

**SINGAPORE CHINESE GIRLS' SCHOOL
FIRST SEMESTRAL ASSESSMENT 2011
PRIMARY 4 SCIENCE**

Name _____ ()

Date: _____

Class: 4

Duration: 1 hr 25 min

Part I (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) on the Optical Answer Sheet provided.

1. Which of the following is/are made of thing/s that was/were once alive?

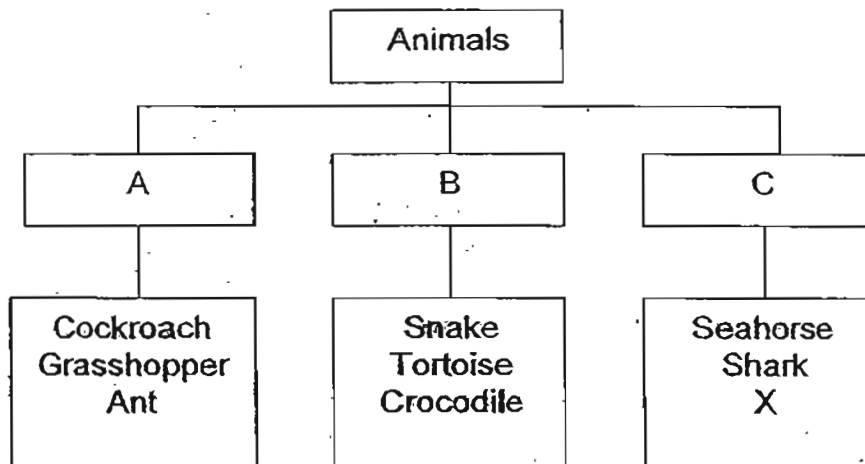
- A) cotton wool
- B) leather shoes

- C) diamond ring
- D) car tyre

- 1) A only
- 2) B and C only

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

Study the classification below and answer Questions 2 and 3.



2. Which of the following would be a suitable heading for A?

- 1) Fish
- 2) Reptiles

- 3) Insects
- 4) Amphibians

3. Which animal can be classified under X?

- 1) Dolphin
- 2) Guppy

- 3) Seagull
- 4) Sea Otter

4. Joan classified some plants into 2 groups as shown in the table below.

A	B
Chiku Orange Grape Lemon	Longan Cherry Pong Pong Lychee

What are the suitable headings for both groups A and B respectively?

	A	B
1)	Edible	Inedible
2)	Non-poisonous	Poisonous
3)	Grow on land	Grow in water
4)	A few seeds	One seed

5. Bacteria are considered as living things because they _____

- A: can reproduce
- B: can grow
- C: are poisonous
- D: are able to move by themselves

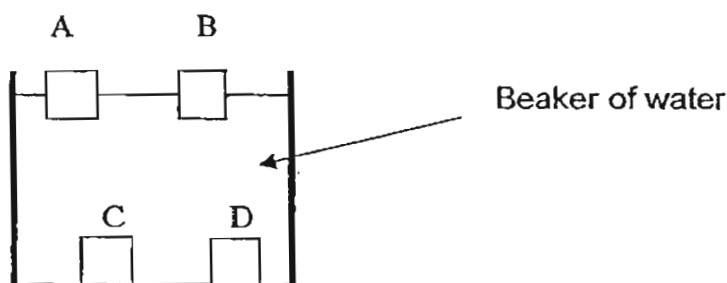
- 1) A and B only
- 2) A, B and D only
- 3) A, B and C only
- 4) A, B, C and D

6. Susan wanted to investigate the rate at which bread mould would grow when placed at different places. She placed 4 slices of bread into a zip-lock bag each and placed each bag at different parts of her house. Arrange in order the rate at which mould would grow, from the slowest to the fastest.

- A: Bread placed at the window sill.
- B: Bread placed in the freezer.
- C: Bread placed in the vegetable compartment of the refrigerator.

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

7. Jason put 4 cubes made of different materials in a beaker of water as shown in the diagram.



Which of the following shows the correct material representation of the different cubes?

	A	B	C	D
1)	Ice	Wood	Steel	Glass
2)	Wood	Glass	Ice	Steel
3)	Steel	Glass	Wood	Ice
4)	Glass	Ice	Steel	Wood

8. Jess carried out an experiment on 4 objects made of different materials (A, B, C and D). She used a plastic ruler to scratch each object. She recorded her observations in the table below.

