

**BITE-SIZED ASSESSMENT 1 (2017)**

**PRIMARY 4**

**SCIENCE**

**Tuesday**

**7 February 2017**

**30 min**

Name: \_\_\_\_\_ ( ) Class: 4.( ) Parent's Signature: \_\_\_\_\_

**INSTRUCTIONS TO PUPILS**

- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 10 questions in this booklet.
- 4 Answer ALL questions.
- 5 The marks are given in the brackets [ ] at the end of each question or part question.

<b>Question Paper</b>	<b>Possible Marks</b>	<b>Marks Obtained</b>
<b>Total</b>	<b>10</b>	

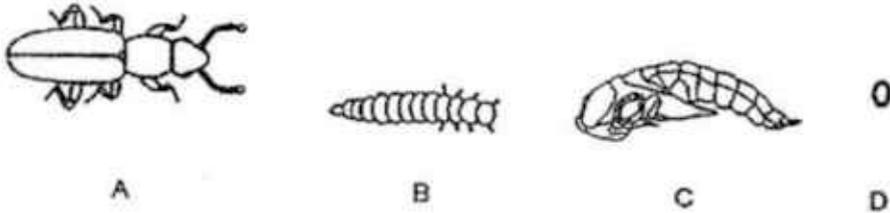
---

**This question paper consists of 7 printed pages (inclusive of cover page).**

**Section A : Multiple Choice Questions (5 marks)**

For each question from 1 to 5, four options are given. One of them is the correct answer. Make your choice and write your answer, 1, 2, 3 or 4, in the brackets provided. (5 x 1 mark)

1. Below are diagrams of the different stages of the life cycle of a beetle, A, B, C and D.

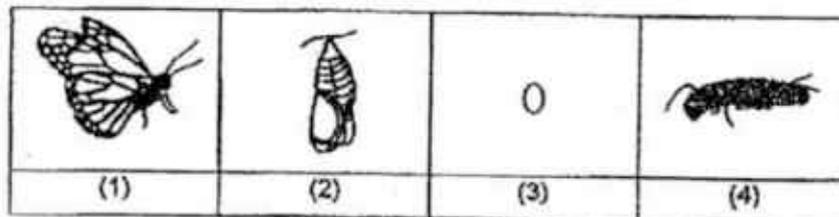


Which of the following shows the correct order of the life cycle of a beetle?

- (1) A → B → C → D  
 (2) B → D → C → A  
 (3) C → A → B → D  
 (4) D → B → C → A
- (     )
2. The diagram below shows a caterpillar.

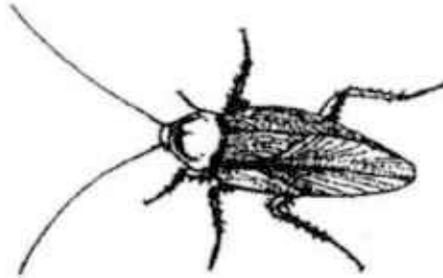


Which of the following diagrams shows the next stage of its life cycle?



(     )

3. The diagram below shows a cockroach.

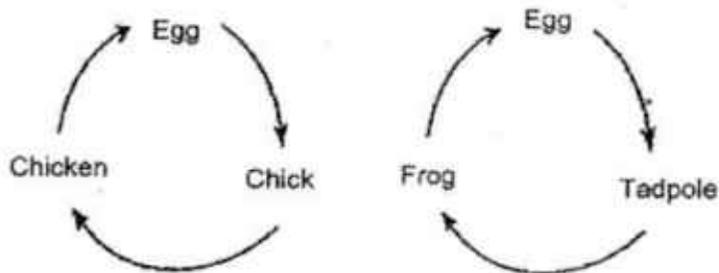


Which one of the following is not a stage in the life cycle of a cockroach?

- (1) egg
- (2) pupa
- (3) adult
- (4) nymph

(      )

4. The diagrams below show the life cycles of a chicken and frog.



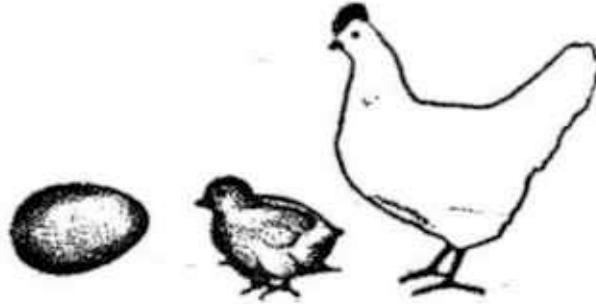
Which of the following describe the similarities between the 2 life cycles?

- A Both life cycles have 3 stages.
- B Both life cycles have an egg stage.
- C The young of both animals look like the adult.
- D The adult of both animals lay their eggs on the ground.

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

(      )

5. The diagram below shows the various stages of the life cycle of a chicken.



Which one of the following statements is correct?

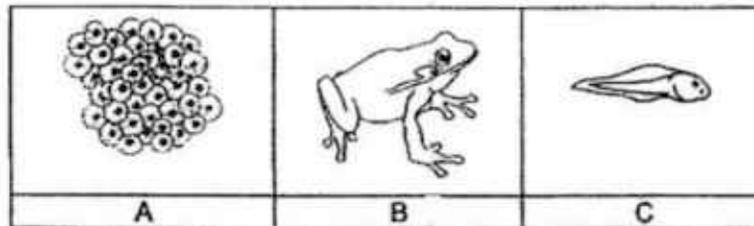
- (1) The eggs are laid in water.
- (2) The young resembles the adult.
- (3) An adult chicken lives on land and in water.
- (4) The egg's soft shell protects the young growing inside the egg. (       )

**Section B : Structured and Open-Ended Questions (5 marks)**

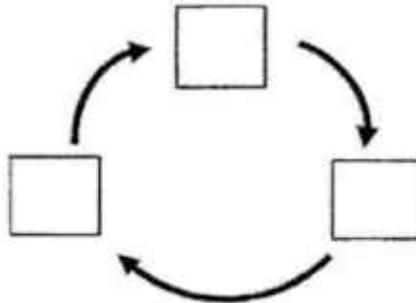
For questions 6 to 10, write your answers in this booklet.

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

6. The diagrams below show the different stages of the life cycle of a frog.

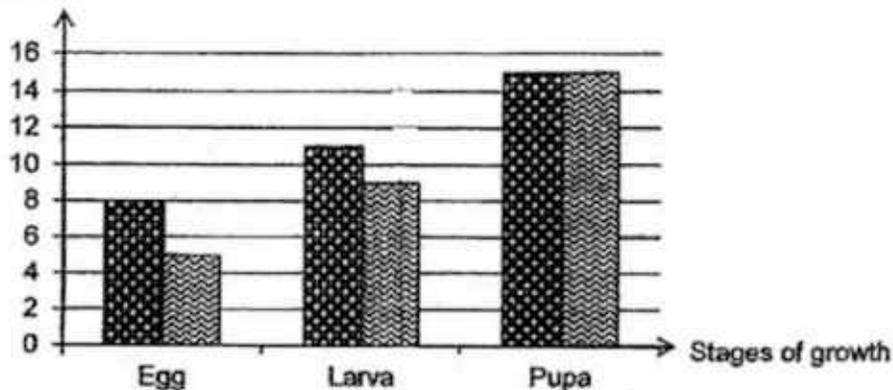


Arrange the above diagrams A, B and C, in the correct order to show the stages in the life cycle of a frog. [1]



7. The chart below shows the number of days each insect, A and B, remained an egg, larva and pupa at the different stages of its life cycle.

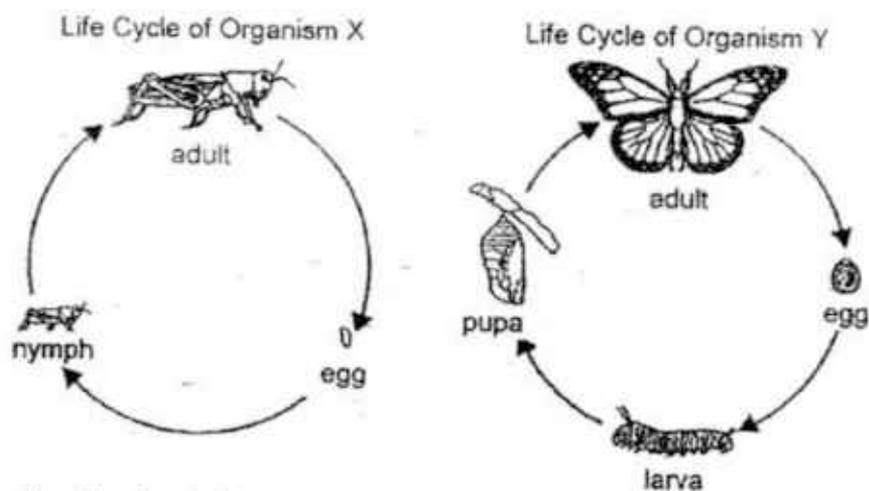
Number of days



Key :  represents A  
 represents B

On the seventh day, after the eggs of both insects were laid, insect A was at the \_\_\_\_\_ stage and insect B was at the \_\_\_\_\_ stage. [1]

8. The diagram below shows the life cycle of two different organisms, X and Y.



- (a) Based on the above diagram, state one similarity between the young and the adult of organism X. [½]

---



---

- (b) Based on the above diagram, state one difference between the young of organism X as a nymph and the young of organism Y as a larva. [½]

---



---

9. Below is a diagram of the nymph and adult of a cockroach.



- (a) Based on the diagram, what is the similarity between the nymph of the cockroach and the adult cockroach? [½]

---



---

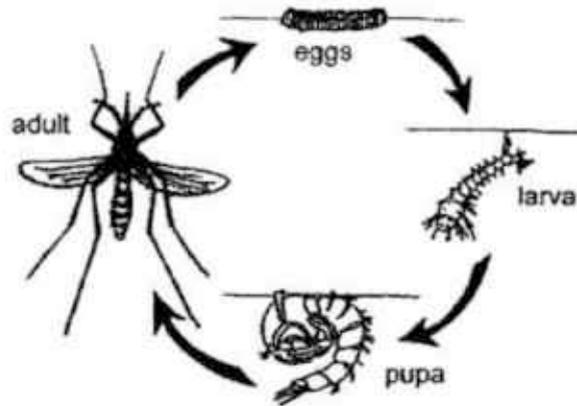
- (b) Based on the diagram, what is the difference between the nymph of the cockroach and the adult cockroach? [½]

---



---

10. The diagram below shows the life cycle of a mosquito.



- (a) At which stage of its life cycle is the mosquito considered harmful to Man? [½]  
Explain your answer.

---

---

- (b) Suggest a way to remove the larva and pupa of the mosquito in a pond. [½]

---

---

**End of Booklet**



**BITE-SIZED ASSESSMENT 2 (2017)**

**PRIMARY 4**

**SCIENCE**

**Tuesday**

**7 March 2017**

**30 min**

Name: \_\_\_\_\_ ( ) Class: 4.( ) Parent's Signature: \_\_\_\_\_

**INSTRUCTIONS TO PUPILS**

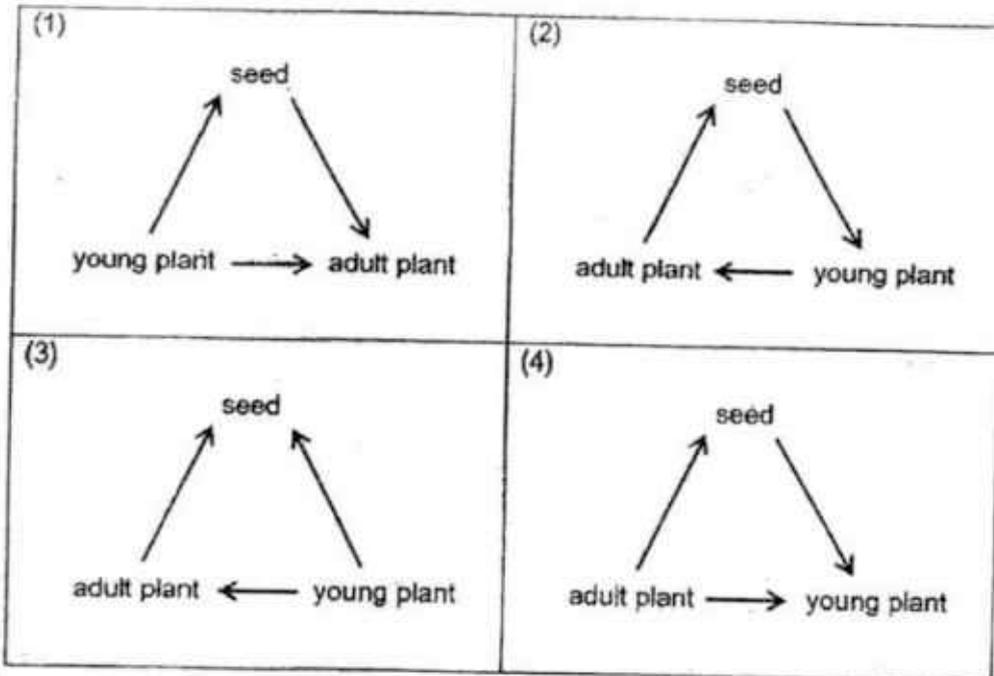
- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 10 questions in this booklet.
- 4 Answer ALL questions.
- 5 The marks are given in the brackets [ ] at the end of each question or part question.

<b>Question Paper</b>	<b>Possible Marks</b>	<b>Marks Obtained</b>
<b>Total</b>	<b>10</b>	

**Section A : Multiple Choice Questions (5 marks)**

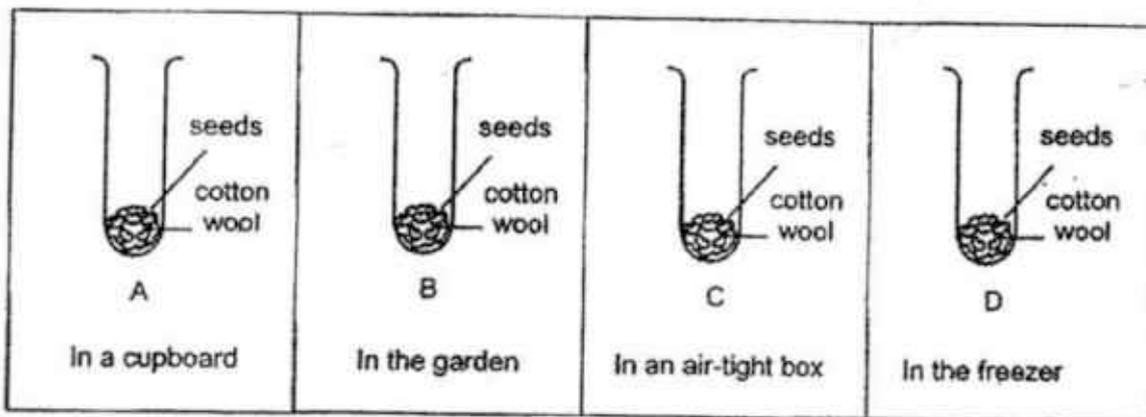
For each question from 1 to 5, four options are given. One of them is the correct answer. Make your choice and write your answer, 1, 2, 3 or 4, in the brackets provided. (5 x 1 mark)

1. Which one of the following diagrams correctly shows the life cycle of a string bean plant?



( )

2. Tom prepared four set-ups, A, B, C and D, as shown below. Each set-up contained 5 bean seeds which are placed on a piece of cotton wool which was wet with a teaspoon of water daily.

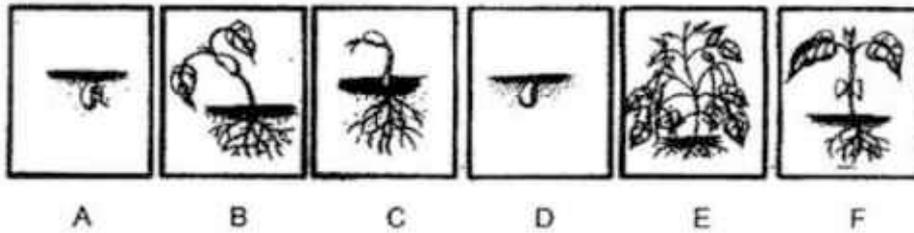


After 2 weeks, Tom noticed that the seeds from two set-ups had grown into young plants. Which two of the above set-ups would have shown what Tom had seen?

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

( )

3. The diagram below shows drawings of the growth of a seed.



Which one of the following correctly shows the order of growth of the seed?

- (1) D → A → B → C → F → E  
 (2) D → A → C → B → F → E  
 (3) D → A → C → F → B → E  
 (4) D → A → B → C → E → F
- ( )
4. The diagram below shows a papaya and an avocado cut into half. The papaya has many small seeds and the avocado has one big seed.



Papaya



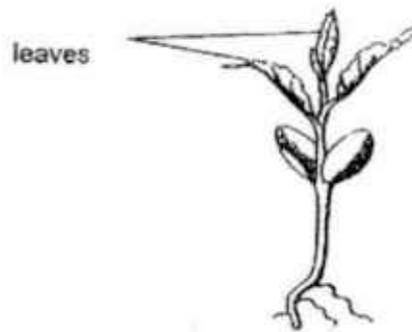
Avocado

Which of the following statements correctly explains why plants have seeds?

- (1) To protect the fruit.  
 (2) To let the seeds grow into flowers.  
 (3) To make sure the type of the fruit continue to exist.  
 (4) To give the soil nutrients as the seeds fall to the ground.

( )

5. The diagram below shows a young plant.



Which one of the following statements is correct about the young plant?

- (1) The young plant grows leaves first.
- (2) The leaves will grow into an adult plant.
- (3) The roots provide food for the young plant.
- (4) The roots of the young plant take in water.

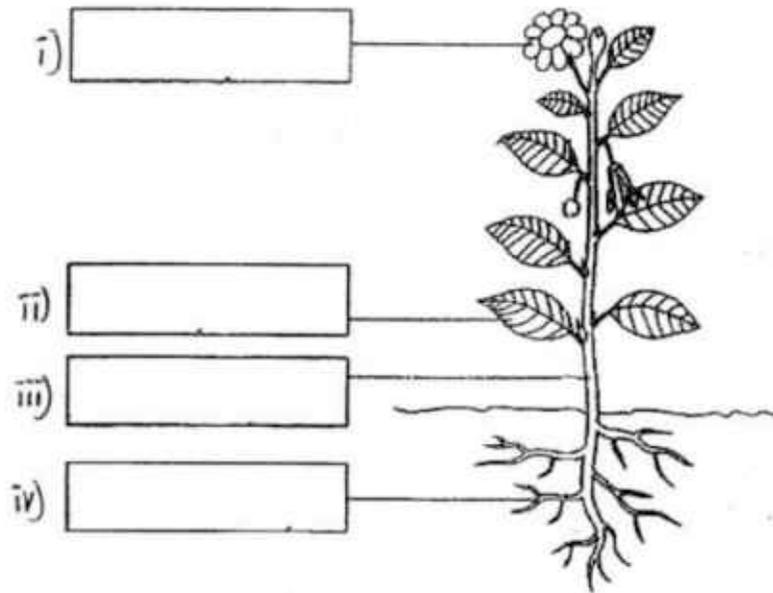
( )

**Section B : Structured and Open-Ended Questions (5 marks)**

For questions 6 to 10, write your answers in this booklet.

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

6. The diagram shows a plant. Name the parts of the plant in the boxes provided. [1]



7. The diagram below shows 3 different types of plants. They are grapevine, pea and money plants.



Grapevine Plant



Pea Plant



Money Plant

- (a) Besides having leaves, roots and stems, state a common characteristic of the 3 plants. [½]

---



---

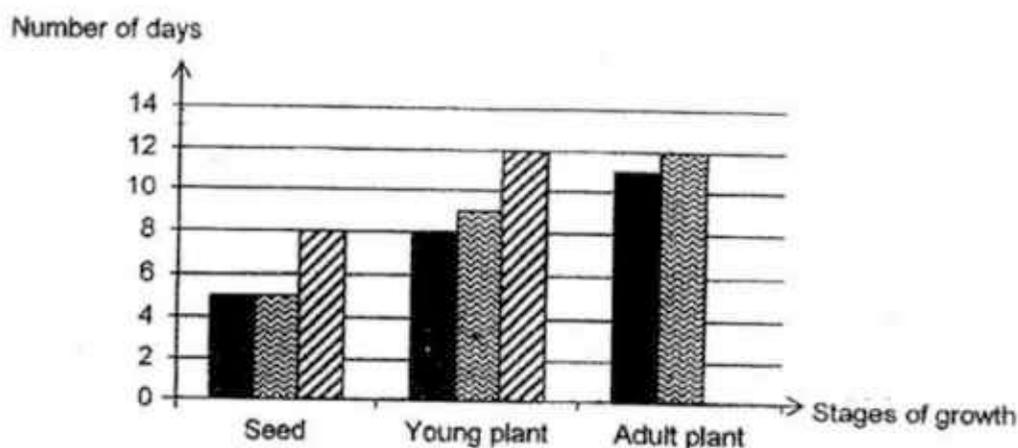
- (b) Explain why these plants climb upwards [½]

---



---

8. The graph below shows the number of days a green bean takes to grow from a seed to a young plant and then to an adult plant. Each seed was placed in 3 different containers, A, B and C and placed by the classroom window. They were watered daily.



Key :

- represents container A
- represents container B
- represents container C

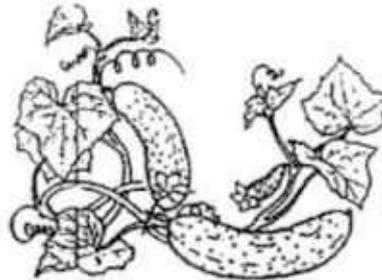
- (a) Based on the graph above, what is/are the possible reason(s) for the seed in container C to take the longest time to grow from a seed to a young plant? [1]  
Put a tick (✓) next to the statement which is true.

Statement	Tick (✓) if true
No light can enter container C.	
The seed in container C has been boiled.	
Container C allows the least air to enter the container.	
The seed in container C was given the least amount of water.	

9. The diagram below shows mushrooms and a cucumber plant.



Mushrooms



Cucumber plant

- (a) State a similarity between the mushrooms and the cucumber plant. [½]

---

- (b) State a difference between the mushrooms and the cucumber plant. [½]

---



---

10. John conducted an experiment. He placed four identical beakers, A, B, C and D in locations with different temperatures. 20 seeds were placed in each beaker. They were watered daily. The table below shows the number of seeds that grew into young plants over 1 week.

Beaker	A	B	C	D
Temperature (°C)	5	12	23	35
Number of seeds that grow into young plants	0	3	15	8

- (a) Based on the results in the table, what is the most suitable temperature for seeds to grow into young plants? Give a reason for your answer. [½]

---



---

- (b) State a variable that had to be kept the same to make this experiment fair. [½]

---

End of Booklet

EXAM PAPER 2017 (P4)

SCHOOL : ACS

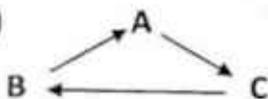
SUBJECT : SCIENCE

TERM : CA1

ORDER CALL :

Q1	Q2	Q3	Q4	Q5
4	2	2	1	2

6)



7) egg / larva

8)a) The young of organism X resembles the adult.

b) The young of organism X has nymph stage and is an adult but the young of organism Y has two.

9)a) The young resembles the adult.

b) The adult cockroach wings but the Nymph does not.

10)a) It can spread diseases.

b) Put fish in the pond to eat the larva and pupa.

Bite – Sized Assessment 2

Q1	Q2	Q3	Q4	Q5
2	1	2	3	4

6)i)flower      ii)leaf      iii)stem      iv)roots

7)a)They have weak stems.

b)To get maximum sunlight to make food.

8)a)

✓
✓

9)a)Both need air, food and water to survive.

b)The mushroom does not make its own food but the cucumber plant does.

10)a)23 °C . It had the highest amount of seed that grew into young plants.

b)The amount of water given to each beaker.

**Mini Test 1**

**PRIMARY 4  
SCIENCE**

2<sup>nd</sup> March 2017

Name: \_\_\_\_\_ ( )

Class: Primary 4 Teamwork \_\_\_\_\_

Total time: 30mins

**INSTRUCTIONS TO CANDIDATES**

1. Write your Name, Class and Register No. in the spaces provided above.
2. DO NOT turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write all your answers in this booklet.

Marks (Booklet A) :	12
Marks (Booklet B) :	8
Total Marks (Booklets A & B) :	20

This booklet consists of 8 printed pages, excluding the cover page.

**Section A (12 marks)**

For each question from 1 to 6, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and write your answer in the brackets provided.

1. Study the classification table below.

Items made of magnetic metals	Items made of non-magnetic metals
iron bar	gold coin
aluminium foil	silver bracelet
steel screw	copper wire

Which of the above items has been placed in the wrong group?

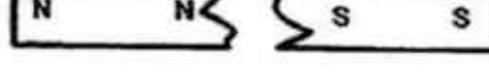
- (1) gold coin
- (2) steel screw
- (3) copper wire
- (4) aluminium foil

(     )

2. A bar magnet broke into two pieces when it dropped on the floor.

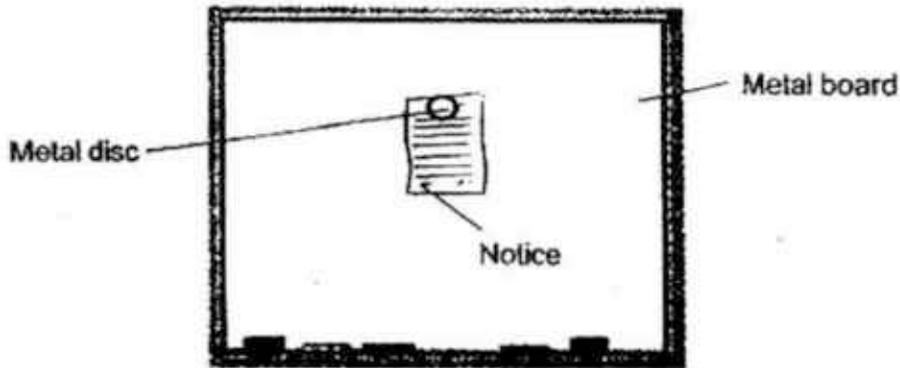


Which diagram below shows the correct poles of the broken pieces of the magnet?

- (1) 
- (2) 
- (3) 
- (4) 

(     )

3. Candy has a metal board and a metal disc. The notice could not stay on the metal board. So, she uses the metal disc to hold it on the metal board as shown below.

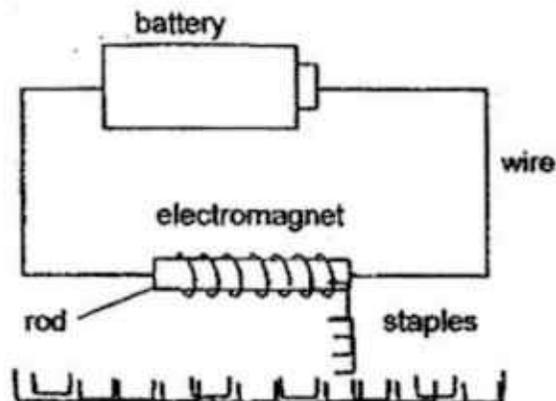


Which of the following statement best explain why the metal disc could hold the notice on the metal board?

- (1) The metal disc is a magnet and it is attracted to the metal board.
- (2) The notice is a magnet and the metal disc is attached to the notice.
- (3) The metal disc and the metal board are both made of non-magnetic materials.
- (4) The metal board is a magnet and the metal disc is made of a non-magnetic material.

( )

4. The set up below shows an electromagnet. The electromagnet can pick up 4 staples from a plate of staples as shown below.

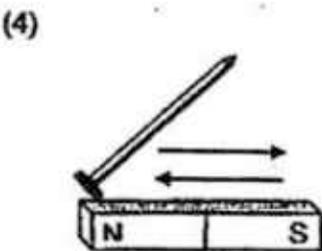
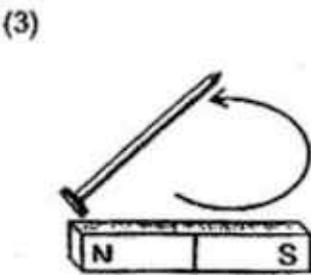
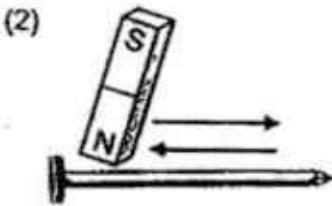
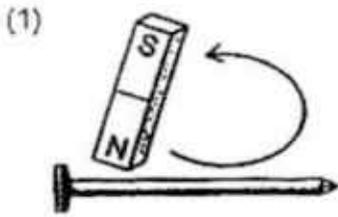


Tina wanted the electromagnet to pick up more metal staples. What should she do?

- (1) Use a bigger size rod
- (2) Increase the length of wire
- (3) Increase the number of rod
- (4) Increase the number of batteries

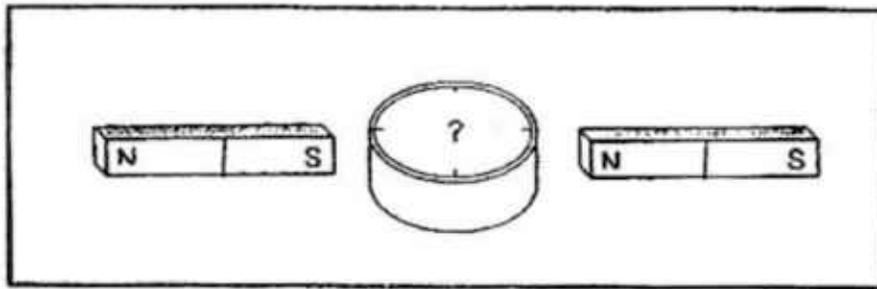
( )

5. Sandy was trying to make a temporary magnet using a bar magnet and an iron nail. Which of the following shows the correct stroking method?



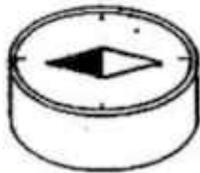
( )

6. Mr Lim taped two bar magnets and placed a compass in between them on a table as shown below.



Which of the compass below shows the correct directions of the needles?

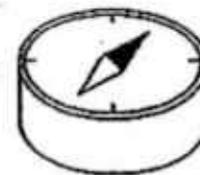
(1)



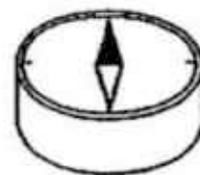
(2)



(3)



(4)



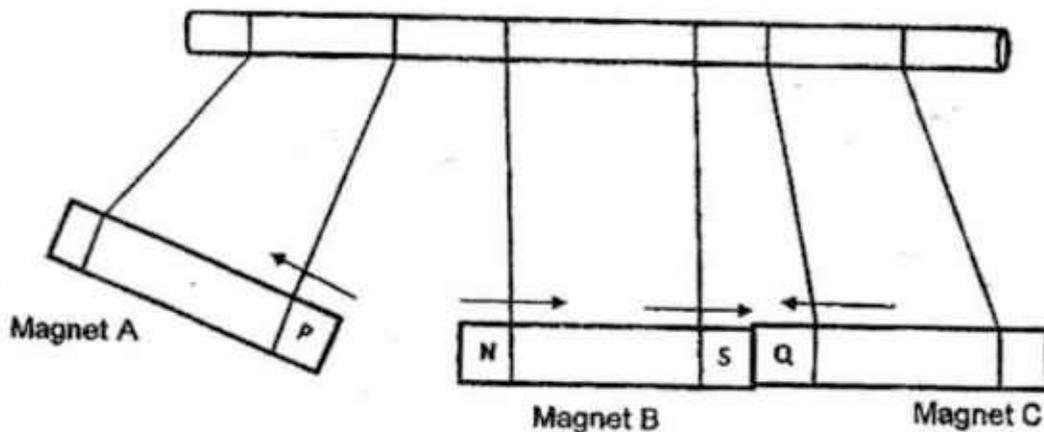
( )

**Section B (8 marks)**

Read questions 7 to 10 carefully. Write your answers in the spaces provided.

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

7. The diagram below shows what happens after three magnets are suspended from a pole. The arrows show the magnets movement. The poles of Magnet B are as labelled below.



Identify the poles of P and Q.

[1]

- (a) Pole P: \_\_\_\_\_  
(b) Pole Q: \_\_\_\_\_

- (c) Explain what would happen to both Magnet A and Magnet C when Pole P of Magnet A is brought near to Pole Q of Magnet C.

[1]

---

---

8. Paul had four button magnets of different sizes as shown below.



He put the button magnets, one at a time, into a tray full of paper clips to see how many paper clips would be attracted to each magnet. He recorded the results in the table below.

Magnets	Number of paper clips attracted
W	4
X	5
Y	10
Z	6

(a) Based on his results, arrange in order, the strength of the magnets, from the strongest to the weakest by writing the letters, W, X, Y or Z in the correct boxes below. [1]

,  ,  ,

Strongest  $\longrightarrow$  Weakest

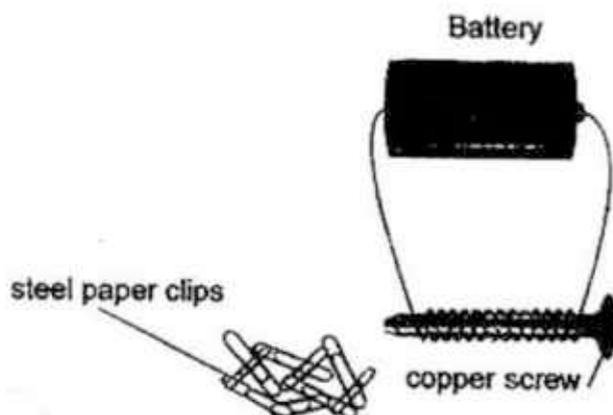
(b) Based on his experiment, what can he conclude in terms of the size of the magnet and the strength of the magnet? [1]

---



---

9. Dave set up an experiment using a new battery as shown in the diagram below.



(a) Dave placed some steel paper clips close to the screw, but the screw did not attract the steel paper clips. Explain why. [1]

---

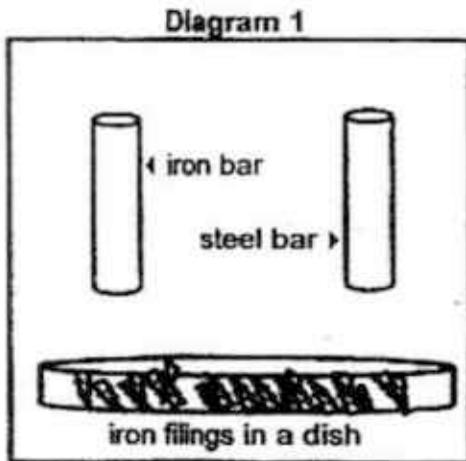
---

(b) What should Dave change in this experiment if he wants to attract the steel paper clips? [1]

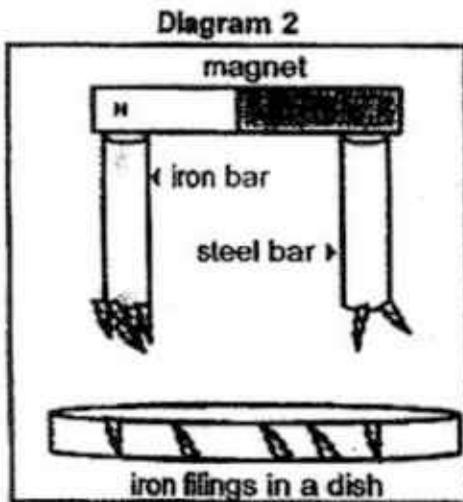
---

---

10. When the iron bar and the steel bar were brought near to the iron filings in a dish, none of the iron filings moved.



When a magnet was placed over the iron bar and the steel bar, the iron filings moved as shown in the diagram below.



- (a) Based on the information above, explain what had happened to the iron and steel bar that resulted in the observation in Diagram 2. [1]

---



---

- (b) State one difference about the two bars used in the experiment in terms of their magnetic strength. [1]

---



---

THE END



EXAM PAPER 2017 (P4)

SCHOOL : PEI HWA

SUBJECT : SCIENCE

TERM : CA1

ORDER CALL :

Q1	Q2	Q3	Q4	Q5	Q6				
4	2	1	4	1	1				

7)a)North    b)North

c)As P and Q poles that are facing each are like poles, they will repel each other.

8)a)Y , Z , X , W

b)Paul can conclude that the strength of a magnet does not depend on what size it is.

9)a)Copper is a non-magnetic material so it cannot be turned into a temporary magnet or a magnet.

b)He should change the screw to a magnetic material such as iron, steel, nickel or col bat if he wants to attract steel paper clips.

10)a)The iron bar and steel bar were magnetised so they would be able to attract some iron filings.

b)The iron bar is stronger than the steel bar base on its magnetic strength.



**CONTINUAL ASSESSMENT 1 /  
2017 PRIMARY 4**

**SCIENCE  
(BOOKLET A)**

Name : \_\_\_\_\_ ( )

Date : 6 March 2017

Class : P4 \_\_\_\_\_

Total Time for Booklet A & Booklet B : 1 hour

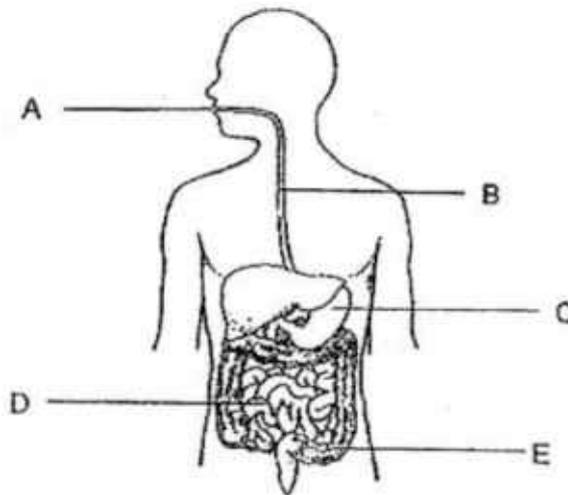
**INSTRUCTIONS TO CANDIDATES**

1. Write your name, index number and class in the space above.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. For Section A, shade your answers for questions 1 to 10 in the Optical Answer Sheet (OAS) provided.
6. For Section B, write your answers for questions 11 to 15 in the space provided in the booklet.
7. The total marks for Booklet A is 20 marks.

**Section A (20 marks)**

For each question 1 to 10, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet.

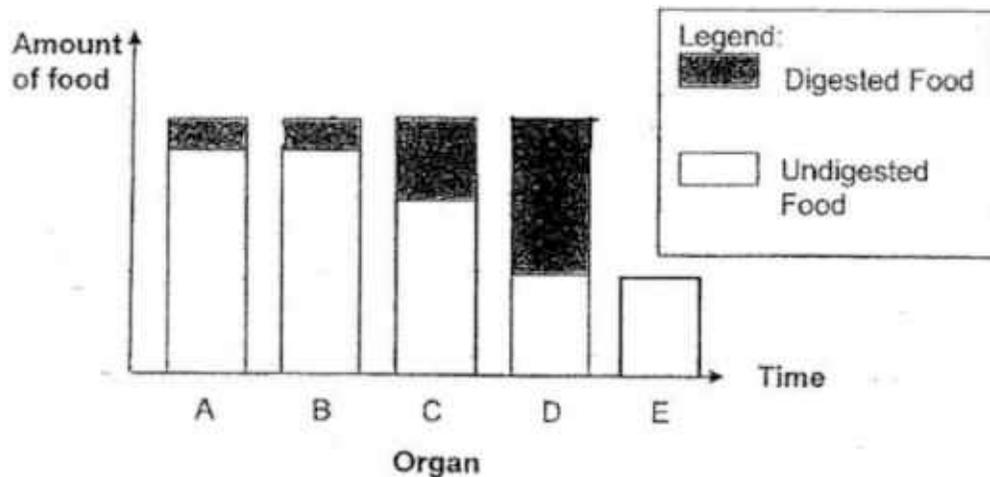
1. In the diagram below, A, B, C, D and E are parts of the digestive system.



Which parts of the system produce digestive juices?

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

2. Melissa ate a sandwich during recess. The bar graph below shows the amount of digested and undigested sandwich in her five organs, A, B, C, D and E of the digestive system at the end of the day.



Which one of the following most likely represents Organ E?

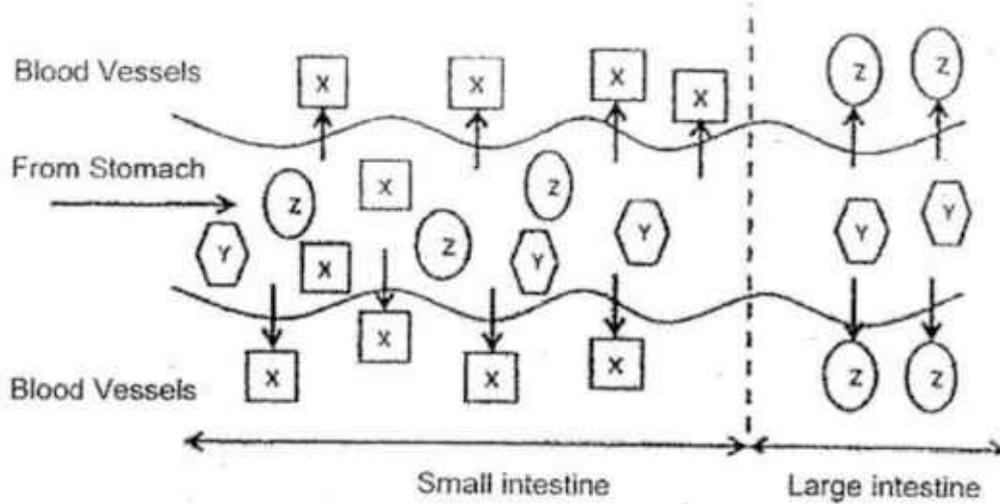
- ( 1 ) Mouth
- ( 2 ) Stomach
- ( 3 ) Small intestine
- ( 4 ) Large intestine

3. Which of the following statements are true about the human digestive system?

- A: All the food goes into the large intestine.
- B: Digested food is used as energy for the body.
- C: Undigested food remains in the small intestine.
- D: Digested food passes through the walls of small intestine into the blood.
- E: The blood carries the digested food to all parts of the body.

- ( 1 ) A, B and C only
- ( 2 ) B, D and E only
- ( 3 ) C, D and E only
- ( 4 ) All of the above

4. The diagram below represents parts of the human digestive system. X, Y and Z represent different substances that are absorbed into the blood as shown below.



Based on the diagram above, which one of the following best represents substances X, Y and Z?

	Substance X	Substance Y	Substance Z
(1)	Water	Digested Food	Undigested Food
(2)	Digested Food	Undigested Food	Water
(3)	Water	Undigested Food	Digested Food
(4)	Undigested Food	Digested Food	Water

5. An ambulance can sound its siren and flash its light. However, it is not a living thing because it cannot \_\_\_\_\_.

- A: Grow
- B: Reproduce
- C: Respond to changes

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

6. Tanya put 200g of food and 200ml of water into each of the four containers A, B, C and D. She then placed them in a room and recorded the amount of food and water left at the end of 4 days.

Container	Amount of food left (g)	Amount of water left (ml)
A	70	80
B	200	200
C	25	10
D	110	95

Based on the information above, which container is likely to contain a non-living thing?

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

7. Study the animals shown below.



Animal X



Animal Y

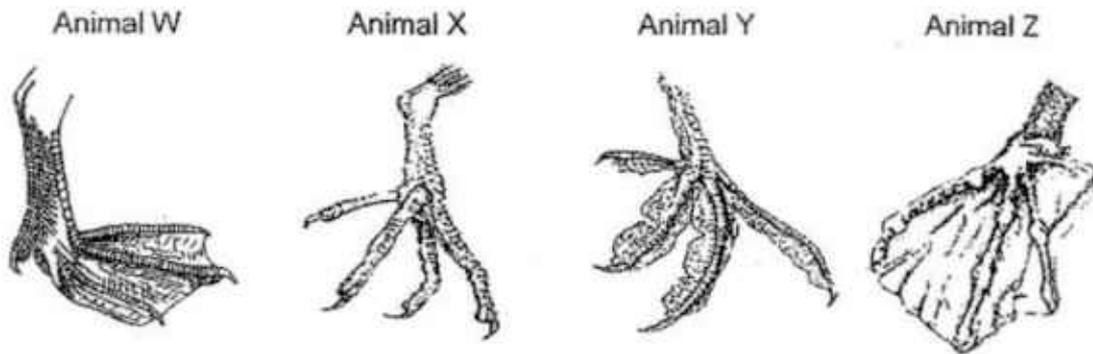
What do Animal X and Animal Y have in common?

- (1) The way they reproduce
- (2) The way they move
- (3) The type of food they eat
- (4) The type of outer covering

8. Mei used a pair of flippers as shown in the diagram below to swim during her swimming lesson.



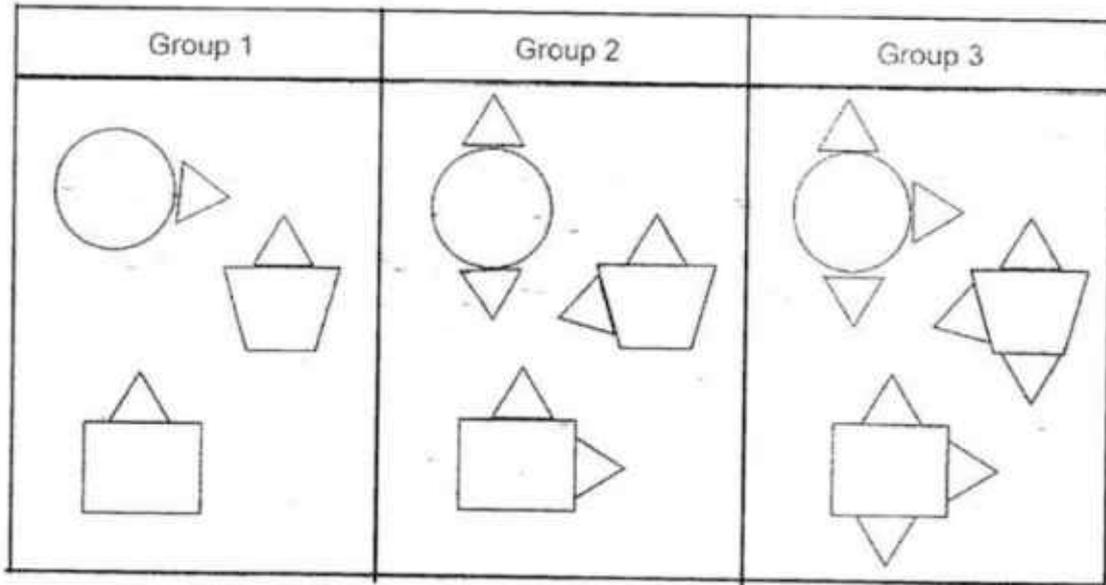
She observed some birds in the diagram below. She observed that their feet also help them to swim in water.



Which of the animal(s) feet help them to swim in the water?

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

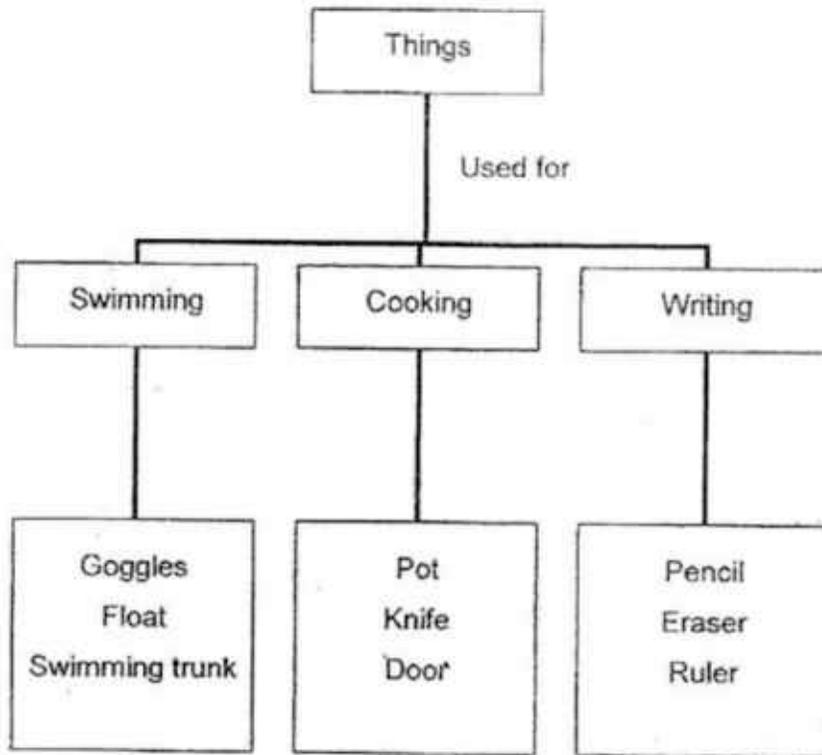
9. Study the groups of objects below.



The objects are grouped according to \_\_\_\_\_.

- (1) size
- (2) shape
- (3) number of sides
- (4) number of triangles

10. Look at the classification chart below.



Which one of the following things has been wrongly classified?

- (1) Door
- (2) Knife
- (3) Eraser
- (4) Goggles

~ End of Section A ~

CONTINUAL ASSESSMENT 1 / 2017

PRIMARY 4

SCIENCE

(BOOKLET B)

Name : \_\_\_\_\_

Date : 6 March 2017

Class : P4 \_\_\_\_\_

Total Time for Booklet A & Booklet B : 1 hour

**INSTRUCTIONS TO CANDIDATES**

1. Write your name, index number and class in the space above.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. For Section A, shade your answers for questions 1 to 10 in the Optical Answer Sheet (OAS) provided.
6. For Section B, write your answers for questions 11 to 15 in the space provided in the booklet.
7. The total marks for Booklet B is 20 marks.

Booklet A		/20
Booklet B		/20
Total		/40
Parent's Signature		

**Section B (20 marks)**

Write your answers for questions 11 to 15 in this booklet.

11. Akbar ate some food containing 500g of substance P, Q, and R.

The table below shows the amount of undigested food left in different parts (A, B, C and D) of his digestive system.

Amount of undigested food left in the different parts (g)				
	Part A	Part B	Part C	Part D
Substance P	500	300	150	100
Substance Q	500	500	500	500
Substance R	300	100	0	0

(a) In which part of the digestive system (A, B, C or D) did digestion of Substance R begin? [1m]

\_\_\_\_\_

(b) Which of the three different substances (P, Q or R) could not be digested? Explain your answer. [1m]

\_\_\_\_\_  
\_\_\_\_\_

(c) How does the human body get rid of undigested food in the digestive system? [1m]

\_\_\_\_\_  
\_\_\_\_\_

	3
--	---

12. Jen placed two biscuits of the same size and type into two identical test-tubes.

She then crushed the biscuit in Set-up A into small pieces but left the whole biscuit in Set-up B as shown below.



The same type and amount of fruit juice was added into each set-up at the same time. After some time, Jen observed the amount of biscuit left in each test tube.

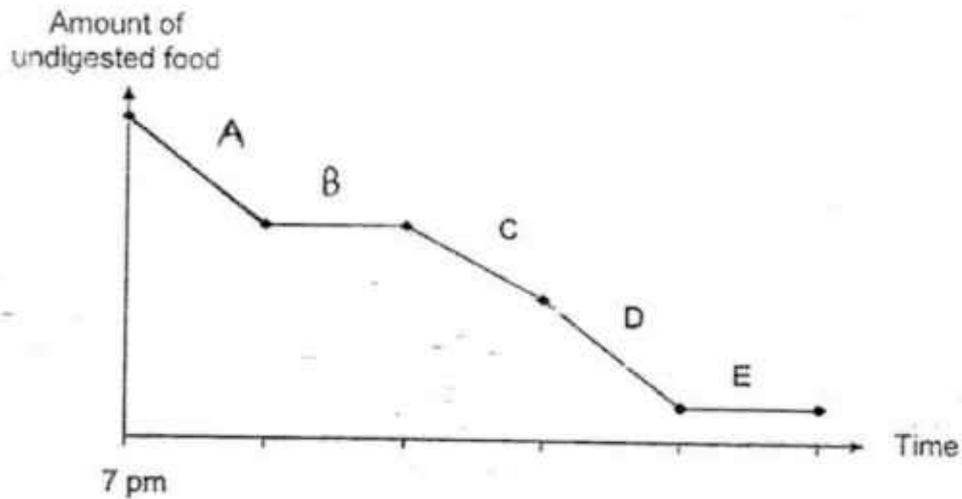
- (a) In which set-up (A or B) will the biscuit most likely turn into a fine pulp? Explain your answer. (2m)

---

---

	2
--	---

Yu Fei had his dinner at 7 p.m. The graph below shows the amount of undigested food left in the different organs over a period of time. A to E represents organs in the digestive system.



- (b) Based on the graph above, at which part(s) of the digestive system does/do digestion take place? Explain your answer. [2m]

---



---

- (c) State what will happen if Part D, is removed from the human digestive system. [1m]

---



---

	3
--	---

13. Stool samples are waste materials that leave the human body via the human digestive system.

Bryan took two of his stool samples for test and recorded the amount of water in each stool sample in the table below.

Stool sample	Amount of water in the stool (cm <sup>3</sup> )
X	70
Y	15

- (a) Which part of his digestive system is mainly responsible for controlling the amount of water present in the stool? [1m]

---

- (b) Which stool sample X or Y, shows that Bryan is **most** likely having a diarrhoea? Explain your answer. [1m]

---

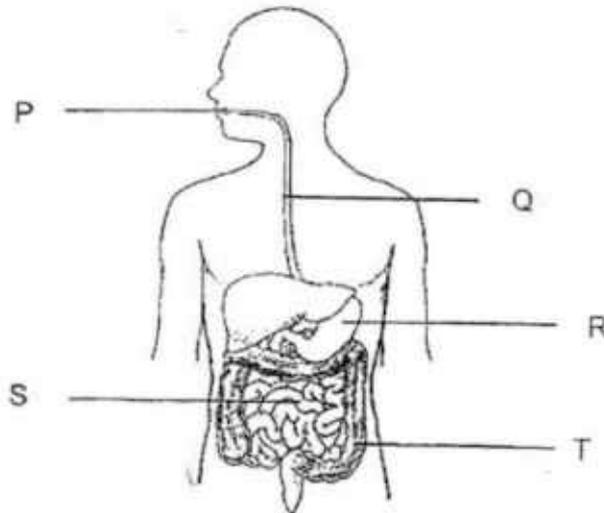
---

	2
--	---

- (c) State the missing organ which causes the following process in the human body. [1m]

Process	Missing organ
Food cannot travel from mouth to stomach	
Nutrients cannot be absorbed from digested food	

- (d) The diagram below shows parts (P, Q, R, S and T) of a digestive system. [1m]

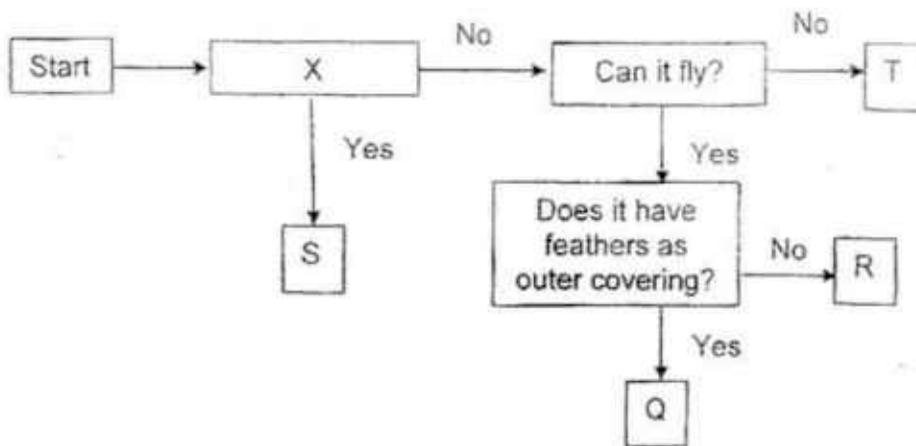


Based on the given diagram, identify the parts where

- (i) digestion first takes place: \_\_\_\_\_
- (ii) digestion does not take place: \_\_\_\_\_

	2
--	---

14. Study the flowchart below.



(a) Based on the flow chart above, describe one similarity and one difference between Animal Q and Animal R. [2m]

(i) Similarity:

---

---

(ii) Difference:

---

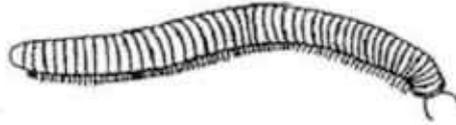
---

(b) If S is a plant, suggest a suitable question for X. [1m]

---

	3
--	---

(c) Wei Hern saw an animal in his school garden. Based on his observations, he concluded that it was an insect. Below is a diagram of the animal.



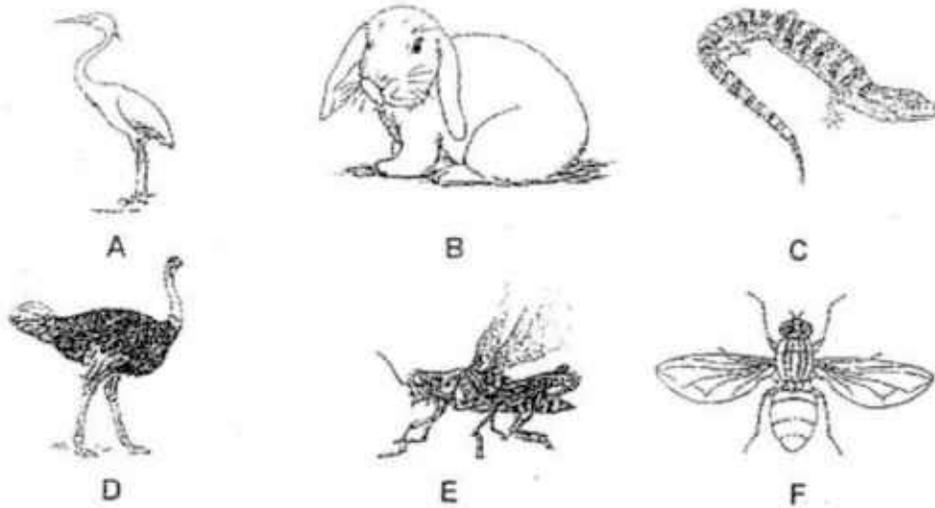
Do you agree with Wei Hern's conclusion? Give a reason. [1m]

---

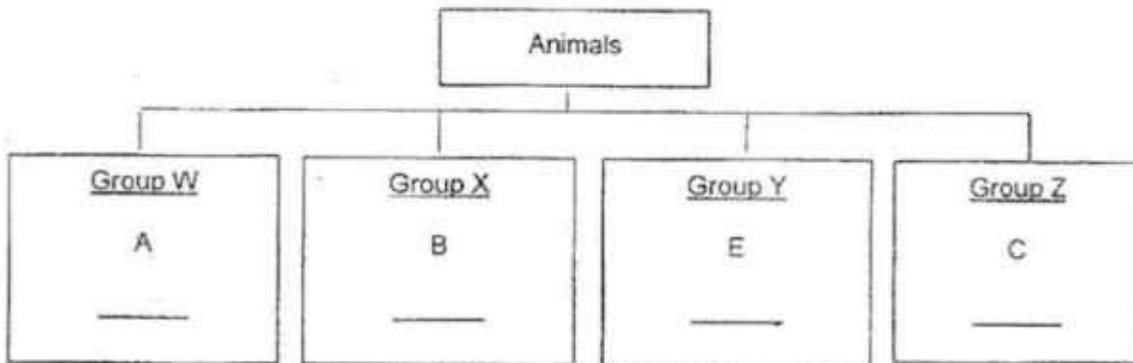
---

	1
--	---

15. Bala collected pictures of six animals (A, B, C, D, E and F) for his science project.



(a) He wanted to classify these animals based on their body covering. He used the table below to group the above animals into 4 groups, W, X, Y and Z. Complete the table below by putting in the letters D and F. [1m]



(b) Which group (W, X, Y or Z) should a snake be placed in? [1m]

\_\_\_\_\_

(c) State one characteristic, other than its body covering, shared by the snake and the animal(s) in the group it belongs to. [1m]

\_\_\_\_\_

\_\_\_\_\_

Bala regrouped the animals using another common characteristic as shown in the table below.

Group 1	Group 2
A, E, F	B, C, D

- (d) What characteristic did Bala use to regroup the animals as shown in the table above? [1m]

---

---

	1
--	---

~ End of Paper ~

EXAM PAPER 2017 (P4)

SCHOOL : River Valley

SUBJECT : SCIENCE

TERM : CA1

ORDER CALL :

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

11)a)Part A

b)the amount of undigested food remained the same.

c)The undigested food will be passed out through the anus

12)a)Set-up A will turn to a fine pulp because smaller pieces so it has larger surface area and it is faster to absorb the juice to turn into a pulp.

b)The amount of undigested food decreases as it passes through A,C and D ,showing that food is digested.

c)Food cannot be digested properly.

13)a)Large intestine

b)There is more amount of water in sample X than sample Y.

c)Gullet

Small intestine

d)i)Part P

ii)Part Q and T

14)a)i)Both animal Q and animal R can fly

ii)Animal Q have feathers as outer covering but animal R does not.

b)Can it make its own food?

c)It does not have 3 body parts.

15)a)Group W – D

Group Y – F

b)Group Z

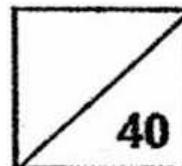
c)It belongs to group Z because it lay eggs.

d)Bala grouped according to can fly or cannot fly.

**Topical Test for 2017  
SCIENCE  
Primary 4**

Name: \_\_\_\_\_

Total  
Marks:



Class: Pr 4 \_\_\_\_\_

Register No. \_\_\_\_\_ . Duration: 1 hour

Date: 3 March 2017

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. This paper consists of 2 sections, Part I and Part II.
4. For questions 1 to 11, write the correct answer in the brackets provided.
5. For questions 12 to 18, give your answers in the spaces provided in Part II.

	<b>Maximum Marks</b>	<b>Marks Obtained</b>
<b>Part I</b>	<b>22 marks</b>	
<b>Part II</b>	<b>18 marks</b>	
<b>Total</b>	<b>40 marks</b>	

\* This booklet consists of 12 pages. (including cover page)

This paper is not to be reproduced in part or whole without the permission of the Principal.

**Part I (22 Marks)**

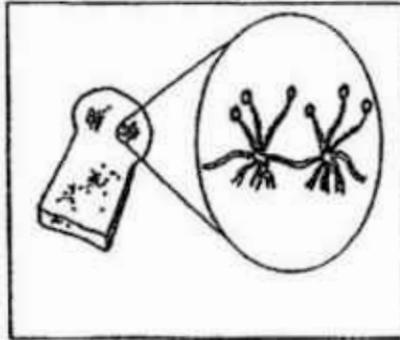
For each question from 1 to 12, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and write your answer in the brackets provided.

1. Which of the following organism(s) does/do not reproduce by spores?

A. tomato plant



B. bread mould



C. sunflower plant



D. Bird Nest Fern



(1) D only

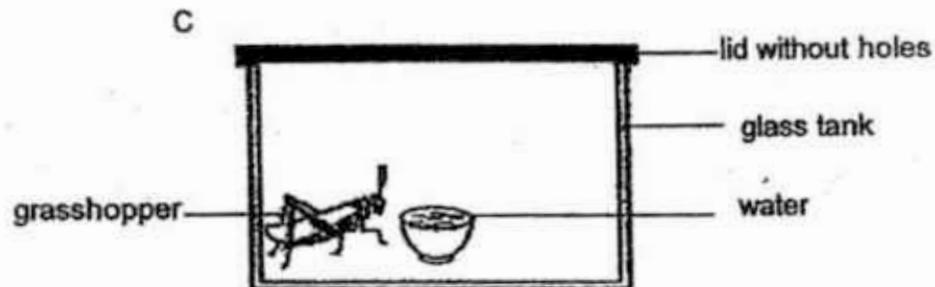
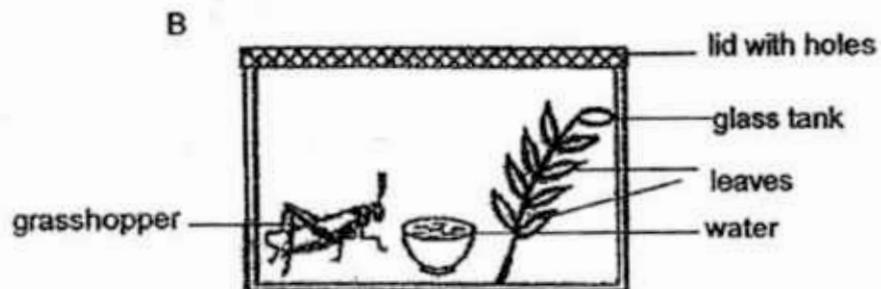
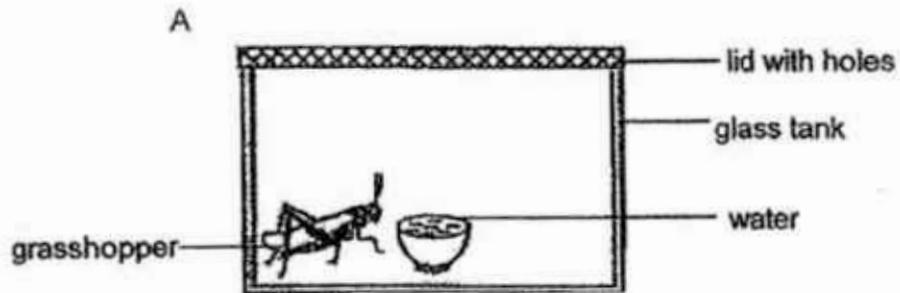
(3) B and C only

(2) A and C only

(4) A, B and D only

( )

2. Jack wanted to keep a grasshopper as a pet. He thought of three possible ways A, B and C to keep his grasshopper alive.



Which of the following is correct?

	Least suitable way to keep the grasshopper	Most suitable way to keep the grasshopper
(1)	C	B
(2)	A	C
(3)	C	A
(4)	A	B

( )

3. Four pupils observed three specimens and recorded their observations in a table. The table shows the characteristics shown by the three specimens A, B and C.

	Needs air	Needs food	Needs water	Needs sunlight	Can move from place to place
A	√	√	√		
B	√	√	√		√
C					√

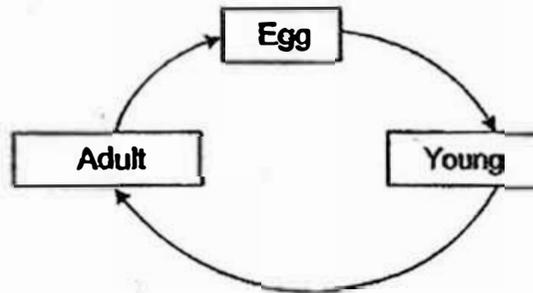
The pupils made the following statements based on their observations.

- Zaki : A is a plant.  
 Nick : B is an animal.  
 Rani : C is a living thing.  
 Lili : A is a non-living thing.

Who made the correct statements?

- (1) Zaki and Rani only                      (2) Nick and Lili only  
 (3) Zaki and Nick only                      (4) Rani and Lili only                      (     )

4. The diagram below shows a life cycle.



Which group of animals may not have a similar life cycle shown above?

- (1) Insects                                      (2) Birds  
 (3) Amphibians                                (4) Reptiles                                      (     )

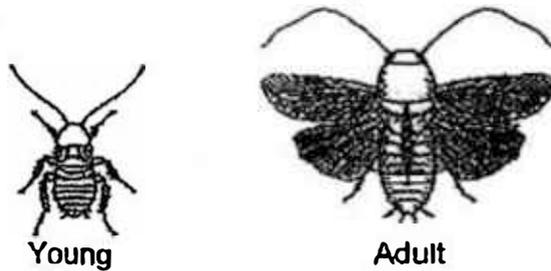
5. Jack kept four mealworm beetles, W, X, Y and Z. They are at different stages of their life cycles. He kept each mealworm beetle in a separate container and he placed 20 g of food in each container. He measured the mass of food left in the container after 3 days and recorded the results in a table.

Mealworm	Mass of food left (g)
W	20
X	12
Y	10
Z	7

Which mealworm is most likely to be in the pupa stage?

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

6. The diagram below shows the young and adult of a cockroach.

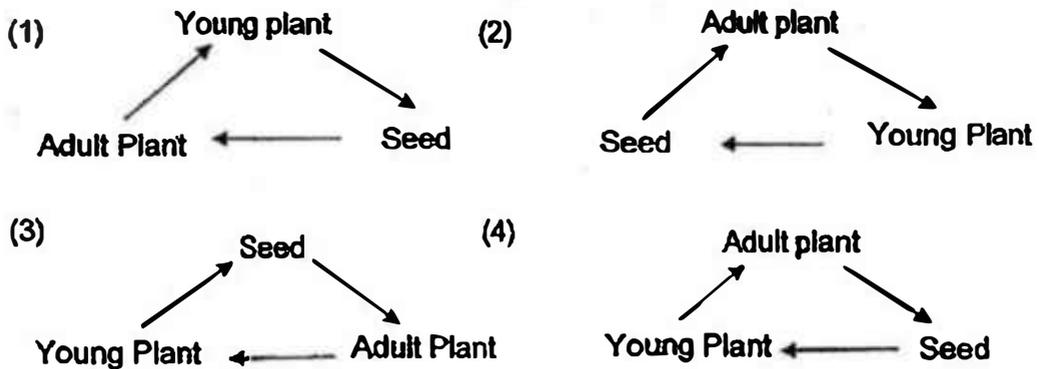


Which of the following statements is/are correct about the young and the adult?

- A. Both have feelers.  
 B. The young does not resemble the adult.  
 C. The young does not have wings but the adult has wings.

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

7. Which one of the following shows the correct order of stages in the life cycle of a flowering plant?



( )

8. The following statements show the different stages of a seed germinating into a seedling.

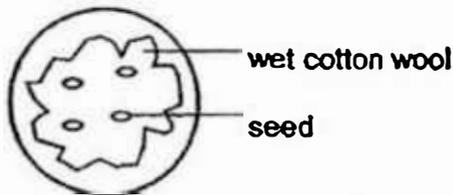
- A. The shoot grows upwards.
- B. The root grows downwards.
- C. The seedling develops its first leaves.
- D. The young plant uses sunlight to make food.

Which one of the following options shows the correct stages of growth?

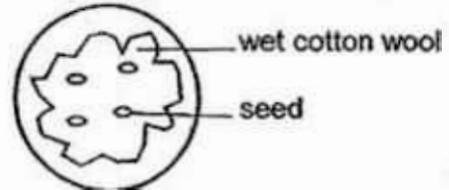
- (1) A → C → B → D                      (2) B → A → C → D  
 (3) C → A → D → B                      (4) C → D → A → B                      (     )

9. Krishnan set up an experiment as shown in the diagram.

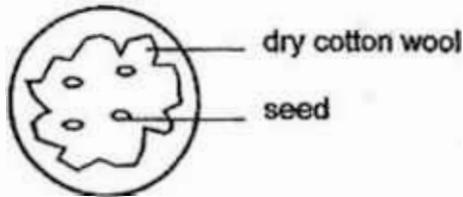
Set-up 1 ( placed under light )



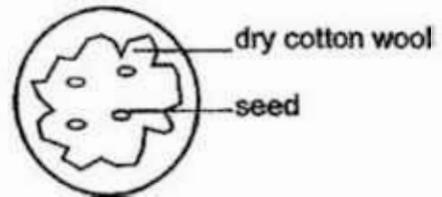
Set-up 2 ( placed in the dark )



Set-up 3 ( placed under light )



Set-up 4 ( placed in the dark )



At the end of the experiment, he observed that only the seeds in set-up 1 and set-up 2 grew into seedlings.

What can Krishnan infer from his observations?

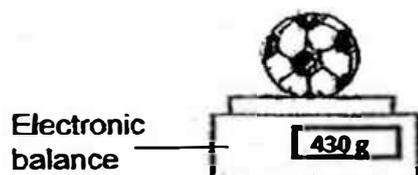
- (1) Seeds need light to germinate.
- (2) Seeds need warmth to germinate.
- (3) Seeds need water to grow into seedlings.
- (4) Seeds need water, light and cotton wool to grow into seedlings.                      (     )

10. Which of the following is not a matter?

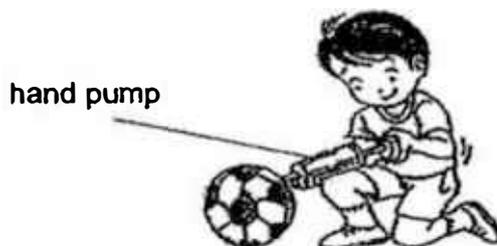
- (1) air (2) heat  
 (3) sand (4) water ( )

11. Sam did an experiment as shown in the diagram below. First, he measured the mass of a ball using an electronic balance and recorded it. Next, he pumped more air into the ball using a hand pump. Then, he measured the mass of the ball again and recorded it.

First



Next



Which one of the following results is mostly likely to be Sam's set of readings and explanation?

	Mass of ball at first (g)	Mass of ball after more air was pumped in (g)	Explanation
(1)	430	410	Air has mass
(2)	430	430	Air takes up space
(3)	430	445	Air has mass
(4)	430	450	Air takes up space

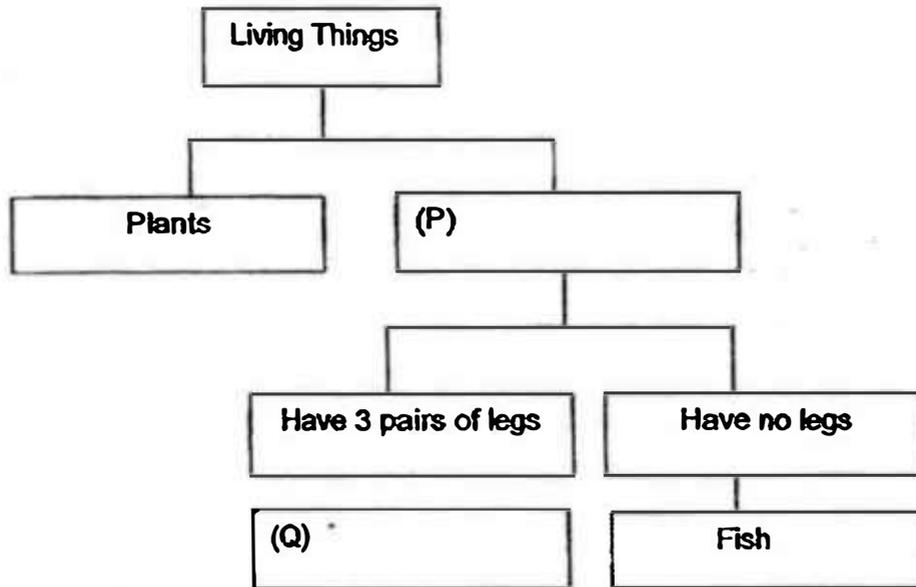
( )

End of Part I

**Part II (18 Marks)**

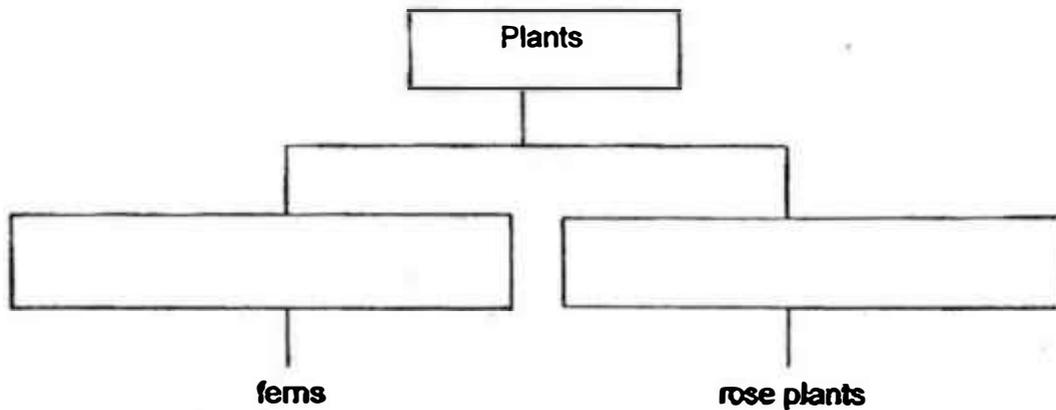
For questions 12 to 18, write your answers in the space provided.

12. Study the classification chart below.



(a) Complete the classification chart above by filling in the boxes P and Q with suitable headings. [1]

(b) How would you classify plants into two groups? Write your answers in the boxes below. [2]



13. Billy planted a seed and observed it for 5 weeks. The seed germinated and he measured the height of the seedling every week and recorded it over five weeks.

Week	Height (cm)
1	2
2	5
3	9
4	12
5	16

- (a) What characteristic of living things does the plant show? [1]

---

- (b) In week 10, another similar young plant was observed to be growing beside Billy's plant. Other than your answer in (a), state another characteristic of living things shown here. [1]

---

14. The picture below shows a caterpillar.



- (a) A caterpillar is the young of an insect. Draw the life cycle of the insect in the box below. [1]

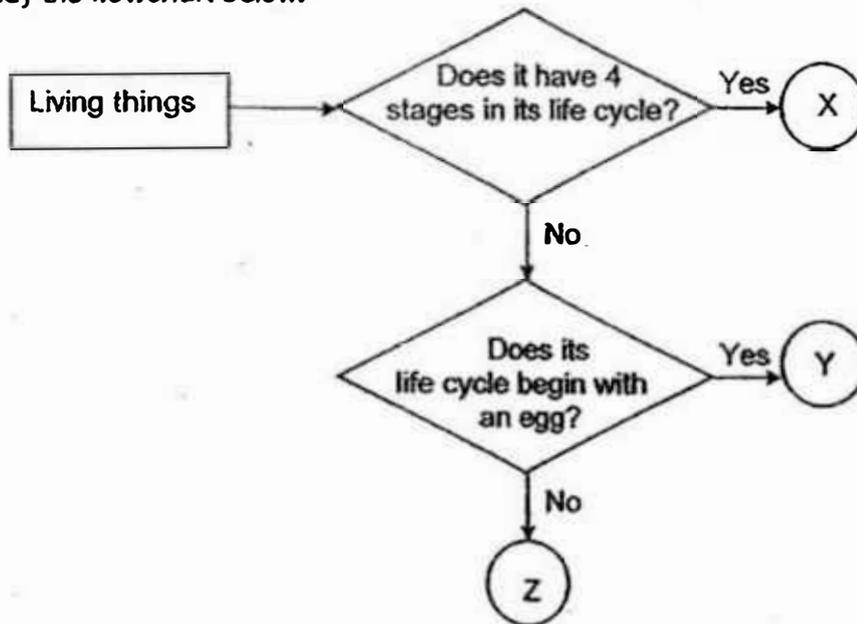
- (b) The adult of the caterpillar lay their eggs on the leaves of some plants. Give a reason why they lay their eggs there. [1]

---



---

15. Study the flowchart below.



(a) Based on the flowchart above, which of the letters X, Y and Z represent the following things? [2]

(i) Plant : \_\_\_\_\_

(ii) Frog : \_\_\_\_\_

(b) Based on the flowchart, what is the difference between X and Z? [1]

---

---

16. Kai Li placed a seed in a container of moist cotton wool for three days. She observed the seed and drew her observations below.



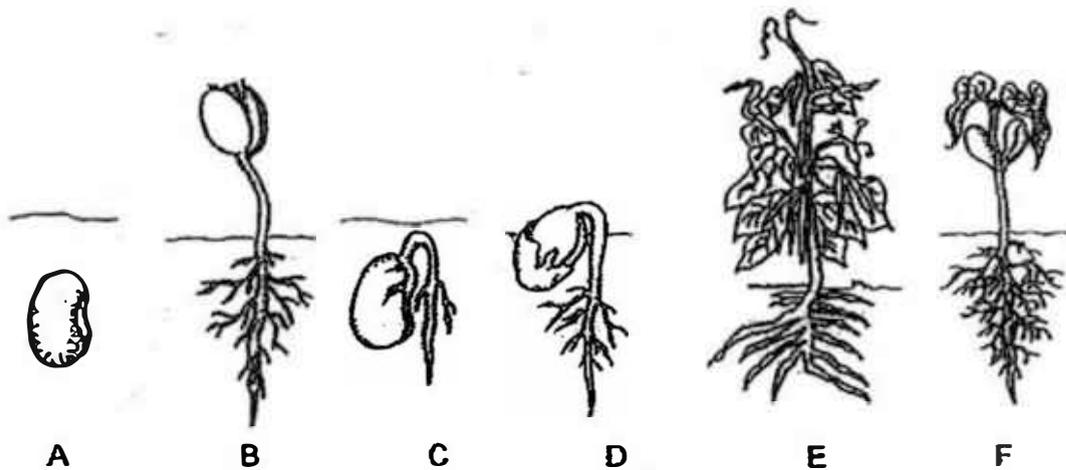
- (a) Explain what has caused the seed to increase in size. [1]

---



---

- (b) The following pictures show the different developmental stages of growth of the seed into a plant.



- Rearrange the above stages (A to F) in the correct order. The first letter 'C' is already done for you. [1]



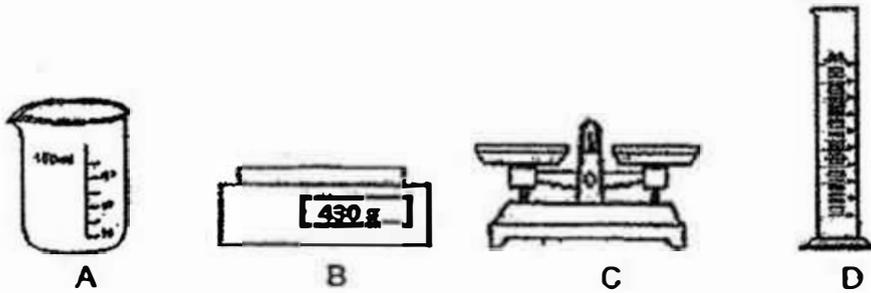
- (c) At which stages (A to F) can the plant make its own food? State your reason why. [2]

---



---

17. The diagrams below show some apparatus commonly used in Science experiments.



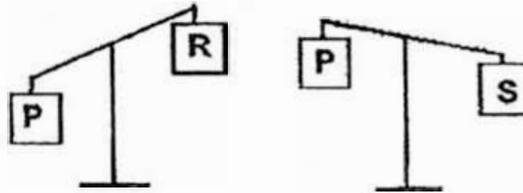
(a) Which two apparatus (A, B, C, D) are used to measure the mass of objects? [1]

---

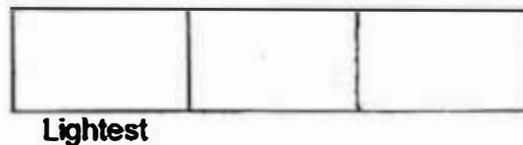
(b) What do the other two apparatus measure? [1]

---

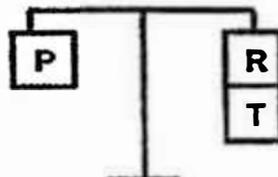
18. Joe was given a lever balance. He used it to compare the masses of three objects as shown in the diagram below.



(a) Study the diagram carefully and arrange the objects, P, R and S according to their masses from the lightest to the heaviest. [1]



Joe placed another object, T, on the first lever balance together with R. The diagram below shows what he observed..



(b) What can you infer about the mass of P, R and T from the observation above? [1]

---



---

End of Paper



**EXAM PAPER 2017 (P4)**

**SCHOOL : ROSYTH**

**SUBJECT : SCIENCE**

**TERM : CA1**

**ORDER CALL :**

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	1	3	1	1	2	4	2	3	2
Q11									
3									

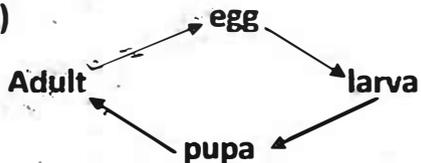
12)a)P: Animals      Q: Insects

b)Non- flowering plant / Flowering plant

13)a)Living things grow.

b)Living things reproduce.

14)a)



b)The butterfly lays egg on leaves so that the caterpillar can feed on the leaves.

15)a)i)Z      ii)Y

b)X has 4 stages in its life cycle while Z does not have 4 stages in its life cycle.

**16)a)It is because the seed absorbed water from the moist cotton wool.**

**b)C→D→B→F→E→A**

**c)Stages E and F. The seedlings have grown leaves to make food.**

**17)a)B and C.**

**b)They find the volume of things.**

**18)a)R P S**

**b)The mass of Pin more that the mass of R or T.**



PEI HWA PRESBYTERIAN PRIMARY SCHOOL  
Mini Test 2

PRIMARY 4  
SCIENCE  
24<sup>th</sup> August 2017

Name: \_\_\_\_\_ ( )

Class: Primary 4 Teamwork \_\_\_\_\_

Total time: 30 mins

**INSTRUCTIONS TO CANDIDATES**

1. Write your Name, Class and Index No. at the spaces provided above.
2. DO NOT turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions in this question booklet.

**FOR TEACHER'S USE**

Marks (Section A) :	12
Marks (Section B) :	8
Total Marks (Sections A & B) :	20

There are a total of 6 pages in this booklet, excluding the cover page.

**Section A (12 marks)**

For each question from 1 to 6, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and write your answer in the brackets provided.

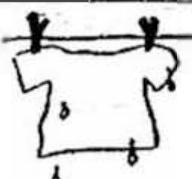
1. Which of the following statements is/are correct?

- A An object expands when it gains heat.
- B An object becomes hotter when it loses heat.
- C Temperature can be measured in degree of Celsius or Fahrenheit.
- D The temperature of an object indicates how dry or wet the object is.

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

( )

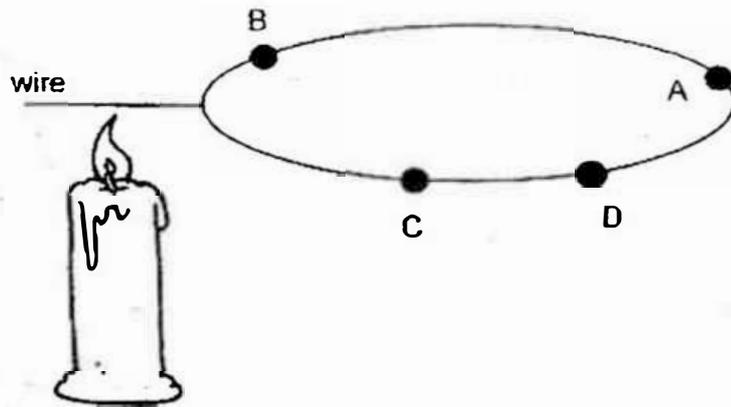
2. Which of the following items in the classification table below is placed wrongly?

Objects that are heat sources	Objects that are not heat sources
 Wet clothes	 Pencil Case
 Burning matchstick	 Melting ice cube

- (1) Wet clothes
- (2) Pencil case
- (3) Melting ice cube
- (4) Burning matchstick

( )

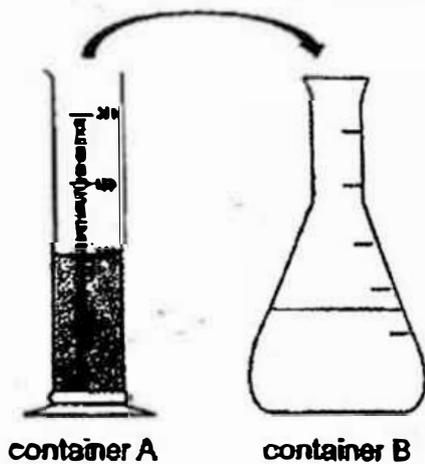
3. Pauline shaped a piece of wire into a circle. She placed four blobs of wax onto different parts of the wire as shown in the diagram below.



In which order would the blob of wax melt and fall?

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

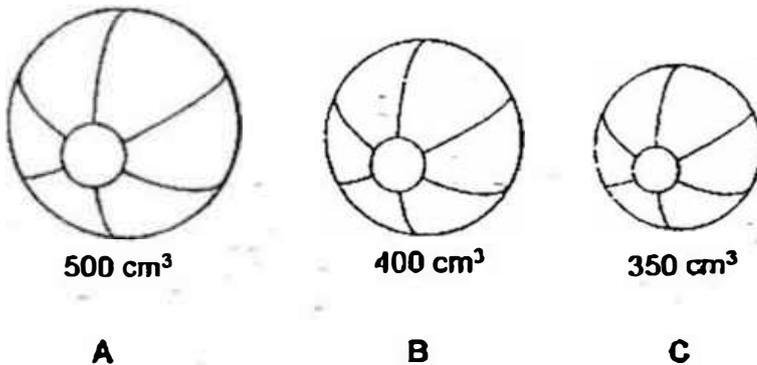
4. Josh poured all the water from container A to container B without spilling.



What is the volume Josh will see in container B?

- (1)- 60 ml
- (2) 80 ml
- (3) 100 ml
- (4) 120 ml

5. Adrian had 3 balls, A, B and C, as shown below. Each ball was labelled with its volume.

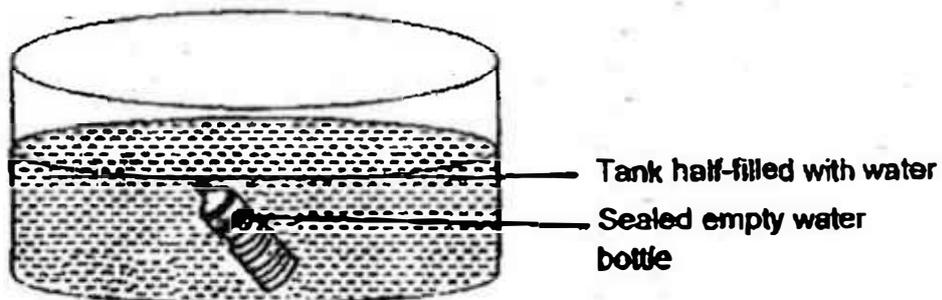


Which ball(s) can Adrain pump in 400 cm<sup>3</sup> of air?

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

( )

6. A sealed empty water bottle was held in the tank which was half-filled with water as seen in the diagram below.



When the bottle cap is being removed, which of the following observations will you see?

- (1) Water flowing out from the bottle.
- (2) Air in the bottle remains in the bottle.
- (3) Water level in the tank remains the same.
- (4) Bubbles of air coming out from the bottle.

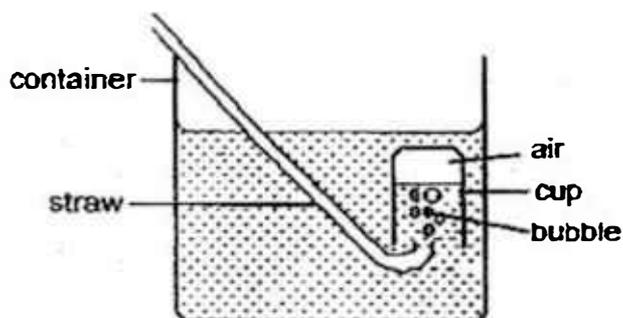
( )

**Section B (8 marks)**

Read questions 7 to 10 carefully. Write your answers in the spaces provided.

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

7. Andy blew into the straw in the set-up below. He observed that the water level in the cup dropped.



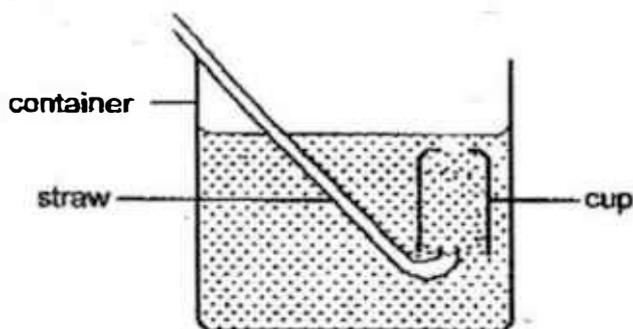
- (a) Why did the water level in the cup dropped?

[1m]

---

---

- (b) A hole was made at the bottom of the cup as shown below.



Will the water level in the cup drop when Andy blow into the straw?

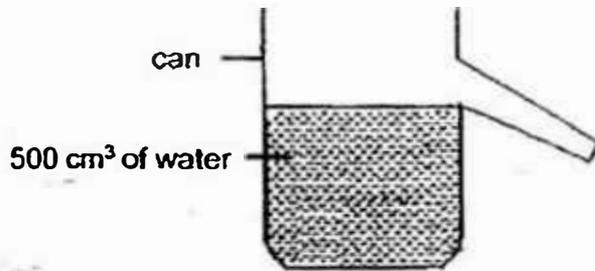
Give a reason for your answer.

[1m]

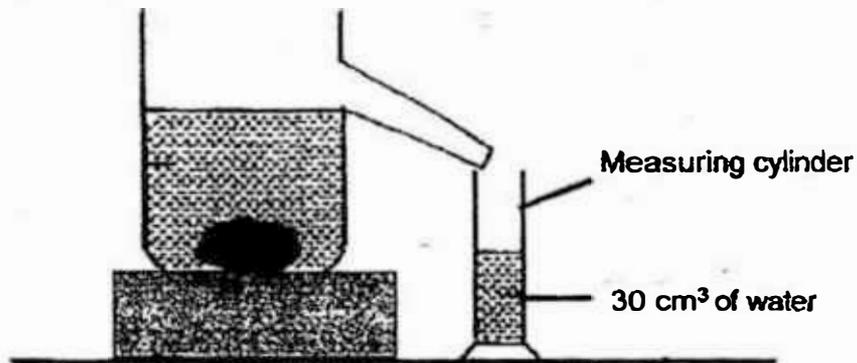
---

---

8. Judy filled a can with  $500 \text{ cm}^3$  of water as shown in the diagram below.



She then gently lowered a stone into the water which sank to the bottom of the can. She observed that some water overflowed into the measuring cylinder at the side of the can as shown in the diagram below.



(a) What is the volume of the stone? \_\_\_\_\_ [1m]

(b) Judy then repeated the experiment replacing the stone with a metal ball, she noticed that the water collected in the measuring cylinder is the same as collected in (a). She concluded that the mass of the stone is the same as the mass of the metal ball.

Do you agree with her conclusion? Explain your answer. [1m]

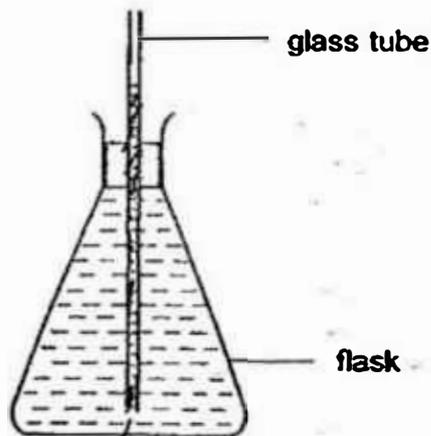
---

---

9. Read the different situations below. Put a tick (✓) under the correct column to show if the underlined object is experiencing 'heat gain' or 'heat loss'. [2m]

	Situation	'heat gain'	'heat loss'
(a)	Melting <u>ice-cream</u> .		
(b)	The <u>thermometer</u> in Mother's mouth.		
(c)	The <u>ice cubes</u> in the hot tea.		
(d)	The <u>water</u> in the cup freezes in the refrigerator.		

