First Semestral Assessment 2017
STANDARD SCIENCE
Primary 4

Name: _____ **Total Marks:** 56

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

Date: 9th May 2017 **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 28 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 29 to 42, give your answers in the spaces given in the Booklet B.

* This booklet consists of 18 printed pages (including cover page).

Part I (56 Marks)

For each question from 1 to 28, 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.**

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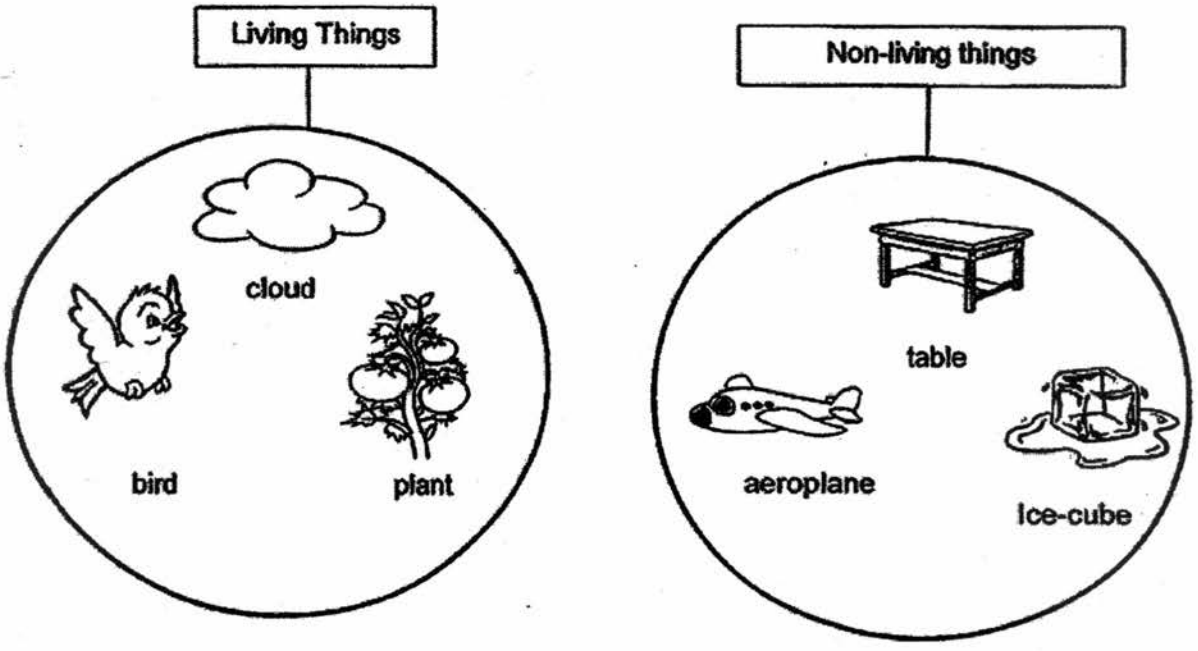
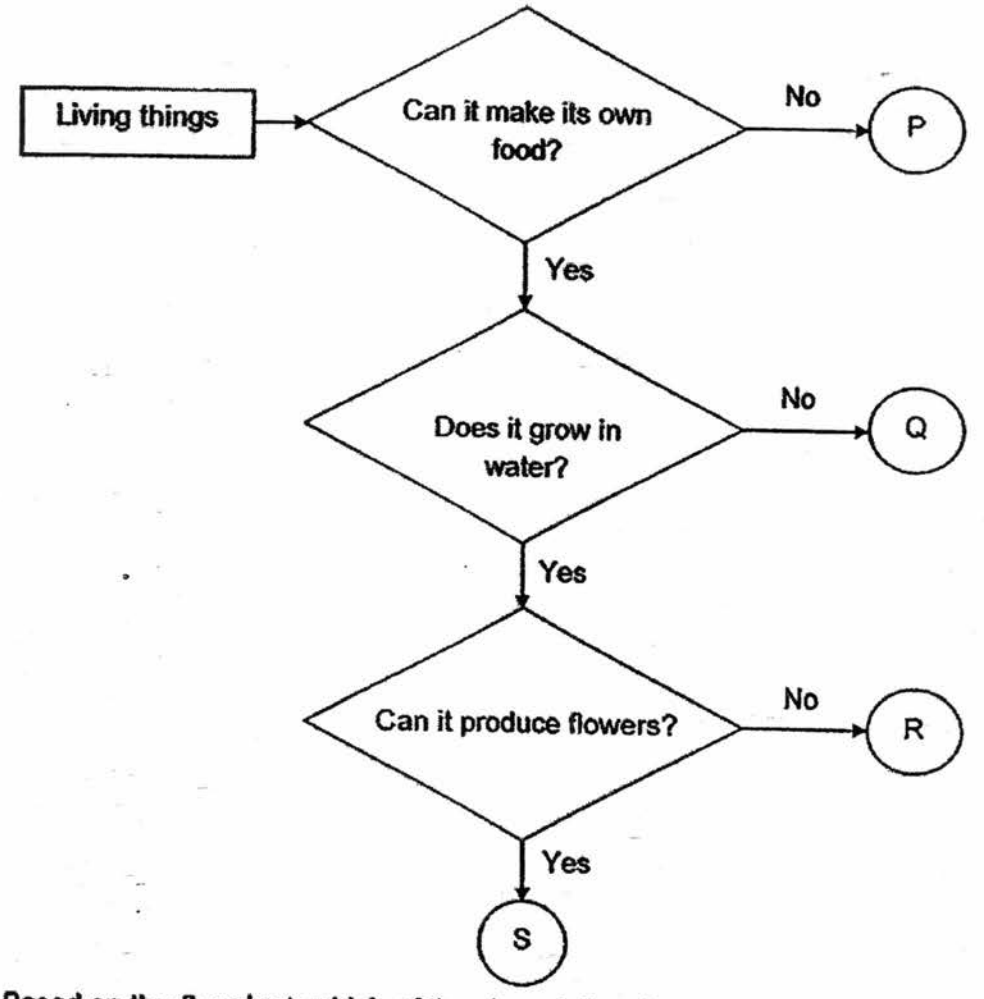
1. Look at the classification below.



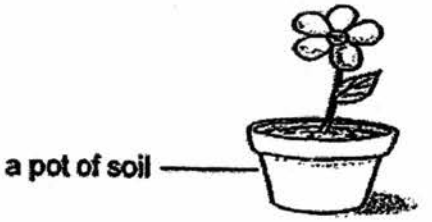
Which of the above things has been grouped incorrectly?

(1) bird
(2) plant
(3) cloud
(4) ice-cube

2. Study the flowchart below.



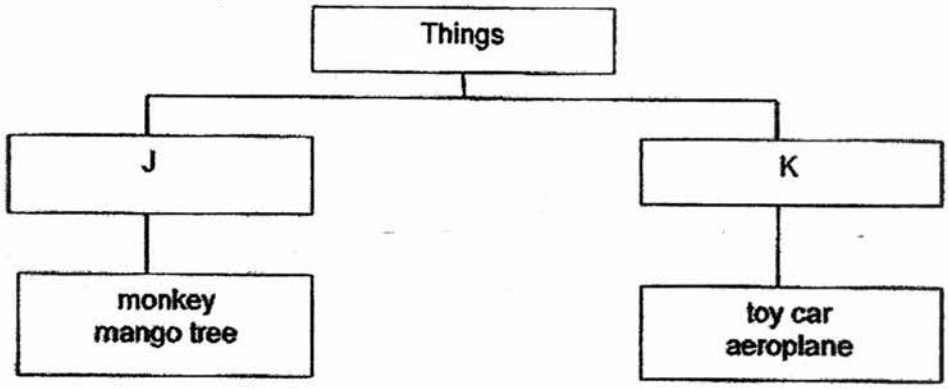
Based on the flowchart, which of the above letters best represents Plant A as shown below?



