

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

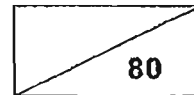
PRIMARY 4 SCIENCE

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 |
|--------------------------------------|--------|---------|--------|
| <input checked="" type="radio"/> (1) | Marble | Ball | Cup |
| <input checked="" type="radio"/> (2) | Oxygen | Mercury | Stone |
| <input checked="" type="radio"/> (3) | Oil | Sugar | Kite |
| <input checked="" type="radio"/> (4) | Book | Water | Eraser |

2. Which one of the following occupies space?

- (1) Wind
- (2) Shadow
- (3) Sunlight
- (4) Lightning

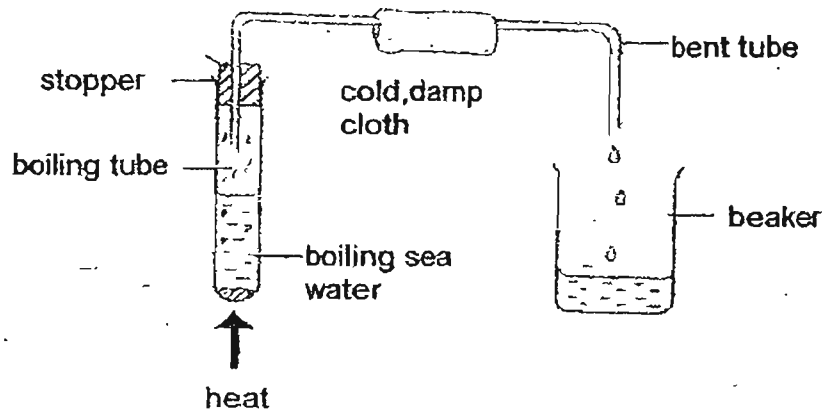
3. Which one of the following is the fastest way to melt a block of ice left in a classroom?

- ~~(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.



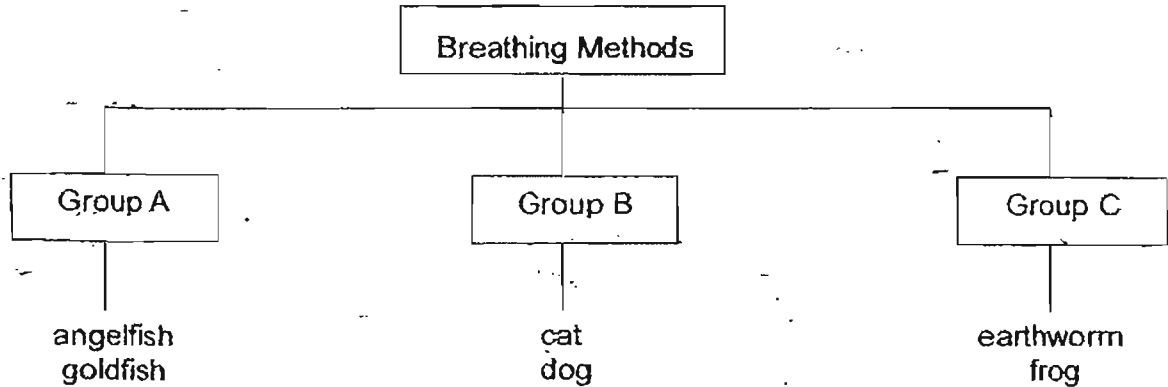
Which of the following shows the correct order of the processes that has taken place to obtain distilled water?

- (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
- (2) whale
- (3) hamster
- (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

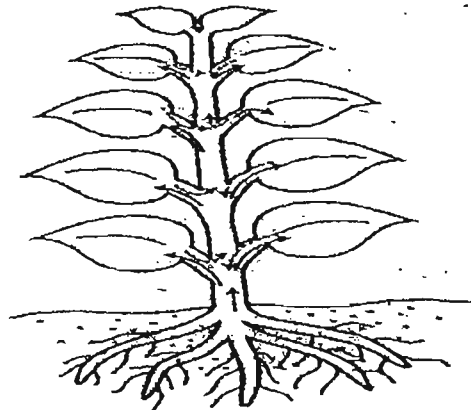
9. The diagram below shows Mr Lim blowing into a party pipe.



