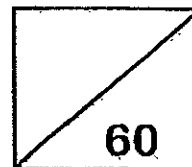




Rosyth School
Semestral Assessment 1 2014

SCIENCE
Primary 4



Total
Marks:

Name: _____

Class: Pr 4 _____ Register No. _____ Duration: 1 h 45 min

Date: 15th May 2014 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 the Booklet B.

* This booklet consists of 19 pages.

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. (60 marks)

1. Brandon observed the characteristics of 2 different types of objects R and S. He then recorded his observation as shown in the table below. A tick (✓) shows that the object has the characteristic while a cross (x) shows that the object does not have the characteristic.

Characteristic	Objects	
	R	S
It can grow.	✓	x
It can reproduce.	✓	x
It can move freely from place to place.	x	x

Based on the information in the table, which one of the following best represents objects 'R' and 'S'?

	R	S
(1)	Fire	Car
(2)	Fern	Ball
(3)	Lion	Mould
(4)	Bacteria	Plant

2. How is a mushroom similar to a hibiscus plant?

A: Both bear flowers.
 B: Both respond to changes.
 C: Both need water to survive.
 D: Both need sunlight to make food.

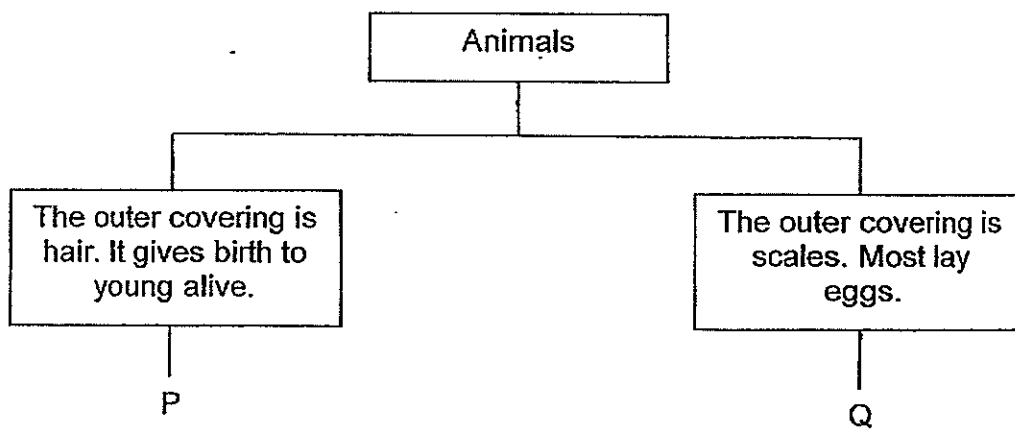
- (1) A and B only (2) B and C only
 (3) A, B and C only (4) B, C and D only

3. Water enters a plant through its roots. Where does the water go to after entering the plant?

A: Fruits
B: Stems
C: Leaves
D: Flowers

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

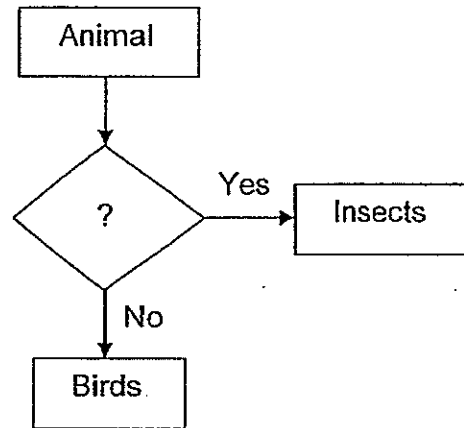
4. Study the classification table below.



What P and Q are likely to be?

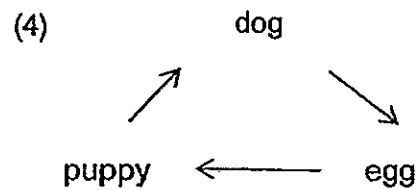
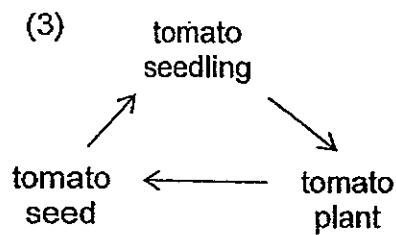
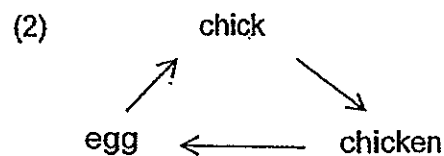
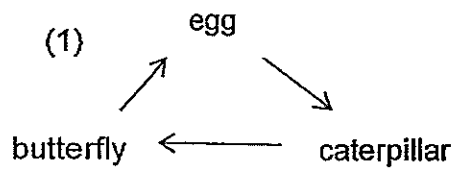
	P	Q
(1)	Birds	Fish
(2)	Insect	Birds
(3)	Mammals	Fish
(4)	Mammals	Insects

5. Refer to the flowchart below.



Which is the most appropriate question in the flowchart above?

- (1) Does it fly?
 - (2) Does it lay eggs?
 - (3) Does it have three body parts?
 - (4) Does it have a three stage life cycle?
6. Look at the diagrams below. Which one of the following is not a correct life cycle?

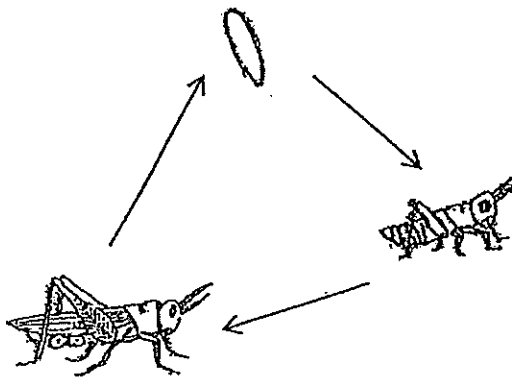


7. The following is a comparison table between a cockroach and a mosquito.

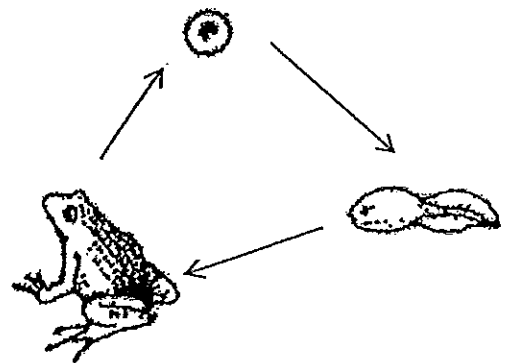
		Cockroach	Mosquito
A	Lays egg in water.	No	Yes
B	3-stage life cycle.	No	Yes
C	Has wings in its adult stage.	Yes	Yes
D	Spends part of its life in water.	No	Yes

Which of the above comparisons are correct?

- (1) A and B only
 (2) A and C only
 (3) A, C and D only
 (4) B, C and D only
8. Study the life cycles of Animal P and Animal Q below.



Animal P

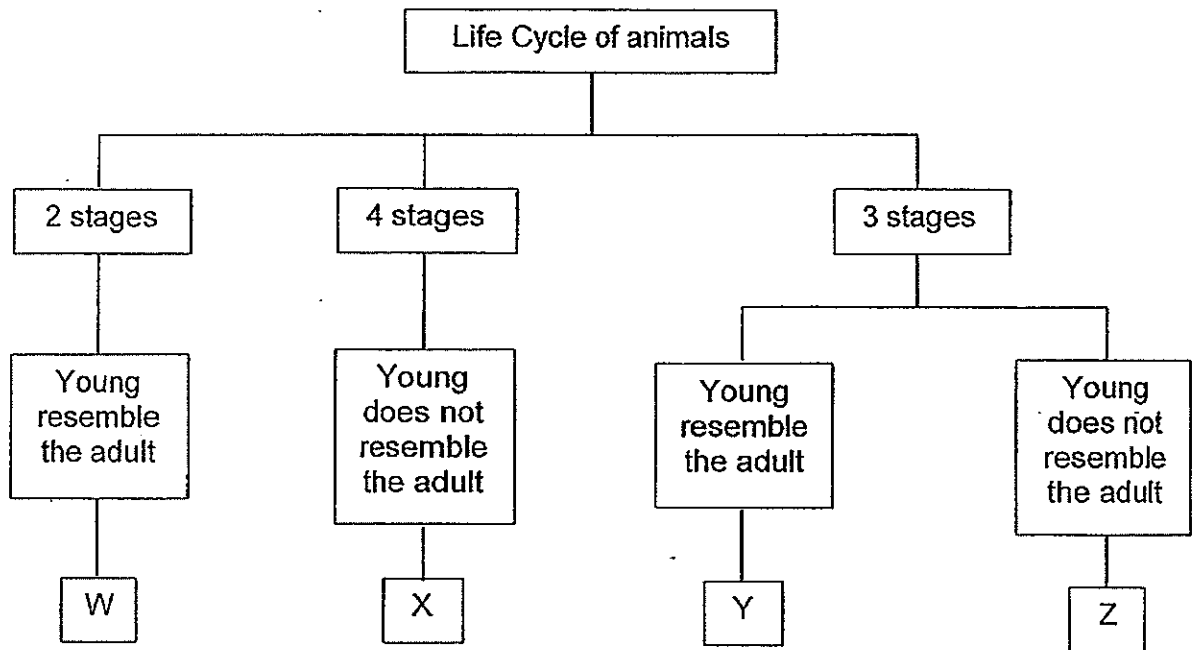


Animal Q

Which of the following statement is true about the life cycles shown above?

