

Name: \_\_\_\_\_ ( )

Class: Primary 5 \_\_\_\_\_

## CHIJ ST NICHOLAS GIRLS' SCHOOL



**Primary 5**

**Semestral Assessment 1 – 2011**

**SCIENCE**

**BOOKLET A**

**12<sup>th</sup> May 2011**

**Total Time for Booklets A and B: 1 hour 45 minutes**

**30 questions**

**60 marks**

**Do not open this booklet until you are told to do so.**

**Follow all instructions carefully.**

**Answer all questions.**

**Shade your answers in the Optical Answer Sheet (OAS) provided.**

**This paper consists of 24 printed pages.**

**Section A : ( 30 x 2 MARKS )**

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

1. Winnie looked through the microscope and found the cells she observed having the following parts:

- cytoplasm
- chloroplasts
- large nucleus
- cell membrane

Winnie was probably observing the cells taken from a/an \_\_\_\_\_.

- (1) hydrilla  
(2) mushroom  
(3) onion skin  
(4) human's cheeks
2. Ahmad wants to observe a specimen under the microscope. The steps of setting up a microscope to observe a specimen are shown below. However, they are not in the correct order.

- A Draw your observation.  
B Place the slide on the microscope.  
C Prepare the slide of the specimen.  
D Adjust the focus knob for a clearer view.

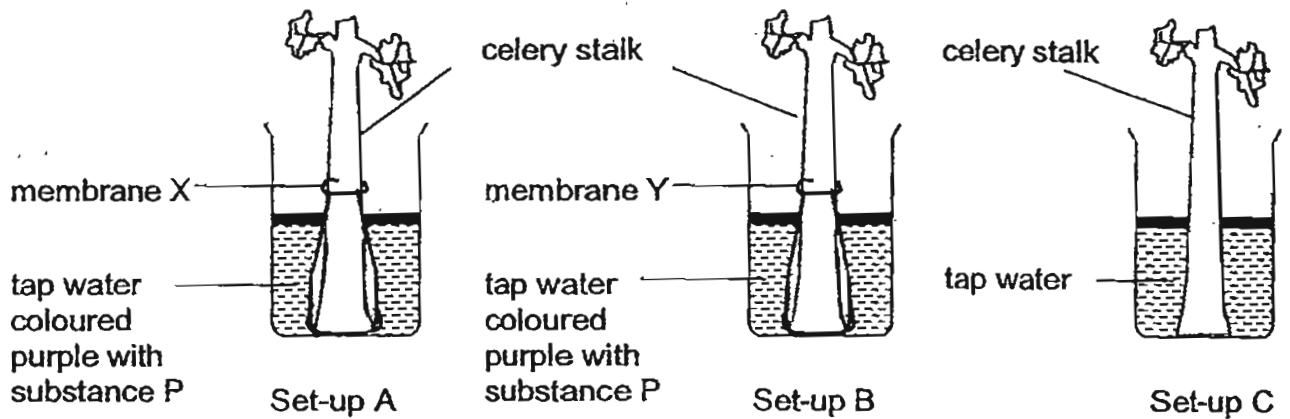
Which one of the following shows the steps in the correct order?

- (1) A, B, C, D  
(2) B, C, D, A  
(3) C, B, D, A  
(4) D, A, B, C
3. Which of the following organisms are made up of a single cell?

- A an egg  
B a moss  
C a yeast  
D a paramecium

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

4. Gopal set up an experiment as shown below.



The bases of the celery stalks in set-ups A and B were wrapped with membranes X and Y respectively before being placed into the beaker of tap water that had been coloured purple with substance P. The celery stalk in set-up C was placed in tap water. Three days later, Gopal recorded down his observations of the three celery stalks in the table below.

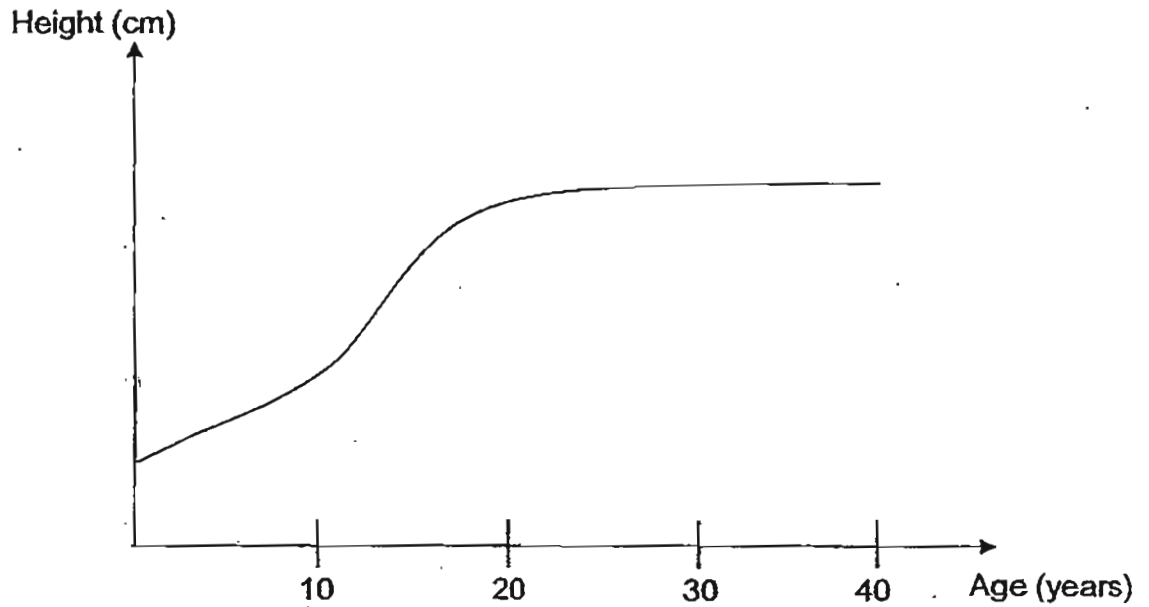
	Set-up A	Set-up B	Set-up C
Observations	Leaves are green and firm.	Leaves are yellowish and floppy.	Leaves are green and firm.

Which of the following statements show(s) the conclusion of Gopal's experiment?

- A Water can pass through membrane X.
- B Substance P can pass through membrane X but not membrane Y.
- C Substance P in set-up B prevented the celery stalk from taking in water.
- D The leaves of the celery stalk in set-up B will be firm if the base of the celery stalk was not wrapped with membrane Y.

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

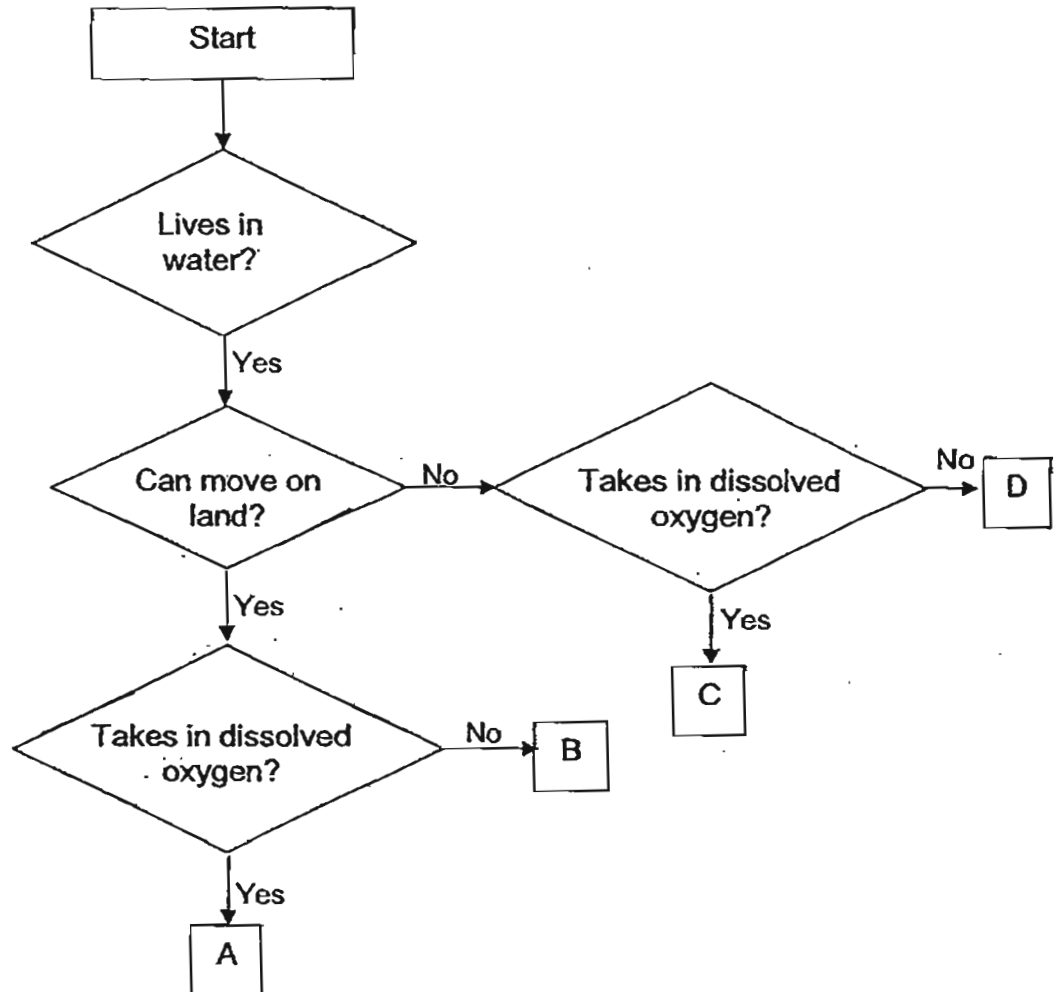
5. The graph below shows Mrs Teo's height from birth until she was 40 years old.



Based on the graph, which one of the following statements is definitely correct?

- (1) Mrs Teo was the tallest at the age of 20 years old.
- (2) New cells started to form only when Mrs Teo was 10 years old.
- (3) Mrs Teo's cells stopped reproducing after she reached 20 years old.
- (4) New cells were still formed to replace old and dead cells after she was 20 years old.

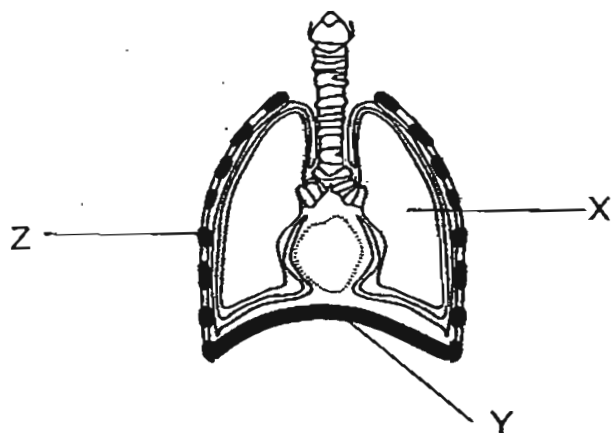
6. Study the flow chart below carefully.