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:

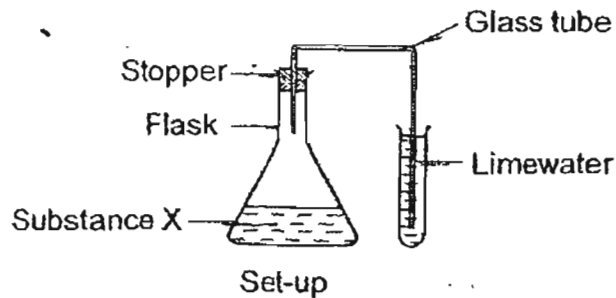
—▶ Arrow A

- - -▶ 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?

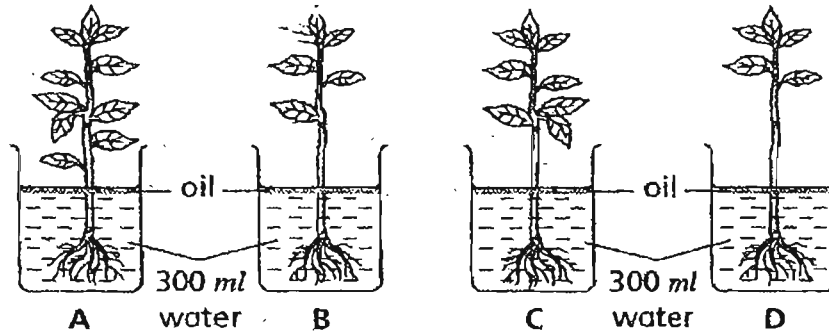
- | | |
|----------------|---------------|
| (1) Oil | (2) Lemon tea |
| (3) Iced water | (4) Coca-cola |
12. Which of the following statements is incorrect?
- (1) A child has a lower heartbeat rate than an adult.
 - (2) The heart needs food, water and oxygen to function.
 - (3) The number of heartbeats 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.

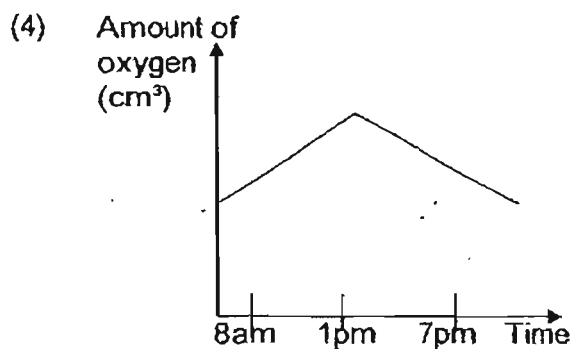
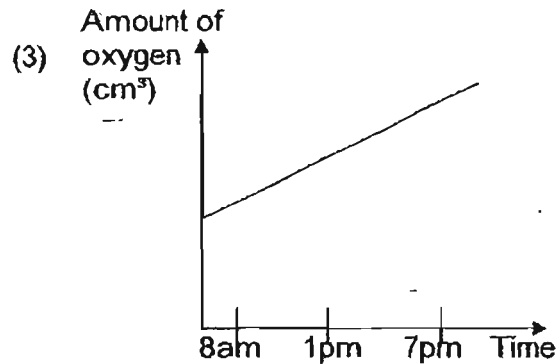
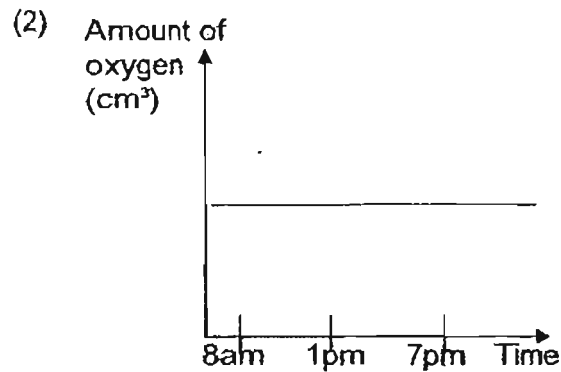
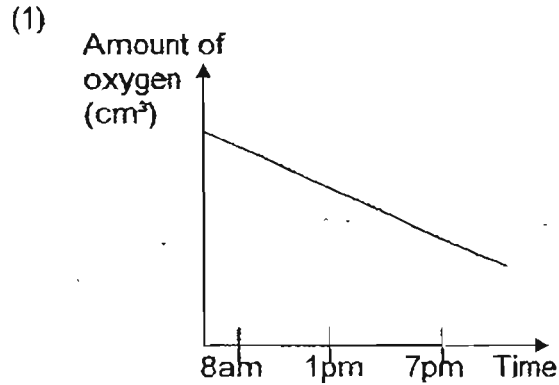


What is the purpose of using oil in the experiment?

