

**Test:** Primary 5 Science (Term 4) - St Nicholas

**Points:** 67 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 66**

Primary 5 Science (Term 4) 2 pts

**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. (56 marks)**

Which of the following characteristics could be used to tell the difference between mammals and insects?

- A number of legs
- B presence of wings
- C number of body parts
- D colour of outer covering

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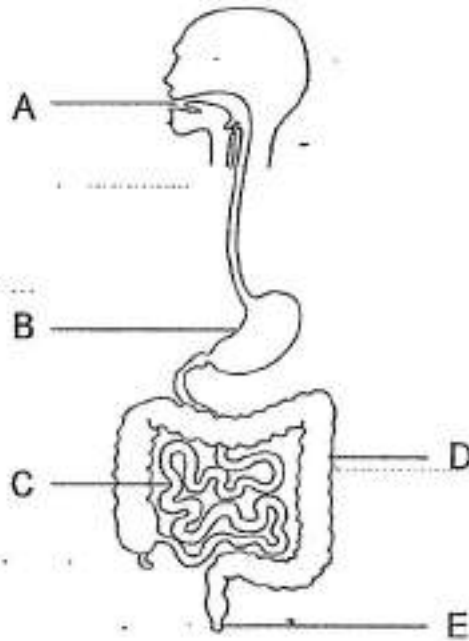
**A)** A and C only

**B)** A and D only

**C)** B and D only

**D)** B and C only

The diagram below shows the human digestive system.



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

- A)
 

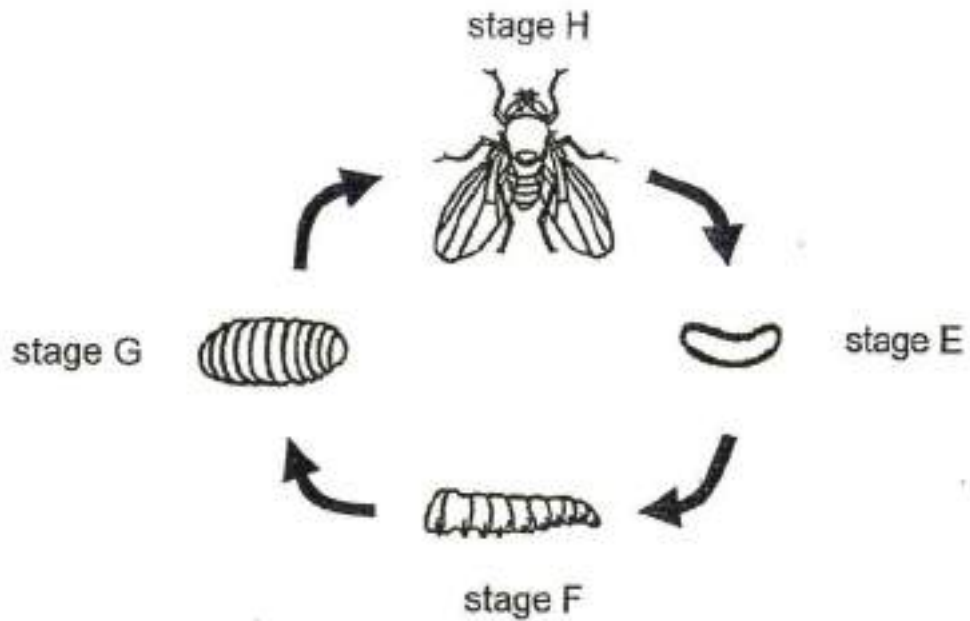
Organ where digestion begins	Organ where digestion is completed
A	E
- B)
 

Organ where digestion begins	Organ where digestion is completed
A	C
- C)
 

Organ where digestion begins	Organ where digestion is completed
B	C
- D)
 

Organ where digestion begins	Organ where digestion is completed
B	D

The diagram below shows the stages in the life cycle of a housefly.

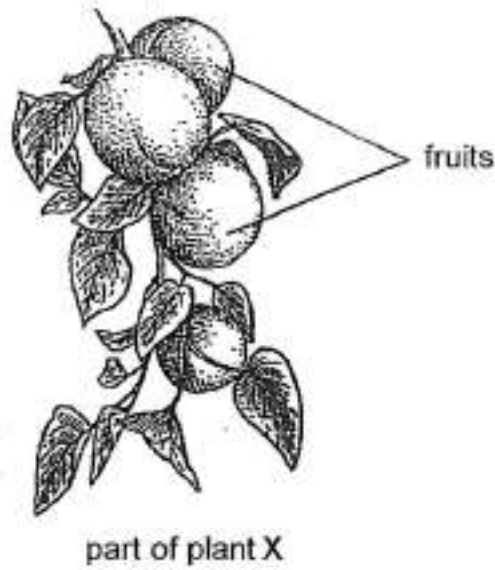


Which of the following statements are correct?

- A It moults at stage E.
- B It is a larva at stage F.
- C It does not need air at stage G.
- D It is able to reproduce and fly at stage H.

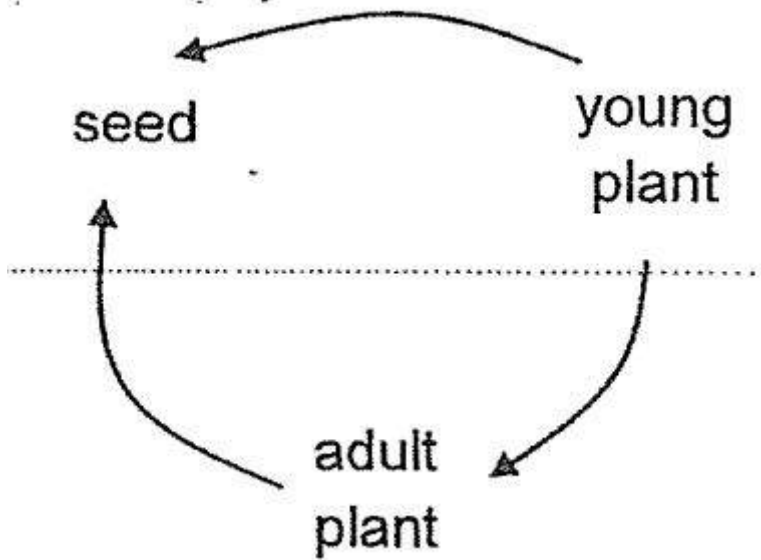
- 
- A) A and C only
  - B) B and D only
  - C) A, B and C only
  - D) B, C and D only

The diagram below shows part of plant X.

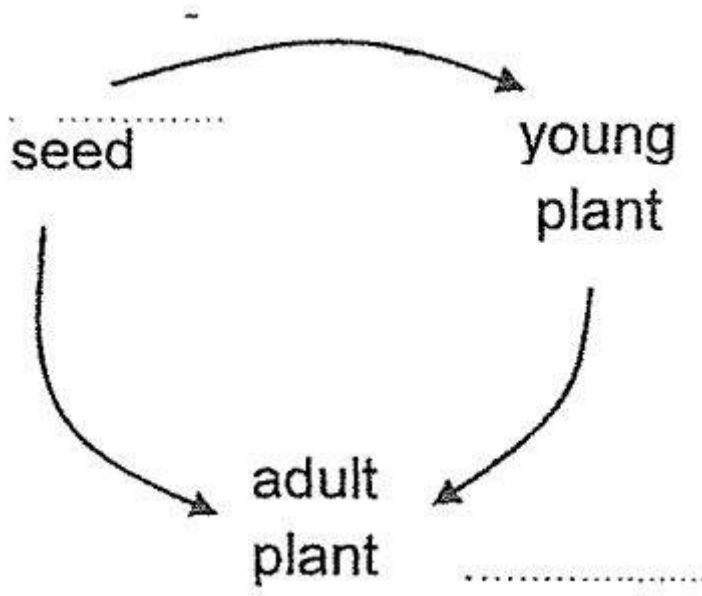


Which one of the following correctly shows the stages in the life cycle of plant X?

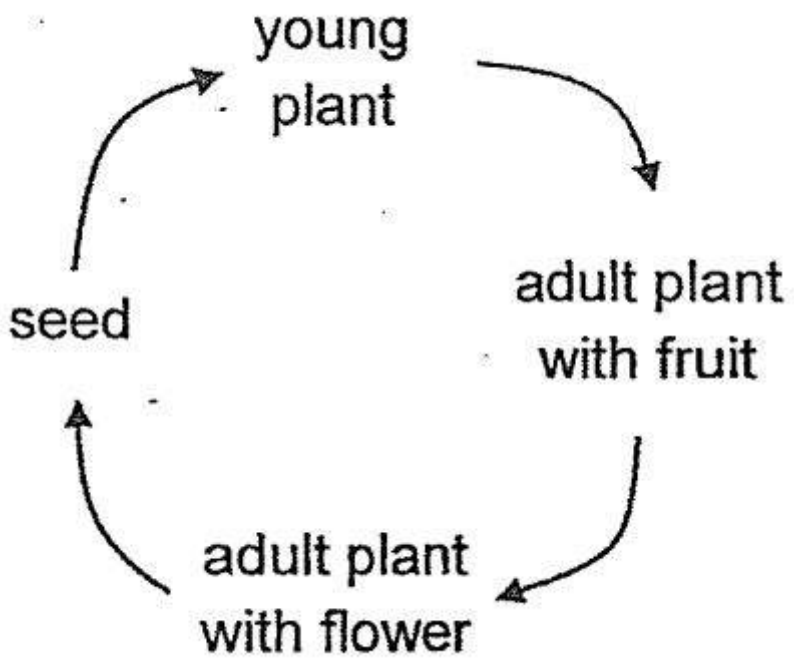
A)



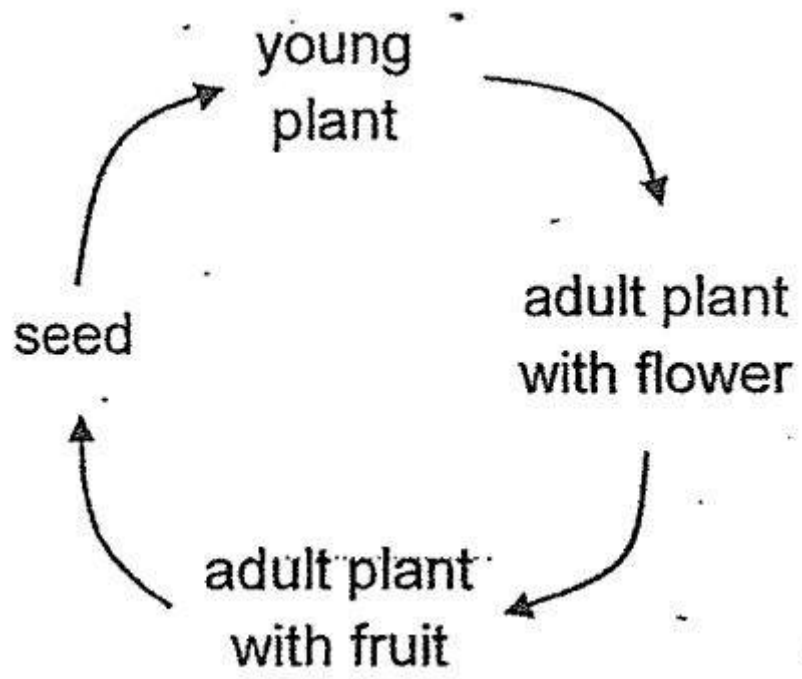
B)



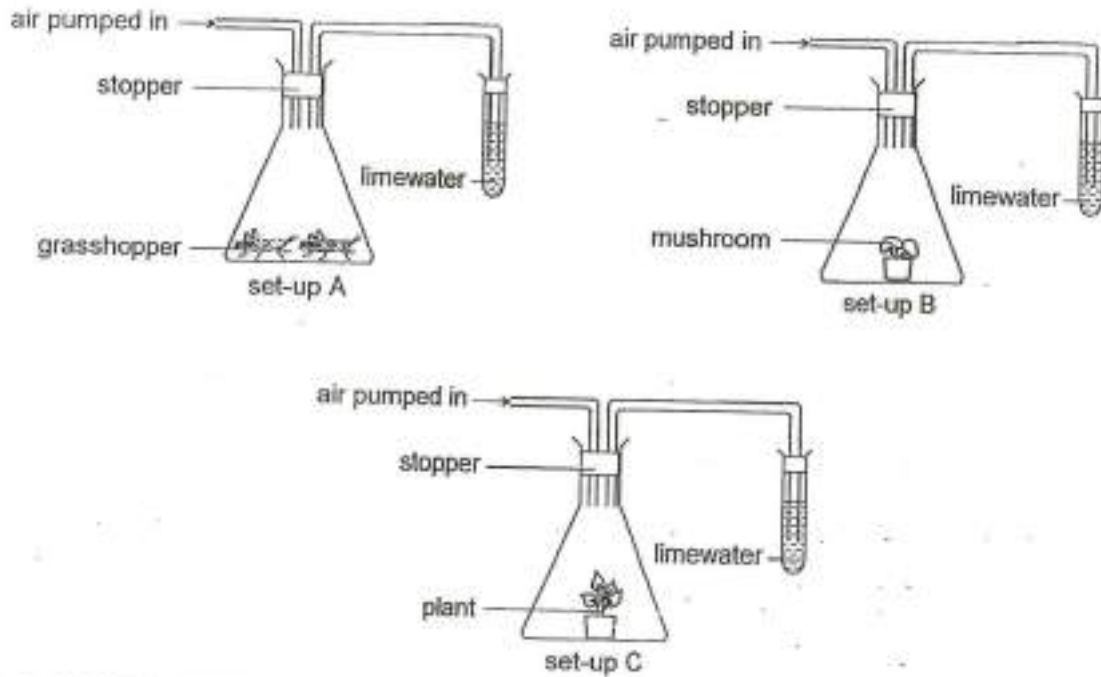
c)



D)



Yao Ming placed different organisms in each set-up shown below and added limewater to each test tube. Limewater changes from clear to chalky when in contact with carbon dioxide. The three set-ups were placed beside the window from 12 noon to 4 pm.



