NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 2007
PRIMARY 4
SCIENCE

Name : _____ ( )

Class : Primary 4 _____

Date : 10 May 2007

Duration : 1 h 45 min

Sect A	/ 60
Sect B	/ 40
Total:	/ 100

_____
Parent's Signature

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 Which one of the following is not a matter?

(1) Ball
(2) Stream
(3) Sound
(4) Toothpaste

2. Selina did an experiment to find out the properties of solids X, Y and Z. The result of her experiment is shown in the table below.

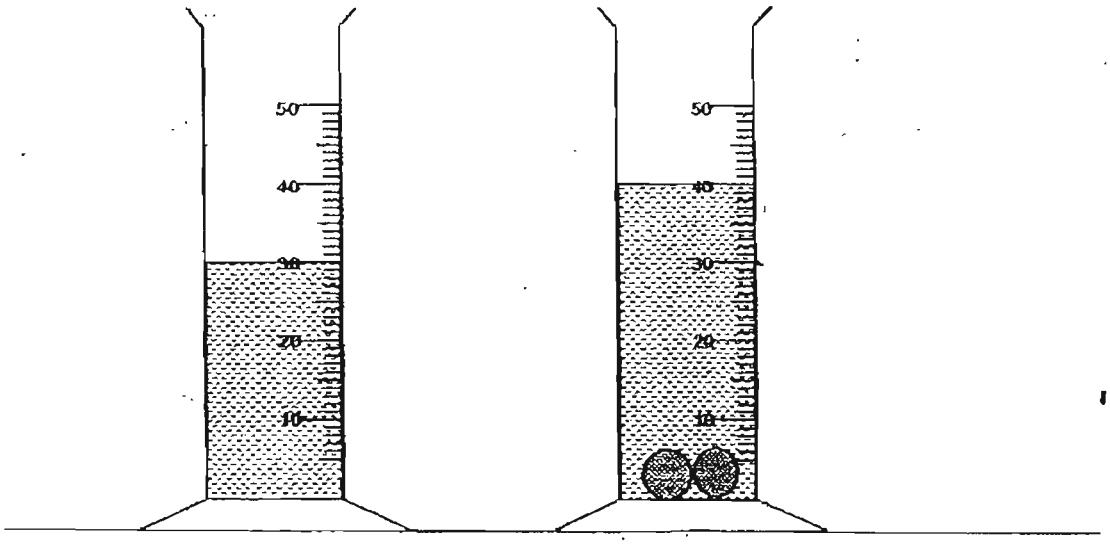
Solids	X	Y	Z
Does it become flat when hit?	No	Yes	No
Does it break into pieces when dropped?	Yes	No	No
Is it waterproof?	Yes	Yes	Yes

In what ways are solids X and Z [illegible]?

A: They both do not become flat when hit
B: They both break into pieces when dropped
C: They both are waterproof

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

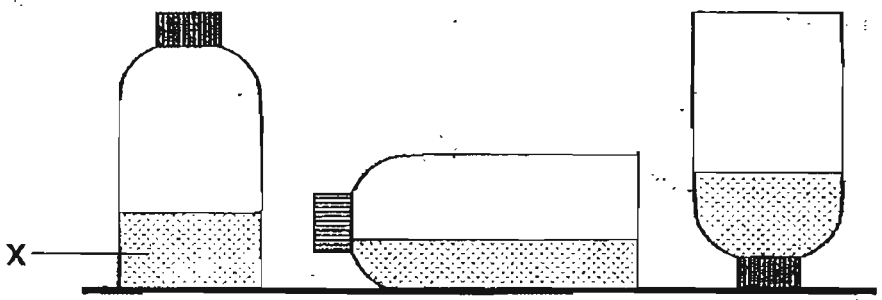
3. A measuring cylinder was filled with some water. Then two identical marbles were added to it.



What is the volume of each marble?

(1) 5 cm^3
(2) 10 cm^3
(3) 30 cm^3
(4) 40 cm^3

4. The diagram below shows the container with Substance X when placed in different positions.

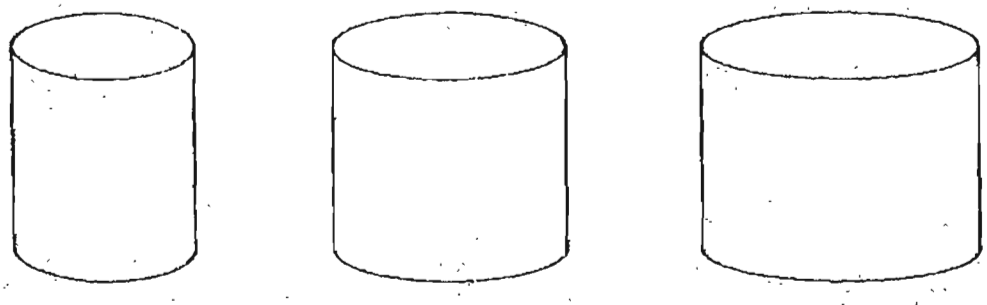


Based on the diagram, which of the following statement(s) is/are true?

A: X is a gas.
B: X can be compressed.
C: X occupies space.

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

5. The diagram below shows three containers. Jieming has 500 cm^3 of oxygen and 500 cm^3 of petrol. He wants to transfer **all** the oxygen and petrol into another container. Which of the following containers would be able to hold all the oxygen and petrol?



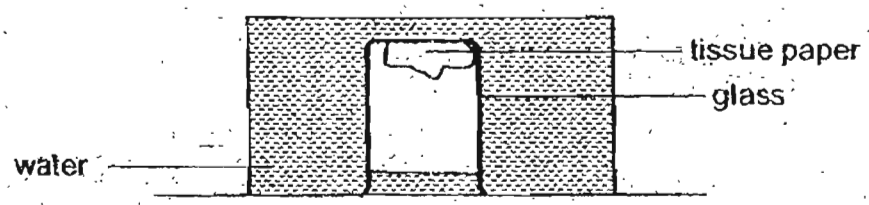
Container A
Capacity: 500 cm^3

Container B
Capacity: 950 cm^3

Container C
Capacity: 1200 cm^3

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

6. An empty glass with a piece of tissue paper stuck to its inner surface was lowered into a basin of water. The diagram below shows what was observed when the glass was fully submerged.



What does this experiment show?

