

NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

SEMESTRAL ASSESSMENT 1
2004

SKA

BOOKLET A

Date : 7th May 2004

Duration : 1 h 45 min

Name : _____ ()

Class: Primary 4.()

Marks Scored:

Booklet A:		60
Booklet B :		40
Total :		100

Parent's signature:

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

Booklet A consists of 11 printed pages including this cover page.

Section A (30 x 2 marks = 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 provided.

1. Jane has classified the following items into matter and non-matter.

Matter	Non-Matter
air	sound
book	sunshine
X	Y

Which one of the following pair of items best represents X and Y respectively?

- (1) heat and water
 - (2) wind and shadow
 - (3) oxygen and eraser
 - (4) wood and nitrogen
2. Peter puts two objects of the same volume on a balance and the balance tilted to one side. Which one of the following is the best explanation for his observation?
- (1) One object is matter and the other is not.
 - (2) The two objects are made of different materials.
 - (3) The two objects occupy different amount of space.
 - (4) One object can be compressed and the other object cannot be compressed.
3. Which one of the following statements about matter is correct?
- (1) Not all forms of matter can be seen.
 - (2) Not all forms of matter occupy space.
 - (3) All forms of matter have definite shapes.
 - (4) All forms of matter have definite volumes.

4. Study the classification table below carefully.

Group Q	Group R	Group S
oil	hydrogen	sand
alcohol	steam	salt
seawater	oxygen	pillow

The materials above are classified according to their _____.

- (1) shape (2) size
(3) state (4) mass

5. Which one of the following statements is definitely true about a solid and a liquid?

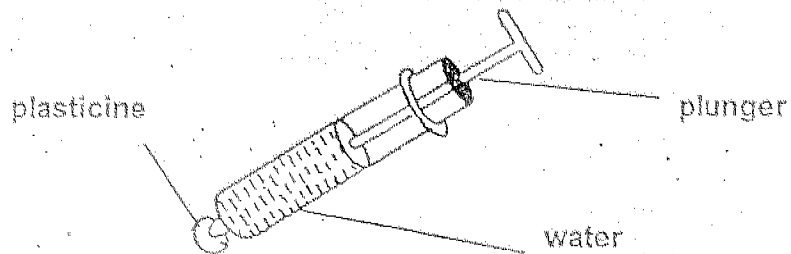
	Solid	Liquid
(1)	floats on water	does not float on water
(2)	does not have definite volume	has definite volume
(3)	can be compressed	cannot be compressed
(4)	has a definite shape unless a force is applied	takes the shape of the container

6. Some ice cubes were added to a glass of hot milo. Which of the following statements are correct about the above?

- A. Ice cubes melt.
B. Ice cubes gain heat.
C. Hot milo gains heat.
D. Hot milo loses heat.

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

7. Andrew put some water into a syringe and covered one end of it with a piece of plasticine as shown below.



He tried to push the plunger down but could not.
Which one of the following best explains his observations?

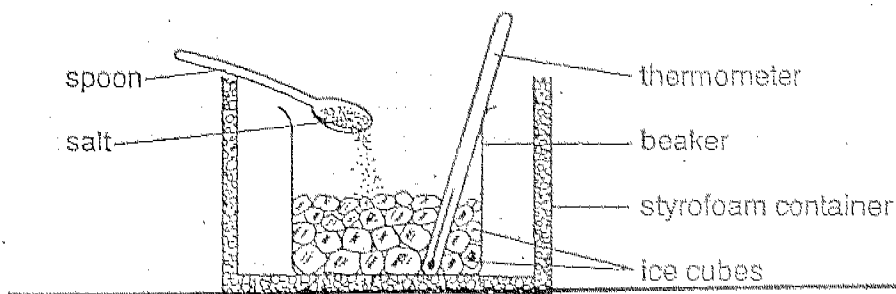
- (1) Water can be compressed.
 - (2) Water has no definite volume.
 - (3) Water cannot be compressed.
 - (4) Water does not occupy space.
8. Four similar towels W, X, Y and Z were hung in 4 different places with conditions as shown in the table below.

Towel	Conditions		
	Sunny	Windy	Humid
W	✓		✓
X	✓	✓	
Y		✓	✓
Z	✓	✓	✓

Which towel would dry the fastest?