10. The picture below shows a flask with a glass tube that has been filled with water at room temperature.



- (a) What will you observe of the water level in the glass tube when the flask is placed in a basin of hot water? [1m]

---



---

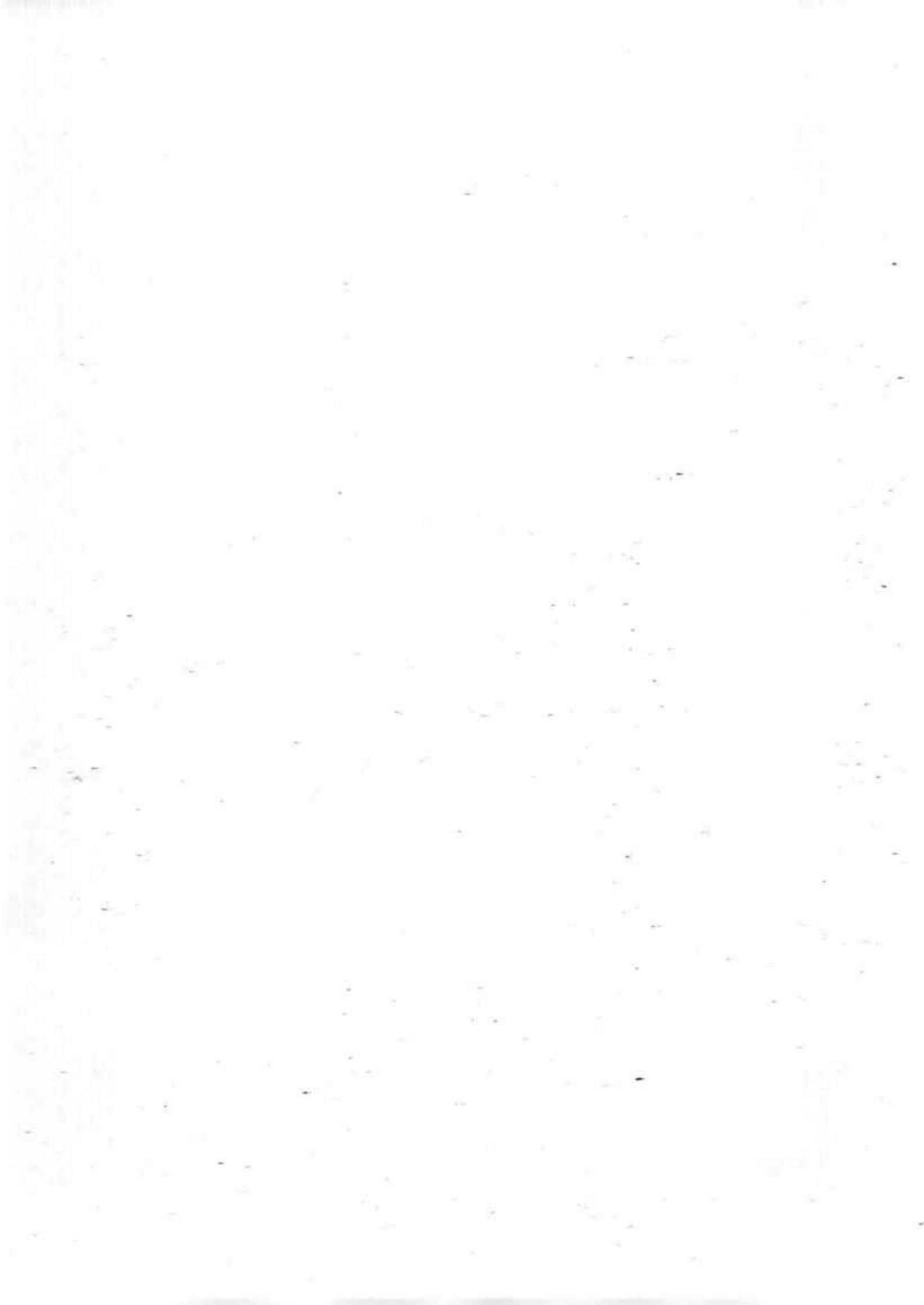
- (b) Explain your answer in (a). [1m]

---



---

– End of Paper –



**EXAM PAPER 2017 (P4)**

**SCHOOL : PEI HWA**

**SUBJECT : SCIENCE**

**TERM : CA2**

**ORDER CALL :**

Q1	Q2	Q3	Q4	Q5	Q6				
2	1	3	3	4	4				

**7)a)Air takes up in the cup and pushes the water out of the cup.**

**b)No. Air can escape from the hole in the cup.**

**8)a)30 cm<sup>3</sup>**

**b)No. I do not agree. The amount of water collected in the measuring cylinder is the volume of the ball, not the metal mass.**

**9)a)heat gain      b)heat gain      c)heat gain      d)heat loss**

**10)a)The water level in the glass tube will rise.**

**b)As water in the flask gains heat from the basin of hot water, the water in the flask will expand, causing the water level to rise.**



RIVER VALLEY PRIMARY SCHOOL  
CONTINUAL ASSESSMENT 2 / 2017  
PRIMARY 4

STANDARD SCIENCE

(BOOKLET A)

Name : \_\_\_\_\_ ( )

Date : 16 Aug 2017

Class : P4 \_\_\_\_\_

Total Time for Booklet A & Booklet B : 1 hour

**INSTRUCTIONS TO CANDIDATES**

1. Write your name, index number and class in the space above.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. For Section A, shade your answers for questions 1 to 10 in the Optical Answer Sheet (OAS) provided.
6. For Section B, write your answers for questions 11 to 15 in the space provided in the booklet.
7. The total marks for Booklet A is 20 marks.

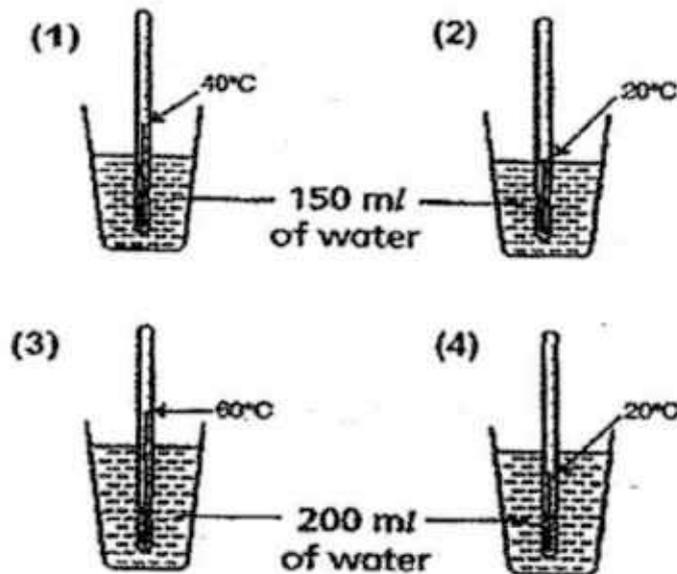
**Section A (20 marks)**

For each question 1 to 10, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Which one of the following is **NOT** a source of heat?

- (1) A candle
- (2) Boiling water
- (3) Burning charcoal
- (4) Heated oven

2. Which of the following glasses of water has the **least** amount of heat in it?

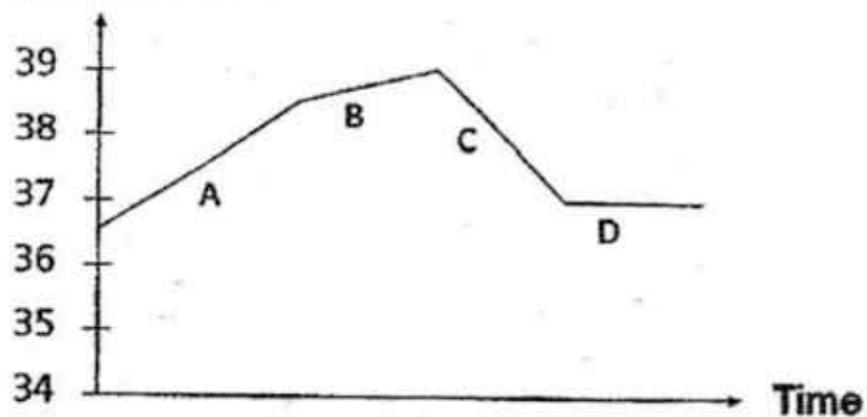


3. What does the temperature of an object measure?

- (1) It measures the volume of an object.
- (2) It is a measurement of its degree of hotness.
- (3) It measures how hot or cold an object is at room temperature.
- (4) It is a measurement of its degree of hotness at room temperature.

4. The graph shows the changes in Joe's body temperature.

Temperature in °C



Which part of the graph shows that he is recovering from a fever?

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

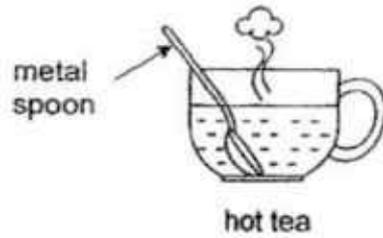
5. A keyboard was left in the air-conditioned room of temperature  $25^{\circ}\text{C}$ . Jonathan touched the keys on the keyboard and the metal casing of the keyboard. His hand felt cooler when he touched the metal casing.



Which of the following best explains why his hand felt cooler when he touched the metal casing?

- (1) The keys were hotter than the metal casing.
- (2) The hands transferred less heat to the metal casing.
- (3) More heat was transferred from the hands to the metal casing.
- (4) The metal casing was a poorer conductor of heat than the keys.

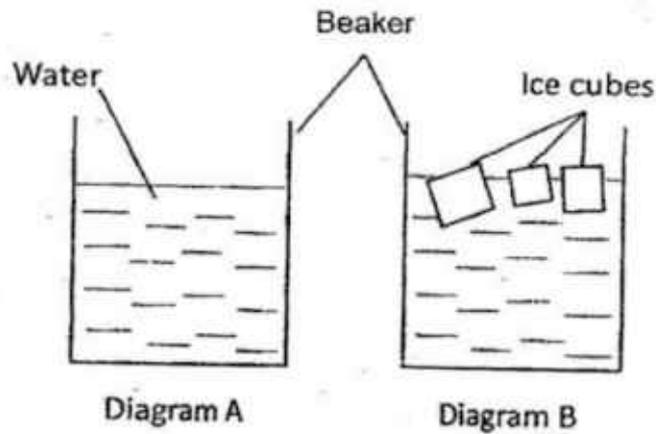
6. Mrs. Tan placed a metal spoon into a cup of hot tea.



After a while, the spoon became hotter because the \_\_\_\_\_

- ( 1 ) cup lost heat to the hot tea
- ( 2 ) spoon lost heat to the hot tea
- ( 3 ) spoon gained heat from the hot tea
- ( 4 ) spoon gained heat from the surrounding

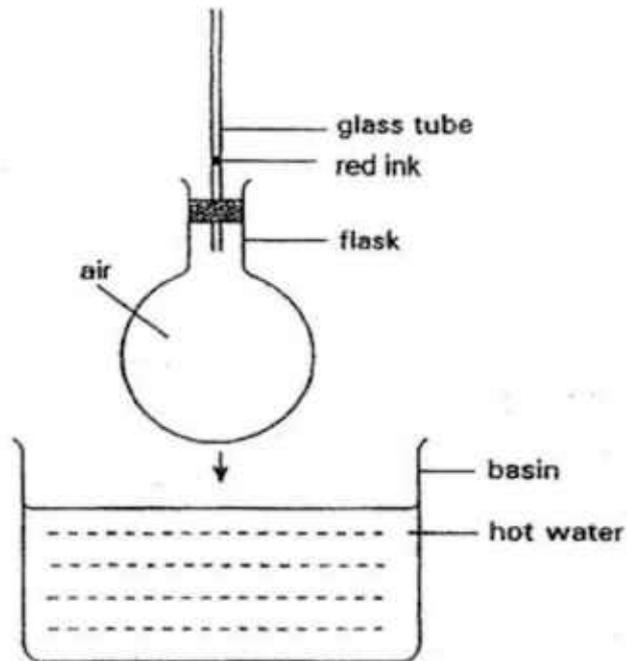
7. Diagram A shows a beaker containing some water. Zi Xuan then put some ice cubes into the water as shown in Diagram B. She notices that the temperature of the water decreases.



Why did the temperature of the water decrease?

- (1) The ice cubes gained heat from the water.
- (2) The ice cubes transferred heat to the beaker.
- (3) The water gained heat from the surrounding.
- (4) The heat in the ice was transferred to the water.

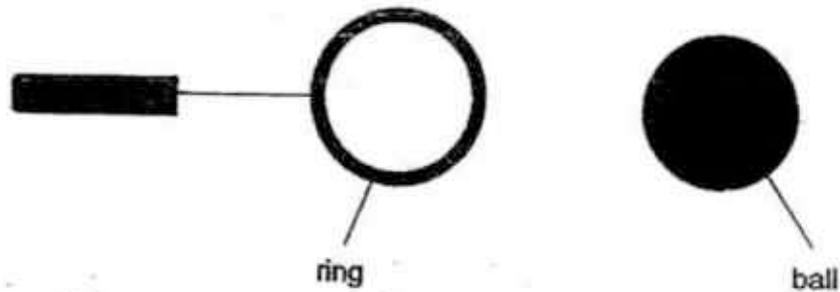
8. Serene placed a flask into a basin of hot water as shown below.



The red ink moved up because \_\_\_\_\_.

- (1) the air in the flask expanded
- (2) the air in the flask contracted
- (3) the red ink in the glass tube expanded
- (4) the flask expanded faster than the tube

9. The ring and the ball shown below were made of the same material.

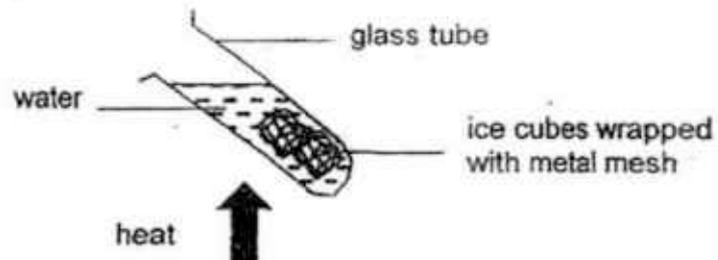


At room temperature, the ball was unable to pass through the ring. After heating the ring for a while, the ball passed through the ring.

Which of the following explains this observation?

	Ring	Ball
(1)	expanded	contracted
(2)	expanded	remained the same size
(3)	remained the same size	contracted
(4)	remained the same size	remained the same size

10. Miss Wong conducted an experiment as shown below.



Some ice cubes were wrapped up in metal mesh to make them sink to the bottom of the tube. After a few minutes, the ice cubes have not melted completely.

What can you conclude from the above experiment?

- (1) Metal is a poor conductor of heat.
- (2) Water is a poor conductor of heat.
- (3) Water is a good conductor of heat.
- (4) The glass tube is a good conductor of heat.

~ End of Section A ~



CONTINUAL ASSESSMENT 2 /  
2017 PRIMARY 4

STANDARD SCIENCE

(BOOKLET B)

Name : \_\_\_\_\_ ( )

Date : 16 Aug 2017

Class : P4 \_\_\_\_\_

Total Time for Booklet A & Booklet B : 1 hour

**INSTRUCTIONS TO CANDIDATES**

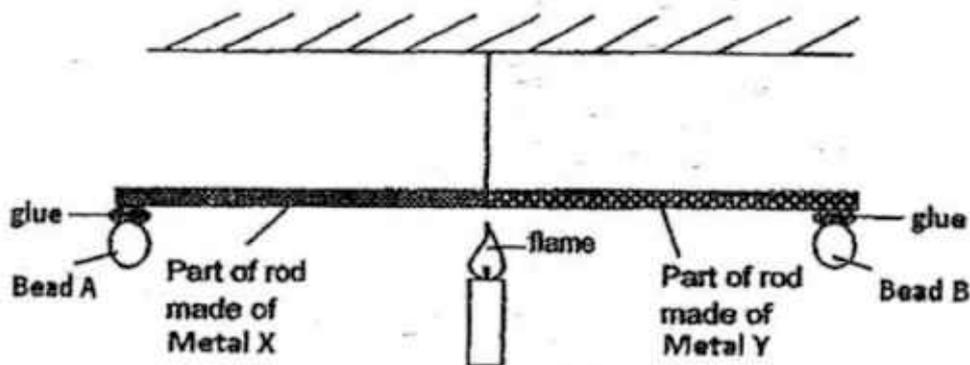
1. Write your name, index number and class in the space above.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. For Section A, shade your answers for questions 1 to 10 in the Optical Answer Sheet (OAS) provided.
6. For Section B, write your answers for questions 11 to 15 in the space provided in the booklet.
7. The total marks for Booklet B is 20 marks.

Booklet A		/20
Booklet B		/20
Total		/40
Parent's Signature		

**Section B (20 marks)**

Write your answers for questions 11 to 15 in this booklet.

11. Sam hung a rod made of Metals X and Y as shown below. Two identical beads were attached to the ends of the rod using the same amount of glue. Both sections of the rod, made of metals X and Y are equal in length. At the beginning of the experiment, the rod was balanced.



Sam heated the centre of the rod with a flame. He recorded the time taken for the bead to drop as shown in the table below.

Bead	Time taken for each bead to drop (min)
A	3
B	4

- (a) Based on his observation, which metal X or Y, is a better conductor of heat? Explain your answer. [1m]

---

---

	1
--	---

(b) Sam continued to heat the rod X for another 10 minutes.

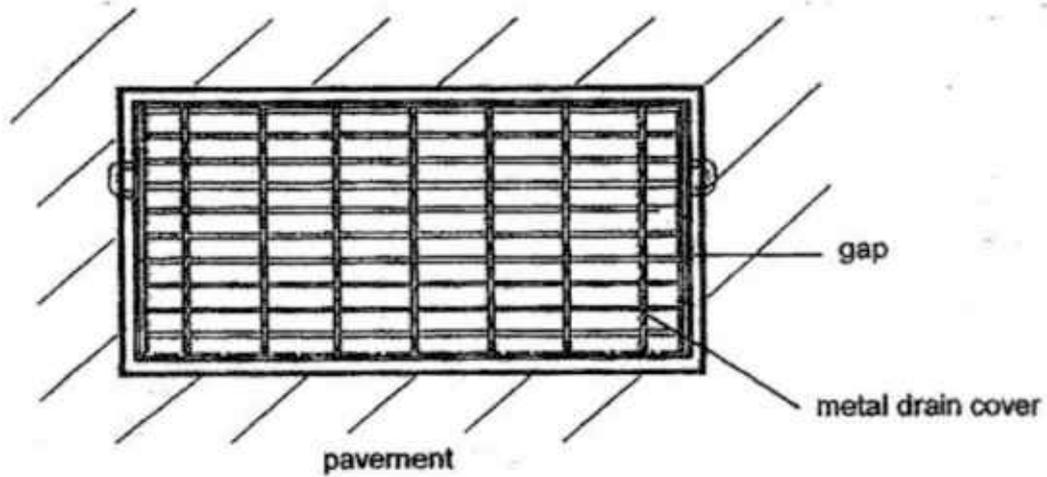
What is the effect of this heating on the rod X?

[1m]

---

---

(c) Based on the results of the above experiment, explain why there is a gap between the metal drain cover and the pavement as shown in the picture below. [2m]



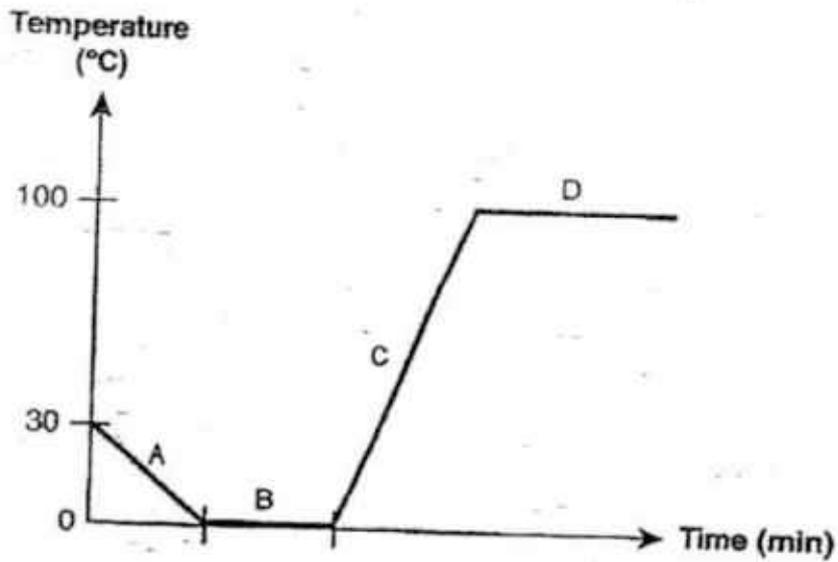
---

---

---

	3
--	---

12. The graph below shows the changes in the temperature of water.



- (a) State if there is **heat gain** or **heat loss** for the following:

[2m]

Stage A : \_\_\_\_\_

Stage C : \_\_\_\_\_

- (b) Which part of the graph shows that:

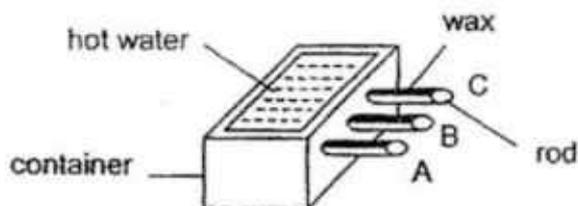
[2m]

(i) the water has been placed in a freezer: \_\_\_\_\_

(ii) the water has been heated in a kettle: \_\_\_\_\_

	4
--	---

13. Adrian sets up an experiment below to find out which type of metal rod is the best conductor of heat. Rod A, B, C each has the same amount of wax applied.



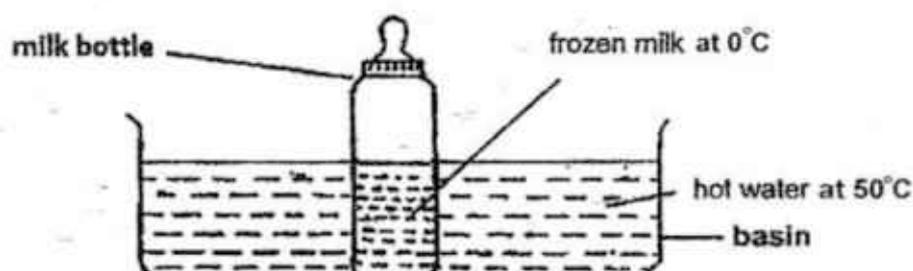
- (a) What should Adrian observe so that he can conduct this experiment accurately?

Tick one of the following.

[1m]

Amount of water	
Amount of wax left on the metal rod	
Type of wax used at the start of the experiment	

- (b) Mrs Shannon took a bottle of milk out of the freezer. It was frozen and she placed it in a basin of hot water as shown below.



After 10 minutes, the frozen milk in the bottle had melted. What had happened to the temperature of the milk? [1m]

---



---

(c) If the temperature of the milk in the bottle is now 28°C, the temperature of the hot water will most likely be (tick one of the following) : [1m]

2°C to 5°C	
20°C to 30°C	
50°C to 70°C	

Explain your answer.

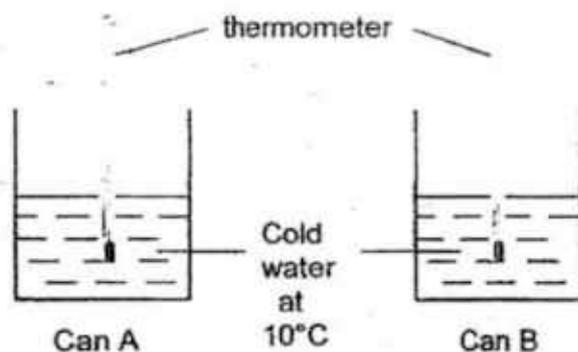
[1m]

---

---

	2
--	---

14. The picture below shows two metal cans which contained cold water at  $10^{\circ}\text{C}$ . They were left in the classroom at room temperature of  $30^{\circ}\text{C}$  and changes in their temperature were measured.

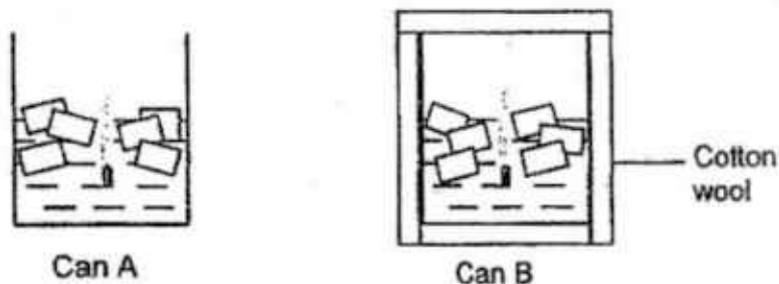


- (a) What will happen to the temperature in both setups? [1m]

---

---

The next day, equal amount of ices were added into the cans. Can B was covered up with cotton wool and the readings of both thermometers in Can A and B were being recorded again.



	1
--	---

- (b) Which thermometer, in Can A or B, will show a faster increase in temperature?

The thermometer in Can \_\_\_\_\_ [1m]

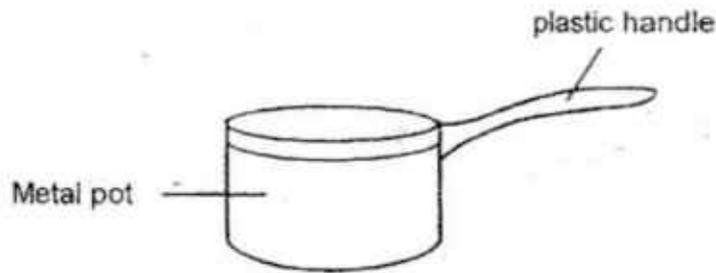
- (c) After 30 minutes, all the ice in Can A had melted but some of the ice in Can B remained. Based on the results of this experiment, what can you conclude about the property of the cotton wool? [2m]

---

---

	3
--	---

15. The diagram below shows a cooking pot.



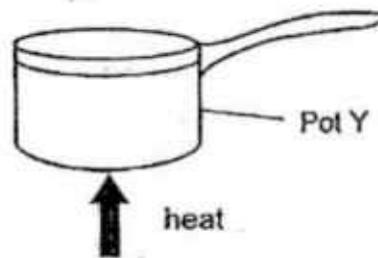
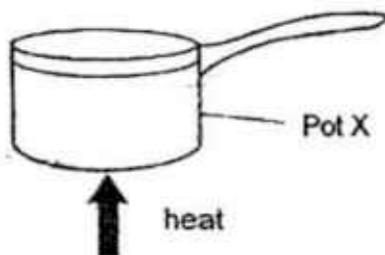
(a) The handle is made of plastic because it is a \_\_\_\_\_  
conductor of heat.

[1m]

The pot is made of metal because it is a \_\_\_\_\_  
conductor of heat.

[1m]

Mrs Goh used two pots to cook dinner. The pots are of the same size, thickness and shape but they were made of different materials. She poured the same amount of water into each pot.



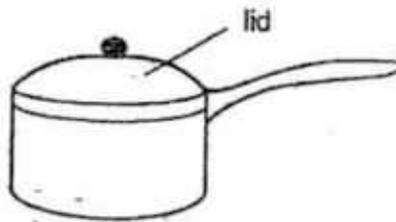
(b) Using the same stove, Mrs Goh realized that the water in Pot Y boil faster than Pot X. Explain why. [1m]

---

---

---

- (c) Mdm Tan suggested that Mrs Goh should use a lid to cover the pot so that the water in the pot will boil faster. Is Mdm Tan correct? [1m]  
Give a reason for your answer.



---

---

---

	1
--	---

~ End of Paper ~

EXAM PAPER 2017 (P4)

SCHOOL : RIVER VELLEY

SUBJECT : SCIENCE

TERM : CA2

ORDER CALL :

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	2	2	3	3	3	1	1	2	2

11)a)Metal X. It takes a shorter time for heat to travel to the glue.

b)Rod X will gain heat and expand so the metal X and Y will take a longer time to drop.

c)Gaps between the pavement allowed for expansion on hot days when the pavement gain heat and expand.

12)a)A: heat loss      b)heat gain

b)i)B    ii)C

13)a)Amount of wax left on the metal rod

b)The temperature of the milk will increase.

c)The frozen milk gained heat from the hot water.

The hot water lost heat to the frozen milk.

14)a)The temperature in both setup will increase.

b)A.

c)The cotton wool is a poor conductor of heat and it can slow down the ice from gaining heat from the surrounding so the ice in Can B remained.'

15)a)poor / good

b)Pot Y is a better conductor of heat then Pot X so Pot Y boil faster than Pot X.

c)Yes. The lid prevents heat loss to the surroundings and traps heat. Hence water will boil faster.

**SEMESTRAL ASSESSMENT 1 (2017)**

**PRIMARY 4  
SCIENCE  
BOOKLET A**

**Wednesday**

**17 May 2017**

**1 hr 30 min**

Ⓔ: \_\_\_\_\_ ( ) Class: 4.( )

**INSTRUCTIONS TO PUPILS**

- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 25 questions in this booklet.
- 4 Answer ALL questions.
- 5 Shade your answers in the Optical Answer Sheet (OAS) provided.

**Booklet A (50 marks)**

For each question from 1 to 25, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade your answer on the Optical Answer Sheet (25 x 2 marks)

---

1. Which one of the following statements about living things is true?

- (1) All living things need food to survive.
- (2) All living things can survive without water.
- (3) All living things are made up of plants and animals only.
- (4) All living things reproduce by giving birth to their young.

2. Which of the following correctly describes the difference between Chilli Plant and Bird's Nest Fern?



Chilli Plant



Bird's Nest Fern

- (1) Chilli Plant makes food but Bird's Nest Fern does not make food.
- (2) Chilli Plant reproduces by spores but Bird's Nest Fern reproduces by seeds.
- (3) Chilli Plant produces flowers while Bird's Nest Fern does not produce flowers.
- (4) Chilli Plant needs water to grow but Bird's Nest Fern does not need water to grow.

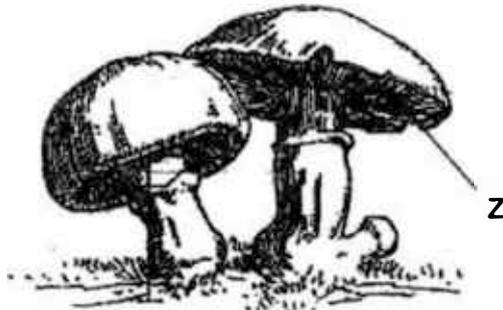
3. Some characteristics of animals X, Y and Z are listed in the table below.

Characteristic	Animal X	Animal Y	Animal Z
Breathes through gills	No	Yes	No
Has three body parts	Yes	No	No
Has dry skin	No	No	Yes
Has scales as outer covering	No	Yes	Yes

Which of the following groups of animals correctly identifies X, Y and Z?

	Animal X	Animal Y	Animal Z
(1)	Amphibian	Fish	Insect
(2)	Insect	Bird	Insect
(3)	Insect	Fish	Reptile
(4)	Amphibian	Bird	Reptile

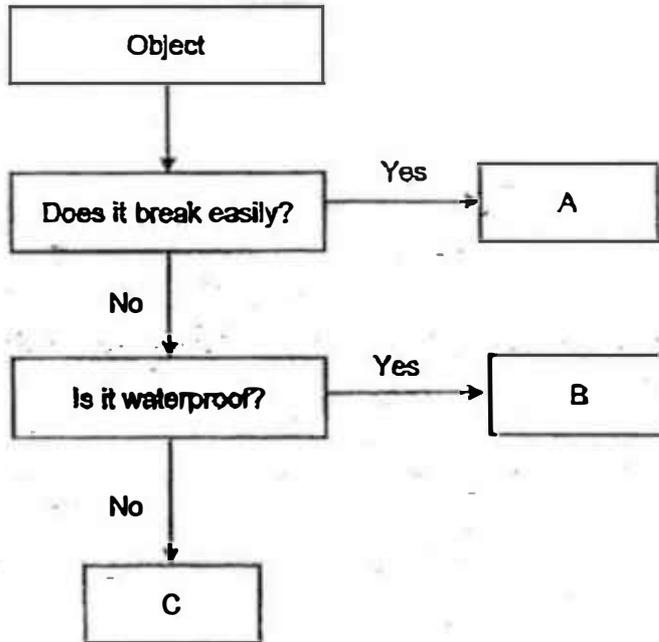
4. The diagram below shows some mushroom.



What can be found in the part labelled 'Z'?

- (1) Fruits
- (2) Seeds
- (3) Spores
- (4) Flowers

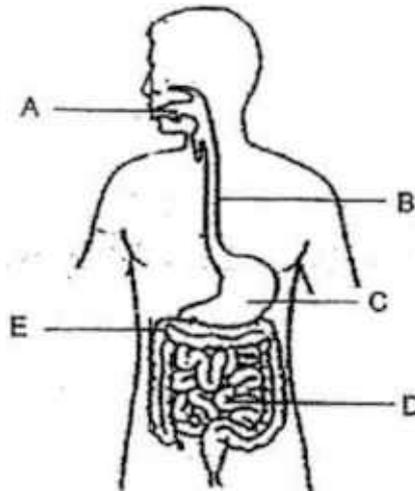
5. Study the flowchart below.



Which of the following could A, B and C represent?

	A	B	C
(1)	Plastic Cup	Cotton shirt	Glass mug
(2)	Glass Mug	Rubber tyre	Cotton shirt
(3)	Glass Mug	Cotton shirt	Plastic cup
(4)	Rubber tyre	Glass mug	Cotton shirt

6. The diagram below shows the digestive system with parts labelled A, B, C, D and E.



Identify the parts where digestive juices are not produced.

- (1) A and C only
  - (2) B and E only
  - (3) A, B and E only
  - (4) B, C and D only
7. Which of the following pairs of organ systems work together to help us bend, stretch and move?
- (1) Skeletal system and Muscular system
  - (2) Digestive system and Skeletal system
  - (3) Muscular system and Digestive system
  - (4) Respiratory system and Digestive system

8. The table below shows a comparison of activities in our small and large intestines.

	Small Intestine	Large intestine
A	Food is completely digested.	Food is being digested.
B	It passes food to the large intestine for further digestion.	Undigested food is absorbed into the blood.
C	Digested food is absorbed into the blood.	Water from undigested food is removed.

Which of these comparisons, A, B or C, is/are correct?

- (1) A only  
 (2) C only  
 (3) A and B only  
 (4) B and C only
9. The picture below shows a balsam plant.



Balsam Plant

Which of the following matches the plant part to its function correctly?

	Plant Part	Function
(1)	Leaves	Hold the plant upright
(2)	Flowers	Makes food for the plant
(3)	Stems	Hold the plant firmly to the ground
(4)	Roots	Absorbs water and mineral salts

10. Lily wanted to find out which type of soil was most suitable for growing Plant X. She planted Plant X in three different pots, P, Q and R.

	Pot P	Pot Q	Pot R
Material of pot	Plastic	Plastic	Plastic
Type of soil	Clay	Garden soil	Sand
Location of experiment	Garden	Garden	Garden
Amount of water given	200 cm <sup>3</sup>	250 cm <sup>3</sup>	300 cm <sup>3</sup>

Lily's mother told her that her experiment was not a fair one. Which of the following variables should Lily keep the same for all the pots in order to carry out a fair test?

- A Type of soil
- B Amount of water given
- C Location of experiment

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

11. Which of the following statements is true about plants?

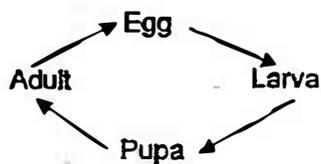
- (1) All ferns and mosses bear tiny flowers called spores.
- (2) Plants that do not bear flowers cannot make their own food.
- (3) Plants are the only living things that can make their own food.
- (4) Only tall and big trees have roots while smaller plants have stems.

12. The table below gives information about the life cycle of 4 animals, S, T, U and V.

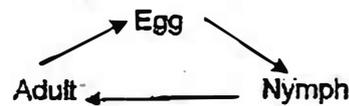
Description	S	T	U	V
The young looks like the adult.	Yes	No	No	Yes
It has a 4-stage life cycle.	No	No	Yes	No
It produces by laying eggs.	Yes	No	Yes	No

Which animal, S, T, U or V most likely represents a chicken?

- (1) S
  - (2) T
  - (3) U
  - (4) V
13. Study the diagram below on the life cycle of the butterfly and an unknown animal X.



Life cycle of Butterfly

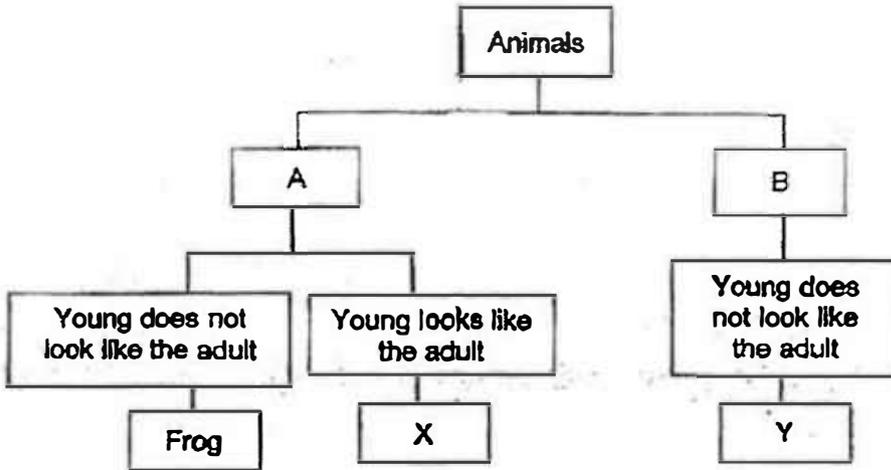


Life cycle of Animal X

How are both life cycles similar?

- (1) The young resemble the adult.
- (2) There are 4 life stages in their life cycles.
- (3) The adults have scales as outer covering.
- (4) The young moult in the larva or nymph stage before developing into adults.

14. Study the classification table below.



Which of the following options correctly represents A, B, X and Y?

	A	B	X	Y
(1)	3-stage life cycle	4-stage life cycle	Cockroach	Beetle
(2)	3-stage life cycle	4-stage life cycle	Beetle	Cockroach
(3)	4-stage life cycle	3-stage life cycle	Grasshopper	Chicken
(4)	4-stage life cycle	3-stage life cycle	Chicken	Grasshopper

15. Which of the following reason(s) correctly explains why a banana plant produces flowers?

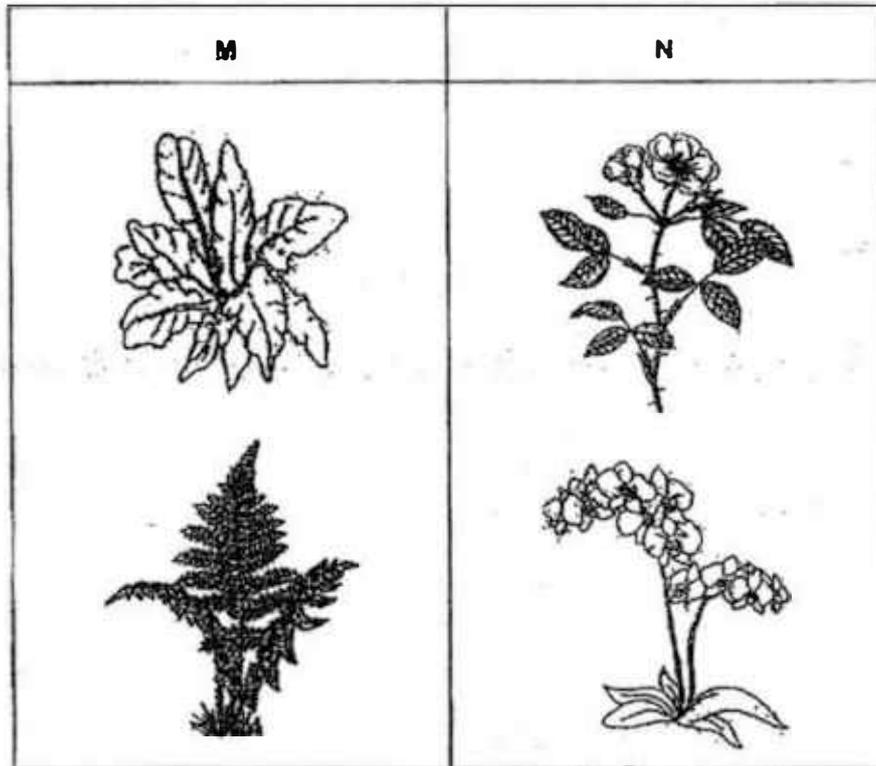


Banana Plant

- A To make the plant taller.
- B To absorb nutrients for the plant.
- C To anchor the plant firmly to the ground.
- D To reproduce to ensure continuity of its kind.

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

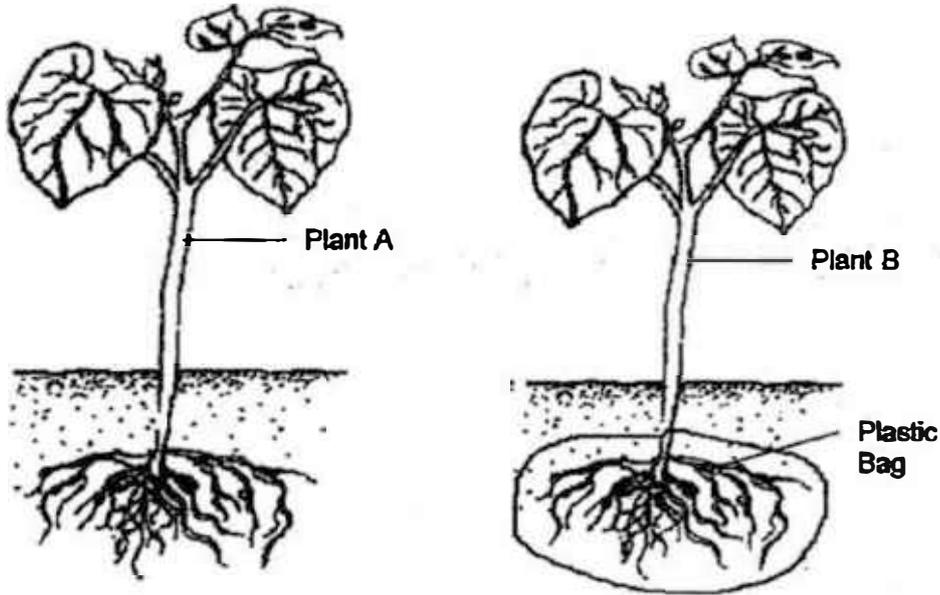
16. The plants below are classified into two groups M and N.



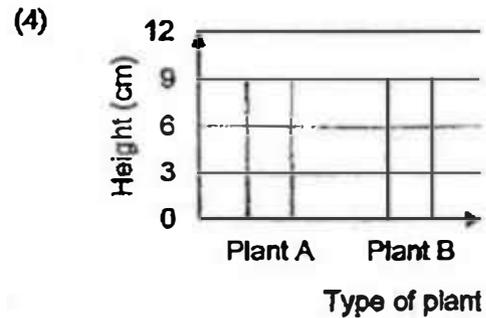
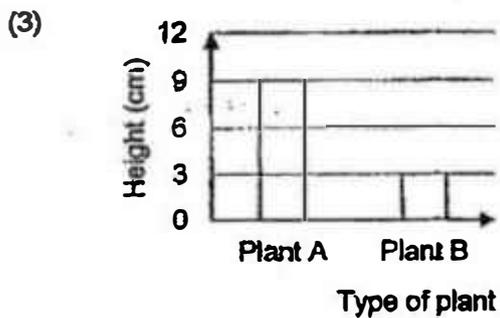
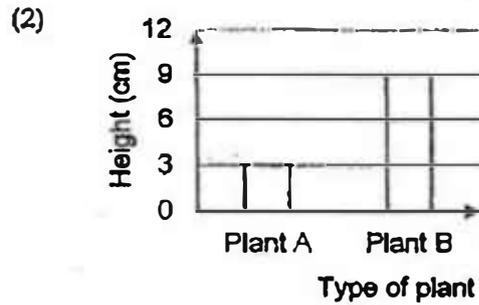
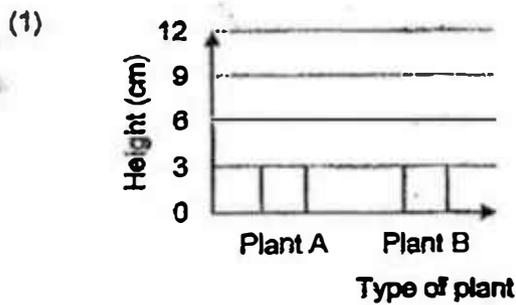
Based on your observation, what characteristic is used to classify the plants?

	M	N
(1)	non-flowering plants	flowering plants
(2)	plants with small flowers	plants with big flowers
(3)	flowers which grow singly	flowers which grow in cluster
(4)	flowers with unpleasant smell	flowers with pleasant smell

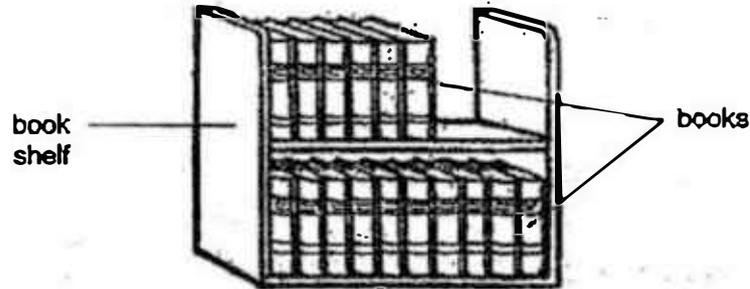
17. Suzy planted 2 identical plants, A and B, side by side in the open field. She tied a plastic bag around the roots of plant B as shown below. Both plants were given equal amount of water daily. She recorded the growth of the plants for a week in a bar graph.



Which graph correctly shows the height of the plant at the end of the experiment?

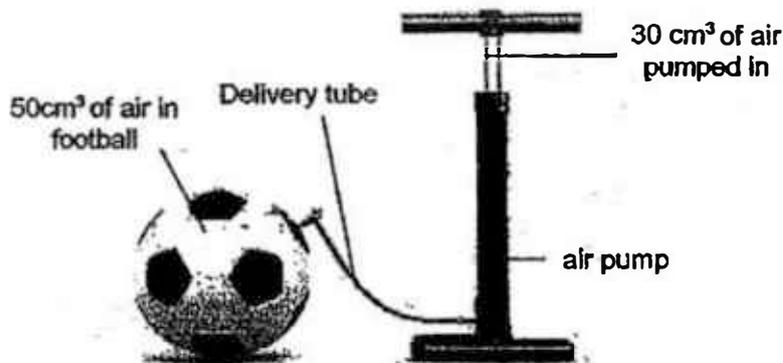


18. Mr Tay bought a small book shelf to hold his students' books. He could only fit a maximum of 10 identical books on each shelf. His pupil, Joseph, tried to fit in one more book but failed to do so.



Which property of matter best explains why Joseph was unable to add one more book to the shelf?

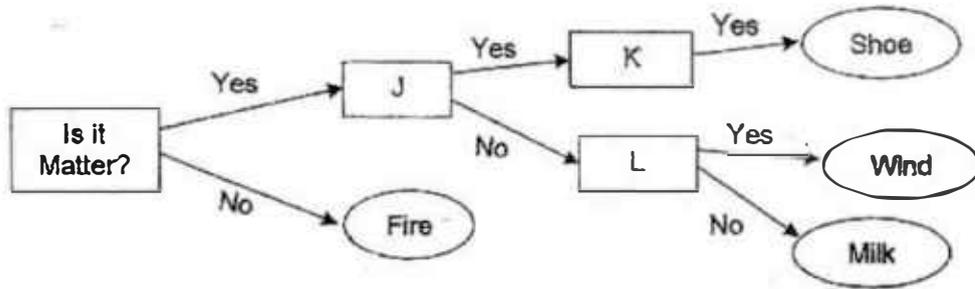
- (1) The books are too big.
  - (2) The books occupy space.
  - (3) The books can be compressed.
  - (4) The books have an indefinite volume.
19. An air pump containing  $30 \text{ cm}^3$  of air was inserted into a fully inflated football using a delivery tube as shown in the diagram below. Linda gave one complete push of the pump into the ball.



What was the total volume of air in the football after the air pump was pushed in completely?

- (1)  $20 \text{ cm}^3$
- (2)  $30 \text{ cm}^3$
- (3)  $50 \text{ cm}^3$
- (4)  $80 \text{ cm}^3$

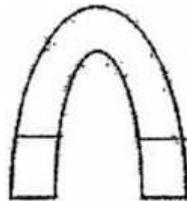
20. The flowchart below shows how shoe, wind and milk can be classified.



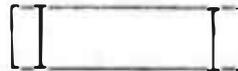
What can J, K and L represent?

	J	K	L
(1)	Does it have a fixed volume?	Does it have a fixed shape?	Can it be compressed?
(2)	Does it have a fixed shape?	Does it have a fixed volume?	Can it be compressed?
(3)	Does it have a fixed volume?	Can it be compressed?	Does it have a fixed shape?
(4)	Does it have a fixed shape?	Can it be compressed?	Does it have a fixed volume?

21. Roy conducted an experiment using a U-shaped magnet and a bar magnet below to attract some iron nails.



U-shaped magnet



Bar magnet

The table below shows the number of iron nails attracted by each magnet.

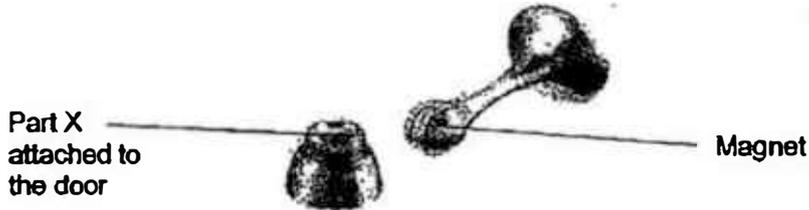
Iron nails attracted by U-shaped magnet	Iron nails attracted by bar magnet
13	13

Based on the experiment, which of the following statement(s) is/are true?

- A Both magnets have equal magnetic strength.
- B The bar magnet is weaker than the U-shaped magnet.
- C Only the U-shaped magnet has North and South poles.

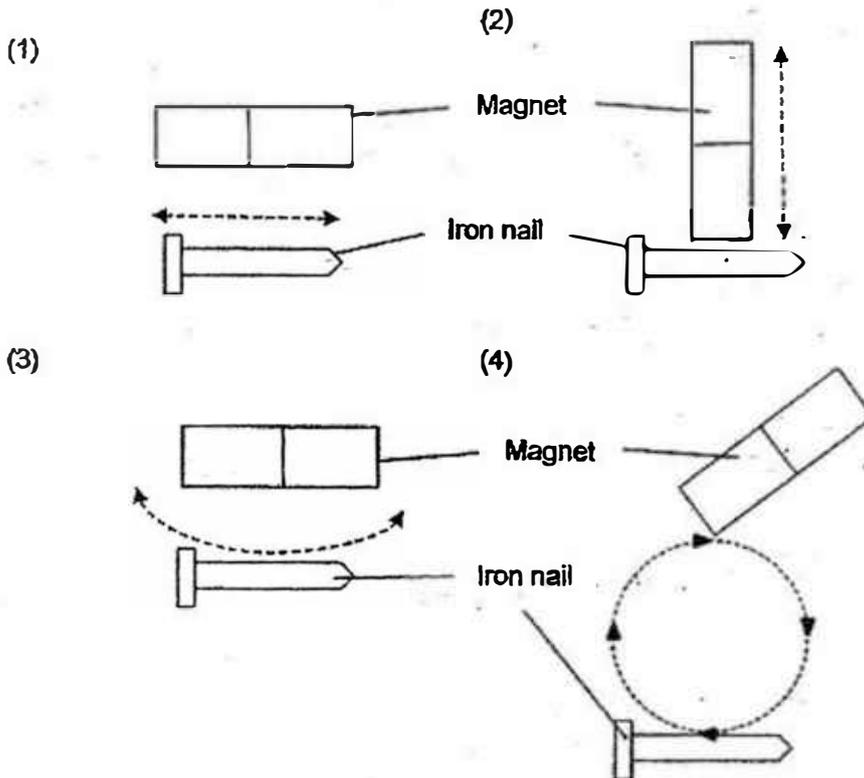
- (1) A only
- (2) B only
- (3) B and C only
- (4) A and C only

22. Mr Loh wanted to fix a magnetic door stopper behind all the doors in his new house. He placed a magnet behind each wall as shown in the diagram below.

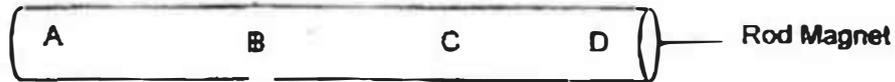


Which of the following materials should Mr Loh use for part X in order for the door stopper to work?

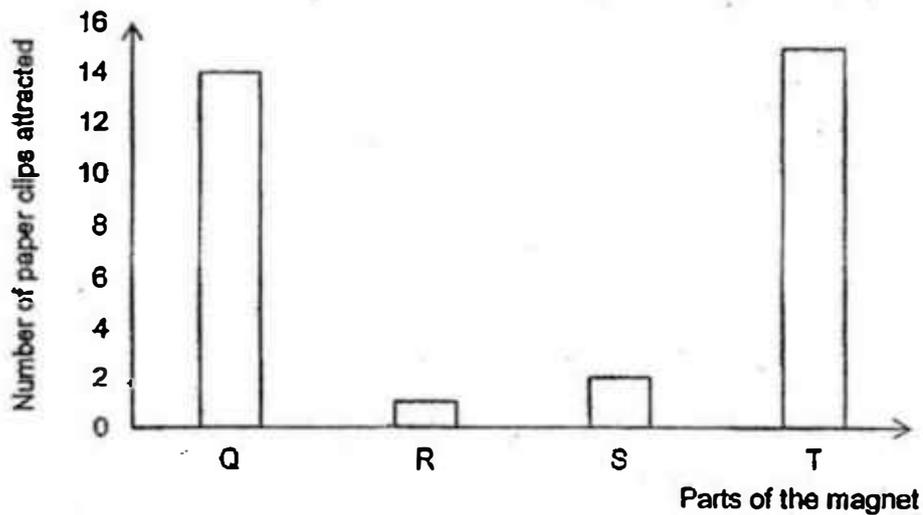
- (1) Steel
  - (2) Wood
  - (3) Plastic
  - (4) Aluminium
23. Ethan wanted to create a temporary magnet using the stroke method. He used one end of a magnet to stroke 4 identical iron nails according to the direction of the arrows as shown below. Which iron nail will become a temporary magnet?



24. Ela conducted an experiment to find out the magnetic strength of the different parts A, B, C, and D, of a rod magnet.



She placed the rod magnet into a bowl of iron paper clips and counted the number of paper clips attracted at parts A, B, C and D. She recorded the number of paper clips attracted to each of the parts A, B, C and D in the form of a graph below.



Which of the following options correctly identifies Q, R, S and T in the graph above to the parts, A, B, C and D, of the rod magnet?

	Q	R	S	T
(1)	A	C	D	B
(2)	A	B	C	D
(3)	C	D	B	A
(4)	D	A	B	C

25. Mrs Li wanted to create a fishing game for her son using a magnetic fishing rod and 3 different toy fishes. Each fish has a different piece of circular disc attached to it. She brought the magnetic fishing rod close to the circular disc of each of the three fishes, A, B and C, and recorded her observations in the table below.



Fish	Observation
A	It did not move.
B	It moved towards the magnet.
C	It moved away from the magnet

Which of the following correctly matches the circular discs of fishes A, B and C?

	A magnet	Made of aluminum	Made of iron	Made of ceramic
(1)	-	C	B	A
(2)	B	A	-	C
(3)	C	-	A	B
(4)	C	A	B	-

End of Booklet A

**SEMESTRAL ASSESSMENT 1 (2017)**

**PRIMARY 4**

**SCIENCE**

**BOOKLET B**

**Wednesday**

**17 May 2017**

**1 hr 30 min**

Name: \_\_\_\_\_ ( ) Class: 4.( ) Parent's Signature: \_\_\_\_\_

**INSTRUCTIONS TO PUPILS**

- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 13 questions in this booklet.
- 4 Answer ALL questions.
- 5 The marks are given in the brackets [ ] at the end of each question or part question.

<b>Booklet</b>	<b>Possible Marks</b>	<b>Marks Obtained</b>
<b>A</b>	<b>50</b>	
<b>B</b>	<b>40</b>	
<b>PBA</b>	<b>10</b>	
<b>Total</b>	<b>100</b>	

---

**This question paper consists of 17 printed pages (inclusive of cover page).**

**Booklet B (40 marks)**

For questions 26 to 38, write your answers in this booklet.

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

26. The table below shows the characteristics of three different animals, L, M and N. A tick (✓) indicates that the animal has the characteristics.

Observations	Animals		
	L	M	N
Has feathers		✓	
Has wings		✓	
Has hair	✓		
Suckles its young	✓		
Lives on land and in water			✓
Reproduces by laying eggs		✓	✓
Breathes through lungs and skin			✓

- (a) Based on the information given above, state the similarity between Animals M and N.

[1]

---



---

- (b) Based on the information given above, which animal, L, M or N, can be grouped together with a whale? Give a reason for your answer.

[1]

---



---

(Go on to the next page)

SCORE	2
-------	---

(c) Study Animal Q below.



Animal Q

Siti said that Animal Q is definitely a bird. State a characteristic that is not mentioned in the table that shows Animal Q is a bird.

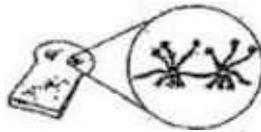
[1]

---



---

27. Study the pictures below of two organisms, bread mould and oyster mushroom.



Bread Mould



Oyster Mushroom

(a) Which group of living things do the above organisms belong to?

[1]

---

(b) Where do bread mould get its food from?

[1]

---



---

(c) How does Oyster Mushroom reproduce?

[1]

---

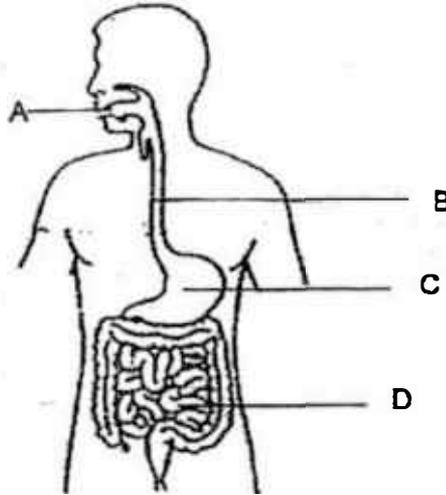


---

(Go on to the next page)

SCORE	
	4

28. The diagram below shows the human digestive system with parts labelled A, B, C and D.



- (a) Name parts A, B, C and D.

[2]

A: \_\_\_\_\_

B: \_\_\_\_\_

C: \_\_\_\_\_

D: \_\_\_\_\_

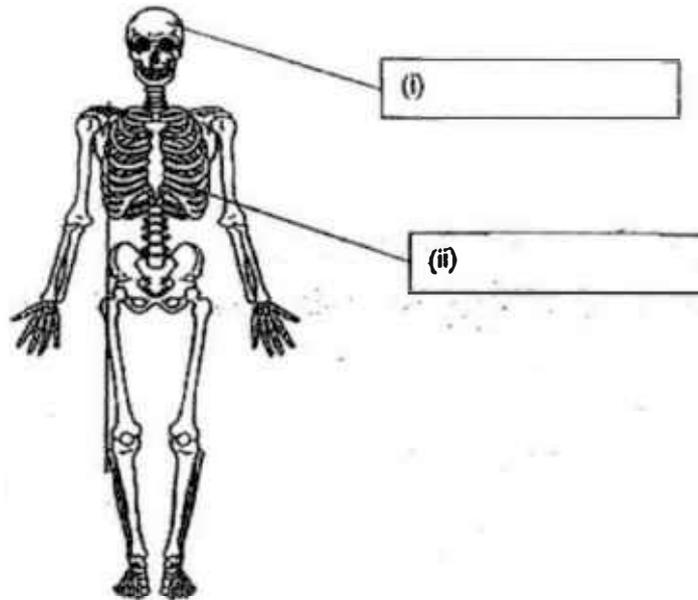
- (b) Fill in the boxes with the correct human body systems based on the functions given. [1]

	Human body system	Function
(i)		Carries digested food, water and oxygen to all parts of the body.
(ii)		Takes in air and removes air from the body.

(Go on to the next page)

SCORE	3
-------	---

- (c) The diagram below shows a skeletal system.



- Name the parts of the skeletal system labelled (i) and (ii) in the boxes above. [1]
- (d) State one function that these two parts (i) and (ii) in (c) have in common. [1]

---

---

(Go on to the next page)

SCORE	
-------	--

29. Luke wanted to find out if the temperature of the surrounding affects the growth of a plant. He planted four plants of the same height in identical pots filled with soil and watered them daily. He measured the height of the plants at the end of 3 weeks. The results of his experiment are recorded in the table below.

	Pot A	Pot B	Pot C	Pot D
Temperature of surrounding (°C)	21	24	28	31
Height of plant at the start (cm)	5	5	5	5
Height of plant at the end (cm)	9	12	17	23

- (a) State the variable that was changed in the experiment. [1]

---

---

- (b) Name two other variables that should be kept the same in order to ensure a fair test. [1]

---

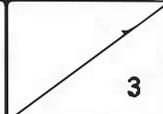
---

- (c) From the results above, what can Luke conclude about the effect of temperature of the surrounding on the growth of the plant? [1]

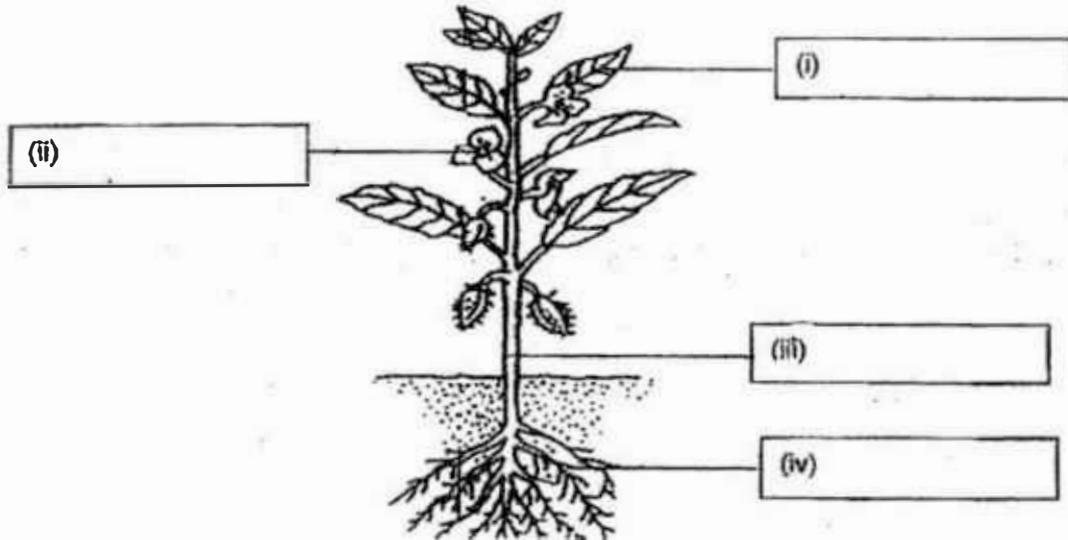
---

---

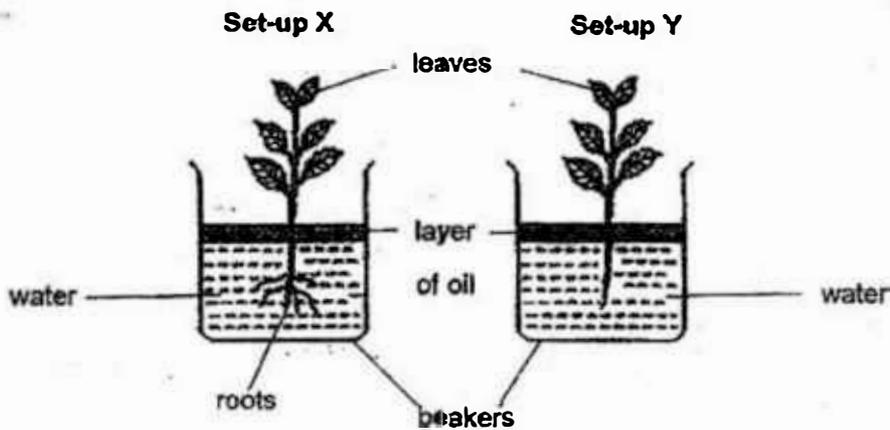
(Go on to the next page)

SCORE	
-------	---

30. The diagram below shows a plant.



- (a) Name the parts of the plant labelled (i), (ii), (iii) and (iv) in the boxes above. [2]
- (b) Nat conducted an experiment for a week. He placed two identical plants in two identical containers as shown in set-ups X and Y below. Each container was given the same amount of water. He cut off the roots of the plant in set-up Y.



He recorded the amount of water in the container before and after the experiment. What is the aim of Nat's experiment? [1]

---

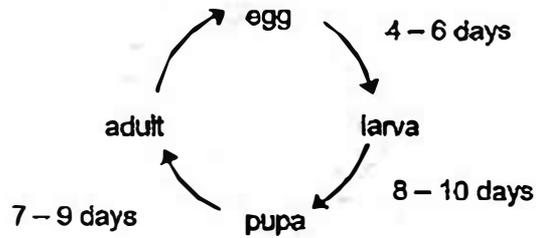


---

(Go on to the next page)

SCORE	3
-------	---

31. Study the life cycle of Animal R below.



Life cycle of Animal R

- (a) What is the greatest number of days Animal R will take to become an adult once it has hatched from the egg? [1]

---

- (b) Name two animals that have the same number of stages in their life cycles as Animal R. [1]

---

- (c) State a difference between a larva and a pupa. [1]

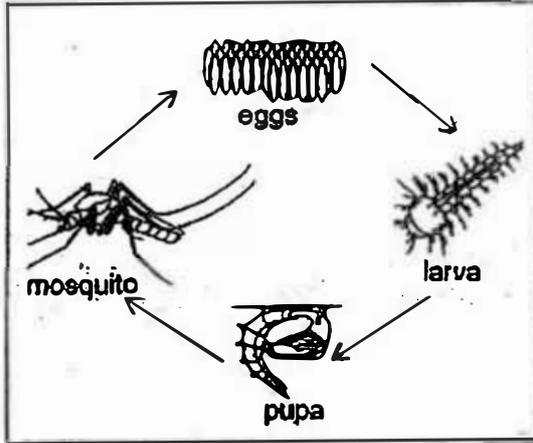
---

---

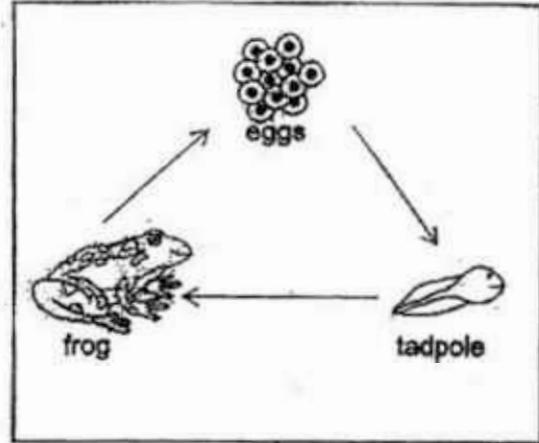
(Go on to the next page)

SCORE	
	3

32. The diagrams below show the life cycles of the mosquito and frog.



Life cycle of a mosquito



Life cycle of a frog

(a) How is the life cycle of a mosquito similar to that of a frog? [1]

---



---

(b) How is the life cycle of a mosquito different from that of a frog? [1]

---



---

(c) Tadpole go through a few physical changes as they develop into the adult frogs. Name two ways in which the tadpole is different from the adult frog. (Do not compare the size). [1]

---



---

(Go on to the next page)

SCORE	3
-------	---

33. Lucy found 2 identical plants. She placed Plant A in a completely dark room and Plant B in the open field. Both plants were watered with equal amounts of water every day. She observed their growth over 2 weeks.



Plant A

Location: Completely dark room



Plant B

Location: Open field

- (a) What was the aim of Lucy's experiment? [1]

---

- (b) What would happen to both Plants A and B after two weeks? [1]

---



---

- (c) Lucy's brother wanted to find out if plants need water to grow. What changes should he make to the above experiment? [1]

---

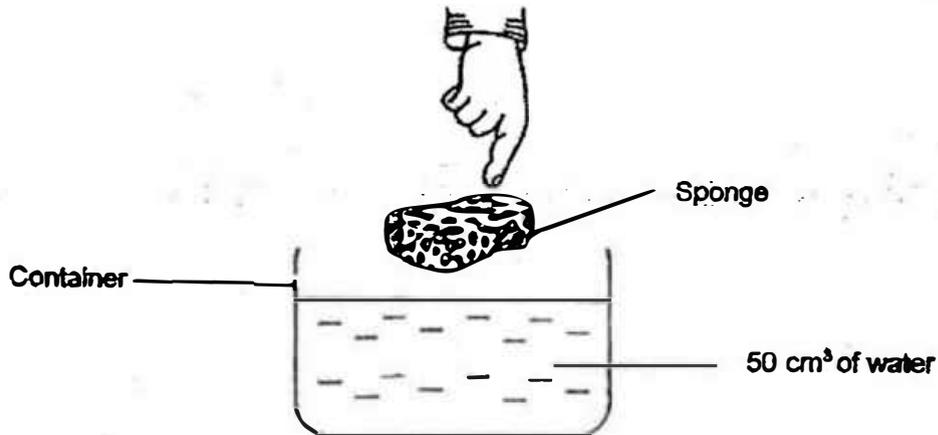


---

(Go on to the next page)

SCORE	3
-------	---

34. Felice carried out an experiment below. She filled up a container with  $50 \text{ cm}^3$  of water. She pushed a sponge gently into the container until it reached the base and after 10 seconds, she removed it from the container. Then, she recorded the amount of water in the container by pouring it into a measuring cylinder.



- (a)(i) Tick (✓) the correct amount of water left in the measuring cylinder at the end of the experiment. [1]

Amount of water left in the measuring cylinder	Put a tick (✓)
More than $50 \text{ cm}^3$	
Less than $50 \text{ cm}^3$	
Exactly $50 \text{ cm}^3$	

- (ii) Explain your answer in (a)(i). [1]

---

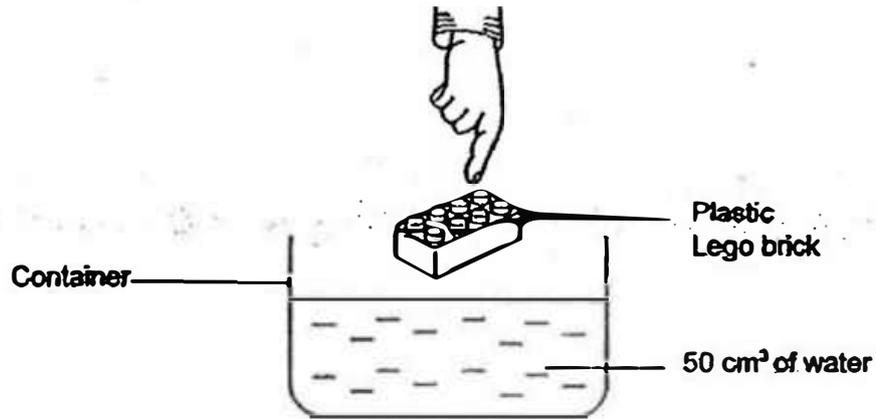


---

(Go on to the next page)

SCORE	2
-------	---

- (b) Felice conducted the experiment again. She changed the sponge into a piece of plastic Lego brick. She pushed the brick to the base of the container for 20 seconds before removing it. She also recorded the amount of water left in the container.



Will there be a difference in results when compared to (a)? Explain why. [1]

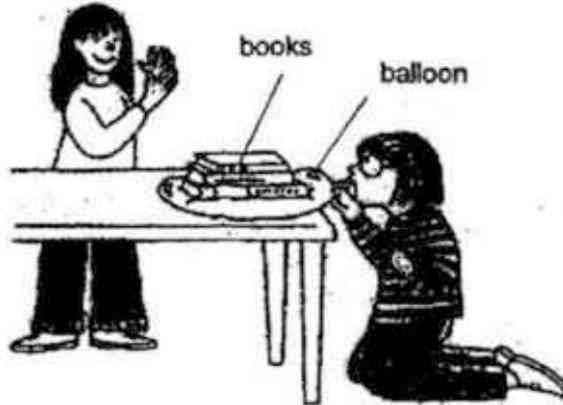
---

---

(Go on to the next page)

SCORE	1
-------	---

35. Mary placed a stack of books on top of a huge balloon. She tried to inflate the balloon by blowing air into it. Her friend saw this and said that the balloon will not be able to inflate.



- (a) Explain why the balloon will not inflate. [1]

---



---

- (b) Mary repeated the experiment by replacing the books with a piece of tissue paper. What would she observe? [1]

---



---

- (c) Michael saw a clown sculpting balloons. The clown twisted and turned a balloon to form different shapes as shown in the diagram below.



- Based on the diagram above, list 2 properties of air. [1]

---

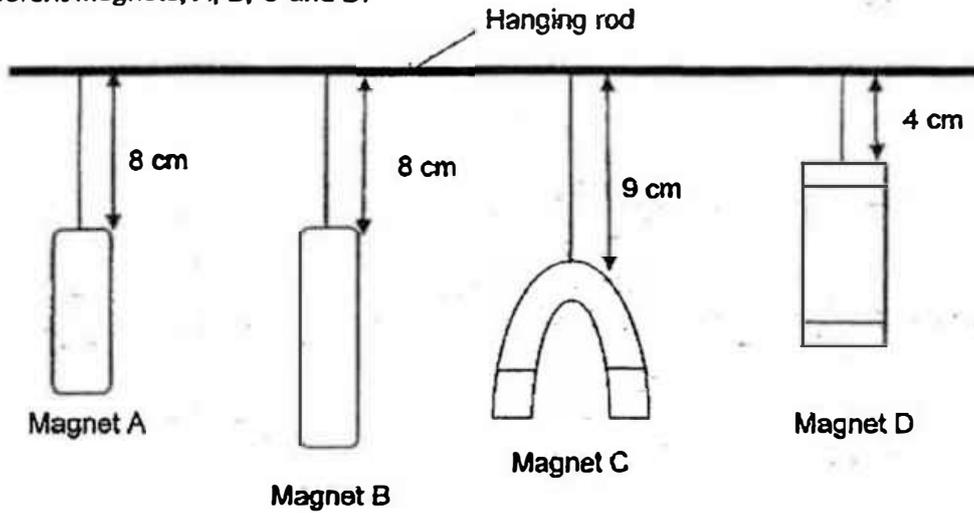


---

(Go on to the next page)

SCORE	3
-------	---

36. Sally conducted an experiment as shown below to compare the strength of four different magnets, A, B, C and D.



She placed a container of iron paper clips below the set-up and recorded her observations in the table below.

Magnet	A	B	C	D
Number of iron paper clips attracted	8	10	12	7

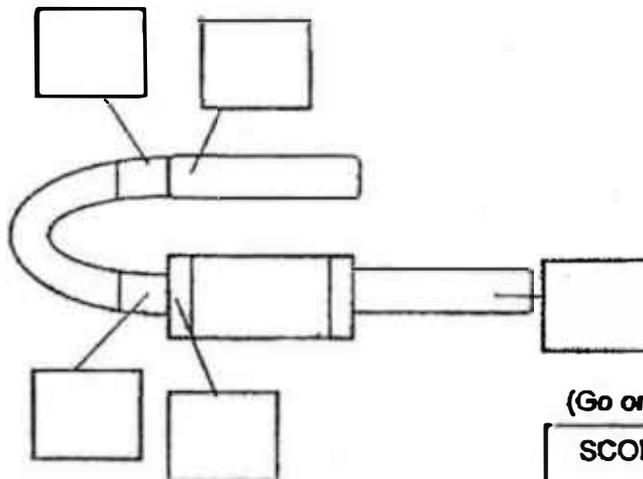
- (a) Tom said that Sally's experiment was not a fair test. What can she do to make it a fair test? [1]

---



---

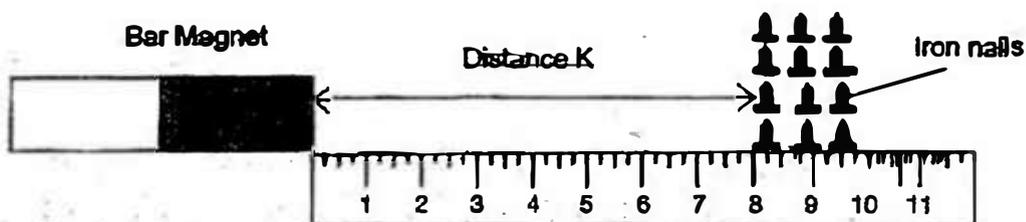
- (b) When the four magnets, A, B, C and D were brought close together, it attracted one another and formed the figure below. Write 'N' and 'S' on the poles of the magnet to show how the attraction took place. [1]



(Go on to the next page)

SCORE	2
-------	---

37. The experiment shown below is carried out using a bar magnet and several iron nails. The bar magnet is brought closer to the iron nails. Distance K shows the longest distance before the iron nails get attracted to the bar magnet.



The table below shows the results of the experiment.

Distance K (cm)	Number of Iron nails attracted to the magnet
2	7
4	5
6	3
8	1

- (a) What is the relationship between distance K and the number of iron nails attracted to the magnet?

[1]

---



---

- (b) Other than moving the iron nails nearer to the bar magnet; what could be done to the experiment to decrease distance K?

[1]

---

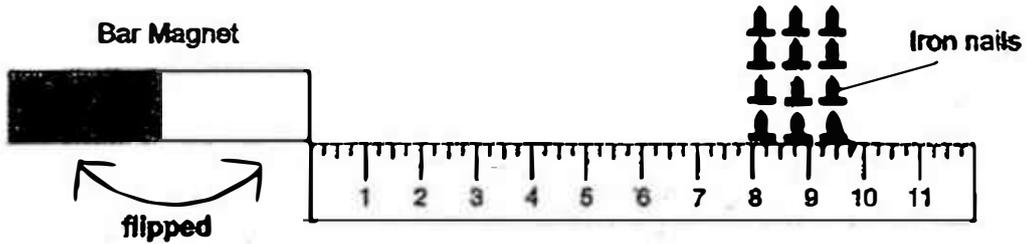


---

(Go on to the next page)

SCORE	2
-------	---

(c) The same bar magnet in the above experiment is flipped sideways.



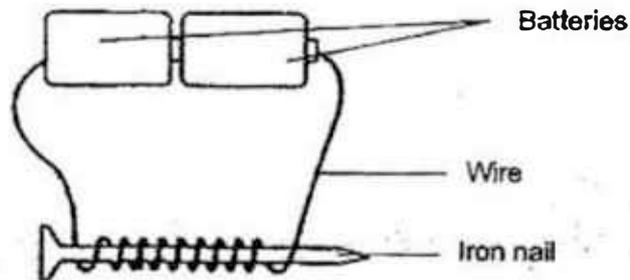
Which of the following predictions would likely be observed if the bar magnet is flipped and the other side of the magnet is facing the iron nail as shown above? [1]

Prediction	Tick the correct prediction(s)
The iron nails will be attracted to the bar magnet.	
None of the iron nails will be attracted to the bar magnet.	
The iron nails will move away from the bar magnet.	

(Go on to the next page)

SCORE	1
-------	---

38. Andy coiled some wires around an iron nail and connected the ends of the wire to batteries as shown below.



- (a) What will happen to the iron nail when the wires are connected to the batteries? [1]

---

---

- (b) State one thing Andy can do to increase the strength of the electromagnet above. [1]

---

---

- (c) If Andy replaces the iron nail with a silver nail, will the silver nail become an electromagnet? Explain why. [1]

---

---

End of paper

SCORE	
	3



SCHOOL : ANGLO-CHINESE SCHOOL (JUNIOR)

LEVEL : PRIMARY 4

SUBJECT : SCIENCE

TERM : 2017 SA1

CONTACT :

---

**SECTION A**

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	3	3	3	2	2	1	2	4	3
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	1	4	1	2	1	3	2	3	2
Q 21	Q22	Q23	Q24	Q25					
1	1	4	2	4					

**SECTION B**

Q26)	a) Both reproduce by laying eggs. b) L, the whale has hair and suckles its young, L also has hair and suckles it young. c) It has a beak.
Q27)	a) Fungi b) They get their food from the bread. c) It reproduces by seeds.
Q28)	a) A: mouth B: gullet C: stomach D: small intestine b) (i) : circulatory system (ii) respiratory system c) (i) skull (ii) ribcage d) They protect the important organs of the body.
Q29)	a) The temperature of the surrounding. b) Type of plants and the amount of water given to each plant c) The higher the temperature of the surroundings, the taller the plant will grow.
Q30)	a) (i) leaves (ii) Flower

	<p>(iii)Stem (iv)Roots</p> <p>b) To find out if plants need roots to take in water.</p>
Q31)	<p>a) 19 days b) Mosquito and butterfly c) The larva eats a lot but the pupa does not eat food.</p>
Q32)	<p>a) Both have an egg stage b) The life cycle of a mosquito has four stages but the life cycle of the frog has three. c) The tadpole breaths through gills but the frog breaths through lungs and moist skin. The tadpole can only live in water but the frog can live in water and on land.</p>
Q33)	<p>a) To find out if plants need sunlight to survive. b) Plant A would have died but plant B would be alive. c) Place both plants in an open field, give water to only one plant.</p>
Q34)	<p>a) (i) Less than 50 cm<sup>3</sup> (ii) The sponge is absorbent and absorbed the water, and the water in the container occupied the space in the air holes in the sponge. b) Yes. The lego is waterproof so it will not absorb the water.</p>
Q35)	<p>a) Air will not be able to enter the balloon as the space inside the balloon is blocked by the books that are pressing down on it. b) The balloon will inflate. c) It does not have a definite shape and it can be compressed.</p>
Q36)	<p>a) She should make the distance from the magnets to the paper clips the same. b) Top magnet : N, S Bottom Magnet : S, N Right side : S</p>
Q37)	<p>a) The longer the distance K, the fewer the number of iron balls will be attracted. b) Use a weaker magnet. c) The iron nails will be attracted to the bar magnet. ✓</p>
Q38)	<p>a) It will become magnetized. b) He can increase the number of batteries. c) No. It is not a magnetic material.</p>

**MID-YEAR EXAMINATION 2017  
PRIMARY 4  
SCIENCE**

**BOOKLET A**

**Total Time for Booklets A and B: 1 hour 30 minutes**

**INSTRUCTIONS TO CANDIDATES**

**Do not turn over this page until you are told to do so.**

**Follow all instructions carefully.**

**Answer all questions.**

**Shade your answers in the Optical Answer Sheet (OAS) provided.**

**Name: \_\_\_\_\_ ( )**

**Class: Primary 4 \_\_\_\_\_**

**Date : 9 May 2017**

**This booklet consists of 16 printed pages including this page.**

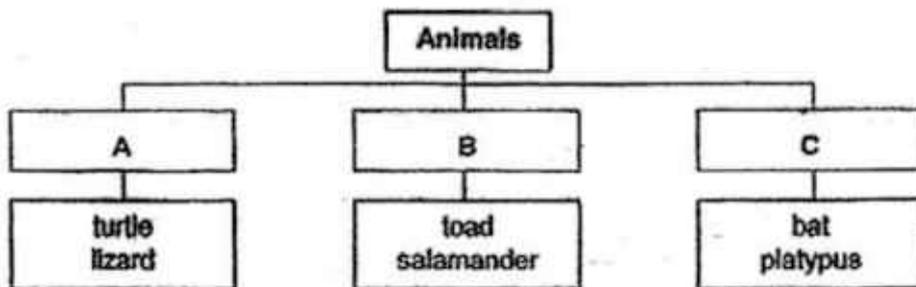
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS).

[56 marks]

- 1 Jamie is playing with her pet dog in her garden. Which of the following does not show that her dog is a living thing?

- (1) The dog drinks milk.
- (2) The dog wags its tail.
- (3) The dog has four legs.
- (4) The dog barks at strangers.

- 2 Study the classification diagram below carefully.



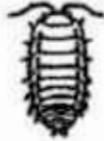
What are the most suitable headings for each group of animals?

	A	B	C
(1)	Reptiles	Amphibians	Birds
(2)	Amphibians	Reptiles	Birds
(3)	Reptiles	Amphibians	Mammals
(4)	Reptiles	Fish	Mammals

(Go on to the next page)

3 Which one of the following animals below is not an insect?

(1)



(2)



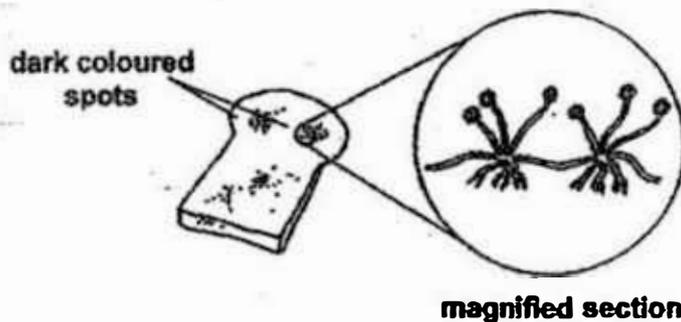
(3)



(4)



4 Ali left a piece of bread on a table in the kitchen. After a week, he observed that some dark coloured spots had formed on the bread.



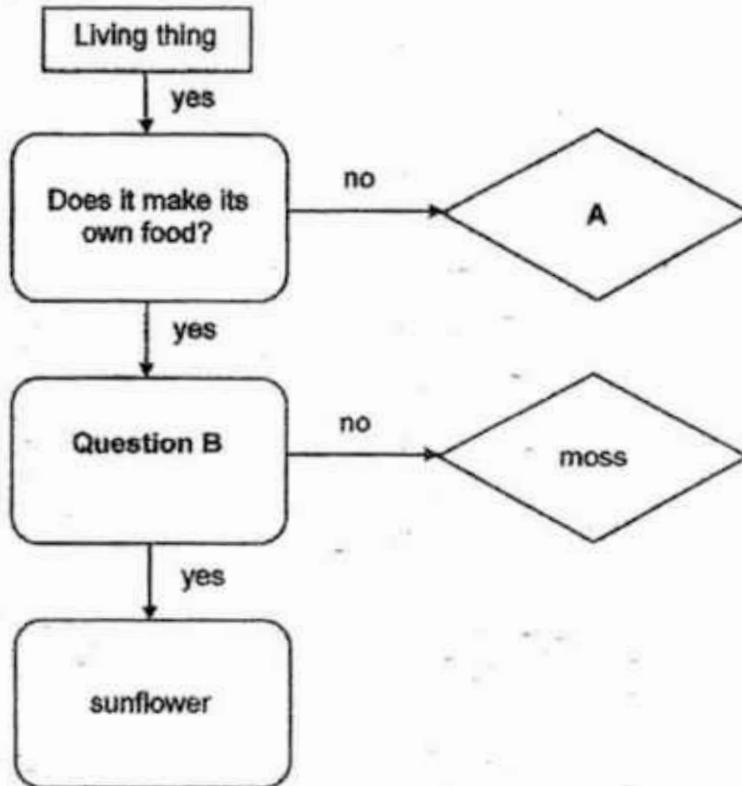
Which statement(s) is/are true about the dark-coloured spots?

- A They need light to make food.
- B They reproduce by producing spores.
- C They can be harmful to human beings.

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

(Go on to the next page)

5 Study the chart below.



Which one of the following is correct?

	A	Question B
(1)	mushroom	Does it have leaves?
(2)	toadstool	Does it produce seeds?
(3)	fern	Does it have fruits?
(4)	grass	Does it have a strong stem?

(Go on to the next page)

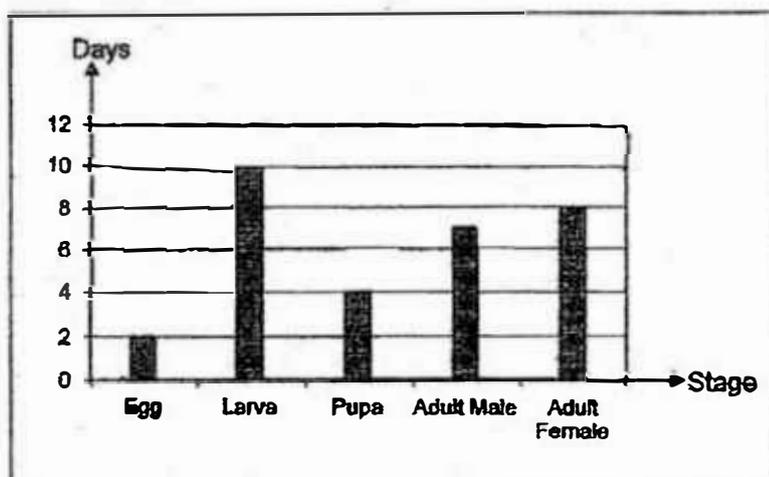
6 The table below shows the characteristics of animals A and B.

Characteristics	Animal	
	A	B
Has a pupal stage	✓	X
Gives birth to young alive	X	X
Has wings in adult stage	✓	✓
Moults several times	✓	X

Based on the table above, which one of the following statements is correct?

- (1) Both animals can fly when they were young.
- (2) Animal A is a cockroach and Animal B is a butterfly.
- (3) Animal A gives birth to young alive while Animal B lays eggs.
- (4) Animal A has 4 stages in its life cycle while Animal B has 3 stages in its life cycle.

The graph below shows the number of days for each stage of the life cycle of an insect.

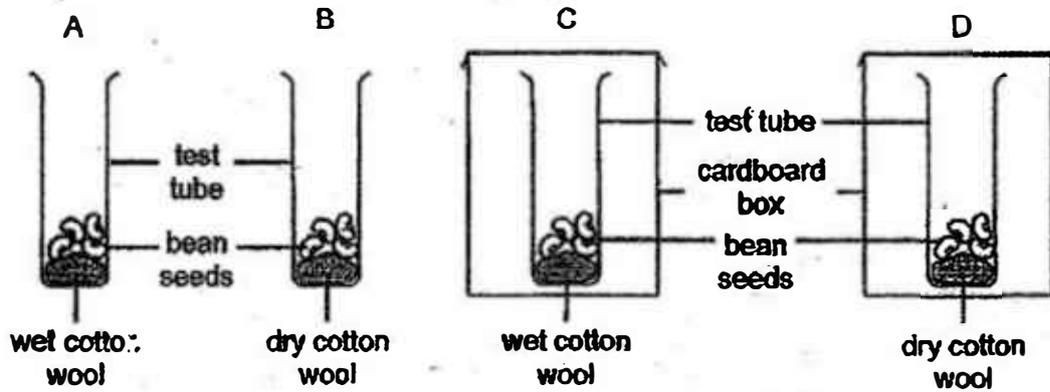


How many days would the insect take to become a male adult after the egg is hatched?

- (1) 14 days
- (2) 16 days
- (3) 21 days
- (4) 23 days

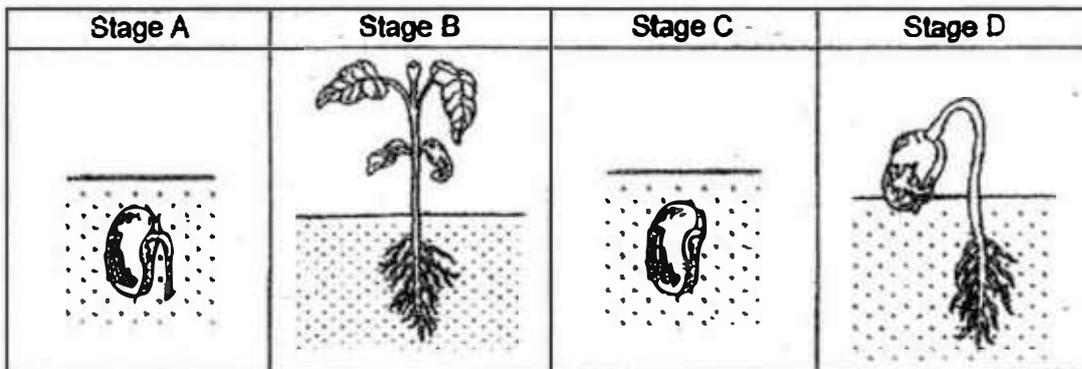
(Go on to the next page)

- 8 Four set-ups as shown below were placed in a room near the window. Each test tube contained four green bean seeds on a piece of cotton wool.



In which of the set-ups will the bean seeds not germinate?

- (1) B and D
  - (2) C and D
  - (3) A, B and C
  - (4) B, C and D
- 9 The following diagram shows the different stages in which a seed goes through during germination.

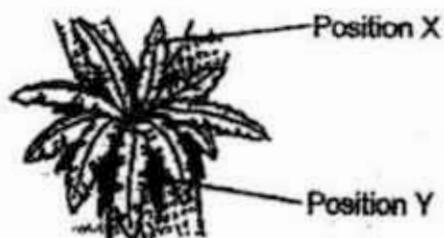


Which of the following shows the correct order when the seed germinates?

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

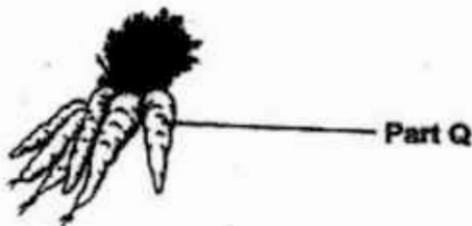
(Go on to the next page)

- 10 The diagram below shows a bird's nest fern growing on a tall tree.



The leaves at position X are green but those at the lower position Y have turned brownish. This is because the leaves at position Y receive less \_\_\_\_\_.

- (1) food
  - (2) water
  - (3) sunlight
  - (4) mineral salts
- 11 Mrs Lim harvested some carrots from her garden as shown below.



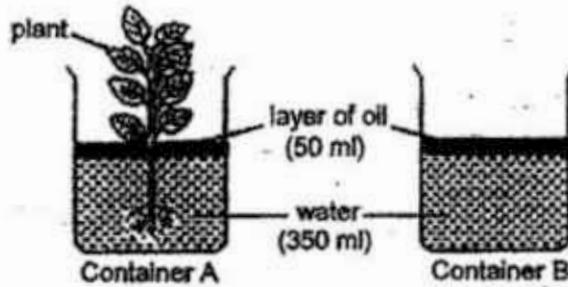
How is part Q useful to the carrot plant?

- A It produces food for the plant.
- B It stores food made by the leaves.
- C It holds the plant firmly to the ground.
- D It absorbs water and mineral salts from the soil.

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

(Go on to the next page)

- 12 Sue poured the same amount of water into two identical containers, A and B. She placed a plant into container A while container B was set up as a control as shown in the diagram below. Both containers were left on the table near the window for three days.

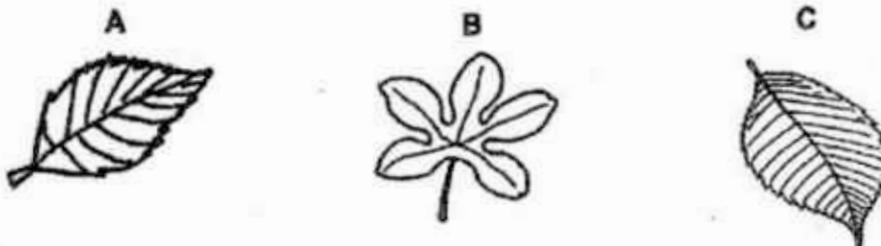


Which one of the following observations is correct at the end of three days?

- (1) The water level in both container A and B remained the same.
  - (2) The water level in both container A and B is lower than the first day.
  - (3) The water level in container A is lower than the water level in container B.
  - (4) The water level in container B is lower than the water level in container A.
- 13 Study the two leaves shown below.



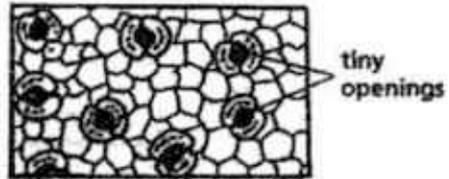
Which of the three leaves below are more likely to be classified in the same group as the two leaves above?



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

(Go on to the next page)

- 14 The diagram below shows an enlarged view of the underside of a leaf.



