

SAT



RED SWASTIKA SCHOOL

# RED SWASTIKA SCHOOL

## 2005 SEMESTRAL ASSESSMENT 1

### SCIENCE

Name : \_\_\_\_\_

Class : Primary 4/ \_\_\_\_

Date : 12 May 2005

### BOOKLET A

30 Questions

60 Marks

Duration of Paper : 1 hour 30 minutes

Note:

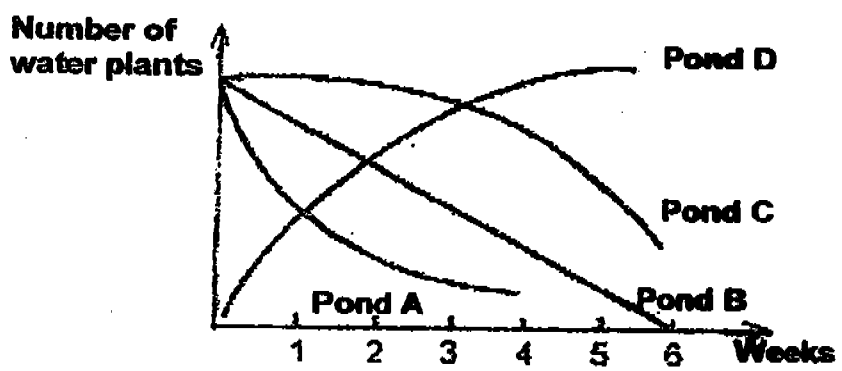
1. Do not open this Booklet until you are told to do so.
2. Questions 1 - 30 are to be done on the OAS provided.
3. Read carefully the instructions given at the beginning of each part of the Booklet.
4. Do not waste time. If a question is difficult for you, go on to the next one.
5. Check your answers thoroughly and make sure you attempt every question.

**Section A . Multiple Choice Questions (30 X 2 marks each)**

**Choose the correct answer and shade the appropriate oval in the OAS provided.**

1. Which of the following is true about water pollution?
  - 1) When oil sticks to the fur of a seal, it helps it to float better.
  - 2) Marine organisms get entangled in discarded objects and die.
  - 3) Deforestation helps to filter the water by clearing the soil in the forest.
  - 4) Plants living in cloudy water will thrive well because sunlight can reach them easily.
  
2. Which of the following is not a way of conserving water?
  - 1) Make proper use of half and full toilet flushes
  - 2) Take a quick shower instead of bathing in the bathtub,
  - 3) Use a running hose to water the plants.
  - 4) Wash your kitchen utensils in a basin of water.
  
3. Water pollution has many effects on human beings. Which of these statements are true?
  - A. Polluted water can result in expensive water treatment methods.
  - B. Polluted water is not suitable for gardening, farming or sports such as swimming.
  - C. Polluted water contains harmful chemicals which can cause hazards for the consumers of water.
  - D. Polluted water carries diseases and germs which can be passed on to the consumers of seafood.
  - 1) B, C and D
  - 2) A, B and C
  - 3) A, C and D
  - 4) All of the above

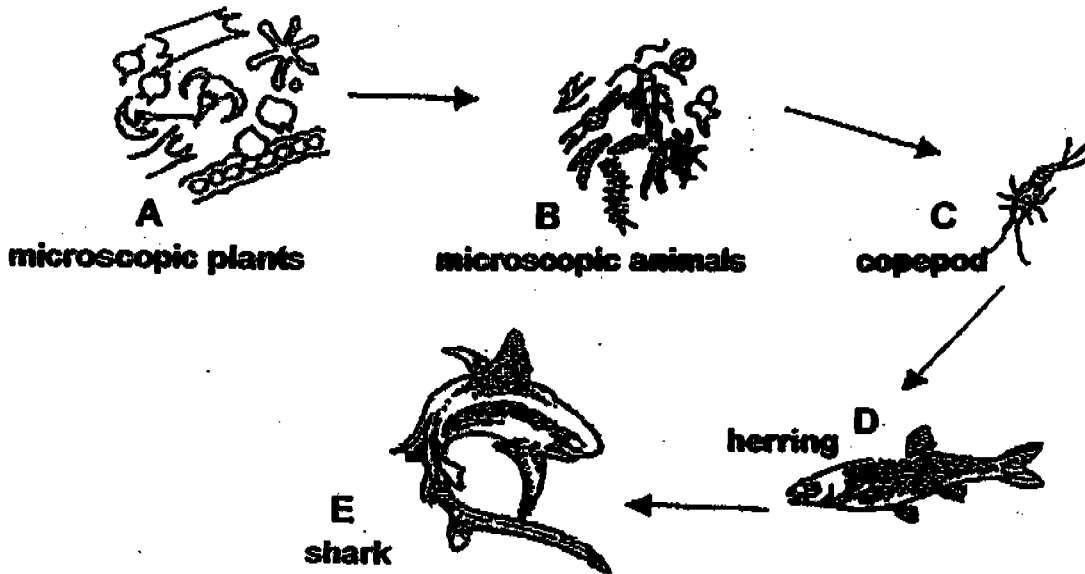
4. Study the graph below carefully.



Which pond contains water that is most likely not polluted?

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

5. Given below is a food chain. An arrow indicates that the second life form eats the first, e.g. the herring eats the copepod or the shark eats the herring, and so on.