Plant A

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

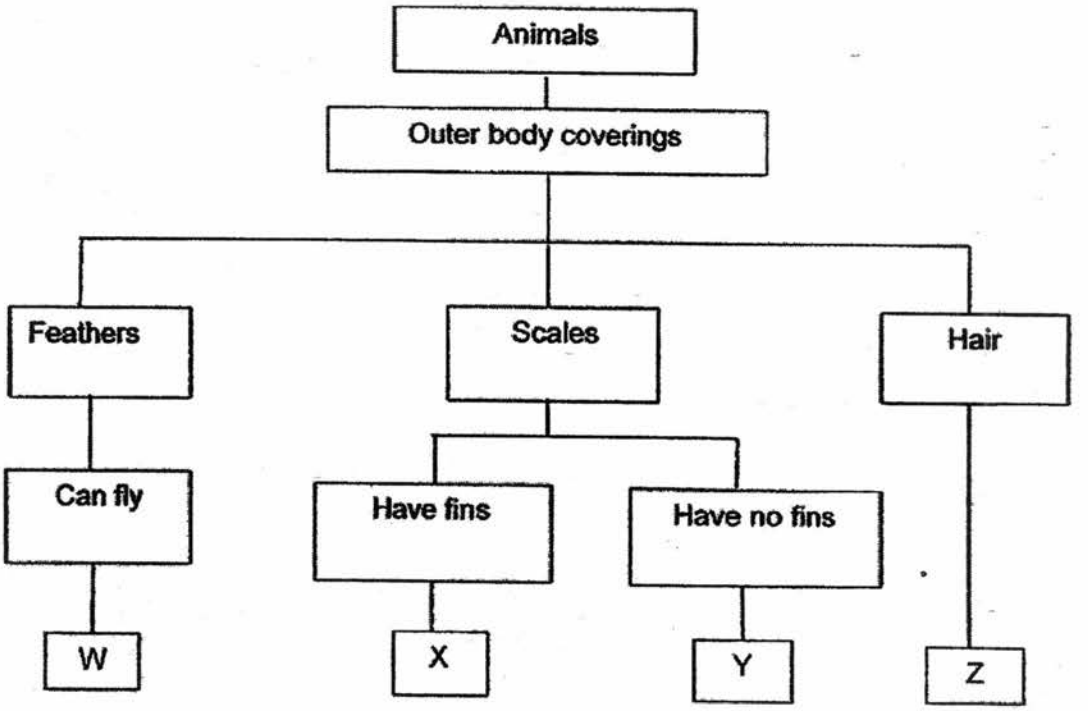
3. Study the classification chart below.



Which one of the following set of headings best represents J and K?

	J	K
(1)	Can reproduce	Cannot reproduce
(2)	Can produce fruits	Cannot produce fruits
(3)	Can make its own food	Cannot make its own food
(4)	Can move from place to place	Cannot move from place to place

4. Study the classification chart below.



Based on the classification chart above, which of the following statements about Animals W, X, Y and Z are definitely correct?

A: Animal W lays eggs.
B: Animal Z is a mammal.
C: Animal Y could be an insect.
D: Animal X breathes through gills.

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

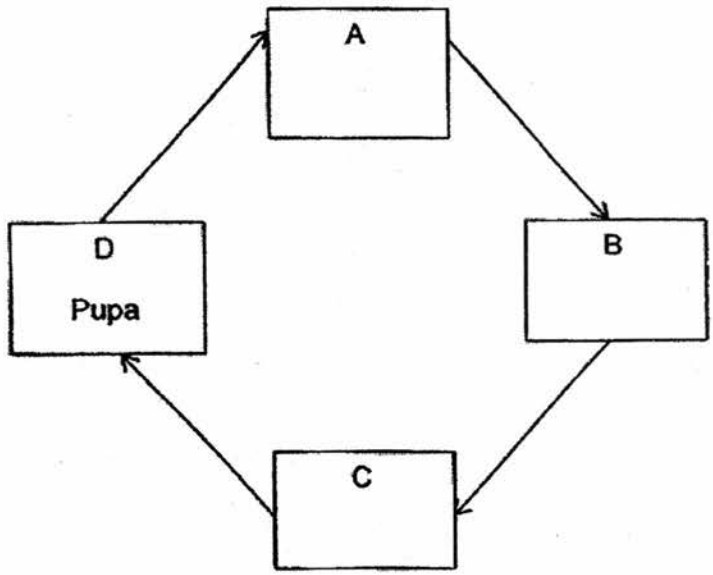
5. Four animals, P, Q, R and S are described in the table as shown below.

Description	Animal P	Animal	Animal R	Animal S
The adult has wings.	No	Yes	No	Yes
The adult has feelers.	No	Yes	Yes	Yes
The young resembles the adult.	Yes	Yes	No	No
The animal has 4 stages in its life cycle.	No	Yes	Yes	Yes

Based on the information in the table above, which of the animals best describes a cockroach?

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

6. **The diagram below shows the life cycle of a butterfly**

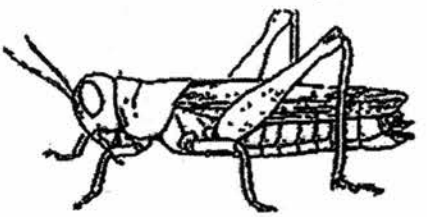


At which stage, A, B, C or D is the butterfly a pest to the farmer because it eats up the leaves of his crops?

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

7. Peter wrote down some information about an adult grasshopper and its young.

nymph



adult grasshopper

A: The nymph looks like the adult.
B: Only the adult grasshopper has a pair of feelers.
C: The nymph cannot fly but the adult grasshopper can.
D: The nymph has two body parts but the adult grasshopper has three body parts.

Which of the above information is correct?

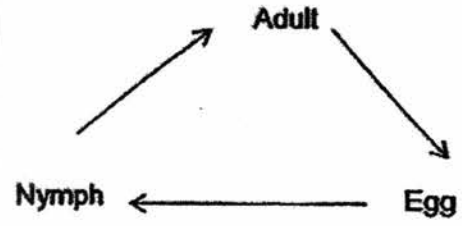
(1) A and C only
(2) B and C only
(3) A, B and C only
(4) A, B and D only

8. The table below shows the characteristics of animal M.

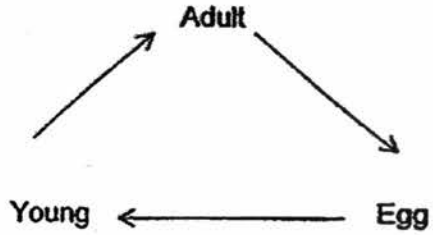
• It lays eggs. • It has a beak. • It has a pair of wings. • It has feathers on its body.

Which one of the following shows the correct stages in the life cycle of the animal described above?

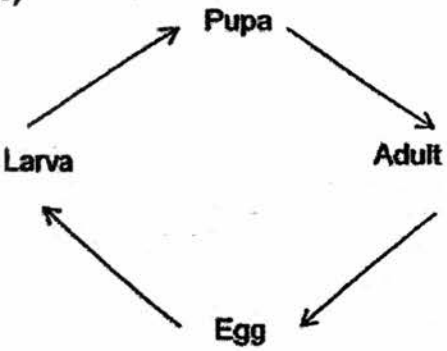
(1)



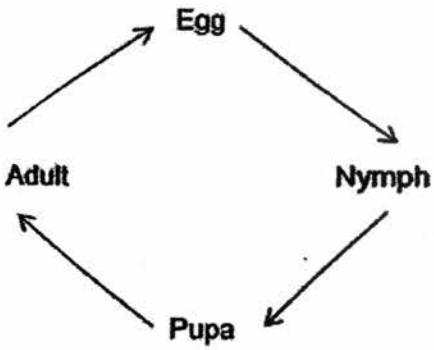
(2)



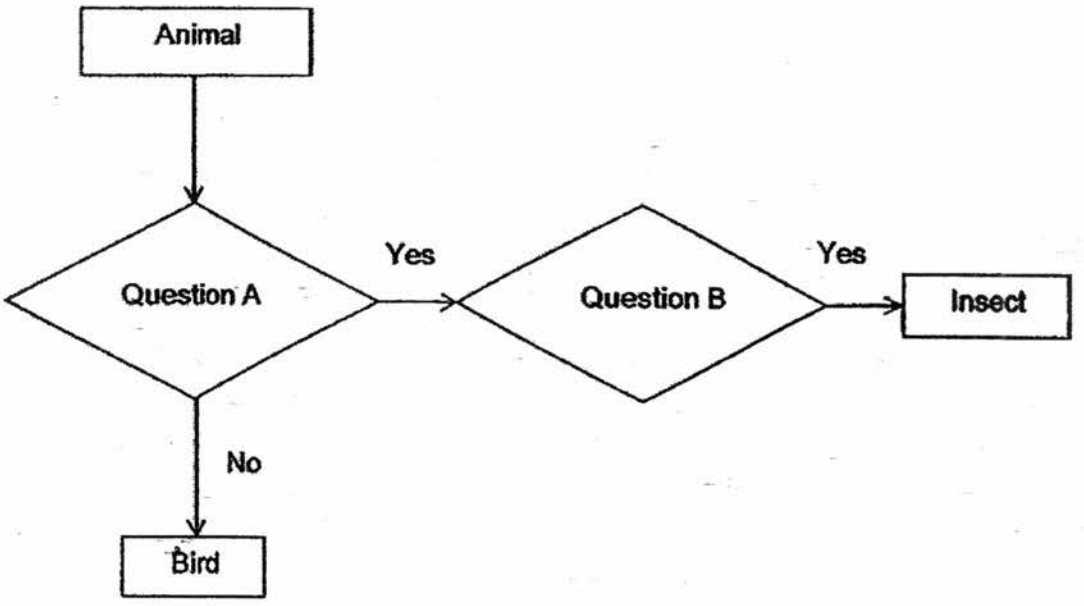
(3)



(4)



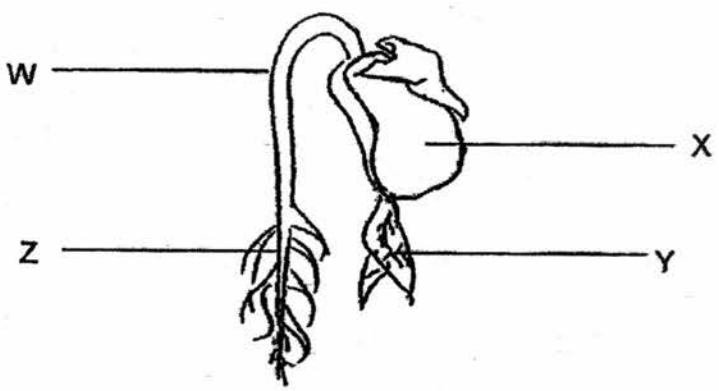
9. Study the flowchart below.



