

**Test:** Primary 4 - Term 2 (SA1) Science (St Hilda)

**Points:** 68 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 60**

Primary 4 Science (Term 2) 2 pts

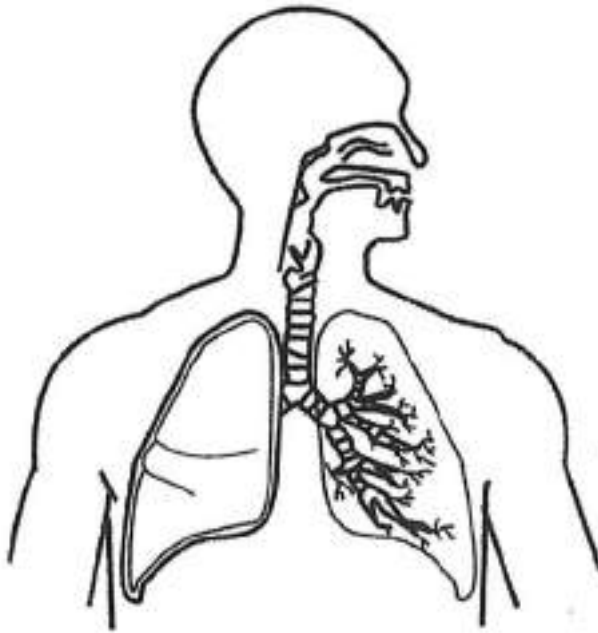
**Booklet A (28 x 2 marks)**

**For each question from 1 to 28, four options are given. One of them is the correct answer.**

Which one of the following is true about the human circulatory system?

- 
- A)** It helps different parts of the body to move
  - B)** It breaks down food into simpler substances
  - C)** It supports the body and gives the body its shape
  - D)** It carries digested food, water and oxygen in the blood to all parts of the body

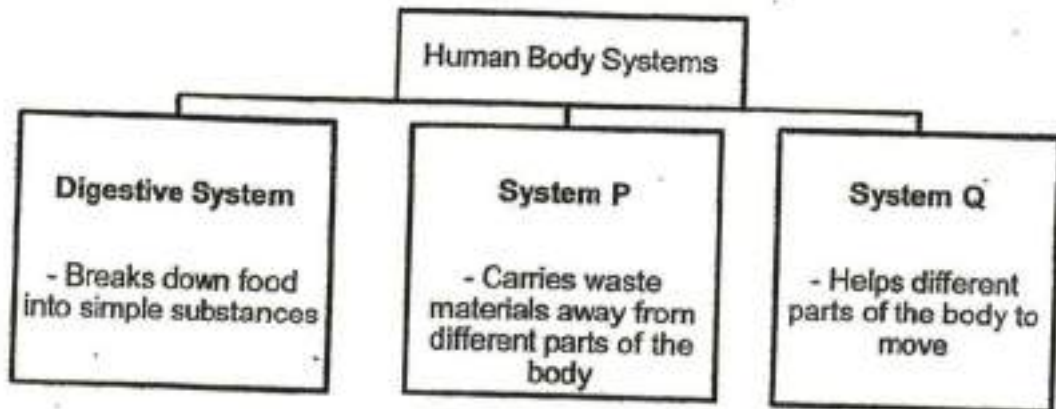
Study the diagram of the human body system below.



Which one of the following statements is **not** correct about the above human body system?

- 
- A) It takes in air into the body
  - B) It removes air from the body
  - C) It protects the heart and the lungs
  - D) It is made up of the nose, windpipe and lungs

Study the concept map below carefully.

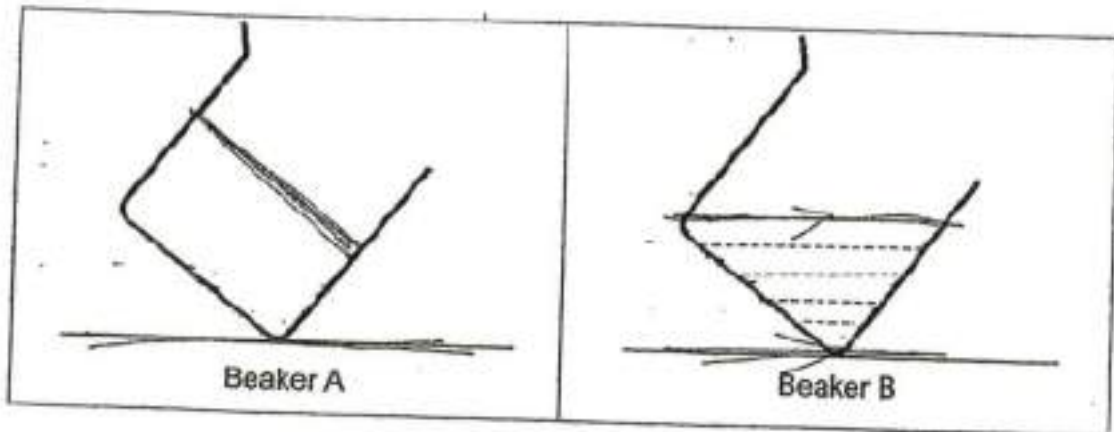


What could Systems P and Q be?

	System P	System Q
(1)	Circulatory	Muscular
(2)	Circulatory	Respiratory
(3)	Muscular	Skeletal
(4)	Digestive	Skeletal

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

• Beaker A and Beaker B contain water.

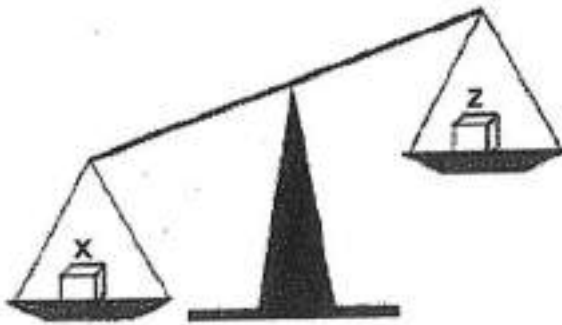
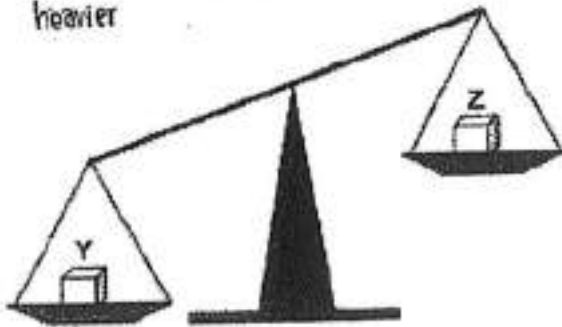
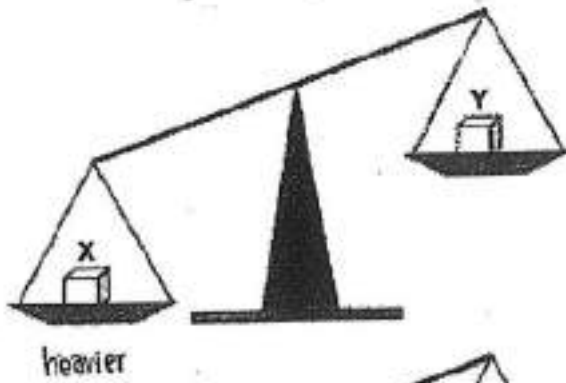


Name the state of water in Beaker A and Beaker B.

	Beaker A	Beaker B
(1)	Solid	Solid
(2)	Solid	Liquid
(3)	Liquid	Solid
(4)	Liquid	Liquid

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

5 The diagrams below show objects X, Y and Z on a balancing scale.

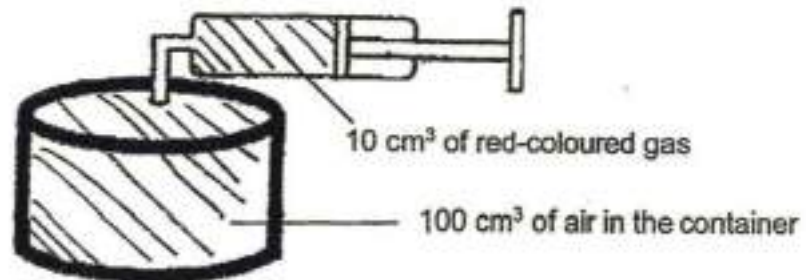


Which one of the following shows objects X, Y and Z arranged in an increasing order of mass?

	Least amount of mass → Most amount of mass		
(1)	X	Y	Z
(2)	Y	X	Z
(3)	Y	Z	X
(4)	Z	Y	X

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

Daniel conducted an experiment with a container that has a volume of  $100\text{ cm}^3$ . He filled up the container with  $100\text{ cm}^3$  of air. Then, he pumped another  $10\text{ cm}^3$  of red-coloured gas into the container.



This led him to conclude that a gas \_\_\_\_\_.

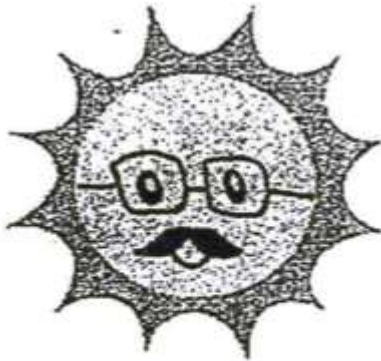
- (A) can be compressed
- (B) does not have a definite shape
- (C) does not have a definite volume

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

Which of the following is not a source of heat?

---

A)



The Sun

B)



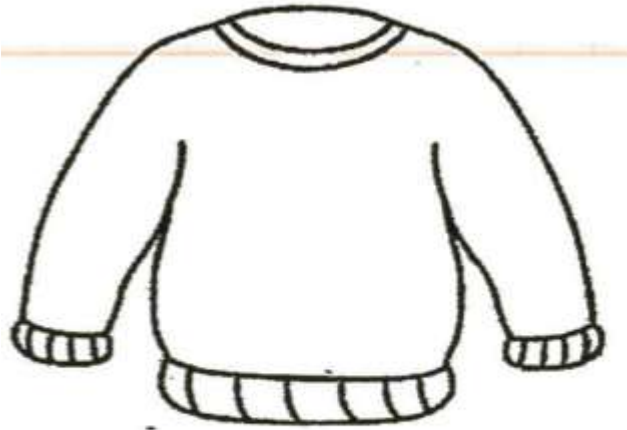
A lit candle

C)



An electric stove

D)



A woollen sweater

Question 8 of 60

Primary 4 Science (Term 2) 2 pts

Samuel made a cup of hot tea. He left it on the table at room temperature of 25 °C for 30 minutes until it cooled down.