From the food chain above, which of the following statements is possible if Animal C has consumed a toxic pollutant?

- 1) Animal C dies of poisoning.
  - 2) Animal B dies of poisoning.
  - 3) The number of Animal E increases.
  - 4) The number of Animal C increases.
6. The hair and the mucus in the nose remove \_\_\_\_\_ from the air in the respiratory passage.
- 1) dust particles
  - 2) unwanted food
  - 3) waste gases
  - 4) water vapour
7. The \_\_\_\_\_ moves downwards to draw in air and expand the lungs.
- 1) air sacs
  - 2) diaphragm
  - 3) stomach
  - 4) windpipe
8. When we breathe, our \_\_\_\_\_ move(s) and this cause(s) the change in the size of our chest cavity.
- 1) stomach
  - 2) heart
  - 3) lungs
  - 4) )

9. We have to breathe harder on the mountain than at sea level because there is less \_\_\_\_\_ at a higher altitude.

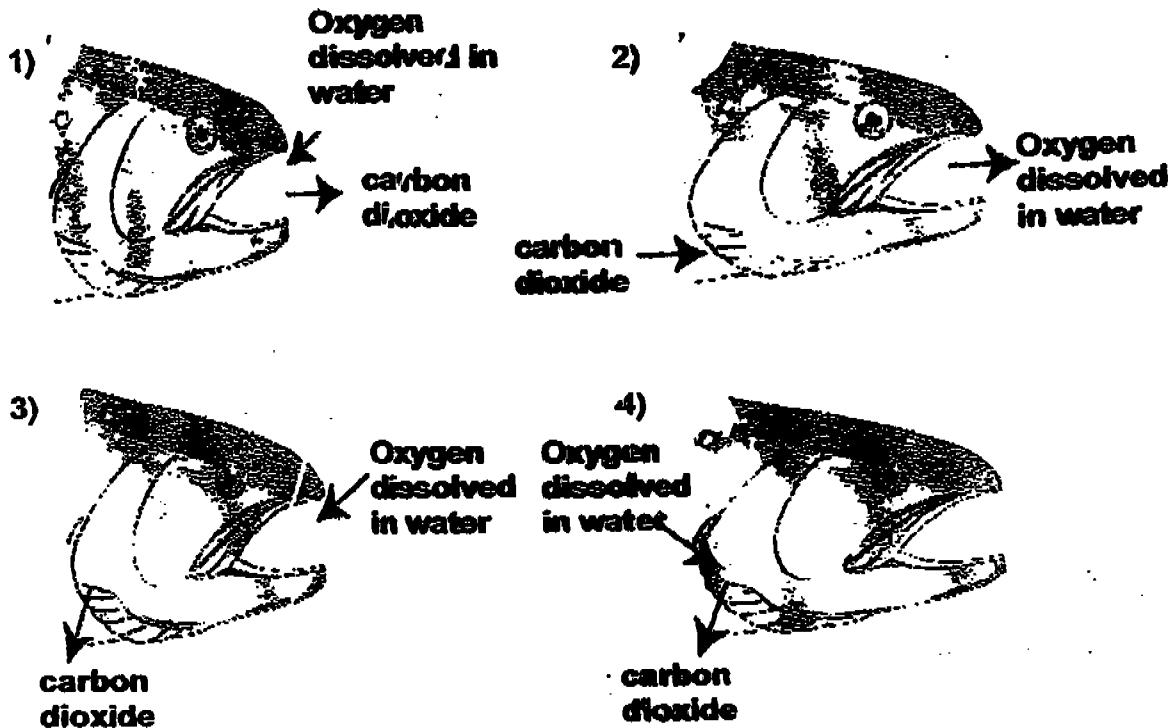
- 1) carbon dioxide
- 2) hydrogen
- 3) nitrogen
- 4) oxygen

10. <sup>four</sup> The five sentences below describe what happens when we breathe. Read them carefully, and then arrange them in the correct order.

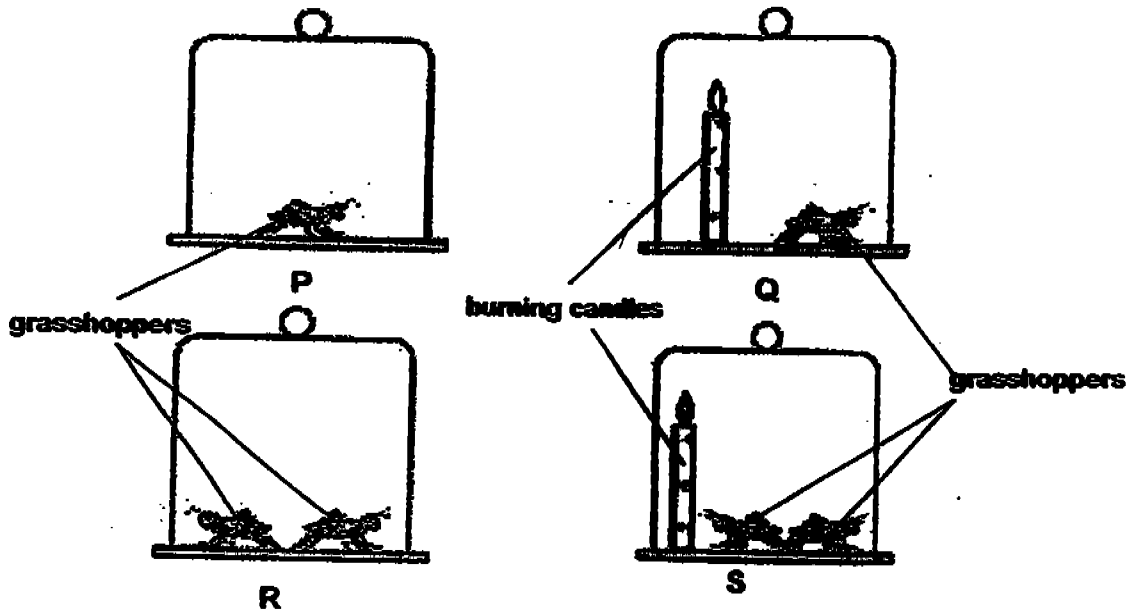
- A. The lungs expand
- B. Air enters through the nose
- C. Air goes into our lungs.
- D. Air goes into the windpipe.

