Rosyth School
First Semestral Examination for 2013
SCIENCE
Primary 4

Name: _____ Total Marks: 60

Class: Pr 4 _____ Register No. _____ Duration: 1 h 30 min

Date: 15 May 2013 Parent's Signature: _____

Booklet A

Instructions to Pupils:

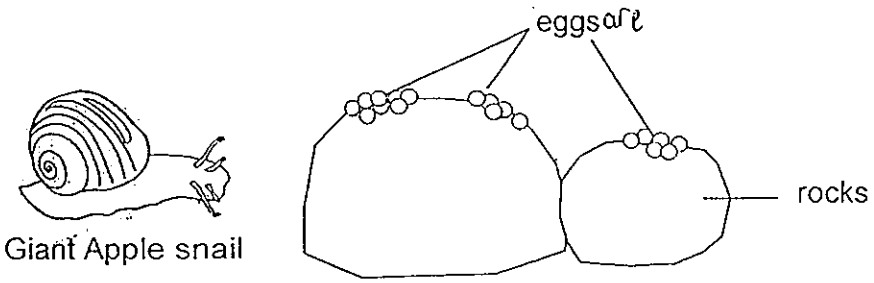
1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets, Booklet A and Booklet B.
4. For questions 1 to 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 31 to 44, give your answers in the spaces given in Booklet B.

* This booklet consists of 18 pages.

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. Sam saw many pink clusters on top of the rocks during a trip to Bishan Park recently. His father said that these were actually eggs from the Giant Apple snail.



Which characteristic of living things was observed by Sam?

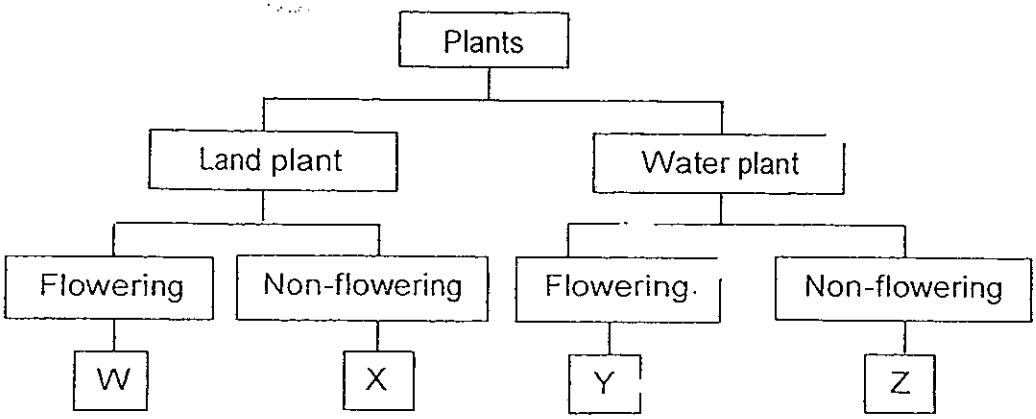
(1) Living things die.
(2) Living things grow.
(3) Living things respond.
(4) Living things reproduce.

2. The Giant Apple snail lays many soft eggs at the same time. After a few hours, the eggs start to harden and a shell forms around the eggs.

What is the function of the shell?

(1) It protects the eggs from injury.
(2) It helps the developing young to breathe.
(3) It can change colour to match the surroundings.
(4) It helps to provide food for the developing young.

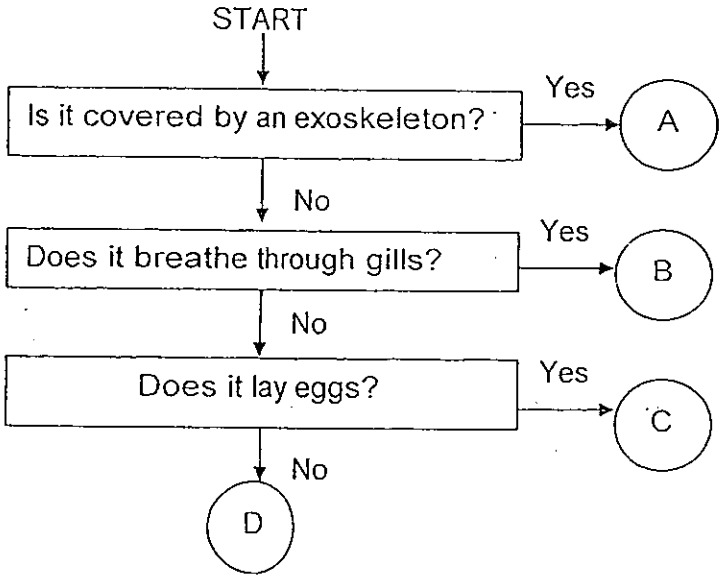
3. Study the classification chart carefully.



Xinyi saw a plant in the pond. It has a cluster of white flowers.
Based on the classification chart above, which group is this plant most likely to be in?

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

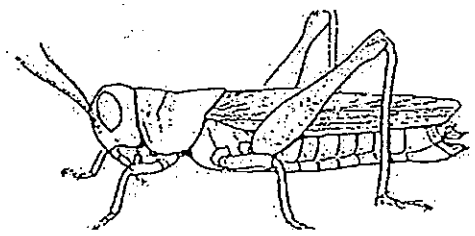
4. Study the flowchart carefully.



Based on the flowchart, where will a bird be placed?

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

5. Casey wrote some information about grasshoppers as shown below.



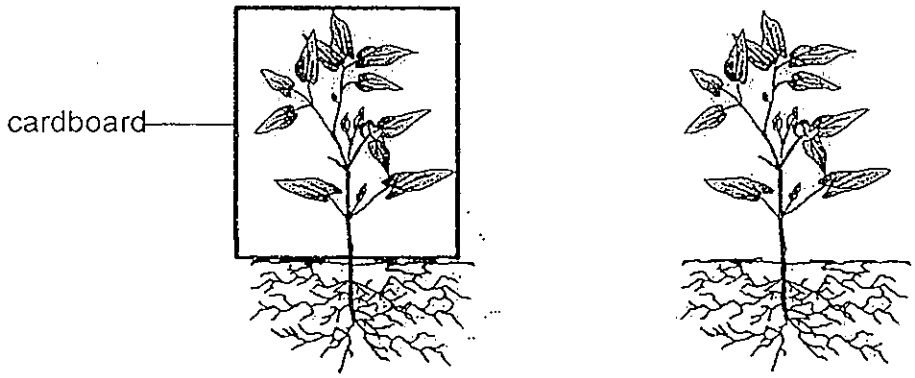
grasshopper

A: All grasshoppers cannot fly.
B: All grasshoppers have feelers.
C: All grasshoppers have a life cycle.
D: All grasshoppers have 2 body parts.

Which of the above information are correct?

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

6. The diagram below shows two identical plants, X and Y, in the garden.



Plant X Plant Y

What will happen to both plants after a week?

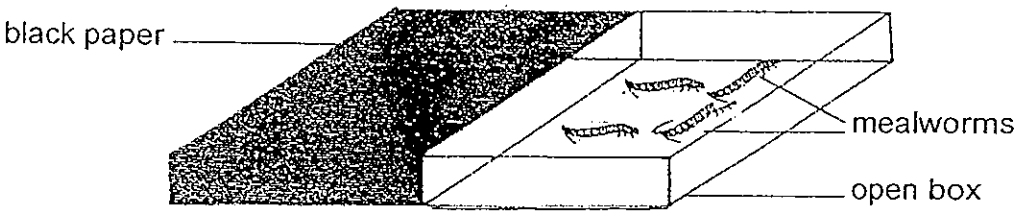
(1) Both plants will die.
(2) Both plants will continue to grow.
(3) Plant X will die but Plant Y will continue to grow.
(4) Plant X will continue to grow but Plant Y will die.

7. Four pupils were talking about Organism Z.

Based on their statements, which organism could Z be?

(1) Fern
(2) Mould
(3) Mushroom
(4) Bacteria

8. Wei Liang covered one half of a box with black paper. He placed some mealworms in the other half without any black paper as shown below.