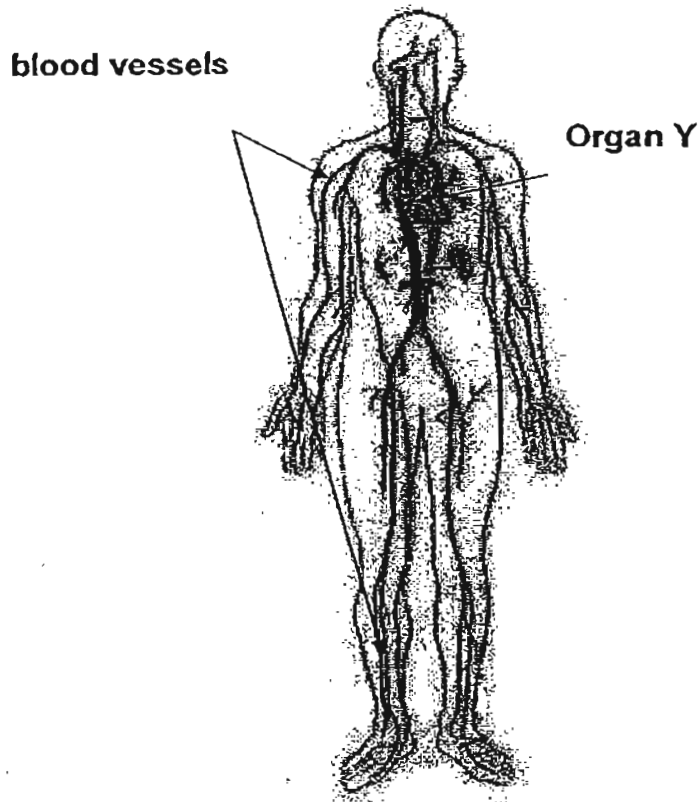
Objects	Observations
A	There was no scratch mark on the ruler or on A.
B	There was a scratch mark on the plastic ruler but not on B.
C	It was slightly scratched.
D	There was a deep scratch.

Arrange the objects in ascending order (from the softest to the hardest).

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

For Questions 9 and 10, refer to the diagram below.

9. The diagram below shows a system of the human body.



What is the function of blood vessels?

- A: They transport blood all around the body.
- B: They work with bones to enable movement.
- C: They help in the production of waste matter.
- D: They support our body and give it a shape.

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

10. Organ Y is the X that helps the body to Y .

	X	Y
1)	lung	take in carbon dioxide and gives out oxygen
2)	heart	pump blood to all parts of the body
3)	lung	take in oxygen and gives out carbon dioxide
4)	heart	pump air to all parts of the body

11. Study the table below.

Age of a person / years	2	4	6	8	10	12	14
Pulse rate / min	130	100	100	90	90	80	80

Which of the following describes the pattern shown in the table?

- 1) A person's pulse slows down when she exercises.
- 2) A person's pulse decreases when she rests.
- 3) A person's pulse increases as she grows older.
- 4) A person's pulse slows down when she grows older.

12. The respiratory system consists of _____.

A: nose
B: gullet
C: lungs

D windpipe
E: heart
F: stomach

- 1) A, B and C
- 2) A, B and E

- 3) A, C and D
- 4) C, D, E and F

13. The diagram below shows a plant that was found in a garden.



The plant climbs up the pole to _____.