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

11. Which diagram shows the path of oxygen and carbon dioxide in a fish?



12. There are 6 grasshoppers and 2 burning candles in 4 inverted glass jars as shown in the diagrams below.



Which of the following statements is not true?

- All the grasshoppers will not stay alive in the jars..
- The grasshopper in P will stay alive for the longest time.
- The grasshopper in Q will die faster than the grasshoppers in S.
- The grasshoppers in R will die faster than the grasshopper in P.

13. The table below shows the number of breaths Alex took before and after exercising.

Time	Number of breaths in one minute
11.00 a.m.	20
11.05 a.m.	21
11.10 a.m.	20
11.15 a.m.	25
11.20 a.m.	29
11.25 a.m.	34
11.30 a.m.	38

At what time did Alex start exercising?

- 1) 11.02 am
- 2) 11.12 am
- 3) 11.25 am
- 4) 11.30 am

14. Which of the following is not matter?

- 1) rainbow
- 2) steam
- 3) dust
- 4) dew

15. Alvin filled a plastic bag with water. He used a rubber band to tie the bag of water tightly. He then pressed the bag very hard and it burst. What does this show?

- 1) Water is not flexible.
- 2) Water is compressible.
- 3) Water has a definite shape.
- 4) Water has a definite volume.

16. Which one of the following groups of things includes all the three states of matter?

- 1) rain, snow, ice
- 2) grass, dew, soil
- 3) sand, sea water, wind
- 4) pond water, oxygen, clouds

17. Kenny moulded a piece of plasticine into a mouse. His baby brother rolled it into a ball and threw it at a wall nearby. Which of the following factors concerning the plasticine remained the same?

- A. position
- B. mass
- C. shape
- D. volume

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

18. Salt water \_\_\_\_\_ at 0°C.

- 1) melts
- 2) becomes ice
- 3) becomes steam
- 4) does not become ice

19. Debbie puts a glass of water into a freezer overnight. Which of the following properties of water will change?

- A. mass
- B. shape
- C. state
- D. colour

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

20. A is a single cone of ice. B is the same sized cone made by arranging little cones together. If both of them are put under the same conditions, which one will be the first to melt completely and why?



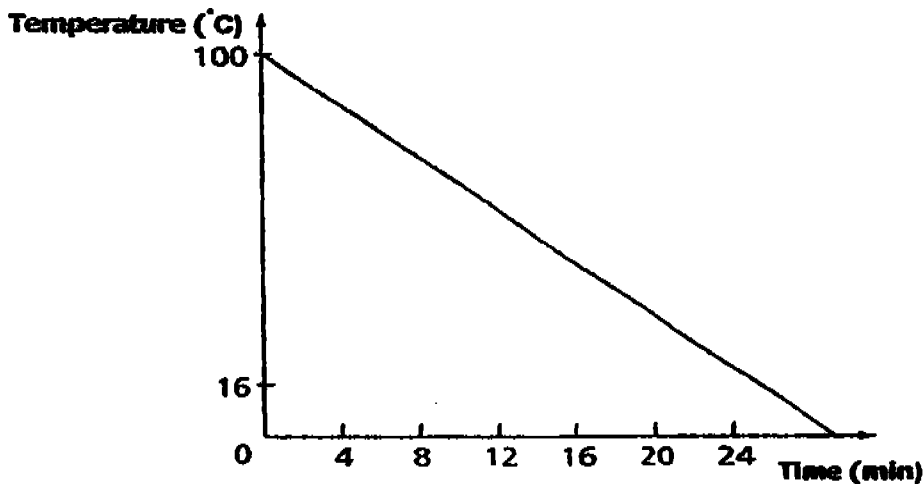
A



B

- 1) It will be A as it has a larger exposed surface area.
- 2) It will be B as it has a smaller exposed surface area.
- 3) It will be B as it has a larger exposed surface area.
- 4) A and B will melt at the same time since they are of the same size.

21. A thermometer was placed inside a beaker of water and its temperature was taken at regular intervals. A graph was then plotted as shown below.



Which process was taking place?

