

2007

PRIMARY 4 SCIENCE

1.	ACS (JUNIOR)	-	SA1	-	SA2
2.	AI TONG	CA1	SA1	CA2	SA2
3.	CHIJ ST NICHOLAS	-	SA1	-	SA2
4.	HENRY PARK	-	SA1	-	SA2
5.	MAHA BODHI	-	SA1	-	SA2
6.	METHODIST GIRLS	CA1	SA1	-	SA2
7.	NAN HUA		SA1	-	SA2
8.	NANYANG	CA1	SA1	CA2	SA2
9.	RAFFLES GIRL	-	SA1	-	SA2
10.	PEI CHUN	-	SA1	CA2	SA2
11.	ROSYTH	-	SA1	CA2	SA2

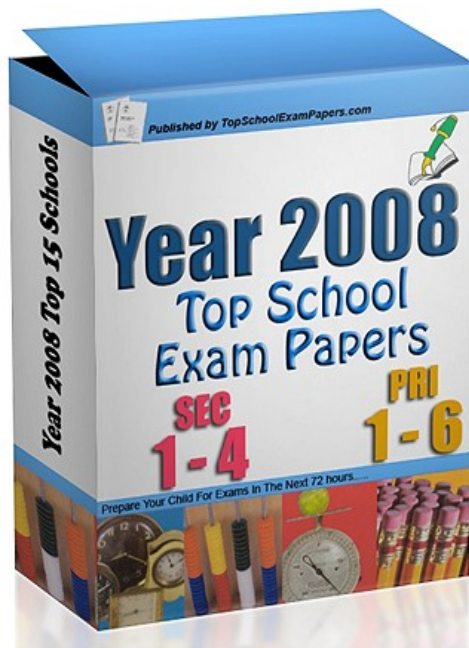
Total : 908 Pages

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METHODIST GIRLS' SCHOOL (PRIMARY)
CONTINUAL ASSESSMENT 1
PRIMARY FOUR
SCIENCE 2007

Name: _____

Marks: _____

Class: P 4

Date: _____

Parent's Signature: _____

Section A (30 marks)

Choose the most suitable answer and write its number in the brackets provided.

1. What do green plants need to make food?

- A: water
- B: oxygen
- C: sunlight
- D: carbon dioxide

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

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2. There are certain life processes in plants and animals. One of the life processes that removes carbon dioxide from the atmosphere is _____.

- (1) circulation
- (2) respiration
- (3) transpiration
- (4) photosynthesis

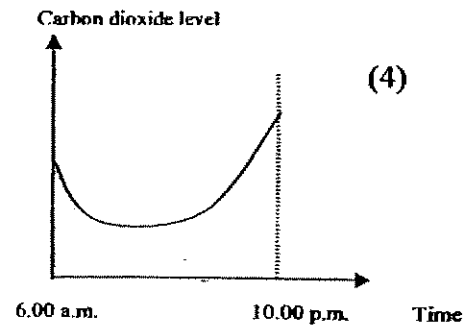
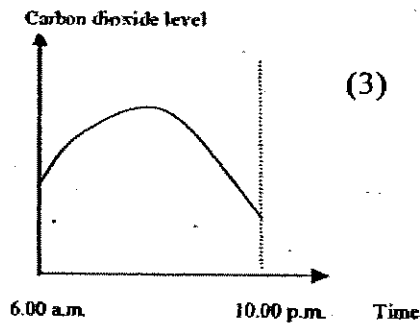
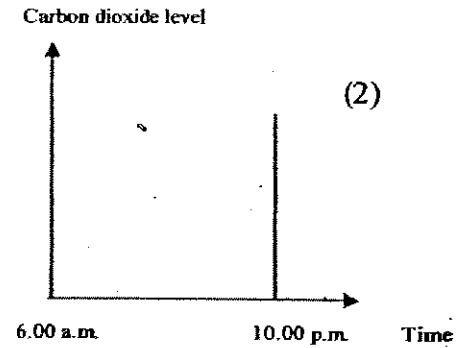
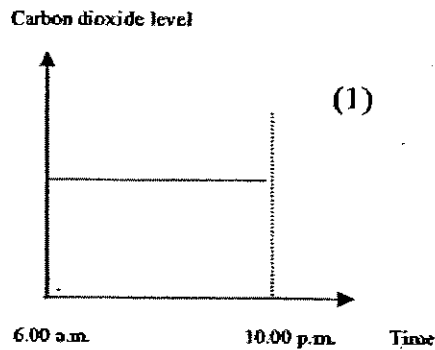
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3. Which one of the following gives the correct order in which carbon dioxide is transported in our body?

- (1) all parts of the body → heart → lungs → windpipe
- (2) windpipe → lungs → heart → all parts of the body
- (3) lungs → all parts of the body → windpipe → heart
- (4) windpipe → all parts of the body → lungs → heart

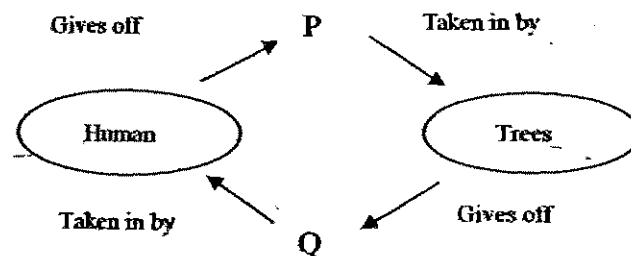
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4. Which of the following graphs correctly shows the carbon dioxide level in the air at a park from 6.00 a.m. to 10.00 p.m.?



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5. The diagram below shows the exchange of gases by 2 groups of organisms.

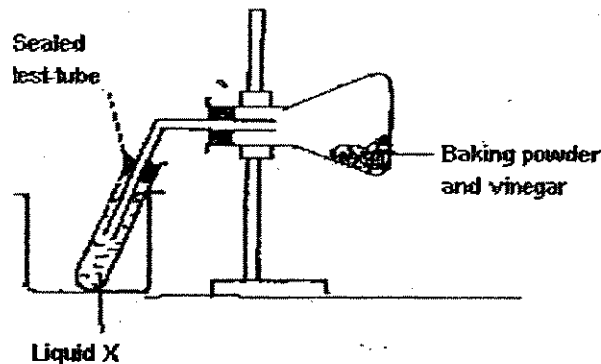


What do P and Q represent?

	P	Q
(1)	Water vapour	Oxygen
(2)	Carbon dioxide	Oxygen
(3)	Oxygen	Carbon dioxide
(4)	Carbon dioxide	Water vapour

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Sally wanted to find out the effect of vinegar on baking powder. She set up the experiment as shown in the diagram below.



6. She observed some changes taking place in Liquid X inside the test-tube. The clear Liquid X had turned chalky. What do you think was Liquid X?
- (1) alcohol
 - (2) mercury
 - (3) tap water
 - (4) limewater
- ()
7. What gas was produced to turn Liquid X from clear to chalky?
- (1) oxygen
 - (2) nitrogen
 - (3) water vapour
 - (4) carbon dioxide
- ()
8. Our human circulatory system is made up of _____
- A: nose
 - B: heart
 - C: blood
 - D: xylem
 - E: blood vessels
- (1) A, B and C only
 - (2) B, C and E only
 - (3) A, B, C and E only
 - (4) B, C, D and E only
- ()

9. Arrange the following activities according to the breathing rate in descending order.

- A: Taking a nap
- B: Brisk-walking 100 metres in the park
- C: Watching a horror movie
- D: Climbing a flight of stairs from ground floor to 5th floor

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

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10. Our blood is made up of:

- A: red blood cells
- B: white blood cells
- C: plasma
- D: platelets

Which of the above **do not** transport any materials in the body?

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

()

11. There are some similarities between the plant transport system and the human transport system. Which statement/s given below is/are **not** a similarity/similarities?

- A: Both systems transport gases, food and water
- B: Both systems have tubes to transport materials
- C: Both systems perform the function of transporting materials
- D: Both systems consist of different parts that work together to perform a function

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

()

12. Below is a table showing the breathing methods of living things. Which is the **correct** classification?

	Breathing Methods of Living Things			
	Stomata	Lungs	Gills	Skin
(1)	Fern	Shark	Crabs	Earthworm
(2)	Mushroom	Elephant	Sea bass	Garoupa
(3)	Fern	Dolphin	Mudskipper	Earthworm
(4)	Mushroom	Sea cow	Guppy	Mudskipper

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13. In the human respiratory system, there are differences between the air that is inhaled and the air that is exhaled. Which of the following is **incorrect**?

	Inhaled Air	Exhaled Air
(1)	More oxygen	Less oxygen
(2)	Less carbon dioxide	More carbon dioxide
(3)	More dust particles	Less dust particles
(4)	More water vapour	Less water vapour

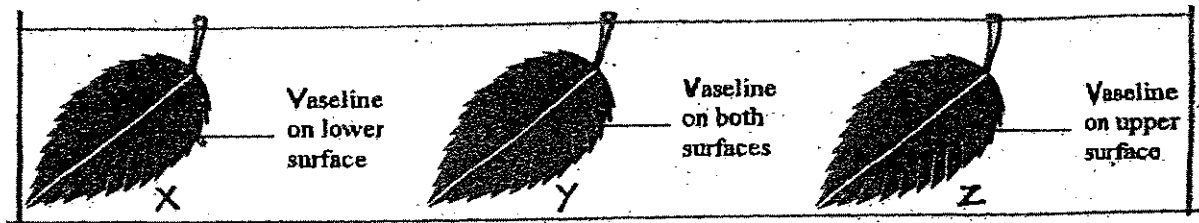
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14. We get a bruise when we get a hard knock. Why is this so?

- (1) Our bones were damaged.
- (2) Veins were cut into two.
- (3) Capillaries were damaged.
- (4) Blood could not reach the arteries around that spot.

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15. Three identical leaves X, Y and Z are hung in an airy place. Some vaseline is smeared on each of them as shown below. Next, the leaves are weighed individually.



It was observed that Leaf Y's weight remains the same and Leaf Z's weight is less than that of Leaf X. What are the likely predictions for the observations?

- A: Water is lost more rapidly from the lower surface than the upper surface of the leaf
- B: Water is lost more rapidly from the upper surface than the lower surface of the leaf
- C: Water is lost from both surfaces
- D: Water is not lost from Leaf Y

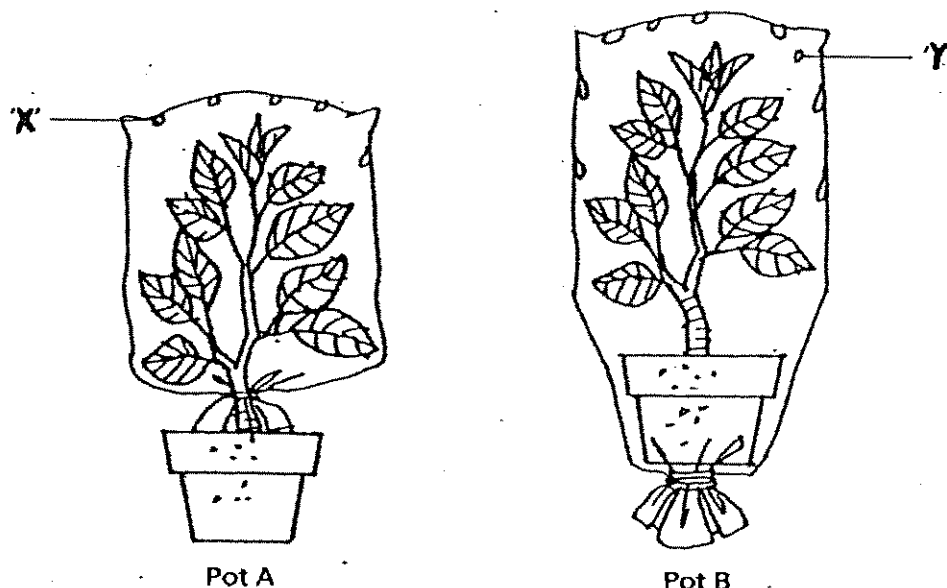
- (1) A and C only
- (2) A and D only
- (3) A, B and D only
- (4) A, C and D only

()

End of Section A
Please proceed to Section B

Write the correct answers in the spaces provided. Marks will be deducted for keywords that have been mis-spelt.

16. Two pots of plants A and B were covered with plastic bags as shown in the diagrams below. Both pots were left in a sunny place. After some time, some changes were observed in both plastic bags.



- (a). What were 'X' and 'Y'? (1m)

'X' and 'Y' were _____.

- (b). Where did 'X' and 'Y' come from? (2m)

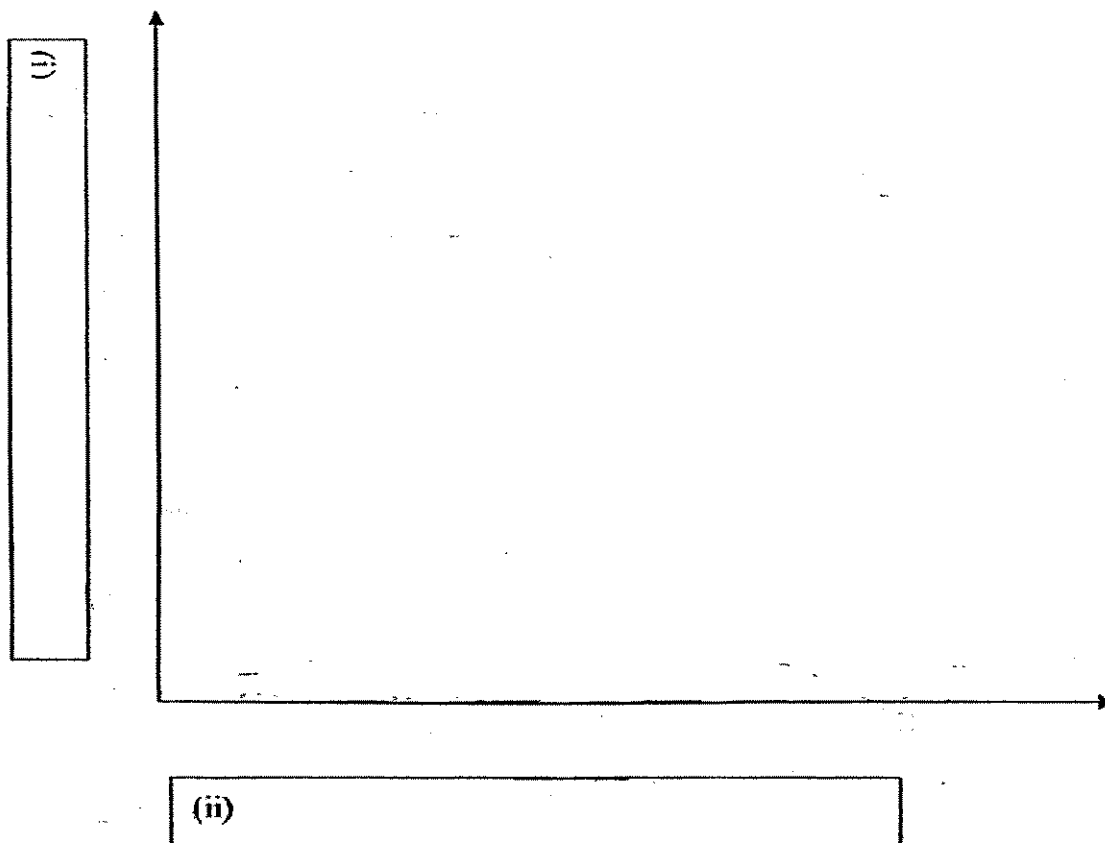
'X' came from the _____.

'Y' came from the _____.

17. The table shows the normal heart beat rates of 5 different animals, A, B, C, D and E.

Animal	Heart Beats/minute
A	60
B	20
C	120
D	80
E	70

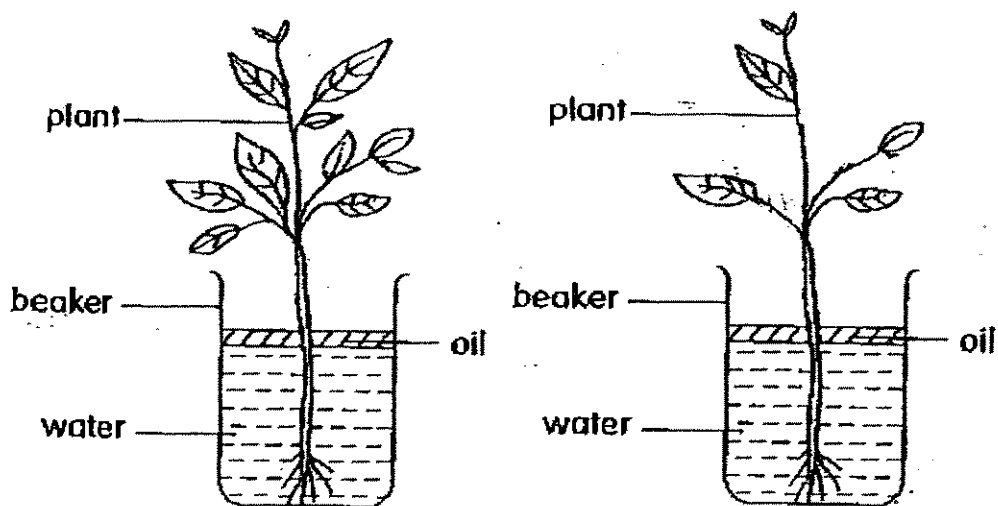
- (a). Use the information given in the table to draw a bar graph in the space below.
Label the two axes, (i) and (ii), in the boxes accordingly. (2m)



- (b). Which of the heartbeats above is most likely to be that of a baby? (1m)

- (c). Name one disease associated with the heart. (1m)

18. Leon set up an experiment as shown below. The 2 similar beakers were placed in the school field. He had also poured some oil into both beakers. After a day, Leon realized that the water level in both beakers had decreased.



- (a). What do you think is Leon trying to investigate? (1m)

- (b). Why did Leon pour oil into both beakers? (1m)

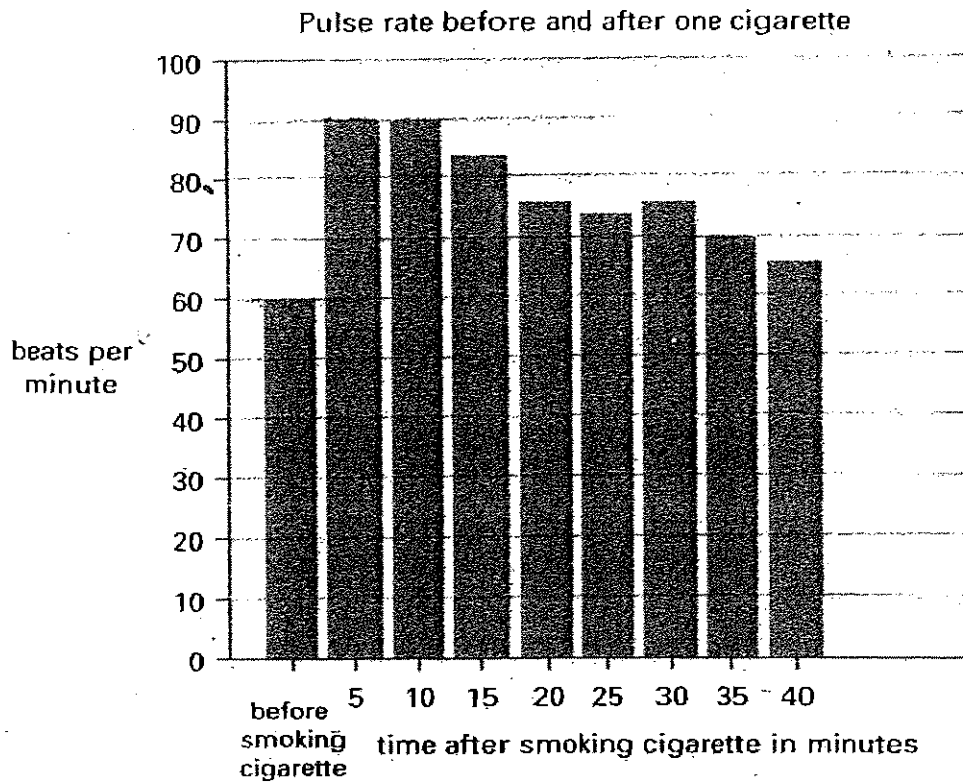
- (c). Name any 2 variables that Leon must keep constant so that this is a fair test. (1m)

19. Becky has some coffee powder. She kept half of it in an air-tight container and the other half in a plastic bag. After one week, Becky observed some changes.

(a). What do you think will Becky observe after a week? (1m)

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

20. The graph shows the pulse rate before and after smoking a cigarette.



- (a). What was the pulse rate before smoking a cigarette? (1m)

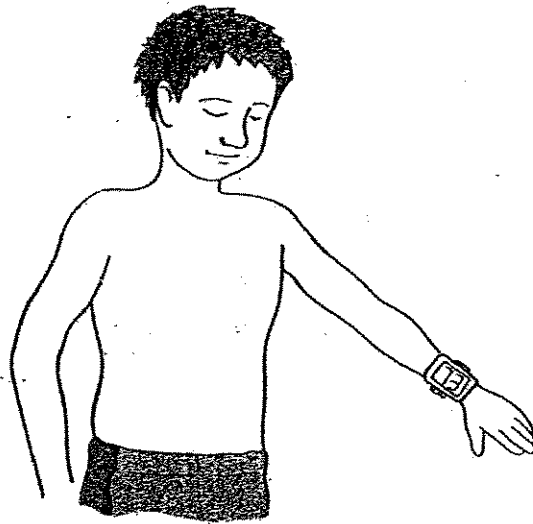
The pulse rate was _____ beats per minute.

- (b). By how much did the pulse rate increase in the first five minutes after smoking a cigarette? (1m)

- (c). Explain why the pulse rate increases after smoking. (1m)

Smoking causes less _____ to reach the body. So the heart has to pump _____ to make up for the difference.

21. On the diagram below, mark the position of the heart with the letter H. (½ m)

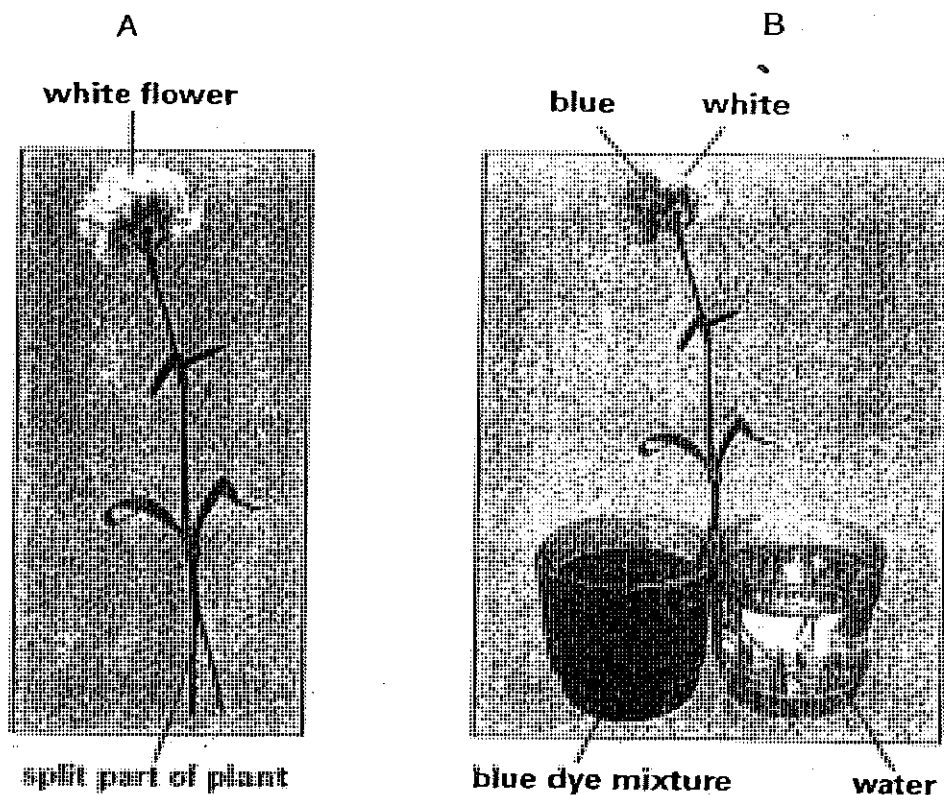


(a). Which part of the body protects the heart? (½ m)

(b). Name the blood vessels that take blood away from the heart. (1m)

(c). What is the job of the heart? (1m)

22. Helen set up an investigation as shown below. She splits part of the stem of a flower in half as shown in picture A. Then she put one half in water mixed with blue dye as shown in picture B.

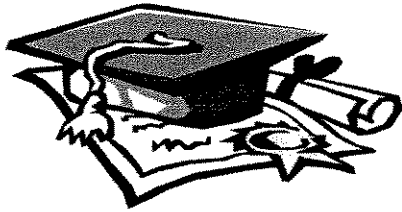


After some time, half of the flower turns blue.

- (a). What part of the stem did the dye travel through to get to the flower? (1m)

- (b). Predict what will happen if Helen puts a new stalk of white flower into red dye. (1m)

End of Paper
Please check your work carefully



ANSWER SHEET

M G S PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007
CONTINUAL ASSESSMENT (1)

1. 4
2. 4
3. 1
4. 4
5. 2
6. 4
7. 4
8. 2
9. 1
10. 4
11. 1
12. 3
13. 4
14. 3
15. 4
- 16) a) water
b) X: plant
Y: plant and soil
- 17) a) i) Heart Beats/minute
ii) Animal
b) 120 heart beats.
c) Heart attack.
- 18) a) I think Leon is trying to investigate whether the number leaves of a plant affect the water level used up by the plant.
b) To prevent evaporation of water.
c) 1) The type of plant.
2) The amount of water.
- 19) a) The coffee powder in the air-tight container remained the same but the coffee powder in the plastic bag becomes mould.
b) Mould cannot grow in air-tight container because there is no air and moisture. Spores floating in the air can land on the coffee powder and mould will grow in the presence of oxygen and moisture from the air in the plastic bag.
- 20) a) 60
b) It increased by 30 beats per minute.
c) oxygen, faster

21) a) Rib cage.

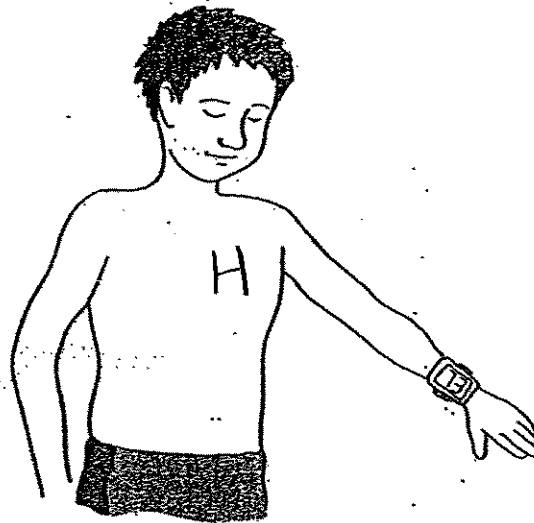
b) Arteries.

c) To pump to all parts of the body.

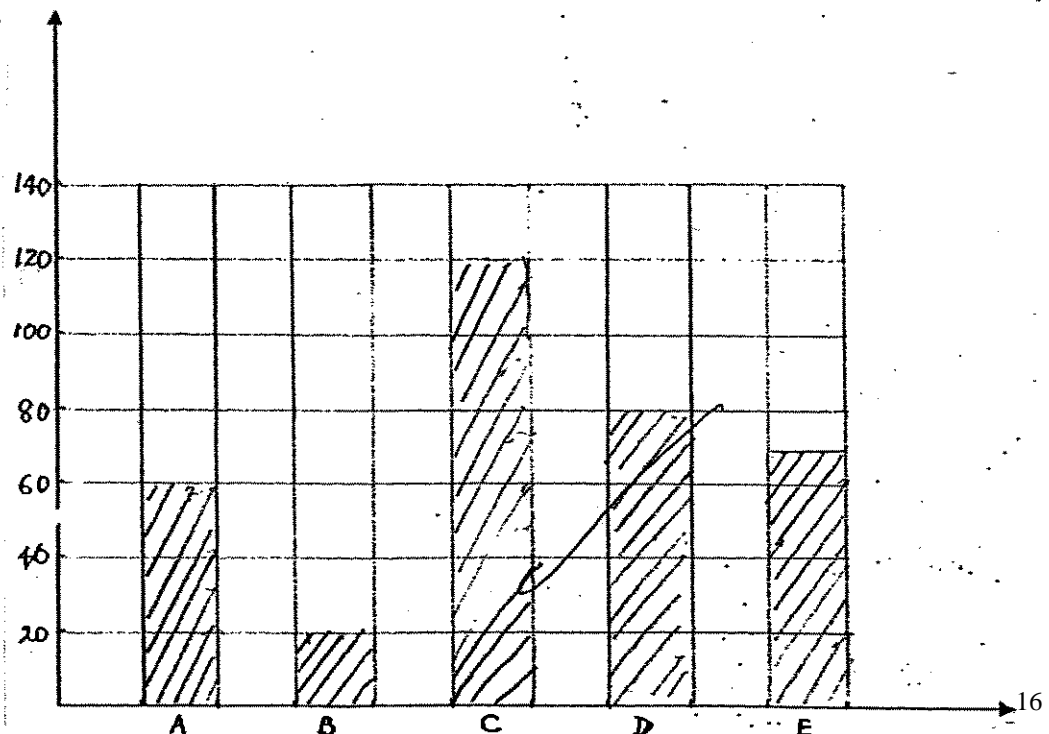
22) a) The xylem.

b) The roots stem and leaves of the flower will turn red.

21. On the diagram below, mark the position of the heart with the letter H. ($\frac{1}{2}$ m)



14)





AI TONG SCHOOL

2007 CONTINUAL ASSESSMENT (1)

PRIMARY FOUR SCIENCE

DURATION : 1hr 45 min

DATE: 8th March 2007

INSTRUCTIONS

**Do not open the booklet until you are told to do so.
Follow all instructions.
Answer all questions.**

Name : _____ ()

Class : Primary _____

Parent's Signature : _____

Date : _____

MARKS	100
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Section A (30 x 2 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.

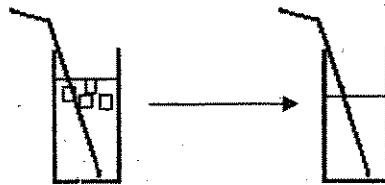
1. Which one of the following items is matter?

- (1) Ink
- (2) Time
- (3) Music
- (4) Lightning

2. Which one of the following statements is **NOT** true?

- (1) Matter has mass.
- (2) Matter occupies space.
- (3) Non-living things are not matter.
- (4) All living things are examples of matter.

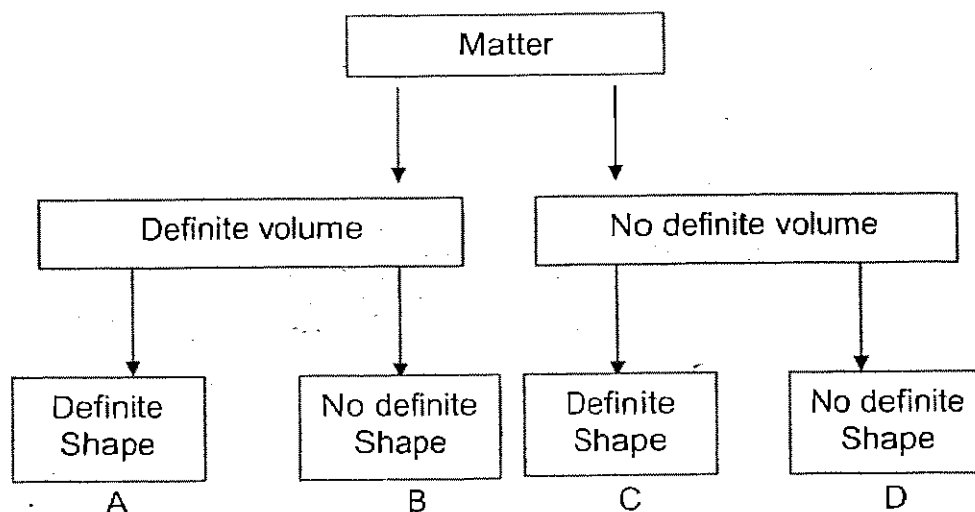
3. Jerry had a glass of iced lemon tea. He removed the ice cubes and found that the level of liquid in the glass fell.



This shows that the ice cubes _____.

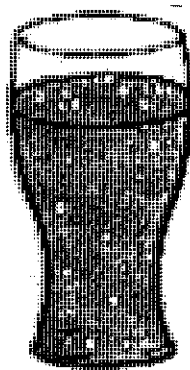
- (1) float in water
- (2) take up space
- (3) cannot be compressed
- (4) have no definite shape

4. Look at the concept map below and then answer the questions.



Which group can a teddy bear be placed?

- (1) A
 - (2) B
 - (3) C
 - (4) D
5. Identify the states of matter that can be found in the contents in the glass.



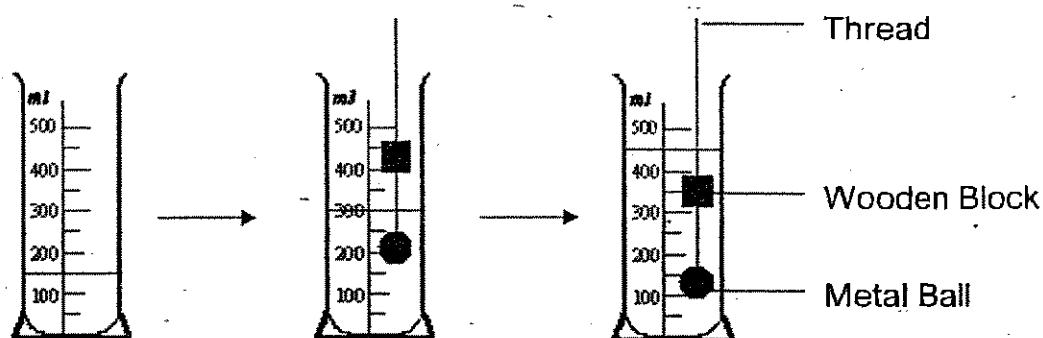
- (1) Liquid only
- (2) Gas and liquid only
- (3) Liquid and solid only
- (4) Gas, liquid and solid

6. Jasmine observed the properties of three objects – E, F and G and recorded her observations in a table below.

Properties	E	F	G
Occupies space	Yes	Yes	Yes
Has definite shape	No	No	Yes
Has definite volume	No	Yes	Yes
Can be seen	No	Yes	Yes

What can E be?

- (1) Book
 - (2) Water
 - (3) Oxygen
 - (4) Electricity
7. The diagram below shows a measuring cylinder indicating different water level readings when different items are lowered into the cylinder.



Which one of the following sets of reading is correct?

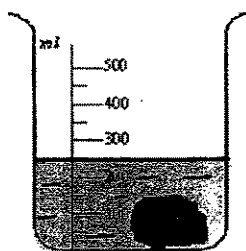
	Vol of metal ball (cm^3)	Vol of wooden block (cm^3)
(1)	300	450
(2)	300	150
(3)	150	300
(4)	150	150

20

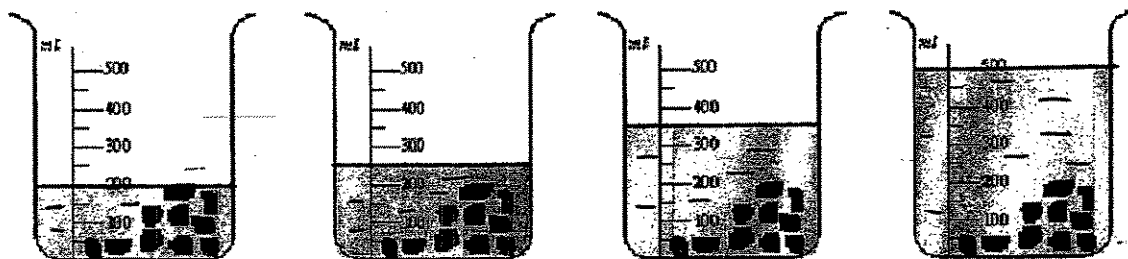
8. Which group includes all the three states of matter?

- (1) Cloud, snow, ice
- (2) Sea water, pebbles, grass
- (3) Wind, rain, cup
- (4) Sand, rain, dew

9. Julian has poured 100ml of water in a beaker. He put a potato into the beaker and measured the total volume.



Then he took out the potato, cut it into ten pieces and put them into the water again.



A

B

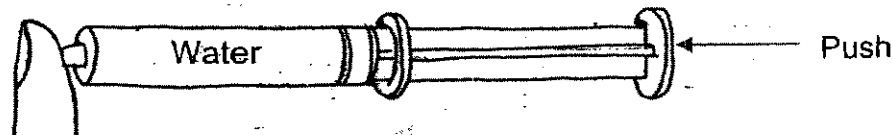
C

D

Which one of the beakers above shows the correct water level?

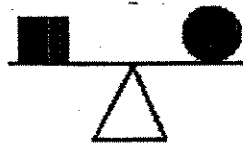
- (1) A
- (2) B
- (3) C
- (4) D

10. A ball can hold 500 cm^3 of air but Wei Ming is able to pump in 650 cm^3 of air. This is because air _____.
- (1) has mass
 - (2) has volume
 - (3) occupies space
 - (4) can be compressed
11. A syringe was filled with water and the nozzle was covered. Penny tried to push the plunger but she was not able to push it in.



This experiment was conducted to show that water _____.

- (1) can be compressed
 - (2) has a definite shape
 - (3) has no definite mass
 - (4) has a definite volume
12. A level balance stayed level when two objects were placed on each side.



This shows that the two objects _____.

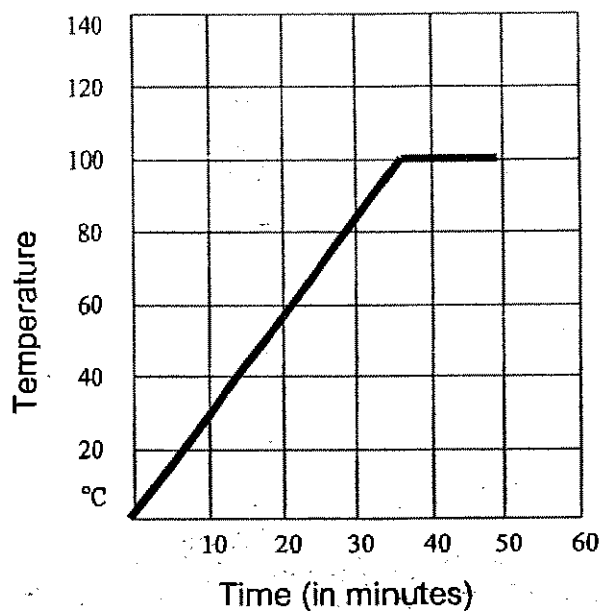
- (1) are of the same size
- (2) have the same mass
- (3) have the same volume
- (4) are made of the same material

13. When matter can be compressed, it means that it has the ability to _____.
- (1) Increase its mass
 - (2) reduce its mass
 - (3) occupy a smaller space
 - (4) change to a different state
14. If an ice cube takes 15 minutes to melt completely and becomes water, what is the temperature of the melting ice cube at 10 minutes?
- (1) 0°C
 - (2) 2°C
 - (3) 5°C
 - (4) 10°C
15. Josh took out some ice cubes and put them into a beaker. Then, he took a thermometer from a container of boiling water and placed it in the beaker of ice cubes. Which of the following took place during the experiment?
- (1) The thermometer gained heat.
 - (2) The thermometer eventually showed 0°C .
 - (3) The liquid in the thermometer rose.
 - (4) The ice cubes lost heat.
16. A cup of hot coffee was left in the dining room. Its temperature was measured at 80°C . 20 minutes later, the temperature was read again. The new temperature of the cup of coffee would most likely be about _____.
- (1) 5°C
 - (2) 15°C
 - (3) 40°C
 - (4) 85°C

17. Which one of the statements below is **false**?

- (1) Water freezes into ice at 0°C .
- (2) Water boils at 100°C .
- (3) The temperature of ice is 10°C .
- (4) Ice melts at 0°C .

18. Peter started to boil a beaker of water and recorded the temperature as shown below.



What is the temperature of the water at 30 minutes?

- (1) 30°C
- (2) 55°C
- (3) 82°C
- (4) 100°C

19. What happens when the temperature of water changes from 30°C to 90°C ?

- (1) The water gains heat.
- (2) The water loses heat.
- (3) The water becomes a gas.
- (4) The water produces steam.

20. Cedric measured the temperature of an ice cube on the kitchen table. Then he put some salt on it. He measured the temperature again. What change would he observe?

- (1) The temperature would fall.
- (2) The temperature would rise.
- (3) The ice cube would become bigger.
- (5)(4) The temperature would remain unchanged.

21. Mike placed a beaker of boiling water into a container of cold water and recorded his observation after a few minutes.

Which one of the following observations recorded is correct?

	Boiling Water	Cold Water
(1)	Gained Heat	Lost Heat
(2)	Gained Heat	Gained Heat
(3)	Lost Heat	Lost Heat
(4)	Lost Heat	Gained Heat

22. What would happen when a watermelon is placed in the freezer?

- A The watermelon becomes bigger.
- B The watermelon gained heat.
- C The juice in the fruit changed from liquid to solid.

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

23. Living things can be classified into four groups. They are _____.

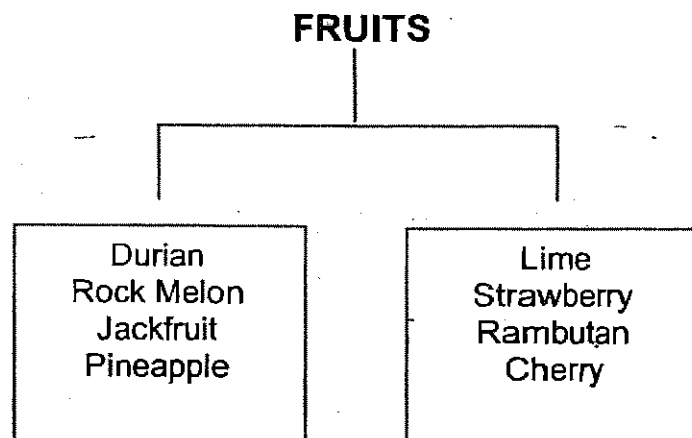
- (1) mammals, birds, fish and plants
- (2) mammals, plants, fungi and bacteria
- (3) animals, plants, fungi and micro-organisms
- (4) animals, flowers, mushroom and micro-organisms

24. The outer covering of a zebra helps _____.

- A it to run faster
- B to keep it warm
- C to protect it from injury
- D to protect it from its enemies

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

25. Jane placed some fruits into two groups.



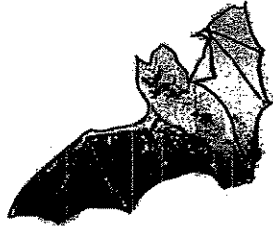
How are the fruits above classified?

- (1) By the shape
- (2) By the size
- (3) By the taste
- (4) By the texture

26. Tom saw these four animals and made an observation. He decided that one of the animals does not belong in the group.



A



B



C



D

Which does **NOT** belong to the group?

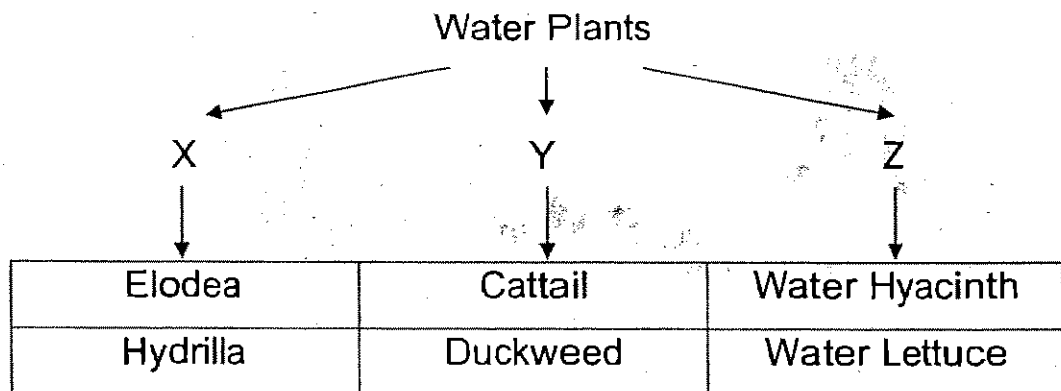
- (1) A
 - (2) B
 - (3) C
 - (4) D
27. The table above showed the number of butterflies visiting the 4 types of flowers in a day.

Colour of Flowers	BRIGHT RED	WHITE	SUNNY ORANGE	DULL YELLOW
Number of butterflies visited the flowers in 1 day.	31	2	54	3

The results tell us that the _____.

- (1) butterflies like visiting flowers
- (2) butterflies prefer red flowers to the others
- (3) butterflies are attracted to brightly coloured flowers
- (4) red flowers contain more pollen than yellow flowers

28. Janet found some water plants and decided to draw a classification chart.



Which plant has been classified wrongly?

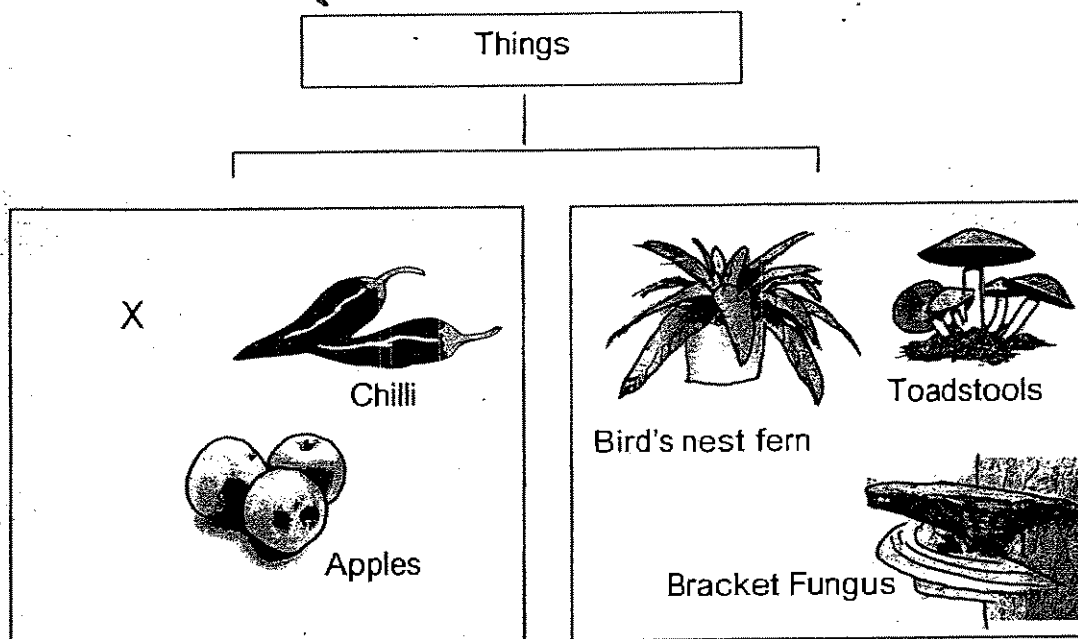
- (1) Cattail
 - (2) Elodea
 - (3) Duckweed
 - (4) Water Lettuce
29. Henry is learning about fungi and micro-organisms. He needs to identify living things that belong to that group.

Group A	Group B	Group C
Toadstool	Bacteria	Mould
Algae	Spores	Puffball
Grass	Yeast	White Fungus

Which group or groups have the correct living things listed?

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

30. Jenny studied the characteristics of six items and placed them into two groups as shown below.



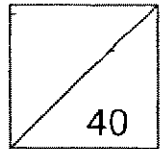
What can X be?

- (1) Corn
- (2) Yeast
- (3) Puffball
- (4) Ladder Fern

P4 Science CA1 2007

Name: _____ ()

Marks:



Class: _____

Date: _____

Section B (40 marks)**Answer all the questions in the spaces provided.**

31. (a) Is thunder a matter? [1]

(b) Give two reasons for your answer in (a). [1]

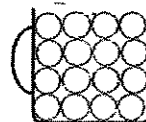
(i) _____

(ii) _____

32. The diagram below shows two identical cups. Cup A is filled with water and Cup B is filled with marbles.



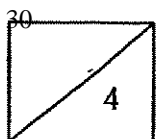
Cup A



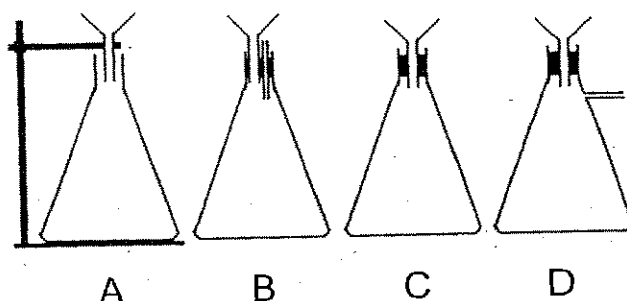
Cup B

(a) Is the volume of the contents in both cups the same? [1]

(b) Explain your answer in (a). [1]



33. The diagram below shows four experimental set-ups.



The same amount of water is poured into the funnel of each set-up.

(a) Which flask will have the least water?

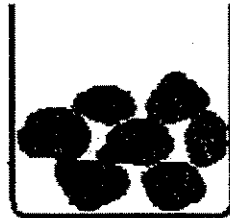
Flask _____ [1]

(b) Explain your answer in (a) [2]

34. Write 'True' or 'False' against each statement in the table. [2]

	Statement	True / False
i)	Oil has no definite shape but has a definite volume.	
ii)	Plasticine is not a solid because the shape can change.	
iii)	Tap water has no definite shape and no definite volume.	
iv)	Air has no mass and volume.	

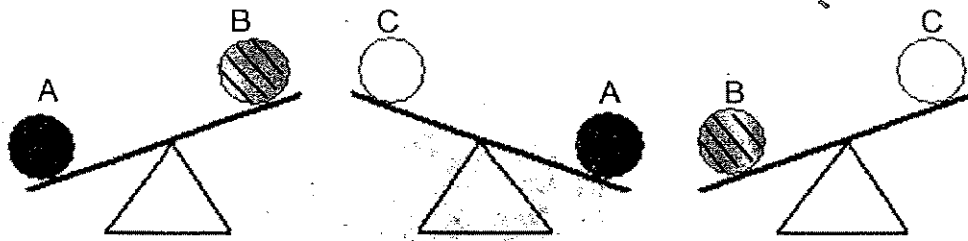
35. Linda filled a 1-litre container with 550cm^3 of stones as shown below.



- (a) How much water must she pour into the container to fill it to the brim? _____ cm^3 [1]
- (b) If she had filled the container to the brim with water at first, what would happen to the water if she put in the stones next? [1]

- (c) Why? [1]

36. June weighed three types of ball on a balance scale.



- (a) Arrange the balls in order from the lightest to the heaviest. [1]

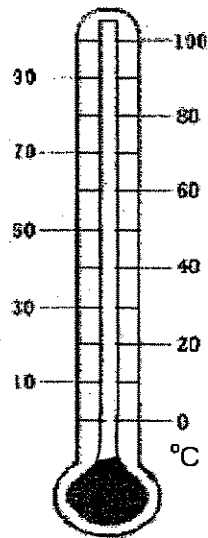
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- (b) The balls are made of different materials: wood, rubber and wool. Which ball A, B or C is made of wool? [1]

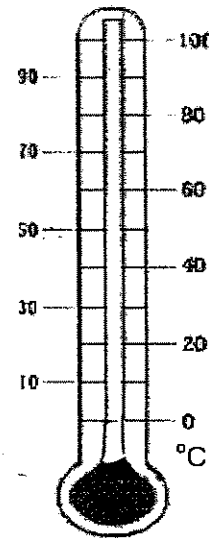
Ball _____

- (c) If the 3 balls shown in the diagram are made of the same material, then the _____ would be the same. [1]

37. Shade the thermometers to show the following temperatures. [2]



Melting point of ice



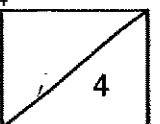
Freezing point of water

38. George bought a bowl of ice-kachang and left it on the table.



- (a) What would happen to the ice-kachang in the bowl after 5 minutes? [1]

- (b) Explain your answer in (a). [1]



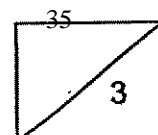
39. Mother took out a frozen fish from the freezer and placed it on a plate at room temperature.

(a) What would happen to the above two underlined items?

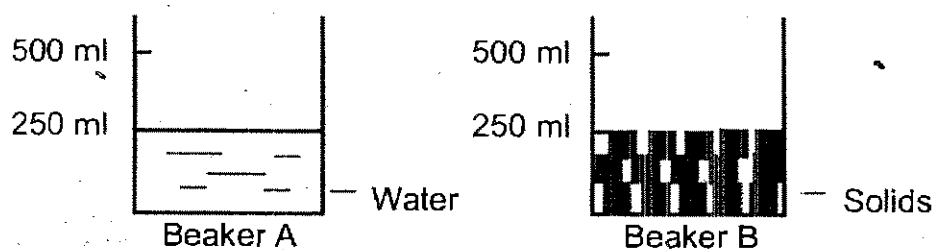
Write **Lose Heat** or **Gain Heat** in the correct boxes below. [2]

Item	Lose Heat / Gain Heat
Frozen Fish	
Plate	

- (b) Name the process that took place when the frozen fish was left on the table at room temperature. [1]
-



40. Ernie set up two beakers as shown below.



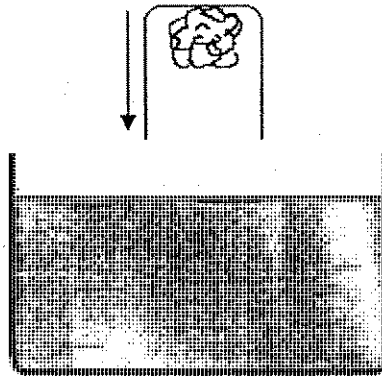
- (a) If the water in Beaker A was poured into Beaker B, what was the likely water level in Beaker B? [1]

Water Level	Tick (✓) the correct box
500 ml	
Less than 500 ml	
250 ml	
Less than 250 ml	

- (b) Ernie boiled the contents in Beaker B next. After ten minutes, he noticed that there was only liquid in the beaker. What had happened to the solids? [1]

- (c) Had the solids gained heat or lost heat? [1]

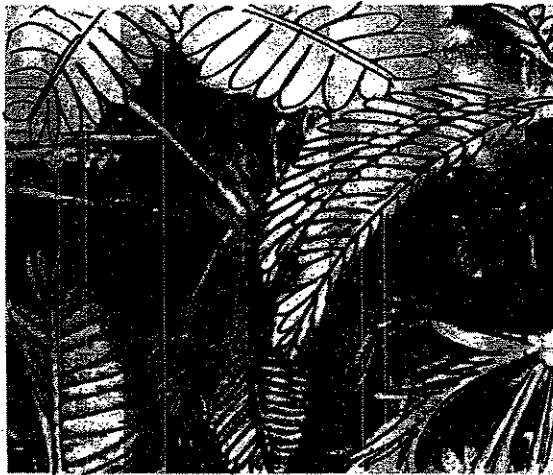
41. James conducted an experiment. He glued a piece of cotton wool in a glass. Then, he inverted the glass into a basin of water.



- (a) Would the wool be wet when James pushes the glass into the bowl of water? [1]

- (b) Explain your answer in (a). [2]

42. Kenny took a photograph of the mimosa plant as shown below.

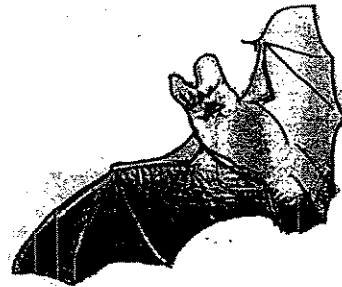


The mimosa plant closed its leaves when he touched it.

- (a) Which characteristic of living things was the mimosa plant showing? [1]

- (b) Name one other characteristic of this plant. [1]

43. Study the two animals shown below carefully. Then answer the questions that follow.

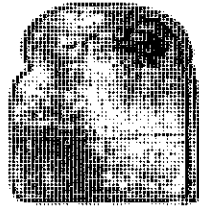


- (a) Name the body covering that these two animals have. [1]

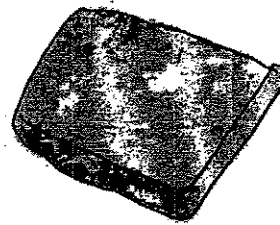
- (b) Name another similarity that can be found in these two animals. [1]

- (c) Name one difference between these two animals. [1]

44. Benny placed 2 slices of bread in the kitchen and observed them for 4 days. He noticed that Bread A has no mould but Bread B has turned mouldy.



Bread A



Bread B

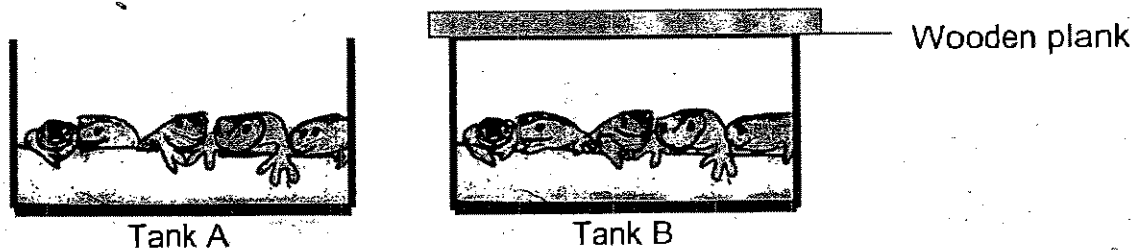
- (a) Besides air, what 2 other conditions are needed for mould to grow? [2]

i) _____

ii) _____

- (b) What do you think has Benny done to Bread A? [1]

45. Ron caught some frogs and put them into two tanks.



He found that the all frogs in Tank A jumped out and made his sister scream, so he covered Tank B with a wooden plank.

- (a) What would happen to the frogs in Tank B? [1]

- (b) Explain your answer in (a). [1]

- (c) What can Ron do instead of covering the tank with the wooden plank? [1]

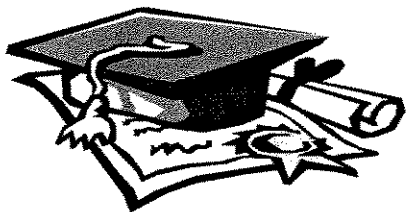
- (d) Name two other things that Ron should put into the tank for the frogs to enable them to live? [1]

i) _____

ii) _____

End of Paper

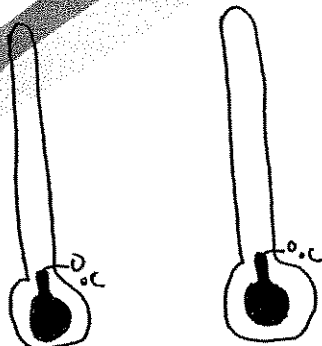
41

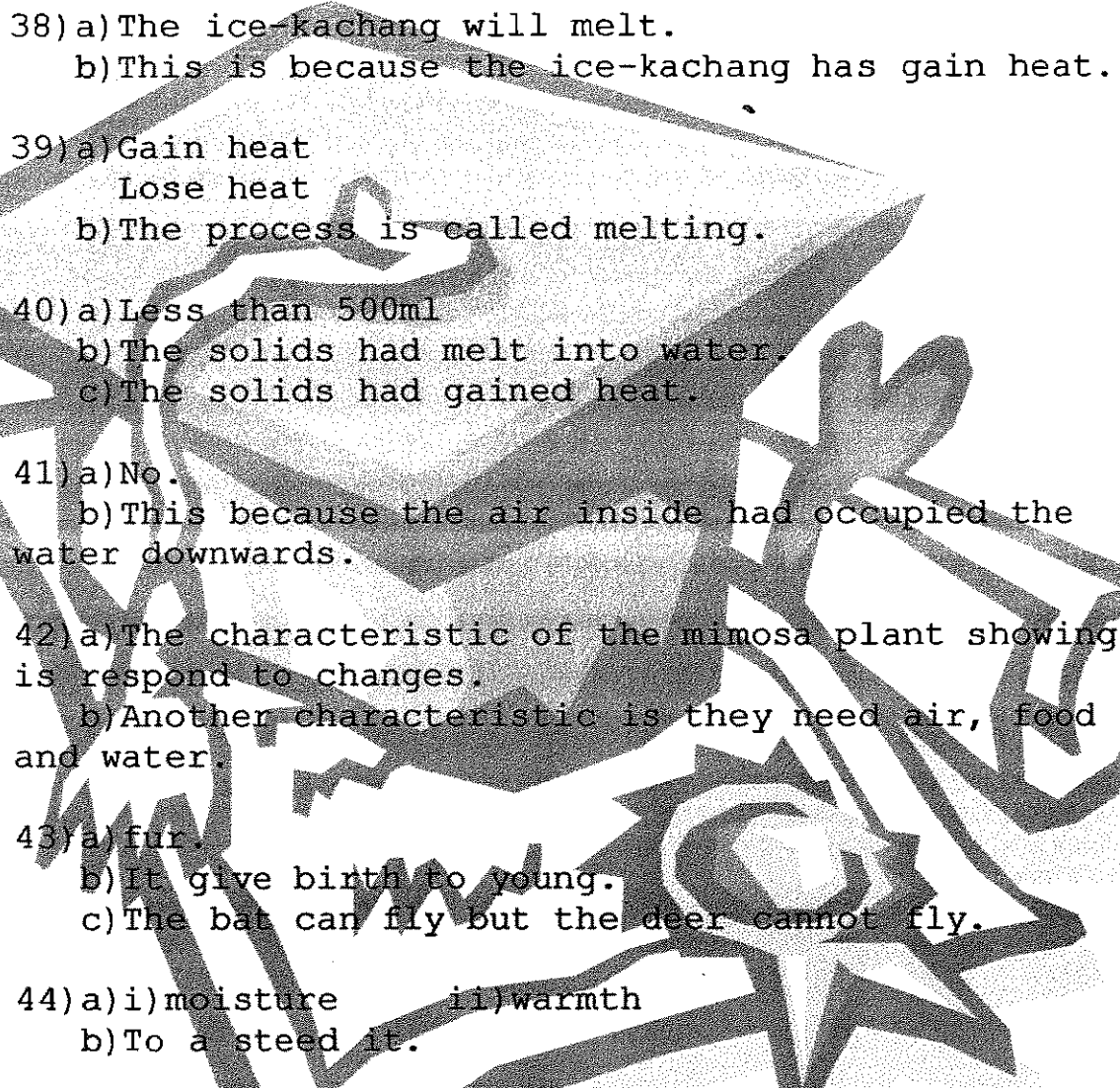


ANSWER SHEET

AI TONG PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007
CONTINUAL ASSESSMENT (1)

1. 1
2. 3
3. 2
4. 1
5. 2
6. 3
7. 4
8. 3
9. 2
10. 4
11. 4
12. 2
13. 3
14. 1
15. 2
16. 3
17. 3
18. 3
19. 1
20. 1
21. 4
22. 2
23. 3
24. 3
25. 2
26. 2
27. 3
28. 3
29. 3
30. 1
- 31) a) No.
b) i) This is because it does not have mass.
ii) This is because it does not occupy space.
- 32) a) No.
b) There is still space not occupied by the marble in cup B.
- 33) a) C.
b) This is because the air inside the flask is trapped as they place a stopper on the flask so the air cannot escape.
- 34) i) True ii) True iii) False iv) False
- 35) a) 450 cm³
b) The water will flow out of the container.
c) This is because the stones had occupied the space inside the container.
- 36) a) C, B, A
b) C.
c) mass
- 37)



- 
- 38) a) The ice-kachang will melt.
b) This is because the ice-kachang has gain heat.
- 39) a) Gain heat
Lose heat
b) The process is called melting.
- 40) a) Less than 500ml
b) The solids had melt into water.
c) The solids had gained heat.
- 41) a) No.
b) This because the air inside had occupied the water downwards.
- 42) a) The characteristic of the mimosa plant showing is respond to changes.
b) Another characteristic is they need air, food and water.
- 43) a) fur.
b) It give birth to young.
c) The bat can fly but the deer cannot fly.
- 44) a) i) moisture ii) warmth
b) To a steed it.
- 45) a) The frogs in tank B will die.
b) There is not enough air.
c) Ron could put a net on top of the tank B.
d) i) food
ii) water



南洋小學
NANYANG PRIMARY SCHOOL

PRIMARY FOUR SCIENCE
CONTINUAL ASSESSMENT 1

2007

BOOKLET A

Date : 27 February 2007

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 14 printed pages including this cover page.

NANYANG PRIMARY SCHOOL
PRIMARY 4 SCIENCE
FIRST CONTINUAL ASSESSMENT 2007

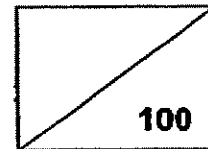
Name : _____ () Date : _____

Class : Primary 4 ()

Duration : 1 h 45 min

Parent's signature: _____

Score



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. Study the following classification table carefully.

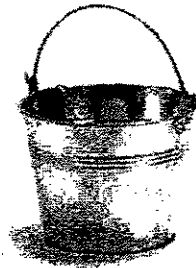
A	B
Cotton towel	Bicycle
Plastic box	Watch
Paper bag	Umbrella

Which one the following pairs of items matches Group A and Group B respectively.

- | | | |
|---|----------------------|----------------|
| | <u>Group A</u> | <u>Group B</u> |
| ① | Metal spoon | Television |
| ② | Hammer | Clay pot |
| ③ | Plastic watering can | Handkerchief |
| ④ | Porcelain vase | Paper carton |

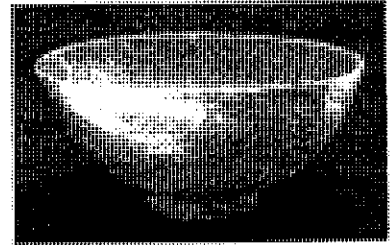
2. Which one of the following objects is made from material that was once alive?

①



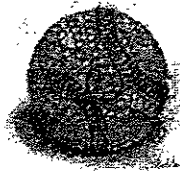
Metallic pail

②



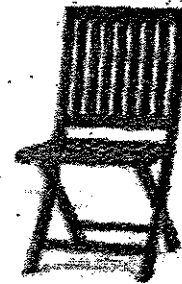
Porcelain bowl

③



Rubber ball
Plastic

④



Wooden chair

3. The young of Animal X lives in the water but its adult lives on land. Which of the following animals fit the same description as Animal X?

- A. Toad
- B. Platypus
- C. Mosquito
- D. Dragonfly

①

A, B and C only

③

B, C and D only

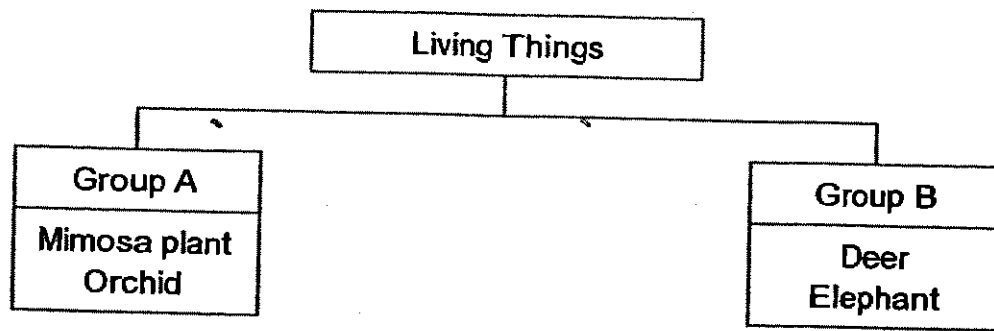
②

A, C and D only

④

A, B and D only

4.



Which one of the following living things can be classified under Group B?

- | | |
|-------------|----------------|
| ① Grass | ② Cactus |
| ③ Toadstool | ④ Coconut tree |

5. Which one of the following statements is true of Plant A and Plant B?



Plant A



Plant B

- | | |
|---|-------------------------------------------|
| ① | Plant A can grow faster than Plant B. |
| ② | Plant A has more nutrients than Plant B. |
| ③ | Plant A has a weak stem but not Plant B. |
| ④ | Plant A needs more sunlight than Plant B. |

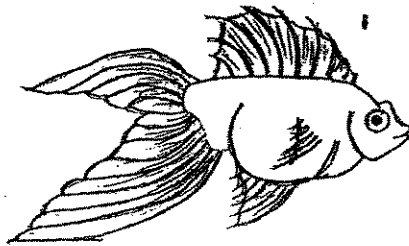
6 . After observing an animal carefully, Patricia wrote down her observations.

Animal Y

- (i) It breathes through gills.
- (ii) It moves about by swimming
- (iii) Its body is covered with scales

Which one of the following animals is Animal Y likely to be?

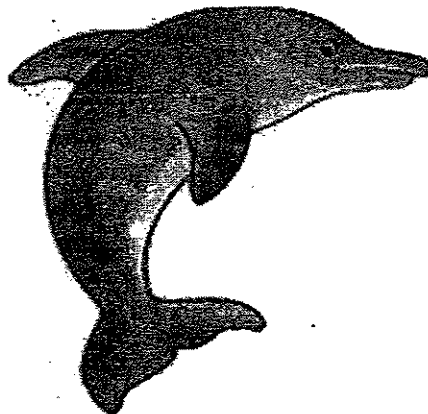
①



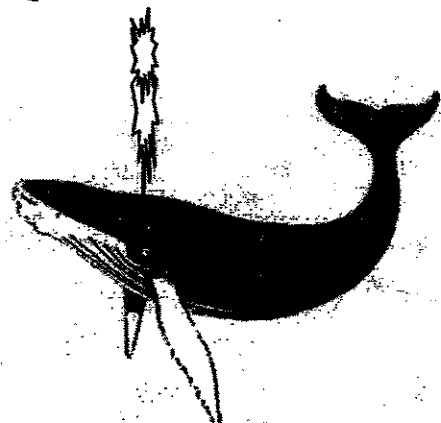
②



③



④



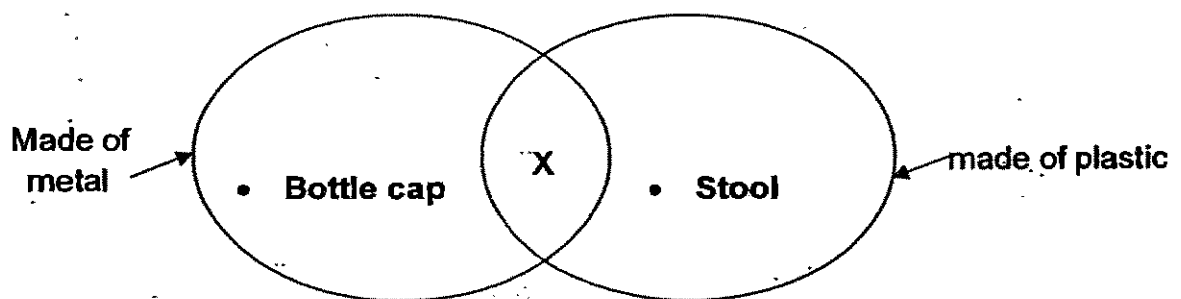
7. Which of the following statement(s) is/are true of both birds and insects?

- (A) All insects and birds can fly.
- (B) Both insects and birds lay eggs.
- (C) Both insects and birds have three body parts
- (D) All insects and birds have the same number of stages in their life cycles

- ☒ (1) A only
- ☒ (3) B only

- ☒ (2) C and D only
- ☒ (4) B and D only

8. Study the Venn diagram below.



What can object "X" be in the above Venn diagram?

- (1) Pillow
- ☒ (3) Frying pan

- (2) Cushion
- (4) Tennis ball

9. Which of the following properties of metal make it suitable for making gates?

- A : strong
- B : waterproof
- C: transparent
- D: good conductor of heat

- ☒ (1) A and B only
- ☒ (3) A, B and D only

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

10. Which one of the following is a form of matter?

- (1) Heat
(3) Sound

- (2) Light
(4) Smoke

11. Which of the following statements do not describe matter?

- (A) It has mass
(B) It occupies space
(C) It has a definite shape
(D) It has a definite volume

- (1) A and B only
(3) A and D only

- (2) C and D only
(4) B and C only

12. Which one of the following groups of matter consists of a solid, a liquid and a gas?

- (1) flour, rain, nitrogen
(3) milk, juice, oxygen

- (2) penguin, wire, electricity
(4) helium, steam, wine

13. A teacher left 150ml of tap water in a beaker on the table in the classroom. After two days he found that the amount of water left was likely to be _____.

- (1) 120ml
(3) 165ml

- (2) 150ml
(4) 180ml

14. Our skin feels more damp and stickier in the forest than in the desert because the _____ in the forest is higher than that of the desert.

- (1) humidity
(3) temperature

- (2) pressure
(4) rate of evaporation

15. When matter changes from one state to another, _____ is taken in or given off.

- ① air
③ heat

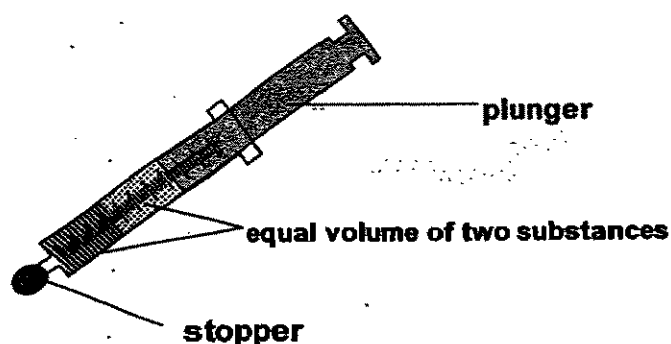
- ② gas
④ water

16. Which of the following cannot exist at a temperature below 100 °C?

- ① Ice
③ Steam

- ② Water
④ Water vapour

17. Four syringes P, Q, R, S each containing two substances. The diagram below shows one of the syringes. Each syringe contained 10cm³ of each substance making a total volume of 20cm³.



The table below shows the final volume for each syringe when the plunger is pushed until it cannot be pushed further.

Syringes	Total volume before plunger is pushed (cm ³)	Total volume after Plunger is pushed (cm ³)
P	20	20
Q	20	10
R	20	20
S	20	1

Which syringes could have contained a solid and a liquid?

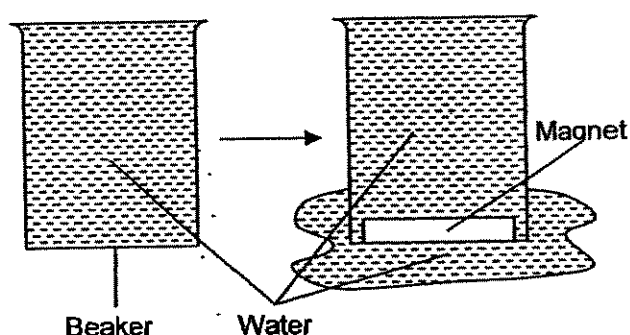
- ① P and R only
③ Q and R only

- ② Q and S only
④ P and S only

18. Which one of the following changes takes place when a candle is lit?

①	Liquid → Solid → Gas
②	Liquid → Gas → Liquid
③	Solid → Liquid → Gas
④	Solid → Gas → Liquid

19. Tom puts a bar magnet into a beaker of water that is filled to the brim. He then notices that water flows out from the beaker.



Which of the following statements explain why the water flows out of the beaker?

- (A) The magnet has a definite shape.
- (B) The magnet has a definite volume.
- (C) The magnet occupies space in the beaker.
- (D) The magnet is heavier than water.

① A and B only

② B and C only

③ C and D only

④ A and D only

20. A block of ice was placed on the ground. After some time a puddle of water could be seen where the block of ice was.

What had happened to the block of ice?

- (A) It had taken in heat
- (B) It had given out heat.
- (C) It had changed in state.

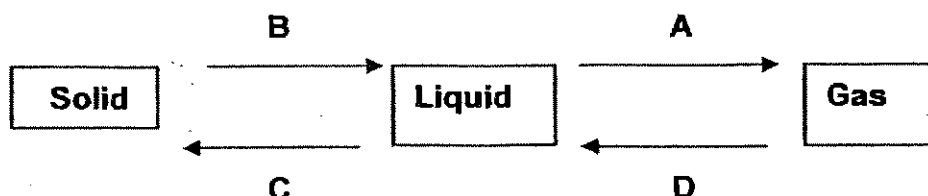
① A only

② A and C only

③ C only

④ B and C only

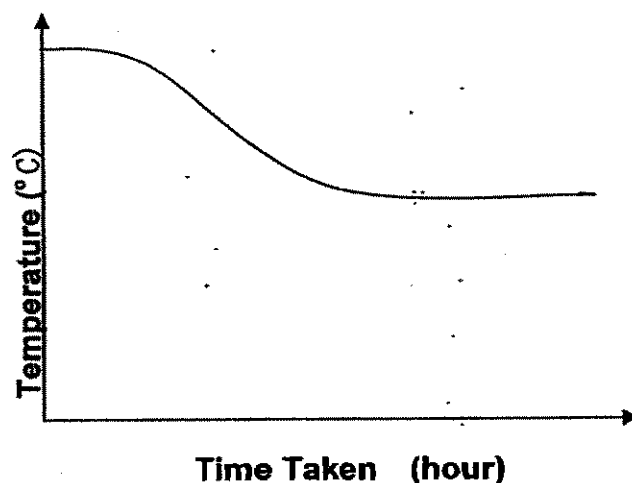
21. The diagram below shows four processes A, B, C and D involved in the change of the states of water.



Which one of the following option below correctly matches the 4 processes?

Processes	A	B	C	D
①	Melting	Condensation	Freezing	Evaporation
②	Condensation	Freezing	Melting	Evaporation
③	Melting	Evaporation	Condensation	Freezing
④	Evaporation	Melting	Freezing	Condensation

22. Study the line graph shown below.



Halim plotted the above line graph to show the change in temperature within an hour after he had carried out one of the following activities.

Which one of the following was the most likely activity?

- ① He left a pot of hot plain porridge to cool.
- ② Halim left a tray of tap water in the freezer.
- ③ A pot of vegetable soup being heated up by Halim.
- ④ A frozen chicken was taken out from the freeze by Halim.

23. Hsu Wei had a cup of water with the mass of 40g. He then added 2g of sand and 1g of sugar into the cup of water and stirred till all the sugar had dissolved. What was the total mass of the cup of water and the substances in it after all the sugar had dissolved?

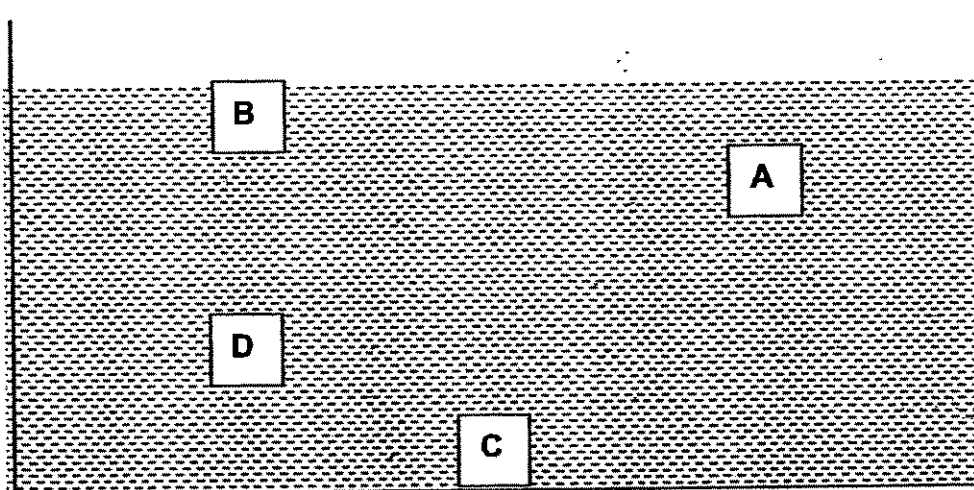
① 40g

② 41g

③ 42g

④ 43g

24. Four cubes A, B, C and D ^{of similar volume} are dropped into a container of water. Arrange the cubes according to mass from the biggest to the smallest.



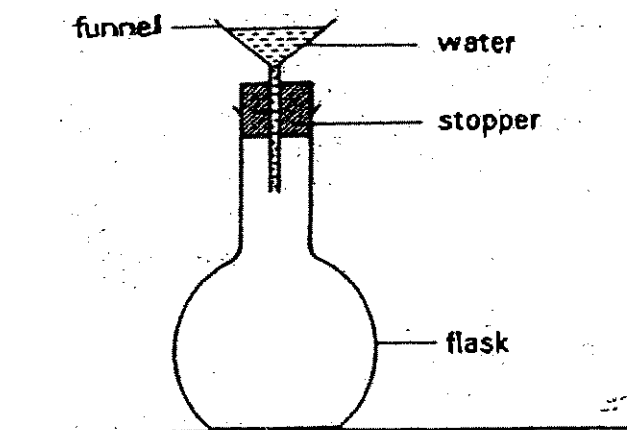
① A, B, C and D

② B, A, D and C

③ C, D, A and B

④ D, C, B and A

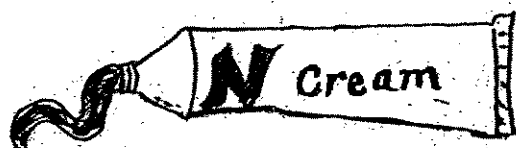
25. Mrs Gupta set up the experiment as shown in the diagram.
When she poured tap water into the funnel, she noticed that it stopped flowing into the flask after a short while.



What should she do to enable all the water in the funnel to flow into the flask?

- ① Loosen the rubber stopper.
- ② Pour hot water into the funnel.
- ③ Put the flask in a basin of cool water.
- ④ Pour the tap water into the funnel quickly.

26. The substance squeezed from the tube shown below has _____.

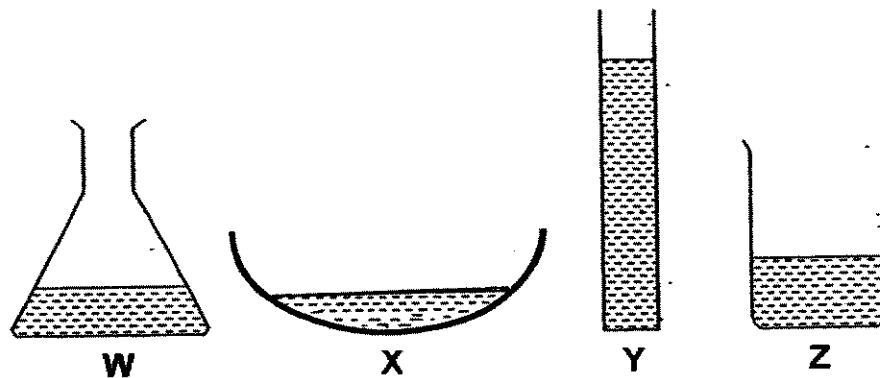


- ① mass and a definite shape.
- ② no mass but has definite volume.
- ③ a definite shape but no definite volume.
- ④ no definite shape and no definite volume

27. Which one of the following statements correctly shows the difference between a gas and a solid?

- (1) A gas has no mass but a solid has mass.
- (2) A gas does not occupy space but a solid occupies space.
- (3) A gas has no definite shape but a solid has a definite shape,
- (4) A gas has no definite volume but a solid has a definite volume.

28. Alison fills 4 different glass vessels W, X, Y and Z with an equal volume of water as shown the diagram below. She places the vessels side by side under the sun in the field.



After a few hours, which one of the glass vessels contains the largest amount of water.

- ① W
- ③ Y

- ② X
- ④ Z

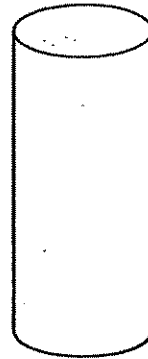
29. Hassim has 120ml of oxygen gas in a tank. He wants to transfer all the oxygen in the tank into another container. Which of the following container(s) A, B and C would be able to hold the 120ml of oxygen?

**A**

Volume: 100ml

**B**

Volume: 120ml

**C**

Volume: 140ml

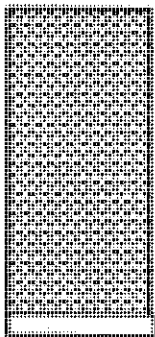
① A only

③ B only

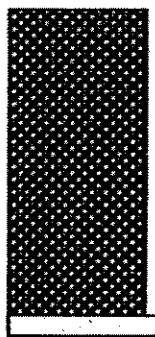
② B and C only

④ A, B and C

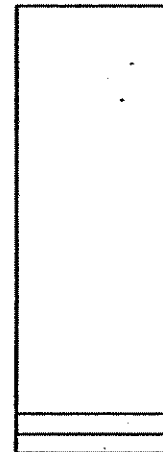
30. Mr. Lim completely filled 100cm^3 measuring cylinder with water. He completely filled up another 100cm^3 cylinder with small marbles. Next, he transferred all the water and marbles into a 250cm^3 measuring cylinder.



100cm^3 cylinder
filled with water



100cm^3 cylinder
filled with marbles



250cm^3 cylinder

The volume occupied by the water and marbles in the 250cm^3 cylinder is likely to be _____.

① 100cm^3 ③ 200cm^3 ② more than 200cm^3 ④ between 100cm^3 and 200cm^3

Name : _____ ()

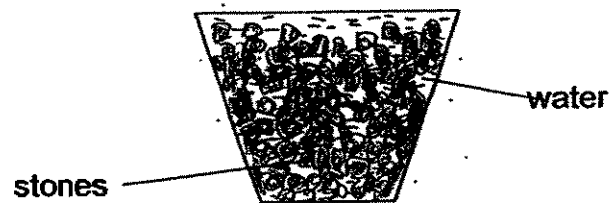
Date: _____

Class : Primary 4 ()

Section B (40 marks)

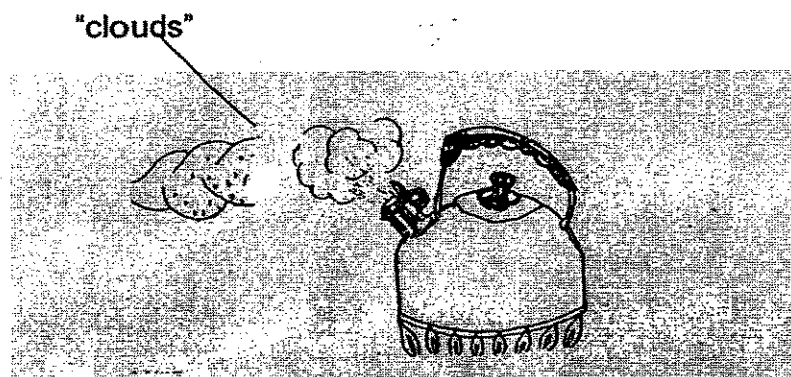
Write your answers to questions 31 to 46 in the spaces provided.
Marks will be deducted for misspelt key words.

31. The diagram below shows a container which was filled with stones and water.



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

b. If all the water was poured away and only the stones were left behind in the container. Name the states of matter left in the container now. (1 mark)



32. A kettle of water was boiling on the kitchen stove as shown in the diagram above. Sam and his mother commented on the following observations.

Sam: Mom, I can see the steam coming out of the kettle!

It is white in colour.

Mother: That is not steam, Sam.

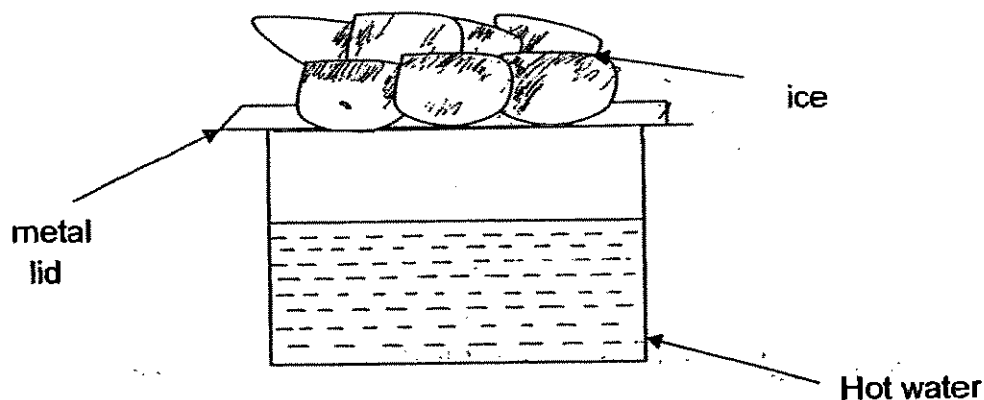
- a. Give the reason why Mother made that statement?

(1mark)

- b. Explain how the "clouds" that Sam saw was formed.

(2marks)

33. Allen set up an experiment as shown in the diagram below.

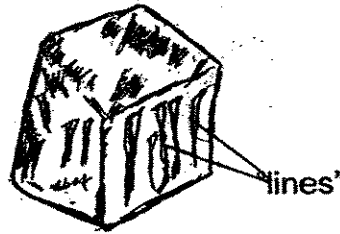


He placed a metal lid over the container of hot water. A few ice cubes were placed on top of the metal lid. After a while he noticed that some water droplets were formed.

- a. Draw the water droplets that Allen noticed in the above diagram. (1mark)
- b. Allen then used the same set-up but he added 6 tablespoons of salt on the ice cubes and he noticed that the water droplets were formed faster in the same amount of time.

Explain why the water droplets were formed faster? (2marks)

34. Keith took a cube of ice ~~from his~~ from his freezer. He then noticed that there were little "lines" inside it.



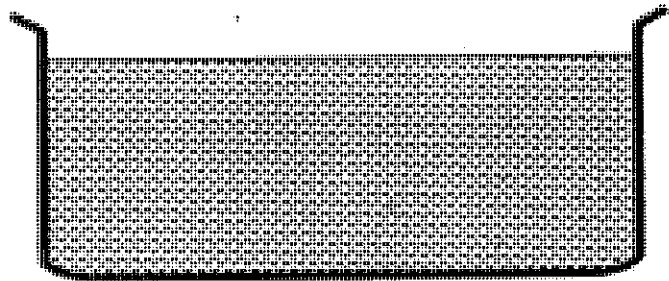
- a. What are those "lines" inside the ice cube? (1mark)
-

- b. How are the "lines" formed? (1mark)
-

35. Bala was told to carry out an experiment to show that there is air in the soil. He was given a pot of soil and a tank of water as shown below.



Pot of soil

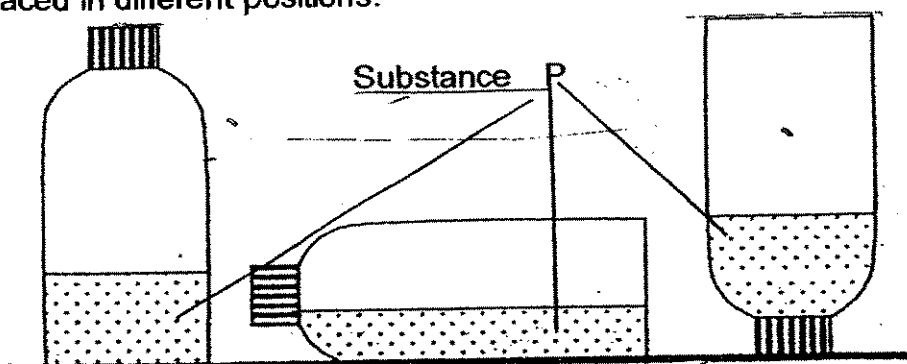


Tank filled with water

- a. Using what he was given how would he show that soil contains air? (1mark)
-

- b. What would he observe that shows that there is air in the soil? (1mark)
-
-

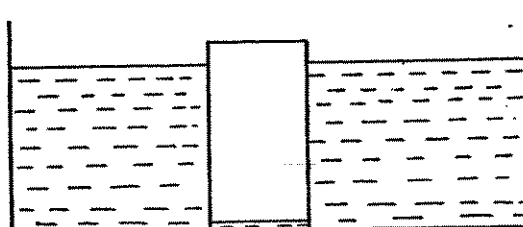
36. The diagram below shows the behaviour of substance P in a bottle. The bottle is then placed in different positions.



Based only on the above diagram, decide if the following statements about substance P are "True" "False" or "Not Possible to Tell" by putting a tick (✓) in the appropriate box.
(3marks)

	Statements	True	False	Not Possible To Tell
i)	P is a gas			
ii)	P is vinegar			
iii)	P has no definite volume			

37. Study the diagram below



Desmond inverted an empty glass into a basin of water. He noticed that the water did not enter the glass.

- a. Explain why the water did not flow into the glass.

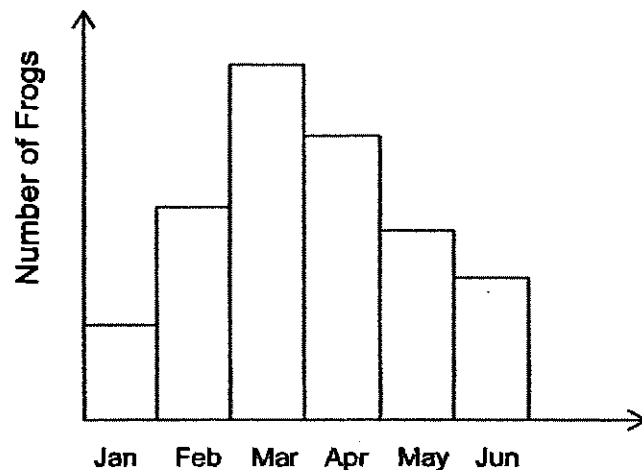
(1 mark)

- b. Keeping the glass below the water, how would he get the water into the glass? (1m)

38. Fill in each blank with the correct word. (2marks)

Water boils at _____ °C but it can evaporate at any temperature. The _____ and _____ points of water are at the same temperature which is _____ °C.

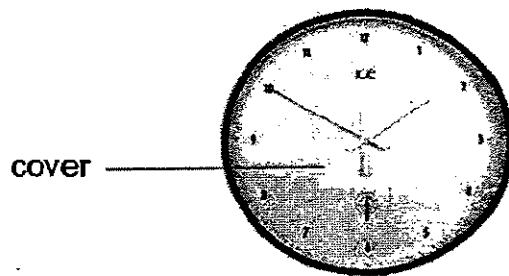
39. Larry was studying the frogs that lived in a pond. He drew the bar graph shown below to show the number of frogs found in the pond every month for six months.



- (a) The number of frogs increased from January to March.
Give one possible reason for the increase. (1 mark)

- (b) From the end of March to June, the number of frogs decreased.
Give one possible reason for the decrease. (1 mark)

40. The diagram below shows a wall clock with a cover made of material Z.



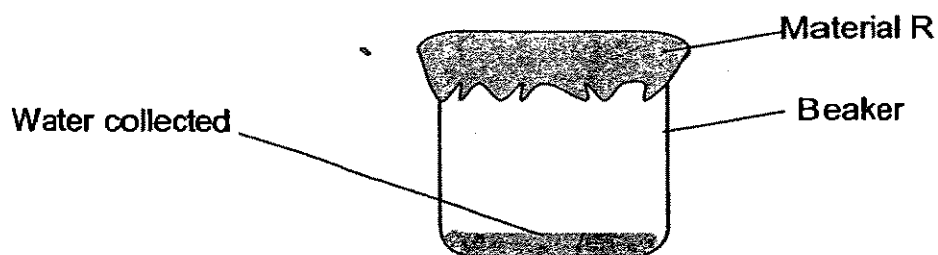
a. Suggest a material that Z could be.

(1mark)

b. Name one property of material Z that makes it suitable for its use.

(1 mark)

41. The diagram below shows an experiment that David conducted.



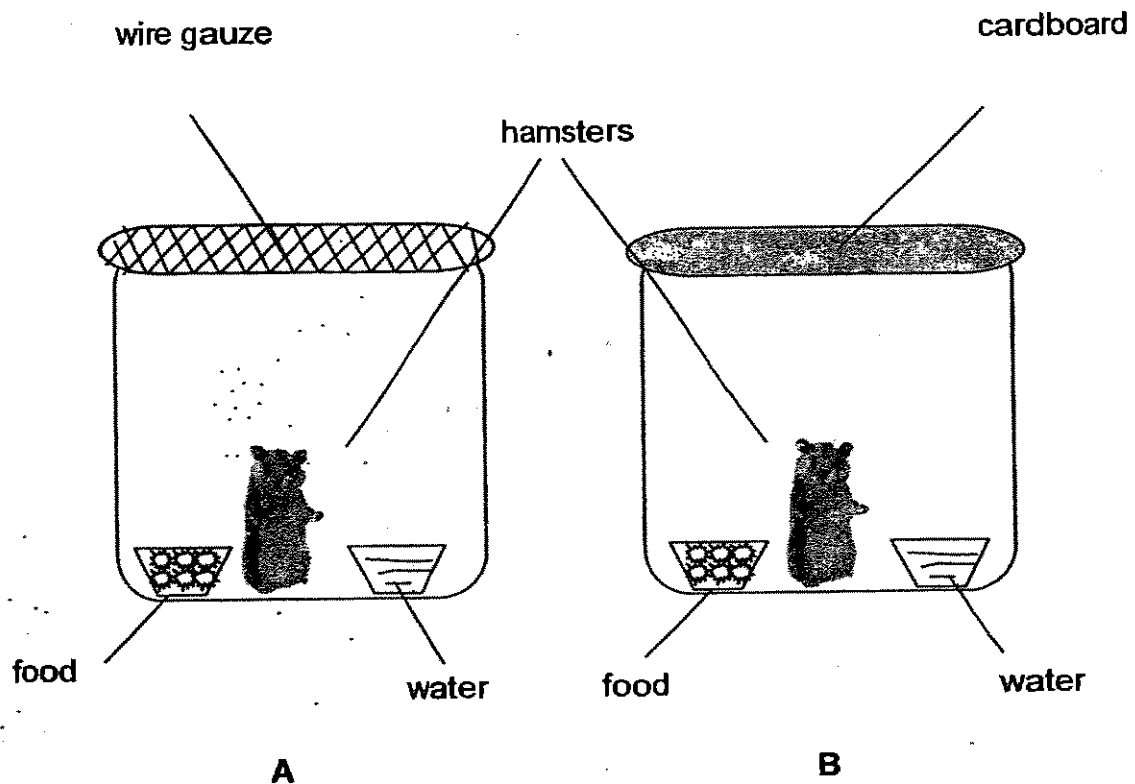
He tied a piece of material R over the mouth of a beaker before pouring 10ml of water onto the material. After 5 minutes, he carefully removed the material and measured the volume of water collected in the beaker. He repeated the experiment with 2 other pieces of materials S and T and recorded his results in the table below.

Material	Amount of Water Collected
R	9
S	6
T	1

a) Which material is most suitable for making raincoat? (1 mark)

b) Explain your choice for (a). (1 mark)

42. Two jars, A and B, each contains a hamster, a dish of food and a dish of water. A piece of wire gauze is wrapped over the mouth of Jar A. The mouth of Jar B is covered with a piece of cardboard. The hamsters are provided with a 2-week supply of food and water.



- (a) What will happen to both the hamsters after two days? (2 marks)

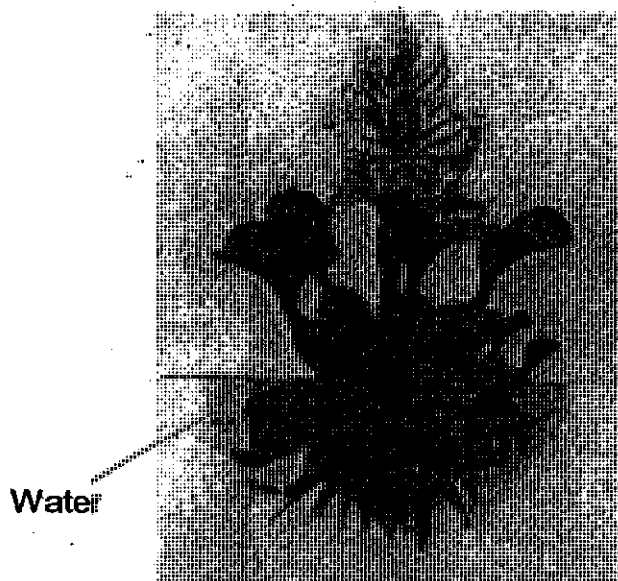
- (b) What does the above experiment show? (2marks)

43. a) Classify the plants in the box below into land and water plants. (2marks)

Cattail	Hydrilla
Hibiscus	Bougainvillea

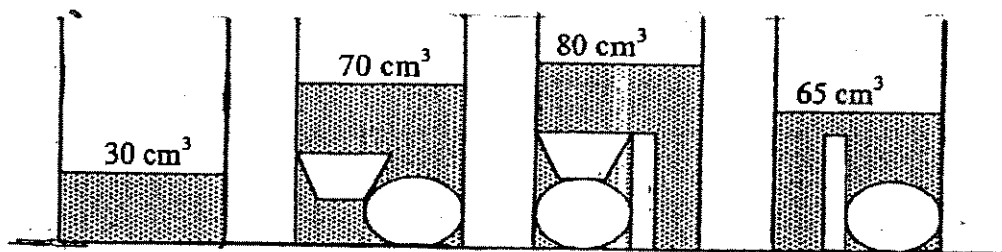
Land Plants	Water Plants

- b) The diagram below shows the roots of two plants.



State one similar function of the roots of both plants. (1mark)

44. a) Study the diagram below carefully.



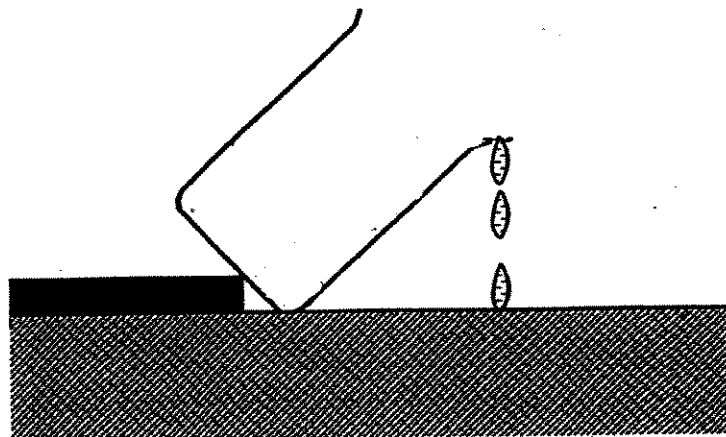
Three objects of different volumes were put into a beaker containing 30cm^3 water and the final water level in each case was shown above.

Arrange the objects according to their volumes from the smallest to the greatest by drawing the correct objects in the spaces below. (2marks)

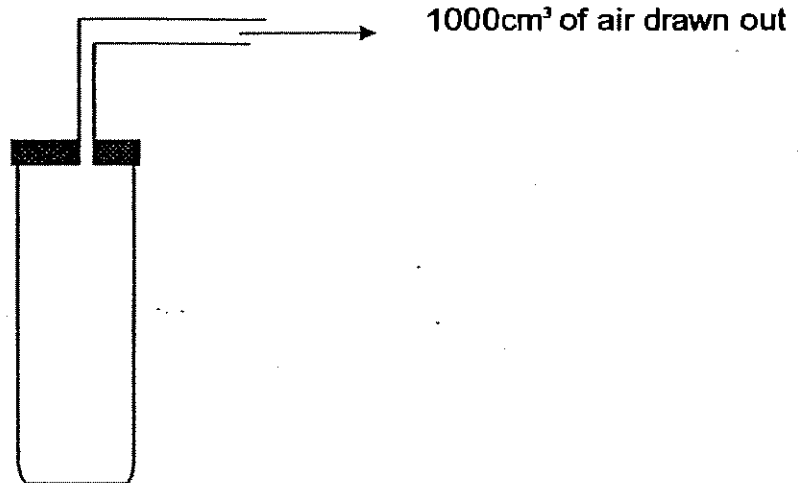
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b. The diagram below shows a tilted can of water.

Complete the diagram by drawing the water level in the can. (1 mark)



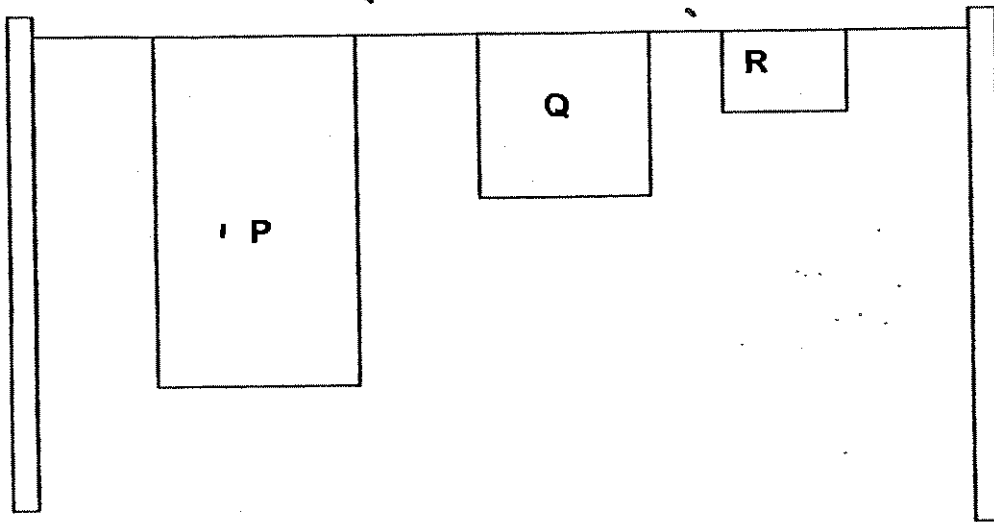
45. 1000cm^3 of air is drawn out from a hole on the cover of an 800cm^3 glass cylinder. The hole was immediately sealed after the air was drawn out.



- a. What is the volume of air in the glass cylinder after 1000cm^3 of air has been drawn out? (1mark)
-

- b. What properties of air is shown in the above experiment? (1mark)
-

46. Three wet towels P, Q and R of the same material and size were hung to dry in the sun. Towel P was fully opened, towel Q was folded once and towel R was folded twice as shown in the diagram below.



- a. Towel _____ dried the slowest because _____

(2marks)

- b. State another condition that could have helped to dry the three towels faster. (1mark)

End of paper
Please check your papers



ANSWER SHEET

NANYANG PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007
CONTINUAL ASSESSMENT (1)

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

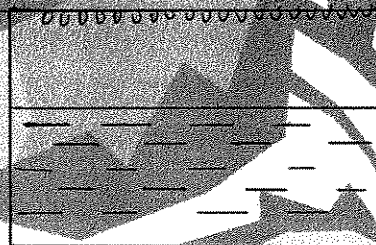
31) a) Solid and liquid.

b) Solid and gas.

32) a) Steam is invisible.

b) The water in the kettle before it boiled has tiny pockets of air. Hence, after it boils, it will rush out as water vapour and touches the cool surroundings and condenses in to the 'clouds' which are tiny drops of water.

33) a)



b) The salt that was added to the ice decreases the temperature to fall below 0°C . Therefore, water vapour will touch the cooler surface of the metal lid and condensates back in to water droplets faster.

34) a) Those 'lines' inside the ice cubes are air bubbles.

b) The air bubbles are trapped within the ice cubes during freezing.

35) a) He can put the pot of soil in to the tank filled with water.

b) There will be air bubbles coming out of the water.

36) ai) False ii) Not iii) False

37) a) Air occupies space in the glass.

b) He can tilt the glass to let the air escape and water can flow to take up the space previously occupied by the air.

38) 100°C, freezing, melting, 0

39) a) The frogs reproduced.

b) The frog died.

40) a) Glass

b) Glass is transparent.

41) a) Material T.

b) The least amount of water was collected in the beaker.

42) a) Hamster A will still be alive but hamster B will die.

b) Living things need air.

43) a) Land Plants: Hibiscus, Bougainvillea

Water Plants: Hydrilla, Cattail

b) The roots take in water for the plants.

44) a)



b)



45) a) 800cm³

b) Air has no definite volume.

46) a) Towel R dried the slowest because it was smallest exposed surface area.

b) Low humidity.

**ANGLO-CHINESE SCHOOL
(PRIMARY)**

MID-YEAR EXAMINATION 2007

SCIENCE

BOOKLET A

Name: _____ ()

Class: Primary 4 _____

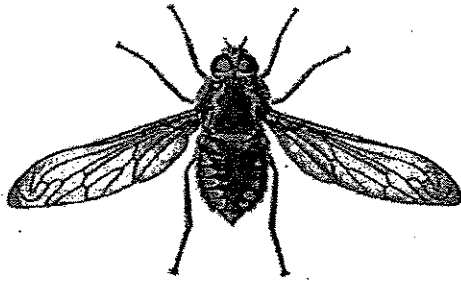
Date: 10th May 2007

Duration of paper: 1 h 45 min

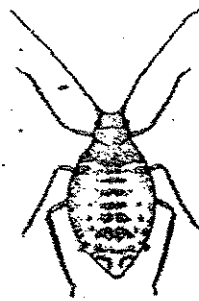
**THIS BOOKLET CONTAINS 17 PAGES.
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

1 Which of the animals below is **NOT** an insect?

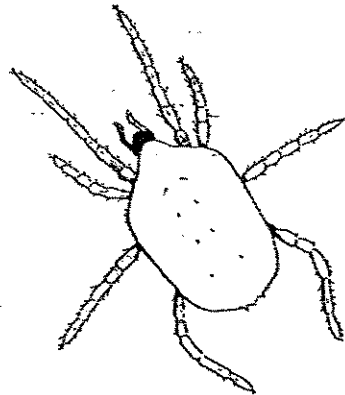
(1)



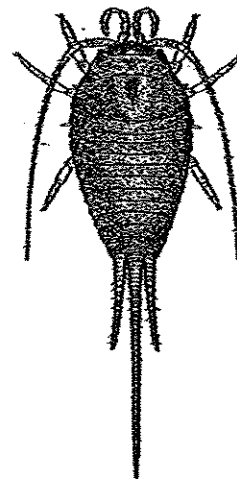
(2)



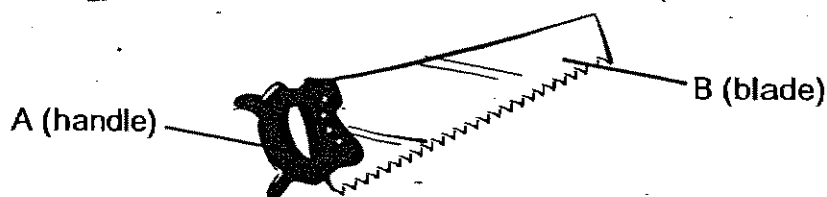
(3)



(4)



2 The tool shown in the diagram below is used for sawing wood.

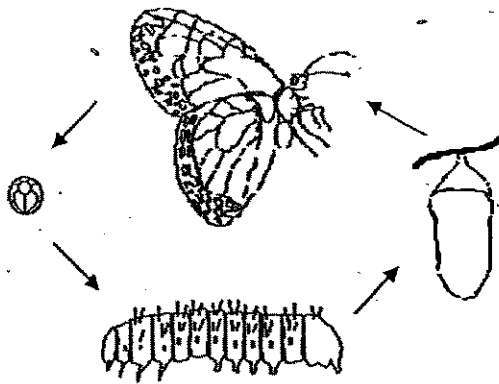


What materials are most suitable to make A and B?

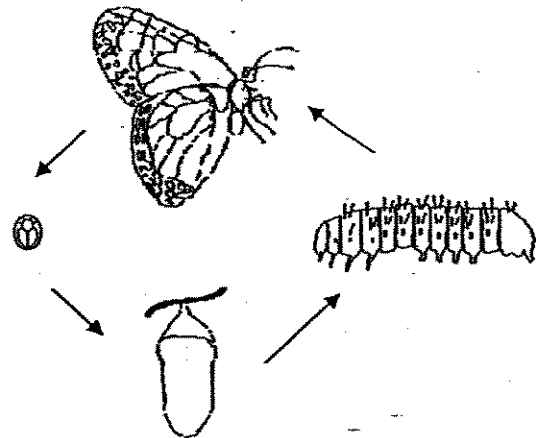
	A	B
(1)	plastic	metal
(2)	wood	glass
(3)	glass	metal
(4)	plastic	wood

3 Which of the following shows the correct life cycle of an insect?

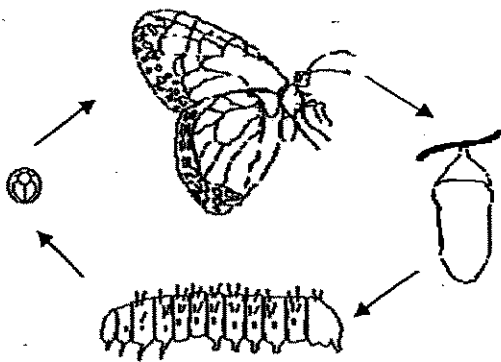
(1)



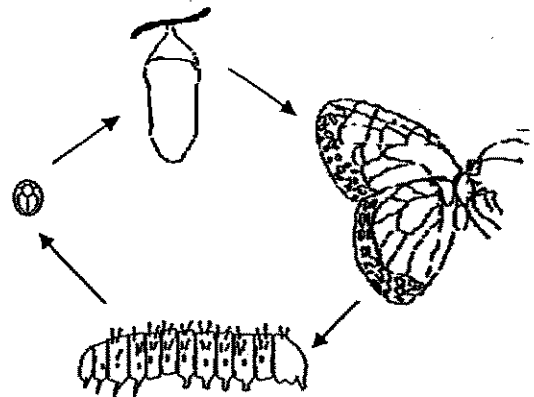
(2)



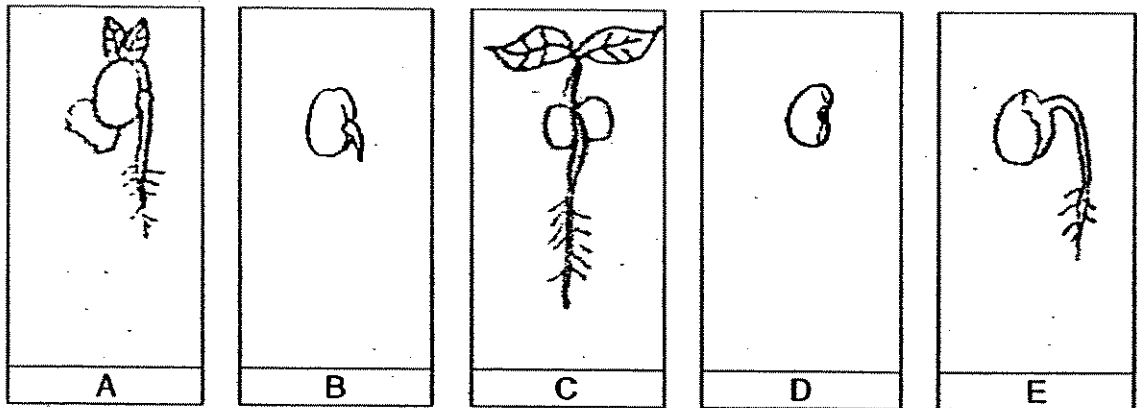
(3)



(4)

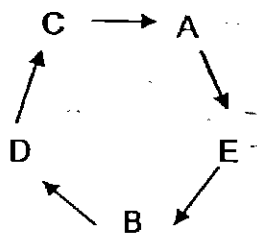


4 The picture below shows the different stages of the growth of a bean seed.

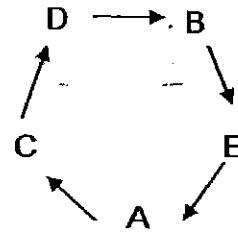


Which of the following shows the correct order of growth?

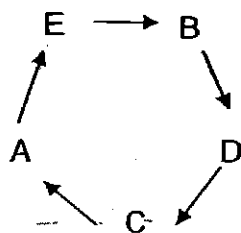
(1)



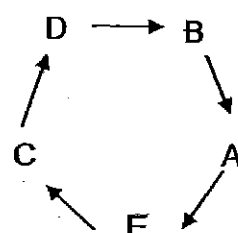
(2)



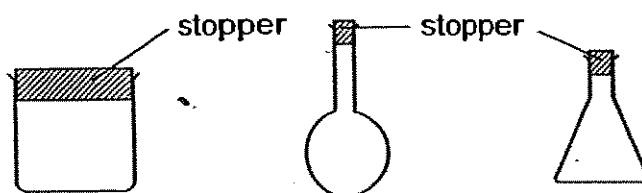
(3)



(4)

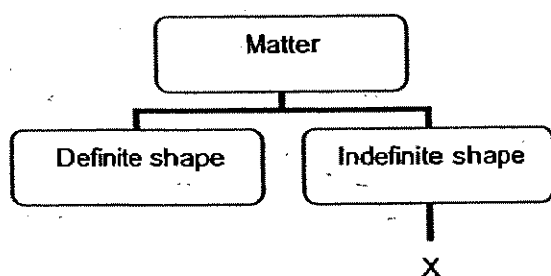


- 5 May filled each of the containers shown below with X. She noticed that X took the shape of all the containers

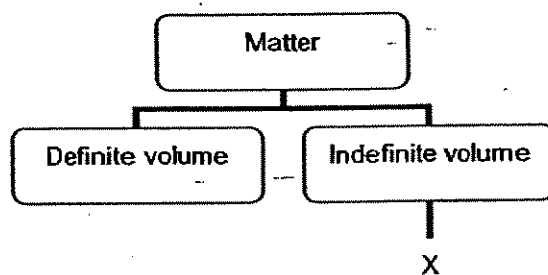


Based on the information above, which of the following charts **DOES NOT** show a possible classification for X?

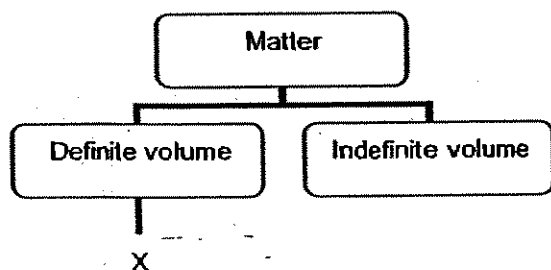
(1)



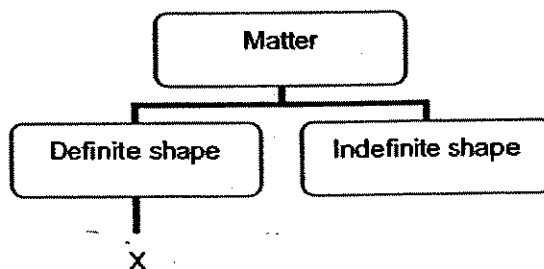
(2)



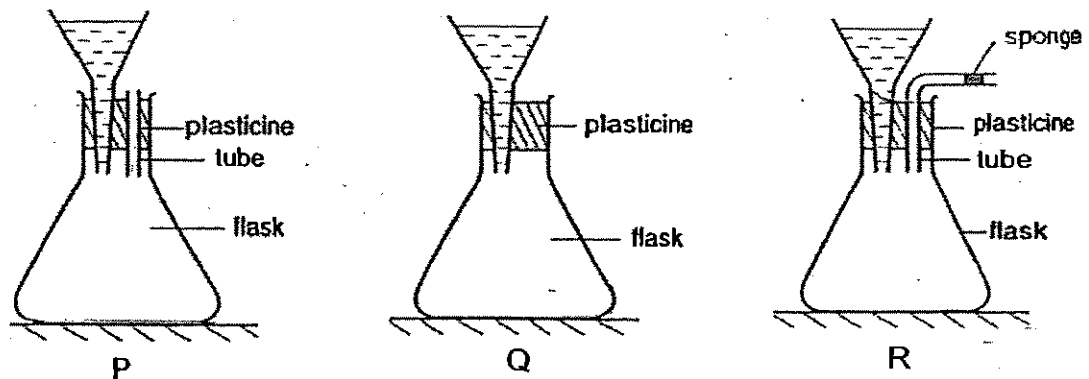
(3)



(4)

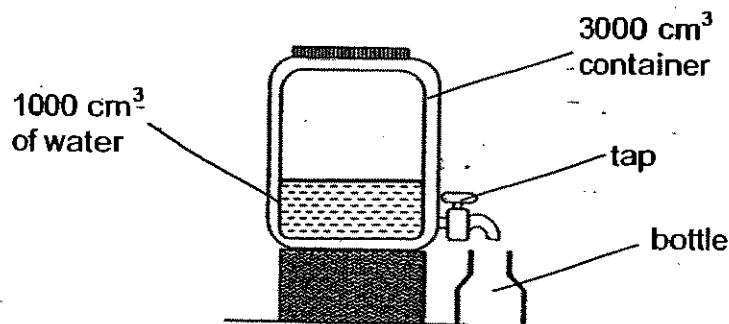


- 6 Lydia set up P, Q and R as shown below using similar funnels and flasks for each set-up. The mouth of each flask was sealed with plasticine. Same amount of water was poured into the funnels at the start of the experiment. She wanted to find out which flasks would collect the most water after 5 seconds.



Arrange the set-ups, P, Q and R according to the amount of water collected in the flask from the least to the most.

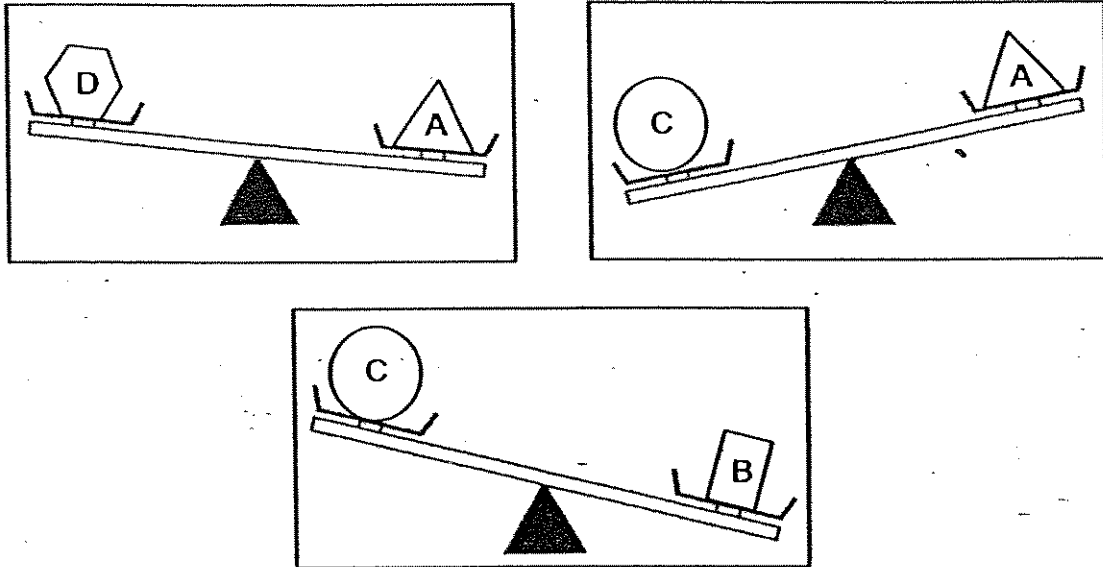
- (1) P, R, Q
 - (2) P, Q, R
 - (3) Q, R, P
 - (4) R, P, Q
- 7 The diagram below shows a water container holding 1000 cm^3 of water. The capacity of the container is 3000 cm^3 .



When the tap of the container is turned on and off, 500 cm^3 of water is collected in the bottle. What is the final volume of air in the container?

- (1) 1500 cm^3
- (2) 2000 cm^3
- (3) 2500 cm^3
- (4) 3000 cm^3

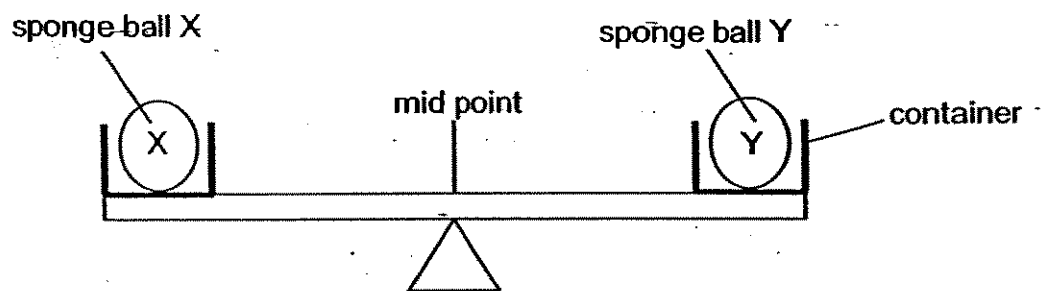
8 Muthu compared the objects A, B, C and D on balances as shown below.



Arrange the objects, A, B, C and D according to their masses from the lightest to the heaviest.

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

9 An experiment was carried out with two identical sponge balls, X and Y, a ruler and a triangular support. At the beginning, the sponge balls balanced each other on the ruler placed with its mid point on the support as shown in the diagram below.

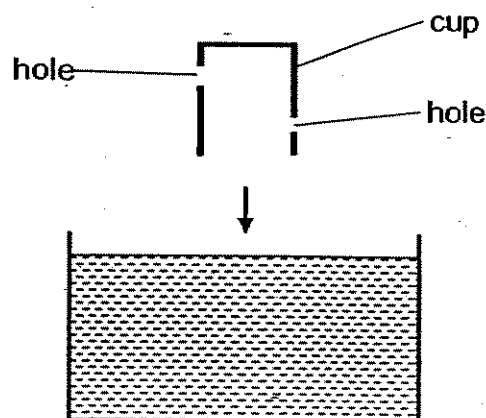


When one of the balls was soaked in water and put on the ruler, the ruler tilted in the direction of the soaked ball.

Based on this experiment, what can you infer?

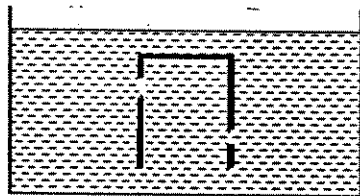
- (1) Water has mass.
- (2) Water takes up space.
- (3) X occupies more space than Y.
- (4) Air in the sponge balls have mass.

- 10 Two holes are made on the sides of a plastic cup as shown in the diagram below. The cup is then pushed vertically into a basin of water.

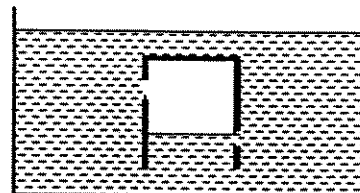


Which one of the diagrams below correctly shows the water level in the cup?

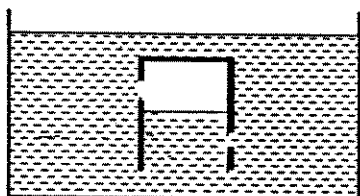
(1)



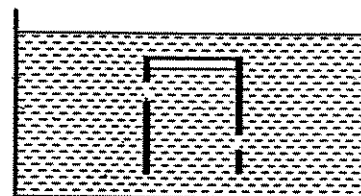
(2)



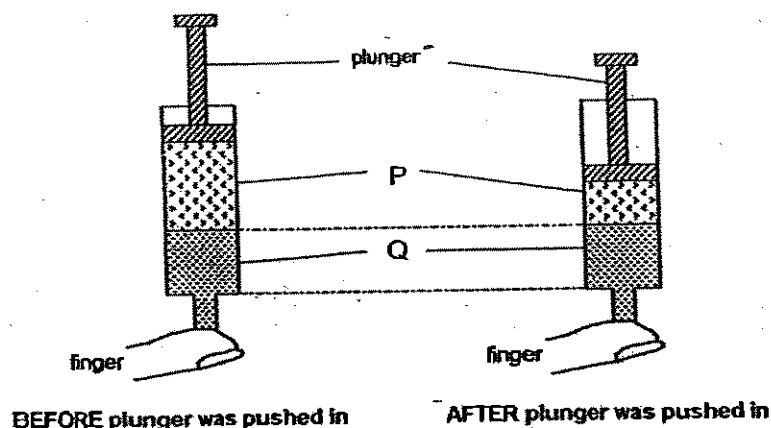
(3)



(4)



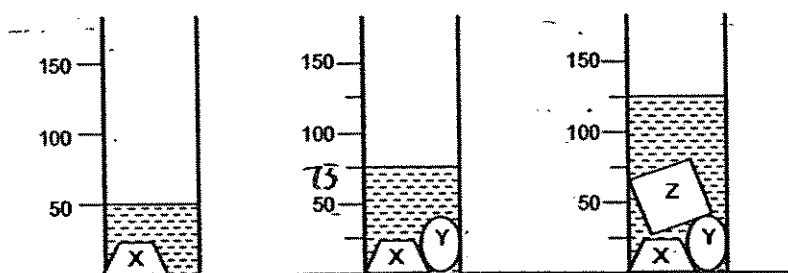
- 11 Amanda filled a syringe with two substances, P and Q. The diagrams below show the syringe before and after the plunger was pushed in.



Which one of the following would most likely be P and Q?

	P	Q
(1)	Oil	Salt
(2)	Rice	Oxygen
(3)	Nitrogen	Water
(4)	Flour	Water vapour

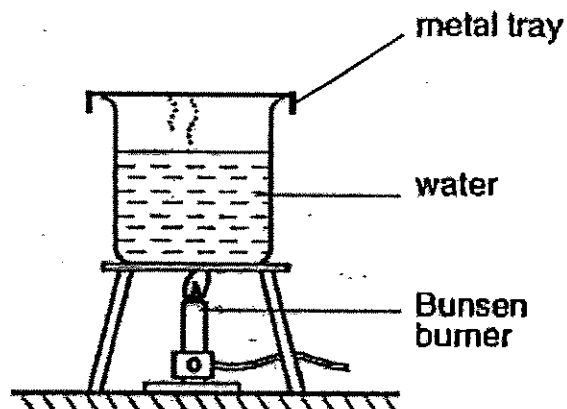
- 12 Mustafa has 3 objects, X, Y and Z. First he put X into a measuring cylinder with 30ml of water. The water level rises. Then he put object Y and Z into the same measuring cylinder. The diagram below shows the changes in water level as each object is put in.



Based on the diagrams above, we can conclude that the volume of water is greater than the volume of _____.

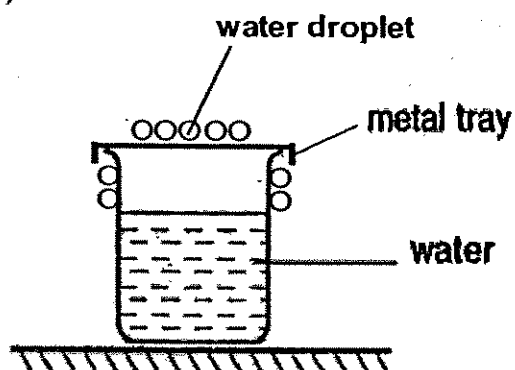
- (1) X only
- (2) Y only
- (3) X as well as Y only
- (4) X, Y as well as Z

- 13 In an experiment, a metal tray was used to cover a beaker of heated water as shown below. The beaker and the metal tray were then removed from the tripod stand and were left on a table.

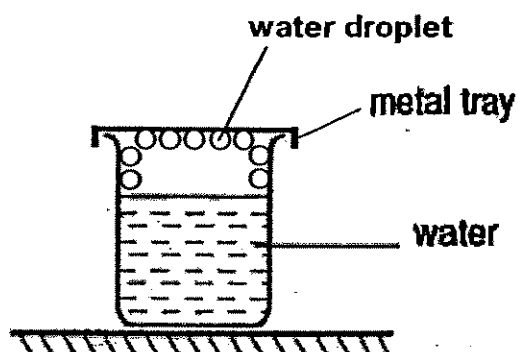


After 2 minutes, which of the following can be observed?

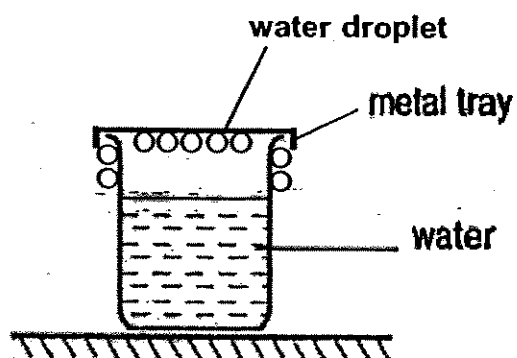
(1)



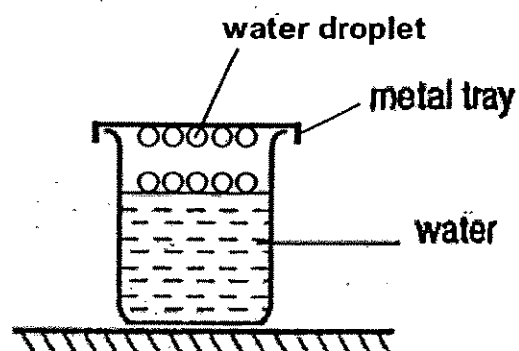
(2)



(3)

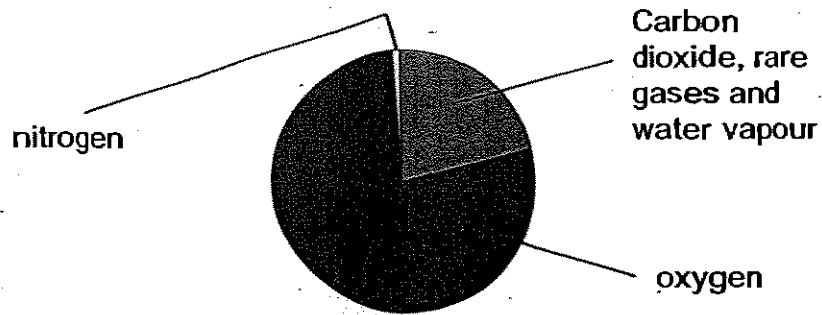


(4)

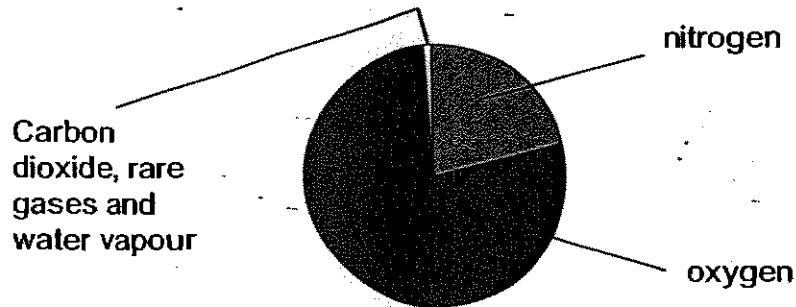


14 Which of the following pie charts shows the correct proportion of different gases in the atmosphere?

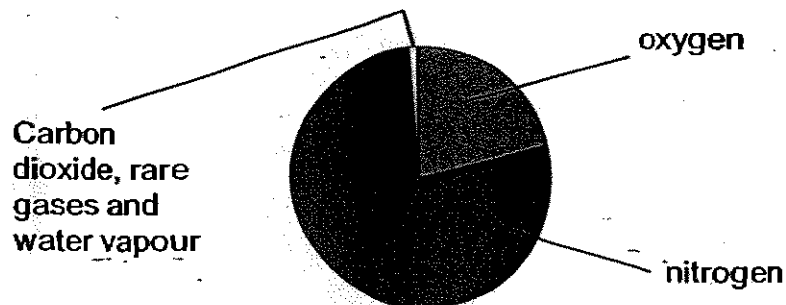
(1)



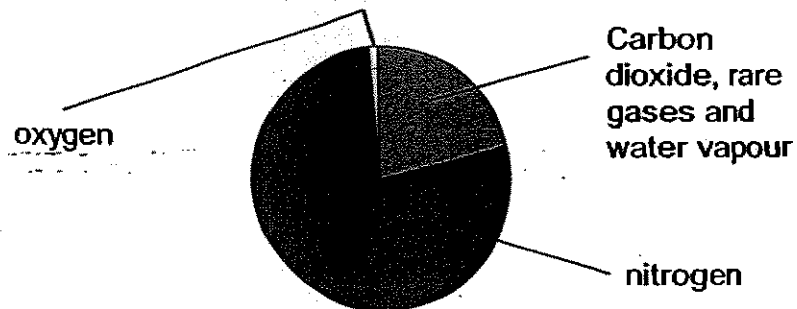
(2)



(3)



(4)



- 15 Matthew was trying to find out if the type of soil affects the growth of money plants. The table below shows the set-ups available for the test.

Set-up	Type of soil	Number of money plant	Amount of water given (ml)	Location of experiment
A	Sand	1	30	Sunny place
B	Garden soil	2	10	Sunny place
C	Clay	1	20	Shady place
D	Sand	2	10	Shady place
E	Garden soil	1	30	Sunny place
F	Clay	2	20	Shady place

Which two set-ups should he use to conduct a fair test?

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

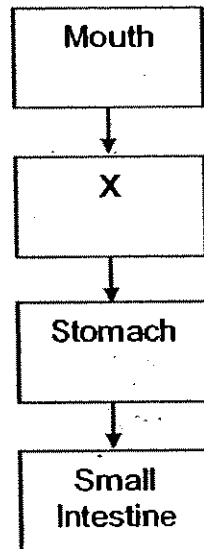
- 16 Joshua wanted to find out the rate of evaporation at two different locations of his neighbourhood. He emptied a 50ml bottle of water at each location to create 2 puddles. He then observed the 2 puddles of water and noticed that puddle A dried up faster than puddle B.

Which of the following are possible reasons for this?

- A: Puddle B has a smaller exposed surface area than puddle A.
 B: Puddle B was under the shade while puddle A was under direct sunlight.
 C: Puddle B was in the path of wind while puddle A had little wind.

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

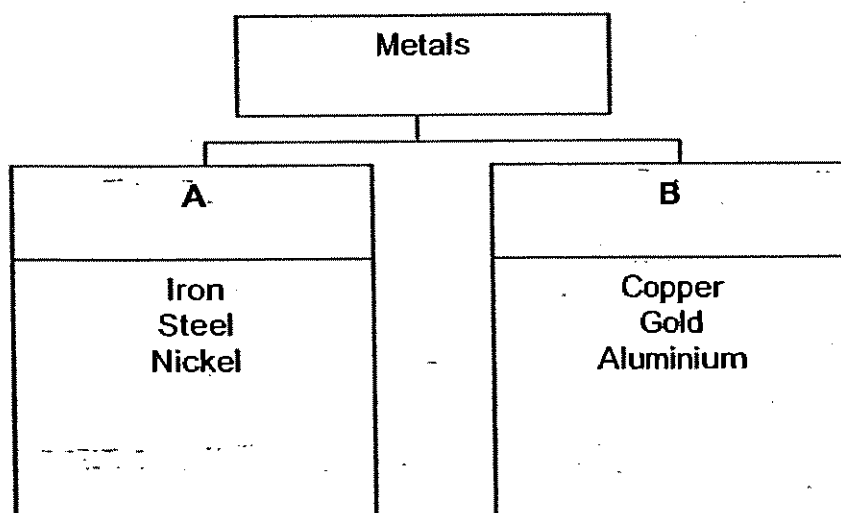
17 The following flowchart shows how food travels in the body during digestion.



Which part of the body does "X" best represents?

- (1) Nose
- (2) Gullet
- (3) Lungs
- (4) Windpipe

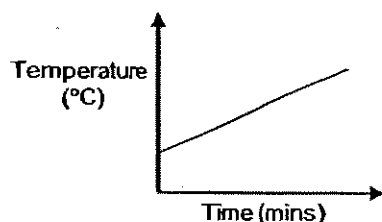
18 Saad created the following classification chart.



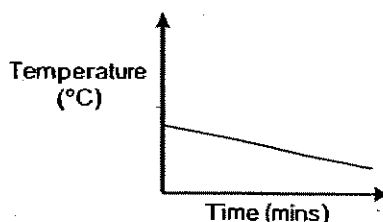
Which of the following titles are most suitable for this chart?

	A	B
(1)	Weak	Strong
(2)	Bendable	Not bendable
(3)	Magnetic	Non-magnetic
(4)	Non-Shiny	Shiny

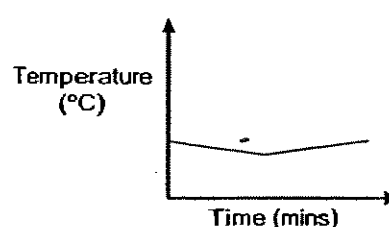
19 The following graphs record the temperature of water over a period of time.



Graph A



Graph B

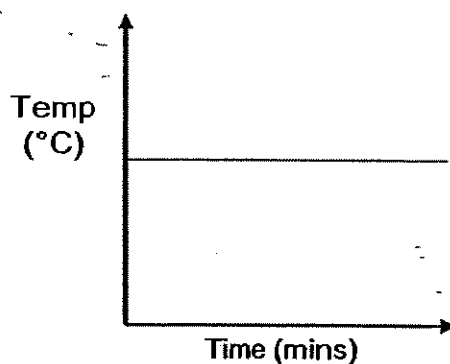


Graph C

In which of the graph(s) above would evaporation have taken place?

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

20 A beaker of water was placed over a bunsen burner for 10 minutes and the temperature of the water was recorded in the graph below.



At the start of the experiment, the beaker contained _____.

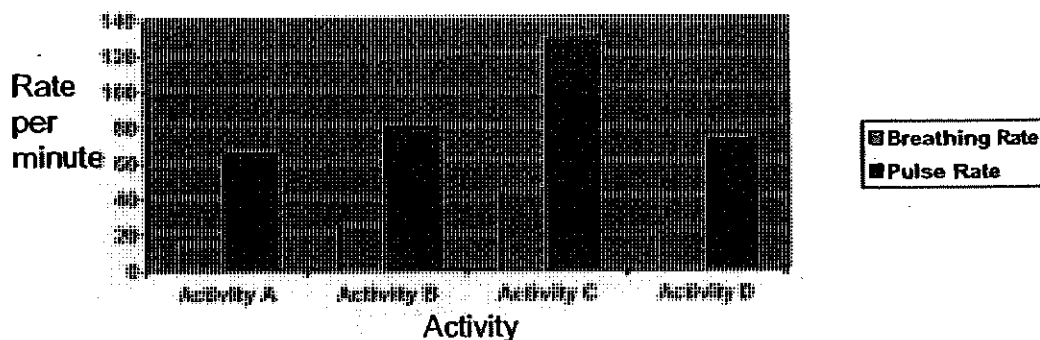
- (1) boiling water
- (2) ice and water
- (3) water at 50°C
- (4) water at room temperature

- 21 Four similar beakers containing the same amount of water were placed at four different locations, A, B, C and D. The conditions for each of the location are stated in the table below.

Factor	Location			
	A	B	C	D
Amount of sunlight	Some	A lot	Little	Some
Humidity level	Low	Low	High	Medium

Which of the following correctly lists the evaporation from the quickest to the slowest?

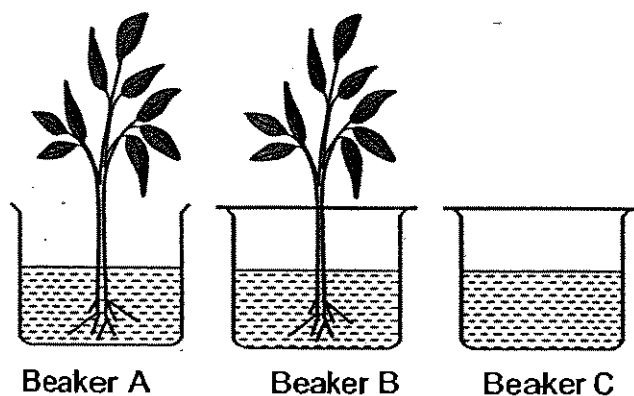
- (1) B, A, D, C
 - (2) B, D, C, A
 - (3) C, D, A, B
 - (4) A, D, C, B
- 22 The graph below shows Amos' breathing rate and pulse rate as he performed various activities. The four activities are: a normal night sleep, playing a soccer match, watching television and walking home from school.



Based on the graph above, which activity would best show Amos having a normal night sleep?

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

- 23 Jonathan setup 3 identical beakers with the same amount of water, under the sun, as shown below. After 3 hours, he measured the amount of water in each beaker.



What is the amount of water left in the beakers in descending order?

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

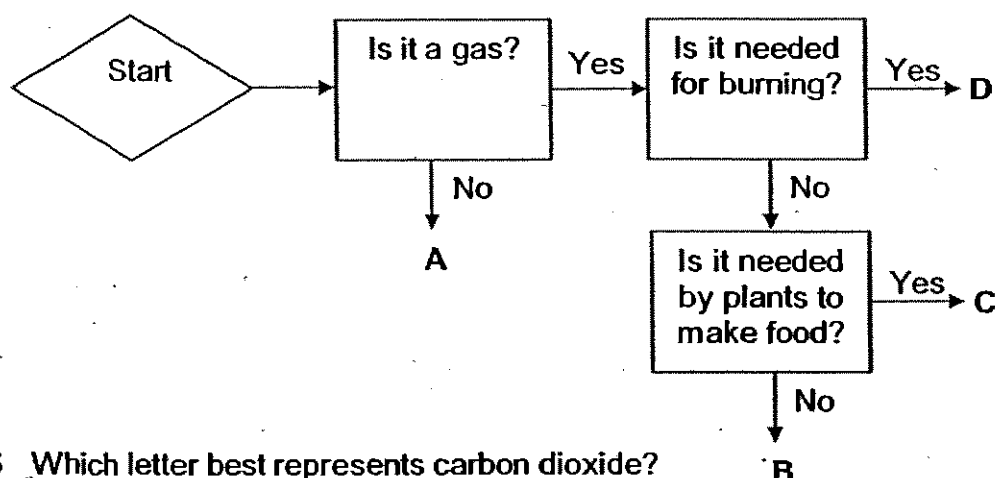
- 24 Wesley conducted a test based on the variables, as shown in the table below.

	Set-up A	Set-Up B	Set-Up C
Presence of wind	High	High	High
Amount of water	50 ml	50 ml	50 ml
Temperature of water	40°C	20°C	Room temperature
Humidity	Low	Low	Low

His most likely aim was to find out whether the _____.

- (1) amount of water affects the rate of evaporation
- (2) presence of wind affects the rate of evaporation
- (3) temperature of water affects the rate of evaporation
- (4) humidity of the surrounding affects the rate of evaporation

Study the flowchart below and answer Question 25 and 26.



25 Which letter best represents carbon dioxide?

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

26 Which letter best represents mist?

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

27 Four similar towels, each having a surface area of 100cm^2 , were soaked with 25ml of water and left to dry on a laundry line. They were folded in several different ways and the time taken for each towel to dry was recorded in the table below.

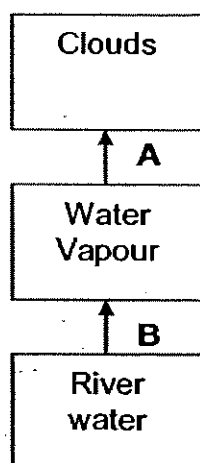
Towel	Exposed surface area (cm^2)
A	50
B	20
C	25
D	40

If the test were a fair one, which of the following variables were kept constant at the start of the experiment?

- A: Wetness of towel
- B: Location of experiment
- C: Exposed surface area of towel

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

- 28 The following flowchart shows the change in the state of water as part of the water cycle.



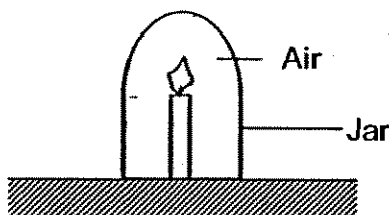
What could A and B represent?

	A	B
(1)	evaporation	evaporation
(2)	evaporation	condensation
(3)	condensation	evaporation
(4)	condensation	condensation

- 29 Which one of the following statements about our skeletal system is **FALSE**?

- (1) It gives us our shape.
- (2) It helps support our body.
- (3) It carries blood around the body.
- (4) It protects the internal organs of our body.

- 30 The diagram below shows a burning candle in a jar filled with atmospheric air.



What would be the changes to the mass of the gases in the air after the flame has burnt out?

	Nitrogen	Oxygen	Carbon dioxide
(1)	No change	More	Less
(2)	More	Less	No change
(3)	Less	Less	Less
(4)	No change	Less	More

**ANGLO-CHINESE SCHOOL
(PRIMARY)**

MID-YEAR EXAMINATION 2007

SCIENCE

BOOKLET B

Name: _____ ()

Class: Primary 4 _____

Date: 10th May 2007

Duration of paper: 1 h 45 min -

Parent's Signature

Booklet	Maximum marks	Marks obtained
A	60	
B	40	
Total	100	

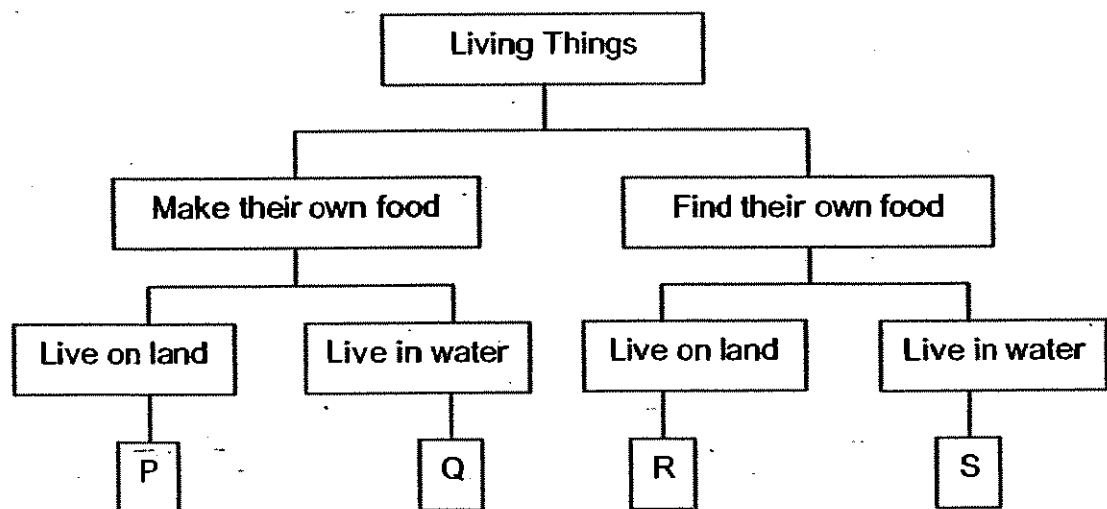
**THIS BOOKLET CONTAINS 10 PAGES.
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

- 31 John's robotic dog can run and bark when he touches its head.
He says his robotic dog behaves like a living thing.

(a) Based on the description above, write down one characteristic of living things which John's robotic dog shows. [1]

(b) Name 3 basic things living things need to survive but John's robotic dog does not need. [2]

- 32 A group of living things, P, Q, R and S are classified in the chart below.
Use the information in the chart to answer the questions.

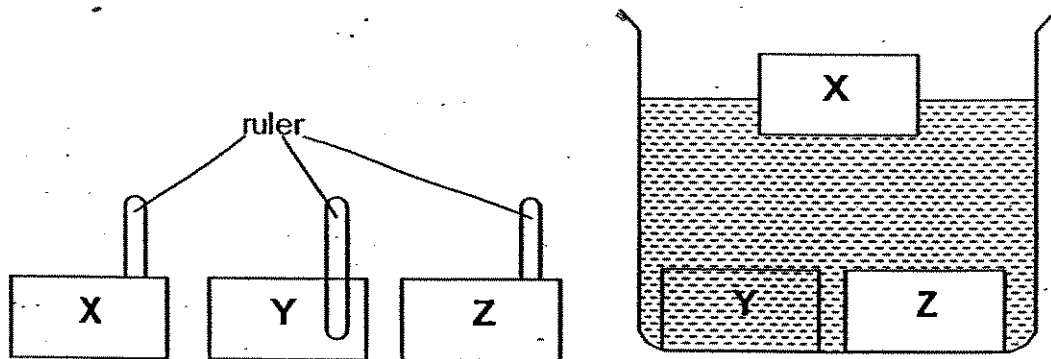


(a) How are living things R and S similar? [1]

(b) How are living things P and R similar? [1]

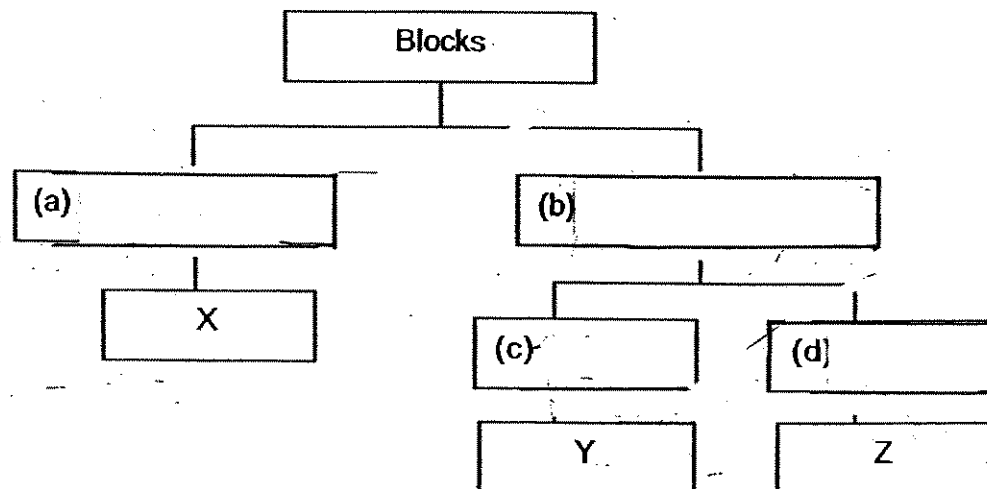
(c) How is Q different from S? [1]

- 33 There are three blocks, X, Y and Z. They are made of different materials. The following diagrams show the observations when a similar ruler is placed behind each block and when the three blocks are dropped in a tank of water.



Based on the above observations, the three blocks can be classified as shown below. Complete the chart by filling in the blank boxes with the correct headings.

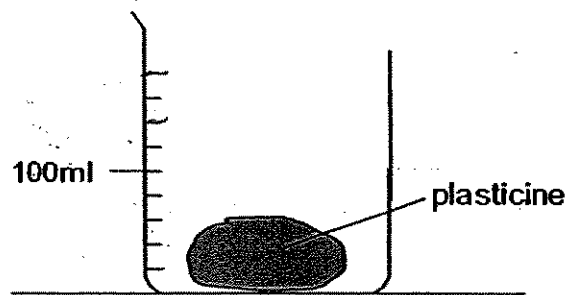
[2]



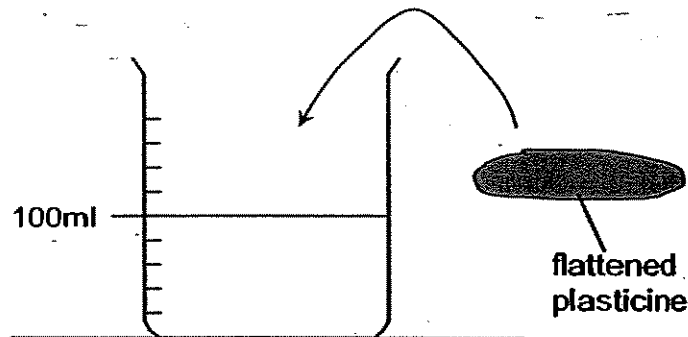
- 34** Jamal lowered a lump of plasticine into a beaker containing 100ml of water. The volume of plasticine was 40cm^3 .

(a) Draw the water level in the diagram below.

[1]



- (b) He then took the same amount of plasticine and flattened it before he lowered it into another beaker containing 100ml of water as shown below.



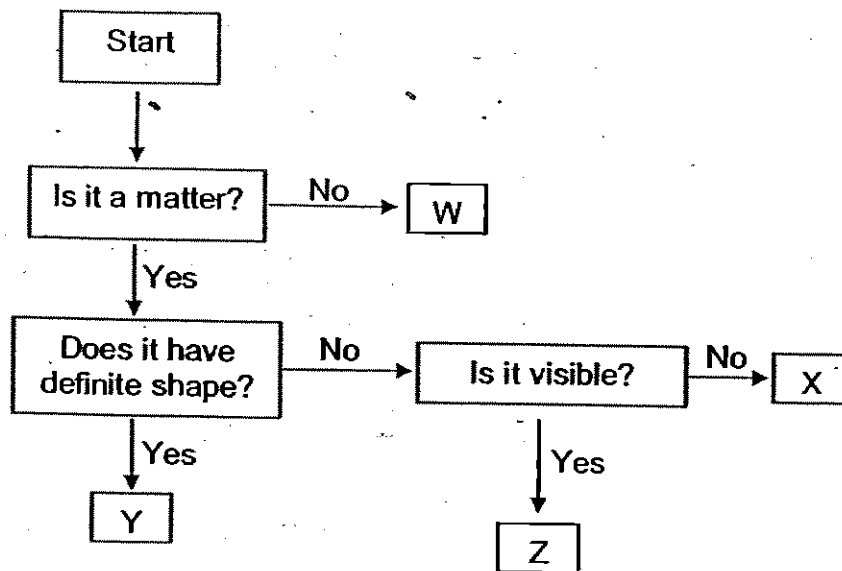
What would be the new water level when he lowered the flattened plasticine into the beaker gently?

[1]

- (c) What does (a) and (b) show us about the property of plasticine?

[1]

- 35 The chart below classifies things into 4 groups, W, X, Y and Z according to their properties.



- (a) Write the words "petrol", "noise", "steam" and "ice" against the group they belong to. [2]

W: _____

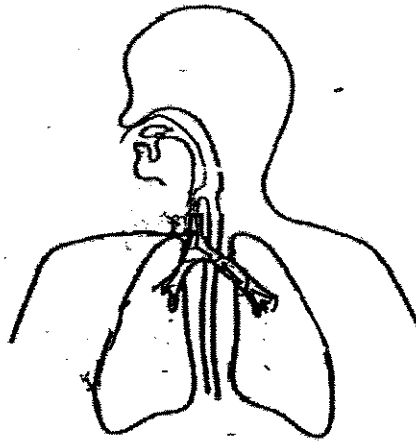
X: _____

Y: _____

Z: _____

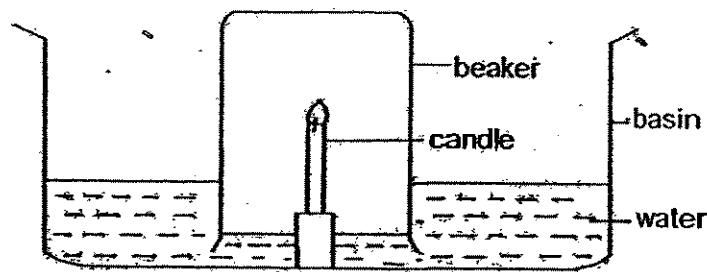
- (b) Name one difference between Y and X. [1]

36 The diagram below shows part of the human respiratory system.



- (a) In the diagram above, label clearly the part that allows air to flow from the nostrils to the lungs. [1]
- (b) Draw arrows to show the complete movement of air as you breathe in. [1]
- (c) A mirror turns misty when you breathe into it. What does that tell you about the air you breathe out? [1]

37 Study the diagram below.



(a) What will happen to the candle flame in the beaker after 15 minutes? [1]

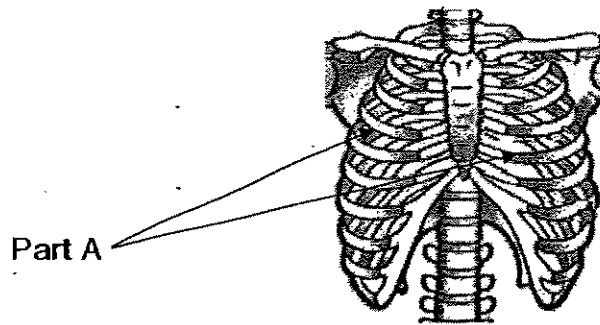
(b) Explain your answer in (a)? [1]

(c) What will happen to the water level in the beaker? [1]

38 Fill in the blanks with the most suitable words. [2]

Our bones are stiff and hard but light. They cannot _____. Hence, all our bones are connected with joints. Examples of joints are: ball and socket joint, and _____ joint. The muscular system works together with the _____ system to enable us to _____ our body.

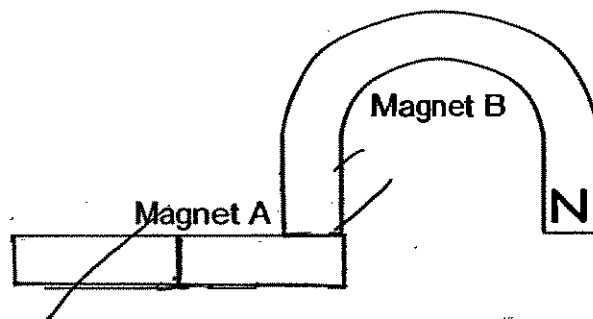
- 39 The diagram below shows a part of our skeletal system.



- (a) Name part A. [1]

- (b) List two organs that part A protects. [1]

- 40 A bar magnet and a horseshoe magnet were attracted to each other as shown below.



In the diagram above, identify and label the poles of Magnet A and Magnet B. One has been done for you. [1½]

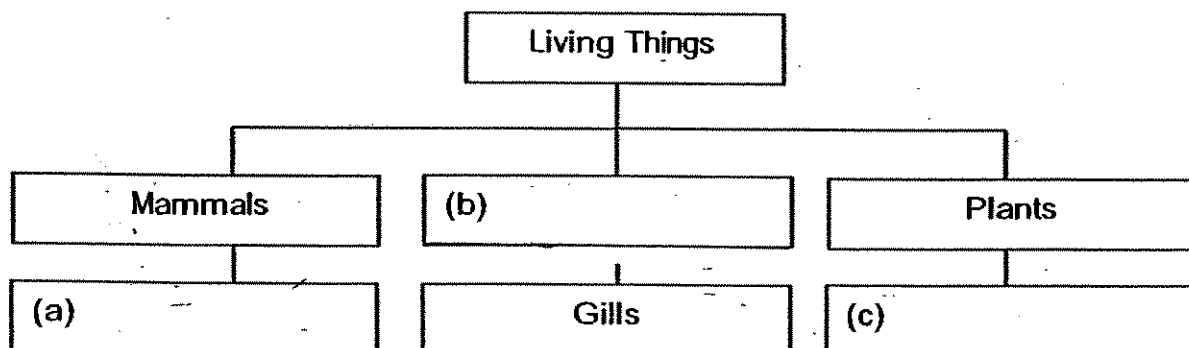
- 41 The table below describes two substances, A and B.

	Substance A	Substance B
Is water in the gaseous state	✓	✓
Formed when water gains heat	✓	✓
Can only be formed when water gains heat till 100°C	✓	
Can be formed at any temperature		✓

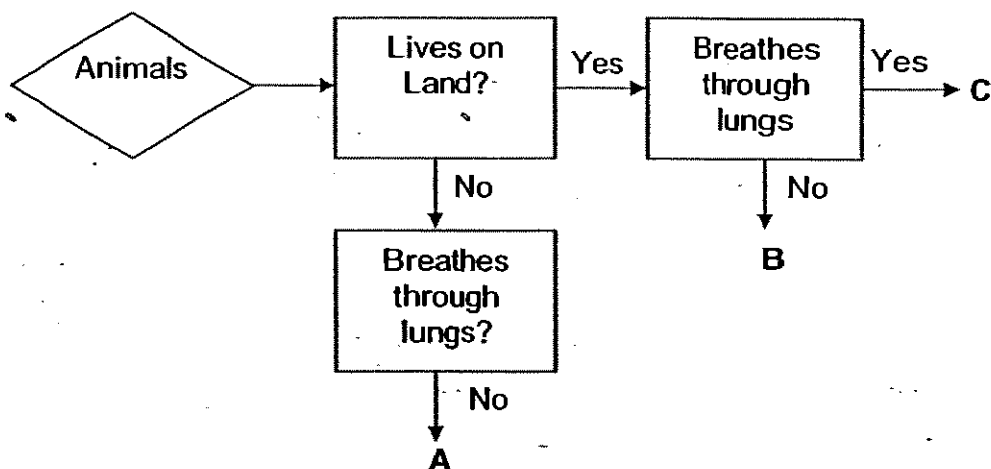
What are Substance A and Substance B?

[2]

- 42 The following classification chart shows different groups of living things and their breathing organs. Complete the chart by filling in the boxes with the correct words. [1½]



43 The following flowchart describes 3 animals based on their characteristics.



(a) How is animal A and B similar? [1]

(b) What is the difference between animal B and animal C? [1]

(c) Give 2 examples of animal C. [1]

44 Four statements about air were made. For each statement, write 'T' for true or 'F' for false. [2]

(a) Moving air is called wind. ()

(b) Water vapour in the air is fixed at 3% of the total air. ()

(c) Carbon dioxide is needed by green plants to make food. ()

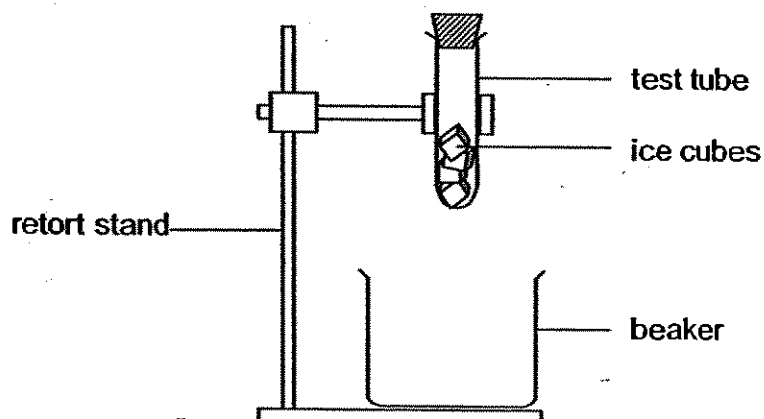
(d) The air we breathe out contains less oxygen than the air we breathe in. ()

- 45 Marcus placed part of a horseshoe magnet in a container filled with iron nails. He then lifted up the magnet and counted the number of nails that part attracted, and recorded it in the table below. He repeated the experiment with different parts of the magnet and the results are shown below.

Part	Number of nails attracted
A	4
B	10
C	16
D	6
E	18

Which two parts are most likely to be the two ends of the horseshoe magnet?
Give a reason to support your answer. [2]

- 46 An experiment about water was setup in the classroom as shown in the diagram below.



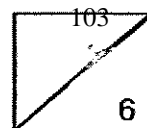
After 20 minutes, substance X was seen in the test tube.

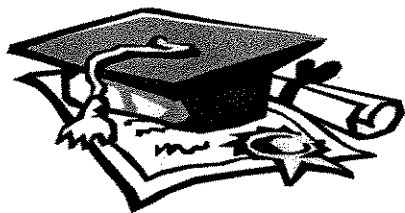
- a) What is substance X? Explain how it appeared? [2]

It was also observed that substance Y formed in the beaker.

- b) What is substance Y? Explain how it appeared? [2]

END OF PAPER





ANSWER SHEET

A C S PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007
SEMESTRAL ASSESSMENT (1)

1. 3

2. 1

3. 1

4. 2

5. 4

6. 3

7. 3

8. 2

9. 1

10. 4

11. 3

12. 3

13. 2

14. 3

15. 1

16. 1

17. 2

18. 3

19. 4

20. 1

21. 1

22. 1

23. 3

24. 3

25. 3

26. 1

27. 1

28. 3

29. 3

30. 4

31) a) It responds to changes all around

b) Air, water, food

32) a) They find their own food.

b) They both live on land.

c) Q makes its own food while S finds its own food.

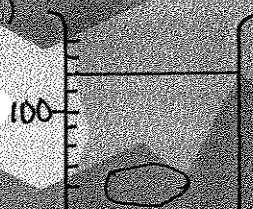
33) a) able to float on water.

b) sinks in water.

c) transparent

d) opaque

34) a)



b) 140ml

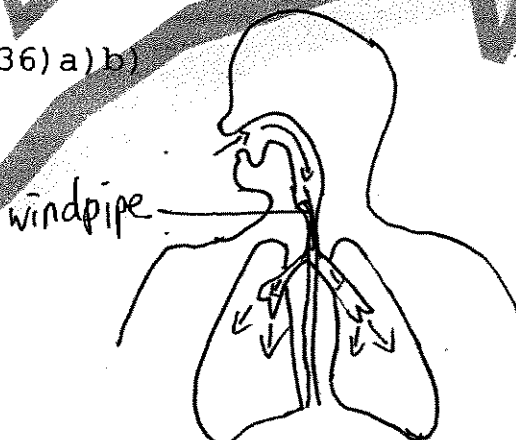
c) It has a definite volume.

35) a) W: noise X: steam

Y: ice Z: petrol

b) Y has a definite shape but X has no definite shape.

36) a) b)



36)c)The air that I breathe out has water vapour.

37)a)It will go out.

b)Oxygen is inside the beaker, when it runs out, there is space for water to go in.

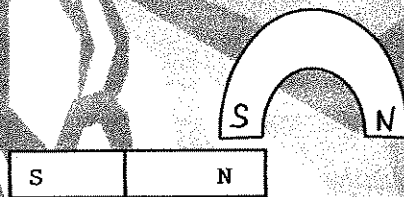
c)The water level will rise.

38)turn, hinge, skeletal, move

39)a)ribcage.

B)heart and lungs.

40)



41)A: steam B: water vapour

42)a)lungs b)fish c)stomata

43)a)They do not breathe through lungs.

b)Animal C breathe through lungs but Animal B do not breathe through lungs.

44)a)T b)F c)T d)T

45)C and E. They pick up the most nails.

46)a)Water vapour in the surrounding air condensed on the cooler surface of the test tube.

b)Water. After condensing to form water droplets, the drop of water on the test tube dripped into the beaker.



Name : _____

Date : 11 May 2007

Class : Pr 4 ()

Duration : 1 h 30 min (Parts I & II)

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 Mark Sheet (OMS).

1. Which of the following states do not have a definite shape?

- A: Solid
- B: Liquid
- C: Gas

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

2. Diagram A shows a flask containing a substance X at room temperature. Diagram B shows the same flask being tilted to one side.

Diagram A

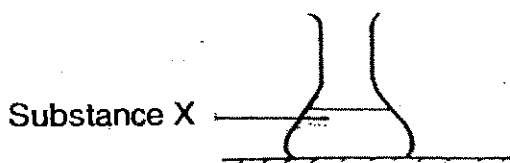
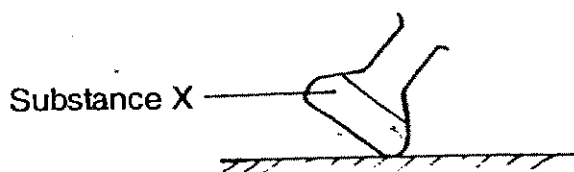


Diagram B



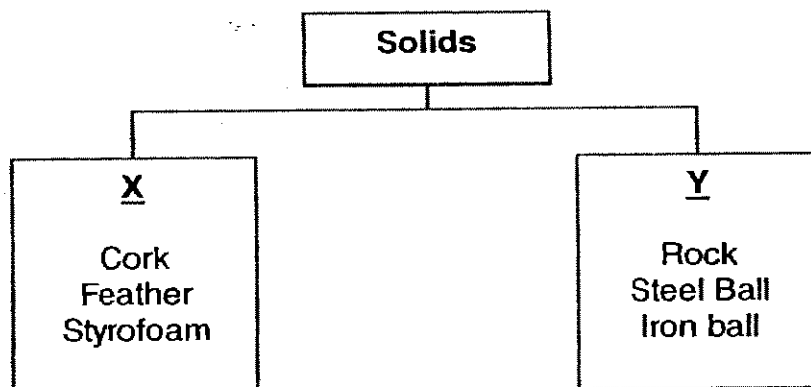
Substance X is most probably _____.

- (1) milk
- (2) jelly
- (3) water
- (4) orange juice

3. Mass is the amount of _____ an object has.

- (1) weight
- (2) energy
- (3) space
- (4) matter

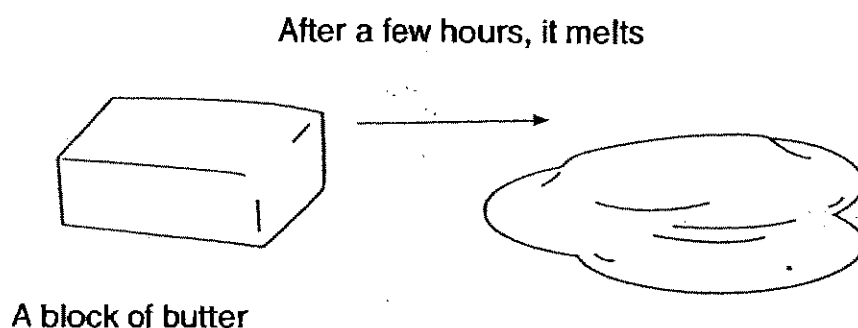
4. Study the classification table below.



Which one of the following are the correct headings?

	X	Y
(1)	No definite shape	Definite shape
(2)	Dissolve in water	Do not dissolve in water
(3)	Float on water	Sink in water
(4)	Once alive	Never alive

5. Study the diagram below.



When the block of butter melts, it undergoes a change in _____.

A: mass
B: state
C: shape

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

6. The freezing point of water is the same as the _____.

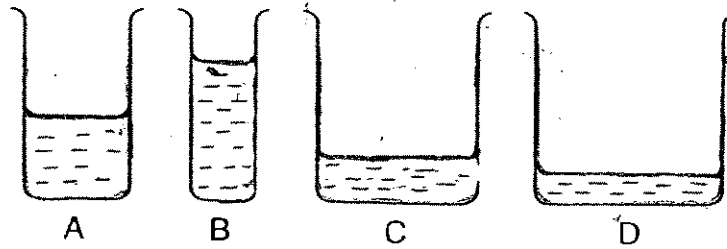
- (1) melting point of ice
- (2) boiling point of steam
- (3) boiling point of water
- (4) condensation of water vapour

7. Which one of the following statements is **NOT** true?

Both water vapour and water have mass

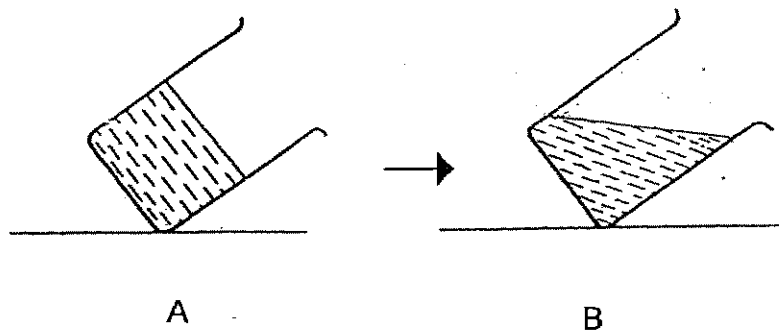
- (1) ~~Water vapour has no definite mass but water does.~~
- (2) Water vapour has a definite shape but water does. *not*
- (3) Water vapour does not have a definite volume but water does.
- (4) Water vapour can be compressed but water cannot be compressed.

8. Four beakers of different sizes are filled with 200ml of water. They are all placed under a tree. The temperature of the water is the same for all the beakers.



Which one of the beakers would have the least amount of water left after 3 days?

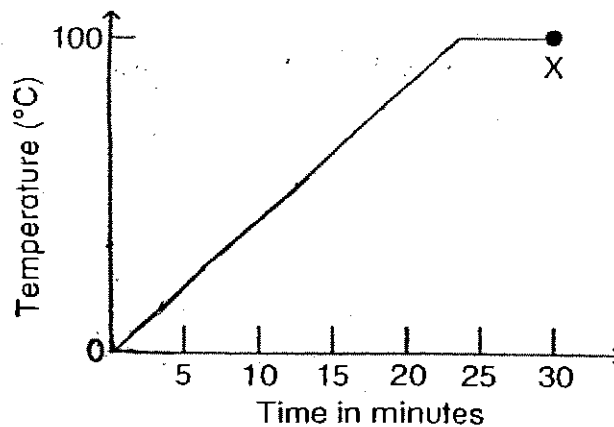
- (1) A
 - (2) B
 - (3) C
 - (4) D
9. A beaker containing a substance is set up as in Diagram A and left for 2 hours at room temperature after which it appears as in Diagram B.



What has most likely happened to the substance to produce the change in appearance?

- (1) evaporation
- (2) condensation
- (3) melting
- (4) freezing

10. The graph shows the temperature change when a beaker of ice-cold water was heated.



Which one of the following processes is happening in the water at Point X?

- (1) Melting
- (2) Boiling
- (3) Freezing
- (4) Condensation

11. Which one of the following statements is **NOT** true?

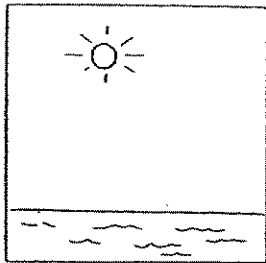
- (1) Water evaporates only from water bodies.
- (2) The water cycle occurs because water can change from one state to another.
- (3) The formation of the clouds is due to the condensation of water vapour in the sky.
- (4) There is constantly water vapour all around us as evaporation takes place all the time.

12. Snow is just like rain that comes from the sky. Under what circumstances will snow form?

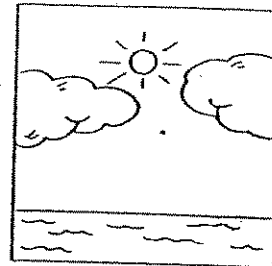
- (1) When there is too much wind.
- (2) When the weather gets very cold.
- (3) When the water particles get too big.
- (4) When there is too much water in the clouds.

13. Tommy looks at the sky and predicts that it is not going to rain within the next hour. Which one of the following could he have probably seen?

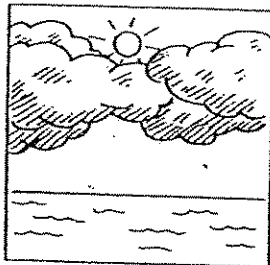
(1)



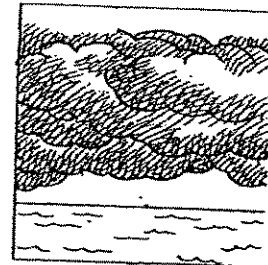
(2)



(3)



(4)



14. Which of the following is/are sources of water supply in Singapore?

- A: Buying of water from Malaysia
- B: Desalination of seawater
- C: Recycling of water to produce NeWater
- D: Collection of rainwater in reservoirs and water catchment areas

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

15. Some seawater is being heated in a beaker. After all the water has evaporated, some white substance is left in the beaker. What is the white substance mostly made of?

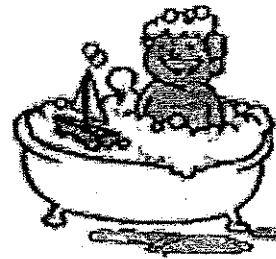
- (1) Ice
- (2) Salt
- (3) Sugar
- (4) Talcum powder

16. Which one of the following activities shows wastage of water?

(1)



(2)



(3)



(4)



17. Some hikers on a trek wanted to boil some water for drinking. They collected samples of water from four streams and made the following observation.

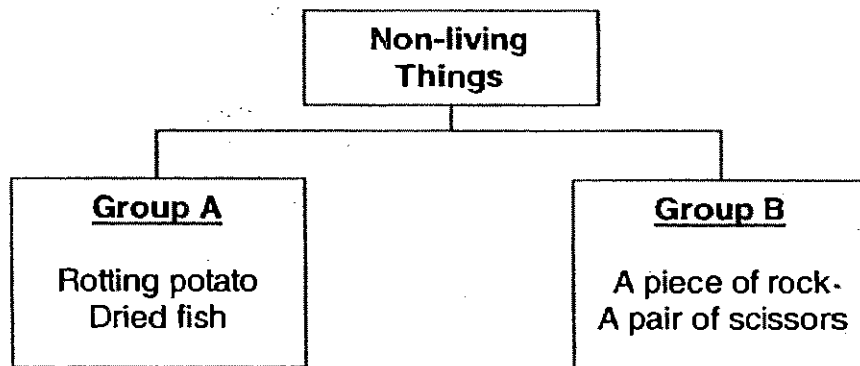
Sample of water	Colour	Smell	Presence of harmful organisms
A	√	x	√
B	x	√	x
C	x	x	√
D	x	x	x

KEY
 √ Present
 x Not present

Which one of the following streams has water that is safest to drink?

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

18. Study the classification diagram below.



Which one of the following items can be classified under Group B?

- (1) A coin
- (2) An apple
- (3) A dead housefly
- (4) An uprooted tree

19. Two groups of plants are left in the garden. There are 10 plants in each group. Plants in group A are watered daily but plants in group B are not being watered at all.

If it does not rain at all, what is most likely to happen to the two groups of plants after a month?

- (1) Both groups of plants will die.
- (2) Both groups of plants will grow taller.
- (3) Plants in group A will die and plants in group B will survive.
- (4) Plants in group A will survive and plants in group B will die.

20. An animal has six legs and three body parts. It has two pairs of wings. It lives near the pond and eats insects. It is likely to be a/an _____.

- (1) housefly
- (2) dragonfly
- (3) mosquito
- (4) cockroach

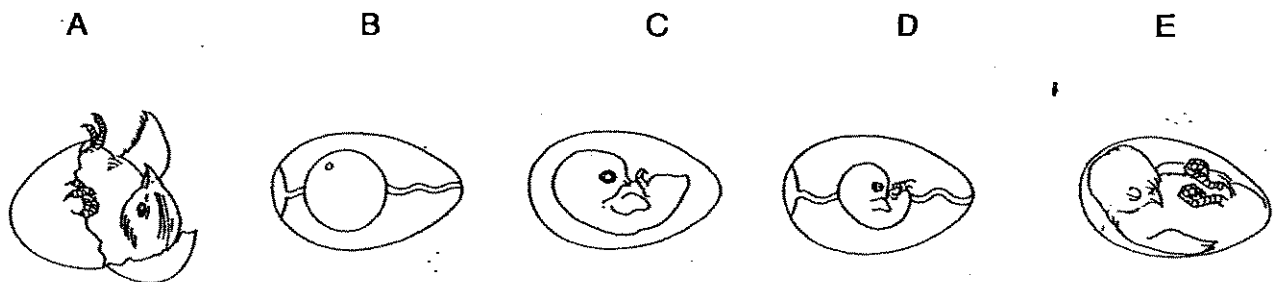
21. Which one of the following statements is **true**?

- (1) Mango trees can reproduce but mushrooms cannot.
- (2) Mushrooms are poisonous but mango trees are not.
- (3) Mushroom grow in the forest but mango trees do not.
- (4) Mango trees can make food for themselves but mushrooms cannot.

22. Which one of the following animals has the same life cycle as a chicken?

- (1) Mosquito
- (2) Butterfly
- (3) Giraffe
- (4) Sparrow

23. Study the diagrams below. Rearrange them in the correct order to show the development of the chick from a fertilised egg.



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

24. Mei Ling has some of these characteristics.

- A: Short hair
- B: Big round eyes
- C: Long fingernails
- D: Double eyelids

Which of these characteristics are passed down from either/both of her parents?

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

25. Ali knows that someone is knocking on his door although the door is closed. Which sense organ did he use?

- (1) skin
- (2) eyes
- (3) ears
- (4) tongue

26. What is main function of the digestive system?

- (1) It breaks down food into simpler substances.
- (2) It takes in oxygen and gives out carbon dioxide.
- (3) It carries messages from one part of the body to another.
- (4) It transports blood from one part of the body to another.

27. Which of the following statements about the skeleton is/are true?

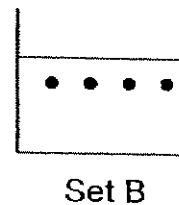
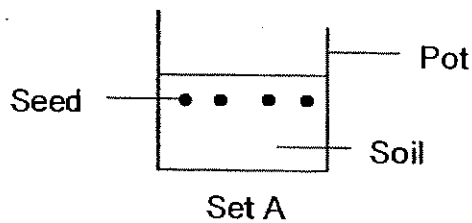
- A: Our skeleton is made up of many bones.
- B: Our skeleton enables us to move.
- C: The skeleton cannot grow.

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

28. What happens when you move your arm?

- (1) The lower arm becomes shorter so it bends.
- (2) Both arm muscles relax to pull the lower bone up.
- (3) Both arm muscles contract to move the lower arm.
- (4) The muscles and the bones in the arm work together to move the arm.

29. Mary wants to find out if different types of plant soil will affect the growth of tomato seeds. She sets up two sets of items as shown below.

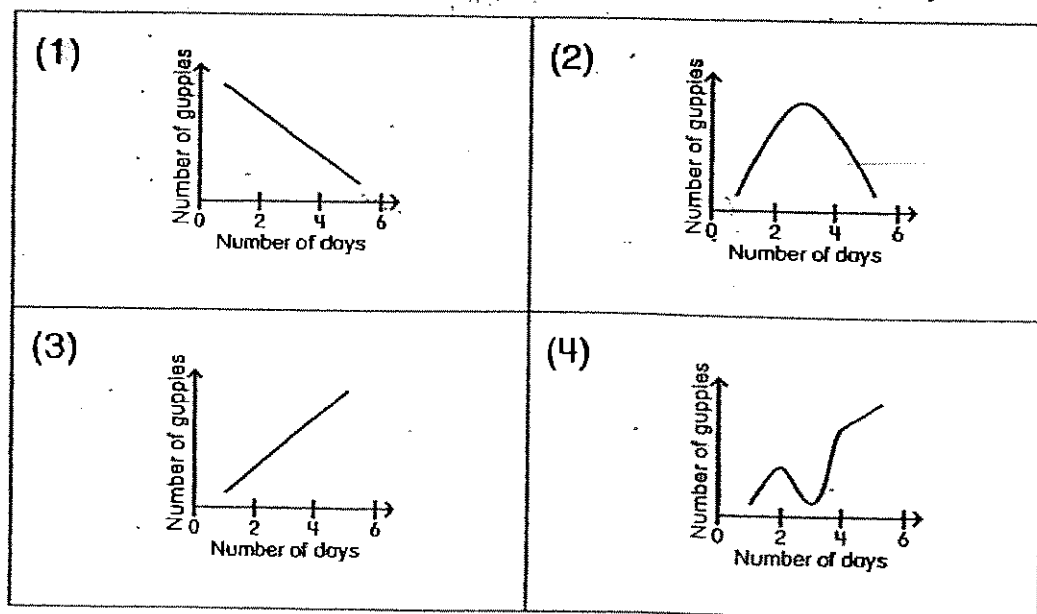


Which of the following must she keep the same for both sets to make a fair test?

- A: Amount of soil
- B: Amount of water
- C: Type of soil
- D: Size of pot

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

30. A guppy population is affected when some detergent were dumped in the pond in which they were living. Which one of these graphs shows the most likely changes in the population if the poison is found in the pond from day one (the day the detergent was dumped into the pond)?



END OF PART I



Maha Bodhi School
2007 Semestral Assessment 1
Science

Name : _____ (

Class : Pr 4 ()

Duration : 1 h 30 min (Parts I & II)

Date : 11 May 2007

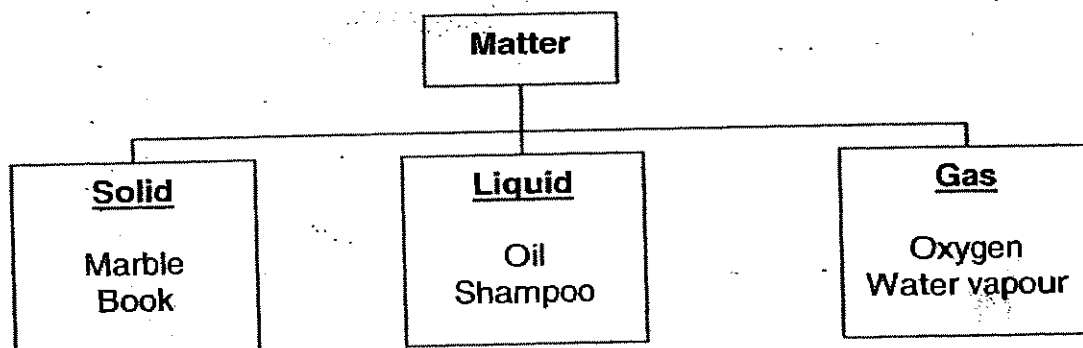
Parent's Signature : _____

Part I (60 marks)	
Part II (40 marks)	
SA1 (100 marks)	

Part II: (40 marks)

Write your answers to questions 31 to 46 in this script.

31. Study the classification table below.



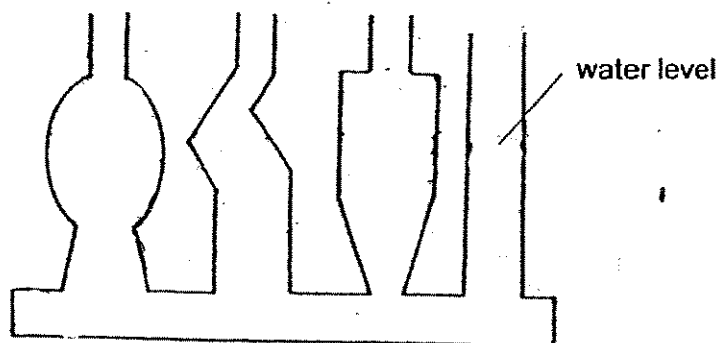
Where would you place 'milk' and 'sugar' in the classification table above?

