

Test: Primary 6 Science (Prelim) - Nanyang (Y0)

Points: 61 points

Name: _____

Score: _____

Date: _____

Signature: _____

Select multiple choice answers with a cross or tick:

Only select one answer

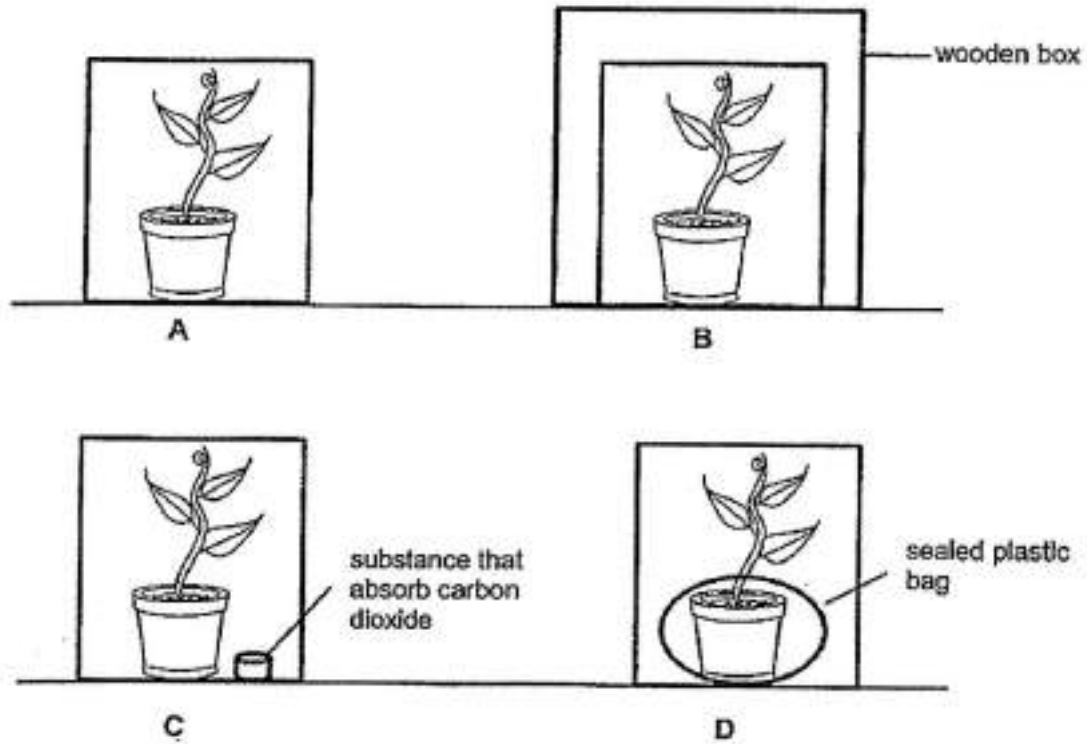
Can select multiple answers

Question 1 of 62

Primary 6 Science (Prelim) 2 pts

For each question, four options are given. One of them is the correct answer. (28 x 2 marks = 56 marks)

June wanted to find out how the presence of carbon dioxide affects the rate of photosynthesis. She placed four identical pots of plants in the garden under bright sunlight as shown in the diagram below.



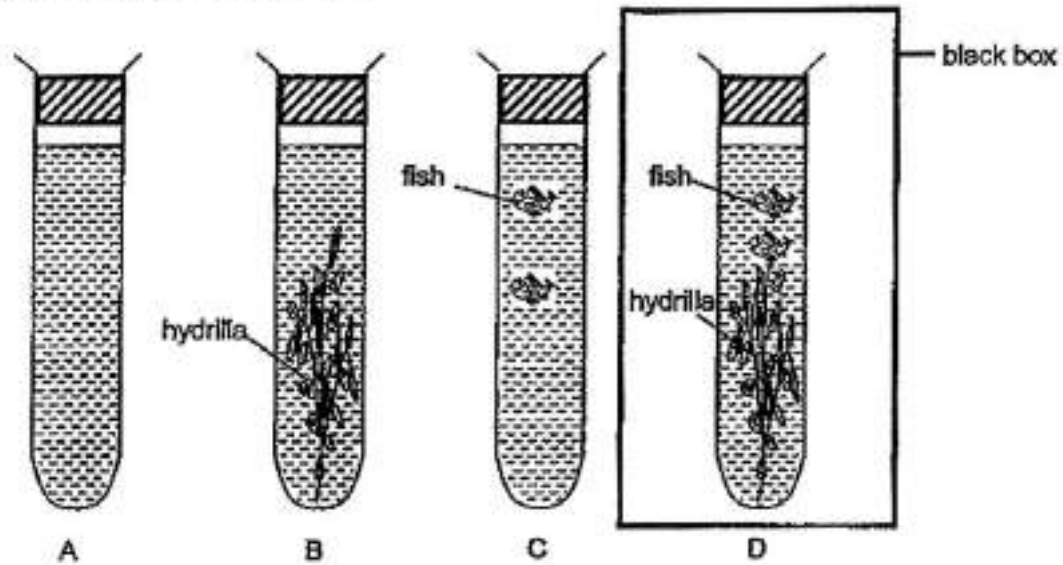
Which set-ups should June use to conduct her experiment?

- A) A and C only
- B) A and D only
- C) B and C only
- D) B and D only

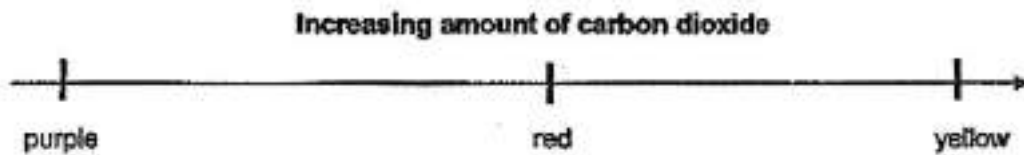
Question 2 of 62

Primary 6 Science (Prelim) 2 pts

Jane carried out an experiment using some fishes and hydrilla plants. A stopper was placed at the opening of each test tube



Jane then placed 5 ml of solution X into each test tube. The colour of solution X changes in the presence of different amounts of carbon dioxide as shown below.



All the set-ups were left in the sun for 3 hours while set-up D was placed in a black box for the same duration. At the start of the experiment, the colour of solution X in each test tube was red.

Which of the following shows the most likely results in each tube after 3 hours?

A) Colour of solution X after 3 hours

| | | | |
|-----|--------|--------|-----|
| A | B | C | D |
| red | yellow | purple | red |

B)

| | | | |
|--------|--------|--------|-----|
| A | B | C | D |
| purple | purple | yellow | red |

C)

| | | | |
|-----|--------|--------|--------|
| A | B | C | D |
| red | purple | yellow | yellow |

D)

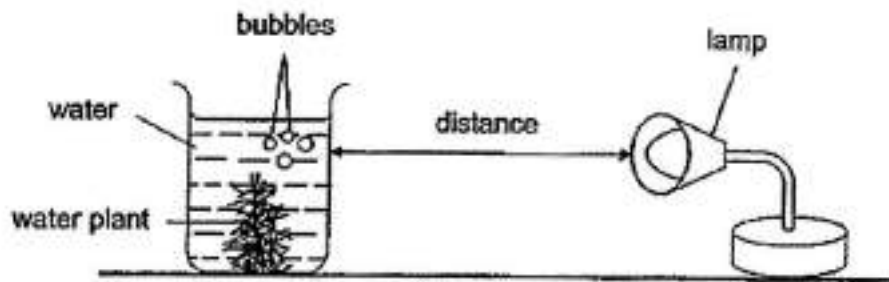
| | | | |
|--------|--------|--------|--------|
| A | B | C | D |
| purple | yellow | purple | yellow |

Question 3 of 62

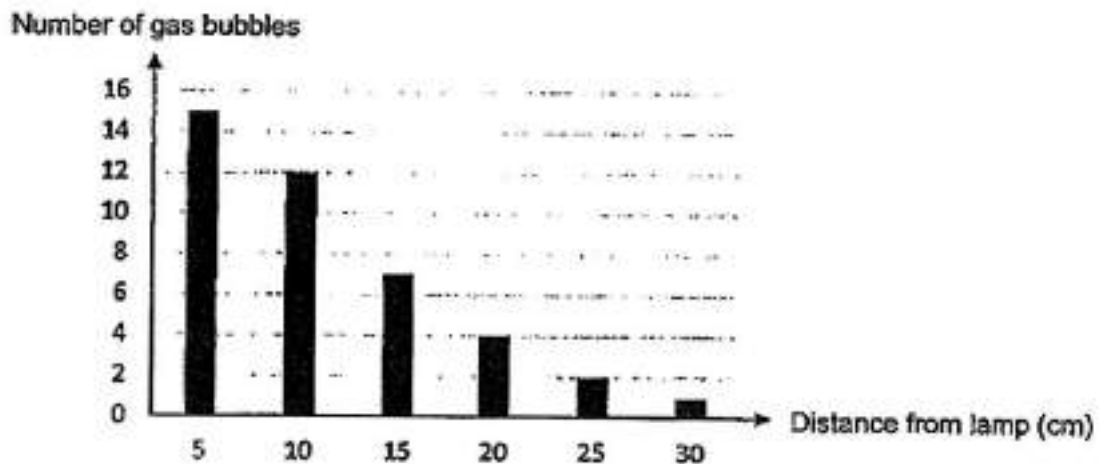
Primary 6 Science (Prelim)

2 pts

Kandis set up an experiment as shown in the diagram below.



The graph below shows his results.



Based on the above results, which one of the following is the correct conclusion?

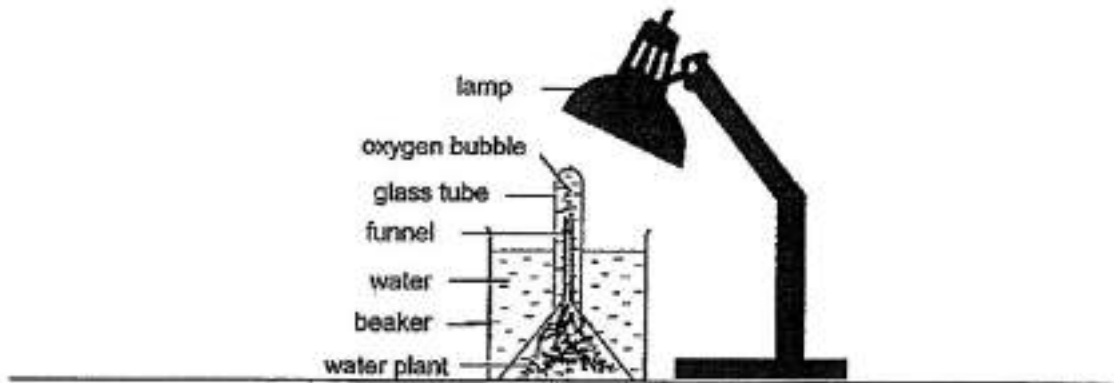
- A) The higher the rate of photosynthesis, the lower the intensity of light.
- B) The higher the rate of photosynthesis, the higher the intensity of light.
- C) The higher the intensity of light, the lower the rate of photosynthesis.
- D) The higher the intensity of light, the higher the rate of photosynthesis.

Question 4 of 62

Primary 6 Science (Prelim)

2 pts

Linda set up an experiment as shown in the diagram below.

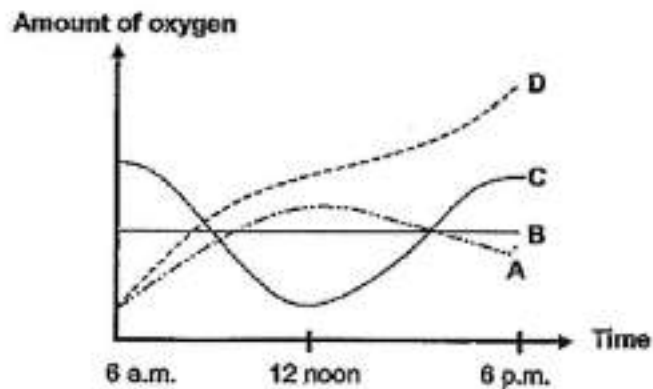


She counted the number of oxygen bubbles produced by the water plant per minute with varying levels of light intensity and her results are shown in table below.

| Intensity of light (units) | Number of oxygen bubbles produced |
|----------------------------|-----------------------------------|
| 0 | 0 |
| 50 | 12 |
| 100 | 26 |
| 150 | 40 |
| 200 | 55 |

The above setup without the lamp was then placed in an open field on a clear day.

Based on the above experiment, which one of the following graphs, A, B, C or D, would represent the amount of oxygen produced from 6.00 a.m. to 6.00 p.m.?



- A) A
 B) B
 C) C
 D) D

Question 5 of 62

Primary 6 Science (Prelim) 2 pts

Figures 1 and 2 below show the reproductive parts of a flowering plant and a female human respectively.

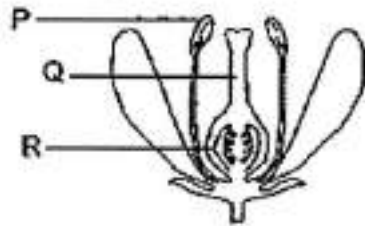


Figure 1



Figure 2

Which two reproductive parts have similar functions?

- A) P and S
- B) Q and T
- C) Q and S
- D) R and T

Question 6 of 62

Primary 6 Science (Prelim) 2 pts

The diagram below shows human reproductive cells, X and Y, undergoing a process during human reproduction.



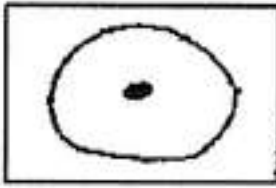
Which one of the following statements is **Incorrect**?

- A) The above process takes place before the baby develops.
- B) The human reproduction cells above are undergoing fertilisation.
- C) Cell X is produced in the testes while Cell Y is produced in the ovaries.
- D) Cell X is a female reproductive cell and Cell Y is a male reproductive cell.

