Rosyth School
Performance Task 2
SCIENCE
Primary 4

Name: _____ Total Marks: 20

Class: Pr 4 _____ Register No. _____ Duration: 50 min

Instructions to pupils:

1. Do not open the booklet until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions in this booklet.
4. Write your answers in the spaces provided.

* This booklet consists of 6 printed pages (including cover page).

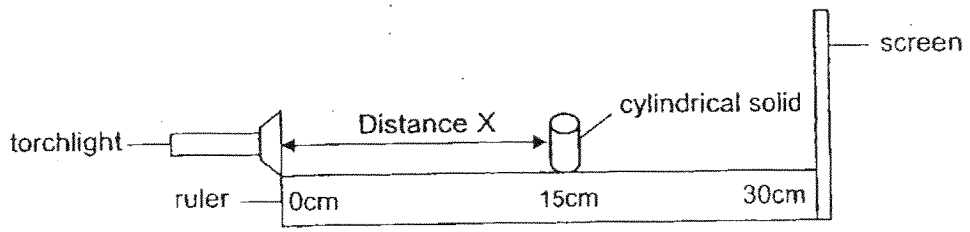
Part I (10 marks)
Read the instructions and carry out Experiments 1 and 2.

Experiment 1

Aim: To find out how the distance between the torchlight and the object will affect the height of the shadow

Procedure:

1. Place the cylindrical solid upright at the 15cm mark of the ruler as shown below.



2. Mark the height of the shadow on the screen.
3. Measure the height of the shadow formed on the screen using the 15cm ruler.
4. Record the result in the results table below.
5. Move the cylindrical solid to the 20cm and 25cm mark of the ruler respectively.
6. Repeat steps 2 to 4.

Results Table: [3]

Distance X (cm)	Height of shadow (cm)
15	
20	
25	

7. Based on your results, which of the following will make the shadow taller? [1]

Tick (✓) the correct box(es).

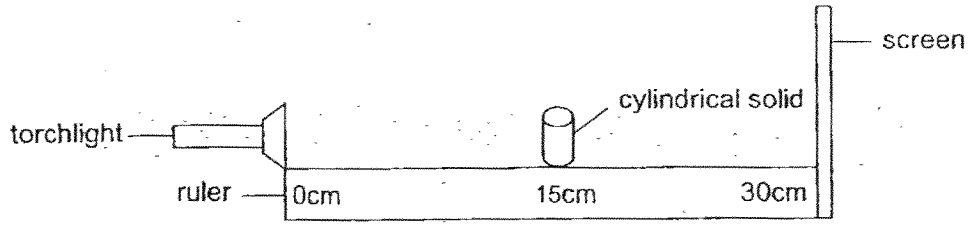
(i) Put the object closer to the screen. ☐

(i) Put the object closer to the torchlight. ☐

Experiment 2

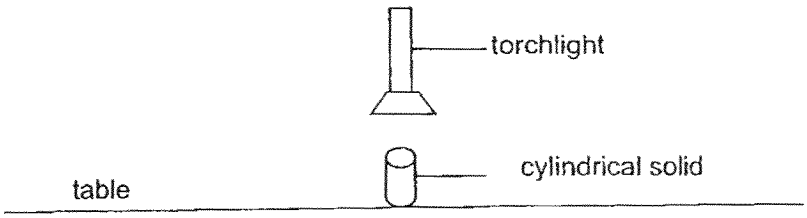
Aim: To find out if the position of the torchlight affects the shape of the shadow

1. Place the cylindrical solid upright at the 15cm mark of the ruler as shown below.



2. Observe shadow A formed on the screen. Draw it in the box below. [2]

3. Place the torchlight directly above the cylindrical solid as shown below.



4. Observe shadow B formed on the table. Draw it in the box below. [2]

shadow A	shadow B

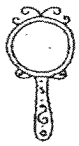
5. Based on your observations, what is your conclusion? Fill in the blanks. [2]

The _____ of the torchlight _____ the shape of the shadow.

Part II (10 marks)

For questions 1 to 3, four options are given. One of them is the correct answer. Write your answer in the given bracket. Each question carries 2 marks.

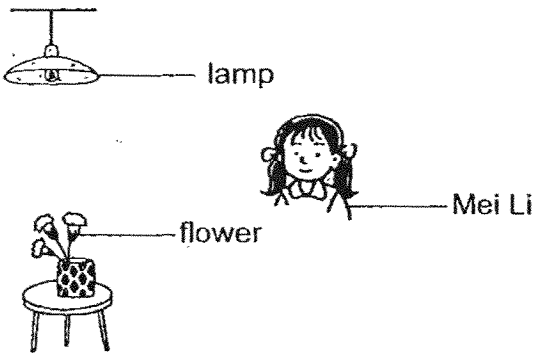
1. Look at the pictures below.

(A)  a firefly	(B)  a mirror
(C)  a candle	(D)  a bulb

Which of the following is **not** a source of light?

