Rosyth School
First Semestral Assessment for 2007
SCIENCE
Primary 4

Total Marks: /100

Name: _____

Class: P4_____ Register No._____ Duration: 1 h 30 min

Date: 14th May 2007 Parent's Signature: _____

Instructions to Pupils:

1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets, Booklet A and Booklet B.
4. For questions 1 to 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 31 to 46, give your answers in the spaces given in the Booklet B.

	Maximum	Marks Obtained
Booklet A	60 marks	
Booklet B	40 marks	
Total	100 marks	

* This booklet consists of 14 pages . (Pg. 1 to 14)

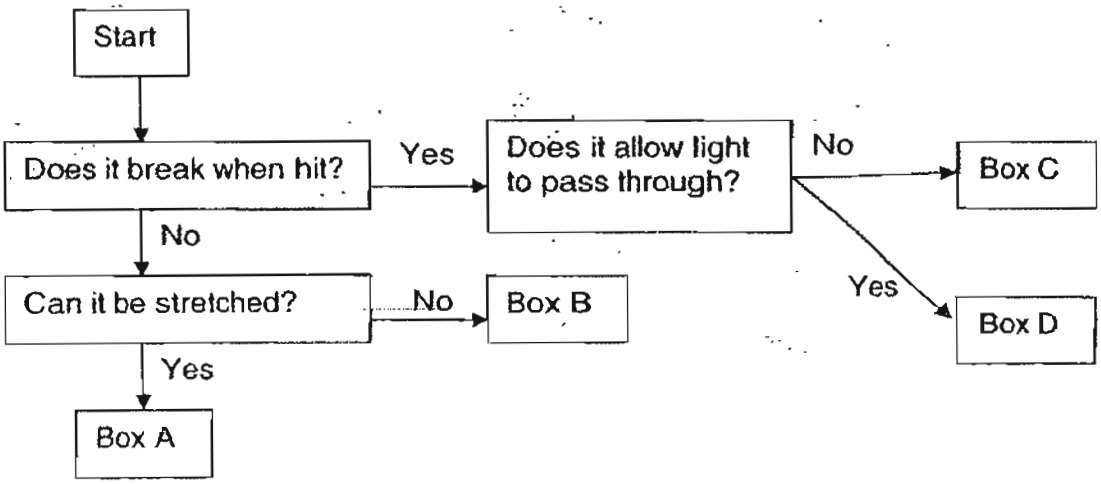
Part I (60 MARKS)

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. Which one of the following statements about magnet is true?

(1) Magnetic forces cannot act from a distance.
(2) Magnets cannot exert any force.
(3) Like poles repel each other.
(4) Unlike poles repel each other.

2 Mrs Tan drew the flowchart below to sort materials into four boxes labelled A, B, C and D. She asked 4 pupils to identify the materials in the boxes.



All but one of the pupils answered the question correctly. Who answered incorrectly?

(1) Ahmad said that he would be able to find a piece of diamond in Box D.
(2) Veronica said that she would be able to find a sheet of rubber in Box A.
(3) David said that he would be able to find a sheet of copper in Box B.
(4) Kok Seng said that he would be able to find a clay tile in Box C.

3. Which one of the following is not a matter?

(1) Empty bottle
(2) Music from a radio
(3) Deflated soccer ball
(4) Smoke from a chimney

4. Which of the following statements are true?

A: A gram of gold and a gram of cotton wool have different volumes.
B: A gram of gold and a gram of cotton wool have different masses.
C: A gram of gold has the same volume as a gram of cotton wool.
D: A gram of gold has the same mass as a gram of cotton wool.

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

5. Miss Low brought some identical blocks of plasticine to class. Each group of pupils in the class was given 5 blocks of plasticine. A group of pupils used 4 blocks of plasticine to make a big fish and used the remaining block to make a small fish. Then they took the mass of two plasticine fish.

Which of the following observations did they make?

A: The mass of the big plasticine fish was greater than the mass of the small plasticine fish.
B: The mass of the big plasticine fish was smaller than the mass of the small plasticine fish.
C: Plasticine did not have a definite shape.
D: Plasticine has a definite shape.

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

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6. Three objects are placed on the table as shown below.

3 kg of milk | 3 kg of cotton wool | 6kg of steel

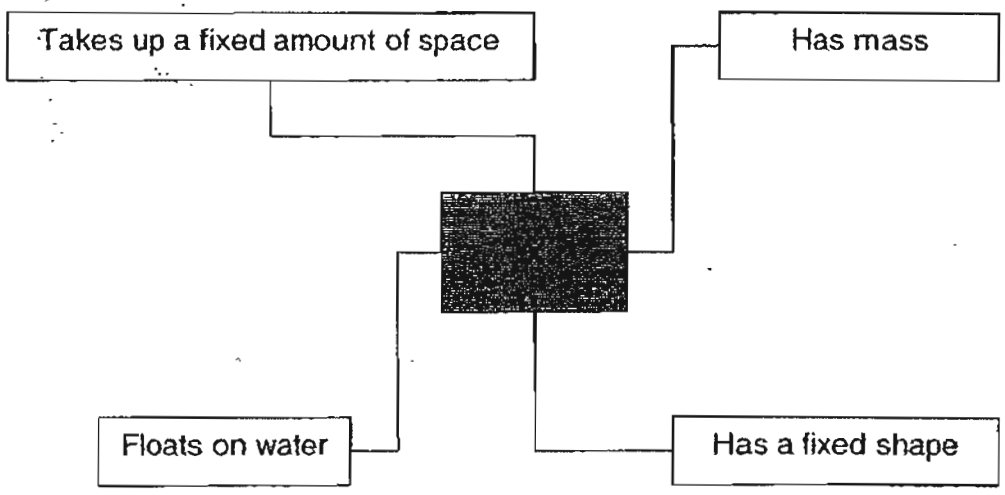
Sofia then recorded her findings.

Which of the following findings about these objects is/are true?

A: All of them occupy space.
B: All of them have definite shape.
C: All of them have the same mass.