The temperature of the tea was measured and is shown in the table below.

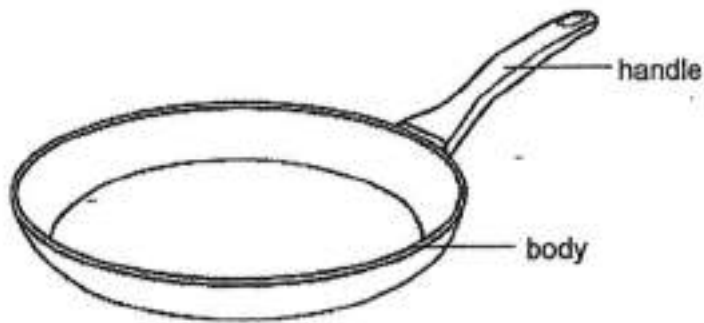
	Temperature of tea (°C )
At first	80
After 30 min	25

Which of the following statements best explains the change in temperature after 30 minutes?

- A) The cup loses heat to the hot tea
- B) The cup gains heat from the surroundings
- C) The hot tea loses heat to the surroundings
- D) The hot tea gains heat from the surroundings



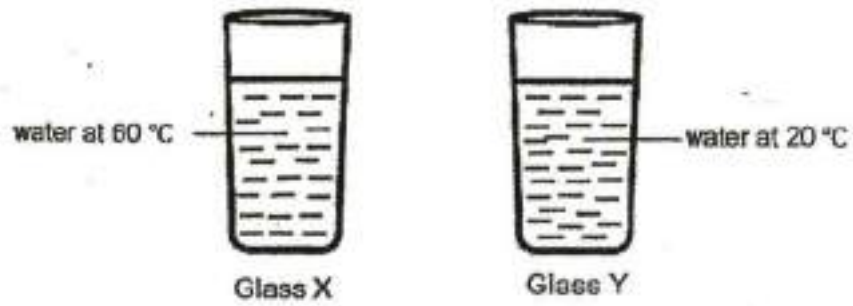
The diagram below shows a frying pan.



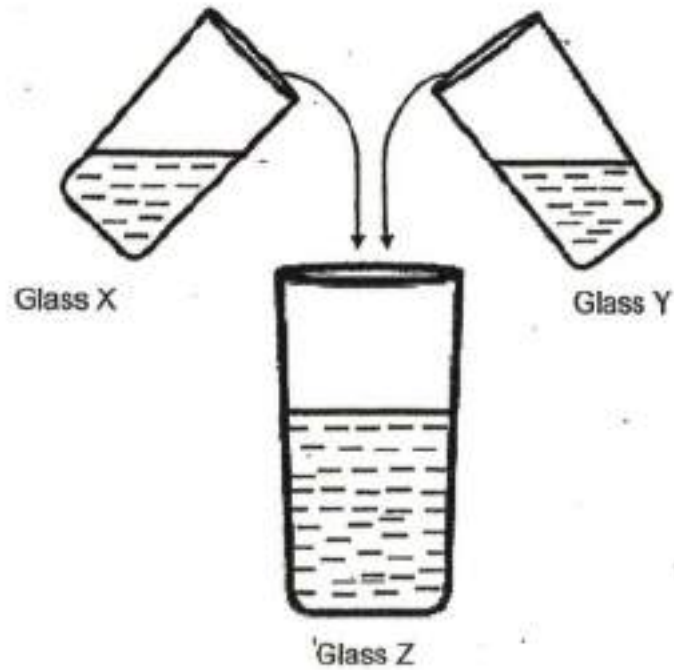
Which is a suitable material to make the body and the handle of the frying pan?

	Material for Body	Material for Handle
(1)	Metal	Plastic
(2)	Metal	Fabric
(3)	Plastic	Plastic
(4)	Plastic	Wood

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



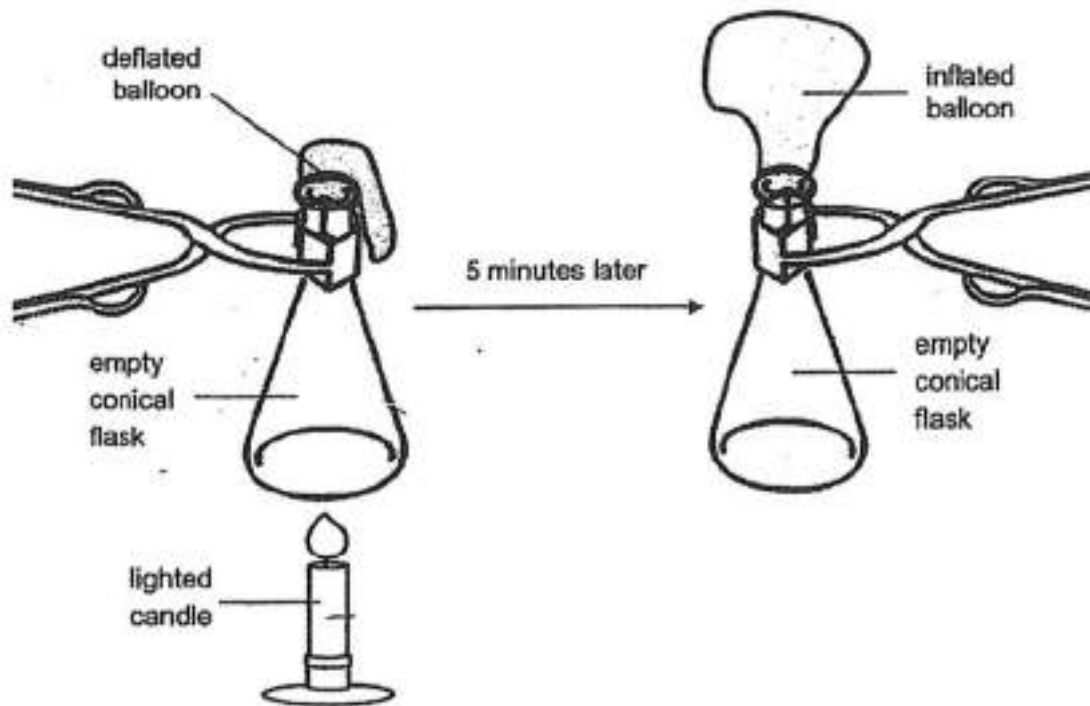
Next, he poured all the water from both glasses, X and Y, into an empty Glass Z.



What would be the most likely temperature of water in Glass Z?

- A) 20 °C
- B) 40 °C
- C) 60 °C
- D) 80 °C

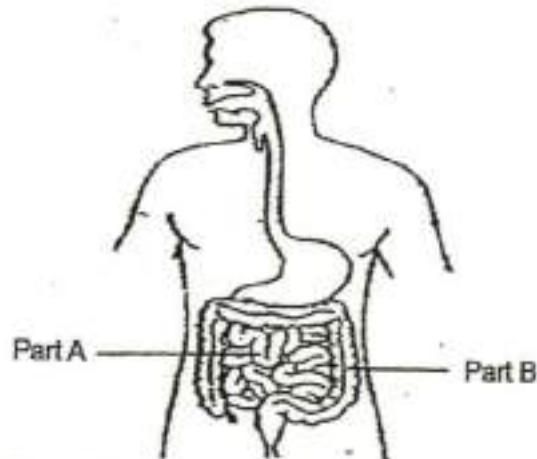
Peter heated an empty conical flask with a deflated balloon tightly placed over its mouth. 5 minutes later, the balloon became inflated.



Which of the following best explains why the deflated balloon became inflated after 5 minutes?

- A) The bottle lost heat and contracted
- B) The air inside the bottle lost heat and contracted
- C) The air inside the bottle gained heat and expanded
- D) The air outside the bottle gained heat and expanded

Study the diagram below.



Which of the following statements are correct about the labelled parts, A and B, in the diagram above?

	Part A	Part B
(1)	Digested food is absorbed into the blood vessels.	Undigested food is absorbed into the blood vessels.
(2)	Digested food is absorbed into the blood vessels.	Water from undigested food is absorbed into the blood vessels.
(3)	Water from undigested food is absorbed into the blood vessels.	Digested food is absorbed into the blood vessels.
(4)	Digestion starts here.	Digestion ends here.

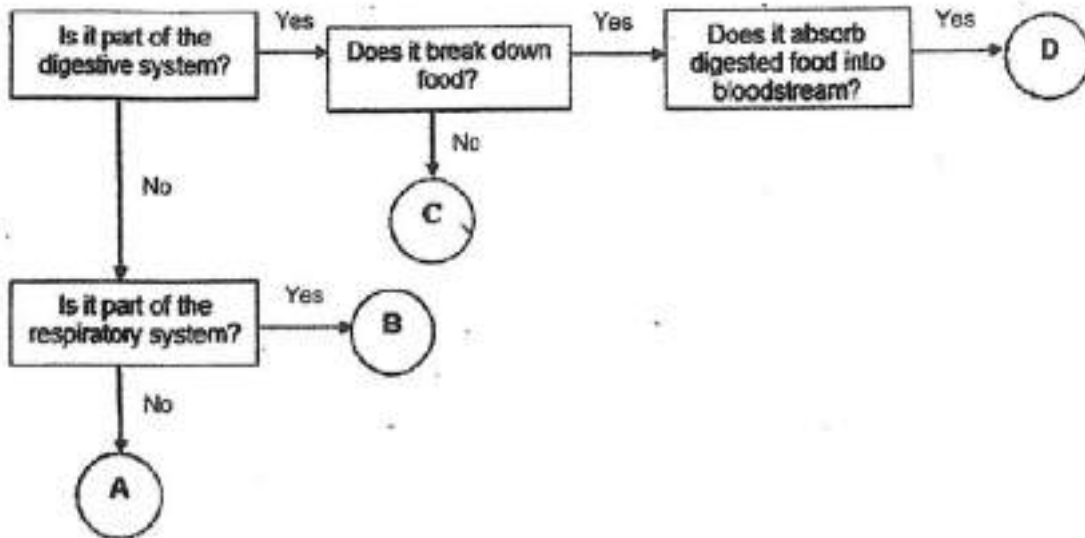
- A) 1  
 B) 2  
 C) 3  
 D) 4

Which of the following is/are true about the human organs systems?