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

9. Two teaspoonfuls of salt were added into a beaker of ice cubes as shown below.

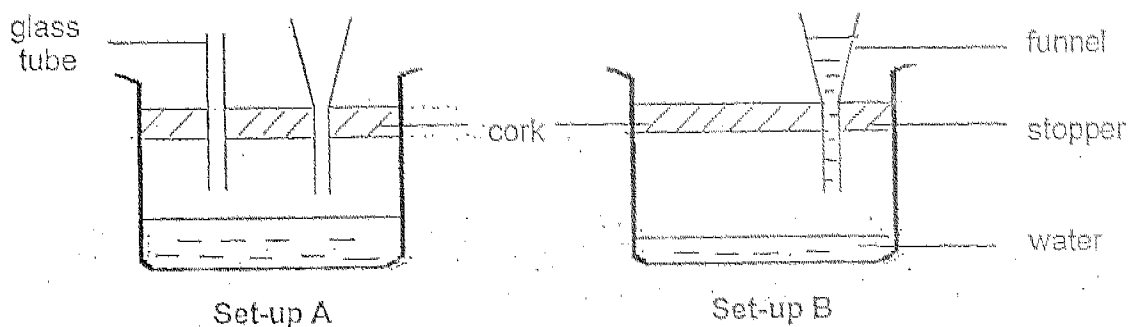


Which of the following statements about the above is/are true after 5 minutes?

- A. The ice cubes would melt.
- B. The melting point of the ice cubes would increase.
- C. The melting point of the ice cubes would decrease.
- D. The melting point of the ice cubes would remain at 0°C .

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

10. The diagram below shows two set-ups, A and B: Sui Choon poured an equal amount of water into each funnel. He found that the water in Set-up A flowed into the beaker quickly but the flow of water in Set-up B stopped after a while.



Which one of the following best explains the above experiment?

- (1) Air occupies space.
- (2) Air occupies more space than water.
- (3) Water occupies more space than air.
- (4) Water takes the shape of the beaker.

11. Which one of the following statements about water are true?

- A Water freezes and melts at a fixed temperature.
- B Water boils and evaporates at a fixed temperature.
- C Water freezes at a lower temperature than its melting point.
- D Water boils at a fixed temperature but it evaporates at any temperature.

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

12. Which of the following statements below describe where water vapour in the air come from?

- A Blowing our wet hair with a hair dryer.
- B Evaporation of water from the reservoirs, rivers and seas.
- C A glass of water that is not covered and left on the table.

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

13. Water cycle is important to us in many ways. Which of the following statements below shows its importance?

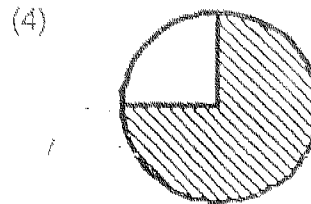
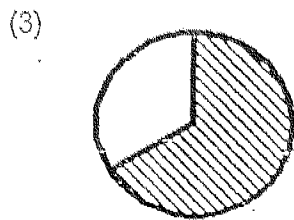
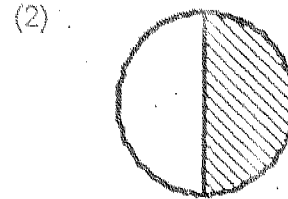
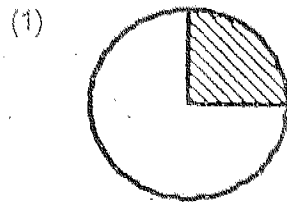
- A It ensures ponds and rivers do not dry up.
- B It is necessary for the survival of all living things.
- C It ensures that all living things have a continuous supply of water.

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

14. Which one of the following provides the heat energy required in the water cycle?

- (1) Sun
- (2) Moon
- (3) Atmosphere
- (4) Ozone layer

15. Which one of the following pie-charts shows how much of the Earth is covered by water?



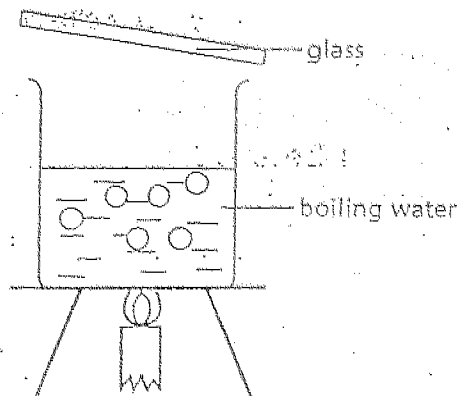
16. Which one of the following statements about the water cycle is false?

