HENRY PARK PRIMARY SCHOOL

2011 SEMESTRAL EXAMINATION 2

PRIMARY 5 SCIENCE

Booklet A

Name: _____ ( )

Class: Primary 5 _____

60

30 Questions
60 Marks

Total Time for Booklet A and B: 1 h 45 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

READ AND FOLLOW INSTRUCTIONS CAREFULLY.

PART 1 (60 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.

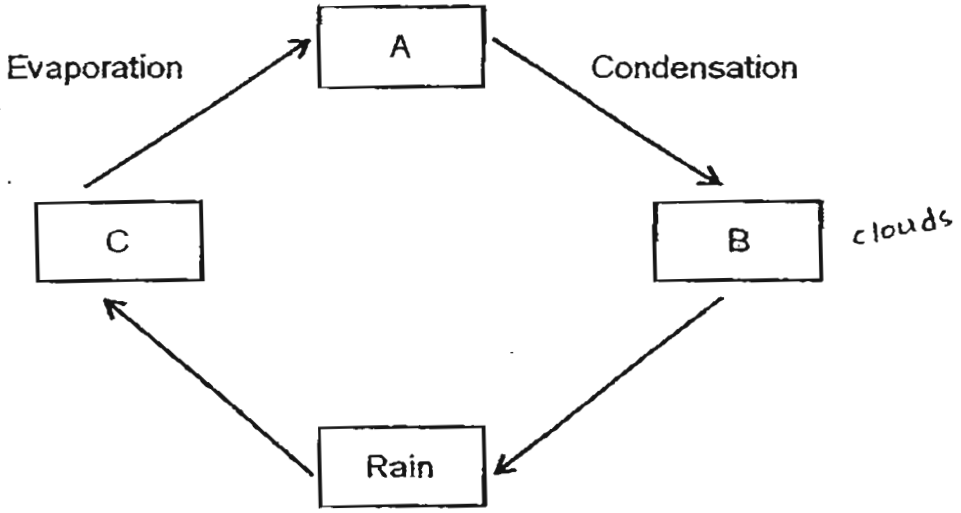
1. Substance X freezes at 20°C and boils at 450°C.

Which one of the following shows the **correct** state of substance X at 5°C and 300°C respectively?

	State of substance X	
	at 5°C	**at 300°C**
(1)	solid	solid
(2)	solid	liquid
(3)	liquid	solid
(4)	liquid	liquid

( )

2. The diagram below shows the water cycle.

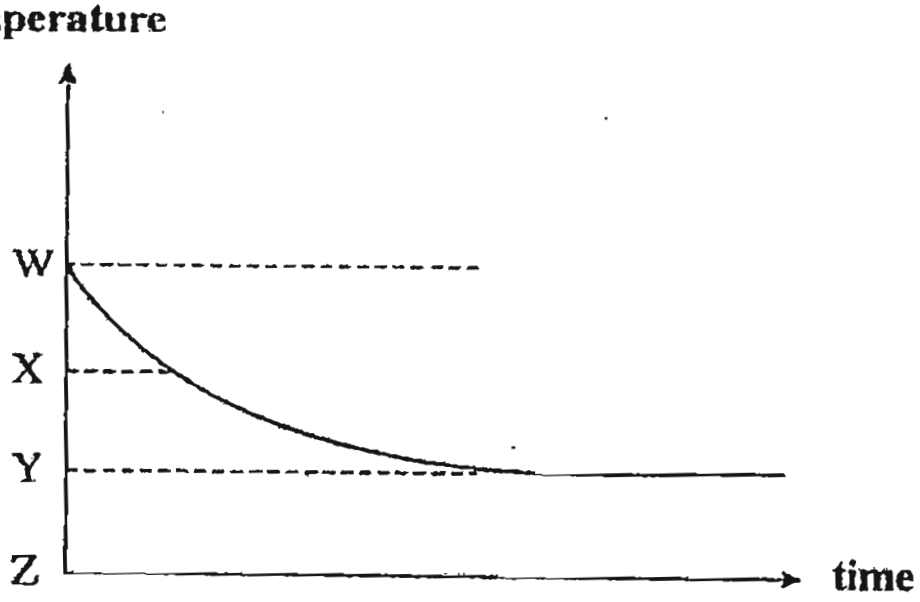


Which one of the following correctly identifies the substances A, B and C?

	A	B	C
(1)	Sea	Water droplets	Water vapour
(2)	Clouds	Water vapour	Water droplets
(3)	Water vapour	Clouds	Sea
(4)	Water droplets	Clouds	Water vapour

( )

3. A beaker of water was heated and then left to cool in a classroom. The graph below shows the temperature of the cooling water in the beaker over time.



Which letter (W, X, Y or Z) represents the classroom temperature?

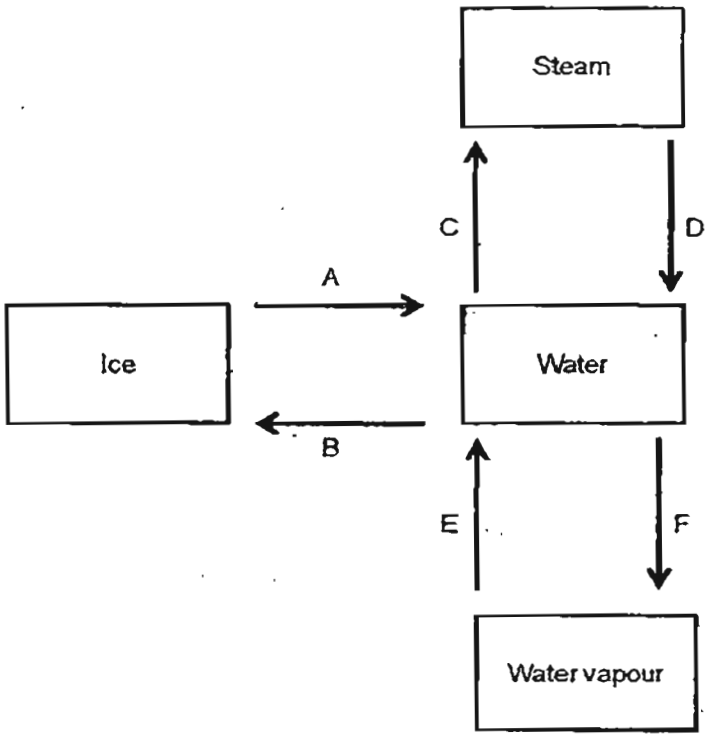
(1) W
(2) X
(3) Y
(4) Z ( )

4. Nancy washed 2 similar bed sheets on two separate days. Bed sheet washed on the 2nd day dried completely 2 hours faster than the one washed on the 1st day.

If the surrounding temperature was the same on both days, which other factor on the 2nd day could have caused the difference in the time taken for the 2 bed sheets to dry completely?

(1) Colder day
(2) High humidity
(3) Presence of strong wind
(4) Presence of dark clouds ( )

5. Study the diagram below carefully. The arrows show the changes in the state of water.



Which of the following processes (A, B, C, D, E and F) show heat loss?

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

( )

6. Which one of the following correctly shows the route taken by a sperm during human sexual reproduction?

(1) Penis → Ovary → Testes
(2) Penis → Testes → Vagina
(3) Testes → Penis → Vagina
(4) Testes → Ovules → Penis ( )

7. Which of the following statements are true about reproduction in animals?

A: One egg is fertilised by one sperm.
B: All eggs develop into young animals.
C: Fertilisation takes place inside or outside the female's body.

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

8. In flowering plants, the function of a male sex cell in the pollen is to _____.

(1) develop into a fruit
(2) attract insects to the flower
(3) fertilize the egg in the ovule
(4) produce the female part of a flower ( )

9. In the life cycle of a flowering plant, the following processes occur.

A: Dispersal
B: Pollination
C: Fertilization
D: Germination

Which of the following shows the correct sequence of the processes (A, B, C and D)?