Which one of the following show the correct observation of limewater in the three set-ups at the end of the experiment?

- A) 

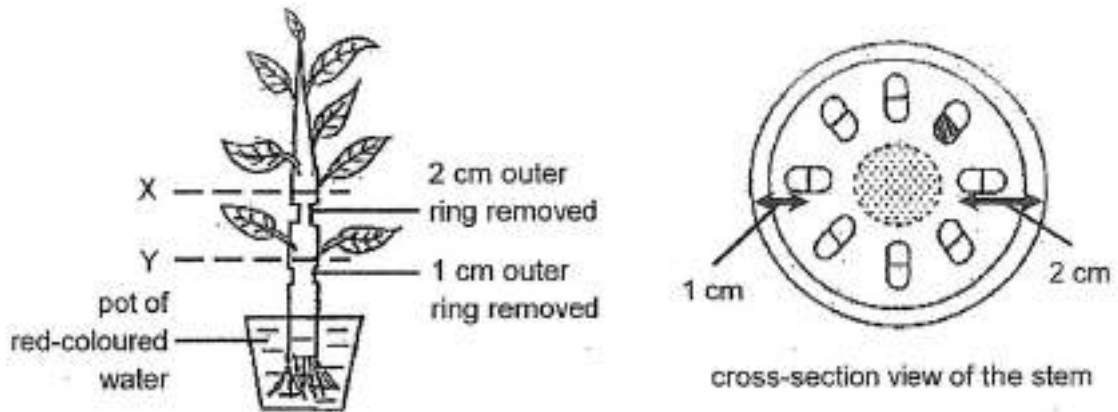
A	B	C
chalky	chalky	no change
- B) 

A	B	C
chalky	no change	no change
- C) 

A	B	C
no change	chalky	chalky
- D) 

A	B	C
no change	no change	chalky

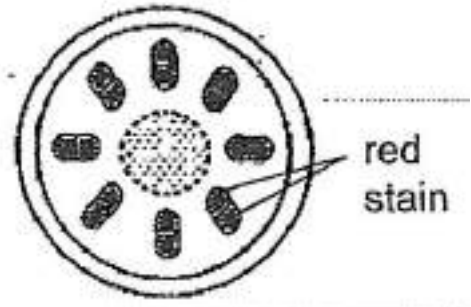
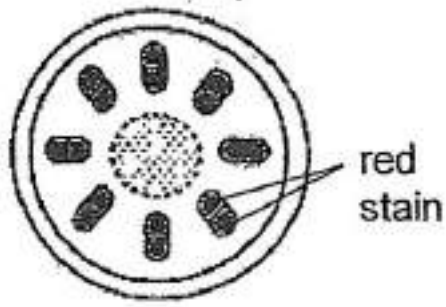
Ismail made a 1-cm and 2-cm cut to the stem of a plant and placed it in a pot of red-coloured water as shown below.



Which one of the following shows his observation after 1 day?

- |                          | X | Y |
|--------------------------|---|---|
| <input type="radio"/> A) |   |   |
| <input type="radio"/> B) |   |   |
| <input type="radio"/> C) |   |   |
| <input type="radio"/> D) |   |   |



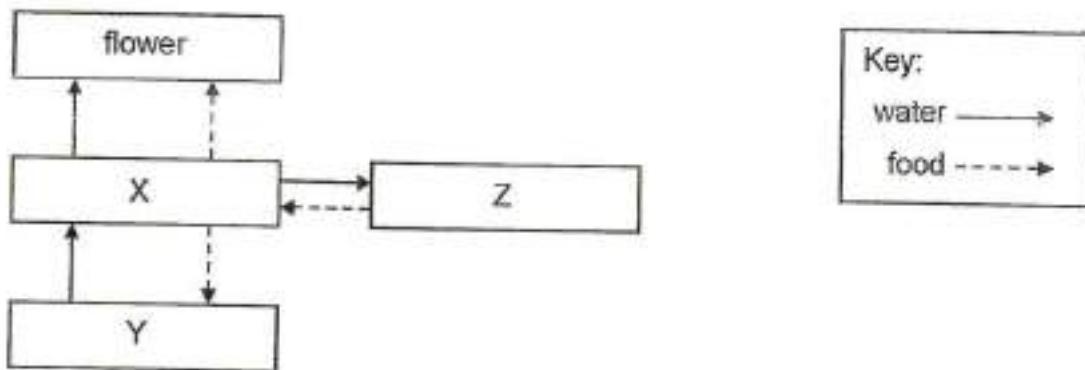


**Question 7 of 66**

Primary 5 Science (Term 4)

2 pts

Study the plant transport system below.



Which one of the following is correctly represented by X, Y and Z?

- A) 

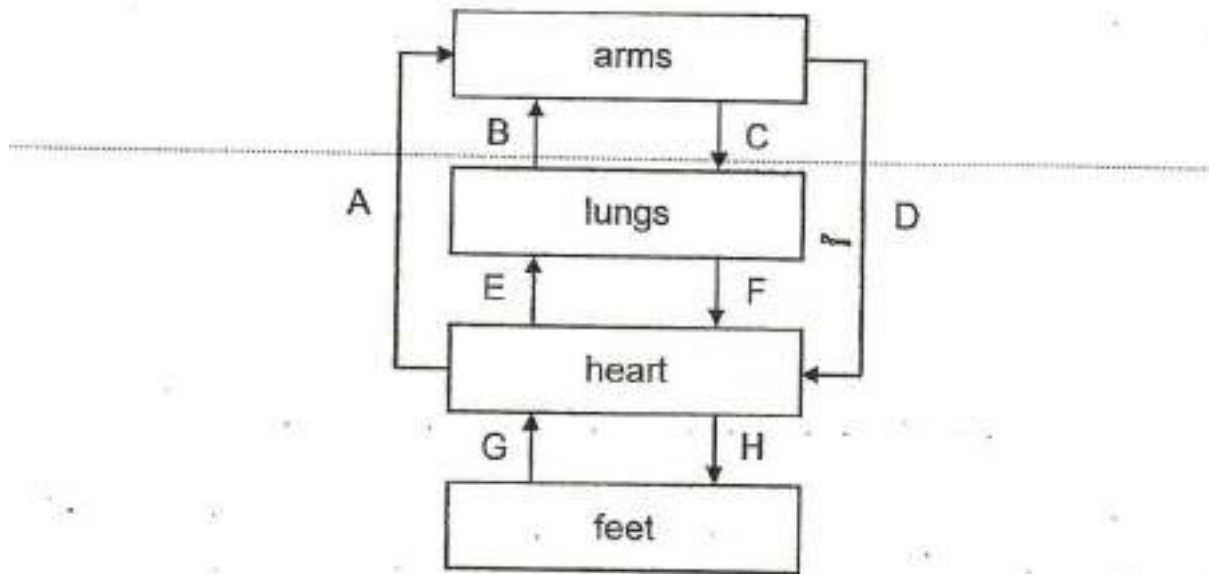
X	Y	Z
leaves	stem	roots
- B) 

X	Y	Z
stem	leaves	roots
- C) 

X	Y	Z
roots	stem	leaves
- D) 

X	Y	Z
stem	roots	leaves

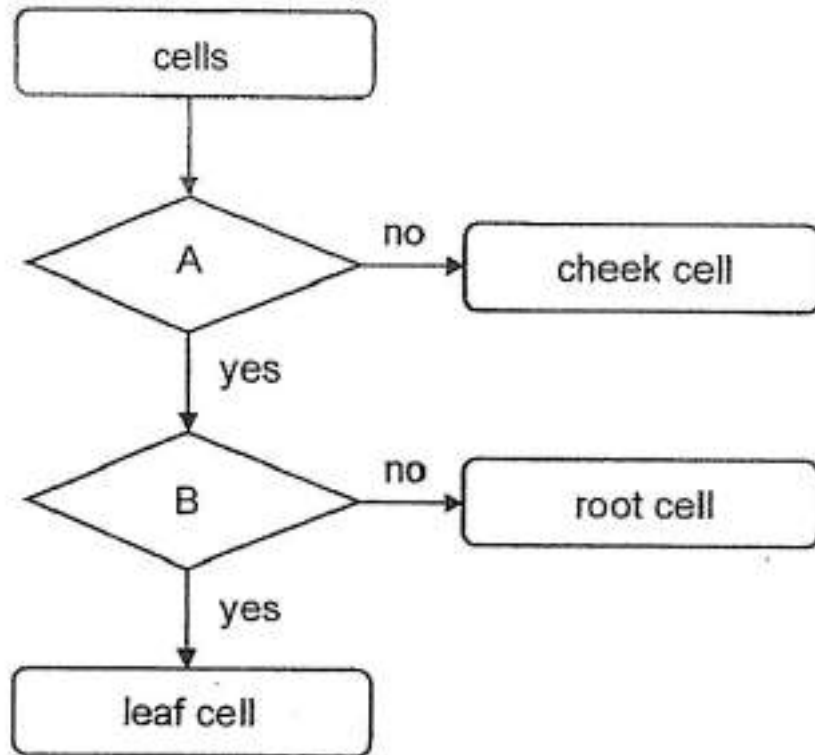
The diagram below shows the blood flow in some parts of the human body.



Which two arrows are **not** drawn correctly?

- A) A and D
- B) B and C
- C) E and F
- D) G and H

Study the chart below.



Which one of the following correctly represents A and B?

- A)
 

A	B
Does the cell have chloroplasts?	Does the cell have a cell wall?
- B)
 

A	B
Does the cell have a cell wall?	Does the cell have chloroplasts?
- C)
 

A	B
Does the cell have a cell wall?	Does the cell have a nucleus?
- D)
 

A	B
Does the cell have a nucleus?	Does the cell have chloroplasts?

Prakash recorded the cell parts present in cell samples A, B, C and D taken from plants and animals. A tick (✓) indicates that the cell part is present.

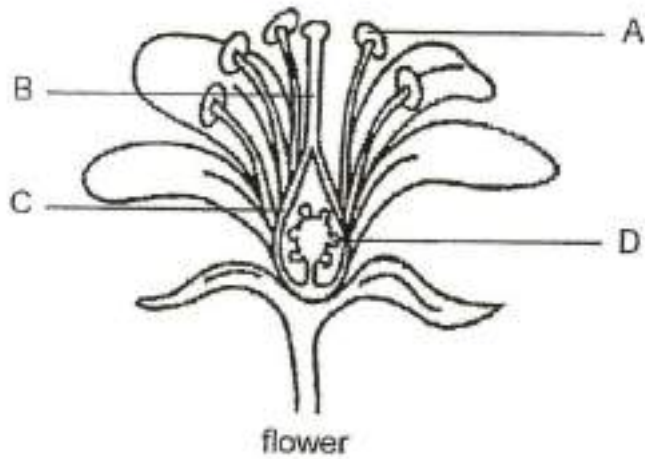
Cell Part	Cell Sample			
	A	B	C	D
nucleus	✓	✓	✓	
cell wall	✓		✓	
cytoplasm	✓	✓		✓
chloroplasts			✓	
cell membrane	✓	✓		✓

His teacher told him that there is a mistake in his observation.

Which cell did he record **wrongly**?

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

The diagram below shows the different parts of a flower.



Which one of the following correctly shows the development of the flower parts after fertilisation?

- A) 

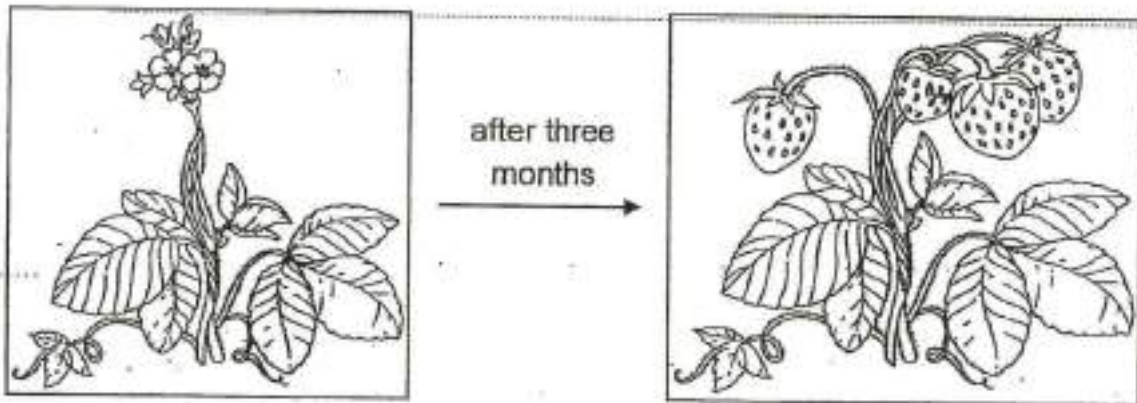
Develops into the seeds	Develops into the fruit
A	B
- B) 

Develops into the seeds	Develops into the fruit
B	A
- C) 

Develops into the seeds	Develops into the fruit
C	D
- D) 

Develops into the seeds	Develops into the fruit
D	C

The diagram below show the development of a plant after three months.



