Rosyth School
First Semestral Assessment for 2008
SCIENCE
Primary 4

Total Marks: 100

Name: _____

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

Date: 12th May 2008 Parent's Signature: _____

Instructions to Pupils:

1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets, Booklet A and Booklet B.
4. For questions 1 to 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 31 to 46, give your answers in the spaces given in the Booklet B.

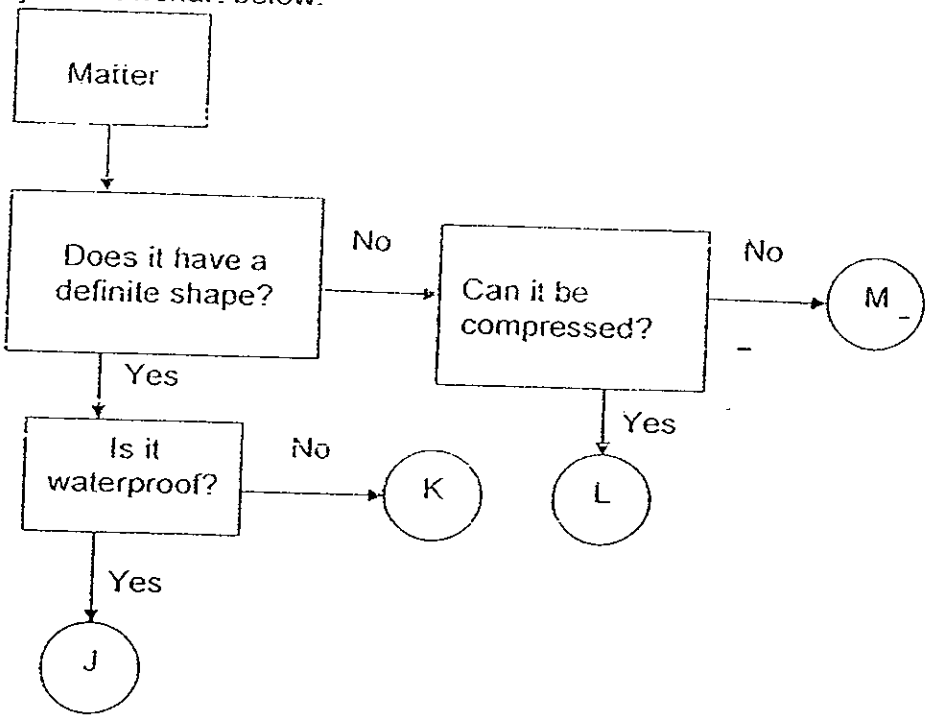
	Maximum	Marks Obtained
Booklet A	60 marks	
Booklet B	40 marks	
Total	100 marks	

* This booklet consists of 19 pages.

Booklet A (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. Study the flowchart below.



Which of the following correctly represents J, K, L and M?

	J	K	L	M
(1)	Shadow	Cork	Cotton wool	Mercury
(2)	Glass Sheet	Log	Nitrogen	Oil
(3)	Styrofoam	Paper clips	Water vapour	Alcohol
(4)	Plasticine	Sponge	Light	Magnet

2. May wanted to find out if a plastic windmill or a paper windmill turns faster when the fan is switched on.

Which one of the following factors should she change to carry out her investigation?

(1) The speed of the fan.
(2) The mass of the windmill
(3) The material of the windmill
(4) The number of blades in the windmill

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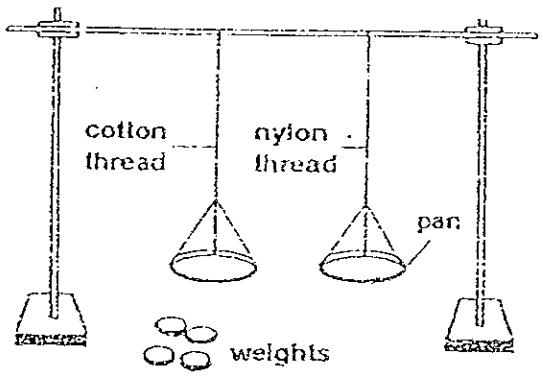
3. Samad carried out an experiment using the set-up shown below.

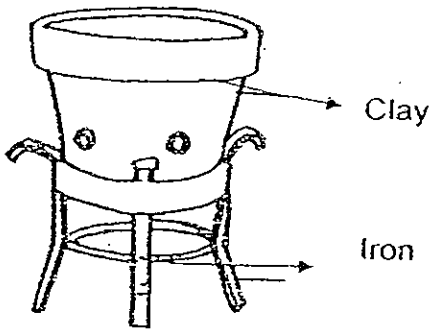


He carried out the following steps:

a) Add weights, one at a time, to each pan until the thread broke.
b) Record the number of weights that made each thread break.

What do you think Samad was trying to find out?
(1) He was trying to find out which thread is lighter.
(2) He was trying to find out which thread is softer.
(3) He was trying to find out which thread is stronger.
(4) He was trying to find out which thread is more flexible.

4. The pot and the stand shown below are made of clay and iron respectively.



Which one of the statements decribes the materials that are used to make the pot and stand?
(1) They are man-made.
(2) They come from plants.
(3) They come from animals.
(4) They come from the ground.

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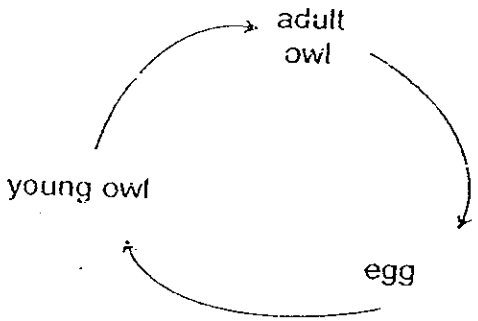
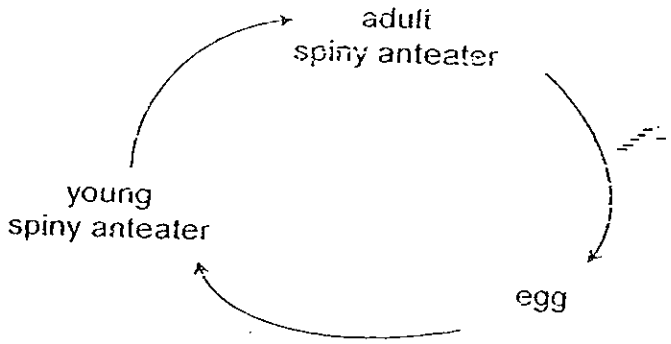
5. The diagrams below show the life cycles of some animals.

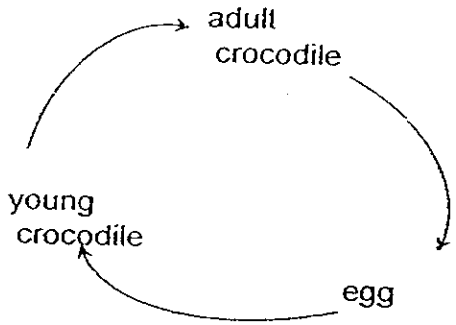
(1)



(2)



(3)



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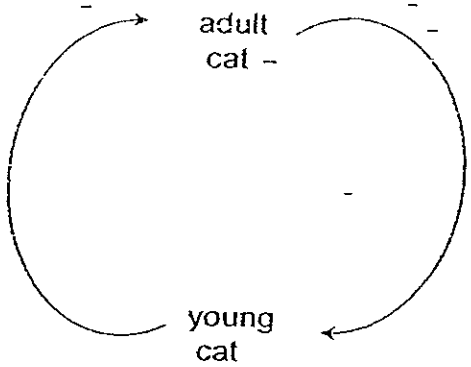

Which one of the life cycles shown is different from the others?