(1)

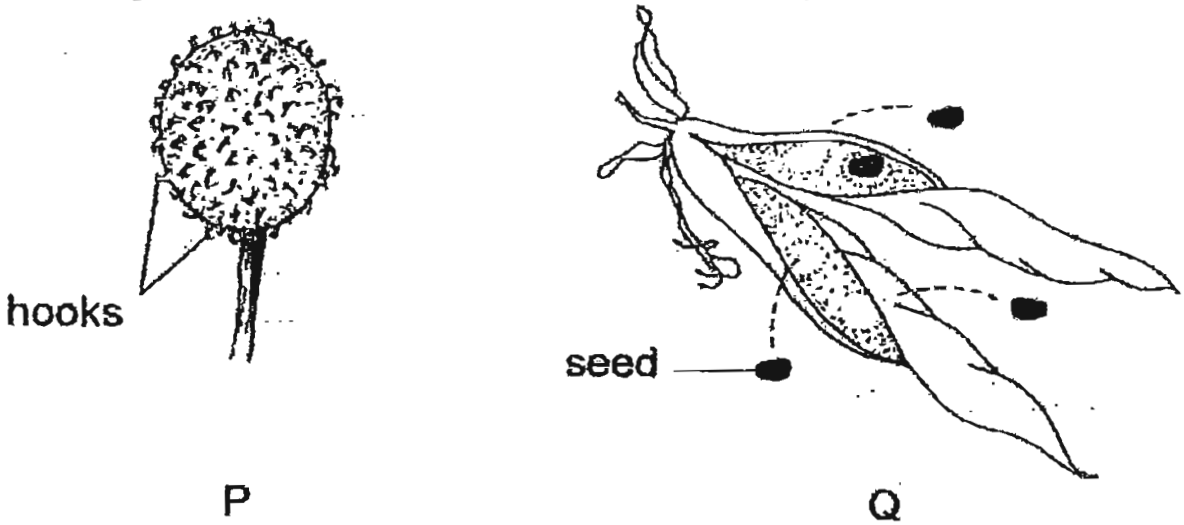
(2)

(3)

(4)

( )

10. The diagram below shows the fruits from two different plants.



Which of the following shows the correct method of dispersal of fruits P and Q?

	P	Q
(1)	Wind	Animals
(2)	Animals	Splitting action
(3)	Wind	Splitting action
(4)	Animals	Animals

( )

11. Which of the following parts of a cell cannot be found in animal cells?

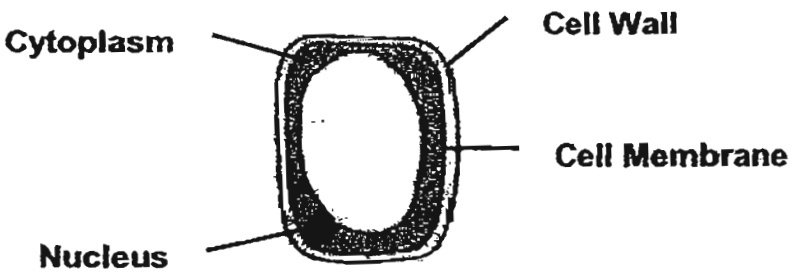
A: cell wall
B: chloroplast
C: cell membrane

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

12. Sundra is an 11-year-old girl. Which of the following information about the cells in her body is true?

(1) The cells in Sundra's body are always reproducing to replace old and damaged ones.
(2) The increase in Sundra's body mass is because the cells in her body get larger in size.
(3) The nuclei (plural form of nucleus) found in Sundra and her sister's body are identical.
(4) The nucleus in Sundra's cells shares similar information with that of her mother but not her father. ( )

13. The diagram below shows a cell.

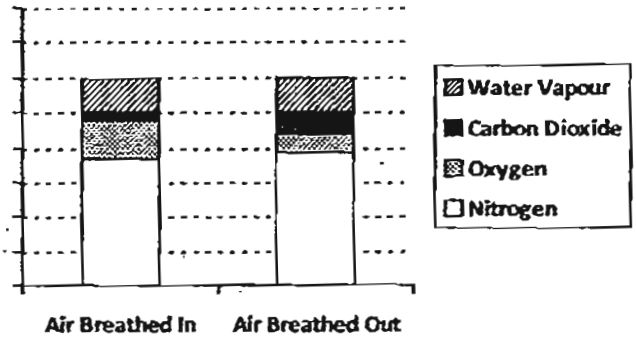


Which part of a living thing is this cell likely to be taken from?

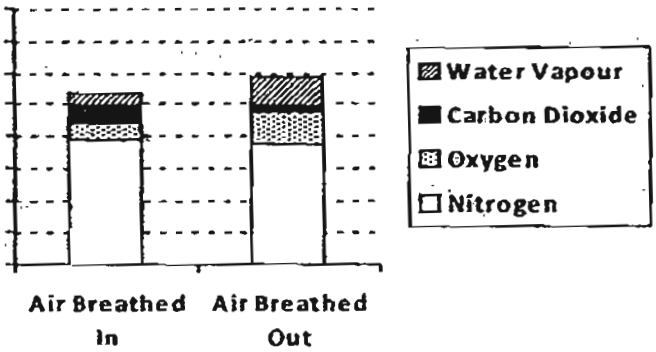
(1) leaf of balsam plant
(2) root of balsam plant
(3) egg cell of a human
(4) skin cell of a human ( )

14. Which of the following graphs correctly compares the composition of the air we breathe in with the air we breathe out?

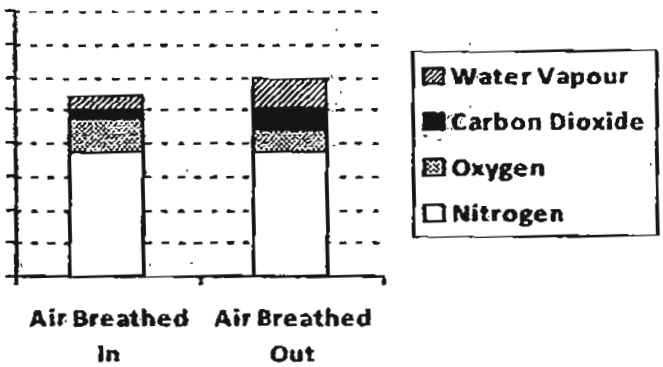
(1)



(2)



(3)



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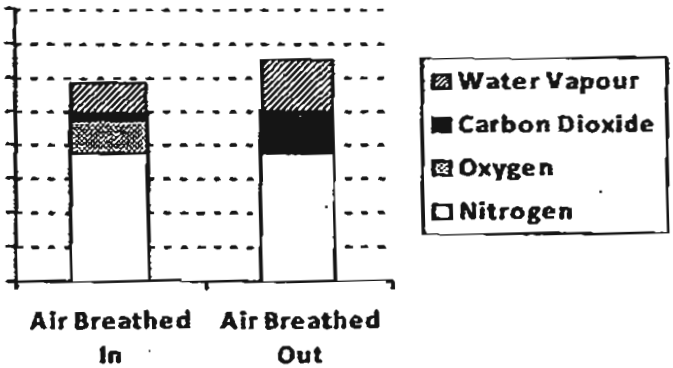
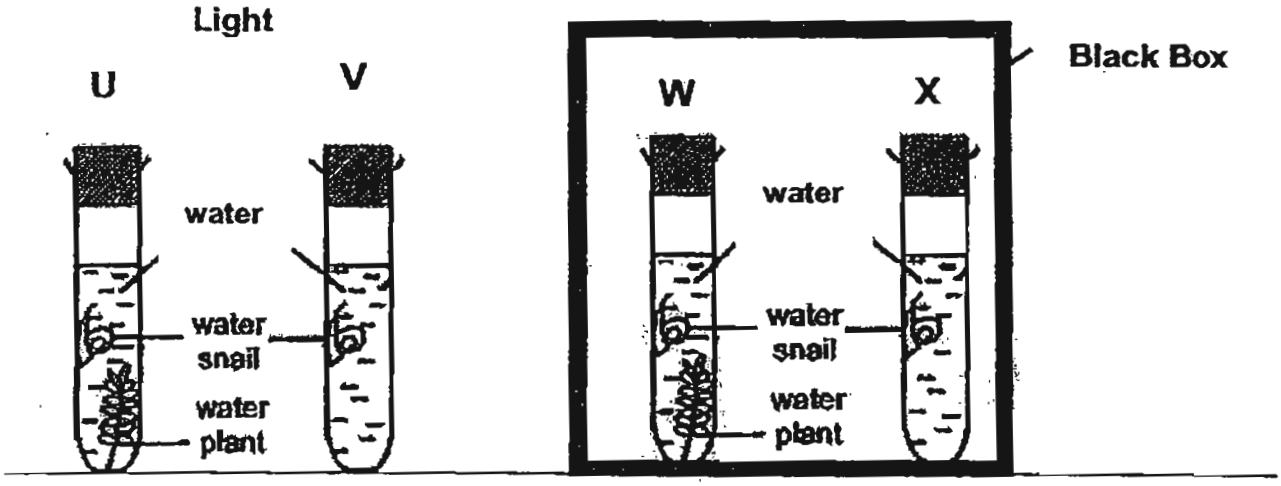


( )

15. A snail is placed in 4 similar containers (U, V, W and X). Containers U and V are placed in light while Containers W and X are placed in a black box.