Based on the development shown above, which of the following processes would have taken place during the three months?

- A Pollination
- B Fertilisation
- C Seed dispersal
- D Seed germination

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

Shu En observed some flowers and recorded her observations in the table below. A tick (✓) shows that the flower has the characteristic.

Characteristics	Flowers			
	A	B	C	D
Has sweet-smelling nectar.	✓			✓
Has stigma hidden in the flower.	✓			
Has small and dull-coloured petals.		✓		
Has anthers that stick out of the flower.		✓	✓	

Which of these flowers are most likely insect-pollinated?

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

Question 14 of 66

Primary 5 Science (Term 4) 2 pts

Which of the following characteristics can be passed on from parents to their offsprings?

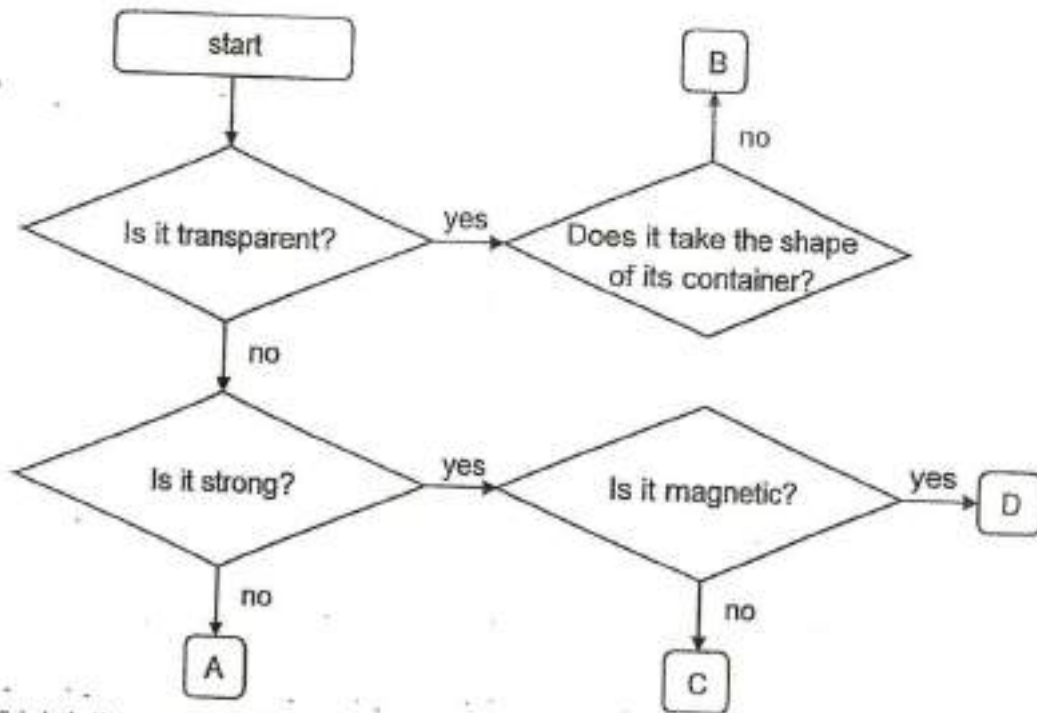
- A Fingprints
- B Hair colour
- C Eye colour
- D Ability to swim

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

Question 15 of 66

Primary 5 Science (Term 4) 2 pts

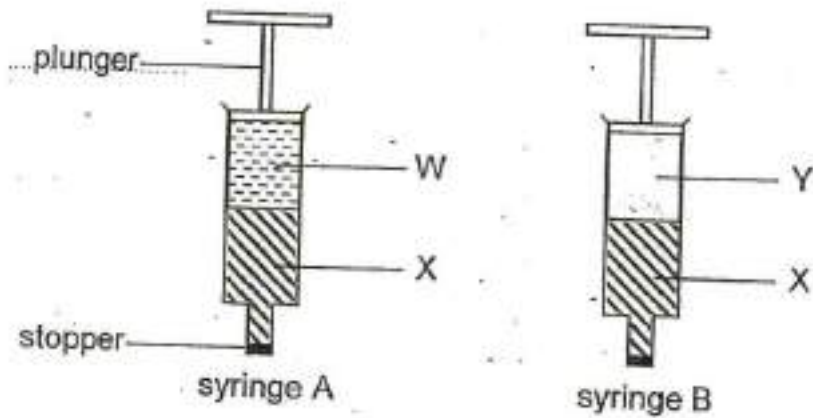
Study the chart below.



Which letter represents an iron nail?

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

Two syringes containing some substances are shown below.

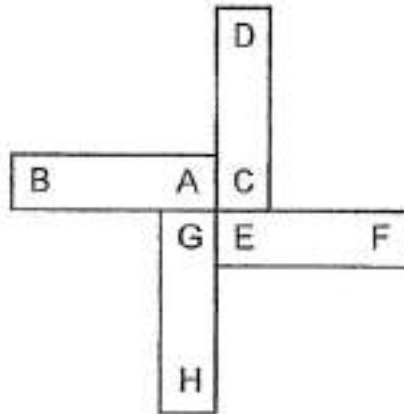


Which one of the following best explains why only the plunger in syringe B could be pushed down?

- A) Only X can be compressed.
- B) Only Y can be compressed.
- C) W, X and Y have a definite shape.
- D) W, X and Y have no definite volume.

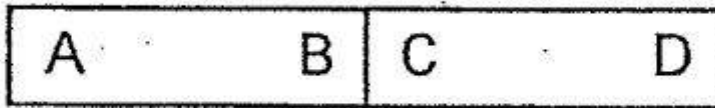


The diagram below shows the arrangement of four identical bar magnets.



Based on the above, which one of the following arrangements is **not** possible?

A)



B)



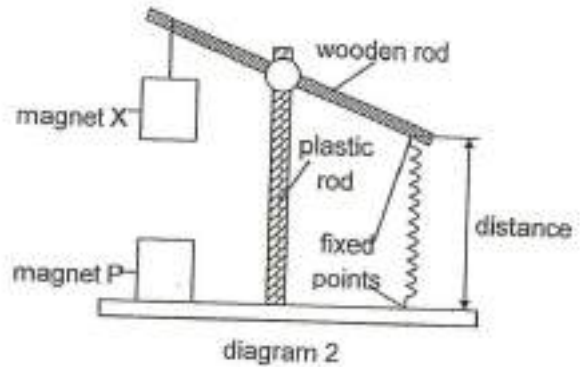
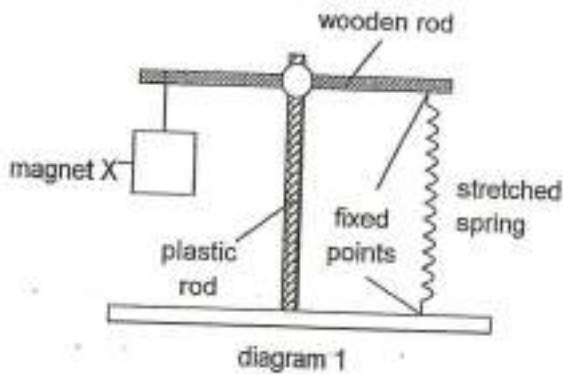
C)

G	D
H	C

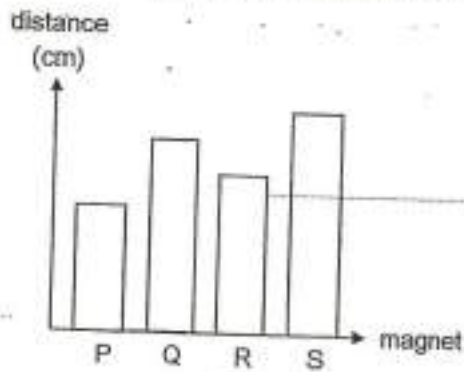
D)

E	F	H	G
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Study the experimental set-up below. At the start of the experiment, the wooden rod was horizontal when magnet X was fixed at one end of the rod as shown in diagram 1. Magnet P which is of identical shape and size was then placed directly below magnet X. The wooden rod was observed to tilt as shown in diagram 2.



The experiment was repeated using other magnets Q, R and S, each of identical shape and size, to replace magnet P. The results are recorded in the graph below.



Based only on the results above, which one of the following correctly shows the arrangement of magnets P, Q, R and S from the magnet with the greatest magnetic strength to the magnet with weakest magnetic strength?

- A) 

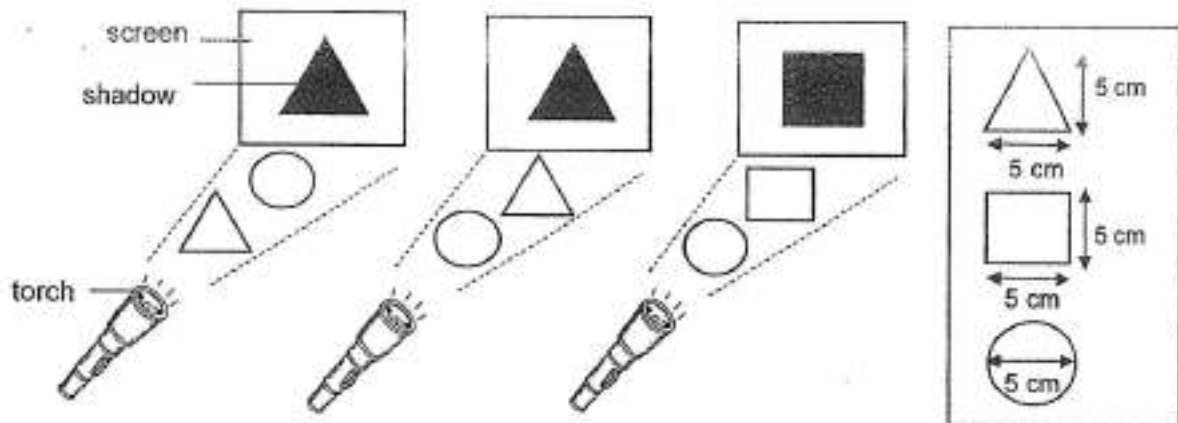
Greatest magnetic strength	-- -->	Weakest magnetic strength
S	Q R	P
- B) 

Greatest magnetic strength	-- -->	Weakest magnetic strength
S	R Q	P
- C) 

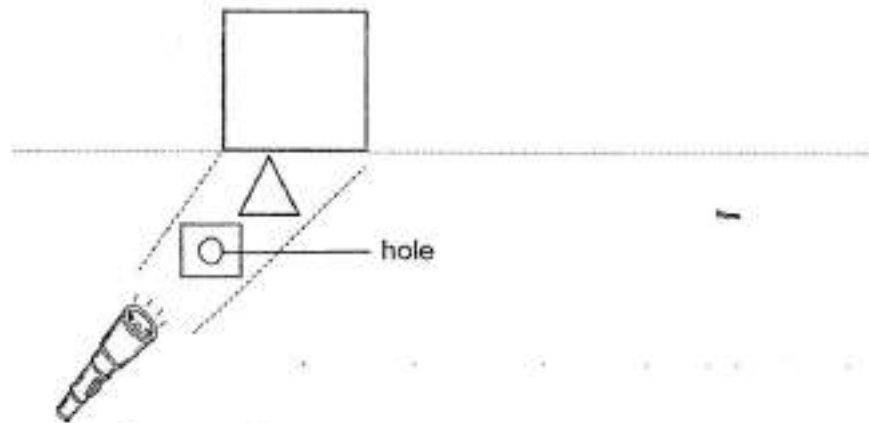
Greatest magnetic strength	-- -->	Weakest magnetic strength
P	Q R	S
- D) 

Greatest magnetic strength	-- -->	Weakest magnetic strength
P	R Q	S

The diagram below shows the shadows on the screens when two different shapes of different materials are placed between the screens and the torches as shown.

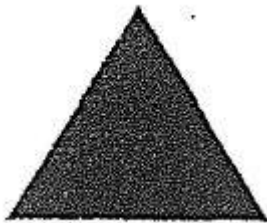


A hole is made on the square-shaped material and placed in the set-up as shown below.



Which of the following shows the shadow on the screen?