Based on the flow chart above, which one of the following shows the correct animals for A, B, C and D?

	A	B	C	D
(1)	Tadpole	Whale	Crab	Crocodile
(2)	Whale	Tadpole	Crocodile	Crab
(3)	Crocodile	Crab	Whale	Tadpole
(4)	Crab	Crocodile	Tadpole	Whale

7. The diagram below shows the organs of a human respiratory system.



Which one of the following shows the changes that happen to the organs, X, Y and Z, when a person is blowing into a balloon?

	X	Y	Z
(1)	Becomes bigger	Moves upwards	Move outwards
(2)	Becomes bigger	Moves downwards	Move outwards
(3)	Becomes smaller	Move upwards	Move inwards
(4)	Becomes smaller	Move downwards	Move inwards

8. The bar chart below shows the composition of air in the surroundings.



Each composition of air is represented by the different shading below.



P



Q

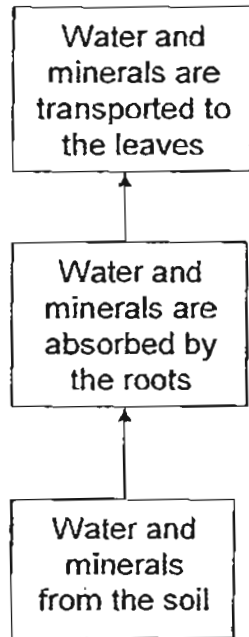


R

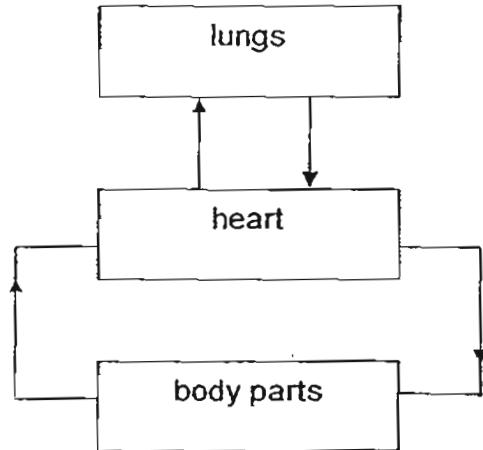
Which one of the following best represents P, Q and R?

	P	Q	R
(1)	Water vapour	Nitrogen	Oxygen
(2)	Carbon dioxide	Oxygen	Nitrogen
(3)	Water vapour	Oxygen	Nitrogen
(4)	Carbon Dioxide	Nitrogen	Water vapour

9. The diagrams below show the transport system of a plant and the circulatory system of a human.



Transport system of a plant

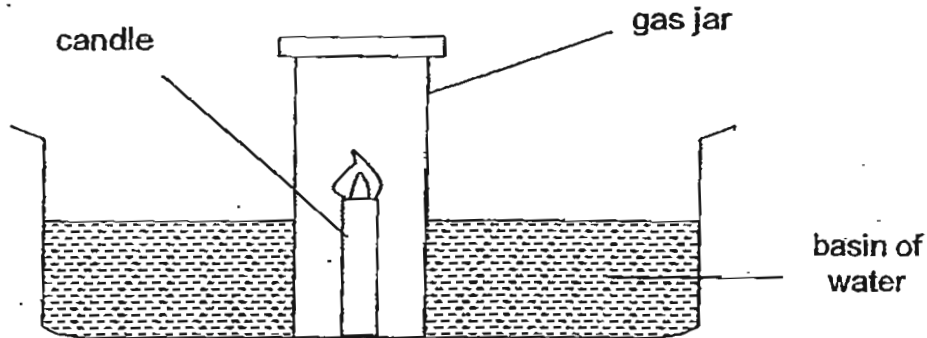


Circulatory system of a human

Based on the diagrams above, which one of the following statements below is correct?

- (1) Only water is transported in the transport system of a plant.
- (2) The roots of the plant carry water from the soil to other part of plants.
- (3) Only carbon dioxide is transported to all parts of the body in the circulatory system.
- (4) An organ in the human circulatory system pumps the blood to all parts of the body.

10. Kelly wanted to find out if the size of the gas jar affects the time taken by the candle to remain lighted. She conducted an experiment as shown in the diagram below.



Which one of the following tables shows the correct variables she needed as a control in order to conduct a fair test?

(1)

Variables	Kept constant	Change
Thickness of candle	✓	
Length of candle		✓
Size of gas jar	✓	
Amount of water in the basin	✓	

(2)

Variables	Kept constant	Change
Thickness of candle	✓	
Length of candle	✓	
Size of gas jar		✓
Amount of water in the basin	✓	

(3)

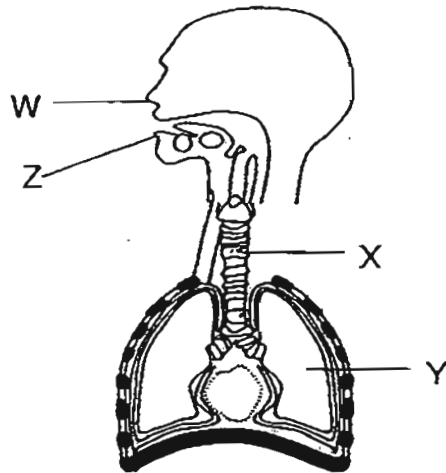
Variables	Kept constant	Change
Thickness of candle		✓
Length of candle	✓	
Size of gas jar	✓	
Amount of water in the basin	✓	

(4)

Variables	Kept constant	Change
Thickness of candle	✓	
Length of candle	✓	
Size of gas jar	✓	
Amount of water in the basin		✓



11. Study the diagram below carefully.



Which one of the following shows the correct sequence of air leaving the human respiratory system when a person is exhaling?

- (1) W, X, Y
- (2) Y, X, W
- (3) W, Y, Z
- (4) Z, X, Y

12. The following changes take place in the body of a person jogging in a park.

- A Breathing rate increases.
- B More oxygen is supplied to the muscles.
- C More carbon dioxide is found in the blood.
- D Movement in the muscles produces carbon dioxide.

Which one of the following shows the correct order in which these changes occur in the person's body?

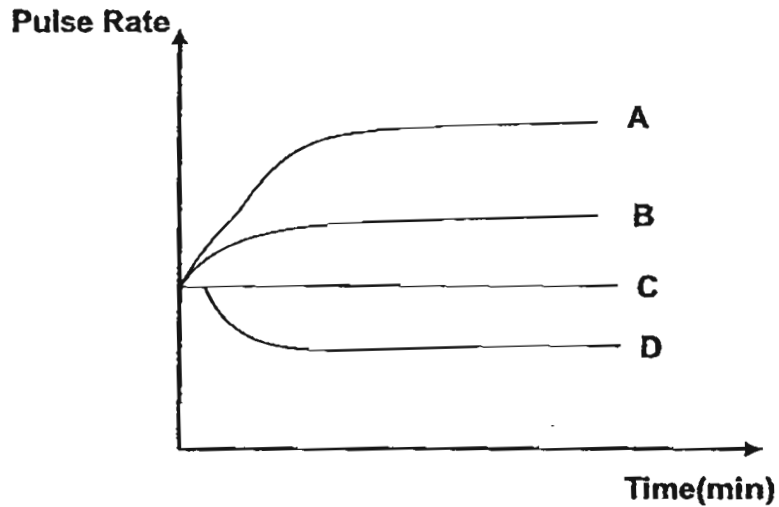
	First	→			Last
(1)	A	B	C	D	
(2)	B	A	C	D	
(3)	D	A	B	C	
(4)	D	C	A	B	

13. Which of the following statements is/are false about the red blood cells?

- A They transport oxygen.
- B They fight against germs.
- C They help in clotting of blood on wounds.
- D They contain red pigments that give the blood the colour red.

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

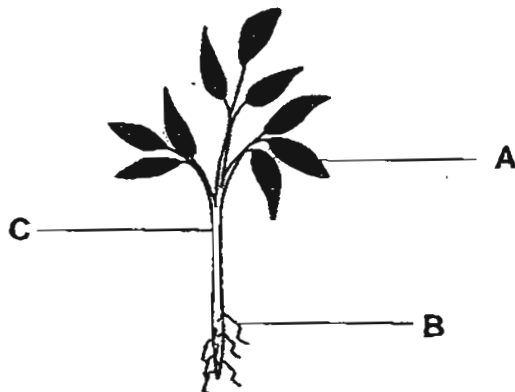
14. The graph shows the pulse rate (number of heartbeats per minute) of a person engaged in 4 activities, A, B, C and D.



Which one of the following shows what he could have been doing for graphs, A, B, C and D?

	A	B	C	D
(1)	Listening to music	Sleeping	Running on a track	Strolling in the garden
(2)	Running on a track	Strolling in the garden	Listening to music	Sleeping
(3)	Strolling in the garden	Running on a track	Sleeping	Listening to music
(4)	Sleeping	Listening to music	Strolling in the garden	Running on a track

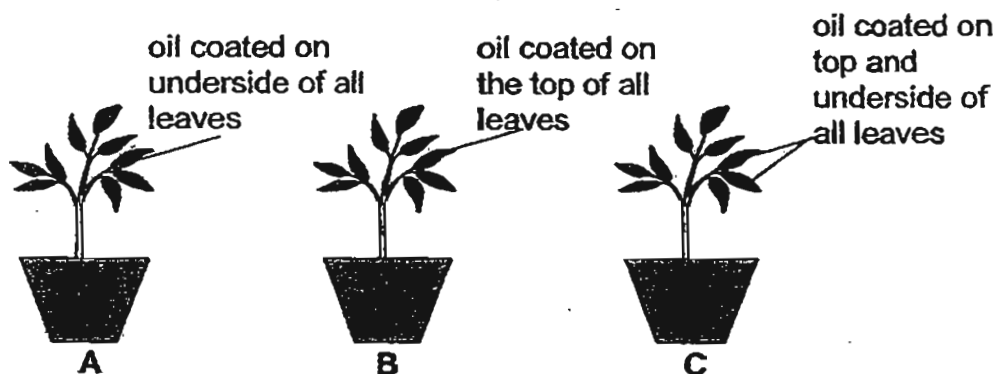
15. The diagram below shows a plant.



Which one of the following shows the correct functions of the parts, A, B and C?