- (1) Clouds are made up of water vapour.
- (2) Water vapour in the sky condenses to form clouds.
- (3) Evaporation takes place at the surface of the sea.
- (4) Snow may be formed in the sky if the temperature of the sky is very low.

17. Which one of the following shows the correct state of water at -5°C and above 100°C ?

	Water at -5°C	Water above 100°C
(1)	liquid	gas
(2)	solid	liquid
(3)	gas	liquid
(4)	solid	gas

18. A beaker of water was being boiled as shown in the diagram below.



A piece of glass was then placed over the boiling water. What observations could be made after some time?

- (1) The glass turned black.
 - (2) The glass shrank in size.
 - (3) Both sides of the glass would be covered with water droplets.
 - (4) Tiny droplets of water could be found on only one side of the glass.
19. Which one of the following best describes the process of removing dissolved salt from seawater to obtain fresh drinking water?
- (1) Purification
 - (2) Evaporation
 - (3) Desalination
 - (4) Condensation
20. Which one of the following is an example of reusing water?
- (1) Taking a bath in a tub instead of a quick shower.
 - (2) Using water from washing rice to water the plants.
 - (3) Throwing away water after using it to wash vegetables.
 - (4) Using a mug to hold water instead of leaving the tap on when brushing teeth.
21. When the feathers of seabirds are covered with oil, the seabirds can freeze to death. This occurs because _____.
- (1) the air in the oil cools their feathers
 - (2) air cannot be trapped between feathers
 - (3) the oil prevents oxygen from dissolving in the water
 - (4) the oil reduces the body temperature of the seabirds

22. Which of the following are some possible causes of water pollution?

- A Oil leaks out from a ship.
- B A farmer burns trees in the forest.
- C A farmer uses insecticide near a pond.
- D A factory discharges hot water into the river.

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

23. We can reduce our dependence on other countries for water if we can

- A recycle and reuse water
- B obtain water from seawater
- C buy more water from other countries
- D stop building reservoirs to collect water

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

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

- A check if oil is present
- B determine if the water is clear
- C detect if there is any smell coming from the water
- D carry out experiments to find out if aquatic organisms can survive in it.

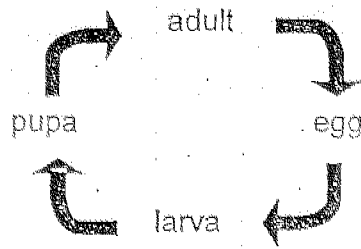
- (1) A and B only
- (2) B and C only
- (3) A, B and D only
- (4) A, B, C and D

25. After a seed is germinated, it will develop and grow into a young plant. Arrange the following to show the correct order of development.

- A root appears
- B seed coat breaks
- C seedling
- D shoot appears

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

26. The diagram below shows a 4 stage life cycle.

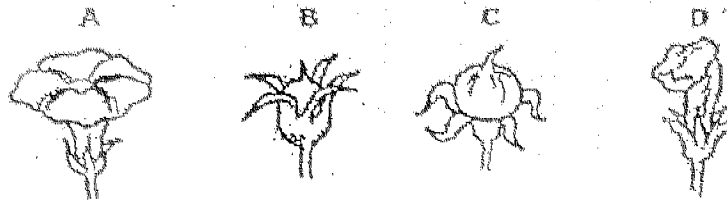


Which of the following animals as shown below do not go through the 4 stage life cycle?

- A. platypus
 B. mealworm
 C. grasshopper
 D. mosquito

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

27. Arrange the diagrams below to show the correct sequence of a flower changing into a fruit.



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

28. Which one of the following statements about an adult cockroach and its young, is incorrect?

	Young	Adult
(1)	It has no wings.	It has wings.
(2)	It is called nymph.	It is called pupa
(3)	It is smaller in size	It is bigger in size.
(4)	It moults a few times.	It does not moult.

29. Which of these statements are true of plants?

- A. All plants grow from seeds.
- B. Seeds found inside fruits can grow into new plants.
- C. As a seedling grows, more leaves will develop to help it make food.
- D. Each new plant goes through the same life cycle as the parent plant.