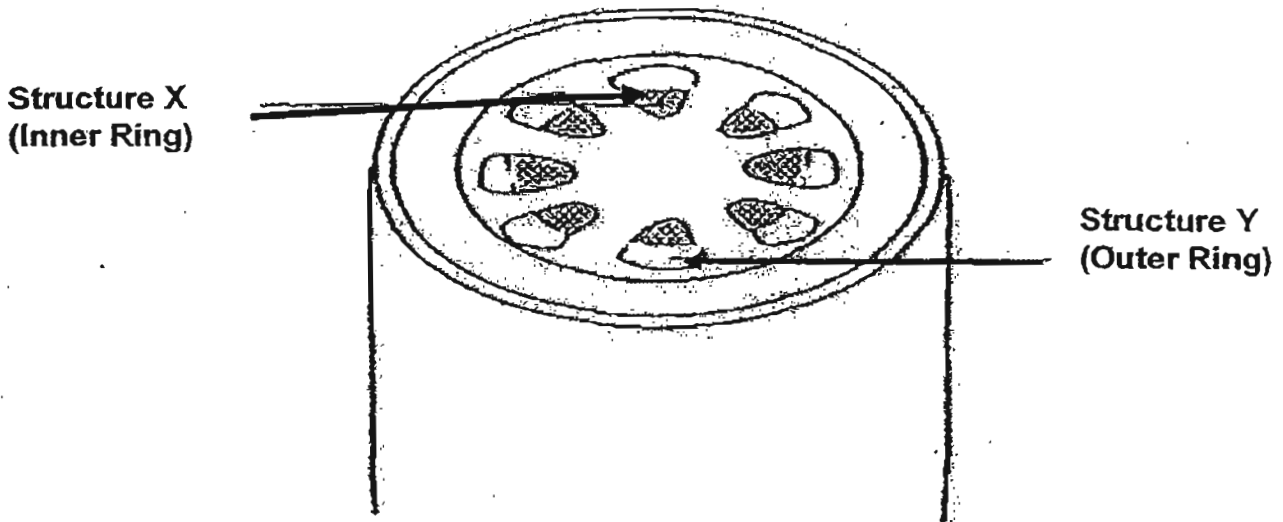
A: get more air
B: get more shade

C: absorb more water
D: get more sunlight

- 1) A only
- 2) D only

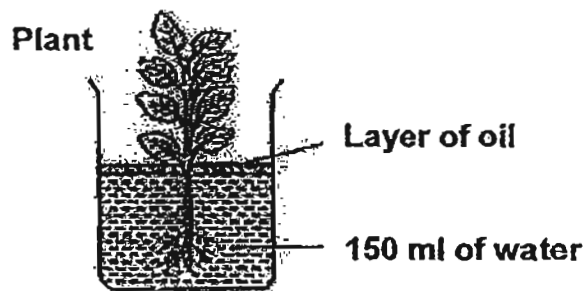
- 3) B and C only
- 4) A, B and C only

14. The diagram below shows the X-section of the stem of a plant that had been immersed in blue coloured water for 2 days. X and Y are the structures found in the stem. What is the likely outcome of these structures after 2 days?



	Structure X	Structure Y
1)	Blue	Colourless
2)	Colourless	Colourless
3)	Colourless	Blue
4)	Blue	Blue

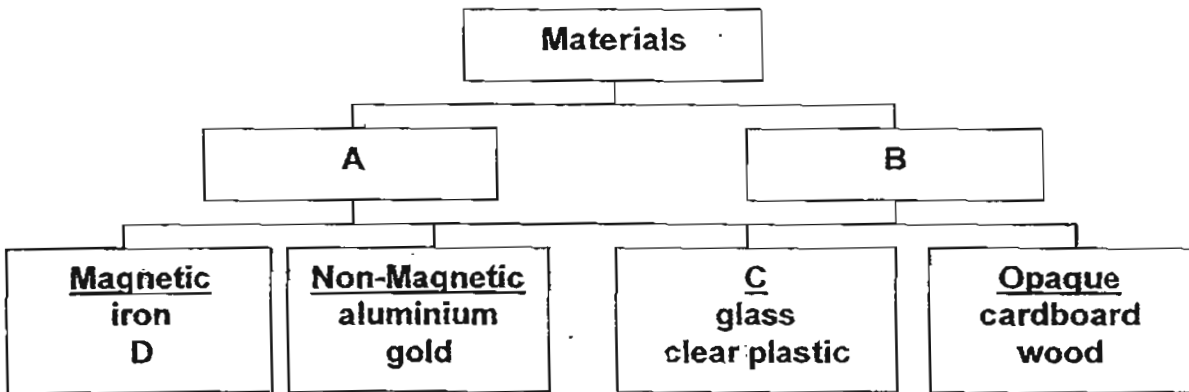
15. Vera set up an experiment as shown below. She filled a beaker with 150 ml of water and placed a plant in it. She left the plant in the balcony outside her class for 3 days.



Which of the following sets of results shows the most likely amount of water left in the beaker at the end of 3 days?

	Start of Experiment	End of Experiment
1)	150 ml	160 ml
2)	150 ml	150 ml
3)	150 ml	120 ml
4)	150 ml	0 ml

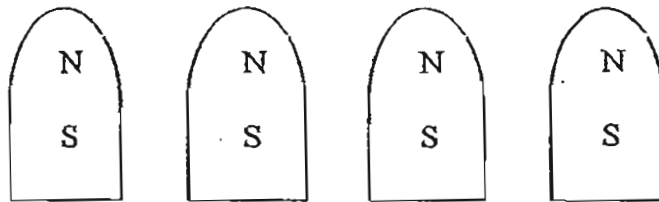
16. Some materials are classified below.



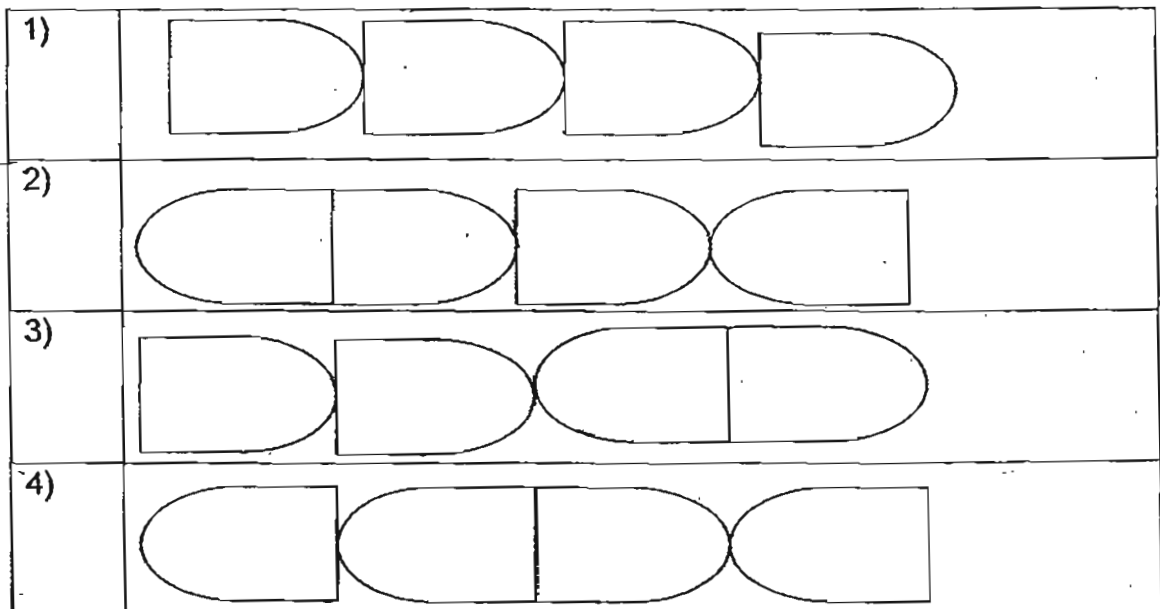
Which of the following is a correct representation of A, B, C and D?