	A	B	C
(1)	Water is absorbed	Air enter or leave through stomata	Water and food are transported
(2)	Water and food are transported	Water is absorbed	Air enter or leave through stomata
(3)	Air enter or leave through stomata	Water and food are transported	Water is absorbed
(4)	Air enter or leave through stomata	Water is absorbed	Water and food are transported

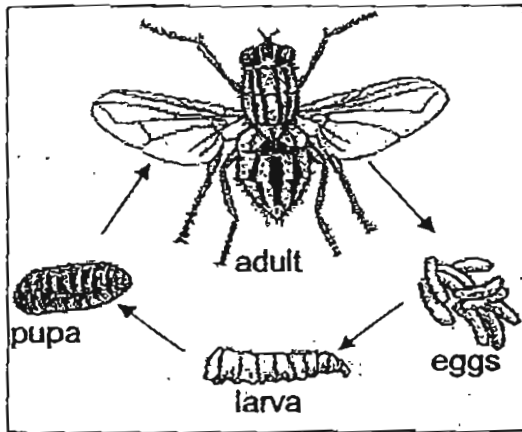
16. Jamilah conducted an experiment with three similar and healthy plants. She applied oil on different parts of the leaves. All three plants were placed side by side in a garden and watered with the same amount of water each day.



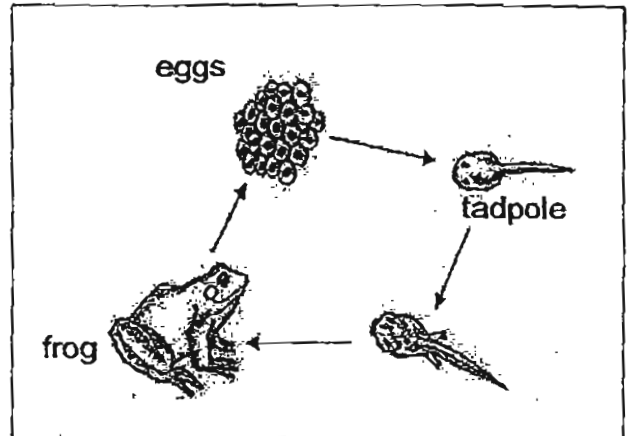
In which order would the plants die off first?

- (1) A, B, C  
 (2) C, B, A  
 (3) B, C, A  
 (4) C, A, B

17. The diagram below shows the life cycles of a housefly and a frog.



Life cycle of a housefly



Life cycle of a frog

Which of the following statements is/are correct about the two life cycles?

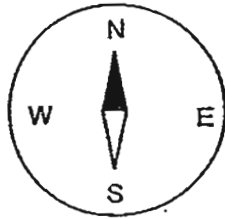
- A Both adults lay many eggs at one time.
- B Both have the same stages of life cycle.
- C The young of both animals do not resemble the adult.
- D The young of both animals spend most of their life in the water.

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

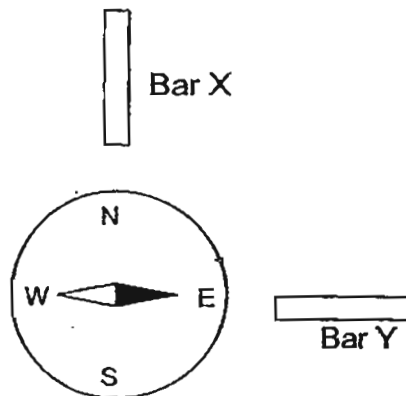
18. Which one of the following materials is a non-metal and a good conductor of electricity?

- (1) copper
- (2) carbon
- (3) nichrome
- (4) porcelain

19. The diagram below shows the position of the compass needle when it was placed on a table.



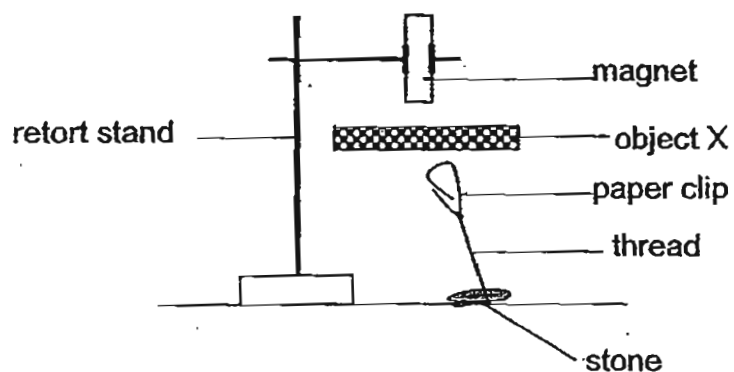
The diagram below shows what happened when it was placed near two metal bars, X and Y.



Which one of the following statements about the two metal bars is definitely correct?

- (1) Bar Y is a non-magnetic object.
- (2) Both metal bars are magnetic materials.
- (3) Bar X is a magnet with its north pole facing the compass.
- (4) Bar Y is a magnet with its south pole facing the compass.

20. Study the set-up below.

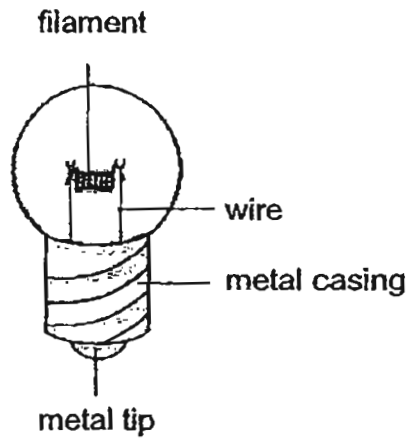


When object X was placed between the magnet and the paper clip, the paper clip dropped.

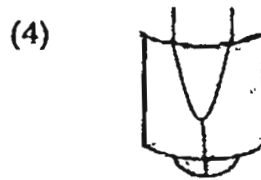
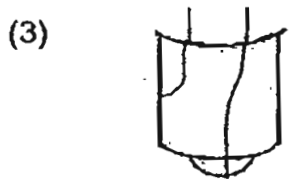
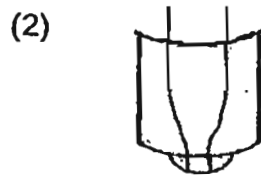
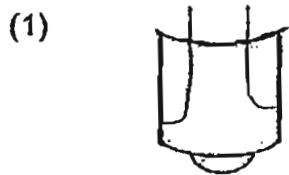
What could object X be?

- (1) paper
- (2) cardboard
- (3) iron sheet
- (4) aluminium foil

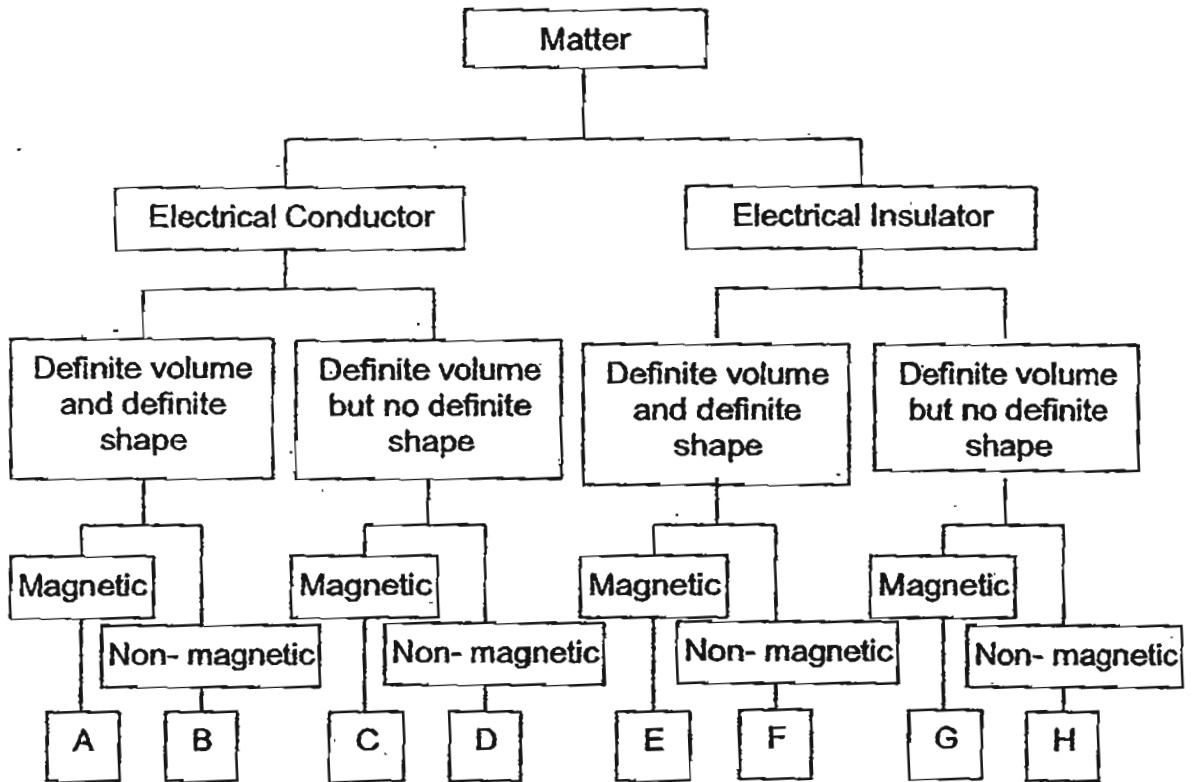
21. The diagram below shows the parts of a light bulb.



Which one of the following diagrams shows the correct connections of wires inside the metal casing?



22. Look at the classification table below.

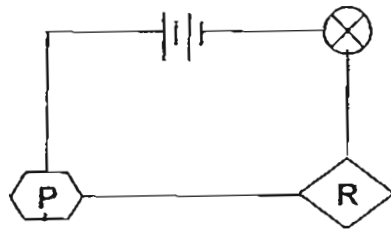


Where would you place "salt water" and "copper sheet"?