(1) A, B and C only

(2) B, C and D only

(3) A, C and D only

(4) A, B, C, and D

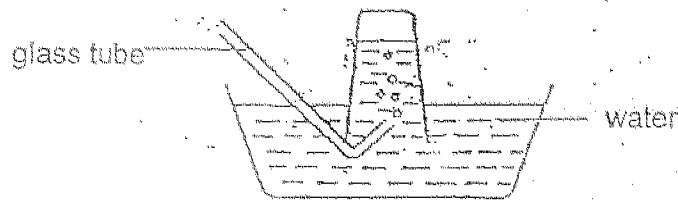
30. Which one of the following statements of a butterfly is incorrect?

- (1) A caterpillar is also known as the larval stage.
- (2) The caterpillar moults only once in its lifetime.
- (3) The pupa is the non-feeding stage of a butterfly.
- (4) There are four stages in the life cycle of a butterfly.

Section B (40 marks)

Write your answers to questions 31 to 46 in the spaces provided.
Marks will be deducted for misspelt key words.

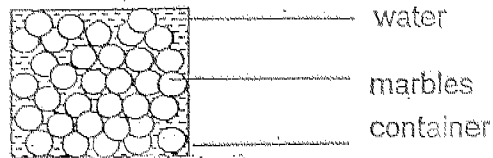
31. John blew some air into the glass using a glass tube as shown below.



(a) What did he observe about the water level in the glass? (1 mark)

(b) State one property of air as shown in this experiment. (1 mark)

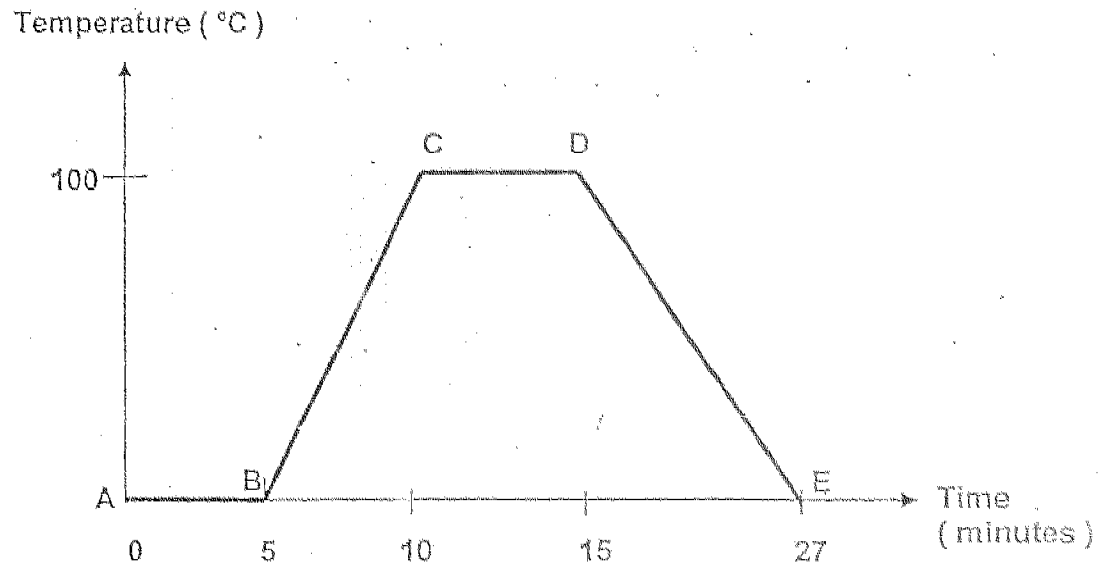
32. The diagram below shows a container which was filled with marbles and water.



(a) Name the states of matter found in the container, (1 mark)

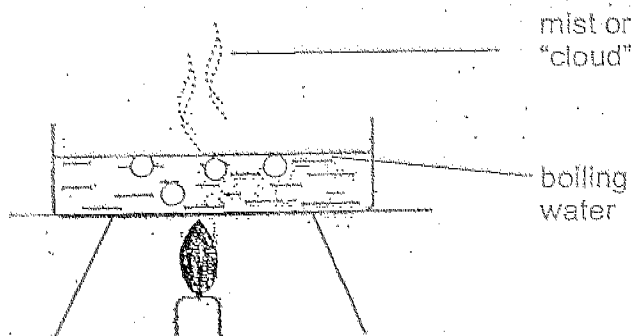
(b) If all the water was poured away and the container of marbles was left under the sun to dry, name the states of matter left in the container. (1 mark)

33. The graph below shows the change in temperature of water in a beaker over a period of time.



- (a) Which part of the graph shows that melting had taken place?
(1 mark)
-
- (b) State the change in state of water along CD. (1 mark)
-
- (c) What could have been done to cause the change in temperature along DE?
(1 mark)
-

34. When water boils, a mist or "cloud" can be seen coming from the boiling water as shown below.



In the table below, state two differences between mist and steam.

