METHODIST GIRLS' SCHOOL (PRIMARY)

PRIMARY 4

END-OF-YEAR EXAMINATION 2008

SCIENCE

BOOKLET A

NAME: _____ ( )

CLASS: _____

Total time for Booklets A and B: 1 h 30 min.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

METHODIST GIRLS' SCHOOL (PRIMARY)

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SCIENCE

BOOKLET B1

SECTION	MARKS
A	50
B1	20
B2	20
Practical	10
TOTAL	100

NAME: _____ ( )

CLASS: _____

Total time for Booklets A and B: 1 h 30 min.

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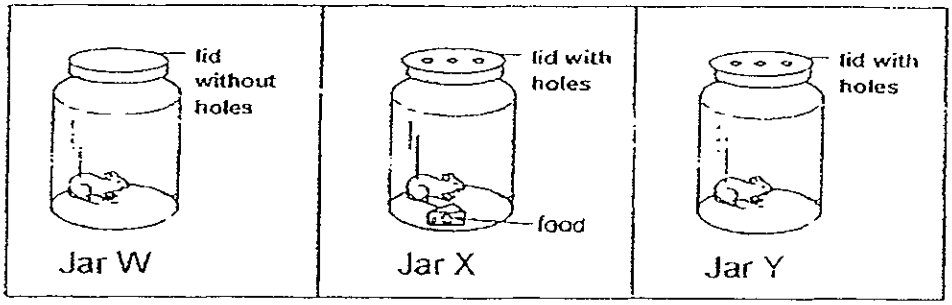
Section A : (25 x 2 marks)

For each question, four options are given. Choose the most suitable option and shade your answer in the Optical Answer Sheet (OAS) provided.

1. Sandra wanted to find out if a mouse needs air to survive. She set up three jars, W, X and Y as shown below.



Which jars should Sandra use to carry out her experiment?

(1) W and X
(2) X and Y
(3) W and Y
(4) W, X and Y

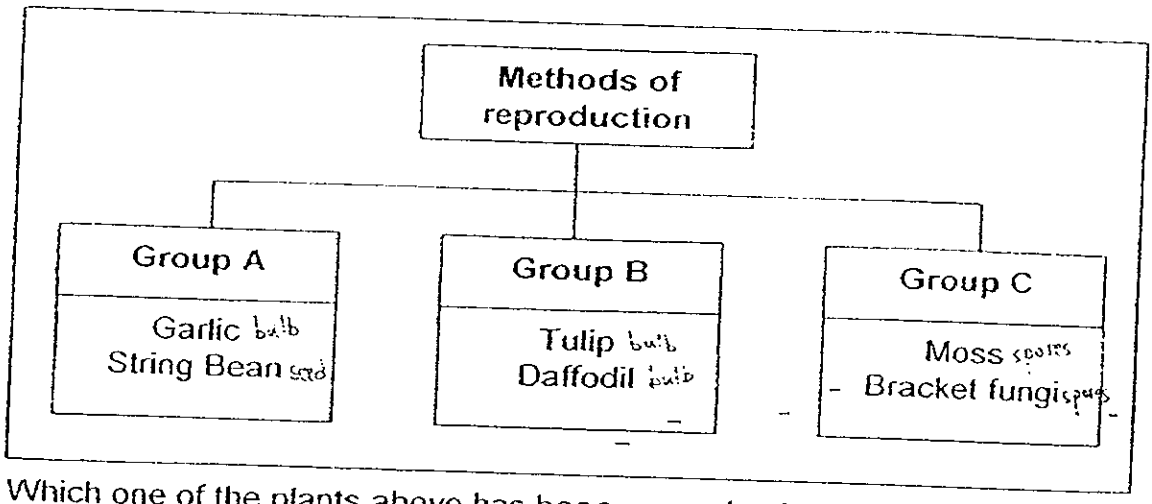
2. The table below shows two household pests.

Characteristics	Animal P	Animal Q
Lay eggs	Yes	Yes
Life cycle	3 stages	3 stages
Has wings	No	Yes
Number of legs	4	6

What could Animal P and Q most likely be?

	Animal P	Animal Q
(1)	Cockroach	Housefly
(2)	Rat	Mosquito
(3)	Housefly	Ant
(4)	Lizard	Cockroach

3. The flow chart below shows how some plants are grouped based on their method of reproduction.



Which one of the plants above has been <u>wrongly</u> classified?

(1) Garlic
(2) Daffodil
(3) String Bean
(4) Bracket Fungi

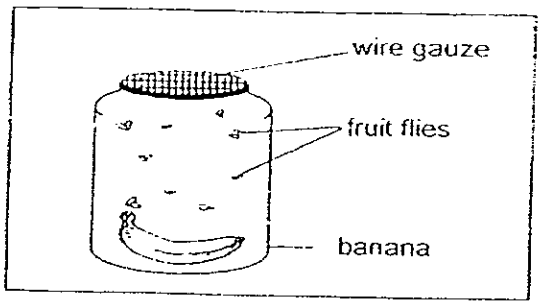
4. Jenny fed four rabbits, W, X, Y and Z with different amount of carrots everyday. She made sure that the other conditions were kept exactly the same. Then, she measured and recorded the masses of the four rabbits as shown in the table below.

Rabbit	Amount of carrots given everyday (g)	Mass of rabbit (g)			
		Week 1	Week 2	Week 3	Week 4
W	3	40	40	40	41
X	6	40	41	42	44
Y	9	40	42	45	Died
Z	12	40	43	Died	Died

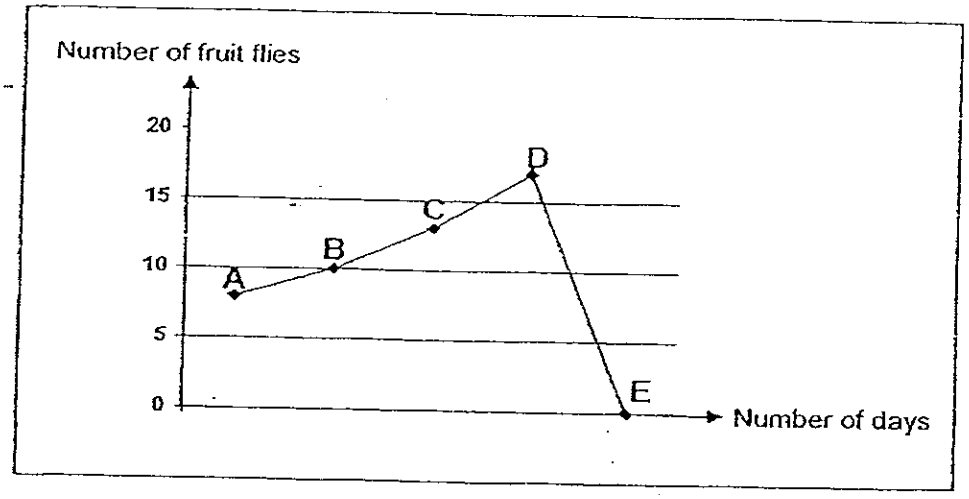
Based on the results above, what would be the <u>most suitable amount of carrots</u> Jenny should give to the rabbit if she wanted to increase its mass the fastest without harming it?

(1) 6 g
(2) 9 g
(3) 3 g
(4) 12 g

5. Some fruit flies were kept in a jar. A banana was placed inside the jar and it was covered with a piece of fine wire gauze as shown in the diagram below.



The number of fruit flies was counted and recorded as shown in the graph below.

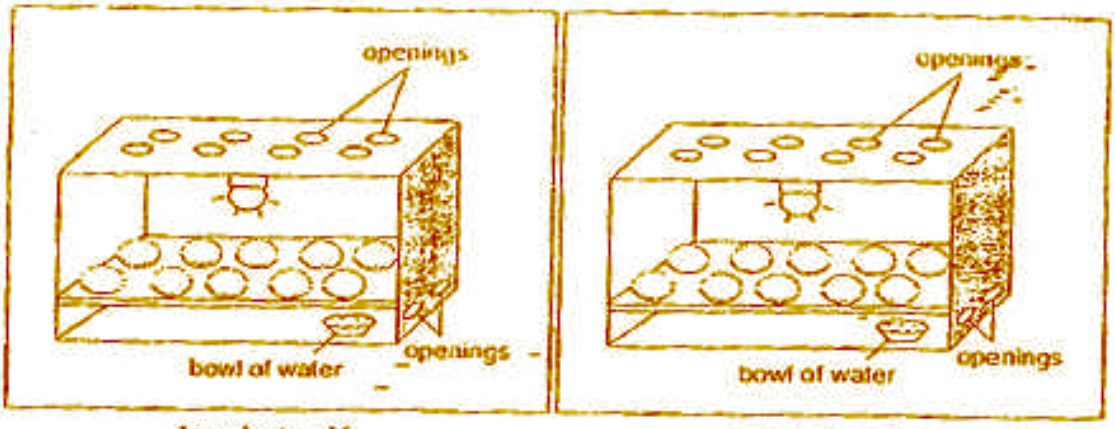


What could have happened from Point D to Point E?

A : The banana has rotted.
B : A frog was introduced to the jar.
C : More bananas were added into the jar.

(1) B only
(2) A and B only
(3) B and C only
(4) All of the above

6. The diagram below shows two sets of incubator. A bowl of water was placed in each incubator to provide moisture. Ten eggs were placed in each incubator.



Incubator Y Incubator Z

After twenty-one days, most of the eggs in incubator Z hatched into chicks but all the eggs in incubator Y did not.

Which of the following statements could be the possible reasons for the ten eggs <u>not to hatch</u>?

A : The ten eggs in incubator Y were not fertilized.
B : There were too few openings in incubator Y.
C : The temperature in incubator Y was too low.
D : There was too much water in the bowl in incubator Y.