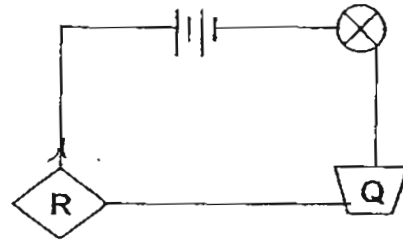
	Salt Water	Copper Sheet
(1)	D	A
(2)	F	E
(3)	D	B
(4)	H	F



23. Alice set up the circuits below using a bulb, 2 batteries and 3 objects, P, Q and R.

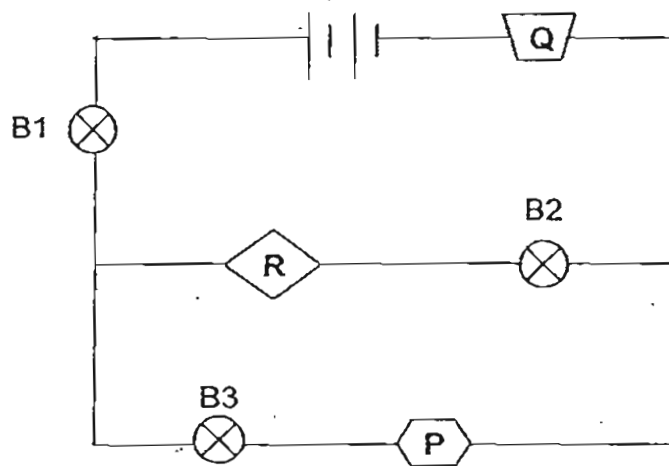


Bulb lights up



Bulb does not light up

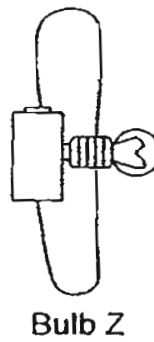
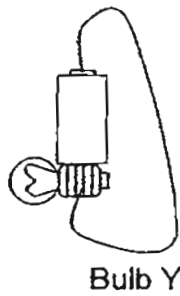
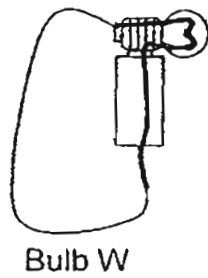
She used the objects, P, Q and R, again to form the circuit below.



Which of the bulbs, B1, B2 or B3, would light up?

- (1) Bulb 1 only
- (2) Bulb 1 and 3 only
- (3) Bulb 2 and 3 only
- (4) None of the bulbs

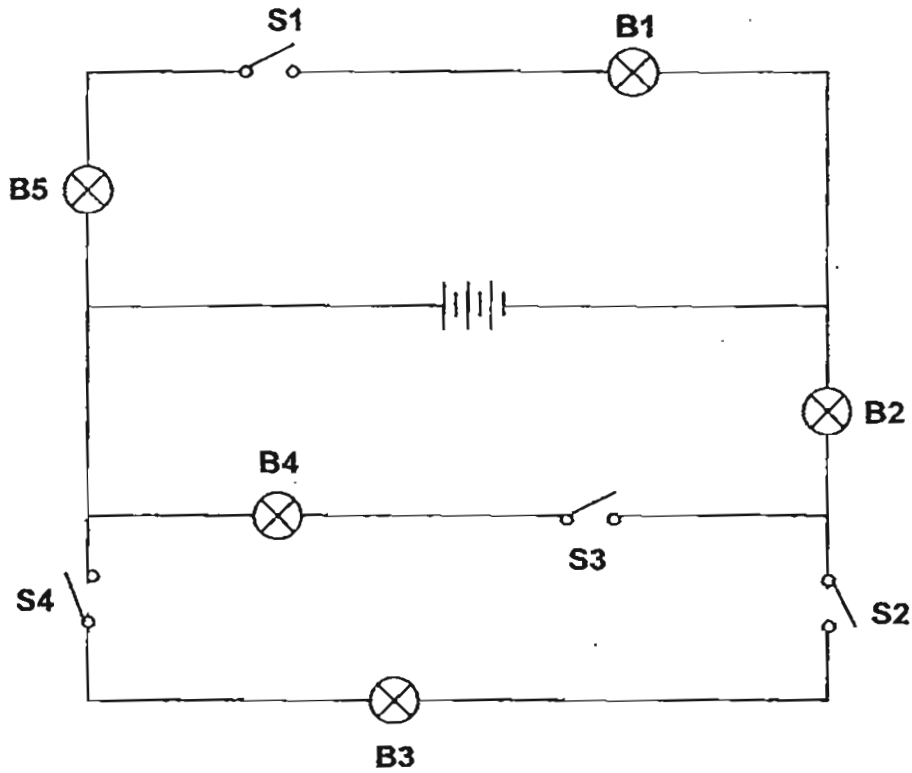
24. Study the diagram below carefully.



Which of the following bulbs, W, X, Y and Z would light up?

- (1) W and Z
- (2) X and Y
- (3) W and X
- (4) Y and Z

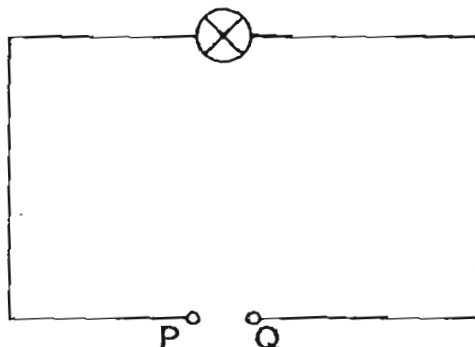
25. The circuit diagram shown below consists of 5 bulbs, 4 switches and 3 batteries.



Which switches must be closed in order to allow only 4 bulbs to light up?

	S1	S2	S3	S4
(1)	Close	Close	Open	Open
(2)	Close	Open	Close	Open
(3)	Open	Close	Open	Close
(4)	Close	Open	Open	Close

26. Ainul set up the circuit below to investigate the relationship between the length and thickness of the wire and the brightness of the bulb by connecting different wires to points, P and Q, of the circuit.



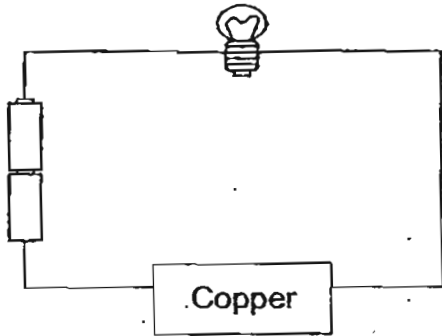
The table below shows the results of her experiment.

Wire	Length	Thickness	Brightness of bulb
W	10cm	1mm	Bright
X	10cm	2mm	Very bright
Y	20cm	1mm	Not bright
Z	20cm	2mm	Bright

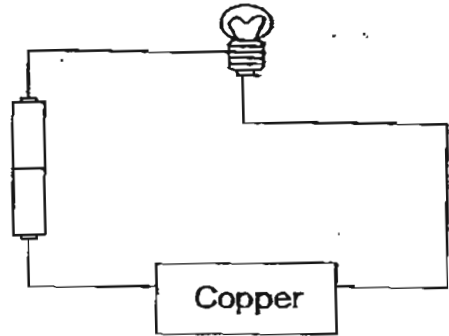
Based on her observations, which of the following statements is/are true?

- A The longer the wire, the brighter the bulb.
  - B The thicker the wire, the brighter the bulb.
  - C The length of the wire does not affect the brightness of the bulb.
  - D The bulb will not light up if the length of the wire is more than 20cm.
- (1) B only  
(2) A and B only  
(3) B and C only  
(4) A, C and D only

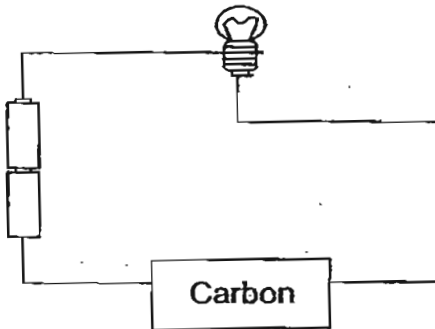
27. Study the electrical diagram below carefully.



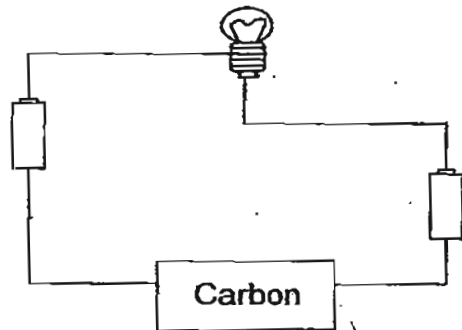
Circuit A



Circuit B



Circuit C

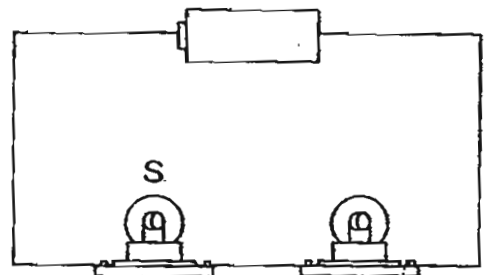
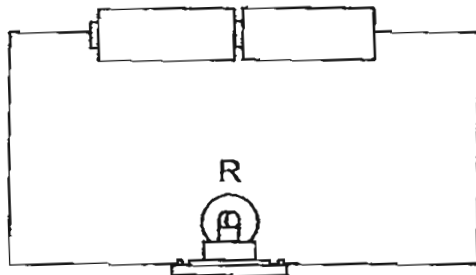
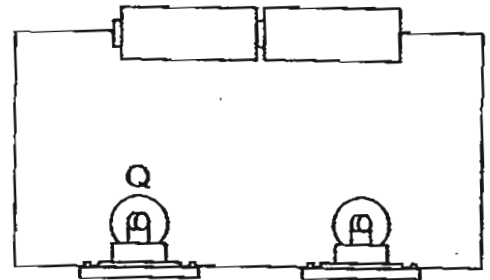
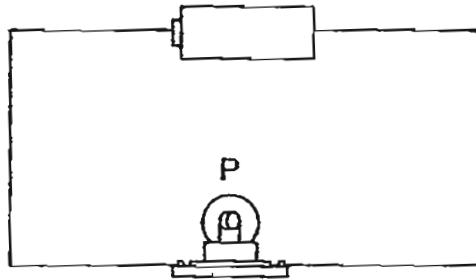


Circuit D

In which of the above circuits will the bulb light up?

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

28. The diagrams below show four different circuits. The batteries and bulbs used are identical. The bulbs in all four circuits light up.



Which one of the following shows the brightness of the bulbs, P, Q, R and S?

	Brightness of bulb		
	Low	Medium	High
(1)	S	P	Q
(2)	S	Q	R
(3)	Q	R	S
(4)	Q	P	R

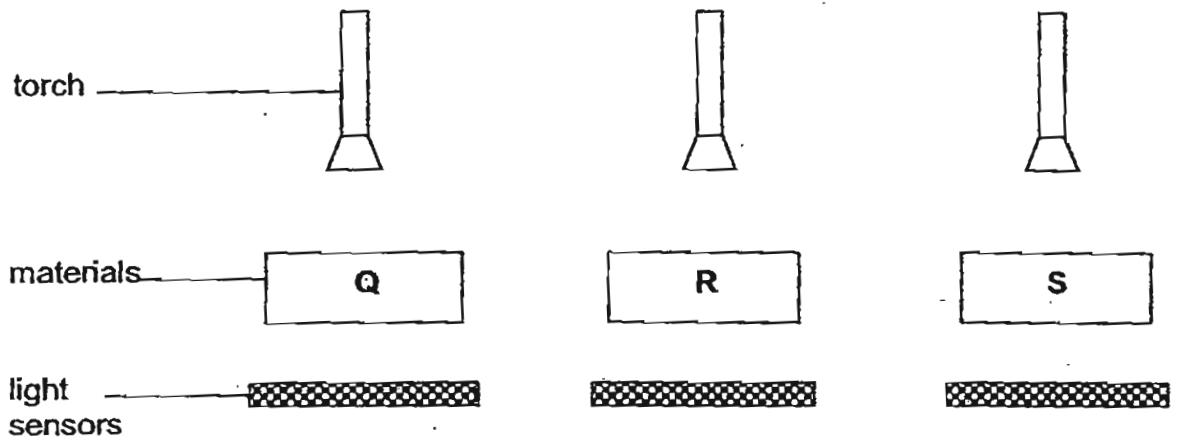
29. Richella was given a beaker containing three different powders, X, Y and Z, mixed together. These powders cannot be dissolved in water. The properties of the three powders are given in the table below.