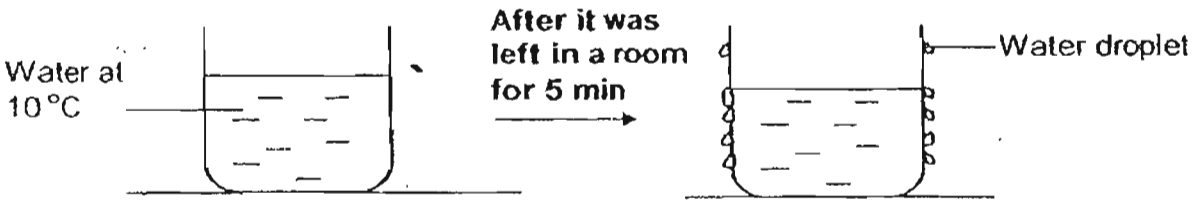
(1) Air has mass.
(2) Air occupies space.
(3) Air cannot be compressed.
(4) Air has mass and occupy space.

7. Which of the statements is/are true about **all** matter?

A: Matter has volume.
B: Matter can be compressed.
C: Matter can be seen.

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

8. A beaker containing water at 10 °C was left on a table at room temperature. After 5 minutes, water droplets were observed on the outer surface of the beaker.

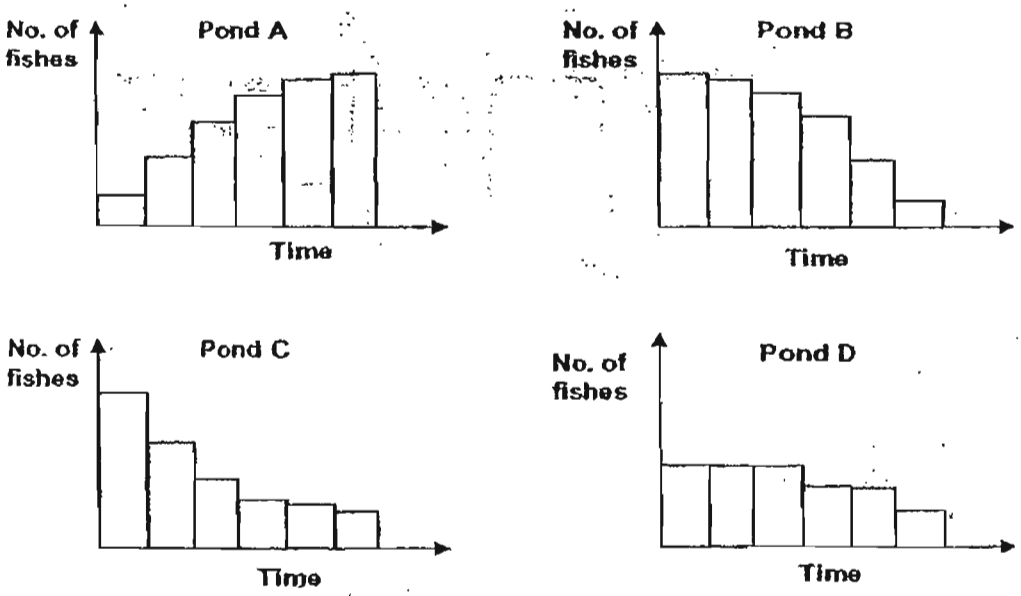


What inferences can be made based on the experiment above?

A: The room temperature is higher than 10°C.
B: Condensation has taken place.
C: The water droplets come from the water in the beaker.

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

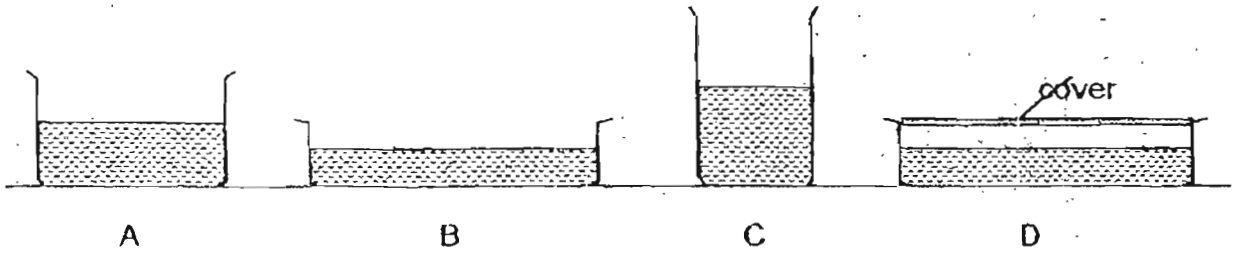
9. The graph below shows the number of fishes in ponds A, B, C and D, over a period of six months.



Which pond contains water that is most likely not polluted?

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

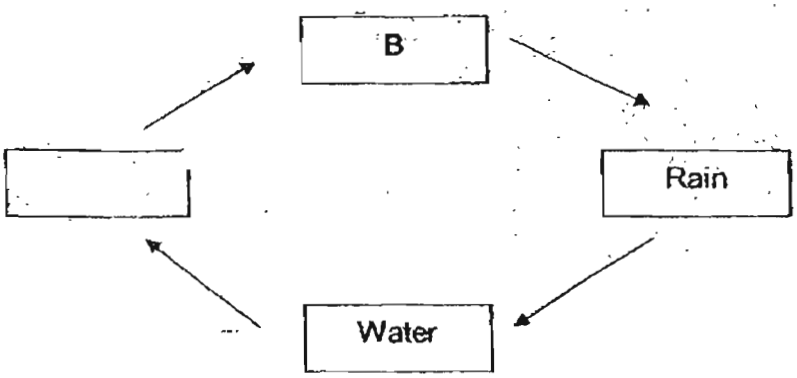
10. Four glass containers, A, B, C and D, were each filled with 200 cm^3 of water as shown below.



In which container will the water evaporate the fastest?

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

11. The boxes below represent the different states of water in the water cycle.



Which of the following correctly describe A?

A: It is made up of tiny water droplets.
B: It is formed when water evaporates.
C: It is invisible.