Which are the most suitable questions for Part A and Part B in the flowchart above?

	Question A	Question B
(1)	Does it have feathers?	Does it have a three stage life cycle?
(2)	Does it lay eggs?	Does it have a three stage life cycle?
(3)	Does it have three body parts?	Does it have six legs?
(4)	Does it have three body parts?	Does it have feathers?

The diagram below shows a germinating seed. The parts W, X, Y and Z have been labelled. Questions 10 and 11 are based on this diagram.



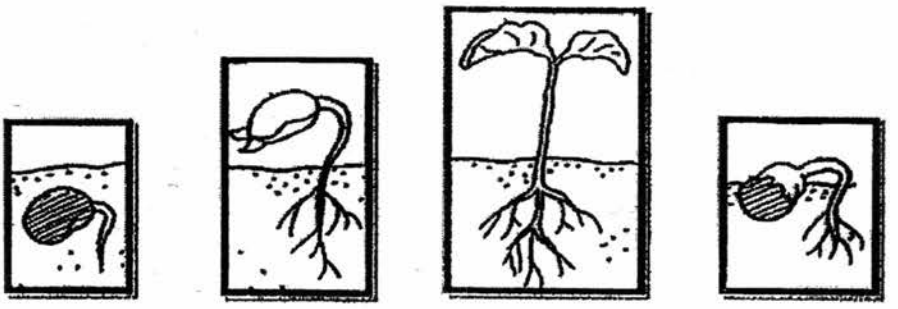
10. Which part of the seed grows first during germination?

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

11. What is the function of the part labelled X?

(1) It provides warmth for the seedling.
(2) It gives the young seedling support.
(3) It makes food for the young seedling.
(4) It provides the young seedling with stored food.

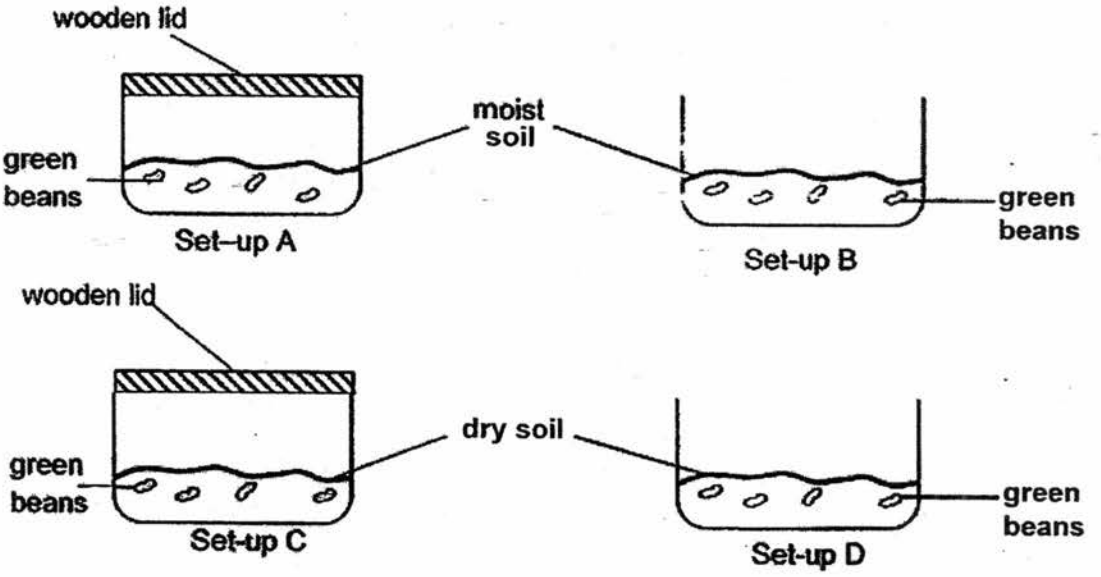
12. In the diagram below, J, K, L and M represent the different developmental stages in the life cycle of a flowering plant.



Which of the following shows the correct order of the developmental stages in the life cycle of a green bean plant.

(1) J, K, L, M
(2) K, L, M, J
(3) J, M, K, L
(4) M, K, J, L

13. John placed some green beans in four different set-ups A, B, C and D with soil. He kept the set-ups in his classroom.



Which set-up/(s) of seeds would germinate after a few days?

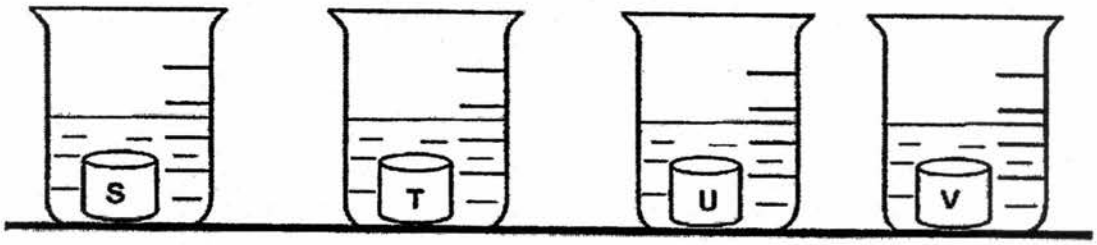
(1) A only
(2) A and B only
(3) A, B and D only
(4) B, C and D only

14. Which of the following properties are the reasons for using glass to make a fish tank?

A: It is flexible
B: It is waterproof
C: It is transparent
D: It breaks when dropped

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

15. Objects S, T, U and V are similar in size but they are made of different materials. Li Juan placed these objects into four separate beakers. Each beaker contained the same amount of water as shown below.



She first measured the mass of each object before placing them into the beakers of water. Then she measured the mass of each object 15 minutes after putting them in the beaker of water and recorded the masses in the table below.

Object	Mass at the beginning (g)	Mass at the end (g)
S	12	15
T	12	12
U	12	29
V	12	18

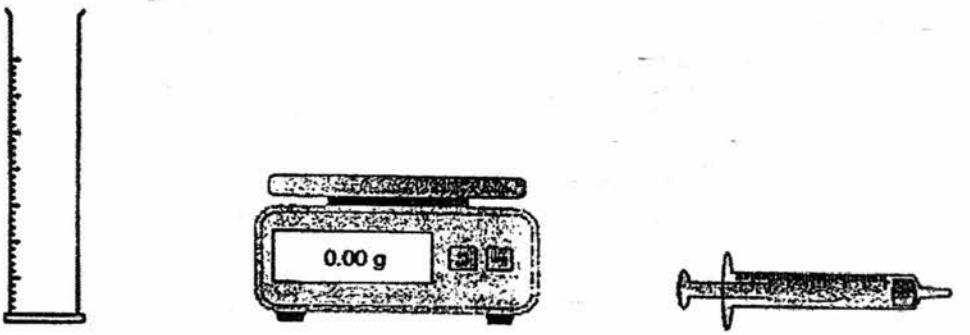
Based on the table above, which object is made of a material that is the most absorbent?