- A) The digestive system absorbs digested food into the body  
 B) The skeletal system protects the heart  
 C) The circulatory system carries useful substances in the blood to all parts of the body  
 D) The respiratory system allows air to be taken in and removed from our body

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

Study the flow chart below.

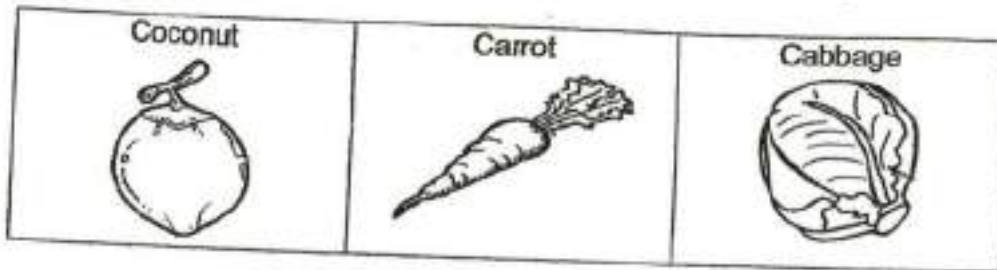


Which one of the following mostly likely represent A, B, C and D?

	A	B	C	D
(1)	Heart	Lung	Large intestine	Small intestine
(2)	Lung	Heart	Large intestine	Small intestine
(3)	Heart	Lung	Small intestine	Large intestine
(4)	Lung	Heart	Small intestine	Large intestine

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

The diagrams below show the parts of some plants that we eat.

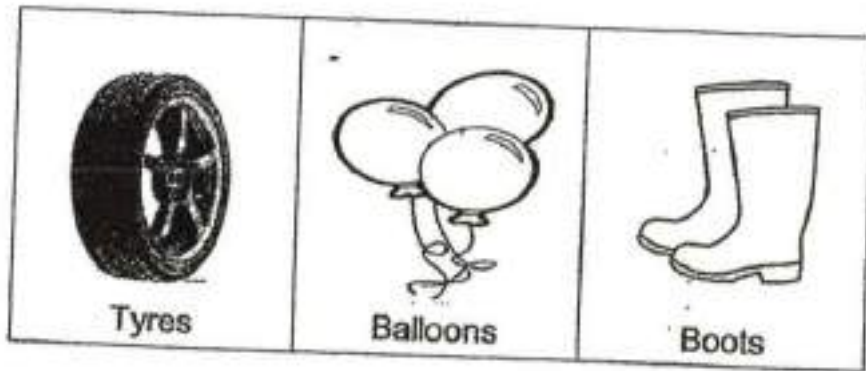


Which of the following correctly shows the parts of the plants that are eaten?

	Coconut	Carrot	Cabbage
(1)	stem	fruit	leaf
(2)	root	stem	leaf
(3)	fruit	root	leaf
(4)	fruit	root	stem

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

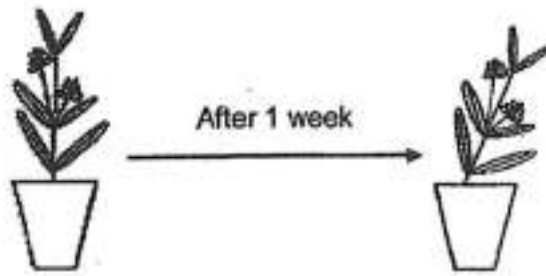
Tyres, balloons and boots are usually made of rubber.



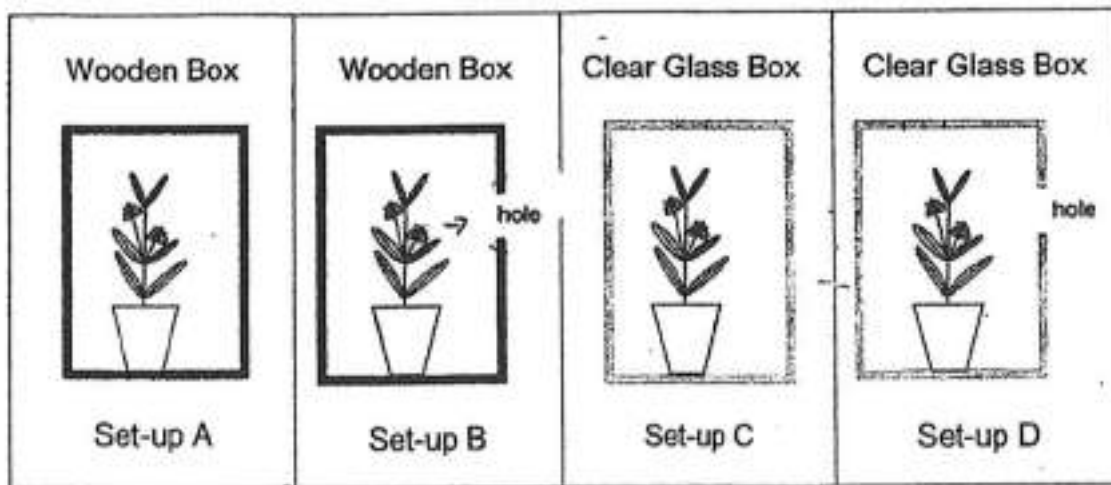
What is the most important reason for using rubber to make these items?

- 
- A) Rubber is flexible
  - B) Rubber floats on water
  - C) Rubber is not transparent
  - D) Rubber is a natural material

Joey wanted to find out if plants need sunlight to grow.  
 The diagrams below show how the plant looked like, one week after her experiment.



Which one of the below set-ups did she use for her experiment?



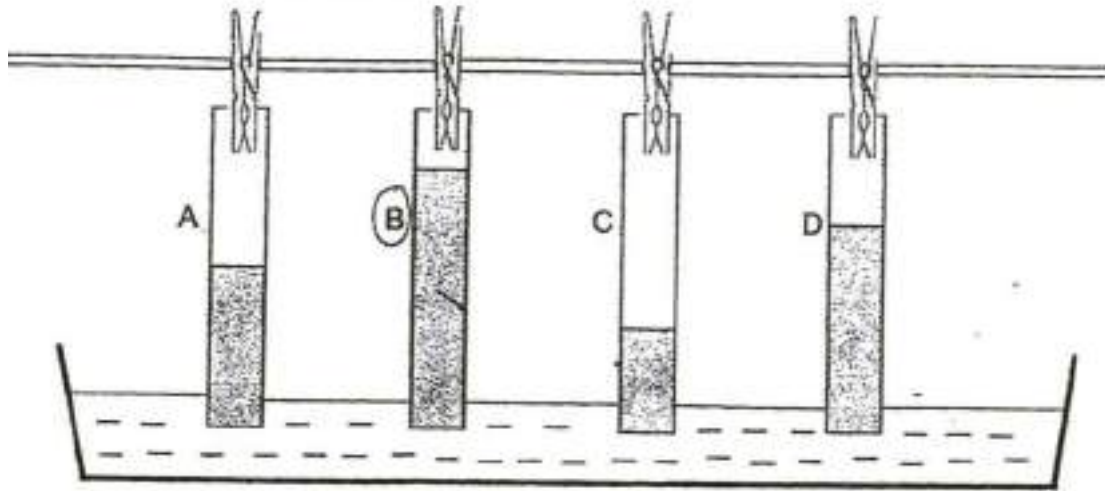
- A) Set-up A
- B) Set-up B
- C) Set-up C
- D) Set-up D



Four equal-sized strips, A, B, C and D, made of different materials were dipped in coloured water at the same level initially.

The height of the water that travelled up the four strips was measured.

The diagram below shows the results.



Which of the four materials, A, B, C and D, is most suitable to make a beach towel?

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

A bar magnet is broken into two pieces.



In which one of the below diagrams are the poles of the new magnets correctly labelled?

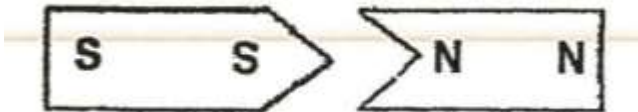
A)



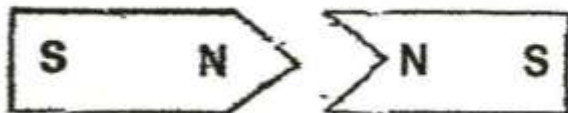
B)



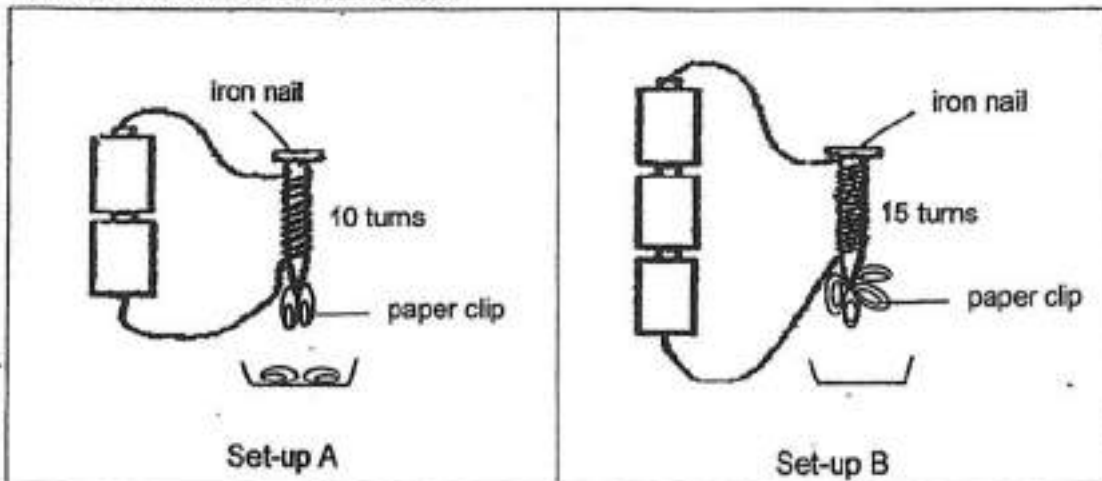
C)



D)



Study the two set-ups, A and B, of the electromagnets in the diagrams as shown below. The iron nails are of the same size.