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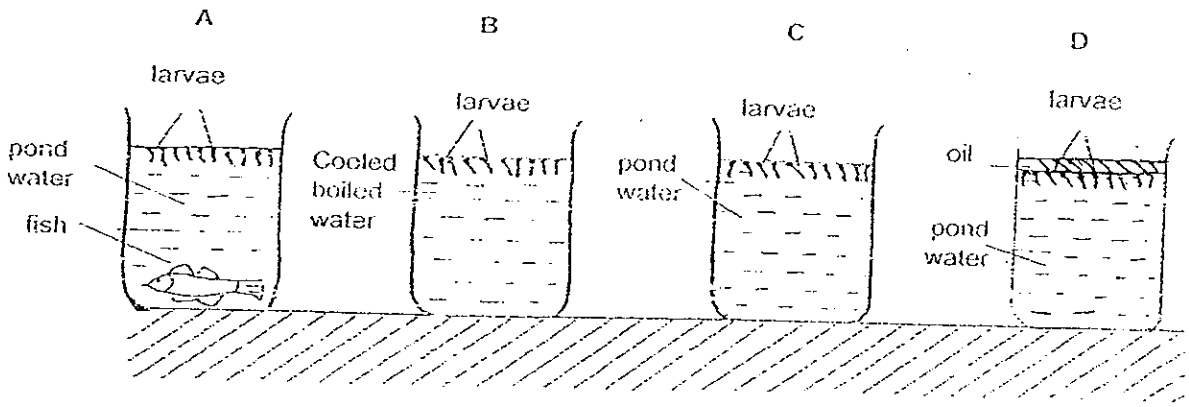
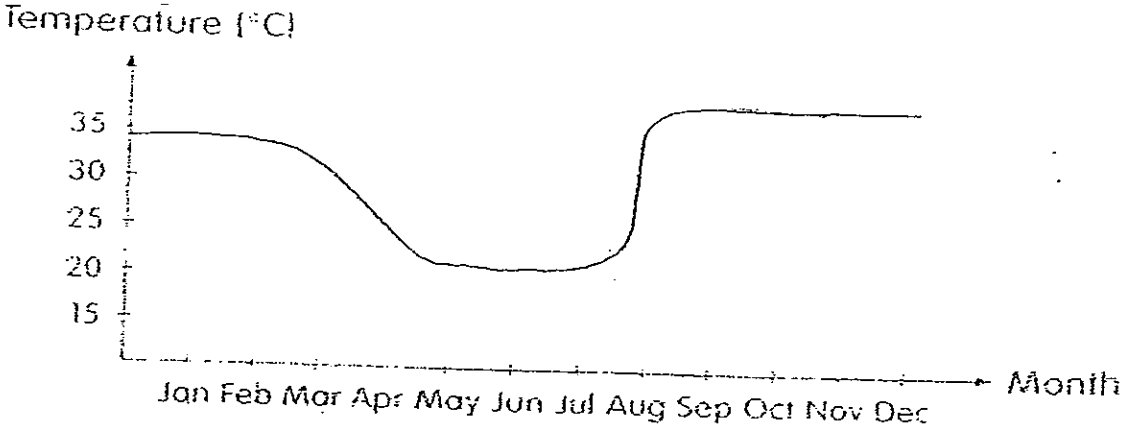
6. Ali placed 10 mosquito larvae in each of the 4 jars (A, B, C and D) as shown below.



Which jars are most suitable for the larvae to develop into mosquitoes?

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

7. The graph below shows the temperature of a particular place from January to December.



Insect X lives in this place. It requires a temperature of between 32°C and 34°C for at least one month to develop from an egg into an adult.

Which of the following months are suitable for Insect X to breed?

(1) January to March
(2) April to July
(3) August to September
(4) May to December

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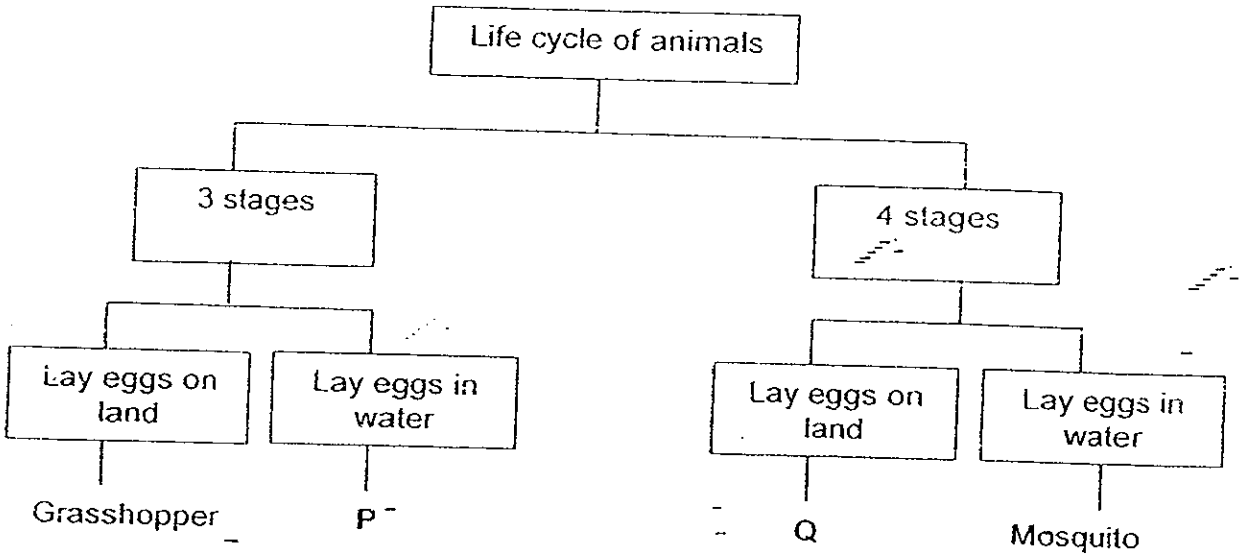
8. Study the classification table below.



What are P and Q likely to be?

	P	Q
(1)	Toad	Chicken
(2)	Guppy	Ant
(3)	Frog	Butterfly
(4)	dragonfly	Cockroach

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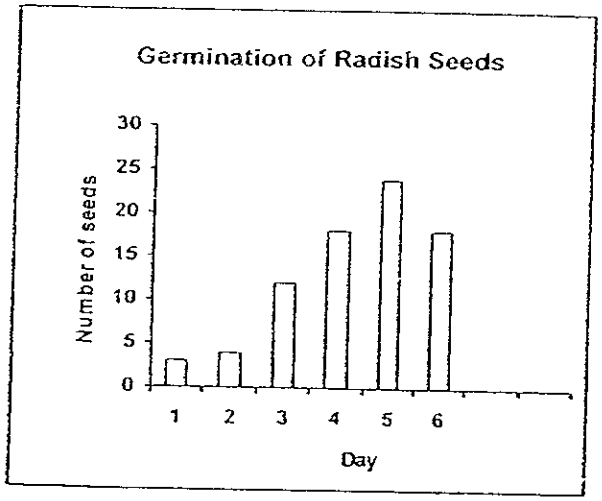
9. Ahmad put 25 radish seeds in a pot. He watered the seeds and put the pot next to the window. He observed the germination of the seeds and recorded his observation in the table below.

Day	Number of radish seeds already germinated
1	3
2	4
3	12
4	18
5	24
6	24

Ahmad used the above data to plot a bar graph. Which of the following is the correct graph?

(1)



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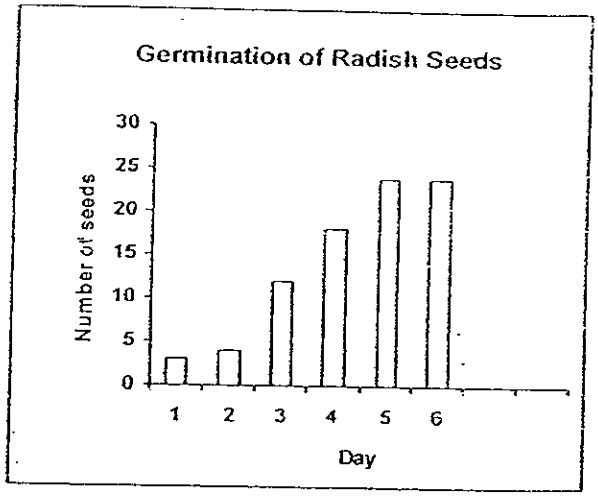
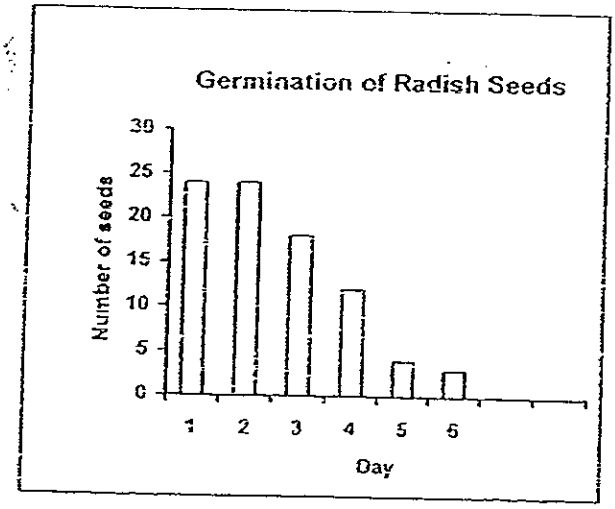


(3)



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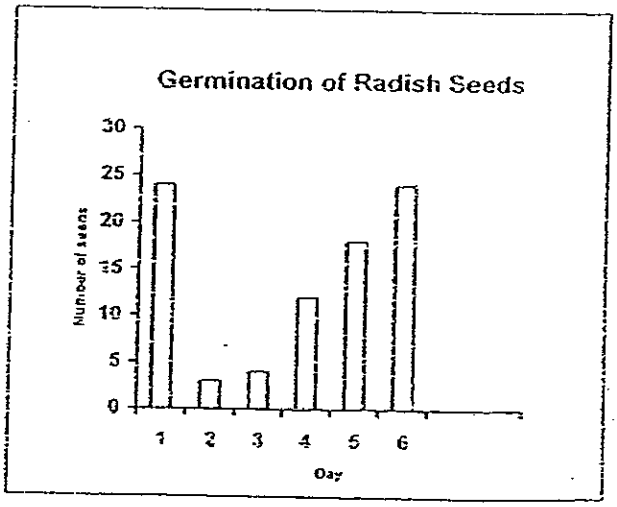

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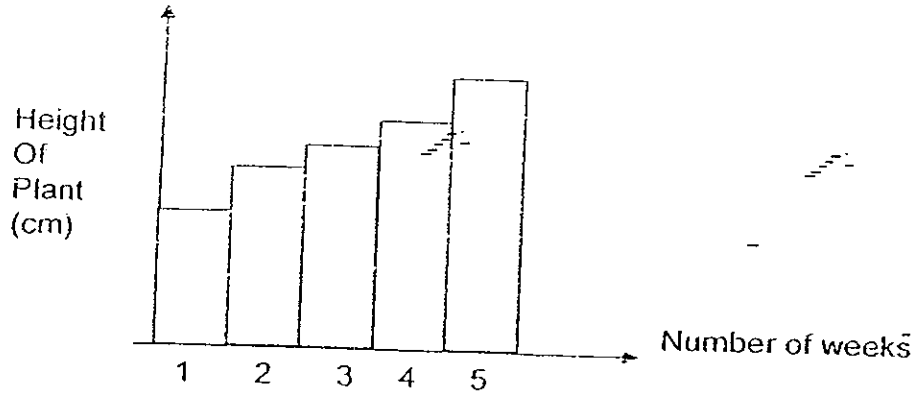
10. The graph below shows the growth of a plant.