	A	B	C	D
1)	Metals	Non-metals	Transparent	Steel
2)	Non-metals	Metal	Translucent	Cobalt
3)	Non-breakable	Breakable	Opaque	Ceramic
4)	Hard	Soft	Opaque	Nickel

17. The diagram below shows 4 magnets. The poles of the magnets are labelled as shown.



Which of the following shows a possible arrangement in which the magnet could be attracted?



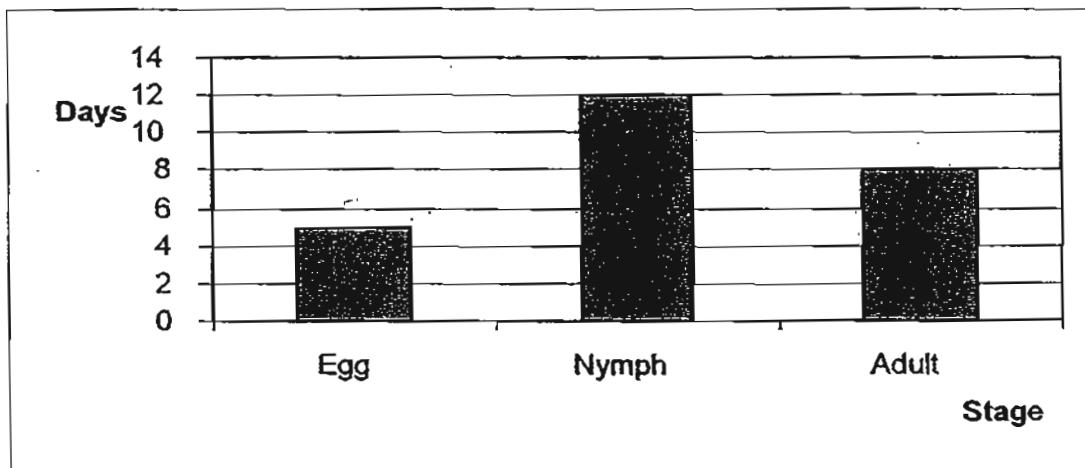
18. Study the table below.

	Statement	Grasshopper	Mealworm Beetle
A	Has 3-stage life cycle	√	X
B	Lay eggs in water	√	X
C	Young resembles its parent	√	X
D	Young moults	√	√

Which of the following are true of a grasshopper and mealworm beetle?

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

Study the graph below and answer Questions 19 and 20. The graph shows the number of days that an insect stays in a certain stage of its life cycle.



19. How many days would the insect take to become an adult after the egg is hatched?

- 1) 5
- 2) 12
- 3) 17
- 4) 25

20. Which of the following has/have a similar life cycle as the one shown above?

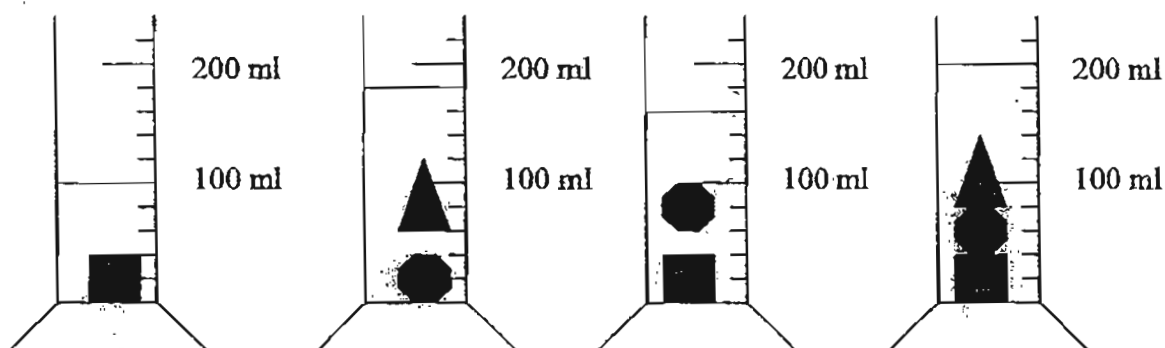
- A) Ant
 - B) Dragonfly
 - C) Butterfly
 - D) Mosquito
- 1) A only
 - 2) B only
 - 3) A, B and D only
 - 4) B, C and D only

21. Jane conducted an experiment to show how bean seeds reacted when subjected to the following conditions over a period of 5 days.

