

Test: Primary 5 Science (Term 2) - St Nicholas

Points: 72 points

Name: _____

Score: _____

Date: _____

Signature: _____

Select multiple choice answers with a cross or tick:

Only select one answer

Can select multiple answers

For each question, four options are given. One of them is the correct answer. Make your choice (A, B, C or D) and choose the correct answer. (28 x 2 marks = 56 marks)

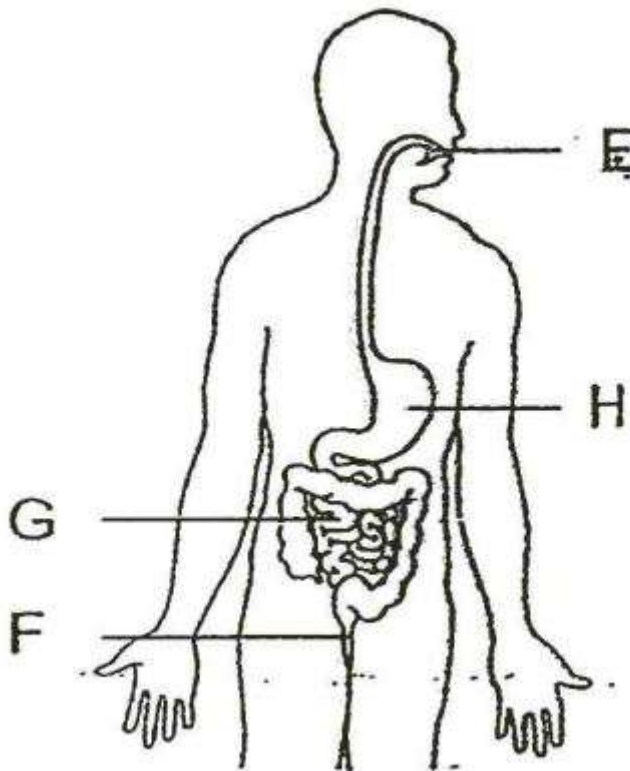
Study the table below.

| Function | Part of the human digestive system | | | |
|--|------------------------------------|---|---|---|
| | E | F | G | H |
| Digestion takes place here. | ✓ | ✓ | | ✓ |
| Digested food is absorbed into the bloodstream | | ✓ | | |
| Solid waste is passed out of the body | | | ✓ | |

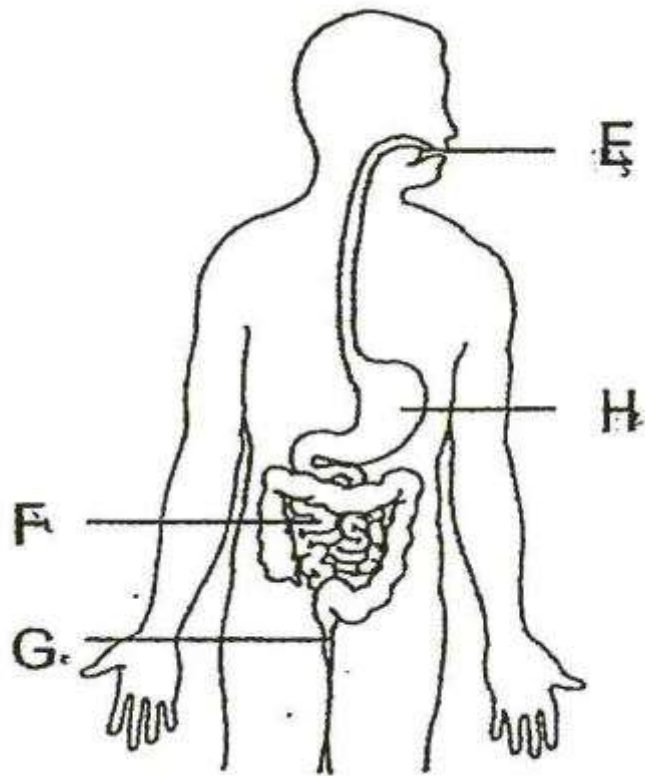
Key
✓ present

Which one of the following correctly shows the parts labelled E, F, G and H?

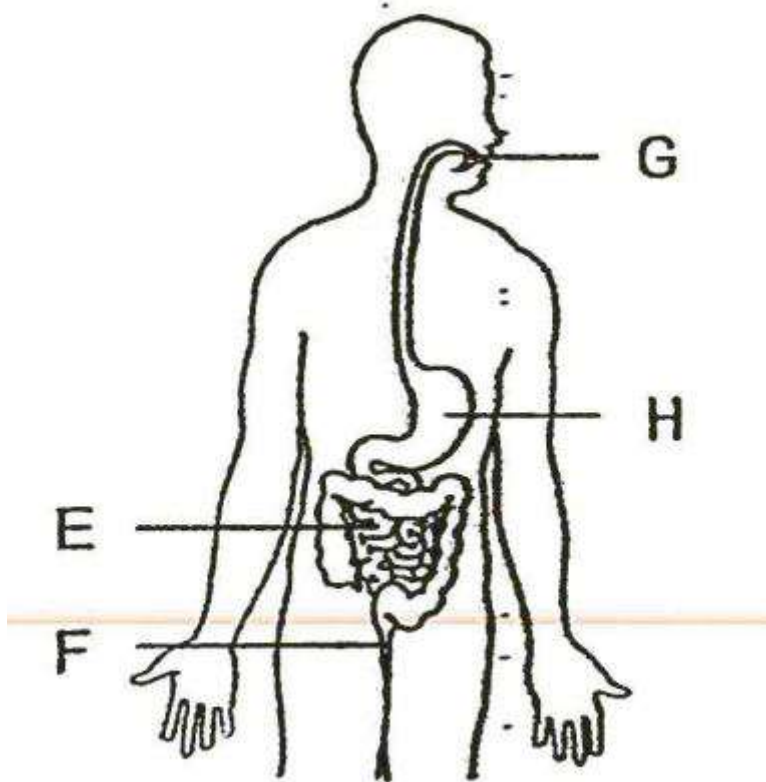
A)



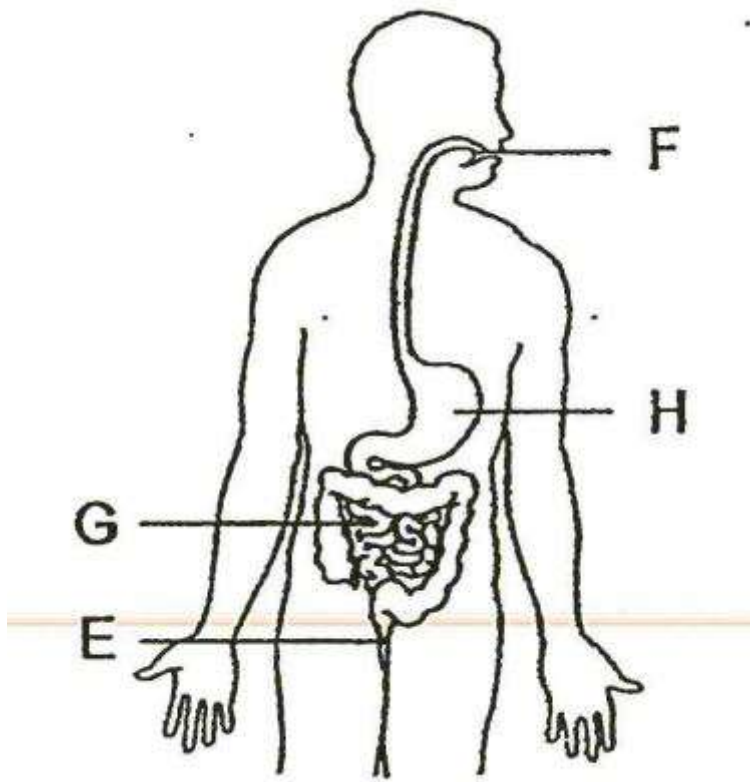
B)



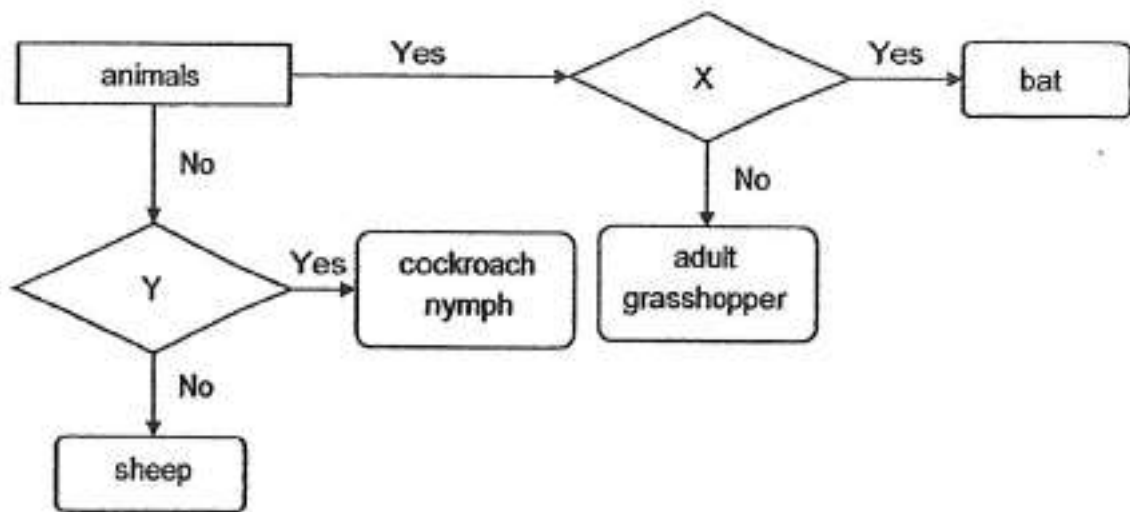
C)



D)



Study the chart below.



Which of the following shows the characteristics represented by X and Y?

- A)

| | |
|-----------|------------------|
| X | Y |
| lays eggs | has 3 body parts |
- B)

| | |
|------------------------|------------------|
| X | Y |
| breathes through lungs | has 3 body parts |
- C)

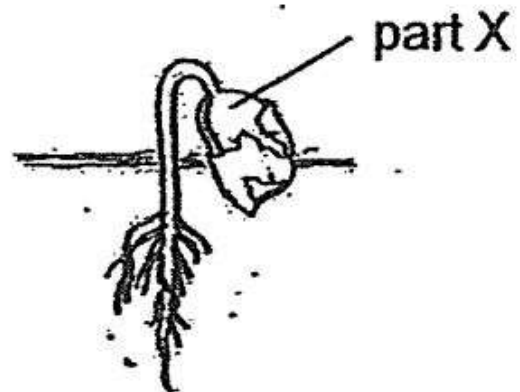
| | |
|------------|--------------------------------|
| X | Y |
| has 6 legs | gives birth to its young alive |
- D)

| | |
|--------------|--------------------------------|
| X | Y |
| has feathers | gives birth to its young alive |

What is generally common among birds and fish?

- A) They can swim.
- B) They can reproduce by laying eggs.
- C) They have the same outer covering.
- D) They have the same breathing method.

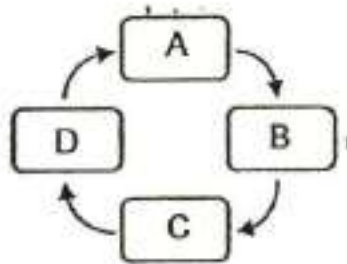
Study the diagram shown below.



What is the function of part X?

- A) It provides air for the young plant.
- B) It provides food for the young plant.
- C) It provides water for the young plant.
- D) It provides protection for the young plant.

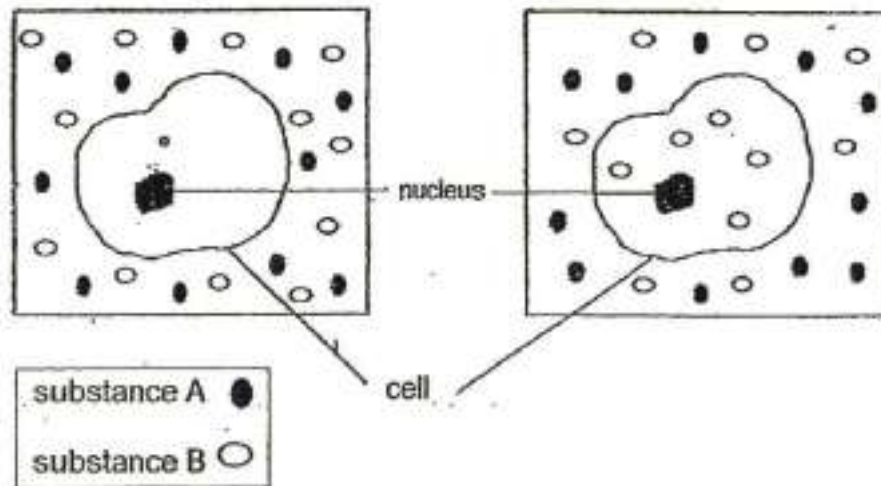
A, B, C and D represents the different stages in the life cycle of a butterfly



If B represents the adult stage of the butterfly, what stage does D represent?

- A) Egg
- B) Larva
- C) Pupa
- D) Nymph

The diagram below shows movement of substances A and B in a cell.



Which one of the following best explains the above observation?

-
- A) The cell membrane of the cell only allows substance A to pass through.
 - B) The cell membrane of the cell only allows substance B to pass through.
 - C) The cell membrane of the cell allows substance A and B to pass through.
 - D) The cell membrane of the cell does not allow any substances to pass through.

Study the diagram below.



organism W



organism S

Which of the following statement(s) about the organisms is/are true?

- A Organism W has more cells than organism S.
- B Both organisms have cells that carry out different functions.
- C Organism W is bigger than organism S because its cells are much larger.

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

The table below lists the parts of a cell. Each tick (✓) represents the part of a cell that cells G, H and J have.

| Part of the cell | Cell G | Cell H | Cell J |
|------------------|--------|--------|--------|
| Cell Membrane | ✓ | ✓ | ✓ |
| Cell Wall | ✓ | | ✓ |
| Chloroplasts | ✓ | | |
| Nucleus | ✓ | ✓ | ✓ |

Where are cells G, H and J likely to be found?