[2]

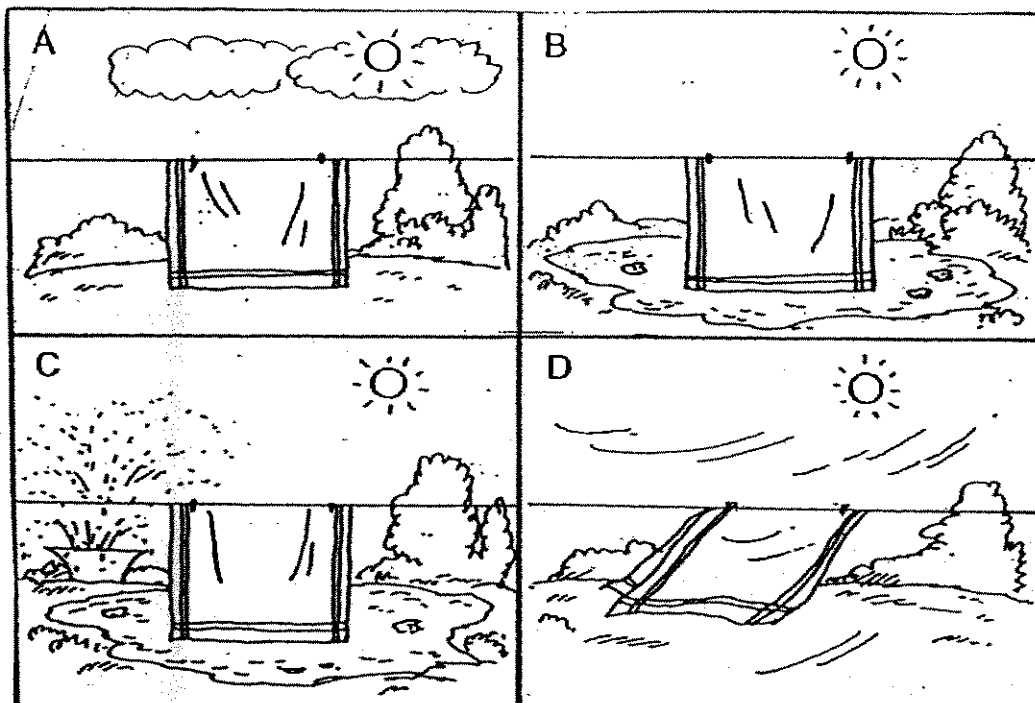
(a) Milk: _____

(b) Sugar: _____

32. Harry bought a special glass container which is made of 4 columns of hollow glass with different shapes. Harry fills his container with water. The water level in one part of the container has been drawn for you. **Draw** in the water levels of each of the columns to complete the diagram. (**NOTE:** Include the water mark and meniscus.) [2]



33. The pictures below show the four identical handkerchiefs being dried in 4 different conditions.



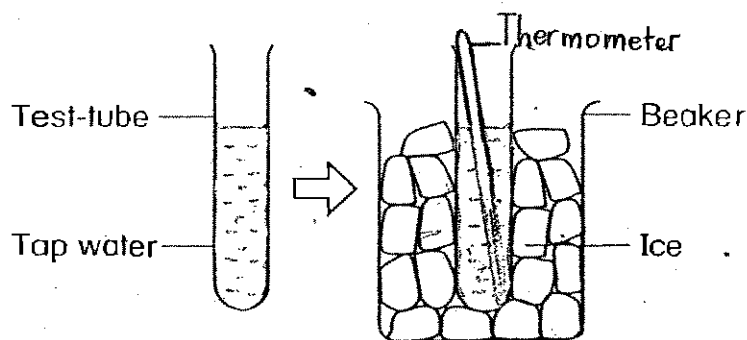
- (a) Which handkerchief will probably dry the fastest?

[1]

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

[2]

34. Tommy carries out an experiment as shown below.



He puts the test tube of tap water into a beaker of crushed ice.

(a) What will happen to the temperature of the water in the test-tube after 10 minutes? [1]

(b) Would the water in the test-tube turn to ice? Explain your answer. [2]

35. Ali notices that there are droplets of water on the windshield of his father's car in the early morning before his father sends him to school. He is puzzled, as it was not raining the night before.

Explain his observation.

36. Write (T) for statements that are true and (F) for statements that are false in the blanks. [2]

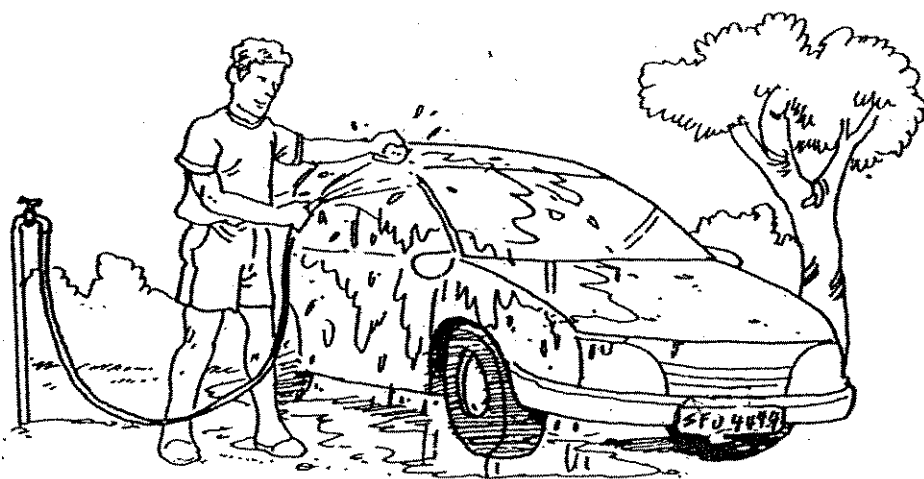
(a) The amount of water vapour in the air is known as humidity. _____

(b) The rate of evaporation depends on the rate of the wind only. _____

(c) Icebergs are water in its solid state. _____

(d) The freezing point of water is 100°C . _____

37. Study the diagram below.



(a) What is wrong with the way Mr Tan washes his car?

[1]

(b) State two ways in which he can conserve water.

[2]

i) _____

ii) _____

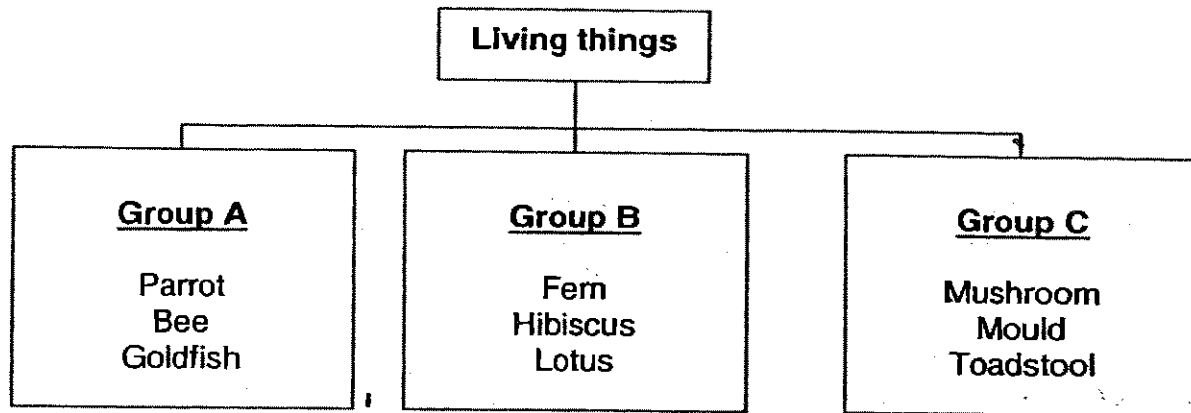
38. Oil spills at sea can cause a lot of marine life to be destroyed. State two ways in which the animals and plants can be harmed from oil spills.

[2]

i) _____

ii) _____

39. Study the classification table below.



Give a suitable heading for each group.

[3]

i) Group A: _____

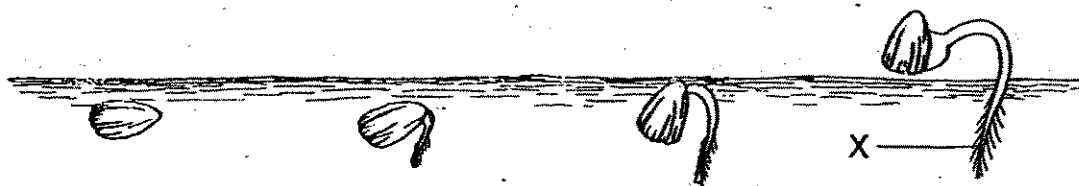
ii) Group B: _____

iii) Group C: _____

40. State one difference in the way a bird and giraffe reproduces.

[2]

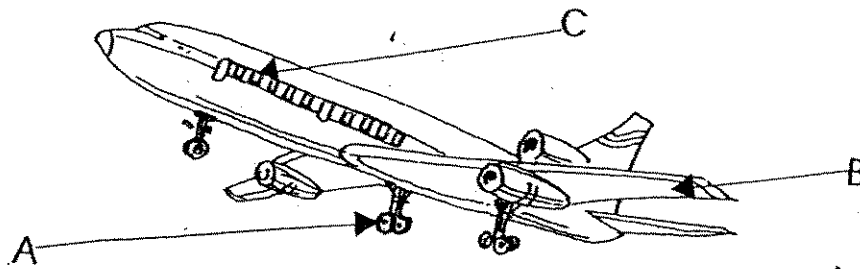
41. Study the diagram below.



What is the function of part X?

[2]

42. The diagram below shows an airplane. What materials are the parts labelled made of? [3]

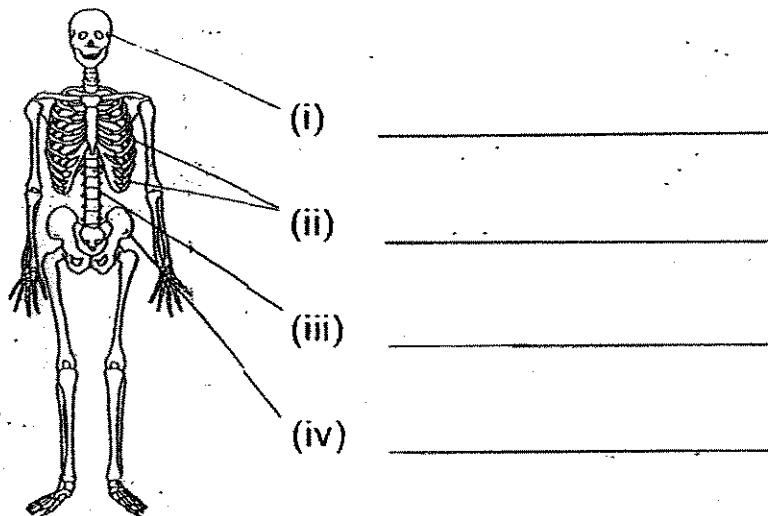


A: _____

B: _____

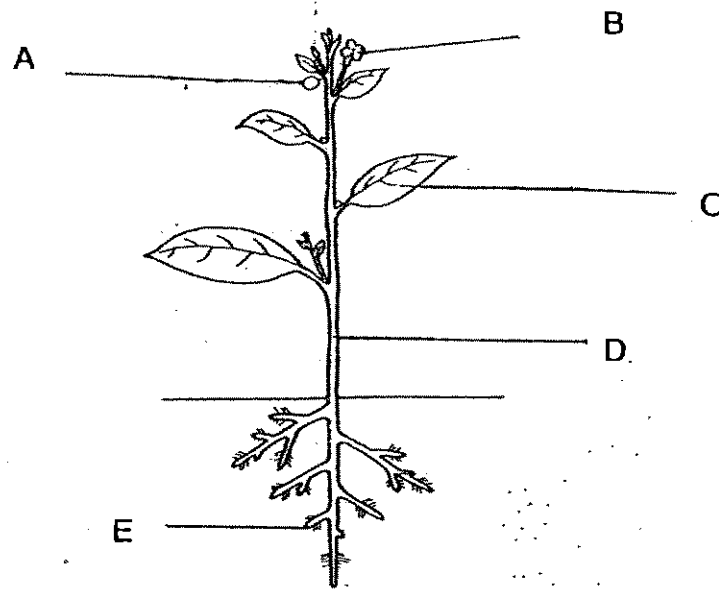
C: _____

43. (a) Name the four different parts of the skeleton as shown below. [2]



(b) State one common function of these four parts of the skeleton. [1]

44. Study the diagram of the plant below.



(a) What would happen if all part C is removed?

[2]

(b) State one function of part D.

[1]

45. A bunch of grapes are weighed and the mass was recorded. The grapes were then placed in the sun. After four days, the grapes were weighed again.

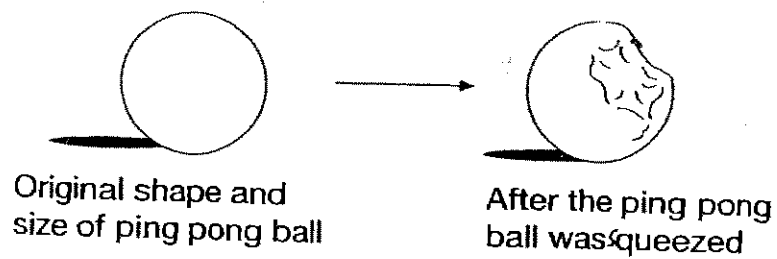
(a) What would happen to the mass of the grapes?

[1]

(b) Explain your answer in (a).

[2]

46. A ping pong ball became dented after it was squeezed.



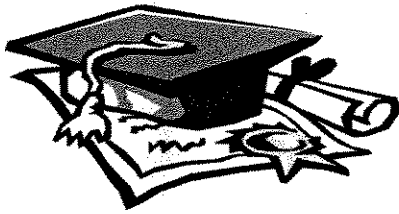
a) What happened to the air in the ping pong ball?

[1]

b) What did the above activity show?

[1]

—END OF PAPER



ANSWER SHEET

MAHA BODHI PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007
SEMESTRAL ASSESSMENT (1)

1. 3

2. 2

3. 4

4. 3

5. 3

6. 1

7. 2

8. 4

9. 3

10. 2

11. 1

12. 2

13. 1

14. 4

15. 2

16. 2

17. 4

18. 1

19. 4

20. 2

21. 4

22. 4

23. 2

24. 2

25. 3

26. 1

27. 3

28. 4

29. 4

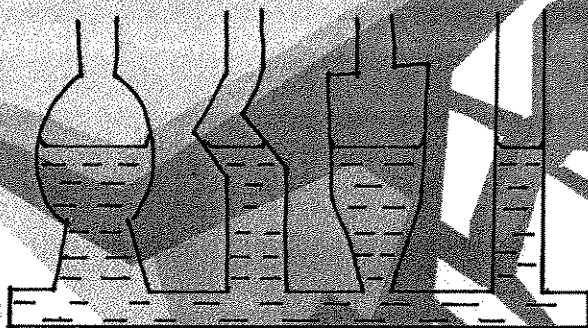
30. 1

31) a) Liquid b) Solid

33) a) Handkerchief D will probably dry the faster.

b) The presence of wind and lower humidity increases the rate of evaporation of water from the handkerchief.

32)



34) a) There will be a decrease in temperature.

b) No. The temperature of ice is not low enough so there is very little loss of heat from the water to the surrounding.

35) The water vapour in the condenses on the cool surface of the glass.

36) a) T b) F c) T d) F

37) a) He is using a hose to wash his car so there will be a lot of wastage of water.

b) i) Mr Tan can use a pair of water to wash the car,

37)b)ii)Mr Tan can use water used to wash rice and vegetables to wash the car.

38)i)The oil prevents the oxygen from dissolving and reaching the living things in the sea.

ii)The oil coats the outer covering of the animals and does not allow them to move easily.

39)i)Animals ii)Plants iii)Fungi

40)The bird lays eggs but the giraffe gives birth to its young alive.

41)Part X holds the plant firmly to the ground.

42)A: Rubber B: Metal C: Glass

43)a)i)skull (ii)ribcage iii)backbone (iv)hip bone
b)They protect some internal organs.

44)a)Plants will no leaves to make food and will die.
b)Part D transport minerals,salt and food to other parts of the plants.

45)a)The mass of grapes would decrease.
b)Some of the water in the grapes have evaporated thus making the mass smaller.

46)a)The air was compressed.
b)Air can be compressed.

-- end ---



HENRY PARK PRIMARY SCHOOL

SEMESTRAL EXAMINATION I

2007

SCIENCE

PRIMARY 4

BOOKLET A

Name: _____ ()

Class: Primary 4 _____

**30 Questions
60 Marks**

Total Time for Booklets A and B: 1 h 40 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

READ AND FOLLOW INSTRUCTIONS CAREFULLY.

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.

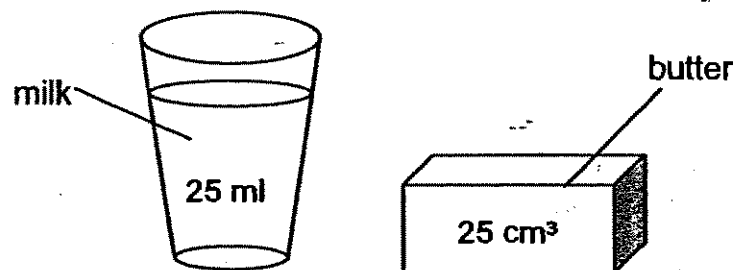
1. Air is matter because it _____.

- A: has mass
- B: occupies space
- C: cannot be compressed

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

()

2. A glass of milk has the same volume as a block of butter.



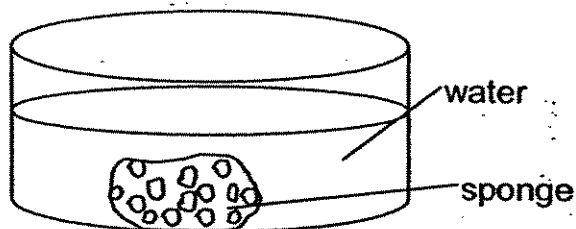
They both _____.

- (1) can be compressed
- (2) have definite shapes
- (3) have the same amount of matter
- (4) take up the same amount of space

()



3. Kelly observed that bubbles were released when she squeezed a sponge in water.

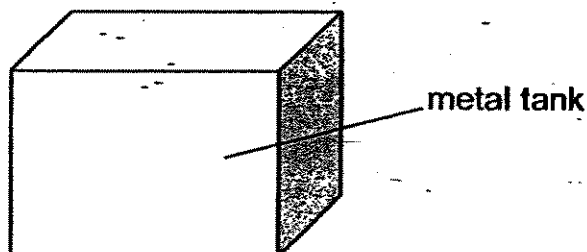


Which one of the following statements **correctly** explains why it happened?

- (1) Air trapped in water was released.
- (2) Air trapped in the sponge was released.
- (3) Water trapped in the sponge was released.
- (4) Water absorbed by the sponge was released.

()

4. The metal tank below has a capacity of 1000 cm^3 .

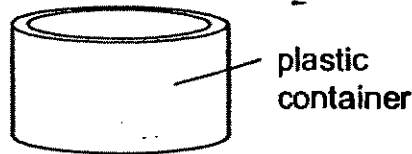


It can be filled with _____.

- (1) 1200 cm^3 of water
- (2) 1200 cm^3 of petrol
- (3) 1200 cm^3 of oxygen
- (4) 1200 cm^3 of rice grains

()

- Get a Tutor to go through the Papers <http://www.yestuition.sg>
5. Sally puts four substances into round, plastic containers. Which of the following does **not** take the shape of its container?



- A. oil
- B. sand
- C. marbles
- D. chicken soup

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

()

6. In the morning, Julia noticed water droplets on the outside of the cars even though it did not rain the night before.

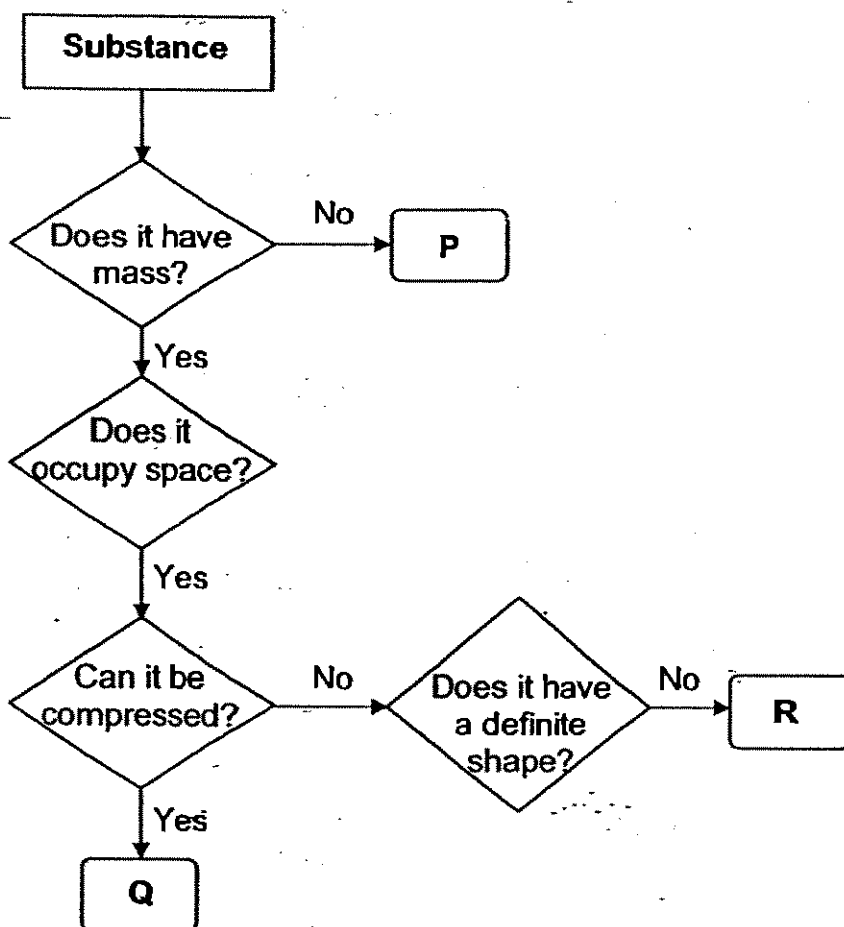
Which one of the following statements explains what happened?

- (1) Water vapour on the cool car condensed from the air.
- (2) Water vapour from the air condensed on the cool car.
- (3) Water droplets on the warm car evaporated to the air.
- (4) Water droplets from the warm air evaporated on the car.

()



7. Study the flow chart of some substance below.



Which one of the following **correctly** identifies substances P, Q and R?

	P	Q	R
(1)	music	nitrogen	coffee
(2)	violin	bread	jelly
(3)	radio	oxygen	petrol
(4)	fire	petals	jam

().....

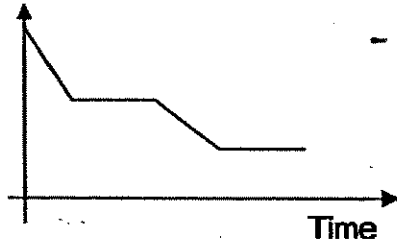


8. Ali heated some tap water in a beaker. He allowed it to boil for 5 minutes and then left it in the beaker to cool to room temperature. He recorded the temperature at 5-minute intervals.

Which one of the following graphs would **correctly** represent his data?

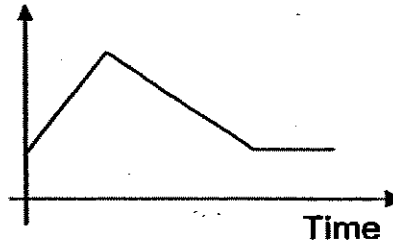
(1)

Temperature



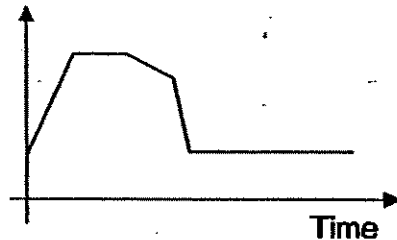
(2)

Temperature



(3)

Temperature



(4)

Temperature



9. Water will _____ at the temperature of 0°C .

- A. melt
- B. freeze
- C. evaporate
- D. condense

(1) B only

(2) A only

(3) A, B and C only

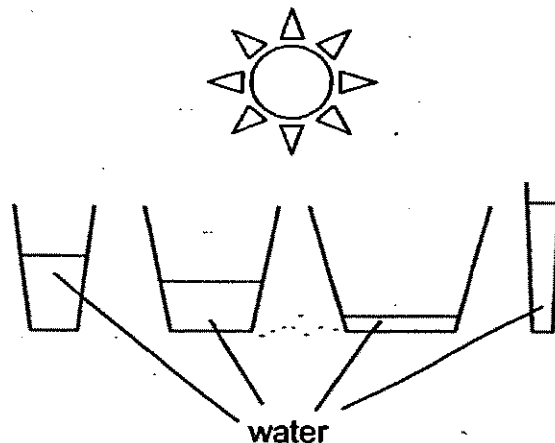
(4) A, B, C and D



10. In the Earth's water cycle, when water vapour condenses it _____.

- (1) gains heat and flows to the sea
- (2) loses heat and falls to the Earth
- (3) loses heat and becomes clouds
- (4) gains heat and forms water bodies

11. Selma set up the experiment as shown below. She poured equal amounts of water into four different glass containers and placed them under the sun.



She was testing the effect of the _____ on the rate of evaporation of water.

- (1) heat from the sun
- (2) size of the container
- (3) area of exposed surface
- (4) amount of water vapour in the surroundings

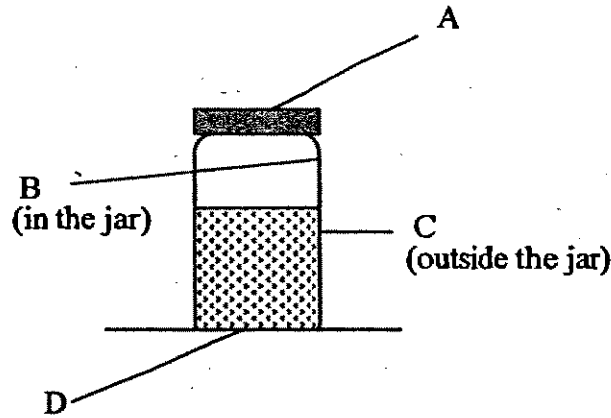
12. Jim added some hot water into a beaker of ice. Which of the following statement is correct?

- A. The ice gains heat and melts faster
- B. The hot water loses heat and melts the ice.
- C. The ice changes from solid state to liquid state.

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



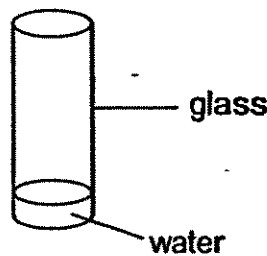
13. Mary poured some icy cold soft drink in a jar, covered it with a metal lid and placed it on a table with a thin glass top as shown below. At which of the following parts would she observe tiny water droplets after 5 minutes?



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

()

14. Su Lin wants the water in the glass to dry up as quickly as possible.



She should _____.

- (1) add salt to the water
- (2) pour the water on a flat tray
- (3) cover the mouth of the glass
- (4) put the glass of water in the freezer

()



15. When the weather is very cold, 'white clouds' seem to be coming out of our mouths when we speak and breathe out. This is because of the change in the states of water from _____.

- (1) gas to solid
- (2) liquid to gas
- (3) gas to liquid
- (4) solid to liquid

()

16. Which one of the following ways best describes water conservation?

- (1) Reusing unclean water for drinking
- (2) Washing our dishes under a running tap
- (3) Letting the water run while brushing our teeth
- (4) Using the water collected from washing vegetables to wash the toilet

()

17. Which of the following are some causes of water pollution?

- A: Oil spills
- B: Deforestation
- C: Rubbish thrown from a ship
- D: A gardener uses insecticide near a pond

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

()

18. Which of the following conditions must be present for water cycle to continue to take place?

- A: There must be light
- B: There must be heat
- C: There must be wind
- D: Water must change state

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

()



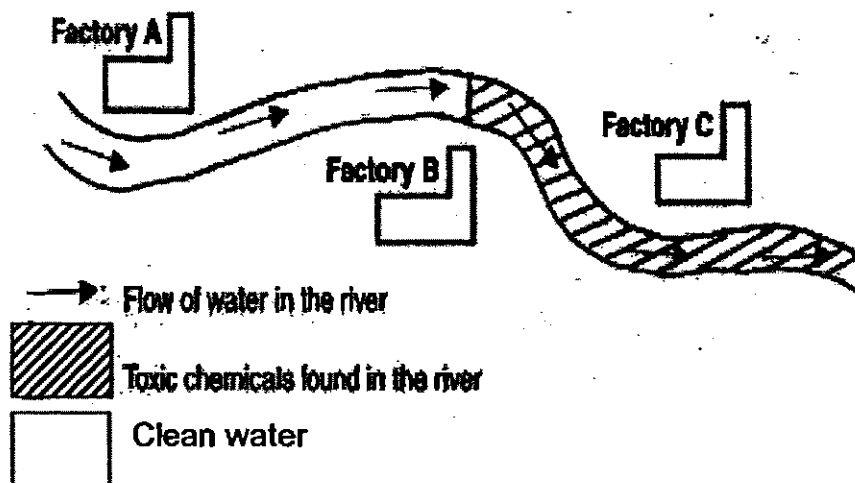
19. Countries that face water shortage can _____

- A: reuse water
- B: recycle water
- C: obtain water from seawater
- D: build more reservoirs to collect rainwater

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

()

20. A group of scientists discovered that certain stretches of the river were polluted with toxic chemicals. Which factory(ies) is/are most likely responsible for the water pollution?



- (1) Factory A
- (2) Factory B
- (3) Factory C
- (4) Not possible to tell

()

21. Why is the water cycle important to living things?

- (1) It causes the evaporation of water.
- (2) It provides oxygen for living things.
- (3) It provides carbon dioxide for plants.
- (4) It ensures that living things have a continuous supply of fresh water.

()

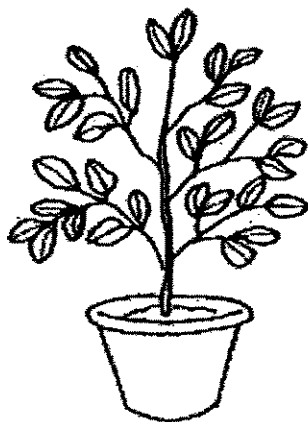


22. A girl observed that a fruit was thorny and had an unpleasant smell. Which of the following senses helped her to make these observations? *Name all the that can help.*

A: Sense of smell
B: Sense of sight
C: Sense of taste
D: Sense of touch

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

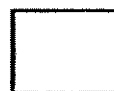
23. Samy made some statements about the plant shown below.



Which of the following statement(s) he made was/were correct?

A: It can reproduce.
B: It can move on its own.
C: It does not need food to stay alive.

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



- A: food
- B: water
- C: sunlight

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

()

25. Animal B lives in water. It does not lay eggs. Its young feed on the mother's milk. Animal B belongs to the group of _____.

- (1) fish
- (2) insects
- (3) reptiles
- (4) mammals

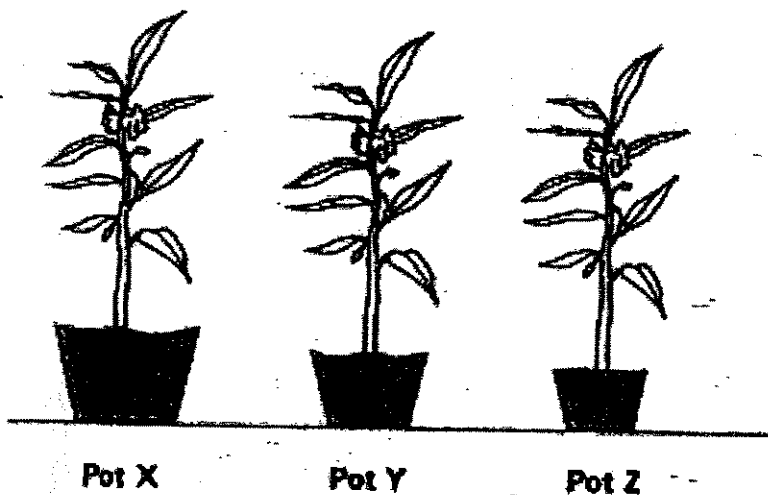
()



26. Gordon wanted to find out what type of soil was suitable for growing roses. He planted 3 rose plants of similar size in three pots, X, Y and Z.

	Pot X	Pot Y	Pot Z
Material of pot	Plastic	Plastic	Plastic
Type of soil	Garden soil	Sand	Clay
Amount of water used everyday	250 cm ³	300 cm ³	350 cm ³

The three plants were placed in the garden as shown below.



Gordon's father told him that he had not carried out a fair test as not all the controlled variables were kept the same. Which of the following should be kept the same?

- A: Type of soil
- B: Size of pot
- C: Amount of water

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

(. . .)

27. Some drivers along a road noticed a fire engine and gave way to it. What senses did all these drivers use to come to this decision?

A: Sense of sight
B: Sense of touch
C: Sense of smell
D: Sense of hearing

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

()

28. The table below show the number of seedlings planted in a plot of land over a period of 2 weeks.

Days	Number of seedlings
1	80
6	63
10	41
14	28

What could have caused the changes in the number of seedlings over the 2 weeks?

A: A drop in the supply of water to these seedlings
B: A decrease in the number of animals feeding on the seedlings
C: Regular rainfall resulting in the plants getting enough water
D: Lack of nutrients in the soil

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

()



29. The table below shows four households, A, B, C and D trying to save water over a period of 4 months. The table shows how much water each household had been using each month.

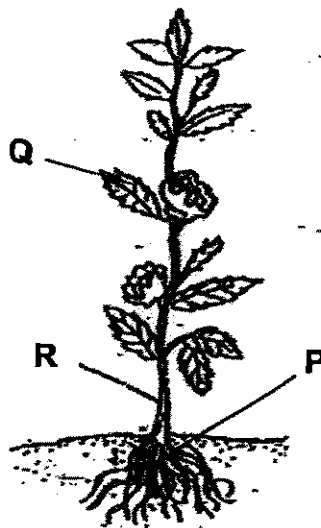
Which family appears to have been the **least effective** in its attempts to save water over the 4 months?

Household	Amount of water used each month (m^3)			
	January	February	March	April
A	17 m^3	17 m^3	18 m^3	19 m^3
B	15 m^3	14 m^3	15 m^3	14 m^3
C	18 m^3	19 m^3	15 m^3	14 m^3
D	16 m^3	16 m^3	15 m^3	15 m^3

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

()

30. Study the diagram carefully and identify correctly parts P, Q and R of the plant.



	P	Q	R
(1)	Stem	Fruit	Leaf
(2)	Root	Leaf	Stem
(3)	Leaf	Stem	Fruit
(4)	Fruit	Flower	Root

()



HENRY PARK PRIMARY SCHOOL

SEMESTRAL EXAMINATION I

2007

SCIENCE

PRIMARY 4

BOOKLET B

Name: _____ ()

Class: Primary 4: _____

**16 Questions
40 Marks**

Total Time for Booklets A and B: 1 h 40 min

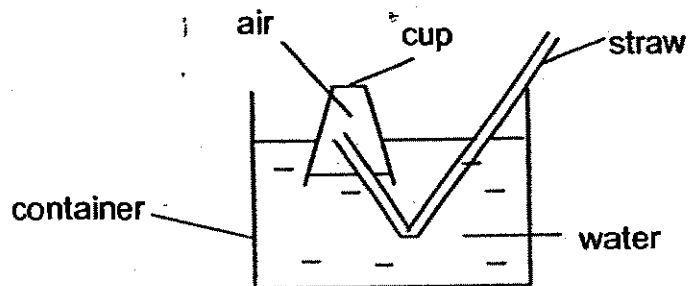
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

READ AND FOLLOW INSTRUCTIONS CAREFULLY.

PART 2 (40 marks)

Write your answers to questions 31 to 46 in the spaces given.

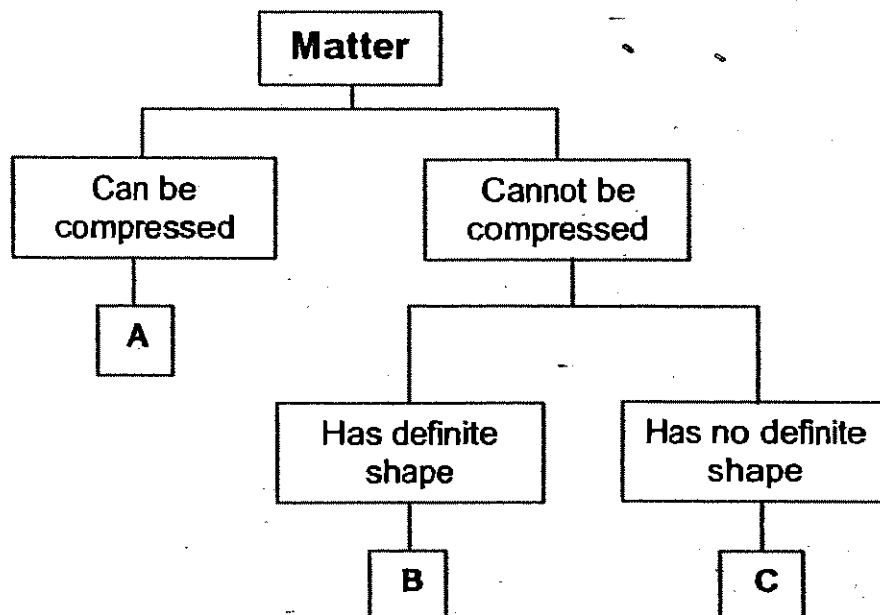
31. Kim sets up an experiment as shown in the diagram below.



- a) What happens to the water level in the cup when Kim sucks out some air through the straw? (1m)

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

32. Joan classified three types of matter, A, B and C according to their properties below.



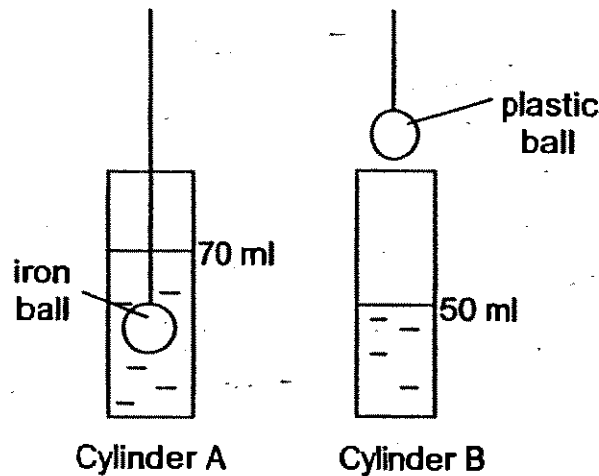
- a) Look at the following two items. State if they represent A, B or C from the chart above.

i) Rock : _____ (1m)

ii) Sea water : _____ (1m)

- b) When water from the sea evaporates, which matter in the chart above (A, B, or C) will it be classified in? (1m)

33. James poured 50 ml of water into each measuring cylinder. He lowered an iron ball into cylinder A until it is fully submerged but not touching the bottom of the cylinder. He repeated the same action with a plastic ball. Both the iron and plastic balls have the same shape and size.

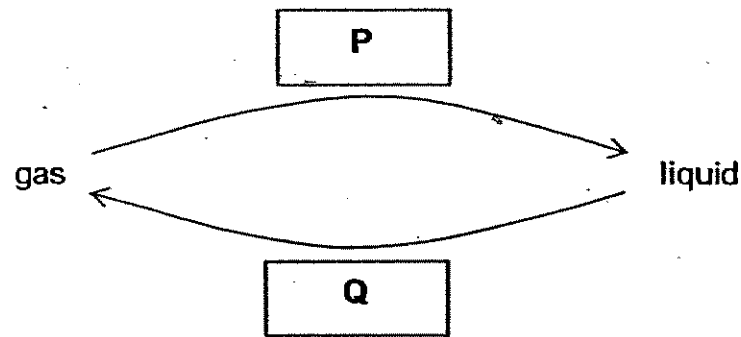


He recorded the water levels in the table below.

	Water level (ml)	
	Before the ball was put inside	After the ball was put inside
Cylinder A	50	70
Cylinder B	50	

- a) What will be the water level in Cylinder B after the ball was put inside? **Complete the table above with your answer.** (1m)
- b) He lowered the iron ball until it touched the bottom of Cylinder A. Predict if the water level would be higher, lower or remain the same. (1m)
- c) Which property (shape, size, mass or volume) of the iron and plastic balls is tested in this activity? (1m)

34. Kim drew a concept map to show the effect of heat gain and loss on the state of water.

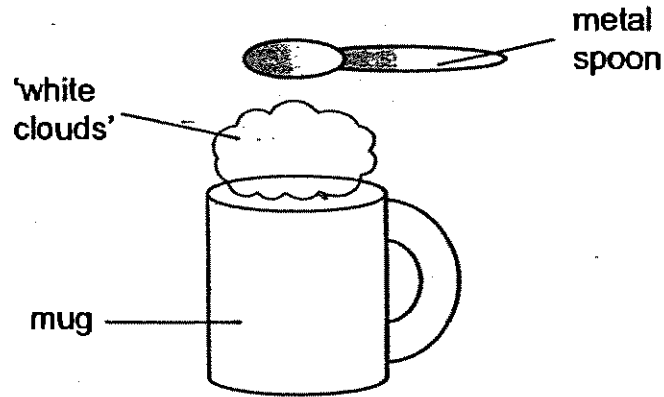


- a) State what Process P is. (1m)

- b) Process Q happens at any temperature. State what Process Q is. (1m)

- c) State whether heat is gained or lost during Process P. (1m)

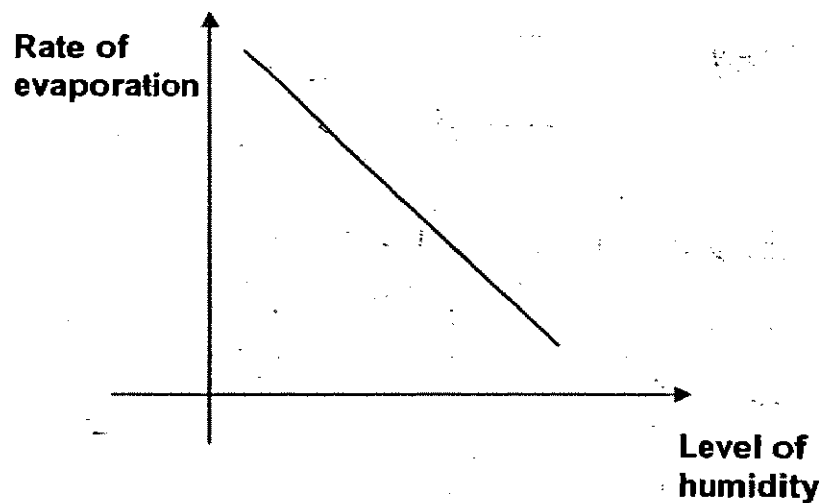
- d) Name the gas produced during Process Q. (1m)



- a) Explain how the 'white clouds' were formed. (1m)

- b) What happens if Ben places a metal spoon above the cup? (1m)

36. The graph below shows the relationship between the rate of evaporation and the amount of water vapour in the air (humidity).



- a) Based on the graph, explain how the level of humidity affects the rate of evaporation. (1m)

- b) Name 2 conditions that could speed up the rate of evaporation of a puddle of water by a roadside. (1m)

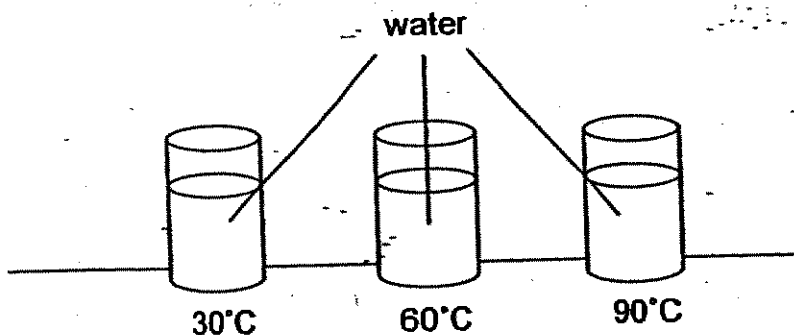
(i)

(ii)

Similarity: _____

Difference: _____

38. Sami wanted to find the effect of temperature of water has on rate of evaporation. He measured an equal volume of water of different temperatures. He poured the water carefully into three identical glasses. The 3 glasses are left uncovered and placed on a table next to a window. The set up of his experiment is shown below.



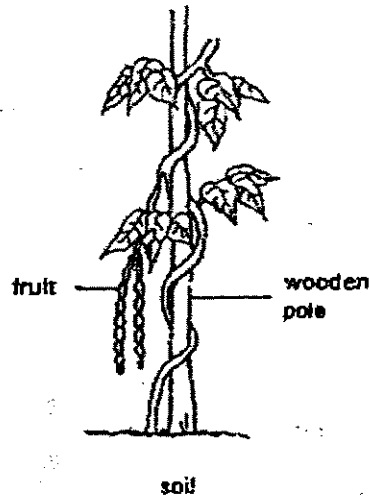
- a) What is the test variable in the above experiment?

(1m)

- b) What should Sami measure at the end of the experiment to make a conclusion?

(1m)

39. The diagram shows a bean plant growing in a garden.

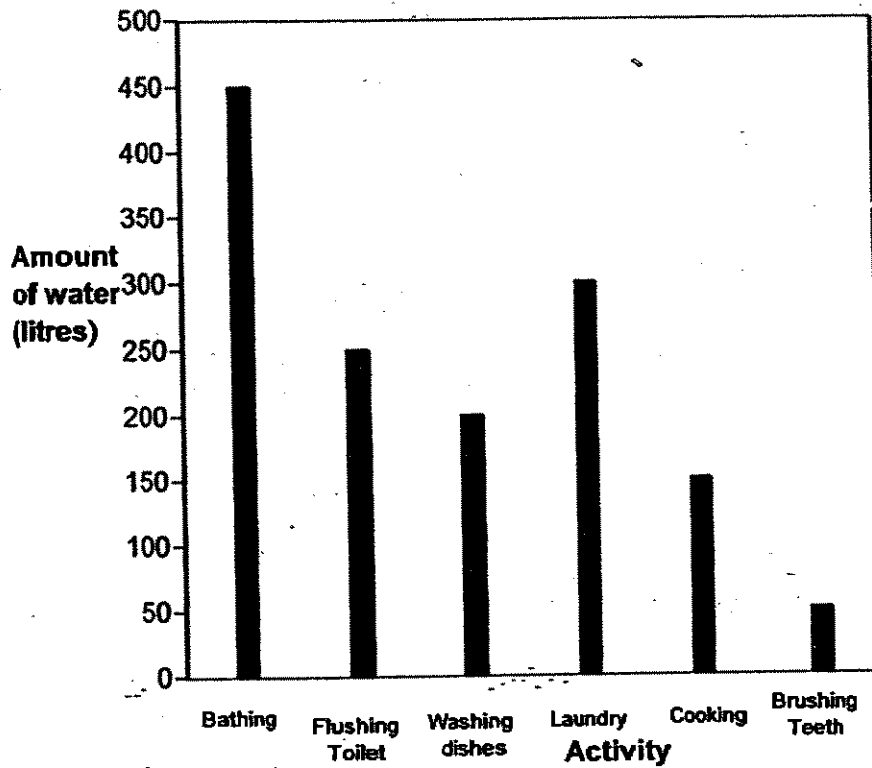


- a) Describe the type of stem the bean plant has. (1m)

- b) How does the bean plant stay upright? (1m)

- c) Why does the bean plant have to stay upright? (1m)

Get a Tutor to go through the Papers <http://www.yestuition.sg>
40. The bar graph below shows the amount of water used daily for different activities by the Smith family. Study the graph and answer the questions that follow.



- a) Which activity uses the least amount of water?

(1m)

- b) Suggest one way the Smith family could reduce the amount of water used for bathing.

(1m)



41. In the table below, write down the sense organ and the sense used to detect each of the activities.

	Activity	Sense Organ	Sense
(a)	Fragrance of a baked cake coming from the kitchen		
(b)	Pulling one's hand away after touching a hot kettle of water		

(1m)

(1m)

42. The table below shows two ponds with different conditions. Study the table and answer the questions.

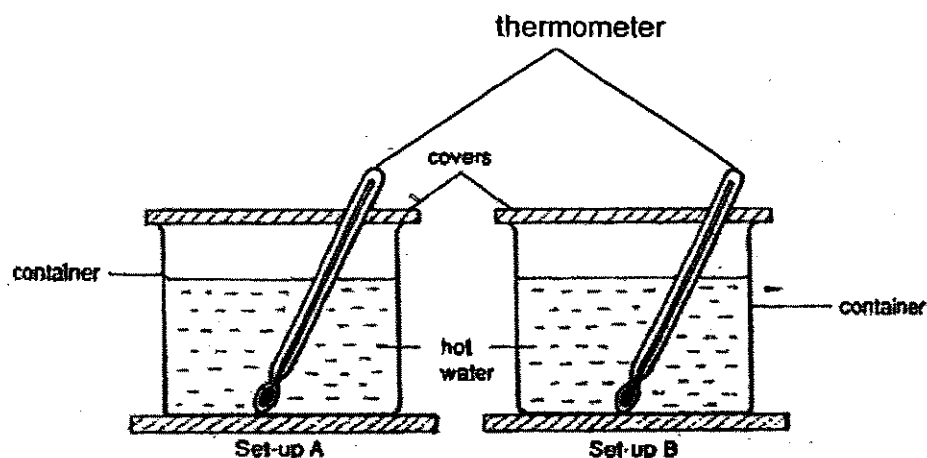
Pond A	Pond B
Water is dark and cloudy	Water is clear
Toxic substance and stench are present	Toxic substance and stench are not present
Litter is present on surface of water	Water surface is litter-free

- a) Which pond is suitable for growing plants?

(1m)

- b) Explain your answer in (a).

(2m)



He wanted to find out which container kept the water hot for a longer period of time.

- a) State two variables that Kamal needs to keep the same for his test to be a fair one. (2m)

i) _____

ii) _____

- b) State a suitable hypothesis for the above experiment. (1m)

- c) The process of removing salt from sea water to get fresh water is called _____. (1m)

44. The table below shows some characteristics of 4 different types of plants, W, X, Y and Z.

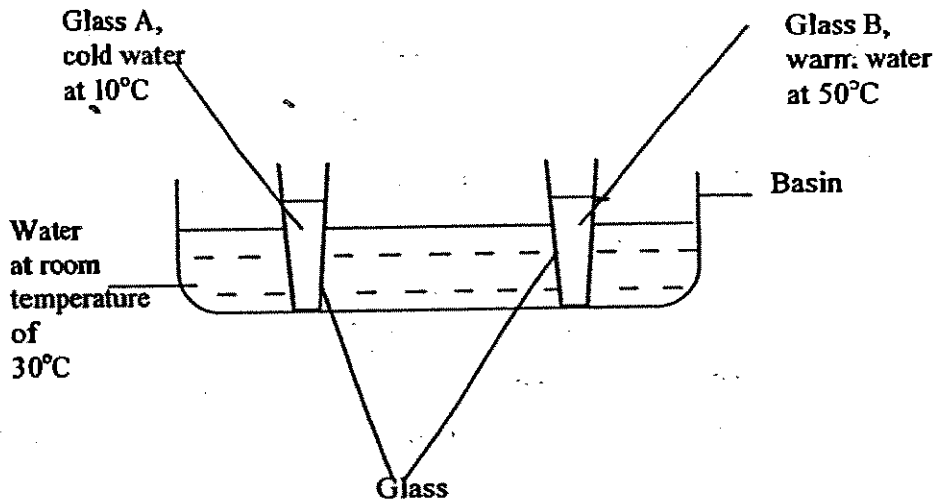
	has woody stem	has non-woody stem
bears fruit	W	X
does not bear fruit	Y	Z

Write down in the spaces provided if the following statements refer to plants W, X, Y or Z. (2m)

(i) Has no bark and is a flowering plant - _____

(ii) Has bark and it reproduces from seeds - _____

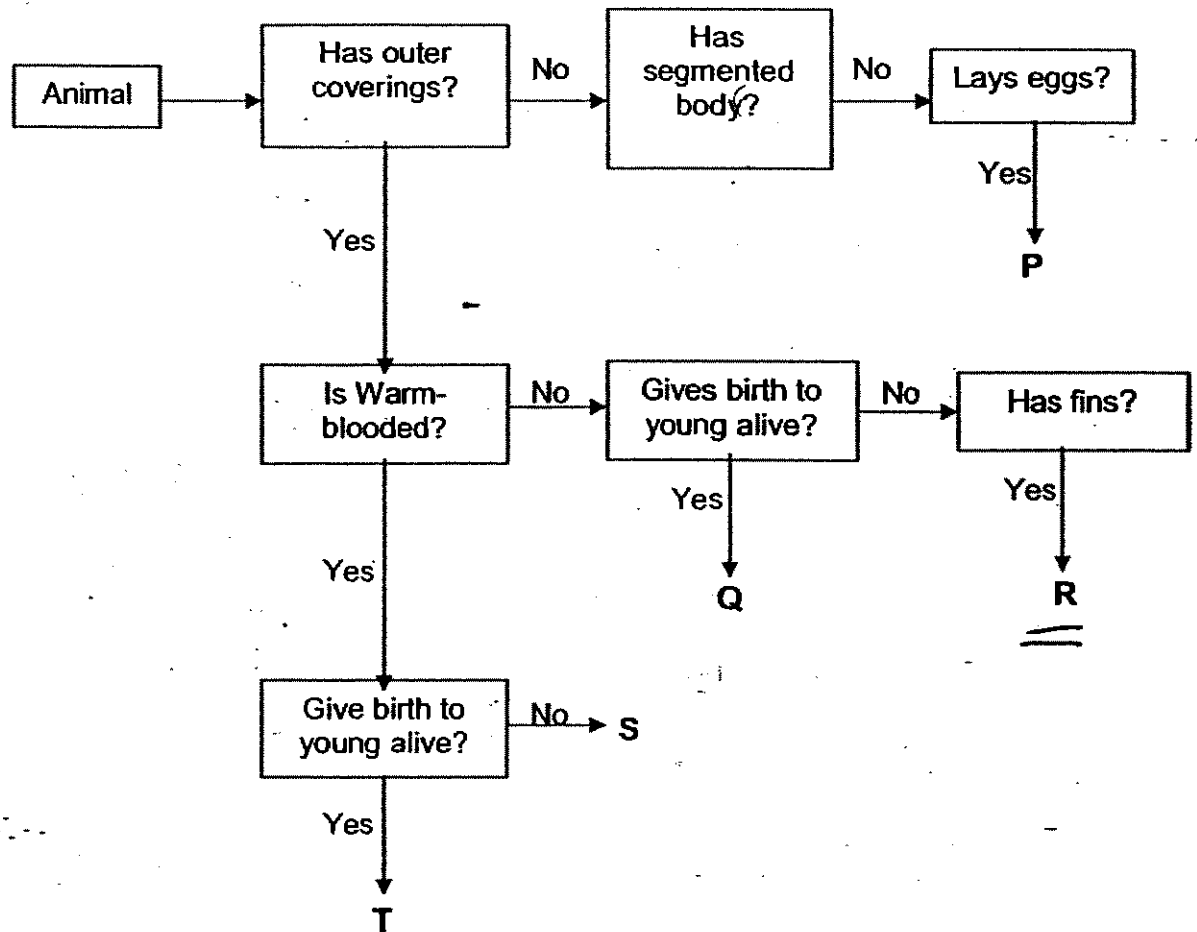
45. 2 identical glasses, A and B, with equal amounts of water, were left in a basin of water at a room temperature of 30°C . The set up is shown in the diagram below.



Put a tick in the correct boxes to show what will be observed in the above set up over a period of 6 hours. (2m)

Temperature of water in Glass A drops	
Temperature of water in Glass B drops	
Water level in Glass B remains the same	
Temperature of water in Glasses A and B reach the same level after 6 hours	

46. Study the flowchart below.



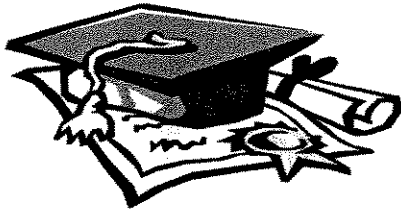
Based on the diagram, state two differences between animals R and T. (2m)

(i) _____

(ii) _____

Setters: Ms Rebecca Lo and Mr Francis Chia





ANSWER SHEET

HENRY PARK PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007
SEMESTRAL ASSESSMENT (1)

1. 2
2. 4
3. 2
4. 3
5. 3
6. 2
7. 1
8. 4
9. 4
10. 3
11. 3
12. 4
13. 3
14. 2
15. 3
16. 4
17. 4
18. 4
19. 4
20. 2
21. 4
22. 3
23. 3
24. 2
25. 4
26. 4
27. 2
28. 2
29. 1
30. 2
- 31) a) The water level will go up.
b) Water goes in and takes the space previously occupied air.
- 32) a) i) B ii) C
b) A
- 33) a) 70
b) The water level will remain unchange in the water level.
c) The property is volume.
- 34) a) Condensation
b) Evaporation
c) Heat lost
d) water vapour
- 35) a) The water vapour condenses in the cooler air surrounding it.
b) There will be water droplets on the metal spoon.
- 36) a) The higher the humidity the slower it evaporate.
b) i) The bigger the expose surface area, the faster the rate of evaporation.
ii) The higher the wind, the faster the rate of evaporation.
- 37) Similarity: The greater the level of humidity the slower the rate of Evaporation.

Difference: Evaporation takes place at any temperature while boiling takes place at 100°C

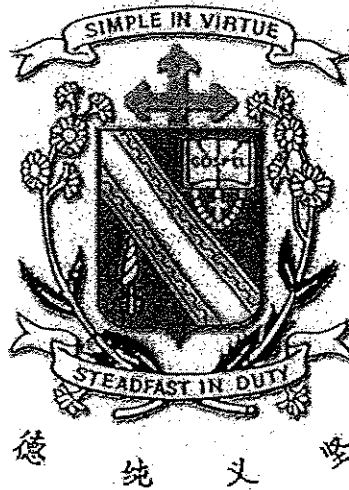
- 38) a) The temperature of water.
b) How many ml water are there left.
- 39) a) Non woody.
b) Twins around the wooden pole as a support.
c) So that the leaves could get sunlight to make food.
- 40) a) Brushing teeth.
b) Take a quick shower instead of a bath.
- 41) a) nose, sense of smell.
b) skin, sense of touch.
- 42) a) Pond B.
b) Pond B water is clear, no toxic substance and stench and the water surface is litter-free.
- 43) a) i) He have to make water the same volume.
ii) He have to make the water the same temperature for the experiment.
b) same location.
c) desalination.
- 44) i) X ii) W
- 45) ✓ × ✓
- 46) i) Animal R lays egg while animal T give birth alive.
ii) T is not a warm blooded while Animal R is warm blooded.

---end---

Name : _____ ()

Class : Primary _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 4

First Semestral Assessment – 2007

SCIENCE

BOOKLET A

9th May 2007

Total Time for Booklets A and B: 1 hour 45 minutes

**30 questions
60 marks**

**Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.**

Section A: (30 x 2 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 of the following properties describe a matter?

- A: It has mass.
- B: It has volume.
- C: It can be seen.
- D: It can be touched.

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

2. The table below describes the properties of Substance X.

	Has a definite shape?	Has a definite volume?	Can be compressed?
Substance X	No	No	Yes

What can Substance X be?

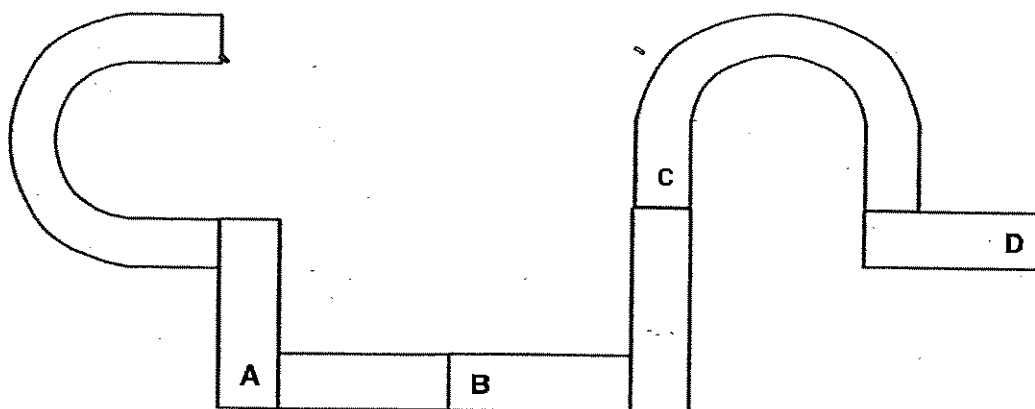
- (1) Honey
- (2) Cotton
- (3) Nitrogen
- (4) Plasticine

3. Which one of the following objects can be attracted by a magnet?

- A: Steel bar
- B: Nickel ring
- C: Gold chain
- D: Aluminium can

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

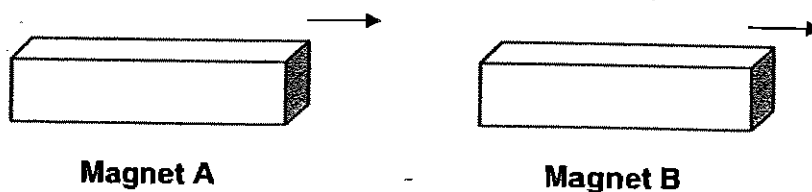
4. The diagram below shows a number of magnets attracted to each other.



What could be the poles of A, B, C and D?

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

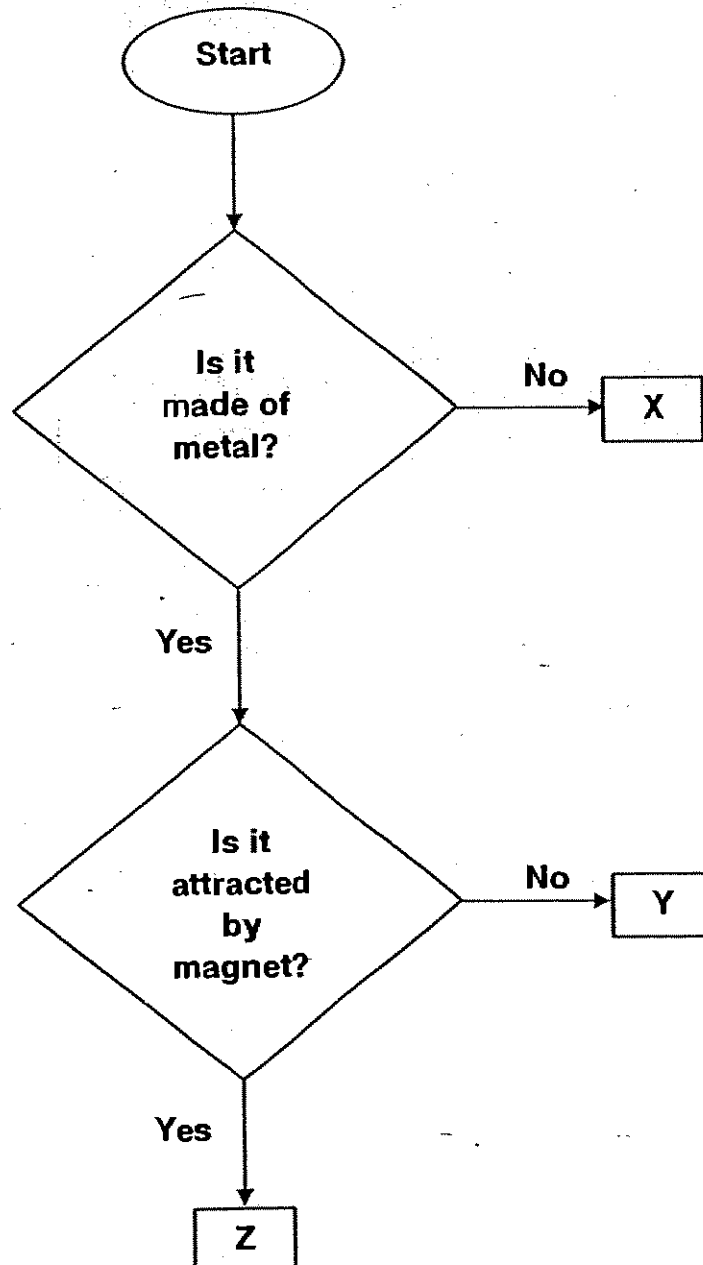
5. When Magnet A was brought near Magnet B, Magnet B moved away from Magnet A as shown in the diagram below.



What can we conclude about Magnet A and B?

- (1) Magnet A has a stronger magnetism than Magnet B.
- (2) Magnet B has a stronger magnetism than Magnet A.
- (3) The like poles of Magnet A and Magnet B are facing each other.
- (4) The unlike poles of Magnet A and Magnet B are facing each other.

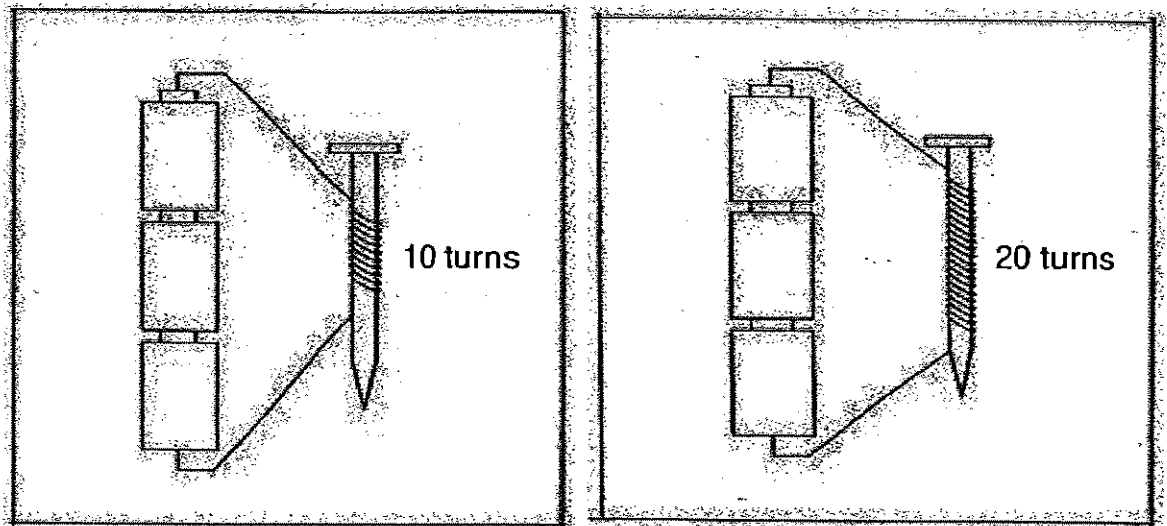
6. Study the flowchart below.



Which one of the following statements is correct?

- (1) X is a magnetic metal.
- (2) Z is a magnetic metal.
- (3) Both Y and Z are magnetic metals.
- (4) Both X and Y are non-magnetic metals.

7. An iron nail becomes a magnet when it is placed in a coil of wire joined to batteries.
- Jasmine sets up two arrangements as shown below. For each arrangement, she counted the number of paper clips it can attract.



Jasmine is trying to find out whether _____.

- (1) the number of batteries affects the strength of a magnet
 - (2) the type of battery used affects the strength of a magnet
 - (3) the type of iron nail used affects the strength of a magnet
 - (4) the number of turns of coils affects the strength of a magnet
8. Three children made the following statements about water.

Ali : Dew is water in the gaseous state.
Betty : Water exists in three different states.
Corina : Steam is produced when water boils.

Whose statement(s) is/are correct?

- (1) Ali only
- (2) Betty only
- (3) Ali and Betty only
- (4) Betty and Corina only

9. Sarah filled a container with water as shown in Figure 1 below. When she put an egg into the container, some water overflowed into beaker A as shown in Figure 2.

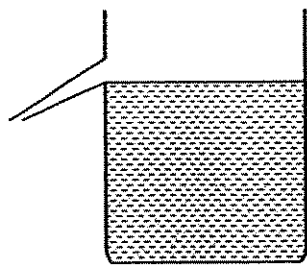


Figure 1

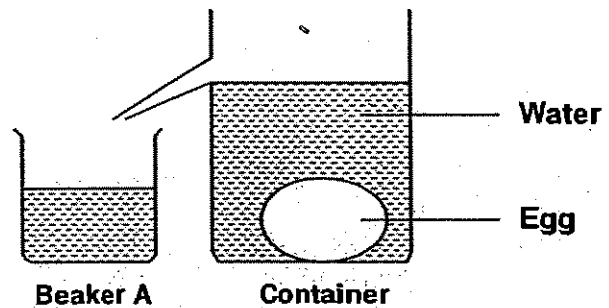


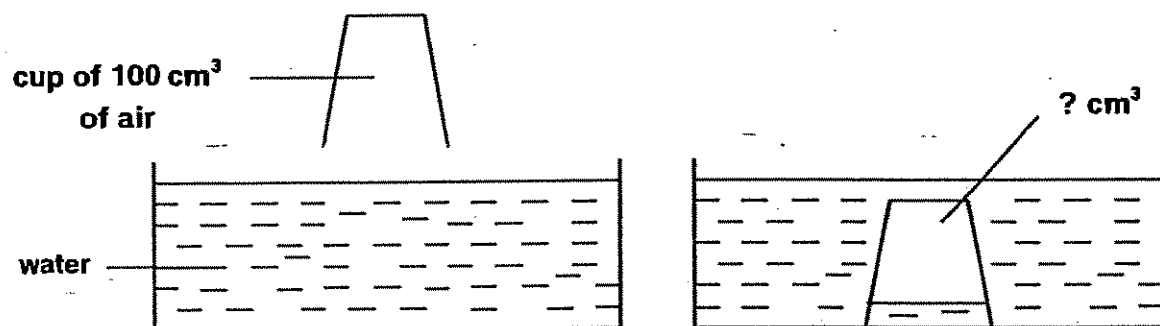
Figure 2

The experiment shows that the egg _____.

- (1) has mass
- (2) has a definite volume
- (3) has no definite shape
- (4) cannot be compressed

(2)

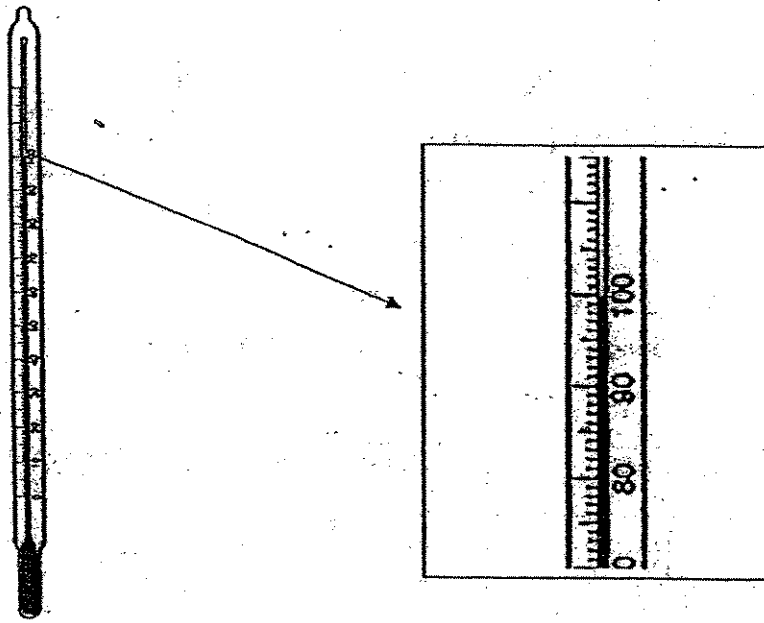
10. The cup in the diagram below contains 100cm^3 of air.



When the cup is pushed down into the water, what is the likely volume of air in the cup?

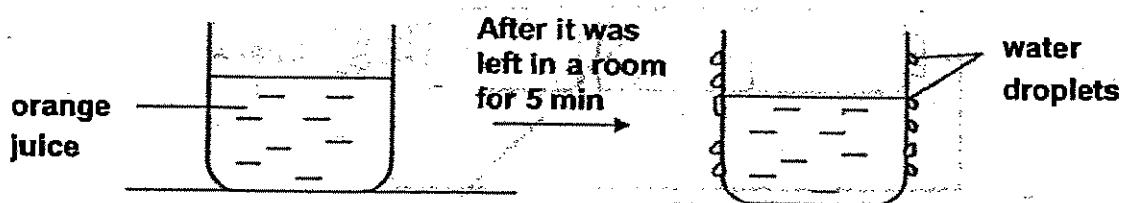
- (1) 0 cm^3
- (2) 90 cm^3
- (3) 100 cm^3
- (4) 110 cm^3

11. Study the diagram below.



The thermometer above shows the temperature when water _____.

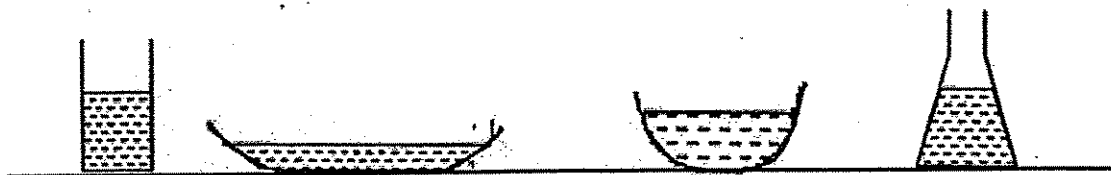
- (1) boils
 - (2) melts
 - (3) freezes
 - (4) condenses
12. John took out a glass of cold orange juice from the refrigerator and placed it on the table in a room. After 5 minutes, he observed that tiny water droplets were formed on the outer surface of the glass as shown in the diagram below.



Where does the water droplets come from?

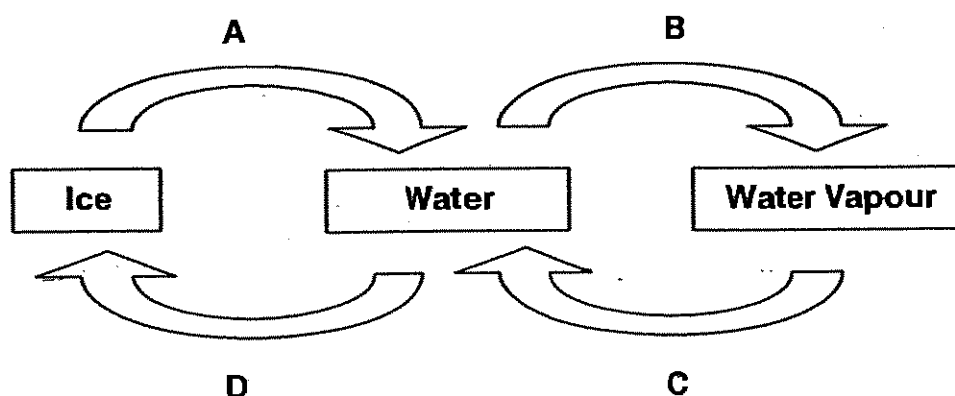
- (1) Refrigerator
- (2) Orange juice
- (3) Surrounding air
- (4) Outer surface of the glass

13. Susan wanted to find out the effects of temperature on the rate of evaporation. She poured an equal amount of water into four containers as shown below. She placed each of them in four different places of varying temperatures. However, Susan's teacher said that it was not a fair test.



What should Susan do to her set-up to ensure a fair test?

- (1) Use identical containers.
 - (2) Place all containers in the same location.
 - (3) Use different amount of water in each container.
 - (4) Use different types of liquid for all the containers.
14. Study the diagram below carefully. The arrows A, B, C and D are processes which represent the change in the states of water.



Which one of the following matches the processes in arrows A, B, C and D?

	A	B	C	D
(1)	Melting	Evaporation	Condensation	Freezing
(2)	Freezing	Condensation	Evaporation	Melting
(3)	Evaporation	Freezing	Melting	Condensation
(4)	Condensation	Melting	Freezing	Evaporation

15. The table below shows the melting points and boiling points of four different substances P, Q, R and S.

Substance	Melting point (°C)	Boiling point (°C)
P	5	110
Q	36	89
R	55	90
S	60	99

Which one of the substances is a liquid at 25°C?

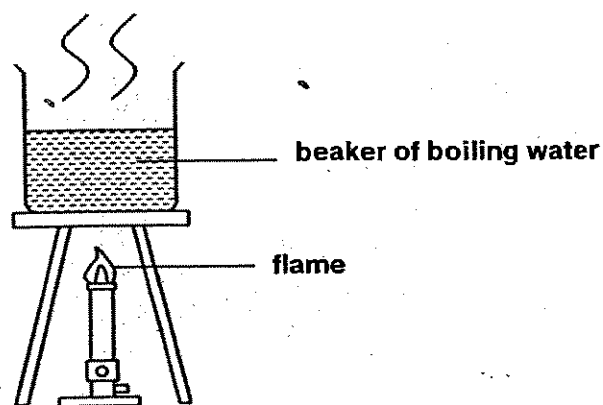
- (1) P
 - (2) Q
 - (3) R
 - (4) S
16. The table below shows statements made by 4 pupils about the factors affecting the rate of evaporation of a liquid.

Alice	The lower the temperature of the surroundings, the higher the rate of evaporation of the liquid.
Ben	The stronger the wind, the higher the rate of evaporation of the liquid.
Chloe	The greater the exposed surface area of the liquid, the higher the rate of evaporation.
Dennis	The lower the humidity, the lower the rate of evaporation of the liquid.

Whose statements are correct?

- (1) Alice and Ben only
- (2) Ben and Chloe only
- (3) Alice and Dennis only
- (4) Chloe and Dennis only

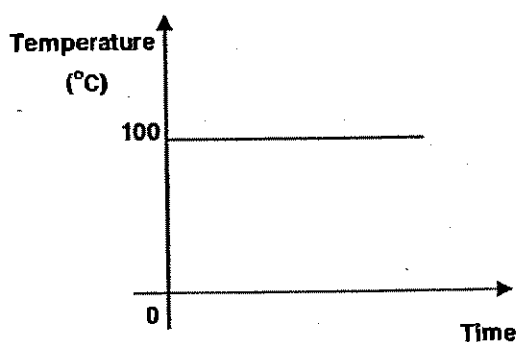
17. Eunice poured some boiling water into a beaker and heated it over a flame as shown in the diagram below.



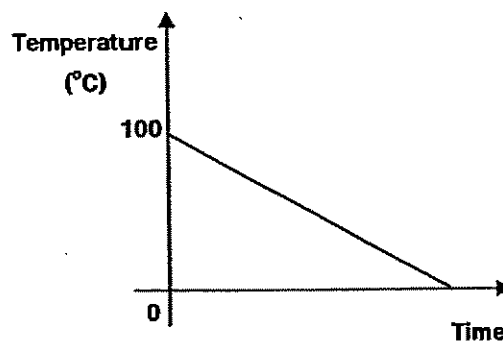
After 10 minutes, Eunice removed the beaker of boiling water and put it in the freezer for two hours.

Which one of the following graphs shows the changes in the temperature of the water throughout the experiment?

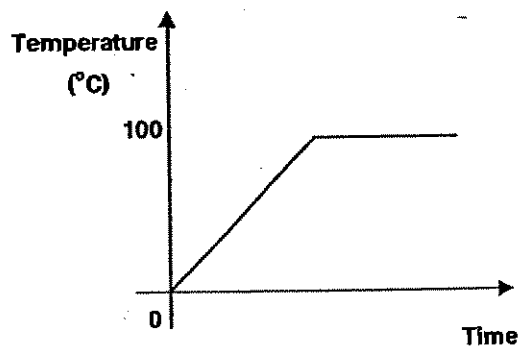
(1)



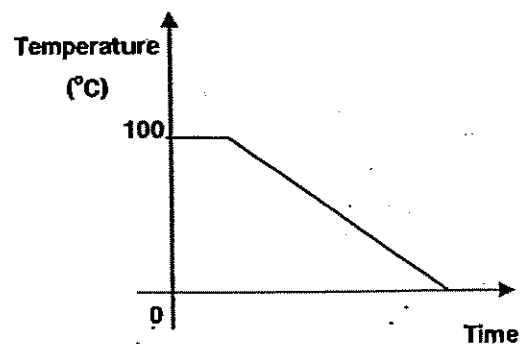
(2)



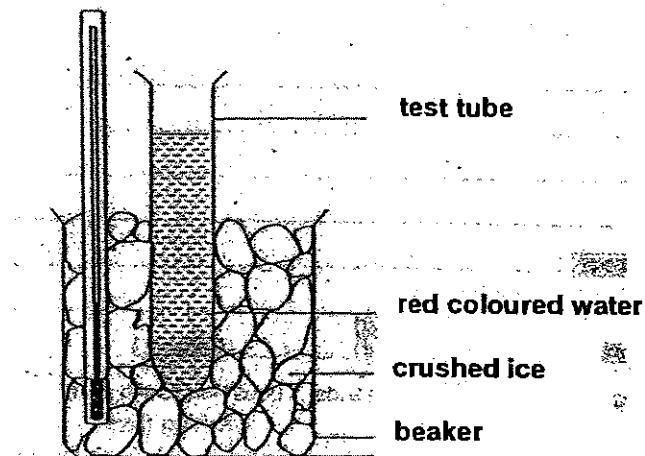
(3)



(4)



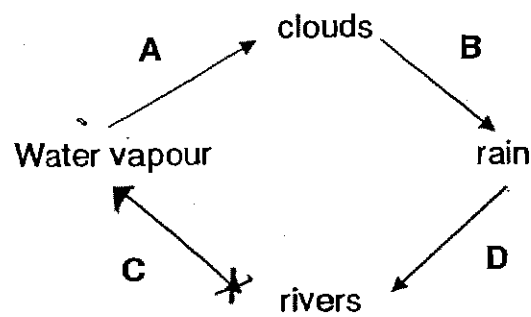
18. A test tube of red coloured water at room temperature is put into a beaker of crushed ice as seen in the diagram below.



The set-up is left in a room for 5 minutes. Which one of the following observations is **incorrect**?

- (1) The ice in the beaker is melting.
 - (2) The red coloured water has turned into ice.
 - (3) Water droplets appear at the side of the beaker.
 - (4) The temperature of the ice cubes remains at 0°C .
19. Water is polluted when _____.
- (1) rain water flow into the drain
 - (2) there are fishes in the reservoir
 - (3) water from the sink flows straight into the sewer
 - (4) wastes from the chemical factories flows straight into the sea

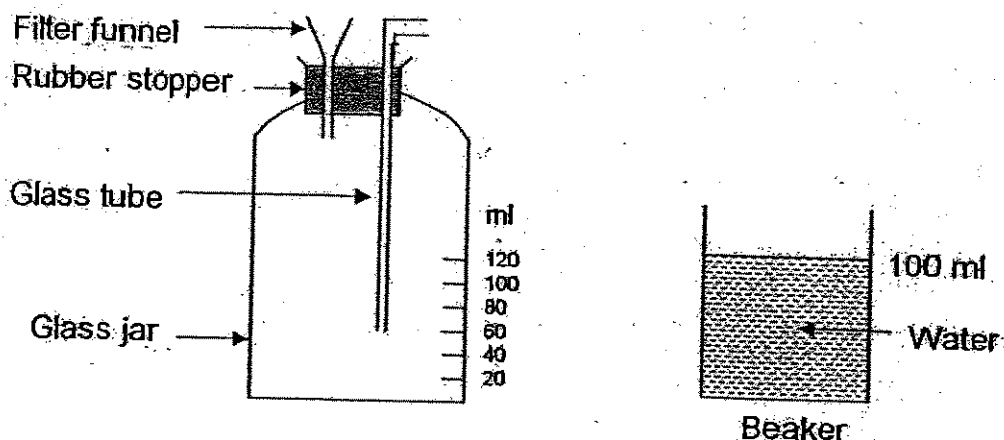
20. The diagram below shows the water cycle.



Which stage(s) of the water cycle does/do not involve a change in state?

- (1) D only
 - (2) A and C only
 - (3) B and D only
 - (4) A, B and C only
21. Which one of the following activities **does not** conserve water?
- (1) Repair any water leakage immediately.
 - (2) Rinse the mouth under running tap water.
 - (3) Replace the hose with a pail when washing cars.
 - (4) Recycle the water used for washing rice to water the plants.

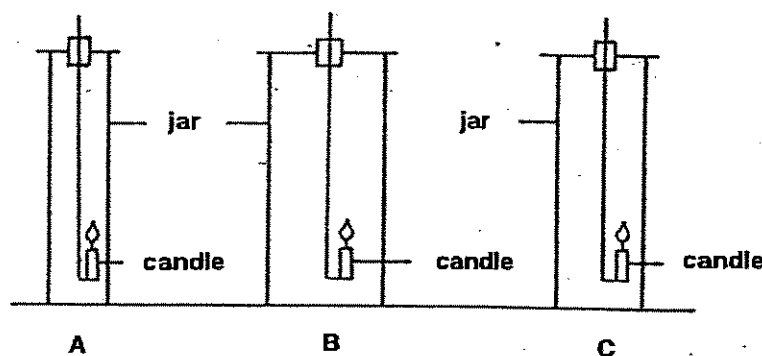
22. The diagram below shows a glass container. It has a rubber stopper with glass tube and a filter funnel.



John found that he could not pour all the water in the beaker into the glass jar through the funnel with a narrow tube.

About how much water in the beaker could be poured into the glass jar?

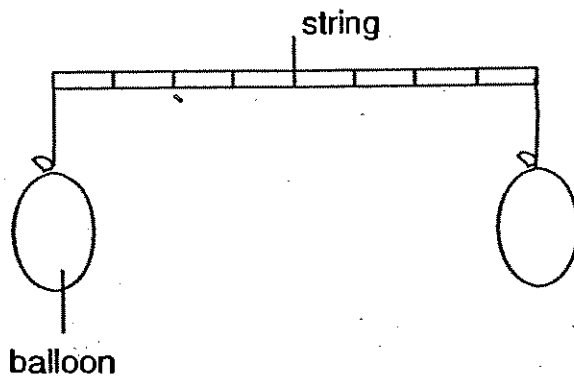
- (1) 20 ml
 - (2) 40 ml
 - (3) 60 ml
 - (4) 70 ml
23. Three identical burning candles, A, B and C are placed in gas jars of different sizes as shown in the diagram below. It is observed that the flames of the three candles extinguished at different times.



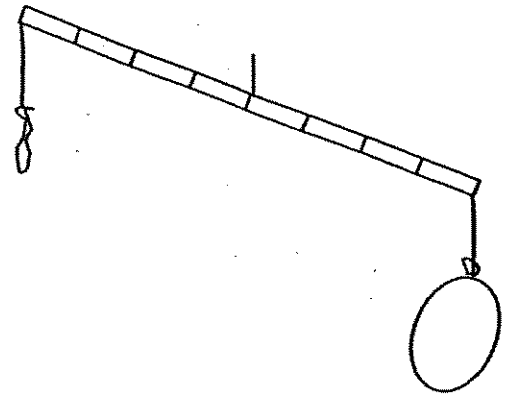
In which order do the candles extinguish?

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

24. Lily carried out an experiment with two balloons as shown in the diagram below.



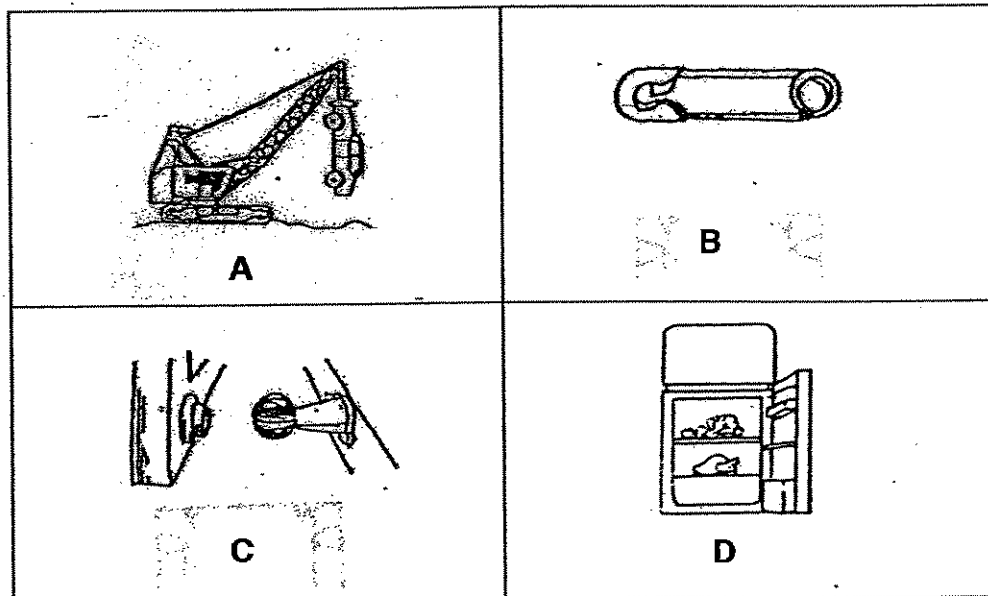
Start of experiment



End of experiment

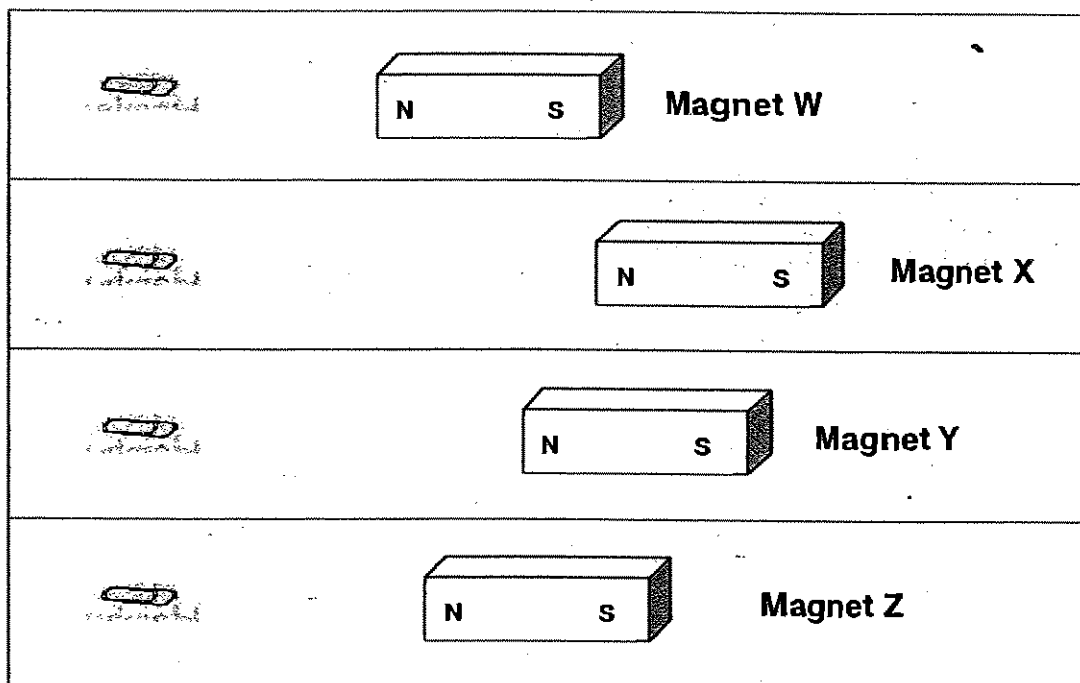
The aim of her experiment is to show that _____.

- (1) air has mass
 - (2) air can be compressed
 - (3) rubber has no definite shape
 - (4) rubber can be used to make balloons
25. Which of the following objects make use of magnets in order to function?



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

26. Ravi wanted to buy the strongest magnet from a shop. She tested 4 magnets with paper clips and recorded the furthest distance from which each of the magnets can attract the paper clip in the diagram below.



Which one of the magnets is the strongest?

- (1) Magnet W
 - (2) Magnet X
 - (3) Magnet Y
 - (4) Magnet Z
27. Which of the following statements about the uses of oxygen are **incorrect**?
- A: It is used for burning.
 - B: It is used for welding.
 - C: It is used to make fertilisers.
 - D: It is used to make fizzy drinks.
- (1) A and B only
 - (2) A and C only
 - (3) B and D only
 - (4) C and D only

28. The table below shows some animals being classified according to the way they breathe.

A	B	C
Whale	Frog	Seahorse
Dolphin	Salamander	Guppy

Which one of the following correctly identifies the breathing methods of A, B and C?

	A	B	C
(1)	Gills	Lungs	Moist skin
(2)	Lungs	Moist skin	Gills
(3)	Blow hole	Gills	Lungs
(4)	Moist skin	Lungs	Blow hole

29. The bar charts below shows the proportion of air.



Each composition of air is represented by the different shading below.



X



Y

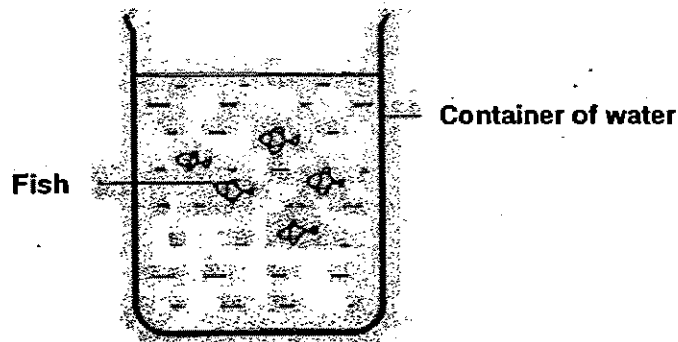


Z

Which one of the following best represents X, Y and Z?

	X	Y	Z
(1)	Water vapour	Nitrogen	Oxygen
(2)	Carbon dioxide	Oxygen	Nitrogen
(3)	Water vapour	Oxygen	Nitrogen
(4)	Carbon Dioxide	Nitrogen	Water vapour

30. Jane bought some fishes and put them in a container of water as shown below.



Jane was worried that the fishes might not have enough air in the water. What should she do to ensure sufficient supply of air in the water?

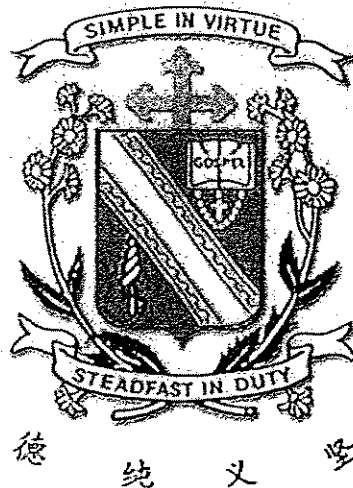
- (1) Add soil into the water
- (2) Add more fishes into the water
- (3) Add aquatic plants into the water
- (4) Add more food to feed the fishes

*******End of Section A*******

Name : _____ ()

Class : Primary _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 4

First Semestral Assessment – 2007

SCIENCE

BOOKLET B

9th May 2007

Total Time for Booklets A and B: 1 hour 45 minutes

**16 questions
40 marks**

Booklet A	60
Booklet B	40
Total	100

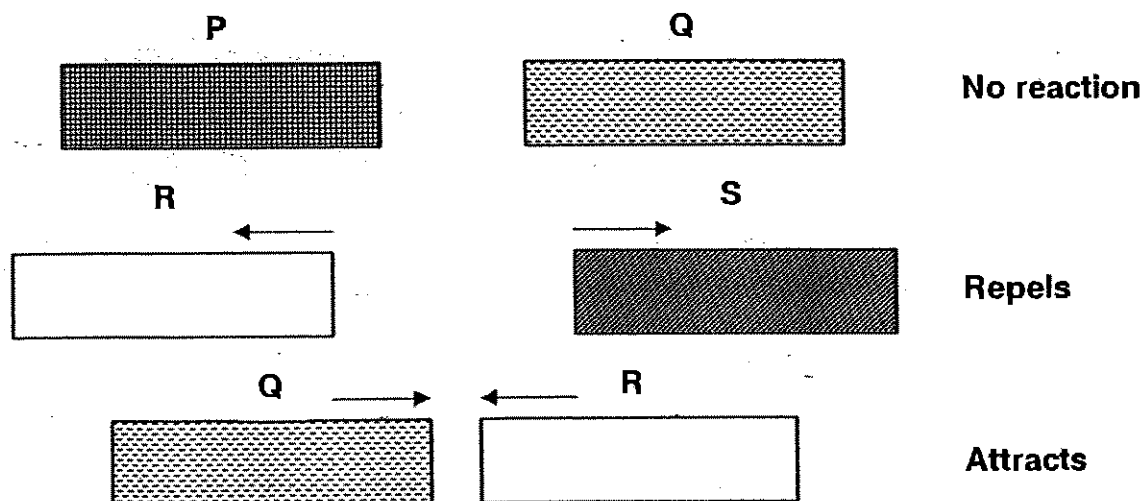
**Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.**

Parent's Signature/Date

Section B: (40 marks)

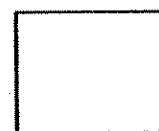
Answer all the questions in the spaces provided.

31. Four objects, P, Q, R and S are put close to each other to test if they are magnets. The results are shown below.

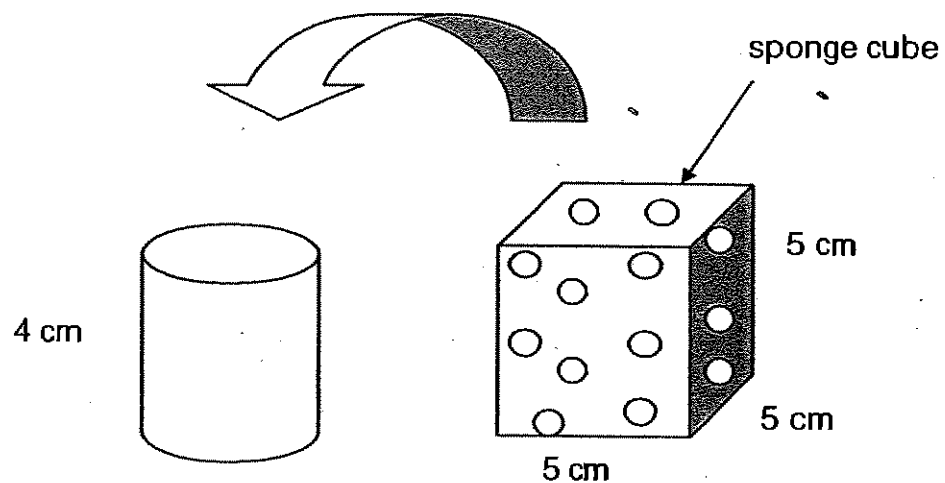


- (a) Which of the objects P, Q, R and S are definitely magnets? (1m)

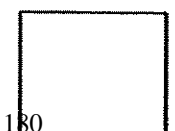
- (b) Which object is a non-magnetic material? (1m)



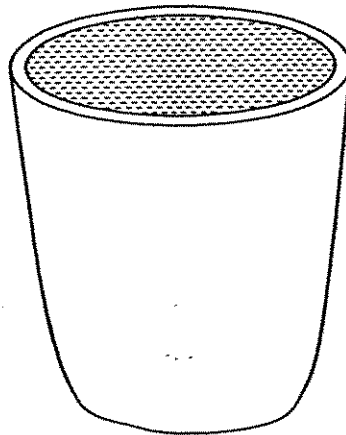
32. Henry has a sponge cube and a cylinder as shown in the diagram below.



- (a) Henry finds out that he can squeeze the sponge into the cylinder. Why is this so? (1m)
-
- (b) What will Henry observe if he repeats the experiment with a solid cube of the same volume? Explain your answer clearly. (1m)
-



33. A plastic cup is filled to the brim with hot tea as shown in the diagram below.

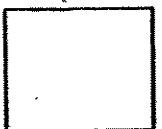


Plastic cup of hot tea

- (a) When the plastic cup is placed in a room at room temperature, the hot tea has cooled down. What does this observation show? (1m)

- (b) What will happen to the plastic cup if it is placed in the freezer overnight? (1m)

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



34. **A** cannot be compressed. However, when it is heated, it will change its state to **B**. **B** takes up the shape of the container. Further heating will cause **B** to change its state to **C** and **C** can be compressed.

(a) What states do **A**, **B** and **C** represent?

(1½m)

(i) **A** : _____

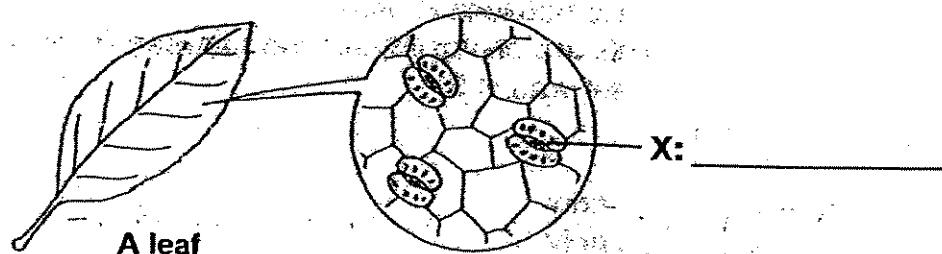
(ii) **B** : _____

(iii) **C** : _____

(b) What could be done in order to change the state of **B** back to **A**? Explain your answer.

(1m)

35. Study the diagram below.

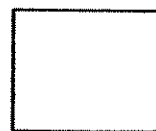


(a) Name the part on the leaf as indicated on the diagram.

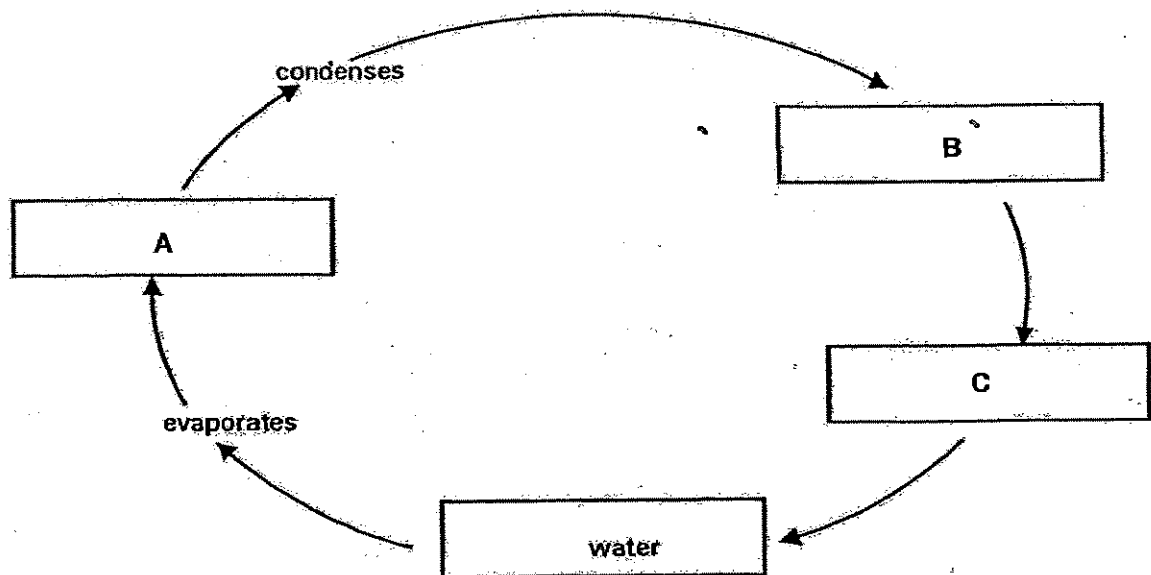
(1m)

(b) What will happen to the leaf if "X" is missing?

(1m)



36. The diagram below shows the water cycle.



(a) What does each of the letters A, B and C represent? (1½ m)

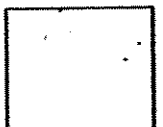
(i) A : _____

(ii) B : _____

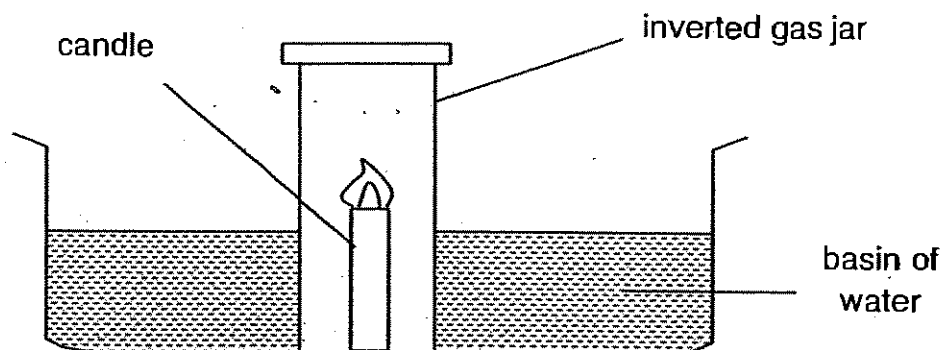
(iii) C : _____

(b) List one difference between the properties of A and C. (1m)

(c) Why is water cycle important⁺ to all living things? (1m)



37. Kelly conducted an experiment as shown in the diagram below.

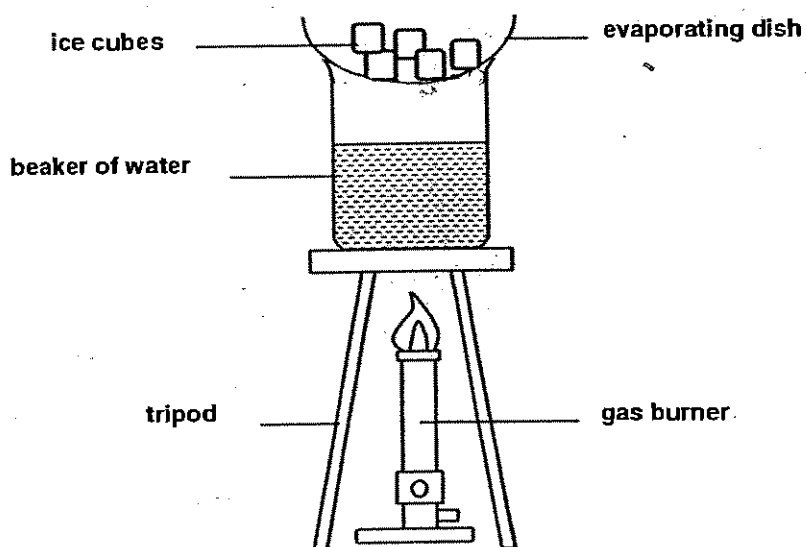


After a few minutes, Kelly observed that the flame went off after burning for a while.

- (a) What is one **OTHER** observation Kelly made from the above experiment? (1m)

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

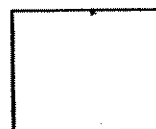
38. Mr Lee wanted to show his students the changes of state of water by setting up an experiment as shown below.



The steps taken are as follow:

Step 1	Heat the beaker of water until water boils.
Step 2	Cover the beaker with evaporating dish.
Step 3	Observe the bottom of the evaporating dish.

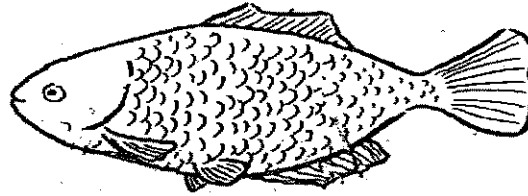
- (a) Draw on the diagram above to show where the water droplets will be formed. (1m)
- (b) Explain clearly how the water droplets are formed. (2m)
-



39. Look at the picture of a fish below.

(a) Draw an arrow to indicate the gill cover on the picture below.

(1m)



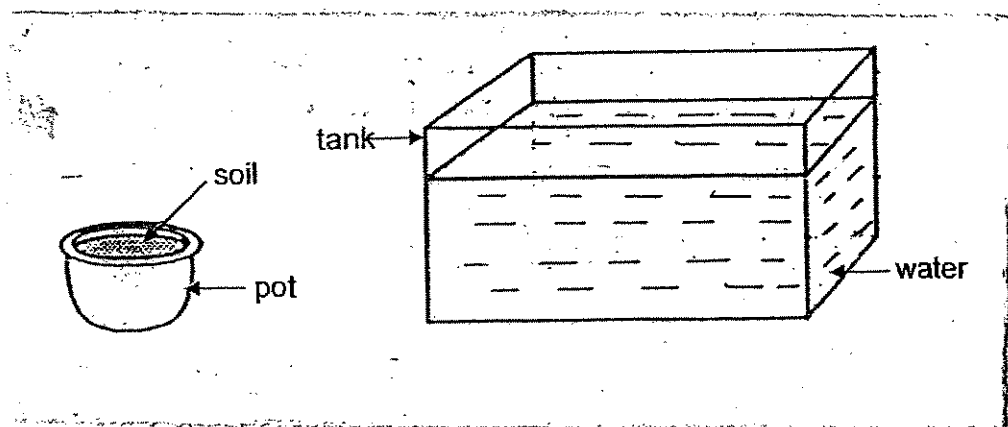
(b) State the function of the gill cover.

(1m)

(c) How are the gills useful to the fish?

(1m)

40. John was given a pot of soil and a tank of water to carry out an experiment to show that there is air in the soil.



(a) What must he do to show that there is air in the soil?

(1m)

(b) What observation would tell him that there is air in the soil?

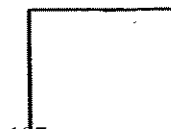
(1m)

41. Susan placed 10 water plants into four containers respectively. Each container had water from four different rivers. After many days, she counted the number of water plants left in the container and recorded her observations in the table below.

Water taken from river	Number of water plants			
	Day 5	Day 10	Day 15	Day 20
A	10	8	6	3
B	10	10	10	10
C	10	12	14	16
D	10	10	13	15

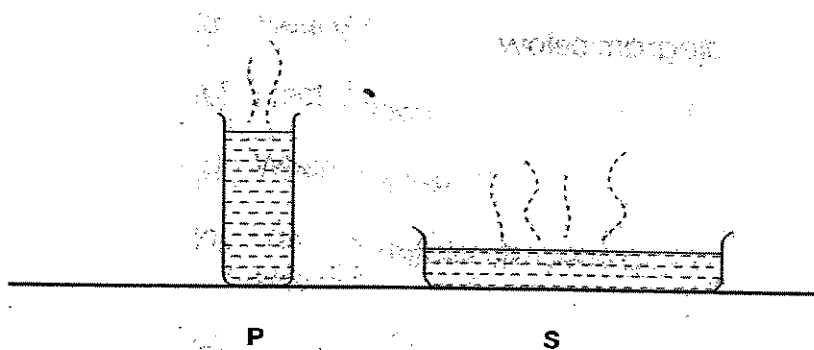
- (a) From the table ^{above} ~~below~~, which river source is likely to be polluted? (1m)

- (b) What is the possible cause for the pollution? (1m)



187

42. Equal volume of water at 100°C is poured into two different containers P and S as shown in the diagram below.



After a few hours, both containers P and S have the same amount of water left. Give two possible reasons for the above observation.

(2m)

43. The diagrams below show two different processes taking place.



Diagram A

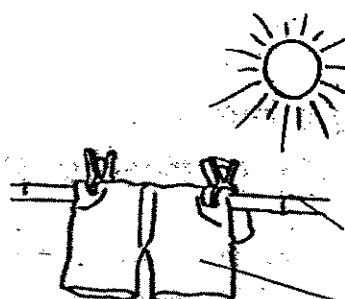


Diagram B

wet clothes

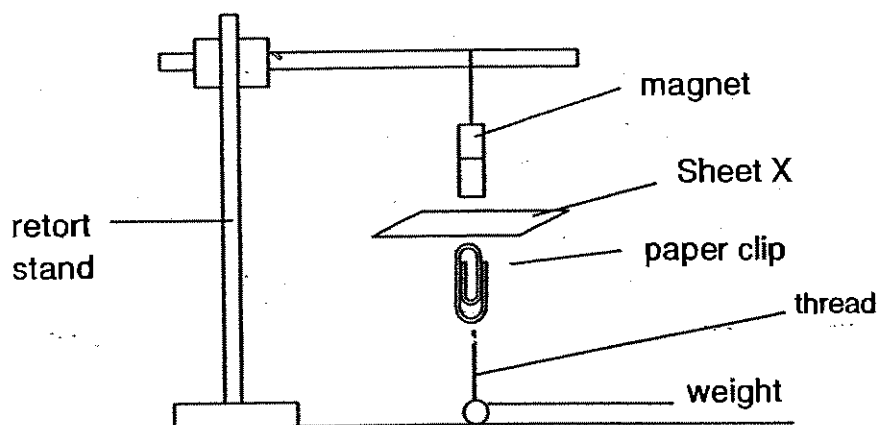
- (a) List one similarity between the two processes in Diagrams A and B.

(1m)

- (b) List one difference between the two processes in Diagrams A and B.

(1m)

44. An experiment was conducted using two sheets, X and Y, which are made of different materials.



When Sheet X was held below the suspended magnet, the paper clip was lifted. When the experiment was repeated using Sheet Y, the paper clip was not lifted.

Andrew was told that one sheet was made of iron while the other was made of plastic.

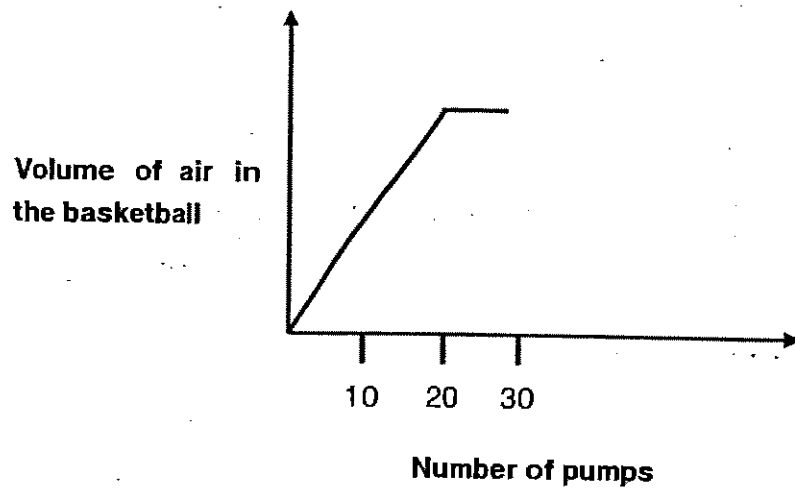
- (a) Based on the experiment, identify the type of materials Sheet X and Sheet Y are made of. (2m)

(i) Sheet X: _____

(ii) Sheet Y: _____

- (b) Explain clearly your answer above. (1m)

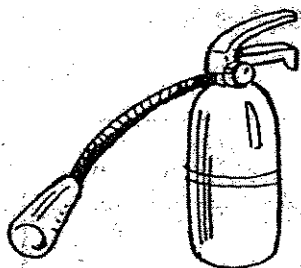
45. Air was pumped into a completely deflated football. The graph below shows the volume of air in the basketball as air is pumped into it. No air was leaked during the pumping process.



- (a) What can Rani conclude about the volume of air in the basketball after 20 pumps? (1m)

- (b) Rani noticed that she could not pump in any more air into the basketball after 30 pumps. Why? (1m)

46. The diagram below shows a fire extinguisher.



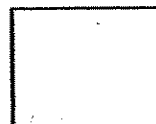
(a) What is the gas found in the fire extinguisher? (1m)

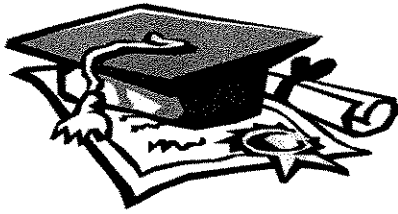
(b) State two other uses of the gas in (a). (2m)

(c) Name another gas which can be used to put out fire. (1m)

~~ End of Paper ~~

Have you checked your paper?





ANSWER SHEET

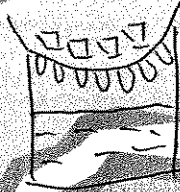
CHIJ PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007
SEMESTRAL ASSESSMENT (1)

1. 1
2. 3
3. 1
4. 2
5. 3
6. 2
7. 4
8. 4
9. 2
10. 2
11. 1
12. 3
13. 1
14. 1
15. 1
16. 2
17. 4
18. 2
19. 4
20. 3
21. 2
22. 4
23. 2
24. 1
25. 3
26. 2
27. 4
28. 2
29. 1
30. 3
- 31) a) Objects R and S.
b) Object P.
- 32) a) The air in the sponge can be compressed.
b) The solid cube could not fit in the cylinder as it could not be compressed.
- 33) a) The hot tea loses heat to the surrounding.
b) The plastic cup will crack.
c) The tea will freeze and the volume will increase.
- 34) a) i) solid ii) liquid iii) gas
b) Put B in the freezer. When the liquid state loses heat, it would change into a solid state which is A.
- 35) a) X: stoma
b) The leaf cannot take in carbon dioxide to make food.
- 36) a) i) water vapour
ii) clouds
iii) rain
b) A does not have a definite volume but c does.
c) It ensures a constant supply of fresh water.

37) a) The water enters the jar.

b) The oxygen in the jar was used up so there was space for the water.

38) a)



b) The water vapour from the hot water touches the cold surface of the dish and condense into water droplets.

39) a)



b) To protect the gills of the fish.

c) To let the fish breathe.

40) a) He should put the pot of soil at the bottom of the tank.

b) He should see air bubbles coming out of the tank.

41) a) River A.

b) The rowing of waste into rivers.

42) P is placed in a sunny place. S is place in a shady place.

43) a) In both processes water changes from a Liquid to a gas.

b) Process A takes place at a fixed temperature while process B takes place at any temperature.

44) a) i) Plastic ii) Iron

b) Magnetism can pass through non-magnetic materials.

45) a) The air in the balloon cannot be compressed any more.

b) Air can be compressed until a certain point.

46) a) Carbon dioxide.

b) It is used to make fizzy drinks.

c) Nitrogen.

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

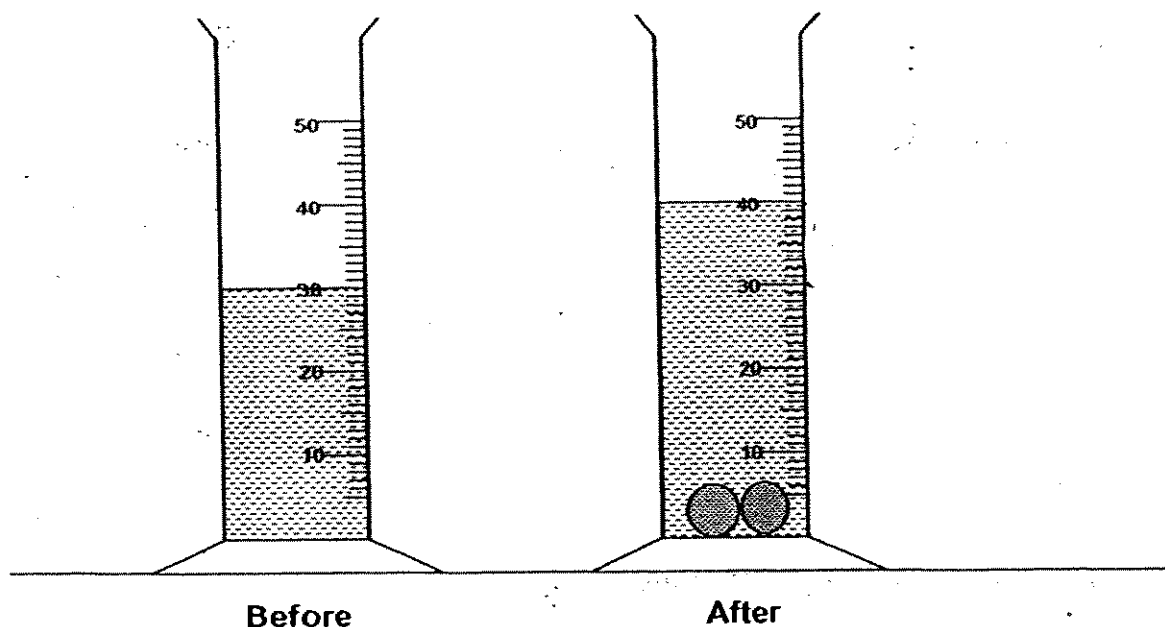
In what ways are solids X and Z ~~similar~~?

- 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
- (3) A and C only

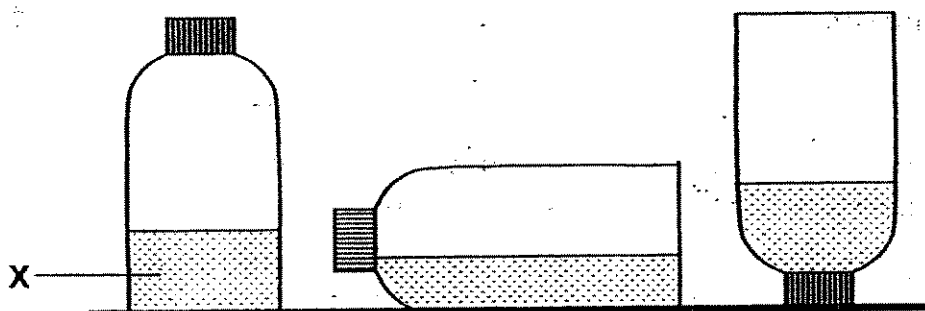
- (2) C only
- (4) A, B and C

- Get a Tutor to go through the Papers. <http://www.vesttution.sg>
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.

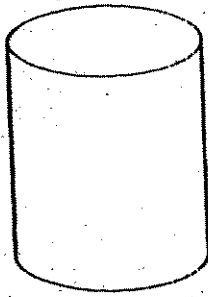


Based on the diagram, which of the following statement(s) is/are **definitely** true?

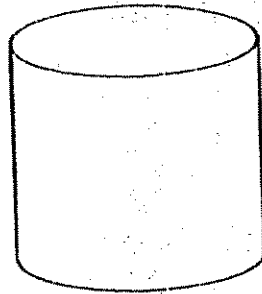
- A: X is a gas.
 B: X can be compressed.
 C: X occupies space.

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

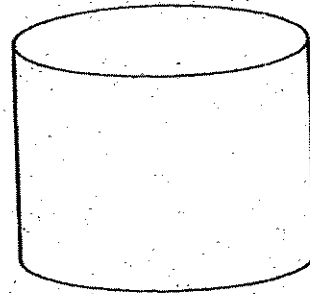
5. The diagram below shows three containers. Jieming has 500 cm³ of oxygen and 500 cm³ of petrol. He wants to transfer all the oxygen and petrol into another container. Which of the following containers would be able to hold all the oxygen and petrol?



Container A
Capacity: 500 cm³



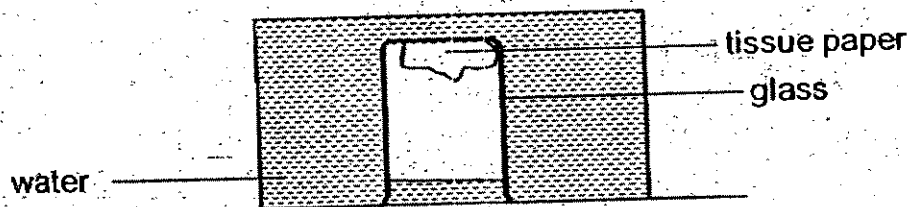
Container B
Capacity: 950 cm³



Container C
Capacity: 1200 cm³

- | | |
|------------------|------------------|
| (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.



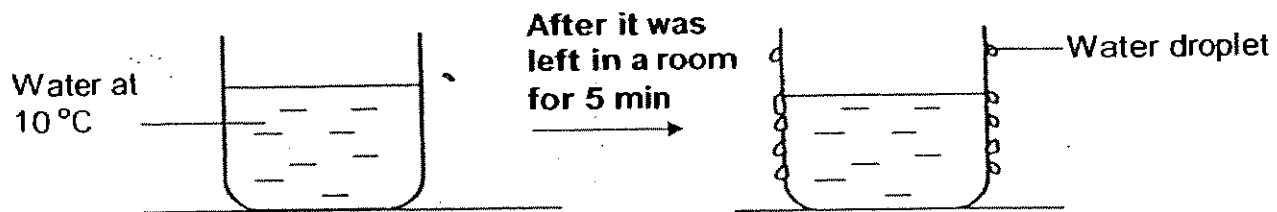
What does this experiment show?

- | | |
|-------------------------------|------------------------------------|
| (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.



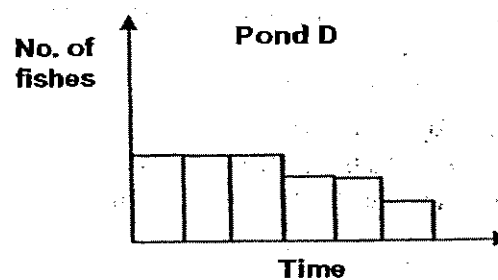
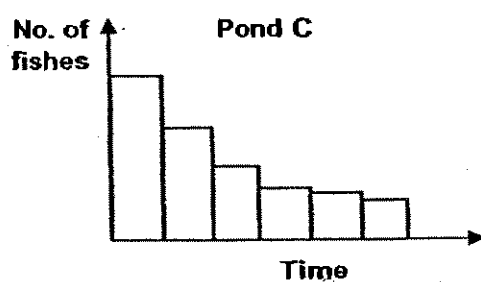
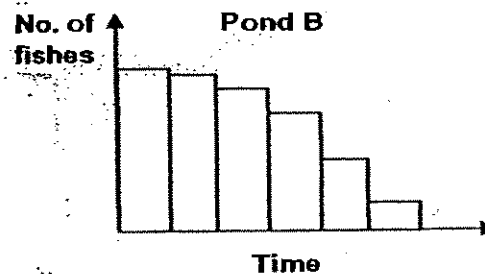
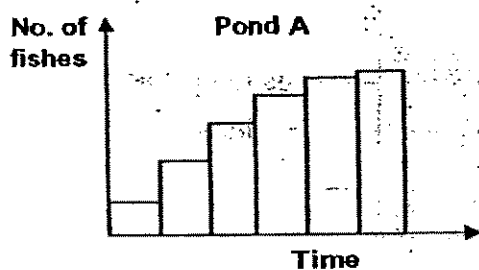
What inferences can be made based on the experiment above?

- 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
 (3) B and C only

- (2) A 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.

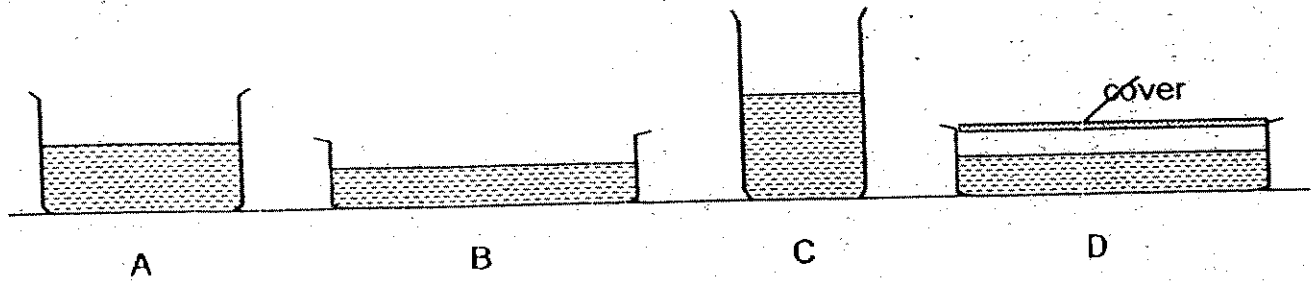


Which pond contains water that is most likely not polluted?

- (1) Pond A
 (3) Pond C

- (2) Pond B
 (4) Pond D

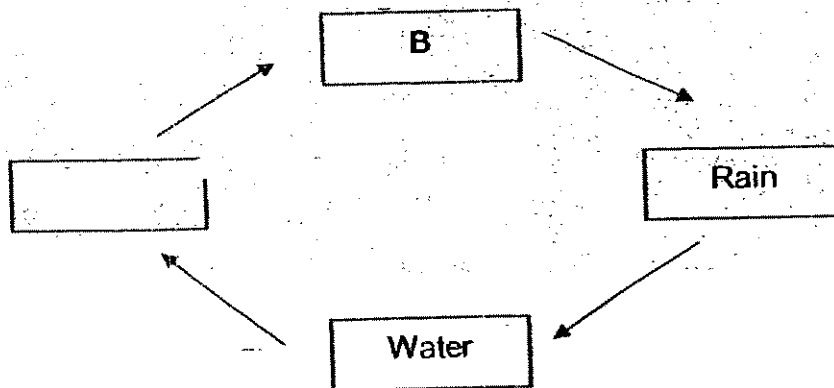
10. Four glass containers, A, B, C and D, were each filled with 200 cm³ of water as shown below.



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.

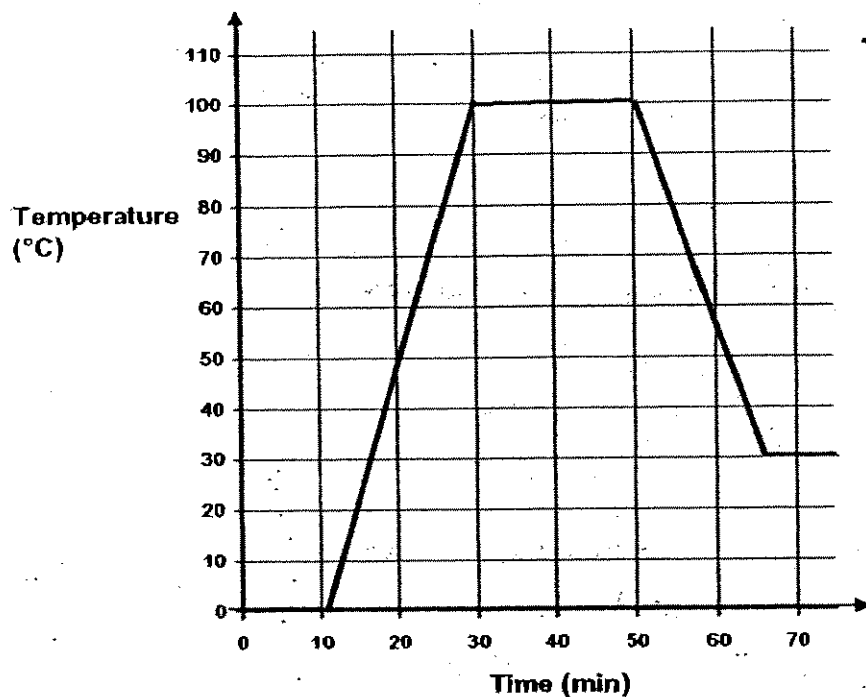
- (1) A only (2) B only
(3) A and B only (4) B and C only

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) 10th
(3) 50th

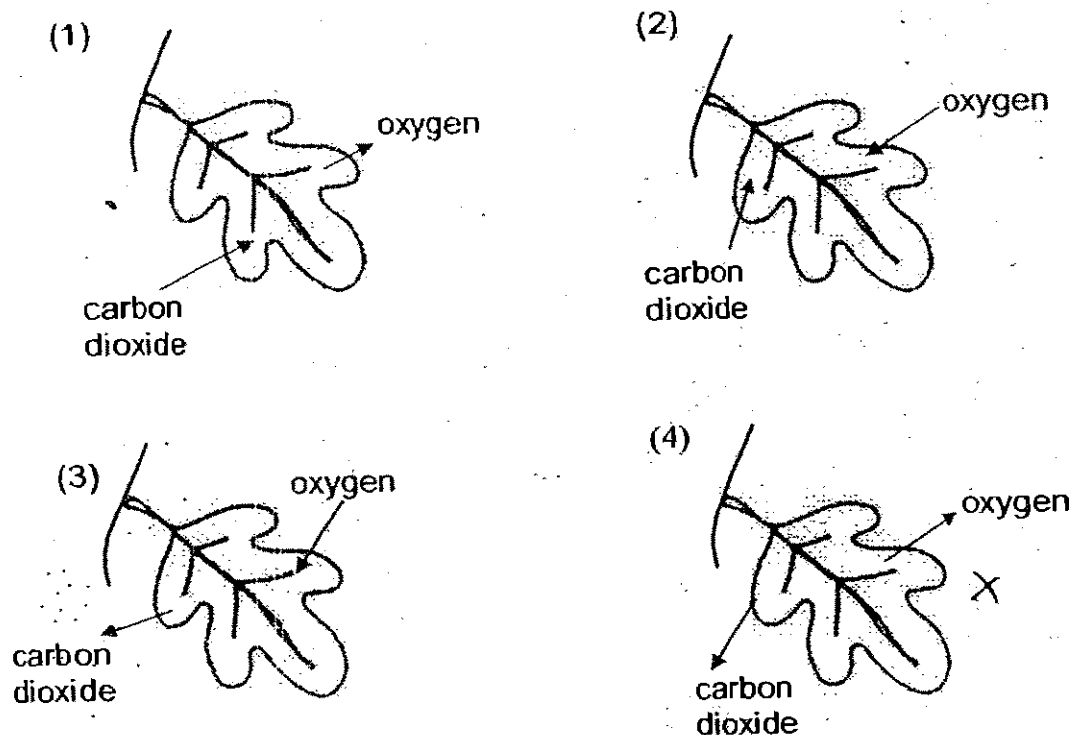
- (2) 30th
(4) 65th

14. What was the room temperature?

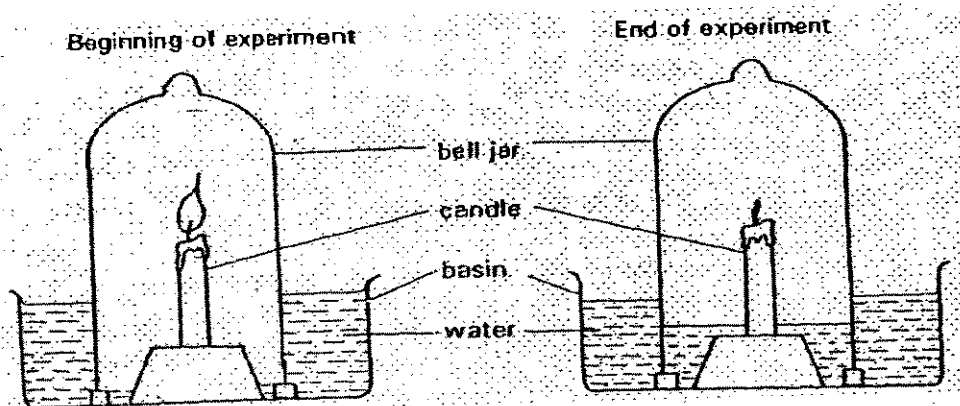
- (1) 0°C
(3) 30°C

- (2) 25°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?



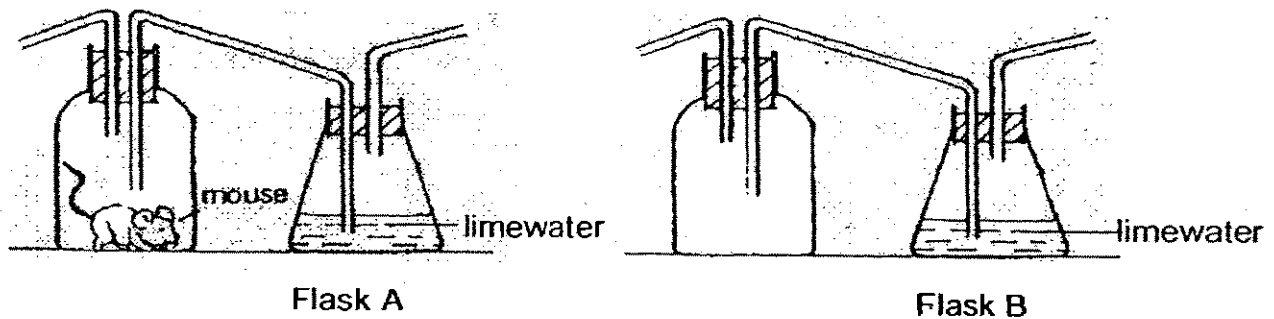
16. Shawn lighted a candle in a basin of water and covered it with a bell jar as shown in the diagram below.



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.

Get additional documents and papers to find out if carbon dioxide is given off by the mouse during respiration. <http://www.vestition.sg>



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 not correctly matched to its breathing part?

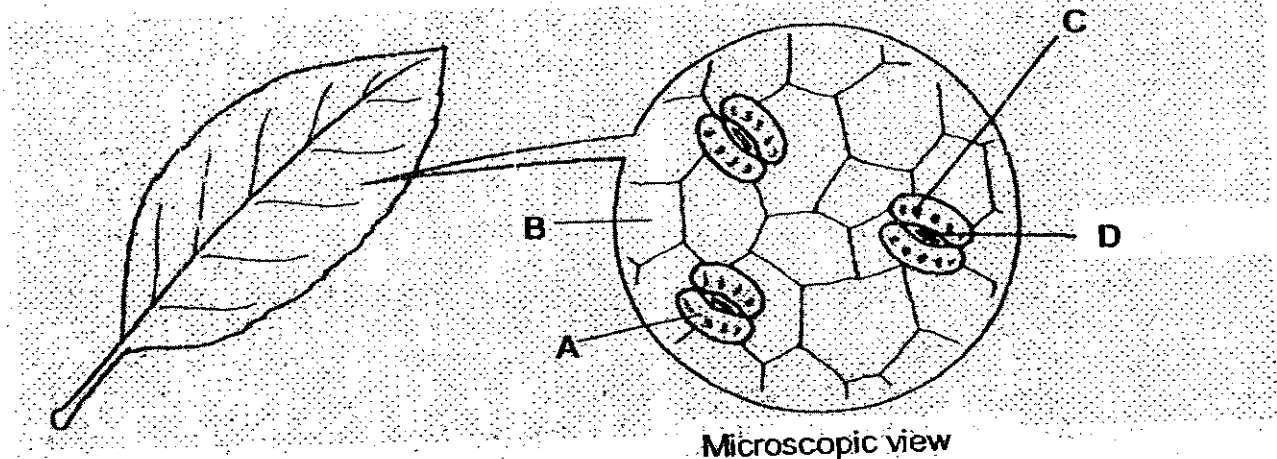
	Animals	Breathing parts
(1)	Mud skipper	Gills
(2)	Dog	Lungs
(3)	Seal	Lungs
(4)	Whale	Gills

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

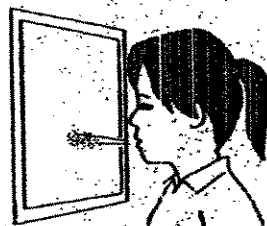
21. The diagram below shows the underside of a leaf under a microscope.



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

- 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

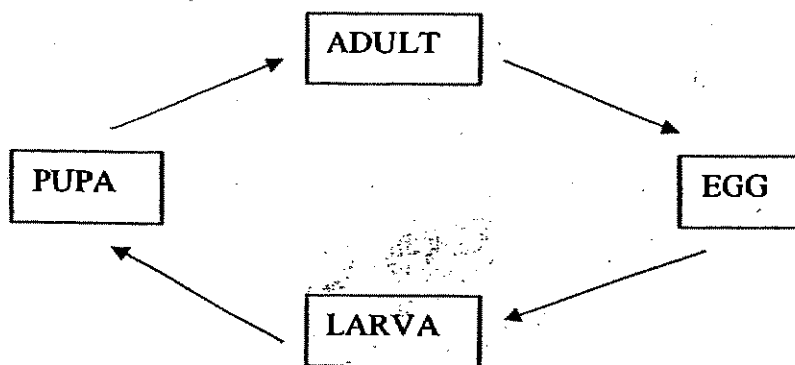
- (1) A and B only (2) A and C only
 (3) B and C only (4) A, B and C

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.

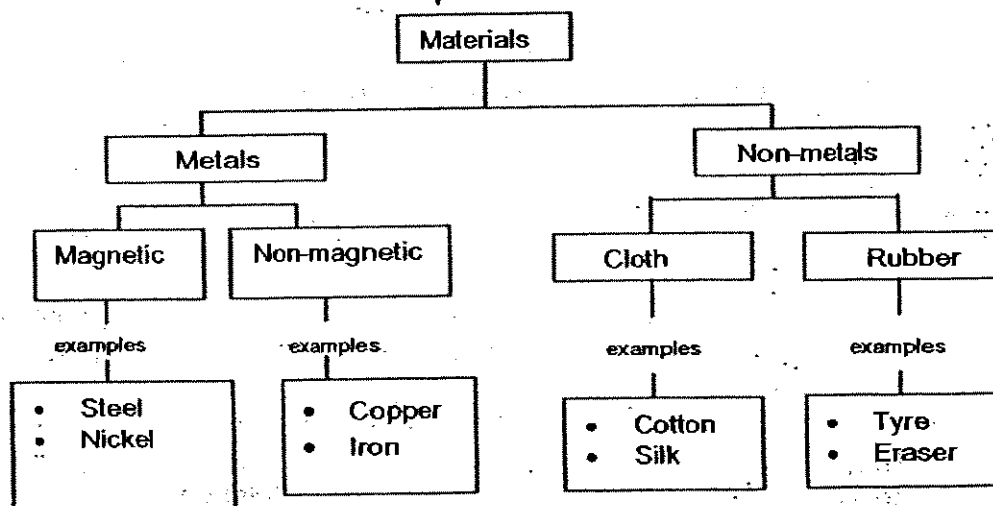
29. Angie found an Animal X near a lake. She observed that the Animal X has the following characteristics:

- 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

Name : _____ ()

Class : Primary 4 _____

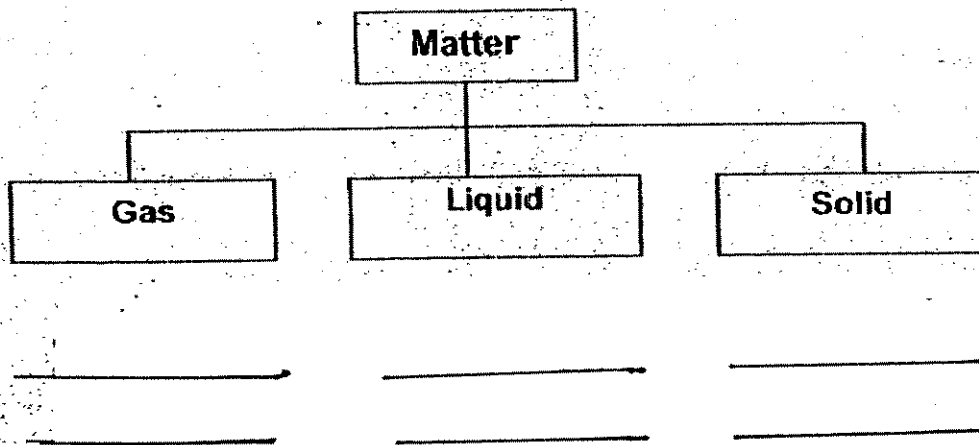
Marks
40

Section B : (40 marks)

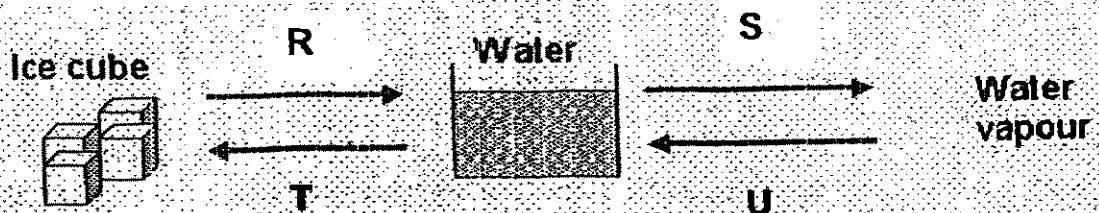
For question 31 to 46, write your answers in the spaces provided. The number of marks available is shown in the bracket () at the end of each question or part question.

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

Pencil	Steam	Oxygen
Oil	Milk	Mirror



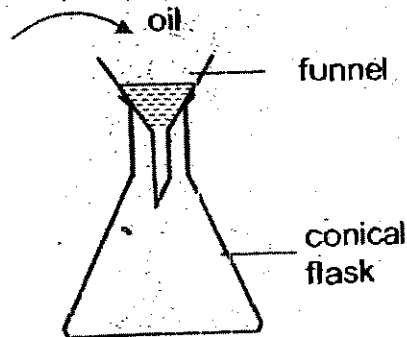
32. The diagram below shows the changes in states of water.



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

R: _____ S: _____

T: _____ U: _____



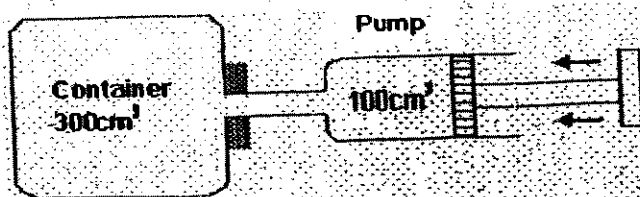
When he poured some oil into the funnel, the oil dripped into the conical flask slowly.

(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)

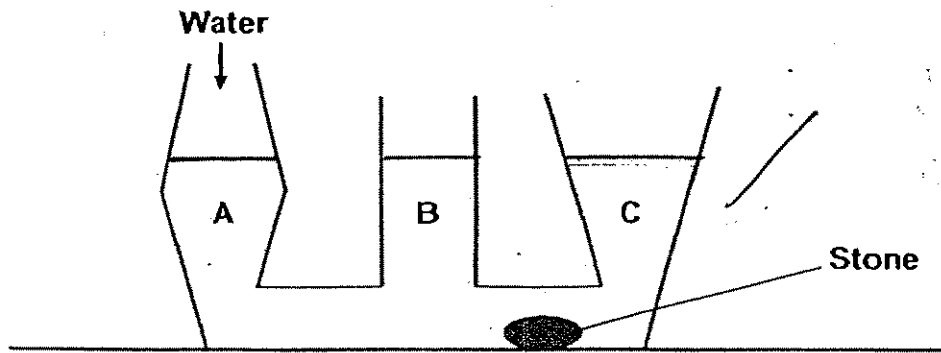
(c) Explain how your method stated in (b) allows the oil to flow faster. (1m)

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



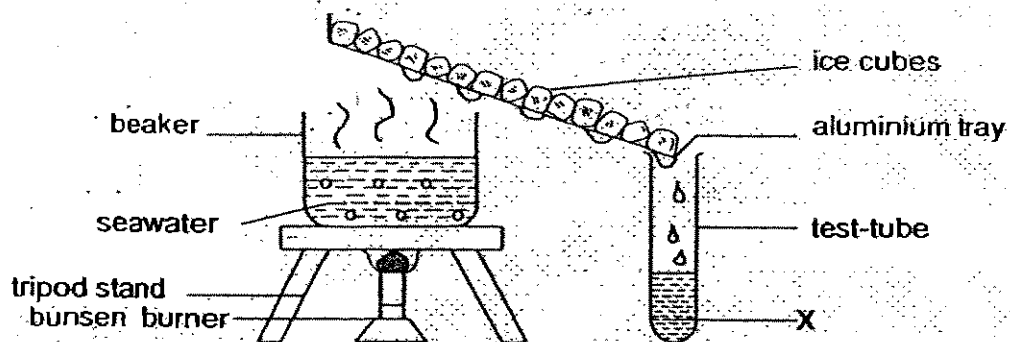
(a) What is volume of the air in the container when 100 cm^3 of air is pumped into it? (1m)

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



- (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)

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

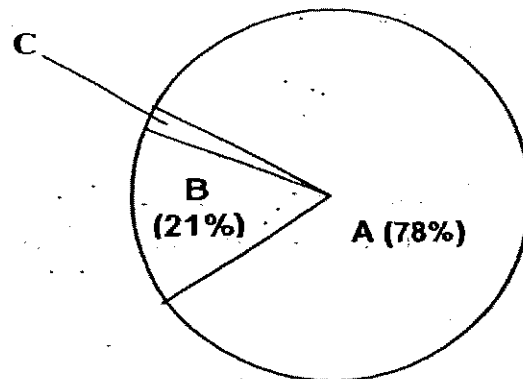
- ~~A~~: Water evaporates.
- ~~B~~: Condensation occurs.
- ~~C~~: Heat energy from the Sun warms the Earth.
- ~~D~~: Warm air rises and then cools.
- ~~E~~: Droplets of water form clouds
- ~~F~~: When the water droplets become bigger, rain falls.

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)

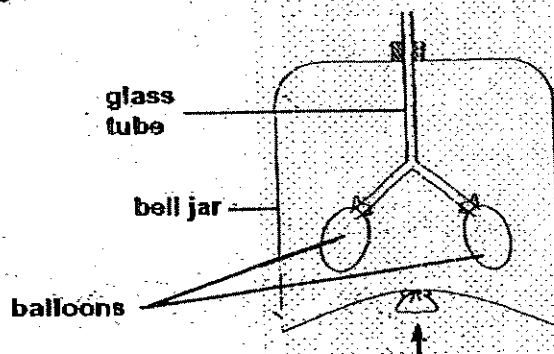
A	
B	
C	

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:

--	--

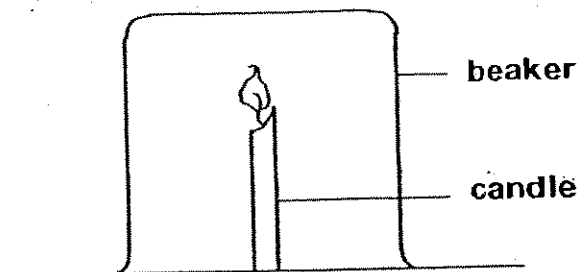
(2m)

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

--

--

41. Get a Tutor to go through the papers 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.

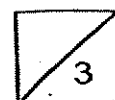
The length of the candle.	<input type="checkbox"/>
The size of the candle.	<input type="checkbox"/>
The size of the beaker	<input type="checkbox"/>

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)

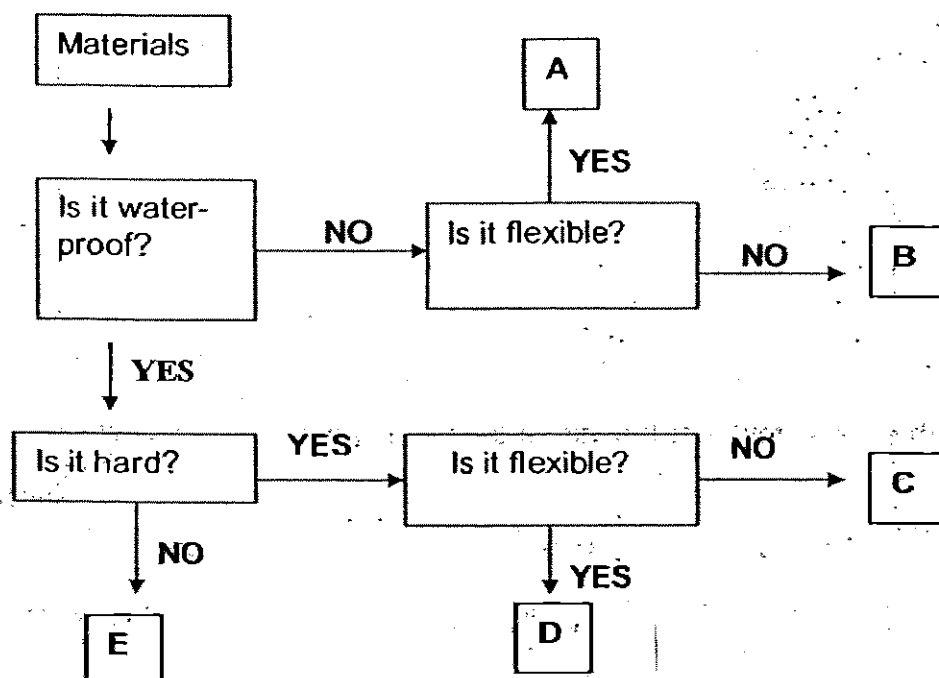


42. Write 'T' for True and 'F' for False in the boxes provided.

(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?

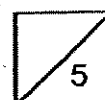
(1m)

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

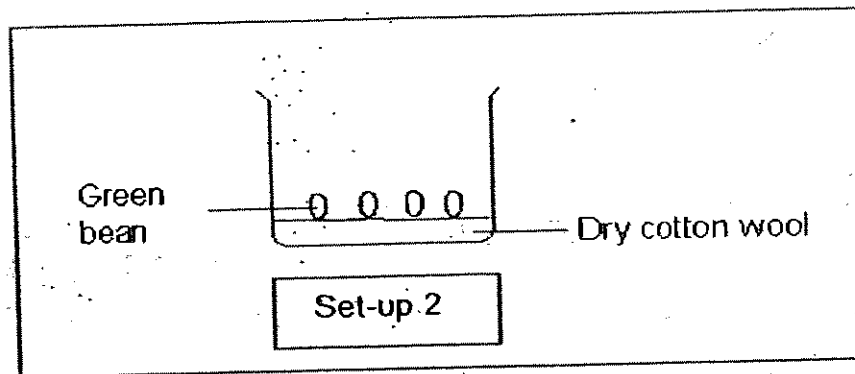
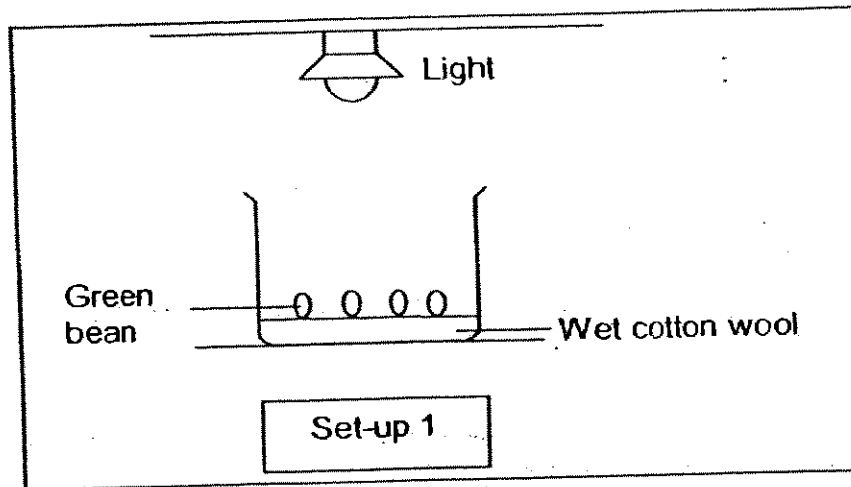
(1m)

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

(1m)

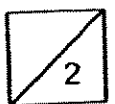


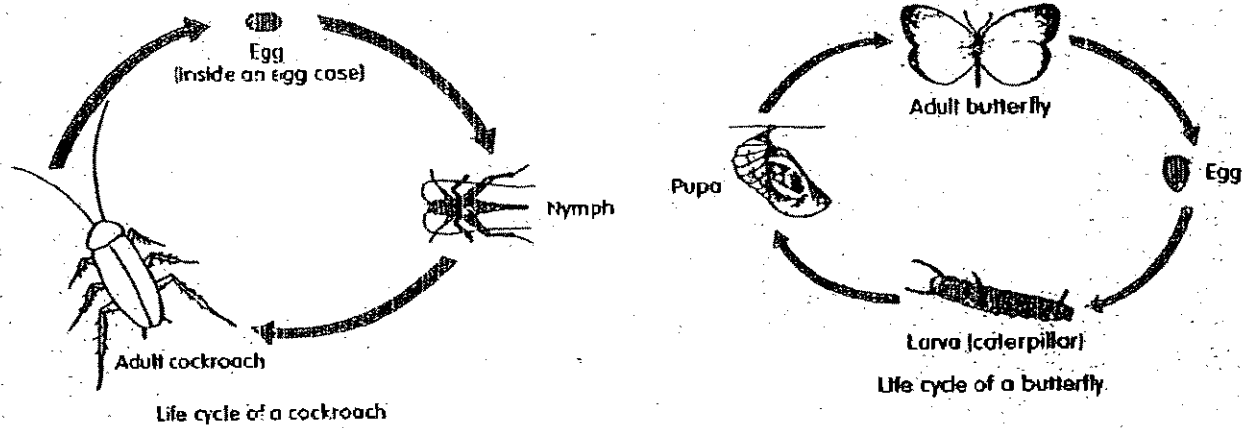
44. Keith set up an experiment to find out if light is needed by the green bean to germinate.



(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)

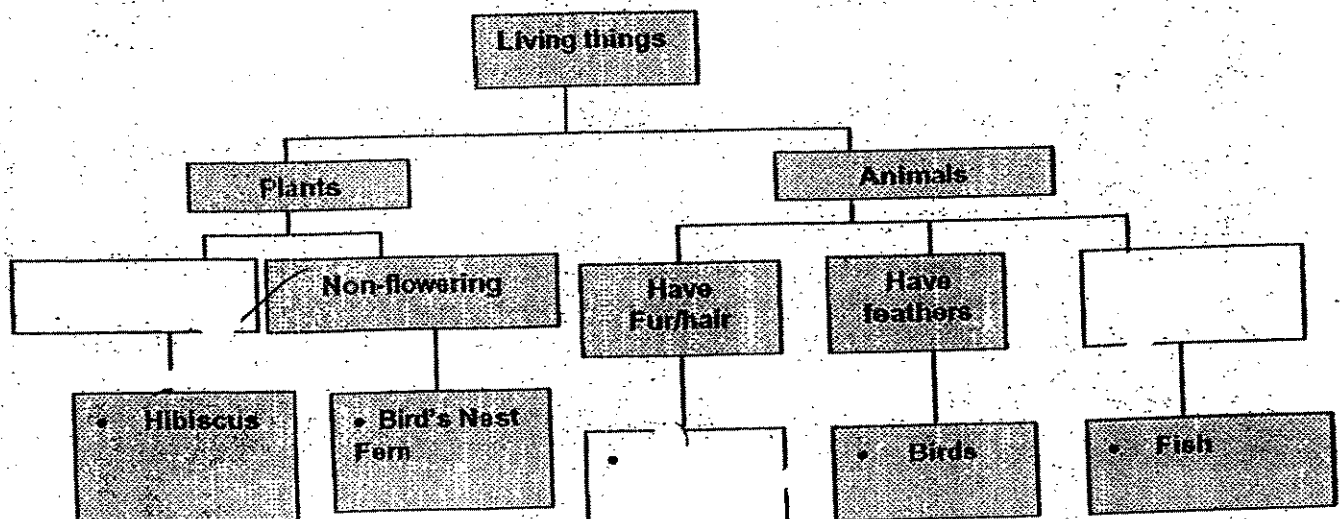




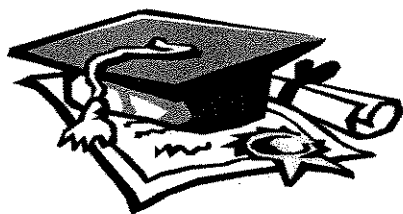
(a) State two differences between the above life cycles. (2m)

(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



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

31) Steam

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.

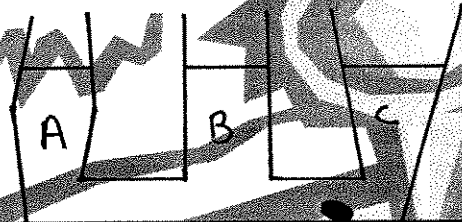
b) Alan could lift up the funnel so that the air can escape.

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 affects the burning time of the beaker.

42) a) F b) T 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.

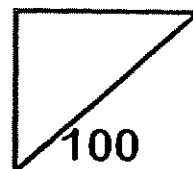
b) Moulting.

46) Flowering .

Mammals.



Rosyth School
First Semestral Assessment for 2007
SCIENCE
Primary 4



Name: _____

Total
Marks:

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)

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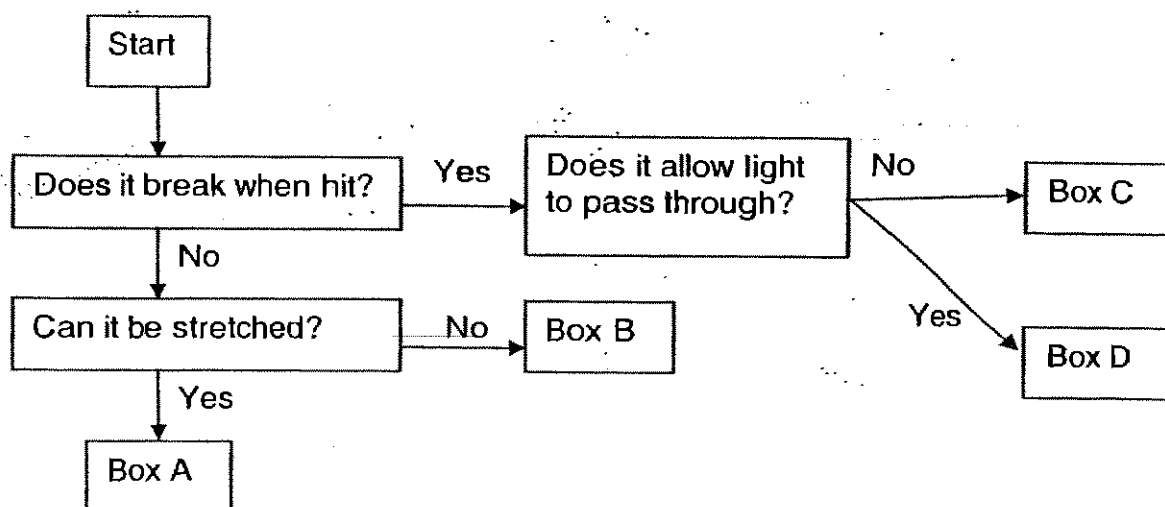
Part I (60 MARKS)

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

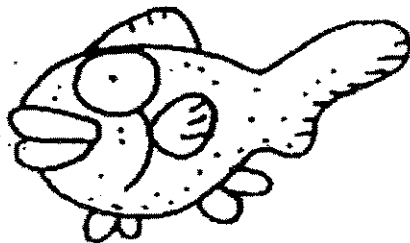
4. Which of the following statements are true?

- 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
- (3) B and C only

- (2) A and D 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.



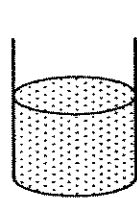
Which of the following observations did they make?

- 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
- (3) A and D only

- (2) A and C only
- (4) B and C only

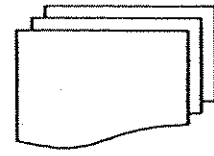
6. Three objects are placed on the table as shown below.



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.

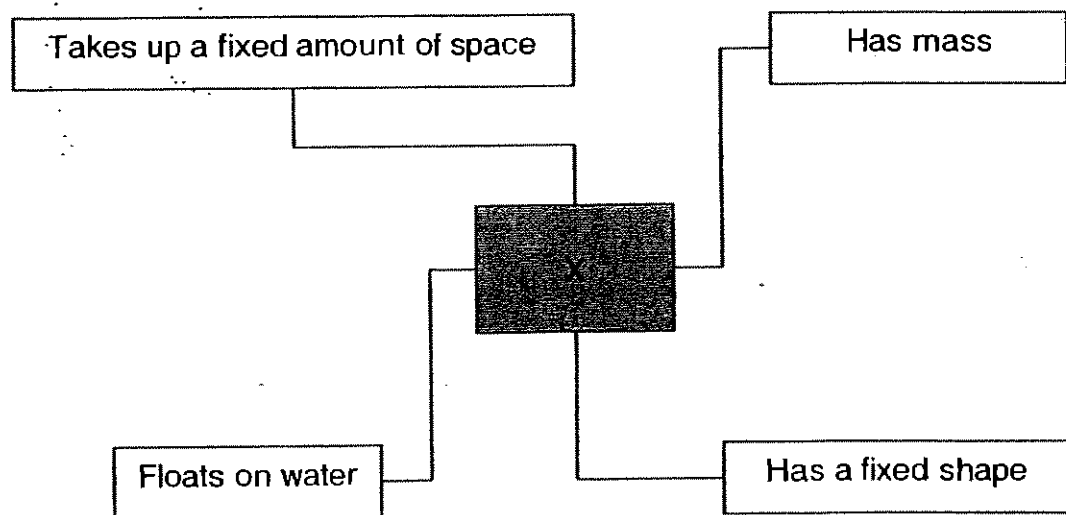
(1) A only

(3) A and B only

(2) B only

(4) B and C only

7. Study the diagram below.



Which of the following can X be?

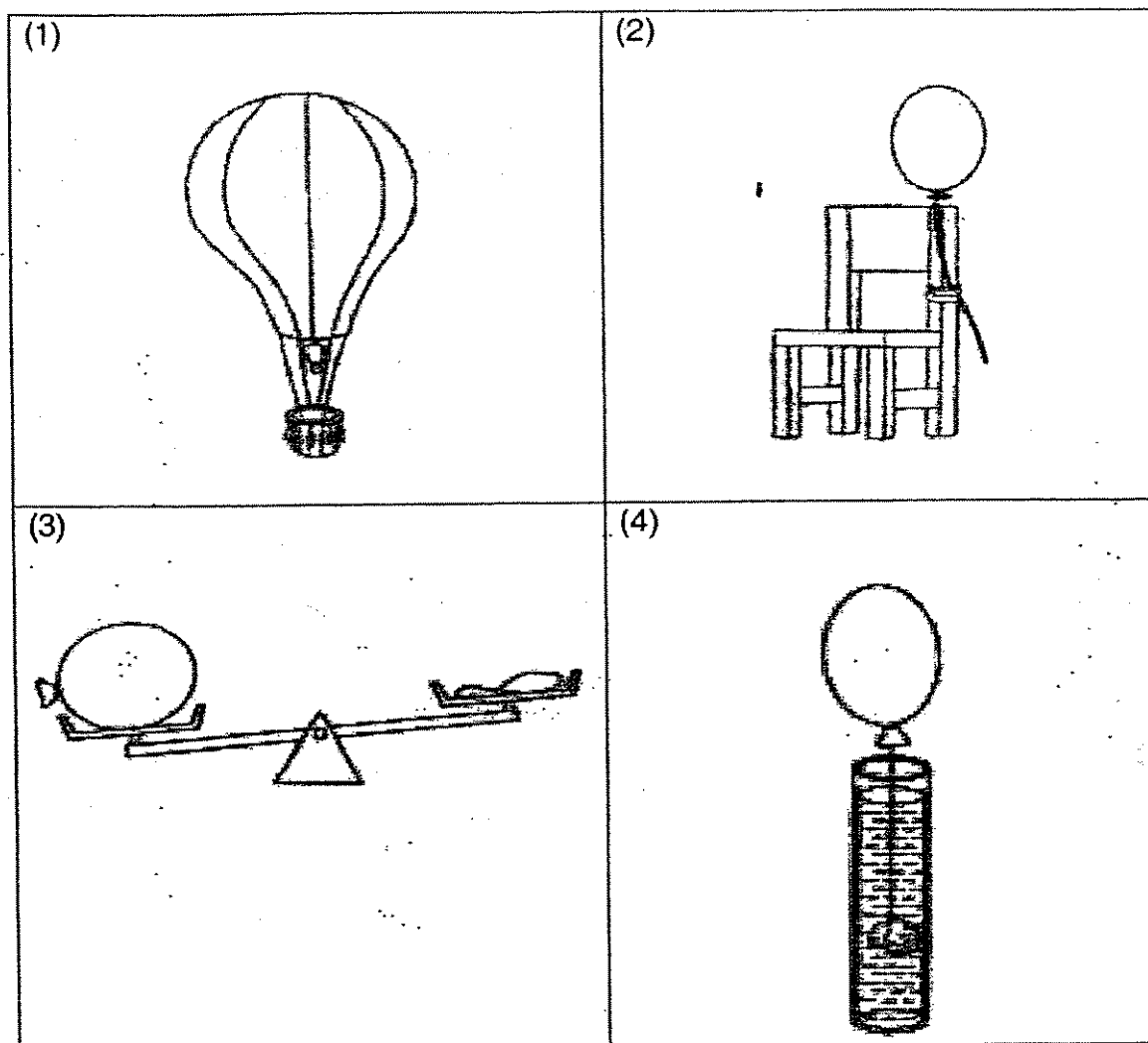
(1) Nail

(3) Cooking oil

(2) Pebble

(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
(3) 55°C

- (2) 23°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.

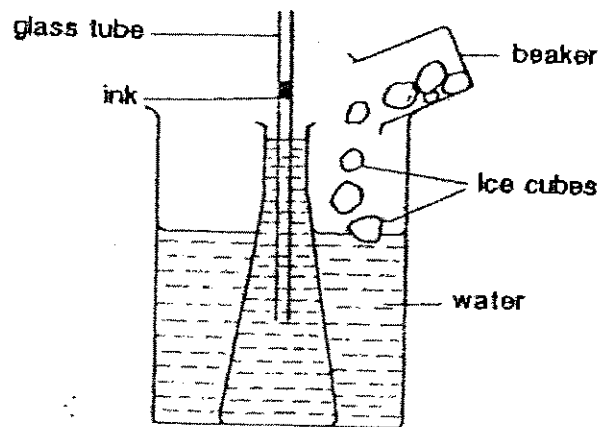
Charlie : The state of matter changes faster when it is boiling than when it is evaporating.

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.

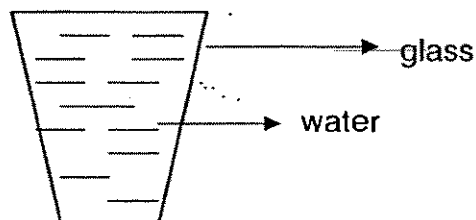


The drop of ink in the glass tube fell.

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 but the air inside the glass tube contracted when cooled.
- (4) The water contracts 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?

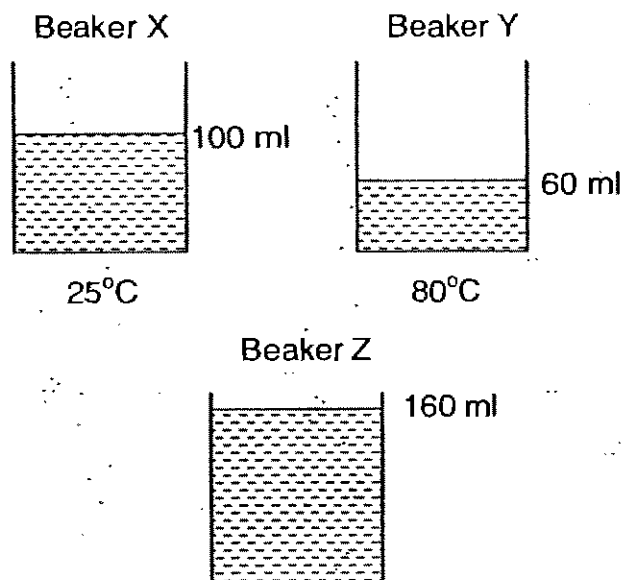
- A: The water will overflow.
- B: The stone will float on the water.
- C: The stone will sink to the bottom of the glass.

- (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.

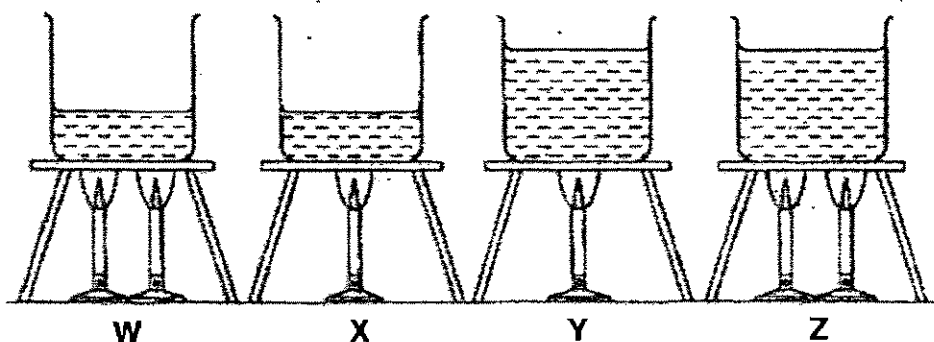
Setup	Surface area of container (cm ²)	Temperature of water (°C)	Amount of water used (ml)
P	40	80	150
Q	50	60	200
R	50	80	200
S	60	50	150

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
(3) Q and R

- (2) P and S
(4) Q and S

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

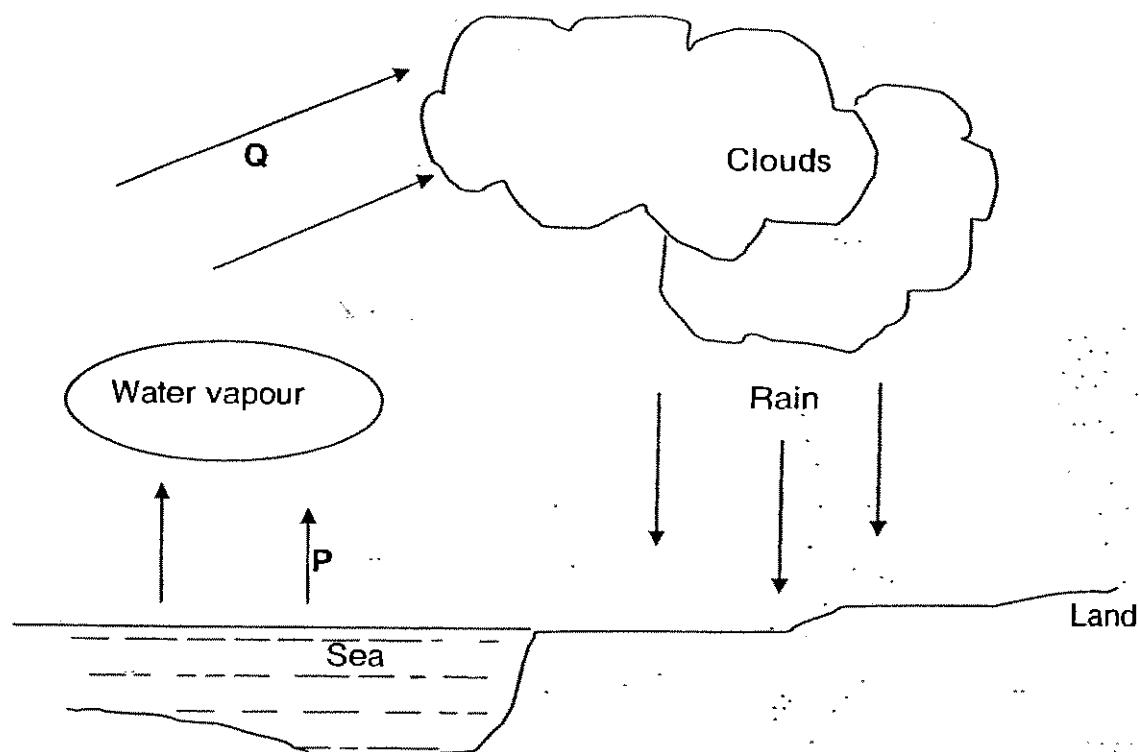


After heating for 1 minute, when none of the 4 beakers of water had boiled yet, which beaker of water would have the highest temperature?

- (1) W
(3) Y

- (2) X
(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?

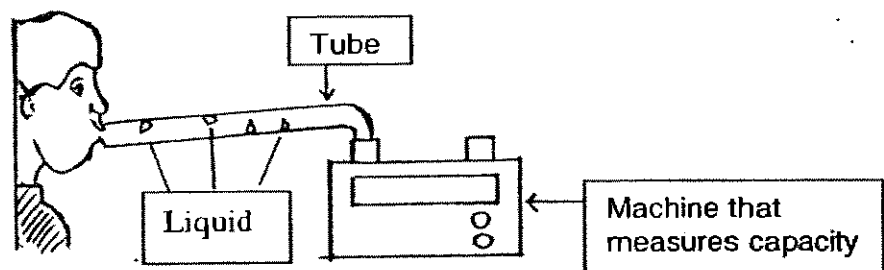
- A: Dumping waste at the garden
- B: Dye factories set up near a river
- C: Throwing rubbish in the beach
- D: Oil spills from sinking sea vessels

- (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

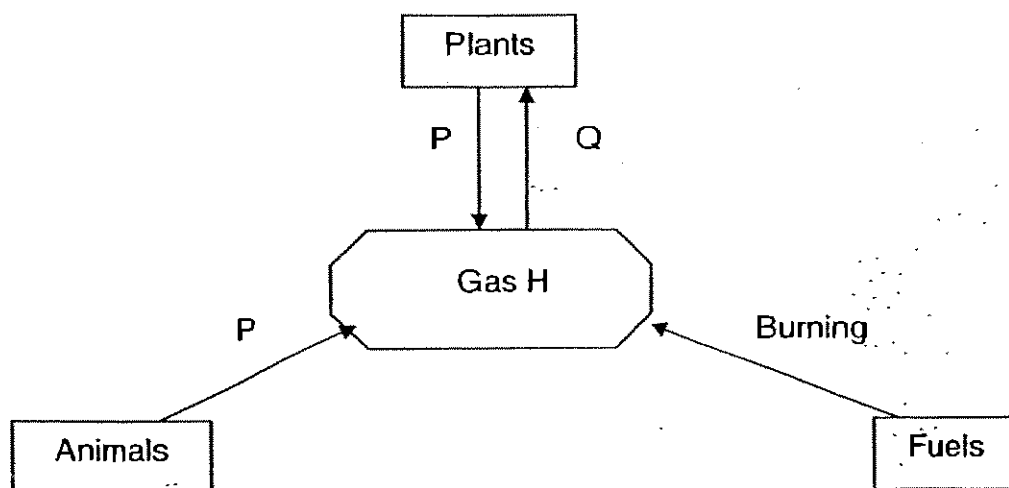
27. Jenny went to a hospital for a medical experiment. She was asked to breathe in and out of a tube that was connected to a machine that measures lung capacity. She noticed a liquid forming on the inside of the tube as shown in the diagram below.



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.

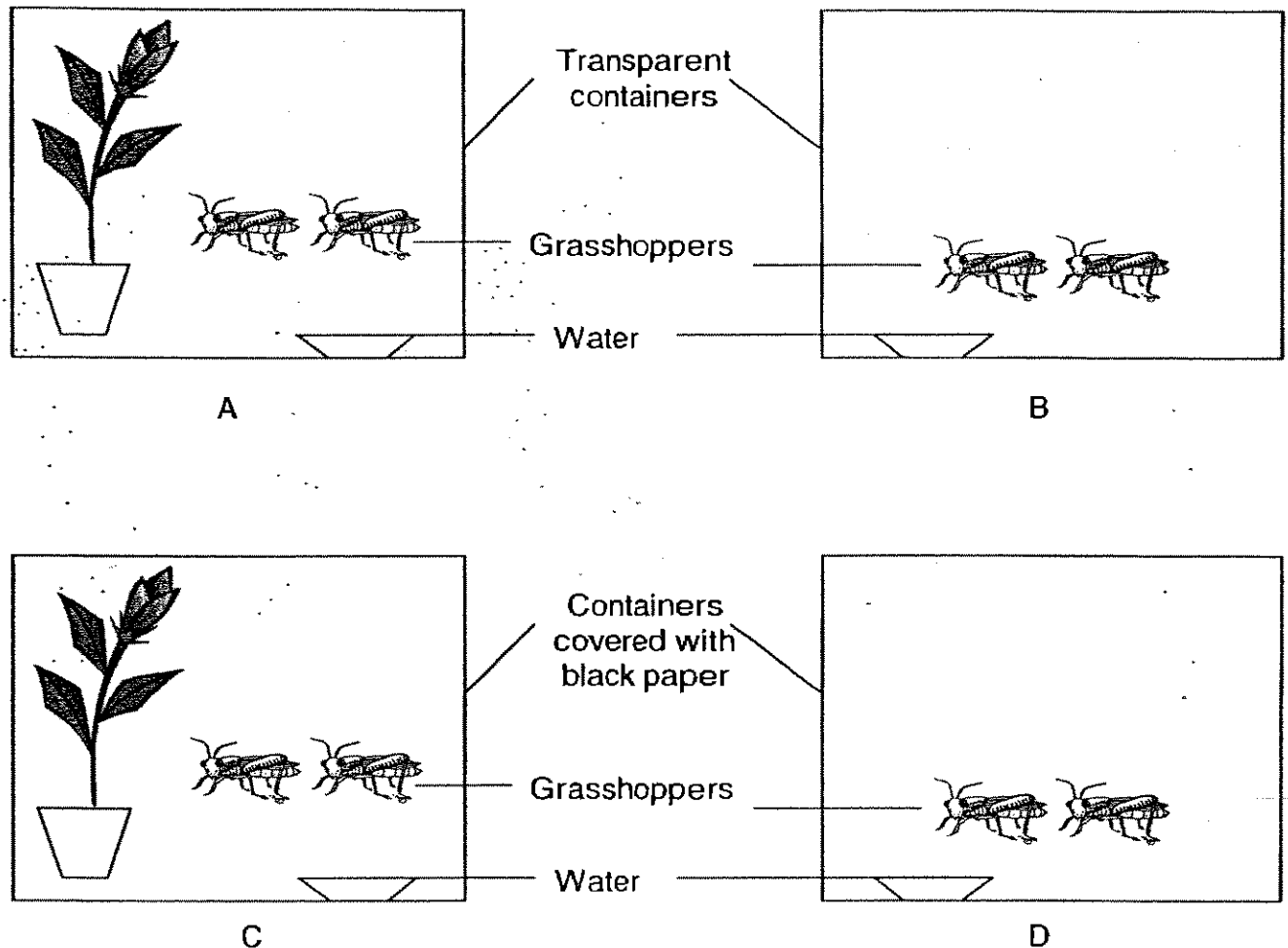
28. The diagram below shows how **Gas H** is added and removed from the air in the atmosphere through processes **P** and **Q**.



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.

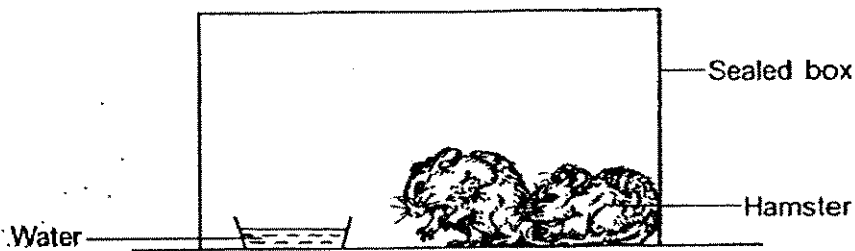


Which container has the least amount of carbon dioxide at the end of the experiment?

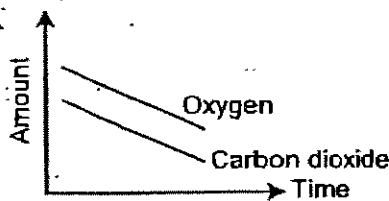
- (1) A
(3) C

- (2) B
(4) D

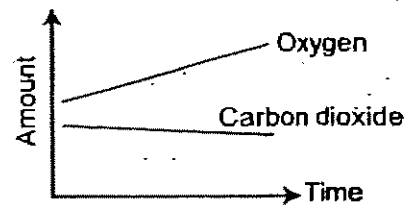
30. Jeffrey sets up the experiment below to find out how respiration affects the amount of oxygen and carbon dioxide in a sealed box.



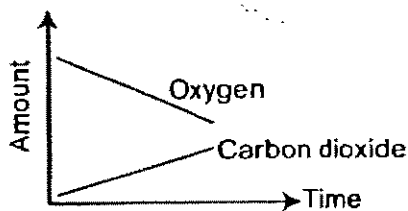
Which of the following graphs best describe the changes in the amount of oxygen and carbon dioxide in the sealed box over a period of 12 hours?



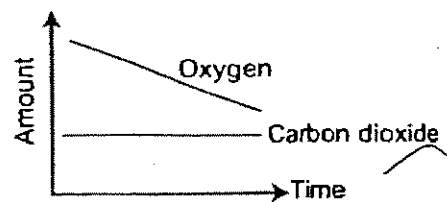
(1)



(2)



(3)



(4)

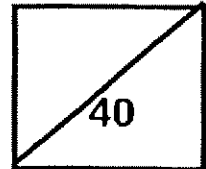
End of Part 1



Rosyth School
First Semestral Assessment for 2007
SCIENCE
Primary 4

Name: _____

Total
Marks:



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.

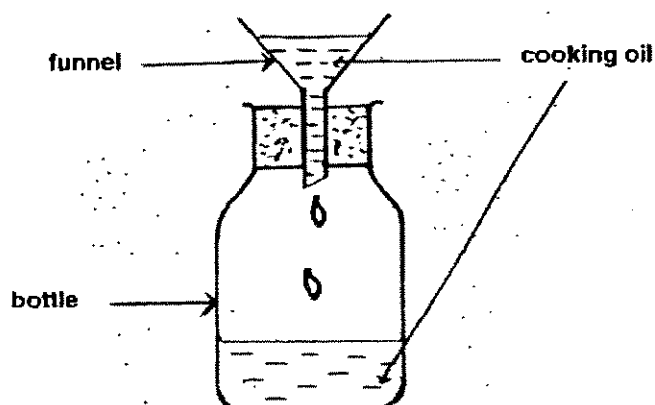
*** This booklet consists of 16 pages. (Pg. 15 to 30)**

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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.

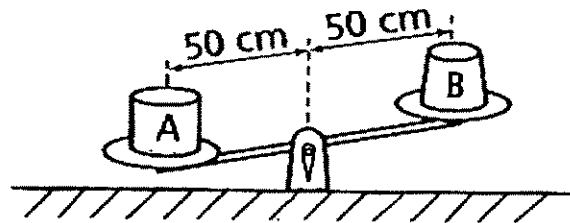
- (a) What was present in the empty space in the bottle? (1m)

- (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.

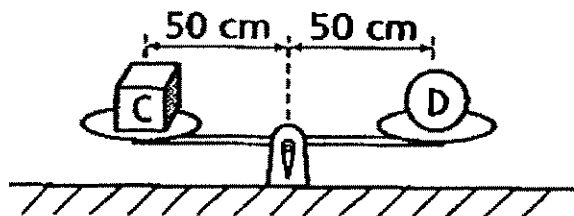
(a)



Object A is tilted to one side. Compare the mass of objects A and B.

(1m)

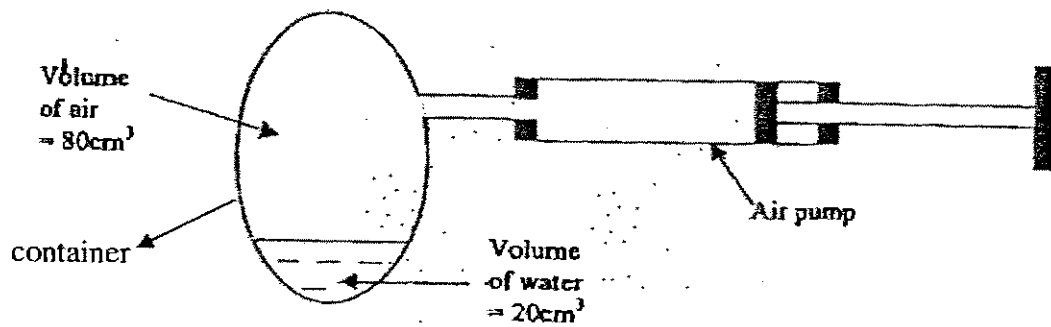
(b)



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.

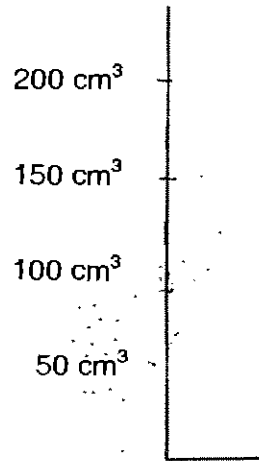


With each stroke of the air pump, 50 cm^3 of air is pumped into the container.

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

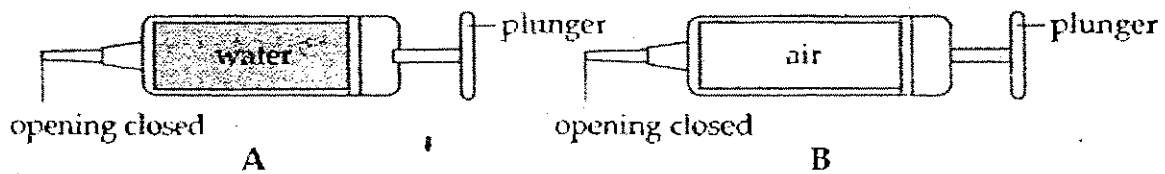
- (b) State the property of water and air that leads you to your answer in (a). (1 m)

34. The picture below shows a measuring cylinder^A 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. (1 m)
- (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 cm³ of water and Syringe B contains 20 cm³ of air.

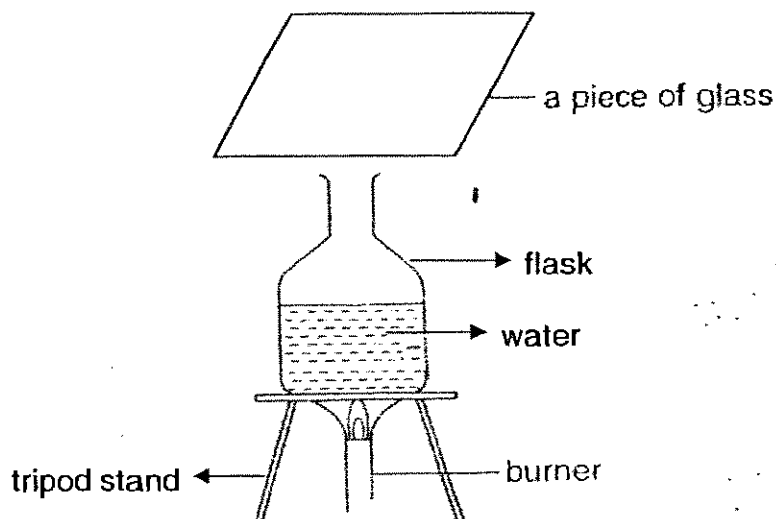


- (a) What happens to the volume of the water in Syringe A when the plunger is pushed in? (1 m)

- (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.