- 1) Water was changing into steam.
- 2) Steam was changing into water.
- 3) Water was changing into ice.
- 4) Ice was changing into water

22. Rearrange the changes that take place in the water cycle in the correct order using the letters (A to E).

- A. The tiny droplets join together to form bigger droplets.
- B. The Sun heats the land, seas and oceans, and causes water to evaporate to form water vapour.
- C. Clouds are formed.
- D. Water vapour condenses in the cool air to form tiny droplets of water.
- E. The bigger droplets fall to the Earth as rain.

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

23. In the desert, clouds are rarely seen in the sky because \_\_\_\_\_.

- A. the desert is too hot.
- B. the desert is not occupied by living things
- C. the desert winds are too strong
- D. very little water vapour is available

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

24. The diagram shows the stages of the growth of a seed to a young plant. At which stage is sunlight necessary for the seedling?



A



B



C



D

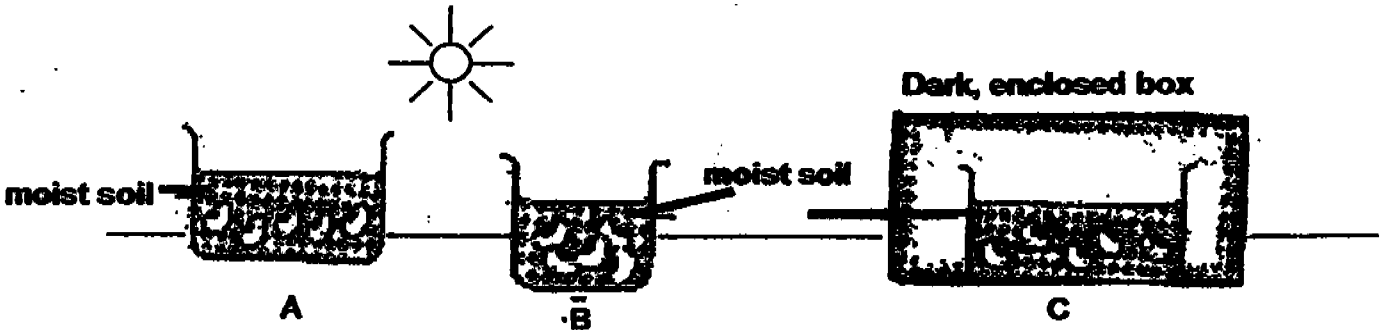
- 1) A
- 2) B
- 3) C
- 4) D

25. Which of these organisms have similar number of stages in their life cycles?

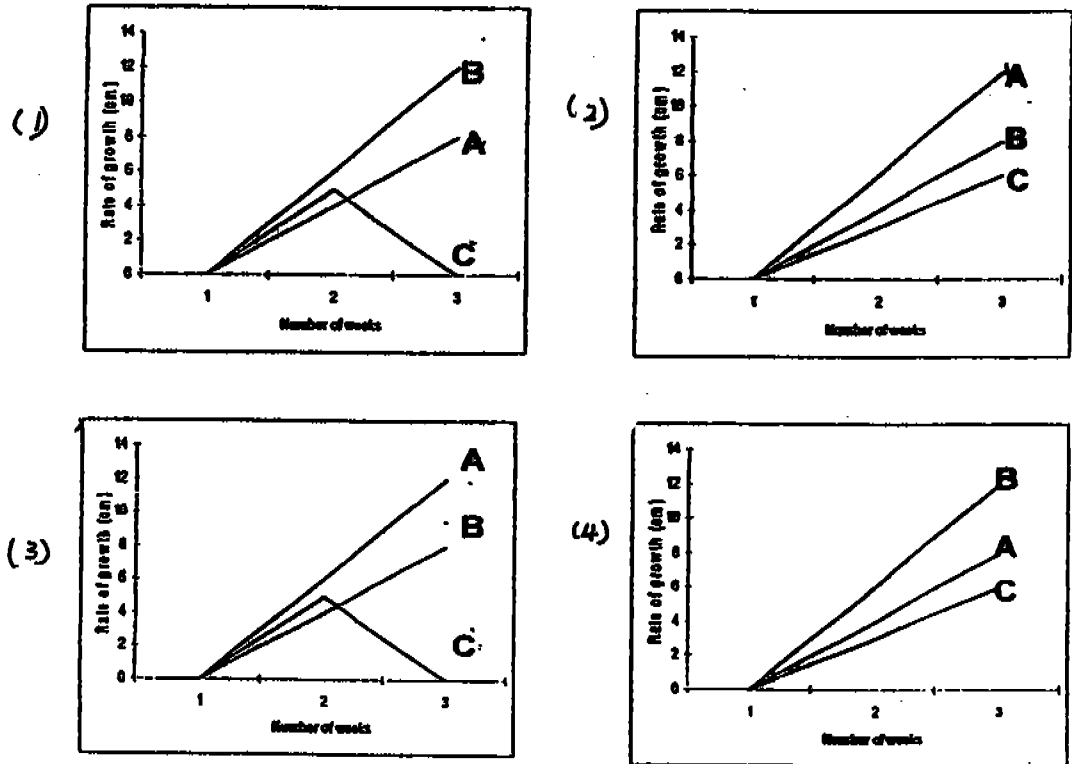
- 1) Mosquito and chicken
- 2) Butterfly and cockroach
- 3) Cockroach and grasshopper
- 4) Cockroach and moth



26. Mani planted five germinating seeds in three pots A, B and C (as shown below). There is an equal amount of soil in all the pots. He placed Pots A and B in the sun and Pot C in a dark, enclosed box. Then he monitored their rates of growth over a period of three weeks.