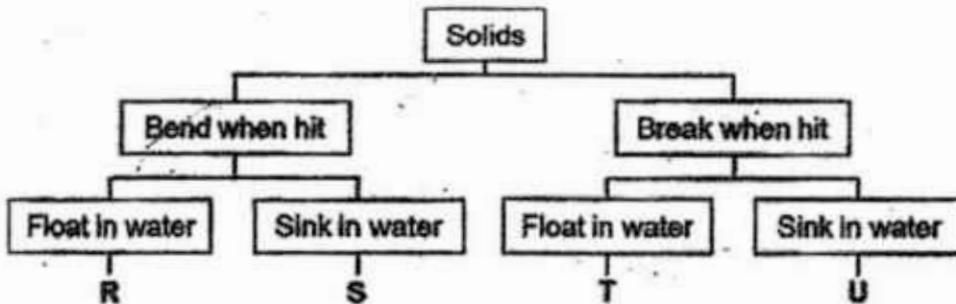
Which of the following are the functions of the tiny openings?

- A To take in gas
- B To take in light
- C To take in water
- D To give out gas

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

(Go on to the next page)

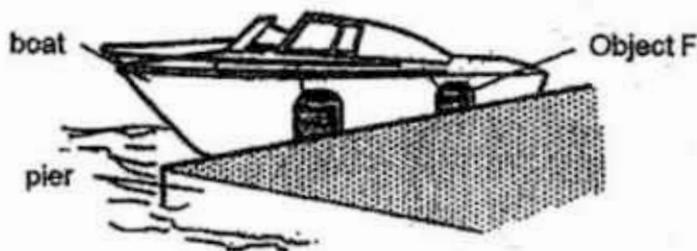
- 15 Study the classification chart below.



Where should the ice cube, claypot and steel nail be placed in the classification chart?

	ice cube	claypot	steel nail
(1)	T	U	S
(2)	R	T	U
(3)	U	R	S
(4)	S	R	T

- 16 Object F is hung at the side of a boat to prevent damage from the pier to the boat. Object F is made from a material that can be compressed when the boat moves towards the pier.

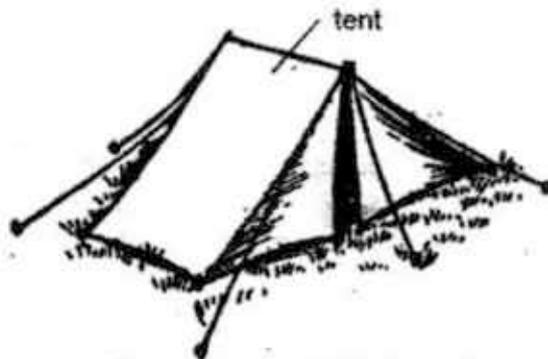


What are the properties of the material used to make object F?

- (1) stiff and strong
- (2) stiff and smooth
- (3) flexible and strong
- (4) flexible and smooth

(Go on to the next page)

- 17 The diagram below shows a tent.

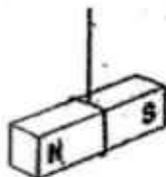


Which of the following properties are most suitable for making the tent?

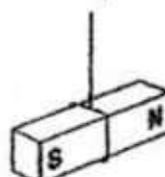
	Property of material	
	Waterproof	Flexible
(1)	no	no
(2)	no	yes
(3)	yes	no
(4)	yes	yes

- 18 A bar magnet is hung by a thin thread and left to spin near a compass. Which of the following shows the position of the bar magnet when it stops spinning?

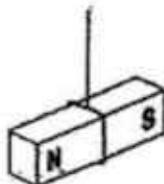
(1)



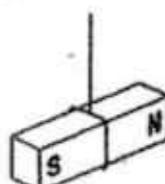
(2)



(3)

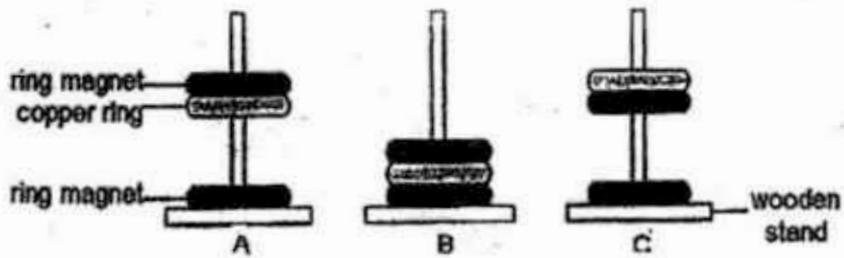


(4)



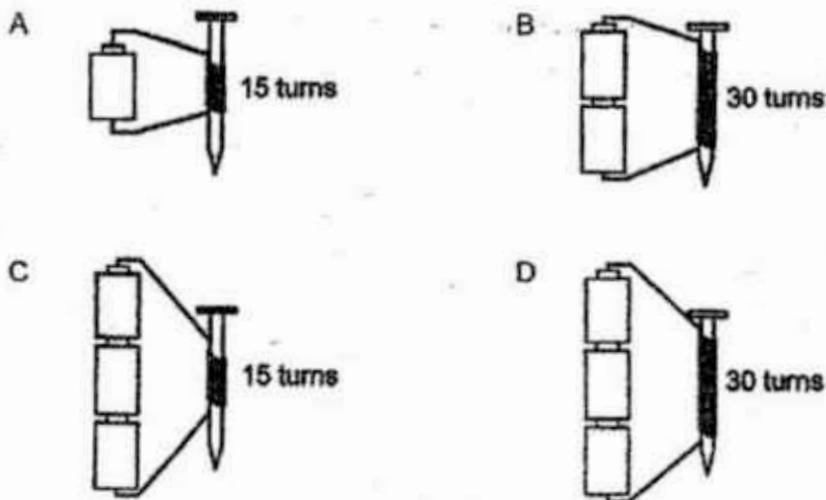
(Go on to the next page)

- 19 Two ring magnets and a copper ring are slotted in a wooden stand.



Which of the following will be observed?

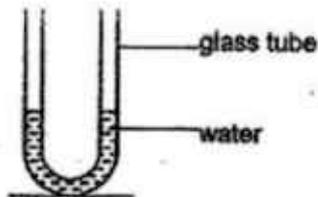
- (1) B only
  - (2) A and B only
  - (3) A and C only
  - (4) B and C only
- 20 Which two set-ups can be used to find out if the number of batteries affects the strength of an electromagnet?



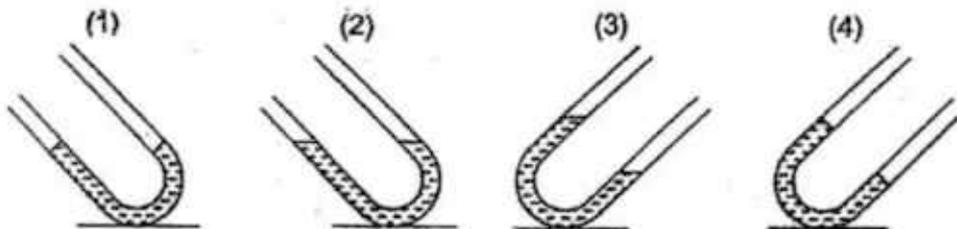
- (1) A and B only
- (2) A and D only
- (3) B and C only
- (4) B and D only

(Go on to the next page)

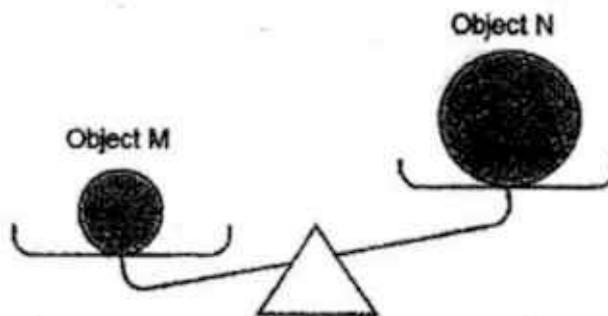
- 21 The diagram below shows a U-shaped glass tube containing some water.



Which one of the following diagrams shows what the water level would look like when the glass tube is tilted?



- 22 Two objects, M and N, are placed on a lever balance as shown below.



Which of the following statements are true?

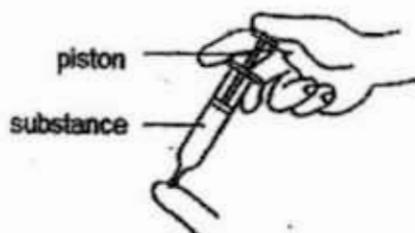
- A Object M has a smaller mass than object N.
- B Object N has a smaller mass than object M.
- C Object M has a greater volume than object N.
- D Object N has a greater volume than object M.

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

(Go on to the next page)



- 25 Two identical syringes are filled with unknown substances M and N. A finger is then used to cover each syringe and the piston is pushed as shown in the diagram below.



The distance moved by the piston is recorded in the table below.

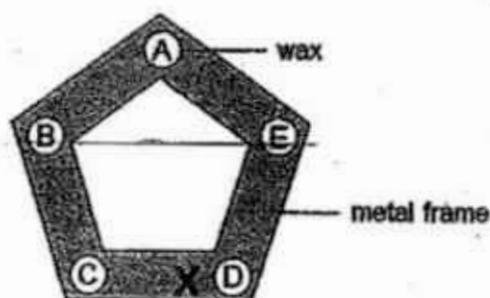
Distance moved by piston for material (cm)	
M	N
0	0.7

Which of the following best represents substances M and N?

	M	N
(1)	air	salt
(2)	air	water
(3)	salt	air
(4)	water	salt

- 26 Five drops of wax were dropped at the corners of a pentagon metal frame as shown in the diagram below. The drops of wax were then left to cool and solidify.

Subsequently, the frame is heated with a Bunsen burner at position X.

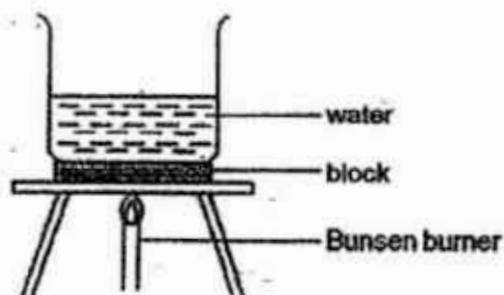


Which of the following shows the correct order of the melting wax, starting from the one which melts first?

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

(Go on to the next page)

- 27 Four blocks made of different material, W, X, Y and Z, were placed under a beaker of water. The set-up was heated over a Bunsen burner as shown below.



The time taken for the water to boil is recorded in the table below. Which block is made up of the best conductor of heat?

	Block	Time taken for water to boil (min)
(1)	W	15
(2)	X	20
(3)	Y	25
(4)	Z	21

- 28 A block of ice is left to melt on a metal plate as shown in the diagram below.



Based on the above experiment, which of the following statement(s) is/are true?

- A The metal plate is losing heat to the block of ice.
  - B The temperature of the block of ice is decreasing.
  - C The water is gaining heat from the surrounding.
  - D The ice is losing heat to the metal plate and the surrounding.
- (1) B only  
 (2) A and C only  
 (3) B and C only  
 (4) A, B and D only

**MID-YEAR EXAMINATION 2017  
PRIMARY 4  
SCIENCE**

**BOOKLET B1**

**Total Time for Booklets A and B: 1 hour 30 minutes**

**INSTRUCTIONS TO CANDIDATES**

**Do not turn over this page until you are told to do so.  
Follow all instructions carefully.  
Answer all questions.**

**Name: \_\_\_\_\_ ( )**

**Class: Primary 4. \_\_\_\_\_**

**Date : 9 May 2017**

Booklet A	56
Booklet B1	16
Booklet B2	18
Total	90
Parent's Signature	

**This booklet consists of 7 printed pages including this page.**

For questions 29 to 34, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

[16 marks]

29 The pictures below show what happens when mammal X faces danger.



rolls up  
when it  
faces  
danger

(a) Which characteristic of living things is shown by the mammal X? [1]

---



---

(b) Besides moving about to escape from danger, give another reason why mammal X needs to move about. [1]

---



---



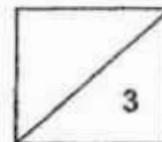
---

(c) How does mammal X reproduce? [1]

---

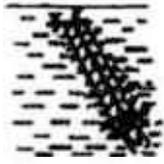


---



(Go on to the next page)

30 The diagrams below show animal C and animal D.



Animal C



Animal D

(a) Which stage of the life cycle is animal C? [1]

---

(b) Apart from their physical shape and size, state two similarities between life cycles of animal C and animal D. [2]

(i) 

---

---

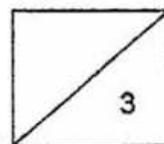
---

(ii) 

---

---

---

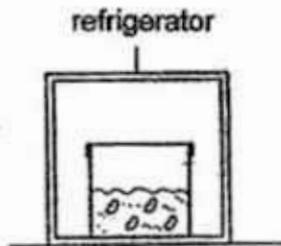


(Go on to the next page)

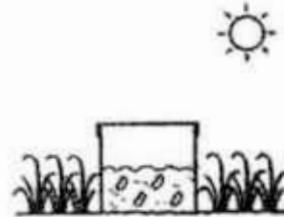
- 31 Mary set up three cardboard boxes with equal amounts of soil and placed equal number of beans in them as shown below. She watered each pot of soil with equal amounts of water daily. All the three boxes were covered with cardboard lids.



Set-up X



Set-up Y



Set-up Z

- (a) Will the beans in all the set-ups germinate? Explain your answer. [1]

---



---



---

- (b) How does covering the boxes with lids in all the set-ups ensure a fair experiment? [1]

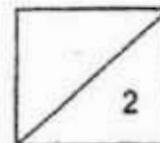
---



---

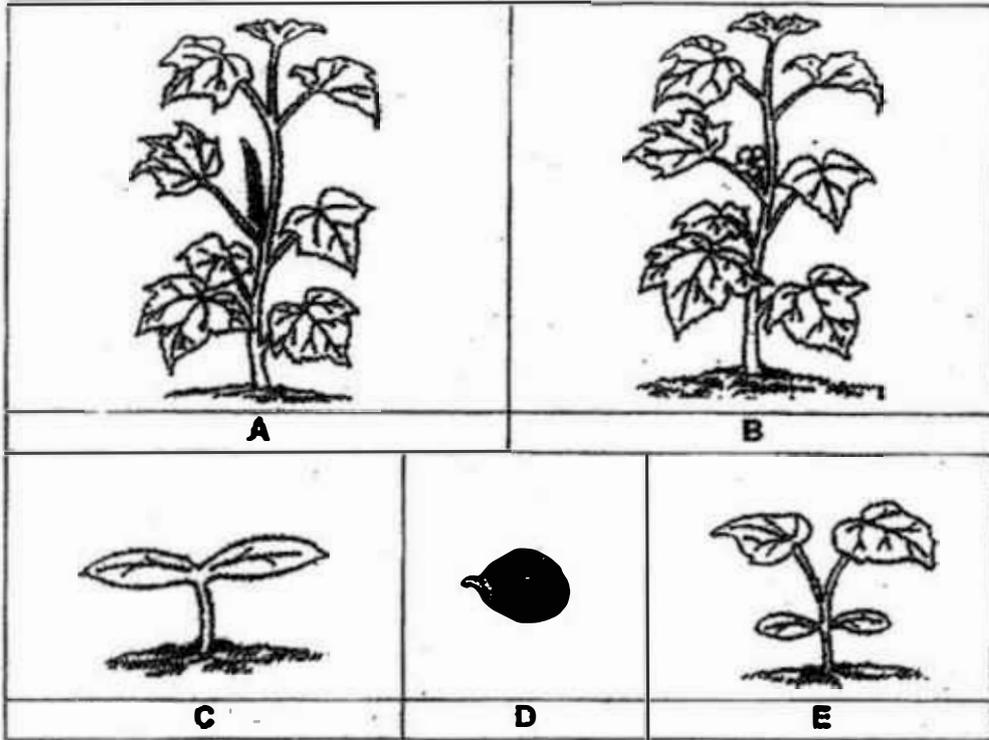


---



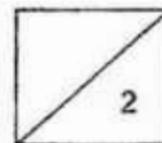
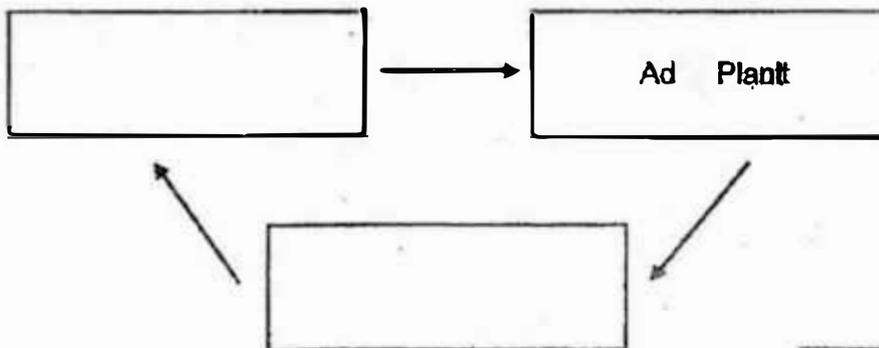
(Go on to the next page)

32 The diagrams below show the various stages of the growth of the lady's finger plant.



(a) At which stages, A, B, C, D and E, can the plant make its own food? [1]

(b) Name the stages and complete the life-cycle of the lady's finger plant below. [1]



(Go on to the next page)

- 33 Susie coated a layer of paint on the stem, leaf stalks and both surfaces of the leaves of the plant as shown below. The plant was placed under the sun and watered daily. After a week, the plant died.



- (a) Why did the plant die? Give two reasons for your answer. [2]

---



---

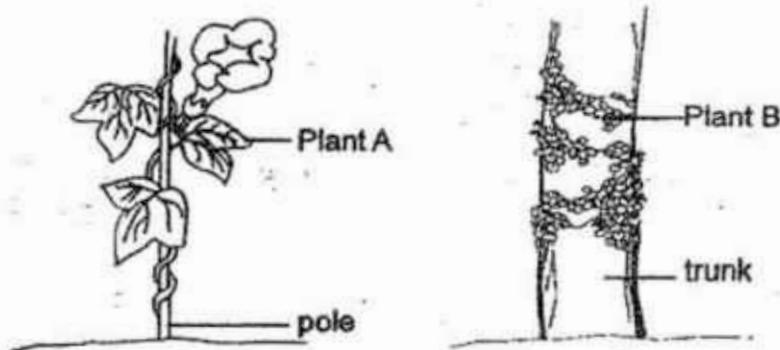


---



---

The diagram below shows two plants, A and B, growing in a park.

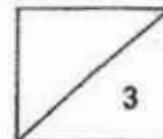


- (b) What is a similarity between the stems of plants A and B? Explain how they help both plants to survive better. [1]

---

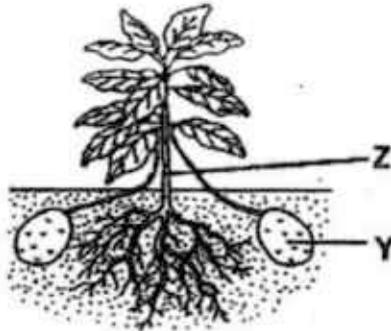


---



(Go on to the next page)

34 The diagram below shows a potato plant.



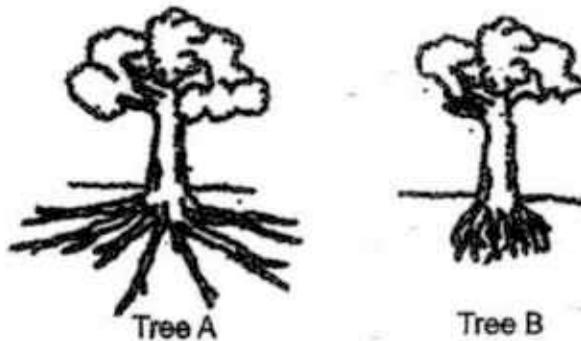
(a) Name the plant part labelled Y. [1]

---

(b) What is the function of part Z? [1]

---

The diagram below shows two trees, A and B



(c) Which tree, A or B, is less likely to be uprooted during a storm? Give a reason for your answer. [1]

---



---



---



**MID-YEAR EXAMINATION 2017  
PRIMARY 4  
SCIENCE**

**BOOKLET B2**

**Total Time for Booklets A and B: 1 hour 30 minutes**

**INSTRUCTIONS TO CANDIDATES**

**Do not turn over this page until you are told to do so.  
Follow all instructions carefully.  
Answer all questions.**

**Name: \_\_\_\_\_ ( )**

**Class: Primary 4. \_\_\_\_\_**

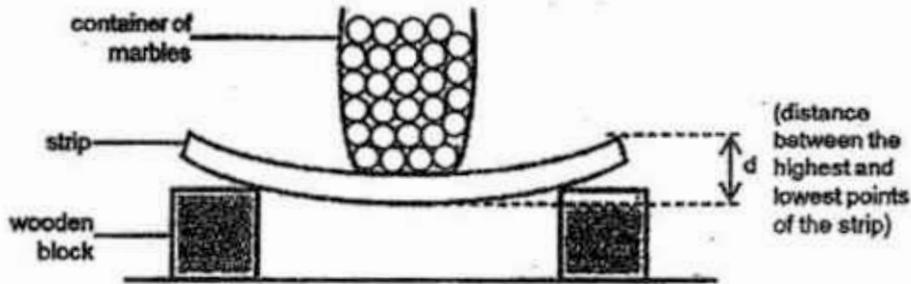
**Date : 9 May 2017**

<b>Booklet B2</b>	<b>18</b>
-------------------	-----------

**This booklet consists of 7 printed pages including this page.**

For questions 35 to 40, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.  
[18 marks]

- 35 Yenni set up an experiment as shown below to compare a property of three strips, X, Y and Z, which are made of different materials.



On each strip, she placed a container of 50 identical marbles and measured the distance  $d$ . The results are shown below.

strip	X	Y	Z
$d$ (cm)	3	1	5

- (a) Which of the strips is the most flexible? Explain your answer in (a) based on the results of the experiment. [2]

---



---



---



---



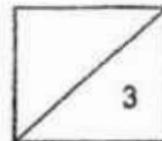
---

- (b) What are the two things about the strips that were kept the same to ensure a fair test? [1]

---

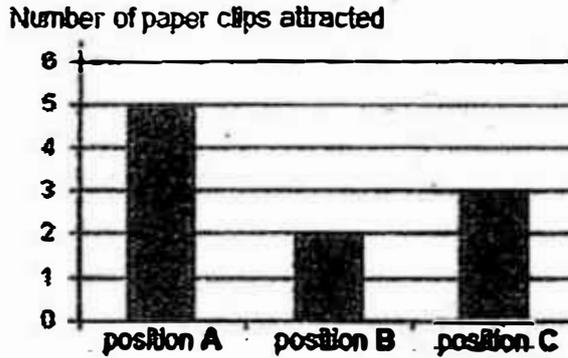


---

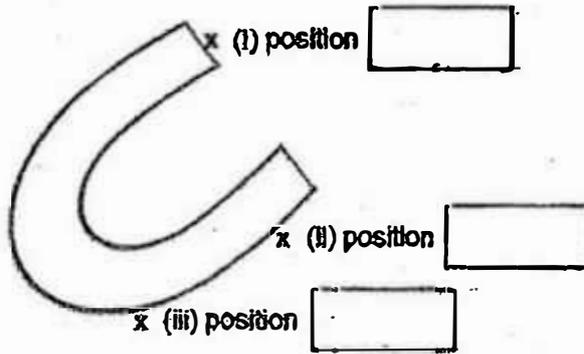


(Go on to the next page)

36 Some paper clips are placed near a horseshoe magnet at different positions, A, B and C. The results are shown in the bar chart below.



(a) Based on the results, label positions A, B and C in the diagram below. [1]



(b) What does this experiment show about the magnetic strength of a magnet? [1]

---



---

(c) Explain your answer in (b) based on the results obtained. [1]

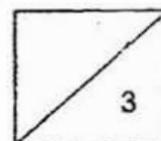
---



---

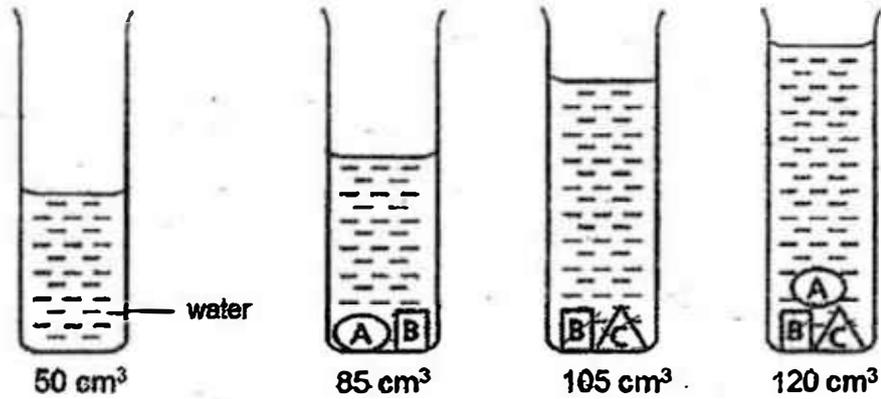


---



(Go on to the next page)

- 37 A container was filled with  $50 \text{ cm}^3$  of water. Objects A, B and C were put into the container and the water level rose as shown below.



- (a) Find the volume of objects A and B. Write your answer in the table below. [2]

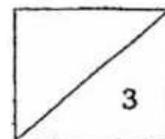
Object	Volume ( $\text{cm}^3$ )
A	
B	

- (b) Based on the above observation, what could be concluded about the property of solids and liquids? [1]

---

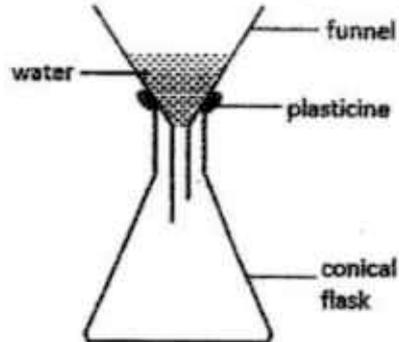


---



(Go on to the next page)

- 38 Lynn placed a funnel on a conical flask and held it in place with plasticine. She poured some water into the funnel as shown below.



- (a) It is observed that the water flowed slowly into the conical flask. Give a reason for this observation. [1]

---



---



---



---

- (b) Without breaking any of the apparatus, what can Lynn do to make the water flow quickly into the conical flask? [1]

---



---



---

- (c) Explain how the method stated in (b) allows the water to flow quickly into the conical flask? [1]

---



---



---



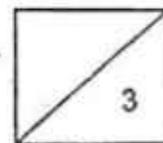
---



---

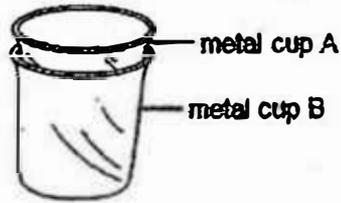


---



(Go on to the next page)

39 Tom found two metal cups stuck together as shown in the diagram below.



He was given some ice cubes and a basin of hot water to separate the metal cups.

(a) What should Tom do with the ice cubes? Explain your answer. [1]

---



---



---

(b) What should Tom do with the basin of hot water? Explain your answer. [1]

---

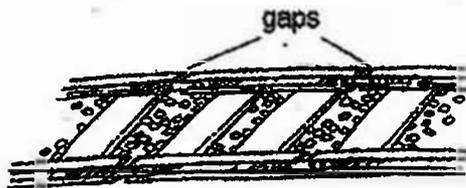


---



---

(c) The diagram below shows part of a railway track. Gaps are observed between the tracks.



What would happen to the railway track on a hot day if it was a continuous track with no gap in between? Give a reason for your answer. [1]

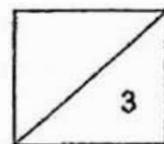
---



---

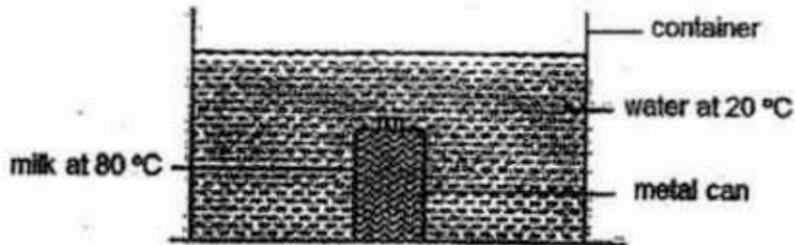


---

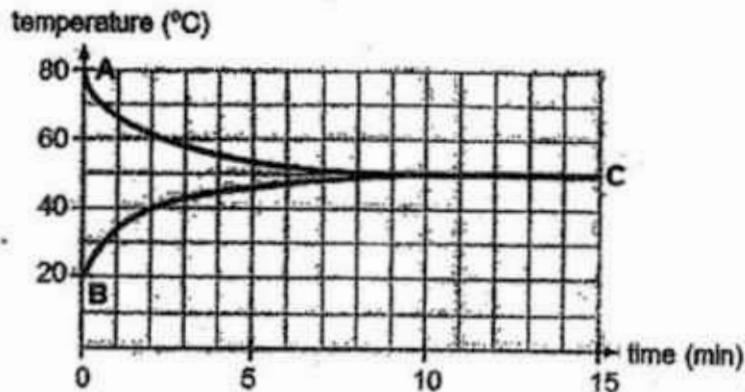


(Go on to the next page)

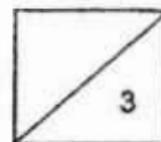
- 40 Some hot milk was poured into a metal can before it was sealed. It was then put into a container of cold water as shown in the diagram below.



The temperature of the cold water and hot milk were measured at regular intervals for 15 minutes and the graph is drawn in the diagram below.



- (a) What was the temperature of the water after the 10 minute? [1]
- 
- (b) What does line AC in the graph represent? [1]
- 
- (c) If the metal can is changed to a glass bottle with the same volume and shape, will it take a longer or shorter time for temperature of milk to increase or decrease? Explain your answer. [1]
- 
- 
- 





**EXAM PAPER 2017 (P4)**

**SCHOOL : MGS**

**SUBJECT : Science**

**TERM : SA1**

**ORDER CALL :**

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

**29)a)Mammal X respond to changes around it.**

**b)Living things need food to survive.Hence it has to look for food and needs to move around.**

**c)Mammal X gives birth to its young alive.**

**30)a)Larva stage**

**b)i)Both of them are at the larva stage now.**

**ii)Both of them have 4-stage life cycle.**

**31)a)No, not all the beans in all the set-ups would germinate. Seeds need warmth, oxygen and water to germinate. Although sufficient**

water is given, warmth is not given to the seeds in box Y. Air is also not given to all the boxes Y, X and Z. Hence the boxes would not be able to germinate.

b) It is to ensure that the beans in each set-up will not receive any sunlight to have a fair test.

32) a) C, E, B and A

b) young plant – Adult Plant – seed

33) a) The plant did not have roots to absorb mineral salts and water. If both sides of the leaves are coated in paint, there would not allow carbon dioxide to enter and oxygen to exit and plant also can't obtain sunlight to make its own food causing it to die after a week.

b) Both of them have weak stem and climb on a pole or a tree trunk to reach for more sunlight for the leaves of the plant to make food.

34) a) Y is a stem

b) Part Z helps to support the plant leaves and branches to help the leaves to reach for more sunlight to make food.

c) Tree A. Roots of the tree hold the plant firmly to the ground. Hence Tree A has compared to B. Roots of tree A would hold A more firmly to the ground than B. During thunderstorm tree A would be less likely to be uprooted compared to B.

35) a) Strip Z. It has the greatest distance between the highest and lowest point of the strip so that it is able to bend the most without breaking.

b) The length and the thickness of strips were kept the same to ensure a fair experiment.

**36)a)i)A**

**ii)C**

**iii)B**

**b)The magnetic strength of the magnet is strongest.**

**c)A that was the pole of a magnet attracted the most paper clip compared to C, who was closest to the poles, and B that was furthest from the poles.**

**37)a)Object A – 15cm<sup>3</sup>**

**Object B – 20cm<sup>3</sup>**

**b)Solid and liquid has definite volume.**

**38)a)There is no hole in or gap for air in the conical flask to escape. The flow of water is slow as the water in the flask occupies space. Air occupies space and can be compressed.**

**b)She can lift the funnel slightly above. The conical flask and remove the plasticine. This would make the flow of water faster than before.**

**c)Air occupies space in the conical flask. Hence when the Plasticine is removed and the flask is raised above the flask, air would be able to escape and the water would be able to occupy the same space the air once occupied. This would help the flow of water to flow quickly into the conical flask.**

**39)a)Put ice into the metal cup A. Metal cup A will lose heat and contract.**

**b)Tom should put the metal cup B in the basin of hot water. That way, metal cup can gain heat and expand. Hence the 2 cups would loosen and Tom would be able to separate them.**

**c)The railway track would buckle .Because there is no space for expansion.**

**40)a)50.C**

**b)It shows the decreasing temperature of the hot milk.**

**c)It will take he milk in the glass to loss heat slower as it is a poor conductor of heat.**

**SEMESTRAL ASSESSMENT 1 –  
2017 PRIMARY 4**

**SCIENCE**

**BOOKLET A**

**28 Multiple Choice Questions (56 marks)**

**Total Time for Booklets A and B : 1 hour 45 minutes**

**INSTRUCTIONS TO CANDIDATES**

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers in the Optical Answer Sheet (OAS) provided.

**Marks Obtained**

Booklet A		/ 56
Booklet B		/ 44
Total		/ 100

Name: \_\_\_\_\_ ( )

Class: P 4 \_\_\_\_\_

Date : 8 May 2017

Parent's Signature: \_\_\_\_\_

---



**Section A: (28 x 2 marks = 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.

1. Which of the following is/are a source(s) of light?



Balloon



Fire



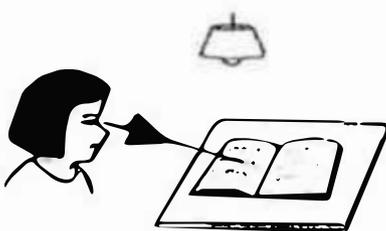
Moon



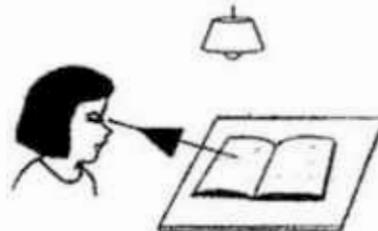
Fan

- (1) Fan only
- (2) Fire only
- (3) Balloon only
- (4) Fire and Moon only

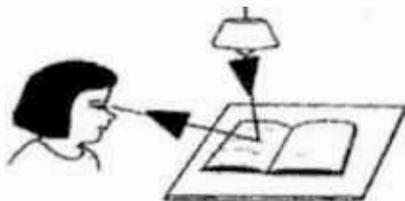
2. Which diagram below shows the correct path of light that enabled Sally to read a book?



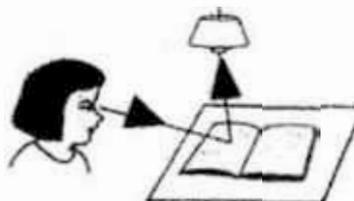
(1)



(2)



(3)

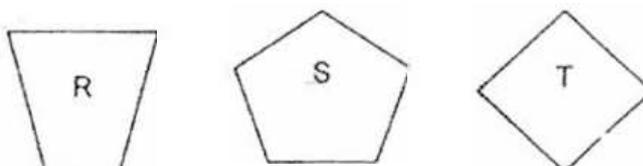


(4)

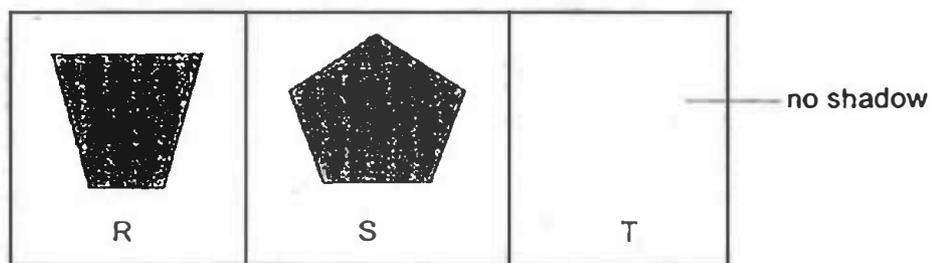
3. Study the set-up below.



Objects R, S and T were placed in between the light source and white screen one at a time.



The following shadows were formed on the screen.



Based on the observations above, which of the following statements are correct?

- A R blocked the most light.
- B T allowed light to pass through.
- C S is placed furthest away from the light source.
- D The path of light is blocked by at least one of the objects.

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

4. Which one of the following is a matter?

(1)



feather from a peacock

(2)



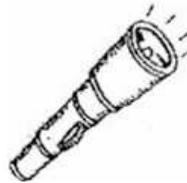
sound made by a bell

(3)



heat from a campfire

(4)



light from a torch

5. The table below shows the properties of four matters.

Object	Definite volume?	Definite shape?	Can be compressed?
Air	No	Yes	Yes
Milk	Yes	No	No
Sugar	Yes	Yes	Yes
Table	Yes	No	No

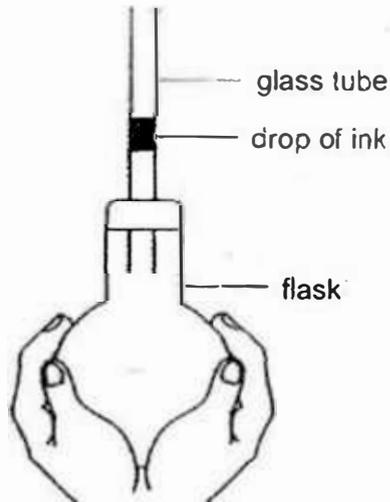
Which one of the following matters has its properties described correctly?

- (1) Air
- (2) Milk
- (3) Sugar
- (4) Table

6. Which one of the following objects produces useful heat to do work?

- (1) Toaster
- (2) Television
- (3) Car engine
- (4) Street lamp

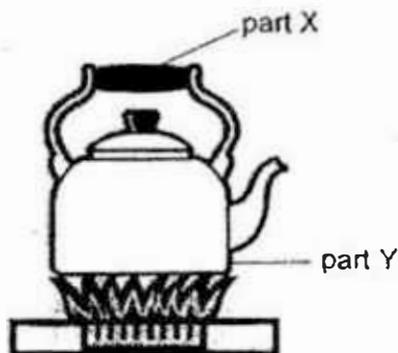
7. Mary fitted a flask with a glass tube. The glass tube contained a drop of ink. The ink moved up the tube slightly when Mary wrapped her hands around the flask.



Which one of the following statements is the correct explanation for her observation?

- (1) The heat from the flask caused the ink to contract.
- (2) The heat from her hands caused the ink to expand.
- (3) The heat from the flask caused the air in the flask to contract.
- (4) The heat from her hands caused the air in the flask to expand.

8. The diagram below shows a kettle.



What properties of the materials are suitable for making part X and part Y of the kettle?

	Part X	Part Y
(1)	good conductor of heat	good conductor of heat
(2)	poor conductor of heat	good conductor of heat
(3)	good conductor of heat	poor conductor of heat
(4)	poor conductor of heat	poor conductor of heat

9. Jane wants to make a raincoat to keep her body dry on rainy days.



Which of the following property/properties must she consider when choosing the material?

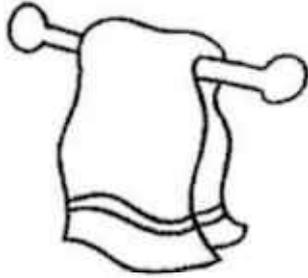
- A It is flexible.
- B It is waterproof.
- C It floats on water.

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

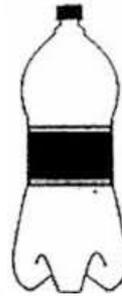
10. Which of the following statement about magnet is **not** true?

- (1) Like poles repel.
- (2) Unlike poles attract.
- (3) Every magnet has a north pole and a south pole.
- (4) Some magnets have two south poles and no north pole.

11. Which one of the following objects is made of magnetic material?



(1) cotton towel



(2) plastic bottle

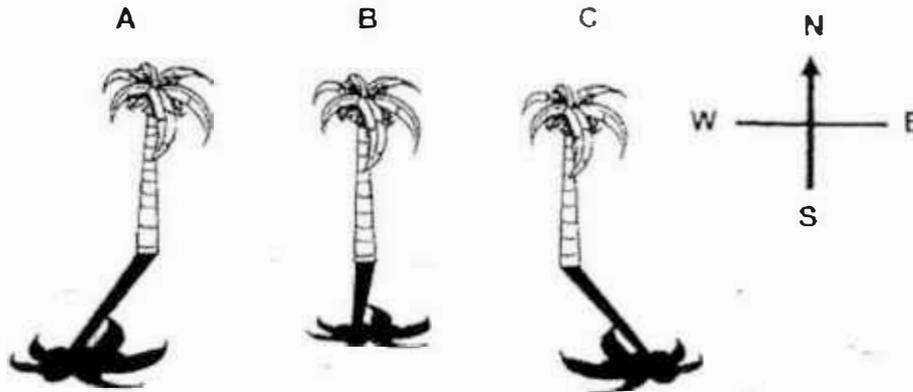


(3) copper mirror frame



(4) steel spoon

12. Study the diagram shown below.



Sara knows that the Sun rises in the East and sets in the West. She observed and recorded the timings of the shadows formed by a coconut tree at different times of the day.

Which one of the following shows the correct timings when the shadows are formed?

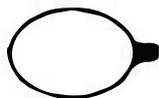
	<b>A</b>	<b>B</b>	<b>C</b>
(1)	9 p.m.	12 noon	4 a.m.
(2)	10 a.m.	12 noon	2 p.m.
(3)	10 a.m.	12 a.m.	5 p.m.
(4)	10 p.m.	1 p.m.	5 a.m.

13. Mei Ling shone a torch at a ceramic cup below to form different shadows of the cup.



cup

Which one of the following shadows cannot be formed by the cup?



(1)



(2)

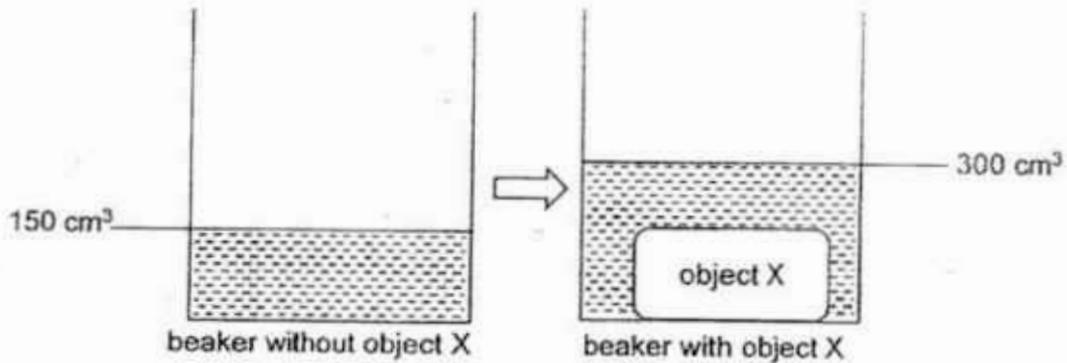


(3)

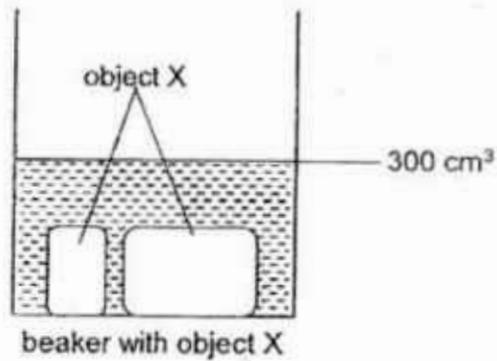


(4)

14. Julie placed a block of object X in a beaker that was filled with  $150 \text{ cm}^3$  of water and the water level rose to  $300 \text{ cm}^3$ .



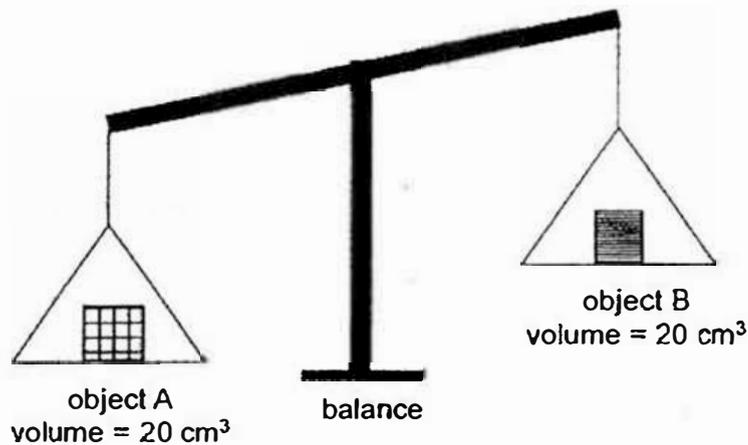
She removed the object and cut it into two pieces. The diagram below shows the water level when she placed the two cut pieces of object X back into the beaker.



From the above activity carried out by Julie, we can conclude that object X

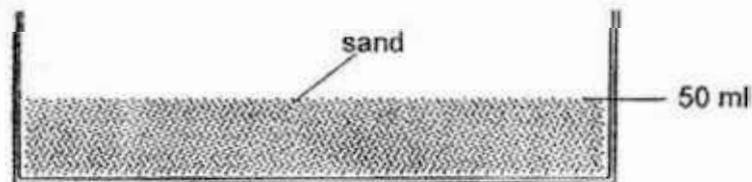
- (1) has mass
- (2) can be compressed
- (3) has a definite volume
- (4) has no definite volume

15. Study the diagram below.



Which of the following statement(s) about objects A and B is/are correct?

- A Both objects have the same mass.
  - B Both objects have different amount of matter.
  - C Object A takes up more space than Object B.
- (1) A only  
(2) B only  
(3) B and C only  
(4) A, B and C
16. Ali placed some sand in a fish tank up to the 50 ml mark as shown in the diagram below. There are air spaces among the sand particles.



The next day, he poured 30 ml of water into the tank containing the sand and noted that the water level was below 80 ml.

Why was the water level below 80 ml?

- (1) The water can be compressed.
- (2) The water and sand have no definite volume.
- (3) The air trapped between the sand particles was compressed.
- (4) Some water occupied the air spaces in between the sand particles.

17. Mrs. Teo carried out an experiment with three different blocks, A, B and C. The blocks have the same colour but different shapes.



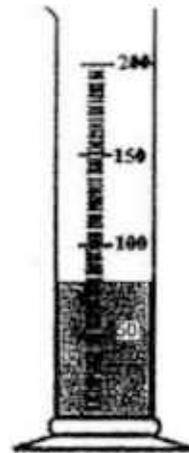
block A



block B



block C



measuring cylinder

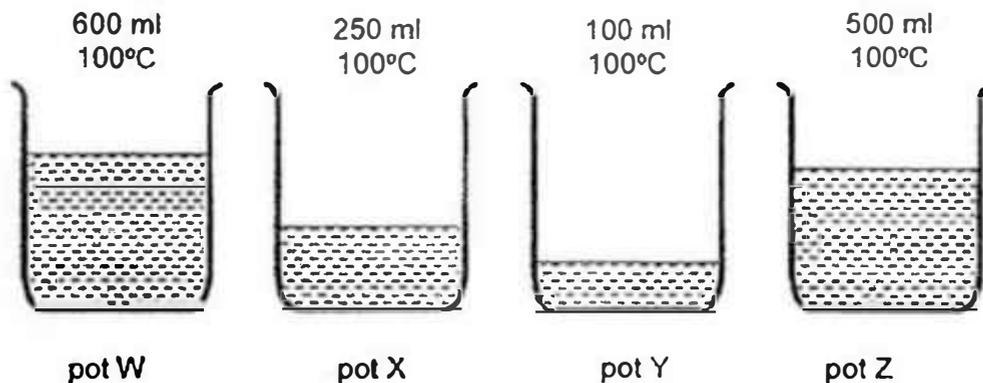
She placed the three different blocks into a measuring cylinder containing 80 ml of water one at a time and measured the volume of each block.

What was she trying to find out from her experiment?

She was trying to find out if \_\_\_\_\_

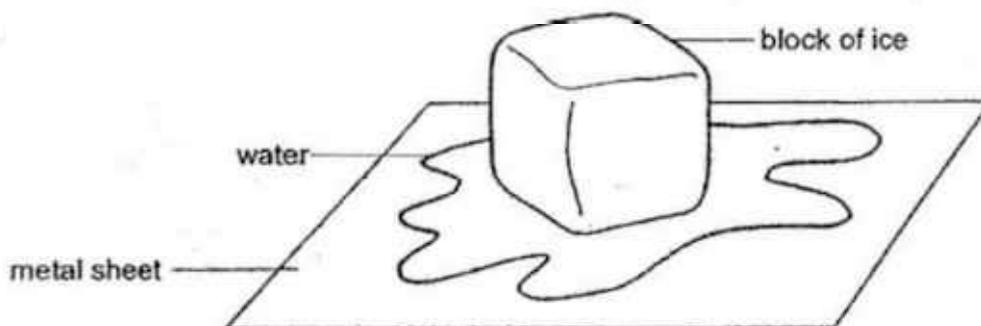
- (1) the colour of the block affect its mass
- (2) the shape of the block affect its mass
- (3) the colour of the block affect its volume
- (4) the shape of the block affect its volume

18. Maggie wants to cook a packet of instant noodle using one of the four pots filled with different amount of water at the same starting temperature.



Which pot should Maggie choose to enable her to take the least amount of time to cook the instant noodle?

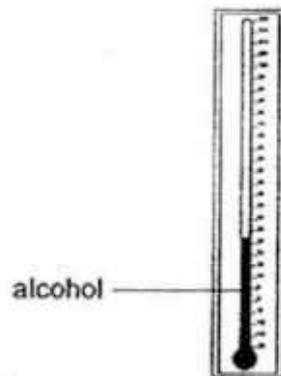
- (1) W
  - (2) X
  - (3) Y
  - (4) Z
19. Study the diagram below.



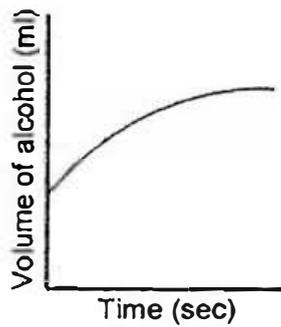
What will happen if the block of ice on a metal sheet is left in a room of 20°C for 5 minutes?

- A The water will change to solid state.
  - B The temperature of the metal sheet will decrease.
  - C The block of ice will gain heat from the surrounding air.
- (1) A only
  - (2) B only
  - (3) B and C only
  - (4) A, B and C

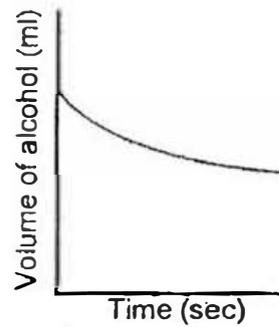
20. The picture below shows a thermometer which contains alcohol.



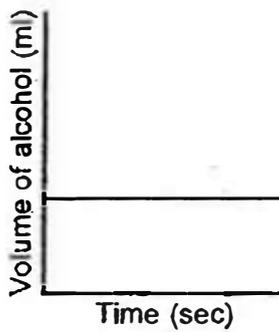
Which of the following graph shows what happens to the volume of the alcohol as soon as the thermometer is placed in a basin of iced water?



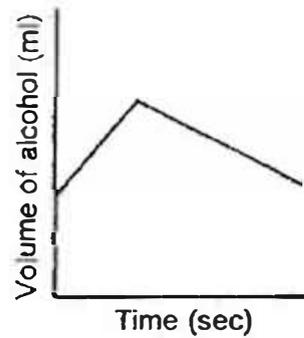
(1)



(2)

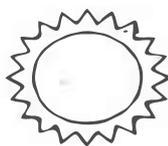


(3)



(4)

21. Mrs. Siva made four similar boxes using different materials, P, Q, R and S. The temperature of the air inside the box at the beginning of the experiment is 30°C. She then left the boxes under the Sun for 20 minutes and recorded the temperature of the air inside each box in the table as shown below.



material P



material Q



material R



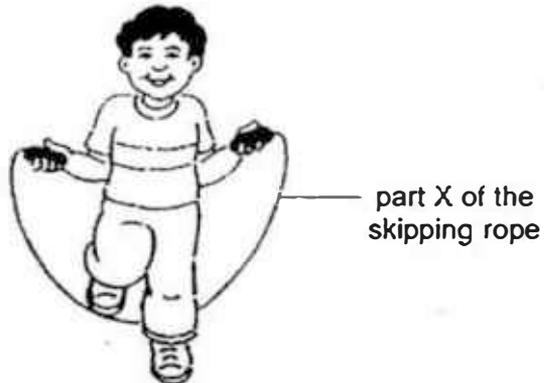
material S

Material used	Temperature (°C) of air inside the boxes after 20 minutes
P	40
Q	33
R	38
S	45

Which box should she choose to put packets of cold drinks so that they will remain cold for the longest period of time?

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

22. Study the picture below.



What property/properties must the material of part X has/have to make the skipping rope?

- A shiny
- B flexible
- C strong
- D waterproof

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

23. The table below shows the least weight of a load that caused the three different materials, A, B, and C, to break.

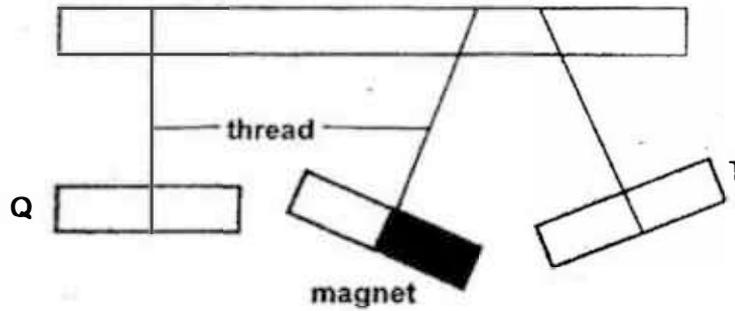
Material	Weight of load that caused material to break (kg)
A	15
B	2
C	10

Which of the following statements about materials A, B and C is/are true?

- A Material A is the strongest.
- B Material C is weaker than material B.
- C Material A is more flexible than material C.

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

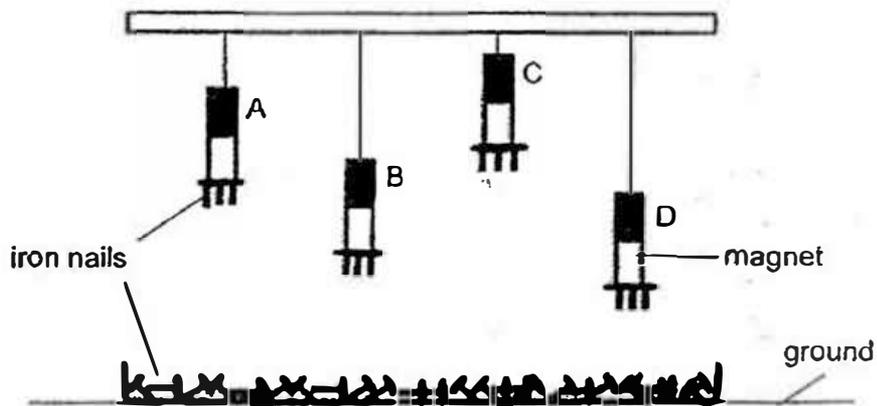
24. The diagram below shows two objects, Q and T, which are hung together with a bar magnet.



What could objects Q and T be?

	Q	T
(1)	Glass rod	Steel rod
(2)	Glass rod	Magnet
(3)	Iron rod	Steel rod
(4)	Iron rod	Magnet

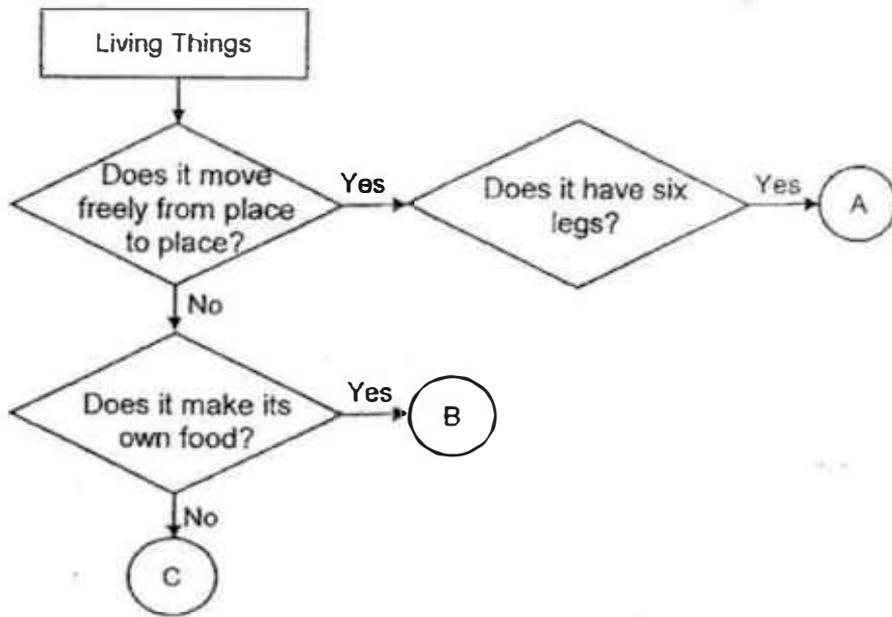
25. Four bar magnets were hung at different heights



Based on the diagram, which magnet has the strongest magnetism?

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

26. Study the flow chart below.



What could A, B and C be?

	A	B	C
(1)	Frog	Mushroom	Fern
(2)	Ant	Grass	Mushroom
(3)	Mushroom	Fern	Ant
(4)	Ant	Grass	Frog

27. The pictures below show two living things.



toadstool



bird's nest fern

Which one of the following statements correctly describes both living things?

- (1) Both are flowering plants.
- (2) Both reproduce from spores.
- (3) Both can make their own food.
- (4) Both can move freely from one place to another.

28. The pictures below show a zebra and a dog.



zebra



dog

They are similar because they \_\_\_\_\_

- (1) lay eggs
- (2) have feelers
- (3) are covered with feathers
- (4) feed their young with milk

**SEMESTRAL ASSESSMENT 1 – 2017  
PRIMARY 4**

**SCIENCE**

**BOOKLET B**

**12 Open-ended questions (44 marks)**

**Total Time for Booklets A and B : 1 hour 45 minutes**

**INSTRUCTIONS TO CANDIDATES**

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

**Marks Obtained**

**Section B**

	<b>/ 44</b>
--	-------------

**Name:** \_\_\_\_\_ (     )     **Class:** P 4 \_\_\_\_\_

**Date :** 8 May 2017

**Parent's Signature:** \_\_\_\_\_

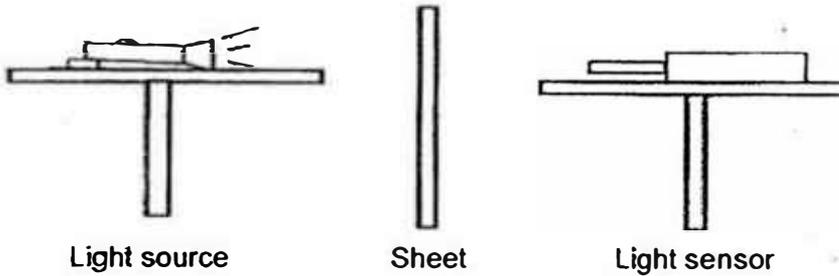
---

**Section B: (44 marks)**

Write your answers to questions 29 to 40.

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

29. Sheryl wanted to find out the degree of transparency of three different materials, R, S and T. She placed each material, one at a time, between the light source and the light sensor in a dark room as shown below.



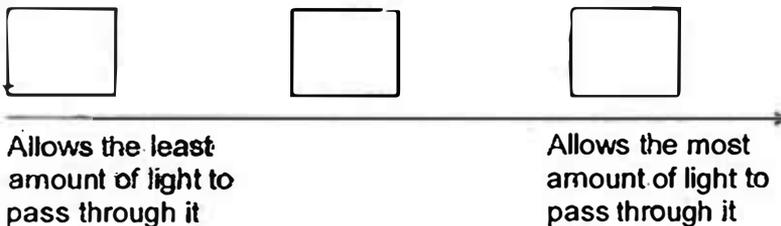
The results of her experiment are shown in the table below.

Material	Amount of light detected by the light sensor (units)
R	350
S	5
T	100

- (a) What is the dependent (measured) variable? [1]

---

- (b) Arrange the materials according to their degree of transparency by filling in the boxes with the correct letters, R, S and T. [1]



- (c) A new material, U, is discovered. It allows more light to pass through than material T but allows less light to pass through than material R.

What is the likely amount of light that will be detected by the light sensor when material U is placed in between the torch and the light sensor? [1]

---

Score	3
-------	---

30 (a) State two common properties of all matter?

[2]

---

---

The table below shows the properties of four specimens, A, B, C and D.

Properties	A	B	C	D
Can it be seen?	No	Yes	Yes	Yes
Does it have mass?	Yes	Yes	No	Yes
Is it a non-living thing?	Yes	No	Yes	Yes
Does it have definite volume?	No	Yes	No	Yes

(b) Which of the following specimen(s), A, B, C or D, is/are matter?

[1]

---

(c) Based on the properties given in the table, give an example of specimen A.

[1]

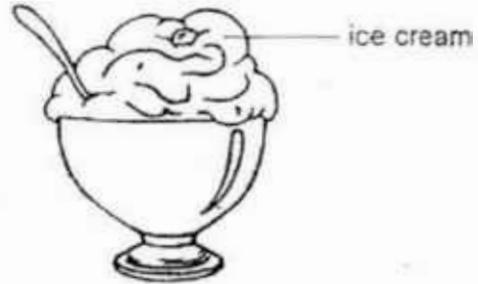
---

Score	4
-------	---

31. The two set-ups below are placed in a room at 30°C.



Set-up A



Set-up B

(a) Put a tick (✓) in the correct box to indicate whether each of the labelled items gains heat or loses heat. [2]

Items	Gains heat	Loses heat
hot tea		
ice cream		

(b) Based on your answers in (a), state the property of heat. [1]

---



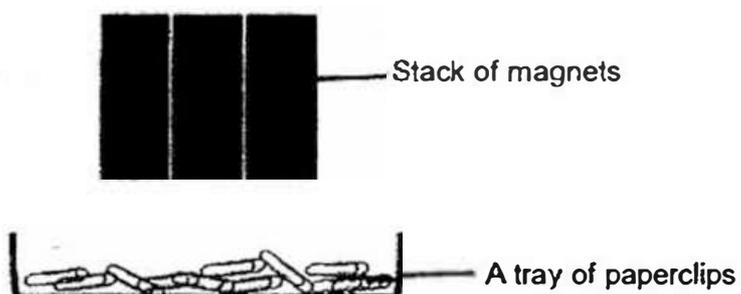
---

(c) What is the likely temperature of Set-up A and Set-up after 2 hours? [1]

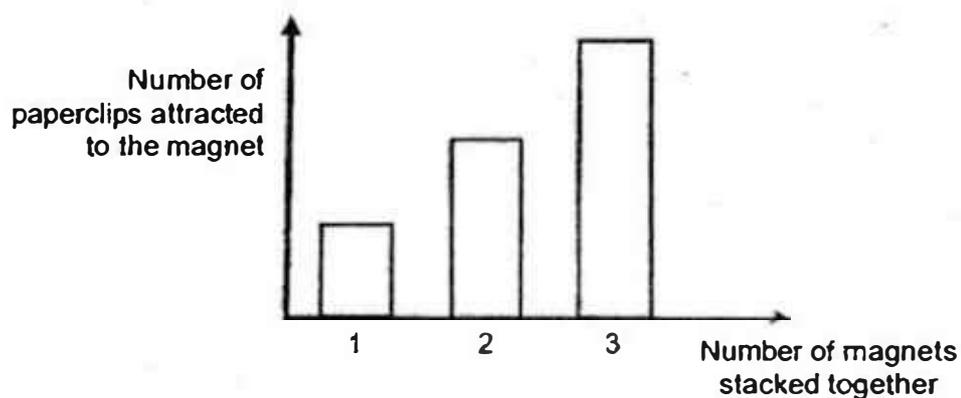
---

Score	4
-------	---

32. Peter carried out an experiment to find out how the number of similar magnets stacked together will affect the number of paperclips attracted to the magnets at a fixed distance.

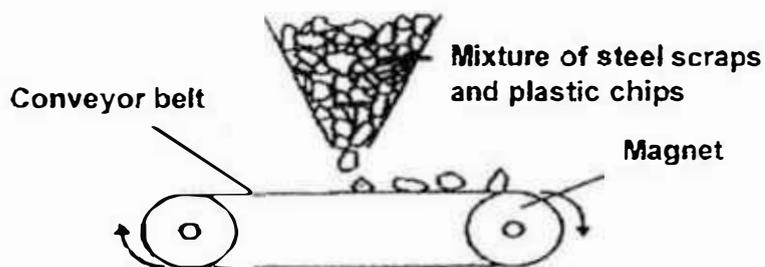


The graph below shows the results of his experiment.



- (a) What is the relationship between the number of magnets stacked together and the number of paperclips attracted to the magnets? [1]

A researcher carried out an experiment using a specially designed conveyor belt to separate steel scraps from plastic chip as shown in the diagram below.



(b) Which of the contents, steel scraps and plastic chips, are most likely to be found in the respective container? [1]

(i) Container A: \_\_\_\_\_

(ii) Container B: \_\_\_\_\_

(c) Explain your answer for part b(ii). [1]

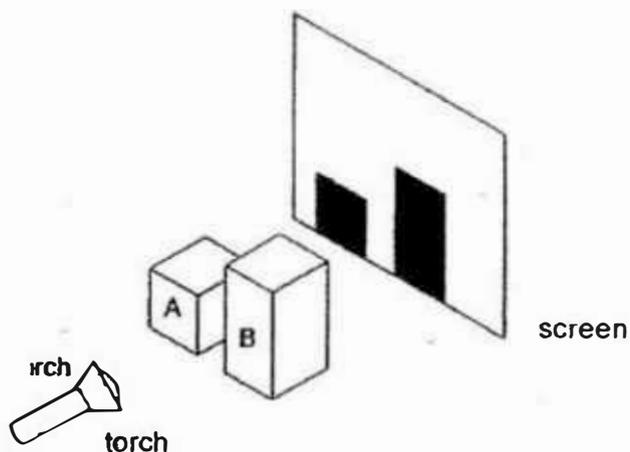
---

---

---

Score	3
-------	---

33. Lewis placed two wooden boxes of different heights in front of a screen and shone a torch on them.



- (a) Explain how the shadows are formed on the screen. (1)

---

---

- (b) Moving only Box A, suggest how to make the height of the shadow of Box A greater than the height of the shadow of Box B. (1)

---

---

- (c) Lewis replaced the wooden boxes with new boxes made of a different material. He noticed that a lighter shadow was formed. What is a possible material used to make the new boxes? Explain your answer. (2)

---

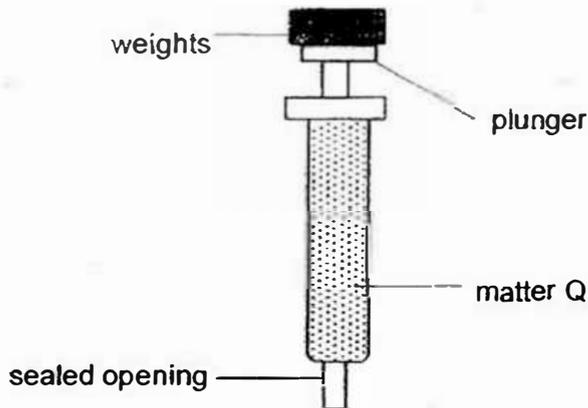
---

---

---

Score	4
-------	---

34. Tom sealed the opening of a syringe before filling the syringe completely with Matter Q. He then put weights on the plunger of the syringe.



He recorded the volume of Matter Q in the table below for every weight he added on the plunger.

Weight added (g)	Volume of Matter Q (cm <sup>3</sup> )
0	100
1	90
2	82
3	75

- (a) What is the volume of matter Q at first before the weights were added? [1]

---

- (b) What happened to the volume of matter Q when the number of weights added increased? [1]

---

- (c) Based on the activity above, what can Tom conclude about the property of matter Q? [1]

---

- (d) Give a reason why Tom needed to seal the opening of the syringe before conducting the activity? [1]

---



---

35. Calvin conducted an experiment in a research lab by heating three rods, A, B and C, made of different materials. He recorded the lengths of each rod before and after heating in the table below.

Material	Length (mm) before heating	Length (mm) after heating
A	100	103
B	100	106
C	100	105

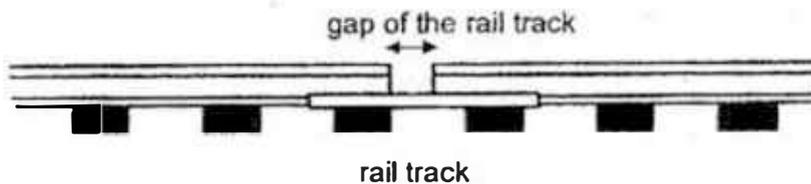
- (a) What is the independent (changed) variable in Calvin's experiment? [1]

---

- (b) Based on the results in the table, which material expanded the most? [1]

---

- (c) The diagram below shows part of a rail track. Calvin wants to ensure that the gap of the rail track will not be narrowed too much on a hot day as it may damage the track.



Which materials, A, B or C, should Calvin choose to make the rail track? Explain your answer. [2]

---



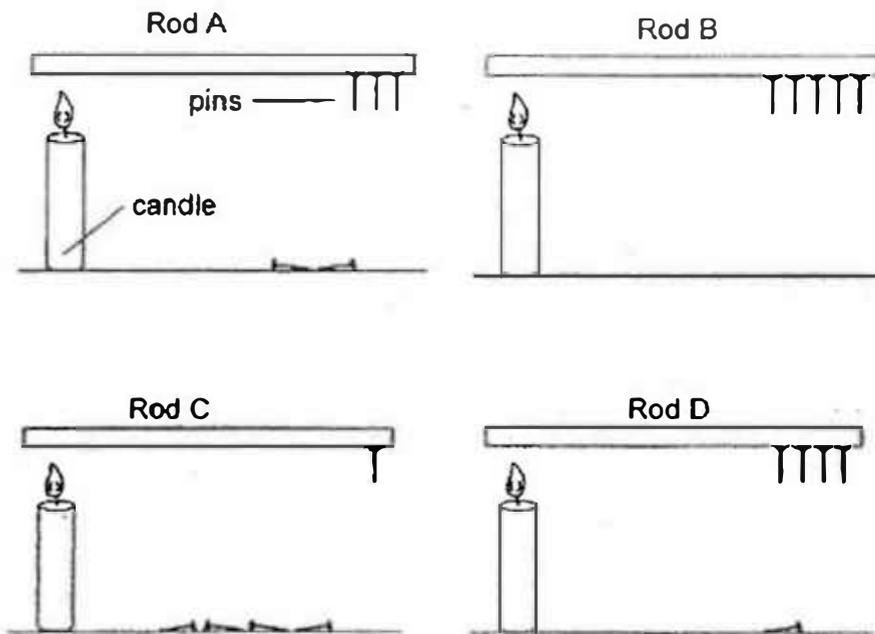
---



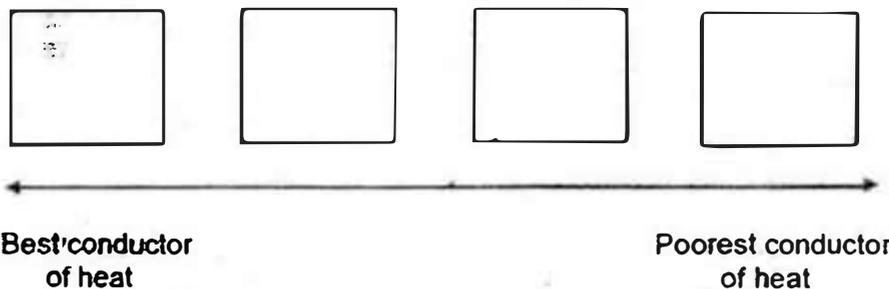
---

Score	4
-------	---

36. Cindy conducted an experiment to find out the heat conductivity of four rods, A, B, C and D. The diagram below shows the results of her experiment after 10 minutes.



- (a) Arrange the rods, A, B, C and D, starting with the best conductor of heat to the poorest conductor of heat. [1]



- (b) List two variables in this experiment that must be kept the same to ensure a fair test. [2]

---



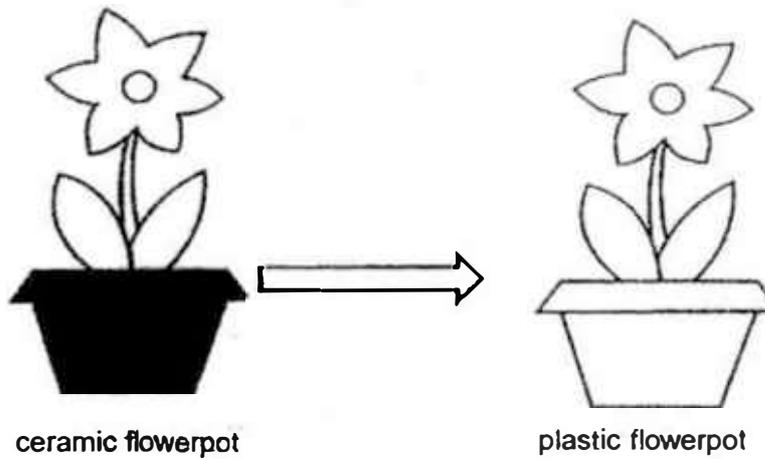
---

- (c) Using the same rods and the pins, suggest a method to make the pins fall faster from the rods. [1]

---

Score	4
-------	---

37. ABC Nursery plans to replace the ceramic flowerpots with plastic flowerpots so that they are easier for handling and transportation.

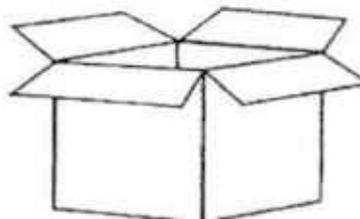


- (a) What are the two properties of plastic that made it easier for the workers to carry and transport it? [2]

---

---

Muthu, a delivery man from the nursery, wants to deliver 3 kg of soil to a customer. He plans to pack the soil into a cardboard box as shown below.



cardboard box

He then decides to wrap the soil with a wrapper before placing it into the box so that the soil will not get wet when it rains.

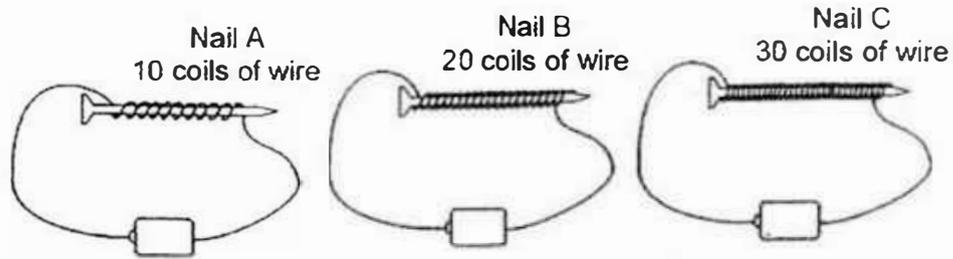
- (b) What material should the wrapper be made of? Explain your answer. [2]

---

---

Score	<hr/> <hr/> 4
-------	------------------

38. Three identical iron nails were each connected to a battery and coiled with wires as shown in the diagram below. The batteries were of the same type and brand.



Each iron nail was brought near a dish of similar thumbtacks and the number of thumbtacks it attracted was recorded in the table below.

- (a) Based on the number of thumbtacks attracted by each iron nail, write the letters A, B and C in the correct box in the table below. [1]

Nail	Number of thumbtacks attracted
	5
	19
	7

- (b) Explain your answer for Nail C. [2]

---



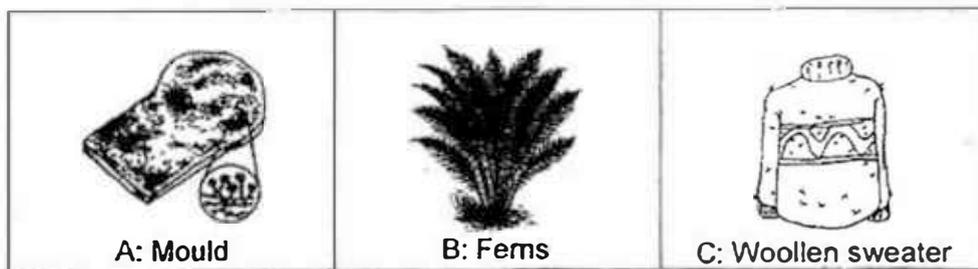
---



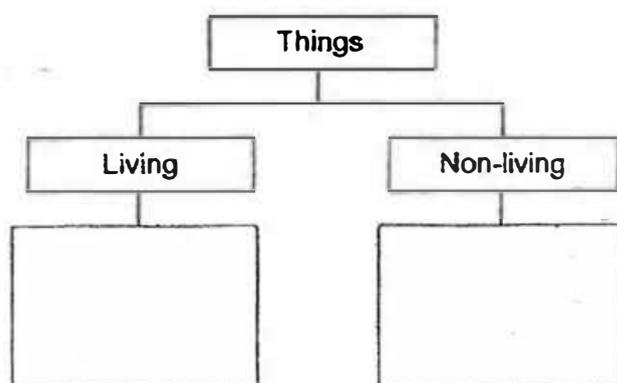
---

Score	3
-------	---

39. The diagram below shows three things.



(a) Classify the things, A, B and C, into the classification chart below. [1]



(b) Explain why mould cannot be classified as a plant. [1]

---

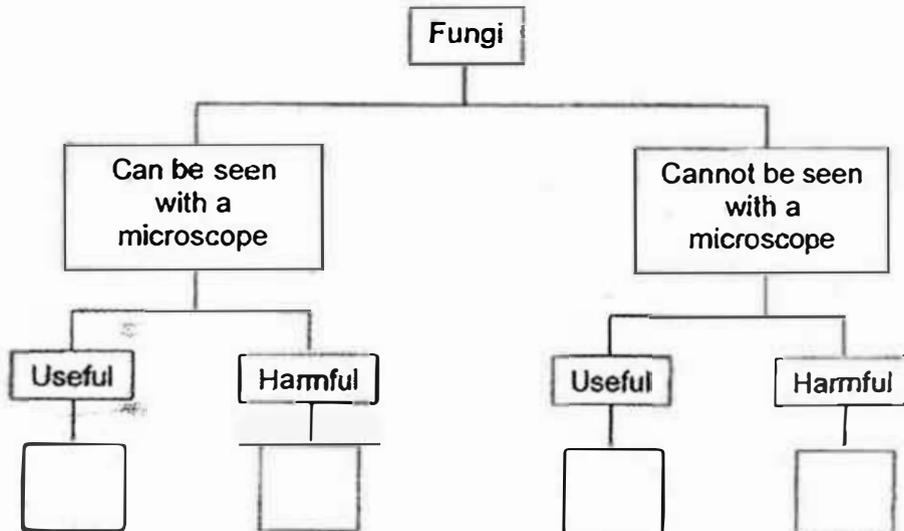
---

---

- (c) The table below shows the characteristics of two different types of living things, R and S. A tick ( ✓ ) shows that the living thing has the characteristic.

Characteristic	R	S
Can only be seen with microscope		✓
Useful	✓	✓

From the information above, where do living things, R and S belong in the following classification table? Write R and S in the correct boxes below. [1]



Score	3
-------	---

40. The pictures below show two animals, E and F.



Animal E



Animal F

(a) Identify the animal group that Animal E and Animal F belong to. [1]

Animal E: \_\_\_\_\_

Animal F: \_\_\_\_\_

(b) How do Animal E and Animal F differ in their outer-covering and the way they reproduce? [2]

	Animal E	Animal F
Outer covering		
The way they reproduce		

(c) Based on what you can observe from the pictures, state one other difference between animal E and animal F. (Do not compare their body shape, size and colour.) [1]

---



---

End of Paper

Score	4
-------	---

**EXAM PAPER 2017 (P4)**

**SCHOOL : Nan Hua**

**SUBJECT : SCIENCE**

**TERM : SA1**

**ORDER CALL :**

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

**29)a)The amount of light detected by the light sensor.**

**b)S , T , R**

**c)240**

**30)a)They have mass and takes up space**

**b)Specimens A , B and D**

**c)Air**

**31)a)hot tea – Loses heat**

**Ice cream – Gains heat**

**b)Heat travels from a hotter object to a colder object.**

c)30.C

32)a)The more number of magnets stacked together,the more number of paperclips it could attract.

b)i)Steel scraps

ii)Plastic chips

c)Plastic chips are non-magnetic and it cannot be attracted by the magnet,hence it will drop into container B.

33)a)The shadow are formed when the light from torch is blocked by the boxes.

b)Move Box A nearer to the torch.

c)Frosted glass.The frosted glass allows some light to pass through hence a lighter shadow is formed.

34)a)100cm<sup>3</sup>

b)The volume of Matter Q decreased

c)It cannot compressed

d)Matter Q cannot escape from the opening.

35)a)The type of materials

b)Material B

c)Material A.The increase in length after heating was the least,so the material will gain heat from the sun and expand the least.

36)a)C , A , D , B

b)The length of rods

The thickness of the rods.

c)Use more candles instead of one

37)a)Plastic is light and does not break easily.

b)Plastic so that it can be fold in to the cardboard if it is too big and it is also waterproof so that it would not get wet when it rains.

38)a)A

C

B

b)Nail C has the most number of coils of wire around the iron nail.Hence it has the strongest magnetism and attracted the most number of thumbtacks.

39)a)Living – B , A

Non-living – C

b)The mould cannot make its own food.

c)Can be seen with a microscope

Useful – S

Cannot be seen with a microscope

Useful – R

40)a)Animal E:Bird

Animal F:Mammal

b)

	Animal E	Animal F
Outer covering	Feather	Hair
The way they reproduce	Lay eggs	Give birth to young

c)Animal E only have two legs but animal F have four limbs.



**PRIMARY 4 SCIENCE**  
**SEMESTRAL ASSESSMENT 1**  
**2017**

**BOOKLET A**

**Date : 8 May 2017**  
**Duration : 1 h 45 min**

**Name : \_\_\_\_\_ (     )**

**Class: Primary 4 (     )**

**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.**  
**FOLLOW ALL INSTRUCTIONS CAREFULLY.**

**Booklet A consists of 20 printed pages including this cover page.**

**Section A (28 x 2 marks = 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 provided.

1. Which of the following examples show a living thing responding to surrounding changes?

- A The leaves of a plant moving with the wind.
- B The leaves of a plant falling as they are cut.
- C The leaves of a plant turning green in summer.
- D The leaves of a plant unfolding in the morning sun.

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

2. Which of the following statements correctly state the similarities between a dog and a rose plant?

- A Both can grow
- B Both can reproduce.
- C Both can make their own food.
- D Both can move from place to place on their own.

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

3. June observed some plants in school. She could tell that the plants were flowering plants even though she did not see any flowers on them.

Which one of the following observations could have helped her?

- (1) The plant has strong stems.
- (2) The leaves of the plants were colourful.
- (3) There were spores on the underside of the leaves.
- (4) There were fruits hanging at the ends of branches.

4. Mohammad observed two organisms and noticed these characteristics.

Characteristics observed	organism P	organism Q
has legs	No	Yes
has wings	No	Yes
breathes through gills	Yes	No
has a hard outer covering	No	Yes
gives birth to its young alive	No	No

Based on his observations, which one of the following best represents organism P and Q?

	organism P	organism Q
(1)	mammal	reptile
(2)	amphibian	bird
(3)	fish	insect
(4)	reptile	bird

5. Min Mei observed and took notes of an unknown animal H.

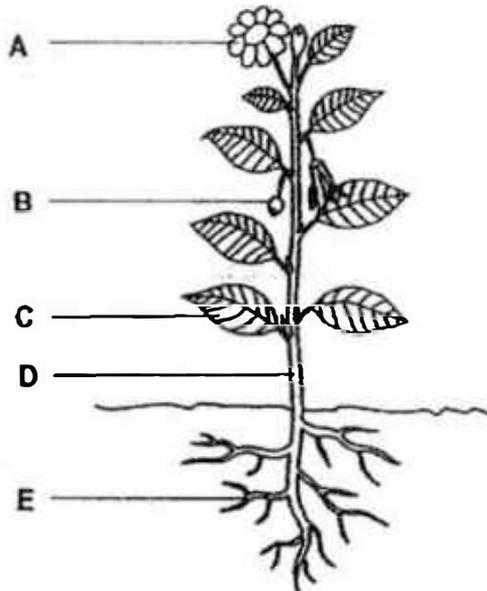
Animal H has the following characteristics:

- scales
- a tail
- reproduces by laying eggs

Based only on her observations, which group(s) of animals can animal H be classified as?

- (1) reptile only
- (2) reptile or fish only
- (3) insects or fish only
- (4) amphibian or fish only

Refer to the diagram below to answer question 6 and question 7.



6. The table below shows the functions of part C and part D, of the plant.

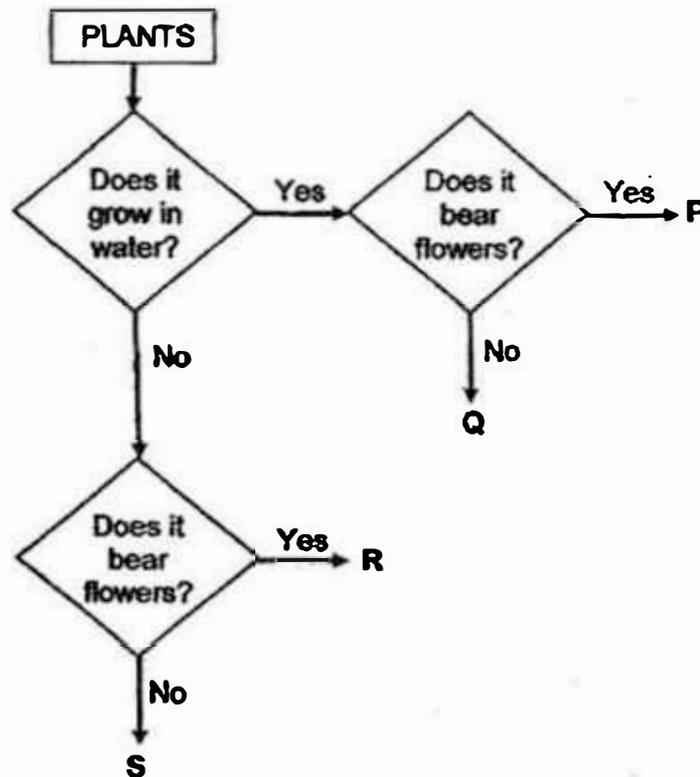
Which one of the following is correctly matched?

	part C	part D
(1)	becomes a fruit	makes food
(2)	attracts animals	holds plant upright
(3)	makes food	anchors plant to the ground
(4)	has tiny holes to take in air	carries food and water

7. Which one of the following correctly identifies the parts that can be found in all plants?

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

8. Study the flowchart below.



Based on the flowchart, which plant is most likely a bird's nest fern?

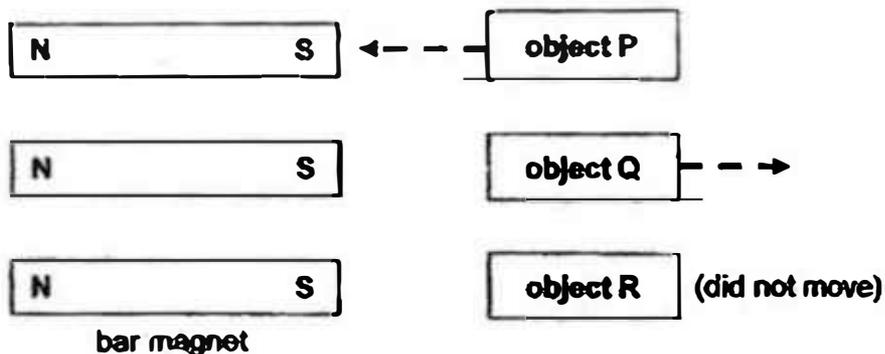
- |             |             |
|-------------|-------------|
| (1) plant P | (2) plant Q |
| (3) plant R | (4) plant S |

9. Which one of the following statements about the human organ systems is correct?

- (1) The muscular system takes air into our body.
- (2) The respiratory system gives our body shape.
- (3) The skeletal system removes excess water from our body.
- (4) The circulatory system carries useful substances to all parts of our body.

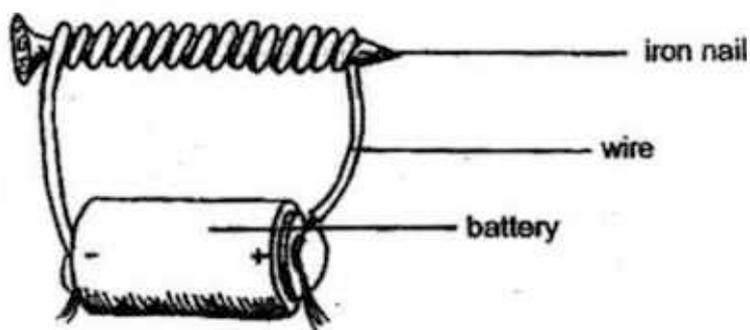


13. Ravi brought one end of a bar magnet near to three objects and observed what happened next. He drew arrows to indicate the direction the objects moved.



Based on his observations, which of the object(s) is/are definitely a magnet(s)?

- (1) object P only
  - (2) object Q only
  - (3) object P and Q only
  - (4) object Q and R only
14. Sarah set up an electromagnet using an iron nail, a wire and a new battery. The electromagnet was able to attract 10 steel clips.



Sarah then tried to attract some metal pins which were similar in size and mass as the steel clips. She found that the electromagnet could not attract any of the metal pins.

What is a possible reason why the electromagnet did not attract the pins?

- (1) The iron nail was too big.
- (2) There should be more batteries used.
- (3) The pins were made of a non-magnetic material.
- (4) There were not enough coils of wire around the iron nail.

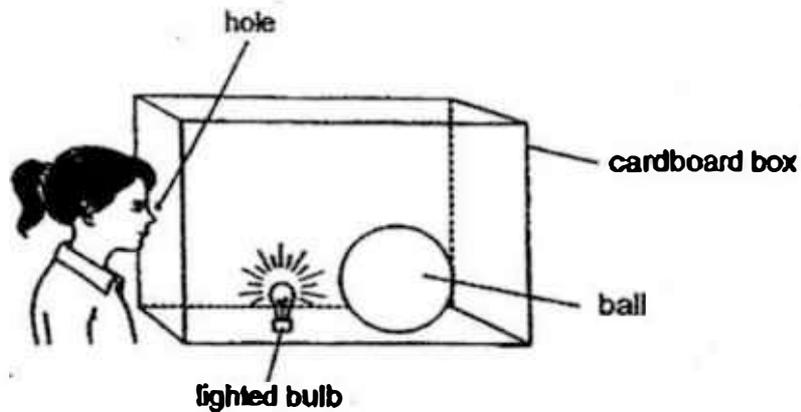
15. Study the classification table below.

Group A	Group B
sun	fan
star	box
firefly	pen

How were the objects in group A and B classified?

	Group A	Group B
(1)	objects that give off light	objects that do not give off light
(2)	objects that are magnetic	objects that are non-magnetic
(3)	objects that do not occupy space	objects that occupy space
(4)	objects that cannot cast a shadow	objects that can cast a shadow

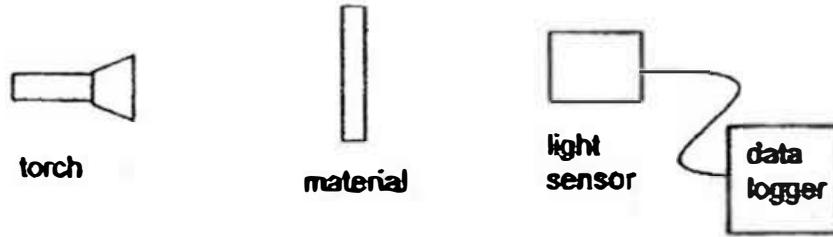
16. A ball and a lighted bulb were placed inside a cardboard box as shown below. The box has a small opening at one side. Lisa looked through the hole and could see the ball inside the box.



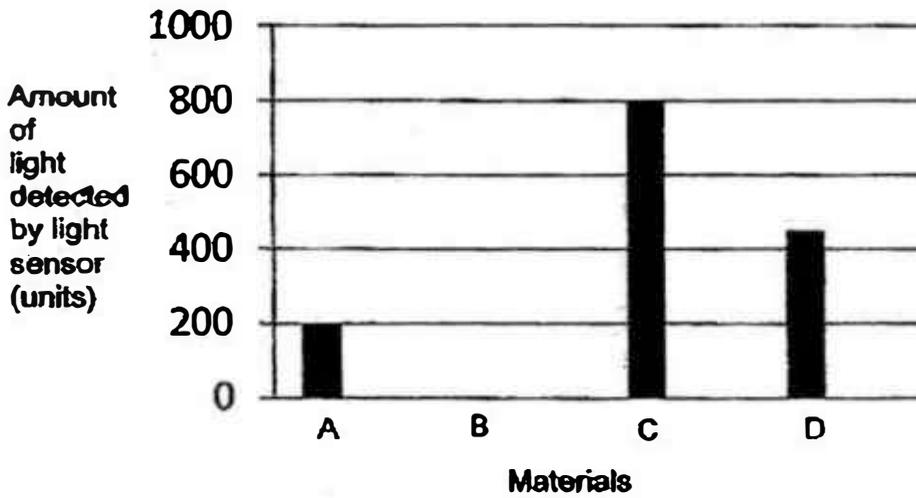
Which one of the following correctly explains why Lisa is able to see the ball inside the box?

- (1) Her eyes are a source of light.
- (2) The ball gives off light that is reflected into her eyes.
- (3) Light from the bulb falls onto the ball and is reflected into her eyes.
- (4) Her eyes reflected light from the bulb to the ball and enters her eyes.

17. Shi Ting connected a light sensor to a data logger as shown below.



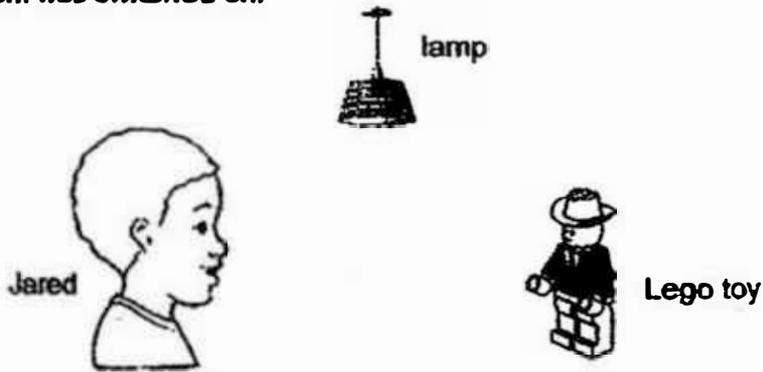
She tested four different materials to find out which material would allow the least amount of light to pass through. The graph below shows the results of her experiment.



Based on the results in the graph, which one of the following materials should Shi Ting choose to make a fish tank so that she could see her fish the clearest?

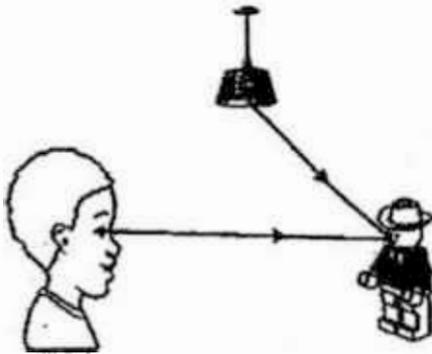
- (1) material A
- (2) material B
- (3) material C
- (4) material D

18. Study the picture below. Jared could see his Lego toy when the lamp in his room was switched on.

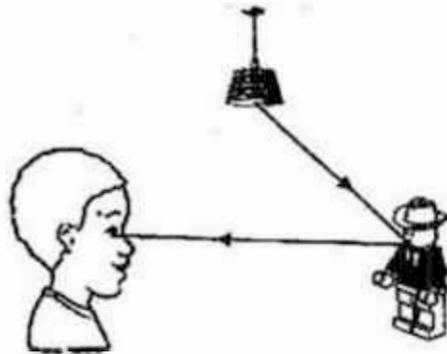


Which one of the following diagrams correctly shows the path of light which allows Jared to see the Lego toy?