(2 marks)

	Mist	Steam
(1)		
(2)		

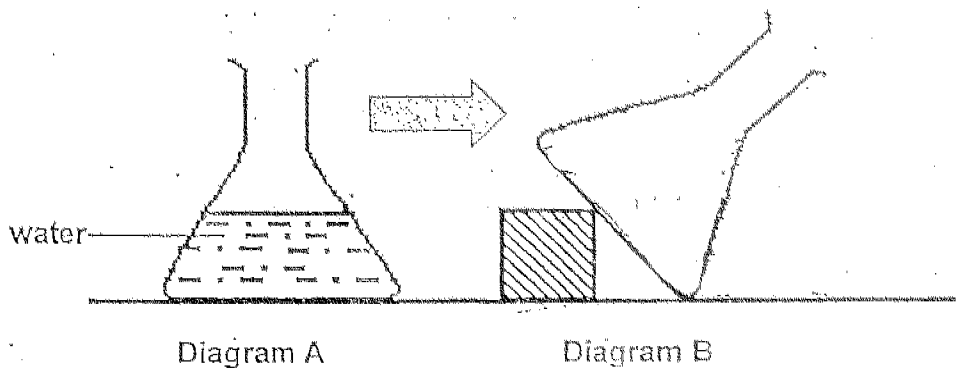
35. Five rubber balls D, E, F, G and H of different sizes were each pumped with 400cm^3 of air. The volume of each ball is shown in the table below.

Ball	Volume (cm^3)
D	250
E	300
F	500
G	400
H	350

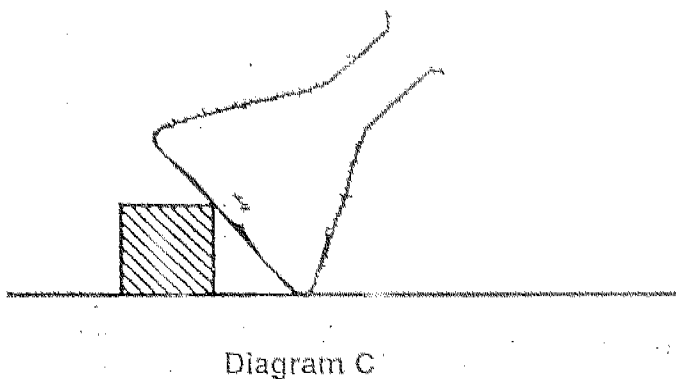
- (a) Which of these balls was/were able to hold all the 400cm^3 of air? (1 mark)

- (b) Give a reason to support your answer in (a). (1 mark)

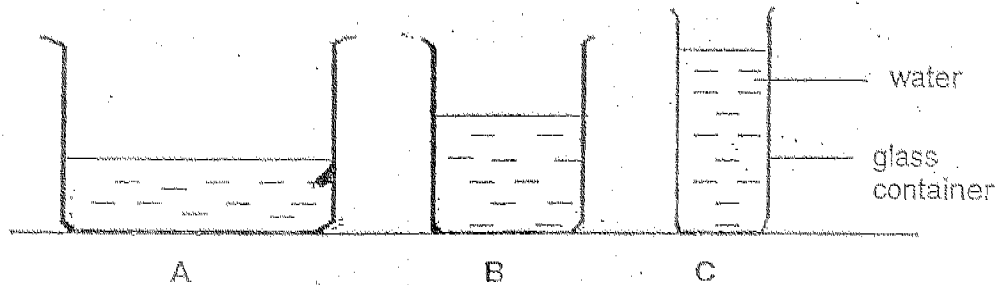
36. Diagram A below shows a conical flask of water placed horizontally on the table. In diagram B, the same flask was tilted as shown below.