(1) S
(2) T
(3) U
(4) V

16. Which one of the following is not a matter?

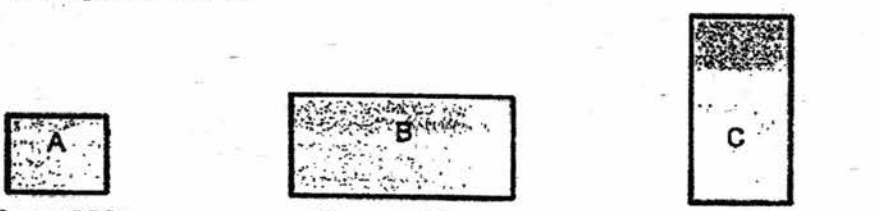
(1) sound
(2) water
(3) ice cubes
(4) clouds

17. Joy wanted to find out if a solid has mass and occupies space. Which of the following apparatus should she use ?



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

18. Study the diagrams below.



Mass: 300g
Volume: 150 cm^3

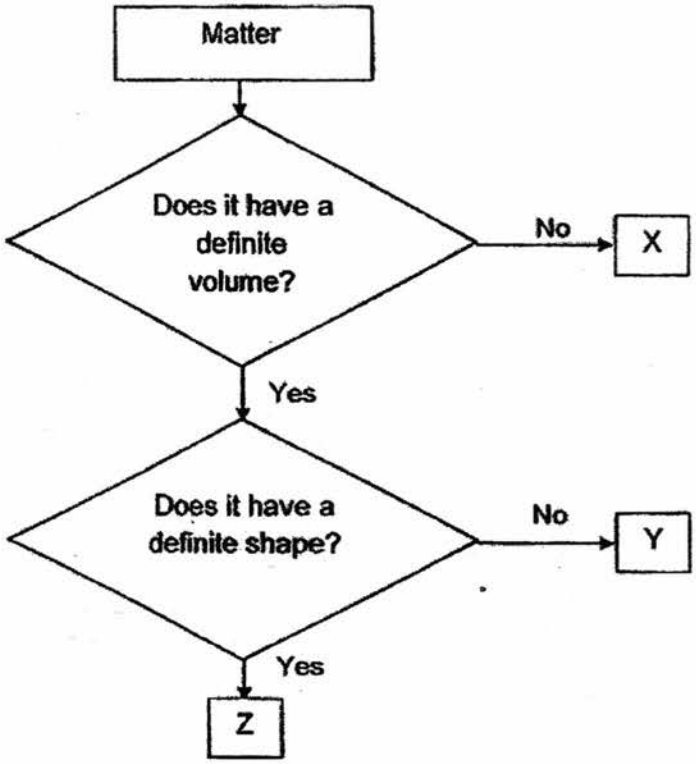
Mass: 300g
Volume: 300 cm^3

Mass: 300g
Volume: 300 cm^3

Based on the information given, which of the following statements is true?

(1) Box A is lighter than box B.
(2) Box A occupies more space than box B.
(3) Box B occupies more space than box C.
(4) Box B and Box C occupy the same amount of space.

19. Study the flowchart below.



Which one of the following is likely to be X, Y and Z?

	X	Y	Z
(1)	air	oil	toy car
(2)	air	toy car	oil
(3)	oil	toy car	air
(4)	oil	air	toy car

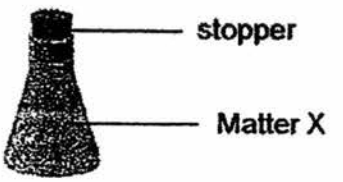
20. What is the difference between a solid and a liquid?

(1) A solid has mass but not a liquid.
(2) A solid has a definite shape but not a liquid.
(3) A solid has a definite volume but not a liquid.
(4) A solid can be compressed but not a liquid.

21. What do solids, liquids and gases have in common?

(1) All of them occupy space and have mass.
(2) All of them occupy space and have no mass.
(3) All of them have definite shape and definite volume.
(4) All of them have definite volume but no definite shape.

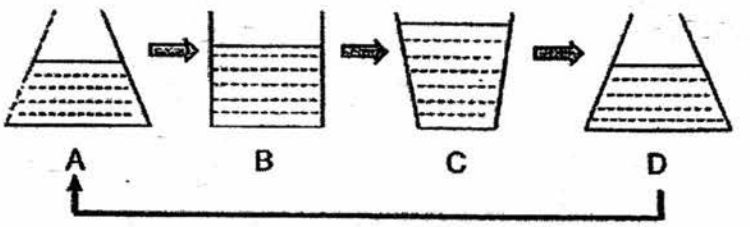
22. Matter X has to be kept in an enclosed container as shown below. This is to prevent it from escaping immediately when the stopper is removed.



Which of the following statement is true of matter X?

(1) It has a definite shape.
(2) It does not have a mass
(3) It does not take up space.
(4) It does not have a definite volume.

23. Gerald filled container A with one litre of water. He transferred the one litre of water completely from container A to B, then B to C and then C to D as shown below. Finally he poured the water back into container A. He realised that the amount of water in container A remained the same.

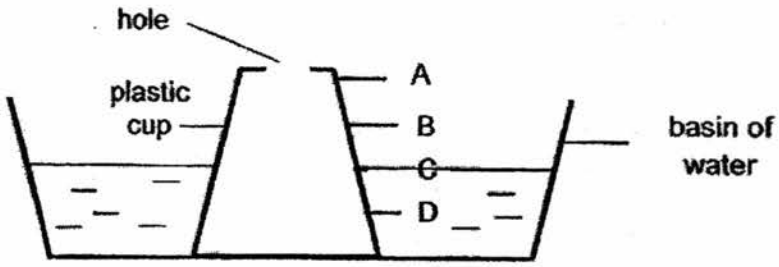


Based on his observation in this experiment, what can he conclude?

A: Water has a fixed mass.
B: Water has a fixed volume.
C: Water takes the shape of the container

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

24. Angela inverted an empty plastic cup into a basin of water as shown in the diagram below. She also created a hole at the bottom of the plastic cup.



Where would the water level inside the plastic cup be after a long time?

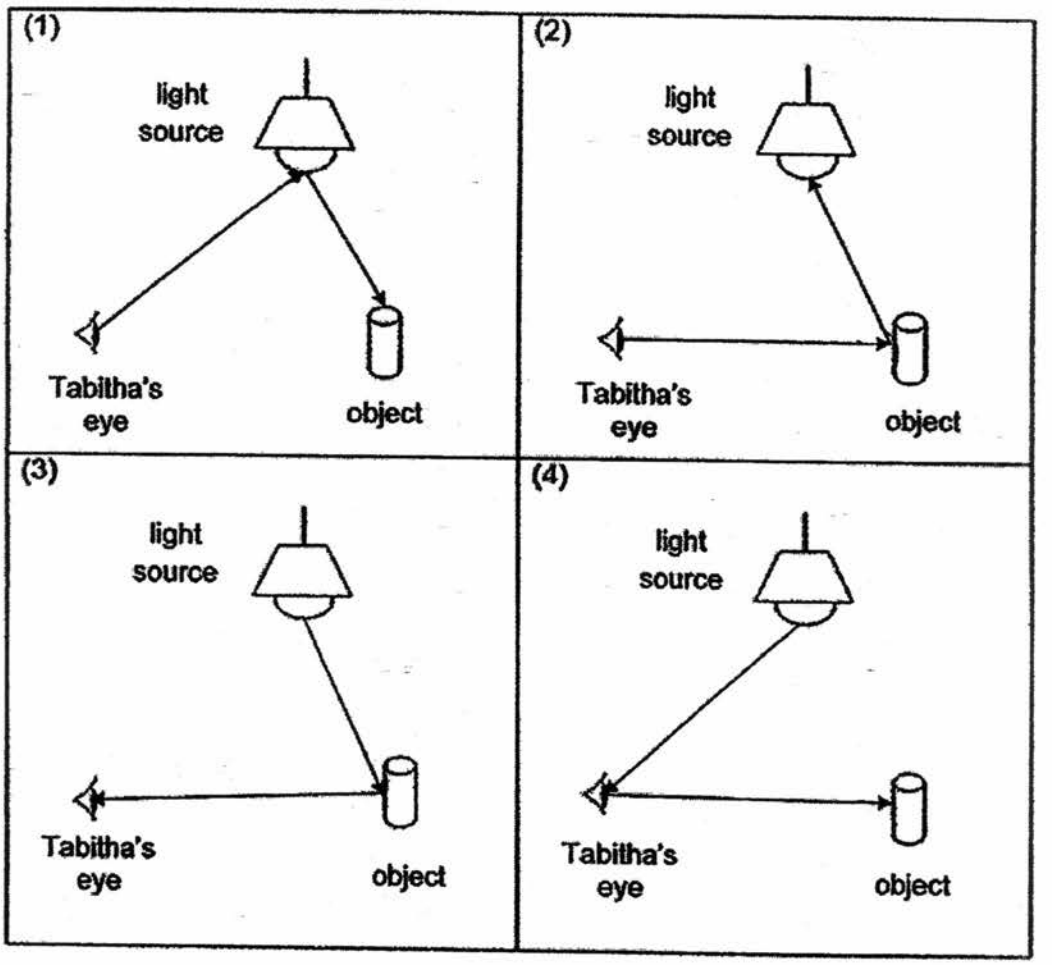
(1) A
(2) B
(3) C
(4) D

25. Which of the following are not sources of light?

A: sun
B: fire
C: mirror
D: diamond

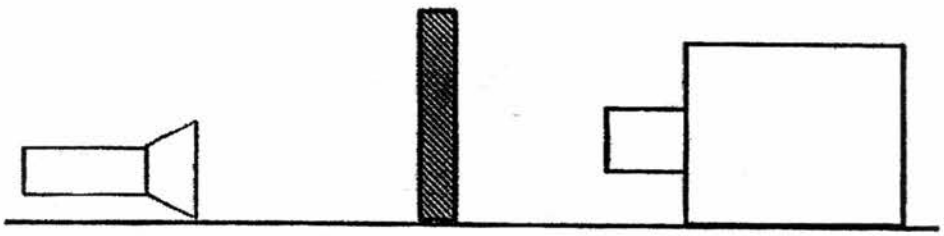
(1) A and B
(2) A and C
(3) B and C
(4) C and D

26. Which one of the following diagrams shows the path of light that enables Tabitha to see the object? The arrows represent the path of light.