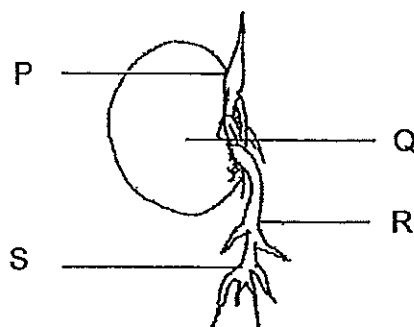
- (1) Animal P has a young stage but Animal Q does not.
 (2) Animal P gives birth to its young alive but Animal Q does not.
 (3) Animal P has an egg stage in its life cycle but Animal Q does not.
 (4) Animal P has a young that resembles the adult while Animal Q does not.

9. Study the classification diagram below.



Which one of the following does the animal belong to?

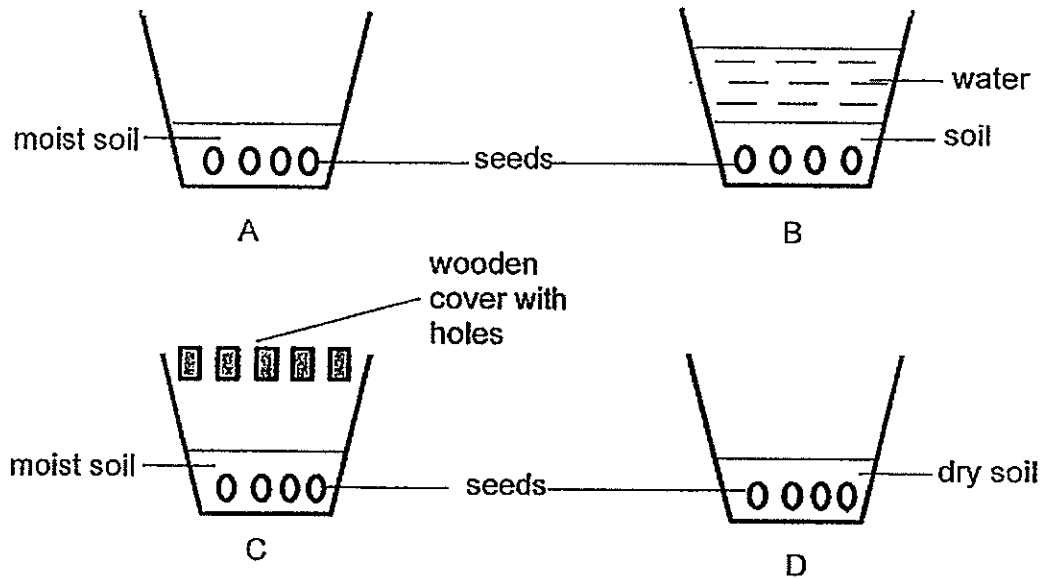
- (1) W: Frog
 (2) X: Bacteria
 (3) Y: Chicken
 (4) Z: Butterfly
10. Observe the different parts of the seedling below.



At the stage shown above, which part of the seedling provides it with food to grow?

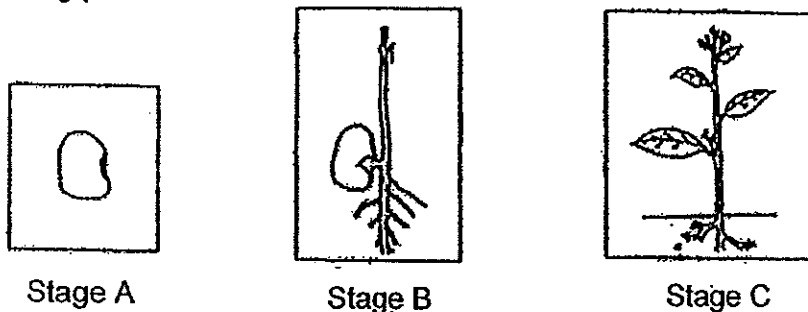
- (1) P
 (2) Q
 (3) R
 (4) S

11. Krishna placed same type of seeds in four different trays A, B, C and D as shown below. He kept the trays along the corridor of his flat.



Which tray of seeds would germinate after a few days?

- (1) A and B only
(2) A and C only
(3) B, C and D only
(4) A, B and C only
12. The diagram below shows the various development stages as a seed germinates into a young plant.



At which of the above stages, is sunlight not required for growth?

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

13. James wanted to find out what type of soil was suitable for growing roses. He planted 3 rose plants of similar size in 3 pots A, B and C.

	Pot A	Pot B	Pot C
Material of pot	Plastic	Plastic	Plastic
Type of soil	Garden soil	Sand	Clay
Size of pots	Small	Medium	Large
Amount of water used everyday	250 cm ³	300 cm ³	350 cm ³

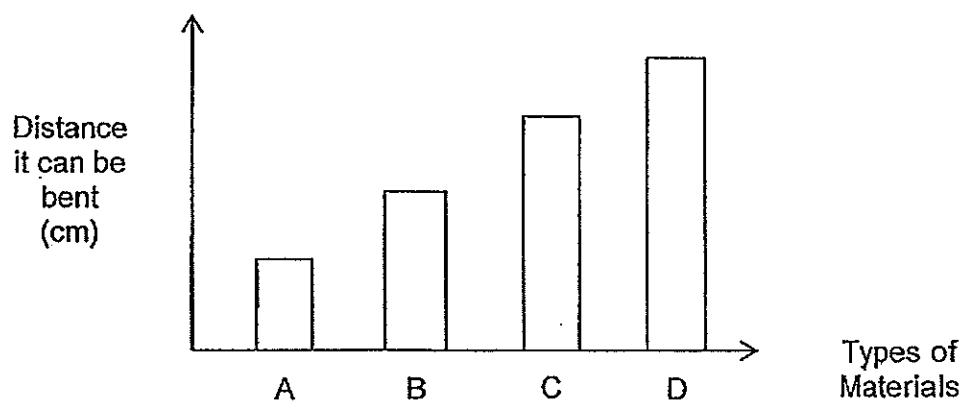
James's father told him that he had not carried out a fair test as not all the controlled variables were kept the same.

Which of the following should be kept the same?

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

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

14. The graph shows how much each of the 4 materials A, B, C and D can bend.



Which one of the properties of materials has been tested above?

- (1) flexibility
 (2) hardness
 (3) strength
 (4) ability to float

- | Materials | Observation |
|-----------|-----------------|
| W | Cut through |
| X | No scratches |
| Y | Light scratches |
| Z | Deep scratches |