Which graph correctly shows the growth rates of the seedlings after three weeks?



27. We withdraw our hands almost immediately when we accidentally touch a hot object. What is the path of the message that enables us to react accordingly?

- ① hand → nerve → brain → nerve → skin
- ② skin → nerve → brain → nerve → hand
- ③ skin → nerve → hand
- ④ brain → nerve → hand

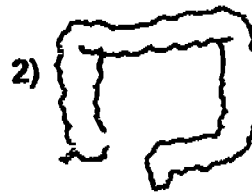
28. In an experiment, Animal Y was placed in a tank with some water, leaves and some flies. After three days, the amount of leaves and the number of flies left in the tank were recorded in the table below.

Day	Number of flies	Amount of leaves
1	5	80 g
2	5	50 g
3	5	20 g

Animal Y is most probably a \_\_\_\_\_.

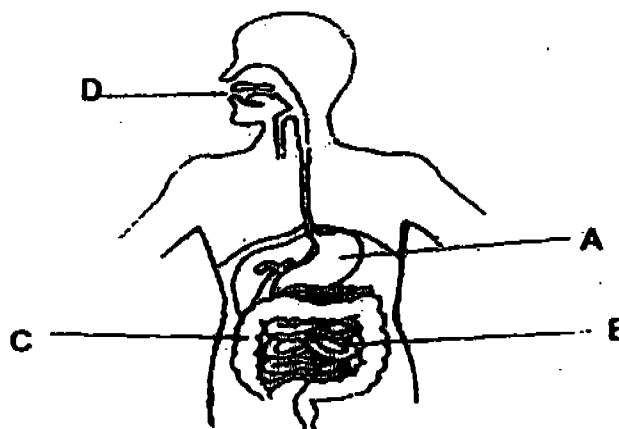
- 1) caterpillar
- 2) frog
- 3) lizard
- 4) mosquito

29. In which of the following organs does digestion start?



30. Most water is absorbed at \_\_\_\_\_.

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



**Section B: Open-ended Questions (16 Questions 40 marks)**

**Answer the following questions in the space provided.**

31. Read the article below which was taken from a newspaper, and answer the questions that follow.

On the 24<sup>th</sup> of March 1989, a huge, black oil tanker, *Exxon Valdez* glided out of the port of Valdez, Alaska into Prince William Sound and slammed into an underwater reef! It spilled out 11 million gallons of oil which could fill over 1000 big swimming pools. The effects of the incident were not really known, but it was known that thousands of marine mammals were poisoned, and over 300 000 birds died. Exxon spent some 2 billion dollars cleaning up the spill and further 1 billion to settle civil and criminal charges related to the case.

- a) Describe how oil spills can endanger or even kill the birds living near the water. (2 marks)

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- b) Besides oil, name one other liquid that pollutes the water. (1 mark)

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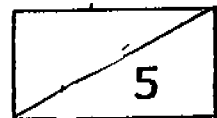
32. a) Explain why water used for the washing of clothes should not be poured into the drains. (1 mark)

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- b) Where should it be poured to instead? (1 mark)

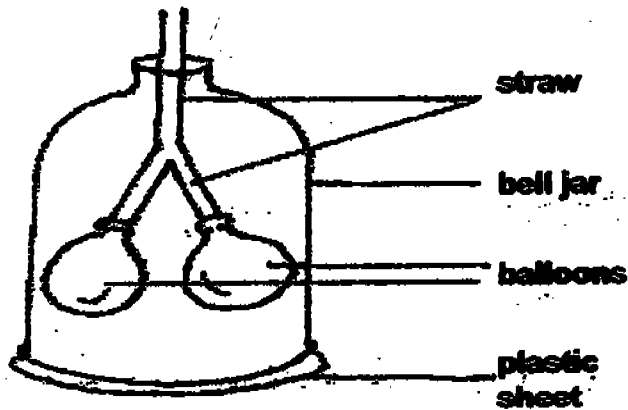
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33. Human beings choke when something goes into their (a) \_\_\_\_\_ instead of going into their (b) \_\_\_\_\_. (2 marks)

34. The following is set up to show how lungs work.



a) Which part of the respiratory system does each of the following represent? (2 marks)

(i) bell jar : \_\_\_\_\_

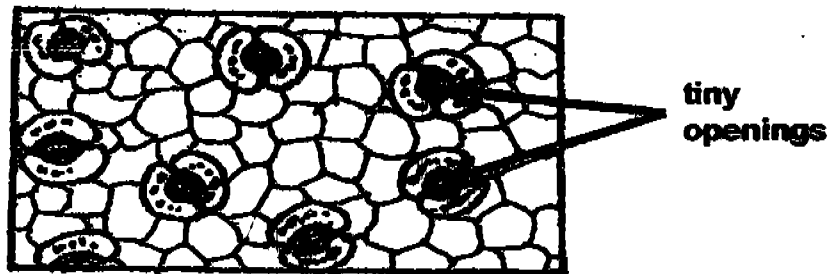
(ii) plastic sheet : \_\_\_\_\_

b) What will happen to the 'balloons' when we breathe in? (1 mark)