Read the experiment below and answer questions 27 and 28.

James set up an experiment as shown below. He used materials A, B, C and D to find out how much light can pass through the material. A light sensor is used to measure the amount of light that can pass through.



Materials	Amount of light captured by the light sensor (units)
A	100
B	40
C	90
D	80

27. Which material should James use to make a curtain so that his room will be least bright during daytime?

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

28. James wanted to find out if the thickness of the material will affect the amount of light that passes through it.

Which of the following variable should she change in order to carry out the experiment?

(1) Type of material
(2) Light intensity
(3) Thickness of material
(4) Distance of material from light source

End of Booklet A

First Semestral Assessment 2017
STANDARD SCIENCE
Primary 4

Name: _____

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

Date: 9th May 2017 **Parent's Signature:** _____

Booklet B

Instructions to Pupils:

1. For questions 29 to 42, give your answers in the spaces given in Booklet B.

	Maximum	Marks Obtained
Booklet A	56 marks	
Booklet B	44 marks	
Total	100 marks	

Part II (44 marks)

For questions 29 to 42, write your answers in this booklet.

The number of marks available is shown in brackets ( ) at the end of each question or part question.

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29. Study the classification table below.

Living Things	
Group A	Group B
	

(a) Which group of living things do Group A and B belong to? (1m)

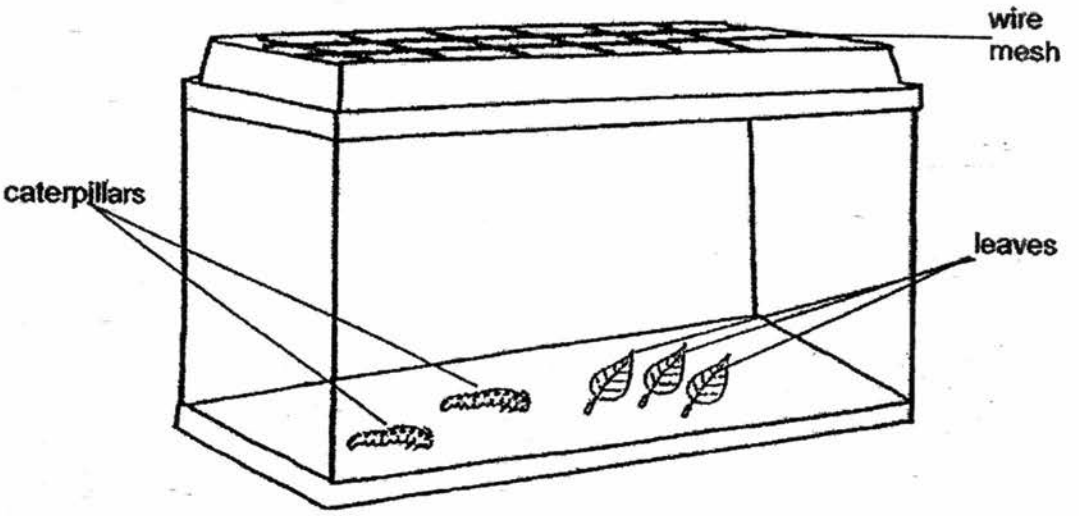
Group A: _____

Group B: _____

(b) List one similarity between the two groups of organisms in the classification table. (1m)

_____

30. Jane placed two caterpillars in a glass tank with some leaves. She covered the container with some wire mesh as shown in the set-up below.



(a) What will happen to the leaves in the container after a few days? (1m)

_____

(b) Jane also noticed that the caterpillars curled up when she used a stick to touch their bodies. State the characteristic of living things that is observed. (1m)

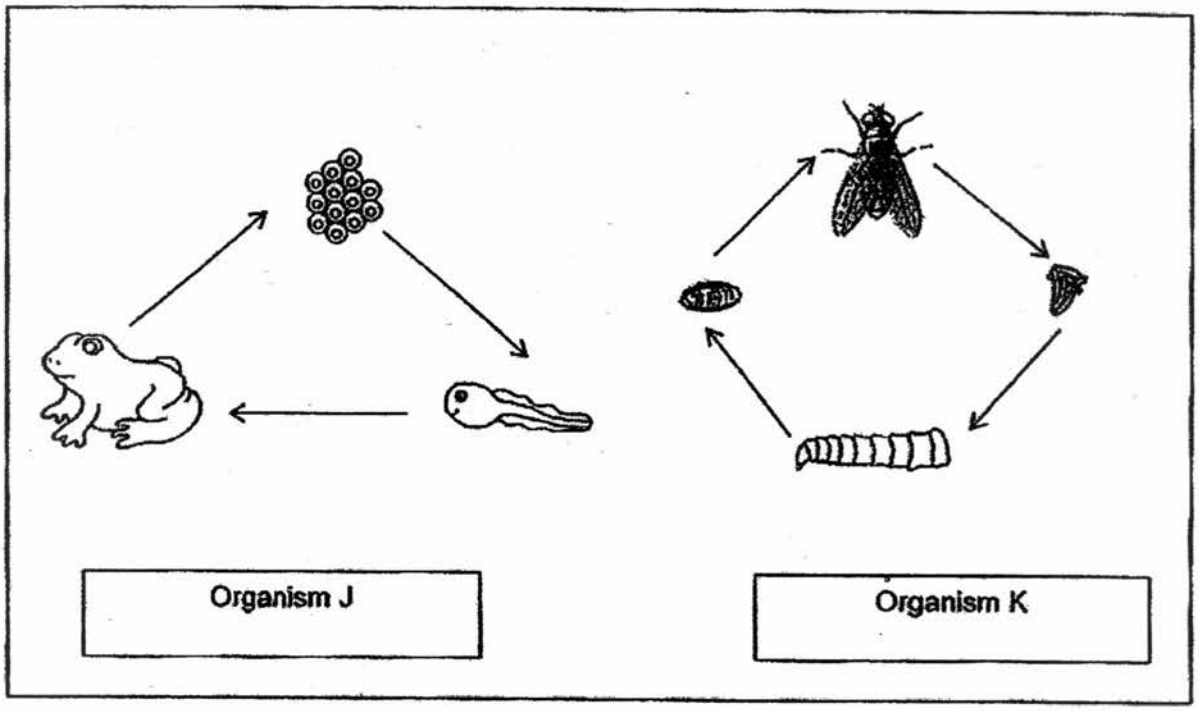
_____

(c) Give a reason why Jane used the wire mesh to cover the container instead of a completely closed lid. (1m)

_____

_____

31. The diagrams below show the life cycle of organisms J and K.



(a) State a similarity between the life cycle of organism J and K. (1m)

_____

_____

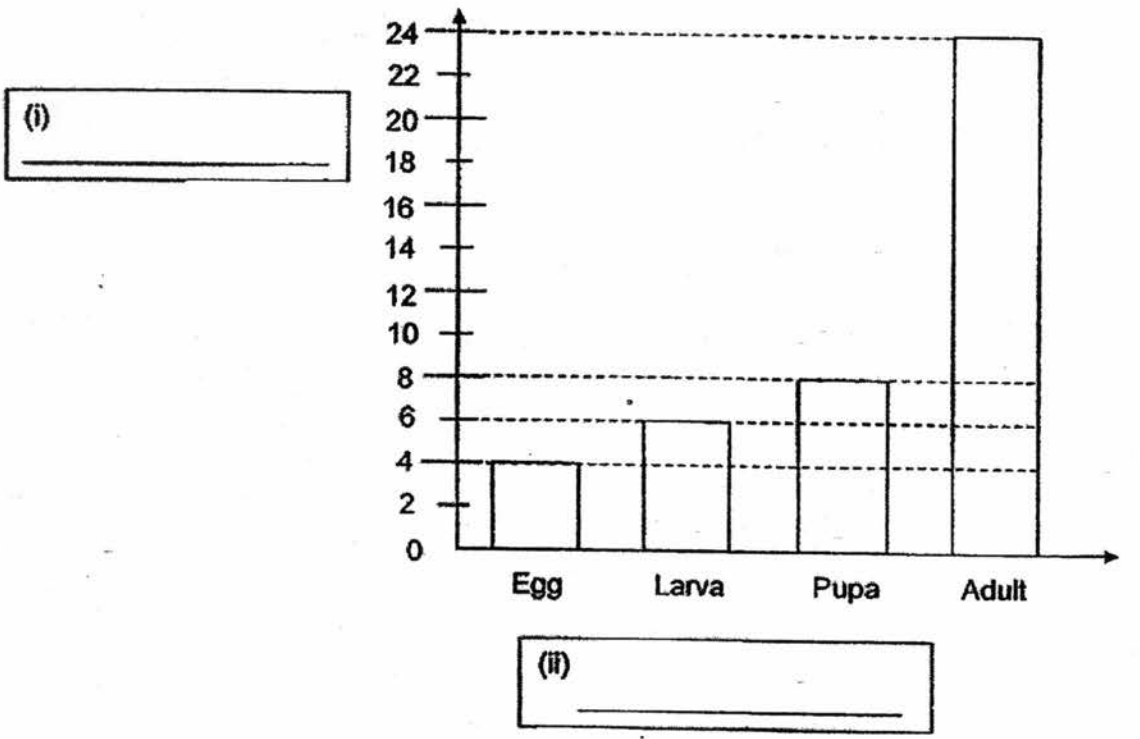
(b) State a difference between the life cycle of organism J and K. (1m)