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

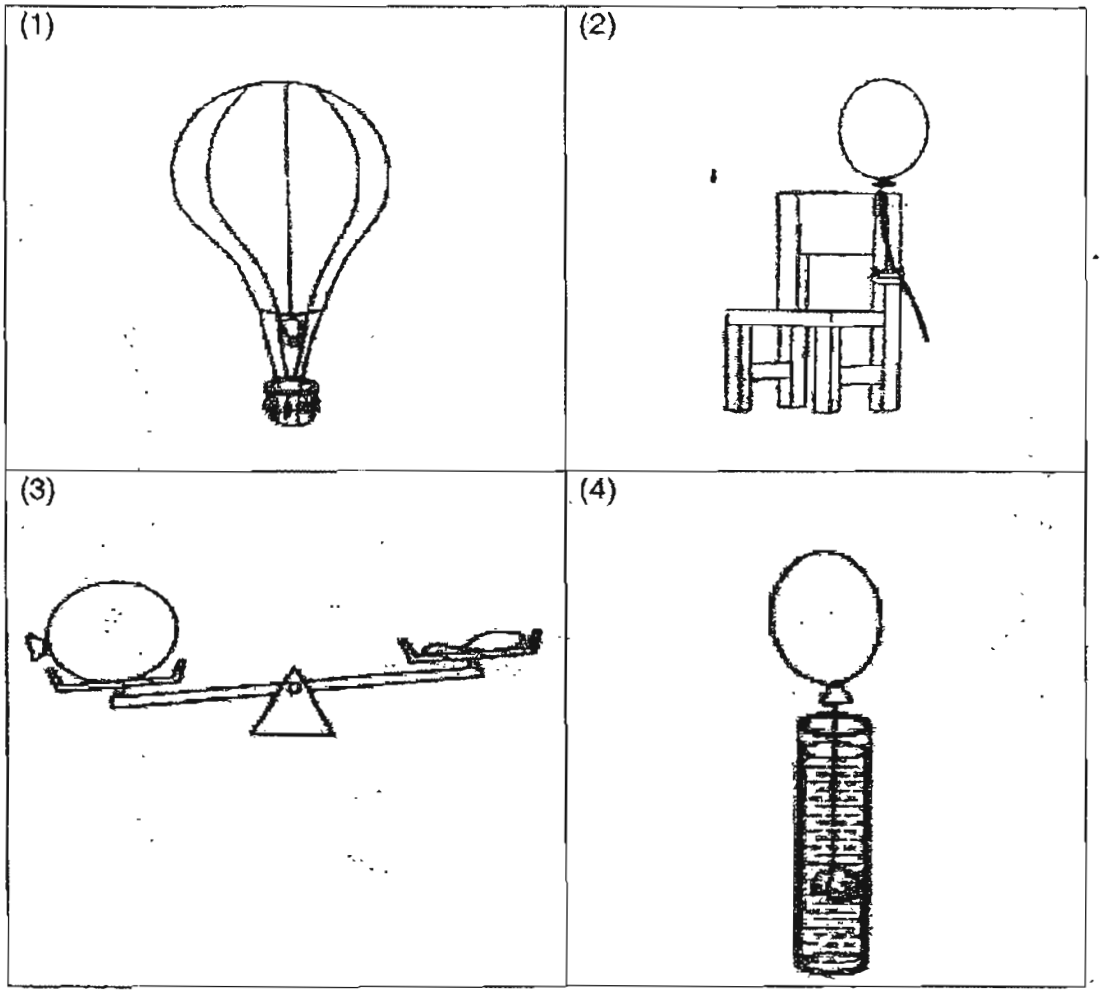
7. Study the diagram below.



Which of the following can **X** be?

(1) Nail
(2) Pebble
(3) Cooking oil
(4) Cork

8. Which one of the following set-ups shows that air has mass?



9. A substance X melts at 22°C and boils at 99°C. At what temperature does X exist as a solid?

(1) 20°C
(2) 23°C
(3) 55°C
(4) 99°C

10. A metal container has a capacity of 2000 cm^3. Which of the following items can be stored in this metal container?

A: 1000 cm^3 of oxygen
B: 2050 cm^3 of carbon dioxide
C: 600 cm^3 of sand
D: 2010 cm^3 of water

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

11. 4 pupils, Amy, Brendon, Charlie and Debbie were discussing about the 3 states of matter.

Amy : A puddle of water will only evaporate at 100°C.

Brendon : Apple juice has a definite shape and volume.

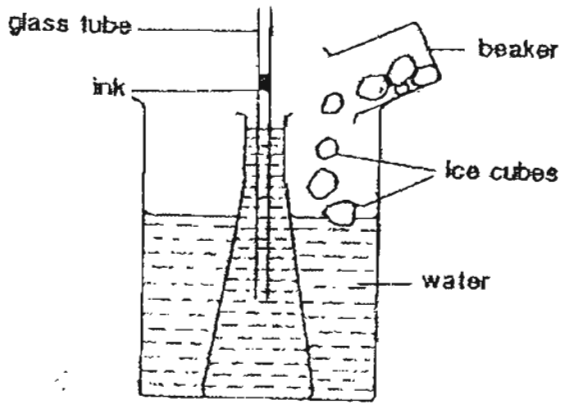
Charlie : The state of matter changes faster when it is boiling than when it is evaporating.

Debbie : A syringe filled with air is lighter than one filled with water because the water has a greater mass than the air.

Who is/are correct?

(1) Amy only
(2) Amy and Charlie only
(3) Brendon and Charlie only
(4) Charlie and Debbie only

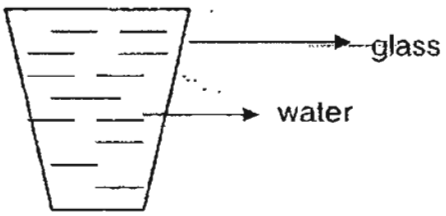
12. Some ice cubes were added to a beaker of water.



The drop of ink in the glass tube fell.
Why did the drop of ink in the glass tube fall?

(1) Both the water and the air inside the glass tube expanded when cooled.
(2) Both the water and the air inside the glass tube contracted when cooled.
(3) The water ~~expands~~ expanded but the air inside the glass tube contracted when cooled.
(4) The water ~~contracts~~ contracted but the air inside the glass tube expanded when cooled.

The diagram below shows a glass filled with water to the brim. Refer to the diagram below and answer **Questions 13 and 14.**



13. What will you observe if you are to put a stone into the glass of water?

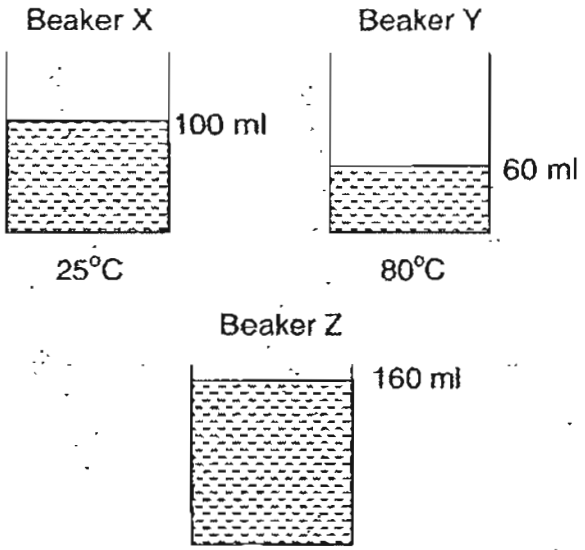
A: The water will overflow.
B: The stone will float on the water.
C: The stone will sink to the bottom of the glass.

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

14. What does the above experiment show?

(1) Water has definite volume but stone does not have definite volume.
(2) Stone has definite volume but water does not have definite volume.
(3) Both water and stone do not have definite volume.
(4) Both water and stone have definite volume.

15. The diagram below shows 2 beakers of water at different temperatures.



Both beakers of water (X and Y) were poured into Beaker Z.
What was the likely temperature of water in Beaker Z?