- (a) Draw the new water level in Diagram B above when the conical flask was tilted. (1mark)
- (b) The same conical flask of water in Diagram A was then placed horizontally in a freezer. After the water had frozen, the conical flask was removed and tilted. Draw what you would observe of the content in the flask in Diagram C below. (1mark)



37. Three glass containers, A, B and C, containing the same volume of water each, were placed under the hot sun as shown below.

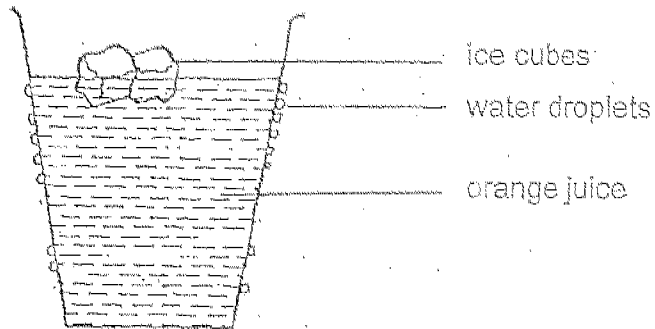


- (a) Which container of water would evaporate the slowest? (1 mark)

- (b) Explain your answer in (a). (1 mark)

- (c) Using the same containers and the content, suggest one way to increase the rate of evaporation for all the containers above. (1 mark)

38. The diagram below shows a glass of cold drink which was left on the table in a room.

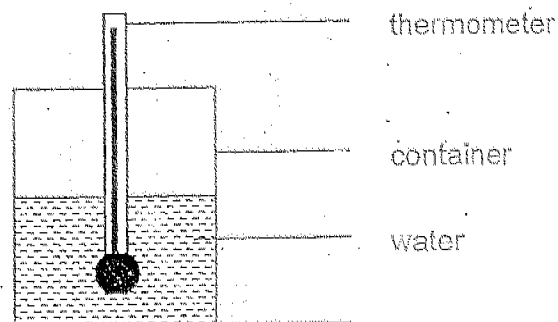


It was observed that there were more water droplets formed on the upper surface than on the lower surface of the glass.

- (a) Give an explanation for the above observation. (2 marks)

- (b) Suggest a way to allow more water droplets to be formed on the surface of the glass. (1 mark)

39. Fatimah had four containers A, B, C and D, each made of a different material. She poured hot water into each container. Then, she measured the temperature of the water in the sealed containers at regular intervals of 5 minutes as shown below.



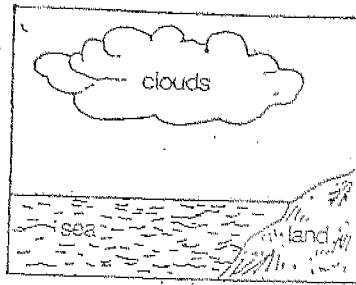
The table below shows the results she had obtained.

Time (min)	Temperature of water in container (°C)			
	A	B	C	D
0	80	80	80	80
5	65	55	70	46
10	53	42	62	39
15	40	33	55	28
20	34	29	49	28

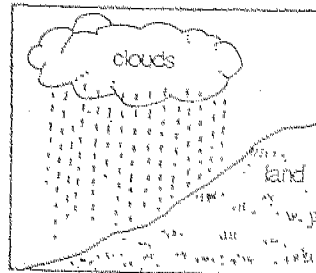
- (a) What was the aim of the above experiment? (1 mark)

- (b) Name 2 variables that she must keep constant in order to carry out a fair experiment. (2 marks)

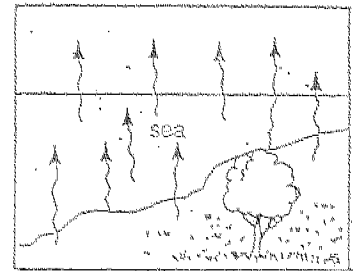
40. The diagrams below show the various stages of the water cycle.



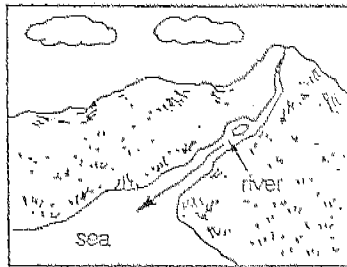
A The clouds form over the sea and land.



B Rain



C The water evaporates from the sea, and plant.



D The water flows to the rivers and seas.