(1) A and B only
(2) A and C only
(3) A, B and C only
(4) All of the above

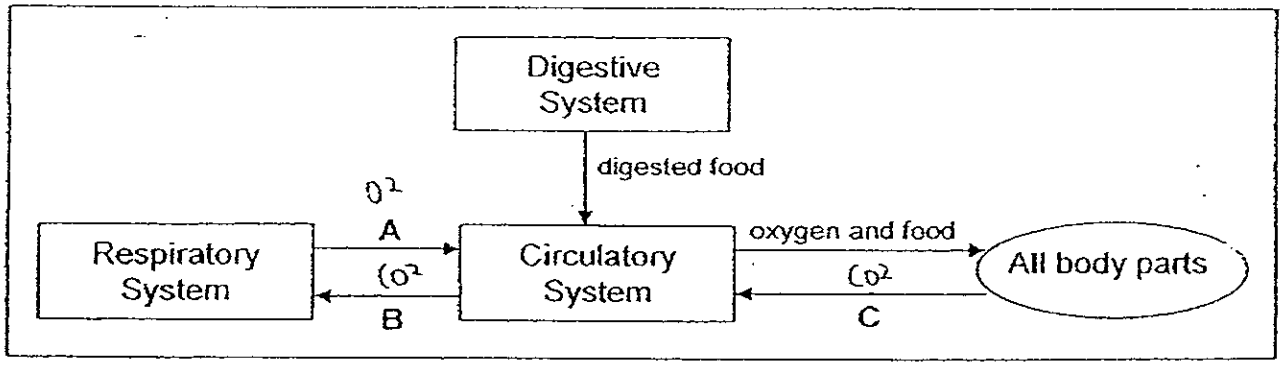
7. The different parts of the digestive system are labelled A to E, as shown below.

A	:	anus
B	:	gullet
C	:	stomach
D	:	large intestine
E	:	small intestine

Which one of the following correctly identifies the path that food takes after it is swallowed?

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

8. The diagram below shows how the circulatory, digestive and respiratory systems in our body work together.



Which one of the following <u>correctly</u> shows the gases represented by A, B and C?

	A	B	C
(1)	oxygen	carbon dioxide	oxygen
(2)	oxygen	carbon dioxide	carbon dioxide
(3)	carbon dioxide	carbon dioxide	oxygen
(4)	carbon dioxide	oxygen	carbon dioxide

9. The diagram below shows the exchange of gases during respiration and photosynthesis.

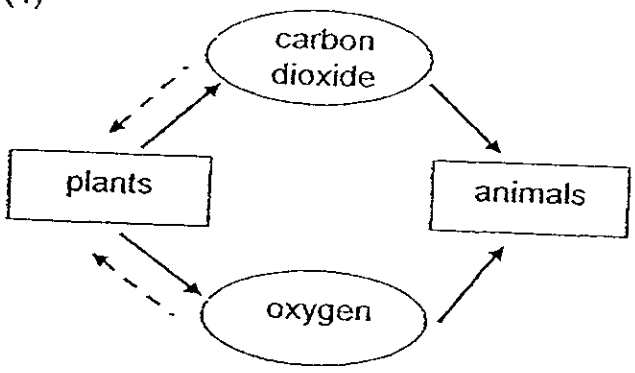
Which one of the following diagrams shows correctly the exchange of gases between living things and their surrounding during **daylight**?

Key:

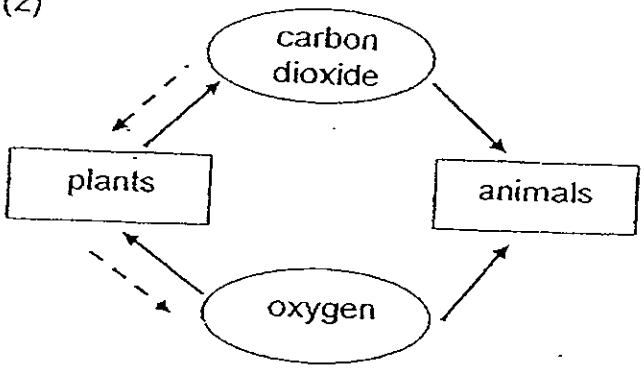
→ Bold arrows indicate movement of gases during respiration.

- - - → Dotted arrows indicate movement of gases during photosynthesis.

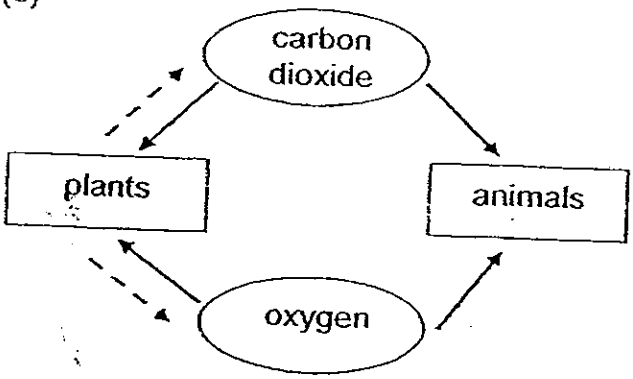
(1)



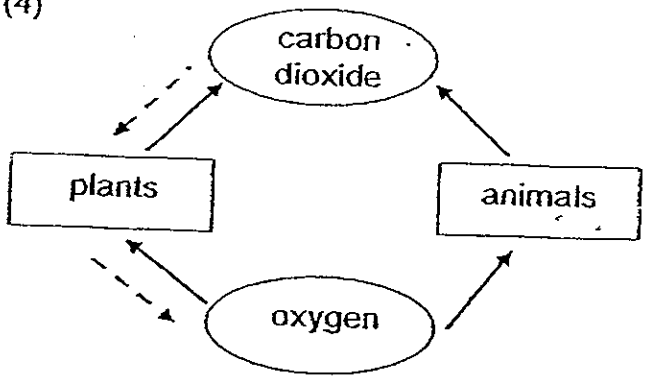
(2)



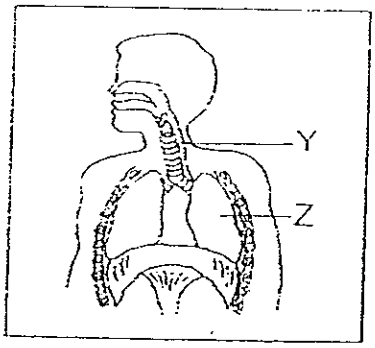
(3)



(4)



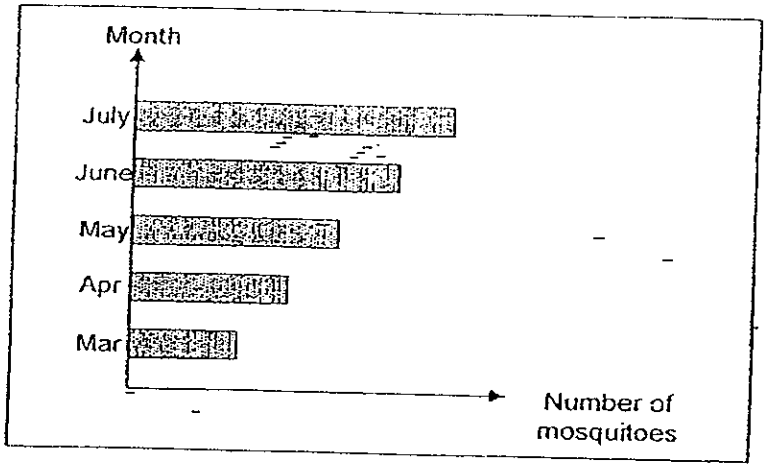
10. Look at the diagram below.



Which of the following are the **correct** functions of the parts labelled Y and Z?

	Part Y	Part Z
(1)	To allow food to travel to the stomach.	To digest food.
(2)	To allow air to pass to the lungs.	To allow gaseous exchange to take place.
(3)	To allow blood to travel to the heart.	To pump out blood to all parts of the body.
(4)	To distribute nutrients to all parts of the body.	To absorb nutrients from digested food.

11. The bar graph below shows the number of mosquitoes over the last five months.



Which one of the following is the **most likely reason** for the increase in the number of mosquitoes?
The mosquitoes _____.

(1) are able to grow
(2) are able to reproduce
(3) reproduce by laying eggs
(4) respond to changes around them

12. Amy set up an experiment to find out which conditions were most suitable for plants to live. The set-up consisted of five bell-jars containing a plant each. Each plant was given a different set of conditions. All the plants were identical and healthy at the start of the experiment.

The table below shows the conditions given to each plant.

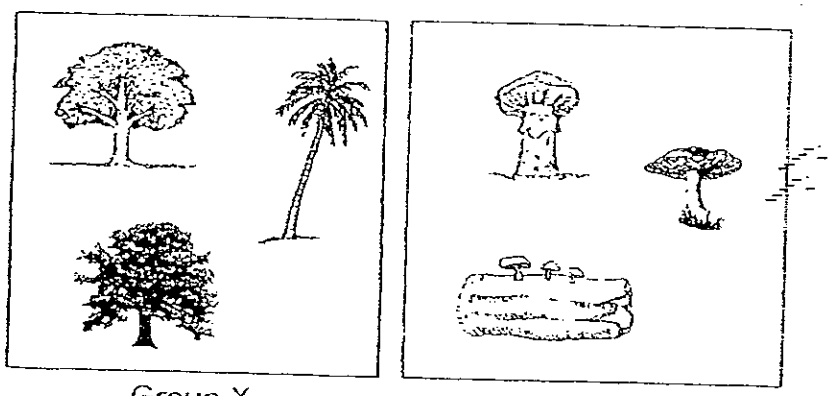
Bell-jars	A	B	C	D	E
Water	X	X	√	X	√
Sunlight	X	√	√	√	√
Oxygen	√	√	√	√	√
Carbon Dioxide	√	X	X	√	√

Key:
√ - present
X – not present

Which 2 bell-jars of plants would be suitable to show that water is needed for the plants to make food?

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

13. Look at the diagram below.



Group X

Group-Y

The following statements describe the differences between the organisms in Group X and Group Y.

A : Organisms in Group X make food but organisms in Group Y do not.

B : Organisms in Group X are known as trees but organisms in Group Y are known as plants.

C : Organisms in Group X have chlorophyll that traps light but organisms in Group Y do not.

Which of the statements above are <u>correct</u>?