Which of the following explains why the iron nail in Set-up B is able to attract more paper clips than the one in Set-up A?

- (A) The wire is shorter.
- (B) More batteries are used.
- (C) Wire is coiled more times around the iron nail.

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

During a group discussion, three pupils made these statements on the topic of Matter.

Andy: Matter occupies space

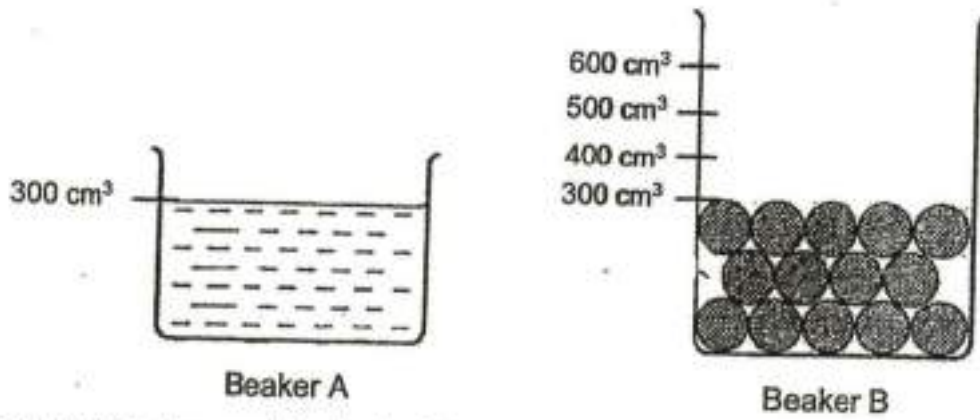
Ben: Matter has mass and shadow

Clare: Matter includes micro-organisms such as bacteria

Which statement(s) is/are correct?

- A) Andy and Ben
- B) Andy and Clare
- C) Ben and Clare
- D) Andy, Ben and Clare

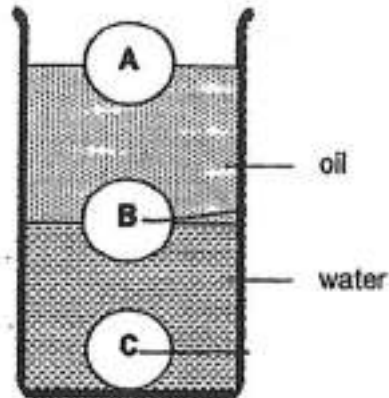
Jeremy filled Beaker A with  $300 \text{ cm}^3$  of water. He also filled another Beaker B with marbles as shown below. Next, he poured all the water from Beaker A into Beaker B.



What would be the possible level of the water with the marbles in Beaker B?

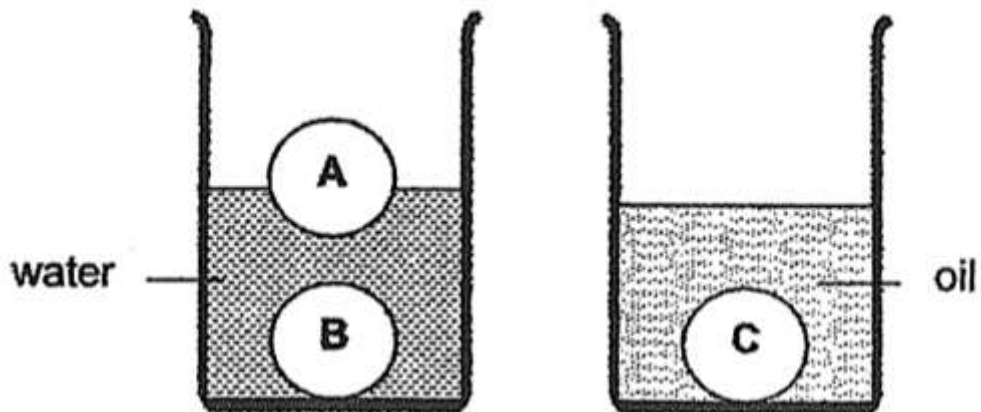
- A)  $100 \text{ cm}^3$
- B)  $300 \text{ cm}^3$
- C)  $500 \text{ cm}^3$
- D)  $600 \text{ cm}^3$

Similar balls of different materials, A, B and C are placed in a beaker containing oil and water as shown in the diagram below.

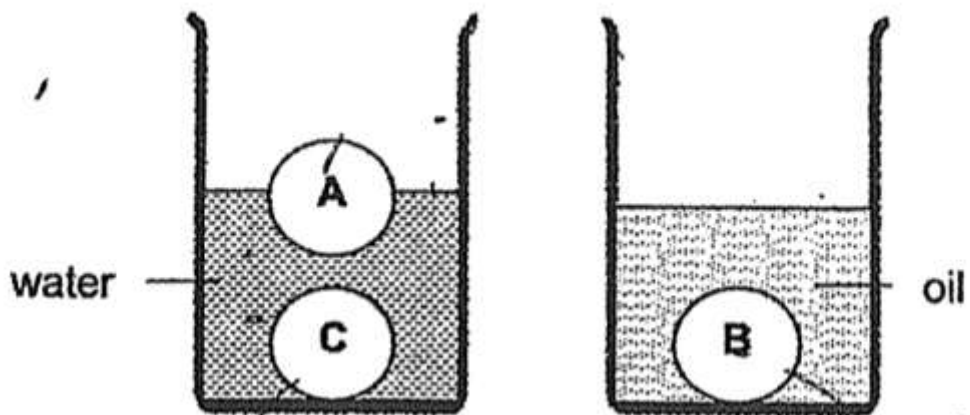


Which one of the following diagrams would show the correct positions of the balls A, B and C, when they are placed in oil and water separately?

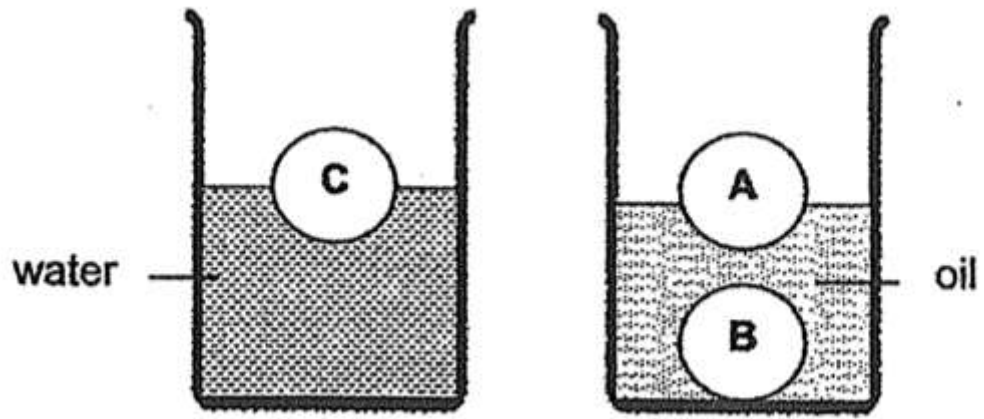
A)



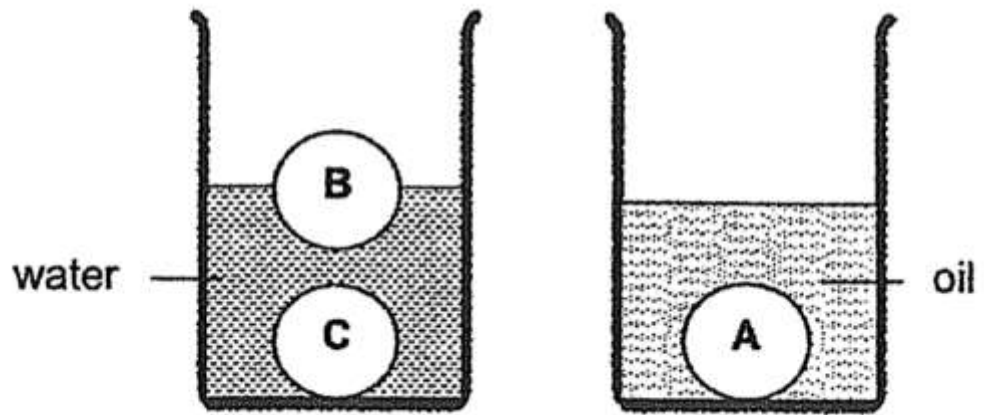
B)



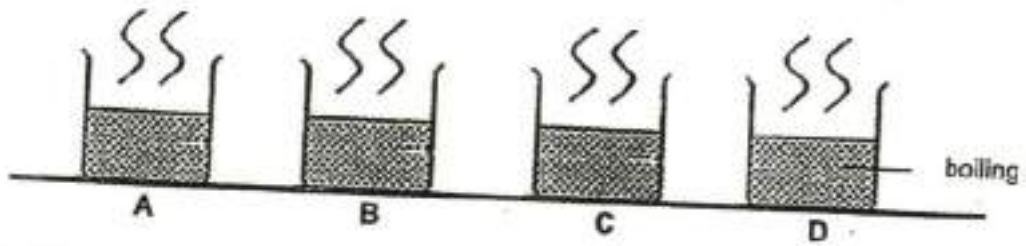
C)