What does the graph tell you about the plant's growth over 5 weeks?

(1) The plant grew taller.
(2) The plant grew shorter.
(3) The plant did not grow at all.
(4) The plant stopped growing after the second week.

11. Four similar plants A, B, C and D were each grown in a pot. Each of the pots was treated differently as shown in the table below.

Plant	Air	Sunlight	Water
A	Absent	Present	Absent
B	Present	Present	Present
C	Present	Absent	Present
D	Present	Present	Absent

Which two plants would you choose to show that water is important for the growth of plants?

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

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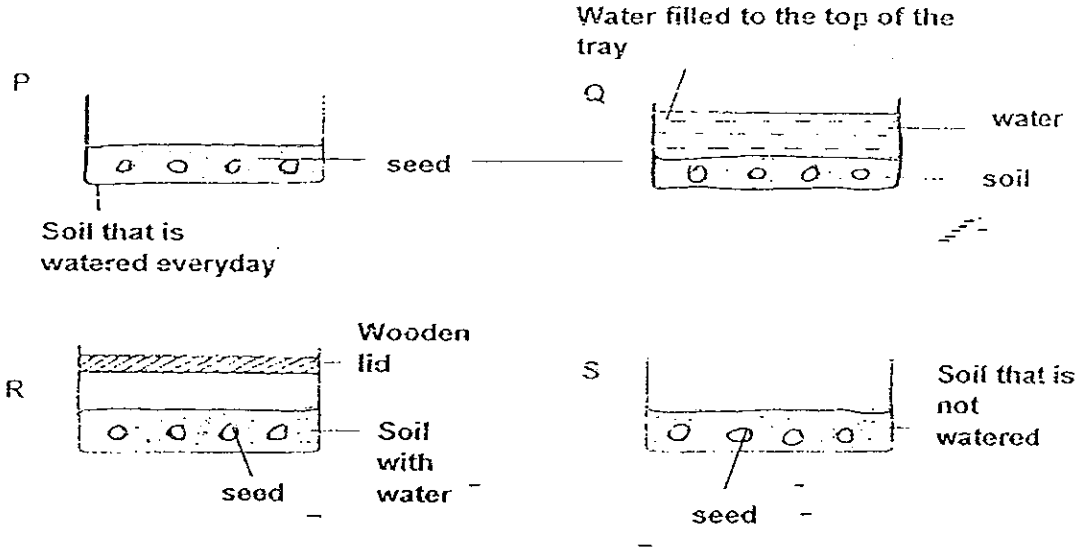
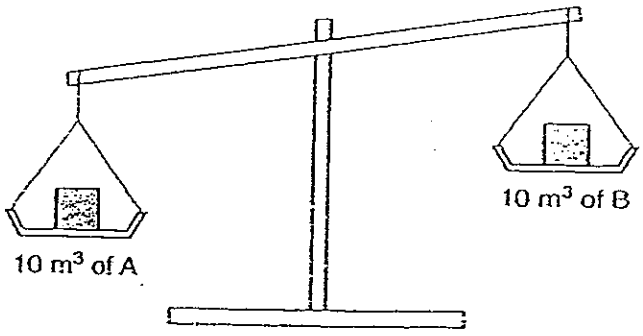
12. Dick placed some tomato seeds in four different trays containing soil. He kept the trays along the corridor of his flat.



Which tray of seeds would germinate after a few days?

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

13. Study the diagram shown below.



What could substance A and B be ?

	A	B
(1)	Cork	Rubber
(2)	Styrofoam	Iron
(3)	Iron	Styrofoam
(4)	Rubber	Iron

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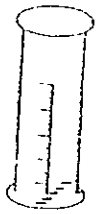
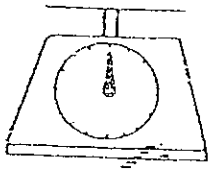
14. Joyce wanted to find the mass of a metal block while Kenny wanted to measure the volume of rain water he collected overnight. Which of the apparatus shown below should they use?

A



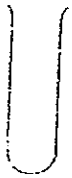
Measuring cylinder

B



Weighing scale

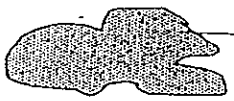
C



Test tube

	Joyce	Kenny
(1)	C	B
(2)	B	C
(3)	A	B
(4)	B	A

15. Tania made three different shapes, one at a time using the same dough.



Play dough

Mass = 48 g
Volume = 18cm^3

She measured the mass and volume of each shape. She recorded her results in a table.

Which of the following shows the correct results?

(1)

Shape of play dough	Mass (g)	Volume (cm^3)
Ball	48	18
Boat	28	8
Bone	58	28

(2)

Shape of play dough	Mass (g)	Volume (cm^3)
Ball	48	18
Boat	48	18
Bone	48	18

(3)

Shape of play dough	Mass (g)	Volume (cm^3)
Ball	48	18
Boat	68	48
Bone	88	28

(4)

Shape of play dough	Mass (g)	Volume (cm^3)
Ball	48	18
Boat	68	38
Bone	28	8

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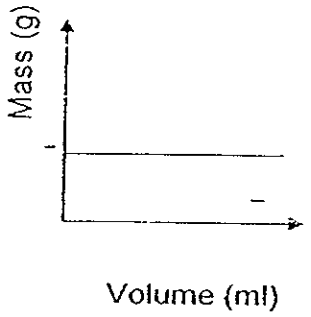
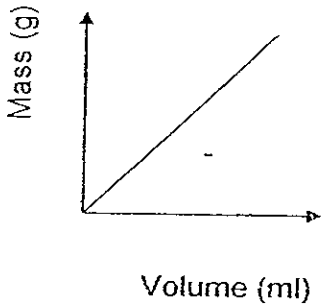
16. Jack used a pail to collect water till its brim. He measured the mass of the pail as he filled it with water.
He represented the relationship between the volume of water and the mass of the pail in a graph.

Which one of the following graphs, represents the relationship correctly?

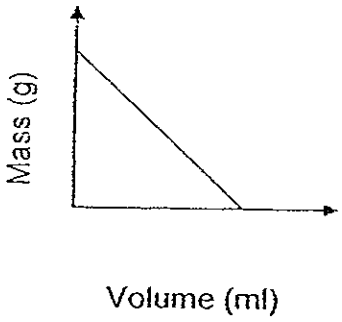
(1)



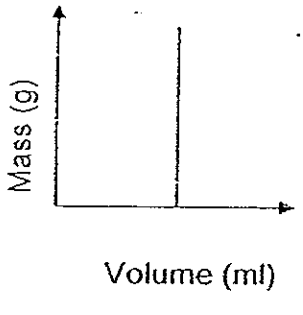
(2)



(3)



(4)



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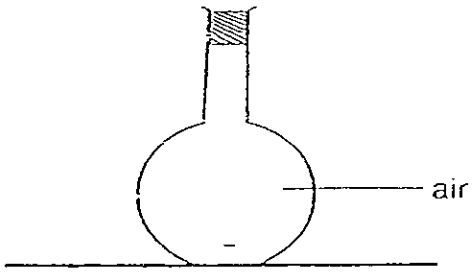
17. The flask shown below is filled with air.



Four pupils argued that the air in the flask is considered matter for different reasons.

Amos : The air is Matter because it is colourless and odourless.
Benny: The air is Matter because it has mass and is colourless.
Cathy : The air is Matter because it has mass and occupies space.
Deon : The air is Matter because it occupies space and is odourless.

Who has given the correct reasons?