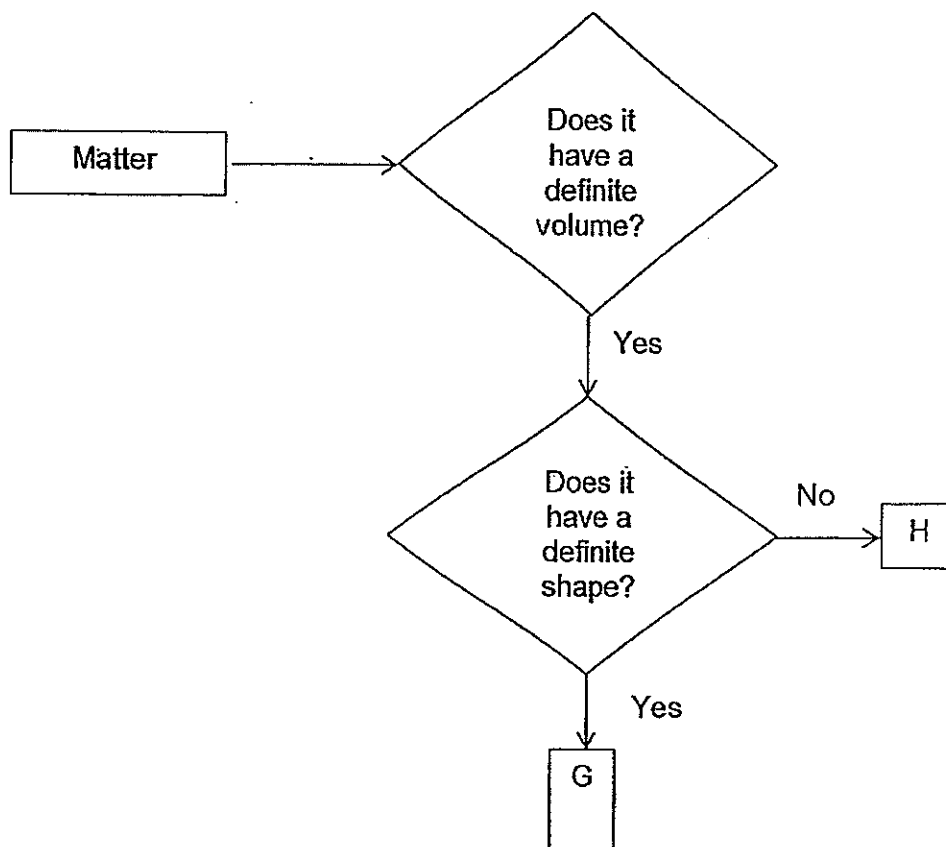
(1) W, X, Y, Z
(3) Z, Y, X, W

16. The table shows the properties of three types of matter A, B and C. A tick (✓) indicates that the matter has the property while a cross (x) indicates that the matter does not have the property listed.

Matter	Has definite shape	Has definite volume	Can be compressed
A	x	√	x
B	x	x	√
C	√	√	x

	A	B	C
(1)	gas	solid	liquid
(2)	liquid	gas	solid
(3)	gas	liquid	solid
(4)	liquid	solid	gas

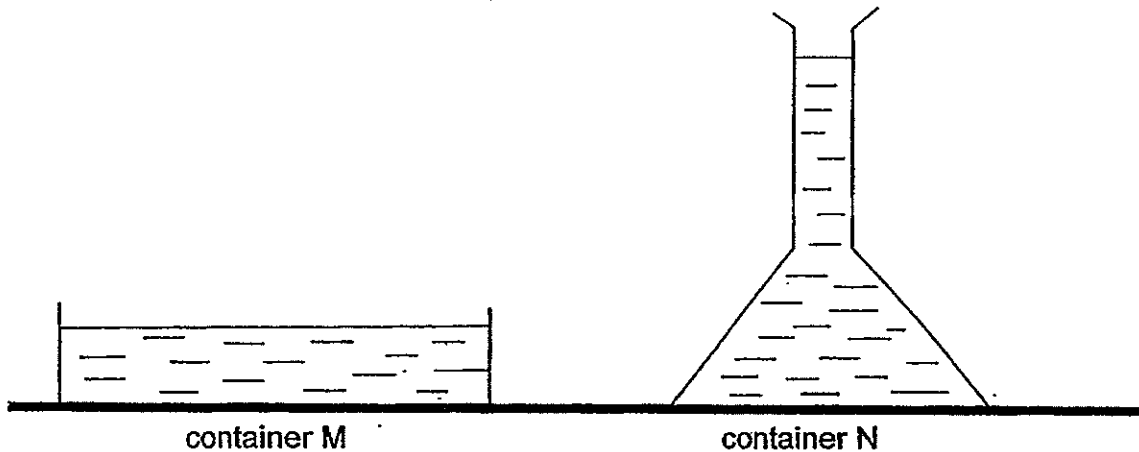
17. Study the flow chart below.



Which one of the following pairs identifies G and H respectively?

	G	H
(1)	toy car	water
(2)	bottle	oxygen
(3)	milk	balloon
(4)	orange juice	salt

18. Ahmad filled container M with 60 ml of water. He then poured all the water from container M to container N.

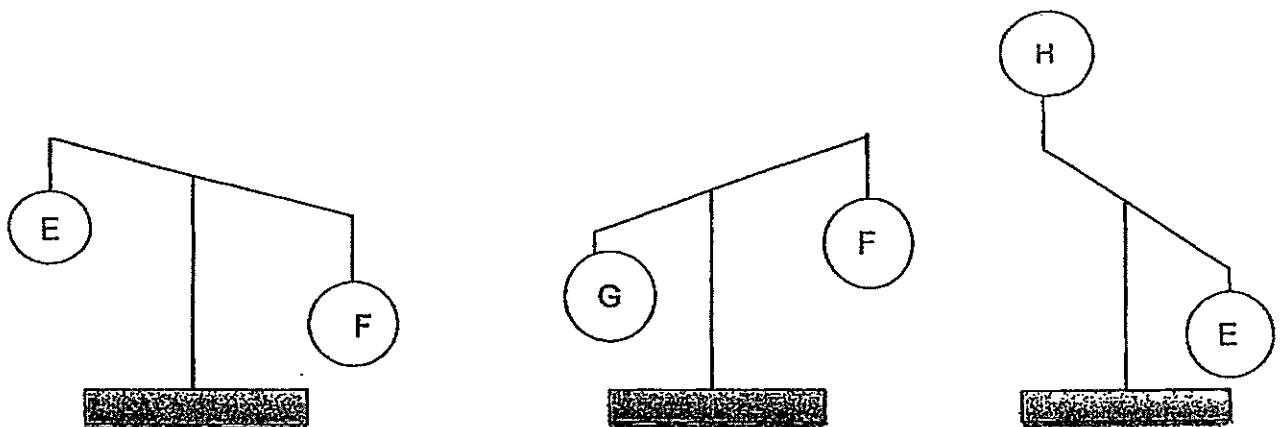


What changes would he observe in container N?

- A: Change in shape of water.
- B: Increase in mass of water.
- C: Increase in height of water.
- D: Increase in volume of water.

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

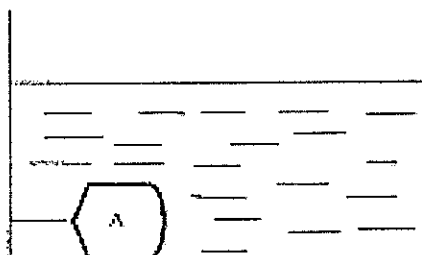
19. May Ling used a lever balance to compare the masses of objects E, F, G and H.



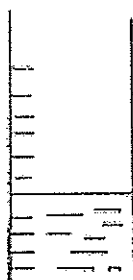
Which of the following shows the correct arrangement of the masses from the heaviest to the lightest?

- (1) E, F, G, H
- (2) G, F, E, H
- (3) E, G, H, F
- (4) H, E, F, G

20. Tom's teacher told him to find the volume of object A. The diagram below shows the position of object A after it is lowered into water.



Tom was given a measuring cylinder filled with some water to help him find the volume of object A.



measuring cylinder

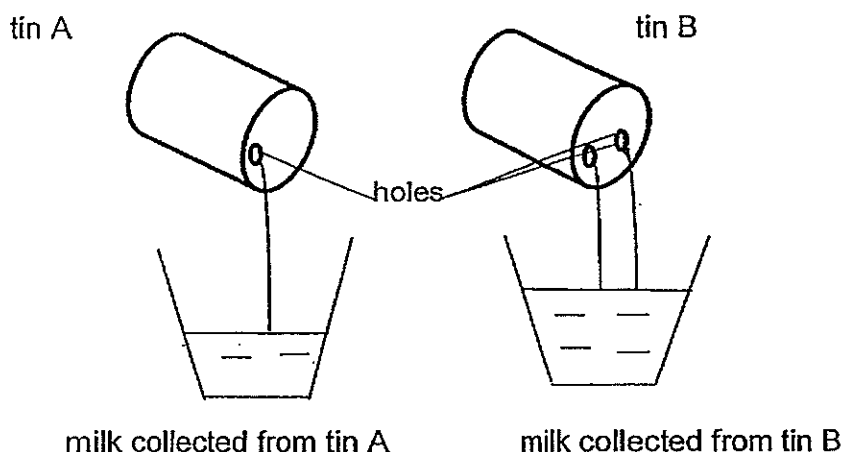
Tom carried out some of the following steps to find the volume of object A

- A: Lower object A into the measuring cylinder.
- B: Find the difference between the two readings.
- C: Read and record the water level in the measuring cylinder.
- D: Read and record the volume of object A and the water in the measuring cylinder.

Which one of the following shows the correct steps in order?