(1) A and B only
(2) A and C only
(3) B and C only
(4) All of the above

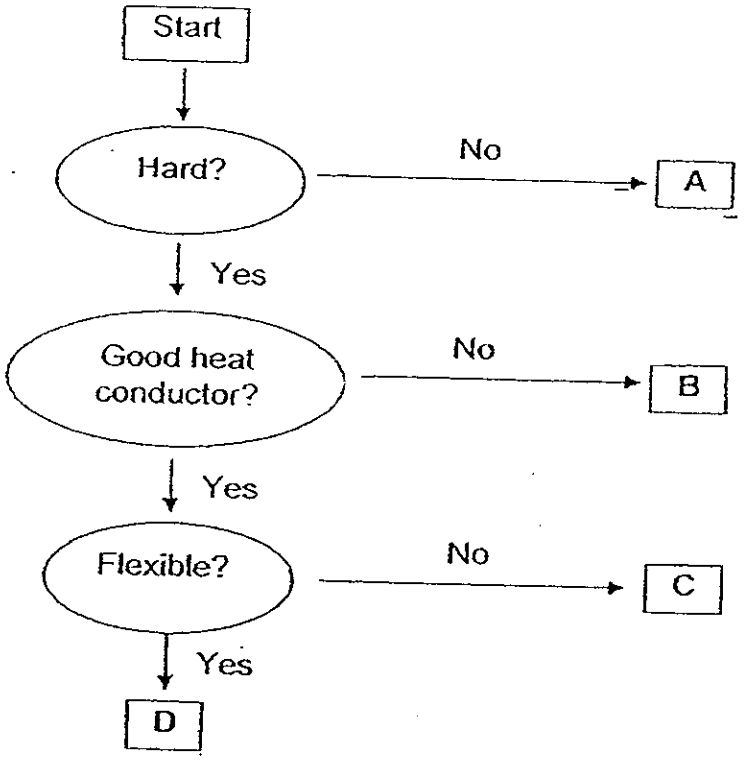
14. Material Y has the following properties:

A: It does not rust.
B: It is a light weight material.
C: It is a good conductor of heat.

Which one of the following is material Y likely to be?

(1) Iron
(2) Glass
(3) Plastic
(4) Aluminium

15. The flow chart below shows how things can be classified based on their properties.



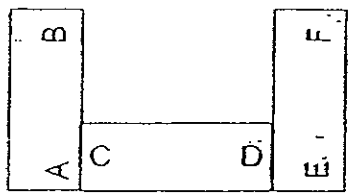
Which one of the following **correctly** identifies A, B, C and D?

	A	B	C	D
(1)	Milk	Iron nail	Steel fork	Plastic cup
(2)	Table cloth	Wooden spoon	Iron nail	Copper wire
(3)	Cotton wool	Copper wire	Steel fork	Plastic cup
(4)	Diamond ring	Ceramic tile	Iron nail	Aluminium foil

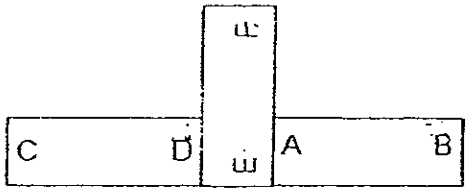
16. Joey was able to arrange 3 magnets as shown below.

Which one of the following is another possible arrangement?

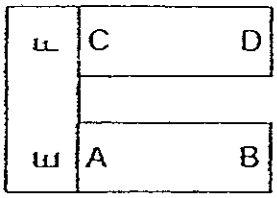
(1)



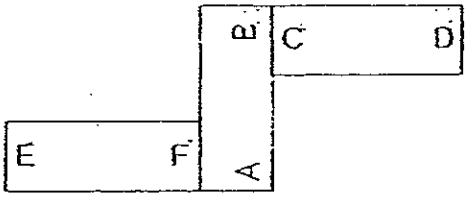
(2)



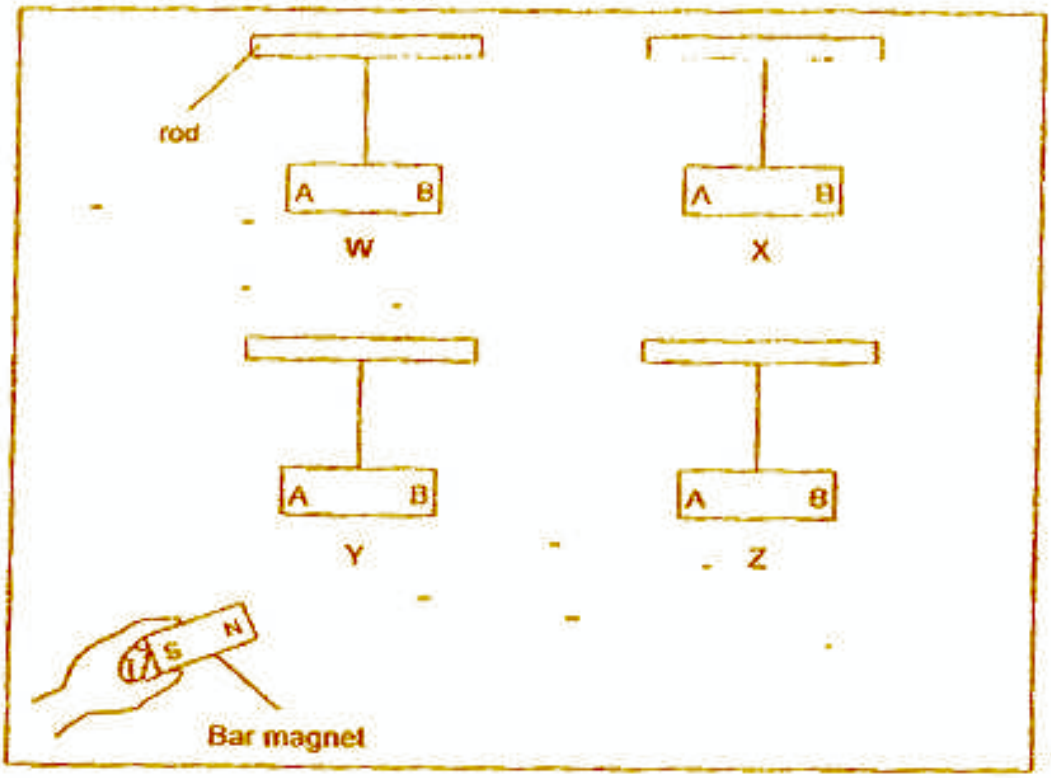
(3)



(4)



17. Raja hung 4 metal bars, W, X, Y and Z, from horizontal rods as shown below. He brought the north-seeking pole of a bar magnet near end A and then end B of each metal bar.



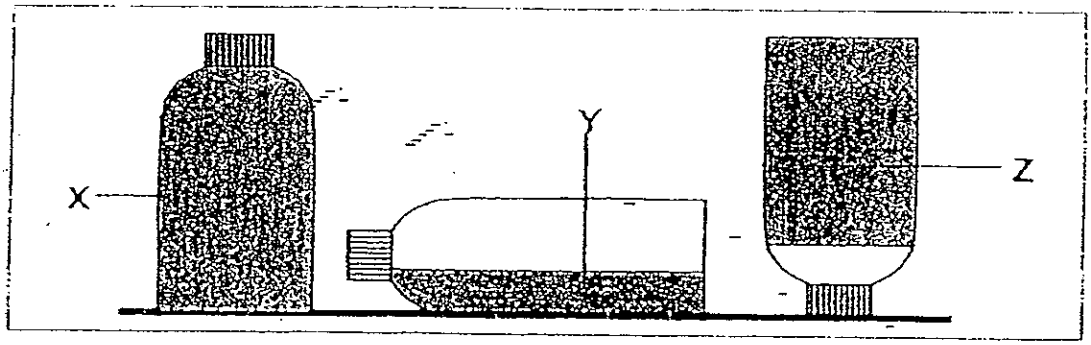
Raja recorded the observations made during the experiment in the following table.

Metal bar	Observations	
	North-seeking pole and end A	North-seeking pole and end B
W	Attracted	Repelled
X	Attracted	Attracted
Y	No reaction between north seeking pole and end A	No reaction between north seeking pole and end B
Z	Repelled	Attracted

Which of the metal bars are magnets?

(1) W and Z only
(2) X and Z only
(3) W, X and Y only
(4) W, X and Z only

18. The diagram shows the 3 substances X, Y and Z.

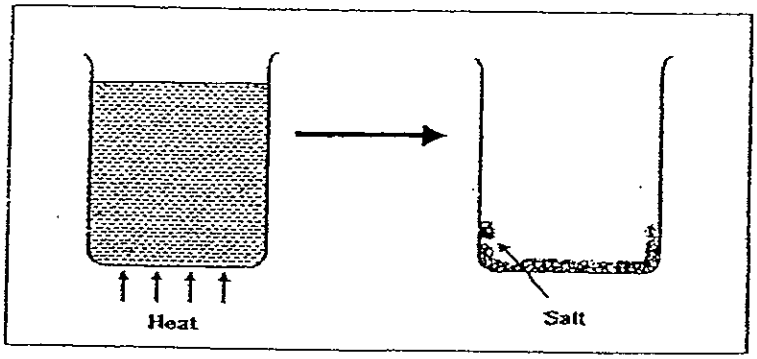


Based on what you can see only, which of the statements are <u>definitely true</u>?

A: Substance Y is oil.
B: Substance Z is a solid.
C: Substance X has a definite shape.
D: Substance Y has a definite volume.

(1) A and B only
(2) B and D only
(3) A, B and D only
(4) All of the above

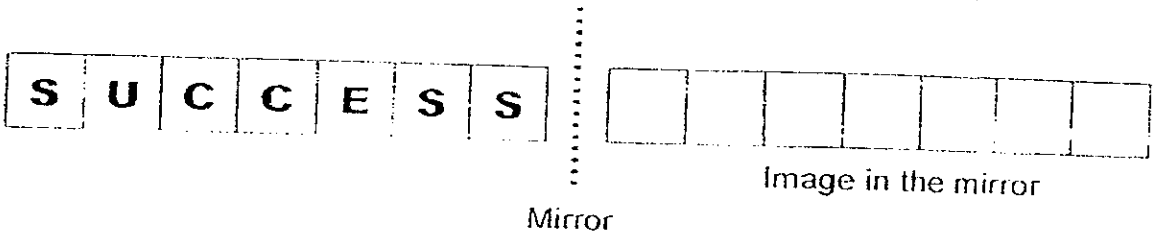
19. Fatimah weighed a beaker containing water and found it to be 150 g. She added 50 g of salt to the water and stirred vigorously until it was completely dissolved. She then heated the solution until only the salt was left. She weighed the beaker again.