Container	Type of water	Location	Observation
A	Tap water	Garden	8 seeds germinated
B	Tap water	Cupboard	8 seeds germinated
C	Boiled water	Refrigerator	No seed germinated
D	Pond water	Garden	9 seeds germinated

Which 2 jars should Jane compare if she wanted to see if the type of water affected the rate at which seeds germinate?

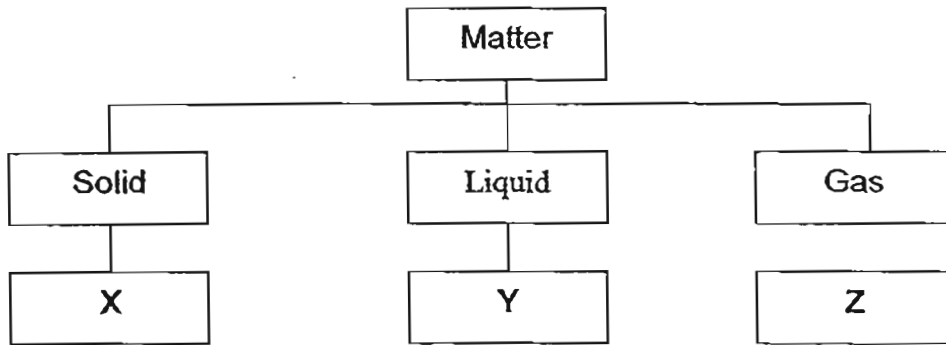
- 1) A and B
 2) B and C
 3) A and D
 4) C and D
22. Different objects were immersed into 3 measuring cylinders that were filled with the same amount of water as shown below. The objects are NOT drawn to scale.



Arrange the volumes of the shapes, starting from the least.

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

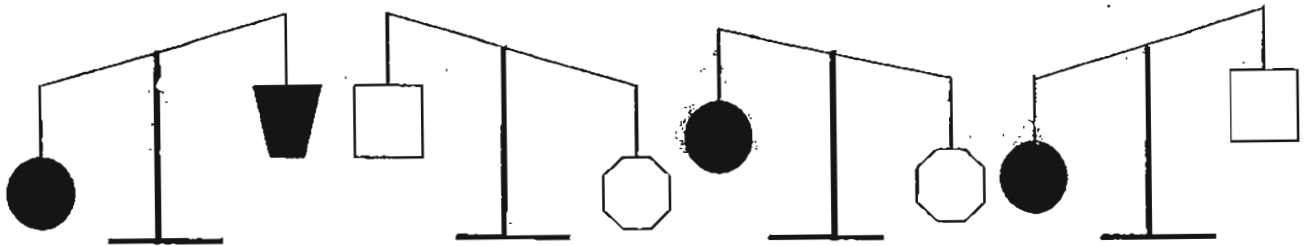
23. Study the classification table below.







Which of the following is the correct representation of the above?

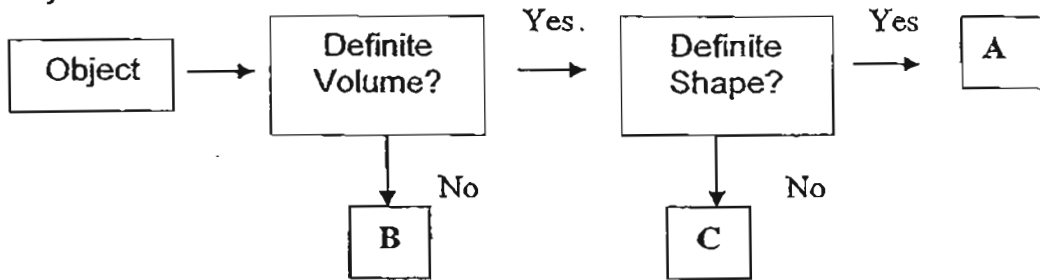
	X	Y	Z
1)	Water vapour	Water	Ice
2)	Ice	Water vapour	Water
3)	Ice	Water	Water vapour
4)	Water	Water vapour	Ice

24. Look carefully at the diagrams below. Which object is the heaviest?



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

25. Study the flowchart below.



Which of the following is a correct representation of the objects as shown above?