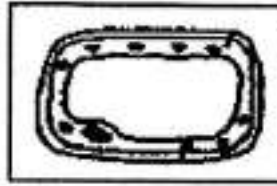
Question 7 of 62

Primary 6 Science (Prelim) 2 pts

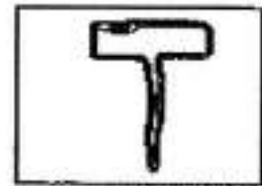
The diagram below shows Cells A, B and C.



Cell A



Cell B



Cell C

Which one of the following statements best describes Cells A, B and C?

- A) All the cells above have a cell wall.
- B) All the cells above can make their own food.
- C) All the cells above are taken from at least two different organisms.
- D) All the cells above are taken from different parts of the same organism.

Question 8 of 62

Primary 6 Science (Prelim) 2 pts

Study the table below.

A tick (✓) indicates the presence of certain parts in Cells P, Q and R.

| Parts | Cell P | Cell Q | Cell R |
|-------------|--------|--------|--------|
| cell wall | | ✓ | ✓ |
| chloroplast | | ✓ | |
| nucleus | ✓ | ✓ | ✓ |

Where are Cells P, Q and R likely to be found?

- A)

| | | |
|--------|--------|--------|
| Cell P | Cell Q | Cell R |
| cheek | root | leaf |
- B)

| | | |
|--------|--------|--------|
| Cell P | Cell Q | Cell R |
| cheek | leaf | root |
- C)

| | | |
|--------|--------|--------|
| Cell P | Cell Q | Cell R |
| root | cheek | leaf |
- D)

| | | |
|--------|--------|--------|
| Cell P | Cell Q | Cell R |
| root | leaf | cheek |

Question 9 of 62

Primary 6 Science (Prelim) 2 pts

Jalme studied three animals, X, Y and Z, and recorded her observations in the table below.

| Observations | Animal X | Animal Y | Animal Z |
|-----------------------|----------|----------|----------|
| Lays eggs | ✓ | ✓ | ✓ |
| Has three body parts | ✓ | ✓ | |
| Young resembles adult | | ✓ | |

Which of the following could be animals X, Y and Z?

- A)

| | | |
|-----------|-----------|------|
| X | Y | Z |
| cockroach | butterfly | frog |
- B)

| | | |
|----------|-----------|---------|
| X | Y | Z |
| mosquito | butterfly | chicken |
- C)

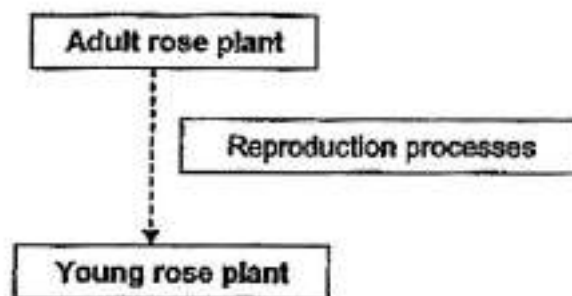
| | | |
|-----------|----------|---------|
| X | Y | Z |
| butterfly | mosquito | chicken |
- D)

| | | |
|-----------|-----------|------|
| X | Y | Z |
| butterfly | cockroach | frog |

Question 10 of 62

Primary 6 Science (Prelim) 2 pts

The diagram below shows the different reproduction processes that the adult rose plant goes through.



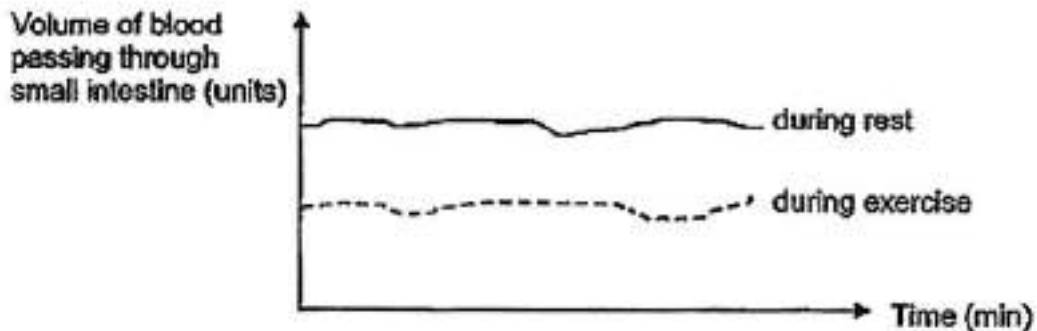
Which of the following correctly state the reproduction processes that the adult rose plant goes through?

- A) fertilisation ---> pollination ---> seed dispersal ---> germination
- B) pollination ---> fertilisation ---> seed dispersal ---> germination
- C) fertilisation ---> pollination ---> germination ---> seed dispersal
- D) pollination ---> seed dispersal ---> germination ---> seed dispersal

Question 11 of 62

Primary 6 Science (Prelim) 2 pts

The graph below shows the volume of blood passing through the small intestine during rest and during exercise over a period of time.



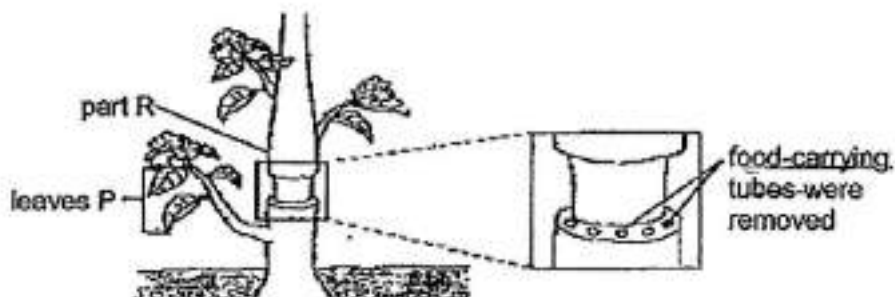
Based on the graph above, how does exercising after a meal affect the absorption of digested food in the small intestine?

- A) Less blood flows to the small intestine so there is less absorption.
- B) More blood flows to the small intestine so there is less absorption.
- C) Less blood flows to the small intestine so there is more absorption.
- D) More blood flows to the small intestine so there is more absorption.

Question 12 of 62

Primary 6 Science (Prelim) 2 pts

Mr Mohammad removed the outer ring of the stem of a plant in a garden as shown in the diagram below. He continued to water the plant daily.



Which of the following would be the most likely observation(s) of the plant after several weeks?

- A Leaves P died.
- B Part R swelled.
- C The whole plant died.

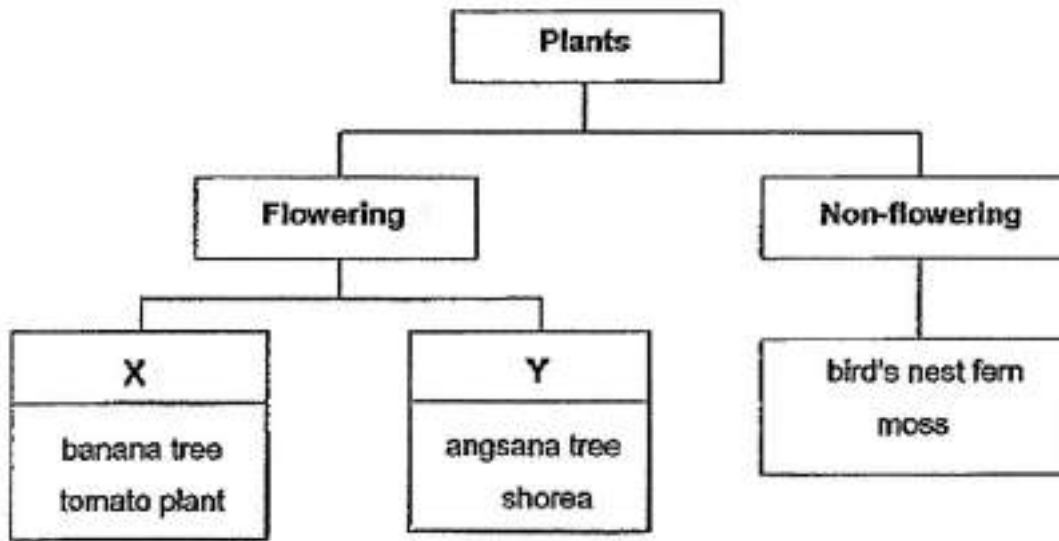
- A) A only
- B) B only
- C) A and B only
- D) A, B and C

Question 13 of 62

Primary 6 Science (Prelim)

2 pts

The classification chart below shows how some plants are grouped.



Which of the following headings correctly represents X and Y?

- A)

| | |
|-------------|-------------------|
| X | Y |
| Bear fruits | Do not bear fruit |
- B)

| | |
|--------------------|------------------------|
| X | Y |
| Dispersed by water | Dispersed by splitting |
- C)

| | |
|--------------------|---------------------|
| X | Y |
| Reproduce by seeds | Reproduce by spores |
- D)

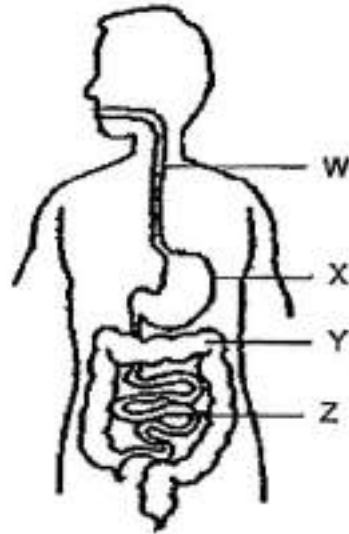
| | |
|----------------------|-------------------|
| X | Y |
| Dispersed by animals | Dispersed by wind |

Question 14 of 62

Primary 6 Science (Prelim)

2 pts

The diagram below represents the human digestive system.



Based on the diagram above, which of the following statements about parts W, X, Y and Z are correct?

- A Digestion is completed at part Y.
- B Digestion of food starts at part Z.
- C Food moves down part W into part X.
- D Water is absorbed into the body at part Y.

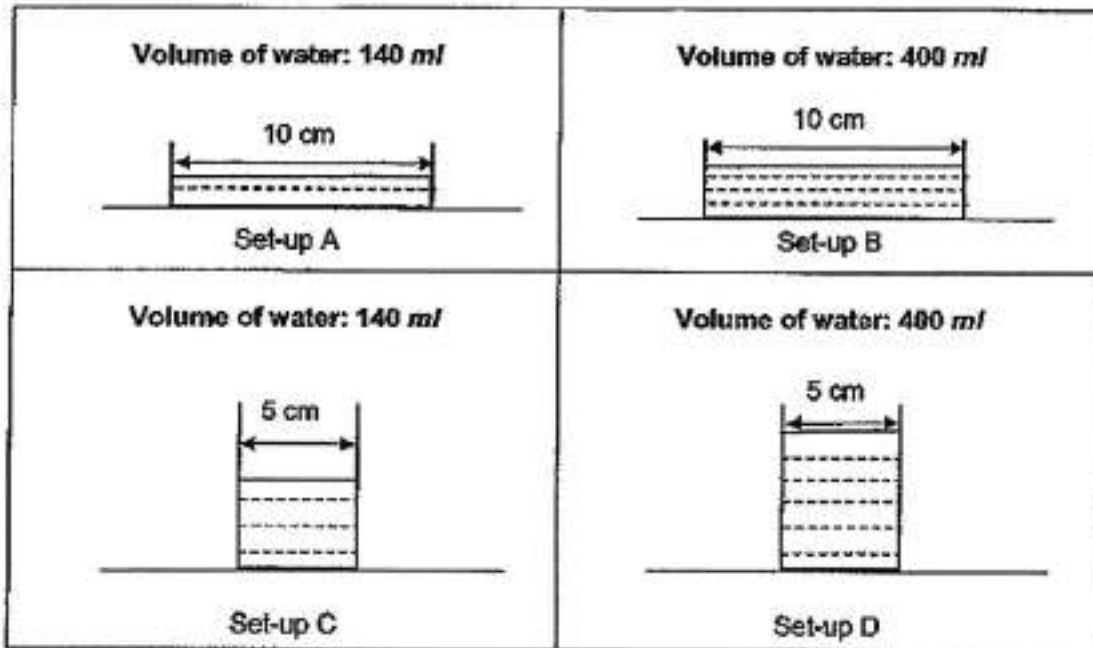
-
- A) A and B only
 - B) C and D only
 - C) B, C and D only
 - D) A, B, C and D

Question 15 of 62

Primary 6 Science (Prelim)

2 pts

Jacob used different containers and poured different volumes of water at 27 °C into the containers as shown in the table below. He then placed the set-ups, A, B, C and D, in the garden.



Which one of the following statement is correct?

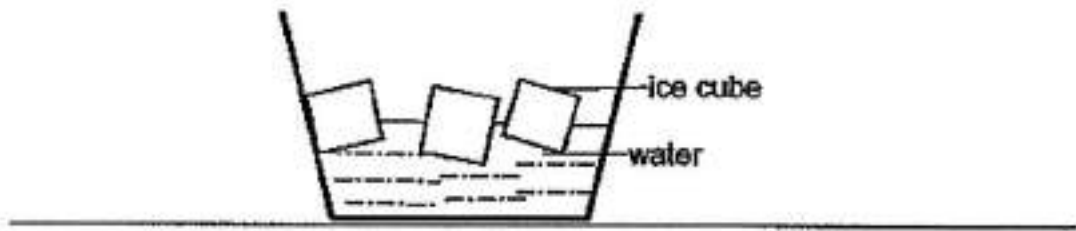
- A) Water in set-up A has the same rate of evaporation as water in set-up C.
- B) Water in set-up C has the same rate of evaporation as water in set-up D.
- C) Water in set-up A has a greater rate of evaporation than water in set-up B.
- D) Water in set-up D has a greater rate of evaporation than water in set-up B.