\_\_\_\_\_

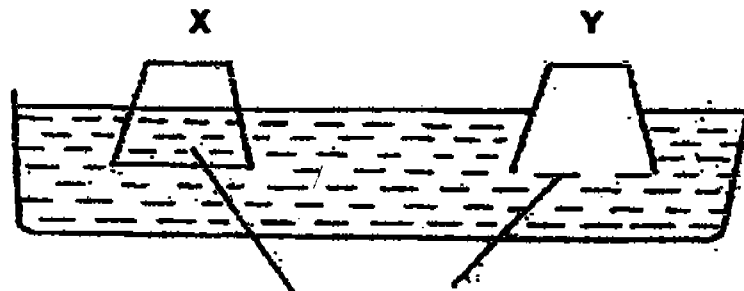


35. The diagram below shows the close-up view of a leaf with tiny openings on it.



- a) What is the name of these tiny openings? (1 mark)
- 
- b) In what way are the tiny openings of the leaf similar to our respiratory system? (1 mark)
- 
- c) On which part of the leaf are these tiny openings mostly found? (1 mark)
- 
- d) Explain why they are found on the part of the leaf stated in (c). (1 mark)
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36. Two porcelain pots, X and Y, are inverted into a basin of water. Both pots are similar in every way except that one pot has five holes at the base while the other does not have holes.



Empty pots inverted into a basin of water

- a) Which pot has holes at the base? (1 mark)

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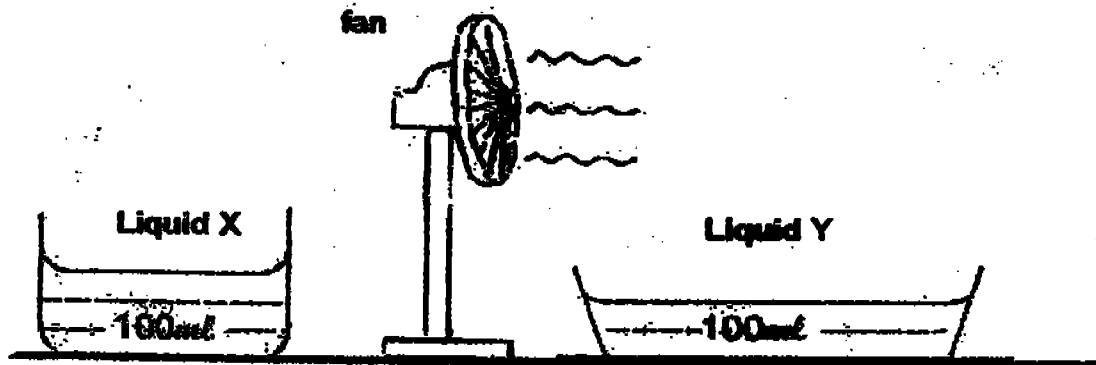
- b) Explain your answer in (a). (2 marks)

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37. James is asked to design an experiment to find out which of the two liquids, X and Y, can evaporate faster. He plans to carry out his experiment as shown in the diagram below.

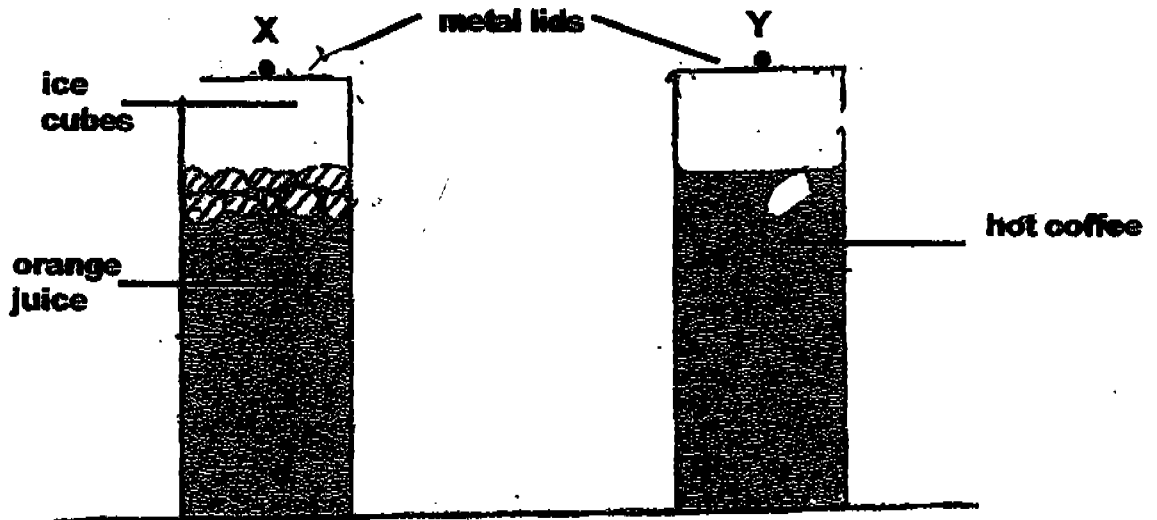


Based on the diagram above, write down two changes which he must make in order to ensure that the experiment is a fair one. (2 marks)

- a) \_\_\_\_\_

- b) \_\_\_\_\_

38. In the diagram below, the glass of iced orange juice and the glass of hot coffee are covered with metal lids X and Y respectively.