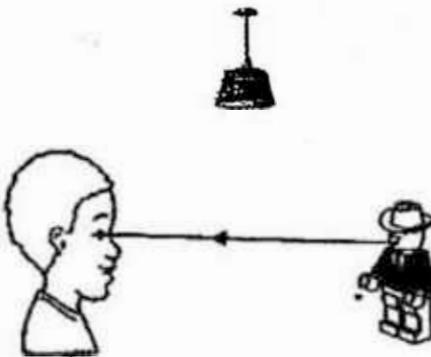
(1)



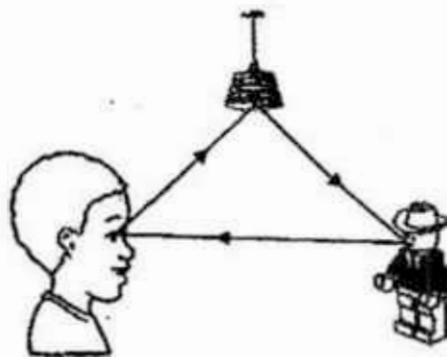
(2)



(3)

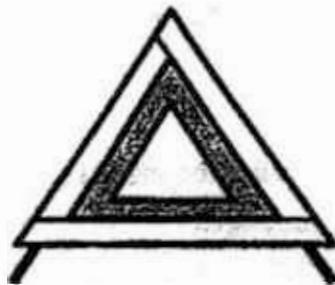
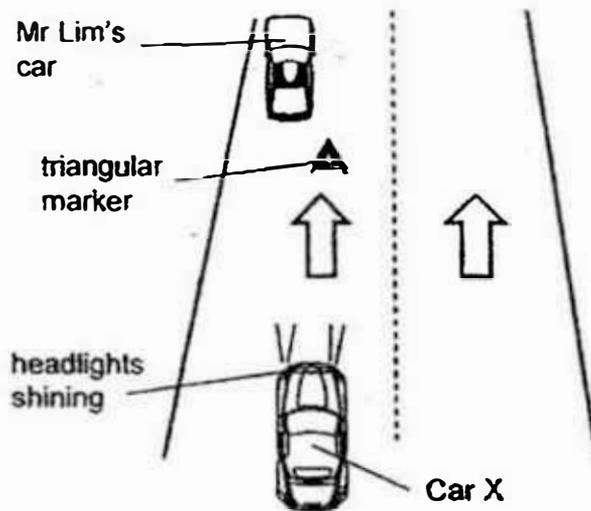


(4)



19. Study the diagrams below.

Mr Lim's car broke down by the side of the road on a dark night. To avoid an accident, he placed a triangular marker some distance away so that the approaching vehicles can see the marker from a distance.



triangular marker

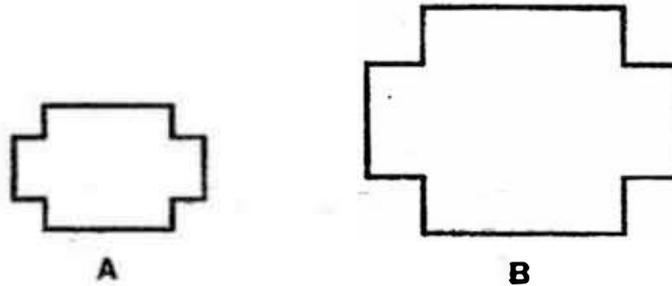
Which of the following properties of light correctly explain how the driver in car X can see the triangular marker from a distance?

- A Light is blocked by the triangular marker.
- B Light is reflected by the triangular marker.
- C Light is absorbed by the triangular marker.
- D Light travels in a straight line to the triangular marker.

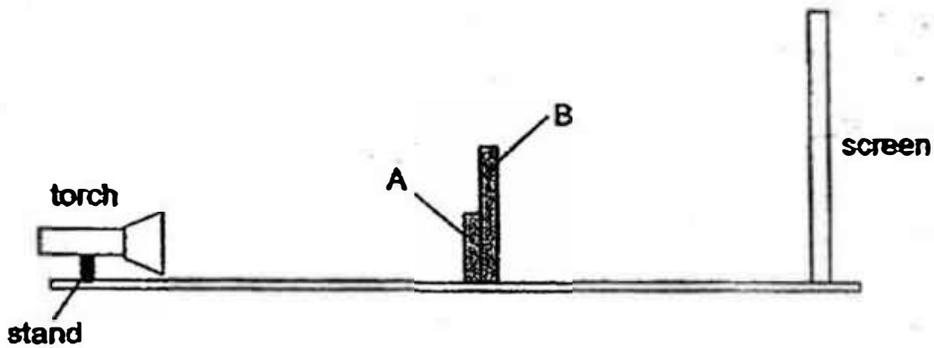
- (1) A and B only
- (3) B and D only

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

20. Ella had two cut-out shapes, A and B, of different sizes, as shown in the diagram. They are made of different materials.



She placed A in front of B as shown in the diagram below and shone a torch in front of them.



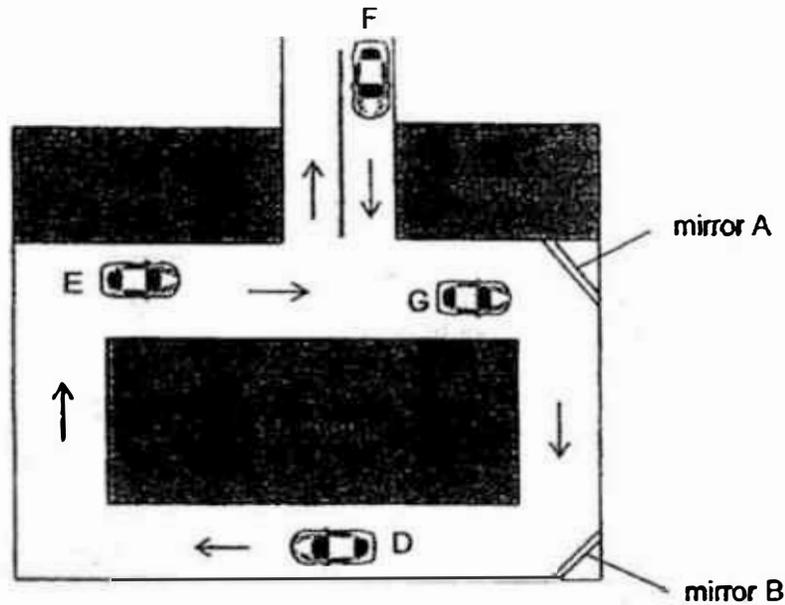
Ella observed the following shadow on the screen.



Based on the observations above, which of the following materials could object A and B be most likely made of?

	object A	object B
(1)	tracing paper	wood
(2)	frosted glass	cardboard
(3)	clear coloured plastic	steel sheet
(4)	wood	tissue paper

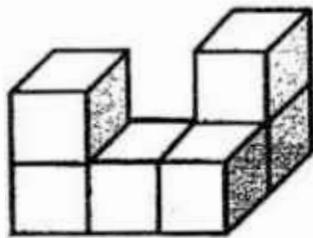
21. The diagram below shows the top view of a road leading to tall buildings in the city. Mirrors were placed at some corners of the road for the purpose of road safety.



Using mirrors A and B only, which one of the following statements is false?

- (1) The driver in car G cannot see car F.
- (2) The driver in car F cannot see car E.
- (3) The driver in car D cannot see car E.
- (4) The driver in car G cannot see car D.

22. The diagram below shows toy R which Colin was playing with. Toy R is made of a material which does not allow light to pass through.



toy R

Colin shone a torchlight on toy R. When he changed the position of the torchlight, different shadows were formed.

Which one of the following shadows could not be formed by toy R?

(1)



(2)



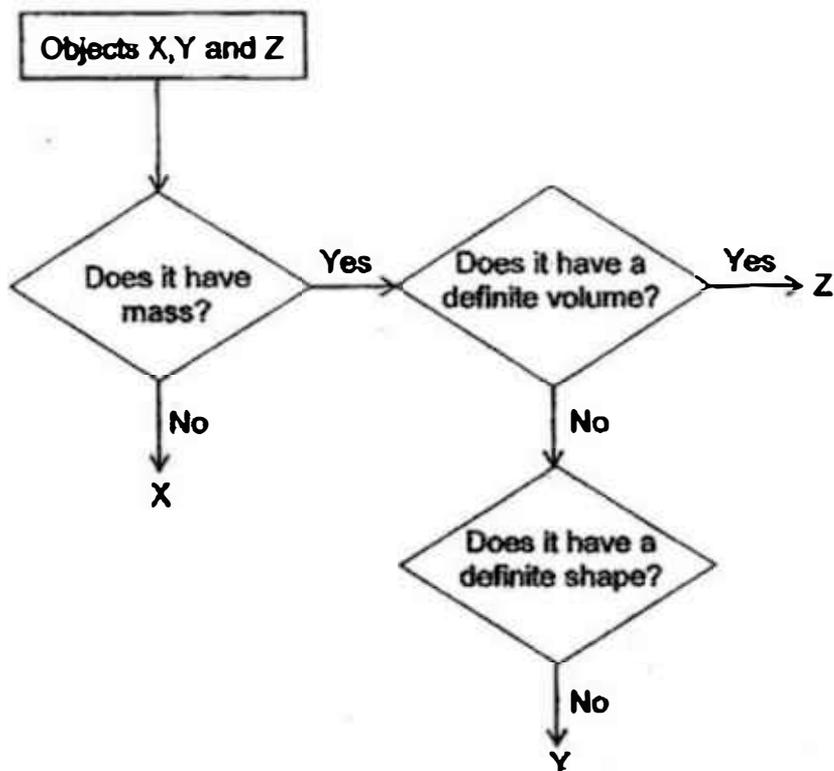
(3)



(4)



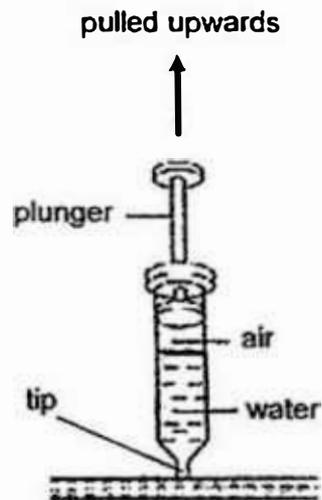
23. Objects, X, Y and Z, have been classified in the flowchart below based on their properties.



Which one of the following best represents objects, X, Y and Z?

	X	Y	Z
(1)	water	air	paper
(2)	air	light	milk
(3)	thunder	air	honey
(4)	light	milk	stone

24. Yi Wei filled a syringe with some tap water. She noticed that there was some air in the syringe too. Yi Wei then blocked the tip and pulled the plunger of the syringe upwards as shown in the diagram below.



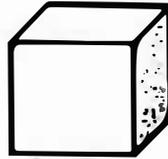
Which one of the following correctly describes what would happen to the volume and mass of the air and water in the syringe when she pulled the plunger?

	Volume of water	Volume of air	Mass of water and air in the syringe
(1)	increase	decrease	increase
(2)	decrease	increase	same
(3)	same	increase	same
(4)	same	same	same

25. Rahim carried out experiments using a lever balance and the following blocks of materials.

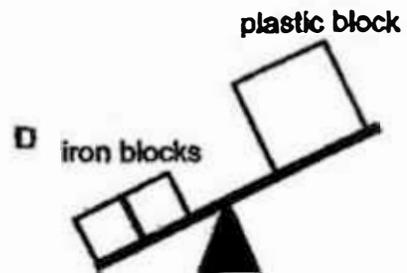
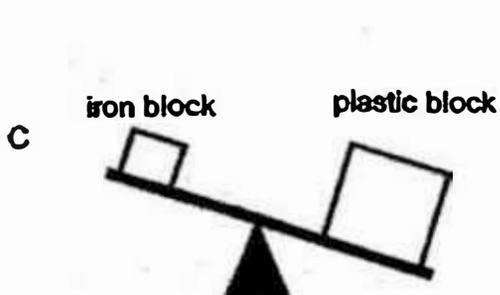
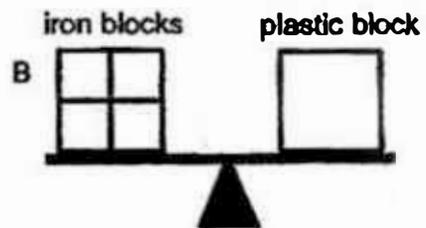
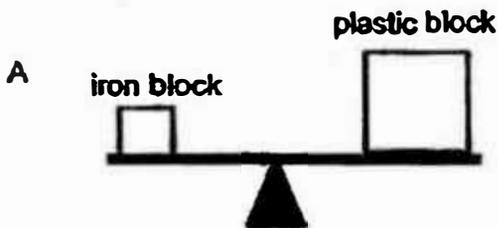


Iron block  
500g  
100cm<sup>3</sup>



Plastic block  
500g  
400cm<sup>3</sup>

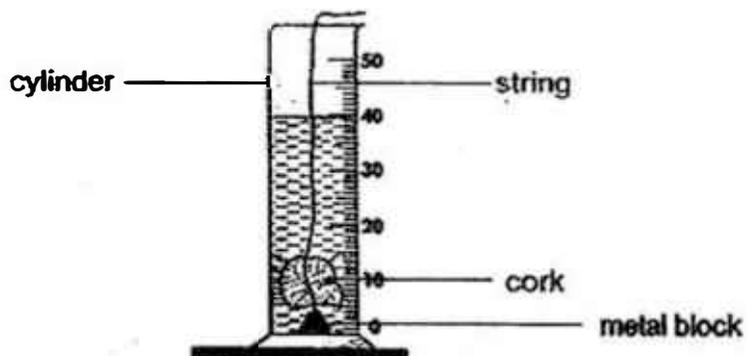
Which of the following shows the correct observations?



- (1) A only  
(3) A and D only

- (2) B only  
(4) B and C only

26. Siti wanted to find out the volume of a cork that was tied to a metal block which she had dropped into a cylinder of water as shown in the diagram below.



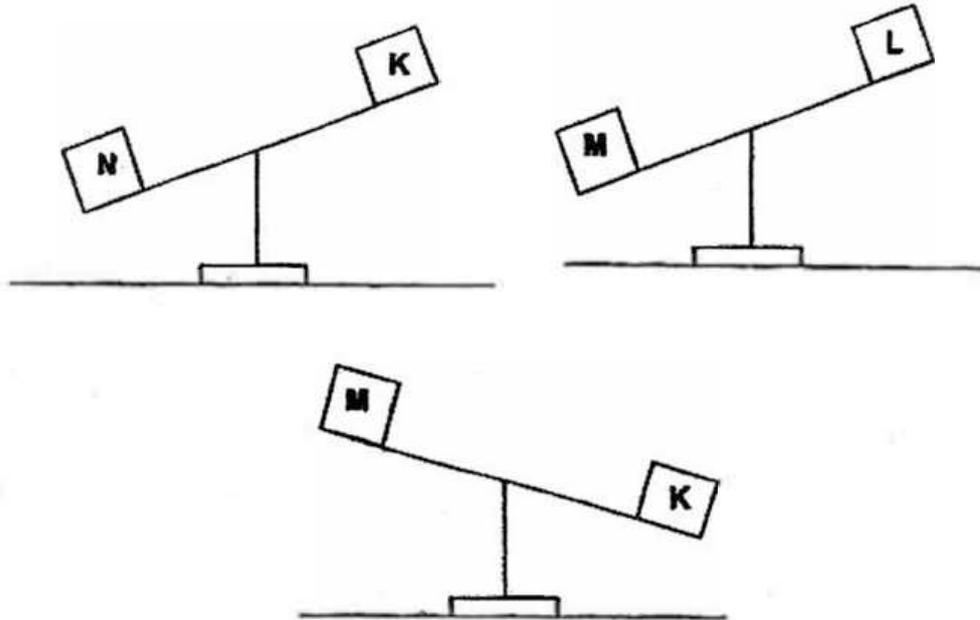
The following measurements, W, X, Y and Z, were taken.

- W Volume of water
- X Volume of metal block
- Y Volume of water and metal block
- Z Volume of water, metal block and cork

Which one of the following combinations of measurements given to Siti will not allow her to find the volume of the cork?

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

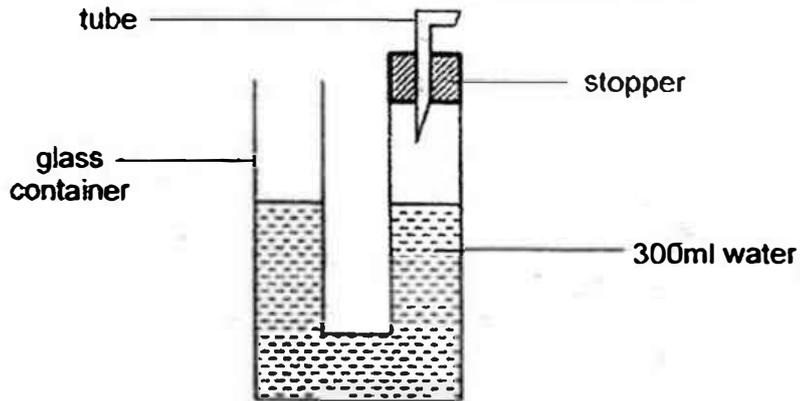
27. Wei Ling used a lever balance to carry out an experiment with 4 different blocks, K, L, M and N. The diagrams below show her observations.



Which one of the following statements is correct?

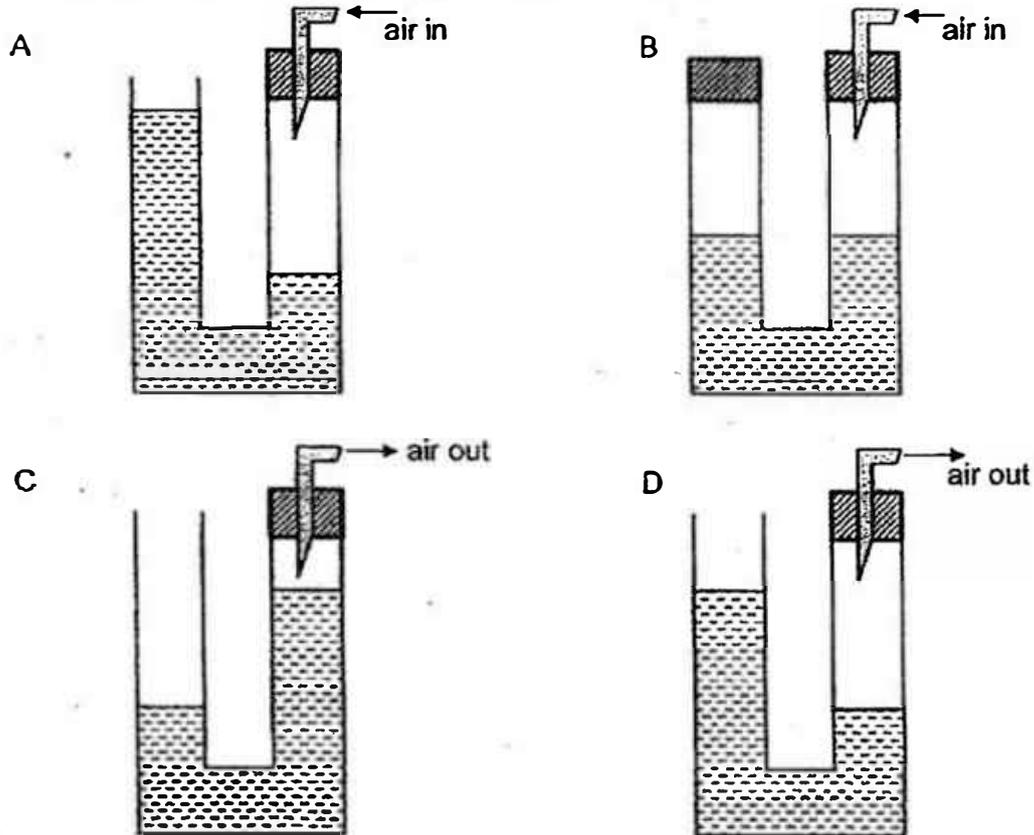
- (1) ~~L~~<sup>M</sup> has the greatest mass.
- (2) N has smaller mass than L.
- (3) K has greater mass than M.
- (4) M has greater mass than N.

28. An experiment was done using a U-shaped glass container with a tube attached to one arm of the glass container. The glass container was filled with 300 ml of water as shown in the diagram below.



Air can be pumped in or drawn out of the glass container through the attached tube.

Which one of the following shows the correct observations?



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

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

**PRIMARY 4 SCIENCE  
SEMESTRAL ASSESSMENT 1  
2017**

**BOOKLET B**

**Date : 8 May 2017**

**Duration : 1 h 45 min**

**Name : \_\_\_\_\_ (    )**

**Class: Primary 4 (    )**

**Marks Scored:**

<b>Booklet A:</b>		<b>56</b>
<b>Booklet B :</b>		<b>44</b>
<b>Total :</b>		<b>100</b>

**Any query on marks awarded should be raised by 18 May 2017. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.**

**Parent's signature: .....**

**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.  
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

**Booklet B consists of 17 printed pages including this cover page.**

**Section B (44 marks)**

Write your answers to questions 29 to 41 in the spaces provided.

29. Syahirah found a caterpillar on a plant and observed it for 3 weeks. She recorded her observations in her Science journal. Based on her journal entries, state the characteristic of living things which was observed.

Three days ago I found some tiny pellets on a leaf and my Science teacher said I had found some butterfly eggs! Here is a drawing I made for one of the eggs.



- (a) Characteristic of living things shown by the butterfly laying eggs: [1]

The caterpillars have emerged and they have big appetites for leaves! This caterpillar is eating a leaf.



- (b) Characteristic of living things shown by the caterpillar: [1]

The caterpillars are interesting! When I gently poke one of them with a stick, it curls up immediately!



- (c) Characteristic of living things shown by the caterpillar: [1]

Something has happened! The caterpillars are much bigger and longer. They are stuck to the tree branches.



- (d) Characteristic of living things shown by the caterpillar: [1]

30. Study the diagram of the two plants, X and Y, below.



plant X



plant Y

- (a) Based only on the diagram above, which plant will most likely bear fruits? Give a reason for your answer. [1]

---



---

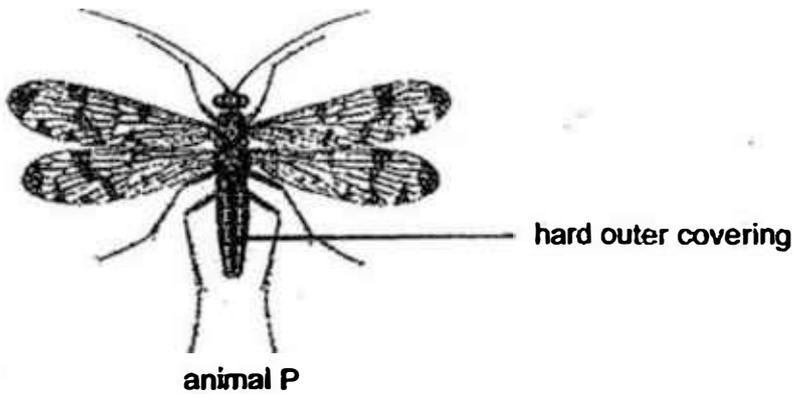
- (b) Jerome observed a third plant, plant Z. It has no flowers or spores. He concluded that it was a non-flowering plant. Explain why Jerome's conclusion is wrong. [1]

---

- (c) Besides flowering and non-flowering plants, Jerome classified plant X, Y and Z in another way. Complete the headings for his classification table below. [1]

(i)	(ii)
plant X	plant Y plant Z

31. Observe animal P shown in the diagram below.



(a) Based on the diagram above, which group of animals does animal P belong to? [1]

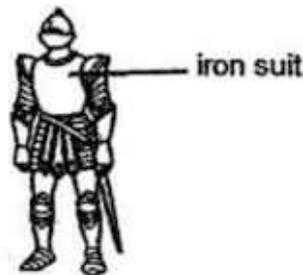
\_\_\_\_\_

(b) Based on the characteristics of animal P, give 2 other reasons for your answer in (a). (Do not mention hard outer covering) [2]

(i) \_\_\_\_\_

(ii) \_\_\_\_\_

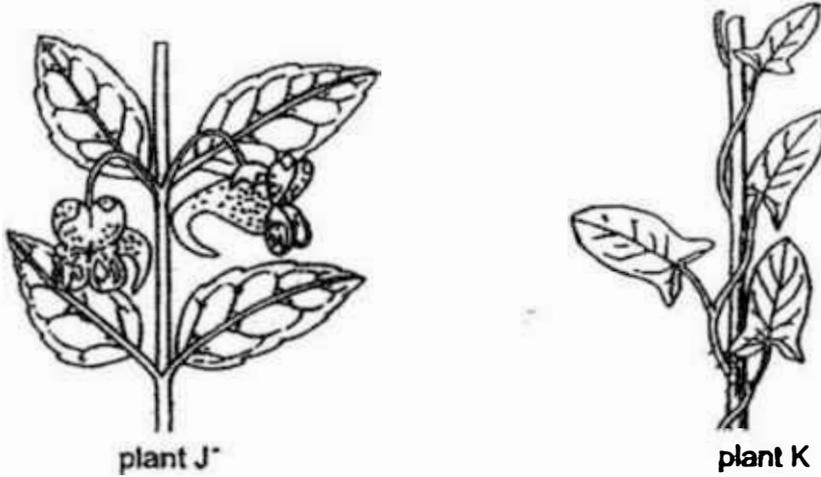
In ancient times, a knight would wear a suit made of iron to cover their bodies before going to fight in a battle.



(c) In what way is the outer covering of animal P and the iron suit similar in function? [1]

\_\_\_\_\_

32. The diagram below shows two plants, J and K. Plant K is climbing up a pole.



(a) **Label** the stems on each plant. [1]

(b) **Based only on the diagram, describe a difference between the stem in plant J and the stem in plant K.** [1]

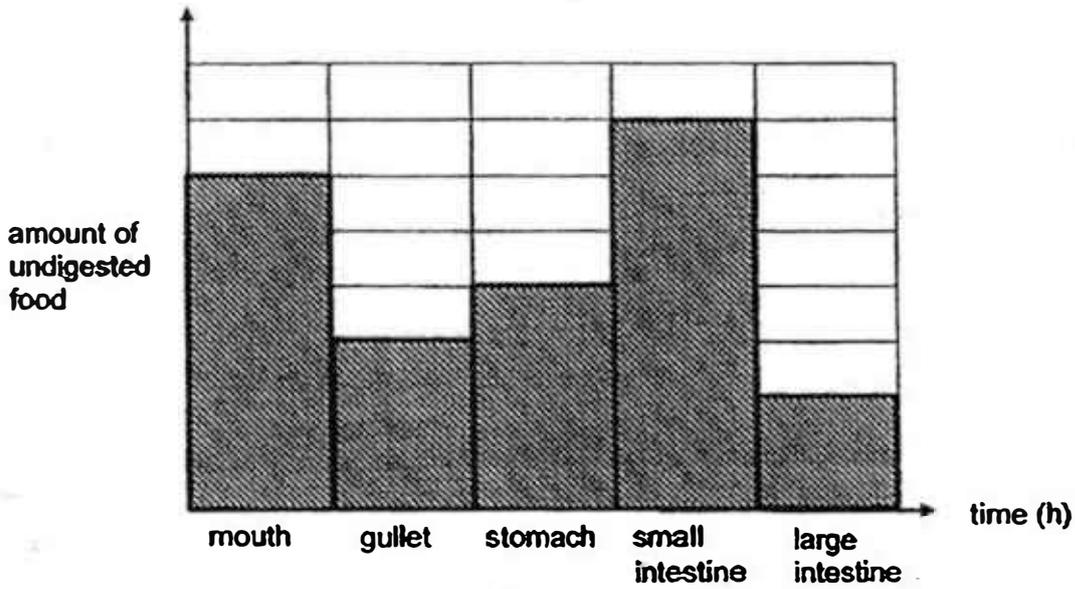
---

---

(c) **State one function of the stems in plant J and K** [1]

---

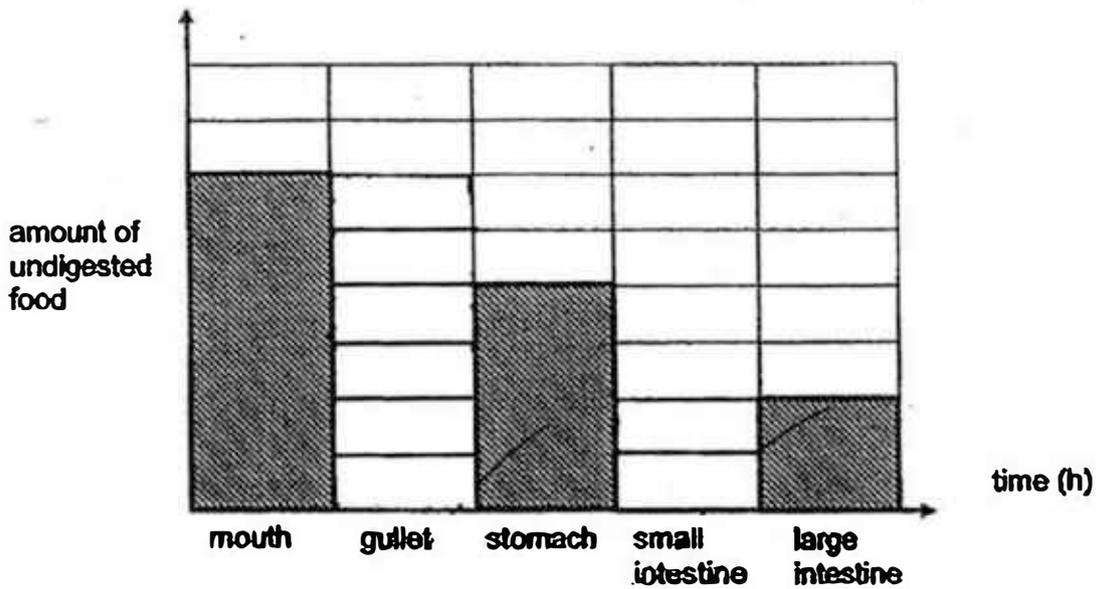
33. Darius ate a plate of chicken rice for recess. He plotted a graph to show what he expects the amount of undigested food to be just before it leaves each part of his digestive system.



Darius asked his teacher to check his graph. Mrs Lee pointed out that the amount of undigested food in the gullet and small intestine are incorrect.

- (a) Complete the bar graph below to correctly show the amount of undigested food at the following parts: [2]

- (i) gullet  
(ii) small intestine



**(b) Our organ systems work closely together to help us function properly.  
How do the digestive system and circulatory system work together? [2]**

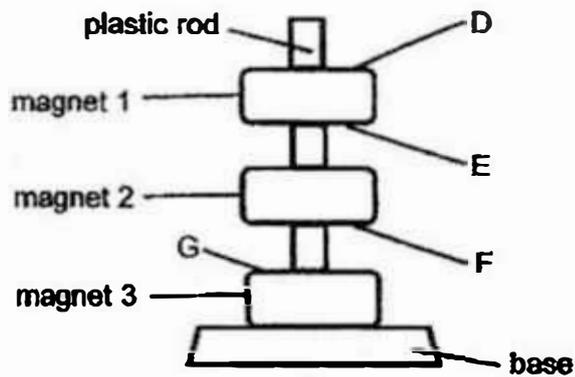
---

---

---

---

34. The diagram below shows a toy with three ring magnets which pass through a smooth plastic rod.



- (a) Identify the poles of the ring magnets as indicated by D, E, F and G. [2]

D : \_\_\_\_\_

E : \_\_\_\_\_

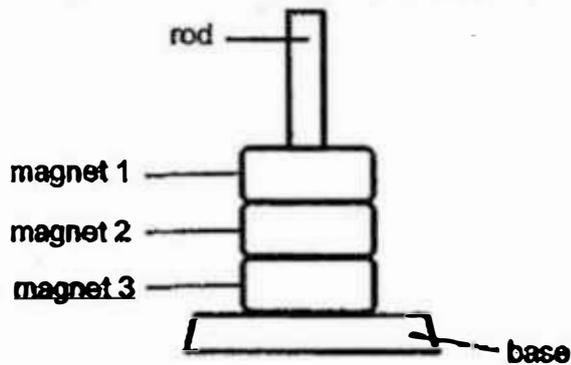
F : \_\_\_\_\_

G : \_\_\_\_\_

- (b) State a property of magnets which is shown in the diagram above. [1]

---

Without adding or taking away any parts of the toy, Ravi made a change to one of the magnets and observed that it now looks like this.

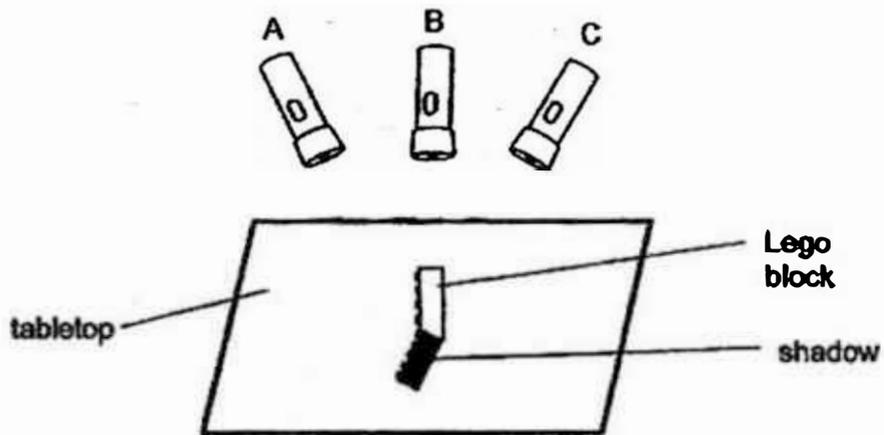


- (c) What was the change that Ravi made? [1]

---

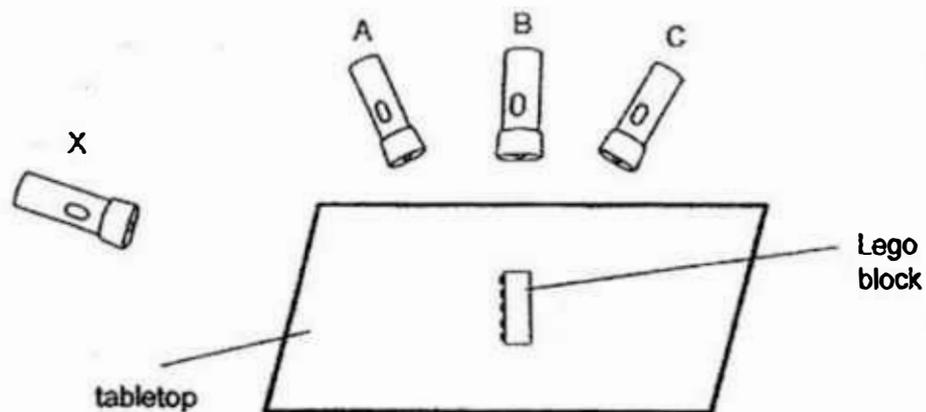
35. Nigel and his friends did an experiment with three torchlights and a piece of Lego block on a tabletop. They wanted to find out how the position of the torchlight affects the length and position of the shadow formed by the Lego block. They placed all three torchlights 10 cm away from the Lego block.

The diagram shows a side view from above.



- (a) Which torchlight was switched on to form the shadow as shown in the diagram above? [1]
-

Nigel held a fourth torchlight, labelled X, at a distance of 25 cm away from the Lego block as shown in the diagram below.



- (b) When only torchlight X was switched on, Nigel noticed 2 changes to the shadow formed as compared to the shadow he had seen earlier.

What were the **two** changes that he most likely noticed? [2]

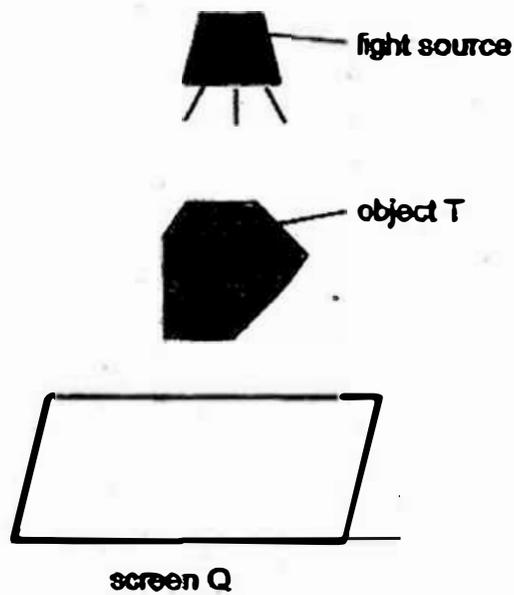
(i) \_\_\_\_\_

(ii) \_\_\_\_\_

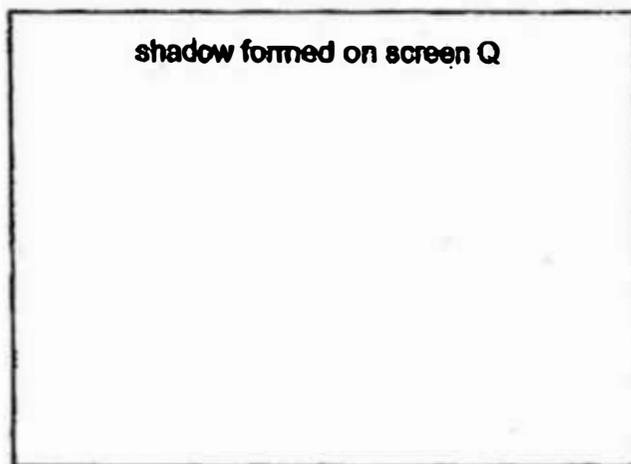
36. Georgia did an experiment using object T.



Object T was placed directly under a light source in a dark room. A shadow was formed on screen Q.



In the box below, draw the shadow of object T which was formed on screen Q. [2]

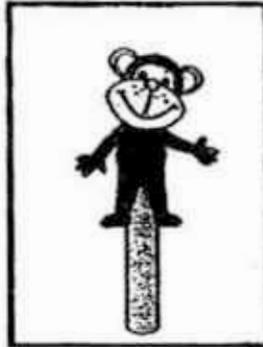


37. Olivia and Sean each has a puppet, X and Y, of similar size and height.

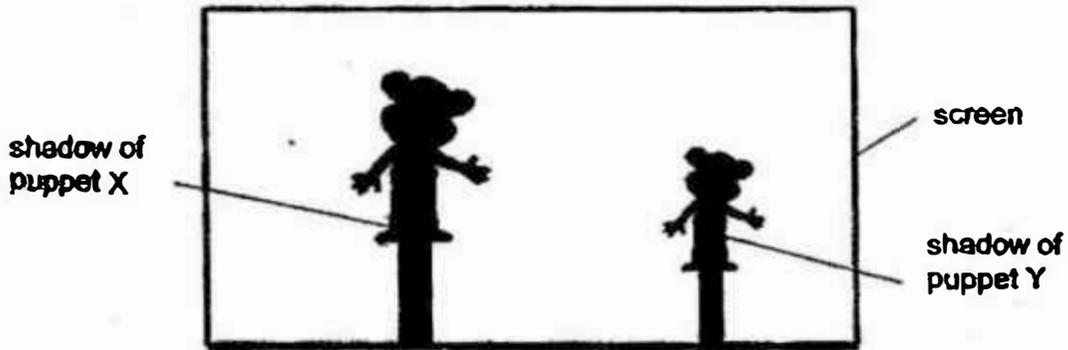
Olivia's puppet X



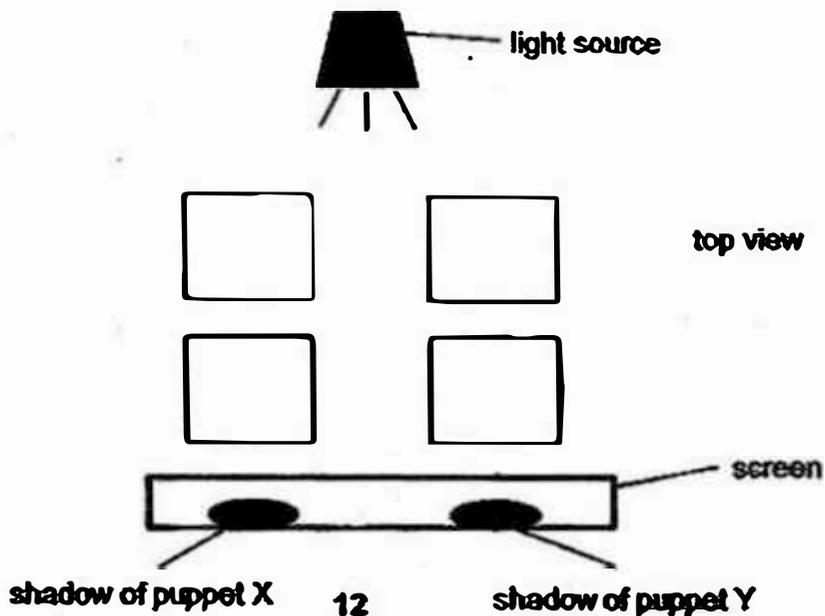
Sean's puppet Y



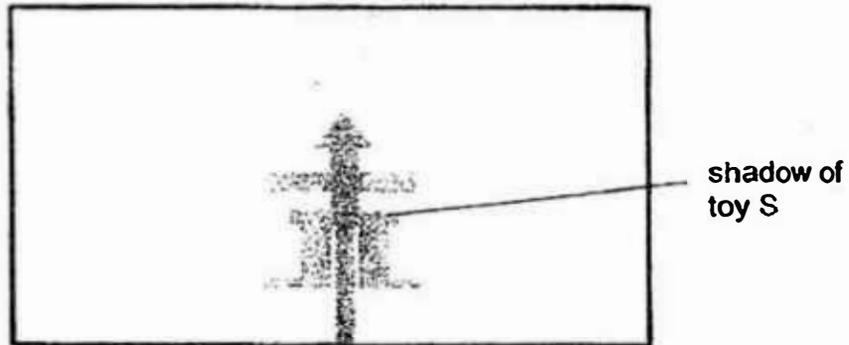
Both children went behind a screen to play with their puppets. The lamp was shining brightly behind the children.



(a) Based on the shadows formed, write the letters X and Y in the correct boxes provided to represent the position of Olivia's and Sean's puppets behind the screen. [1]



Olivia stood behind the screen again, holding another toy S this time.



- (b) Sean observed that toy S cast a **lighter shadow** than puppets X and Y on the screen. Give a reason why the shadow was lighter. [1]

---

---

- (c) Based on the setup above, state 2 properties of light that explains how the shadows were formed. [2]

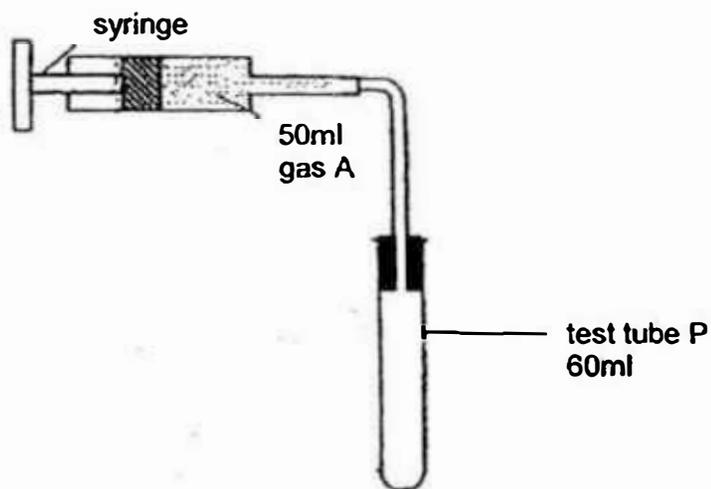
(i) \_\_\_\_\_

---

(ii) \_\_\_\_\_

---

38. Teck Wai has a syringe containing 50 ml of gas A. He pumped all the gas A into a 60 ml test tube, test tube P.



- (a) What will be the amount of space that gas A occupies in test tube P? [1]

---

Teck Wai repeated the experiment with a smaller 30ml test tube, test tube Q.

- (b) What will be the volume of gas A in test tube Q? [1]

---

- (c) Write down the property of gas A that is demonstrated in Teck Wai's experiment. [1]

---

---

39. Finn filled a bottle to the brim with water. He then dropped a marble into the bottle and noticed that the water in the bottle overflowed.

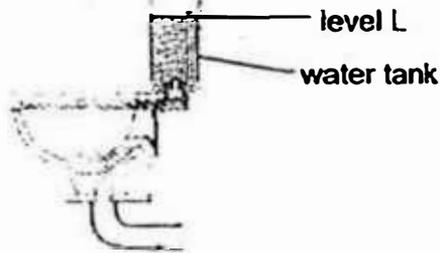
(a) Explain his observation. [1]

---

---

---

A water tank is attached to every toilet bowl. The water tank is filled with water to level L. After every flush, water enters the water tank and re-fills to level L. However, Finn wanted to use less water for each flush.



Finn has the following items.

empty bottle

sand



(b) Using the items above, describe what Finn could do so that he would use less water to flush the toilet. [1]

---

---

(c) Explain your answer in part (b). [1]

---

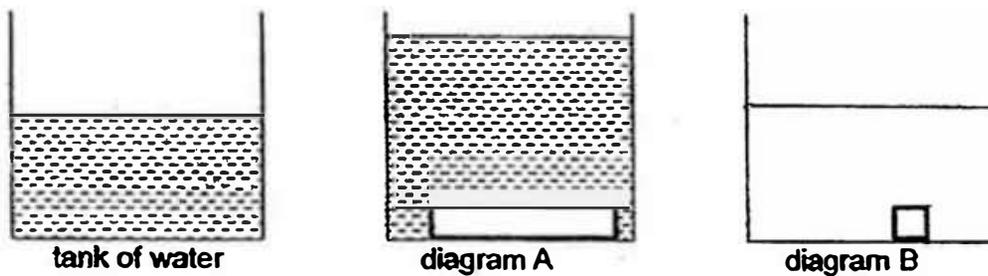
---

40. Two solid blocks, F and G, of different sizes, are made of the same material.

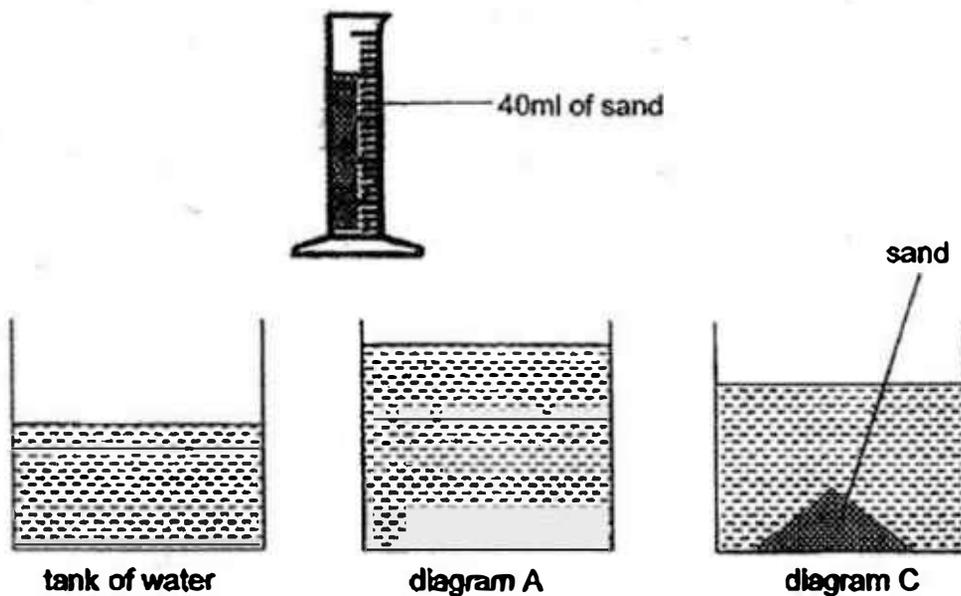


They were dropped into a tank of water separately. Block G sank into the water and the water level rose as shown in diagram A below.

(a) Draw the water level in diagram B when block F was dropped into the tank of water. [1]



Using a measuring cylinder, 40 ml of sand was measured and poured into the tank of water. The new water level is shown in diagram C.



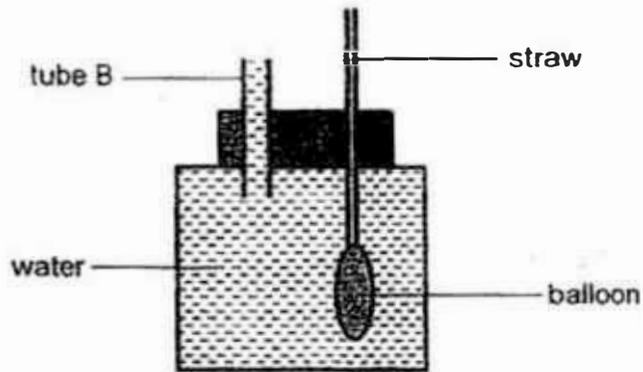
(b) Explain why the water level in diagram A and C are not the same. [1]

---



---

41. Emily filled a container with water as shown below.



Emily blew 5 times into the straw which was attached to the opening of balloon. She covered the opening of the straw with her thumb after every blow.

(a) Write down 2 observations that Emily would make. [2]

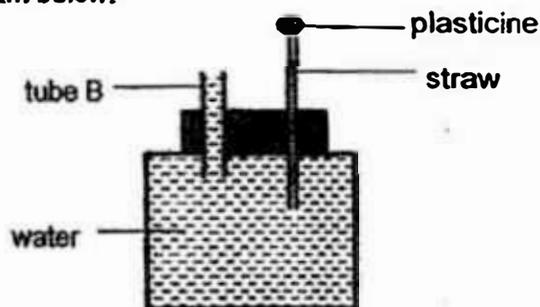
(i) \_\_\_\_\_

(ii) \_\_\_\_\_

(b) Explain the observations above. [2]

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Using the same container, Emily did a similar setup. This time, the balloon was removed and the end of the straw was covered with a ball of plasticine as shown in the diagram below.



(c) What will happen if Emily pumped water into tube B? [1]

\_\_\_\_\_

**SCHOOL : NANYANG PRIMARY SCHOOL**

**LEVEL : PRIMARY 4**

**SUBJECT : SCIENCE**

**TERM : 2017 SA1**

**CONTACT :**

---

**SECTION A**

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

Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	2	2	3	1	3	3	2	3	4

Q 21	Q22	Q23	Q24	Q25	Q 26	Q27	Q28
4	2	3	3	3	1	3	1

**SECTION B**

Q29)	(a) Living things reproduce (b) Living things need food to survive (c) Living things respond to changes around them (d) Living things grow
Q30)	(a) Plant Y. It has flowers on it. (b) Plant Z is a young plant. (c) i. no fruits ii. have fruits
Q31)	(a) insects (b) i. six legs ii. a pair of antennas (c) it protects animal P.

Q32)	<p>(a) plant J-stem, plant K-stem</p> <p>(b) plant J's stem is able to hold the plant upright while plant K's stem needs to climb up a pole.</p> <p>(c) Transport food and water.</p>				
Q33)	<p>(a) {gullet same as mouth, small intestine same as large intestine}</p> <p>(b) The small intestine in the digestive system breaks down food into simpler substances. The digested food gets absorbed into the bloodstream. The blood carries the digested food to all parts of the body.</p>				
Q34)	<p>(a) N, S, N, N</p> <p>(b) Like poles repel</p> <p>(c) He flipped magnet 2.</p>				
Q35)	<p>(a) C</p> <p>(b) i. The shadow formed was longer ii. the shadow is at the right of the block</p>				
Q36)					
Q37)	<p>(a) <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="padding: 2px;">X</td> <td style="padding: 2px;"> </td> </tr> <tr> <td style="padding: 2px;"> </td> <td style="padding: 2px;">Y</td> </tr> </table></p> <p>(b) Toy S was made of translucent material while puppets X and Y were made of opaque material.</p> <p>(c) i. Light travels in a straight line. ii. Light can be blocked by objects.</p>	X			Y
X					
	Y				
Q38)	<p>(a) 60ml</p> <p>(b) 30ml</p> <p>(c) Gas A can be compressed.</p>				
Q39)	<p>(a) Both marble and water have definite volume and occupy space. When the marble is dropped into the bottle, the water is displaced and overflows.</p> <p>(b) Put sand in the bottle and place the bottle into the water tank.</p> <p>(c) The bottle of sand occupies space in the water tank and this reduces</p>				

	the amount of water used to refill water tank to level L.
Q40)	<p>(a) -</p> <p>(b) There are air spaces in the sand, water can occupy these air spaces, therefore water level in diagram C will be lower than water level in diagram Q.</p>
Q41)	<p>(a) (i) Water overflows</p> <p>(ii) Balloon becomes bigger</p> <p>(b) The air inflates the balloon, causing it to occupy more space. Water has a definite volume and therefore gets displaced and overflows from Tube B.</p> <p>(c) The plasticine will pop off</p>

**SEMESTRAL ASSESSMENT 1**

**PRIMARY 4  
SCIENCE  
12<sup>th</sup> May 2017  
(BOOKLET A)**

Name: \_\_\_\_\_ ( )

Class: Primary 4 Teamwork \_\_\_\_\_

Additional Material(s): Optical Answer Sheet (OAS)

Total time for Booklets A and B: 1 h 30 mins

**INSTRUCTIONS TO CANDIDATES**

1. Write your Name, Class and Index No. at the spaces provided above.
2. DO NOT turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers on the Optical Answer Sheet (OAS) provided.

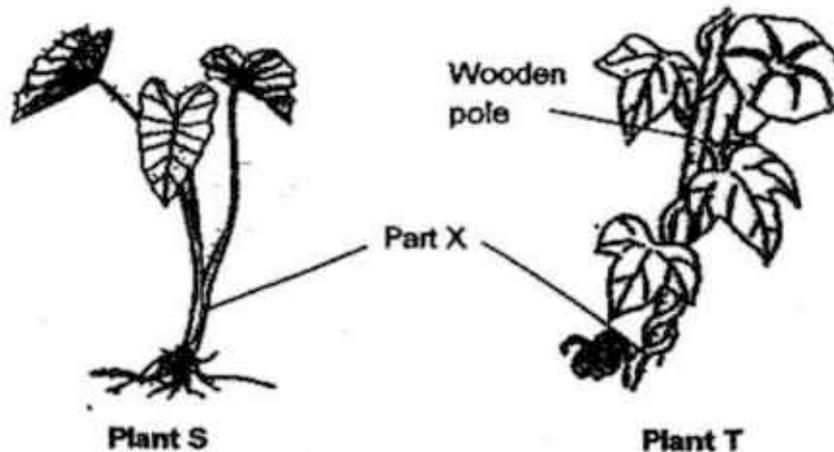
**There are a total of 11 pages in this booklet, excluding the cover page.**



For each question from 1 to 22, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.

(44 marks)

1 Study the diagrams below.



Which one of the following describes the function of Part X in Plants S and T?

It \_\_\_\_\_.

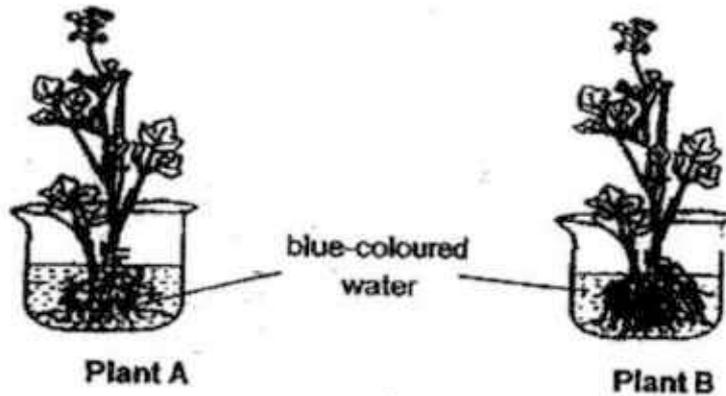
- (1) produces leaves
- (2) supports the plants
- (3) anchors the plant to the ground
- (4) absorbs water and nutrients from the ground

2 The heart pumps blood throughout the body.  
The small intestines move to allow the digested food to move along in the small intestines.

These two organs belong to different systems that work together so as to \_\_\_\_\_.

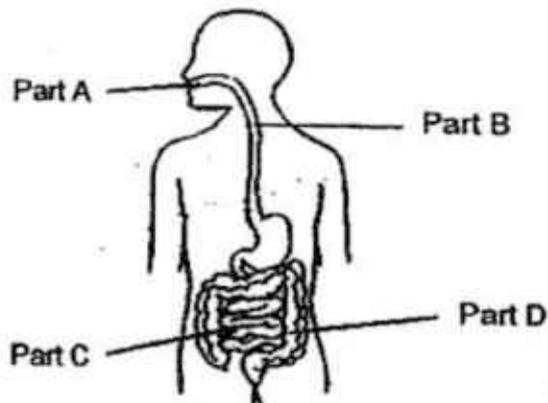
- (1) take in oxygen for the body
- (2) protect the important organs in the body
- (3) allow digested food to be absorbed into the body
- (4) support the body and help different parts of the body to move

- 3 Anita placed two plants of similar size and height into two beakers filled with blue-coloured water.



After one day, she noticed that all the leaves of Plant B had turned blue while only some of the leaves of Plant A turned blue. What could be the reason for this observation?

- (1) Plant A has less roots than plant B.
  - (2) Plant A did not absorb the blue water.
  - (3) Plant A is a water plant but not plant B.
  - (4) The leaves of Plant B turned blue when they trapped sunlight.
- 4 Study the human digestive system below.



Digestion takes place where digestive juices are produced. These juices are added to food in the parts of the digestive system labelled \_\_\_\_\_.

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

5 Study the diagrams below.



Young of a frog



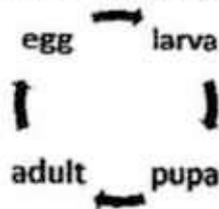
Young of a mosquito

Which of the following statements are true about the similarities between the young of a frog and the young of a mosquito at this stage?

- A Both will moult.
- B Both live in water.
- C Both eat to grow bigger.
- D Both are at the larva stage of the animal's life cycle.

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

6 The following diagram shows the different stages of an animal life cycle.



Which of the following animals go through a similar life cycle as shown above?

- A lizard
- B beetle
- C butterfly
- D cockroach

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

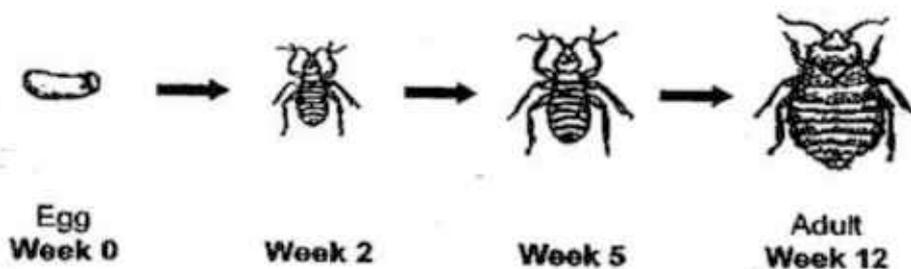
7 The following are some of the characteristics of the young of Animal X.

- It hatches from an egg.
- It goes through three stages in its life cycle.
- It does not resemble its parent at the young stage.

Which of the following is Animal X likely to be?

- (1) Frog
- (2) Chicken
- (3) Ladybird
- (4) Grasshopper

8 Study the growth of the common bed bug as shown below.



Which of the following animals has a similar life cycle to the bed bug?

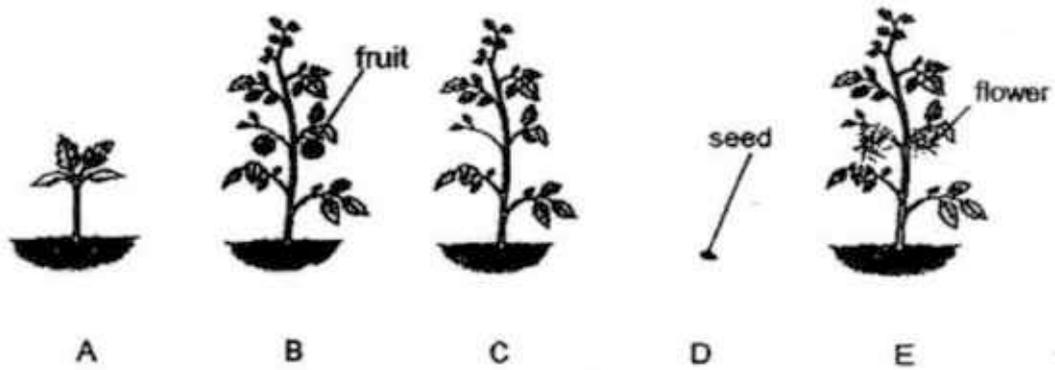
- (1) Beetle
- (2) Butterfly
- (3) Mosquito
- (4) Cockroach

9 Which of the following statements explains how a young plant is different from an adult plant?

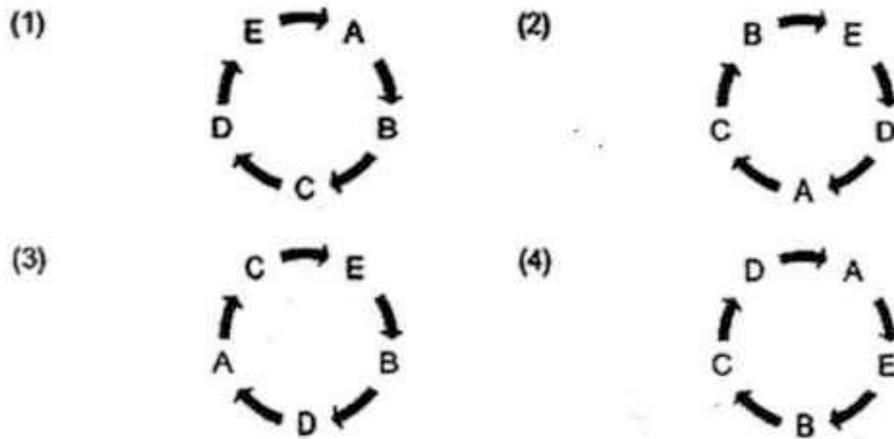
The adult plant \_\_\_\_\_ but the young plant does not.

- (1) has roots
- (2) needs air
- (3) needs water
- (4) bears flowers

10 The following diagram shows how a tomato plant looks like as it grows.

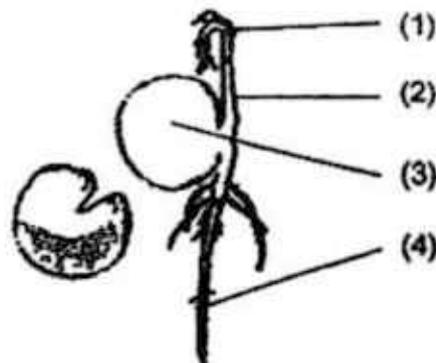


Which of the following shows the correct order of development for the plant?

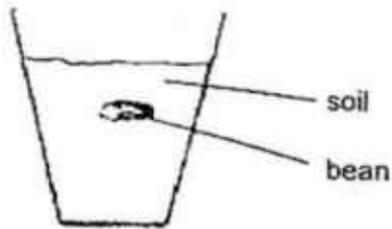


11 The diagram below shows a seedling with a part dropped off.

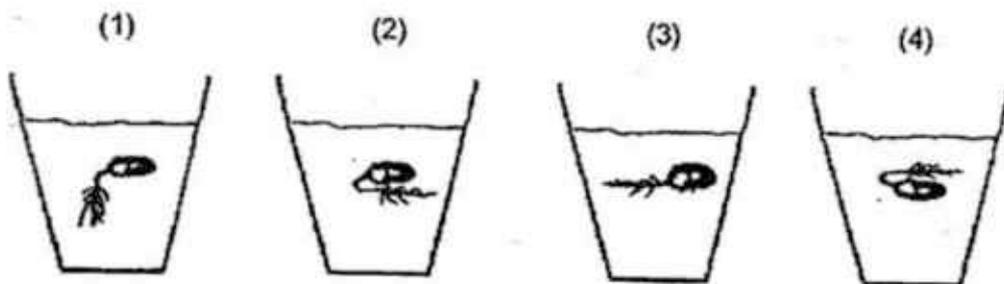
Which part of the seed does it get its food from before its leaves start making its own food?



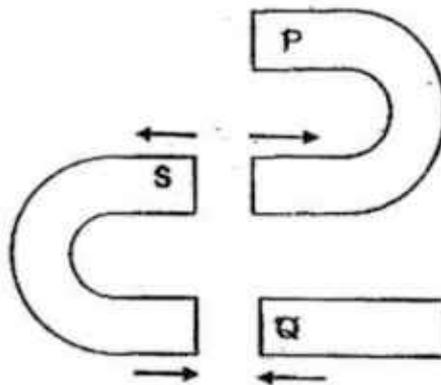
- 12 Theodore planted a bean in a pot filled with soil as shown in the diagram below.



Which of the following diagrams below shows the correct direction of the root when it first emerges from the seed?



- 13 Study the arrangements of three magnets below and their interactions with one another. The pole of one magnet is indicated as south (S).



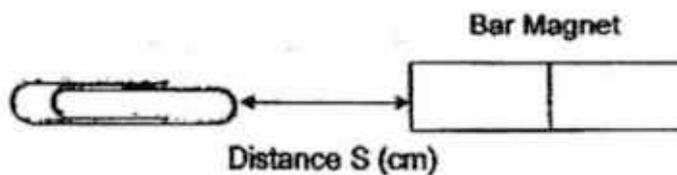
What could the poles at P and Q be?

	Pole P	Pole Q
(1)	N	N
(2)	N	S
(3)	S	N
(4)	S	S

14 A freely suspended magnet will come to rest in the \_\_\_\_\_ direction.

- (1) east - west
- (2) north - south
- (3) southwest - northeast
- (4) northwest - southeast

15 Elise carried out an experiment using three different bar magnets, X, Y and Z and a steel paper clip. She moved each magnet nearer towards the paper clip and recorded if the magnets can attract the paper clip at various distances. A tick (✓) indicates that the magnet can attract.

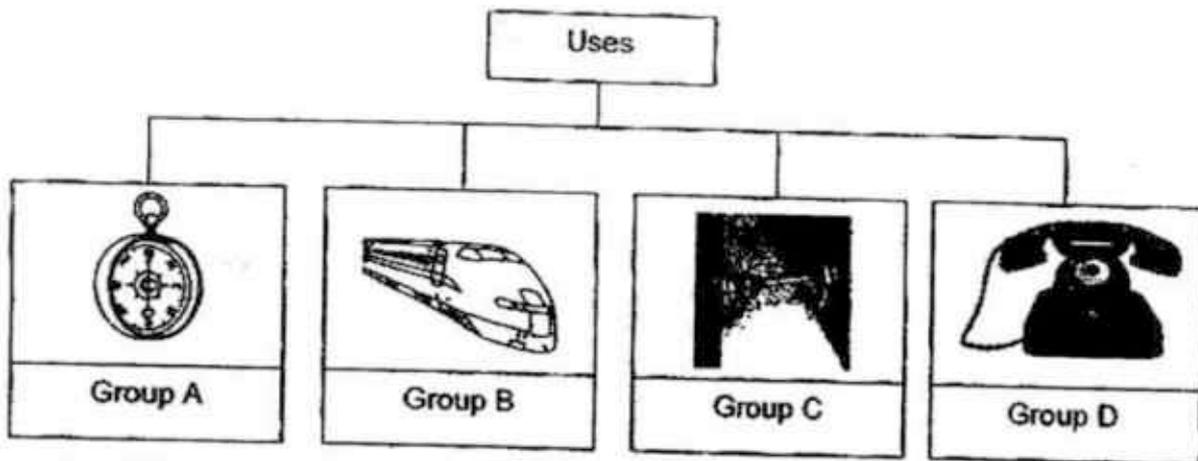


	Attraction at distance S (cm)			
	1 cm	2 cm	3 cm	4 cm
Magnet X	✓	✓	✓	✓
Magnet Y	✓	✓	x	x
Magnet Z	✓	x	x	x

In this experiment, Elise wanted to know the \_\_\_\_\_.

- (1) material of the paper clip
- (2) poles of Magnets X, Y and Z
- (3) magnet with the strongest magnetic pull
- (4) number of paper clips that can be attracted

- 16 The things in the classification chart below are examples of the uses of magnets.



In which groups of objects would you find electromagnets being used?

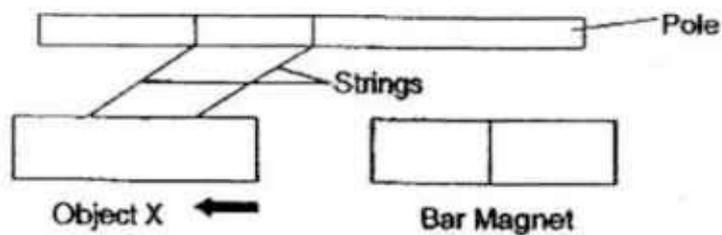
- (1) A and B only
  - (2) B and D only
  - (3) A, B and D only
  - (4) B, C and D only
- 17 Franny lists the following properties of material M.

- It sinks in water
- It is shiny and strong
- It can be attracted to a magnet

What is material M likely to be?

- (1) Wood
- (2) Nickel
- (3) Plastic
- (4) Aluminium

- 18 Billy ties Object X to a pole with 2 strings. When he brings a bar magnet near Object X, he notices that Object X moves away from the magnet as shown in the diagram below.

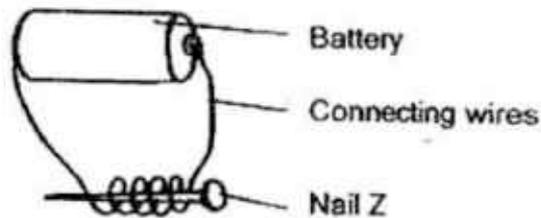


Which of the following statement(s) about Object X would be true?

- A It is a magnet.
  - B It is made of plastic.
  - C It can attract iron pins.
- (1) B only  
(2) A and C only  
(3) B and C only  
(4) A, B and C

Study the following experiment and answer questions 19 and 20.

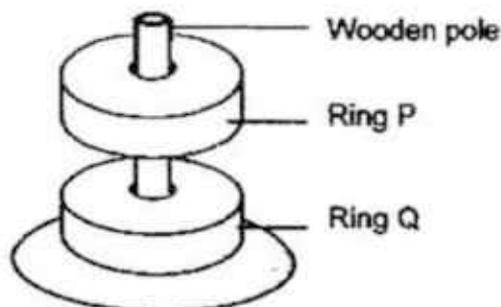
19 Hannah set up the following experiment.



She tried to use Nail Z to pick up some paper clips but it was not able to do so. What could be the reason(s) for this?

- A There were not enough coils on Nail Z.
  - B There was only one nail used in her set-up.
  - C The paper clips were made of non-magnetic materials.
- (1) B only  
(2) A and B only  
(3) A and C only  
(4) A, B and C
- 20 Which material is best used for Nail Z so that the nail can become an electromagnet?
- (1) Iron
  - (2) Paper
  - (3) Plastic
  - (4) Aluminium

21 Gabriel slotted 2 rings, Rings P and Q, through a wooden pole.



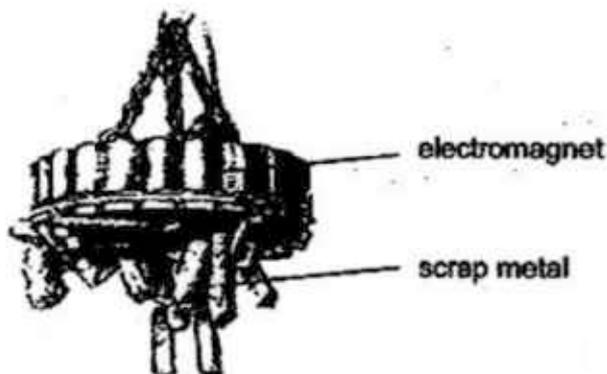
He observed that Ring P float above Ring Q.

Which of the conclusions below can Gabriel draw from his observation?

- A Ring Q is a magnet.
- B Ring P is not a magnet.
- C Both rings have like poles facing each other.

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

22 Isaac visited a scrap yard and saw scrap metal lifted by an electromagnet.



An electromagnet is used mainly because it \_\_\_\_\_.

- (1) is a permanent magnet
- (2) is made of non-magnetic material
- (3) is able to attract non-magnetic materials
- (4) becomes a magnet only when electricity is flowing through it



**SEMESTRAL ASSESSMENT 1**

**PRIMARY 4  
SCIENCE  
12<sup>th</sup> May 2017**

**(BOOKLET B)**

Name: \_\_\_\_\_ ( )

Class: Primary 4 Teamwork \_\_\_\_\_

Total time: 1 h 30 mins

**INSTRUCTIONS TO CANDIDATES**

1. Write your Name, Class and Index No. at the spaces provided above.
2. DO NOT turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write all your answers in this booklet.

**FOR TEACHER'S USE**

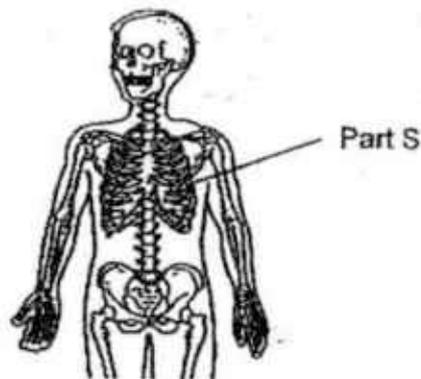
Marks (Booklet A) :	44
Marks (Booklet B) :	36
Total Marks (Booklet A & B) :	80

**There are a total of 10 pages in this booklet, excluding the cover page.**

For questions 23 to 33, write your answers in the booklet.

The number of marks available is shown in brackets [ ] at the end of each question or part question. (36 marks)

23 Study the diagram of the human skeletal system as shown below.



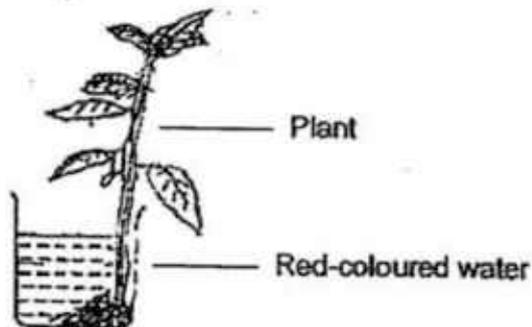
(a) Which two important organs does Part S protect? [1]

---

(b) Besides protecting important organs, state another function of the skeletal system. [1]

---

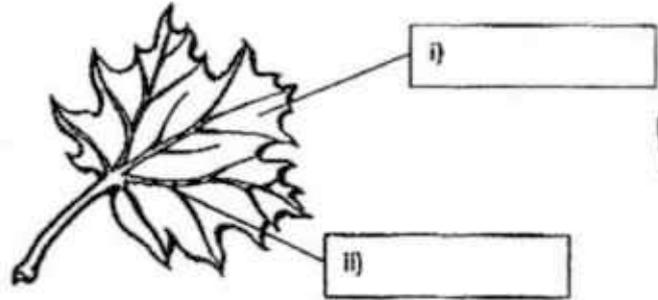
24 Jane put a plant into a beaker of red-coloured water. After a few hours, she noticed that some parts of the leaves had turned red.



(a) Draw an arrow on the diagram to show the direction of the water being transported to the rest of the plant. [1]

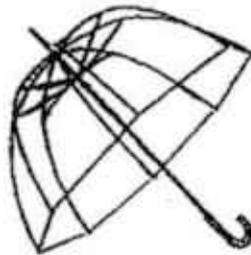
Question 24 continues on page 13

- (b) Study the diagram of a leaf below and label the parts in the boxes provided. [1]



- (c) State the function of a leaf to the plant. [1]

- 25 Kelly has an umbrella made of clear plastic sheet and metal frames.



The umbrella is only suitable to use on rainy days to keep her dry and not sunny days to give shade.

- (a) State the property that enables the umbrella suitable to be used on a rainy day. [1]

---

- (b) Why is the umbrella not suitable to be used to give shade on sunny days? [1]

---

- (c) (i) State the property of the metal used to make the frame. [1]

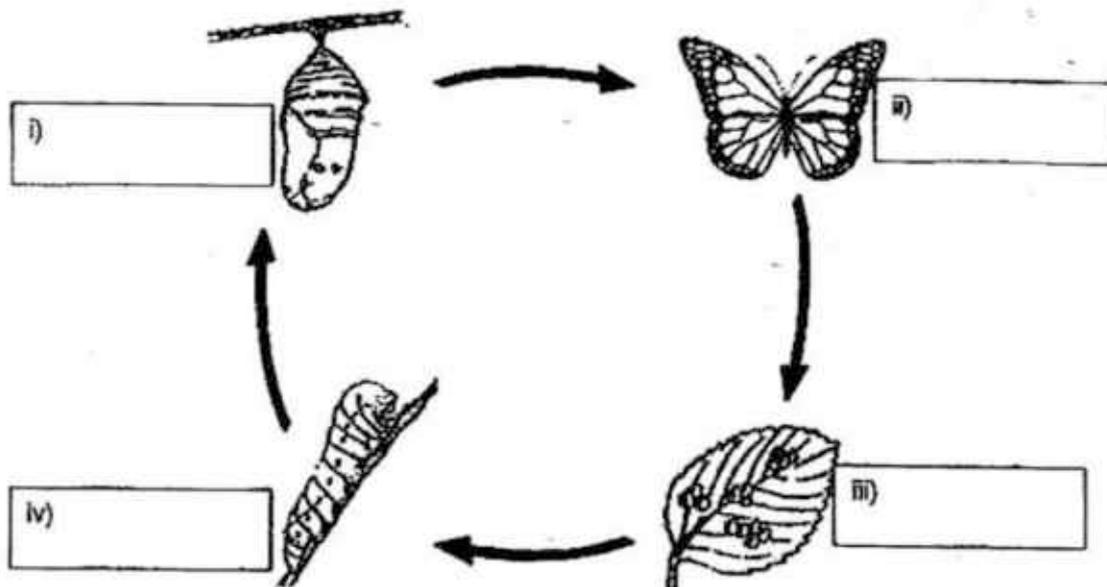
---

- (ii) Explain why the property in (c)(i) is suitable to make the frame. [1]

---

26 The following diagram shows the life-cycle of a butterfly.

(a) Fill in the stages of the life cycle of a butterfly in the boxes provided. [2]



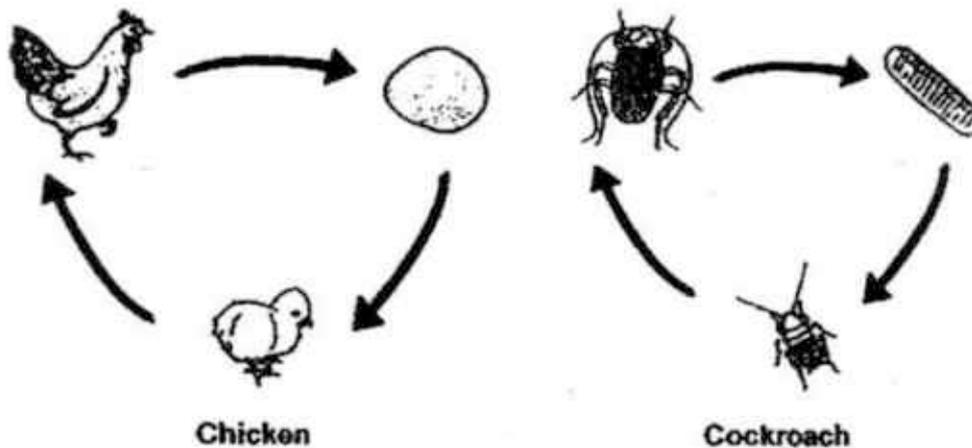
(b) (i) Circle in the diagrams below, the stage in which the animal goes through the process of moulting. [1]



(ii) Why is moulting necessary for the animal at the stage in (b)(i)? [1]

\_\_\_\_\_

27 Study the life cycles below.



- (a) State one similarity between the life cycles of a chicken and a cockroach. [1]
- 
- (b) What is the young of a cockroach called? [1]
- 
- (c) Mrs Tan wanted to get rid of the cockroaches in her house. She bought 3 poison brands and conducted an experiment with some cockroaches in 3 enclosed containers for 3 days.

She recorded the results of her experiment in the table below.

Container	Poison Brand used	Number of cockroaches alive at the beginning	Number of cockroaches alive after 3 days
1	X	25	10
2	Y	19	9
3	Z	22	13

Based on the results, which poison (X, Y or Z) is best in getting rid of the cockroaches in her house? Why? [1]

---

- 28 Mary observed two insects, P and Q and recorded the number of days of each stage of their life cycles in the table shown below.

Stage	Egg	Larva	Pupa	Adult
Insect P	6	6	12	10
Insect Q	5	9	10	8

- (a) Which insect (P or Q) has a longer life cycle? [1]

---

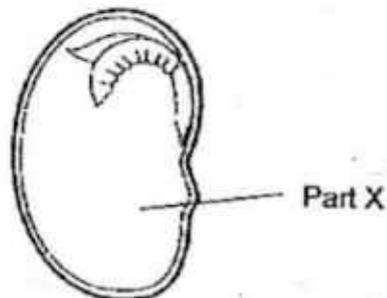
- (b) (i) Insect Q is identified as a butterfly. At which stage is it a pest to farmers?  $\left(\frac{1}{2}\right)$

---

- (ii) Why is it a pest at the stage in (b)(i)? [1]

---

- 29 Study the diagram of a seed as shown below.



- (a) Name Part X. [1]

---

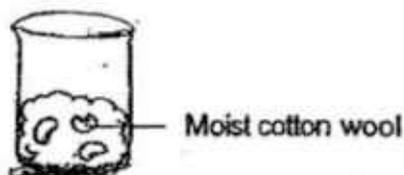
- (b) The mass of Part X decreased as the seed germinated into a young plant. Explain why. [1]

---

- (c) Part X was removed after the seed has germinated into a young plant but the young plant continued to grow. Give a reason why this was so. [1]

---

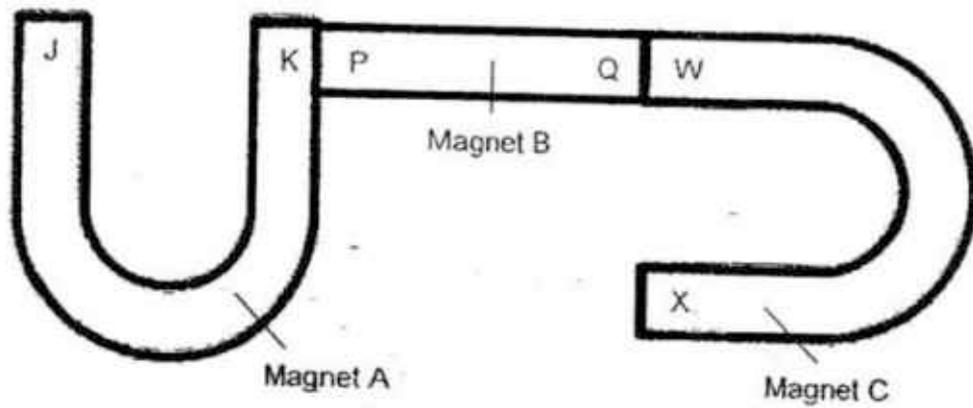
- 30 Matthew prepared 4 beakers, A, B, C and D. In each beaker, he placed 3 green beans on a moist cotton wool and placed the beakers in different locations as shown below.



Set-up	A	B	C	D
Location	Well-lit room at 30°C	Well-lit room at 0°C	Dark room at 30°C	Dark room at 0°C

- (a) He found that only the seeds in set-ups A and C germinated after a few days. From the experiment, state the three conditions that were needed for the seeds to germinate. [1½]
- 
- (b) How many stages are there in the life cycle of a flowering plant? [1]
- 
- (c) Matthew set up another beaker, Beaker E, with some moist soil and 3 green beans. He put them next to Beaker A in a well-lit room at 30°C. He found that the plants in Beaker E grew better than the plants in Beaker A. Explain why. [1]
-

31 The diagram below shows how 3 magnets are attracted to one another.



- (a) Based on the information above, state whether the following statements is/are 'true' or 'false' by putting a tick (✓) under the correct column in the table below. [1]

	True	False
K repels Q		
P attracts W		

- (b) Describe clearly how Magnet B can be used to make an iron nail into a temporary magnet. [2]

---



---



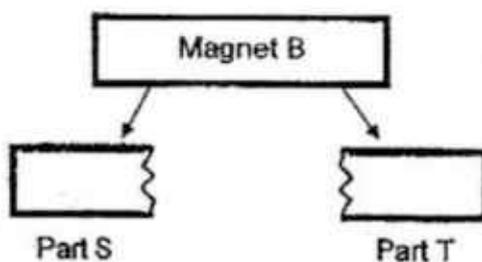
---



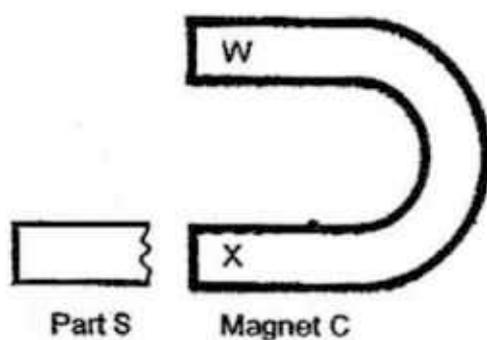
---

Question 31 continues on page 19

- (c) Magnet B breaks into two to become Part S and Part T as shown in the diagram below.



Part S is brought near to Magnet C as shown in the diagram below.



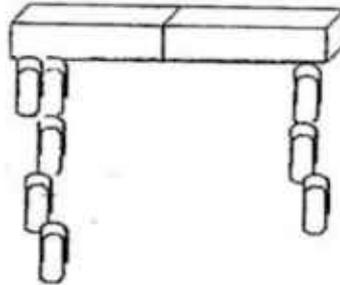
Describe what will be observed.

[1]

---

---

- 32 Nathan carried out an experiment using a bar magnet and some paper clips as shown below.



- (a) He noticed that most of the paper clips were attracted to some parts of the magnet in the set-up above.  
Why were the paper clips attracted to these parts? [1]

---

---

- (b) He then took the bar magnet and heated it for 10 minutes. After that, he noticed that the magnet was not able to attract any paper clips when he brought it near some paper clips. What could have happened? [1]

---

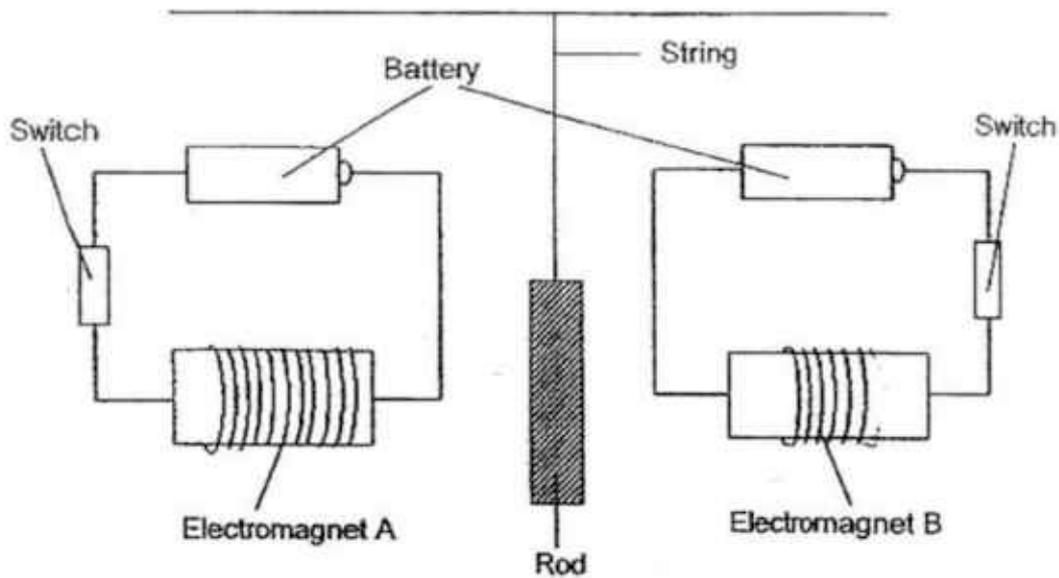
---

- (c) He then put the heated bar magnet in the fridge. After the bar magnet has cooled down, he took the bar magnet and tried to attract the paper clips.  
Will he be able to attract any paper clips? Give a reason for your answer. [1]

---

---

33 Paul constructs the following using two electromagnets A and B, and a rod.



(a) Explain why the rod moves to Electromagnet A when the switches in the two set-ups are switched on. [2]

---

---

(b) State the material to be used for the rod in order for it to move towards Electromagnet A or B. [1]

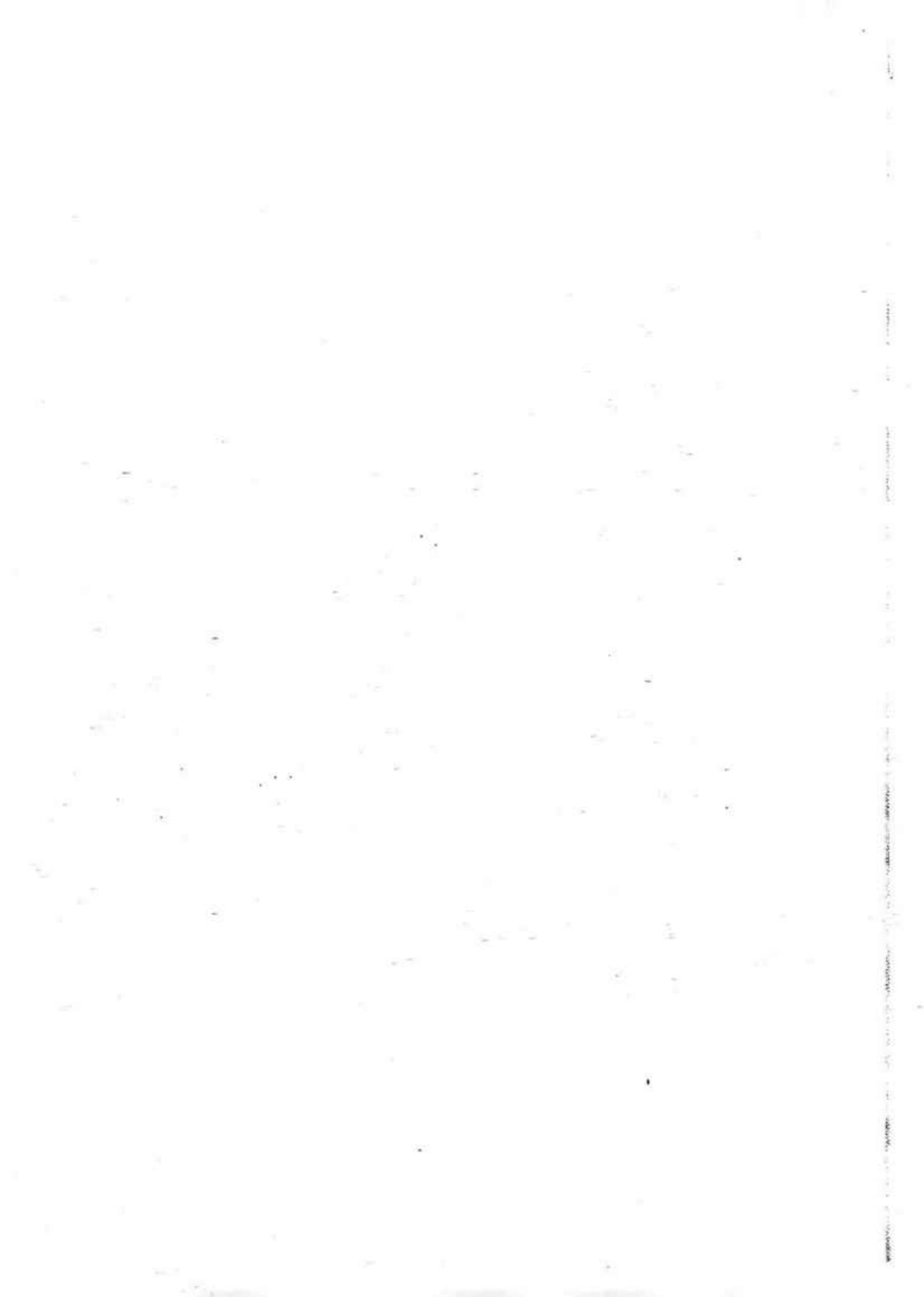
---

(c) Suggest what can be done to the set-up of Electromagnet B so that the rod moves to Electromagnet B when both the switches are on. [1]

---

---

– END OF PAPER –



SCHOOL : PEI HWA PRESBYTERIAN PRIMARY SCHOOL

LEVEL : PRIMARY 4

SUBJECT : SCIENCE

TERM : 2017 SA1

CONTACT :

---

**SECTION A**

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	3	1	2	2	1	1	4	4	3
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	1	2	2	3	2	2	2	3	1
Q 21	Q22								
2	4								

**SECTION B**

Q23)	a) The lungs and the heart. b) The skeletal system allows us to move our body and support our body.
Q24)	a) {Draw an upward arrow in the stem to show water being transported to the rest of the plant} b) i) leaf blade ii) leaf veins c) The leaf allows gaseous exchange to happen and take in air and sunlight.
Q25)	(a) Waterproof (b) The umbrella is transparent and light can enter (c) i) Strong, ii) When it rains, the strong metal can keep its shape and will not bend or close.
Q26)	(a) i) Pupa ii) adult ii) egg iv) larva (b) Moulting allows the larva to grow and become bigger after coming out of the skin its shed

Q27)	<ul style="list-style-type: none"> <li>(a) Both the adult chicken and adult cockroach reproduce by laying eggs.</li> <li>(b) Nymph</li> <li>(c) Poison X. It killed the most cockroaches in three days.</li> </ul>
Q28)	<ul style="list-style-type: none"> <li>(a) Insect P</li> <li>(b) i) The larva stage ii) At the larva stage, it eats the farmer's crops and leaves.</li> </ul>
Q29)	<ul style="list-style-type: none"> <li>(a) Seed leaves</li> <li>(b) As the baby plant grew, it used the food in the seed leaves.</li> <li>(c) The young plant had its own leaves and could make its own food.</li> </ul>
Q30)	<ul style="list-style-type: none"> <li>(a) Water, warmth and air</li> <li>(b) Three stages</li> <li>(c) In the soil, there are mineral salts and water but the cotton wool had only water and no mineral salts. Hence, plants in beaker E grew better than plants in Beaker A.</li> </ul>
Q31)	<ul style="list-style-type: none"> <li>(a) K repels Q → True P attracts W → False</li> <li>(b) Keep on stroking the iron nail in Magnet B and keep trying until the paper clip get attracted by the iron nail from a distance.</li> <li>(c) Part S will repel Magnet C at X.</li> </ul>
Q32)	<ul style="list-style-type: none"> <li>(a) A magnet's magnetism is the strongest at its poles.</li> <li>(b) The magnet loss its magnetism after being heated for 100 minutes</li> <li>(c) He will not be able to attract any paper clips. When a magnet has lose its magnetism, the only way to make it a magnet again is to stroke it using another magnet and not cool it down as it uses the stroking method which cannot be a magnet again if he cools it down.</li> </ul>
Q33)	<ul style="list-style-type: none"> <li>(a) Electromagnet A has more coils than electromagnet B causing Electromagnet A to have a stronger magnetic force to get the rod attracted to electromagnet A.</li> <li>(b) Steel</li> <li>(c) Paul can add more batteries or coils to electromagnet B so that the rod will move towards Electromagnet B.</li> </ul>

**SEMESTRAL ASSESSMENT (1)  
2017**

Name : \_\_\_\_\_ Index No: \_\_\_ Class: P4 \_\_\_

9 May 2017

SCIENCE

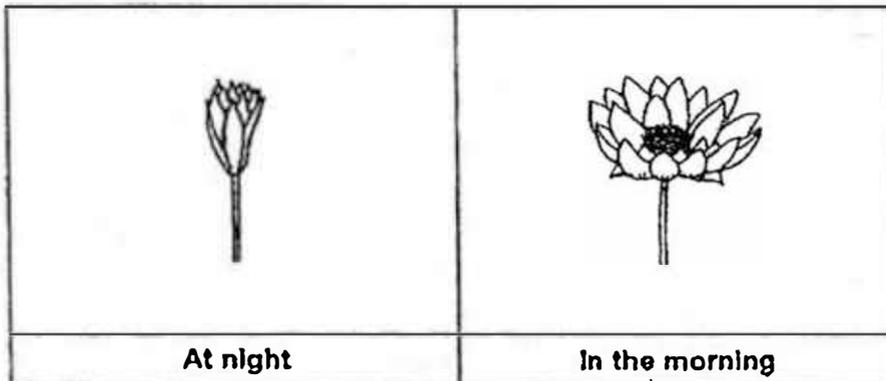
Att: 1 h 45 min

Section A	58
Section B	44
Your score out of 100	
Parent's signature	

**SECTION A (28 x 2 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 (OAS) provided.

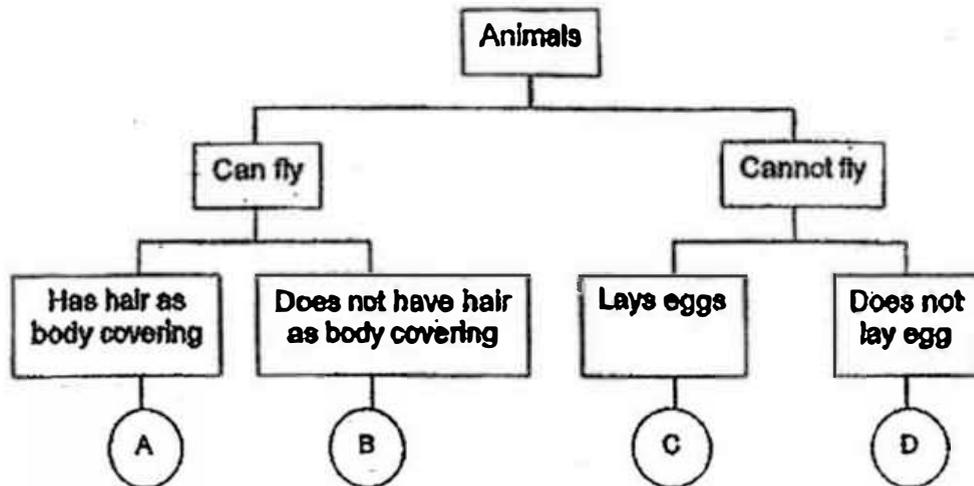
1. The flower shown below closes at night and only opens in the early morning.