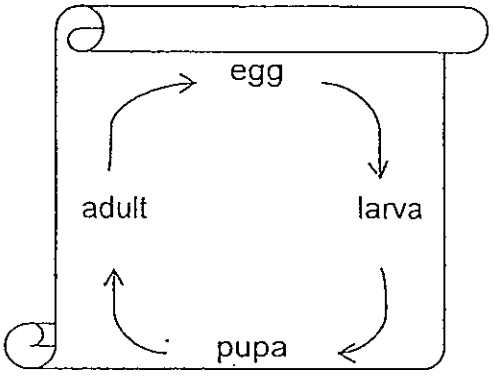
He left the box in the garden during the day. After a while, Wei Liang found the mealworms had crawled to the covered part of the box.

Based on the observation, which of the following statement(s) is/are correct?

W: Mealworms like shady places.
X: Mealworms like sunny places.
Y: Mealworms respond to changes.
Z: Mealworms can move by themselves.

(1) W only
(2) X only
(3) W, Y and Z only
(4) X, Y and Z only

9. Henry made a poster on life cycle as shown below. However, he forgot to put a title for his poster.



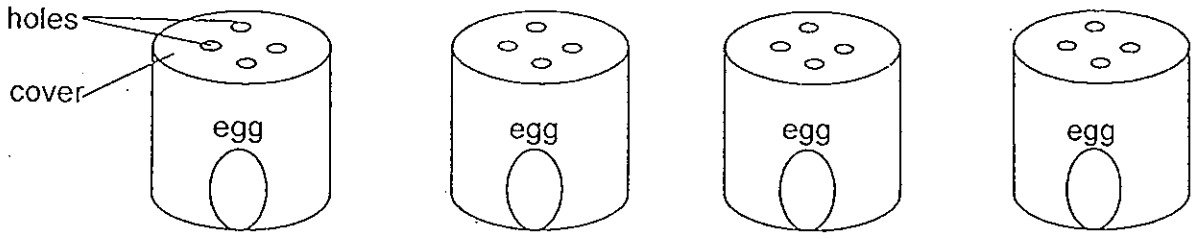
Which is the most likely title that he should use?

(1) Life cycle of a frog
(2) Life cycle of a chicken
(3) Life cycle of a cockroach
(4) Life cycle of a mealworm beetle

For Questions 10 and 11, please refer to the experimental set-up as shown below.

Rani wanted to find out how temperature affects the development of eggs.

An egg was placed into four containers each with a cover. The covers had holes on them. The containers were then placed in different locations as shown below.



Container A
Freezer
(0°C)

Container B
Refrigerator
(4°C)

Container C
Incubator
(37°C)

Container D
Oven
(100°C)

10. In which container will the egg be able to hatch into a chick?

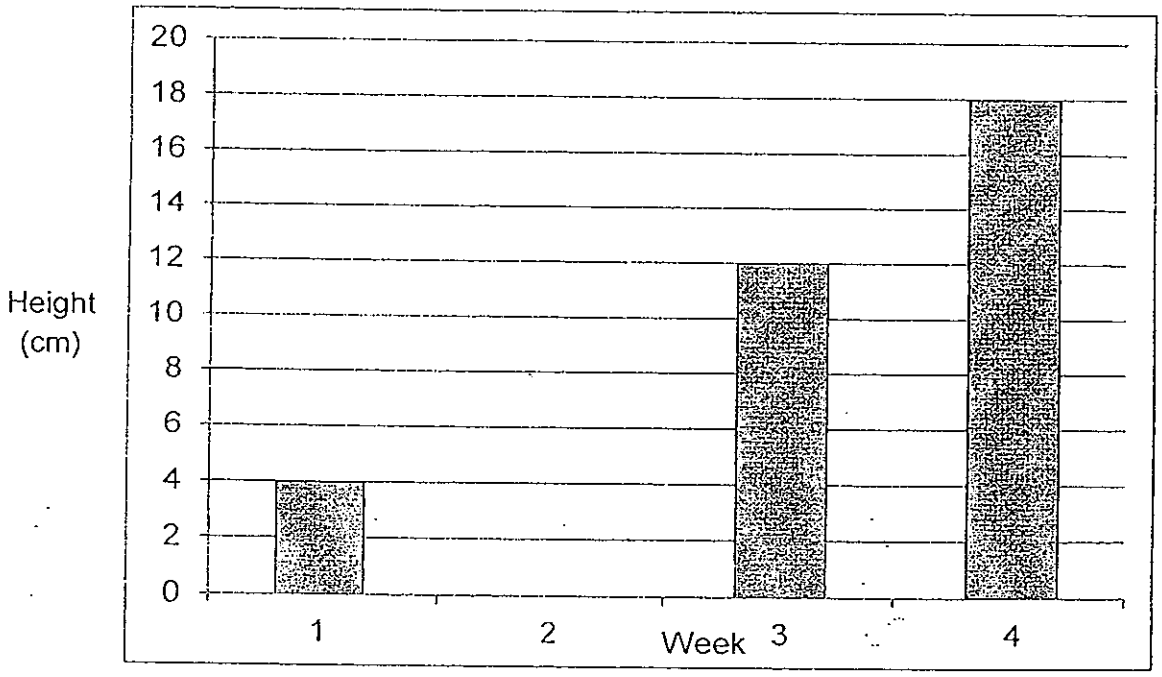
(1) Container A
(2) Container B
(3) Container C
(4) Container D

11. Which of the following variables should Rani keep the same?

A: Temperature
B: Type of egg
C: Number of eggs.
D: Time taken for the egg to hatch

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

12. The height of a young plant was measured and observed over a period of four weeks as shown in the graph below.



What was the most likely height of the plant in Week 2?

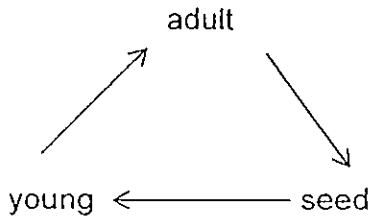
(1) 2 cm
(2) 14 cm
(3) 9 cm
(4) 20 cm

13. Zack observed the growth of a green bean seed and drew the life cycle. Which one of the following correctly represents the life cycle of a green bean plant?

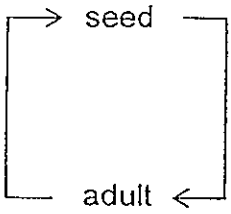
(1)

egg → young → adult

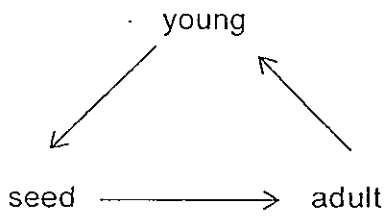
(2)



(3)



(4)



14. The table below shows the presence of plant parts of four plants. A tick (✓) means the plant part is present.

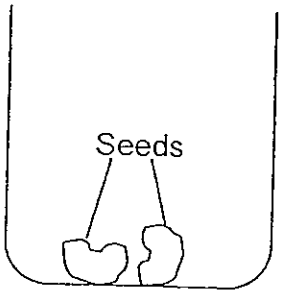
Plant	Leaves	Flowers	Fruits
A	✓		
B	✓	✓	
C	✓		✓
D	✓	✓	✓

Which one of the above is/are an adult plant?

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

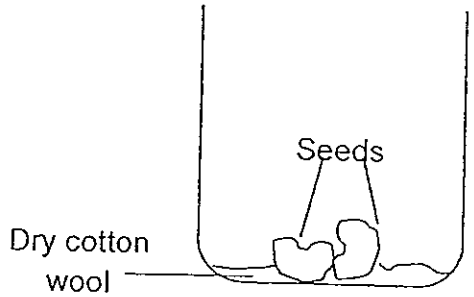
15. In which of the following set-up will the seed germinate?