What would the mass of the salt be?

(1) 25g
(2) 50g
(3) 100g
(4) 150g

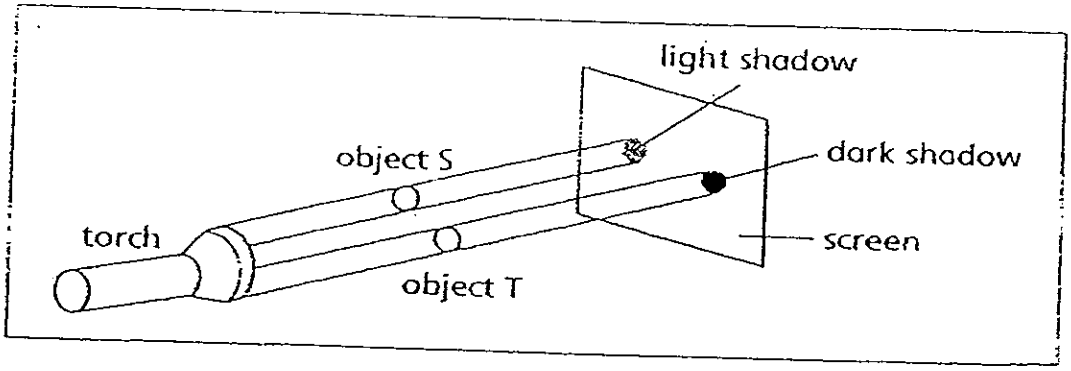
20. A mirror was placed on the dotted line shown below.



What would the image of the word "SUCCESS" look like?

(1)	S S Ǝ Ɔ Ɔ U S
(2)	S ∩ C C E S S
(3)	S U Ɔ Ɔ Ǝ S S
(4)	S S U Ɔ Ɔ Ǝ S

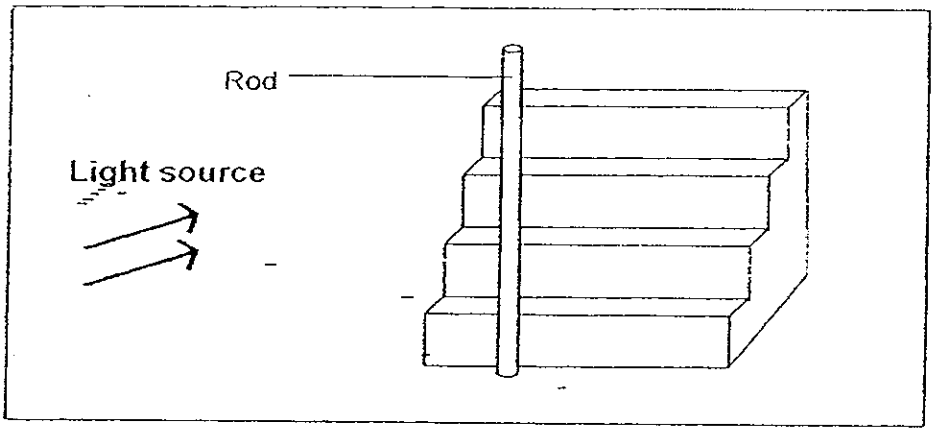
21. A torch was shone onto 2 objects, S and T, as shown in the diagram.



Which of the following materials are S and T likely to be made of?

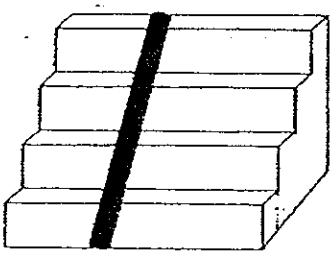
	Object S	Object T
(1)	Wood	Thin fabric
(2)	~~Tracing paper~~ Frosted plastic	Clear plastic
(3)	Frosted glass	Steel
(4)	Styrofoam	Copper

22. The shadow of a rod was cast on a flight of staircase when light was shone on it.

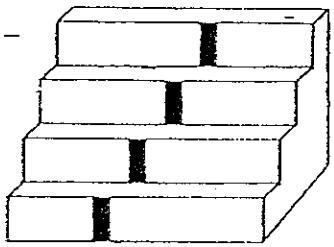


Which of the following correctly shows how the shadow of the rod looks like?

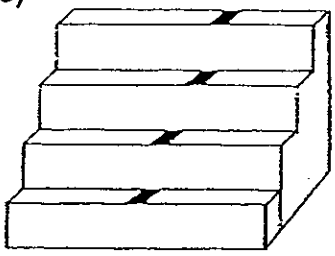
(1)



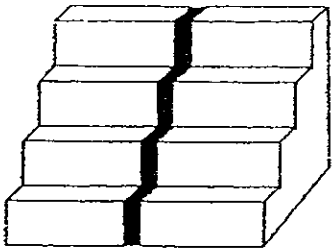
(2)



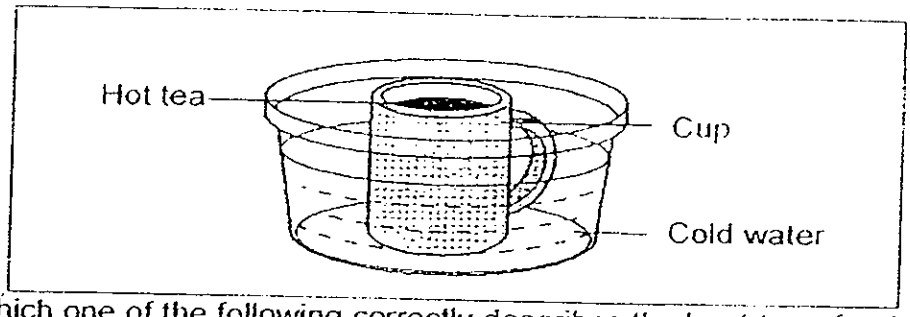
(3)



(4)



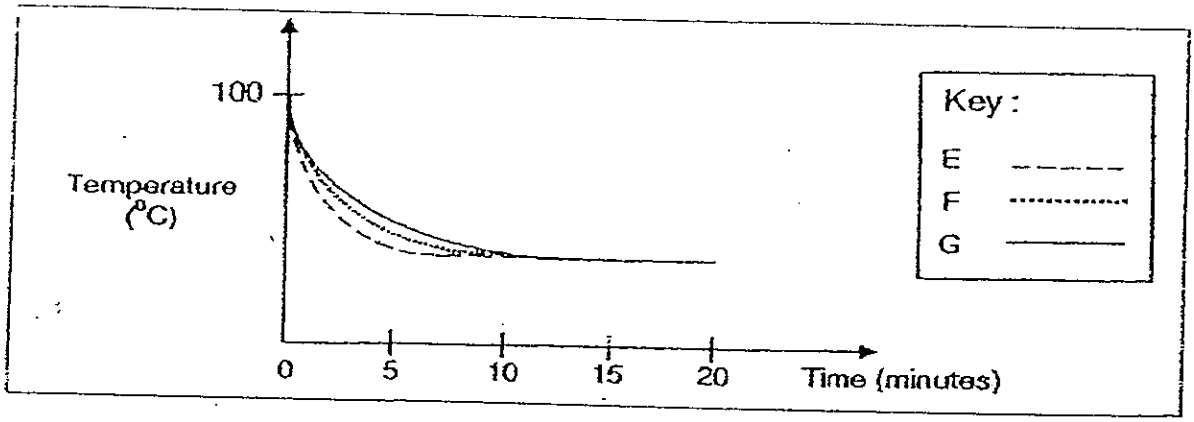
23. A cup of hot tea is placed into a basin of cold water.



Which one of the following correctly describes the heat transfer that takes place?

	Cold Water	Hot Tea	Cup
(1)	Heat gain from cup	Heat loss to cup	Heat gain from hot tea
(2)	Heat gain from cup	Heat gain from cup	Heat gain from hot tea
(3)	Heat loss to cup	Heat loss to cup	Heat loss to hot tea
(4)	Heat loss to cup	Heat gain from cup	Heat loss to hot tea

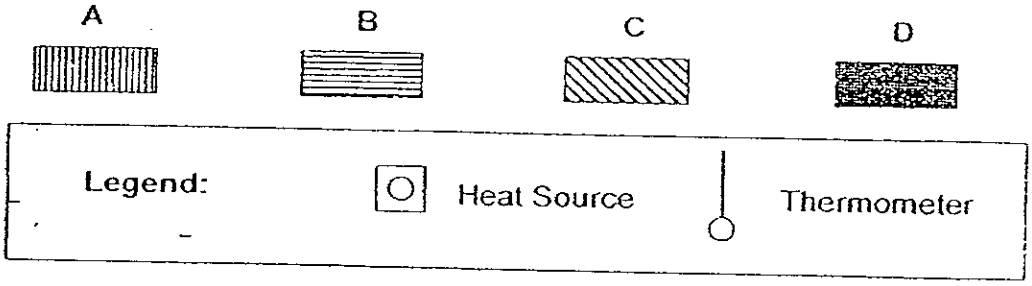
24. Three similar containers, E, F and G were made of different materials. They were filled with equal amount of boiling water. The graph below shows the time taken for the water in each container to cool down.