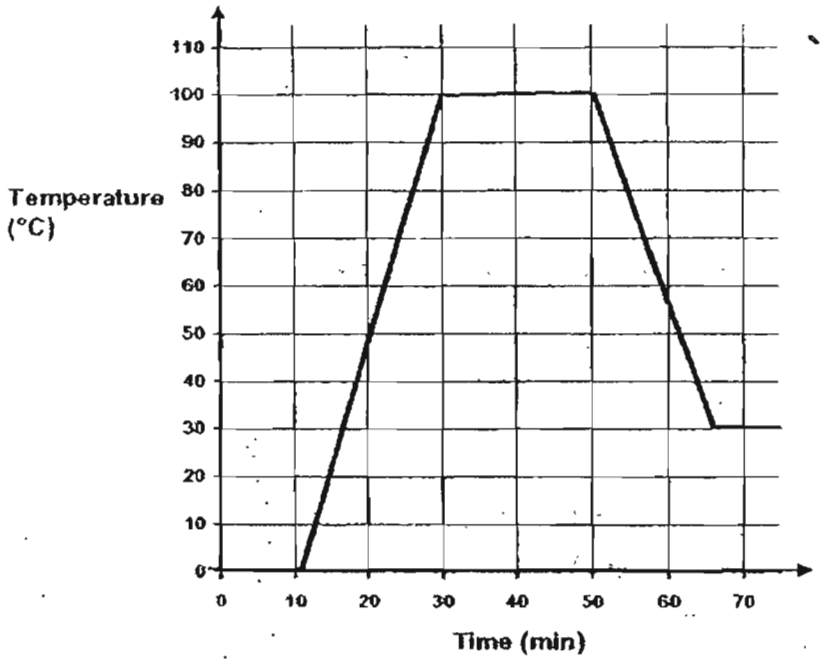
(1) A only
(2) B only
(3) A and B only
(4) B and C only

12. Living things cannot survive without water. Why is water important to living things?

A: Water is home to many living things.
B: Water is needed by living things to carry out life processes.
C: Water is needed by green plants to make food.

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

The graph below shows the change in temperature of ice as it was being heated over a flame for a period of time and left to cool. Use the information in the graph to answer questions 13 and 14.



13. The flame was removed after the _____ minute.

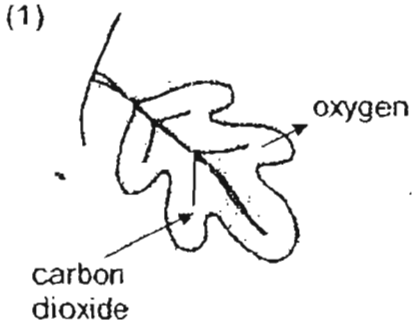
(1) 10^{th} (2) 30^{th}
(3) 50^{th} (4) 65^{th}

14. What was the room temperature?

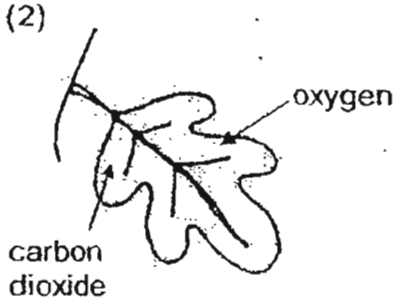
(1) 0°C (2) 25°C
(3) 30°C (4) 40°C

15. Which one of the following diagrams correctly shows the exchange of gases between the leaf of a plant and the surrounding air on a dark night?

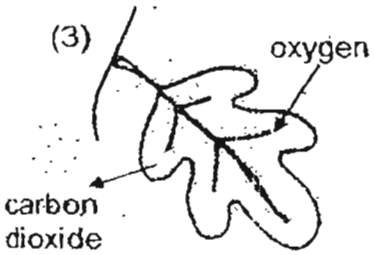
(1)



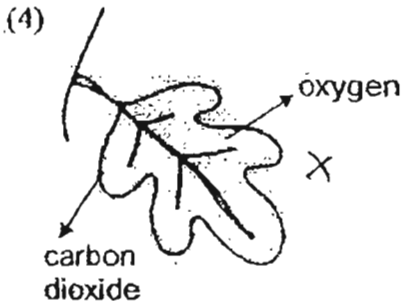
(2)



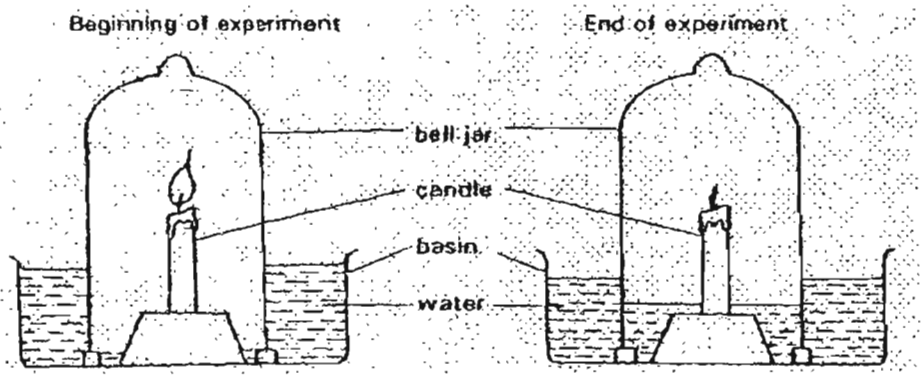
(3)



(4)



16. Shawn lighted a candle in a basin of water and covered it with a bell jar as shown in the diagram below.



After a short moment, the candle flame flickered and went out. What caused the candle flame to go out?

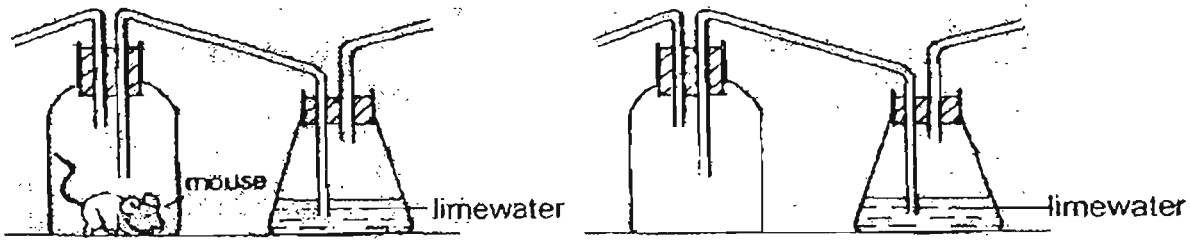
(1) The water in the bell jar wet the candle.

(2) There was not enough oxygen in the jar.

(3) There was not enough carbon dioxide in the jar.

(4) Some of the water vapour condensed to form water droplets on the cooler inner surface of the jar.