	<b>Property A</b>	<b>Property B</b>	<b>Property C</b>
	Is it a magnetic material?	Is it a good conductor of electricity?	Does it sink in water?
Powder X	No	Yes	Yes
Powder Y	No	No	No
Powder Z	Yes	Yes	Yes

Which property (ies) should Richella make use of in order to separate the three powders quickly?

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

30. Bella conducted an experiment to find out how much light can pass through different materials. She prepared 3 set-ups as shown below and measured the amount of light with a light sensor.



The measurements shown on the light sensors are recorded in the table below.

Materials	Q	R	S
Amount of light (lux)	30	0	100

Which one of the following matches the materials in the set-up?

	Q	R	S
(1)	Tracing paper	Cardboard	Clear plastic sheet
(2)	Cardboard	Tracing paper	Clear plastic sheet
(3)	Tracing paper	Clear plastic sheet	Cardboard
(4)	Clear plastic sheet	Cardboard	Tracing paper

End of section A



Name: \_\_\_\_\_ ( )

Class: Primary 5 \_\_\_\_\_

## CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 5

Semestral Assessment 1– 2011

SCIENCE

BOOKLET B

12<sup>th</sup> May 2011

Total Time for Booklets A and B: 1 hour 45 minutes

14 questions  
40 marks

Do not open this booklet until you are told to do so.  
Follow all instructions carefully.  
Answer all questions.  
Write your answers in this booklet.

This paper consists of 15 printed pages.

Booklet A	60
Booklet B	40
Total	100

\_\_\_\_\_  
Parent's Signature/Date

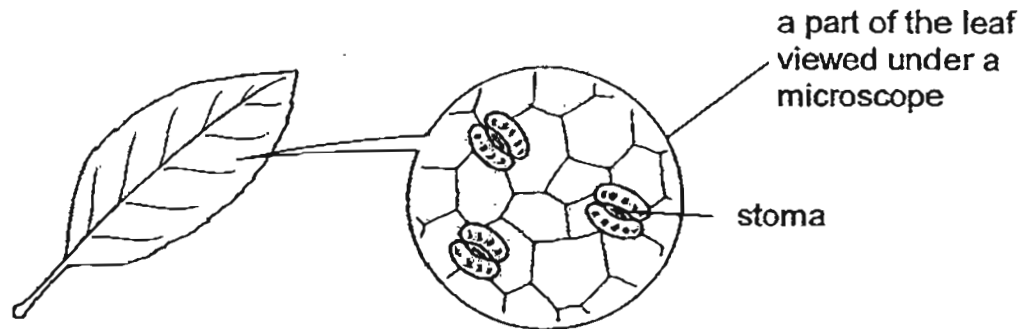


**Section B: 40 marks**

For questions 31 to 44, write your answers in this booklet.

The number of marks available is shown in the brackets [ ] at the end of each question or part question.

31. The diagram below shows the stomata from a leaf of a plant.

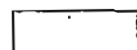


(a) What is the function of the stoma of a leaf? [1]

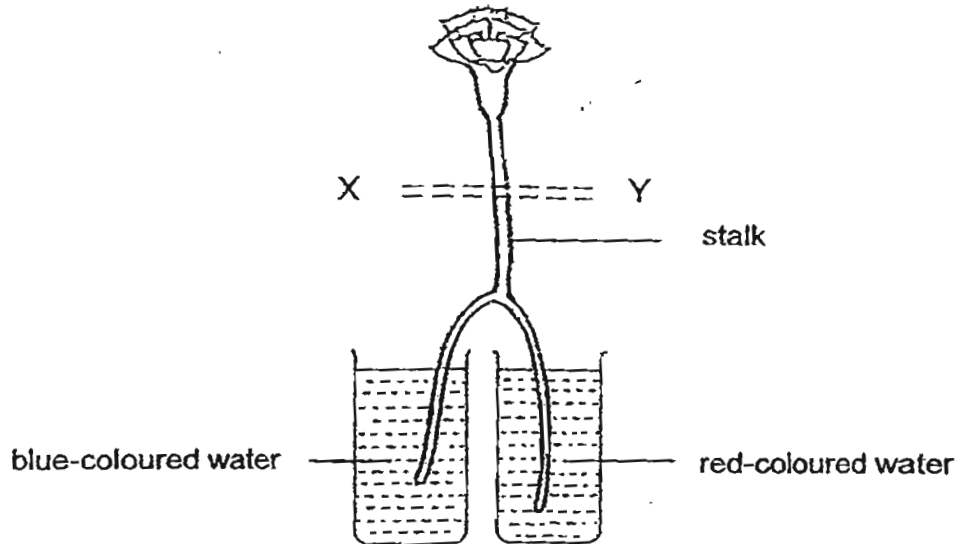
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(b) Explain why there are more stomata found on the underside of the leaves. [1]

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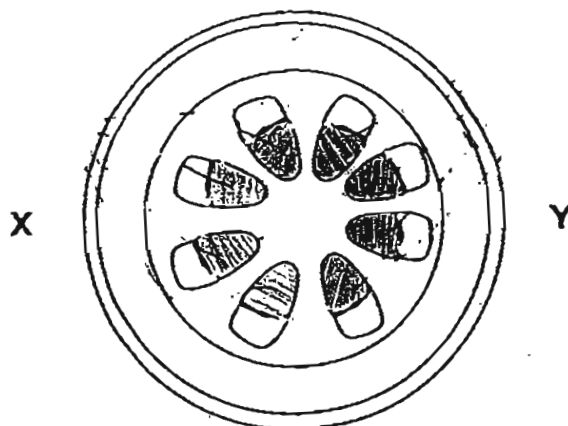
32. Liping split part of the stalk of a white flower into half and conducted an experiment as shown in the diagram below.



She put one half of the stalk of the flower in a jar with blue-coloured water while the other half in a jar with red-coloured water.

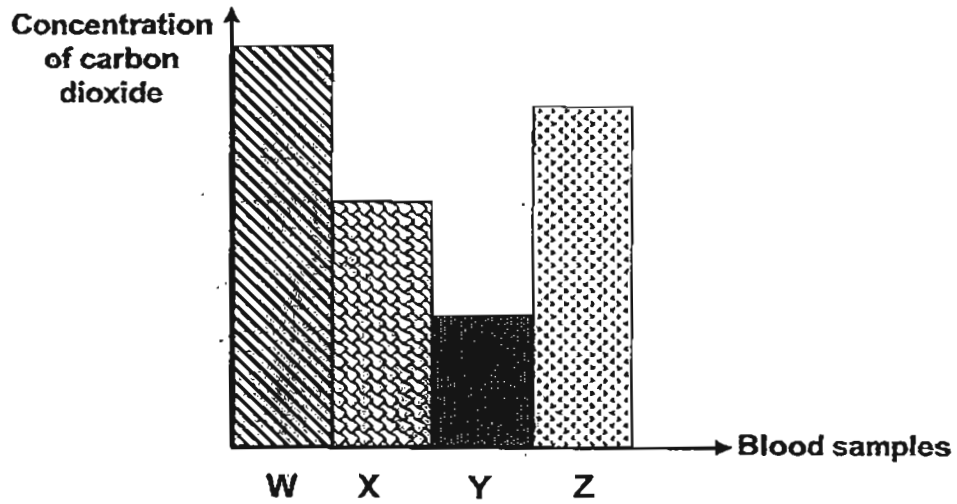
- (a) What would she observe in the flower the next day? [1]

- (b) At the end of the experiment, she cut the stalk at the part labelled XY. **Shade and label** the colour of the fluid found in the stalk on the diagram below to show how the cross-section of the stalk would look like. [2]

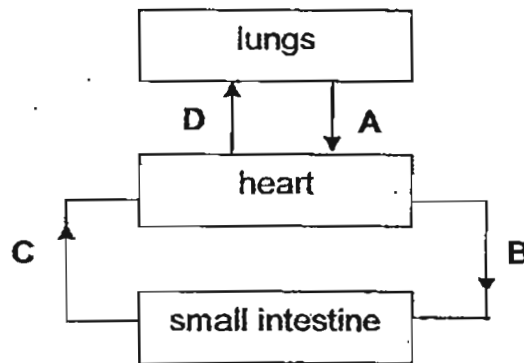


- (c) What can she conclude from this experiment? [1]

33. The bar graph below shows the concentration of carbon dioxide in four blood samples taken at the same time from different blood vessels located in different parts of the circulatory system.



The following diagram shows the different organs linked with different blood vessels, A, B, C and D.