	A	B	C
1)	Desk	Oxygen	Orange Juice
2)	Nitrogen	Book	Towel
3)	Water	Chair	Sponge
4)	Cup	Jelly	Carbon Dioxide

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Name _____ ()
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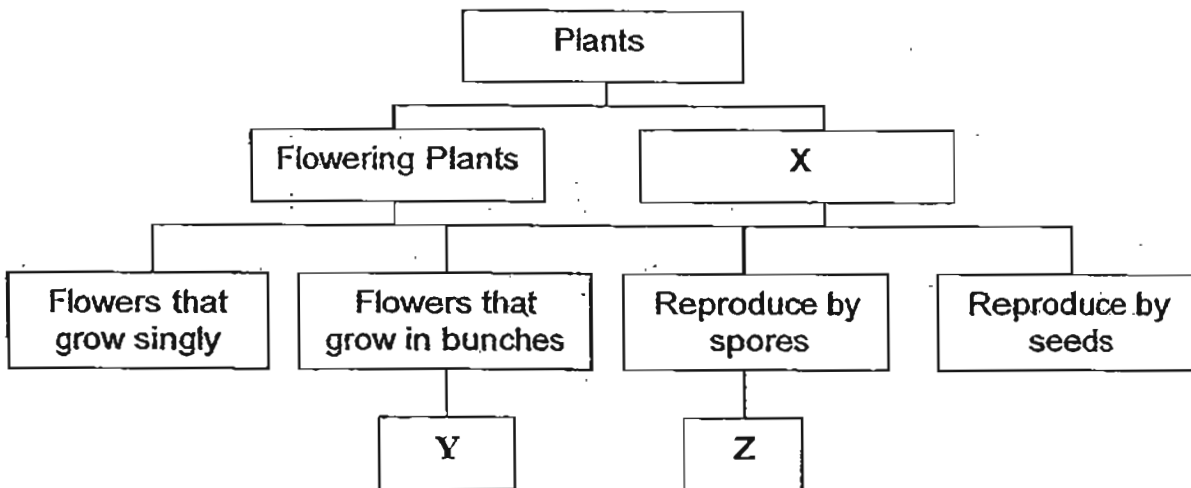
Written Paper (Part I)	50
Written Paper (Part II)	30
Total	80
Percentage	%

Parent's Signature

Part II (30 marks)

Read and answer Questions 26 to 35.

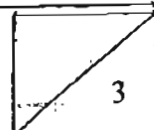
26. Study the classification table as shown below.



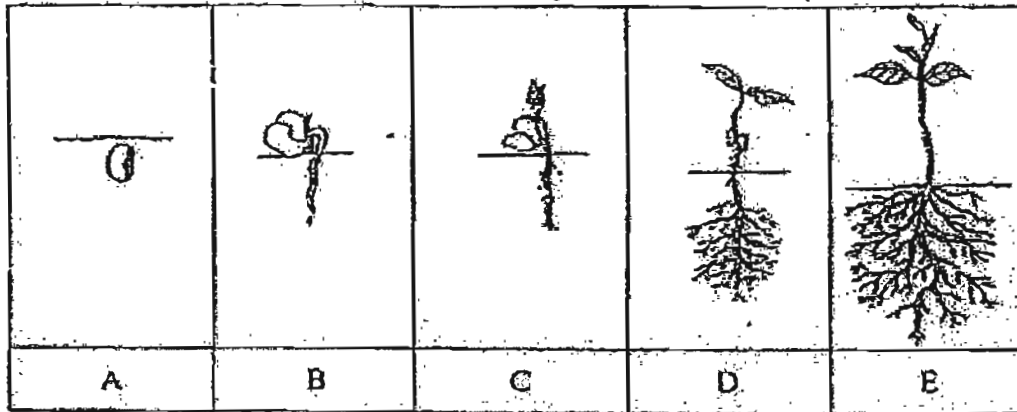
a) Write down a suitable heading for X. (1m)

b) Describe the characteristic of Plant Y. (1m)

c) Give an example of a plant that can be placed in Z. (1m)



27. The diagram below shows the growth of a bean plant.



a) What can be observed if Sally cuts away the seed leaves in the diagram D? (1m)

b) Give an explanation to your answer in (a). (2m)

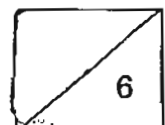
28. Tom's teacher took the class for an outing to the Sungei Buloh Wetland Reserve. Tom and Jane had an argument as to which category a mudskipper belonged to.

Tom: It is an amphibian. I saw it gliding on land and swimming in water.

Jane: I think it is a fish. I saw it flipping its gill cover just now.

a) Which group of animals do you think the mudskipper belongs to? Provide an **explanation** to your answer using the children's argument. (2m)

b) List down **another** characteristic that the mudskipper has that shows it belongs to the group of animals you have chosen in (a). (1m)



29. Doreen thinks that a special organic fertiliser, when added to the plants, will increase the average height of the plants by at least 5cm. She got 20 pots of plants and divided them equally into Group X and Group Y. Plants in Group X were given a daily dosage of the organic fertiliser while the plants in Group Y were not. After 2 weeks, she recorded the growth in the table below.