(1) 10°C
(2) 25°C
(3) 45°C
(4) 80°C

16. When ice water is poured into a glass, water droplets appear on the outside of the glass.

Which one of the following ways will you use to show that the water droplets do not come from the ice water in the glass?

(1) Wrapped the glass with a towel.
(2) Paint the outside of the glass black.
(3) Use a glass that is made of ~~styrofoam~~. styrofoam
(4) Fill up the glass with ice water that is not colourless.

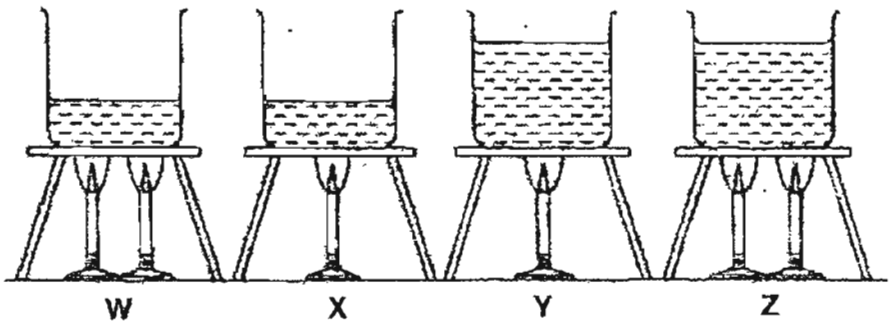
17. Ali wants to carry out an experiment to study the factors that affect the rate of evaporation. He records the conditions in the table below.

Setup	Surface area of container (cm^2)	Temperature of water (°C)	Amount of water used (ml)
P	40	80	150
Q	50	60	200
R	50	80	200
S	60	50	150

Which 2 setups (P, Q, R and S) should use to carry out the experiment in order to ensure a fair test?

(1) P and Q
(2) P and S
(3) Q and R
(4) Q and S

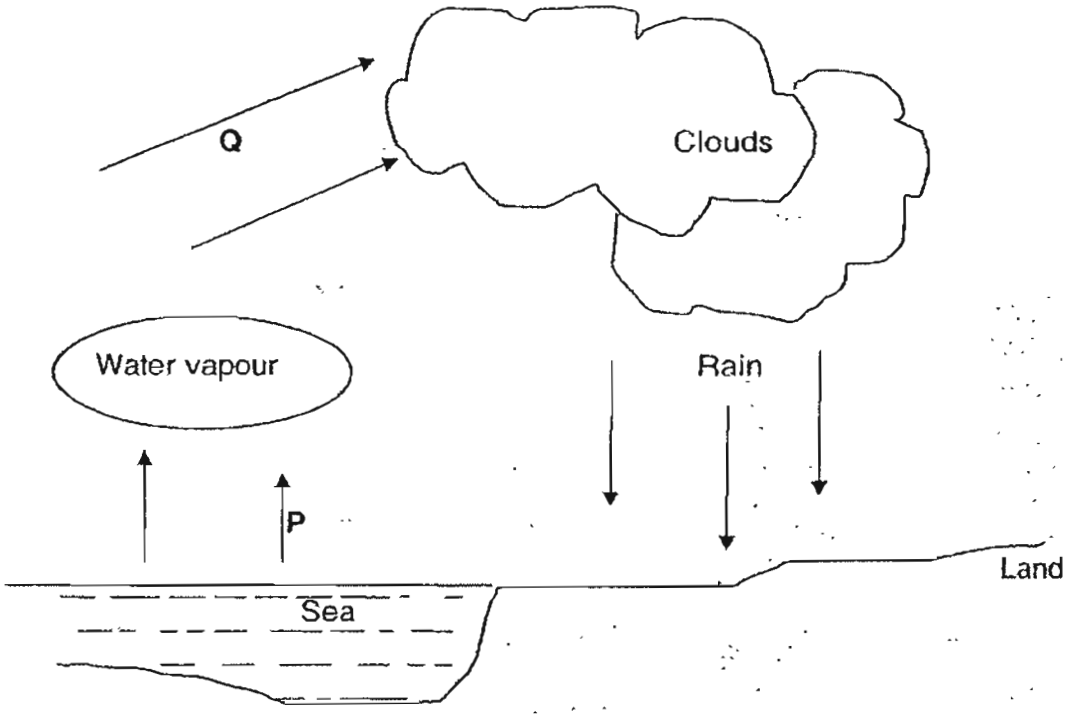
18. Jack used similar sources of heat to heat up 4 beakers of water as shown below.



After heating for 1 minute, when none of the 4 beakers of water had boiled yet,which beaker of water would have the highest temperature?

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

19. The diagram below shows the water cycle.



Based on the diagram, which of the following statements are true?

A: P takes place at a higher temperature than Q.
B: P does not take place at a fixed temperature.
C: Q takes place only when water vapour evaporates.

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

20. Sea creatures can freeze to death when their feathers or fur are covered with oil. Why do the sea creatures freeze to death?

A: Oil reduces the freezing point of water
B: Oil conducts heat away from the body.
C: Air cannot be trapped between the feathers or fur.
D: Oil stops the sea creatures' bodies from producing heat.

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

21. In which of the following is clean water most required?

(1) At the carwash
(2) Watering the plant
(3) Manufacturing food and drinks
(4) Using water to cool down engines in machinery

22. How does the process of desalination work?

(1) By evaporating seawater to get freshwater.
(2) By obtaining freshwater from seawater by condensation.
(3) By converting seawater to freshwater by both evaporation and condensation.
(4) By filtering seawater to get freshwater.

23. Which of the following could help determine if a source of water is free from pollutant?

A: Check if there is a layer of oil at the water surface.
B: Determine if the water is clear and free from particles such as soil.
C: Check if there is smell coming from the water.
D: Conduct experiments to determine if aquatic organisms can survive in it.

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

24. Which of the following are good habits or practices?

A: Using waste water from the washing machine to flush the toilet.
B: Pouring soapy water into an open drain.
C: Putting refuse in used plastic bags for disposal.
D: Taking a bath in a tub instead of a quick shower.