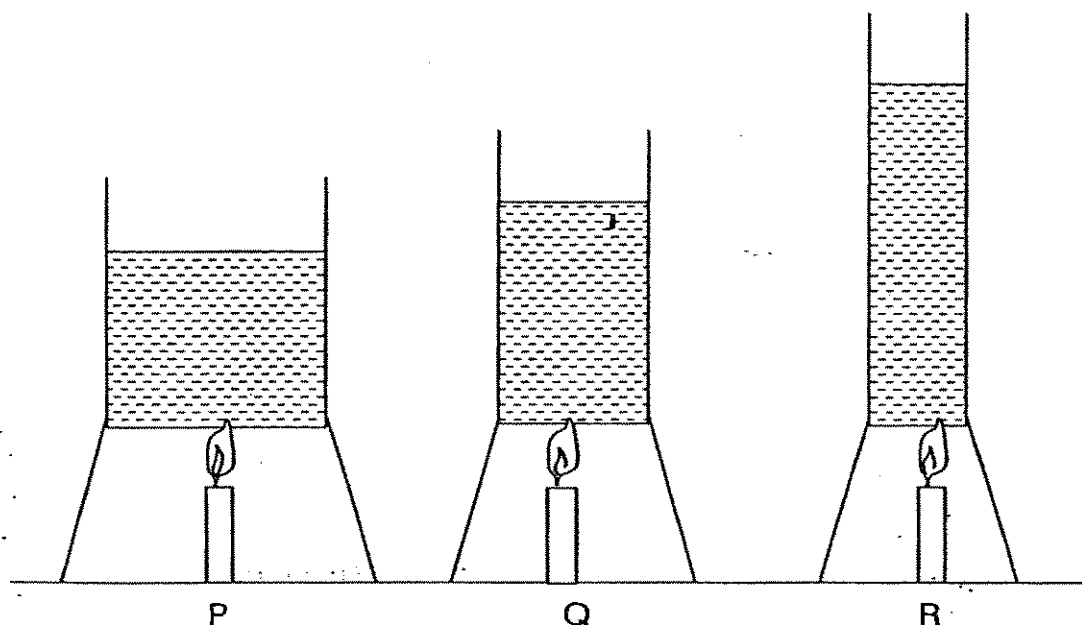


- (a) What could be observed on the underside of the glass after sometime? (1 m)
- _____
- (b) Name the process which resulted in what you observed in (a). (1 m)
- _____
- (c) After some time, it could be observed that fewer droplets of water formed on the underside of the glass. Explain why did this 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.



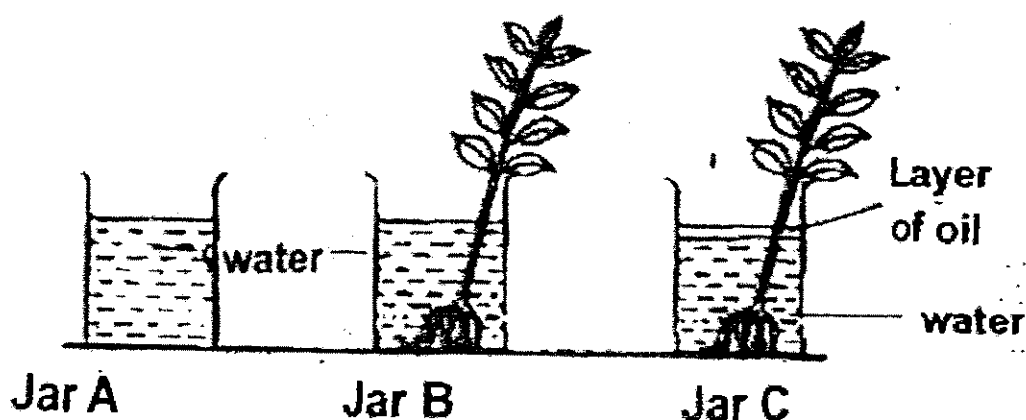
She used 45 ml of water in each container and heated the containers using similar candles. She measured the volume after 30 minutes. The results were tabulated in the table below.

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)

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)

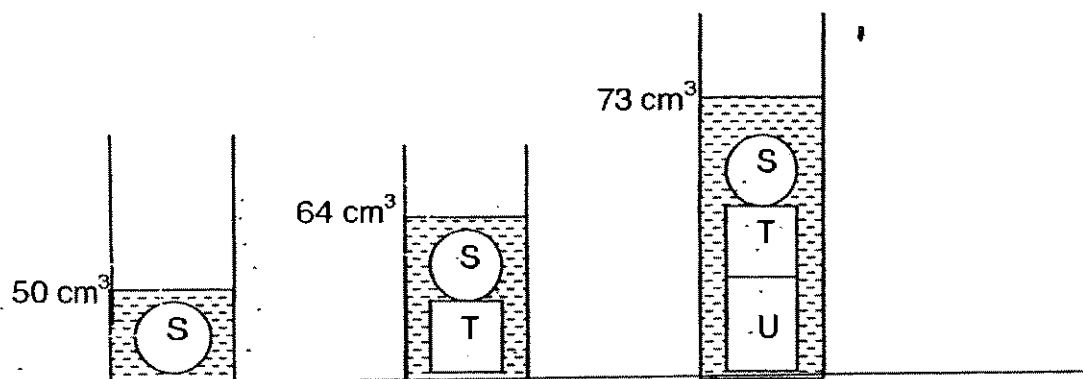
Setup	Jar A	Jar B	Jar C
Volume of water at the start of the experiment	(i) _____	250 ml	250 ml
Volume of water after 2 days	225 ml	200 ml	(ii) _____

- (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)

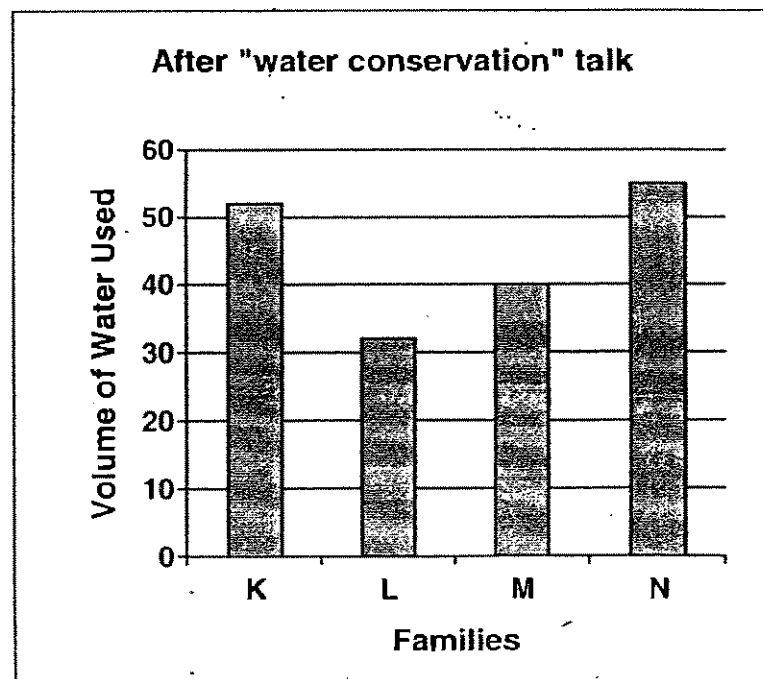
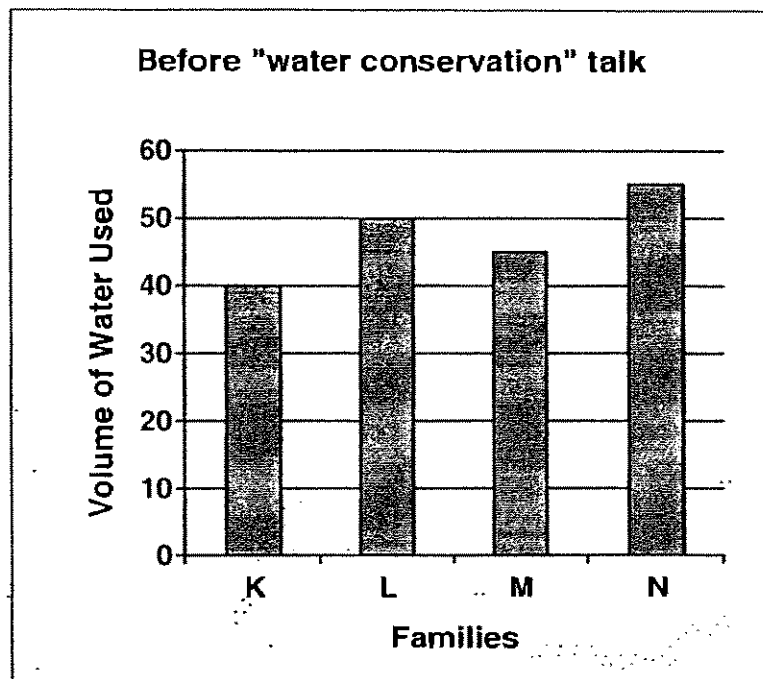
40. Teck Meng poured an equal amount of water into three identical measuring cylinders. Objects S, T and U were put into the cylinders as shown in the diagram below.



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.

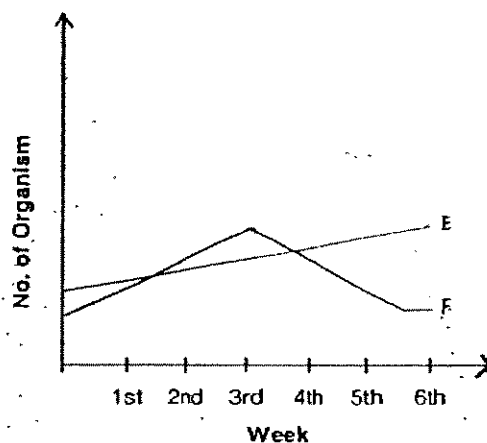


Question 41 continues on the next page.....

- (a) Which of the family/families 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.



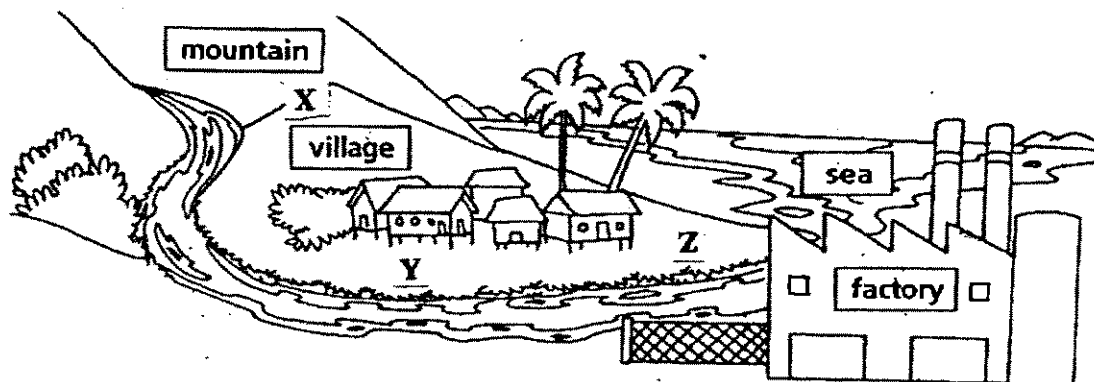
- (a) Dirty water from a nearby farm was discharged into the stream on the 3rd week. State the effect of the dirty water on organisms E and F. (1m)

(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.



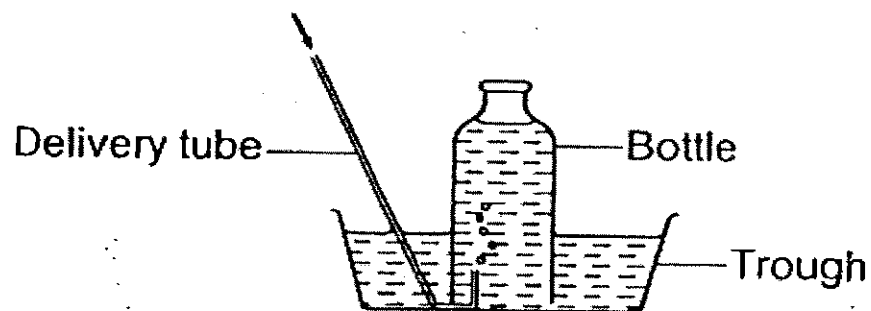
- (a) On the diagram there are 3 locations marked X, Y and Z. Which is a suitable location for a reservoir? (1m)

- (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.



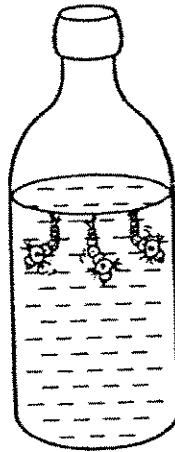
The results of the experiment are as follows:

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)

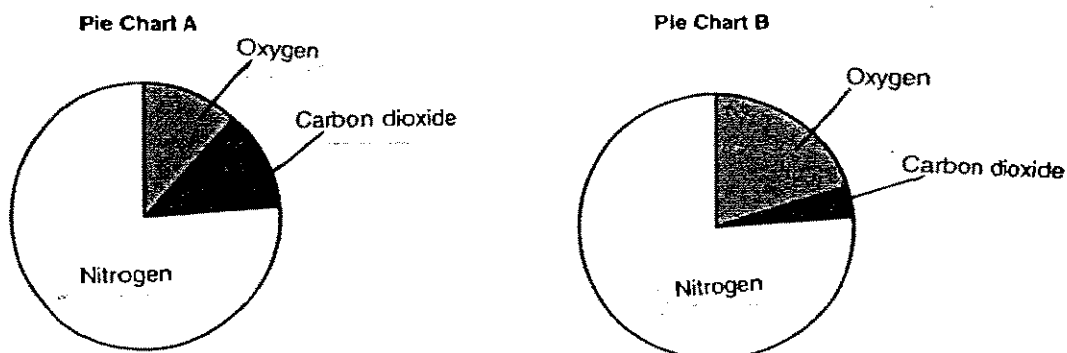
45. Li Ling conducted an experiment by pouring some cooking oil into a bottle of water containing some live mosquito larvae. The next day she found that the larvae were dead.



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)

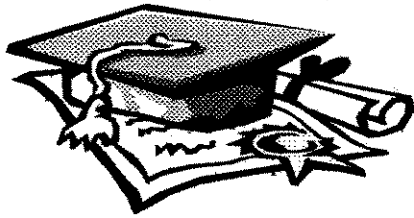
46. The two pie charts below show the composition of inhaled and exhaled air.



- (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)

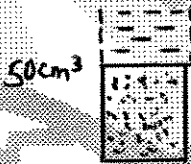
	Activity	Type of Gas
(i)	To break down food into energy.	
(ii)	It is changed into a useful form for the plants by the bacteria in the soil.	
(iii)	It is required to keep flame of a candle glowing.	
(iv)	It is used by plants to make food in the presence of sunlight.	

End of Paper



ANSWER SHEET

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

1. 1 31) a) Air
2. 1 b) The air in bottle are occupying the
3. 2 space.
4. 2 c) I should have some holes for the air
5. 3 to escape.
6. 1
7. 4 32) a) Object A has more mass than objects.
8. 3 b) D and C have the same mass.
9. 1
10. 1 33) a) 80cm³
11. 1 b) Water has a definite volume but air
12. 2 doesn't have definite volume.
13. 3
14. 4 34) a)
15. 1
16. 4 
17. 3
18. 1
19. 1 b) No. The orange syrup and the water had
20. 4 to fill up the space left in the sand.
21. 3
22. 3 35) a) 20cm³
23. 4 b) The air in the plunger will be compressed.
24. 2 c) The water in plunge A has a definite
25. 4 volume but the air in plunge B can be
26. 1 compressed.
27. 4
28. 4 36) a) There will be water droplet on the underside
29. 1 of the glass.
30. 1 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 whether 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 rains 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 pollute 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---



RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (1)

2007

Name : _____ Index No: _____ Class: P4 _____

10 May 2007

SCIENCE

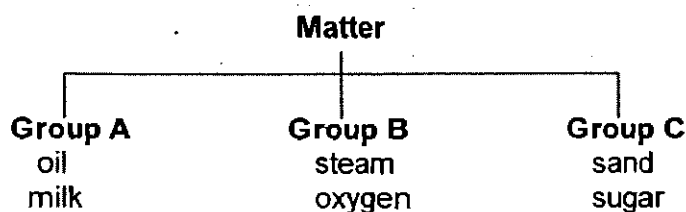
Att: 1 h 30 min

Section A	/50	
Section B	/50	
Your score out of 100 marks		
	Class	Level
Highest score		
Average score		
Parent's signature		

SECTION A (25 x 2 marks)

For each question from 1 to 25, 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 (OAS) provided.

1. The classification table below shows how some matter is grouped at room temperature.

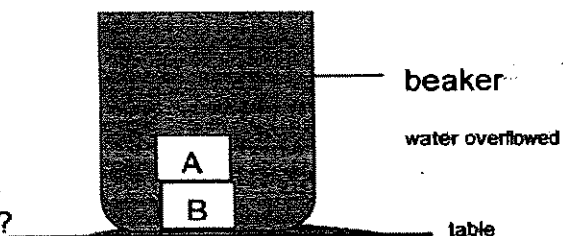


Which one of the following correctly describes the groups, A, B and C?

	A	B	C
(1)	solid	gas	liquid
(2)	gas	solid	liquid
(3)	liquid	gas	solid
(4)	gas	liquid	solid

2. Which one of the following shows that gas can be compressed?
- (1) A basketball is inflated
 - (2) A piece of sponge is squeezed
 - (3) A hot air balloon rises into the sky
 - (4) Steam is produced by boiling water
3. Jack has the same mass as a 30-kg bag of rice. Both Jack and the bag of rice _____
- (1) have the same shape
 - (2) have the same volume
 - (3) have the same amount of matter
 - (4) occupy the same amount of space

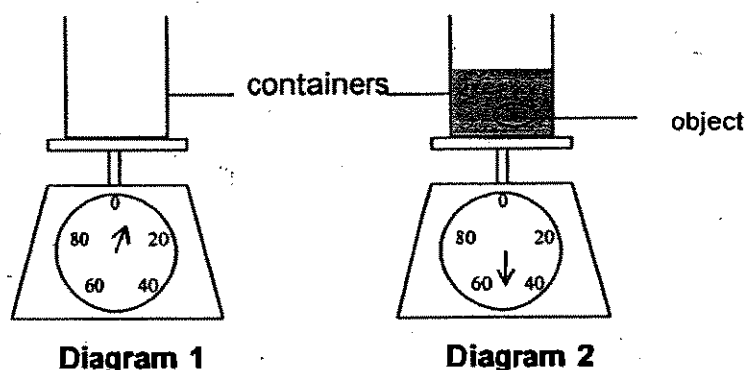
4. John filled a beaker to the brim with 50 cm^3 of water. 2 identical objects, A and B, each of 8 cm^3 , were dropped gently into the beaker of water. Water overflowed onto the table.



What is the volume of water left in the beaker?

- (1) 34 cm^3
- (2) 42 cm^3
- (3) 50 cm^3
- (4) 58 cm^3

5. Aziz weighed an empty container at the beginning of his experiment as shown in Diagram 1. He placed some water and an object of mass 10 g in the container and weighed them as shown in Diagram 2.



What was the mass of the water **ONLY**?

- (1) 10 g
 - (2) 20 g
 - (3) 30 g
 - (4) 50 g
6. Which of the following processes occur **ONLY** at 0°C ?

- ☒ A melting of ice
- ☒ B boiling of water
- ☒ C freezing of water
- ☒ D condensation of water

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

7. The diagram below shows the interchangeable states of water.

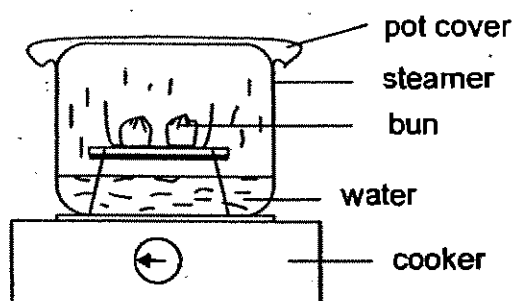


What happens to water when process X takes place?

- ☒ A Water gains weight.
- ☒ B Water loses its heat.
- ☒ C Water changes its state.
- ☒ D Water changes its shape.

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

8. Two buns were placed in a steamer with water as shown in the picture below.



After a while, the cooker was turned off as soon as bubbles were seen in the water. The buns were left in the steamer to cool down for a while before they were removed.

Based on the information above, what were the processes that took place to soften the buns before they were removed from the steamer?

- ☒ A boiling
- ☒ B melting
- ☒ C evaporation
- ☒ D condensation

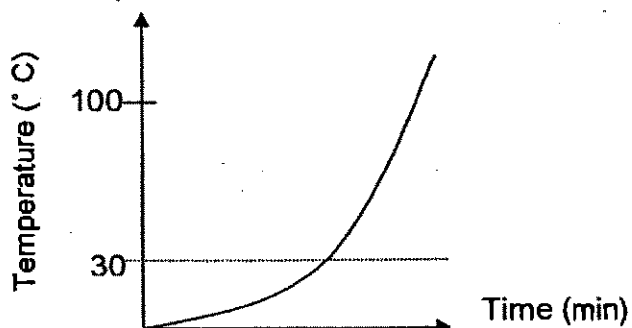
- (1) A and B only
- (2) A and C only
- (3) A, C and D only
- (4) B, C and D only

9. A few ice cubes are added to a beaker of boiling water.

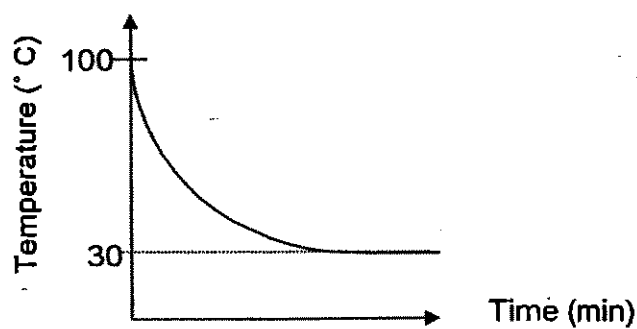
Which one of the following graphs (**NOT** drawn to scale) shows the **most likely** change in temperature of the water in the beaker after some time?

(Room temperature: 30°C)

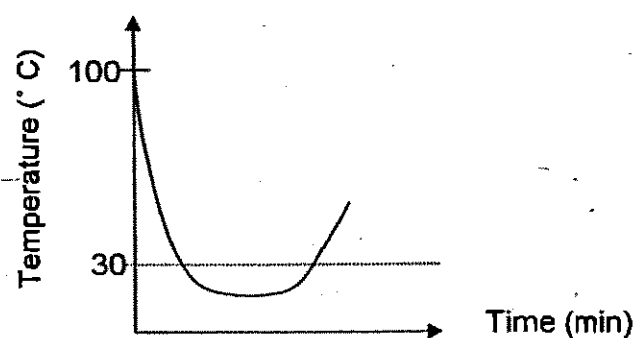
~~(1)~~



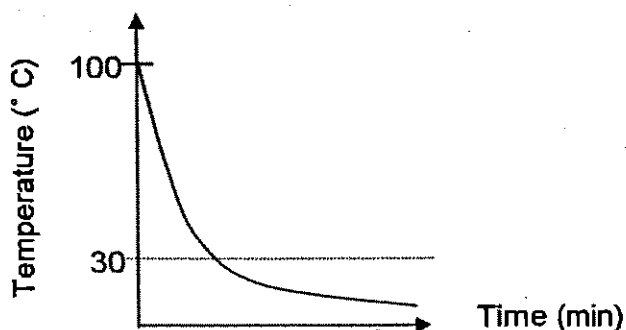
~~(2)~~



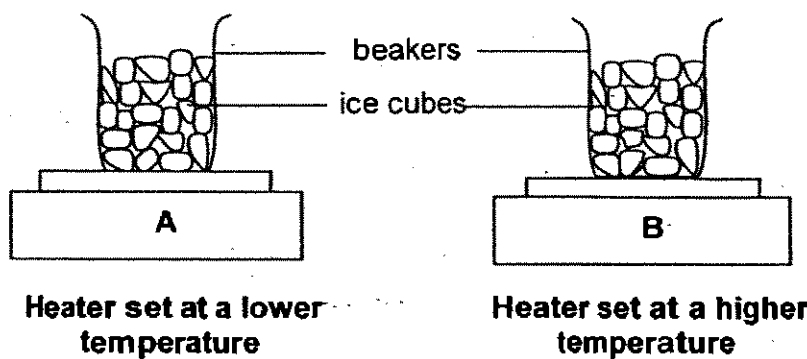
~~(3)~~



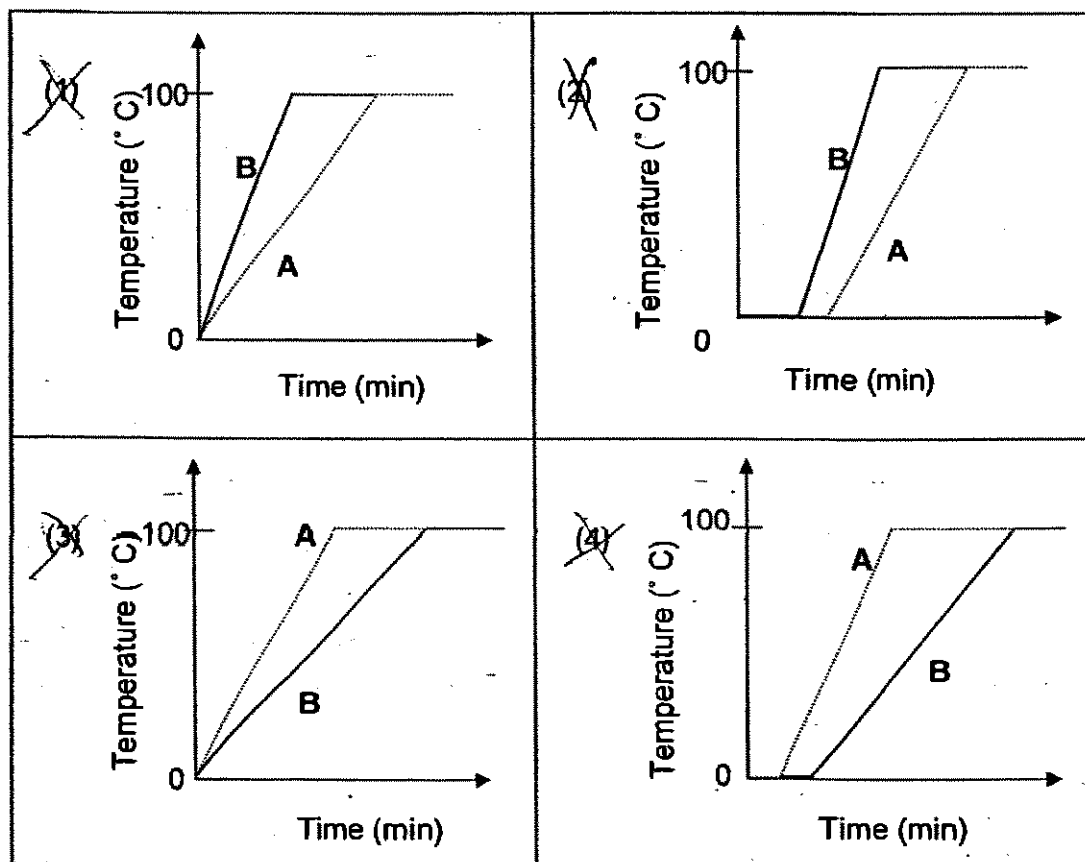
~~(4)~~



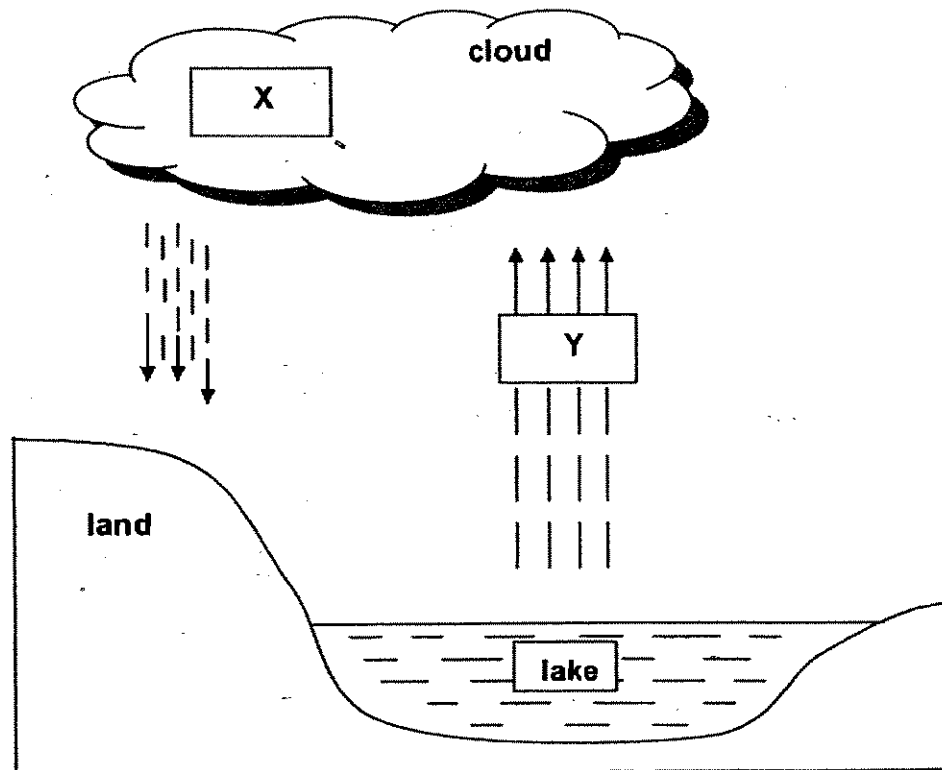
10. 2 identical beakers contain an equal amount of ice cubes. They are heated separately with two heaters, A and B, set at different temperatures as shown in the diagrams below.



Based on the information given above, which one of the following graphs **correctly** shows the changes in the temperature of the contents in both the beakers?



The diagram shows the water cycle. X and Y are processes involved in the water cycle.



Based on the diagram above, answer Questions 11 and 12.

11. Which one of the following correctly shows the processes of X and Y?

	X	Y
(1)	evaporation	condensation
(2)	condensation	evaporation
(3)	evaporation	cooling
(4)	condensation	cooling

12. Processes X and Y in the water cycle _____.

- ~~A~~ remove oil spills
~~B~~ prevent deforestation
~~C~~ reduce the amount of water from the earth
~~D~~ provide a continuous supply of fresh water to all living things

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

13. Which one of the following is a good practice for water conservation?

- (1) Using a water hose to wash the car
- (2) Reusing untreated water for drinking
- (3) Washing our dishes under a running tap
- (4) Making use of water collected from washing clothes to wash the toilet

14. The presence of unwanted substances in water results in water pollution. Which of the following correctly describe the impact of water pollution?

- ☒ A Soil erosion takes place.
- ☒ B Water becomes too salty for drinking.
- ☒ C Water plants cannot get enough sunlight to carry out photosynthesis.
- ☒ D Some poisonous pollutants kill the fish and other living things in the water.

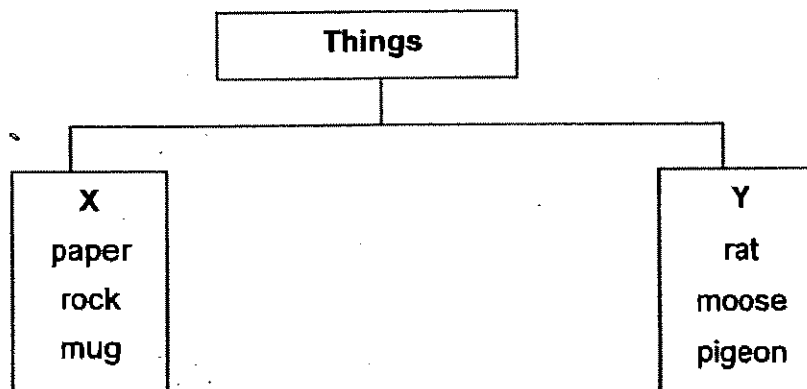
- (1) A and B only
- (2) C and D only
- (3) B, C and D only
- (4) A, B, C and D

15. Which of the following is a non-living/ are non-living things?

- ☒ A a cat
- ☒ B a kite
- ☒ C a racket
- ☒ D an apple on a tree

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

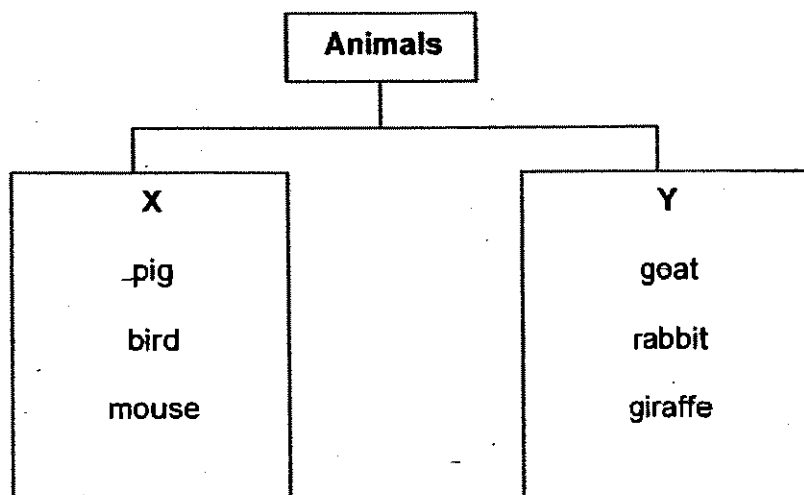
16. Some things are grouped according to the classification chart below.



Based on the information above, which one of the following can be placed in X and Y?

	X	Y
(1)	piano	plane
(2)	monkey	money
(3)	pin	cat
(4)	tree	turtle

17. The classification chart below shows how some animals are grouped.



Based on the information above, which one of the following correctly represents X and Y?

	X	Y
(1)	plant eaters	animal eaters
(2)	animal eaters	plant eaters
(3)	plant and animal eaters	plant eaters
(4)	plant eaters	plant and animal eaters

18. Which of the following correctly describe **ALL** fishes?

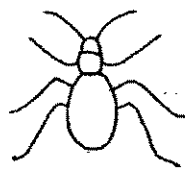


- They lay eggs.
- They have fins.
- They breathe through their gills.
- They can live in both freshwater and sea water.

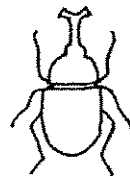
- (1) A and B only
- (2) A and D only
- (3) B and C only
- (4) B, C and D only

19. Which one of the following is **NOT** a true representation of an insect?

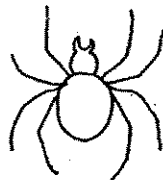
~~(1)~~



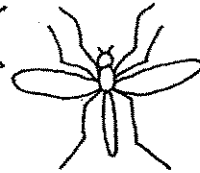
~~(2)~~



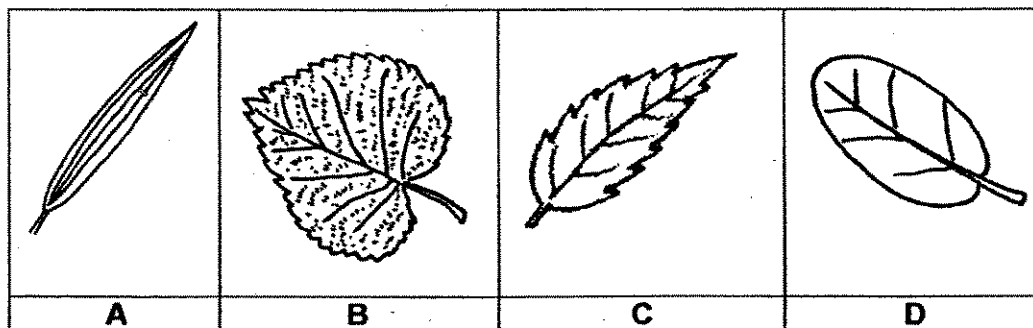
~~(3)~~




~~(4)~~



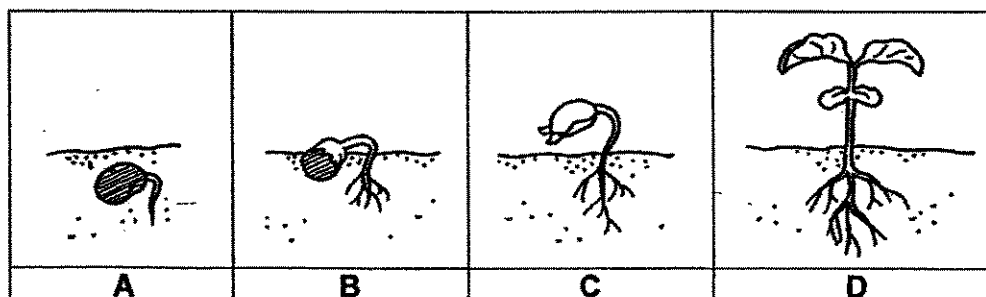
20. Leaves, A, B, C and D, as shown below have distinct characteristics.



Based on the pictures above, which one of the following shows the correct classification?

	Leaves with entire edge	Leaves with toothed edge
	A and B	C and D
	A and D	B and C
	A, C and D	B
	A	B, C and D

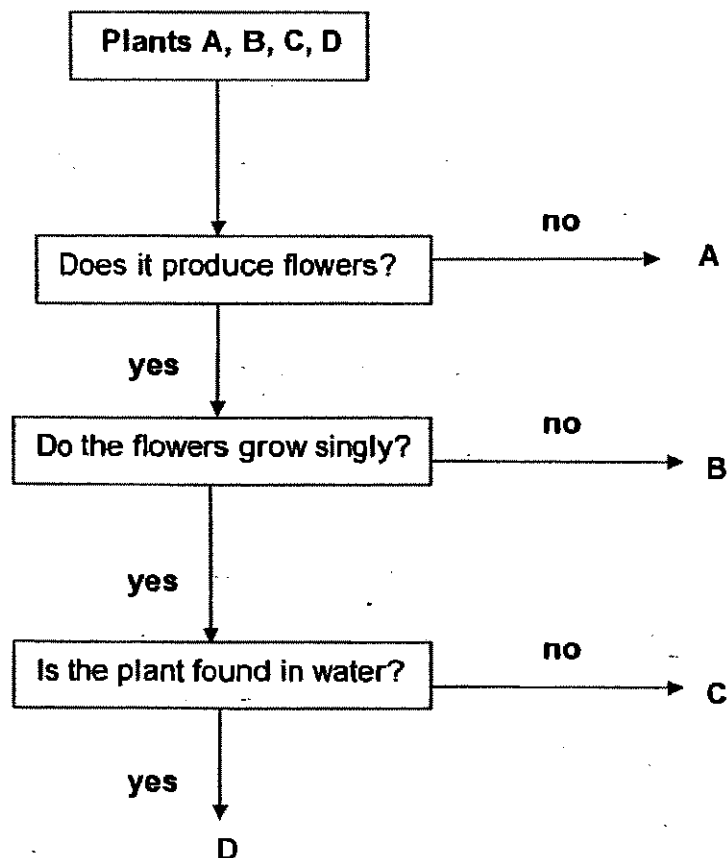
21. The diagrams below show some stages in the life cycle of a flowering plant.



At which stage of its life cycle, A, B, C or D, does the plant start to make its own food?

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

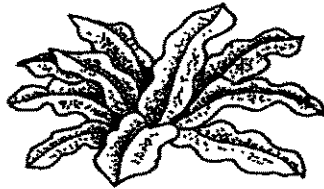
22. The flow chart below shows how plants, A, B, C and D, can be identified.



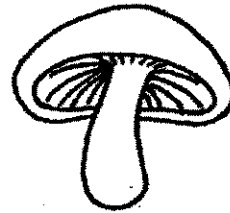
Based on the information above, which one of the following correctly represents the plants, A, B, C and D?

	A	B	C	D
(1)	moss	frangipani	hibiscus	water lily
(2)	stag's horn fern	rose	cattail	orchid
(3)	hydrilla	ixora	lotus	sunflower
(4)	duckweed	jasmine	lotus	daisy

23. X and Y are 2 living things found in a garden.



X



Y

Based on the pictures given above, which of the following statements is/are true about both X and Y?



- ☒ A Both can respond to changes.
- ☒ B Both X and Y reproduce by spores.
- ☒ C X contains chlorophyll but Y does not.
- ☒ D Y can make its own food but X cannot.

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






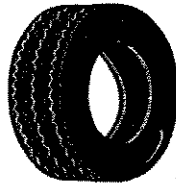
24. Jamie has two objects, X and Y. When she rubs the two objects together, she notices that only X has been scratched. What can she conclude from her observation?



- ☒ (1) X is harder than Y.
- ☒ (2) X is lighter than Y.
- ☒ (3) Y is harder than X.
- ☒ (4) Y is lighter than X.

25. Tommy classified some objects according to their properties as shown in the table below.

Q.M

Group A	Group B
	
	
	

He grouped the objects according to _____.

- ~~(1)~~ their sizes
- ~~(2)~~ their thickness
- ~~(3)~~ their ability to float
- ~~(4)~~ the materials that they are made from

SECTION B (50 marks)

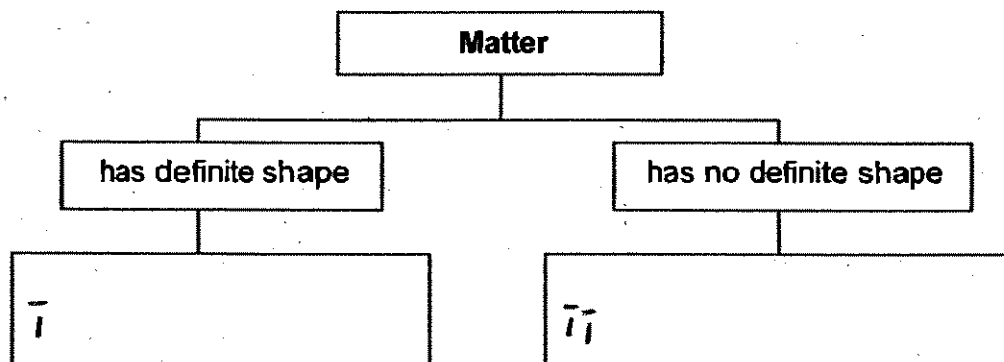
For questions 26 to 45, write your answers in the spaces provided.

The number of marks available is shown in brackets [] at the end of each question or part question.

26. (a) Fill in the boxes with suitable words to describe the properties of matter. Some boxes have been done for you. [3]

i	solid		definite volume
ii	liquid	no definite shape	
iii	gas		no definite volume

- (b) Fill in each box with an example of a matter using the classification chart below. [1]

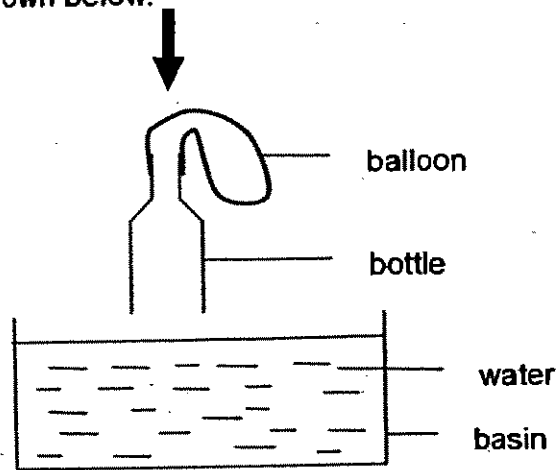


27. (a) Write down TWO differences in **PROPERTIES** of air and shadow. [2]

Difference 1	
Difference 2	

- (b) Give **ANOTHER** example of a non matter. [1]

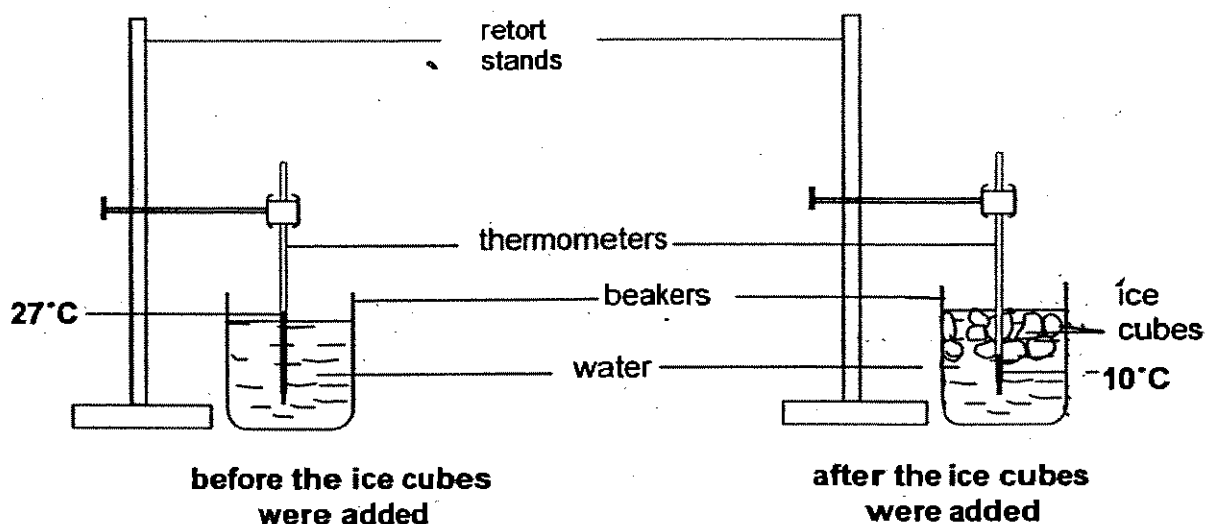
28. Nadia attaches a balloon to the mouth of an empty bottle, which has its bottom cut out, as shown below.



- (a) What happens to the balloon when Nadia pushes the bottle into the basin of water? [1]

- (b) Give a reason for your answer in (a). [1]

29. The temperature of a beaker of water was recorded before and after some ice cubes were added as shown in the diagrams below.

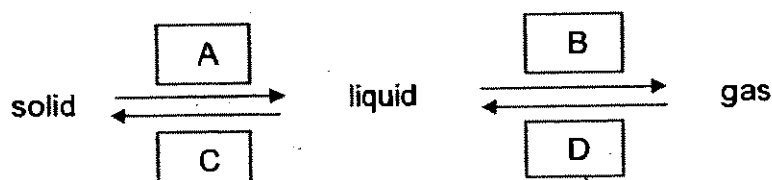


- (a) In the diagram above, **DRAW IN PENCIL** the water droplets formed on the beaker after the ice cubes were added. [1]

- (b) Give a reason for the change in temperature of water after ice cubes were added. [1]

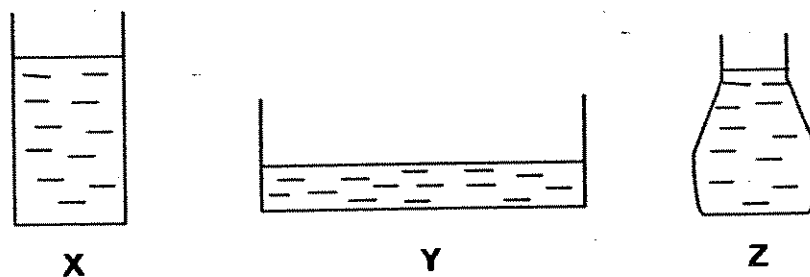
- (c) What happens to the ice cubes after some time? [1]

30. The diagram below shows the interchangeable states of a matter. A, B, C and D are the processes involved.



- (a) Of the 4 processes above, which of these involve(s) the loss of heat? [1]

Devi poured 200 cm³ of water into each of the 3 containers, X, Y and Z, as shown below. The containers were made of the same material.

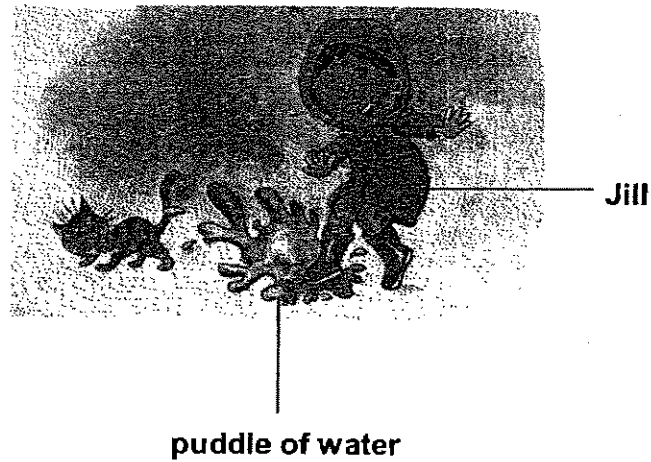


The containers were left in the open.

- (b) Which of the containers, X, Y or Z, would have the least amount of water left after a few hours? [1]

- (c) Give a reason for your answer in (b). [1]

31. The picture below shows Jill playing happily after a heavy rain.



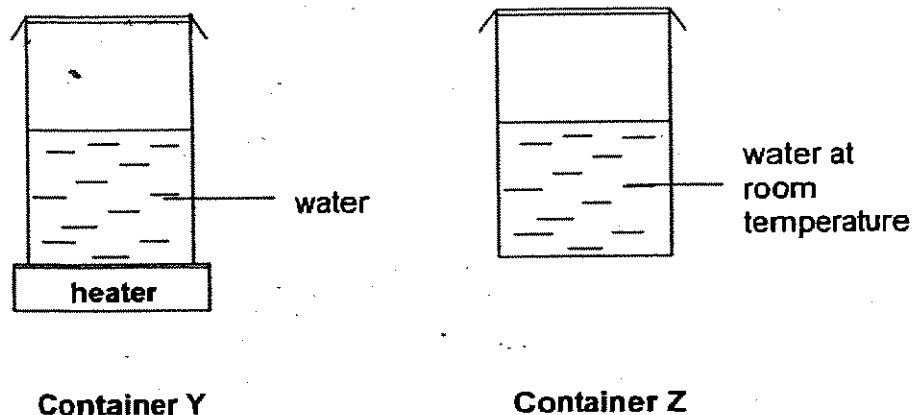
After a few hours, the puddle of water 'disappeared'.

- (a) What had the puddle of water changed into? [1]

- (b) Using your answer in (a), explain what had caused it to change. [1]

- (c) If the humidity was high that day, how would this affect the rate of 'disappearance' of the puddle of water? [1]

32. Water droplets were seen in containers Y and Z. Containers Y and Z were each filled with 300 ml of water as shown below.



Container Y was placed on a heater at a constant temperature of 100°C.

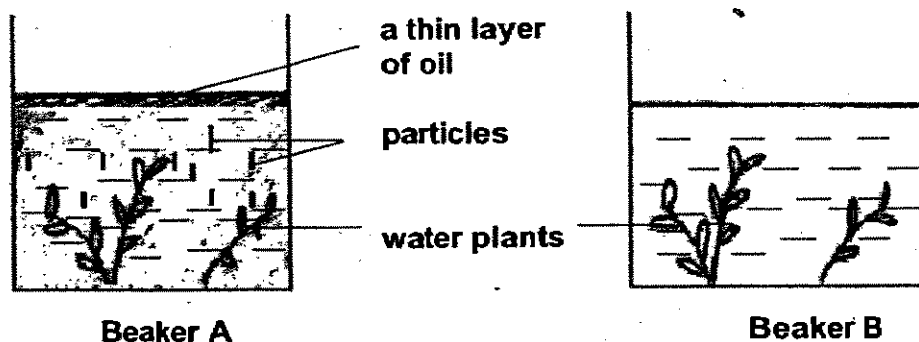
- (a) **DRAW IN PENCIL** the water droplets formed in container Y. [1]
- (b) Name the process(es) that has/ have taken place in each of the containers in the table below. [2]

Container	Process(es)
Y	
Z	_____ , condensation

33. Give an example for each of the following practice of 3Rs in the table shown below. [3]

recycle water	
reuse water	
reduce water	

34. Ming Li set up an experiment to find out the impact of water pollution on the water plants using the apparatus as shown below.



She recorded her observations of both beakers in the table shown below.

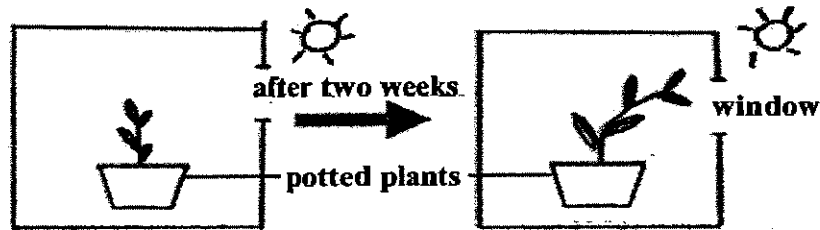
Beaker A	Beaker B
<ul style="list-style-type: none"> water is dark and cloudy particles are present a thin layer of oil is present on the water surface 	<ul style="list-style-type: none"> water is clear particles are not found no oil is present on the water surface

- (a) At the end of the day, Ming Li observed that the water plants in beaker A looked less healthy than those in beaker B. Give 2 reasons why this happened. [2]

Reason 1	
Reason 2	

- (b) If Ming Li puts an equal number of fish into both beakers A and B, how does the layer of oil affect the fish in beaker A? [1]

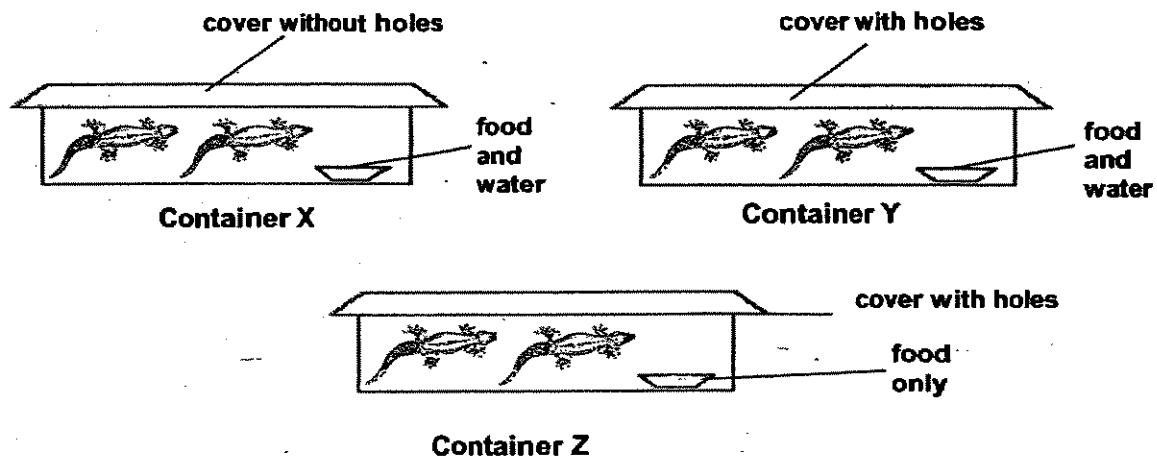
35. Elaine placed a potted plant near the window and noticed that it grew taller than before and bent towards the direction of the sunlight after 2 weeks.



Based on the information given above, what are the **TWO** characteristics of a living thing that were shown? Complete the sentence below using the characteristics identified. [2]

Living things _____ and _____

36. James set up an experiment using three containers, X, Y, and Z, as shown below. In each container, there were 2 lizards of the same breed and size.

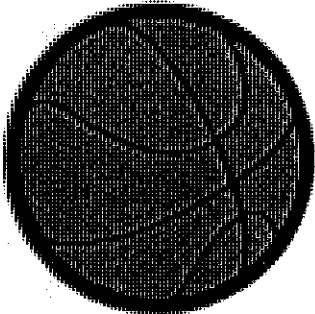
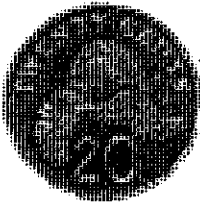

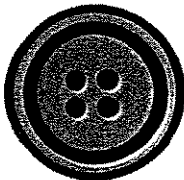


Based on the information above, answer the following questions:

- (a) In which container will the ^{lizards} ~~have~~ live for the longest period? Write letter X, Y or Z. [1]

- (b) Give a reason for your answer in (a). [1]

37. Some objects are grouped as shown below.

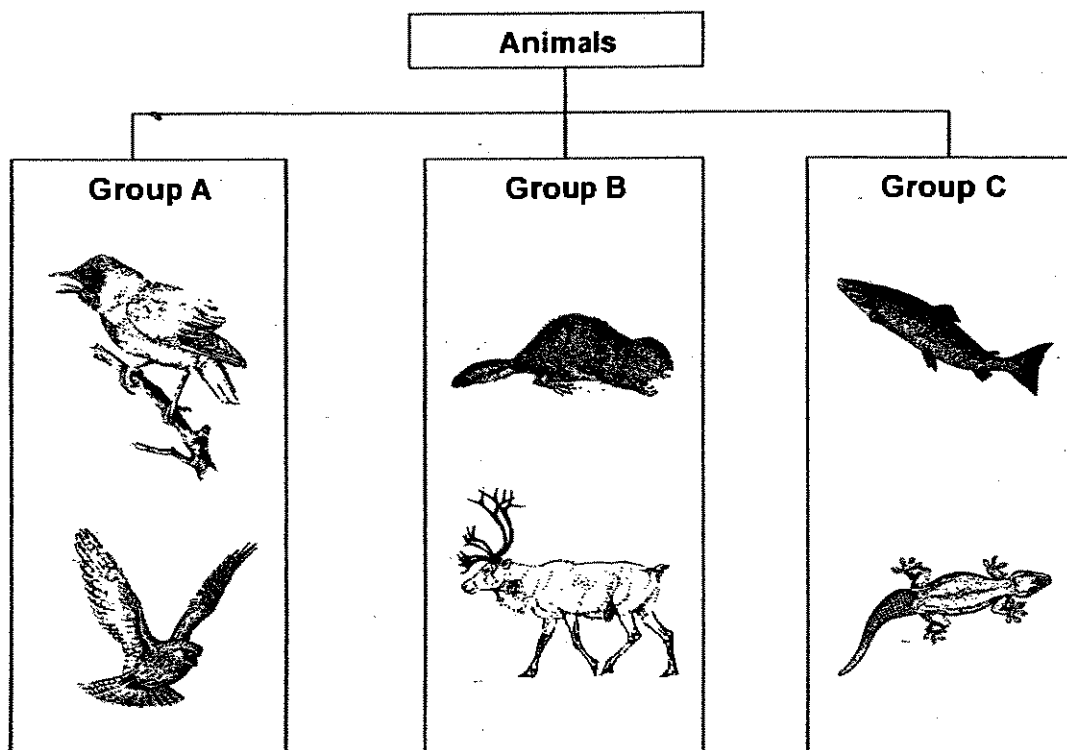
Group A	Group B
	
	

Based on the classification above, answer the following questions:

- (a) State one similarity between the two groups, A and B. [1]

- (b) State one difference between Group A and Group B. [1]

38. Some animals, A, B, C and D, as shown below are classified according to their types of body covering.



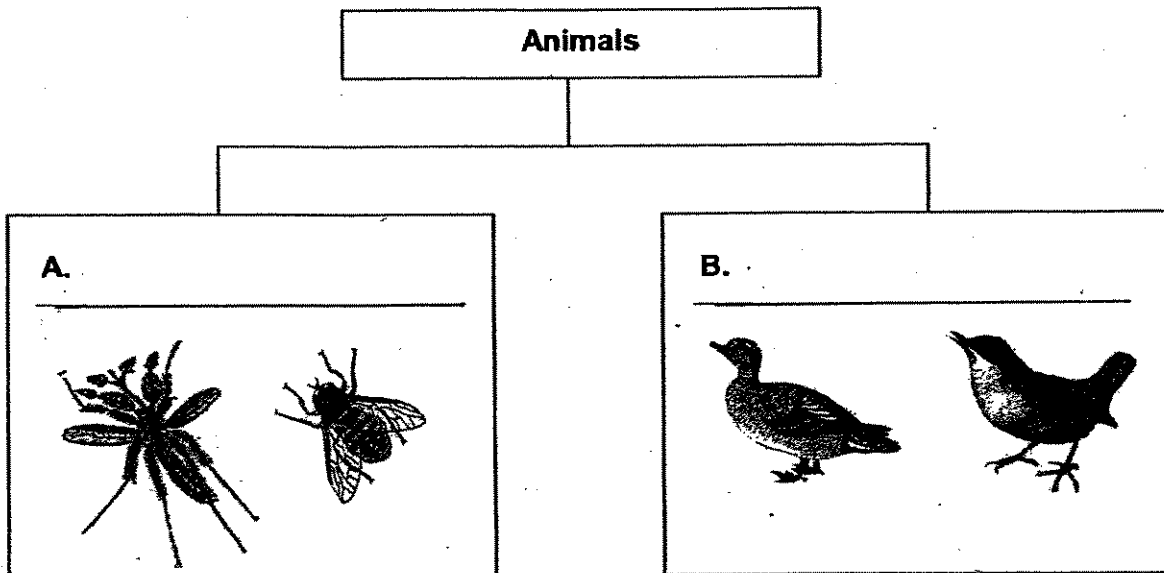
Based on the information above, answer the following questions:

- (a) Give **OTHER** example of an animal in each of the following groups: [1]

Group	Example
B	
C	

- (b) Name a characteristic of the group of animals in A based on what you can see in the pictures. [1]

39. Some animals are classified in the chart below. Fill in the boxes, A and B, with suitable headings based on their characteristics. [2]



40. Some animals were classified in the classification table below.

X	Y
guppy	platypus
tiger	turtle
monkey	emu
whale	angelfish

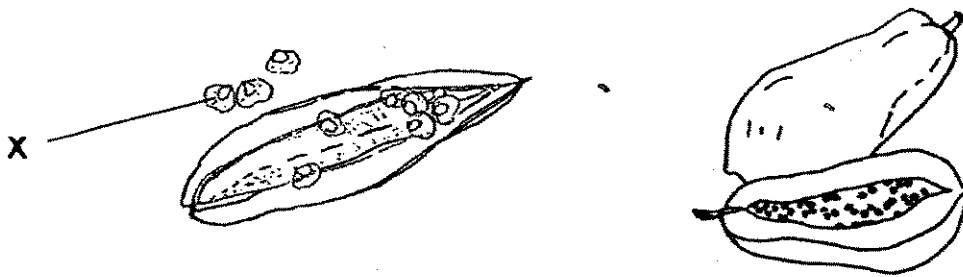
Based on the classification table above, answer the following questions:.

- (a) How are the animals classified into groups X and Y? [1]

- (b) In which group, X or Y, should the following animals belong to?
Write letters, X and Y, only. [1]

Animals	Group
frog	
horse	

41. The diagrams below show fruits of 2 different plants.



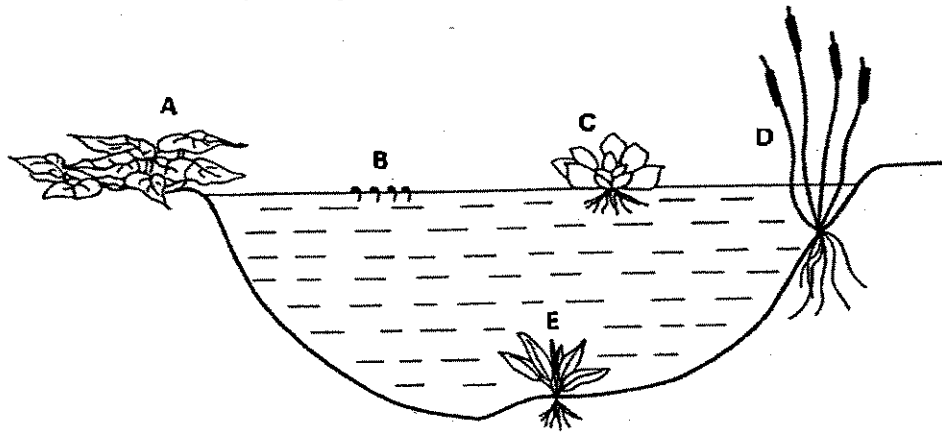
(a) What are found in the fruits shown above?

[1]

(b) What is the function of X?

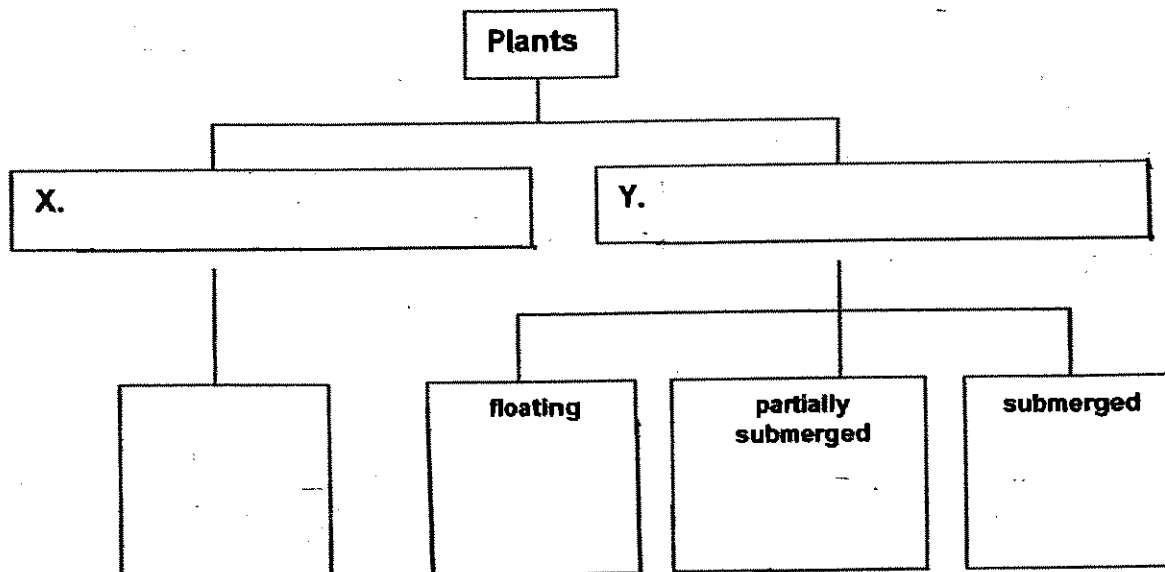
[1]

42. Kumar saw some plants growing near and in a pond as shown below.



- (a) Suggest how Kumar should classify these plants using the classification chart below. Write the letters, A, B, C, D and E, in the boxes provided.

[2]



- (b) Suggest **TWO** suitable sub-headings for boxes X and Y. Write them in the boxes, X and Y, above.

[1]

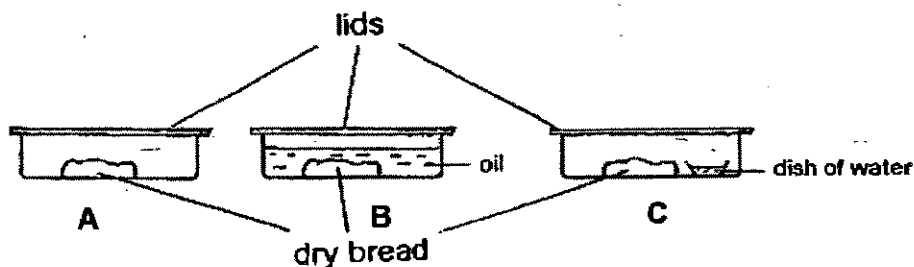
43. Two plants, A and B, as shown below, were found in a plot of land.



- (a) What is common between the stems of both plants, A and B? [1]

- (b) What is the difference in the way both plants grow? [1]

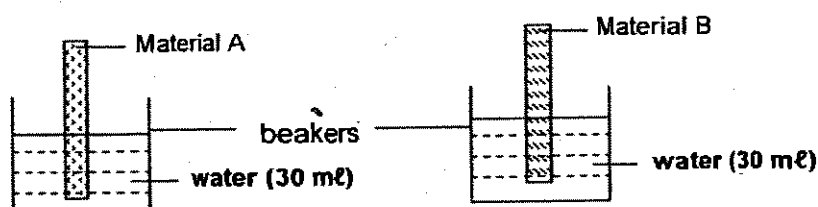
44. Tom had 3 identical containers, A, B and C. He placed into each of the containers a piece of dry bread of similar size as shown below.



- (a) In which container would the piece of bread turn mouldy first? Write letter A, B or C. [1]

- (b) Give a reason for your answer in (a). [1]

45. Karen had two identical strips of different materials, A and B. She dipped each of them into a beaker of water as shown in the diagrams below.



At the end of 5 minutes, Karen removed both strips and weighed each of them.

Her observations were recorded in the table shown below.

Time (min)	Mass of A (mg)	Mass of B (mg)
0	8.0	8.0
5	8.1	10.5

- (a) Based on her observations, what can Karen conclude about the property of each of the materials, A and B? [1]

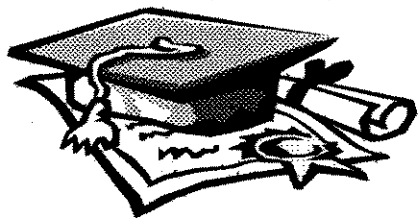
Material	Property
A	
B	

- (b) Which material, A or B, should Karen use to make a raincoat? Explain your answer. [1]

- END OF PAPER -

Setters :

Mr Ronald Lee
Mrs Jessie Goh
Mdm Janice Yeo
Mdm Florence Kong
Mdm Ho Sheen Yee



ANSWER SHEET

RAFFLES GIRLS' PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007
SEMESTRAL ASSESSMENT (1)

1. 3

2. 1

3. 3

4. 1

5. 3

6. 2

7. 4

8. 3

9. 2

10. 2

11. 2

12. 2

13. 4

14. 2

15. 3

16. 3

17. 3

18. 3

19. 3

20. 2

21. 4

22. 1

23. 4

24. 3

25. 4

26) a) i) definite shape

ii) definite volume

iii) no definite shape

b) i) Eraser

ii) Oil

27) a) 1: Air has mass but a shadow does not.

2: Air cannot be seen but shadow can be seen.

b) Music.

28) a) The balloon will inflate.

b) When the bottle is pushed into the water, air will occupy space in the bottle. Therefore, the balloon will inflate.



29) a)

b) Water in the beaker loses heat to the ice.

c) The ice cubes will melt.

30) a) Processes C and D.

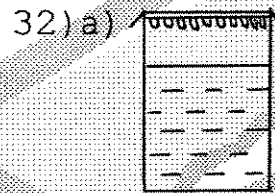
b) Container Y.

c) Container Y has the biggest exposed surface area and will evaporate the fastest.

31)a)Water vapour.

b)The heat from the same makes the puddle of water evaporate.

c)The puddle will disappear slower.



b)Y:Boiling,evaporation and condensation.

Z:Evaporation

33)recycle water:Treat or purifying waste water.

Reuse water:Use water collected from.washing clothes to wash the toilet.

Reduce water:Take a shower than taking a bath.

34)a)1:Water paints could not get light because of the layer of oil and therefore it could not photosynthesis.

2:The oil in beaker A prevents sunlight to pass through the water.Therefore,the plants cannot photosynthesis.

b)The oil in beaker A prevents the air from going into the water,therefore,the fishes will die.

35)Living things respond to changes around them and grows.

36)a)Y

b)The lizards in container Y have food,water and air to survive.

37)a)The things in group A and B are round.

B)Group A is thicker than group A but Group B is thinner than group B.

38)a)B:whale

C:Angle fish

b)They have wings

39) A: Have 6 legs
B: Have 2 legs

40) a) They are classified in the way they reproduce.
b) Y, X

41) a) Seeds
b) It allows the plant to reproduce.

42) a) b)

Plants

X: Land Plants

A

Y: Water Plants

B, C

D

E

43) a) Both stems are weak.
b) Plant A grows on the ground but plant B grows on a stick.

44) a) C.
b) It has water and air to survive.

45) a) A: Does not get wet easily.
B: Easily getting wet.
b) Material A. Material A does not take in water.

---end---

Name : _____ ()

Date : 8 May 2007

Class : Pri. 4 ()

Time : 1 hr 30 min

Science Teacher : _____

Section A (25 × 2 marks)

For questions 1 to 25, choose the most suitable answer and shade its number (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.

1. Which of the following can move by itself?

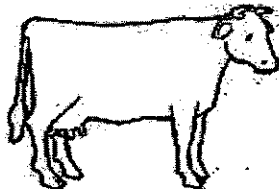
(1)



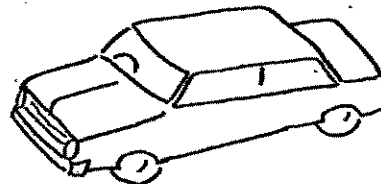
(2)



(3)



(4)



()

2. The diagrams below show two animals.

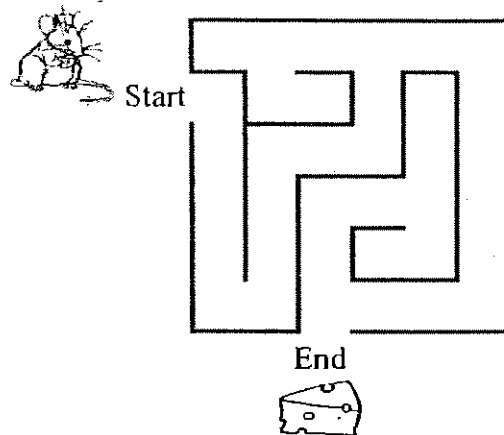


Based on what you can observe from the diagrams, which of the statements is definitely true?

- (1) Both breathe through the gills.
- (2) Both of them have a tail.
- (3) Both live in the water.
- (4) Both lay eggs.

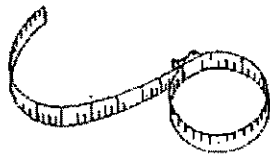
()

3. The following diagram shows a maze that Bala has created. A mouse is placed at the start position. Cheese is placed at the end of the maze.

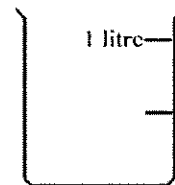


Bala wants to find out how long the mouse takes to reach the cheese. Which of the following instruments should he use?

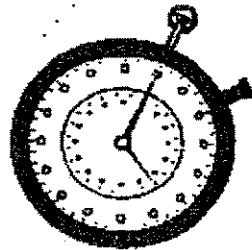
(1)



(2)



(3)



(4)



()

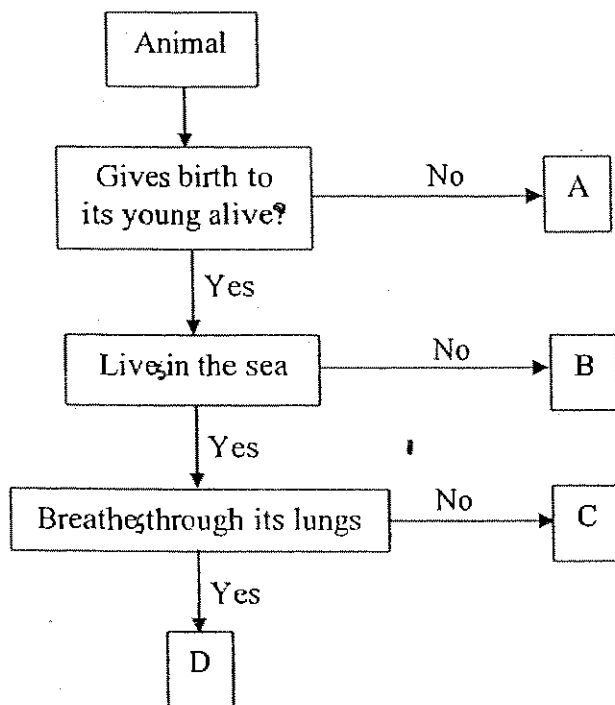
4. The following animals belong to the same group because all of them _____.



- (1) can fly
- (2) eat fish
- (3) can sing
- (4) have wings

()

5. The flowchart below shows the characteristics of four different ~~organisms~~ ^{animals}.



Which of the animals, A, B, C or D, matches the animal shown in the diagram below?

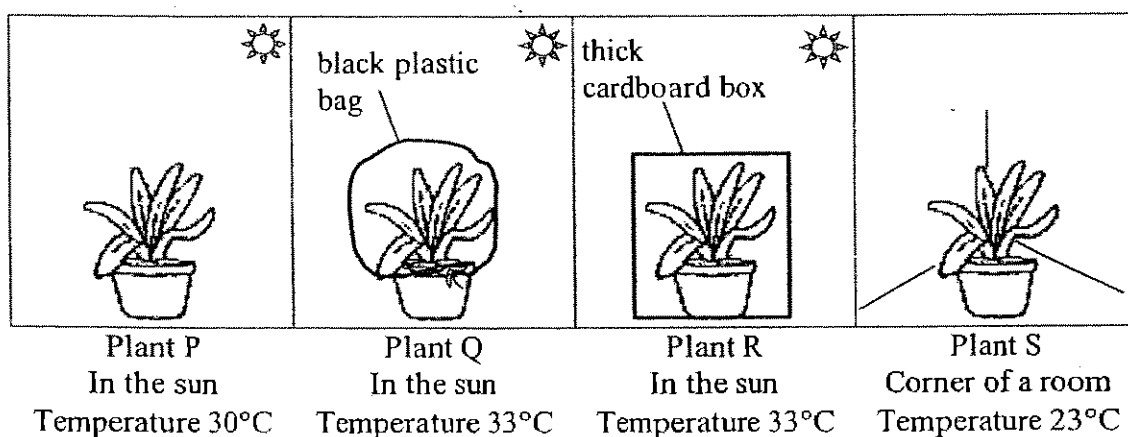


- (1) A
(3) C

- (2) B
(4) D

()

6. The diagrams below show four similar plants, P, Q, R and S.

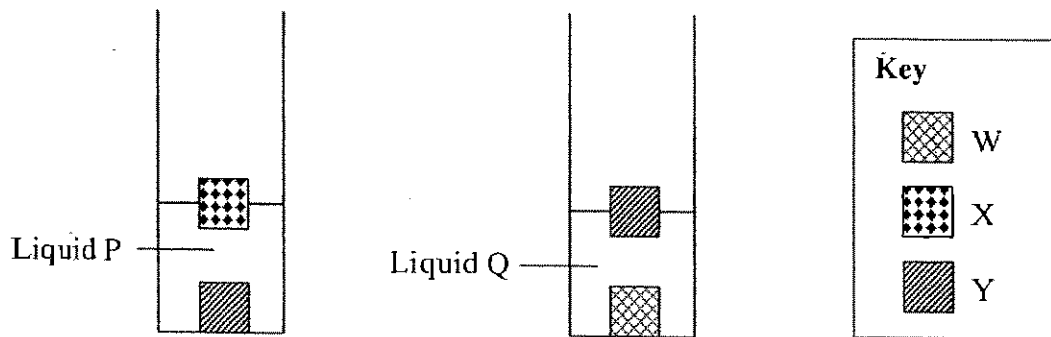


Which of the plants above will be able to photosynthesize?

- (1) P
(3) R

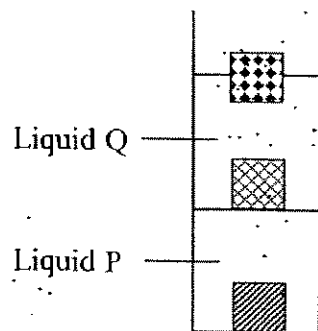
- (2) Q
(4) S

()
291

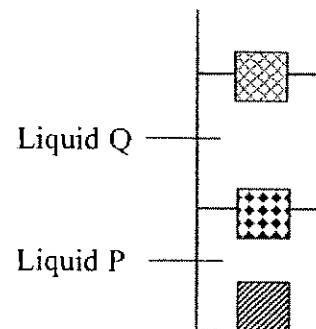


Which of the following diagrams show clearly what happens when liquids P and Q, and all the objects are placed in one container?

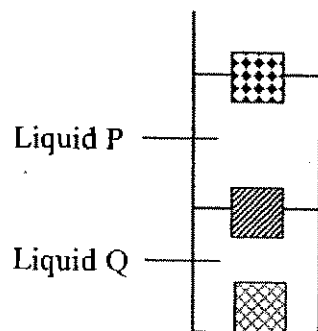
(1)



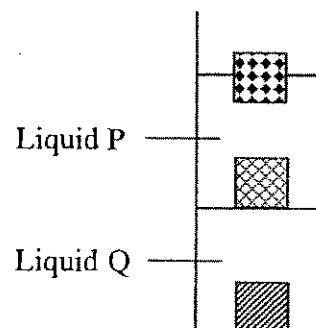
(2)



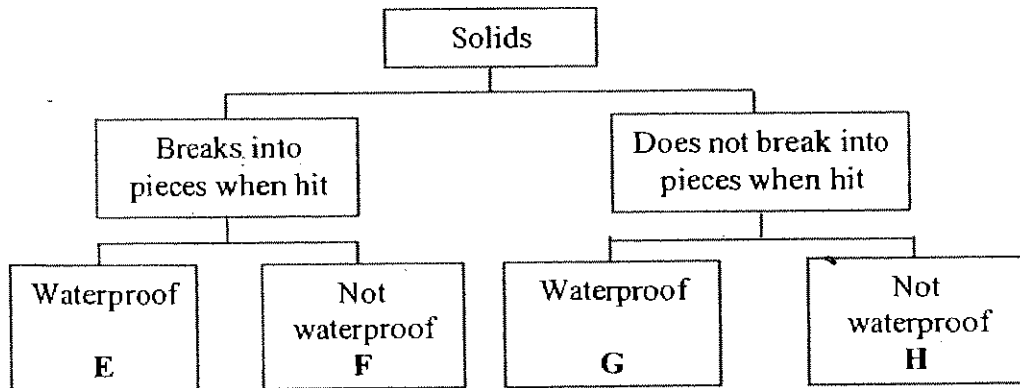
(3)



(4)



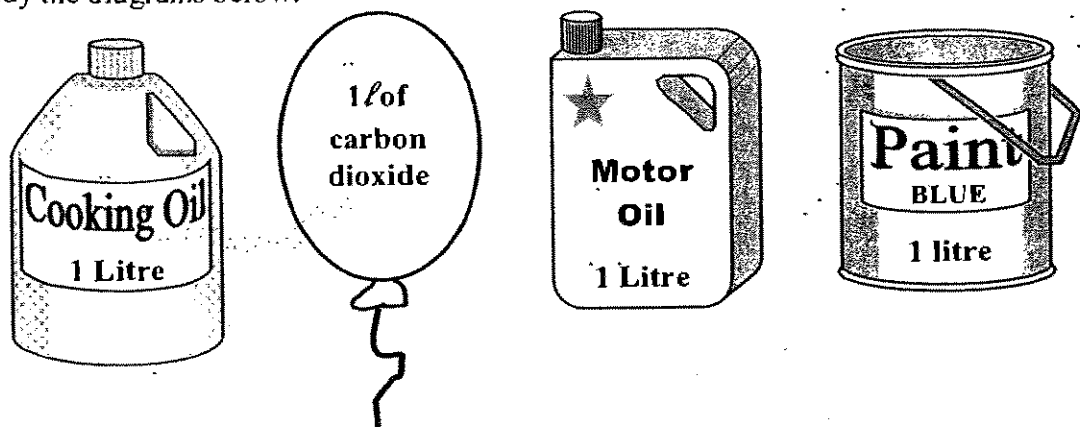
()



In which group will you place mirror and raincoat?

	mirror	raincoat
(1)	E	G
(2)	F	G
(3)	G	E
(4)	G	H

9. Study the diagrams below.



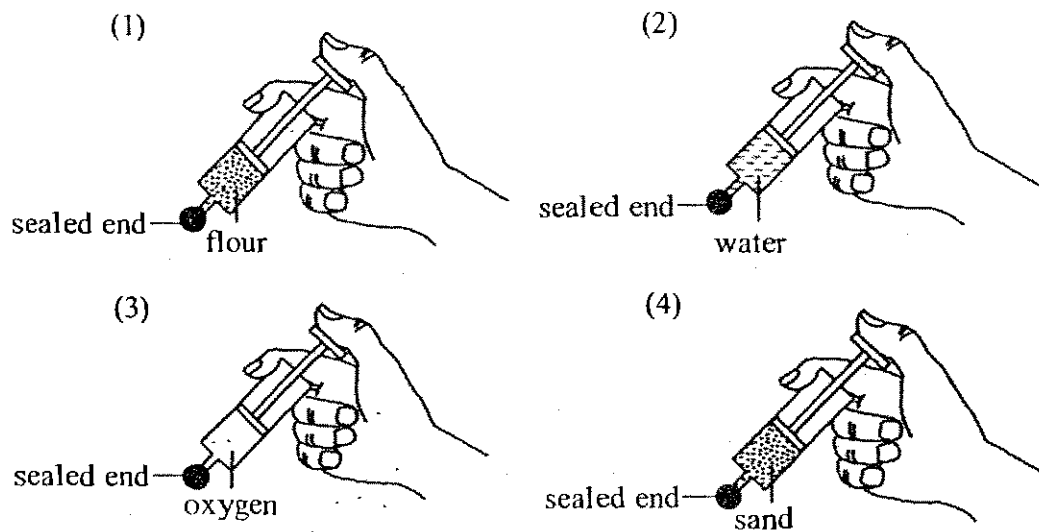
Which of the following statements about the liquids and gas in the containers and balloon are true?

- A: They cannot be compressed.
- B: They have the same volume.
- C: They do not have a definite shape.

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

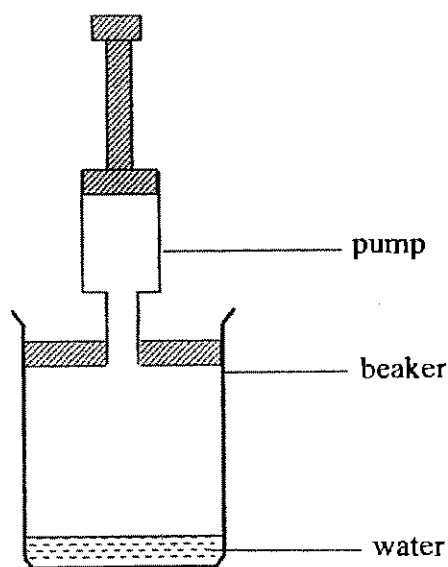
()

10. Equal volumes of flour, water, oxygen and sand are placed into four identical syringes. In which syringe can the plunger be pushed down the most?



()

11. The diagram below shows a beaker with a capacity of 1000 cm^3 . Nathan filled the beaker with 100 cm^3 of water. Then, he fitted a pump at the top of the beaker. Each time he pushed in the pump fully, 200 cm^3 of air entered the beaker. He pressed the pump 2 times.

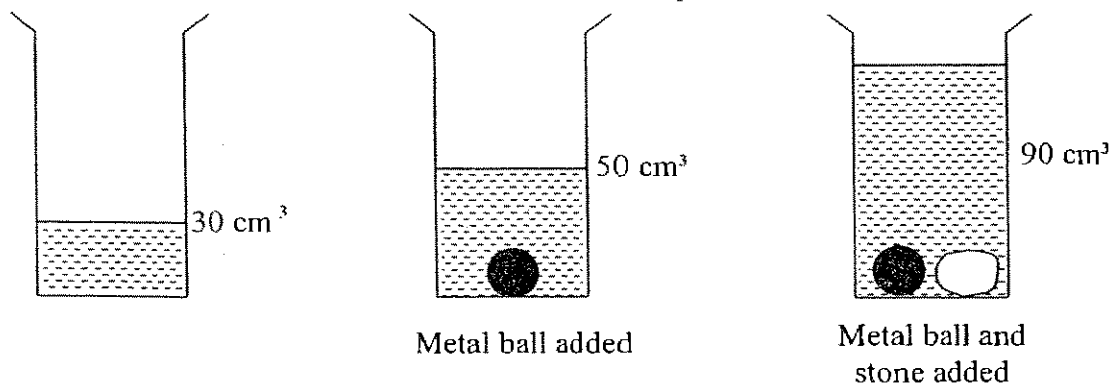


What would the volume of air in the beaker be?

- (1) 1300 cm^3
 (2) 1100 cm^3
 (3) 1000 cm^3
 (4) 900 cm^3

()

12. The diagram below shows a measuring cylinder which contains 30 cm^3 of water. When a metal ball is added, the water level rises. When both the metal ball and a stone are added, the water level rises again.



Which one of the following sets of readings shows the volumes of the metal ball and the stone?

	Volume of the metal ball (cm^3)	Volume of the stone (cm^3)
(1)	50	90
(2)	50	40
(3)	20	40
(4)	20	10

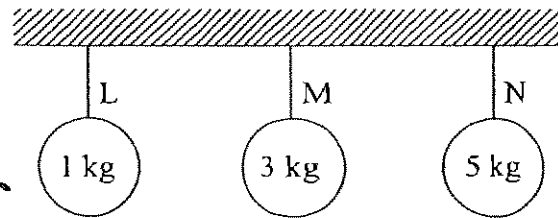
13. Cindy wants to set up an experiment to test how the exposed surface area of a liquid can affect the rate of evaporation.

	Exposed surface area of liquid (cm^2) (cm^3)	Amount of water (cm^2) (cm^3)
Container K	20	30
Container L	20	40
Container M	20	40
Container N	30	40

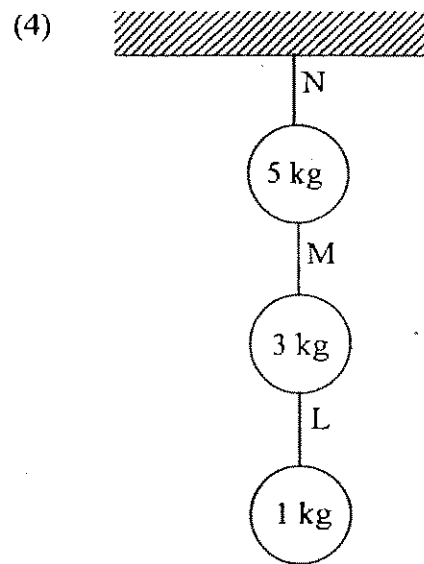
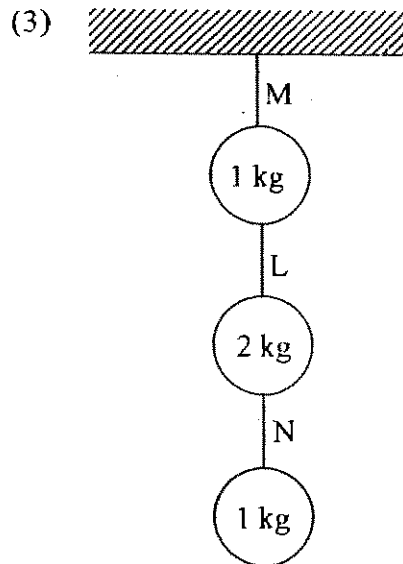
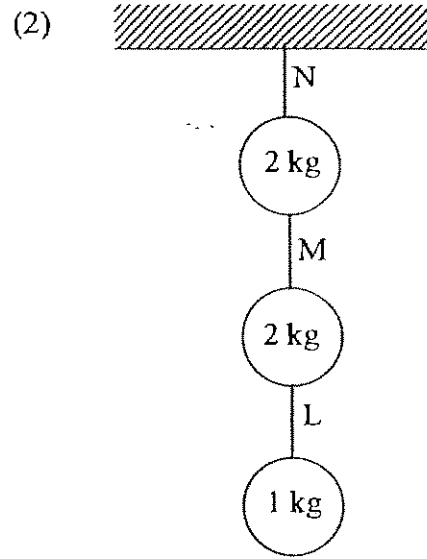
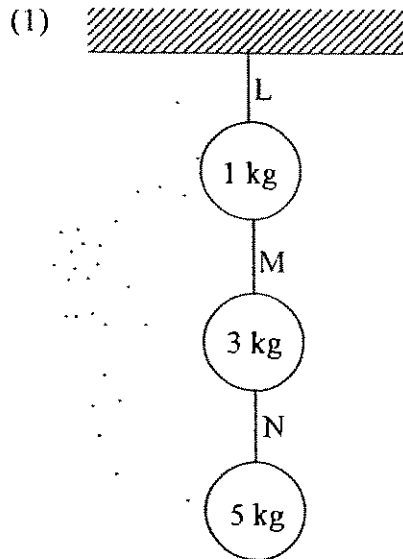
Which two of the above containers should she choose to carry out her experiment?

- (1) K and L
(2) K and M
(3) L and M
(4) M and N

19. A diagram has 3 different ropes, L, M and N. The diagram shows the maximum mass that each rope can support without breaking.



Which of the arrangements below would not cause any of the ropes to break?



()

- Get a Tutor to go through the Papers <http://www.topexamp.com>
 15. The boiling and freezing points of four liquids, E, F, G and H, are given below.

Liquid	Boiling Point (°C)	Freezing Point (°C)
E	120	-90
F	310	90
G	75	-10
H	80	20

Which of them would be a suitable liquid for use in a thermometer to measure both the boiling and freezing points of water?

- (1) E (2) F
 (3) G (4) H ()

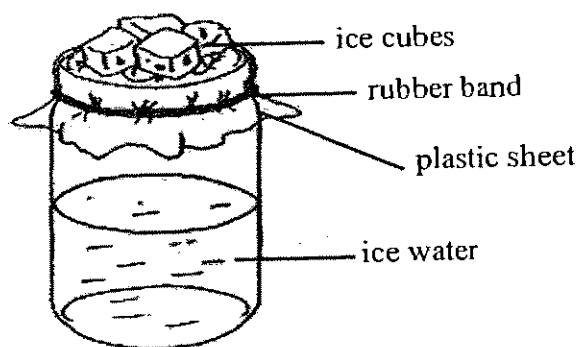
16. Four identical towels, P, Q, R and S, are soaked with the same amount of water and hung to dry under different weather conditions.

	P	Q	R	S
Windy	✓	✓	✗	✓
High surrounding temperature	✗	✓	✓	✓
Low humidity	✗	✗	✓	✓

Which of the towels will dry first?

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

17. Shila used the following setup to 'create rain'. She filled half the jar with ice water and covered it with a piece of plastic sheet. Some ice cubes were placed on the plastic sheet. After a few minutes, she did not see the 'rain' that she had expected to see. One of the items she used was incorrect.



Which of the following items was incorrect?

- (1) Ice cubes
 (2) Ice water
 (3) Plastic sheet
 (4) Rubber band ()

18. The statements A to F describe the events that lead to the formation of rain. However, they are not in the correct order.

- A: Water evaporates from rivers and lakes
 B: Condensation happens
 C: Water vapour rises and then cools
 D: Droplets of water form clouds
 E: Heat from the sun warms the earth
 F: Water droplets become bigger and fall as rain



Which of the following completes the order?

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

()

19. Which of the following processes of the water cycle are correctly described?

	Process	Change	
		From	To
A	Condensation	Water vapour	Water
B	Evaporation	Water	Ice
C	Freezing	Ice	Water vapour
D	Melting	Ice	Water

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

()

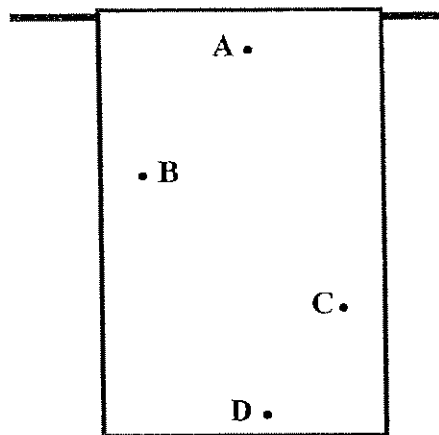
20. Which of the following statements about air are true?

- A: Inhaled air contains more oxygen than exhaled air.
 B: Air is a mixture of oxygen and carbon dioxide only.
 C: Every 100 ml of air contains 1 ml of carbon dioxide.
 D: Green plants need oxygen and carbon dioxide to live.

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

()

21. A wet towel is hung out to dry in the sun as shown.

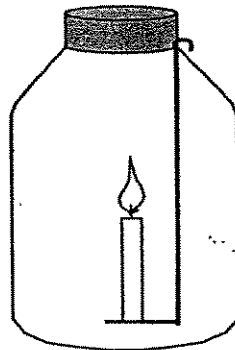


Which of the following spots (A, B, C or D) will take the shortest time to dry?

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

()

22. Judy wanted to conduct an experiment to show that more air will keep a candle burning for a longer time. She lit a candle and put it into the container as shown. She covered the container. She measured the time taken for the candle to stop burning and repeated the experiment three times.

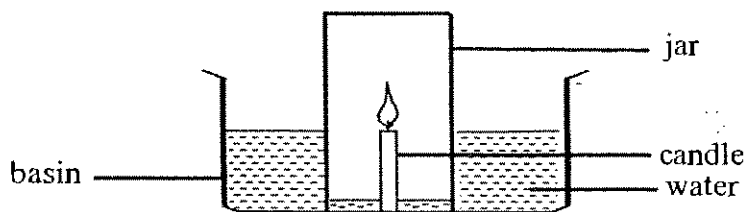


Which of the following variables should she keep the same?

- A: Size and type of the candles used
- B: Size of the sealed containers used
- C: Time taken for the candles to stop burning

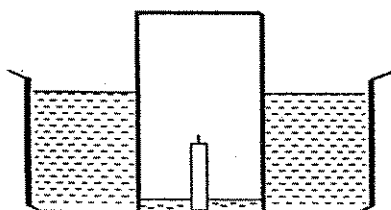
- (1) A only
- (2) B only
- (3) A and B only
- (4) A, B and C

()

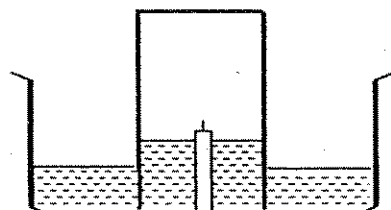


Which diagram shows what happened to the set-up at the end of the experiment?

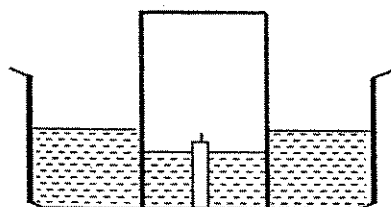
(1)



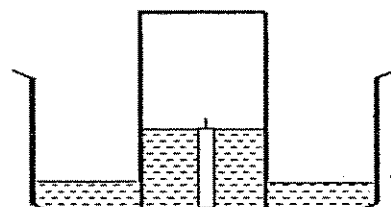
(2)



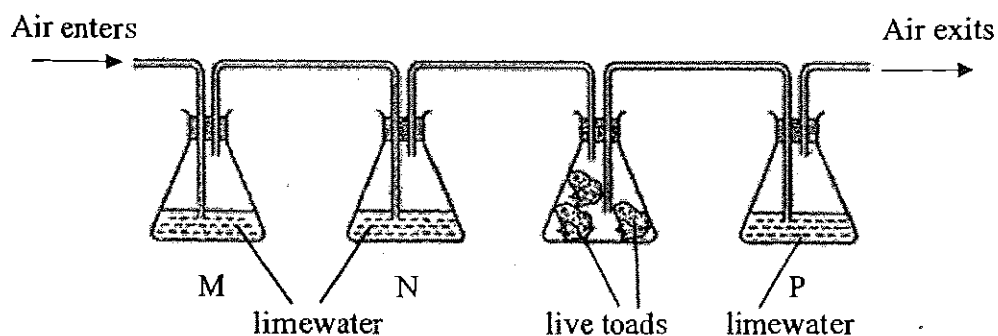
(3)



(4)



24. Steffy set up an experiment as shown below. Air entered from one side of the set-up and travelled through the four beakers.



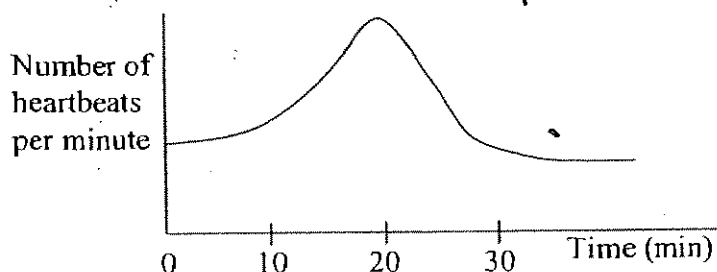
In which beaker(s) will the limewater turn chalky after some time?

- (1) Beaker N only
- (2) Beaker P only
- (3) Beakers M and N only
- (4) Beakers N and P only

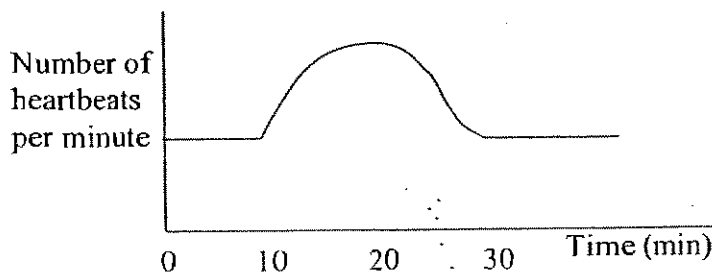
25. Henry walked briskly for 10 minutes from his home to a field. Then, he ran very fast for another 10 minutes, before walking home slowly. Which of the following graphs best shows his pulse rate during his journey?

number of heartbeats per minute

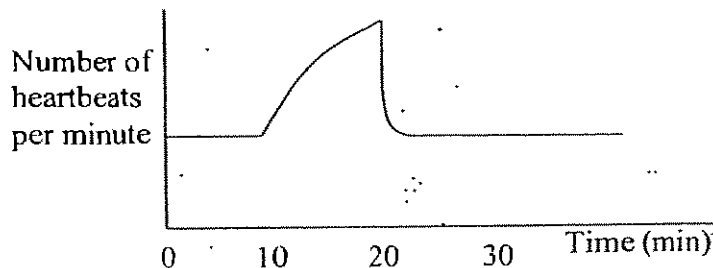
(1)



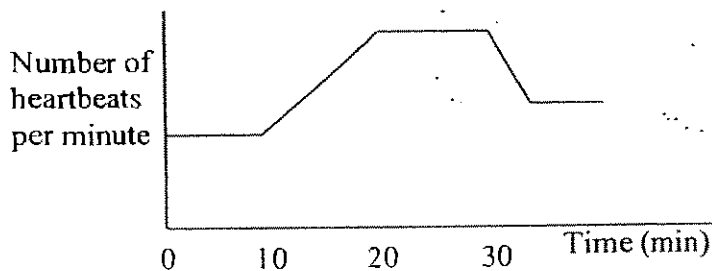
(2)



(3)



(4)



For Questions 26 to 30, please refer to Booklet K.

End of Section A

Science
Primary 4

Name : _____ ()

Date : 8 May 2007

Class : Pri. 4 ()

Parent's Signature : _____

Science Teacher : _____

Time : 1 hr 30 min

Marks for Section A	60
Marks for Section B	30
Marks for Booklet K (exclude Section A Qns. 26 to 30)	10
Total Marks	100

Section B (30 marks)

For questions 31 to 42, write your answers in the spaces provided.

31. Look at the following diagram.



adult cockroach

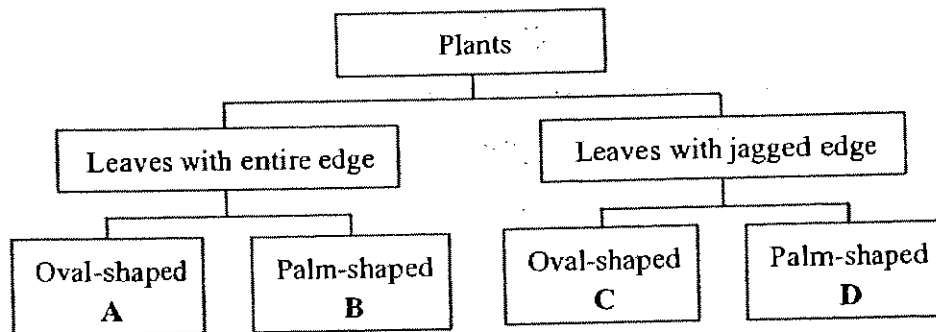


cockroach nymph

- a) Based on the diagram, what is one difference between the adult cockroach and the cockroach nymph? (Do not compare their sizes.) (1 m)

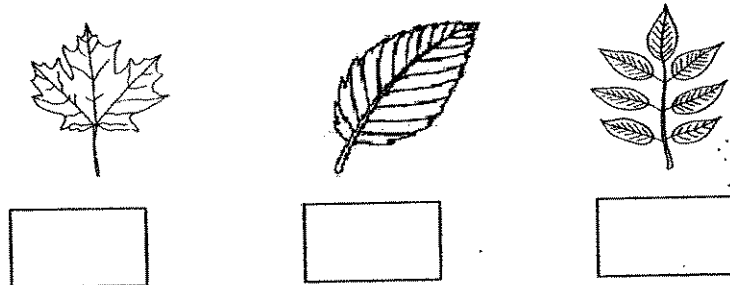
- b) Name the process that the cockroach nymph goes through before it becomes an adult. (1 m)

32. Study the classification chart below.



- a) In which group would you place the leaves of the three different plants below? Write A, B, C or D in the boxes below.

(1½ m)



- b) Based on the classification chart, what are the characteristics of plant B?

(1 m)

33. The diagram below shows the three body parts of an insect.

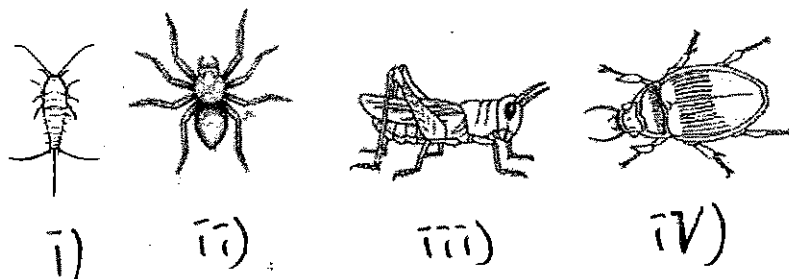


- a) Draw the legs of the insect on the diagram above.

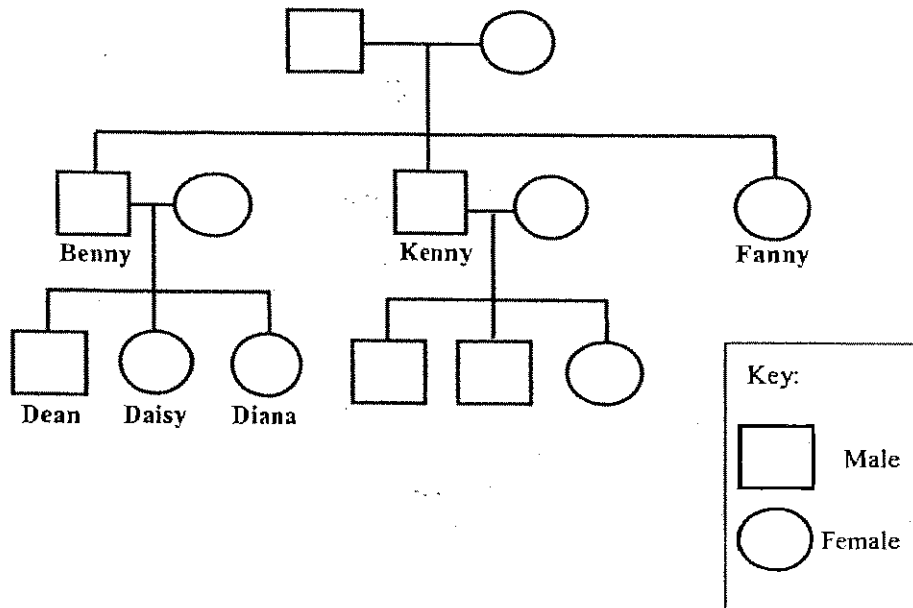
(1 m)

- b) Look at the following diagrams carefully. Circle the insects.

(1 m)



34. Study Dean's family tree below.

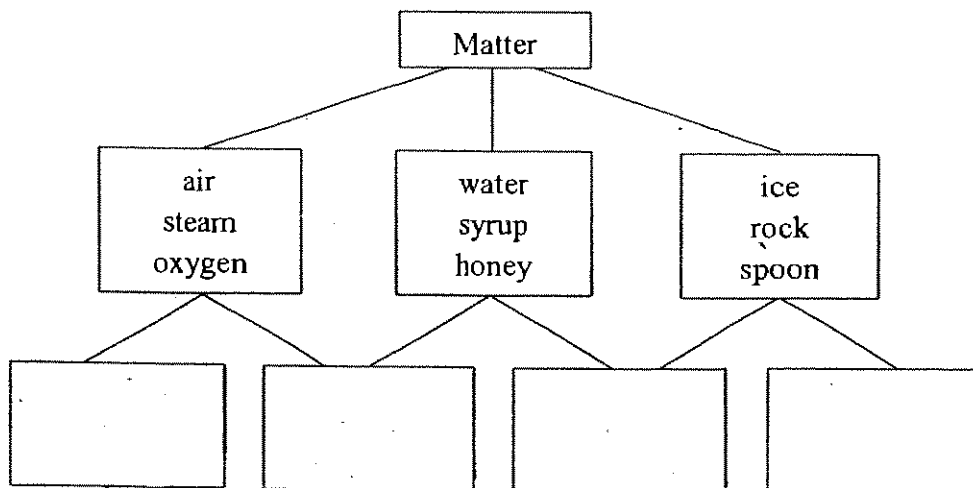


Put a tick (✓) in the correct boxes against the following statements.

(2 m)

Statement	True	False	Not possible to tell
Diana has two sisters.			
Daisy has three cousins.			
Kenny is older than Dean, Diana and Daisy.			
Dean's grandparents have two daughters.			

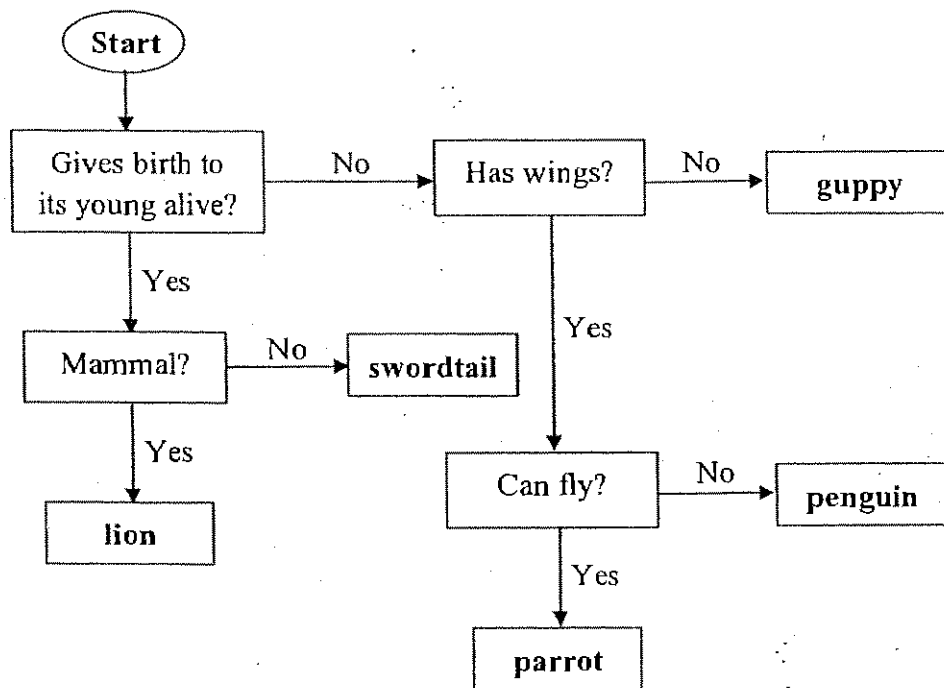
35. The diagram below shows some examples of the three groups of matter.



Fill in each box with the correct property that describes the matching state(s) of matter.

(2 m)

36. Study the following flow chart which describes different animals.

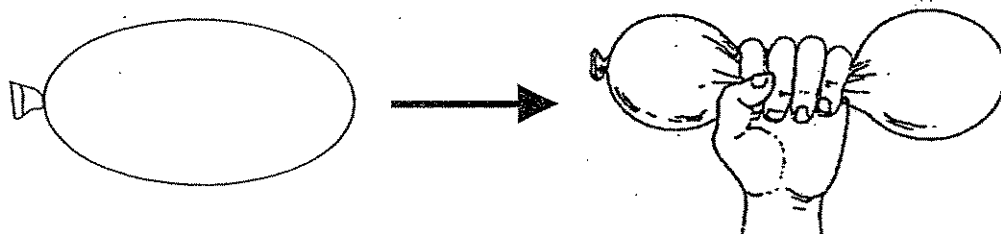


- a) Which of the above animals is wrongly classified? Why? (2 m)

- b) Based on the flowchart above, write down the characteristics of the parrot. (1½ m)

- c) How does a swordtail reproduce? (1 m)

37. Meili received a balloon from her friend. The diagram below shows what happened to the balloon when she squeezed it.



a) What does this show about air?

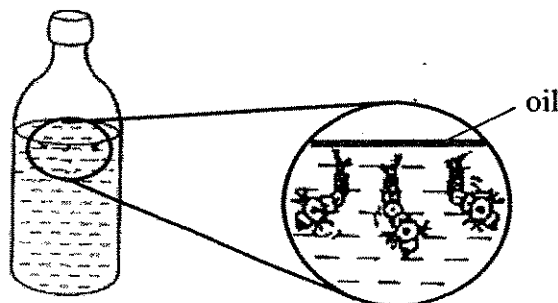
(1 m)

b) Tom noticed that the water level in the bathtub rose when he got into the water. Why did the water level rise?

(1 m)



38. Mrs Fatimah poured some cooking oil into a bottle of water with some wrigglers in it.



a) What would Mrs Fatimah observe after 3 days?

(1 m)

b) Explain your answer in (a).

(1 m)

39. Cynthia puts ticks (✓) against the characteristics that her hamsters had and crosses (✗) for those they did not have.

Characteristic	Cynthia's hamsters					
	Allyham	Billyham	Collyham	Dillyham	Easyham	Fillyham
Short tail	✓	✗	✓	✗	✓	✓
Furry tail	✓	✗	✓	✓	✓	✗
Short fur	✗	✗	✗	✓	✓	✗
Pointed ears	✓	✗	✗	✓	✓	✗
Curved claws	✓	✓	✓	✗	✗	✓
Single colour	✗	✓	✗	✗	✓	✓

- a) Cynthia placed her hamsters into two groups according to one of the characteristics.

Group P	Group Q
Allyham	Billyham
Dillyham	Collyham
Easyham	Fillyham

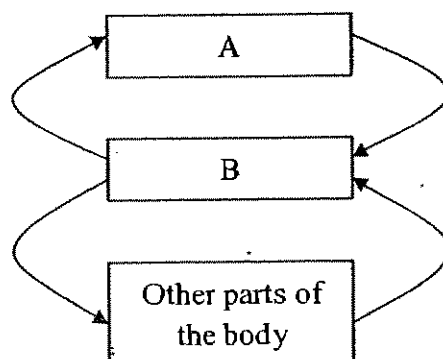
(1 m)

Which characteristic did she use to group the hamsters?

- b) What was the difference between Billyham and Fillyham?

(1 m)

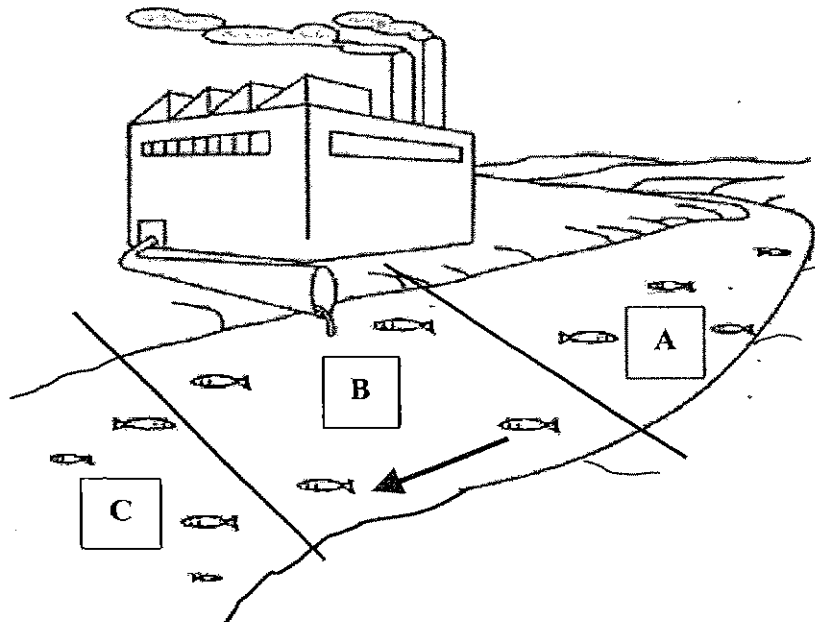
40. The diagram below shows the circulatory system in our body,



a) Name the parts marked A and B.
A: _____ B: _____

- b) What is the difference between the blood entering the lungs and the blood leaving the lungs? (1 m)

41. The diagram below shows a factory discharging harmful chemical waste into the river. The arrow shows the direction of the river flow.

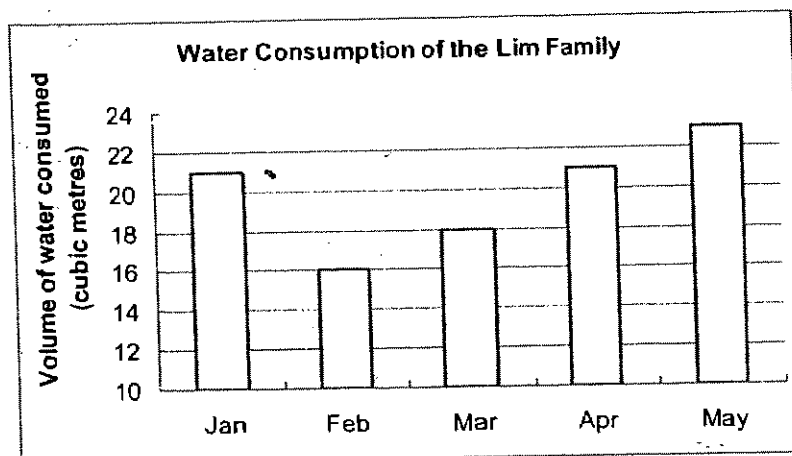


- a) Which part of the river, A, B or C, is the most polluted? (1 m)

- b) Which part of the river, A, B or C, will you find the most fish surviving? (1 m)

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

42. The bar graph below shows the water consumption of the Lim family for the months January to May 2007



- a) In which month did the Lim family use the most water? (1 m)

- b) How much water did the Lim family use that month? (1 m)

- c) State whether the following statements about the water consumption of the Lim family are true or false. (1 m)

	True/ False
The Lim family consumed more and more water from January to May 2007.	
They consumed the least amount of water in February.	

- d) Tick against the boxes that show possible ways in which the Lim family can reduce their consumption of water. (1 m)

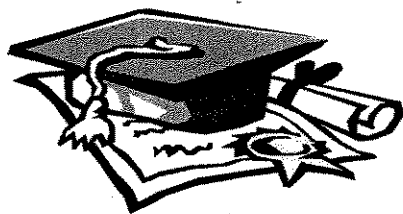
	Activities	Tick (✓)
i	Use a hose when washing the car.	
ii	Water the plants with a watering can.	
iii	Do not leave taps running unnecessarily.	

For Questions 43 to 46, please refer to Booklet K.

End of Paper

Set by : Ms Chua Hui Zhi

Vetted by: P4 Science Committee teachers



ANSWER SHEET

PEI CHUN PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007
SEMESTRAL ASSESSMENT (1)

1. 3

2. 2

3. 3

4. 4

5. 4

6. 1

7. 3

8. 1

9. 3

10. 3

11. 4

12. 3

13. 4

14. 2

15. 1

16. 4

17. 2

18. 2

19. 2

20. 2

21. 1

22. 1

23. 3

24. 2

25. 1

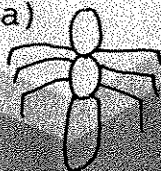
31) a) The adult cockroach has wings but the cockroach nymph does have wings.

b) Molting

32) a) D, C, B, A

b) Plant B is a palm-shaped leaf with an entire edge.

33) a)



b) i, iii, iv

34) False

True

Not

False

35) no definite volume

no definite shape

definite volume

definite shape

36) a) The guppy. The chart says that guppies do not give birth to their young alive, but guppies do give birth to their young alive.

b) A parrot has wings, can fly and does not give birth to its young alive.

c) It gives birth to its young alive.

37) a) Air can be compressed.

b) When Tom stepped into the bathtub, he occupied the space the water needed to maintain the same water level, causing the water level to rise.

38) a) The wriggles would be dead.

b) The layer of cooking prevents the wrigglers from getting the oxygen they needed.

39) a) Then pointed ears. The hamsters of Group P have pointed ears but the hamsters of Group Q do not have pointed ears.

b) Filly ham has a short tail but Billy ham does not have a short tail.

40) a) lungs b) heart

b) The blood entering the lungs contains little oxygen but the blood leaving the lungs contains a lot of oxygen.

41) a) C b) A

c) When the harmful chemicals get washed into the river, the flow of water carries it down stream to locations B and C. As location A is upstream, it is least affected by the harmful chemicals the factory discharge.

42) a) May

b) 23m³

c) False

True

d) ii, iii

NAME : (_____)

CLASS : _____

METHODIST GIRLS' SCHOOL (PRIMARY)

MID-YEAR EXAMINATION 2007

PRIMARY FOUR

SCIENCE

BOOKLET A

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

Booklet A : 30 Questions (60 marks)

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

**Methodist Girls' School (Primary)
Primary 4 Science
First Semestral Assessment 2007**

Section A (30 × 2 = 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 of the following are needed by all living things?

- A: Food
- B: Water
- C: Oxygen
- D: Sunlight

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

2. Ian found a creature in his garden and observed these characteristics:-

- It's fixed in a position.
- It responds slowly to changes.
- It does not make its own food.
- It feeds on dead and live animals and plants.

What do you think is this creature?

- (1) A plant
- (2) A fungus
- (3) An animal
- (4) A micro-organism

3. Which living things are grouped incorrectly based on the way they reproduce?

- (1) Ant, owl, spider and butterfly
- (2) Dolphin, guppy, man and rat
- (3) Angelfish, hen, ostrich and turtle
- (4) Kingfisher, penguin, tilapia and whale

4. Which one of the statements below contains at least a living thing, a non-living thing, and a non-living thing that was once alive?

- (1) A plastic bag full of vegetables and meat
- (2) A porcelain vase of fresh roses and tulips
- (3) A glass tank of fishes on a wooden table
- (4) Children playing with a beach ball in the pool

5. The Underwater World in Sentosa is the largest tropical oceanarium in Asia. Beautiful marine life can be viewed through the specially constructed glass tank. Which statement correctly explains why glass is used to construct the tank?

- (1) It does not crack easily
- (2) It is the cheapest material in the world
- (3) It allows light to pass through and it is waterproof
- (4) It can conduct heat away to the surrounding easily

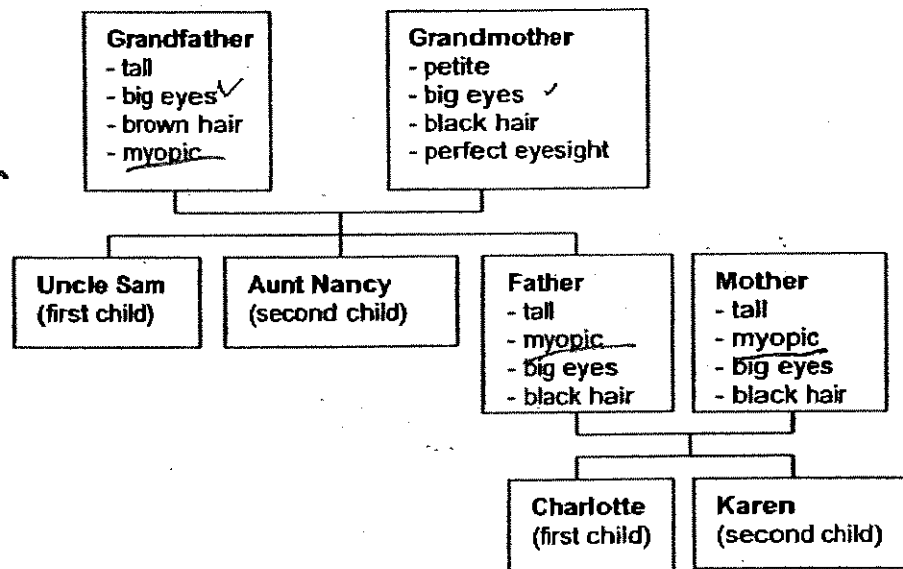
6. Abel, Ben and Caleb each brought a water bottle with them when they went hiking at Fort Canning Hill. Abel brought a plastic water bottle with 500ml of water, Ben brought a metal water bottle with 500ml of water and Caleb brought a thermo flask with 500ml of water. After hiking for an hour under the hot sun, they found that their water had different temperature. Which statement has correctly arranged the water bottle according to the water temperature in ascending order?

- (1) Thermo flask, plastic water bottle, metal water bottle
- (2) Plastic water bottle, thermo flask, metal water bottle
- (3) Metal water bottle, plastic water bottle, thermo flask
- (4) Metal water bottle, thermo flask, plastic water bottle

7. Which one of the following pairs of items shows an object and its appropriate material?

- (1) Frying pan – metal only
- (2) Spectacles – glass only
- (3) Raincoat – cloth and plastic
- (4) Bicycle's wheel – rubber and metal

During the Science lesson, Charlotte drew her family tree as below. Refer to this family tree to answer Question 8 and 9.



8. By referring to the family tree, which description would best describe how Aunt Nancy may look like?
- (1) She is petite with brown hair and a sharp nose
 - (2) She is tall and has a pair of blue eyes with black hair
 - (3) She is petite and has a pair of small eyes with red hair
 - (4) She is tall with brown hair and wears a pair of spectacles
9. Recently, Charlotte was diagnosed to be myopic, she hopes that her younger sister, Karen, would not be myopic when she grows older. Which statement is most likely to be true?
- (1) Karen is most likely to be myopic in future because she looks like Charlotte
 - (2) Karen is most likely to be myopic in future because both her parents are myopic ✖
 - (3) Karen is most likely to have a perfect eyesight because her grandmother says so
 - (4) Karen is most likely to have a perfect eyesight because she looks like her grandmother

10. After explaining the 3 states of Matter, a Science teacher asked the class to explain which state water is in. The following are the answers the class gave:-

- A: Water can be a solid, liquid or gas
 B: Water is definitely a gas because it is steam
 C: Water is definitely a solid because ice is made from it
 D: Water changes its state depending on the temperature
 E: Water is definitely a liquid because we drink it everyday

Which option would best explain the state of water?

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

11. While learning the 3 states of Matter, Gary learnt that the melting points and the boiling points of the following matters at normal atmospheric pressure are:

Matter	Melting point (°c)	Boiling point (°c)
Argon	-189.35	-185.85
Iodine	113.70	184.30
Iron	1538.00	2861.00
Mercury	-38.83	356.73

Which statement is correct about the states of these gases?

	Matter	0°C	Room temperature	100°C
(1)	Argon	Gas	Gas	Gas
(2)	Iodine	Liquid	Solid	Gas
(3)	Iron	Solid	Liquid	Gas
(4)	Mercury	Liquid	Liquid	Gas

12. One night, Joyce saw her own shadow while walking her dog. When she saw her dog stepped into her shadow, she concluded that shadow is not a matter. Which statements below are true?

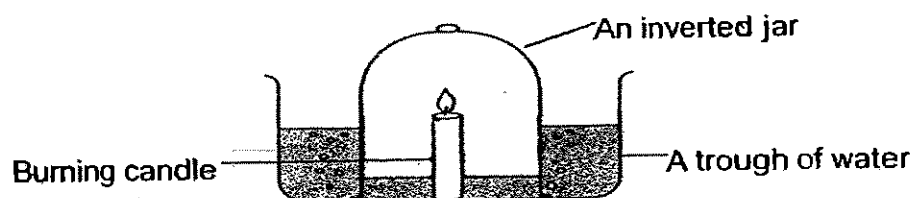
A: Shadow is not a solid, liquid or gas
 B: Shadow has mass and occupies space
 C: Shadow does not have mass but covers an area

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

13. Which of the following processes use up oxygen and release carbon dioxide?

- (1) Combustion and Digestion
 (2) Combustion and Respiration
 (3) Respiration and Photosynthesis
 (4) Decomposition and Photosynthesis

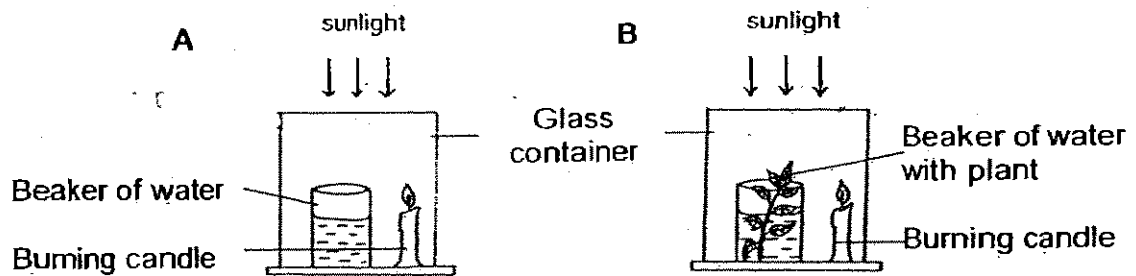
14. A candle is burnt in an inverted jar. Bubbles can be seen coming out of the water.



Which statement is true about the water level?

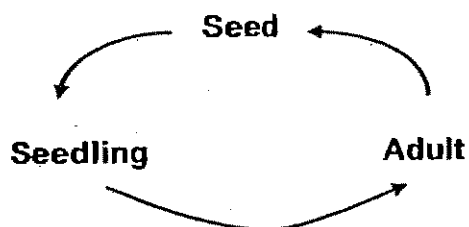
- (1) The water level in the jar will rise
 (2) The water level in the jar will drop
 (3) The water level in the trough will rise
 (4) The water levels in the jar and trough remain the same

15. Two experiment set-ups A and B are placed under the sun. Set-up A consists of a beaker of water and a burning candle inside a glass container. Set-up B consists of exactly the same apparatus except that it has a small plant in the beaker. Study the following diagram. Which statement is true about the observation of the experiment?



- (1) Candle in Set-up A will go out first
- (2) Candle in Set-up B will go out first
- (3) Both candles will go out at the same time
- (4) Both candles will keep on burning for a long time

16. The diagram below shows the life cycle of a plant.



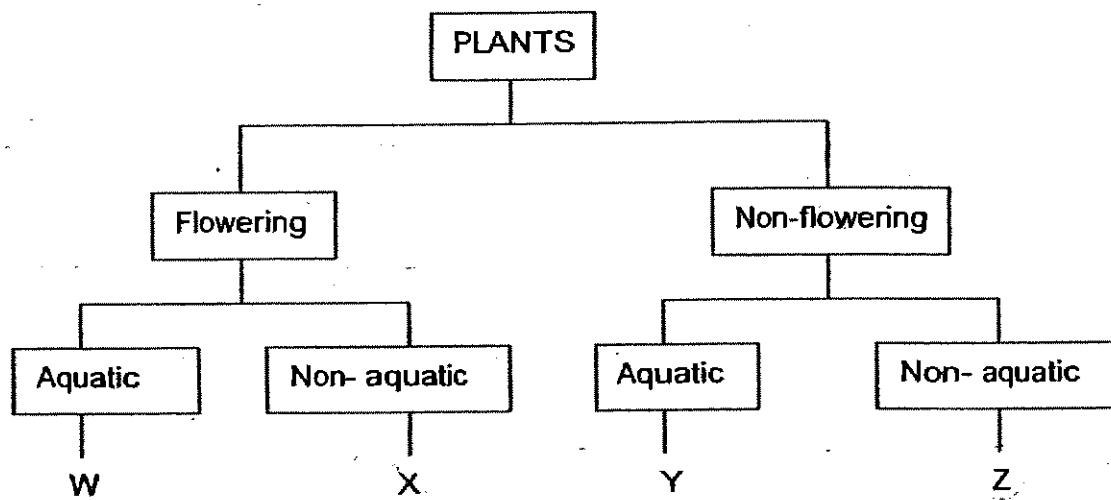
Based on the above life cycle, what can you infer about the plant?

- (1) It is a flowering plant.
- (2) It will grow into a tree.
- (3) The fruit can be eaten.
- (4) The seeds are dispersed by animals.

17. The following table gives information on four plants, A, B, C and D, based on two characteristics. A tick (✓) shows that the plant has the characteristic.

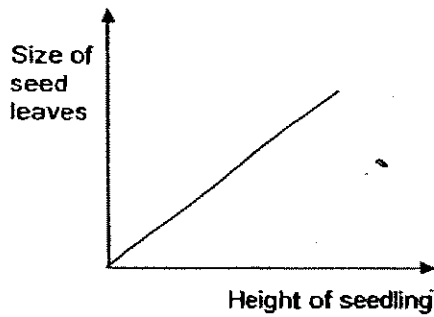
Characteristic	A	B	C	D
Grows on Land		✓		✓
Bears fruit	✓			✓

From the information above, where do plants B and C belong in the following classification table?

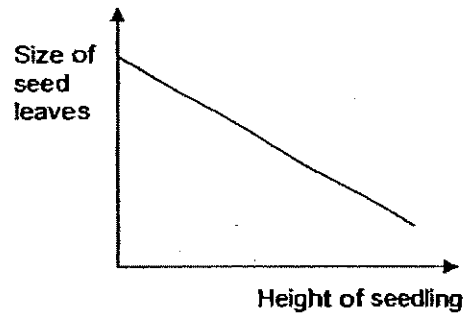


	Plant B	Plant C
(1)	X	Z
(2)	Z	Y
(3)	Y	W
(4)	W	X

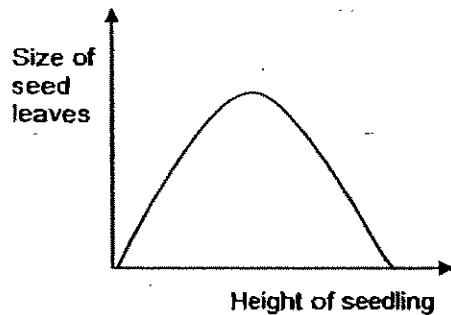
18. Which of the following graphs correctly shows the relationship between the size of the seed leaves and the height of the seedling?



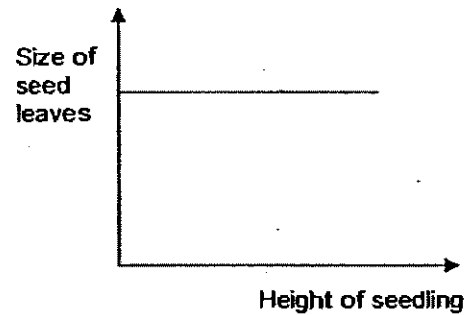
(1)



(2)

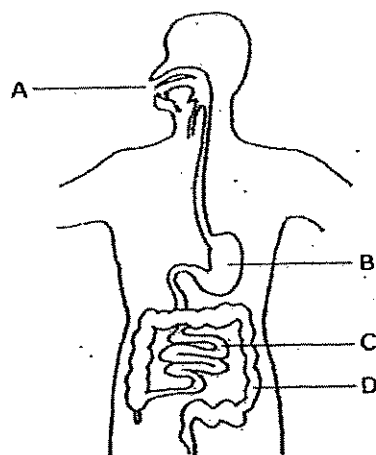


(3)



(4)

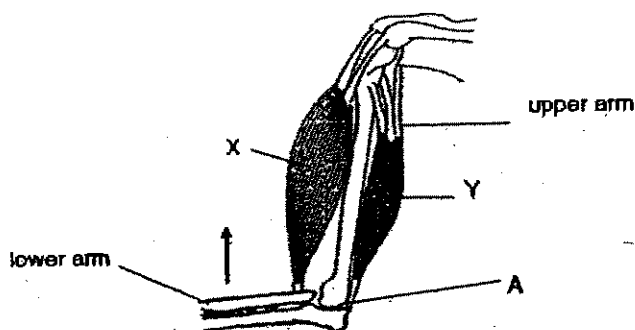
19. The diagram below shows the human digestive system.



In which part, A, B, C or D is food digested and passed into blood vessels?

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

20. The diagram below shows the muscles of a human arm.



Which of the following correctly shows the type of Joint at A and the reactions of the muscles when the lower arm is raised?

	Muscle X	Muscle Y	Joint A
(1)	Relaxes	Contracts	Ball and Socket
(2)	Contracts	Relaxes	Ball and Socket
(3)	Relaxes	Contracts	Hinge
(4)	Contracts	Relaxes	Hinge

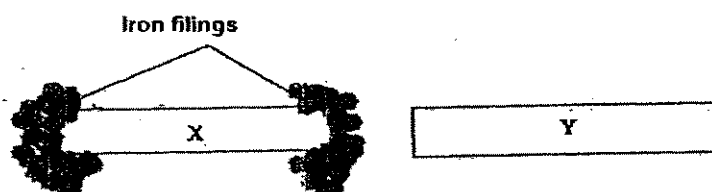
21. The table below shows what four vases A, B, C and D contain.

Vase	Amount of chemical Y (mg)	Amount of water (ml)	Number of flowers
A	None	100	3
B	None	None	3
C	5	100	None
D	5	100	3

Mary wanted to find out if Chemical Y helps to keep flowers fresh for a longer time. Which two vases should she use to conduct the experiment?

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

22. X and Y are two objects placed very close to each other on a piece of paper laced with iron filings. The diagram below shows what happens to X and Y.



Which of the following statement(s) is/are **definitely true**?

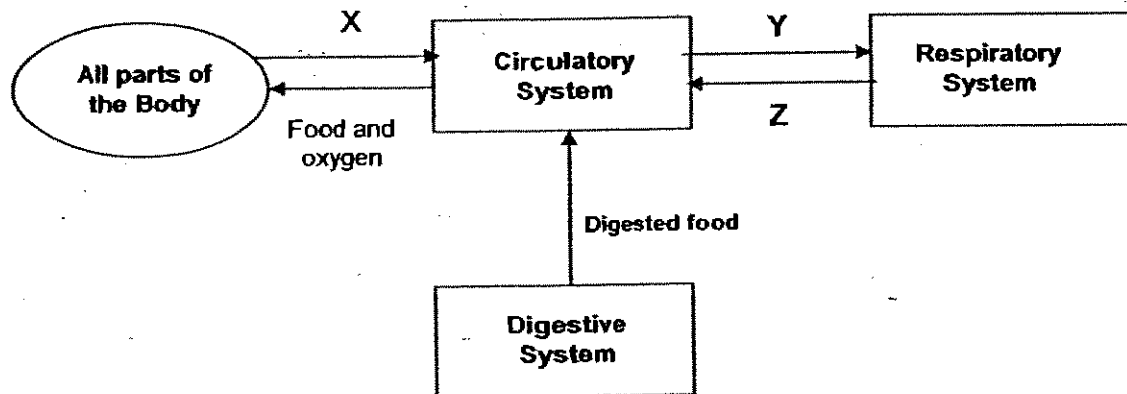
- A: Object X is a magnet.
- B: Object X is made of aluminum.
- C: Object Y is made of copper.
- D: Object Y is made of magnetic material.

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

23. Candice was about to eat a banana when she discovered that it was rotten. What senses are involved here?

- (1) Smell and taste
- (2) Smell and Sight
- (3) Smell and touch
- (4) Touch and Sight

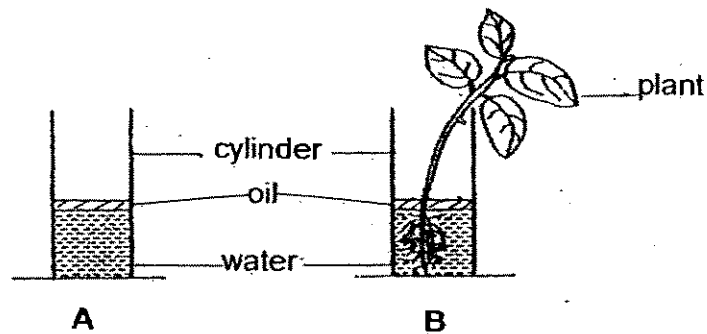
24. The diagram below shows how the respiratory, circulatory and digestive systems in our body work together.



Which one of the following correctly shows the gases represented by X, Y and Z?

	X	Y	Z
(1)	carbon dioxide	oxygen	carbon dioxide
(2)	carbon dioxide	carbon dioxide	oxygen
(3)	oxygen	carbon dioxide	carbon dioxide
(4)	oxygen	carbon dioxide	oxygen

25. Xiao Hong carried out an experiment to find out if plants take in water. She placed equal amount of water in cylinders A and B which are of the same size. She then placed a plant in cylinder B as shown below.



What is the purpose for Xiao Hong to set up cylinder A?

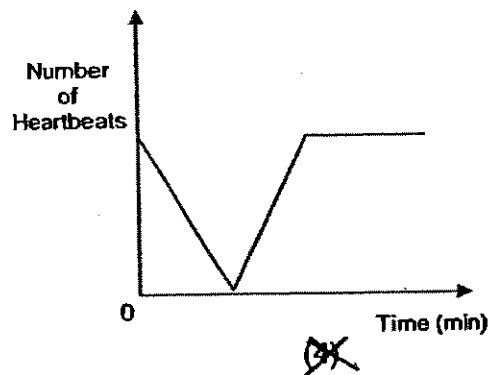
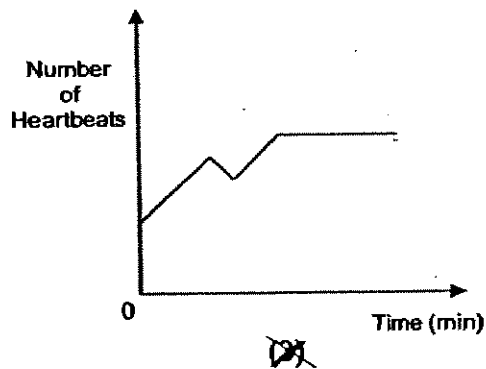
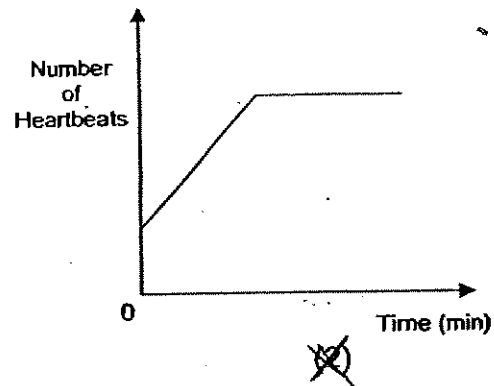
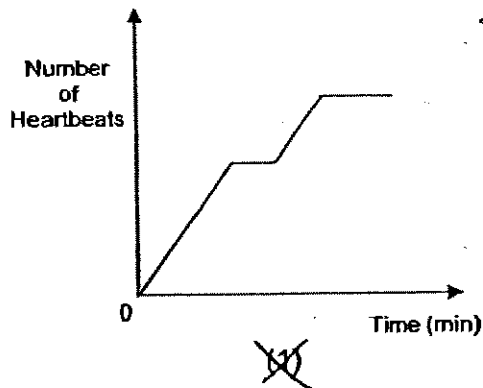
- X: To show that water is absorbed by the plant.
 Y: To act as a control for the experiment.
 Z: To show the amount of water lost through evaporation.

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

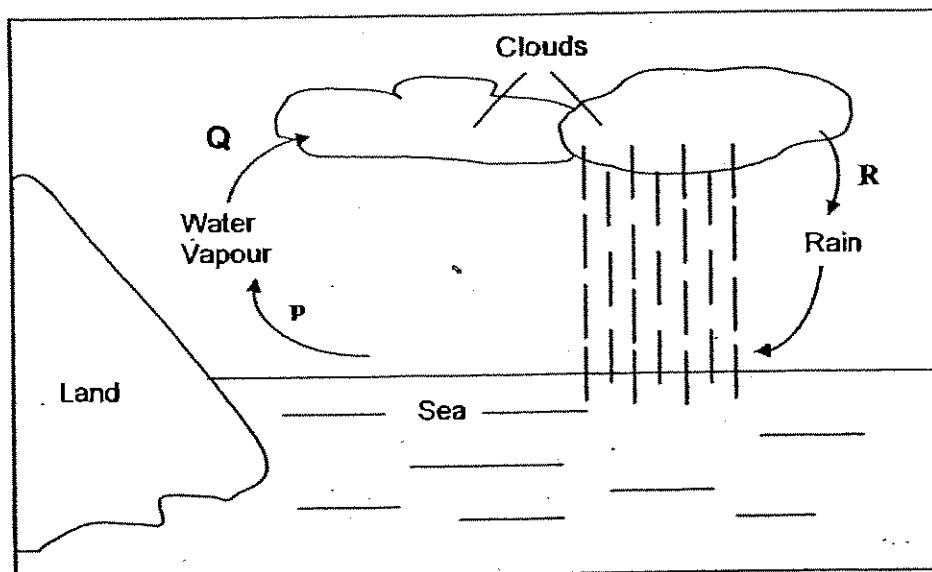
26. Water has three states. Which of the following are correct examples of the different states?

	Solid	Liquid	Gas
(1)	Ice	Clouds	Glacier
(2)	Iceberg	Water vapour	Dew
(3)	Snow	Dew	Mist
(4)	Glacier	Mist	Water vapour

27. Bill went jogging up Bukit Timah Hill. He took a 5-minute rest halfway up the hill. Then, he continued jogging until he reached the peak of the hill. Which one of the following graphs shows the likely change in his heartbeat when he started jogging till he reached the peak of the hill?



28.



Study the diagram above. Which of the following statements are true?

- A: Q takes place only when water vapour evaporates.
- B: P takes place at a higher temperature than Q.
- C: P does not take place at a fixed temperature.
- D: Q is known as evaporation.

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

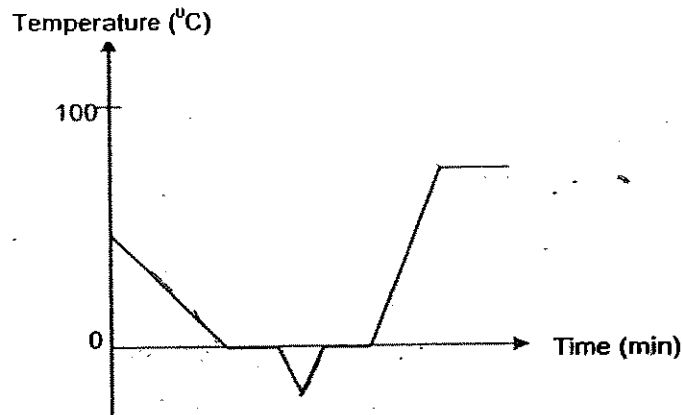
29. Four identical containers A, B, C and D were filled with the same amount of water. They were left in places with four different conditions for half a day as shown in the table below.

Container	Condition
A	Sunny and windy
B	Sunny and not windy
C	In the shade and windy
D	In the shade and not windy

Arrange the containers A, B, C and D in order starting with the most amount of water left after half a day.

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

30. The graph below shows the temperature of water during an experiment.



How many changes of state did the water go through?

- (1) 1
- (2) 2
- (3) 3
- (4) 4

NAME _____

CLASS : _____

METHODIST GIRLS' SCHOOL (PRIMARY)

MID-YEAR EXAMINATION 2007

PRIMARY FOUR

SCIENCE

BOOKLET B

BOOKLET	MARKS
A	/ 60
B	/ 40
TOTAL	

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

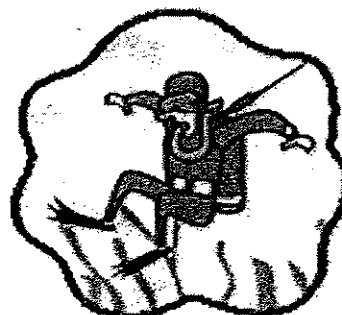
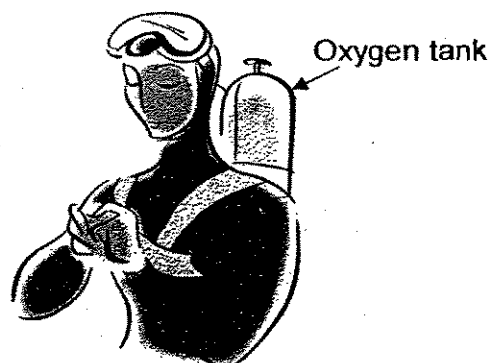
Booklet B : 16 Questions (40 marks)

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

Section B: Open-ended (16 questions = 40 marks)

Read each question carefully and fill in the blanks with the correct answer.

31. Divers enjoy going underwater to view the beauty of the sea bed. They are to put on a mask with a breathing tube connecting from an oxygen tank to their mouths. The oxygen tank may weigh about 5 kg.



The weight of the oxygen tank can be a burden to the divers, however the divers usually feel lighter once they get into the water.

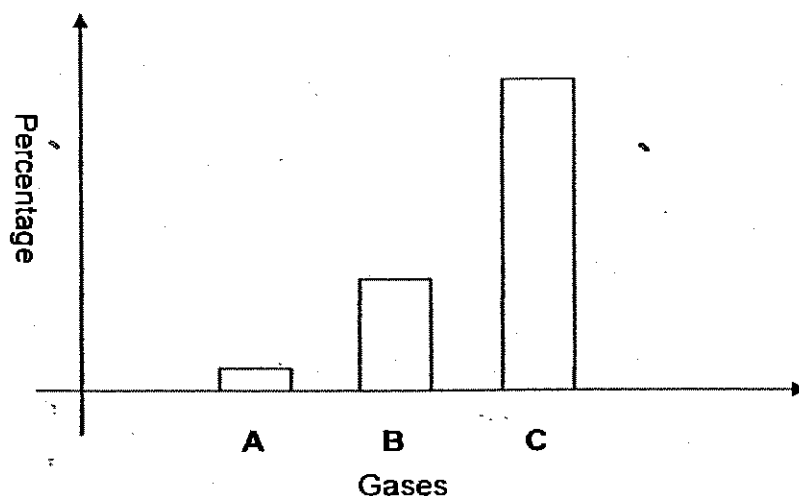
- (a) Does the mass of the oxygen tank change once the divers are underwater? Explain why the oxygen tank feels lighter when they are underwater. (1 m)

It is advised that the way the divers breathe is not the usual way and thus it is unhealthy to breathe too long in that manner.

- (b) What is the usual way that we should breathe? (1 m)

- (c) Why is it unhealthy for us to breathe through our mouth? (1 m)

32. The following graph represents the component of gases found in air.



(a) By looking from the graph, indicate which letter (A, B or C) represents the gases in the table below. Write down the percentage of their component in air.

	Gases	Letter (A, B or C)	Percentage
i)	Oxygen		
ii)	Nitrogen		
iii)	Other gases		

(1½ m)

(b) Carbon Dioxide is also one component of air. State 2 applications of this gas. (1m)

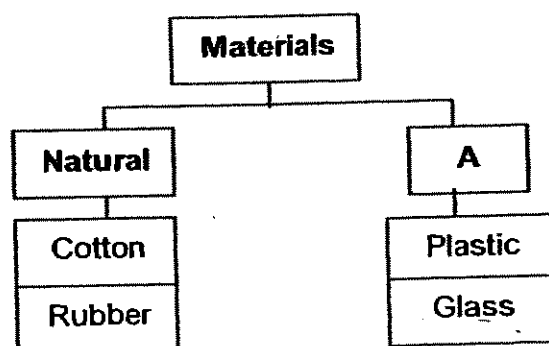
33. Study the table carefully

	Need air	Can move	Can reproduce	Once Alive
Object E	✓			✓
Object F	✓	✓	✓	
Object G				✓

Write T for True or F for False in the bracket provided after each statement. (3m)

- (a) Object E is a living thing. ()
- (b) Object E, F and G will die. ()
- (c) Object G can be a leather bag. ()
- (d) Object F and G need sunlight to make food. ()
- (e) Object F needs food to grow and move around. ()
- (f) Object E and F can respond to changes around them. ()

34. Study the classification chart below and answer the questions accordingly.



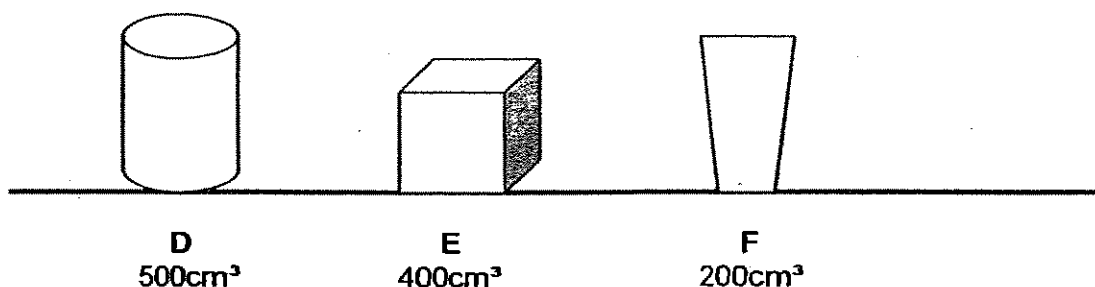
(a) What should the heading A be? (1.m)

(b) Name another material that can be classified under **Natural** and under the heading A. (1 m)

Natural: _____

A : _____

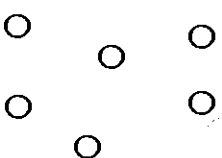
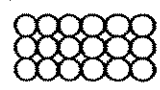
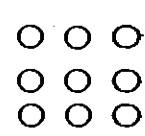
35. Anna pumped 200cm^3 of air into each of the containers D, E and F and covered them with a lid.



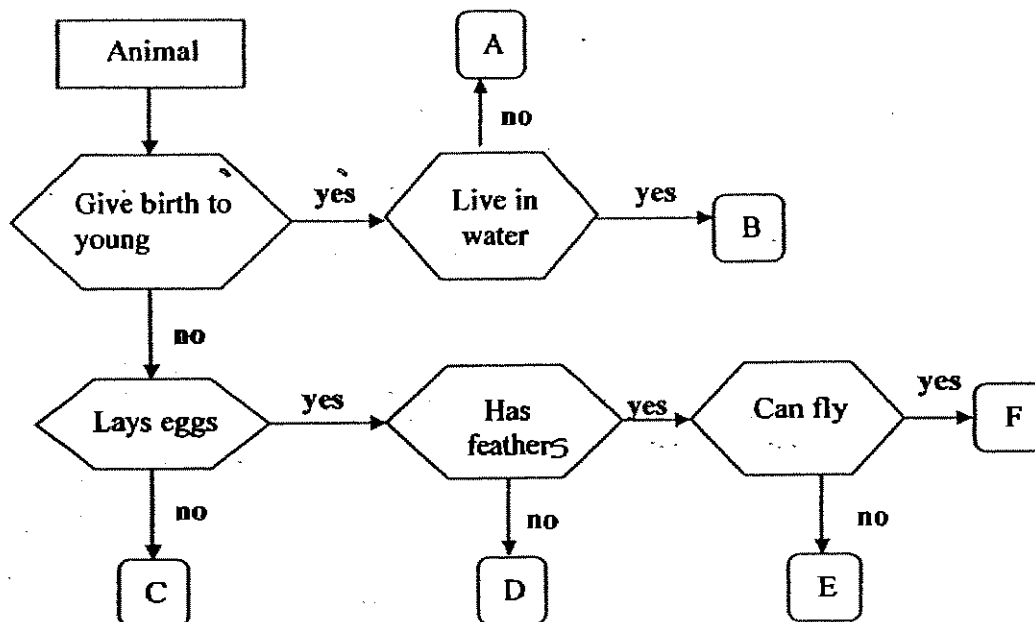
- (a) Fill in the table below the volume of air in the container after she pumped in the air. (1½m)

Container	D	E	F
Volume of air in the container after she pumped in the air (cm^3)			

- (b) Air is a Matter. For each row, tick the box ☐ that correctly represents the property of air in that category. (1½ m)

Matter : Air	1	2	3
(i) The molecular arrangement of air	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>
(ii) The movement of the air molecules	Vibrate within one spot. Slight movement <input type="checkbox"/>	Vibrate slowly. Movement is quite restricted <input type="checkbox"/>	Vibrate randomly. Molecules are free to move in any direction <input type="checkbox"/>
(iii) Its properties	Definite shape but no definite volume <input type="checkbox"/>	No definite shape and volume <input type="checkbox"/>	Definite shape and volume <input type="checkbox"/>

36. Study the flow chart below.



(a) Describe the characteristics of animal E.

(1 m)

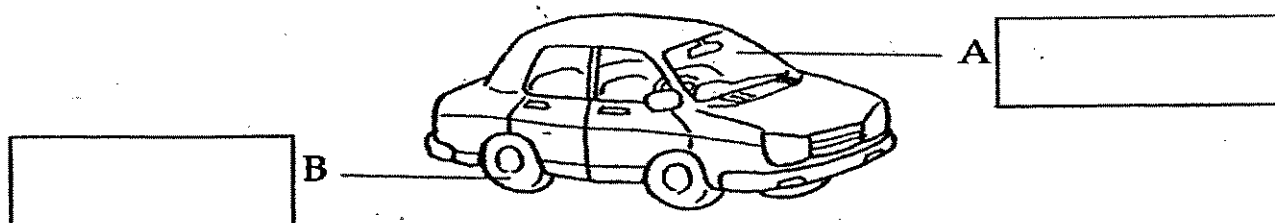
(b) Name an animal that can be placed at :

(1 m)

A:

B:

37. Fill in the blanks by determining the materials it is made from. (1 m)



(a) State 2 properties of material B that makes it suitable to make that part of the car. (1 m)

38. Here is a table which gives you some information of 4 different items.

Item	Has Mass	Occupy Space	Definite Shape	Compressibility
M	✓	✓	✓	
N	✓	✓		✓
P				
Q	✓	✓		

(a) Place the items into the correct boxes based on their properties. (1½ m)

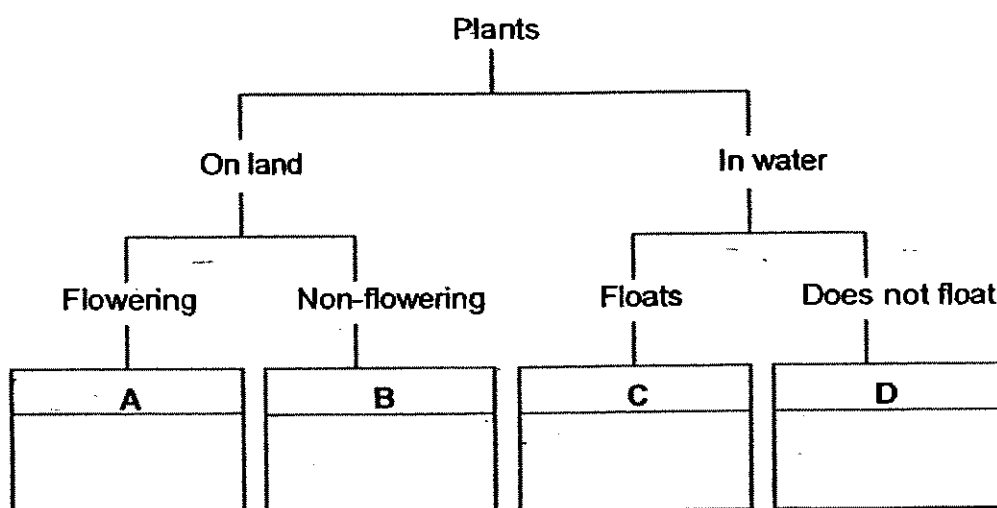
Solid:

Liquid:

Gas:

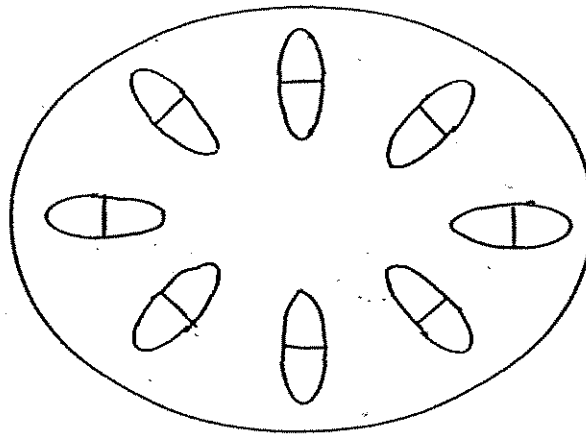
(b) Give ONE example to represent Item P. (1 m)

39. The diagram below shows a classification chart. How would you group the plants: **fern** and **hydrilla** in this table? Write your answers in the boxes provided. (2m)



(a) Base on the classification chart, state one difference between Plant A and Plant C? (1m)

40. The balsam plant was placed in a beaker containing blue-coloured water. A few days later, the stem was cut and the cross-section of the stem is shown below.

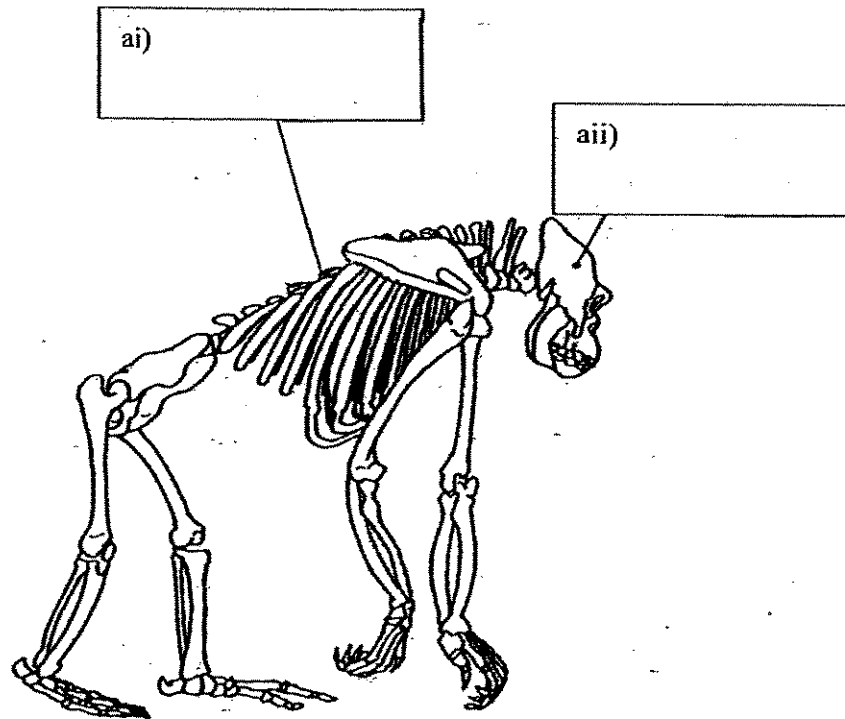


- (a) Shade on the diagram above all the areas where you will expect to see blue stains. (1m)

- (b) What do these tubes transport besides water? (1m)

41. Label the parts of the skeleton below.

(2m)



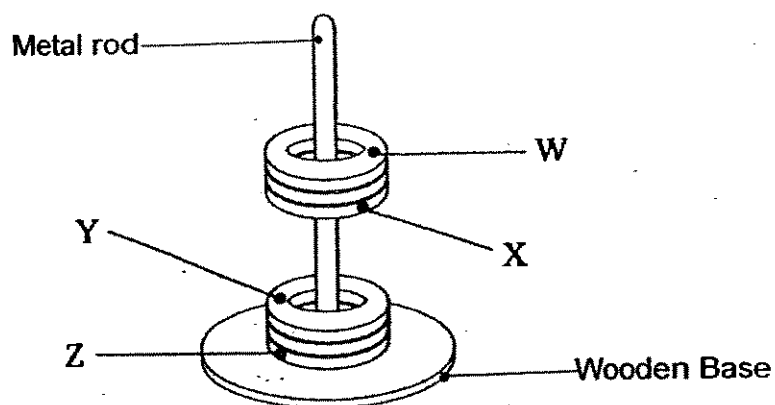
(b) What do you think is the breathing method of this animal?

(1m)

(c) Give a reason for the above answer.

(1m)

42. The diagram below shows what happens when 4 rings, W, X, Y and Z are slotted through a metal rod.

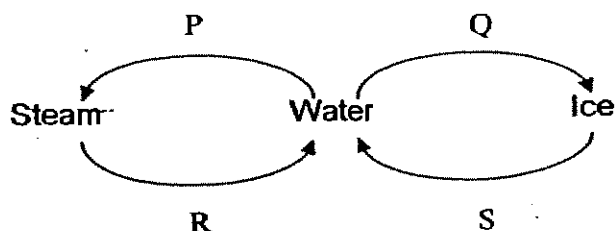


Put a tick in the correct box for each statement.

(2m)

	Statements	True	False	Not possible to tell
(a)	Object W is a magnetic material.			
(b)	Object X is a magnet.			
(c)	Object Y is made of aluminium.			
(d)	Object Z is a magnet.			

43. The diagram below shows the changes in the state of water.



- (a) Name the processes Q and R.

(2m)

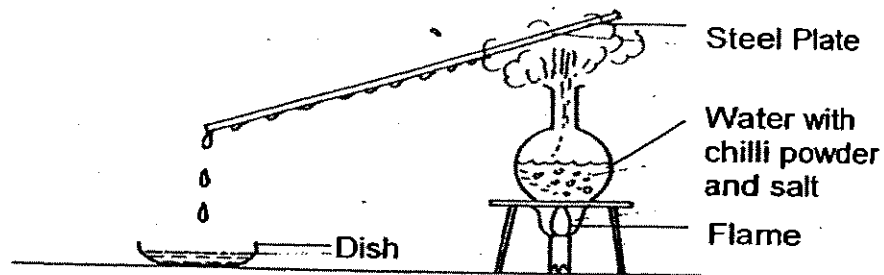
Q: _____

R: _____

- (b) State one similarity between the processes Q and R.

(1m)

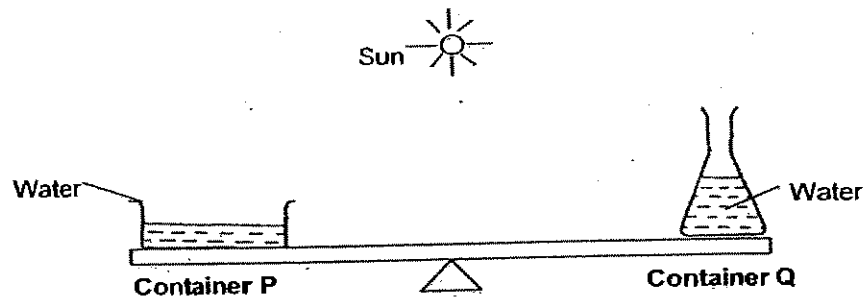
44. The flask on the Bunsen burner contained chilli powder, salt and pure water, all mixed up. These were heated until it boiled. A steel plate was then placed above the flask as shown in the diagram below.



- (a) What would be the taste of the liquid collected in the dish? (1m)

- (b) Name the process that is occurring at the surface of the liquid in the dish. (1m)

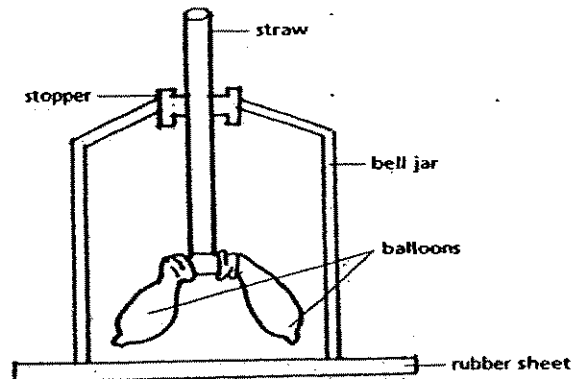
45. Joey wanted to find out about the factors that affect the rate of evaporation. She filled two containers, P and Q, with the same amount of water. Next, she placed them on a lever balance as shown in the figure below.



- (a) Which factor is Joey investigating in this experiment? (1m)

- (b) What can Joey conclude about the relationship between the factor she is investigating and the rate of evaporation? (1m)

46. The following equipment was set up to show how our lungs work.



(a) The apparatus used in the set-up represents certain parts/organs in our body. Complete the table with the correct information. (1½m)

Apparatus used in set-up	Body parts represented
Bell Jar	
Rubber Sheet	
	Lungs

(b) What will happen to the 'balloons' when we breathe in? (½m)



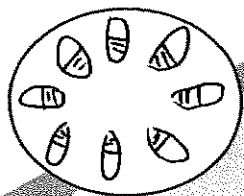
ANSWER SHEET

M G S PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007
SEMESTRAL ASSESSMENT (1)

1. 3 31) a) No. The water helps to support the weight of the oxygen tank.
2. 2 b) Through our nose.
3. 4 c) Our mouth does not have hair in it to trap dirt that we breathe in.
4. 3
5. 3
6. 1
7. 4 32) a) i) B, 21%
8. 4 ii) C, 78%
9. 2 iii) A, 1%
10. 2 b) 1) Fire extinguisher.
11. 1 2) To make dry ice.
12. 2
13. 2 33) a) F b) F c) T d) F e) T f) F
14. 1
15. 1 34) a) Man-made
16. 1 b) Natural: leather
17. 2 A: Nylon
18. 2
19. 3 35) a) D: 500cm³ E: 400cm³ F: 200cm³
20. 4 b) i) 1 ii) 3 iii) 2
21. 2
22. 1 36) a) It lay eggs, has feathers and cannot fly.
23. 2 b) A: Dog B: Puppy
24. 2
25. 1
26. 4 37) a) 1) Strong.
27. 3 2) Does not break easily.
28. 2
29. 4 38) a) M, Q, N
30. 2 b) A shadow.

39) B: fern D: hydrilla
a) Plant A lives on land while plant plant lives on water.

40) a)



b) These tubes also transport minerals.

41) a) i) back bone ii) skull

b) Through its lungs.

c) It has a rib-cage which protects the lungs.

42) a) Not b) T c) F d) Not

43) a) Q: Freezing

R: Condensation

b) There is heat loss on both processes.

44) a) It would taste like water.

b) Evaporation

45) a) The amount of exposed surface area.

b) The bigger the exposed surface area the faster the rate of evaporation.

46) a) i) Balloons

ii) Ribcage.

Diaphragm

b) They will expand.



AI TONG SCHOOL

2007 SEMESTRAL ASSESSMENT (1) PRIMARY FOUR SCIENCE

DURATION : 1hr 45 min

DATE: 15th of May 2007

INSTRUCTIONS

**Do not open the booklet until you are told to do so.
Follow all instructions.
Answer all questions.**

Name : _____ ()

Class : Primary 4 _____

Parent's Signature : _____

Date : _____

Practical Assessment	15
Written Assessment	85
Total	100

Section A (30 X 2 marks)

For each question 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 of the following statements about matter are correct?

A Some matter can be compressed.
B All matter have a definite shape.
C All matter take up space.
D Some matter have definite volume.

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

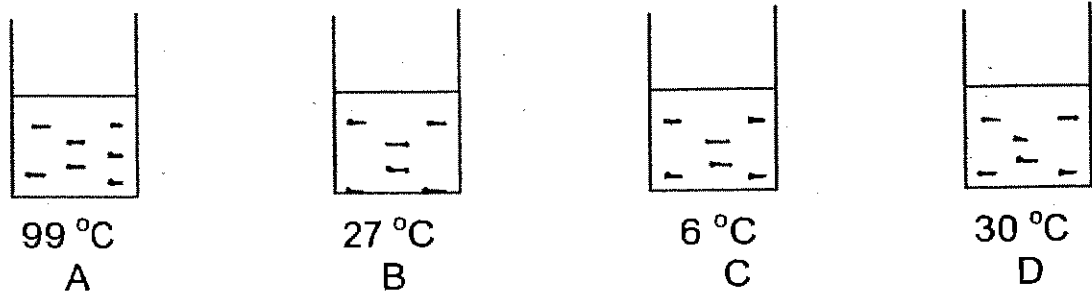
2. Which one of the following groups shows the three different states of matter?

(1) orange juice, nitrogen, oxygen
(2) carbon dioxide, apple, tea
(3) mango, rock, sand
(4) sugar, coffee, tea

3. Bala had a cup of hot milo. As it was too hot for him to drink, he put in a few cubes of ice. What would happen?

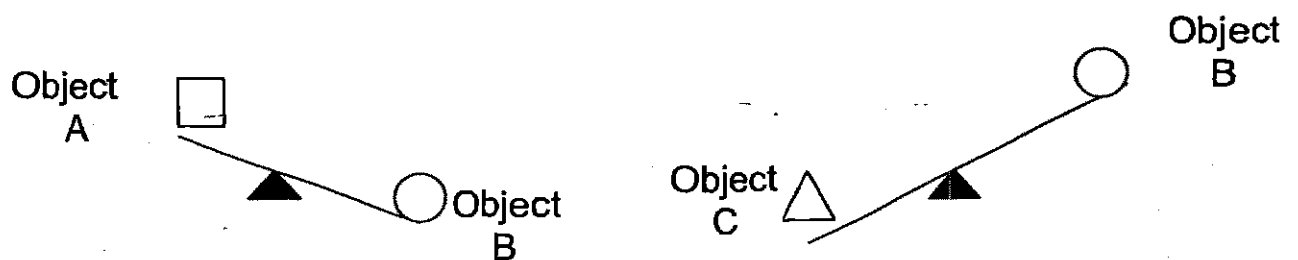
(1) The hot milo would lose heat to the ice.
(2) The hot milo would gain heat from the ice.
(3) The temperature of the milo would become 0°C.
(4) The temperature of the milo would remain the same.

4. Four containers of water were placed in a classroom. The temperature of water in each container is shown in the diagram below. On which glass would you see droplets of water forming on the outer surface?



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

5. The diagram below shows 3 objects, Object A, Object B and Object C on a balance.



Which one of the following statements can be concluded from the set up above?

- (1) Object A has a greater mass than Object C.
- (2) Object C has a smaller mass than Object B.
- (3) Object C has the greatest mass.
- (4) Objects B and C have the same mass.

6. Which of the following properties best describe shampoo?

- A It can be compressed.
- B It has a definite volume.
- C It has no definite shape.
- D It has no definite mass.

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

7. Bala went to a funfair. In order for him to win a prize, he needed to guess what was in a box. He was only allowed to feel the object but not look at it.

He said, "The object is hard and cannot be squeezed."

What could the object be?

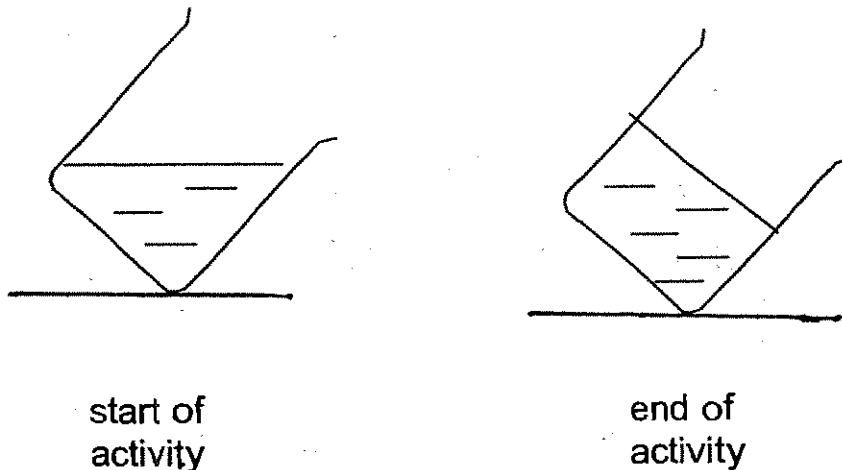
- (1) Soft toy
- (2) Toy car
- (3) Cotton wool
- (4) Paper plate

8. Which one of the following is **not** matter?

- (1) Dust
- (2) Water Vapour
- (3) Steam
- (4) Heat

9. Which are the 3 Rs that can help in water conservation?
- A Reduce
 - B Reverse
 - C Reuse
 - D Recycle
- (1) A, B and C
(2) A, C and D
(3) A, B and D
(4) B, C and D
10. Which of the following human activities does **not** cause water pollution to take place?
- (1) littering into the sea
 - (2) ships releasing their waste engine oil into the sea
 - (3) factories dumping toxic waste materials into the sea
 - (4) using water from the washing machine to mop the floor
11. Desalination is a process of _____.
- (1) dissolving salt in sea water
 - (2) removing dissolved salt from sea water
 - (3) removing pollutants from sea water
 - (4) increasing water supply to households

12. The diagram shows the contents of a beaker before and after a process has taken place.



The process is _____.

- (1) freezing
 - (2) condensation
 - (3) melting
 - (4) evaporation
13. During a water rationing exercise, _____.
- (1) water supply is disrupted temporarily
 - (2) water cost becomes more
 - (3) water becomes polluted
 - (4) water supply to our homes increases
14. Why is the water cycle important? It _____.
- (1) prevents water pollution
 - (2) provides energy for animals
 - (3) provides water for desalination
 - (4) ensures a constant supply of water

15. Mei Mei wanted to make some ice. She filled up a container with tap water and placed it in a freezer. What would happen to the water the next day?

- (1) The water would lose heat.
- (2) The water would gain heat.
- (3) The water would condense.
- (4) The water would remain a liquid.

16. In which of the following process is heat gained?

- A Melting
- B Evaporation
- C Condensation
- D Freezing

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

17. Which one of the following is not part of the respiratory system?

- (1) Stomach
- (2) Lungs
- (3) Windpipe
- (4) Nose

18. We breathe out air which is mainly high in its _____ content.

- (1) water vapour
- (2) carbon dioxide
- (3) oxygen
- (4) dust

19. Which one of the following animals breathe through gills?

- (1) Bat
- (2) Whale
- (3) Sparrow
- (4) Mudskipper

20. When an insect changes its skin, we say that it is _____.

- (1) reproducing
- (2) moulting
- (3) responding
- (4) breathing

21. Study the flow chart on our respiratory system.



Identify A, B and C.

	A	B	C
(1)	Nose	mouth	lungs
(2)	windpipe	nose	lungs
(3)	Nose	lungs	windpipe
(4)	Nose	windpipe	lungs

22. If you were to choose a material to make a fish tank, which one of the following properties would you consider the most important?

- (1) the mass of material
- (2) whether it is colourful
- (3) whether it is stretchable
- (4) whether it is transparent

23. The classification table shows some materials and where they come from. Which set is correctly matched?

	Come from the plants	Come from the animals	Come from the ground
(1)	Silk	Paper	Iron
(2)	Rubber	Leather	Wool
(3)	Cotton	Wool	Gold
(4)	Plastic	Silk	Steel

24. Oxygen and water are similar because they _____.

- (1) have no definite mass
- (2) have no definite volume
- (3) have no definite shape
- (4) can be compressed

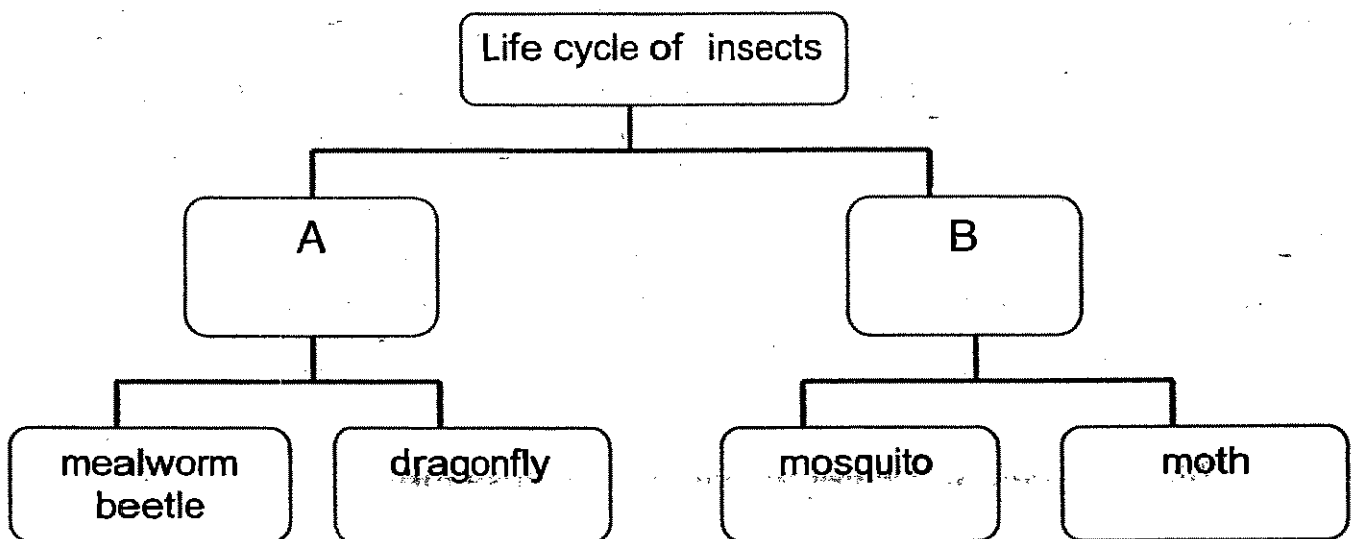
25. In which stage of its life does a female mosquito feed on blood?

- (1) Egg
- (2) Pupa
- (3) Larva
- (4) Adult

26. Which of the following gases is needed for burning and respiration?

- (1) Carbon dioxide
- (2) Oxygen
- (3) Nitrogen
- (4) Hydrogen

27. Which one of the following insects has been classified **wrongly**?

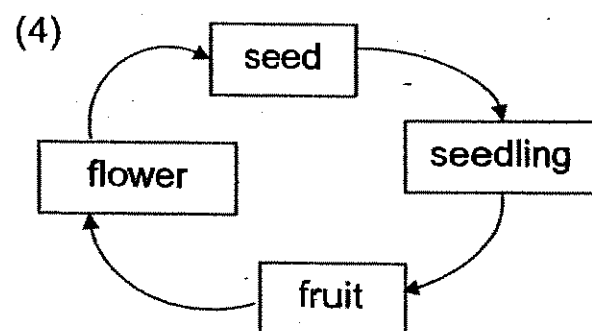
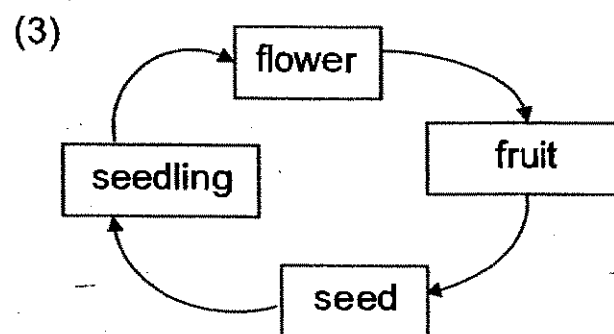
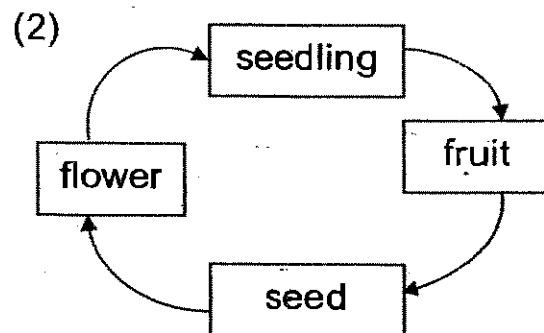
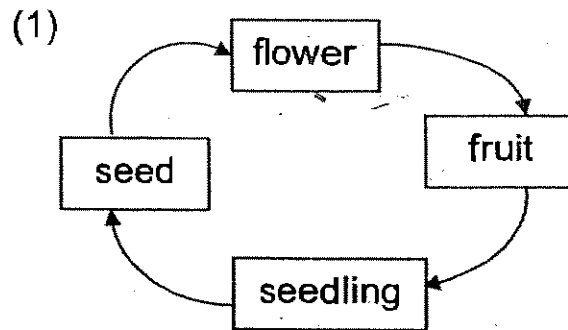


- (1) Mealworm beetle
- (2) Dragonfly
- (3) Mosquito
- (4) Moth

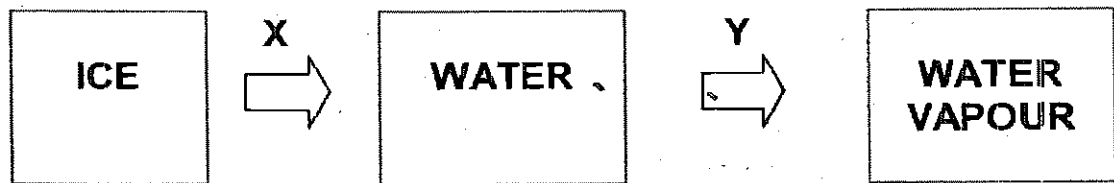
28. Fungi reproduce from _____

- (1) spores
- (2) seeds
- (3) fruits
- (4) roots

29. Which diagram shows the correct life cycle of a flowering plant?



30.



The diagram above shows the changes of state that water goes through. What would be the possible descriptions for X and Y?

XY

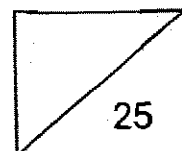
- | | | |
|-----|-------------|-------------|
| (1) | lost heat | lost heat |
| (2) | gained heat | gained heat |
| (3) | lost heat | gained heat |
| (4) | gained heat | lost heat |

Primary 4 Science SA1 (2007)

Name : _____ ()

Class : _____

Date : _____

**Section B (25 marks)****Answer all the questions in the spaces provided.**

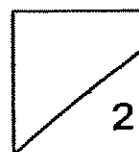
31. A boy carried out an experiment to investigate the rate of evaporation in a week. He poured different amounts of water into 4 similar beakers.

He recorded the volume of water in the four beakers at the beginning and end of the investigation. The results are shown in the table below.

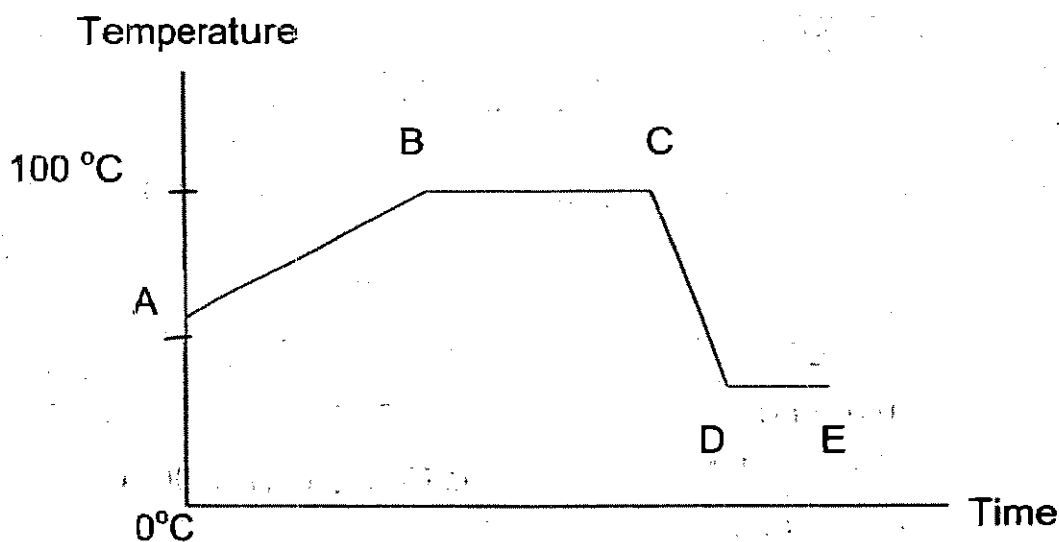
Container	Volume of water at the start of the investigation (ml)	Volume of water at the end of the investigation (ml)
W	65	55
X	75	45
Y	85	55
Z	95	30

- (a) In which container was evaporation the slowest? [1]

- (b) Why do you say so? [1]



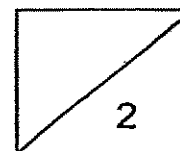
32. Cindy heated some water in a container. She recorded the temperature of the water every 3 minutes. After 10 minutes, she turned off the fire. She then left the container of water on the table. She recorded the temperature of the water in a graph as shown below.