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

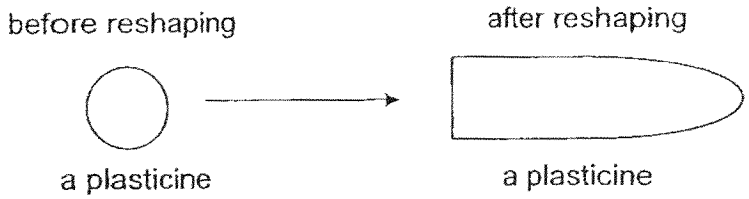
2. Mei Li saw some flowers on the table.



Which of the following statements explains why Mei Li can see the flowers?

(1) The light travels from Mei Li's eyes to the flowers.
(2) The lamp produces light which enters Mei Li's eyes.
(3) The reflected light from the flowers enters the lamp.
(4) The reflected light from the flowers enters Mei Li's eyes. ( )

3. Tim took a plasticine and reshaped it into another shape as shown below.



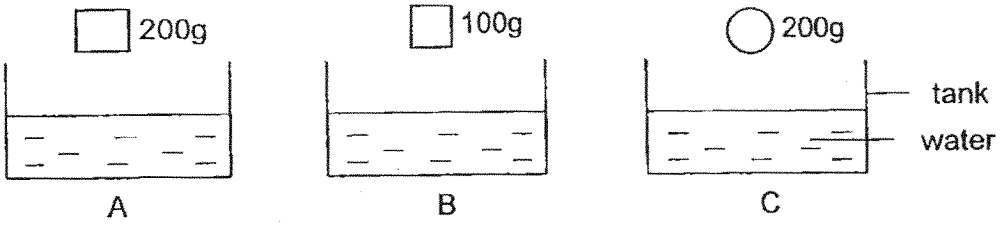
What happened to the mass and volume of the plasticine after it was reshaped?

	Mass of the plasticine	Volume of the plasticine
(1)	decreased	decreased
(2)	increased	decreased
(3)	remained the same	remained the same
(4)	remained the same	increased

( )

Read questions 4 and 5 carefully. Write the answers in the space provided.

4. Kenny set up an experiment using three solid objects made of the same material.



He wanted to find out if the shape of the objects affects the time taken for them to sink to the bottom of the tank.

(a) Which pair of set-ups should he use? [1]

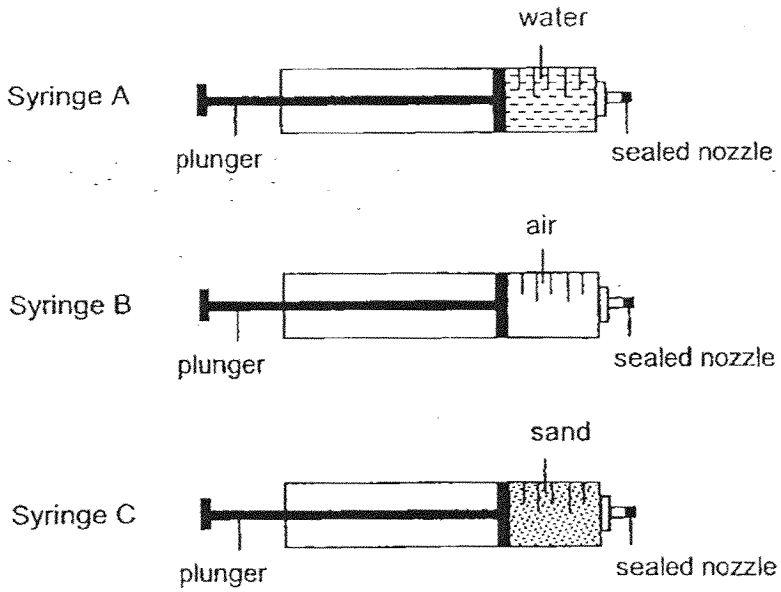
_____ and _____

(b) Give two reasons for your answer in (a). [1]

Reason 1: _____

Reason 2: _____

5. Max filled three syringes, A, B and C each with equal volume of water, air and sand respectively. Then he tightly sealed the nozzle of each syringe.



(a) The plunger of syringe A could not be pushed in but the plunger of syringe B could be pushed in. Explain why. [1]

_____

_____

(b) The plunger of syringe C could be pushed in slightly. [1]

This was possible because _____

_____

End of Paper

Rosyth School
Weighted Assessment 2 (Term Two)
SCIENCE
Primary 4

Name: _____ Total Marks: /40

Class: Pr 4_____ Register No. _____ Duration: 50 min

Parent's Signature: _____

Instructions to Pupils:

1. Do not open the booklet until you are told to do so.
2. Follow all instructions carefully.
3. For questions 1 to 11, shade the correct answer in the Optical Answer Sheet (OAS) provided.
4. For questions 12 to 16, give your answers in the spaces provided.