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

25. Which of the following could cause water pollution?

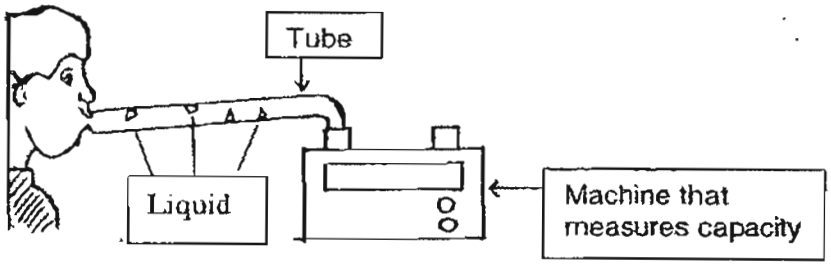
A: Dumping waste at the garden
B: Dye factories set up near a river
C: Throwing rubbish in the beach
D: Oil spills from sinking sea vessels

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

26. Our rib cage protects important organs in our body. What are these organs?

(1) Heart and lungs
(2) Blood and heart
(3) Stomach and intestines
(4) Windpipe and lungs

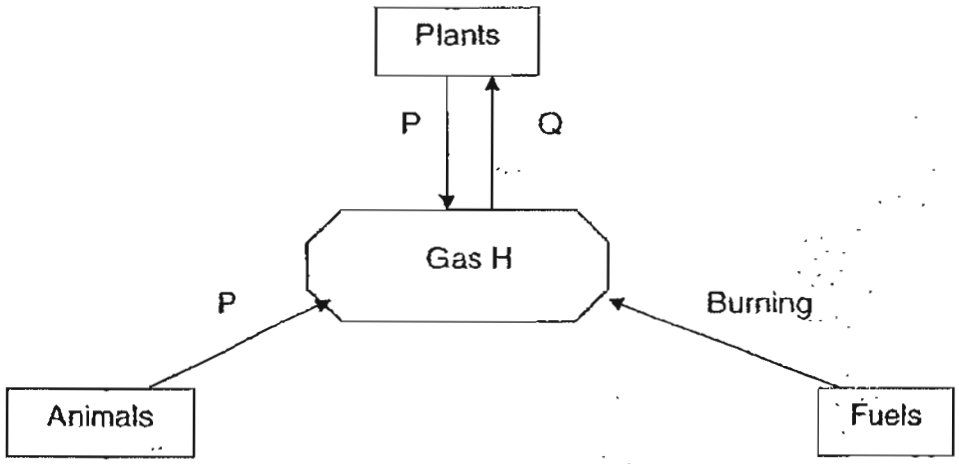
27. Jenny went to a hospital for a medical experiment. She was asked to breathe in and out of a tube that was connected to a machine that measures lung capacity. She noticed a liquid forming on the inside of the tube as shown in the diagram below.



Which one of the following statements best explains her observation?

(1) Air contains moisture.
(2) The movement of the air in and out of the tube resulted in moisture being formed on the walls of the tube.
(3) Carbon dioxide in the warm exhaled air condensed on the cool walls of the tube.
(4) Water vapour in the warm exhaled air condensed on the cool walls of the tube.

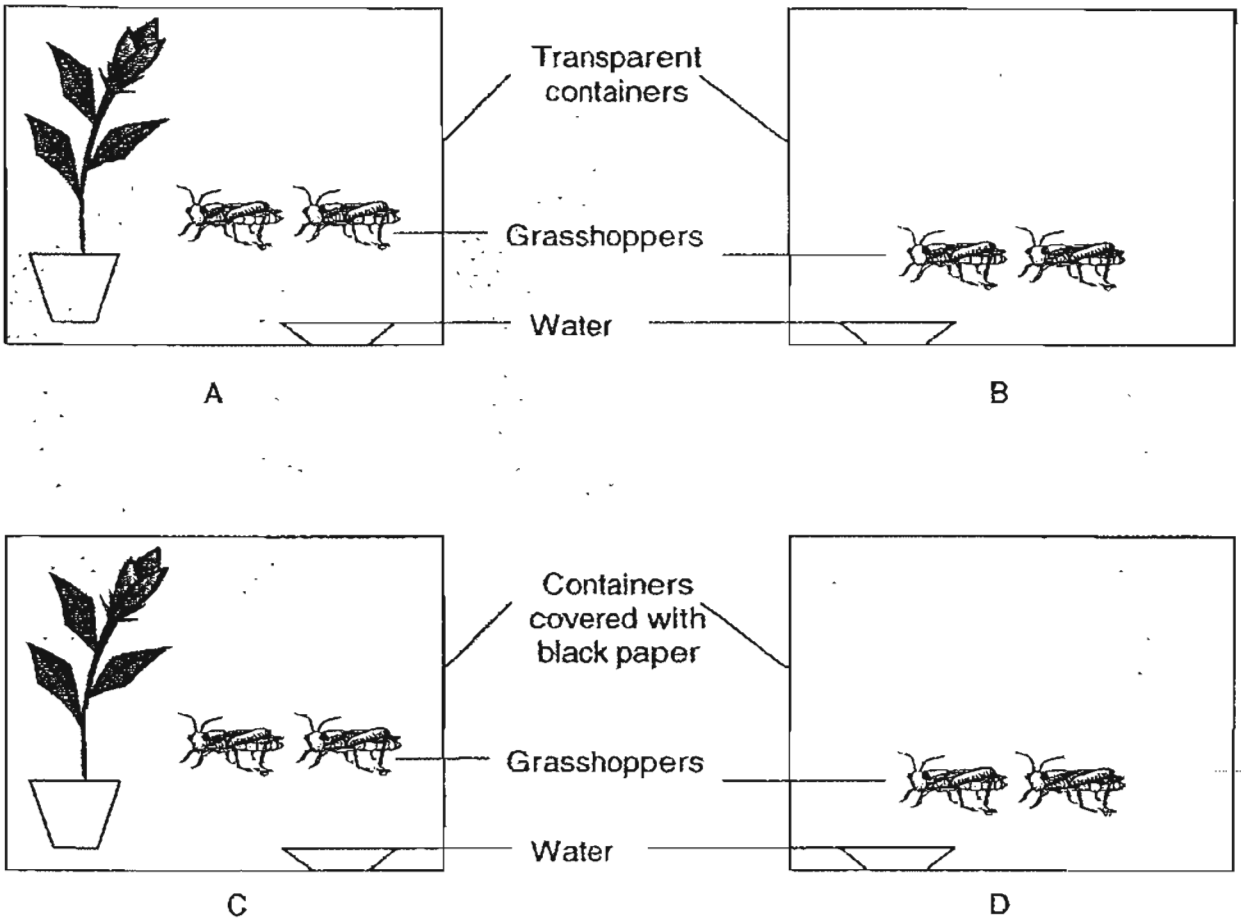
28. The diagram below shows how **Gas H** is added and removed from the air in the atmosphere through processes **P** and **Q**.



Identify Gas H and Processes P and Q.

	Gas H	Process P	Process Q
(1)	Oxygen	Respiration	Photosynthesis
(2)	Oxygen	Photosynthesis	Respiration
(3)	Carbon dioxide	Photosynthesis	Respiration
(4)	Carbon dioxide	Respiration	Photosynthesis

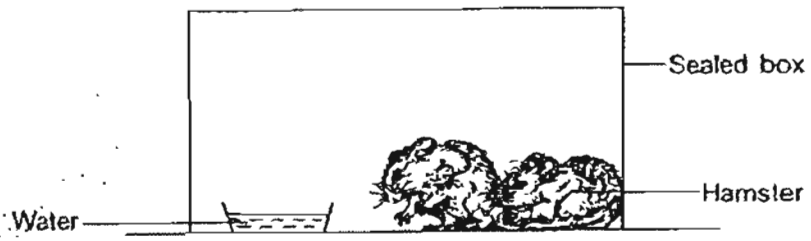
29. Rahim put 2 grasshoppers each into 4 air-tight containers as shown below. The 4 containers were put under the Sun from 9 am to 12 pm.