- A)

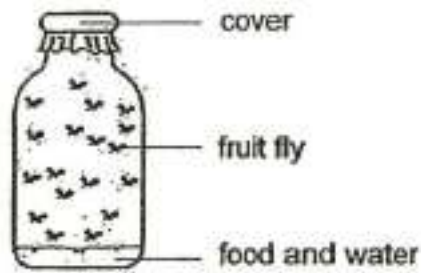
| | | |
|--------|--------|--------|
| Cell G | Cell H | Cell J |
| cheek | leaf | root |
- B)

| | | |
|--------|--------|--------|
| Cell G | Cell H | Cell J |
| root | cheek | leaf |
- C)

| | | |
|--------|--------|--------|
| Cell G | Cell H | Cell J |
| leaf | root | cheek |
- D)

| | | |
|--------|--------|--------|
| Cell G | Cell H | Cell J |
| leaf | cheek | root |

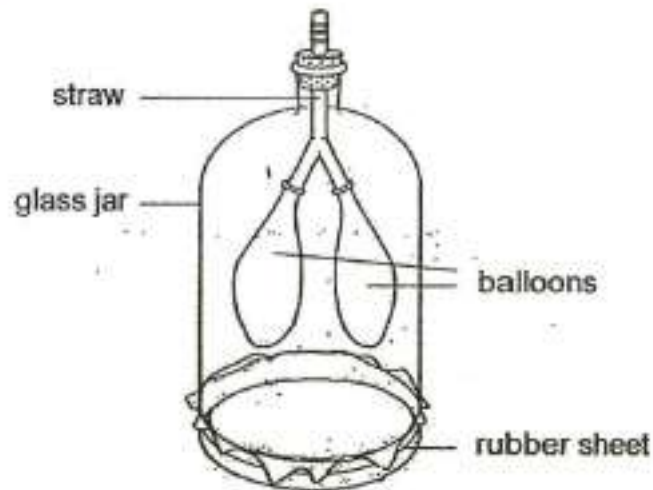
The diagram below shows some fruit flies kept in a sealed jar.



Which of the following correctly shows the changes in the amount of gases in the jar after five hours?

- A)
- | Carbon Dioxide | Oxygen | Nitrogen | Water Vapour |
|----------------|----------|----------|-----------------|
| decrease | increase | decrease | remain the same |
- B)
- | Carbon Dioxide | Oxygen | Nitrogen | Water Vapour |
|----------------|----------|-----------------|--------------|
| increase | decrease | remain the same | decrease |
- C)
- | Carbon Dioxide | Oxygen | Nitrogen | Water Vapour |
|----------------|----------|----------|-----------------|
| decrease | increase | increase | remain the same |
- D)
- | Carbon Dioxide | Oxygen | Nitrogen | Water Vapour |
|----------------|----------|-----------------|--------------|
| increase | decrease | remain the same | increase |

Study the lung-model below.



Which one of the following correctly matches the parts of the lung-model to the human respiratory system?

- A)

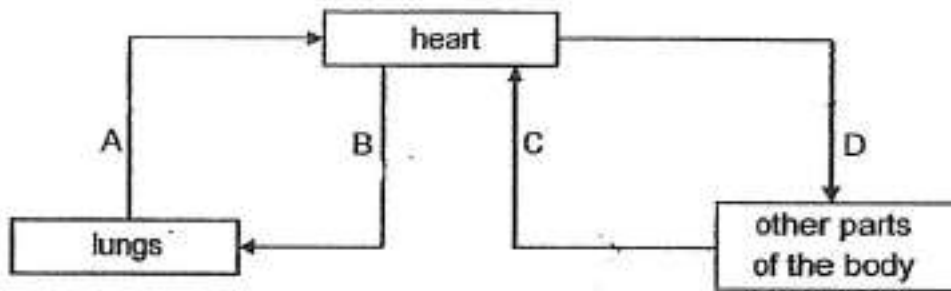
| | | |
|-----------------|---------------------|--------------|
| Balloons | Rubber Sheet | Straw |
| heart | diaphragm | gullet |
- B)

| | | |
|-----------------|---------------------|--------------|
| Balloons | Rubber Sheet | Straw |
| lungs | heart | gullet |
- C)

| | | |
|-----------------|---------------------|--------------|
| Balloons | Rubber Sheet | Straw |
| lungs | diaphragm | windpipe |
- D)

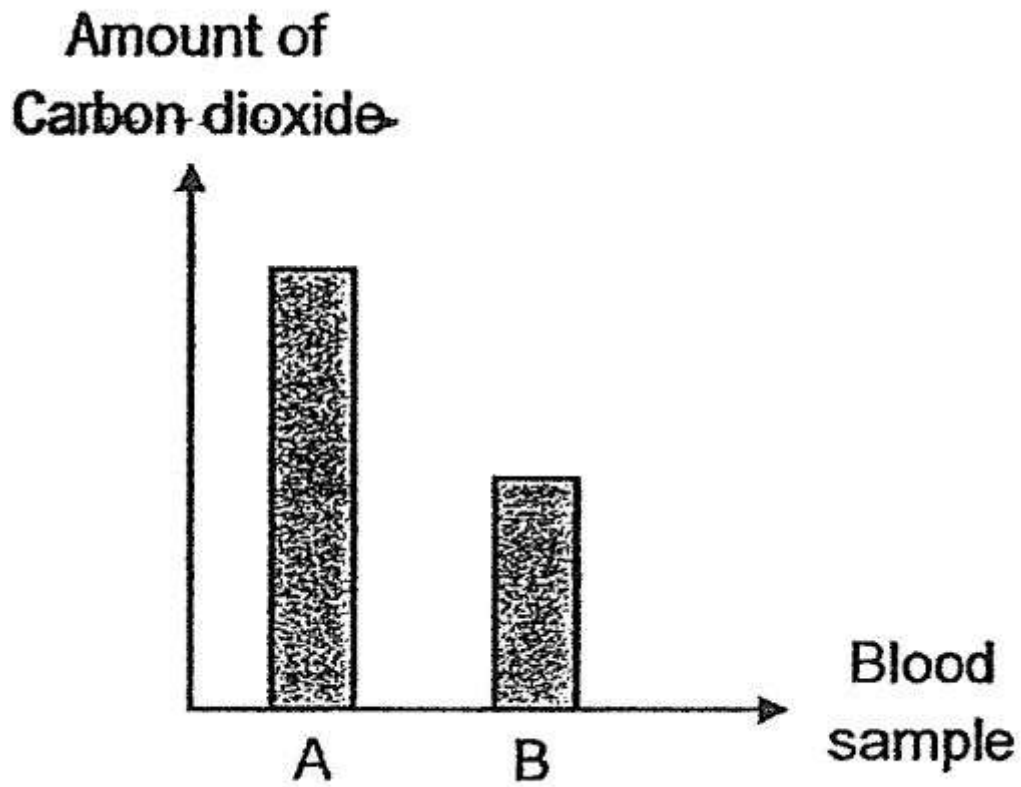
| | | |
|-----------------|---------------------|--------------|
| Balloons | Rubber Sheet | Straw |
| diaphragm | lungs | windpipe |

The diagram shows the direction of blood flow in some parts of the body.



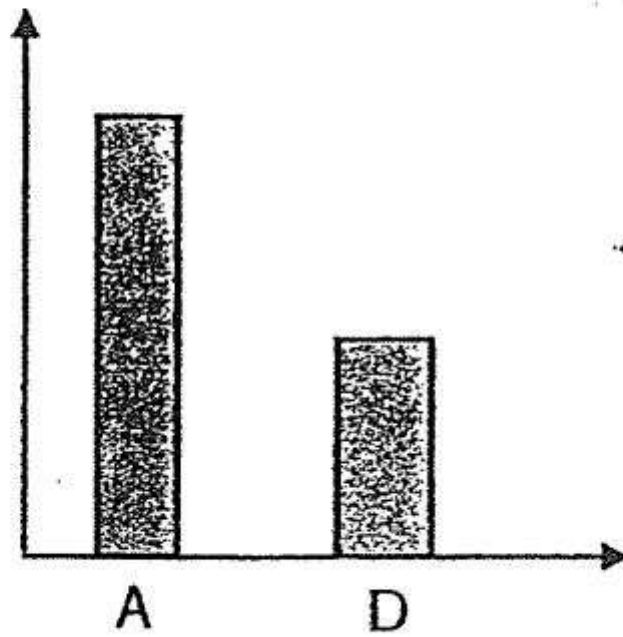
Which chart shows the correct comparison of the amount of carbon dioxide in the blood samples?

A)



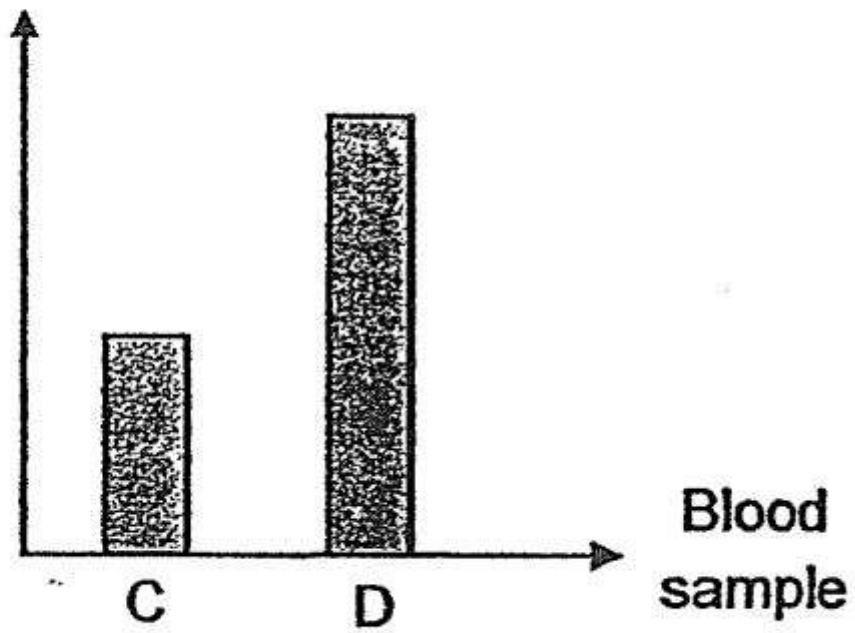
B)

Amount of
Carbon dioxide



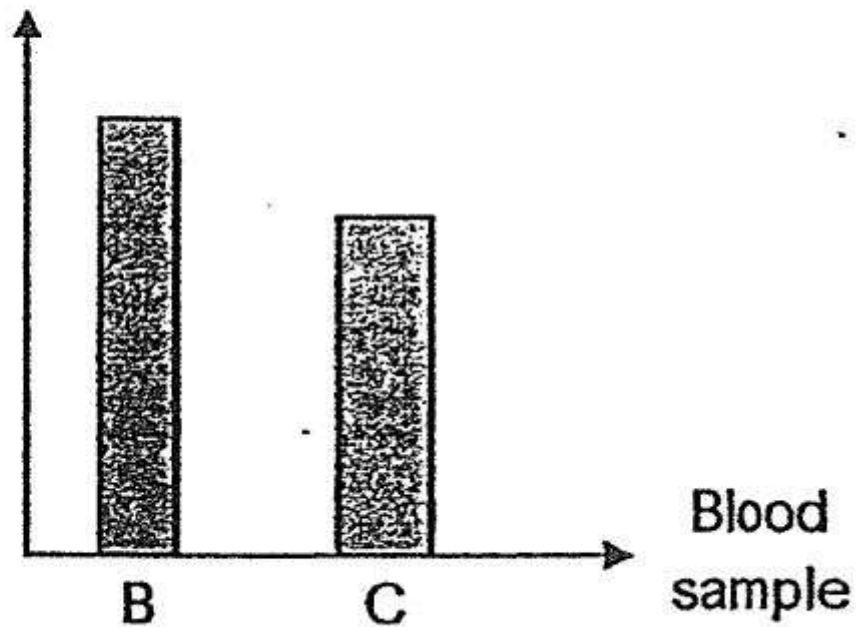
c)

Amount of
Carbon dioxide



D)

Amount of Carbon dioxide



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Primary 5 Science (Term 2) 2 pts

The table below shows Steve's pulse rate when he carries out three different activities.

| Activity | Pulse rate per minute |
|----------|-----------------------|
| E | 60 |
| F | 75 |
| G | 105 |

Which of the following is likely to represent the three activities correctly?

- A)

| | | |
|----------|-----------------------|--------------------|
| E | F | G |
| sleeping | strolling in the park | playing basketball |
- B)

| | | |
|----------------|-----------------------|----------|
| E | F | G |
| playing hockey | strolling in the park | sleeping |
- C)

| | | |
|----------------|-------------------|-----------------------|
| E | F | G |
| reading a book | playing badminton | strolling in the park |
- D)

| | | |
|-----------------------|-----------------|----------------|
| E | F | G |
| strolling in the park | playing netball | reading a book |

Question 13 of 64

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Which one of the following comparisons between the human circulatory system and the plant transport system is correct?

- A)

| Human circulatory system | Plant transport system |
|--------------------------|------------------------|
| does not transport gases | transports gases |
- B)

| Human circulatory system | Plant transport system |
|------------------------------------|-----------------------------------|
| substances moves in two directions | substances moves in one direction |
- C)

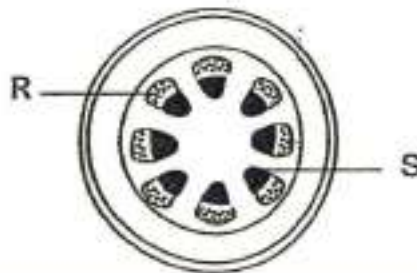
| Human circulatory system | Plant transport system |
|---|--|
| has an organ to pump substances around the body | does not have an organ to pump substances around the plant |
- D)

| Human circulatory system | Plant transport system |
|---|--|
| has only one tube to carry substances around the body | has one tube to carry food and one tube to carry water |

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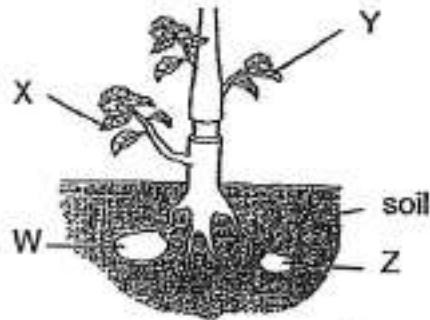
Arron put a plant in a beaker of blue-coloured water for 24 hours. The diagram below shows a section of the stem after 24 hours.