	Maximum Marks	Marks Obtained
Q1-Q11	22 marks	
Q12-Q16	18 marks	
Total	40 marks	

* This booklet consists of 16 printed pages (including cover page).

For each question from 1 to 11, 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.** (22 marks)

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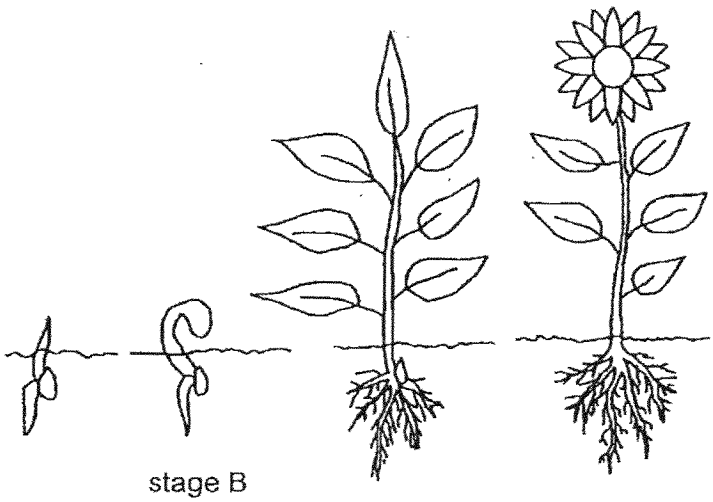
1. Study the diagram below that shows the developmental stages of a plant.

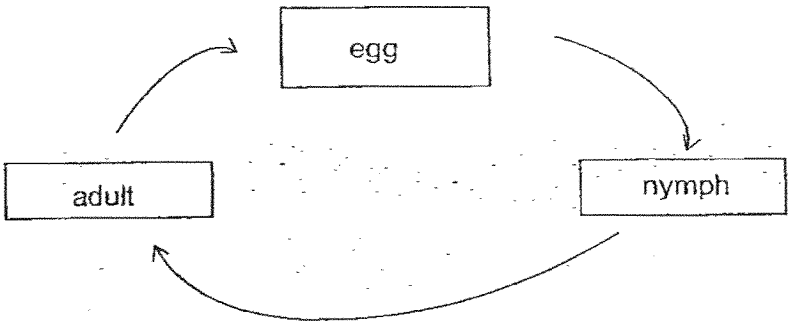


stage B

At stage B, the seedling cannot make its own food because it does not have a _____.

(1) root
(2) leaf
(3) stem
(4) flower

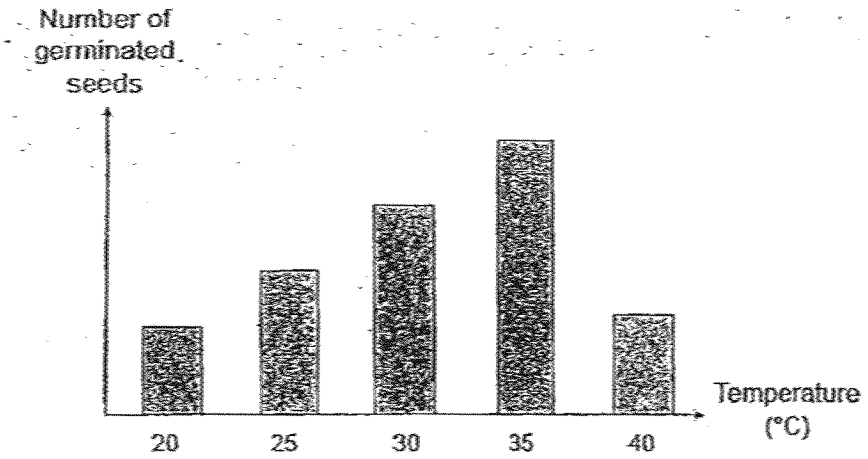
2. The diagram below shows the life cycle of an animal.



Which animal is likely to have the life cycle as shown above?

(1) frog
(2) chicken
(3) mosquito
(4) grasshopper

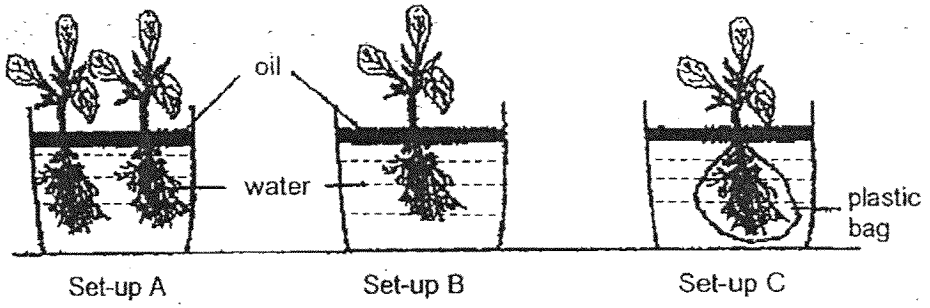
3. Tina soaked ten seeds in water at 20°C and counted the number of seeds that germinated. She repeated the experiment at four other temperatures. The graph below shows her results.