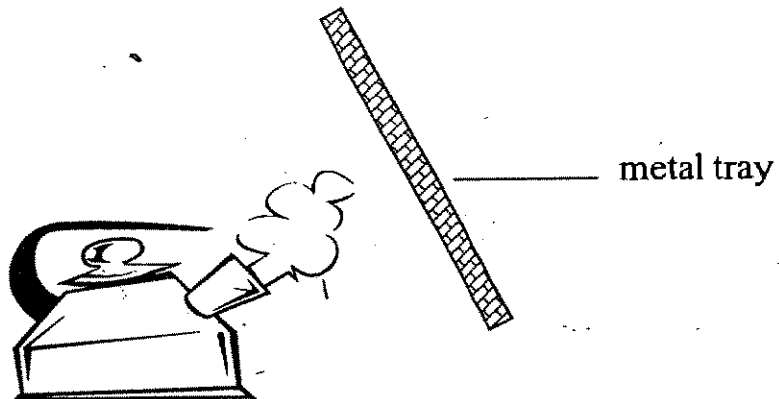
- (a) What is the likely temperature of the water at the Point of A?

[1]

- (b) What does the horizontal line BC tell us about the water? [1]

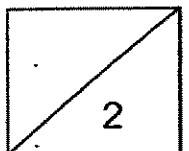


33. Mary is boiling some water in a kettle. She places a metal tray near the mouth of the kettle.

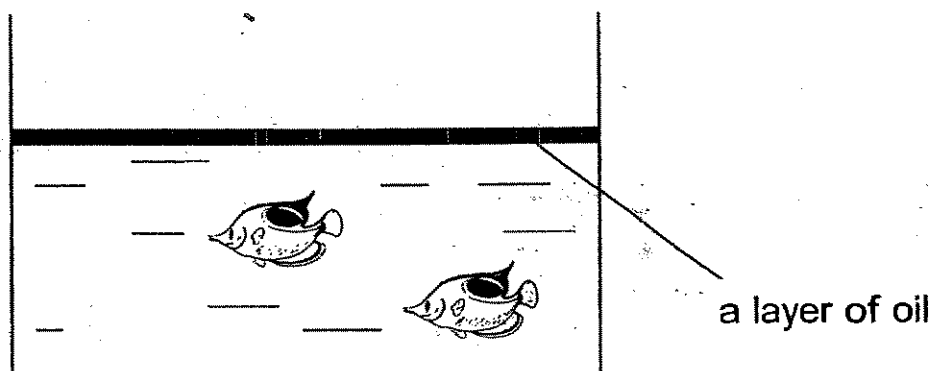


- (a) What will she observe on the underside of the metal tray? [1]

- (b) Explain how the substance is formed. [1]



34. Weiming wanted to find out the consequences of an oil spill. He set up an aquarium with some fish ~~and a water plant~~ as shown in the picture below. He poured some oil into the water.

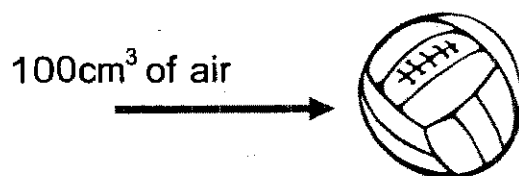


- (a) The fresh fish died after a week. Explain why they died? [1]
- _____
- _____
- (b) If oil spills in the sea, how would the body covering of birds be affected? [1]
- _____
- _____

35. Write 'True' or 'False' against each statement in the table. [2]

	Statement	True/ False
i)	All objects are made of a combination of different materials.	
ii)	Wood is an example of natural material.	
iii)	Rubber comes from the rubber trees.	
iv)	Clay is used to make bricks.	

36. A ball had 300cm^3 of air. Lily pumps another 100cm^3 of air into it.



- (a) How much air is there in the ball now? [1]

- (b) What does this activity tell us about air? [1]

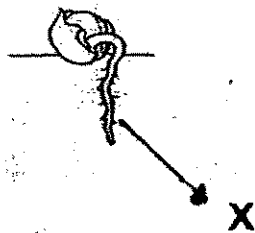
37. The table below shows the water consumption used by three families who attended a "Water Conservation" talk in May. After the talk, the 3 families tabulated their water consumption.

Month	Tan Family	Lim Family	Ching Family
April	23 litres	33 litres	46 litres
May	15 litres	35 litres	47 litres
June	19 litres	29 litres	41 litres
July	45 litres	22 litres	50 litres

- (a) Which family shows a great understanding of water conservation after the talk? [1]

- (b) Explain your answer in (a). [1]

38. The pictures below show the different stages in the life cycle of a plant.



Picture A



Picture B



Picture C

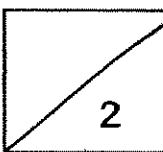


Picture D

- (a) Arrange the pictures in the correct order to show how a seed can grow into a seedling. [1]

--	--	--	--

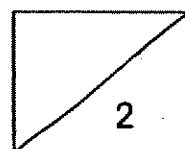
- (b) Why does X grow downwards? [1]



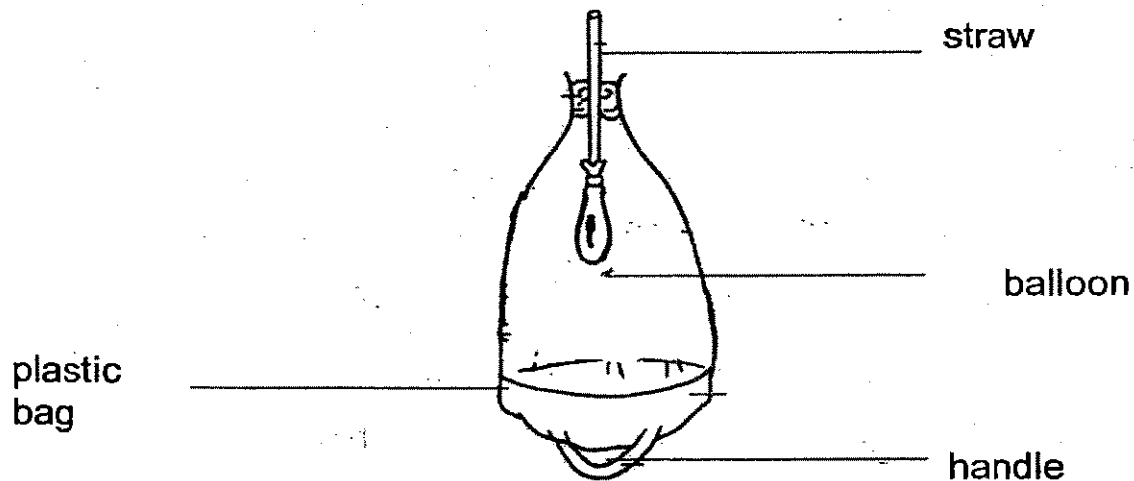
39. Write the four examples of matter in the table. [2]

~~honey~~ ice cube ~~hydrogen~~ ~~wine~~

	DEFINITE VOLUME	NO DEFINITE VOLUME
i) DEFINITE SHAPE		
ii) NO DEFINITE SHAPE		



40. The picture below is a model of a respiratory system of a human body.



- (a) Which part of the human organs is represented by the objects in the set up? [1]

- i) straw _____
ii) plastic bag _____

- (b) What will happen to the balloon when the handle is pulled away from the bottle? [1]

41. The table below shows two rivers with different conditions.

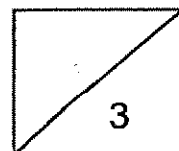
River A	River B
Water is cloudy	Water is clear
Few aquatic animals are living in the water	Many aquatic animals are living in the water
Scum on the surface of the water	No scum on the surface of the water

- (a) State 2 reasons which tells us that River B is **not** polluted? [1]

- (b) Besides the signs stated in the table, state two more signs of water pollution. [2]

- ---

- ---

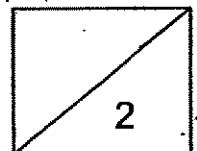


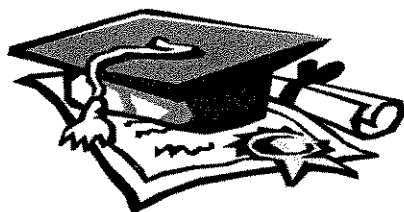
42. Mr Ling hung out 3 similar towels. She recorded the time taken for each towel to dry.

Towel	Description	Time
A	Not folded	10 minutes
B	Folded into halves	20 minutes
C	Folded into quarters	30 minutes

- (a) What is the pattern between the number of folds and the time taken for the towels to dry? [1m]

- (b) What is the factor that affects the rate of evaporation in this activity. [1m]





ANSWER SHEET

AI TONG PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007
SEMESTRAL ASSESSMENT (1)

1. 4
2. 2
3. 1
4. 3
5. 3
6. 3
7. 2
8. 4
9. 2
10. 4
11. 2
12. 1
13. 1
14. 4
15. 1
16. 2
17. 1
18. 2
19. 4
20. 2
21. 4
22. 4
23. 3
24. 3
25. 4
26. 2
27. 1
28. 1
29. 3
30. 2
- 31) a) Container W.
b) The water evaporated is the least.
- 32) a) The likely temperature is 60°C .
b) The horizontal line BC tell us that the water is remain at 100°C
- 33) a) She would observe water droplets on the underside of the metal.
b) This is because the boiling kettle had produced hot steam and so the hot steam touched the cool surface of the metal tray and then it condensed into water droplets.
- 34) a) The oil prevented air from passing through and so fish could not breathe.
b) The body covering of birds will dump together.
- 35) i) False ii) True iii) True iv) True
- 36) a) There are 300cm^3 air in the ball now.
b) This activity tell us that air can compressed.
- 37) a) The Lim family.
b) The water consumption of the Lim Family decreased after but the other two family increased.

38) a) B, A, D, C
b) It is the roots, the roots go downwards in search of water.

39) i) Ice cube.
ii) Wine honey, hydrogen

40) a) i) windpipe. ii) diaphragm.
b) It will inflate.

41) a) One of the reasons is there are many aquatic animals are living in the water and there is no scum on the surface of the water.
b) .water is muddy.
.oil spill.

42) a) The more the towel is folded the longer it takes to dry.
b) The factor is the area of exposed surface.

---end---



南洋小學
NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE
SEMESTRAL ASSESSMENT 1
2007

BOOKLET A

Date : 7th May

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 16 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. Which one of the following is not matter?

- (1) Cat
- (2) Light
- (3) Bread
- (4) Football

2. The table describes substances A and B.

Substance A	Substance B
Takes the shape of the container	Takes the shape of the container
Can be compressed	Cannot be compressed

Based on the information above, what can we say about substances A and B?

- (1) Both have a definite volume
- (2) Both have no definite volume
- (3) Substance A is most likely a liquid and substance B is a gas
- (4) Substance A is most likely a gas and substance B is a liquid

3. Jenna classifies 6 objects into 2 groups as shown below.

Group A	Group B
Basketball	Hot tea
Plastic Mug	Kerosene
Running Shoes	Ice Lemon Tea

What common property do the objects in Group A have that the items in Group B do not have?

- (1) They occupy space.
- (2) They have definite shape.
- (3) They can be compressed.
- (4) They have definite volume.

4. Which of the following are harmful results of oil spills in seas?

- ☒ A. Aquatic animals are poisoned.
- ☐ B. Aquatic animals change their diet.
- ☒ C. Aquatic animals are unable to breathe.
- ☒ D. Aquatic Animals may be covered by the oil affecting their movements.

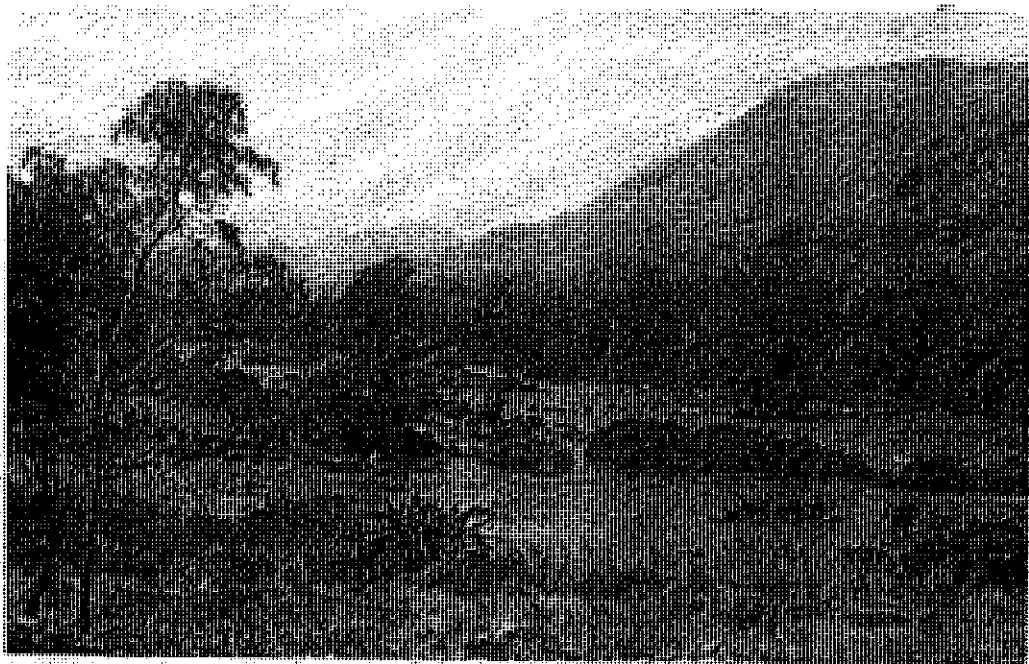
(1) A and D only

(2) A, B and C only

(3) B and D only

(4) A, C and D only

5. Recent newspaper articles reported that the deforestation and heavy rain situation in Sumatra had led to the death of many aquatic animals in the nearby rivers. The diagram below shows the situation of deforestation and heavy rain.



Which of the following is a possible reason for the death of aquatic animals?

- (1) There was an increase in competition for food.
- (2) There was a change in eating habits of the forest animals.
- (3) The aquatic animals were unable to get food from the forest.
- (4) The plants in the river were affected by the deforestation.

6. Which of the following are uses of water?

- A. Drinking
- B. Transporting people
- C. Cleaning of public toilets
- D. Playing a game of water polo

- (1) A and D only
- (3) B and D only

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

7. Waste water in a city was collected and treated in water treatment plants before being released into the seas. The population in the city remained the same from 1990 to 2006. The table shows the amount of treated water released into the sea in 1990 and 2006 respectively.

Year	Amount of waste water collected (litres)	Amount of treated water released back to sea (litres)
1990	80000	70000
2006	90000	64000

Which of the following is a possible reason to explain why less treated water was released back into the sea in 2006?

- (1) Fresh water consumption in 2006 was lower.
- (2) More canals were dug for water to flow into the sea.
- (3) A fine was imposed for using too much fresh water in 2006.
- (4) More factories were using treated water to cool machines in 2006

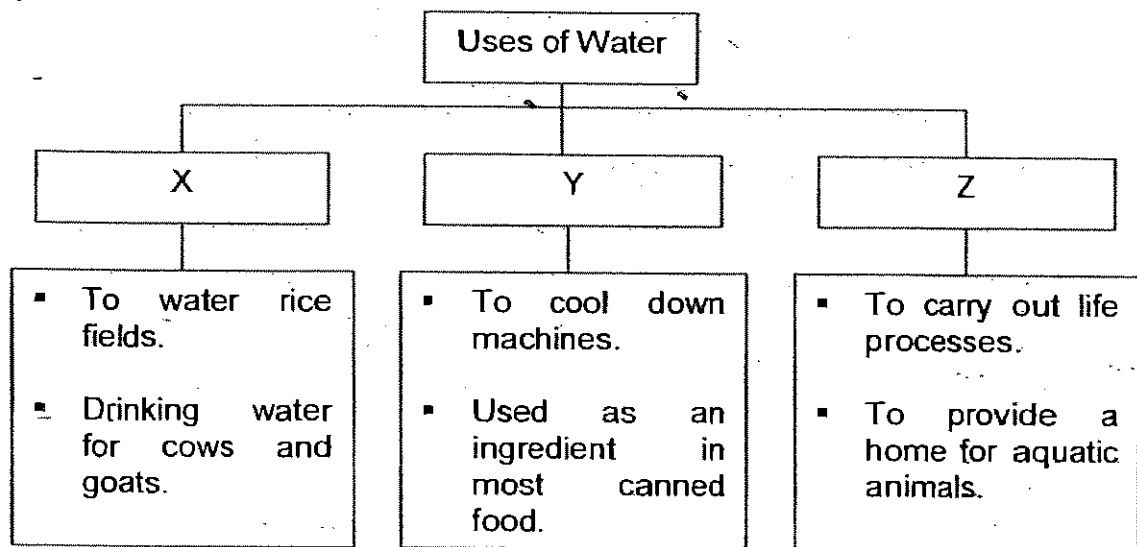
8. Which of the following are good habits for conserving water?

- A. Taking frequent baths.
- B. Using a basin of water to wash cutleries.
- C. Using the half flush button at the toilet whenever possible.
- D. Making use of the car wash service at the petrol kiosk if possible.

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

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

9. The classification table below shows the uses of water in 3 main ways X, Y and Z.



Which one of the following are suitable headings for ^XP, ^YQ and ^ZR?

	X	Y	Z
(1)	In farming	By animals	By plants
(2)	In factory	In farming	By plants
(3)	In farming	In factory	By animals
(4)	In factory	In farming	By animals

10. Which of the following statements explains why it is important for animals to have young?
- (1) The young look like their parents.
 - (2) The parents help the young to look for food.
 - (3) All old animals are looked after by their young.
 - (4) There will always be living things of the same kind around.
11. Which of the following pairs of living things have a 4-stage life cycle?
- (1) Mayfly and Dragonfly
 - (2) Butterfly and Mosquito
 - (3) Frog and Grasshopper
 - (4) Cockroach and Housefly
12. Which of the following examples show that characteristics can be passed on from parent to young?
- A. A bean seed will grow into a young bean plant.
 - B. A child having the same eye colour as his parent.
 - C. The young having the same life cycle as their parents.
- (1) B only
 - (2) B and C only
 - (3) A and B only
 - (4) A, B and C
13. Which one of the following correctly shows the life cycle of a butterfly in the correct sequence?
- (1) Adult insect → Egg → Nymph
 - (2) Egg → Nymph → Adult insect
 - (3) Adult insect → Egg → Pupa → Larva
 - (4) Egg → Larva → Pupa → Adult insect

14. Study the diagram below.



Which of the following correctly shows the stages of the life cycle of a plant in the correct order?

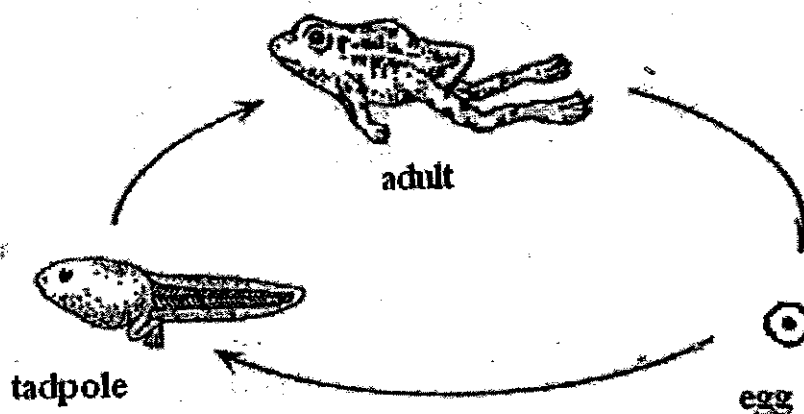
(1) A → B → C → D

(2) B → A → D → C

(3) C → D → B → A

(4) D → B → C → A

15. The diagram below shows the life cycle of a frog.



Life cycle of a frog

Which of the following statements is true of the frog during its adult stage?

- (1) It lays its eggs on land.
 - (2) It breathes through gills.
 - (3) It continues to live in the water only.
 - (4) Its tail disappears when it becomes an adult.
16. What similar properties do plasticine and apple juice have?
- A. They have mass.
 - B. They occupy space
 - C. They can be compressed
 - D. They take the shape of the container.
- | | |
|---------------------|-------------------------|
| (1) A and B only | (2) B and C only |
| (3) A, B and D only | (4) A, B, C and D only. |

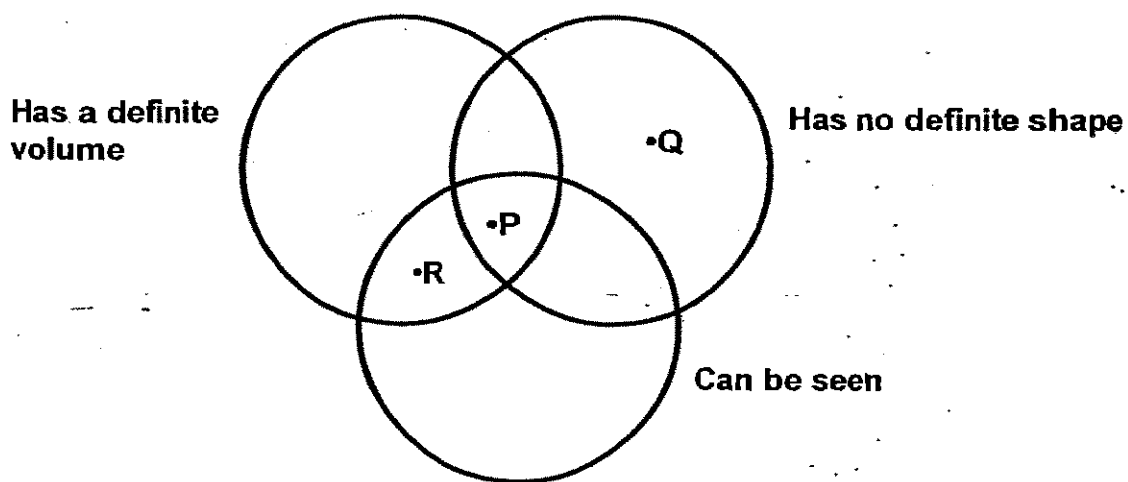
17. The table below shows the melting points and boiling points of substances A, B, C and D.

Substance	Melting point(°C)	Boiling point (°C)
A	45	92
B	63	112
C	-8	24
D	0	100

At room temperature (30°C), which one of the following observation(s) is/are correct?

- (1) Substance D is in the solid state.
- (2) Substances A and B are in the solid state.
- (3) Substances C and D are in the liquid state.
- (4) Substances A, B and D are in the gaseous state.

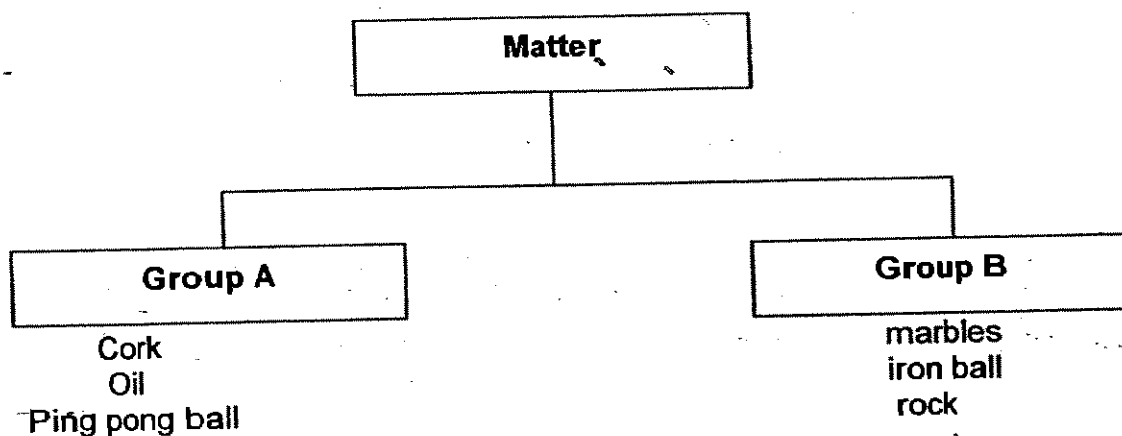
18. Study the Venn diagram below.



Which of these options are likely to be P, Q and R?

	P	Q	R
(X)	dew	nitrogen	heat
(Z)	milk	stone	carbon dioxide
(X)	honey	water vapour	flour
(4)	oxygen	sand	oil

19. Study the classification below



Which of the following options best describes Group A and Group B?

	Group A	Group B
(1)	No definite shape	Have definite shape
(2)	Have definite volume	No definite volume
(3)	Once alive	Once not alive
(4)	Float on water	Sink in water

20. Salim conducted four experiments under different conditions to investigate the effect of wind speed on the rate of evaporation of water. He filled four identical containers with 50cm³ of water.

	Experiment	Exposed surface area of water in the container(cm ³)	Temperature of surrounding (°C)	Wind speed(km/h)
(1)	A	40	28	10
(2)	B	50	30	15
(3)	C	50	30	10
(4)	D	60	28	18

Which of the two set-ups should he use to ensure a fair test?

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

21. Jane filled a plastic transparent water bottle to the brim with water. She then placed it in the freezer. Two days later, she took it out and she made some observations. Which of the following are her observations?

- A. The water has turned to ice.
- B. Only some of the water is left.
- C. The bottle appears slightly larger
- D. There was an increase in the mass of the water.

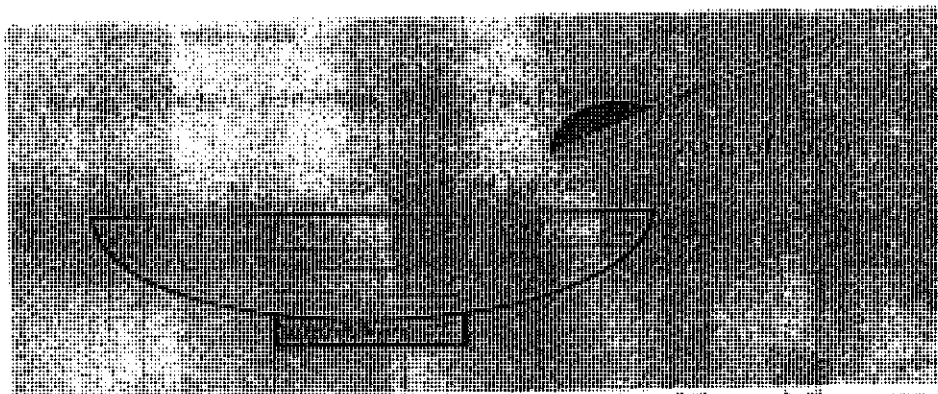
- (1) A and B only
- (3) A, B and C only

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

22. Sally was told to list the differences between the freezing and evaporation of water. In which of the following comparisons has she made a mistake?

	Evaporation	Freezing
(1)	No heat is needed.	Heat is needed
(2)	Heat is gained by the water.	Heat is lost by the water.
(3)	Takes place at any temperature.	Takes place at a fixed temperature.
(4)	Changes from a liquid to a gas.	Changes from a liquid to a solid.

23. Lihua filled a bowl with 200ml of water. She then added 20g of sugar into the water.



After three days, it was found that only 110g of the solution was left in the bowl. What would the remaining solution contain?

- (1) 20g of sugar only.
 - (2) 110g of water only.
 - (3) 90g of water and 20g of sugar
 - (4) 100g of water and 10g of sugar.
24. Four similar unfolded wet towels J, K, L and M were hung in 4 different places for 3 hours with conditions shown below. A tick (✓) shows that the condition(s) was/were present.

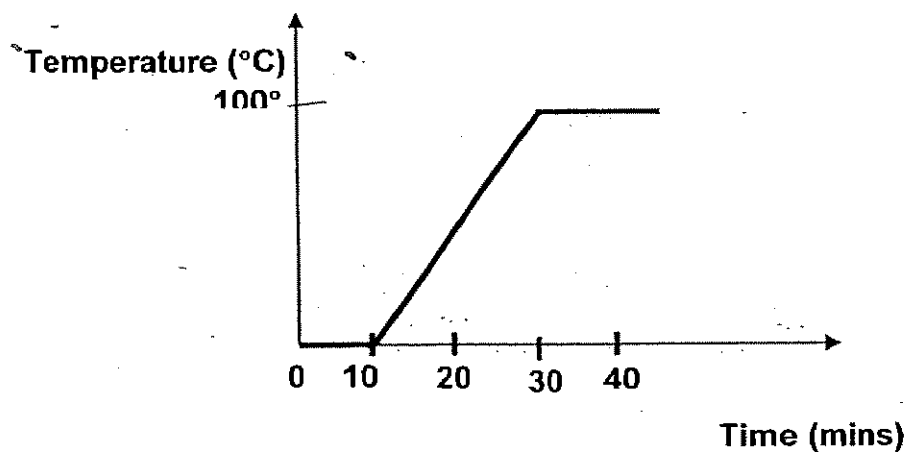
	Towel	Sunny	Windy	Humid
(1)	J	✓		
(2)	K	✓	✓	
(3)	L		✓	
(4)	M			✓

Which of the following options correctly shows the towels arranged from the driest to the wettest after 3 hours?

- (1) J, K, L, M
(3) K, L, J, M

- (2) J, L, K, M
(4) K, M, J, L

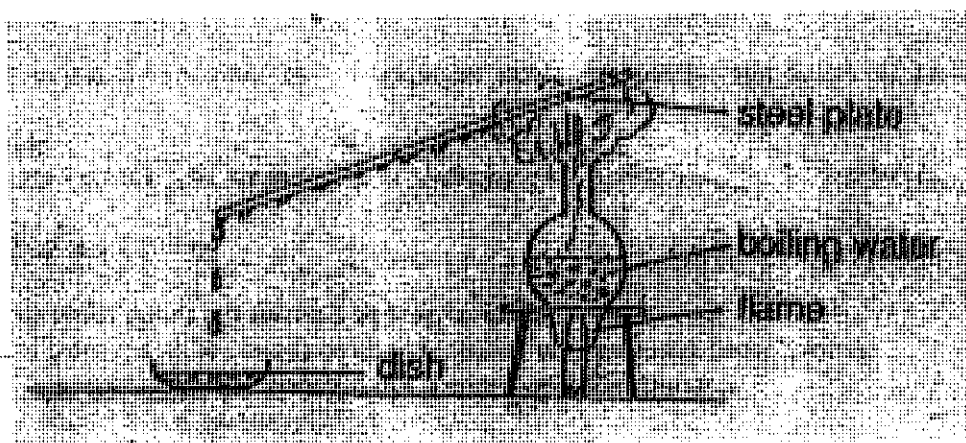
25. A beaker of ice cubes was heated for 40 minutes until there was no more water left in the beaker. The graph below shows the temperature changes of the content in the beaker against time.



What was the state of matter found in the beaker at the 20th and 35th minute?

	At the 10 th minute	At the 35 th minute
(1)	Solid only	Liquid only
(2)	Liquid only	Gas only
(3)	Solid only	Liquid and gas
(4)	Liquid only	Liquid and gas

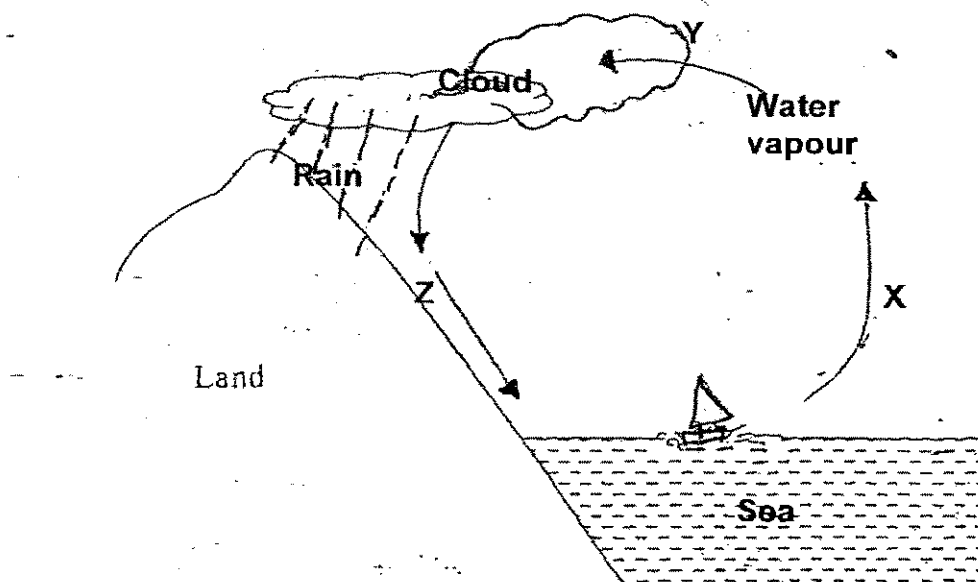
26. Sarah boiled 300ml of water over a Bunsen burner as shown in the set-up below.



After 20 minutes, although there was some water in the flask, she found that no water was dripping into the dish. What could be the possible reason?

- (1) Water has evaporated from the dish.
- (2) The rate of condensation has increased.
- (3) The steel plate has become colder than before.
- (4) The steel plate has become hotter than before.

The diagram below shows the water cycle. Study it carefully and then answer Questions 27 and 28.



27. In which of the following processes, X, Y or Z is there a change in the state of water from a gas to a liquid?

~~A~~ X
~~B~~ Y
~~C~~ Z

(1) B only
 (3) C only

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

28. When there is an increase in the humidity in the air and the temperature is low, which of the following statement(s) correctly describe(s) how processes X and Y would be affected?

A Process X would happen at a slower rate.
 B Process Y would happen at a faster rate.
 C Both processes would happen at a slower rate.
 D Both processes would happen at a faster rate.

(1) A only
(3) C only

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

29. During a Science lesson, Lisa, Muthu, Xiaoming and Jonathan made these comments about the water cycle.

Lisa: Clouds are made of water vapour.
Muthu: The sun provides heat energy for evaporation to occur.
Xiaoming: The water cycle is important to all animals and plants.
Jonathan: Snow may be formed in the sky if the temperature is very low.

Who has made the wrong statement?

- | | |
|--------------|--------------|
| (1) Lisa | (2) Muthu |
| (3) Xiaoming | (4) Jonathan |

30. Which of these activities help to contribute water vapour to the water cycle?

- A. People exhaling.
- B. Animals perspiring.
- C. Drying hair with a hair dryer
- D. Hanging wet clothes out to dry.

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



南洋小學

NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

SEMESTRAL ASSESSMENT 1

2007

BOOKLET BDate : 7th May

Duration : 1 h 45 min

Name : _____ ()

Class: Primary 4 _____

Marks Scored:

Booklet A:	60
Booklet B :	40
Total :	100

Parent's signature:

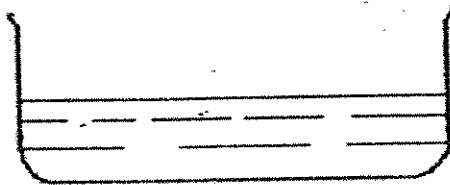
**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

Booklet B consists of 16 printed pages including this cover page.

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. As water becomes more precious, many countries are building desalination plants to obtain fresh water.



Tub of seawater



Bowl

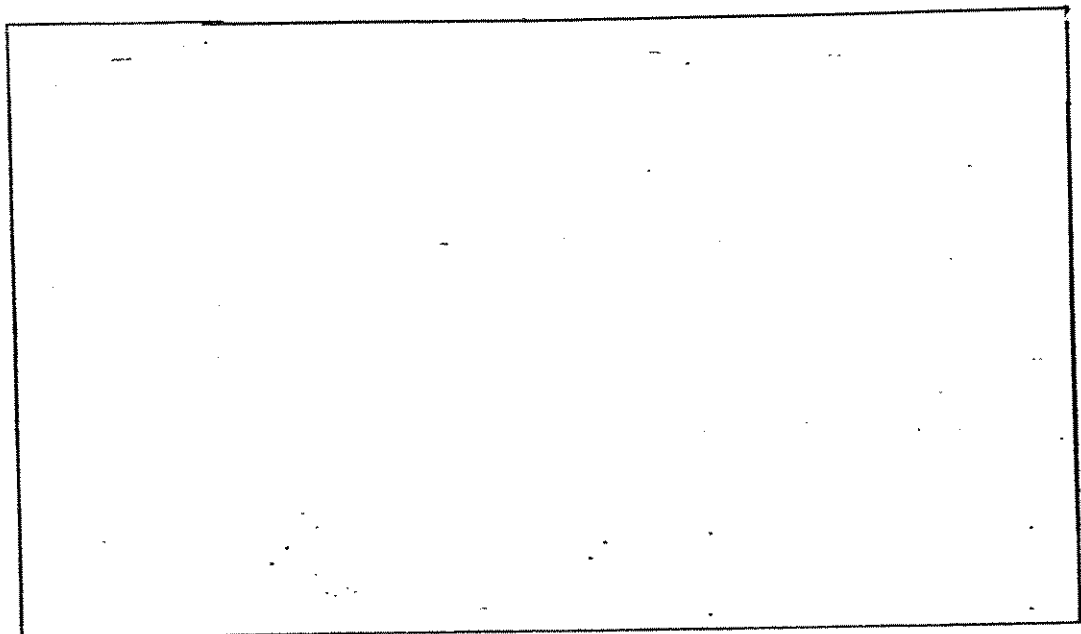


Coin

Plastic Sheet

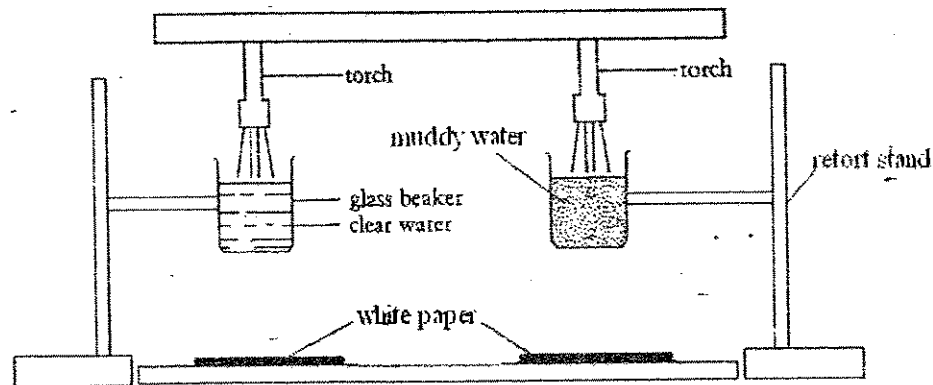
Side View of apparatus

- (a) With the given apparatus above, draw and label in the space provided below how fresh water can be obtained. (2 marks)



- (b) Name 2 processes that occur in your set-up when the sea water becomes fresh water. (1 mark)

32. Tommy set up the following experiment. He kept all the variables the same except the type of water.

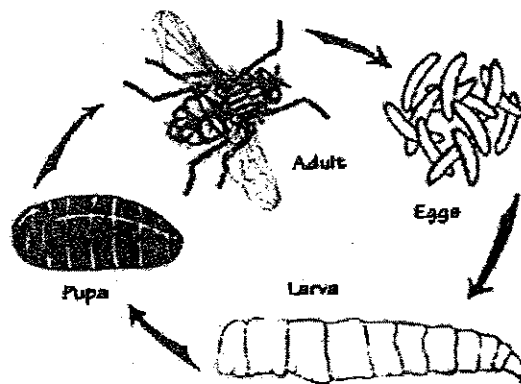


When the torches were switched on, Tommy noticed a bright patch of light on the piece of paper under the beaker of clear water. There was a grey shadow on the piece of paper under the beaker of muddy water.

- (a) What can Tommy conclude from the experiment? (1 mark)

- (b) Explain why submerged waters plants could not grow well in muddy water? (1 mark)

33. The diagram below shows the life cycle of a housefly.



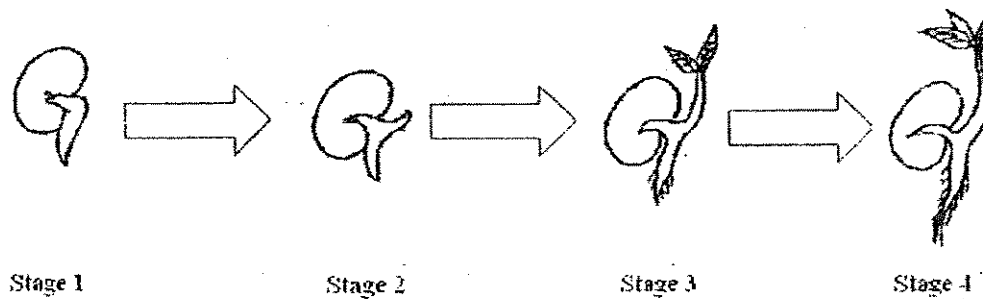
Mary saw some eggs and larvae of the housefly on a dead rat.

- (a) Why did the houseflies lay its eggs on the dead rat? (1 mark)

- (b) At which stage(s) does/do the housefly undergo moulting? (1 mark)

- (c) The housefly will not feed during stage(s) _____ (1mark)

34. The diagram below shows how a seed develops into a young seedling.



- (a) During stages 1 and 2, where does the seedling get its food from? (1 mark)
- _____
- (b) Name 2 conditions necessary for the seed to germinate. (1 mark)
- _____
- _____
- (c) At which stage(s) would the seed be able to **start** making its own food. Explain your choice. (2 marks)
- _____
- _____

35. The following table contains information about insects X and Y.

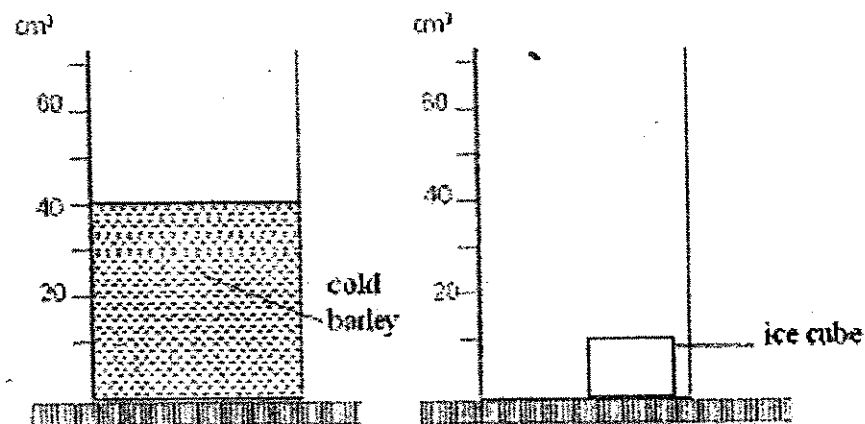
	Insect X	Insect Y
Quantity of eggs	8	8
Diet	Grass	Grass
Number of stages in its cycle	3	4
Number of days for it to develop from an egg into an adult.	8	6

Equal number of eggs of insect X and Y were placed in a tank. There was also enough grass, air and water for the adults for ten days. All the eggs hatched and none of the insects could escape from the tank.

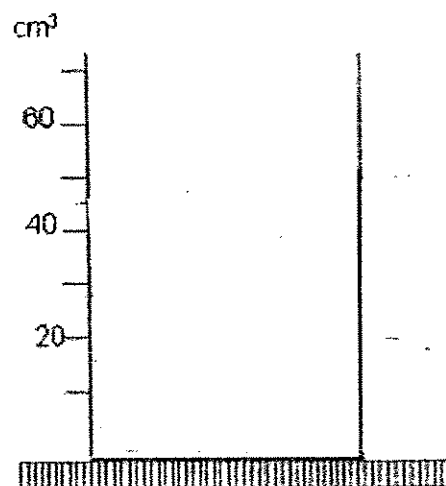
- (a) Which insect has more adults at the end of 10 days? (1 mark)

- (b) Give an example of an insect with a life cycle of 3 stages. (1 mark)

36. Michael poured a beaker of cold barley into a beaker containing one ice cube.

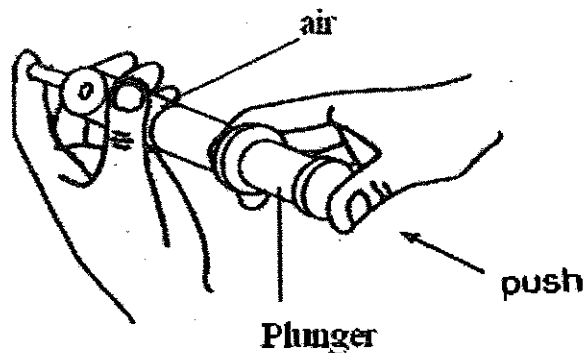


- (a) Draw in the beaker provided below the correct position of the ice cube after cold barley is added. (1 mark)



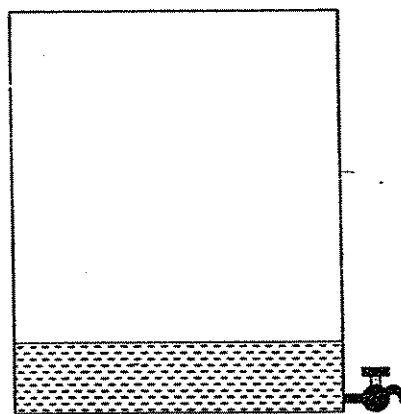
- (b) Explain his observation in (a). (1 mark)

37. Tommy conducted an experiment. Using an empty syringe, he placed his finger tightly against the tip and pushed the plunger.



- (a) What would Tommy observed if he continues to push the plunger. Explain his observation. (1 mark)

The diagram below shows a container with a tap.



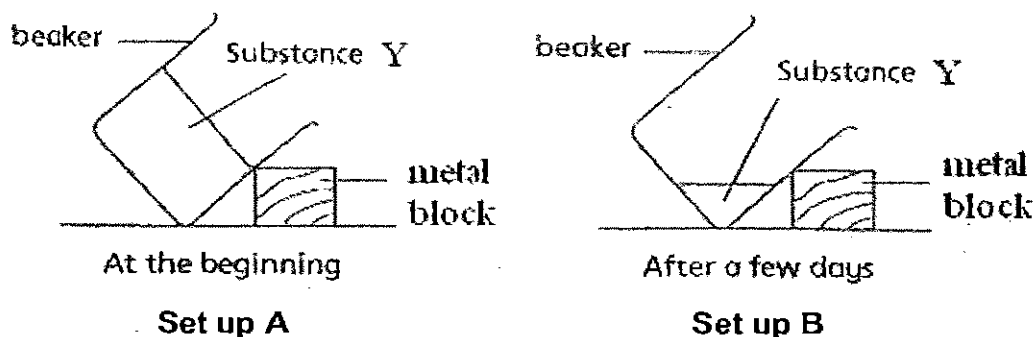
The volume of the container was 500 cm^3 and it contained 100 cm^3 of water.

- (b) When the tap was turned on, 50 cm^3 of water flowed out before the tap was turned off. What is the volume of the air in the container after the water has flowed out?

_____ cm^3

(1 mark)

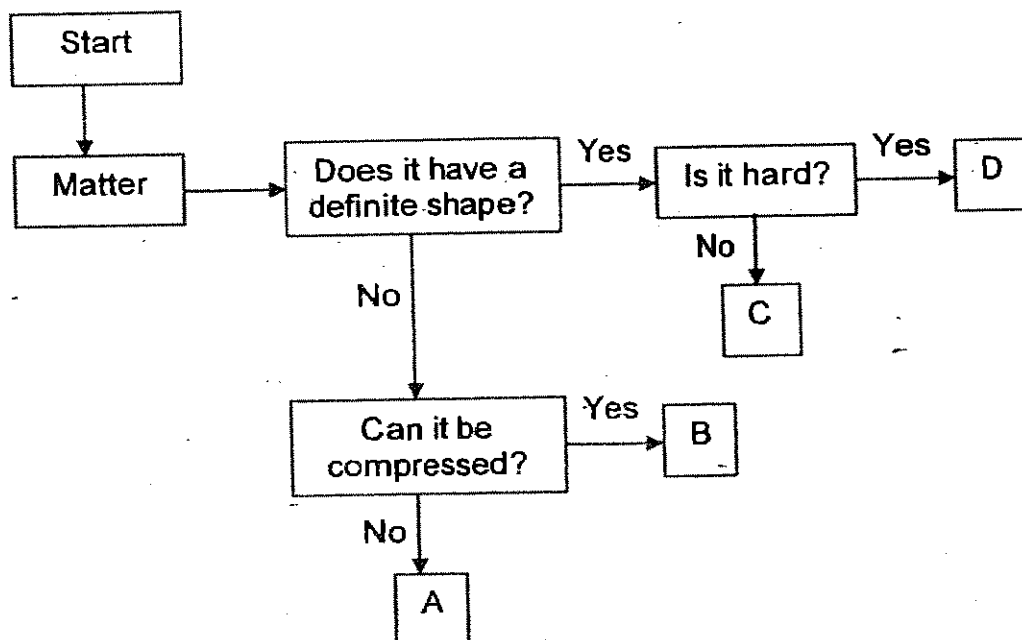
38. The diagram below shows what happens to substance Y at the beginning and after a few days.



- (a) What processes have taken place in the above set-ups to cause the change after a few days? (1 mark)

- (b) What is the state of matter of substance Y at the beginning stage? (1 mark)

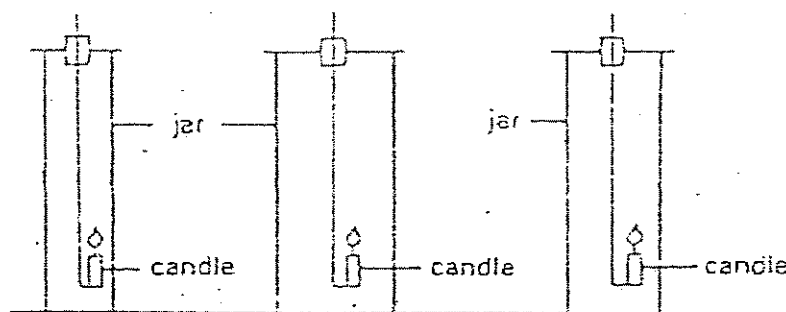
39. The flow chart below shows the properties of 5 substances A, B, C and D.



Based on the flow chart above, identify the following substances by writing the letters A, B, C or D in the brackets provided. (2 marks)

- (a) Iron rod ()
- (b) Cooking oil ()
- (c) Cotton wool ()
- (d) Water vapour ()

40. Samy put 3 similar candles into 3 different jars as shown in the set-ups below.



He noted the time taken by each candle to go off and recorded them in the table shown below.

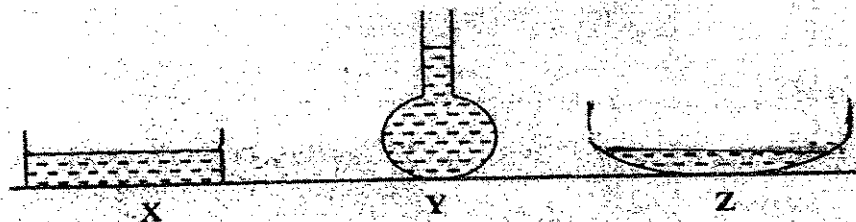
Put a tick (✓) in the correct boxes to indicate which variable(s) must be changed or kept the same so as to ensure a fair test. (2 marks)

	Variables	Changed	Kept the same
i)	Size of candles		
ii)	Size of jar		
iii)	Material of jar		

41. The table below lists water in its different states when it interacts with its surroundings. Put a tick (✓) to show whether heat is gained or lost by the water to its surrounding during each process: (2 marks)

	States of water	Heat gained	Heat lost
(a)	Snow falling on the ground in winter.		
(b)	A puddle of rain water under the sun.		
(c)	Air bubbles rising to the surface of a pot of hot soup.		
(d)	Dew forming on the surface of leaves.		

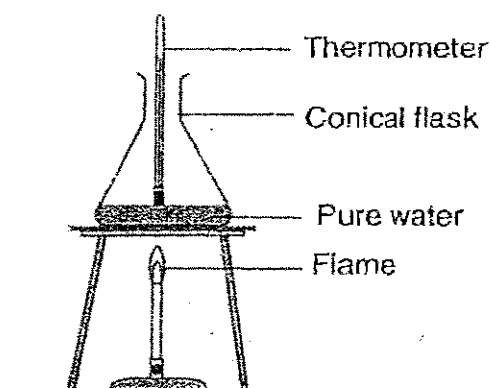
42. Susan conducted an experiment using the set-up as shown below. She filled three containers, X, Y and Z with 200ml of water each. Then she placed the containers in a windy place. After 3 hours, she measured the amount of water left in each container.



Below are 3 sentences based on her results. Indicate whether each of the statements is **True**, **Not True** or **Not possible to tell** by putting a tick (✓) in the correct box. (3 marks)

	Statements	True	Not True	Not possible to tell
(1)	There is less water left in X than in Y after 3 mins.			
(2)	There is no more water left in Z.			
(3)	The water in Y evaporates the slowest			

43. Liming carried out an experiment as shown in the set-up below.



She filled a conical flask with 150ml of water and allowed it to boil and noted its temperature. Next she added 5g of salt into the water and again measured its temperature when the water boiled. She repeated the experiment using different amount of salt. Then she recorded the results in the table shown below.

Amount of salt added (g)	0	5	15	20
Temperature at which water boils ($^{\circ}\text{C}$)	100	101	104	105

- (a) What was Liming trying to find out in the above experiment? (1 mark)

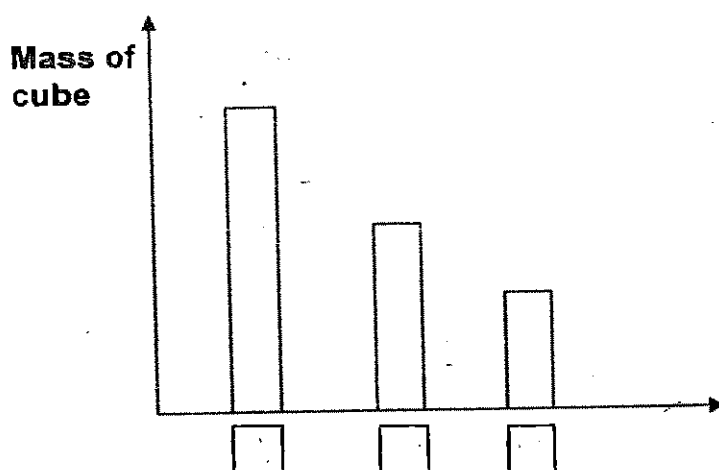
- (b) What was the relationship between the amount of salt added and the boiling point of the water? (1 mark)

- (c) What would be left in the conical flask if Liming continued to heat the solution until it dried up? (1 mark)

44. Marian uses a weighing balance to compare the masses of 3 similar cubes P, Q and R which are made of different materials as shown in the diagrams below.



After finding the mass of each cube, she then recorded the results in the graph shown below.



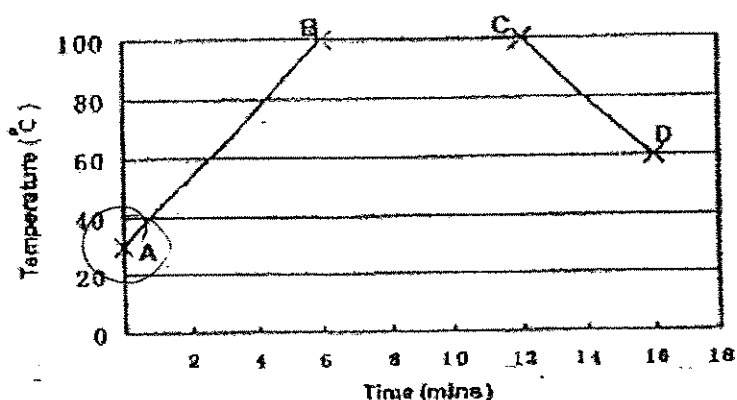
- (a) Write the letters P, Q and R in the correct boxes to name each cube in the graph above. (1 mark)
- (b) If the cubes were made of wood, Styrofoam or iron, identify each cube by filling in the correct letters, P, Q or R in the table below. (1mark)

	Cube	Material it is made of
(i)		Wood
(ii)		Styrofoam
(iii)		Iron

45. Complete the table below to show one function for each of the parts of a plant. (2 marks)

	Plant part	Function
(a)	Stem	
(b)	Leaves	

46. Jenny heated some water at room temperature in a beaker until it boiled. It was left on the kitchen table to cool. She recorded her results in the graph as shown below.



- (a) For how long was the water boiling? (1mark)

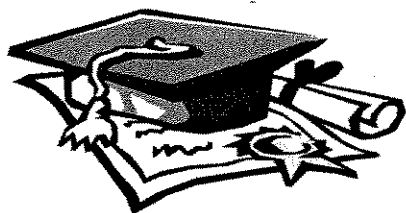
- (b) Which part of the graph shows that water was gaining heat? (1mark)

- (c) What could Jenny have done to the beaker of water at point C for the temperature to fall to D? (1 mark)

- (d) If the water was left on the table for another 2 hours, what would be its final temperature? (1 mark)

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

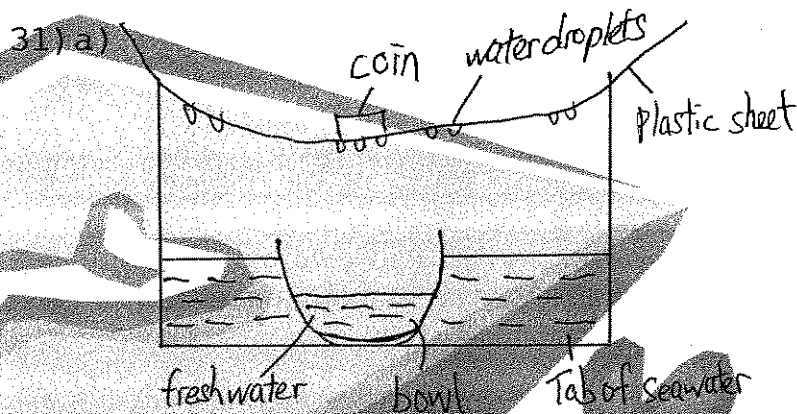
Setters:
Low Kiah Wée
Loo P.F.



ANSWER SHEET

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

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



b) Evaporation and condensation.

32)a) Muddy water does not allow light to pass through, clear water allow the light to pass through.

b) The sunlight will not be able to pass the water and the plants cannot photosynthesis.

33)a) So that the larva can feed on the dead rat.

b) Larva.

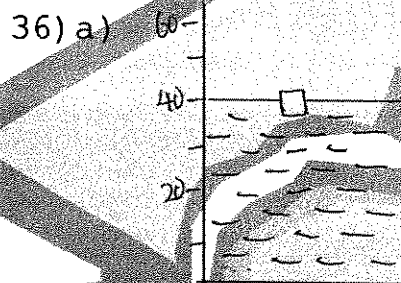
c) Pupa and the egg.

34)a) It gets its food from the seed leaves.

b) Water and warmth.

c) At stage 3 and 4. The seedling has already grown leaves and leaves contains chlorophyll in them. Hence the seedling can photosynthesis.

- 35) a) Insect Y.
b) Grasshopper.



b) The ice cube is lighter than the cold barley. Therefore, the ice floats.

- 37) a) The plunger can be slightly pushed in Air can be compressed.

b) 450

- 38) a) Melting and evaporation.
b) Solid state.

- 39) a) D b) A c) C d) B

- 40) i) Kept the same ii) Changed iii) Kept the same

- 41) a) Heat lost b) Heat gained
c) Heat lost d) Heat lost

- 42) 1) True 2) Not possible to tell 3) True

- 43) a) Whether the salt causes the water to boil above 100°C.

b) The more salt added, the higher the temperature at which water boils.

c) Salt particles.

- 44) a) R, P, Q b) i) P ii) Q iii) R

- 45) a) Transport minerals and water to other parts of the plant.

b) Makes food for the plant.

- 46) a) 6min b) AB c) She could add ice d) 30°C



AI TONG SCHOOL

2007 CONTINUAL ASSESSMENT (2)

PRIMARY FOUR SCIENCE

DURATION : 1hr 45 min

DATE: 30th August 2007

INSTRUCTIONS

Do not open the booklet until you are told to do so.

Follow all instructions.

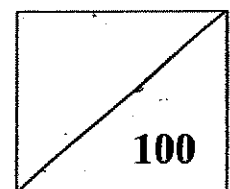
Answer all questions.

Name : _____ ()

Class : Primary _____

Parent's Signature : _____

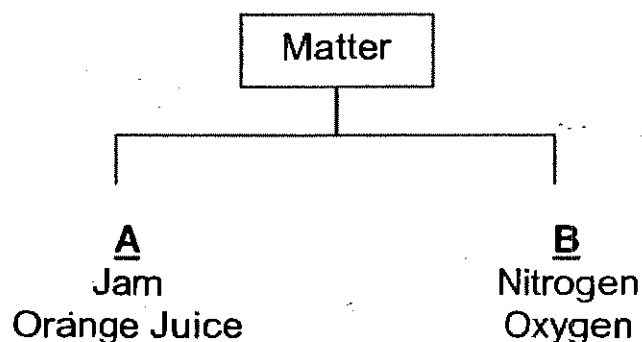
Date : _____



Section A (30 X 2 marks)

For each question 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. Mary classified 4 objects into two groups using the chart below.



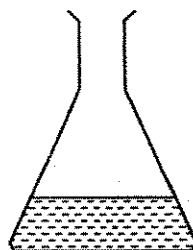
Which of the following could be the most suitable headings for Group A and B?

	A	B
(1)	Has no definite shape	Has a definite shape
(2)	Can be compressed	Cannot be compressed
(3)	Has a definite volume	Has no definite volume
(4)	Has no definite volume	Has a definite volume

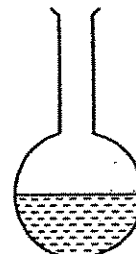
2. A boy pours the water from the test tube into the conical flask and then into the round-bottomed flask.



Test
tube



Conical
flask



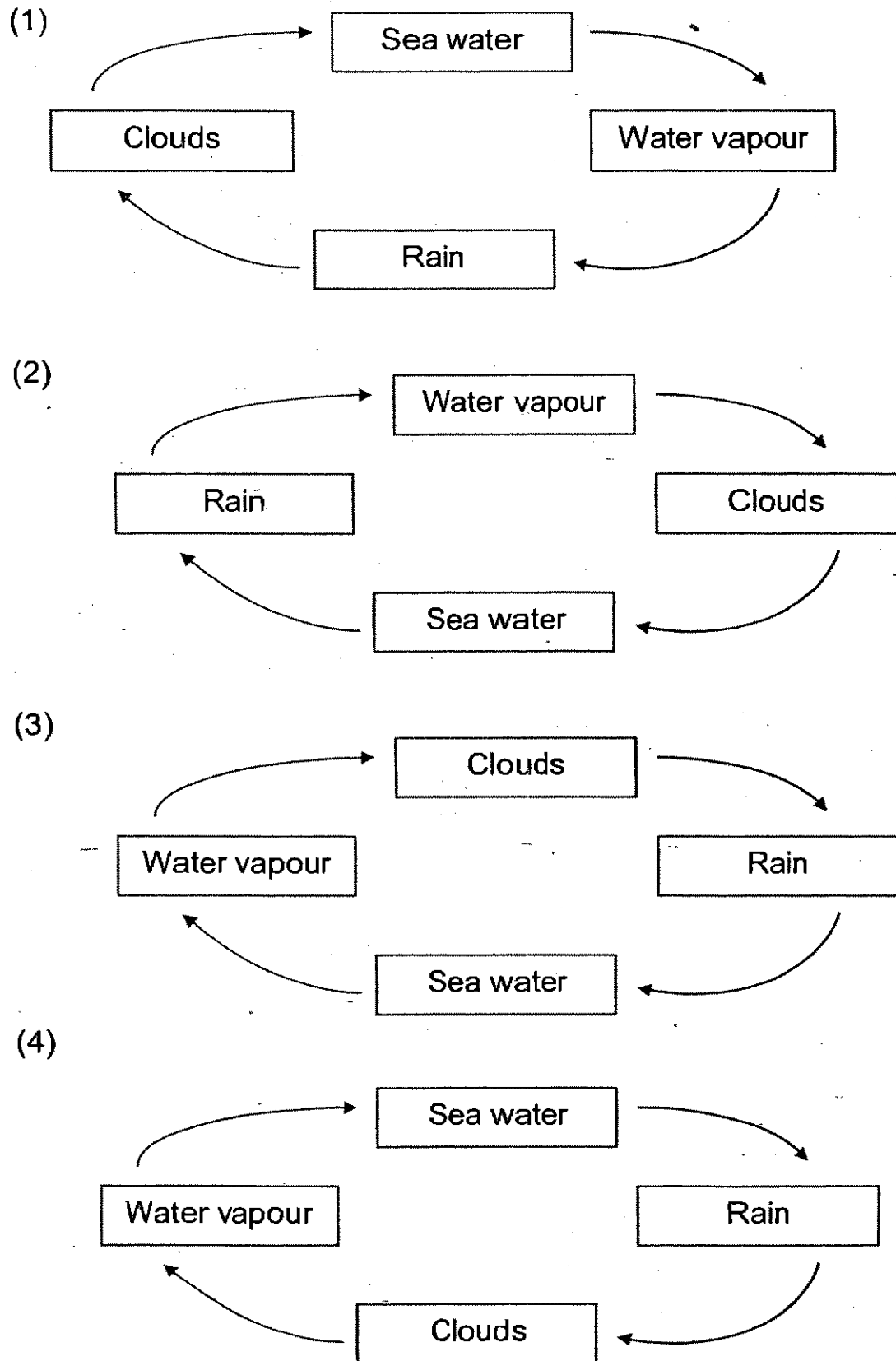
Round
bottomed
flask

What does he want to show in his activity?

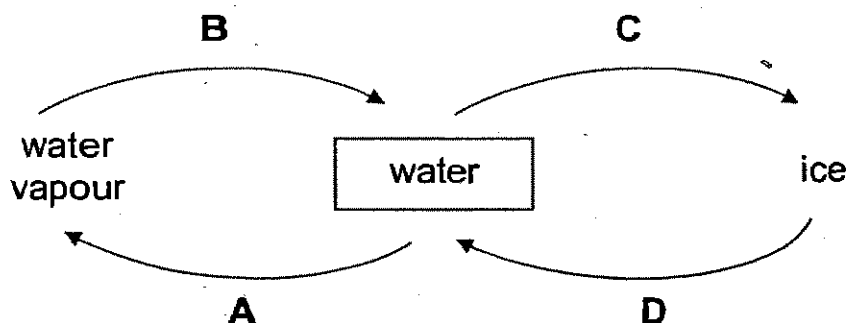
- A: Water has mass.
- B: Water has no definite shape.
- C: Water has no definite volume.
- D: Water takes the shape of its container.

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

3. Which one of the following shows the correct sequence of the water cycle?



4. The diagram shows the states of water and some processes.



Which one of the following set of arrows shows the correct processes represented by the arrows?

	A	B	C	D
(1)	Condensation	Evaporation	Melting	Freezing
(2)	Evaporation	Condensation	Freezing	Melting
(3)	Melting	Boiling	Evaporation	Freezing
(4)	Boiling	Evaporation	Freezing	Melting

5. Which one of the following takes place when water gains heat?

- (1) Water freezes.
- (2) Water boils.
- (3) Water vapour condenses.
- (4) Water droplets gather to become clouds.

6. Joe wanted to find out if the rate of evaporation of water would be affected by the humidity of the surrounding. He had 4 different set-ups for this experiment. Which 2 set-ups should he choose?

Set-up	Amount of water (ml)	Temperature ($^{\circ}\text{C}$)	Humidity (%)
A	100 ml	29	70 %
B	200 ml	29	70 %
C	100 ml	29	50 %
D	200 ml	29	50 %

- (1) Set-ups A and C
 - (2) Set-ups B and C
 - (3) Set-ups C and D
 - (4) Set-ups A and D
7. 4 children were discussing their "Water Cycle" project. Each wrote a statement about it. Whose statement should not be included in their report?

Joy : In order for evaporation to take place, rain water needs to gain heat.

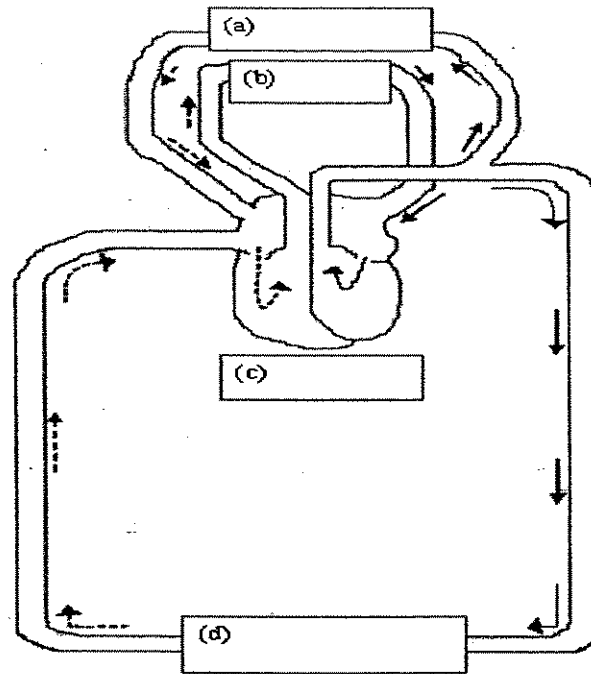
Ali : Condensation will take place only when the temperature of the surrounding is 25°C .

Muthu : Rivers, lakes and reservoirs are examples of water bodies.

Weiming : The water cycle will never stop.

- (1) Joy
- (2) Ali
- (3) Muthu
- (4) Weiming

8. The diagram below shows the circulatory system of a human body. Choose the correct label from the table below.

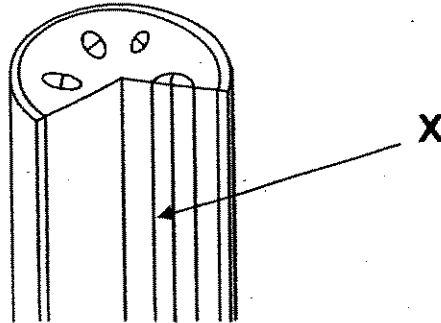


	(a)	(b)	(c)	(d)
(1)	upper body	heart	lower body	lungs
(2)	upper body	lungs	heart	lower body
(3)	upper body	lower body	lungs	heart
(4)	upper body	heart	lungs	lower body

9. During a water rationing exercise, the _____.

- (1) cost of water is more expensive
- (2) water supply is temporarily cut off
- (3) tap water is unsafe for drinking
- (4) water level in reservoirs decreases

10. The picture below shows a cross section of a celery stalk. Which one of the following statements below describes best part mark 'X'?



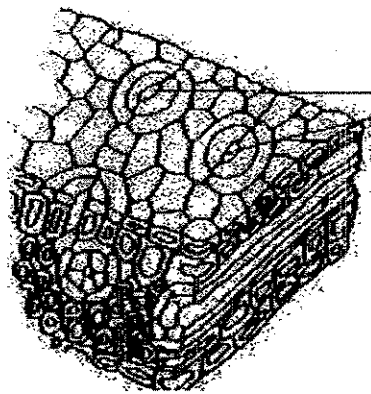
cross section of a celery stalk

- (1) X is the xylem tube of the plant that transports water and mineral salts.
 - (2) X is the phloem tube of the plant that transports water and mineral salts.
 - (3) X is the xylem tube of the plant that transports food made in the leaves.
 - (4) X is the phloem tube of the plant that transports food made in the leaves.
11. What is the process of removing dissolved salt from seawater to obtain fresh drinking water?
- (1) purification
 - (2) pollution
 - (3) desalination
 - (4) condensation

12. The gills of the fish have many blood vessels to _____.

- (1) take in food
- (2) absorb dissolved carbon dioxide
- (3) absorb dissolved oxygen
- (4) enable them it to swim

13. The picture below shows what a girl saw under a microscope.



Which one of the following statements is true about what she saw in the picture?

- (1) They can be found on the stems of the plants.
- (2) They can absorb gases and water.
- (3) They can give off water.
- (4) They can make food.

14. Which one of the following living things gets energy indirectly from the sun?

- (1) corn plant
- (2) rambutan tree
- (3) monkey
- (4) grass

15. Which one of the following gases is **wrongly** matched with its description?

	Gas	Description
(1)	Carbon Dioxide	Plant takes in this gas during photosynthesis.
(2)	Oxygen	Living things take in this gas during respiration.
(3)	Water Vapour	It is present in the air.
(4)	Nitrogen	Plants take in this gas directly from the air.

16. Which one of the following is **not** transported by the blood?

- (1) carbon dioxide
- (2) oxygen
- (3) waste material
- (4) water vapour

17. Which of the following statements about heat are **wrong**?

- A : Heat helps living things to keep warm.
- B : Heat enables man and animals to see.
- C : Heat is needed to dry clothes
- D : Heat is a kind of matter.

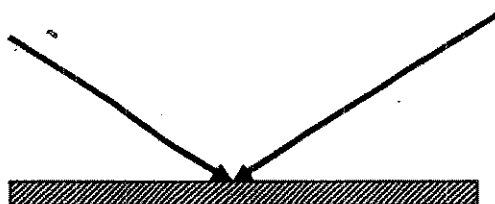
- (1) A and B
- (2) A and D
- (3) B and C
- (4) B and D

18. Which one of the following gives off natural light on its own?

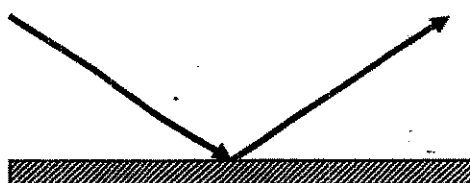
- (1) lighted bulb
- (2) moon
- (3) earth
- (4) star

19. Which one of the diagrams below shows how light is reflected?

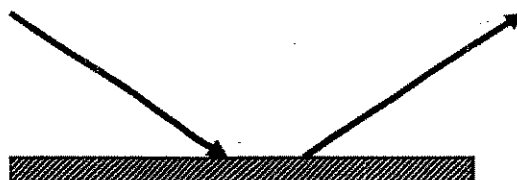
(1)



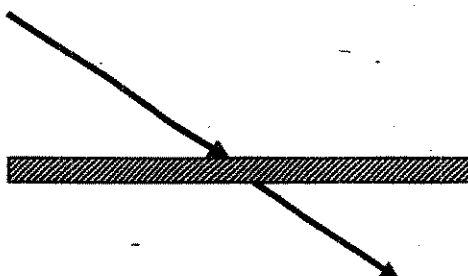
(2)



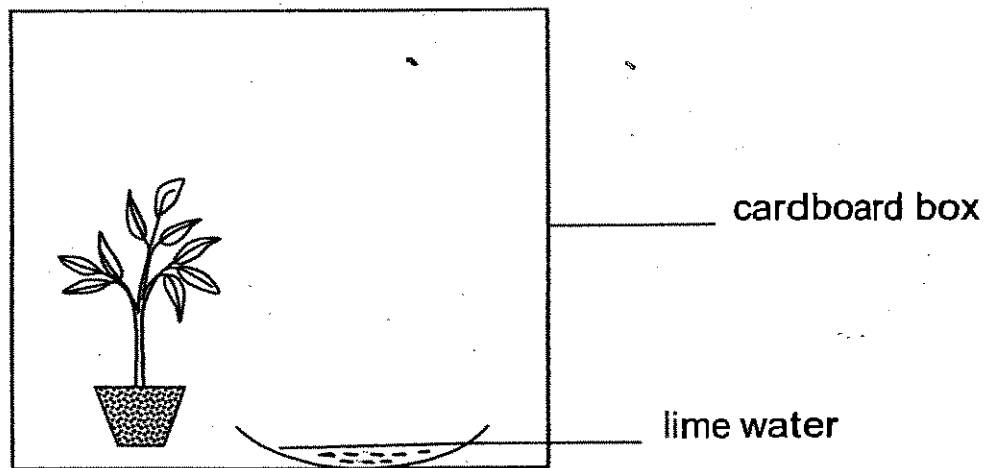
(3)



(4)



20. A plant is placed in a cardboard box as shown below.



The limewater will turn cloudy because the plant will _____.

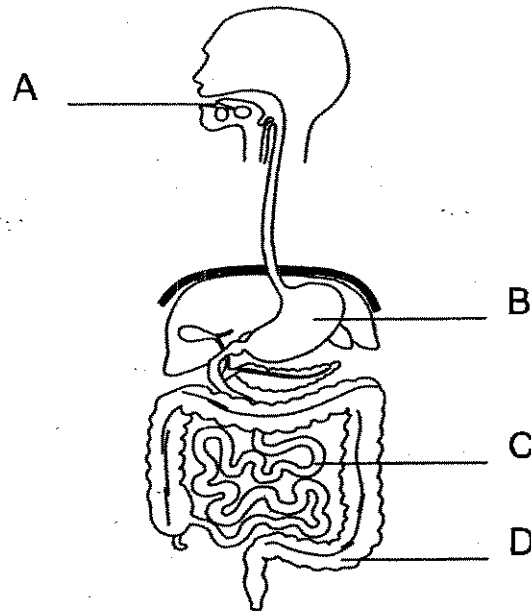
- (1) respire
 - (2) photosynthesize
 - (3) give out water
 - (4) use up energy
21. Bob's father eats a lot of vegetables. He works out in a gymnasium. He carries weights too. He is trying to build his _____.

- (1) muscles
- (2) fats
- (3) bones
- (4) joints

22. The skull protects the _____ and the ribcage protects the _____.

- (1) brain, lungs
- (2) eyes, intestine
- (3) head, stomach
- (4) nose, blood vessel

23. The diagram below shows a digestive system. In which part of the diagram will the digested food be passed into the blood vessel?



- (1) A
(2) B
(3) C
(4) D
24. Julie wanted to find out whether a red apple or green apple was sweeter. Which one of the following senses does she need to use?

A : touch
B : hearing
C : sight
D : taste

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

25. Which of the following statements about the muscular system is false?

- (1) We can control all our muscles.
- (2) The skeleton is covered with muscles.
- (3) Muscles work in pairs.
- (4) When one muscle contracts, the other relaxes.

26. During photosynthesis, plants take in _____ and give out _____.

- (1) oxygen, carbon dioxide
- (2) oxygen, oxygen
- (3) carbon dioxide, oxygen
- (4) carbon dioxide, carbon dioxide

27. The stem of a plant _____.

- (1) absorbs light for photosynthesis.
- (2) transports water and food to other parts
- (3) holds firmly to the ground
- (4) gives out water

28. Digestion starts in our _____.

- (1) gullet
- (2) stomach
- (3) mouth
- (4) small intestine

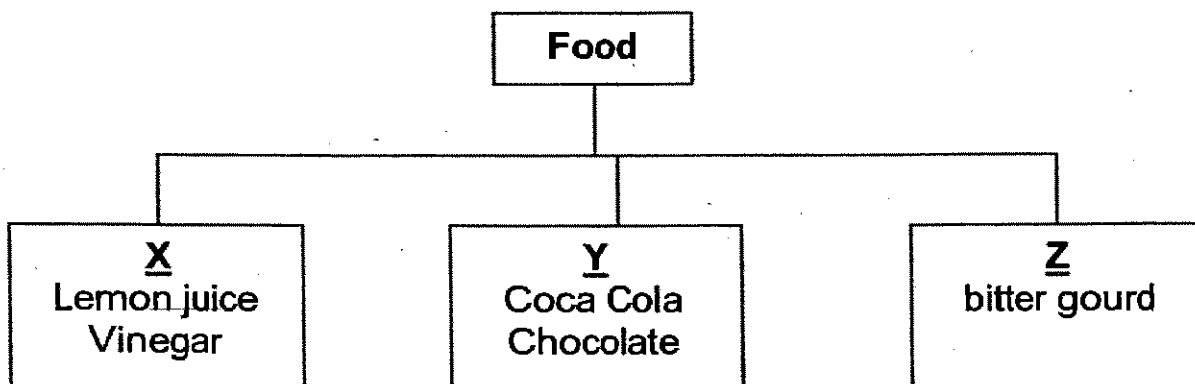
29. Ahmad received a game card that states the following.

- It takes in oxygen into the body
- It removes carbon dioxide from the body.

Which one of the following systems carries out the processes described above?

- (1) Circulatory system
- (2) Muscular system
- (3) Skeletal system
- (4) Respiratory system

30. Meiling drew the following classification chart.

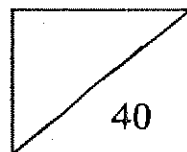


Which one of the following is best for the headings?

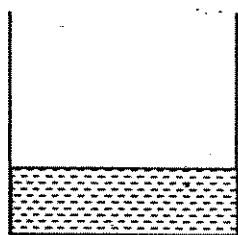
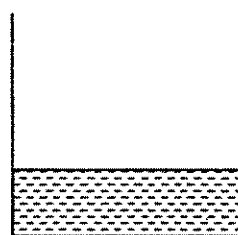
	X	Y	Z
(1)	Sweet	Sour	Salty
(2)	Sour	Sweet	Bitter
(3)	Bitter	Sour	Sweet
(4)	Salty	Bitter	Sour

Primary 4 Science CA2 (2007)

Name : _____ ()

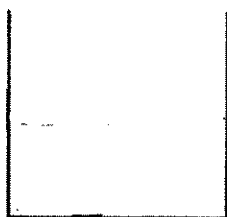
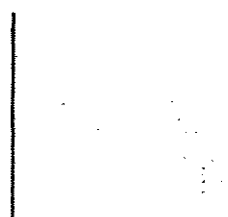
**Section B (40 marks)****Answer all the questions in the spaces provided.**

31. Joseph poured the same amount of water in two beakers as shown below.

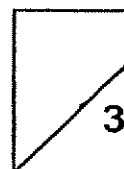
**Beaker C****Beaker D**

He had 2 iron balls of different sizes. He dropped the small ball into Beaker C and the big ball into Beaker D.

- (a) Draw results of the experiment. [2]

**Beaker C****Beaker D**

- (b) What can you conclude from this experiment? [1]



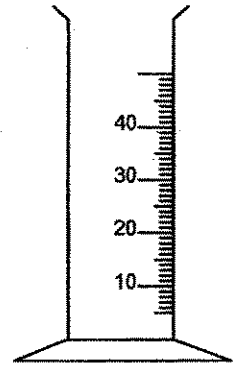
32. Gina was instructed to find the volume of a stone. She was given the objects as shown below.



jar of water

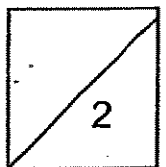


stone

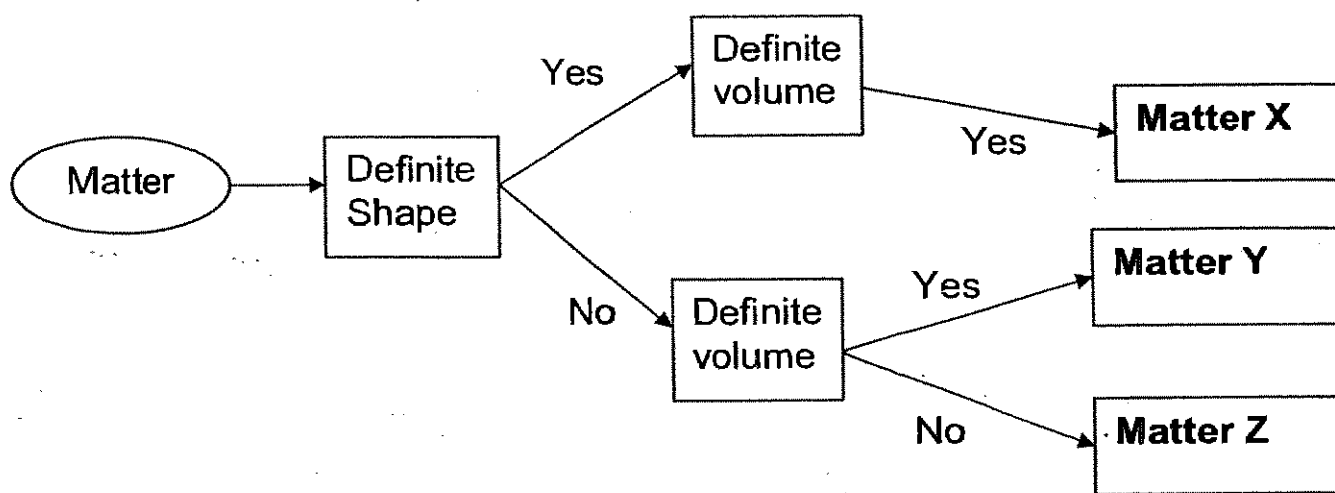


measuring cylinder

Write out the steps she should take. [2]

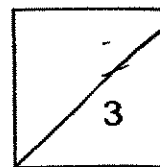


33. Study the flow chart on matter.

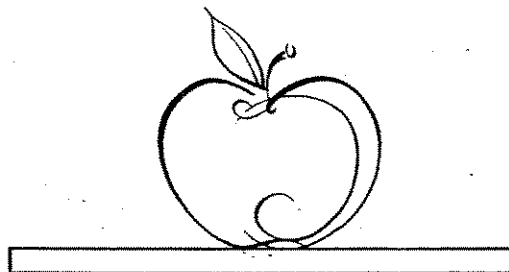


What is the state of each matter? [3]

Matter X - _____
Matter Y - _____
Matter Z - _____



34. Mandy took an apple out of the refrigerator and placed it on a table.

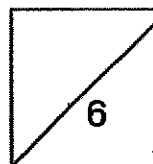


- (a) What would she see on the apple after a few minutes?
[1]

- (b) Explain what happened in (a) [2]

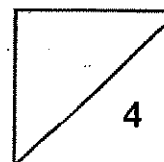
35. Mrs Tay is trying to teach her children to conserve water by practising the 3 Rs. Write "Reducing", "Reusing" or "Recycling" for each of the activities. [3]

	Activities	3 Rs
(a)	Using water that was used to wash vegetables to water plants.	
(b)	Using a mug when brushing your teeth.	
(c)	Purifying water so that it can be used again.	

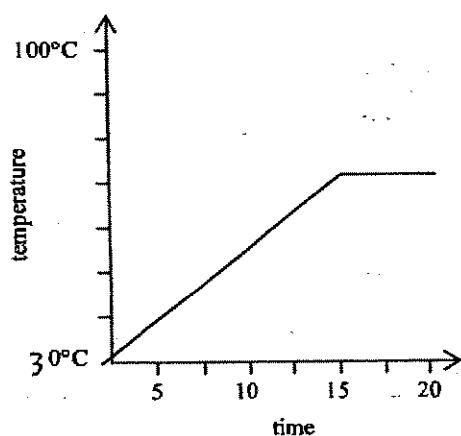


36. Fill up the table below to compare the process of respiration and photosynthesis of a plant. [4]

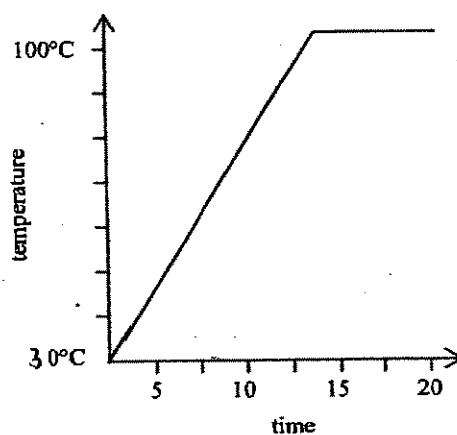
	Respiration	Questions	Photosynthesis
(a)		Does the process require light?	
(b)		When does the process take place?	
(c)		What is the gas produced during the process?	
(d)		What is the gas taken during the process?	



37. Judy was given 2 containers of colourless liquid. She boiled both liquids and plotted two graphs to show the changes in temperature.



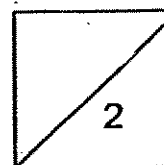
Liquid X



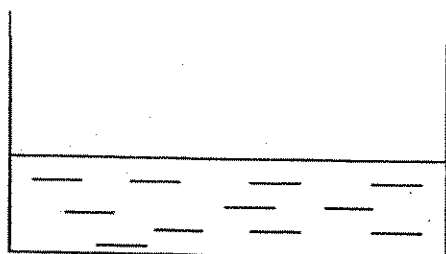
Liquid Y

- (a) Which liquid is water? [1]

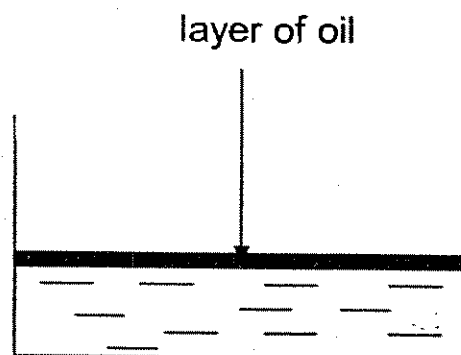
- (b) Explain your answer in (a). [1]



38. Sally placed two basins of water under the hot sun.



Set Up C



Set Up D

- (a) Which set up will have less water after 3 hours? [1]

- (b) Explain the reason for your answer in (a). [2]

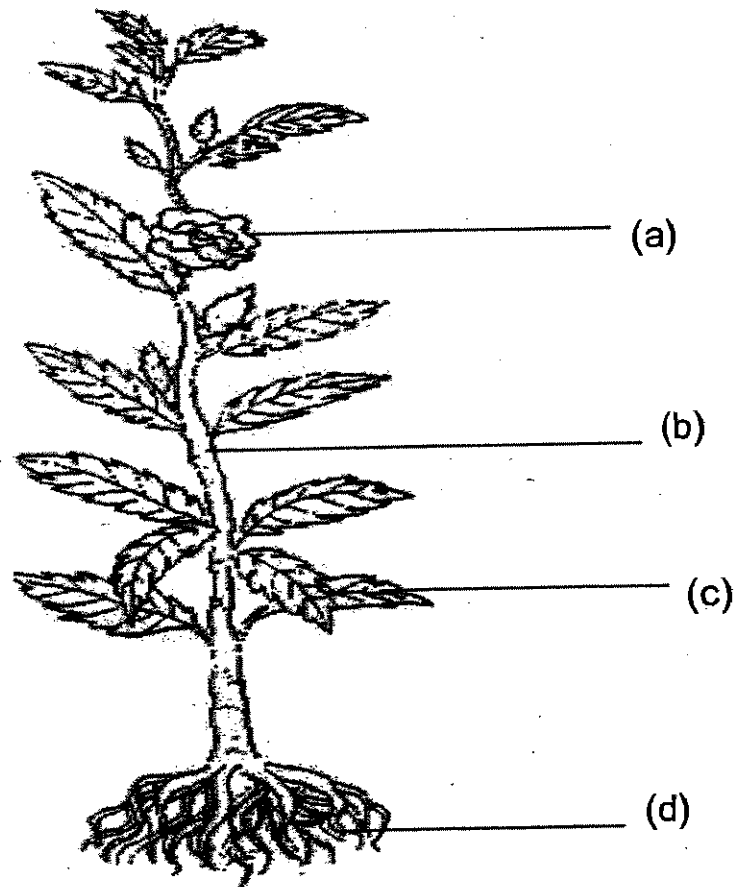
39. Classify the objects below into the correct groups [3]

frosted glass	mirror
tap water	story book
tracing paper	magnifying glass

i)	ii)	iii)
Allow some light to pass through	Allow all light to pass through	Allow no light to pass through

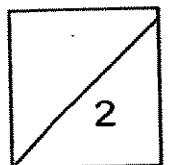
6

40. The picture shows a balsam plant.



Identify the parts and write the answers below. [2]

- (a) _____
- (b) _____
- (c) _____
- (d) _____



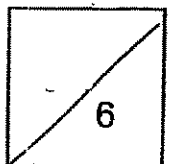
41. Samy ran around the track for 20 minutes.

(a) What would happen to his heartbeat after 20 minutes? [1]

(b) Why is this so? [2]

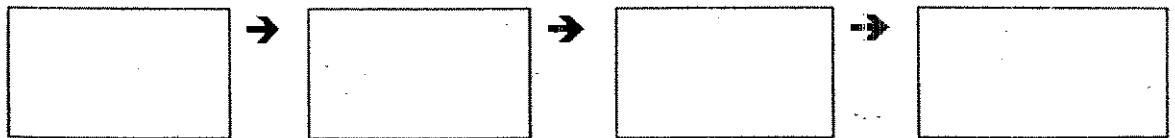
42. Look at the following statements. Write "True" or "False" in the lines provided. [3]

(a)	When we breathe in, our ribs move out and upwards.	
(b)	Blood which is rich in oxygen also carry waste materials.	
(c)	The heartbeat can also be detected on the neck.	

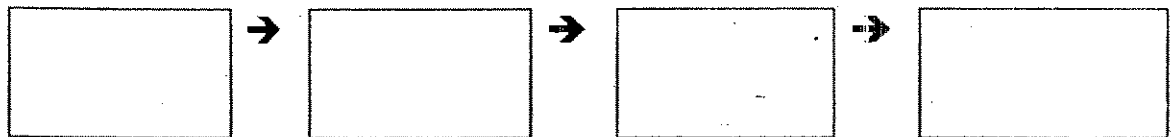


43. Rearrange the items below to show the correct order in which energy is transferred. [2]

(a) boy, sun, chicken, seeds



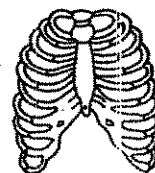
(b) goat, sun, python, grass



44. Study the diagram below and fill in the answers.



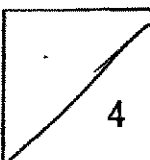
skull



ribcage

- (a) What is the similarity of the 2 bones above? [1]

- (b) Why is skeleton system important in a human body? [1]



45. Tim and his friends are having a picnic at the beach.

Tim : The satay is very delicious.

Lina : Oh dear! I think something is burning.

Paul : The coffee is hot

Cindy : I can hear the ringing bell of the ice-cream man.

Write down the senses used by each of the children when they make the statements. [2]