- (a) Fill in, A, B, C and D, correctly in the table below to show how the different blood vessels, A, B, C and D, are matched with the blood samples. [2]

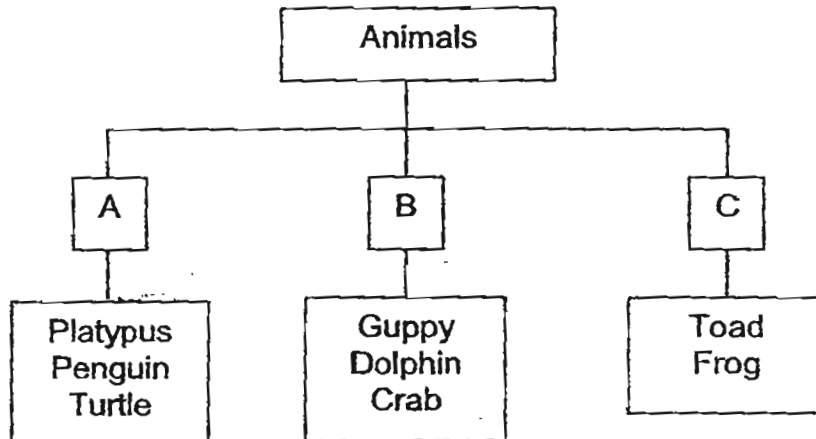
Blood Sample	Blood vessel from
W	
X	
Y	
Z	

- (b) What role does the circulatory system play in digestion of food? [1]

---



34. Some animals are grouped using the classification chart shown below.



(a) Based on the classification chart above, how are the animals grouped? [1]

---

(b) Which animal from the classification chart above is wrongly grouped? [½]

---

(c) Which group, A, B or C, can 'shark' be grouped under? [½]

---



35. Alesha viewed some cells under the microscope and recorded her observations in the table below.

Parts of a cell	Cell A	Cell B	Cell C	Cell D
Cell wall		✓	✓	
Nucleus	✓	✓	✓	
Chloroplasts		✓		
Cell membrane	✓	✓	✓	✓

- (a) Based on the table above, which of the above cells does/do **not** produce oxygen? [1]

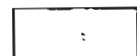
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- (b) Explain clearly why the cell(s) mentioned in (a) does/ do not produce oxygen. [2]

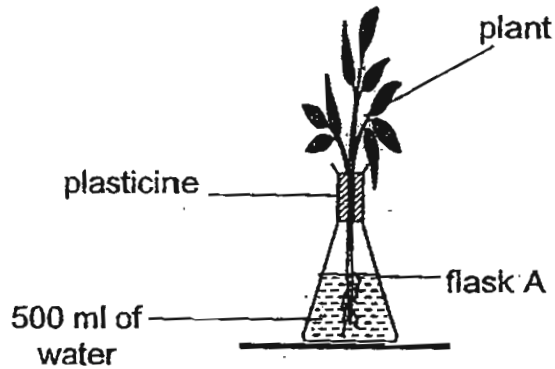
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- (c) What could cell D be? [1]

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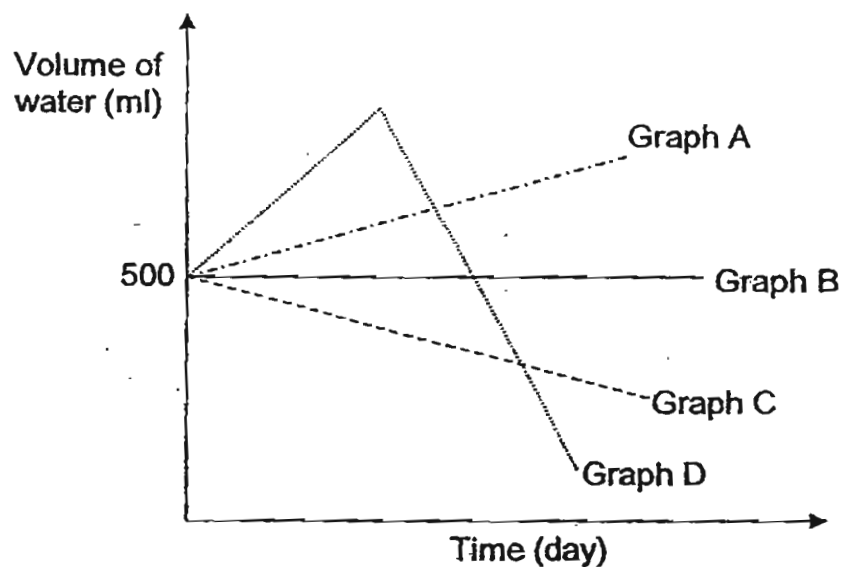
36. Jacob wanted to find out if the number of leaves would affect the amount of water the plant takes in. He set up the experiment below and recorded the water level in the flask over 5 days.



- (a) In the box below, tick (✓) the variables that Jacob should keep constant in order for the test to be a fair one. [1]

Variables	Kept Constant
Amount of water	
Type of plant	
Number of leaves	
Type of flask	

After 5 days, Jacob plotted a graph to represent his results.



- (b) Which graph represents the volume of water in Flask A after 5 days? Explain your answer. [2]

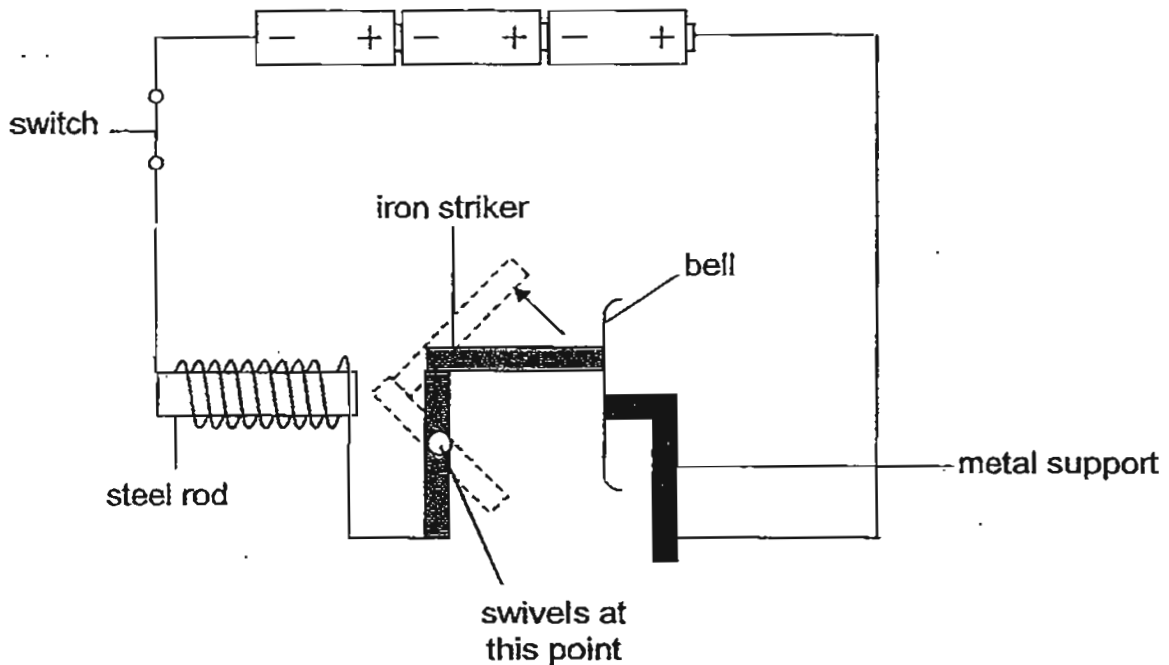
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37. Study the circuit diagram below carefully.



In the above set-up, when the switch is closed, electricity will pass through the circuit and the steel rod will be magnetized. The iron striker will then be pulled back towards the steel rod (represented by dotted lines), causing it to break its contact with the bell. When this happens, the circuit is opened and the iron striker will move back and hit the bell.

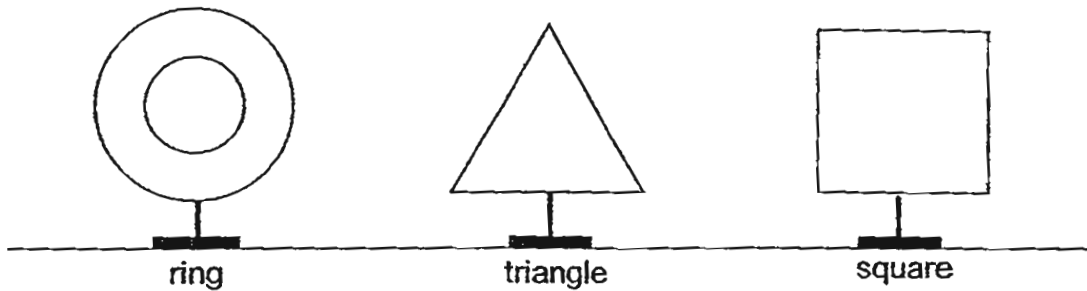
(a) Explain why the iron striker cannot be made of aluminium?

[1]

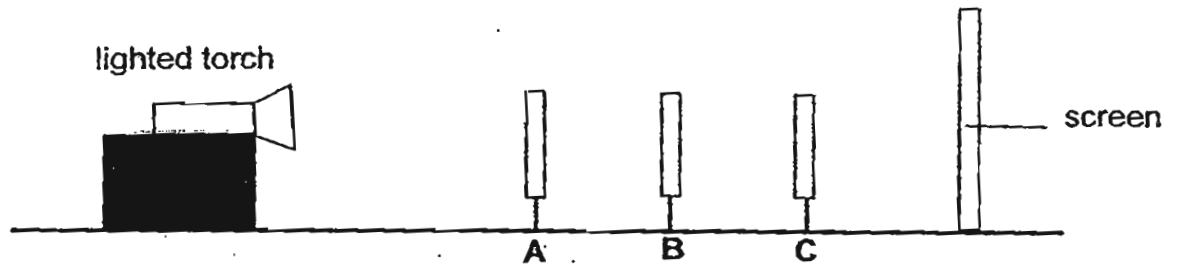
(b) What would happen if the steel rod was magnetized permanently?

[2]

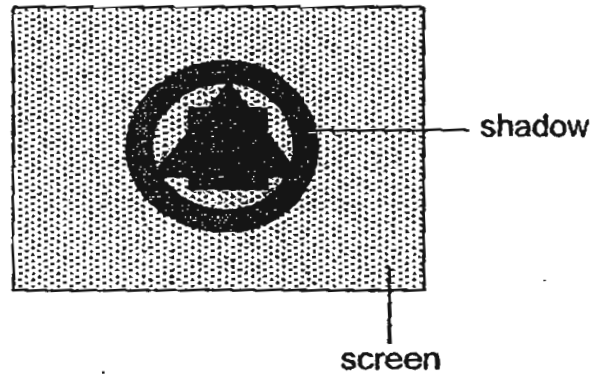
38. Marissa carried out an experiment to find out more about shadows and the properties of light. She cut out 3 objects, a square, a triangle and a ring, as shown below.



She then placed the 3 objects between a screen and a lighted torch as shown in the diagram below.



The diagram below shows the shadow which was cast on the screen.