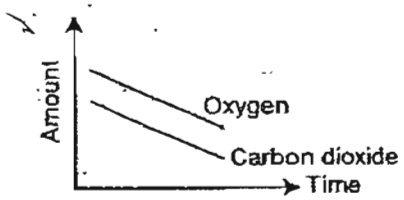
Which container has the least amount of carbon dioxide at the end of the experiment?

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

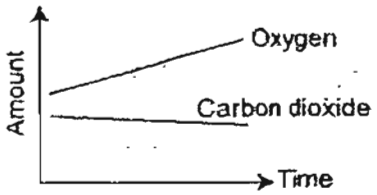
30. Jeffrey sets up the experiment below to find out how respiration affects the amount of oxygen and carbon dioxide in a sealed box.



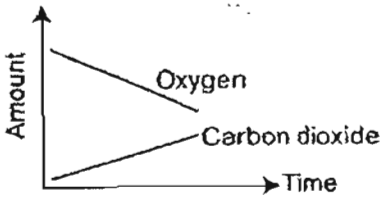
Which of the following graphs best describe the changes in the amount of oxygen and carbon dioxide in the sealed box over a period of 12 hours?



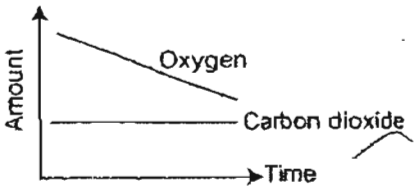
(1)



(2)



(3)



(4)

End of Part 1

Rosyth School
First Semestral Assessment for 2007
SCIENCE
Primary 4

Name: _____ Total Marks: /40

Class: Pr _____ Register No. _____ Duration: 1 h 30 min

Date: 14th May 2007 Parent's Signature: _____

Booklet B

Instructions to Pupils:

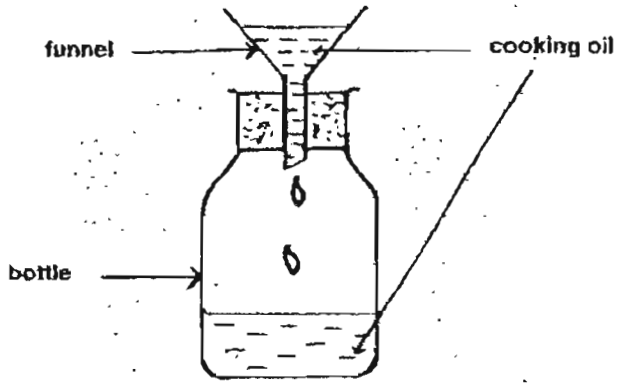
1. For questions 31 to 46, give your answers in the spaces given in this Booklet B.

* This booklet consists of 16 pages. (Pg. 15 to 30)

PART II (40 MARKS)

For questions 31 to 46, write your answers in this booklet.

31. Look at the diagram below carefully. Some oil was being poured into a bottle through a funnel.



The oil stopped flowing into the bottle although there was still a lot of empty space in it.

(a) What was present in the empty space in the bottle? (1m)

_____

(b) Why did the oil stop flowing into the bottle? (1m)

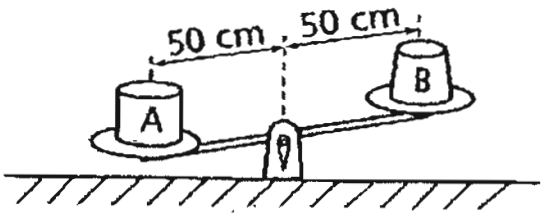
_____

(c) Suggest one thing that you could do so that the oil could continue to flow into the bottle. (1m)

_____

32. Study the following diagrams carefully. A lever balance was used to compare the mass of objects A, B, C and D.

(a)

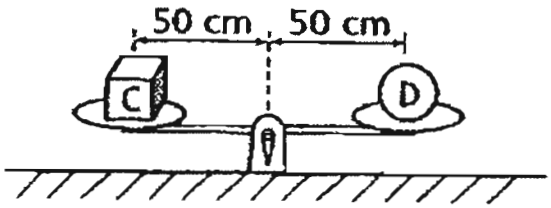


Object A is tilted to one side. Compare the mass of objects A and B. (1m)

_____

_____

(b)

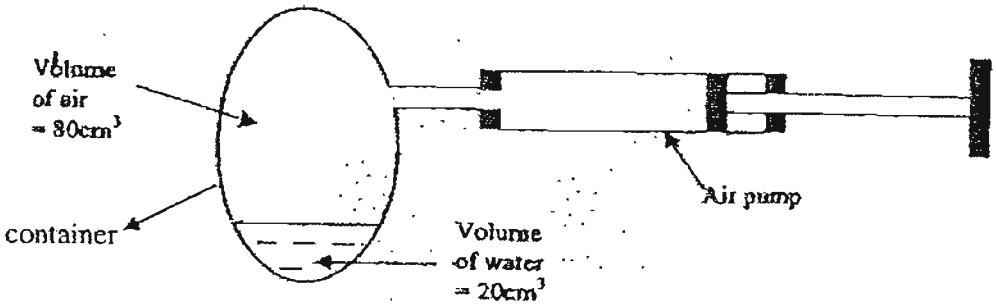


What does the above diagram show you about the mass of objects C and D? (1m)

_____

_____

33. The diagram below shows an air-tight metal container with some water and air in it.



With each stroke of the air pump, 50 cm^3 of air is pumped into the container.

(a) What is the volume of the air in the container if the pump is pushed twice?
(1 m)

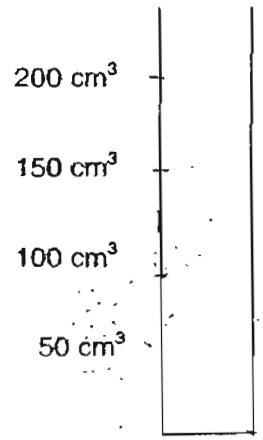
_____

(b) State the property of water and air that leads you to your answer in (a).
(1 m)

_____

_____

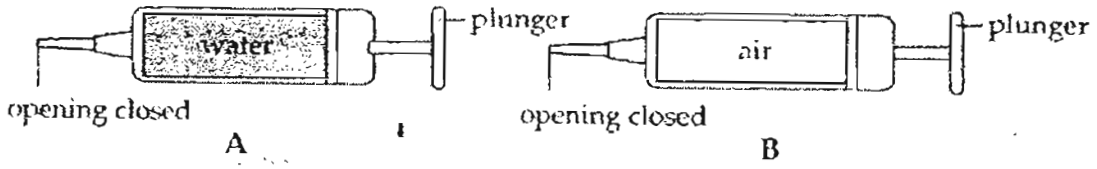
34. The picture below shows a measuring cylinder containing 50 cm^3 of sand.