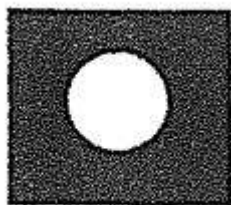
A)



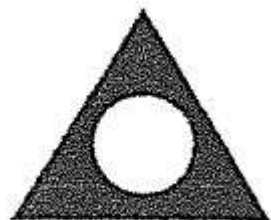
B)



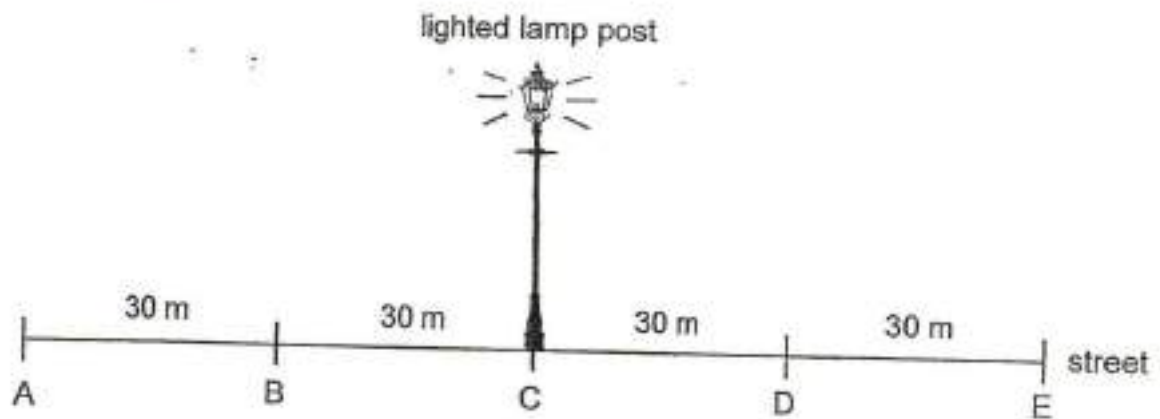
C)



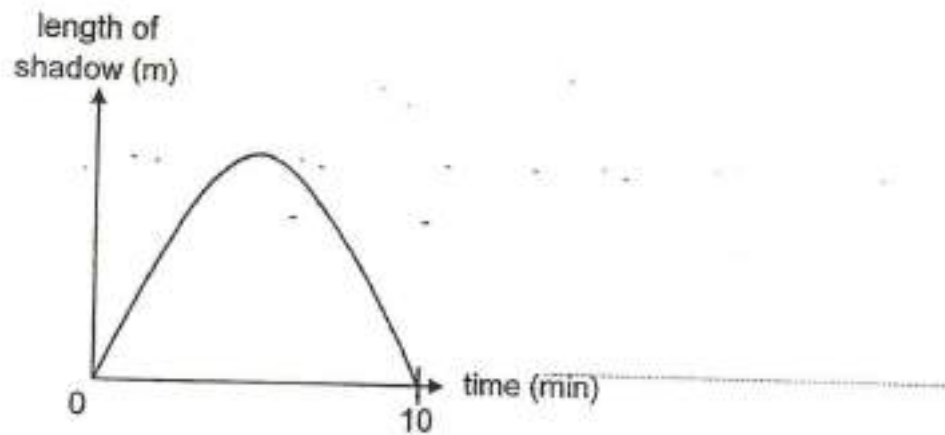
D)



Study the diagram below.



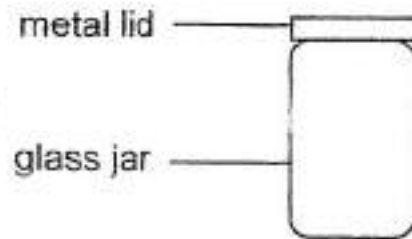
As Siti walked along the street at night, it was observed that the length of her shadow changed as shown in the graph below.



Based on this observation, which one of the following most likely shows the route taken by Siti as she walked along the street?

- A) A → B → C
- B) B → C → B
- C) C → B → C
- D) C → D → E

Zainab could not remove the metal lid from a glass jar.



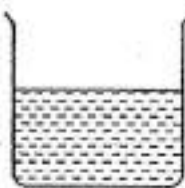
Which of the following would help her remove the metal lid most easily?

- A) Place the metal lid in ice water.
- B) Place the metal lid in hot water.
- C) Place ice cubes on the metal lid only.
- D) Place the glass jar in hot water and wrap the metal lid with a cold towel.

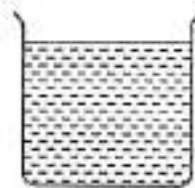
Three beakers containing some water are shown below.



beaker D  
200 ml of water  
at 70°C



beaker E  
200 ml of water  
at 50°C

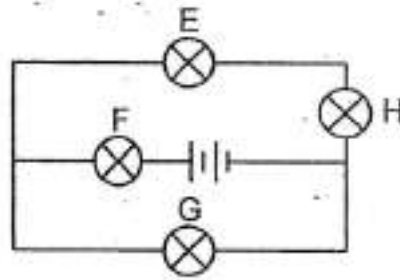


beaker F  
400 ml of water  
at 50°C

Which of the following statement is true about the water in the beakers?.....

- A) Water in beaker F has more heat than E.
- B) Water in beakers E and F have the same amount of heat.
- C) Water in beaker D will reach room temperature the fastest.
- D) Water in beakers D, E and F will reach room temperature at the same time.

Study the electrical circuit below.



When two of the bulbs fused, the other two bulbs remained lit. Which were the two bulbs that had fused?

- A) E and F
- B) E and H
- C) G and F
- D) G and H

Vimala wanted to find out which material of an object affects the brightness of the bulbs in a circuit. Which of the following variables must be kept the same in order for the experiment to be fair?

- A Type of batteries used
- B Number of batteries used
- C Material of the object being tested
- D Number and arrangement of bulbs

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



The table below shows the melting and boiling points of four substances A, B, C and D.

Substance	Melting Point (°C)	Boiling Point (°C)
A	63	267
B	15	84
C	90	300
D	5	30

Which of the following substances are in solid state at room temperature?

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

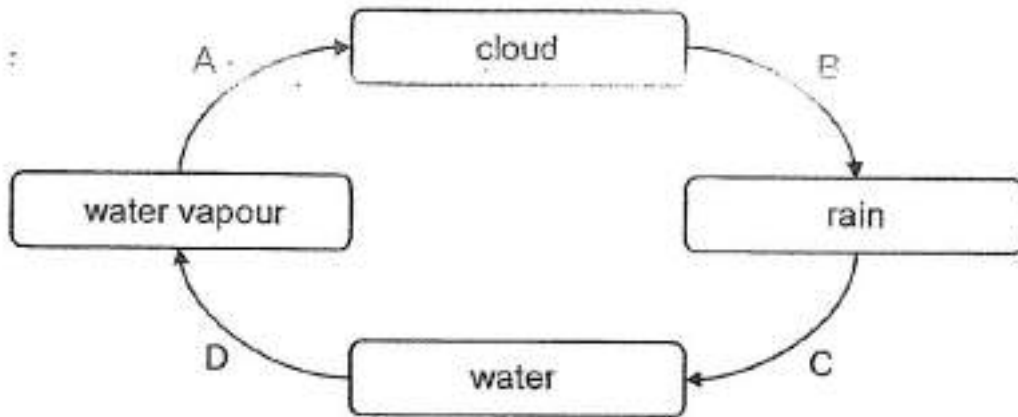
A block of ice was placed in a container and left near the window. After a while, the ice started to melt as shown below.



Which one of the following statements is true?

- A) The ice loses heat to the surrounding air.
- B) The temperature of the block of ice is 0°C.
- C) The temperature of the block of ice increases.
- D) Water in the container gained heat from the ice.

The diagram shows the water cycle.



Which one of the following is correct?

- A)
 

Heat Gain	Heat Loss
A	C
- B)
 

Heat Gain	Heat Loss
A	B
- C)
 

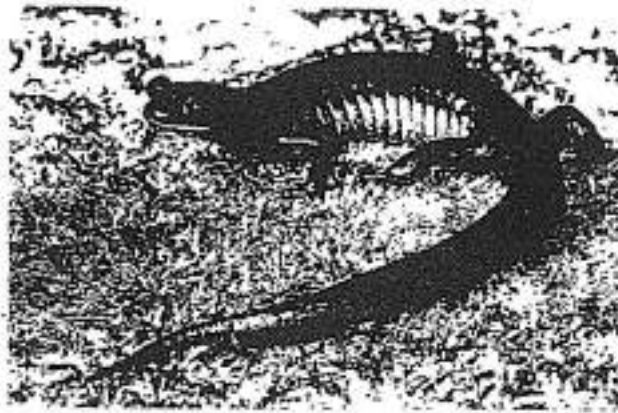
Heat Gain	Heat Loss
D	B
- D)
 

Heat Gain	Heat Loss
D	A

Which one of the following helps to reduce water usage?

- A) Taking a long bath.
- B) Washing dishes under a running tap.
- C) Using water from a hose to wash the car.
- D) Turning off the tap while brushing your teeth.

Organism Z lives both on-land and in water. It needs to live near a water body to keep its skin moist.

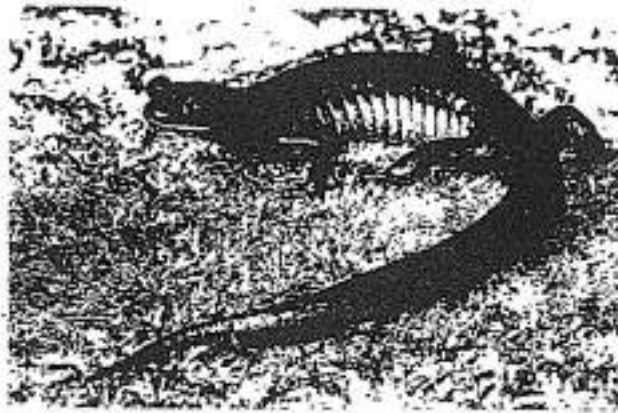


Organism Z

Which group of animal would organism Z be classified as?

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Organism Z lives both on-land and in water. It needs to live near a water body to keep its skin moist.

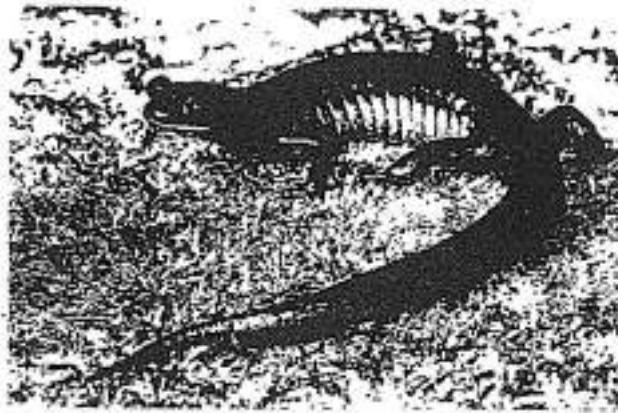


Organism Z

The young of organism Z can only live in water and takes in dissolved oxygen. Which organ allows it to do so?

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Organism Z lives both on-land and in water. It needs to live near a water body to keep its skin moist.



Organism Z

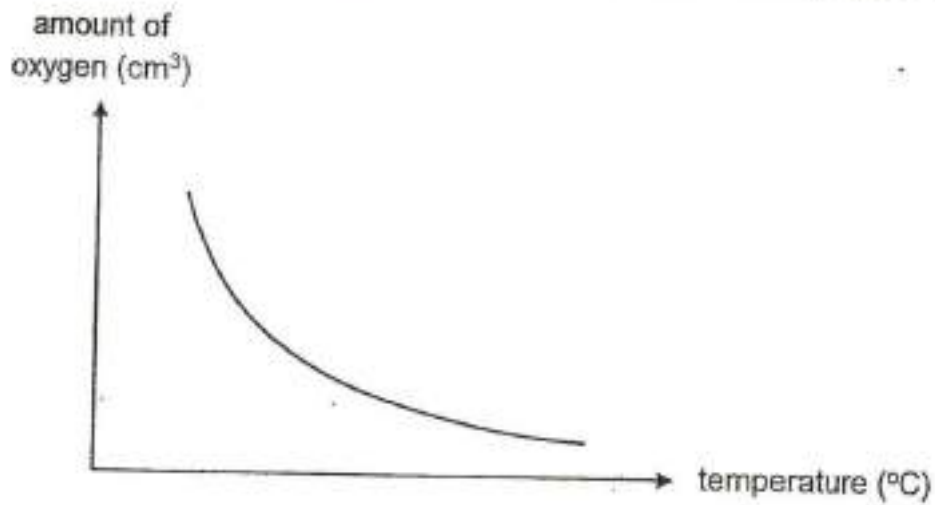
Organism Z can lay up to 400 eggs at one go. What is one advantage of doing so? (1 mark)

*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.*

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Ban Pin conducted an experiment to find out how the amount of oxygen changes in his fish tank at different temperatures. His results are shown in the graph below.



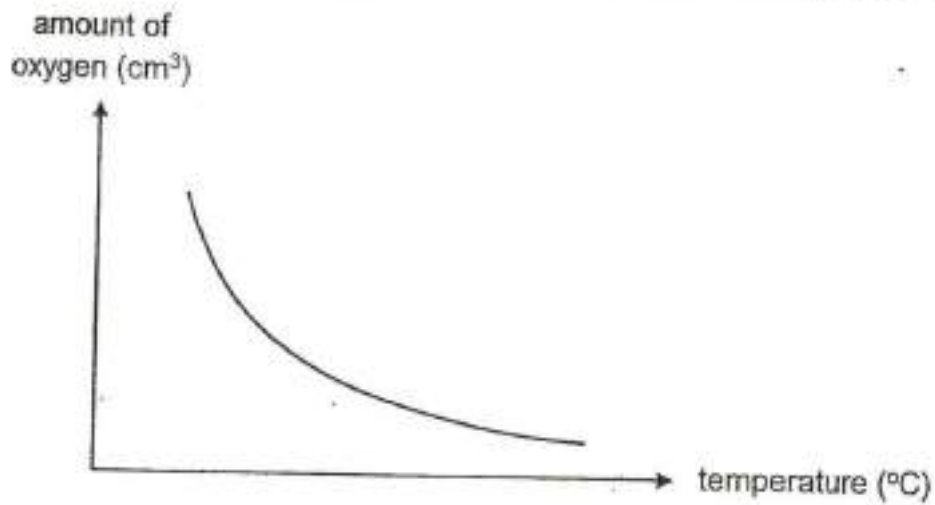
Based on the graph above, state the relationship between temperature and amount of oxygen. (1 mark)

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---

Ban Pin conducted an experiment to find out how the amount of oxygen changes in his fish tank at different temperatures. His results are shown in the graph below.