Arron observed that tube S turned blue but not tube R. Which of the following is a possible explanation for this observation?

- A) Tube S transports food from the roots to all parts of the plant.
- B) Tube S transports water from the roots to all parts of the plant.
- C) Tube S transports food from the leaves to all parts of the plant.
- D) Tube S transports water from the leaves to all parts of the plant.

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



It was observed that part W of the plant grew bigger after one week.

Which of the following statement(s) best explains this observation?

- A Food at Z is transported to W.
- B Food made by X is transported to W.
- C Food made by Y is transported to W.
- D W absorbs water and becomes bigger.

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

The diagram below shows a car.



Part X helps to keep the rain away and allows the driver of the car to see the road ahead clearly.

Which of the following best represents the properties of part X?

- A)

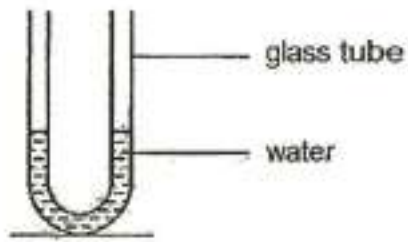
| | |
|-------------------|-------------------------------------|
| Waterproof | Allows light to pass through |
| yes | yes |
- B)

| | |
|-------------------|-------------------------------------|
| Waterproof | Allows light to pass through |
| yes | no |
- C)

| | |
|-------------------|-------------------------------------|
| Waterproof | Allows light to pass through |
| no | yes |
- D)

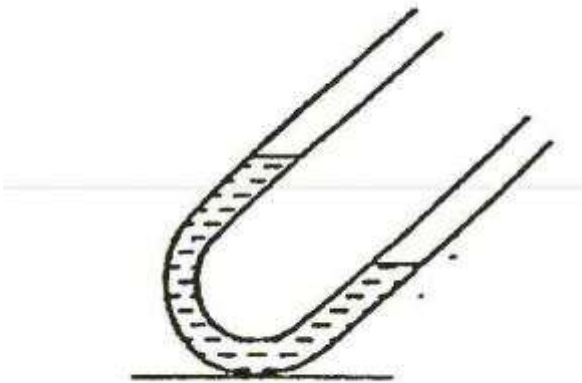
| | |
|-------------------|-------------------------------------|
| Waterproof | Allows light to pass through |
| no | no |

Study the diagram below.

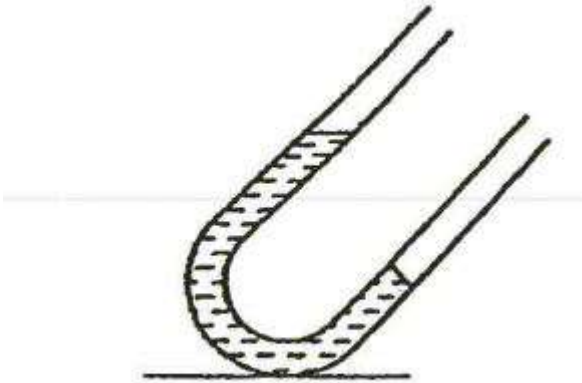


Which one of the following diagrams shows how the water in the tube would look like when the glass tube is tilted?

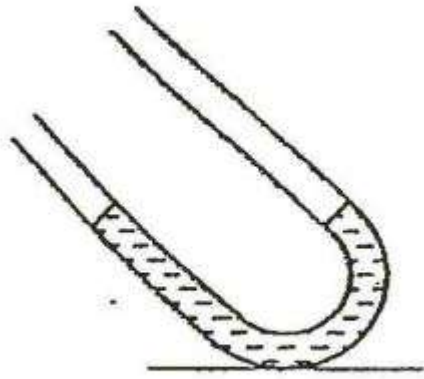
A)



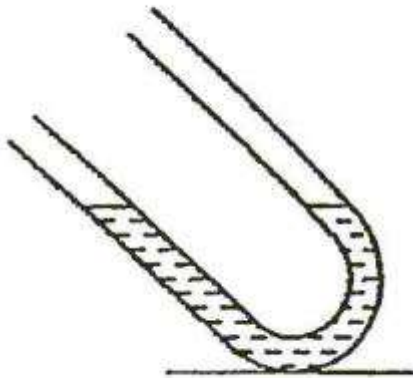
B)



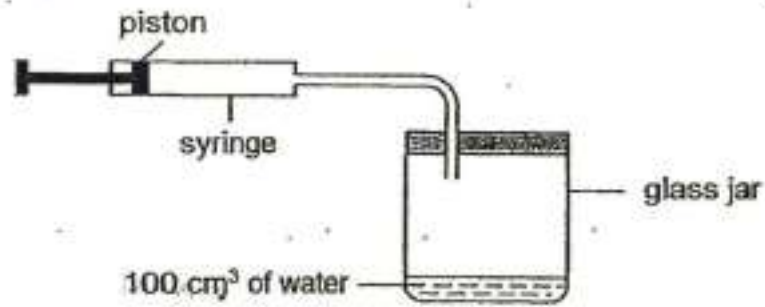
C)



D)



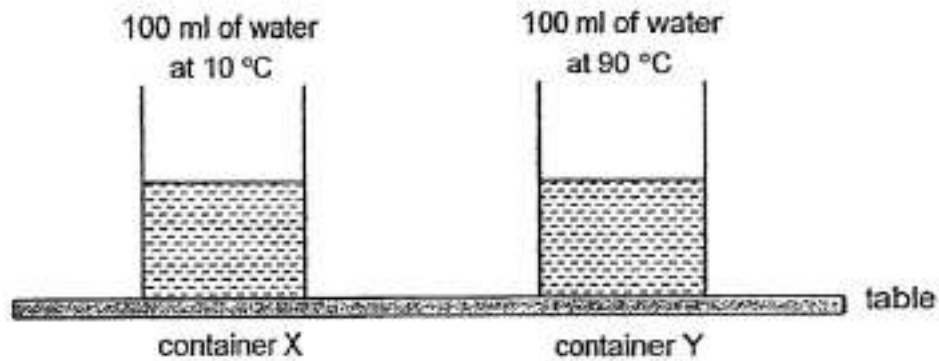
The diagram below shows a syringe connected to a glass jar. The capacity of the glass jar is 500 cm^3 .



When the piston is pushed in completely, another 90 cm^3 of air is forced into the jar. What is the volume of air in the jar?

-
- A) 90 cm^3
 - B) 400 cm^3
 - C) 490 cm^3
 - D) 500 cm^3

The set-ups below show two similar containers with water at different temperatures. Both containers were left on the table for 30 minutes.



Which one of the following table shows what happened to the water in the containers after 30 minutes?

A)

| | Gained heat | Lost heat | Temperature |
|----------------------|-------------|-----------|-------------|
| Water in container X | ✓ | | Increased |
| Water in container Y | | ✓ | Decreased |

B)

| | Gained heat | Lost heat | Temperature |
|----------------------|-------------|-----------|-------------|
| Water in container X | ✓ | | Increased |
| Water in container Y | ✓ | | Decreased |

C)

| | Gained heat | Lost heat | Temperature |
|----------------------|-------------|-----------|-------------|
| Water in container X | | ✓ | Increased |
| Water in container Y | | ✓ | Increased |

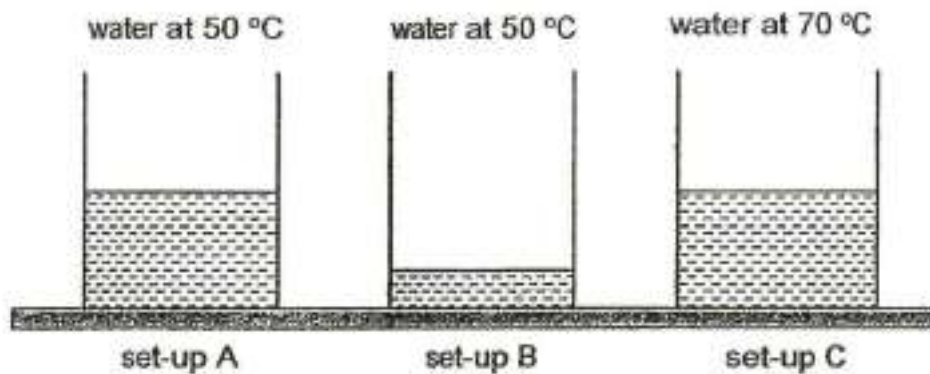
D)

| | Gained heat | Lost heat | Temperature |
|----------------------|-------------|-----------|-------------|
| Water in container X | | ✓ | Decreased |
| Water in container Y | ✓ | | Decreased |

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Study the set-ups below.



Which one of the following shows the correct order of increasing amount of heat in the water for set-ups A, B and C?

- A)

| | | |
|----------------------|---|---------------------|
| Least Amount of Heat | | Most Amount of Heat |
| B | A | C |
- B)

| | | |
|----------------------|---|---------------------|
| Least Amount of Heat | | Most Amount of Heat |
| C | A | B |
- C)

| | | |
|----------------------|---|---------------------|
| Least Amount of Heat | | Most Amount of Heat |
| C | B | A |
- D)

| | | |
|----------------------|---|---------------------|
| Least Amount of Heat | | Most Amount of Heat |
| A | B | C |

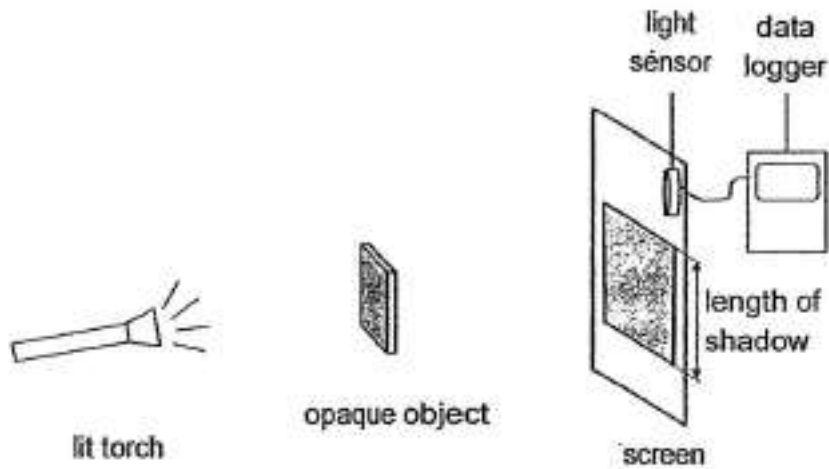
Study the table below.

| Metal | Temperature before heating (°C) | Temperature after heating (°C) |
|-------|---------------------------------|--------------------------------|
| S | 20 | 90 |
| T | 24 | 79 |
| U | 21 | 87 |
| V | 25 | 69 |

Which metal S, T, U or V is most suitable for making the base of a frying pan?

-
- A) S
- B) T
- C) U
- D) V

Najmi used the set-up below to conduct an experiment on shadows in a dark room. He used a light sensor to measure the amount of light on the screen.



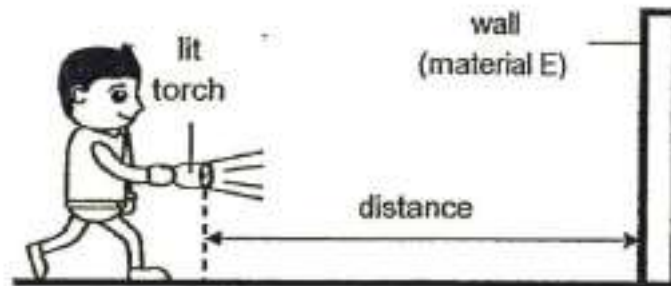
He changed the position of one of the items in the set-up and recorded his observations for each position as follows.

| Length of shadow (cm) | Light sensor reading (units) |
|-----------------------|------------------------------|
| 20 | 120 |
| 17 | 170 |
| 11 | 260 |
| 9 | 300 |

What change did Najmi make?

- A) Object was moved towards the torch.
- B) Torch was moved towards the object.
- C) Screen was moved towards the object.
- D) Object was moved away from the screen.

Cheng Yee wanted to find out which material could reflect the most light. He conducted the following experiment in a dark room.



He shone the torch onto material E and walked towards it. When he could see the material clearly, he stopped and recorded the distance between the torch and the material. He repeated this experiment using materials F, G and H and recorded the results in the table below.

| Material | E | F | G | H |
|---------------|----|-----|-----|-----|
| Distance (cm) | 80 | 120 | 160 | 200 |

Which one of the following statements is correct?

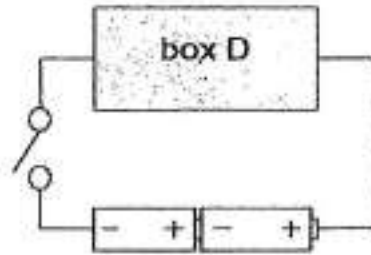
- A) Material E is better at reflecting light than Material H.
- B) Material G is better at reflecting light than Material F.
- C) Material H is poorer at reflecting light than Material E.
- D) Material F is poorer at reflecting light than Material E.

Siti tried to attract some steel clips using a nail which had been stroked by a bar magnet. She observed that no steel clips were attracted. Which of the following could be possible reason(s) for this observation?

- A The nail was made of copper.
- B The nail was stroked by the south pole of the bar magnet only.
- C The nail was stroked many times in the same direction with the same pole of the bar magnet each time.
- D The nail was stroked many times in different directions with the same pole of the bar magnet each time.

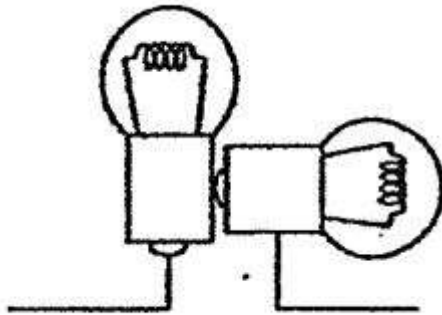
- A) A only
- B) B only
- C) A and D only
- D) B and C only

Calista set up the circuit as shown below. She arranged two identical bulbs in box D. When she closed the circuit, both bulbs lit up.