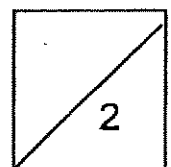
Tim - _____

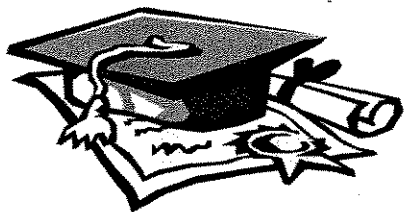
Lina - _____

Paul - _____

Cindy - _____

~~~ End of Paper ~~~



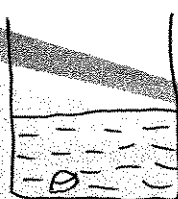


# ANSWER SHEET

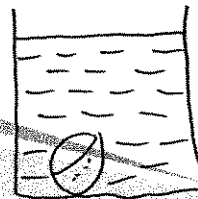
AI TONG PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007  
CONTINUAL ASSESSMENT (2)

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

31) a)



C



D

b) Ball D occupies more space than ball C.

- 32) 1) Find the initial volume of the water.  
2) Put in the stone.  
3) Record the new level of the water.  
4) Subtract the initial volume of the water from the new volume.

33) X: solid Y: liquid Z: gas

- 34) a) She would see water droplets.  
b) The water vapour in the air condenses on the cool apple to form water droplets.

- 35) a) Recycling.  
b) Reducing.  
c) Reusing.

- 36) a) No, Yes  
b) All the time, During the day  
c) Carbon dioxide, Oxygen  
d) Oxygen, Carbon dioxide

37) a) Liquid Y.

b) When water is boiled, the temperature of the water will be  $100^{\circ}\text{C}$  and then it will evaporate in the air.

38) a) Set up C.

b) Set up C will evaporate faster as there is no layer of oil covering it.

39) i) tracing paper tap water.

ii) frosted glass magnifying glass.

iii) mirror story book.

40) a) flower.      B) stem      c) leaves      d) roots

41) a) Sam's heart beat will increase after 20 minutes.

b) The heart needs to pump more blood as it needs to supply more digested food, water and oxygen to other parts of the body to produce energy.

42) a) True      b) False      c) True

43) a) Sun → seeds → chicken → boy

b) Sun → grass → goat → python

44) a) It protects the vital organs.

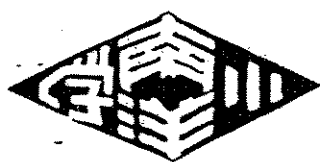
b) The skeleton system helps to support our body.

45) Tim: taste

Lina: smell

Paul: touch

Cindy: hearing



南洋小學  
NANYANG PRIMARY SCHOOL

PRIMARY FOUR SCIENCE  
CONTINUAL ASSESSMENT 2

2007

**BOOKLET A**

Duration : 1 h 45 min

Name : \_\_\_\_\_ ( )

Class: Primary \_\_\_\_\_ ( )

Marks Scored:

|            |  |    |
|------------|--|----|
| Booklet A: |  | 50 |
| Booklet B: |  | 30 |
| Total :    |  | 80 |

Parent's signature: \_\_\_\_\_

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

Booklet A consists of 13 printed pages including this cover page.

## NANYANG PRIMARY SCHOOL

## PRIMARY 4 SCIENCE

## SECOND CONTINUAL ASSESSMENT 2007

Name : \_\_\_\_\_ ( )

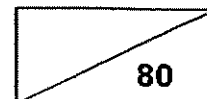
Date : \_\_\_\_\_

Class : Primary 4 ( )

Duration : 1 h 45 min

Parent's signature: \_\_\_\_\_

Score :

**Section A** (25 x 2 marks = 50 marks)

For each question from 1 to 25, 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. Rachel investigated the properties of substances X, Y and Z. She recorded the results in the table below. A tick (✓) indicates that the property is present.

| Property          | X | Y | Z |
|-------------------|---|---|---|
| Flows easily      |   |   |   |
| Occupies space    |   |   |   |
| Can be compressed |   |   |   |

Which of the following represents X, Y and Z correctly?

|            | X | Y       | Z      |
|------------|---|---------|--------|
| (1) Marble |   | Ball    | Cup    |
| (2) Oxygen |   | Mercury | Stone  |
| (3) Oil    |   | Sugar   | Kite   |
| (4) Book   |   | Water   | Eraser |

2. Which one of the following occupies space?

- (1) Wind
- (2) Shadow
- (3) Sunlight
- (4) Lightning

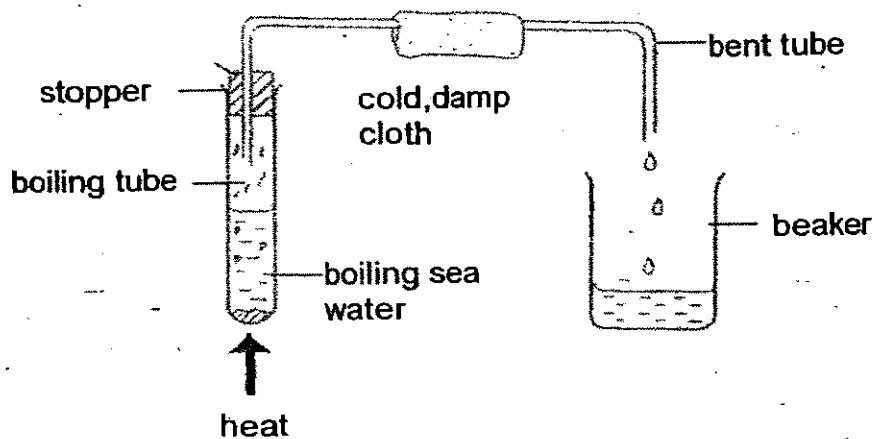
3. Which one of the following is the fastest way to melt a block of ice left in a classroom?

- ~~(1)~~ Leave the block of ice in a pail.  
~~(2)~~ Sprinkle sawdust over the block of ice.  
~~(3)~~ Wrap a piece of white cloth around the block of ice.  
~~(4)~~ Crush the block of ice and spread the broken pieces on a table.

4. When air is pumped into a balloon, the balloon becomes bigger. This shows that air \_\_\_\_\_.

- ~~(1)~~ has weight  
~~(2)~~ occupies space  
~~(3)~~ can be compressed  
~~(4)~~ is a mixture of gases

5. The diagram below shows a simple way to get distilled water from sea water.



Which of the following shows the correct order of the processes that has taken place to obtain distilled water?

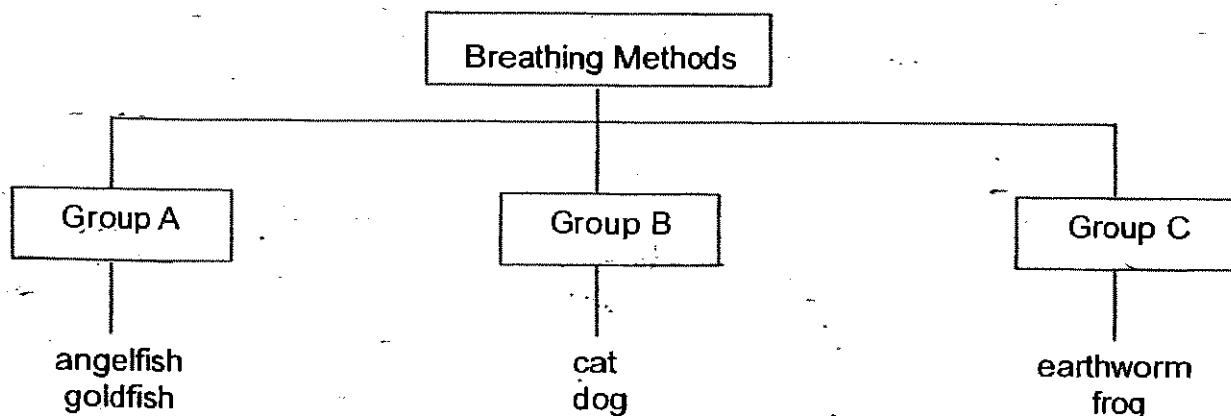
- |                  |   |              |   |              |
|------------------|---|--------------|---|--------------|
| (1) Evaporation  | → | Condensation | → | Boiling      |
| (2) Condensation | → | Evaporation  | → | Boiling      |
| (3) Boiling      | → | Condensation | → | Evaporation  |
| (4) Boiling      | → | Evaporation  | → | Condensation |



6. The purpose of the 'Water Rationing Exercise' is to \_\_\_\_\_.

- (1) encourage us to drink less water.
- (2) show us ways to recycle used water at home.
- (3) teach us what to do if we experience water shortage in future.
- (4) provide us with specially-designed containers to save more water.

7. Study the classification chart below.



Which of the organisms below should be classified under Group A?

- ~~(1)~~ tadpole
- ~~(3)~~ hamster

- ~~(2)~~ whale
- ~~(4)~~ parrot

8. Which of the following are products of respiration?

- A: Nitrogen
- B: Oxygen
- C: Carbon dioxide
- D: Water vapour

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

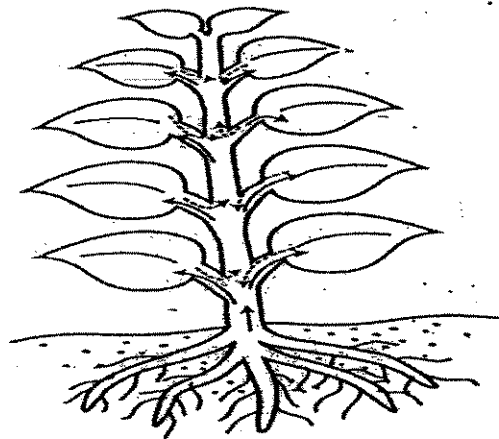
9. The diagram below shows Mr Lim blowing into a party pipe.



Which of the following correctly describes what happens to his ribs, diaphragm and chest when he blows into the pipe?

|     | Ribs                  | Diaphragm      | Chest   |
|-----|-----------------------|----------------|---------|
| (1) | move out and upwards  | move downwards | bigger  |
| (2) | move out and upwards  | move upwards   | smaller |
| (3) | move in and downwards | move downwards | bigger  |
| (4) | move in and downwards | move upwards   | smaller |

10. The diagram below shows a plant.



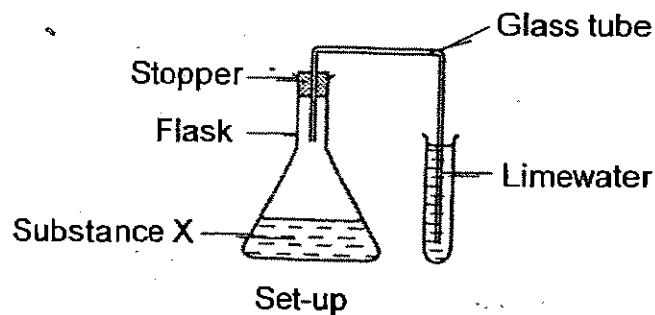
**Key:**

—▶ **Arrow A**  
 - - -▶ **Arrow B**

The arrows **A** show the movement of \_\_\_\_\_ to all parts of the plant whereas the arrows **B** show the movement of \_\_\_\_\_ to all parts of the plant.

- |                            |                            |
|----------------------------|----------------------------|
| (1) food, water            | (2) water, food            |
| (3) oxygen, carbon dioxide | (4) carbon dioxide, oxygen |

11. Charles set up the apparatus as shown below. He conducted the experiment a few times using substance X. He noticed that the limewater turned chalky.



Which of the following is substance X likely to be?

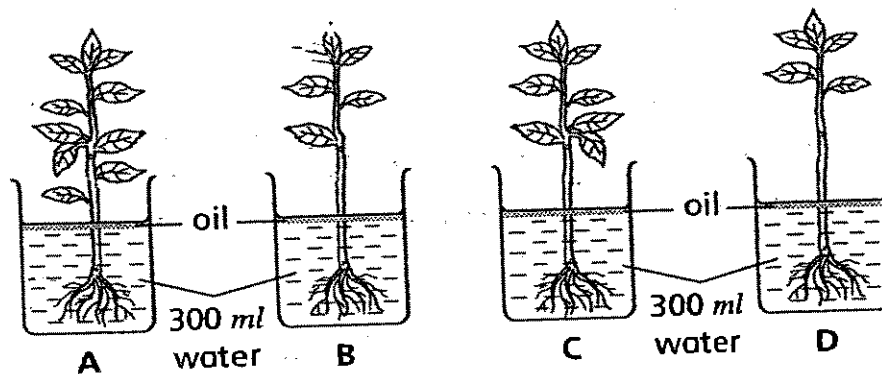
- |                |               |
|----------------|---------------|
| (1) Oil        | (2) Lemon tea |
| (3) Iced water | (4) Coca-cola |
12. Which of the following statements is incorrect?
- (1) A child has a lower heartbeat rate than an adult.
  - (2) The heart needs food, water and oxygen to function.
  - (3) The number of heartbeats per minute is the pulse rate.
  - (4) A heartbeat is a cycle of contraction and relaxation of the heart muscles.

13. Which of the following are parts of the circulatory system?

- A: heart
- B: lungs
- C: nose
- D: gullet
- E: blood vessels
- F: windpipe

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

14. Ansel sets up an experiment as shown in the picture below.  
Refer to the experiment below to answer Questions 14 and 15.

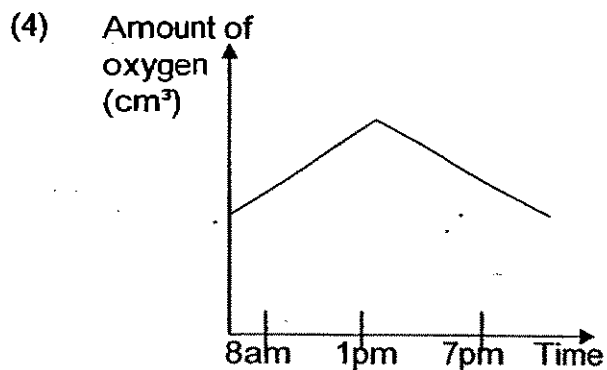
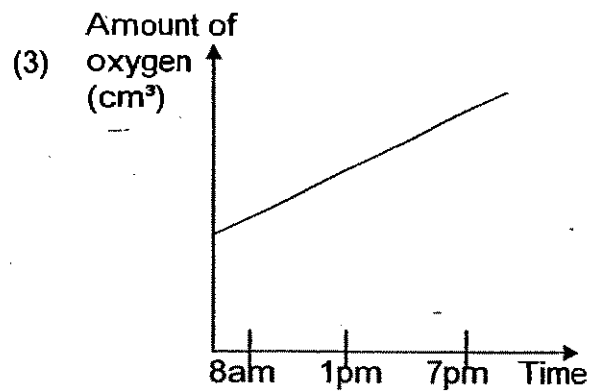
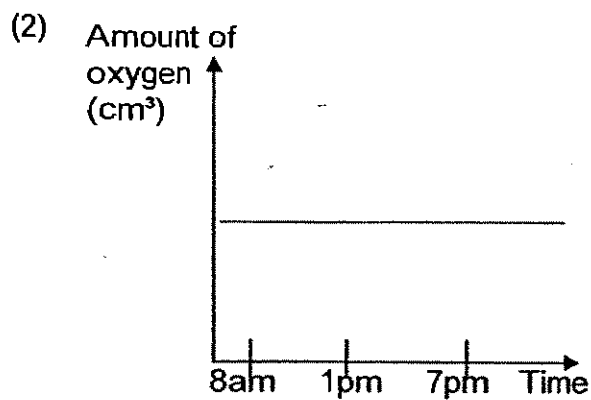
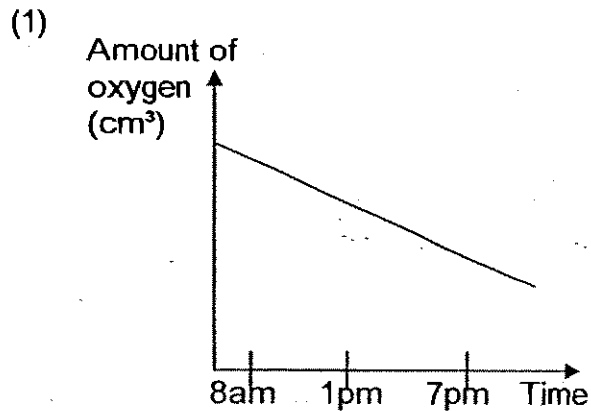


What is the purpose of using oil in the experiment?

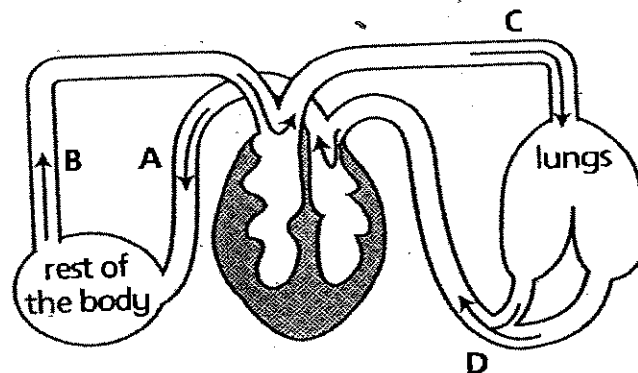
- (1) It is a fertiliser for the plant.  
(2) It prevents the water from evaporating.  
(3) It prevents oxygen from entering into the water.  
(4) It prevents carbon dioxide from entering into the water.
15. After a week, different amount of water was left in the beakers. Which one of the following correctly shows the order of the beakers, according to the amount of liquid left?

| Least amount of water left in the beaker <span style="float: right;">→</span> Most amount of water left in the beaker |   |   |   |
|-----------------------------------------------------------------------------------------------------------------------|---|---|---|
| (1) A                                                                                                                 | B | C | D |
| (2) A                                                                                                                 | C | B | D |
| (3) C                                                                                                                 | D | B | A |
| (4) D                                                                                                                 | C | B | A |

16. William kept some plants inside a wooden box. He recorded the amount of oxygen in the box at different times of a day. Which one of the following graphs correctly shows the amount of oxygen in the box over time?

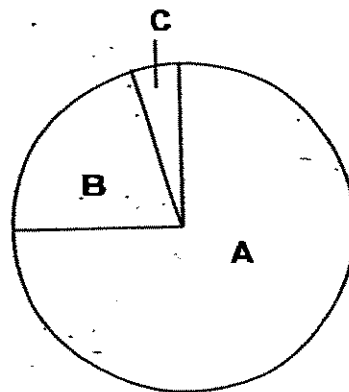


17. The diagram below shows the flow of blood in a body.



At which positions, A, B, C and D, would the blood be richer in oxygen?

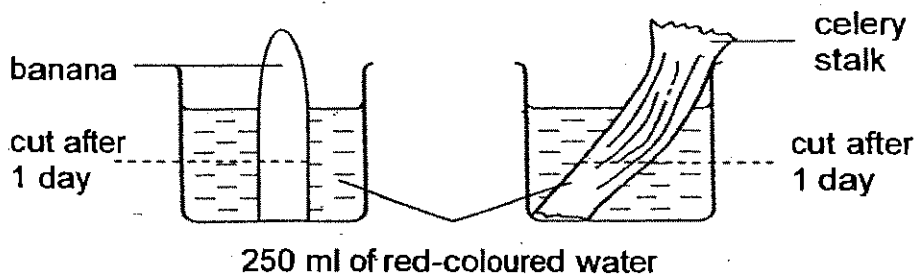
- (1) A and B only                      (2) A and D only  
(3) B and C only                      (4) C and D only
18. The air in the atmosphere is made up of different gases. The pie chart below shows only the composition of the 3 gases, A, B and C.



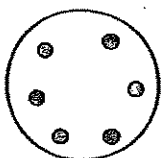
Which of the gas(es) A, B or C is/are needed for making fertilisers and for plants growth?

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

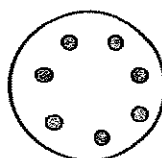
19. Yati put a banana (with skin removed) and a celery stalk into a beaker of red-coloured water. After a day, she cut the banana and celery stalk and made a drawing of what she saw. Which one of the followings correctly shows the drawing she made?



(1) Banana



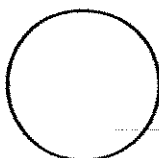
Celery Stalk



**Key**

● — red colour

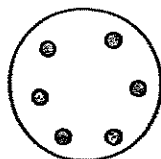
(2) Banana



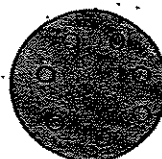
Celery Stalk



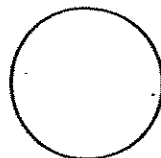
(3) Banana



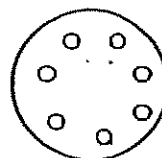
Celery Stalk



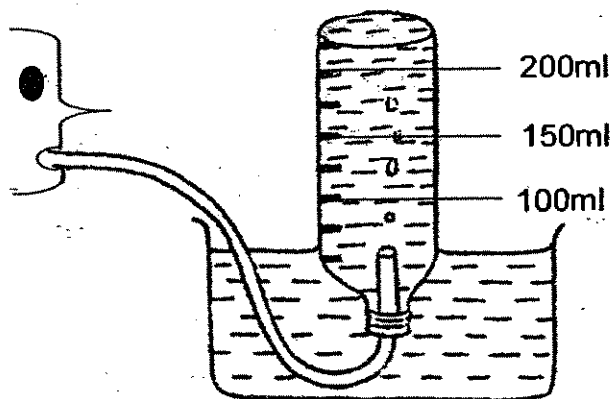
(4) Banana



Celery Stalk



20. Amy, Bala, Caili and David took turns to blow into the apparatus as shown in the diagram below.



The table below shows the amount of water left in the bottle after each person took one deep breath and blew into tube.

|                                    | Amy   | Bala  | Caili | David |
|------------------------------------|-------|-------|-------|-------|
| Amount of water left in the bottle | 175ml | 125ml | 150ml | 200ml |

### Who has the largest lung capacity?

- (1) Amy                      (2) Bala  
(3) Caili                  (4) David

21. Which of the following materials allow magnetic forces to pass through?

**A:** a sheet of aluminum

**B :** a piece of tracing paper

**C : a glass of water**

**D : a sheet of plastic**

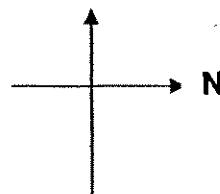
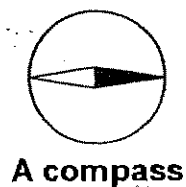
- (1) A and C only                      (2) A, B and D only  
(3) B, C and D only                (4) A, B, C and D



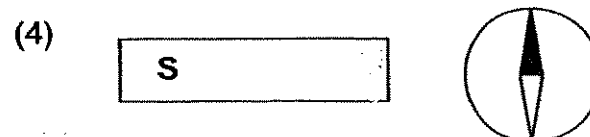
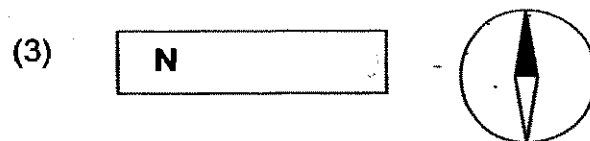
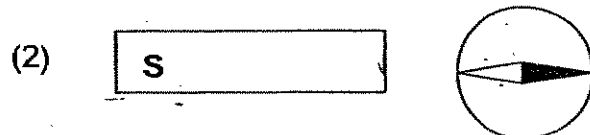
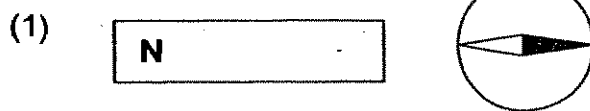
22. Which one of the following statements about magnets is correct?

- (1) A magnet attracts all metals.
- (2) A round magnet has no poles.
- (3) A magnet will lose its magnetism when heated.
- (4) A bar magnet has a stronger magnetic force than a U-shaped magnet.

23. The diagram below shows a compass placed on a table.



Which diagram below shows the correct alignment of the compass needle when a bar magnet is placed next to it?



- Filter the mixture through filter paper  $\longrightarrow$  Use a magnet  $\longrightarrow$  Boil the mixture
- Step 1** **Step 2** **Step 3**

- (1) iron filings, sand and salt
- (2) milk powder, coins and sugar
- (3) sand, iron filings and marbles
- (4) iron nails, iron filings and rubber band

- A. wall  
B. wooden door  
C. aluminum grille  
D. classroom whiteboard ✓

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

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

Date: \_\_\_\_\_

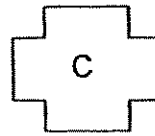
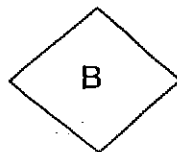
Class: \_\_\_\_\_

**Section B (30 marks)**

Write your answers to questions 26 to 37 in the spaces provided.

Marks will be deducted for misspelt key words.

26. Benny did an experiment using 3 solids of different shapes and sizes as shown below. (3 marks)

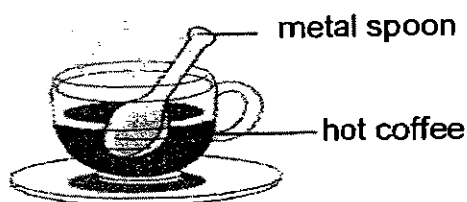


He first filled a measuring cylinder with  $50\text{cm}^3$  of water. He then placed object A into the cylinder and recorded the volume as shown in the table below. He added the other objects, B and C one at a time into the measuring cylinder.

|                                        | Volume Recorded ( $\text{cm}^3$ ) |
|----------------------------------------|-----------------------------------|
| Water + Object A                       | $75\text{ cm}^3$                  |
| Water + Object A + Object B            | $120\text{ cm}^3$                 |
| Water + Object A + Object B + Object C | $150\text{ cm}^3$                 |

Find the volume of water + Object A + Object C. Show your workings in the box shown below.

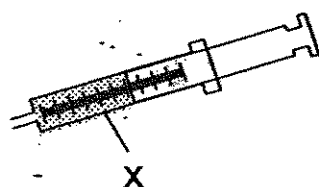
27. The picture below shows a cup of hot coffee with a metal spoon in it. The temperature of the surrounding is  $20^{\circ}\text{C}$ . (2 marks)



In the table below, put a tick ( $\checkmark$ ) at the correct boxes to indicate which object gains or loses heat to its surroundings.

|      | Object      | Gains Heat | Loses Heat |
|------|-------------|------------|------------|
| (i)  | Metal spoon |            |            |
| (ii) | Hot coffee  |            |            |

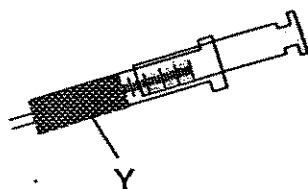
28. Ali placed a substance X in a syringe as shown. It cannot be compressed and it has no definite shape.



- (a) What is the state of the substance?

(1 mark)

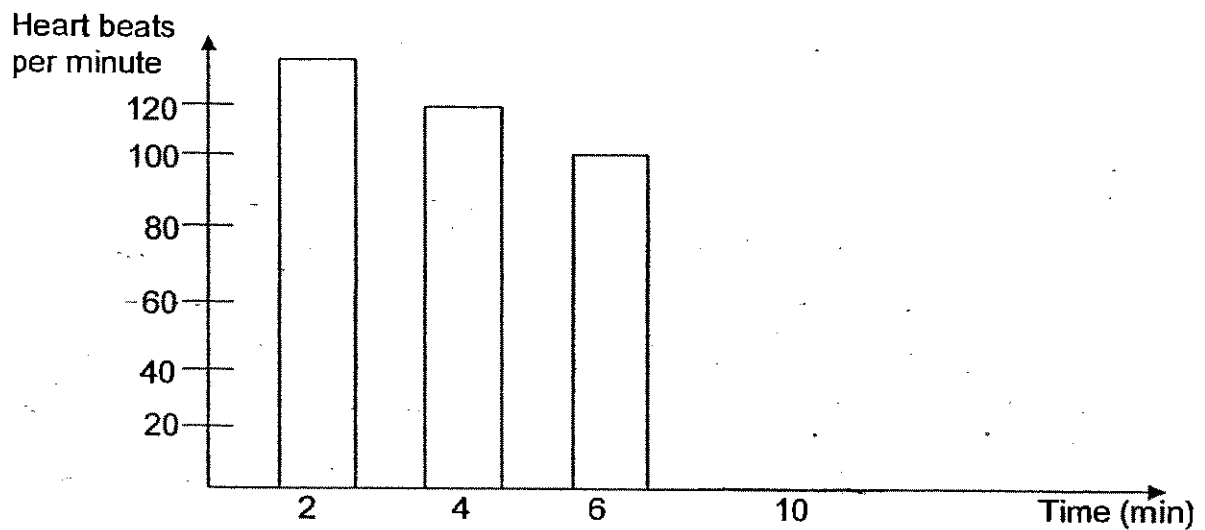
Ali then replaced substance X with another substance Y in the syringe as shown above. It also cannot be compressed but it has a definite shape.



- (b) Name the state of substance Y.

(1 mark)

29. Zhihong is a fast swimmer. His normal heart rate is 70 beats per minute. He swam for 6 minutes before he rested. The graph below shows his heart rate for the first 6 minutes.



- (a) On the graph above, complete the bar to represent his heart rate at the 10<sup>th</sup> minute. (1 mark)
- (b) Explain why his heart beats faster when he swims. (2 marks)

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- 30(a) How is the function of the stomata similar to the gills of a fish?  
(1 mark)

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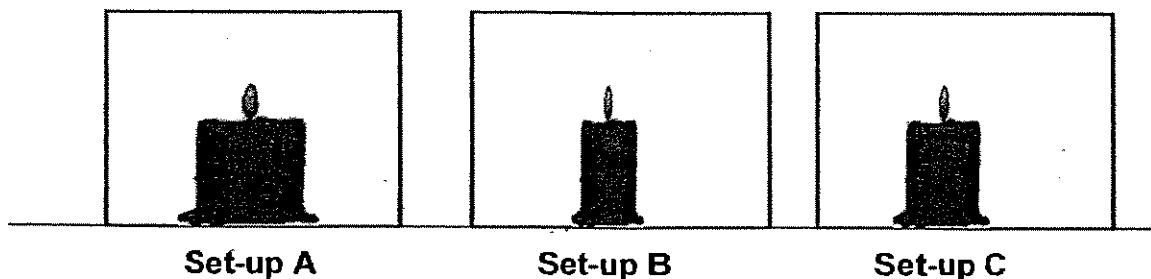
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- (b) Explain why there are more stomata found on the underside of the leaves of a plant than on its upper side. (1 mark)

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31. Leo conducted an experiment as shown below using some candles and 3 identical glass jars. He recorded the time taken for each candle to burn before it went out.



- (a) What is the aim of his experiment? (1 mark)

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- (b) State 2 variables that he had to keep the same for the above experiment. (2 mark)

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- (c) Arrange the set-up A, B and C according to the order which the candles went out first. (1 mark)

Set-up \_\_\_\_\_, Set-up \_\_\_\_\_, Set-up \_\_\_\_\_  
First candle to go out Last candle to go out

32. Study the table below.

| Mammals    | Mass      | Pulse rate<br>(beats per<br>minute) |
|------------|-----------|-------------------------------------|
| Mouse      | 25 grams  | 670                                 |
| Rat        | 200 grams | 420                                 |
| Guinea pig | 300 grams | 300                                 |
| Rabbit     | 2 kg      | 205                                 |
| Small dog  | 5 kg      | 120                                 |
| Large dog  | 30 kg     | 85                                  |
| Man        | 70 kg     | 72                                  |
| Horse      | 450 kg    | 38                                  |

- (a) Based on the information given in the table above, what is the relationship between the ~~size~~<sup>mass</sup> of the mammals and their pulse rate? (1 mark)

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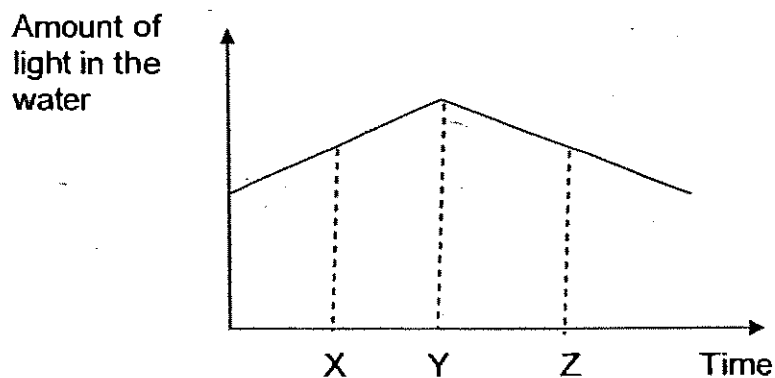
- (b) Would a young lamb have a higher or lower pulse rate than an adult sheep? (1 mark)

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33. A tank containing hydrilla plants was placed in a garden for a day. The table below shows the number of bubbles produced by the plants whereas the graph shows amount of light in the water during the 3 timings of the day, X, Y and Z.

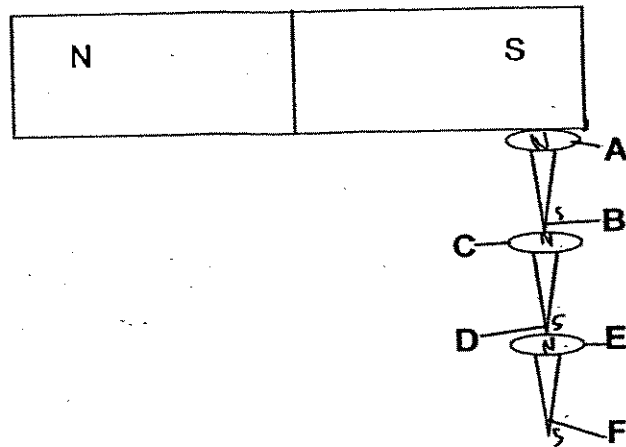


| Time                                  | X | Y  | Z |
|---------------------------------------|---|----|---|
| Number of bubbles produced per minute | 4 | 12 | 3 |

Based on the above information, put a tick in the right column for each of the following statements. (4 marks)

|                                                                                                                                           | True | False | Not possible to tell |
|-------------------------------------------------------------------------------------------------------------------------------------------|------|-------|----------------------|
| (i) The increase in the number of bubbles produced from Time X to Y was due to the increase in the amount of carbon dioxide in the water. |      |       |                      |
| (ii) As the light intensity in the water decreases, the number of bubbles produced also decreases.                                        |      |       |                      |
| (iii) The plants were making food from time X to Z.                                                                                       |      |       |                      |
| (iv) There will be no bubbles produced if there is no light.                                                                              |      |       |                      |

34. A magnet was placed next to a pin. Soon it was observed that more pins could be picked up. A, B, C, D, E and F are ends of the pins.



- (a) Name the poles of the ends of the pins below by writing 'N-pole' or 'S-pole' in the space provided. (1 mark)

(i) End A : \_\_\_\_\_

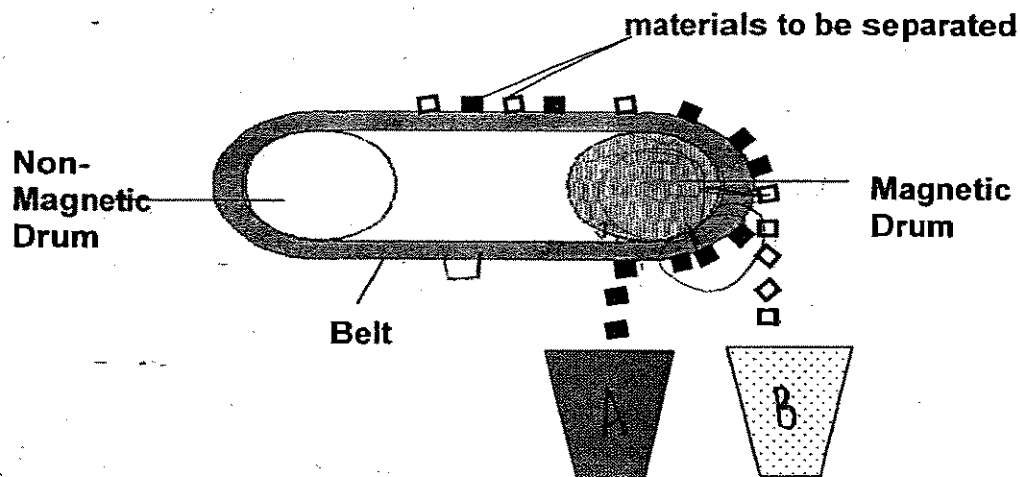
(ii) End F : \_\_\_\_\_

- (b) When the same magnet was used to attract pins which were heavier, explain why fewer pins could be picked. (1 mark)

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35. The diagram below shows a machine that is used to separate magnetic materials from non-magnetic ones.



- (a) In which bucket, A or B, will the magnetic objects drop into? (1 mark)

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- (b) Explain why a non-magnetic material is used to make the belt. (1 mark)

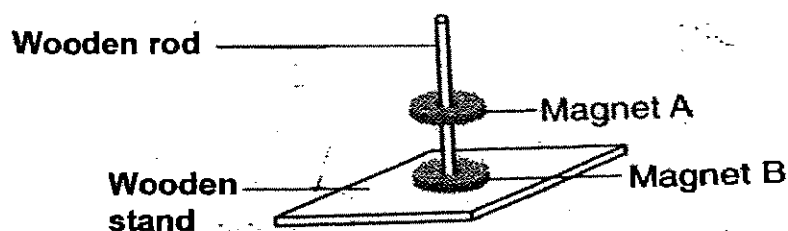
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36. Read the sentences carefully and write 'True' or 'False' in the boxes provided. (2 marks)

- i) A piece of copper can be magnetized by passing electricity through it. \_\_\_\_\_
- ii) The bigger the magnet the stronger is the strength of the magnet. \_\_\_\_\_
- iii) The poles of a U-shaped magnet is at the centre. \_\_\_\_\_
- iv) A magnet can attract things that are made of iron, steel or nickel. \_\_\_\_\_

37. The diagram below shows 2 ring magnets, A and B.



- (a) Explain why Magnet A could float above Magnet B. (2 marks)

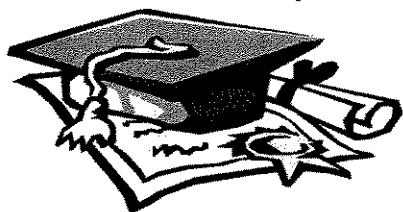
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**END OF PAPER**

Setters: Ms Alice Chong  
Mrs Manju





# ANSWER SHEET

NANYANG PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007  
CONTINUAL ASSESSMENT (2)

1. 2

2. 1

3. 4

4. 2

5. 4

6. 2

7. 1

8. 2

9. 4

10. 2

11. 4

12. 1

13. 1

14. 2

15. 2

16. 1

17. 2

18. 1

19. 2

20. 2

21. 4

22. 3

23. 2

24. 1

25. 1

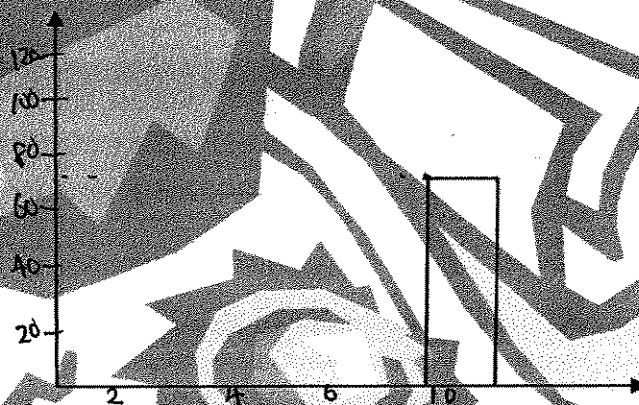
26)  $75 - 50 = 25$  (object A) $120 - 75 = 45$  (object B) $150 - 120 = 30$  (object C) $30 + 25 = 55$  $55 + 50 = 105$ 

The volume of water + Object A +  
object C is  $105\text{cm}^3$

27) i) Gains Heat ii) Loses Heat

28) a) Liquid. B) Solid

29) a)



b) The heart has to beat faster so  
that the blood can transport  
more oxygen and food to the other  
parts of the body to produce  
more energy.

30) a) The stomata and gills exchange  
gases for the body.

b) It is to prevent water loss.

31) a) To find out whether the size of the candle affects the burning time.

b) The size of the jar and where it is placed.

c) A, C, B

32) a) The smaller the mass of the mammal, the higher the pulse rate.

b) A higher pulse rate.

33) i) Not    ii) True    iii) True    iv) False

34) a) i) N-pole    ii) S-pole

b) The magnetism B not strong enough to pick up more pins.

35) a) Bucket A.

b) So that the magnetic force can pass through hit and the magnetic drum can attract the magnetic object.

36) i) False    ii) False    iii) False    iv) True

37) a) It is because, magnet A and B have the same pole, so therefore it repels each other float in the air, if they have different pole N and S they will not float in the air.

**Pei Chun Public School**  
**Continual Assessment – 2007**  
**Science**  
**Primary 4**

Name : \_\_\_\_\_ ( )

Date : 24 August 2007

Class : Pri. 4 ( )

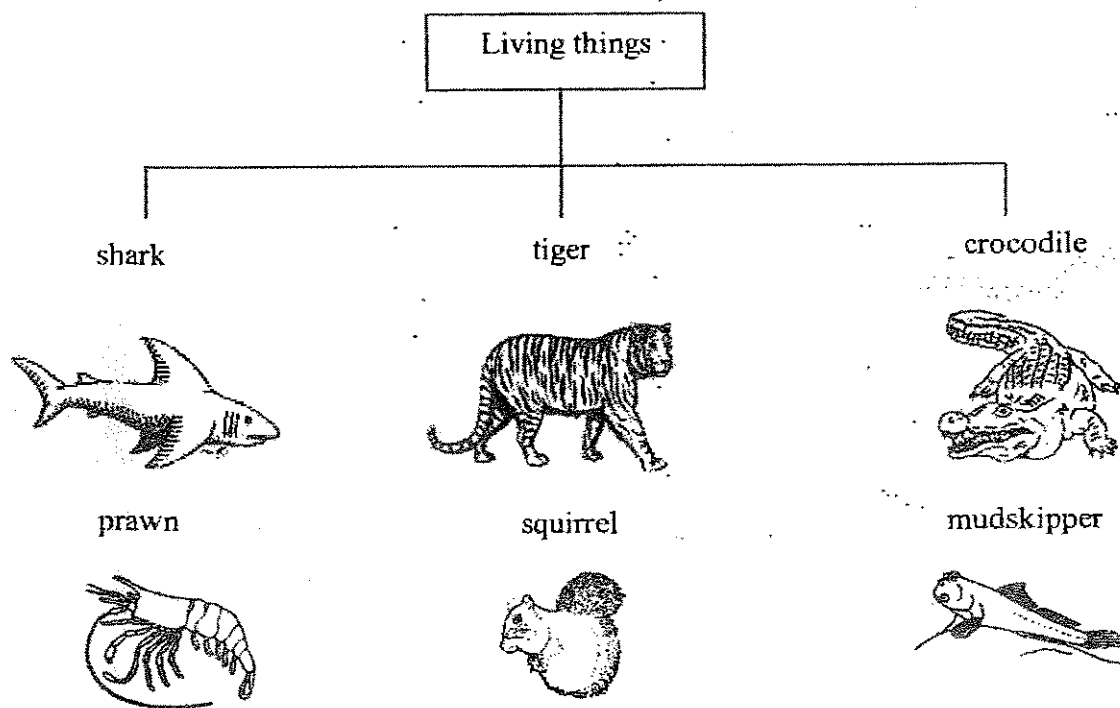
Science Teacher : \_\_\_\_\_

Time : 1 hr 20 min

**Section A (25 × 2 marks)**

For questions 1 to 25, choose the most suitable answer and shade its number (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.

1. Some living things have been classified as shown below.



The living things are classified according to \_\_\_\_\_.

- (1) their body covering
- (2) the way they move
- (3) where they live
- (4) what they eat

( )



2. Max conducted a series of tests on materials E, F, G and H. His results are shown below.

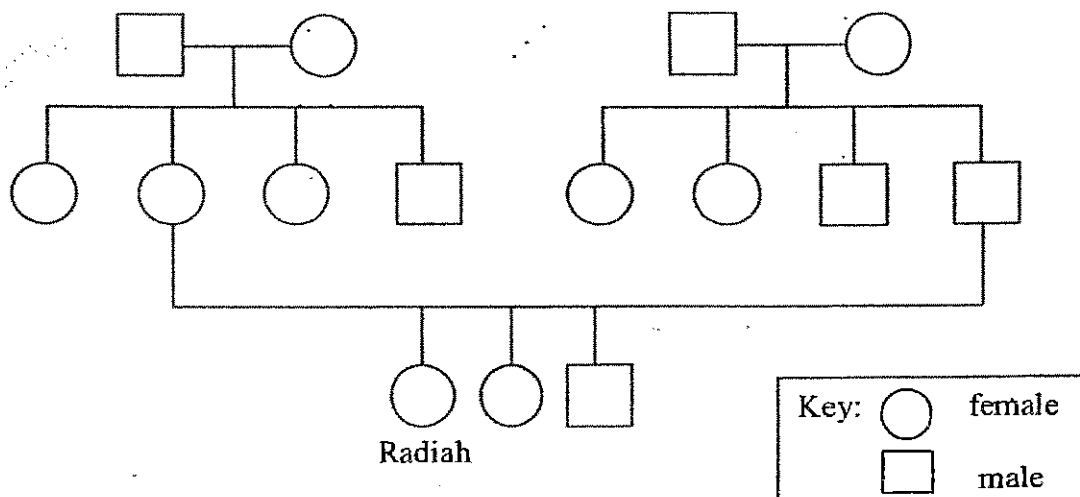
|             | E | F | G | H |
|-------------|---|---|---|---|
| Breakable   | ✓ | × | × | × |
| Flexible    | × | ✓ | × | ✓ |
| Stretchable | × | ✓ | × | ✓ |
| Waterproof  | ✓ | ✓ | ✓ | × |

Which material is the most suitable to be made into a long-lasting bookshelf?

- (1) E  
(2) F  
(3) G  
(4) H

( )

3. Study Radiah's family tree below.

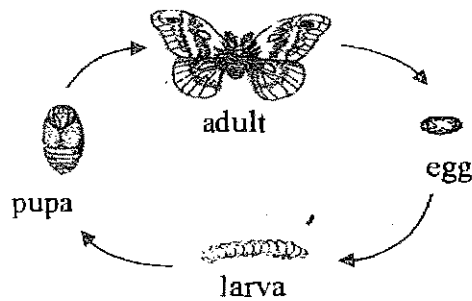


Which of the statements below is definitely true?

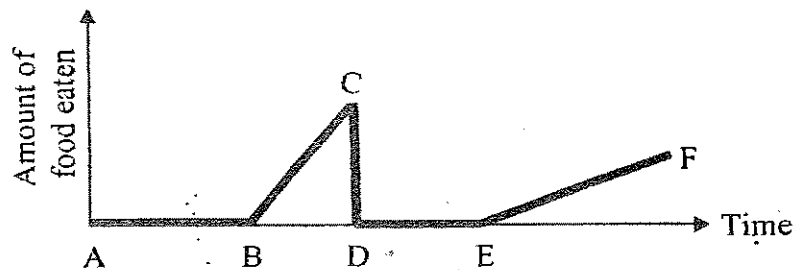
- (1) Radiah has two siblings.  
(2) Radiah has three uncles.  
(3) Radiah's mother has one sister.  
(4) Radiah's father is the youngest son.

( )

4. The diagram below shows the stages in the life cycle of a butterfly.



The graph below shows the amount of food eaten by the butterfly at the 4 different stages of its life cycle.



The line 'BC' shows the \_\_\_\_\_ stage of the butterfly.

- (1) egg
- (2) larva
- (3) pupa
- (4) adult

5. Four identical dishes, A, B, C and D, each contained the same amount of cotton wool. Five beans were placed on the cotton wool in each of the dishes for 5 days. The containers were placed in different places.

| Dish | Air | Water | Sunlight | Temperature |
|------|-----|-------|----------|-------------|
| A    | Yes | Yes   | Yes      | 30°C        |
| B    | No  | Yes   | Yes      | 29°C        |
| C    | Yes | No    | No       | 33°C        |
| D    | Yes | Yes   | No       | 29°C        |

Based on the information in the table above, which dish(es) will have seedlings in 5 days' time?

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

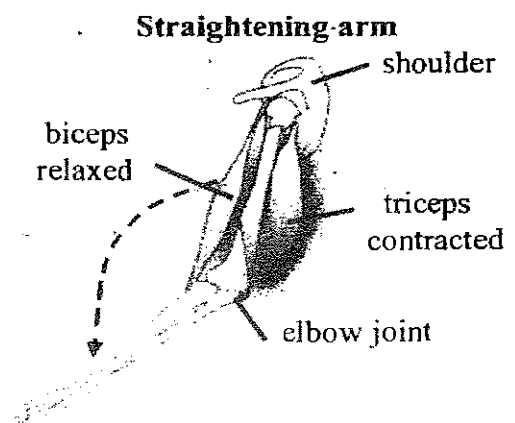
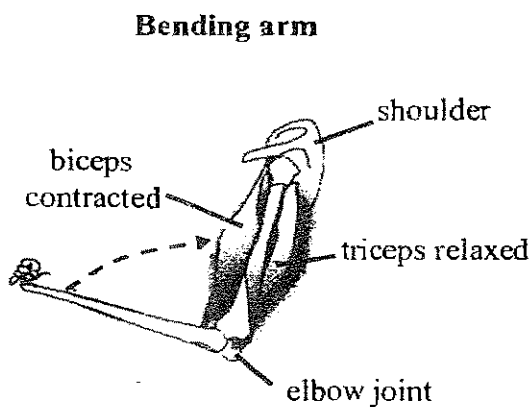
6. A, B, C and D represent Shanti's sense organs. The table below shows how the sense organs tell her about her surroundings.

| Sense Organ | Information                         |
|-------------|-------------------------------------|
| A           | Tells her that the rock is rough.   |
| B           | Tells her that there is thunder.    |
| C           | Tells her that the ball is blue.    |
| D           | Tells her the scent of her perfume. |

Based on the information given, what do A, B, C and D represent?

|     | A    | B    | C    | D    |     |
|-----|------|------|------|------|-----|
| (1) | eyes | ears | nose | skin |     |
| (2) | eyes | ears | skin | nose |     |
| (3) | skin | eyes | nose | ears |     |
| (4) | skin | ears | eyes | nose | ( ) |

7. When muscles contract, they shorten. When muscles relax, they lengthen. Muscles move bones. The arrows show the directions in which the bones move.

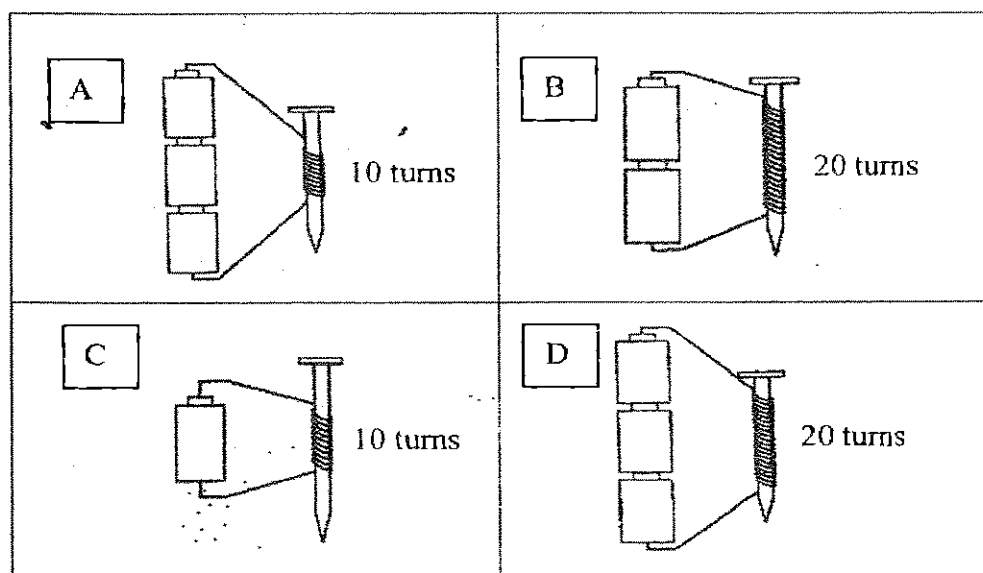


According to the diagrams, to straighten the arm, \_\_\_\_\_.

- (1) the biceps lengthen and the triceps lengthen
- (2) the biceps lengthen and the triceps shorten
- (3) the biceps shorten and the triceps lengthen
- (4) the biceps shorten and the triceps shorten

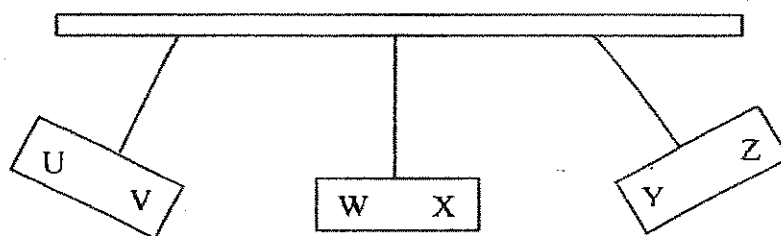
( )

8. An iron nail becomes an electromagnet when it is placed in a coil of wire joined to batteries. Samuel wants to find out whether the number of turns of the coil affects the strength of the electromagnet.



Which two arrangements in the above diagrams should he set up to conduct a fair test?

- (1) A and C only  
 (2) A and D only  
 (3) B and D only  
 (4) C and D only ( )
9. The diagram below shows 3 magnets that repel one another when placed on a table.

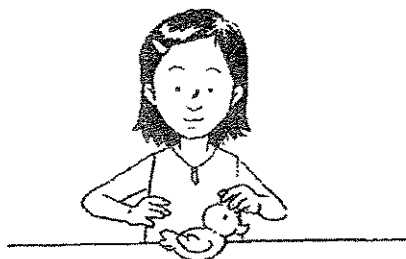


Which of the following correctly shows the possible poles of U, W and Z?

|   | U     | W     | Z     |
|---|-------|-------|-------|
| A | North | North | South |
| B | North | South | South |
| C | South | South | North |
| D | South | North | North |

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

10. Suying has a piece of plasticine which is 160g and has a volume of  $40\text{cm}^3$ . She moulded the whole piece of plasticine into 3 parts: head, body and tail. She measured and recorded the masses and volumes of the 3 parts before putting them together to form a duck.



Which of the following shows the correct results?

(1)

| Shape of plasticine | Mass (g) | Volume ( $\text{cm}^3$ ) |
|---------------------|----------|--------------------------|
| head                | 50       | 11                       |
| body                | 60       | 22                       |
| tail                | 50       | 15                       |

(2)

| Shape of plasticine | Mass (g) | Volume ( $\text{cm}^3$ ) |
|---------------------|----------|--------------------------|
| head                | 48       | 12                       |
| body                | 70       | 18                       |
| tail                | 40       | 10                       |

(3)

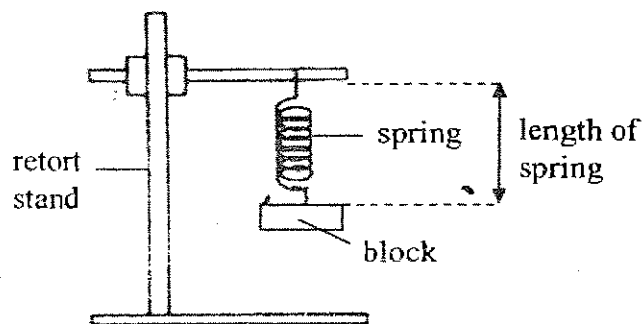
| Shape of plasticine | Mass (g) | Volume ( $\text{cm}^3$ ) |
|---------------------|----------|--------------------------|
| head                | 40       | 10                       |
| body                | 80       | 20                       |
| tail                | 40       | 5                        |

(4)

| Shape of plasticine | Mass (g) | Volume ( $\text{cm}^3$ ) |
|---------------------|----------|--------------------------|
| head                | 48       | 12                       |
| body                | 88       | 22                       |
| tail                | 24       | 6                        |

( )

11. 5 blocks, P, Q, R, S and T, of different masses are attached to a spring one at a time as shown below.



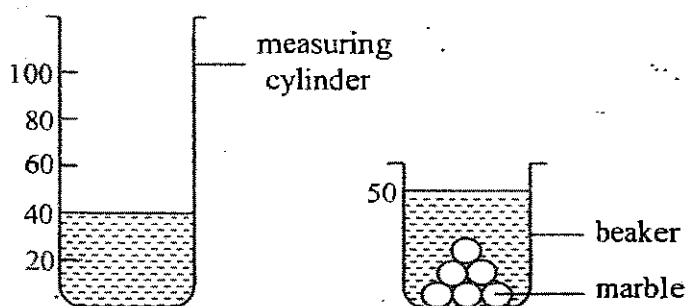
The length of the spring is measured and recorded in the table below.

| Block | Length (cm) |
|-------|-------------|
| P     | 18          |
| Q     | 24          |
| R     | 5           |
| S     | 29          |
| T     | 11          |

Arrange the blocks in decreasing order of mass.

- (1) S, Q, P, T, R                      (2) T, P, S, R, Q  
 (3) Q, R, S, P, T                    (4) S, T, P, Q, R

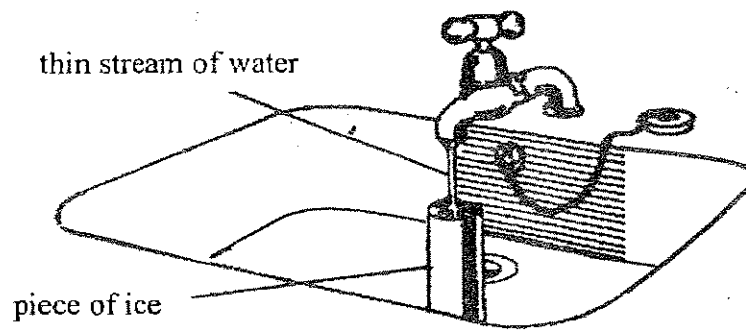
12. Weiliang set up an experiment as shown below.



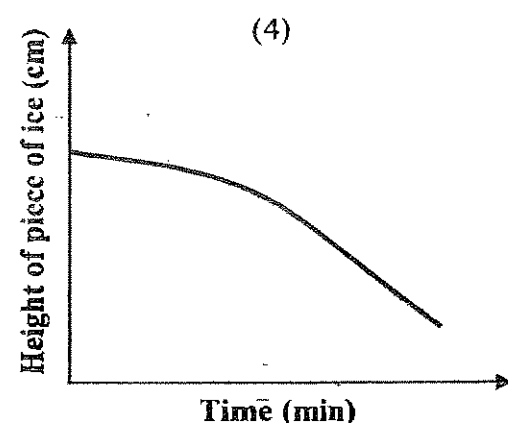
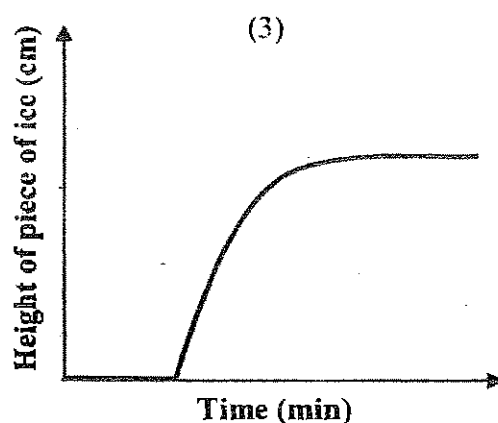
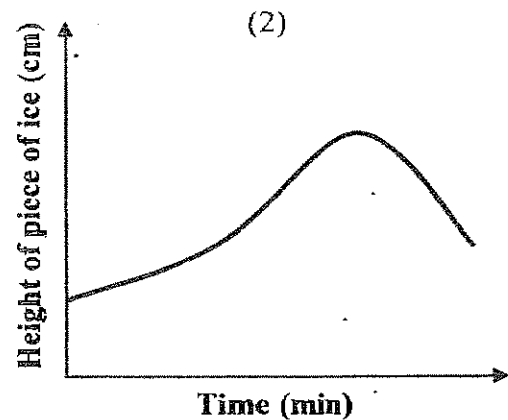
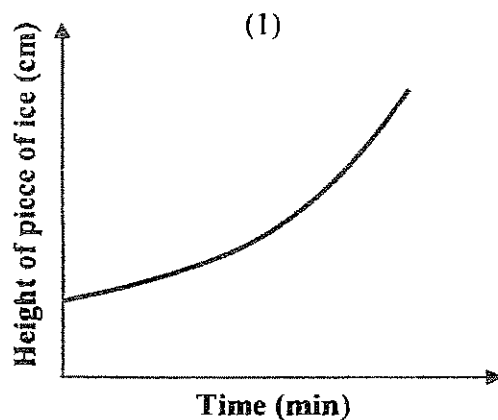
Which of the following would he observe if he transfers two of the marbles from the beaker into the measuring cylinder?

|     | Water level in the measuring cylinder | Water level in the beaker |
|-----|---------------------------------------|---------------------------|
| (1) | Nothing happens                       | Rises                     |
| (2) | Rises                                 | Nothing happens           |
| (3) | Rises                                 | Falls                     |
| (4) | Falls                                 | Falls                     |

13. Aliya wanted to investigate the way a piece of ice is worn away by warm running water. She placed a long piece of ice in a sink and let a thin stream of water run slowly over it.

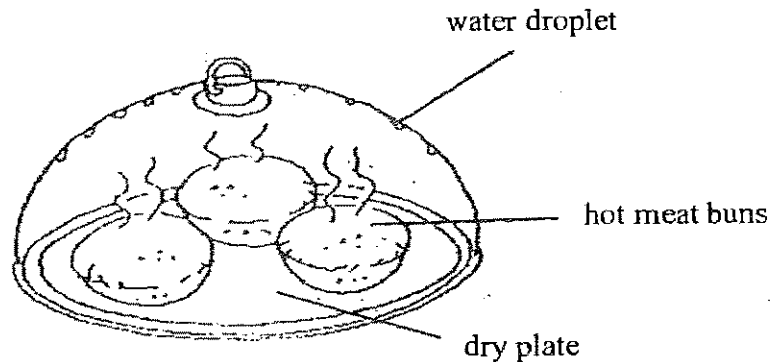


Aliya measured the height of the piece of ice and plotted her results in a graph. Which of the following graphs shows the correct change in the height of the piece of ice?



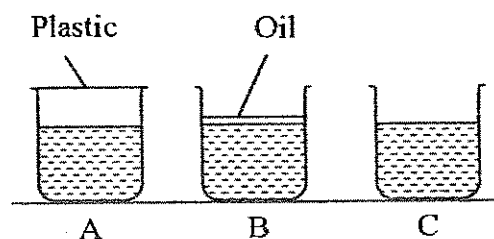
( )

14. Mum placed some hot meat buns on a dry plate and covered it with a plastic cover. After a few minutes, she saw tiny water droplets on the plastic cover.



Where do you think the water droplets came from?

- (1) Warm water vapour from the meat buns rose up to the plastic cover and condensed on the inside of the plastic cover.
  - (2) Warm water from the plate rose up to the plastic cover and condensed on the inside of the plastic cover.
  - (3) Warm water vapour from the air inside the plastic cover condensed on the outside of the plastic cover.
  - (4) Warm water vapour from the air outside the plastic cover condensed on the inside of the plastic cover. ( )
15. Arthur placed an equal amount of water into 3 identical beakers. He put a plastic cover over beaker A, poured a layer of oil into beaker B and left the water in beaker C exposed. He then placed all the 3 beakers side by side in the school field.



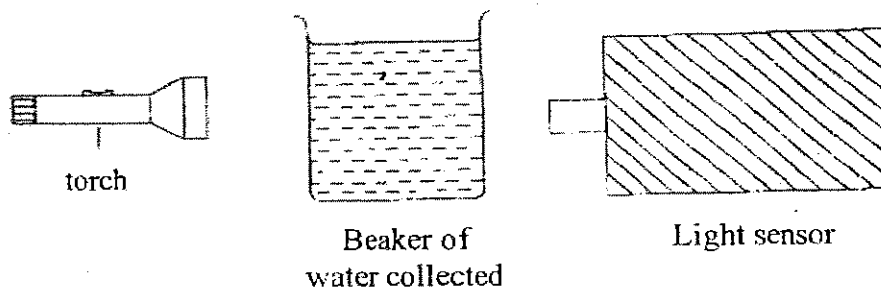
Which of the following shows what happened several hours later?

- (1)
- (2)
- (3)
- (4)

( )



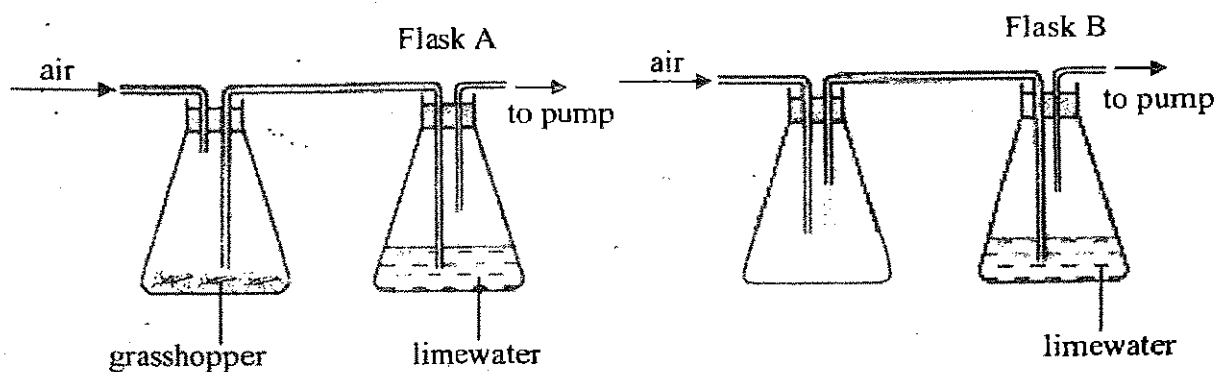
16. One way of checking whether water is polluted is to see how clear it is. In general, the clearer the water, the less polluted it is. With this in mind, a group of P4 pupils collected four beakers of water from four different places, A, B, C and D. Using the set-up below, they measured and recorded the amount of light that passed through the four beakers of water.



The table below shows the data collected. From the data, which place has water that is the most polluted?

|     | Place | Amount of light received by the sensor (units) |
|-----|-------|------------------------------------------------|
| (1) | A     | 1.2                                            |
| (2) | B     | 4.0                                            |
| (3) | C     | 7.8                                            |
| (4) | D     | 5.5                                            |

17. Meiling prepared the setup below.

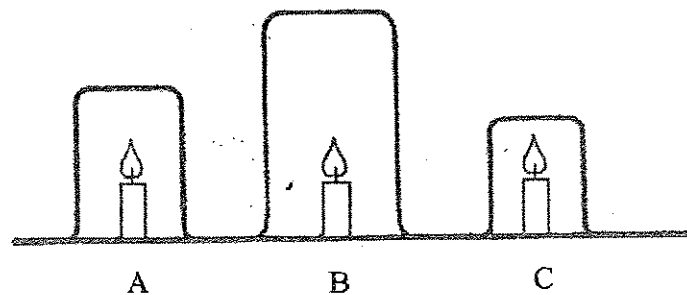


Meiling observed that the limewater in Flask A turned more chalky than the limewater in Flask B. Which of the following is the most likely reason for Meiling's observation?

- (1) Flask A does not have any carbon dioxide but Flask B does.
- (2) Flask A has carbon dioxide but Flask B does not.
- (3) Flask B has more carbon dioxide than Flask A.
- (4) Flask B has less carbon dioxide than Flask A.

( )

18. Ranjit was given three gas jars of different sizes. He lighted three identical candles and inverted the 3 gas jars over them as shown below.

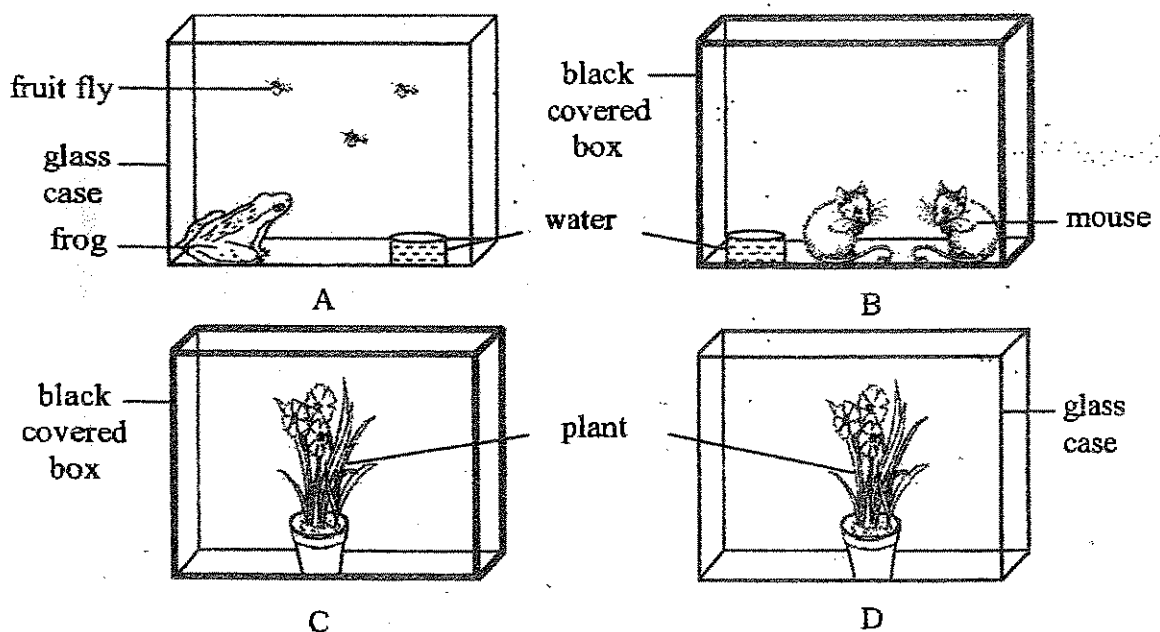


Which of the following shows the correct order in which the flames extinguish?

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

( )

19. A group of pupils prepared the set-ups below. The set-ups were placed side by side in an open field on a sunny day.

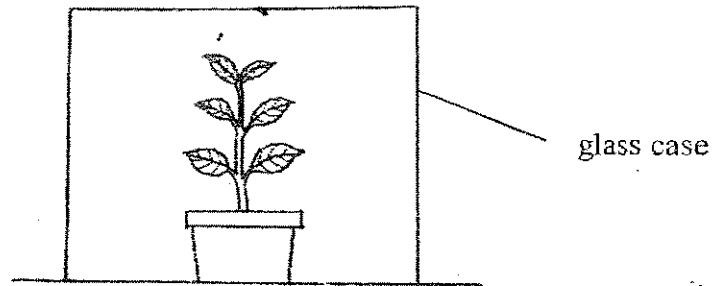
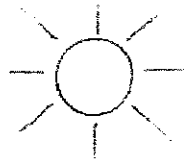


Which of the sealed set-ups above would contain the most amount of oxygen after 3 hours?

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

( )

20. A healthy plant is put in a glass case and left in a sunny place.

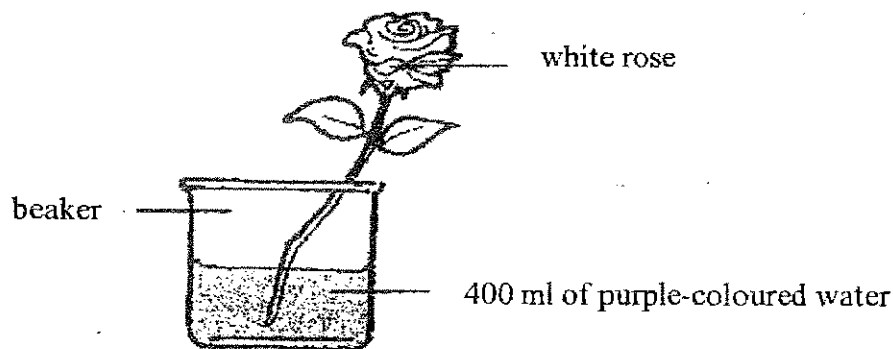


Which of the following most likely shows the change in the amount of gases present in the glass case after two hours?

|     | Carbon dioxide | Oxygen   | Water vapour |
|-----|----------------|----------|--------------|
| (1) | decrease       | increase | increase     |
| (2) | decrease       | decrease | increase     |
| (3) | increase       | increase | decrease     |
| (4) | increase       | decrease | increase     |

( )

21. Fionne sets up an experiment as shown below.



What will she observe after two days?

|     | Colour of petals | Amount of water left in the beaker (ml) |
|-----|------------------|-----------------------------------------|
| (1) | white            | 350                                     |
| (2) | purple           | 400                                     |
| (3) | purple           | 350                                     |
| (4) | white            | 400                                     |

( )

22. Mrs Lee asked the following question:  
Why does your heart beat faster when you exercise?  
3 pupils gave the following answers.

Ariel : To pump blood more quickly to all parts of our body.

Kumar : To supply more digested food and oxygen to all parts of our body.

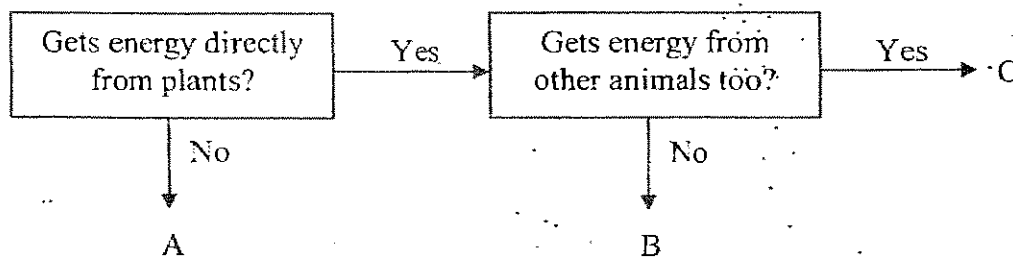
Nabil : To get rid of carbon dioxide produced by our body more quickly.

Who answered the above question correctly?

- (1) Ariel only  
(2) Ariel and Kumar only  
(3) Kumar and Nabil only  
(4) All of them

( )

23. Study the flow chart below. A, B and C represent 3 different animals.

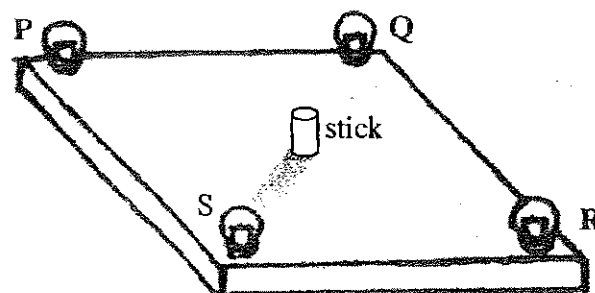


What could A, B and C most likely be?

|     | A          | B          | C       |
|-----|------------|------------|---------|
| (1) | tiger      | elephant   | mouse   |
| (2) | polar bear | goat       | cow     |
| (3) | lizard     | rhinoceros | lion    |
| (4) | fox        | frog       | chicken |

( )

24. A stick is placed in the middle of a board in a dark room.



Which of the bulbs have to be switched on so that the shadow of the stick shown in the diagram is formed?

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

( 67 )

25. Razak wrote the word 'CAT' on a card. He held the card in front of a mirror.

What Razak wrote:

C A T

What Razak saw in the mirror:

T A C

He held another card with the word 'FEED' in front of a mirror. What would Razak see in the mirror?

F E E D

(1) F E E D

(2) D E E F

(3) D E E F

(4) F E E D

( )

For Questions 26 to 30, please refer to Booklet K.

(End of Section A)

**Pei Chun Public School**  
**Continual Assessment – 2007**  
**Science**  
**Primary 4**

Name : \_\_\_\_\_ ( )

Date : 24 August 2007

Class : Pri. 4 ( )

Parent's Signature : \_\_\_\_\_

Science Teacher : \_\_\_\_\_

Time : 1 hr 20 min

|                                                          |     |
|----------------------------------------------------------|-----|
| Marks for Section A                                      | 60  |
| Marks for Section B                                      | 20  |
| Marks for Booklet K<br>(exclude Section A Qns. 26 to 30) | 10  |
| Marks for Practical Test                                 | 10  |
| Total Marks                                              | 100 |

**Section B (20 marks)**

For questions 31 to 39, write your answers in the spaces provided.

31. The table below shows the boiling points and freezing points of four substances, A, B, C and D.

| Substance | Boiling point (°C) | Freezing point (°C) |
|-----------|--------------------|---------------------|
| A         | 75                 | 20                  |
| B         | 80                 | 20                  |
| C         | 120                | 90                  |
| D         | 310                | 90                  |

- a) Which substance(s) is/are gas at 85°C ?

( 1 m )

\_\_\_\_\_

- b) Which substance(s) is/are solid at 30°C ?

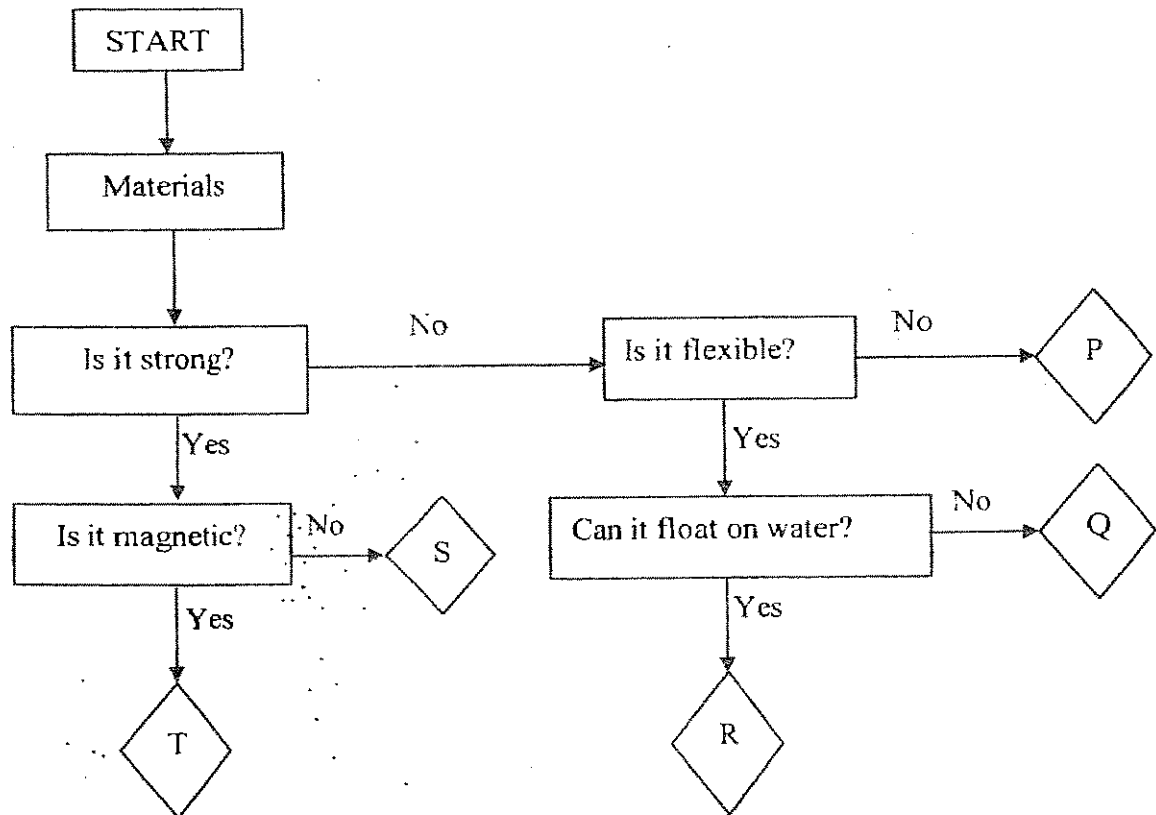
( 1 m )

\_\_\_\_\_

SCORE

69

32. Study the flowchart below.



a) State two similarities between material R and Q.

( 1 m )

---

---

b) If materials T and S were mixed together, explain how these two materials could be separated.

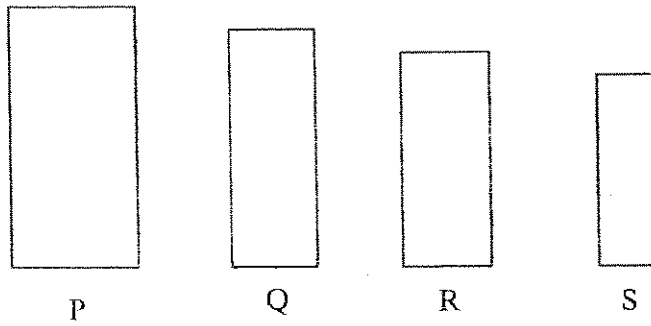
( 1 m )

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SCORE  
70

33. Kevin took 4 magnets and dipped the ends of the magnets into a box of staples.



Then he counted the number of staples picked up by each magnet. He recorded his results in the table below.

| Magnet | Number of staples picked up by the magnet |
|--------|-------------------------------------------|
| P      | 26                                        |
| Q      | 24                                        |
| R      | 30                                        |
| S      | 22                                        |

- a) Based on the results above, decide which of the following conclusion(s) is/are correct by ticking (✓) the appropriate columns. (1 m)

|      |                                                                               |  |
|------|-------------------------------------------------------------------------------|--|
| i)   | The wider the magnet, the stronger the magnetic force it exerts.              |  |
| ii)  | The strength of the magnetic force depends on the length of the magnet.       |  |
| iii) | The strength of the magnetic force does not depend on the size of the magnet. |  |
| iv)  | The thinner the magnet, the weaker the magnetic force it exerts.              |  |

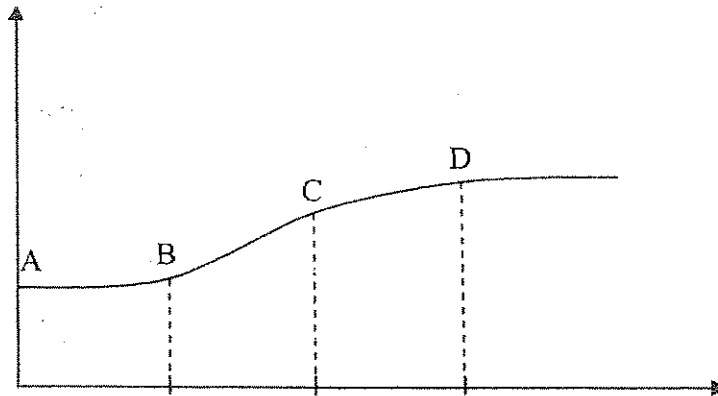
- b) Arrange the four magnets from the strongest to the weakest. (1 m)

SCORE

7



34. Clement started recording his pulse rate while he was resting at home at 10 a.m. Then he went for a swim. The graph below shows Clement's pulse rate from 10 a.m. onwards.



- a) From the graph, which part shows that he was resting? (1 m)

\_\_\_\_\_

- b) Explain why his pulse rate increased when he was swimming. (2 m)

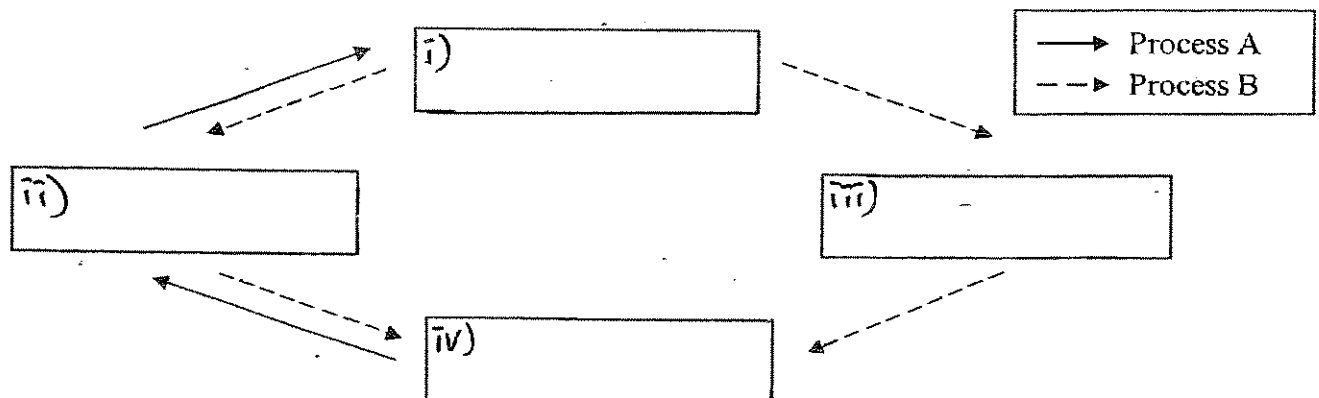
\_\_\_\_\_

\_\_\_\_\_

35. The diagram below shows how plants and animals exchange gases between themselves and their environment.

- a) Complete the diagram with the following words: (2 m)

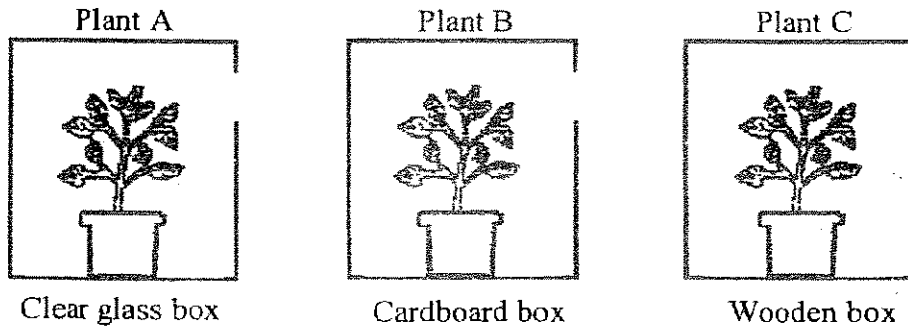
plants      carbon dioxide      animals      oxygen



- b) Name the processes A and B. (1 m)

A: \_\_\_\_\_ B: \_\_\_\_\_ SCORE 72

30. A teacher set up 3 boxes as shown below. The boxes were placed side by side near an open window.

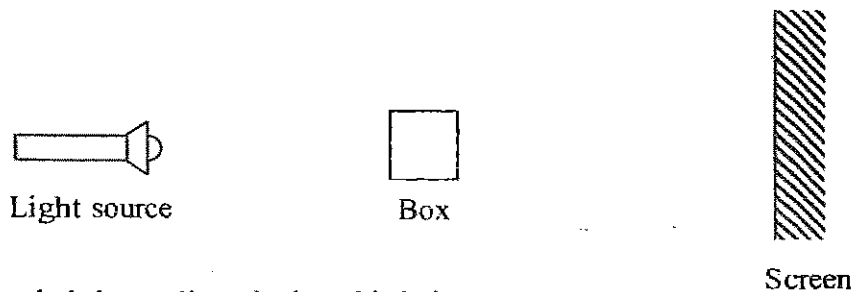


Some pupils made the following statements based on the set-ups shown above. Put (T) for a correct statement and (F) for a wrong statement.

(2 m)

- Plant A will most likely grow healthily. ( )
- Plants B and C will grow towards the openings in the boxes after a few days. ( )
- The experiment shows that plants need air, water and sunlight. ( )
- The above set-ups can be used to show how a plant responds to sunlight. ( )

37. Xuimei set up the experiment below to measure the length of the shadow when the distance between the light source and the box changes.



She recorded the readings in the table below.

| Distance between the light source and the box (cm) | 20 | 30 | 40 | 50 |
|----------------------------------------------------|----|----|----|----|
| Length of the shadow (cm)                          | 15 | 13 | 11 | 9  |

What pattern do you notice about the distance between the light source and the box and the length of the shadow?

(2 m)

---



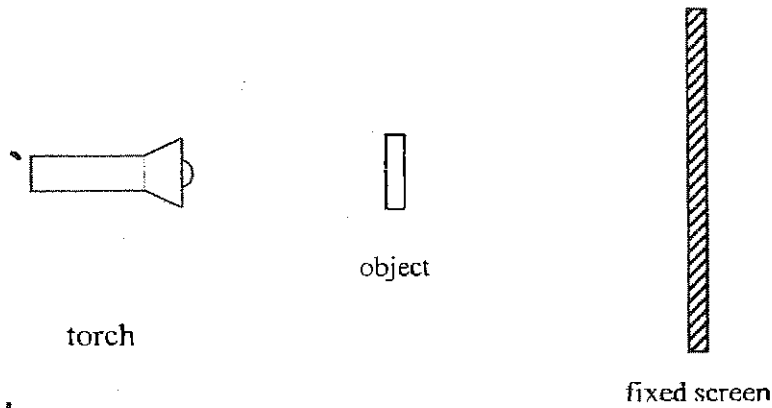
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---

SCORE

38. Rahmat shone a torch on an object as shown below.



Write down two things that he can do to make the shadow smaller.

a) \_\_\_\_\_ ( 1 m )

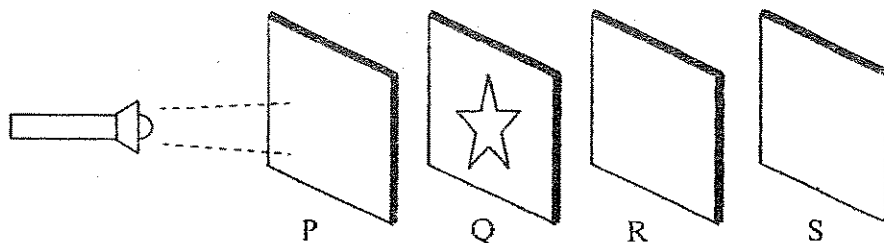
\_\_\_\_\_

b) \_\_\_\_\_ ( 1 m )

\_\_\_\_\_

SCORE  
74

39. Cards P, Q, R and S are made of different materials. They are arranged in a straight line. There is a star-shaped cut-out on Q. When Caleb shines a torch on P, a bright star is seen on R. Tick (✓) the correct box to show whether the materials, P, Q, R and S allow light to pass through. (2 m)



| Cards | Does not allow light to pass through | Allows most of the light to pass through | Not possible to tell |
|-------|--------------------------------------|------------------------------------------|----------------------|
| P     |                                      |                                          |                      |
| Q     |                                      |                                          |                      |
| R     |                                      |                                          |                      |
| S     |                                      |                                          |                      |

For Questions 40 to 44, please refer to Booklet K.

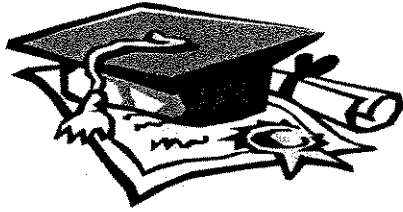
End of Paper

Set by : Ms Norhidayah Bte Ahmad  
Vetted by : P4 Science Committee teachers

SCORE

75





# ANSWER SHEET

PEI CHUN PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007  
CONTINUAL ASSESSMENT (2)

1. 3
  2. 3
  3. 1
  4. 2
  5. 2
  6. 4
  7. 2
  8. 2
  9. 3
  10. 4
  11. 1
  12. 3
  13. 4
  14. 1
  15. 4
  16. 1
  17. 4
  18. 2
  19. 4
  20. 1
  21. 3
  22. 4
  23. 1
  24. 2
  25. 1
- 31) a) Substance A and substance B.  
b) Substance C and substance D.
- 32) a) Q and R are not strong and are flexible.  
b) Using a magnet, attract Material T and pull it away from Material S.
- 33) a) iii      b) R, P, Q, S
- 34) a) A to B  
b) When he exercises, his body needs more energy. Thus, his heart needs to pump more blood containing oxygen and digested food to the rest of the body quickly to produce energy causing his pulse rate to quicker.
- 35) a) i) oxygen      ii) plants  
iii) animals      iv) carbon dioxide  
b) A: photosynthesis  
B: respiration
- 36) a) T      b) T      c) F      d) T
- 37) The further away the light source the smaller and sharper is the shadow.

38) a) Move the torch further backwards away from the fixed screen and the object.

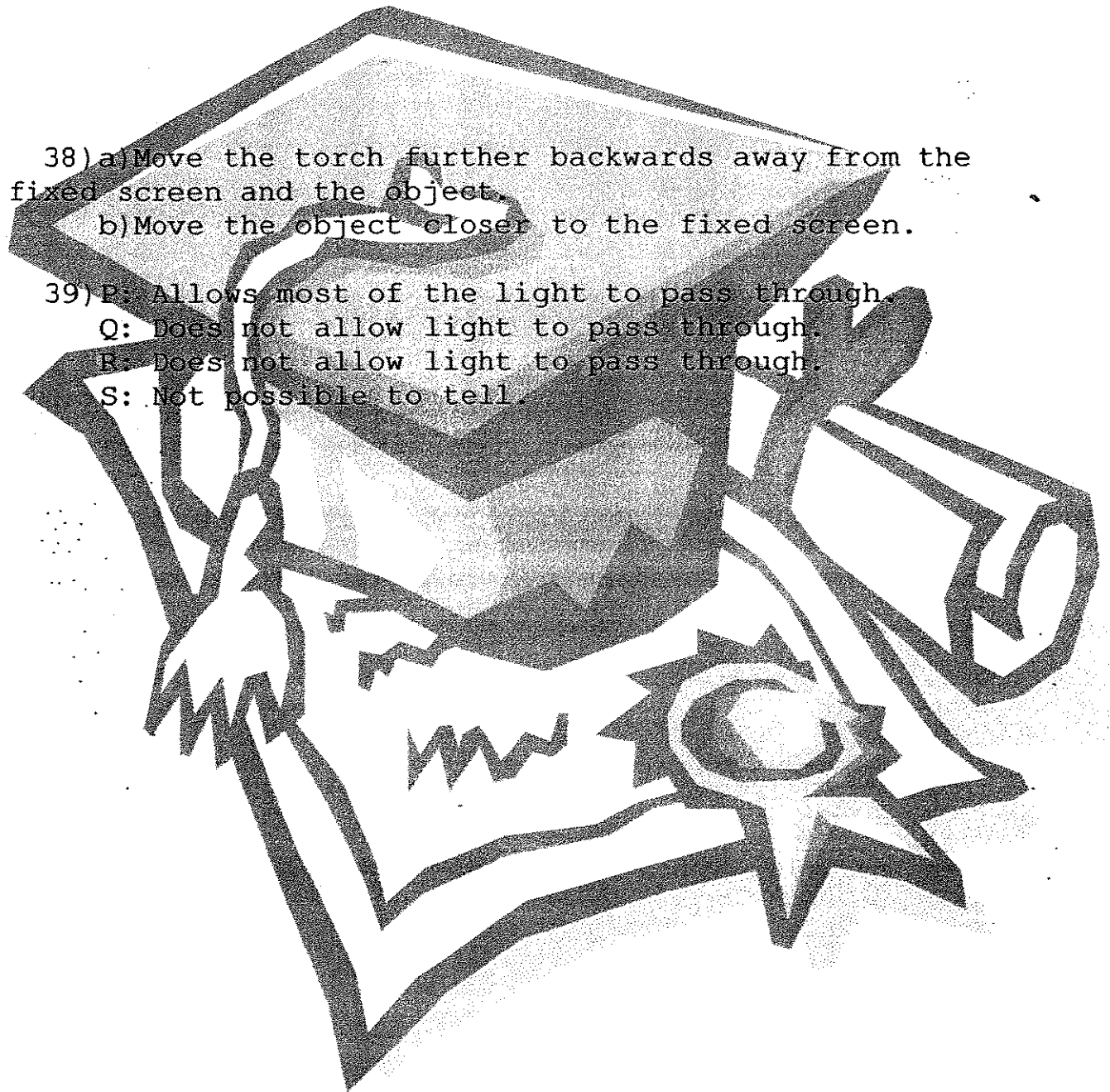
b) Move the object closer to the fixed screen.

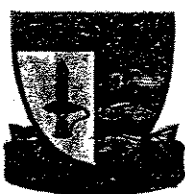
39) P: Allows most of the light to pass through.

Q: Does not allow light to pass through.

R: Does not allow light to pass through.

S: Not possible to tell.

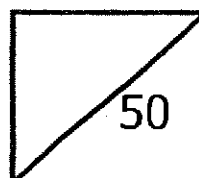




**Rosyth School**  
**Second Continual Assessment for 2007**  
**SCIENCE**  
**Primary 4**

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

Total  
Marks:



Class: Pr 4 \_\_\_\_\_ Register No. \_\_\_\_\_ Duration: 1 h 15 min

Date: 23 August 2007 Parent's Signature: \_\_\_\_\_

**Instructions to Pupils:**

1. Do not open the booklet until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 sections, Section A and Section B.
4. For questions 1 to 15, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 16 to 23, give your answers in the spaces provided in Section B.

|                  | Maximum         | Marks Obtained |
|------------------|-----------------|----------------|
| <b>Section A</b> | <b>30 marks</b> |                |
| <b>Section B</b> | <b>20 marks</b> |                |
| <b>Total</b>     | <b>50 marks</b> |                |

\* This booklet consists of 19 pages. (pg. 1 to 19)

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<http://www.topschoolexampapers.com>

3. The table below shows the amount of energy that can be released from four types of food when they are broken down through the process of respiration.

| Type of food  | Amount of energy released per 100g (kcal) |
|---------------|-------------------------------------------|
| Bread         | 473                                       |
| Wheat biscuit | 525                                       |
| Chicken       | 217                                       |
| Fish          | 154                                       |

Based on the information above, which of the following deductions are correct?

A: Food is a source of energy.

B: Food from plants has more energy than animals.

C: There is more energy in bread than in wheat biscuit.

D: Fish has less energy than chicken because it is smaller in size.

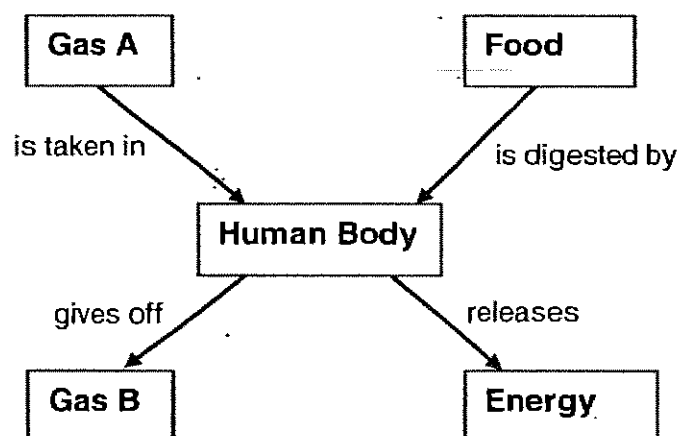
(1) A and B only

(2) B and C only

(3) A, B and D only

(4) A, C and D only

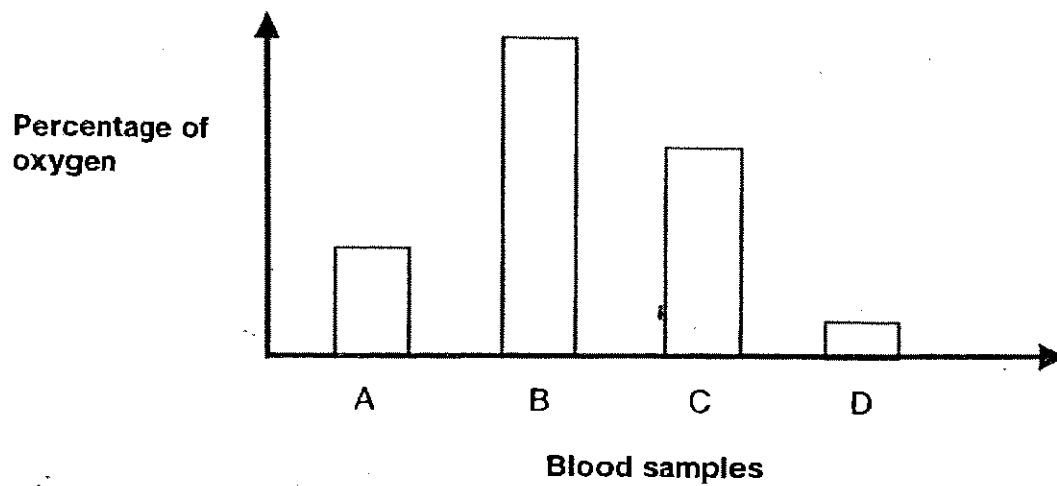
4. Study the diagram below.



What are gases A and B?

|     | Gas A          | Gas B          |
|-----|----------------|----------------|
| (1) | Oxygen         | Carbon dioxide |
| (2) | Oxygen         | Oxygen         |
| (3) | Carbon dioxide | Oxygen         |
| (4) | Carbon dioxide | Carbon dioxide |

5. The bar chart below shows the percentage of oxygen in four blood samples taken from different blood vessels at the same time in a human circulatory system.



Which one of the following pairs likely represents the percentage of oxygen in the vein and artery respectively?

|     | Vein | Artery |
|-----|------|--------|
| (1) | A    | B      |
| (2) | A    | D      |
| (3) | C    | D      |
| (4) | C    | A      |

6. Kevin started to do the following activities for the next 30 minutes continuously.

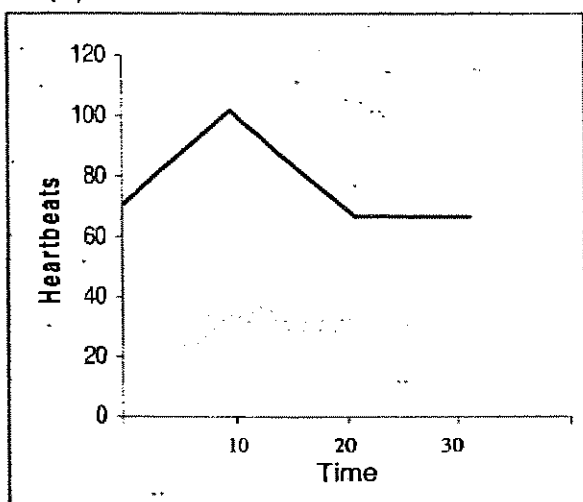
**10 minutes: Jog along the park**

**10 minutes: Cool down exercise**

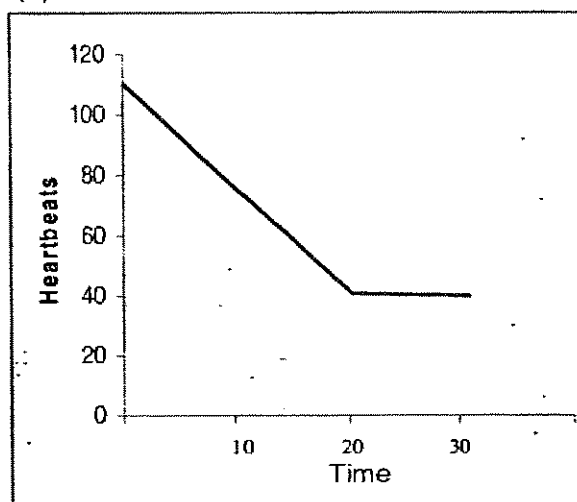
**10 minutes: Lie on the mat and gaze at the stars**

His heartbeat was measured during the activities. The results were represented in a graph. Which one of the graphs correctly represents Kevin's heartbeat during those activities?

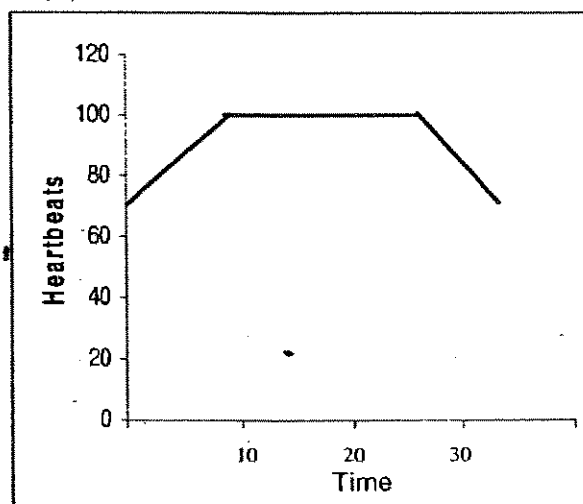
(1)



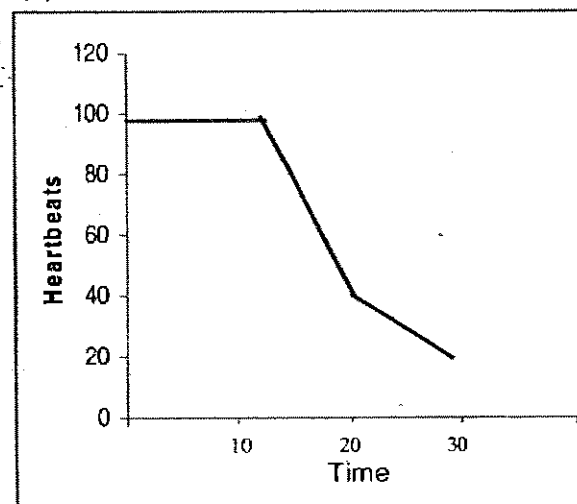
(2)



(3)



(4)



7. Allison put some fishes in two bowls. She wanted to find out if the number of fishes in a bowl would affect the number of times the fishes go to the surface to breathe.

Which of the following variables should be left unchanged in both bowls for a fair experiment?

- A: Size of bowls
- B: Volume of water
- C: Type of fish
- D: Number of fish in each bowl
- E: Location

(1) A, B and C only

(2) B, C, D and E only

(3) A, B, C and E only

(4) A, B, C, D and E only

8. Which one of the following correctly represents the path that water travels through a rose plant?

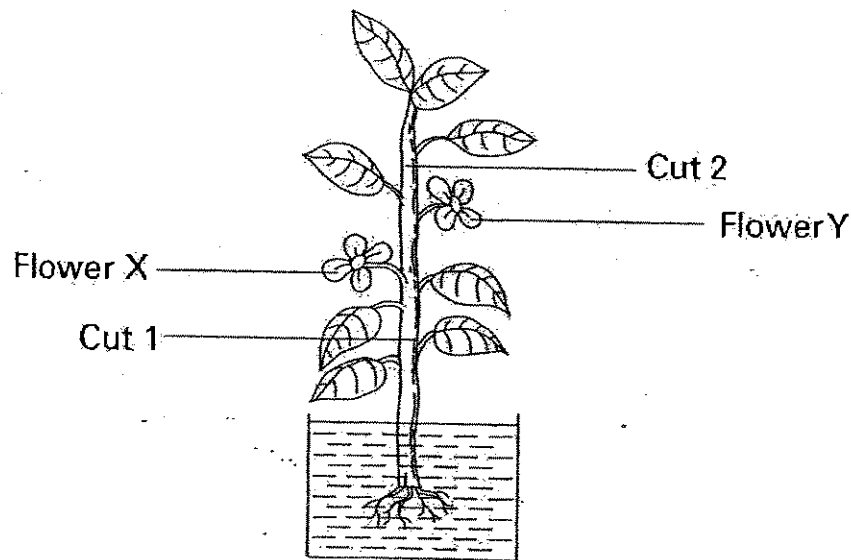
(1) leaf → phloem tubes in stems → root hairs → roots

(2) leaf → xylem tubes in stems → root hairs → roots

(3) root hairs → roots → phloem tubes in stems → leaf

(4) root hairs → roots → xylem tubes in stems → leaf

9. Vivian placed a plant with two white flowers, X and Y, into a container containing blue-coloured water. After a short while, Flower X had turned blue while Flower Y remained white.

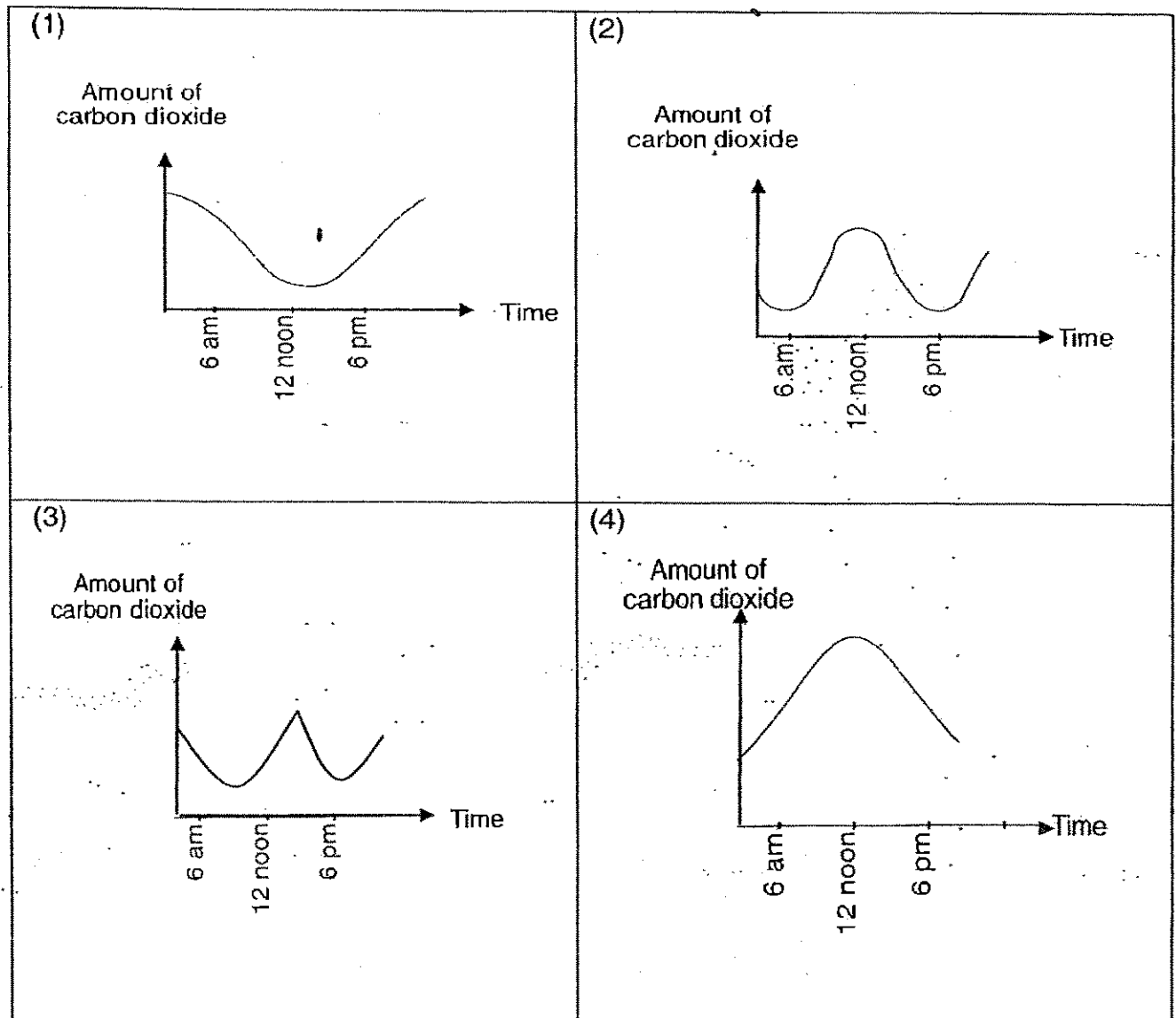


She made two cuts as shown in the diagram above.

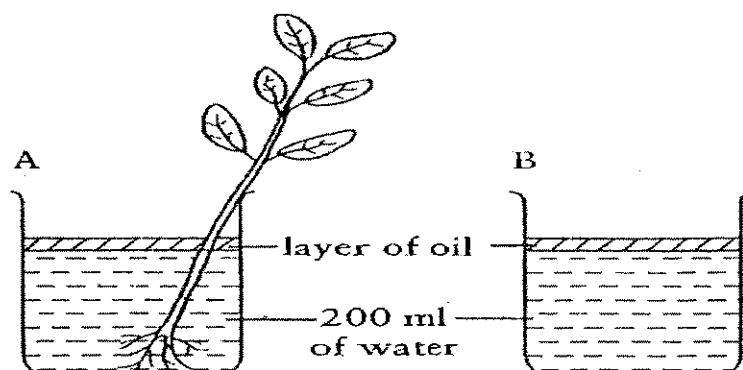
Which one of the following pairs shows the correct cross-section of the stems made at cuts 1 and 2 respectively?

|                                      |                                      |
|--------------------------------------|--------------------------------------|
| <p>(1)</p> <p>Cut 1</p> <p>Cut 2</p> | <p>(2)</p> <p>Cut 1</p> <p>Cut 2</p> |
| <p>(3)</p> <p>Cut 1</p> <p>Cut 2</p> | <p>(4)</p> <p>Cut 1</p> <p>Cut 2</p> |

10. The amount of carbon dioxide in the air above a group of trees was measured over a period of 24 hours. Which one of the following graphs shows the amount of carbon dioxide in the air?



Study the set-up below carefully to answer questions 11 and 12.



Marcus placed two beakers, A and B, on a table near a window. Both beakers contained the same amount of water. He then poured an equal amount of oil into both beakers.

11. What was Marcus trying to find out?

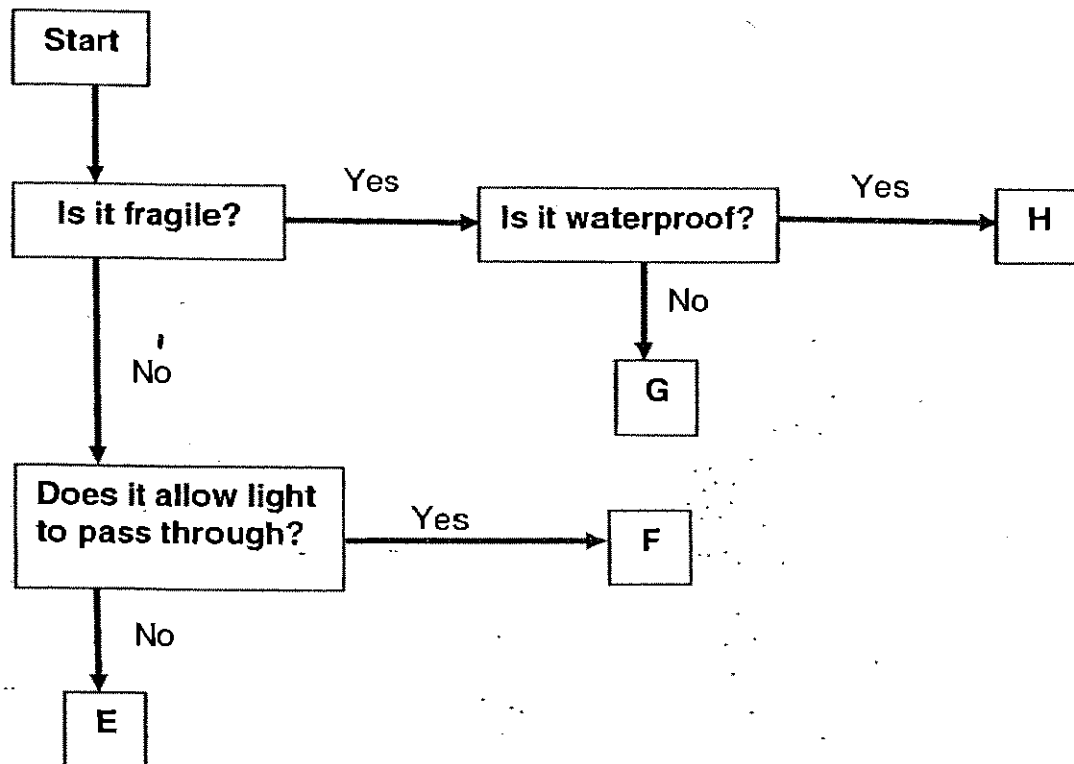
- (1) To find out if oil affects the amount of water taken in by the plant.
- (2) To find out if plants take in water.
- (3) To find out if oil affects the rate of evaporation.
- (4) To find out if oil affects the rate at which water is taken in by the plant.

12. Which of the following correctly shows the amount of water left in beaker A and beaker B after 5 days?

|     | Amount of water left (ml) in Beaker A | Amount of water left (ml) in Beaker B |
|-----|---------------------------------------|---------------------------------------|
| (1) | 200                                   | 200                                   |
| (2) | 180                                   | 200                                   |
| (3) | 200                                   | 180                                   |
| (4) | 180                                   | 180                                   |



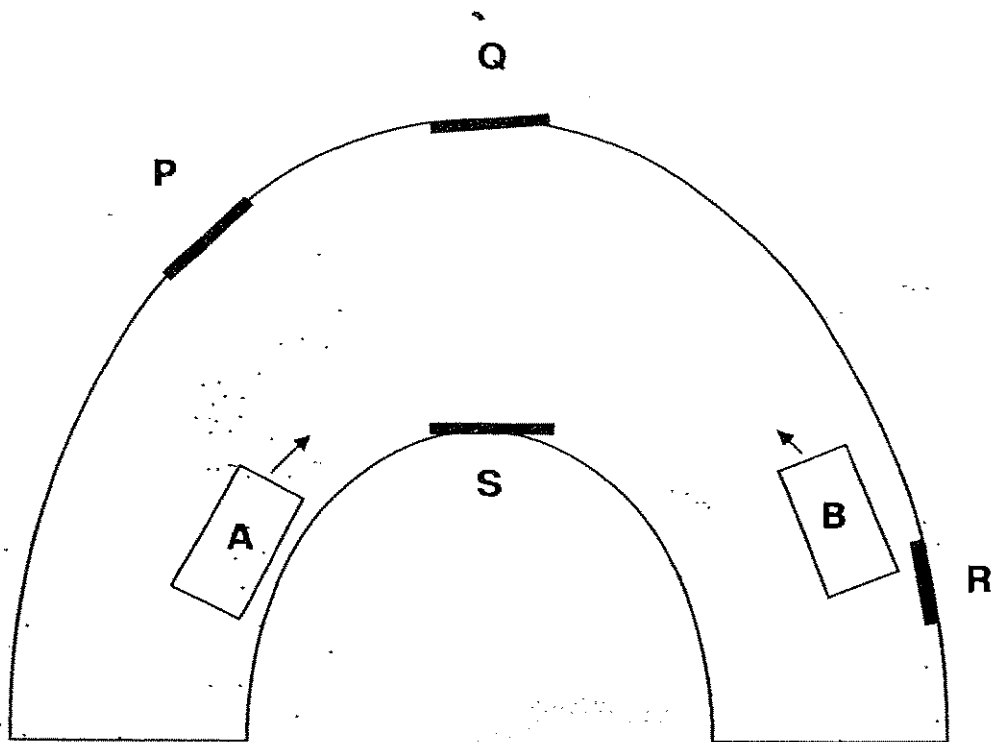
13. Study the flow chart carefully.



Which one of the following correctly represents the objects, E, F, G and H?

|     | E                   | F                   | G                   | H                   |
|-----|---------------------|---------------------|---------------------|---------------------|
| (1) | Clear plastic sheet | Eraser              | Glass bowl          | Clay pot            |
| (2) | Glass bowl          | Clay pot            | Clear plastic sheet | Eraser              |
| (3) | Eraser              | Clear plastic sheet | Clay pot            | Glass bowl          |
| (4) | Clay pot            | Glass bowl          | Eraser              | Clear plastic sheet |

14. The diagram below shows two cars, A and B, and four mirrors, P, Q, R and S.



Which mirror(s) would allow the two drivers to see each other from the positions they were at?

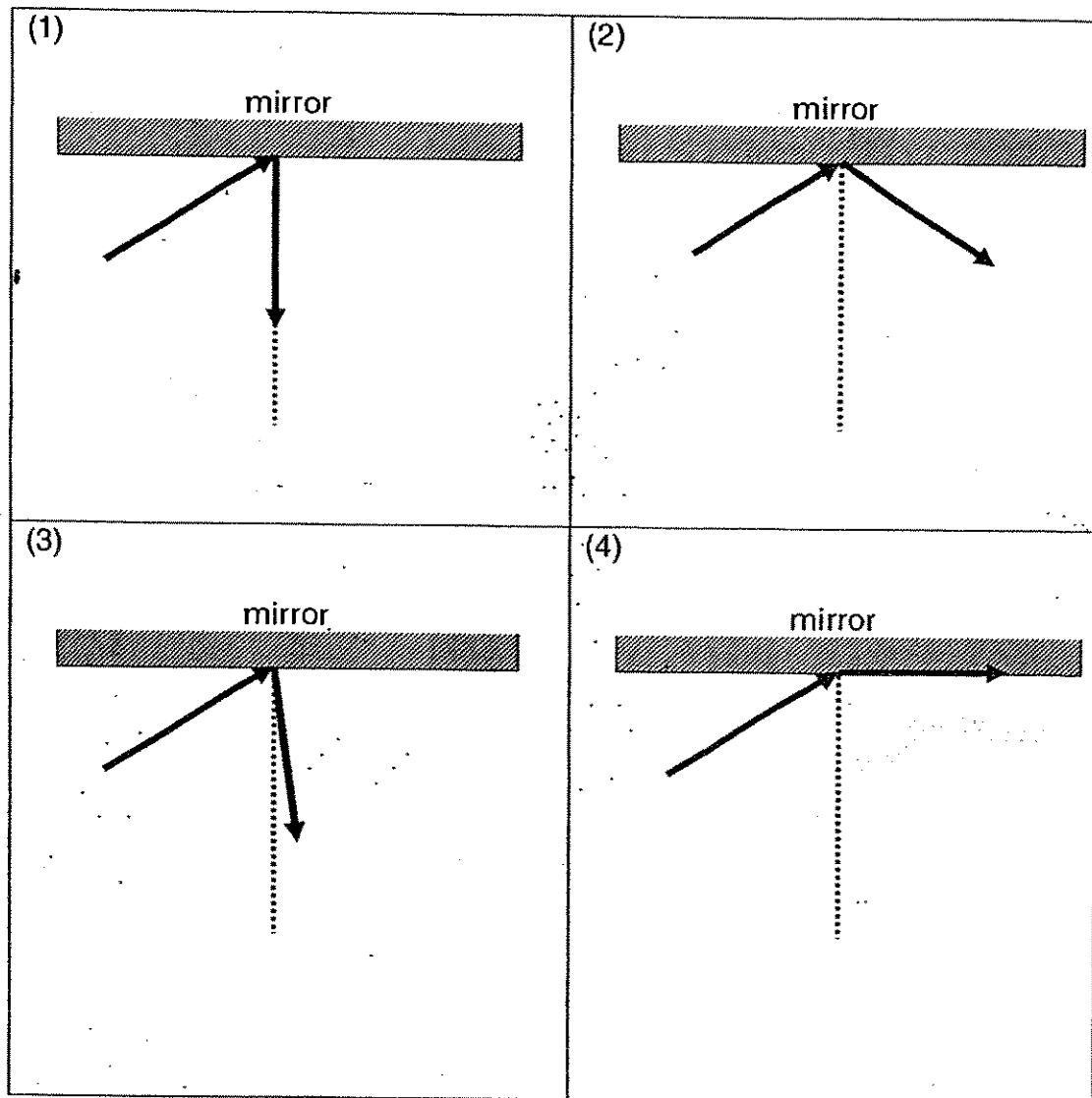
(1) P only

(2) R only

(3) P and Q only

(4) R and S only

15. Which one of the following diagrams show how a ray of light is reflected by a plane mirror?

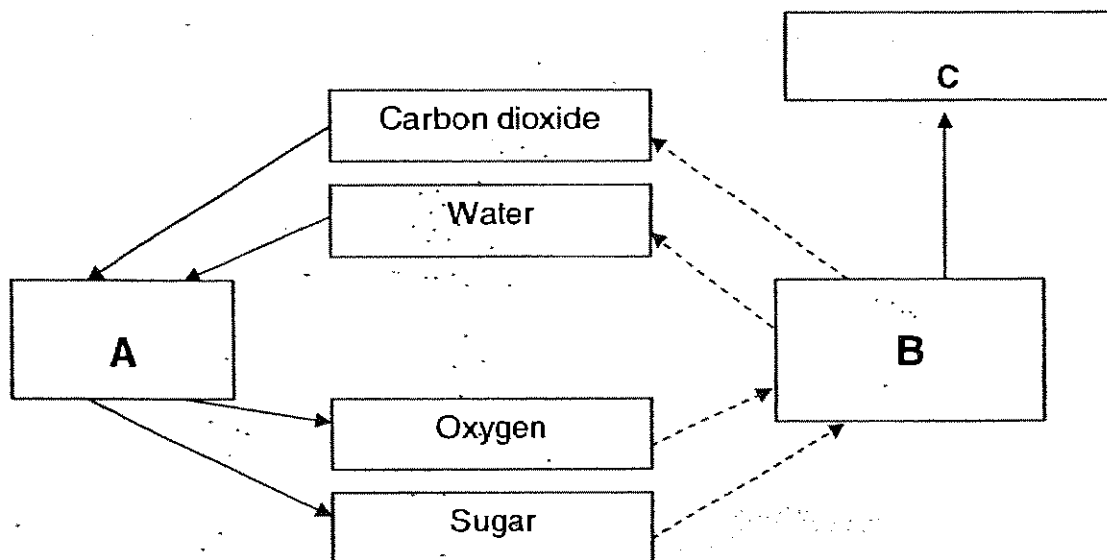


End of Section A

**Section B (20 MARKS)**

For questions 16 to 23, write your answers in this booklet.

16. The diagram below shows two processes that occur in a plant.



(a) Name the two processes, A and B, in the blanks provided below. (2m)

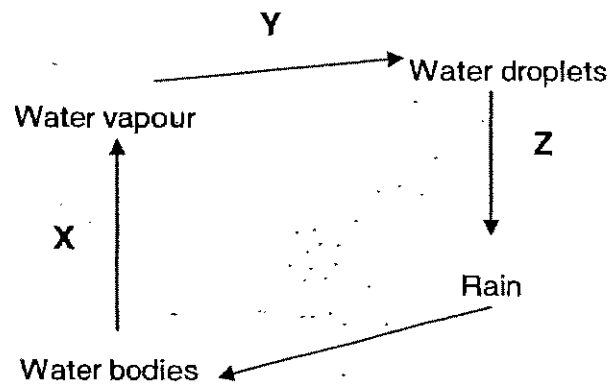
A: \_\_\_\_\_

B: \_\_\_\_\_

(b) Identify another product (labelled as C in the above diagram) that is produced during process B. (1m)

C: \_\_\_\_\_

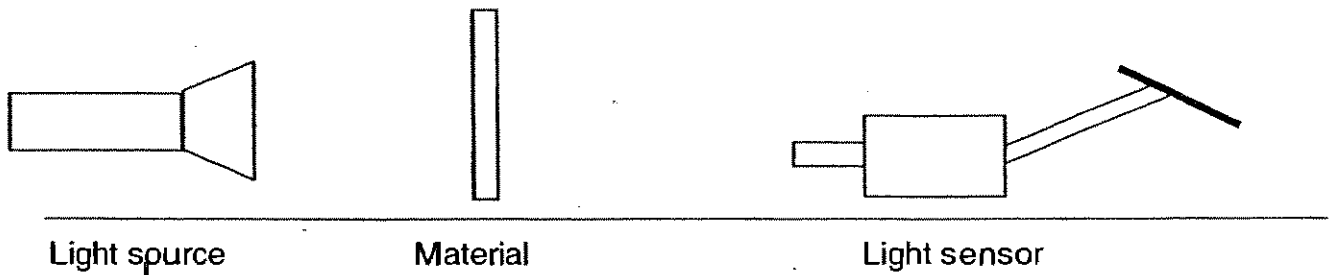
17. The diagram below shows the three processes X, Y and Z that occur in a water cycle.



- (a) During which process, X, Y or Z is the Sun important? (1m)

- (b) How is the Sun useful during the process mentioned in part (a)? (1m)

18. Kelly tested four different materials, P, Q, R and S, for the amount of light that can pass through the materials. She used a light sensor as shown below.



The table below shows the results she recorded after the test.

| Materials | Amount of light (lux) |
|-----------|-----------------------|
| P         | 30                    |
| Q         | 120                   |
| R         | 0                     |
| S         | 60                    |

- (a) Which of the above materials is the most suitable for making the lens of a magnifying glass? (1m)

---

- (b) Explain your choice in part (a). (2m)

---

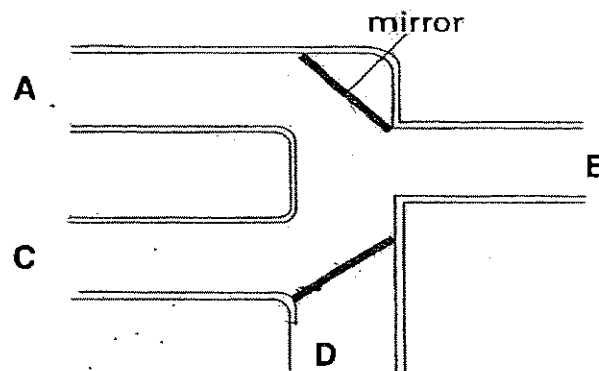


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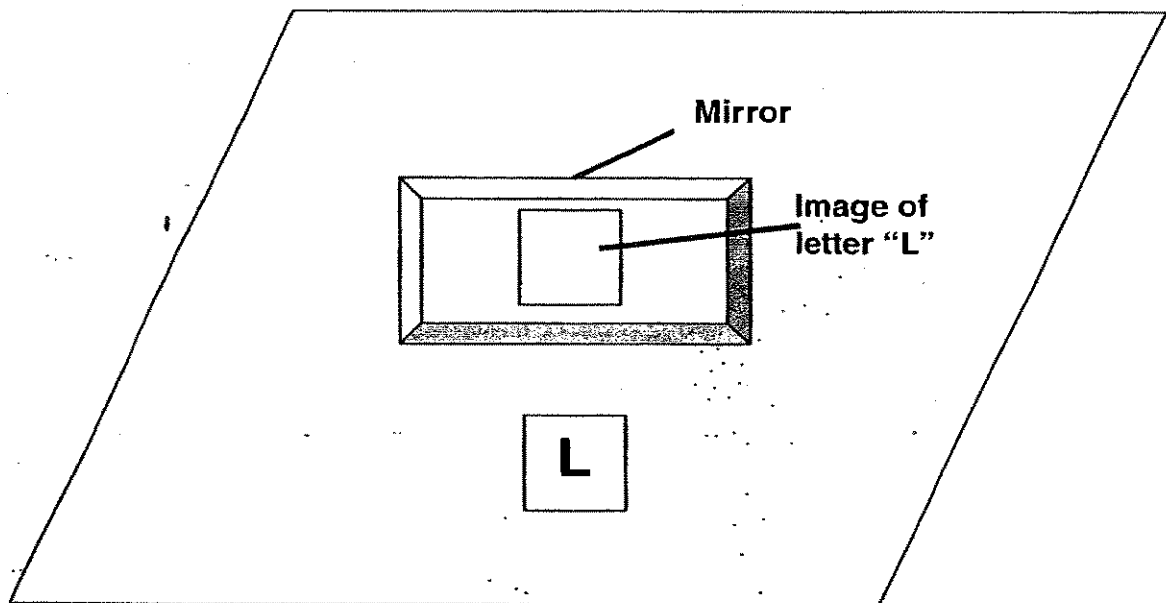
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19. The diagram below shows a connection of pipes. Two mirrors are placed inside the pipes.

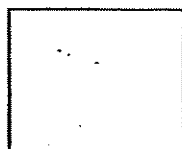


- (a) In order to see an object positioned at C, where should the eye be positioned - A, B or D? (1m)
- 
- (b) Draw the pathway of light that allows the object to be seen in the diagram above. (1m)

20. A mirror is placed on a table as shown below. A card with the letter "L" is placed in front of the mirror.



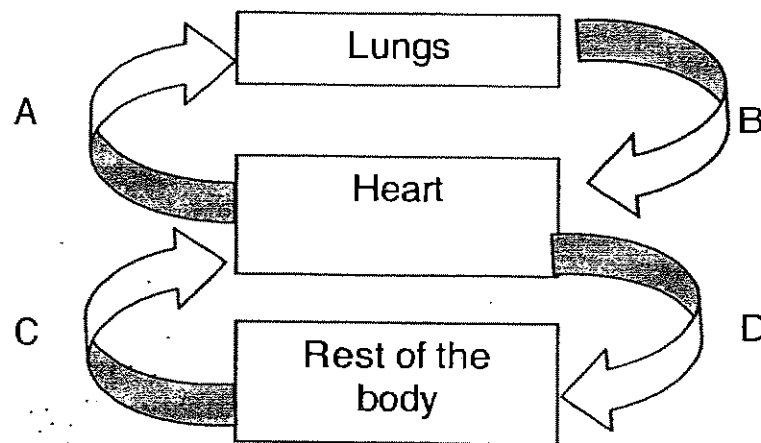
- (a) Draw the image in the box below that would be observed in the mirror? (1m)



- (b) In which mirror, smooth or rough will the image formed be clearer? (1m)



21. The diagram below is a simplified way of showing how our blood travels in the body through the blood vessels.



(a) In the above diagram, which of the blood vessel(s) above is/are vein(s)? (1m)

---

(b) During a vigorous activity, what change will take place in a blood vessel?  
Put a tick (✓) to indicate the change in the box below. (1m)

(i) The amount of blood flowing in the blood vessel will increase.

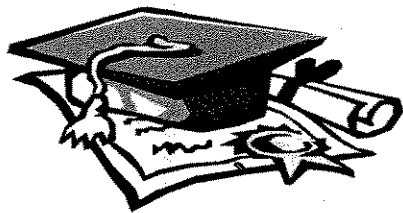
☐

(ii) The speed of blood flowing in the blood vessel will increase.

☐

(c) Explain how the change in part (b) would enable a person to carry out a vigorous activity. (1m)

---



# ANSWER SHEET

ROSYTH PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007  
CONTINUAL ASSESSMENT (2)

1.3

2.4

3.1

4.1

5.1

6.1

7.3

8.4

9.1

10. 1

11. 2

12. 2

13. 3

14. 3

15. 2

16) a) A: photosynthesis

B: respiration

b) C: energy

17) a) X

b) It provides heat to change water into water vapour.

18) a) Q.

b) Q allows the most light to pass through so that the object can be seen clearly.

19) a) A

b)

A

B

C

20) a)

b) smooth

21) a) C and B.

b) i) ✓

c) More blood carries more oxygen to the body to produce more energy.



**NAN HUA PRIMARY SCHOOL  
CONTINUAL ASSESSMENT 2  
PRIMARY FOUR  
SCIENCE**

Name : \_\_\_\_\_ ( )

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

Date : 23 August 2007

Duration : 1 hr 30 min

| MARKS          |             |
|----------------|-------------|
| Sect A:        | / 40        |
| Sect B:        | / 40        |
| <b>Total :</b> | <b>/ 80</b> |

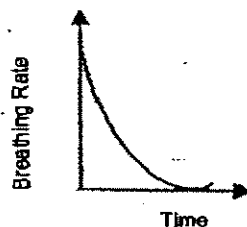
Parent's Signature : \_\_\_\_\_

**Section A: (20 x 2marks = 40marks)**

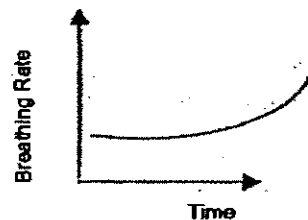
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Which one of the following graphs shows the changes in the breathing rate of Sally when she ran up the stairs?

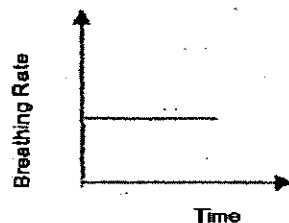
(1)



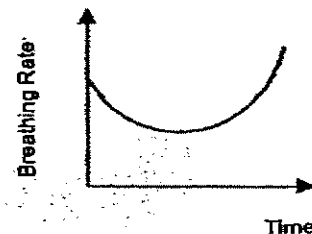
(2)



(3)



(4)



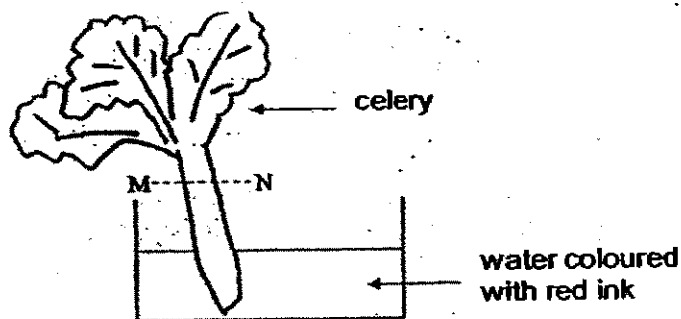
2. Study the table below. It shows the properties of 3 objects, X, Y and Z.

| Property           | Object X | Object Y | Object Z |
|--------------------|----------|----------|----------|
| Can be compressed  | No       | No       | No       |
| Has a fixed shape  | Yes      | Yes      | No       |
| Can float on water | Yes      | No       | Yes      |

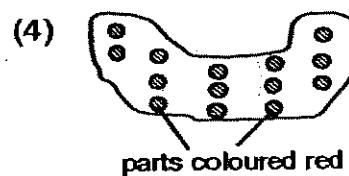
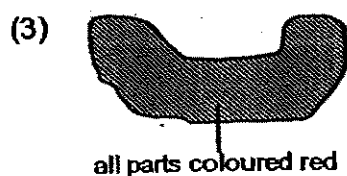
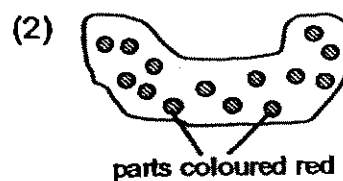
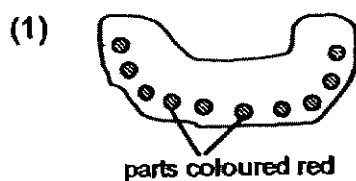
Which of the following can be X, Y and Z?

|     | X           | Y               | Z         |
|-----|-------------|-----------------|-----------|
| (1) | Leaf        | Stone           | Paper bag |
| (2) | Plastic cup | Coin            | Air       |
| (3) | Ice         | Marble          | Oil       |
| (4) | Plastic bag | Styrofoam plate | Oil       |

3. A stalk of celery was placed in water, which was coloured with red ink. The next day, the stalk was removed and cut across at MN as shown in the diagram below.



Which one of the following shows the cross-section that would be observed at MN?



4. Which of the following are functions of roots?

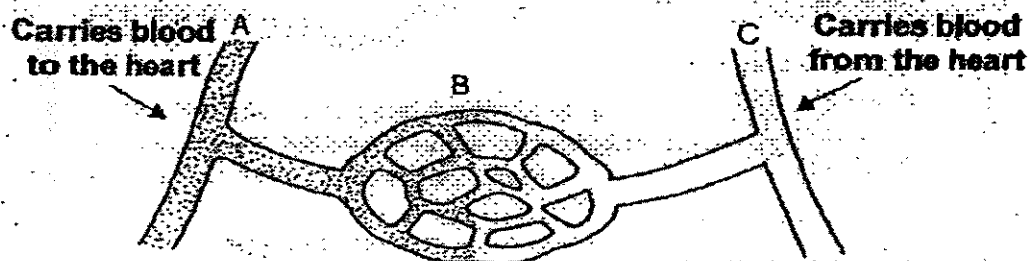
- A: Roots make food for the plant.  
 B: Roots hold the plant firmly to the soil.  
 C: Roots take in carbon dioxide from the water  
 D: Roots take in water and nutrients from the soil.

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

5. The hairs in the nose trap \_\_\_\_\_ from the air in the respiratory passage.

- (1) dust  
 (2) waste gases  
 (3) impure blood  
 (4) unwanted food

6. Study the diagram below.



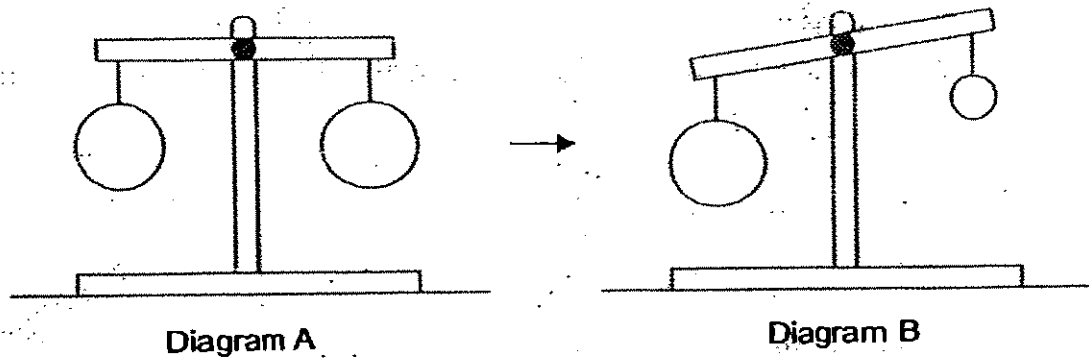
What types of blood vessels are A, B and C?

|     | Arteries | Veins | Capillaries |
|-----|----------|-------|-------------|
| (1) | A        | B     | C           |
| (2) | B        | C     | A           |
| (3) | C        | A     | B           |
| (4) | C        | B     | A           |

7. Which one of the following is not a source of energy?

- (1) Food
- (2) Wood
- (3) Shadow
- (4) Fossil fuel

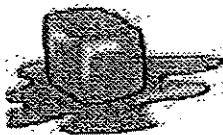
8. Diagram A below shows two identical balloons filled with the same amount of air. The balloons are tied with a string to a balance. One of the balloons in Diagram A is then removed from the balance. Some air is released from the balloon and placed back onto the balance at the same position, as shown in Diagram B.



What can you conclude from the experiment?

- (1) Air has mass.
- (2) Air can be compressed.
- (3) The balloons have different mass.
- (4) The air in the balloons has no mass.

9. The diagram below shows a cube of ice melting.

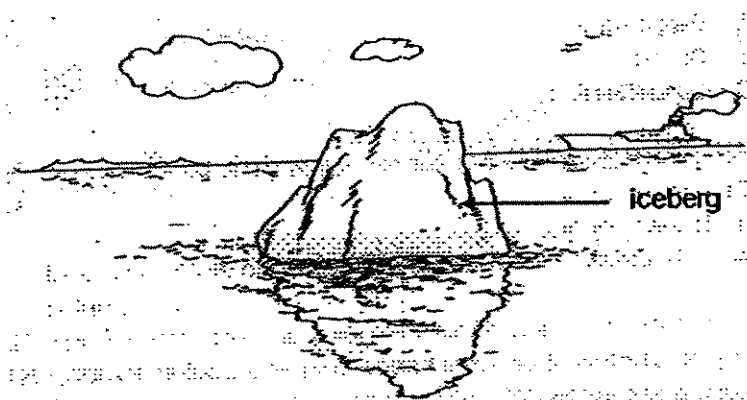


As the ice melts, there is a change in \_\_\_\_\_.

- A : state  
B : shape  
C : volume

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

10. The diagram below shows an iceberg out at sea.



Which of the following states of water can be seen in the picture above?

- A : Solid  
B : Liquid  
C : Gas

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



11. Which of the following are possible effects of water pollution?

- A: The number of marine animals increases.
- B: Marine animals consume toxic waste and die.
- C: Marine animals get entangled in the litter thrown in water and die.
- D: Aquatic plants submerged in the water do not get enough sunlight.

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

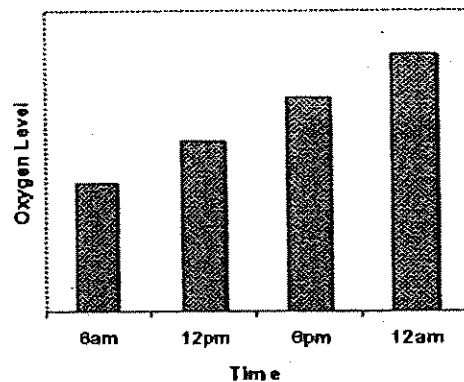
12. The table below shows the differences between inhaled air and exhaled air.

Which one of the following correctly shows the difference between inhaled air and exhaled air?

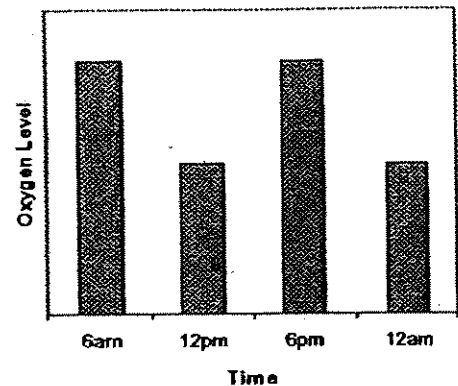
|     | Inhaled air                  | Exhaled air                  |
|-----|------------------------------|------------------------------|
| (1) | Contains more oxygen         | Contains less oxygen         |
| (2) | Contains more nitrogen       | Contains less nitrogen       |
| (3) | Contains more water vapour   | Contains less water vapour   |
| (4) | Contains more carbon dioxide | Contains less carbon dioxide |

13. Which one of the following graphs best shows the oxygen level in the air at a forest over a period of time?

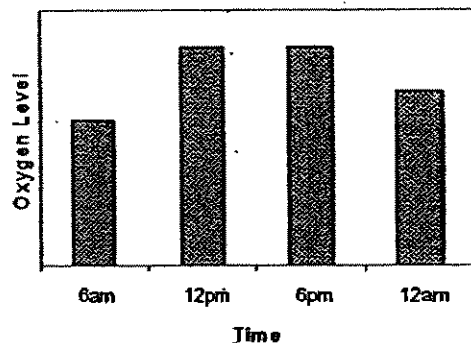
(1)



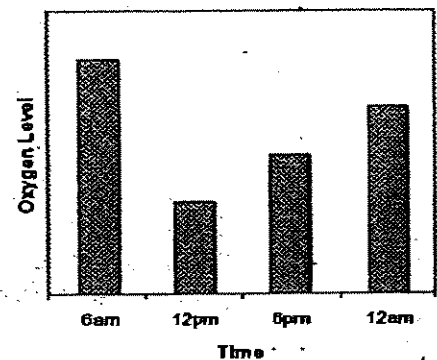
(2)



(3)



(4)



14. Jenny placed a white carnation in a beaker of water. She accidentally spilled a few drops of black ink into the beaker of water. The next day, she was surprised to observe that some parts of the petals of the carnation flower had turned from white to black. What does her observation show?

- (1) Water from the flower is lost to the surroundings.
- (2) The stem carries water from the flower to the roots.
- (3) The stem carries food from the roots to the flower.
- (4) The stem carries water from the roots to the flower.

15. Which one of the following is not true of the plant transport system?

- (1) The plant transport system is made up of two networks of tubes.
- (2) One set of the tubes carries food from the leaves to the rest of the plant.
- (3) One set of tubes carries water and minerals from the roots to the rest of the plant.
- (4) The plant transport system transports oxygen and carbon dioxide throughout the plant.

16. What can we say about our heart?

- A: It is a muscular organ
- B: It is protected by the ribcage.
- C: It is found to the right of our chest.
- D: It pumps blood through blood vessels to all parts of the body.

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

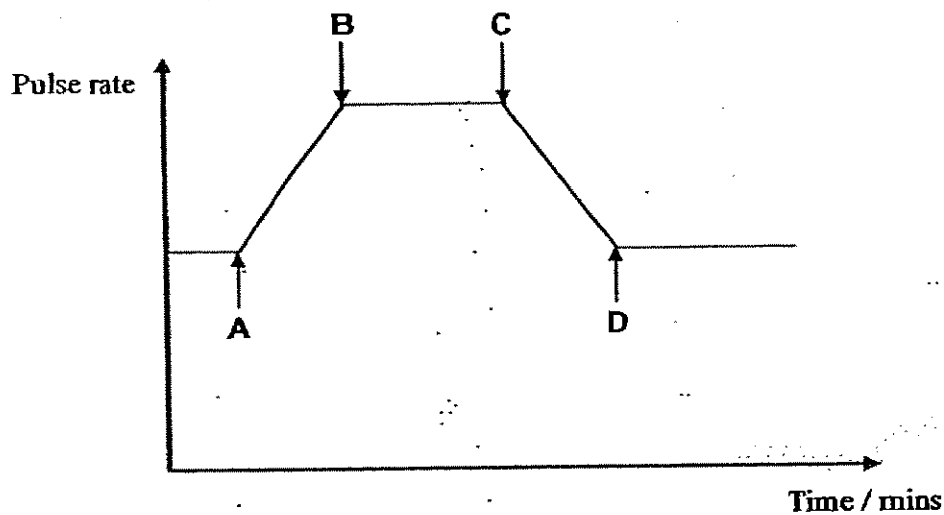
17. The heart pumps blood to all parts of our body by \_\_\_\_\_.

- (1) closing the valves in the veins
- (2) opening the valves in the veins
- (3) moving up and down the ribcage
- (4) contracting and relaxing its muscles

18. Which of the following structures in plants is similar to the blood vessels in the human circulatory system?

- (1) Stem
- (2) Leaves and stomata
- (3) Roots and root hairs
- (4) Food-carrying tubes and water-carrying tubes

19. The graph below shows the pulse rate of a boy over a period of time.



Which part of the graph shows that the boy has just stopped playing basketball?

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

20. Which of the following statements explain why the sun is an important source of energy for living things on earth?

- A : Energy from the sun keeps all living things warm.
- B : Without energy from the sun, green plants cannot make food.
- C : Energy from the sun enables animals to see things around them.

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

**NAN HUA PRIMARY SCHOOL  
CONTINUAL ASSESSMENT 2  
PRIMARY FOUR  
SCIENCE**

Name : \_\_\_\_\_ ( )

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

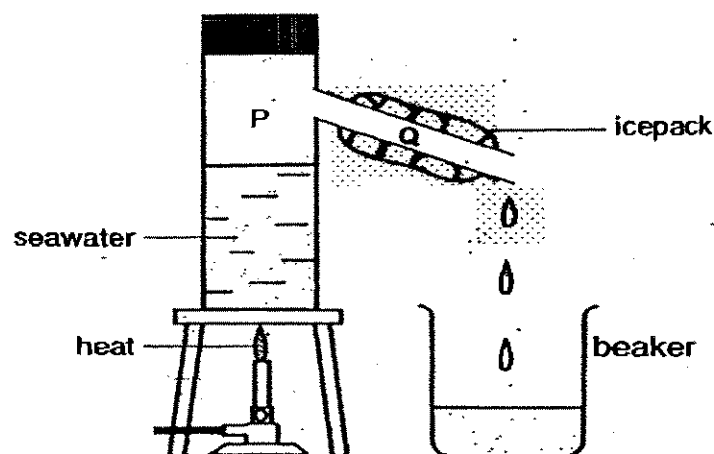
| MARKS |
|-------|
| 40    |

**Section B: (40marks)**

Write your answers to question 21 to 36.

The number of marks available is shown in brackets [ ] at the end of each question or part question.

21. Some seawater is being heated in the following set-up.



- (a) Name the processes that are taking place at P and Q. [1]

P: \_\_\_\_\_

Q: \_\_\_\_\_

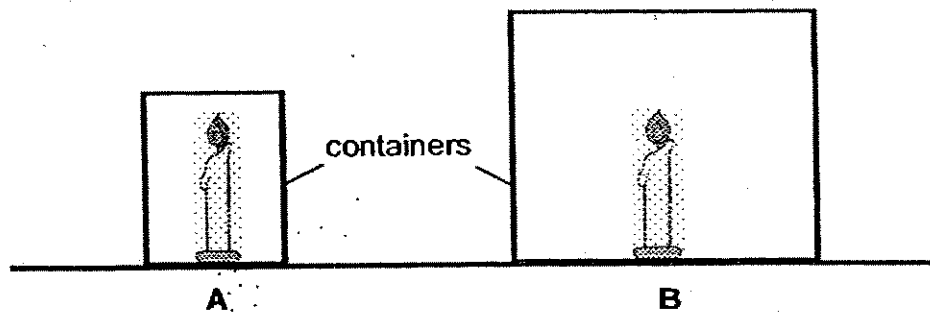
- (b) What is the function of the ice pack? [1]

\_\_\_\_\_

\_\_\_\_\_

| Score |
|-------|
| 2     |

22. Ivan carried out an experiment to find out if the size of the container affects the burning time of the candle. He chose 2 similar candles and placed them in 2 different containers as shown in the diagram below.



The time taken for each flame to go off was recorded in the table below.

| Candle | Burning Time (in seconds) |
|--------|---------------------------|
| A      | 14                        |
| B      | 26                        |

- a) Tick (✓) the variables that were kept the same in order to carry out a fair test. [1]

| Variables         | Kept the same |
|-------------------|---------------|
| Size of container |               |
| Size of candle    |               |
| Type of candle    |               |

- b) What could Ivan conclude from the results obtained? [2]

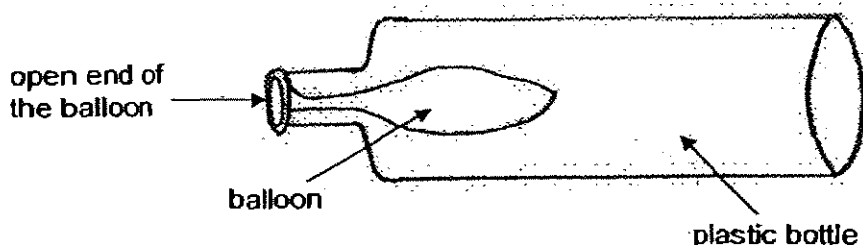
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|       |   |
|-------|---|
| Score | 3 |
|-------|---|

23. Look at the diagram below.  
A balloon is pushed into a plastic bottle and the opened end is stretched over the mouth of the bottle.



Joanne tried to blow to inflate the balloon in this set up but she failed.

- (a) Suggest a method for Joanne to blow to inflate the balloon without taking it out of the bottle. [1]

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- (b) What does the experiment tell us about the property of air? [1]

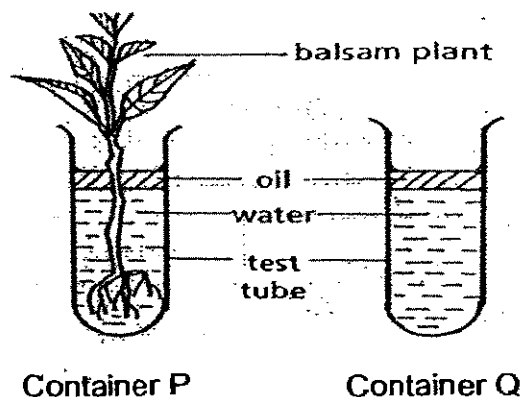
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|       |                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Score | <div style="border: 1px solid black; width: 100px; height: 100px; position: relative;"><div style="position: absolute; top: 0; right: 0; width: 100%; height: 100%; border-left: 1px solid black; border-bottom: 1px solid black; transform: rotate(45deg);"></div><div style="position: absolute; bottom: 0; right: 0; width: 20px; height: 20px; text-align: center; line-height: 20;">2</div></div> |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



24. Peter sets up the experiment as shown below.



The roots of the balsam plant are washed and then placed in Container P. A similar Container Q, is set up without the plant. The amount of water is kept the same for both containers. A layer of oil covers the surface of the water in each container.

- (a) After a few days, what will happen to the water level in the two containers? [2]

---



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- (b) Why does Peter need to put oil into the containers? [1]

---



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- (c) What does the experiment show? [1]

---



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|       |   |
|-------|---|
| Score | 4 |
|-------|---|

25. Fill in the blood vessels that carry out the activities described in the table below. [3]

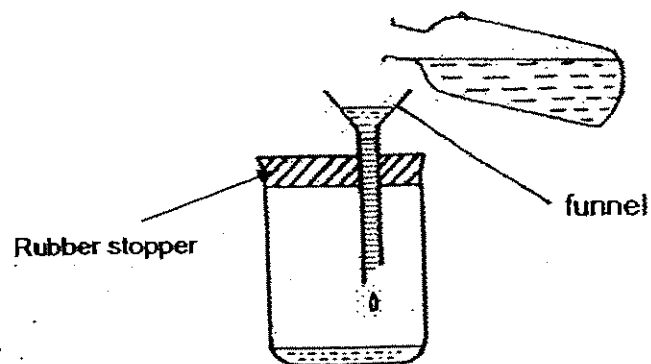
| Blood vessels | Activities                                                                                |
|---------------|-------------------------------------------------------------------------------------------|
|               | Nutrients, digested food and oxygen pass through the very thin wall of this blood vessel. |
|               | Blood with less oxygen is carried back to the heart through this blood vessel.            |
|               | Blood rich in oxygen is transported away from the heart to other parts of the body.       |

26. Put a "T" for statements that are **true** and an "F" for statements that are **false**. [2]

|     |                                                                                                       |  |
|-----|-------------------------------------------------------------------------------------------------------|--|
| (a) | Both the plant and human transport systems perform the function of transporting materials.            |  |
| (b) | Both the plant and human transport systems do not use any organ to pump materials through the system. |  |
| (c) | The plant transport system has 2 sets of tubes to transport materials.                                |  |
| (d) | The plant transport system transports oxygen, digested food, carbon dioxide and water.                |  |

|       |   |
|-------|---|
| Score | 5 |
|-------|---|

27. In the diagram below, water drips into the beaker at a very slow rate.



- (a) Give a reason why the water drips into the <sup>beaker</sup> ~~flask~~ so slowly. [1]

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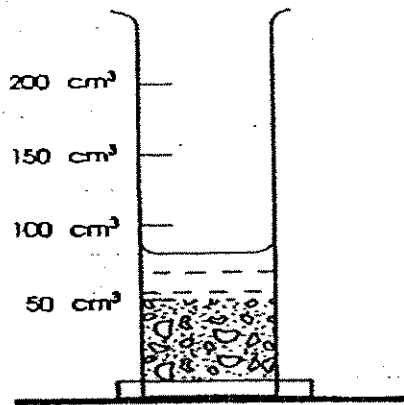
- (b) If the stopper is loosened, what will happen to the rate of the drip? [1]

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---

|       |   |
|-------|---|
| Score | 2 |
|-------|---|

28. A measuring cylinder was packed with pebbles to the  $50 \text{ cm}^3$  mark.  $50 \text{ cm}^3$  of water was added but the water level did not reach the  $100 \text{ cm}^3$  mark.



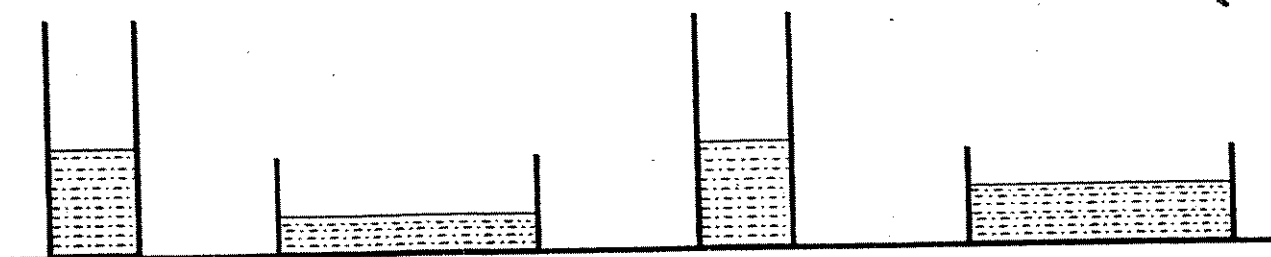
Explain why the water level did not reach the  $100 \text{ cm}^3$  mark. [2]

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|       |                                                                                                                                                         |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Score | <div style="border: 1px solid black; width: 100px; height: 100px; position: relative;"><div style="position: absolute; top: 0; right: 0;">2</div></div> |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------|

29. Study the set-ups below carefully.



**A**  
Volume of water = 250ml  
Temperature = 25 °C

**B**  
Volume of water = 250ml  
Temperature = 25 °C

**C**  
Volume of water = 250ml  
Temperature = 35 °C

**D**  
Volume of water = 350ml  
Temperature = 35 °C

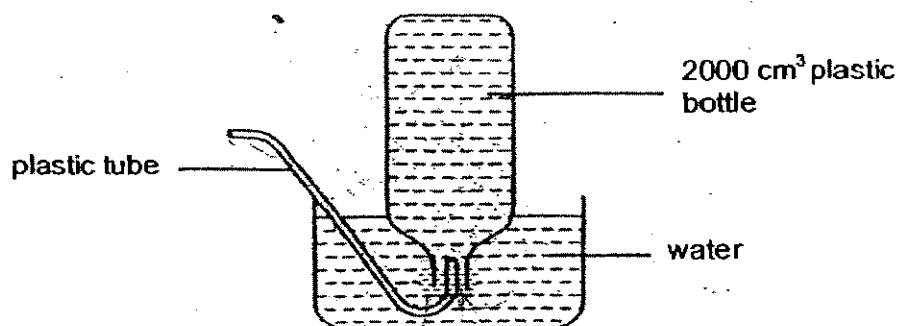
(a) Which two set-ups should be used to find out if temperature affects the rate of evaporation of water? [1]

(b) State the conditions that must be kept the same or changed in order to carry out a fair test. [2]

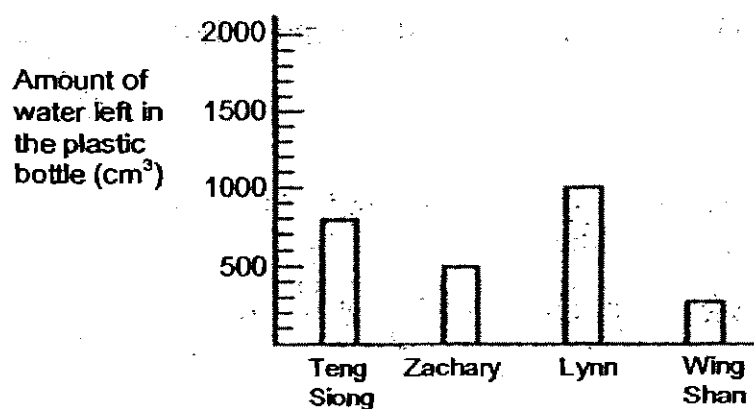
|               | Conditions |
|---------------|------------|
| Keep the same |            |
|               |            |
|               |            |
| Change        |            |
|               |            |
|               |            |

|       |   |
|-------|---|
| Score | 3 |
|-------|---|

30. A group of pupils set up an experiment as shown in the diagram below to find out whose lungs can hold the most air.



The pupils took turns to take a deep breath and blow as much as he or she could into the plastic tube. The graph below shows the results they obtained.



Answer the following questions based on the graph.

- (a) How much air can Zachary's lungs hold?

[1]

\_\_\_\_\_

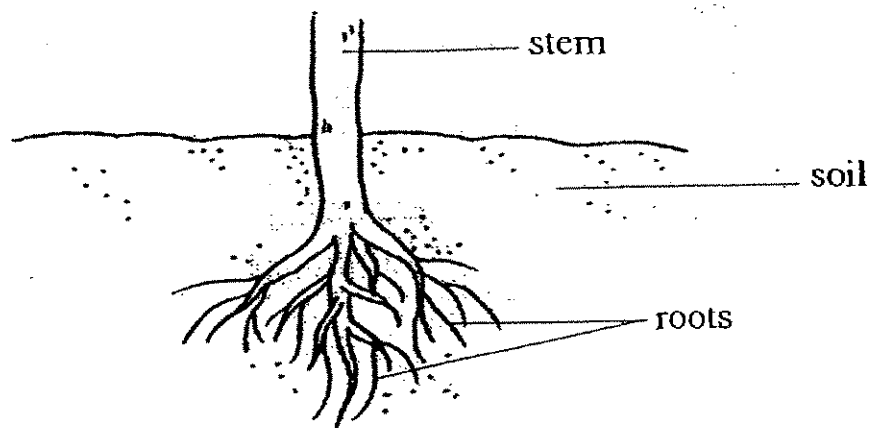
- (b) Whose lungs can hold the most air?

[1]

\_\_\_\_\_

|       |                                                                                                                                                           |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Score | <div style="border: 1px solid black; width: 100px; height: 100px; position: relative;"> <div style="position: absolute; top: 0; right: 0;">2</div> </div> |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|

31. The diagram below shows the stem and roots of a plant.



- (a) Why do the roots grow downwards into the soil? [1]

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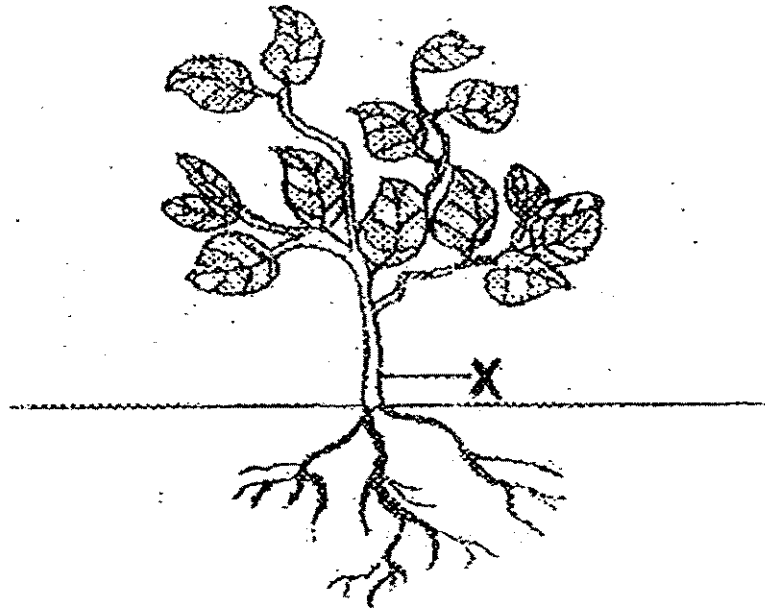
- (b) Where do the roots get the energy to grow? [1]

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|       |                                                                                                                                                                            |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Score | <div style="border: 1px solid black; width: 100px; height: 100px; position: relative;"><div style="position: absolute; top: 0; right: 0; text-align: right;">2</div></div> |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

32. Look at the diagram of a plant below.



- (a) Can the branches and leaves continue to grow if the plant is chopped at X? [1]

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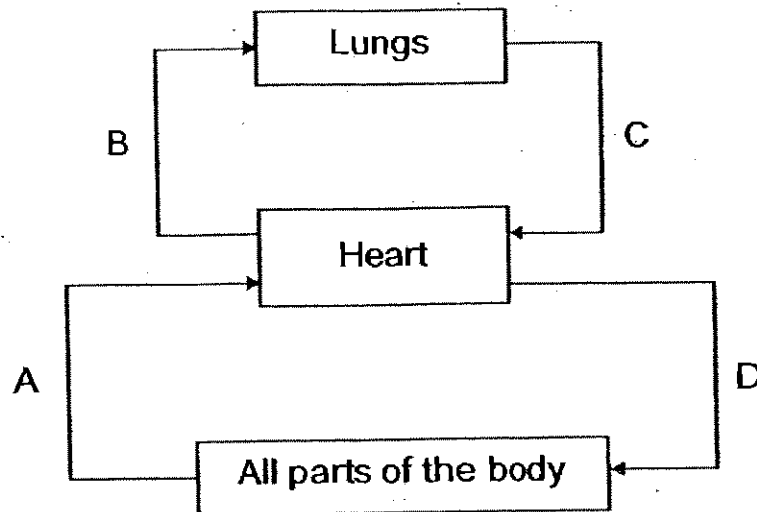
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- (b) Give a reason for your answer in (a). [2]

|       |   |
|-------|---|
| Score | 3 |
|-------|---|



33. The diagram below shows the circulation of blood in our body.



- (a) Which arrows (A, B, C or D) indicate blood rich in oxygen? [2]

---

- (b) How many times does blood pass through the heart during one complete circulation round the body? [1]

---

|       |   |
|-------|---|
| Score | 3 |
|-------|---|

34. The table below shows the breathing rates of different people when they are resting.

| People          | Breathing rate<br>(number of breaths per minute) |
|-----------------|--------------------------------------------------|
| Babies          | 27 to 35                                         |
| Teenagers       | 21 to 25                                         |
| Adults          | 18 to 20                                         |
| Senior Citizens | 16 to 17                                         |

Use the information given in the table above to answer the following questions.

- (a) How does the breathing rate vary according to age? [1]

---

- (b) Tom, a 14-year old boy, checked his breathing rate one day while he was resting. What would his breathing rate be? [1]

---

- (c) After playing basketball with his friends, Tom checked his breathing rate again. He found that his breathing rate was 30 breaths per minute. Why was his breathing rate higher? [1]

---



35. Put a "T" for statements that are **true** and an "F" for statements that are **false**. [2]

|     |                                                                |  |
|-----|----------------------------------------------------------------|--|
| (a) | Heat and light are forms of energy.                            |  |
| (b) | Heat energy is needed by green plants to make food.            |  |
| (c) | Energy is needed to make things move or work.                  |  |
| (d) | Energy is needed by living things to carry out life processes. |  |

36. State the function of each of the following systems. [2]

(a) Circulatory system :

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(b) Respiratory system :

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**END OF PAPER**

|       |                                                                                       |
|-------|---------------------------------------------------------------------------------------|
| Score |  |
|-------|---------------------------------------------------------------------------------------|



# ANSWER SHEET

NAN HUA PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007  
CONTINUAL ASSESSMENT (2)

1. 2
2. 3
3. 1
4. 2
5. 1
6. 3
7. 3
8. 1
9. 4
10. 1
11. 3
12. 1
13. 3
14. 4
15. 4
16. 2
17. 4
18. 4
19. 3
20. 4
- 21) a) P: Evaporation.  
Q: Condensation.  
b) It cools the water vapour which condenses into water.
- 22) a) Size of candle.  
Type of candle.  
b) The size of the container affects the burning time of the candle.
- 23) a) Use a toothpick to make hole at the end of the plastic bottle.  
b) It tells us that air takes up space.
- 24) a) The water level in container P has dropped while the water level in container Q remained the same.  
b) The oil is to prevent water from evaporating.  
c) The experiment shows that a balsam plant takes in water from its roots.
- 25) Artery  
Vein  
Capillary
- 26) a) T b) F c) T d) F
- 27) a) The air in the beaker takes up Space and it cannot escape.  
b) The rate of the drip will become faster because the air in the beaker can escape to make room for the water.

28) There were tiny air spaces between the pebbles for the water to seep in.

29) a) Set-up A and C.

b) Keep the same: Size of beaker.

Volume of water.

Change : Temperature.

30) a) 1500 cm<sup>3</sup>

b) Wing Shan

31) a) So that it can absorb water that are deep in the soil.

b) The roots get the energy from the food the leaves made.

32) a) No.

b) Water and dissolved minerals absorbed at the roots can no longer be transported to the rest of the plant.

33) a) C and D.

b) 2 times.

34) a) The older the person is the lesser the number of breaths.

b) His breathing rate would be from 21 to 25 breaths per minute.

c) During exercise the body needs more oxygen. So Tom needs to breathe to take in oxygen in oxygen quickly.

35) a) T    b) F    c) T    d) T

36) a) It is to transport digested food, oxygen and nutrients around the body and collect waste material and carbon dioxide.

b) It takes in oxygen and give out carbon dioxide.



**Anglo-Chinese School (Primary)**

**P4 SCIENCE 2007**

**END-OF-YEAR EXAMINATION**

**BOOKLET A**

**Name:** \_\_\_\_\_ (      )

**Class: Primary 4**

**Date: 1 November 2007**

**Duration of paper: 1h 45 min**

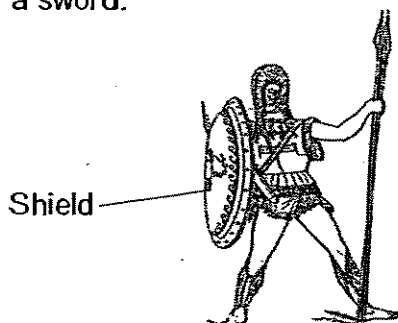
\_\_\_\_\_  
**Parent's/Guardian's signature**

**THIS BOOKLET CONTAINS 19 PAGES.**

**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.**

**FOLLOW ALL INSTRUCTIONS CAREFULLY.**

- 1 The diagram below shows a soldier with a shield which is used to prevent him from being struck by a sword.



Which material, iron or wood, is better for making the shield? What is the most likely reason?

- (1) Iron is better because it is heavier than wood.
  - (2) Iron is better because it is stronger than wood.
  - (3) Wood is better because it can float but not iron.
  - (4) Wood is better because it is a poor conductor of heat.
- 2 Caleb wanted to compare the hardness of four objects, A, B, C and D. He tested them by scratching them with rulers made of different materials.

After the experiment, he concluded that object B is the hardest, followed by objects A, C and D.

Which one of the following is the most likely observation that he had made?

|     |     |
|-----|-----|
| (1) | (2) |
| (3) | (4) |

| Objects | The tick (✓) indicates the presence of scratch marks made by the rulers |              |             |
|---------|-------------------------------------------------------------------------|--------------|-------------|
|         | Plastic ruler                                                           | Wooden ruler | Metal ruler |
| A       |                                                                         | ✓            | ✓           |
| B       | ✓                                                                       | ✓            | ✓           |
| C       |                                                                         |              | ✓           |
| D       |                                                                         |              |             |

| Objects | The tick (✓) indicates the presence of scratch marks made by the rulers |              |             |
|---------|-------------------------------------------------------------------------|--------------|-------------|
|         | Plastic ruler                                                           | Wooden ruler | Metal ruler |
| A       |                                                                         | ✓            | ✓           |
| B       | ✓                                                                       | ✓            | ✓           |
| C       |                                                                         |              | ✓           |
| D       |                                                                         |              | ✓           |

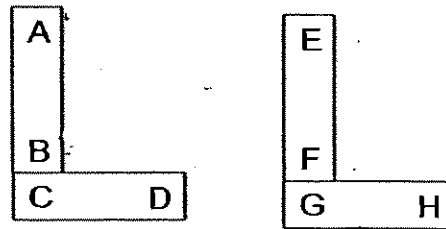
  

| Objects | The tick (✓) indicates the presence of scratch marks made by the rulers |              |             |
|---------|-------------------------------------------------------------------------|--------------|-------------|
|         | Plastic ruler                                                           | Wooden ruler | Metal ruler |
| A       |                                                                         |              | ✓           |
| B       |                                                                         |              |             |
| C       |                                                                         | ✓            | ✓           |
| D       | ✓                                                                       | ✓            | ✓           |

| Objects | The tick (✓) indicates the presence of scratch marks made by the rulers |              |             |
|---------|-------------------------------------------------------------------------|--------------|-------------|
|         | Plastic ruler                                                           | Wooden ruler | Metal ruler |
| A       |                                                                         |              | ✓           |
| B       |                                                                         | ✓            | ✓           |
| C       | ✓                                                                       | ✓            | ✓           |
| D       | ✓                                                                       | ✓            | ✓           |

- 3 The pairs of magnets are attracted to each other as shown below.

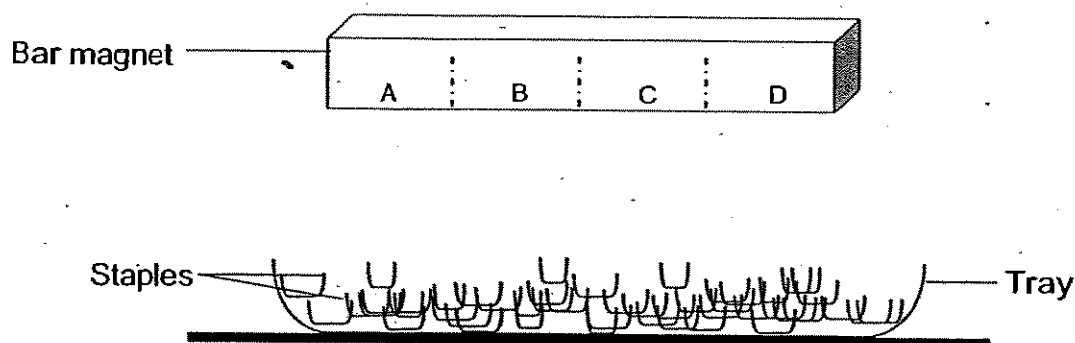


If ends A and E are both North poles, which one of the following is the most likely rectangular arrangement of the four bar magnets if they are placed end to end as shown below?

|            |            |
|------------|------------|
| <p>(1)</p> | <p>(2)</p> |
| <p>(3)</p> | <p>(4)</p> |

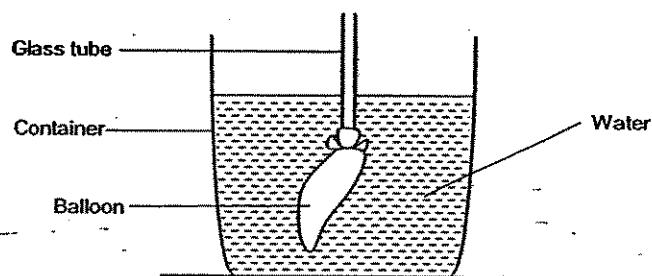


- 4 Dominic conducted an experiment as shown below. He lowered the bar magnet into the tray of staples and recorded the number of staples attracted to the magnet at the 4 positions A, B, C and D.



His most likely aim was to find out whether the \_\_\_\_\_.

- (1) number of tray affects the magnetism of a bar magnet
  - (2) number of staples affects the magnetism of a bar magnet
  - (3) position on a magnet affects the number of staples it can attract
  - (4) distance between magnet and staples affects the number of staples the bar can attract
- 5 A balloon attached to a hollow glass tube was submerged in a container of water as shown below.



Shaun placed his mouth over the open end of the glass tube and tried to blow air into it. When Shaun blew air through the tube, he observed that the water level in the container rose. This experiment tells us that air \_\_\_\_\_.

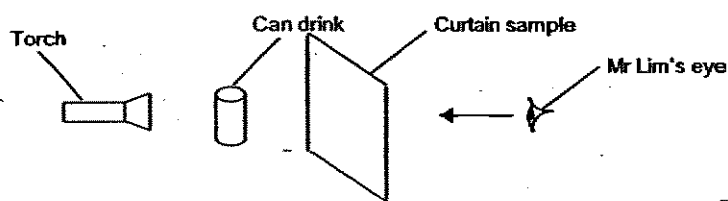
- A: has mass  
 B: occupies space  
 C: has definite volume  
 D: can be compressed

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

- 6 Mr. Lim wanted to buy a set of curtains, which will reduce the amount of sunlight entering the bedroom, and at the same time, allow sufficient light to enter it. He also wanted to buy another set of curtain to cover the entrance of the bathroom so that no one would be able to see through it.

He selected three curtain samples, A, B and C and tested the amount of light that passes through each of them before making a decision.

He conducted his test in a totally dark room and observed the image formed on the curtain sample as shown below.



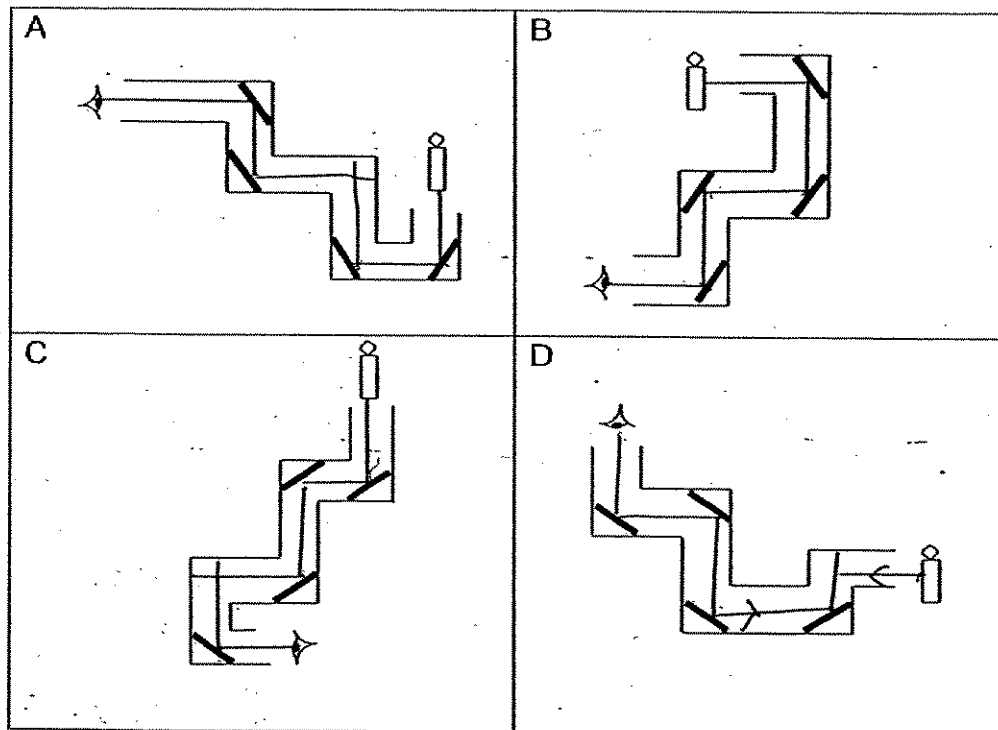
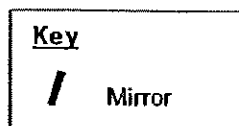
The table below shows his observations.

| Curtain sample | Image formed on the curtain |
|----------------|-----------------------------|
| A              |                             |
| B              |                             |
| C              |                             |

Based on his observations, which **one** of the following combination should he choose for his bedroom and bathroom respectively?

|     | Bedroom  | Bathroom |
|-----|----------|----------|
| (1) | Sample A | Sample B |
| (2) | Sample B | Sample C |
| (3) | Sample C | Sample B |
| (4) | Sample C | Sample A |

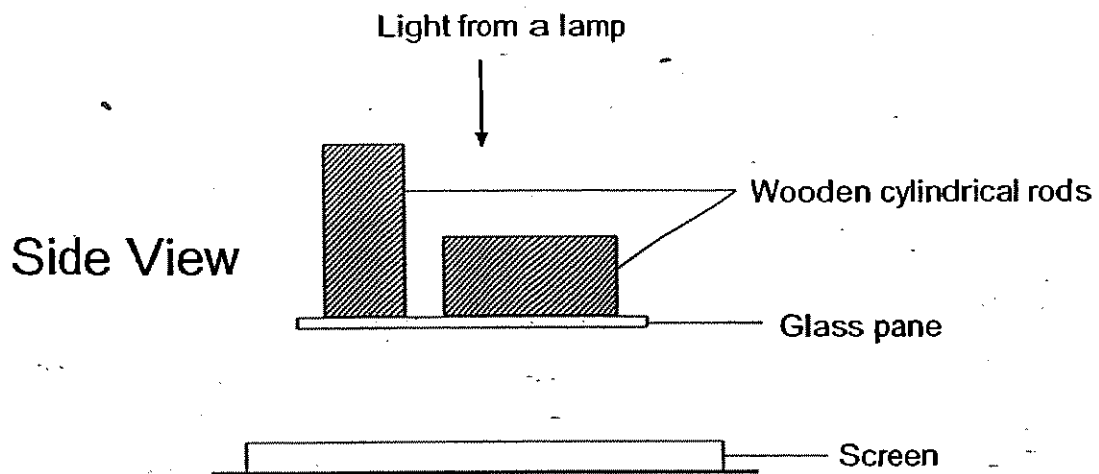
7 Ahmad made four periscopes as shown below.



Which of them would allow him to see the candle(s) at the end of the periscope(s)?

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

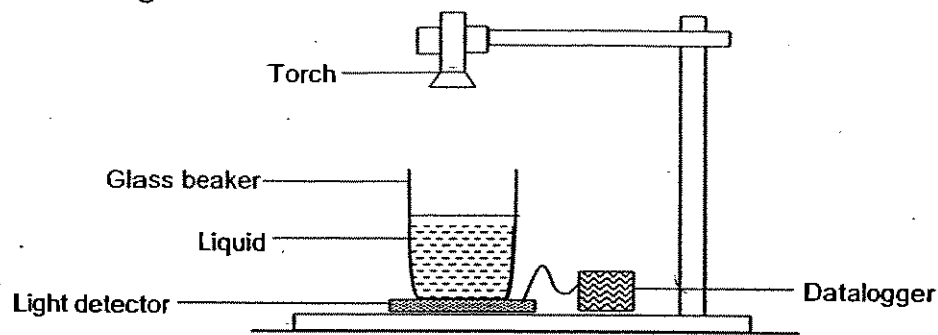
- 8 Two identical wooden cylindrical rods were placed on a glass pane at two different positions directly under a light source in a dark room as shown below.



Which one of the following shows the likely shadows that are cast on the screen?

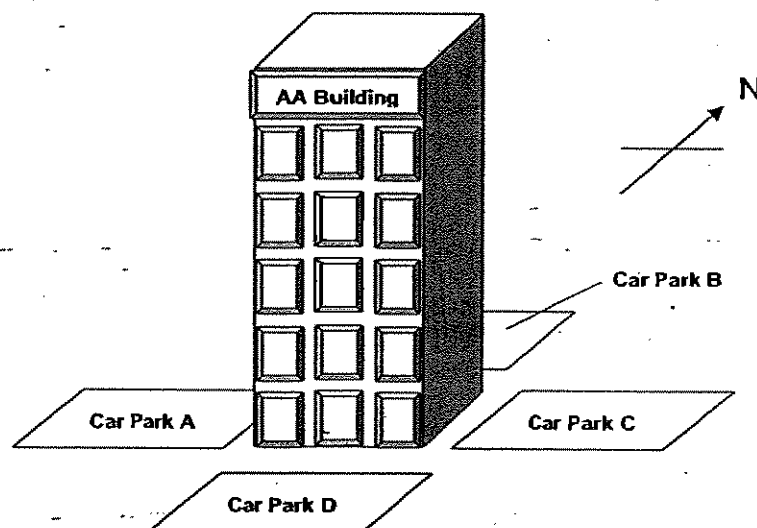
|     |  |
|-----|--|
| (1) |  |
| (2) |  |
| (3) |  |
| (4) |  |

- 9 Lionel wants to carry out an experiment to find out how different types of liquid affects the amount of light passing through it. He sets up the experiment as shows in the diagram below.



Which one of the following variables was changed in this experiment?

- (1) Type of liquid
  - (2) Intensity of light
  - (3) Type of glass beaker
  - (4) Distance of torch from the surface of the liquid
- 10 Mr. Lim drove to AA Building and reached there at 4p.m. He wanted to find a car-park that would be most shady.



Which one of the following car parks would he most likely to choose to park his car?

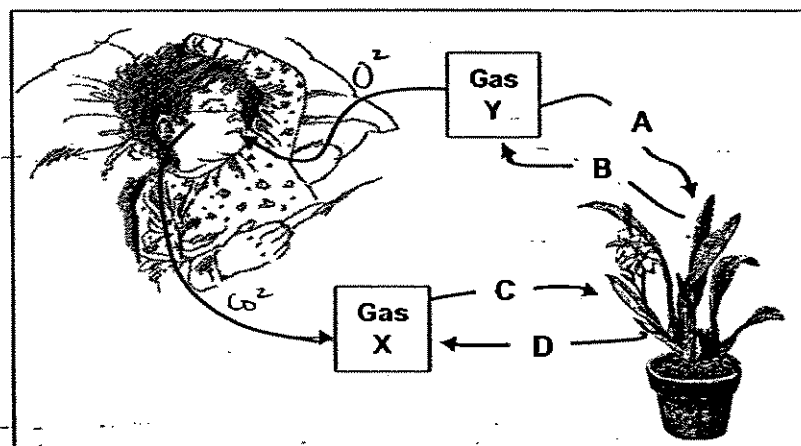
- (1) A
- (2) B
- (3) C
- (4) D

- 11 Luke was trying to find out if the location of a plant placed in an experiment affects the amount of oxygen produced by the potted plant. The table below shows the set-ups for the test.

| Set-up | Time duration of experiment | Amount of water given to the plant (ml) | Type of plant  | Location of experiment |
|--------|-----------------------------|-----------------------------------------|----------------|------------------------|
| A      | 1 day                       | 20                                      | Money plant    | Sunny place            |
| B      | 1/2 day                     | 20                                      | Money plant    | Shady place            |
| C      | 1 day                       | 10                                      | Hibiscus plant | Shady place            |
| D      | 1 day                       | 20                                      | Money plant    | Shady place            |
| E      | 1 day                       | 20                                      | Hibiscus plant | Shady place            |

Which two set-ups should he use to conduct a fair test?

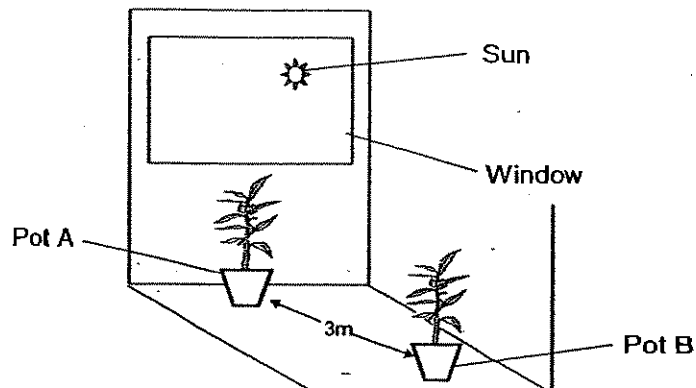
- (1) A and B
  - (2) A and D
  - (3) B and D
  - (4) C and E
- 12 Zacharias has a potted plant in his room. During respiration, he takes in Gas Y and gives out Gas X.



Which of the following arrows show the correct flow of Gas X and Gas Y during respiration in the plant?

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

- 13 Mr. Tan placed two identical plants in Pot A and Pot B, at his balcony. The balcony had only one window as shown below. He gave the two plants the same amount of water daily.



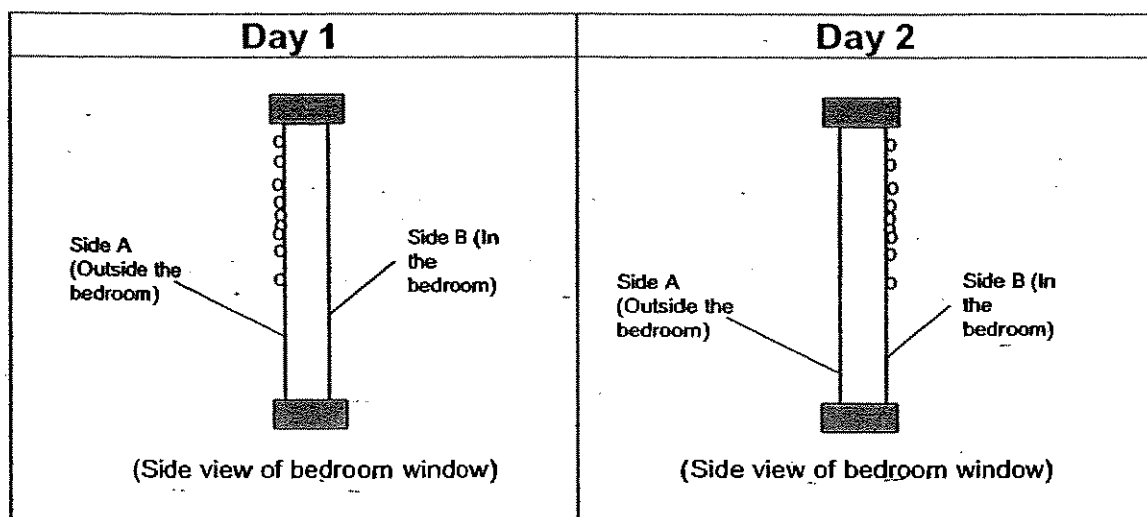
What would most likely happen to the height of his two plants a year later?

- (1) Both plants grew to the same height.
  - (2) The height of both plants remained unchanged.
  - (3) Pot A's plant grew taller because it wanted to get more sunlight.
  - (4) Pot B's plant was taller because it did not receive enough sunlight.
- 14 Which one of the following comparisons between inhaled air and exhaled air is incorrect?

|     | Inhaled air         | Exhaled air         |
|-----|---------------------|---------------------|
| (1) | Less warm           | warmer              |
| (2) | More oxygen         | Less oxygen         |
| (3) | More Water vapour   | Less water vapour   |
| (4) | Less carbon dioxide | More carbon dioxide |

## 15 Alice's room was air-conditioned.

She noticed that water droplets were formed at Side A on Day 1. However, on Day 2, she observed that the water droplets were formed at Side B.

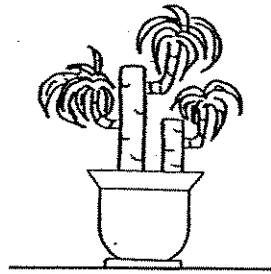


Which one of the following shows the possible temperature conditions inside and outside the room during the two days?

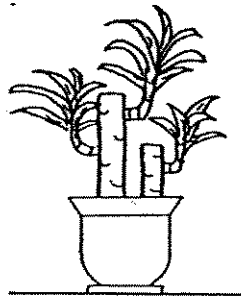
|     | Day 1                                            |                                             | Day 2                                            |                                             |