(1) Amos only
(2) Cathy only
(3) Benny and Deon only
(4) Amos and Cathy only

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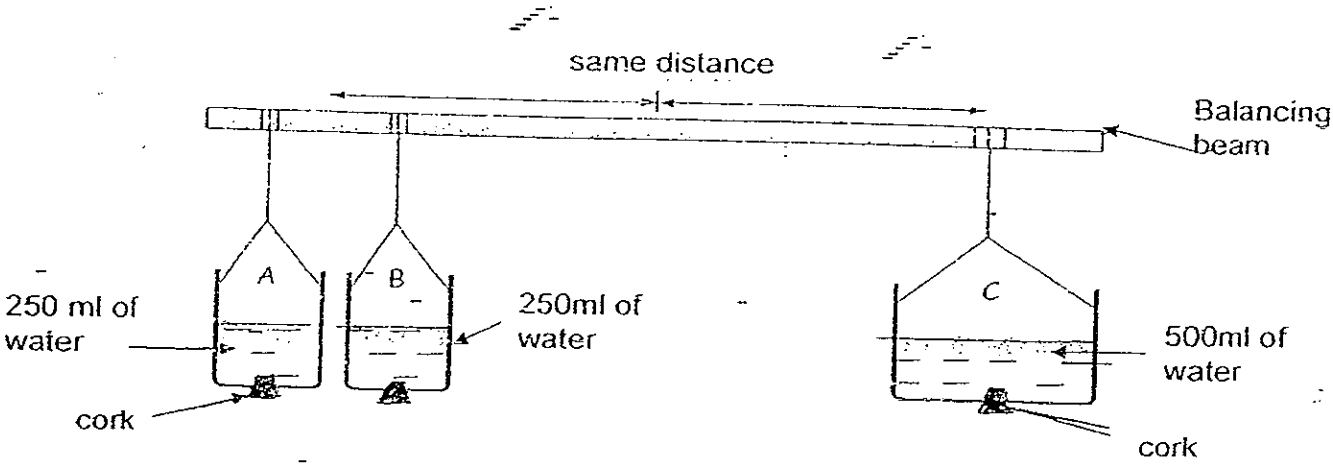
18. Containers A, B and C are hung on a balancing beam as shown in the diagram below. The combined mass of Containers A and B is equal to the mass of Container C. A hole of equal size is drilled through the bottom of each container and stoppered with a cork. Lastly, 500ml of water is poured into Container C and 250 ml of water is poured into Containers A and B each.



What can be observed when all the corks are pulled out at the same time?

(1) Container C kept moving up and down.
(2) Container C moved down and stayed there.
(3) Containers A and B moved down and stayed there.
(4) Containers A and B moved up and slowly returned to its original level.

19. Study the table shown below. The tick (✓) indicates a property present and a cross (X) indicates a property absent.

	Nitrogen	Smoke	Olive oil	Ice cube
Has mass	✓	X	✓	✓
Occupies space	✓	✓	✓	✓
Has a definite shape	X	X	X	X
Has a definite volume	X	X	✓	✓

Which matter are incorrectly classified?

(1) Olive oil and Nitrogen
(2) Smoke and Ice cube
(3) Ice cube and Nitrogen
(4) Nitrogen and Smoke

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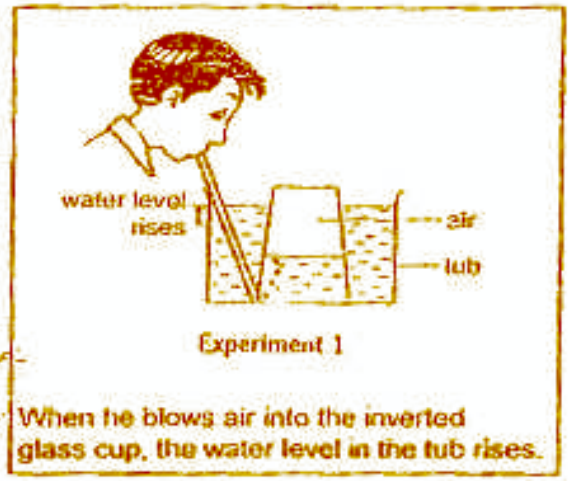
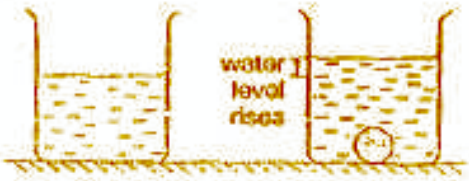
20. Ken conducted two experiments as shown below.



Experiment 1

When he blows air into the inverted glass cup, the water level in the tub rises.



Experiment 2

When he drops a metal ball into the beaker, the water level rises.

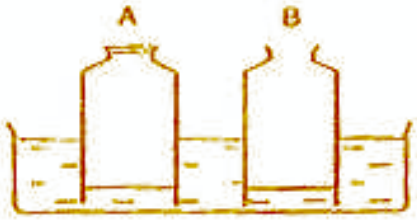
What do these two experiments show?

(1) Only air can be compressed.
(2) Water cannot be compressed.
(3) Solid, liquid and gas occupy space.
(4) Liquid and gas take the shapes of the container.

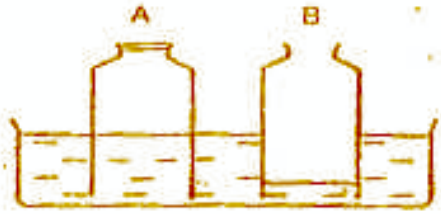
21. Two plastic bottles, A and B, with their bottoms cut off were pushed into a basin of water. Bottle A was capped while B was not.

Which one of the following diagrams below shows correctly the water level in the two bottles?

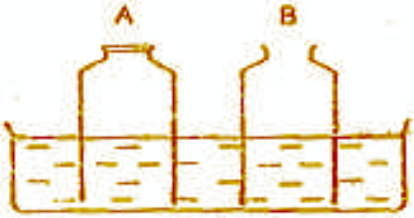
(1)



(2)



(3)



(4)

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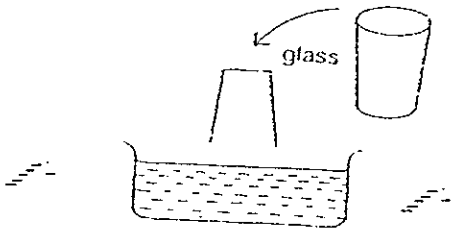
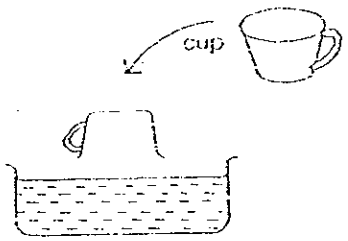
22. Which one of these containers can be pushed into the water most easily when inverted?

(1)



(2)



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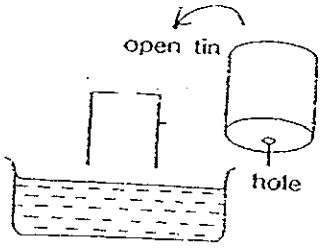

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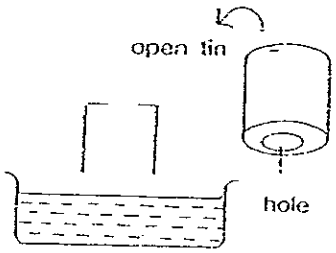

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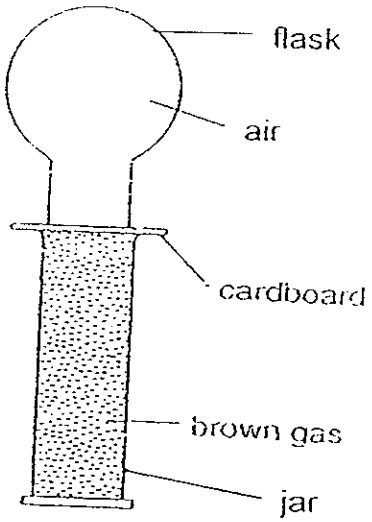
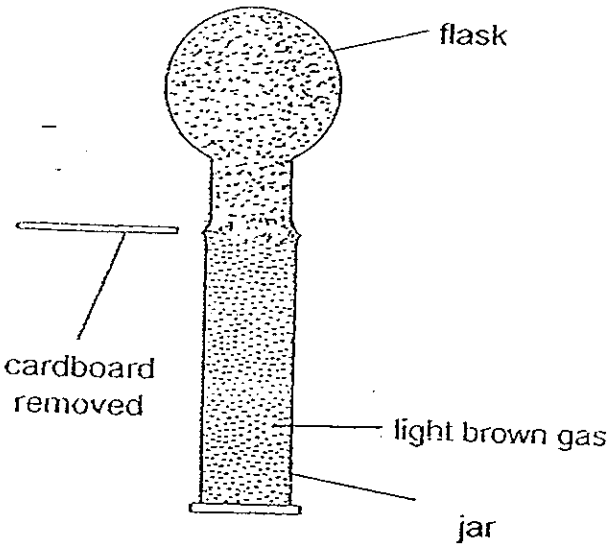
23. A flask of air is placed above another jar containing a brown gas. The two containers are separated by a piece of cardboard as shown below.



Five minutes after the cardboard was removed, a light brown gas was seen in the two containers.



Which properties of the brown gas are shown by the above experiment?

(A) It can be compressed.
(B) It has no definite shape.
(C) It has no definite volume.