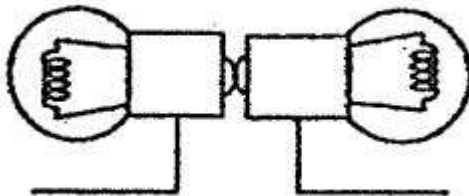


Which one of the following arrangements of bulbs in box D is **not** possible?

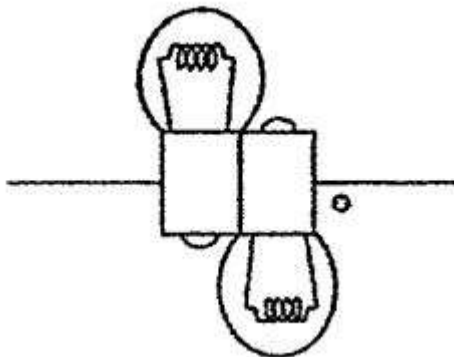
A)



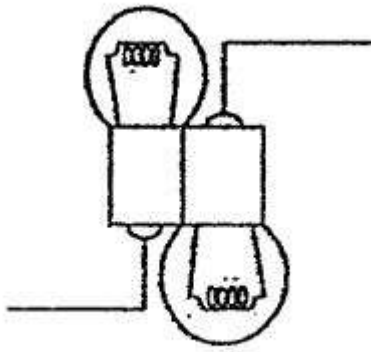
B)



C)



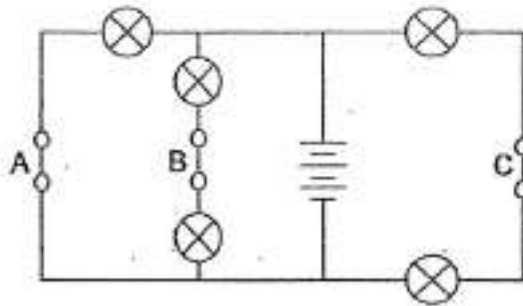
D)



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Primary 5 Science (Term 2) 2 pts

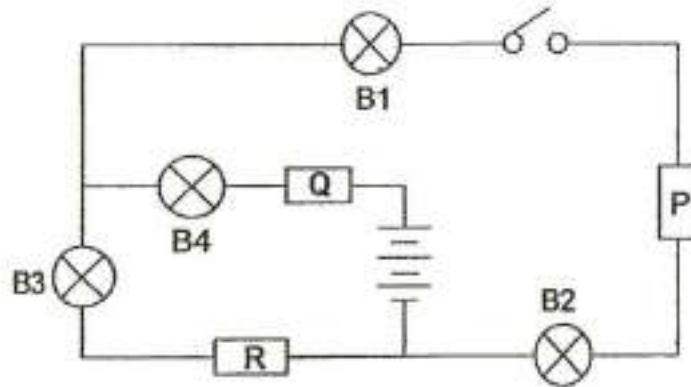
Firdaus set up a circuit as shown below. All the five identical bulbs lit up when all switches A, B and C were closed.



Which of the following switch(es) should be opened in order to have the least number of bulbs lit?

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

Three rods P, Q and R each made of a different material were connected in a circuit as shown below.



The table below shows the results when the switch was closed.

| Did the bulb light up? | | | |
|------------------------|-----|----|-----|
| B1 | B2 | B3 | B4 |
| yes | yes | no | yes |

Which of the following describes P, Q and R correctly?

- A)

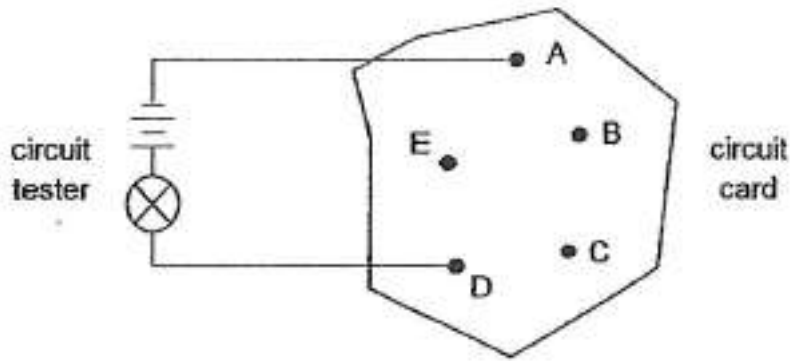
| | | |
|-----------|-----------|-----------|
| P | Q | R |
| conductor | insulator | conductor |
- B)

| | | |
|-----------|-----------|-----------|
| P | Q | R |
| conductor | conductor | insulator |
- C)

| | | |
|-----------|-----------|-----------|
| P | Q | R |
| insulator | insulator | conductor |
- D)

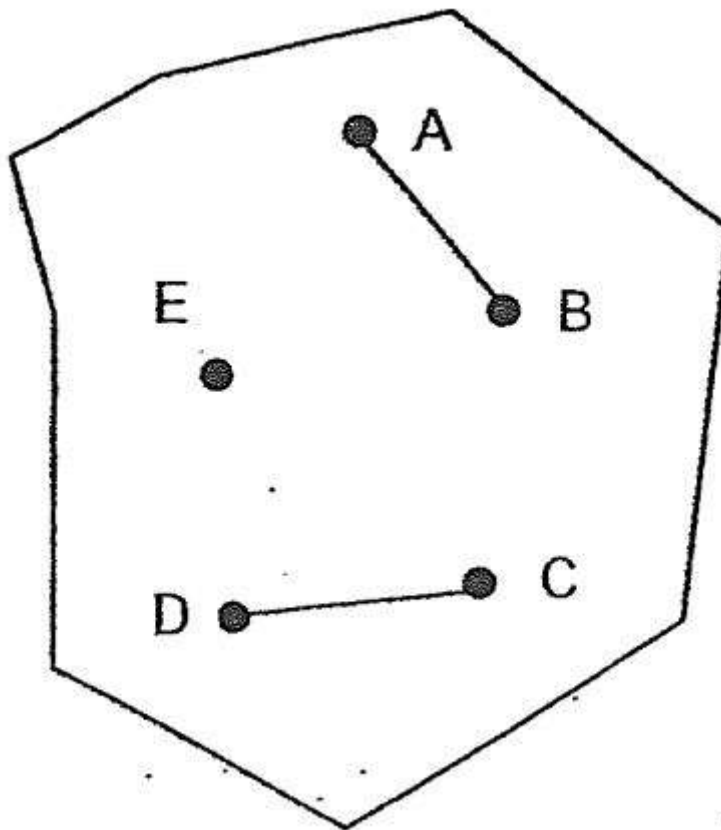
| | | |
|-----------|-----------|-----------|
| P | Q | R |
| insulator | conductor | insulator |

Chee Hsiang was given a circuit card and a circuit tester as shown below. When one end of the circuit tester was clipped onto A and the other end onto D, the bulb lit up.

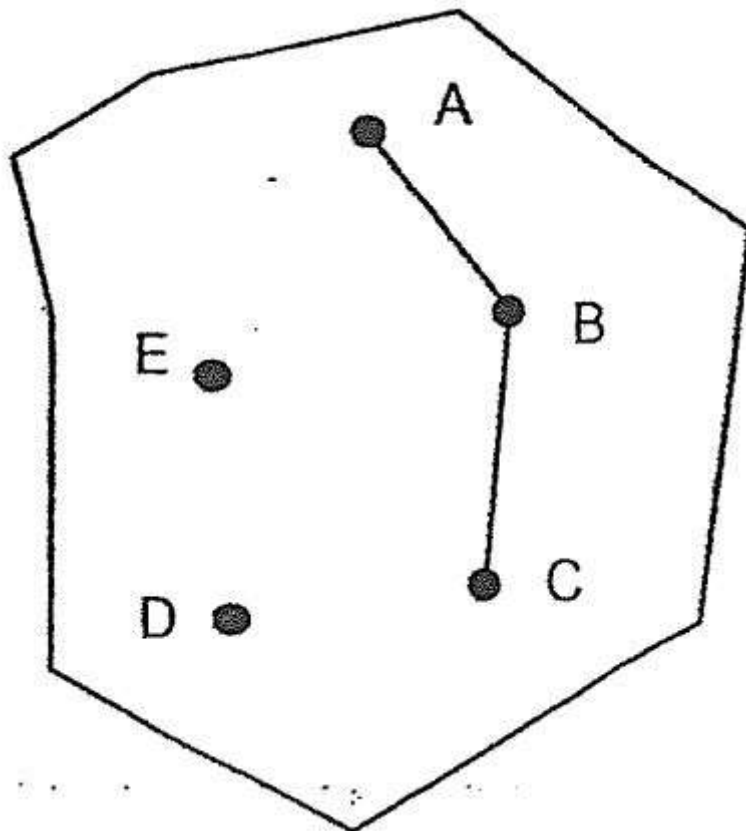


Which one of following connections correctly shows how the wires are connected on the reverse side of the circuit card?

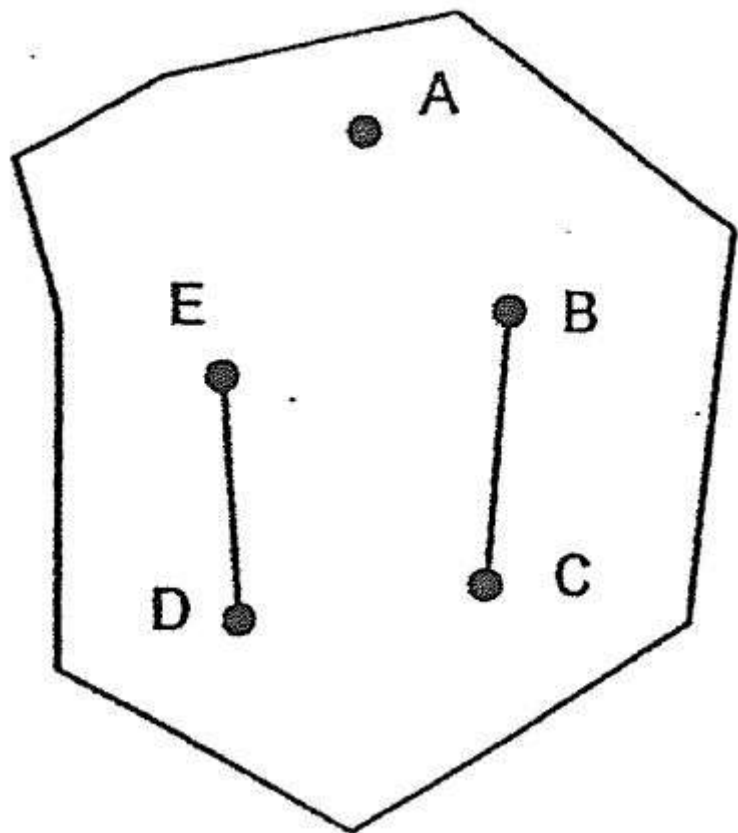
A)



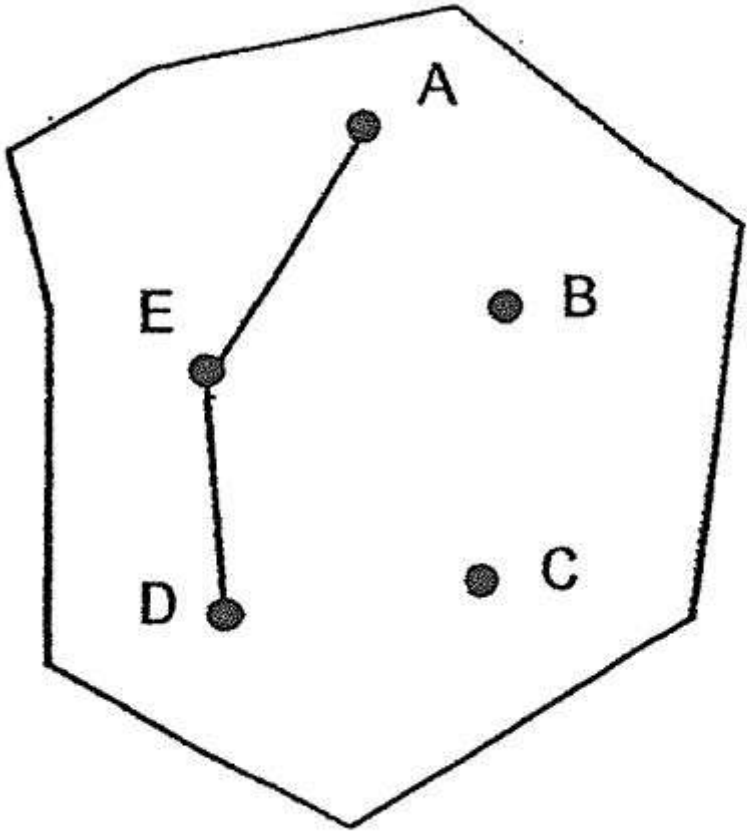
B)



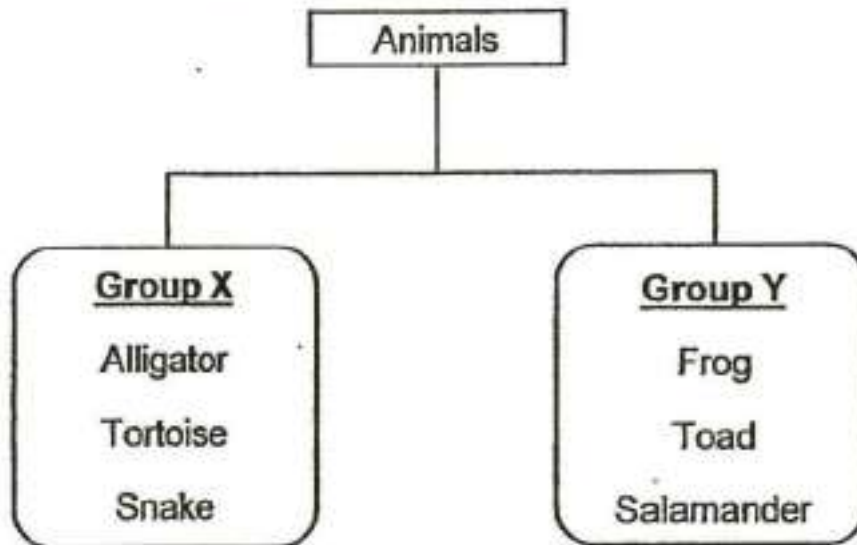
c)



d)



Study the chart below carefully.