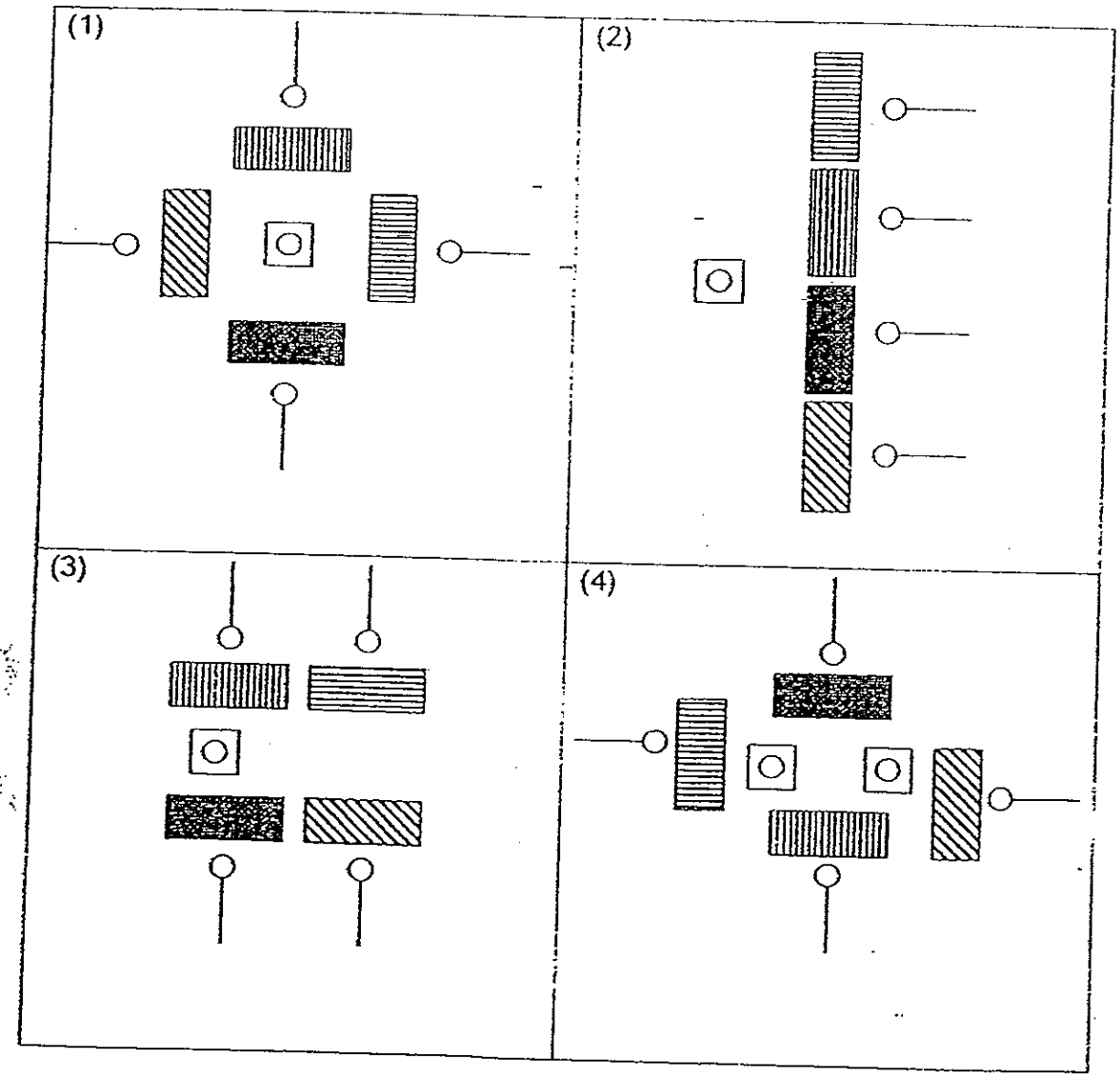
Based on the graph above, identify the possible material of each container.

	Container E	Container F	Container G
(1)	Glass	Styrofoam	Plastic
(2)	Aluminium	Glass	Styrofoam
(3)	Styrofoam	Plastic	Aluminium
(4)	Glass	Aluminium	Plastic

25. Mr Phua Chu Kang wanted to find out which building materials A, B, C or D would be the best to keep the house cool during summer. The following shows the different types of building materials.



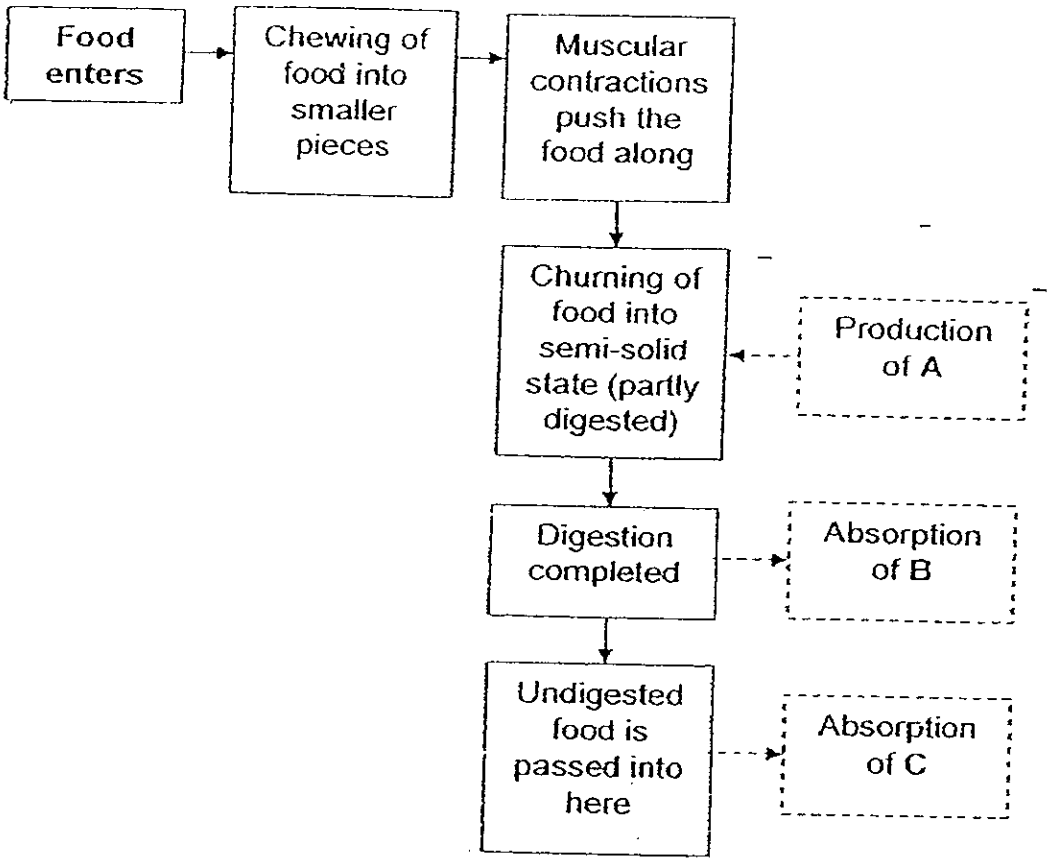
Which of the following is the best arrangement for Mr Phua to test out the materials?



Section B: (40 marks)

Write the answers in the blanks provided.

26. The flow chart below shows the processes involved in the human digestive system.



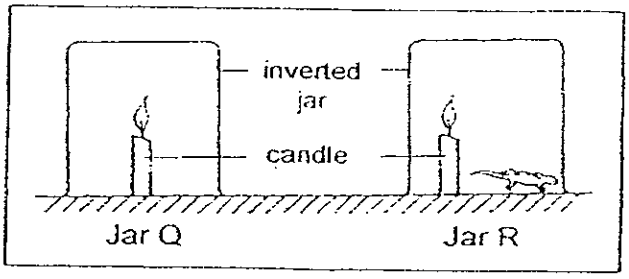
Based on the information given above, what are the substances that **best** represent A, B and C? (2m)

(a) A : _____

(b) B : _____

(c) C : _____

27. Jenny set up the following experiment as shown below to carry out an investigation. The candles and jars are of similar size.



Then, she observed and recorded the time taken for the candle in each jar to be extinguished.

(a) In which jar would the candle take a shorter time to be extinguished? (½m)

_____

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

_____

_____

_____

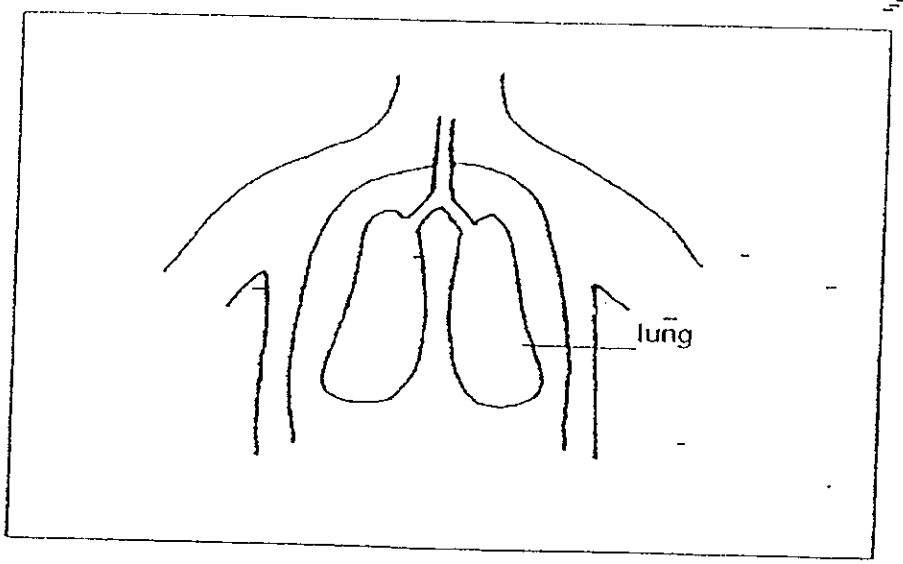
(c) What is the gas that was released by the burning candle? (½m)

_____

2

28. The diagram below shows an incomplete drawing of a human respiratory system.

(a) Draw and label the missing diaphragm to show what the diaphragm looks like when a person inhales completely. (1m)



(b) When a person inhales, his lungs _____ and move _____. (1m)

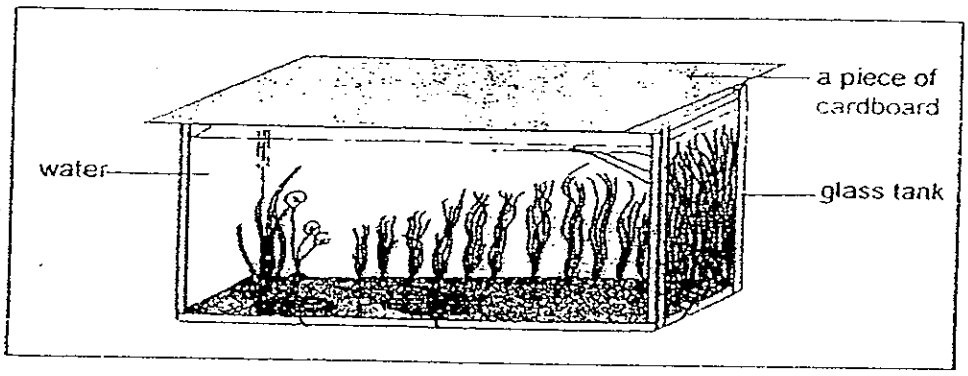
(c) The lungs are protected by a certain part of the body. Name the part and the system it belongs. (1m)