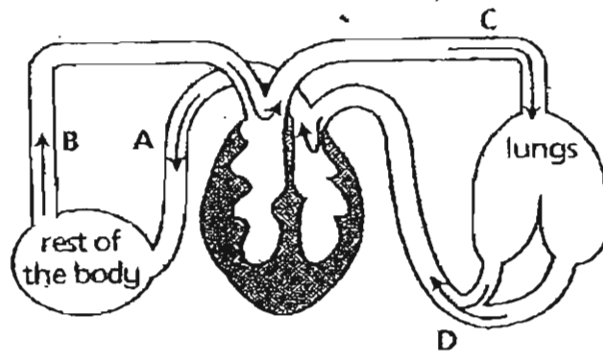
- ~~(1)~~ It is a fertiliser for the plant.
 - ~~(2)~~ It prevents the water from evaporating.
 - ~~(3)~~ It prevents oxygen from entering into the water.
 - ~~(4)~~ It prevents carbon dioxide from entering into the water.
15. After a week, different amount of water was left in the beakers. Which one 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 → 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?



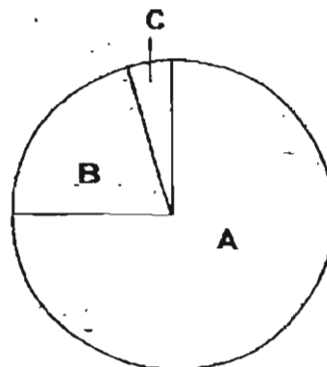
17. The diagram below shows the flow of blood in a body.



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

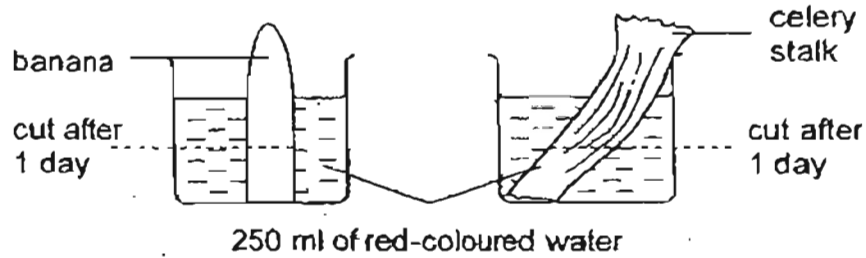
18. The air in the atmosphere is made up of different gases. The pie chart below shows only the composition of the 3 gases, A, B and C.



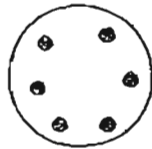
Which of the gas(es) A, B or C is/are needed for making fertilisers and for plants growth?

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

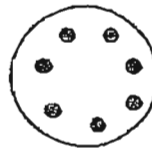
19. Yati put a banana (with skin removed) and a celery stalk into a beaker of red-coloured water. After a day, she cut the banana and celery stalk and made a drawing of what she saw. Which one of the followings correctly shows the drawing she made?



(1) Banana



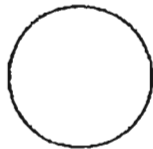
Celery Stalk



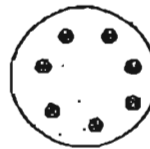
Key

● - red colour

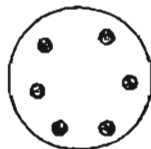
(2) Banana



Celery Stalk



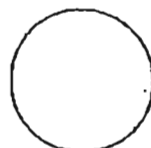
(3) Banana



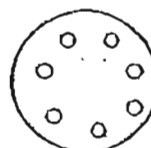
Celery Stalk



(4) Banana



Celery Stalk




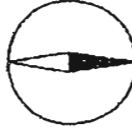

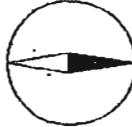




22. Which one of the following statements about magnets is correct?

- (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?