	Group X	Group Y
Average increase in height / cm	10 cm	2 cm

- a) What was the aim of Doreen's investigation? (1m)

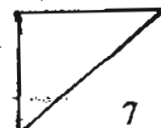
- b) What was the variable she measured? (1m)

- c) Which was the control group of plants in Doreen's experiment? (1m)

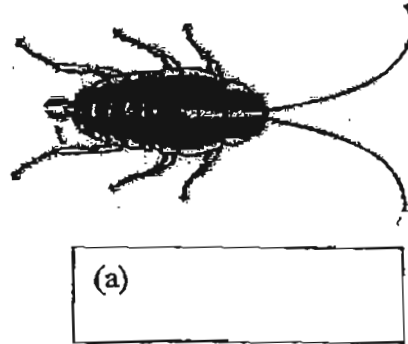
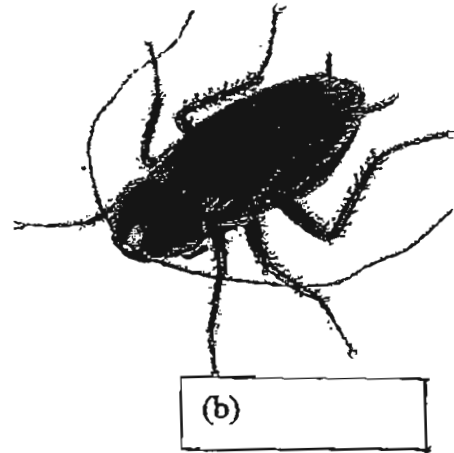
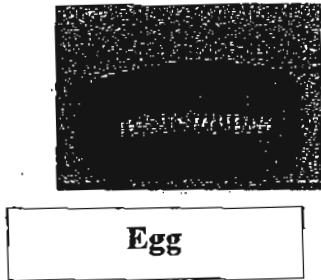
- d) What should Doreen's conclusion of the above experiment be? (1m)

30. The table below shows some parts of the human body systems and their functions. Fill in the missing parts below. (3m)

Human System	Function
_____	It consists of bones to hold up our body and give it its shape.
Respiratory System	
_____	It helps to carry food, water, oxygen and waste materials to and from different parts of the body.



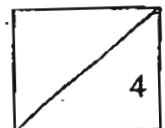
31. Fill in each stage of the life cycle of a cockroach in the boxes as shown below. Complete the diagram to illustrate the life cycle of a cockroach by drawing in the arrows. (2m)



- c) State 1 similarity and 1 difference between the life cycle of a cockroach and the life cycle of a mealworm beetle. (2m)

Similarity:

- d) Difference:



32. Karen conducted an experiment to find out if the number of batteries connected to an electromagnet affects the strength of the electromagnet. She recorded the results in the table below.

Number of batteries	Number of paper clips picked up by the electromagnet
1	5
2	9
3	15
4	22

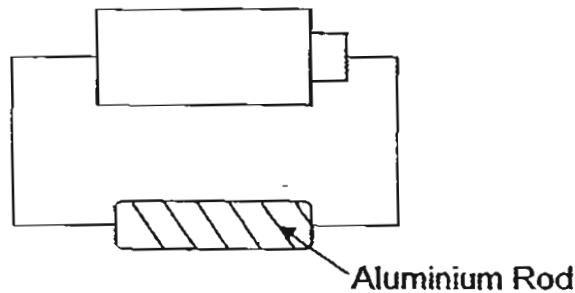
- a) Besides the wire and the iron nail used, state 2 other variables that she should keep the same to ensure a fair test. (2m)

(i) _____

(ii) _____

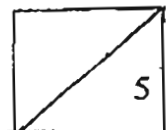
- b) What conclusion can you derive from this experiment? (1m)

33. Tammy set up the experiment as shown below.

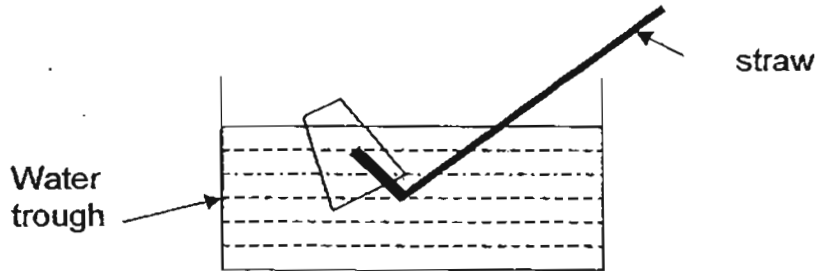


- a) What can be observed when Tammy puts the aluminium rod into a box of iron filing? (1m)

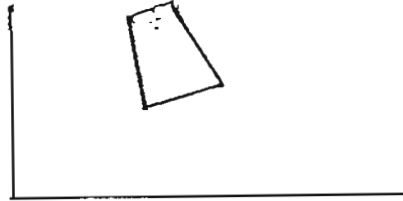
- b) Give an explanation to your answer in (a) (1m)



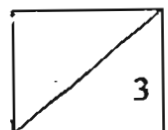
34. June set up an experiment as shown below. She filled a trough with water and placed an inverted glass into the trough. She let some water enter the glass. After that, she attached a straw below the inverted glass and blew some air into the inverted glass.