Part of the body : _____

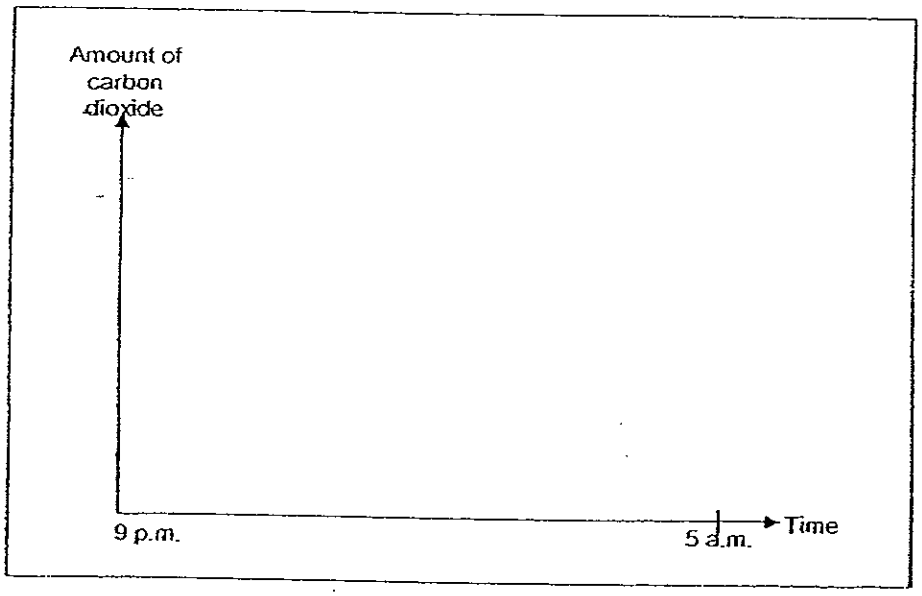
System it belongs to: _____ System

3

29. Maria put some green water plants in a glass tank. Then, she covered the tank with a piece of cardboard as shown in the diagram below.



(a) In the box provided below, **draw a line** in the graph to show the change in the amount of carbon dioxide in the tank from 9 p.m. to 5 a.m.? (1m)



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

_____

_____

_____

2

30. The diagram below shows a leaf structure.

(a) Identify the part labelled X? (½m)

_____

(b) Where is it mostly found? (½m)

_____

(c) Give two functions of the part labelled above? (2m)

(i) _____

_____

(ii) _____

_____

3

31. Suzy carefully removed a small ring of bark from a plant growing in her garden as shown in Figure X below. The ring of bark that was removed contained some phloem tubes. Xylem tubes were not removed.

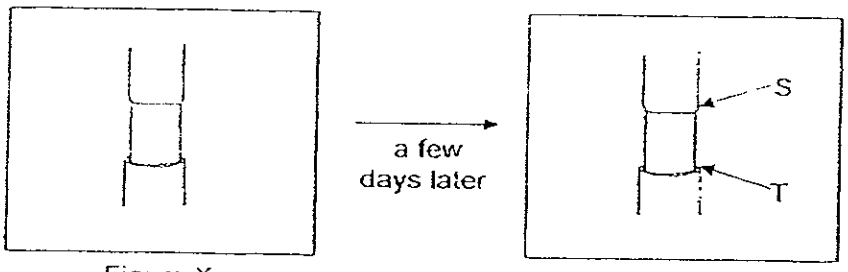


Figure X Figure Z

A few days later, she noticed a swelling on certain part of the ring of the bark that was removed.

(a) In Figure Z above, two parts, S and T were labelled. At which part/s of the ring would the swelling/s of the ring look/s like a few days later? (1m)

The part/s labelled _____

(b) What would happen to the plant eventually if the xylem tubes were removed? (½m)

_____

Fill in the blanks with the correct answers. (1m)

(c) The xylem tubes transport _____ from the _____ to _____ _____ of the plant.

(d) The phloem and xylem tubes are parts of the transport system in a plant. Which part of the human circulatory system performs the same function? (½m)

_____

3

32. Patricia planned an experiment to investigate the effect of temperature on the rate at which seeds germinate. She labelled the 4 pots as W, X, Y and Z and put some moist cotton wool into each of them. Then she placed some green bean seeds on the cotton wool in each pot.

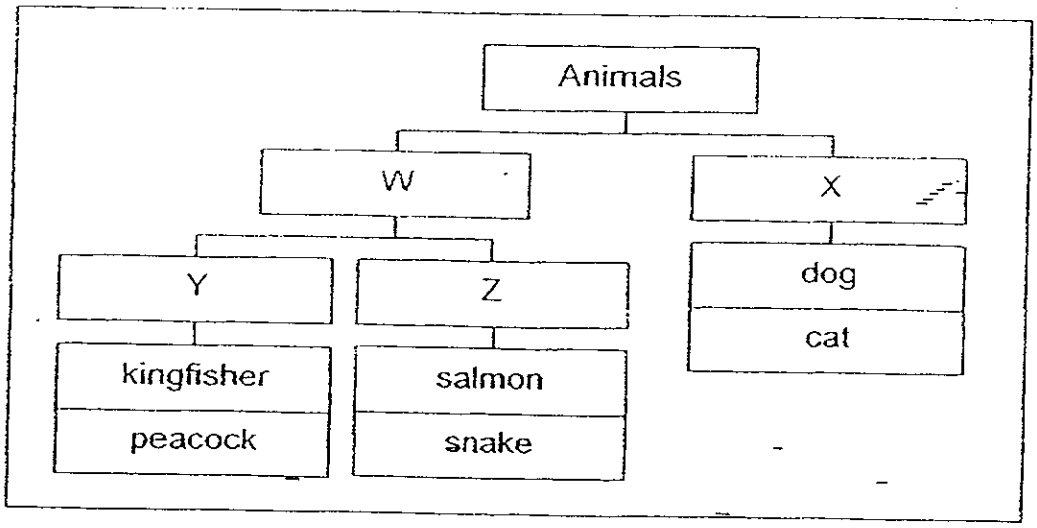
For the above test to be a fair one, write the variables that should be kept the same and the variable that should be different in the table below.

(2m)

Variables that should be kept the same	Variable that should be different

2

33. Study the classification table below.



(a) What would be the suitable headings for X, Y and Z? (2m)

(i) X : _____

(ii) Y : _____

(iii) Z : _____

(b) In which group would "Penguin" and "Whale" be placed? (1m)

(i) Penguin : _____

(ii) Whale : _____

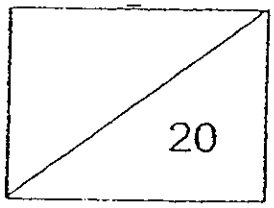
METHODIST GIRLS' SCHOOL (PRIMARY)

PRIMARY 4

END-OF-YEAR EXAMINATION 2008

SCIENCE

BOOKLET B2



NAME : _____ ( )

CLASS : _____

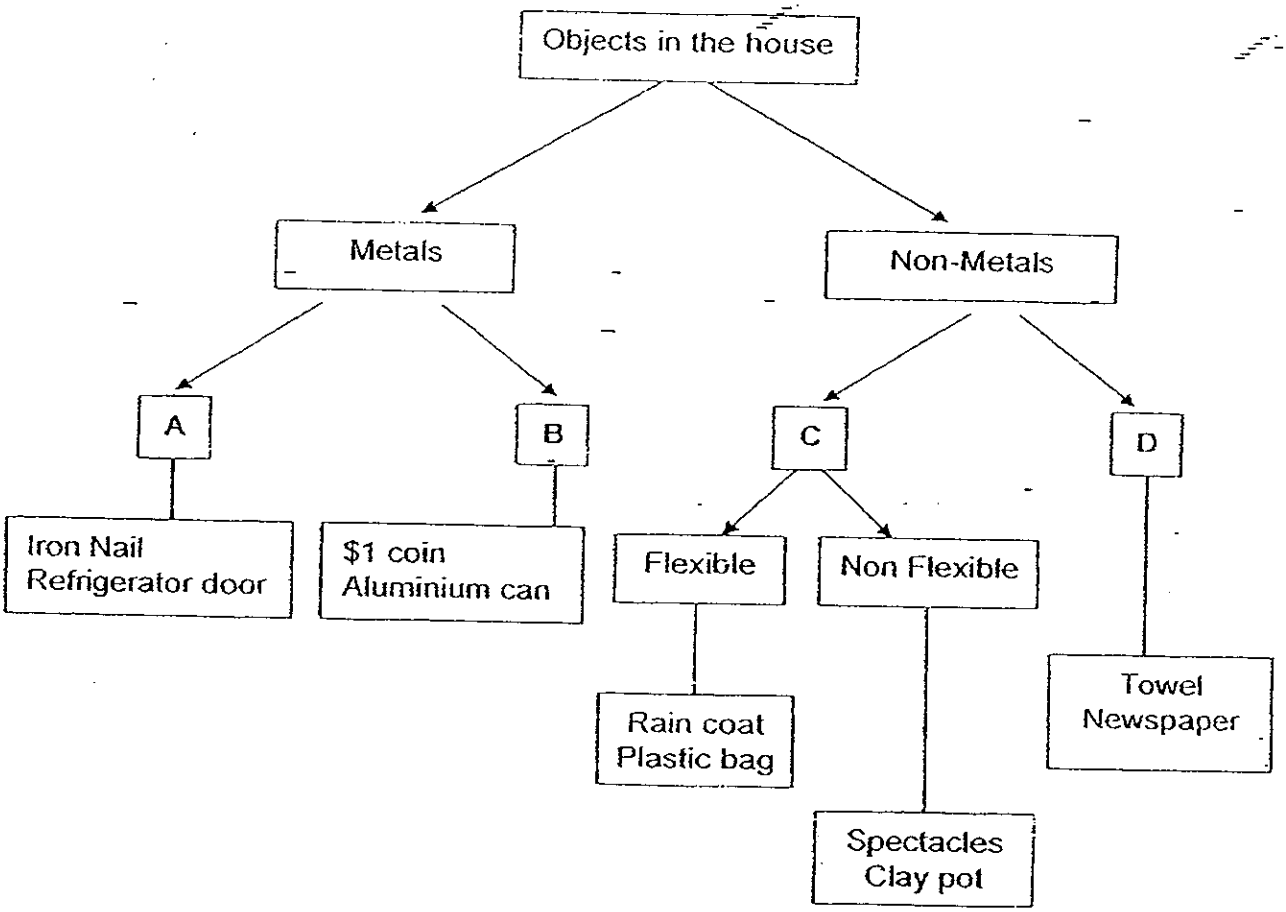
Total time for Booklets A and B: 1 h 30 min.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Section B : (40 marks)

Write the answers in the blanks provided.