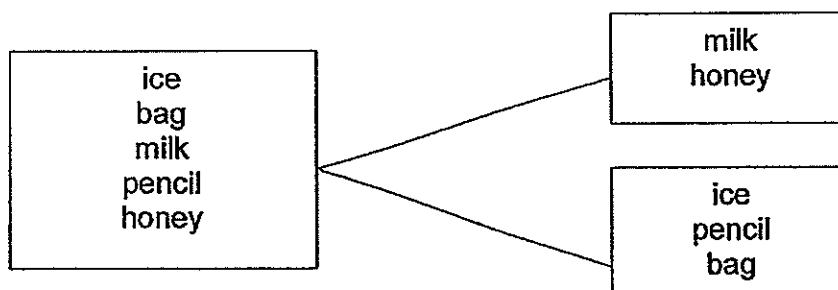
	1st	2nd	3rd	4th
(1)	A	B	C	D
(2)	A	C	D	B
(3)	D	C	B	A
(4)	C	A	D	B

21. Miss Tan was given two tins of condensed milk. She made 1 hole in tin A and 2 holes in tin B. When she poured out the condensed milk, she observed that the condensed milk in tin B flowed out faster than the condensed milk in tin A.



What could be a possible reason for this observation?

- (1) More air could move into tin A.
 - (2) More air could move into tin B.
 - (3) Condensed milk in tin B has less mass.
 - (4) Condensed milk in tin A occupies more space.
22. Study the classification table below.

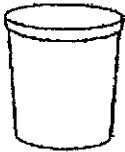
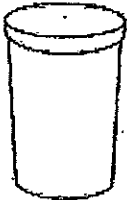
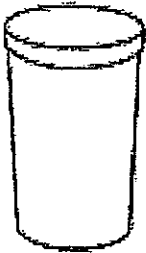


Based on which property has the items above been classified into two groups?

- A: Have mass.
 B: Occupy space.
 C: Definite shape.
 D: Definite volume.

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

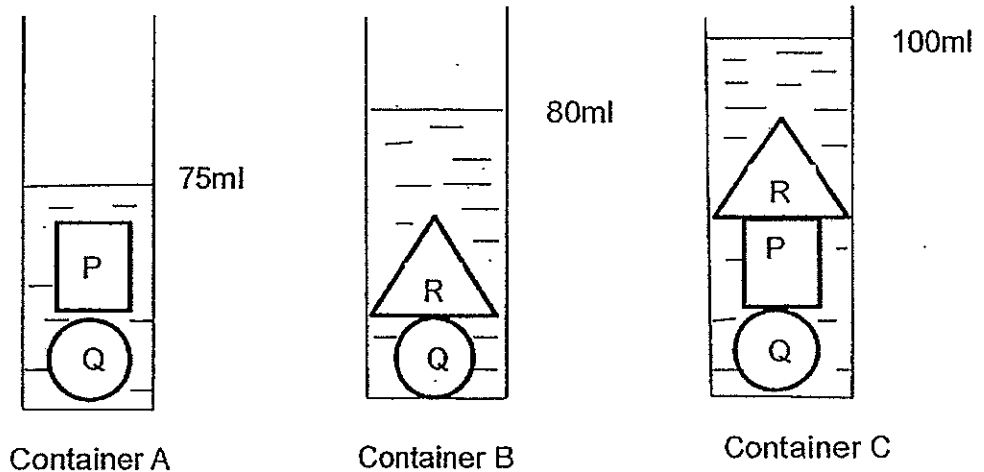
23. In which of the following containers can 450cm^3 of air be pumped into?

Container A  300 cm^3	Container B  400 cm^3
Container C  500 cm^3	Container D  1000 cm^3

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

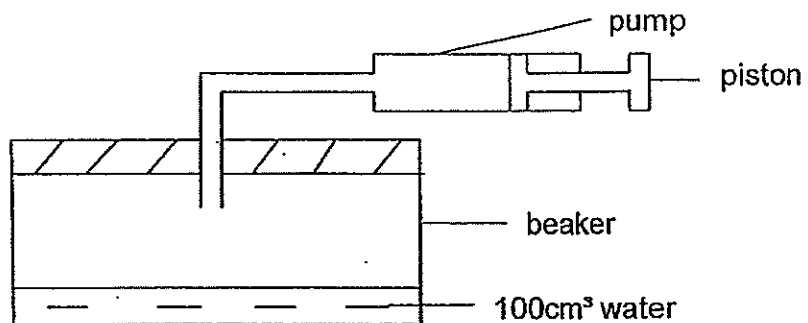
- (2) B, C and D only
(4) A, B, C and D

24. Sheela had 3 containers A, B and C with 40ml of water each. She put objects P, Q and R in as shown below. She observed the water level in each container.



What is the volume of object Q?

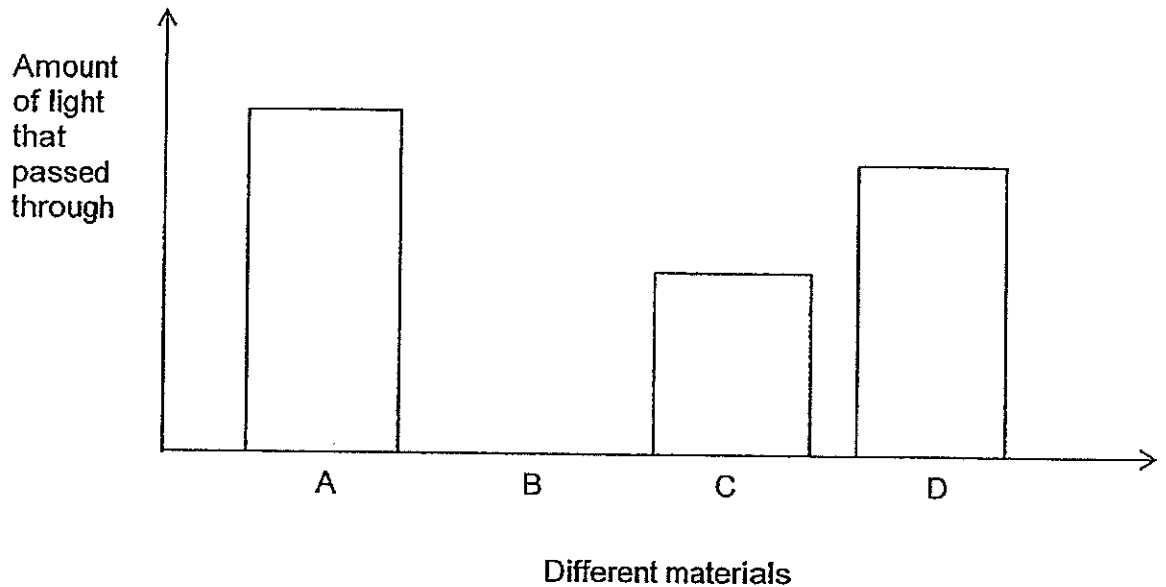
- (1) 15cm^3 (2) 20cm^3
 (3) 35cm^3 (4) 40cm^3
25. The diagram below shows a pump that has been connected to a beaker. The capacity of the beaker is 700cm^3 . The beaker contains 100cm^3 of water.



When the piston is pushed in completely, 50cm^3 of air enters the beaker. What is the volume of air in the beaker after the piston has been pushed in 2 times?

- (1) 100cm^3 (2) 200cm^3
 (3) 600cm^3 (4) 800cm^3

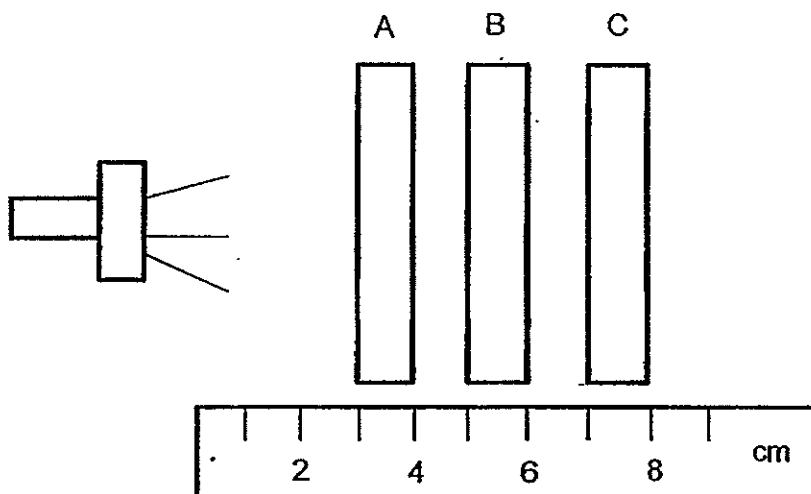
26. Mary used a light sensor attached to a data logger to find out how much light passes through 4 sheets of different materials – cloth, cardboard, tracing paper and tissue paper. She recorded the results in the graph below.



Which material represents the amount of light that passed through the cardboard?