_____

_____

32. The graph below shows the number of days in each stage of the life cycle of a mosquito.

(a) Label the graph below with the following variables, 'Number of days' and 'Stage' in (i) and (ii) (1m)



(b) How many days would it take for the young to become an adult mosquito after it is hatched? (1m)

_____

(c) Why does an adult mosquito lay many eggs at one time in the water? (1m)

_____

_____

Question 32 continues on Pg 6

(d) It is observed that the larva of the mosquito sheds its skin several times. What is this process known as? (1m)

_____

(e) At which stage would it be the most difficult to destroy this pest? Explain your answer. (1m)

_____

_____

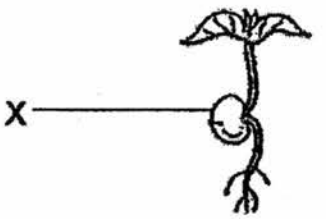
33. Tom wants to find out if water is needed for green bean seeds to grow He prepares four set-ups and leaves them in a well-lit room at room temperature.

	Set-up A	Set-up B	Set-up C	Set-up D
Number of green bean seeds	5	4	3	5
Amount of water (ml)	20	15	15	0

(a) Which two set-ups should Tom use in this experiment to ensure a fair test? Explain your answer. (1m)

_____

The diagram below shows the germinating seed.

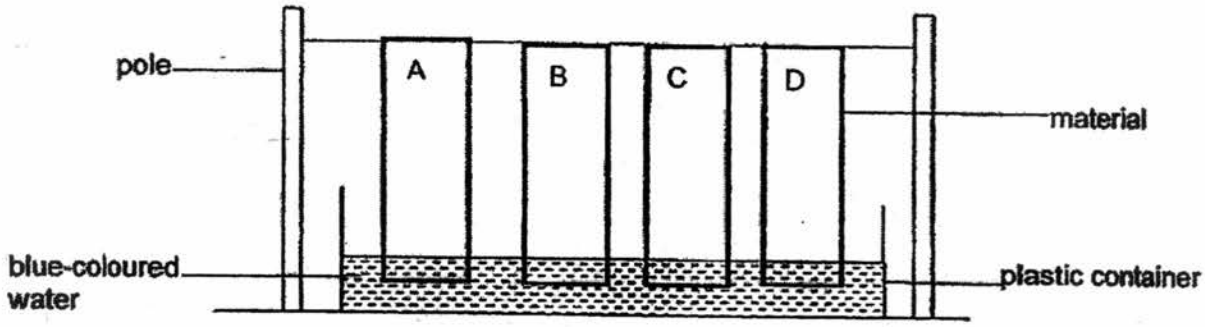


(b) What will eventually happen to the part labelled 'X' as the seedling grows? Explain why. (2m)

_____

_____

34. Mei Li dipped four strips of different materials A, B, C and D into a plastic container with blue-coloured water as shown below. The four strips were of the same dimension and thickness



The height of the coloured water on the material was measured after 5 minutes and the results were recorded in the table below.

Material	Height of coloured water on the material after 5 minutes (cm)
A	20
B	15
C	0
D	8

(a) Based on the results above, which material would Mei Li use to make a bath towel? Give a reason for your answer. (1m)

_____

_____

(b) Which material would she choose to make a raincoat? Give a reason for your answer. (1m)

_____

_____

(c) From the above set up, identify:

(i) the changed variable - _____ (1/2m)

(ii) the measured variable - _____ (1/2m)

35. May Lin observed some objects around her and recorded her observations in a table as shown below. Write 'T' (true) or 'F' (false) in the boxes provided below. (2m)

	Statements	T or F
(i)	Clouds are not considered a matter because they do not have mass.	
(ii)	When we burn wood, smoke from the fire is not matter because it does not occupy space.	
(iii)	A lever balance is used to show that an object has mass.	
(iv)	Sand is a liquid because it can take up the shape of the container.	

36. Tommy hung two similar balloons as shown in Figure 1. One minute later, he pricked and deflated balloon A as shown in Figure 2.

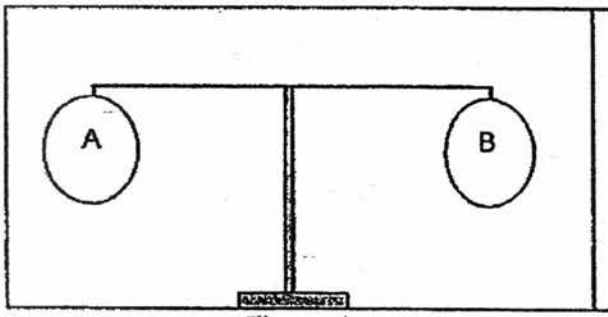


Figure 1

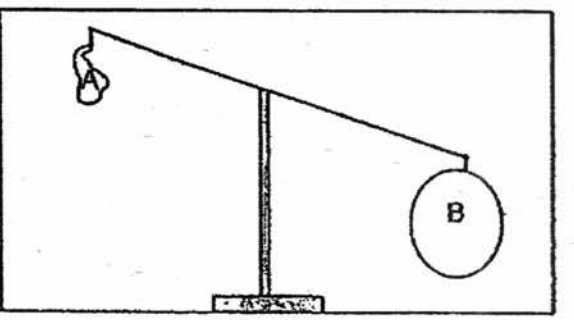


Figure 2

(a) Describe the observation for Figure 2. (1m)

_____

_____

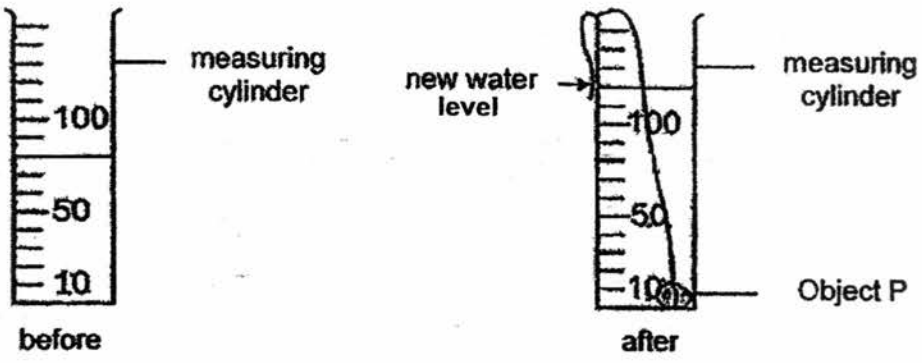
(b) What can you conclude about air from the above observation? (1m)

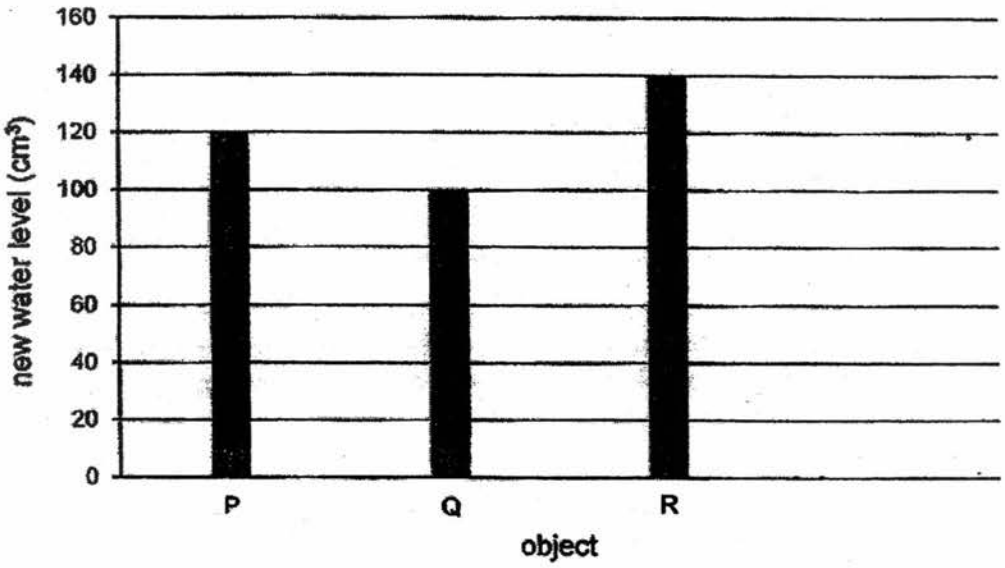
_____

(c) State another property to show that air is matter.