Question 16 of 62

Primary 6 Science (Prelim)

2 pts

A bowl of ice was placed in a room at 27°C.



Mary observed the cup after 5 hours. Which one of the following is correct?

- A)

| Observation | Explanation |
|-----------------------|--------------------------------------|
| The ice cubes melted. | The ice cube lose heat to the water. |
- B)

| Observation | Explanation |
|-----------------------------|-------------------------------------|
| The ice cubes did not melt. | The ice cube lose heat to the room. |
- C)

| Observation | Explanation |
|-----------------------|---|
| The ice cubes melted. | The ice cube gained heat from the room. |
- D)

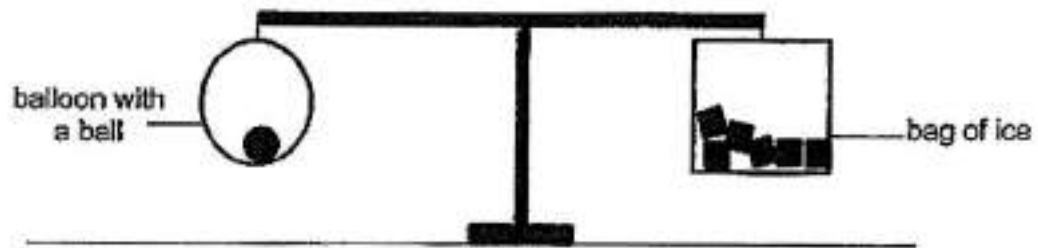
| Observation | Explanation |
|-----------------------------|--|
| The ice cubes did not melt. | The ice cube gained heat from the water. |

Question 17 of 62

Primary 6 Science (Prelim)

2 pts

Sally placed an inflated balloon with a ball in it and a bag of ice on a beam balance under the hot sun. The set up was balanced at the start of the experiment.



She recorded her observation after 3 hours.

Which of the following statement(s) is/are possible observation(s) after 3 hours?

- A The balloon expanded
- B The set-up remained balanced.
- C The side of the beam balance with the balloon moved downwards.
- D The side of the beam balance with the bag of ice moved downwards.

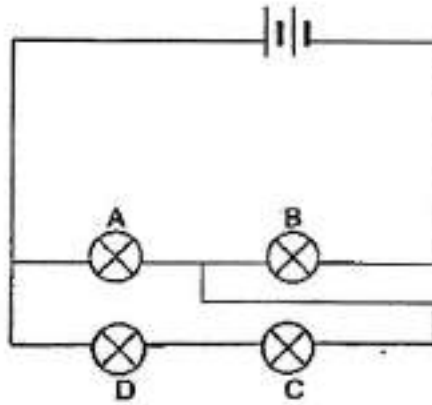
-
- A) B only
 - B) A and B only
 - C) C and D only
 - D) A, C and D only

Question 18 of 62

Primary 6 Science (Prelim)

2 pts

Study the circuit below.



After one of the bulbs had blown, all the other bulbs did not light up. Which bulb had blown?

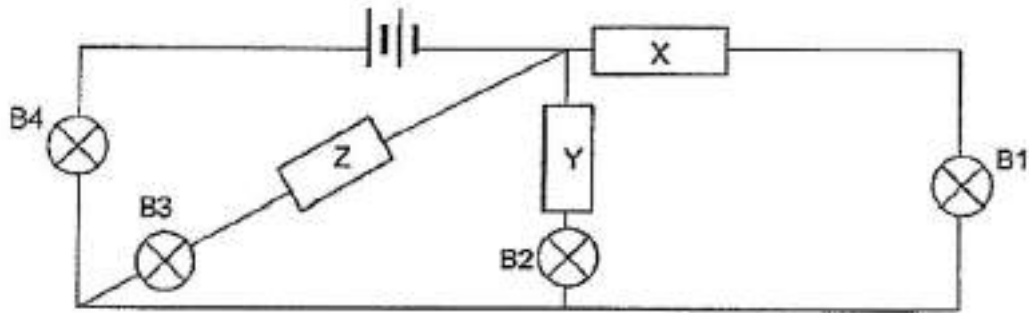
-
- A) A
 - B) B
 - C) C
 - D) D

Question 19 of 62

Primary 6 Science (Prelim)

2 pts

Tom placed different materials, P, Q, R and S, randomly in positions X, Y and Z as shown below.



He then recorded his observations in the table below.

| Position X | Position Y | Position Z | Bulbs that lit up |
|------------|------------|------------|--------------------|
| P | Q | R | B2 and B4 only |
| Q | R | S | B1, B3 and B4 only |

Which of the following correctly represents P, Q, R and S?

- A)

| | | | |
|--------|---------|------|------|
| P | Q | R | S |
| copper | plastic | iron | wood |
- B)

| | | | |
|--------|------|------|---------|
| P | Q | R | S |
| copper | iron | wood | plastic |
- C)

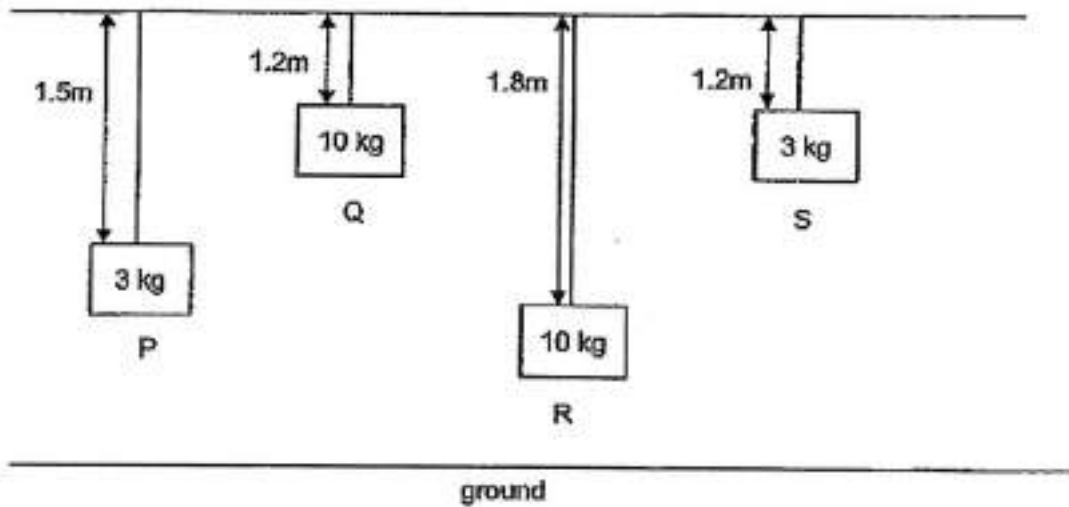
| | | | |
|------|---------|--------|------|
| P | Q | R | S |
| wood | plastic | copper | iron |
- D)

| | | | |
|------|------|---------|--------|
| P | Q | R | S |
| wood | iron | plastic | copper |

Question 20 of 62

Primary 6 Science (Prelim) 2 pts

Four objects of different mass, P, Q, R and S, are hung above the ground using strings of different lengths as shown in the diagram below.



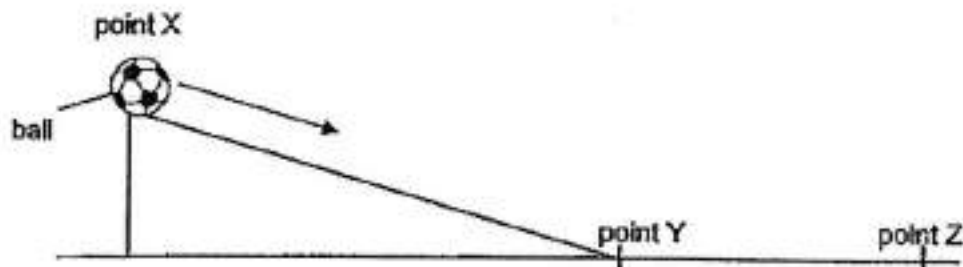
Which object has the most potential energy?

- A) P
- B) Q
- C) R
- D) S

Question 21 of 62

Primary 6 Science (Prelim) 2 pts

A ball at point X was released and it rolled down the ramp past point Y and came to a stop at point Z.



Which of the following statements are correct based on the above set-up?

- A The ball has the most kinetic energy at Y.
- B The ball has less potential energy at Z than at Y.
- C The ball has the most potential energy at X before it was released.
- D The ball has less kinetic energy at Z than at X before it was released.

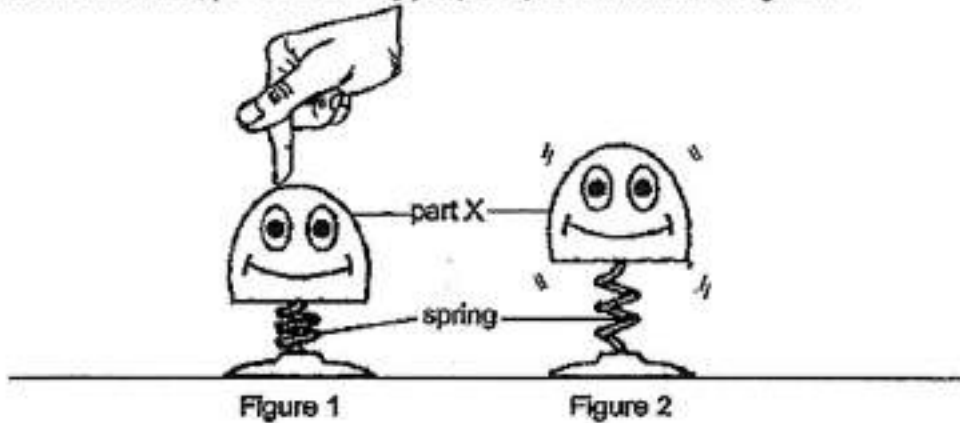
- A) B only
- B) B and D only
- C) A and C only
- D) A, C and D only

Question 22 of 62

Primary 6 Science (Prelim)

2 pts

Joyce pushed a toy, which was attached to a spring, as shown in figure 1. When she removed her hand, part X of the toy jumped up as shown in the figure 2.



Which of the following shows the correct main energy conversions?

Joyce pushing the toy

Compressed spring

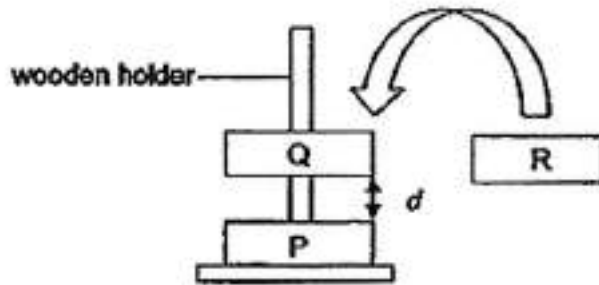
Part X jumped up

- A) Joyce pushing the toy Compressed spring Part X jumped up
 heat energy -----> potential energy -----> kinetic energy
- B) heat energy -----> kinetic energy -----> kinetic energy + heat energy
- C) kinetic energy -----> kinetic energy -----> potential energy
- D) kinetic energy -----> potential energy -----> kinetic energy + potential energy

Question 23 of 62

Primary 6 Science (Prelim) 2 pts

Ernest placed two similar ring magnets, P and Q, into a wooden holder as shown below. He observed a distance, d , between the two magnets. Then he added a metal ring, R, into the holder above magnet Q.



Which of the following explains correctly the possible observations he could make about distance, d ?

- A)

| Observation of d | Explanation |
|--------------------|------------------------|
| increases | Magnet Q repels ring R |
- B)

| Observation of d | Explanation |
|--------------------|------------------------|
| decreases | Magnet P repels ring R |
- C)

| Observation of d | Explanation |
|--------------------|--------------------------------|
| decreases | Ring R adds weight to Magnet Q |
- D)

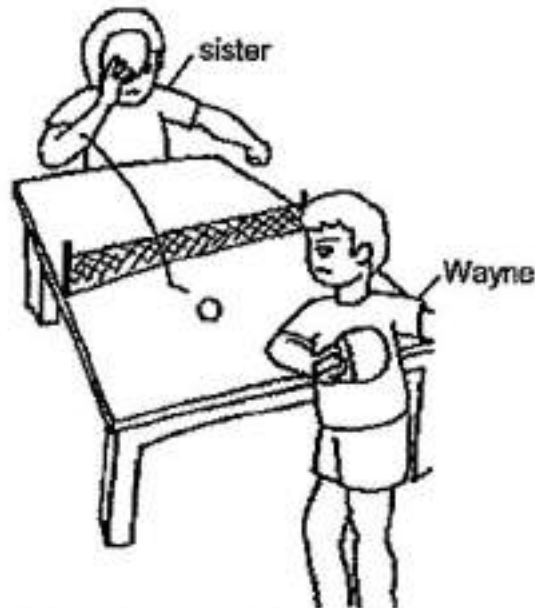
| Observation of d | Explanation |
|--------------------|--------------------------|
| remains the same | Magnet Q attracts ring R |

Question 24 of 62

Primary 6 Science (Prelim)

2 pts

The diagram below shows Wayne and his sister playing table-tennis.



The ball bounced on the table and was moving towards Wayne. He hit it with the bat.

Based on the diagram above, which of the following statements are correct?

- A When Wayne hits the ball, it will totally stop moving.
- B Wayne has to exert a push force on the ball to hit it back to his sister.
- C The ball exerted a push force on the table to bounce towards Wayne.
- D The ball will continue to move at the same speed when Wayne hits it harder than his sister.