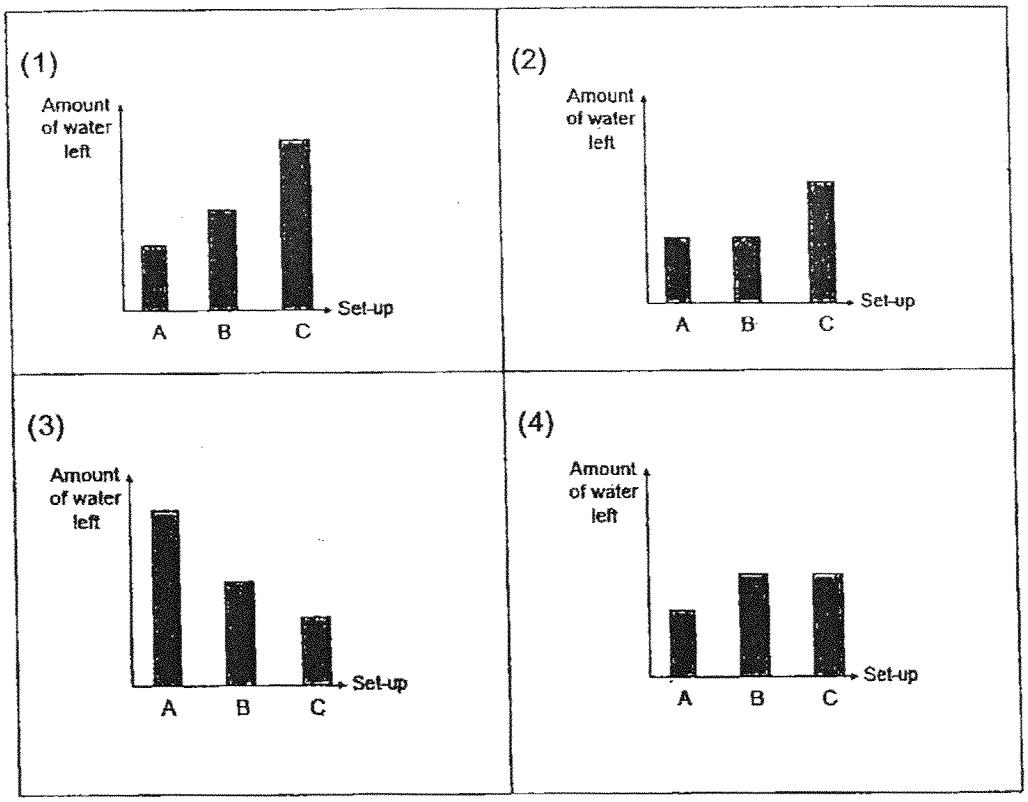
Based on the results, which conclusion is correct?

(1) Seeds cannot germinate at 45°C.
(2) Less seeds will germinate at 38°C than at 35°C.
(3) More seeds germinated as the temperature increased.
(4) Temperature affected the number of seeds germinated.

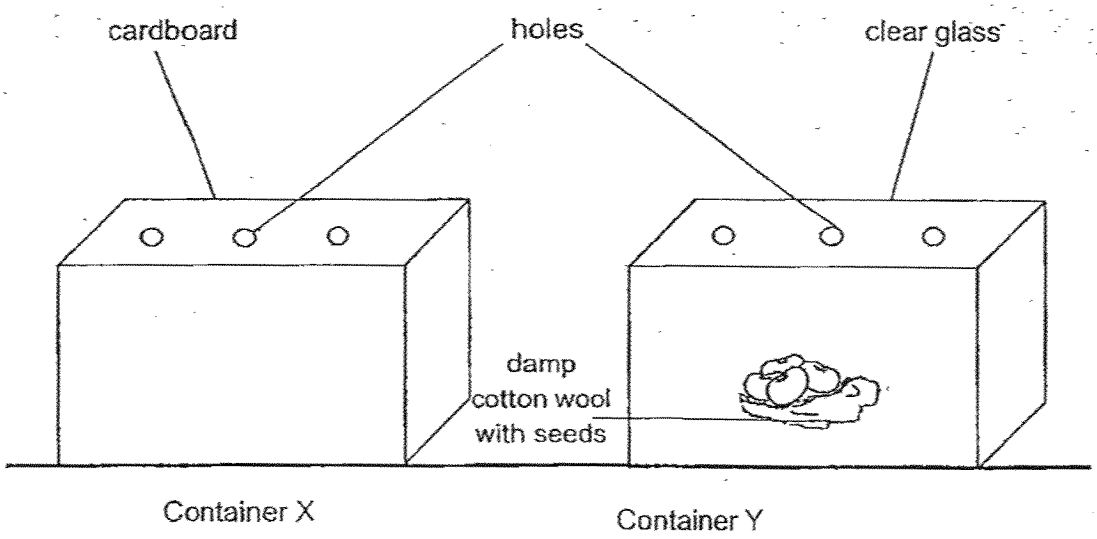
4. Arjun prepared three set-ups, A, B and C, using identical plants as shown below. He added the same amount of water and a layer of oil in each set-up. He placed each set-up near the window. He measured and recorded the amount of water left in each set-up after one week.