_____

37. Devon carried out an investigation to find the volume of four different objects, P, Q, R and S using the set-up as shown below.





(a) Based on the results as shown above, what property of matter does this experiment show? (1m)

_____

(b) Arrange the objects P, Q and R in order, beginning with the smallest volume. (1m)

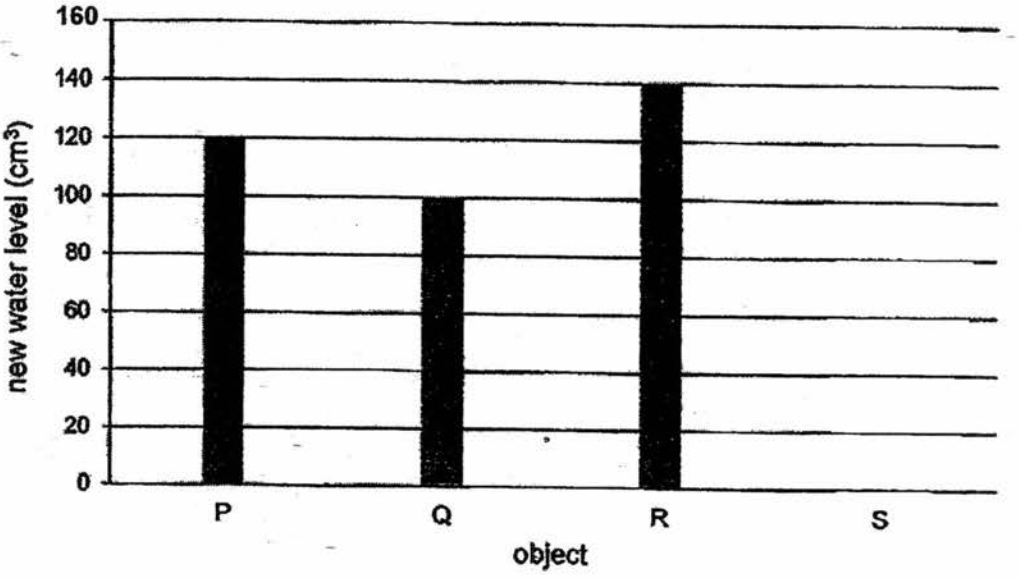
[ ] , [ ] , [ ]

smallest volume

Question 37 continues on the pg 11

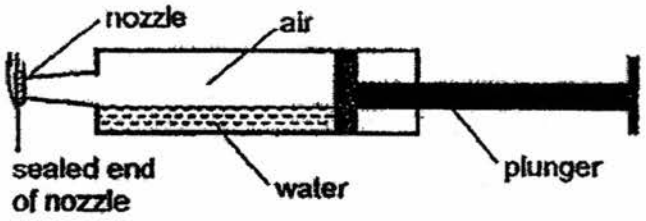
Devon repeated the same steps for a new object, S. The new water level was 160 cm^3.

(c) Complete the graph below for object S. (1m)

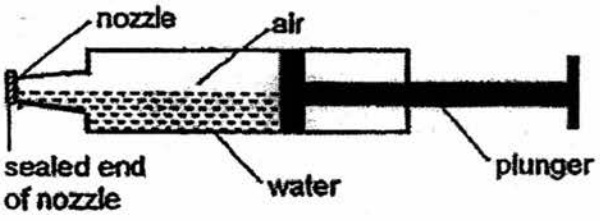


(d) If object Q is put into a measuring cylinder containing 30 cm^3 of water, what would be the new water level in the measuring cylinder? Work out your answer below. (1m)

38. The diagram below shows a syringe filled with some water and air. The nozzle of the syringe is tightly sealed.



Faridah pushed the plunger and discovered that the plunger could be pushed in slightly as shown in the diagram below.



(a) Explain why the plunger could be pushed in slightly. (1m)

_____

_____

(b) Did the volume of water in the syringe change after the plunger was pushed in slightly? Give a reason for your answer. (1m)

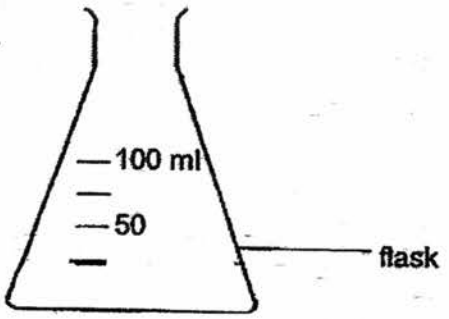
_____

_____

(c) What happened to the mass of the air in the syringe after the plunger was pushed in? Tick (√) the correct option. (1m)

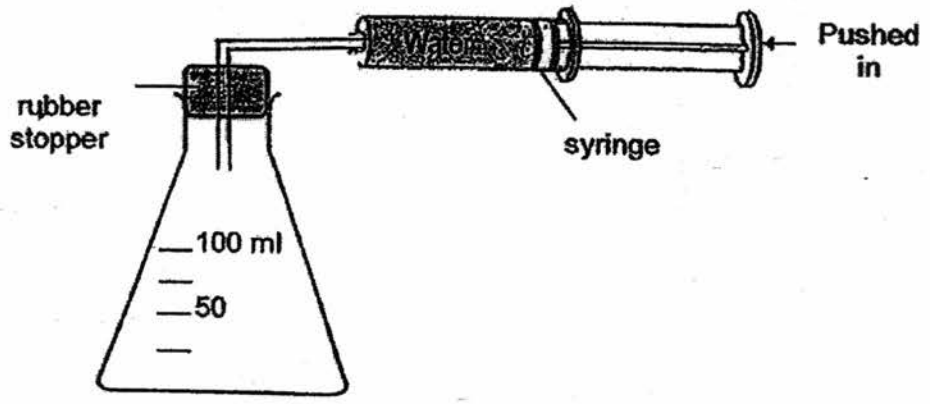
Statement	Tick (√) the correct option
The mass of air increased	
The mass of air decreased	
The mass of air remained the same	

39. Valoo poured 25 ml of water into an empty flask.



(a) Draw the water level in the flask above. (1m)

Valoo covered another similar flask with a rubber stopper and connected the container to a syringe as shown below.



(b) Veloo tried to add water into the container by pushing the plunger. Would the plunger be pushed in easily to allow all the water to enter the container? Explain why. (1m)

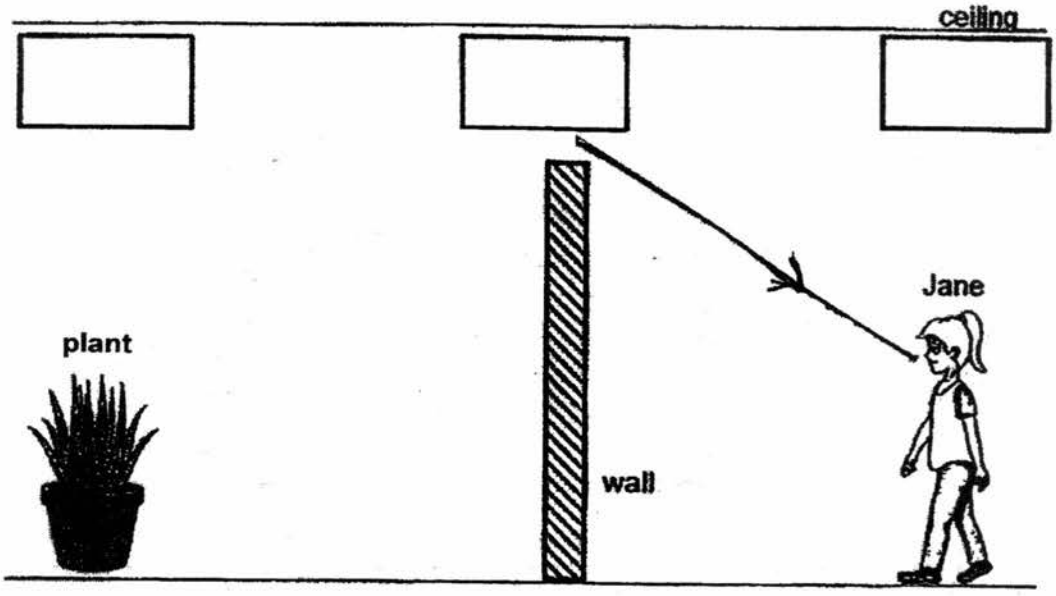
_____

_____

(c) Based on your explanation in (b), state the property of air. (1m)

_____

40. 4 students were studying the diagram as shown below.



When Jane was standing behind the wall in a brightly lit room as shown in the diagram above, she could not see the plant.

Each of the four students gave an explanation why Jane could not see the plant.