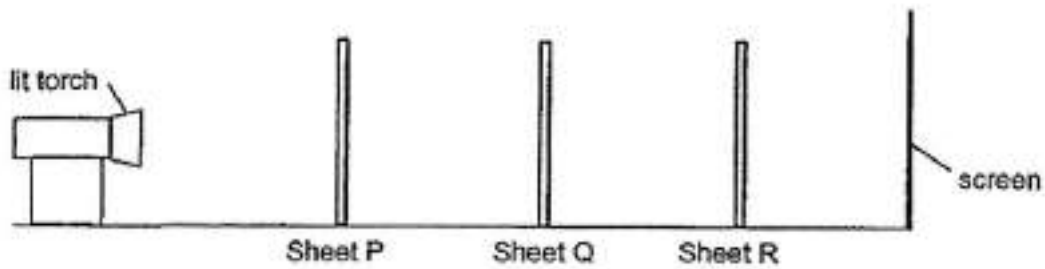
-
- A) A and B only
 - B) B and C only
 - C) A, C and D only
 - D) B, C and D only

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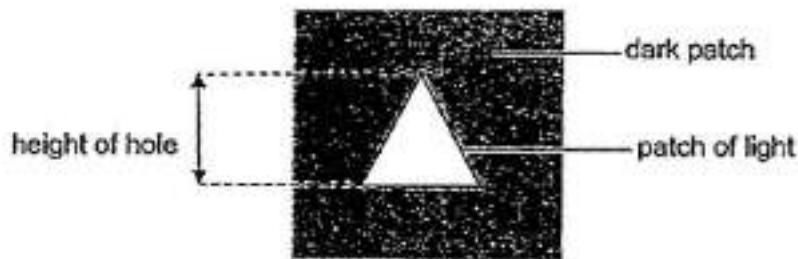
Primary 6 Science (Prelim)

2 pts

The set-up below shows light shining on three sheets, P, Q and R, made of different materials, in a dark room. Only one sheet allowed most light to pass through. Each sheet has a hole of the same height cut out in a different shape.

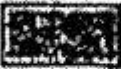
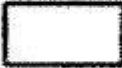


The diagram below shows the shadow seen on the screen.

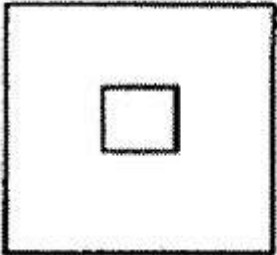

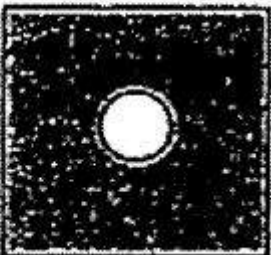


Which of the following arrangements will enable the shadow above to be seen on the screen?

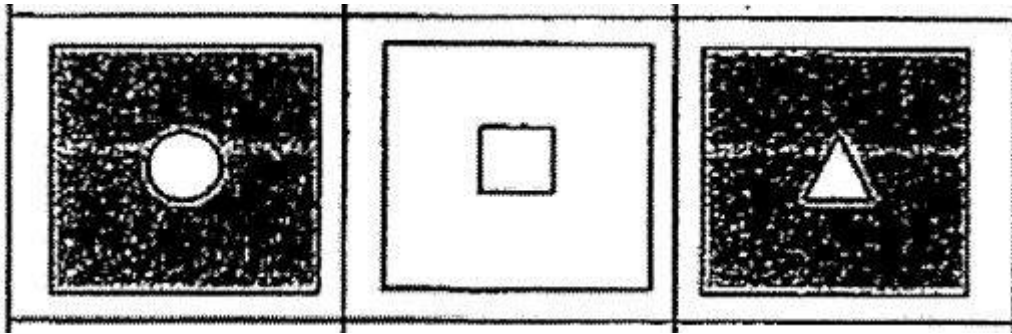
Key

-  does not allow light to pass through
-  allows most light to pass through

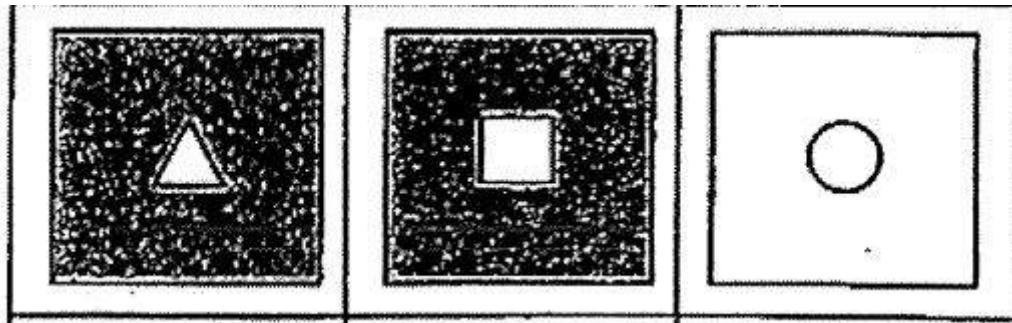
A)

| Sheet P | Sheet Q | Sheet R |
|---|---|--|
|  |  |  |

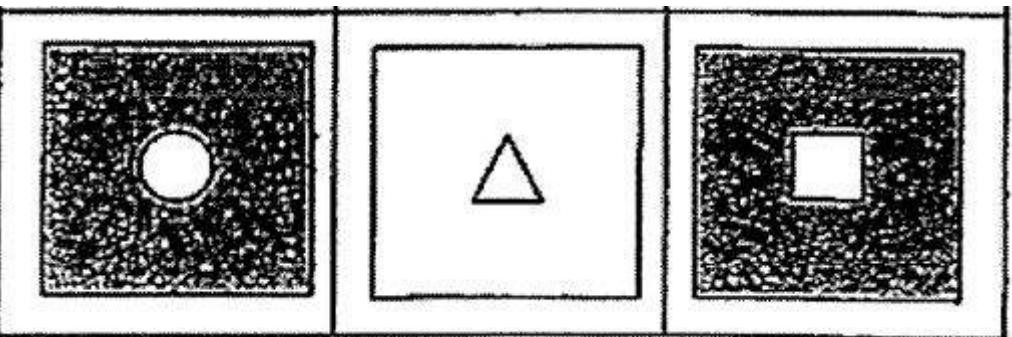
B)



C)



D)

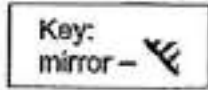


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Primary 6 Science (Prelim)

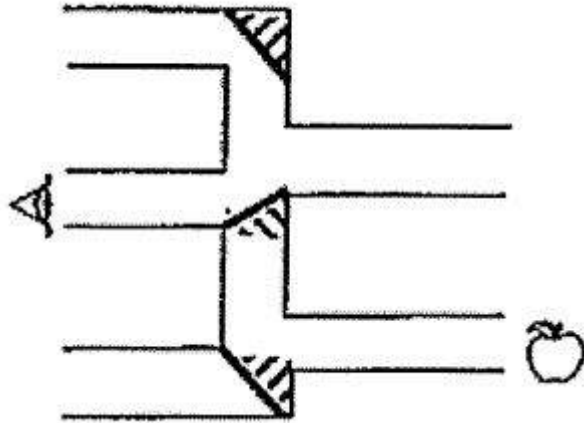
2 pts

Ramesh placed 3 mirrors in a set of connected pipes. He looked through different pipe openings to find out if he could see the apple on the opposite side using the mirrors.

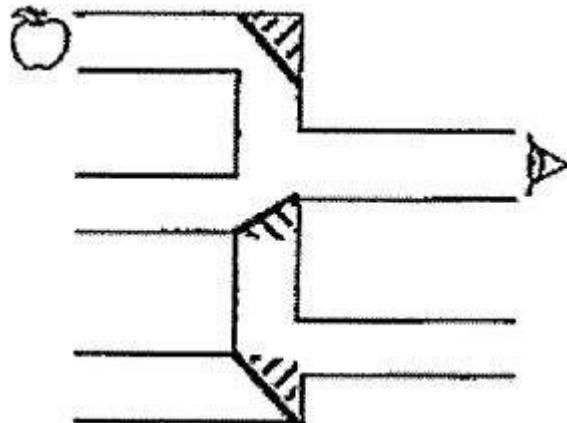


In which of the following set-ups will he be able to see the apple?

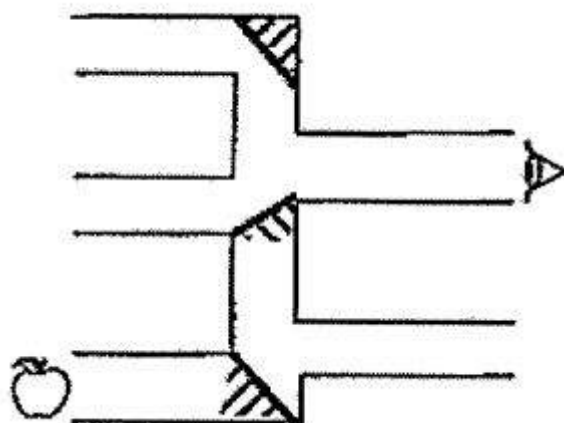
A)



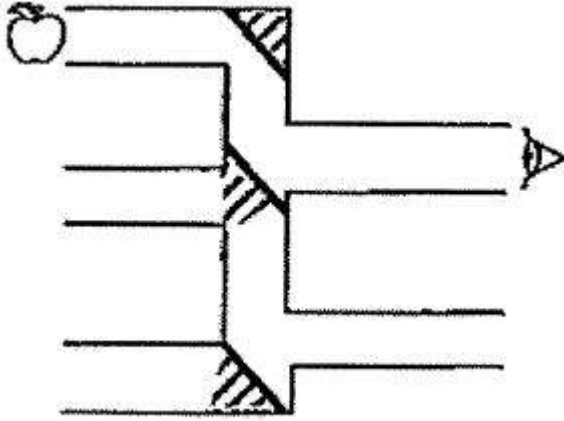
B)



C)



D)

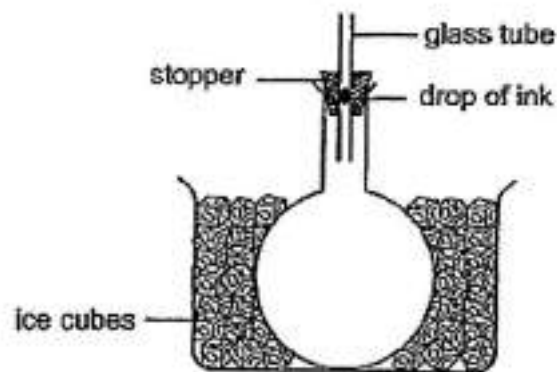


Question 27 of 62

Primary 6 Science (Prelim) 2 pts

Billy placed an empty round-bottom flask into a basin of ice cubes as shown in the diagram below. The flask was fitted with a stopper where a glass tube was inserted. He added a drop of ink into the glass tube.

After 20 minutes, he observed that the drop of ink had moved down the glass tube.



Which one of the following explains his observation?

- A)

| | |
|--------------------------|-------------|
| Air in the flask | Ice Cubes |
| gained heat and expanded | gained heat |
- B)

| | |
|--------------------------|-----------|
| Air in the flask | Ice Cubes |
| gained heat and expanded | lost heat |
- C)

| | |
|--------------------------|-------------|
| Air in the flask | Ice Cubes |
| lost heat and contracted | gained heat |
- D)

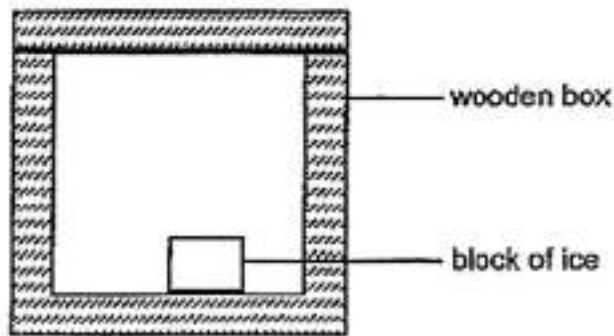
| | |
|--------------------------|-----------|
| Air in the flask | Ice Cubes |
| lost heat and contracted | lost heat |

Question 28 of 62

Primary 6 Science (Prelim)

2 pts

A block of ice was placed in a wooden box as shown in the diagram below.



Which one of the following statements best explains why the block of ice melted slowly?

- A) The wooden box is a good conductor of heat.
- B) The air in the wooden box conducted heat away from the ice quickly.
- C) The heat in the wooden box could not escape to the surrounding air outside the box.
- D) The wooden box slowed down heat gain by the ice from the surrounding air outside the box.

Question 29 of 62

Primary 6 Science (Prelim)

0 pts

Xinyi setup her new aquarium next to the window in her bedroom as shown in Figure 1 below.

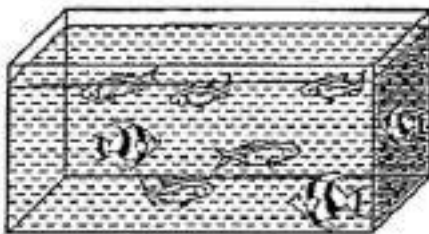


Figure 1



Figure 2

Her mother observed that the fish remained at the surface of the water most of the time and suggested that Xinyi put some water plants, as shown in Figure 2, into the aquarium.

Describe the process of photosynthesis carried out in green plants. (1 mark)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

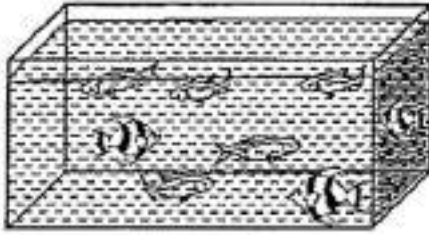
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 30 of 62

Primary 6 Science (Prelim)

0 pts

Xinyi setup her new aquarium next to the window in her bedroom as shown in Figure 1 below.

**Figure 1****Figure 2**

Her mother observed that the fish remained at the surface of the water most of the time and suggested that Xinyi put some water plants, as shown in Figure 2, into the aquarium.

Other than being a source of food and shelter, explain how her mother's suggestion would help the fish in the aquarium survive better. (1 mark)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 31 of 62

Primary 6 Science (Prelim)

0 pts

Xinyi setup her new aquarium next to the window in her bedroom as shown in Figure 1 below.