(1)



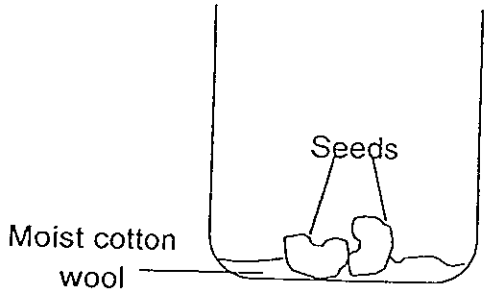
Beaker W
Placed in cupboard

(2)



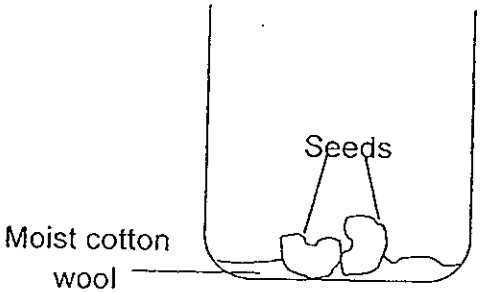
Beaker X
Placed in dark box

(3)



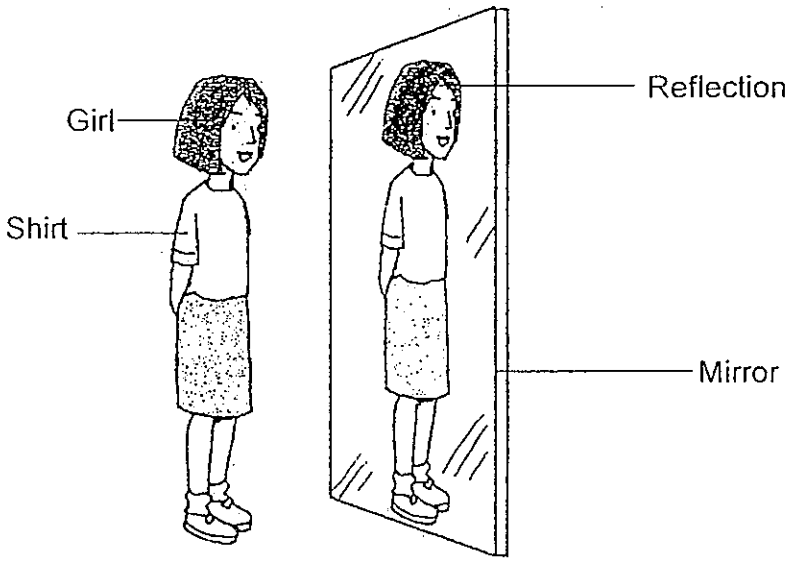
Beaker Y
Placed in cupboard

(4)



Beaker Z
Placed in freezer

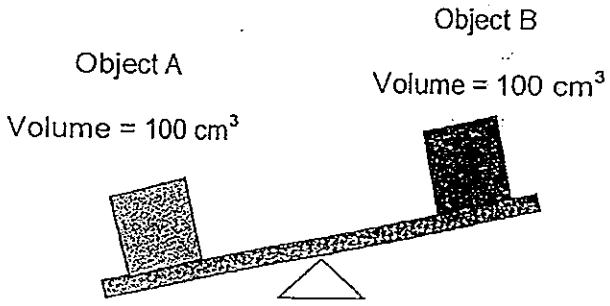
16. Look at the diagram below.



Which of the following is not a matter?

(1) Girl
(2) Shirt
(3) Mirror
(4) Reflection

17. Study the diagram below.

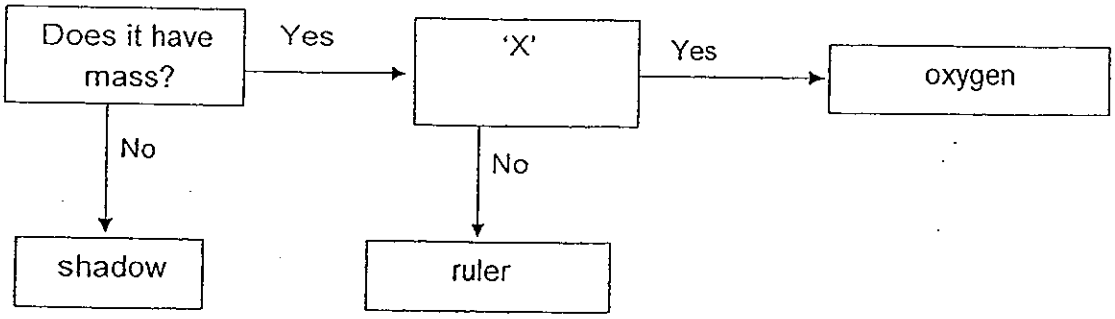


Which of the following statements are true?

A: Object A takes up more space than Object B.
B: Objects A and B may be made of different materials.
C: Objects A and B are made up of the same amount of matter.
D: Objects A and B take up the same amount of space but have different masses.

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

18. Study the flow chart below.



What would be a suitable question to ask in 'X'?

(1) Is it matter?
(2) Can it be compressed?
(3) Does it have a definite shape?
(4) Does it have a definite volume?

19. The table below shows the properties of three types of matter.

Matter	Does it have a definite volume?	Does it have a definite shape?
P	Yes	Yes
Q	Yes	No
R	No	No

Based on the information given in the table above, which one of the following statements is most likely to be true?

(1) R does not have mass.
(2) Q and P can be compressed.
(3) When given the same volume, P will be heavier than R.
(4) When poured into a container, only R will take the shape of the container.

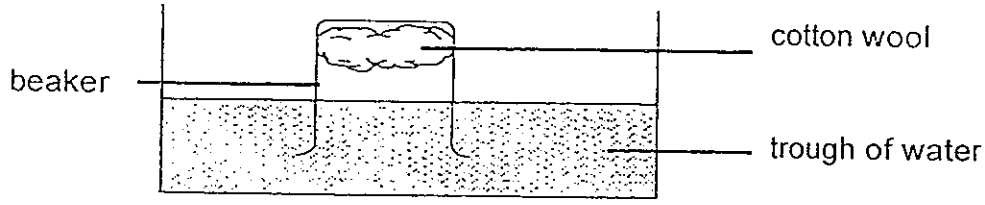
20. Study the table below.

Property	A	B	C	D
Can be seen?	X	√	X	√
Has definite volume?	X	√	√	X
Has mass?	√	√	√	X

Which of the following represents gas?

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

21. Jane pasted some cotton wool at the base of a beaker.
She inverted the beaker and slowly pushed it into a trough of water until it touched the bottom of the trough. Jane made sure that she did not tilt the beaker.



She noticed that the cotton wool did not become wet. What does this show?

(1) Air has mass.
(2) Air takes up space.
(3) Cotton wool is waterproof.
(4) Cotton wool takes up space.

22. Sarah made 4 different shapes below, each with 40 g of plasticine.

She placed the shapes each into a measuring cylinder, containing 100 ml of water. She took note of the increase in the water level in the four measuring cylinders.

What was Sarah trying to find out?

(1) To find out if the mass of matter would affect its volume.
(2) To find out if the shape of matter would affect its mass.
(3) To find out if the shape of matter would affect its volume.
(4) To find out if the volume of matter would affect its mass.

23. Some substances are classified in the table below.

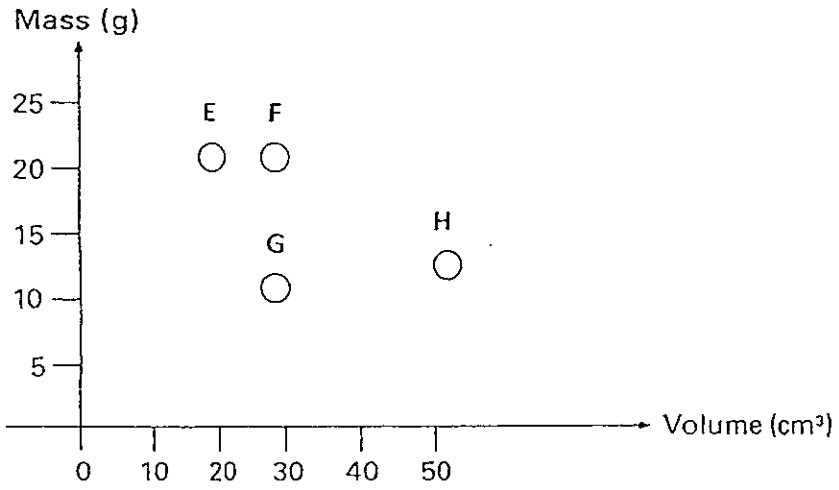
A	B
Tea	Cotton Wool
Milk	Sponge
Water	Plasticine

Which of the following are suitable headings for A and B?