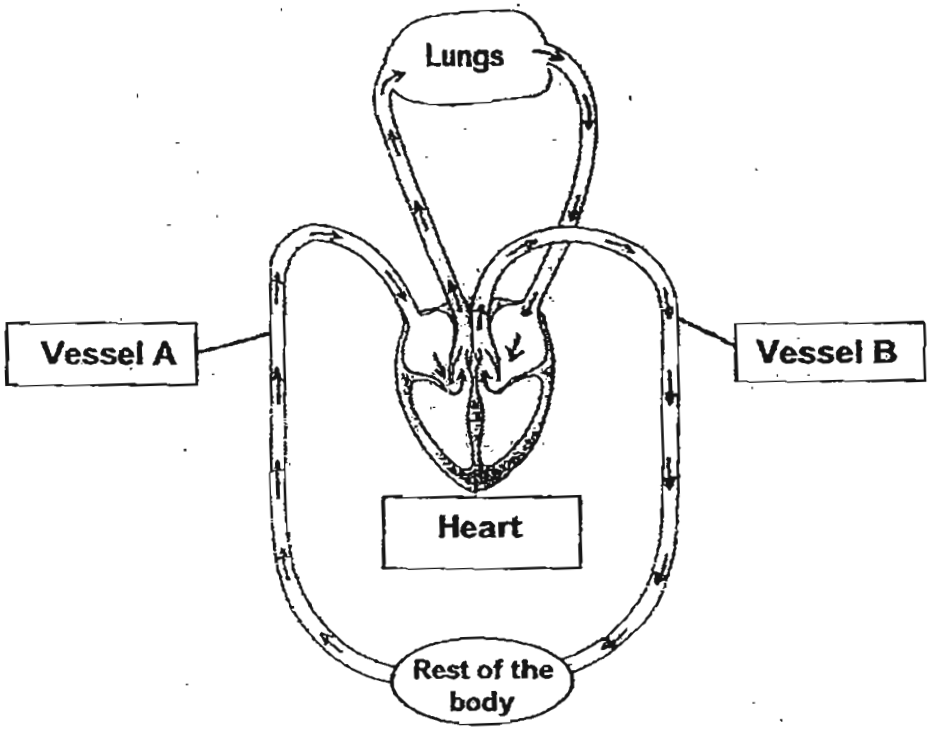
The snail in which container will survive the longest?

(1) U
(2) V
(3) W
(4) X

( )

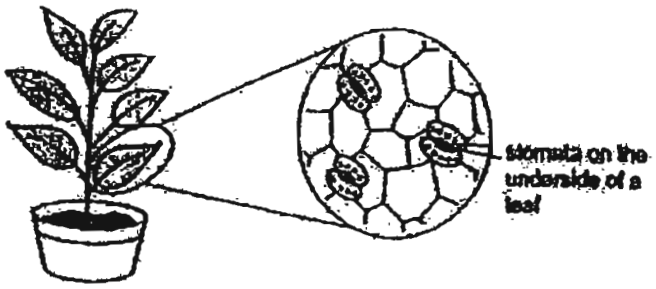
16. The diagram below shows the flow of blood between the lungs, heart and the rest of the body.

Which of the following statements is true?



(1) Blood flowing in Vessel B carries only oxygen.
(2) Blood flowing in Vessel A carries more oxygen than blood in Vessel B.
(3) Blood flowing in Vessel B carries more oxygen than blood in Vessel A.
(4) Blood flowing in Vessel A carries only carbon dioxide. ( )

17. The diagram below shows the tiny openings on the underside of a leaf.



In what ways do these tiny openings help the plant?

A: absorb sunlight to make food
B: remove excess water
C: exchange gases with the surroundings
D: absorb water vapour from the surrounding air

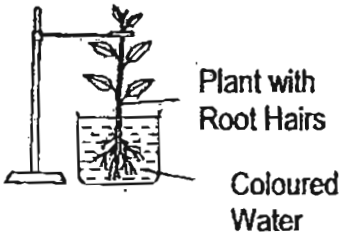
(1) C only
(2) B and C only
(3) A, C and D only
(4) A, B and C only ( )

18. Which of the following statements about plants is true?

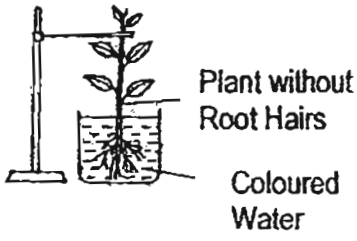
(1) Plants take in and give out oxygen at all times.
(2) Plants do not take in oxygen during photosynthesis.
(3) Plants only take in carbon dioxide and only give out oxygen.
(4) Plants take in more carbon dioxide than they give out when light is present. ( )

19. Sam wants to prove that plants absorb water through their root hairs. Which of the following set-ups should he use?

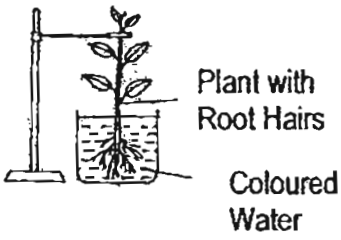
(1)

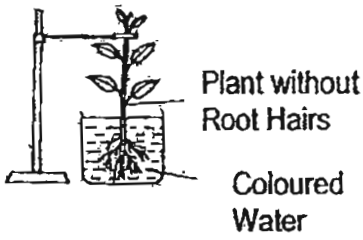


(2)



(3)





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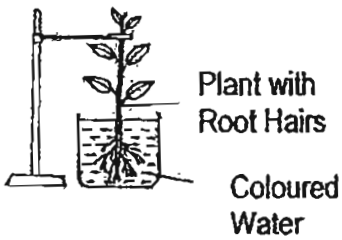
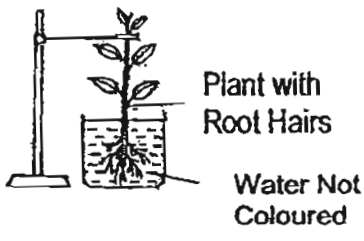




( )

20. The diagram below shows a tree.

Which one of the following is the function of the stem of a tree?

A: Make food.
B: Protect the plant.
C: Transport food and water.
D: Holds the plant upright to get sunlight.

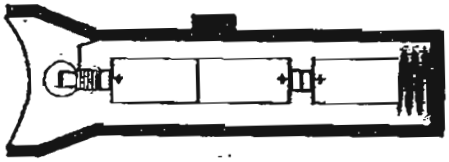
(1) A and D only
(2) A and B only
(3) B and C only
(4) C and D only

( )

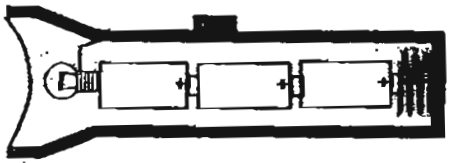
21. Three batteries are needed to light up each of the torches below.

Which arrangement of batteries will light up the torch?

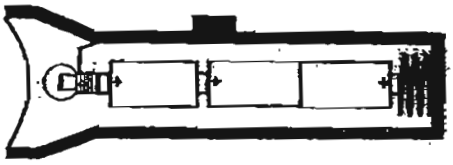
(1)



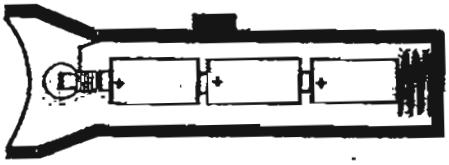
(2)



(3)



(4)



( )

22. Four wall switches are next to a lamp. Only one switch controls the lamp.

The table below shows what happens when Sulin turns the switches on and off.