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

27. Aini carried out an experiment using three different materials A, B and C, which are placed at the 3-cm, 5-cm and 7-cm markings of a ruler. A torch is shone on the materials as shown in the diagram below. She discovered that light can only reach the 3cm mark on the ruler.



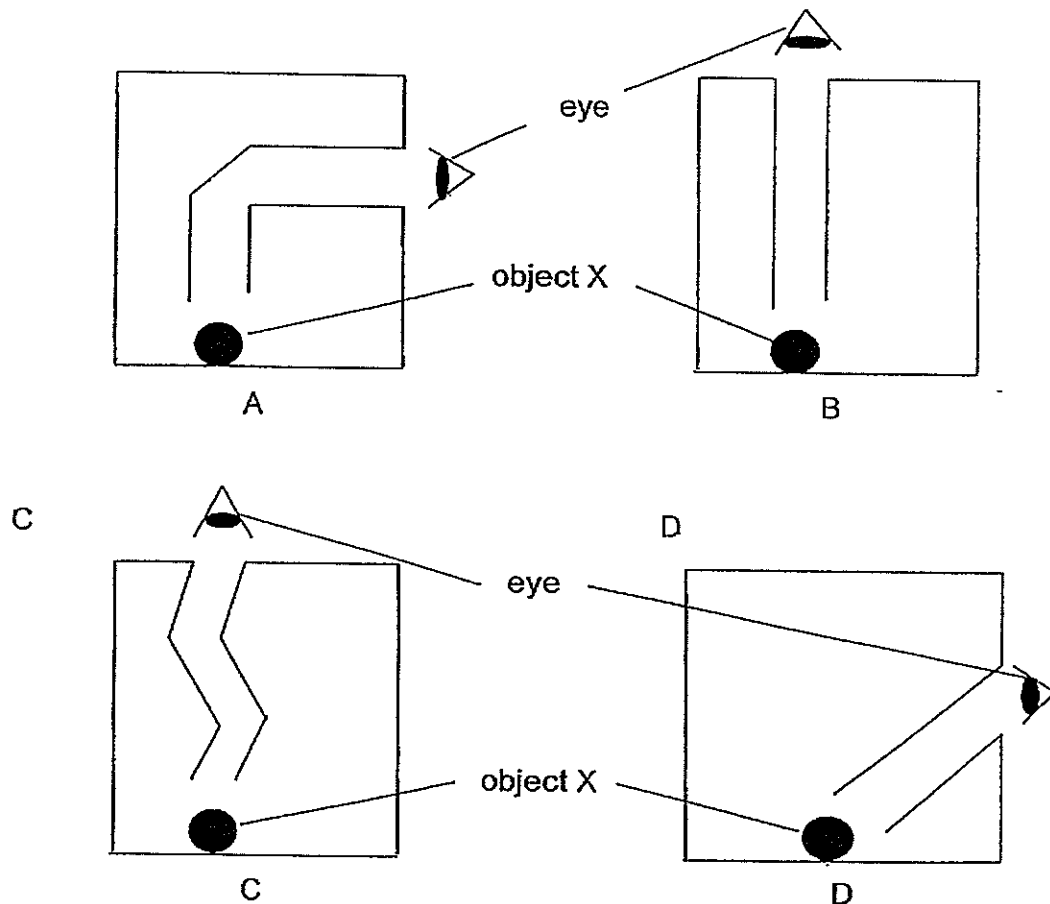
Materials A, B and C were then rearranged in a different order and placed on the 3-cm, 5-cm and 7-cm marks on the ruler. The distance the light travels from the torch is recorded as shown in the table below.

Order of materials	Distance the light travels (cm)
C, B and A	7
B, A and C	5

Which material(s) allow(s) light to pass through?

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

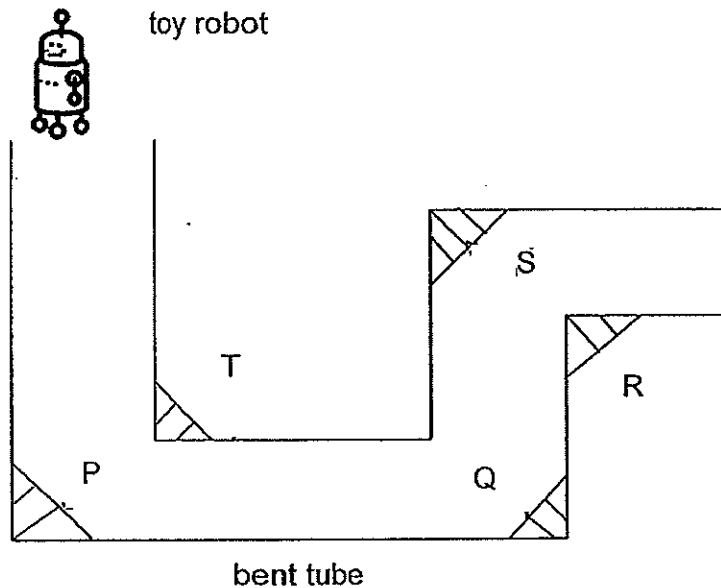
28. Tom placed object X, which could glow in the dark in four containers - A, B, C and D. He made a hole in each of the four containers. Next, he inserted a pipe in each container. Which container will enable Tom to see object X? All the containers and pipes were made of the same opaque material.



Which of these containers would allow Tom to see the glowing object X in them?

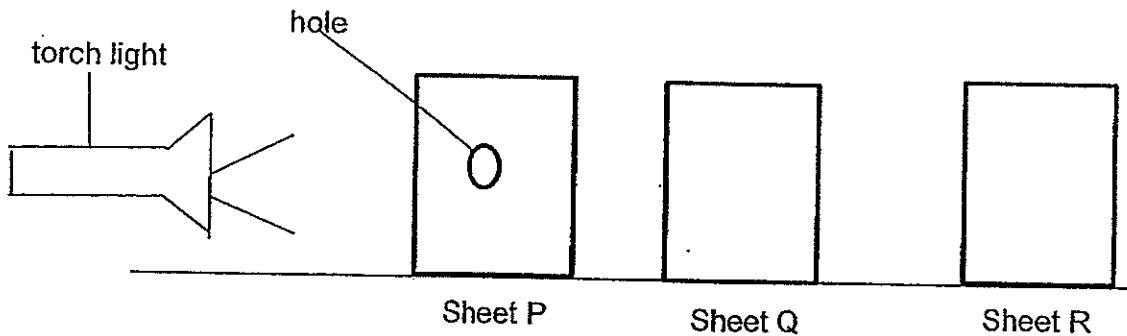
- (1) A and B only
 (2) B and C only
 (3) B and D only
 (4) A, B and C only

29. Henry used the following apparatus to see a toy robot at one end of a bent tube. He placed some mirrors at positions P, Q, R, S and T. Identify the positions where the mirrors should be placed to enable him to see the toy robot from the other end of the tube.



- | | |
|---------------------|---------------------|
| (1) P, T and Q only | (2) P, Q and R only |
| (3) P, Q and S only | (4) Q, R and S only |

30. The experiment below was carried out in a dark room. Sheets P, Q and R are arranged in a straight line. When a torch is shone at the hole on sheet P, a bright circular patch of light is seen on sheet R only.



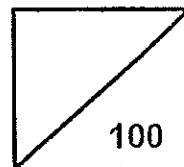
Which one of the following below shows the correct material sheets P, Q and R are made of?

	Sheet P	Sheet Q	Sheet R
(1)	wood	cardboard	clear glass
(2)	cardboard	wood	clear glass
(3)	clear glass	cardboard	wood
(4)	wood	clear glass	cardboard

End of Booklet A



Rosyth School
Semestral Assessment 1 2014
SCIENCE
Primary 4



Name: _____

Total
Marks:

Class: Pr 4. _____

Register No. _____

Duration: 1 h 45 min

Date: 15th May 2014

Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 31 to 44, give your answers in the spaces given in Booklet B.

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

* This booklet consists of 14 pages.

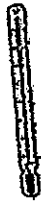
For questions 31 to 44, write your answers in this booklet.

(40 marks)

31. The table below shows the characteristics of four things W, X, Y and Z. A tick (✓) shows that the thing has the characteristic while a cross (x) shows that the thing does not have the characteristic.