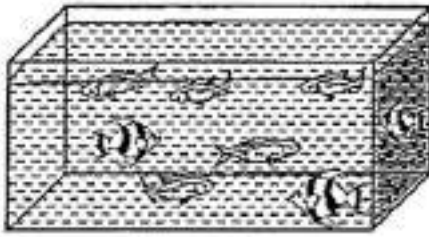


Figure 1



Figure 2

Her mother observed that the fish remained at the surface of the water most of the time and suggested that Xinyi put some water plants, as shown in Figure 2, into the aquarium.

Figure 3 below shows a tent pitched on a field. After a week, the tent was removed. It was observed that the grass growing in the area, where the tent had been pitched, had turned brown and died as shown in Figure 4.

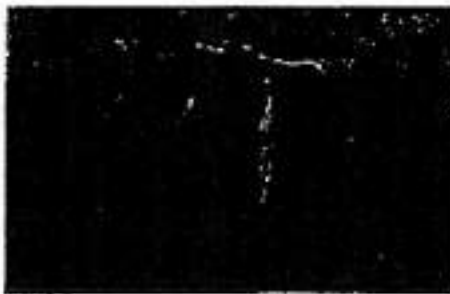


Figure 3

surrounding
green grass

patch of
dead grass

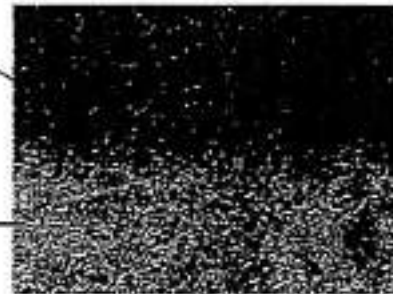


Figure 4

Explain why the grass under the tent died.

[1]

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

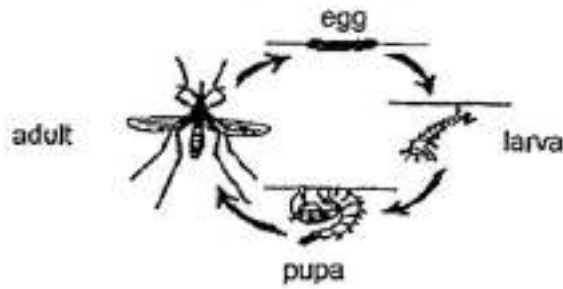
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 32 of 62

Primary 6 Science (Prelim)

0 pts

The diagram below shows the life cycle of mosquito X, which spreads a virus that causes illness P.



Some scientists kept these mosquitoes at different temperatures and recorded the duration of each stage of their life cycle. The results are shown in the table below.

| | Duration of stage at different temperatures (days) | | | |
|-------|--|------|------|------|
| | 28°C | 29°C | 30°C | 31°C |
| Egg | 3 | 2 | 2 | 2 |
| Larva | 8 | 7 | 6 | 5 |
| Pupa | 2 | 2 | 2 | 1 |

State the effect of temperature on the length of the life cycle of mosquito X. (1 mark)

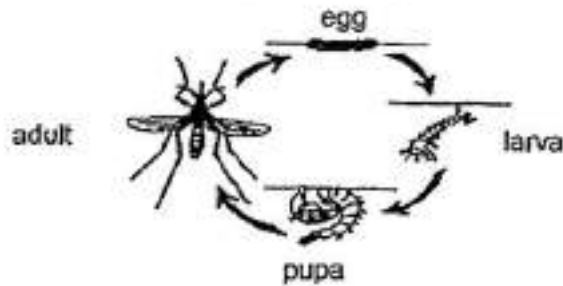
This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 33 of 62

Primary 6 Science (Prelim) 0 pts

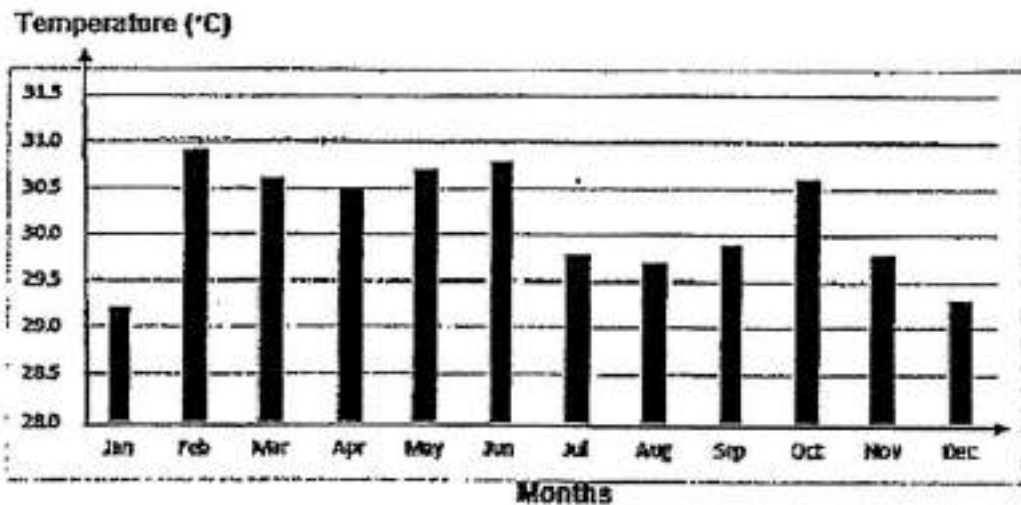
The diagram below shows the life cycle of mosquito X, which spreads a virus that causes illness P.



Some scientists kept these mosquitoes at different temperatures and recorded the duration of each stage of their life cycle. The results are shown in the table below.

| | Duration of stage at different temperatures (days) | | | |
|-------|--|------|------|------|
| | 28°C | 29°C | 30°C | 31°C |
| Egg | 3 | 2 | 2 | 2 |
| Larva | 8 | 7 | 6 | 5 |
| Pupa | 2 | 2 | 2 | 1 |

The graph below shows the average monthly temperature in Singapore in 2019.



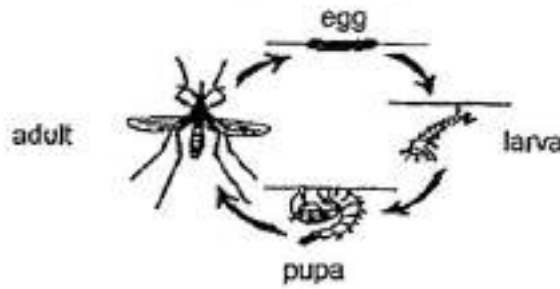
Based on the information above, would there be more cases of illness P between January and June or between July and December? Explain your answer. (2 marks)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 34 of 62

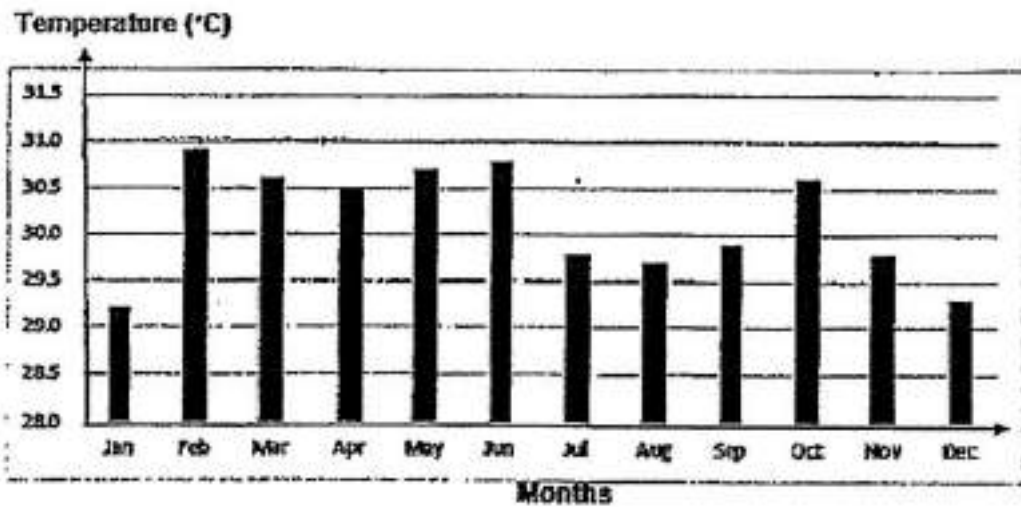
The diagram below shows the life cycle of mosquito X, which spreads a virus that causes illness P.



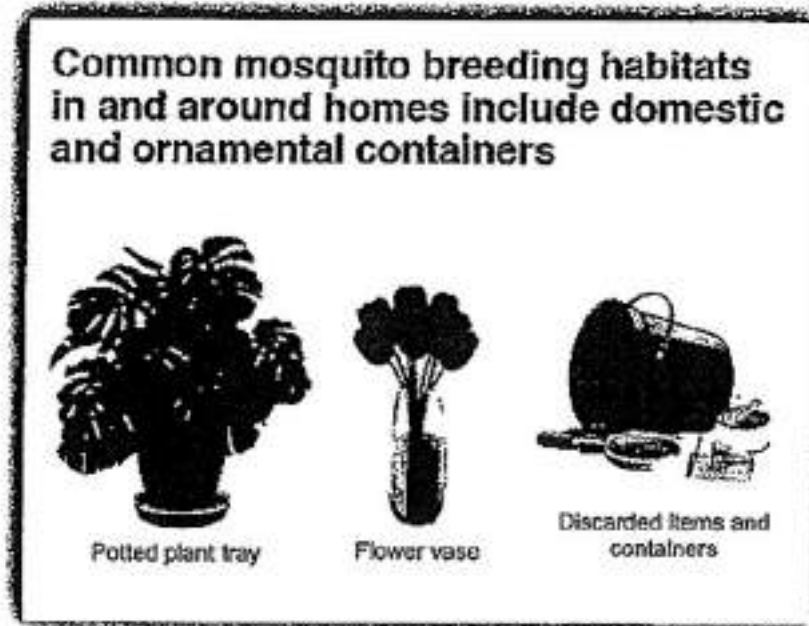
Some scientists kept these mosquitoes at different temperatures and recorded the duration of each stage of their life cycle. The results are shown in the table below.

| Duration of stage at different temperatures (days) | | | | |
|--|------|------|------|------|
| | 28°C | 29°C | 30°C | 31°C |
| Egg | 3 | 2 | 2 | 2 |
| Larva | 8 | 7 | 6 | 5 |
| Pupa | 2 | 2 | 2 | 1 |

The graph below shows the average monthly temperature in Singapore in 2019.



The diagram below shows part of a poster displayed in a neighbourhood with a high number of cases of illness P.



Based only on the objects shown above, suggest one way residents in the neighbourhood can play a part in reducing the breeding of mosquitoes.

[1]

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

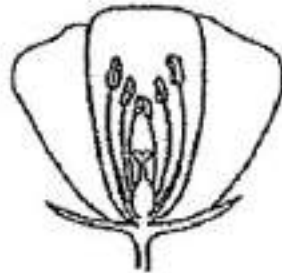
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 35 of 62

Primary 6 Science (Prelim)

0 pts

The diagrams below show flowers X and Y.

**Flower X****Flower Y**

Which flower, X or Y, is most likely pollinated by wind? Give a reason for your answer. (1 mark)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

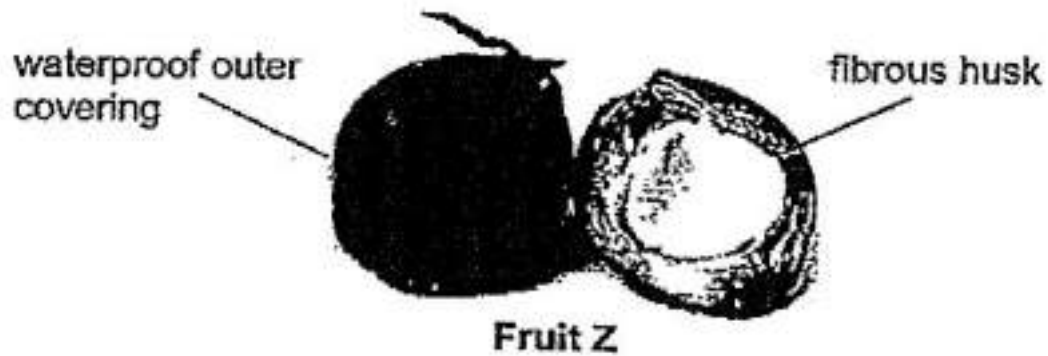
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 36 of 62

Primary 6 Science (Prelim)

0 pts

The diagram below shows fruit Z that Lucas found at the beach



Explain based on the characteristics of fruit Z how it can be dispersed by water. (1 mark)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

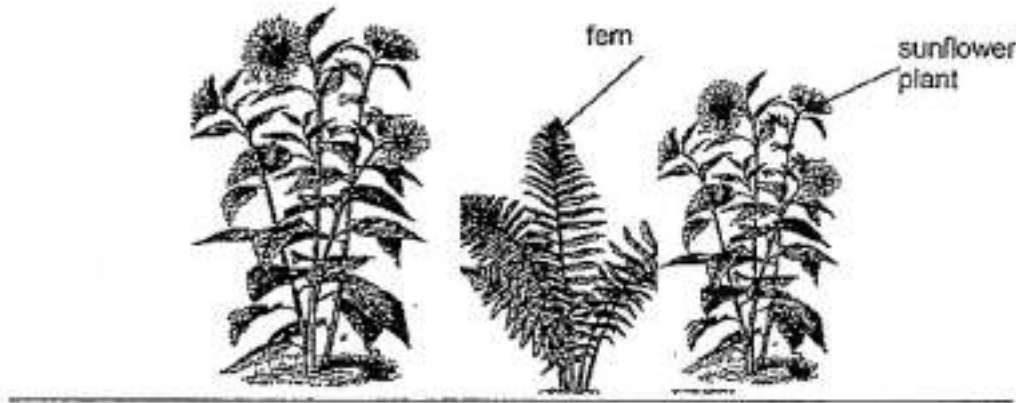
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 37 of 62

Primary 6 Science (Prelim)

0 pts

Lucas removed all the plants in his garden. He then planted two rows of sunflower plants only, in his garden. After three weeks, he noticed that there were ferns growing near his sunflower plants as shown in the diagram below.