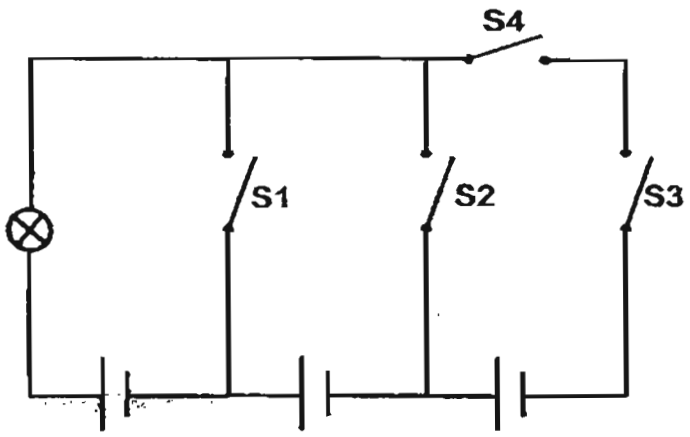
Switch A	Switch B	Switch C	Switch D	Lamp
Off	Off	On	Off	Not lighted up
On	On	Off	Off	Lighted up
On	Off	Off	On	Not lighted up

Which switch controls the light?

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

( )

23. A bulb is connected to three identical batteries and four switches that are opened.

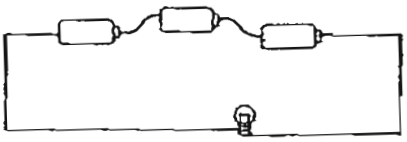


If only one switch is to be used, which switch should be closed to give the brightest bulb?

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

( )

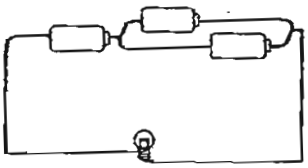
24. Bulb A is connected in a circuit as shown below.



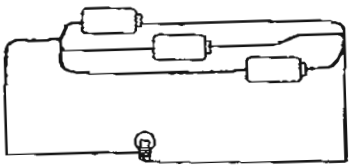
Bulb A

In which of the following circuits does the bulb have the same brightness as bulb A?

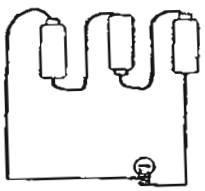
(1)



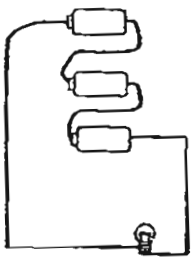
(2)



(3)



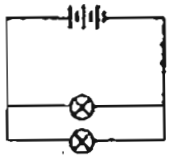
(4)



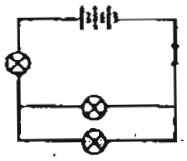
( )

25. All the circuits below have identical batteries and bulbs.
Which one of the following has the dimmest bulbs?

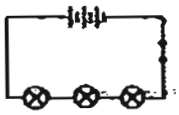
(1)



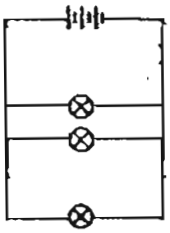
(2)



(3)

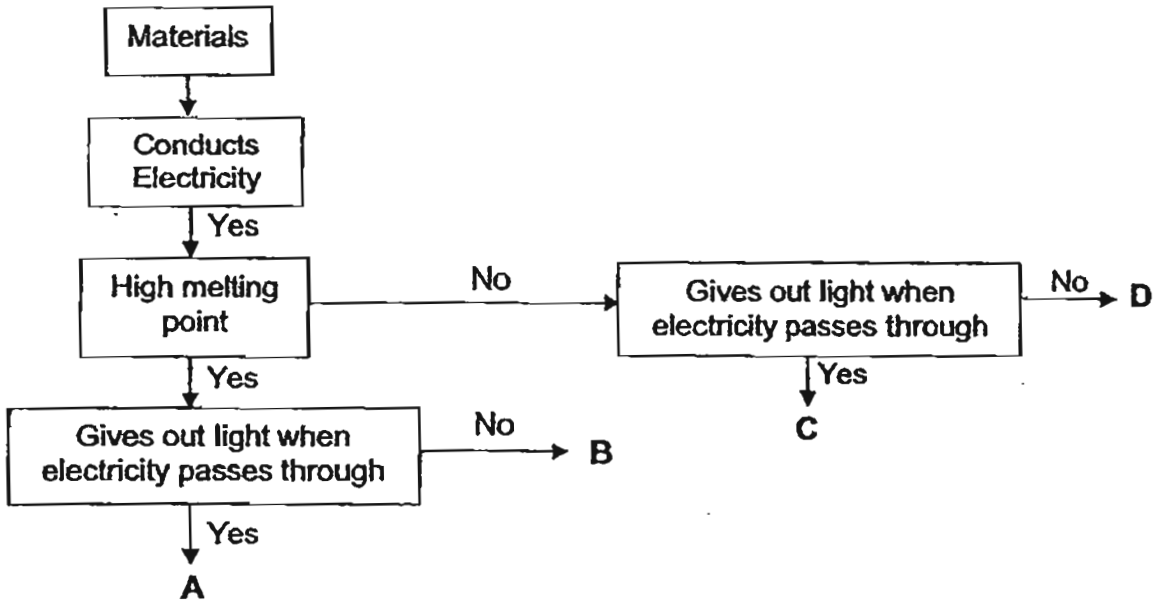


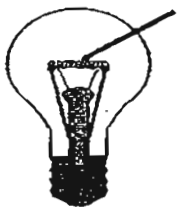
(4)



( )

26. The chart below shows how materials A, B, C and D can be classified.





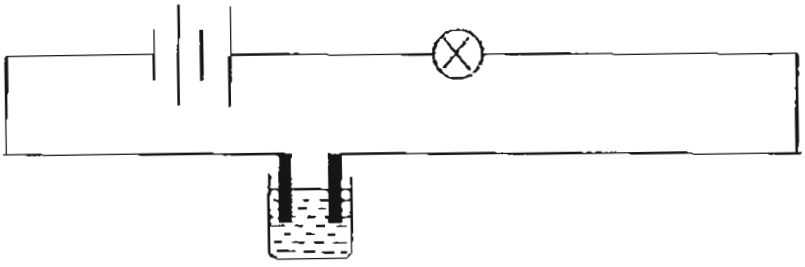
Part X

Which material is most suitable for making Part X of the light bulb?

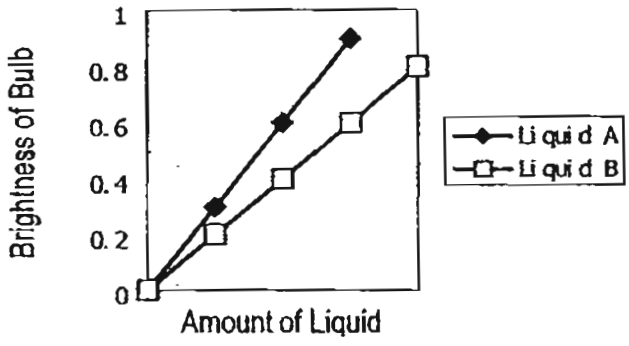
(1) A
(2) B
(3) C
(4) D

( )

27. Steve set up the following circuit.



He measured the brightness of the light bulb using a light sensor and recorded his result in the graph below.

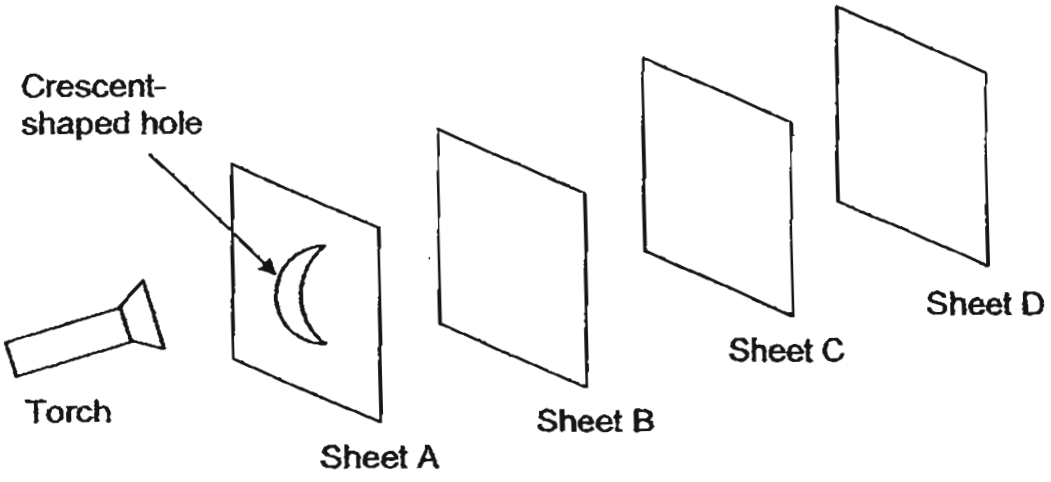


What can Steve infer from the results of his experiment?