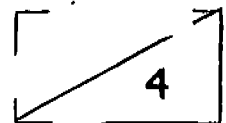
The two glasses are left undisturbed on a table. After a few minutes, it is observed that water droplets are formed on the metal lids.

- a) Show, by drawing on the diagrams, the water droplets formed on

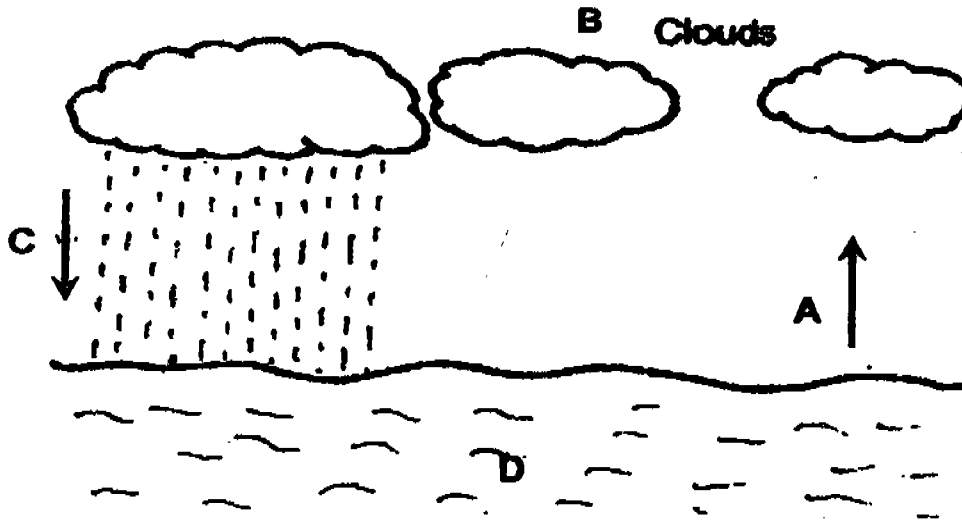
- (i) metal lid X  
 (ii) metal lid Y (2 marks)  
 b) Give reasons for your answers to (a). (2 marks)

(i) metal lid X: \_\_\_\_\_

(ii) metal lid Y: \_\_\_\_\_



39. The diagram below shows the movement of water in the water cycle.

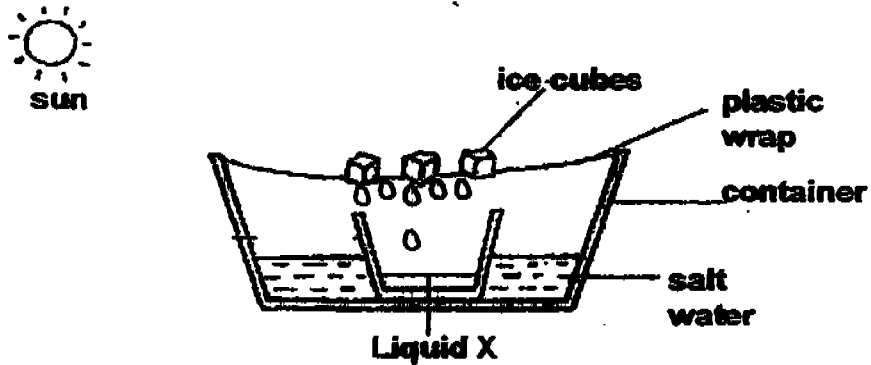


Which letter, A, B, C, D, in the water cycle above represents each of the following processes? (2 marks)

a) Condensation : \_\_\_\_\_

b) Evaporation : \_\_\_\_\_

40. George lay a sheet of plastic wrap over a container with salt water in it and placed some ice cubes on the plastic wrap as shown below.



a) What was the purpose of the ice cubes on the plastic wrap? (1 mark)

\_\_\_\_\_

b) What do you think Liquid X is? (1 mark)

\_\_\_\_\_



41. Arrange the statements below to show the correct order of the growth of a green bean seed. Write the numbers 1, 2, 3, and 4, in the spaces provided. The first one has been done for you. (2 marks)

- a)   5   Flowers develop and fruits form from the flowers.
- b)        The shoot appears from the seed.
- c)        The seed absorbs water.
- d)        The seedling grows into a young plant and makes its own food.
- e)        The root appears from the seed.