(a) 50 cm^3 of water was poured into the measuring cylinder above. What would the water level likely to be? Draw it in the diagram above. (1m)

(b) 50 cm^3 of orange syrup is added to another measuring cylinder containing 50 cm^3 of water. Do you think the observation would be the same as part(a)? Explain your answer. (1 m)

35. Syringe A contains 20 cm^3 of water and Syringe B contains 20 cm^3 of air.

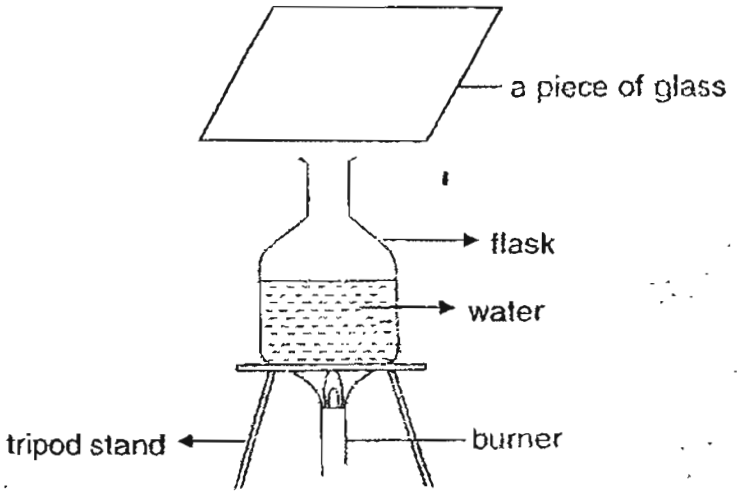


(a) What happens to the volume of the water in Syringe A when the plunger is pushed in? (1 m)

(b) What happens to the volume of the air in Syringe B when the plunger is pushed in? (1 m)

(c) Explain your answers in (a) and (b). (1 m)

36. The water in the flask was being heated and a piece of glass was held over the mouth of the flask.



(a) What could be observed on the underside of the glass after sometime? (1 m)

_____

(b) Name the process which resulted in what you observed in (a). (1 m)

_____

(c) After some time, it could be observed that fewer droplets of water formed on the underside of the glass. Explain why did this happen? (1 m)

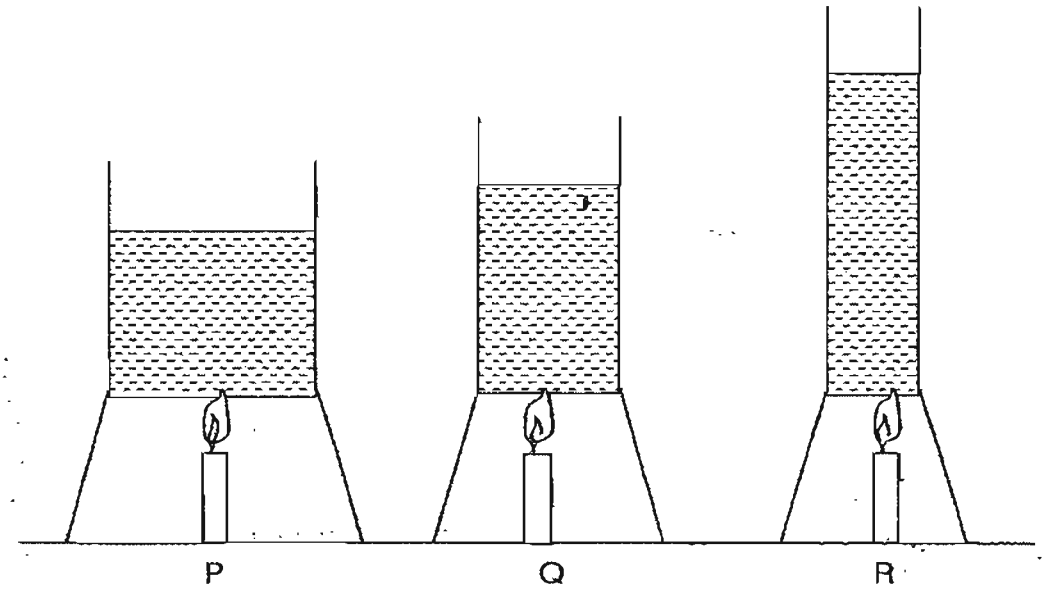
_____

_____

37 Study the following statements carefully. Write "**True**" or "**False**" for each statement below. (2 m)

Statement	True/False
Melting changes water from a state with definite shape to a state with no definite shape.	
Evaporation occurs when the temperature is above 100°C or when it is below 0°C.	
Boiling produces steam and bubbles in water.	
Melting of ice occurs at 0°C only.	

38 Linda set up the experiment as shown in the diagram below.



She used 45 ml of water in each container and heated the containers using similar candles. She measured the volume after 30 minutes.
The results were tabulated in the table below.

Set-up	Volume of water before experiment (ml)	Volume of water after experiment (ml)
P	45	31
Q	45	38
R	45	43

(a) Explain why there is least water in container P after 30 minutes. (1 m)

_____

_____

(b) Why did she use the same number of candles to heat up the water in each container?

(1 m)

_____

_____

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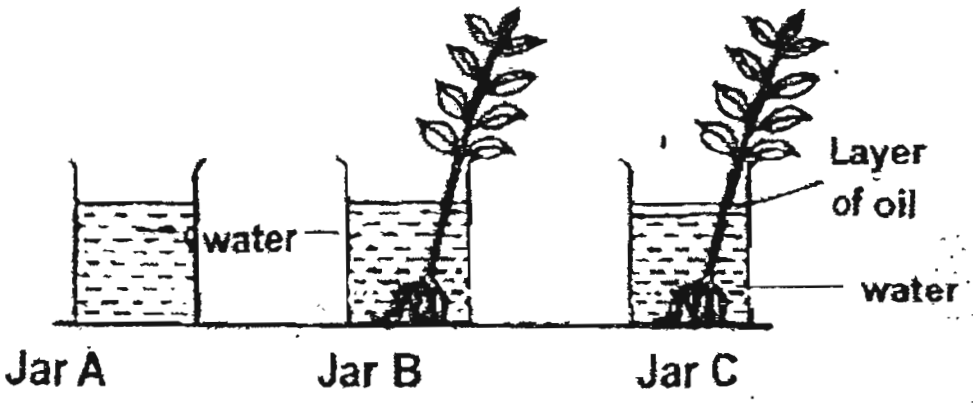
39. Tom filled 3 jars of the same size with the same amount of water. He put 2 small plants of similar size in Jar B and Jar C. He poured a layer of oil on the surface of Jar C. All the 3 jars were placed next to an open window.