Which one of the following most likely shows the amount of water left in each set-up after one week?



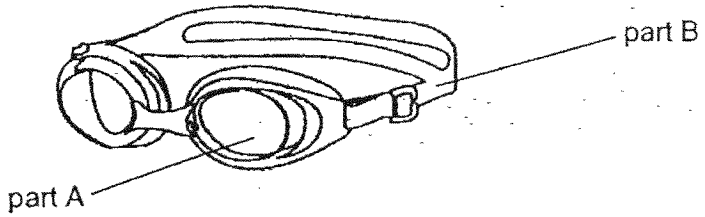
5. Zul set up two similar-sized containers, X and Y, as shown below. Container X was made of cardboard but container Y was made of clear glass. He placed four similar seeds in each of the containers on some damp cotton wool. Both containers had holes on them and were left in the garden.



In which container(s) do the seeds have suitable conditions to germinate?

(1) X only
(2) Y only
(3) Both X and Y
(4) None of the containers

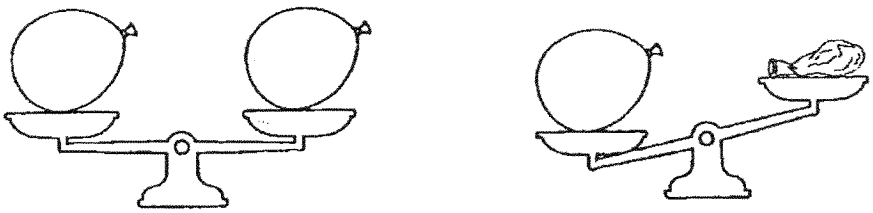
6. The picture below shows a pair of goggles that swimmers use during their swimming lessons. Part A and B are made from different materials.



Which one of the following materials and their properties in the table below are most suitable to be used to make Part A and B?

	Part A		Part B	
	Material	**Property**	**Material**	**Property**
(1)	Plastic	Allows most light to pass through it	Rubber	Flexible
(2)	Glass	Allows most light to pass through it	Glass	Waterproof
(3)	Plastic	Waterproof	Rubber	Allows most light to pass through it
(4)	Glass	Waterproof	Wood	Strong

7. When air was let out of one of the inflated balloons, the balance tilted as shown in the diagram below.

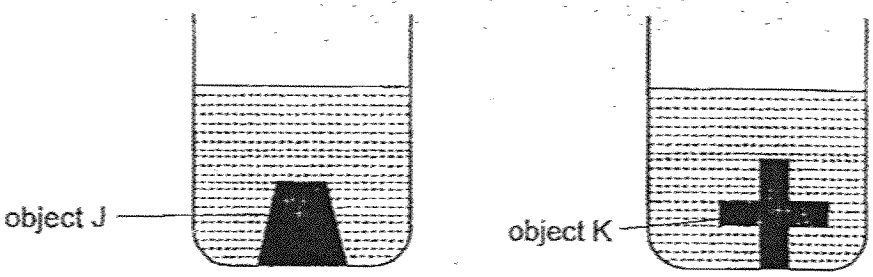


before after

What can we conclude from the above experiment?

(1) Air has mass.
(2) Air can be compressed.
(3) Air has no definite shape.
(4) Air has no definite volume.

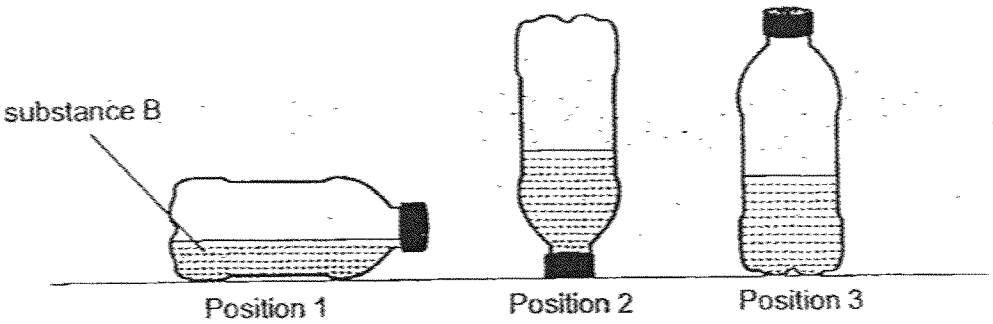
8. Eden filled two beakers with equal volume of water. She then placed objects, J and K, in each beaker and observed that the water level rose to the same height as shown in the diagram below.