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

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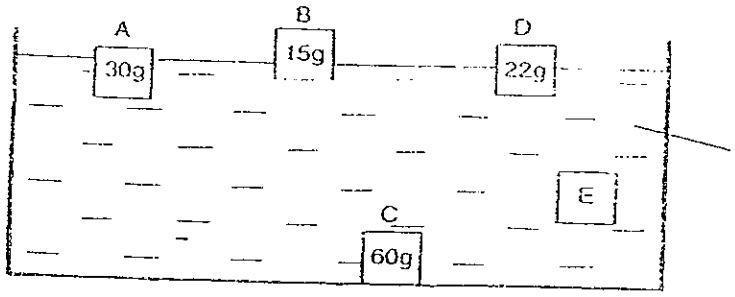
24. Five objects, A, B, C, D and E, of the same volume but different masses, are put into a tank of water.

The diagram below shows what happens when they are in water.



Which one of the following is most likely to be the mass of object E?

(1) 20g
(2) 28g
(3) 48g
(4) 65g

25. Which of the following statements about energy are correct?

A: It has mass.
B: It does not have volume.
C: It enables things to move.
D: It can change the states of matter.

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

(Go on to the next page)

26. Refer to the group of objects as shown below.

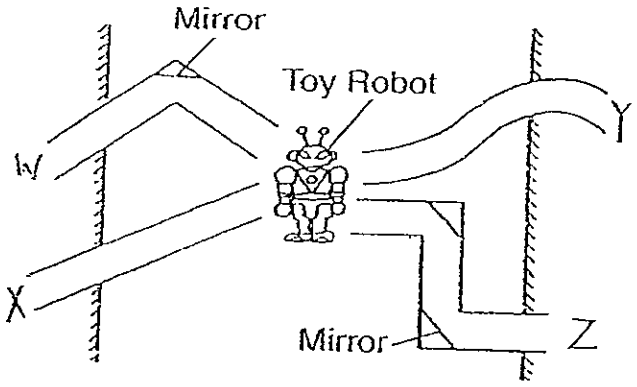
Lens of reading glass
Magnifying lens
Clear wrap plastic

What is/are the common properties of the material the objects are made of?

A: Fragile
B: Waterproof
C: Flexible
D: Allows most light to pass through

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

27. Four cardboard tubes were used to see the toy robot as shown below. The robot could only be seen through tubes W, X and Z.



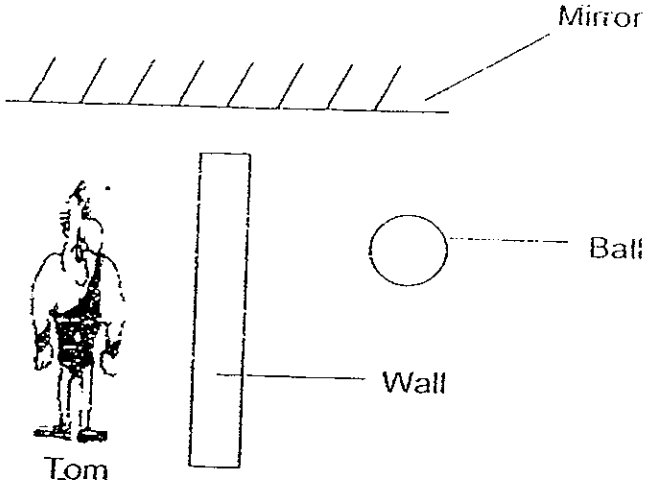
What property(ies) of light does the situation above show?

A: Light can be reflected.
B: Light travels in a straight line.
C: Light can pass through transparent objects.

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

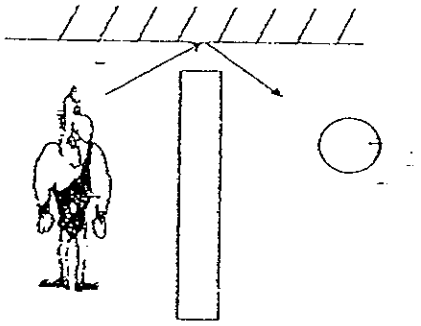
(Go on to the next page)

28. Refer to the diagram below. A wall separated Tom from a ball but he was still able to see it.

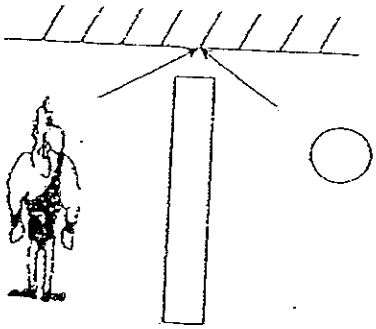


Which one of the following shows how this was possible?

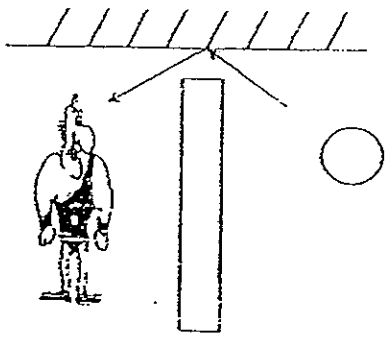
(1)



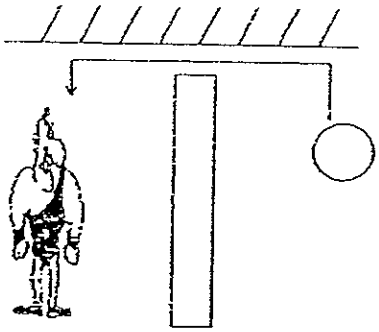
(2)



(3)



(4)



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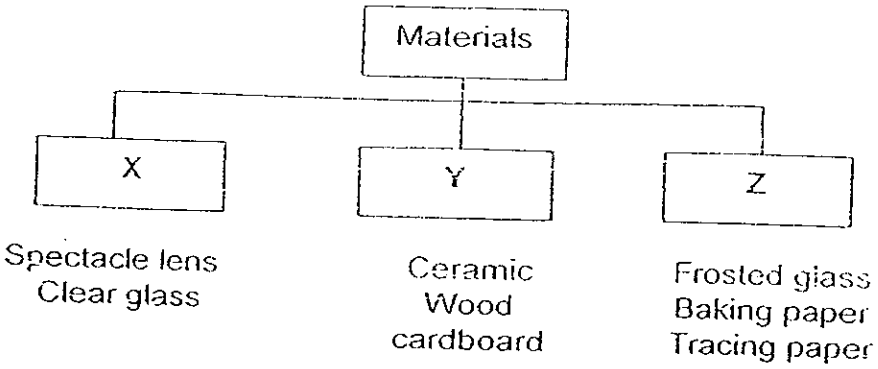
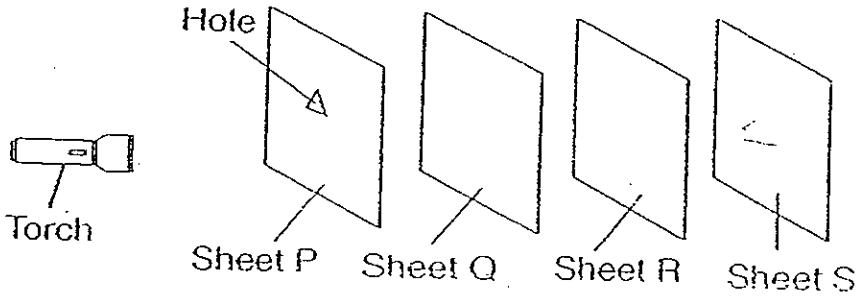
29. Refer to the classification table below.



What are the suitable headings for X, Y and Z?

	X	Y	Z
(1)	Transparent	Translucent	Opaque
(2)	Transparent	Opaque	Translucent
(3)	Translucent	Opaque	Transparent
(4)	Opaque	Translucent	Transparent

30. The experiment shown below was carried out in a dark room.



Sheets P, Q, R and S were arranged in a straight line. When the torch was switched on, a bright triangular patch of light was seen on sheet S.

Which of the following statements is true?

(1) Sheet Q is opaque.
(2) Sheet S is transparent.
(3) Sheet P is transparent.
(4) Sheet R allows light to pass through.

End of Booklet A

Rosyth School
First Semestral Assessment for 2008
SCIENCE
Primary 4

Name: _____ Total Marks: /40

Class: Pr____ Register No. _____ Duration: 1 h 30 min

Date: 12th May 2008 Parent's Signature: _____

Booklet B

Instructions to Pupils:

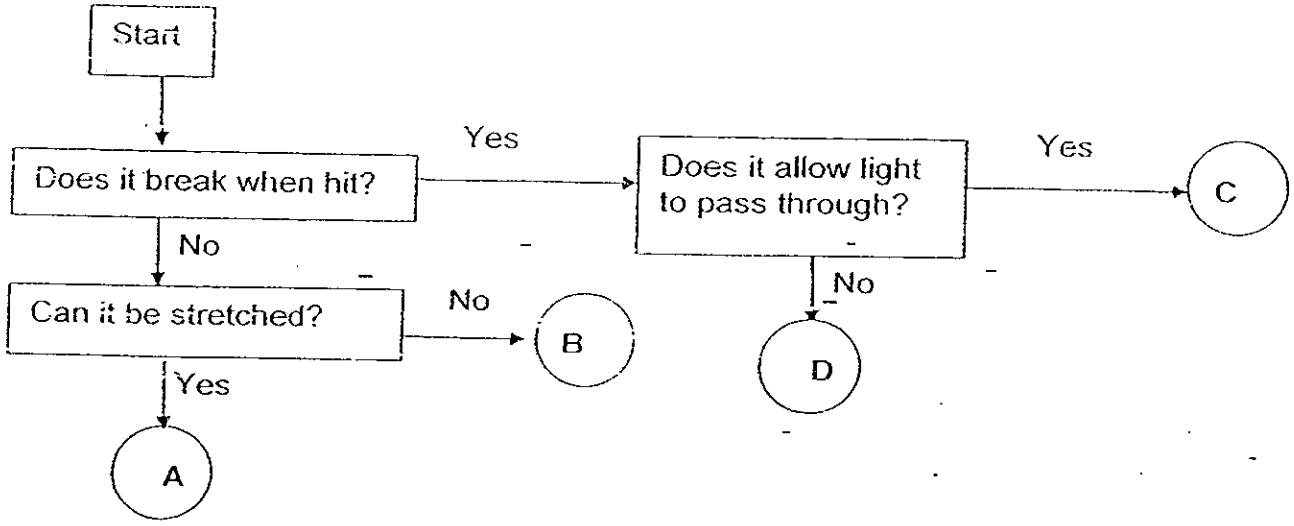
1. For questions 31 to 46, give your answers in the spaces given in this Booklet B.