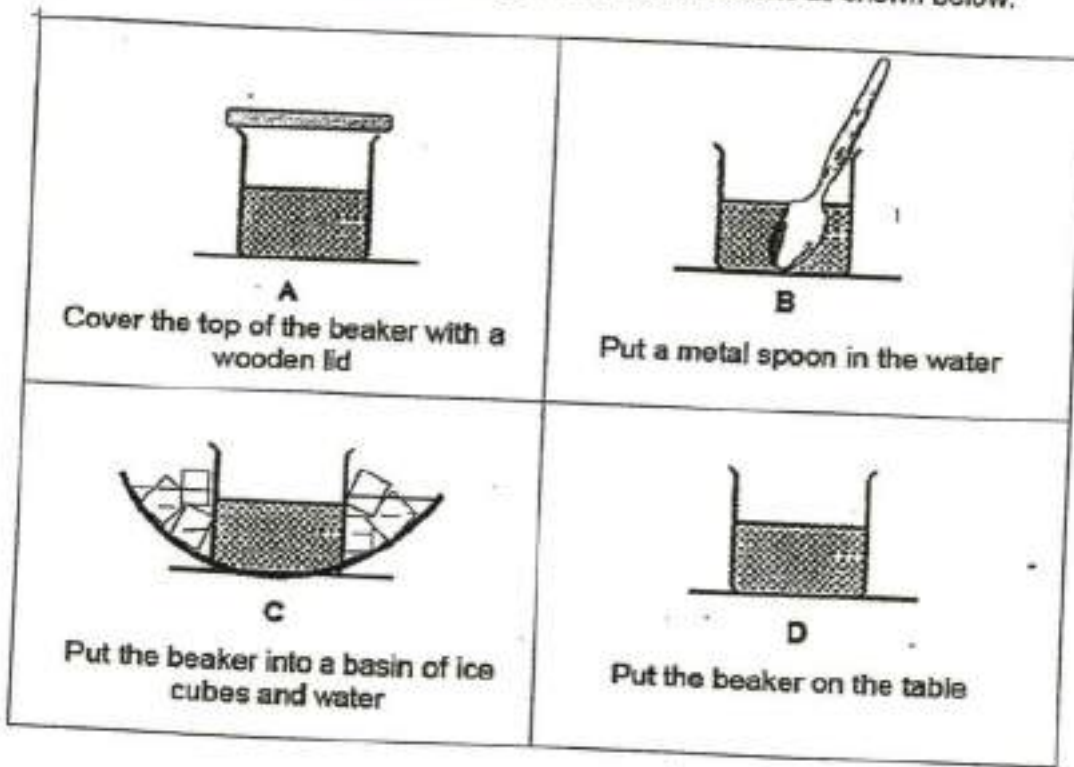
D)



Sarah put 4 similar glass beakers, A, B, C and D, containing boiling water on the table



She tried to cool the boiling water using the 4 different actions as shown below.



Which one of the following shows the temperatures of water in the 4 glass beakers after 30 minutes?

	Highest temperature		Lowest temperature	
(1)	A	B	D	C
(2)	C	D	B	A
(3)	A	D	B	C
(4)	B	A	D	C

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

Four similar beakers were filled with the same volume of water. Each beaker was wrapped with a different material, P, Q, R and S. They were heated and the time taken for the water in each beaker to reach 100 °C was recorded as shown below.

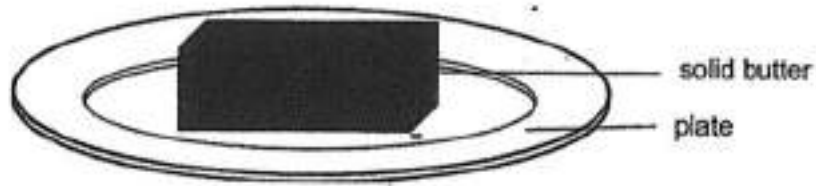
Material	Time taken for water to reach 100 °C (min)
P	13
Q	10
R	28
S	18

Which material is most suitable to be used to make a hot water flask to keep the water hot?

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



Mrs Chew left a slab of solid butter on a plate under the hot sun.

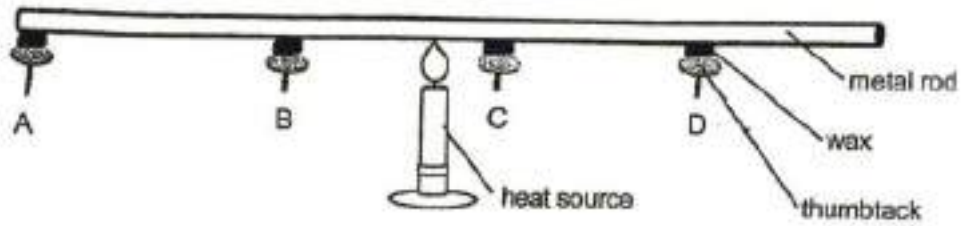


When she came back a few hours later, the butter had changed from (State 1) to (State 2) because (Reason).

	State 1	State 2	Reason
(1)	solid	liquid	the butter gained heat from the surrounding air.
(2)	solid	liquid	the butter lost heat to the surrounding air.
(3)	liquid	solid	the butter lost heat to the surrounding air.
(4)	liquid	solid	the butter gained heat from the surrounding air.

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

Four thumbtacks were attached to a metal rod using the same amount of wax. The metal rod was heated as shown in the diagram below.

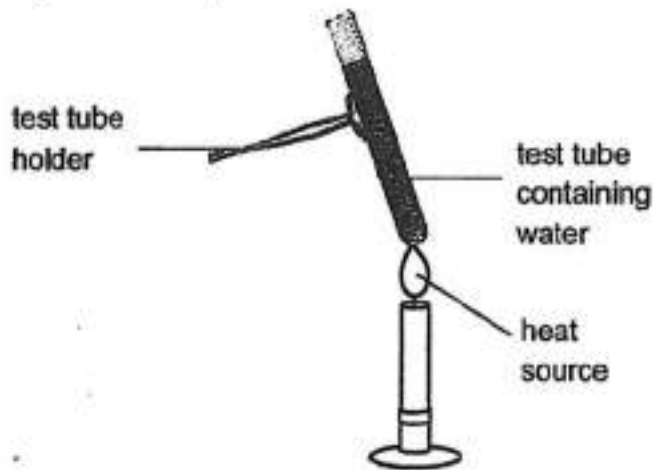


After a few minutes, the thumbtacks started to fall off the metal rod one after another. Arrange the thumbtacks in the correct order, starting with the one that would fall off first.

	First	Second	Third	Fourth
(1)	A	B	C	D
(2)	A	D	B	C
(3)	C	B	D	A
(4)	C	D	B	A

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

Thomas heated a test tube of water at room temperature until it was boiling.

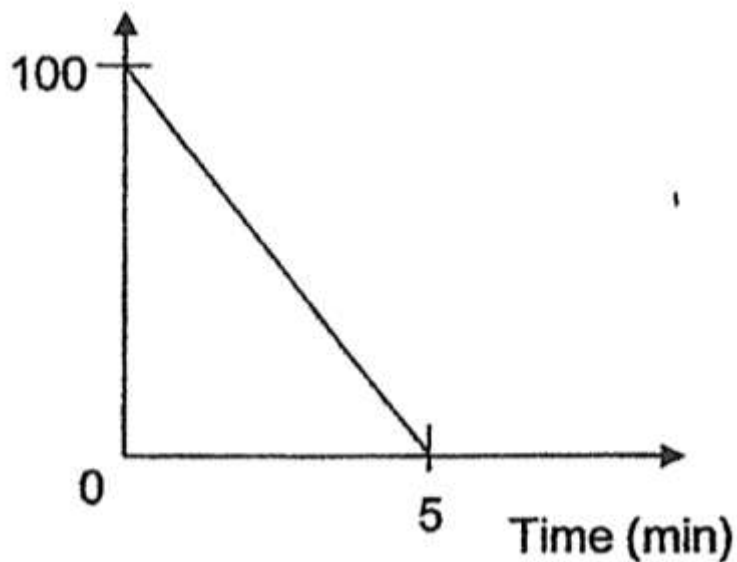


He used a thermometer to measure the temperature of the water over 5 minutes. He then plotted a graph to show the change in the temperature of the water.

Which one of the graphs below correctly shows the change in the temperature of the water?

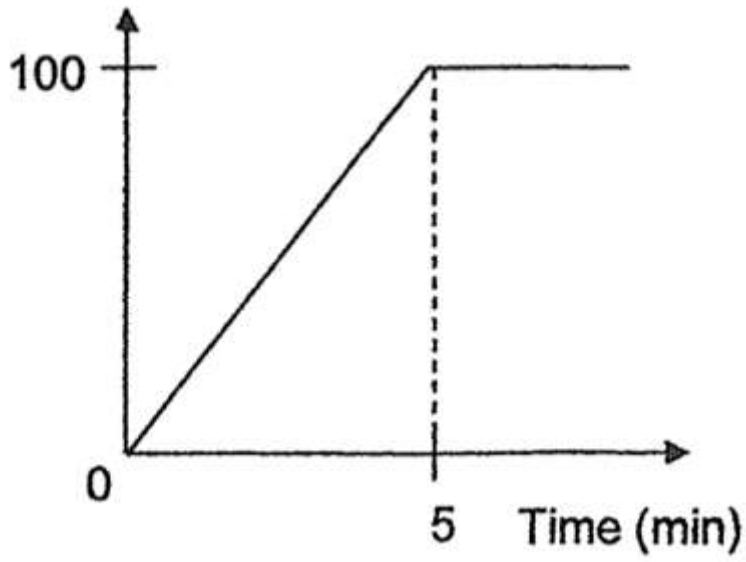
A)

Temperature ( $^{\circ}\text{C}$ )



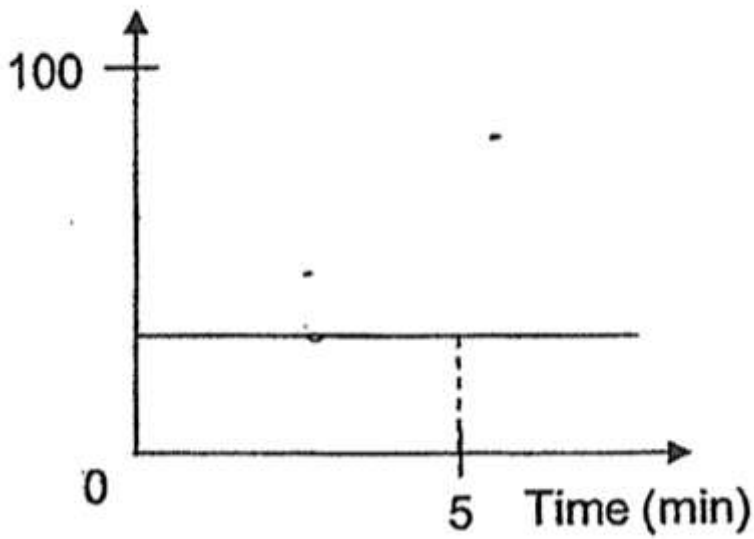
B)