17. John conducted an experiment to find out if carbon dioxide is given off by the mouse during respiration.



Flask A Flask B

Which one of the following observations would he make after 1 hour?

	Limewater in flask A	**Limewater in flask B**
(1)	Remained clear	Turned chalky
(2)	Turned chalky	Remained clear
(3)	Remained clear	Remained clear
(4)	Turned chalky	Turned chalky

18. The layer of air that covers the surface of the Earth is known as _____.

(1) oxygen
(2) nitrogen
(3) the atmosphere
(4) water vapour

19. Which one of the following animals is <u>not</u> correctly matched to its breathing part?

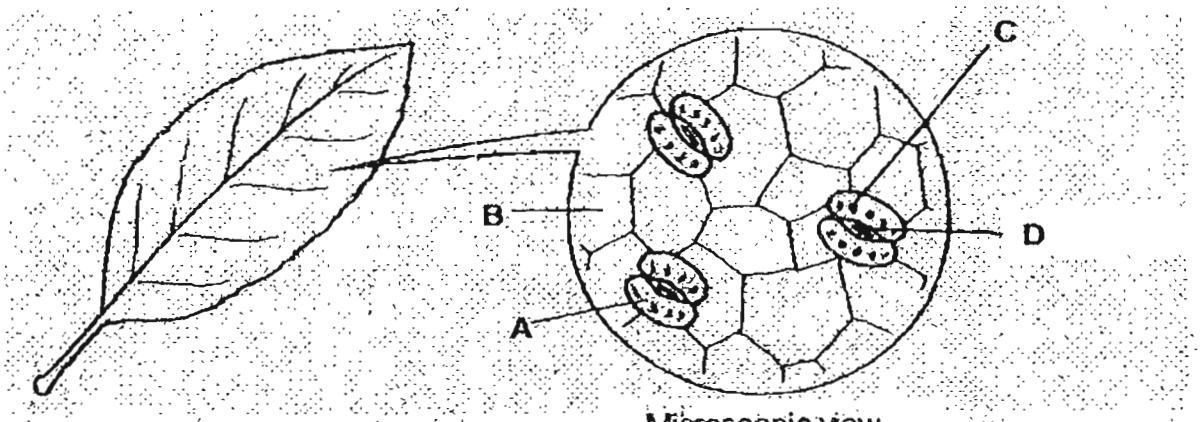
	Animals	Breathing parts
(1)	Mud skipper	Gills
(2)	Dog	Lungs
(3)	Seal	Lungs
(4)	Whale	Gills

20. The air we breathe out contains more _____ than the air we breathe in.

A: Oxygen
B: Carbon dioxide
C: Nitrogen

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

21. The diagram below shows the underside of a leaf under a microscope.

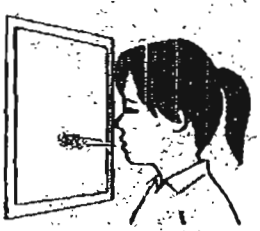


Microscopic view

Which letter (A, B, C or D) correctly shows the place where exchange of gases with the surrounding takes place?

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

22. A mirror gets misty when a person blows onto it quickly.



Which substance in exhaled air is changed to mist?

(1) Oxygen
(2) Nitrogen
(3) Carbon dioxide
(4) Water vapour

23. The exchange of gases in the lungs involves the exchange of _____.

A: oxygen from the lungs to the blood
B: oxygen from the blood to the lungs
C: carbon dioxide from the lungs to the blood
D: carbon dioxide from the blood to the lungs

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

24. Plastic is a more suitable material for making milk bottle for babies than glass because _____.

A: it allows us to see the milk in the milk bottle
B: it does not break easily
C: it is lighter than glass

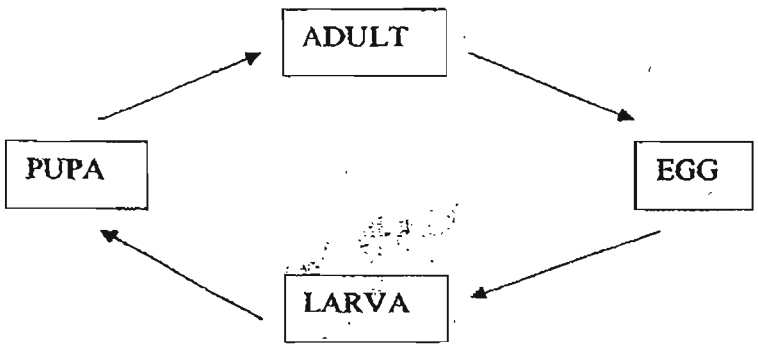
(1) A and B only
(2) A and C only
(3) B and C only
(4) A, B and C

25. Which of the following are characteristics of **all** living things?

A: They can grow.
B: They can reproduce.
C: They can respond to changes around them.
D: They can move from one place to another.

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

26. Study the life cycle below carefully.



Which one of the following groups of animals has the life cycle shown above?

(1) Moth, mosquito and butterfly.
(2) Grasshopper, frog and housefly.
(3) Dragonfly, mosquito and cockroach.
(4) Mosquito, housefly and chicken.