	A	B
(1)	Liquid	Solid
(2)	Definite volume	No definite volume
(3)	Definite shape	No definite shape
(4)	Cannot be compressed	Can be compressed

24. The mass and the volume of four objects E, F, G and H were measured.

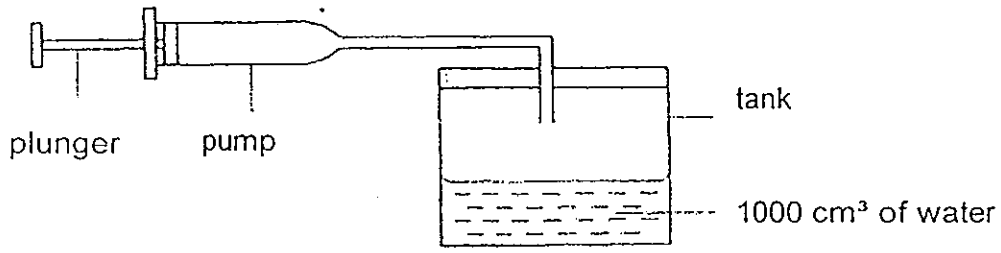
Their masses and volumes were represented in the graph below.



Based on the graph, Tom made four statements about the four objects. Which statement is correct?

(1) H is heavier than E.
(2) E occupies less space than G.
(3) E and F have the same volume..
(4) The greater the mass, the greater the volume.

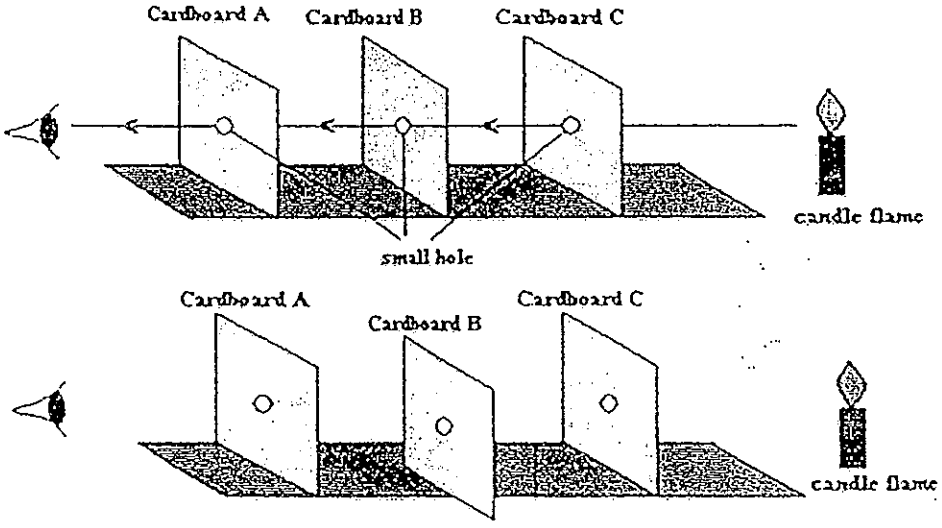
25. The diagram below shows a pump attached to a tank. The tank contains 1000 cm^3 of water. When the plunger is pushed inwards, 600 cm^3 of air is being forced into the tank.



What is the volume of air in the tank if the volume of the tank is 2500 cm^3?

(1) 400 cm^3
(2) 600 cm^3
(3) 1500 cm^3
(4) 2500 cm^3

26. An experiment was set up as shown in the diagram below. When all the small holes were aligned in a straight line, the candle flame could be seen. However, when Cardboard B was moved slightly to the right, the candle flame can no longer be seen.



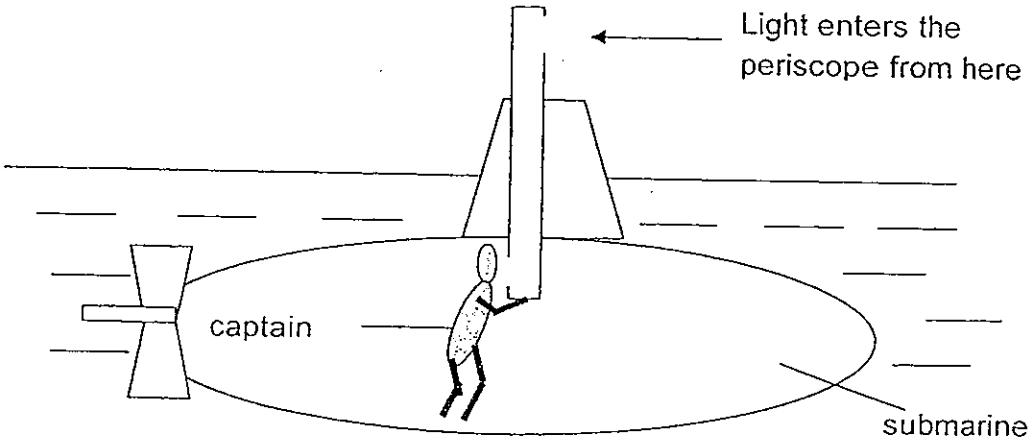
What does the experiment show?

(1) Light passes through objects.
(2) Light travels in a straight line.
(3) Light is reflected from the cardboard.
(4) Light can partially pass through cardboard.

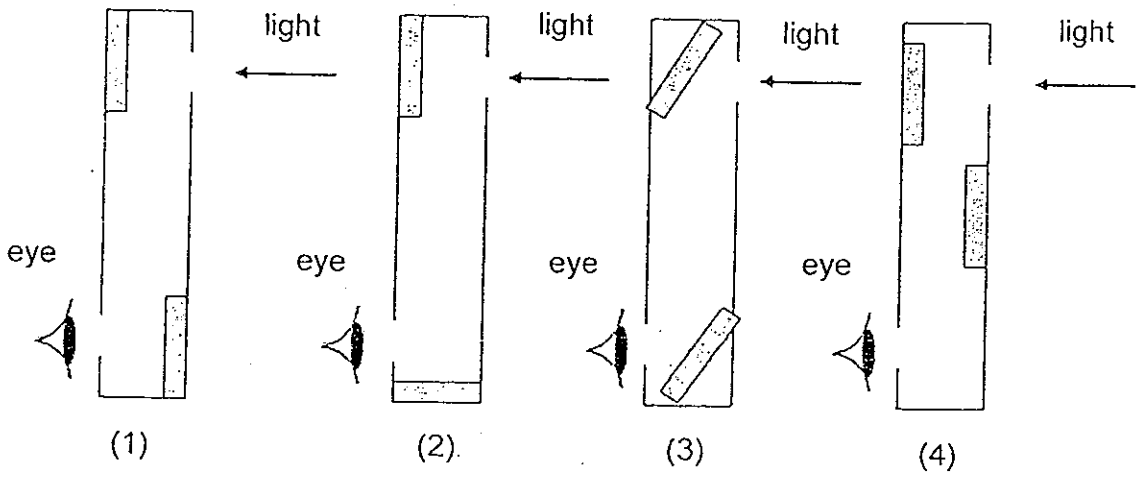
27. Which of the following is a source of light?

(1) Moon
(2) Fire
(3) Mirror
(4) Sparkling diamond

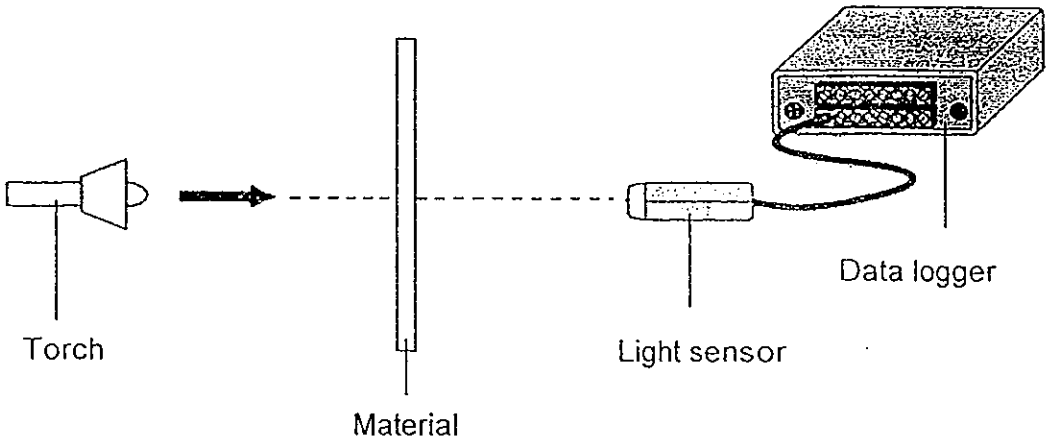
28. The sea captain in a submarine is using a periscope to observe what is above the water. The periscope allows him to see what is above the water.