A: Both liquids are conductors of electricity.
B: Liquid A conducts electricity faster than Liquid B.
C: Liquid A conducts more electricity than the same amount of Liquid B.
D: More of Liquid A than Liquid B is needed to produce the same brightness in the bulb.

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

28. Martin carried out an experiment in a dark room with the set-up as shown below. He arranged 4 sheets made of different materials A, B, C and D in a straight line. When the torch was switched on, he observed that a **bright patch of light in the shape of a crescent** was seen on sheet C only.



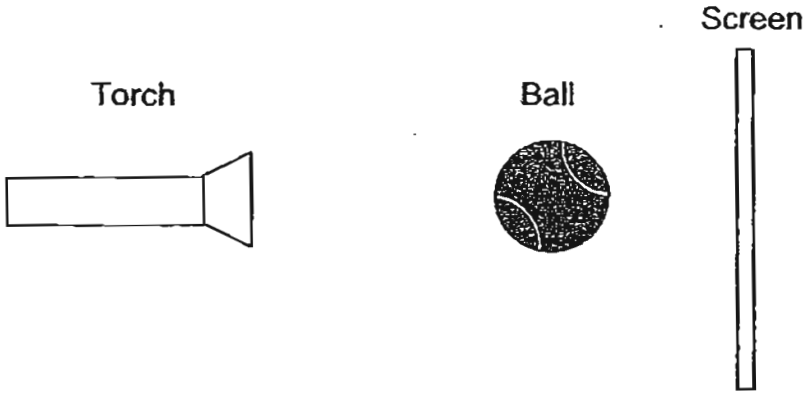
Which of the following statements is **true** about the sheets used above?

A: Sheet A is opaque.
B: Sheet B is transparent.
C: Sheet C is transparent.
D: Sheet D is translucent.

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

( )

29. Choon Lan positioned a tennis ball between a screen and a torch as shown below.



He wrote down the steps he did on his experiment.

A : Switch on the torch
B : Measure the height of the shadow of the tennis ball formed on the screen.
C : Move the tennis ball 5 cm closer to the torch.
D : Measure the height of the shadow again.
E : Repeat steps (C) and (D) twice, moving the tennis ball 5 cm closer to the torch each time.

Which of the following states the correct **hypothesis** for the above experiment?

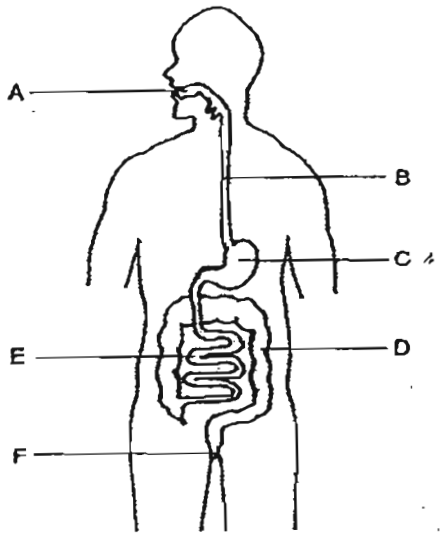
(1)The brightness of the torch will affect the size of the shadow.

(2) The strength of the battery will affect the darkness of the shadow.

(3) The distance between the torch and the tennis ball will affect the height of the shadow.

(4) The distance between the tennis ball and the screen will affect the shape of the shadow. ( )

30. The diagram below shows the digestive system of a human body.



Which of the following parts of the digestive system breaks down food into simple substances?

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

End of Booklet A

HENRY PARK PRIMARY SCHOOL

2011 SEMESTRAL EXAMINATION 2

PRIMARY 5 SCIENCE

Booklet B

40

Name: _____ ( )

Class: Primary 5 _____

14 Questions
40 Marks

Total Time for Booklet A and B: 1 h 45 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

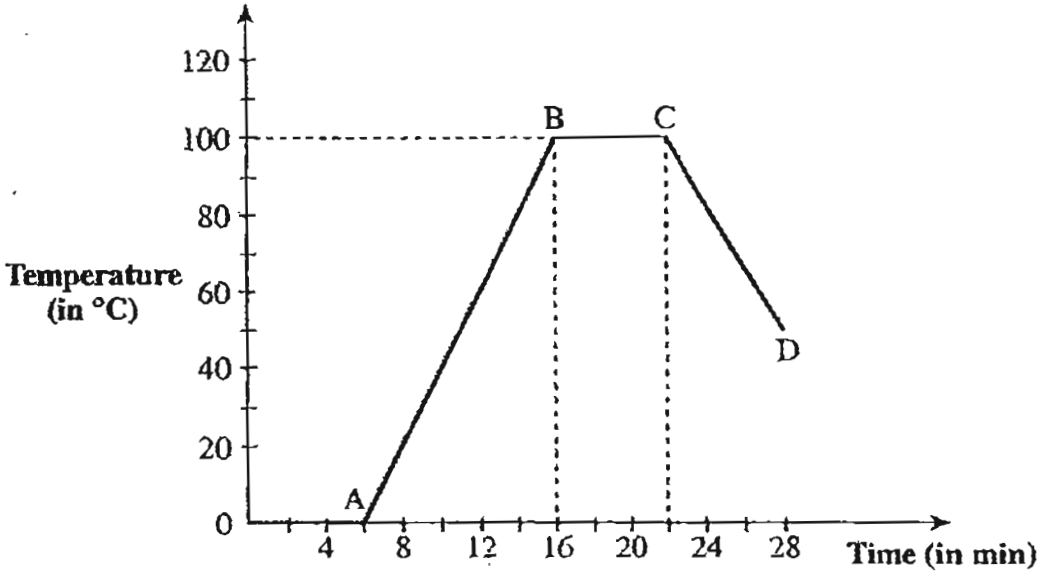
READ AND FOLLOW INSTRUCTIONS CAREFULLY.

There are no questions on this page.

Booklet B (40 marks)

Write your answers to questions 31 to 44 in the spaces given.

31. Peter heated a beaker of ice and recorded the temperature changes. The results are shown in the graph below.



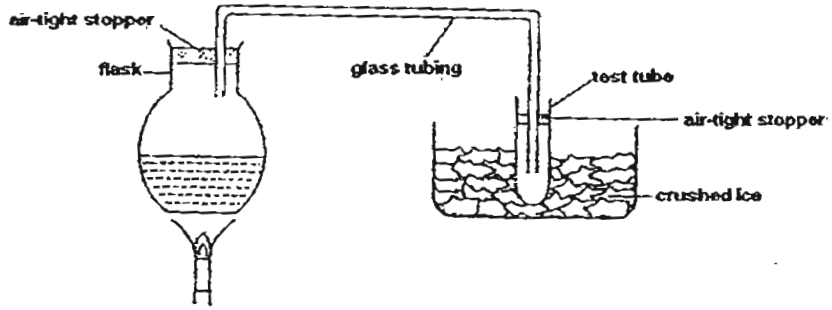
a) How long did the water take to start boiling? *(1m)*

b) Name the process that was taking place between B and C. *(1m)*

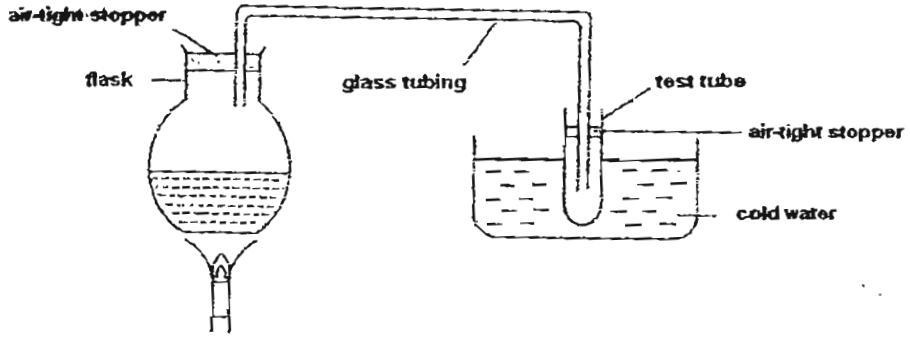
c) After a while, Peter added more ice to the beaker. During which period (A to B, B to C or C to D) did he add more ice? Explain your answer. *(1m)*

32. Study set-ups A and B below. Set-ups A and B are similar except that in set-up A, the test tube is put in crushed ice, while in Set-p B, the test tube is put in cold water. The amount of water collected in the test tubes is compared.