Which one of the following characteristics of living things does the above flower show?

- (1) Living things die.
- (2) Living things reproduce.
- (3) Living things need air, food and water to survive.
- (4) Living things respond to changes in its surroundings.

2. The flow chart below shows how some animals are classified into groups A, B, C and D.



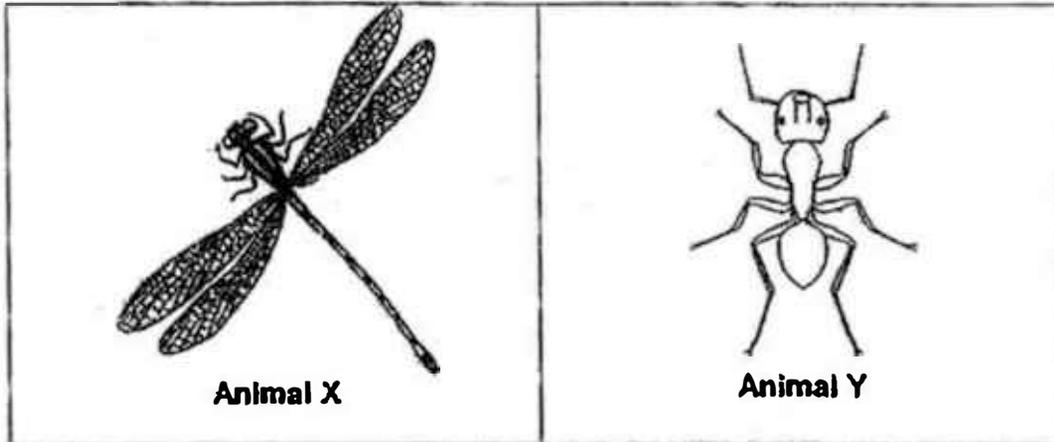
The diagram below shows a bat.



Which of the groups, A, B, C or D does the bat belong to?

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

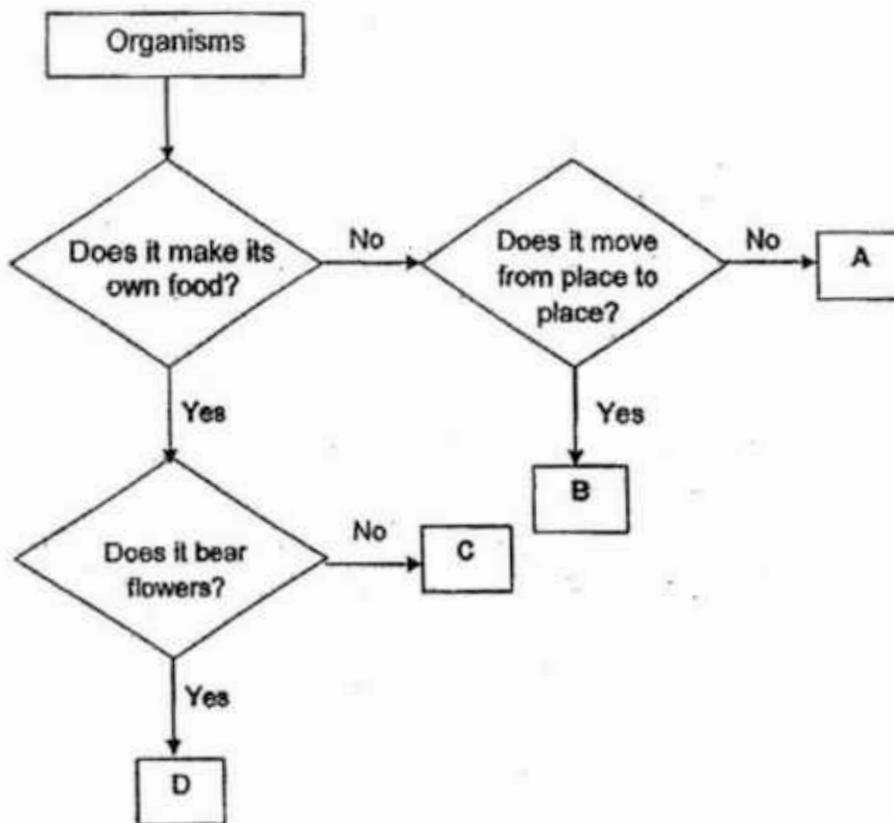
3. The diagrams below show animals X and Y.



Based on the above diagrams, which one of the following statements is correct?

- (1) Both animals X and Y are insects because they have six legs.
  - (2) Both animals X and Y are not insects because they do not have three body parts.
  - (3) Only animal Y is an insect because it has feelers but animal X does not have feelers.
  - (4) Only animal X is an insect because animal X has wings but animal Y does not have wings.
4. Which one of the following is a characteristic of all fungi?
- (1) All fungi can be eaten.
  - (2) All fungi reproduce by seeds.
  - (3) All fungi cannot make their own food.
  - (4) All fungi cannot be seen with our naked eyes.

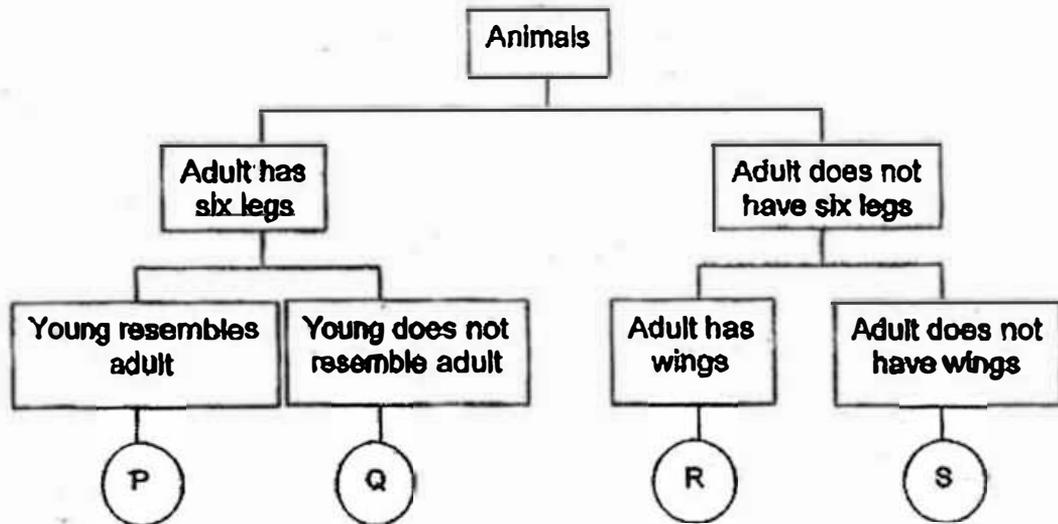
5. The flow chart below shows how some organisms are classified.



Which one of the following organisms are likely to be mushroom and bird's nest fern?

	Mushroom	Bird's nest fern
(1)	A	C
(2)	B	A
(3)	C	D
(4)	D	B

6. The flow chart below shows how some animals are classified into groups P, Q, R and S.



The diagrams below show the young and adult of animal X.



Young

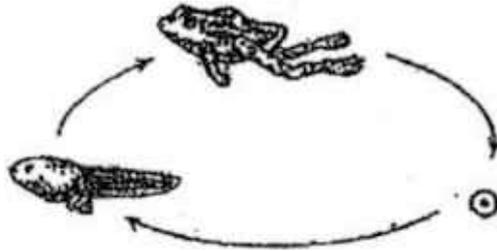


Adult

Which one of the following groups does animal X belong to?

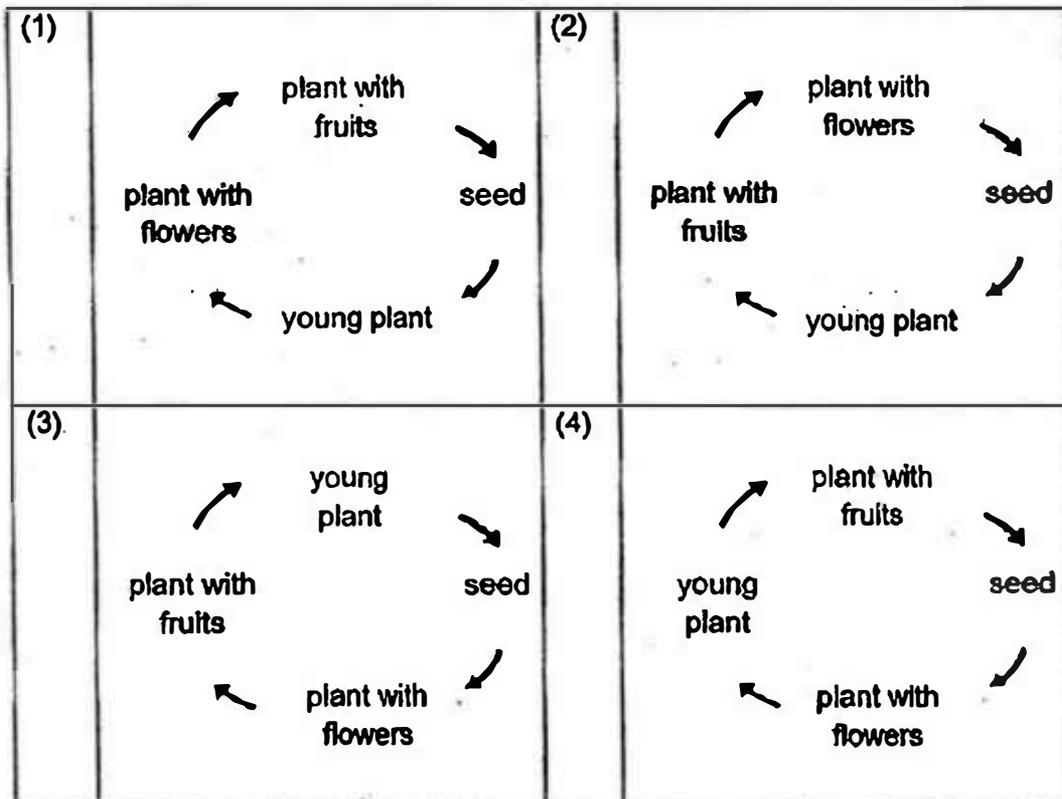
- (1) P
- (2) Q
- (3) R
- (4) S

7. The diagram below shows the life cycle of a frog.

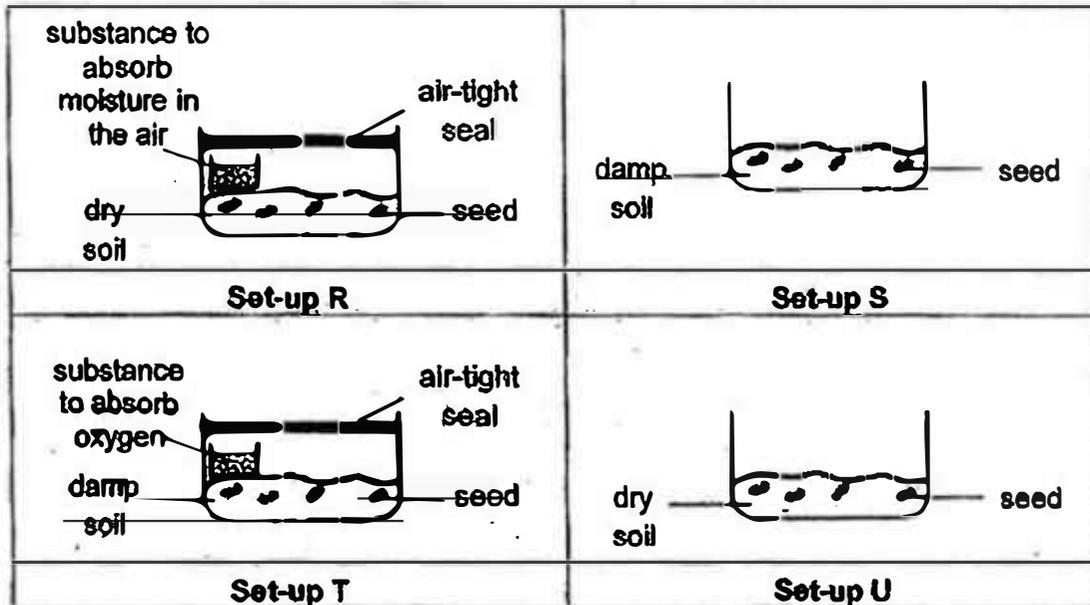


Which one of the following is true about the life cycle of the frog?

- (1) It has an egg stage.
  - (2) It has a pupal stage.
  - (3) The young does not feed.
  - (4) It has a four-stage life cycle.
8. Which one of the following shows the correct stages of development of a flowering plant?



9. The diagrams below show four set-ups with equal number of green bean seeds placed in different conditions.



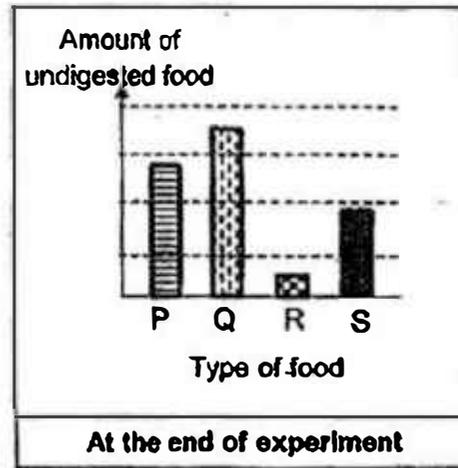
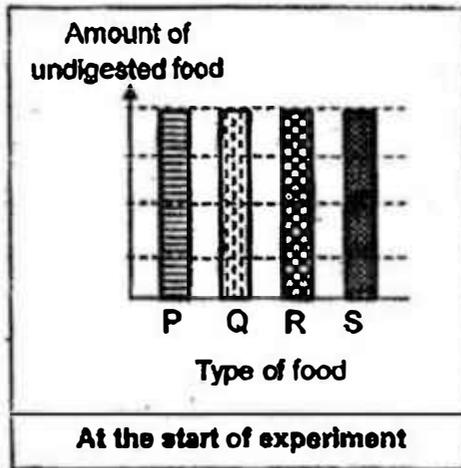
In which one of the following set-ups will the seeds germinate?

- (1) R  
 (2) S  
 (3) T  
 (4) U
10. Which one of the following shows the organs in the human respiratory system?
- (1) gullet, lungs, nose  
 (2) gullet, lungs, mouth  
 (3) nose, heart, windpipe  
 (4) lungs, nose, windpipe
11. Which one of the following correctly matches the system to its function?

	System	Function
(1)	Skeletal system	Removes excess water from our body
(2)	Muscular system	Allows us to move different parts of our body
(3)	Respiratory system	Carries useful substances to all parts of our body
(4)	Circulatory system	Takes air into our body

12. Four different types of food, P, Q, R and S, were mixed with some digestive juices and left on the table in the science lab for two hours.

The graphs below show the amount of undigested food left at the start and at the end of two hours.



Based on the above graphs, which type of food, P, Q, R or S, took the longest time to digest?

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

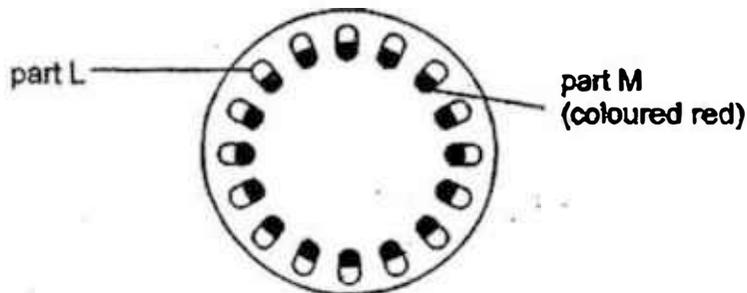
13. Amy wanted to find out how the amount of digestive juice affects the rate of digestion of food.

Which of the following variables should be kept constant in order to ensure a fair test?

- A Type of food
- B Amount of food
- C Amount of digestive juice
- D Time taken for the food to be broken down completely

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

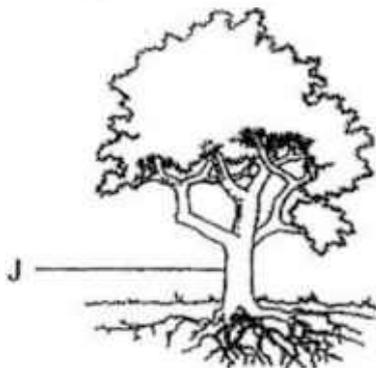
14. Jenny placed a plant in a beaker of red coloured water for three hours. After three hours, she cut a section of the stem of the plant and observed that some parts were coloured red as shown in the diagram below.



Which one of the following correctly identifies parts L and M?

	Part L	Part M
(1)	Food-carrying tube	Food-carrying tube
(2)	Food-carrying tube	Water-carrying tube
(3)	Water-carrying tube	Water-carrying tube
(4)	Water-carrying tube	Food-carrying tube

15. The diagram below shows a tree with part J.



Three pupils made the following statements about part J :

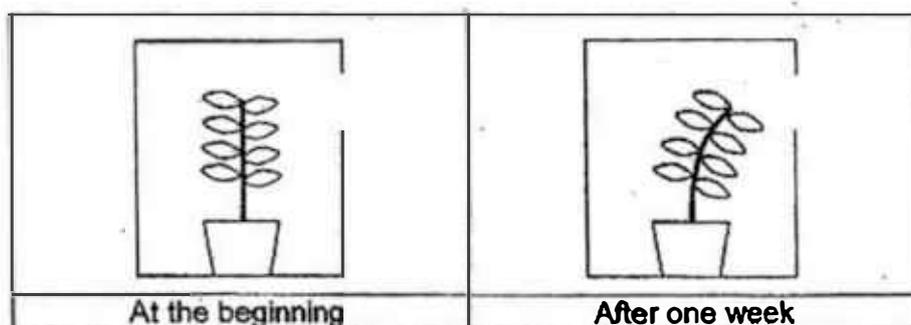
Amy: Part J holds the plant upright.

Caleb: Part J takes in water from the ground.

Dennis: Part J transports water from the leaves to all parts of the plant.

Which of the following pupils made the correct statements about part J?

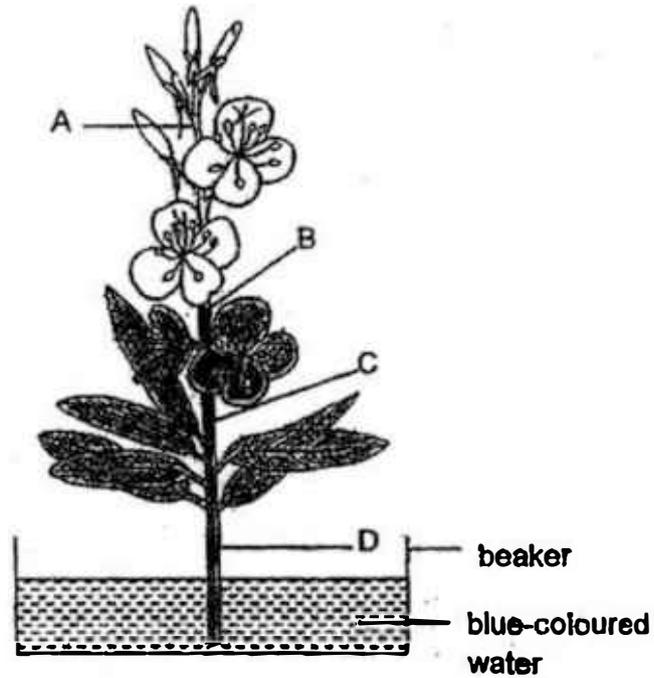
- (1) Amy only
  - (2) Amy and Dennis only
  - (3) Caleb and Dennis only
  - (4) Amy, Caleb and Dennis
16. A plant was placed in a black box with a hole. The diagrams below show the plant at the beginning of the experiment and at the end of one week, respectively.



Which one of the following best explains the above observation after one week?

- (1) The plant has a weak stem.
- (2) The stem could not support the leaves of the plant.
- (3) The roots are not receiving enough water for the plant.
- (4) The leaves grew towards the opening to obtain more sunlight to make food.

17. A plant with damaged stem was placed in a beaker of blue-coloured water and left near a window for twenty-four hours. The diagram below shows the plant after twenty-four hours. The parts of the plant that had been stained blue were indicated by the shaded parts as shown below.



Based on the diagram above, at which one of the following parts, A, B, C, or D, was the stem damaged?

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

18. The table below shows some information on the properties of materials J, K, L, and M. A tick (✓) indicates the presence of the property.

Material	Flexible	Waterproof	Breaks easily	Does not allow light to pass through
J	✓		✓	✓
K	✓	✓		✓
L		✓	✓	
M		✓		✓

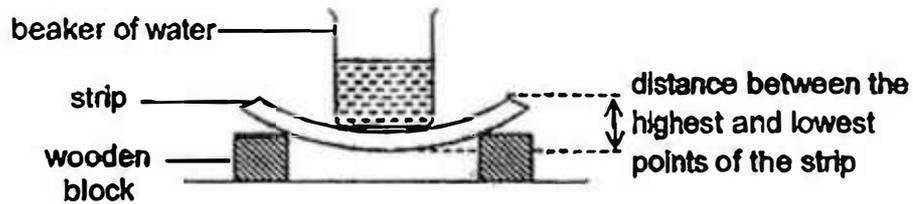
The umbrella shown below is used to shelter the user from the rain and sunlight.



Which one of the following shows the most suitable materials for making parts X and Y of the umbrella?

	Part X	Part Y
(1)	J	L
(2)	K	M
(3)	L	K
(4)	M	J

19. Ling Ling set up an experiment as shown below to investigate a property of three strips, P, Q and R, which were made of different materials.



She added different amounts of water into the beaker rested on each strip until the distance between the highest and lowest points of the strip reached 2 cm.

Based on her results, she concluded that strip P was the most flexible and strip Q was the least flexible.

Which of the following results did she observe in order to draw the conclusion above?

	Amount of water in beaker (ml)		
	P	Q	R
(1)	30	90	60
(2)	30	60	90
(3)	60	90	30
(4)	90	30	60

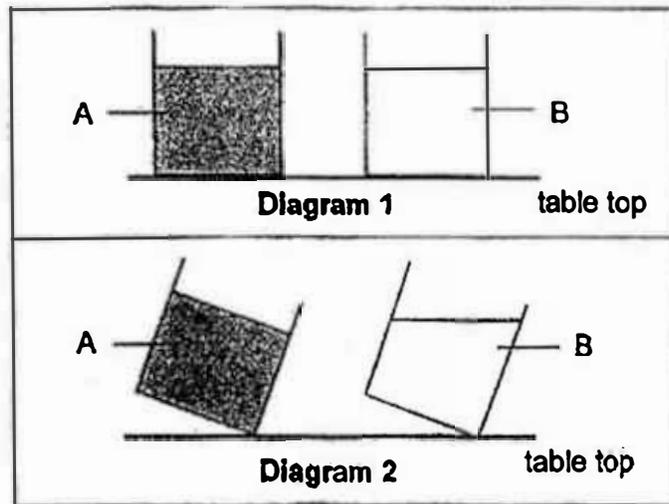
20. The table below shows some properties of substances X, Y and Z. A tick (✓) indicates the presence of the property.

Property	Substance X	Substance Y	Substance Z
Has mass	✓	✓	
Has a definite volume		✓	
Takes the shape of the container that it is placed in	✓		

Which one of the following correctly represents substances X, Y and Z?

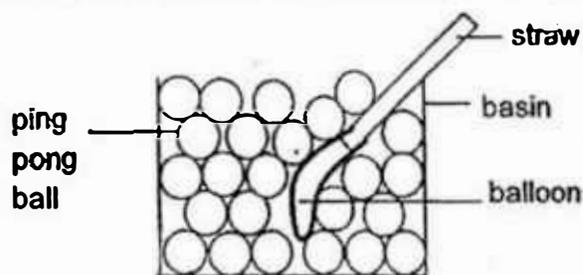
	Substance X	Substance Y	Substance Z
(1)	air	rock	shadow
(2)	oil	rock	heat
(3)	oxygen	water	air
(4)	water	light	oxygen

21. Diagrams 1 and 2 below show two identical beakers containing substances A and B when placed on a table top and when tilted at an angle, respectively.



Based on the observation above, which one of the following statements about substances A and B is correct?

- (1) Substance A has a greater mass than substance B.
  - (2) Substance A is a liquid while substance B is a solid.
  - (3) Substance A has a definite shape but not substance B.
  - (4) Substance A cannot be compressed but substance B can be compressed.
22. Meimei placed a balloon attached to a straw into a basin and then filled the basin with ping pong balls to the brim, as shown in the diagram below.

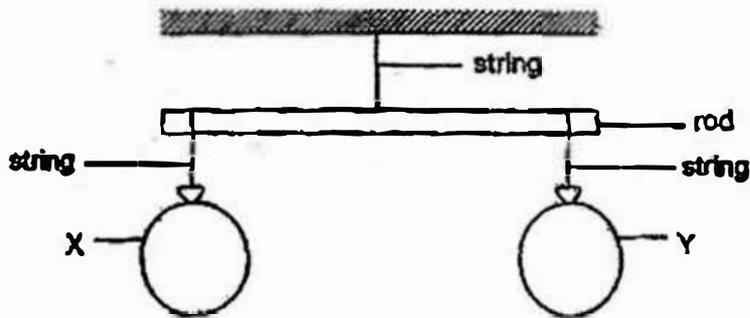


When Meimei blew into the straw, she observed that some of the ping pong balls spilled out of the basin.

Which one of the following best explains her observation?

- (1) Each ping pong ball has a definite shape.
- (2) The air in the balloon has no definite shape.
- (3) The inflated balloon occupied more space in the basin.
- (4) The air in between the ping pong balls has no definite volume.

23. Two identical balloons, X and Y, were filled with equal amounts of air and then attached to a rod, as shown in the diagram below.



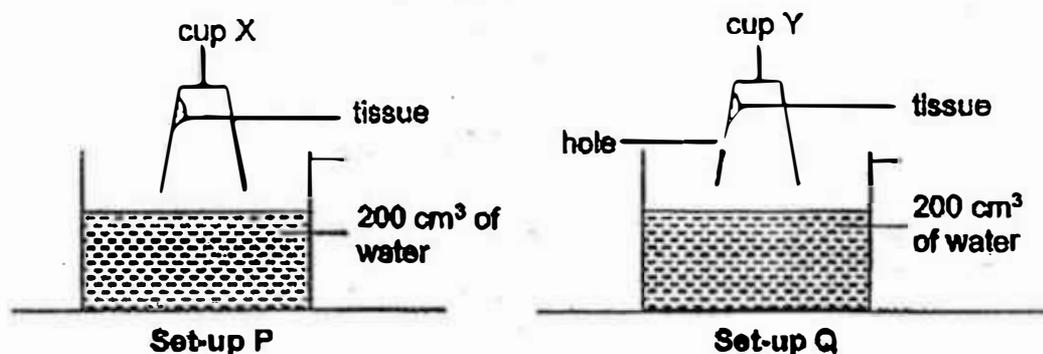
An additional  $20 \text{ cm}^3$  of air was pumped into balloon X.

Which of the following observations is/are correct after additional  $20 \text{ cm}^3$  of air was pumped into balloon X?

- A Balloon Y decreased in size.
- B The rod remained horizontal.
- C The rod tilted downwards at balloon X.
- D Balloon X was bigger in size than balloon Y.

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

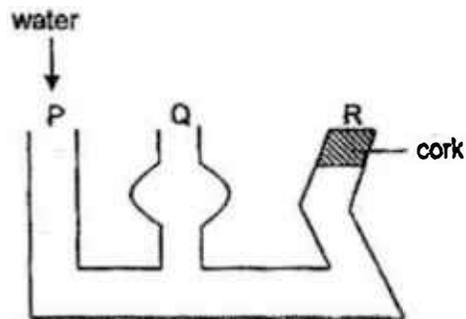
24. Susan conducted an experiment using set-ups, P and Q, as shown below. She attached a piece of dry tissue in each cup at the same position. She made a hole in cup Y. Then she inverted and pushed each cup into a basin of water.



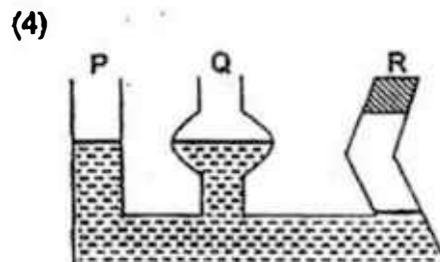
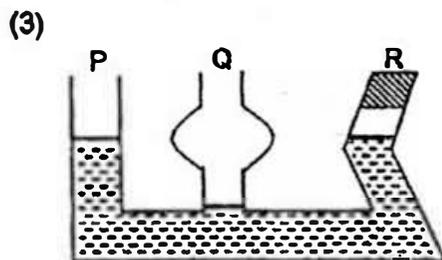
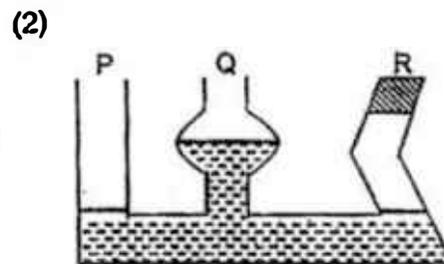
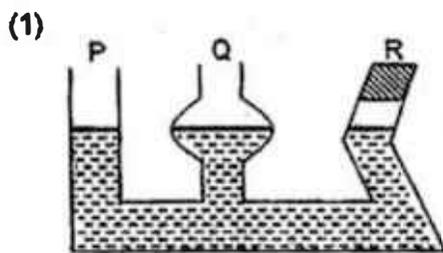
Which one of the following shows the correct observation?

- (1) Water entered cup X but not cup Y.
- (2) More water entered cup X than cup Y.
- (3) The tissue in both cups, X and Y, remained dry.
- (4) The water levels in both basins, P and Q, dropped.

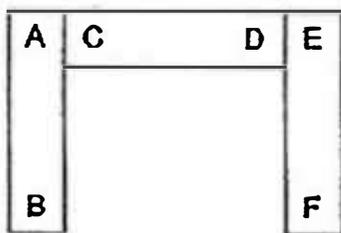
25. The diagram below shows a vessel with openings P, Q and R. Opening R was sealed with a piece of cork.



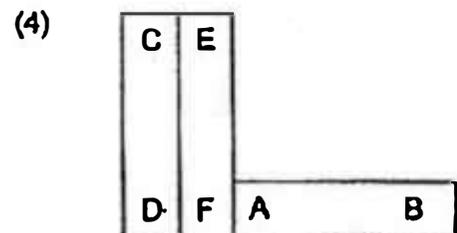
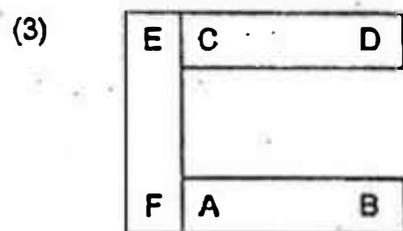
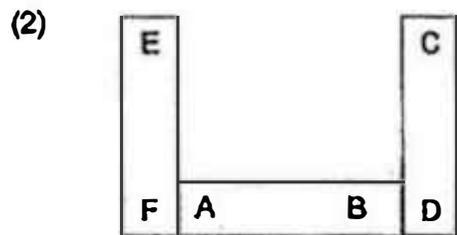
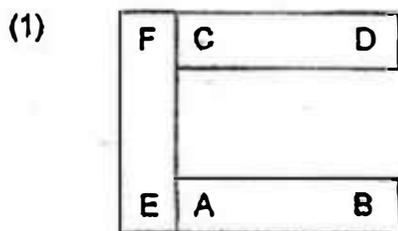
When water was poured into the vessel through opening P, which of the following shows the correct water levels in each opening of the vessel?



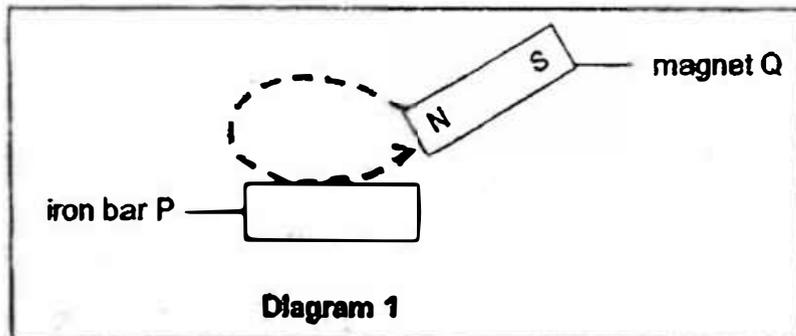
26. The diagram below shows an arrangement of four magnets. The poles of the magnets are labelled A, B, C, D, E and F respectively.



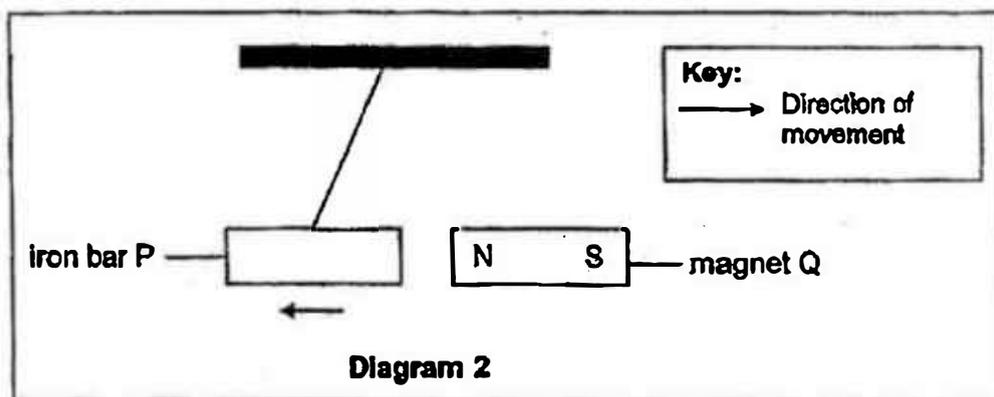
Which one of the following arrangements of the four magnets is possible?



27. Lily magnetised an iron bar P using the stroking method as shown in Diagram 1 below.



Then she attached the magnetised iron bar P to a string and placed magnet Q near to it. She observed that iron bar P moved in the direction as shown in Diagram 2 below.

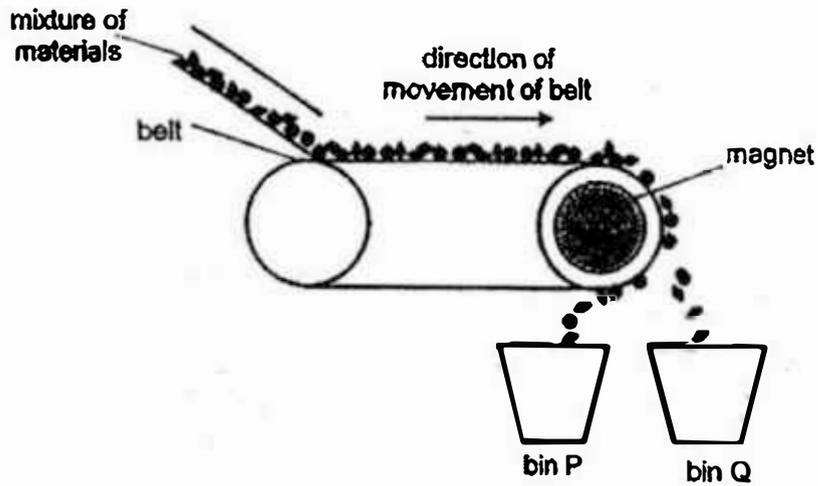


Which of the following actions would cause iron bar P to move further away from magnet Q?

- A Heat iron bar P over a flame.
- B Drop iron bar P onto the ground for a few times.
- C Stroke iron bar P with the magnet for a greater number of times.

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

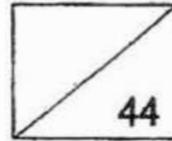
28. The diagram below shows a way to separate a mixture of materials.



Which of the following shows the materials that can be found in bins P and Q?

	Bin P	Bin Q
(1)	iron, nickel	aluminium, plastic
(2)	cobalt, plastic	copper, steel
(3)	nickel, cobalt	iron, plastic
(4)	plastic, aluminium	cobalt, nickel

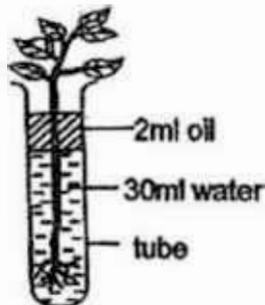
Name : \_\_\_\_\_ Index No: \_\_\_\_\_ Class: P4 \_\_\_\_\_



**SECTION B (44 marks)**

For questions 29 to 41, write your answers clearly in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

29. Susan placed different types of plants in three identical tubes of water, P, Q and R. One of the plants was a plastic plant. The diagram below shows one of the set-ups.



The three set-ups were left near the window for three days. The table below shows the amount of water left in each set-up at the start and end of the experiment.

Set-ups	Amount of water left in the tube (ml)	
	Day 1	Day 3
P	30	15
Q	30	30
R	30	20

- (a) Which one of the set-ups, P, Q or R, contained the plastic plant? Give a reason for your answer. [1]

---

---

- (b) Susan repeated the experiment with set-up P but wrapped the roots of the plant with a plastic bag.

Would the amount of water left in the tube be less than 15ml, greater than 15ml or remain the same at 30ml at the end of the experiment? Give a reason for your answer. [1]

---

---

Continue on next page

Score	2
-------	---

Continue from previous page

Susan prepared four more similar set-ups. The table below shows the information on the four set-ups, W, X, Y and Z.

Set-up	Type of plant	Location where set-up is placed	Number of leaves	Amount of water in the tube at the start of the experiment (ml)
W	Plant M	open field	20	30
X	Plant M	open field	40	30
Y	Plant N	open field	40	30
Z	Plant N	classroom	20	20

(c) Which set-ups, W, X, Y and Z, should Susan compare if she wants to investigate :

(i) if the type of plant affects the amount of water taken in by the plant? [1]

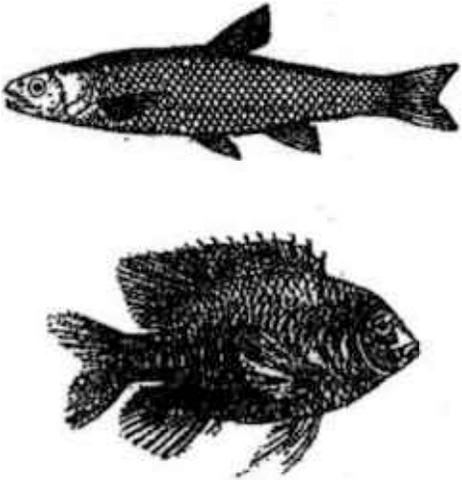
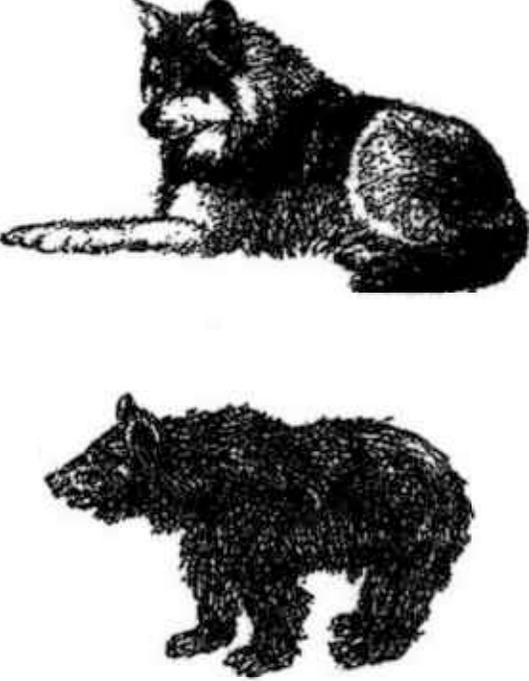
Set-up \_\_\_\_\_ and set-up \_\_\_\_\_

(ii) if the number of leaves affects the amount of water taken in by the plant? [1]

Set-up \_\_\_\_\_ and set-up \_\_\_\_\_

Score	2
-------	---

30. Melissa classified four animals, which are not drawn to scale, into two groups as shown below.

Fish	Mammal
	

(a) Based on the above diagrams, describe clearly one observable difference between the fish and mammal. [1]

Fish	Mammal

Melissa made the following observations on animal K:

- Lives in water
- Has short hair
- Breathes through lungs

(b) Based on the information above, in which group, 'Fish' or 'Mammal', does animal K belong to? Explain your answer clearly. [2]

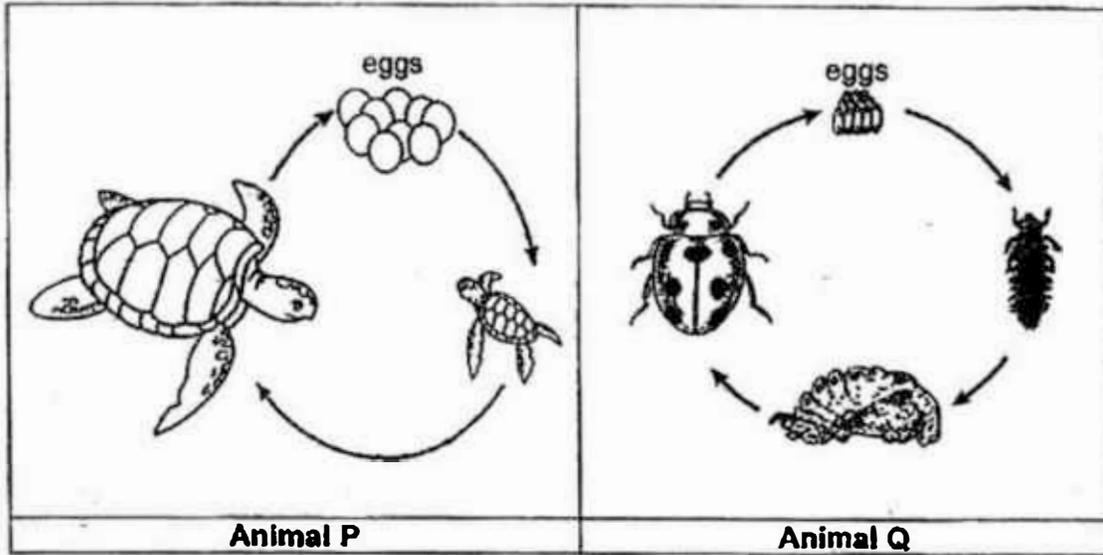
---



---

Score	3
-------	---

31. The diagrams below show the life cycles of animals P and Q.



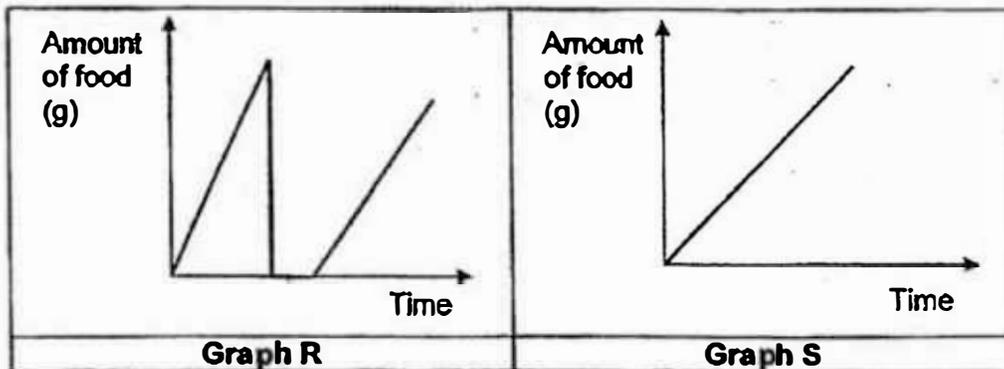
(a) Based on your observations on the above diagrams, state one difference between the two life cycles. [1]  
 (Note: Do not compare shape, size and number of stages.)

---



---

The graphs below show the amount of food taken in by animals P and Q in one life cycle.



(b) Which one of the graphs, R or S, represents the amount of food taken in by Animal Q as it grows? Explain your answer. [2]

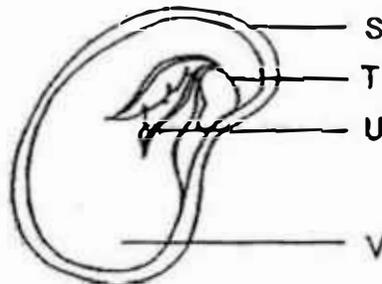
---



---

Score	3
-------	---

32. The diagram below shows the cross-section of a seed.



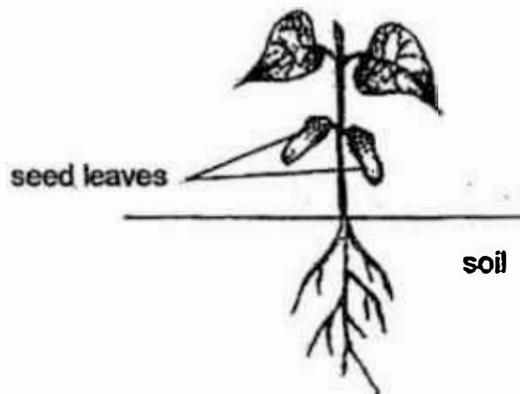
(a) Which part, S, T, U or V, represents the 'seed leaf'? [1]

\_\_\_\_\_

(b) State one function of the seed leaf. [1]

\_\_\_\_\_  
\_\_\_\_\_

The diagram below shows a young plant which has just germinated from a seed.

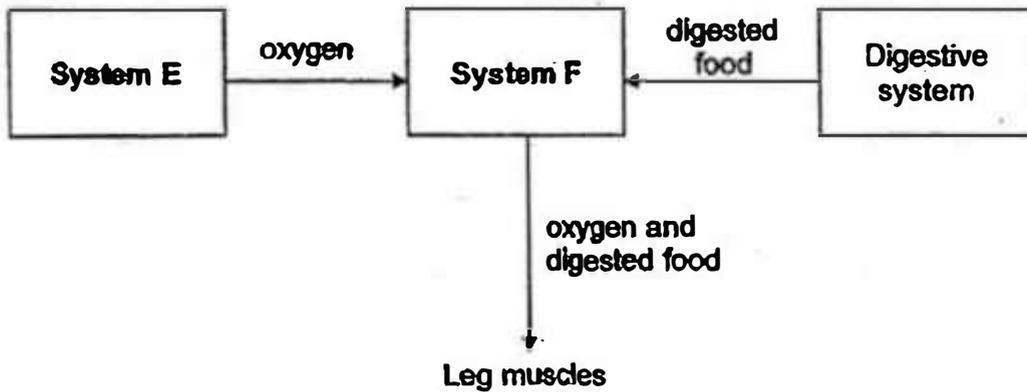


(c) The two seed leaves were removed and the plant was left in the garden for one week. After one week, it was observed that the plant continued to grow and increase in height. Explain the observations clearly. [2]

\_\_\_\_\_  
\_\_\_\_\_

Score	4
-------	---

33. The flow chart below shows how some substances are transported in the human body to provide energy for the legs to bend.

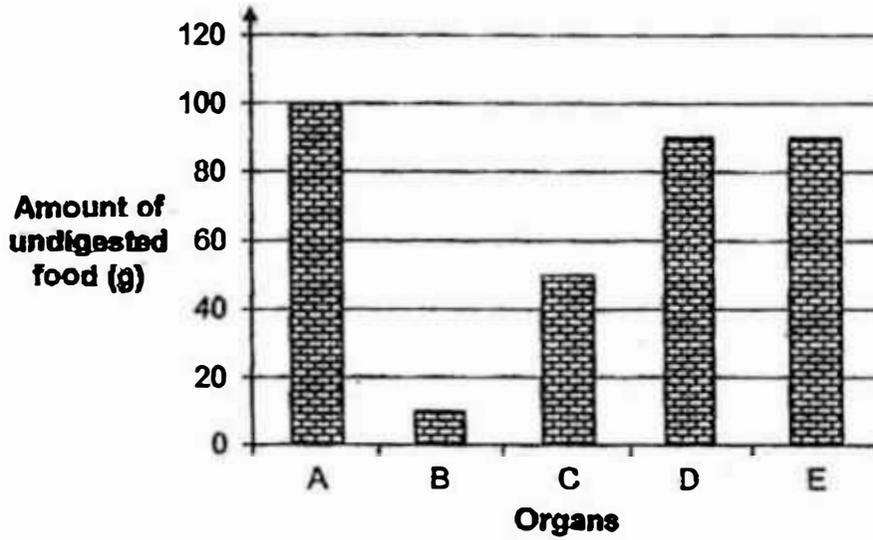


- (a) Based on the above information, identify systems E and F. [2]
- (i) System E : \_\_\_\_\_ system
- (ii) System F : \_\_\_\_\_ system
- (b) Name the organ in the digestive system where the digested food leave the digestive system and enter system F. [1]

---

Score	3
-------	---

34. The graph below shows the amount of undigested food that has just entered the different organs in the human digestive system.



- (a) Based on the information above, which organ, A, B, C, D or E, represents the large intestine? Explain your answer. [2]

---



---



---

- (b) In the graph above, the amount of undigested food that just entered organs D and E are the same.

What could organs D and E possibly be? [1]

Organ D: \_\_\_\_\_

Organ E: \_\_\_\_\_

Score	3
-------	---

35. Neela planted a seed in a pot of soil and placed near the window. She observed the development of the seed into seedling over a period of time.

(a) Neela recorded her observations as shown below (not in order). Fill in the correct boxes with "2", "3" and "4" to show the correct order of the development of seed. Stages '1' and '5' have been indicated for you. [1]

- The seed leaves shrink in size and drop off.
- The shoot emerges from the seed.
- The roots emerges from the seed.
- The leaves appear.
- The seed coat ruptures.

(b) Neela planted another seed of the same type in another pot of soil and placed it in a dark cupboard instead of near the window.

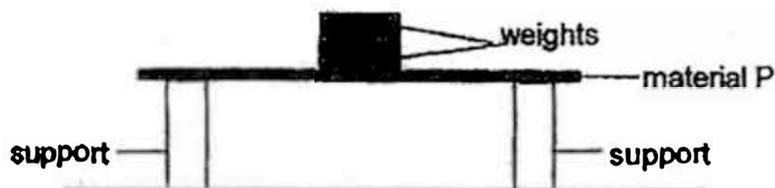
Would the seed be able to germinate? Explain your answer clearly. [2]

---

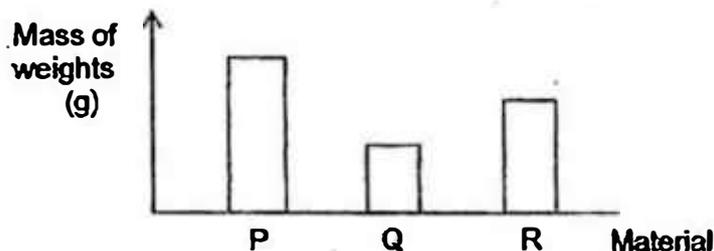
---

Score	3
-------	---

36. Sophie set up the experiment below to investigate a property of three different materials, P, Q and R. All the materials were of the same length.



For each material, weights are added onto the material until it started to break. Her results are shown in the graph below. The mass of the weights that cause each material to start to break are recorded in the graph below.



- (a) Identify the property of the materials that Sophie was testing in the above experiment. [1]

---

- (b) Based on the above results, Sophie chose material P to make a book shelf to store her books. Give a reason for her choice of material. [1]

---

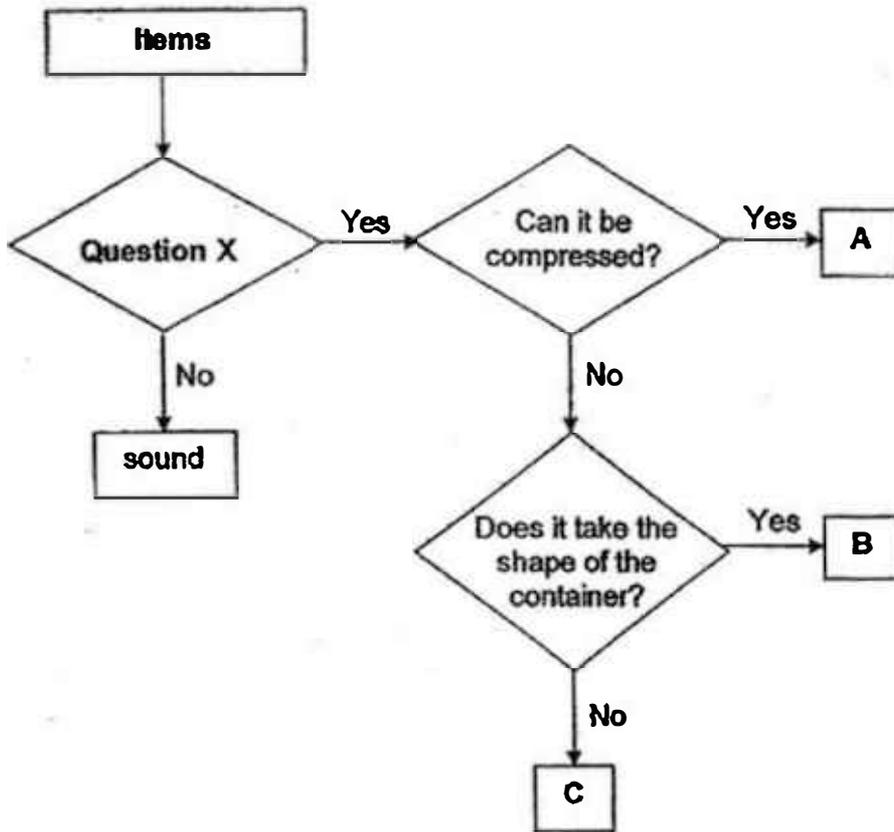
---

- (c) Besides the length of materials, name another variable that should be kept constant in order to ensure a fair test. [1]

---

Score	3
-------	---

37. The flow chart below shows how some items are classified.



Answer the following questions based on the information above.

(a) State one similarity and one difference between B and C. [2]

Similarity : \_\_\_\_\_

Difference : \_\_\_\_\_

\_\_\_\_\_

(b) Suggest a possible question X. [1]

\_\_\_\_\_

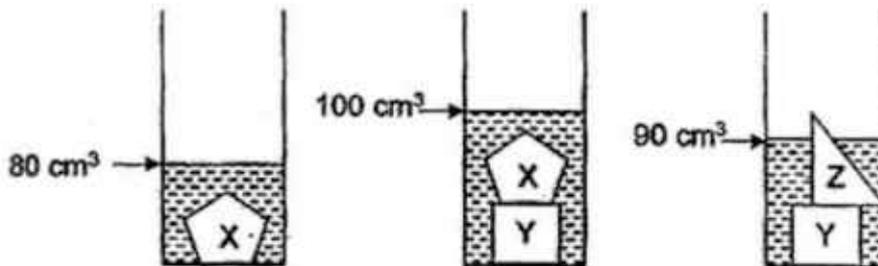
(c) Which item, A, B or C, would represent the following correctly? [1]

(i) Oil : \_\_\_\_\_

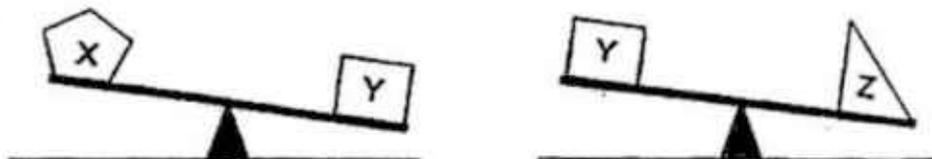
(ii) Plasticine : \_\_\_\_\_

Score	4
-------	---

38. Sue placed different objects, X, Y and Z, in measuring cylinders each containing  $50\text{cm}^3$  of water, as shown in the diagrams below.



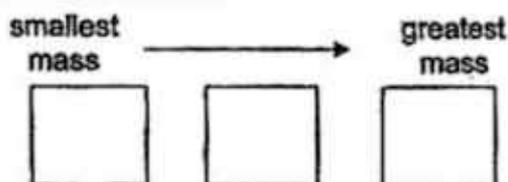
Sue also compared the mass of the objects, X, Y and Z, using a balance as shown in the diagrams below.



- (a) Based on the above information, put a tick ( $\checkmark$ ) in the correct box to indicate if it is "True", "False" or "Not possible to tell" for each statement. [2]

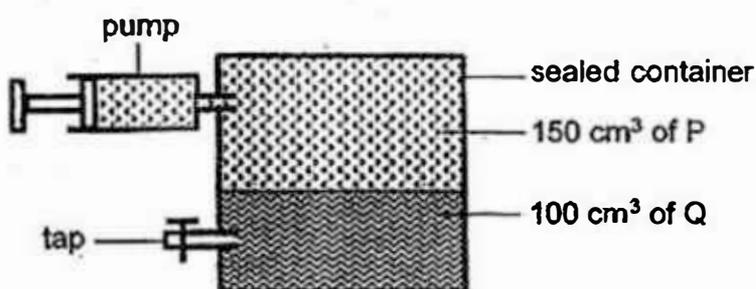
	Statements	True	False	Not possible to tell
(i)	Z has the greatest volume.			
(ii)	All the objects have definite shape.			
(iii)	All the objects occupy space in the measuring cylinder.			
(iv)	The greater the volume of the object, the greater the mass of the object.			

- (b) Arrange the objects in increasing order of mass by writing 'X', 'Y' and 'Z' in the correct boxes below. [1]



Score	3
-------	---

39. Alice conducted an experiment using the set-up as shown below.



(a) After Alice used the tap to remove 20 cm<sup>3</sup> of Q from the container, she observed that the volume of P in the container was 170 cm<sup>3</sup>.

Identify the states (solid, liquid or gas) of substances P, Q and R. [2]

(i) Substance P : \_\_\_\_\_

(ii) Substance Q : \_\_\_\_\_

(b) Which property of substance P did you use to obtain your answer in (a)(i)? [1]

---

---

(c) After removing 20 cm<sup>3</sup> of Q from the container in part (a), she used the pump to add 10 cm<sup>3</sup> of P into the container.

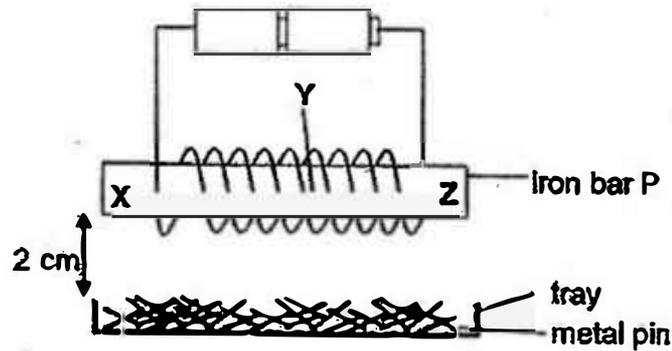
What is the final volume of substance P in the container? [1]

\_\_\_\_\_ cm<sup>3</sup>

Score	4
-------	---



41. Carol constructed an electromagnet using an iron bar P, as shown in the diagram below. The different parts of iron bar P were labelled X, Y and Z.



She placed a tray of pins 2 cm below the iron bar and recorded her observations for part X in the table below.

Parts of iron bar	X	Y	Z
Number of metal pins attracted to the iron bar	10		

- (a) Predict the number of metal pins attracted to parts Y and Z of the iron bar and write your answers in the above table. [1]
- (b) Using the same iron bar and same type of batteries, suggest two ways to increase the total number of pins attracted to the iron bar. [2]

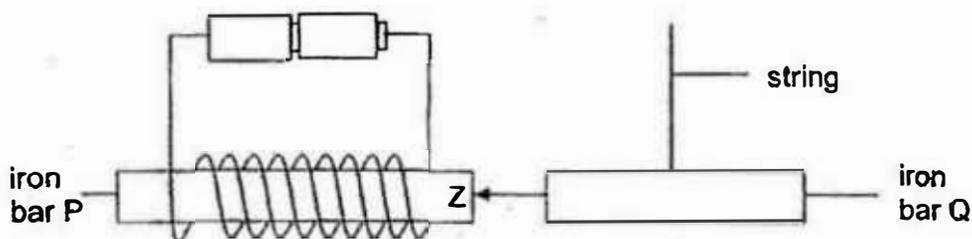
- (i) \_\_\_\_\_
- (ii) \_\_\_\_\_

Continue on next page

Score	3
-------	---

Continue from previous page

- (c) Carol placed iron bar Q, near end Z of the iron bar P, as shown in the diagram below.



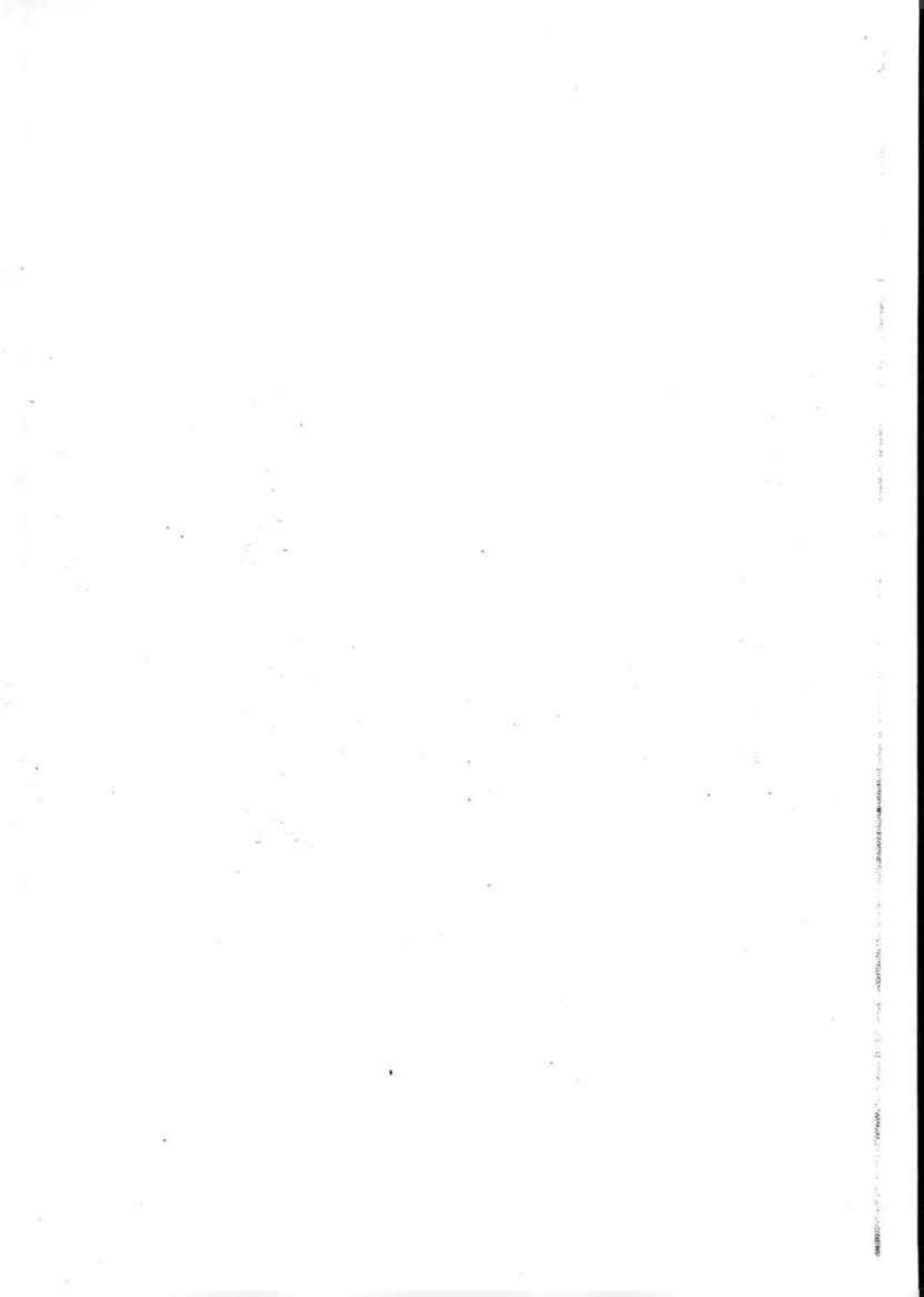
Carol observed that the iron bar Q moved towards iron bar P, as indicated by the arrow in the above diagram. She concluded that iron bar Q is a magnet.

Do you agree with her? Explain your answer clearly.

[1]

---

---



EXAM PAPER 2017 (P4)

SCHOOL : RAFFLES GIRLS'

SUBJECT : SCIENCE

TERM : SA1

ORDER CALL :

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

29)a)Q. It did not absorb any water and plants need water to survive so it is a plastic plant.

b)It would remain the same at 30ml at the end of the experiment. The plastic bag prevents the roots from absorbing water. Therefore, it will remain in the same.

c)i)X , Y      ii)W , X

30)a)Fish      Mammal

Has scales      Has hair

b)It belongs to the group mammals. As it breathe through lungs but fish breathe through gills and it has hair but fish body covering is scales.

31)a) Animal P young resembles its adult but animal Q young does not resemble its adult.

b) Graph R. When it is at Larval stage it eats a lot but when it is a pupal stage it does not feed and when it is an adult it eats normally it begins to eat again.

32)a) V.

b) It has food stored at the seed leaf so when it is growing it will use the food. Since it does not have true leaves yet.

c) Since it has its true leaves it can make its own food, so it does not need the seed leaves.

33)a) i) Respiratory      ii) circulatory

b) Small intestine.

34)a) B. It has the least amount of undigested food as most of the food is digested and absorbed at the small intestine so it is B.

b) D: stomach      E: Gullet

35)a) 3, 2, 4

b) The seed will still be able to germinate. It does not need light to germinate. It still can receive air, water and warmth.

36)a) The strength of the material.

b) P is the strongest material as it can hold the greatest mass of weights placed on P until it broke.

c) The thickness of the materials.

37)a) Similarity : Both B and C cannot be compressed .

Difference : B takes the shape of the container but C does not take the shape of the container.

b) Does it occupy space.

c) i) B      ii) C

38)a)i)Not      ii)True      iii)True      iv)False

b)X , Y , Z

39)a)i) P: Gas      ii)Liquid

b)P has no definite volume.

c)170cm<sup>3</sup>

40)a)S and has small spaces in between each particle of sand so the water will fill up the spaces in between. Therefore, the water level has lesser than 200cm<sup>3</sup>.

b)More than 170cm<sup>3</sup>

41)a)Y : 0    Z: 10

b)i)She could coil more times around the iron bar.

ii)She could add more batteries.

c)No. She did not observe repulsion between the two bars. Q was only attracted to P.



**SEMESTRAL ASSESSMENT 1 / 2017**

**PRIMARY 4**

**SCIENCE**

**(BOOKLET B)**

Name : \_\_\_\_\_ ( )

Date : 9 May 2017

Class : P4 \_\_\_\_\_

Total Time for Booklet A & Booklet B : 1 hour

**INSTRUCTIONS TO CANDIDATES**

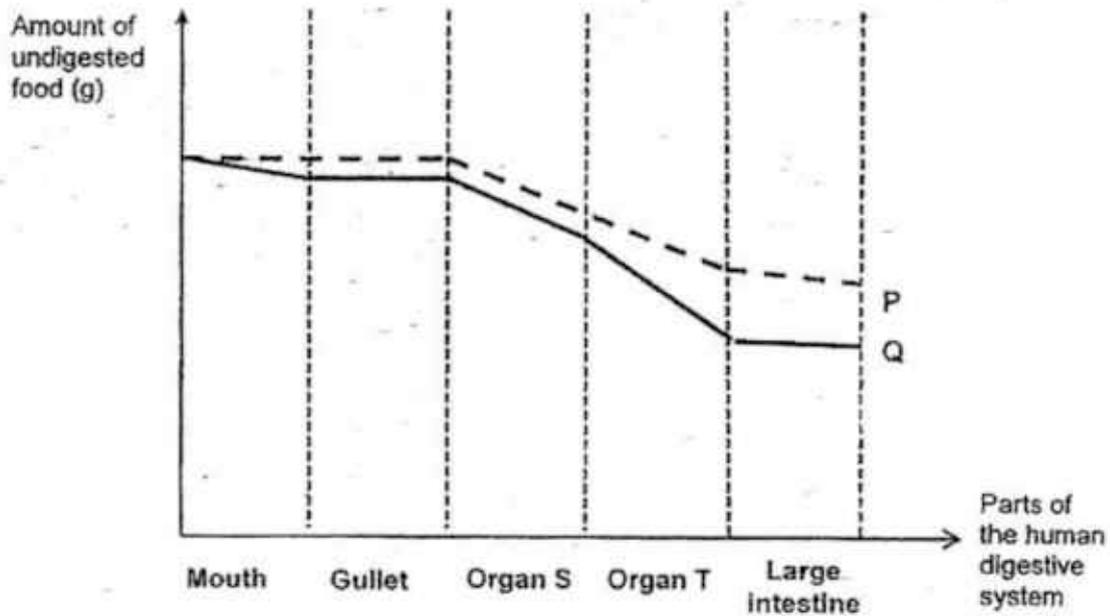
1. Write your name, index number and class in the space above.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. For Section A, shade your answers for questions 1 to 15 in the Optical Answer Sheet (OAS) provided.
6. For Section B, write your answers for questions 16 to 20 in the space provided in the booklet.
7. The total marks for Booklet B is 20 marks.

<b>Booklet A</b>		/30
<b>Booklet B</b>		/20
<b>Total</b>		/50
<b>Parent's Signature</b>		

**Section B (20 marks)**

For Questions 16 to 20, write your answers in this booklet.

16. Study the graphs shown below.



(a) Name Organs S and T. [2]

S: \_\_\_\_\_ T: \_\_\_\_\_

(b) From the graph, it can be observed that more digestion took place at Organs S and T. State a difference between Organs S and T. [2]

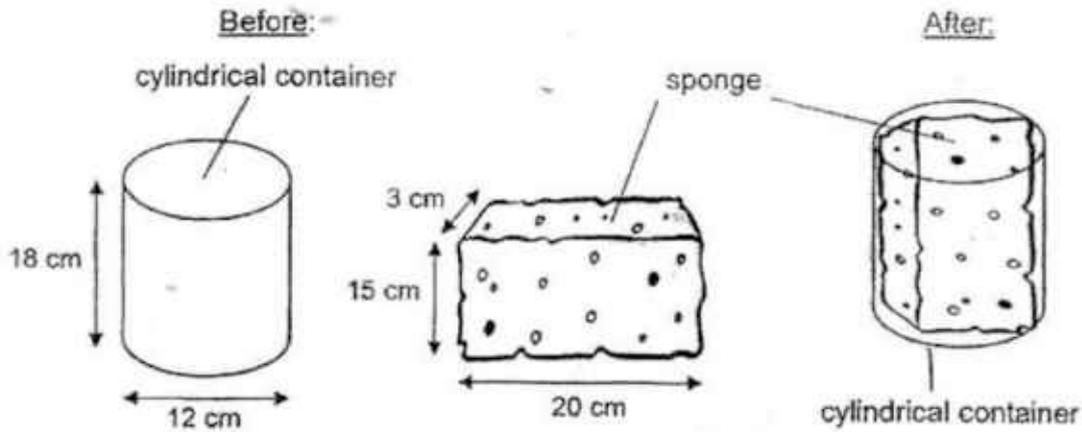
---

---

---

	4
--	---

17. Katy was given a sponge and a cylindrical container as shown in the diagram below. She was able to squeeze the whole sponge into the cylindrical container.



- (a) Explain how Katy was able to put the sponge into the cylindrical container. [2]

---

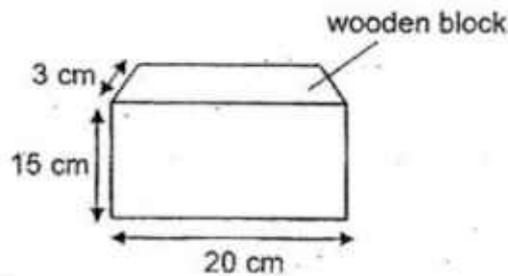


---



---

- (b) Katy found a wooden block shown below, which is of the same size as the sponge.



- She realised that she was unable to squeeze the wooden block into the cylindrical container. Why is that so? [2]

---



---



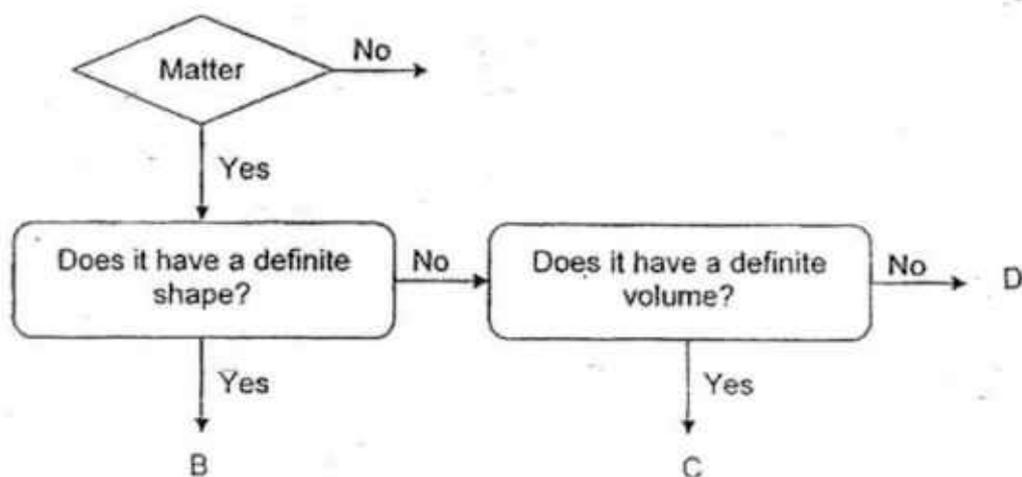
---

	4
--	---

18. The table below shows the characteristics of three objects P, Q and R.

Characteristic	P	Q	R
Occupies space	✓	✓	✓
Can be compressed	✓		
Takes the shape of its container	✓	✓	

The objects are classified in the flowchart below.



(a) In which group A, B, C or D, can Objects P and Q be classified? [1]

P: \_\_\_\_\_ Q: \_\_\_\_\_

(b) Which state of matter ( solid, liquid or gas ) is Object R? [1]

\_\_\_\_\_

	2
--	---

(c) Danny pumps in more air into a rubber ball using a hand pump.



No. of times he pumps in air	Mass of rubber ball
1	300g
3	310g
5	320g
7	?
9	340g

(i) Predict the mass of the ball at the 7<sup>th</sup> time when Danny pumps in the air. [1]

g

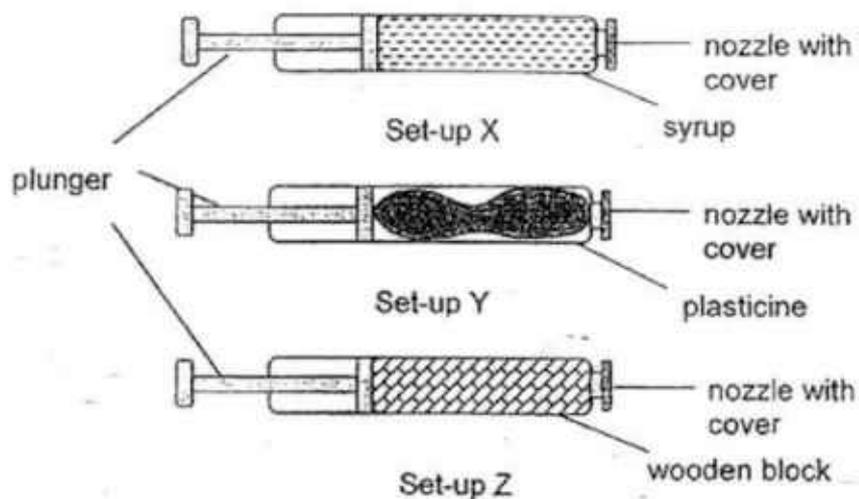
(ii) Based on the above results, what can Danny conclude? [1]

Danny can conclude that as he pumps in more air, the \_\_\_\_\_

of the rubber ball \_\_\_\_\_.

	2
--	---

19. Weiwei filled three syringes with different substances as shown below.



He covered the nozzle of each syringe and tried to push the plunger in.

(a) What property of matter was Weiwei trying to test? [1]

---

---

(b) Explain clearly why the plunger in Set-up Y can be pushed in. [1]

---

---

(c) Though Weiwei removed the cover of the nozzle in Set-up Z, he was still unable to push the plunger all the way in. Give a reason for this. [2]

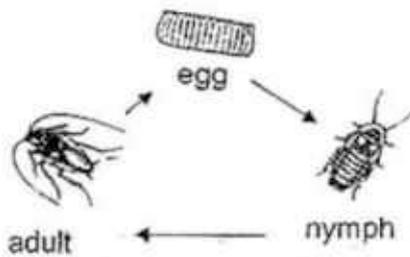
---

---

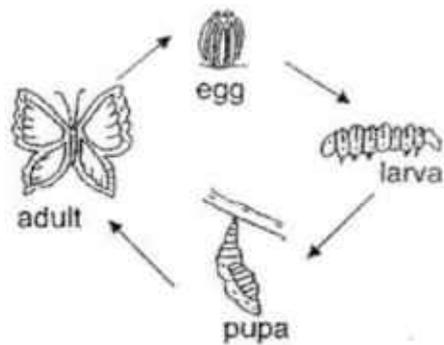
---

	4
--	---

20. The diagrams below show the life cycle of a cockroach and a butterfly.



life cycle of a cockroach



life cycle of a butterfly

- (a) State one difference between the young of the cockroach and the young of the butterfly. [1]

---



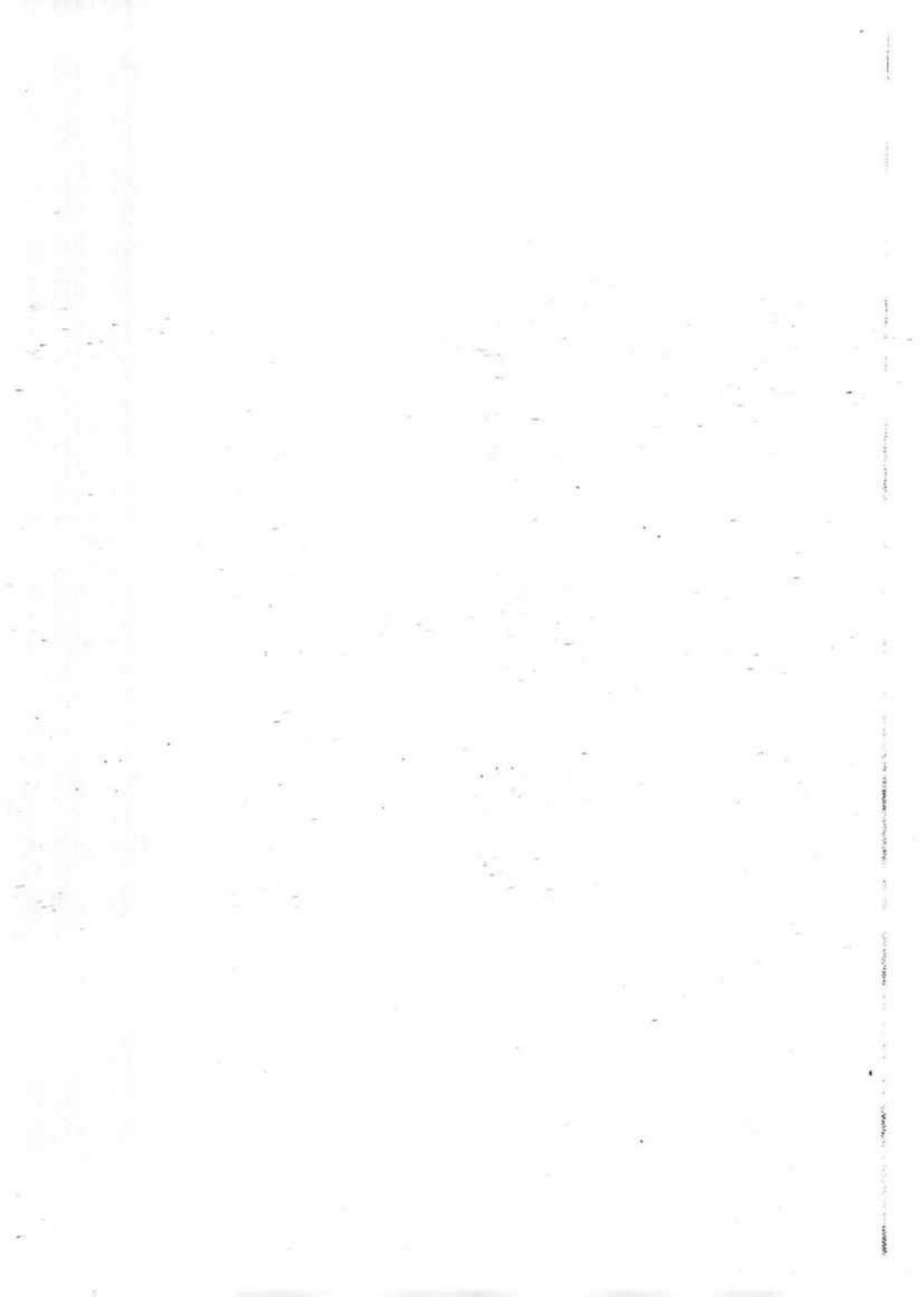
---

- (b) Write (T) for True or (F) for False in the boxes provided. [3]

	Statements	T or F
(i)	The cockroach nymph and butterfly larva moult at this stage.	
(ii)	The butterfly stops eating at the pupa stage.	
(iii)	The butterfly larva eats the most before it reaches the adult stage.	

	4
--	---

~End of Paper~



EXAM PAPER 2017 (P4)

SCHOOL : River Valley

SUBJECT : SCIENCE

TERM : SA1

ORDER CALL :

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

16)a)S: Stomach

T: Small intestine

b)Organ S is partially digested but organ T is fully digested.

17)a)Air spaces are in the sponge and can be compressed.

b)The wood cannot be compressed.

18)a)P: group D

Q: group C

b)Solid

c)i)330g

ii) mass , increases

19)a) WeiWei was trying to test if it does not have a definite volume and can be compressed.

b) There are air spaces in between the plasticine so it can be compressed.

c) The wooden block has a definite volume and could be compressed.

20)a) The young of the cockroach resemble the adult but the young of the butterfly does not resemble the adult.

b)i) T

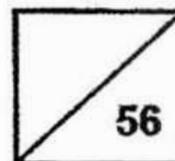
ii) T

iii) T

**First Semestral Assessment 2017  
STANDARD SCIENCE  
Primary 4**

Name: \_\_\_\_\_

Total  
Marks:



Class: Pr 4 \_\_\_\_\_

Register No. \_\_\_\_\_

Duration: 1 h 45 min

Date: 9<sup>th</sup> 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).**

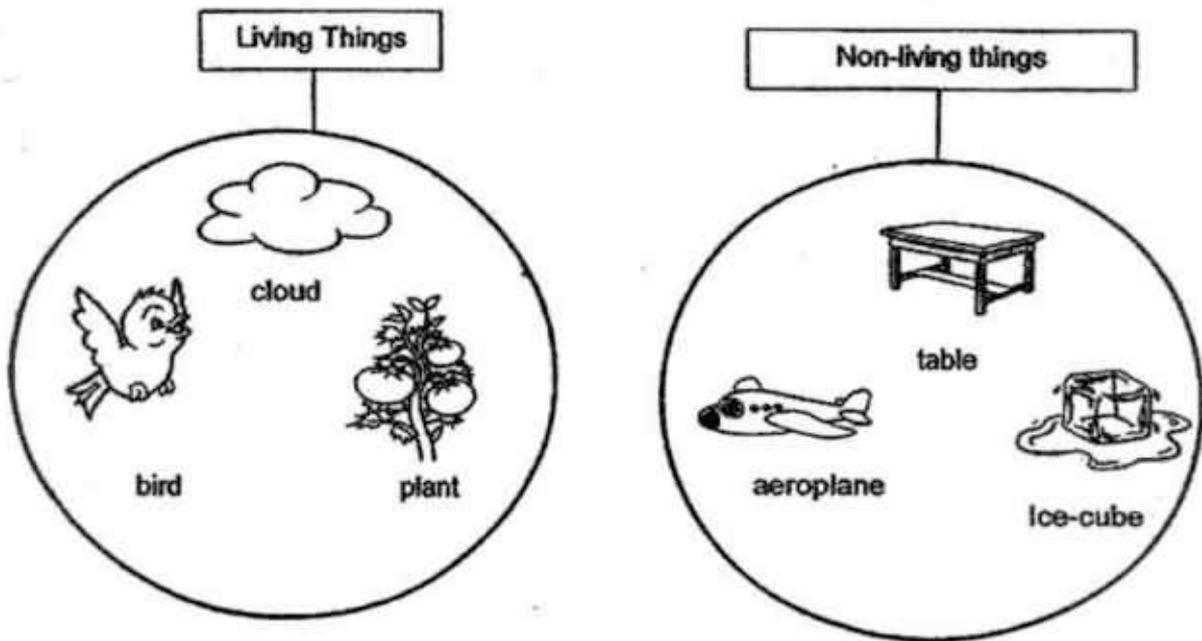
**This paper is not to be reproduced in part or whole without the permission of the Principal.**



**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.

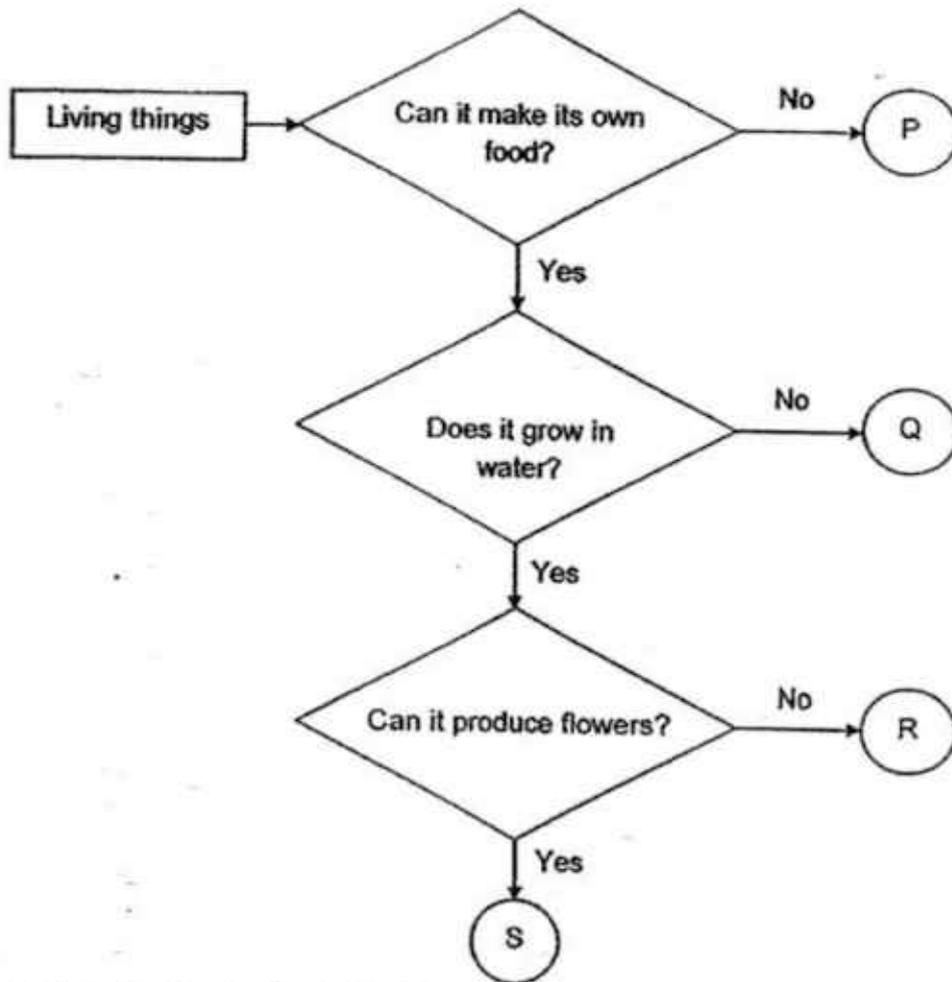
1. Look at the classification below.



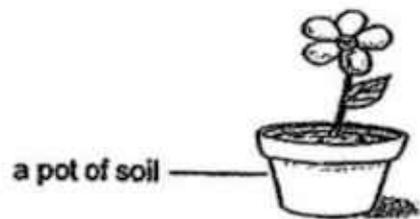
Which of the above things has been grouped incorrectly?

- (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?

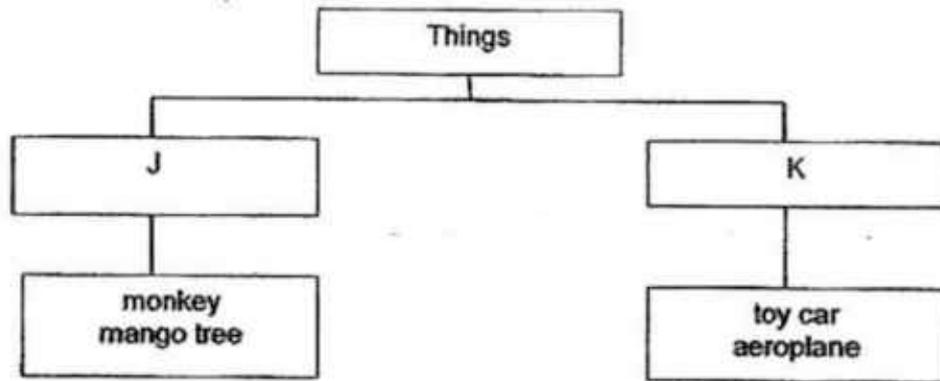


Plant A

- (1) P
- (3) R

- (2) Q
- (4) S

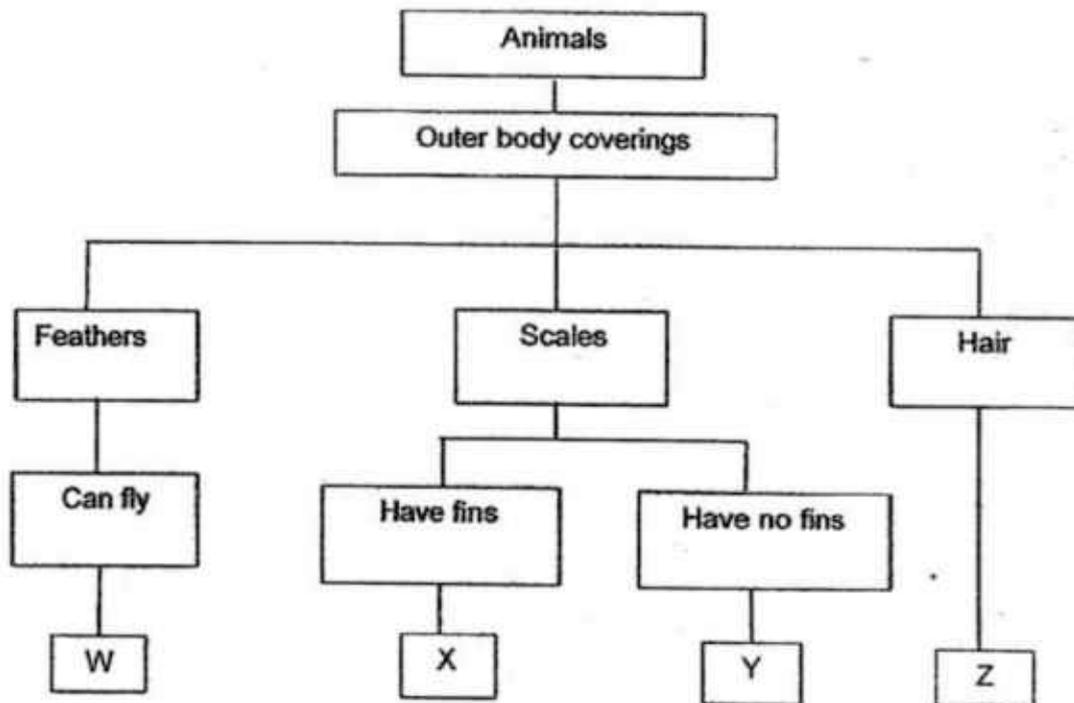
3. Study the classification chart below.



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
- (3) C and D only

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

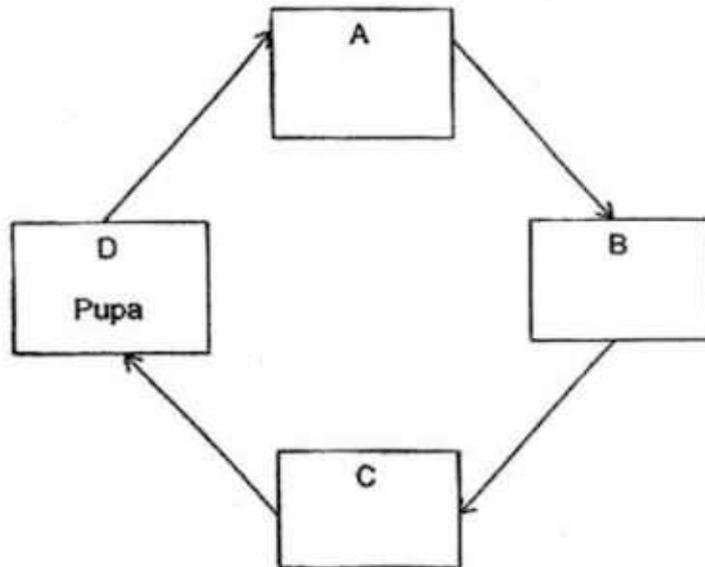
5. Four animals, P, Q, R and S are described in the table as shown below.