Based on Eden's observation, which one of the following statements about objects, J and K, is correct?

(1) They have the same mass.
(2) They have the same volume.
(3) Object J is heavier than object K.
(4) They are made of the same material.

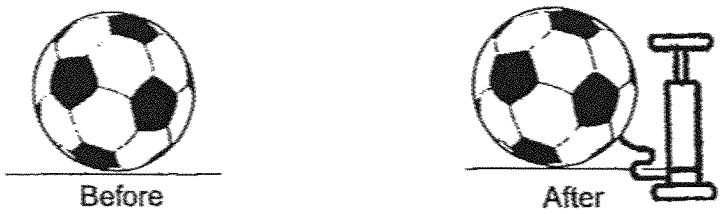
9. A bottle was filled with substance B and placed in three different positions. Observe the diagram below.



Based on this experiment, what can you conclude about substance B?

(1) It can be compressed.
(2) It does not have a definite mass.
(3) It does not have a definite shape.
(4) It does not have a definite volume.

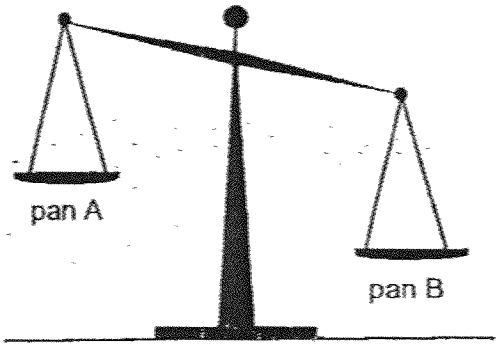
10. Shamady carried out an experiment as shown in the diagram below. The volume of the ball was 300cm^3. Then, he pumped an additional 50cm^3 of air into the ball using a hand pump. The size of the ball remained the same.



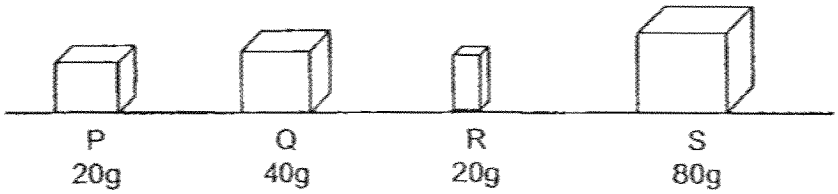
Which of the following is correct?

	Volume of air inside the ball	Mass of the ball
(1)	Increased	Increased
(2)	Increased	Remained the same
(3)	Remained the same	Increased
(4)	Remained the same	Remained the same

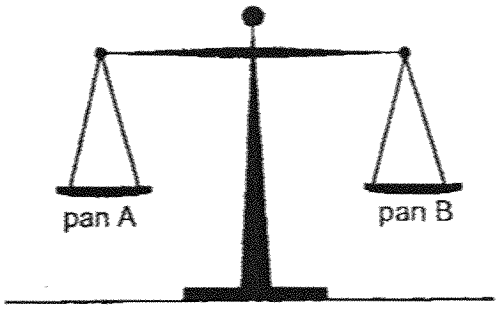
11. Study the diagram below. The lever balance is not working well.



Paul has four objects, P, Q, R and S, as shown below.



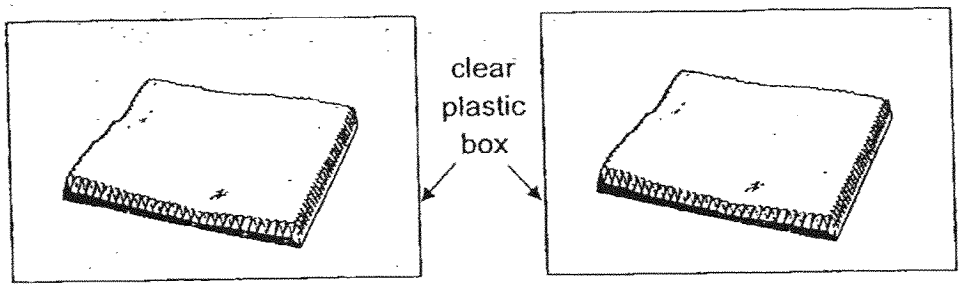
Which two objects placed on pan A and pan B will most likely cause the lever balance to be straight as shown below?



	Pan A	Pan B
(1)	P	R
(2)	Q	S
(3)	S	Q
(4)	R	P

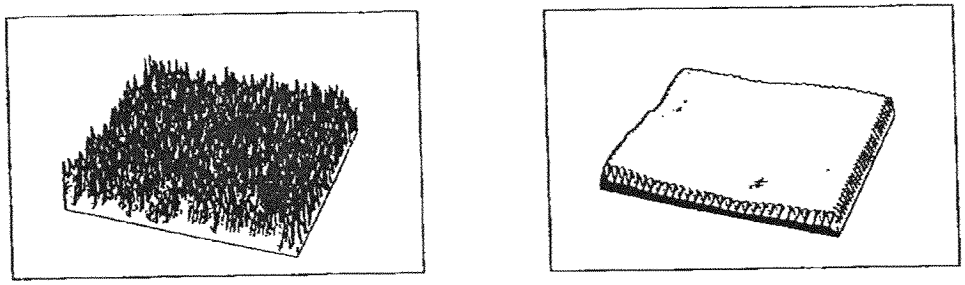
For questions 12 to 16, write your answers in this booklet. (18 marks)

12. Siti bought two turfs of grasses, A and B. However, she did not know if they were living or artificial grass. She decided to put each turf of grass in a clear plastic box as shown below. She watered both turfs of grasses with equal volume of water.