(a) Arrange them in the correct order by filling in the letters, A, B, C and D in the boxes below. (2 marks)



(b) Explain the importance of animals in the water cycle. (1 mark)

41. (a) What does 3R stand for in the conservation of water? (1 mark)

(b) State one way to reuse water from the washing machine. (1 mark)

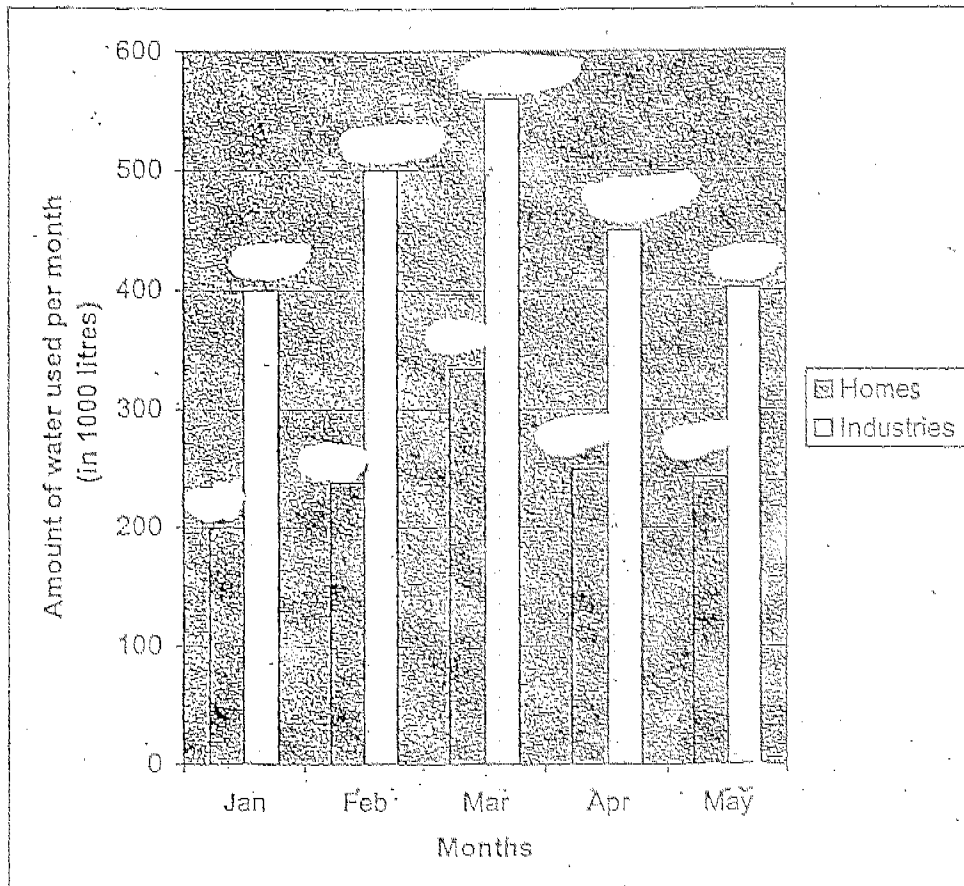
42. Jane conducted an experiment to find out how different samples of water collected from 3 ponds, A, B, and C affect the growth of duckweeds. The table below shows the results gathered over a period of 3 weeks.

Week	Pond water		
	A	B	C
1	20	20	20
2	35	18	10
3	62	9	2

(a) Which type of pond water is the most unsuitable for the growth of duckweeds? (1 mark)

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

43. The graph below shows the amount of the water used by homes and industries in a particular country monthly, from January to May. Study the graph carefully and answer the questions below.



- (a) Which month shows the greatest difference in the usage of water between the homes and industries? (1 mark)