Temperature (°C)



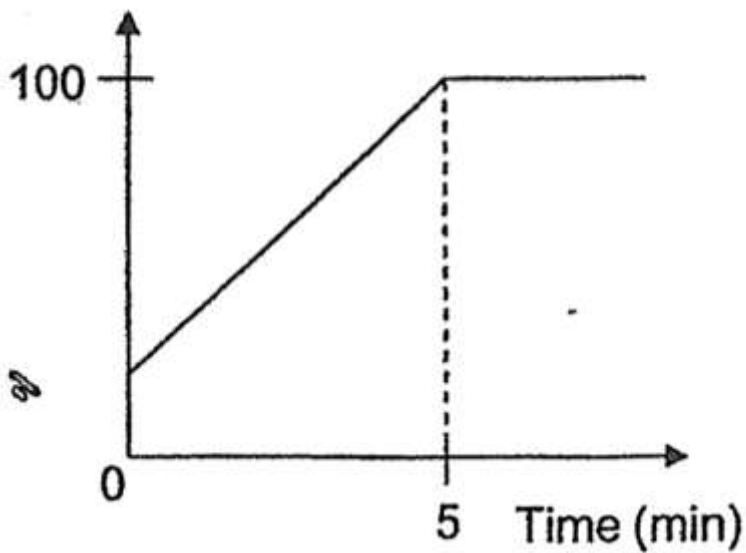
C)

Temperature (°C)



D)

Temperature (°C)

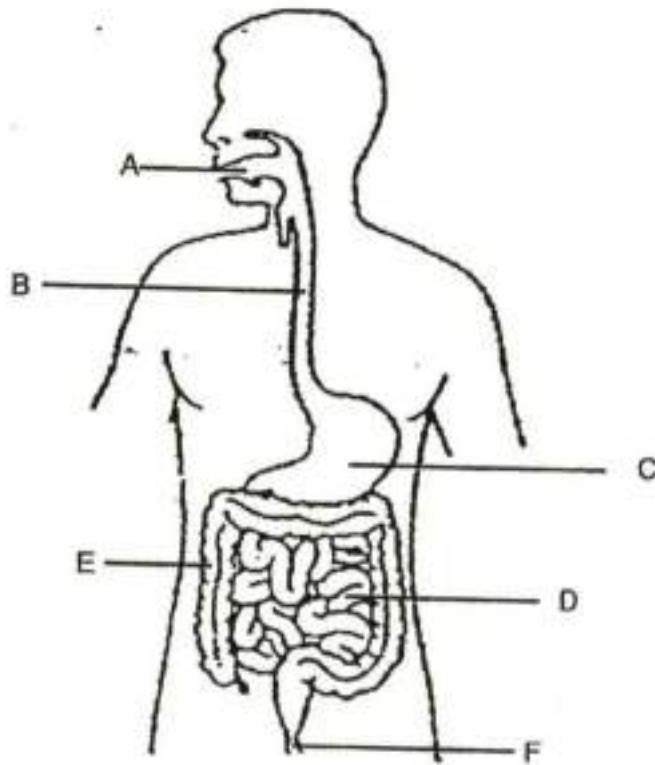


**Booklet B**

This section 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.

The diagram below shows different parts of the human digestive system.



Based on the diagram above, name 2 parts of the digestive system that contain digestive juices.

[1]

- 
- A) A
  - B) B
  - C) C
  - D) D
  - E) E
  - F) F

State the function of part B

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**Question 31 of 60**

Primary 4 Science (Term 2)

1 pt

Tom was not feeling well. It was well observed that he passed out watery waste from his digestive system

Identify the part which could be causing this

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- A) A
- B) B
- C) C
- D) D
- E) E
- F) F

**Question 32 of 60**

Primary 4 Science (Term 2)

0 pts

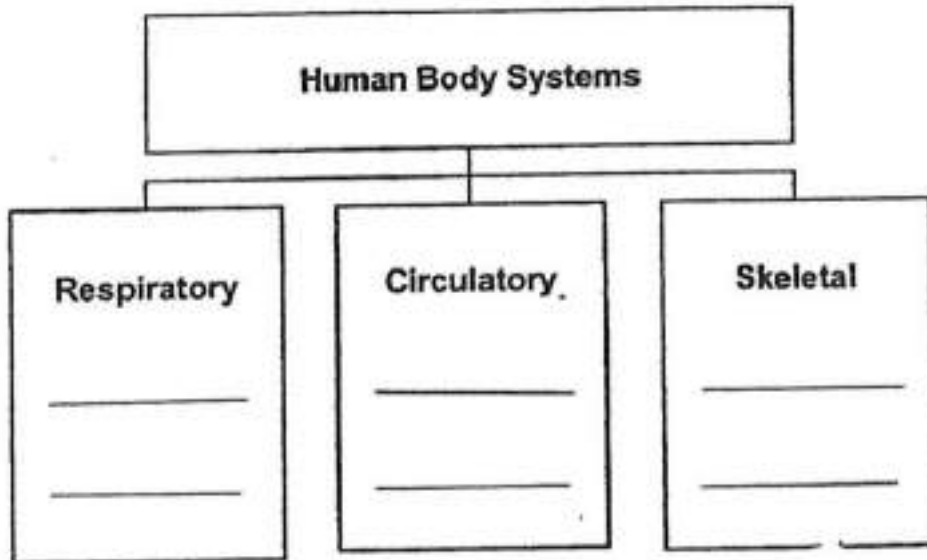
Explain the reason why

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Fill in the chart below with the different body parts given in the table.

[3]

lungs	skull	heart
blood vessels	windpipe	backbone



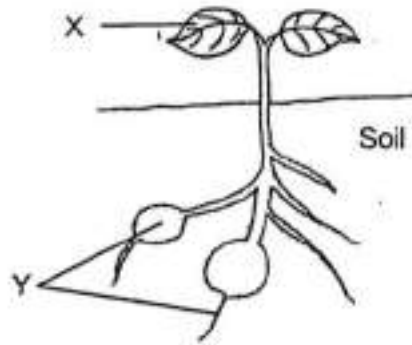
Please put "Done" in the question space below in order to proceed to the next question

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**Question 34 of 60**

Primary 4 Science (Term 2) 0.5 pts

The diagram below shows a green plant.



Name the parts labelled X and Y.

[1]

X: \_\_\_\_\_

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**Question 35 of 60**

Primary 4 Science (Term 2) 0.5 pts

Y: \_\_\_\_\_

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**Question 36 of 60**

Primary 4 Science (Term 2) 0 pts

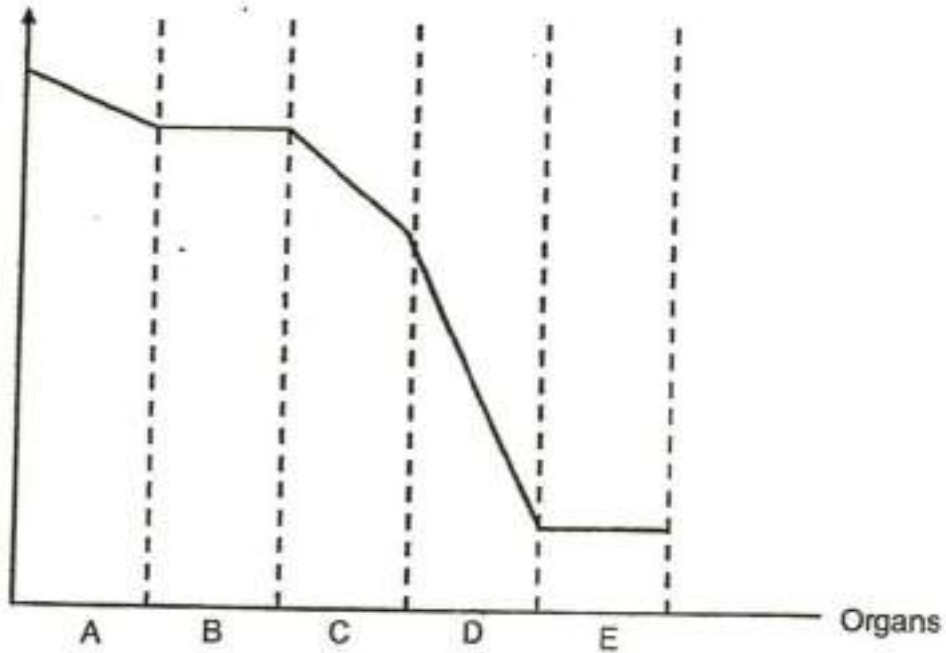
State one function of the part labelled Y

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The graph below shows the amount of undigested food as it passes through the different organs in the human digestive system.

Amount of undigested food / units

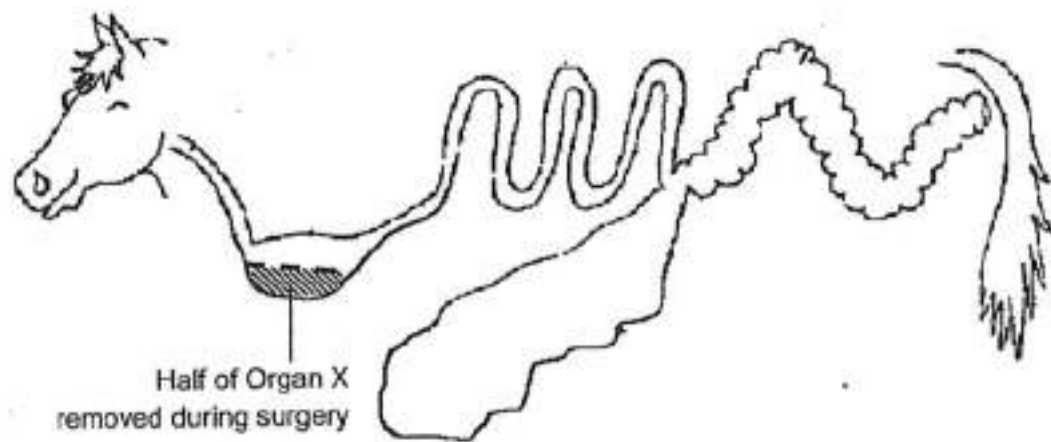


Based on the graph shown above, which part, A, B, C, D or E, most likely represents the small intestine? Explain why. [2]

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The diagram below shows an outline of the horse digestive system.  
The horse digestive system is similar to the human digestive system.