34. Look at the classification table below.



(a) Identify the headings for A, B, C and D. (2m)

A: _____

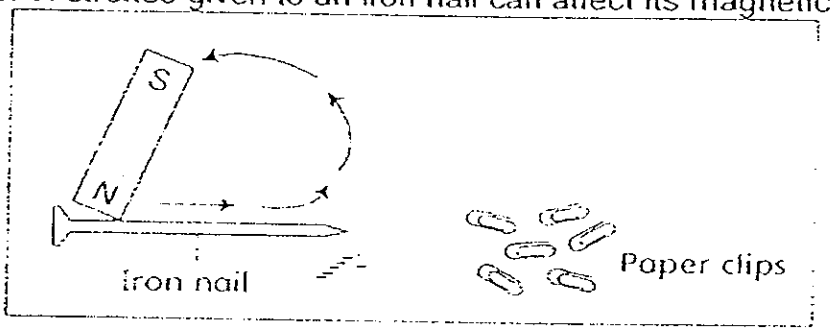
B: _____

C: _____

D: _____

2

35. Ronald conducted the experiment shown below to find out how the number of strokes given to an iron nail can affect its magnetic strength.



He stroked an iron nail with a magnet different number of times. Each time, he recorded the number of paper clips the iron nail could attract and tabulated the results obtained in the table below.

Reading	Number of strokes on the iron nail	Number of paper clips attracted
1	10	2
2	20	3
3	30	4
4	40	5
5	50	5
6	60	X

(a) Based on the **first four readings**, what is the relationship between the number of strokes and the number of paper clips attracted? (1m)

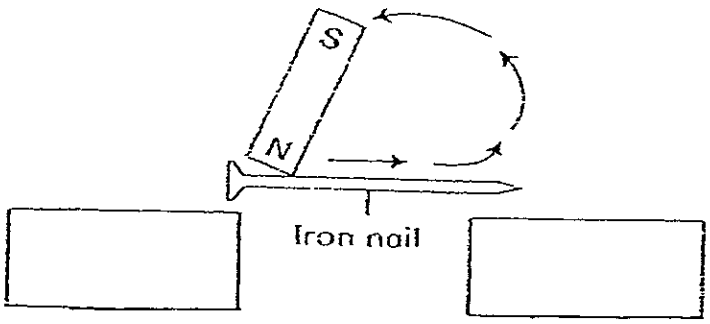
_____

_____

(b) What is the most likely value of 'X' in the table? (1m)

_____

(c) Label the poles of the magnetised iron nail by writing "N" for north-seeking pole and "S" for south-seeking pole in the boxes provided. (1m)



3

36. The diagram in figure 1 shows three Beakers, A, B and C containing marbles, water and oil respectively.

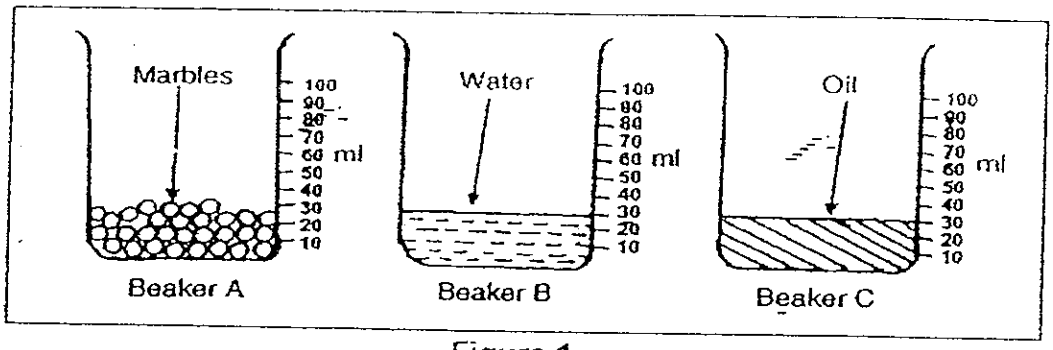


Figure 1

(a) The contents in Beakers B and C were poured into Beaker A. In the diagram in figure 2, **draw and label** the contents after they have been poured into Beaker A, given that the final level of the contents was **80ml**. (1m)

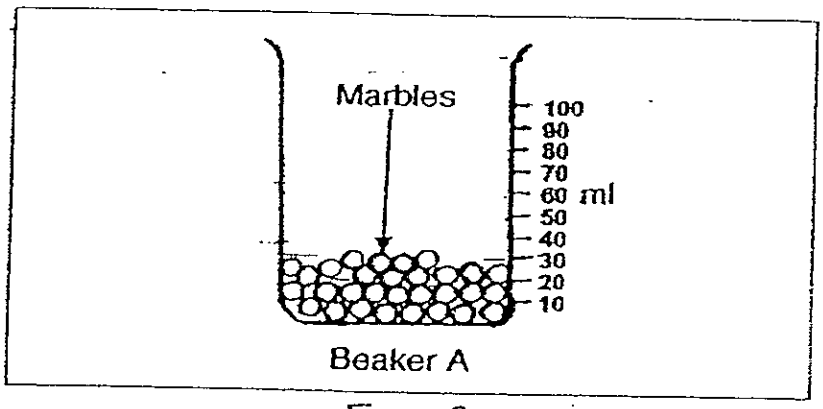


Figure 2

(b) Write down one property each of solid and liquid illustrated in the diagram above after the contents have settled. (1m)

(i) Solid: _____

_____

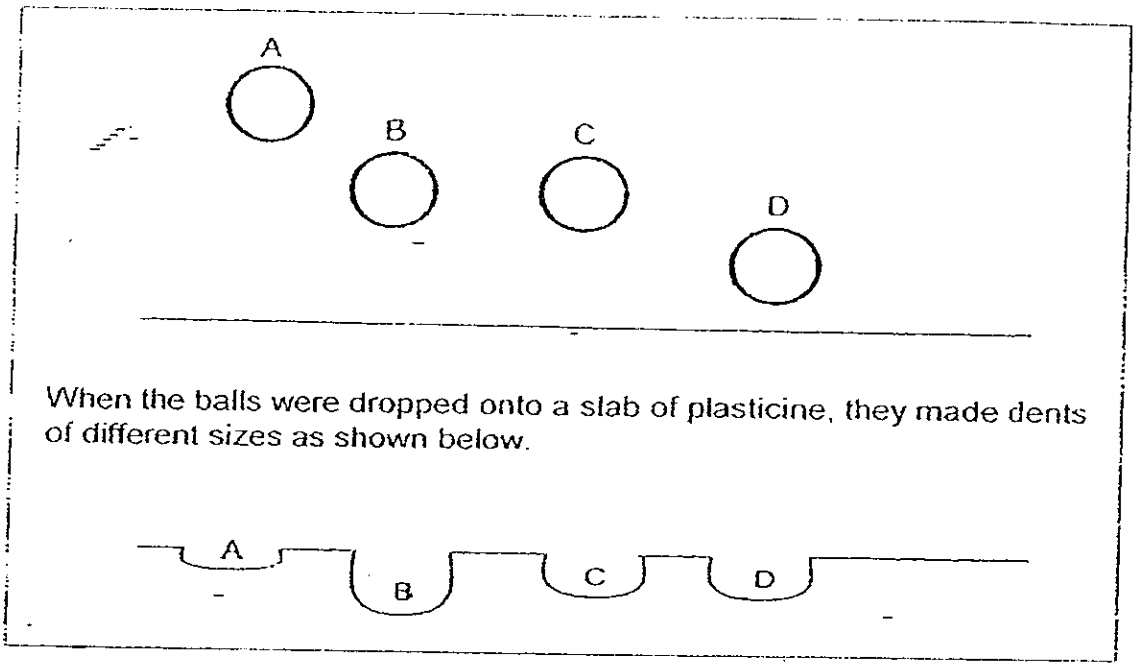
(ii) Liquid: _____

_____

(c) 10ml of small stones was added to Beaker A and its contents in figure 2. What would be the final volume of all the contents in Beaker A? (1m)

_____

37. The diagram below shows four balls (A, B, C and D) of the same size at different heights.



When the balls were dropped onto a slab of plasticine, they made dents of different sizes as shown below.