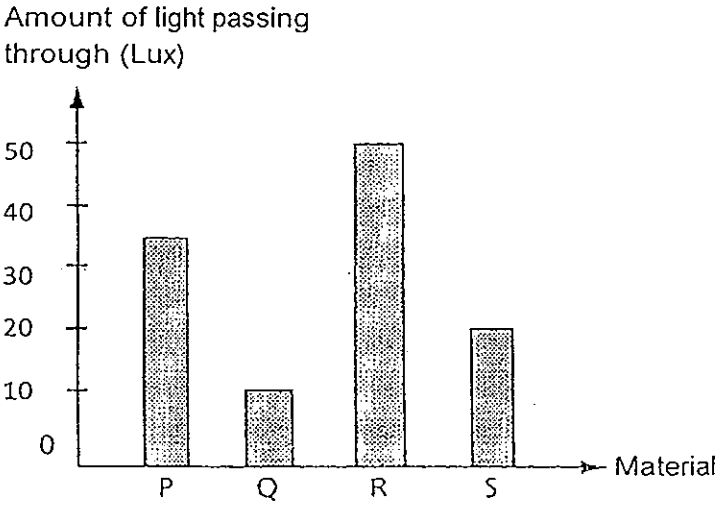
Which of these correctly shows how the mirrors in the periscope are placed?



29. Meiling conducted an experiment to investigate the degree of transparency of 4 different materials, P, Q, R and S by using the set-up shown below.



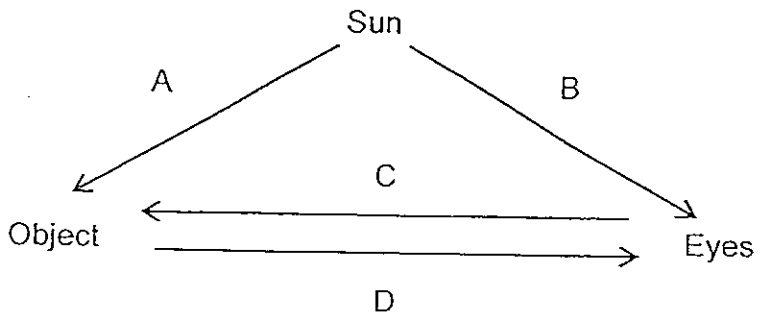
After conducting the experiment, she plotted the graph below to show her findings.



Based on Meiling's finding, which material is the most suitable for making the curtains of a room so that the room will be dark?

(1) P
(2) Q
(3) R
(4) S

30. Study the diagram below.



Which arrows show the direction of light to enable the eyes to see the object?

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

- End of Part I -

Rosyth School
First Semestral Examination for 2013
SCIENCE
Primary 4

Name: _____ Total Marks: /100

Class: Pr 4- _____ Register No. _____ Duration: 1 h 30 min

Date: 15 May 2013 Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 31 to 44, write your answers in the spaces given in this booklet.

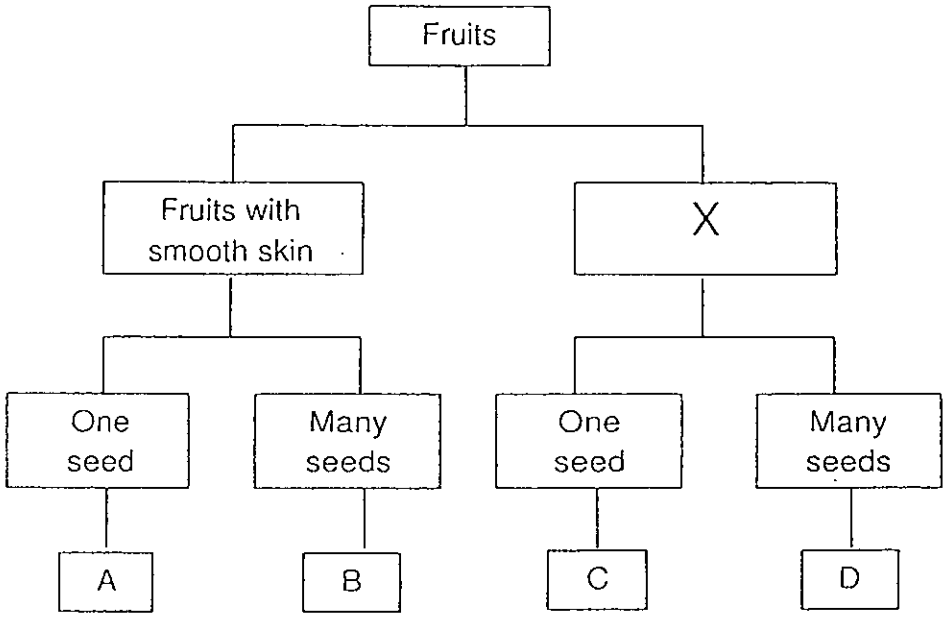
	Maximum	Marks Obtained
Booklet A	60 marks	
Booklet B	40 marks	
Total	100 marks	

* This booklet consists of 14 pages.

Part II (40 marks)

For questions 31 to 44, write your answers in this booklet.

31. The classification chart below shows how some fruits have been classified.



(a) Give a suitable heading for X. (1m)

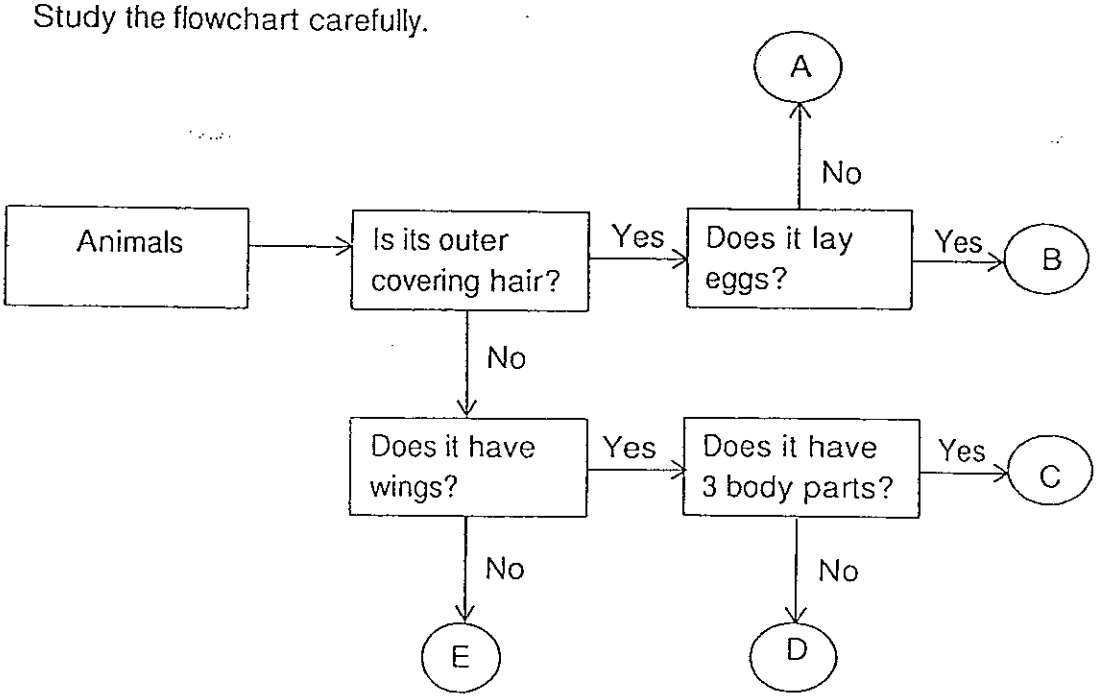
_____

(b) State one similarity between Fruit B and Fruit D. (1m)

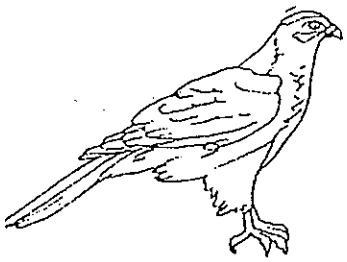
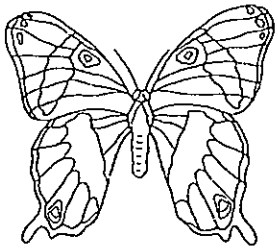
_____