State one similarity and one difference between the characteristics of the animals in the two groups above.

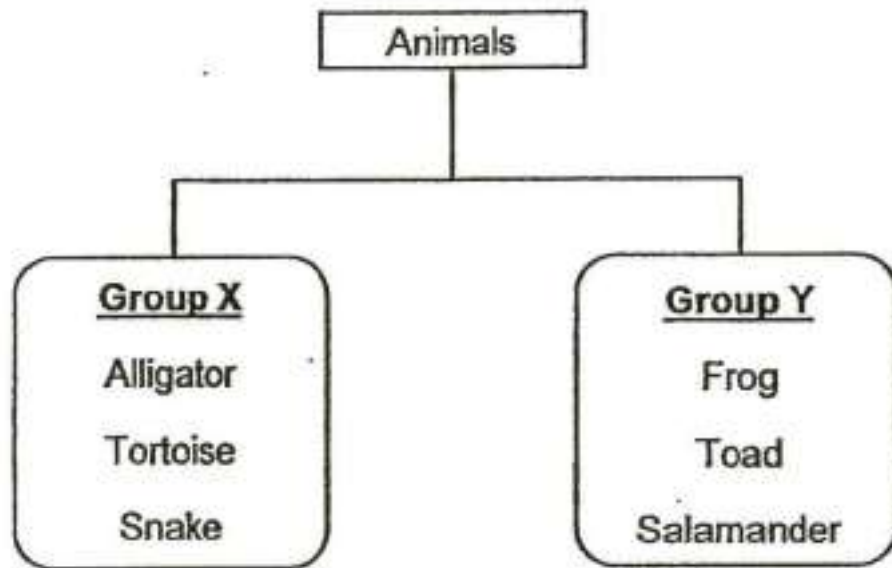
Similarity: _____ (1)

Difference: _____ (1)

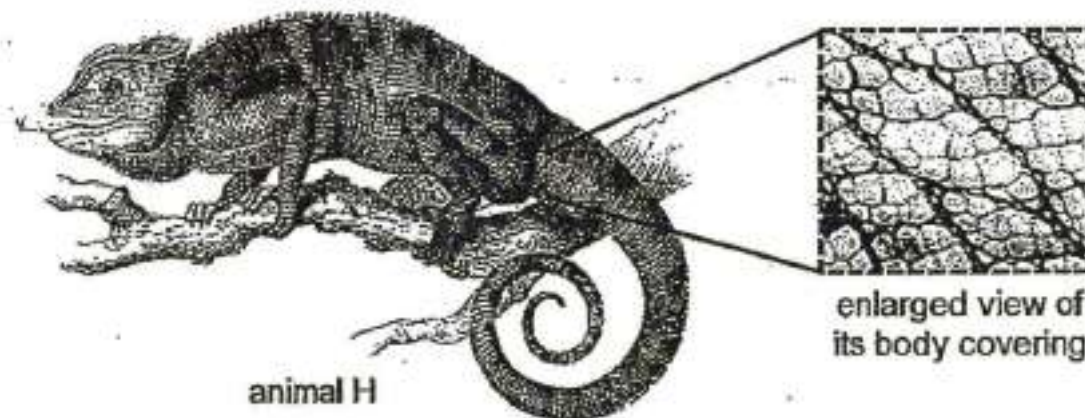
This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

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.

Study the chart below carefully.



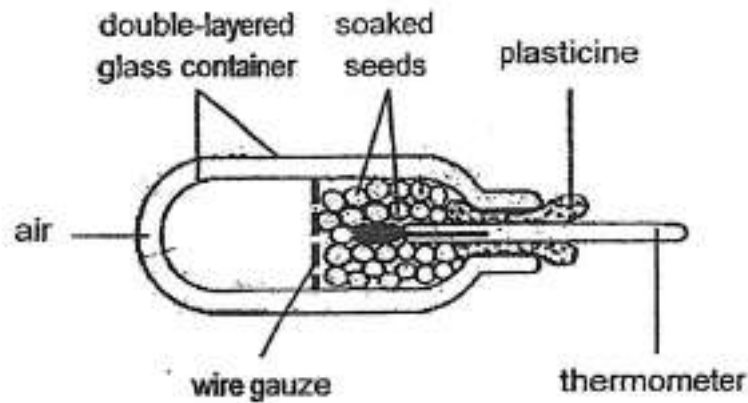
Study animal H below carefully.



Which group X or Y should animal H be placed under? Give a reason for your answer.

[1]

Zhi Hui wanted to find out if germinating seeds produced heat. He soaked some seeds in water before placing them in a glass container as shown.



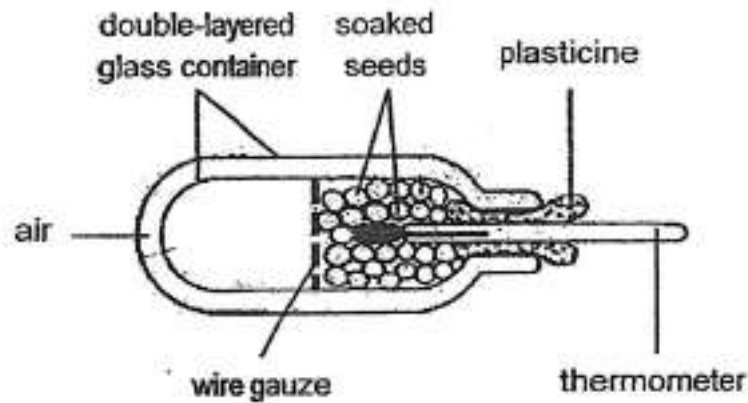
He measured the temperature in the container from time to time until all the seeds had germinated.

Give a reason why Zhi Hui did not fill the container completely with seeds.

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.

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Zhi Hui wanted to find out if germinating seeds produced heat. He soaked some seeds in water before placing them in a glass container as shown.



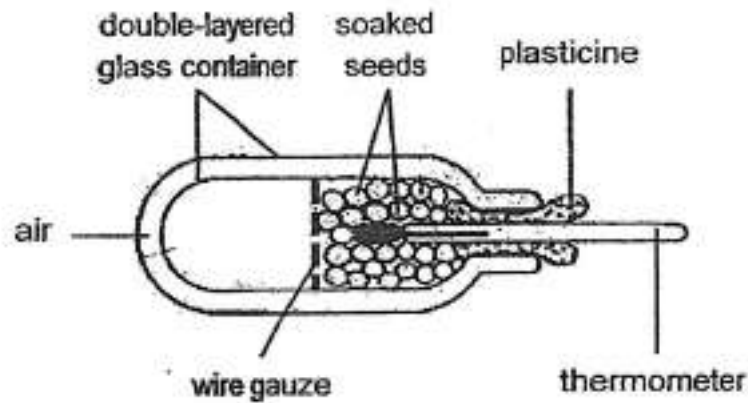
He measured the temperature in the container from time to time until all the seeds had germinated.

Explain how using a double-layered glass container with air in between helps to make the results of the experiment more reliable.

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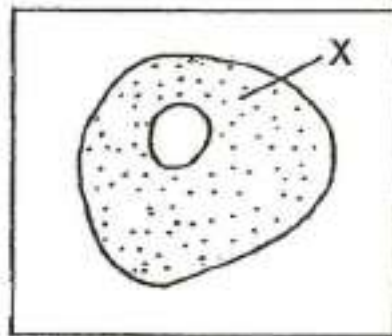
He measured the temperature in the container from time to time until all the seeds had germinated.

As the seeds were germinating, the temperature in the glass container increased. What can Zhi Hui conclude from this observation?

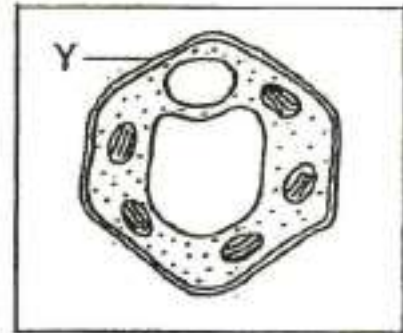
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The diagram below shows an animal cell and a plant cell.



cell A



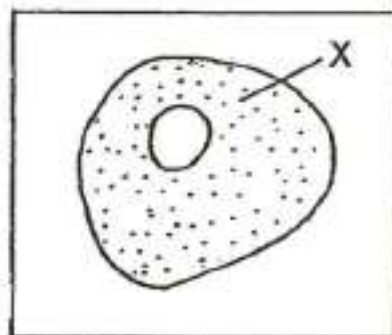
cell B

Identify which cell is a plant cell and which is an animal cell.

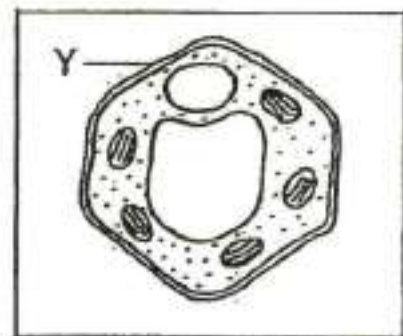
Cell A: _____

Cell B: _____

The diagram below shows an animal cell and a plant cell.



cell A



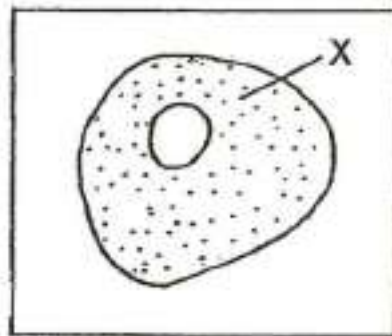
cell B

State the function of part X of cell A.

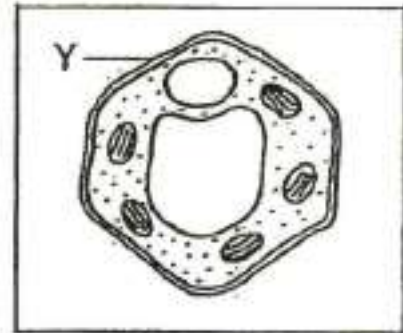
This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.

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The diagram below shows an animal cell and a plant cell.



cell A



cell B

What will happen to the cell if part Y of cell B is removed? Explain your answer.

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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.

Diagram 1 below shows the movement of substances in a plant.

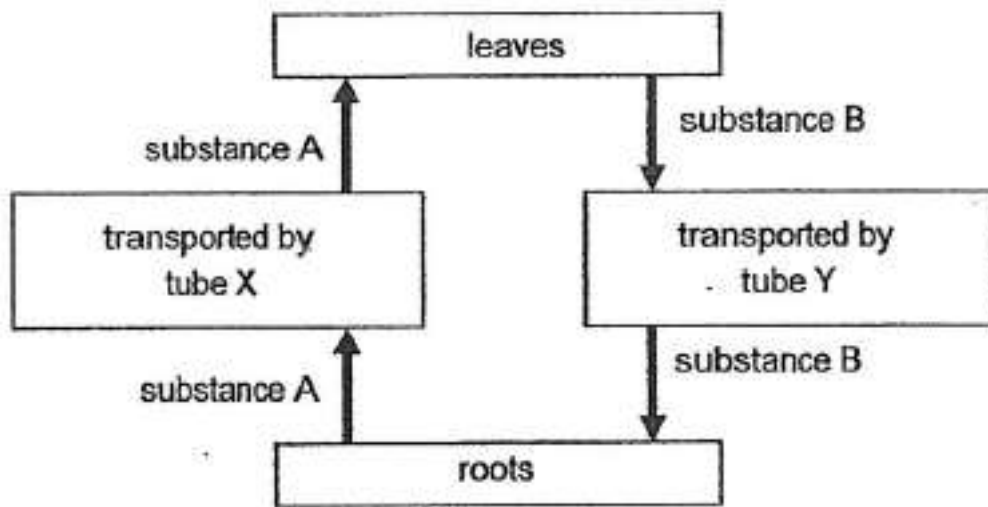


diagram 1

Identify tube X.

Diagram 1 below shows the movement of substances in a plant.

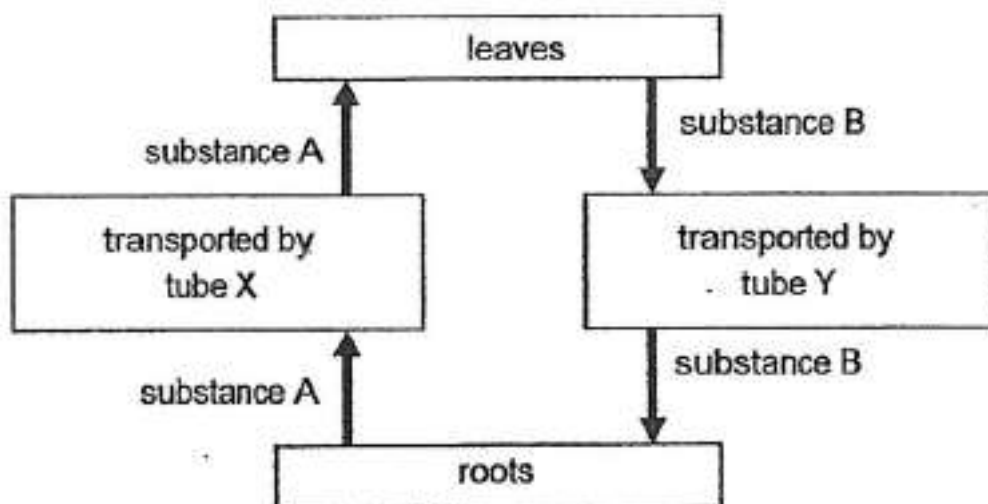


diagram 1

Identify tube Y.

Diagram 1 below shows the movement of substances in a plant.

