she wants to make her environment as dark as possible while she sleeps.

- (c) Which material, A, B or C, should she use to make curtains for her windows? Give a reason for your answer. [1]

44. Steve wanted to test the properties of substances X and Y. He set up the experiment as shown below in the Science laboratory. He placed 2 balloons of the same type, one completely filled with substance X only and the other completely filled with substance Y, and hung them over a candle flame. He lit the candle and observed what happened.



He recorded the time taken for the balloon to burst in the table below.

| Set-up | Time taken for balloon to burst (s) |
|--------|-------------------------------------|
| A | 10 |
| B | 120 |

- (a) Based on the results above, what can he conclude about the property of substance Y as compared to substance X? [1]

- (b) Explain the difference in the time taken for the balloons to pop in the 2 set-ups above. [2]

EXAM PAPER 2016

SCHOOL :NANYANG

SUBJECT :P6 SCINECE

TERM : SA1

| | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 |
| 3 | 2 | 2 | 1 | 1/4 | 1 | 3 | 1 | 1 | 3 |
| Q11 | Q12 | Q13 | Q14 | Q15 | Q16 | Q17 | Q18 | Q19 | Q20 |
| 2 | 3 | 2 | 3 | 4 | 3 | 2 | 2 | 4 | 4 |
| Q21 | Q22 | Q23 | Q24 | Q25 | Q26 | Q27 | Q28 | Q29 | Q30 |
| 3 | 3 | 3 | 4 | 2 | 2 | 2 | 1 | 2 | 1 |

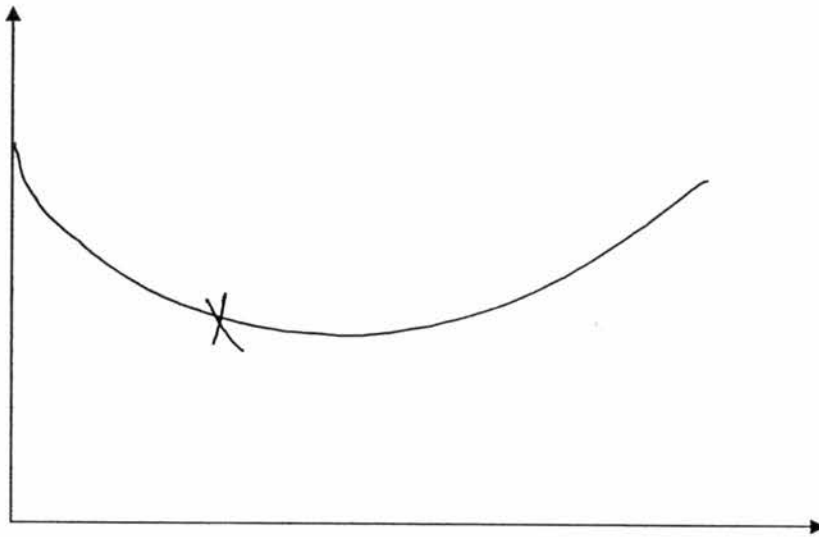
31)a)Jar B. Water in the jar had evaporated. Therefore the plant has no water for photosynthesis and died.

b)The seedlings will not be able to receive sunlight and thus not able to photosynthesis, and died due to lack of food.

32)a)To find out how the temperature of the water affect the number of hatched eggs.

b)As the temperature of the water increased, the number of hatched eggs also increase. Until 26°C, as the temperature increase, the number of hatched eggs decrease.

33)a)



b) B is the prey of C.

c) D eats B, therefore the population of B decrease. There will be less B feeding on the grass. Hence, the population of the grass will increase.

34)a) Outside. Water vapour from the surrounding air outside the glass loses heat to the cooler glass window and condense to form water droplets.

b) It increases the temperature in the room. The glass will be warmer then before, hence the rate of condensation will decrease.

35)a) The spores were blown by the wind onto the tree, thus the fern germinated on the tree.

b) The fern will be able to obtain more sunlight to make food.

36)a) The pollen grains from other plants landed on the stigma, then created a pollen tube down to the ovule and fused with it. Thus the ovary became a fruit.

b) Its stigma and anther are hanging out of the petal.

37)a)i)Distance travelled by the cone

ii)Force of air on the ball/unit

b)To ensure that the result are reliable.

38)a)The amount of volume of water decrease by the roots for photosynthesis.

b)The die solution was absorbed by the roots and transported through the water carrying tube to other parts of the plant.

39)a)Cell wall. It give the plant call a regular shape.

b)The nucleus contains genetic information of the cell.

40)a)Substance Y: Digestive juice.

Function : Breaks down the food into simpler substances.

b)The small intestine is longer so that more time for food to be digested and absorbed into the blood stream while for the large intestine, only water needs to be absorbed.

41)a)GPE of the water in A is converted to KE of the dripping water. The KE of the dripping water is converted to the water wheel in the form of KE which is then converted to EE of the generator and LE of the bulb.

b)Method: Place container A at a higher height.

Explanation: The water in container A will possess more gravitational potential energy which would be converted to more kinetic energy of the spinning water wheel. More kinetic energy will then be converted to more electrical energy of the circuit and more light energy of the light bulb, allowing the bulb to light up brighter.

42)a)As the speed of the hair dryer increases, the height of the balloon also increase.

b)Gravitational force and air resistance.

c)The air in the balloon gains heat form the air blown from the hairdryer and expands. When the air expands too much, there is not enough space in the balloon for the air, thus the balloon bursts.

43)a)To find out how the different materials allow different amount If light to pass through.

b)It was to ensure that it is a fair test, and that the results were only due to the different type of materials and not the difference in the thickness of materials.

c)She should use material A as it allows the least amount of light to pass through, keeping the room the darkest.

44)a)Substance Y is a better conductor of heat than X. Y expands slower than X. X expand faster than Y.

b)The balloon with substance Y takes a longer time to burst as it stretched slower since it did not expand as quickly.