Description	Animal P	Animal Q	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  
 (2) Animal Q  
 (3) Animal R  
 (4) Animal S

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



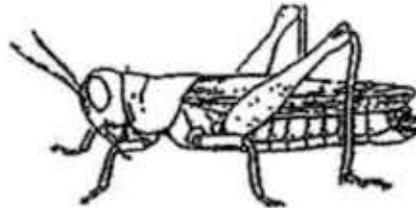
At which stage, A, B, C or D is the butterfly a pest to the farmer because it eats up the leaves of his crops?

- (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.

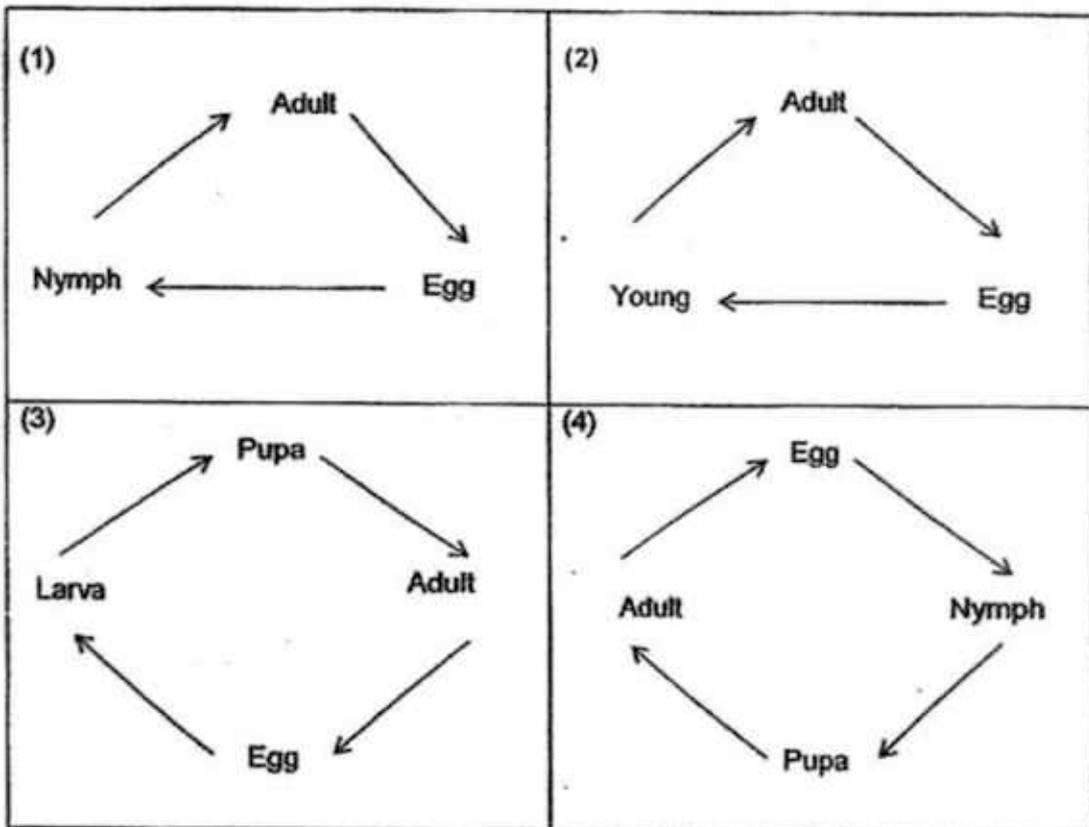
Which of the above information is correct?

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

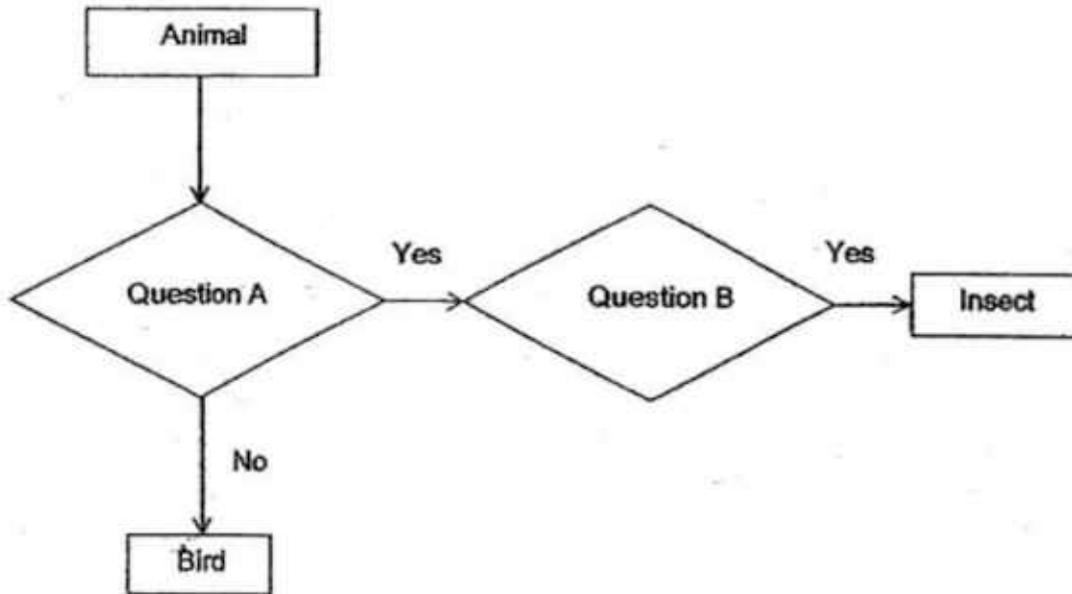
8. The table below shows the characteristics of animal M.

- 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?



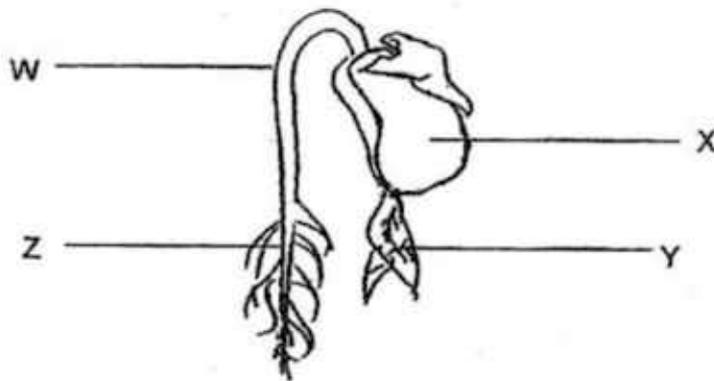
9. Study the flowchart below.



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.



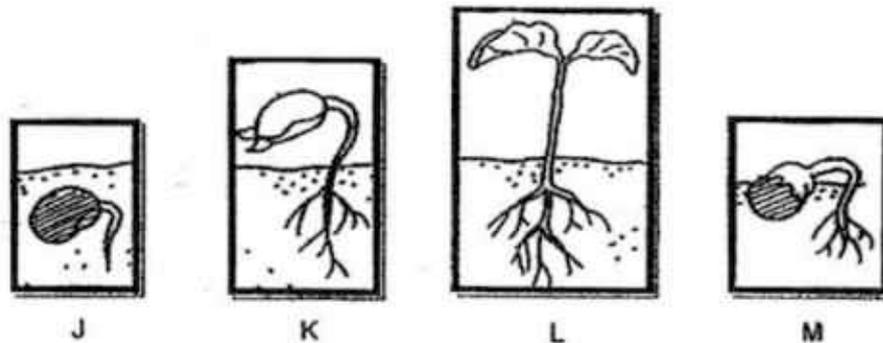
10. Which part of the seed grows first during germination?

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

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

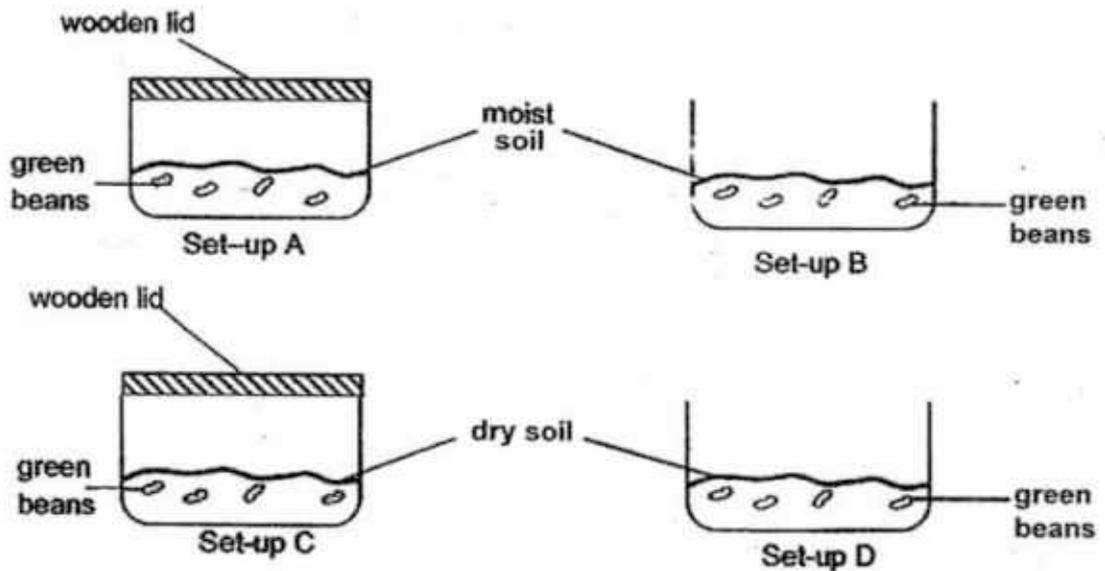
- (1) It provides warmth for the seedling.
- (2) It gives the young seedling support.
- (3) It makes food for the young seedling.
- (4) It provides the young seedling with stored food.

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

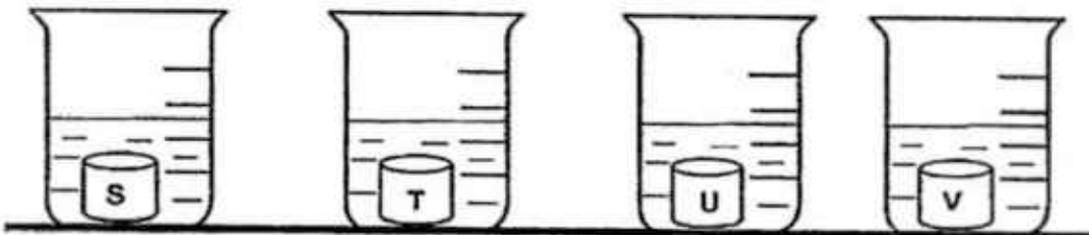
14. Which of the following properties are the reasons for using glass to make a fish tank?

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

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

(2) B and C 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  
 (3) U

(2) T  
 (4) V

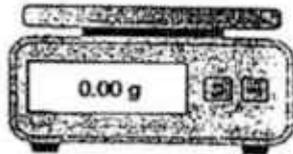
16. Which one of the following is not a matter?

- (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 ?



A



B



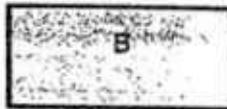
C

- (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<sup>3</sup>



Mass: 300g  
Volume: 300 cm<sup>3</sup>

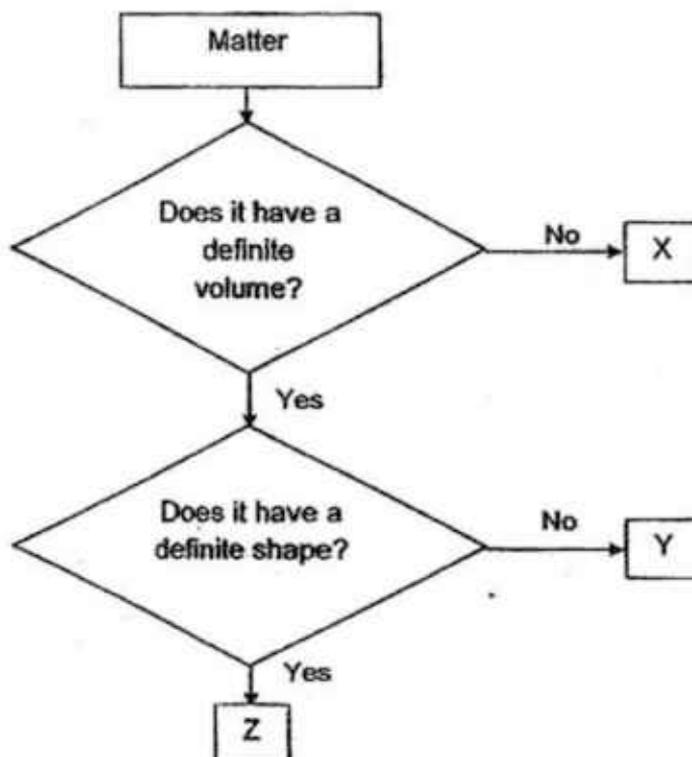


Mass: 300g  
Volume: 300 cm<sup>3</sup>

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

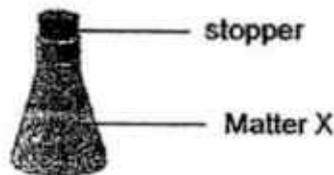
20. What is the difference between a solid and a liquid?

- (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?

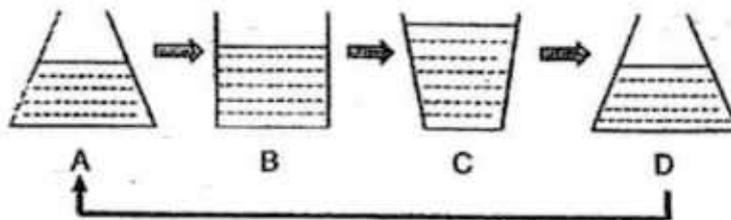
- (1) All of them occupy space and have mass.
- (2) All of them occupy space and have no mass.
- (3) All of them have definite shape and definite volume.
- (4) All of them have definite volume but no definite shape.

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.

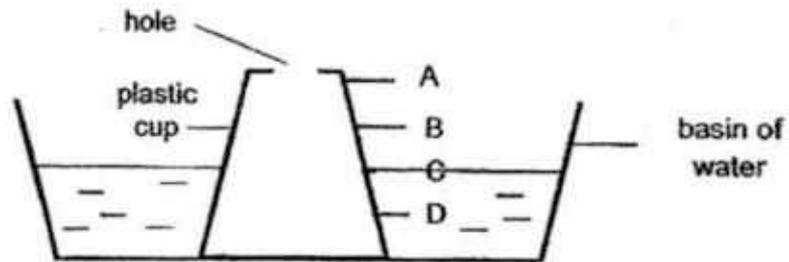


Based on his observation in this experiment, what can he conclude?

- 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

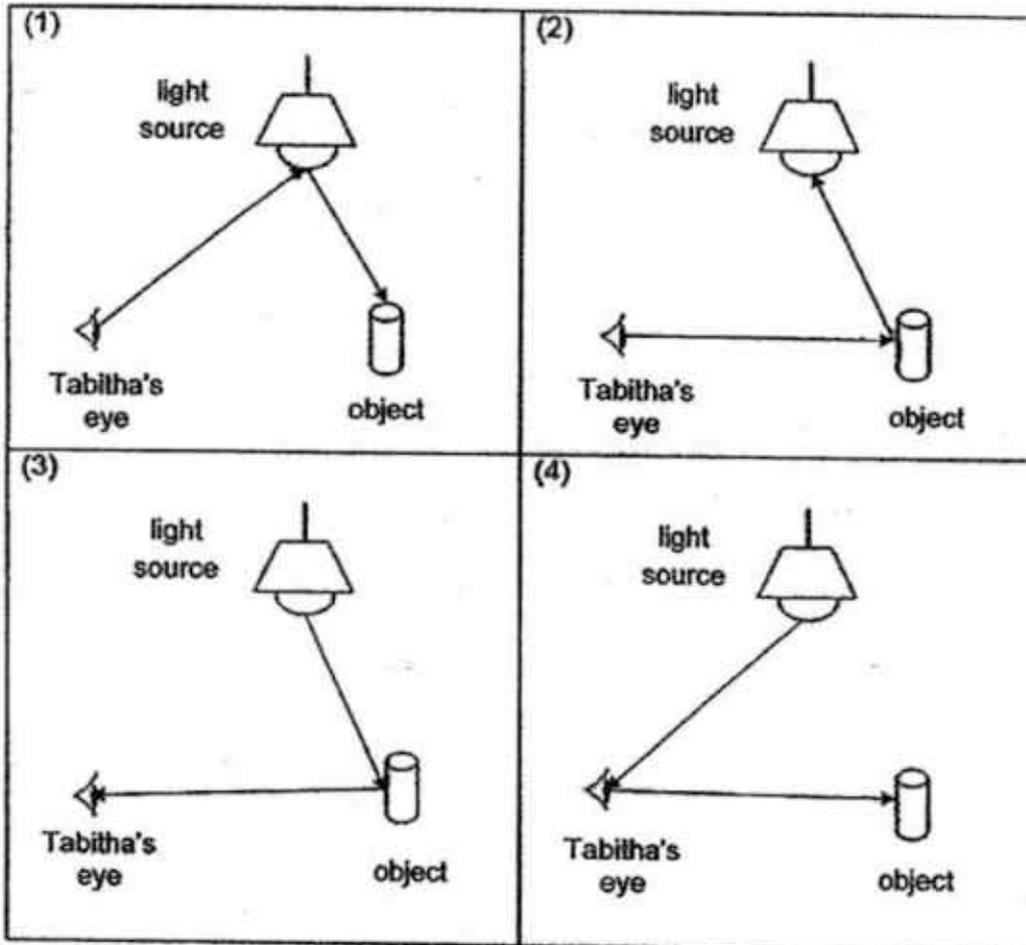
24. Angela inverted an empty plastic cup into a basin of water as shown in the diagram below. She also created a hole at the bottom of the plastic cup.



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

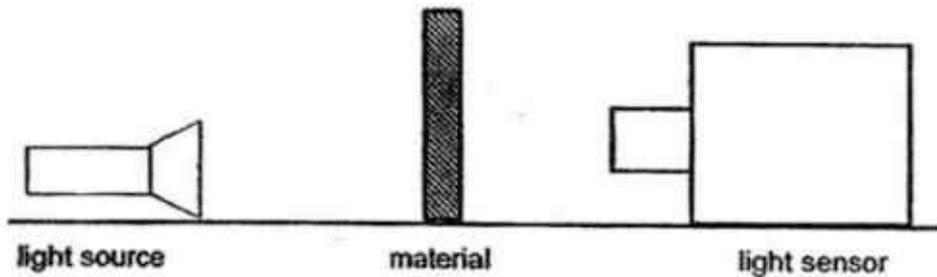
- (1) A  
(2) B  
(3) C  
(4) D
25. Which of the following are not sources of light?
- A: sun  
B: fire  
C: mirror  
D: diamond
- (1) A and B  
(2) A and C  
(3) B and C  
(4) C and D

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: 9<sup>th</sup> 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.

	<b>Maximum</b>	<b>Marks Obtained</b>
<b>Booklet A</b>	<b>56 marks</b>	
<b>Booklet B</b>	<b>44 marks</b>	
<b>Total</b>	<b>100 marks</b>	



**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.

---

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)

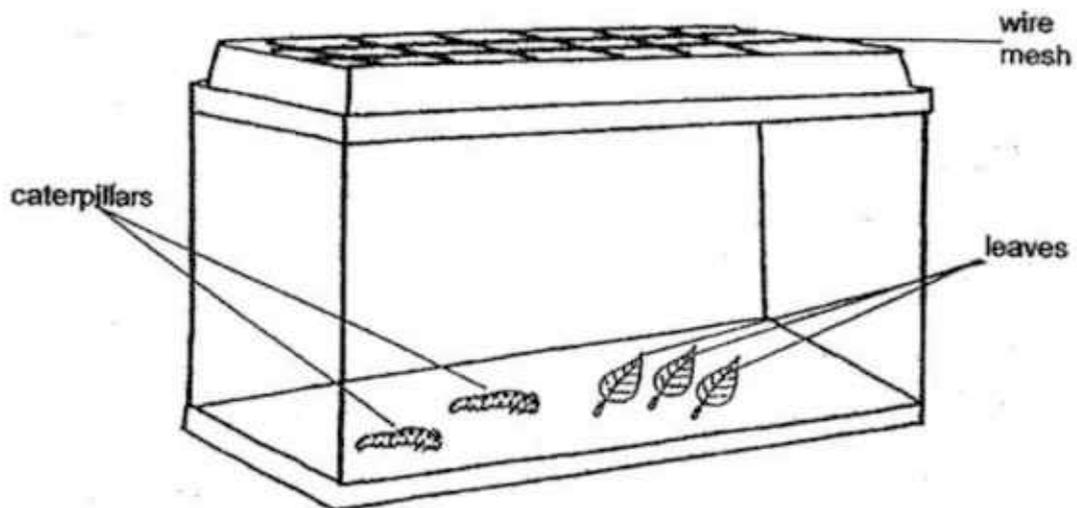
Group A: \_\_\_\_\_

Group B: \_\_\_\_\_

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

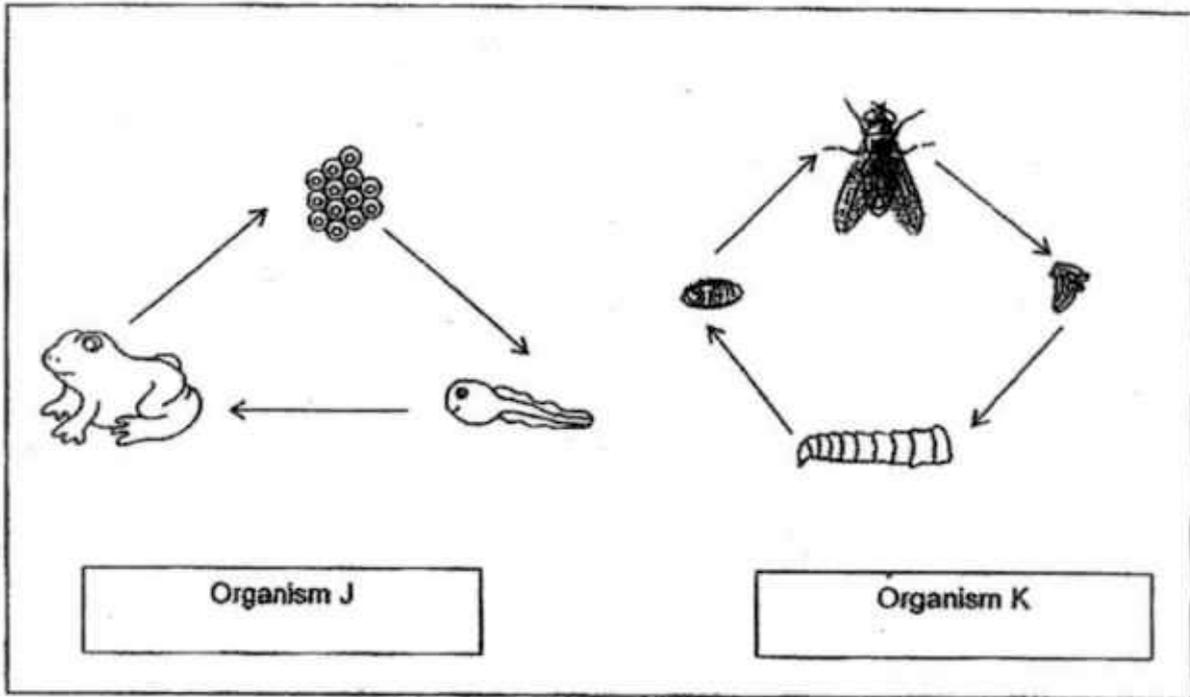
---

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)

---

---

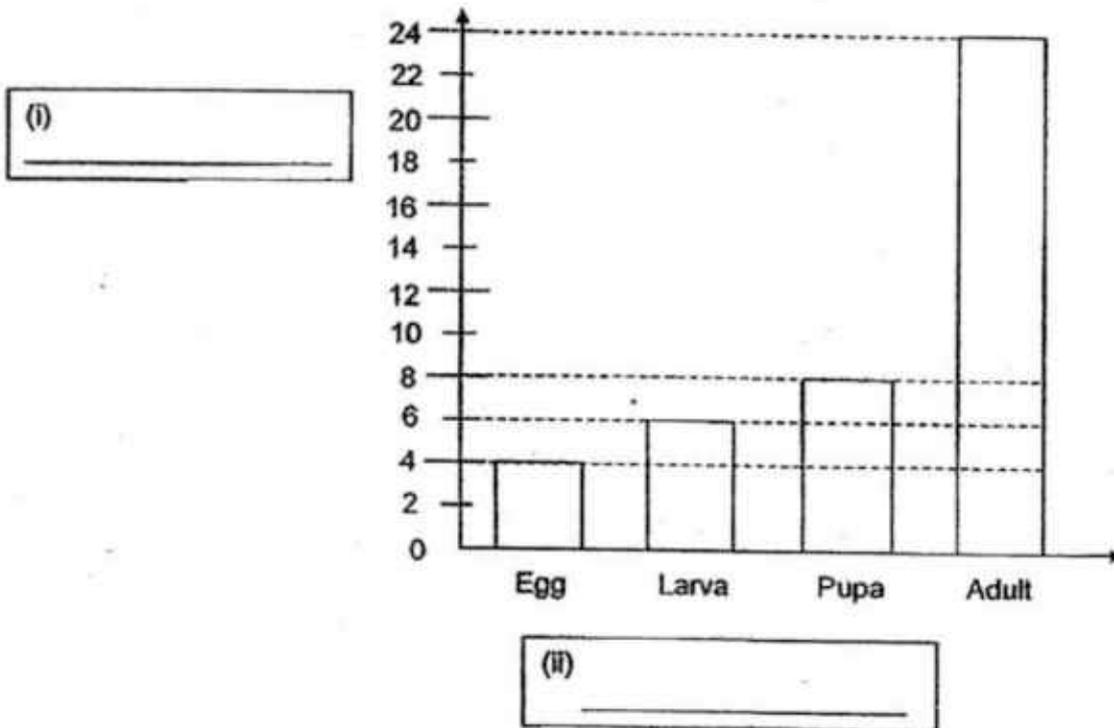
(b) State a difference between the life cycle of organism J and K. (1m)

---

---

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)

---

---

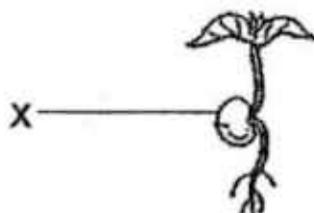
33. Tom wants to find out if water is needed for green bean seeds to grow. He prepares four set-ups and leaves them in a well-lit room at room temperature.

	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.



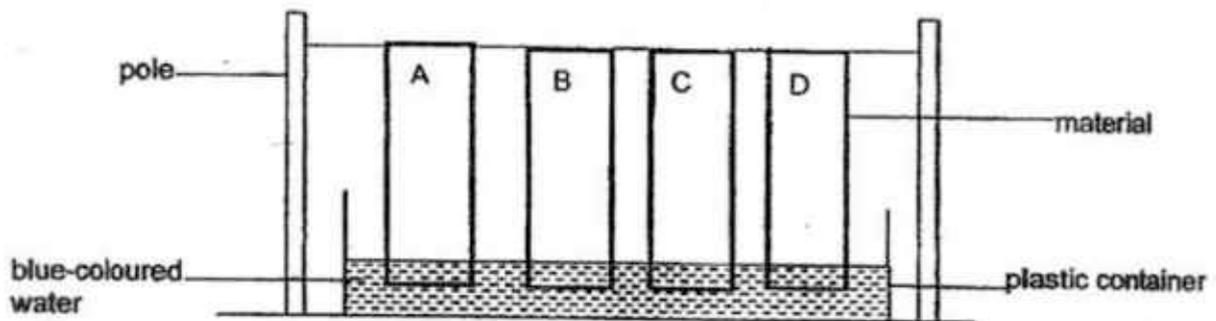
- (b) What will eventually happen to the part labelled 'X' as the seedling grows? Explain why. (2m)

---



---

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:

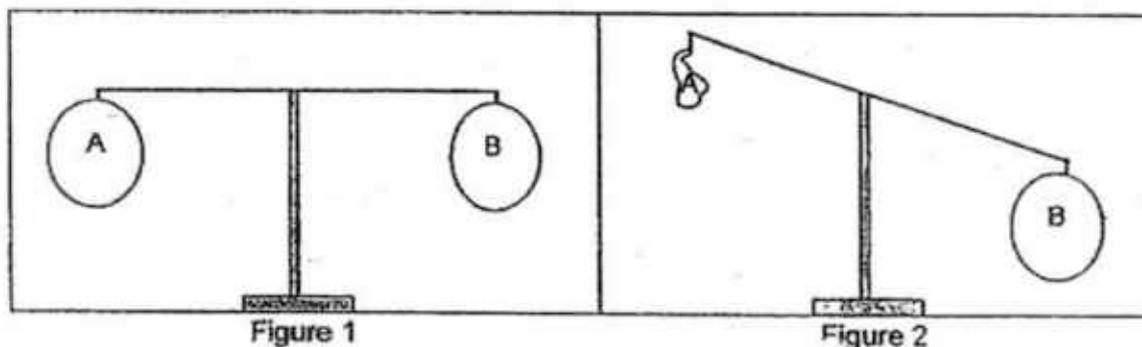
(i) the changed variable - \_\_\_\_\_ (1/2m)

(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.



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

---



---

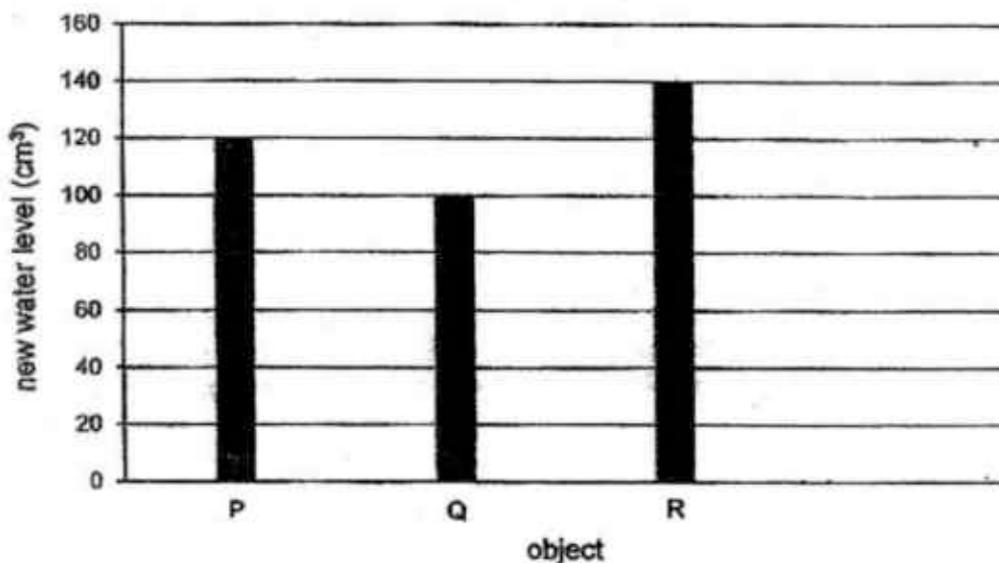
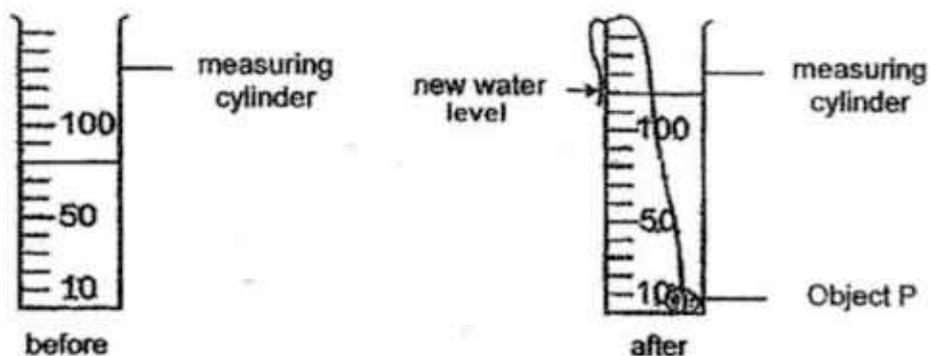
- (b) What can you conclude about air from the above observation? (1m)

---

- (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)

---

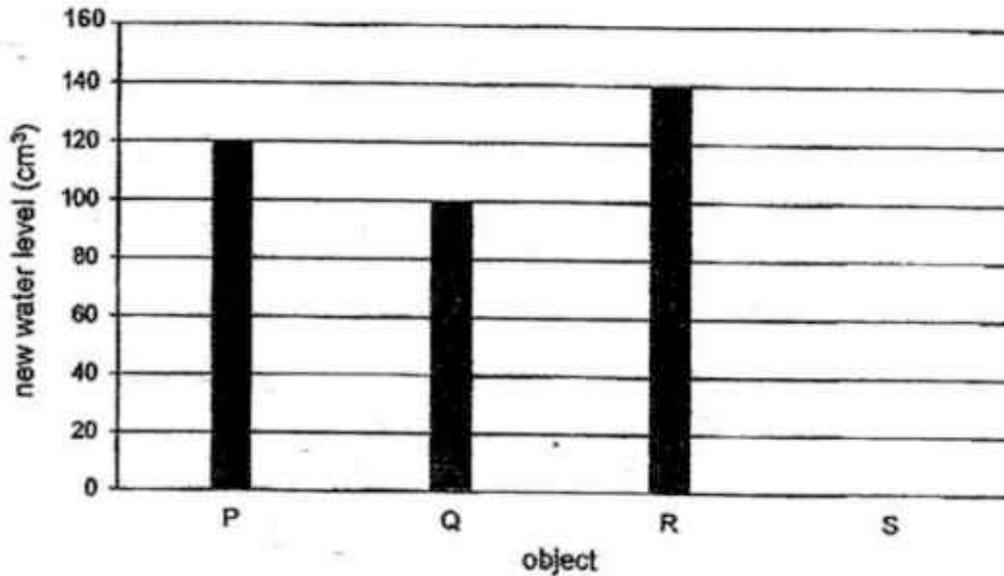
- (b) Arrange the objects P, Q and R in order, beginning with the smallest volume. (1m)

,  ,   
 smallest volume

Question 37 continues on the pg 11

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

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

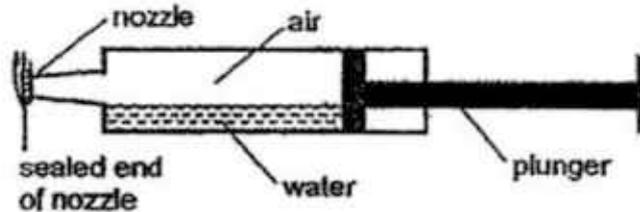


- (d) If object Q is put into a measuring cylinder containing  $30 \text{ cm}^3$  of water, what would be the new water level in the measuring cylinder? Work out your answer below. (1m)

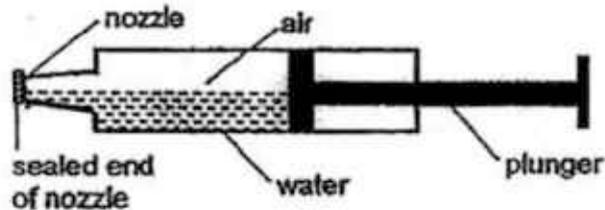
---

---

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)

---

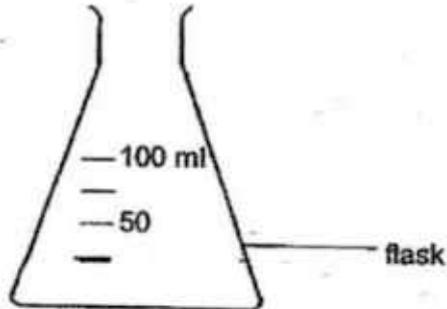


---

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

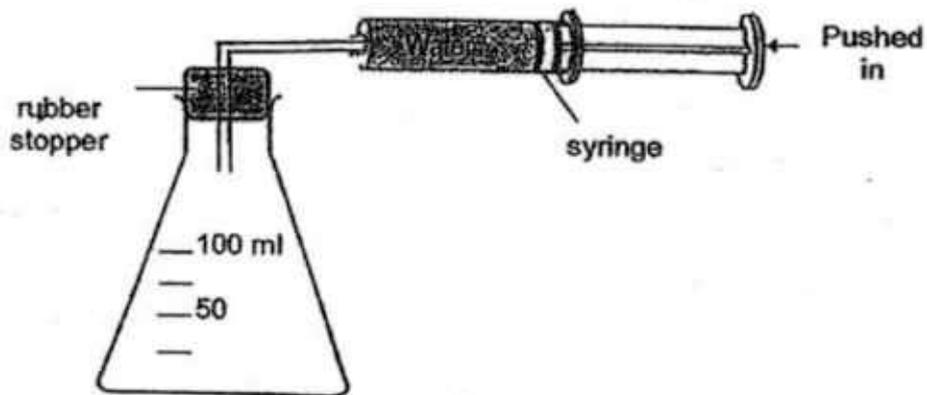
Statement	Tick (✓) the correct option
The mass of air increased	
The mass of air decreased	
The mass of air remained the same	

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) Valoo 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)

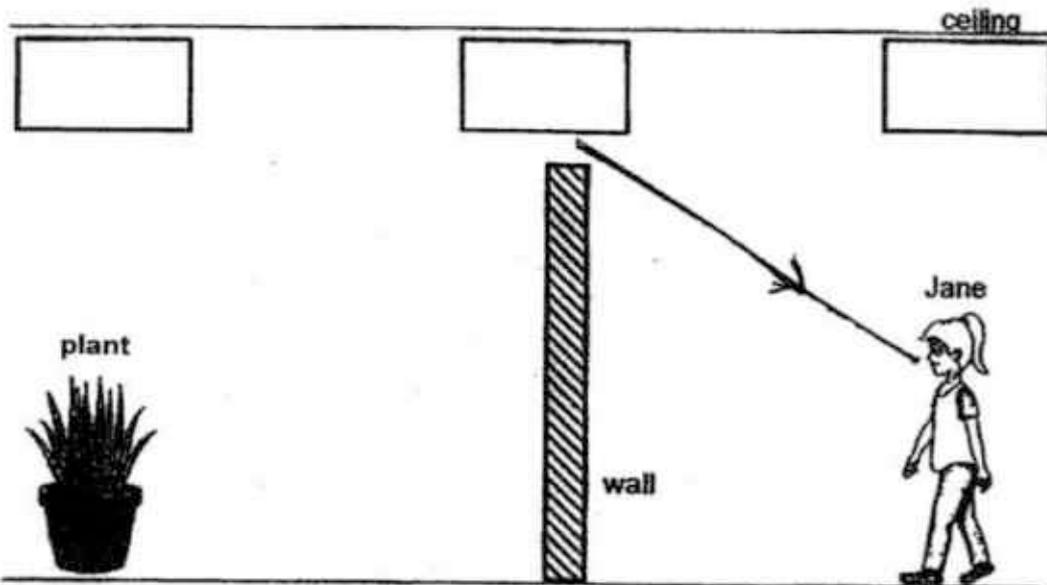
---

---

- (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.

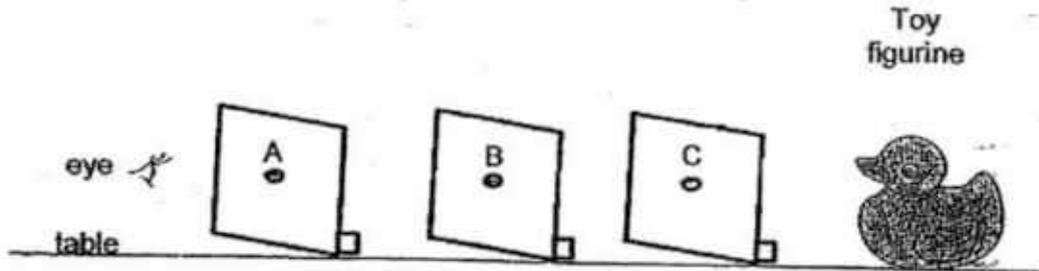
Derrick: The wall did not allow light to pass through.

(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)

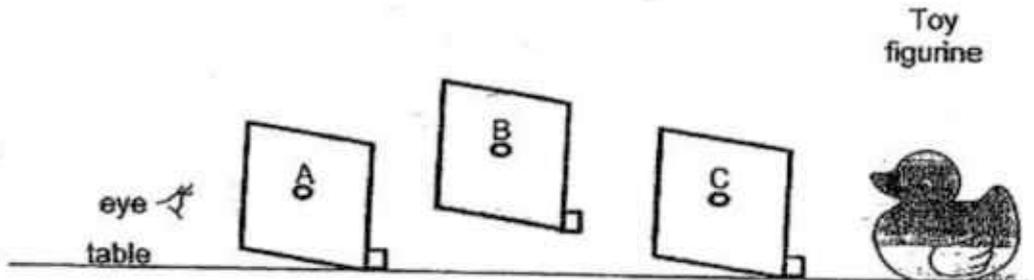
41. James set up an experiment as shown below. He placed the three sheets of cardboard in a row so that the holes at A, B and C are aligned.



- (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.

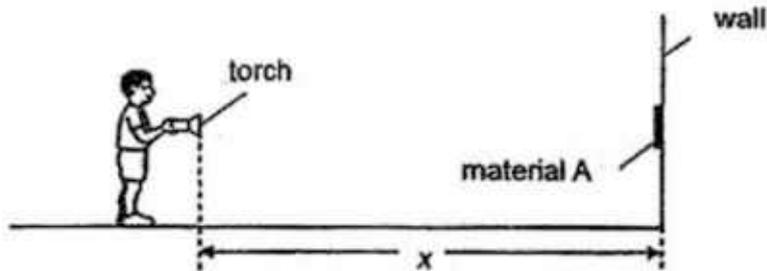


- (c) Will he be able to see the toy figurine? Explain why. (1m)

---

---

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 ( $\checkmark$ ) 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 around 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 life 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 unfolded 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 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

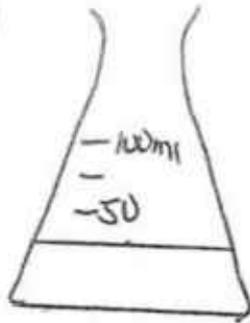
d) $100\text{cm}^3 - 80\text{cm}^3 = 20\text{cm}^3$        $30\text{cm}^3 + 20\text{cm}^3 = 50\text{cm}^3$

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

b)No. Water has a definite volume.

c)The mass of air remained the same

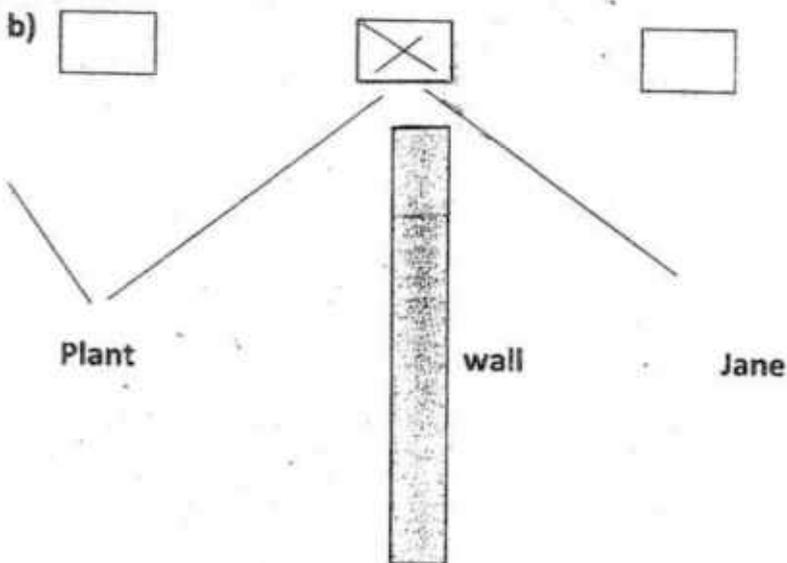
39)a)



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

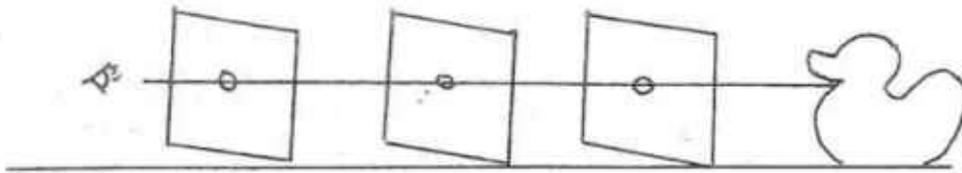
c)Air occupies space.

40)a)Derrick.



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)

	✓		
		✓	
		✓	
			✓

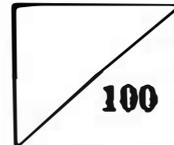
b)C.

c)D.

**SEMESTRAL ASSESSMENT 1  
SCIENCE  
2017**

**Name:** \_\_\_\_\_ (    )      **Marks:** \_\_\_\_\_ / 60  
**Level:** Primary 4      **Total Time for Booklets**  
**Class:** Primary 4 (    )      **A and B:** 1 h 30 min  
**Setter:** Ms Sng Chee Hoon      **Date:** 9 May 2017

**Total Marks:**



**BOOKLET A**

**Instructions to pupils:**

1. Do not open this booklet until you are told to do so.
2. You are required to answer all the questions in this booklet.
3. This question booklet consists of 

<b>18</b>
-----------

 printed pages, including the cover page.

**Section A (30 x 2 marks)**

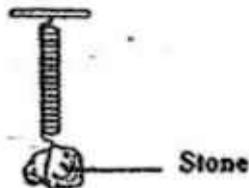
For each of the questions from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Which one of the following is not an example of matter?

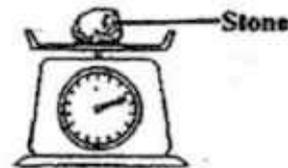
- (1) Air
- (2) Light
- (3) Plasticine
- (4) Cooking oil

2. Which one of the following set-ups should John use to measure the volume of a piece of stone?

(1)



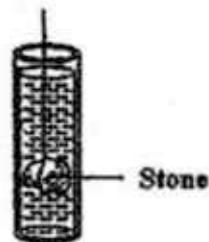
(2)



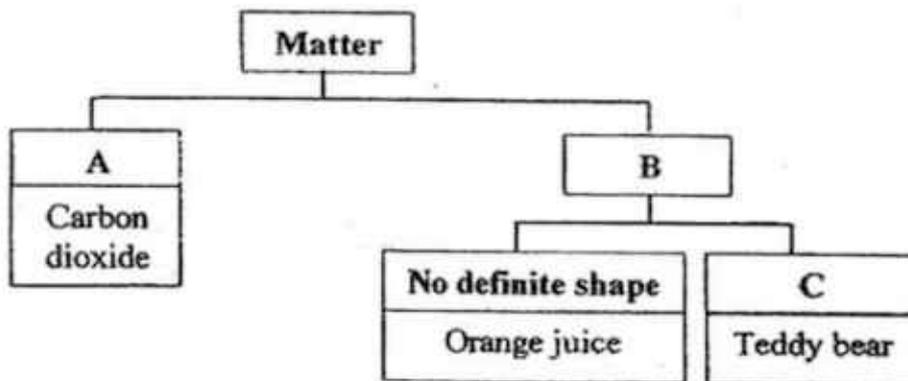
(3)



(4)



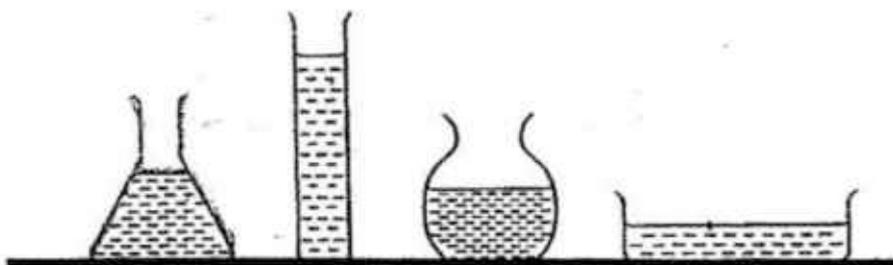
3. Study the classification chart below carefully.



Which one of the following sets of headings correctly represents A, B and C?

	A	B	C
(1)	Definite shape	No definite shape	No definite volume
(2)	No definite shape	Definite shape	No definite volume
(3)	Definite volume	No definite volume	No definite shape
(4)	No definite volume	Definite volume	Definite shape

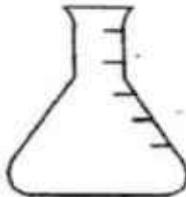
4. Praveen poured 120ml of water into each of the four containers as shown below.



What could he conclude from the experiment above?

- (1) Water can be compressed.
- (2) Water has no definite shape.
- (3) Water has a definite volume.
- (4) Water has no definite volume.

5. Study the diagrams below carefully.



Flask



Stapler



Paper clip

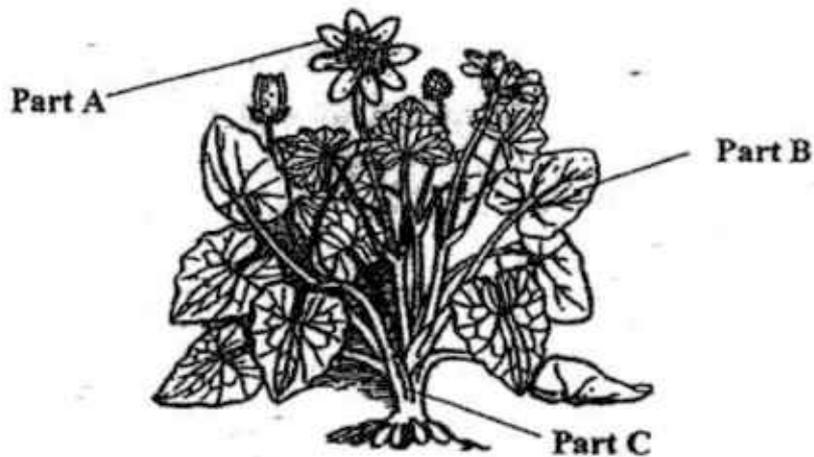


Fan

Which of the above are examples of a system?

- (1) Stapler and fan only
- (2) Flask and paper clip only
- (3) Flask, stapler and fan only
- (4) Stapler, paper clip and fan only

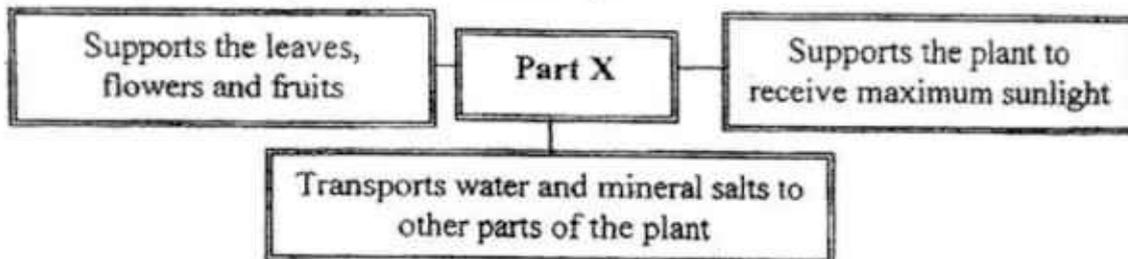
6. Study the plant below carefully.



Which of the plant parts above is / are responsible for gaseous exchange?

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

7. Study the concept map below carefully.



Which part of the plant does X represent?

- (1) Stem
- (2) Root
- (3) Leaf
- (4) Flower

8. The classification table below shows the various systems in the human body and their functions.

Human Body			
System	P	Q	Digestive
Functions	Carries food, water and oxygen to all parts of the body.	Protects the delicate organs in the body.	S
	Carries waste materials away from different parts of the body.	R	

Some information was left out. Which one of the following sets best represents the letters P, Q, R and S?

	P	Q	R	S
(1)	Respiratory	Muscular	Takes oxygen into the body	Removes carbon dioxide from the body
(2)	Respiratory	Skeletal	Helps different parts of the body to move	Takes oxygen into the body
(3)	Circulatory	Skeletal	Gives the body its shape	Absorbs simple food substances so that they can be used by the body
(4)	Circulatory	Muscular	Removes carbon dioxide from the body	Breaks down food into simpler substances

9. The picture below shows Javier skipping.

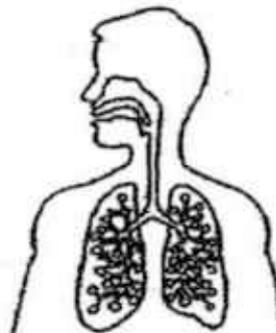


Which body systems work together to enable him to skip?

A:



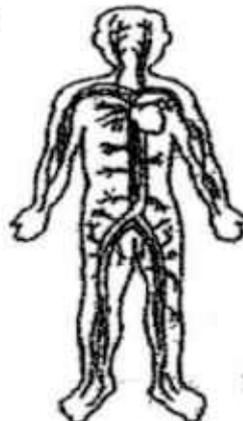
B:



C:

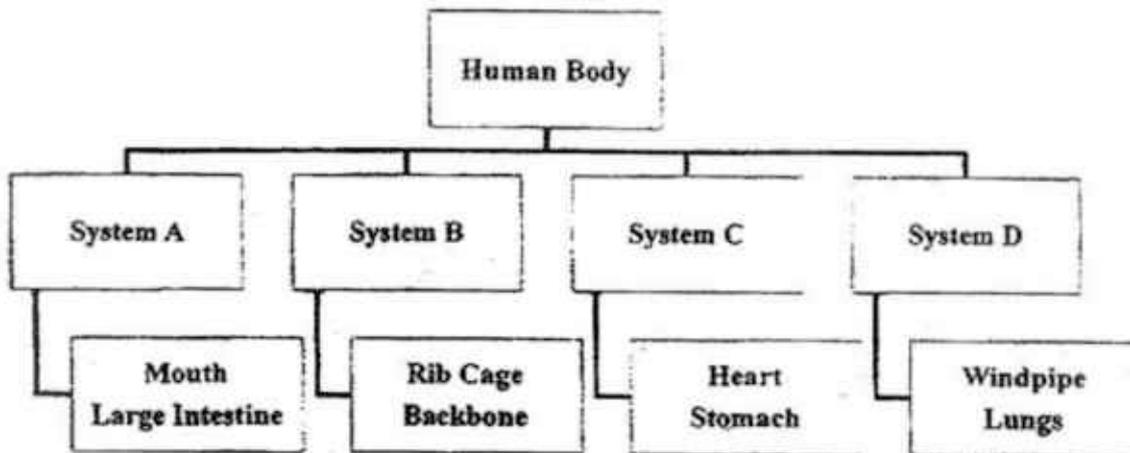


D:



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

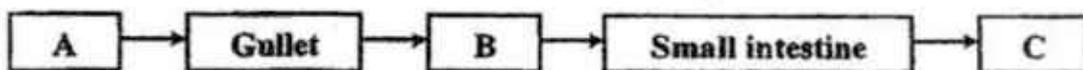
10. Study the classification chart below carefully.



Which one of the systems above has that wrongly classified?

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

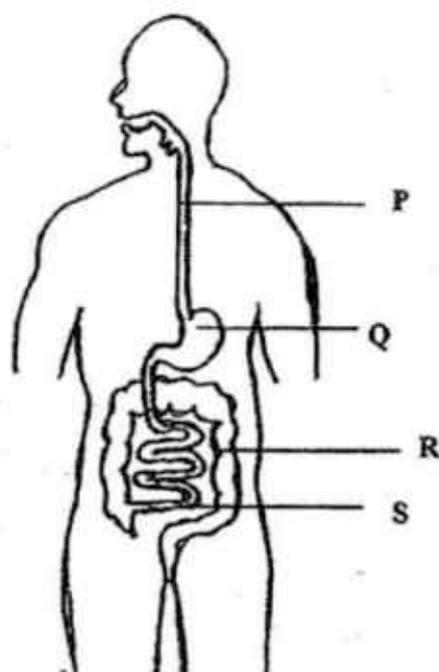
11. The flowchart below shows the path taken by the food in our digestive system.



Which one of the following sets correctly identifies A, B and C?

	A	B	C
(1)	Mouth	Liver	Anus
(2)	Nose	Windpipe	Lung
(3)	Mouth	Stomach	Large intestine
(4)	Lung	Heart	Blood vessel

12. Study the human digestive system below carefully.



Which one of the following tables correctly describes parts P, Q, R and S?

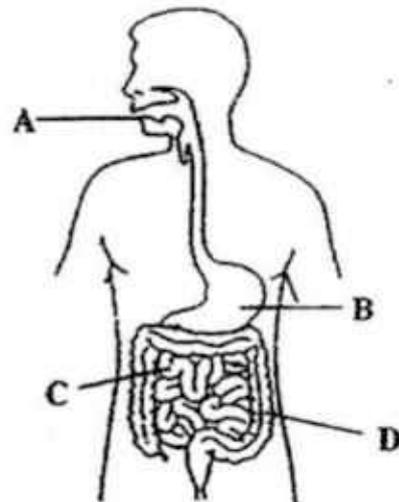
	P	Q	R	S
(1) Produces digestive juices		✓		✓
Absorbs digested food	✓			✓
Absorbs excess water			✓	

	P	Q	R	S
(2) Produces digestive juices		✓		✓
Absorbs digested food		✓		
Absorbs excess water			✓	

	P	Q	R	S
(3) Produces digestive juices		✓		✓
Absorbs digested food				
Absorbs excess water			✓	✓

	P	Q	R	S
(4) Produces digestive juices		✓		✓
Absorbs digested food				✓
Absorbs excess water			✓	

13. Study the diagram below carefully.



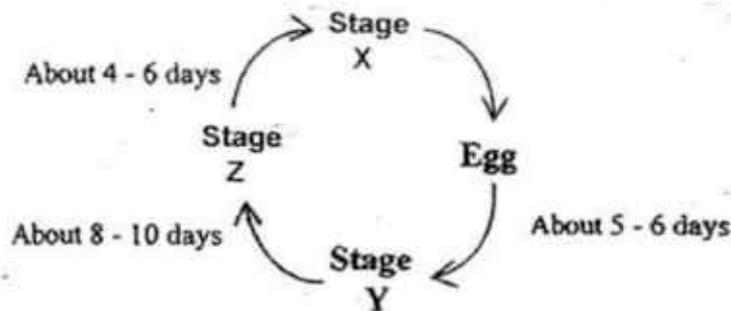
Which one of the organs is matched wrongly with its function?

	Organ	Function
(1)	A	It chews and grinds the food into smaller pieces to be swallowed.
(2)	B	It absorbs carbon dioxide and allows it to enter the bloodstream.
(3)	C	It allows the digested food to pass through its walls and into the bloodstream.
(4)	D	It removes water from the undigested food.

14. Kendrick compared the life cycles of a grasshopper and a cockroach as shown below. Which one of the following sets is true?

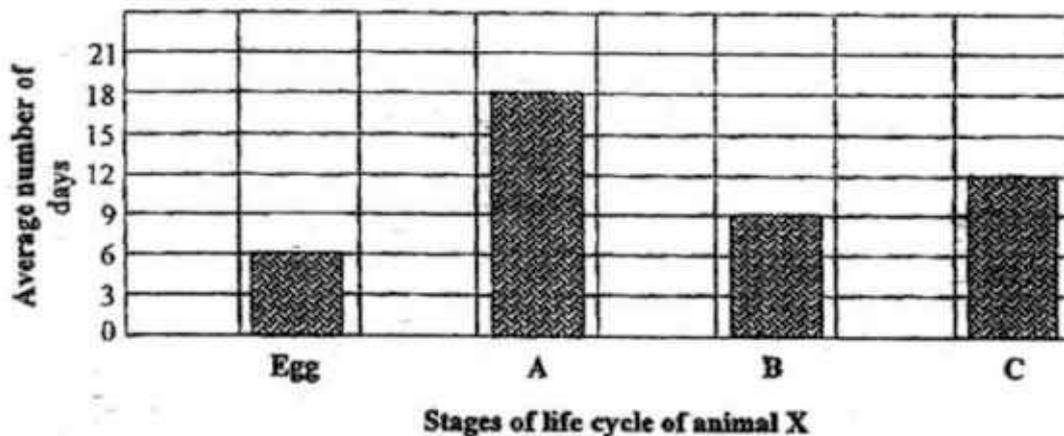
	Grasshopper	Cockroach
(1)	It has a 4-stage life cycle.	It has a 3-stage life cycle.
(2)	Its young moults several times.	Its young moults several times.
(3)	Its young looks like the adult.	Its young looks different from the adult.
(4)	It has a larva stage.	It has no larva stage.

15. The diagram below shows the life cycle of organism A.



What is the least possible number of days organism A will take to develop from an egg to the pupa stage?

- (1) 6  
(2) 8  
(3) 13  
(4) 19
16. The graph below shows the stages in the life cycle of animal X and the lengths of time the animal remains in these stages. The stages, A, B and C, are not in order.

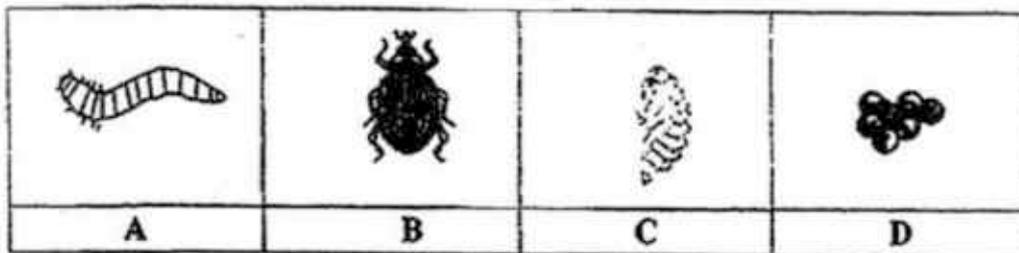


After the egg has hatched, it takes 21 days before it becomes an adult. It takes 12 days before the adult emerges from its previous stage

Which one of the following sets correctly identifies A, B and C?

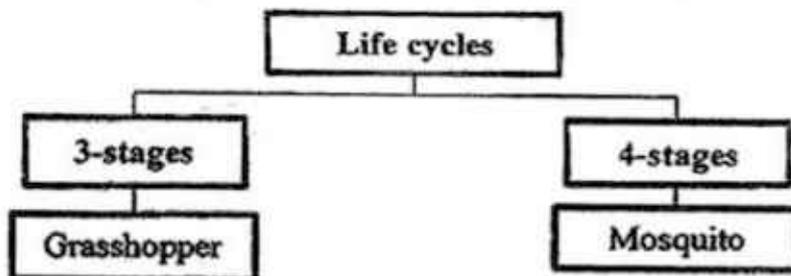
	A	B	C
(1)	Pupa	Larva	Adult
(2)	Larva	Pupa	Adult
(3)	Adult	Pupa	Larva
(4)	Adult	Larva	Pupa

17. The picture below shows the life cycle of a mealworm. The stages are not arranged in the correct order.



At which stages does the mealworm need food?

- (1) A and B only  
 (2) A and D only  
 (3) B and C only  
 (4) C and D only
18. Remy classified two animals in the classification chart below.



He noted some similarities and differences between the two life cycles and wrote the information in the table below.

Information	
A	The young of the grasshopper and mosquito look like the adults.
B	The nymph of the grasshopper has wings and can fly.
C	The larva of the mosquito does not moult as it grows.
D	The adult grasshopper lays its eggs in the soil and the adult mosquito lays its eggs in the water.

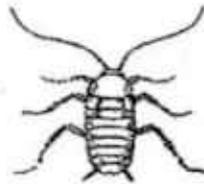
Which one of the following is correct about the animals above?

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

19. Study the diagrams below carefully.



**Beetle**



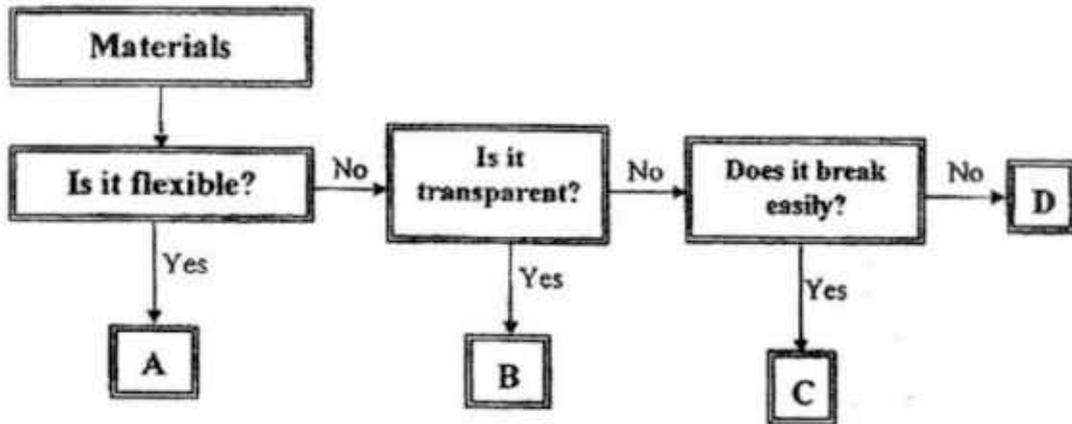
**Nymph**

Based on the diagrams only, which of the following can be observed?

- A: The beetle and nymph have six legs each.
- B: The beetle crawls but the nymph wriggles.
- C: The beetle feeds on other insects but the nymph does not.

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

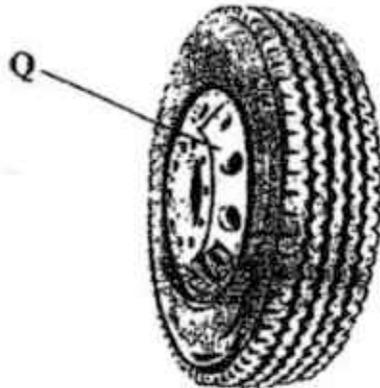
Study the flowchart below carefully to answer questions 20 and 21.



20. Which one of the following letters best represents "glass"?

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

21. Study the car tyre below carefully.



Which one of the following materials from the flowchart above is most suitable for making part Q of the car tyre?

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

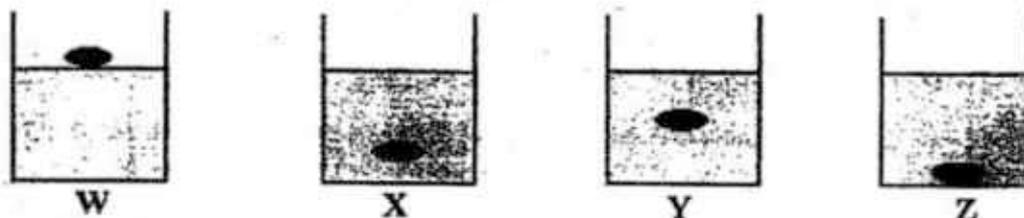
22. Teresa conducted a few experiments on objects A and B. She recorded the results in the table below.

Property	Object A	Object B
Is it waterproof?	Yes	Yes
Is it flexible?	Yes	No
Will it break into pieces when it is dropped?	No	Yes

Which one of the following sets of objects best represents objects A and B?

	Object A	Object B
(1)	Plastic ruler	Glass bottle
(2)	Steel key	Rubber band
(3)	Clay cup	Ballpoint pen
(4)	Ballpoint pen	Cotton shirt

23. Muthu carried out an experiment by dropping objects W, X, Y and Z into a beaker of water each. The results are shown in the diagram below.



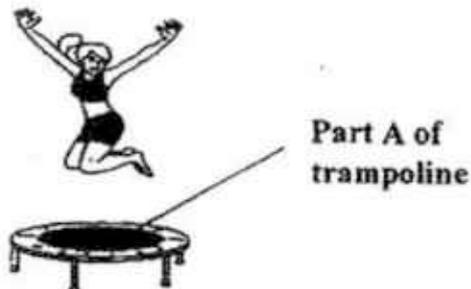
The diagram below shows a swimming float.



Which one of the following, W, X, Y or Z, will be the most suitable material to make a swimming float?

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

24. Phoebe carried out some tests to find out if a material is suitable for making part A of the trampoline.

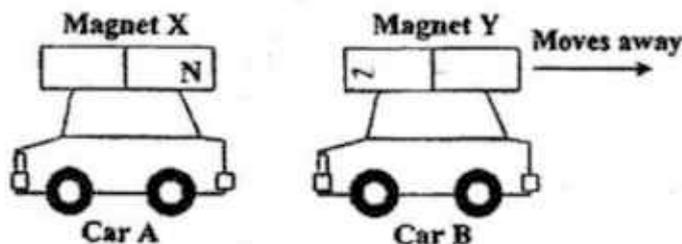


She came up with questions for some tests she would like to conduct and recorded them in the table below.

Test	Question
A	Is the material durable?
B	Is the material smooth or rough?
C	Does it allow light to pass through the material?
D	Is the material flexible or stiff?

Based on the table above, which two tests are important in deciding the most suitable material in making part A of the trampoline?

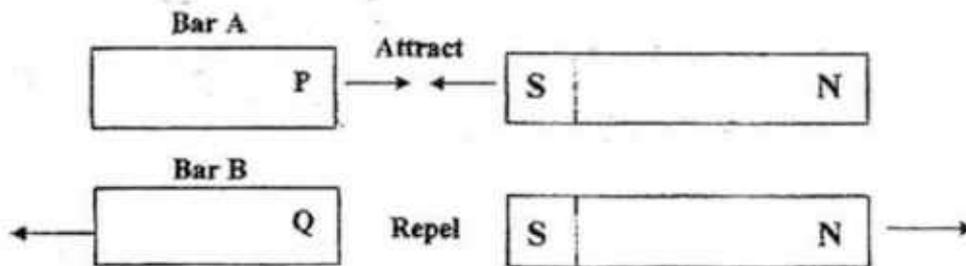
- (1) Tests A and B
  - (2) Tests A and D
  - (3) Tests B and C
  - (4) Tests C and D
25. - The diagram below shows two toy cars, A and B, with similar magnets attached on top. When magnet X from car A moves towards magnet Y on car B, car B moves slightly to the right.



What could be the explanation for such an observation?

- (1) Magnet Y on car B exerts a push on the magnet X on car A.
- (2) Magnet Y on car B exerts a pull on the magnet X on car A.
- (3) Magnet X on car A exerts a push on the magnet Y on car B.
- (4) Magnet X on car A exerts a pull on the magnet Y on car B.

26. Study the following diagram carefully. Both bars A and B are magnets.



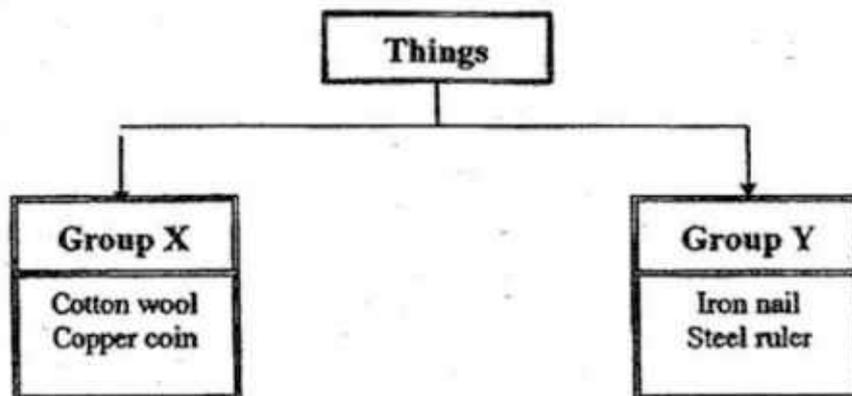
Bar A and bar B are brought close to each other as shown in the diagram below.



What will happen if bar A and bar B are placed close together with P and Q in the positions shown?

- (1) Bar A and Bar B will repel.
- (2) Bar A and Bar B will attract.
- (3) Bar A and Bar B will attract first and then repel.
- (4) Bar A and Bar B will repel first and then attract.

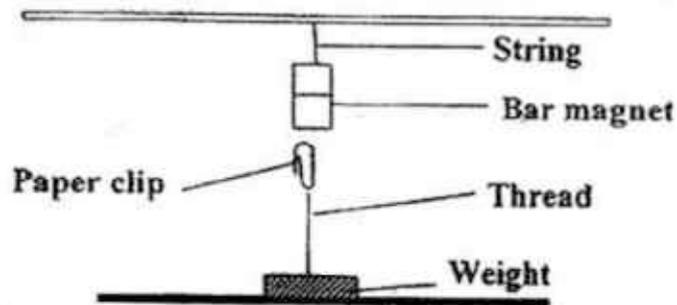
27. Study the classification chart below carefully.



Which one of the following sets best represents groups X and Y?

	Group X	Group Y
(1)	Float on water	Sink in water
(2)	Non-magnetic	Magnetic
(3)	Sink in water	Float on water
(4)	Magnetic	Non-magnetic

28. Putri carried out the experiment as shown below.



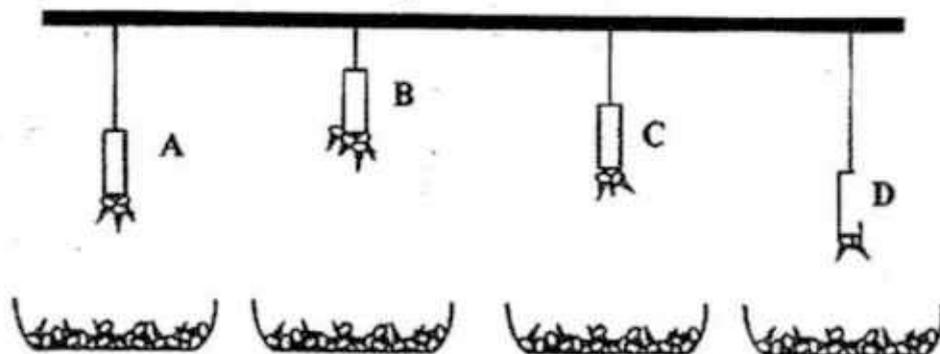
The paper clip was able to float in mid-air because the \_\_\_\_\_.

- A: paper clip was magnetised
- B: bar magnet attracted the paper clip
- C: paper clip was made of a magnetic material

Which of the following statements are true?

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

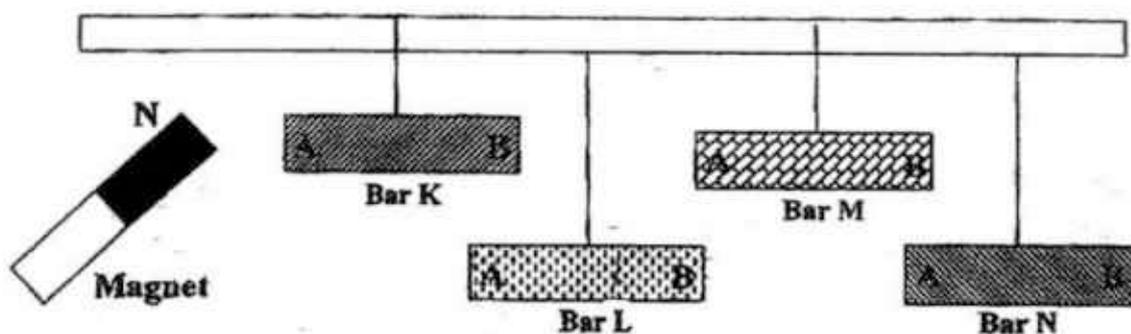
29. Quentin carried out an experiment below using 4 similar magnets, A, B, C and D. They were hung from strings of different lengths and they attracted different number of pins.



Based on the experiment, which of the magnets are the strongest and weakest?

	Strongest magnet	Weakest magnet
(1)	A	B
(2)	A	C
(3)	B	D
(4)	C	D

30. Four metal bars, K, L, M and N, were left to hang freely as shown below.



Jaya brought the north-seeking pole of a bar magnet near end A and then end B of each metal bar.

He recorded his observations from the experiment in the table below.

Metal Bar	Observations	
	N-pole of magnet and end A	N-pole of magnet and end B
K	No reaction	No reaction
L	Repelled	Attracted
M	Attracted	Repelled
N	Attracted	Attracted

Based on the observations made in the table, which of the metal bars are not magnets?

- (1) K and N only
- (2) L and M only
- (3) L, M and N only
- (4) K, L and M only

**SEMESTRAL ASSESSMENT 1  
SCIENCE  
2017**

**Name:** \_\_\_\_\_ (    )    **Marks:** \_\_\_\_\_ / 40  
**Level:**    **Primary 4**    **Date:**    **9 May 2017**  
**Class:**    **Primary 4 (    )**    **Parent's**  
**Signature:** \_\_\_\_\_

**BOOKLET B**

**Instructions to pupils:**

1. **Do not open this booklet until you are told to do so.**
2. **You are required to answer all the questions in this paper using your own words / expressions as far as possible.**
3. **All drawings / diagrams must be clearly shown and labelled.**
4. **Marks will be deducted for wrongly spelt key words.**
5. **This question booklet consists of 

<b>15</b>
-----------

 printed pages, including the cover page.**

**Section B (40 marks)**

**Write your answers to questions 31 to 44 in this booklet.**

31. The table below shows three objects, A, B and C, and their properties.

<b>Property</b> <b>Object</b>	<b>Has a definite volume</b>	<b>Has a definite shape</b>	<b>Can be compressed</b>
<b>A</b>	✓	✓	×
<b>B</b>	×	×	✓
<b>C</b>	✓	×	×

(a) Write down one similarity between objects A and C. (1 m)

---

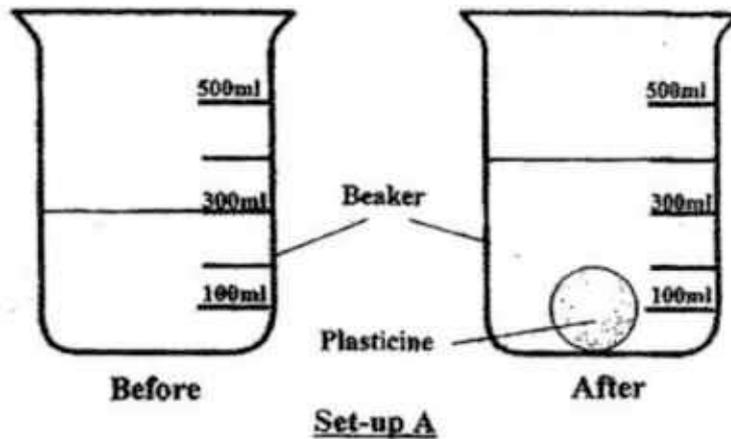
---

(b) Write down one difference between objects A and B. (1 m)

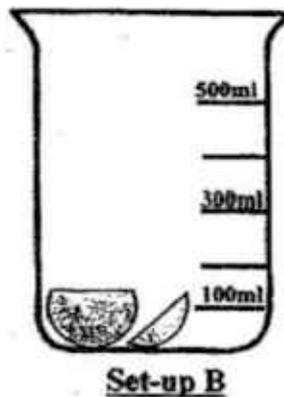
---

---

32. Gopal places a ball of plasticine into a beaker of water in set-up A as shown below. He notices the water rise to a new level.



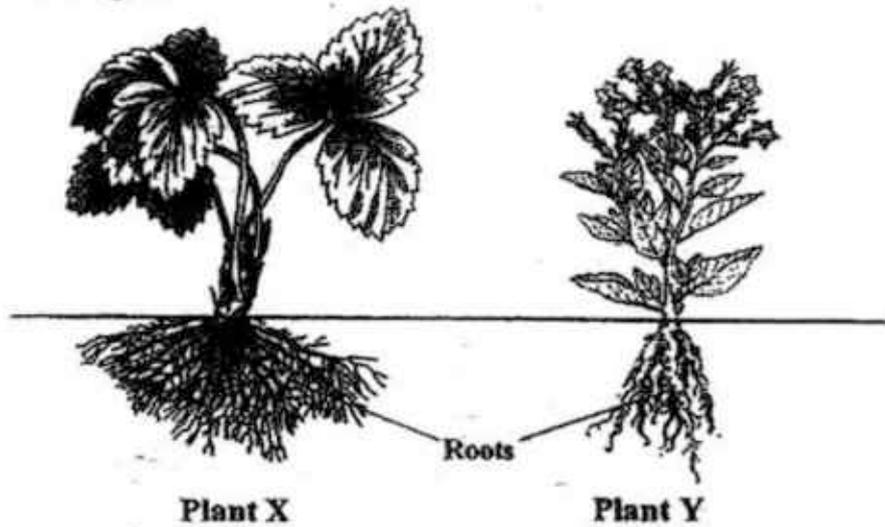
He then takes the ball of plasticine out of the beaker, cuts it into two pieces and lowers them gently into another similar beaker with the same volume of water as shown in set-up B below.



- (a) Draw the water level in Set-up B. (1 m)
- (b) Based on the experiment above, state two properties that Gopal can conclude about the ball of plasticine. (2 m)

- (i) \_\_\_\_\_
- (ii) \_\_\_\_\_

33. The diagram below shows the roots of two different plants, X and Y, planted in the garden.



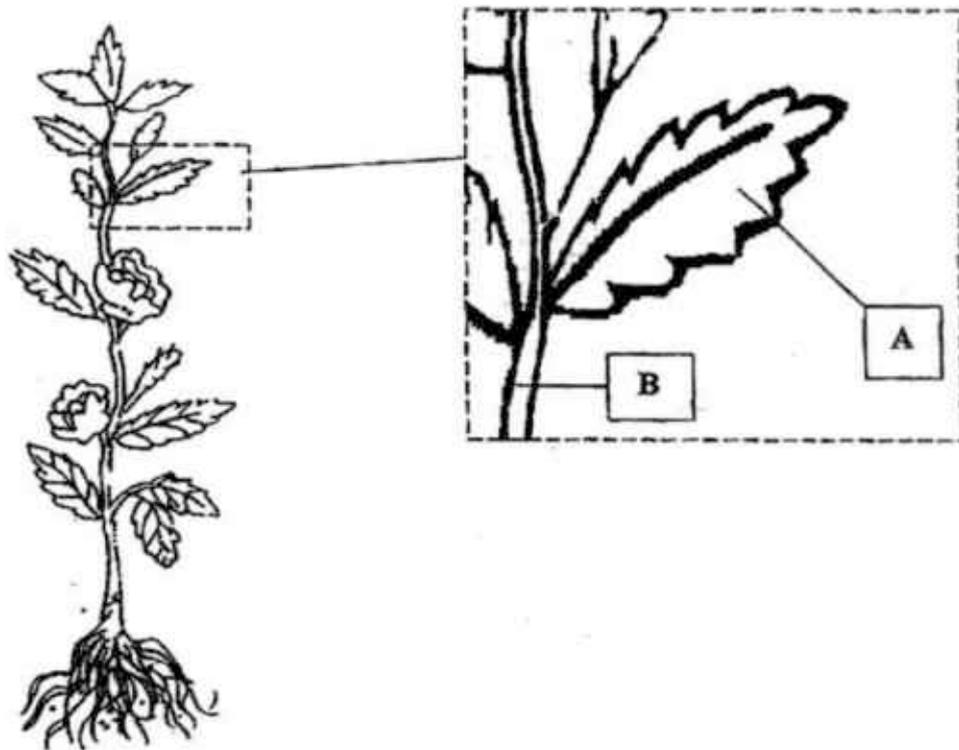
Based on the diagram above, which plant will most likely be uprooted from the soil after a heavy thunderstorm? Explain your answer clearly. (2 m)

---

---

---

34. Study the diagram below carefully.



(a) Identify the plant parts labelled A and B. (1 m)

A: \_\_\_\_\_

B: \_\_\_\_\_

(b) What happens when part B of the plant stops carrying out its functions? (2 m)

(i) \_\_\_\_\_

\_\_\_\_\_

(ii) \_\_\_\_\_

\_\_\_\_\_

35. The diagrams below show different human body systems.



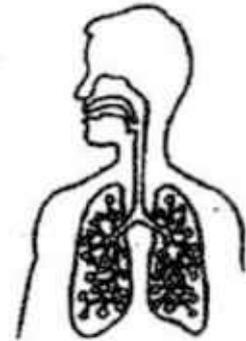
A



B



C



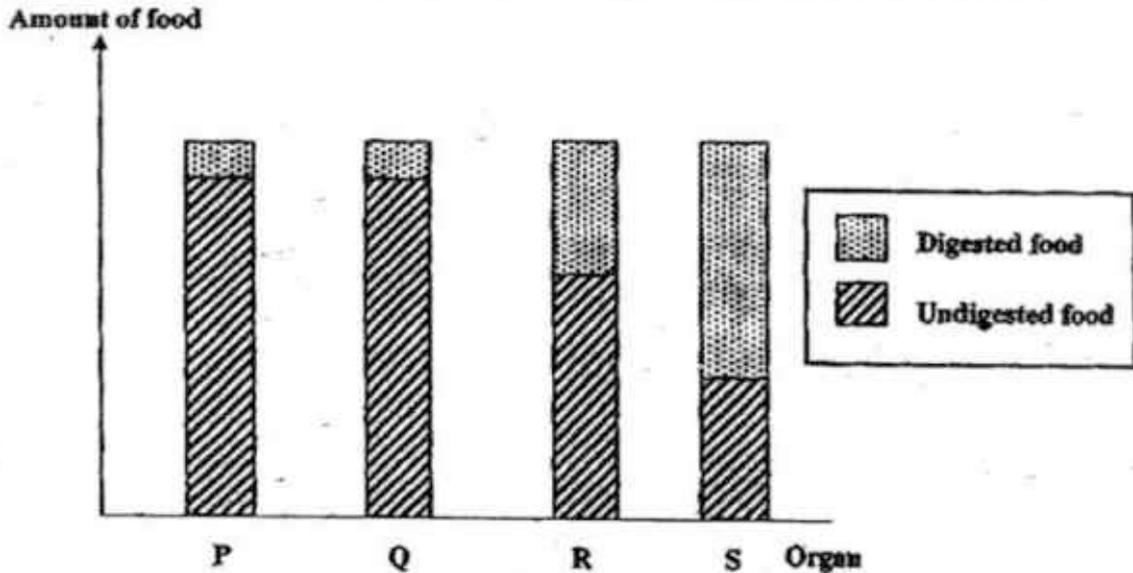
D

Match the descriptions to the correct systems (A, B, C or D).

(3 m)

No	Description of the system	System
(i)	It protects the delicate organs in the body.	
(ii)	It helps different parts of our body to move.	
(iii)	It takes in oxygen to all parts of our bodies.	

36. The graph below shows what happened to an amount of food as it moved through the different organs, P, Q, R and S, of the human digestive system.



- (a) Identify organ P. (1 m)

---

- (b) Which organ (P, Q, R or S) represents the gullet? Give a reason for your answer. (1 m)

---



---

- (c) As food travelled from organs R to S, what happened to the amount of digested food? (1 m)

---



---

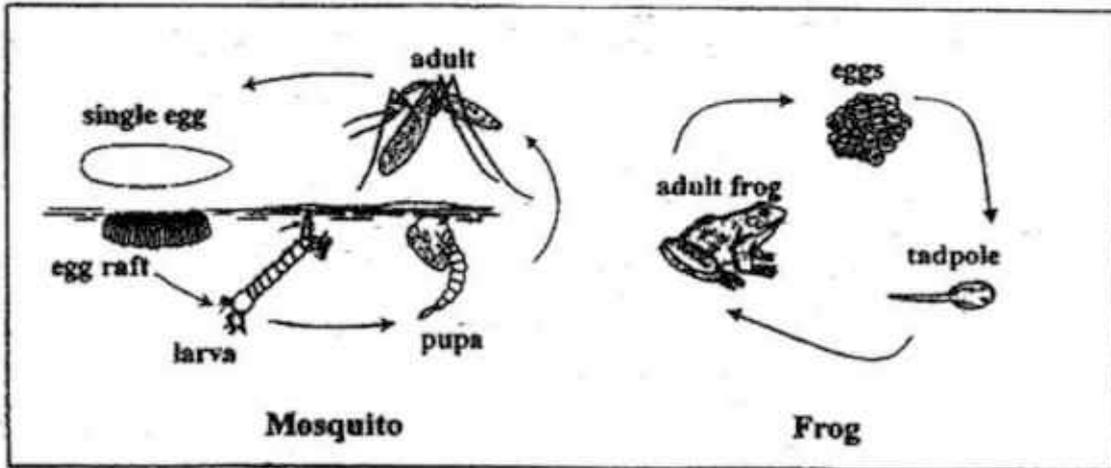
- (d) Why was the amount of undigested food in organ R different from that in organ Q? (1 m)

---



---

37. The diagrams below show the life cycles of a mosquito and a frog.



(a) Write down a difference between the adult mosquito and the adult frog in (1 m)

---

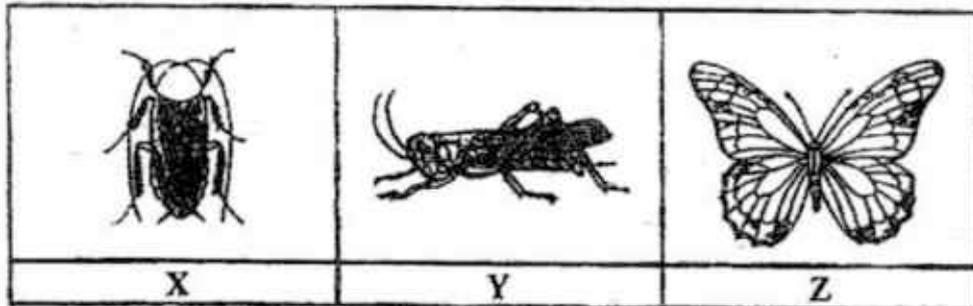
---

(b) The tadpole breathes through its gill. How does an adult frog breathe? (1 m)

---

---

38. The diagrams below show three animals, X, Y and Z.



(a) Write down the difference between animals X and Z in terms of the number of stages in their life cycles. (1 m)

---

---

(b) Write down two similarities between the life cycles of animals X and Y based on the following: (2 m)

(i) their young;

---

---

(ii) number of stages in their life cycles.

---

---

39. Mr Tan conducted an experiment on four materials, W, X, Y and Z, and recorded the results in the table below.

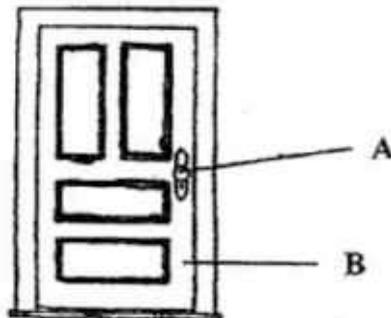
Material	Properties		
	Is it flexible?	Does it break easily?	Is it waterproof?
W	x	x	✓
X	x	✓	✓
Y	x	✓	x
Z	✓	x	✓

- (a) Which materials (W, X, Y or Z) best represent "steel" and "rubber"? (1 m)
- (i) Steel : \_\_\_\_\_
- (ii) Rubber : \_\_\_\_\_
- (b) Name two differences between materials W and Y based on the information in the table above. (2 m)

(i) \_\_\_\_\_  
\_\_\_\_\_

(ii) \_\_\_\_\_  
\_\_\_\_\_

40. The diagram below shows a front door.

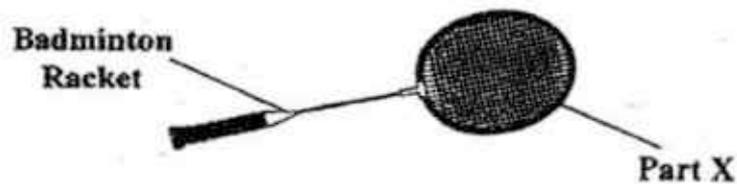


(a) Write down one suitable material used to make parts A and B. (1 m)

A: \_\_\_\_\_

B: \_\_\_\_\_

(b) Study the diagram below carefully.



(i) Put two ticks in the boxes below against the possible materials used to make part X of the badminton racket. (1 m)

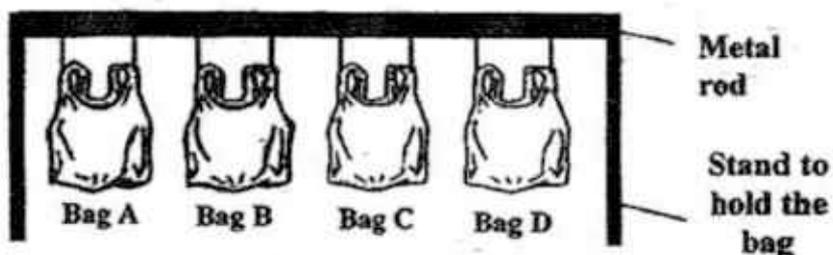
Material	Tick (✓)
Metal	
Plastic	
Glass	

(ii) Which property of the materials is considered before making the choice for part X? (1 m)

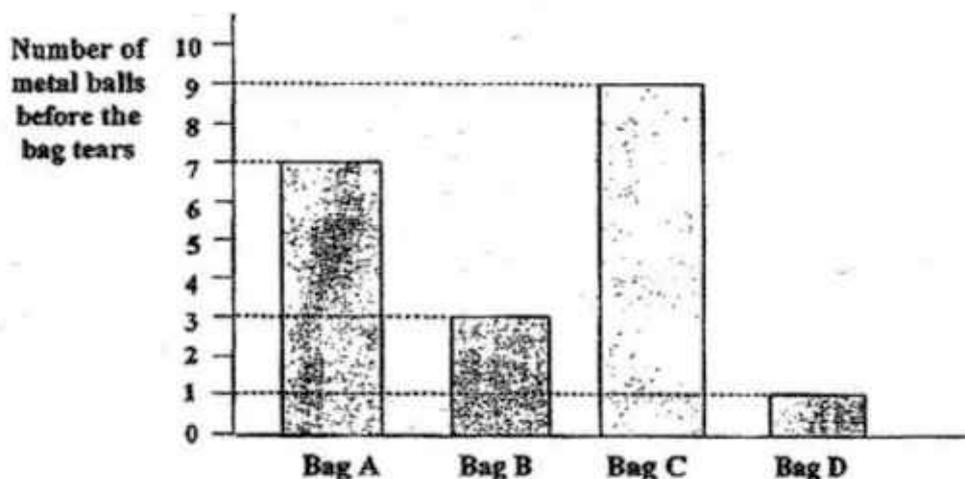
\_\_\_\_\_

\_\_\_\_\_

41. Josephine wanted to find out which material makes a good grocery bag that does not tear easily when she carries a lot of groceries. She used four identical bags, A, B, C and D, made of different materials as shown below. She then added metal balls into each of the respective bags until the bag was torn.



She recorded her observation in the bar graph below.



- (a) Which variable did Josephine change? (1 m)

---

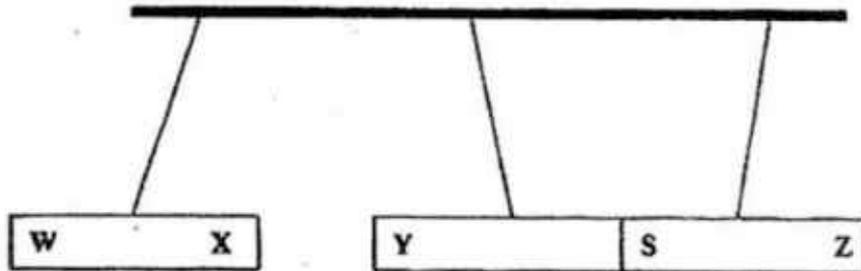
---

- (b) Which bag do you think Josephine would choose as her grocery bag? Explain your answer clearly. (2 m)

---

---

42. Three magnets are suspended from a rod. The results of their interaction are shown below.



- (a) Write down the poles of the magnets, W, X, Y and Z, given that S represents the South pole. (2 m)

W	X	Y	S	Z
			South pole	

- (b) Ryan marked out four different parts, A, B, C and D, on a large bar magnet as shown below.