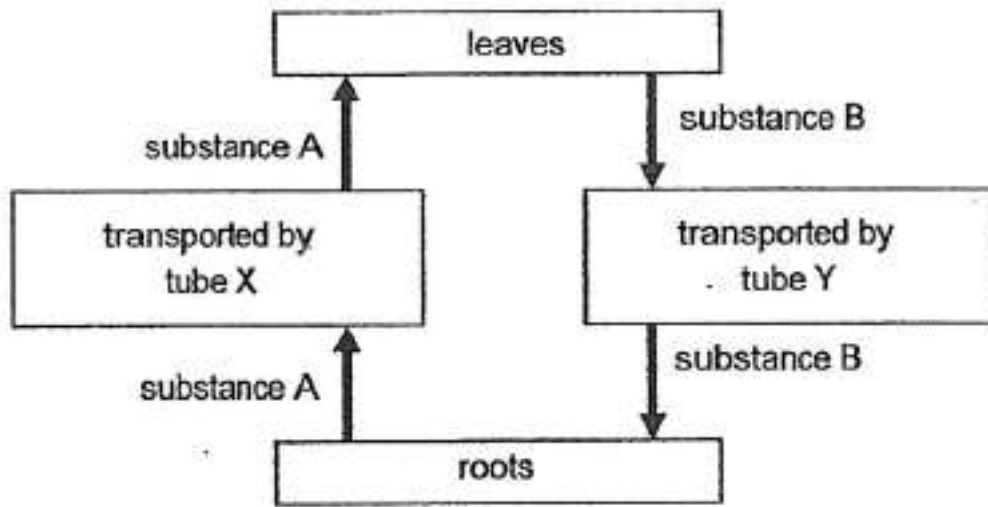


diagram 1

Identify substance A.

Diagram 1 below shows the movement of substances in a plant.

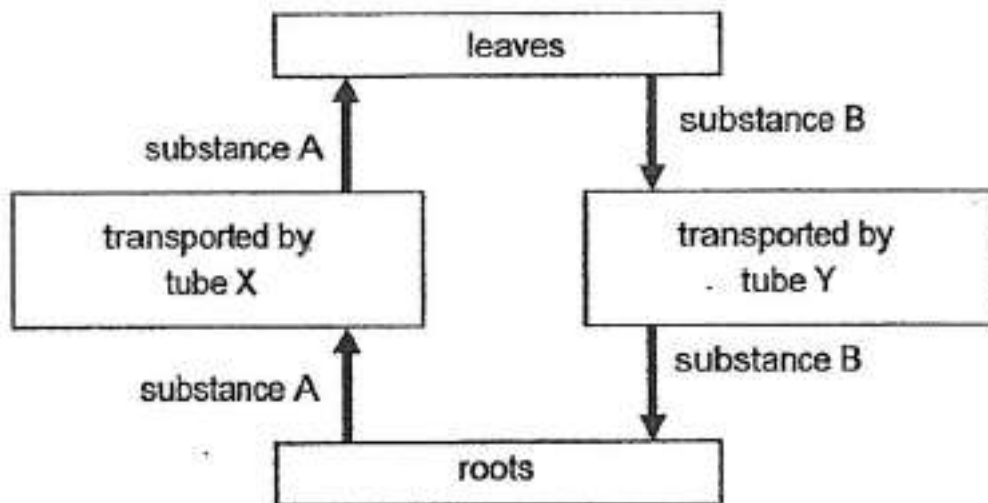


diagram 1

Identify substance B.

Diagram 1 below shows the movement of substances in a plant.

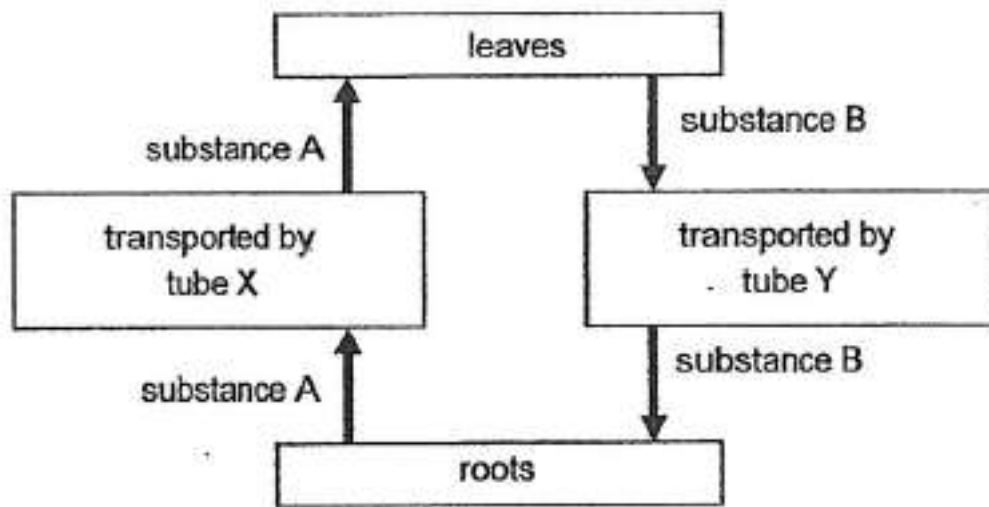


diagram 1

Diagram 2 below shows the circulatory system of organism K.

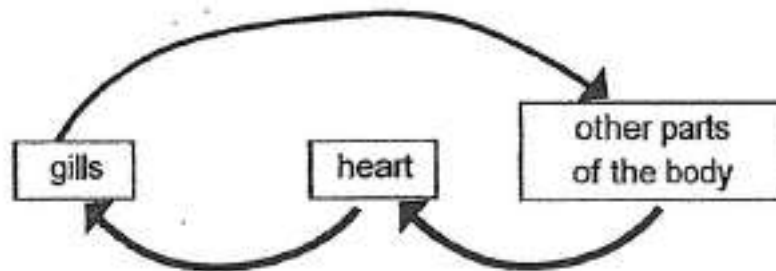


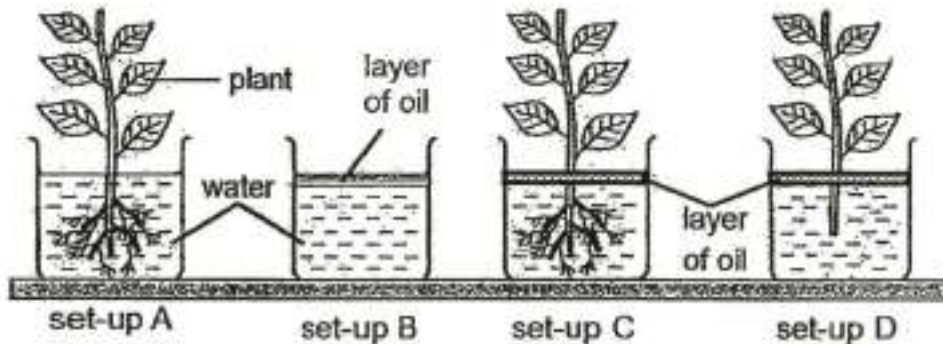
diagram 2

Comparing diagrams 1 and 2, state one difference between the direction of transport system of the plant and the circulatory system of organism K.

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.

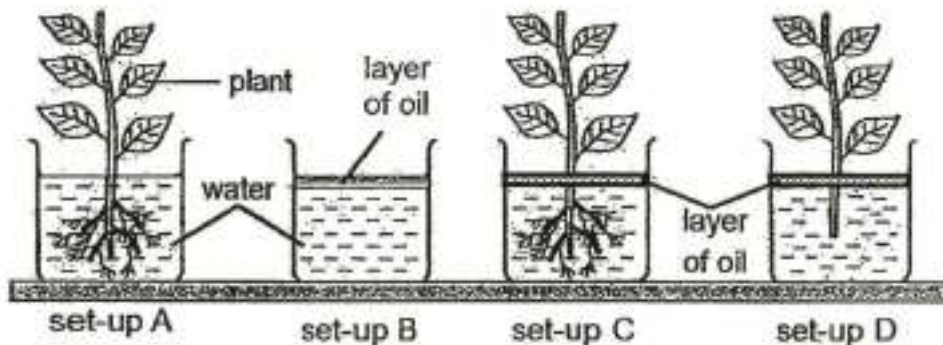
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Laura conducted an experiment in a classroom as shown below. She wanted to find out if roots take in water.



Which pair of set-ups should she use to make a fair comparison? Explain your answer.

Laura conducted an experiment in a classroom as shown below. She wanted to find out if roots take in water.



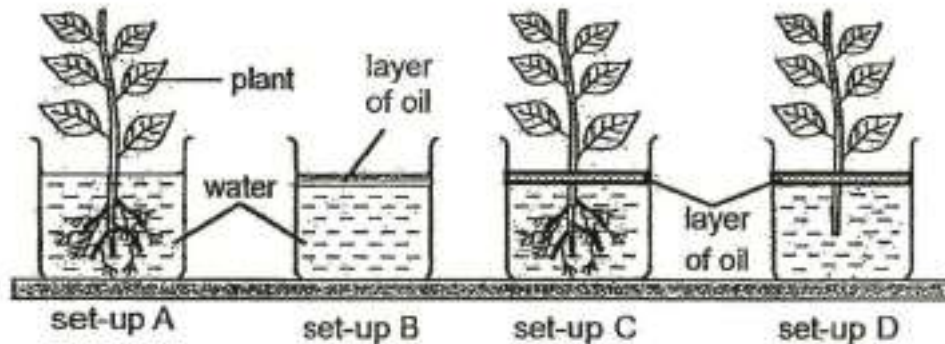
Laura wanted to conduct another experiment to find out if the number of leaves affect the amount of water absorbed by the roots. he decided to use set-ups A and C to conduct the experiment.

Suggest two changes that Laura should do to set-up A and C to make the experiment a fair test. (2 mark)

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Laura conducted an experiment in a classroom as shown below. She wanted to find out if roots take in water.



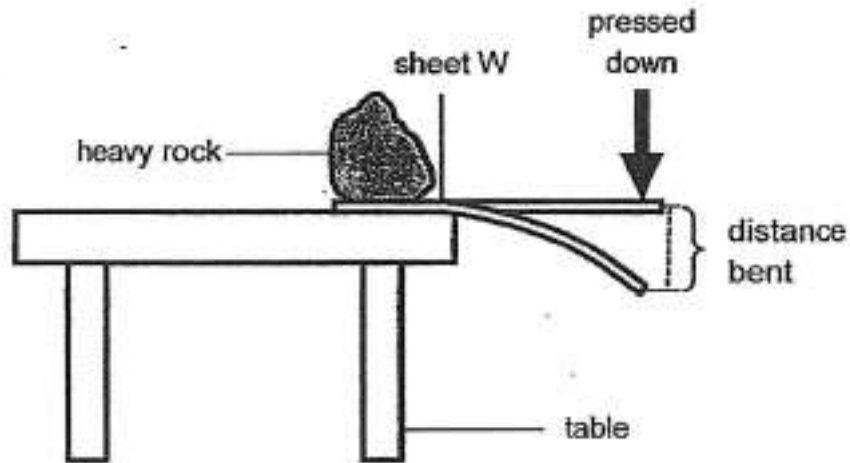
Laura wanted to conduct another experiment to find out if the number of leaves affect the amount of water absorbed by the roots. He decided to use set-ups A and C to conduct the experiment.

What is the purpose of the layer of oil in this 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.

Wei Ling carried out an experiment on four sheets W, X, Y and Z each made of a different material. She placed sheet W on the side of a table and placed a heavy rock on it to hold it down firmly. Then she pressed the sheet down slowly until it broke. She repeated the experiment using sheets X, Y and Z.

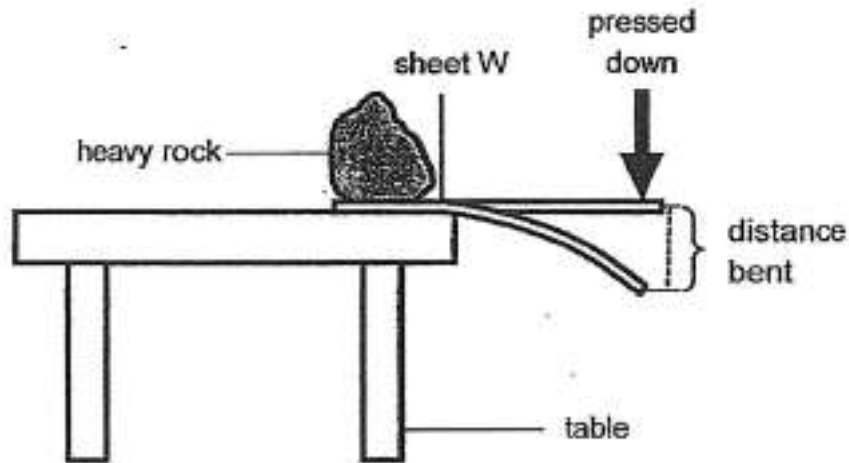


She recorded the results in the table below.

| Sheet | Greatest distance bent before breaking (cm) |
|-------|---|
| W | 7 |
| X | 1 |
| Y | 5 |
| Z | 2 |

State the property of material that Wei Ling was testing.

Wei Ling carried out an experiment on four sheets W, X, Y and Z each made of a different material. She placed sheet W on the side of a table and placed a heavy rock on it to hold it down firmly. Then she pressed the sheet down slowly until it broke. She repeated the experiment using sheets X, Y and Z.

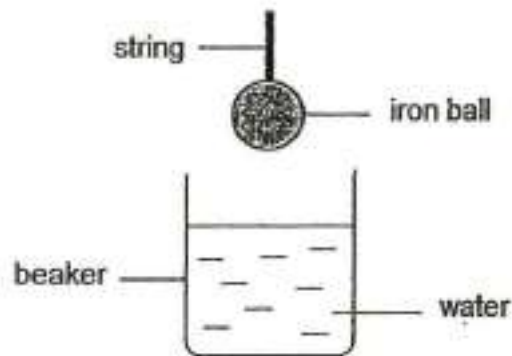


She recorded the results in the table below.

| Sheet | Greatest distance bent before breaking (cm) |
|-------|---|
| W | 7 |
| X | 1 |
| Y | 5 |
| Z | 2 |

Based on the results of the experiment, which one of the materials W, X, Y or Z should Wei Ling use to make a pair of chopsticks? Give a reason for your answer.

Kim gently lowered an iron ball into a beaker of water as shown in the diagram below.

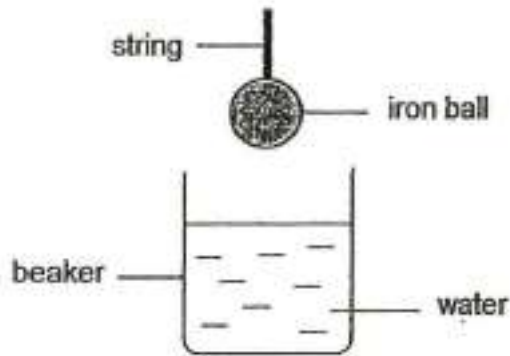


What change to the water level will Kim observe when the iron ball is fully lowered into the beaker of water? (1 mark)

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Kim gently lowered an iron ball into a beaker of water as shown in the diagram below.