- (1)  
- (2)  
- (3)  
- (4)  

Name: _____

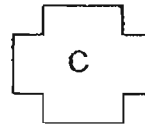
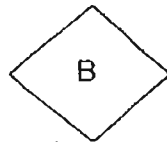
Date: _____

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)

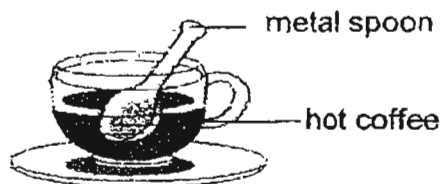


He first filled a measuring cylinder with 50cm^3 of water. He then placed object A into the cylinder and recorded the volume as shown in the table below. He added the other objects, B and C one at a time into the measuring cylinder.

| | Volume Recorded (cm^3) |
|--|-----------------------------------|
| Water + Object A | 75 cm^3 |
| Water + Object A + Object B | 120 cm^3 |
| Water + Object A + Object B + Object C | 150 cm^3 |

Find the volume of water + Object A + Object C. Show your workings in the box shown below.

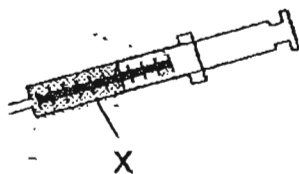
27. The picture below shows a cup of hot coffee with a metal spoon in it. The temperature of the surrounding is 20°C . (2 marks)



In the table below, put a tick (\checkmark) at the correct boxes to indicate which object gains or loses heat to its surroundings.

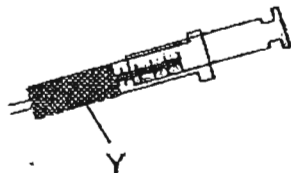
| | Object | Gains Heat | Loses Heat |
|------|-------------|------------|------------|
| (i) | Metal spoon | | |
| (ii) | Hot coffee | | |

28. Ali placed a substance X in a syringe as shown. It cannot be compressed and it has no definite shape.



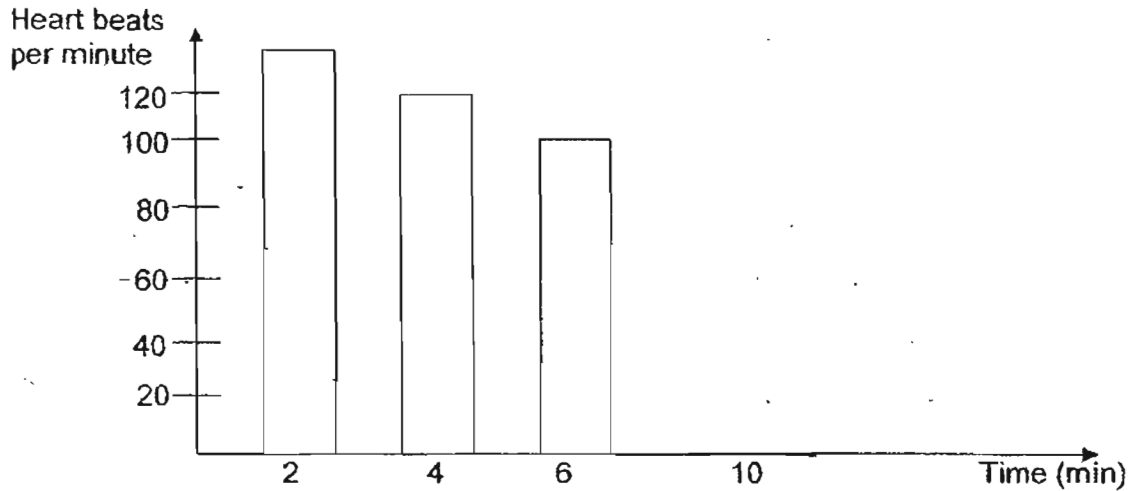
- (a) What is the state of the substance? (1 mark)

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.