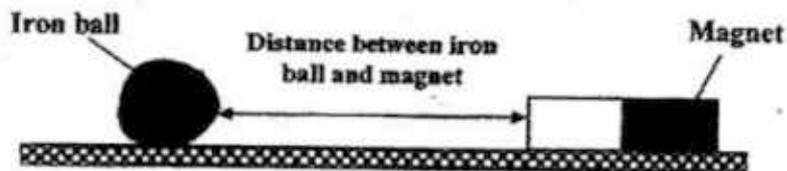
He recorded the number of thumbtacks attracted to the four different positions of the magnet and noticed that two positions of the magnet attracted the most number of thumbtacks. Which were the two positions? Write down the reason why they attracted the most thumbtacks. (1 m)

---



---

43. Keith wants to investigate the strength of four bar magnets, P, Q, R and S, by observing whether the iron ball is attracted and moving towards the bar magnet at different distances between them. He sets up an experiment as shown below.



He then records the results in the table below. A tick (✓) means that the iron ball is attracted and moving towards the bar magnet.

Distance between iron ball and magnet	Magnet P	Magnet Q	Magnet R	Magnet S
2cm	✓	✓	✓	✓
4cm	✓	✗	✓	✓
6cm	✓	✗	✓	✗
8cm	✗	✗	✓	✗

- (a) Based on the results above, which is the weakest magnet? Explain your answer clearly. (2 m)

---



---



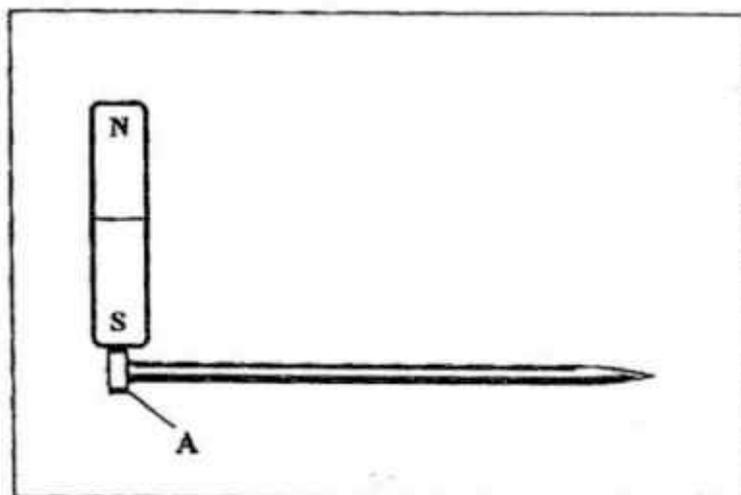
---

- (b) Which one of the magnets (P, Q, R or S) is the strongest magnet? (1 m)

Magnet \_\_\_\_\_

44. A nail can be made into a temporary magnet by stroking it with a strong magnet as shown in the diagram below.

(a) Complete the diagram by drawing arrows to show the circular movement of the strokes. (1 m)



(b) Name the pole of part A of the nail. (1 m)

Part A: \_\_\_\_\_ pole

(c) Rose wants to magnetise a copper bar using one of the poles of the magnet above. However, no matter how many times she strokes the copper bar, it is not able to attract any steel paper clips. Give a reason why it is so.

(1 m)

---

---

**END OF PAPER**



SCHOOL : RULANG PRIMARY SCHOOL

LEVEL : PRIMARY 4

SUBJECT : SCIENCE

TERM : 2017 SA1

CONTACT :

---

**SECTION A**

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

Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	4	2	2	3	4	1	4	1	2

Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	1	1	2	3	1	2	4	3	1

**SECTION B**

Q31)	(a) Other Object A and C have a definite volume. (b) Object A has definite shape while Object B does not have definite shape
Q32)	(a) {Draw the water level at 400 ml} (b) i) The ball of plasticine takes up space ii) The ball of plasticine has definite volume
Q33)	Plant Y. During t thunderstorm, Plant X can hold firmly onto the ground as it has more roots hairs than Plant Y whereas Plant Y will have lesser root hairs, therefore Plant Y will most likely to be uprooted from the soil.

Q34)	<p>a) A : Stem B : Leaves</p> <p>b) i) Water and mineral salts absorbed by the roots cannot be transported to different parts of the plant.</p> <p>ii) The plant cannot support itself and will not be able to obtain sunlight.</p>
Q35)	<p>a) i) B ii) C iii) D</p>
Q36)	<p>a) Mouth</p> <p>b) Organ Q. No digestion has taken place at Organ Q</p> <p>c) The amount of digested food became higher</p> <p>d) There is a decrease in undigested food as more digestion has taken place in the stomach.</p>
Q37)	<p>a) The adult mosquito lives on land only while the adult frog lives on land and water.</p> <p>b) The adult frog breathes through its lungs and skin.</p>
Q38)	<p>a) Animal X has 3-stage life cycle while Animal Z has 4-stage life cycle.</p> <p>b) i) The young of Animal X and Animal Y moults</p> <p>ii) Both Animal X and Y have 3-stage life cycle</p>
Q39)	<p>a) i) W ii) Z</p> <p>b) i) Material Y breaks easily while Material W does not break easily</p> <p>ii) Material W is waterproof while Material Y is absorbent</p>
Q40)	<p>a) A : Steel B : wood</p> <p>b) i) Metal ✓ Plastic ✓</p> <p>ii) The material does not break easily and is not flexible</p>
Q41)	<p>a) She changed the types of material that are used to make the bags</p> <p>b) Bag C. Josephine would choose Bag C as it could hold the most number of metal balls among the four bags.</p>

Q42)	<p>a)</p> <table border="1" data-bbox="312 353 1289 517"> <tr> <td data-bbox="312 353 509 409">W</td> <td data-bbox="509 353 705 409">X</td> <td data-bbox="705 353 901 409">Y</td> <td data-bbox="901 353 1098 409">S</td> <td data-bbox="1098 353 1289 409">Z</td> </tr> <tr> <td data-bbox="312 409 509 517">North pole</td> <td data-bbox="509 409 705 517">South pole</td> <td data-bbox="705 409 901 517">South pole</td> <td data-bbox="901 409 1098 517">South pole</td> <td data-bbox="1098 409 1289 517">North pole</td> </tr> </table> <p>b) Parts A and D. A magnet is strongest at its poles.</p>	W	X	Y	S	Z	North pole	South pole	South pole	South pole	North pole
W	X	Y	S	Z							
North pole	South pole	South pole	South pole	North pole							
Q43)	<p>a) Magnet Q. It attracts the iron ball from the shortest distance. b) R</p>										
Q44)	<p>a)</p>  <p>b) South c) Copper is a non-magnetic material and only non-magnetic materials can be made into a temporary magnet.</p>										



Name: \_\_\_\_\_ ( )

Class: Primary 4 \_\_\_\_\_

**Primary 4  
Semestral Assessment 1 – 2017**

**SCIENCE**

**BOOKLET A**

**9 May 2017**

**Total Time for Booklets A and B: 1 hour 45 minutes**

**28 questions**

**68 marks**

**Do not open this booklet until you are told to do so.**

**Follow all instructions carefully.**

**Answer all questions.**

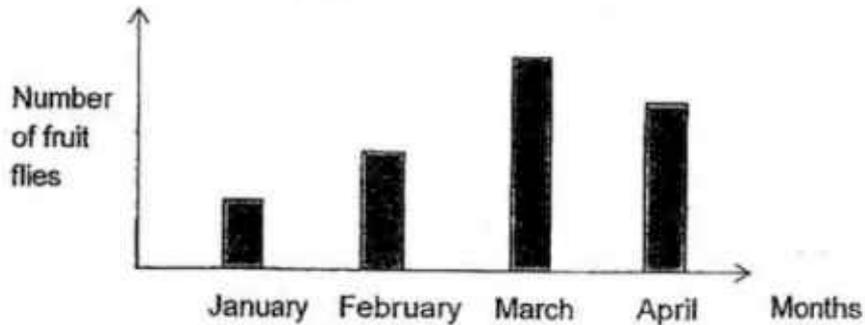
***This booklet consists of 20 printed pages.***



**Section A (28 x 2 marks = 56 marks)**

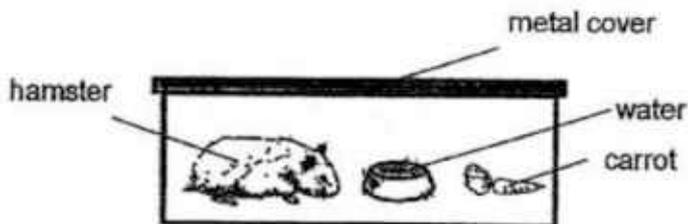
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.

1. Andy counted the number of fruit flies in a tank over a period of four months and recorded his results in the graph below.



Based on his results from January to March, what can he conclude about the fruit flies?

- (1) The fruit flies died.
  - (2) The fruit flies reproduced.
  - (3) The fruit flies increased in size.
  - (4) The fruit flies responded to changes.
2. Joe placed a hamster in a metal container as shown below.



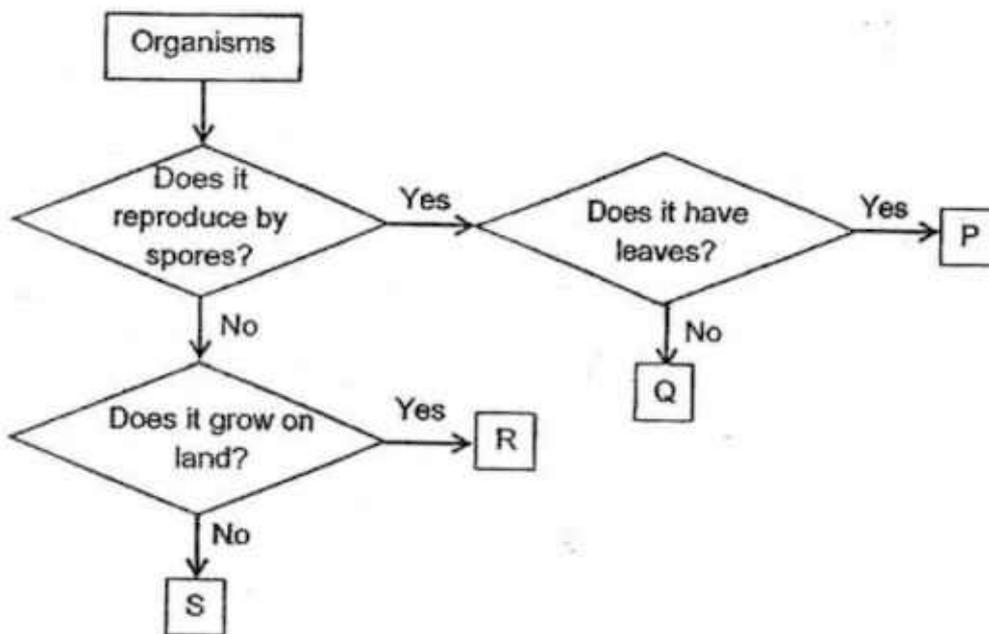
After two days, Joe observed that the hamster had died. Which one of the following is a possible reason for his observation?

- (1) It had no air
- (2) It had no food.
- (3) It had no water.
- (4) It had no sunlight.

3. Which one of the following statements is true of non-flowering plants?

- (1) They do not produce fruits.
- (2) They do not have green leaves.
- (3) They do not make their own food.
- (4) They produce fruits but not flowers.

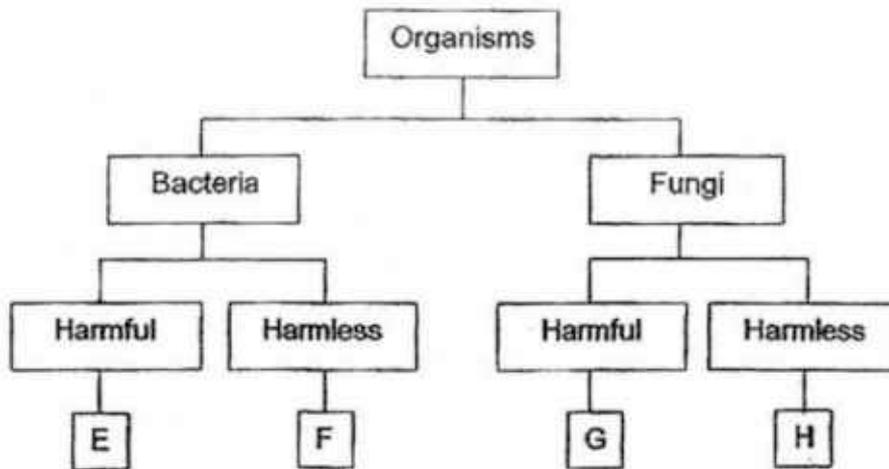
4. Study the flow chart below.



Based on the flow chart, which one of the organisms P, Q, R and S, best represents a bird's nest fern?

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

5. Study the diagram below.



Which one of the following represents bread mould?

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

6. Four pupils made some statements about bacteria as shown below.

- Alex: Bacteria cannot reproduce.
- Ben: Bacteria feed on living things.
- Clara: Bacteria can make their own food.
- Dena: Bacteria can be found everywhere.

Which of the pupils made the correct statements?

- (1) Alex and Ben only
- (2) Alex and Clara only
- (3) Ben and Dena only
- (4) Clara and Dena only

7. John saw animal X during a school camp. He recorded his observations of animal X as shown in the box below.

It can swim in water.  
It has moist skin.  
It reproduces by laying eggs.

Which animal group does animal X belong to?

- (1) fish
- (2) reptiles
- (3) mammals
- (4) amphibians

8. The pictures below show two animals.



bat



eagle

Jen made the following statements about the animals.

- A Both can fly.
- B Both lay eggs.
- C Both have wings.
- D Both have feathers.

Which of the statements are common characteristics of the animals above?

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

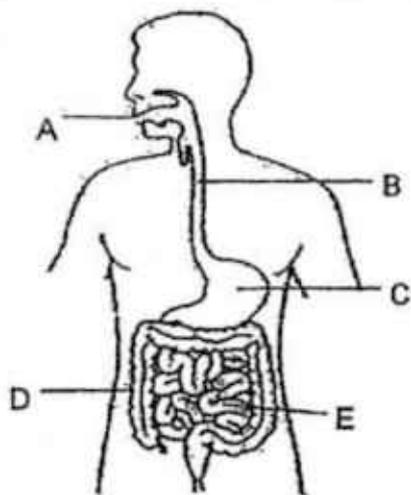
9. The table below shows the characteristics of four animals A, B, C and D. A tick (✓) indicates that the characteristic is present in the animals.

Characteristics	A	B	C	D
Has scales			✓	
Lays eggs	✓	✓	✓	✓
Breathes through lungs	✓	✓	✓	
Has moist skin	✓			

Which one of the following animals A, B, C or D, represents a reptile?

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

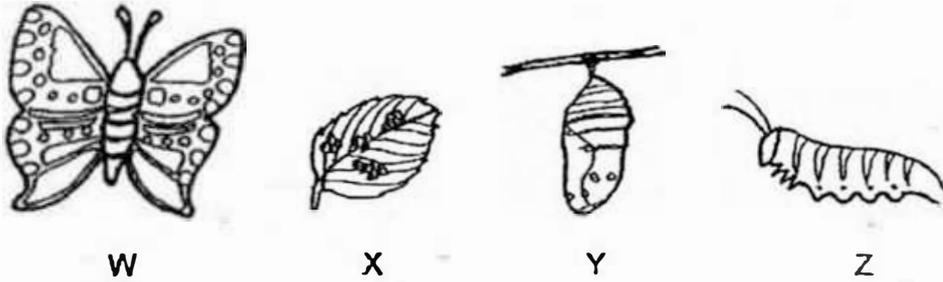
10. The diagram below shows the human digestive system.



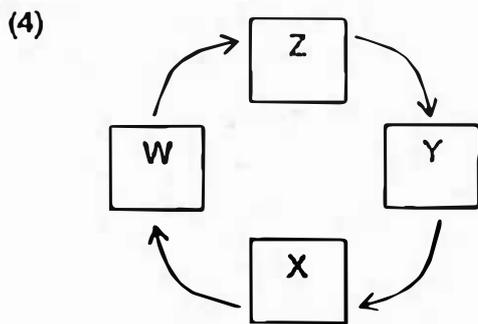
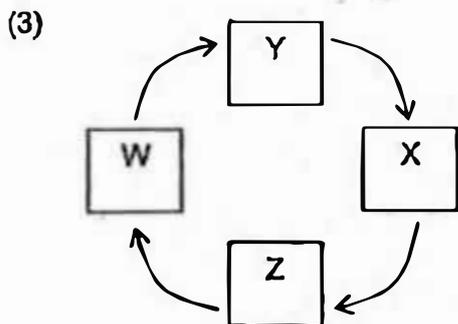
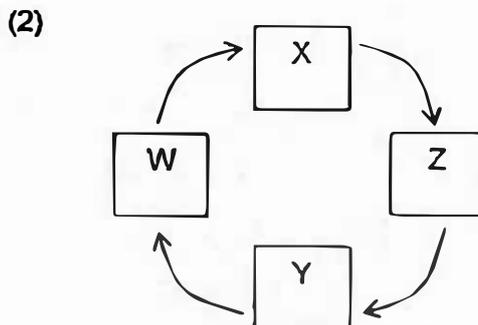
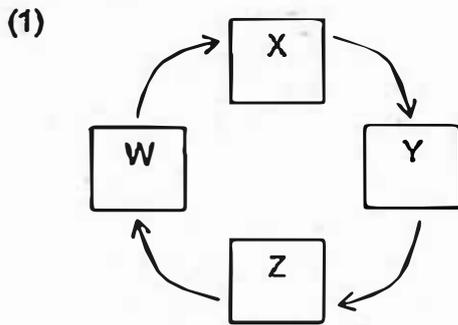
Where does digestion take place?

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

11. Study the diagram below. W, X, Y and Z represent the various stages in the life cycle of a butterfly.



Which one of the following shows the correct order of the life cycle of the butterfly?



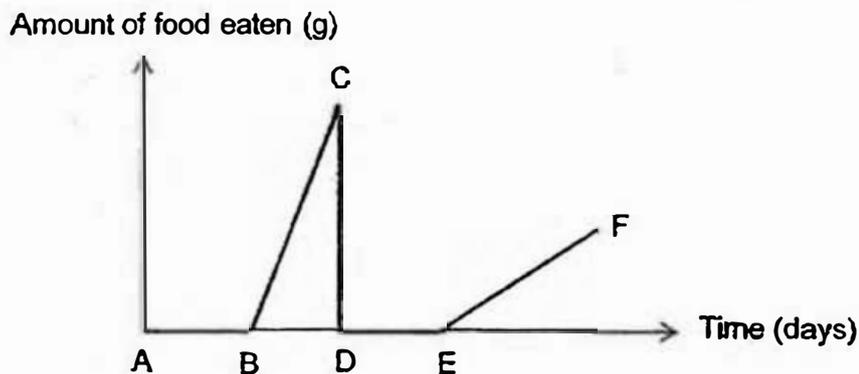
12. Tom made some statements about the differences between an adult grasshopper and a grasshopper nymph.

- A A grasshopper nymph is bigger than an adult grasshopper.
- B A grasshopper nymph does not feed at all but an adult grasshopper feeds on leaves.
- C A grasshopper nymph does not have wings but an adult grasshopper has wings.
- D A grasshopper nymph cannot reproduce but an adult grasshopper can.

Which of the statements are correct?

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

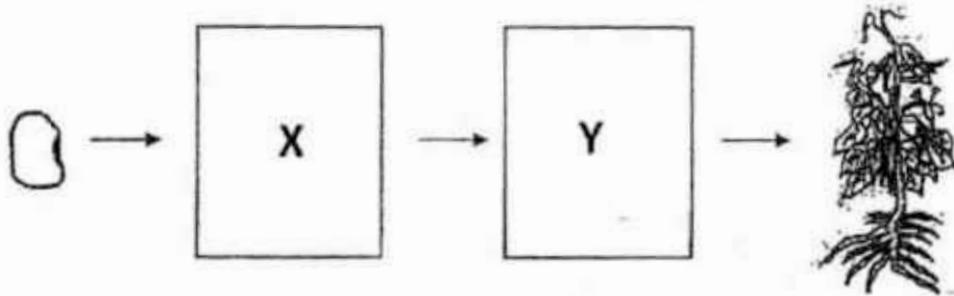
13. Zheng Min kept some beetle eggs in a container. After the eggs had hatched, she gave the mealworms the same amount of food each day. She observed the amount of food eaten by the mealworms as they developed. She recorded her findings in the graph below.



The line DE shows the \_\_\_\_\_ stage of a beetle.

- (1) egg
- (2) larval
- (3) pupal
- (4) adult

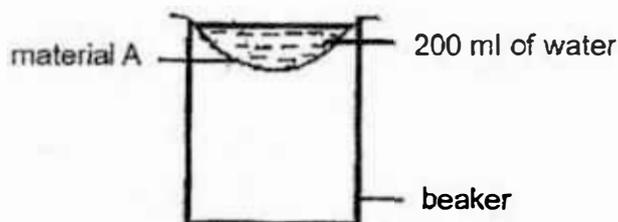
14. The diagram below shows the growth of a young plant with two missing stages X and Y.



Which one of the following shows the correct stages for X and Y?

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

15. Henry wants to select the most suitable material to make a raincoat. He used four different materials A, B, C and D, of similar size and thickness. He placed material A over the beaker and poured 200 ml of water on it.



After an hour, he measured the volume of water collected in the beaker. He then repeated the experiment with the other materials and recorded his results in the table below.

Material	Amount of water collected in the beaker (ml)
A	183
B	51
C	0
D	109

Which material A, B, C or D, is most suitable for making a raincoat?

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

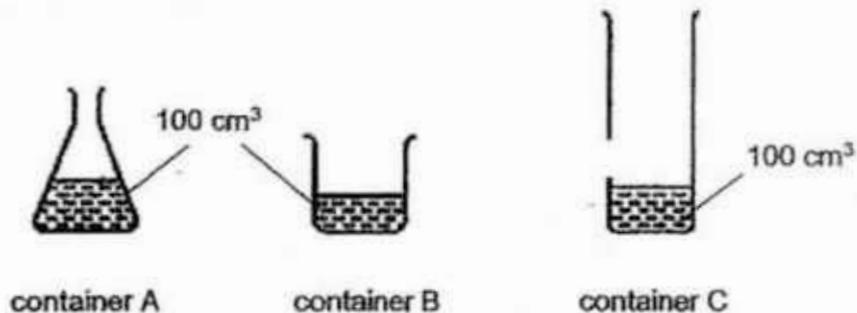
16. Study the diagram below.

Group A	Group B
 <p data-bbox="488 734 555 763">glass</p>  <p data-bbox="488 1081 550 1111">vase</p>	 <p data-bbox="967 707 1029 736">hose</p>  <p data-bbox="959 1088 1050 1117">curtain</p>

The objects are grouped according to whether they \_\_\_\_\_

- (1) are flexible
- (2) are waterproof
- (3) float or sink in water
- (4) allow light to pass through

17. Kelly poured equal amounts of liquid Z into three containers A, B and C, as shown below.



She made the following conclusions.

- A Liquid Z can be compressed.
- B Liquid Z has a definite volume.
- C Liquid Z does not have a definite shape.

Which of the conclusion(s) is/are correct based on her experiment?

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

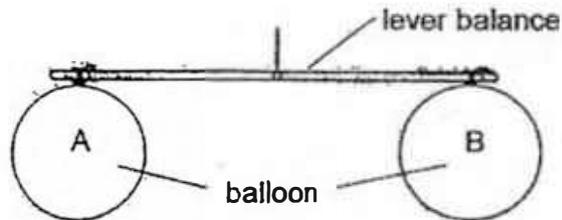
18. Study the table below.

Matter	Properties		
	has a definite shape	has a definite volume	occupies space
Rice	No	Yes	Yes
Honey	Yes	Yes	Yes
Water	No	Yes	No
Oxygen	No	No	Yes

Which one of the following matter is correctly matched to its properties?

- (1) Rice
- (2) Honey
- (3) Water
- (4) Oxygen

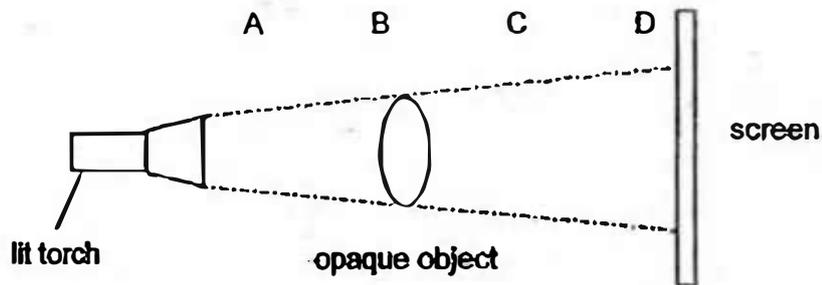
19. Two identical balloons A and B, were hung on a lever balance as shown in the diagram below. They were both filled with  $400 \text{ cm}^3$  of air.



John pumped another  $400 \text{ cm}^3$  of air into balloon A.

Which one of the following observations is correct after more air had been pumped into balloon A?

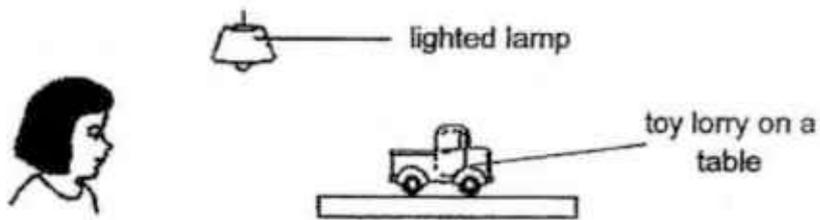
- (1) Both balloons will be the same size.
  - (2) Both balloons will have the same mass.
  - (3) The lever will tilt down towards balloon A.
  - (4) The lever will tilt down towards balloon B.
20. An opaque object was placed in front of a lighted torch to form a shadow on a screen.



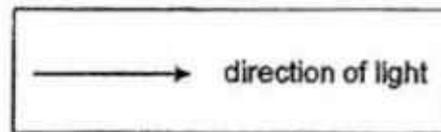
At which position A, B, C or D, should the object be placed in order to form the largest shadow?

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

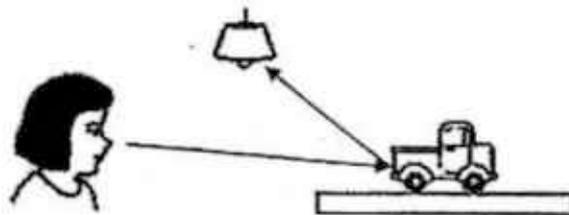
21. Look at the picture below.



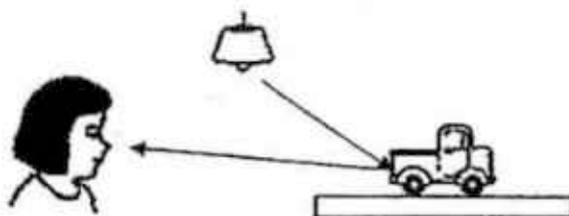
Which one of the following shows the correct path that light takes for Sue to see the toy lorry?



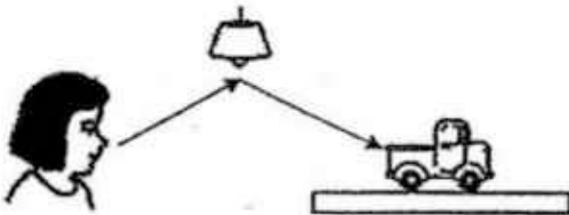
(1)



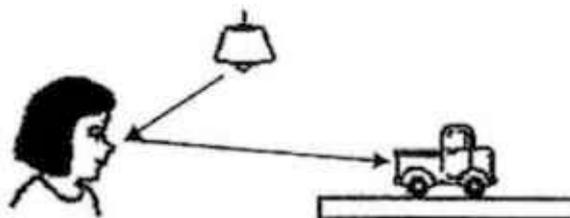
(2)



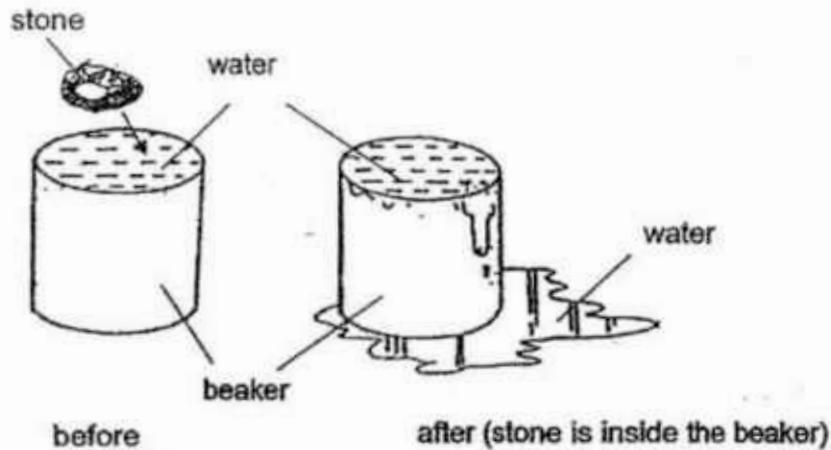
(3)



(4)



22. Study the diagram below. A stone was gently placed into a beaker that was completely filled with water.



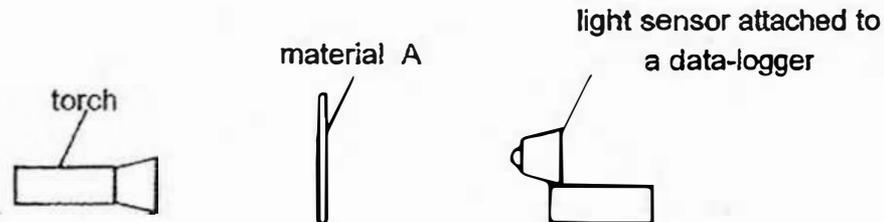
The diagram shows that the \_\_\_\_\_.

- A water has mass
- B stone occupies space
- C stone has a fixed shape
- D water has a fixed volume

Which of the following statements are correct?

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

23. Colin set up an experiment to measure the amount of light that can pass through different materials A, B, C and D, of similar size and thickness.



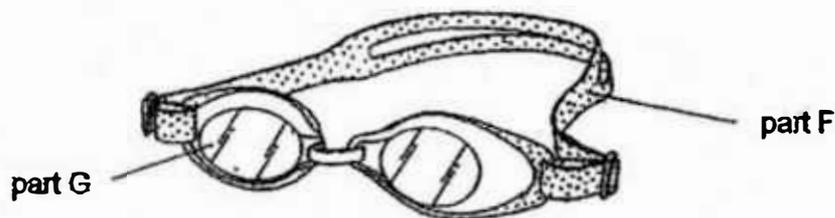
He measured the amount of light that could pass through material A. He then repeated the experiment with the other materials and recorded his results in the table below.

Materials	Reading on light sensor (units)
A	69
B	0
C	200
D	400

Which one of the following materials is most likely made of clear glass?

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

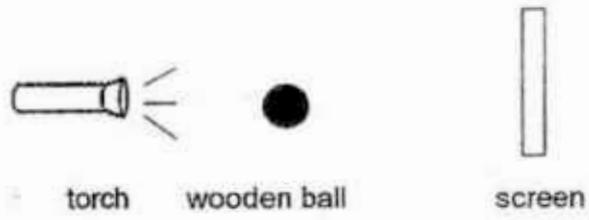
24. The picture below shows a pair of swim goggles.



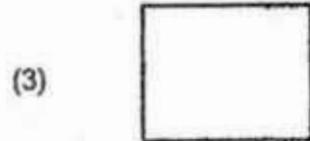
Which one of the following properties should we consider when choosing suitable materials for making part F and part G?

	Part F	Part G
(1)	flexibility	allows light to pass through
(2)	strength	flexibility
(3)	ability to float	strength
(4)	allows light to pass through	waterproof

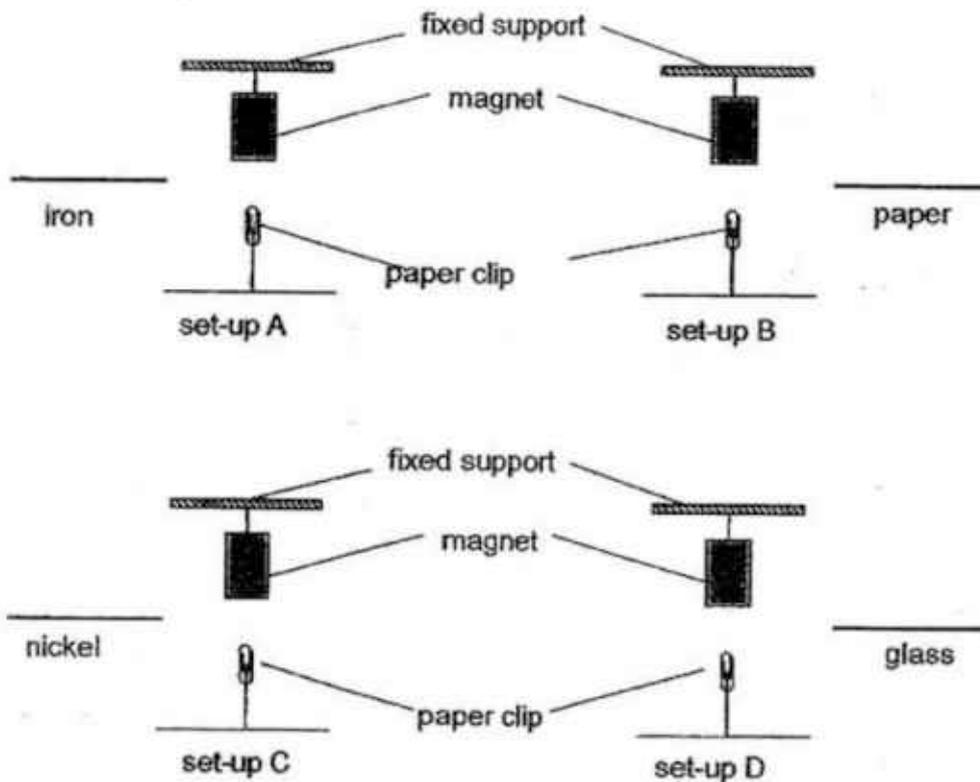
25. The set-up below shows a lit torch shining on a wooden ball in a dark room.



Which one of the following would most likely be seen on the screen?



26. Joan hung a magnet from a fixed support. Using a string, she tied a paper clip to the table. The paper clip remained in an upright position in the air. She wanted to place different materials of the same thickness between the magnet and paper clip as shown below.



In which of the set-ups above will the position of the paper clips remain unchanged after the materials were placed in between the magnet and the paper clip?

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

27. Elyn wanted to find out the strength of four different magnets W, X, Y and Z. She placed the magnets one at a time, near a tray of pins. She then counted the number of pins that were attracted to each magnet.



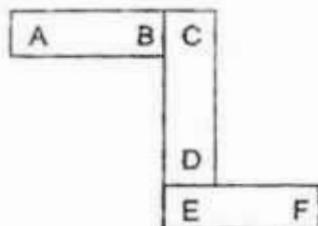
Elyn recorded her results in the table below.

Magnet	Number of pins attracted	Distance between magnet and pins
W	6	3 cm
X	18	3 cm
Y	14	3 cm
Z	9	3 cm

What can Elyn conclude from the results above?

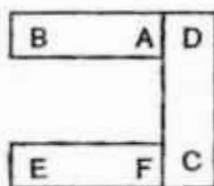
- (1) Magnetic strength is strongest at its poles.
- (2) Magnet Y is stronger than Z but weaker than W.
- (3) Magnetic strength of a magnet does not depend on its length.
- (4) Magnetic strength of a magnet depends on the distance between the magnet and the pins.

28. Shale arranged three magnets with poles labelled A to F in the diagram below.

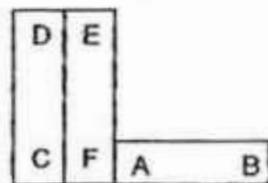


Based on the above observation, which one of the following is not a possible arrangement of the magnets?

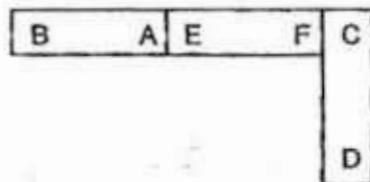
(1)



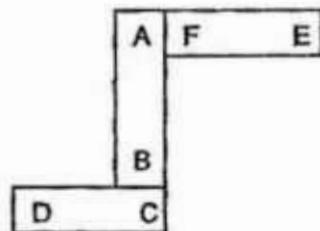
(2)



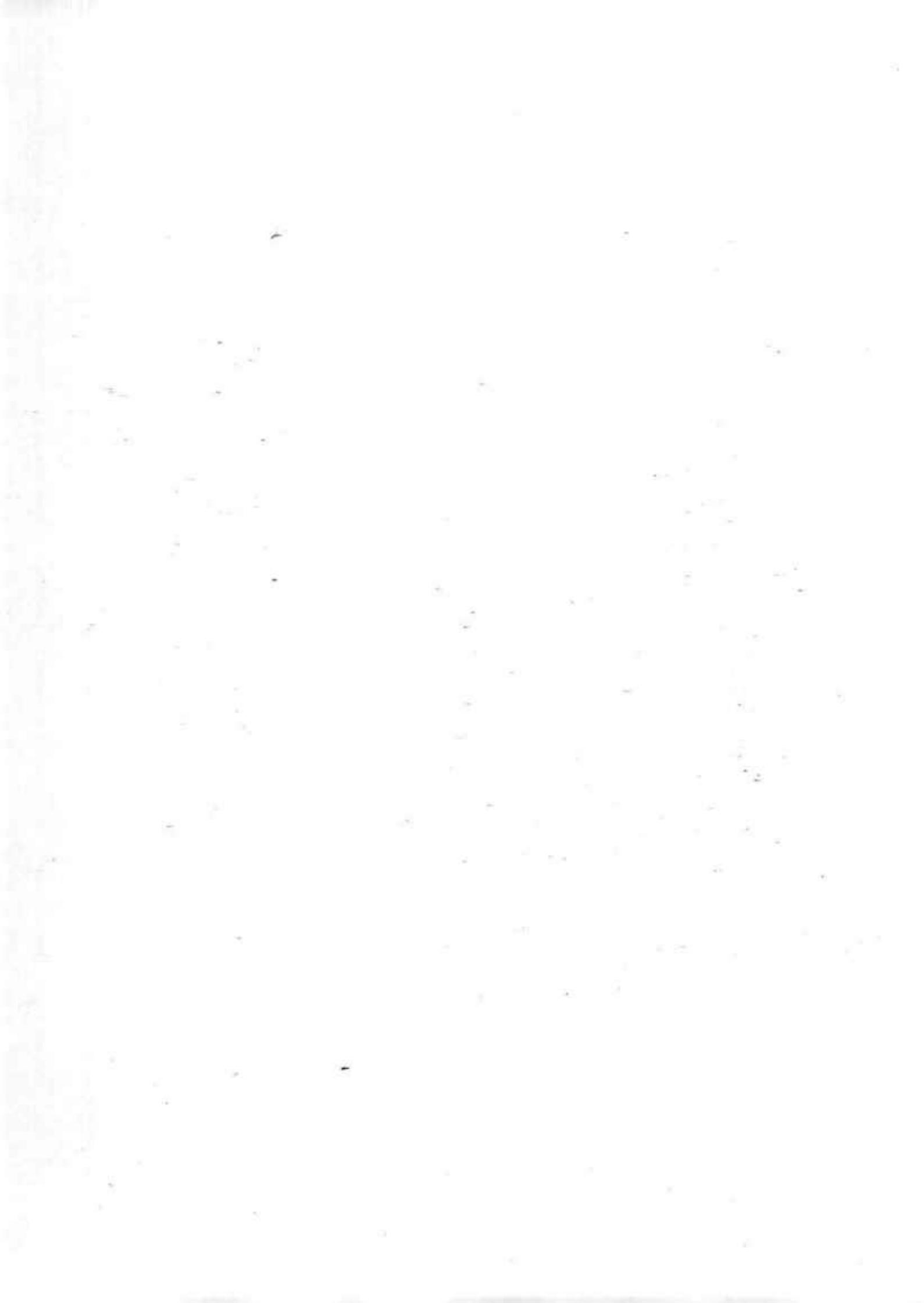
(3)



(4)



**END OF BOOKLET A**



Name : \_\_\_\_\_ ( )

Class : Primary 4 \_\_\_\_\_

**Primary 4**  
**Semestral Assessment 1 – 2017**  
**SCIENCE**  
**BOOKLET B**  
**9 May 2017**

**Total Time for Booklets A and B: 1 hour 45 minutes**

**13 questions**  
**44 marks**

**Do not open this booklet until you are told to do so.**  
**Follow all instructions carefully.**  
**Answer all questions.**

**This paper consists of 14 printed pages.**

Booklet A	56
Booklet B	44
Total	100

---

Parent's Signature/Date

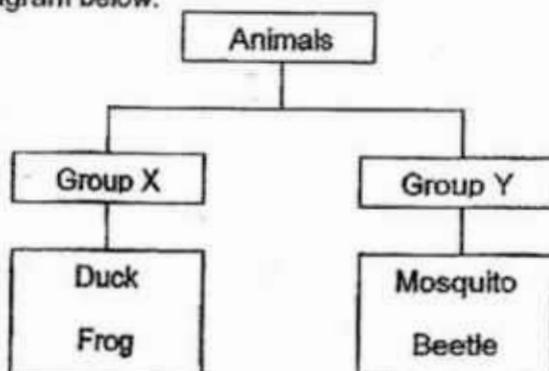


**Section B (44 marks)**

For questions 29 to 41, write your answers in this booklet.

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

29. Study the diagram below.



(a) Suggest an appropriate heading for Group X and Group Y.

[2]

Group X: \_\_\_\_\_

Group Y: \_\_\_\_\_

Jerry discovered a nymph of an insect. He observed it for weeks and noticed that it moulted several times before becoming an adult.

(b) How many stages are there likely to be in the life cycle of the insect Jerry observed?

[1]

\_\_\_\_\_

(c) Why did the nymph moult?

[1]

\_\_\_\_\_

\_\_\_\_\_

30. The table below shows the characteristics of some plants. A tick (✓) indicates that the characteristic is present in the plant.

Characteristic of plant	Plant A	Plant B	Plant C	Plant D
Has edible fruit		✓	✓	
Has poisonous parts	✓		✓	
Has woody stem	✓	✓	✓	✓

Tom said, "Plant C is wrongly classified. How can a plant be poisonous and edible at the same time?"

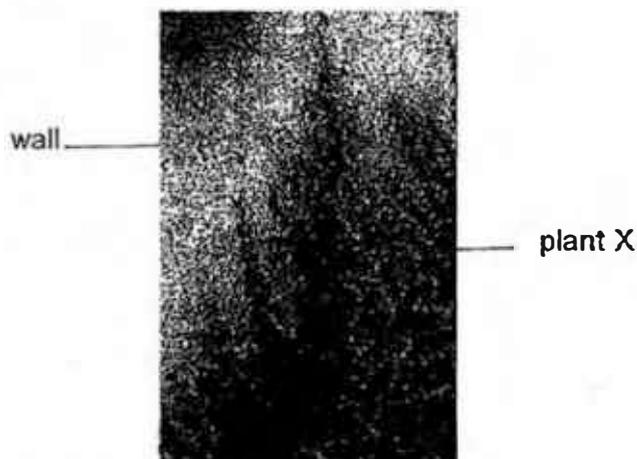
- (a) Do you agree with Tom? Explain why. [1]

---



---

Look at plant X found growing on the walls in Tom's garden as shown below.



- (b) Tom identified plant X as having the same characteristics as plant D, based on the table above. His mother told him that he was incorrect. Explain why. [2]

---



---

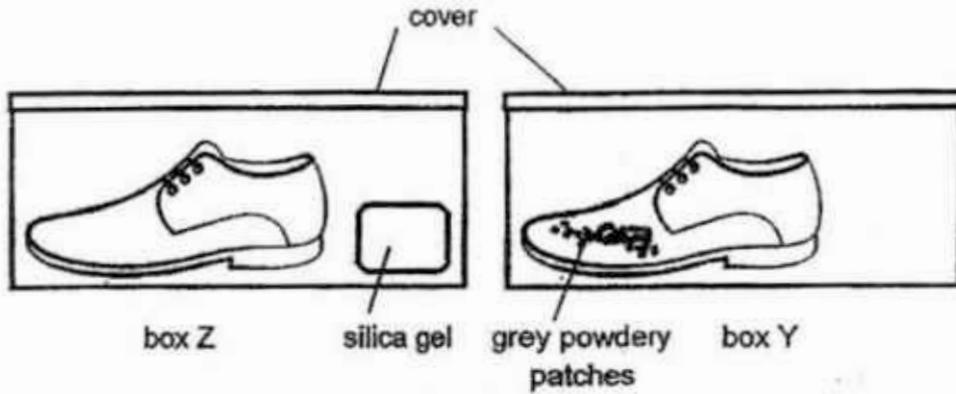
- (c) Give a reason how plant X benefits from growing in the manner shown in the diagram above. [1]

---



---

31. Mr Tan placed a leather shoe each into two identical boxes Z and Y, along the corridor. He also placed a packet of silica gel in box Z. Silica gel absorbs moisture. After a month, he observed that the shoe in box Y was covered with grey powdery patches.



- (a) What could the grey powdery patches in Box Y be? [1]

---

- (b) State the condition that was present in box Y but not in box Z that allowed the grey powdery patches to grow. [1]

---

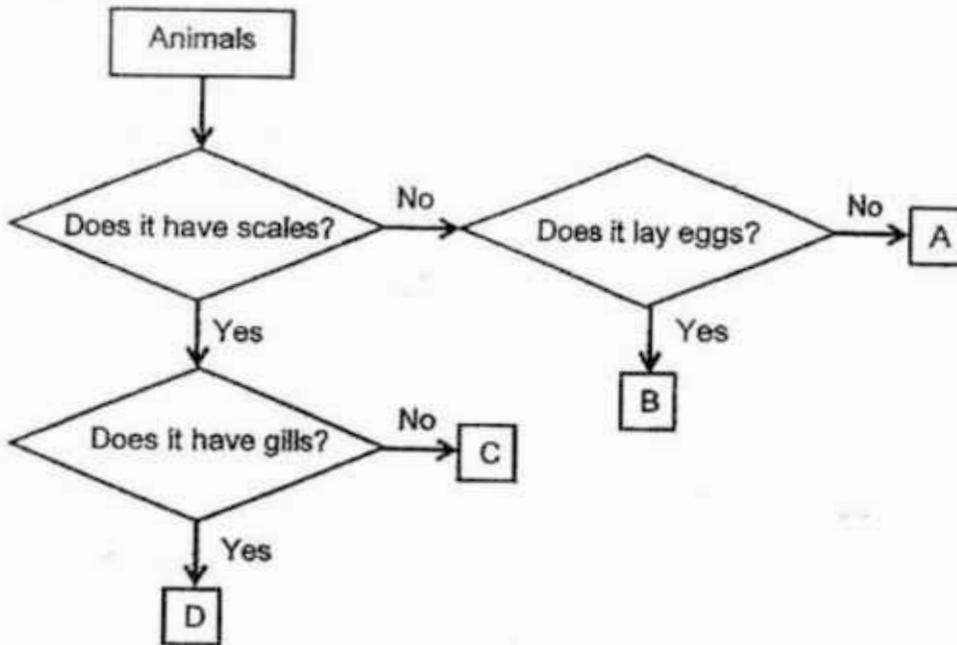
After two months, Mr Tan observed the shoe in box Y again. He observed that there were more grey powdery patches on it.

- (c) What does Mr Tan's observation tell you about the grey powdery organism? [1]

---

---

32. Study the flow chart below.



(a) Based on the flow chart, state the characteristics of animal A. [1]

---

---

(b) Based on the flow chart, state one difference between animal B and C. [1]

---

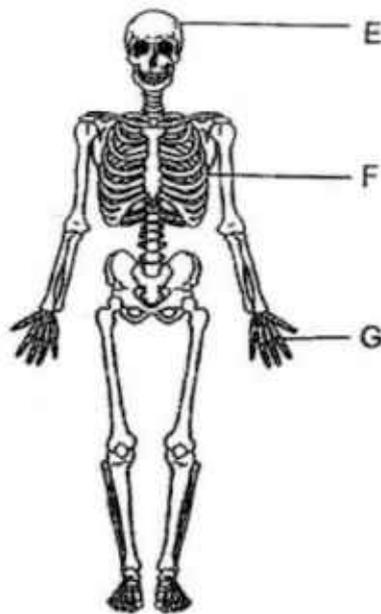
---

(c) Based on the flow chart, where would you put the following animals? Write the letter A, B, C or D, in the blanks provided. [1]

Chicken: \_\_\_\_\_

Tilapia: \_\_\_\_\_

33. The diagram below shows the human skeletal system.



(a) State the functions of part E and F. [1]

---

---

(b) Part G works with another organ system to allow a person to hold things. Name the organ system. [1]

---

(c) Name 2 organ systems that work together to transport oxygen to all parts of our body. [1]

---

---

34. Sherry found some eggs of a butterfly on the underside of a leaf. She started a journal to record her observations as shown below.

Date	Observation
1 May	Found an egg on the underside of a leaf
7 May	Egg turned into a caterpillar
19 May	Caterpillar turned into a pupa
4 July	Butterfly emerged from the pupal case

Based on Sherry's journal, answer the following questions.

- (a) When did larval stage start? [1]

---

- (b) On which date did the young of the butterfly stop eating and moving? [1]

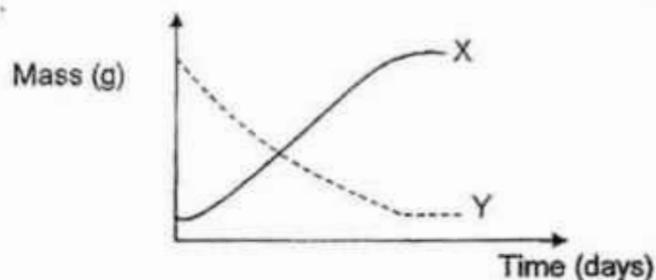
---

- (c) At which stage of the life cycle of the butterfly would it be considered to farmers? Explain your answer. [1]

---

---

35. The graph below shows the changes in the mass of a seed leaf and a seedling.



- (a) Which line X or Y, shows the changes in the mass of the seed leaf?  
Explain your answer. [1]

---



---

Ally carried out an experiment on the germination of seeds using set-up A as shown below. She placed the set-up next to the window.



set-up A

- (b) Give a reason why the seeds in set-up A did not germinate. [1]

---



---

She then carried out another experiment using set-up B as shown below.



set-up B

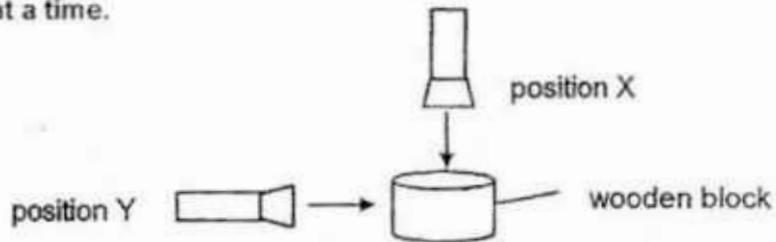
- (c) Would the seeds in set-up B germinate if it was placed in a dark room?  
Explain your answer. [1]

---

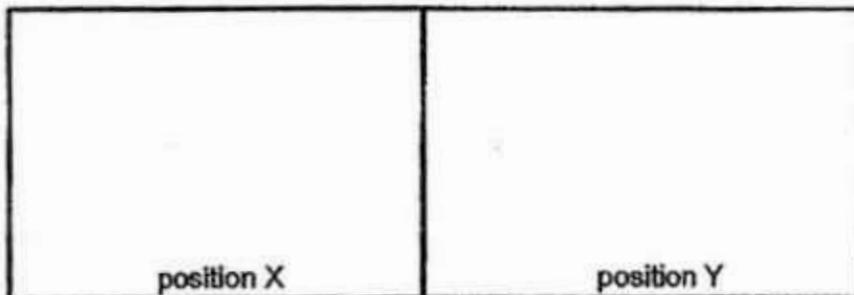


---

36. Shona shone a torch on a wooden block from two different positions X and Y, one at a time.



- (a) In the space provided, draw and shade the shadow cast when the torch is shone from position X and Y. [1]



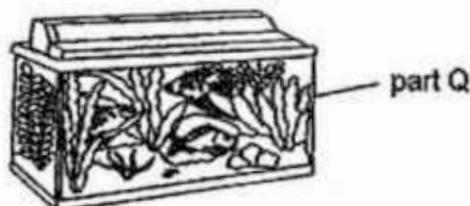
- (b) Explain how a shadow is formed. [1]

---



---

The picture below shows an aquarium.



- (c) Name the most suitable material for making part Q. [1]

---

- (d) Support your answer in (c) with two important properties which make it a suitable material. [1]

Reason 1: \_\_\_\_\_

Reason 2: \_\_\_\_\_

37. Jon wanted to find out which bag could carry the most number of marbles. He used three identical bags J, K and L, made of different materials. He placed the marbles, one at a time, in each bag until the bag broke.



He recorded his results in the table below.

Bag	Number of marbles in the bag when it broke
J	125
K	78
L	134

- (a) State the property of the material that Jon was testing. [1]

---

- (b) What is the most number of marbles Bag J can hold before breaking? [1]

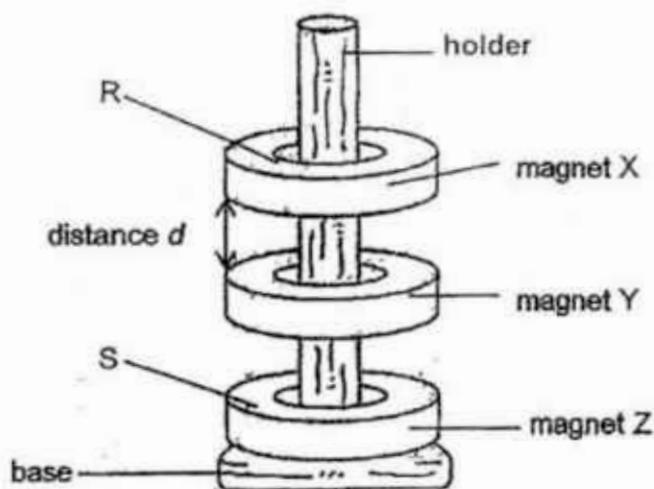
---

- (c) Explain why Jon must use marbles of the same size and material for his experiment. [1]

---

---

38. The diagram below shows three magnets X, Y and Z.



(a) What kind of material should the holder be made of? Explain your answer. [1]

---

---

(b) Jane observed that magnet X and Y were at a distance  $d$ , from each other. Give a reason for this observation. [1]

---

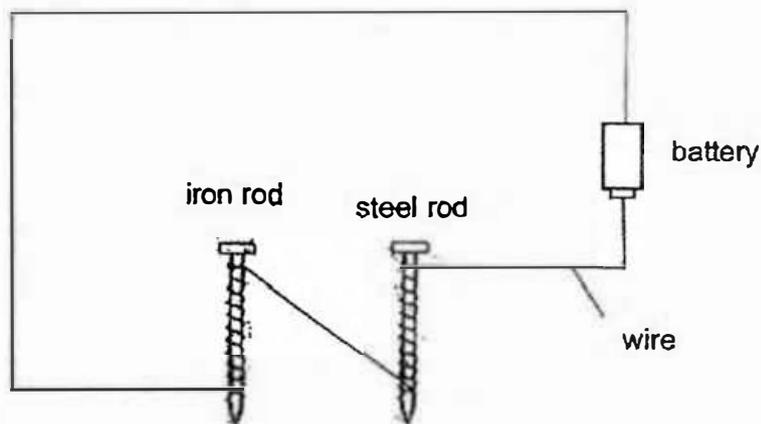
---

(c) Magnet X was heated at a high temperature for 30 minutes and then returned to its original position on the wooden rod. How would distance  $d$  be affected? Give a reason for your answer. [2]

---

---

39. A length of wire was coiled around two metal rods as shown in the diagram below. The ends of the wires were connected to a battery.



- (a) What would the two metal rods become when the wires are connected to the battery? [1]

---

The two rods were placed 5 cm above a tray of metal paper clips when the battery and wires were connected. The number of paper clips attracted to each rod is recorded in the table below.

	Iron rod	Steel rod
Number of paper clips attracted	18	9

- (b) From the results above, which material, iron or steel, is more suitable to be used to help sort out metals at a scrap yard? Explain your answer. [2]

---



---

- (c) If the metal paper clips are replaced by plastic paper clips, would the metal rods be able to attract the plastic paper clips? State a reason for your answer. [1]

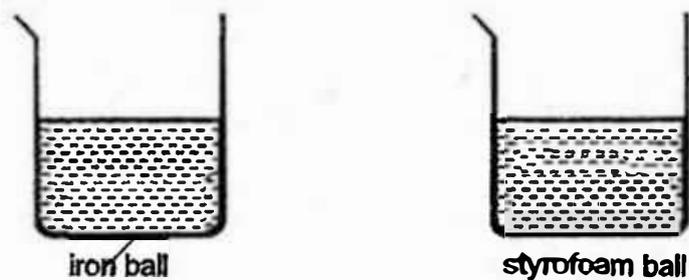
---



---

40. Kenny has two balls of the same size but made of different materials. One is made of styrofoam and the other is made of iron. He places them into two similar beakers of water, each containing 500 ml of water.

(a) Draw in the diagram below, the position of the balls after Kenny had placed them into the beakers. [1]

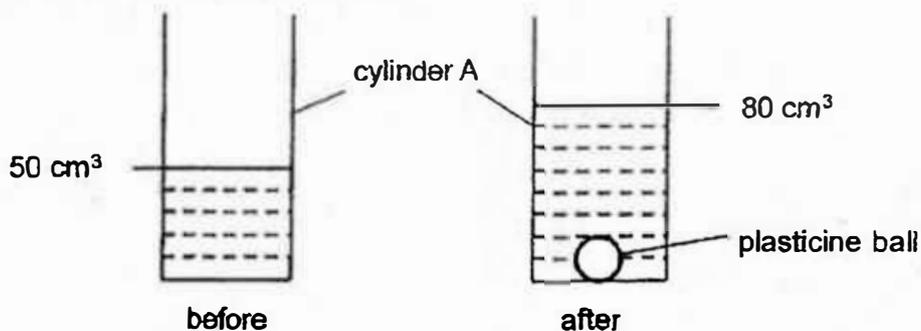


(b) Which of the balls would cause the level of water in the beaker to rise higher? Explain your answer. [2]

---

---

41. Kelvin poured  $50 \text{ cm}^3$  of water into cylinder A. He then lowered a  $30 \text{ cm}^3$  plasticine ball into the cylinder until it was full submerged. The water level rose as shown in the diagram below.



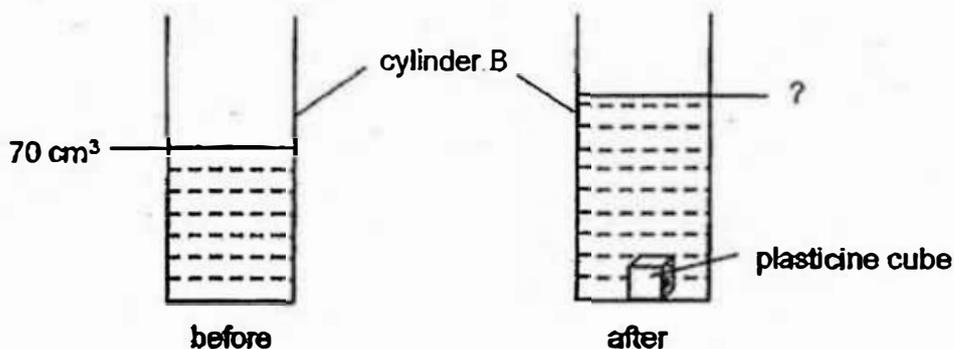
- (a) Based on the observation above, state a property of the plasticine ball. [1]

---



---

Kelvin then removed the plasticine ball from cylinder A and dried it. The plasticine ball was then moulded into the shape of a cube and placed into cylinder B as shown below.



- (b) What is the water level in cylinder B? [1]

---

- (c) What was Kelvin trying to find out when he changed the shape of the plasticine before he put it into cylinder B? [1]

---



---

**END OF BOOKLET B**



SCHOOL : CHIJ ST NICOLAS PRIMARY SCHOOL

LEVEL : PRIMARY 4

SUBJECT : SCIENCE

TERM : 2017 SA1

CONTACT :

---

**SECTION A**

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

Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	4	3	2	3	1	3	4	3	1

Q 21	Q22	Q23	Q24	Q25	Q 26	Q27	Q28
2	3	4	1	4	4	3	1

**SECTION B**

Q29)	a) Group X : Three stage life cycle Group Y : Four stage life cycle b) Three stage c) The nymph moulted because the old skin is too small for it and grow new skin as they become too big for their old skin.
Q30)	a) No, because some plant parts are poisonous but if that plant part is not poisonous, it can be eaten. b) The plant does not have a woody stem. It has a weak stem to climb the wall for support. c) The wall provides as a support for the stem to stay upright and climb upwards to get more sunlight to make food.
Q31)	a) Mould

	<p>b) Moist was present in box Y but not in Box Z.</p> <p>c) It needs moist to grow.</p>
Q32)	<p>a) It does not have scales and does not lay eggs.</p> <p>b) Animal C has scales while Animal B does not have scales.</p> <p>c) Chicken: B                      Tilapia: D</p>
Q33)	<p>a) To protect the lungs and the brain</p> <p>b) Muscular system</p> <p>c) The circulatory system and the respiratory system.</p>
Q34)	<p>a) 7<sup>th</sup> May</p> <p>b) 19<sup>th</sup> May</p> <p>c) Larval because it eats up the leaves of the plant and the leaves makes food for the plant. Without food, the plant will not be able to survive.</p>
Q35)	<p>a) Line Y as the seed leaves provide the food for the plant and it will lose mass after giving food for the growing seeding.</p> <p>b) As seeds need air to germinate, the layer of oil in Set-up A prevents the seeds from getting air to germinate.</p> <p>c) Yes as seeds do not need light to germinate.</p>
Q36)	<p>a)                         Position X                      Position Y</p> <p>b) A shadow is formed as light travels in straight lines so when an opaque object blocks light from passing through, it will form a shadow.</p> <p>c) Glass</p> <p>d) Reason 1: Glass is waterproof  Reason 2: It has to be transparent</p>
Q37)	<p>a) Strength</p> <p>b) 124</p> <p>c) To ensure a fair test and only the number of marbles affects the results.</p>

Q38)	<p>a) A non-magnetic material because magnetism can pass through it.</p> <p>b) Their like poles were facing each other so the magnets is repelled.</p> <p>c) Distance d will be similar as magnet X had loss most of its magnetism.</p>
Q39)	<p>a) They will both become an electro magnet.</p> <p>b) Iron rod as it attracted the most number of paper clips which means it has the stronger magnetism.</p> <p>c) No because plastic is a non-magnetic material and will not be attracted to the electro magnet.</p>
Q40)	<p>a)</p> <div data-bbox="411 943 616 1115" data-label="Image"> </div> <p>b) Iron ball as it sinks and takes up more space.</p>
Q41)	<p>a) It has a definite volume</p> <p>b) 100 cm<sup>3</sup></p> <p>c) He is trying to find out if the change of shape will affect the volume of the plasticine.</p>



**PRIMARY 4 MID-YEAR EXAMINATION 2017**

Name : \_\_\_\_\_ ( )

Date: 8 May 2017

Class : Primary 4 ( )

Time: 1 hour 45 minutes

Parent's Signature : \_\_\_\_\_

Marks: \_\_\_\_\_ / 58

**SCIENCE  
BOOKLET A**

**INSTRUCTIONS TO CANDIDATES**

Write your name, class and register number.

Do not turn over this page until you are told to do so.

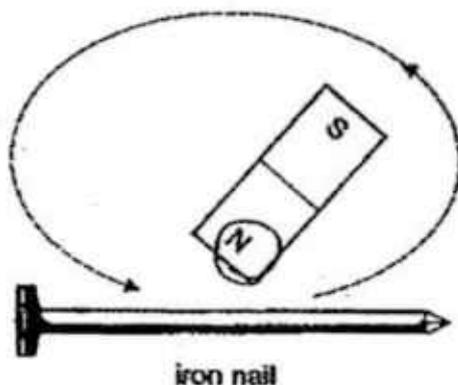
Follow all instructions carefully.

Answer all questions.

**Section A (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) and shade your answer on the Optical Answer Sheet.

1. John stroked an iron nail using the north pole of a magnet in the same direction for 20 times. He observed that the iron nail could attract 4 paperclips.



What should John do if he wants the iron nail to attract more than 4 paperclips?

- (1) Drop the iron nail on the floor.
  - (2) Heat the iron nail over a flame.
  - (3) Stroke the iron nail another 20 times using the north pole of the magnet in the same direction.
  - (4) Stroke the iron nail another 20 times using the south pole of the magnet in the same direction.
2. Which one of the following statements about roots is correct?
- (1) Roots transport water to all parts of the plant.
  - (2) Roots support the plant and help it to grow tall.
  - (3) Roots help the plant take in water and food from the soil.
  - (4) Roots prevent the plant from being uprooted during strong winds.

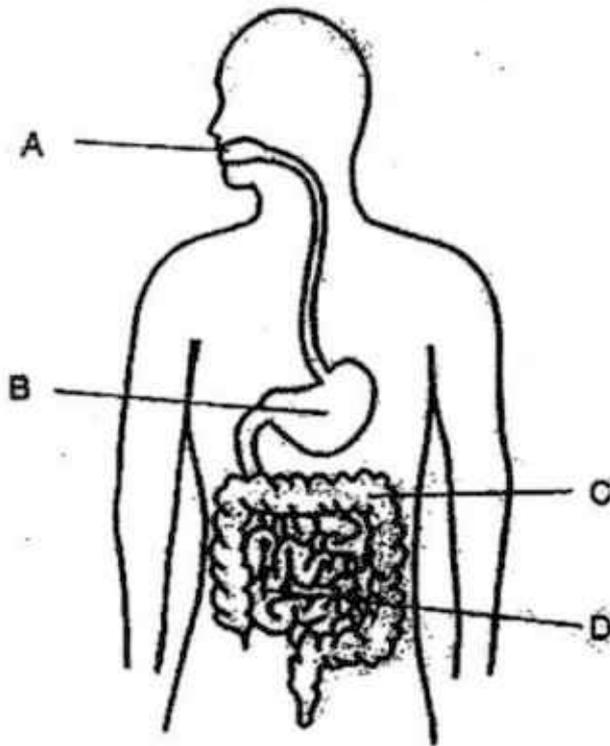
3. Animal X has the following characteristics.

- It has 1 pair of antennae.
- It has 2 pairs of wings.
- It has 3 pairs of legs.

What animal group does animal X belong to?

- (1) Fish
- (2) Bird
- (3) Insect
- (4) Mammal

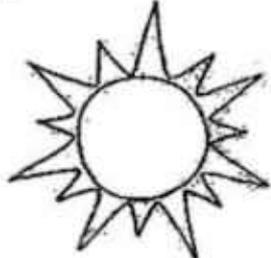
4. The diagram below shows the human digestive system.



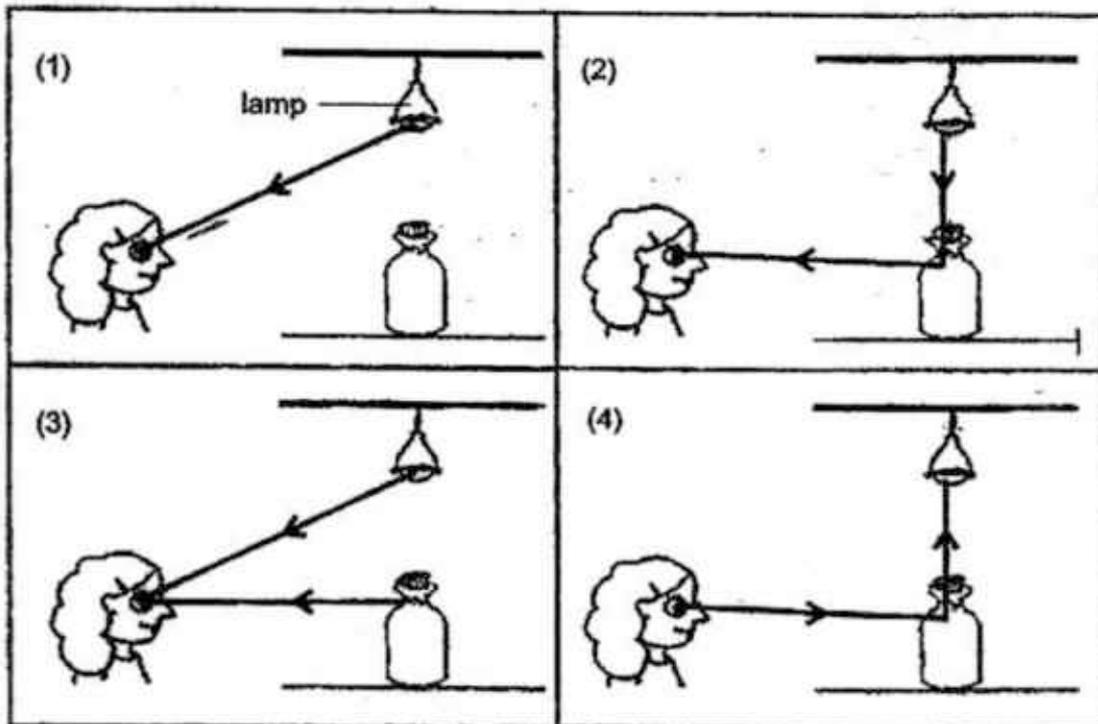
At which part, A, B, C or D, does digestion end?

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

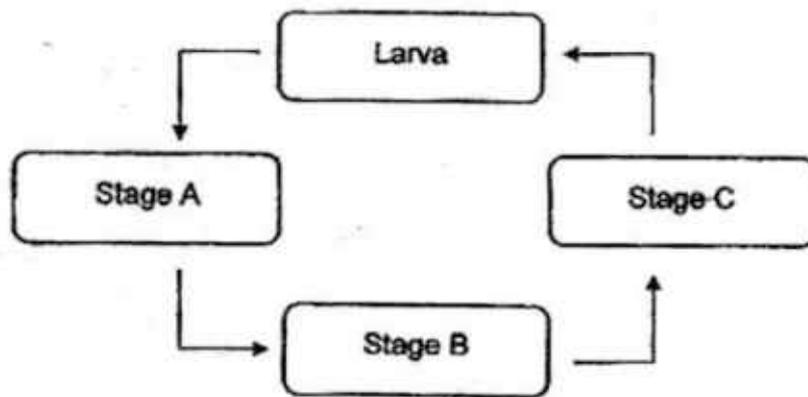
5. Which of the following gives off its own light?

(1) mirror 	(2) aluminium foil 
(3) Sun 	(4) Moon 

6. Mary is able to see a bottle under a lamp. Which one of the diagrams below correctly shows the path of light that enables her to see the bottle?



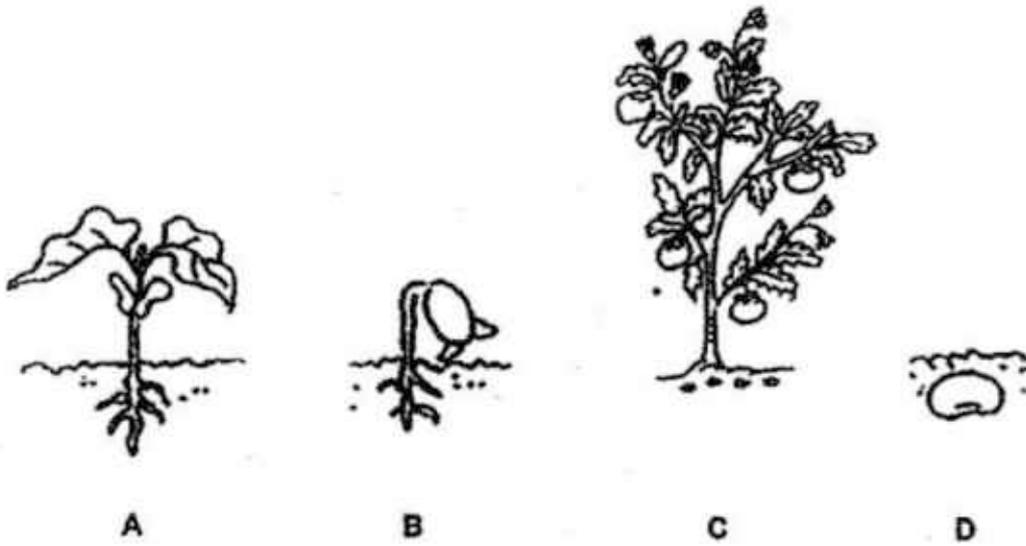
7. The diagram below shows the life cycle of an insect.



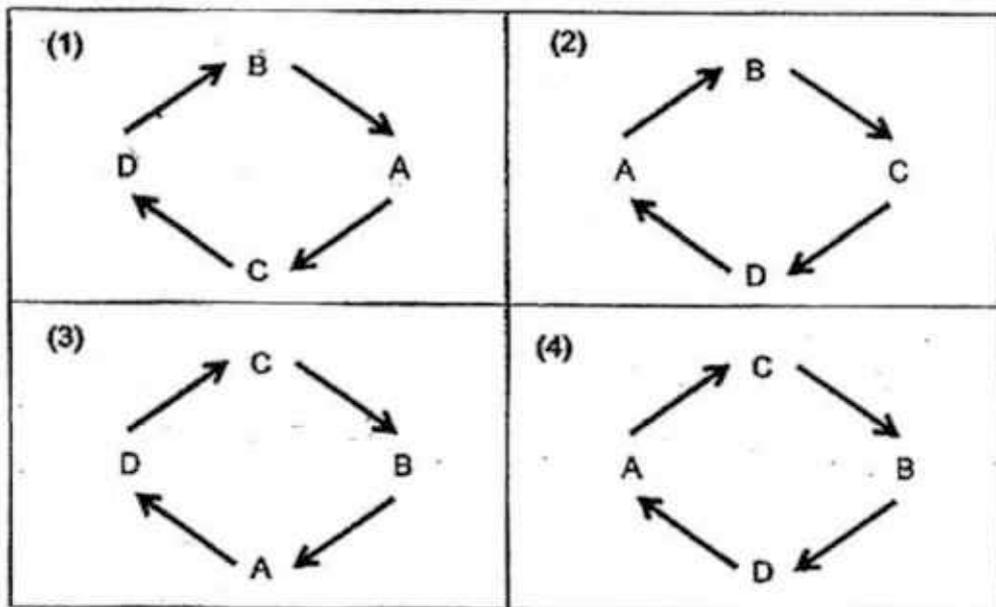
Which are the stage(s) that the insect does not feed?

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

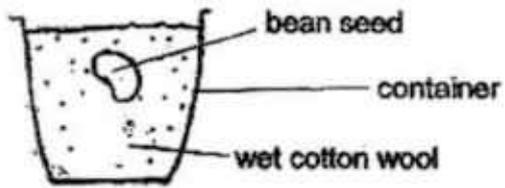
8. Cindy drew pictures of different stages of the life cycle of a plant.



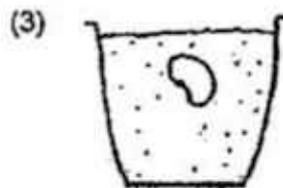
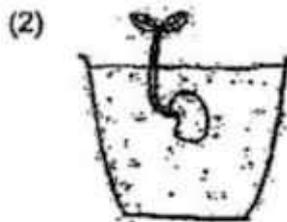
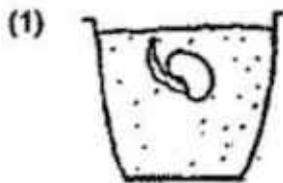
Which of the following shows the correct sequence of the life cycle of the plant?



9. Muthu placed a bean seed into a container of wet cotton wool as shown below. He placed it on a table near a window.



Which one of the following diagrams shows what he would first observe after a few days?



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

- (1) Oil
- (2) Ice
- (3) Glass
- (4) Music

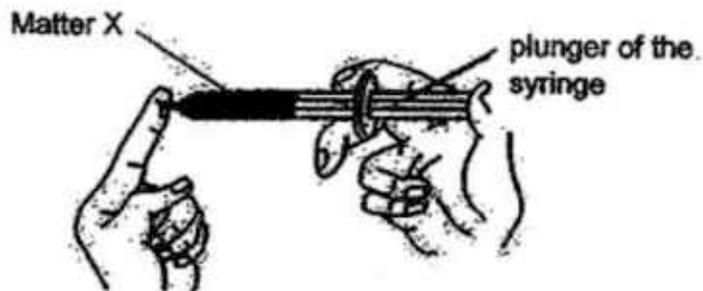
11. The table below shows the properties of 3 matters, A, B and C.

	A	B	C
<b>Has fixed shape</b>	No	Yes	No
<b>Has fixed volume</b>	Yes	Yes	No

Which of the following are correct examples of matters A, B and C?

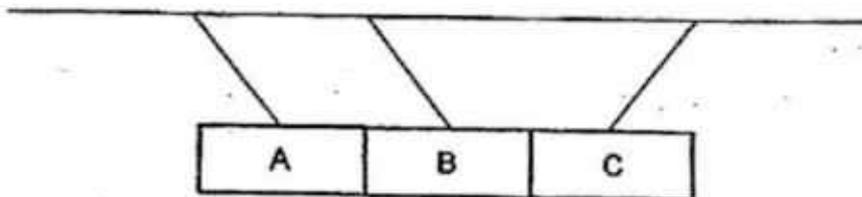
	A	B	C
(1)	saliva	air	book
(2)	saliva	book	air
(3)	book	air	saliva
(4)	book	saliva	air

12. Remmy filled the syringe below with 5 cm<sup>3</sup> of matter X and covered the nozzle with his finger. He could push in the plunger of the syringe slightly.



What can he conclude about matter X?

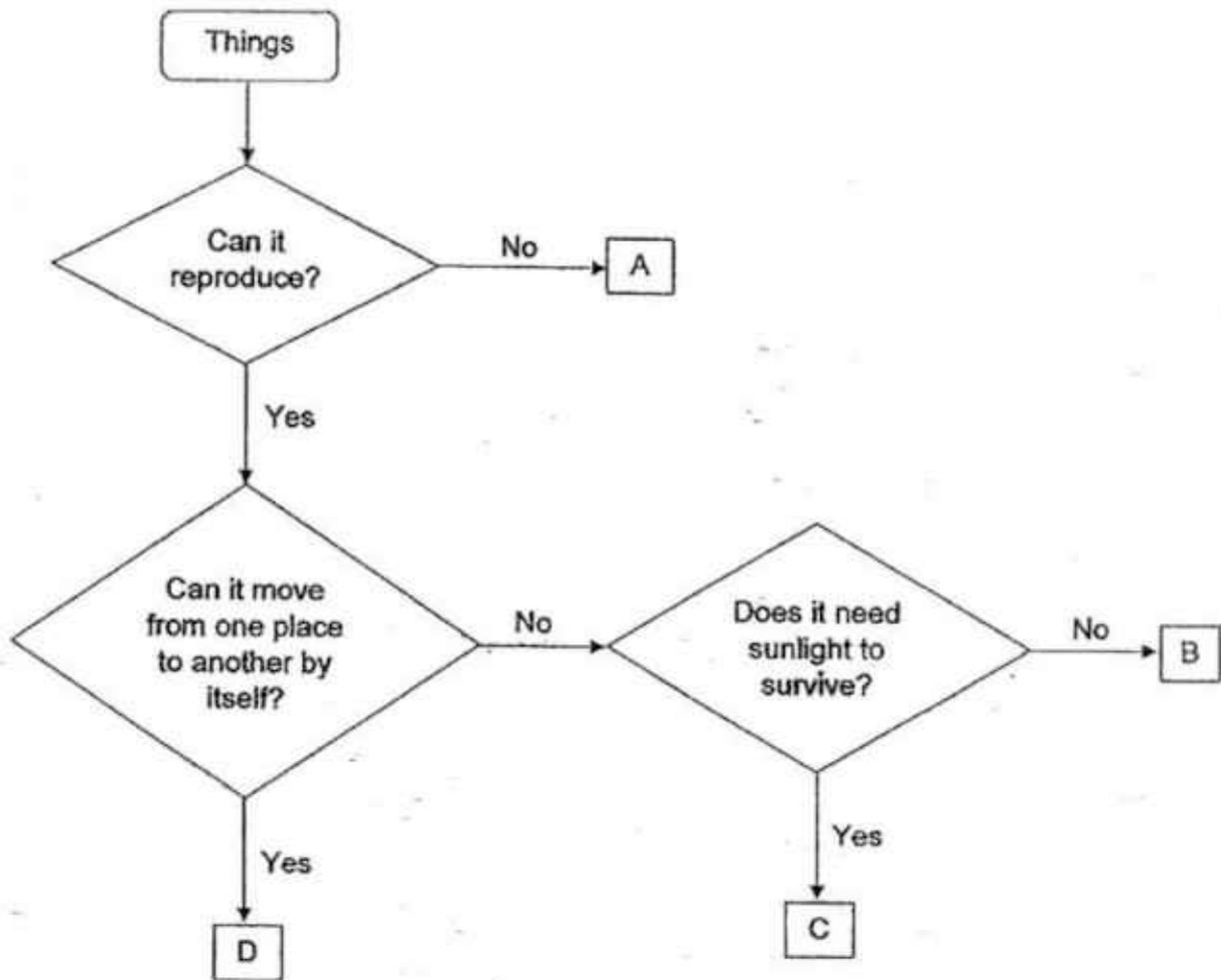
- (1) Matter X is a solid.
  - (2) Matter X is a liquid.
  - (3) Matter X has a fixed volume.
  - (4) Matter X can be compressed.
13. 3 bars, A, B, and C, are suspended in the air. The diagram below shows the positions of the bars when they are brought near each other.



Which statement is definitely true?

- (1) Bar A is repelling Bar C.
- (2) None of the bars are magnets.
- (3) Bar B is made of a non-magnetic material.
- (4) All the bars are made of magnetic materials.

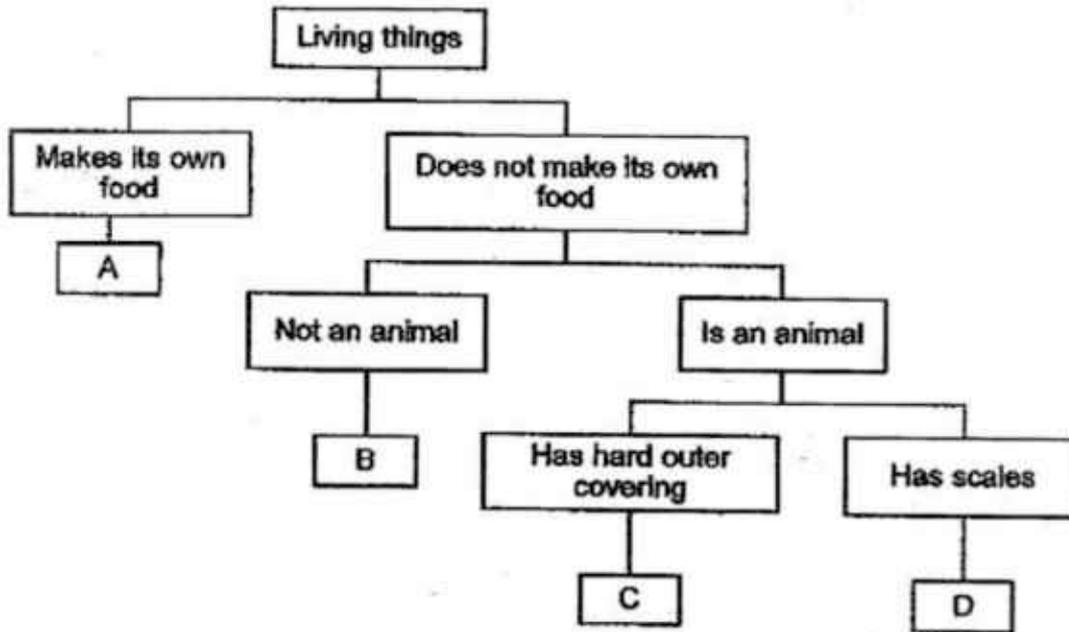
14. Study the flow chart below.



Which of the above items, A, B or C, could likely be a pencil and a mushroom?

	Pencil	Mushroom
(1)	A	B
(2)	A	C
(3)	B	C
(4)	C	A

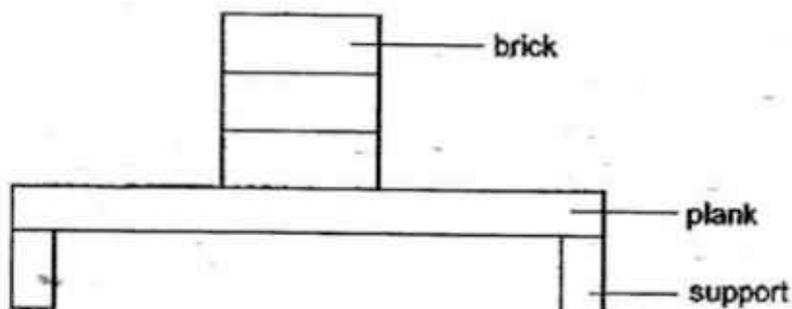
15. Study the classification chart below.



What could A, B, C and D be?

	A	B	C	D
(1)	mould	bacteria	butterfly	crocodile
(2)	fern	bacteria	butterfly	crocodile
(3)	fern	mould	crocodile	butterfly
(4)	bacteria	fern	butterfly	crocodile

16. Mei Yu wanted to investigate the strength of 4 similar planks made of different materials, P, Q, R and S. She placed identical bricks, one at a time, on each plank as shown below until it broke.



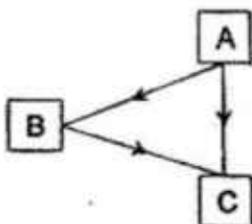
The results were recorded in the table below.

Material	Number of bricks needed to break the plank
P	34
Q	89
R	50
S	11

Which material is most suitable for making a bench for people to sit on?

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

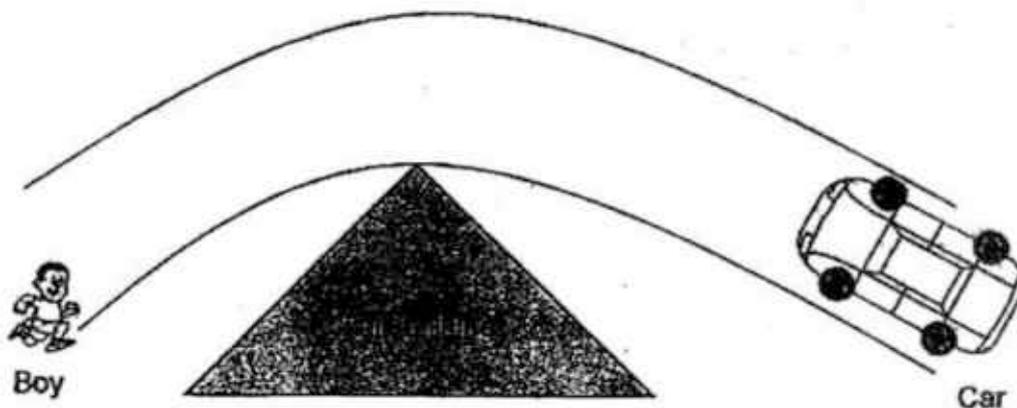
17. The diagram below shows how Jerry is able to see a ball and a lamp.



Which of the following correctly matches the letters, A, B and C, to Jerry, the ball and the lamp?

	A	B	C
(1)	Jerry	lamp	ball
(2)	Jerry	ball	lamp
(3)	lamp	Jerry	ball
(4)	lamp	ball	Jerry

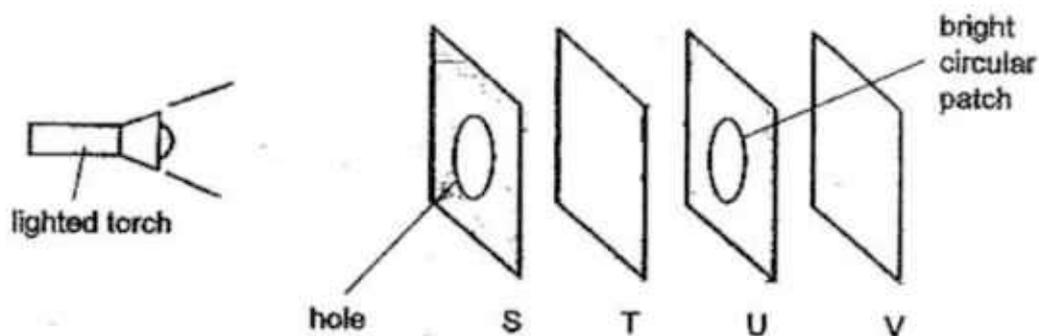
18. A driver was driving his car around a corner of a tall building on a sunny day.



The driver of the car could not see the boy running because \_\_\_\_\_.

- (1) there was no light
- (2) light is not a matter
- (3) light travels in a straight line
- (4) light could not be reflected off the boy

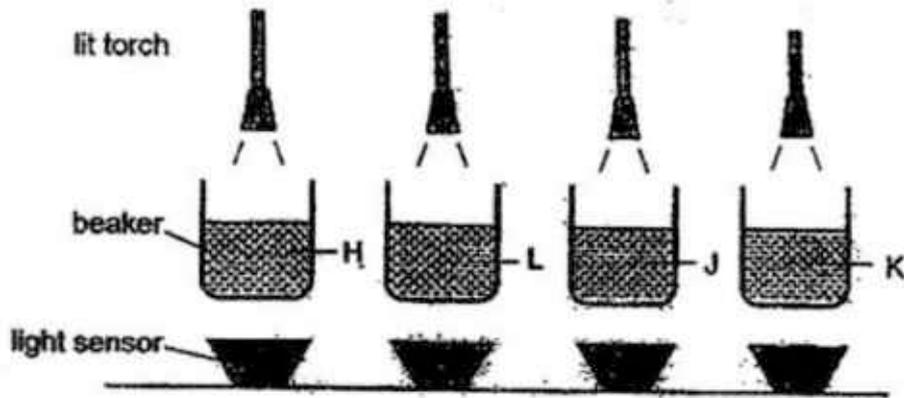
19. Li Peng set up the following experiment using four sheets made of different materials, S, T, U and V. When the torch was switched on, a small, bright circular patch of light was seen on sheet U only.



Which of the following best describes the properties of the materials?

	Allows most light to pass through	Does not allow any light to pass through	Not possible to tell
(1)	S and T	U	V
(2)	T	S and U	V
(3)	S	T	U and V
(4)	T	S	U and V

20. Johnny wanted to find out how much light can pass through 4 different liquids, H, L, J and K. He set up the experiment shown below with 200 ml of each liquid in the respective beakers in a dark room.



His observations for each liquid is as follow.

Light sensor readings (units)			
H	L	J	K
0	70	111	25

Which one of the following statements is correct?

- (1) J is opaque.
- (2) H allows most light to pass through.
- (3) All liquids allow light to pass through.
- (4) L allows more light to pass through than K.

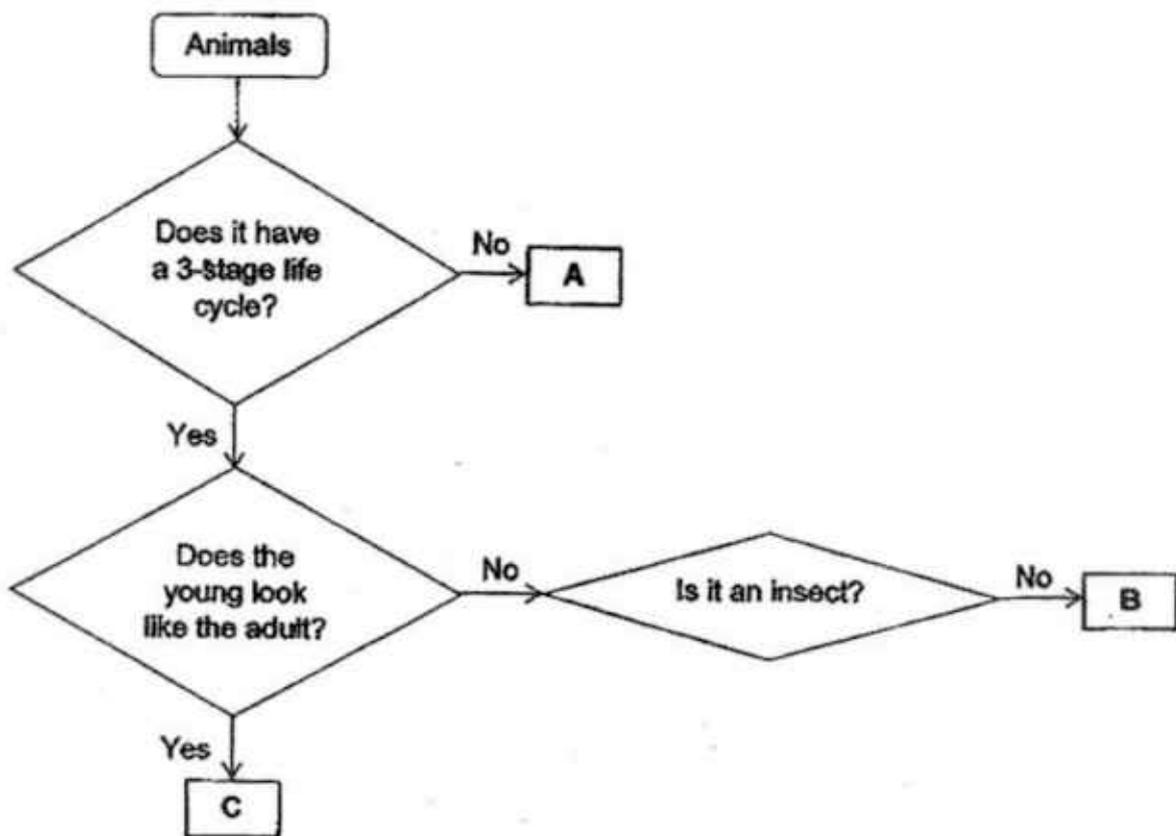
21. Faridah observed the growth of a living thing over 2 weeks. She recorded her observations in the table below.

Date	Observation
03 January 2017	Egg hatched into a larva.
10 January 2017	Larva became a pupa.
14 January 2017	Pupa became an adult.

Based on Faridah's observations, which of the following statements is definitely true?

- (1) The young resembles the adult.
- (2) The pupa eats a lot to develop into an adult.
- (3) The living thing spends most of its life cycle in the water.
- (4) The living thing has the same number of stages in its life cycle as a butterfly.

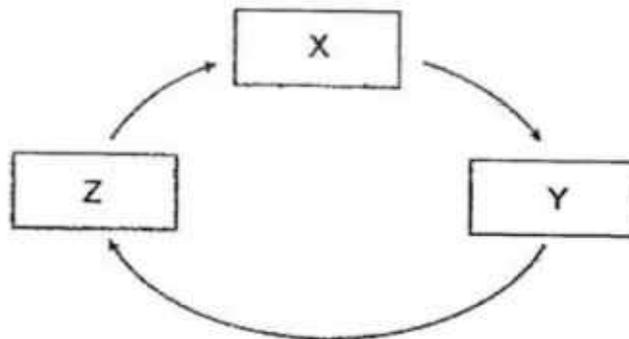
22. Study the flow chart below.



Based on the information given above, which of the following correctly represent animals A, B and C?