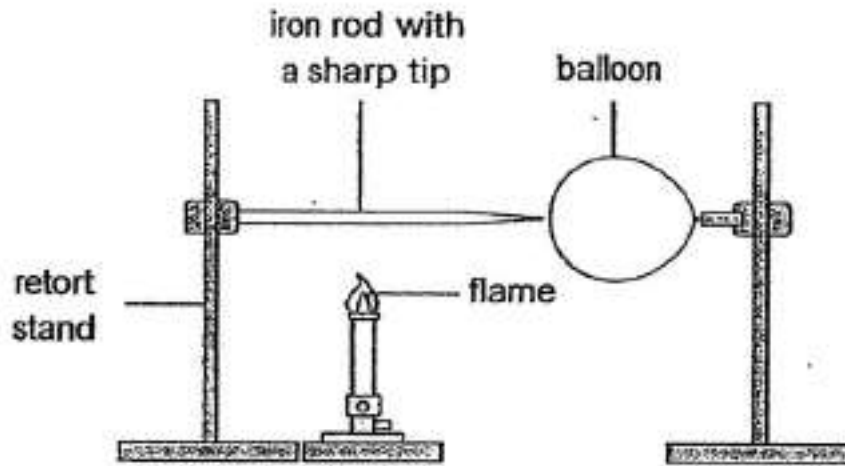
Kim then replaced the iron ball with a lighter glass ball of the same size and repeated the experiment.

Will the water level be lower, higher or remain the same as in her previous experiment?
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.

Study the set-up below.

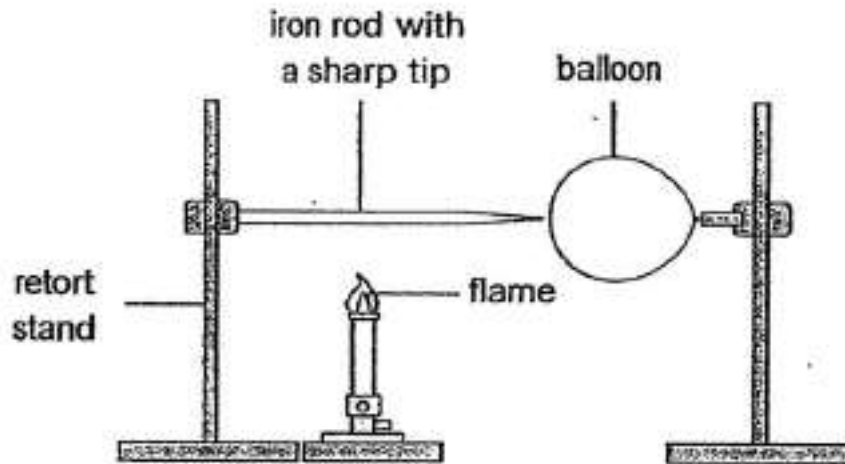


The iron rod was heated for 5 minutes and the balloon burst. Explain why the balloon burst. (1 mark)

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Study the set-up below.

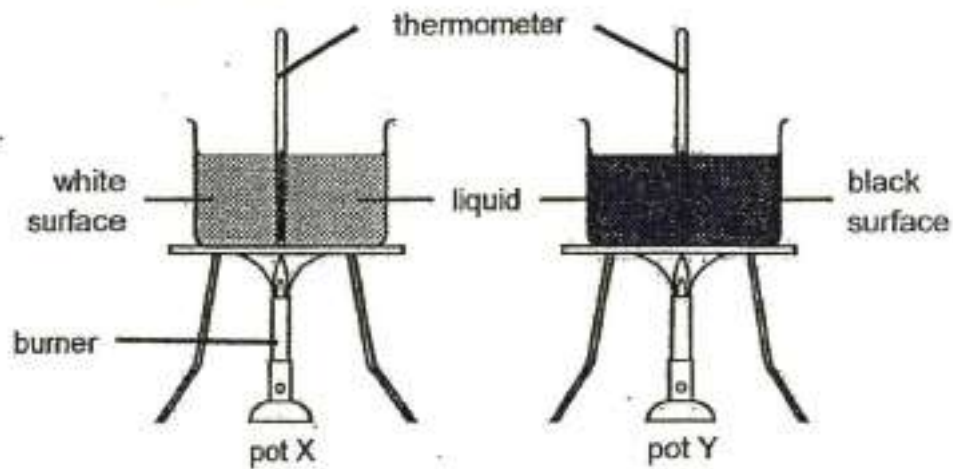


The iron rod was changed to a ceramic rod and the experiment was repeated. After 5 minutes, the balloon did not burst. Explain why. (2 marks)

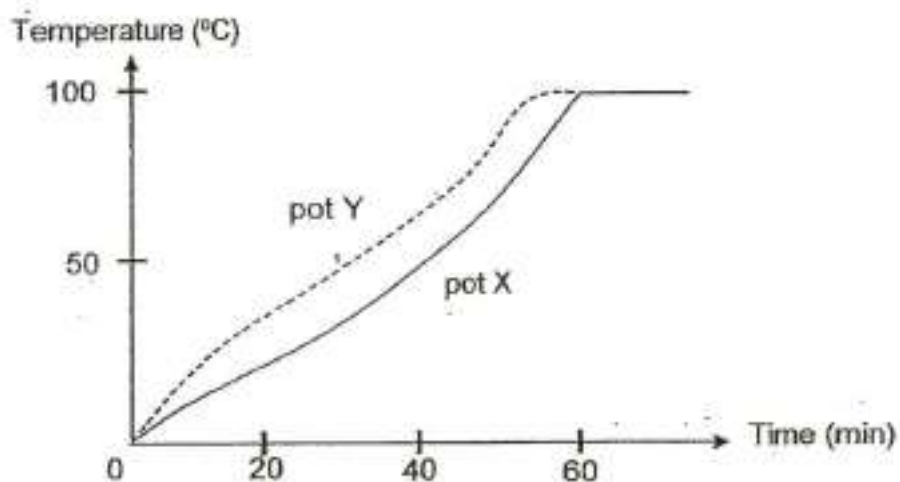
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Ken conducted an experiment using two identical pots as shown below. Pot Y has a black surface while pot X has a white surface. Both pots were filled with 200 cm³ of water at 0 °C and heated with 2 similar burners.

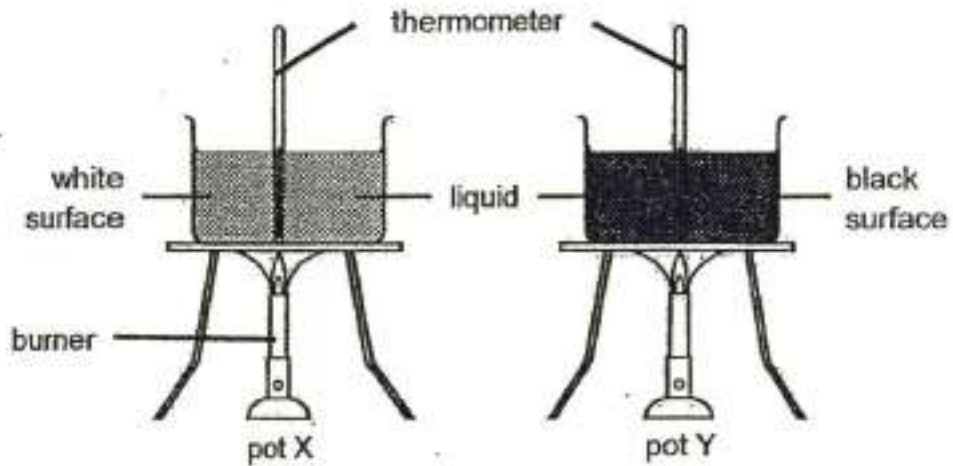


The temperatures of water in both pots X and Y were recorded every minute for some time. The graph below shows the results of Ken's experiment.

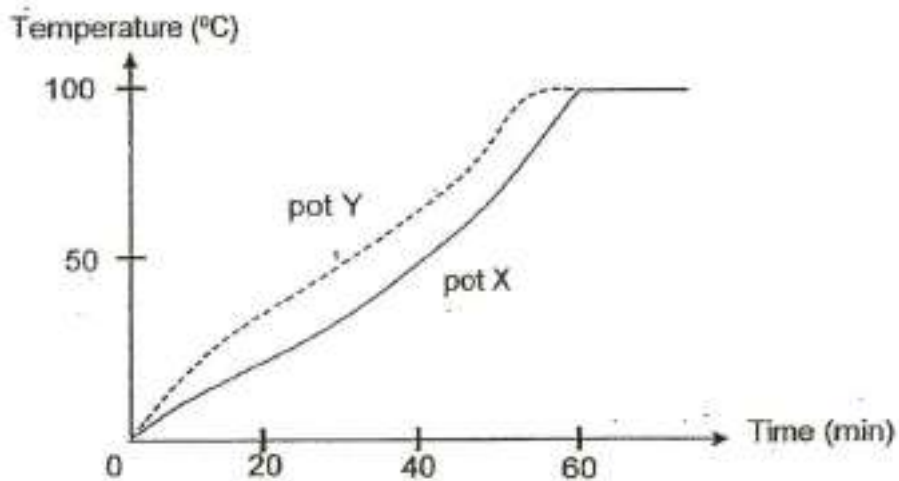


Based on the results above, which pot X or Y can be used to cook soup in a shorter time? Explain your choice.

Ken conducted an experiment using two identical pots as shown below. Pot Y has a black surface while pot X has a white surface. Both pots were filled with 200 cm³ of water at 0 °C and heated with 2 similar burners.



The temperatures of water in both pots X and Y were recorded every minute for some time. The graph below shows the results of Ken's experiment.



What will the temperature of the water be in both pots at the 65th minute?

The diagram below shows a dog house that is in the garden.

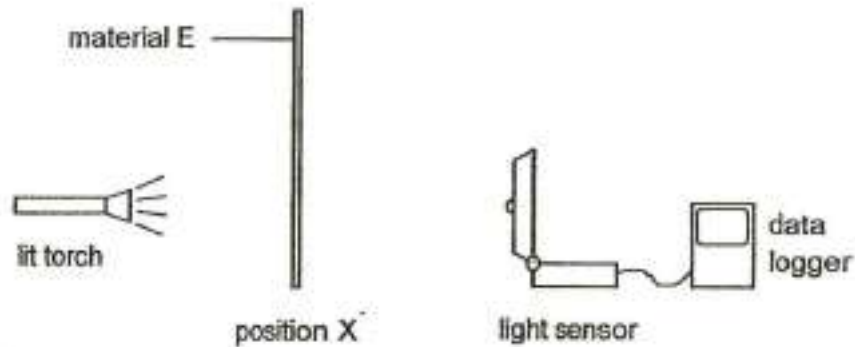


Based on the results of Ken's experiment, should Ken paint the roof of the dog house black or white if he wants to keep his dog cooler on a sunny day? Explain your answer.

[2]

Rina wanted to find out which material is the most suitable for making a bottle to store essential oils. Essential oils, usually used for scenting rooms, are best stored away from direct light to prevent a loss of quality.

She placed material E at position X and shone the torch on it as shown below. A light sensor attached to a data logger was used to record the amount of light that passed through the material.



She repeated the experiment with materials F, G and H. For each material, she conducted the experiment three times and recorded the results in the table below.

| Material | Thickness (cm) | Average amount of light detected (units) |
|----------|----------------|--|
| E | 1 | 52 |
| F | 1 | 43 |
| G | 1 | 38 |
| H | 1 | 15 |

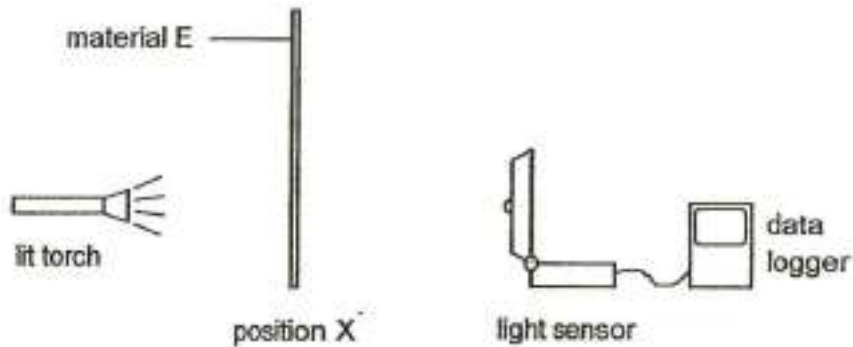
Give a reason why Rina repeated the experiment three times of each type of material. (1 mark)

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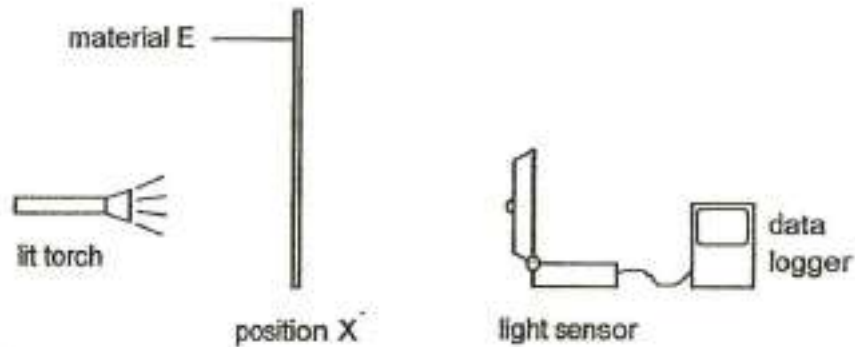
She repeated the experiment with materials F, G and H. For each material, she conducted the experiment three times and recorded the results in the table below.

| Material | Thickness (cm) | Average amount of light detected (units) |
|----------|----------------|--|
| E | 1 | 52 |
| F | 1 | 43 |
| G | 1 | 38 |
| H | 1 | 15 |

State the changed variable in this experiment.