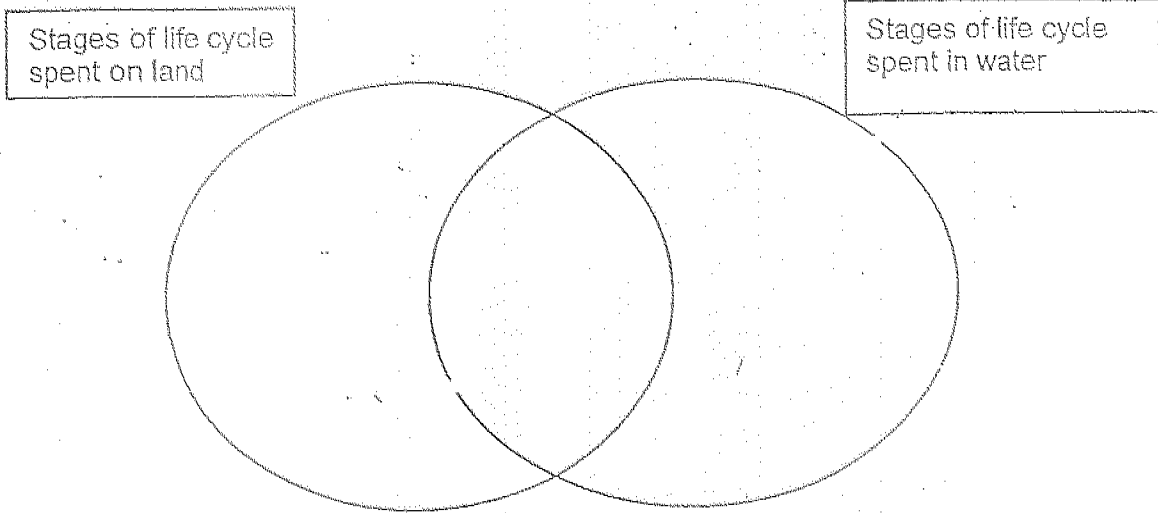
- (b) The government decided to educate the public by raising public awareness on water conservation. At the same time, it also wanted to raise the cost of water to reduce the usage of water for both homes and industries. During which month are these actions most likely to be carried out in? (1 mark)

- (c) Explain your answer in (b). (1 mark)

44. Classify the following organisms by putting a dot next to the animal in the Venn diagram as shown below:

- Frog
- Dragonfly
- Shark
- Lizard

(1/2 mark x 4)



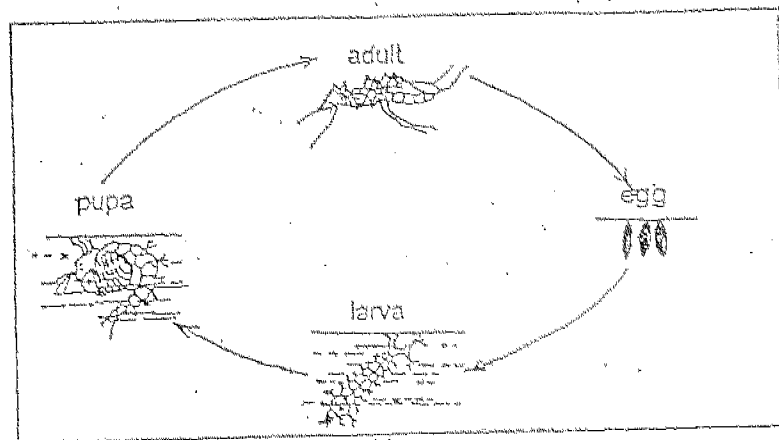
45. The fruits below are classified into 2 groups, X and Y.

Group X	Group Y
Jackfruit	Mango
Watermelon	Durian
Honeydew	Longan
Tomato	Rambutan

(a) Which one of the fruits above has been classified wrongly?
(1 mark)

(b) Explain how the fruits in both groups are being classified.
(1 mark)

46. The diagram shows the life cycle of the mosquito.



(a) Which stage of the life cycle of a mosquito is considered harmful? (1 mark)

(b) Explain your answer in (a) (1 mark)

(c) It is easier to get rid of mosquitoes at the larval stage and the pupa stage as compared to the adult stage. Explain why. (1 mark)

(d) Suggest a way to get rid of the young of mosquitoes in a pond without polluting the water. (1 mark)

-----END OF PAPER-----

- 39) a) To find out which container would lose the most heat.
b) Size of containers and amount of water.

40) a) C A B D

- b) The animal's sweat evaporates. When animals breathe out, they give out water vapour to the atmosphere.

41) a) They stand for reuse, recycle and reduce.

- b) The water from the washing machine can be used to wash the car.

42) a) C

- b) The duckweeds population in Pond C declined most rapidly over the 3 weeks.

43) a) The month is February

b) April

- e) Compare with March, the usage of water in April started to drop.

44)

Lizard

Frog

Shark

Dragonfly

45) a) Durian

- b) X = many seeds Y = one seed

46) a) adult

b) It can spread diseases.

c) The adult mosquito can fly while the pupa and larva cannot.

d) By rearing fish in the water.