- (a) Based on the shadow above, write down the letters, A, B and C, in the blanks below in order to cast a shadow as seen above. [1½]

(i) Square : \_\_\_\_\_

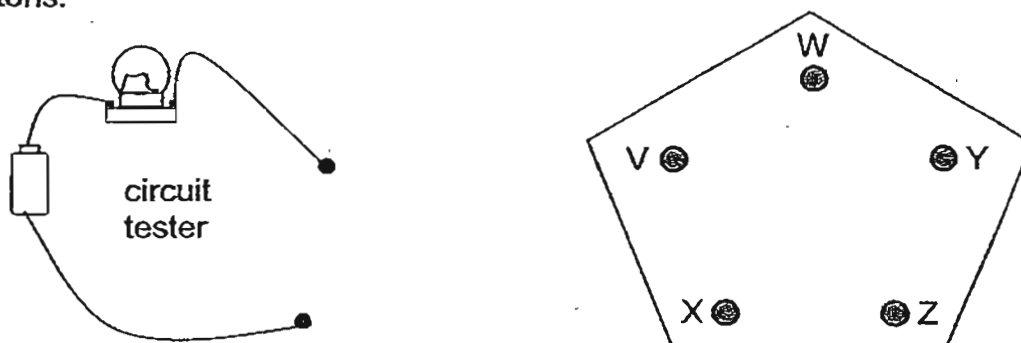
(ii) Triangle : \_\_\_\_\_

(iii) Ring : \_\_\_\_\_

- (b) Without moving materials, A, B and C, what could Marissa do to obtain a smaller and sharper shadow on the screen? [1]

\_\_\_\_\_

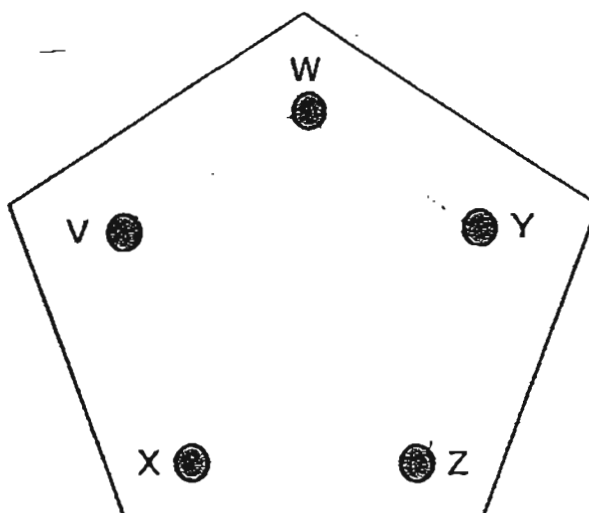
39. Boon Kiat fixed 5 metal buttons, V, W, X, Y and Z to a card. There were wires under the card which connected some of the buttons to one another. He used a circuit tester to connect to two of the metal buttons.



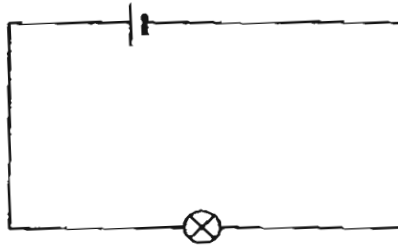
The table below shows the results when the metal buttons were tested with the circuit tester.

Set-up	Metal buttons tested	Did the bulb light up?
1	W and X	No
2	W and Y	Yes
3	W and Z	
4	X and Y	No
5	X and Z	
6	Y and Z	Yes
7	V and W	Yes
8	V and X	No

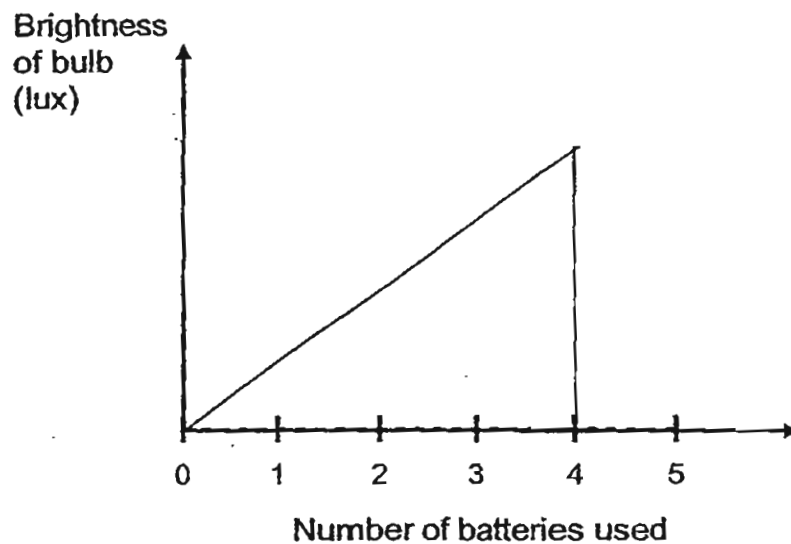
- (a) Based on the results given, write down the results of set-ups 3 and 5 in the table above. [1]
- (b) Based on the results above, draw on the circuit card below to show the correct connection of the wires between the metal buttons. [1]



40. Sheevani set up an experiment as shown below.



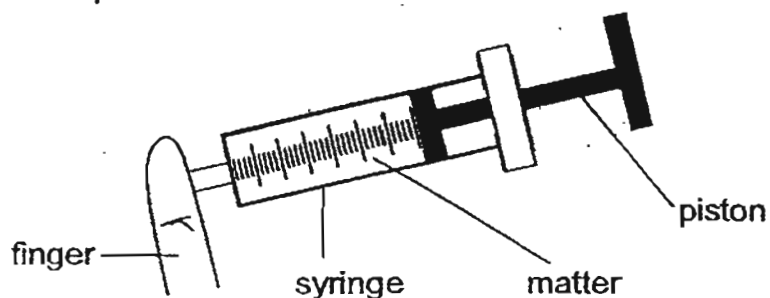
She repeated the experiment with different number of batteries. The results of her experiment are represented by the graph shown below.



- (a) What is the aim of Sheevani's experiment? [1]
- 
- (b) Based on the graph above, what can you say about the relationship between the number of batteries and the brightness of the bulb? [2]
- 
- (c) Draw a circuit diagram of Sheevani's experiment when two batteries are used, such that the brightness of the bulb is the same as her original circuit. [1]



41. Zhiying prepared three syringes and filled each of them with 3 matter, A, B and C. She then placed her index finger to cover each syringe and pushed the piston as shown below.



She recorded the distance moved by the piston for each syringe as shown in the table below.

Syringe	A	B	C
Distance moved by piston (cm)	0.1	0	3

- (a) What could matter, A, B and C represent? Write the letters, A, B and C, in the correct boxes. [1½]

Air       Salt       Carbonated water

- (b) Explain how you identify carbonated water in your answer above. [1½]

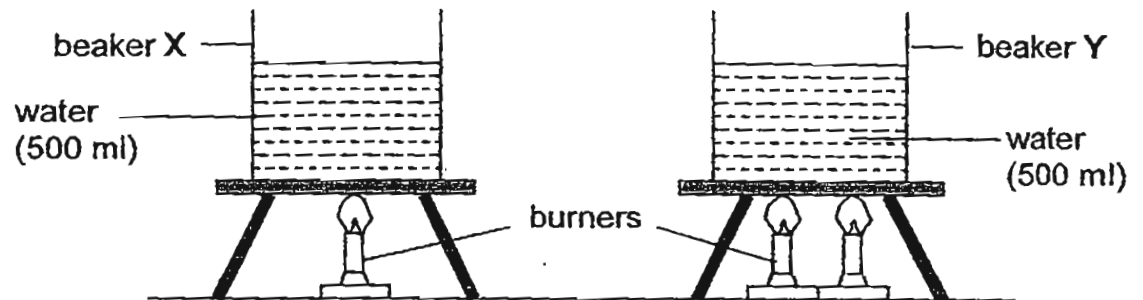
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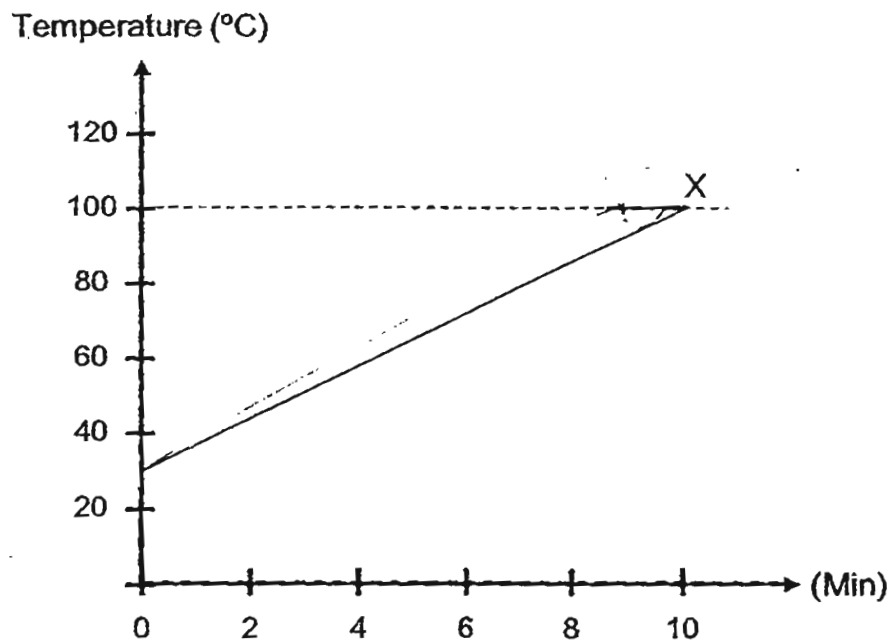
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42. Two identical beakers containing 500 ml of tap water each are heated at the same time, one with one burner while the other with two as shown in the diagram below.



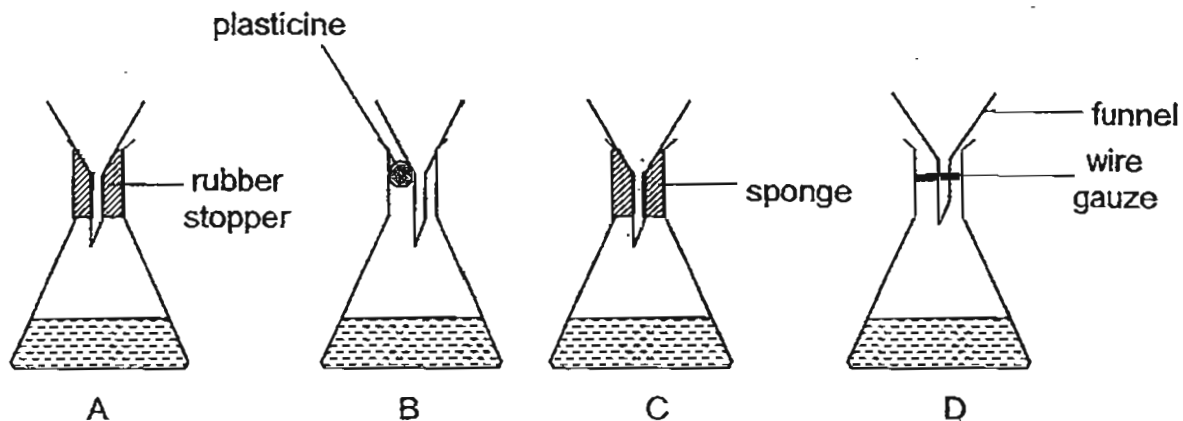
After 10 minutes, the temperature of the water in beaker X is shown in the graph below.



- (a) What is the aim of the experiment above? [1]

- (b) Draw and label 'Y' clearly on the graph above to show the change in temperature of the water in beaker Y? [1]

43. Farid prepared 4 set-ups, A, B, C and D, as shown in the diagrams below. He wanted to find out which set-up will allow water to flow through the funnel in the shortest period of time.