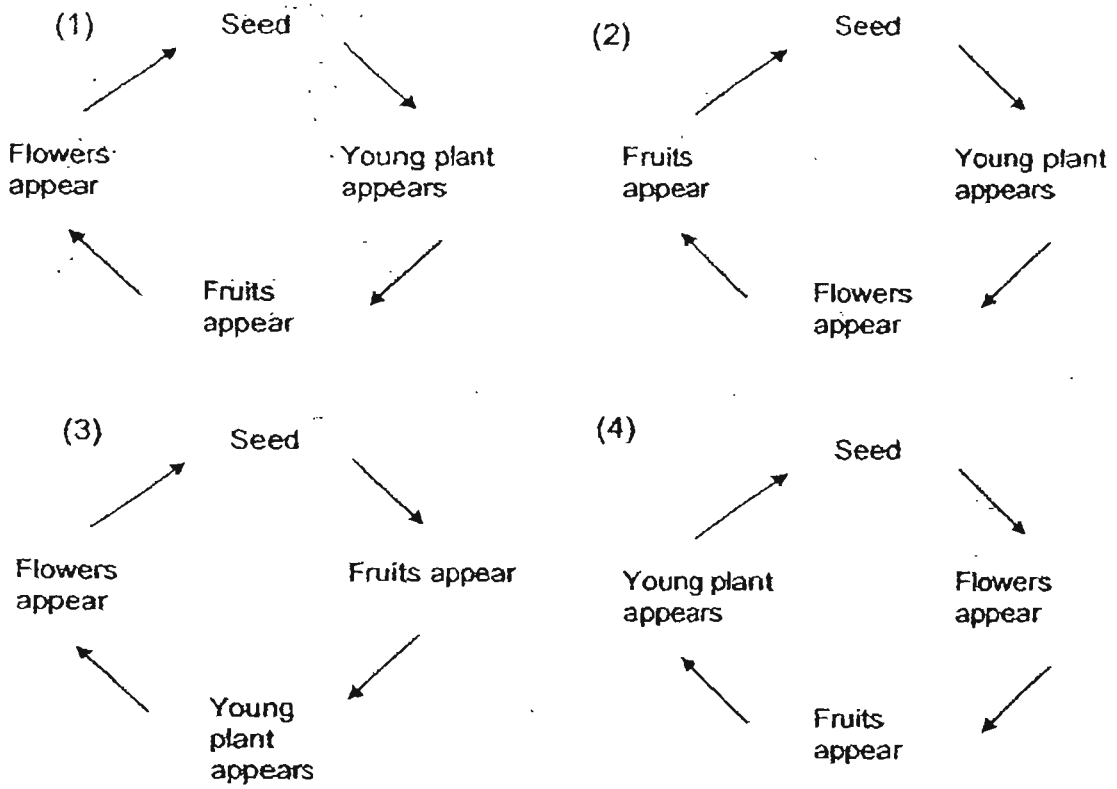
27. Four pupils were asked to classify four organisms.

	Animals	Plants	Fungi	Micro-organisms
Ali	Rose	Bread Mould	cockroach	Amoeba
Bala	Bread Mould	Rose	Amoeba	cockroach
Cathy	cockroach	Rose	Bread Mould	Amoeba
David	cockroach	Rose	Amoeba	Bread Mould

Who had classified the organisms correctly?

(1) Ali
(2) Bala
(3) Cathy
(4) David

28. Which one of the life cycles below correctly shows the life cycle of a bean plant?



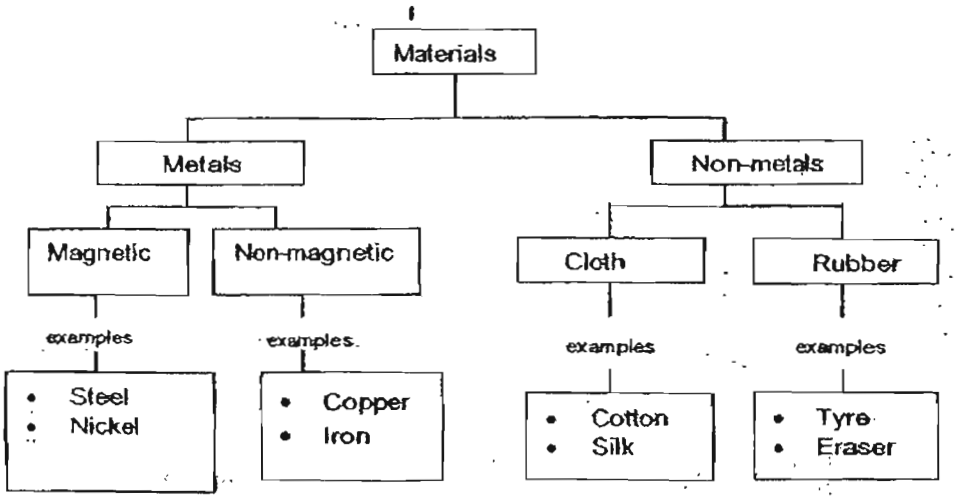
29. Angie found an Animal **X** near a lake. She observed that the Animal **X** has the following characteristics:

- It has three body parts
- It lays its eggs in the water.
- It has a pair of feelers.

Which one of the following could be Animal **X**?

(1) Fish
(2) Mosquito
(3) Earthworm
(4) Mudskipper

30. Study the classification chart below carefully.



Which one of the above materials is **wrongly** classified?

(1) Iron
(2) Copper
(3) Cotton
(4) ~~Clay~~ Eraser

NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 2007
PRIMARY 4
SCIENCE

Name : _____ _____ ( )

Class : Primary 4 _____

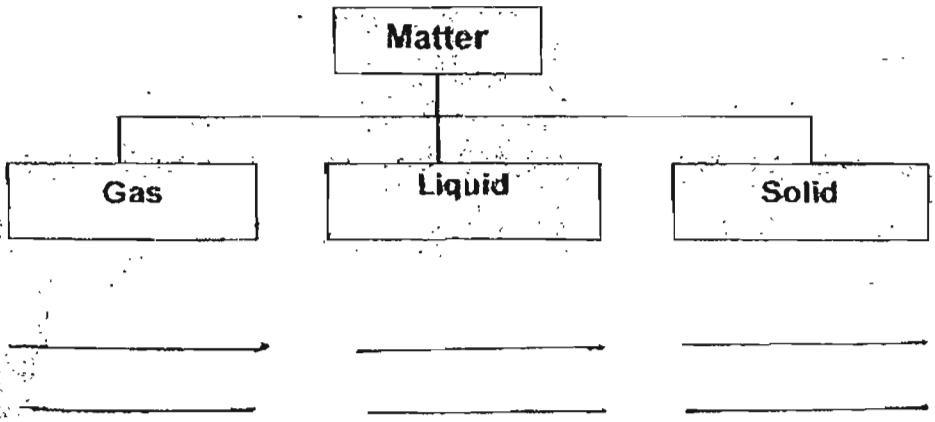
Marks
/40

Section B : (40 marks)

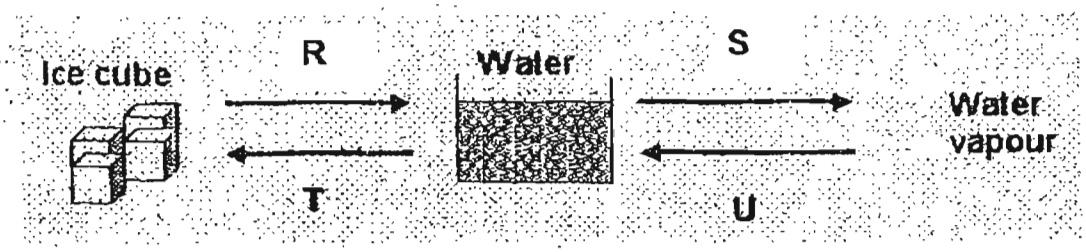
For question 31 to 46, write your answers in the spaces provided. The number of marks available is shown in the bracket ( ) at the end of each question or part question.