Ban Pin then observed that the breathing rate of the fish increased when the temperature of the water in the fish tank increased.

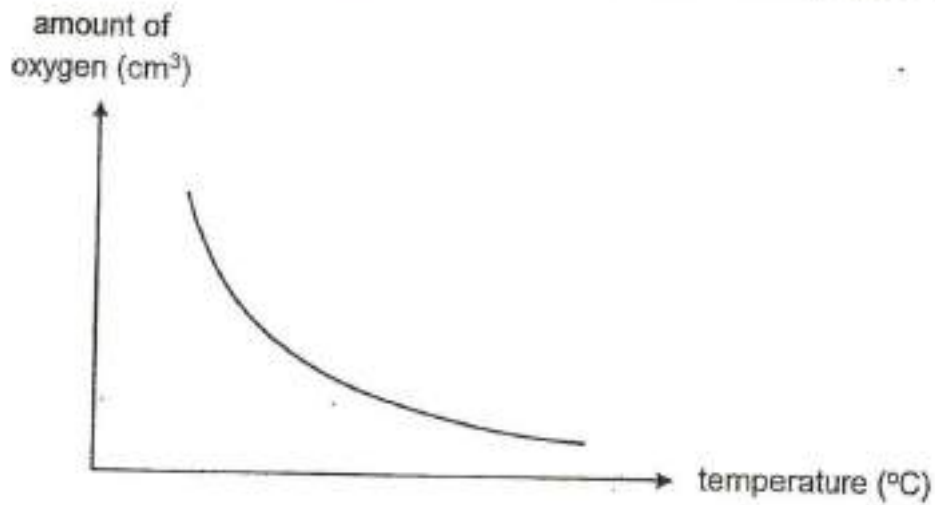
Using the results above, explain this observation. (1 mark)

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---

Ban Pin conducted an experiment to find out how the amount of oxygen changes in his fish tank at different temperatures. His results are shown in the graph below.



His friend suggested that adding some plants into the tank and placing the tank by the window would help the fish survive better.

How does the suggestion affect the amount of oxygen in the tank? Give a reason for your answer. (1 mark)

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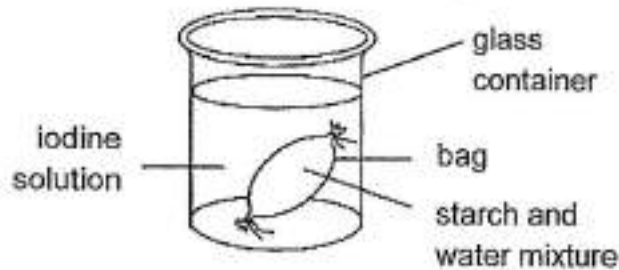
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**Question 35 of 66**

Primary 5 Science (Term 4) 0 pts

A bag filled with starch and water mixture was lowered into a glass container filled with some iodine solution. Iodine solution changes from yellowish brown to dark blue in the presence of starch. Six hours later, the mixture in the bag turned dark blue. However, the iodine solution in the glass container remained unchanged.



What could have caused the mixture in the bag to turn dark 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.*

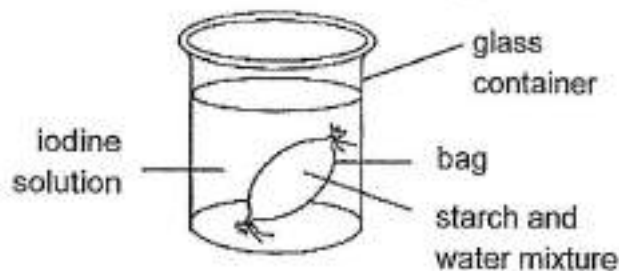
*Grading: This question type is not graded on this system and will not affect the final score as it was designed in such a way that it requires manual assistance.*

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**Question 36 of 66**

Primary 5 Science (Term 4) 0 pts

A bag filled with starch and water mixture was lowered into a glass container filled with some iodine solution. Iodine solution changes from yellowish brown to dark blue in the presence of starch. Six hours later, the mixture in the bag turned dark blue. However, the iodine solution in the glass container remained unchanged.



Why did the colour of iodine solution in the glass container remain unchanged? (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.*

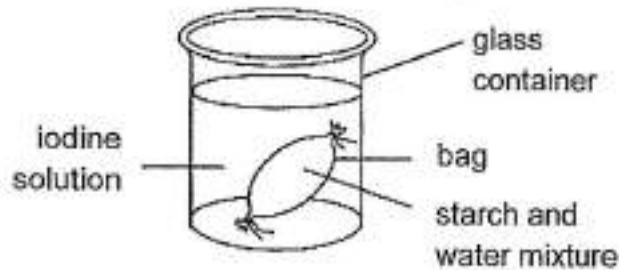
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**Question 37 of 66**

Primary 5 Science (Term 4)

1 pt

A bag filled with starch and water mixture was lowered into a glass container filled with some iodine solution. Iodine solution changes from yellowish brown to dark blue in the presence of starch. Six hours later, the mixture in the bag turned dark blue. However, the iodine solution in the glass container remained unchanged.



Which cell part has the same function as the bag?

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**Question 38 of 66**

Primary 5 Science (Term 4)

0 pts

Ganesh collected three different types of inedible seeds X, Y and Z. He wanted to find out how easily seeds X, Y and Z are dispersed by animals. He placed 20 seeds of each type into an uncovered box and covered this box with a furry towel.

Next, he shook the covered box for 30 seconds. He then removed the towel and recorded the number of each type of seed stuck onto the towel. The table below shows the results of this experiment.

Type of seed	Number of seeds	
	Remained in the box	Stuck onto the towel
X	20	0
Y	3	17
Z	15	5

Based on the results shown, what is the relationship between the number of seeds stuck on the towel and how easily the seeds are dispersed by animals?  
(1 mark)

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**Question 39 of 66**

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Type of seed	Number of seeds	
	Remained in the box	Stuck onto the towel
X	20	0
Y	3	17
Z	15	5

What conclusion can you draw from the experiment? (1 mark)

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**Question 40 of 66**

Primary 5 Science (Term 4) 0.5 pts

Ganesh collected three different types of inedible seeds X, Y and Z. He wanted to find out how easily seeds X, Y and Z are dispersed by animals. He placed 20 seeds of each type into an uncovered box and covered this box with a furry towel.

Next, he shook the covered box for 30 seconds. He then removed the towel and recorded the number of each type of seed stuck onto the towel. The table below shows the results of this experiment.

Type of seed	Number of seeds	
	Remained in the box	Stuck onto the towel
X	20	0
Y	3	17
Z	15	5

State one characteristic or structure that can be found on seed X.

---

Ganesh collected three different types of inedible seeds X, Y and Z. He wanted to find out how easily seeds X, Y and Z are dispersed by animals. He placed 20 seeds of each type into an uncovered box and covered this box with a furry towel.

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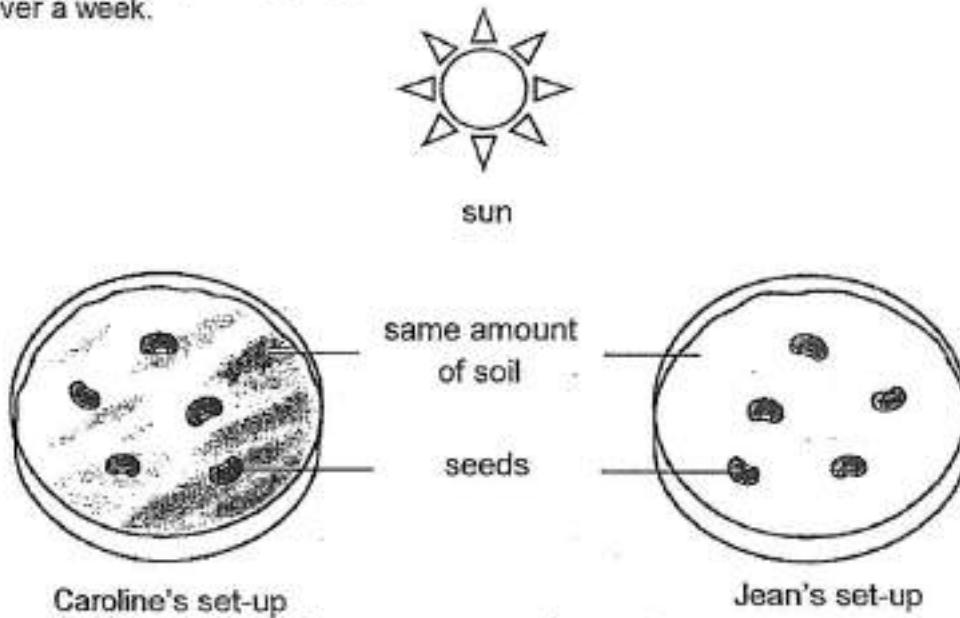
Type of seed	Number of seeds	
	Remained in the box	Stuck onto the towel
X	20	0
Y	3	17
Z	15	5

State one characteristic or structure that can be found on seed Y.

---

Caroline and Jean wanted to investigate the conditions necessary for seeds to germinate. They carried out the experiment with the set-ups shown.

Both the set-ups were placed near a window. Caroline added a little amount of water to her set-up every day. Both Caroline and Jean then observed their seeds for over a week.



What is a likely aim for the experiment? (1 mark)

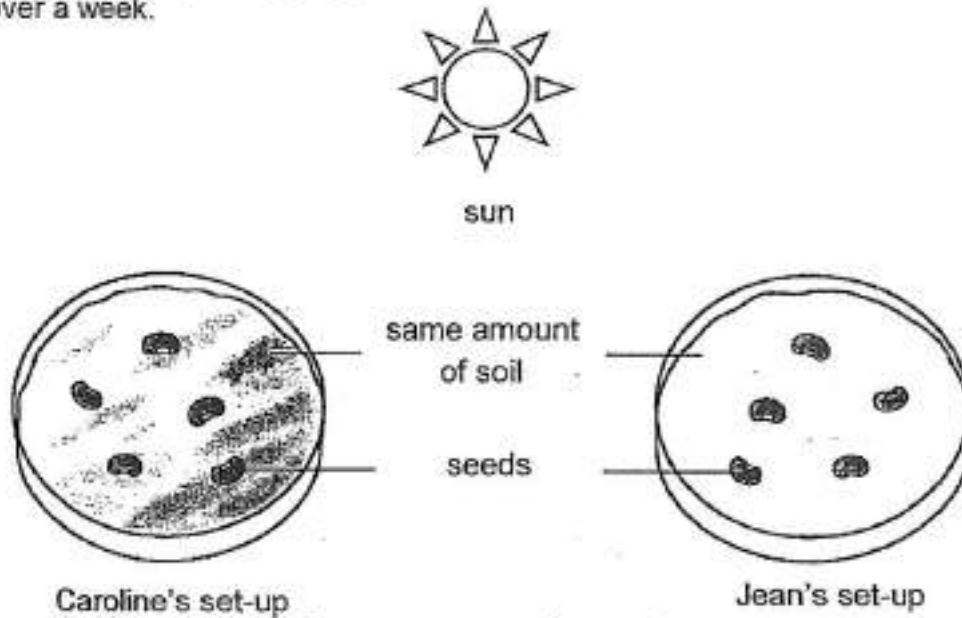
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Caroline and Jean wanted to investigate the conditions necessary for seeds to germinate. They carried out the experiment with the set-ups shown.

Both the set-ups were placed near a window. Caroline added a little amount of water to her set-up every day. Both Caroline and Jean then observed their seeds for over a week.



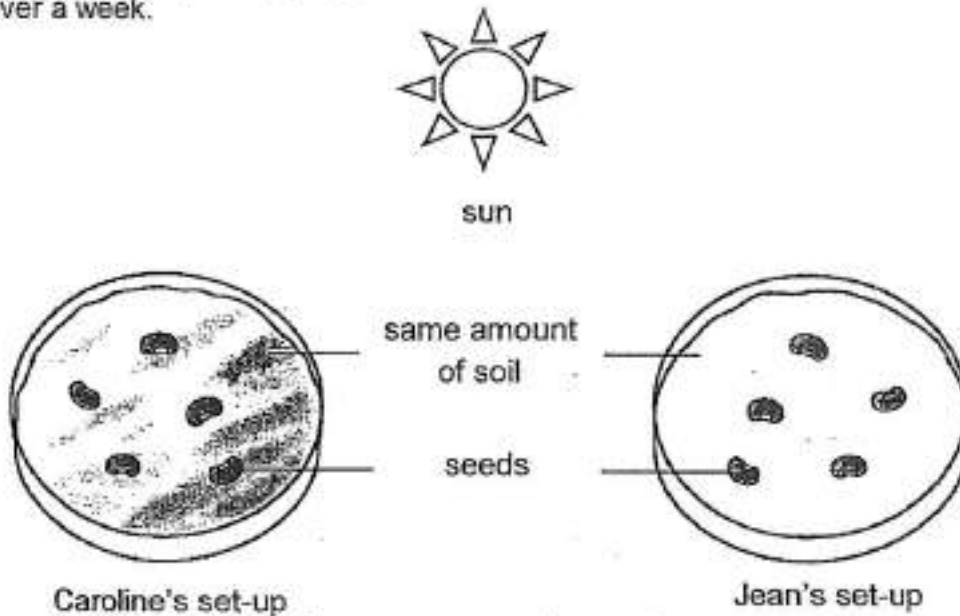
In whose set-up would the seeds be more likely to germinate? Explain your answer. (1 mark)

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Both the set-ups were placed near a window. Caroline added a little amount of water to her set-up every day. Both Caroline and Jean then observed their seeds for over a week.