(a) He recorded the results of his experiment in the table below. Complete the table by filling in the blanks. (2 m)

Setup	Jar A	Jar B	Jar C
Volume of water at the start of the experiment	(i)_____	250 ml	250 ml
Volume of water after 2 days	225 ml	200 ml	(ii)_____

(b) What was Tom trying to find out from the experiment? (1 m)

_____

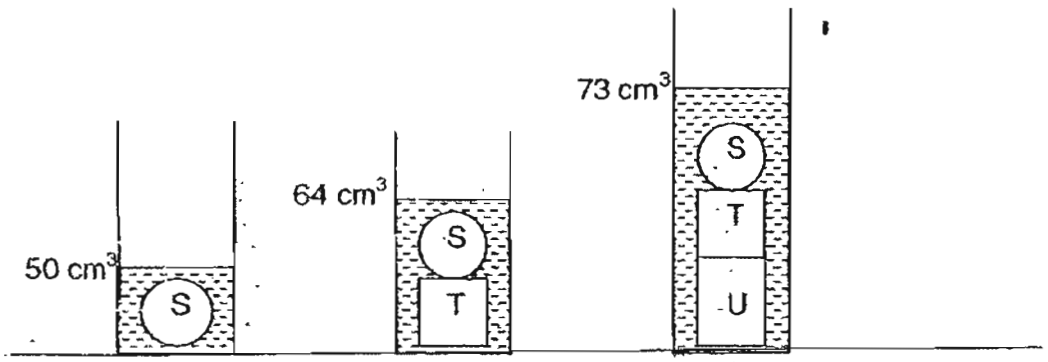
_____

(c) Name one other factor Tom must keep the same in order to ensure a fair test. (1m)

_____

_____

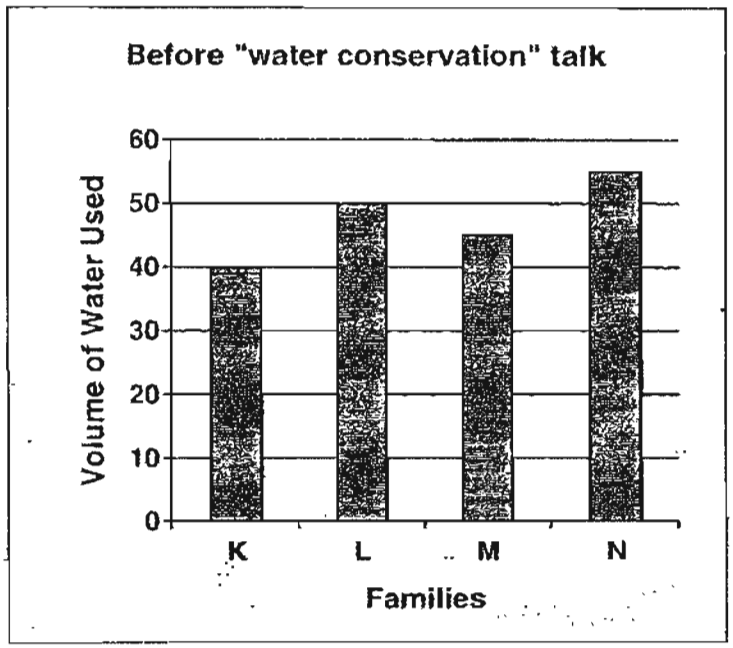
40. Teck Meng poured an equal amount of water into three identical measuring cylinders. Objects S, T and U were put into the cylinders as shown in the diagram below.

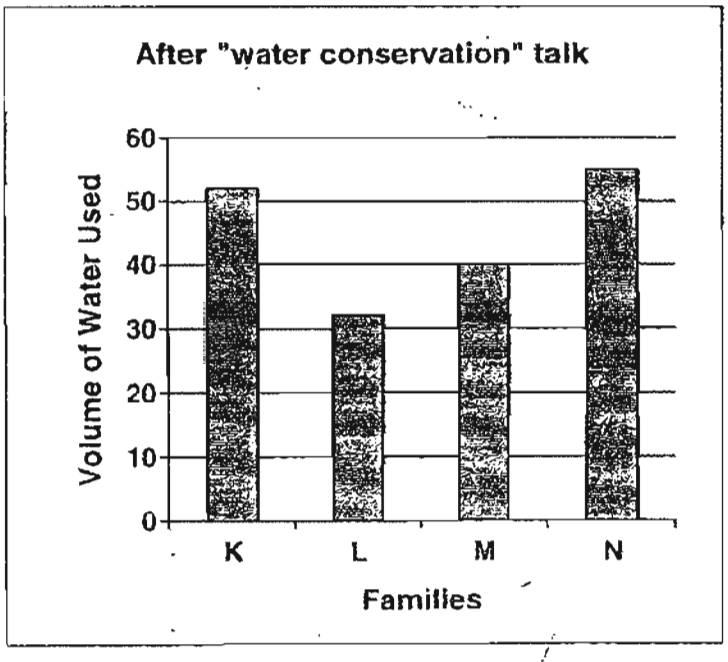


For each of the statement below, determine whether the statement is "True", "False" or "Not possible to tell" by putting a tick in the correct box. (2 m)

No.	Statement	True	False	Not possible to tell
(a)	The original volume of water is 50 cm^3.			
(b)	The volume of Object T is 14 cm^3.			
(c)	Object T has a greater mass than Object S.			
(d)	Volume of Object T is less than volume of Object U.			

41. Four families attended a talk on "water conservation" organized by the Natural Environment Agency. The graphs below show the amount of water used by the four families before and after their attendance at the talk.





Question 41 continues on the next page.....

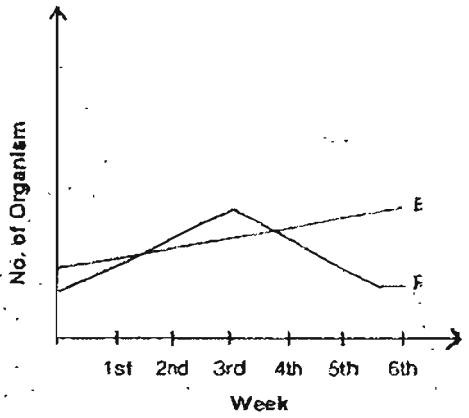
(a) Which of the family/families (J, K, L and M) show(s) that they have responded correctly to the talk? (1m)

_____

(b) How can you tell from the graph that the family/families you mentioned in (a) has/have responded correctly to the talk? (1m)

_____

42. The graph below shows that the change in the number of organisms (E and F) in a stream over 6 weeks.



(a) Dirty water from a nearby farm was discharged into the stream on the 3rd week. State the effect of the dirty water on organisms E and F. (1m)

(i) Organism E: _____

_____

(ii) Organism F: _____

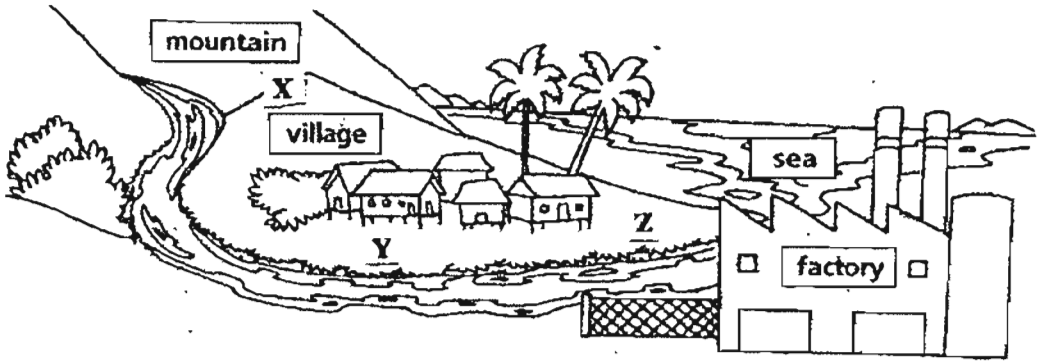
_____

(b) Many trees along the stream were cut down. How does the removal of these trees pollute the waters in the stream? (1m)

_____

_____

43. The diagram below shows a village located between the mountains and the sea. A river passes through the village. Furthermore, a factory is situated beside the village near the river.