Explain how the ferns started growing in his garden. (1 mark)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

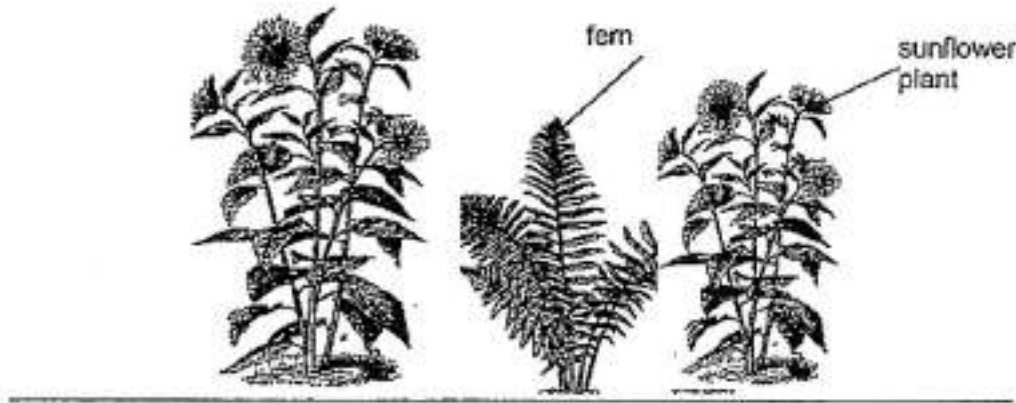
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 38 of 62

Primary 6 Science (Prelim)

0 pts

Lucas removed all the plants in his garden. He then planted two rows of sunflower plants only, in his garden. After three weeks, he noticed that there were ferns growing near his sunflower plants as shown in the diagram below.



Why is it important for Lucas to remove the ferns. (1 mark)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

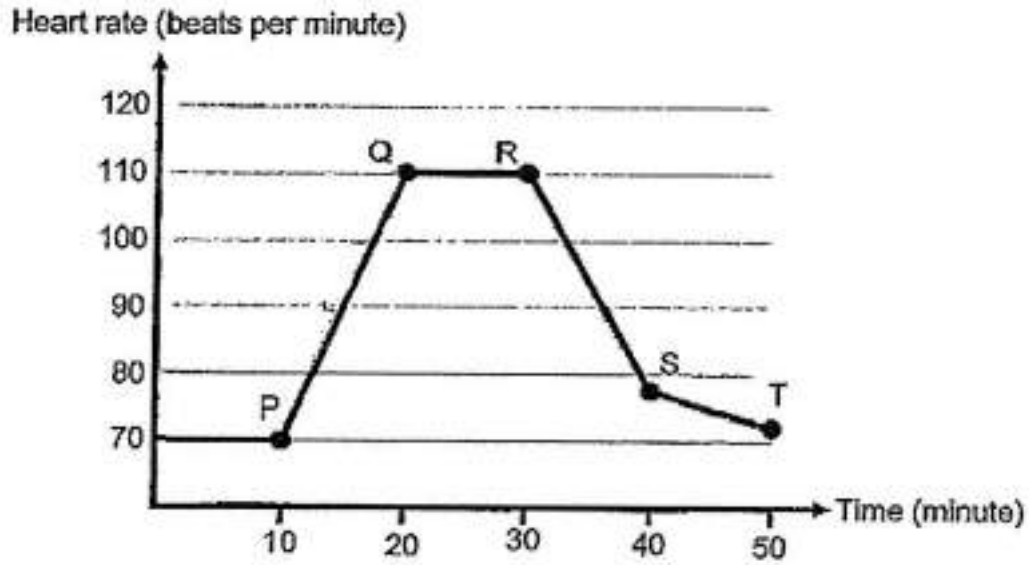
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 39 of 62

Primary 6 Science (Prelim)

1 pt

The graph below shows the changes in Samuel's heart rate before, during and after exercising. He only exercised for 20 minutes.



At which point, P, Q, R, S or T, did Samuel start exercising?

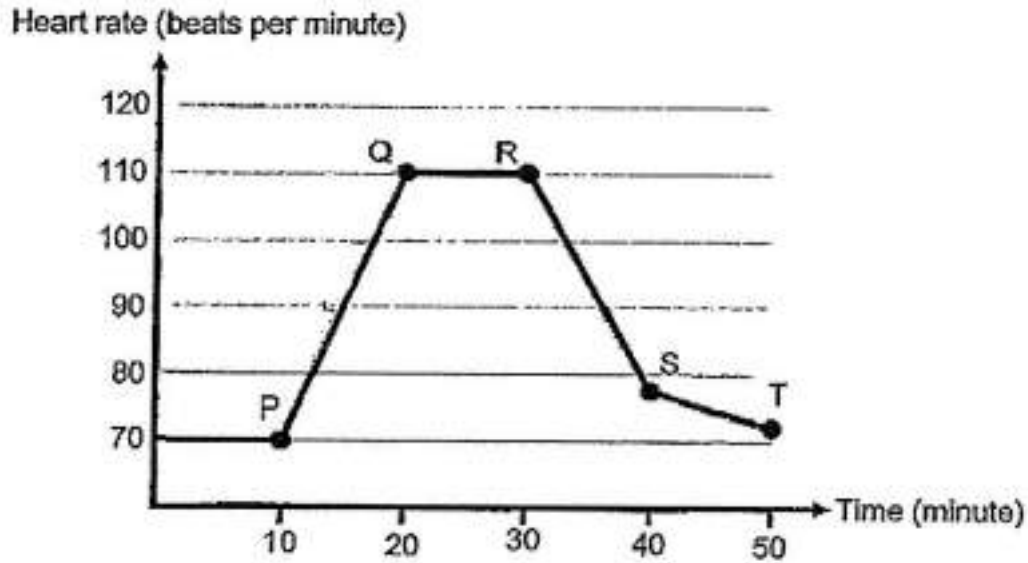
Point _____

Question 40 of 62

Primary 6 Science (Prelim)

0 pts

The graph below shows the changes in Samuel's heart rate before, during and after exercising. He only exercised for 20 minutes.



State how his heart rate changed when he exercised. Explain why? (2 marks)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

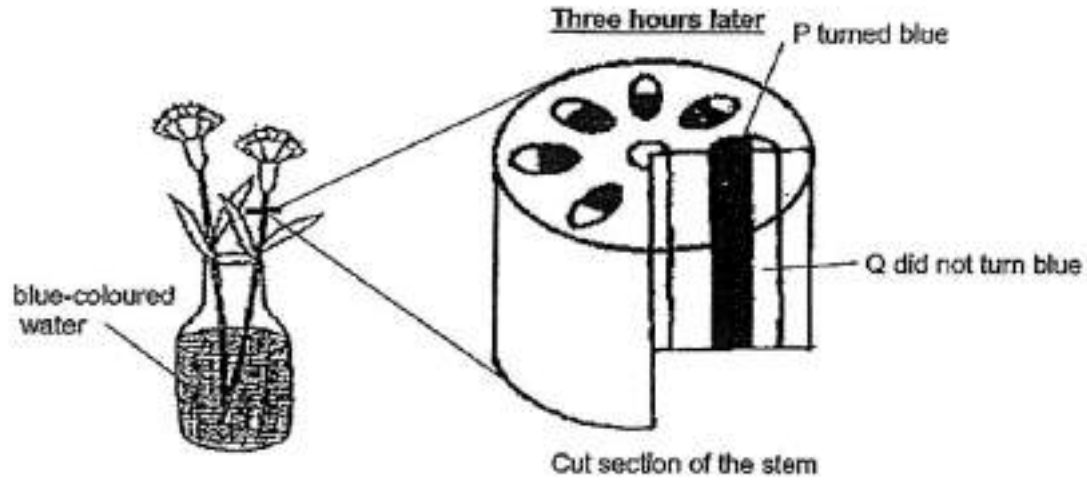
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 41 of 62

Primary 6 Science (Prelim)

1 pt

Two white flowers were placed in blue-coloured water for three hours. After three hours, the white flowers turned blue. The stem was cut and it was noticed that part P turned blue while part Q did not, as shown in the diagram below.

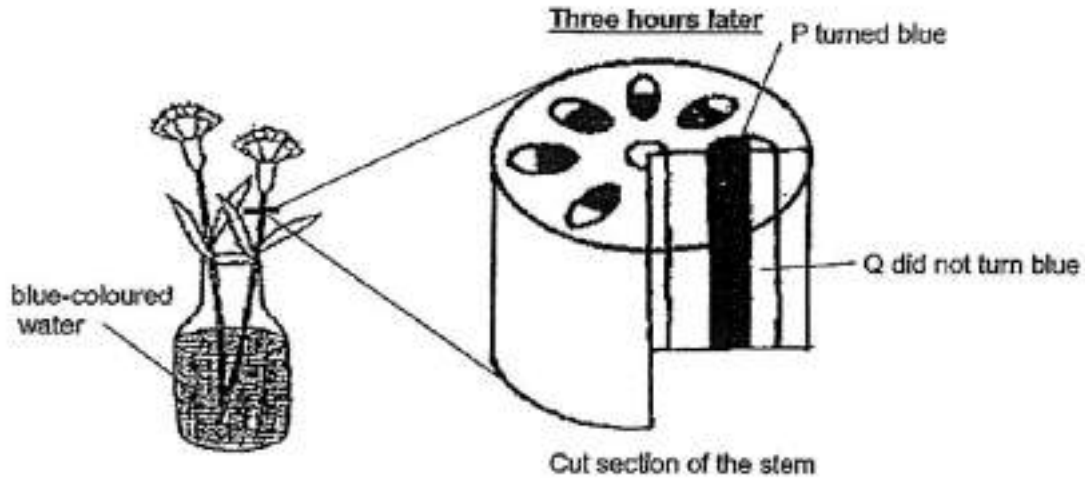


Identify part P.

Question 42 of 62

Primary 6 Science (Prelim) 0 pts

Two white flowers were placed in blue-coloured water for three hours. After three hours, the white flowers turned blue. The stem was cut and it was noticed that part P turned blue while part Q did not, as shown in the diagram below.



Explain how the white flowers turned blue. (1 mark)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

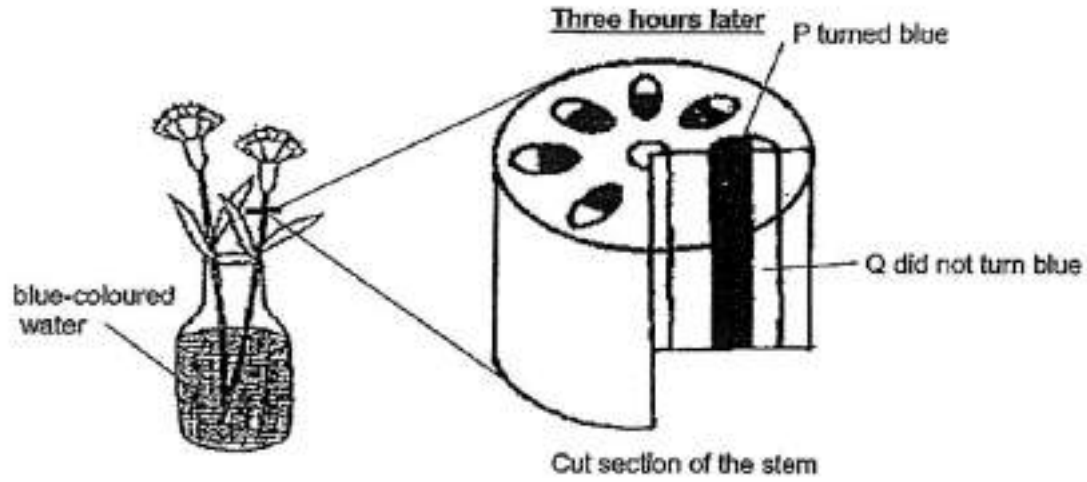
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 43 of 62

Primary 6 Science (Prelim)

1 pt

Two white flowers were placed in blue-coloured water for three hours. After three hours, the white flowers turned blue. The stem was cut and it was noticed that part P turned blue while part Q did not, as shown in the diagram below.

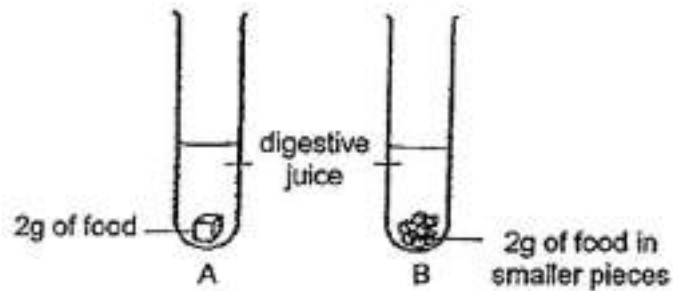


What substance did part Q transport?

Question 44 of 62

Primary 6 Science (Prelim) 0 pts

Jie Rui poured an equal amount of digestive juice into 2 test tubes, A and B. She added 2g of food to each test tube. The food that was added to test tube B was cut into (smaller pieces) as shown in the diagram below.