31. Classify the following items listed below into the correct groups. **Use each word ONCE only.** (3m)

Pencil	Steam	Oxygen
Oil	Milk	Mirror



32. The diagram below shows the changes in states of water.



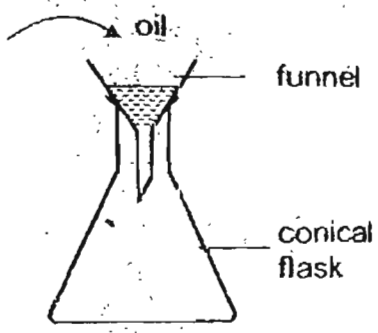
Name the processes R, S, T and U. (2m)

R: _____ S: _____

T: _____ U: _____

/5

33. Alan placed a funnel on a conical flask as shown in the diagram below.



When he poured some oil into the funnel, the oil dripped into the conical flask slowly.

(a) Why did the oil drip into the conical flask slowly? (1m)

_____

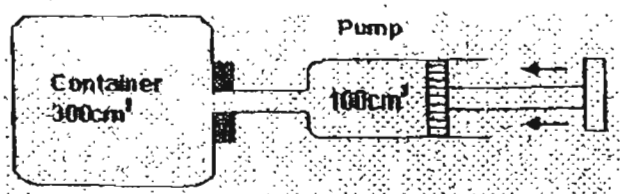
(b) **Without using any additional object, or breaking any part of the set-up above**, what can Alan do to the set-up to make the oil flow faster? (1m)

_____

(c) Explain how your method stated in (b) allows the oil to flow faster. (1m)

_____

34. A pump is connected to a 300 cm^3 container.



(a) What is volume of the air in the container when 100 cm^3 of air is pumped into it? (1m)

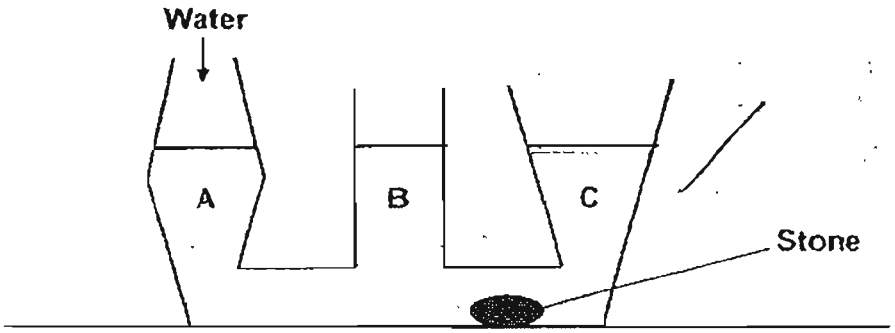
_____

(b) What property of air does this experiment show? (1m)

_____

210 / 5

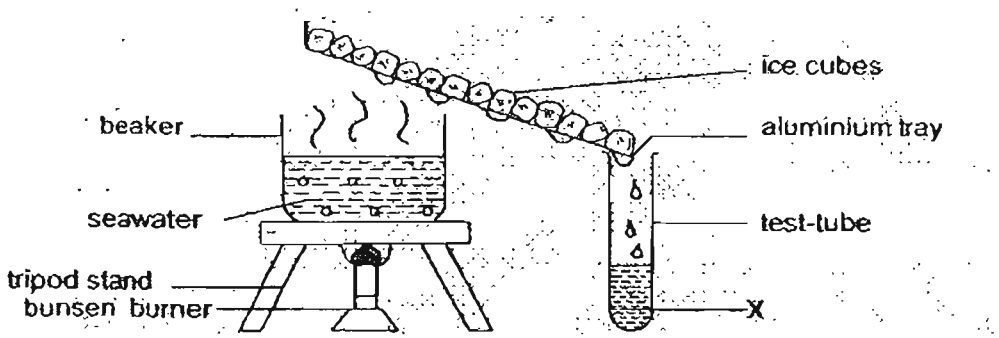
35. Some water was poured into a container through one of the openings as shown below.



(a) The water level in part A of the container is shown above.
Draw lines on the diagram to show the water level in parts B and C of the container using a pencil. (1m)

(b) What property of water does the above set-up show? (1m)

36. The experiment below is a 'Rain Maker' because it resembles the natural water cycle in some ways.



(a) What is Liquid **X**? (1m)

(b) **Explain** how Liquid **X** is formed. (2m)

5

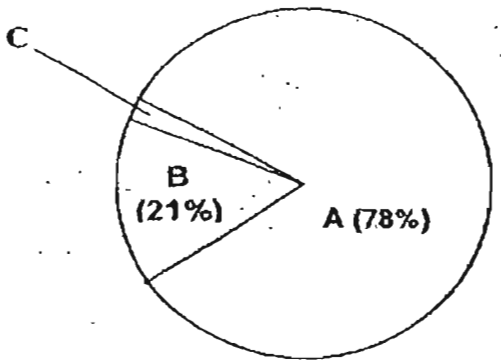
37. The statements A-F describe the events that lead to the formation of rain. They are not in the correct order.

A: Water evaporates.
B: Condensation occurs.
C: Heat energy from the Sun warms the Earth.
D: Warm air rises and then cools.
E: Droplets of water form clouds
F: When the water droplets become bigger, rain falls.

Complete the diagram below to show the correct order. (2 m)

38. The pie chart below shows the composition of air in our surrounding. (2 m)

Water vapour **oxygen** **carbon dioxide** **nitrogen**



Fill in the boxes with the words provided above. Use each word **ONCE** only. (You may fill in more than one answer in each box when necessary)

A	
B	
C	

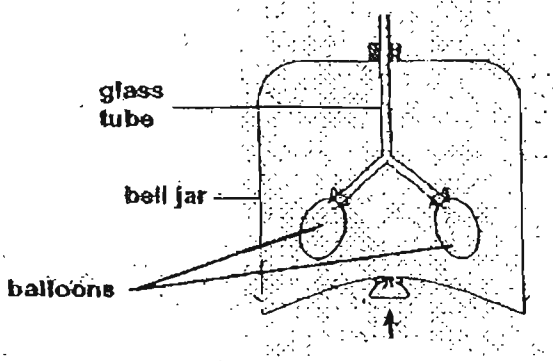
4

39. State four factors that affect the rate of evaporation of water

-
-
-
-

(2m)

40. The diagram below shows a model which works like our respiratory system.



(a) Which parts of our respiratory system do the glass tubes and balloons represent?