42. Explain why sunlight is not needed during germination. (2 marks)

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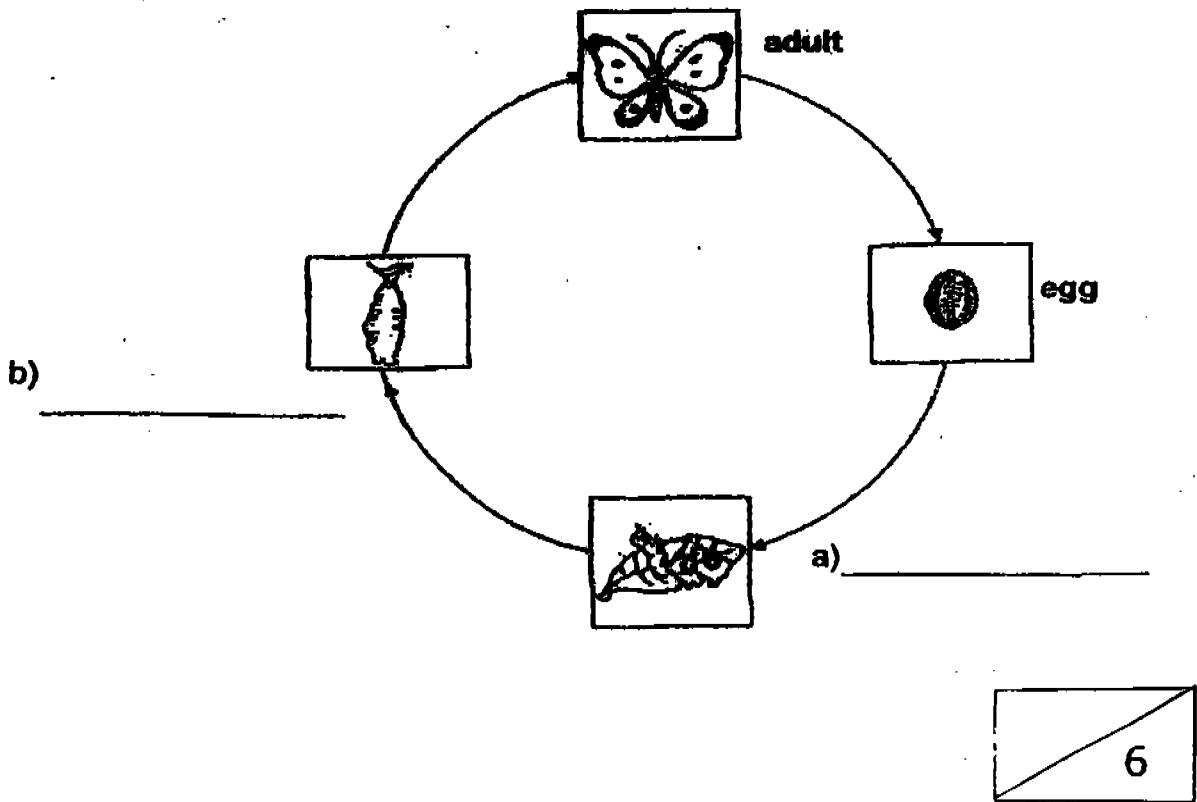


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43. Fill in the missing stages in the life cycle of a butterfly. (2 marks)



44. Give two similarities between the life cycle of a butterfly and a mosquito. (2 marks)

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45. A group of friends is at a barbecue at East Coast Park.  
Angelia: The music playing from the radio is too loud.  
Bernice: Michelle is not here. Is she coming?

In the table provided, identify the senses and sense organs used by the two girls. (2 marks)

	Sense of	Sense organ
Angelia		
Bernice		

46. a) What is the digestive juice found in the mouth? (1 mark)

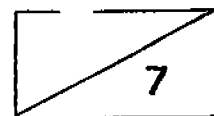
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- b) What do you think will happen if the mouth has no digestive juice? (2 marks)

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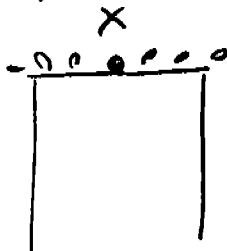
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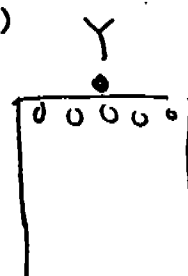
RED SWASTIKA SCHOOL  
2005 SEMESTRAL ASSESSMENT 1  
SCIENCE  
PRIMARY FOUR

- 1) 2
- 2) 3
- 3) 4
- 4) 4
- 5) 1
- 6) 1
- 7) 2
- 8) 3
- 9) 4
- 10) 4
- 11) 3
- 12) 3
- 13) 2
- 14) 1
- 15) 4
- 16) 3
- 17) 2
- 18) 4
- 19) 2
- 20) 3
- 21) 3
- 22) 3
- 23) 2
- 24) 4
- 25) 3
- 26) 3
- 27) 2
- 28) 1
- 29) 4
- 30) 3
- 31) a) The oil sticks onto their feathers, thus preventing them from flying.  
b) Fuel
- 32) a) Drains lead to reservoirs and pollute the water.  
b) It should be poured into the toilet.
- 33) a) windpipe      b) gullet
- 34) a) i) ribcage  
ii) diaphragm  
b) It will expand.
- 35) a) Stomata  
b) It helps with the exchange of gases.  
c) On the underside of the leaf.  
d) This will prevent excess water from evaporating.
- 36) Pot X  
b) Air escapes from the pot through the holes .
- 37) a) She must switch off the fan.  
b) She must pour the liquids into similar container.

38) a) i)



ii)



- 38) b) i) The air in its container is colder than those in the surrounding, this will make water droplets on top of the metal lid X.
- ii) The air in its container is warmer than its surrounding, this will let the warm air condenses on the cold metal lid.
- 39) a) a) B  
b) A
- 40) a) to condense the water vapour.  
b) Pure water
- 41) a) 5  
b) 3  
c) 1  
d) 4  
e) 2
- 42) The seed has no leaves to photosynthesize.
- 43) a) Larva b) pupa
- 44) i) The adult stage of a butterfly and mosquito both have wings.  
2) Their eggs will turn into larva.
- 45) Hearing Ear  
Sight Eyes
- 46) a) Saliva  
b) Our gullet will have difficulty bringing the food to our stomach as the food is very dry and hard.