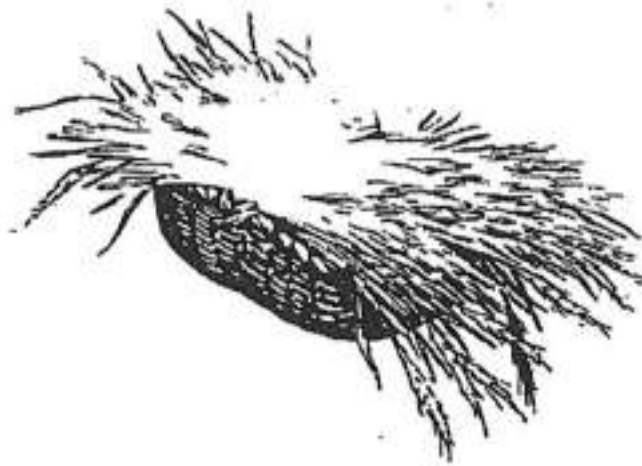
Half of Organ X was removed during a surgery as shown in the diagram above.

(i) Name Organ X.

[1]

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Before the removal of half of Organ X, the horse ate a tray of hay daily as shown below.



- (ii) How would the eating pattern of the horse change after surgery? [1]

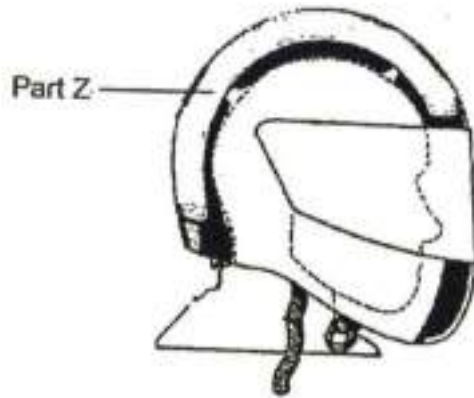
The diagram below shows a light bulb.



- (i) What is a suitable material used to make part A of the light bulb? [1]

What is this material suitable for making part A?

A motorist is required to wear a helmet while riding the motorcycle.



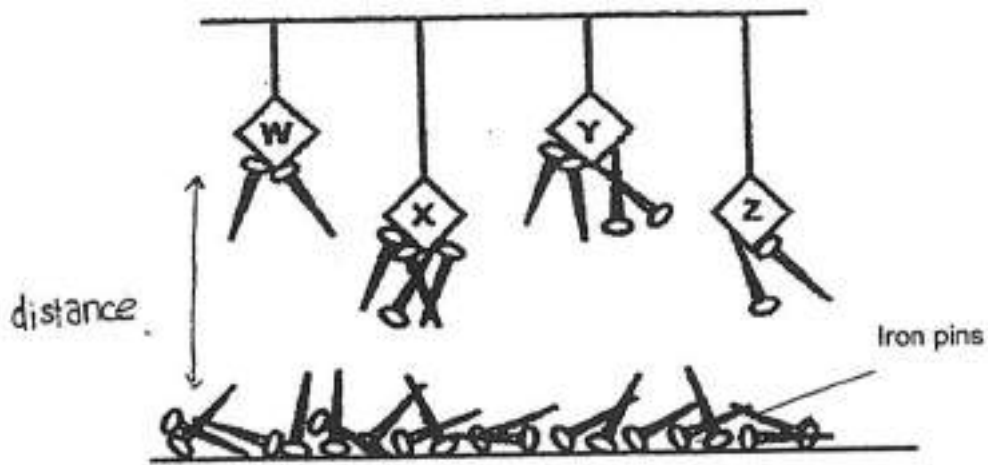
The table below shows some materials and their properties.

	Material A	Material B	Material C
Strength	√	X	√
Flexible	X	√	√
Waterproof	√	X	X

Which material, A, B or C, is most suitable for making Part Z of the helmet? [1]

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

Alex conducted an experiment using 4 different magnets W, X, Y and Z as shown in the diagram below.



He recorded his observations in the table below.

Type of Magnets	Distance between the magnet and the pins (cm)	Number of pins attracted to the magnet
W	5 cm	2
X	3 cm	4
Y	5 cm	4
Z	3 cm	2

Based on the table shown above, which one of the magnets has the strongest pull? Explain your answer. [2]

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Alex replaced the pins with matchsticks

What would Alex observe about the number of matchsticks attracted to the 4 magnets?

---

**Question 45 of 60**

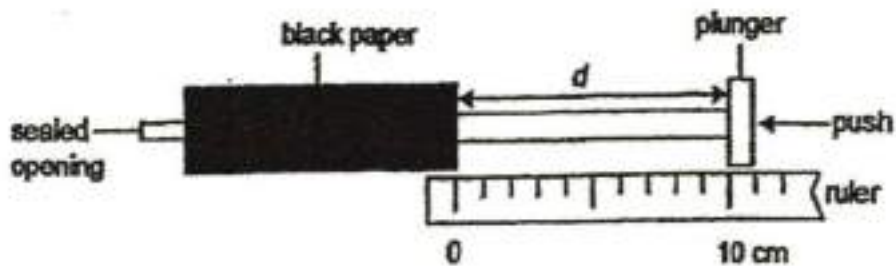
Primary 4 Science (Term 2) 0 pts

Explain the reason for your answer

**Question 46 of 60**

Primary 4 Science (Term 2) 1 pt

Esther covered two similar syringes A and B with black paper. She filled one syringe with air and the other syringe with water.



Then, she pushed the plunger of both syringes as hard as she could and measured the distance (labelled 'd').

She recorded the measurement in the table below.

	<u>Distance (d) in cm</u>	
	<u>Syringe A</u>	<u>Syringe B</u>
Before pushing the plunger	10 cm	10 cm
After pushing the plunger	10 cm	4 cm

Which of the two syringes, A or B, contained water?

[1]

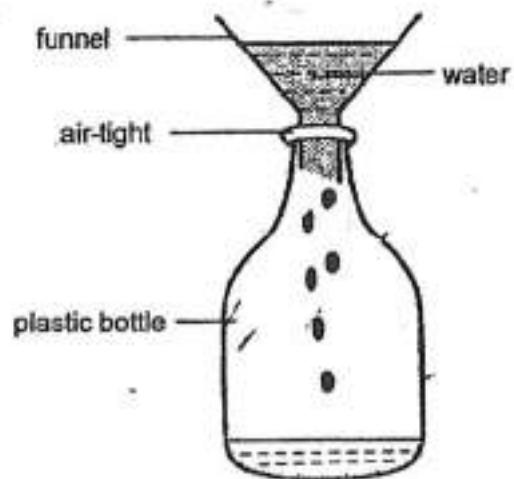
- A) A
- B) B

**Question 47 of 60**

Primary 4 Science (Term 2) 0 pts

Based on the results shown in the table above, explain your answer in part (a).

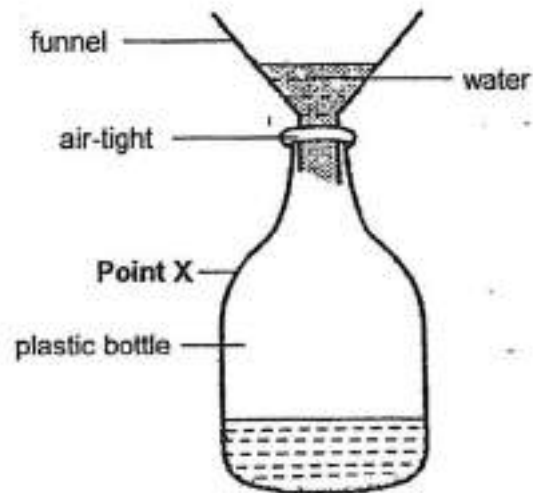
Study the set-up shown in the diagram below.



When water was poured into the funnel, it dripped slowly into the plastic bottle. Give a reason.

[1]

A hole is made at point X and it was observed that the water from the funnel dripped down into the plastic bottle faster.



Explain the above observation.

[2]

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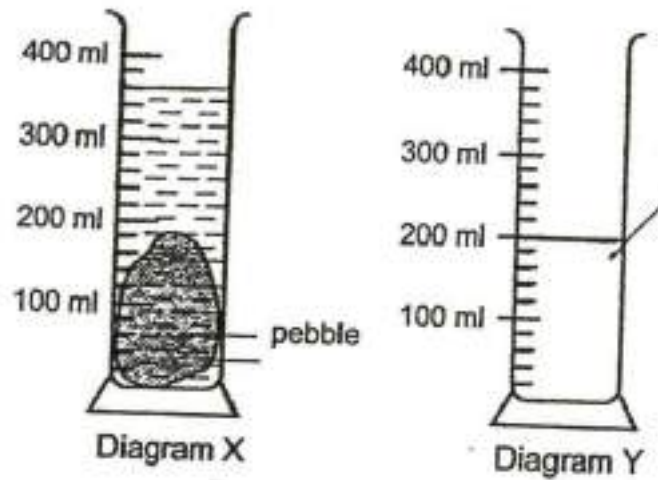
State another way to make the water drip down faster.

[1]

---



Pauline dropped a pebble into a measuring cylinder containing 200 ml of water.



What is the total volume of water and the pebble?

[1]

Write one observation of the water level when the pebble is removed from the measuring cylinder. [1]

On Diagram Y above, **draw** the water level after the pebble is removed. [1]

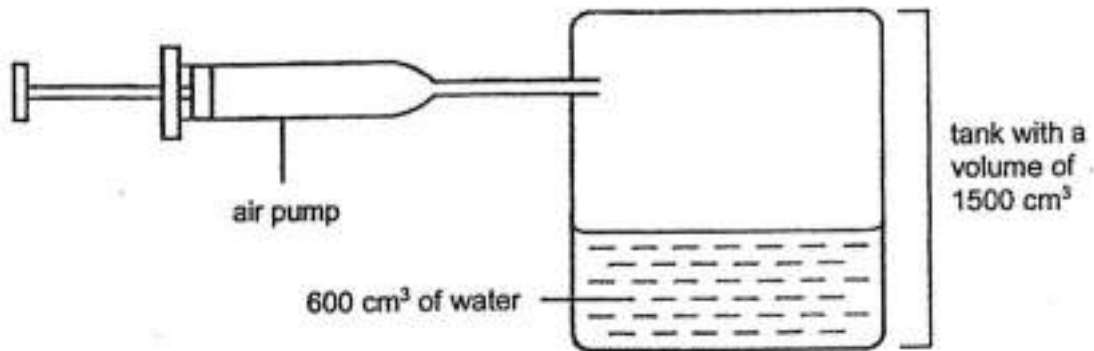
State one property of the pebble which allows its volume to be measured using the above method. [1]

**Question 52 of 60**

Primary 4 Science (Term 2)

1 pt

An air pump was attached to a tank with a volume of  $1500 \text{ cm}^3$ .