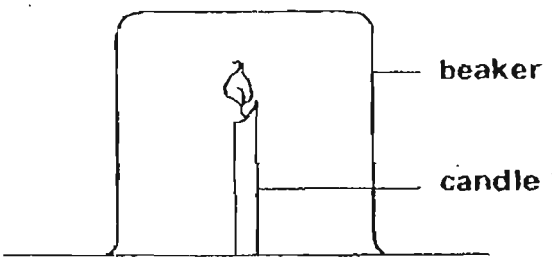
(i) Glass Tube: [ ]

(ii) Balloons: [ ] (2m)

(b) What would be observed when the part X of the model is pulled down? (1m)

13/5

41. Ali wants to conduct an experiment **to find out if the size of the beaker placed over a burning candle affects the burning time of the candle.**
(Note: The burning time of the candle is the period of time the candle remains burning before it goes out.)



(a) Which of the following variables must Ali change in his experiment? (1m)

Put a tick in the correct box(es) below.

The length of the candle.	
The size of the candle.	
The size of the beaker	

Study the set-ups below carefully.

Set-up	Length of candle (cm)	Thickness of candle (cm)	Size of beaker (ml)
A	8	2	30
B	8	1.5	30
C	8	2	50
D	9	1.5	50
E	9	2	30

(b) Which two set-ups should he use for his experiment? (1m)

_____

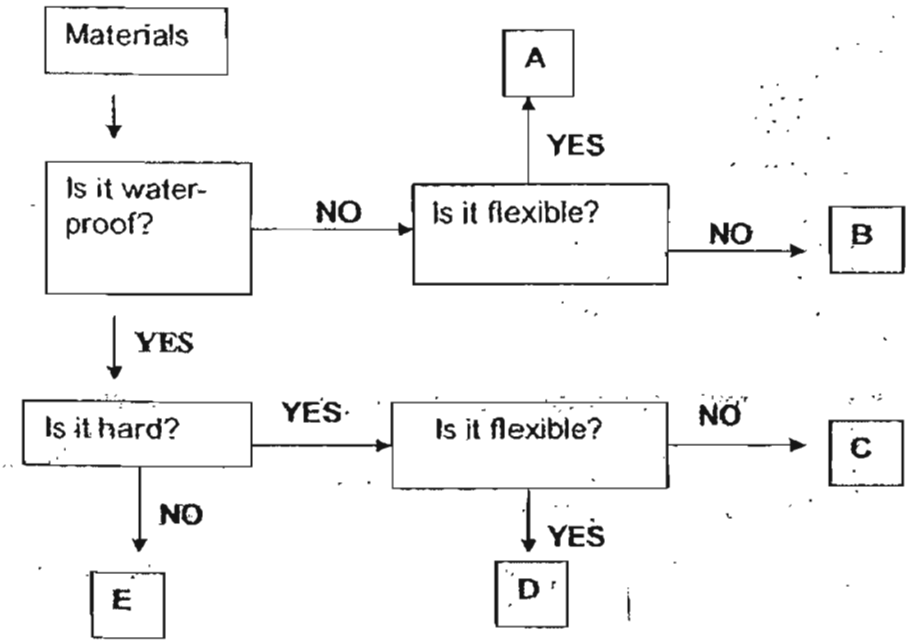
(c) In another experiment, Ali compares the burning times of the candles in set-ups **A** and **E**. What is the aim of this experiment? (1m)

3

42. Write **'T' for True and 'F' for False** in the boxes provided. (2m)

(a)	All animals that breathe through gills cannot survive on land.	
(b)	Plants need carbon dioxide to make food.	
(c)	Mammals such as dolphins and whales have nostrils called "blowholes".	
(d)	Plants do not carry out respiration during the day.	

43. Study the flow chart below carefully and answer the questions based on the information given in the flow chart.



(a) What common property does materials **C** and **E** have? (1m)

_____

(b) Which letter A, B, C, D and E best represents the material "Glass"? (1m)

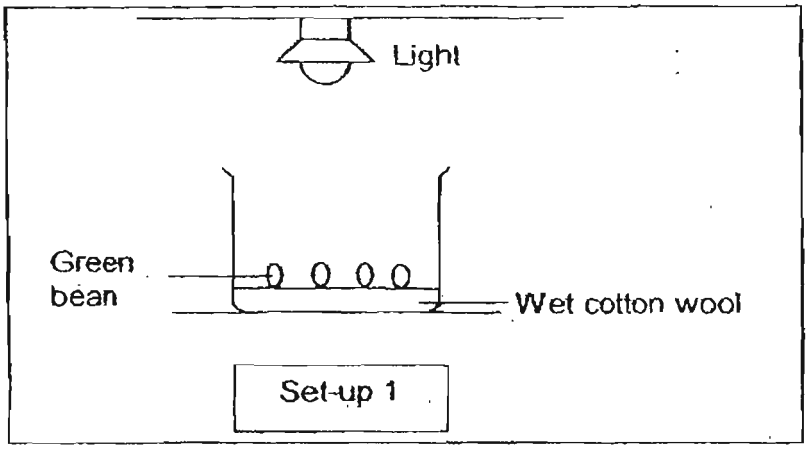
_____

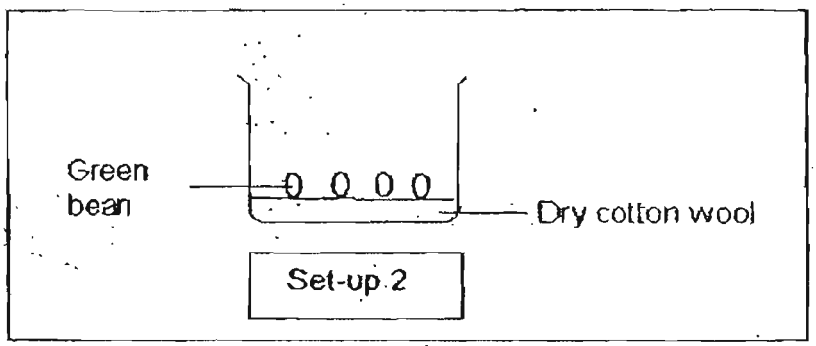
(c) Besides the properties stated above, state one other property that E has which makes it suitable to be used for making raincoats? (1m)