Set-up A (With crushed ice)



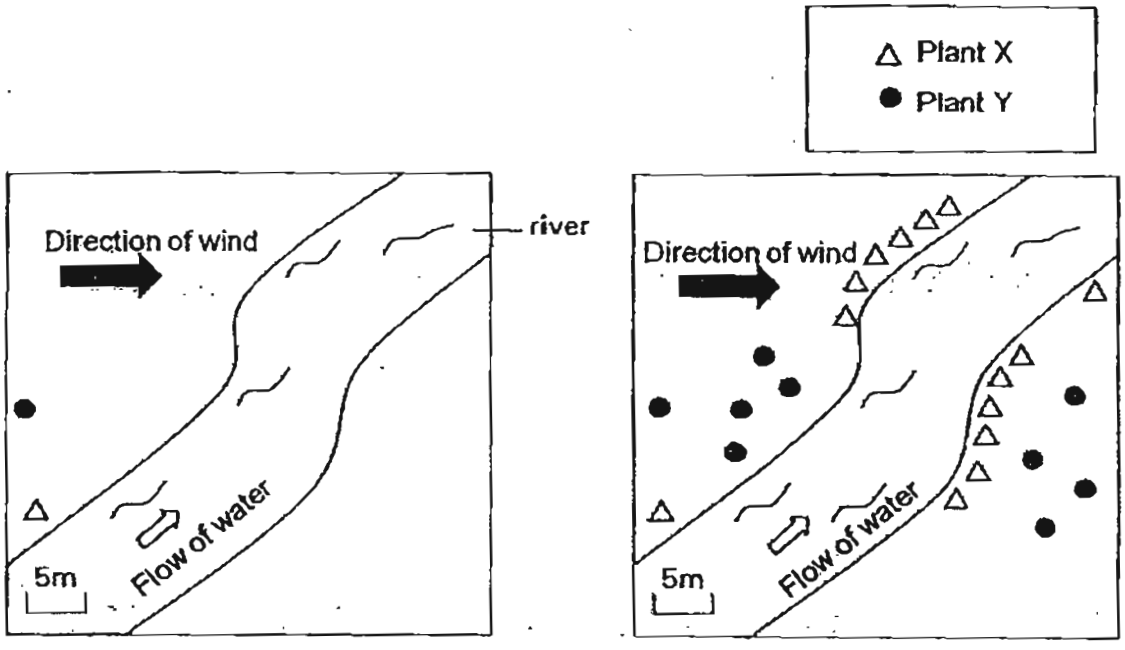
Set-up B (With cold water)



(a) State if the amount of water collected in Set-up A will be greater, smaller or the same as that in Set-up B? *(1m)*

(b) Give a reason for your answer. *(2m)*

33. Nancy counted the number of wild plants X and Y on a piece of land. After a few months, she looked at the same piece of land again. Her observations are shown below.



a) State the methods of dispersal for plants X and Y.

(i) X: _____ *(1m)*

(ii) Y: _____ *(1m)*

b) Give a reason for the dispersal method of plant X mentioned in a(i). *(1m)*

_____

_____

c) Name one characteristic of the fruit of plant X that enables it to be dispersed using the method mentioned in (a). *(1m)*

_____

_____

_____

34. Study the table given below carefully.

Animal	Gestation period	Age of maturity
Cat	60 days	9 months
Bear	230 days	4 years
Mouse	20 days	6 weeks
Elephant	624 days	14 years

a) Arrange the animals according to the length of the gestation period, from the longest to the shortest. *(1m)*

Longest gestation period			Shortest gestation period

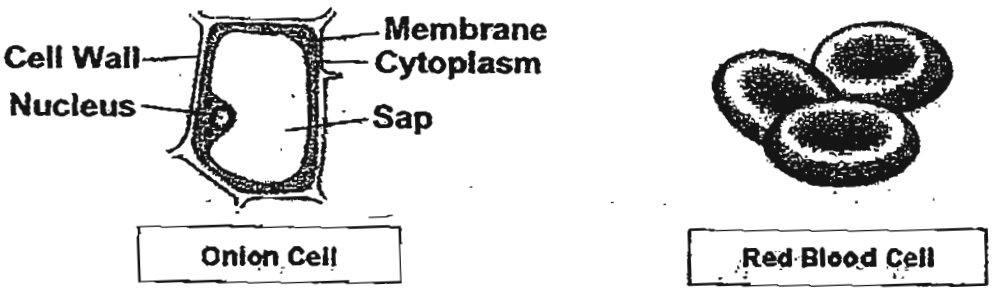
b) Based on the table above, state what effect the size of the animal has on the age of maturity. *(2m)*

_____

_____

_____

35. The diagram below shows an onion cell (taken from the bulb of an onion) and a red blood cell.
The red blood cell is special animal cell that does not contain a nucleus.



a) Besides the nucleus, name a part of the onion cell that cannot be found in the red blood cell. *(1m)*

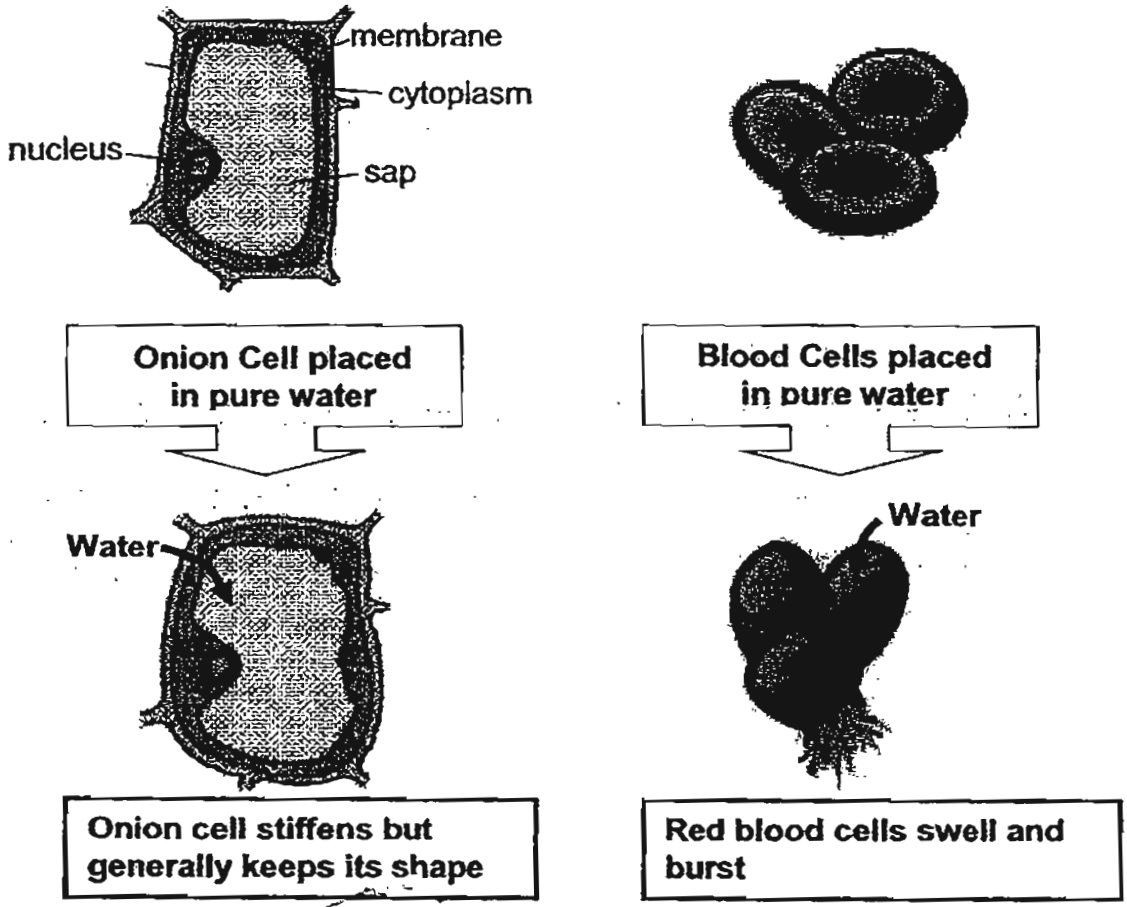
_____

Question 35 continued

An experiment is carried out on both the onion and red blood cell to find out what happens when they absorb too much water.