The tank was then filled with  $600 \text{ cm}^3$  of water, as shown in the diagram above. What is the volume of air in the tank? [1]

**Question 53 of 60**

Primary 4 Science (Term 2)

1 pt

Each time the air pump is applied, it forces  $100 \text{ cm}^3$  of air into the tank. If the air pump was applied twice what is the volume of air in the tank?

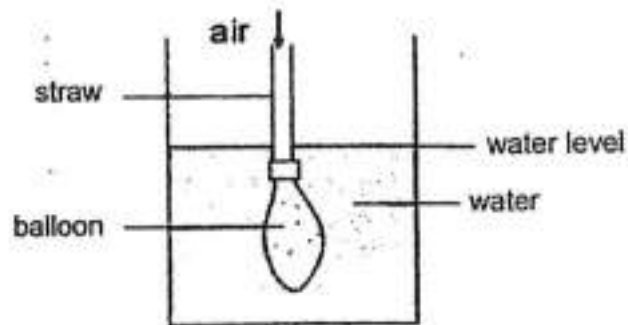
**Question 54 of 60**

Primary 4 Science (Term 2)

0 pts

Explain your answer in part B) above

Eric tied a balloon over one end of a straw and submerged it in a beaker of water as shown in the diagram below. He then blew air through the straw.

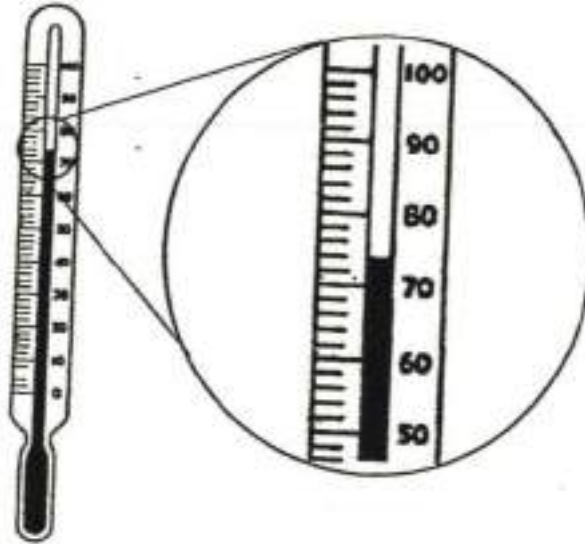


Write one observation of the water level when air was blown through the straw. Explain your observation. [2]

---

- Hafiz walks into a laboratory and sees a beaker of water sitting on the table at room temperature of 25 °C.  
He wants to find out the temperature of the water in the beaker.

He used the laboratory instrument to measure the temperature of the water in the beaker. The reading of the laboratory instrument is shown in the diagram below.

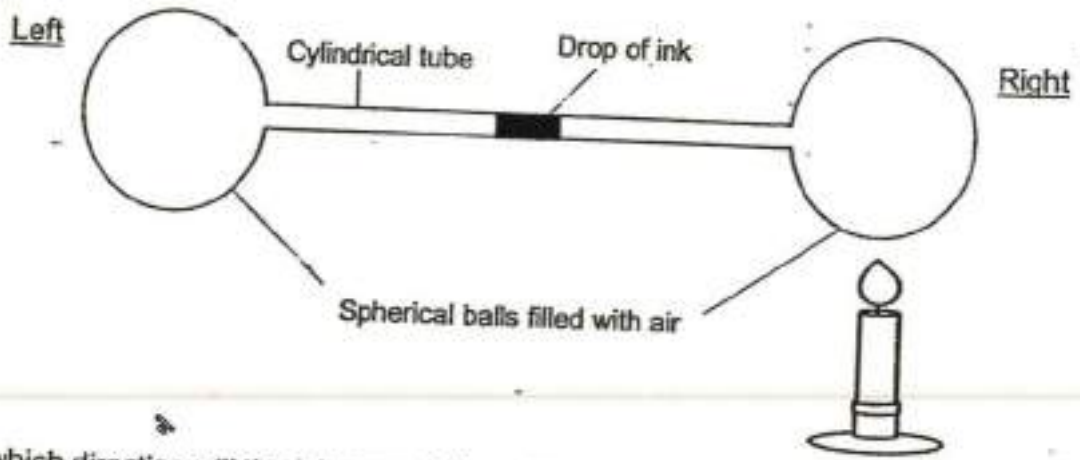


The name of this laboratory instrument is the \_\_\_\_\_  
and the reading of the laboratory instrument shown in the diagram above  
is \_\_\_\_\_ °C.

[2]

\_\_\_\_\_, \_\_\_\_\_

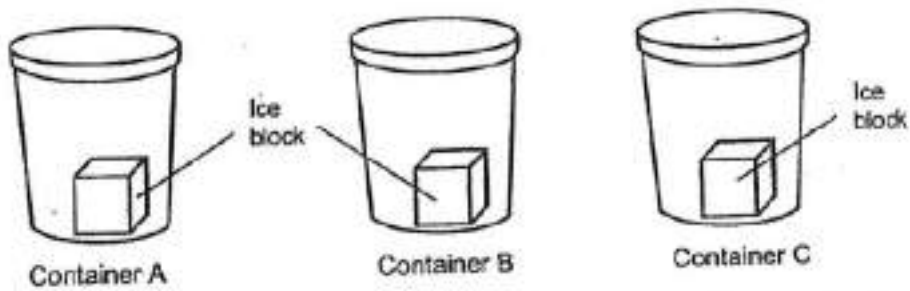
The diagram below shows two spherical balls connected by a cylindrical tube that contains a drop of ink.



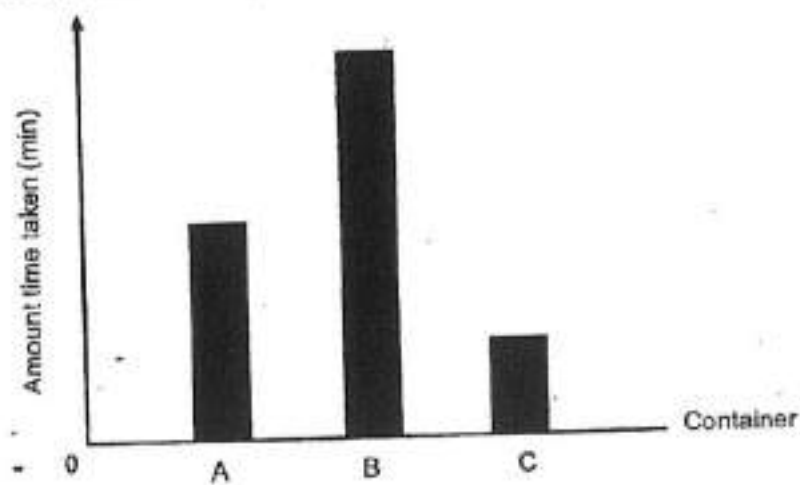
In which direction will the ink move if the spherical ball on the right is heated? Explain your answer.

[2]

Ting Xuan set up an experiment as shown below.



She placed 3 similar ice blocks in 3 containers of the same volume made of different materials, A, B and C. The graph below shows the time taken for each ice block to melt completely.



(a) Which variable did Ting Xuan change in this experiment?

[1]

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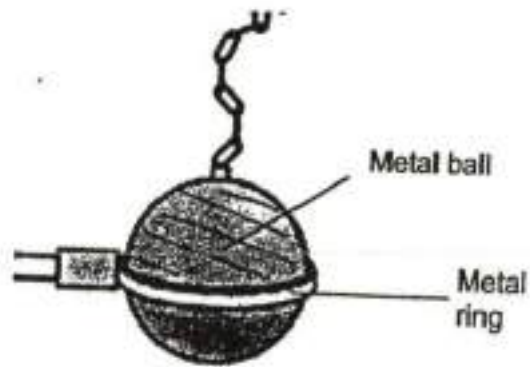


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(b) If you are going to the beach on a hot day, which container would you choose to keep your drink cold? Explain your answer.

[2]

During a ball-and-ring experiment in the Science laboratory, Susan's metal ball could not pass through the metal ring.



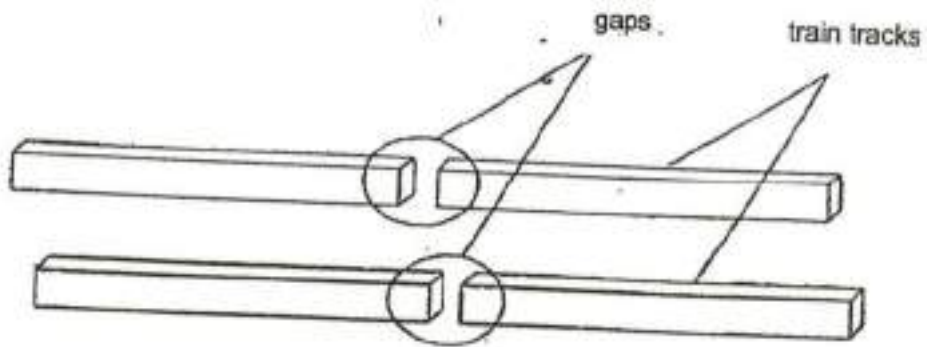
- (i) What should Susan do so that the metal ball can pass through the metal ring? [1]

---

- (ii) Explain your answer to (a)(i). [1]

---

- (b) Farzanah was walking along the train track when she noticed that there are gaps between the train tracks as shown in the diagram below.



Explain why are there gaps between the train tracks.

[1]