|-----|--------------------------------------------------|---------------------------------------------|--------------------------------------------------|---------------------------------------------|
|     | Temperature condition of air outside the bedroom | Temperature condition of air in the bedroom | Temperature condition of air outside the bedroom | Temperature condition of air in the bedroom |
| (1) | cooler                                           | warmer                                      | warmer                                           | cooler                                      |
| (2) | cooler                                           | cooler                                      | warmer                                           | warmer                                      |
| (3) | warmer                                           | cooler                                      | cooler                                           | warmer                                      |
| (4) | warmer                                           | warmer                                      | cooler                                           | cooler                                      |



- 16 Jon realised that the leaves of his plant placed along the corridor sagged as shown below.



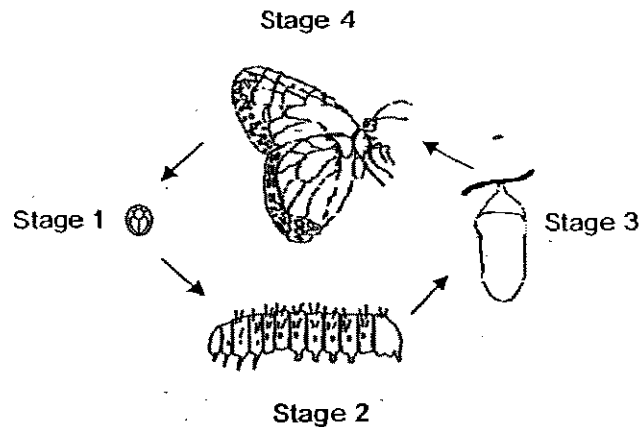
He did one thing to the plant and the following day, he observed that the leaves became firm.



What could he possibly have done to the plant?

- (1) He wet the leaves.
  - (2) He watered the plant.
  - (3) He added fertiliser to the soil.
  - (4) He placed the potted plant in an open field under the sun.
- 17 When blood leaves the heart through the arteries, the substance found in the greatest concentration in the blood is \_\_\_\_\_.
- (1) water
  - (2) oxygen
  - (3) digested food
  - (4) carbon dioxide

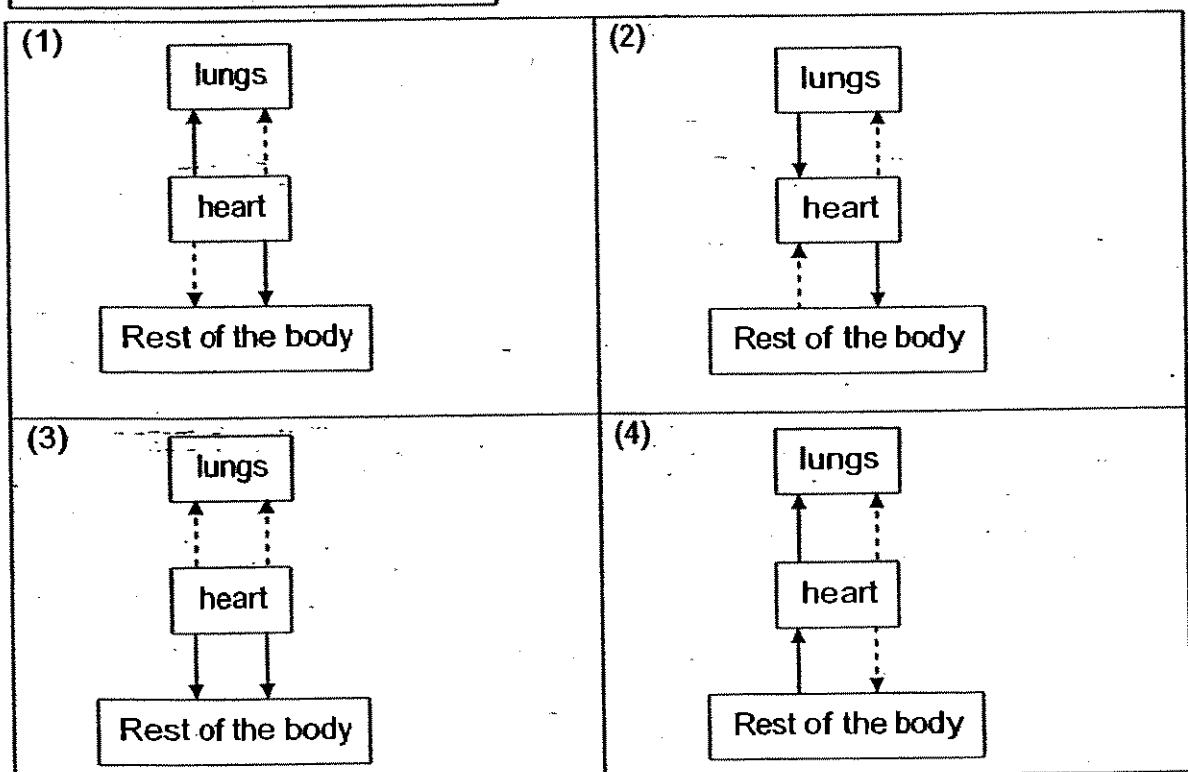
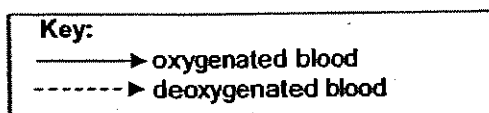
18 The diagram below shows the life cycle of the butterfly.



Which one of the following statements is true of the life cycle above?

- (1) Legs are absent in stage 2.
- (2) Wings are developed in stage 3.
- (3) The animal eats in stages 3 and 4 only.
- (4) Egg is not one of the stages in the lifecycle.

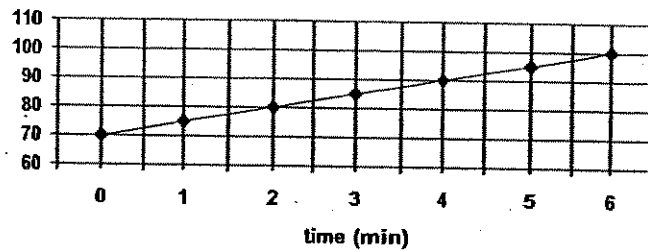
19 Which one of the following diagrams correctly shows the circulatory system in human?



- 20 Which one of the following graphs shows the fastest time to reach the highest number of heartbeat?

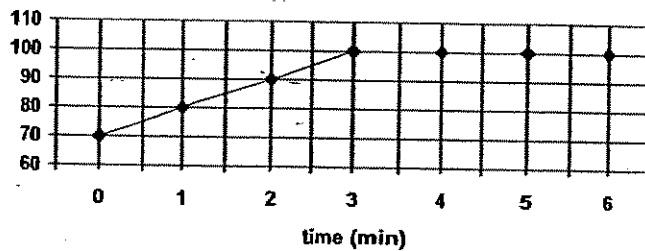
(1)

number of heartbeat



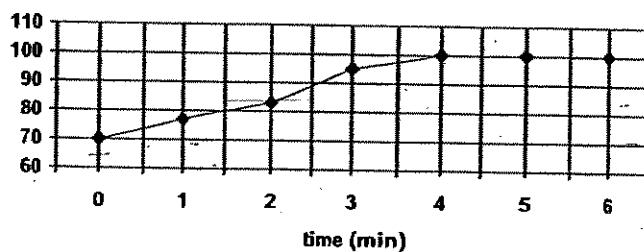
(2)

number of heartbeat



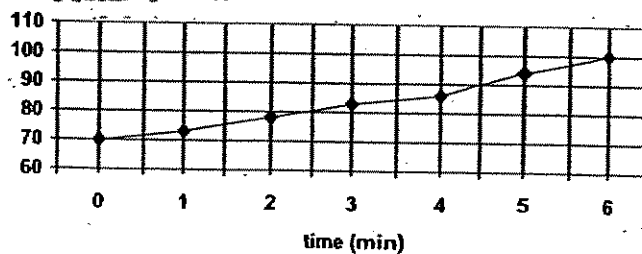
(3)

number of heartbeat

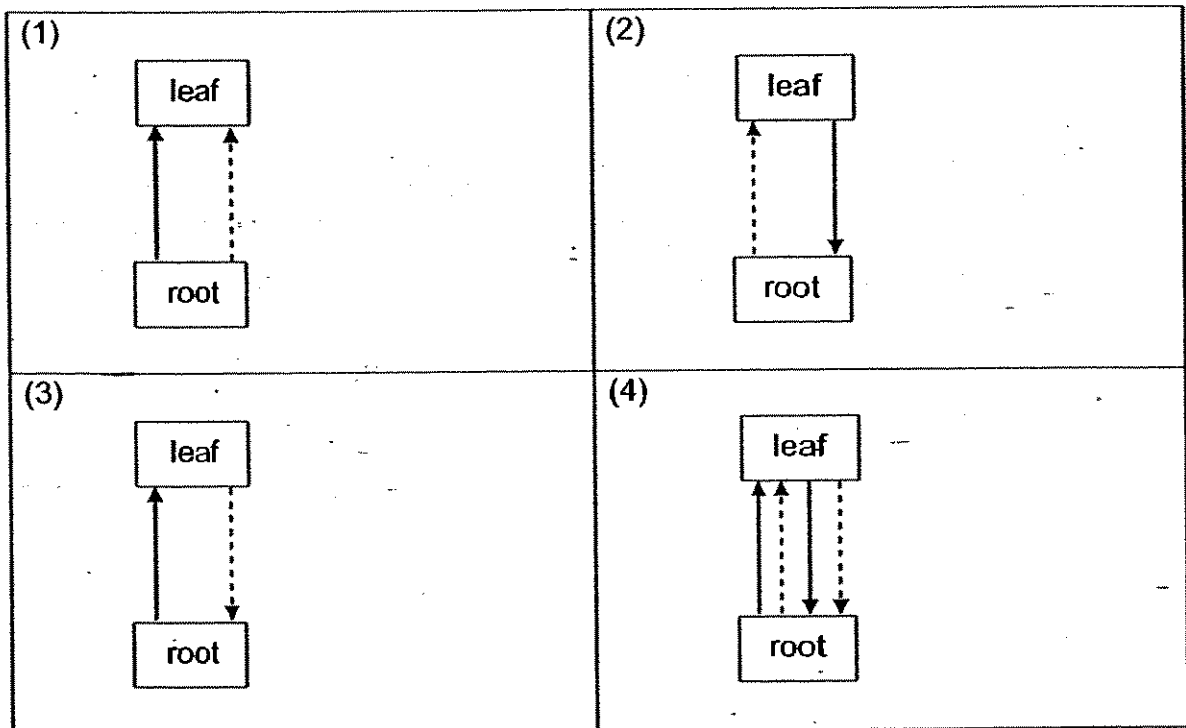
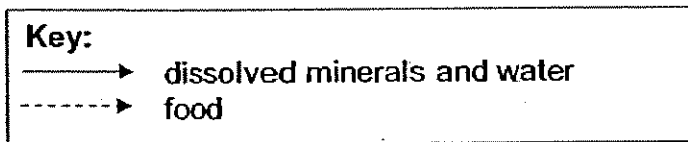


(4)

number of heartbeat



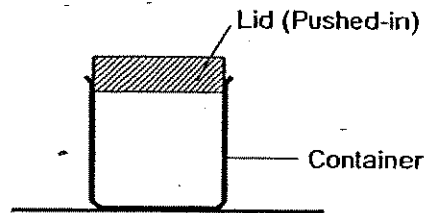
- 21 Which **one** of the following diagrams correctly shows the transport system of a plant?



- 22 Which **one** of the following parts of the digestive system absorbs digested food into the Human Circulatory System?

- (1) gullet
- (2) stomach
- (3) small intestine
- (4) large intestine

- 23 The diagram below shows an air-tight plastic container.



The properties of the lid and the container are as follows:

**Lid:**

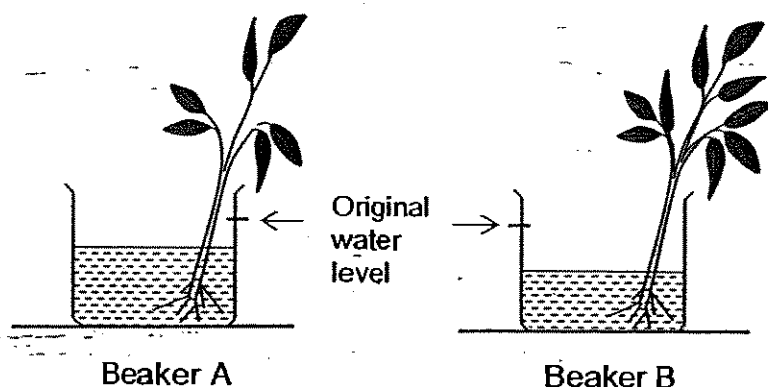
Conducts heat very quickly  
Does not allow light to pass through

**Container:**

Cracks at 80°C  
Allows most light to pass through

Which one of the following actions should be taken to open the lid?

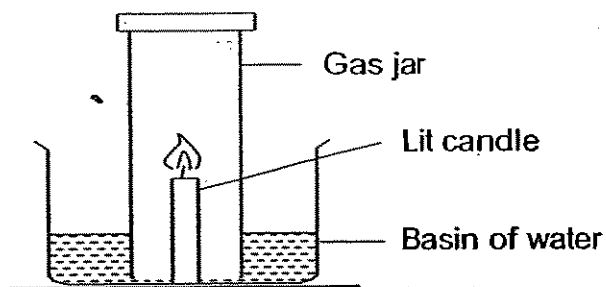
- (1) Put ice on the lid.
  - (2) Shine torchlight on the lid.
  - (3) Put boiling water on the lid.
  - (4) Heat the container to 80°C.
- 24 2 plants of the same type were left at the window over a period of 2 days. At the end of the experiment, the water in beaker B was found to have decreased more than the water in beaker A as compared to the original water level as shown below.



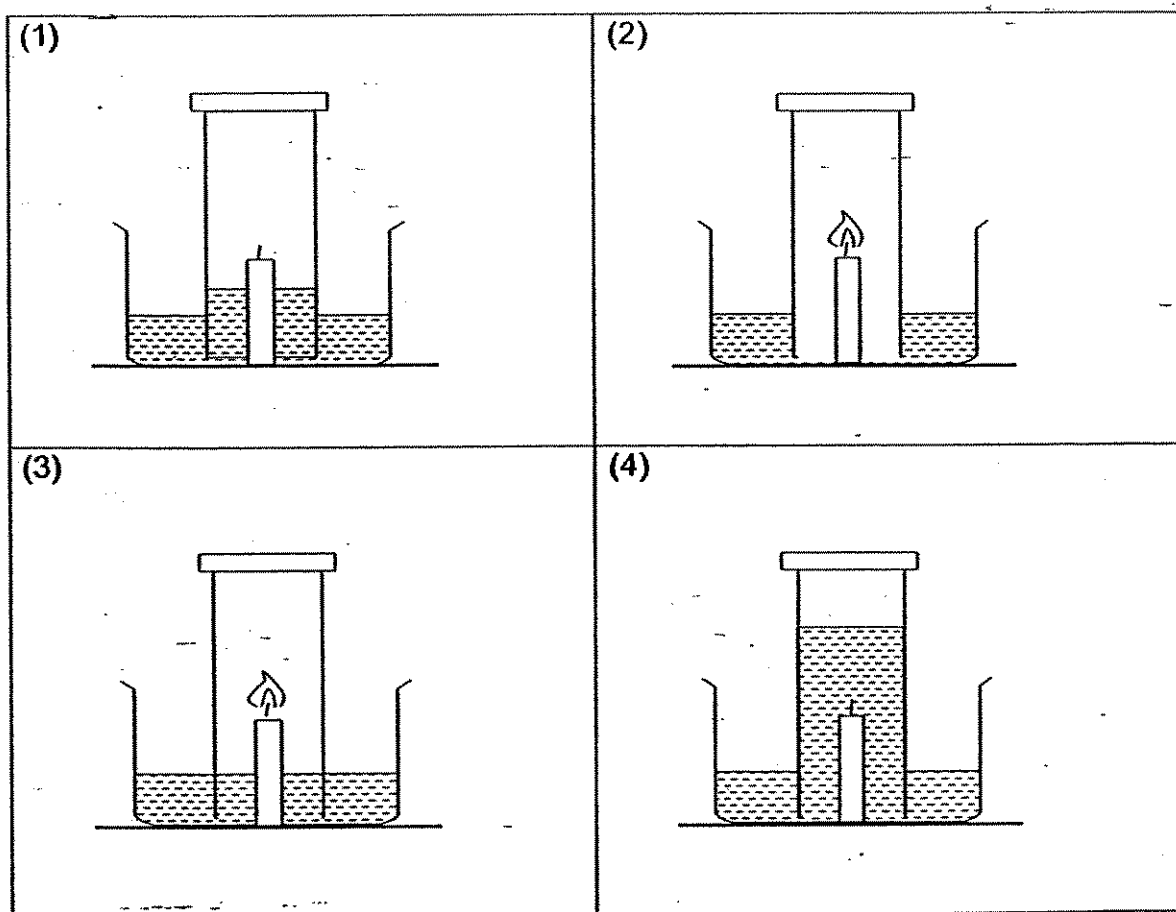
The most likely aim of the experiment was to find out if \_\_\_\_\_.

- (1) air is needed to produce leaves
- (2) plants need light to produce food
- (3) roots transport water throughout the plant
- (4) the number of leaves affect the absorption of water

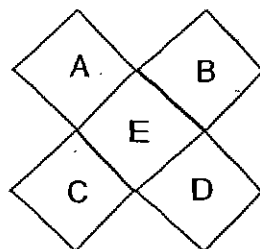
- 25 A lit candle is stuck onto the bottom surface of the basin. A gas jar is held just above the bottom surface of a basin as shown below.



Which of the following diagrams correctly shows what will happen after sometime?



26 5 metal pieces of different temperatures are arranged as shown below.



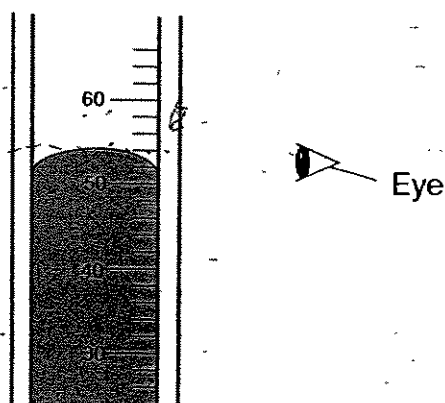
The table below shows the temperature of each metal piece at the beginning of the experiment.

| Metal | Temperature ( $^{\circ}\text{C}$ ) |
|-------|------------------------------------|
| A     | 80                                 |
| B     | 100                                |
| C     | 10                                 |
| D     | 150                                |
| E     | 30                                 |

Which one of the following statements is most likely true about how heat would travel in the above arrangement?

- (1) Metal C would gain the most heat.
- (2) Metal E would lose heat to Metal D.
- (3) Metal B would gain heat from Metal A.
- (4) Metal E would remain at room temperature throughout.

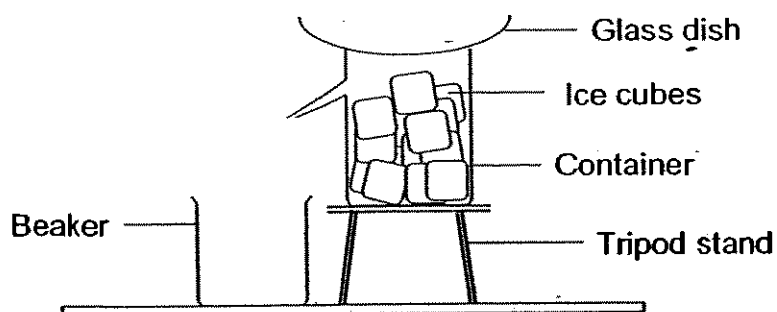
27 The diagram below shows part of the thermometer.



What is the reading on the thermometer?

- (1)  $54^{\circ}\text{C}$
- (2)  $52^{\circ}\text{C}$
- (3)  $50^{\circ}\text{C}$
- (4)  $26^{\circ}\text{C}$

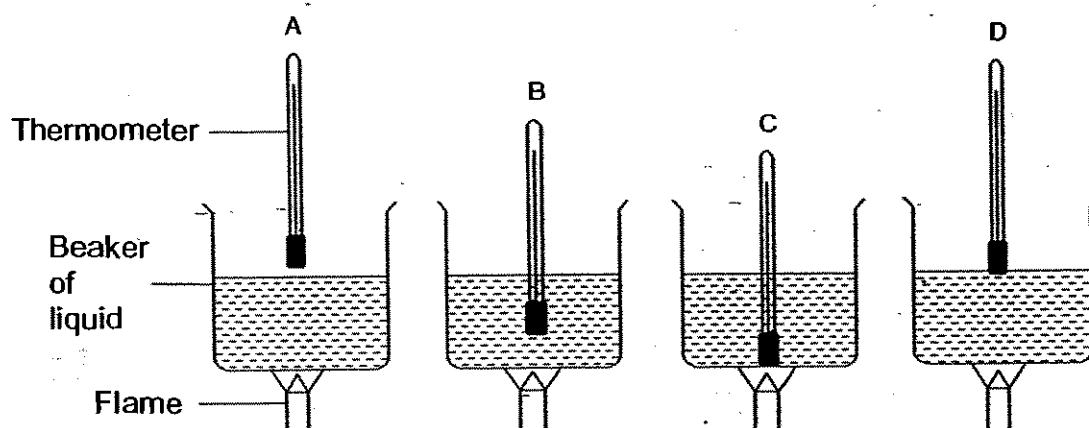
28 Some ice cubes were left in a container as shown below.



Which **one** of the following would most likely be observed after sometime?

- (1) There is no water in the container.
- (2) There are a lot of water droplets in the glass dish.
- (3) There are tiny water droplets on the outside of the beaker.
- (4) There are tiny water droplets on the outside of the container.

29 4 laboratory thermometers are held at positions A, B, C and D to measure the temperature change of a liquid as shown below.

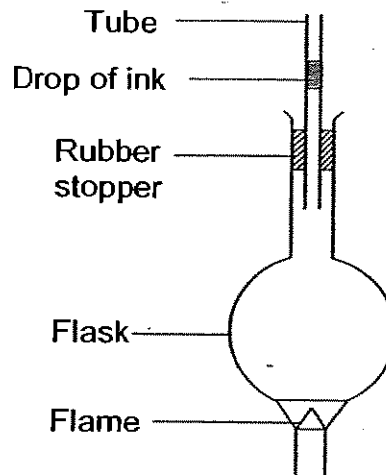


At which position should the thermometer be held at so as to give the best measurement of the temperature of the liquid?

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

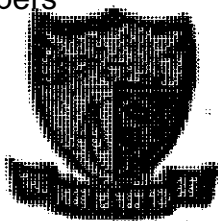


- 30 A tube containing a drop of ink was attached to a flask and heated as shown in the diagram. When the flask was placed over a flame, the ink drop dropped a little before rising up the tube.



Which one of the following reasons best explained why there was a drop initially?

- (1) The drop of ink expanded.
- (2) The air in the flask expanded.
- (3) The rubber stopper was too tight.
- (4) The flask got heated and expanded first.

**Anglo-Chinese School (Primary)****P4 SCIENCE 2007****END-OF-YEAR EXAMINATION****BOOKLET B**

Name: \_\_\_\_\_ (     ) Class: Primary 4 \_\_\_\_\_

Date: 1 November 2007

Duration of paper: 1h 45 min

|                       | Maximum Marks | Marks Obtained |
|-----------------------|---------------|----------------|
| Section A / Booklet A | 60            |                |
| Section B / Booklet B | 40            |                |
| Total                 | 100           |                |

**THIS BOOKLET CONTAINS 13 PAGES.****DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.****FOLLOW ALL INSTRUCTIONS CAREFULLY.**

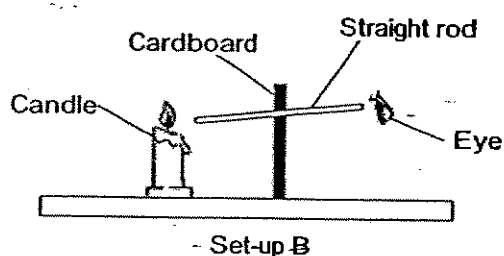
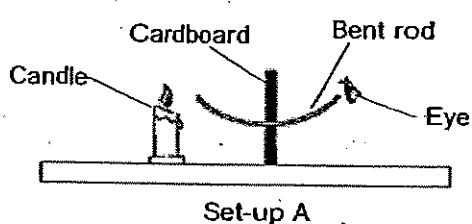
## PART II

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

The number of marks available is shown in brackets [ ] at the end of each question or part question.

(40 marks)

- 31 Tommy carried out an experiment using set-ups, A and B, as shown in the diagram below. In set-up A, he inserted a bent hollow rod in the cardboard, but in set-up B, he inserted a straight hollow rod in it. He then looked through the two rods.



- (a) What was the likely aim of Tommy's experiment?

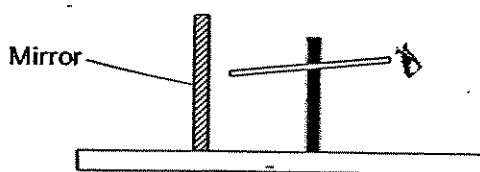
[1] -

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Tommy then placed Set-up B in a totally dark room and he replaced the candle flame with a mirror as shown below.



- (b) Could he see the mirror when he looked through the hollow rod? Why?

[2]

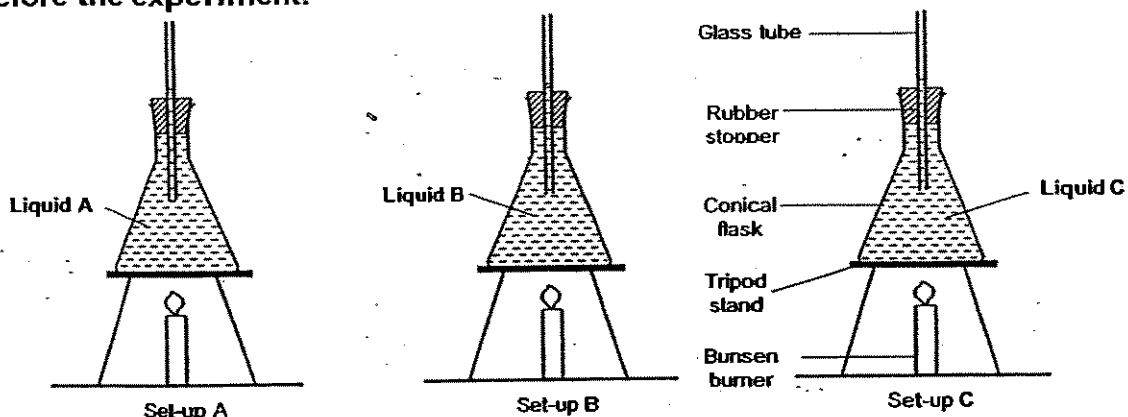
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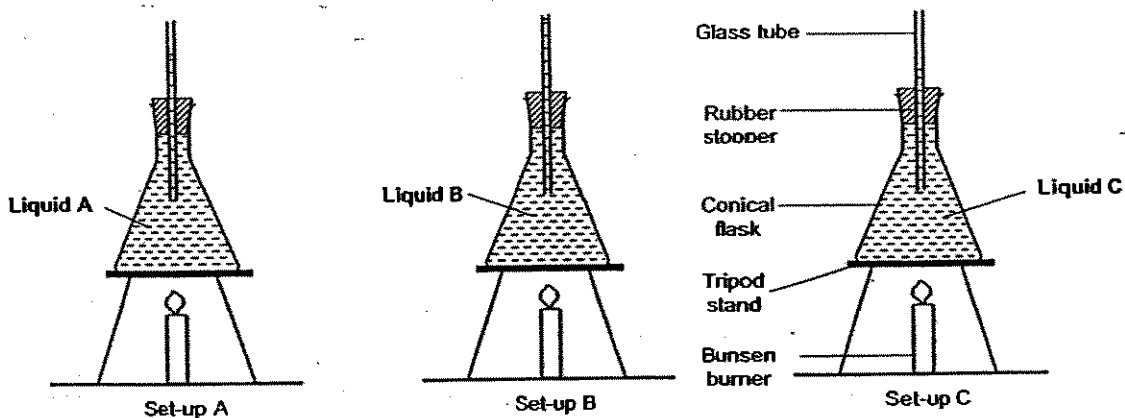
32 Stanton carried out an experiment using set-ups A, B and C, as shown below.

**Before the experiment:**

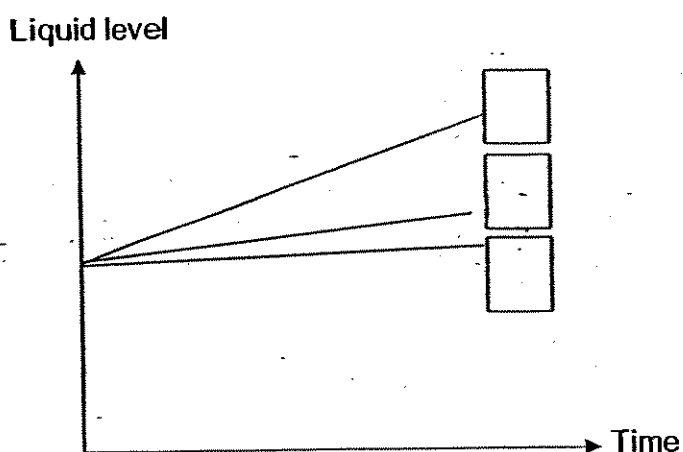


He observed that upon heating, each liquid rose to a different level as shown below.

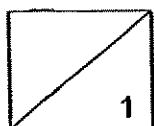
**After the experiment:**



Then he plotted the results in the graph below.



(a) Label the graph above by writing the letters A, B and C in the boxes provided to represent each set-up. [1]



- (b) List two variables that must be kept constant for his experiment to be a fair one. [2]

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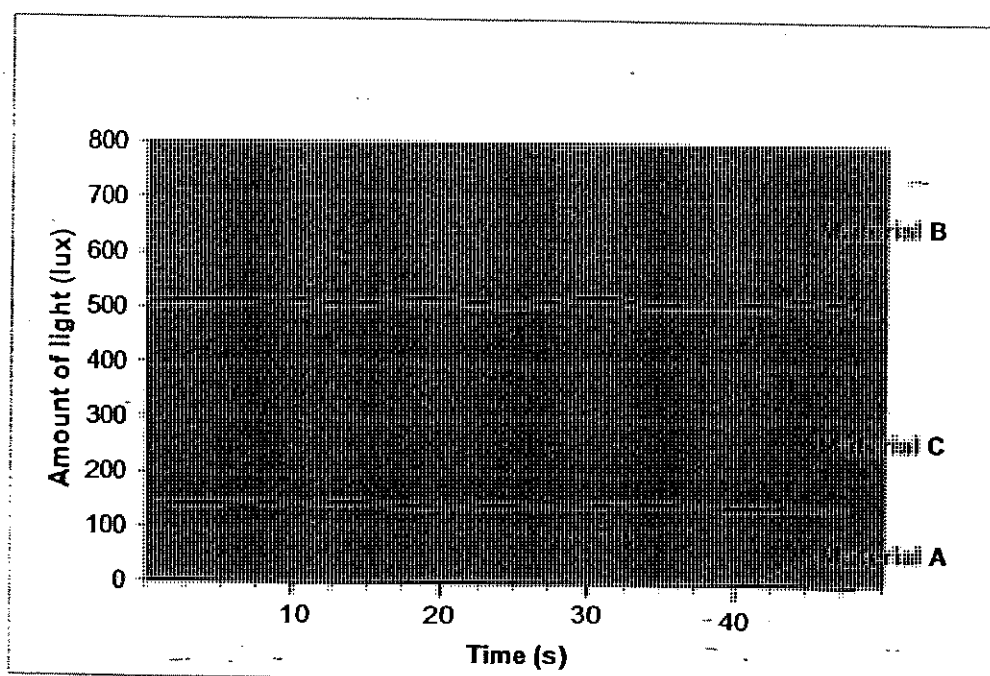


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- (c) What was the aim of his experiment? [1]

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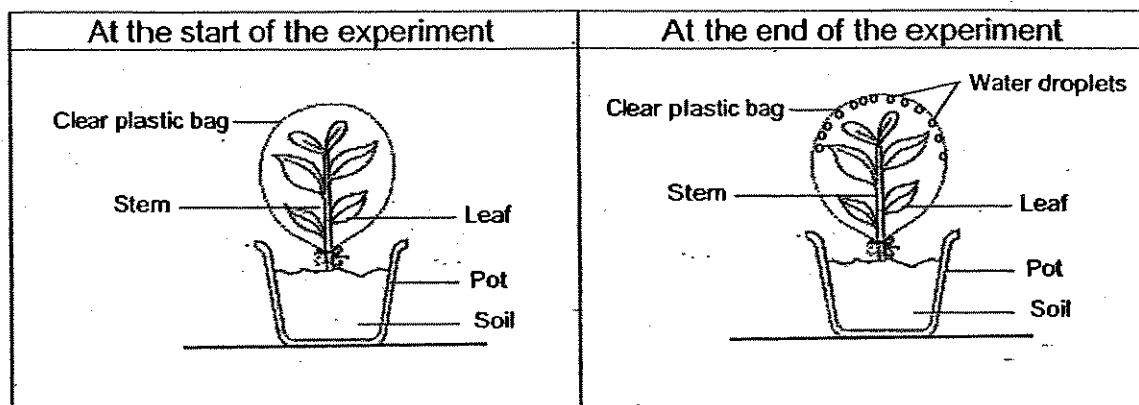
- 33 A datalogger was used to measure the amount of light passing through three different materials A, B and C.



Based on the graph shown above, indicate with a tick (✓) whether each of the statements is 'True', 'False' or 'Not possible to tell'. [2]

|     | Statements                                                       | True | False | Not possible to tell |
|-----|------------------------------------------------------------------|------|-------|----------------------|
| (a) | Material A is an opaque object.                                  |      |       |                      |
| (b) | Material B allows more light to pass through it than Material C. |      |       |                      |
| (c) | Material C is frosted glass.                                     |      |       |                      |
| (d) | No shadow is formed when light is blocked by Material A.         |      |       |                      |

- 34 Zoe carried out an experiment to find out if it is the leaves of the plant that give out water vapour. She placed a clear plastic bag over on a plant as shown below and placed it at an open field. A day later, she observed droplets of water were formed on the inner side of the clear plastic bag.

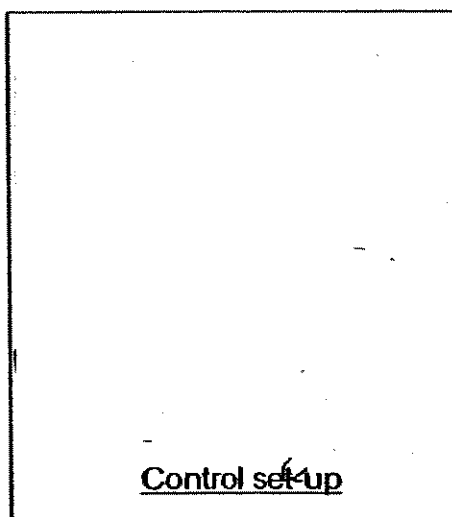


- (a) What could she conclude from this experiment?

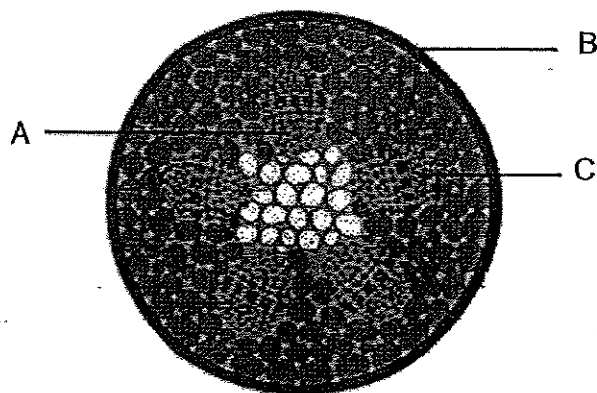
[1]

- (b) Draw in the box below to show the control set-up for this experiment.

[1]



35 The diagram below shows a cross section of a stem.



- (a) If the stem is put into a beaker of coloured water for 2 hours, which part A, B or C will be stained the most? [1]

\_\_\_\_\_

- (b) Name part A. [1]

\_\_\_\_\_

36 (a) Complete the table below by stating the breathing organs that are used by the 2 living things. [1]

| Living thing | Breathing organ |
|--------------|-----------------|
| Fish         |                 |
| Mammal       |                 |

- (b) Besides having different breathing organs, why are fish unable to breathe through their breathing organ on land as mammals do? [1]

\_\_\_\_\_

\_\_\_\_\_

- 37 Jack placed a mirror in front of his mouth. When he breathed out, he noticed a mist forming on the mirror.

(a) What is this mist? [1]

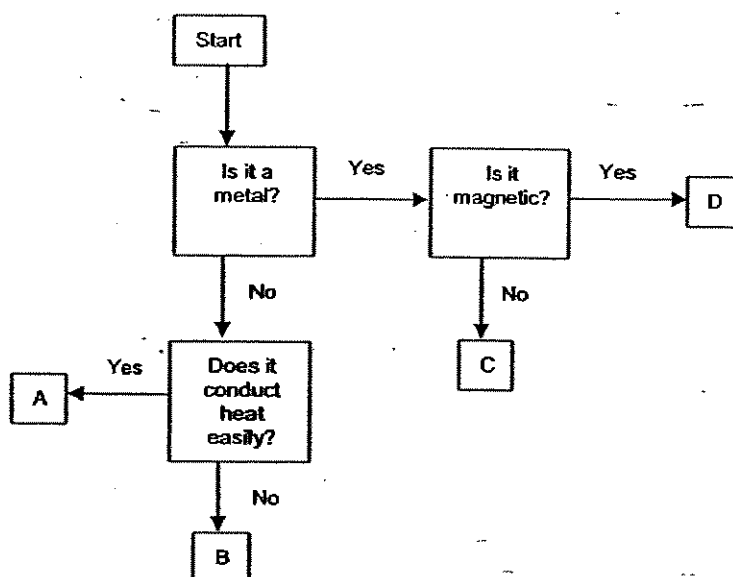
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(b) Explain how this mist was formed. [2]

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- 38 Study the flowchart below.

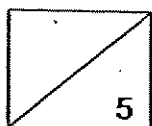


(a) Based on the flow chart above, what are the characteristics of material A? [1]

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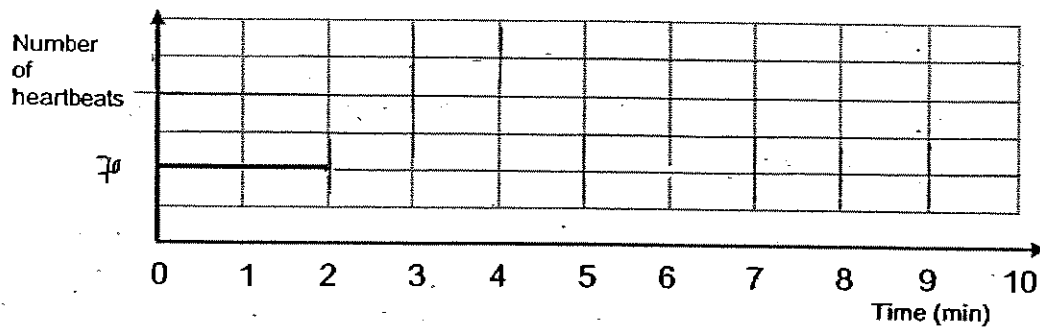
(b) Give an example of material D. [1]

---





- 39 The graph below shows the resting pulse rate of a person from the 1<sup>st</sup> minute till the 2<sup>nd</sup> minute.



- (a) Draw on the same graph above to show what happens when the person starts to jog from the 2<sup>nd</sup> minute and continues to do so for the next 2 minutes. [1] o
- (b) Draw on the graph above to show what happens if the person stops jogging at the 4<sup>th</sup> minute and rests till the 9<sup>th</sup> minute. [1]
- (c) What are the two systems in our body that allow nutrients to be transported and absorbed respectively into all parts of the body? [1]
-

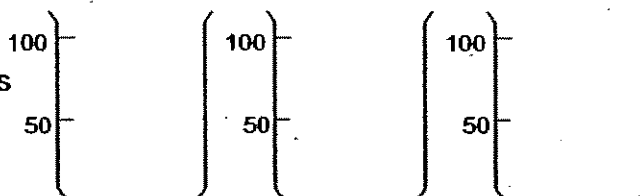
40 The aim of the experiment and the apparatus needed are as follow.

[2]

**Aim of experiment:** To find out if exposed surface area of the container affects the rate of evaporation of water.

**Apparatus:**

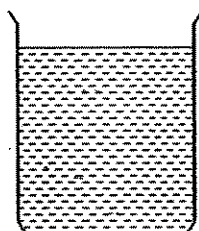
Three 100ml beakers



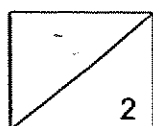
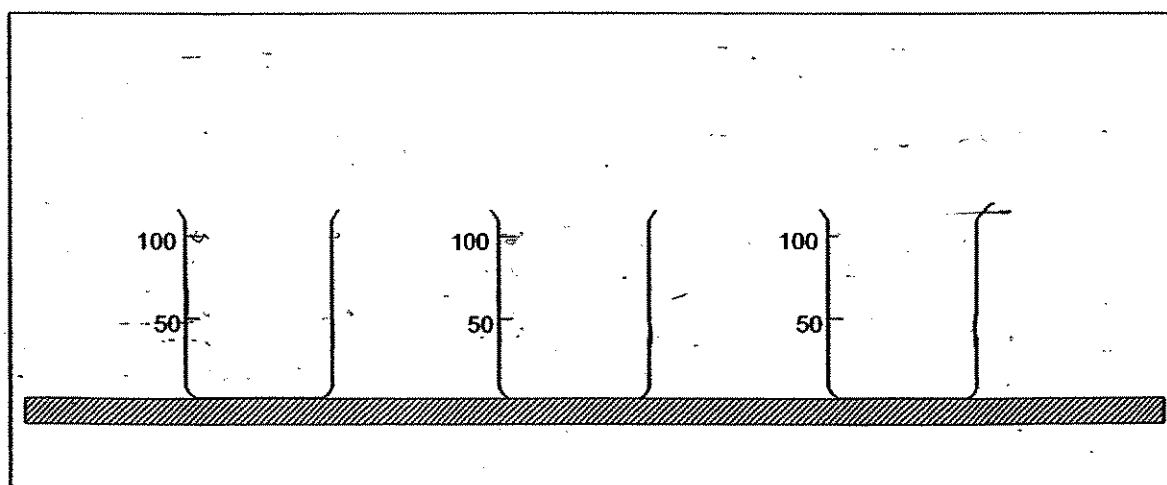
3 cardboards



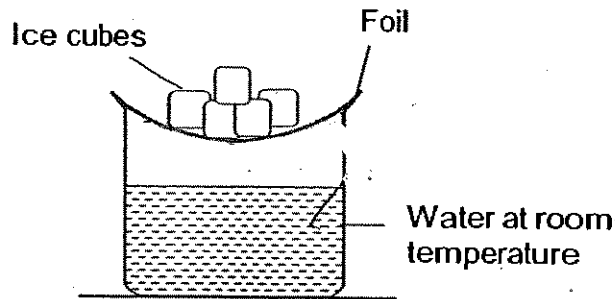
300 ml of water



Use a pencil to draw how the set-ups should look like in the space below. You do not need to use all of the apparatus. Label your set-ups using the words (example: cardboard, water and beaker). Indicate the amount of water in each beaker clearly. A table top and the beakers have been drawn for you.

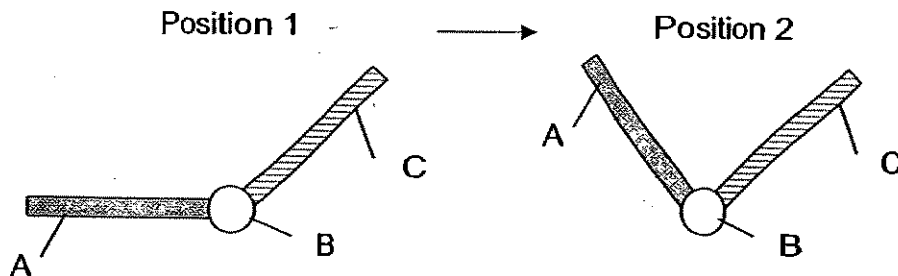


- 41 The model below is used to demonstrate the formation of rain.



- (a) Draw where the water droplets would be formed in the diagram above. [1]
- (b) What can be done to increase the amount of 'rain' in the model? [1]
- 

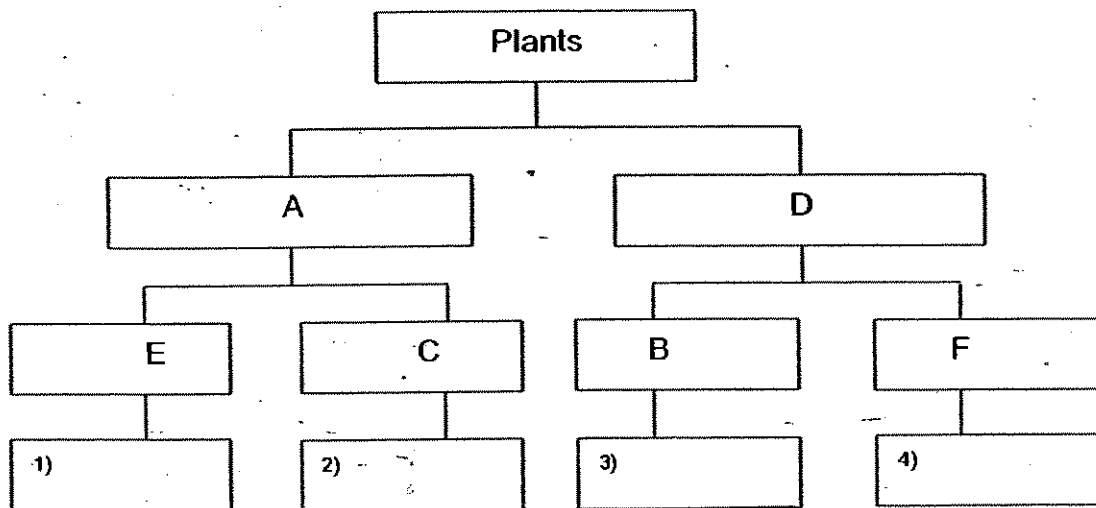
- 42 Parts A, B and C represent the model of a human arm. The model below shows the movement of the arm from position 1 to position 2.



- (a) Name the 2 body systems that allow for such a movement. [1]
- 
- (b) What would part B represent? [1]
-

- 43 You are told that plant X have characteristics A and E, plant Y have characteristics B and D and plant Z have characteristics A and C.

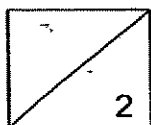
(a) Based on the information above, put the plants X, Y and Z in the appropriate boxes (1, 2, 3 or 4) below. [1]



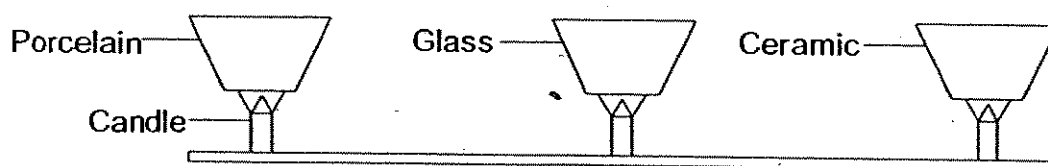
(b) If the plant in box 1 is Morning Glory and the plant in box 3 is Bird's Nest Fern, what is the characteristic of A and D? [1]

A: \_\_\_\_\_

D: \_\_\_\_\_



- 44 In an experiment, some ice-cubes were heated in each of the containers as shown below. The containers were of the same size but were made of different materials.



The table below shows the results of the experiment.

| Material  | Number of ice-cubes | Number of candles | Time taken for all the ice-cubes to melt completely |
|-----------|---------------------|-------------------|-----------------------------------------------------|
| Porcelain | 10                  | 1                 | 4 min 20 s                                          |
| Glass     | 10                  | 1                 | 2 min 45 s                                          |
| Ceramic   | 10                  | 1                 | 5 min 5 s                                           |

- (a) From the results above, which material allowed the ice cubes to melt the fastest? [1]

---

- (b) Based on your answer in (a), what would be a possible aim of the experiment? [1]

---

In another experiment, the time taken for the ice cubes to melt in porcelain container using different amounts of heat was measured.

The table below shows the results of the experiment.

| Material  | Number of ice-cubes | Number of candles | Time taken for ice-cubes to melt completely |
|-----------|---------------------|-------------------|---------------------------------------------|
| Porcelain | 10                  | 1                 | 4 min 20 s                                  |
| Porcelain | 10                  | 2                 | 3 min 25 s                                  |
| Porcelain | 10                  | 3                 | 2 min 37 s                                  |

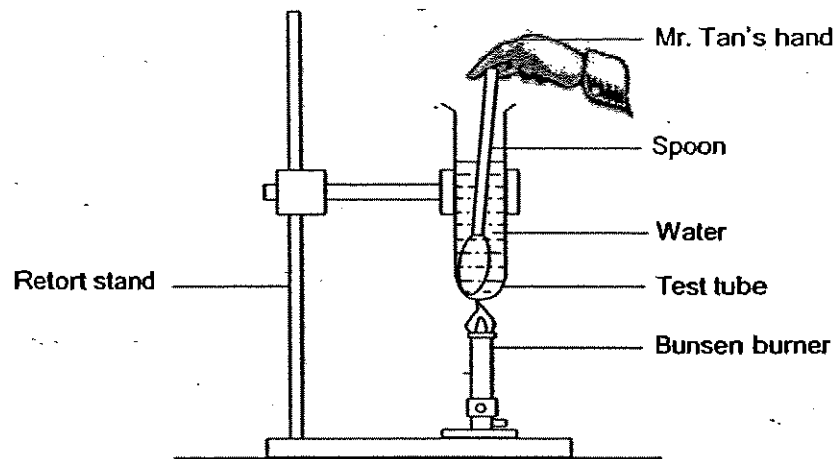
- (c) What is the relationship between the number of candles and the time taken for the ice-cubes to melt completely? [1]

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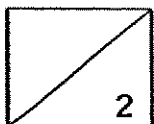
- 45 A test tube of water was being heated and during heating, Mr. Tan held the spoon which was dipped in the water as shown below.



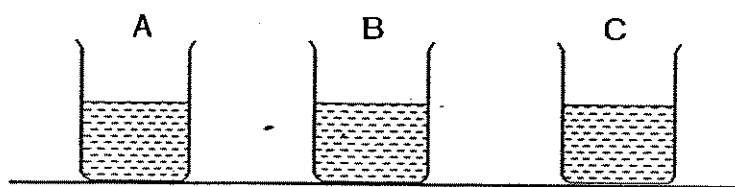
How does heat travel to his hand?

[2]

From \_\_\_\_\_ to \_\_\_\_\_ to  
\_\_\_\_\_ to the hand.



- 46 The diagram below shows 3 beakers of 3 different colourless liquids A, B and C.

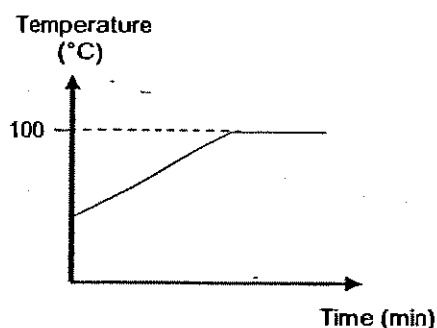


- (a) What can you do to test and find out if one of the liquids is limewater? [2]

---

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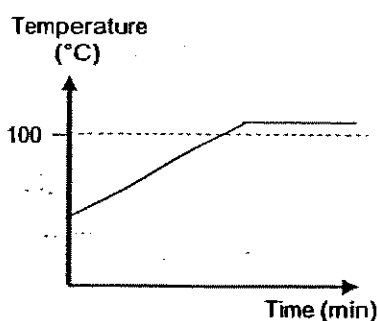
The graph below shows how the temperature of liquid A changes upon heating.



- (b) What is liquid A likely to be? [1]

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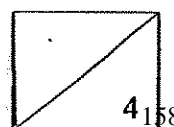
The graph below shows what happened when something was added to liquid A as it was heated. [1]

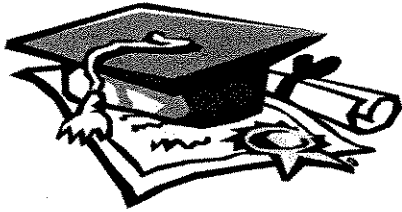


- (c) What was most likely added to liquid A? [1]

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END OF PAPER





# ANSWER SHEET

A C S PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007  
SEMESTRAL ASSESSMENT (2)

1. 2

2. 3

3. 2

4. 3

5. 1

6. 3

7. 2

8. 3

9. 1

10. 3

11. 2

12. 2

13. 3

14. 3

15. 3

16. 2

17. 2

18. 2

19. 2

20. 2

21. 3

22. 3

23. 1

24. 4

25. 1

26. 1

27. 1

28. 4

29. 2

30. 4

31) a) To see if light travels in straight lines.

b) No. The mirror does not give out its own light, thus no light is reflected to his eye.

32) a) B, A, C

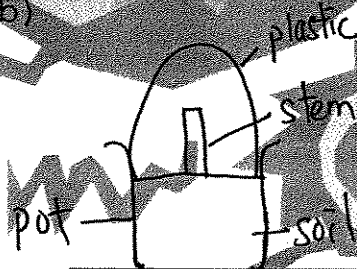
b) The amount of water in the glass tube in the beginning and the amount of heat applied.

c) To find out which liquid would expand the most when heated.

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

34) a) Plants give out water vapour.

b)



35) a) Part A.    b) Xylem

36) a) Fish: gills    Mammal: lungs

b) Fish cannot breathe in oxygen in the air.

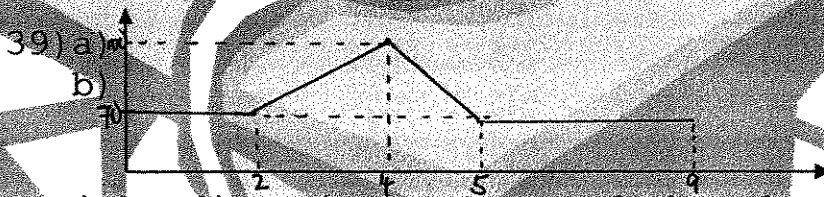


37) a) Tiny water droplets.

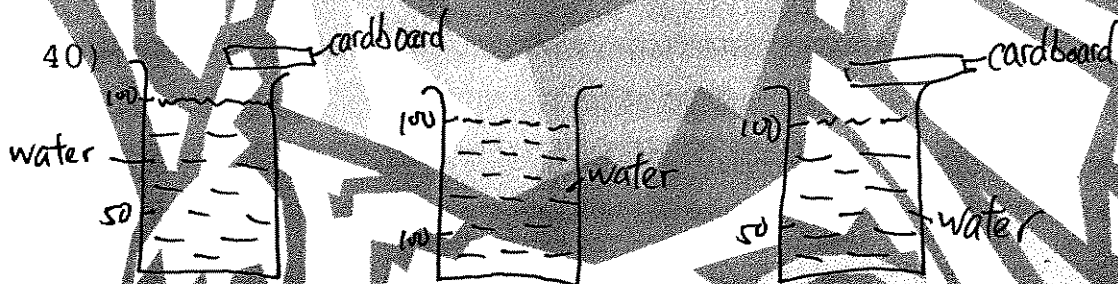
b) Water vapour from the exhaled air condensed on the cooler surface of the mirror, thus mist has formed on the mirror.

38) a) Material A is not a metal and conducts heat easily.

b) Nickel.



c) The digestive system and the circulatory system.



b) Put more ice on the foil.

42) a) The muscular system and the skeletal system.

b) A hinge joint.

43) a) 1) X 2) Z 3) Y

b) A: Flowering plants

D: non-flowering plants

44) a) Glass

b) To find out the type of material affects the heat from the candle to melt the ice cubes.

c) The more candles, the time taken to melt the ice cubes is shorter.

45) From the Bunsen burner to the test tube to the water to the spoon to the hand.

46) a) Dip a straw into each container and blow in it and see which one turns chalky.

b) water.

c) Salt.





## 2007 Semestral Assessment 2

## Science

Name : \_\_\_\_\_ ( )

Date : 31 October 2007

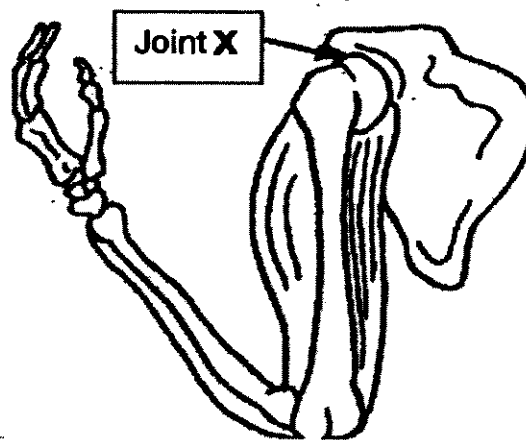
Class : Pr 4 ( )

Duration : 1 h 30 min ( Parts I &amp; II )

**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 (OAS).

1. Study the diagram below.



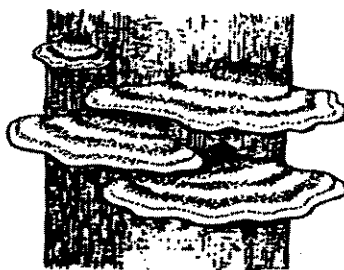
Which **other** part of the body can Joint X be found?

- (1) Hips
  - (2) Knee
  - (3) Finger
  - (4) Elbow
2. Our digestive system consists of the mouth, gullet, stomach, small intestine and large intestine. What happens if the small intestine is missing?
- (1) Solid waste cannot be passed out from the body.
  - (2) Water cannot be absorbed from the digested food.
  - (3) Digested food cannot be absorbed into the bloodstream.
  - (4) Small balls of food cannot be pushed down into the stomach.

3. Study the diagrams below.



Banana tree



Bracket fungus



Cat

Which of the following statements are **true** about all these three things?

- A. They can grow.
- B. They can reproduce.
- C. They need air, food and water.
- D. They move from place to place.

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

4. Some pupils tested four materials (A, B, C and D) and recorded their results as shown in the table below.

| Material            | A | B | C | D |
|---------------------|---|---|---|---|
| Is waterproof       | ✓ | ✓ | ✓ | X |
| Can be folded       | X | ✓ | X | ✓ |
| Breaks when dropped | ✓ | X | X | X |

Which one of the following materials is suitable for making raincoat?

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

5. The process of shedding old skins and growing new ones is called moulting. In the life cycle of the butterfly, this process takes place during the \_\_\_\_\_ stage.

- (1) Adult
- (2) Larva
- (3) Nymph
- (4) Pupa

6. Nina was walking past a heap of rubbish on her way to school.

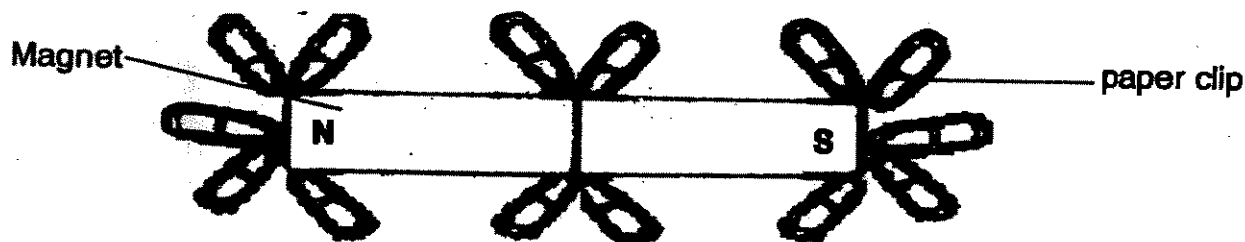


**Based on the above picture**, which **two** sense organs did Nina use to cause her to respond this way?

- A: Ears
- B: Eyes
- C: Skin
- D: Nose

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

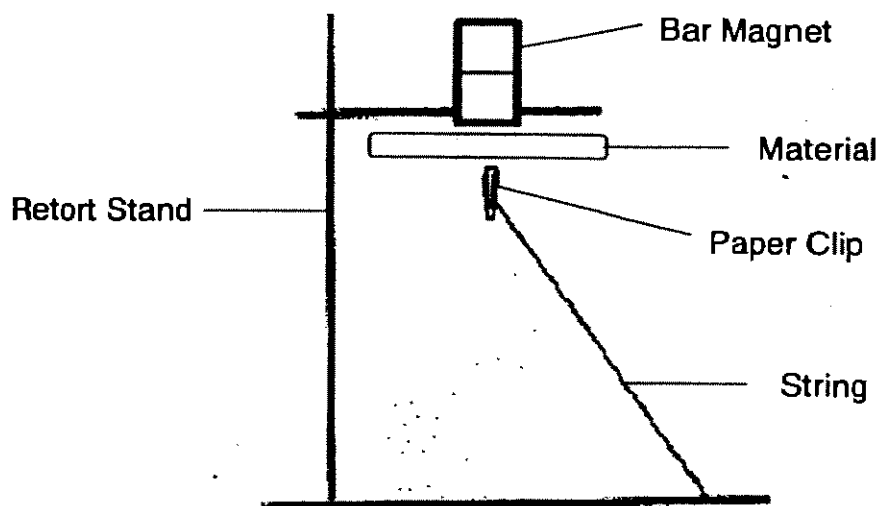
7. Benjamin found some paper clips hanging from a magnet as shown below.



Which one of the following statements can Benjamin conclude **correctly**?

- (1) The paper clips are non-magnetic.
- (2) The N-pole is stronger than the S-pole.
- (3) The paper clips are temporary magnets.
- (4) The pull of a magnet is strongest at the poles.

8. Clarice set up an experiment as shown below. She noted that when she placed different materials of 5mm thickness between the bar magnet and the paper clip, the paper clip remained floating in the air.



Which of the following materials would allow the paper clip to remain floating in the air?

- A: Iron
- B: Steel
- C: Wood
- D: Glass
- E: Plastic

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

9. Dave was investigating the properties of a metal ruler, a plastic spoon, a rubber band and a porcelain mug. He found that one of these objects was able to float, was flexible and did not break easily. Which one of the following objects has the properties described above?

(1)



metal ruler

(2)



plastic spoon

(3)



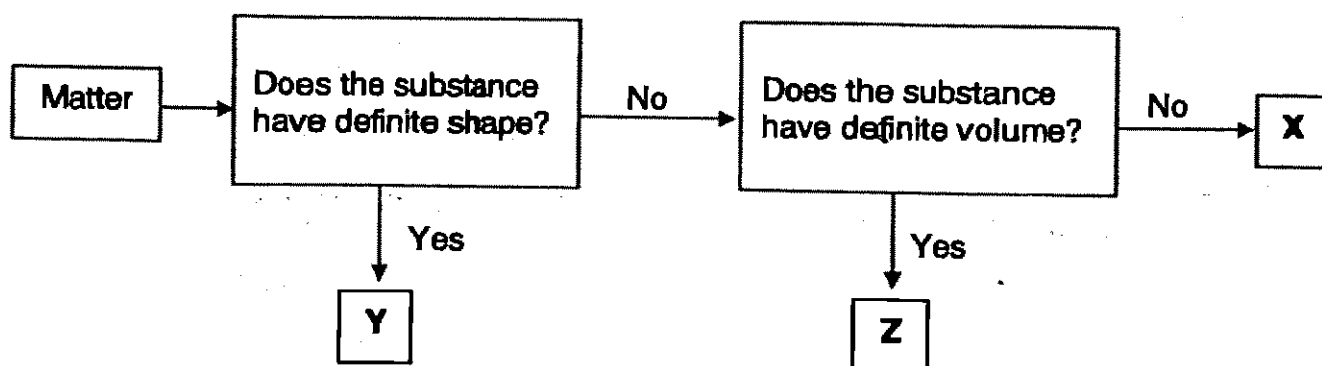
rubber band

(4)



porcelain mug

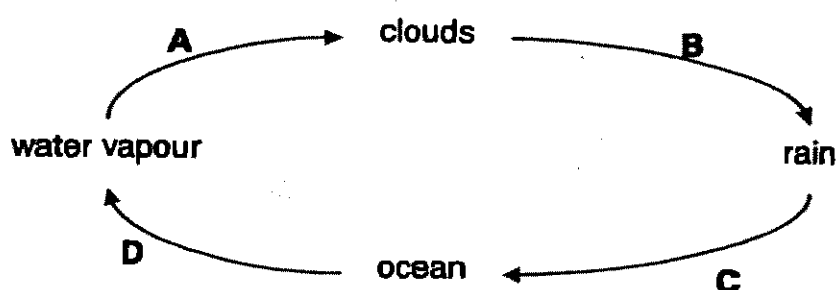
10. Christopher made use of the flow chart below to determine the state of some substances.



What could the state of substances **X**, **Y** and **Z** be?

|     | <b>X</b> | <b>Y</b> | <b>Z</b> |
|-----|----------|----------|----------|
| (1) | Solid    | Liquid   | Gas      |
| (2) | Gas      | Solid    | Liquid   |
| (3) | Liquid   | Gas      | Solid    |
| (4) | Gas      | Liquid   | Solid    |

11. Study the water cycle below.

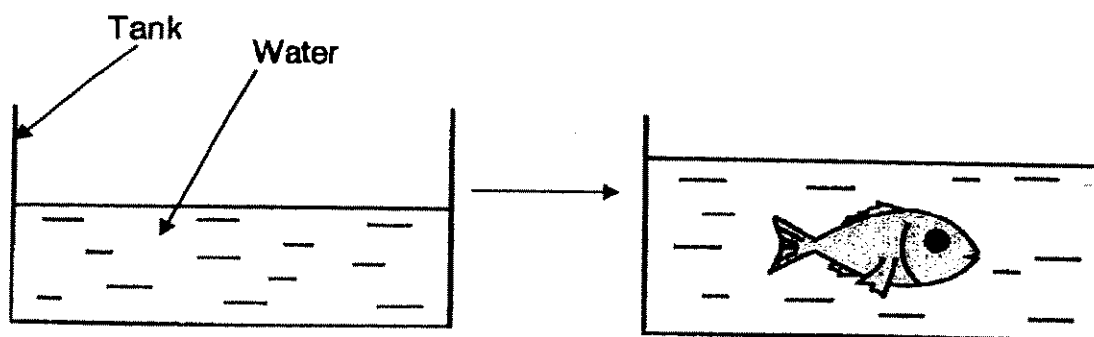


Evaporation takes place at the stage marked \_\_\_\_\_.

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



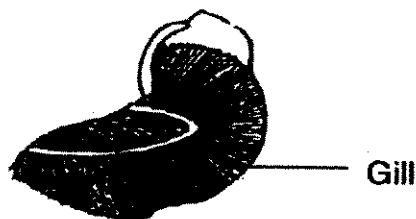
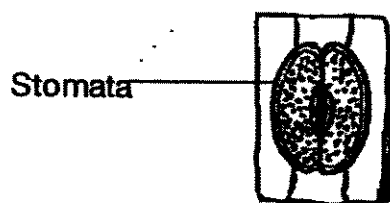
12. Jenny filled a tank half-filled with water. When she placed a big fish into the tank, the water level rises.



Which one of the following properties of matter does this experiment show?

- (1) Matter has mass.
- (2) Matter occupies space.
- (3) Matter has a definite shape.
- (4) Matter has a definite volume.

13. Study the diagrams below carefully.



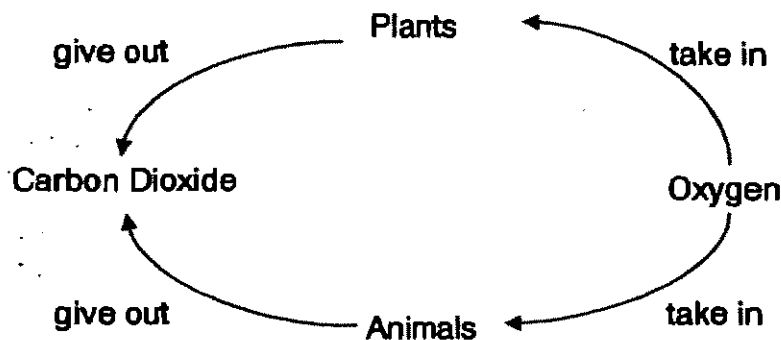
Which of the following statement(s) is/are correct?

- A: Stomata are found in plants and gills are found in fish.
  - B: The stomata allow the organism to take in carbon dioxide and give out oxygen.
  - C: Both the stomata and the gills allow the organisms to take in oxygen and give out carbon dioxide.
- (1) B only
  - (2) C only
  - (3) A and B only
  - (4) A, B and C

14. Which one of the following pairs of systems works together so that the whole body can receive oxygen?

- (1) Skeletal system and Digestive system
- (2) Digestive system and Circulatory system
- (3) Muscular system and Respiratory system
- (4) Respiratory system and Circulatory system

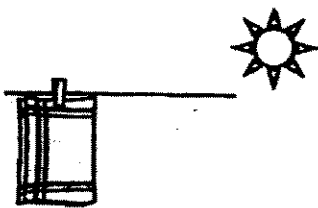
15. The diagram below shows the exchange of gases in plants and animals.



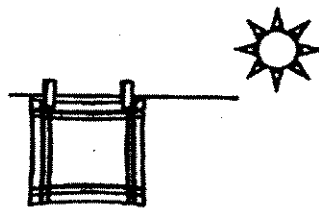
The process shown in the diagram above is \_\_\_\_\_ which takes place

- (1) photosynthesis.....only during the day
- (2) photosynthesis.....throughout the day and night
- (3) respiration.....only during the day
- (4) respiration.....throughout the day and night

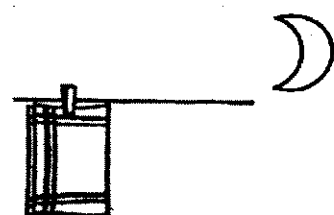
16. Three cotton handkerchiefs A, B and C of equal size are hung on a laundry line for a period of time during the day and night. Handkerchiefs A and B are hung out at 12 noon for 3 hours while handkerchief C is hung out at night at 8pm for 3 hours too.



Handkerchief A  
( Folded in half )



Handkerchief B  
( Not folded )

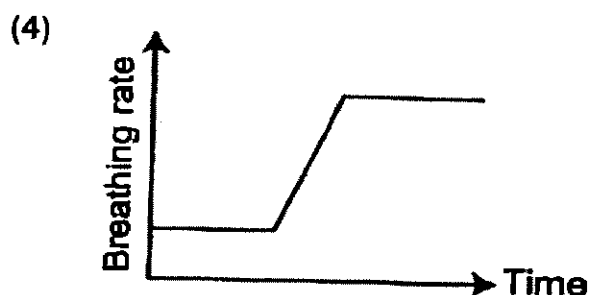
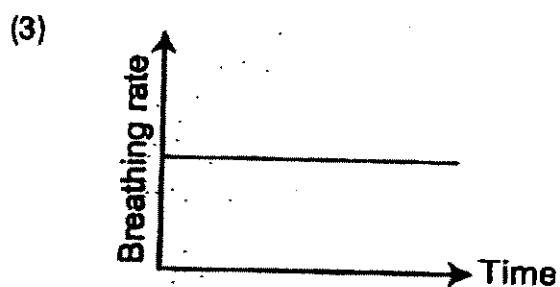
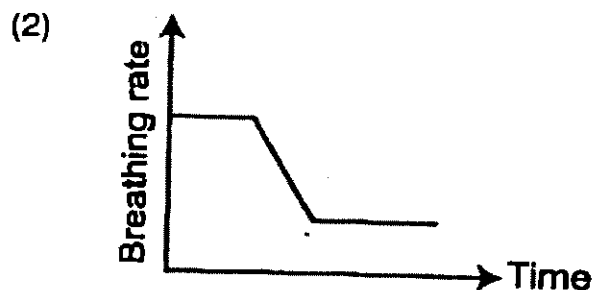
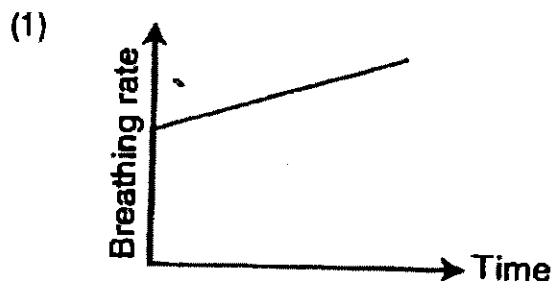


Handkerchief C  
( Folded in half )

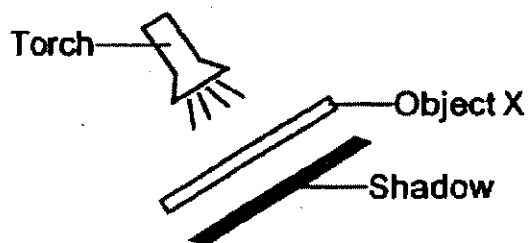
Which one of the following shows the correct order of the handkerchiefs that dries the fastest to the one that dries the slowest?

|     | Fastest | → | Slowest |
|-----|---------|---|---------|
| (1) | A       | B | C       |
| (2) | A       | C | B       |
| (3) | B       | A | C       |
| (4) | C       | A | B       |

17. Which one of the following graphs **correctly** shows the change in Pat's breathing rate as she cools down after a game of tennis?



18. Study the diagram below carefully.

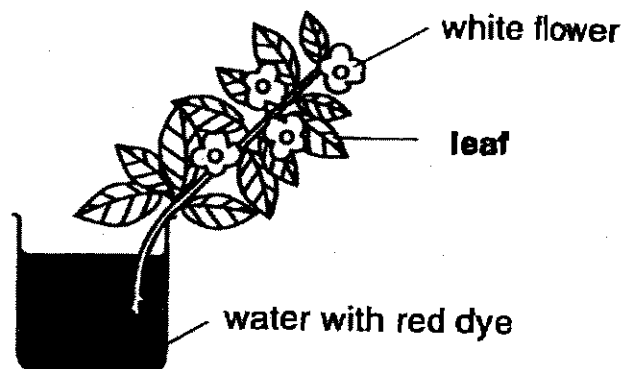


The shadow cast by Object X was very dark.

Which one of the following materials could Object X be possibly made of?

- (1) Metal
- (2) Clear glass
- (3) Tracing paper
- (4) Frosted glass

19. Roslinda filled a beaker with some water and mixed some red dye in it. She then put in a plant and left the set-up in the garden for one week.

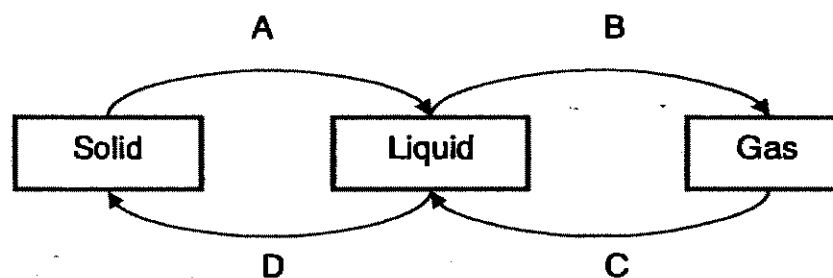


When Roslinda observed the flowers, leaves and a cross-section of its stem after one week, what would she observe?

- A: The leaves are stained red.  
 B: The flowers are stained red.  
 C: The tiny tubes are stained red.

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

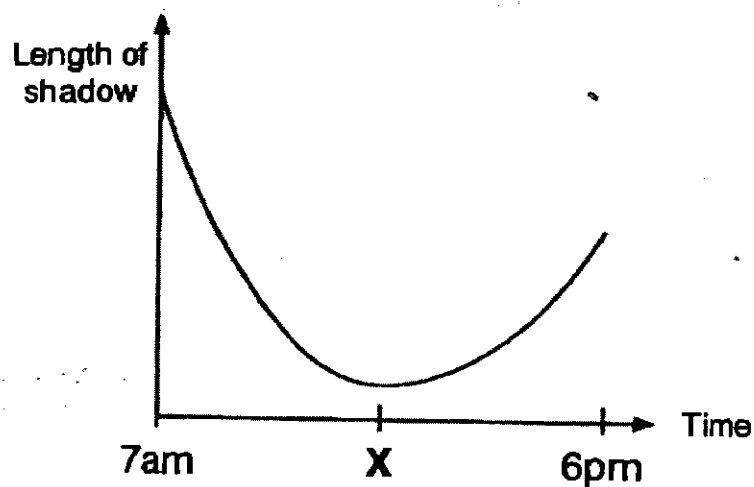
20. Water may undergo one of the processes A, B, C or D as shown in the diagram below.



In which **two** processes will water **lose heat** to its surroundings?

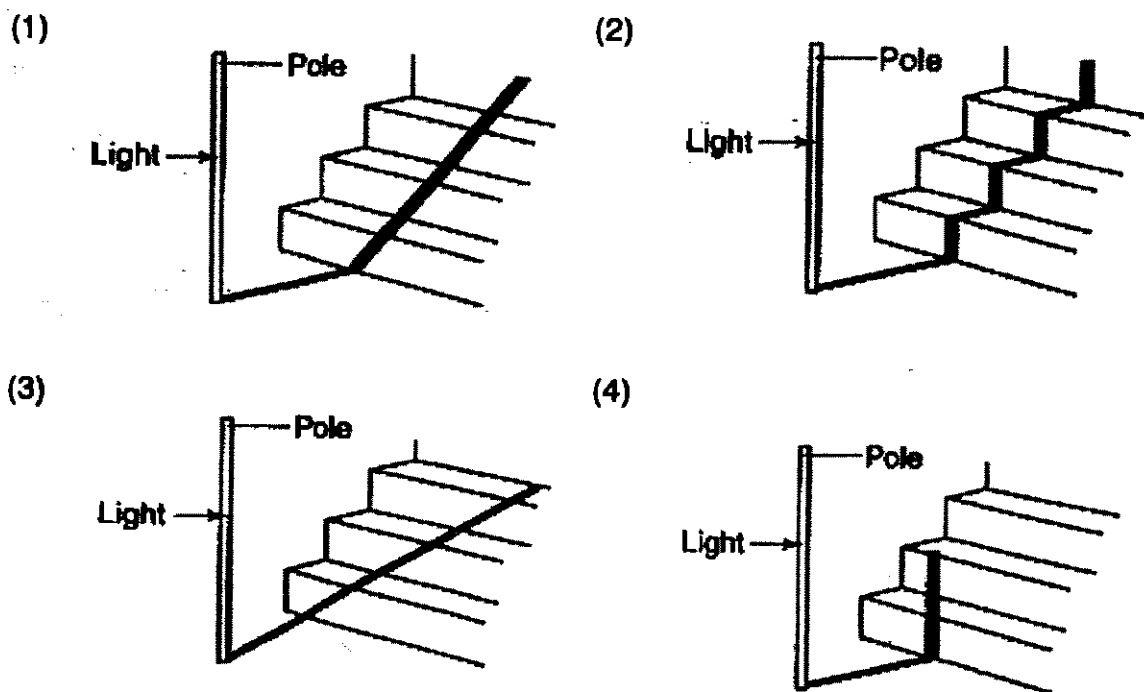
- (1) A and B  
 (2) A and C  
 (3) B and D  
 (4) C and D

21. The graph below shows how the length of Sherry's shadow changes throughout the day.

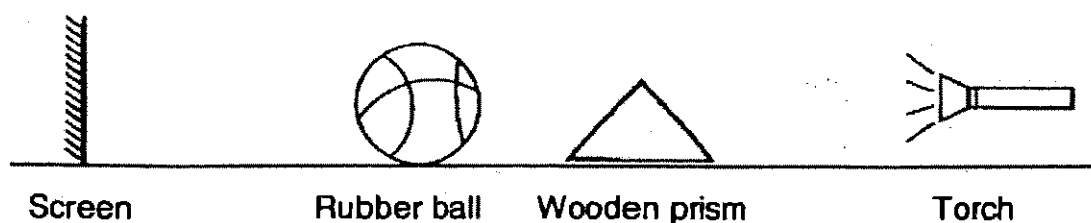


From the graph, the time marked 'X' is most likely to be \_\_\_\_\_.

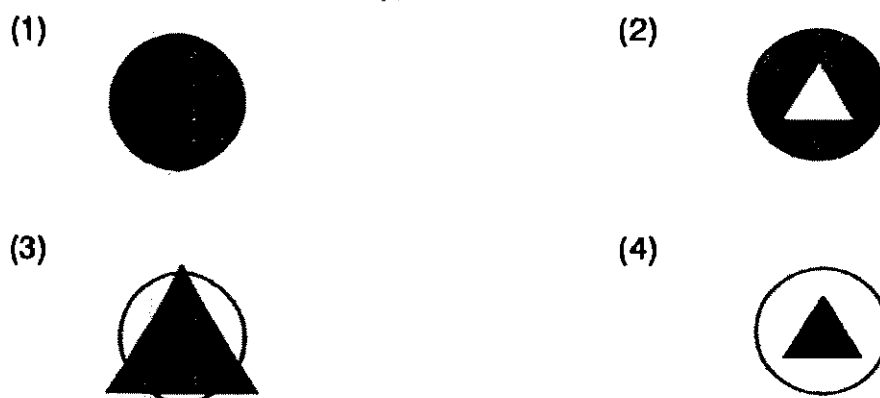
- (1) 12.00 am  
 (2) 6.00 am  
 (3) 12.00 pm  
 (4) 2.00 pm
22. Ahmad placed a pole in front of a flight of steps. He shone a light onto the pole as shown in the diagram below. Which one of the following diagrams **correctly** shows how the shadow of the pole would look like as it fell across the steps?



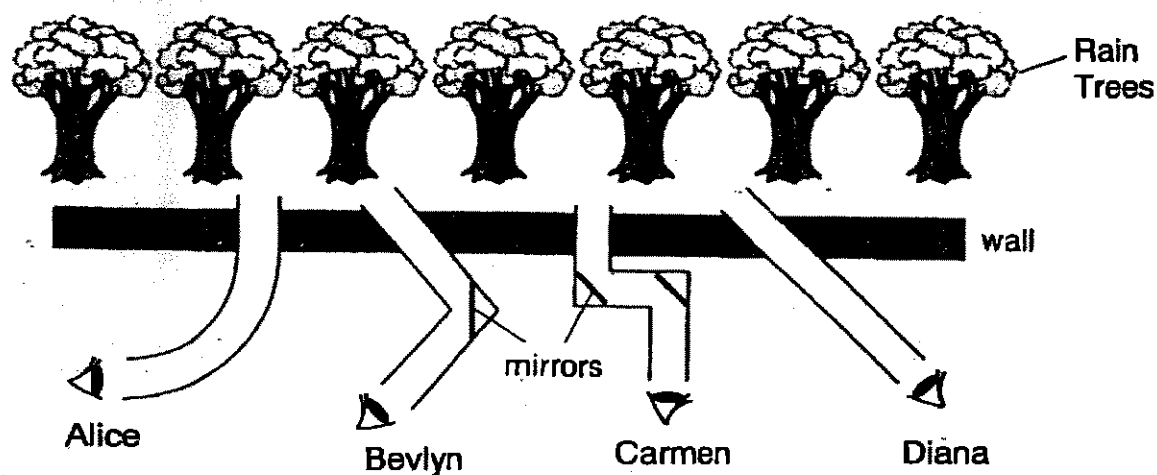
23. A torch is shone on a rubber ball and a wooden prism as shown below.



Which one of the following diagrams **correctly** shows the shadow that is cast on the screen?



24. Four girls stand behind a high wall as shown below.

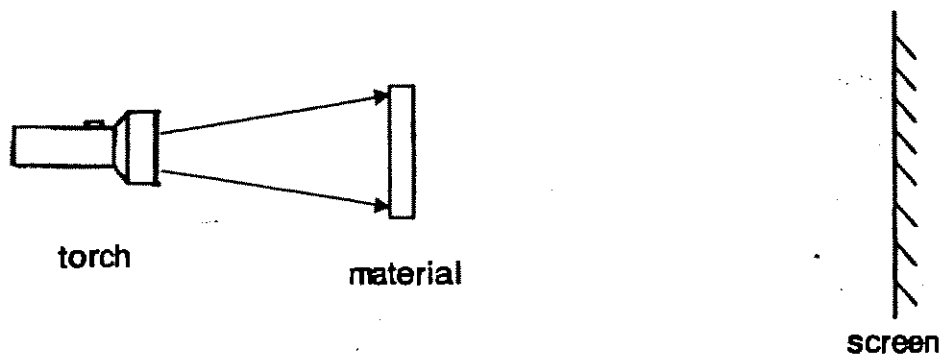


Each girl uses a different cardboard tube to look over the high wall at the rain trees growing behind the wall.

Which of the following girls will be able to see the rain trees through their tubes?

- (1) Alice and Diana only
- (2) Bevlyn and Carmen only
- (3) Bevlyn, Carmen and Diana only
- (4) Alice, Carmen and Diana only

25. Li Jie conducted an experiment to find out how much light is allowed to pass through three different materials A, B and C. She set up the experiment as shown below.

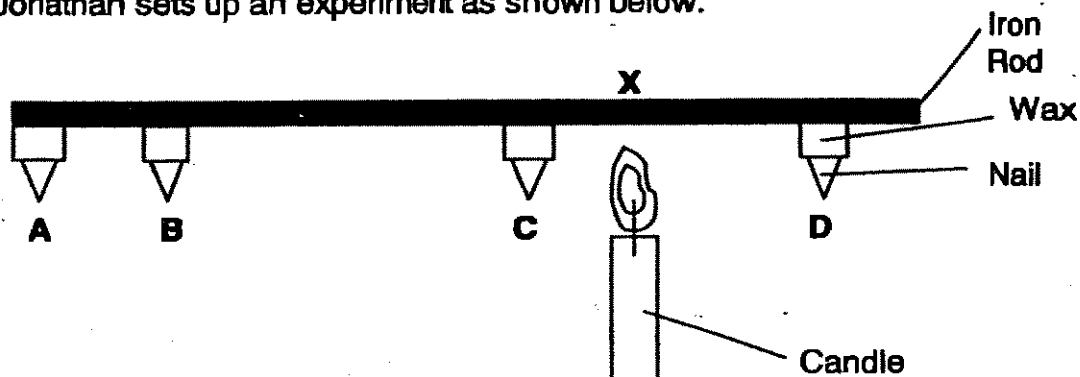


First, she used material A. Then she replaced it with material B, followed by material C.

Which one of the following variables must she keep the same in order to conduct a fair test?

- (1) Size of material
- (2) Type of material
- (3) Colour of material
- (4) Thickness of material

26. Jonathan sets up an experiment as shown below.

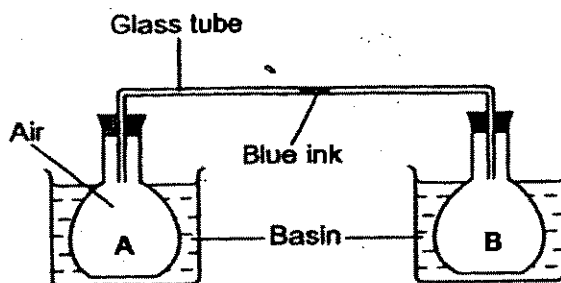


He used some wax to attach 4 similar nails A, B, C and D to the iron rod. He lit a candle and held it near the rod at the part marked X.

Which one of the following lists shows the correct order in which the nails will drop first from the rod?

|     | First | → |   |   | Last |
|-----|-------|---|---|---|------|
| (1) | A     | B | D | C |      |
| (2) | C     | B | A | D |      |
| (3) | C     | D | B | A |      |
| (4) | D     | A | B | C |      |

27. In the set-up as shown below, a drop of blue ink is placed in the glass tube connecting the two flasks A and B. Each flask is placed in a basin of water.



Which one of the following set-ups will cause the drop of blue ink move towards Flask A?

|     | Flask A is placed in a basin of | Flask B is placed in a basin of |
|-----|---------------------------------|---------------------------------|
| (1) | ice water                       | water at 90°C                   |
| (2) | water at 90°C                   | water at room temperature       |
| (3) | water at 90°C                   | ice water                       |
| (4) | water at room temperature       | ice water                       |

28. Lionel has difficulty opening the metal lid of a glass bottle of jam. His mother asked him to invert the bottle and place it in a basin of hot water. What is the effect of the hot water on the bottle of jam?

- (1) It causes the metal lid to contract.
- (2) It causes the glass bottle to contract.
- (3) It causes the metal lid to expand more than the glass bottle.
- (4) It causes the glass bottle to expand more than the metal lid.

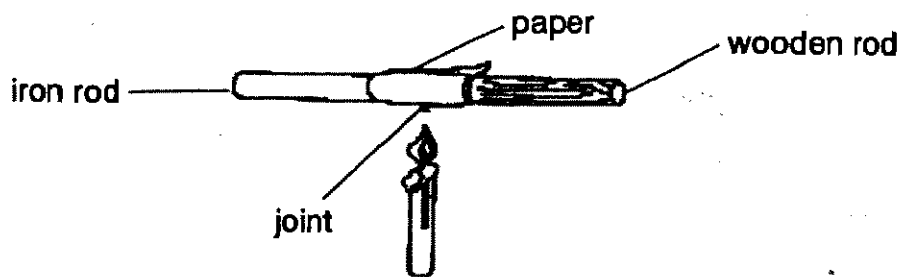
29. Which of the following statement(s) about heat is/are true?

- A: Our main source of heat is electricity.  
 B: Solids contract when they are heated.  
 C: Heat can be produced by rubbing two objects together.  
 D: Heat moves from a hotter region to a colder region of an object.

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



30. A piece of iron rod and a piece of wooden rod were joined together. A piece of paper was wrapped around the section where the two rods were joined as shown in the diagram below.



The joint was heated for a few seconds. After heating, it was found that the section of paper around the iron rod showed no change while the section around the wooden rod appeared slightly burnt.

Which one of the following statements explains the observation?

- (1) Wood supports burning but iron does not.
- (2) Wood and iron burn at different temperatures.
- (3) Iron conducts heat to the wood and causes it to burn.
- (4) Iron is able to conduct the heat away from the paper while wood cannot.

**END OF PART 1**



Name : \_\_\_\_\_ ( )

Class : Pr 4 ( )

Duration : 1 h 30 min ( Parts I &amp; II )

Date : 31 October 2007

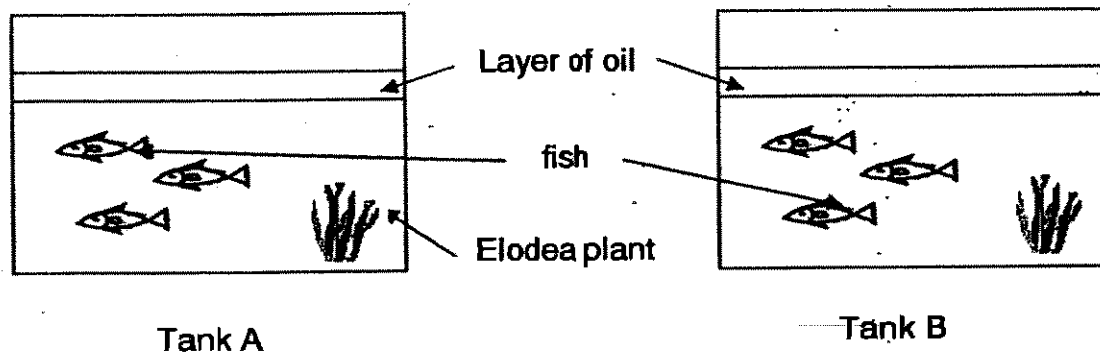
Parent's Signature : \_\_\_\_\_

|                         |  |
|-------------------------|--|
| Part I<br>( 60 marks )  |  |
| Part II<br>( 40 marks ) |  |
| SA2<br>( 100 marks )    |  |

**Part II: ( 40 marks )**

Write your answers to questions 31 to 46 in this script.

31. Minghui set up an experiment as shown below. She put Tank A near a window and Tank B in a cupboard for 5 days.



- (a) After 5 days, in which tank would the fish be dead? [1]

---

- (b) Explain your answer in (a). [2]

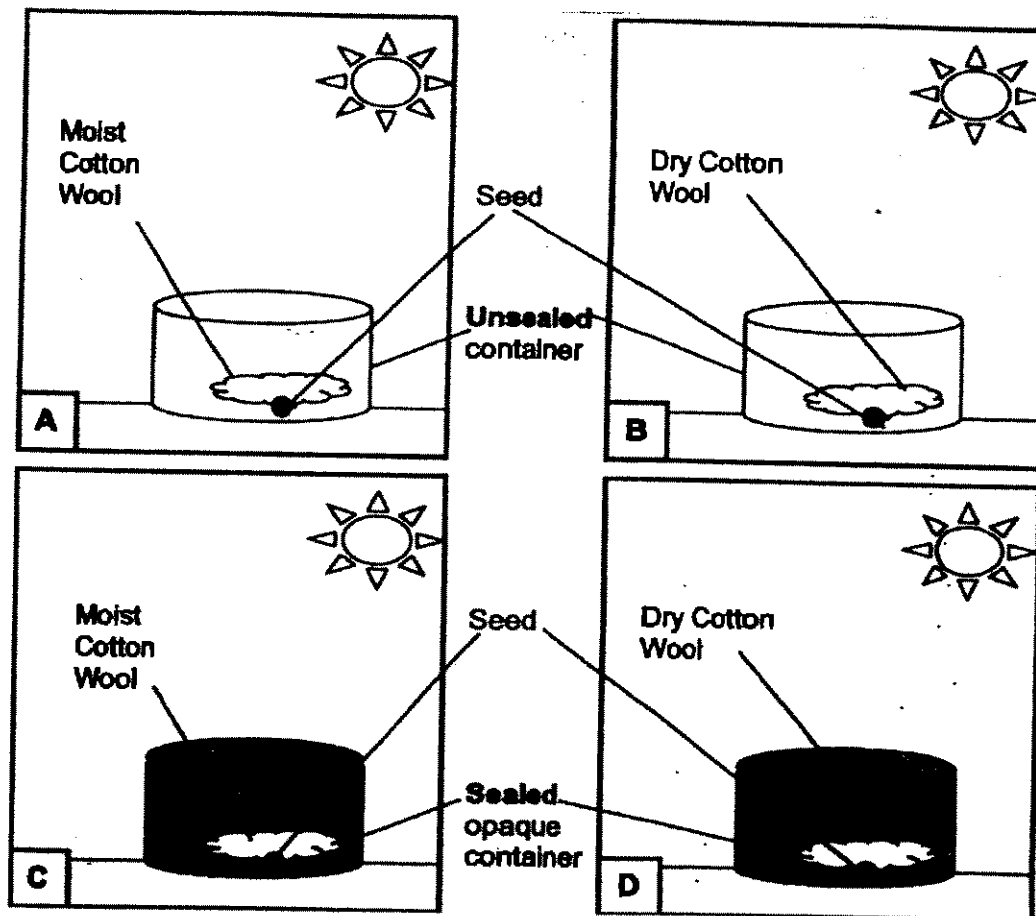
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32. Sheryl wanted to find out the conditions that allow seeds to germinate. She conducted an experiment by placing four identical seeds in four containers A, B, C and D as shown below. Containers A and B allow light to pass through while containers C and D do not allow light to pass through.



- (a) In which containers A, B, C and D will the seed(s) start to germinate? [1]

---

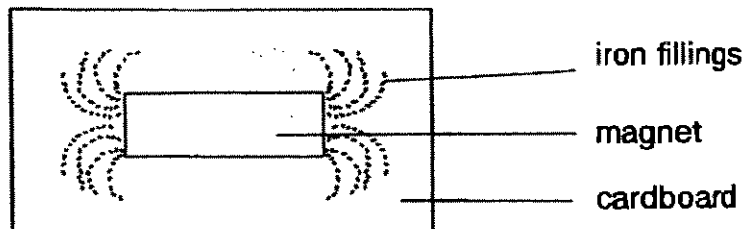
---

- (b) State three conditions that are needed in order for a seed to germinate. [2]

---

---

33. Ronny placed a piece of cardboard over a bar magnet and sprinkled some iron filings on the cardboard. He then tapped the cardboard lightly and the following pattern appeared.



Why were the iron filings found mostly at the two ends of the magnet?

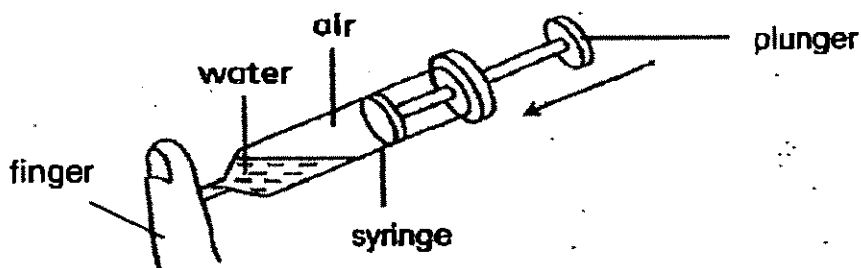
[1]

---



---

34. The diagram below shows a syringe filled with air and water.



- (a) What will happen to the volume of air and water when the plunger is pushed in? Put a tick (✓) under the correct headings.

[2]

|                     | Increases | Decreases | Remains the same |
|---------------------|-----------|-----------|------------------|
| i) Volume of air    |           |           |                  |
| ii) Volume of water |           |           |                  |

- (b) State one difference between the property of air and water as shown in this experiment.

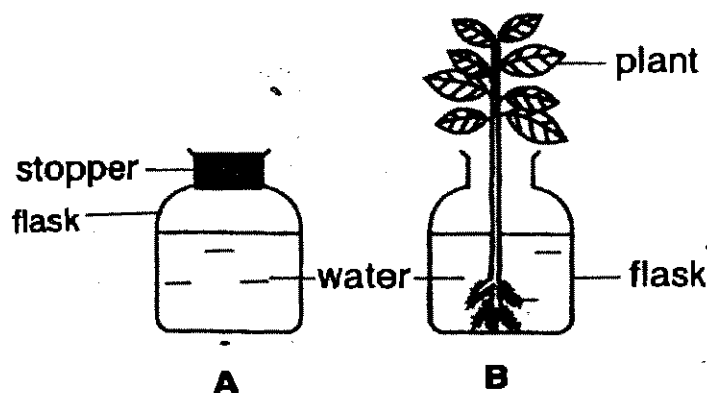
[1]

---

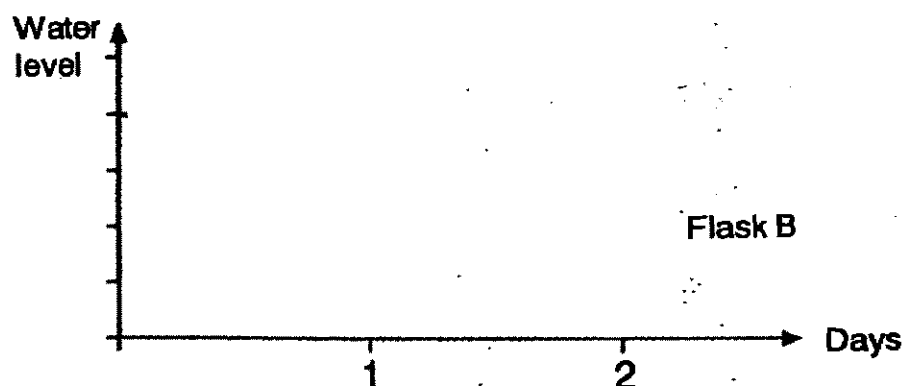


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35. Ivy conducted an experiment to investigate if plants take in water through their roots. She prepared two setups A and B as shown below.



She recorded the water level in each set-up for 2 consecutive days and plotted the graph for flask B as shown below.



- (a) Based on the graph above, draw a line graph and label it to show the water level of Flask A over the 2 days in the graph above. [2]

From the graph, she concluded that plants take in water through their roots. However, her brother, Ben, said that her results were not accurate.

- (b) What was wrong with Ivy's experiment? [1]

---



---

- (c) What should Ivy have done to get accurate results? [1]

---



---

36(a) Give **one** similarity between the Sun and stars.

[1]

---



---

(b) Give **one** difference between stars and the moon.

[1]

---



---

37. The table below shows Marcus' pulse rate as he carry out activities A, B and C.

|                               | Activities |    |    |
|-------------------------------|------------|----|----|
|                               | A          | B  | C  |
| Duration of activity (in min) | 30         | 30 | 30 |
| Number of heartbeats per min  | 120        | 90 | 70 |

(a) Which activity required the most amount of oxygen?

[1]

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(b) Could activity A possibly be Marcus taking a nap? Explain your answer.

[1]

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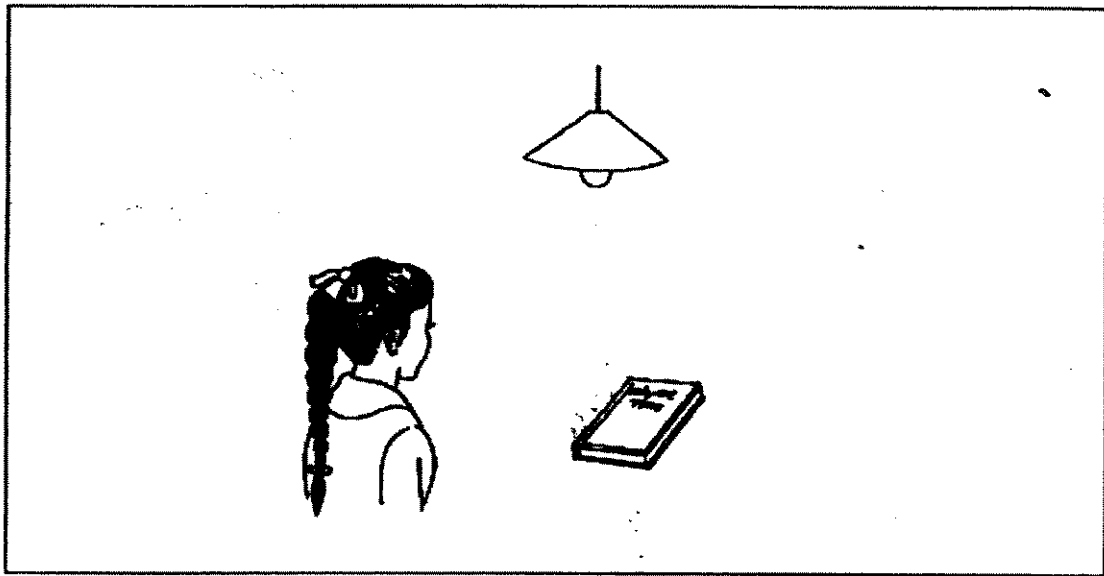


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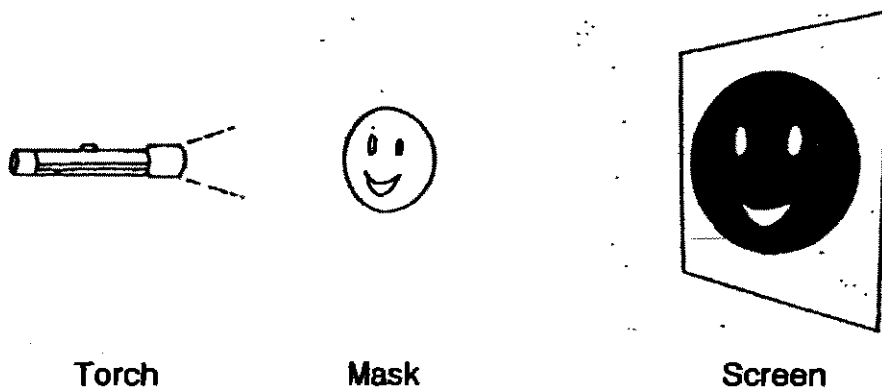


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38. **Draw** two arrows in the diagram below to show the path taken by the light rays in order for Siti to see the book. [1]



39. Rick cast a shadow on a screen by positioning a mask in the path of light from a torch as shown below.

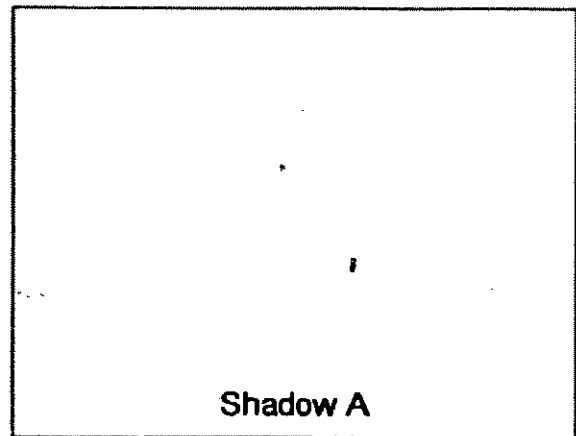
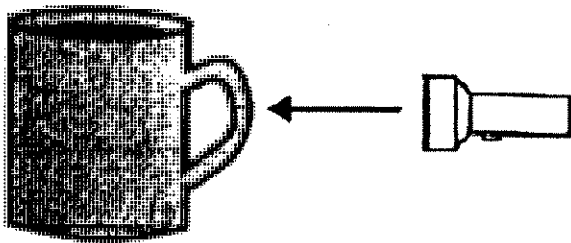


Suggest **two** different ways in which Rick can increase the size of the shadow formed. [2]

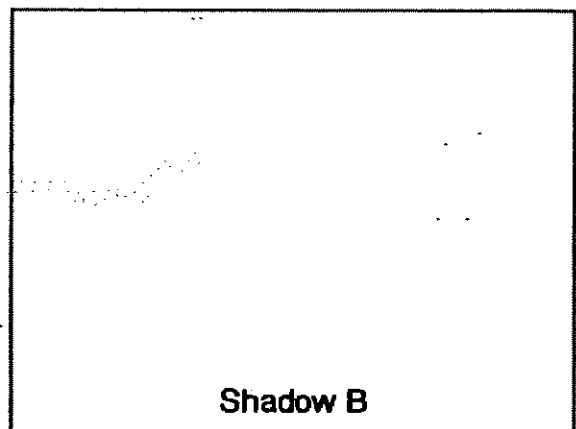
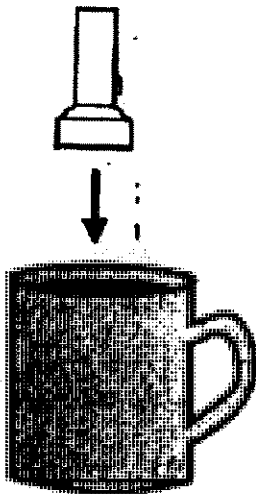
- (i) \_\_\_\_\_  
\_\_\_\_\_
- (ii) \_\_\_\_\_  
\_\_\_\_\_

40. Sandra wanted to find out how the shadow of a cup may look like from different angles. **Draw** two shadows A and B cast by the cup when shone at different angles in the box below. [2]

(i)

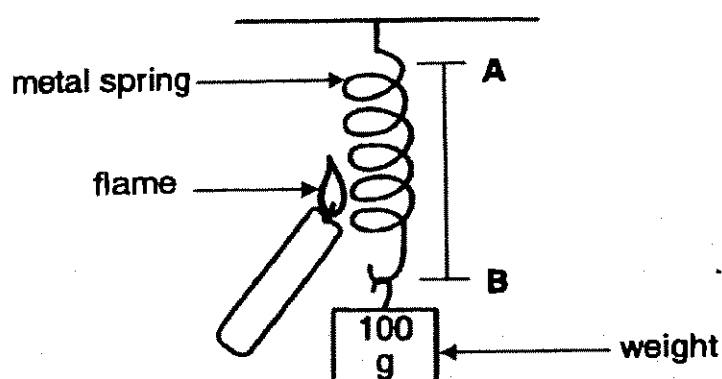


(ii)





41. David attached a weight to a metal spring and measured the length of the spring from A to B. He then heated the spring as shown in the diagram below.



- (a) What happened to the length of the spring after 5 minutes? [1]

---

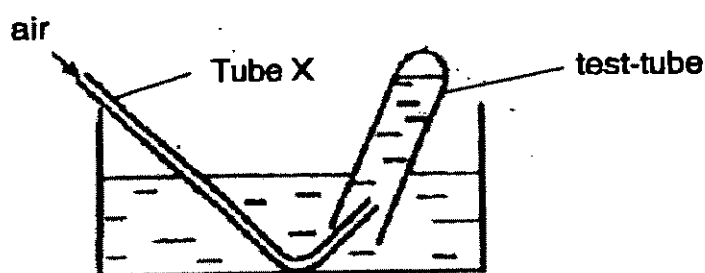
---

- (b) What can you conclude from the above experiment? [1]

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42. John inverted a test-tube in a basin as shown in the diagram below. He then blew air into tube X.



- (a) State one observation made by John. [1]

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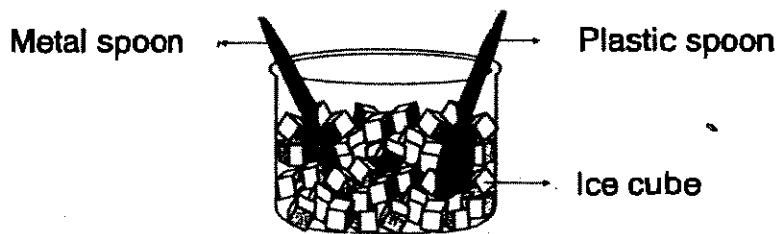
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- (b) What does this experiment show? [1]

---

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43. Christine placed a metal spoon and a plastic spoon in a glass of ice cubes as shown in the diagram below.



- (a) Christine touched the two spoons after five minutes. Which spoon feels colder after five minutes? [1]

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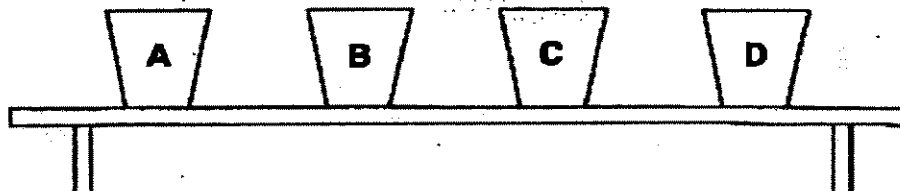
- (b) Explain your answer in part (a). [2]

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44. Four cups A, B, C and D were each made of different materials. Each of the cups was filled with 200ml of hot water at 80°C. They were then placed on a table as shown below.



After 20 minutes, the temperature of the water in each cup was measured and recorded in the table below.

| Cup | Temperature (°C) after 20 minutes |
|-----|-----------------------------------|
| A   | 35                                |
| B   | 30                                |
| C   | 60                                |
| D   | 45                                |

- (a) From the table, which cup would you choose if you want the hot water to stay warm longer? [1]

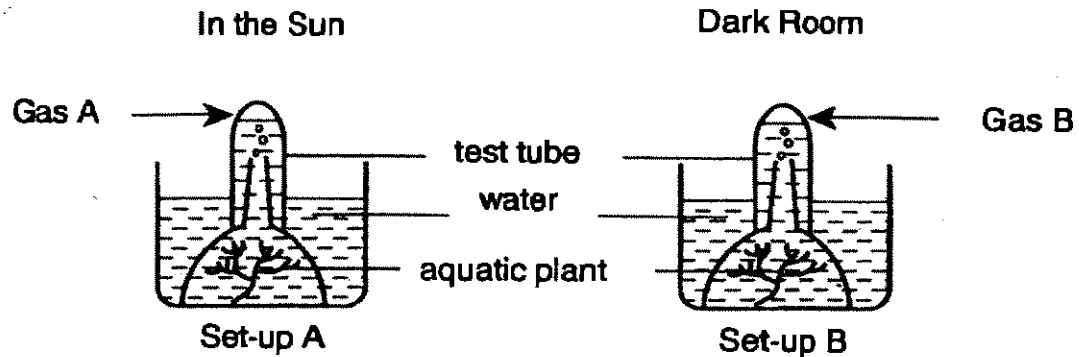
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- (b) Suggest one possible material for Cup B and Cup C. [2]

(i) Cup B: \_\_\_\_\_

(ii) Cup C: \_\_\_\_\_

45. Adam sets up the experiment shown below and puts Set-up A in the sun and Set-up B in a dark room. Soon, he notices that gas is collected in each of the test-tubes.



- (a) Name the gases collected in the test-tubes in Set-ups A and B. [2]

(i) Gas A: \_\_\_\_\_

(ii) Gas B: \_\_\_\_\_

- (b) Explain the process that takes place in Set-up A and B. [2]

---



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46. Evelyn accidentally stepped on her brother's ping pong ball and the ball was dented.

- (a) What can she do to make the ball round again? [1]

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- (b) Explain your answer in (a). [2]

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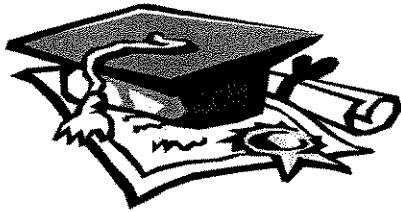


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**END OF PAPER**



# ANSWER SHEET

MAHA BODHI PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007  
SEMESTRAL ASSESSMENT (2)

1. 1

2. 3

3. 3

4. 2

5. 2

6. 3

7. 4

8. 4

9. 3

10. 2

11. 4

12. 2

13. 4

14. 4

15. 4

16. 3

17. 2

18. 1

19. 4

20. 4

21. 3

22. 2

23. 1

24. 3

25. 4

26. 3

27. 1

28. 3

29. 3

30. 4

31) a) Tank B.

b) The plant cannot photosynthesize to produce oxygen for the fish to live.

32) a) A or B and C.

b) A. Seed need A air, warmth and water to germinate.

33) A magnet is strongest at its ends

34) a) i) Decreases ii) Remains the same

b) Air can be compressed but water cannot be compressed.

35) a)



b) There was a stopper in Flask A but not Flask B.

c) She should have covered the mouth of Flask with a stopper.

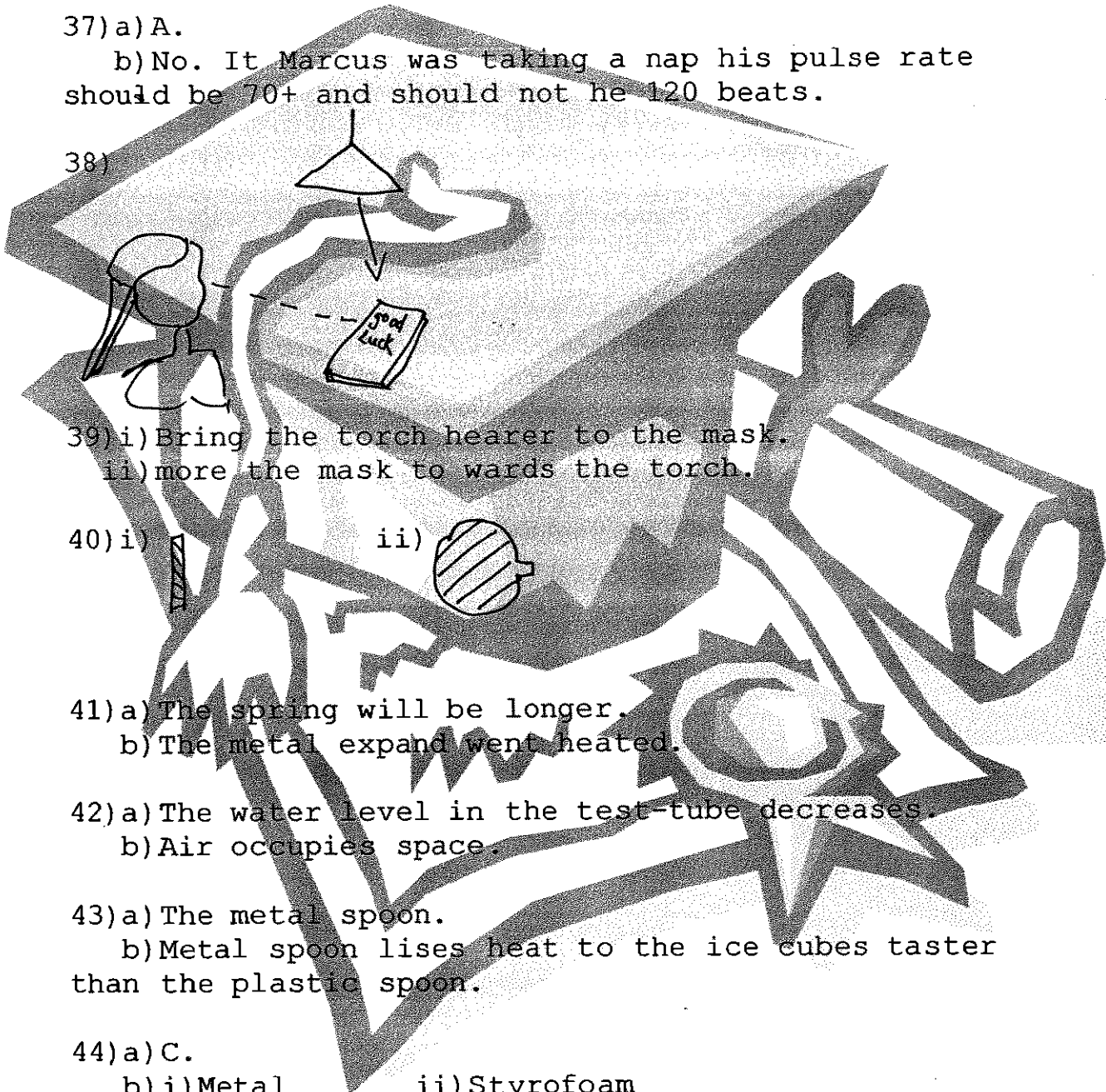
36) a) They give out light by their selves.

b) The stars give out its own light while the moon reflects to light from the sun.

37) a) A.

b) No. If Marcus was taking a nap his pulse rate should be 70+ and should not be 120 beats.

38)



39) i) Bring the torch nearer to the mask.  
ii) move the mask towards the torch.

40) i)

ii)

41) a) The spring will be longer.  
b) The metal expands when heated.

42) a) The water level in the test-tube decreases.  
b) Air occupies space.

43) a) The metal spoon.  
b) Metal spoon loses heat to the ice cubes faster than the plastic spoon.

44) a) C.

b) i) Metal

ii) Styrofoam

45) a) i) oxygen      ii) carbon dioxide

b) In test tube A, the plant photosynthesizes in the presence of sunlight and produces oxygen. In test tube B, the plant cannot carry out photosynthesis so it only produces carbon dioxide during respiration.

46) a) Put the ping pong ball into the hot water.

b) The air in the ping pong ball heats and expands to take up more space.



**HENRY PARK PRIMARY SCHOOL**

**SEMESTRAL EXAMINATION 2**

**2007**

**SCIENCE**

**PRIMARY 4**

**BOOKLET A**

**Name:** \_\_\_\_\_ ( )

**Class:** Primary 4 \_\_\_\_\_

**30 Questions  
60 Marks**

**Total Time for Booklets A and B: 1 h 30 min**

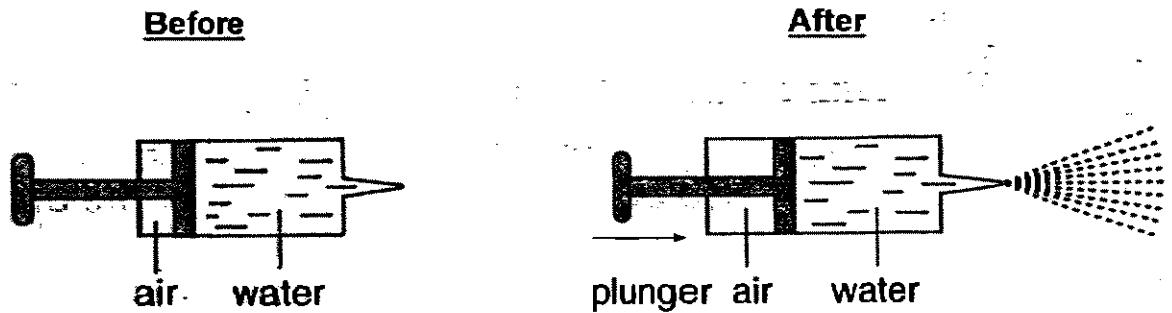
**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.**

**READ AND FOLLOW INSTRUCTIONS CAREFULLY.**

**PART 1 (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. A syringe is filled with water. When its plunger is pushed, a jet of water shoots out in the direction as shown below.



What has happened to the water and the air in the syringe?

- A. The volume of water has increased.
- B. The volume of water has decreased.
- C. The volume of air remained the same.
- D. The volume of air increased.

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

2. The table shows the result of an experiment on three substances A, B, C.

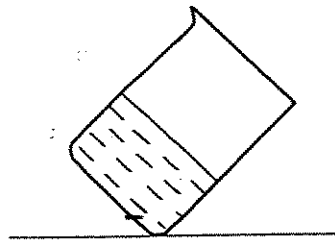
| Properties        | A   | B   | C   |
|-------------------|-----|-----|-----|
| definite shape    | Yes | No  | No  |
| has definite mass | Yes | Yes | Yes |
| definite volume   | Yes | No  | Yes |

Which of the following identifies these substances correctly?

- (1) A – solid, B – liquid, C – gas
- (2) A – liquid, B – solid, C – gas
- (3) A – gas, B – solid, C – liquid
- (4) A – solid, B – gas, C – liquid



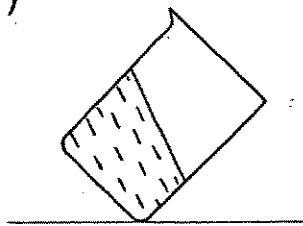
3. A beaker of water was placed in the fridge. The diagram below shows the beaker of water when it was just taken out of the fridge.



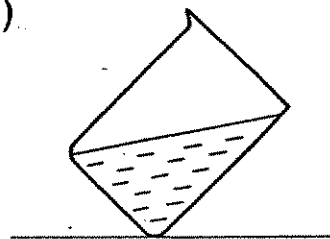
At the beginning

Which one of the following diagrams shows what has taken place after two hours?

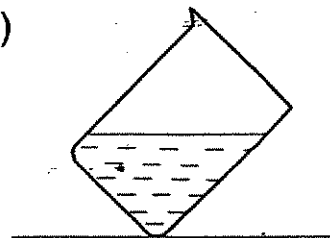
(1)



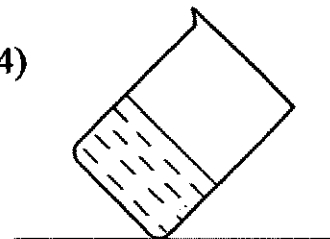
(2)



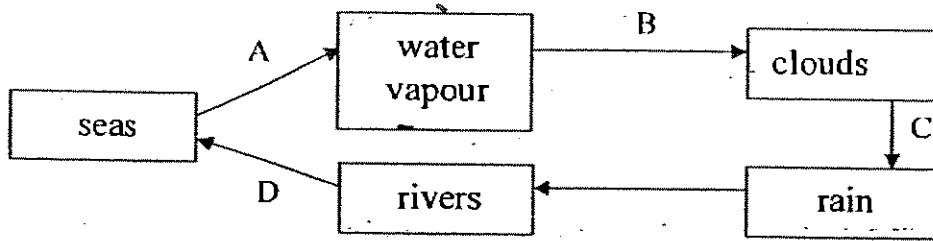
(3)



(4)



4. The diagram shows how water moves from the Earth's surface to the air and back again.



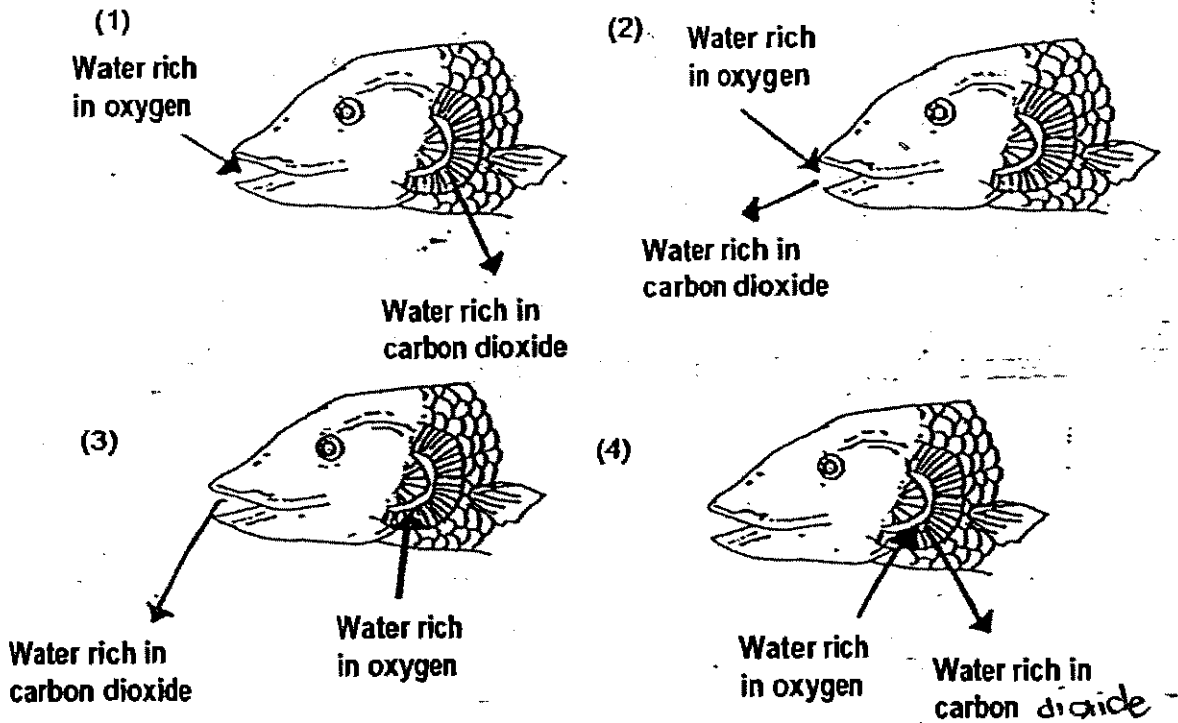
The process of evaporation takes place at \_\_\_\_\_.

- (1) A
  - (2) B
  - (3) C
  - (4) D
5. Which of the following action(s) is/are most likely to pollute the Earth's water resources?

- A. Taking long showers.
- B. Spraying insecticides and pesticides near rivers and lakes
- C. Burning of rubbish
- D. Throwing harmful waste into the sea

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

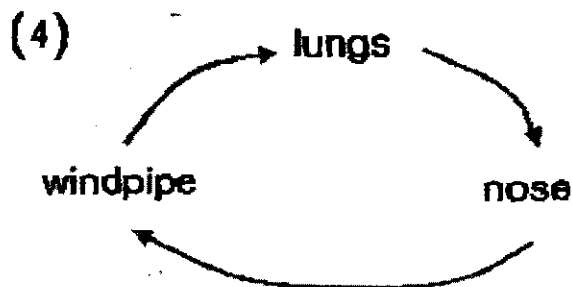
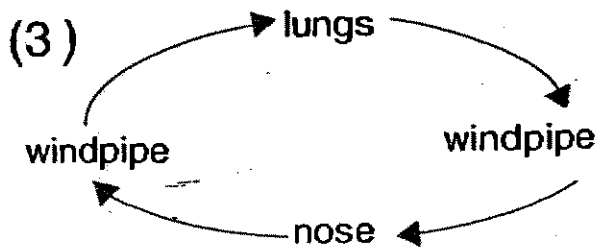
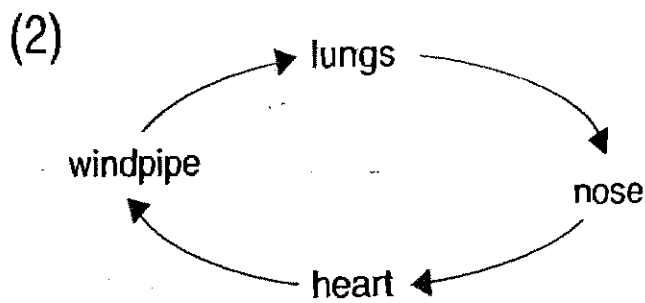
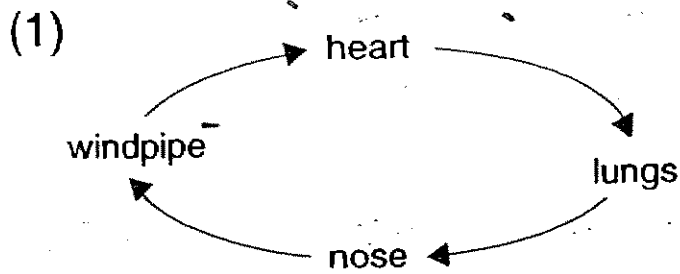
6. Which diagram shows how breathing takes place in a fish?



7. Which one of the following gas exists in the greatest amount in the air?

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

8. Which one of the following diagrams shows the flow of air in our body?



9. When the diaphragm in your chest cavity moves upwards and downwards, \_\_\_\_\_ is taking place.

- (1) breathing
- (2) circulation
- (3) respiration
- (4) photosynthesis

10. The body's circulatory system consists of \_\_\_\_\_.

- A. blood
- B. blood vessels
- C. heart
- D. lung

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

11. Which of the following describes the circulatory system incorrectly?

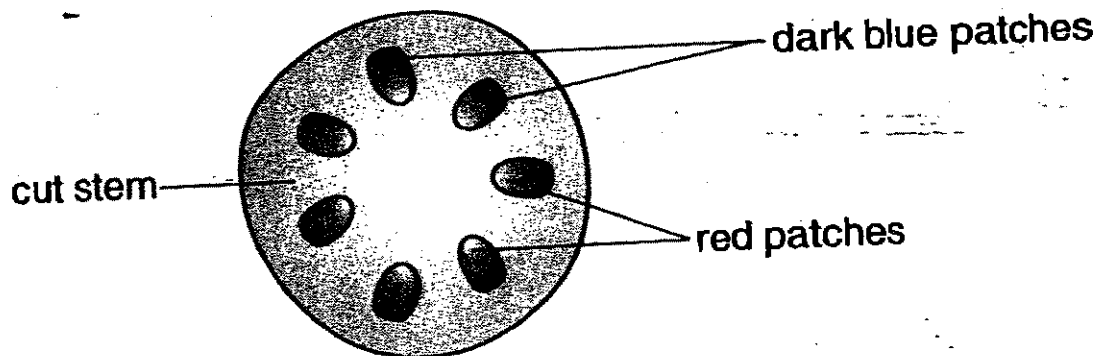
- (1) The heart pumps blood rich in carbon dioxide to the lungs.
- (2) Blood vessels are needed to transport blood.
- (3) The waste products are carried away by the blood.
- (4) Blood rich in carbon dioxide is pumped to the rest of the body.

12. When food is made, it is stored in the form of starch.

Iodine is a liquid which turns dark blue when there is starch.

The cut end of a Balsam stem is dipped into some iodine. Some patches of dark blue are seen as in the diagram below.

Study the diagram below and answer questions 12 and 13.



The dark blue patches show us the position of the \_\_\_\_\_.

- (1) air spaces
- (2) pores
- (3) tubes that carry water
- (4) tubes that carry food

13. The root of the plant was earlier dipped into a bottle of water stained with red ink. The red patches as seen in the cut stem indicate that \_\_\_\_\_.

- (1) air has entered the red patches
- (2) food is being carried along these tubes
- (3) the tubes which carry water are different from the tubes that carry food
- (4) the tubes which carry water are the same as the tubes that carry food

14. Which of the following activities need energy?

- A: lying in bed
- B: breathing
- C: digestion of food
- D: playing football.

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

15. The following diagram shows one way in which energy is transferred.

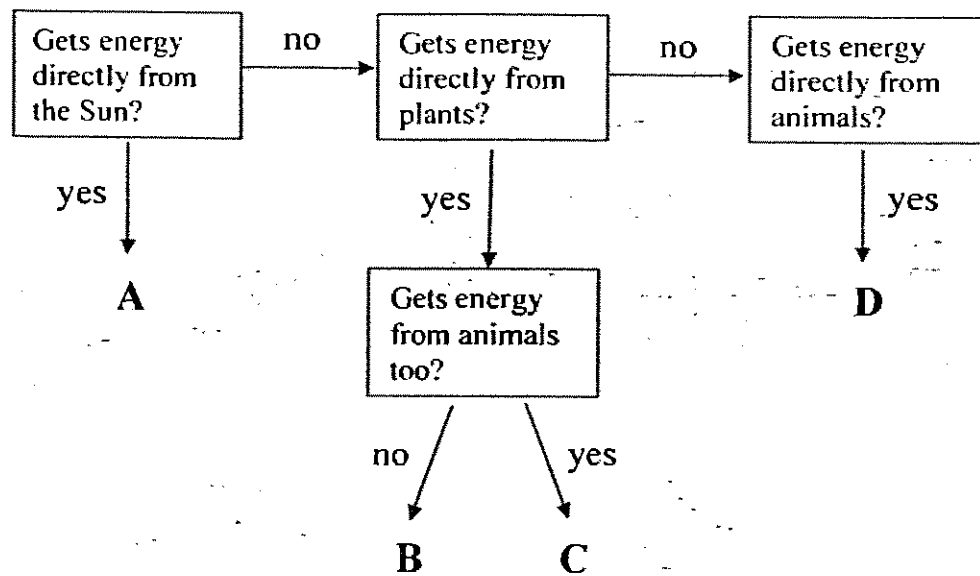
**Sun → Plant → Grasshopper → Bird → Snake**

Which of the following statements about the diagram is true?

- A: The bird gets its energy indirectly from the plant
- B: Only plants get their energy directly from the sun.
- C: Transfer of energy is not possible if there is no sun.
- D: Energy is transferred indirectly from the plant to the snake.

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

16. Study the flow chart below carefully.

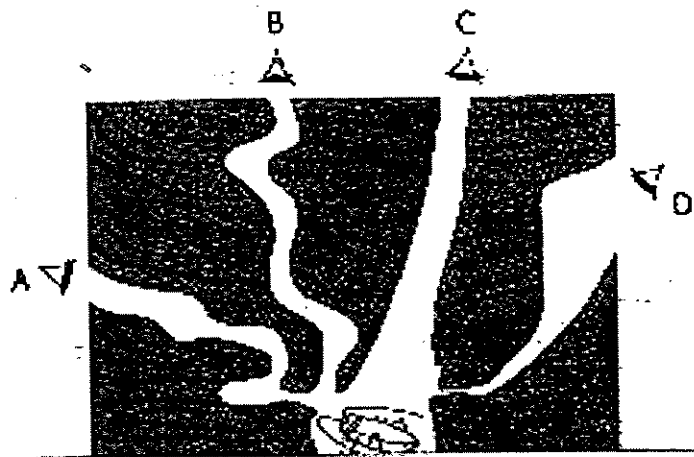


What are A, B, C and D?

|     | A     | B     | C     | D     |
|-----|-------|-------|-------|-------|
| (1) | cow   | grass | tiger | human |
| (2) | grass | cow   | human | tiger |
| (3) | grass | human | cow   | tiger |
| (4) | tiger | human | grass | cow   |

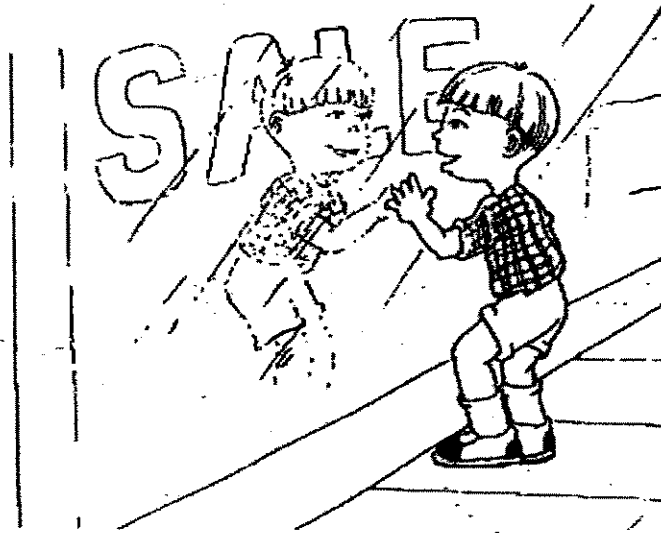


17. Which one of the holes in the wooden block would allow Mary to see the cockroach?



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

18. A boy stood in front of a display window.



He is able to see what was being displayed behind the window and his reflection in the window at the same time.

He is able to do these because the display window \_\_\_\_\_.

A: allows light to pass through

B: does not allow light to pass through

C: reflects some light back into his eyes

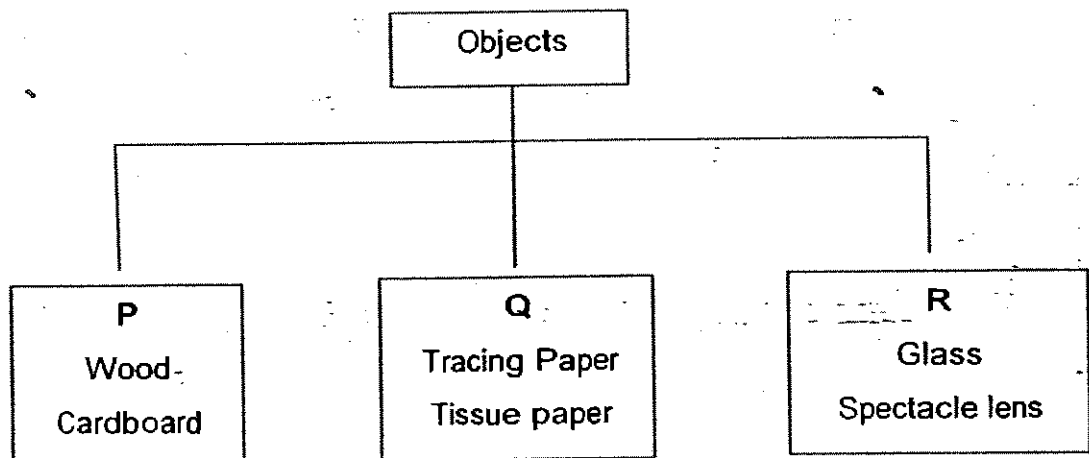
(1) A only

(2) C only

(3) A and C only

(4) B and C only

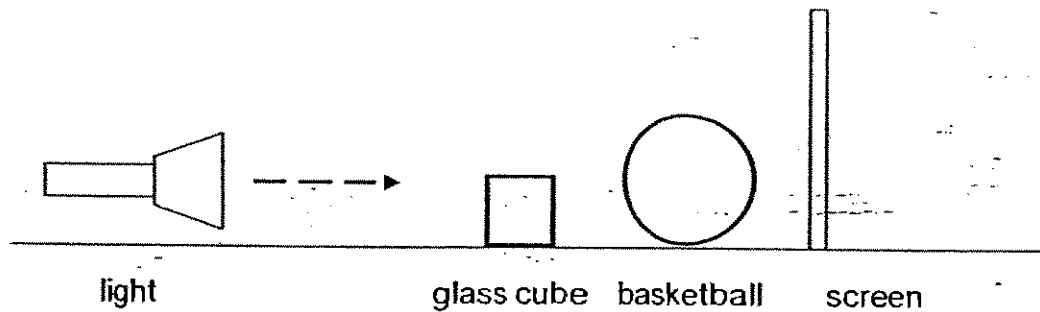
19. Study the classification below.



What are the suitable headings for P, Q and R?

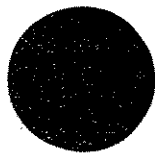
|     | P           | Q           | R           |
|-----|-------------|-------------|-------------|
| (1) | Opaque      | Transparent | Translucent |
| (2) | Opaque      | Translucent | Transparent |
| (3) | Translucent | Opaque      | Transparent |
| (4) | Transparent | Opaque      | Translucent |

20. Sandy set up an experiment to study shadows. She placed a basketball and a glass cube as shown in the diagram below and shone light on the 2 objects. The shadow produced was captured on the screen.



Which one of the following shadows would Mindy see on the screen?

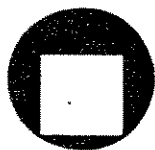
(1)



(2)



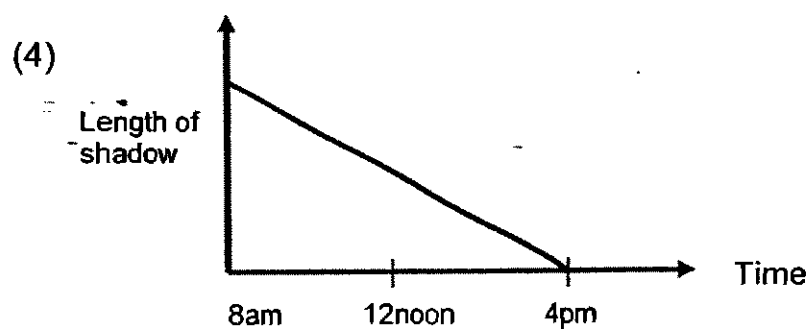
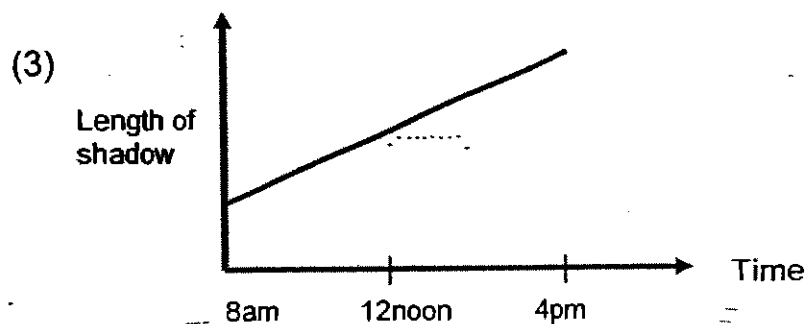
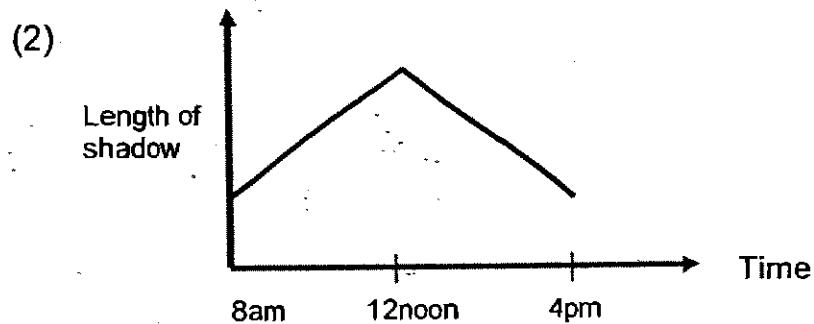
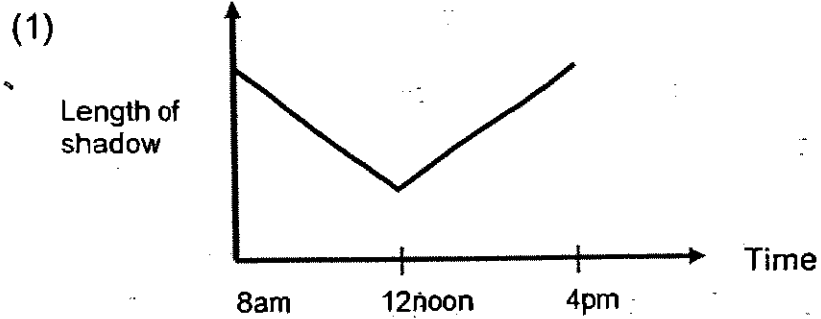
(3)



(4)



21. Which one of the following graphs correctly shows the changes in the length of a shadow cast by an object during the day?

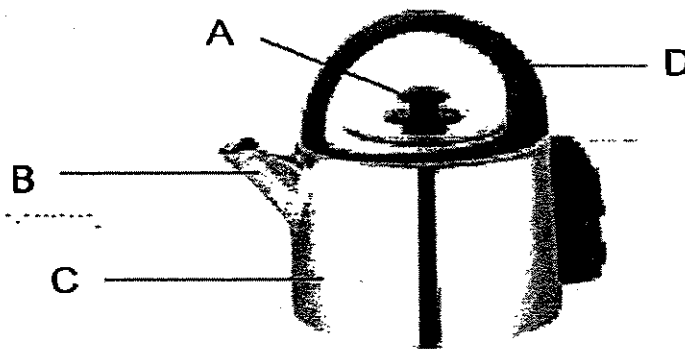


22. Heat is given off by \_\_\_\_\_.

- A: the sun
- B: melting ice
- C: burning things
- D: rubbing a stone against the ground

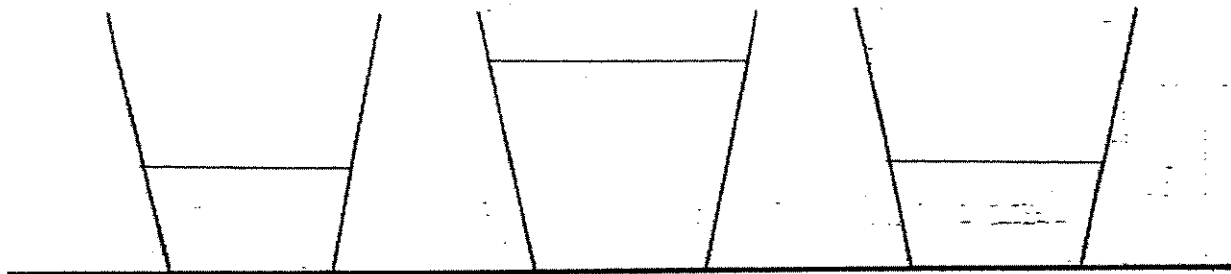
- (1) A and C only
- (2) B and D only
- (3) A, C and D only
- (4) All of the above

23. Look at the diagram of a kettle below. Which part/s of it is most likely made of materials that are poor conductors of heat?



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

24. The glasses below are filled with different amounts of water at different temperatures. Arrange the glasses beginning with the one with the most heat to the least heat?



**Glass A**

$40^{\circ}\text{C}$

**Glass B**

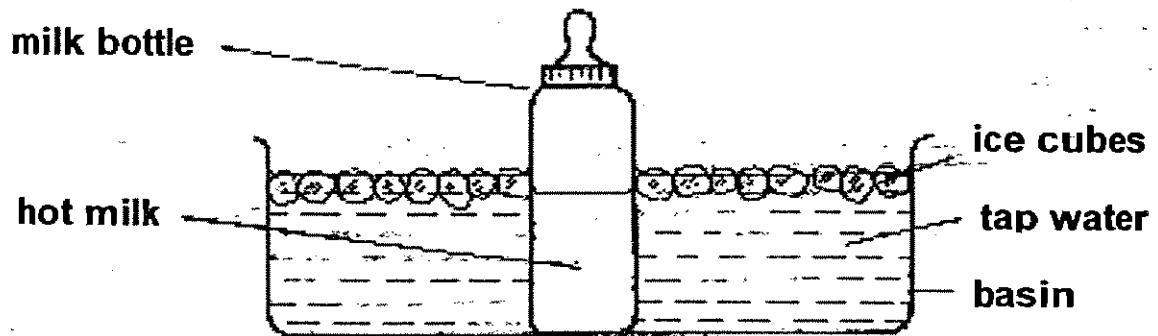
$70^{\circ}\text{C}$

**Glass C**

$70^{\circ}\text{C}$

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

25. Celine placed a bottle of hot milk into a basin of ice water as shown below. Which of the following statement/s is true?



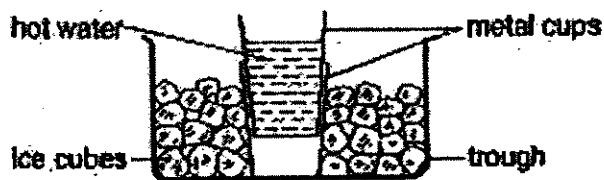
- A: The temperature of the hot milk would decrease for a period of time.  
B: The temperature of the tap water would remain unchanged.  
C: The ice gained heat from the hot milk, tap water in the basin and surrounding air.  
D: The basin was cold when you touched it because your hand lost heat to it.

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

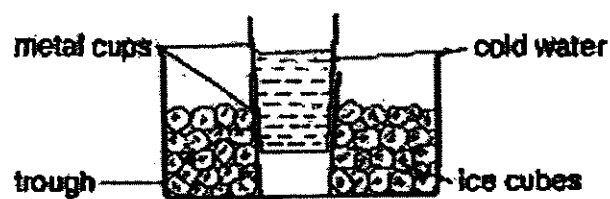


26. 2 metal cups are stuck together. Which one of the following would be the fastest method of separating them?

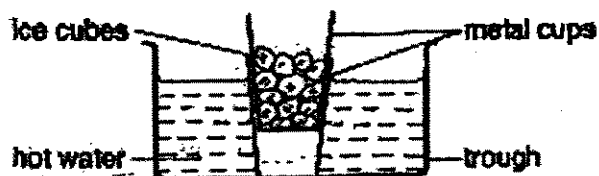
(1)



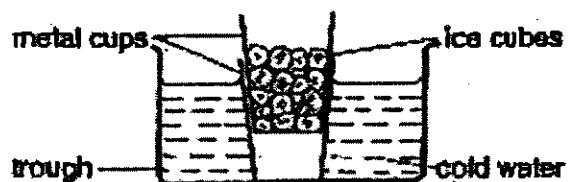
(2)



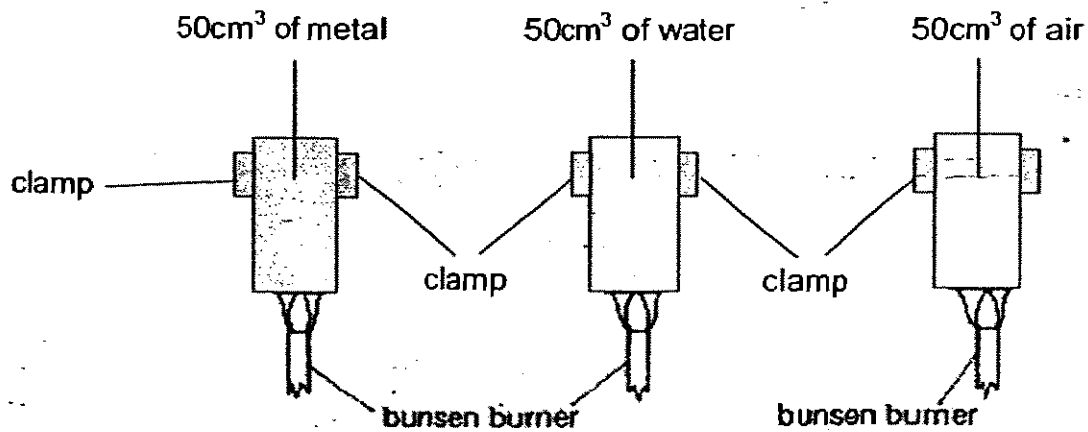
(3)



(4)



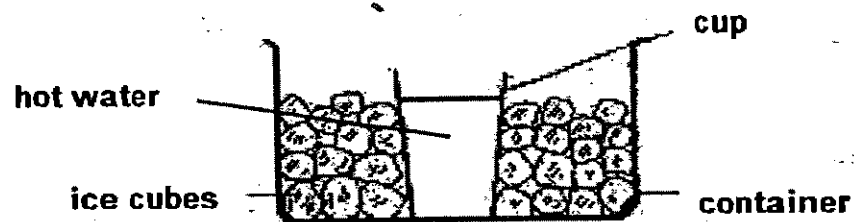
27. Gilbert set up the following experiment as shown below. He heated equal volumes of metal, water and air in different sealed cylinders. He measured and compared the time taken for their temperature to reach  $80^{\circ}\text{C}$ .



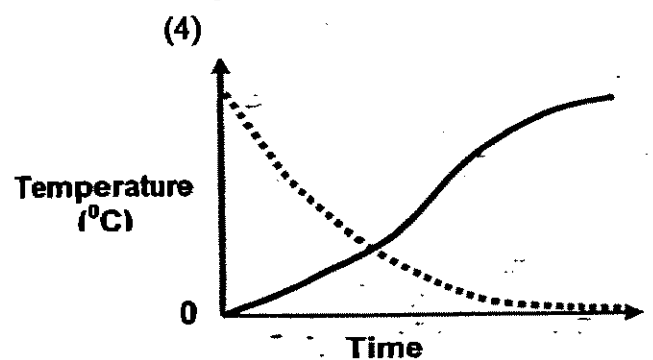
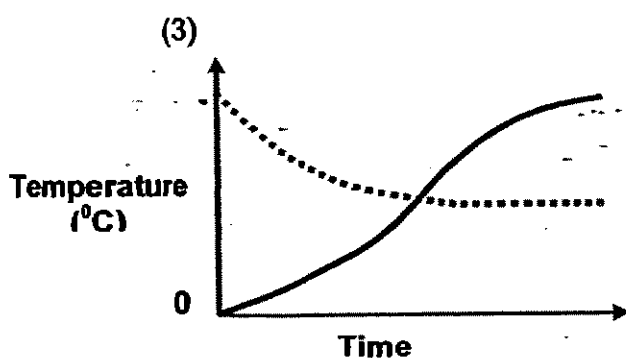
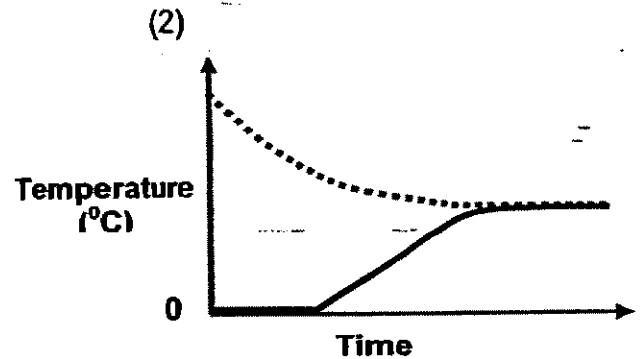
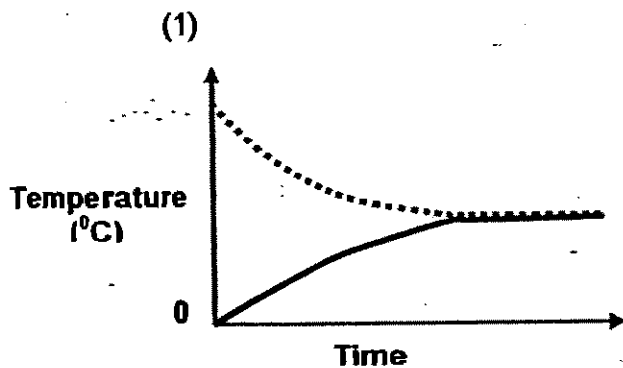
The aim of his experiment was to find out \_\_\_\_\_.

- (1) which type of matter contracts the fastest.
- (2) the boiling points of different types of matter.
- (3) how fast heat travels in different types of matter.
- (4) what happens to different types of matter when they are heated.

28. A cup of hot water was placed in a container of ice cubes as shown in the diagram below.



Which one of the following graphs most accurately shows the temperature of the hot water and ice cubes over a period of five hours?



29. Look at the table below.

| Waterproof materials       | Non- Waterproof materials  |
|----------------------------|----------------------------|
| plastic<br>glass<br>rubber | aluminum<br>cotton<br>silk |

Which materials have been wrongly grouped?

- (1) aluminum
- (2) cotton
- (3) glass
- (4) rubber

30. Which one of the following statements about systems is not true?

- (1) The human body is a system.
- (2) Each part of a system has a function.
- (3) Each part of a system does a job that is different from the rest.
- (4) A system can still work properly even if some parts are not working.



**HENRY PARK PRIMARY SCHOOL**

**SEMESTRAL EXAMINATION 2**

**2007**

**SCIENCE**

**PRIMARY 4**

**BOOKLET B**

**Name:** \_\_\_\_\_ (    )

**Class:** Primary 4 \_\_\_\_\_

**16 Questions  
40 Marks**

**Total Time for Booklets A and B: 1 h 30 min**

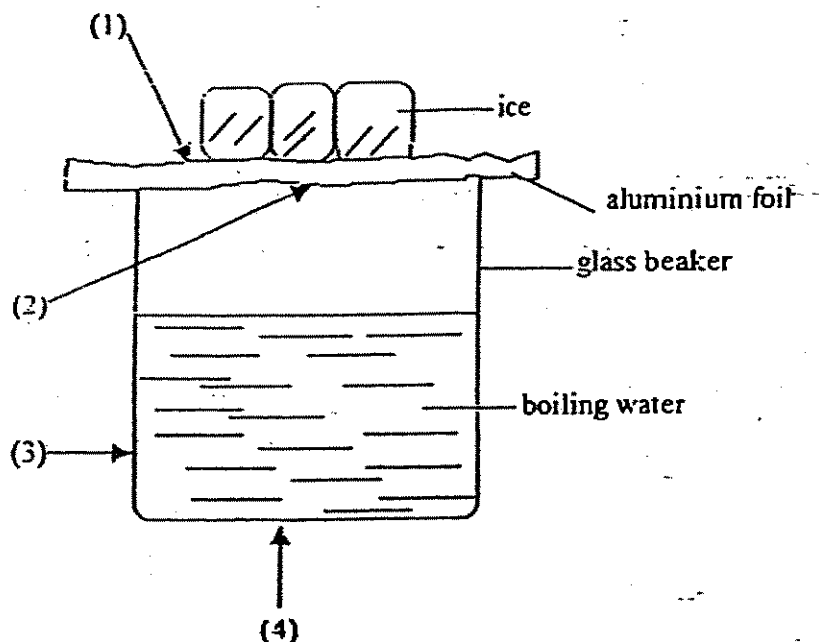
**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.**

**READ AND FOLLOW INSTRUCTIONS CAREFULLY.**

**PART 2 (40 marks)**

Write your answers to questions 31 to 46 in the spaces given.

31. Mary poured some boiling water into a glass beaker. She placed an aluminium foil over the beaker. Then she put a few pieces of ice onto the aluminium foil. After a few minutes, she noticed that some water droplets were formed.



- a. At which point would she find most water droplets? (1m)

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- b. Explain how the water droplets were formed. (2m)

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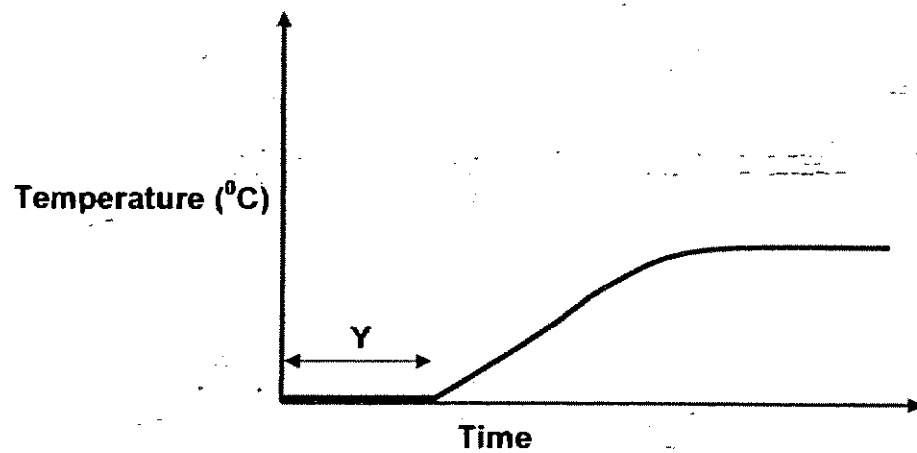
32. State one similarity between evaporation and boiling of water? (1m)

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33. Some ice cubes were left on the table for twenty minutes. The graph below shows the temperature of the ice cubes.



- a. Is there heat gain or heat loss during the process that is taking place at Y? (1m)

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- b. White clouds could be seen around the ice cubes in the first ten minutes. Explain how the white clouds were formed. (1m)

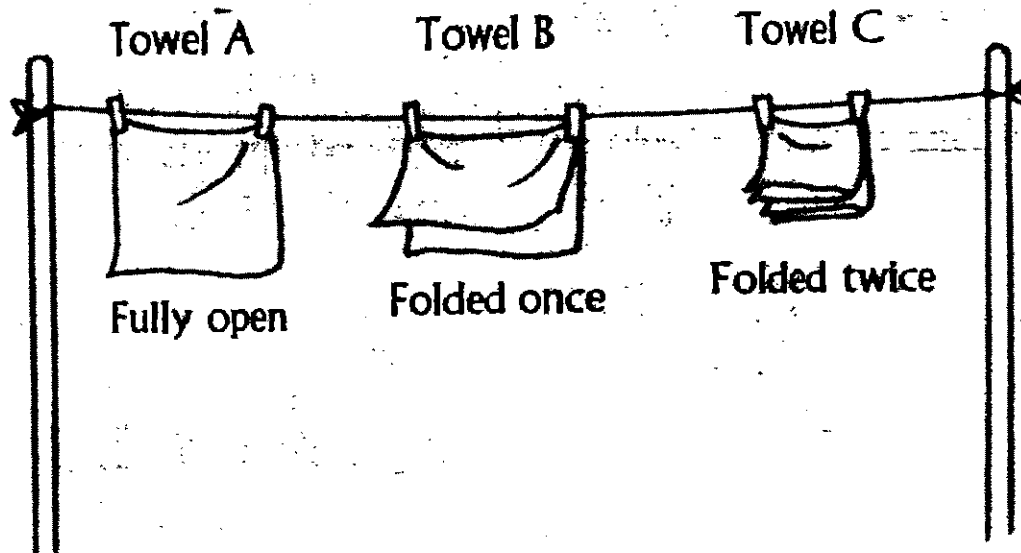
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34. The following experiment is carried out.

Three towels of the same size were hung out to dry in the same place.

Towel A was fully open, Towel B was folded once and Towel C was folded twice as shown below.



a. What is the purpose of the experiment? (1m)

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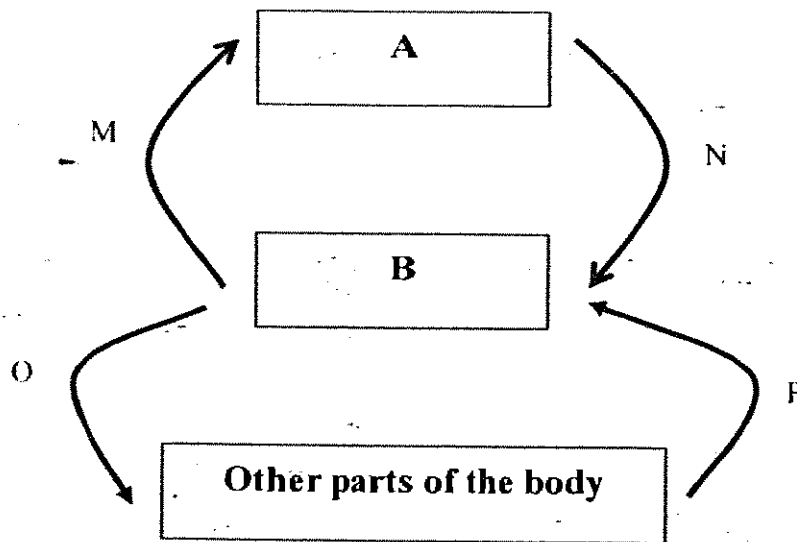
b. What is the measured variable of this experiment? (1m)

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35. The diagram shows how blood travels in the body.



Arrows **M, N, O, P** represent the movement of blood. **A** and **B** represent two organs.

a. Name the organs which **A** and **B** represent. (1m)

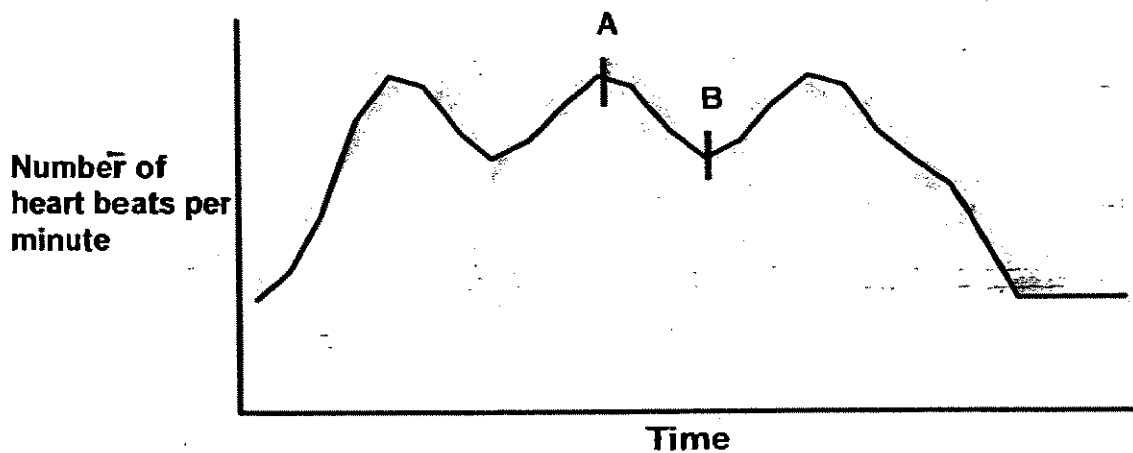
A: \_\_\_\_\_

B: \_\_\_\_\_

b. Which arrow(s) represent the movement of blood rich in oxygen? (1m)

\_\_\_\_\_

36. John ran 1.6km during his NAPFA test. The graph below shows his pulse rate during the run and ten minutes after the run.



- a. Suggest what could happen to cause his heart beat to decrease between point A and B during the run. (1m)

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- b. Explain why the number of heart beat per minute increase when we exercise. (1m)

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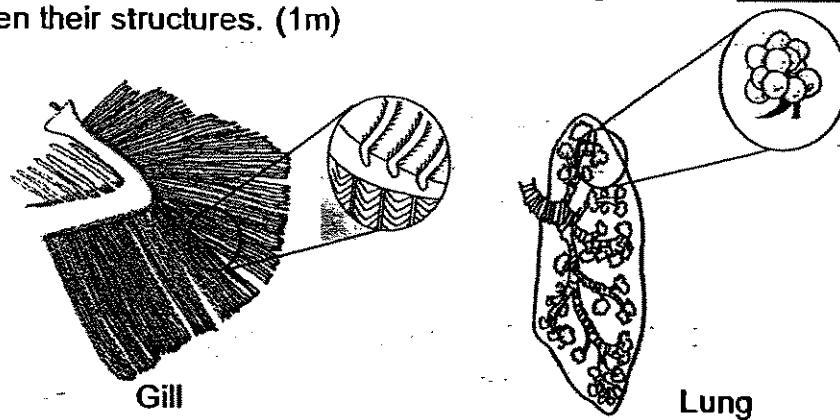


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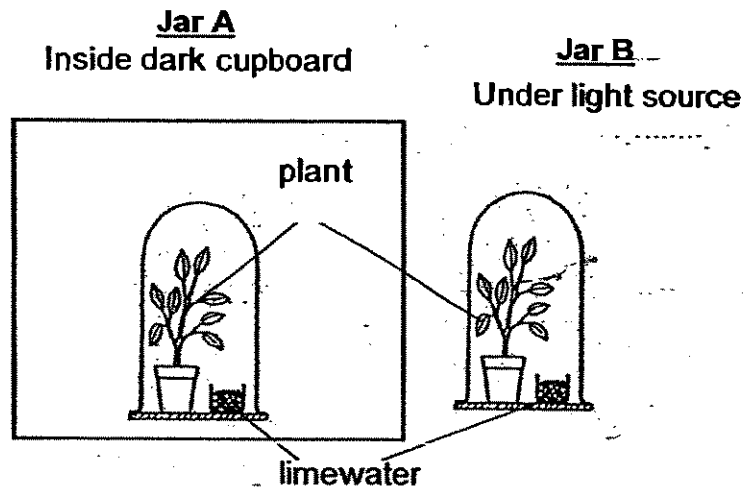
37. Write down the systems that the following body parts belong to. (1m)

|     | Body part    | System |
|-----|--------------|--------|
| (a) | Windpipe     |        |
| (b) | Blood Vessel |        |

38. The diagram below shows a picture of a gill and a lung. Look at the enlarged sections of the gill and lung, state a difference between their structures. (1m)



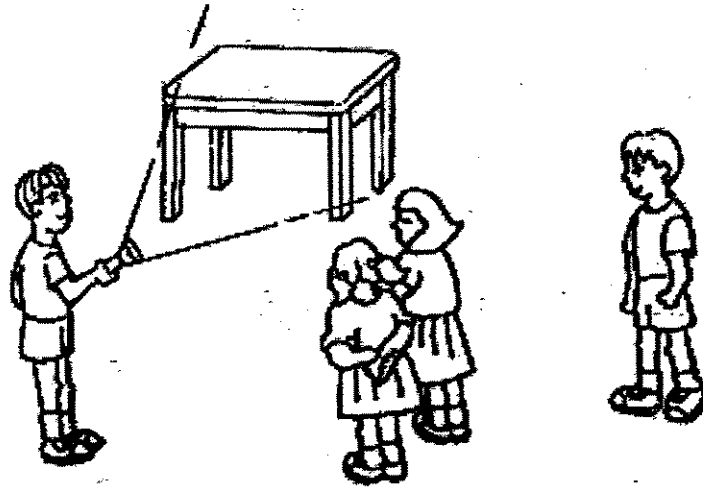
39. John set up the experiment below. A pot of plant was placed in a dark cupboard while another was placed under a light source. He was told that limewater turns chalky when carbon dioxide is present.



- a. In which jar (A or B) will the limewater turn chalky first? (1m)

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

40. Four students were in a pitch-dark room where they could not see anything. One of them switched on a torchlight and now the students were able to see the things around them.



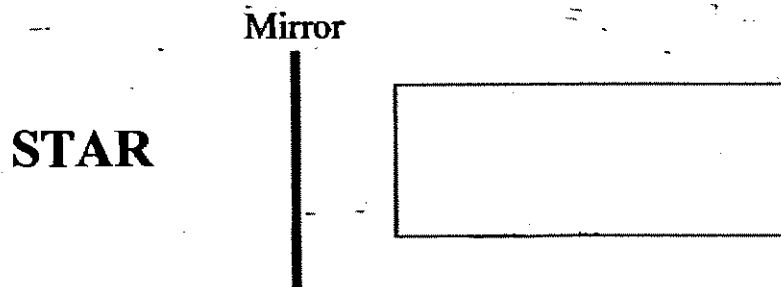
- a. Explain why they were able to see the table and each other when the torchlight was switched on. (2m)

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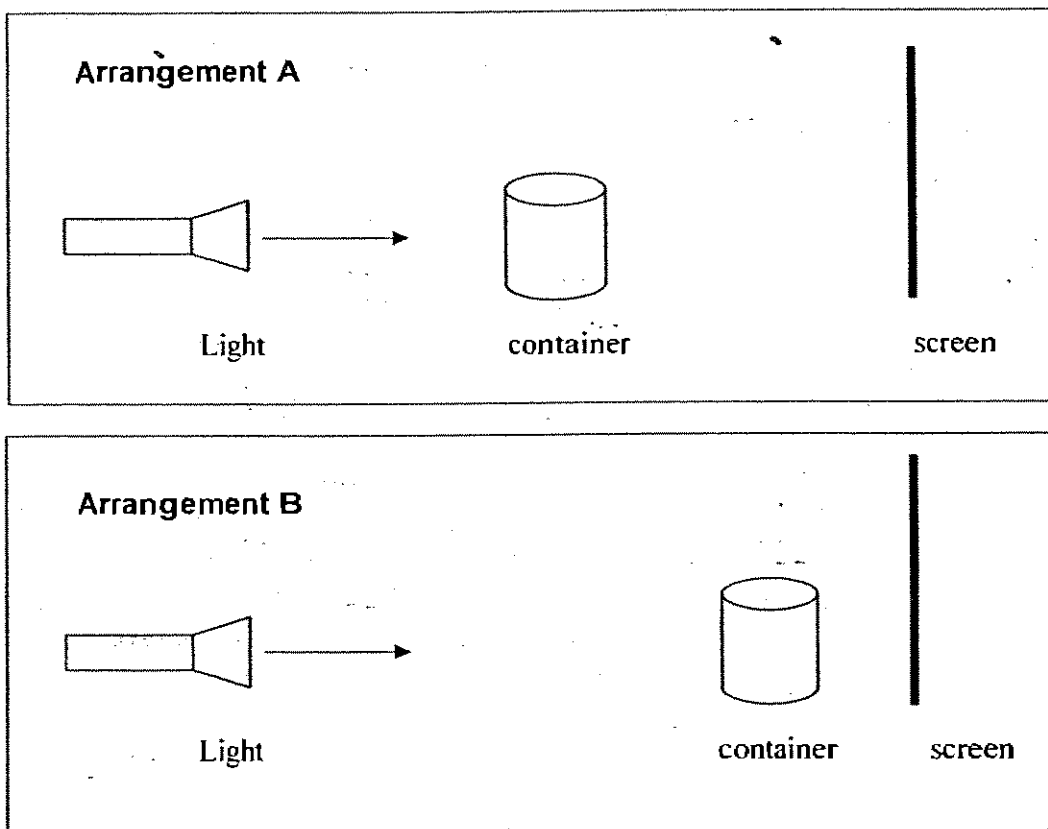


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- b. Draw in the box the reflected image of the word 'STAR'. (1m)



41. A metal container is arranged in two different ways in front of a light source to cast different shadows on the screen.



- a. State one similarity and one difference between the shadows formed in Arrangement A and Arrangement B. (2m)

Similarity: \_\_\_\_\_  
\_\_\_\_\_

Difference: \_\_\_\_\_  
\_\_\_\_\_

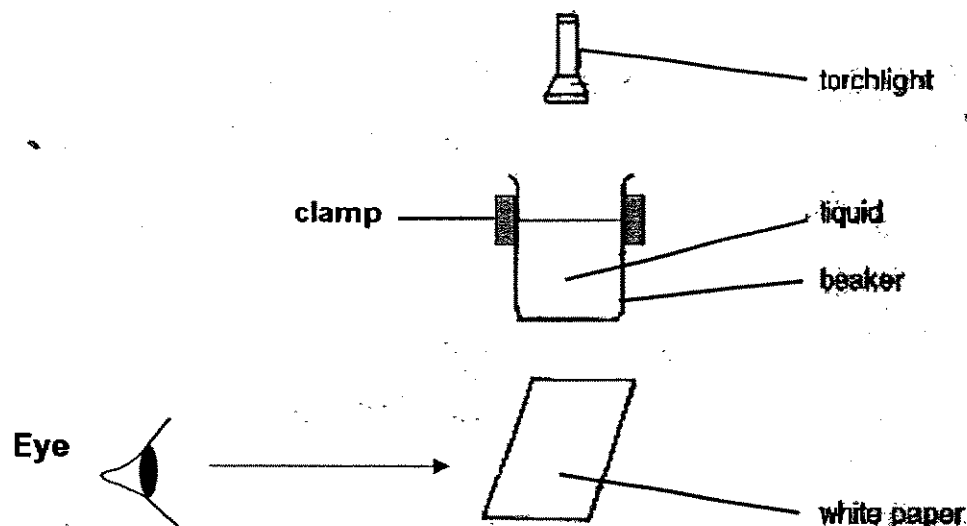
- b. Describe in what way the shadow would be different if a frosted glass container is used in Arrangement A. (1m)

\_\_\_\_\_

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

\_\_\_\_\_  
\_\_\_\_\_

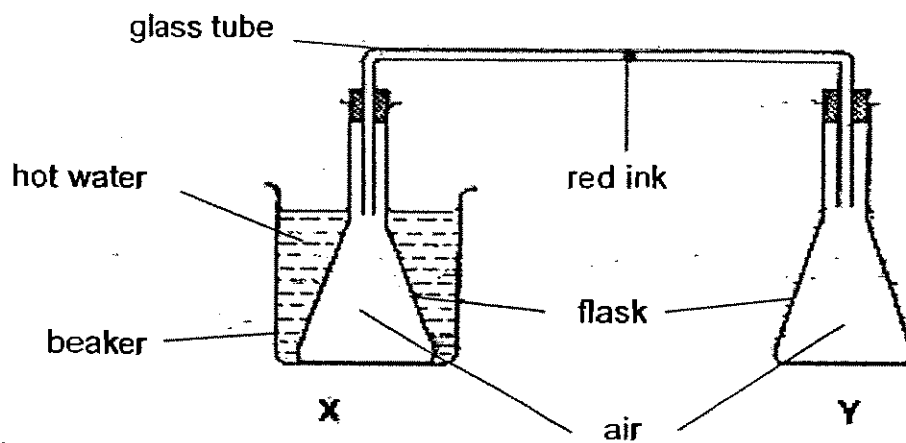
- Get a Tutor to go through the Papers <http://www.yestuition.sg>
42. Ken set up the experiment as shown below to investigate the transparency of different liquids. He switched on the torchlight and recorded what he saw on the white paper in the table below.



| Liquid                         | W            | X           | Y        | Z           |
|--------------------------------|--------------|-------------|----------|-------------|
| What he saw on the white paper | Bright light | Faint light | No light | Faint light |

- a. What is the test variable of his experiment? (1m)
- 
- b. State one variable he must keep the same to ensure a fair test? (1m)
- 
- 
- c. Ken dropped a coin into the different liquids. In which beaker of liquid (W, X, Y or Z) would he not see the coin at all? (1m)
- 
- d. Explain your answer in (c). (1m)
- 
-

- 43a. Samantha set up the following experiment. She placed a drop of red ink in the middle of the glass tube connecting the two flasks X and Y.



State what would happen to the drop of red ink. (1m)

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

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- b. June was walking home from school when she noticed cracks on the concrete pavement like those shown in the picture below.



- i. Explain why the concrete pavement cracked? (1m)

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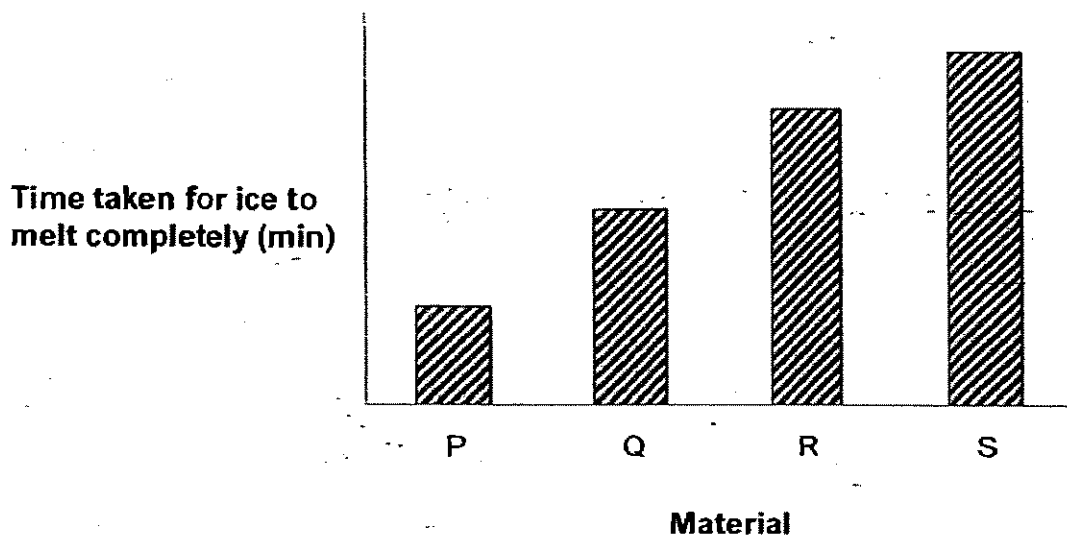
- ii. What can be done to prevent such cracking? (1m)

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44. Ali tested four containers made of different materials (P, Q, R and S) to see which one can prevent ice from melting for the longest period of time. He recorded the time taken for the ice to melt completely in each container.



- a) Which material is the best conductor of heat? (1m)

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

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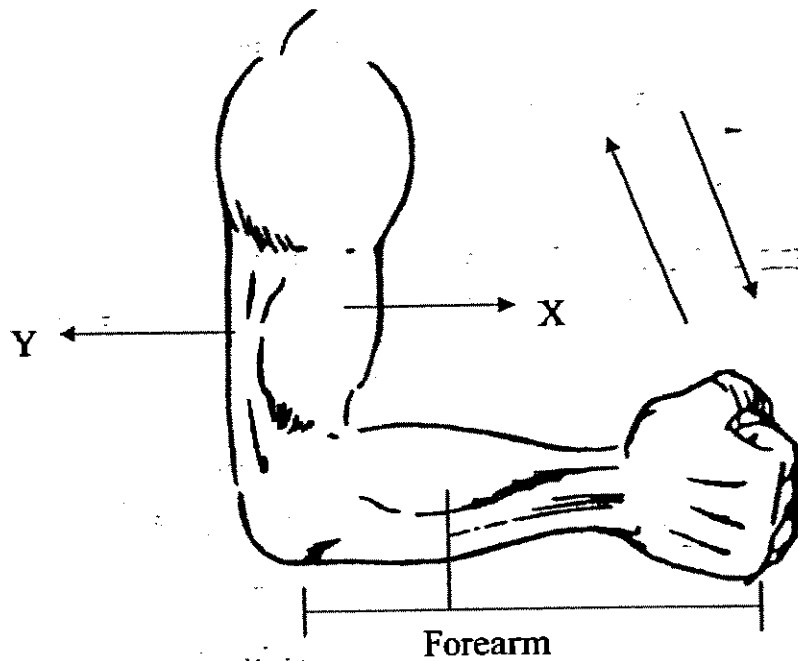
- c) Which material (P, Q, R or S) should he choose to make an icebox to keep his soft drinks cool when he goes on a picnic? (1m)

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- d) State the measured variable for this investigation. (1m)

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45.



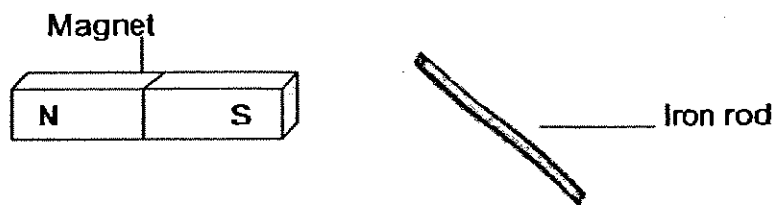
a. Looking at the diagram above, when X contracts, Y \_\_\_\_\_ (1m)

b. Name the type of joint that enables only the forearm to move up and down? (1m)

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46a. Look at the diagram below.

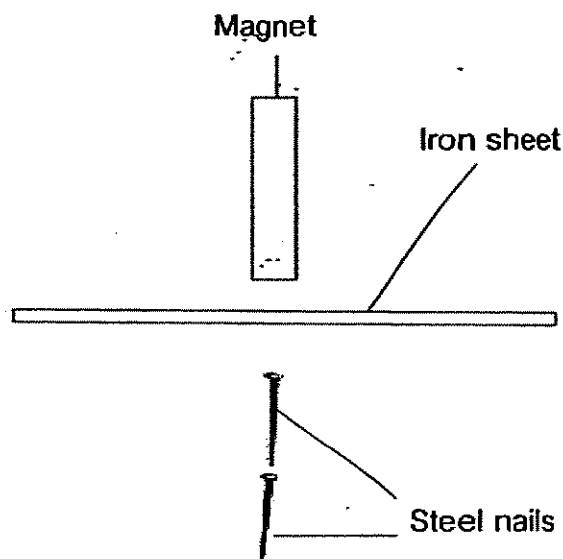


Using the magnet, how can Jayce make the iron rod into a magnet? (1m)

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b. Madam Heng set up the following experiment below.



i. Will the steel nails be attracted to the magnet? (1m)

---

ii. Explain your answer in (bi). (1m)

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# ANSWER SHEET

HENRY PARK PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007  
SEMESTRAL ASSESSMENT (2)

1. 4
  2. 4
  3. 3
  4. 1
  5. 2
  6. 1
  7. 2
  8. 3
  9. 1
  10. 2
  11. 4
  12. 4
  13. 3
  14. 4
  15. 3
  16. 2
  17. 3
  18. 3
  19. 2
  20. 1
  21. 1
  22. 3
  23. 4
  24. 3
  25. 4
  26. 3
  27. 3
  28. 2
  29. 1
  30. 4
- 31) a) Point 2  
b) Boiling water evaporated to form water vapour. water vapour is cooled the aluminium foil with the ice and condense to water.
  - 32) They cause a change from liquid to gas.
  - 33) a) Heat gain.  
b) Warmer surrounding water vapour condenses when it meets the cooler air around the ice cubes.
  - 34) a) To find out if the area of exposed surface will affect the rate of evaporation.  
b) The time taken for towel to dry.
  - 35) a) A: lungs      B: heart  
b) Arrow N and O
  - 36) a) The cause that his heart beat decrease between point A and point B is he stop running and started jogging.  
b) Our heart have to pump oxygenated blood to the rest of his body to release more energy.
  - 37) a) respiration system.  
b) circulatory system.

38) The sills are made of feather like structures but the lungs are made of spongy like structures.

39) a) Jar A

b) The plant takes in oxygen and gives out carbon dioxide during respiration.

40) a) The path of light and the objects must be correctly stated to obtain.

b) RATC

41) a) Similarity: The shape of the shadows is the same.  
Different : Arrangement A shadow on the screen will be big but Arrangement B will be small.

b) The shadow will be lighter dark not very dark.

c) Frosted glass is translucent.

42) a) The types of liquids used.

b) Must use the same energy from the torchlight.

c) Beaker Y.

d) Liquid Y is opaque.

43) a) i) The drop of red ink would move towards flask Y.

ii) The air in flask X expands pushing the ink towards flask Y.

b) i) It expands when it is hot and cracks as there is no space for it to expand.

ii) Build them in small for expansion and contraction.

44) a) Material P.

b) The ice melts in the shortest amount of time.

c) Material S.

d) The time taken for ice to melt completely.

45) a) relaxes.

B) Hinge joint.

46) a) Jayce must use the magnet to stroke the iron rod in the same direction.

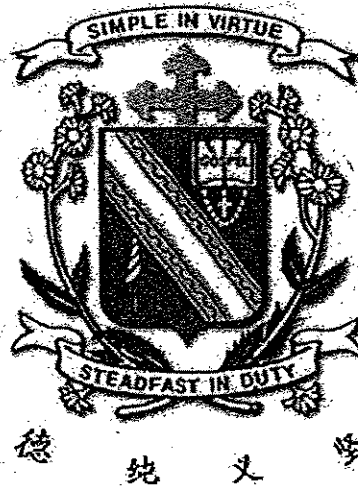
b) i) No.

ii) Magnetism cannot pass through magnetic materials.

Name : \_\_\_\_\_ ( )

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

## CHIJ ST NICHOLAS GIRLS' SCHOOL



**Primary 4**

**Second Semestral Assessment – 2007**

**SCIENCE**

**BOOKLET A**

**12<sup>th</sup> October 2007**

**Total Time for Booklets A and B: 1 hour 45 minutes**

**30 questions  
60 marks**

**Do not open this booklet until you are told to do so.  
Follow all instructions carefully.  
Answer all questions.**

**Section A : (30 x 2 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 of the following statements are true about the red blood cells?

- A: They transport oxygen.
- B: They fight against germs and diseases.
- C: They help in clotting of blood on wounds.
- D: They contain red pigments that give the blood the colour red.

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

2. Which one of the following is **not** an example of a light source?

- (1) Sun
- (2) Light bulb
- (3) The Moon
- (4) Burning Wood

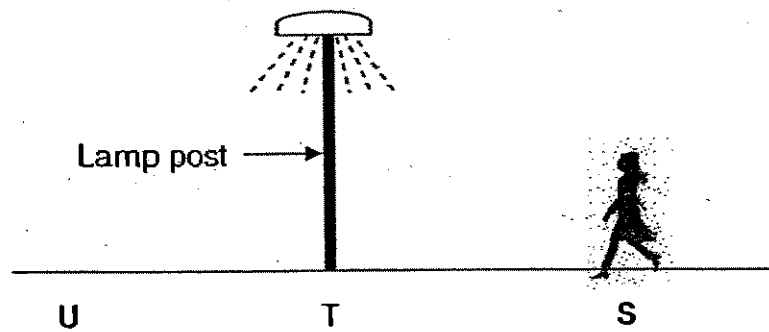
3. John conducted an experiment to find out the relationship between the mass and the volume of Matter A. The table below shows the results of the experiment.

|                          |    |    |    |    |
|--------------------------|----|----|----|----|
| Volume / cm <sup>3</sup> | 20 | 20 | 20 | 20 |
| Mass / g                 | 20 | 40 | 60 | 80 |

Which one of the following can Matter A be?

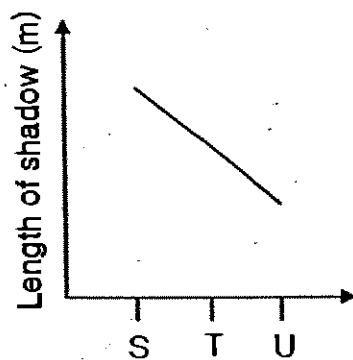
- (1) Clay
- (2) Apple juice
- (3) Toothpaste
- (4) Carbon dioxide

4. One dark night, Mary walked from point S to point U, passing a lamp post at T.

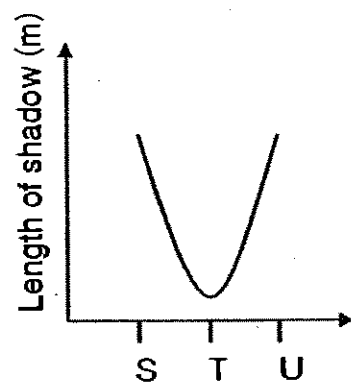


If the only light source nearby was the lamp post, which one of the graphs below shows how the length of her shadow changes from S to U?

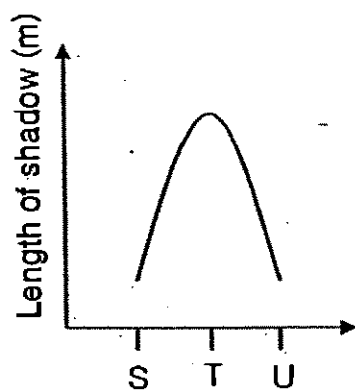
(1)



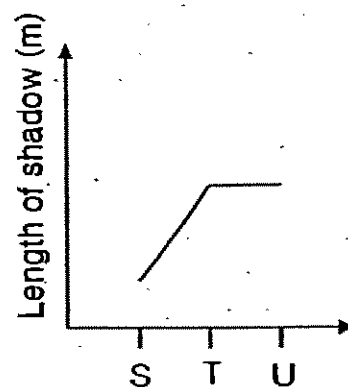
(2)



(3)

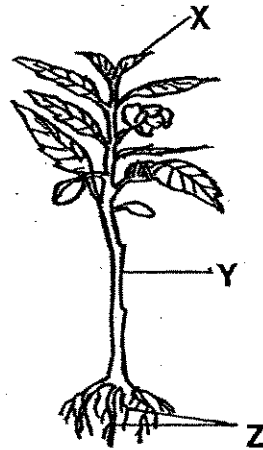


(4)





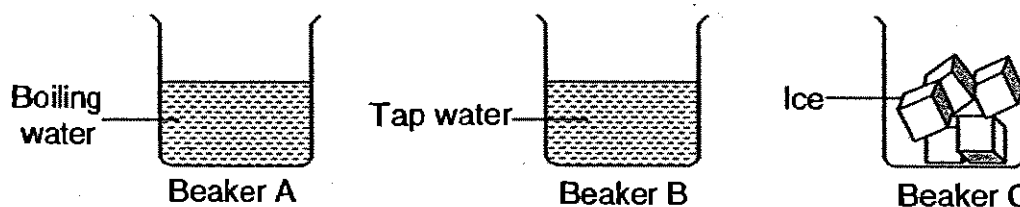
5. The diagram below shows a plant.



Which one of the following shows the correct functions of the plant parts, X, Y and Z respectively?

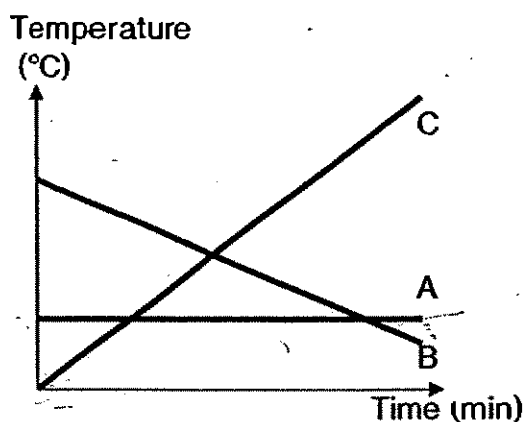
|     | X                                    | Y                                    | Z                                   |
|-----|--------------------------------------|--------------------------------------|-------------------------------------|
| (1) | Water and mineral salts are absorbed | Gases are exchanged                  | Water and food are transported      |
| (2) | Water and food are transported       | Water and mineral salts are absorbed | Gases are exchanged                 |
| (3) | Gases are exchanged                  | Water and food are transported       | Water and mineral salt are absorbed |
| (4) | Gases are exchanged                  | Water and mineral salts are absorbed | Water and food are transported      |

6. Three beakers, A, B and C, with different contents as shown in the diagram below, were left on a table for 2 hours.

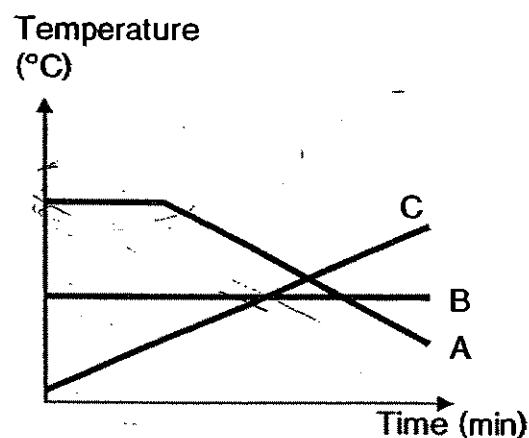


Which one of the following graphs correctly shows the change in temperature of the boiling water, tap water and ice?

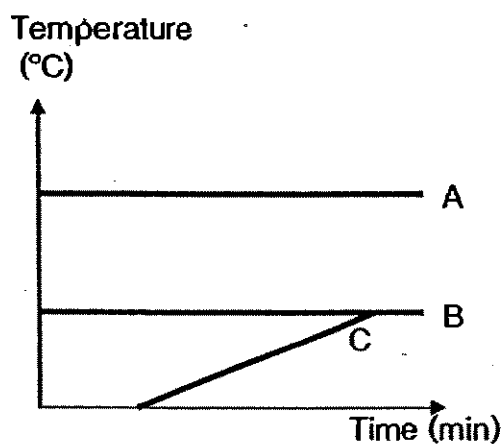
(1)



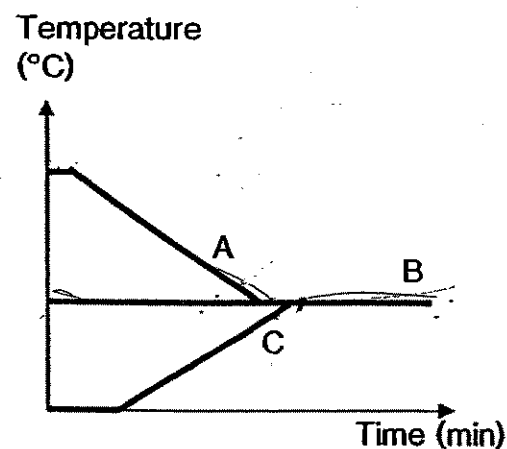
(2)



(3)



(4)



7. The following diagram shows the energy from the Sun is transferred to organisms X, Y and Z.

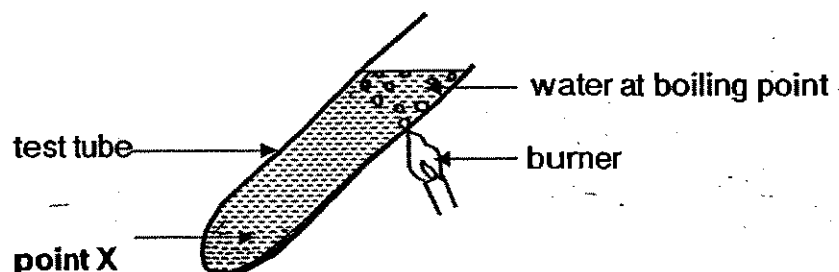


Which of the following statements correctly describe the diagram shown above?

- A: X needs sunlight to make food.
- B: The diagram shows a food chain.
- C: Z depends indirectly on X for energy.
- D: The arrows show a flow of energy transfer.

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

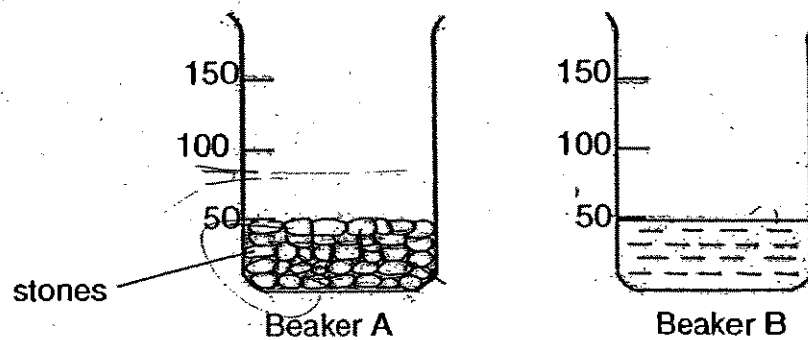
8. In the experiment below, water in the test tube was heated at the point as shown in the diagram.



Which one of the following statements about the temperature of water at **point X** is correct?

- (1) It is lower than  $100^{\circ}\text{C}$ .
- (2) It is higher than  $100^{\circ}\text{C}$ .
- (3) It has a temperature of  $100^{\circ}\text{C}$ .
- (4) It is the same as the room temperature.

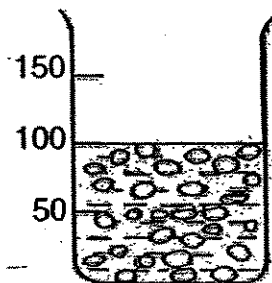
9. Nathan filled up Beaker A with stones up to the 50ml mark. He then filled Beaker B with 50ml of water as shown below.



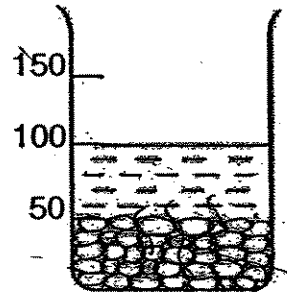
All the water in Beaker B was then poured into Beaker A.

Which drawing below probably shows the water level in Beaker A?

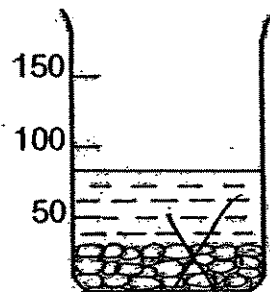
(1)



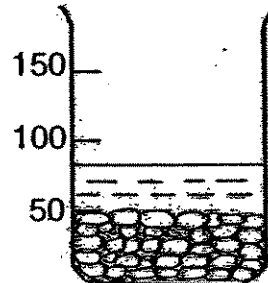
(2)



(3)



(4)



10. Helen soaks four handkerchiefs, A, B, C and D of similar materials with an equal amount of water. The handkerchiefs are then left to dry in four locations under different conditions as shown in the table below.

| Condition<br>Handkerchief | Windy | Cloudy | Sunny |
|---------------------------|-------|--------|-------|
| A                         | √     | √      |       |
| B                         |       | √      |       |
| C                         | √     |        | √     |
| D                         |       |        | √     |

After an hour, Helen takes the handkerchiefs and weighs them again.

Arrange the handkerchiefs in ascending order according to the mass of the handkerchiefs.

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

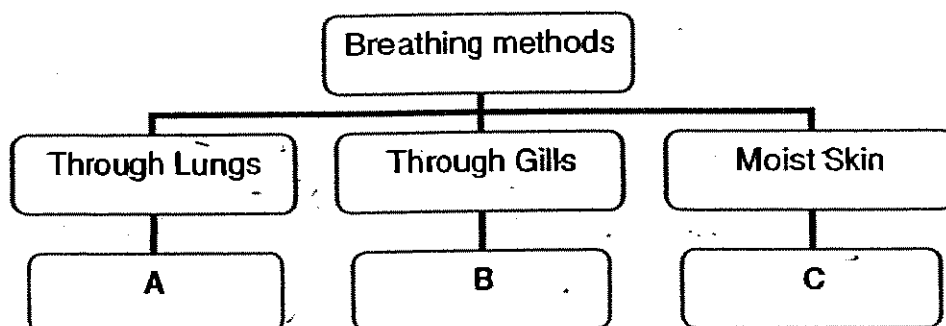
11. Several people were trapped in a lift for 30 minutes. There was no fresh air entering the lift. The amount of different gases present in the lift before the breakdown is shown in the table below.

| Type of gas    | Percentage (%) |
|----------------|----------------|
| Carbon dioxide | 0.03%          |
| Oxygen         | 21%            |
| Water vapour   | 1%             |

Which one of the following correctly shows the change in the different types of gases in the lift after 30 minutes?

|     | Carbon dioxide | Oxygen | Water vapour |
|-----|----------------|--------|--------------|
| (1) | 0.04%          | 17%    | 0.04%        |
| (2) | 0.03%          | 21%    | 4%           |
| (3) | 1%             | 22%    | 2%           |
| (4) | 1%             | 16%    | 2%           |

12. The table below shows the breathing methods of some organisms.



Which one of the following sets of organisms below can be correctly placed in the classification table above?

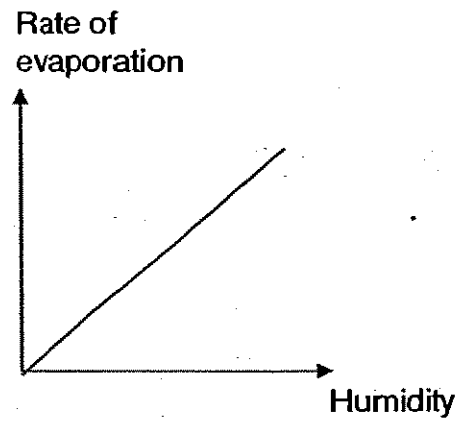
|     | A     | B       | C          |
|-----|-------|---------|------------|
| (1) | man   | seal    | frog       |
| (2) | shark | guppy   | mudskipper |
| (3) | horse | dolphin | whale      |
| (4) | whale | shark   | Earthworm  |

13. Which one of the following shows what happens to the human chest, diaphragm and ribs when a person is coughing out? *Force the air out*

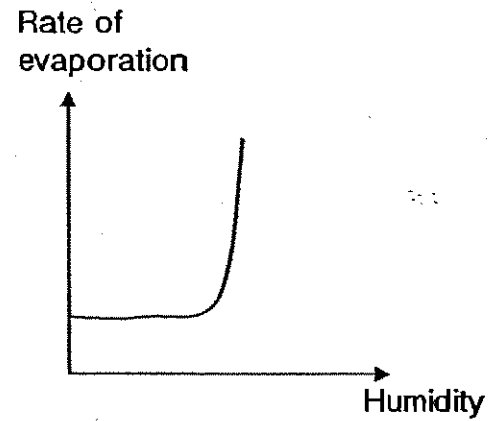
|     | Chest           | Diaphragm       | Ribs          |
|-----|-----------------|-----------------|---------------|
| (1) | Becomes bigger  | Moves upwards   | Move outwards |
| (2) | Becomes bigger  | Moves downwards | Move outwards |
| (3) | Becomes smaller | Move upwards    | Move inwards  |
| (4) | Becomes smaller | Move downwards  | Move inwards  |

14. Which one of the following graphs shows what happens to the rate of evaporation as humidity increases?

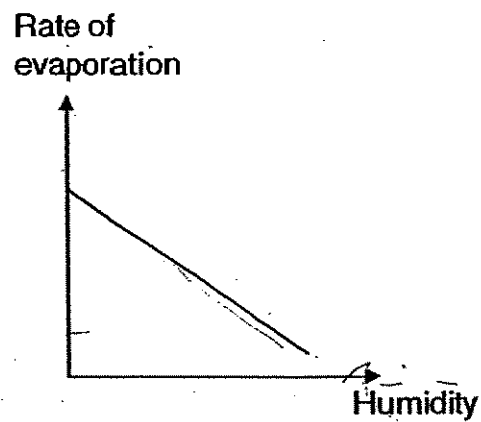
(1)



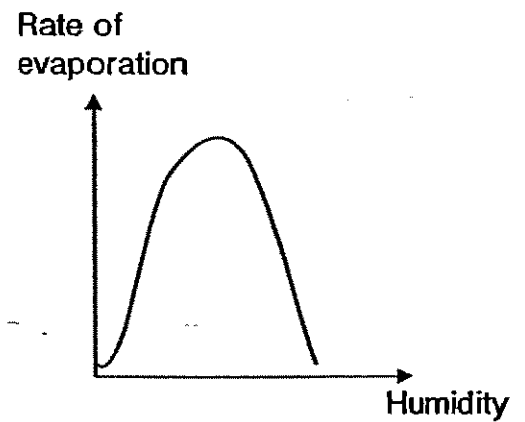
(2)



(3)



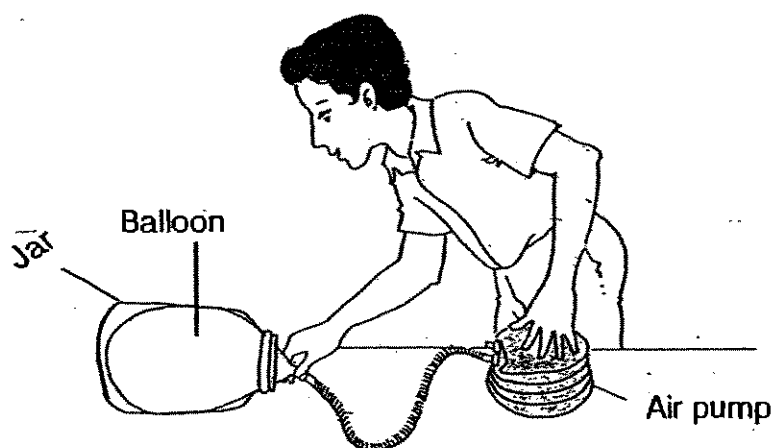
(4)



15. Which one of the following shows the correct sequence of air leaving the human respiratory system when a person is exhaling?

- (1) Air Tubes → Lungs → Nose → Windpipe
- (2) Windpipe → Nose → Air Tubes → Lungs
- (3) Nose → Windpipe → Air Tubes → Lungs
- (4) Lungs → Air Tubes → Windpipe → Nose

16. Kenny placed a balloon in a jar as shown in the diagram below.



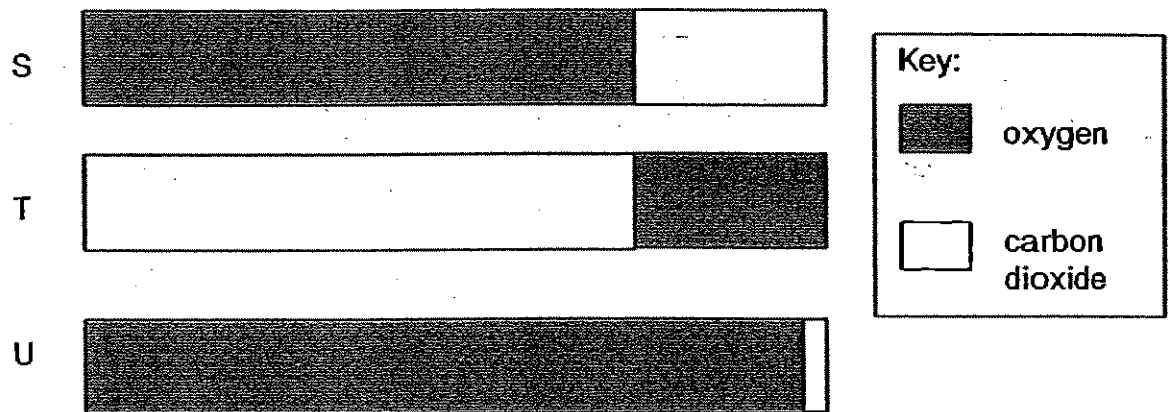
He wanted the balloon to fill the jar by pumping more air into the balloon. However, he could not get the balloon to fill the jar.

The balloon cannot fill the jar because the \_\_\_\_\_.

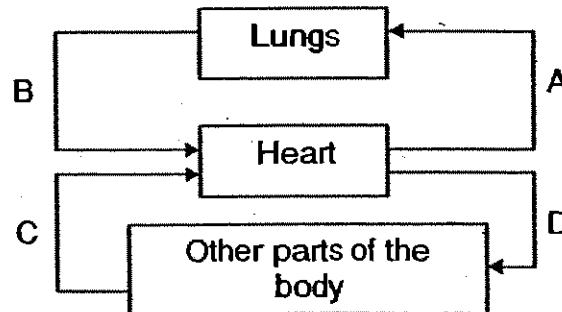
- (1) air inside the jar occupies space  
(2) balloon cannot be stretched further  
(3) jar has a definite shape and volume  
(4) air inside the jar cannot be compressed



17. The diagram below shows the proportion of carbon dioxide and oxygen in three blood samples, S, T and U, taken at the same time from different blood vessels located in the different parts of the circulatory system.



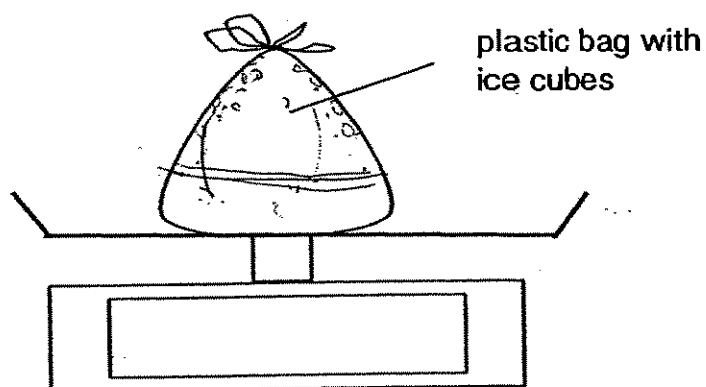
The following shows the different organs linked with the different blood vessels.



Which of the following blood vessels are correctly matched to the blood samples?

|     | Blood sample S | Blood sample T | Blood sample U |
|-----|----------------|----------------|----------------|
| (1) | A              | B              | C              |
| (2) | C              | A              | B              |
| (3) | D              | A              | B              |
| (4) | B              | D              | C              |

18. Suhaila placed a bag of ice cubes weighing 58g on an electronic scale as shown in the diagram below.



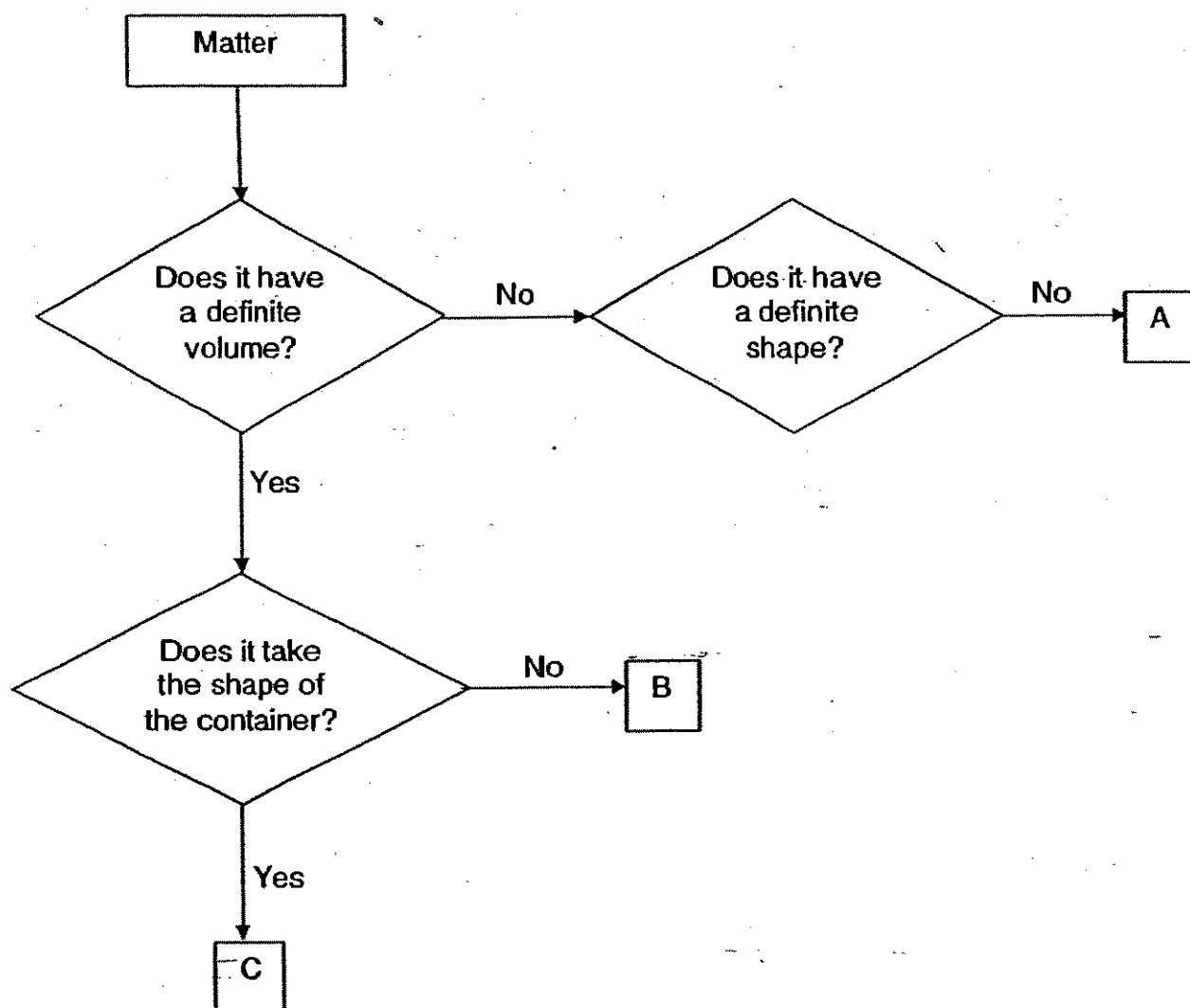
What will the reading on the scale be when all the ice cubes in the bag has melted?

- (1) exactly 58g
  - (2) slightly less than 58g
  - (3) slightly more than 58g
  - (4) Not possible to tell
19. A big block of ice is left in a small room to melt. The table below shows the possible changes to the temperature of the ice, water and small room while the ice is melting.

Which one of the following lists shows the correct changes?

| Temperature |           |          |           |
|-------------|-----------|----------|-----------|
|             | Ice       | Water    | Room      |
| (1)         | No change | Increase | Decrease  |
| (2)         | No change | Increase | Increase  |
| (3)         | Increase  | Decrease | Decrease  |
| (4)         | Increase  | Increase | No change |

20. Study the flow chart below.

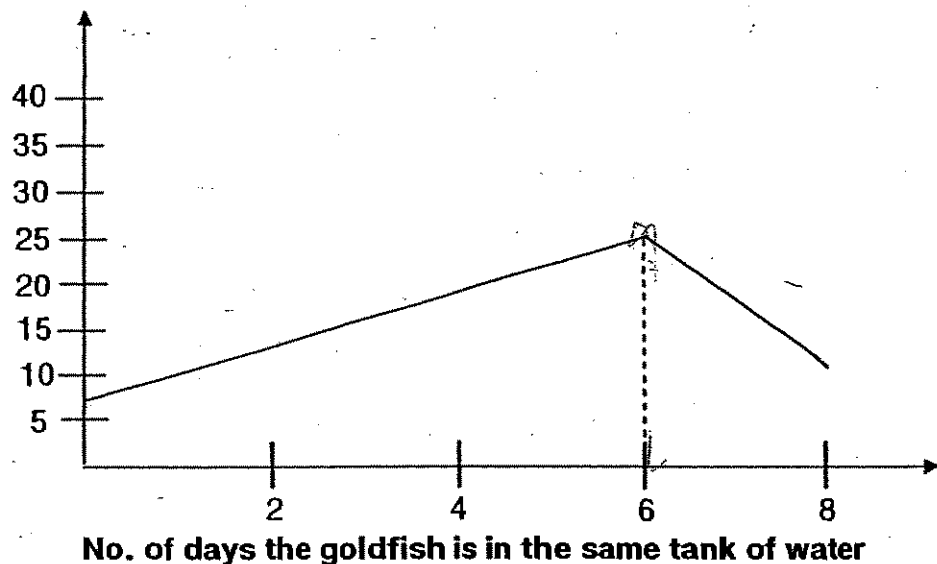


What can A, B and C be?

|     | A            | B            | C            |
|-----|--------------|--------------|--------------|
| (1) | Oxygen       | Orange Juice | Plasticine   |
| (2) | Nitrogen     | Flour        | Orange Juice |
| (3) | Orange Juice | Plasticine   | Flour        |
| (4) | Flour        | Orange Juice | Oxygen       |

21. Ali wants to find out if the number of days the goldfish is in the tank will affect the number of times the gill cover opens and closes. He records his observation for 8 days in the graph below.

**No. of times gill cover  
opens and closes in 30  
seconds**



Based on the graph, which one of the following statements below is correct?

- (1) By the 8<sup>th</sup> day, the goldfish has died.
- (2) The breathing rate of the goldfish decreases after the 6<sup>th</sup> day as more goldfish were added in.
- (3) The number of times the gill covers open and close increases as the number of days increases.
- (4) There is an increase in the amount of dissolved oxygen after the 6<sup>th</sup> day as a pump has been placed in the tank.

22. The following changes take place in the body of an athlete running a marathon.

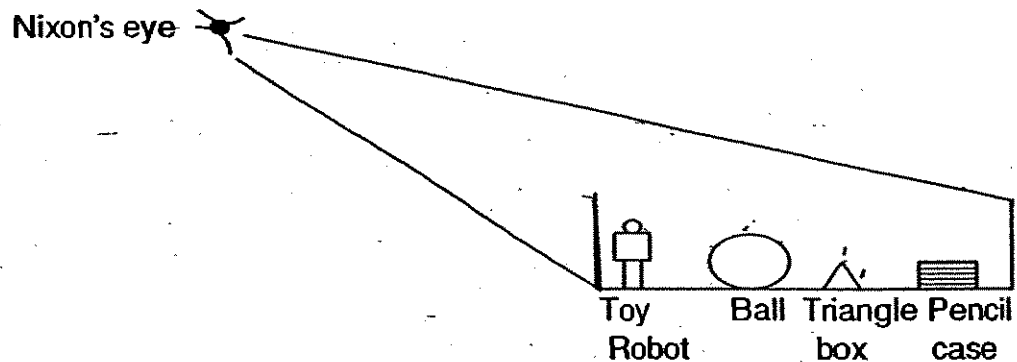
- A: Breathing rate increases  
 B: More oxygen is supplied to the muscles  
 C: More carbon dioxide is found in the blood  
 D: Movement in muscles produces carbon dioxide

In which order do these changes occur in the athlete's body?

FIRST → LAST

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

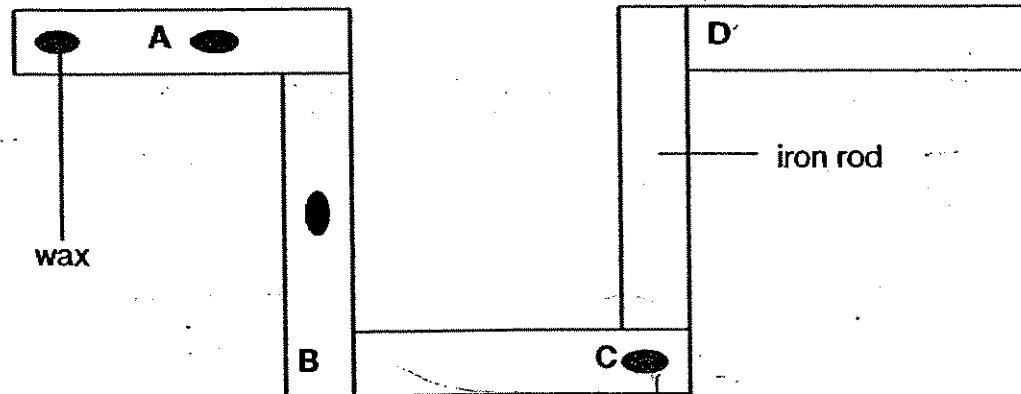
23. Nixon looked into a box containing a ball, a toy robot, a triangle box and a pencil case from a distance.



Which of the object(s) in the container would he not able to see at all if the container is opaque?

- (1) Toy robot only  
 (2) Pencil case and ball only  
 (3) Toy robot and triangular box only  
 (4) None of the objects

24. Five pieces of iron rods of the same size are joined together to form a structure as shown below. Four blobs of wax are stuck to different parts of the iron rods.

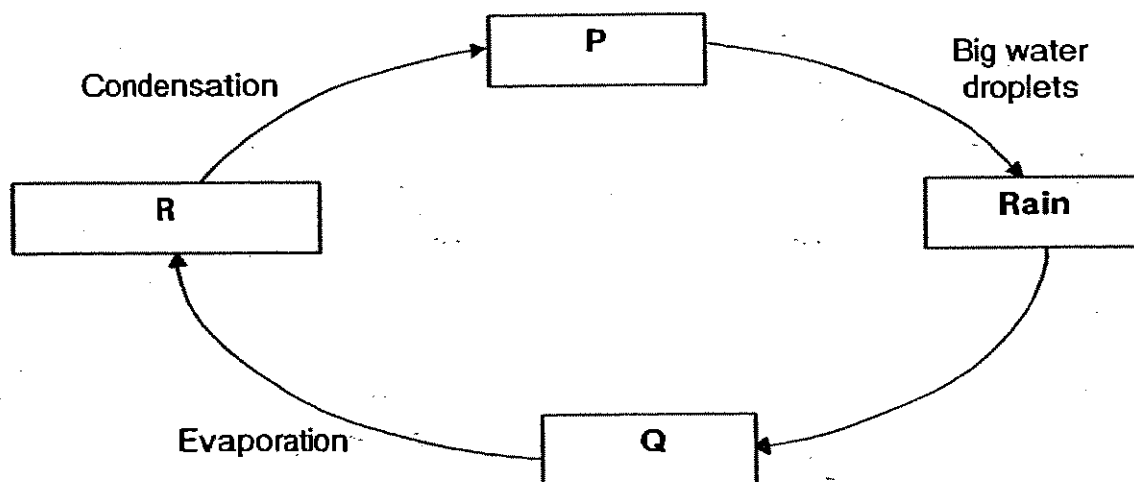


At which point should the flame be placed so that all the blobs of wax will melt in the shortest time?

- (1) A
  - (2) B
  - (3) C
  - (4) D
25. Which one of the following will least likely cause water pollution?
- (1) Spilling of oil in the sea
  - (2) Throwing rubbish into drains
  - (3) Releasing treated water into the sea
  - (4) Flowing of fertiliser from farms into streams

liquid

26. The diagram below shows the water cycle.



What do P, Q and R represent in the water cycle?

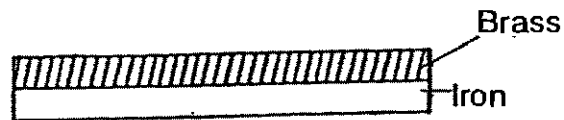
|     | P            | Q            | R            |
|-----|--------------|--------------|--------------|
| (1) | Lake         | Cloud        | Water vapour |
| (2) | Cloud        | Lake         | Water vapour |
| (3) | Water vapour | Cloud        | Lake         |
| (4) | Lake         | Water vapour | Cloud        |

27. Which of the following statements on water cycle are true?

- A: When sea water evaporates, the water and salt in it rise to the sky.
- B: The change in the states of water in the water cycle is a continuous process.
- C: The water cycle ensures that there will always be fresh water for living things.
- D: In the water cycle, the temperature for evaporation is always 100°C.

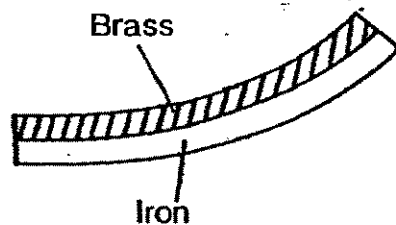
- (1) A and B only
- (2) B and C only
- (3) C and D only
- (4) A and D only

28. The diagram below shows a bimetallic strip made of brass and iron.

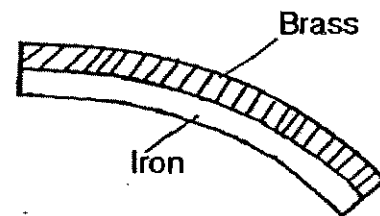


After being heated for 30 minutes, it is seen that brass expands more than iron. Which of the following diagrams below shows the bimetallic strip after it has been heated?

(1)



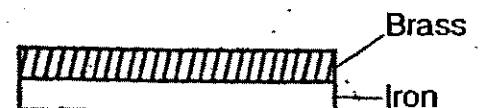
(2)



(3)

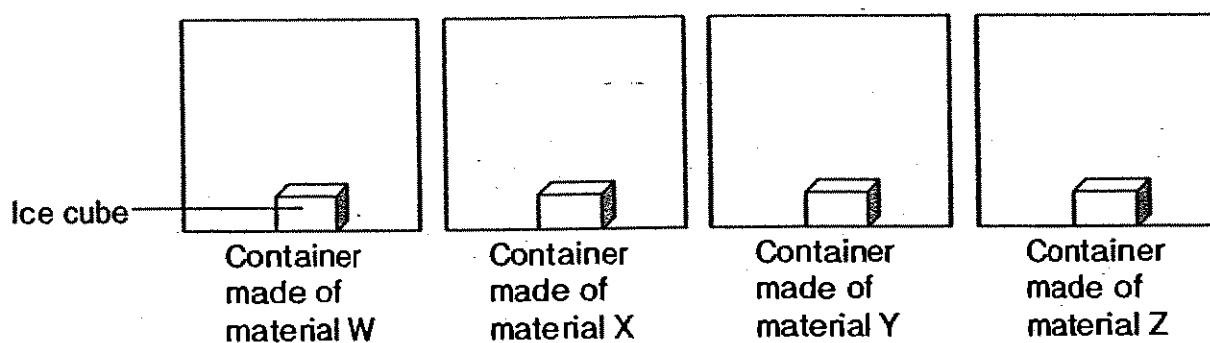


(4)





29. An ice cube is placed and sealed in each of four containers made of different materials. The containers are also identical in size.



The table below shows the time taken for the ice in each container to melt completely.

| Material | Time taken for ice to melt (mins) |
|----------|-----------------------------------|
| W        | 4                                 |
| X        | 15                                |
| Y        | 8                                 |
| Z        | 2                                 |

Which one of the following material is the best in making containers for keeping food warm?

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

30. A mug as shown below is placed between a torch and the wall.

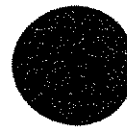


Which one of the shadows below cannot be cast by the mug?

(1)



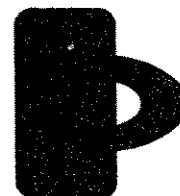
(2)



(3)



(4)



**\*\*\*\*\* END OF SECTION A \*\*\*\*\***

Name : \_\_\_\_\_ ( )

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

**CHIJ ST NICHOLAS GIRLS' SCHOOL****Primary 4****Second Semestral Assessment – 2007****SCIENCE****BOOKLET B****12<sup>th</sup> October 2007.****Total Time for Booklets A and B: 1 hour 45 minutes****16 questions  
40 marks**

|           |     |
|-----------|-----|
| Booklet A | 60  |
| Booklet B | 40  |
| Total     | 100 |

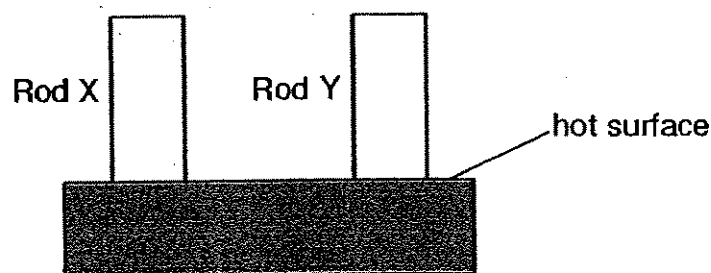
**Do not open this booklet until you are told to do so.  
Follow all instructions carefully.  
Answer all questions.**

\_\_\_\_\_  
**Parent's Signature/Date**

**Section B: 40 marks**

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

31. Henry conducted an experiment by placing two rods, X and Y of similar length but made of different materials, on top of a hot surface as shown below.



After a while, he touched the ends of the two rods.

- (a) What was Henry trying to find out about the materials of Rods X and Y? (1 mark)

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- (b) If Rod X and Rod Y are made of glass and copper respectively, what observation would Henry make in order to arrive at a conclusion about the materials? (1 mark)

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- (c) What could Henry conclude about the materials of Rod X and Y? (1 mark)

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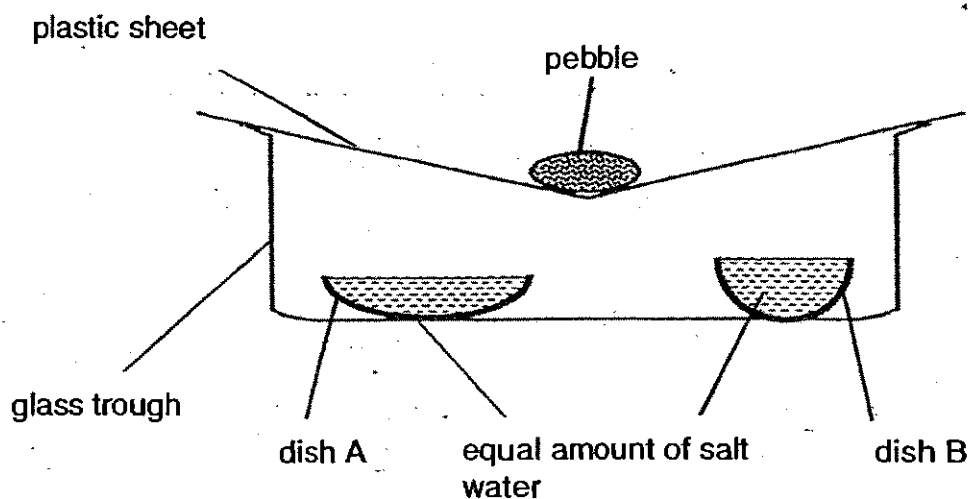
32. The table below shows the state of four substances, Q, R S and T, at different temperatures.

| Substance | State of substance at |        |        |
|-----------|-----------------------|--------|--------|
|           | 20°C                  | 40°C   | 60°C   |
| Q         | Solid                 | Solid  | Solid  |
| R         | Solid                 | Liquid | Liquid |
| S         | Solid                 | Solid  | Liquid |
| T         | Liquid                | Liquid | Gas    |

Using the information from the table given, put a tick (✓) in the correct column for each of the statements given below. (2 marks)

|     | Statements                                  | True | False | Not Possible to tell |
|-----|---------------------------------------------|------|-------|----------------------|
| (a) | Substance Q has the highest freezing point. |      |       |                      |
| (b) | The freezing point of Substance R is 20°C.  |      |       |                      |
| (c) | The melting point of Substance S is 60°C.   |      |       |                      |
| (d) | Substance T has the lowest boiling point.   |      |       |                      |

33. A group of students performed the following experiment in the open to obtain water from salt water. A plastic sheet was used to cover the set-up and a pebble was placed as shown.



After a few hours, less water was found in dish A than dish B and water was collected at the bottom of the glass trough.

- (a) Why was there a difference in the water levels in dish A and dish B? (1 mark)

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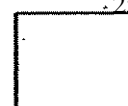
- (b) Explain clearly how the water was obtained at the bottom of the glass trough. (2 marks)

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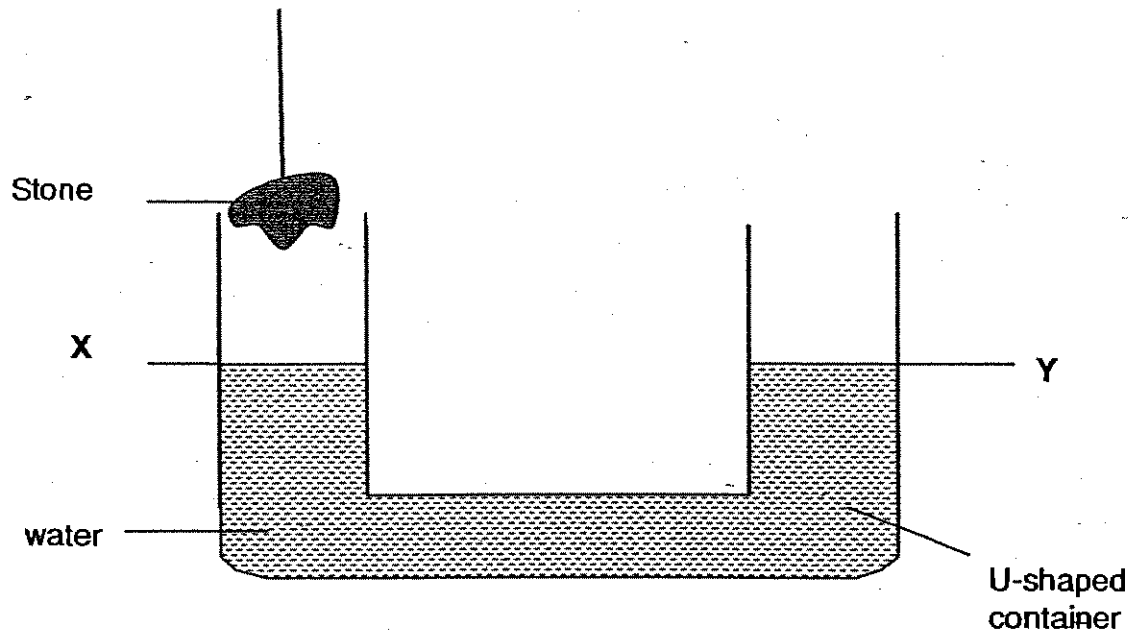
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- (c) What would the students find in both dish A and B after 3 days? (1 mark)

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34. The diagram below shows a U-shaped container. The water levels in X and Y are the same.



A stone is then carefully lowered into the container.

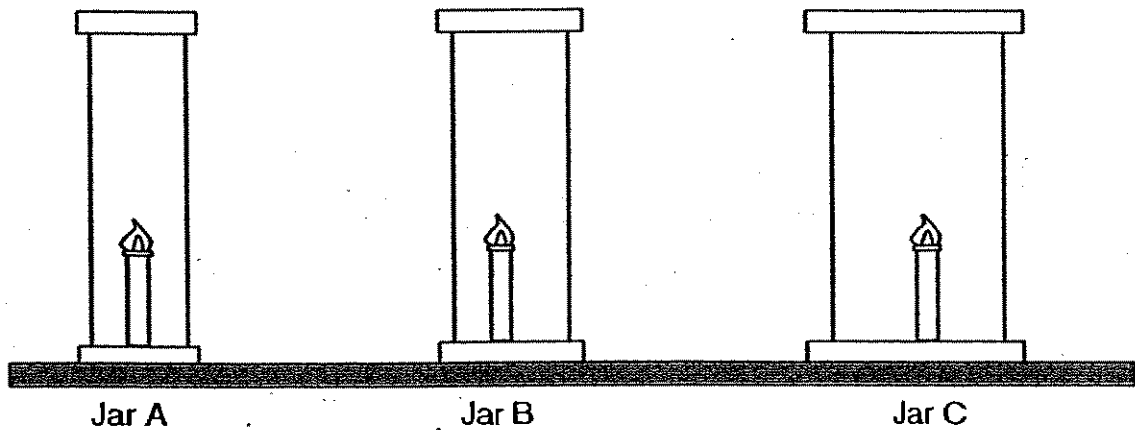
- (a) What would happen to the water levels at X and Y? (1mark)

---

- (b) What property of stone does this experiment show? (1mark)

---

35. Jason conducted an experiment by placing three similar burning candles in jars A, B and C of different sizes as shown in the diagram below.



- (a) In which jar would the burning candle extinguish first?  
Explain your answer clearly. (1 mark)

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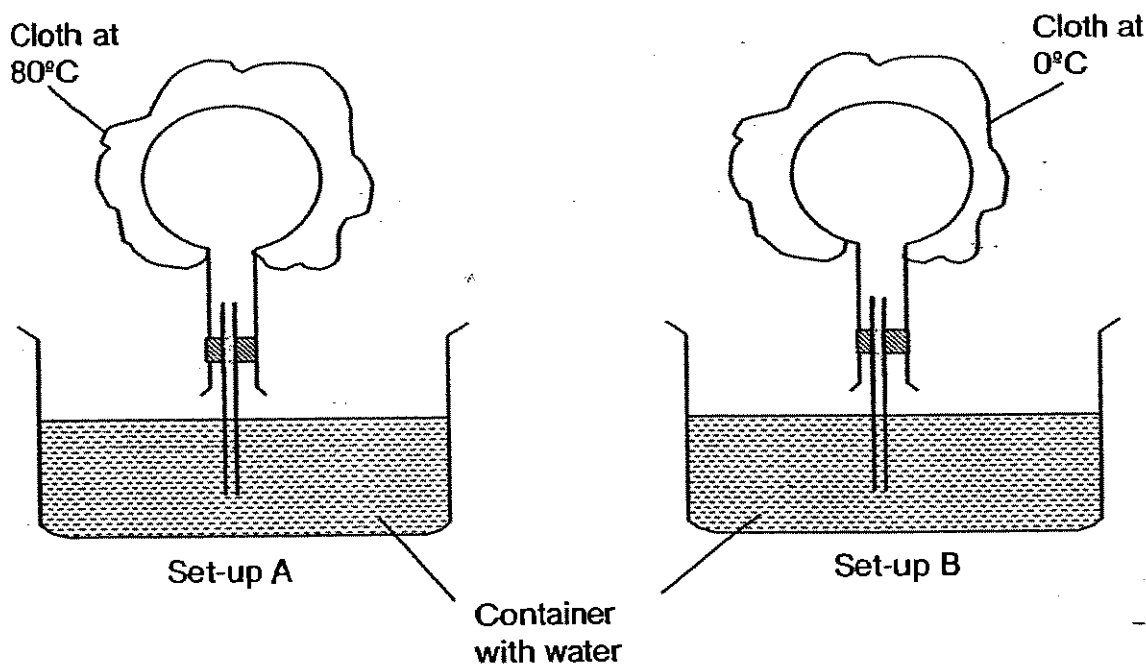
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- (b) State two variables that Jason needs to keep the same if he wants to find out whether the length would affect the rate of burning of the candle. of candle (1 mark)

---



36. Study the two set-ups, A and B, as shown below.



- (a) What could be observed three minutes in set-ups A and B after the cloths were placed on the flasks? (2 marks)

(i) Set-up A: \_\_\_\_\_

\_\_\_\_\_

(ii) Set-up B: \_\_\_\_\_

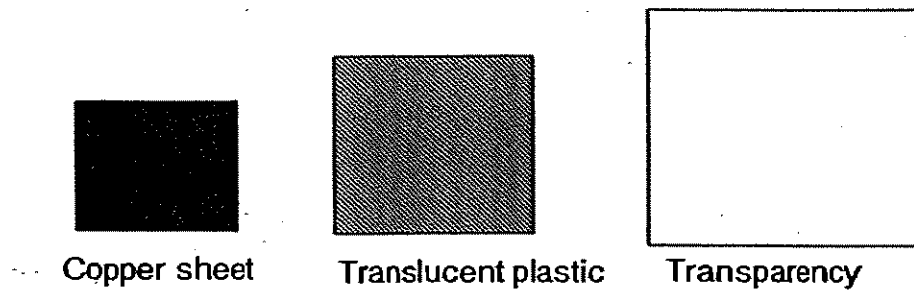
\_\_\_\_\_

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

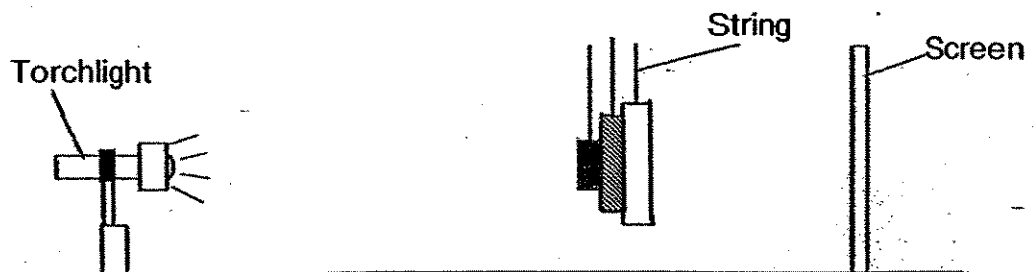
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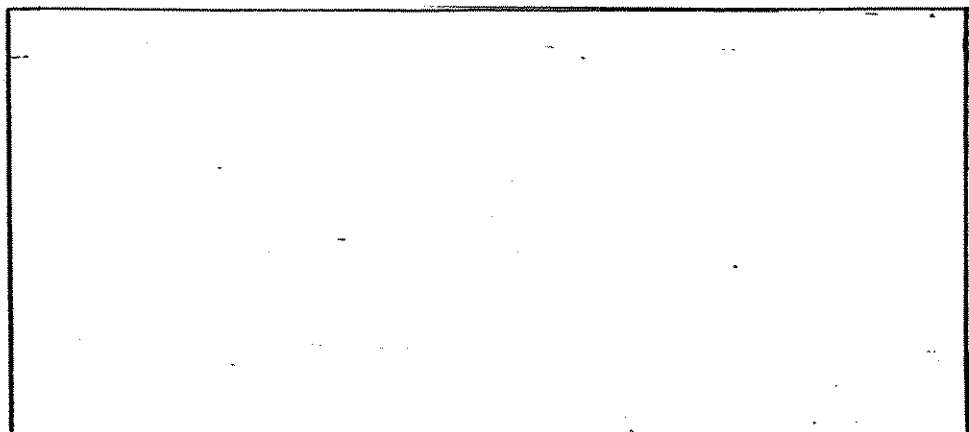
37. The diagram below shows three objects of different sizes cut from various materials.



The objects are then suspended by strings and placed between a torchlight and a white screen.



- (a) Draw in the box provided below the shadow formed by the three objects. (1 mark)



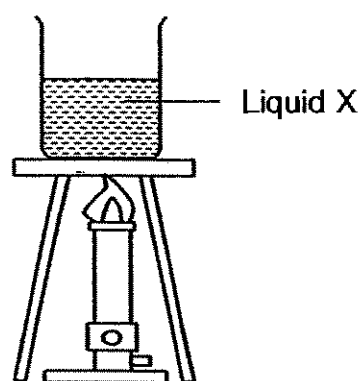
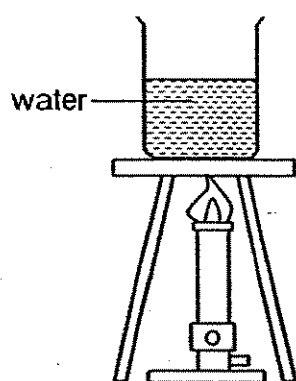
- (b) State the property of light which causes the shadow to be formed on the screen. (1 mark)

\_\_\_\_\_

38. The table below shows the melting and boiling points of water and Liquid X.

|          | Melting Point | Boiling Point |
|----------|---------------|---------------|
| Water    | 0°C           | 100°C         |
| Liquid X | 10°C          | 80°C          |

An experiment involving water and liquid X was set up as shown below.



- (a) At 80°C, which liquid would have a greater mass remaining in the beaker? (1 mark)

\_\_\_\_\_

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

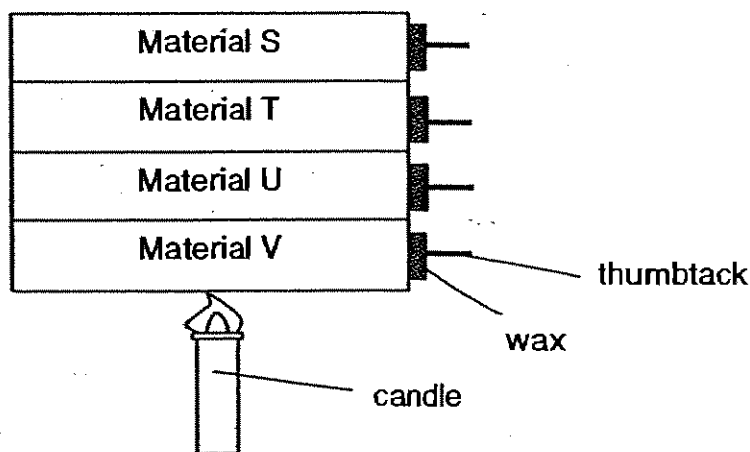
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

39. Ken set up the experiment to compare the heat conductivity of 4 different materials, S, T, U and V.



He recorded the results below.

| Material | Time taken for thumbtack to drop (min) |
|----------|----------------------------------------|
| S        | 10                                     |
| T        | 8                                      |
| U        | 2                                      |
| V        | 4                                      |

- (a) Ken's teacher told him that his experiment is not a fair one. Explain why this is so? (1 mark)

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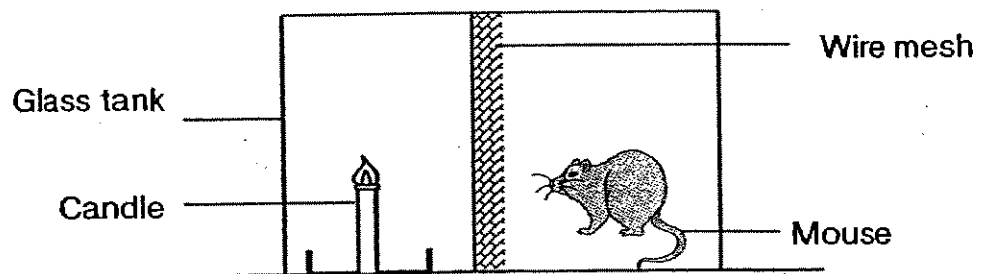
- (b) Is Material U a better conductor of heat than Material V? Explain your answer clearly. (1 mark)

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40. A mouse was kept in a glass tank with a burning candle as shown in the diagram below.



- (a) What would happen to the mouse after 1 day? (1 mark)

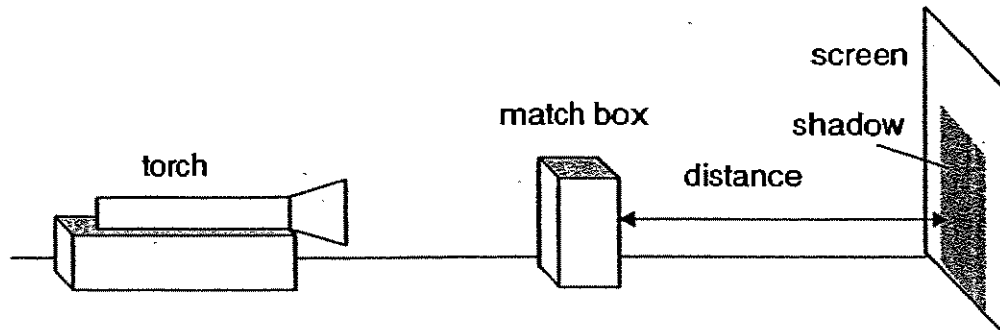
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- (b) Explain your answer in (a). (2 marks)

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---

41. Rajah set up the experiment as shown below. He carried out the experiment four times. Each time, he would record the distance between the match box and the screen and the size of the corresponding shadow cast on the screen.



The table below shows the results of Rajah's experiment.

| Shadow | Distance between matchbox and the screen |
|--------|------------------------------------------|
| A      | 8cm                                      |
| B      | 32cm                                     |
| C      | 16cm                                     |
| D      | 24cm                                     |

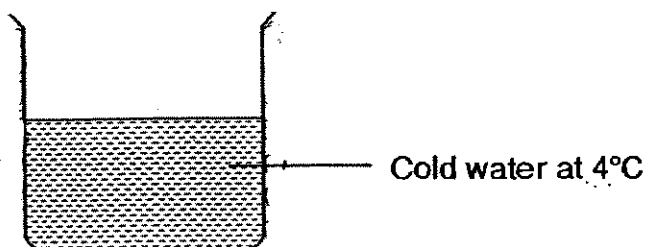
- (a) Arrange the shadows of the match box formed in descending order according to their sizes. (1 mark)

---

- (b) Without moving the match box and the screen, what must he do in order to form a larger shadow on the screen? (1 mark)

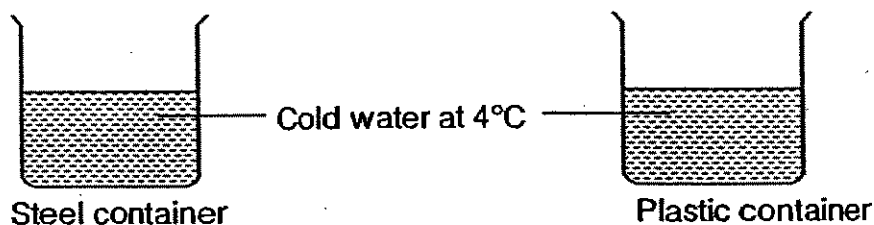
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42. Rashid placed a beaker containing some cold water in a room as shown below. He observed some water droplets formed on the beaker after 5 minutes.



- (a) Draw the water droplets formed on the beaker in the above diagram. (1 mark)

Rashid then filled 2 containers made of different materials with the same amount of water and temperature and placed them in a room.

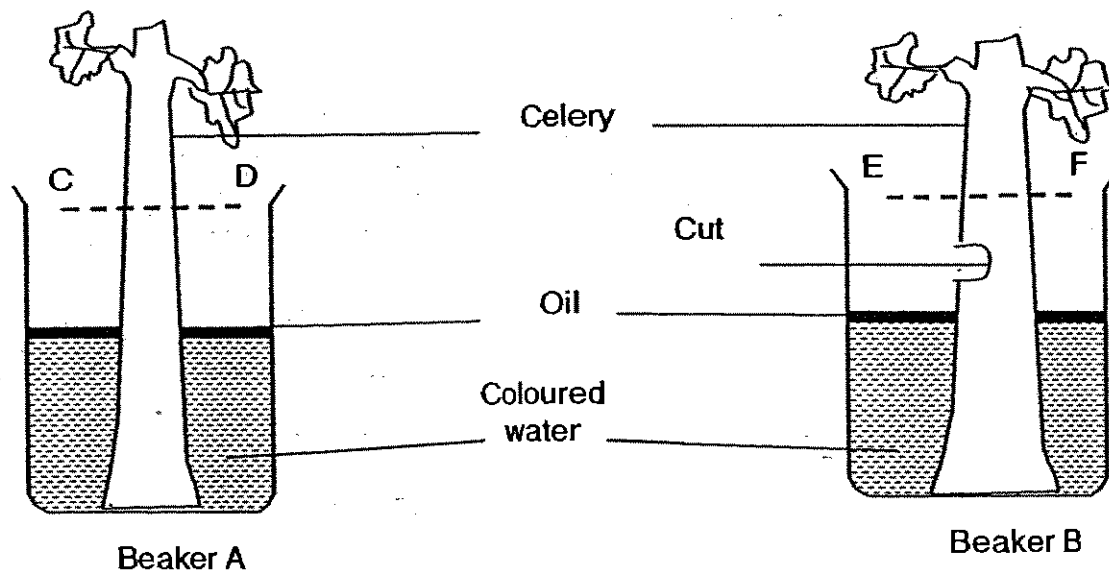


- (b) Which container will allow water droplets to appear first? Explain your answer clearly. (2 marks)

---

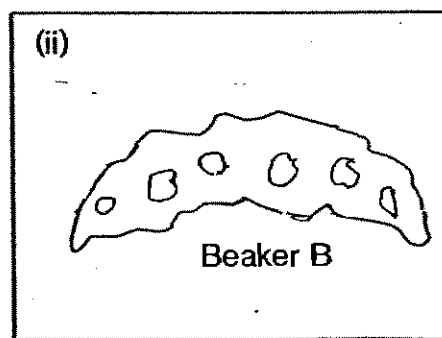
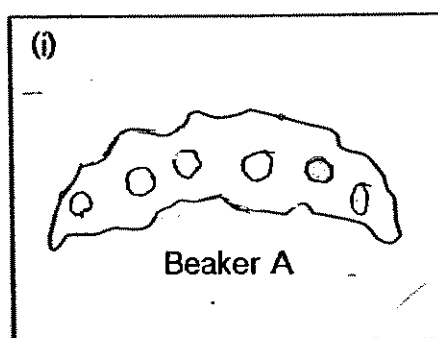
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43. Two stalks of a celery plant, one with a part cut out, are lowered into two beakers, A and B, with the same amount of coloured water as shown in the diagram below.



After two days, the two stalks of celery in both beakers were cut at CD and EF respectively.

- (a) Shade in the diagram below to show how the coloured water would be seen in the cross sections of the two stalks of celery. (2 marks)



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

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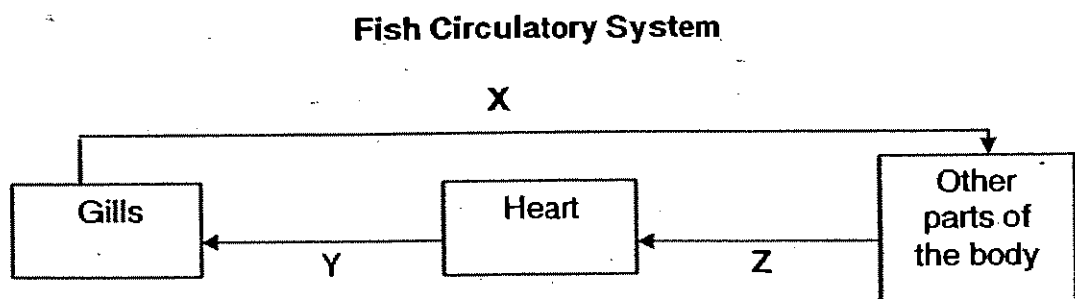
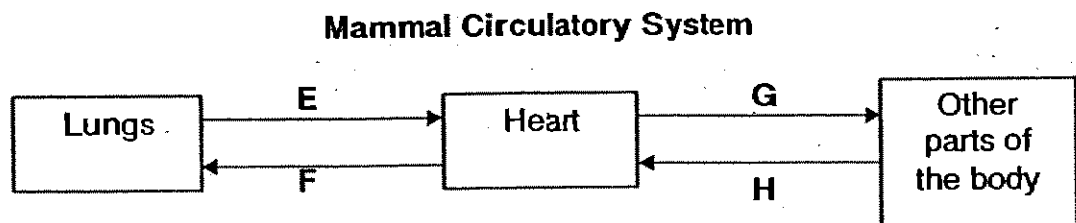


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44. The diagrams below show the circulatory systems of a mammal and a fish.

The arrows represent the blood vessels that carry blood from the lungs or gills to the other parts of the body.



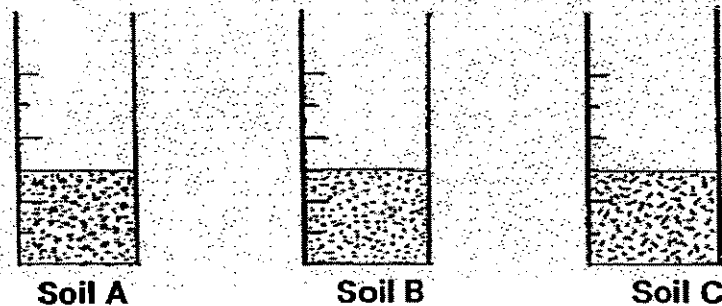
- (a) Which one of the arrows, X, Y or Z in the fish circulatory system shows blood with the highest carbon dioxide content? (1 mark)

\_\_\_\_\_

- (b) State (two) differences between the mammal circulatory system and the fish circulatory system. (2 marks)

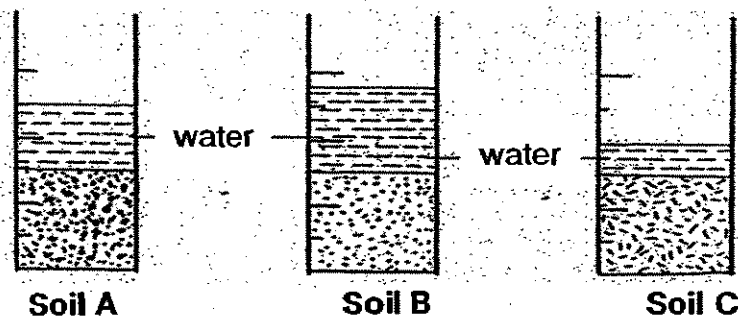
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

45. David conducted an experiment by placing an equal amount of each type of soil, A, B and C, into three identical jars as shown below.



He then poured an equal amount of water into each jar at the same time.

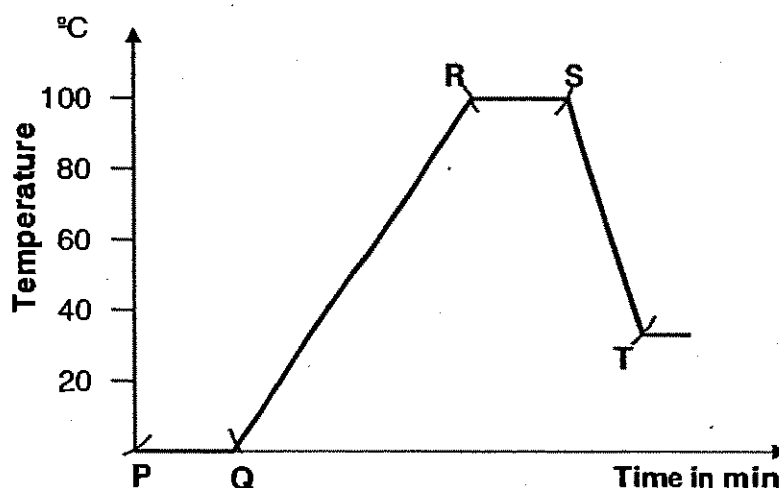
The diagrams below show David's initial observations of the three set-ups after the water was poured into each jar of soil.



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

- (b) Why is the water level in the jar containing soil C lower than the jar containing soil A? (1 mark)

46. A group of students carried out an experiment with a beaker of ice cubes. They heated the beaker of ice cubes and then left it on a table to cool. They observed the changes in temperature at regular intervals and plotted a graph to show their findings.



- (a) Which parts of the graph, PQ, QR, RS, ST show heat gain during their experiment? (1 mark)
- 