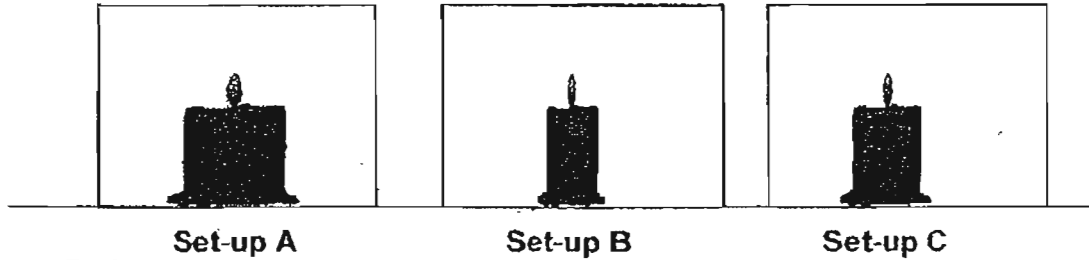


- (a) On the graph above, complete the bar to represent his heart rate at the 10th minute. (1 mark)
- (b) Explain why his heart beats faster when he swims. (2 marks)

30(a) How is the function of the stomata similar to the gills of a fish?
(1 mark)

(b) Explain why there are more stomata found on the underside of the leaves of a plant than on its upper side. (1 mark)

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)

- (b) State 2 variables that he had to keep the same for the above experiment. (2 mark)

- (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

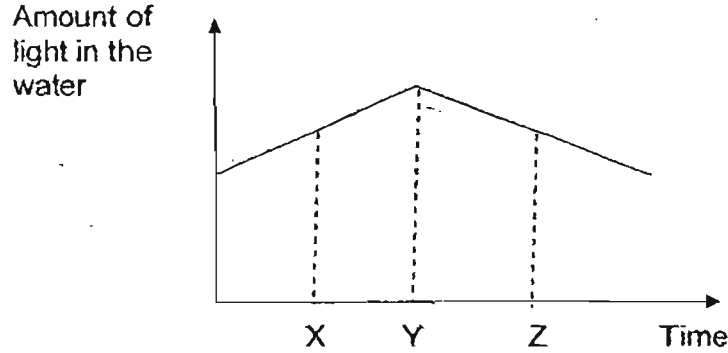
32. Study the table below.

| Mammals | Mass | Pulse rate (beats per 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 of the mammals and their pulse rate? (1 mark)
- mass*

- (b) Would a young lamb have a higher or lower pulse rate than an adult sheep? (1 mark)

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.

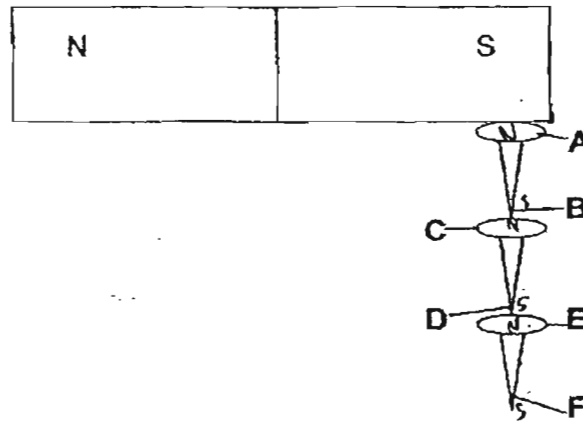


| | | | |
|---------------------------------------|---|----|---|
| Time | X | Y | Z |
| Number of bubbles produced per minute | 4 | 12 | 3 |

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.



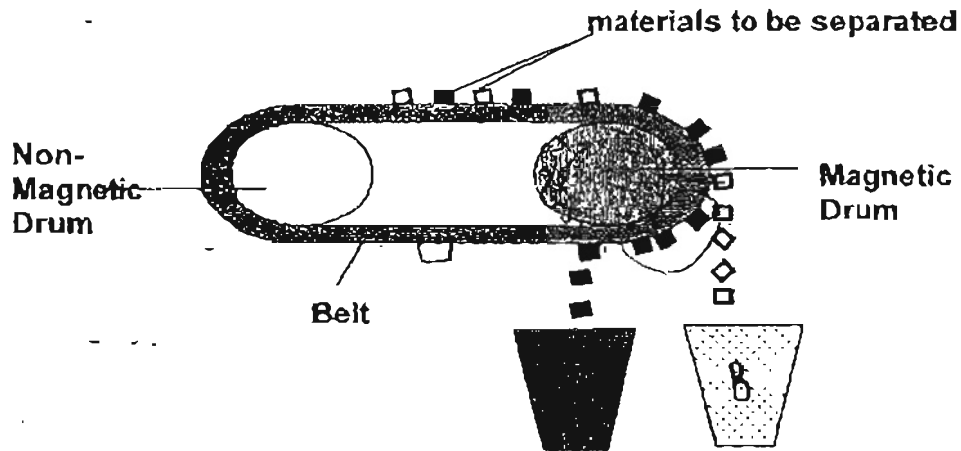
- (a) Name the poles of the ends of the pins below by writing 'N-pole' or 'S-pole' in the space provided. (1 mark)