* This booklet consists of _16_ pages.

Booklet B (40 MARKS)

For questions 31 to 46, write your answers in this booklet.

31 Study the flowchart below.



(a) State one similarity between A and B. (1m)

_____

_____

(b) Which letter in the flowchart best represents a clay tile? (1m)

_____

_____

(c) State one difference between B and C (1m)

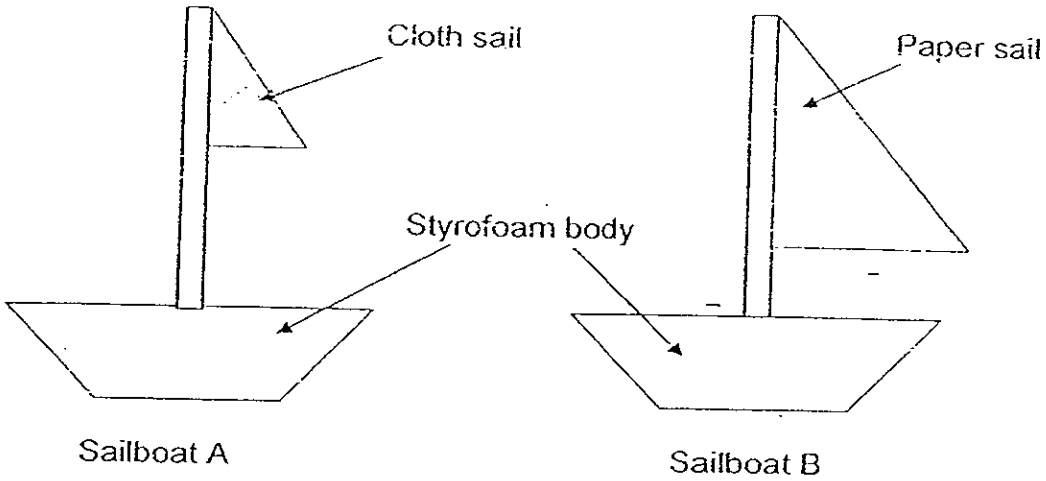
_____

_____

(Go on to the next page)

32 Ah Seng wanted to conduct an experiment to find out whether the material he used to make the sail would affect the distance travelled by his sailing boats. He made 2 styrofoam sailing boats as shown below.

His teacher told him that his test was not a fair one.



(a) What can he do to make his test a fair one? (1m)

_____

_____

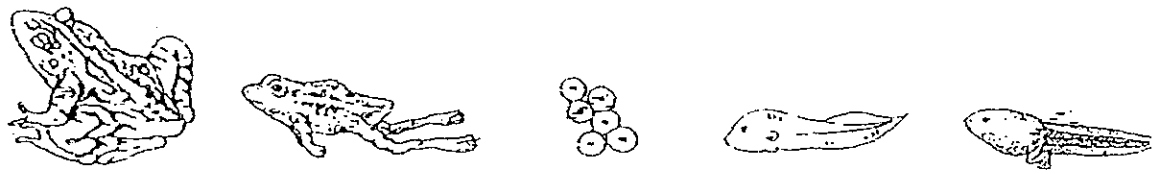
(b) Ah ~~Beng~~ Seng thought of using wood to make the sailboat body instead of styrofoam. State **one advantage** wood has over styrofoam. (1m)

_____

_____

(Go on to the next page)

33 The diagram below shows how a frog changes during its life cycle.



A B C D E

(a) Arrange the diagrams to show the order of the life cycle of the frog. The first one is already done for you. (1m)

D				

(b) Based on the diagram, what changes can be seen when a tadpole grows into a frog? (1m)

_____

_____

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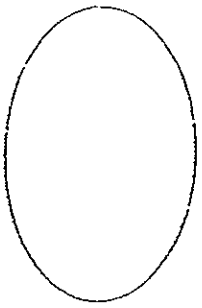
34. The diagram below shows a chicken egg and a seed.



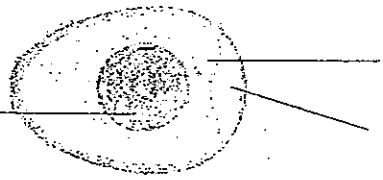
Egg

Bean

(a) In what way are the egg shell and the seed coat similar in function? (1m)

_____

(b) The diagram below shows the parts of an egg.



Which part(s) has/have similar function as the seed leaves in a germinating seed? (1m)

_____

(Go on to the next page)

35. Farmer Tan grew some cucumber plants from cucumber seeds in his plot. He harvested the fruits at the 1st harvest and sold them at the market. He repeated this process till the 3rd harvest.

The table below shows the 3 harvests he had done.

Harvest	Number of cucumber plants grown	Number of cucumber harvested	Average length of each cucumber (cm)
1st	40	128	20
2nd	40	96	16
3rd	40	65	14

(a) What happened to the number of cucumbers harvested as the number of harvest increased? (1m)

_____

_____

(b) Farmer Tan found out that the longer the fruits, the more the money he received when he sold them.

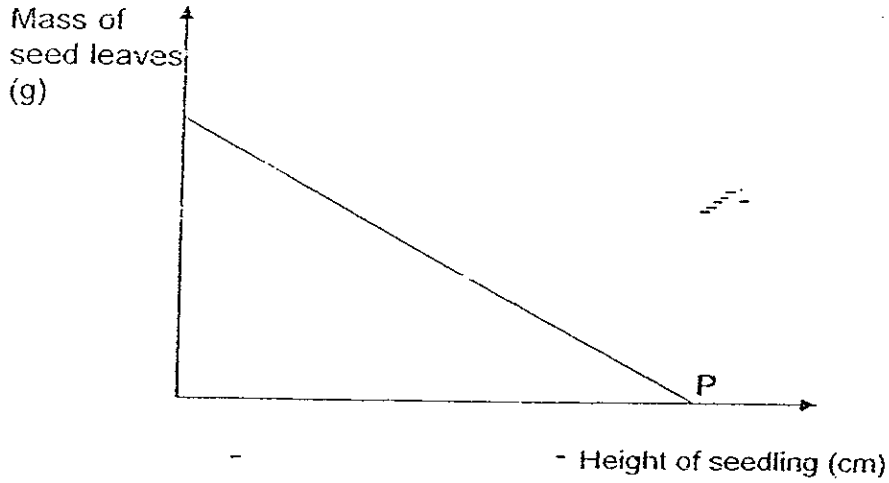
Do you think Farmer Tan should do a 4th harvest? Explain why. (1m)

_____

_____

(Go on to the next page)

36 Ahmad studied the relationship between the mass of the seed leaves and the height of the seedling using the graph shown below.



(a) Why did the mass of seed leaves decrease as the height of seedling increase? (1m)

_____

_____

(b) Which parts of the seedling would have developed at point P? (1m)

_____

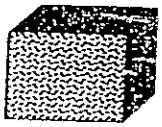
_____

(c) If Ahmad had measured the mass of the seedlings, would it increase or decrease as the height of seedling increase? (1m)

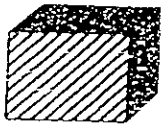
_____

(Go on to the next page)

37 The two blocks, A and B have similar volume but different masses.



Mass of Block A : **80g**



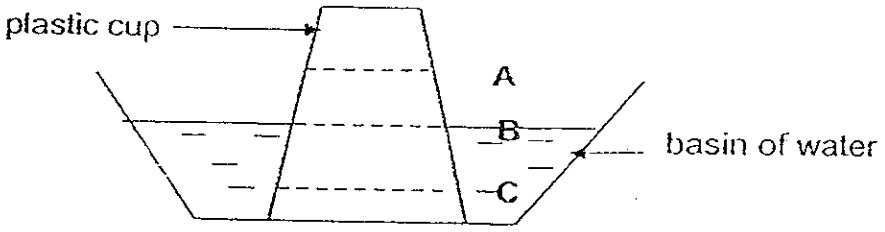
Mass of Block B : **25 g**

Based on the information given above, state whether each of the statements is **True**, **False** or **Not possible to tell.** (2m)

Put a tick (✓) in the correct box.