(a) If Ball C and D were to be dropped from the same height, which would make a deeper depression? (½m)

_____

(b) What can you conclude about the mass of C and D? (1m)

_____

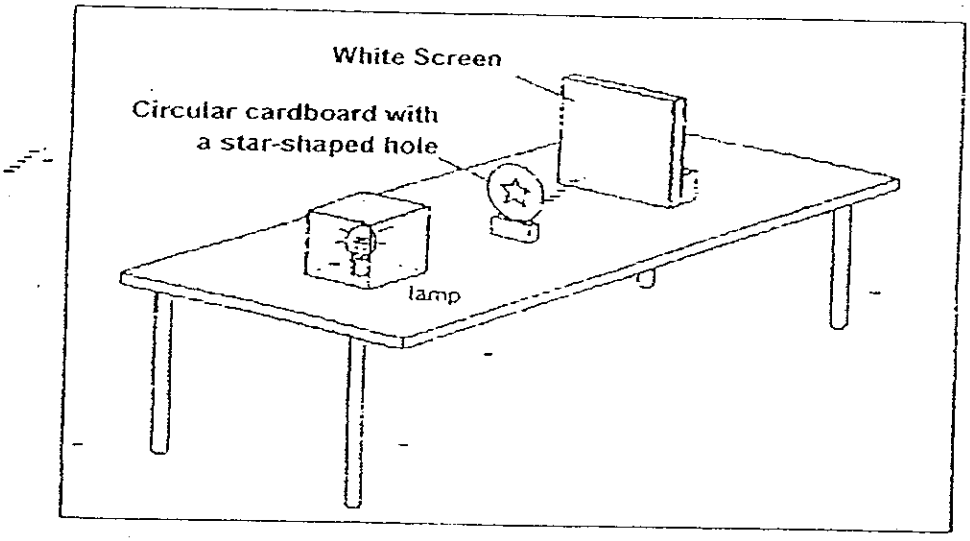
_____

(c) Arrange the balls in ascending order in terms of their mass. (½m)

_____, _____, _____, D

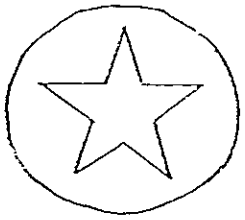
2

38. Nora ~~Kevin~~ performed an experiment using the set-up below.



A shadow was formed on the screen.

(a) In the diagram below, shade the part that formed the shadow on the screen. (1m)



(b) How would the size of the star in the shadow change if the circular card was moved towards the lamp? (½m)

_____

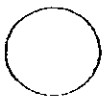
_____

(c) What else could Nora do to get the same effect as in (b)? (½m)

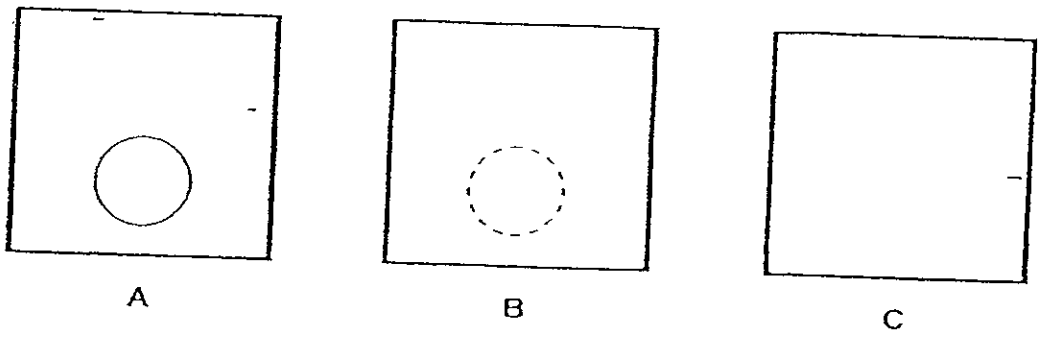
_____

_____

39. Billy was given a ball as shown in the diagram below.



Billy placed the ball <u>behind</u> three different types of screens and looked at it. He drew what he saw.



(a) Which screen **<u>does not</u>** allow light to pass through? (½m)

_____

(b) Suggest a **<u>material</u>** that each screen could be made of. (1½m)

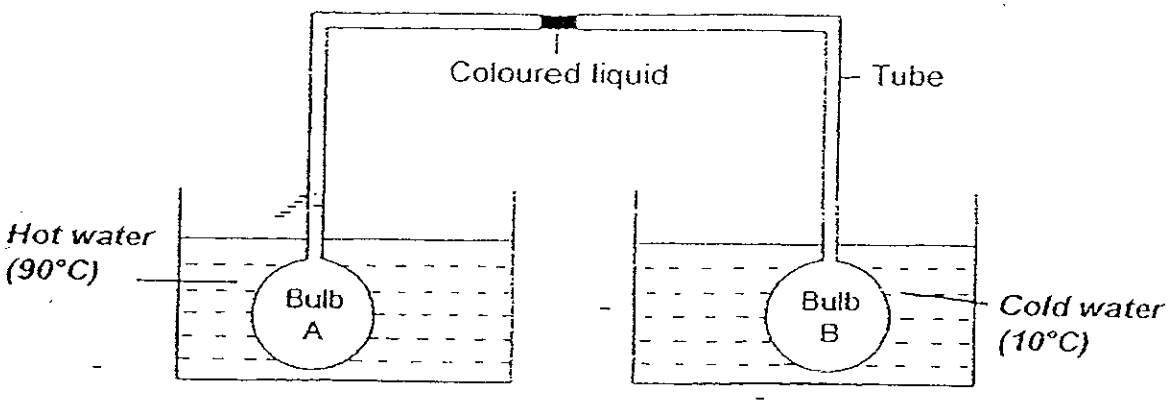
Screen A: _____

Screen B: _____

Screen C: _____

2

40 Bulb A and Bulb B are identical.



Bulb A is placed in a container of hot water and Bulb B is placed in another container of cold water.

(a) What do you think will happen to the coloured liquid after a while? (1m)

_____

_____

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

_____

_____

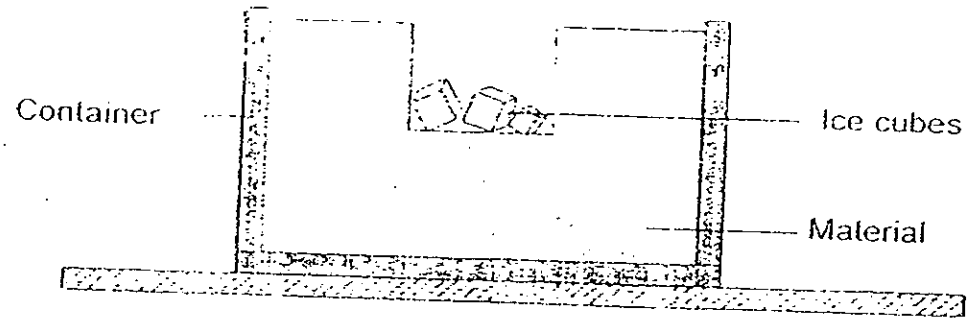
(c) Explain what will happen to the water in both containers after 3 hours. (1m)

_____

_____

3

41. Mrs Chee wanted to find out which material can keep ice cubes from melting for the longest period of time. She conducted an experiment using the set up as shown below.



Different materials W, X, Y and Z were each placed into the container at different times and the time taken for the similar sized ice cubes to melt was recorded as shown in the table below.

Material	Time taken for ice to melt
W	35 min
X	2 h 15 min
Y	1 h 50 min
Z	1 h 5 min

(a) Arrange the materials from the best conductor of heat to the worst conductor of heat.

(1m)

_____

_____

(b) If Mrs Chee wants to keep a block of ice overnight, which one of the above material should she use?

(1m)

_____

_____

(c) Identify one variable that must be kept unchanged for this experiment.

(1m)

_____

_____

ANSWER SHEET

EXAM PAPER 2008

SCHOOL : MGS PRIMARY SCHOOL
SUBJECT : PRIMARY 4 SCIENCE

TERM : SA 2

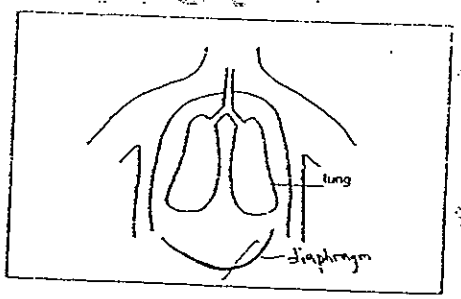
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
3	4	1	1	1	2	4	2	4	2	2	4	2	4	2	4	1

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25
2	2	1	3	4	1	2	1

26)a)A: Digestive juices
b)B: Nutrients
c)C: Water

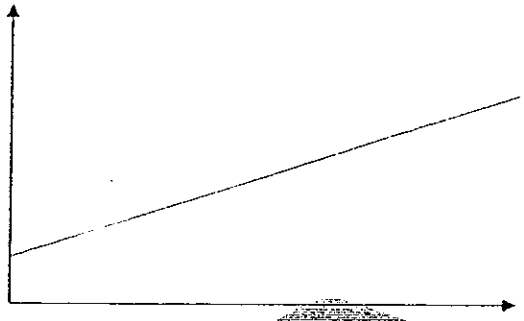
27)a)Jar R.
b)Candles need oxygen to burn. In jar R, the animal inside also needs oxygen and hence, the candle in Jar R extinguishes faster.
c)It is carbon dioxide.

28)a)



b)expand, outwards
c)Rib cage, Skeletal

29)a)



b)There is no sunlight so photosynthesis cannot take place. Thus the amount of carbon dioxide will increase.

30)a)It is the stomata.
b)It is found at the underside of leaves.
c)i)Allow exchange of gases.
ii)It allow excess water to come out.

31)a)S
b)The plant would not be able to transport water to the leaves and would eventually die.
c)The xylem tubes transport water from the roots to other parts of the plant.
d)The blood vessels.

32)The amount of water must be the same.

The temperature of surrounding air.

The pots must be the same.

The type of the seeds.

33)a)i)Give birth to young alive.
ii)Feathers.
iii)Scales.
b)i)Group Y
ii)Group X

34)a)Magnetic b)Non-magnetic
c)alive waterproof d)Not waterproof

35)a)The more strokes, the more paper clips are attracted to the iron nail.
b)It is most likely 5 paper clips.
c)N, S

36)a)

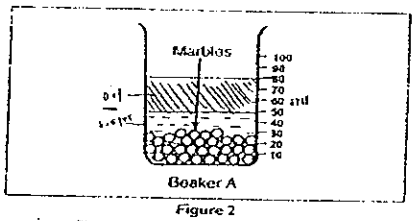


Figure 2

b)i)Definite shape
ii)Definite volume
c)It would be 90ml

37)a)D
b)C is lighter and D is heavier.
c)A, C, B, D

38)a)

b)The size of the star would increase.
c)She could move the lamp nearer to the circular card.

39)a)Screen C.
b)A: Clear plastic B: Frosted glass C: Steel

40)a)It would move to Bulb B.

b)The air in Bulb B gained heat, from the hot water and expanded. It then pushed the coloured liquid towards Bulb B.

c)Water in both containers will have the same room temperature as heat travels from higher to lower temperature.

41)a)W, Z, Y, X

b)She should use material X.

c)The temperature the set-ups are placed in.