Caroline and Jean wanted to modify their experiment to find out whether light is needed for seeds to germinate. State one change that they each [2] have to make in the experiment to achieve their aim.

Caroline's set-up:

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Jean's set-up:

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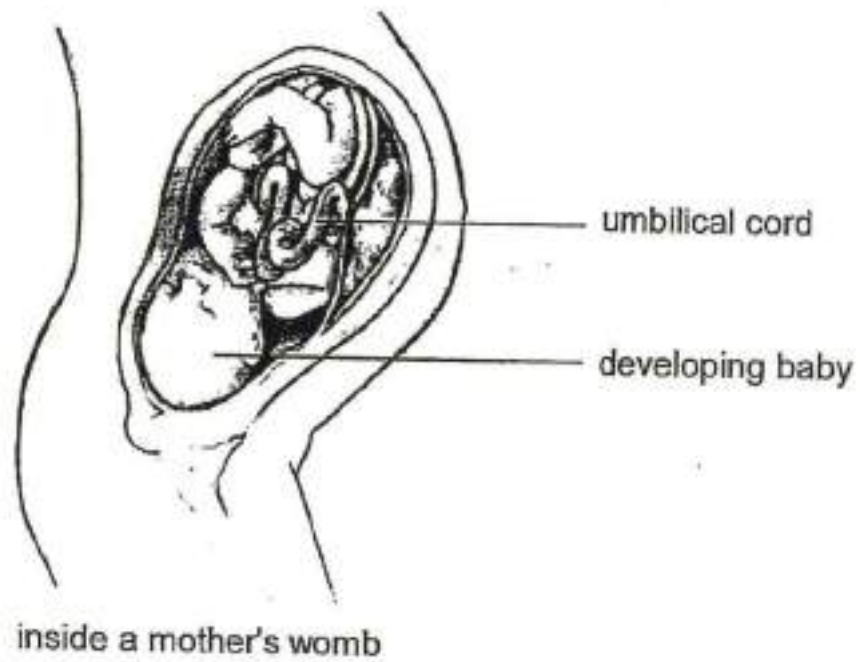


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The diagram below shows a developing baby inside a mother's womb.



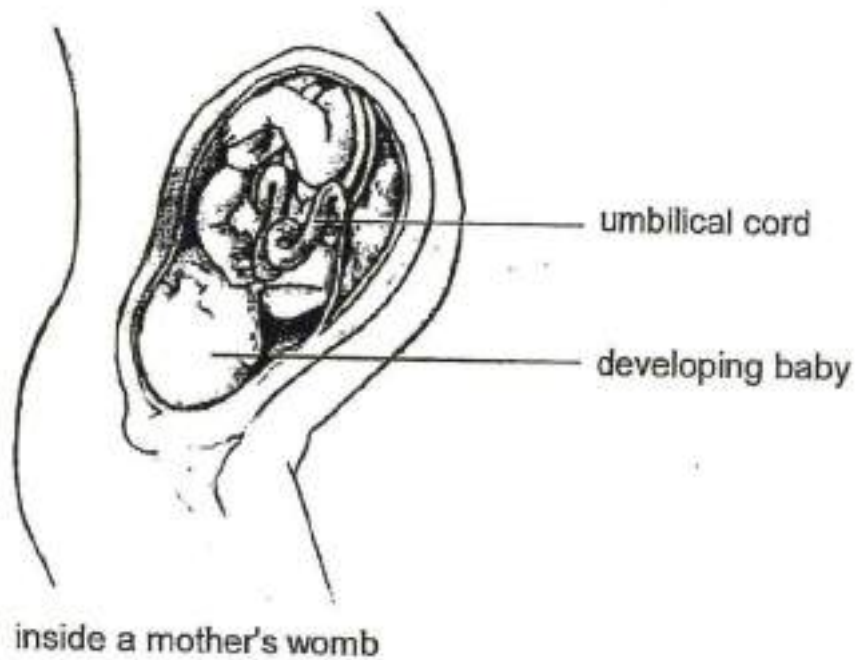
State whether the following statement is 'True' or 'False'.

Millions of sperms are needed to fertilise one egg cell.

- 
- A) True
- B) False



The diagram below shows a developing baby inside a mother's womb.

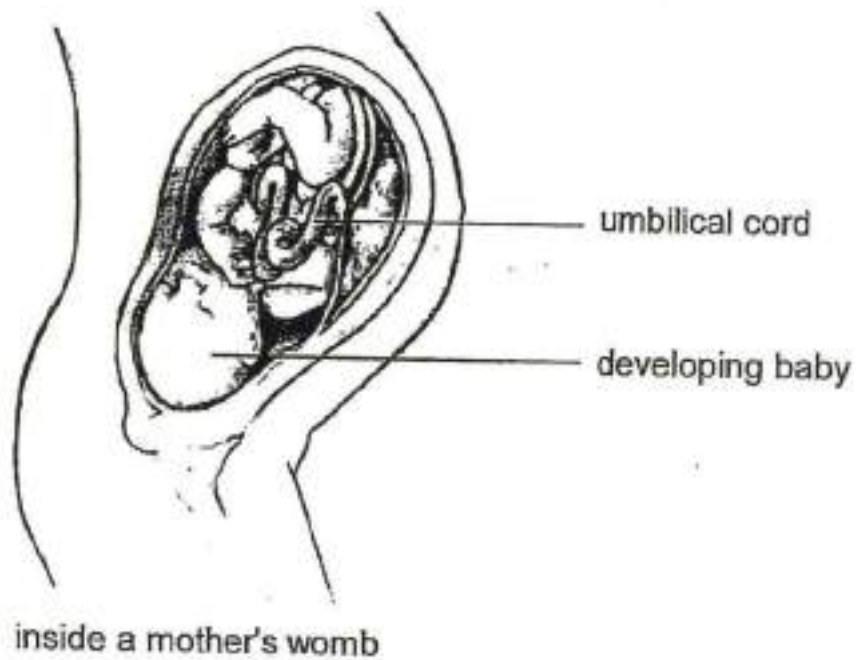


State whether the following statement is 'True' or 'False'.

As the baby develops inside the mother's womb, it does not require air or water.

- 
- A) True
- B) False

The diagram below shows a developing baby inside a mother's womb.

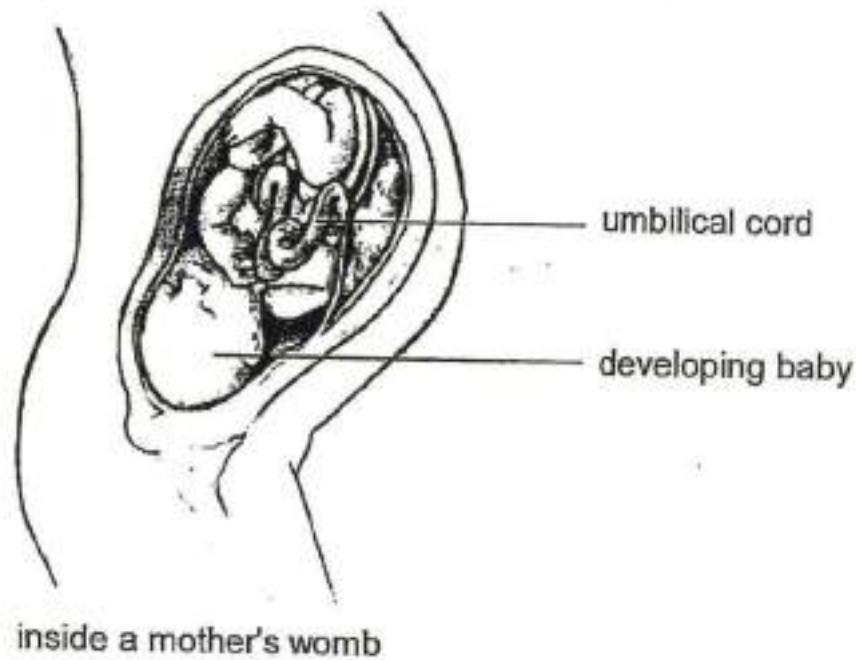


State whether the following statement is 'True' or 'False'.

The developing baby obtains its nutrients from the mother's blood which flows through the umbilical cord.

- 
- A) True
- B) False

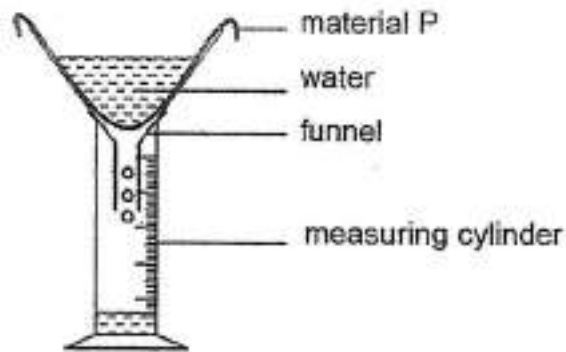
The diagram below shows a developing baby inside a mother's womb.



After fertilisation, the fertilised egg will attached itself to the wall of the womb and then divides to form more cells.

- 
- A) True
- B) False

A thin layer of material P was lined on a funnel. Water was poured into the funnel and left to stand for 2 minutes. The volume of water collected in the measuring cylinder was recorded. The experiment was repeated with materials Q and R.



The table below shows the results recorded.

Material	Volume of water collected (ml)
P	50
Q	0
R	80

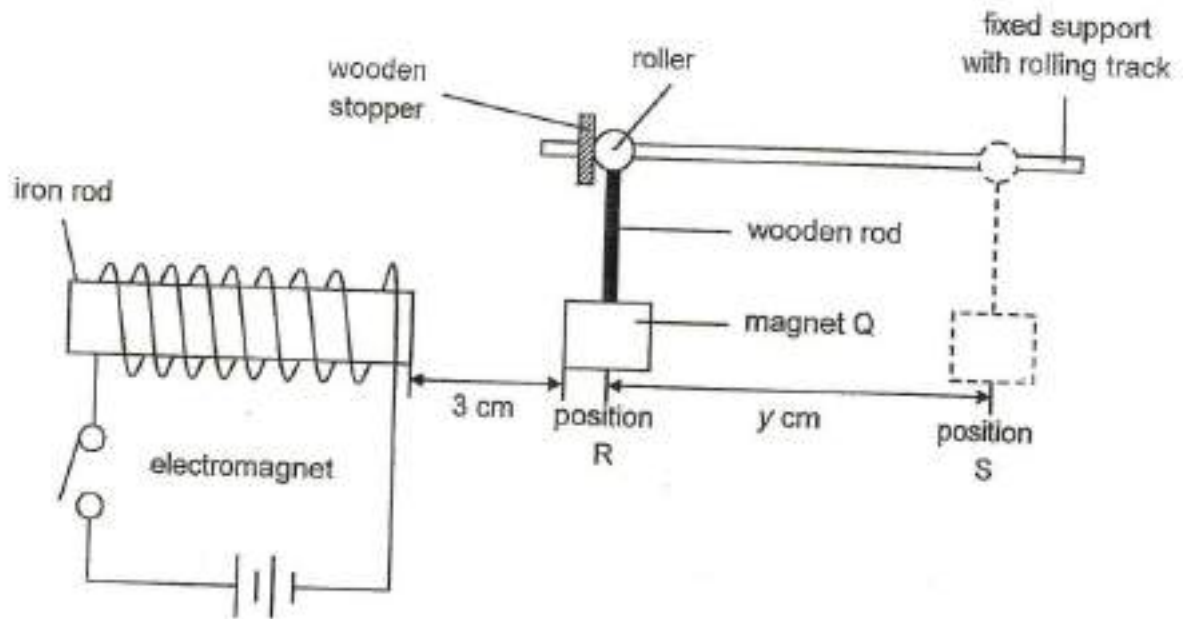


Based on the results, which material should be chosen to make part X of an umbrella? Explain your answer. [2]

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Study the diagram below. When the switch in the circuit was closed, magnet Q was observed to have moved a distance of  $y$  cm from position R to position S.