(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)

35. The diagram below shows a machine that is used to separate magnetic materials from non-magnetic ones.



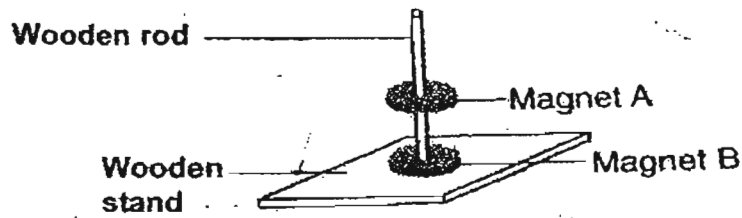
(a) In which bucket, A or B, will the magnetic objects drop into? (1 mark)

(b) Explain why a non-magnetic material is used to make the belt. (1 mark)

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)

END OF PAPER

Setters: Ms Alice Chong
Mrs Manju



ANSWER SHEET

NANYANG PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007
CONTINUAL ASSESSMENT (2)

- 1. 2 $75-50=25$ (object A)
- 2. 1 $120-75=45$ (object B)
- 3. 4 $150-120=30$ (object C)
- 4. $30+25=55$
- 5. 4 $55+50=105$

6. 2 The volume of water + Object A + Object C is 105cm^3

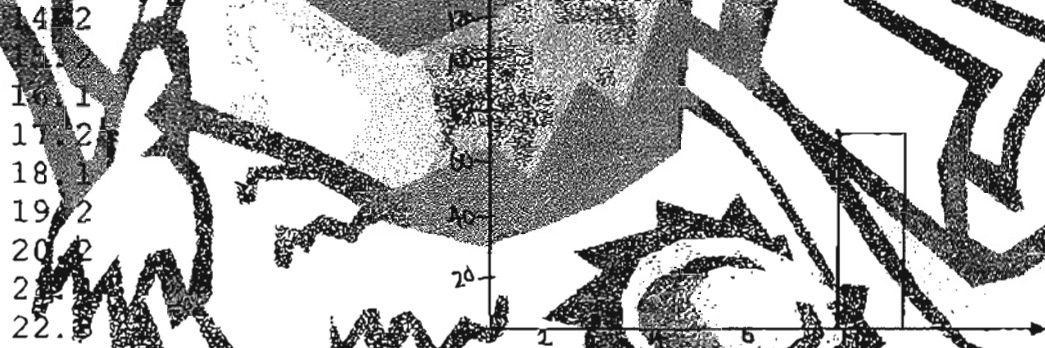
7. 1

8. 2

9. 4 27) i) Gains Heat ii) Loses Heat

10. 28) a) Liquid B) Solid

11. 4 29) a)



12. 1

13. 1

14. 2

15. 1

16. 2

17. 2

18. 1

19. 2

20. 2

21. 1

22. 3

23. 2 b) the heart has to beat faster so that the blood can transport the oxygen and food to the other parts of the body to produce more energy.

24. 1

25. 1

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 sound rate.

33) a) Not ii) True iii) True iv) False

34) a) i) N-pole ii) S-pole

b) The magnetism is not strong enough to pick up more pins.

35) a) Bucket A.

b) Yes, the magnetic force can pass through it and the magnetic drum can attract the magnetic object.

36) i) False ii) False iii) False iv) True

37) a) It is because magnets A and B have the same pole, so therefore if they are each other float in the air, if they have different pole N and S they will float in the air.