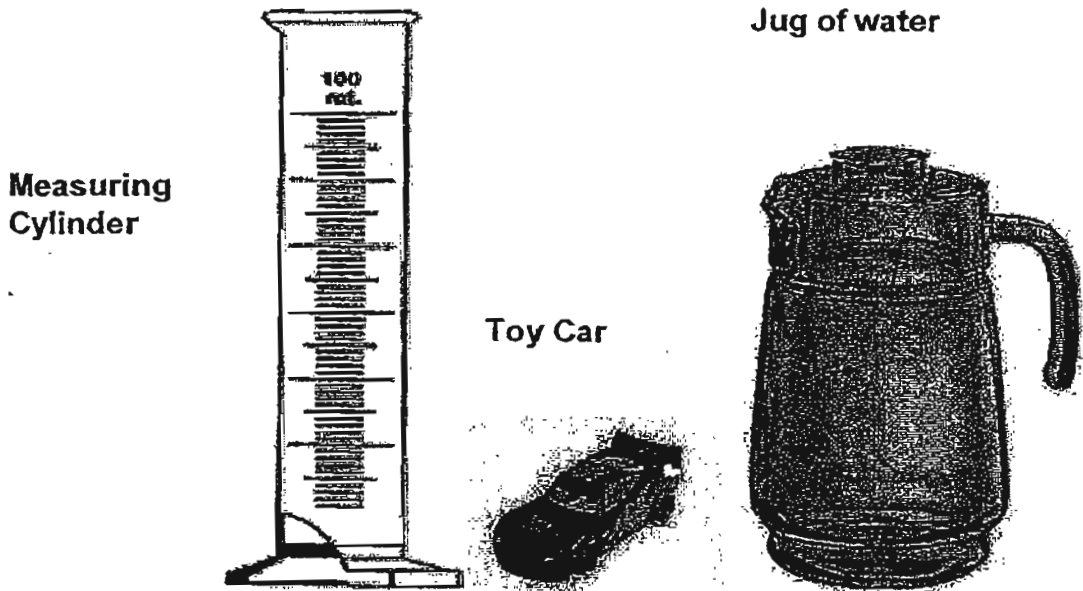
- a) After blowing for 5 minutes, she removed the straw from the cup. Draw the water level in both the trough and the cup. (1m)



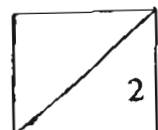
- b) What can you conclude about the air that she has blown into the cup? (1m)
-
- c) Write down **1 other** property of air. (1m)
-



35. Gabriel wanted to find out the volume of a toy car. Using the apparatus below, describe the steps he should use to determine the volume of the toy car. (2m)



Steps	Actions to be taken
1	
2	
3	
4	



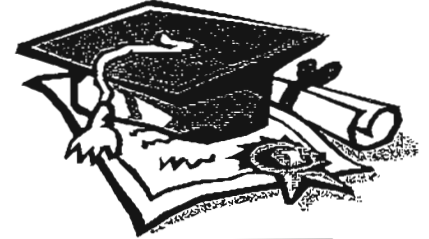


ANSWER SHEET

EXAM PAPER 2011

**SCHOOL : SCGS
SUBJECT : PRIMARY 4 SCIENCE**

TERM : SA1



Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
3	3	2	4	2	1	1	4	1	2	4	3	2	1	3	1	1

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25
4	3	1	1	3	3	4	1

26a) A suitable heading for X is **non-flowering plants**.

26b) Plant Y is a flowering plant and has flowers that grow in branches.

26c) A part that can be placed in Z is the **bird's nest form**.

27a) The plant will continue to grow.

27b) The plant has green leaves to make food for the plant.

28a) Fish : **only fish have gill covers**.

28b) Has fins only

29a) The aim of Doreen's investigation was to find out whether the organic fertilizer increase the height of the plant by at least 5 cm.

29b) The variable she measured was the average increase of height.

29c) The control group was group Y.

29d) Doreen's conclusion should be that the plants will grow faster with the organic fertilizers by at least 5 cm.

30) Human System → Skeletal system

Function → Respiratory → It consists of the nose, windpipe, exchange of gases and lungs, It helps to provide us with oxygen and takes out carbon dioxide.

Human System → Circulatory System

31a) Adult 31b) Nymph

31c) Both the young of the cockroach and the mealworm beetle mouths.

31d) The cockroach has three stages in it's a life cycle while the mealworm beetle has four stages in it's life cycle.

32a) i) type of batteries

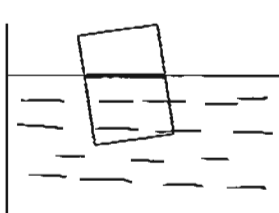
(ii) She should make sure that all the iron nails have the same number of coils around them.

32b) I can derive that the more number of batteries of used, the stronger the electromagnet.

33a) The aluminum rod would not attract any iron fillings.

33b) The aluminum rod is not magnetic therefore it cannot be made into a temporary magnet.

34a)



b) The air took up the space previously taken up by the water.

c) Air Can be compressed.

35) 1 . Pour the water from the jug to the measuring cylinder.

2. Record the level

3. Put the car into the measuring cylinder and record the new water level.

4. Subtract the initial volume of water from the new volume.