Rina wanted to find out which material is the most suitable for making a bottle to store essential oils. Essential oils, usually used for scenting rooms, are best stored away from direct light to prevent a loss of quality.

She placed material E at position X and shone the torch on it as shown below. A light sensor attached to a data logger was used to record the amount of light that passed through the material.

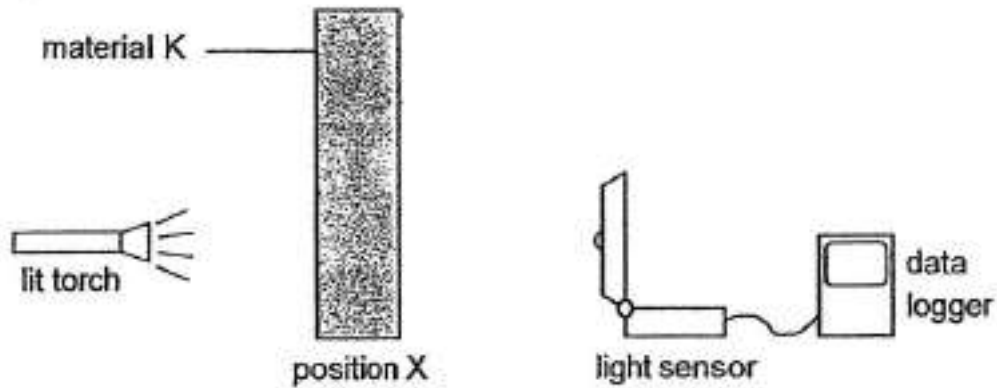


She repeated the experiment with materials F, G and H. For each material, she conducted the experiment three times and recorded the results in the table below.

| Material | Thickness (cm) | Average amount of light detected (units) |
|----------|----------------|--|
| E | 1 | 52 |
| F | 1 | 43 |
| G | 1 | 38 |
| H | 1 | 15 |

Based on the results in the table, which material E, F, G or H is most suitable for making bottles used for storing essential oils? Give a reason for your answer.

Rina conducted a similar experiment using different thickness of material K.



She recorded the results in the table below.

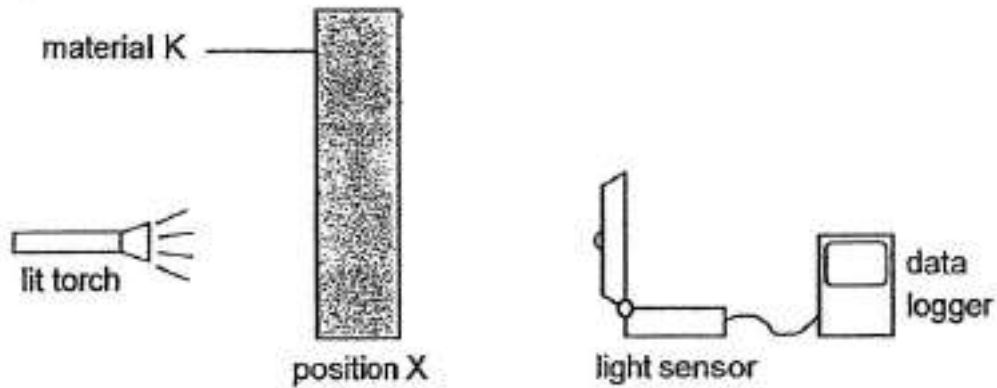
| Thickness (cm) | Average amount of light detected (units) |
|----------------|--|
| 5 | 42 |
| 6 | 32 |
| 7 | 25 |
| 8 | 8 |

Write down a suitable aim for the experiment. (1 mark)

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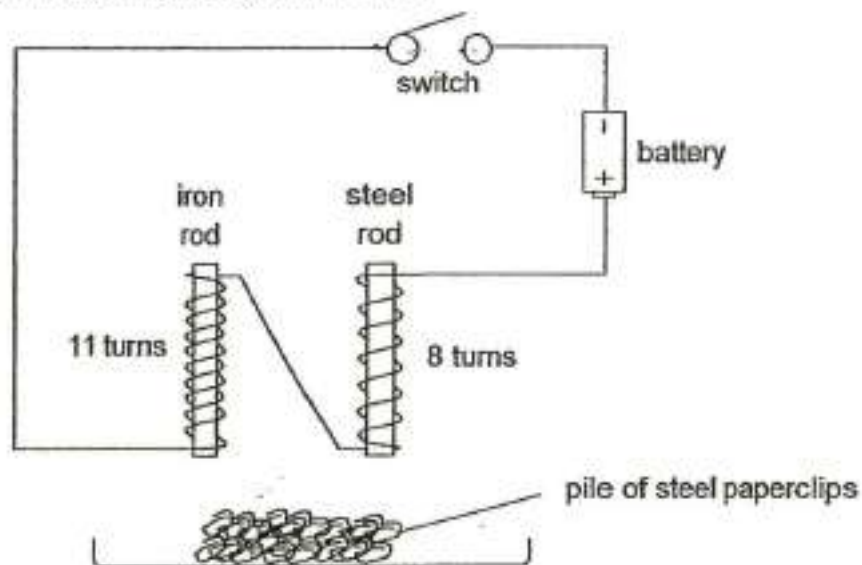
| Thickness (cm) | Average amount of light detected (units) |
|----------------|--|
| 5 | 42 |
| 6 | 32 |
| 7 | 25 |
| 8 | 8 |

What can she conclude from the experiment? (1 mark)

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Tom conducted an experiment as shown below.



The two rods were placed 5 cm above a pile of steel paperclips before the switch was closed. The number of paperclips attracted to each rod are shown below.

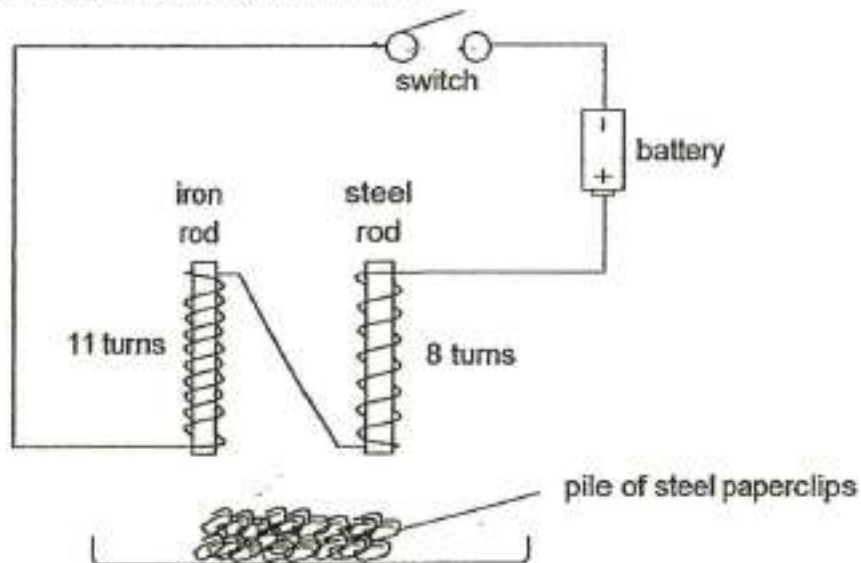
| | Iron Rod | Steel Rod |
|-----------------------|----------|-----------|
| 1 st Trial | 15 | 10 |
| 2 nd Trial | 14 | 8 |
| 3 rd Trial | 16 | 9 |

Tom's friend said that the experiments was not fair and they were not able to conclude which rod, iron or steel, was an electromagnet with a greater magnetic strength. Explain why Tom's friend is right. (2 marks)

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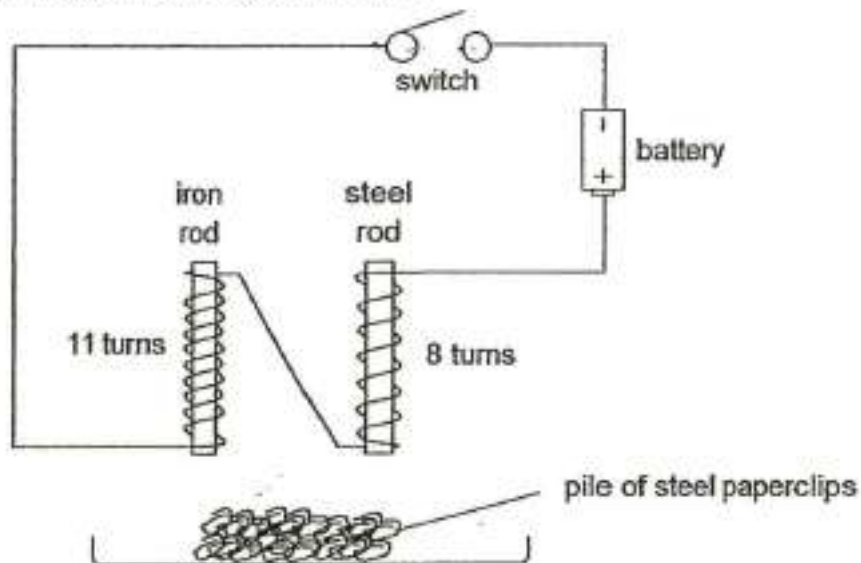
| | Iron Rod | Steel Rod |
|-----------------------|----------|-----------|
| 1 st Trial | 15 | 10 |
| 2 nd Trial | 14 | 8 |
| 3 rd Trial | 16 | 9 |

List one change Tom can make to the set-up such that he can conclude which rod is an electromagnet with a greater magnetic strength. (1 mark)

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| | Iron Rod | Steel Rod |
|-----------------------|----------|-----------|
| 1 st Trial | 15 | 10 |
| 2 nd Trial | 14 | 8 |
| 3 rd Trial | 16 | 9 |

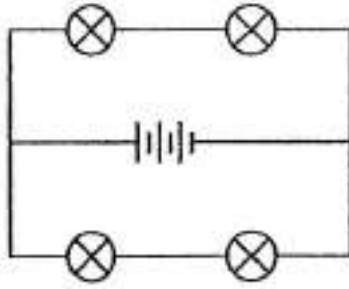
What would be observed if two more batteries are connected in series to the circuit above? (1 mark)

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.

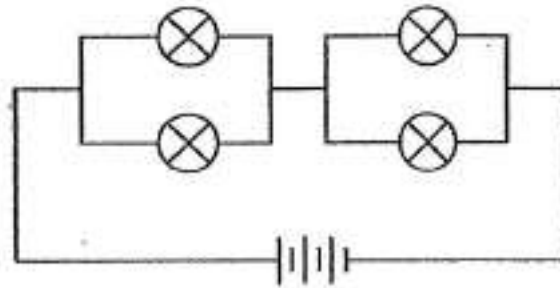
Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.

Study the circuits below. In the given circuits, all the bulbs were lit.

circuit X



circuit Y

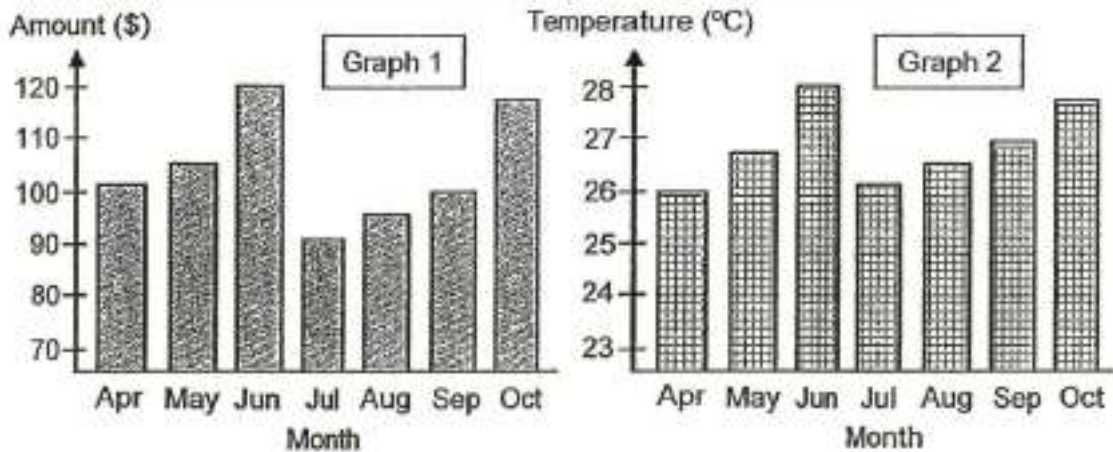


In the table below, write down the number of bulbs that would remain lit when one of the bulbs in each circuit is blown.

[2]

| | Circuit X | Circuit Y |
|----------------------------------|-----------|-----------|
| Number of bulbs remaining lit :- | | |

Study the two graphs below. Graph 1 shows the average electricity bill for John's family. Graph 2 shows the average monthly temperature in Singapore.

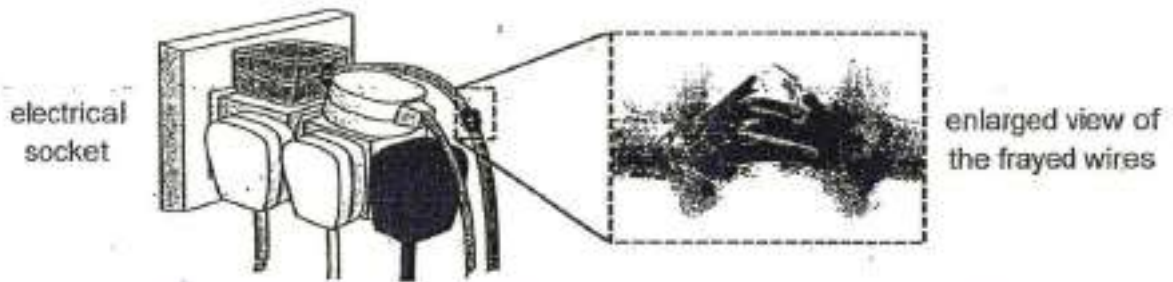


John observed that there was a large increase in his electricity bill for the months of June and October. Based on the graphs, give a possible explanation for this increase. (2 marks)

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.

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The following situation was observed at an electrical socket in John's house.



Based on the above diagram, state two electrical safety issues and give a possible precaution John can take to address each issue. [2]

| | Safety Issue | Possible Precaution(s) to be taken |
|------|--------------|------------------------------------|
| (i) | | |
| (ii) | | |

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