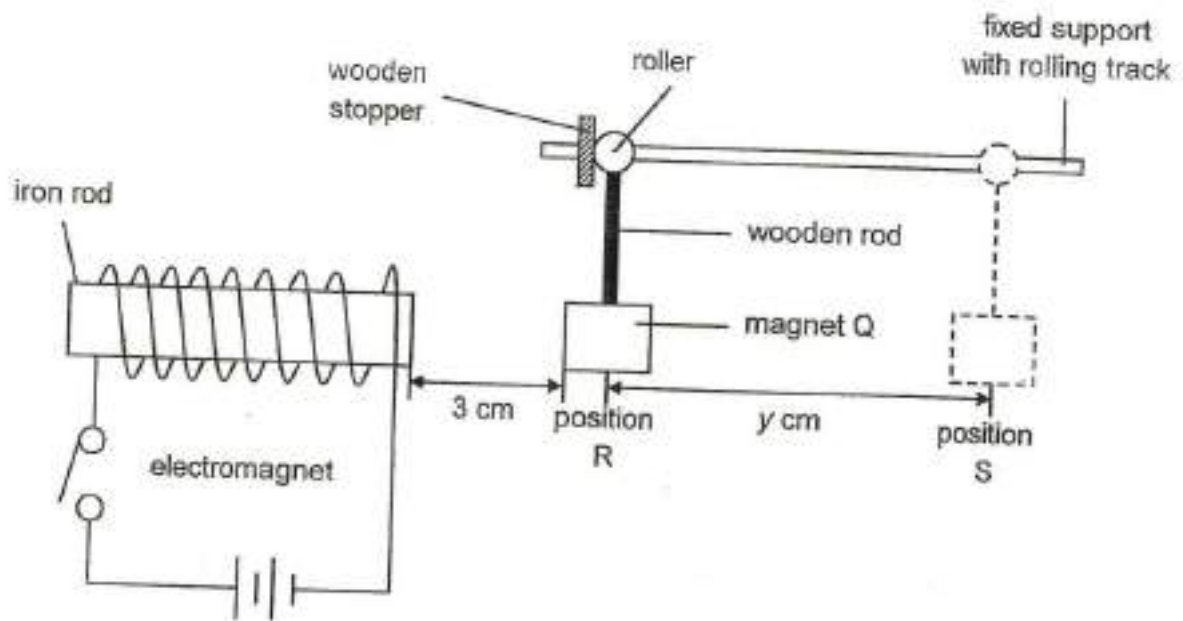


Explain the above observation. (2 marks)

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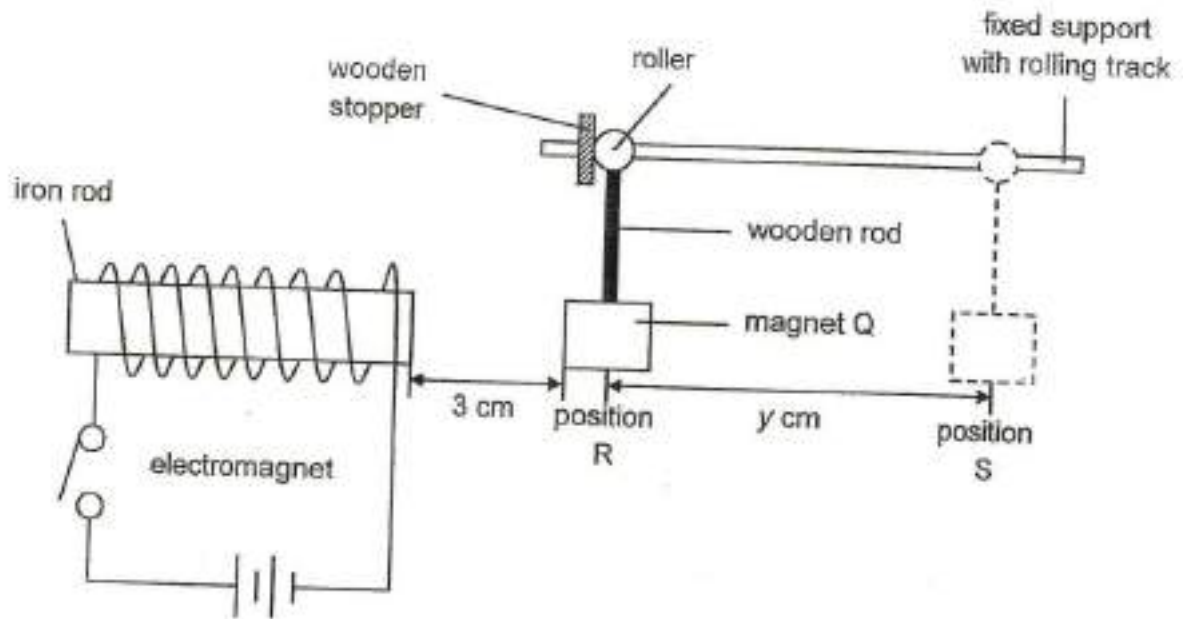


Suggest one change to be made to the circuit above such that distance  $y$  can be increased. (1 mark)

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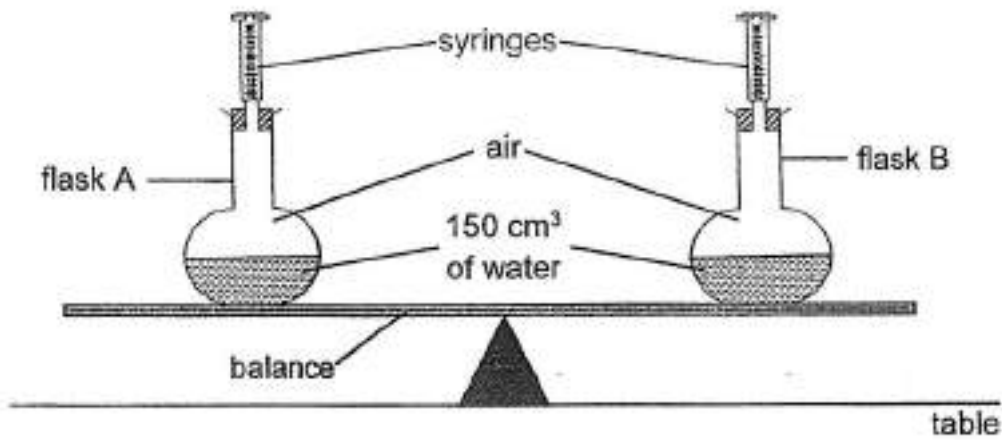
The experiment was repeated three times before the average distance moved by magnet Q was calculated and recorded. Give a reason for this. (1 mark)

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Two similar flasks A and B were placed on a balance as shown below. Each flask has a capacity of  $300\text{ cm}^3$  and was filled with  $150\text{ cm}^3$  of water. The syringe attached to each flask allows air to be pumped in and removed.



$50\text{ cm}^3$  of air was then removed from flask A only.

What will be observed about the balance? Explain your answer. (2 marks)

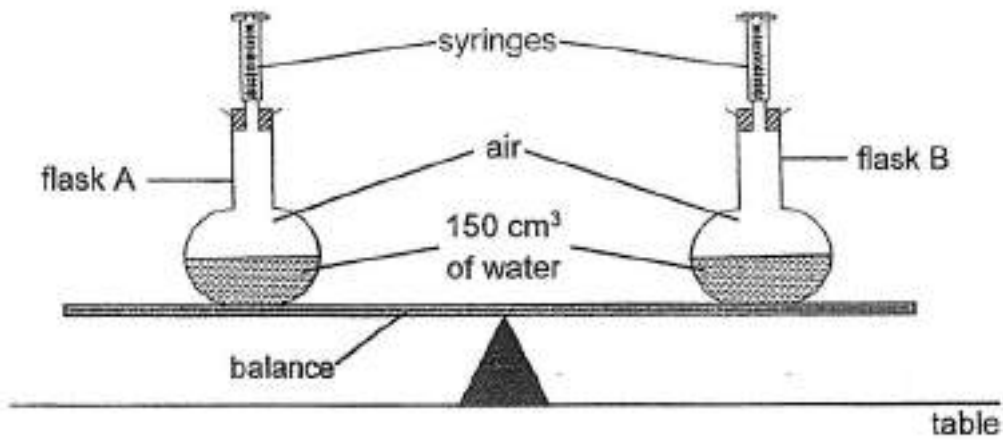
*This question is designed for extended answers that parent/ teacher will have to assign and guide child to attempt after the test has been completed.*

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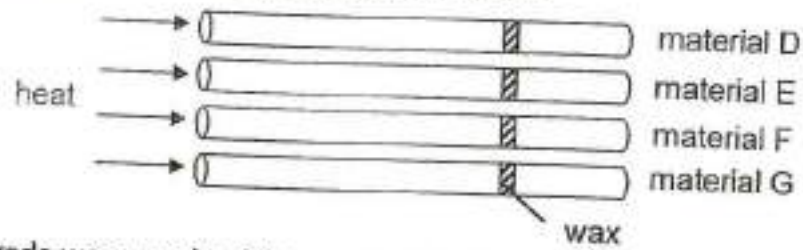


$50\text{ cm}^3$  of air was then removed from flask A only.

What is the volume of air in flask A?

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Four rods of similar size D, E, F and G were marked with the same amount of wax at the same position and heated as shown below.



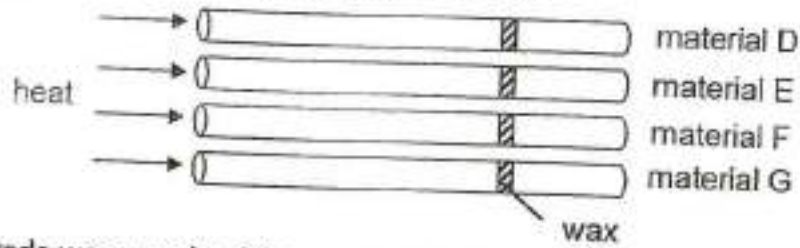
Only two rods were made of the same material. The table below shows the results of the experiment.

Material	Time taken for wax to melt completely (min)
D	5
E	10
F	10
G	38

Based on the above results, which two rods were made of the same material? Explain your answer.

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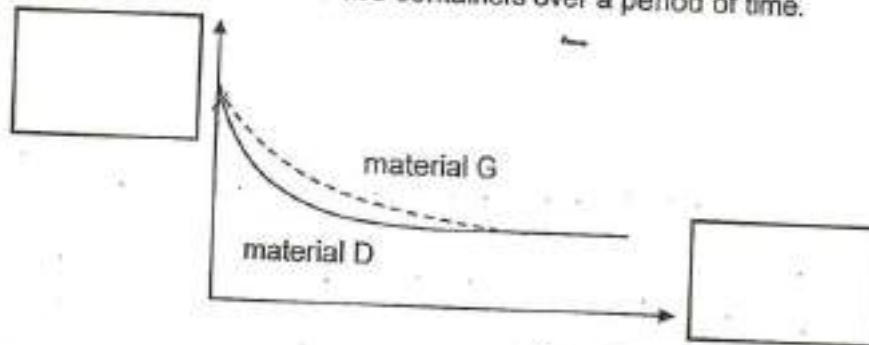
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Material	Time taken for wax to melt completely (min)
D	5
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F	10
G	38

Equal volume of boiling water was poured into two containers made from materials D and G. The water was allowed to cool. The graph below shows the changes in the temperature of water in the two containers over a period of time.

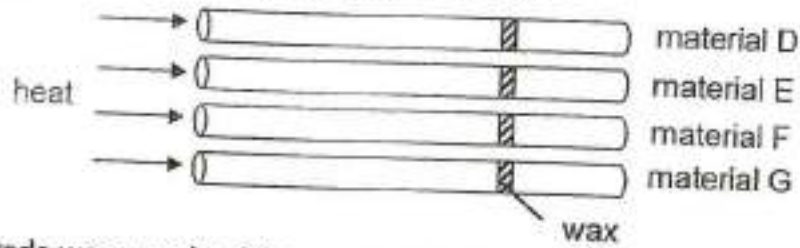


Label axes in the graph with 'Time (min)' or 'Temperature of Water (°C)'. (1 mark)

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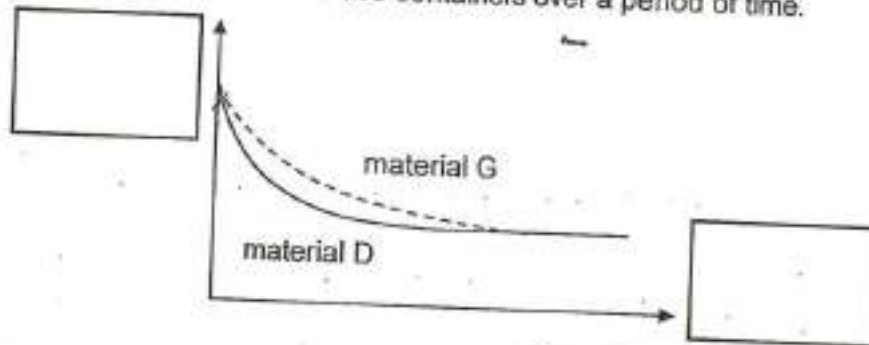
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D	5
E	10
F	10
G	38

Equal volume of boiling water was poured into two containers made from materials D and G. The water was allowed to cool. The graph below shows the changes in the temperature of water in the two containers over a period of time.



Which material D or G is more suitable to be made into a container for keeping food warm? Explain your answer. (1 mark)

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An experiment was conducted in a dark room using the set-up below. Steven wanted to find out if the type of material affects the amount of light reflected as shown below.



He conducted the same experiment using other materials B, C and D and recorded the average amount of light detected in the table below.