	Statement	True	False	Not possible to tell
(a)	Block A is made of iron and Block B is made of aluminium			
(b)	80g of Block A occupies the same space as 25g of Block B.			
(c)	Block B has a greater mass than Block A			
(d)	Both blocks have identical volumes but are of different masses due to the material they are made of.			

38 Angela inverted an empty plastic cup into a basin of water as shown in the diagram below. Some water entered into the plastic cup.



(a) Where would the water level inside the plastic cup be? (1m)

_____

(b) Give a reason for your answer in (a). (1m)

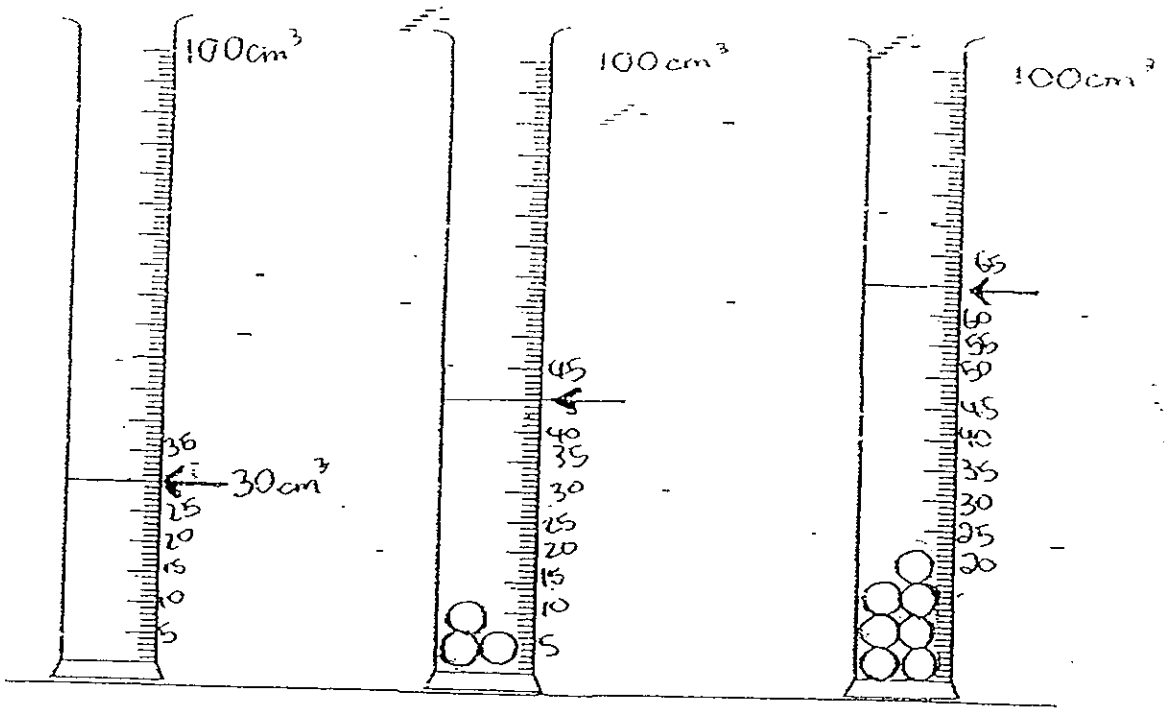
_____

_____

_____

(Go on to the next page)

39 Suria filled a glass cylinder with some water. She noticed that the water level in the glass cylinder rose each time she put in a marble.
The diagram below shows the changes in the water level when different numbers of marbles were added into the cylinder. The marbles were all of the same size.

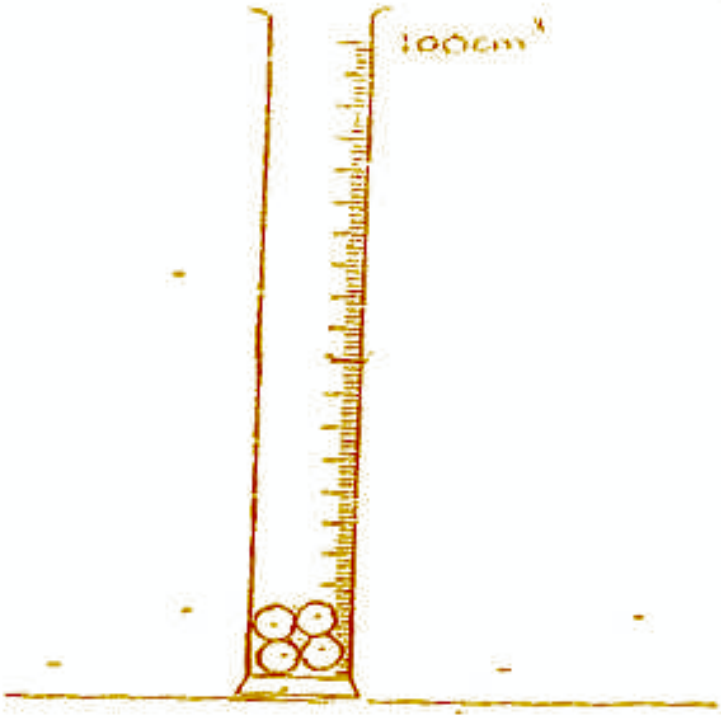


Question 39 is continued on Page 28

(Go on to the next page)

39 (a) If four marbles were put into the measuring cylinder, where do you think the water level would be?

Mark the water level clearly with an arrow in the diagram below. (1m)



(b) Why did Suria use a measuring cylinder instead of a beaker? (1m)

_____

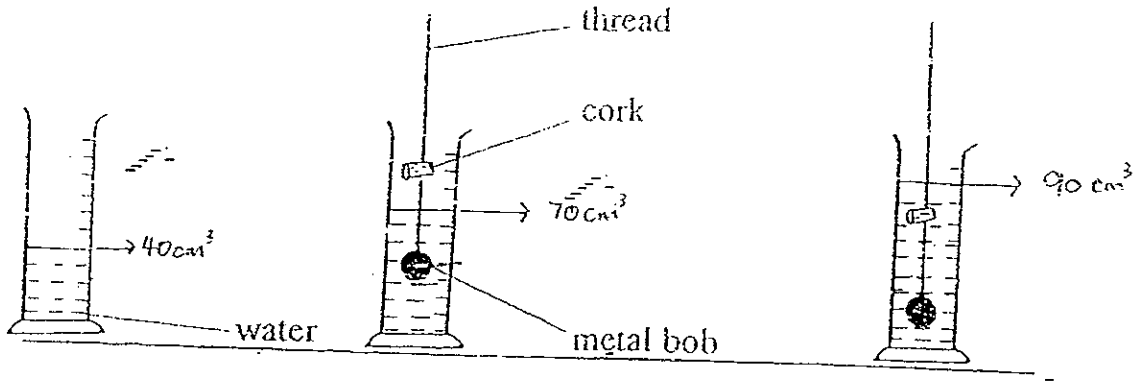
_____

(c) Based on her observations, what can she deduce about the property of a marble? (1m)

_____

(Go on to the next page)

40 Jason filled a measuring cylinder with 40cm^3 of water as shown in the diagram below. When a metal bob was lowered into the cylinder, the water level rose to the 70cm^3 mark. When the metal bob together with a cork were lowered into the cyiinder, the water level rose to the 90cm^3 mark.



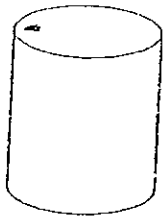
Based on the above results,

(a) find the volume of the metal bob. (1m)

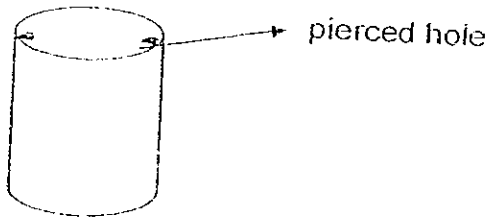
(b) find the volume of the cork. (1m)

(Go on to the next page)

41 Mrs Lim wanted to teach her new maid, Gloria, how to pour out evaporated milk from a can more easily. Mrs Lim pierced one hole in her can of milk while she instructed Gloria to pierce two holes in her can of milk.



Mrs Lim's can



Gloria's can

(a) Who would be able to pour out the evaporated milk more quickly and easily? (1m)

_____

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

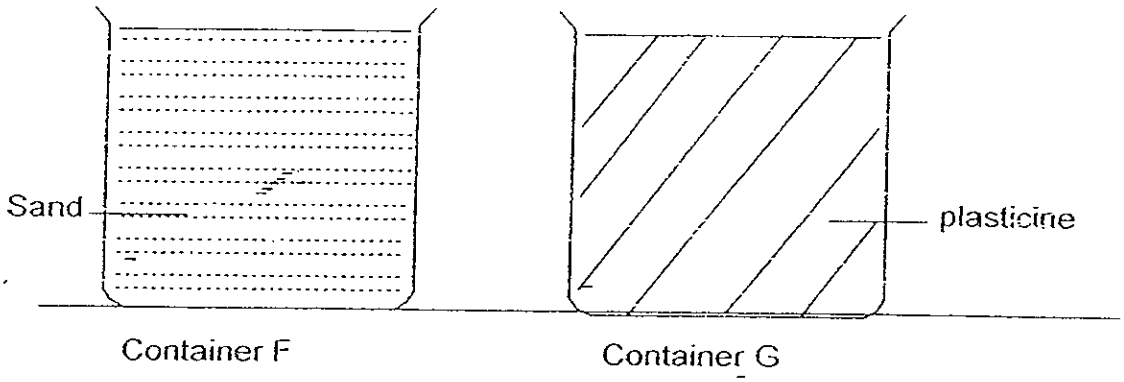
_____

_____

_____

(Go on to the next page)

42 Sally filled Container F with sand and Container G with plasticine to the brim, as shown in the diagram below.



She then poured a small but equal amount of water into each of the containers.