After 2 hours, she removed the undigested food pieces left, dried them and weighed them. She recorded the results and repeated the experiment for another two times as shown in the table below.

| Test tube | Mass of food left after 2 hours (g) <small>or mass of food</small> | | |
|-----------|--|---------------------|---------------------|
| | 1 st try | 2 nd try | 3 rd try |
| A | 1.9 | 1.8 | 1.9 |
| B | 0.7 | 0.7 | 0.9 |

What was the aim of Jie Rui's experiment? (1 mark)

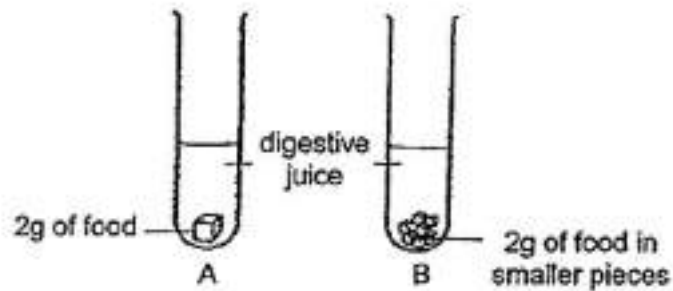
This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 45 of 62

Primary 6 Science (Prelim) 0 pts

Jie Rul poured an equal amount of digestive juice into 2 test tubes, A and B. She added 2g of food to each test tube. The food that was added to test tube B was cut into (smaller pieces) as shown in the diagram below.



After 2 hours, she removed the undigested food pieces left, dried them and weighed them. She recorded the results and repeated the experiment for another two times as shown in the table below.

| Test tube | Mass of food left after 2 hours (g) <small>or mass of food</small> | | |
|-----------|--|---------------------|---------------------|
| | 1 st try | 2 nd try | 3 rd try |
| A | 1.9 | 1.8 | 1.9 |
| B | 0.7 | 0.7 | 0.9 |

Give a reason why it was important for the food pieces to be dried before weighing them. (1 mark)

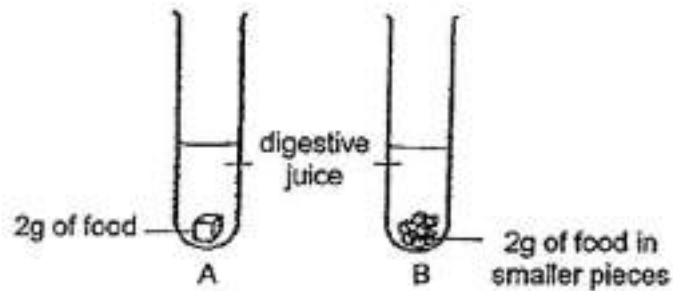
This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 46 of 62

Primary 6 Science (Prelim) 0 pts

Jie Rul poured an equal amount of digestive juice into 2 test tubes, A and B. She added 2g of food to each test tube. The food that was added to test tube B was cut into (smaller pieces) as shown in the diagram below.



After 2 hours, she removed the undigested food pieces left, dried them and weighed them. She recorded the results and repeated the experiment for another two times as shown in the table below.

| Test tube | Mass of food left after 2 hours (g) <small>or mass of food</small> | | |
|-----------|--|---------------------|---------------------|
| | 1 st try | 2 nd try | 3 rd try |
| A | 1.9 | 1.8 | 1.9 |
| B | 0.7 | 0.7 | 0.9 |

Based on the result of her experiment, explain why chewing is an important process that helps digestion. (1 mark)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 47 of 62

Primary 6 Science (Prelim) 0 pts

Selina bought a cup of hot coffee. Some mist was seen when she took the cup to her seat as shown in the diagram below.



Explain how the mist was formed. (2 marks)

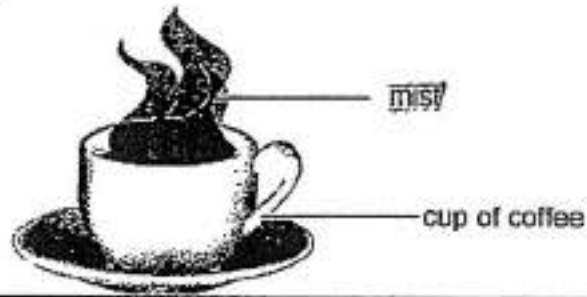
This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 48 of 62

Primary 6 Science (Prelim) 0 pts

Selina bought a cup of hot coffee. Some mist was seen when she took the cup to her seat as shown in the diagram below.



Explain why the mist disappeared after a short time. (1 mark)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

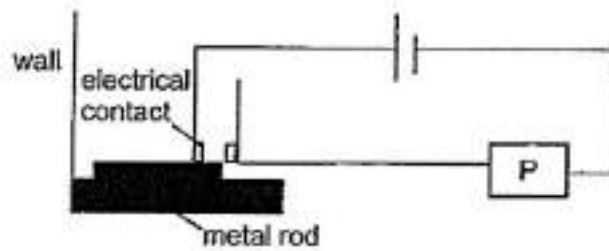
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 49 of 62

Primary 6 Science (Prelim)

0 pts

Le Yi set up a simple fire alarm system in her restaurant. She used a metal rod, alarm P and some wires as shown below. The metal rod expands easily when heated.



She then tested her alarm system by heating the metal rod to different temperatures. She recorded her results in the table below.

| Temperature of ^{rod} box (°C) | Alarm P |
|--|---------|
| 10 | Off |
| 30 | Off |
| 80 | On |

Explain how the system works when the temperature is above 80 °C. (2 marks)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

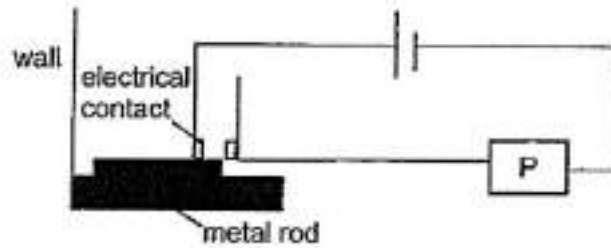
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 50 of 62

Primary 6 Science (Prelim)

0 pts

Le Yi set up a simple fire alarm system in her restaurant. She used a metal rod, alarm P and some wires as shown below. The metal rod expands easily when heated.



She then tested her alarm system by heating the metal rod to different temperatures. She recorded her results in the table below.

| Temperature of ^{rod} box (°C) | Alarm P |
|--|---------|
| 10 | Off |
| 30 | Off |
| 80 | On |

Le Yi then wanted to create a lit up sign board for her restaurant as shown below.



She used one light bulb to light up each letter, 'N', 'Y', 'P' and 'S'.

Her circuit must be able to do the following:

- If one bulb fused the others would still light up.
- The entire sign is controlled by a single switch.

Draw the circuit diagram for her sign board.

[2]



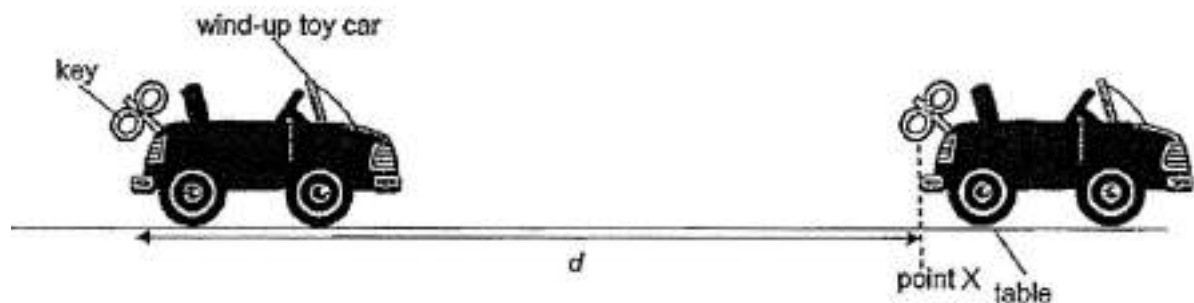
This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

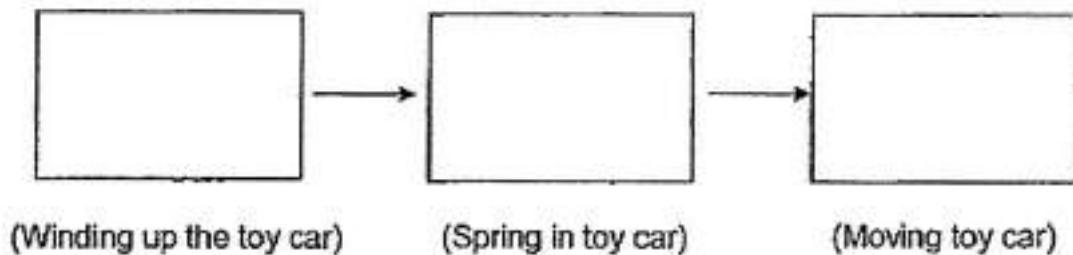
Question 51 of 62

Primary 6 Science (Prelim) 0 pts

Ali wound up a toy car. Upon releasing it, the toy car moved forward for a short distance before stopping at point X. He measured the distance, d , that the car had moved.



State the main energy conversions starting from Ali winding up the toy car to the car moving across the floor. [1]



This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

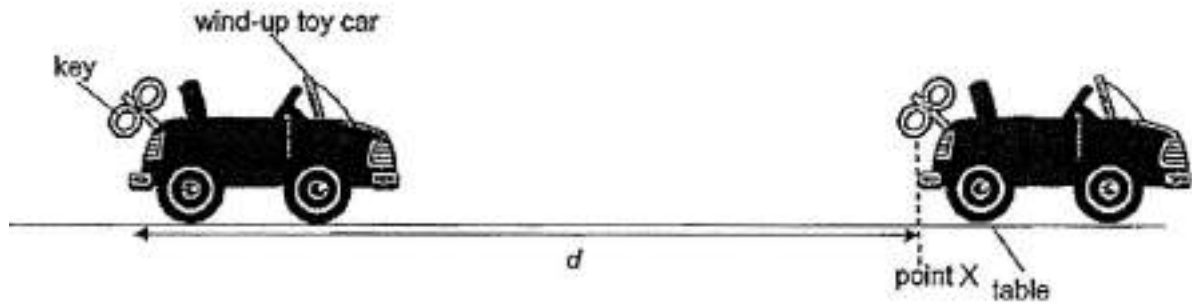
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 52 of 62

Primary 6 Science (Prelim)

0 pts

Ali wound up a toy car. Upon releasing it, the toy car moved forward for a short distance before stopping at point X. He measured the distance, d , that the car had moved.



Ali then applied a layer of oil on the surface of the table.

Explain, in terms of energy why the car moved a longer distance with the layer of oil on the surface of the table. (2 marks)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

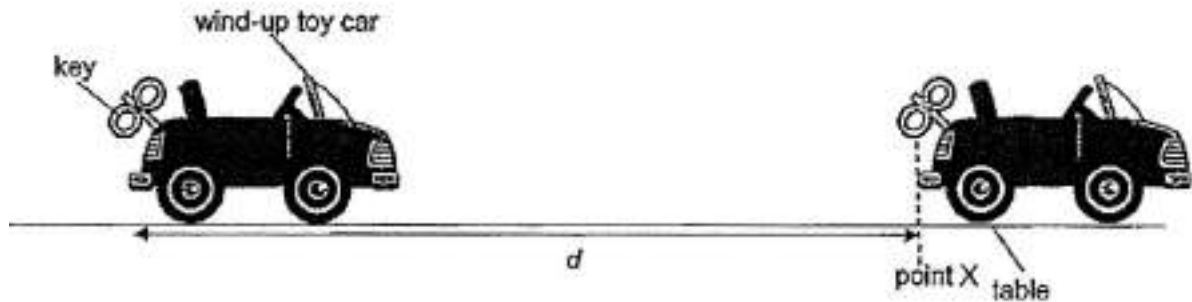
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 53 of 62

Primary 6 Science (Prelim)

0 pts

Ali wound up a toy car. Upon releasing it, the toy car moved forward for a short distance before stopping at point X. He measured the distance, d , that the car had moved.



Ali then observed how the number of times he turns the key affected the distance travelled by the toy car. His results are shown in the table below.

| Number of turns | Distance travelled by the toy car (cm) |
|-----------------|--|
| 1 | 4 |
| 2 | 8 |
| 3 | 12 |
| 4 | 16 |

What is the relationship between the number of turns of the key and the distance the toy car travelled? (1 mark)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

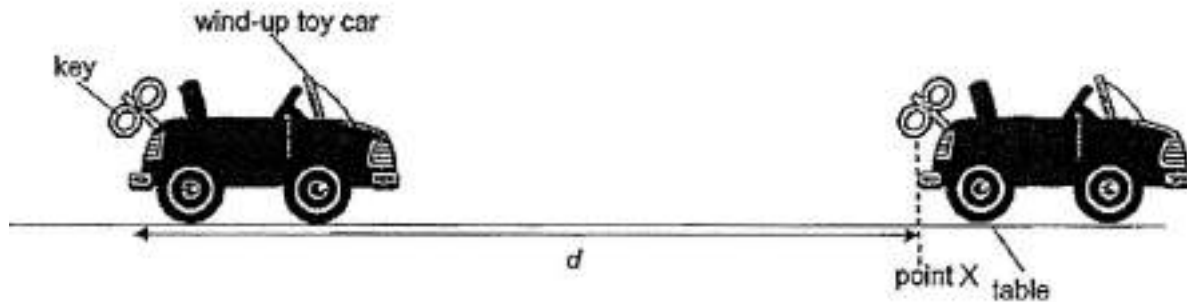
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 54 of 62

Primary 6 Science (Prelim)

0 pts

Ali wound up a toy car. Upon releasing it, the toy car moved forward for a short distance before stopping at point X. He measured the distance, d , that the car had moved.