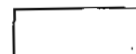


- (a) Which one of the above set-ups, A, B, C or D, would water flow through the funnel the fastest? [1]

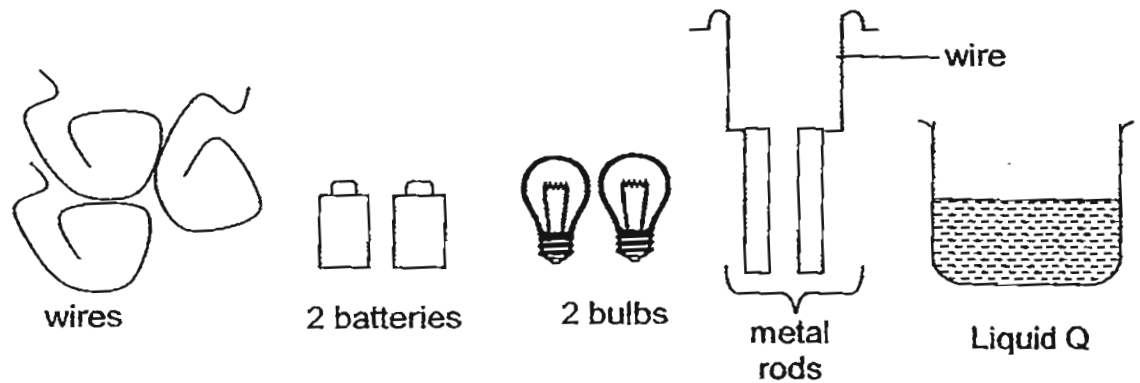
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- (b) Explain your answer in (a). [1½]

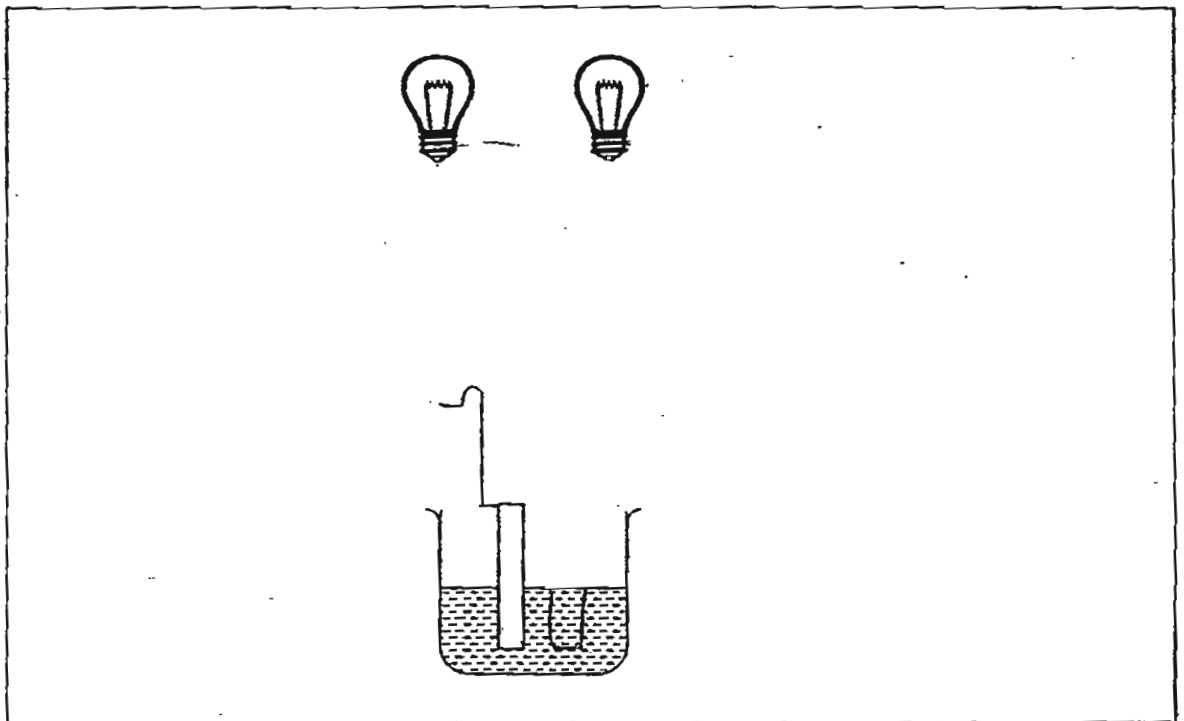
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44. Viknesh wanted to test if liquid Q is an electrical conductor. He was provided with the following apparatus.



- (a) Use the materials given above to complete the circuit below to show how Viknesh could test the electrical conductivity of liquid Q. [2]



- (b) Using the above circuit set-up, what would happen if liquid Q is a conductor of electricity? [1]

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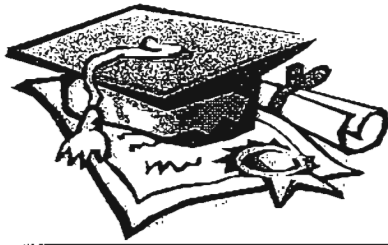


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End of paper





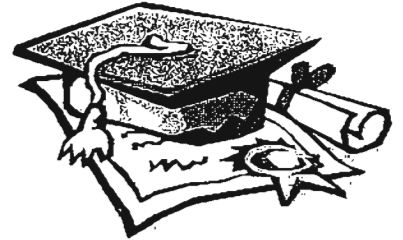


# ANSWER SHEET

**EXAM PAPER 2011**

**SCHOOL : CHIJ**  
**SUBJECT : PRIMARY 5 SCIENCE**

**TERM : SA1**



Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
1	3	3	2	4	4	3	1	4	2	2	4	3	2	4	4	3

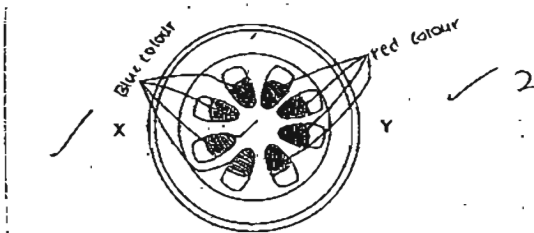
Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	4	3	3	3	4	3	2	1	2	2	3	1

31)a)Its function is to exchange gases.

b)To prevent excess loss of water to the surrounding as the underside is cooler than the upper surface of the leaf.

32)a)The flower would be half blue and half red.

b)



c)The water-carrying tube of the stalk transports water to the other parts of the plant.

33)a)D, B, A, C

b)It helps to transport the digested food to other parts of the body through the blood.

34)a)Breathing method.

b)Dolphin.

c)Group B.

35)a) Cell A, C and D.

b) They do not have chloroplasts that contain chlorophyll. Therefore the plant cannot make food to produce oxygen.

c) Cell D could be an red blood cell.

36)a) Amount of water

Type of plant

Type of flask

b) Group C. The plant could absorb water by its roots. Hence, the water level in the flask decreased.

37)a) Aluminium is non-magnetic so it will not be attracted to the magnetized steel rod.

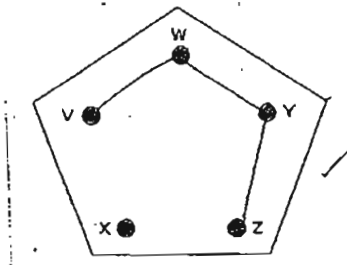
b) The iron striker will not hit the bell. If the steel rod is magnetized permanently, whether the circuit is closed or open would not affect it. Therefore, the striker would just be attracted to the steel rod but will not move back and hit the bell.

38)a) i) C ii) B iii) A

B) She could move the torch further away from the materials.

39)a) 3 → Yes 5 → No

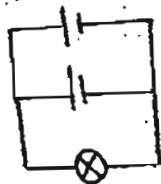
b)



40)a) To see if the number of batteries affect the brightness of the bulb.

b) The more number of batteries used up to 4 batteries, the brighter the bulb would light up. However, when four batteries were used, the bulb will fuse.

c)

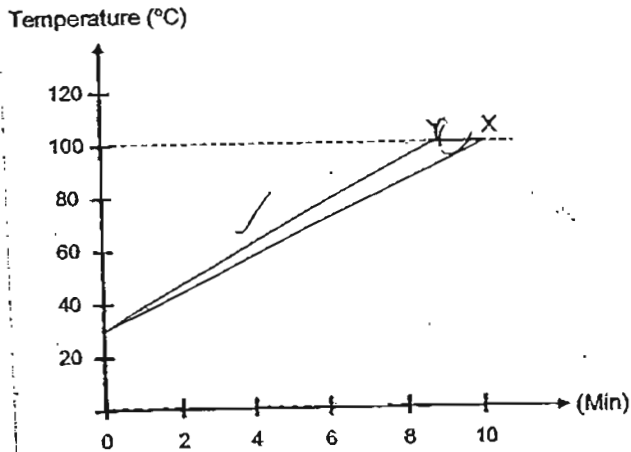


41)a) C B A

b) It is a liquid and it has definite volume but since it contains dissolved carbon dioxide, it could be compressed slightly.

42)a) The aim of the experiment above is to find out if the number of burners affect the time taken for the water to reach its boiling point.

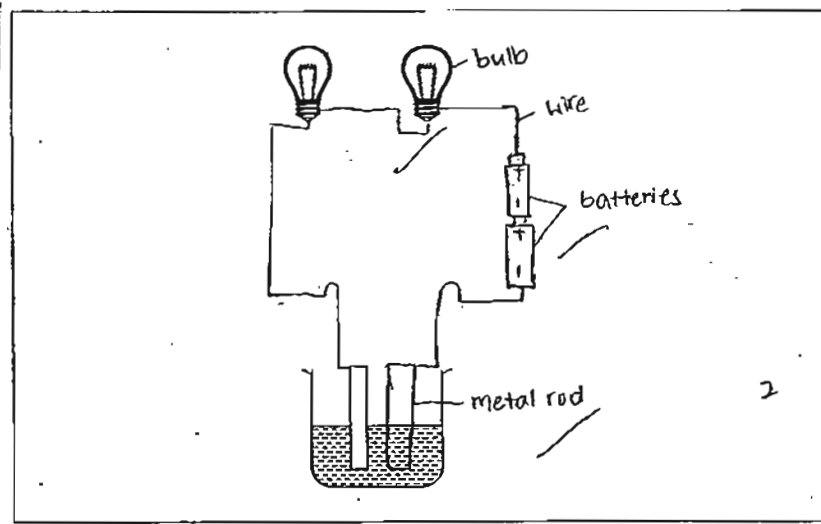
b)



43)a) Set-up D.

b) The wire gauze would allow the air to escape from the flask. Therefore, the space occupied by the air would be lesser, and thus the water would be able to flow in the fastest.

44)a)



b) The bulbs would light up.