Material	Average amount of light detected (units)
A	33
B	100
C	64
D	85

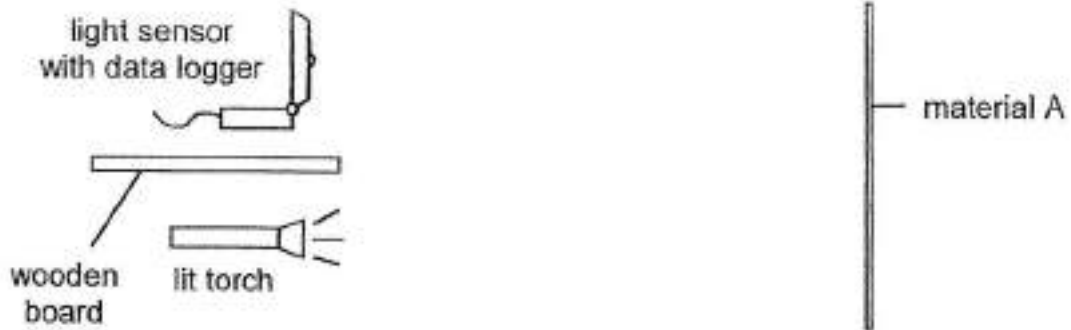
Explain why it was necessary for the experiment to be conducted in a dark room. (1 mark)

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Material	Average amount of light detected (units)
A	33
B	100
C	64
D	85

State two **other** changes to be made to the experiment such that the light sensor can detect more light reflected by the materials. [2]

Change 1:

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Change 2:

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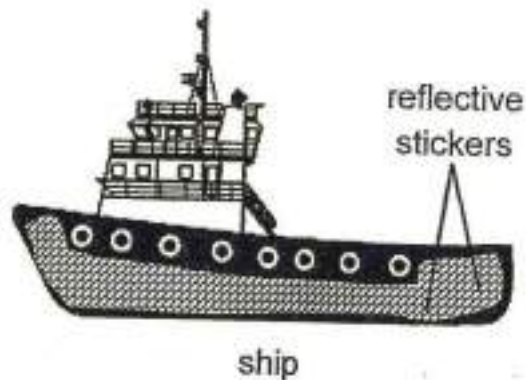
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He conducted the same experiment using other materials B, C and D and recorded the average amount of light detected in the table below.

Material	Average amount of light detected (units)
A	33
B	100
C	64
D	85

The diagram below shows the side of a ship.



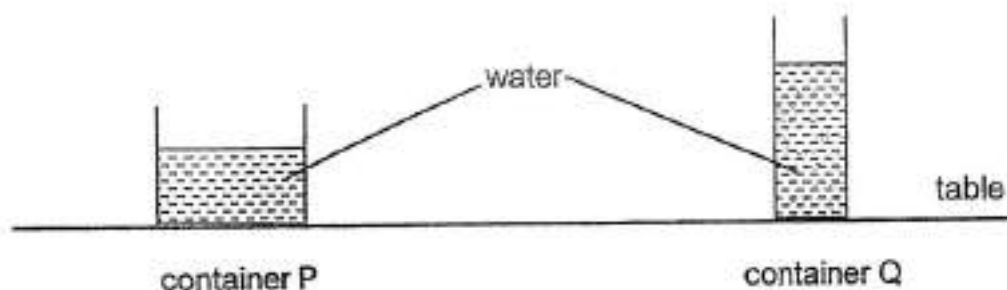
Based only on the results in the table, which material is suitable for making the reflective stickers for ships travelling at night? Explain your answer. [2]

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Faizal wanted to find out if the exposed surface area of water affects the rate of evaporation. He placed two containers P and Q, each filled with 200 ml of water in his room for 6 hours.



The results of his experiment were recorded in the table below.

Container	Volume of water left in the container (ml)
P	100
Q	150

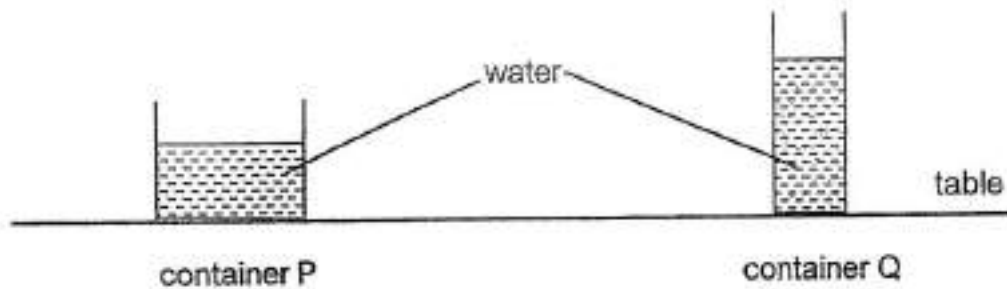
Based on the above experiment, explain why the volume of water left in container P was less than that in container Q. (1 mark)

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Faizal wanted to find out if the exposed surface area of water affects the rate of evaporation. He placed two containers P and Q, each filled with 200-ml of water in his room for 6 hours.



The results of his experiment were recorded in the table below.

Container	Volume of water left in the container (ml)
P	100
Q	150

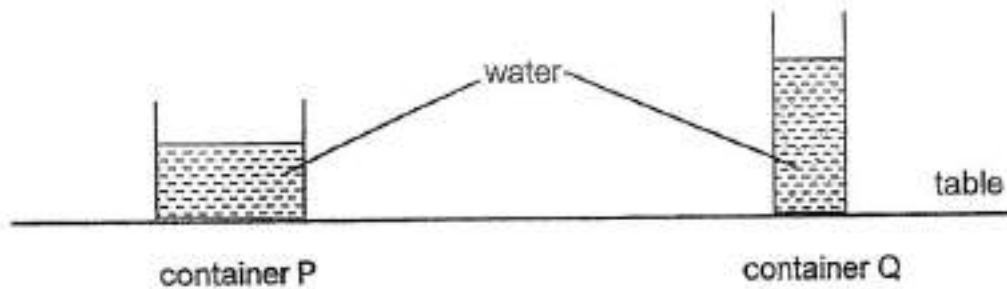
Give a reason why placing both containers in the same room help to make the experiment a fair one. (1 mark)

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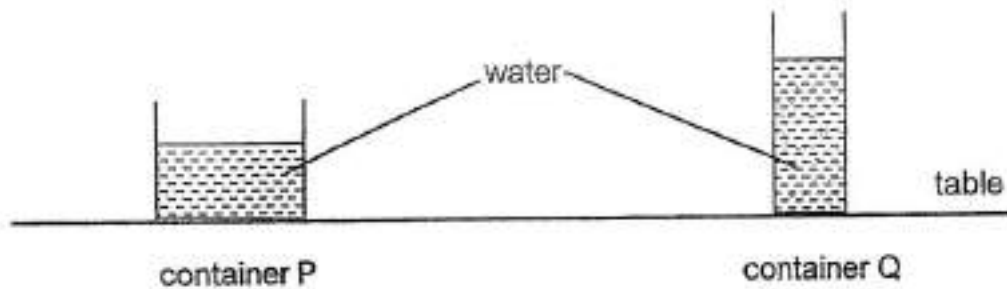
Faizal then repeated the experiment with the two containers placed under a fan. Will the amount of water left in the containers be less than, equal to or more than the results in the table above? (1 mark)

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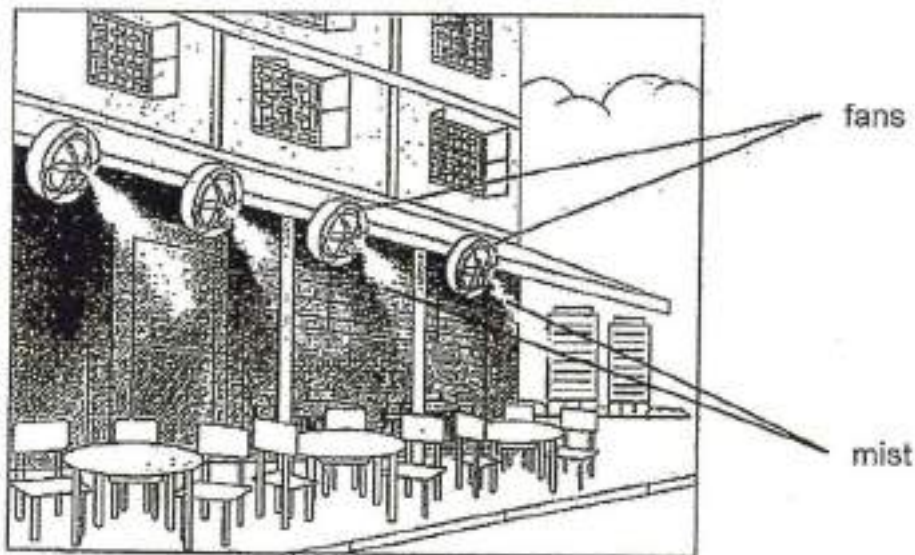
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The results of his experiment were recorded in the table below.

Container	Volume of water left in the container (ml)
P	100
Q	150

At some hawker centres, water mist systems are used to cool the surrounding air on a hot day. Tiny water droplets are produced in the form of mist. Fans are added to the water mist systems as shown below.



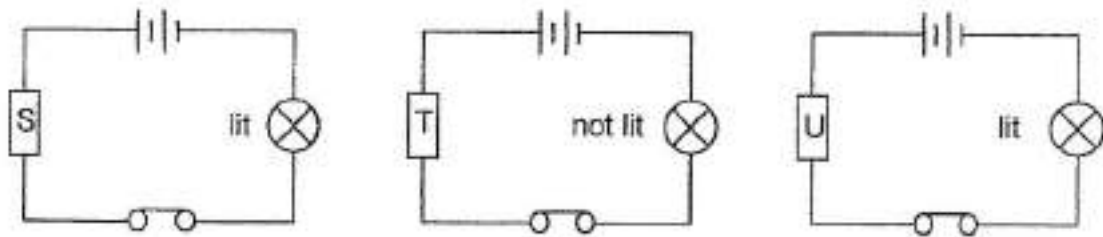
Explain how adding the fans would help the water mist systems to cool the surrounding air more effectively.

[2]

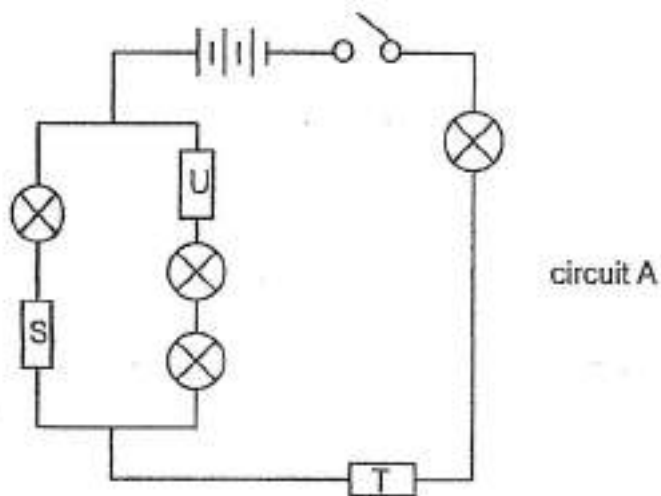
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The diagram below shows what happens when different materials S, T and U are each connected in a separate circuit.



The three materials are then connected in circuit A as shown below.

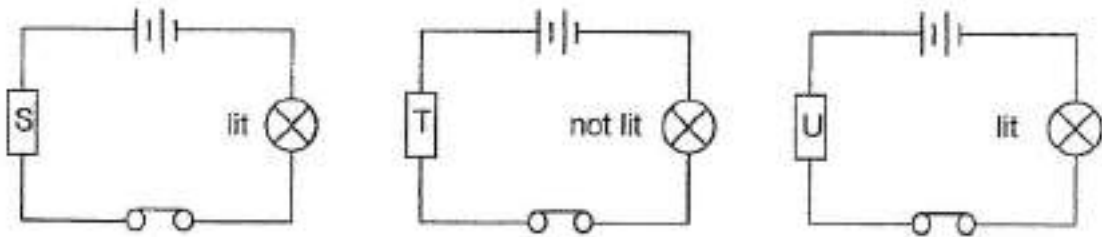


How many bulbs will light up when the switch is closed? Give a reason for your answer. (1 mark)

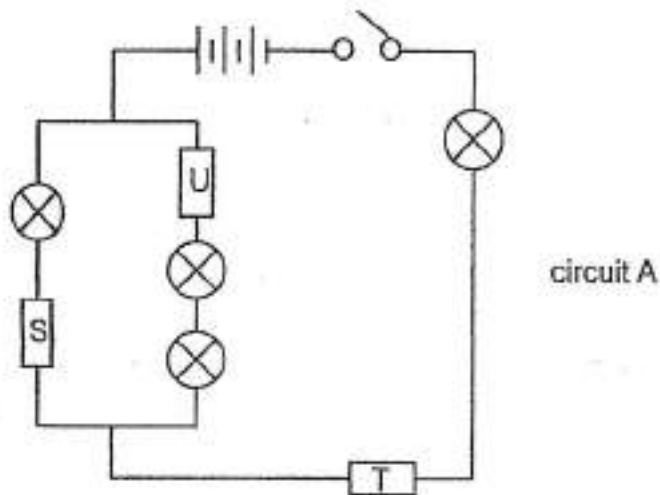
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The diagram below shows what happens when different materials S, T and U are each connected in a separate circuit.



The three materials are then connected in circuit A as shown below.



Replacement items, each made of a different material were brought in to replace S, T and U in circuit A as shown in the box below.

Replacement items: iron nail, plastic cup, bar magnet

In the table below, match each replacement item to S, T and U so that the **greatest** number of bulbs will light up in circuit A. [2]

Material	S	T	U
Replacement item			

Match the options below:

- |                   |                |
|-------------------|----------------|
| 1. [ ] Material S | A. Iron Nail   |
| 2. [ ] Material T | B. Bar Magnet  |
| 3. [ ] Material U | C. Plastic Cup |