Things	Responds to changes	Needs air, food and water	Can fly
W	✓	x	x
X	✓	✓	x
Y	x	x	✓
Z	✓	✓	✓

Using the information, match the things W, X, Y and Z with the pictures shown below. Write your answers in the boxes. (2m)

32. The picture below shows 2 animals.



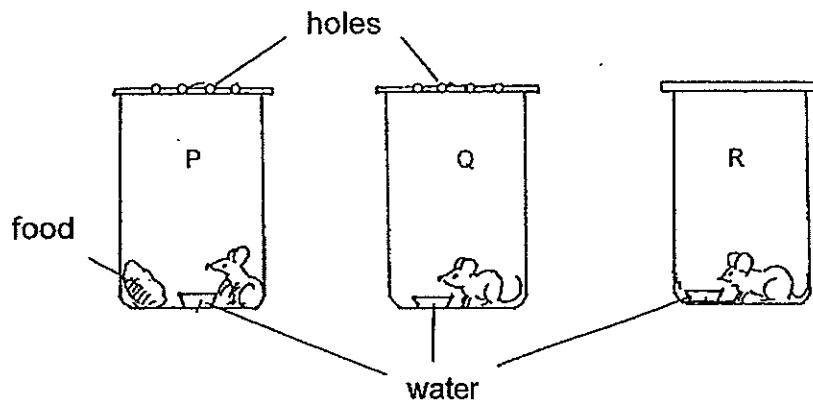
(a) Base on the pictures above, state two similarities of the animals. (1m)

(i) _____

(ii) _____

(b) Which group of animals does the two animals belong to? Support your answer. (1m)

33. Each of the three jars P, Q and R has a mouse in it. Plastic sheets were used to cover the mouths of the jars. The conditions in each jar were set up as follows:

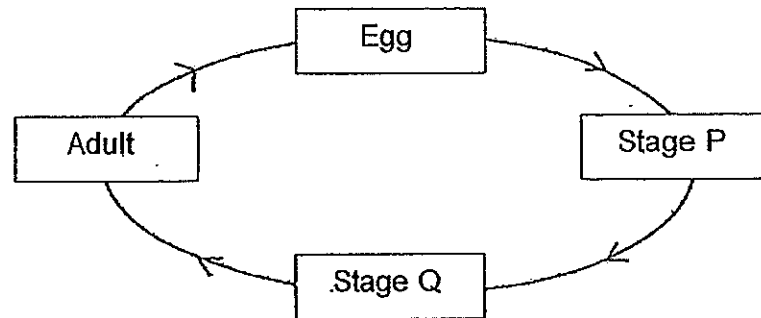


	Jar P	Jar Q	Jar R
A bowl of water	Yes	Yes	Yes
Some food	Yes	No	No
Some holes in the plastic sheet	Yes	Yes	No

(a) Describe the observations you would make for the experiment above after a few weeks. (2m)

(b) What inference can you make from your observations in (a)? (1m)

34. The diagram below shows the stages in the life cycle of a mosquito.



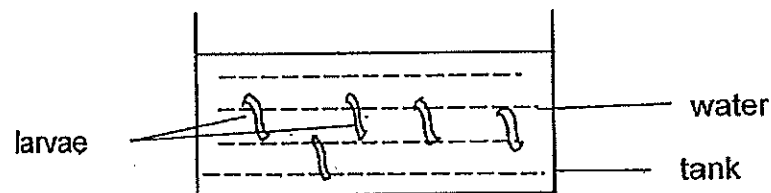
- (a) Identify Stage P and Q. (1m)

Stage P: _____

Stage Q: _____

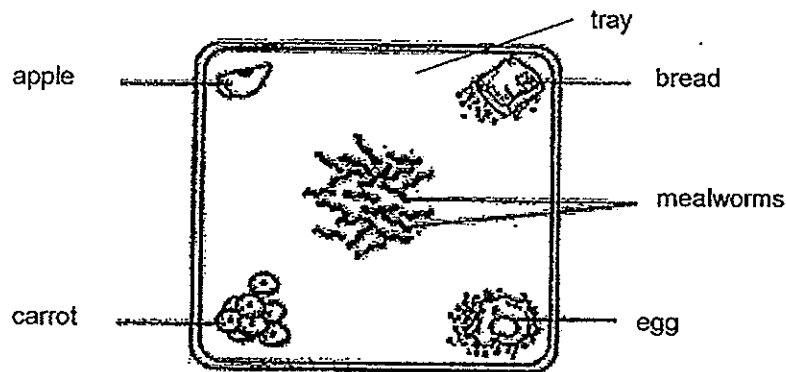
- (b) Name one difference between Stage P and Stage Q. (1m)

- (c) There are some mosquito larvae in the tank below.



Suggest a way to kill the mosquito larvae. Explain why. (2m)

35. Jasmine carried out an experiment with 20 mealworms. She placed the mealworms in the centre of the tray as shown in the diagram below. She also placed different types of food at the 4 corners of the tray.



After some time, she counted the number of mealworms at each corner. The results were recorded in the table below.

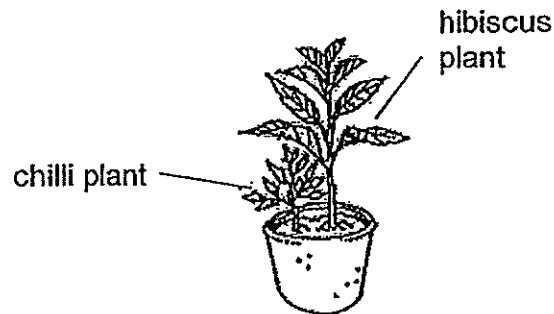
Food	Apple	Bread	Carrot	Egg
Number of mealworms	5	12	2	1

- (a) Based on the results from the table, what is the type of food that the mealworms like the most? Explain your choice. (1m)

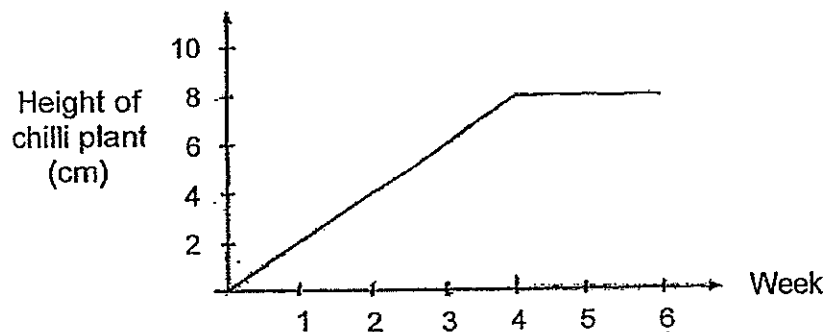
- (b) Why did Jasmine put the mealworms in the centre of the tray? (1m)

- (c) Jasmine observed some dead insect skin on the tray, near the mealworms. What can she infer from the observation? (1m)

36. Andy plants a chilli plant in a pot beside a hibiscus plant. He waters the plants every day.



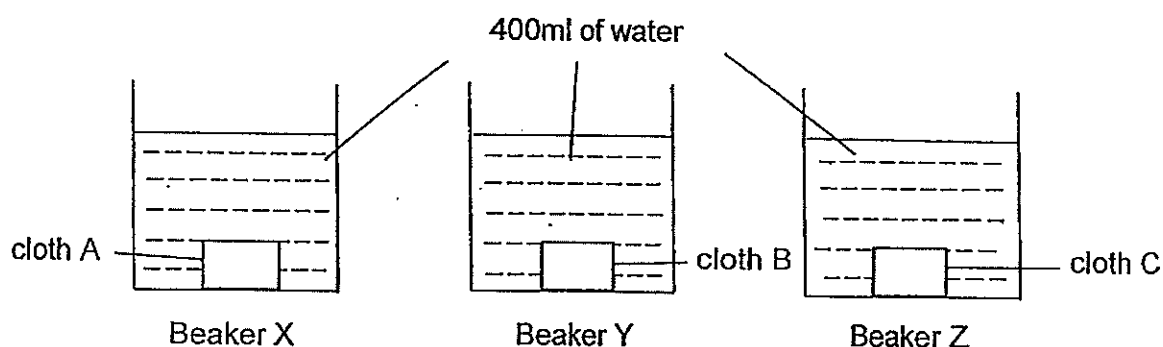
The graph below shows the growth of the chilli plant for 6 weeks.



- (a) What observation can you make about the height of the chilli plant from week 1 to week 6? (1m)

- (b) In what way do you think the hibiscus plant has prevented the chilli plant from growing after week 4? (1m)

37. Clement wanted to find out which material is the most suitable for making a mop ^{mop} mat? Three different materials of the same shape and size were placed into a beaker containing 400 ml of water each, as shown in the diagrams below.