State your observations for each container. (2m)

Container F : _____

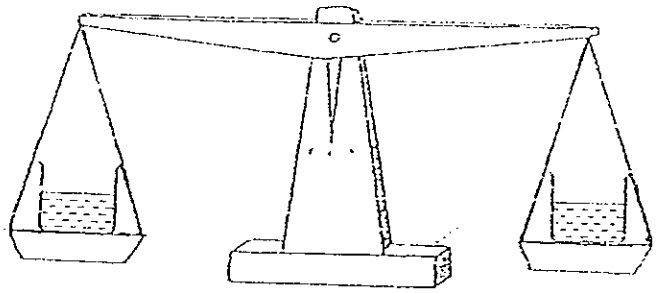
_____

Container G : _____

_____

(Go on to the next page)

43. Two identical beakers filled with equal amounts of water were placed on a lever balance, as shown in the diagram below.



Lever balance

(a) Using the above set-up, state what you would do to show that liquids have mass. (1m)

_____

_____

_____

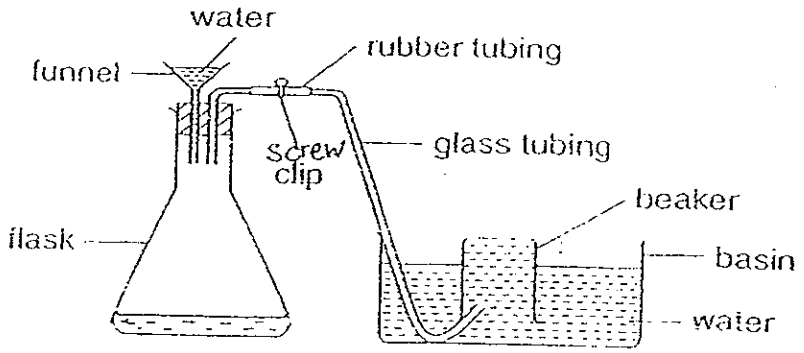
(b) State what you would observe for the action taken in (a). (1m)

_____

_____

(Go on to the next page)

44 Hashim prepared the set-up below to do an experiment in the science laboratory.



The funnel was fixed tightly to the flask. When water was poured into the funnel, only some water entered the flask while the rest stopped flowing and remained in the funnel.

(a) Based on the observation from the above experiment, state the property of air. (1m)

_____

_____

(b) What should he do to enable the water in the funnel to continue to flow into the flask? (1m)

_____

_____

(c) What would he observe in the beaker as water in the funnel enters the flask? (2m)

(i) _____

_____

(ii) _____

_____

_____

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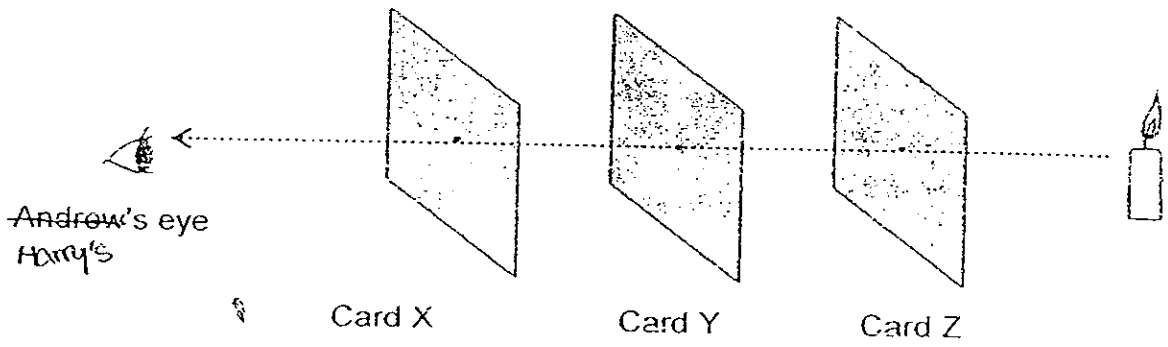
45 Harry arranged 3 cards,(X, Y and Z), with holes in the centre in a straight line as shown below.



He put a lighted candle behind card Z and placed this set-up in a dark room.

(a) What can Harry see when all 3 cards are arranged in a straight line? (1m)

_____

_____

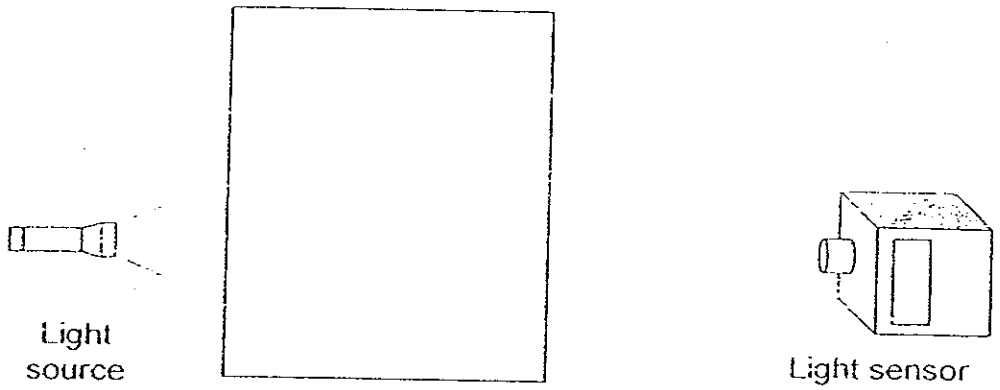
(b) What property of light can be shown in the above experiment? (1m)

_____

_____

(Go on to the next page)

46 Sally wanted to make a new set of curtains for her living room. She set up the following experiment to try out a few cloth samples for the curtain.



The cloth samples were of the same size and the experiment was conducted in a dark room.

(a) Other than the size of the cloth samples and the darkness of the room, state 2 other variable(s) that must be kept constant? (2m)

(b) The government is concerned about the high cost of electricity and wants to make use of light sensors to save cost. How can light sensors be used to help control lighting on the streets? (2m)

End of Paper

ANSWER SHEET

EXAM PAPER 2008

SCHOOL : ROSYTH PRIMARY SCHOOL
SUBJECT : PRIMARY 4 SCIENCE

TERM : SA 1

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

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	2	3	4	4	2	3	3	2	3	3	2	4

31)a)A and B do not break when hit.
b)The letter D.
c)B does not break when hit while C break when hit.

32)a)The cloth on Sailboat A should be the same size as the paper on Sailboat B.
b)Wood is more durable than Styrofoam.

33)a)D,E,B,A,C
b)The tadpole grows its legs and its tail shorten when a tadpole grows into frog.

34)a)They protect the embryo inside the egg and seed.
b)The egg yolk and the egg white.

35)a)The number of cucumber became lesser.
b)No,The length will shorten more and the lesser money Farmer Tan will get.

36)a)The seed absorbs the food the seed leaves give and the plant slowly develop the first leaves and thus, it does not need the seed leaves anymore, the seed leaves will wither and drop.

b)The leaves, shoots, roots and stem.

c)The mass would increase as the height of the seedling increase.

37)a)Not b)T c)F d)T

38)a)The water level would be at C.

b)The air in the cup cannot escape and the water level is not high as air occupies space. The water is able to enter because air can be compressed.

39)a)50cm^3

b)It is more accurate to use a measuring cylinder than a beaker. The water displaced by the marble is too small to be absorbed.

c)A marble has a definite volume.

40)a)Original water level= 40cm^3, Metal bob=70cm^3-40cm^3=30cm^3.
The volume of the metal bob is 30cm^3.

b)90cm^3-70cm^3=20cm^3.
The volume of the cork is 20cm^3.

41)a)Gloria.

b)More air enter the can with 2 holes. This will push the milk faster as occupy space.

42)Container F: The water slid through the sand to the bottom.
Container G: The water stayed at the top.

43)a)1)I would pour out the water in one of the beakers.
2)The level balance will tilt to the beaker which have water.

b)The level balance will tilt to the beaker which contains water.

44)a)Air can be compressed and occupies space.

b)He should remove the screw clip to let some air enter the beaker.

c)i)The bubbles came out of the glass tubing to the beaker.

ii)The water in the beaker became lesser.

45)a)Harry can see the lighted candle.

b)Light travels in a straight line.

46)a)1)The amount of the light source.

2)The distance between the light sensor and the cloth sample.

b)They can help there is daylight and switch off the street lamps when it is in the day when light comes and it does not have any lights, it can switch the street lamps on.