Ali then observed how the number of times he turns the key affected the distance travelled by the toy car. His results are shown in the table below.

| Number of turns | Distance travelled by the toy car (cm) |
|-----------------|--|
| 1 | 4 |
| 2 | 8 |
| 3 | 12 |
| 4 | 16 |

Ali discovered that when he turned the key 5 times, the distance travelled by the toy car was 0 cm. State a reason for his observation. (1 mark)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

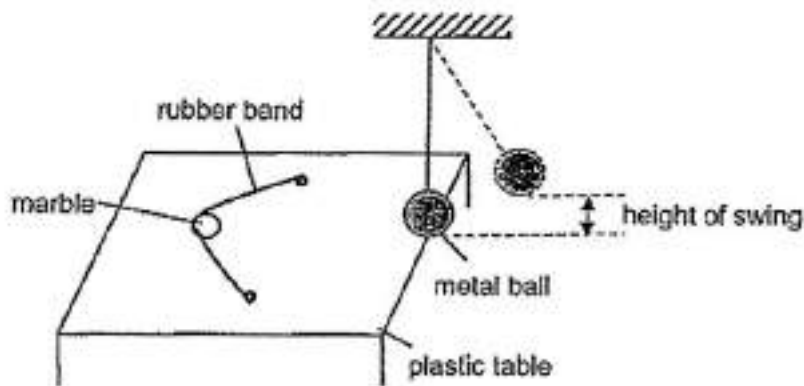
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 55 of 62

Primary 6 Science (Prelim)

1 pt

Colin conducted an experiment on a plastic table top using the set-up shown in the diagram below.



Colin pulled a rubber band back with a marble before releasing it. The marble rolled forward and hit the metal ball. The metal ball then swing up. He measured the height of the swing and recorded his results. Then, he added substance X to the table and repeated the experiment, using the same materials.

| Table | Height of swing of metal ball (cm) | | |
|---------------------|------------------------------------|-------------------------|-------------------------|
| | 1 st reading | 2 nd reading | 3 rd reading |
| Without substance X | 3 | 5 | 4 |
| With substance X | 5 | 6 | 6 |

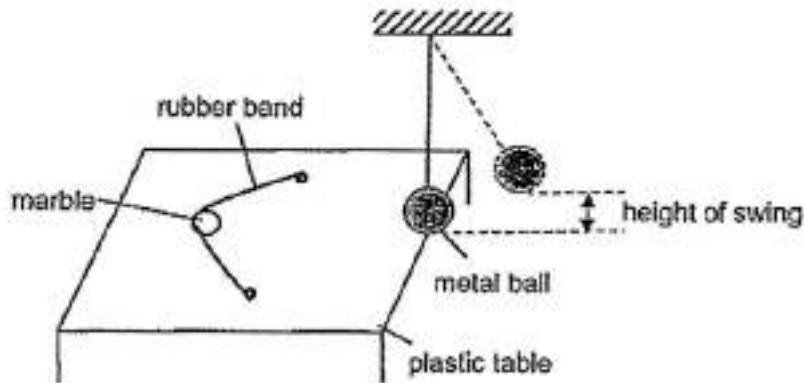
State the force the stretched rubber band possessed just before it was released. (1 mark)

Question 56 of 62

Primary 6 Science (Prelim)

0 pts

Colin conducted an experiment on a plastic table top using the set-up shown in the diagram below.



Colin pulled a rubber band back with a marble before releasing it. The marble rolled forward and hit the metal ball. The metal ball then swing up. He measured the height of the swing and recorded his results. Then, he added substance X to the table and repeated the experiment, using the same materials.

| Table | Height of swing of metal ball (cm) | | |
|---------------------|------------------------------------|-------------------------|-------------------------|
| | 1 st reading | 2 nd reading | 3 rd reading |
| Without substance X | 3 | 5 | 4 |
| With substance X | 5 | 6 | 6 |

Base on the results explain in terms of forces the effect of substance X on the height of swing of the metal ball. (2 marks)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

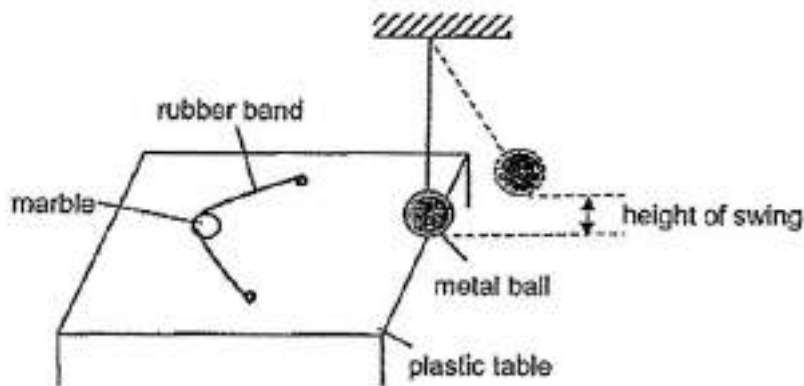
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 57 of 62

Primary 6 Science (Prelim)

0 pts

Colin conducted an experiment on a plastic table top using the set-up shown in the diagram below.



Colin pulled a rubber band back with a marble before releasing it. The marble rolled forward and hit the metal ball. The metal ball then swing up. He measured the height of the swing and recorded his results. Then, he added substance X to the table and repeated the experiment, using the same materials.

| Table | Height of swing of metal ball (cm) | | |
|---------------------|------------------------------------|-------------------------|-------------------------|
| | 1 st reading | 2 nd reading | 3 rd reading |
| Without substance X | 3 | 5 | 4 |
| With substance X | 5 | 6 | 6 |

Explain, in terms of forces, why Colin must stretch the rubber band to the same point in order to make it a fair test. (1 mark)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

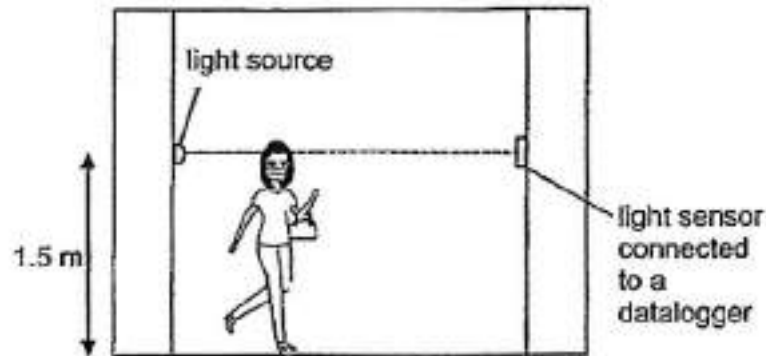
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 58 of 62

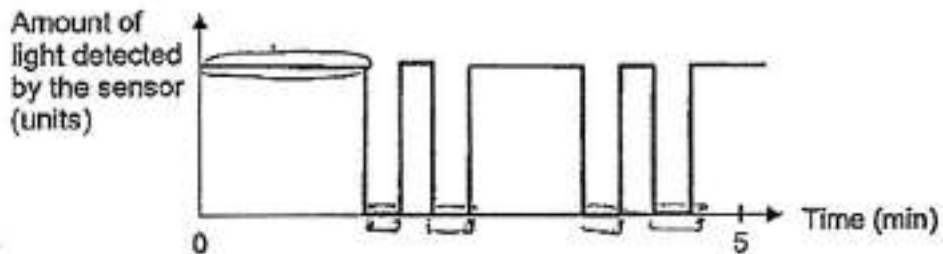
Primary 6 Science (Prelim)

0 pts

A store owner wanted to count the number of people entering his store. He set up a light source and a light sensor at the store entrance as shown below.



The data recorded for 5 minutes is shown in the graph below.



Using the set-up, explain how the store owner could count the number of people entering the store. (1 mark)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

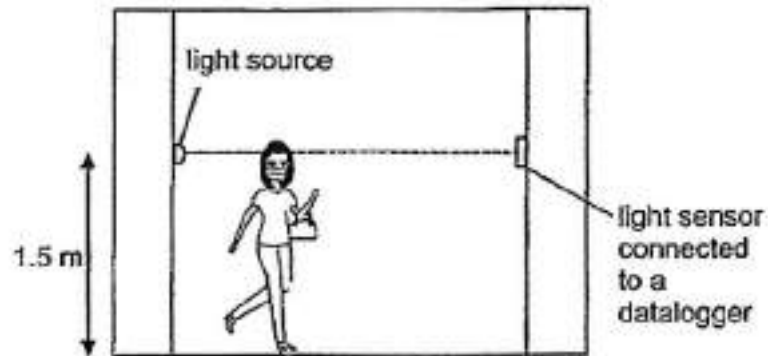
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 59 of 62

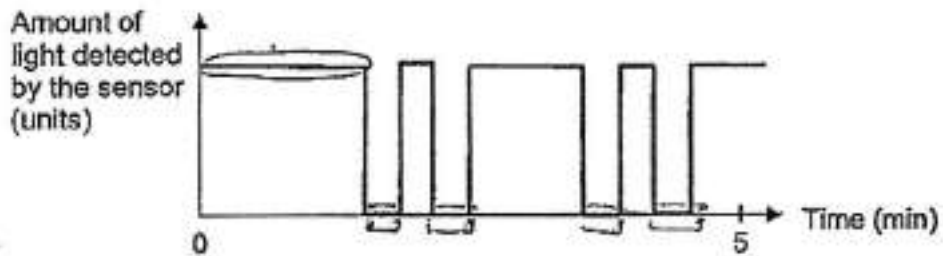
Primary 6 Science (Prelim)

1 pt

A store owner wanted to count the number of people entering his store. He set up a light source and a light sensor at the store entrance as shown below.



The data recorded for 5 minutes is shown in the graph below.



Based on the results above, how many people have entered his store in the 5 minutes?

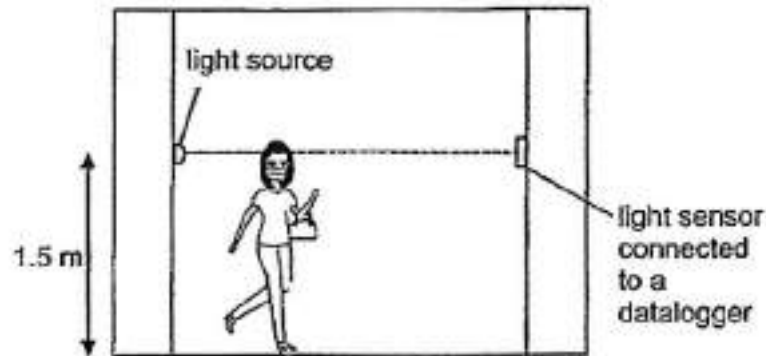
_____ people

Question 60 of 62

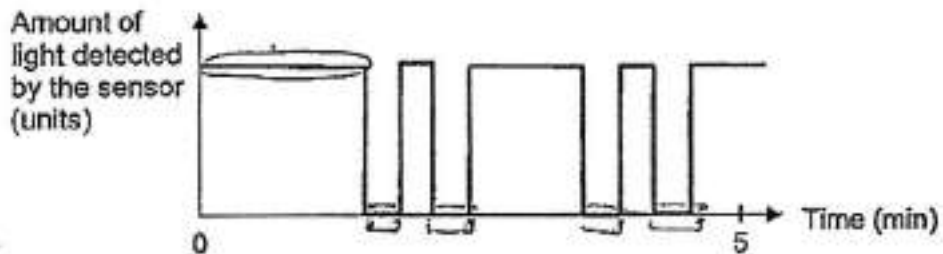
Primary 6 Science (Prelim)

0 pts

A store owner wanted to count the number of people entering his store. He set up a light source and a light sensor at the store entrance as shown below.



The data recorded for 5 minutes is shown in the graph below.



The store owner realised that his set-up could not count all the people entering the store.

Using the same materials suggest what he should do and explain how this method ensures that every person entering the store can be counted. (2 marks)

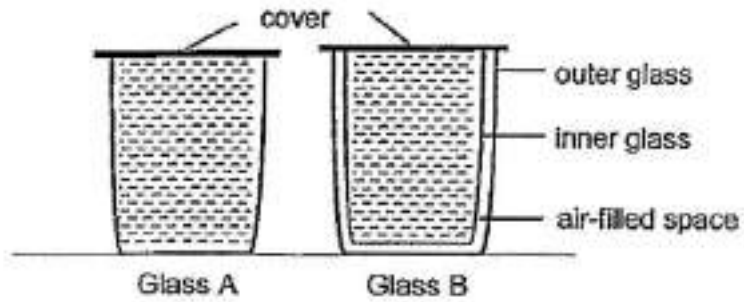
This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 61 of 62

Primary 6 Science (Prelim) 0 pts

Sally poured an equal volume of water at 90°C into two glasses, A and B. Glass A is single-layered while glass B is double-layered with an air-filled space in between.



After some time, she measured the temperature of the water in both glasses.

Explain why the water in glass B was hotter than the water in glass A. (2 marks)

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

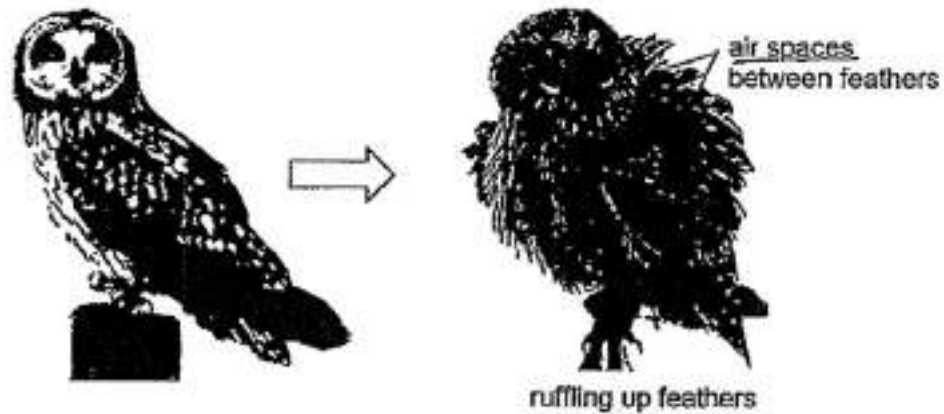
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Question 62 of 62

Primary 6 Science (Prelim)

0 pts

Birds maintain a higher body temperature than their surroundings. In colder months, they are observed to ruffle up their feathers to keep themselves warm.



Suggest how ruffling up their feathers help to keep birds warm.

[2]

This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.