_____

32. Study the flowchart carefully.



(a) Observe Animal R and S carefully and classify them into the correct group (A, B, C, D or E). (1m)

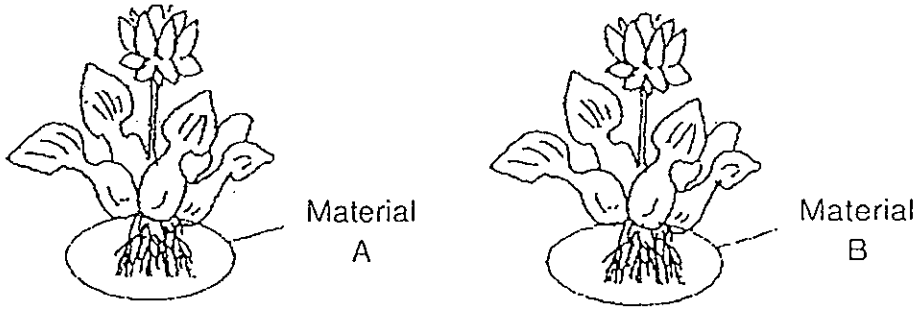
(i) Group : _____	(ii) Group : _____
	
Animal R	Animal S

(b) Using the chart above, state one difference between Animal R and Animal S. (1m)

_____

_____

33. Ben wrapped the roots of two water plants using two bags made of different materials, A and B as shown below. Then he placed the two plants into basins A and B respectively.



The water level in each basin was measured and recorded over a period of five days as shown in the table below.

Number of days	Water level in basin A (ml)	Water level in basin B (ml)
0	100	100
1	97	100
2	95	100
3	92	100
4	89	100
5	85	100

(a) Explain why the water level in basin B remained the same. (1m)

_____

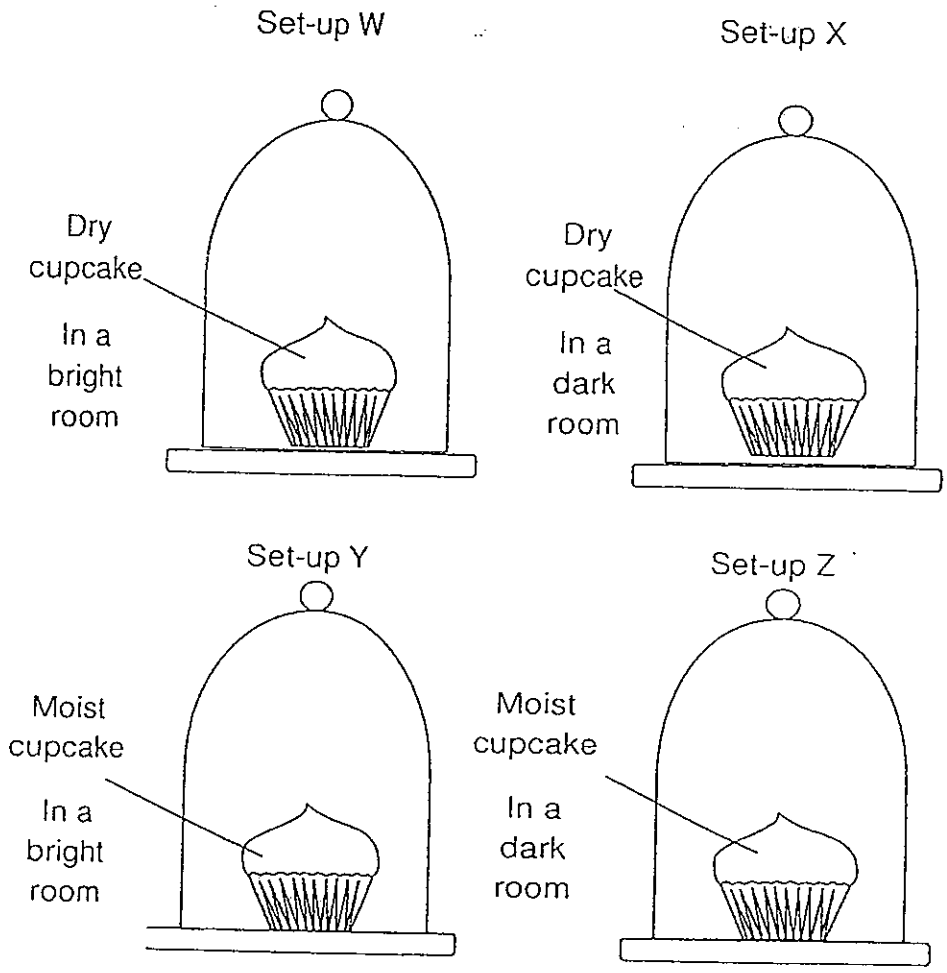
_____

(b) What would happen to both plants after a week? (2m)

(i) Plant with material A : _____

(ii) Plant with material B : _____

34. Aini wanted to find out the factors affecting the growth of mould. She placed four cupcakes in different set-ups as shown below.



(a) If Aini wanted to find out if water affects the growth of mould, which two set-ups should she use?

(1m)

_____

(b) Which set-up would be most suitable for the growth of mould? Support your choice.

(1m)

_____

_____

35. Shaun visited the Giant Panda Forest enclosure to look at the pandas, Jia Jia and Kai Kai. He saw a sign with some information about the pandas.

Life Cycle of Giant Pandas

A female giant panda remains pregnant for 95 to 160 days and gives birth to one or two cubs. Baby pandas are very small when they are born, weighing about 120g. Since birth, the cubs feed on their mother's milk. They start crawling when they are about 3 – 4 months old. At 7 months old, a young panda weighs about 9kg, runs and climbs trees and has started eating bamboos. They resemble the adult, which can weigh up to 90kg.

(a) Which group of animals does the panda belong to? Support your choice with an evidence from the information above. (1m)

_____

_____

(b) Based on the information above, draw the life cycle of the giant panda in the space provided below. (1m)

(c) Based on the information above, state two characteristics of living things. (1m)

_____

_____

36. Study the table below which shows the growth of a plant from a seed to an adult.

Time (weeks)	0	1	2	3	4	5	6	7	8
Average height (cm)	0	5	15	32	50	75	100	?	100

(a) Predict the average height of plant at Week 7. (1m)

_____

(b) Describe the height of the plant from Week 1 to Week 8. (2m)

_____

_____

(c) Why was the average height of the plant 0 cm at Week 0? (1m)

_____

_____

37. Zul received a pamphlet informing him about the rise in dengue cases caused by the Aedes mosquito in his neighbourhood.

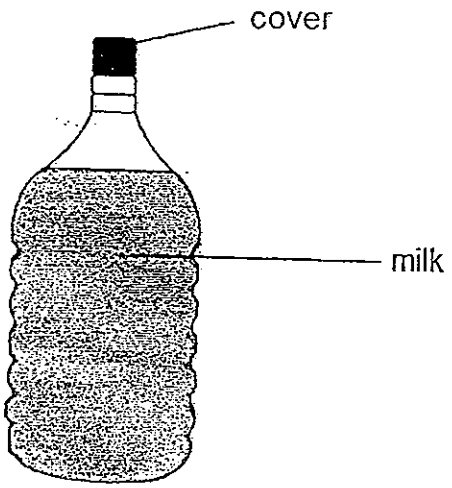
Descriptions on the different stages in the life cycle of the Aedes mosquito were included in the pamphlet as shown in the table below.

(a) Based on the descriptions, identify the stages of the mosquito's life cycle. (2m)

(b) Number the sequence of the life cycle of the mosquito. The first one is already done for you. (1m)

	Descriptions	(a) Stage in the life cycle	(b) Sequence
(i)	• Wriggles and lives in pond or still water • Breathes in air using breathing tubes		
(ii)	• Laid in pond or still water • Found in a large number		
(iii)	• Lives on land • Can fly		
(iv)	• Lives in pond or still water • Breathes in air using breathing tubes • Does not move or eat		

38. The diagram below shows a bottle of milk.



Identify the states of matter for the following: (1m)

(a) Cover: _____.