Both cells are placed in pure water so that their cell membranes absorb as much water as possible.

The diagram below describes the result of the experiment:



b) Why does the red blood cell burst more easily but not the onion cell when too much water enters it? *(2m)*

_____

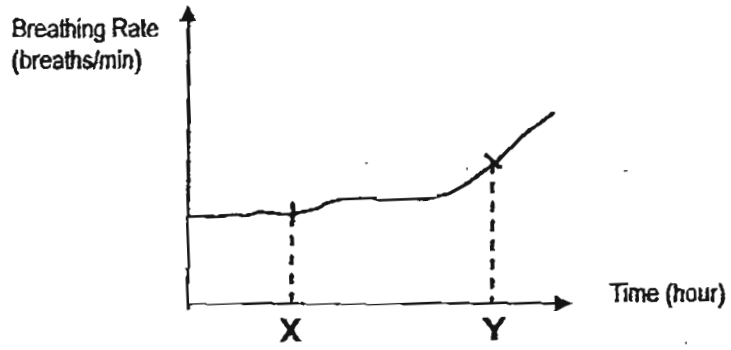
_____

c) Most animals have skeletons so as to give their body shape and structure.
Explain why plants can have a structure even when they do not have skeleton. *(1m)*

_____

_____

36. The graph below show changes in Samy's breathing rate.

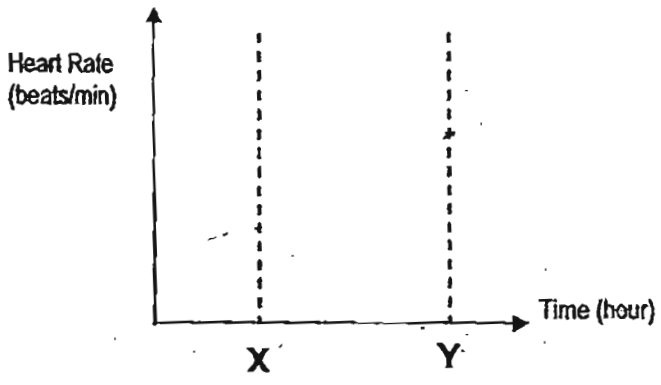


a) The table below shows Samy's activities at different times on the graph.

Times on Graph	Activity
X	Walking
Y	Running

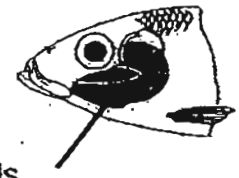
Why is Samy's breathing rate lower at X than at Y? *(2m)*

b) Draw in the graph below to show how Samy's heart rate changes over the same period of time.

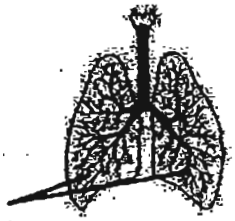


(1m)

37. a) The diagram shows the gills of a fish and the human lungs.



Gills



Lungs

State the difference in the type of oxygen breathed in using the gills and using the lungs. *(1m)*

_____

_____

b) The mudskipper is a fish but can stay on land for a considerable amount of time.

In water, the mudskipper breathes through gills.
When on land, it carries a mouthful of water in its gill chambers.

i) How does a mudskipper use its gills for gaseous exchange using the mouthful of water? *(2m)*

_____

_____

_____

ii) After staying on land for a while, the mudskipper will gulp in another fresh mouthful of water. Explain why. *(1m)*

_____

_____

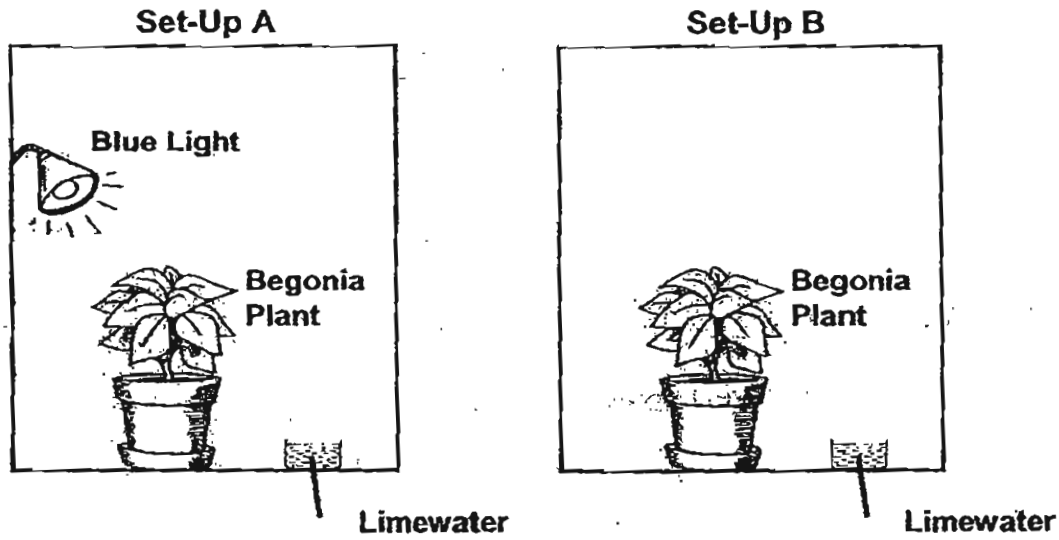
38. Both the human circulatory system and plant transport system use tubes to transport water and food.
State the difference in the way tubes are <u>used</u> in these two systems.

(2m)

39. Stanley wants to test the following hypothesis:

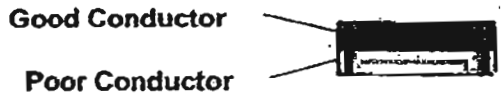
> Begonia plant produces more carbon dioxide when exposed to blue light.

He sets up his experiment as shown using limewater in both set-ups to ~~measure the amount~~ of ~~carbon~~ dioxide produced.



Explain clearly why Set-Up B is used in this experiment. *(2m)*

40. A bimetallic strip is made of 2 metals with different heat conductivity. The metal at the top is a better conductor than the metal below. The diagrams below show what a bimetallic strip looks like at different temperatures.

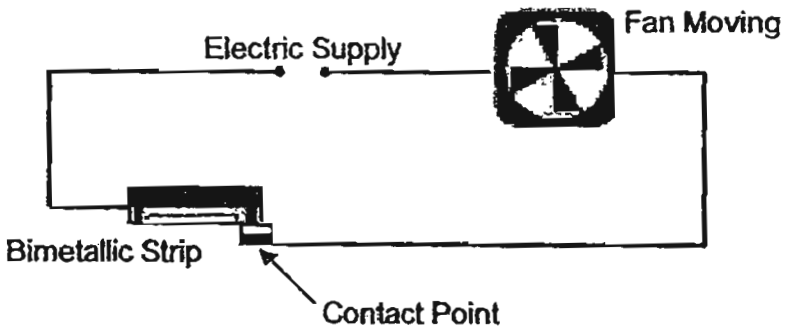


Bimetallic Strip at 25^0C

Bimetallic Strip at 20^0C

a) Draw in the box below what the bimetallic strip looks like at 30^0C. *(1m)*

b) The same bimetallic strip is connected to a circuit with a fan as shown below.