_____

5

44. Keith set up an experiment to find out if light is needed by the green beans to germinate.



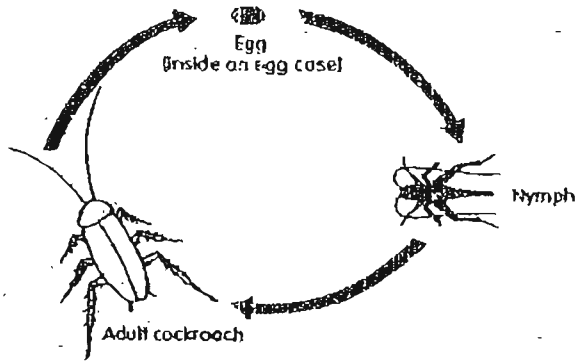


(a) Keith's sister told him that his experiment is not a fair one. Why did she say so? (1m)

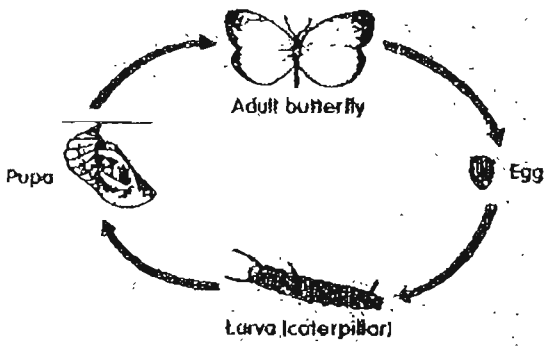
(b) What must Keith do to his set-up to make the experiment a fair one? (1m)

2

45. The diagram below shows the life cycle of a butterfly and a cockroach.



Life cycle of a cockroach



Life cycle of a butterfly

(a) State two differences between the above life cycles. (2m)

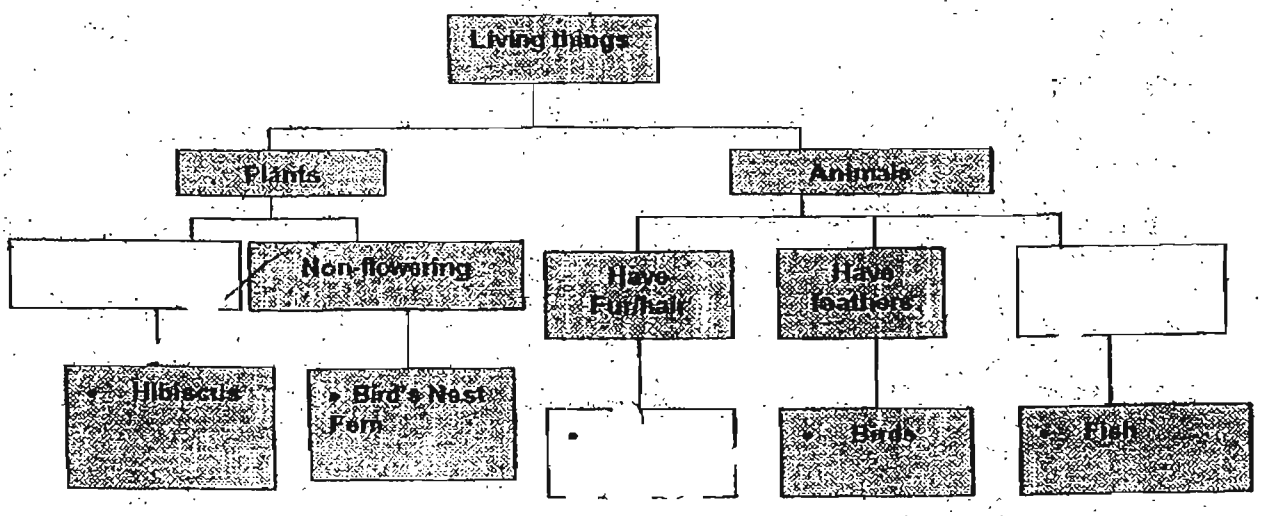
•

•

(b) Which process must the cockroach undergo to increase in size? (1m)

_____

46. Study the classification chart below carefully.
Fill in all the empty boxes with appropriate words/phrases. (3m)



END OF PAPER

6

ANSWER SHEET

NAN HUA PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007
SEMESTRAL ASSESSMENT (1)

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

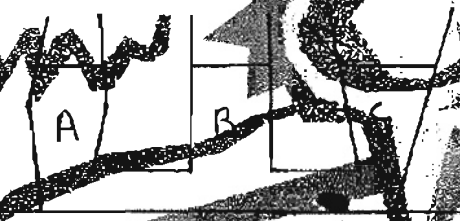
Cream Oil Pencil
Oxygen Milk Mirror

32) R: Melting S: Evaporation
T: Freezing U: Condensation

33) a) There is air in the conical flask and the air occupies space.
b) Alan could lift up the funnel so that the air can escape.
c) As the funnel is lifted up, there is a gap between the conical flask. The air in the conical flask will then escape from it. Now that the air is taking up lesser space, the oil can take up more space.

34) a) 300cm3
b) Air can be compressed to take up lesser space.

35) a)



b) Water has no definite shape.

36) a) Liquid X is water.
b) Seawater evaporates and from water Vapour. The water vapour then condenses on the cooler aluminum tray to form water droplets. The water droplets will flow into the test-tube.

37)C→A→D→B→E→F

38)A: Nitrogen
B: Oxygen
C: Carbon dioxide and water vapour.

39).Temperature
.Wind
.Exposed surface
.Humidity

40)a)i)Windpipe ii)Lungs
b)When part X is pulled down, the balloons will inflate.

41)a)The size of the beaker.
b)Set-up A and C.
c)To find out if the length of the candle effects the burning time of the beaker.

42)a)T b)F c)T d)F

43)a)Both of them are water-proof.
b)C.
c)Light

44)a)In set-up 1, the green beans are placed on wet cotton wool, while in set-up 2, they are placed on dry cotton wool.
b)He must replace the dry cotton wool with wet cotton wool.

45)a).The young of the butterfly does not look like the adult whereas the young (nymph) of life cockroach look like the adult.
.The life cycle of a cockroach has 3 stages while the cycle of a butterfly has 4 stages.
b)Moulting.

46)Flowering . Mammals.