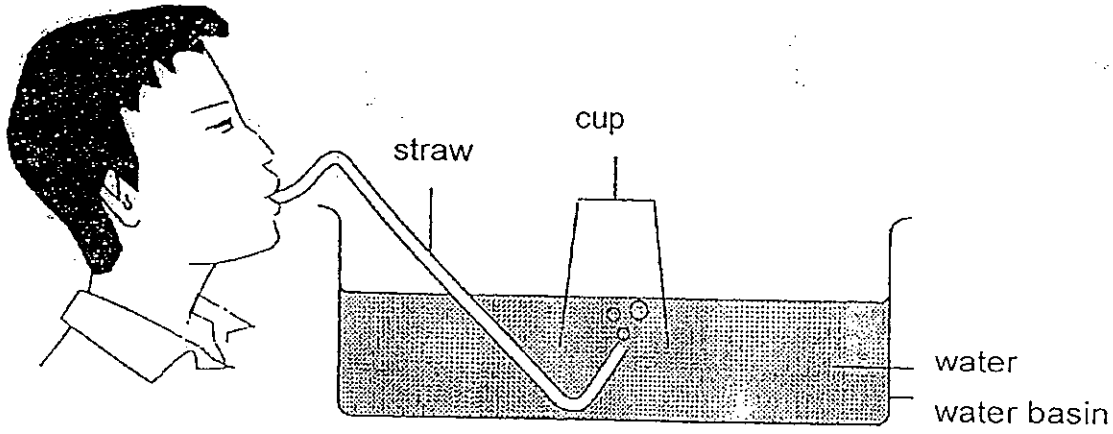
Milk :_____.

(b) Write down one difference between the 2 states of matter in (a). (1m)

_____

_____

39. Peter conducted an experiment as shown below. He started blowing into the straw.



(a) What will happen to the water level in the cup? (1m)

_____

(b) Explain how the observation in (a) takes place. (2m)

_____

_____

_____

_____

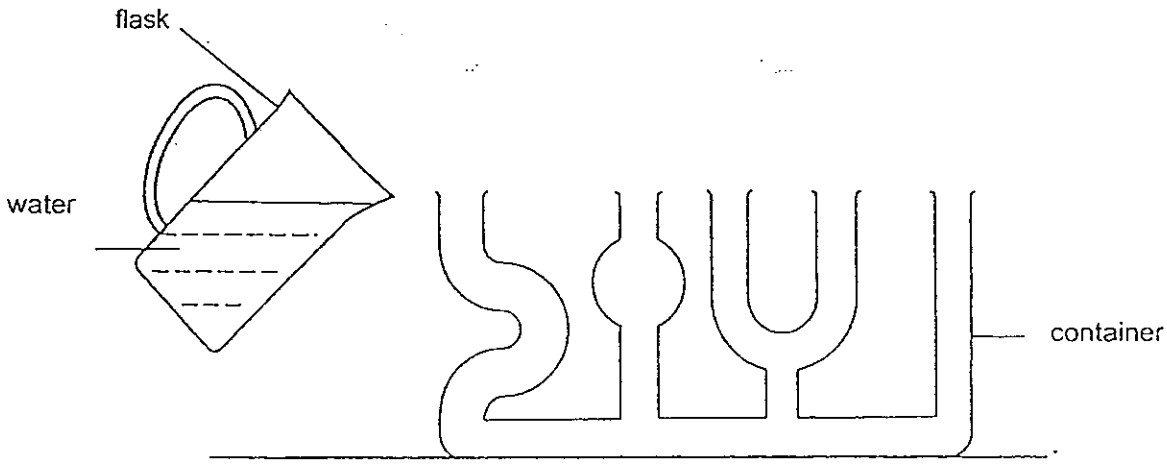
(c) Peter removed the straw from the set-up above. Now he pushed the cup all the way to the bottom of the water basin. He noticed that the water did not fill up the cup.

What can he do to get the water to completely fill the cup in the water basin in this situation? (1m)

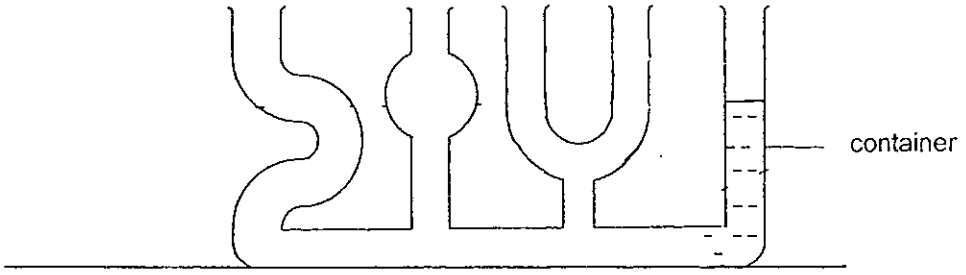
_____

_____

40. A flask of water is poured into a container as shown below.

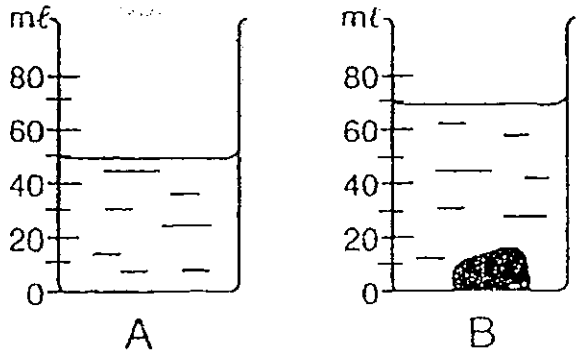


(a) The level of water in one part of the container has been drawn for you. Draw the estimated water level in the rest of the container below when all the water in the flask is emptied inside it. (1m)

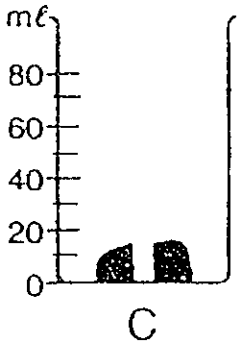


(b) What does this experiment show about the property of liquid? (1m)

41. In diagram A, a beaker is filled with water. A piece of plasticine is put into it and the water level rises as shown in diagram B.



(a) Draw the new water level in diagram C below if the same piece of plasticine is cut into 2 parts. (1m)

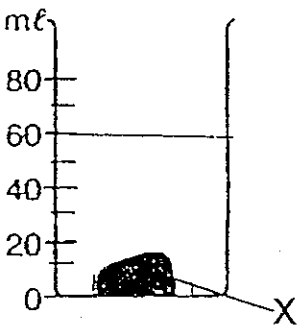


(b) What property of the plasticine can we conclude from this experiment? (1m)

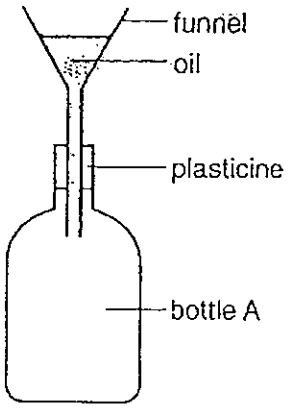
_____

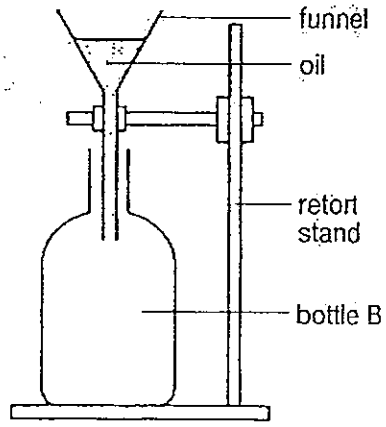
_____

(c) An object X similar in size to the plasticine but half as heavy is put into the beaker. Draw the water level. (1m)



42. Dave wanted to fill up two identical bottles with oil. He had the following set-ups.





(a) What would Dave observe when he pours oil into both bottles? (1m)

_____

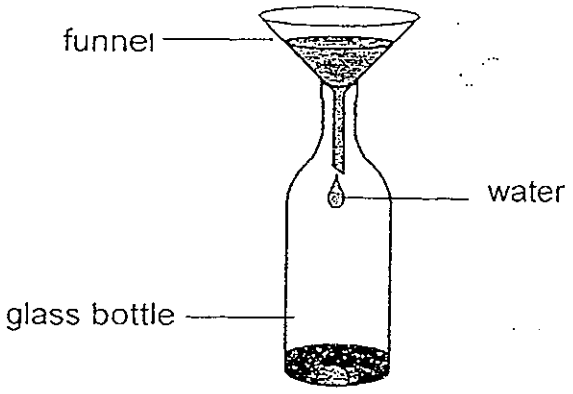
_____

(b) Explain the observation for Bottle A. (2m)