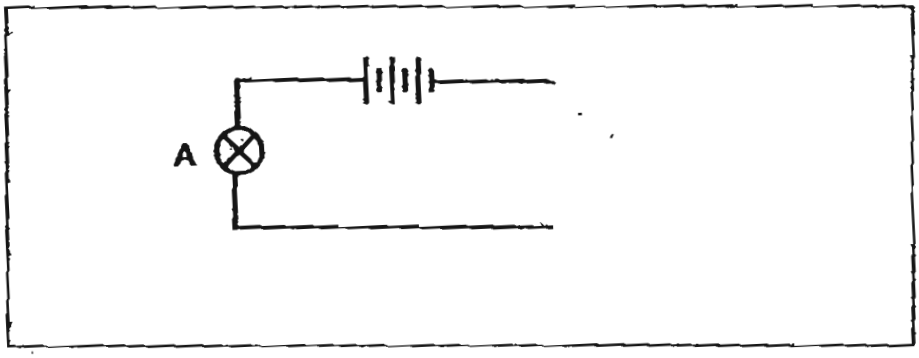
What will happen to the fan when the temperature of the strip reaches 20^0C? *(1m)*

c) The circuit in (b) is used to cool a room. Explain how the strip ensures that the temperature of the room is not too low. *(2m)*

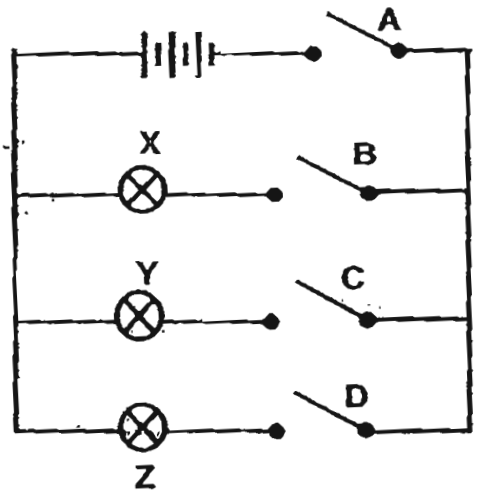
41. Bulbs A, B and C are connected in a circuit with 3 batteries.
The table below shows what happens to the other 2 bulbs if one bulb is fused.

Bulb A	Bulb B	Bulb C
Fused	Does not light up	Does not light up
Light up	Fused	Light up

Using the information in the table above, use symbols to complete the circuit diagram in the box below to show how Bulb B and Bulb C are connected in the circuit. Label Bulb B and Bulb C. *(2m)*



42. A circuit is connected as shown below.



a) Which switch controls all the bulbs in the circuit? *(1m)*

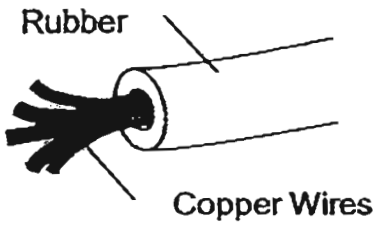
_____

b) What is the advantage of arranging Switch B in series with Bulb X? *(1m)*

_____

_____

43. a) Wires used in households are made of copper wrapped with rubber.

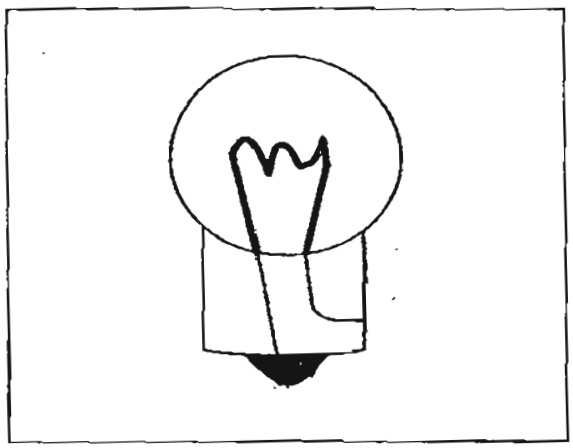


Explain why rubber is used to wrap around copper wires. *(1m)*

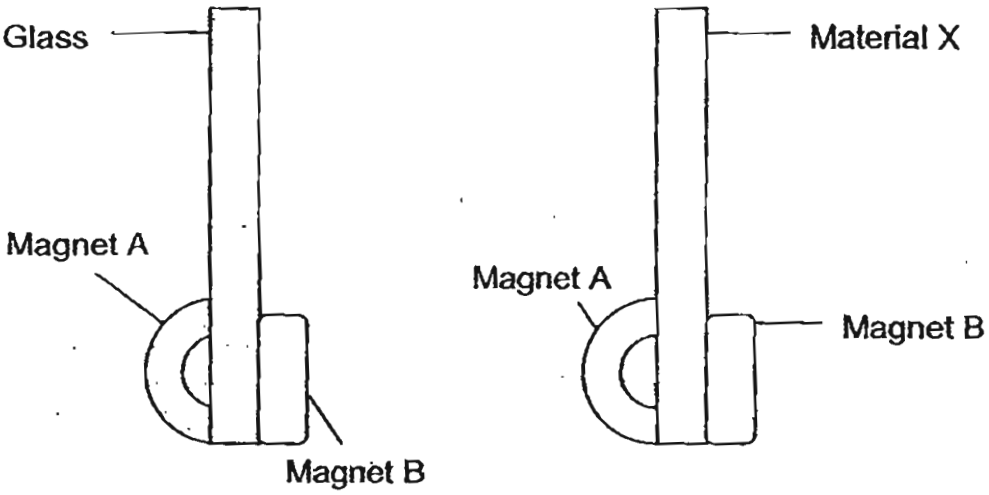
_____

_____

b) Draw lines on the bulb in the box below to show how the filament in the bulb is connected. *(1m)*



44. Study the two set-ups below.



Set-up 1 **Set-up 2**

In Set-up 1, Magnet A is moved upwards along the glass and the distance moved by the two magnets are measured using a ruler. The same is done for Set up 2. The result is recorded in the table below.

Set up 1

Distance moved by A (cm)	Distance moved by B (cm)
2	2
6	6
8	8

Set up 2

Distance moved by A (cm)	Distance moved by B (cm)
2	0
6	0
8	0

(a) Give an example of Material X. *(1m)*

_____

(b) Explain your answer in (a) *(1m)*

_____

_____

End of Booklet B

Setters: Mrs Sia Song Ling and Mr Paul Teo

Answer Ke

EXAM PAPER 2011

SCHOOL : HENRY PARK
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA2

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

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

31)a)16 minutes.
b)Boiling.
c)C to D. The temperature of water decreased.

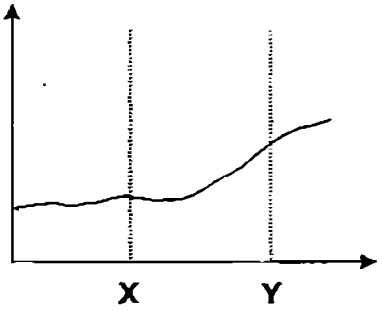
32)a)The amount of water collected in Set-up A would be greater than that in Set-up B.
b)The crushed ice in Set-up A is colder than the cold water in Set-up B. This cause more heat loss and more condensation.

33)a)i)Water. ii)Wind.
b)Plants X are only found along the bank of the river and thus, they are dispersed by water.
c)The fruit of plant X has a fibrous husk that allows it to float on water.

34)a)Elephant, Bear, Cat, Mouse
b)The bigger the animal, the longer the time taken to reach maturity.

35)a)Cell wall.
b)Unlike the onion cell, blood cell does not have a cell wall to hold water better its shape better.
c)The plant cell has a cell wall to keep its structure.

36)a)Walking is less vigorous. Less oxygen is taken in and less carbon dioxide is given out.
b)



37)a)Gills-dissolved oxygen Lungs-atmospheric oxygen.

b)i)The blood vessels in the gills absorb the oxygen dissolved in the water as the water passes through the gills.

ii)The dissolve oxygen was used up and the mud skipper needs to take in another mouthful of water.

38)Human-same tubes for food and water.

Plant-xylem for water, phloem for water.

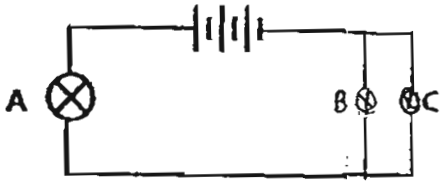
39)Set-up b is a control of the experiment, so as to compare the amount of carbon dioxide at the limewater. As a control to confirm that changes in limewater is due to blue light.

40)a)

b)The fan will not be able to move.

c)When the temperature is too cold, the strip will curl upwards such that it is disconnected from wires causing circuit to be open.

41)

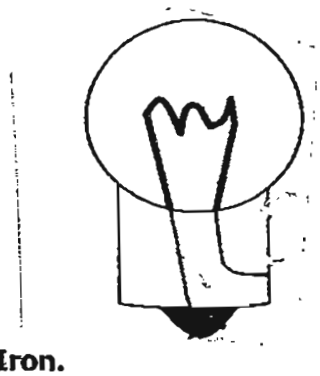


42)a)Switch A.

b)It can control Bulb X only.

43)a)Rubber does not to conduct electricity so electricity in wires will not be conducted people touching it will not result in electric shock when touched.

b)



44)a)Iron.

b)Magnetic force could not pass through as material X is a magnetic material.