Turf A Turf B

The diagrams below show the observations after three weeks.



Turf A Turf B

(a) Based on the observations above, which turf of grass, A or B, is a living thing?

Turf _____ [1]

(b) Support your answer in (a) with a reason. [1]

_____

(c) Besides volume of water, state two other variables that must be kept the same for a fair test. [1]

(i) _____

(ii) _____

13. Shanti recorded the mass of the seed leaves and the shoot as the seedlings grew and recorded them in the table below.

Day	Mass of Part X (grams)	Mass of Part Y (grams)
0	10	0
2	8	1
4	6	2
10	4	3
16	2	4

(a) State the conditions required for germination. [1]

_____

(b) Based on the table above, which parts, X or Y, is more likely to be the seed leaves? Explain your claim. [2]

_____

_____

14. A scientist carried out experiments on butterflies. He recorded the number of weeks the butterfly remained in that stage at two different temperatures, low and high as shown below.

At high temperature

Stage	Time it remained in that stage (In weeks)
Egg	2
Larva	3
Pupa	3
Adult	1
Total time taken to complete a life cycle	9

At low temperature

Stage	Time it remained in that stage (In weeks)
Egg	2
Larva	3
Pupa	30
Adult	1
Total time taken to complete a life cycle	36

(a) State the difference between the time the pupa remained in that stage at high and low temperatures. [1]

_____

_____

(b) At which temperature, high or low, will there be more butterflies observed in the garden? Explain why. [2]

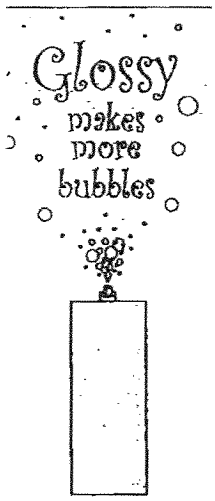
_____

_____

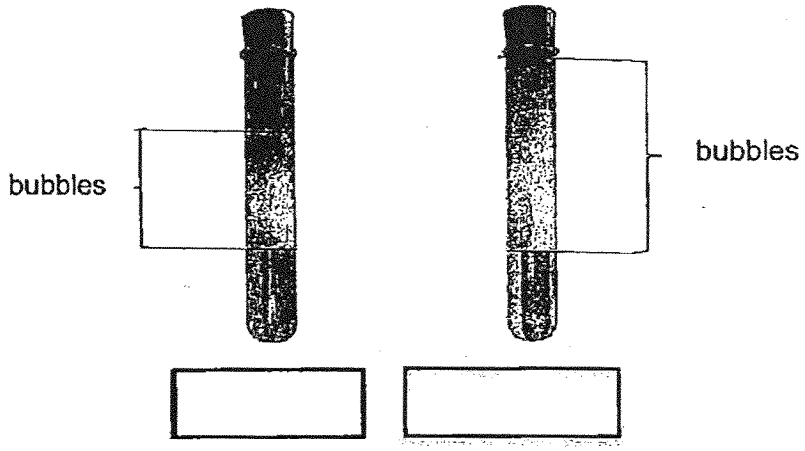
(c) Why do butterflies lay their eggs on the leaves of certain plants? [1]

_____

15. Andy saw a poster stating that Glossy washing liquid makes more bubbles.



Andy investigated the amount of bubbles made by two different washing liquids, Glossy and Shiny. He added each type of washing liquid to each test tube of water and shook it. The result was as shown below.



(a) Which test tube contains the Glossy washing liquid if the claim in the poster is correct? Write **'Glossy'** in the correct box above. [1]