_____

_____

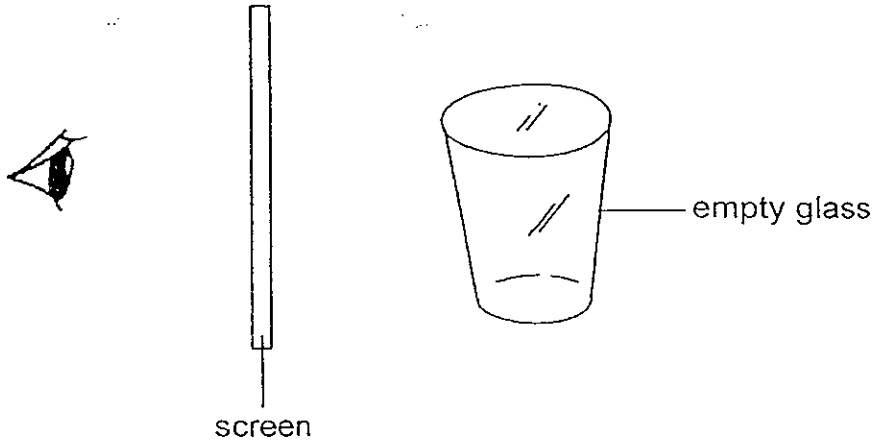
(c) Based on the above experiment, what can Dave do to fill up the below glass bottle with water quickly? (1m)



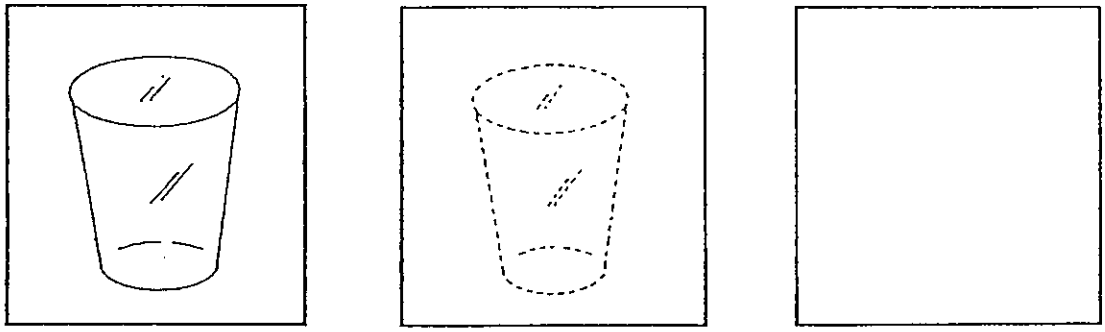
_____

_____

43. Jane was given an empty glass. She looked at the glass through three different types of screens, E, F and G, each made of a different material.



She drew what she saw and recorded her observations as shown below.



(a) Based on her observations, Jane concluded that Screen E allowed the most light to pass through. Do you agree? Explain your answer. (1m)

_____

_____

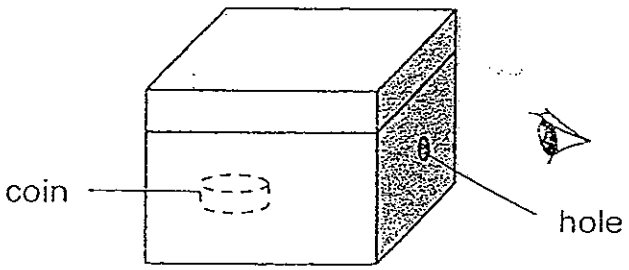
(b) Using the given materials, select one that each of the following screen could be made of. (2m)

Clear glass	Tracing paper	Wood

Screen F: _____

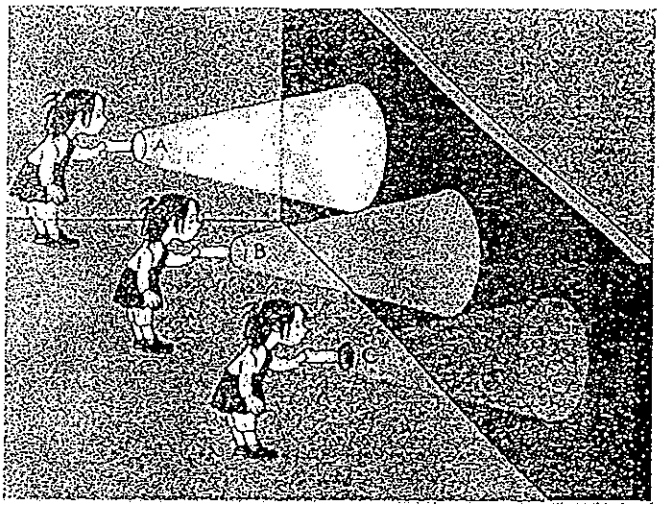
Screen G: _____

44. A coin was placed in a sealed box with a small hole at the side. The box was then placed in a dark room.



(a) Nicole placed her eye at the small hole. She was not able to see the coin in the box. Describe a way for Nicole to see the coin without removing the coin from the box and the cover of the box. (1m)

Nicole did another experiment to find out the degree of transparency of three types of paper A, B and C. She covered the front part of each torchlight with three different types of paper. She shone the torchlight on a wall as shown below.



(b) State one variable that Nicole must keep the same to ensure that the experiment is a fair test. (1m)

(c) State the apparatus that Nicole should use for a more accurate result. (1m)

-End of Paper-

ANSWER SHEET

EXAM PAPER 2013
SCHOOL : ROSYTH SCHOOL
SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1

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

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	3	1	2	3	1	2	3	2	2	3	2	2

BOOKLET B

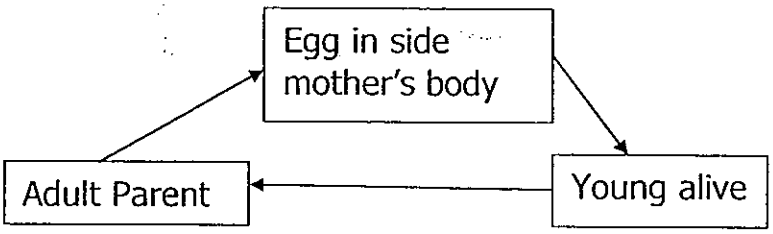
Q31
a) Fruits with rough skin
b) Both fruit B and D have many seeds

Q32
a) i)D ii) C
b) Animal R does not have 3 body parts but Animal S has 3 body parts

Q33
a) As material B is waterproof, it does not allow plants to absorb water
b) i) Survive ii) Die

Q34
a) Set up Z and X
b) Set up Z. As it has a moist cupcake in a dark room so the mould will grow best in dark and damp places

Q35
a) Mammal. The female giant panda gives birth to her babies.
b)



c) Living things reproduce and can grow

Q36
a) 100cm
b) The weight of the plants increased from week 1 to week 6 and remain the same from week 6 to week 8.

Q37

Description	Stage in life cycle (a)	Sequence (b)
- Wriggles and lives in the pond or still water - Breathes in air using breathing tubes	Larva	4
- Laid in pond or still water - Found in large number	Egg	3
- Lives on land - Can fly	Adult	2
- Lives in pond or still water - Breathes in air using breathing tubes - Does not move or eat	Pupa	1

Q38
a) Cover: Solid
Milk: Liquid
b) Solid has definite shape but liquid does not have a definite shape

Q39
a) It will decrease.
b) Air takes up space in the cup and pushes the water out.
c) He can poke a hole at the top of the cup for air to escape.

Q40
a)

b) Liquid takes the shape of its container

Q41
a)

b) Plasticine has a definite volume
c)

Q42
a) He would observe that the oil in the bottle B flows smoothly but A will drip out oil slowly
b) There is no opening for air to escape so oil is not entering the bottle to take up the space
c) Use a glass tube in the funnel to allow air to escape

Q43
a) Yes, as she can see the empty very clearly.
b) Screen F: Tracing paper
Screen G: Wood

Q44
a) She can make a hole on the cover above the coin and shine the light through a hole.
b) Thickness of the material.
c) Datalogger and light sensor