(a) On the diagram there are 3 locations marked X, Y and Z. Which is a suitable location for a reservoir? (1m)

_____

(b) Give two reasons why you have chosen this location. (2m)

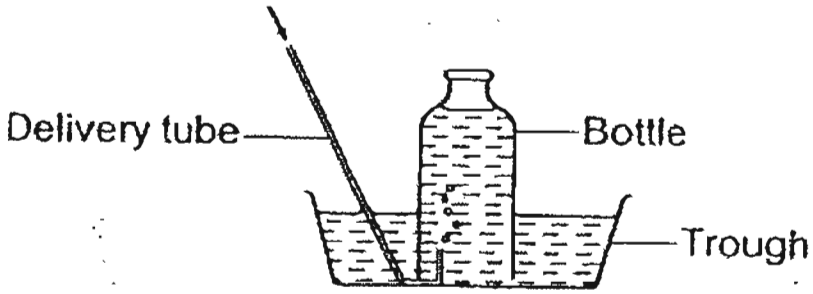
Reason 1: _____

_____

Reason 2: _____

_____

44. Sharon and Carolyn each took a deep breath and blew into the delivery tube in the set-up as shown below.



The results of the experiment are as follows:

Name	Height of water in the bottle at the beginning of the experiment (cm)	Height of water in the bottle at the end of the experiment (cm)
Sharon	8	3.8
Carolyn	8	4.5

(a) Why is there a decrease in the height of water in the bottle when Sharon and Carolyn blew into the delivery tube? (1m)

_____

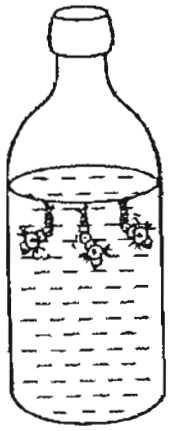
_____

(b) From the result, who has a larger lung capacity to take in oxygen? (1m)

_____

250

45. Li Ling conducted an experiment by pouring some cooking oil into a bottle of water containing some live mosquito larvae. The next day she found that the larvae were dead.



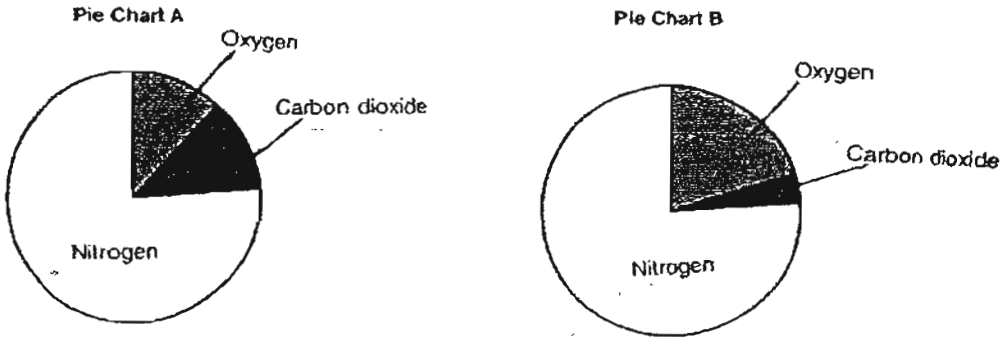
Li Ling concluded that this is a good method to prevent mosquito from breeding. She then decided to pour some oil into her small pond containing live guppies and terrapins in an attempt to control the breeding of mosquito in her garden. Do you think this a good idea? Explain your answer. (2m)

_____

_____

_____

46. The two pie charts below show the composition of inhaled and exhaled air.



(a) Which pie charts (A and B) represent the compositions of inhaled and exhaled air?
(1m)

(i) Inhaled air: _____

(ii) Exhaled air: _____

(b) There is no difference in the amount of nitrogen in the air we breathe in and out. Explain why. (1m)

_____

(c) Identify the gas (oxygen, carbon dioxide or nitrogen) that is needed for the following activities. (2m)

	Activity	Type of Gas
(i)	To break down food into energy.	
(ii)	It is changed into a useful form for the plants by the bacteria in the soil.	
(iii)	It is required to keep flame of a candle glowing.	
(iv)	It is used by plants to make food in the presence of sunlight.	

End of Paper

ANSWER SHEET

ROSYTH PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007
SEMESTRAL ASSESSMENT (1)

1. 1
2. 1
3. 2
4. 2
5. 3
6. 1
7. 4
8. 3
9. 1
10. 1
11. 1
12. 2
13. 3
14. 4
15. 1
16. 4
17. 3
18. 1
19. 1
20. 4
21. 3
22. 3
23. 4
24. 2
25. 4
26. 1
27. 4
28. 4
29. 1
30. 1

31) a) Air

b) The air in bottle are occupying the space.

c) I should have some holes for the air to escape.

32) a) Object A has more mass than objects.

b) D and C have the same mass.

33) a) 80cm3

b) Water has a definite volume but air doesn't have definite volume.

34) a)

b) No. The orange syrup and the water had to fill up the space left in the sand.

35) a) 20cm3

b) The air in the plunger will be compressed.

c) The water in plunge A has a definite volume but the air in plunge B can be compressed.

36) a) The will be water droplet on the underside of the glass.

b) condensation.

c) The glass sheet be come hot.

37)True, False, True, True

38)a)container has the biggest surface area.
b)The water received the same amount of heat so it is a fair test.

39)a)i)250ml ii)225ml
b)He is trying to find we weather the small plant in Jar c can survive.
c)some type of plant.

40)a)False
b)True
c)Not
d)False

41)a)L,N
b)The volume of water used decreased.

42)a)i)increased
ii)decreased
b)No roots to hold the soil when it rain soil will be washed to the river.

43)a)X
b)1)Not near factory so no pollution from factory.
c)Not near village so cannot pollut the water.

44)a)The air occupied the space of the water.
b)Sharon.

45)No.She is polluting her small pond and could kill those guppies and terrapins.

46)a)B b)We don't use nitrogen.
c)i)oxygen ii)Nitrogen iii)oxygen
iv)carbon dioxide.

---end---