- (b) Other than a change of state, what is another similarity between the two processes in PQ and RS? (1 mark)
- 

\*\*\*\*\* END OF PAPER \*\*\*\*\*



# ANSWER SHEET

CHIJ PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007  
SEMESTRAL ASSESSMENT (2)

1. 2
2. 3
3. 4
4. 2
5. 3
6. 4
7. 2
8. 1
9. 4
10. 2
11. 4
12. 4
13. 3
14. 3
15. 4
16. 1
17. 3
18. 3
19. 1
20. 2
21. 4
22. 4
23. 3
24. 2
25. 3
26. 2
27. 2
28. 2
29. 2
30. 2
- 31) a) He was trying to find out which material is a better conductor of heat.  
b) He would feel that Rod Y which is made of copper is hotter than Rod X.  
c) Copper is a good conductor of heat while glass is a poor conductor of heat.
- 32) a) True    b) Not    c) False    d) True
- 33) a) The water in Dish A evaporates faster than Dish B as it has a bigger exposed surface area.  
b) Water from the 2 dishes evaporates, the water vapour touches the cool surface of the plastic sheet and condenses to form water droplets, the water droplets slide down to the center and drip onto the glass trough.  
c) The water will be lesser.
- 34) a) It would increase.  
b) The stone has a definite volume.
- 35) a) Jar A. The smaller the jar, the lesser oxygen there will be in the jar.  
b) Keep the same: size of jar, amount Of oxygen in the jar.

- 36)a)i) Bubbles escape from the tube into the water.  
 ii) The water will rise up the tube.

b) The heat from the cloth cause the air in the flask to expand and pushes itself out from the tube forming bubbles in the water.

- 37)a)  b) Light travels in a straight line.

- 38)a) Water.

b) At  $80^{\circ}\text{C}$  liquid X will be boiling, thus evaporation would have occurred faster than water, this results in a fall in mass in liquid X in comparison to water.

- 39)a) There must be a candle for each of the material.

b) Yes, the wax on material U melts faster than material V even though it is further away from the flame.

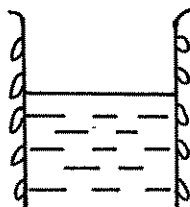
- 40)a) It will die.

b) Both mouse and the candle needs oxygen, if the fire bums off there would be lack of oxygen, so the mouse will die.

- 41)a) B, D, C, A

b) Move the torch nearer to the match box.

- 42)a)



b) Steel container will allow water droplets to appear first as metal is cooler than the plastic container.

43) a) Beaker A

Beaker B

b) Not much colour are seen as the part which has been cut out is where the water is transported to other parts of the plant.

44) a) Y.

b) Fish circulatory system transport blood rich in oxygen directly to the other parts of the body while mammal circulatory system would transport blood rich in oxygen to the heart and then to other parts of the body.

45) a) It was to find out which type of soil contains the most amount of air.

b) There are more air spaces in soil C than A.

46) a) PQ, QR and RS.

b) The temperature during these two processes is constant.





# RAFFLES GIRLS' PRIMARY SCHOOL

## SEMESTRAL ASSESSMENT 2

2007

Name : \_\_\_\_\_ Index No.: \_\_\_\_\_ Class: P4 \_\_\_\_\_

|                            |       |       |
|----------------------------|-------|-------|
| Your score out of 90 marks |       |       |
| Highest score              | Class | Level |
| Average score              |       |       |
| Parent's signature         |       |       |

25<sup>th</sup> October 2007

SCIENCE

ATT: 1 h 30 min

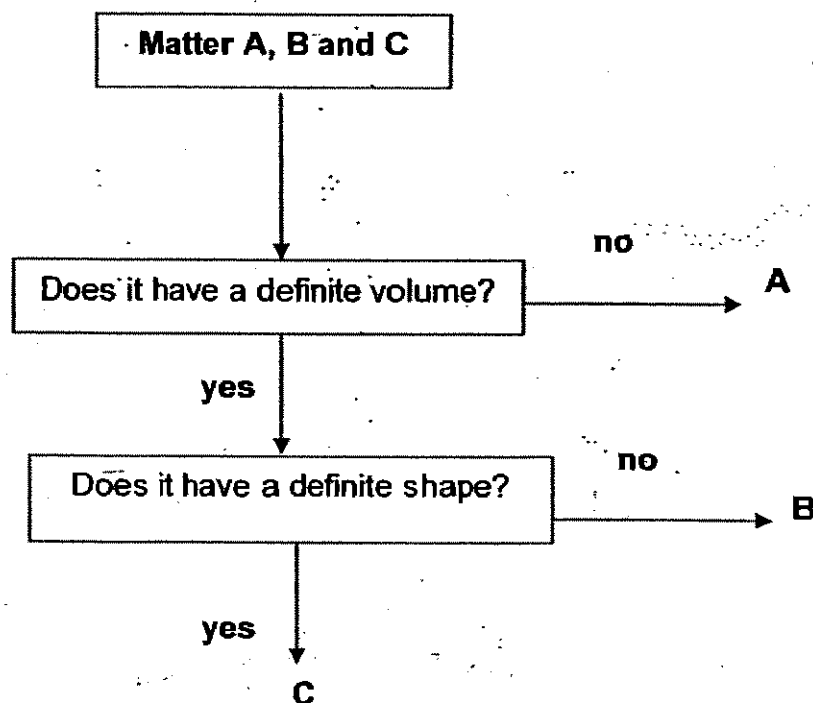
### SECTION A (25 x 2 marks)

For each question from 1 to 25, four options are given.

One of them is the correct answer. Make your choice (1, 2, 3 or 4).

Shade the correct oval on the Optical Answer Sheet (OAS) provided.

1. The chart below shows matter A, B and C at room temperature.



Which one of the following represents correctly matter A, B and C?

|                |           |           |          |
|----------------|-----------|-----------|----------|
| <del>(1)</del> | <b>A</b>  | <b>B</b>  | <b>C</b> |
| <del>(2)</del> | rainwater | stone     | oxygen   |
| <del>(3)</del> | air       | rainwater | sand     |
| <del>(4)</del> | stone     | light     | air      |
|                | oxygen    | air       | shadow   |



2. The following is a series of steps (**NOT** arranged in order) to find the volume of a stone.

- A Record the volume of the water in the measuring cylinder.
- B Record the volume of the water and the stone.
- C Pour some water into a measuring cylinder.
- D Find the difference between the two volumes.
- E Lower the stone fully into the water in the measuring cylinder.

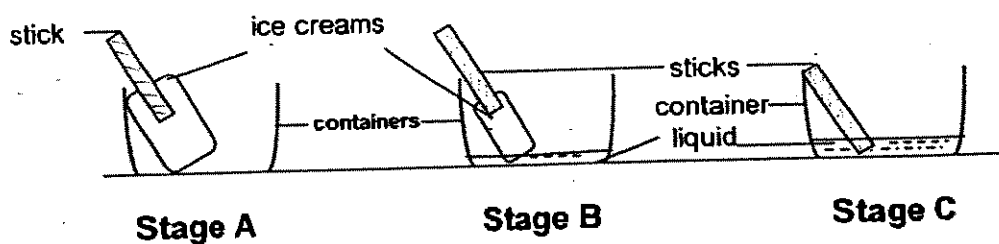
Arrange the series of steps in order so as to find out the volume of the stone.

|     | 1 <sup>st</sup> step | → last step |   |   |   |
|-----|----------------------|-------------|---|---|---|
| (1) | C                    | E           | B | A | D |
| (2) | C                    | B           | E | A | D |
| (3) | C                    | A           | B | D | E |
| (4) | C                    | A           | E | B | D |

3. After a heavy downpour, the roads dried up after some time.  
This resulted from \_\_\_\_\_.

- (1) the formation of clouds in the sky
- (2) the evaporation of water on the roads
- (3) the condensation of water vapour in the sky
- (4) the evaporation of water in the nearby drains

4. The diagrams below show the stages involved for an ice cream to become a liquid.



Based on the information above, which one of the following statements is **CORRECT**?

- (1) The container gains heat from the ice cream. ✗
- (2) The container loses heat to the surrounding air. ✗
- (3) The ice cream loses heat to the surrounding air. ✗
- (4) The ice cream gains heat from the surrounding air. ✗

5. The water cycle is important because it \_\_\_\_\_.

- A prevents water pollution
- B provides energy for all animals
- C ensures a constant supply of fresh water

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

6. Which of the following can cause water pollution?

- A oil spills
- B littering and dumping
- C deforestation and soil erosion
- D disposal of toxic waste by factories

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

7. Respiration is a process whereby Gas A is taken in and Gas B is released.  
Which one of the following shows correctly the gases, A and B, involved in the process?

|                                         | Gas A          | Gas B          |
|-----------------------------------------|----------------|----------------|
| <input checked="" type="checkbox"/> (1) | oxygen         | carbon dioxide |
| <input checked="" type="checkbox"/> (2) | carbon dioxide | oxygen         |
| <input checked="" type="checkbox"/> (3) | oxygen         | nitrogen       |
| <input checked="" type="checkbox"/> (4) | nitrogen       | carbon dioxide |

8. While playing a game of basketball, Susan noticed that she was breathing faster.

Which one of the following statements best explains the increase in Susan's breathing rate?

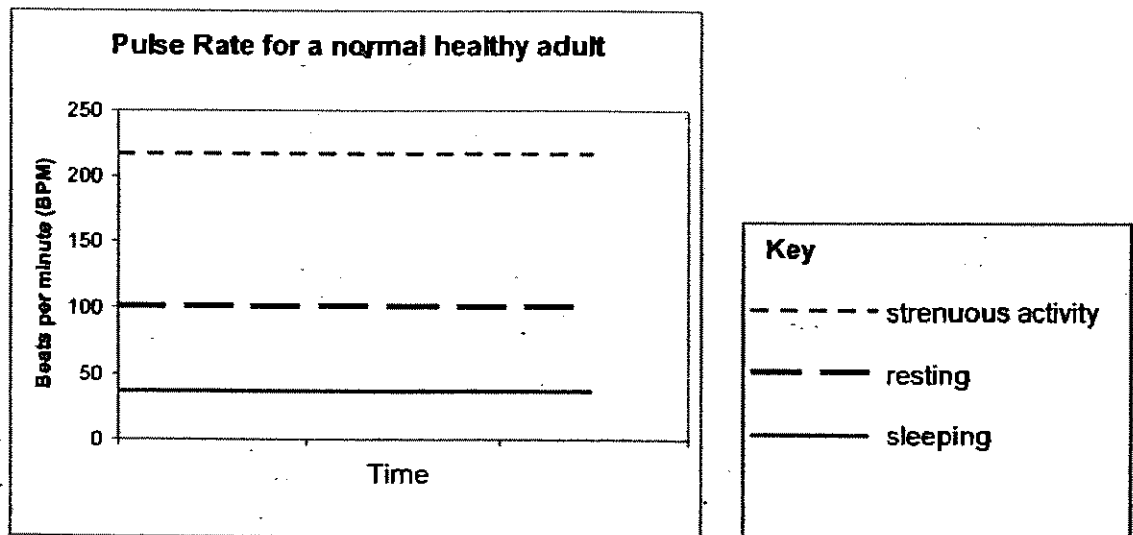
- ☒ (1) Her lungs needed more energy.
- ☒ (2) Her legs were starting to get cramps.
- ☒ (3) Her muscles were producing more heat.
- ☒ (4) Her heart was pumping more oxygen to her body.

9. Which of the following substances is / are transported by our blood?

- A water
- B oxygen
- C nutrients
- D carbon dioxide

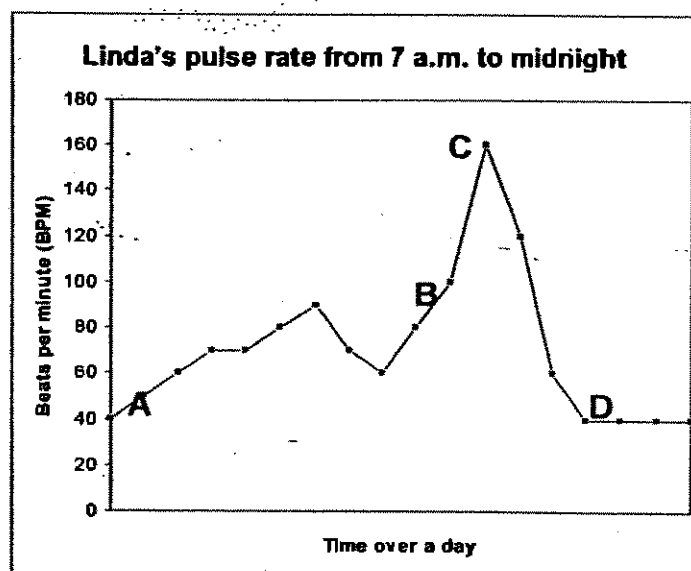
- (1) A only
- (2) A and C only
- (3) B, C and D only
- (4) A, B, C and D

10. Linda's teacher gave her **Graph 1** (as shown below), which showed the pulse rates for different types of activities, to understand how the pulse rate for a normal healthy adult is dependent on the type of activity that he is engaged in.

**Graph 1**

Linda decided to carry out some activities and record the number of her heartbeats per minute for each activity that she was involved in.

Based on her findings, Linda plotted **Graph 2** as shown below.

**Graph 2**

Which one of the following set of activities carried out by Linda matches **Graph 2** most accurately?

|     | A        | B       | C       | D        |
|-----|----------|---------|---------|----------|
| (1) | resting  | jogging | resting | running  |
| (2) | sleeping | resting | resting | running  |
| (3) | resting  | resting | jogging | resting  |
| (4) | sleeping | resting | jogging | sleeping |

11. Which one of the following statements is **NOT** true of the Sun's energy?

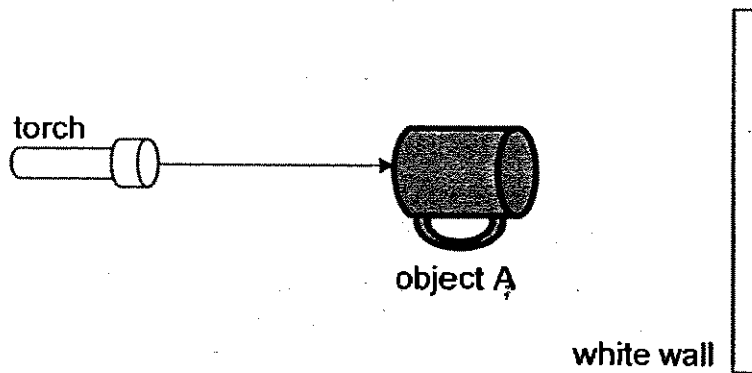
- (1) It lights up the earth.
- (2) It enables plants to grow.
- (3) It provides the earth with heat only.
- (4) It affects weather conditions and enables water cycle to take place.

12. We are able to see clear water because it \_\_\_\_\_.

- A gives off its own light.
- B reflects some light into our eyes
- C allows some light to pass through
- D does not allow any light to pass through.

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

13. Kumar used a lighted torch to shine at object A in the direction as shown below. He noticed that a shadow of the object A was formed on the white wall.



Which one of the following shadows of the object A did Kumar see on the white wall?

(1)



(2)



(3)

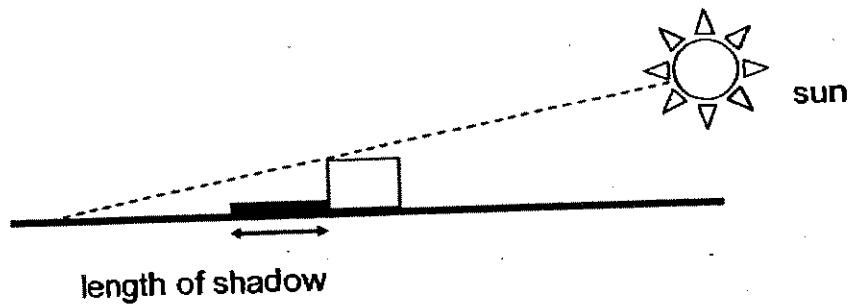


(4)

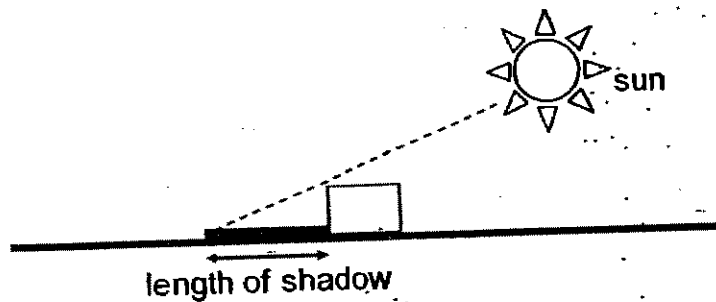


14. Which one of the following shows the correct location and length of the shadow of the object in relation to the position of the Sun?

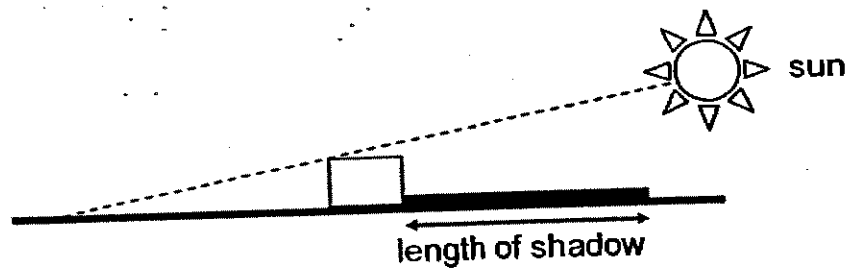
(1)



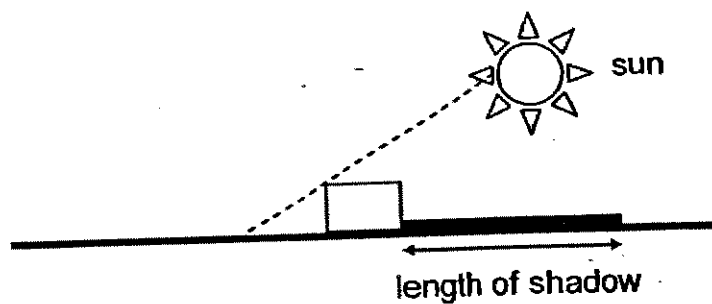
(2)



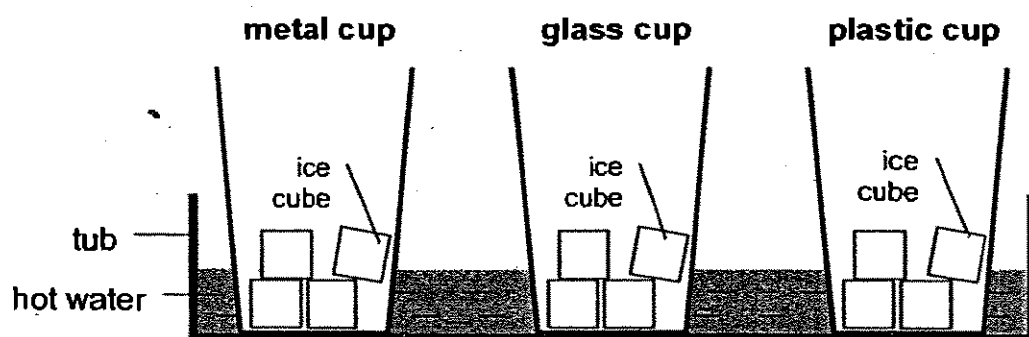
(3)



(4)



15. Janet set up an experiment using the apparatus shown below. Each cup had the same number of ice cubes. The cups were placed in a tub of hot water.



Janet recorded the time taken for the ice cubes to melt completely in each cup.

| material of cup      | metal | glass | plastic |
|----------------------|-------|-------|---------|
| Time taken (minutes) | 15    | 35    | 22      |

The aim of Janet's experiment was \_\_\_\_\_.

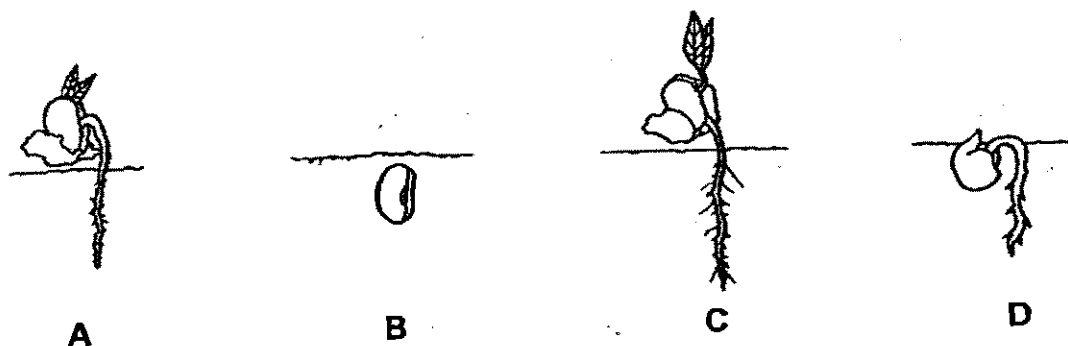
- (1) to show that hot water loses heat to the ice  
 (2) to compare how well each cup conducts heat  
 (3) to show that water is a bad conductor of heat  
 (4) to show that ice melts at a temperature greater than 0°C
16. Harry took a can of drink from the refrigerator. He noticed that the can of drink felt very cold.

Which one of the following explains correctly Harry's observation?

- (1) Harry's hand gained heat from the surroundings.  
 (2) Harry's hand transferred heat to the can of drink.  
 (3) Harry's hand gained coldness from the surroundings.  
 (4) Harry's hand gained coldness from the can of cold drink.
17. When water vapour in the air loses heat, \_\_\_\_\_.
- A it cools down x  
 B clouds are formed  
 C it evaporates faster x  
 D condensation takes place x
- (1) B only  
 (2) A and D only x  
 (3) C and D only x  
 (4) A, B and D only x



18. The diagrams below show the different stages involved in the life cycle of a plant.



Which one of the following shows the correct order of the stages of growth of the plant?

(1) ✓  
(2) ✓  
(3) ✓  
(4) ✓

| 1 <sup>st</sup> stage |   | 4 <sup>th</sup> stage |   |
|-----------------------|---|-----------------------|---|
| A                     | B | C                     | D |
| B                     | D | A                     | C |
| C                     | A | D                     | B |
| D                     | C | B                     | A |

19. The table below shows the different functions of the various parts of a plant.

| Part of plant | Function(s)                                                        |
|---------------|--------------------------------------------------------------------|
| A             | supports the branches and leaves                                   |
| B             | absorb water and mineral salts from the soil                       |
| C             | transports food, water and mineral salts to all parts of the plant |
| D             | holds the plant firmly to the ground                               |
| E             | makes food for the plant                                           |
| F             | contains and protects the seeds                                    |

Which one of the following matches correctly the part(s) of a plant to the function(s) that it performs / they perform?

(1) ✓  
(2) ✓  
(3) ✓  
(4) ✓

| Part(s) of the plant | Function(s) performed |
|----------------------|-----------------------|
| stem                 | A and C               |
| leaf                 | C and E               |
| fruit                | E and F               |
| roots (in the soil)  | B, D and E            |

20. Mary examined an object and wrote the following descriptions:

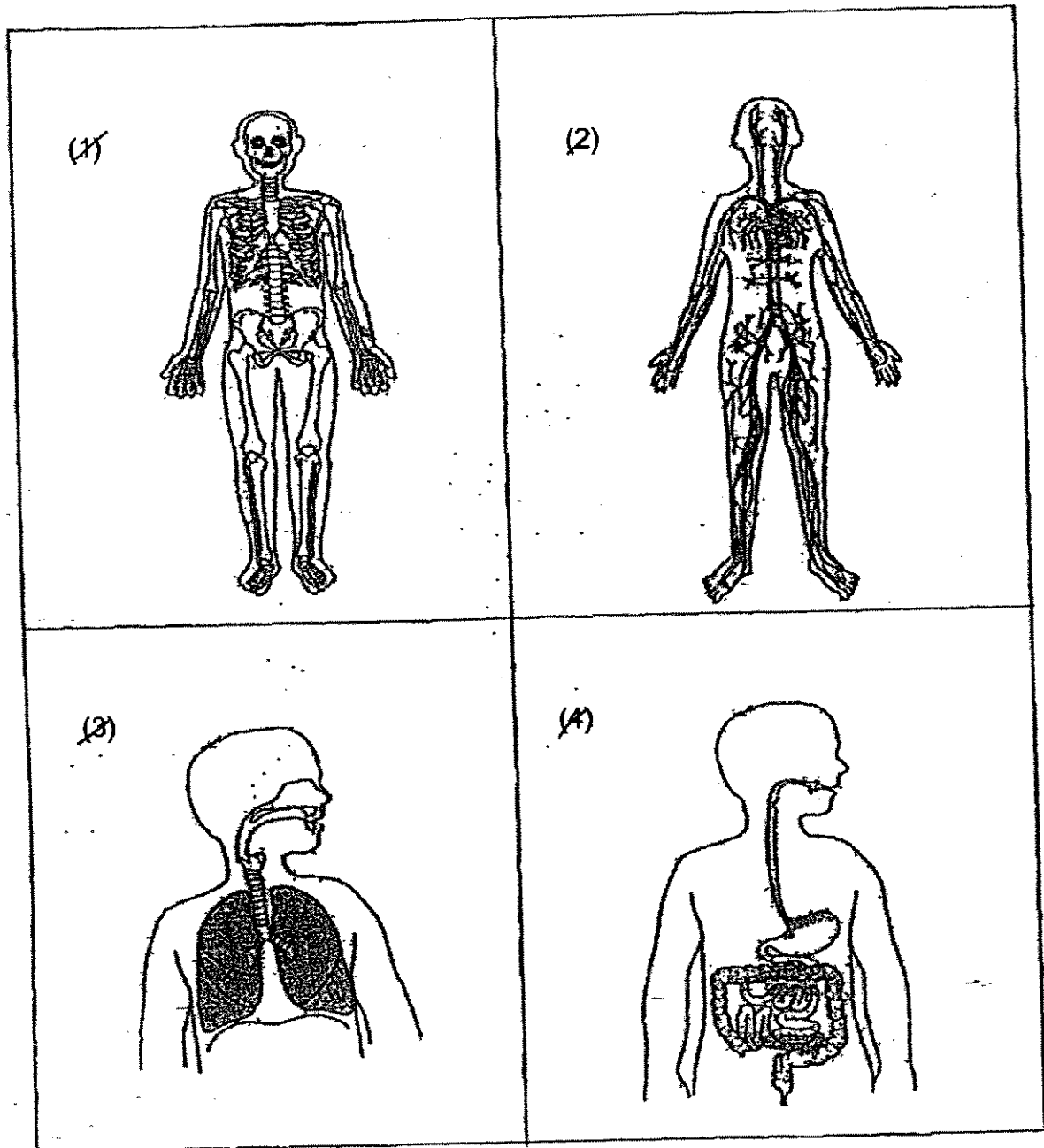
- It is rough and red.
- It makes a loud sound when it is dropped onto the floor.

Which of the following senses did Mary use to help her describe the object?

- A sight
- B taste
- C touch
- D hearing

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

21. The diagrams below show the different body systems of a man.



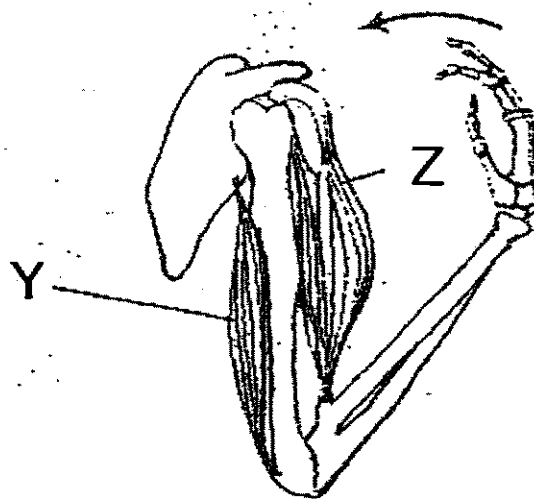
Which one of the systems shown above helps to break down the food that a man eats into simple substances?

22. Which of the following statements are **CORRECT**?

- A Food moves down the gullet into the small intestine.
- B Undigested food is passed out as faeces through the anus.
- C Most of the water from undigested food is absorbed in the large intestine.

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

23. Tim bent his arm at his elbow as shown in the diagram below.

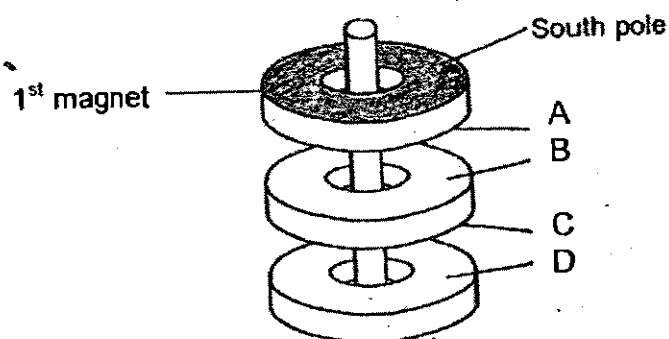


What happened to Tim's muscles, Y and Z, when he bent his arm?

- A Muscles Z moved but not muscles Y.
- B Muscles Y and Z worked at the same time.
- C Muscles Y contracted while muscles Z relaxed.
- D Muscles Y relaxed while muscles Z contracted.

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

24. A, B, C and D are poles of different ring magnets. Siew May noticed that the 3 ring magnets float above one another as shown below.



Siew May knew that the shaded part of the 1st magnet is the South pole.

What can Siew May conclude about the poles of the other ring magnets?

|     | A          | B          | C          | D          |
|-----|------------|------------|------------|------------|
| (1) | South pole | North pole | South pole | North pole |
| (2) | South pole | South pole | North pole | North pole |
| (3) | North pole | North pole | South pole | South pole |
| (4) | North pole | South pole | North pole | South pole |

25. A bar magnet with 4 equal parts, A, B, C and D, is placed in a box of paper clips.

The bar magnet is removed from the box of paper clips. A number of paper clips is found attracted to different parts of the magnet. The results are recorded in the table below.

| Part of magnet | Number of paper clips it attracted |
|----------------|------------------------------------|
| A              | 3                                  |
| B              | 9                                  |
| C              | 2                                  |
| D              | 10                                 |

The poles of the bar magnet are parts \_\_\_\_\_.

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

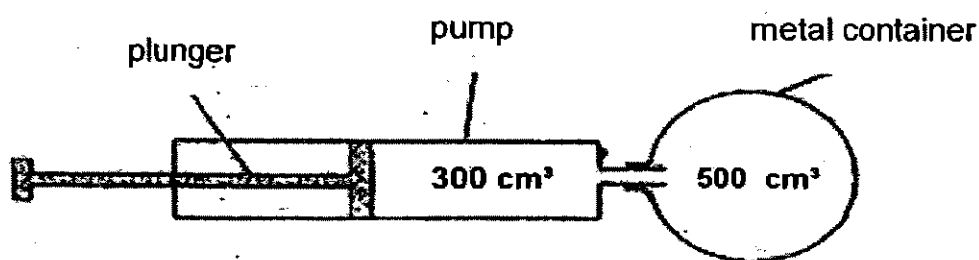
Name : \_\_\_\_\_ Index No: \_\_\_\_\_ Class: P4 \_\_\_\_\_

**SECTION B (40 marks)**

For questions 26 to 41, write your answers clearly in the spaces provided.

The number of marks available is shown in brackets [ ] at the end of each question or part question.

26. The diagram below shows a metal container with 500 cm<sup>3</sup> of air attached to a pump containing 300 cm<sup>3</sup> of air.



Based on the diagram above, answer the following questions:

- (a) What is the volume of the air in the metal container when the plunger is pushed **ONCE** all the way in? [1]

- (b) Name **TWO** properties of air that are shown above. [2]

|            |  |
|------------|--|
| Property 1 |  |
| Property 2 |  |

27. (a) Why is the water cycle important to us? [1]

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- (b) Fill in each blank with a suitable words [3]

Water vapour rises into the sky as a result of

\_\_\_\_\_ of water in sources such as the lakes,

reservoirs and ponds. \_\_\_\_\_ of the water

vapour in the sky results in the formation of \_\_\_\_\_

which become heavy and fall as rain.

28. The table below shows some activities in which water is used.

- (a) Put a tick (✓) in the correct box below to show that water is conserved in the following activities: [2]

|       | Activities                                | Water is conserved |
|-------|-------------------------------------------|--------------------|
| (i)   | brushing my teeth with a cup              |                    |
| (ii)  | washing a car with a water hose           |                    |
| (iii) | washing my face under a running tap       |                    |
| (iv)  | collecting rainwater to clean the toilets |                    |

- (b) Name **ANOTHER** activity in which water can be conserved. [1]

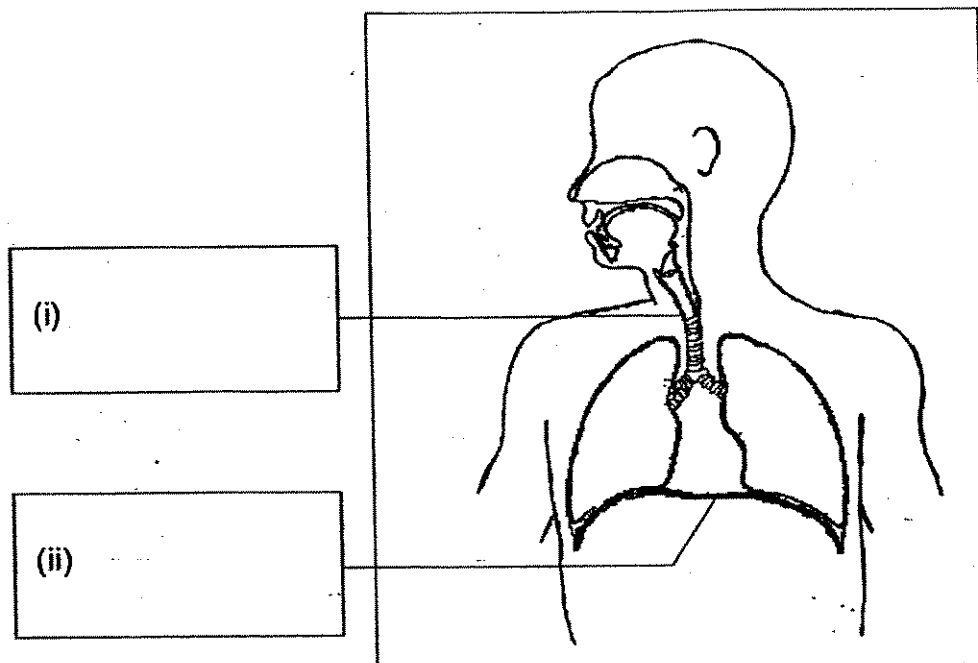
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29. The diagram below shows parts of the respiratory system of a man.

(a) Name the parts of the system by filling in the boxes provided below. [1]



(b) Give **ONE** difference between part (i) in the diagram above and the gullet. [1]

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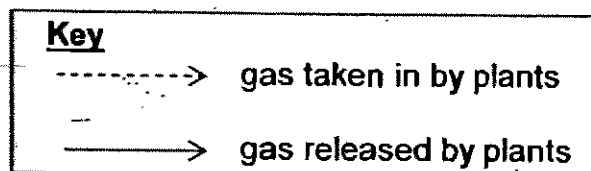
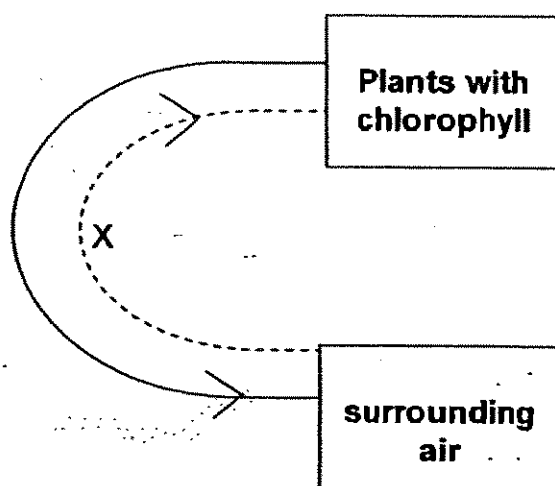
30. Annie has two potted plants placed at the corner of her living room. Before she goes to bed every night, she switches off all the lights.

Based on the information above, answer the following question:

- (a) What process takes place in Annie's potted plants during the night?

[1]

The diagram below shows the exchange of gases that takes place in the plants in the absence of light.



- (b) Name the gas, X, in the diagram above.

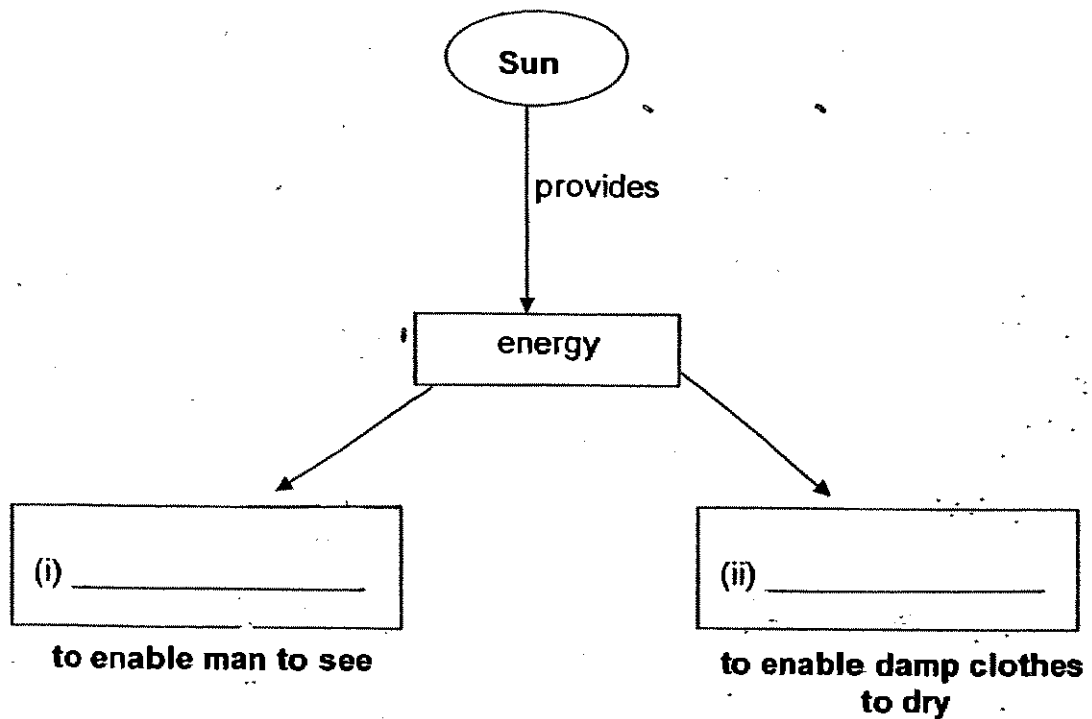
[1]

31. The table below shows some parts of the systems found in a man and their functions.

Complete the table below by writing down the system from which the part(s) of the body are from and state its/ their respective function.  
The first one is done for you. [4]

|     | system   | part(s) | function          |
|-----|----------|---------|-------------------|
| (a) | skeletal | ribs    | protect the heart |
| (b) |          | lungs   |                   |
| (c) |          | heart   |                   |

32. The diagram below shows part of the concept map of energy.



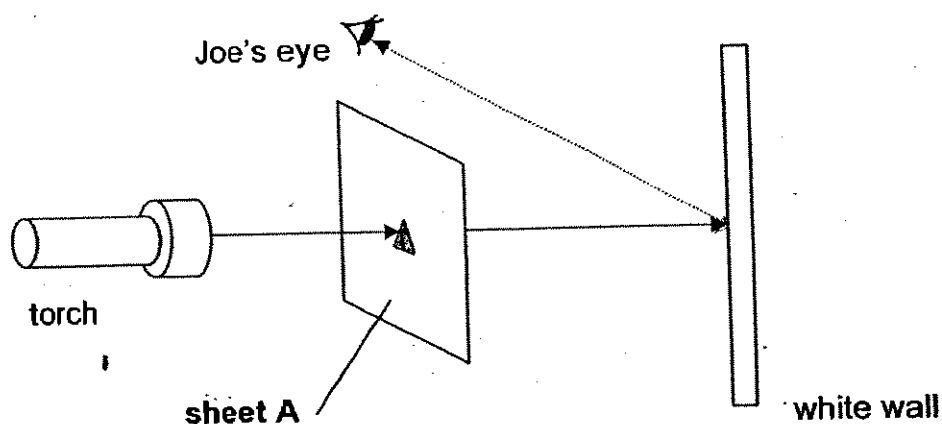
- (a) Complete the diagram above by filling in the boxes with suitable word(s). [1]

- (b) State **ANOTHER** use of the energy from the Sun. [1]

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33. Joe carried out an experiment in a dark room using the apparatus as shown below.



Joe placed sheet A between the lighted torch and the white wall in a straight line. He saw a dark square shadow with a bright triangular patch of light on the wall.

- (a) Describe **ONE** property of the material of sheet A. [1]

| Sheet | Property of material |
|-------|----------------------|
| A     |                      |

- (b) What happens to the bright triangular patch of light on the white wall when Joe moves the lighted torch gradually away from sheet A? (The torch remains in a straight line as the sheet A and the white wall.) [1]

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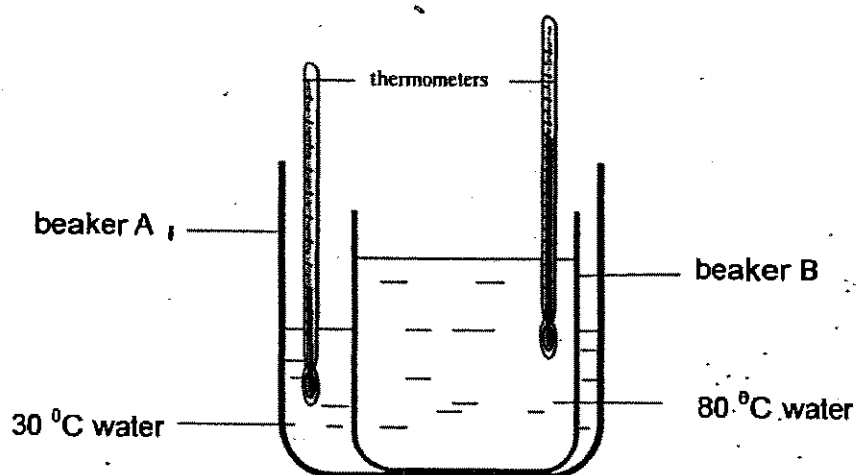
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34. Jamie conducted an experiment for 3 minutes using the apparatus as shown below to find out how heat travels.

The experiment was conducted in a room with a temperature of  $28^{\circ}\text{C}$ .



Based on the information above, answer the following questions:

- (a) What would happen to the temperature of the water in **BOTH** beakers A and B after 3 minutes? [1]

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- (b) What could Jamie conclude at the end of her experiment? [1]

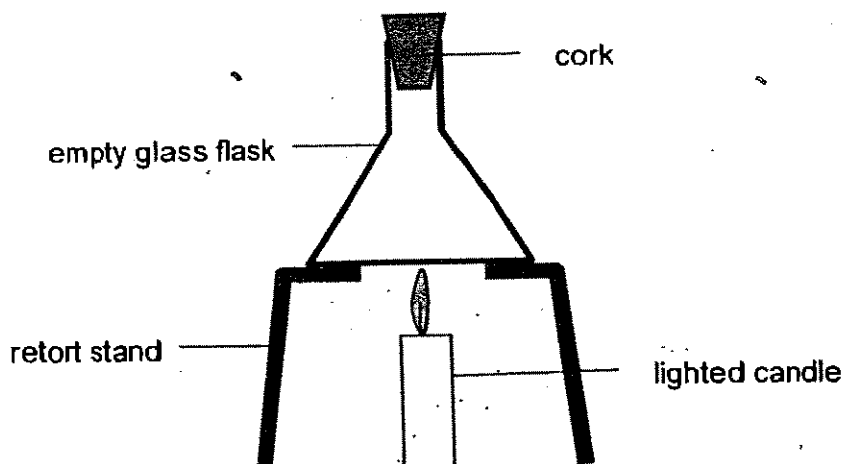
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35. Siti placed a cork and stuck it gently at the mouth of an empty glass flask. Then she placed a lighted candle at the base of the flask as shown below.



Based on the information above, what would Siti observe of the cork after some time?

Explain your answer.

[2]

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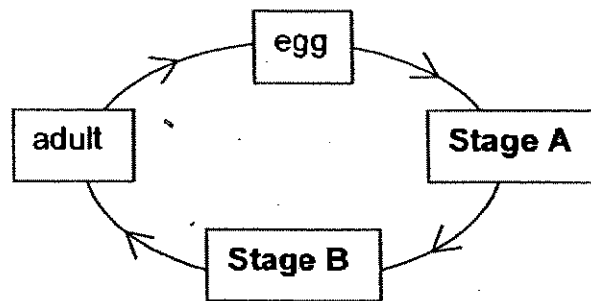
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36. The diagram below shows the different stages in the life cycle of a butterfly.



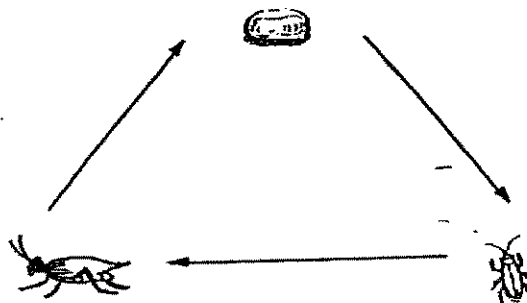
Based on the information below, answer the following questions:

- (a) Name the stages, A and B, of the life cycle.

[1]

| Stage |  |
|-------|--|
| A     |  |
| B     |  |

Kimmie drew the different stages that take place in the life cycle of a cockroach as shown below.



- (b) Compare the life cycle of the cockroach with that of a butterfly. Name **TWO** differences between **BOTH** life cycles.

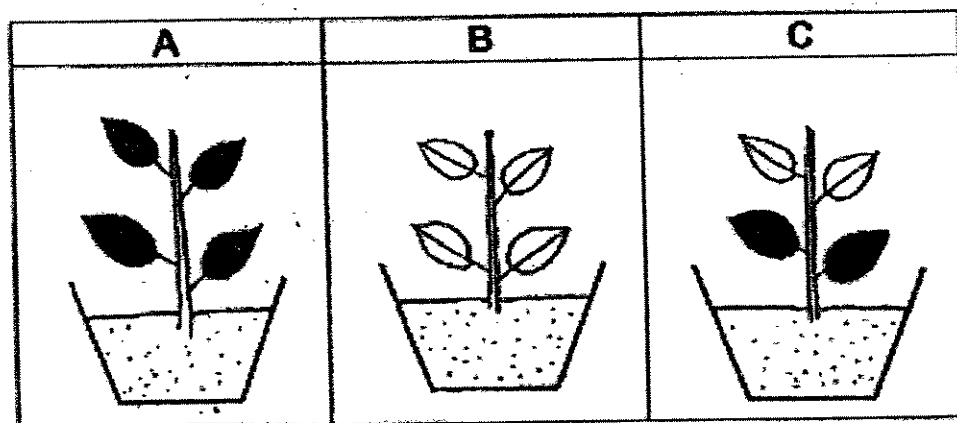
[2]

|              |  |
|--------------|--|
| Difference 1 |  |
| Difference 2 |  |



37. Tom used 3 pots of identical plants, A, B and C.

He set up an experiment using black papers to cover the leaves of plants A and C as shown below.



Tom placed the pots of plants, A, B and C, in an open field for a week.

Based on the information above, answer the following questions:

Which pot of plant, A, B or C, is most likely to be the healthiest?

Explain your answer.

[2]

Pot \_\_\_\_\_

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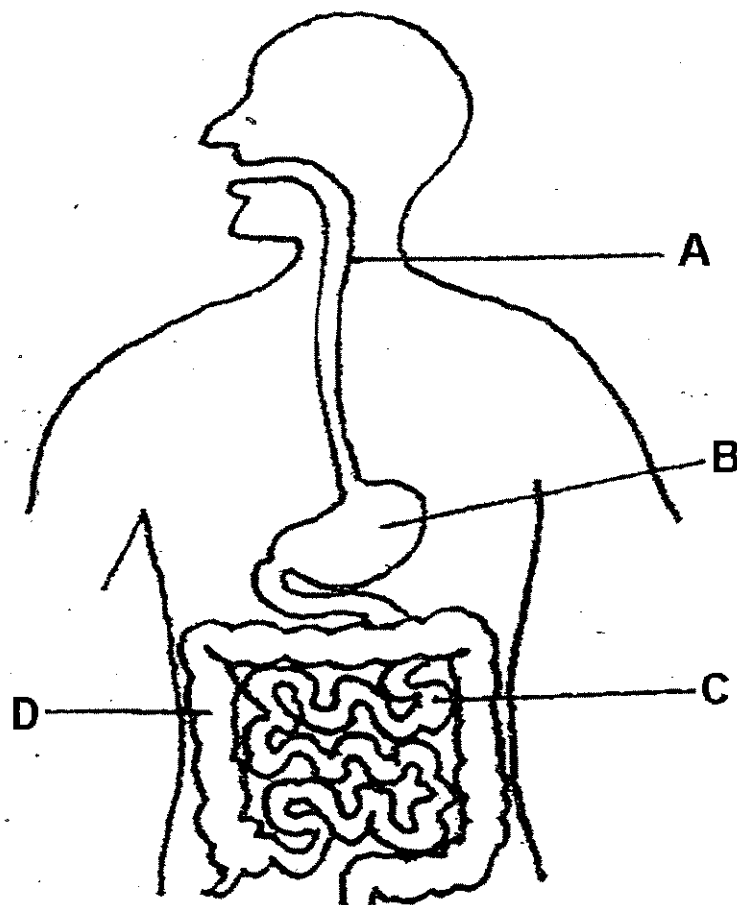
38. Linda used some of her sense organs in the following situations.

Write down the sense organ(s) which Linda used in each situation.

[2]

|     | Situation                                                          | sense/organ(s) |
|-----|--------------------------------------------------------------------|----------------|
| (a) | "The television programme is so funny."                            |                |
| (b) | "This cup of coffee is sweet."                                     |                |
| (c) | "The red flowers give a more pleasant scent than the yellow ones." |                |
| (d) | "This piece of music is soothing."                                 |                |

39. The diagram below shows parts of the digestive system of a man.

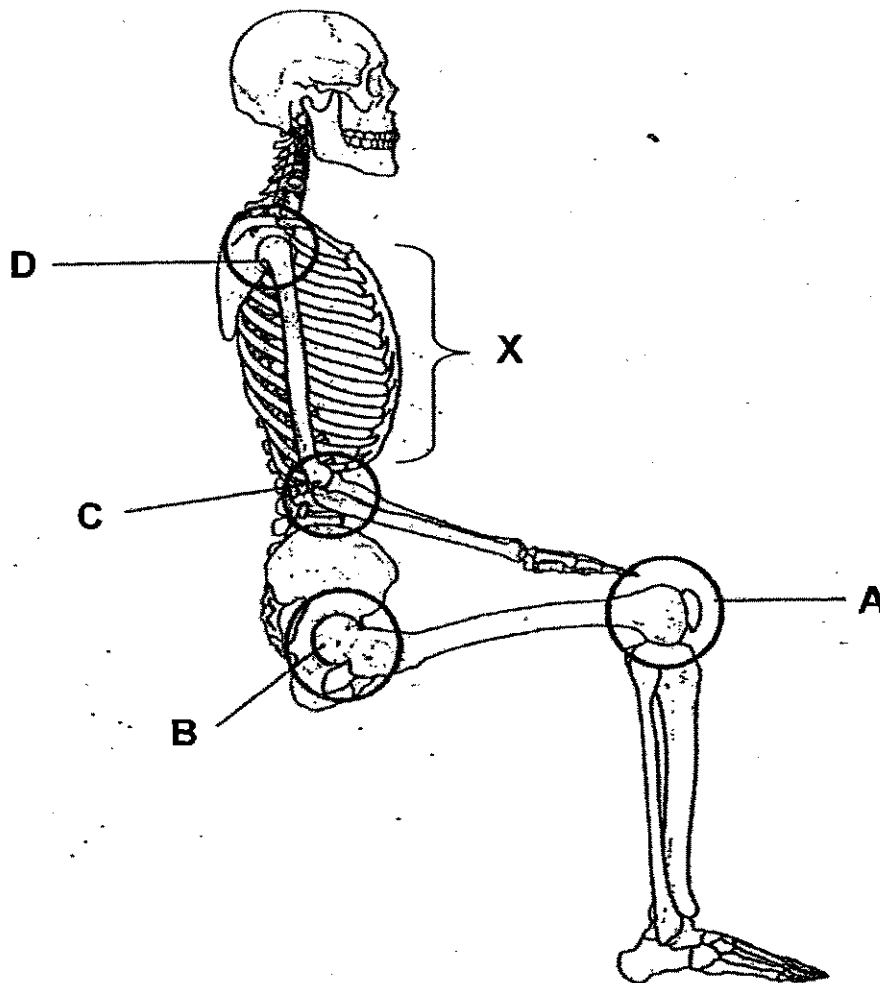


Based on the diagram above, complete the table below by naming the following parts:

[2]

| Part of the digestive system |  |
|------------------------------|--|
| A                            |  |
| B                            |  |
| C                            |  |
| D                            |  |

40. The diagram below shows parts of the skeletal system of a man.



Based on the diagram above, answer the following questions:

- (a) Name the part(s) where the following joints are found.  
Write letters, A, B, C or D, only.

[2]

|      | Joints          | Part(s) |
|------|-----------------|---------|
| (i)  | hinge           |         |
| (ii) | ball and socket |         |

- (b) Describe how X moves when the man inhales.

[1]

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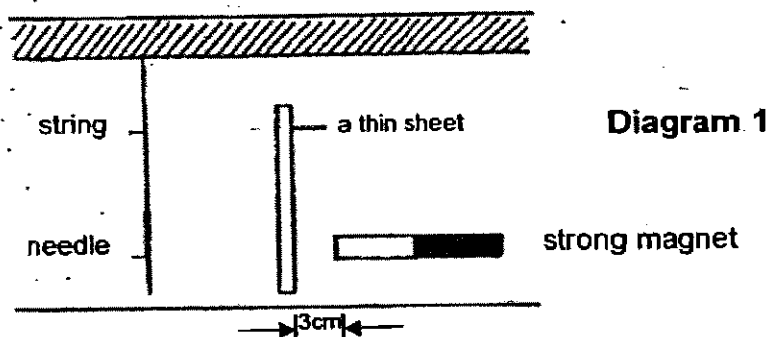
41. Jane set up an experiment using five thin sheets (each made of a different material), a string and a needle.

She identified the materials of the sheets as follows:

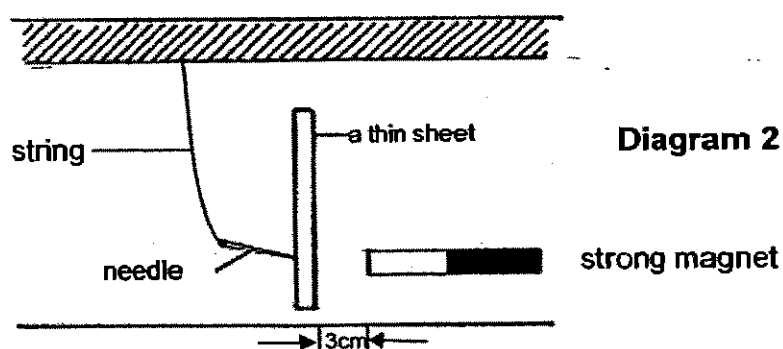
|      |       |       |       |           |
|------|-------|-------|-------|-----------|
| iron | paper | glass | steel | aluminium |
|------|-------|-------|-------|-----------|

Jane placed a thin sheet **ONE** at a time between the bar magnet and the needle hung from a string.

She observed that when the thin sheet of iron and steel was placed **ONE** at a time between the magnet and the needle, the needle did **NOT** move as shown in **Diagram 1** below.



However, when Jane placed the thin sheet of glass, paper and aluminium **ONE** at a time between the magnet and the needle, the needle moved towards the magnet as shown in **Diagram 2** below.



Based on her observations, Jane tabulated the materials used in a table as shown below.

| the needle did not move | the needle moved            |
|-------------------------|-----------------------------|
| iron<br>steel           | glass<br>paper<br>aluminium |

- (a) Name **ONE** common property of those materials which did **NOT** cause the needle to move. [1]

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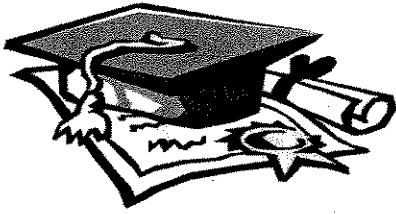
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- (b) From Jane's experiment, she can deduce that the force of magnetism can pass through \_\_\_\_\_ materials. [1]

- END OF PAPER -

Setters: Mr Ronald Lee  
Mrs Jessie Goh  
Mdm Doris Yap  
Mdm Florence Kong





# ANSWER SHEET

RAFFLES GIRLS' PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007  
SEMESTRAL ASSESSMENT (2)

1. 2
2. 4
3. 2
4. 4
5. 1
6. 4
7. 1
8. 4
9. 4
10. 4
11. 3
12. 2
13. 3
14. 2
15. 2
16. 2
17. 4
18. 2
19. 1
20. 3
21. 4
22. 3
23. 3
24. 3
25. 4
- 26) a) 500cm<sup>3</sup>  
b) 1) Air can be compressed.  
2) Air does not have definite volume.
- 27) a) It ensures a continuous supply of fresh water for the survival of all living things.  
b) evaporation. Condensation, clouds
- 28) a) i) ✓ iv) ✓  
b) Take a shower instead of a bath.
- 29) a) i) windpipe ii) diaphragm  
b) Windpipe is used to trap dust from the air we breath in and pass the air to the lungs which is is used in respiratory system while gullet was just to transport digested food to stomach which is used in the digestive system.
- 30) a) respiration.  
b) Oxygen.
- 31) b) function, Allow the exchange of oxygen and carbon dioxide to take place.  
c) circulatory, Pump blood rich in oxygen to all party of the body.



32)a) i) light      ii) heat

b) Light energy from the Sun enables plants to make food.

33)a) A: Does not allow light to pass through.

b) The bright triangular patch of light on the white wall would become smaller and brighter while the dark square shadow would become smaller and darker.

34)a) The temperature of water in beaker A would rise while temperature of water in beaker B would fall.

b) Heat travels from a hotter place to a colder place.

35) The air in the flask gains heat and expands.

36)a) A: larva      B: pupa

b) 1) The life cycle of a cockroach has 3 stages but the life cycle of a butterfly has 4 stages.

2) The young of the butterfly does not resemble the adult but the young of the cockroach resembles the adult.

37) Pot B.

Plant B can photosynthesis but plant A and C were covered with black papers which cannot photosynthesis.

38)a) ears      b) tongue      c) nose and eyes      d) ear

39) A: gullet      B: stomach

C: small intestine      D: large intestine

40)a) i) A and C      ii) B and D

b) When the man inhales X move outwards and upwards.

41)a) They are magnetic objects which allows magnets to attract but not letting the magnetism to pass through.

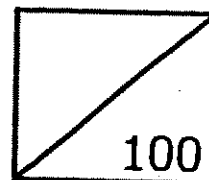
b) non-magnetic.



**Rosyth School**  
**Second Semestral Assessment for 2007**  
**SCIENCE**  
**Primary 4**

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

Total  
Marks:



Class: P 4 \_\_\_\_\_ Register No. \_\_\_\_\_ Duration: 1 h 30 min

Date: 1<sup>st</sup> Nov 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 |
|------------------|------------------|----------------|
| <b>Booklet A</b> | <b>60 marks</b>  |                |
| <b>Booklet B</b> | <b>40 marks</b>  |                |
| <b>Total</b>     | <b>100 marks</b> |                |

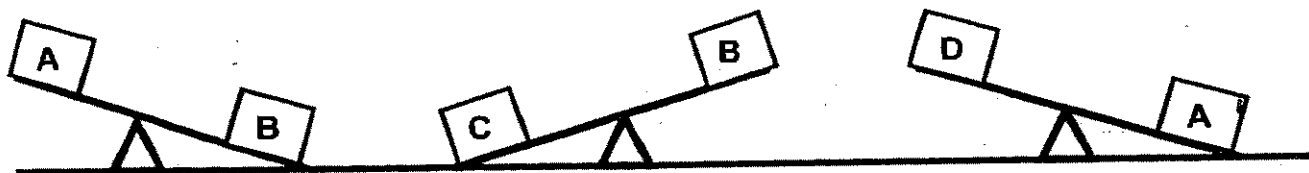
\* This booklet consists of 20 pages . (Pg 1 to 20)

This paper is not to be reproduced in part or whole without the permission of the Principal.

**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. Carina used a lever balance to compare the mass of four different blocks A, B, C and D as shown below.

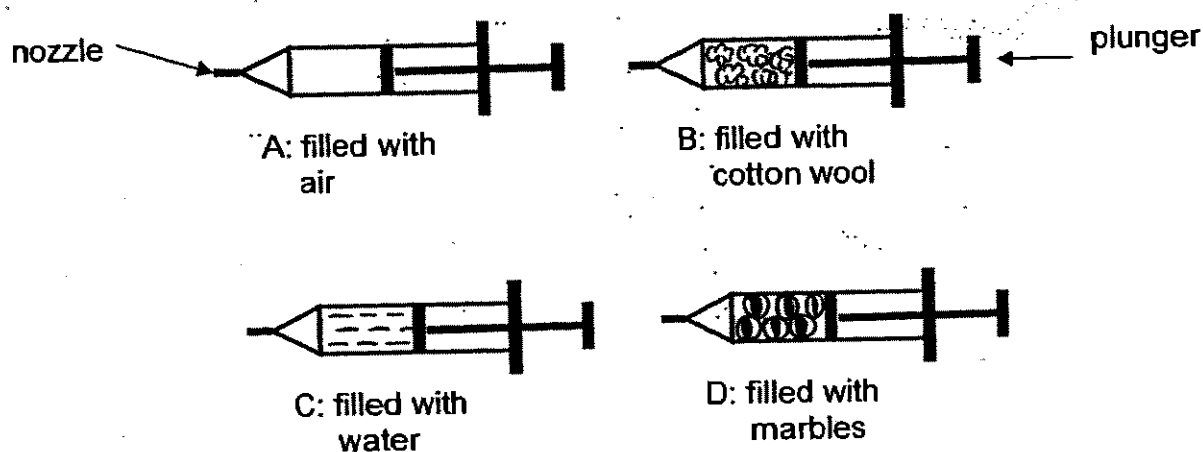


Which block has the greatest mass?

- (1) A  
(3) C

- (2) B  
(4) D

2. Four identical syringes with a similar volume were filled completely with air, cotton wool, water and marbles respectively.

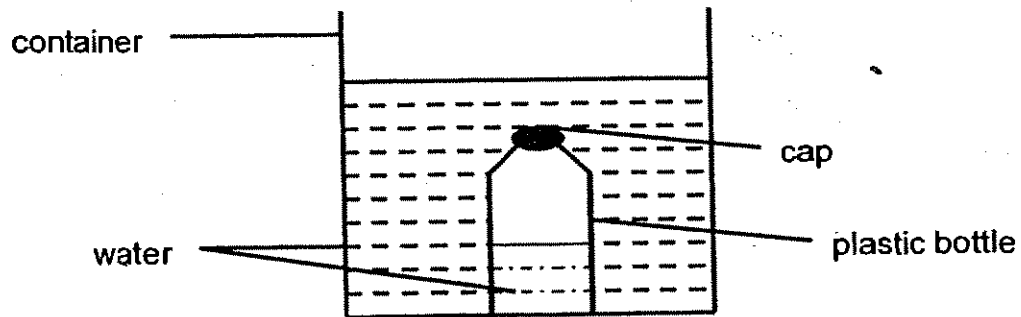


The nozzle of each syringe was completely sealed and the plungers were pushed inwards as far as they could go. Which of the plunger could be pushed in the furthest?

- (1) A  
(3) C

- (2) B  
(4) D

3. A transparent plastic bottle was half-filled with water and a cap was screwed on tightly. It was lowered into a container of water as shown below.



The cap was then unscrewed and removed. What happened to the water in the container and in the bottle?

- A: The water level in the container rose.
- B: The water level in the container dropped.
- C: The water level in the plastic bottle rose.
- D: There was no change in the water level in both the plastic bottle and container.

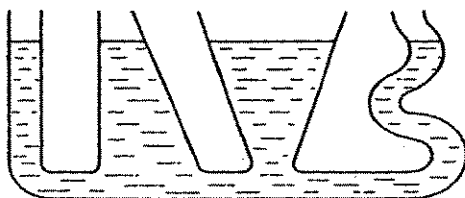
(1) D only

(3) B and C only

(2) A and B only

(4) C and D only

4. Matt poured some water into the container as shown below.



Based on his observations, which of the following statements could he make?

- A: Water has indefinite shape.  
 B: Water has definite volume.  
 C: Water level is always horizontal.

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

5. The table below shows the melting and boiling points of substances X, Y and Z.

| Substances | Melting point ( $^{\circ}\text{C}$ ) | Boiling point ( $^{\circ}\text{C}$ ) |
|------------|--------------------------------------|--------------------------------------|
| X          | 54                                   | 90                                   |
| Y          | 42                                   | 78                                   |
| Z          | 28                                   | 63                                   |

At which one of the following temperatures are the three substances in the same state?

- (1)  $29^{\circ}\text{C}$   
 (2)  $54^{\circ}\text{C}$   
 (3)  $60^{\circ}\text{C}$   
 (4)  $80^{\circ}\text{C}$

6. Marianne was trying to find out whether the thickness of a towel used will affect the time taken for it to dry.

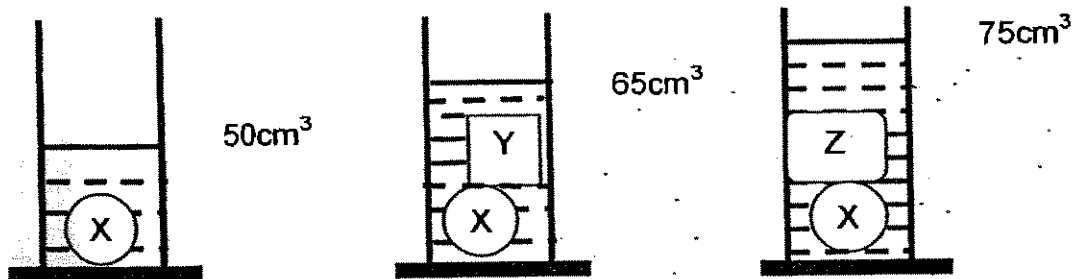
She prepared four different set-ups as shown below.

| Set-up | Thickness (cm) | Place of experiment | Size of the towel ( $\text{cm}^2$ ) | Duration of time it was soaked with water (mins) |
|--------|----------------|---------------------|-------------------------------------|--------------------------------------------------|
| P      | 5              | Shady place         | 50                                  | 5                                                |
| Q      | 10             | Sunny place         | 50                                  | 7                                                |
| R      | 10             | Shady place         | 50                                  | 5                                                |
| S      | 5              | Sunny place         | 50                                  | 5                                                |

Which two set-ups should she observe for a fair test?

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

7. An equal amount of water was poured into each of the three identical measuring cylinders. Some blocks were placed into the measuring cylinders and the new water levels were indicated below.



Joseph made four deductions based on his observations.

- A: The volume of block Y is  $15 \text{ cm}^3$ .  
B: The volume of water added into each cylinder is  $30 \text{ cm}^3$ .  
C: The volume of block Y is less than the volume of block Z.  
D: The volume of block X is greater than the volume of block Z.

Which of the deduction(s) he made is/are correct?

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

For Questions 8 and 9, refer to the table below.

Sue poured some water in four identical bowls and placed them in the same place for six hours. The results are recorded in the table below.

| Bowl | Amount of water at the beginning (ml) | Amount of water at the end (ml) |
|------|---------------------------------------|---------------------------------|
| S    | 30                                    | 5                               |
| T    | 40                                    | 10                              |
| U    | 50                                    | 23                              |
| V    | 60                                    | 50                              |

8. Which of the following is/are the possible reason/(s) for the different rates of evaporation in the above situation?

A: Presence of wind  
B: Exposed surface area  
C: Temperature of the water  
D: Temperature of the surrounding air

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

9. In which bowl was the rate of evaporation the fastest?

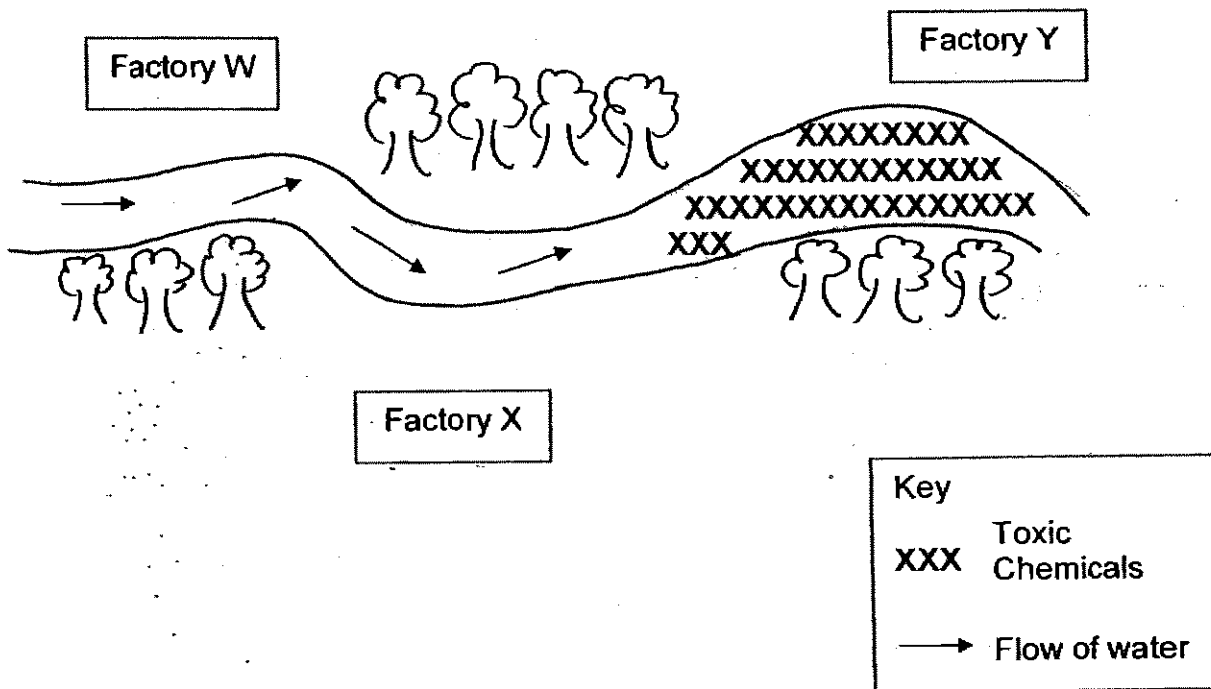
- (1) S  
(2) T  
(3) U  
(4) V

10. Which one of the following would help to conserve water?

A: Take a bath instead of a shower  
B: Use a pail of water to wash the car instead of a hose  
C: Use the water from the washing machine to wash the toilet  
D: Purify water from households so that it can be used more than once

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

11. A certain stretch of a river was found to be polluted with toxic chemicals as shown in the diagram below.



Which of the following statements are definitely true?

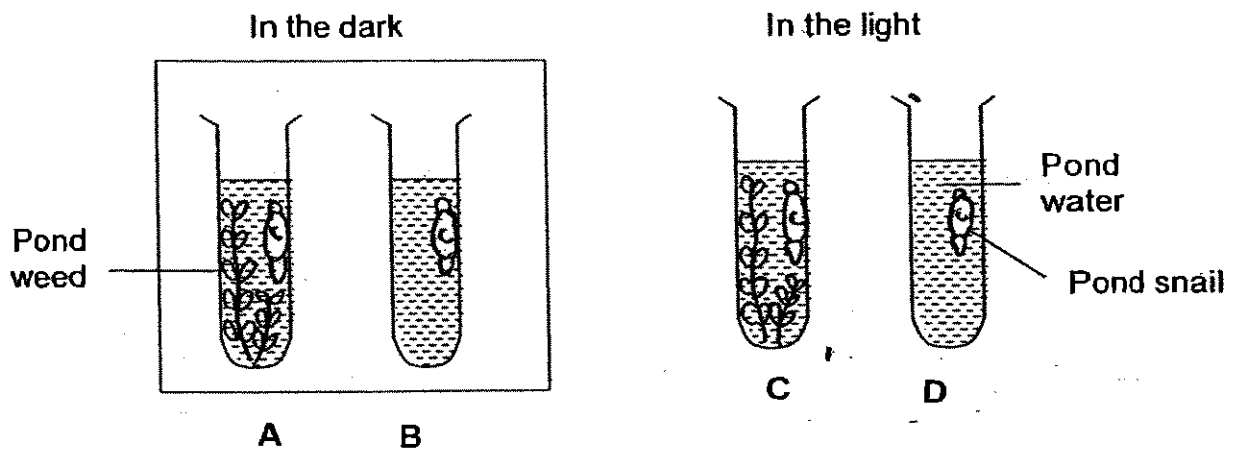
- A: Factories X and Y released toxic chemicals into the river.  
 B: Factory X released toxic chemicals into the river.  
 C: Factory W did not release any toxic chemicals into the river.  
 D: It is not possible to tell if factory Y had released toxic chemicals into the river.

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

- (2) B and C only  
 (4) B, C and D only



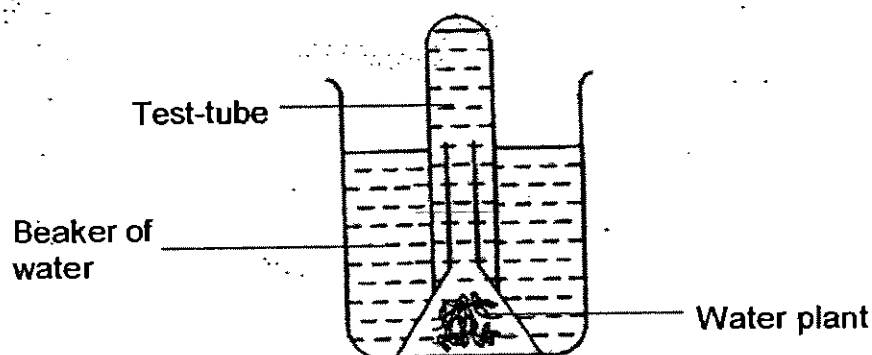
12. Bryan set up four test-tubes (A, B, C, and D) as shown below.



**In which test-tube would the amount of oxygen decrease most rapidly?**

- [illegible]

13. An experiment was set up and placed under the sunlight for four hours as shown below.

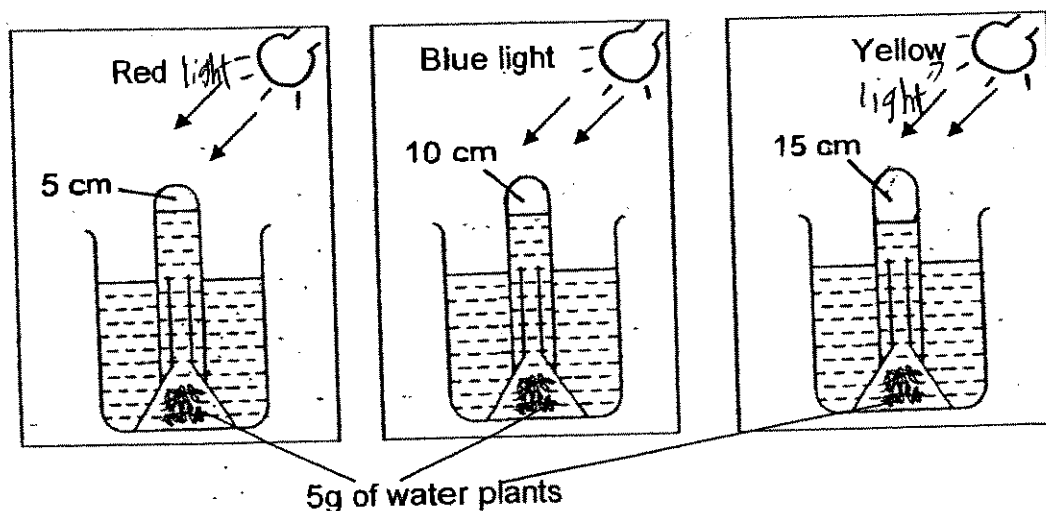


Which of the following results were most likely to be possible?

- A: The water plant would turn brown.  
B: Air bubbles would be seen in the test tube.  
C: All the water in the beaker would be evaporated.  
D: The temperature of the water in the beaker would increase.

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

14. The experiment below was set up to investigate how different lights affect the rate of photosynthesis. The experimental set-ups were left alone for a day and the results of the experiment are as shown in the diagram.



Based on the above results, what conclusion(s) could be drawn from this experiment?

- A: The rate of photosynthesis was faster when the experiment was carried out under red light than under blue light.  
B: The rate of photosynthesis under yellow light was 3 times as fast as under red light.  
C: The rate of photosynthesis was the slowest under yellow light.

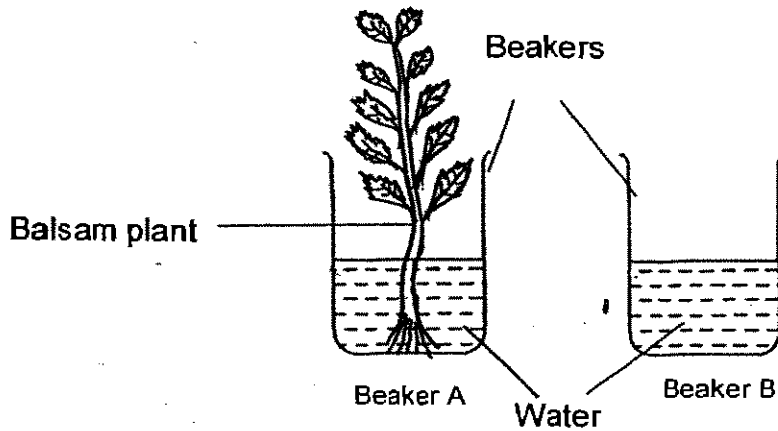
(1) A only

(3) A and B only

(2) B only

(3) A, B and C

15. Audrey set up an experiment as shown below. She left the set-up in the same place from Day 1 to Day 4.



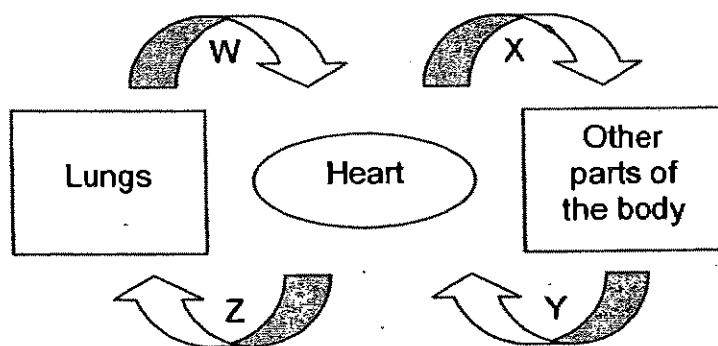
She measured the volume of water in the two beakers on Day 1 and Day 4 and recorded the results in the table as shown below.

| Beaker | Volume of water (mℓ) |       |
|--------|----------------------|-------|
|        | Day 1                | Day 4 |
| A      | 400                  | 250   |
| B      | 400                  | 350   |

Using the results above, how much water did the plant take in from Day 1 to Day 4?

- (1) 50 ml                      (2) 100 ml  
(3) 150 ml                  (4) 200 ml

16. Study the diagram below. The arrows represent the transport of blood in man.



Which of the following statements are true?

- A: Blood vessels X and Y are rich in carbon dioxide.
- B: Blood vessels Y and Z are rich in carbon dioxide.
- C: Blood vessels W and Y are rich in oxygen.
- D: Blood vessels W and X are rich in oxygen.

- (1) A and B only
- (3) B and D only

- (2) A and C only
- (4) C and D only

17. The table below shows the average pulse rate of some animals.

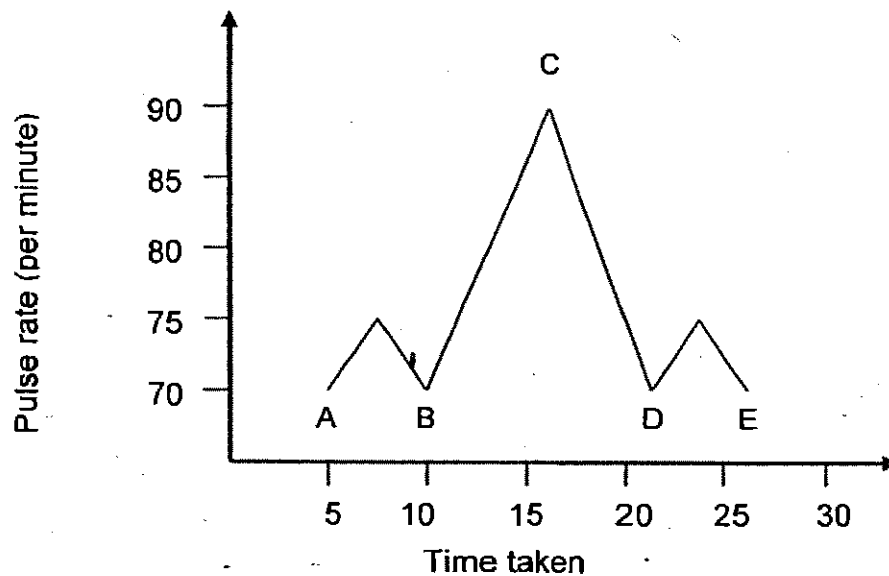
| Animal | Mass (kg) | Average Pulse Rate (beats per min) |
|--------|-----------|------------------------------------|
| E      | 60        | 73                                 |
| F      | 35        | 120                                |
| G      | 24        | 250                                |
| H      | 1         | 950                                |

What would be the most likely pulse rate of an animal of 45 kg?

- (1) 70 beats per min
- (3) 150 beats per min

- (2) 100 beats per min
- (4) 260 beats per min

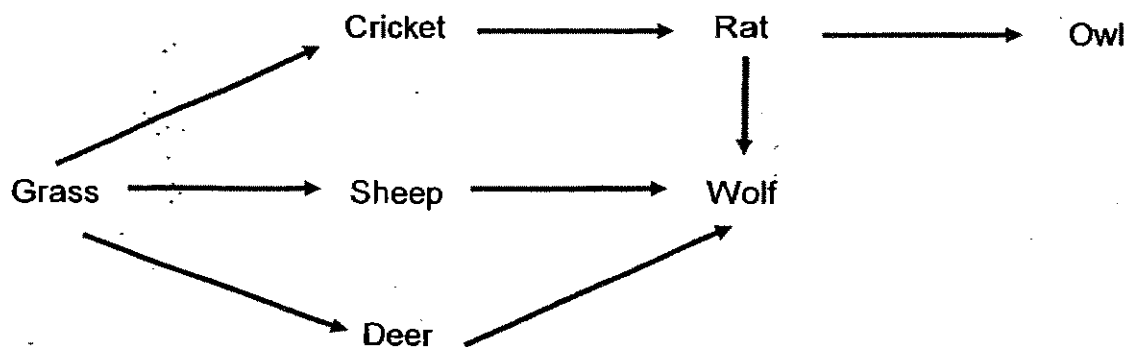
18. The graph below shows the changes in the pulse rate of Rafidah. She started to jog on the spot and stopped for a while.



At which point did she start to jog vigorously on the spot?

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

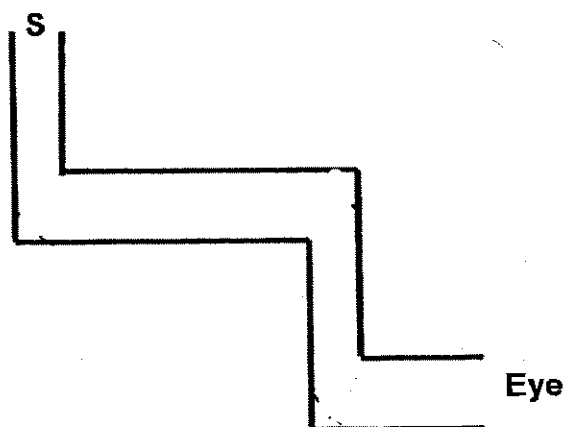
19. The diagram below shows the energy transfer between a group of organisms.



Based on the above energy transfer diagram, which two organisms obtain their energy by eating other animals?

- (1) Cricket and sheep (2) Sheep and deer  
(3) Rat and owl (4) Deer and wolf

20. Study the diagram below carefully.

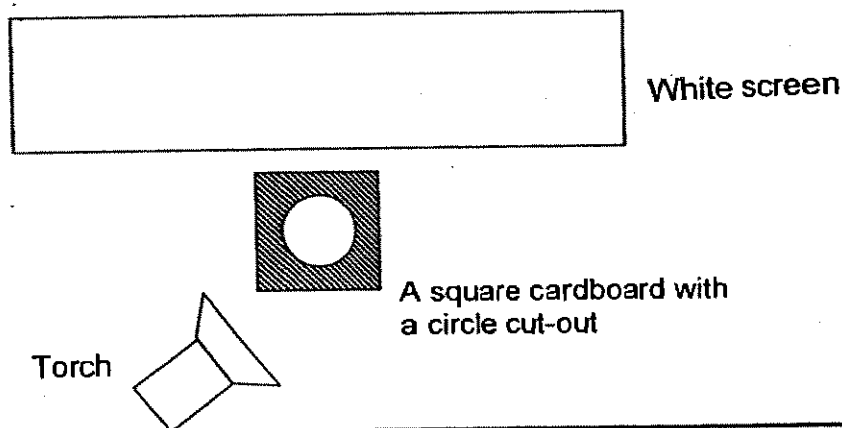


To be able to see the object placed at S, what is the least number of mirrors needed to be placed in the tube?

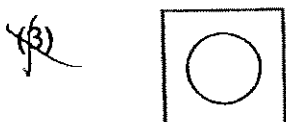
- (1) Three  
(3) Five

- (2) Four  
(4) Six

21. Jeremy shone a torch at a square piece of cardboard with a circle cut out in the middle as shown in the diagram below.



Which of the following shows what he would observe on the white screen?

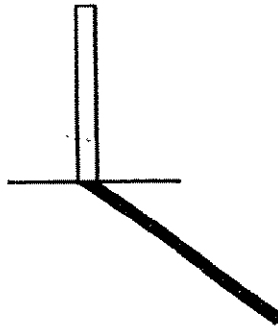


12

Go on to the next page

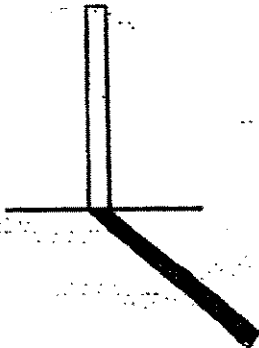
22. James placed a pole in the garden and observed the shadow it formed. The shadow in the diagram below was observed at ~~9.00 a.m.~~

4 p.m

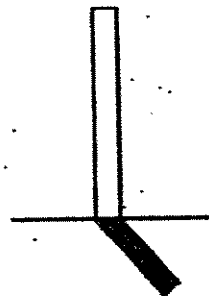


Which one of the following could be the most likely shadow to be observed at 4 p.m.?

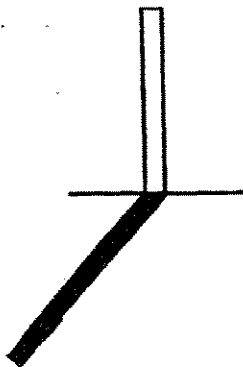
(1) 9.00 a.m



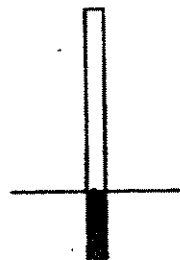
(2)



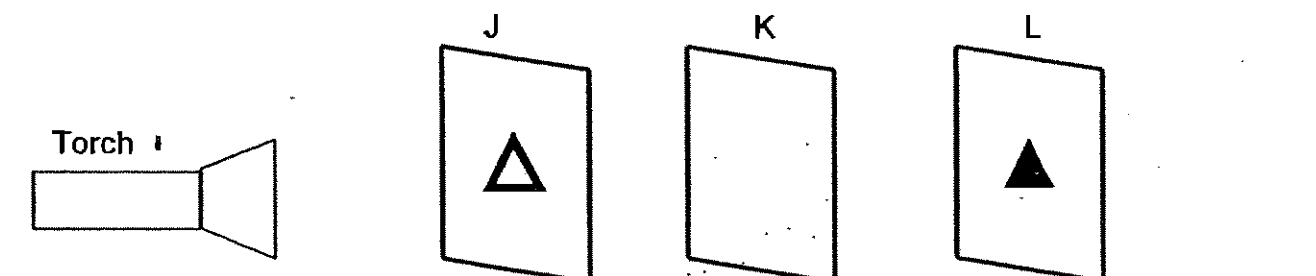
(3)



(4)



23. Ali used three identical sizes of sheets J, K and L. Each sheet was made of a different material and they were arranged in a straight line. There was a triangular-shaped hole in J. When the torch was shone on J, a bright triangular-shaped patch of light appeared on L.



Based on his observations, Ali made the following statements:

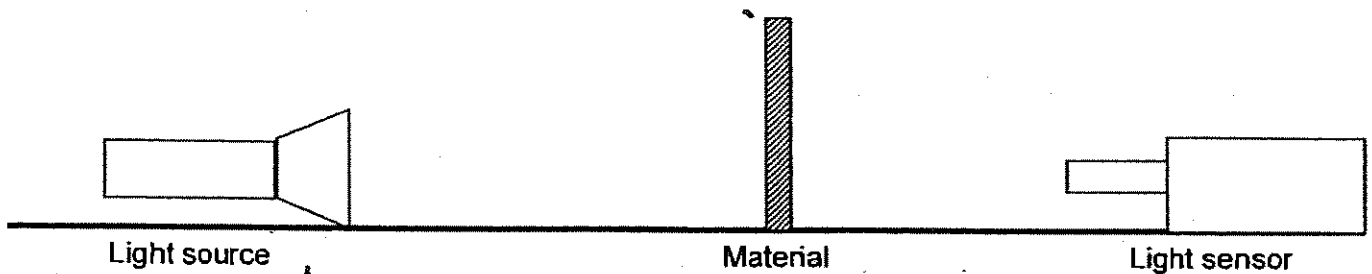
- A: Sheet J is made of transparent material.
- B: Sheet K is made of transparent material.
- C: Sheet L is made of opaque material.

Which of the statement(s) he made is/are correct?

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



24. Nurlin wanted to find out which material allows the most light to pass through it. She used a light sensor to measure the intensity of light that can pass through a material as shown below.



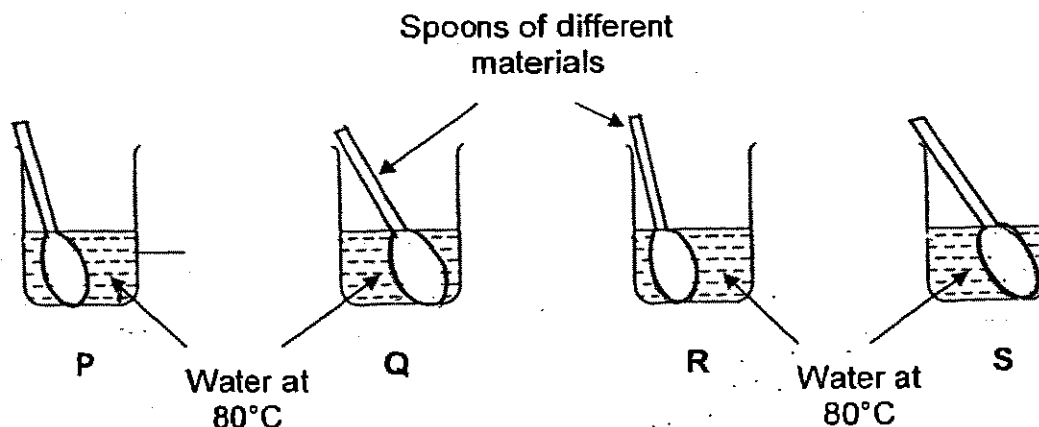
Which of the following variables should be kept the same for a fair test?

- A: Type of light source
- B: Thickness of the material
- C: Distance between light source and material
- D: Distance between light sensor and material

~~(1) A and B only~~  
~~(3) A, C and D only~~

~~(2) C and D only~~  
~~(4) A, B, C and D~~

25. Paul prepared four beakers (P, Q, R and S) with water at  $80^{\circ}\text{C}$ . Then he placed a spoon in each beaker. The spoons were of different materials. He measured the temperature of the water at four equal intervals over a period of 30 minutes.



The temperature of the water was recorded in a table as shown below.

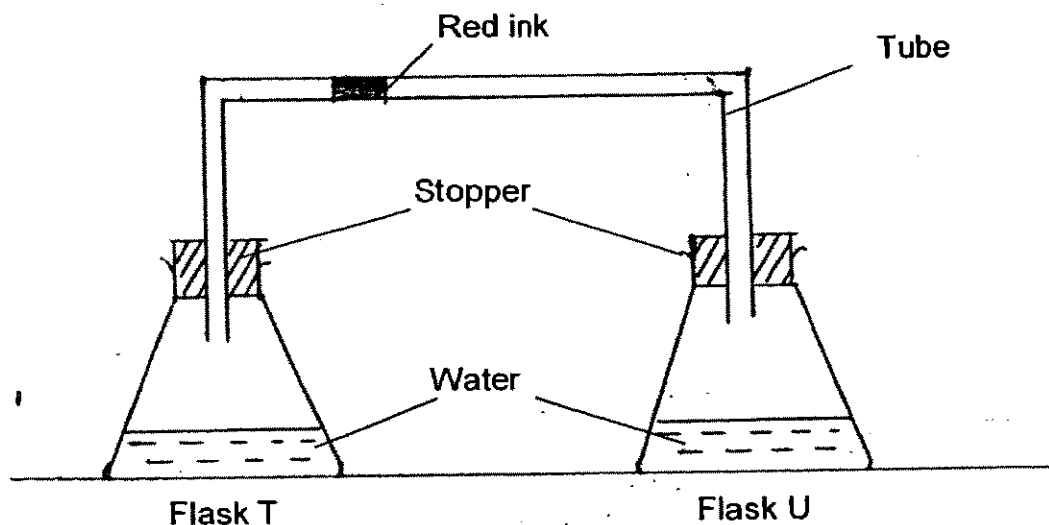
| Beakers | Temperature ( $^{\circ}\text{C}$ ) |    |    |    |
|---------|------------------------------------|----|----|----|
| P       | 80                                 | 70 | 60 | 50 |
| Q       | 80                                 | 60 | 40 | 30 |
| R       | 80                                 | 70 | 55 | 45 |
| S       | 80                                 | 75 | 65 | 55 |

In which beaker, the spoon is made of a material that is able to conduct heat most easily?

- (1) P  
(3) R

- (2) Q  
(4) S

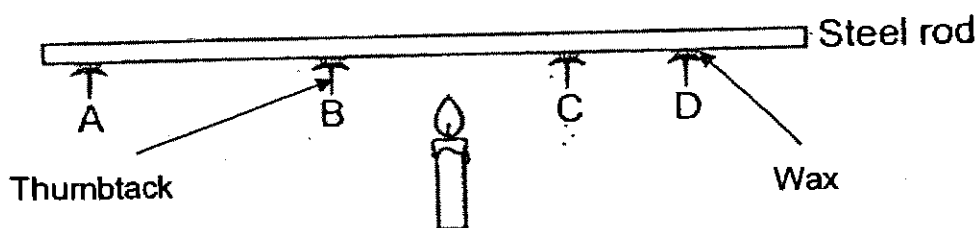
26. Flasks T and U are connected by a tube which contains a drop of red ink.



Which will happen to the drop of red ink when a burner is placed under flask T?

- (1) The drop of red ink will not move at all.
- (2) The drop of red ink will move towards flask U.
- (3) The drop of red ink will move towards flask T.
- (4) The drop of red ink will continuously move forward and backward.

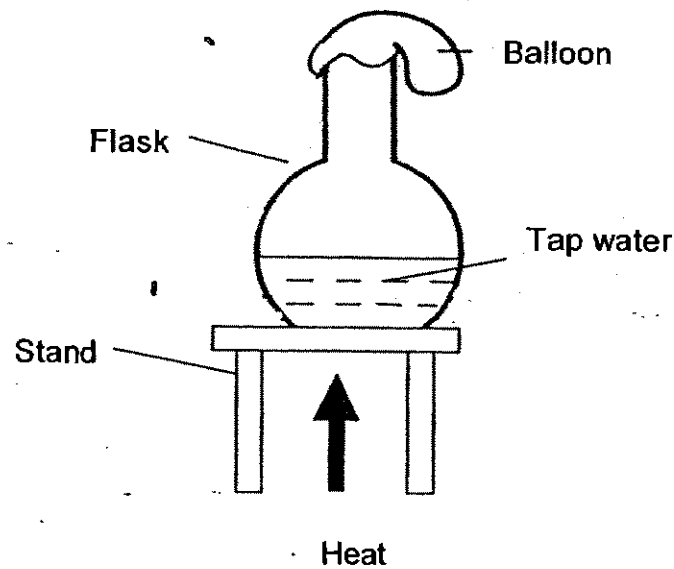
27. In the diagram below, four similar thumbtacks were attached to the steel rod with the same amount of wax.



Which two thumbtacks would most likely to drop off from the rod last?

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

28. Mrs Lee set up an experiment as shown below

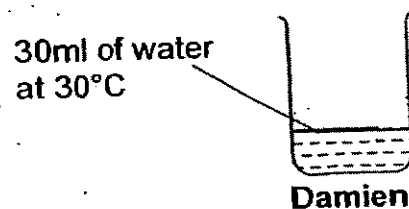
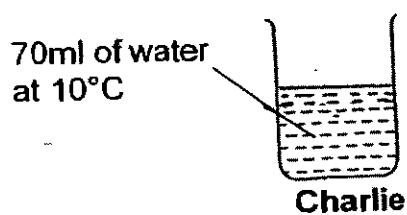
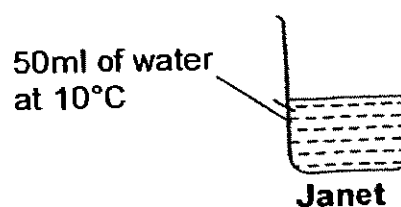
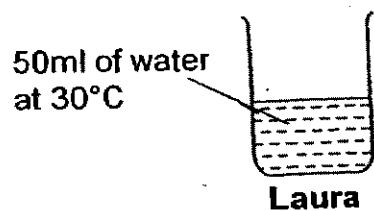


The tap water in the flask was heated over a burner. After some time, she observed that the balloon became inflated. What caused the balloon to inflate?

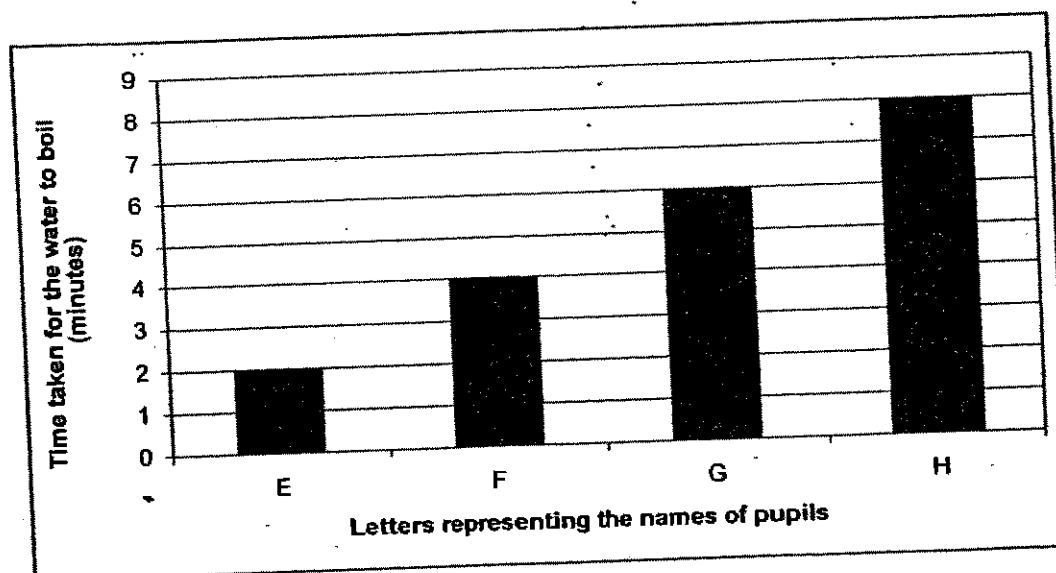
- (1) The air in the flask expanded and entered the balloon.
- (2) The heat from the burner caused the balloon to expand.
- (3) The water level in the flask rose and entered the balloon.
- (4) The flask expanded under the heat of the burner and this caused the balloon to inflate.

Read the following to answer questions 29 and 30.

Laura, Janet, Charlie and Damian wanted to find out whose beaker of water would boil first. The beakers of water they had are shown in the diagrams below.



They represented their results in a bar graph as shown below. The names of the pupils were represented by the letters E, F, G and H.



Questions 29 and 30 continue on pg 20

29. Which of the following represent the letters E, F, G and H correctly?

|     | E       | F     | G       | H       |
|-----|---------|-------|---------|---------|
| (1) | Laura   | Janet | Charlie | Damien  |
| (2) | Charlie | Janet | Laura   | Damien  |
| (3) | Damien  | Laura | Janet   | Charlie |
| (4) | Janet   | Laura | Damien  | Charlie |

30. Which of the following variables should be kept the same for the experiment?

A: Type of water

B: Intensity of fire

C: Material of the beakers

(1) A only

(2) B only

(3) B and C only

(4) A, B and C

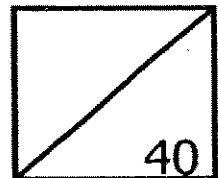
**End of Booklet A**



**Rosyth School**  
**Second Semestral Assessment for 2007**  
**SCIENCE**  
**Primary 4**

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

Total  
Marks:



Class: P 4 \_\_\_\_\_ Register No. \_\_\_\_\_ Duration: 1 h 30 min

Date: 1<sup>st</sup> Nov 2007 Parent's Signature: \_\_\_\_\_

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## Booklet B

### Instructions to Pupils:

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

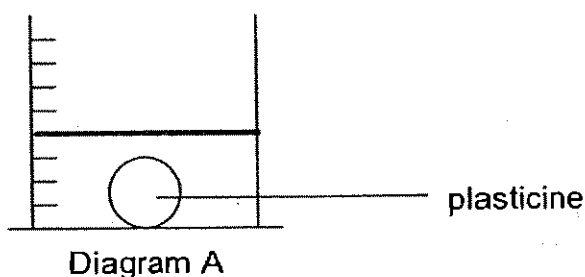
\* This booklet consists of 14 pages . (Pg1 to 14)

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**PART II (40 MARKS)**

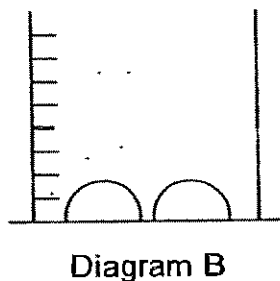
For questions 31 to 46, write your answers in this booklet.

31. Mika placed a ball of plasticine in a measuring cylinder containing some water as shown in diagram A.



Then he took the ball of plasticine out and cut it into two equal pieces and put it back into the same measuring cylinder as shown in diagram B.

- (a) Draw the water-level in the diagram B. (1m)



Mika replaced the two pieces of the plasticine with an iron ball of similar size to the ball of plasticine as in diagram A.

- (b) Would the water-level be similar to that in diagram A? Explain why. (1m)

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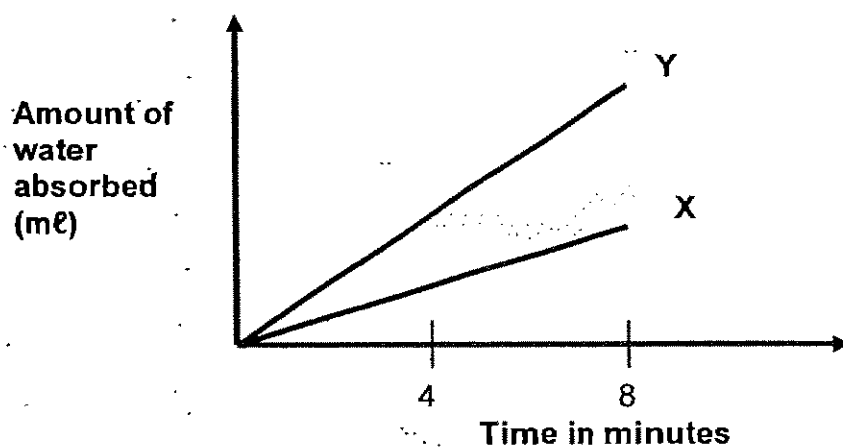
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32. Ernest wanted to find out how the amount of salt affects the time taken for the salt to dissolve in a beaker of water. Put a tick ( ✓ ) for the variable that must be changed and a cross ( ✕ ) for the variable that must be kept the same for a fair experiment. (2m)

|   | Variables            | Tick or Cross |
|---|----------------------|---------------|
| 1 | Amount of salt       |               |
| 2 | Temperature of water |               |
| 3 | Rate of stirring     |               |
| 4 | Amount of water      |               |

33. The graph below shows how much water two different materials, X and Y, can absorb in 8 minutes.



- (a) Which material would you use to mop the floor? (1m)

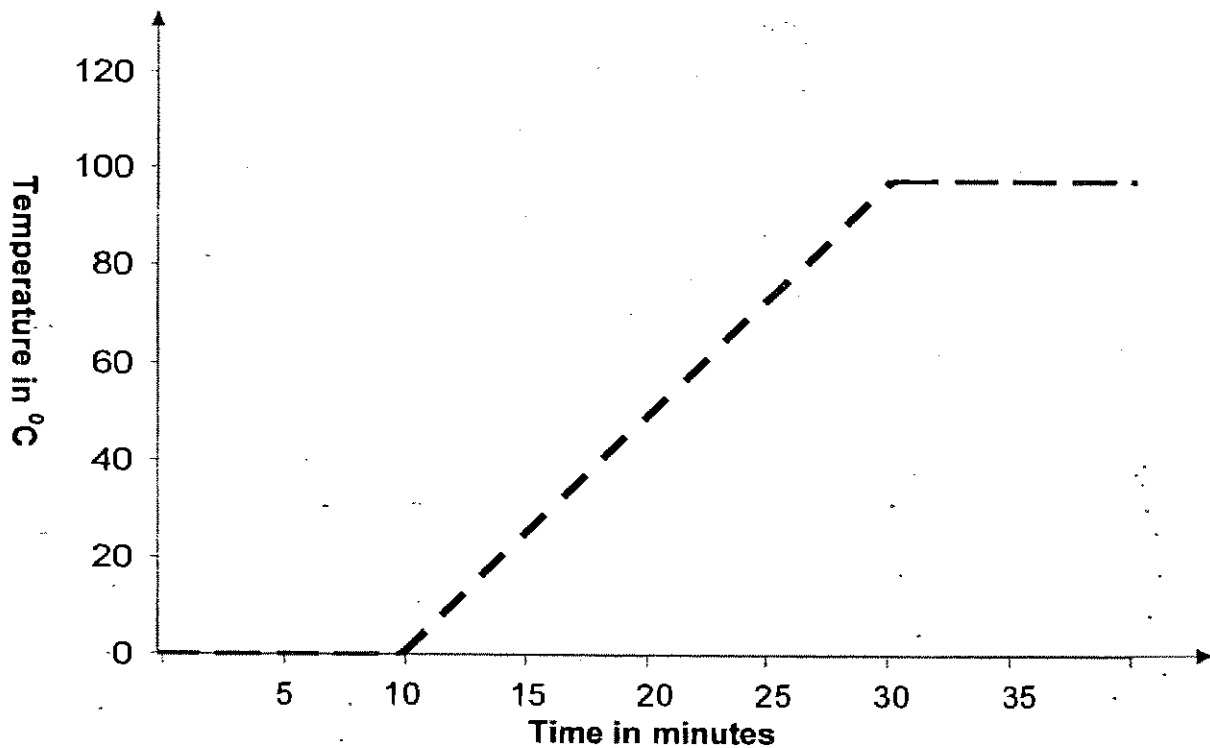
---

- (b) Why did you choose that material? (1m)

---

---

34. Some ice-cubes were heated in a beaker. The graph below shows how the temperature changes with time.



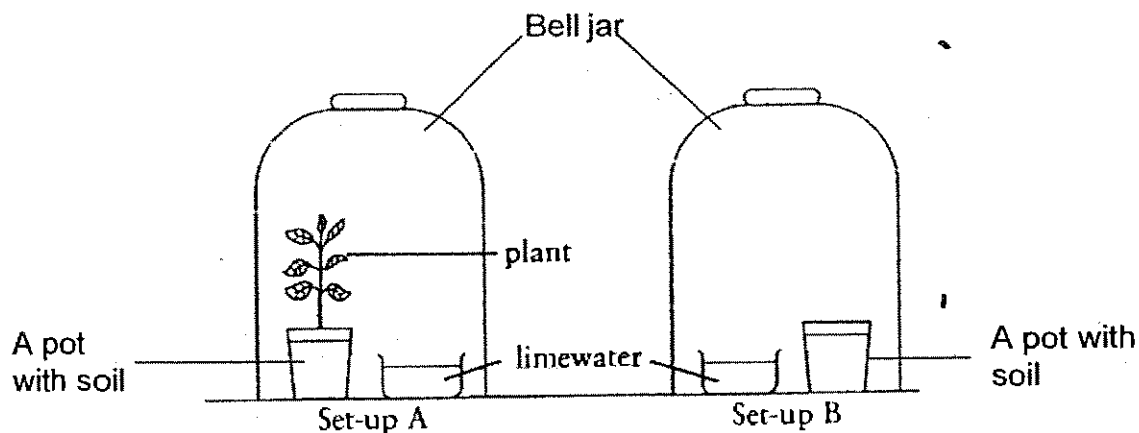
- (a) How long did the ice take to melt completely? (1m)

---

- (b) Explain why there was no increase in temperature for the first 10 minutes although heat was supplied. (1m)

---

35. Alice set up an experiment as shown below. Limewater turns chalky in the presence of carbon dioxide.



She left the two set-ups in a dark room for one day and tabulated the results as shown below.

| Set up | Description of limewater |               |
|--------|--------------------------|---------------|
|        | At the beginning         | After one day |
| A      | Clear                    | Chalky        |
| B      | Clear                    | Clear         |

(a) Why did Alice put the set-ups in a dark room? (1m)

---



---

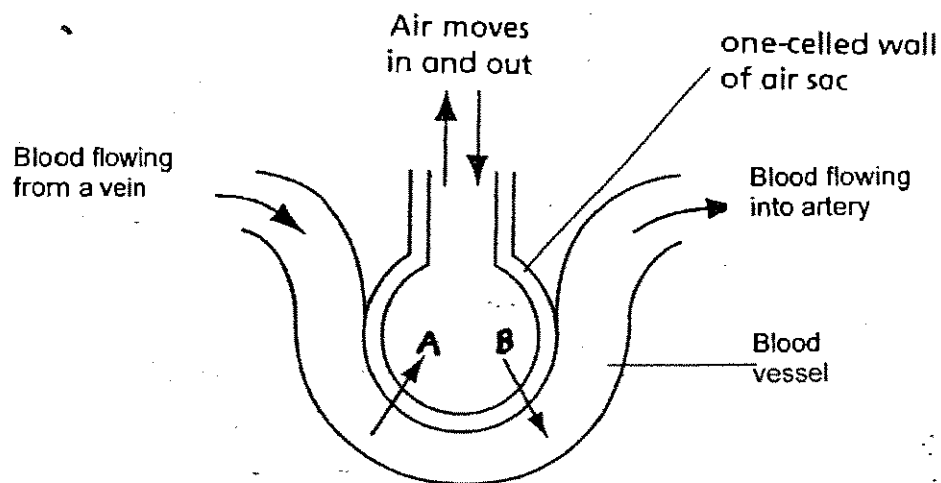
(b) What does the above experiment show? (1m)

---



---

36. There are many air sacs in our lungs. The diagram below shows the exchange of gases in an air sac.



- (a) A and B represent the gases that enter and leave the air sac respectively. Identify gases A and B. (1m)

Gas A: \_\_\_\_\_

Gas B: \_\_\_\_\_

- (b) State the difference between the blood flowing from a vein and the blood flowing into the artery. (1m)

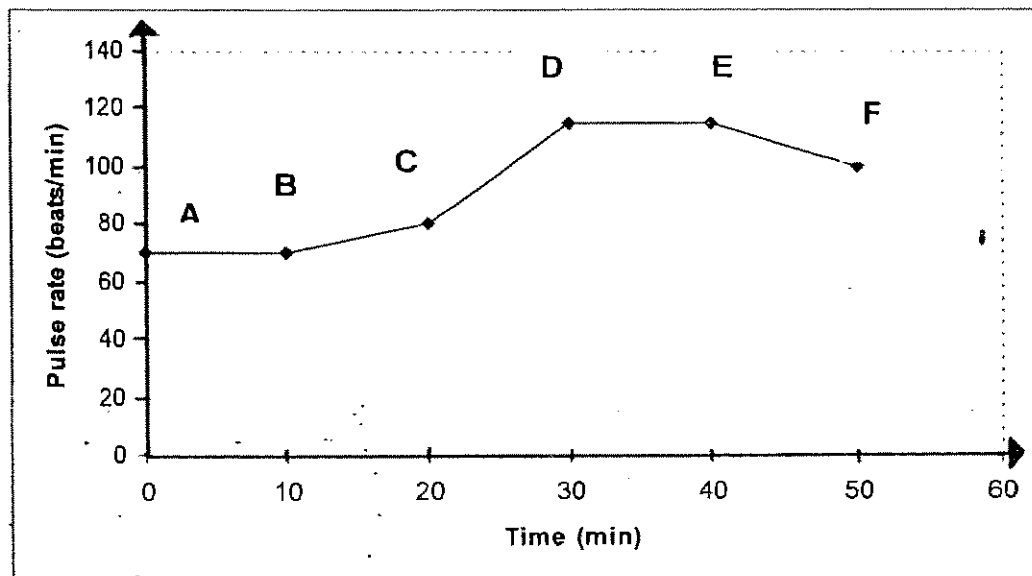
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---

- (c) Name the two systems that are working together in the above situation. (1m)

---

37. Peter's instructor measured and recorded his pulse rate over a period of 50 minutes as shown in the graph. During this period, he did some warm-up exercises before beginning his run.



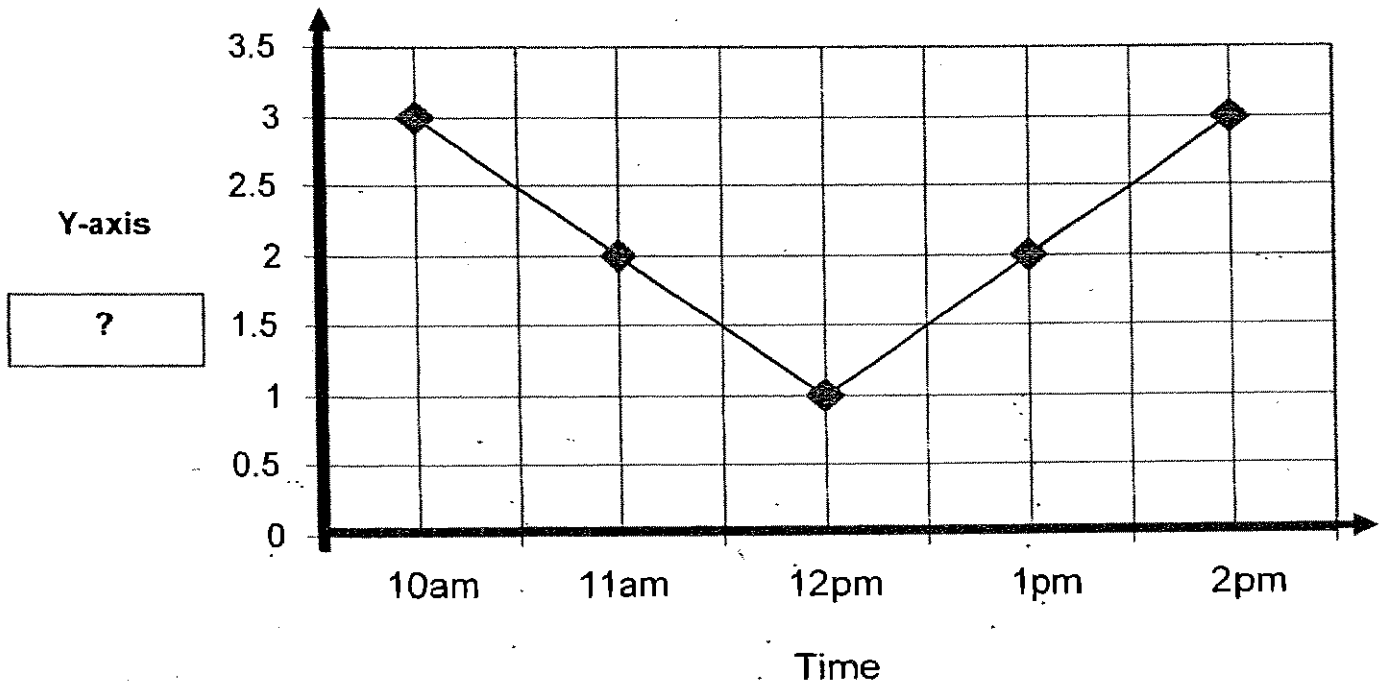
- (a) At which point (A, B, C, D, E or F) did Peter begin his run? (1m)

- (b) What would happen to his breathing rate as his pulse rate increase? (1m)

- (c) At which point did Peter (A, B, C, D, E or F) stop his run? Give a reason to support your answer. (1m)

- (d) From point F, Peter continued to rest completely for another 20 minutes. What should his pulse rate be after 20 minutes? (1m)

38. Mary measured the length of the shadow (in metres) of a flagpole at different times of the day. She represented the results in a garden as shown below.



- (a) What is the heading for the Y-axis above? (1m)

---

- (b) Using the graph, what is the size of the shadow cast at 12.30 pm? (1m)

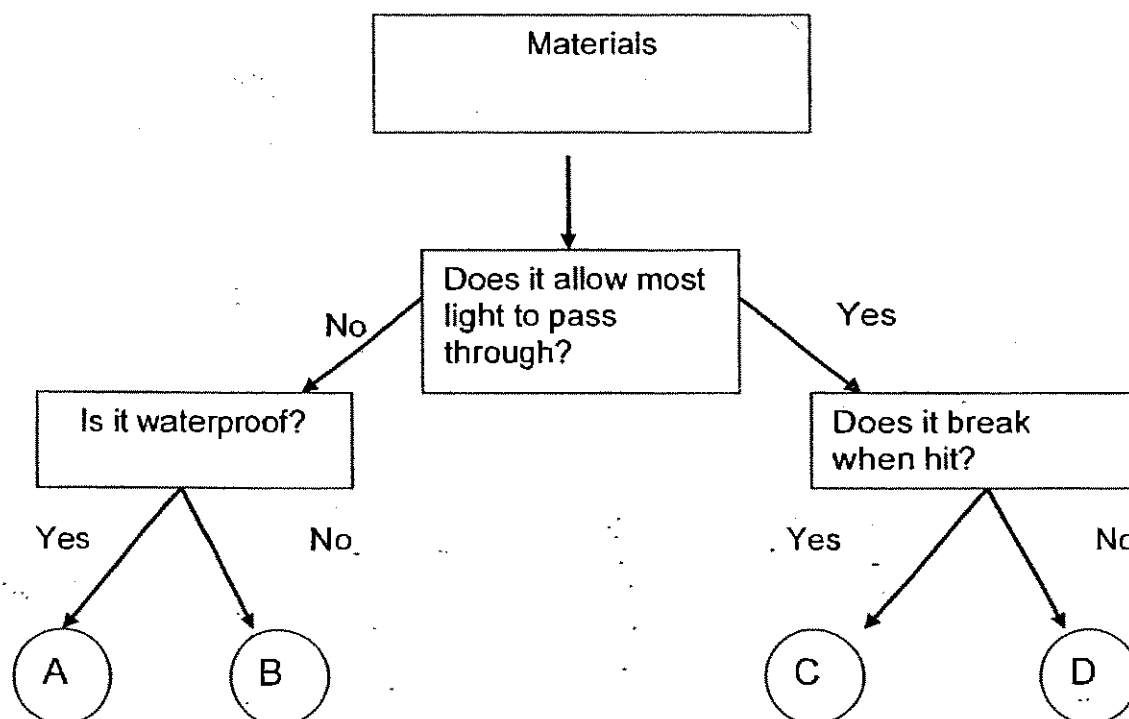
---

- (c) Explain why the length of the shadow changes at different times. (1m)

---

---

39. Study the flowchart below carefully. It shows the properties of some materials.



- (a) State one similarity and one difference between materials C and D. (2m)

Similarity:

---

---

Difference:

---

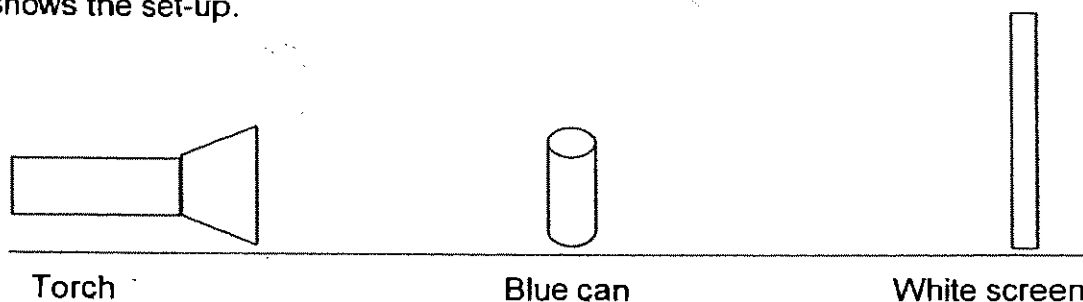
---

- (b) Which two properties are the most important for a material that is used to make a glass tank? (1m)

---

---

40. Clemens carried out an investigation to find out how the distance of the torch from the screen affects the size of the shadow. The diagram below shows the set-up.



His results are shown in the table below.

| Distance of torch from the screen<br>(cm) | Height of the shadow on the screen<br>(cm) |
|-------------------------------------------|--------------------------------------------|
| 20                                        | 11                                         |
| 25                                        | 9                                          |
| 30                                        | 7                                          |
| 35                                        | 5                                          |

- (a) Based on the results, how does the distance of the torch from the screen affect the height of the shadow? (1m)

---

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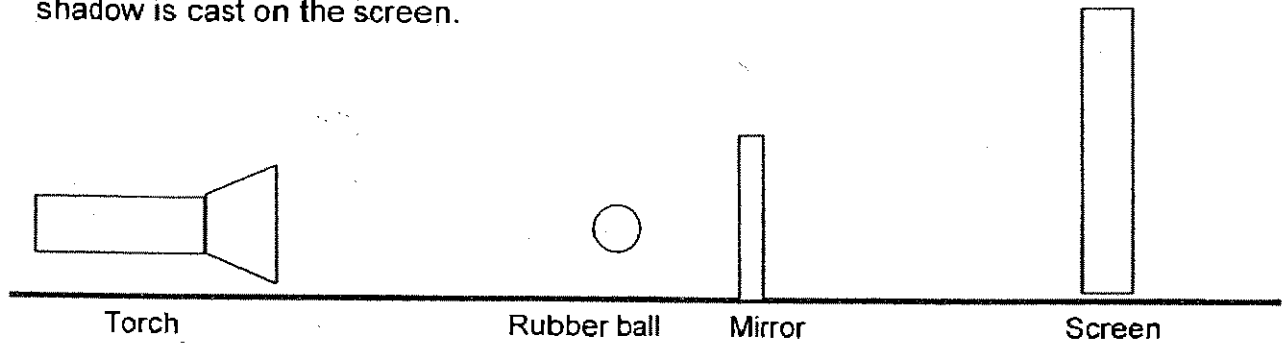
- (b) During the investigation, Clemens observed that the shadow formed on the screen was always black. Why was that so? (1m)

---

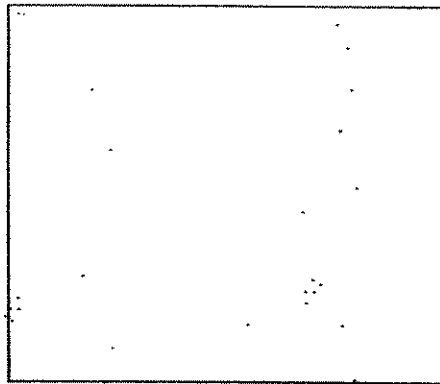
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41. The diagram below shows a torch shining on a ball and a square mirror. A shadow is cast on the screen.



- (a) Draw the shadow as seen on the screen in the box provided below. (1m)

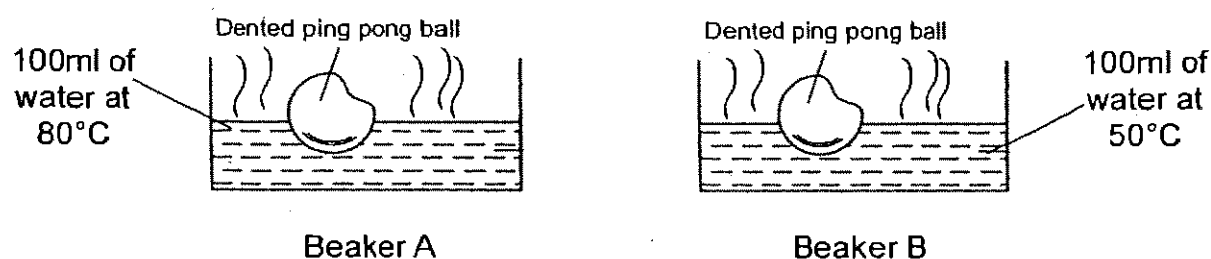


- (b) Suggest one change he should make to the above set-up so that he could see only the shadow of the rubber ball on the screen. (1m)

---

---

42. Xavier had 2 identical ping pong balls which were dented. He placed each ping pong ball in beakers A and B as shown below.



- (a) Compare the amount of heat in beakers A and B.  
What was the difference between the water in beakers A and B with regard to the amount of heat? (1m)

---

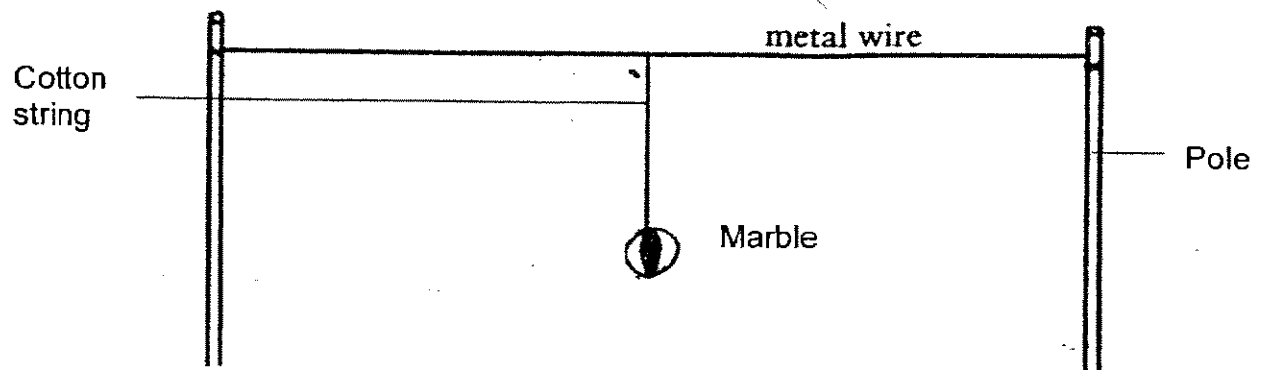
---

- (b) In which beaker would the ping pong ball become round faster?  
Explain why. (1m)

---

---

43. A marble was hung on a metal wire in the garden as shown below.



- (a) Using the diagram above, state two changes you would observe on a very hot day. (2m)

---

---

---

---

- (b) Would you observe the same changes as mentioned in part (a), if the metal wire was replaced by plastic? Explain why. (1m)

---

---

44. Jenny left a cup of hot chocolate drink in an air-conditioned room. She recorded the temperature of the hot chocolate over a period of time as shown below.

| Time/min | Temperature/°C |
|----------|----------------|
| 0        | 97             |
| 5        | 84             |
| 10       | 66             |
| 15       | 52             |
| 20       | 35             |
| 30       | 24             |
| 35       | 22             |
| 40       | 22             |
| 42       | 22             |

- (a) What was the temperature of the hot chocolate drink at 10<sup>th</sup> minute? (1m)

---

- (b) Explain what caused the change in the temperature of the hot chocolate drink. (1m)

---

- (c) Based on the information given, what was the likely temperature of the air-conditioned room? (1m)

---

- (d) What would happen to the change in temperature of the chocolate drink if the temperature of the air-conditioner was lowered? (1m)

---

45. Azlina wanted to find out which material, X or Y, is a better conductor of heat. She placed the materials in an oven at  $120^{\circ}\text{C}$  for 10 minutes. She recorded the temperature of the two materials in a table as shown below.

| Materials | Starting temperature ( $^{\circ}\text{C}$ ) | Temperature after placing in the oven ( $^{\circ}\text{C}$ ) |
|-----------|---------------------------------------------|--------------------------------------------------------------|
| X         | 30                                          | 47                                                           |
| Y         | 30                                          | 33                                                           |

- (a) Using the results, which material is a better conductor of heat? (1m)

---

- (b) Azlina wanted a material to cover ice blocks to prevent them from melting easily. Which material should she choose, X or Y? Support your choice. (1m)

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46. When Jamie exhaled onto a sheet of metal, he noticed tiny drops of water forming on the metal plate. Explain how the water droplets were formed. (2m)

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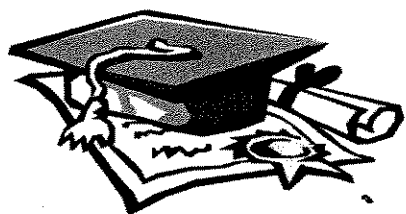


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**End of Paper**



# ANSWER SHEET

ROSYTH PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007  
SEMESTRAL ASSESSMENT (2)

1. 3

2. 1

3. 3

4. 3

5. 3

6. 2

7. 3

8. 2

9. 2

10. 3

11. 4

12. 1

13. 4

14. 2

15. 2

16. 3

17. 2

18. 2

19. 3

20. 1

21. 2

22. 3

23. 4

24. 4

25. 2

26. 2

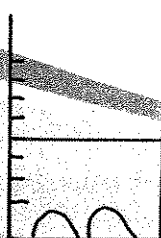
27. 2

28. 1

29. 3

30. 4

31) a)



b) Yes, they occupy the same space.

32) 1) ✓ 2) x 3) x 4) ✓

33) a) Y.

b) Material Y can absorb a lot of water.

34) a) 10 min.

b) The ice had not started to melt completely.


35) a) To prevent the plant from making food.

b) Plants give out carbon dioxide when they respire.

36) a) A: carbon dioxide  
B: oxygen

b) The blood flowing in vein is full of carbon dioxide while the blood flowing in the arteries are full of oxygen.

c) Circulatory system and respiratory system.

- 37) a) C.  
b) His breathing rate will also increase.  
c) E. His pulse rate had decrease.  
d) 70 beats min.
- 38) a) Length of shadow.  
b) 1.5m  
c) The earth is moving therefore the light can be stronger or weak.
- 39) a) Similarity: Both allow most light to pass through.  
Difference: Material C easily when hit while material D does not break when hit.  
b) It must be waterproof and must allow light to pass through.
- 40) a) The nearer the torch is the bigger the shadow is formed.  
b) The blue can is an opaque and opaque object does not allow any light to pass through.
- 41) a)   
b) Remove the mirror.
- 42) a) The air in the ball gains more heat and expands faster.  
b) Water in A has more heat than B.
- 43) a) The metal wire will expand.  
The marble will be lowered.  
b) No, Plastic is a poor conductor of heat.
- 44) a) 66°C  
b) The drink loses heat to the surrounding air.  
c) 22°C  
d) The temperature will lower to the room's temperature.
- 45) a) X.  
b) Y, Y is a bad conductor of heat.

46) Water vapour condenses into water when it drop on cold metal plate.







## AI TONG SCHOOL

### 2007 SEMESTRAL ASSESSMENT (2) PRIMARY FOUR SCIENCE

**DURATION : 1hr 45 min**

**DATE: 29<sup>th</sup> October 2007**

### **INSTRUCTIONS**

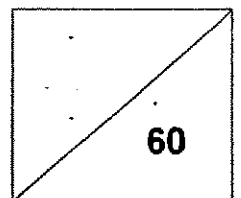
**Do not open the booklet until you are told to do so.  
Follow all instructions.  
Answer all questions.**

**Name:** \_\_\_\_\_ ( )

**Class : Primary 4** \_\_\_\_\_

**Parent's Signature:** \_\_\_\_\_

**Date :** \_\_\_\_\_



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. Based on the pictures below, which one of the following statements is true?



1 kg of feathers



1 kg of sand

- (1) The sand has a greater mass than the feathers.
- (2) The sand has a larger volume than the feathers.
- (3) The feathers have a greater mass than the sand.
- (4) The feathers have a larger volume than the sand.

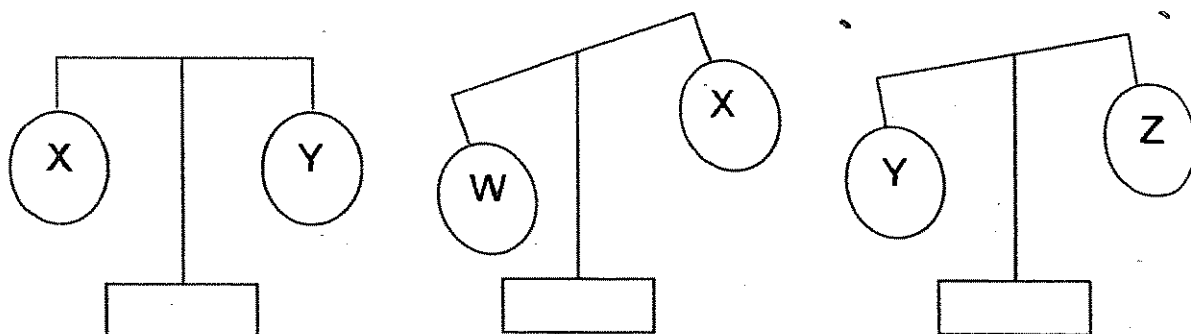
2. The table below shows the properties of substances A, B, C or D.

| Properties            | A   | B   | C   | D   |
|-----------------------|-----|-----|-----|-----|
| Has mass              | Yes | Yes | Yes | Yes |
| Can be compressed     | No  | Yes | Yes | No  |
| Has a definite shape  | No  | Yes | No  | Yes |
| Has a definite volume | Yes | No  | No  | Yes |

Which one of the following substances A, B, C or D represent water vapour?

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

3. Maria used a lever balance to compare the mass of objects W, X, Y and Z. The 4 objects are of the same size and shape.



Which object has the smallest mass?

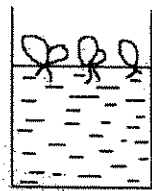
- (1) W
  - (2) X
  - (3) Y
  - (4) Z
4. The table below shows the average total amount of water used by four families at the end of the month. All the four families attended a water conservation talk at the end of May.

| Family | Average total amount of water ( $\text{m}^3$ ) used in |     |      |      |
|--------|--------------------------------------------------------|-----|------|------|
|        | April                                                  | May | June | July |
| Tan    | 50                                                     | 55  | 52   | 45   |
| Lim    | 55                                                     | 58  | 62   | 65   |
| Ahmad  | 52                                                     | 50  | 58   | 60   |
| Mohan  | 50                                                     | 53  | 50   | 47   |

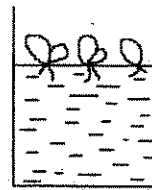
Which of the families showed that they had learnt water conservation through the talk?

- (1) Tan and Ahmad
- (2) Tan and Mohan
- (3) Lim and Ahmad
- (4) Lim and Mohan

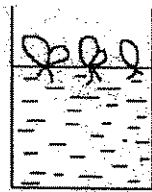
5. Mei Mei set up an experiment as shown below. She put an equal number of duckweeds in beakers A, B, C and D. She placed the beakers in a bright place for 5 days.



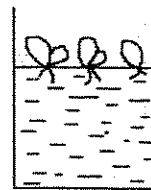
pond water + oil

**A**

pond water + paint

**B**

pond water + detergent

**C**

pond water + soil

**D**

In which beaker would she observe an increase in the number of duckweeds?

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

6. Which processes are put under the **wrong** headings?

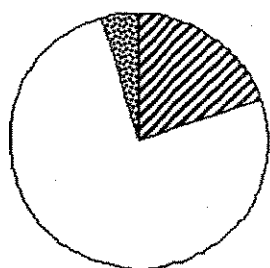
**Heat Loss**

- (1) boiling
- (2) freezing
- (3) freezing
- (4) condensation

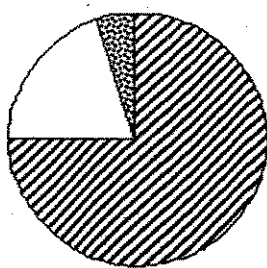
**Heat Gain**

- evaporation
- boiling
- melting
- evaporation

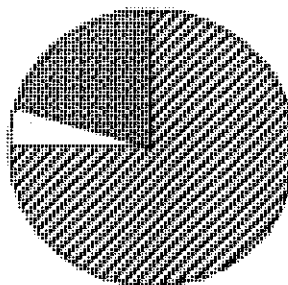
7. Which one of the following pie charts shows the correct composition of gases in the air?



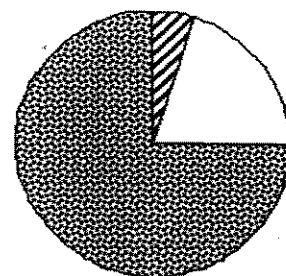
A



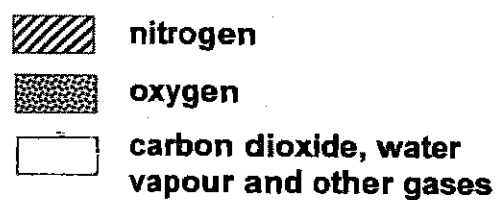
B



C



D



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

8. Which of the following gases is correctly matched with its description?

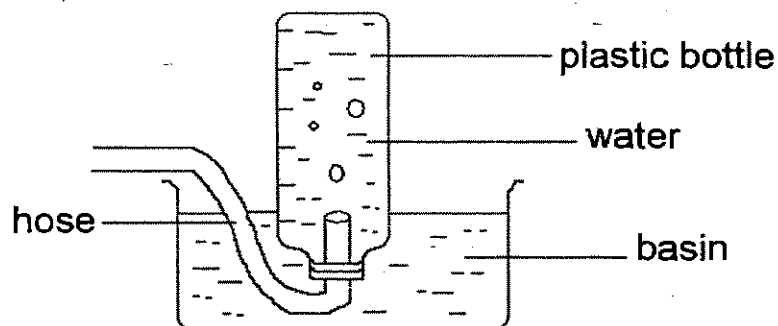
| Gas            | Description                           |
|----------------|---------------------------------------|
| Oxygen         | We need it during respiration.        |
| Nitrogen       | Plants absorb it through the stomata. |
| Water vapour   | Clouds are made up of this.           |
| Carbon dioxide | It will be used up during burning.    |

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

9. Which one of the following animals has a different breathing method?

- (1) Bat
- (2) Dog
- (3) Shark
- (4) Whale

10. Muthu set up an experiment as shown below. He blew into the inverted plastic bottle through the hose.



What changes did Muthu observe?

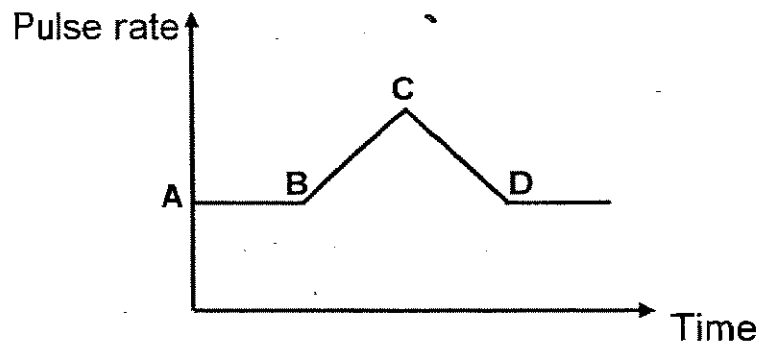
- A: The water level in the basin went up.
- B: The water level in the basin went down.
- C: The water in the plastic bottle turned cloudy.
- D: The water level in the plastic bottle went down.

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

11. The air that we breathe out contains \_\_\_\_\_ than the air we breathe in.
- (1) more heat
  - (2) more oxygen
  - (3) less water vapour
  - (4) less carbon dioxide
12. Our blood transport \_\_\_\_\_ to the lungs and all other parts of our body.
- A: carbon dioxide
  - B: digested food
  - C: oxygen
  - D: water
- (1) A, B and C
  - (2) A, B and D
  - (3) B, C and D
  - (4) A, B, C and D
13. Which one of the following statements is not true about our heart?
- (1) It is conical in shape.
  - (2) It is a spongy tissue.
  - (3) It can contract and relax continuously.
  - (4) It continues to beat even when we are sleeping.



14. The graph shows Tim's pulse rate over an hour during which he strolled to the park for a jog.

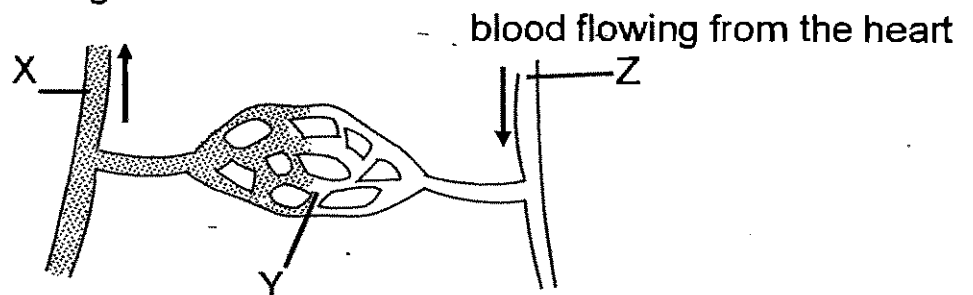


At which point did he stop jogging?

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

15. Study the diagram below.

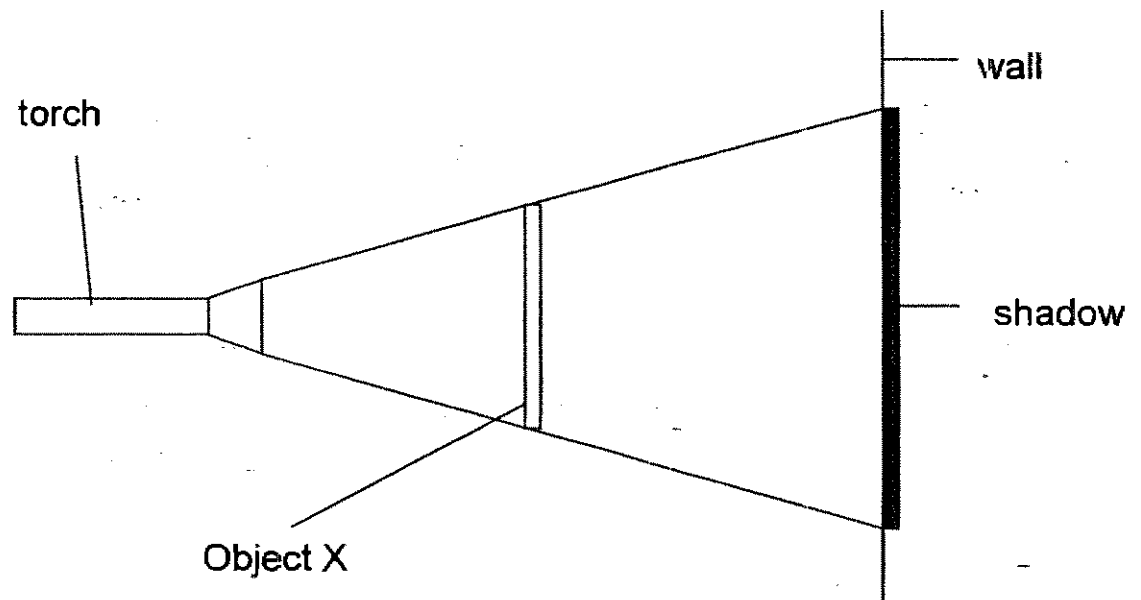
blood returning to the heart



Which types of blood vessels are A, B and C likely to be?

|     | X         | Y         | Z         |
|-----|-----------|-----------|-----------|
| (1) | vein      | capillary | artery    |
| (2) | vein      | artery    | capillary |
| (3) | artery    | capillary | vein      |
| (4) | capillary | artery    | vein      |

16. When a ray of light from a torch is shone onto Object X, a dark shadow is formed on the wall. Object X is most likely to be a \_\_\_\_\_.



- (1) thin mirror
  - (2) clear spectacle lens
  - (3) translucent piece of glass
  - (4) transparent piece of plastic
17. Which of the following processes involve heat energy?

- A: Baking a cake.
- B: Ironing clothes.
- C: Melting butter on a plate.
- D: Setting jelly in a refrigerator.

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

18. Which of the following gives out light?

- A: Fire
- B: Stars
- C: Lightning
- D: The Moon

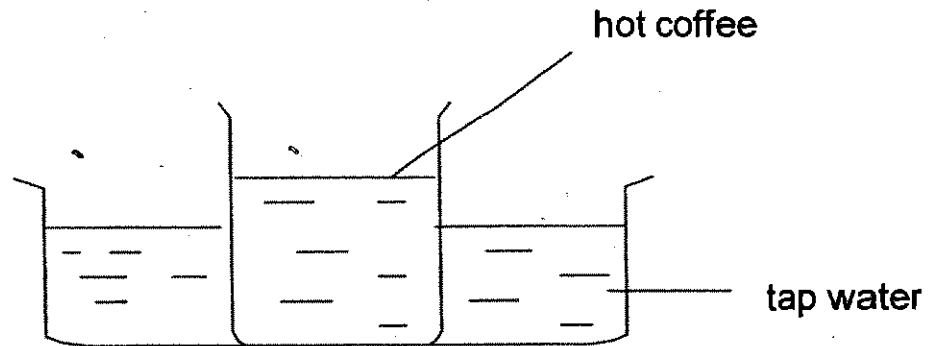
- (1) A and C only
- (2) A and B only
- (3) B and D only
- (4) A, B and C only

19. Which of the following statements about the Sun are correct?

- A: The Sun is our main source of heat and light.
- B: The energy from the Sun is the source of all food energy.
- C: The energy from the Sun enables the water cycle to go on.
- D: The energy from the Sun is passed from animals to plants.

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

20.



In the diagram above, a beaker of hot coffee is placed in a basin of tap water. After some time, the \_\_\_\_\_.

- A: coffee loses heat
- B: tap water loses heat
- C: coffee gains heat
- D: tap water gains heat

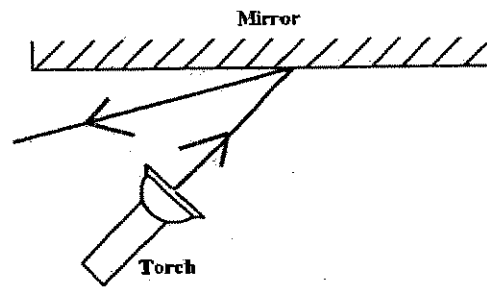
- (1) A only
- (2) B only
- (3) A and D only
- (4) B and C only

21. Which of the following statements about energy are correct?

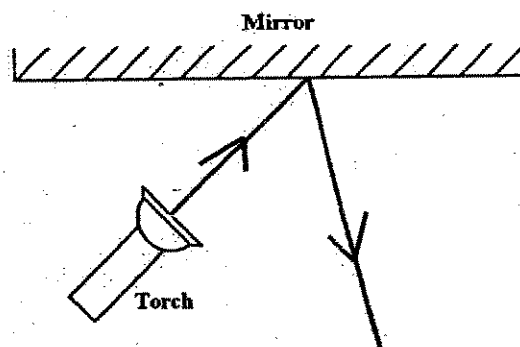
- A: It is a kind of matter.
- B: It enables things to move.
- C: It has a definite volume.
- D: It can be transferred from one place to another.

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

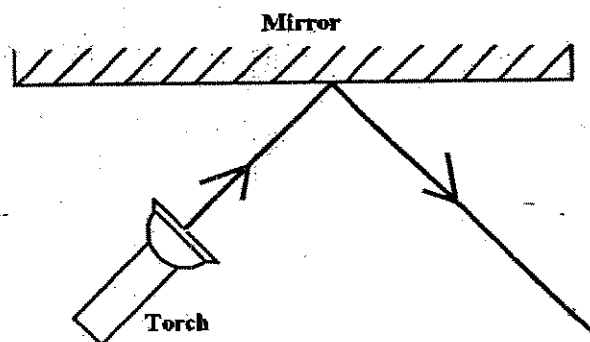
22. Tom set up a mirror and shone a torch onto it. Which one of the following diagrams shows the correct path of the ray of light reflected by the mirror?



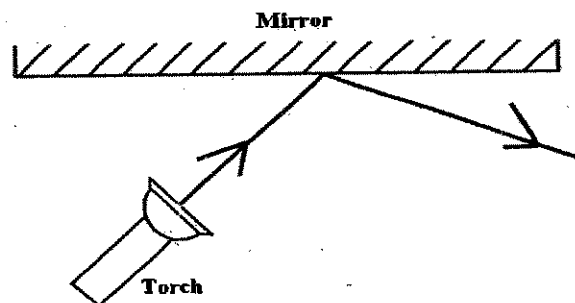
(1)



(2)

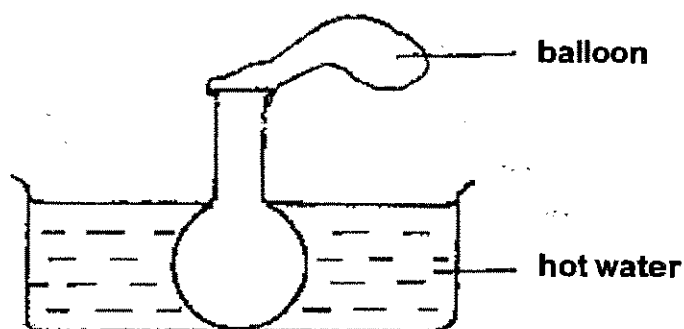


(3)



(4)

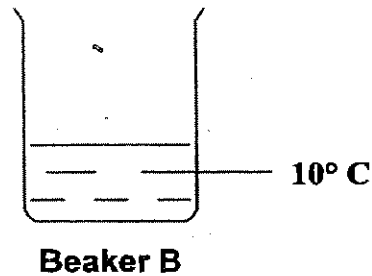
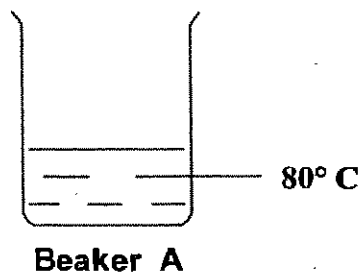
23. A pupil carried out an experiment. He set up the apparatus as shown in the diagram below.



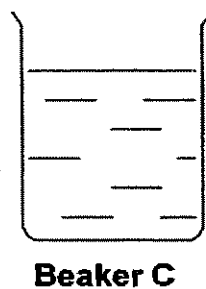
After some time, he observed that the balloon had inflated. This happened because \_\_\_\_\_ expands when heated.

- (1) air
- (2) water
- (3) the balloon
- (4) the bottle

24. Mark had two beakers of water containing equal amount of water.



Mark then poured the water from Beaker A and Beaker B into Beaker C,



The temperature of the water in Beaker C would be \_\_\_\_\_

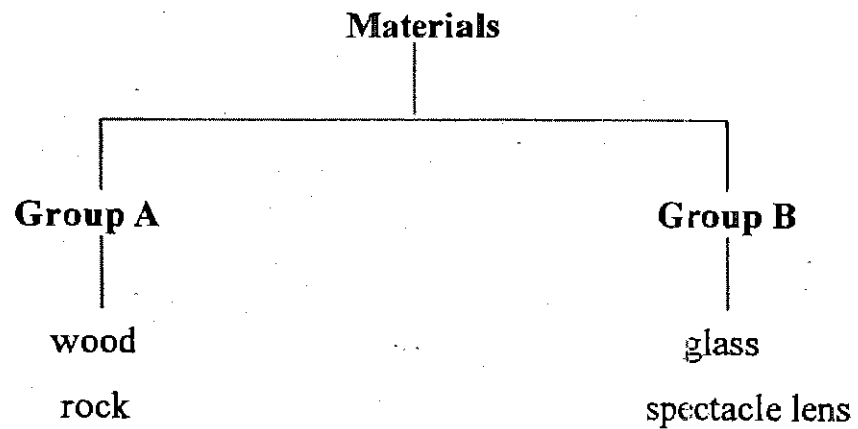
- (1) less than 10°C
- (2) more than 80°C
- (3) less than 80°C but more than 10°C
- (4) more than 80°C but less than 100°C

25. Which one of the following can reduce the strength of a magnet?

- A: Dropping the magnet
- B: Heating the magnet.
- C: Hammering the magnet.

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

26. The classification chart shows 2 groups of materials.

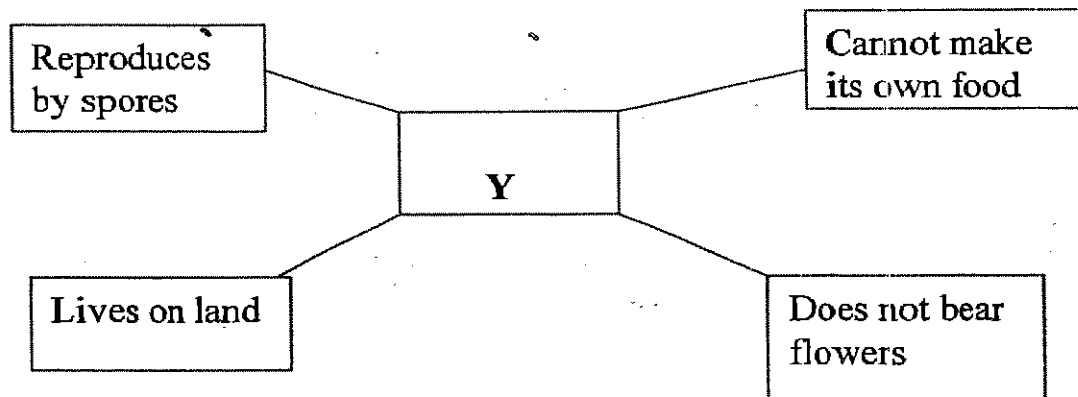


Which of the following correctly describes the materials in each group?

|    | Group A          | Group B         |
|----|------------------|-----------------|
| 1) | Magnetic         | Non-magnetic    |
| 2) | Smooth           | Rough           |
| 3) | Opaque           | Transparent     |
| 4) | Made from animal | Made from plant |



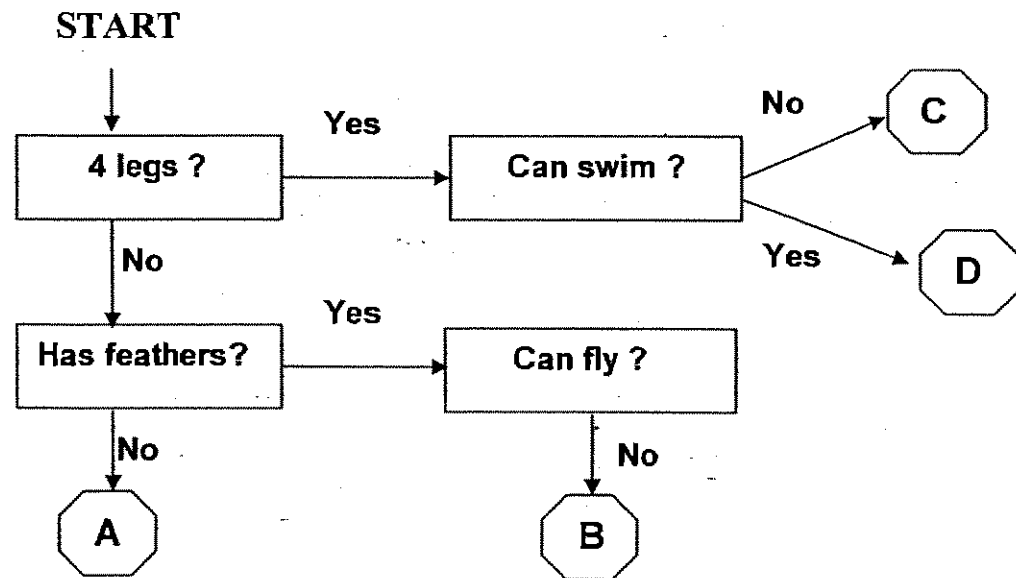
27. The diagram below shows the characteristics of Organism Y.



Which one of the following **cannot** be Organism Y?

- (1) moss
- (2) mould
- (3) toadstool
- (4) bracket fungi

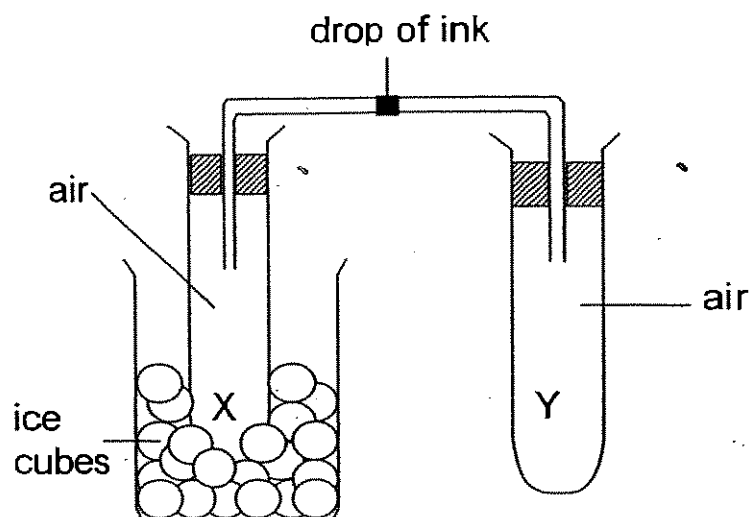
28. The flow chart below shows the characteristics of four animals A, B, C and D.



Which of the following groups of animals are likely to be Animals A, B, C and D?

|    | Animal A  | Animal B | Animal C | Animal D |
|----|-----------|----------|----------|----------|
| 1) | butterfly | crow     | lion     | frog     |
| 2) | fish      | eagle    | bat      | turtle   |
| 3) | sealion   | penguin  | wolf     | toad     |
| 4) | penguin   | ostrich  | platypus | crab     |

29. The diagram below shows a glass tube connecting two test tubes X and Y.



If test tube X is placed in a beaker containing ice cubes, the drop of ink will \_\_\_\_\_.

- 1) expand
  - 2) will not move
  - 3) move towards X
  - 4) move towards Y
30. Which of the following comparisons between the life cycle of a mosquito and that of a butterfly are correct?

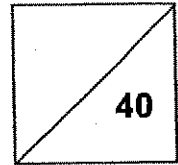
|   |                                      | <b>Mosquito</b> | <b>Butterfly</b> |
|---|--------------------------------------|-----------------|------------------|
| A | Lays eggs in water                   | Yes             | No               |
| B | Has 4 stages in its life cycle       | Yes             | Yes              |
| C | The young resembles the adult        | No              | Yes              |
| D | It is a pest during the larval stage | Yes             | No               |

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

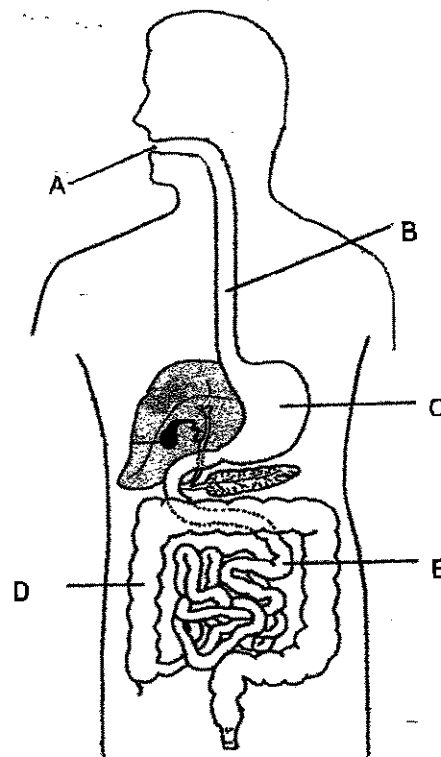
**Primary 4 Science Semestral Assessment 2 (2007)**

Name: \_\_\_\_\_ ( )

Class: P4 ( )

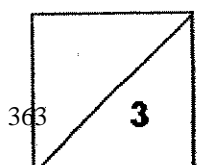
**Section B: 40 marks****Answer all the questions in the spaces provided.**

31. The diagram below shows the digestive system of a man.

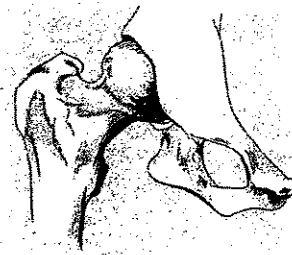


Study the diagram carefully and complete the sentences below with the correct letters.

- (a) Food takes the longest time to be digested at \_\_\_\_\_. [1]
- (b) Water is taken away from the undigested food at \_\_\_\_\_. [1]
- (c) Digested food passes into the blood stream at \_\_\_\_\_. [1]



32. The diagram below shows an example of a joint found in our body.



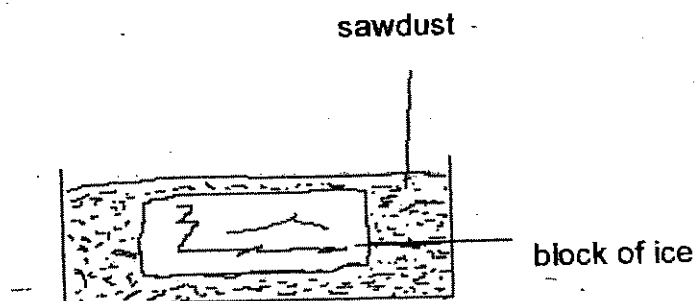
- (a) What is the name of this kind of joint? [1]

\_\_\_\_\_

- (b) Name one part of the body where this kind of joint can be found. [1]

\_\_\_\_\_

33. Some boys covered a block of ice with sawdust as shown in the diagram below.

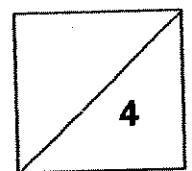


- (a) How does the sawdust prevent the ice from melting quickly? [1]

\_\_\_\_\_

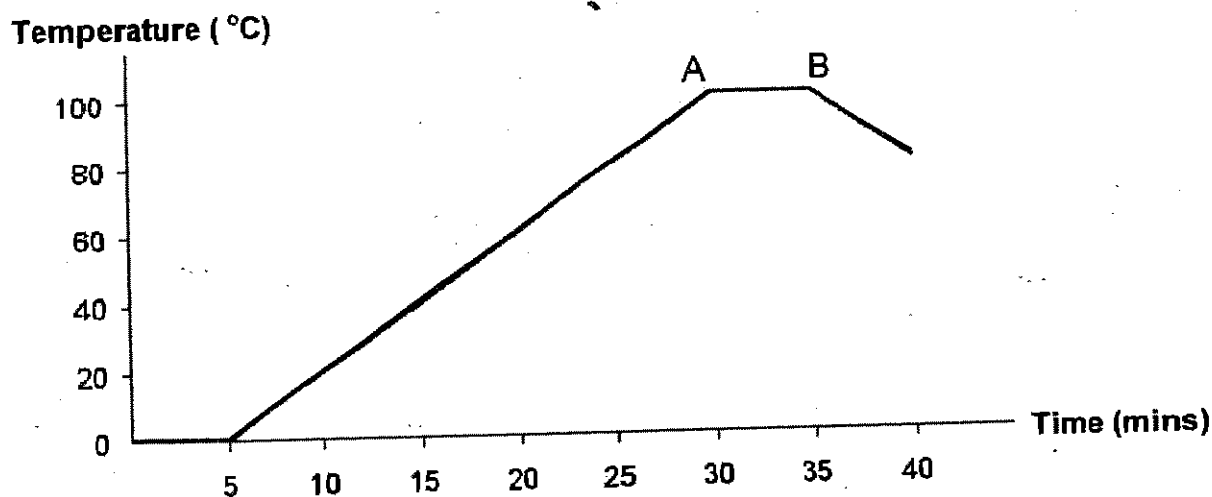
- (b) What other material can the boys put in the box to prevent the ice from melting quickly? [1]

\_\_\_\_\_



364

34. Some ice cubes are placed in the beaker to be heated. The graph below shows the change in temperature of water over a short period of time.



- (a) What is the change of state of the ice cubes during the first 5 minutes? [1]

---

- (b) What processes are taking place at AB? [1]

(i) 

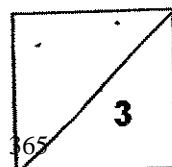
---

(ii) 

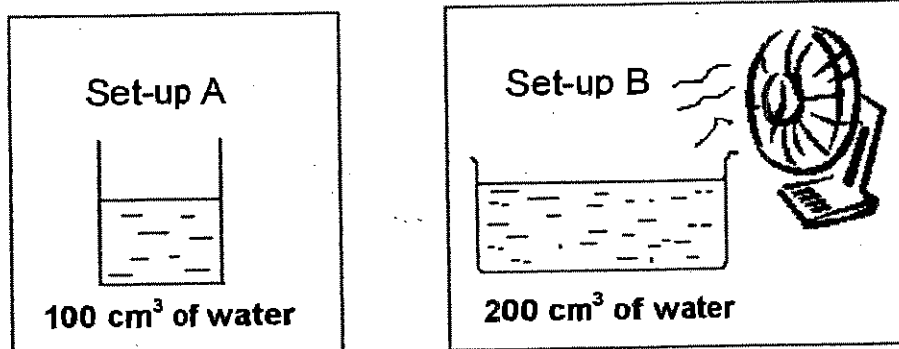
---

- (c) What could have caused the temperature to drop after thirty-five minutes? [1]

---



35. An experiment was set up to find out how wind affects the rate of evaporation of water. The experiment was set up as shown below.



- (a) Give 2 reasons why this experiment was not a fair one.

- (i) \_\_\_\_\_ [1]  
(ii) \_\_\_\_\_ [1]

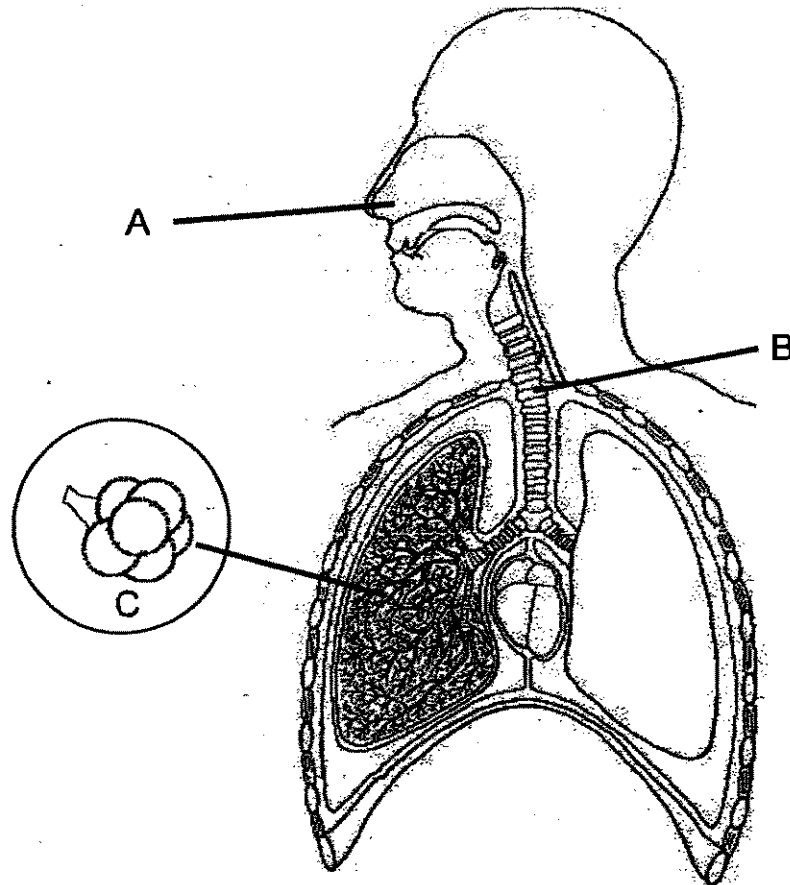
- (b) If the experiment was done correctly, what should be measured to find the result? [1]

\_\_\_\_\_  
\_\_\_\_\_

- (c) Beside using a fan, how else can you evaporate the water in Set-up B faster? [1]

\_\_\_\_\_  
\_\_\_\_\_

36. The diagram below represents the respiratory system of a man.



Name the different parts represented by the letters in the diagram above.

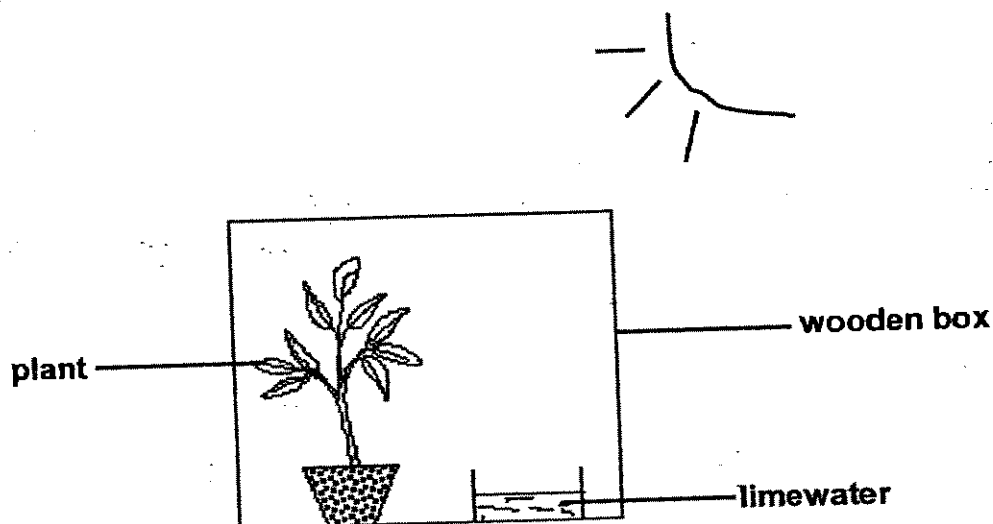
A: \_\_\_\_\_ [1]

B: \_\_\_\_\_ [1]

C: \_\_\_\_\_ [1]



37. A plant and a beaker of limewater are sealed up in a wooden box. The wooden box is left under the sun for one day.



(a) What will happen to the limewater? [1]

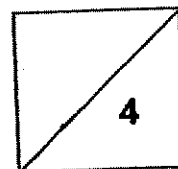
\_\_\_\_\_

(b) What process has taken place to cause the change in the limewater? [1]

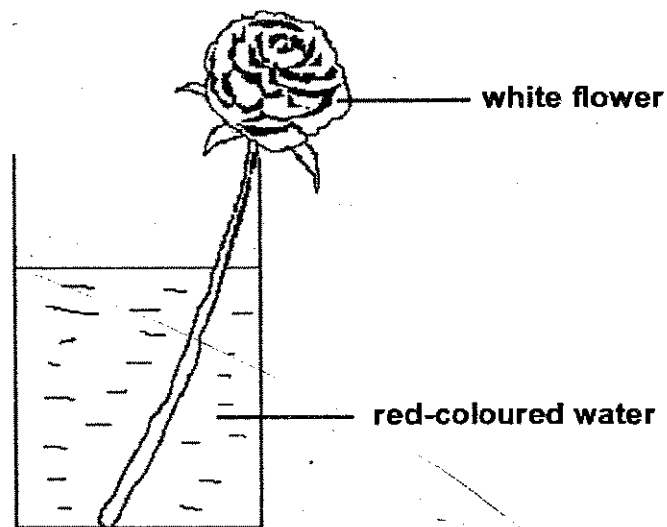
\_\_\_\_\_

(c) Complete the table below to show the exchange of gases during this process. [2]

|               |  |
|---------------|--|
| Gas taken in  |  |
| Gas given out |  |



38. Kenny put a white flower in a beaker of red-coloured water as shown below.



- (a) What would happen to the white flower after 1 day? [1]

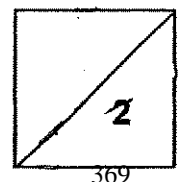
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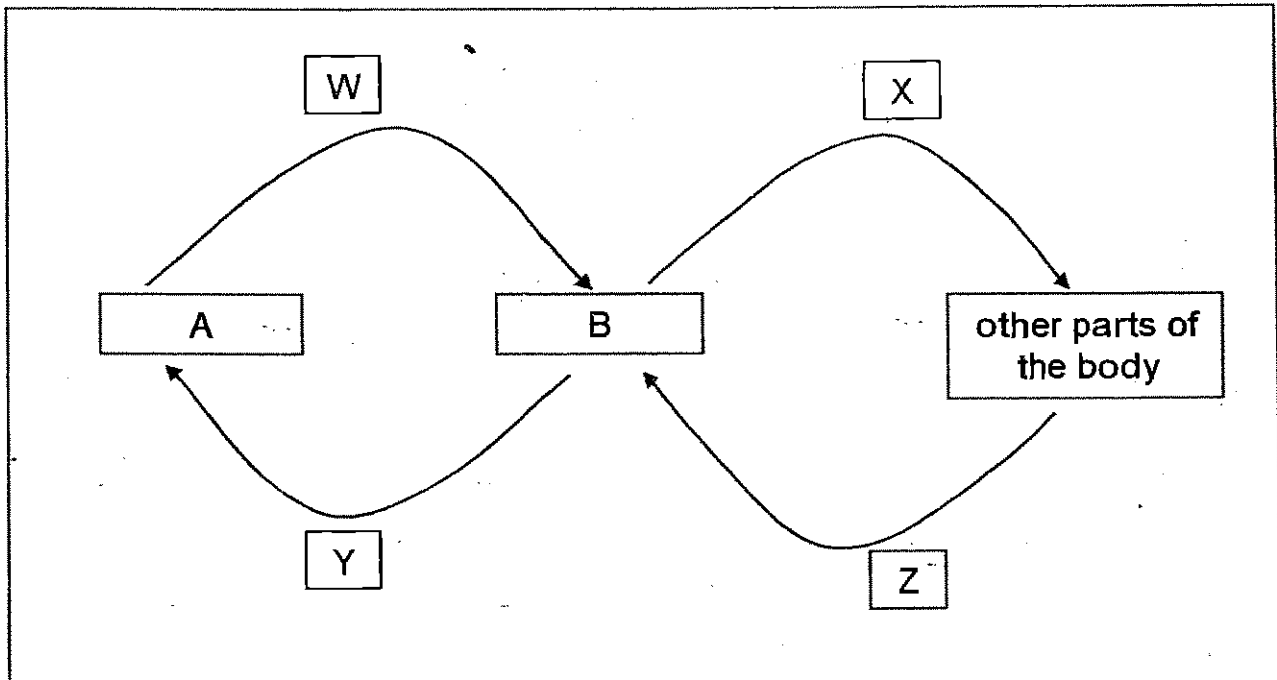
- (b) What does this experiment show? [1]

---

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39. The diagram below shows the human circulatory system.



Arrows W, X, Y and Z represent the movement of blood. Boxes A and B each represent a different organ.

(a) What is organ B? \_\_\_\_\_ [1]

(b) What is the function of organ B? [1]

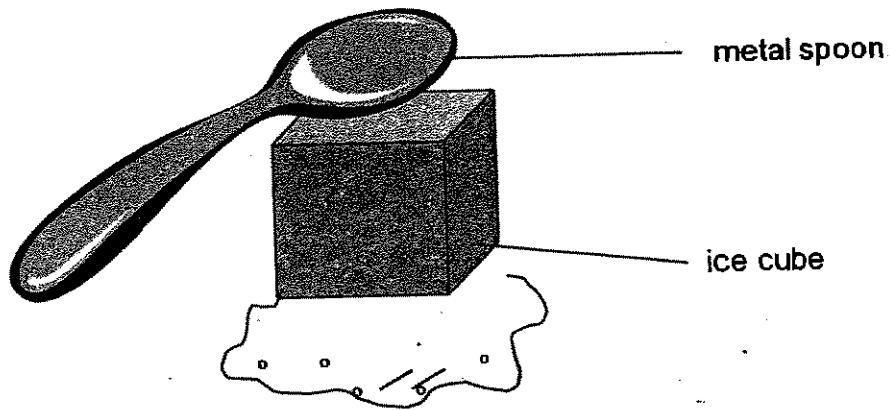
---

---

(c) Which arrow(s) represent(s) the movement of blood rich in carbon dioxide? [1]

---

40. Mary placed a metal spoon on an ice cube as shown in the diagram below.



After a while, she observed that there were some changes to the spoon and the ice cube.

- (a) What did she observe when she touched the spoon? [1]

---

- (b) Explain why this happened. [1]

---

- (c) What change of state did the ice go through? [1]

---

41. John encountered a problem. He could not loosen two metal cups which were stuck together. He was asked to use all the equipment to solve his problem.



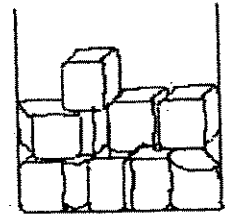
Two metal cups



a tub



a jar of hot water



ice cubes

Describe how John could separate the two metal cups. [3]

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---

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---

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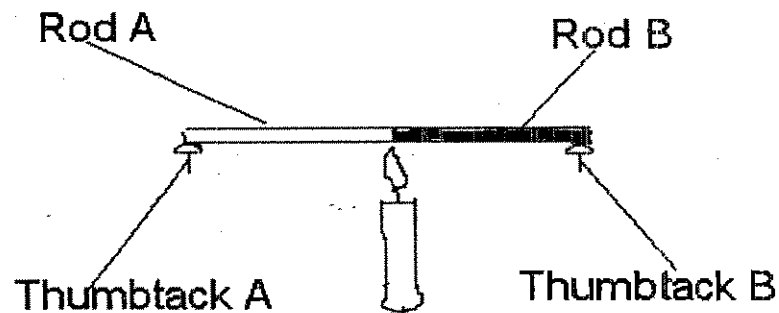
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42. Two different metal rods (Rod A and Rod B) of the same length and diameter are joined together as shown below. Two thumbtacks A and B are stuck to Rod A and Rod B using wax.



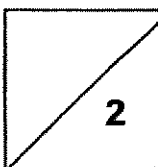
When the candle was lit, Thumbtack B dropped off first followed by Thumbtack A.

- (a) Explain why the wax melted and the thumbtacks dropped off. [1]

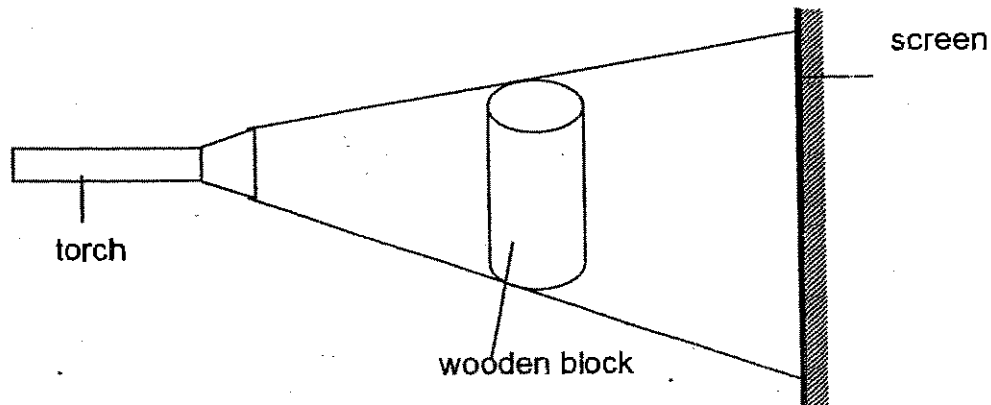
---

- (b) Explain why Thumbtack B dropped off first. [1]

---



43. A torch is shone at a wooden block to produce a shadow on the screen.



Write down two ways in which a bigger shadow of the wooden block can be formed.

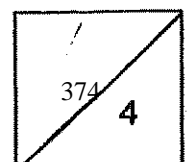
(a) \_\_\_\_\_ [1]

(b) \_\_\_\_\_ [1]

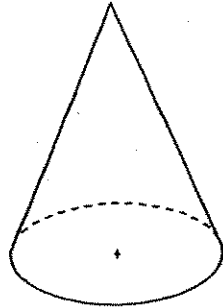
44. Classify the following materials under the correct headings. [2]

wool   iron   copper   porcelain

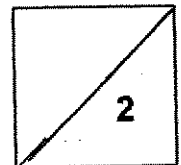
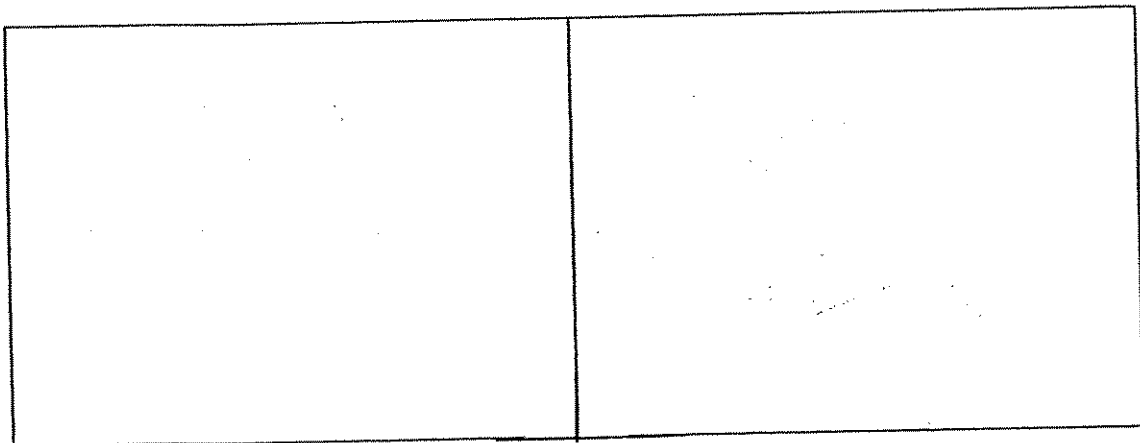
|      | Good conductors of heat | Poor conductors of heat |
|------|-------------------------|-------------------------|
| i)   |                         |                         |
| ii)  |                         |                         |
| iii) |                         |                         |
|      |                         |                         |



45. The diagram below shows a solid wooden cone.



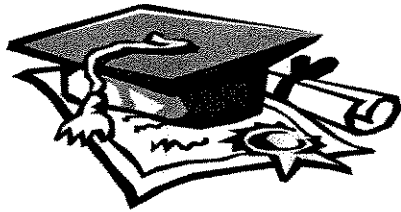
A strong ray of light is shone at the cone.  
In the boxes below, draw two different shadows that can be cast  
by the cone. [2]



End-of-Paper  
Please check your work carefully.







# ANSWER SHEET

AI TONG PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007  
SEMESTRAL ASSESSMENT (2)

1. 4
2. 3
3. 4
4. 2
5. 4
6. 1
7. 3
8. 1
9. 3
10. 2
11. 1
12. 4
13. 2
14. 3
15. 1
16. 1
17. 4
18. 4
19. 3
20. 3
21. 1
22. 3
23. 1
24. 3
25. 4
26. 3
27. 1
28. 3
29. 3
30. 1
- 31) a) C      b) D      c) E
- 32) a) It is the ball and socket joint.  
b) Our shoulder.
- 33) a) Sawdust prevents the surrounding heat from travelling the ice.  
b) Styrofoam, doth, wool.
- 34) a) Solid to liquid.  
b) i) boiling      ii) evaporation  
c) More water/ice was added into the beaker.
- 35) a) i) Set up A and set up B have different container.  
ii) Set up A and set up B have different volume of water.  
b) The water level of the water should be measured to find the result.  
c) Put the set up B of water under a hot sun.
- 36) A: nose      B: windpipe      C: air sacs
- 37) a) The lime water will turn chalky.  
b) The process is respiration.  
c) oxygen  
carbon dioxide

38) a) The white flower will turn red after 1 day.

b) The red coloured water traveled through the xylem tubes in the stem to the flower.

39) a) the heart.

b) Organ B help to pump blood to other parts of the body.

c) Arrows Z and Y.

40) a) The spoon will be cold.

b) This is because the spoon had loses heat to the ice cube.

c) From solid to liquid.

41) 1) Pour the hot water into the tub.

2) Immerse the outer metal cup into it.

3) The outer metal cup will expand.

4) Fill the inner metal cup with ice and it will contract.

5) Slowly separate the two cups.

42) a) The heat from the candle traveled along the rod to reach wax at the thumbtack and the wax melted.

b) Rod B is a better conductor of heat than Rod A.

43) a) Move the torch nearer to the wooden block.

b) Move the screen further from the wooden block.

44) i) iron, wool

ii) copper, porcelain

45) ▲ ●

**METHODIST GIRLS' SCHOOL (PRIMARY)**

**PRIMARY 4**

**END-OF-YEAR EXAMINATION 2007**

**SCIENCE**

**BOOKLET A**

**NAME :** \_\_\_\_\_ (   )

**CLASS :** \_\_\_\_\_

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

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

**Methodist Girls' School (Primary)**  
**Primary 4 Science**  
**End-of-Year Examination 2007**

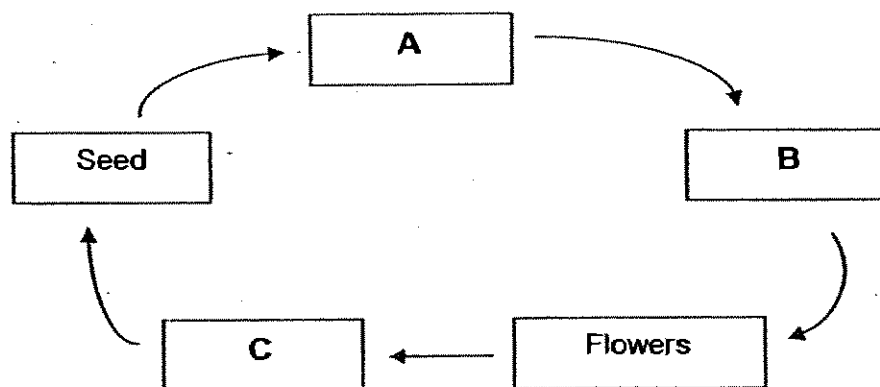
**Section A (30 × 2 = 60 marks)**

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. Some animals have lungs yet can live underwater and some animals have gills and can stay alive on land. How do mudskippers breathe and stay alive on land?

- (1) They breathe through gills and have air tubes.
- (2) They breathe through lungs and have air tubes.
- (3) They breathe through lungs and stored oxygen in their muscles.
- (4) They breathe through gills and have a gill chamber to store water.

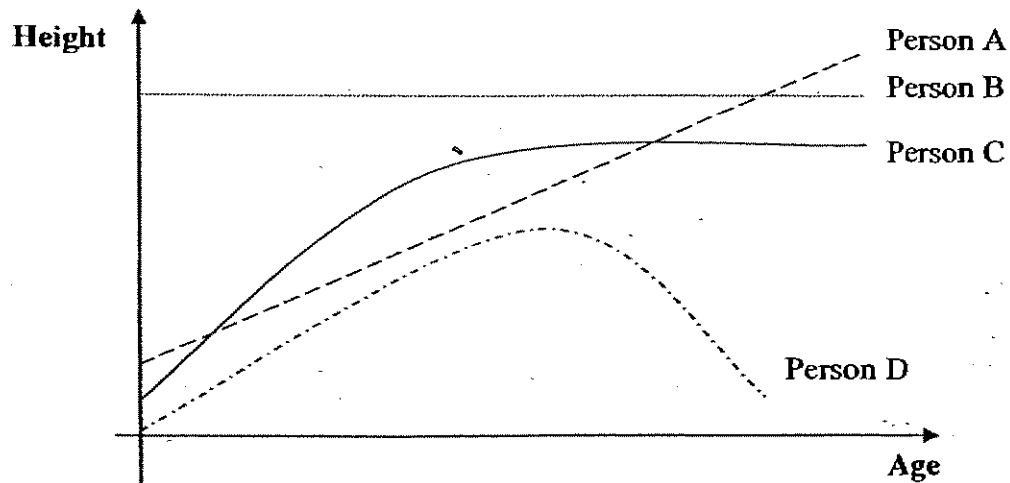
2. Study the life cycle of the string bean plant below.



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

|     | A           | B           | C           |
|-----|-------------|-------------|-------------|
| (1) | Adult plant | Fruit       | Seedling    |
| (2) | Adult plant | Seedling    | Fruit       |
| (3) | Seedling    | Fruit       | Adult plant |
| (4) | Seedling    | Adult plant | Fruit       |

3. The graph below shows the relationship of the height and the age of four people.



Which line has correctly represented the relationship?

- (1) Person A
  - (2) Person B
  - (3) Person C
  - (4) Person D
4. Which of the following bone(s) has/have the function(s) of protecting organ(s) in the human body?
- A: Skull,
  - B: Ribcage
  - C: Thigh bone
  - D: Ankle bone
- (1) A and D only
  - (2) A and B only
  - (3) A, B and D only
  - (4) All of the above

5. Figure A shows a ring of bark containing phloem removed from a plant. The xylem remained intact.



Figure A

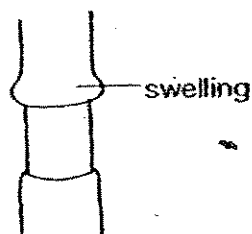
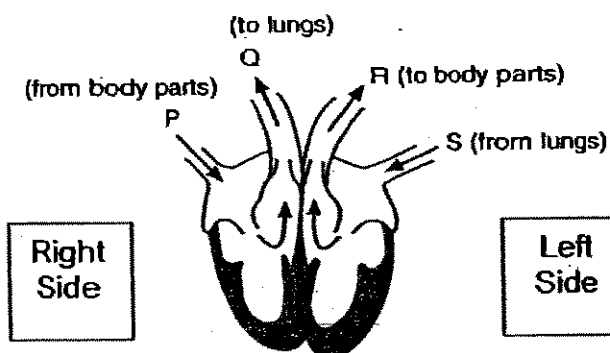


Figure B

Figure B shows appearance of the stem a few weeks later. Which statement best explains the presence of swelling?

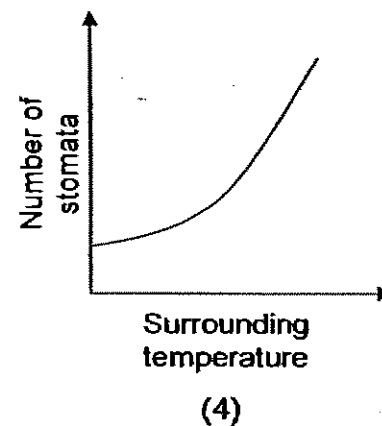
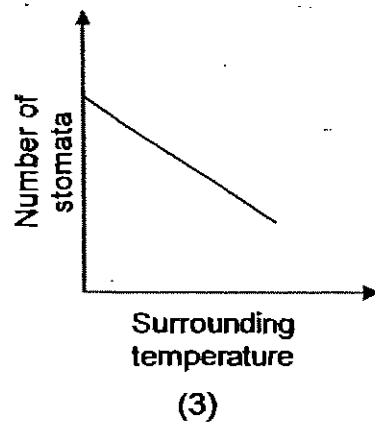
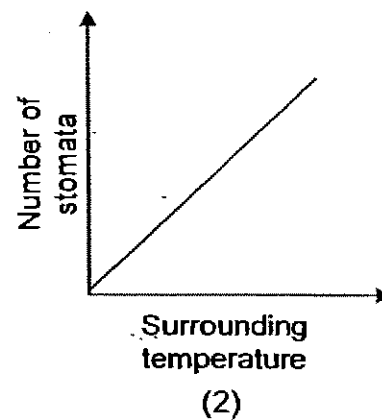
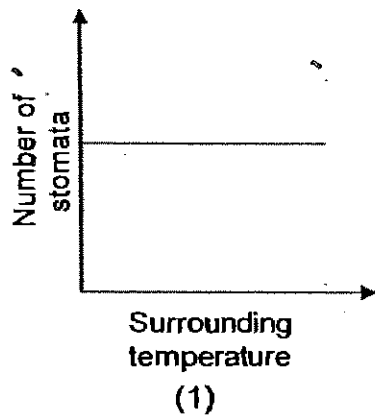
- (1) Food travelling up the stem is trapped above the ring.
  - (2) Water travelling up the stem is trapped above the ring.
  - (3) Food travelling down the stem is trapped above the ring.
  - (4) Water travelling down the stem is trapped above the ring.
6. Study the diagram below.



P, Q, R and S are blood vessels that carry blood to or from the heart. Which blood vessels carry blood rich in oxygen and which blood vessels carry blood rich in carbon dioxide?

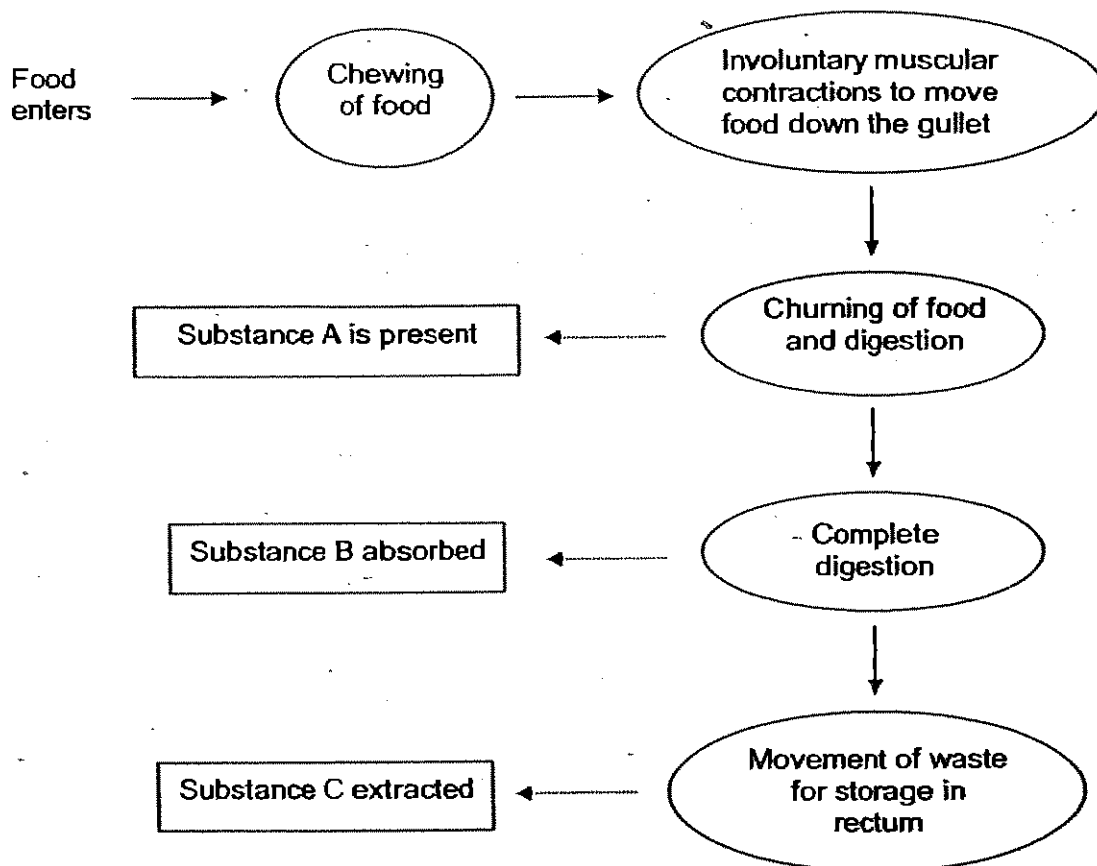
|     | Carry blood rich in oxygen | Carry blood rich in carbon dioxide |
|-----|----------------------------|------------------------------------|
| (1) | P and Q                    | R and S                            |
| (2) | R and S                    | P and Q                            |
| (3) | P and R                    | Q and S                            |
| (4) | Q and R                    | P and S                            |

7. Which one of the following graphs shows the likely relationship between the number of stomata on the leaves of plants growing in deserts and its surrounding temperature?





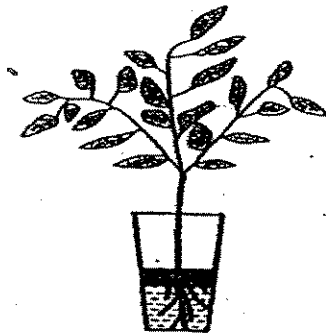
8. The flow chart below shows the processes involved in the human digestive system.



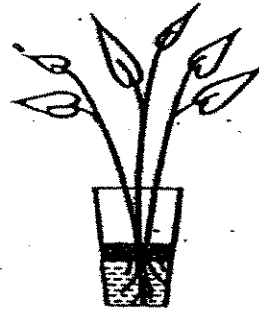
Based on the flow chart above, what are the substances A, B and C respectively?

|     | A               | B         | C     |
|-----|-----------------|-----------|-------|
| (1) | Saliva          | Nutrients | Water |
| (2) | Saliva          | Water     | Waste |
| (3) | Digestive juice | Nutrients | Water |
| (4) | Digestive juice | Water     | Waste |

9. A live plant and an artificial plant were each placed into identical containers filled with  $300 \text{ cm}^3$  of water. A layer of oil was poured into each container to prevent the water from evaporating.



Live plant in  
Container A

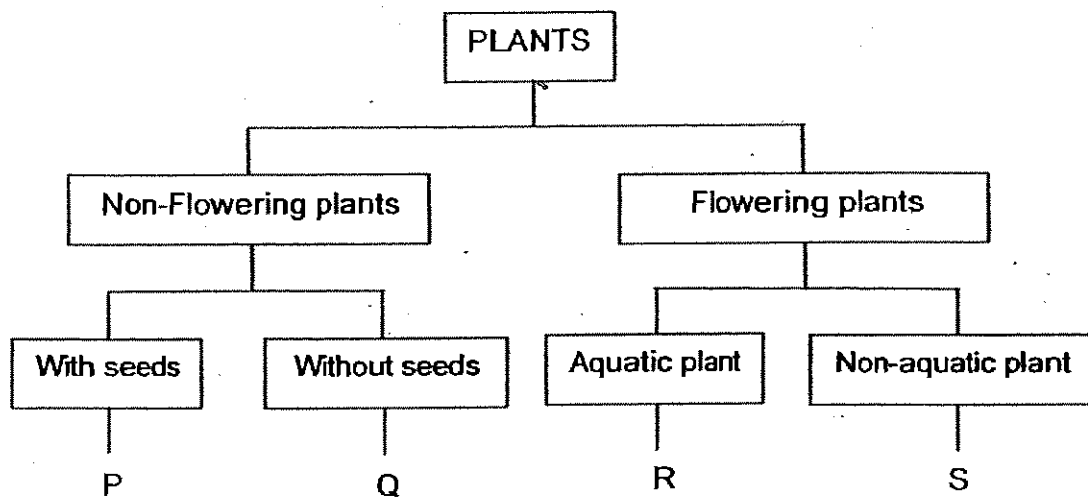


Artificial plant  
in Container B

The volume of the water in each container was measured after a week. Which of the following shows the correct amount of water in the respective containers?

|     | Volume of water ( $\text{cm}^3$ ) after a week |             |
|-----|------------------------------------------------|-------------|
|     | Container A                                    | Container B |
| (1) | 275                                            | 300         |
| (2) | 275                                            | 285         |
| (3) | 285                                            | 275         |
| (4) | 300                                            | 300         |

10. The following chart shows the classification of plants.



Which one of the following plants is Q?

- (1) Pine
- (2) Pong pong
- (3) Morning glory
- (4) Birds' nest fern

11. Objects around us are usually classified as *living things* and *non-living things*. Look at the table below and identify the objects that are **incorrectly** classified.

| Objects around us            |                                                |                                 |
|------------------------------|------------------------------------------------|---------------------------------|
| Living Things                | Non-living Things                              |                                 |
|                              | Once Alive                                     | Never Alive                     |
| Human Being<br>Flower<br>Cat | Synthetic sponge<br>Plastic toy duck<br>Mutton | Safety pin<br>Scissors<br>Cloud |

- (1) Flower and Cloud only
- (2) Cat and Synthetic sponge only
- (3) Mutton and Plastic toy duck only
- (4) Plastic toy duck and Synthetic sponge only

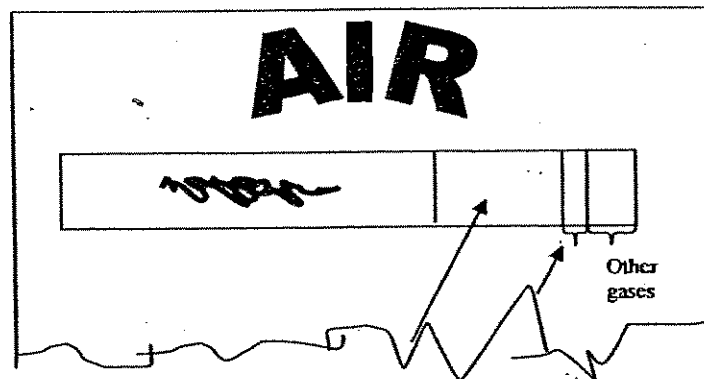
12. The table below shows the freezing points and boiling points of four unknown substances, E, F, G and H.

| Substance | Freezing point ( $^{\circ}\text{C}$ ) | Boiling point ( $^{\circ}\text{C}$ ) |
|-----------|---------------------------------------|--------------------------------------|
| E         | 0                                     | 100                                  |
| F         | 8                                     | 120                                  |
| G         | 23                                    | 79                                   |
| H         | 39                                    | 90                                   |

Which one of the following statements is true?

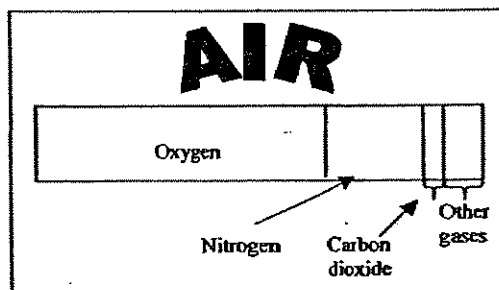
- ~~(1)~~ Substance E is a solid at  $8^{\circ}\text{C}$ .  
~~(2)~~ Substance F is a liquid at  $7^{\circ}\text{C}$ .  
~~(3)~~ Substance G will change its state at  $79^{\circ}\text{C}$ .  
~~(4)~~ Substance H is the only substance at liquid state at  $90^{\circ}\text{C}$ .
13. Whenever the soup is too hot, our mothers would always advise us to blow at the surface of the soup before sipping it. How does blowing help to cool the soup?
- (1) Blowing takes away the hot air above the soup.  
(2) When we blow, our cooler saliva will mix with the hot soup to make it cooler.  
(3) Blowing helps to decrease the rate of heat loss from the soup to the surrounding.  
(4) When we blow, we will feel cooler, thus the soup entering our mouth will feel cooler.
14. Shawn filled a bottle with water to the brim and placed it in the freezer. Two hours later, he observed that the water had frozen and the bottle had cracked. Which statement has correctly explained what had happened?
- ~~(1)~~ The bottle is not able to withstand the low temperature, thus it cracked.  
~~(2)~~ Water expands during freezing, it pushes outwards and causes the bottle to crack.  
~~(3)~~ Water contracts during freezing, it pushes outwards and causes the bottle to crack.  
~~(4)~~ When water freezes to ice, it gets heavier and the bottle could not withstand the weight, thus the bottle cracked.

15. James has found a very old chart that shows the composition of gases that made up air. However, some information on the chart has gone missing.

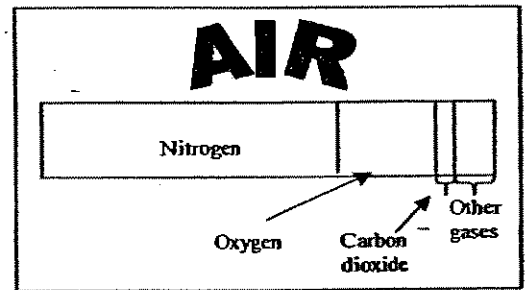


Which chart would most likely be the correct one?

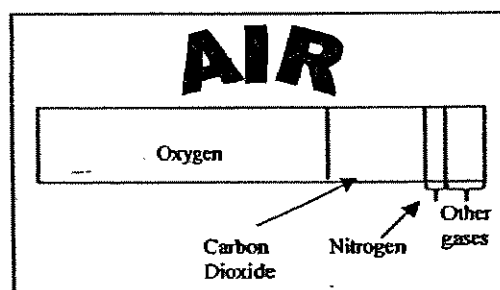
(1)



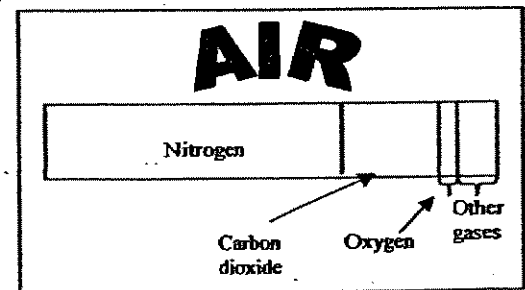
(2)



(3)



(4)



16. The diagram below shows the transfer of energy from the Sun to animals.



Which organisms can X and Y be?

|     | X           | Y     |
|-----|-------------|-------|
| (1) | Rabbit      | Deer  |
| (2) | Hen         | Zebra |
| (3) | Caterpillar | Tiger |
| (4) | Grasshopper | Bird  |

17. Most of our household electrical appliances give out heat. Some give out useful heat while others do not. Which statements indicate the disadvantages of producing heat when it is not needed?

A: It is a waste of energy.

B: ~~It contributes to global warming.~~ It increases our body temperature

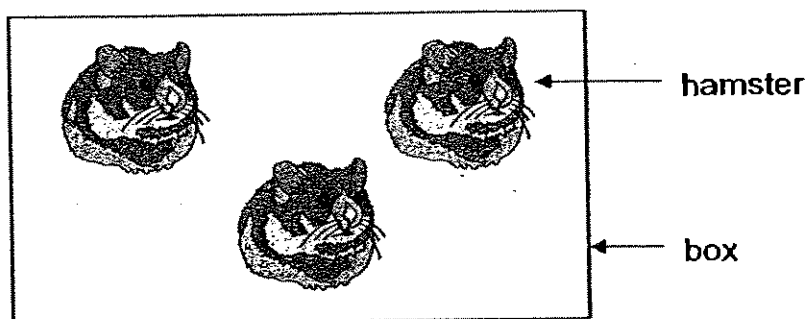
C: It heats up the environment unnecessarily.

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

18. Some fabrics are suitable to make umbrella while some are not. Which is/are the more important reason(s) to decide which fabrics are suitable to make umbrella?

- (1) The fabrics must be very cheap.  
 (2) The fabrics must be transparent.  
 (3) The fabrics must have beautiful prints.  
 (4) The fabrics must be waterproof and durable.

19. Three hamsters were trapped inside a box for 30 minutes. There was no fresh air entering the box. Which of the following shows how the amount of gases in the box changed after 30 minutes?



|     | Oxygen   | Carbon dioxide | Water vapour |
|-----|----------|----------------|--------------|
| (1) | decrease | increase       | no change    |
| (2) | increase | decrease       | no change    |
| (3) | increase | decrease       | increase     |
| (4) | decrease | increase       | increase     |

20. A certain matter has mass and a fixed volume. It can flow and is a good conductor of heat. It is \_\_\_\_\_.

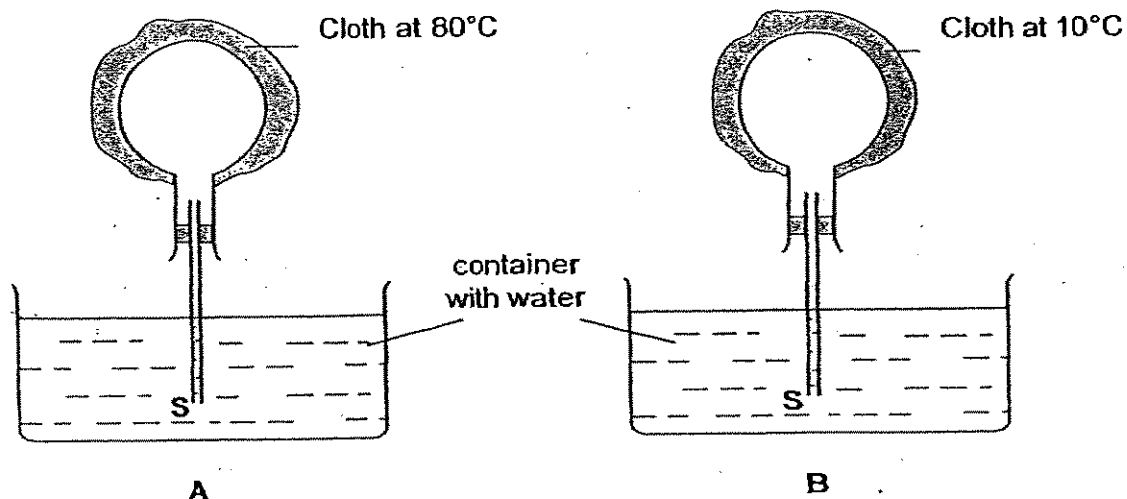
- ☒ (1) iron  
☒ (2) mercury  
☒ (3) water vapour  
☒ (4) carbon dioxide

21. Cecilia enjoys playing tennis in the day. She wonders where the energy comes from whenever she swings her racket to hit the ball.

- (1) The energy comes from the pull of gravity below her.  
 (2) The energy comes from the sun which is shining at her.  
 (3) Whenever she runs, her body will create energy within her.  
 (4) The energy comes from the food and drinks that she consumed.

## 22. Study set-ups A and B below.

Which one of the following could be observed two minutes after the cloth was placed on the flasks, A and B?



|     | Observation for A             | Observation for B             |
|-----|-------------------------------|-------------------------------|
| (1) | Water rises up the tube       | Water rises up the tube       |
| (2) | Water rises up the tube       | Bubbles escape from tube at S |
| (3) | Bubbles escape from tube at S | Water rises up the tube       |
| (4) | Bubbles escape from tube at S | Bubbles escape from tube at S |

## 23. Which material(s) is/are good conductor(s) of heat?

~~A~~: Metal  
~~B~~: Glass  
~~C~~: Clay

~~D~~: Rubber  
~~E~~: Plastic  
~~F~~: Wood

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



24. How do we know when pure water boils?

A: The smell changes.

B: The temperature reaches  $100^{\circ}\text{C}$ .

C: There are large bubbles of steam in the water.

D: There are small bubbles of water droplets in the water.

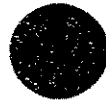
~~(1) A and B only~~

~~(2) B and C only~~

~~(3) B and D only~~

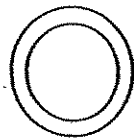
~~(4) B, C and D only~~

25. The diagram below shows a shadow formed on a screen.



Which one of the following objects could not have formed the shadow shown above?

(1)



A metal ring

(2)



A vase

(3)



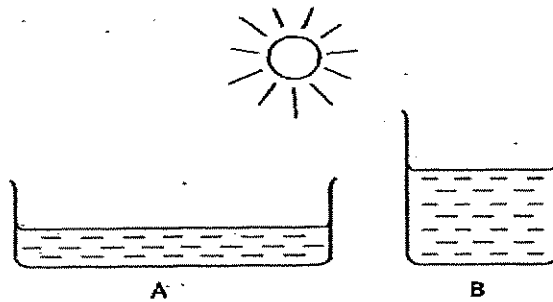
A cone

(4)

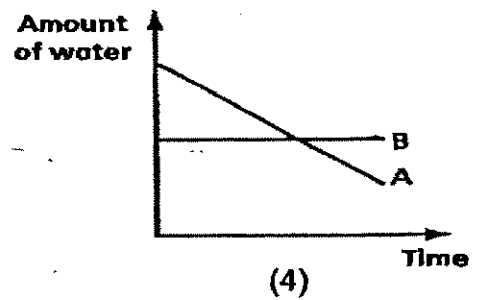
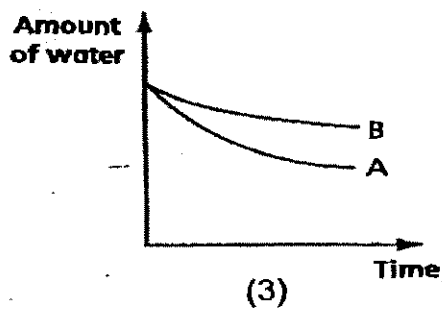
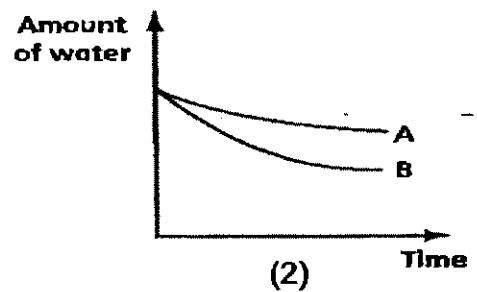
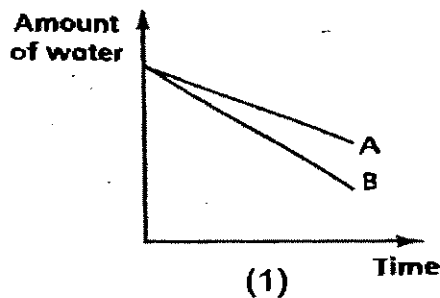


An egg

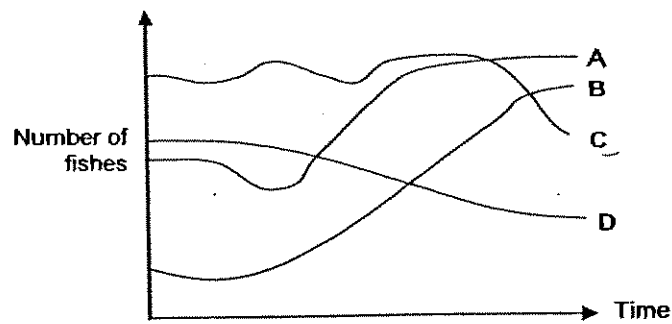
26. Candy placed two containers of water in the sun as shown below. Each container contained the same amount of water. She measured the change in the amount of water in the containers as time passes.



Which one of the following graphs correctly shows the changes in the amount of water in containers A and B?



27. The following graph shows the number of fish in rivers A, B, C and D over a period of time.