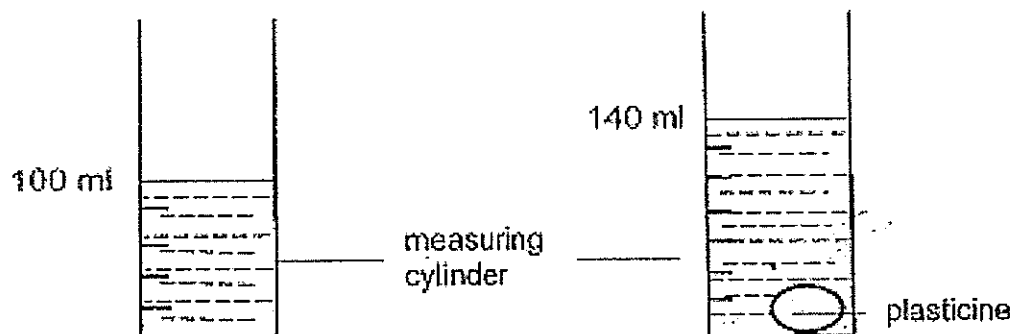
After 20 minutes, the materials were then removed from the beaker and the amount of water left in each beaker was recorded as shown in the table below.

Beakers	Amount of water left in the beaker (ml)
X	400
Y	380
Z	290

- (a) Rank the cloth A, B and C from the most absorbent to the least absorbent. (1m)

- (b) Based on the results in the table above, which cloth is the most suitable for making a mop? Explain your answer. (2m)

38. Siva placed a ball of plasticine into a measuring cylinder containing 100 ml of water. The volume of the plasticine and the water is shown in the diagram below



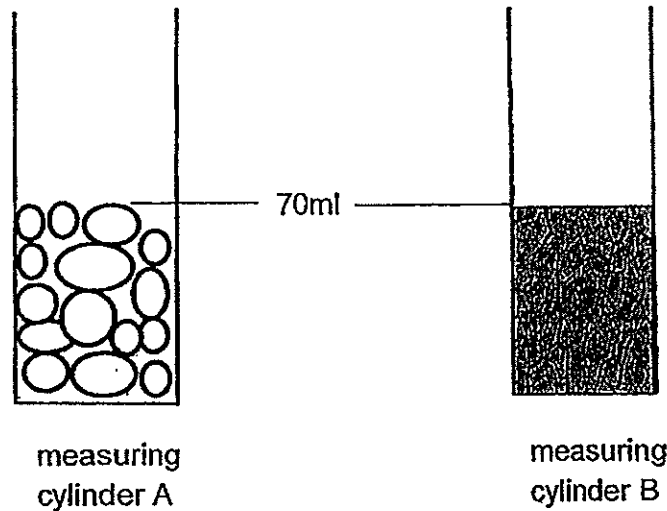
- (a) What is the volume of the plasticine? (1m)

After this, he took the same piece of plasticine and moulded it into the shape of a triangle ( $\longrightarrow$ ) before he placed it into the same measuring cylinder containing 100 ml of water.

- (b) What will the volume of the triangular-shaped plasticine be? (1m)

- (c) State the property that can be inferred from the experiment above. (1m)

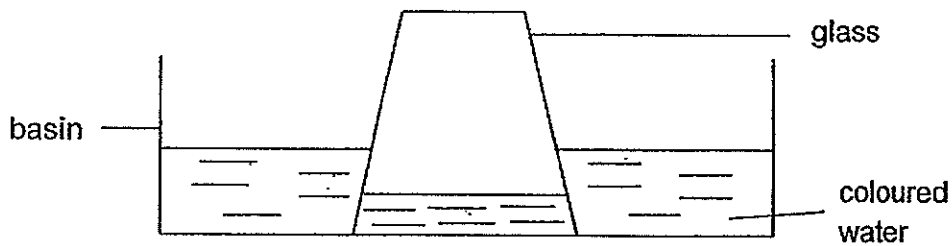
39. Sue conducted an experiment. She had some pebbles in measuring cylinder A and some dried clay in measuring cylinder B. She poured 50 ml of water into each measuring cylinder and made some observations.



- (a) Describe what you would observe about the water levels in measuring cylinders A and B. (1m)

- (b) Explain your observation in (a). (2m)

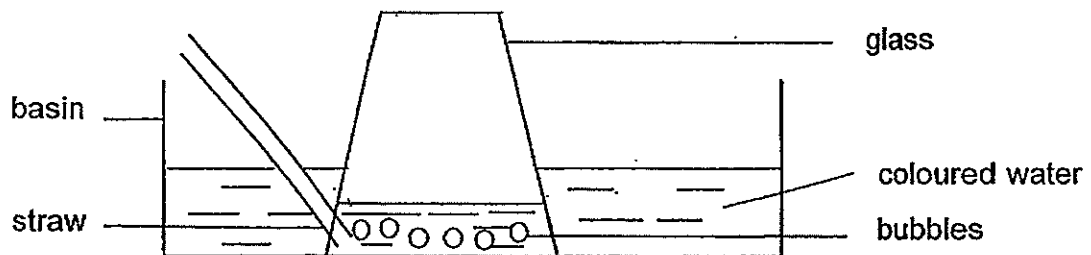
40. Su Lin inverted a glass into a basin of coloured water. No air escaped from the glass into the basin of water when she inverted the glass. However, she observed that a small amount of coloured water entered the glass as shown in the diagram below.



- (a) Explain why a small amount of coloured water entered the glass. (1m)

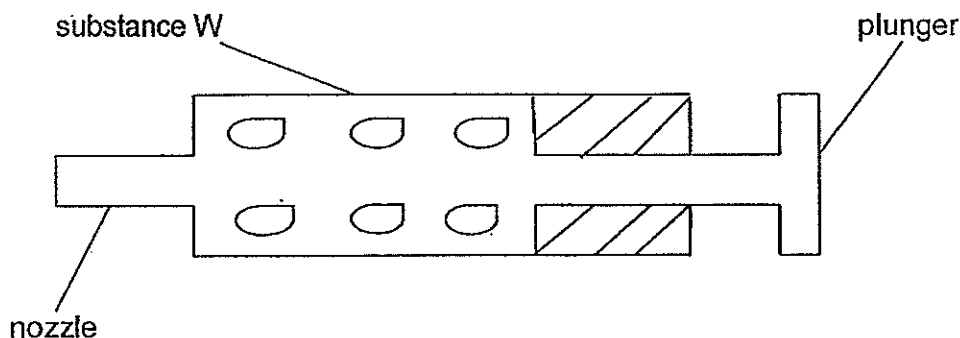
- (b) Why did Su Lin use coloured water instead of clear water for her experiment? (1m)

Next, Su Lin blew air through a straw into the glass. She observed that bubbles were seen in rising up the coloured water in the glass. The water level in the glass also dropped.

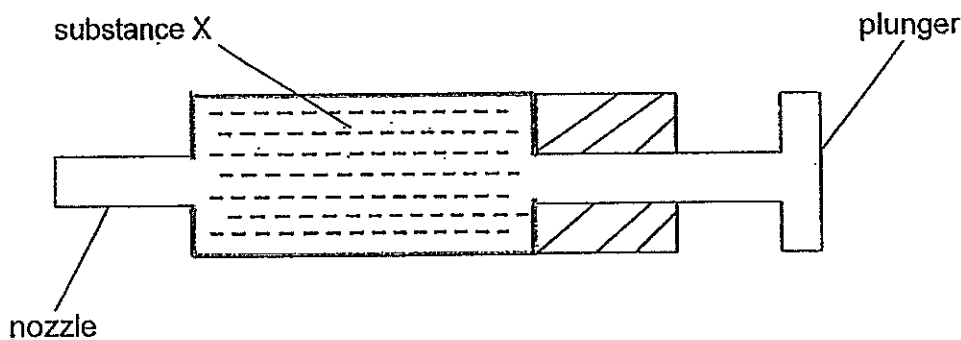


- (c) Why had the level of coloured water in the glass dropped? (1m)

41. Mary placed 10 ml of substance W in a syringe as shown below. She covered the nozzle with her finger and tried to push the plunger in. She found that she could push the plunger in.



Mary then replaced substance W with 10 ml of substance X in the syringe shown below and repeated the same procedure. When she tried to push in the plunger, she found that she could not push in the plunger at all.