Question 15 continues on page 15

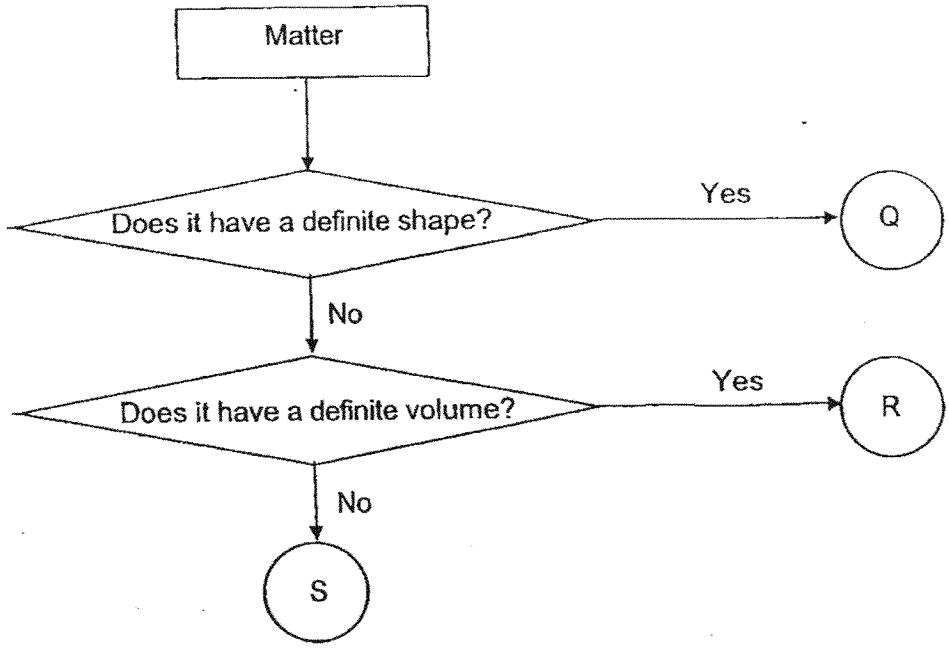
Study the variables shown in the box below.

1. Volume of washing liquid 2. Type of washing liquid 3. Amount of bubbles made 4. Number of times the test-tube is shaken

(b) Classify the above variables according to the types of variables in Andy's investigation. [2]

Changed variable	Measured variable	Variable kept the same

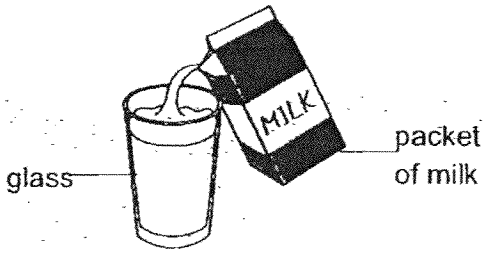
Andy studied the flowchart below which shows the properties of matter Q, R and S.



(c) The bubbles are filled with a matter. Using the flowchart, identify the matter Q, R or S. [1]

_____

16. Xinyi took out a rectangular packet of milk and poured all the milk from the packet into an empty glass.



(a) Would there be a change in the shape and volume of the milk? Put a tick (✓) in the correct box(es). [2]

Description	Change	No change
Shape of milk		
Volume of milk		

(b) State one property of both the packet and glass that prevents the milk from passing through them. [1]

_____

(c) Before pouring any milk out, Xinyi measured the mass of the rectangular packet filled with milk. After pouring all the milk from the packet into the glass, she measured the mass of glass with milk.

The mass of glass with milk is more than the mass of the packet of milk. Explain how is this possible. [1]

_____

_____

End of Paper

SCHOOL : ROSYTH PRIMARY SCHOOL
LEVEL : PRIMARY 4
SUBJECT : SCIENCE
TERM : PERFORMANCE TASK

SECTION A

Q 1	Q2	Q3
2	4	3

SECTION B

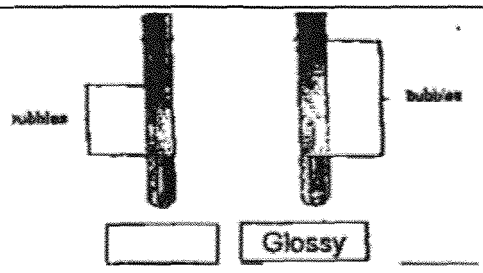
Q4)	a) A amd C b) The mass of A and C are the same. The shape of A and C are different
Q5)	a) A had water and water is a liquid and cannot be compressed while B has air and air is a gas that can be compressed

SCHOOL : ROSYTH PRIMARY SCHOOL
LEVEL : PRIMARY 4
SUBJECT : SCIENCE
TERM : TERM 2 WA

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	4	4	1	3	1	1	2	3	3
Q 11									
3									

SECTION B

Q12)	a) Turf A b) A responds to changes which living things do. c) (i) Same amount of sunlight (ii) Allow oxygen to enter
Q13)	a) Water, air, warmth b) X. As it decreased in mass after some time making the seed leaves grow more causing mass to be decreased.
Q14)	a) The pupa took less days at high temperature while the pupa took more days at low temperature b) High temperature as at high temperature the life cycle takes less days than at low temperature c) So that when the eggs hatch, the larva do not need to look for food get the food from the paint
Q15)	

	Changed variable	Measured variable	Variable kept the same
	2	3	4
b)			1

c) S

Q16)

a)

Description	Change	No change
Shape of milk	✓	
Volume of milk		✓

b) Waterproof

c) The glass milk is heavier than the rectangular packet causing the mass of glass to be heavier than it.