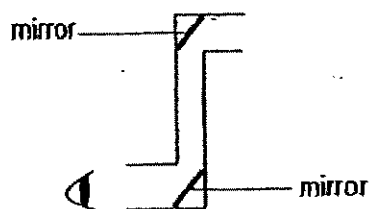


Which rivers are likely to be polluted?

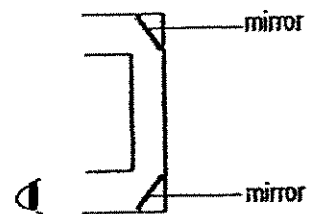
- ☒ (1) A and B only  
☒ (2) A and C only  
☒ (3) B and D only  
☒ (4) C and D only

28. Mary made 4 viewing scopes below. Which one of the following allows her to view the objects behind her?

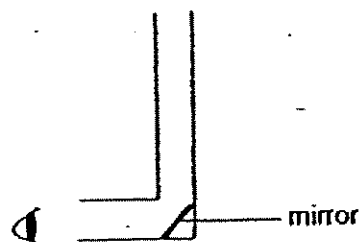
(1)



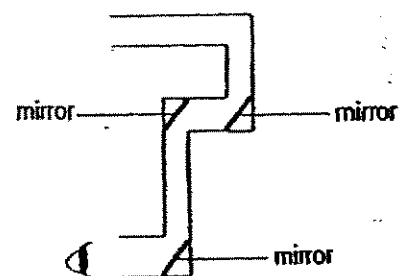
(2)



(3)



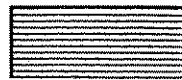
(4)



29. 4 objects, S, T, U and V are put close to each other to test if they are magnets. The results are shown below.



S



T

Attracts



U



S

Repels



V



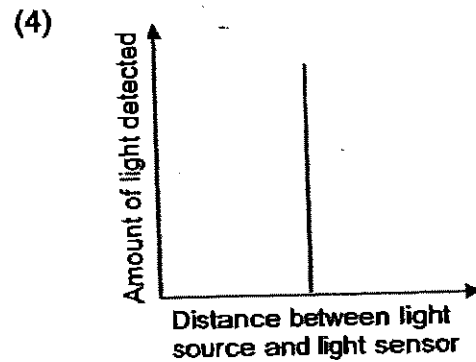
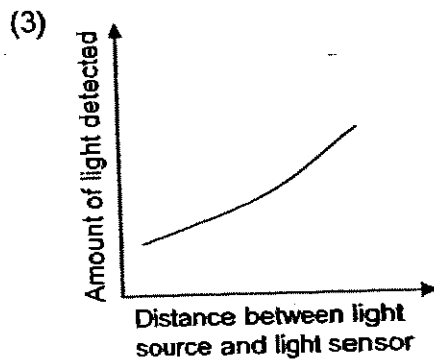
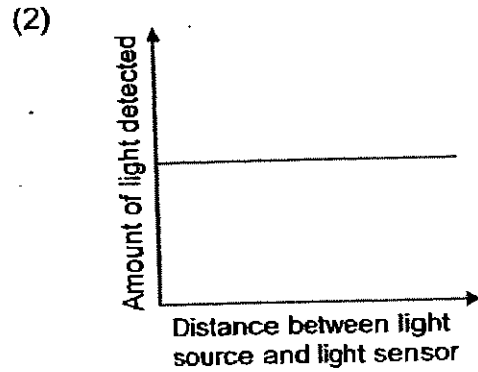
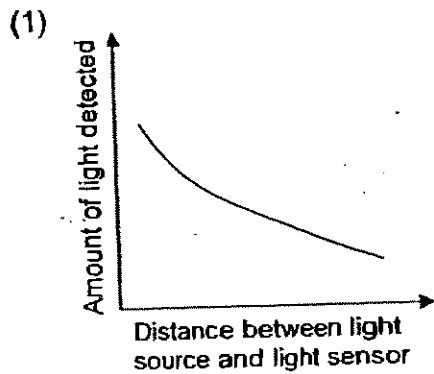
U

No reaction

Which of the following classification is **definitely true**?

|     | Magnets | Non-Magnetic Material |
|-----|---------|-----------------------|
| (1) | S, T    | V                     |
| (2) | U, S    | V, T                  |
| (3) | S, T, U | V                     |
| (4) | U, S    | V                     |

30. A light sensor in a data logger measures the amount of light that it is exposed to. Which of the following graphs shows how the reading of the data logger changes as the light source is moving towards the sensor?



**METHODIST GIRLS' SCHOOL (PRIMARY)****PRIMARY 4****END-OF-YEAR EXAMINATION 2007****SCIENCE****BOOKLET B1**

| SECTION | MARKS |
|---------|-------|
| A       | 60    |
| B1      | 14    |
| B2      | 26    |
| TOTAL   | 100   |

NAME : \_\_\_\_\_ (       )

CLASS : \_\_\_\_\_

**Total time for Booklets A and B: 1 h 30 min.****DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.  
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

**Section B1: Open-ended (6 questions = 14 marks)**

Read each question carefully and fill in the blanks with the correct answer.

31. All objects on earth are classified as living things or non-living things. One group of living things is called animals which have certain characteristics as shown in Table A.

| Animal | Characteristics of animals |              |             |                  |            |            |
|--------|----------------------------|--------------|-------------|------------------|------------|------------|
|        | Warm-blooded               | Have feelers | Have scales | Have young alive | Have wings | Have gills |
| M      |                            | ✓            |             |                  | ✓          |            |
| N      | ✓                          |              |             |                  | ✓          |            |
| O      | ✓                          |              |             | ✓                |            |            |
| P      |                            |              | ✓           |                  |            | ✓          |

Table A

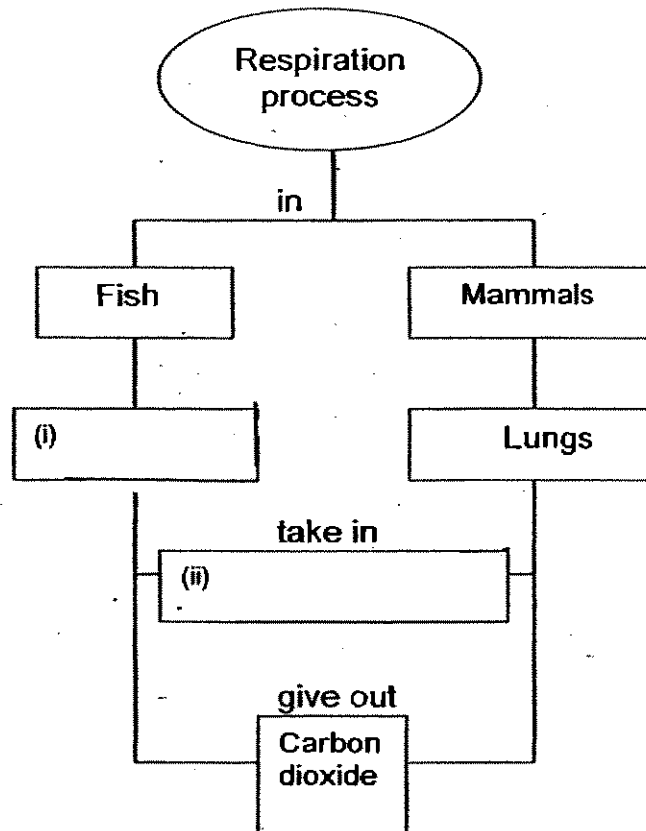
Animals can further be classified into sub-groups. In Table B, identify which sub-groups the animals N and P belong to. For each type of animal, give an appropriate example. The sub-group must not be repeated. (2m)

| Animal | Sub-group     | Example         |
|--------|---------------|-----------------|
| M      | <i>Insect</i> | <i>Housefly</i> |
| N      |               |                 |
| O      | <i>Mammal</i> | <i>Tiger</i>    |
| P      |               |                 |

Table B

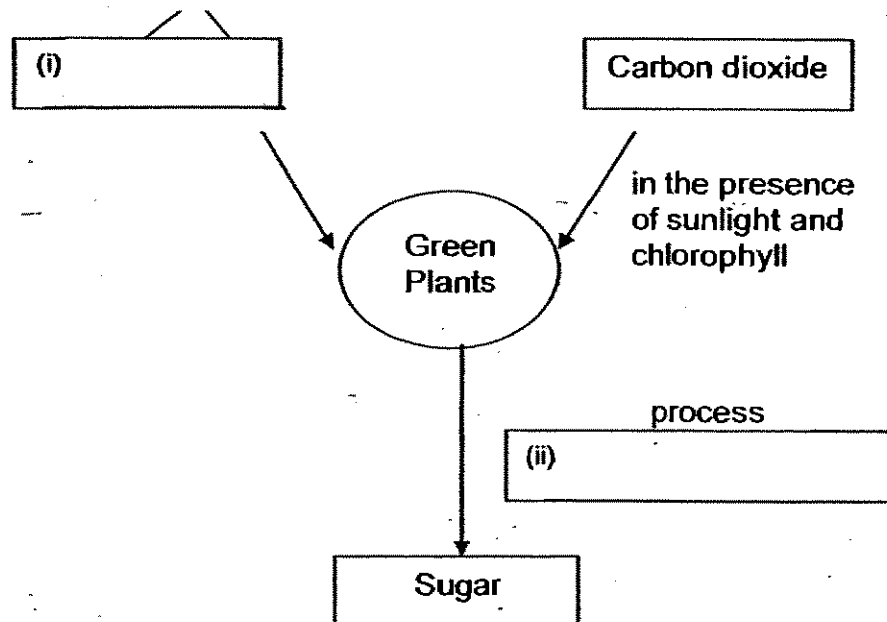
32. Study the concept maps below and fill in the blanks appropriately.

(a)



(1m)

(b)



(1m)



33. The diagram below shows a plant.



- (a) What is 'S'? (1m)

---

- (b) What will 'S' develop into? (1m)

---

34. One day, while Wei Lin was cutting some vegetables, she accidentally cut her finger and she could see blood flowing out from the wound. However, Wei Lin's mother told her not to worry and that the bleeding will stop after a while. The trickle of blood on Wei Lin's finger slows down after a while and thickens. The bleeding eventually stops.

- (a) Explain why is this so. (1m)

---

---

After a few days, a hard brownish layer appears over the cut area on Wei Lin's finger.

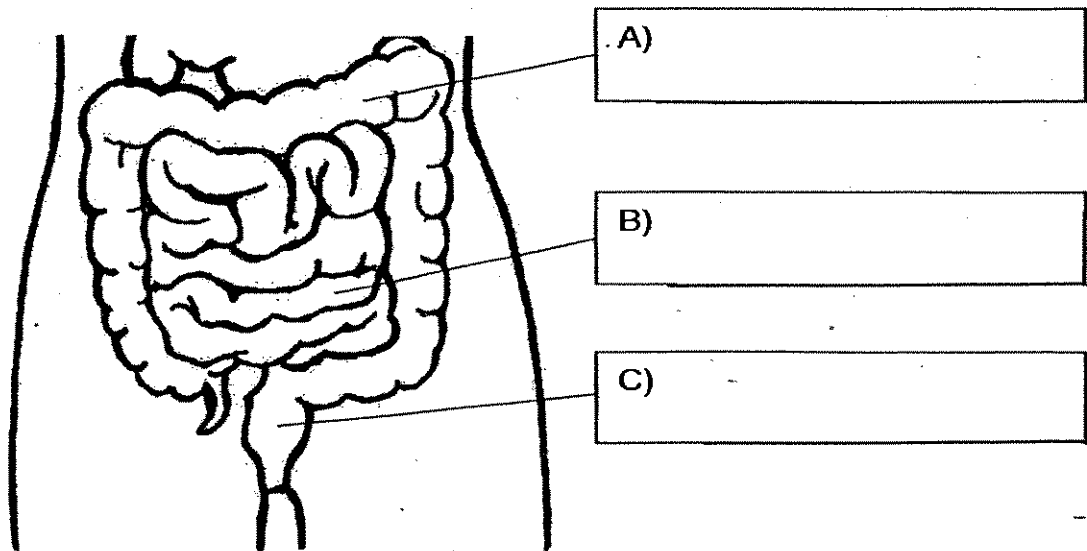
- (b) What is the brownish layer known as? ( $\frac{1}{2}$  m)

---

35. The diagram below shows a part of our digestive system.

(a) Label the parts A, B and C.

(1  $\frac{1}{2}$  m)



(b) In which organ of the digestive system is digestion completed? (1m)

---

(c) What is the function of 'A'? (1m)

---

---

36. Tom and Bala wanted to find out whether exercise affects their heartbeat and breathing rate. They performed the following exercises and recorded their results as shown below.

|      | Mass (kg) | Type of exercise | Duration of exercise (min) | Number of heartbeats per minute | Number of breaths per minute |
|------|-----------|------------------|----------------------------|---------------------------------|------------------------------|
| Tom  | 60        | Skipping         | 5                          | 120                             | 25                           |
| Bala | 70        | Jogging          | 10                         | 130                             | 40                           |

- (a) Based on the table, what is the relationship between the number of heartbeats and breathing rate? (1m)

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---

- (b) Based on the table above, the boys wanted to compare their number of heartbeats. The teacher commented that it is not a fair comparison:

Give **two** reasons to explain the teacher's comment. (2m)

(i) 

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(ii) 

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- End of paper -

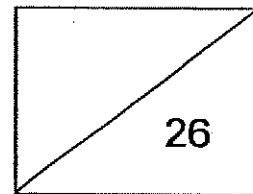
**METHODIST GIRLS' SCHOOL (PRIMARY)**

**PRIMARY 4**

**END-OF-YEAR EXAMINATION 2007**

**SCIENCE**

**BOOKLET B2**



**NAME :** \_\_\_\_\_ (       )

**CLASS :** \_\_\_\_\_

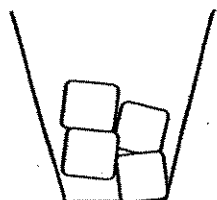
**Total time for Booklets A and B: 1 h 30 min.**

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

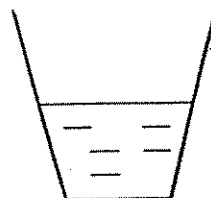
**Section B2: Open-ended (10 questions = 26 marks)**

Read each question carefully and fill in the blanks with the correct answer.

37. An experiment is set up as shown below. One glass contains some ice cubes while the other contains some hot water.



A glass of ice cubes

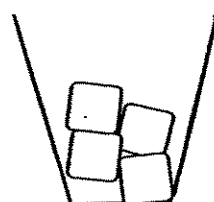


A glass of hot water

- (a) Indicate the changes of states you may expect to observe in each glass after 5 minutes. (2m)

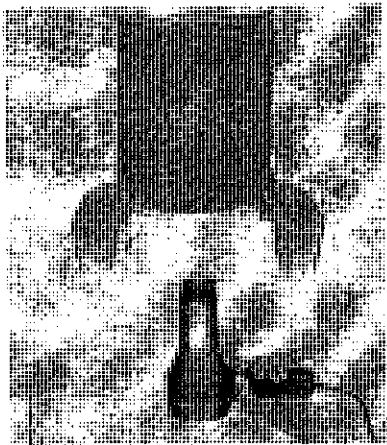
| Matter        | Changes of state (eg. <u>Gas</u> → <u>Liquid</u> ) |       |
|---------------|----------------------------------------------------|-------|
| i) Ice cubes  | _____                                              | _____ |
| ii) Hot water | _____                                              | _____ |

- (b) Some water droplets appeared on the glasses. Draw on the diagram below where the water droplets may appear. (1m)



A glass of ice cubes

38. Below is a simple experiment to show how a hot-air balloon work.

| Procedure                                                                                                                                                                                                                                                                                                                                                                | Picture                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"><li>1. Take a large paper bag and hold it with the mouth of the bag open and downward. Make sure there is no hole in it.</li><li>2. Now blow warm air from a hairdryer into the bag.</li><li>3. Let the hairdryer blow for 2 minutes and then turn it off immediately.</li><li>4. Let go of the bag and observe what happen.</li></ol> |  |

- (a) What will happen to the paper bag when it is released? (1m)

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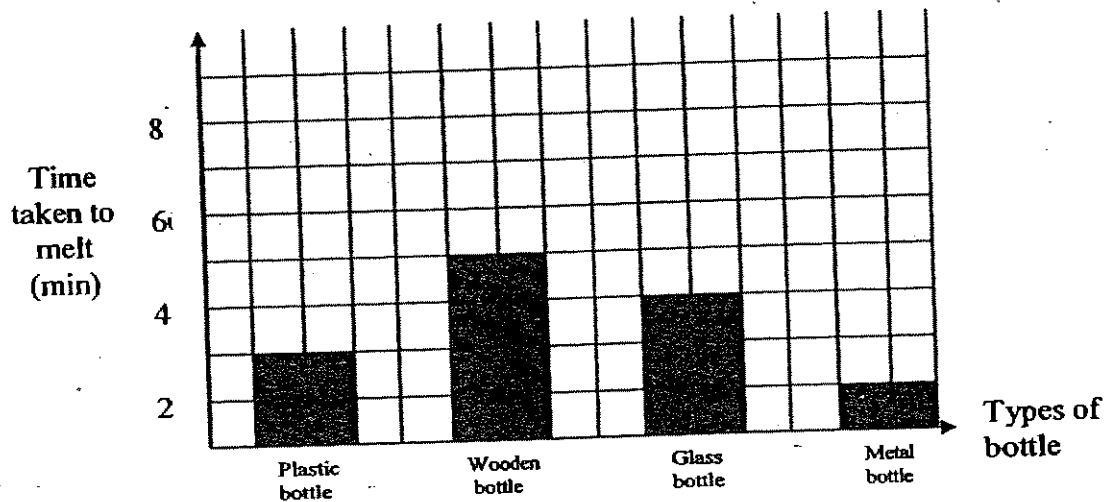
- (b) Do you think the same effect will be achieved if the warm air is replaced with cooler air? Why? (2m)

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39. Lisa did an experiment with four bottles of different materials. She put an ice cube in each bottle and capped them. She recorded the time taken for the ice cube to melt in each bottle and plotted the graph as shown below.



- (a) Which bottle was the best conductor of heat? (1m)
- \_\_\_\_\_
- (b) How long did the ice cube in the wooden bottle take to melt? (1m)
- \_\_\_\_\_
- \_\_\_\_\_
- (c) What is the relationship between the time taken for an ice cube to melt and the type of bottle? (1m)
- \_\_\_\_\_
- \_\_\_\_\_

40. Sometimes when we take out a bottle of jam from the refrigerator, we find it difficult to open the lid.

(a) Why is it so? (Assume the bottle is made of glass and the lid is made of metal.) (1m)

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---

(b) What can you do to open the lid? (Assume you have no strength to open the lid and there is no one around to help you.) (1m)

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

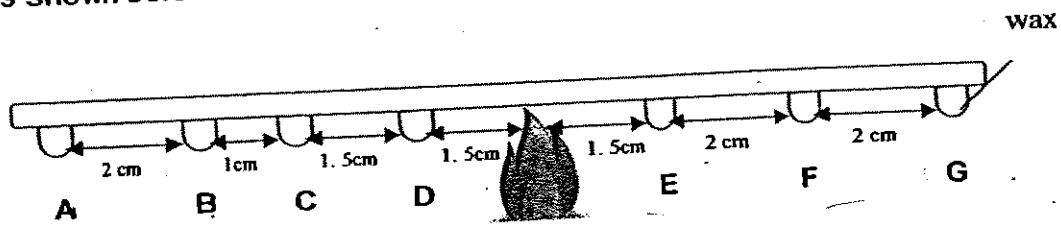
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41. Some candle wax is dripped on a metal rod and a flame is placed below the rod as shown below.



- (a) When a heat source is placed under the metal rod as shown in the diagram, which candle will be the last to drop? (1m)

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- (b) Based on your answer in (a), how does heat flow? (1m)

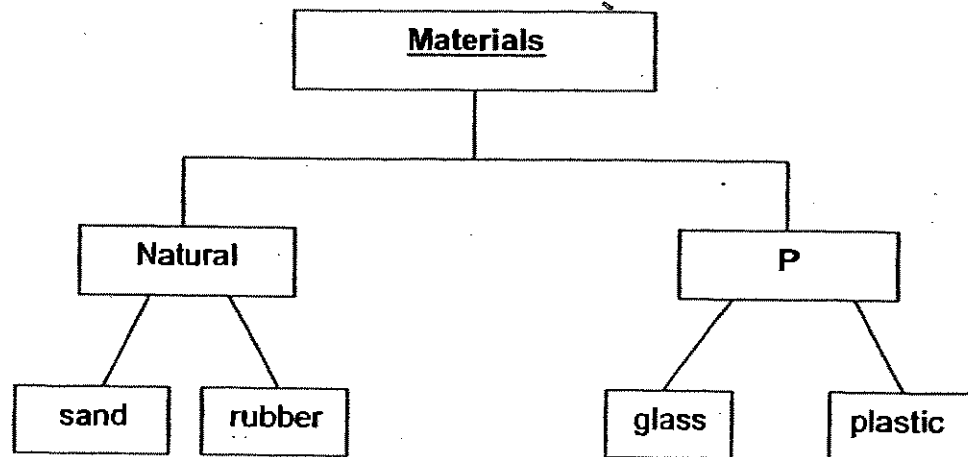
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42. The following shows a classification table of materials.



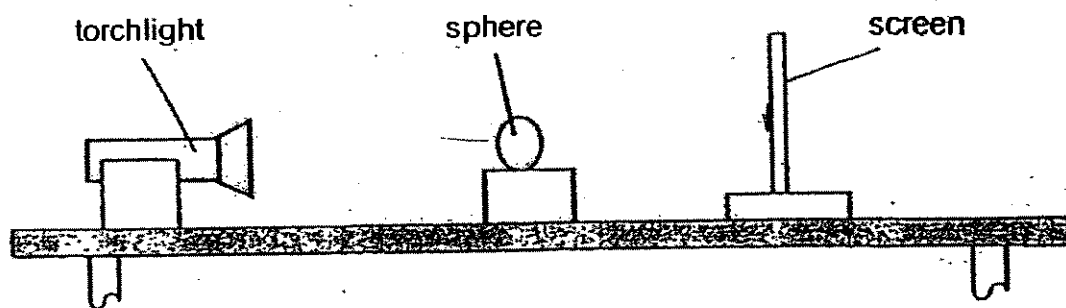
- (a) What is the heading 'P'? (1m)

'P' is \_\_\_\_\_

- (b) Give the name of another material that can be classified under 'P'. (1m)

\_\_\_\_\_  
\_\_\_\_\_

43. Dorothy set up an experiment as shown below.



A shadow was formed on the screen after the torch was switched on in a dark room.

- (a) Why was the shadow formed? (1m)

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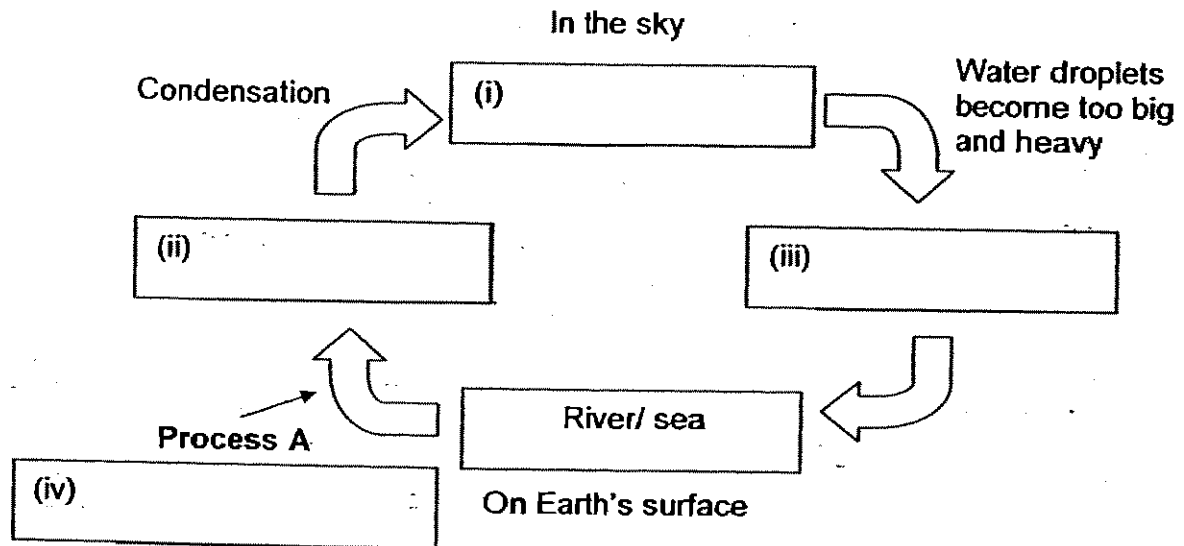
- (b) As the sphere was moved towards the screen, describe two changes in the shadow that Dorothy would observe on the screen. (1m)

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44. (a) Complete the water cycle below by filling in the different stages and process A. (2m)

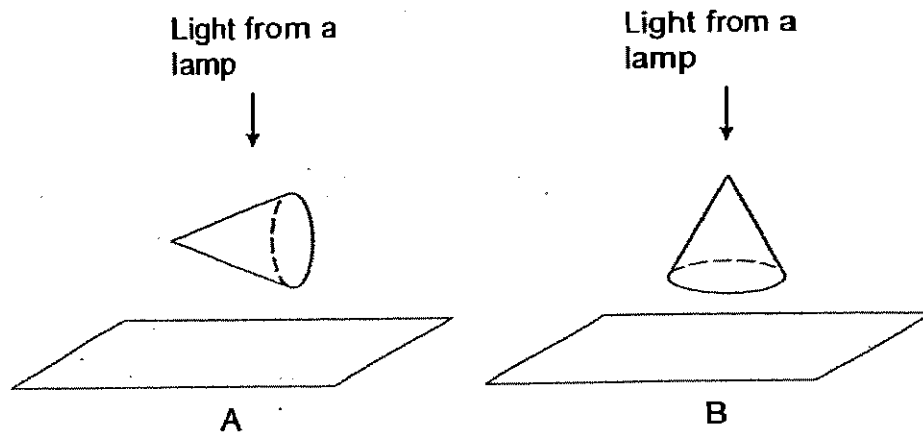


- (b) Explain why the sun plays an important role in the water cycle. (1m)

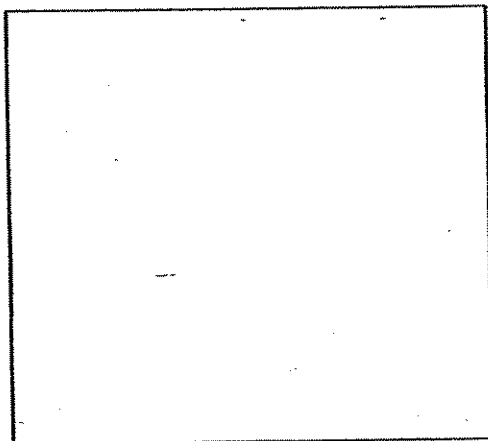
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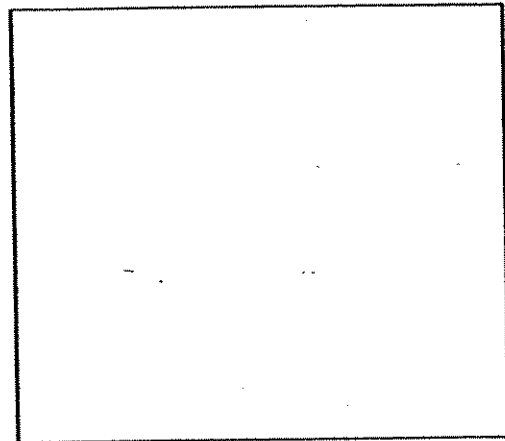
45. Benjamin placed two identical cones in different positions directly under identical light sources in a dark room. He observed the shadows formed on Screens A and B. (2m)



In the boxes below, draw the shadow that Benjamin would be able to observe on each screen.



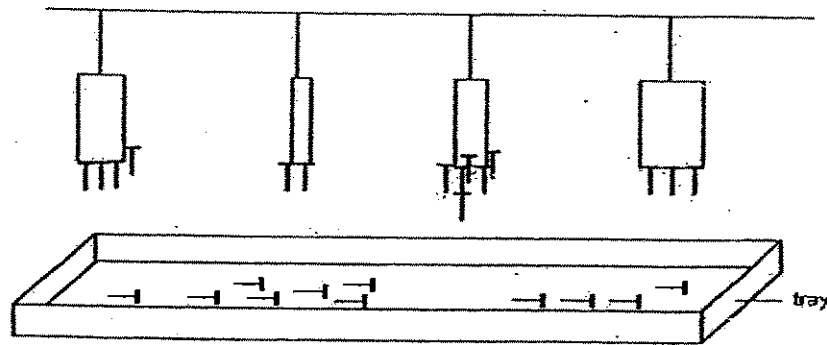
Screen A



Screen B

46. Gary conducted an experiment as shown below to find out if the magnetic strength of a bar magnet increases with its size.

The result of his experiment is as shown below.



- (a) What conclusion can Gary draw based on his result? (1m)

---

---

- (b) Name one variable that should be kept the same in this experiment. (1m)

---

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- (c) Based on Gary's results, which of the following statements is/ are **definitely true**?

(Indicate only the true statement(s) with a tick "✓".) (1m)

- i) Magnetic force can act at a distance.

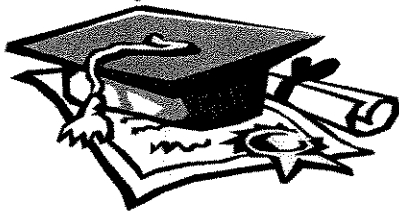
☐

- ii) The nails are made of steel.

☐

- End of paper -

3



# ANSWER SHEET

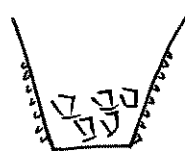
M G S PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007  
SEMESTRAL ASSESSMENT (2)

1. 4
2. 4
3. 3
4. 2
5. 3
6. 2
7. 3
8. 3
9. 1
10. 4
11. 4
12. 3
13. 1
14. 2
15. 2
16. 4
17. 2
18. 4
19. 4
20. 2
21. 4
22. 3
23. 1
24. 2
25. 1
26. 3
27. 4
28. 2
29. 4
30. 1
- 31) N: Bird, Parrot  
P: Fish, Gold Fish
- 32) a) i) Gills ii) Oxygen  
b) i) Water ii) Photosynthesis
- 33) a) 'S' is a bud.  
b) 'S' will develop into a flower.
- 34) a) When Wei Lin cutted her finger, the platelets cloted up her wound and stopped more blood from coming out.  
b) The brownish layer is known as a scab.
- 35) a) A) Large intestine  
B) Small intestine  
C) Rectum  
b) In the small intestine.  
c) It is to store the undigested food and extract water from the undigested food.
- 36) a) The breathing rate increases as the heart beats increases.  
b) i) Tom was skipping and Bala was jogging.  
ii) Tom exercised for only five minutes while Bala exercised for ten minutes.



- 37) a) i) Solid → Liquid  
ii) Liquid → Gas

b)



- 38) a) It will start to fly.

b) No. The warm air made the air in the bag expand and when there is more air, the air will have no space to fit and push the bag up. But cool air made the air inside the bag contract and paper bag will drop to the ground. No, because hot air rises and cold air sinks.

- 39) a) The metal bottle.

b) It took five minutes to melt.

c) The ice cube will melt faster with the better conductor of heat.

- 40) a) The metal lid contracts more than the glass.

b) I can pour hot water onto the lid.

c) The hot water will make the lid expand and grow bigger.

- 41) a) Candle wax A will be the last to drop.

b) Heat flows from a hot place to a cool place.

- 42) a) Man-made.

B) Nylon.

- 43) a) The sphere was able to block the light from the torch and cast a shadow on the screen.

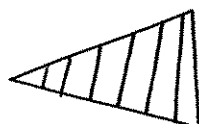
b) The shadow grew smaller and darker.

- 44) a) i) cloud ii) water vapour iii) rain  
iv) evaporation

b) It helps the water to evaporate.

- 45) Screen A.

Screen B.



- 46) a) The magnetic strength does not increase with its size.

b) The length of the magnet to the tray.

c) i) ✓

**NANYANG PRIMARY SCHOOL**

**PRIMARY FOUR SCIENCE**

**SEMESTRAL ASSESSMENT 2**

**2007**

**BOOKLET A**

**Date : 26<sup>th</sup> Oct 2007**

**Duration : 1 h 45 min**

**Name : \_\_\_\_\_ (    )**

**Class: Primary \_\_\_\_\_ (    )**

**Marks Scored:**

|                    |  |            |
|--------------------|--|------------|
| <b>Booklet A:</b>  |  | <b>60</b>  |
| <b>Booklet B :</b> |  | <b>40</b>  |
| <b>Total :</b>     |  | <b>100</b> |

**Parent's signature: .....**

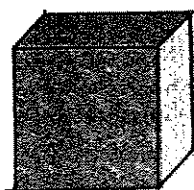
**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.  
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

**Booklet A consists of 15 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.**

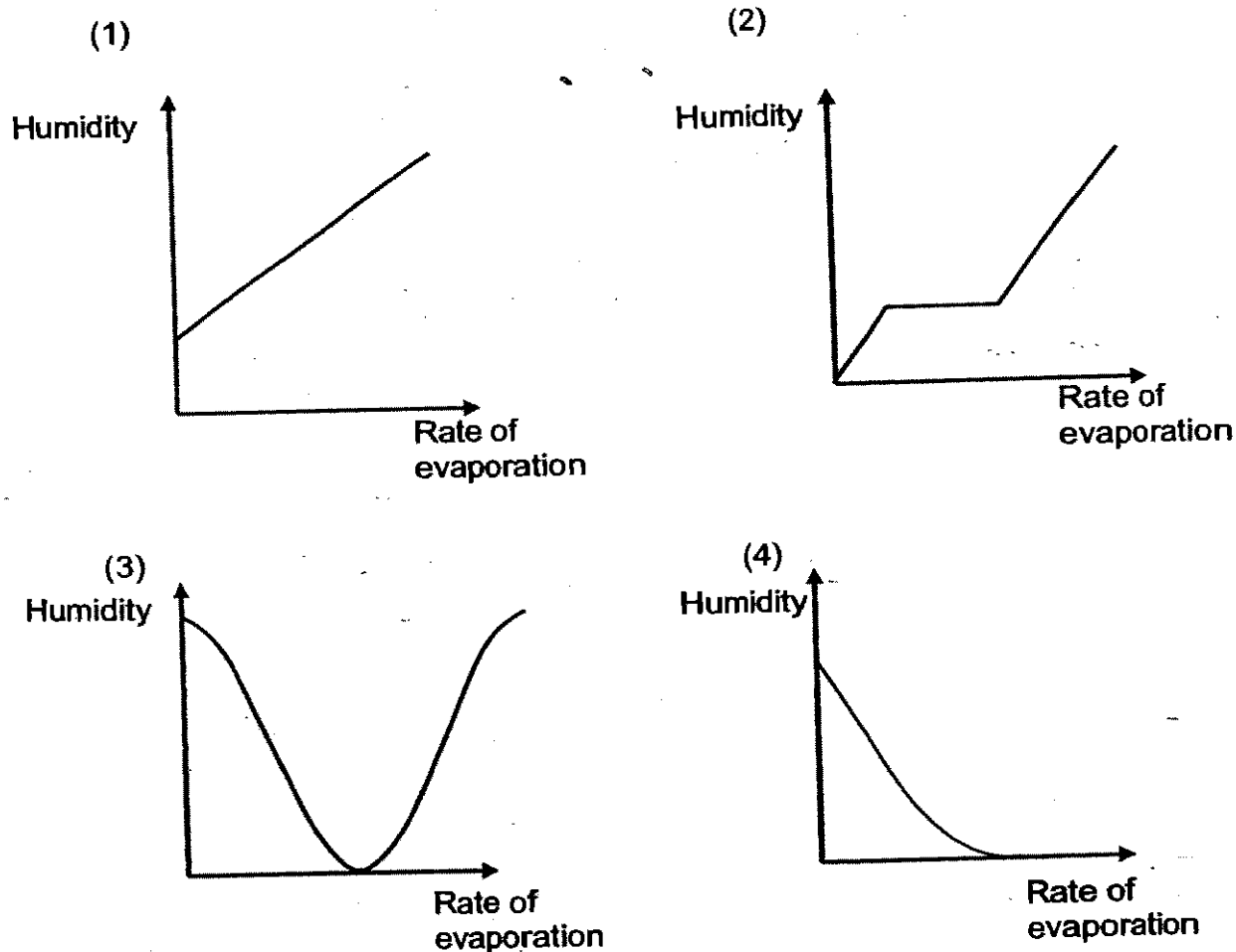
1. The cubes below are made of different materials but have the same mass. Which of the following statements are true?

**Cube P****Cube Q**

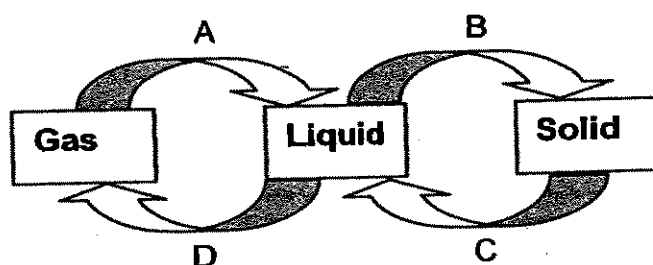
- A Cube Q is lighter.
- B Cube P occupies more space.
- C Cube P is made of a lighter material.
- D Q is more likely to float on water than Cube P.

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

2. Which one of the following graphs best shows the relationship between the humidity level of the air and rate of evaporation of water?



3. Water may undergo any one of the processes A, B, C or D depending on the surrounding temperature.



During which two processes will water gain heat from the surrounding?

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

4. Which of the following are ways of conserving water?

- A Washing floor with water collected from the rain.
- B Leaving the tap running while you cleanse your face with a facial cleanser.
- C Using a hose to water a few pots of plants instead of using a watering can.
- D Ensuring that you have a full load of dirty laundry before washing, when using a washing machine.

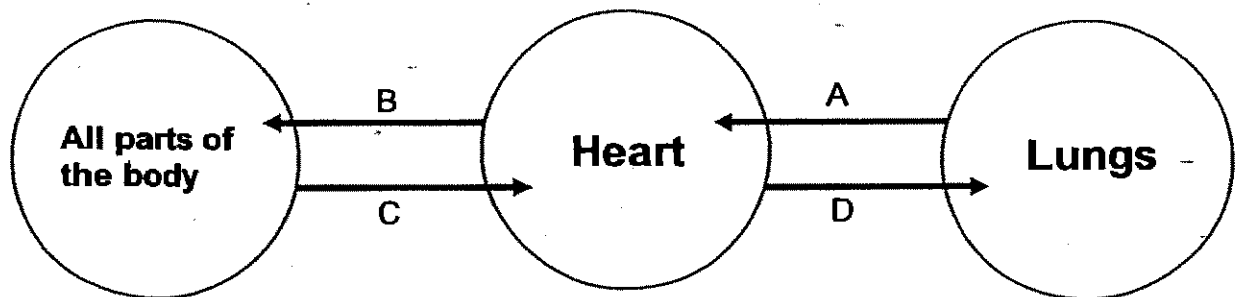
(1) A and C only

(2) A and D only

(3) B and C only

(4) B and D only

5. The diagram below shows how blood is circulated in our body.



Which of the following blood vessels transport oxygenated blood?

(1) A and B

(2) A and D

(3) B and C

(4) C and D

6. After jogging for half an hour, Siti realised that her heartbeat had increased. Which one of the following statements best explains the increase in heart beat?

A Her rate of respiration has increased.  
 B Her heart was beating to the rhythm of her steps.  
 C Her heart needed to transport more oxygen to other parts of her body  
 D Her body was getting tired so the heart needed to push her other organs to keep up.

(1) A and B only

(2) A and C only

(3) A, C and D only

(4) A, B and D only

7. Study the table below carefully.

| Animal  | Average Heart Rate<br>(beats per minute) | Mass (grams) |
|---------|------------------------------------------|--------------|
| Hamster | 450                                      | 60           |
| Horse   | 44                                       | 600000       |
| Chicken | 275                                      | 1500         |
| Cow     | 65                                       | 800000       |

What is the average heart rate of a monkey that weighs 5000g?

(1) 300

(2) 500

(3) 195

(4) 400

8. What is/are the similarity/similarities between gills and lungs?

A Both are part of the circulatory system.  
 B Both are involved in the exchange of gases.  
 C Gills and lungs can take in dissolved oxygen from water.  
 D During the exchange of gases, both change their sizes.

(1) B only

(2) A and C only

(3) A, C and D only

(4) B, C and D only

9. Which of the following are hinge joints?

- |                         |                          |
|-------------------------|--------------------------|
| (1) Elbow and shoulders | (2) Elbow and hip joints |
| (3) Shoulder and neck   | (4) Elbow and knee       |

10. Which of the following sense organs do Joan need to make the observations that a paperweight is blue, smooth and heavy ?

- |                     |                           |
|---------------------|---------------------------|
| (1) Skin and tongue | (2) Eyes and nose         |
| (3) Skin and eyes   | (4) Tongue, nose and ears |

11. Which of the following activities make use of the muscular system?

- A Walking
- B Breathing
- C Pressing the door bell
- D Carrying your school bag

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

12. Which of the following is/are function/s of the roots of a water hyacinth?

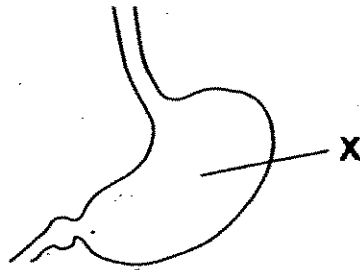
- A Absorb water and minerals
- B Hold the plant firmly to the ground
- C Absorb dissolved oxygen for the plant

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

13. Which of the following is not a function of the skeletal system?

- 1) It helps us to move.
- 2) It enables us to stand upright.
- 3) It protects the vital organs in our body.
- 4) It improves the blood circulation in our body.

14. The organ marked "X" below is part of the digestive system.



Which of the following statements is true about the digestion of food at X ?

- 1) It is here where food first gets digested by digestive juices.
- 2) Digestion is completed here and unwanted food is removed.
- 3) Chewed food is digested further and turns into a thick liquid.
- 4) Digested food is absorbed through the walls of X and into the bloodstream.

15. The table below shows the amount of gases in  $1000\text{cm}^3$  of air exhaled by a 13 year-old girl when she is sleeping.

| Volume of gases ( $\text{cm}^3$ ) in exhaled air |                |             |
|--------------------------------------------------|----------------|-------------|
| oxygen                                           | Carbon dioxide | Other gases |
| 180                                              | 60             | 760         |

Which of the following is most likely to be the amount of gases in  $1000\text{cm}^3$  of air exhaled by the same girl when she is playing basketball?

| Volume of gases ( $\text{cm}^3$ ) in exhaled air |        |                |             |
|--------------------------------------------------|--------|----------------|-------------|
|                                                  | oxygen | Carbon dioxide | Other gases |
| (1)                                              | 150    | 90             | 760         |
| (2)                                              | 180    | 60             | 760         |
| (3)                                              | 200    | 50             | 750         |
| (4)                                              | 220    | 40             | 740         |



16. Which of the following statements correctly compare the difference between air that is inhaled and air that is exhaled by a healthy person?

- A Exhaled air is warmer than inhaled air.  
 B Inhaled air has less oxygen than exhaled air.  
 C Exhaled air has more carbon dioxide than inhaled air.  
 D Inhaled air has less water vapour than exhaled air.

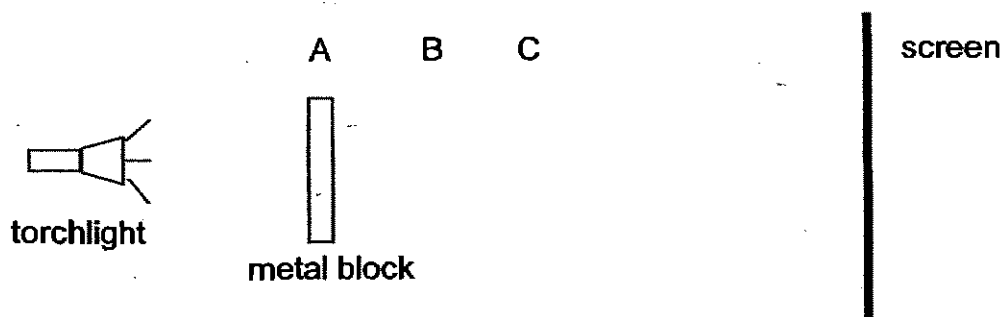
(1) A, B and C only

(2) A, C and D only

(3) B, C and D only

(4) A, B, C and D

17. Ramli set up an experiment on light as shown in the diagram below.



Ramli placed the metal block at positions A, B and C, which were at different distances from the screen. At each position, he measured the length of the shadow cast on the screen. Which one of the following most correctly showed the lengths of the shadows Ramli recorded for positions A, B and C?

|     | Length of shadow<br>at A / cm | Length of shadow<br>at B / cm | Length of shadow<br>at C / cm |
|-----|-------------------------------|-------------------------------|-------------------------------|
| (1) | 16                            | 12                            | 8                             |
| (2) | 12                            | 8                             | 16                            |
| (3) | 8                             | 12                            | 16                            |
| (4) | 16                            | 16                            | 16                            |

18. In which one of the following parts of an earthworm does gaseous exchange take place?

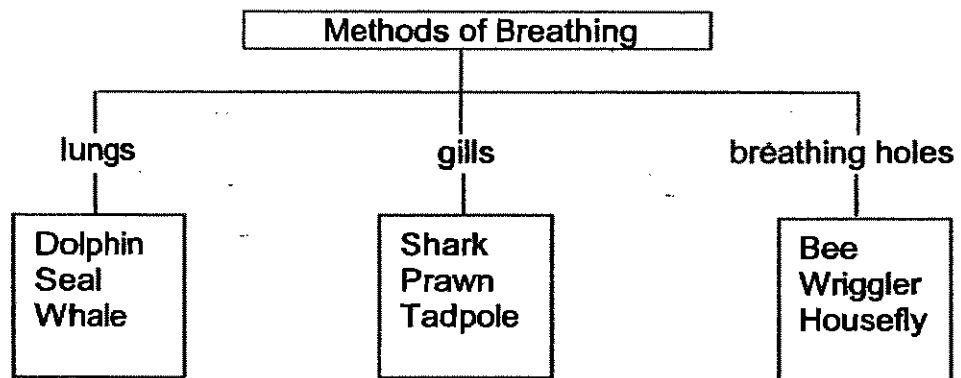
(1) mouth

(2) bristles

(3) skin

(4) saddle

19. Study the classification chart below.



Which one of the following organisms has been wrongly classified?

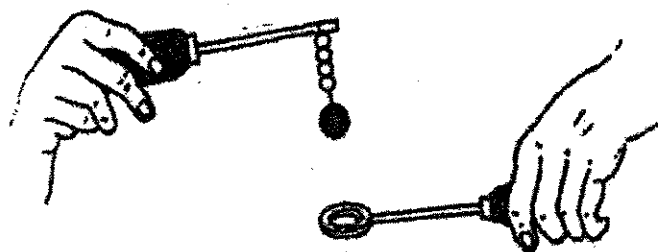
(1) Dolphin

(2) Prawn

(3) Bee

(4) Wiggler

20. The diagram below shows a metal ball and ring apparatus. At the start of the experiment, the ring was too small for the ball to pass through.



What should be done to the metal ball and ring apparatus to enable the ball to pass through the ring?

- A The metal ball should be heated over a bunsen burner.
- B The metal ball should be dipped in cold water.
- C The ring should be heated over a bunsen burner.
- D Both the metal ball and the ring should be dipped in hot water.

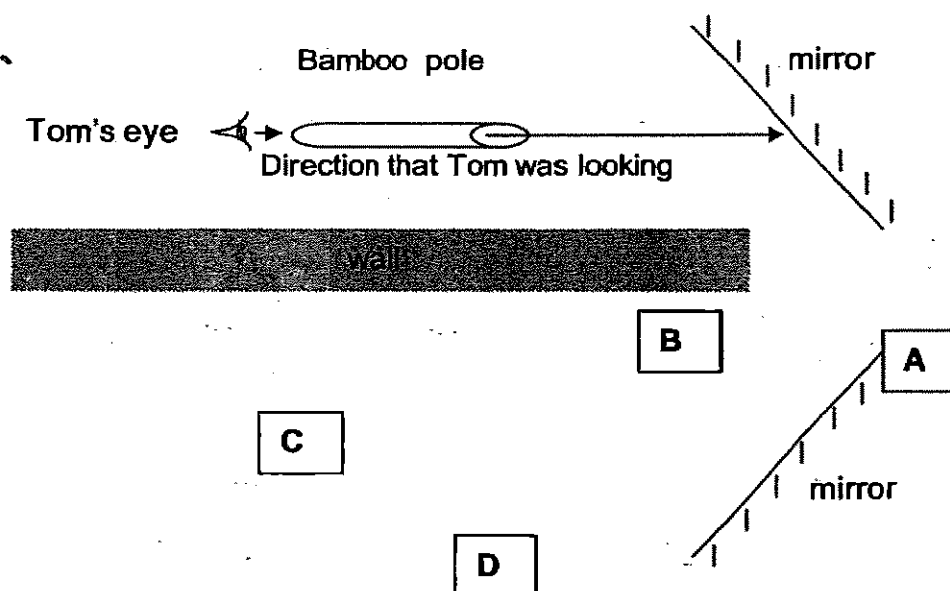
- |                     |                        |
|---------------------|------------------------|
| (1) A and B only    | (2) B and C only       |
| (3) B, C and D only | (4) A, B, C and D only |

21. Which of the following is/are possible sources of light energy for us to see at night?

- A Sun
- B Moon
- C Stars
- D Fireflies

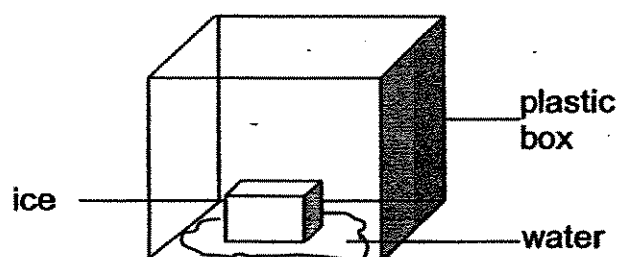
- |                     |                     |
|---------------------|---------------------|
| (1) A and B only    | (2) C and D only    |
| (3) A, B and C only | (4) B, C and D only |

22. Tom looks at a mirror through a hole of a bamboo pole as shown in the diagram below.



From the diagram above, which of the box(es), A, B C or D, will Tom be able to see?

- (1) A only  
(2) C only  
(3) A and B only  
(4) B, C and D only
- 23) Amos placed a block of ice in a dry enclosed plastic box. He noticed that the block of ice started melting after some time as shown in the diagram below.



Which one of the following describes what happened to the temperature of the ice, water and plastic box when the ice was melting?

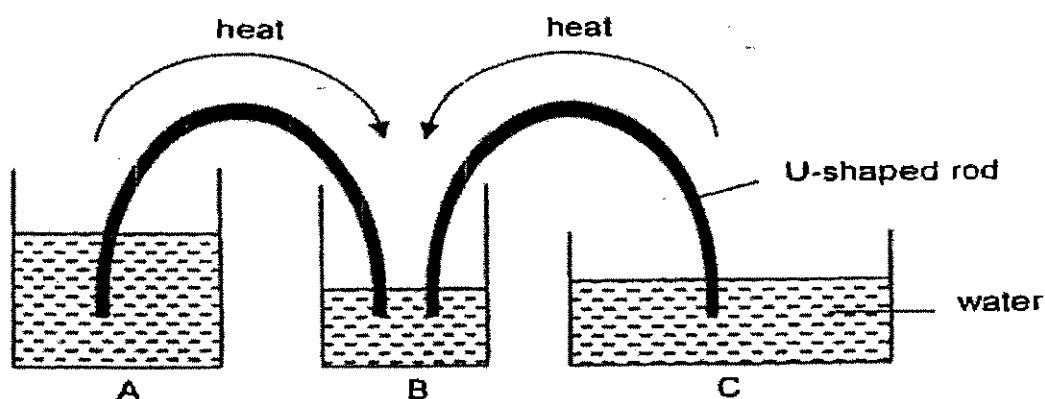
| Temperature of |           |           |             |
|----------------|-----------|-----------|-------------|
|                | Ice       | Water     | Plastic box |
| (1)            | No change | Decrease  | Increase    |
| (2)            | No change | No change | Decrease    |
| (3)            | Decrease  | Increase  | Decrease    |
| (4)            | Increase  | Decrease  | Increase    |

24. Meimei placed an iron ball in a hot oven set at  $140^{\circ}\text{C}$  and took it out after 35 minutes. Which properties of the iron ~~cube~~ <sup>ball</sup> would have changed due to the heating?

A Weight  
B Shape  
C Volume  
D Temperature

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

25. The arrows in the diagram below indicate how heat travels through 2 similar U-shaped copper rods immediately after they were immersed into 3 beakers of water, A, B and C.



Which of the following most likely shows the temperatures of water in the 3 beakers when the rods were just put in?

|     | Beaker A / $^{\circ}\text{C}$ | Beaker B / $^{\circ}\text{C}$ | Beaker C / $^{\circ}\text{C}$ |
|-----|-------------------------------|-------------------------------|-------------------------------|
| (1) | 50                            | 30                            | 80                            |
| (2) | 30                            | 50                            | 80                            |
| (3) | 80                            | 50                            | 30                            |
| (4) | 50                            | 80                            | 30                            |

26. In nature, which one of the following shows the correct order in which energy is transferred?

- (1) cow  $\rightarrow$  sun  $\rightarrow$  grass  $\rightarrow$  tiger  
(2) sun  $\rightarrow$  goat  $\rightarrow$  maize  $\rightarrow$  man  
(3) grass  $\rightarrow$  grasshopper  $\rightarrow$  sun  $\rightarrow$  chicken  
(4) sun  $\rightarrow$  corn  $\rightarrow$  rat  $\rightarrow$  owl

27. Four pupils, Ken, Samy, Liling and Fatimah, are making some statements on the process of respiration.

During respiration, energy is being stored.

Ken

Sugar and water are being released during respiration.

Samy

Respiration is a process that takes place in both plants and animals.

Liling

During respiration, energy and carbon dioxide are being released.

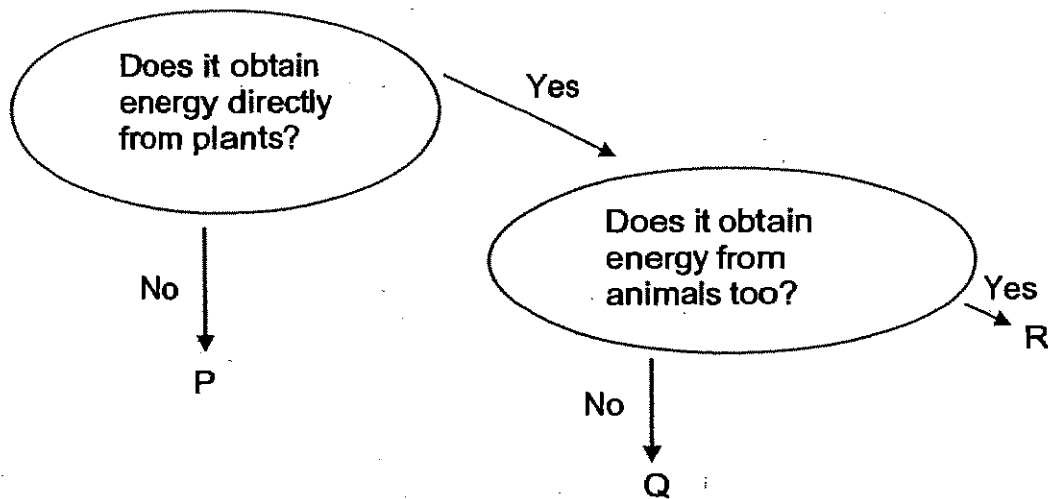
Fatimah

Who made correct statements about respiration?

- (1) Ken and Samy  
(3) Ken and Liling

- (2) Liling and Fatimah  
(4) Samy and Fatimah

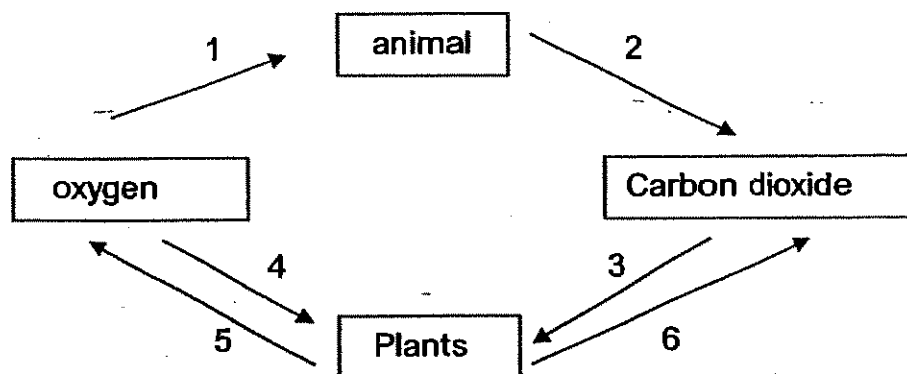
28. The flow chart below shows how living things depend directly or indirectly on plants.



What are P, Q and R likely to be?

|     | P           | Q           | R        |
|-----|-------------|-------------|----------|
| (1) | owl         | toad        | squirrel |
| (2) | earthworm   | chicken     | snail    |
| (3) | grasshopper | mouse       | bee      |
| (4) | frog        | caterpillar | rat      |

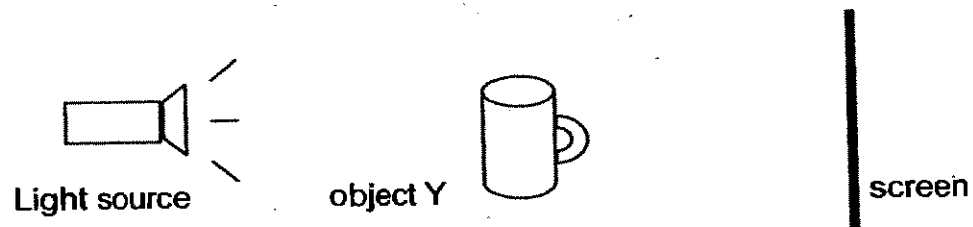
29. The diagram below shows how plants and animals exchange gases between themselves as well as the environment.



Which two arrows show the process of photosynthesis?

- (1) Arrows 1 and 3
- (2) Arrows 2 and 4
- (3) Arrows 3 and 5
- (4) Arrows 5 and 6

30. Jimmy carried out an experiment by placing object Y between a light source and a screen, as shown in the diagram below. He rotated object Y and drew its shadow that was formed on the screen each time.



Which of these shadows was he likely to see on the screen?



A



B



C



D

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



**NANYANG PRIMARY SCHOOL****PRIMARY 4 SCIENCE****SEMESTRAL ASSESSMENT 2****2007****BOOKLET B****Date : 26<sup>th</sup> Oct 2007****Duration : 1 h 45 min****Name : \_\_\_\_\_ (       )****Class: Primary \_\_\_\_\_ (       )****Marks Scored:**

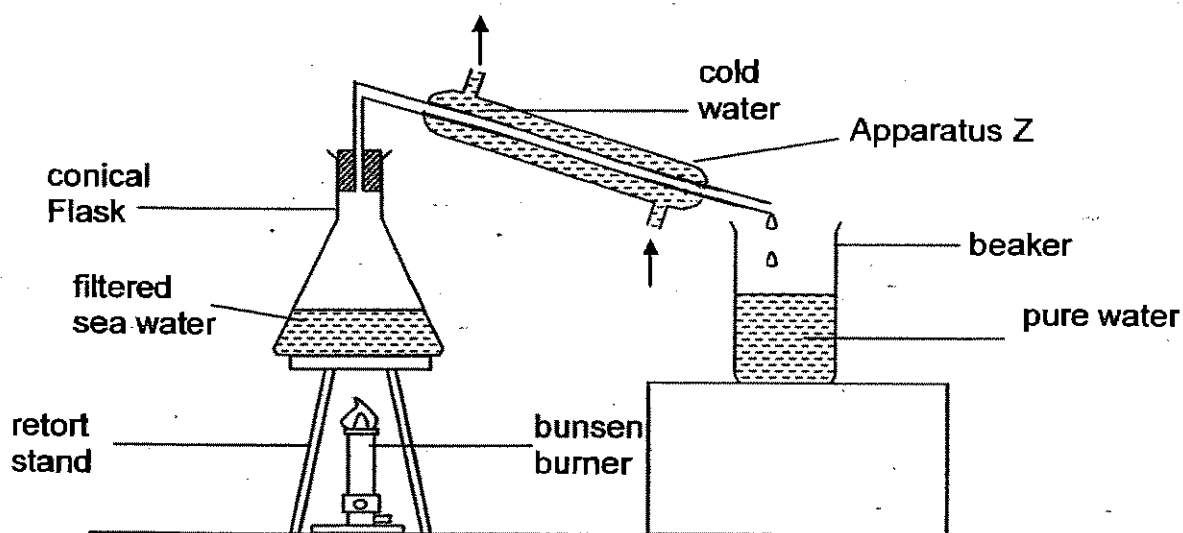
|                    |  |            |
|--------------------|--|------------|
| <b>Booklet A:</b>  |  | <b>60</b>  |
| <b>Booklet B :</b> |  | <b>40</b>  |
| <b>Total :</b>     |  | <b>100</b> |

**Parent's signature: .....****DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.  
FOLLOW ALL INSTRUCTIONS CAREFULLY.****Booklet B consists of 14 printed pages including this cover page.**

**Section B (40 marks)**

Write your answers to questions 31 to 45 in the spaces provided.  
Marks will be deducted for misspelt key words.

31. Study the set up below which is used to obtain pure water from sea water.



- a) Why is cold water pumped into Apparatus Z? (1 m)

---

---

- b) The sea water contained salt dissolved in it. Explain why the water collected in the beaker did not contain salt? (1 m)

---

---

- c) How is the rate of collection of pure water in the beaker related to the strength of the bunsen flame? (1 m)

---

---

32. a) In the water cycle, when would the tiny water droplets in the clouds fall as rain? (1m)

---

---

Cloud seeding is commonly used in countries where there is not much rain. It has proven to be extremely effective in areas with cloud built ups but little rainfall. Small particles are released from planes into the clouds to form rain.

- b) How did the small particles released help form rain? (1 m)

---

---

33. Ali left 2 similar pots of plants in an open area with enough sunlight and he watered them regularly. He then used clear plastic tape to cover the upper side of all the leaves in Plant A and the under side of all the leaves in Plant B.

- a) Which plant is most likely to die first? (1 m)

---

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

---

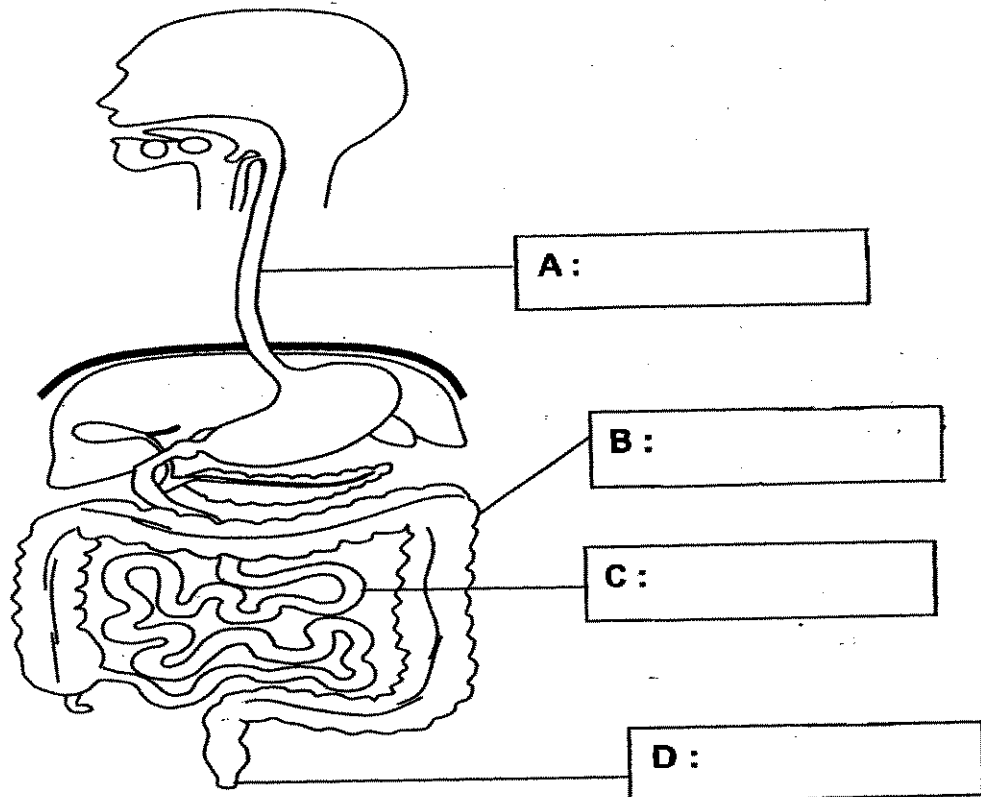
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- c) Besides water and sunlight, what do plants also need to grow well? (1 m)

---

---

34. The diagram below shows the human digestive system.



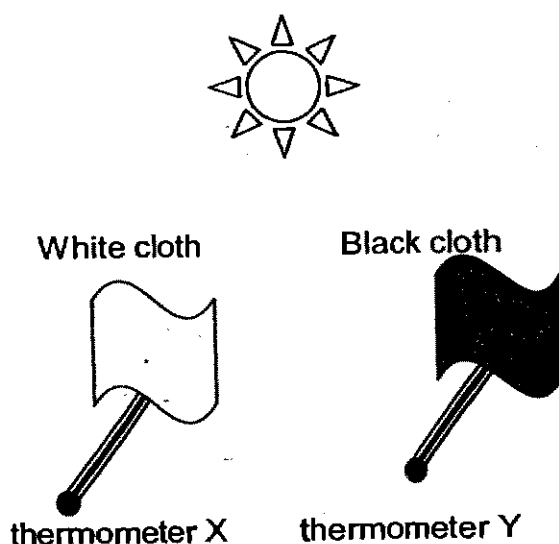
a) Name the organs labelled A to D in the boxes provided. (2 m)

b) What is the function of organ B. (1 m)

---

---

35. Shane placed two thermometers, X and Y, on the ground at basketball court on a sunny day. After two minutes, when the temperatures on both thermometers did not change anymore, he covered thermometer X with a white cloth and thermometer Y with a black cloth. He then left the whole set-up on the ground for another three minutes, as shown in the diagram below.



He recorded the results of his findings as shown below:

|                                                                     |
|---------------------------------------------------------------------|
| Temperature on both thermometers at the start: $33^{\circ}\text{C}$ |
| Temperature on thermometer with white cloth: $30^{\circ}\text{C}$   |
| Temperature on thermometer with black cloth: $36^{\circ}\text{C}$   |

- (a) Based on the information above, what had Shane found out? (1m)

---

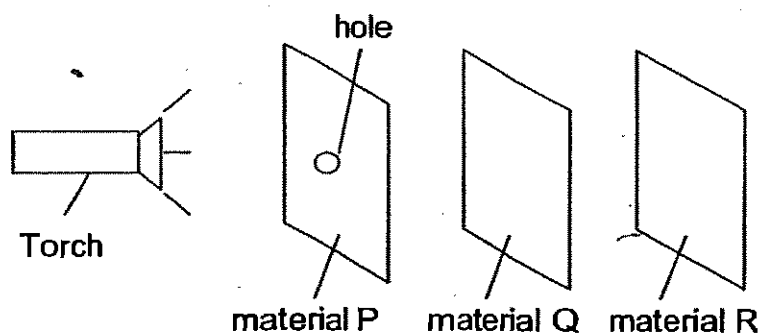
---

- (b) Explain why sportsmen prefer light-coloured shirts to dark-coloured ones on a sunny day. (1m)

---

---

36. A group of pupils carried out the experiment shown below, in a dark room.



Sheets P, Q and R were arranged in a straight line. When the torch was switched on, she could observe a bright oval patch on material R only.

- (a) Based on the pupils' observation in the above experiment, state the property of material Q. (1 m)

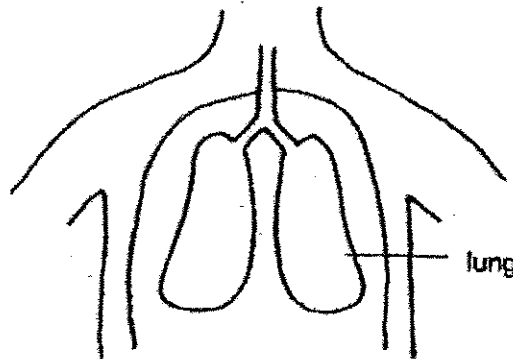
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- (b) Name an example of each of the materials P and R. (2 m)




Material P could be made of \_\_\_\_\_.

Material ~~Q~~<sup>R</sup> could be made of \_\_\_\_\_.

37. The diagram below shows part of the human respiratory system. The diaphragm is not shown in the diagram.



- (a) In the table below, put a tick(✓) next to the correct drawing to show how the missing diaphragm would look like when a person exhales completely. (1 m)

|                                                                                     |  |
|-------------------------------------------------------------------------------------|--|
|  |  |
|  |  |
|  |  |

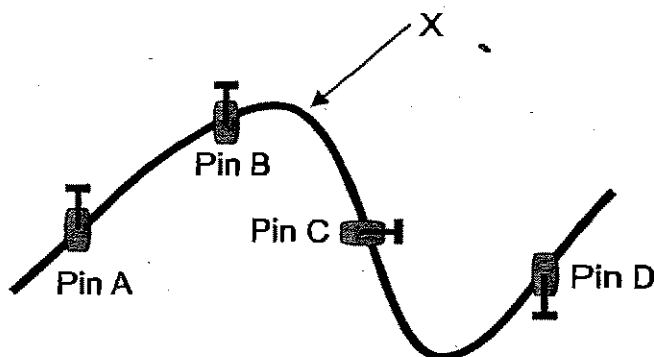
- (b) Cigarette smoke can damage the walls of the air sacs in the lungs. Explain how this can affect the function of respiration of the lungs? (1m)

---



---

- 38 Ming Ming conducted an experiment by sticking pins, A, B, C and D on blobs of candle wax at different points on an aluminium wire. She then heated the wire at the part marked X, as shown in the diagram below.



- (a) State in which order the pins would start to drop off by filling in the boxes with letters A, B, C or D. (1 m)

First to drop off →

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|

- (b) State two variables that should be kept the same in the experiment in order to ensure a fair test. (2 m)

---

---



- 39 Laura wanted to find out how the temperature affects the rate at which a sugar cube dissolved. She then set up an experiment using some sugar cubes, a thermometer and four similar beakers containing water, as shown in the table below.

| Beakers | No. of sugar cube | Temperature of water | Amount of water |
|---------|-------------------|----------------------|-----------------|
| P       | 1                 | 50°C                 | 300 ml          |
| Q       | 1                 | 70°C                 | 300 ml          |
| R       | 2                 | 50°C                 | 300 ml          |
| S       | 2                 | 70°C                 | 300 ml          |

- (a) Apart from the data given above, what else should Laura measure in order to see how the temperature of water affects the rate at which sugar cubes dissolve? (1 m)

---

---

- (b) Which two beakers should Laura compare to achieve her aim of the experiment? (1 m)

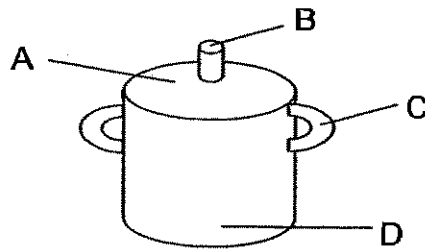
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- (c) What should Laura do to ensure that the results of her experiment are reliable? (1 m)

---

---

- 40 The diagram below shows a cooking pot. The various parts of the pot are labelled A, B, C and D.



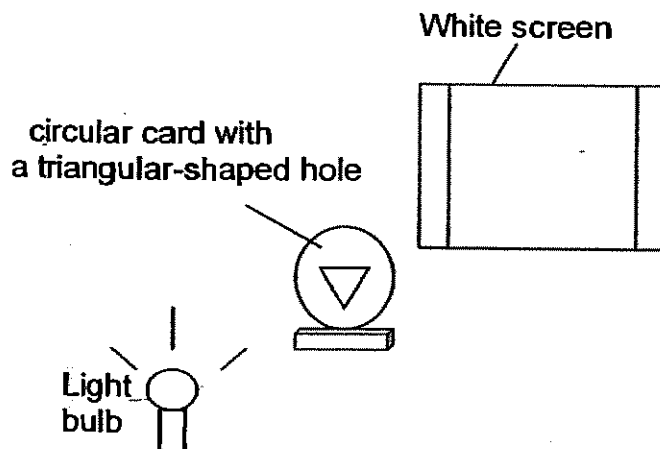
- (a) Which part(s) of the cooking pot is/are made of plastics? (1 m)

---

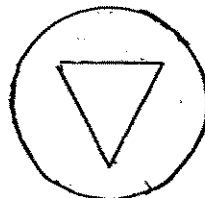
- (b) Why is plastics used in making the part(s) mentioned in (a)? (1 m)

---

- 41 Don conducted an experiment using the set-up below.



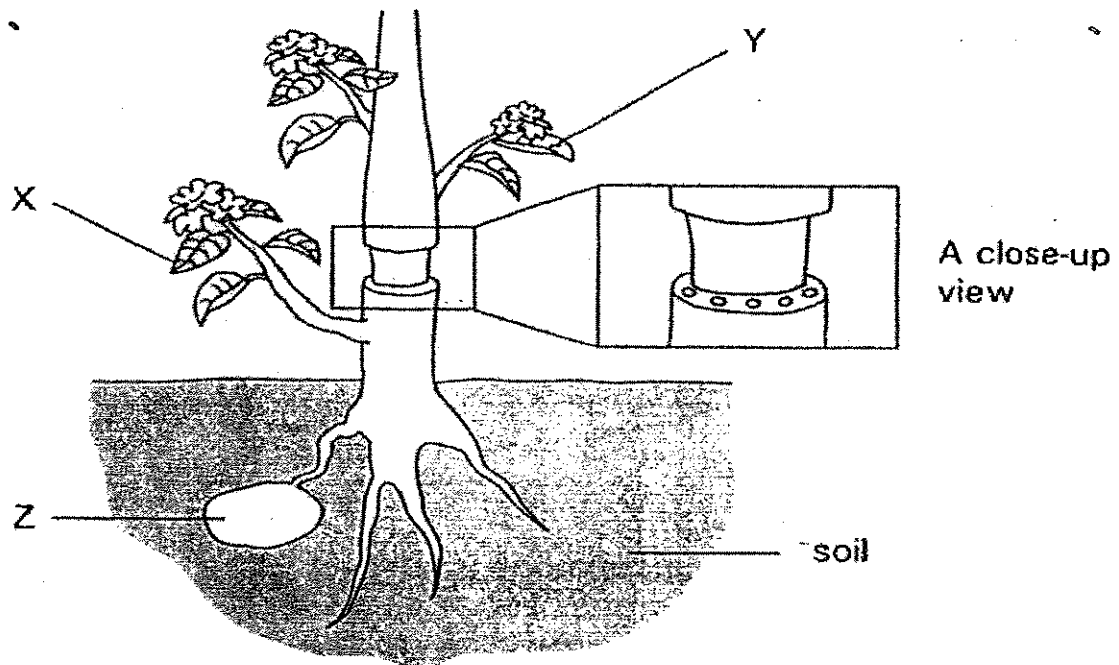
- (a) Shade in the diagram below to show the shadow formed on the screen. (1 m)



- (b) What would happen to the size of the shadow if Don were to move the circular card towards the screen? (1 m)

---

- 42 The diagram below shows a plant with the outer ring of the stem removed. As a result, the tubes carrying food were removed.



- (a) Name the tubes on the stem that carry (1 m)

(i) food \_\_\_\_\_

(ii) water \_\_\_\_\_

- (b) In the diagram, X and Y are the leaves. Which part of the plant is Z? (1 m)

\_\_\_\_\_

- (c) After one week, Y was still growing healthily even though the tubes carrying food were removed. Give a reason. (2 m)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

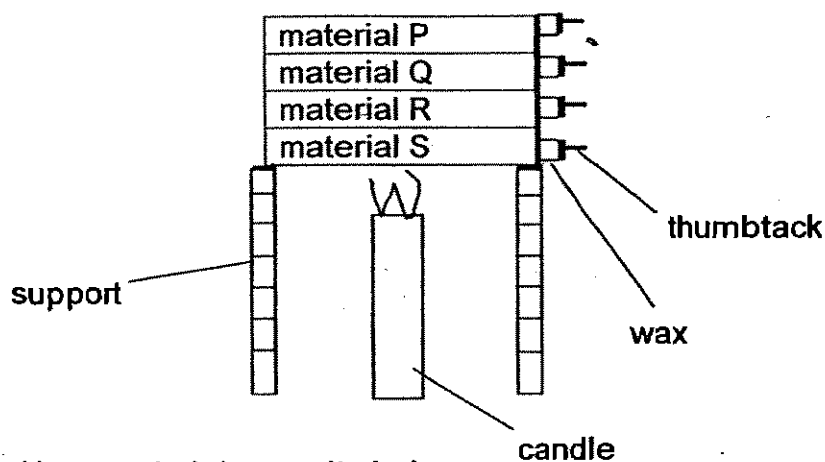
- 43) Classify the following substances into conductors of heat and insulators of heat, using the table below. (2 m)

(poor conductor)

|       |        |      |           |
|-------|--------|------|-----------|
| Glass | Copper | Wood | Aluminium |
|-------|--------|------|-----------|

|     | Good conductors | Insulators<br>(poor conductor) |
|-----|-----------------|--------------------------------|
| i)  |                 |                                |
| ii) |                 |                                |
|     |                 |                                |

- 44 Ali set up the investigation below to compare the heat conductivity of 4 different materials (P, Q, R and S) that were stacked above each other.



He recorded the results below.

| Material | Time taken for thumbtack to drop (minutes) |
|----------|--------------------------------------------|
| P        | 8                                          |
| Q        | 6                                          |
| R        | 2                                          |
| S        | 4                                          |

- (a) Was Ali's experiment a fair one? Explain your answer. (2m)

---



---

- (b) For each of the conclusions below, write 'True', 'False' or 'Not Possible To Tell' in the table below. (1 m)

|      |                                                           |  |
|------|-----------------------------------------------------------|--|
| (i)  | Material P is a better conductor of heat than material Q. |  |
| (ii) | Material R is a better conductor of heat than material S. |  |

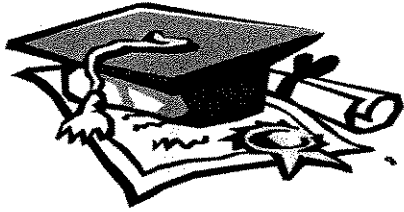
- 45 Fill in the blanks with appropriate words to complete the passage below that describe the life cycle of a plant. (3 m)

In the life cycle of a plant, the seed requires \_\_\_\_\_ ,  
\_\_\_\_\_ and water to germinate into a seedling. When the  
seedling grows into an adult plant, it produces \_\_\_\_\_ that will  
develop into fruits.

End of paper.  
Check your work!

Setters: Mrs Lynette Wong  
Mr Mohammad





# ANSWER SHEET

NANYANG PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007  
SEMESTRAL ASSESSMENT (2)

1. 3

2. 4

3. 4

4. 2

5. 1

6. 2

7. 3

8. 1

9. 4

10. 3

11. 4

12. 1

13. 4

14. 3

15. 1

16. 2

17. 1

18. 3

19. 4

20. 2

21. 2

22. 2

23. 2

24. 2

25. 1

26. 4

27. 2

28. 4

29. 3

30. 3

31) a) The water vapour that is formed in the conical flask can condense  
condensation is faster.  
b) Salt cannot evaporate.  
c) The stronger strength of the bunsen burner, the faster the rate of collection of pure water.

32) a) The tiny water droplets in the clouds will fall down as rain when there is too much water droplets and gets too heavy.  
b) The small particles are attached to the water droplets in the clouds to make them heavier.

33) a) Plant B.  
b) More stomata are found on the underside of the underside of the leaves. The plant cannot make food.

34) a) A: gullet B: large intestines  
C: small intestines D: anus.  
b) To absorb water from the undigested food.


35) a) Shane found out that the black cloth absorbs more heat from the sun than the white cloth.  
b) Light colour shirts make them feel cooler.



36) a) Material Q is transparent

b) P: metal sheet

R: nylon

37) a) 

b) If the air sacs in the lungs are damaged, we would not be able to exchange gases and respire.

38) a) B, C, A, D

b) The amount of candle wax and length of the pins.

39) a) Time taken for sugar cube to dissolve completely.

b) P and Q

c) Repeat the experiment a few times, then take the average time taken for sugar cube to dissolve completely.

40) a) B and C.

b) plastic is a poor conductor of heat, therefore, we will not burn our hand when we are lifting the pot up.

41) a)



b) The size will become smaller.

42) a) i) phloem. ii) xylem.

b) Roots.

c) There is still water in the plant, so it can make food.

43) i) Aluminium, Wood

ii) Copper, Glass

44) a) No, the distance between the material and the candle flame is not the same.

b) i) Not ii) True

45) air, warmth, flowers

**Pei Chun Public School**  
**Semestral Assessment 2 – 2007**  
**Science**  
**Primary 4**

Name : \_\_\_\_\_ ( )

Date : 26 October 2007

Class : Pri. 4 ( )

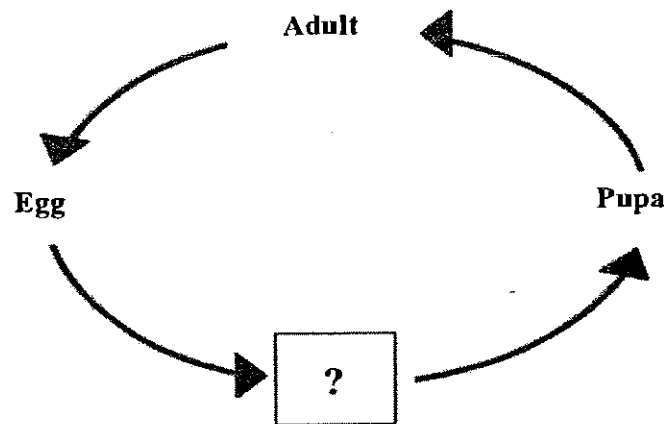
Science Teacher : \_\_\_\_\_

Time : 1 hr 30 min

**Section A (25 × 2 marks)**

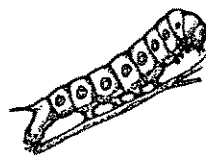
For questions 1 to 25, choose the most suitable answer and shade its number (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.

1. Study the life cycle below.



Which of the following can be used to complete the life cycle?

A)



B)



C)



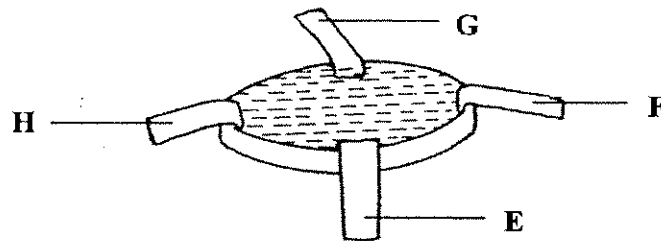
D)



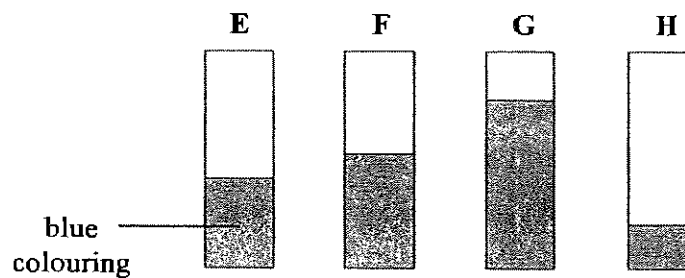
- (1) A and B only  
 (2) C and D only  
 (3) A, B and C only  
 (4) B, C and D only

( )

2. E, F, G and H are four strips of different materials. Ahmad dipped them into a dish filled with blue colouring as shown below.



The diagram below shows the amount of blue colouring absorbed by E, F, G and H after one minute.



Which material is most suitable for making a towel?

- (1) E
- (2) F
- (3) G
- (4) H

( )

3. Gopal had to look for a type of tree in the school garden. He was given some descriptions about the tree:

- The tree bark is rough.
- The leaves are oval in shape.
- The fruits are bitter and poisonous.
- The flowers are white and have no smell.

Which of his senses should he use to help him locate the tree?

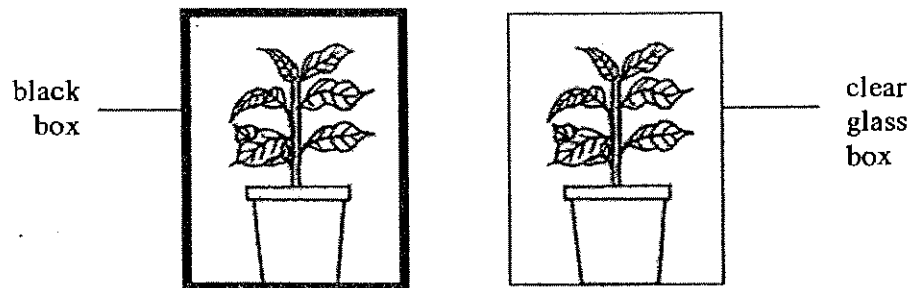
- A : Sense of sight  
 B : Sense of taste  
 C : Sense of smell  
 D : Sense of touch

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

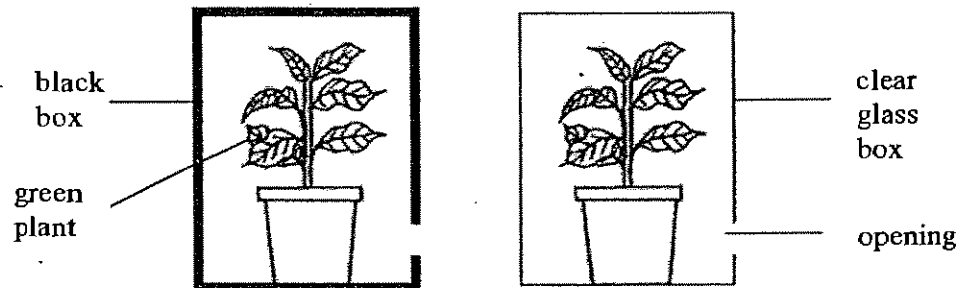
( )

4. Siti wants to conduct an experiment to find out if plants need sunlight to make food. Which of the following set-ups should she choose to carry out her experiment in the school field?

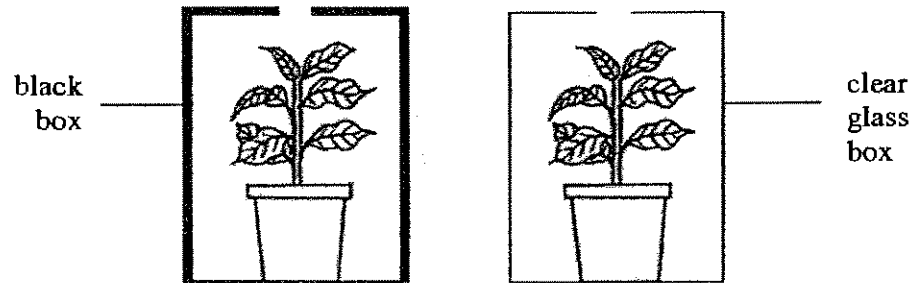
(1)



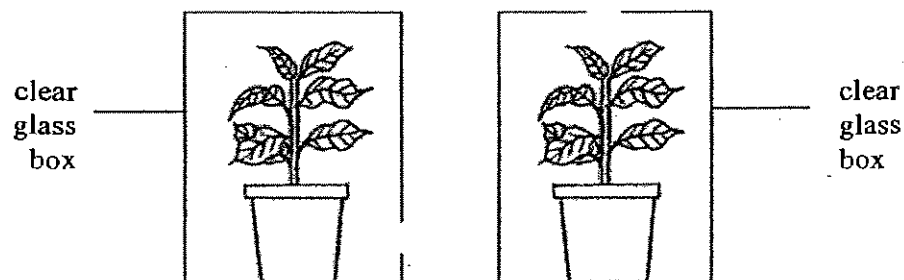
(2)



(3)



(4)

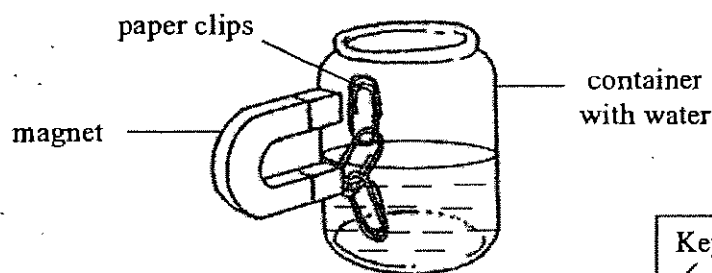


( )

5. Which of the following statements is false?

- (1) Our muscles usually work in pairs.
- (2) Most of the joints in our body allow free movement.
- (3) Food is not digested in every part of the digestive system.
- (4) We can control the movement of all the muscles in our body. ( )

6. Meihua tried to remove some paper clips from 3 containers of water by placing a magnet on the outside of the container and sliding the magnet upwards as shown in the diagram below. The containers are made of steel, plastic and aluminium.



Key:  
✓ - Succeeded  
✗ - Failed

Which of the following results would she get?

|     | Steel Container | Plastic Container | Aluminium Container |     |
|-----|-----------------|-------------------|---------------------|-----|
| (1) | ✓               | ✗                 | ✓                   |     |
| (2) | ✗               | ✓                 | ✓                   |     |
| (3) | ✓               | ✗                 | ✗                   |     |
| (4) | ✗               | ✓                 | ✗                   | ( ) |

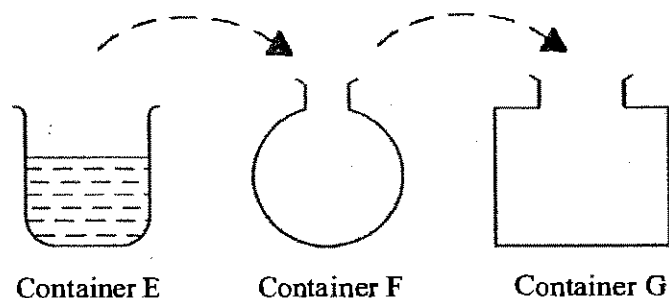
7. The table below shows the properties of X, Y, and Z.

| Properties        | X | Y | Z |
|-------------------|---|---|---|
| Has mass          | ✓ | ✗ | ✓ |
| Definite shape    | ✗ | ✗ | ✓ |
| Can be compressed | ✗ | ✗ | ✗ |

Which of the following best represents X, Y and Z?

|     | X      | Y    | Z     |     |
|-----|--------|------|-------|-----|
| (1) | wind   | heat | rock  |     |
| (2) | honey  | wind | glass |     |
| (3) | oxygen | wind | rock  |     |
| (4) | honey  | heat | glass | ( ) |

8. Study the diagram below. Container E contains 500 ml of water.



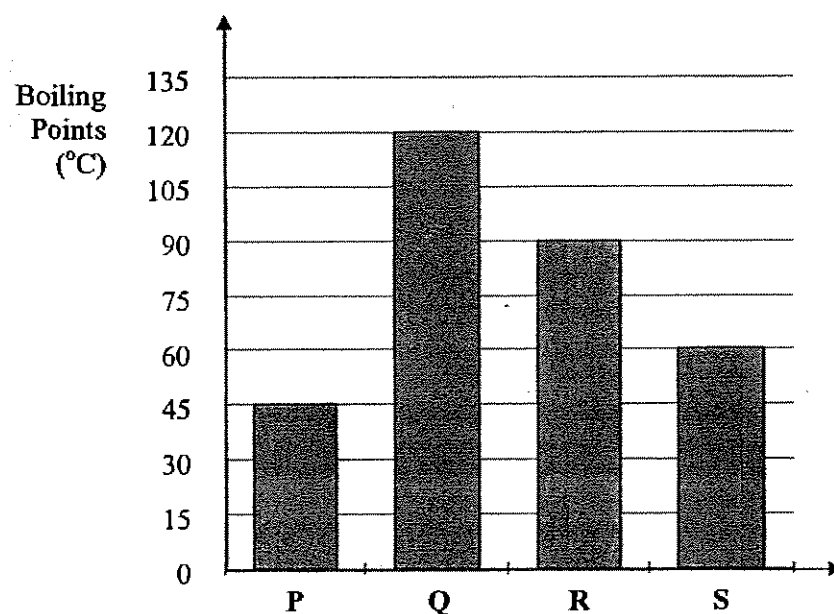
What changes will be observed when all the water is poured from Container E to Container F, then to Container G, with no loss of water?

- A : Mass of water  
 B : Shape of water  
 C : Volume of water  
 D : Exposed surface area of the water

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

( )

9. The graph below shows the boiling points of some substances.

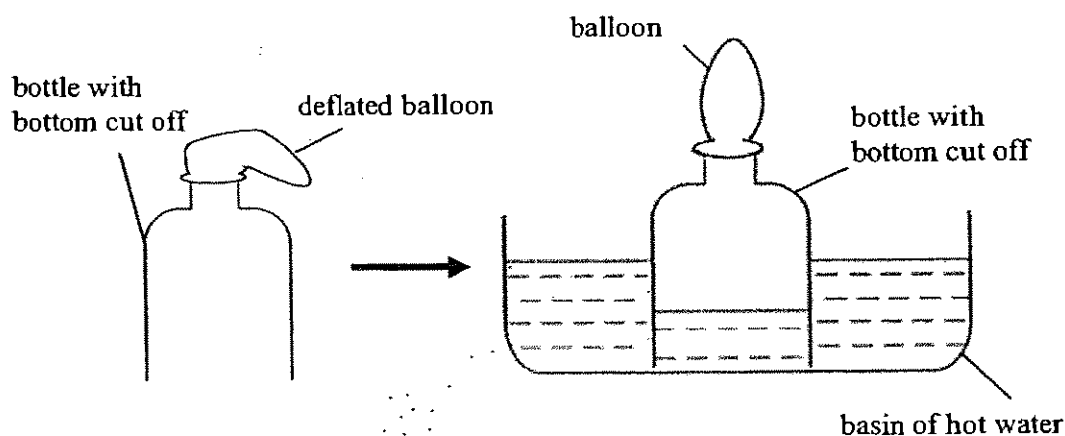


Which of these substances is/are in the gaseous state at 80 °C?

- (1) P only  
 (2) P and S only  
 (3) Q and R only  
 (4) Q, R and S only

( )

10. Eugene set up the experiment as shown below. He cut the bottom of a plastic bottle and covered the mouth of the bottle with a balloon. He then pushed the bottle into a basin of hot water. The diagrams below show what he observed.



What does this experiment show?

- A : Air has mass.
  - B : Air occupies space.
  - C : Air can be compressed.
  - D : Air does not have definite shape.
- (1) A and C only  
(2) B and C only  
(3) B and D only  
(4) A, B, C and D
- ( )

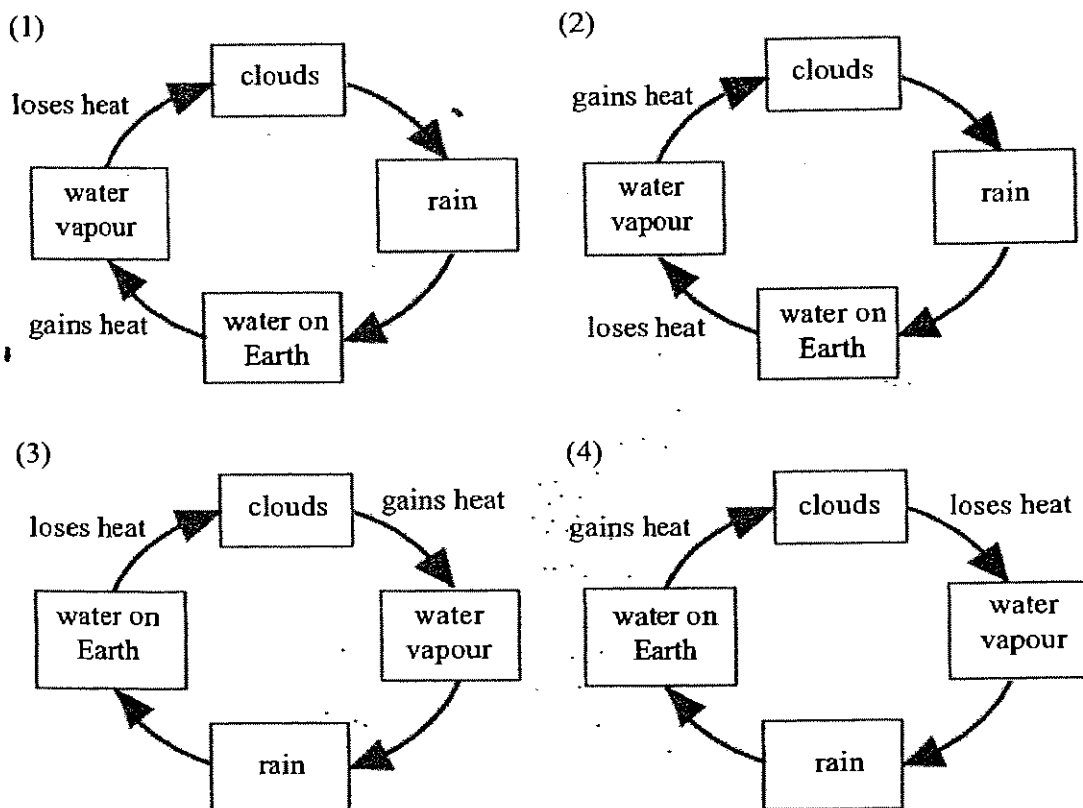
11. One warm and humid afternoon, Yati, Aini, Devi and Tom were on board an air-conditioned bus. They observed that glass windows of the bus became misty as the air in the bus became colder. The explanations provided by them are listed below.

Yati : The glass window is colder than the air outside the bus.  
Aini : The glass window is warmer than the air outside the bus.  
Devi : Warm water vapour inside the bus condenses on the cold glass window.  
Tom : Warm water vapour outside the bus condenses on the cold glass window.

Whose explanations are correct?

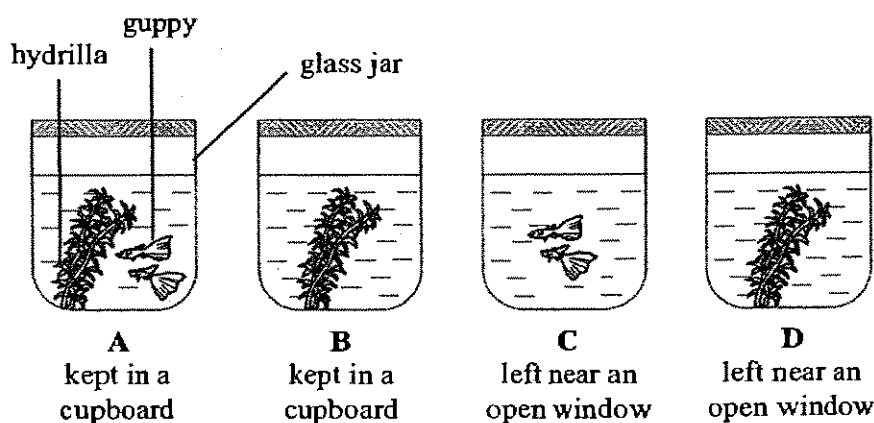
- (1) Yati and Devi  
(2) Yati and Tom  
(3) Aini and Devi  
(4) Aini and Tom
- ( )

12. Which of the following is a correct representation of the water cycle?



( )

13. Four identical sealed glass jars, A, B, C and D, each containing an equal amount of water were set up and left at different places for 3 hours as shown below.



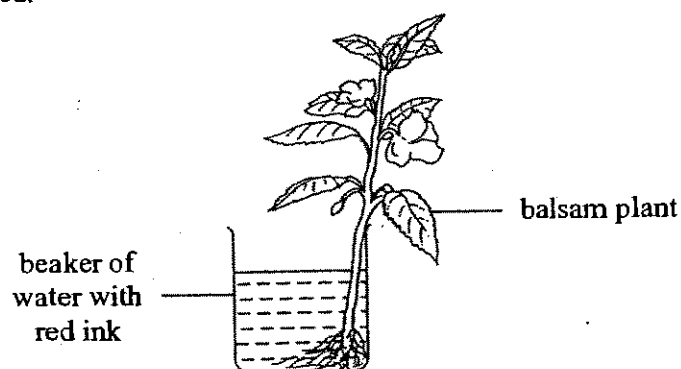
At the end of the experiment, which of the jars, A, B, C or D, would contain the greatest amount of oxygen?

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

( )



14. Kumar puts a balsam plant into a beaker of water in which some red ink has been added. After two days, he observes that the edges of the flowers on the plant turned from white to red.



The aim of the experiment is to show that \_\_\_\_\_.

- (1) the balsam plant grows in water only
  - (2) the stem allows the plant to carry water to the roots
  - (3) water is absorbed by the plant only through its roots
  - (4) the stem carries water from the roots to the rest of the plant ( )
15. Respiration takes place in all living things. Which of the following occurs during respiration?

|     | Food           | Carbon dioxide | Oxygen      |     |
|-----|----------------|----------------|-------------|-----|
| (1) | is formed      | is used        | is produced |     |
| (2) | is formed      | is produced    | is used     |     |
| (3) | is broken down | is used        | is produced |     |
| (4) | is broken down | is produced    | is used     | ( ) |

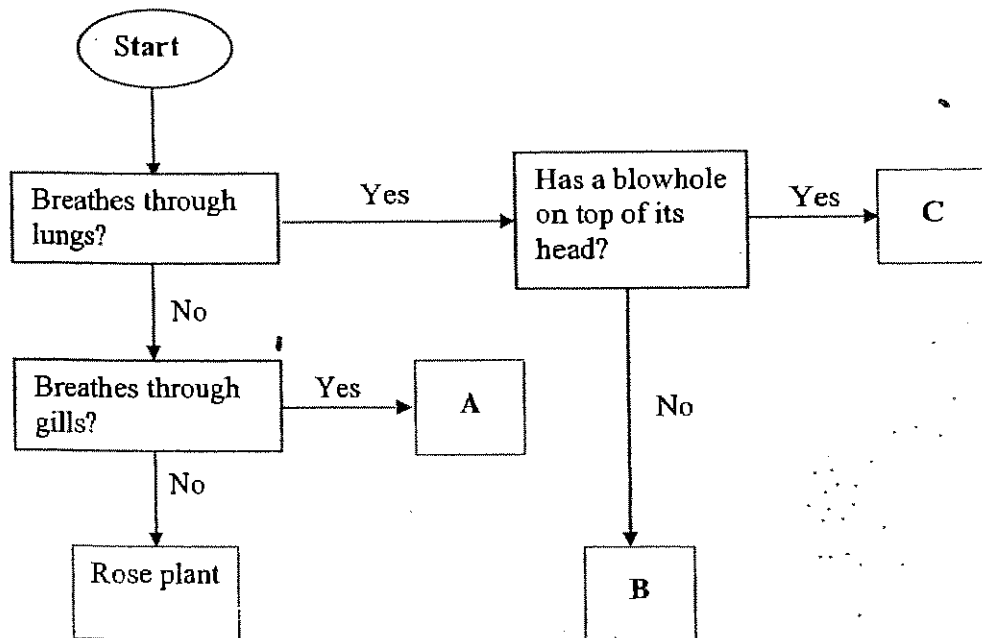
16. The heart rate of a mammal is dependent on its size. The table below shows the normal heart rate of some adult mammals at rest.

| Mammal   | Heart rate (beats per minute) |
|----------|-------------------------------|
| Elephant | 30                            |
| Human    | 65                            |
| Hamster  | 400                           |

Based on the table, which of the following is the most probable normal heart rate of an adult rabbit at rest?

- (1) 35
- (2) 75
- (3) 205
- (4) 405 ( )

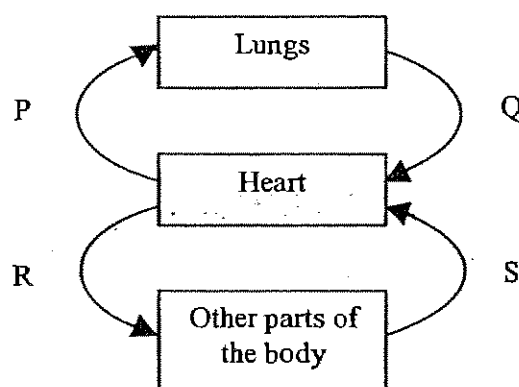
17. Study the flow chart below.



Which one of the following best represents A, B and C?

|     | A       | B          | C          |
|-----|---------|------------|------------|
| (1) | dolphin | shark      | polar bear |
| (2) | shark   | polar bear | seal       |
| (3) | shark   | seal       | dolphin    |
| (4) | seal    | polar bear | dolphin    |

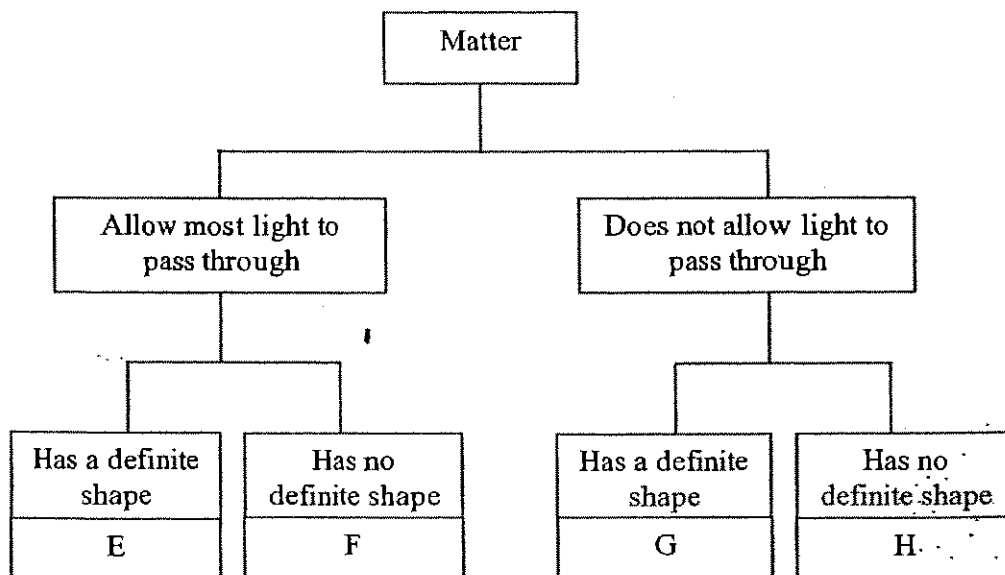
18. The diagram below shows the circulatory system in our body.



Which arrows show the flow of blood rich in carbon dioxide in our body?

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

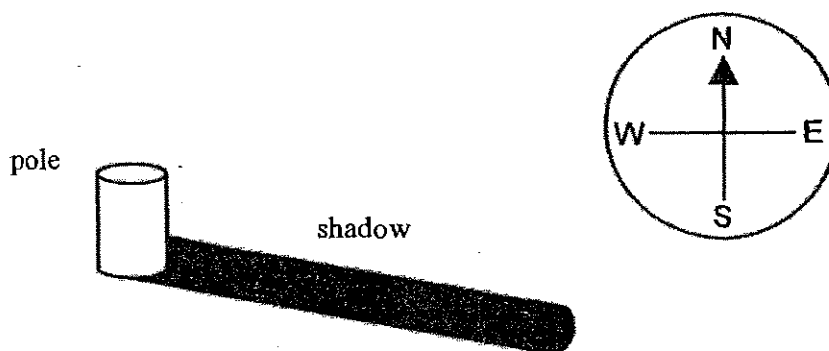
19. Study the classification chart below carefully.



Which of the following best represents E, F, G and H?

|     | E              | F     | G              | H          |
|-----|----------------|-------|----------------|------------|
| (1) | clear glass    | air   | wood           | plasticine |
| (2) | aluminium foil | water | plasticine     | milk       |
| (3) | clear plastic  | air   | aluminium foil | milk       |
| (4) | mirror         | water | wood           | plasticine |

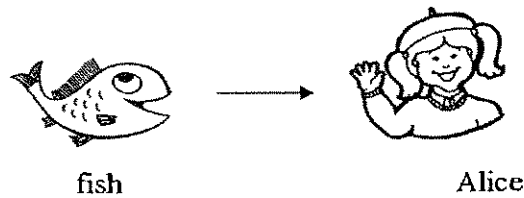
20. The sun rises in the East and sets in the West.  
The diagram below shows the shadow cast by a pole.



What time of the day do you think this shadow was formed?

- (1) 8 a.m.
- (2) 12 noon
- (3) 2 p.m.
- (4) 6 p.m.

21. The diagram below shows that fish is a source of energy for Alice.

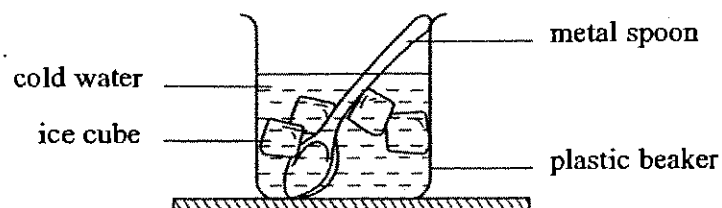


Which of the following shows the correct order in which energy is transferred?

- (1) Sun → Wheat plant → Chicken → Fox
- (2) Sun → Caterpillar → Chicken → Fox
- (3) Sun ← Wheat plant ← Chicken ← Fox
- (4) Sun → Wheat plant → Caterpillar → Fox

( )

22. Kitty placed a warm metal spoon into a beaker of cold water as shown below. After a while, the spoon became cold.



Which of the statements below explains what had happened?

- (1) Heat travelled from the ice cubes to the cold water.
- (2) Heat travelled from the metal spoon to the cold water.
- (3) Coldness travelled from the ice cubes to the cold water.
- (4) Coldness travelled from the cold water to the metal spoon.

( )

23. Which of the following items give out light of their own?

- A : Stars
- B : Moon
- C : Fireflies
- D : Diamond

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

( )

24. Samuel had difficulty opening the metal lid of the glass jar shown below.

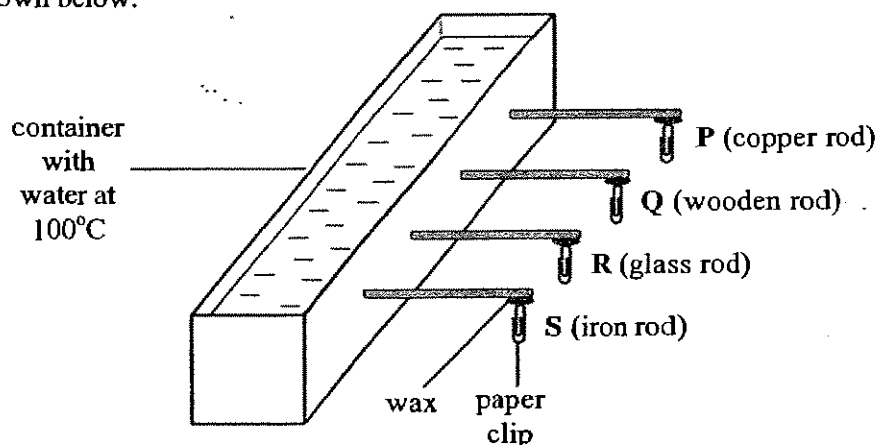


Which of the following actions can help him loosen the metal lid?

- (1) Place the jar in the refrigerator for a few minutes.
- (2) Run cold water over the glass jar for half a minute.
- (3) Run warm water over the metal lid for half a minute.
- (4) Place some ice cubes on top of the metal lid for a few minutes.

( )

25. Rashid had 4 rods <sup>of the same size</sup> made of different materials. He attached a paper clip onto each of the rod with some wax. The four rods were placed in a container of hot water at  $100^{\circ}\text{C}$  as shown below.



Which of the following correctly shows the order in which the paper clips would drop?

- (1) P, S, R, Q
- (2) P, R, S, Q
- (3) Q, R, P, S
- (4) R, P, S, Q

( )

For Questions 26 to 30, please refer to Booklet K.  
End of Section A

**Pei Chun Public School**  
**Semestral Assessment 2 – 2007**  
**Science**  
**Primary 4**

Name : \_\_\_\_\_ ( )

Date : 26 October 2007

Class : Pri. 4 ( )

Parent's Signature :

Science Teacher : \_\_\_\_\_

Time : 1 hr 30 min

|                                                          |     |
|----------------------------------------------------------|-----|
| Marks for Section A                                      | 60  |
| Marks for Section B                                      | 30  |
| Marks for Booklet K<br>(exclude Section A Qns. 26 to 30) | 10  |
| Total Marks                                              | 100 |

**Section B (30 marks)**

For questions 31 to 42, write your answers in the spaces provided.

31. The properties of material P, Q, R and S are given in the table below.

| Type of material | Waterproof | Light in weight | Breaks easily |
|------------------|------------|-----------------|---------------|
| P                | Yes        | Yes             | Yes           |
| Q                | Yes        | Yes             | No            |
| R                | No         | Yes             | No            |
| S                | Yes        | No              | No            |

a) Which material is most suitable for making water bottles for children? ( ½ m )

\_\_\_\_\_

b) Give 3 reasons for your answer in (a). ( 1½ m )

\_\_\_\_\_

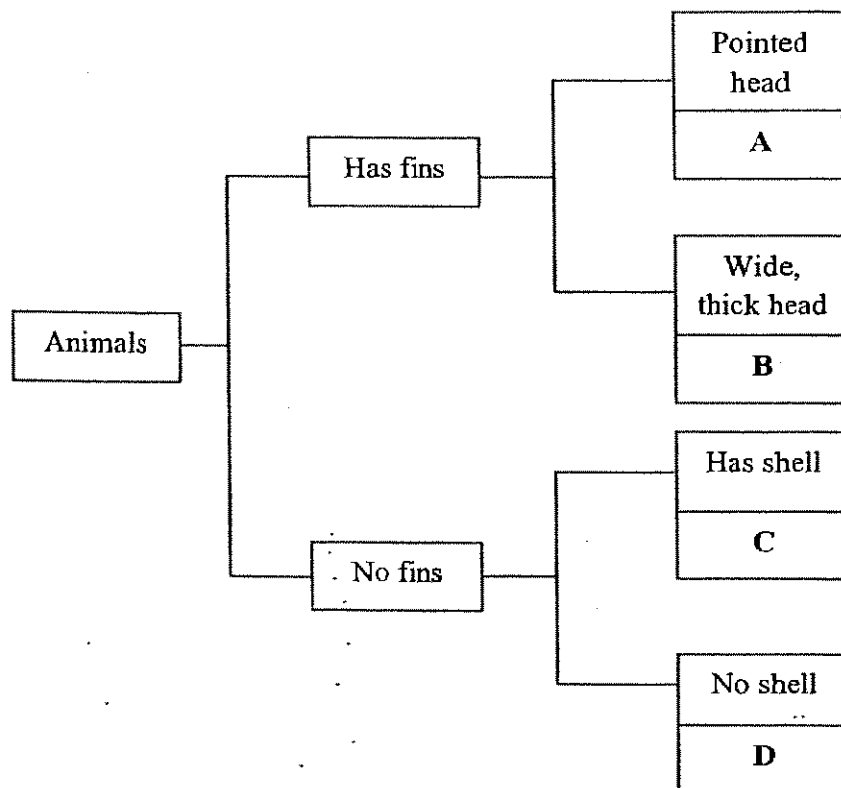
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score

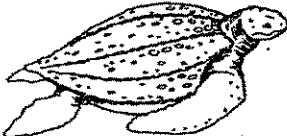
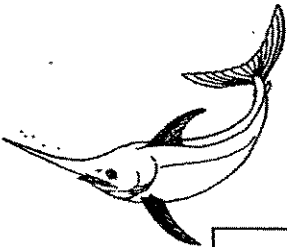
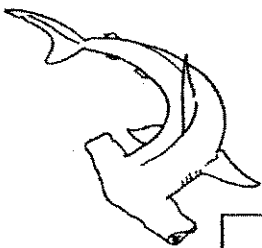
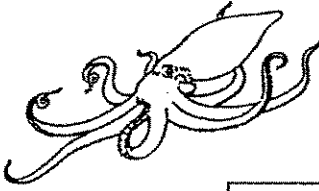
46

32. Study the classification table below carefully.

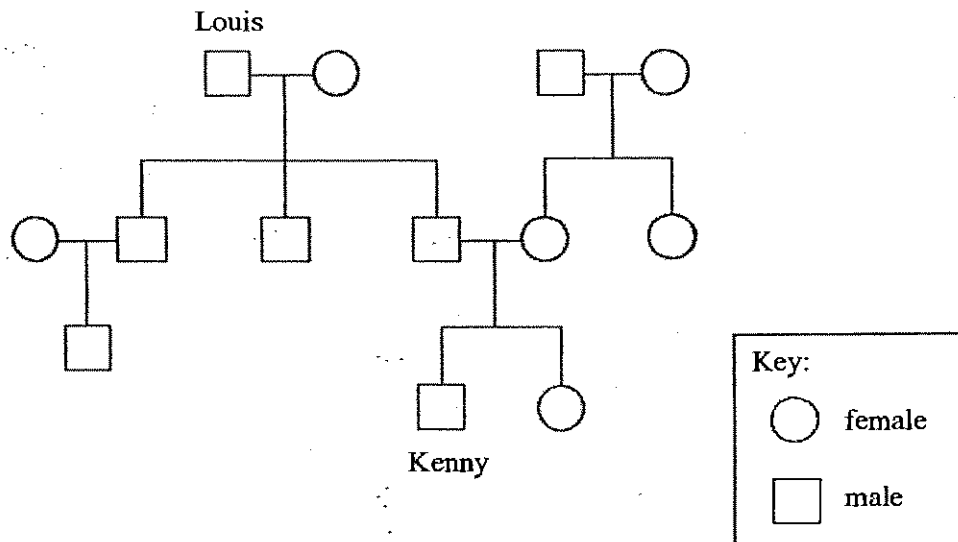


Match the animals with the correct letters given in the table. Write your answers in the given boxes.

( 2 m )

|                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <br><div style="display: flex; justify-content: space-between; align-items: center;"> <span>A</span> <input style="width: 80px; height: 40px;" type="text"/> </div> | <br><div style="display: flex; justify-content: space-between; align-items: center;"> <span>B</span> <input style="width: 80px; height: 40px;" type="text"/> </div> |
| <br><div style="display: flex; justify-content: space-between; align-items: center;"> <span>C</span> <input style="width: 80px; height: 40px;" type="text"/> </div> | <br><div style="display: flex; justify-content: space-between; align-items: center;"> <span>D</span> <input style="width: 80px; height: 40px;" type="text"/> </div> |

33. Study the family tree below



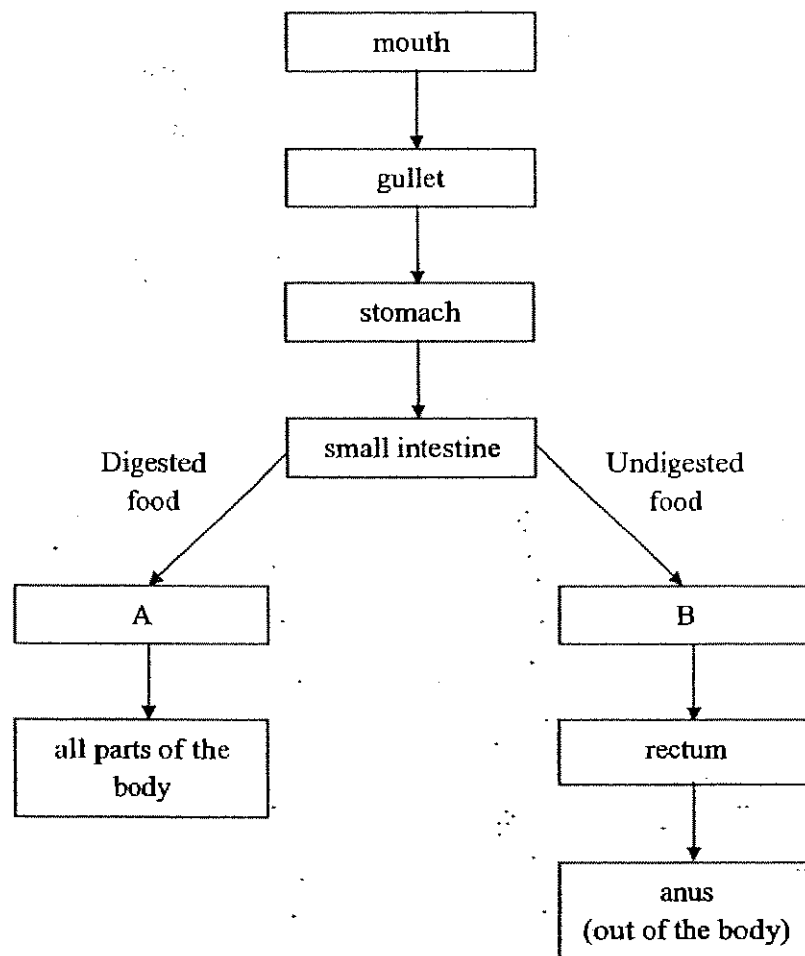
Put a tick (✓) in the correct column for each statement.

( 2 m )

|      | Statement                                        | True | False | Not possible to tell |
|------|--------------------------------------------------|------|-------|----------------------|
| i)   | Kenny has 2 uncles.                              |      |       |                      |
| ii)  | Louis has 4 children.                            |      |       |                      |
| iii) | Kenny's mother has a younger sister.             |      |       |                      |
| iv)  | Kenny's father has a brother who is not married. |      |       |                      |



34. Study the diagram below



a) What do A and B represent? ( 2 m )

A: \_\_\_\_\_

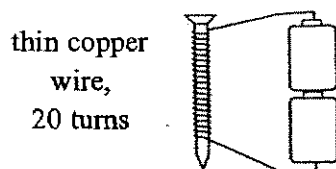
B: \_\_\_\_\_

b) Which two body systems are working together in this diagram? ( 1 m )

\_\_\_\_\_

35. An iron nail can be magnetised by electricity when it is placed in a coil of wire. Christine wanted to find out how the thickness of the wire coiled around the nail can affect the strength of the electromagnet.

She prepared the set-up as shown below.



- a) Using the North pole of a bar magnet, how can she prove that the nail is now an electromagnet? (1 m)

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- b) In order for her experiment to be a fair one, she needed to have another set-up. Which of the following variables should she change and which are the ones should she keep the same?

Complete the table by putting a tick (✓) in the correct boxes.

(1 m)

|      | Variables                               | Keep the same | Change |
|------|-----------------------------------------|---------------|--------|
| i)   | Number of batteries                     |               |        |
| ii)  | Thickness of the wire used              |               |        |
| iii) | Material that the wire is made of       |               |        |
| iv)  | Number of turns of wire around the nail |               |        |

- c) Christine coiled the wire around a glass rod. She connected the wire to the ends of the two batteries. She brought the glass rod near to a paperclip.

Would the paper clip be attracted to the glass rod? Give a reason for your answer. (1 m)

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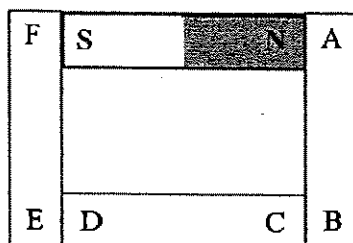


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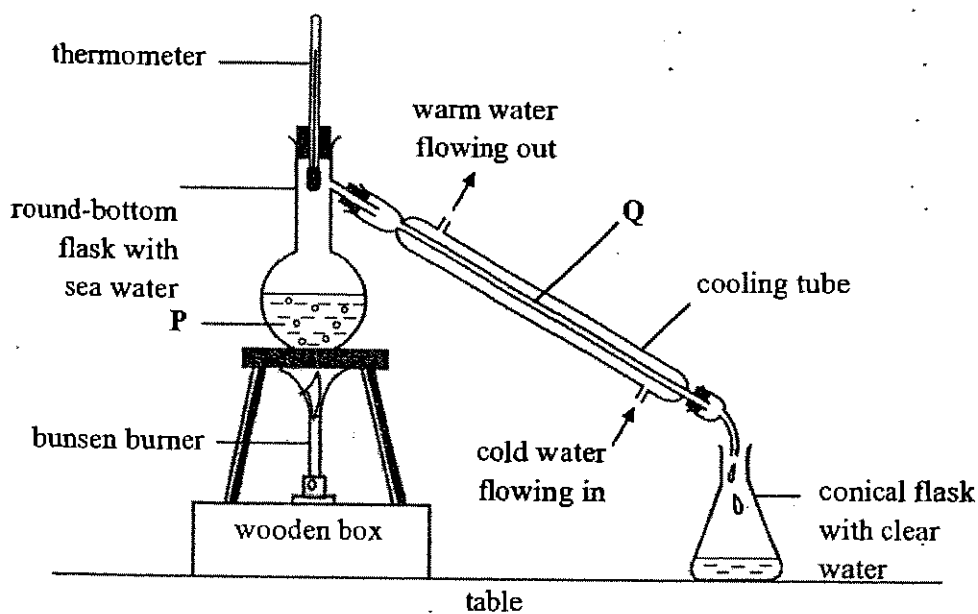
36. Four bar magnets are placed together and their ends are marked as shown in the diagram. Only the poles of one of the magnets have been identified.



What would happen when the ends of the magnets stated in the table below (2 m) are brought close to each other? Put a tick (✓) in the correct boxes.

|    | Ends that are brought close together | Attract | Repel |
|----|--------------------------------------|---------|-------|
| a) | A and D                              |         |       |
| b) | A and F                              |         |       |
| c) | B and D                              |         |       |
| d) | C and F                              |         |       |

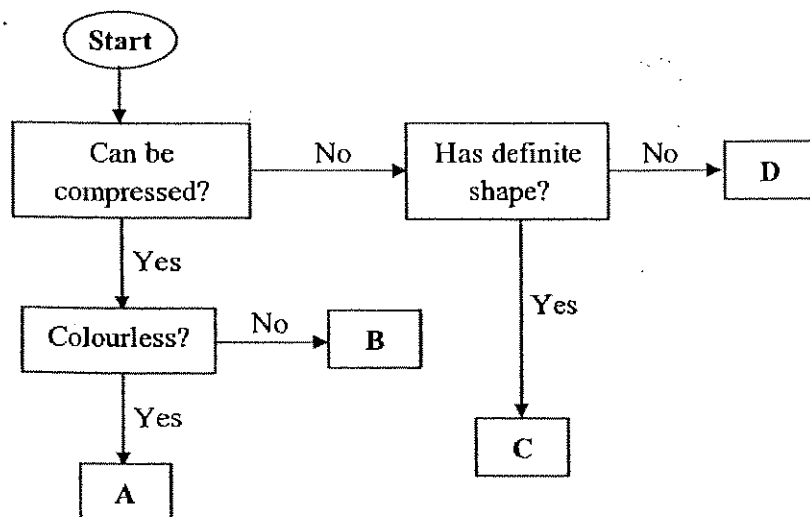
37. Study the diagram below carefully.



Name the processes that are taking place at part P and Q of the set-up.

| Part | Process |
|------|---------|
| P    |         |
| Q    |         |

38. The flow chart below describes the properties of some materials at 25°C.



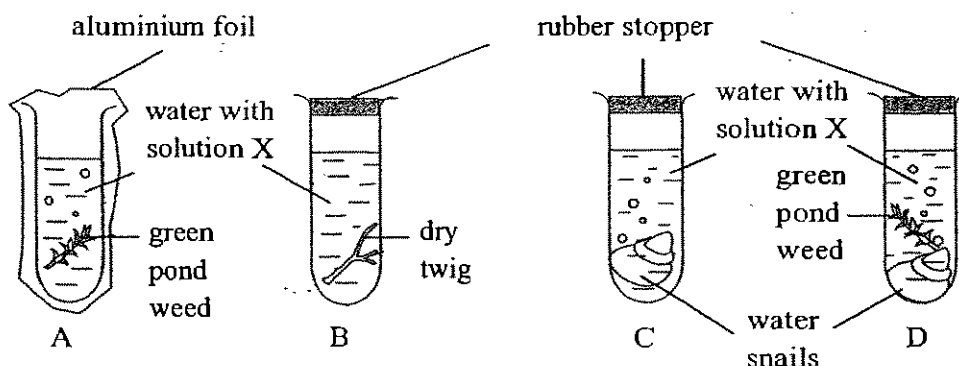
a) Based on the flow chart, what are the properties of B? (1 m)

b) The freezing point of substance X is 18 °C and its boiling point is 65 °C. (1 m)  
Which state of matter is substance X in at 25°C?

c) Match the following substances with the letters, A, B, C and D. (1½ m)

| Substance      | Letter |
|----------------|--------|
| X              |        |
| Candle wax     |        |
| Carbon dioxide |        |

39. Four identical boiling tubes, each with 20 mL of solution X, were placed side by side in a sunny place for a few hours.



When the level of carbon dioxide in the water changes, the colour of solution X changes as shown in the table below.

| Carbon dioxide level | Colour of solution X |
|----------------------|----------------------|
| No change            | red                  |
| Increase             | yellow               |
| Decrease             | purple               |

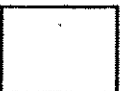
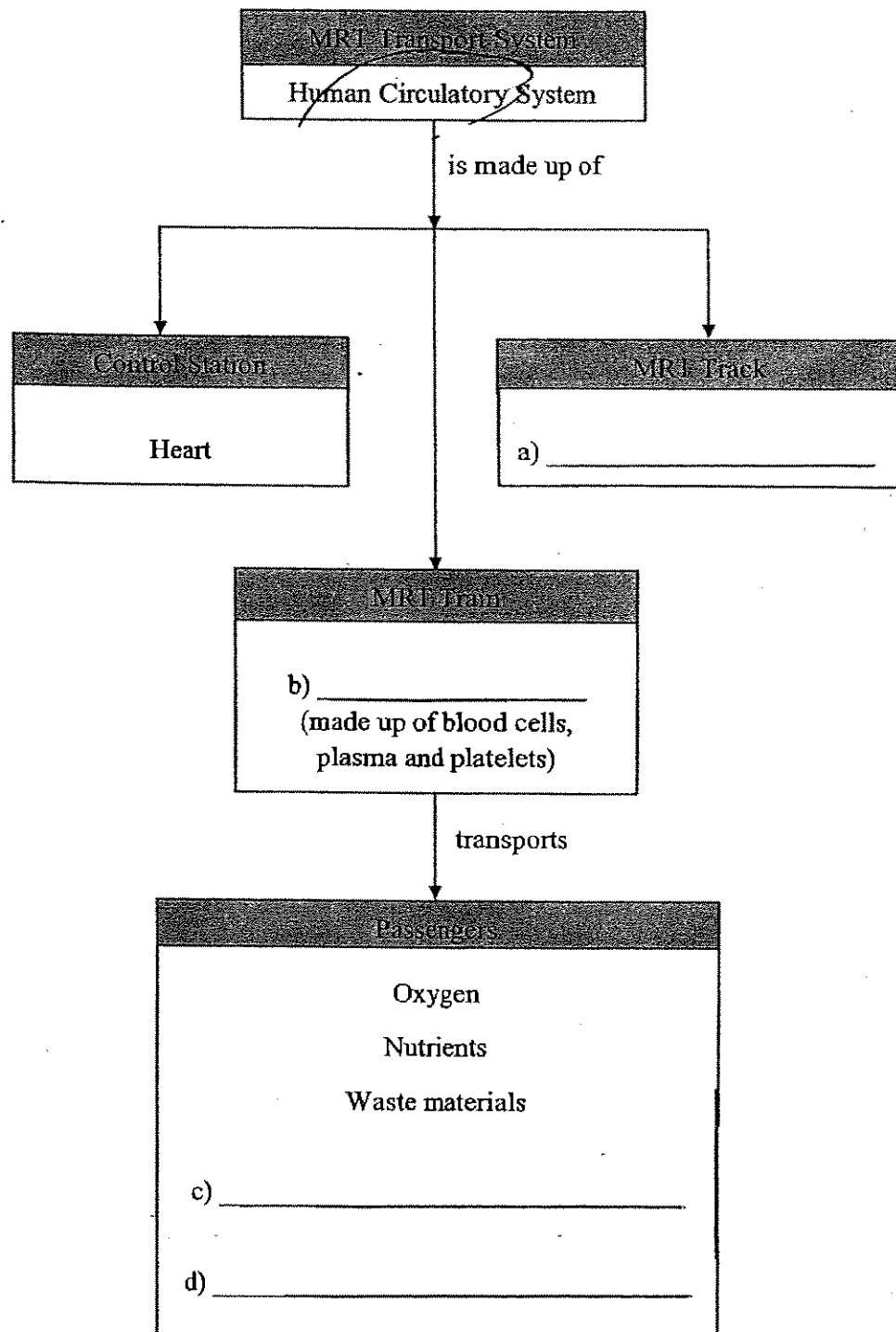
Indicate the colour of solution X in each of the boiling tube in the table below. Put a tick (✓) in the correct boxes. (2 m)

| Boiling tube | Red | Yellow | Purple | Impossible to tell |
|--------------|-----|--------|--------|--------------------|
| A            |     |        |        |                    |
| B            |     |        |        |                    |
| C            |     |        |        |                    |
| D            |     |        |        |                    |

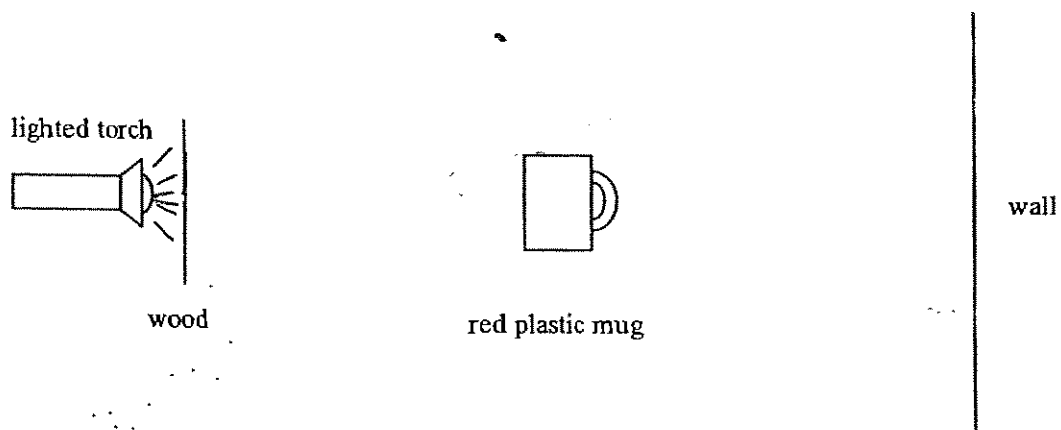
SCORE

468

40. Mandy is revising for her exam. She compared the human circulatory system to the Mass Rapid Transit (MRT) system to help her better remember how the system works. Complete the concept map below by filling in the blanks. (2 m)



41. Sumin shone a torch through a thin piece of wood onto a red plastic mug as shown below.

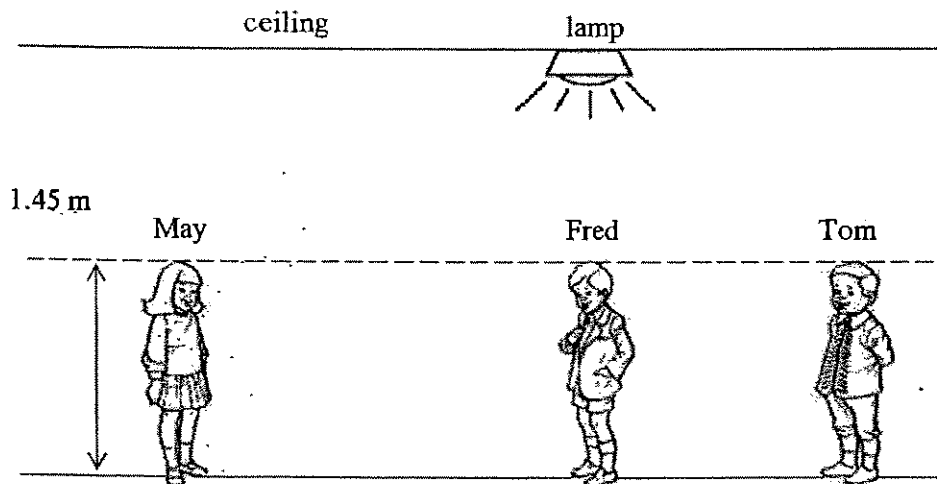


- ai) Using two crosses (×), indicate on the wall the length of the shadow on the wall. (1 m)
- ii) What would happen to the shadow if the mug was moved nearer to the wall? (1 m)

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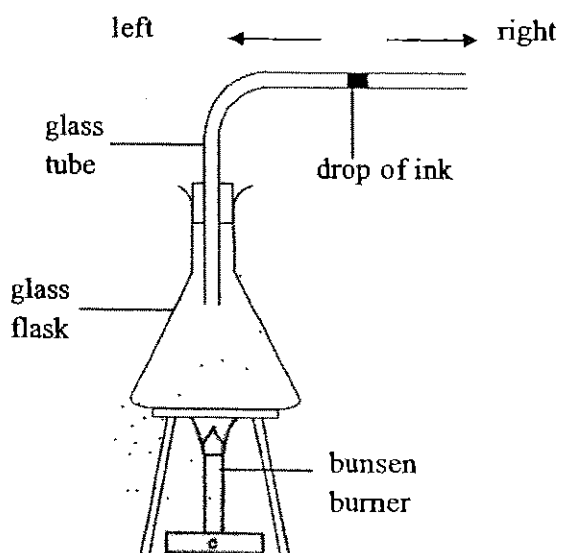
- b) Three children of the same height, May, Fred and Tom, stood under a lamp as shown below. They wanted to find out how the lengths of their shadows were affected by where they stood. They had to stand straight with both their feet on the ground and were not allowed to raise their hands in the air.



- i) Based on the diagram, which child had the shortest shadow? ( ½ m )  
\_\_\_\_\_
- ii) Based on the diagram, which child had the longest shadow? ( ½ m )  
\_\_\_\_\_
- iii) What should Tom do to make his shadow longer? ( 1 m )  
\_\_\_\_\_  
\_\_\_\_\_



42. James set up the experiment ~~below~~ shown below. A drop of red ink was placed in the tube connected to a glass flask. The flask was heated for 5 minutes.



- a) What will happen to the drop of ink? ( ½ m )

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

For Questions 43 to 46, please refer to Booklet K.

End of Paper

Set by : Ms Samantha Gooi  
Vetted by: P4 and P6 Science Committee teachers



# ANSWER SHEET

PEI CHUN PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007  
SEMESTRAL ASSESSMENT (2)

1. 1
  2. 3
  3. 4
  4. 1
  5. 4
  6. 2
  7. 4
  8. 3
  9. 2
  10. 3
  11. 2
  12. 1
  13. 4
  14. 4
  15. 4
  16. 3
  17. 3
  18. 2
  19. 3
  20. 4
  21. 1
  22. 2
  23. 1
  24. 3
  25. 1
- 31) a) Material Q.  
b) It the material is not waterproof the material will absorb the water. It must be light in weight so that it can be carried around easily. It the child drops it, it will not break easily.
- 32) A: C B: A C: B D: D
- 33) i) T ii) F iii) N iv) T
- 34) a) A: blood vessels.  
B: large intestine.  
b) The digestive system and the circulatory system.
- 35) a) Bring the North pole of the magnet to both ends of the iron nail. If it repels one end of the iron nail, the nail is now a magnet.  
b) i) Keep the same ii) Change  
iii) Keep the same iv) Keep the same  
c) No. As glass is not a magnetic material it will never be magnetized by electricity.
- 36) a) Attract b) Attract c) Repel  
d) Attract
- 37) P: Boiling Q: Condensation

38)a) It is not colourless but can be compressed.

b) Liquid.

c) X: D

Candle wax: C

Carbon dioxide: A

39) A: Yellow B: Red C: Yellow D: Impossible to tell

40)a) blood vessels b) blood c) carbon dioxide

d) water

41)a) i)



wood

wall

ii) The shadow will become smaller and sharper.

b) i) Fred ii) May iii) Stand further away from the lamp.

42)a) The drop of ink will move slightly to the left, then towards the right.

b) When the flask is heated, it expands slightly, causing the drop of ink to move left slightly. Then, when the air in the flask is heated, it expands, causing the drop of ink to move right.

**NAN HUA PRIMARY SCHOOL**  
**END OF YEAR EXAMINATIONS 2007**  
**PRIMARY FOUR**  
**SCIENCE**

Name : \_\_\_\_\_ ( )

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

Date : 29 October 2007

Duration : 1 hr 45 min

| MARKS          |              |
|----------------|--------------|
| Sect A:        | / 60         |
| Sect B:        | / 40         |
| <b>Total :</b> | <b>/ 100</b> |

Parent's Signature : \_\_\_\_\_

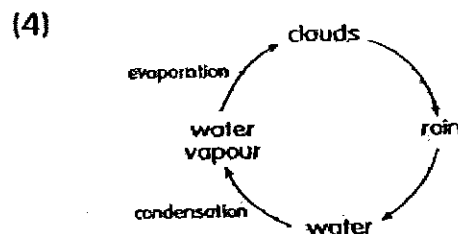
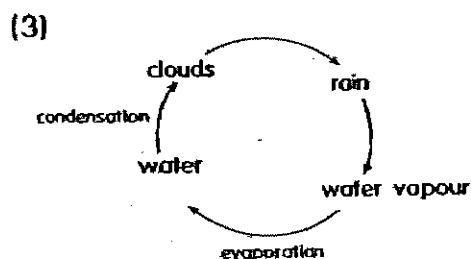
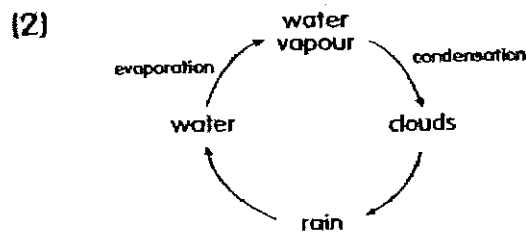
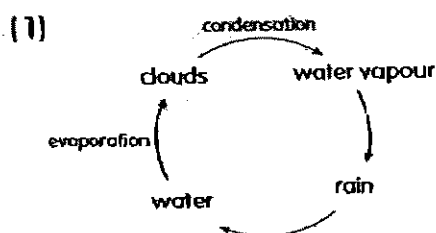
**Section A: (30 x 2marks = 60marks)**

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 is not matter?

- (1) Ink
- (2) Clay
- (3) Sound
- (4) Water vapour.

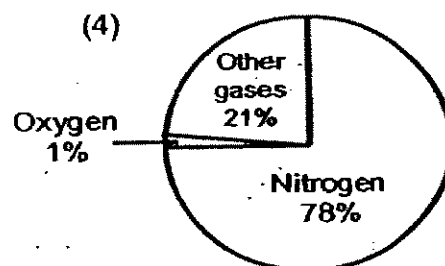
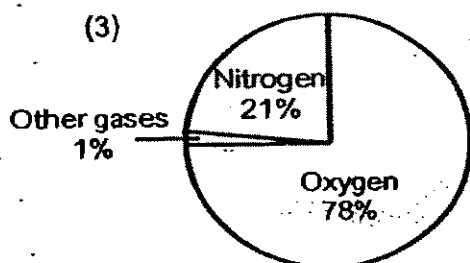
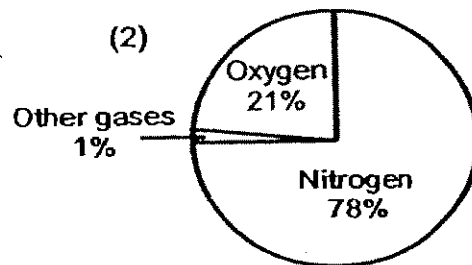
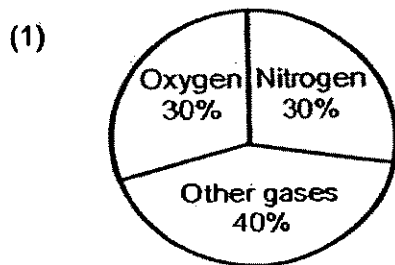
2. Which one of the following correctly describes the water cycle?



3. We can help to conserve water by \_\_\_\_\_.

- (1) taking a long bath instead of a quick shower
- (2) leaving the tap on when washing the dishes
- (3) using a hose instead of a bucket to wash the car
- (4) repairing leaks in taps immediately when they occur

4. Which one of the following shows the correct composition of gases in the air?



5. Which one of the following shows the correct path in which oxygen is transported around our body?

- (1) Windpipe → Lungs → Heart → Rest of the body
- (2) Lungs → Heart → Windpipe → Rest of the body
- (3) Heart → Lungs → Windpipe → Rest of the body
- (4) Windpipe → Heart → Lungs → Rest of the body

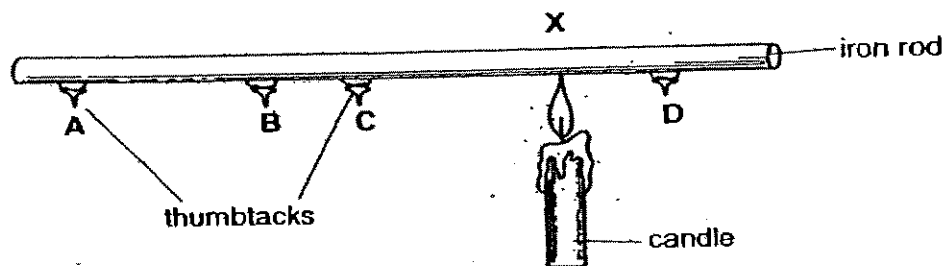
6. Which one of the following does **not** contain stored energy?

- (1) Food
- (2) Wood
- (3) Glass
- (4) Petrol

7. Which one of the following objects does not allow any light to pass through?

- (1) Mirror
- (2) Glass bottle
- (3) Tracing paper
- (4) Clear plastic sheet

8. Sarah set up the experiment shown below. She used some wax to attach 4 thumbtacks A, B, C and D to the iron rod. She lit the candle and held it near the iron rod at the part marked X. Which one of the following shows the correct order in which the thumbtacks will drop from the iron rod?



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

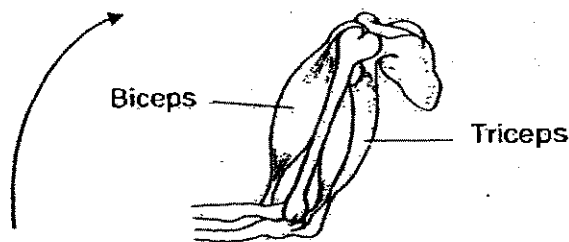
9. Which one of the following spoons heats up the fastest when placed in a cup of hot porridge?

- (1) A metal spoon
- (2) A plastic spoon
- (3) A wooden spoon
- (4) A porcelain spoon

10. Which one of the following statements is **false**?

- (1) Our skeletal system supports the body and keeps it in shape.
- (2) Our digestive system breaks down food into simpler substances for the body to absorb
- (3) Our blood circulatory system carries food, oxygen, water and waste materials to and from various parts of the body.
- (4) Our respiratory system takes in carbon dioxide needed by the body from the air and gives out unwanted oxygen from the body into the air.

11. The diagram below shows a human arm. When we bend our arms in the direction shown by the arrow, which of the following takes place?



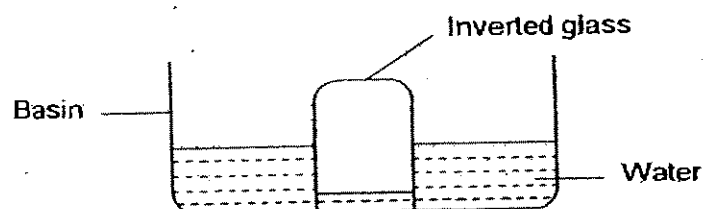
- A. Our biceps contract
- B. Our triceps contract
- C. Our biceps relax
- D. Our triceps relax

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

12. You can make a magnet by \_\_\_\_\_.

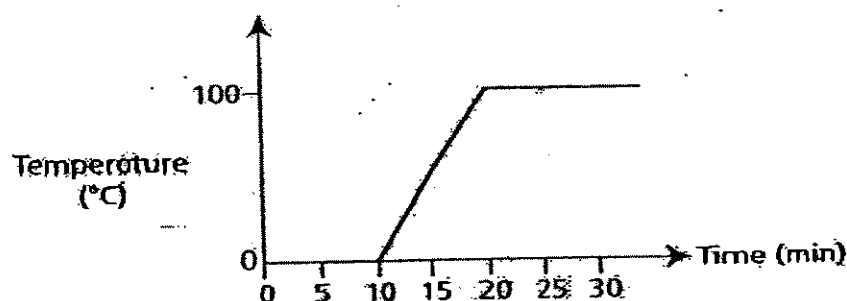
- (1) heating an iron nail
- (2) touching a steel pin with a compass
- (3) stroking a steel rod with a bar magnet
- (4) coiling an iron bar with steel wire

13. Reuben took an empty glass, inverted it and pushed it into a basin of water as shown in the picture below. He noticed that a small amount of water entered the glass. What does this show?



- (1) Air can flow
- (2) Air has mass
- (3) Air has a definite volume
- (4) Air can be compressed

14. Ivy placed some ice cubes in a beaker. She heated the beaker of ice cubes for 30 minutes. She plotted the graph below to show the temperature changes of the contents in the beaker over a period of time.



What processes are taking place in her setup at the 5<sup>th</sup> and 25<sup>th</sup> minute?

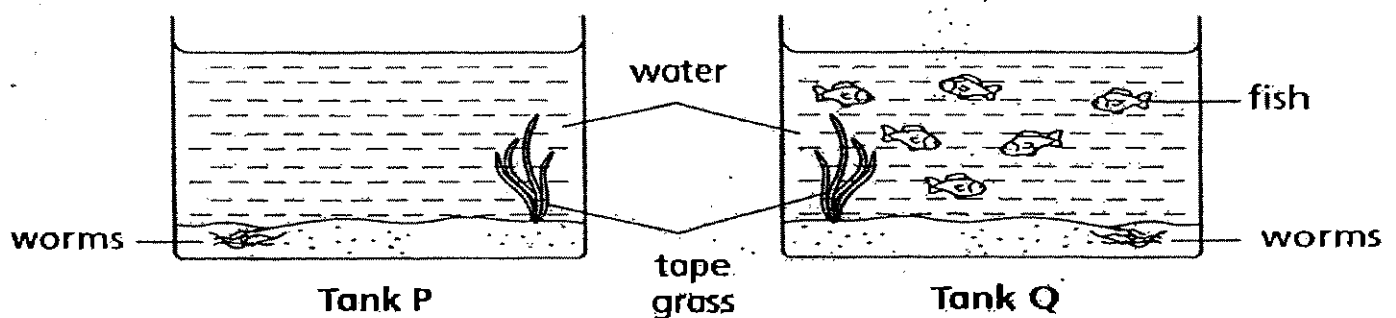
|     | At the 5 <sup>th</sup> minute | At the 25 <sup>th</sup> minute |
|-----|-------------------------------|--------------------------------|
| (1) | Freezing                      | Condensation                   |
| (2) | Freezing                      | Boiling                        |
| (3) | Evaporation                   | Condensation                   |
| (4) | Melting                       | Boiling                        |



15. Joshua noticed a puddle of water on the assembly ground. Which one of the following **does not** affect the rate of evaporation of the puddle of water?

- (1) Humidity
- (2) Presence of wind
- (3) Colour of the water
- (4) Exposed surface area of the puddle

16. Two identical fish tank set-ups, P and Q, were placed beside each other in the same room as shown in the picture below.



After two weeks, it was observed that the tape grass in tank Q had grown taller than the one in tank P. Which of the following are possible reasons for this observation?

- A. The fish in tank Q provided carbon dioxide for the tape grass to make food.
- B. The tape grass in tank P did not receive any sunlight.
- C. The droppings from the fish provided nutrients for the tape grass in tank Q.
- D. The water in tank Q had a higher temperature than the water in tank P.

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

17. A school bus is packed full of students and the air conditioner is not working. After some time, the students in the bus complain that they are feeling humid and faint. Which of the following best describes the changes in the composition of air in the bus?

|     | Carbon dioxide | Oxygen    | Water Vapour |
|-----|----------------|-----------|--------------|
| (1) | Increase       | Decrease  | No change    |
| (2) | Decrease       | Increase  | Decrease     |
| (3) | Increase       | Decrease  | Increase     |
| (4) | Decrease       | No change | Decrease     |

18. Grace placed a young balsam plant in a beaker of water containing red dye. She placed the set-up in the sun for a day and observed that the leaves and the stem were stained red. What could she conclude from the observation?

- A. The roots of the plant take in water.  
 B. The phloem tubes carry food from the roots to the leaves.  
 C. During photosynthesis, the leaves make food that is coloured red.  
 D. The stem of the plant carries water from the roots to the leaves.

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

19. The table below shows Ming Long's pulse rate and number of breaths while at rest.

| Pulse rate | Number of breaths (per minute) |
|------------|--------------------------------|
| 70         | 40                             |

Which one of the following best shows Ming Long's pulse rate and number of breaths after running for 20 minutes?

|     | Pulse rate | Number of breaths (per minute) |
|-----|------------|--------------------------------|
| (1) | 50         | 30                             |
| (2) | 50         | 60                             |
| (3) | 110        | 30                             |
| (4) | 110        | 60                             |

20. Which of the following are similarities between the plant and the human circulatory system?

- A. Both systems have tubes to transport materials.
- B. Both systems transport food, oxygen and carbon dioxide.
- C. Both systems perform the function of transporting materials.
- D. Both systems use an organ to pump the materials through the tubes.

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

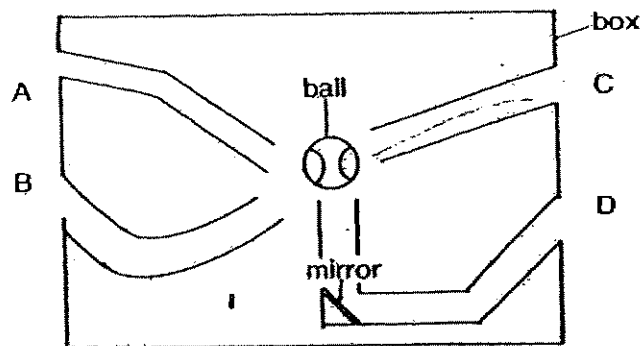
21. Study the table showing the activities of four boys.

| Name of boy | Activity            |
|-------------|---------------------|
| Alden       | Walking in the park |
| Bernard     | Watching television |
| Christopher | Running a race      |
| Darren      | Sleeping            |

Which boy used the most energy?

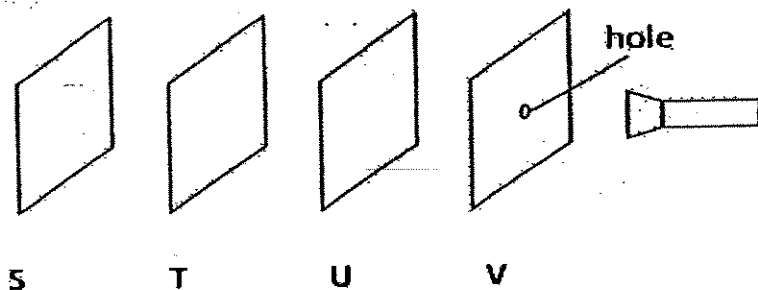
- (1) Alden
- (2) Bernard
- (3) Christopher
- (4) Darren

22. A ball was placed in the middle of a cardboard box as shown in the figure below. Four tubes, A, B, C and D were placed in the box. Which of the tubes can be used to view the ball?



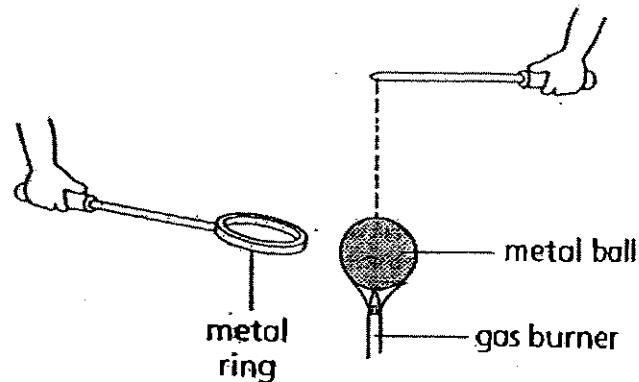
- (1) A  
(2) B  
(3) C  
(4) D

23. Aleena has four sheets made of different materials as shown in the diagram below. She arranged the sheets, S, T, U and V in a straight line. When the torch is switched on, a small, bright circular patch of light is seen on Sheet T only. Which one of the following best describes the properties of the materials of sheets S, T, U and V?



|     | Allows light to pass through | Does not allow light to pass through | Not possible to tell |
|-----|------------------------------|--------------------------------------|----------------------|
| (1) | T and V                      | U                                    | S                    |
| (2) | S and U                      | V                                    | T                    |
| (3) | U                            | T and V                              | S                    |
| (4) | V                            | T                                    | S and U              |

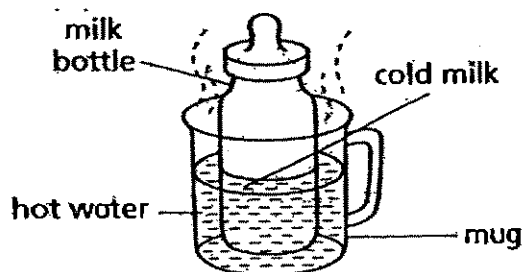
24. When the metal ball is heated, its \_\_\_\_\_



- A. temperature rises ✓  
 B. volume increases ✓  
 C. volume decreases ✗  
 D. temperature falls ✗

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

25. A bottle of cold milk was placed in a mug containing hot water. Which of the following statements are correct?



- A. The cold milk loses heat  
 B. The temperature of the hot water falls  
 C. The mug gains heat from the hot water.  
 D. The hot water gains heat from the cold milk

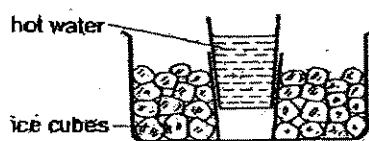
- (1) A and B  
 (2) A and D  
 (3) B and C  
 (4) C and D

26. Two of Andria's metal cups are stuck together as shown below.

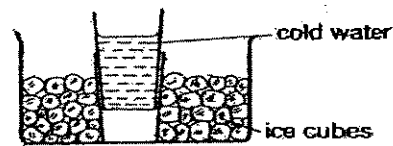


Which one of the following would be the most suitable method of separating them?

(1)



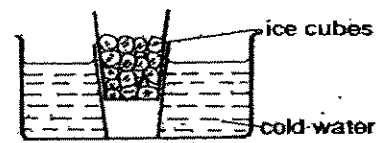
(2)



(3)

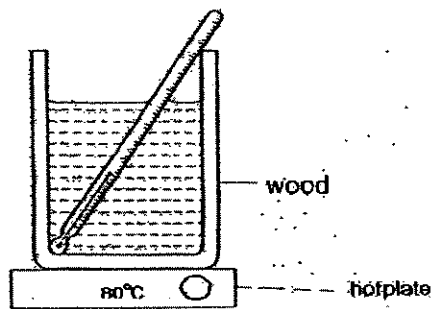


(4)

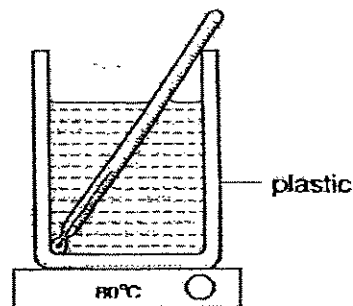


27. Four cans made of different materials were filled with tap water and placed on a hot plate at  $80^{\circ}\text{C}$  for 5 minutes as shown below. A thermometer was placed in each can. At the end of the 5 minutes, which thermometer would show the highest reading?

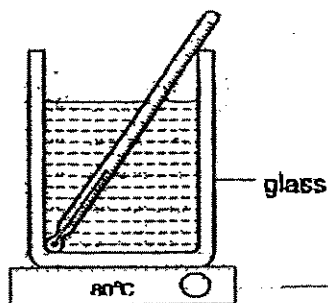
(1)



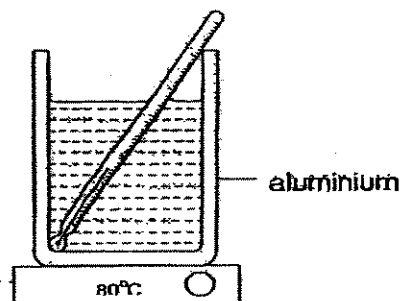
(2)



(3)



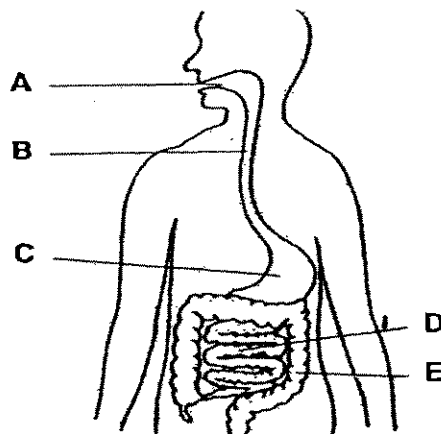
(4)



28. Aminah was told to take care of a balsam plant. She watered the balsam plant every day and protected the plant by placing it in a dark cupboard. Which one of the following statements below **best** describes what will happen to the balsam plant after **one month**?

- (1) The balsam plant will start to bear fruits.
- (2) The balsam plant will look weak due to a lack of oxygen.
- (3) The balsam plant will die due to a lack of carbon dioxide.
- (4) The balsam plant will die because it could not make food.

29. The diagram below shows the human body. In which parts of the body does digestion take place?



- (1) A and C only  
 (2) A, B and C only  
 (3) A, C and D only  
 (4) A, C, D and E only
30. Raphaël found 3 objects and wanted to test if they were magnets. He bought a magnet from the school bookshop and placed it next to each of the objects. This is what he observed.

| Object   | Observation |
|----------|-------------|
| Object A | No reaction |
| Object B | Repels      |
| Object C | Attracts    |

Which of the following object(s) is **definitely** a magnet?

- (1) Object A  
 (2) Object B  
 (3) Object C  
 (4) Objects B and C



**NAN HUA PRIMARY SCHOOL  
END OF YEAR EXAMINATION 2007  
PRIMARY FOUR  
SCIENCE**

Name : \_\_\_\_\_ ( )

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

| MARKS |    |
|-------|----|
|       | 40 |

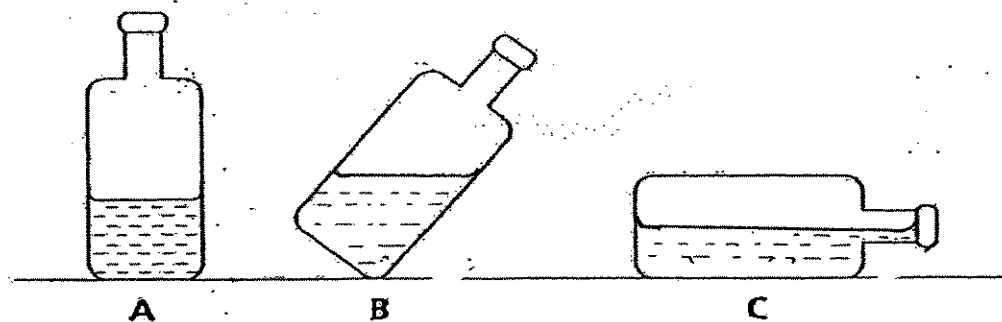
**Section B: (40marks)**

Write your answers to question 31 to 46.

The number of marks available is shown in brackets [ ] at the end of each question or part question.

- 31(a) Jeri wanted to find out what will happen to the water inside her bottle when she tilts it. Diagram A shows her water bottle partially filled with water. She then tilts her bottle slightly as shown in diagram B. Then, the bottle is made to lie sideways on the table as shown in diagram C.

Using a ruler, draw the changes in the water level which Jeri will observe in diagrams B and C.



[1]

- (b) Based on the above experiment, what can you infer about the property of the liquids? [1]

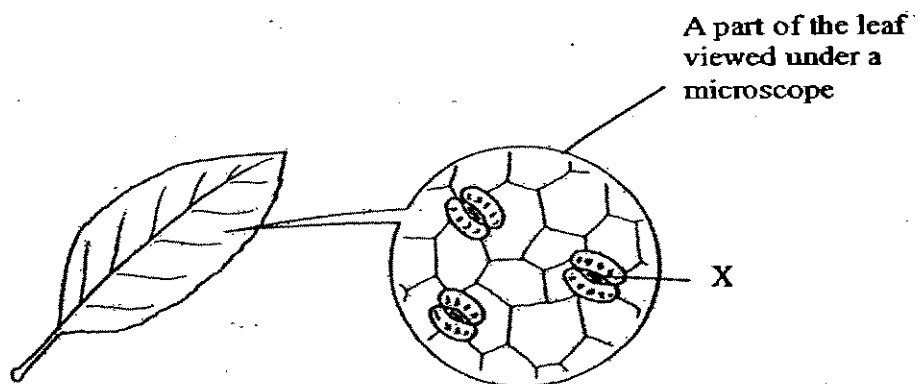
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|       |   |
|-------|---|
| Score | 2 |
|-------|---|

32. Study the diagram below.



(a) Name the part of the leaf labelled X

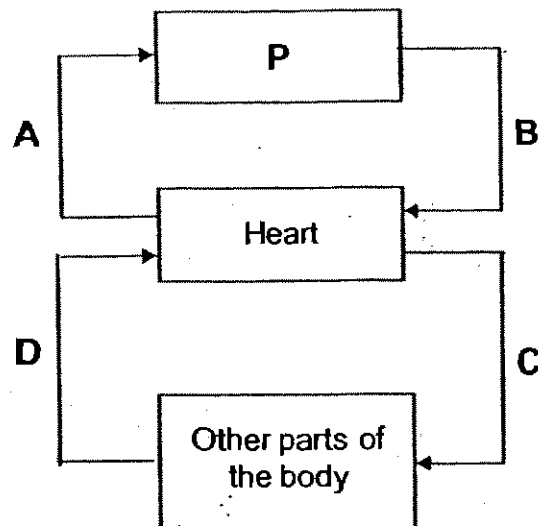
\_\_\_\_\_ [1]

(b) What function does the part labelled X perform during photosynthesis?

\_\_\_\_\_  
\_\_\_\_\_ [2]

|       |                                                                                                                                                                                                                                                                                                                             |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Score | <div style="border: 1px solid black; width: 100px; height: 100px; position: relative;"><div style="position: absolute; top: 0; right: 0; bottom: 0; left: 0; border-left: 1px solid black; border-right: 1px solid black; border-bottom: 1px solid black; transform: rotate(45deg); transform-origin: center;"></div></div> |
|       | 3                                                                                                                                                                                                                                                                                                                           |

33. The diagram below shows how blood flows in the human body.



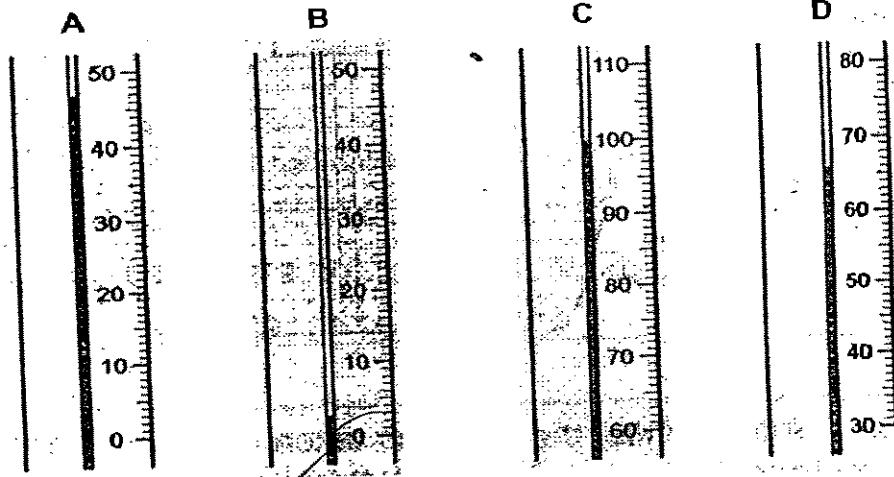
The blood at B contains more oxygen than the blood at A

- (a) Name the organ P. [1]

- (b) Why is the amount of carbon dioxide in the blood higher at D than at C? [1]

- 34 (a) Study the diagrams of thermometers, A, B, C and D, below and record their readings in the space provided.

[2]



Readings: \_\_\_\_\_ °C

\_\_\_\_\_ °C

\_\_\_\_\_ °C

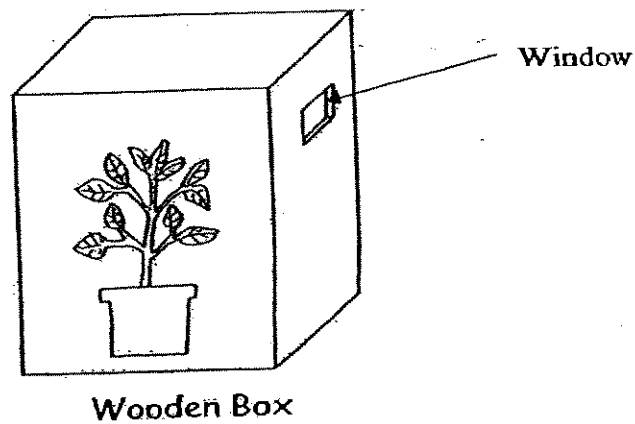
\_\_\_\_\_ °C

- (b) Which of the thermometers shows the temperature of boiling water?

[1]

|       |   |
|-------|---|
| Score | 3 |
|-------|---|

35. Clarice placed a wooden box containing a plant in the open where there was sufficient sunlight. The plant is healthy and is watered daily.



- (a) What will happen to the plant after one week?

\_\_\_\_\_

[1]

- (b) Give a reason for your answer in (a).

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

[1]

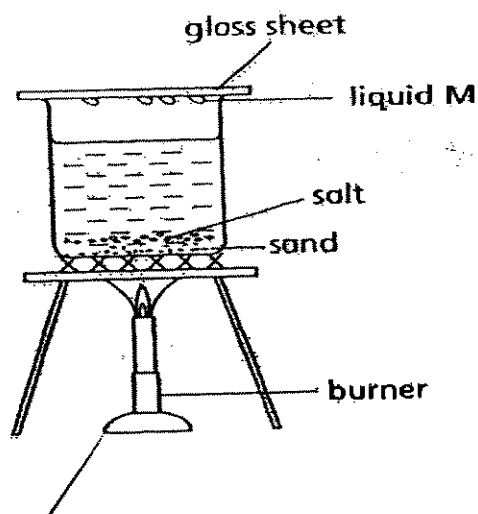
|       |                                                                                                                                                                                                                                                                                                                                                                              |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Score | <div style="border: 1px solid black; width: 100px; height: 100px; position: relative;"><div style="position: absolute; top: 0; right: 0; width: 100%; height: 100%; border-left: 1px solid black; border-bottom: 1px solid black;"></div><div style="position: absolute; bottom: 0; right: 0; width: 20px; height: 20px; text-align: center; line-height: 20;">2</div></div> |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

36. Study the body parts below.  
Circle the body parts that belong to the **digestive system**.

|        |         |                 |          |
|--------|---------|-----------------|----------|
| Gullet | Stomach | Mouth           | Arteries |
| Skin   | Lungs   | Small intestine | Heart    |

[2]

37. A mixture of sand, salt and water was heated as shown below. The mixture was brought to a boil. After a few minutes, liquid M was formed on the underside of the glass sheet.



- (a) What is liquid M?

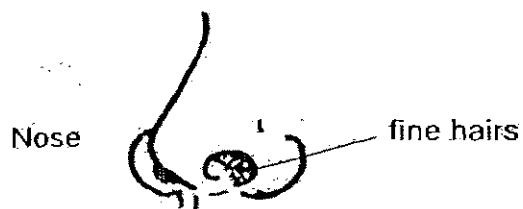
[1]

- (b) Explain how liquid M was formed.

[2]

|       |   |
|-------|---|
| Score | 5 |
|-------|---|

- 38(a) There are tiny and fine hairs in the nostrils of humans as shown in the figure below.



What is the function of these tiny hairs?

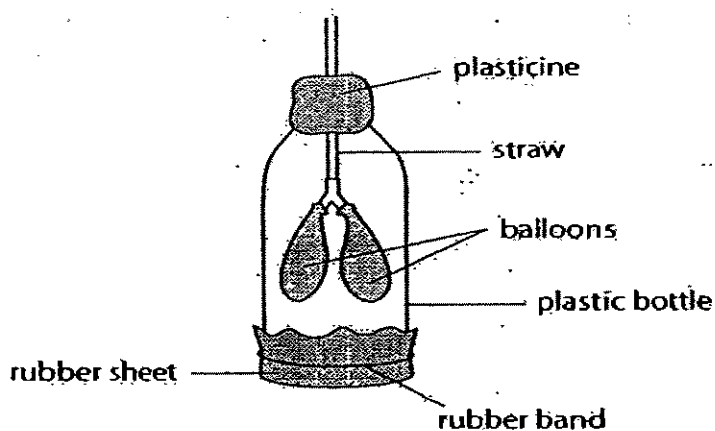
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[1]

- (b) Claire built a model of the human respiratory system as shown in the figure below. State what each of the components of the model represents.

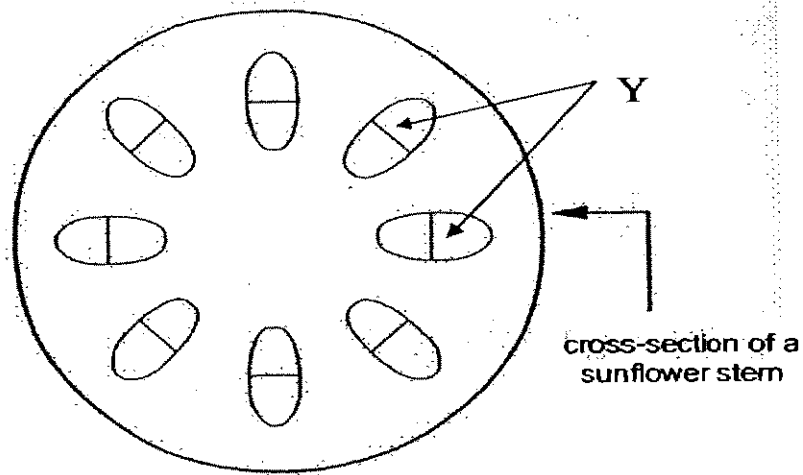


- (i) balloons: \_\_\_\_\_
- (ii) straw: \_\_\_\_\_
- (iii) rubber sheet: \_\_\_\_\_
- (iv) plastic bottle: \_\_\_\_\_

[2]

|       |   |
|-------|---|
| Score | 3 |
|-------|---|

39(a) The figure below shows the cross section of a sunflower stem.



What is the function of the parts labelled Y?

---

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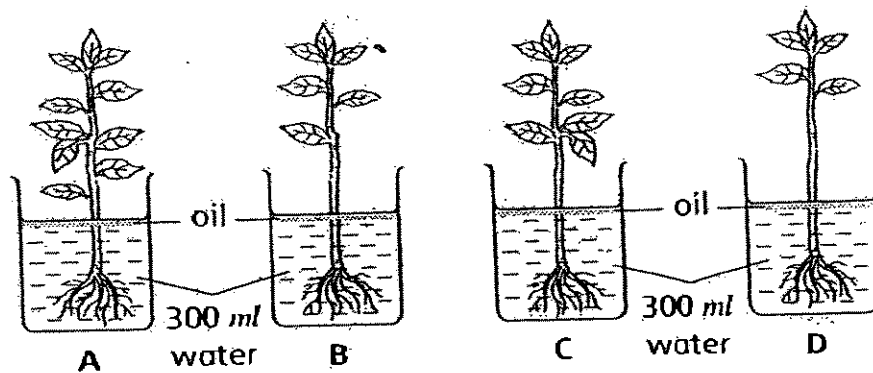
---

[1]

|       |   |
|-------|---|
| Score | 1 |
|-------|---|



- 39(b) Hui Ling poured 300 ml of water into four beakers and placed four balsam plants, A, B, C and D into them as shown in the figure below. A thin layer of oil was poured on the surface of the water.



After two days, she observed the following results:

| Plant                     | A   | B   | C   | D   |
|---------------------------|-----|-----|-----|-----|
| Number of leaves          | 10  | 6   | 9   | 5   |
| Volume of water left (ml) | 150 | 180 | 165 | 190 |

- (i) What can you conclude from the results shown above?

---



---

[1]

- (ii) What is the purpose of pouring a layer of oil on the surface of the water?

---

[1]

|       |   |
|-------|---|
| Score | 2 |
|-------|---|

40. Read the following statements about energy. Write 'T' for the statements that are true or 'F' for the statements that are false in the brackets provided.

- (a) Energy is matter. ( )
- (b) Energy exists in different forms. ( )
- (c) Energy is needed by living things to grow. ( )
- (d) The Sun is our main source of heat and light energy. ( )

[2]

41. Classify the following objects according to the amount of light they allow to pass through them.

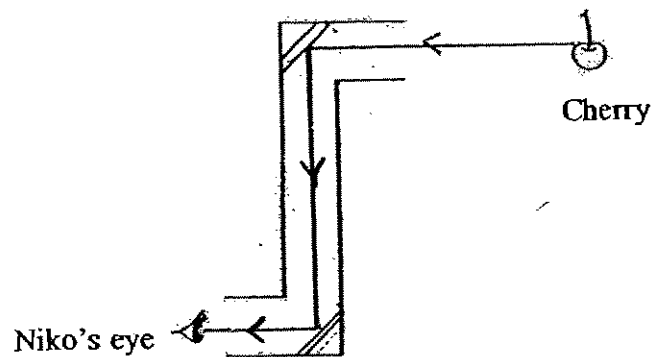
|                                |                           |                          |                           |
|--------------------------------|---------------------------|--------------------------|---------------------------|
| <del>Clear plastic sheet</del> | <del>Cardboard</del>      | <del>Mirror</del>        | <del>Wooden ruler</del>   |
| <del>Frosted glass</del>       | <del>Aluminium foil</del> | <del>Tracing paper</del> | <del>Spectacle lens</del> |

| Transparent | Translucent | Opaque |
|-------------|-------------|--------|
|             |             |        |
|             |             |        |
|             |             |        |
|             |             |        |
|             |             |        |

[4]

|       |   |
|-------|---|
| Score | 6 |
|-------|---|

42. Study the diagram below.



(a) In the above set-up, why was Niko **not** able to see the cherry?

---



---

[1]

(b) Niko was given **two** mirrors and was told that if she were to place the mirrors inside the set-up correctly, she would be able to see the cherry. Draw **lines** in the diagram given to represent where and how she should place these mirrors in order to see the cherry.

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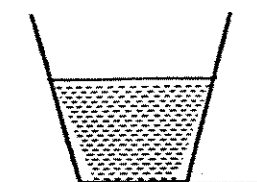
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[1]

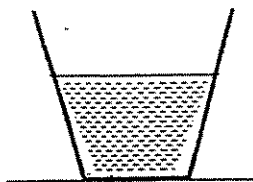
|       |   |
|-------|---|
| Score | 2 |
|-------|---|

43. Galton left two identical containers with equal amounts of water at different temperatures in the room as shown below. The room temperature was  $30^{\circ}\text{C}$ .

Room temperature :  $30^{\circ}\text{C}$



**Container A**  
Temperature of  
water:  $5^{\circ}\text{C}$



**Container B**  
Temperature of  
water:  $80^{\circ}\text{C}$

- (a) Put a tick ( $\checkmark$ ) in the correct box in the table below to indicate the changes in the water after 30 minutes.

[1]

|                      | Gained Heat | Lost Heat | Increased in temperature | Decreased in temperature |
|----------------------|-------------|-----------|--------------------------|--------------------------|
| Water in Container A |             |           |                          |                          |
| Water in Container B |             |           |                          |                          |

- (b) What would the temperature of the water in container A be after 5 hours?

---

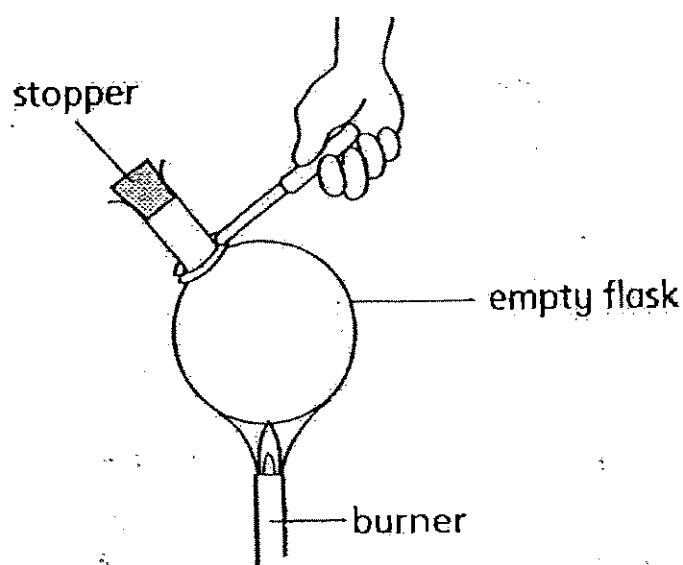


---

[1]

|       |   |
|-------|---|
| Score | 2 |
|-------|---|

44. Chin Hao heated an empty flask over a burner as shown in the diagram below.



After some time, Chin Hao noticed that the stopper popped out.

Explain why the stopper popped out.

---

---

---

[2]

|       |                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Score | <div style="border: 1px solid black; width: 100px; height: 100px; position: relative;"><div style="position: absolute; top: 0; right: 0; width: 100%; height: 100%; border-left: 1px solid black; border-bottom: 1px solid black; transform: rotate(45deg);"></div><div style="position: absolute; bottom: 0; right: 0; width: 20px; height: 20px; text-align: center; line-height: 20;">2</div></div> |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

45. Classify the following objects according to their ability to conduct heat.

|                   |                |            |
|-------------------|----------------|------------|
| Rubber eraser     | Styrofoam cup  | Paper clip |
| Plastic chopstick | Aluminium tray | Gold chain |

| Bad Conductors of Heat | Good Conductors of Heat |
|------------------------|-------------------------|
|                        |                         |
|                        |                         |
|                        |                         |
|                        |                         |
|                        |                         |

[3]

|       |   |
|-------|---|
| Score | 3 |
|-------|---|

46. Bala observed that a black ball was attracted to two magnets in the manner shown below.



- (a) What material was the black ball made of?

---

[1]

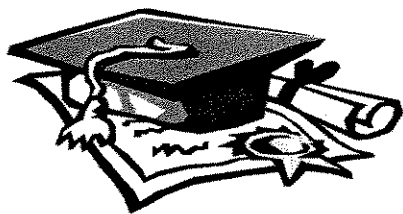
- (b) When the black ball is taken away, what will happen to the two magnets?

---

[1]

**End of Examination**  
**Setter: Mr P. Nair**

|       |                                                                                                                                                         |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Score | <div style="border: 1px solid black; width: 100px; height: 100px; position: relative;"><div style="position: absolute; top: 0; right: 0;">2</div></div> |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------|



# ANSWER SHEET

NAN HUA PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007  
SEMESTRAL ASSESSMENT (2)

1. 3

2. 2

3. 4

4. 2

5. 1

6. 3

7. 1

8. 4

9. 1

10. 4

11. 4

12. 3

13. 4

14. 4

15. 3

16. 1

17. 3

18. 2

19. 4

20. 2

21. 3

22. 3

23. 3

24. 1

25. 3

26. 3

27. 4

28. 4

29. 3

30. 2

31) a)

b) Liquid does not have a definite shape but has a definite volume.

32) a) Stoma.

b) It taken in carbon dioxide and give out oxygen for the plant.

33) a) Lungs.

b) The tissues in the body give carbon dioxide during respiration. As the blood pass through the tissues in the body, the blood exchanges oxygen for carbon dioxide.

34) a) 47°C, 3°C, 100°C, 66°C

b) Thermometer.

35) a) The plant will grow towards the window.

b) The plant can get more sunlight near the window.

36) Gullet, Stomach, Mouth, Small intestine



37)a) Liquid M is water.

b) The burner made the water evaporate into water vapour. The water vapour then condenses on the cool glass sheet to become water droplets.

38)a) To keep dirt from entering the body.

b) i) Lungs      ii) Windpipe  
iii) diaphragm      iv) chest

39)a) It is to transport food made by the leaves to the rest of the plant.

b) i) The more leaves the plant has, the more water it needs.

ii) To prevent evaporation of water.

40)a) F    b) T    c) T    d) T

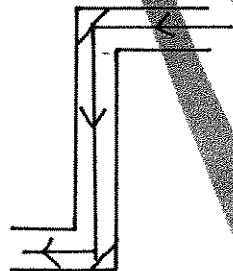
41) Transparent: Clear plastic sheet, Spectacle lens

Translucent: Frosted glass, Tracing Paper

Opaque : Cardboard, Aluminium foil, Mirror  
Wooden ruler

42)a) Light travels in a straight line.

b)



43)a) Water in A: Gained Heat. Increased in temperature

Water in B: Lost Heat. Decreased in temperature

b) It would be 30°C

44) The air in the flask gained heat from the burner and expanded, so the air forced the stopper out.

45) Bad conductors of Heat

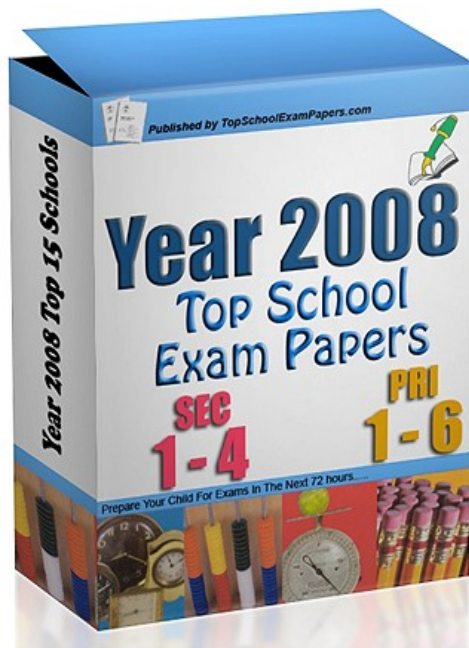
Rubber eraser  
Plastic chopstick  
Styrofoam cup

Good conductors of Heat

Aluminium tray  
Paper clip  
Gold chain

46) a) It is made of iron.

b) They will attract each other.



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