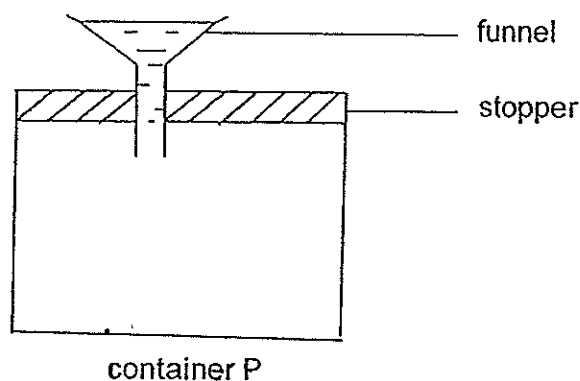
- (a) Based on the above information, what state of matter can substance X and substance W most likely be respectively? (1m)

(i) Substance W: _____

(ii) Substance X: _____

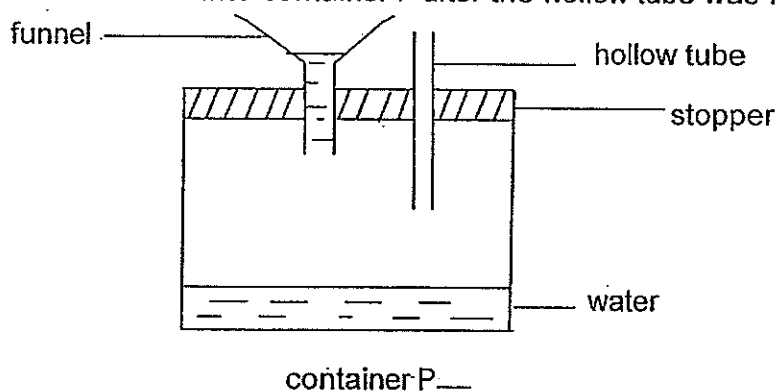
- (b) Give a reason for your answer in (a). (2m)

42. Container P is fitted with a funnel as shown in the diagram below.



- (a) The water from the funnel is not able to flow into container P. Explain why. (1m)

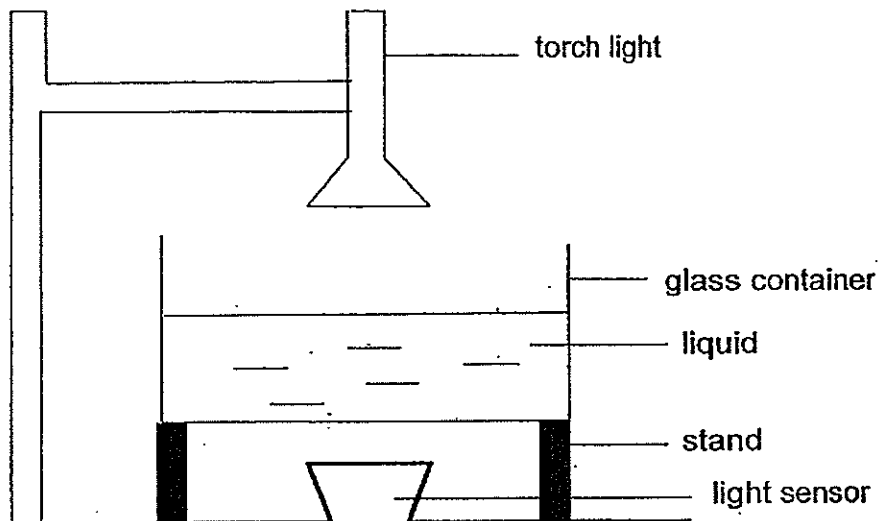
A hollow tube was fitted into the stopper some time later. It was noticed that the water from the funnel flowed into container P after the hollow tube was fitted in.



- (b) Why was the water able to flow into container P after the hollow tube was fitted in? (2m)

- (c) It was observed that the water which was previously in the funnel had a different shape from the water in container P. Explain the reason for this. (1m)

43. Min Hui used the set-up below to investigate how much light passes through different types of liquid.



She used a light sensor to measure the amount of light (lux) that passed through each liquid and recorded her results in the table below.

Liquid	Units of light(lux)
Milo	35
Tap water	210
Cooking oil	115
No liquid	?

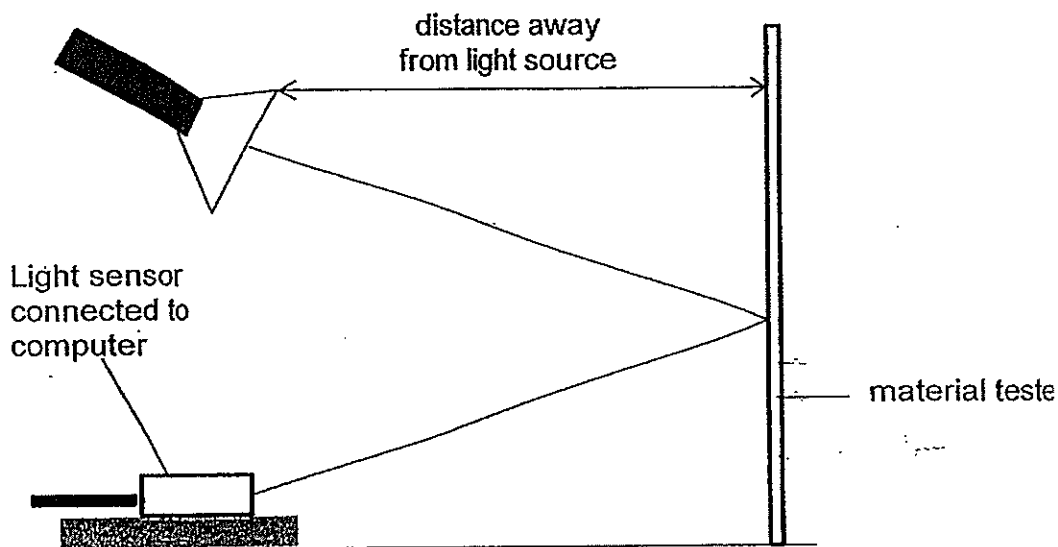
- (a) How many units of light will be measured when there is no liquid in the container? (1m)

_____ lux

- (b) Name 1 variable that Min Hui must keep the same for a fair experiment. (1m)

- (c) Why did the cooking oil allow more light to pass through than the Milo? (1m)

44. Mr Lim conducted an experiment in a completely dark room to find out how much light is reflected by three different materials A, B and C. He set up his experiment as shown in the diagram below.



The table below shows how much light was reflected by each of the materials.

	Material A	Material B	Material C
Distance between material and light source(m)	5	5	5
Amount of light reflected(lux)	40	20	60

- (a) Explain why Mr Lim should conduct his experiment in a completely dark room to ensure a fair test? (1m)

- (b) Based on the results of his experiment, which material would be most suitable for making bicycle reflectors for cyclists who cycle at night? Explain your answer. (1m)

The End of Paper

Year: 2014

Level: Primary 4

School: Rosyth School

Subject: Science

Semester: SA1

Booklet A:

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	2	4	3	3	1	3	4	3	2
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	1	3	1	2	2	1	2	2	4
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	1	4	1	3	2	4	3	3	4

Booklet B:

Q31)

W	X	Z	Y
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Q32) a) i) Both the cockroach and the ant have six legs.

ii) Both the cockroach and the ant have feelers.

b) They belong to insects. Both of them have three body parts and an exo-skeleton.

Q33) a) The mouse in both jar Q and R will die as there is no food in Q and there is no air and food in R. The mouse in jar P will no die.

b) Living things need air, food and water to survive.

Q34) a) Stage P: Larva

Stage Q: Pupa

b) Stage P eats a lot but stage Q doesn't eat and stays inside to prepare for the next stage.

c) Pour oil on the surface of the water. The oil blocks the oil from coming into the water so the larvae will not get air and will die.

Q35)a) The type of food is bread. Bread has the most mealworms eating it.

b) To make the distance between the mealworms and the food and the food corners are equal.

c) She can infer that insects moult and living things grow.

Q36)a) From week 1 to week 4, the height of the plant kept increasing until week 4 to week 6, the height of the plant remained the same.

b) The hibiscus plant blocked the leaves of the chili plant from the sunlight. Without sunlight, the chili plant can't make food and without food, it can't grow.

Q37) a) C, B, A

b) Material Z. It absorbs the most water out of all the materials.

Q38)a) 40cm^3

b) 40cm^3

c) The Plasticine has a definite volume that no matter how you cut it, it will still be the same volume.

Q39)a) The water level in cylinder A will be lower than the water level in cylinder B.

b) In cylinder A, there are spaces between the pebbles so the water occupies these spaces. In cylinder B, there are no empty spaces in the clay for the water.

Q40)a) Air in the glass can be compressed so that water could not enter the glass.

b) The level of the coloured water can be clearly seen.

c) The bubbles are air which pushed the water level in the cup down.

Q41) a) i) Gas

ii) Liquid

b) Air can be compressed but water cannot.

Q42) a) Air occupies space.

b) The hollow tube allowed air to escape, giving space for water to enter.

c) Water does not have a definite shape so it is able to take the shape of the container.

Q43) a) 210

b) The distance between the torch light and the light sensor.

c) The cooking oil is translucent but milo is opaque.

Q44) a) As additional light will also fall on the light sensor and it will also detect the light.

b) Material C. It reflects the most light and thus it's the most suitable.