Amelia: The plant did not reflect light.
Benny: The wall did not reflect light.
Carol: The plant did not allow light to pass through.
Derrick: The wall did not allow light to pass through.

(a) Identify the student with the correct explanation. (1m)

_____

(b) They also learnt that a mirror can enable Jane to see the plant. Put a cross (X) in one of the boxes above where the mirror should be placed. (1m)

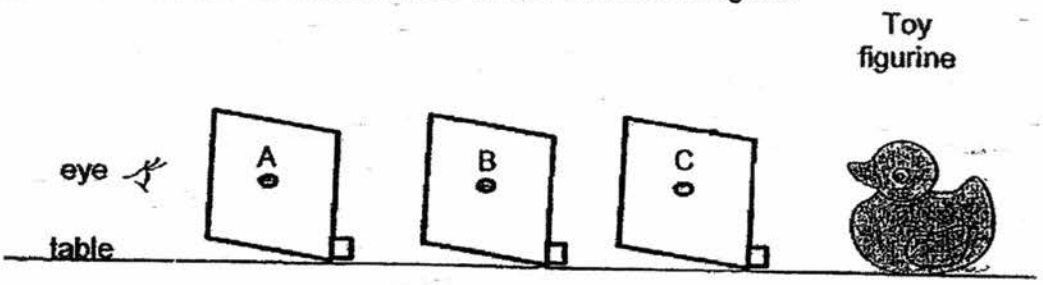
_____

(c) Describe how the mirror can enable Jane to see the plant. (2m)

_____

_____

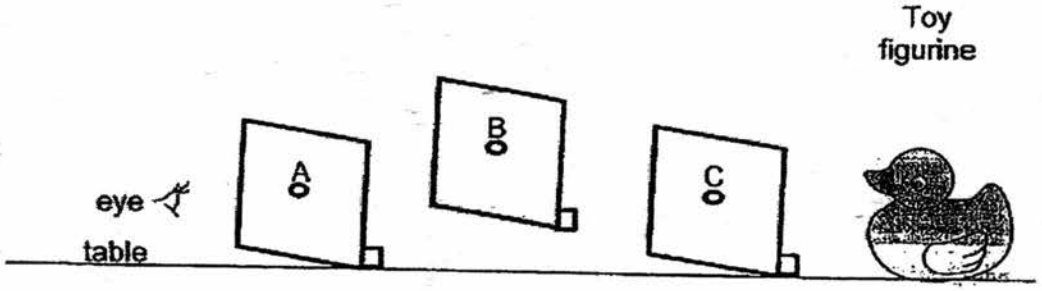
41. James set up an experiment as shown below. He placed the three sheets of cardboard in a row so that the holes at A, B and C are aligned.



(a) When he looked through hole A, he could see the toy figurine. Draw the direction of light rays between the toy figurine and James' eye. (1m)

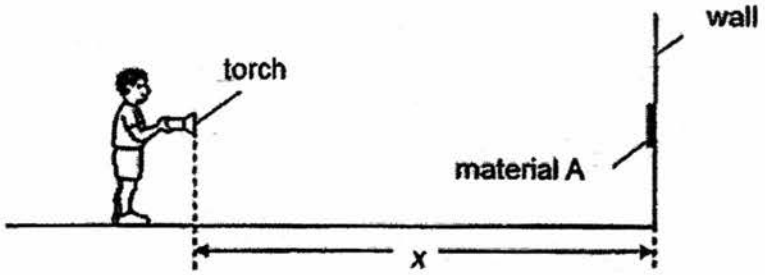
(b) What property of light was he trying to show in this experiment? (1m)

James shifted cardboard B as shown in the diagram below.



(c) Will he be able to see the toy figurine? Explain why. (1m)

42. Ali wanted to investigate which material was best at reflecting light. He set up his experiment in a dark room as shown below.



Ali shone the light onto material A and walked towards it. When he could clearly see the material, he stopped and measured the distance *x* between the torch and the wall. He repeated the experiment with materials A, B, C and D each time.

(a) The table shows some of the variables in Ali's experiment. Complete the table to indicate the different types of variables in the investigation. Use a tick (√) to indicate your answer. (2m)

Variable	To be changed	To be kept the same	To be measured
Type of material			
Size of material			
Type of light source			
Distance *x* (cm)			

Question 42 continues on the pg 17

His results are shown below.

Material	A	B	C	D
Distance *x* (cm)	250	520	120	800

(b) Which material reflects the least light? (1m)

_____

(c) Which material should we use to make a helmet for a cyclist who cycles at night? (1m)

_____

End of Paper

EXAM PAPER 2017 (P4)

SCHOOL : ROSYTH

SUBJECT : SCIENCE

TERM : SA1

ORDER CALL :

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

29)a)A: Non-flowering plants. B: Fungi

b)Both group of organisms reproduce by spores.

30)a)The leaves in the container will get eaten up by the caterpillars.

b)Living things respond to changes ground them.

c)The wire mesh allows air to enter the container and living things need air to survive.

31)a)The young of both life cycle do not resemble the adult.

b)The lift cycle of organism J has 3 stages while the life cycle of organism K has 4 stages.

32)a)i)Number of days. ii)Stage

b)14 days.

c)To ensure that at least some of the eggs develop into young and continue the life cycle.

d)Moulting.

e)The adult stage. The adult mosquito can fly and escape, so it is harder to destroy it.

33)a)Set-up A and D. The number of green beans are the same.

c)X will shrivel and die, as the first pair of leaves has unfolder and can start making its own food.

34)a)Material A, as it is most absorbent and bath towels need to be absorbent.

b)C, as it is waterproof and a raincoat needs to be waterproof.

c)i)Type of material. ii)Height of coloured water on the material.

35)i)F ii)F iii)T iv)F

36)a)The level balance tilted down words towards balloon B.

b)Air has mass.

c)Air occupies space.

37)a)Matter occupies space.

b)Q , P , R

c)draw ---S to 160

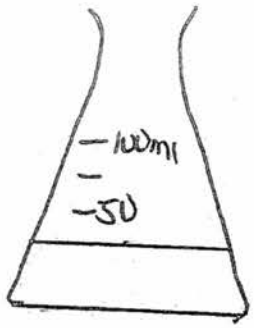
d)100cm3 – 80cm3 = 20cm3 30cm3 + 20cm3 = 50cm3

38)a)It was because air could be compressed, so it was able to be pushed slightly.

b)No. Water has w definite volume.

c)The mass of air remained the same

39)a)

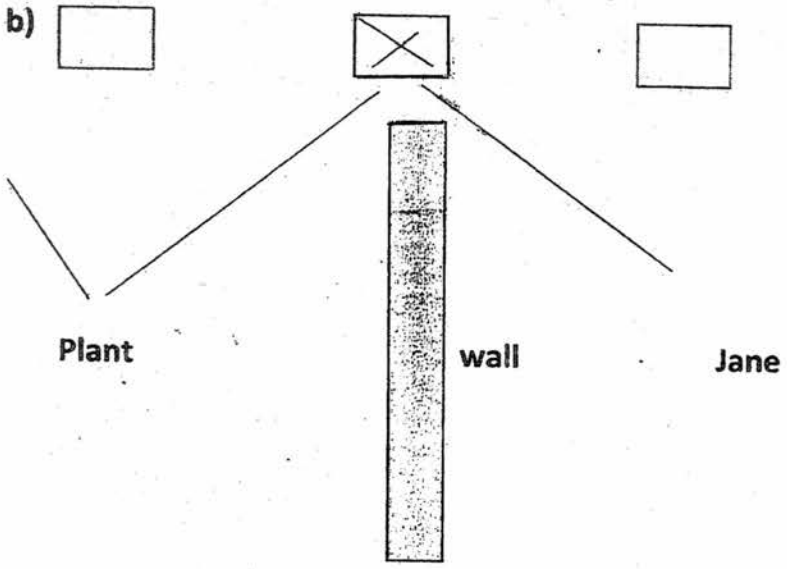


b)No. It is because there is air, inside the flask and it cannot escape so the water cannot enter.

c)Air occupies space.

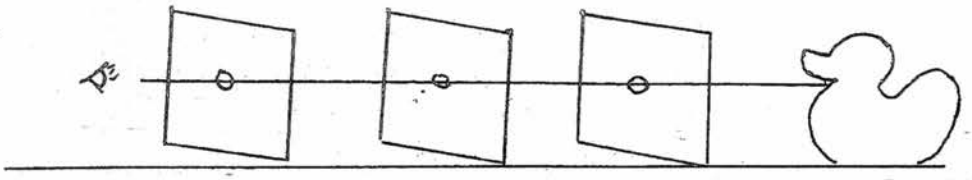
40)a)Derrick.

b)



c)Light shines on the plant. Plant reflects light to their mirror. Mirror reflects light into Jane's eyes.

41)a)



b)Light travels in a straight line.

c)No. The cardboard are not aligned to allow light to travel in a straight line.

42)a)

	√		
		√	
		√	
			√

b)C.

c)D.