	A	B	C
(1)	mosquito	beetle	grasshopper
(2)	frog	cockroach	chicken
(3)	mosquito	grasshopper	chicken
(4)	beetle	frog	cockroach

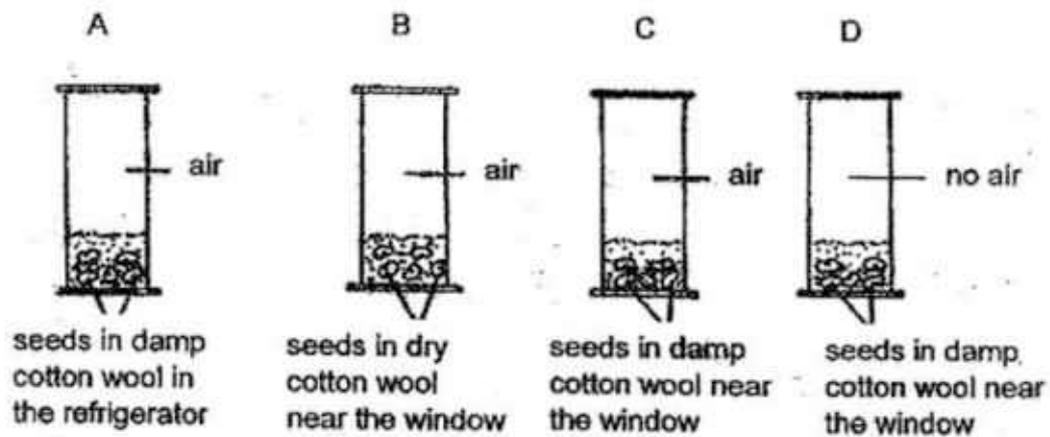
23. Study the life cycle of a flowering plant below.



Which of the following correctly represent the stages X, Y and Z?

	X	Y	Z
(1)	seedling	young plant	adult plant
(2)	adult plant	young plant	seed
(3)	young plant	adult plant	seed
(4)	adult plant	seedling	seed

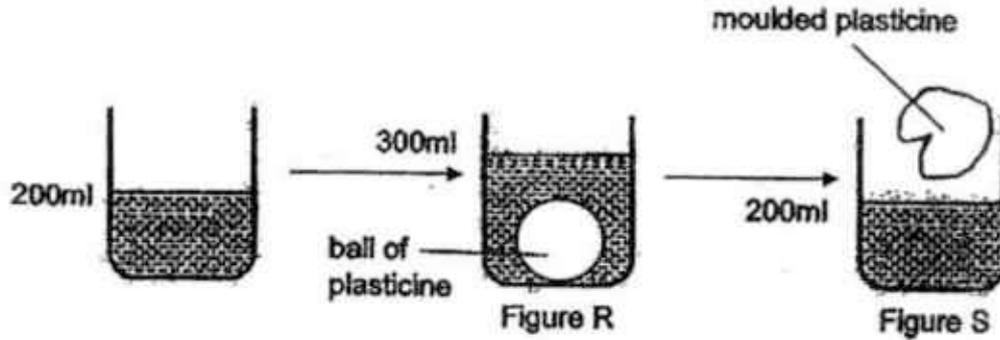
24. The jars below contain seeds from a plant. Jar A is placed in the refrigerator while jars B, C and D, are placed near the window.



In which jars, A, B, C or D, will the seeds most likely germinate?

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

25. A ball of plasticine was put into a beaker containing 200 ml of water. The water level increased to 300 ml, as shown in Figure R.

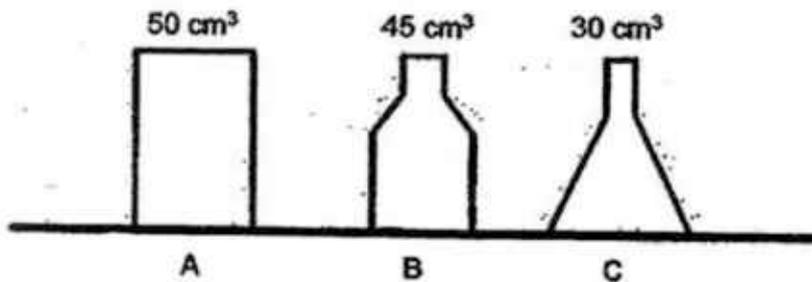


The plasticine was then removed from the water and moulded into another shape. It was put back into the beaker as shown in Figure S.

What would the new water level be?

- (1) 200 ml
- (2) 300 ml
- (3) 400 ml
- (4) 500 ml

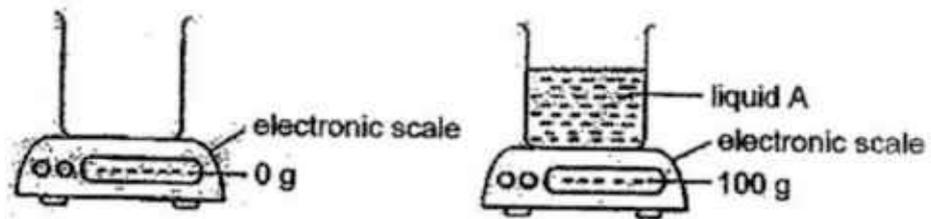
26. Sammy has 3 sealed containers, A, B and C, as shown below.



Which container(s), A, B and/or C, can Sammy pump in 45 cm<sup>3</sup> of air?

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

27. The two beakers below were identical.



The above shows that liquid A \_\_\_\_\_.

- (1) has mass
- (2) has volume
- (3) is transparent
- (4) occupies space

28. Ramlee has a sealed ping pong ball of mass 2.5 g. The ball became dented after being pressed as shown below.



Which one of the following statements on the ping pong ball is true? The ping pong ball \_\_\_\_\_.

- (1) is lighter now
- (2) is heavier now
- (3) occupies more space now
- (4) has the same mass as before

End of Booklet A

**PRIMARY 4 MID-YEAR EXAMINATION 2017**

Name : \_\_\_\_\_ ( )

Date: 8 May 2017

Class : Primary 4 ( )

Duration: 1 hour 45 minutes

Parent's Signature : \_\_\_\_\_

**SCIENCE  
BOOKLET B**

**INSTRUCTIONS TO CANDIDATES**

Write your name, class and register number.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

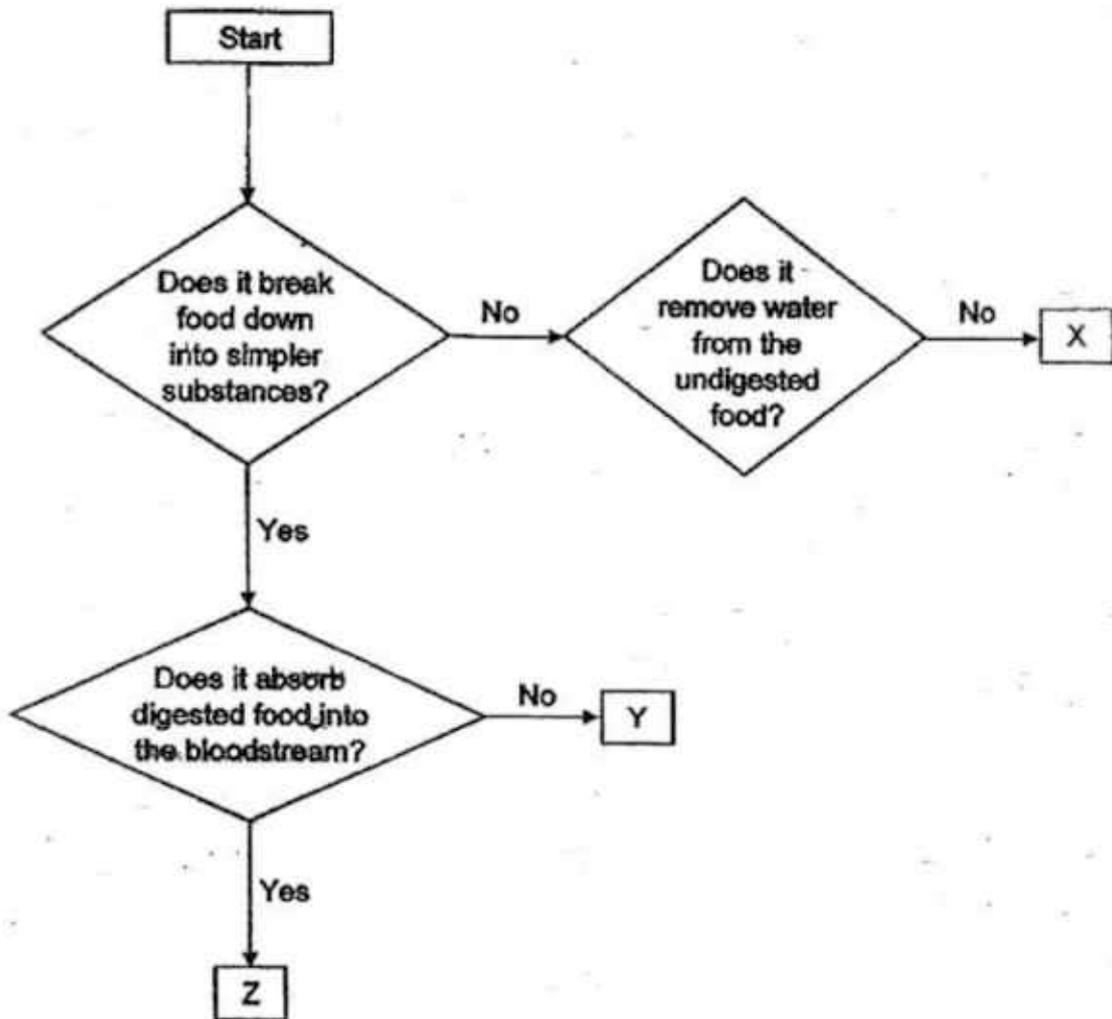
Answer all questions.

<b>Booklet A</b>	<b>56</b>
<b>Booklet B</b>	<b>44</b>
<b>Total</b>	<b>100</b>

**Section B (44 marks)**

For questions 29 to 42, write your answers in this booklet. The number of marks available is shown in [ ] at the end of each question or part question.

29. Study the flow chart on the parts of a human digestive system below.



Identify parts X, Y and Z, in the human digestive system.

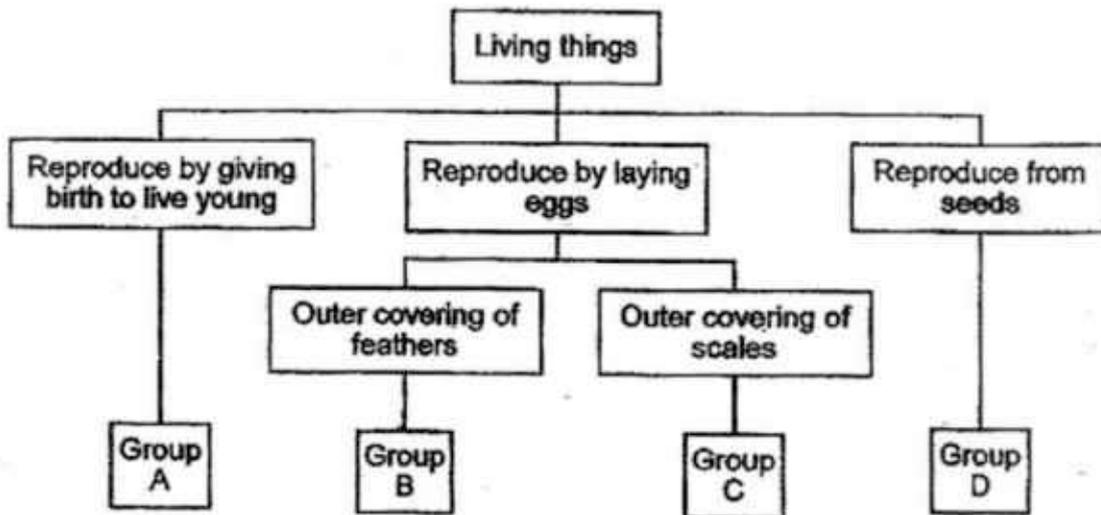
[3m]

(a) X: \_\_\_\_\_

(b) Y: \_\_\_\_\_

(c) Z: \_\_\_\_\_

30. Study the classification chart below.



Organism X



Organism Y

(a) Which groups, A, B, C or D, do organisms X and Y belong to?

[2m]

Organism X: \_\_\_\_\_

Organism Y: \_\_\_\_\_

The table below shows some organisms being classified into the above groups A, B, C and D.

Group A	Group B	Group C	Group D
elephant	penguin	snake	mango tree
dolphin	peacock	goldfish	bird's nest fern

(b) Which organism has been classified wrongly? Explain why.

[1m]

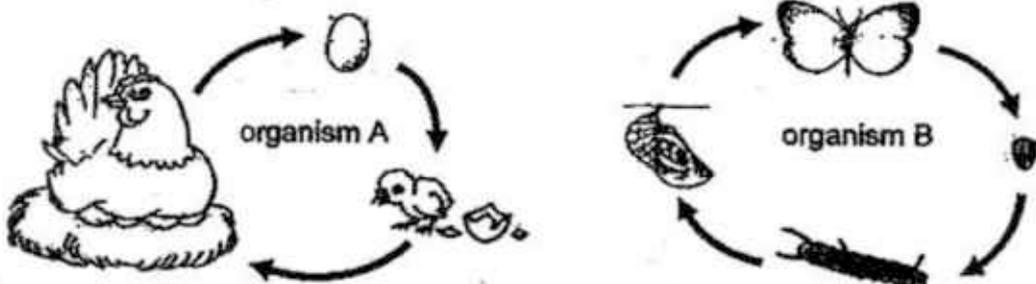
\_\_\_\_\_

31. Classify the following objects according to the amount of light that can pass through them by completing the table below. [3m]

mirror	wooden table	tracing paper
clear glass window	aluminium foil	textbook

Allow most light to pass through	Allow some light to pass through	Allow no light to pass through

32. The diagrams below show the life cycles of organism A and organism B.



(a) Based on the diagrams above, state one similarity between the life cycles of organisms A and B. [1m]

---



---

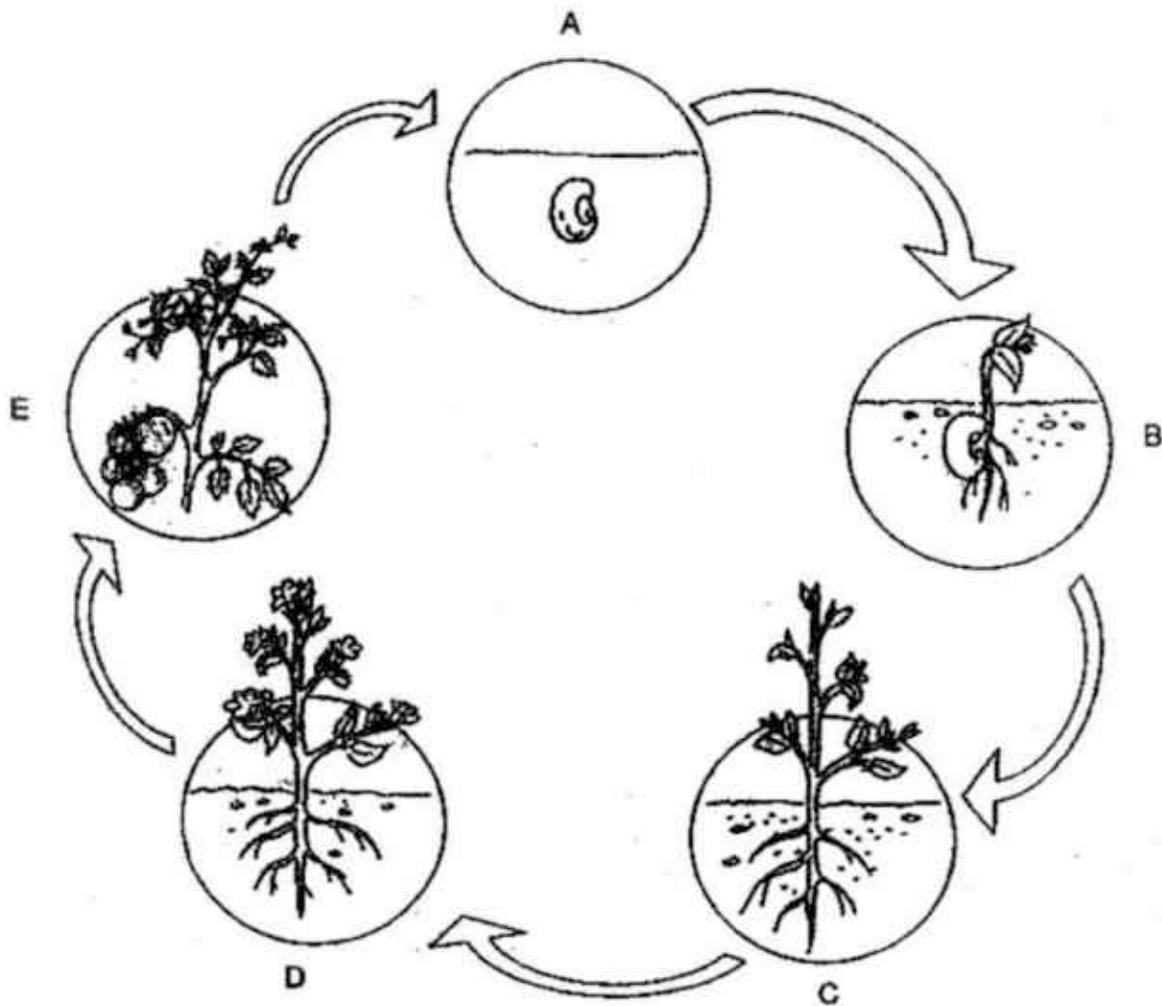
(b) Based on the diagrams above, state one difference between the life cycles of organisms A and B. [1m]

---



---

33. David studied the life cycle of a plant as shown below.



- (a) Based on the diagram above, at which stage(s), A, B, C, D or E, is the plant **unable** to reproduce? [1m]

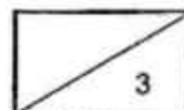
---

- (b) State two characteristics of the plant that helped David classify it as a flowering plant. [1m]

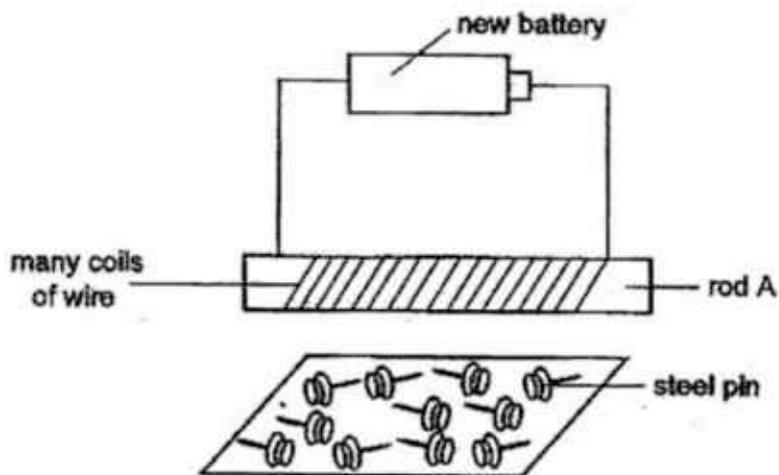
---

34. Write "Yes" or "No" in the boxes below to show whether the following objects have the stated properties. [3m]

Object	Properties of object	
	Has a definite shape	Has a definite volume
sand		
oil		
water		
air		
pencil		
ice cubes		



35. Hassan conducted an experiment using rod A in the set-up below. He brought it near a tray of steel pins. Rod A did not attract any steel pins.



Hassan replaced rod A with rod B <sup>in</sup> his set-up and hence the set-up could now attract 3 steel pins.

(a) Describe the difference between rod A and rod B. [1m]

---



---

(b) What can Hassan do to the set-up if he wants to attract more than 3 steel pins? [1m]

---



---

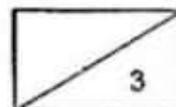
Hassan brought the set-up with rod B near a metal bar, J. The metal bar moved away.

(c) Explain why the metal bar, J, moved away. [1m]

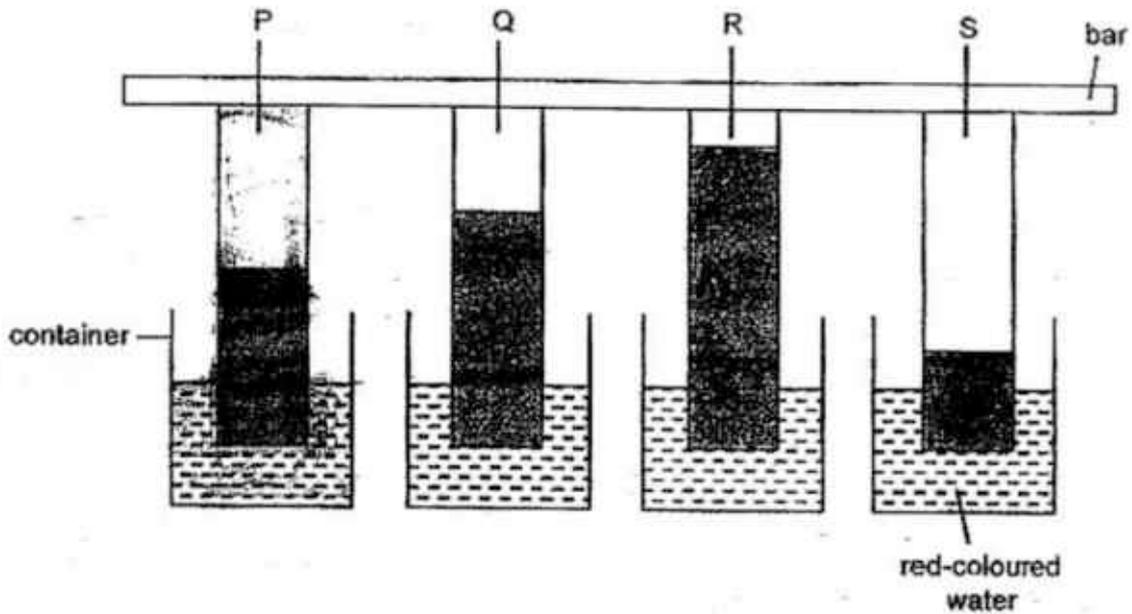
---



---



36. Diane wanted to find out how much water different materials could absorb. She hung 4 strips made of different materials, P, Q, R and S, over 4 identical containers of red-coloured water as shown below. Her observation after 10 minutes is shown below.



- (a) Based on *Diana's observation*, which material is most suitable for making amount? Explain why. [1m]

---

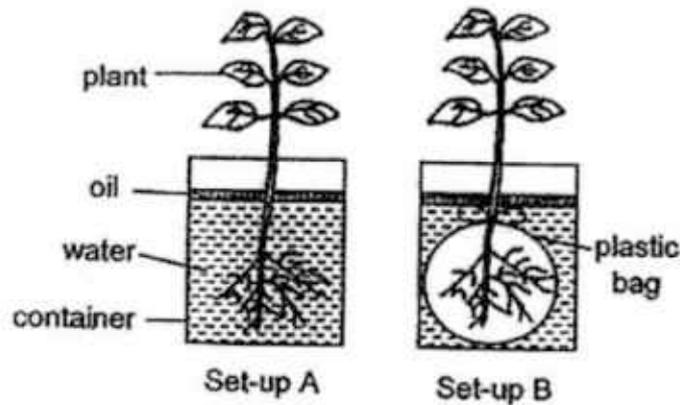
---

- (b) Besides the amount of red-coloured water in each *beaker*, state 2 other variables which must be kept the same when conducting this experiment. [2m]

---

---

37. Ramesh placed the following set-ups with 2 plants in identical containers, each containing 200 ml of water as shown below, near a window. After 2 days, he measured the amount of water in each beaker.



(a) Complete the table below with the letters, A and B, to show the correct results of the experiment. [1m]

Amount of water left in each beaker (ml)	Set-up
200	
185	

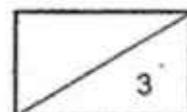
(b) Based on the above results, what conclusion can Ramesh make about the roots? [1m]

\_\_\_\_\_

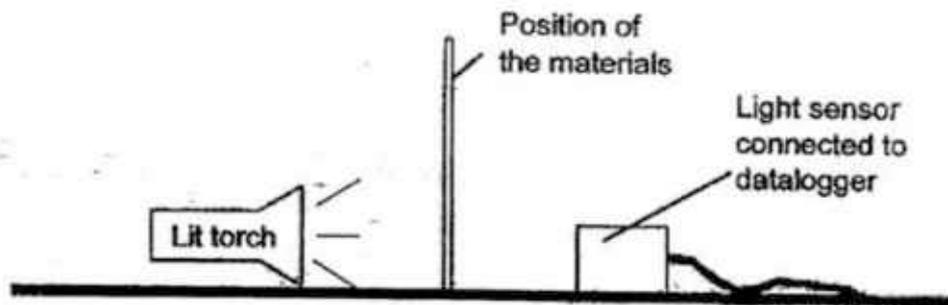
(c) After 3 days, the plant in set-up B started turning yellow. What will happen to the plant in set-up B after 10 days? [1m]

\_\_\_\_\_

\_\_\_\_\_



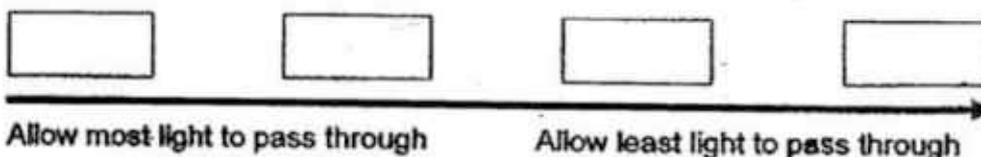
38. Mr Wong carried out an experiment to investigate the amount of light passing through four different materials, A, B, C and D.



When no material was placed between the torch and light sensor, the amount of light detected was 1000 units. The table below shows the amount of light passing through the four materials.

Material	Amount of light detected (units)
A	999
B	0
C	19
D	500

- (a) Arrange the materials, A, B, C and D, according to the amount of light that can pass through them in the boxes below. [1m]



- (b) Mr Wong wants to build a shelter to provide shade for the spectators watching a soccer match. Based on the results, which one of the materials, A, B, C or D, will be most suitable to make the shelter? Explain your choice. [1m]

---



---

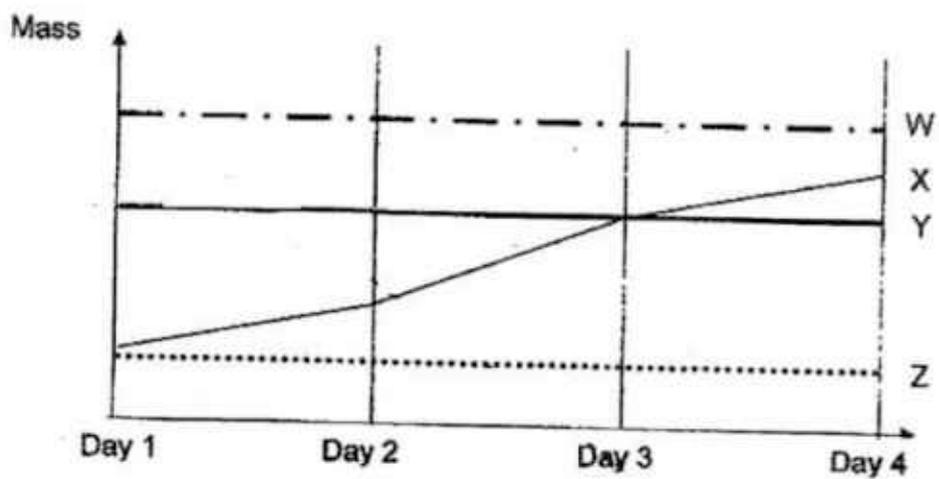
- (c) Other than the positions of the torch and light sensor, state another 2 variables which Mr Wong needs to ensure that they are kept constant for a fair test. [2m]

---



---

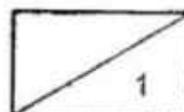
(d) The diagram below shows a graph of the mass of the different stages of a butterfly.



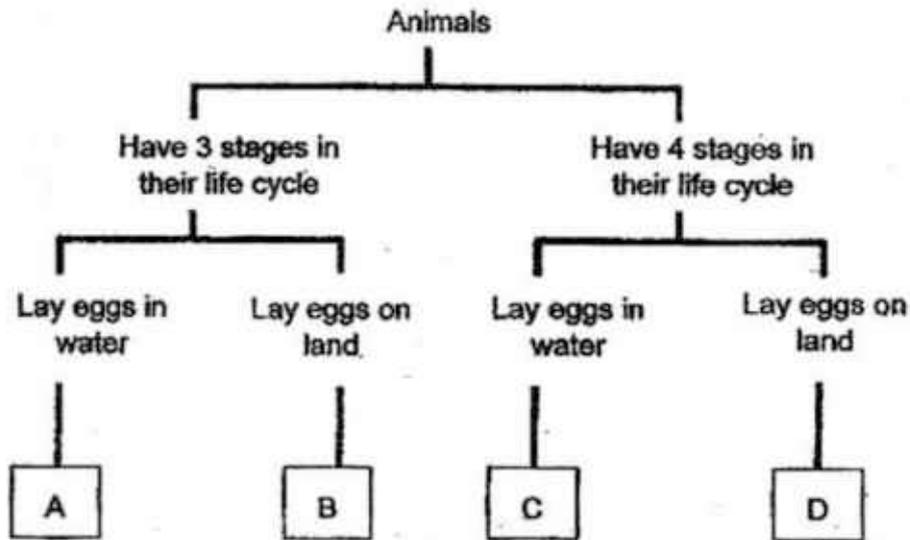
Which line in the graph, W, X, Y or Z, represents the mass of a butterfly larva?  
Explain why.

[1m]

---



39. Study the classification chart below.



(a) State one similarity between Animals B and D.

[1m]

---

(b) State one difference between Animals B and D.

[1m]

---

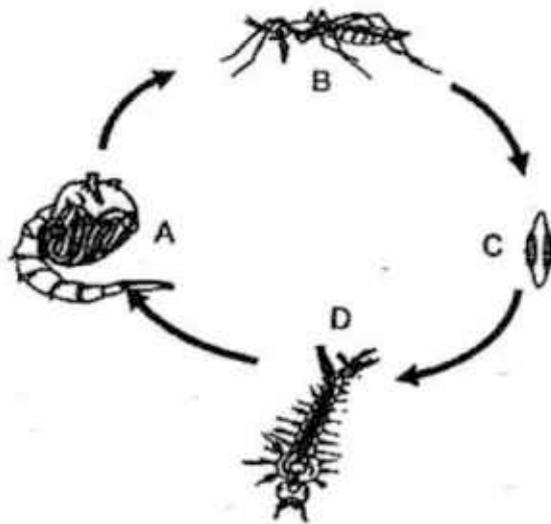
(c) Which of the letters, A, B, C or D, represent the following animals?

[1m]

(i) frog : \_\_\_\_\_

(ii) butterfly : \_\_\_\_\_

40. Study the life cycle below.



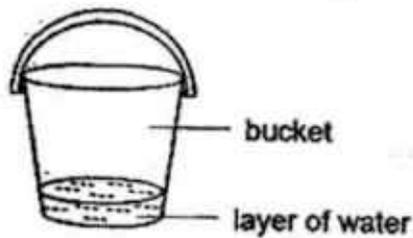
(a) At which stage(s), A, B, C and/or D, of the life cycle above does the animal live in water? [1m]

\_\_\_\_\_

(b) At which stage of the life cycle, A, B, C or D, would it be the most difficult to get rid of the mosquito? [1m]

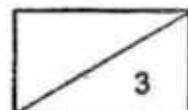
\_\_\_\_\_

(c) Jess noticed that there was some water collected in the bucket left in her home. There were some young mosquitoes in the water.

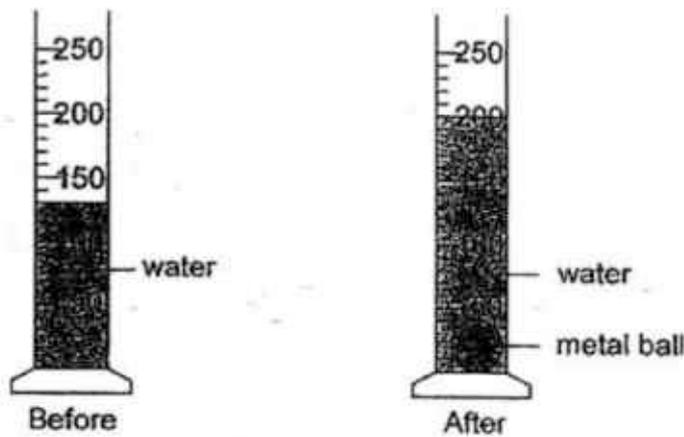


What can she do to get rid of them?

[1m]



41. Roy poured some water into a 250 cm<sup>3</sup> measuring cylinder. He lowered a metal ball into the cylinder until it was fully submerged as shown below.



- (a) What is the volume of the metal ball ? [1m]

---

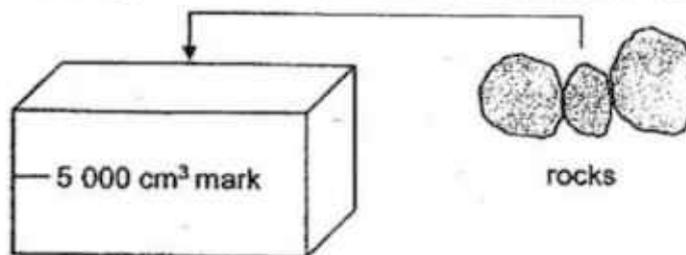
- (b) He repeated the experiment with a rubber ball that had the same shape and size as the metal ball. Predict if the water level would be higher, lower or remain the same as when the metal ball was in the water. Explain why. [1m]

---



---

- (c) Roy has a fish tank. He had to pour 5 000 cm<sup>3</sup> of water to reach the mark as shown below.



After adding some rocks in the fish tank, he noticed that he did not need to pour 5 000 cm<sup>3</sup> of water to reach the mark. Why is this so? [2m]

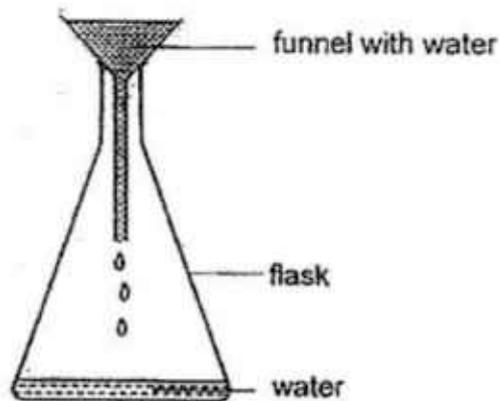
---



---



42. Xander placed a funnel filled with water on top of a flask as shown below.



He observed that the water **did not flow easily** into the flask. After several seconds, the water stopped flowing completely.

- (a) Explain why the water in the funnel stopped flowing into the flask. [2m]

---

---

- (b) (i) What can Xander do to allow the water to flow into the flask easily? [1m]

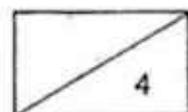
---

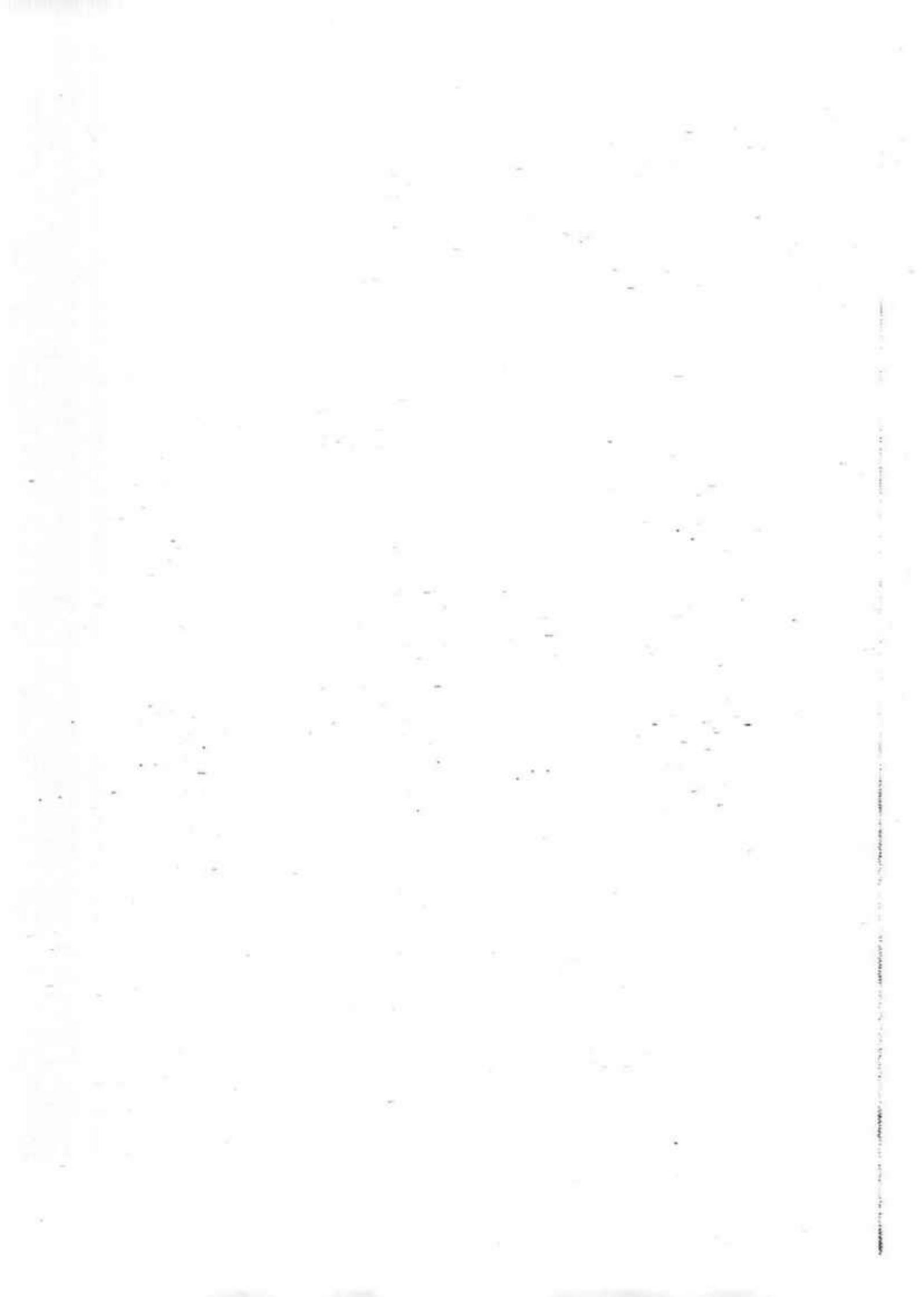
---

- (ii) Explain your answer in (i). [1m]

---

End of Paper





**EXAM PAPER 2017 (P4)**

**SCHOOL : Tao Nan**

**SUBJECT : Science**

**TERM : SA1**

**ORDER CALL :**

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

29)a)X : Gullet

b)Y : Mouth

c)Z : Small intestine

30)a)Organisms X : Group C

Organisms Y : Group B

b)It is the bird's nest fern. The bird's nest fern reproduces from spores unlike the organisms in group D which reproduces from seeds.

31)Allow most light to pass through – clear glass window

Allow some light to pass through – tracing paper,

Allow no light to pass through – wooden table , aluminium foil , text book , mirror

32)a)Organisms A and B have the egg stage

b)Organisms A has a 3 stage life cycle while organisms B has a 4 stage life cycle.

33)a)It is A , B and C

b)It has a flowers and it bears fruits

34)sand – Yes , Yes

Oil – No , Yes

Water – No , Yes

Air – No , No

Pencil – Yes , Yes

Ice cubes – Yes , Yes

35)a)Rod A is made of non-magnetic material while rod B is made of magnetic material.

b)Hassan could add more batteries to the set-up

c)Metal bar J is a magnetic, Like poles of both magnet are facing each other, hence they repel.

36)a)Material R. It absorbed the most red-coloured water. It cloud dry the person using the towel most.

b)Size of strip. Length of strip in red-coloured water

37)a)200 – B

185 – A

b)Roots help the plant to take in water

c)The plant in set-up B will die

38)a)A – D – C – B

b)B. It does not allow light to pass through

c)The thickness of the materials must be the same. The place where the experiment was carried out must be the same.

39)a)They lay eggs on land

b)Animal B has a 3 stage life cycle while animal D has a 4 stage life cycle.

c)i)frog – A

ii)butterfly – D

40)a)It is C , D and A

b)It is B

c)She could cover the water with oil

41)a)It is 70cm<sup>3</sup>

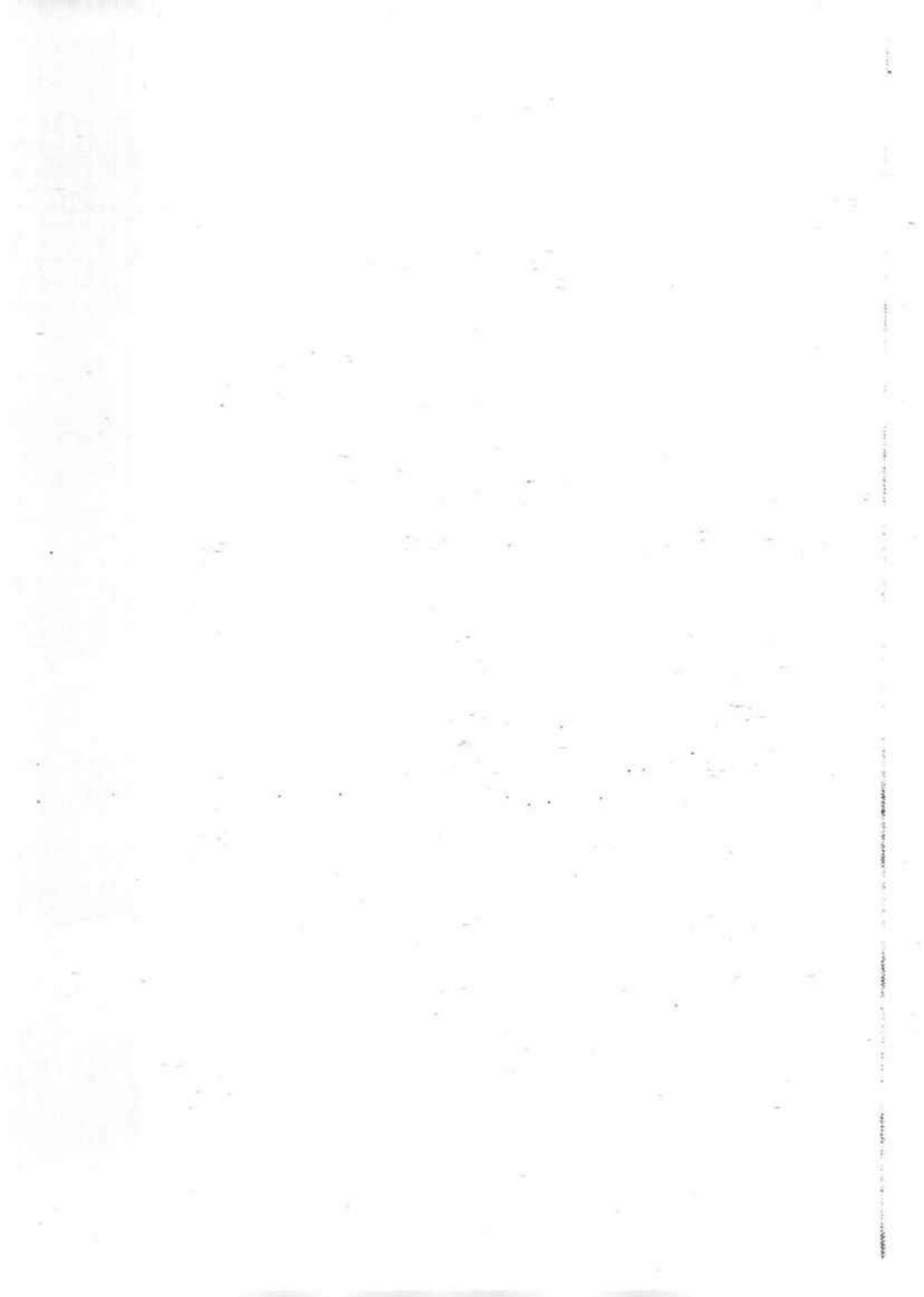
b)The water level would remain the same. Even though the metal ball may be heavier than the rubber ball but their volume is the same so the water level will still be the same.

c)Rocks take up space.

42)a)There is air in the flask. Even though air can be compressed, it can only be compressed to a certain extent.

b)Lift up the funnel

c)Air in the flask can escape and there is space for the water to flow in.



**PRIMARY 4 MID-YEAR EXAMINATION 2017**

Name : \_\_\_\_\_ ( )

Date: 8 May 2017

Class : Primary 4 ( )

Time: 1 hour 45 minutes

Parent's Signature : \_\_\_\_\_

Marks: \_\_\_\_\_ / 58

**SCIENCE  
BOOKLET A**

**INSTRUCTIONS TO CANDIDATES**

Write your name, class and register number.

Do not turn over this page until you are told to do so.

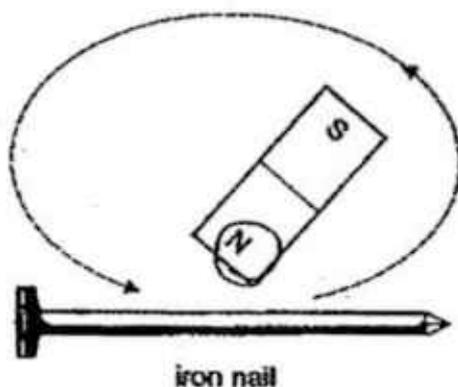
Follow all instructions carefully.

Answer all questions.

**Section A (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) and shade your answer on the Optical Answer Sheet.

1. John stroked an iron nail using the north pole of a magnet in the same direction for 20 times. He observed that the iron nail could attract 4 paperclips.



What should John do if he wants the iron nail to attract more than 4 paperclips?

- (1) Drop the iron nail on the floor.
  - (2) Heat the iron nail over a flame.
  - (3) Stroke the iron nail another 20 times using the north pole of the magnet in the same direction.
  - (4) Stroke the iron nail another 20 times using the south pole of the magnet in the same direction.
2. Which one of the following statements about roots is correct?
- (1) Roots transport water to all parts of the plant.
  - (2) Roots support the plant and help it to grow tall.
  - (3) Roots help the plant take in water and food from the soil.
  - (4) Roots prevent the plant from being uprooted during strong winds.

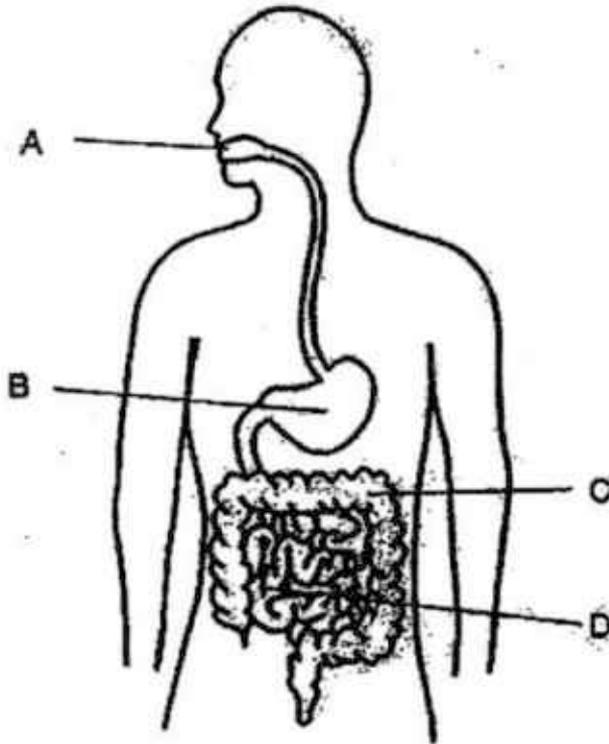
3. Animal X has the following characteristics.

- It has 1 pair of antennae.
- It has 2 pairs of wings.
- It has 3 pairs of legs.

What animal group does animal X belong to?

- (1) Fish
- (2) Bird
- (3) Insect
- (4) Mammal

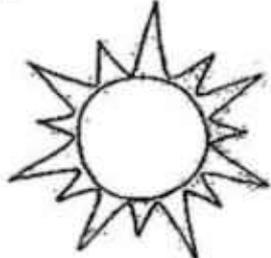
4. The diagram below shows the human digestive system.



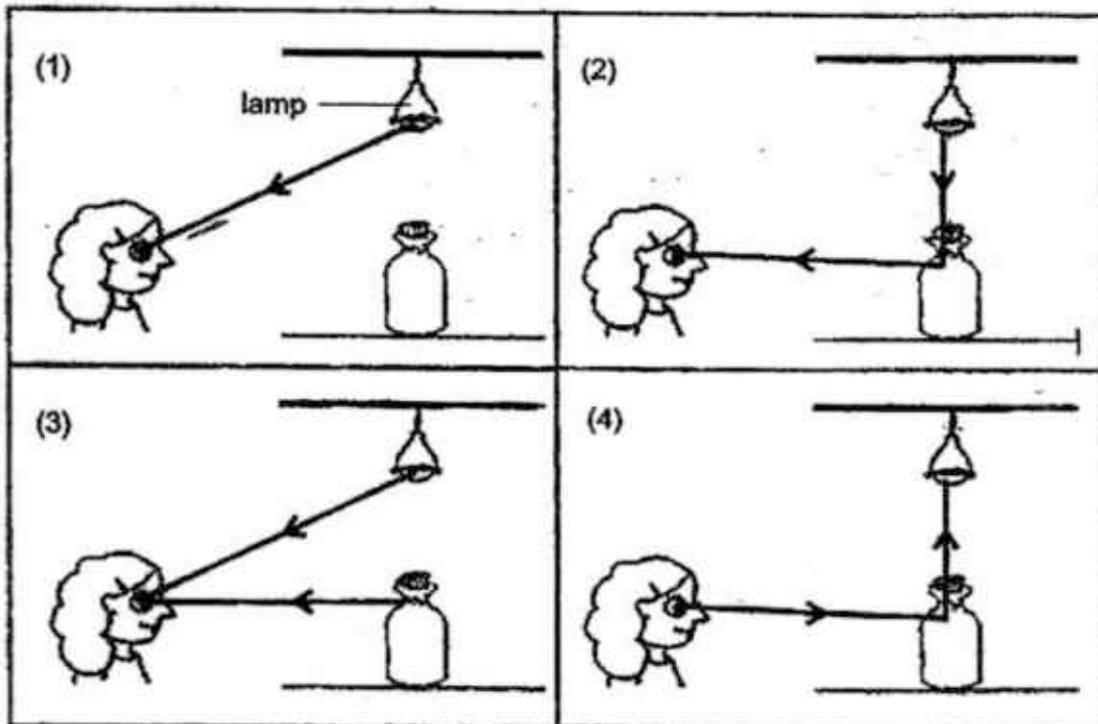
At which part, A, B, C or D, does digestion end?

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

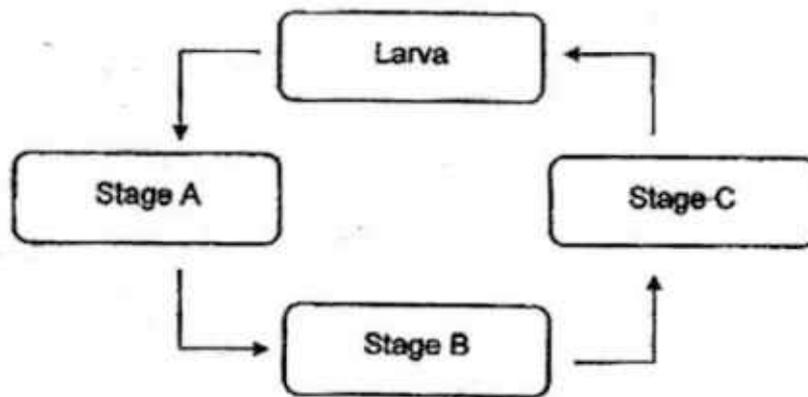
5. Which of the following gives off its own light?

(1) mirror 	(2) aluminium foil 
(3) Sun 	(4) Moon 

6. Mary is able to see a bottle under a lamp. Which one of the diagrams below correctly shows the path of light that enables her to see the bottle?



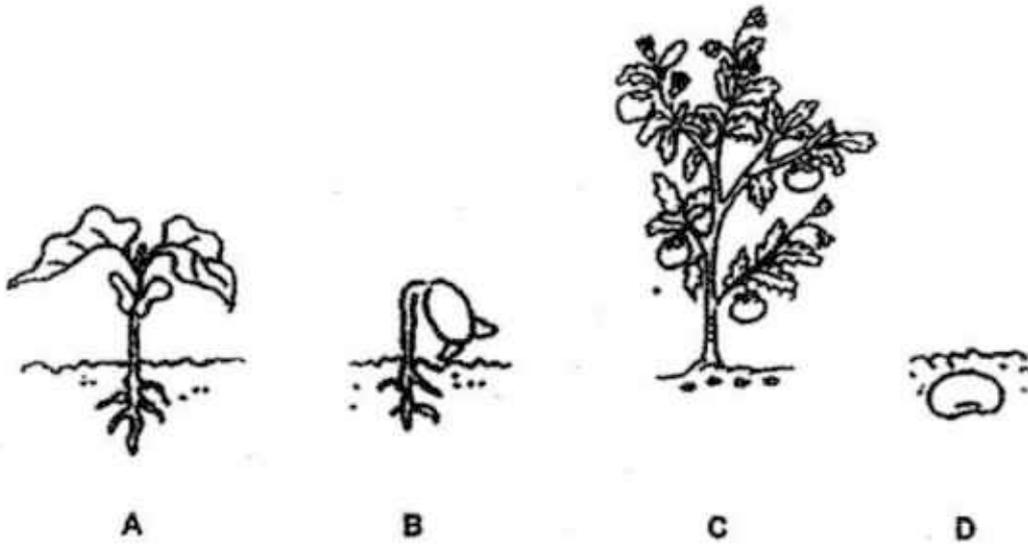
7. The diagram below shows the life cycle of an insect.



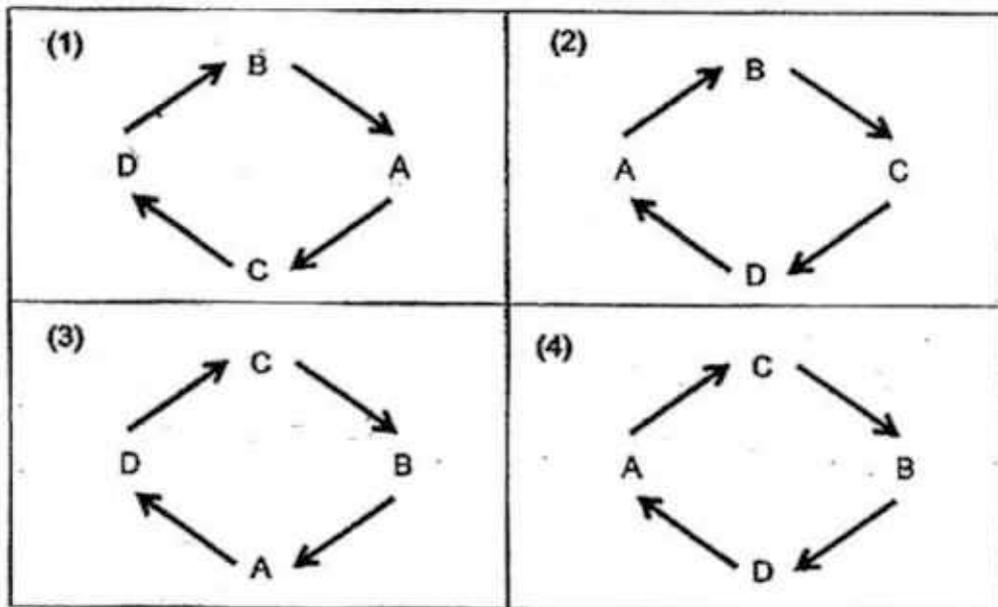
Which are the stage(s) that the insect does not feed?

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

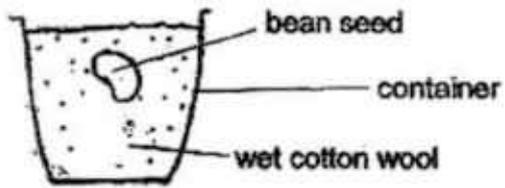
8. Cindy drew pictures of different stages of the life cycle of a plant.



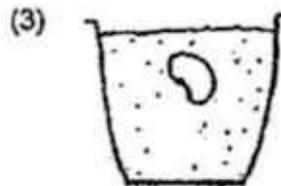
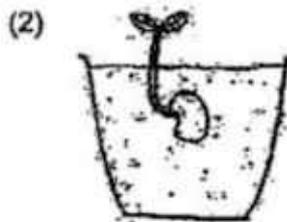
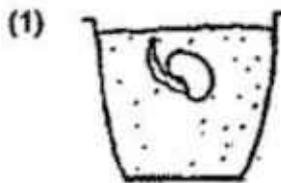
Which of the following shows the correct sequence of the life cycle of the plant?



9. Muthu placed a bean seed into a container of wet cotton wool as shown below. He placed it on a table near a window.



Which one of the following diagrams shows what he would first observe after a few days?



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

- (1) Oil
- (2) Ice
- (3) Glass
- (4) Music

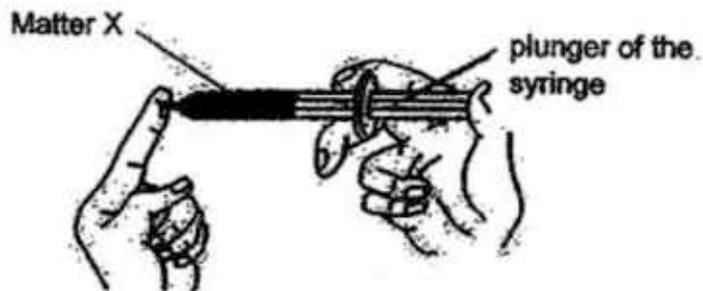
11. The table below shows the properties of 3 matters, A, B and C.

	A	B	C
<b>Has fixed shape</b>	No	Yes	No
<b>Has fixed volume</b>	Yes	Yes	No

Which of the following are correct examples of matters A, B and C?

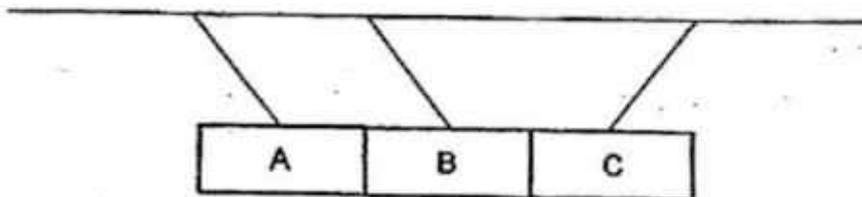
	A	B	C
(1)	saliva	air	book
(2)	saliva	book	air
(3)	book	air	saliva
(4)	book	saliva	air

12. Remmy filled the syringe below with 5 cm<sup>3</sup> of matter X and covered the nozzle with his finger. He could push in the plunger of the syringe slightly.



What can he conclude about matter X?

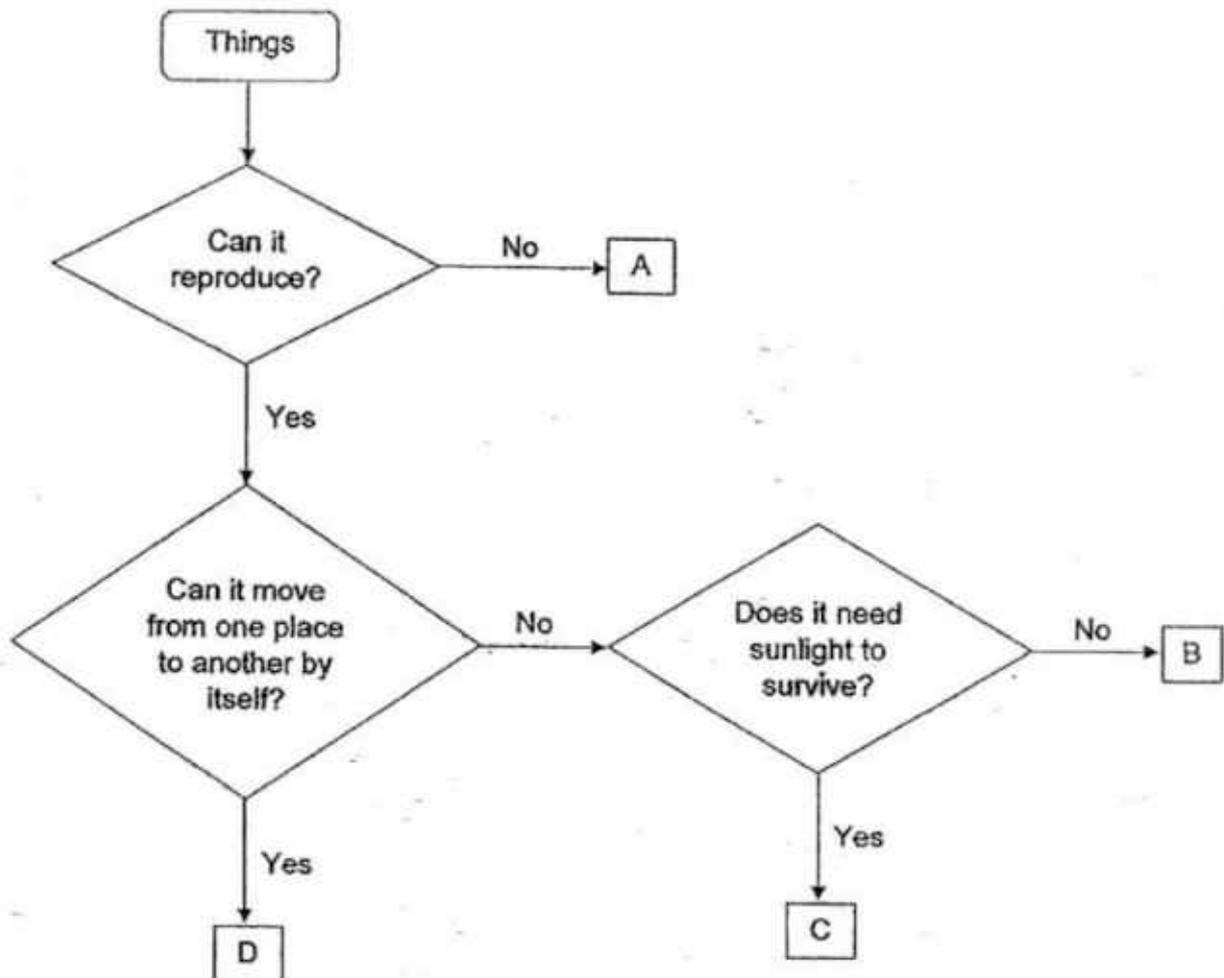
- (1) Matter X is a solid.
  - (2) Matter X is a liquid.
  - (3) Matter X has a fixed volume.
  - (4) Matter X can be compressed.
13. 3 bars, A, B, and C, are suspended in the air. The diagram below shows the positions of the bars when they are brought near each other.



Which statement is definitely true?

- (1) Bar A is repelling Bar C.
- (2) None of the bars are magnets.
- (3) Bar B is made of a non-magnetic material.
- (4) All the bars are made of magnetic materials.

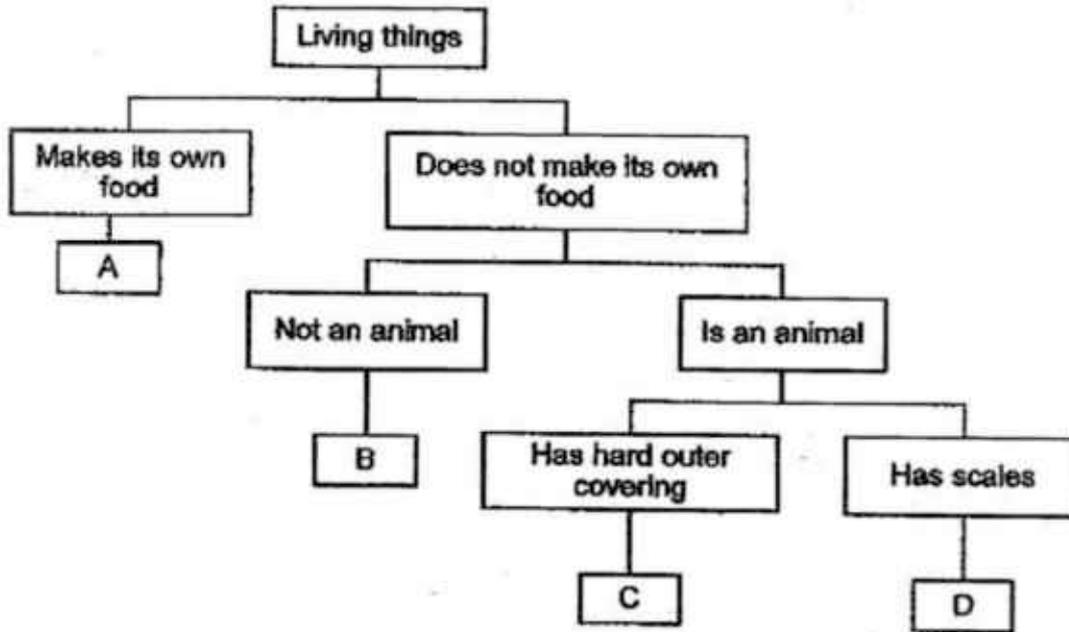
14. Study the flow chart below.



Which of the above items, A, B or C, could likely be a pencil and a mushroom?

	Pencil	Mushroom
(1)	A	B
(2)	A	C
(3)	B	C
(4)	C	A

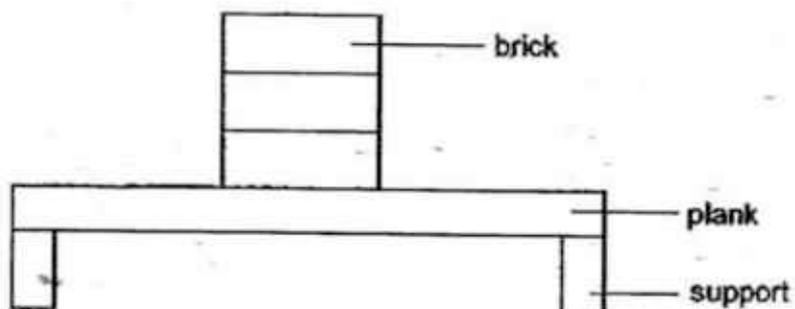
15. Study the classification chart below.



What could A, B, C and D be?

	A	B	C	D
(1)	mould	bacteria	butterfly	crocodile
(2)	fern	bacteria	butterfly	crocodile
(3)	fern	mould	crocodile	butterfly
(4)	bacteria	fern	butterfly	crocodile

16. Mei Yu wanted to investigate the strength of 4 similar planks made of different materials, P, Q, R and S. She placed identical bricks, one at a time, on each plank as shown below until it broke.



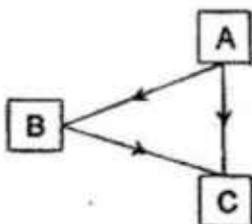
The results were recorded in the table below.

Material	Number of bricks needed to break the plank
P	34
Q	89
R	50
S	11

Which material is most suitable for making a bench for people to sit on?

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

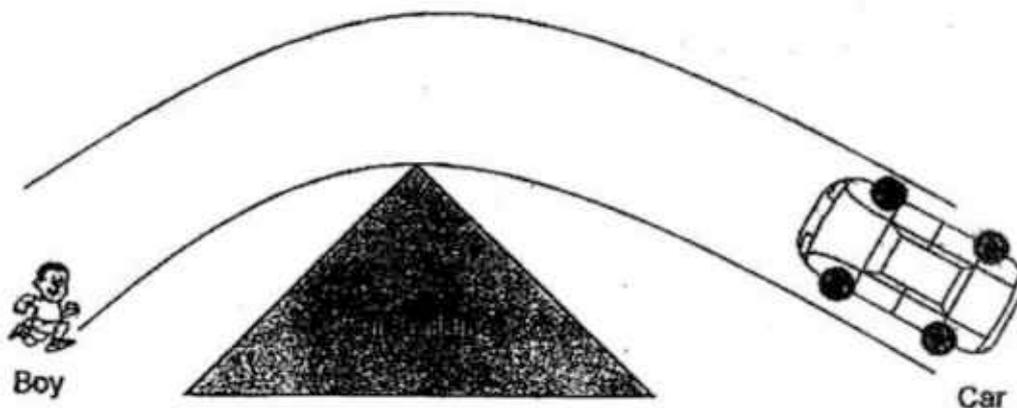
17. The diagram below shows how Jerry is able to see a ball and a lamp.



Which of the following correctly matches the letters, A, B and C, to Jerry, the ball and the lamp?

	A	B	C
(1)	Jerry	lamp	ball
(2)	Jerry	ball	lamp
(3)	lamp	Jerry	ball
(4)	lamp	ball	Jerry

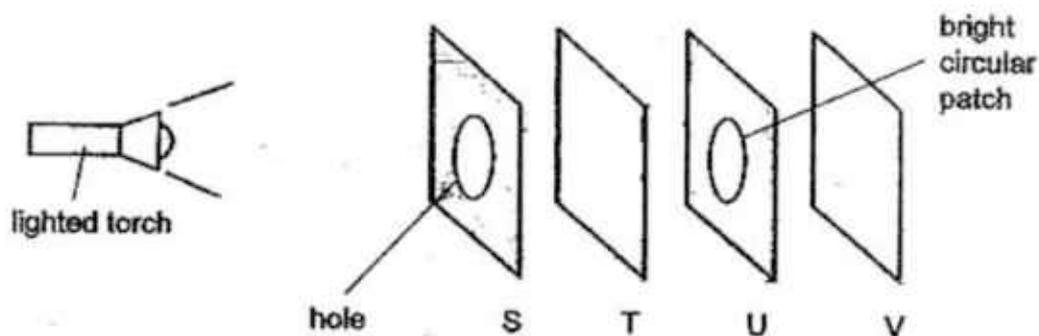
18. A driver was driving his car around a corner of a tall building on a sunny day.



The driver of the car could not see the boy running because \_\_\_\_\_.

- (1) there was no light
- (2) light is not a matter
- (3) light travels in a straight line
- (4) light could not be reflected off the boy

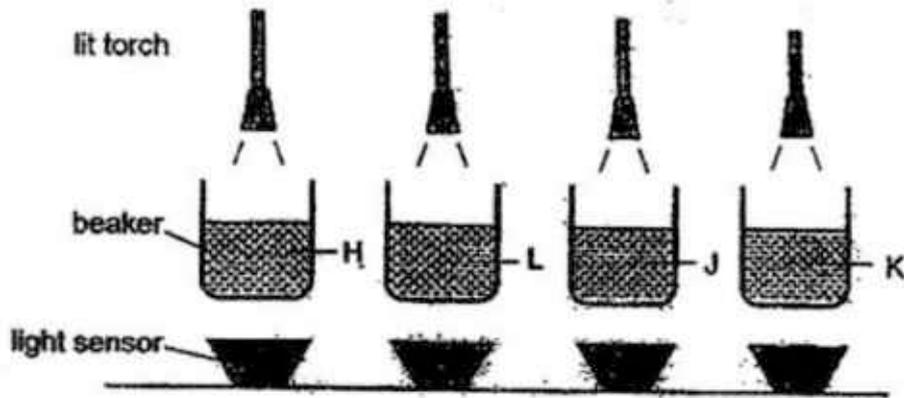
19. Li Peng set up the following experiment using four sheets made of different materials, S, T, U and V. When the torch was switched on, a small, bright circular patch of light was seen on sheet U only.



Which of the following best describes the properties of the materials?

	Allows most light to pass through	Does not allow any light to pass through	Not possible to tell
(1)	S and T	U	V
(2)	T	S and U	V
(3)	S	T	U and V
(4)	T	S	U and V

20. Johnny wanted to find out how much light can pass through 4 different liquids, H, L, J and K. He set up the experiment shown below with 200 ml of each liquid in the respective beakers in a dark room.



His observations for each liquid is as follow.

Light sensor readings (units)			
H	L	J	K
0	70	111	25

Which one of the following statements is correct?

- (1) J is opaque.
- (2) H allows most light to pass through.
- (3) All liquids allow light to pass through.
- (4) L allows more light to pass through than K.

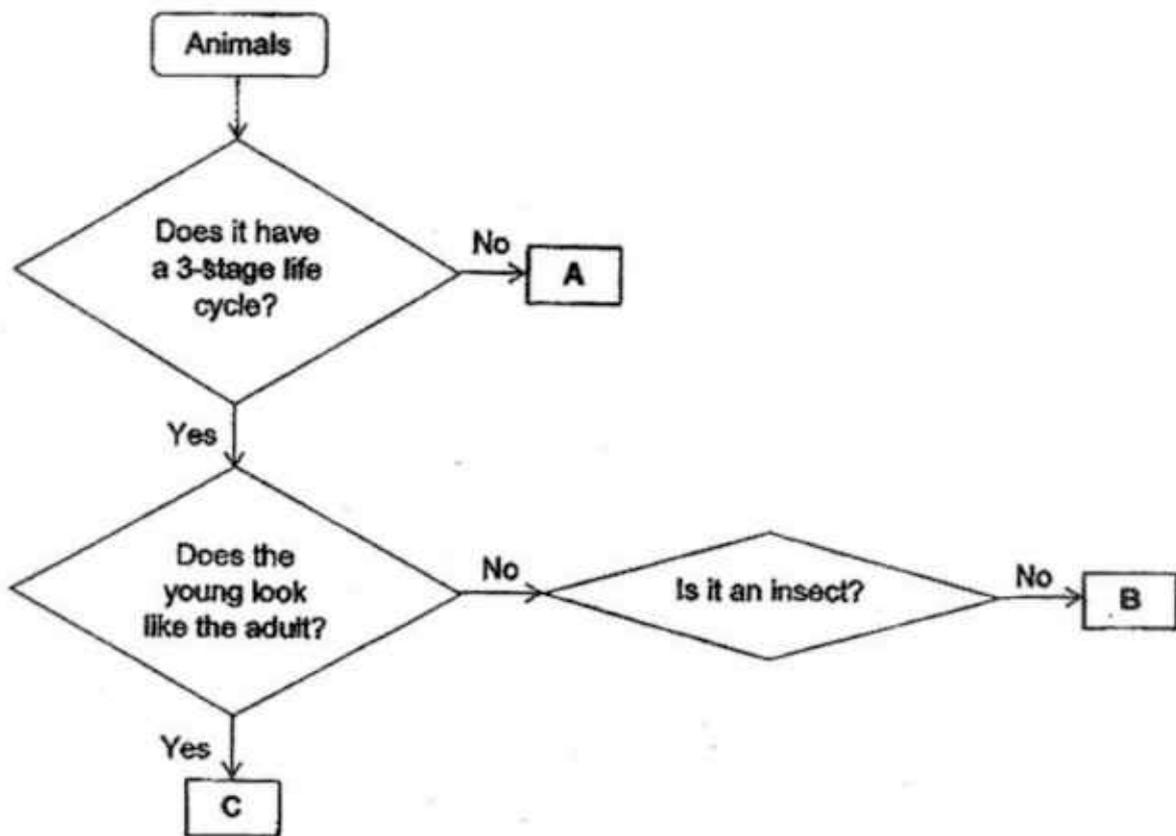
21. Faridah observed the growth of a living thing over 2 weeks. She recorded her observations in the table below.

Date	Observation
03 January 2017	Egg hatched into a larva.
10 January 2017	Larva became a pupa.
14 January 2017	Pupa became an adult.

Based on Faridah's observations, which of the following statements is definitely true?

- (1) The young resembles the adult.
- (2) The pupa eats a lot to develop into an adult.
- (3) The living thing spends most of its life cycle in the water.
- (4) The living thing has the same number of stages in its life cycle as a butterfly.

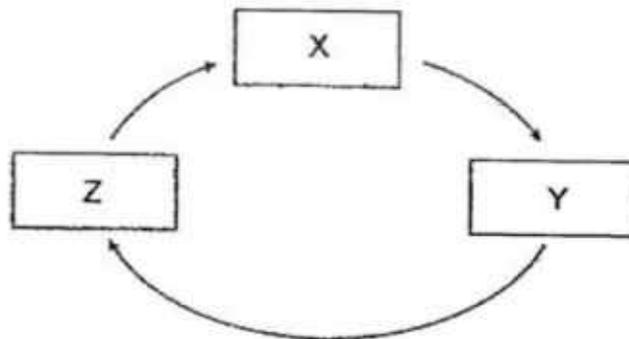
22. Study the flow chart below.



Based on the information given above, which of the following correctly represent animals A, B and C?

	A	B	C
(1)	mosquito	beetle	grasshopper
(2)	frog	cockroach	chicken
(3)	mosquito	grasshopper	chicken
(4)	beetle	frog	cockroach

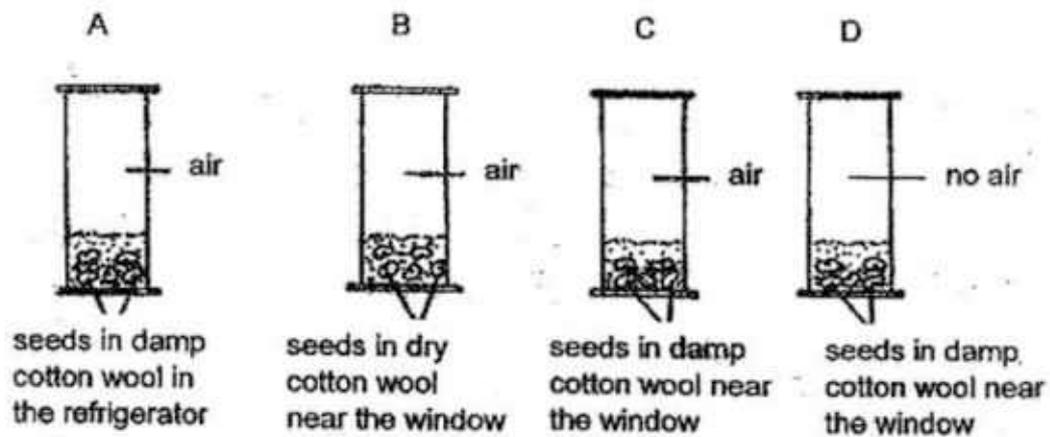
23. Study the life cycle of a flowering plant below.



Which of the following correctly represent the stages X, Y and Z?

	X	Y	Z
(1)	seedling	young plant	adult plant
(2)	adult plant	young plant	seed
(3)	young plant	adult plant	seed
(4)	adult plant	seedling	seed

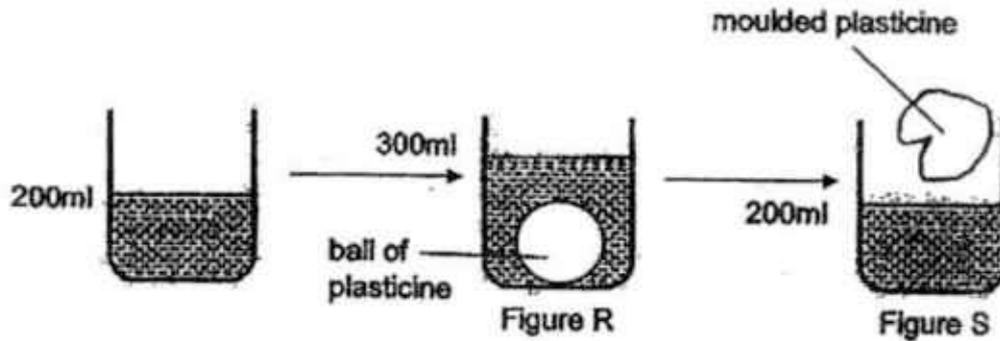
24. The jars below contain seeds from a plant. Jar A is placed in the refrigerator while jars B, C and D, are placed near the window.



In which jars, A, B, C or D, will the seeds most likely germinate?

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

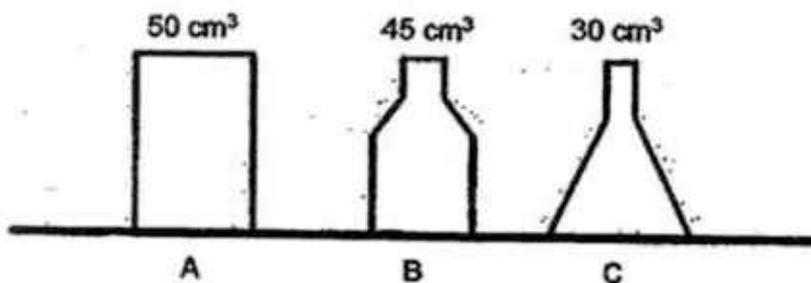
25. A ball of plasticine was put into a beaker containing 200 ml of water. The water level increased to 300 ml, as shown in Figure R.



The plasticine was then removed from the water and moulded into another shape. It was put back into the beaker as shown in Figure S.

What would the new water level be?

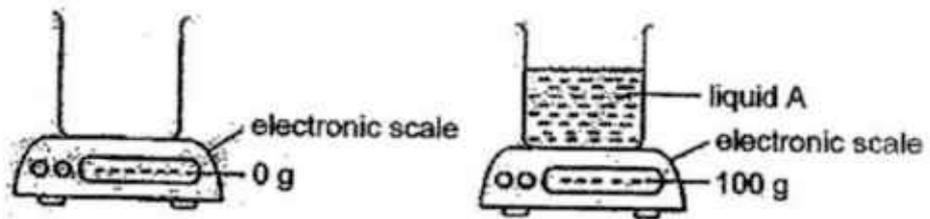
- (1) 200 ml
  - (2) 300 ml
  - (3) 400 ml
  - (4) 500 ml
26. Sammy has 3 sealed containers, A, B and C, as shown below.



Which container(s), A, B and/or C, can Sammy pump in 45 cm³ of air?

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

27. The two beakers below were identical.



The above shows that liquid A \_\_\_\_\_.

- (1) has mass
- (2) has volume
- (3) is transparent
- (4) occupies space

28. Ramlee has a sealed ping pong ball of mass 2.5 g. The ball became dented after being pressed as shown below.



Which one of the following statements on the ping pong ball is true? The ping pong ball \_\_\_\_\_.

- (1) is lighter now
- (2) is heavier now
- (3) occupies more space now
- (4) has the same mass as before

End of Booklet A

**PRIMARY 4 MID-YEAR EXAMINATION 2017**

Name : \_\_\_\_\_ ( )

Date: 8 May 2017

Class : Primary 4 ( )

Duration: 1 hour 45 minutes

Parent's Signature : \_\_\_\_\_

**SCIENCE  
BOOKLET B**

**INSTRUCTIONS TO CANDIDATES**

Write your name, class and register number.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

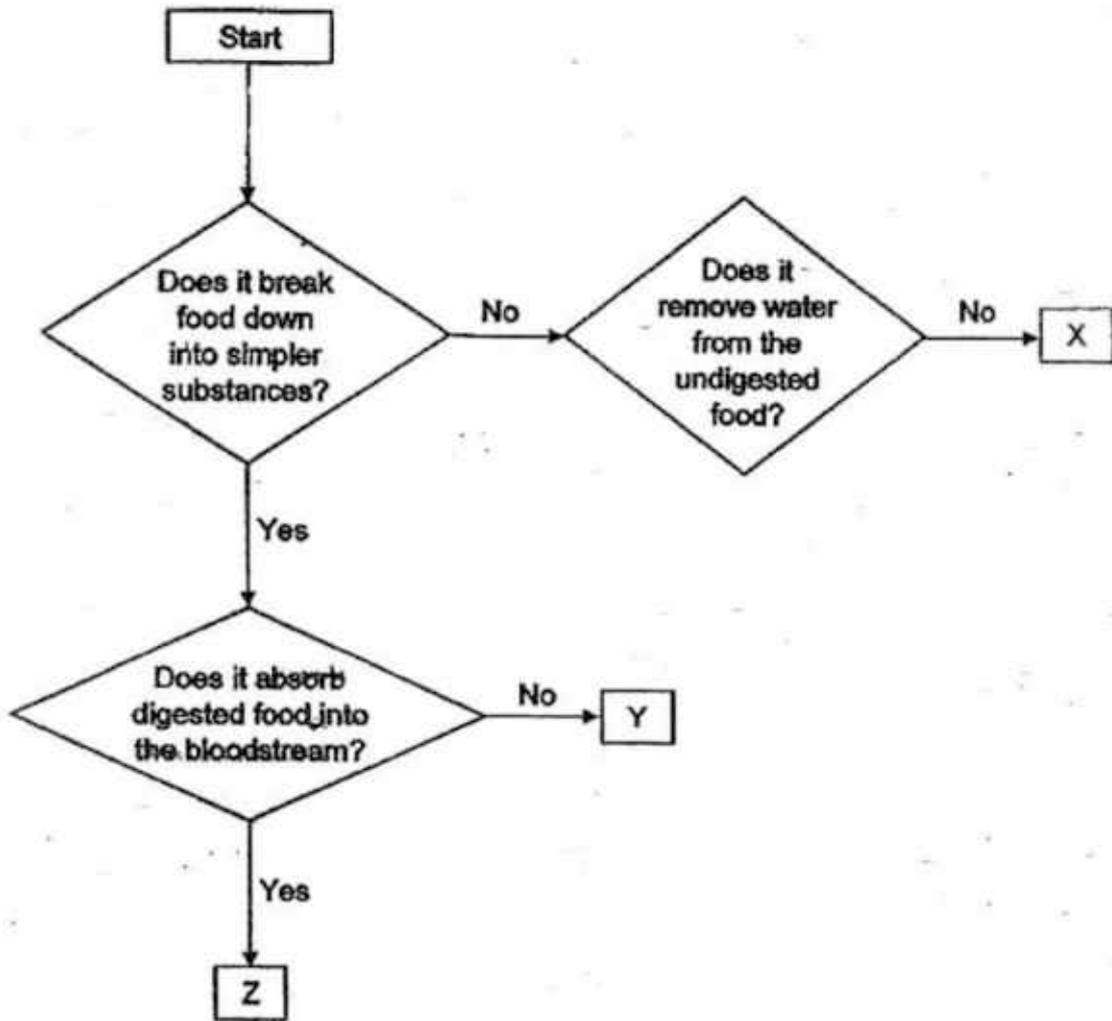
Answer all questions.

Booklet A	56
Booklet B	44
Total	100

**Section B (44 marks)**

For questions 29 to 42, write your answers in this booklet. The number of marks available is shown in [ ] at the end of each question or part question.

29. Study the flow chart on the parts of a human digestive system below.



Identify parts X, Y and Z, in the human digestive system.

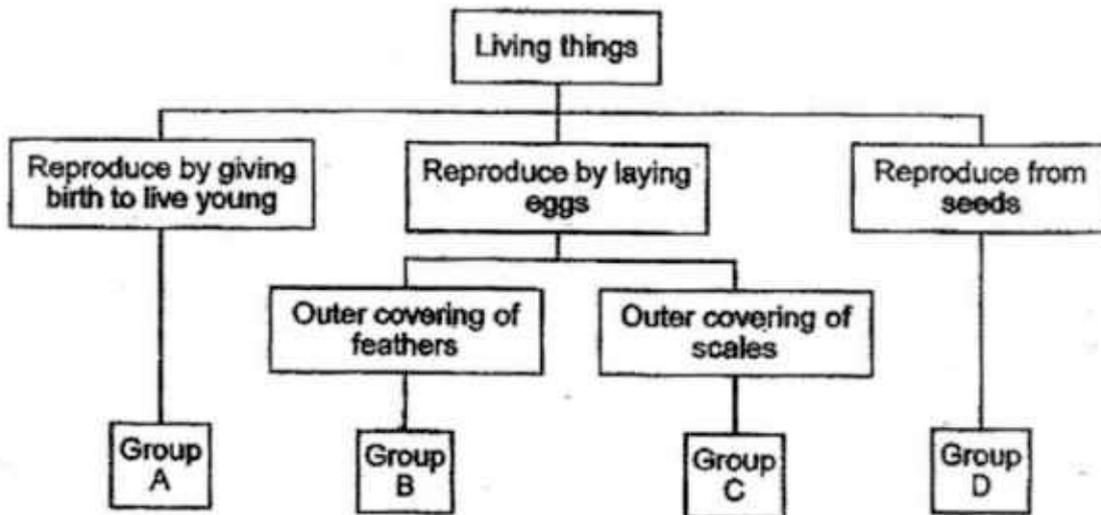
[3m]

(a) X: \_\_\_\_\_

(b) Y: \_\_\_\_\_

(c) Z: \_\_\_\_\_

30. Study the classification chart below.



Organism X



Organism Y

(a) Which groups, A, B, C or D, do organisms X and Y belong to?

[2m]

Organism X: \_\_\_\_\_

Organism Y: \_\_\_\_\_

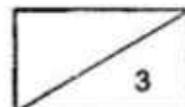
The table below shows some organisms being classified into the above groups A, B, C and D.

Group A	Group B	Group C	Group D
elephant	penguin	snake	mango tree
dolphin	peacock	goldfish	bird's nest fern

(b) Which organism has been classified wrongly? Explain why.

[1m]

\_\_\_\_\_

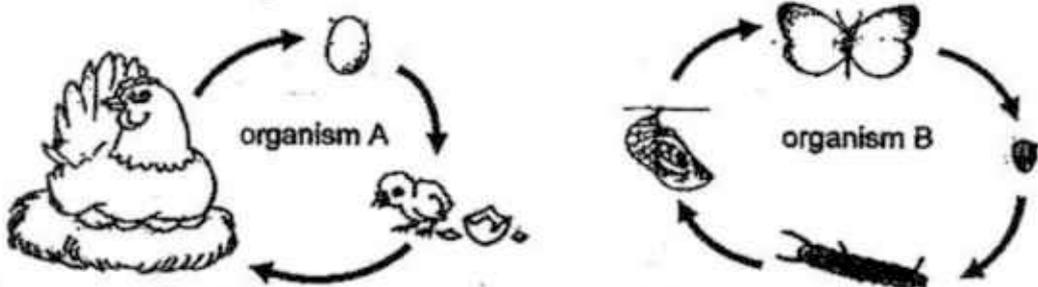


31. Classify the following objects according to the amount of light that can pass through them by completing the table below. [3m]

mirror	wooden table	tracing paper
clear glass window	aluminium foil	textbook

Allow most light to pass through	Allow some light to pass through	Allow no light to pass through

32. The diagrams below show the life cycles of organism A and organism B.



(a) Based on the diagrams above, state one similarity between the life cycles of organisms A and B. [1m]

---



---

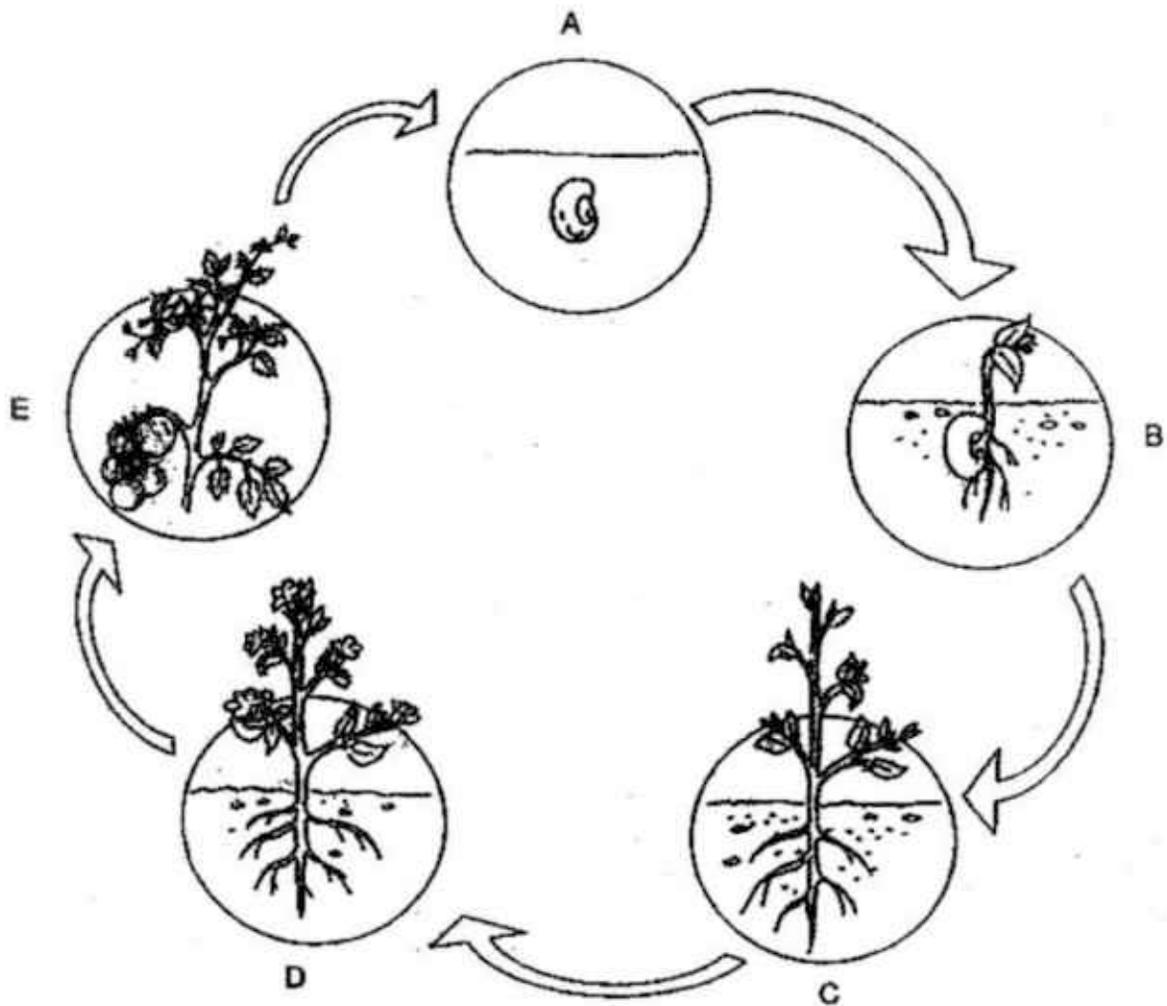
(b) Based on the diagrams above, state one difference between the life cycles of organisms A and B. [1m]

---



---

33. David studied the life cycle of a plant as shown below.



- (a) Based on the diagram above, at which stage(s), A, B, C, D or E, is the plant **unable** to reproduce? [1m]

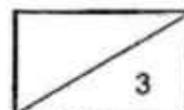
---

- (b) State two characteristics of the plant that helped David classify it as a flowering plant. [1m]

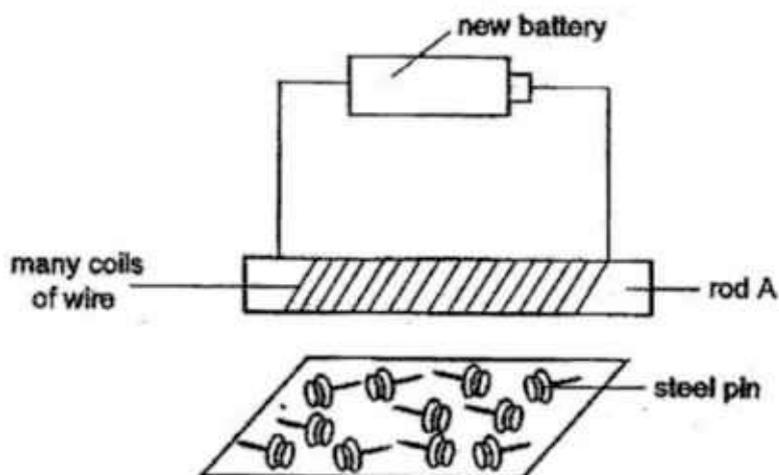
---

34. Write "Yes" or "No" in the boxes below to show whether the following objects have the stated properties. [3m]

Object	Properties of object	
	Has a definite shape	Has a definite volume
sand		
oil		
water		
air		
pencil		
ice cubes		



35. Hassan conducted an experiment using rod A in the set-up below. He brought it near a tray of steel pins. Rod A did not attract any steel pins.



Hassan replaced rod A with rod B <sup>in</sup> his set-up and hence the set-up could now attract 3 steel pins.

(a) Describe the difference between rod A and rod B. [1m]

---



---

(b) What can Hassan do to the set-up if he wants to attract more than 3 steel pins? [1m]

---



---

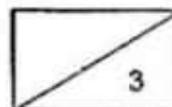
Hassan brought the set-up with rod B near a metal bar, J. The metal bar moved away.

(c) Explain why the metal bar, J, moved away. [1m]

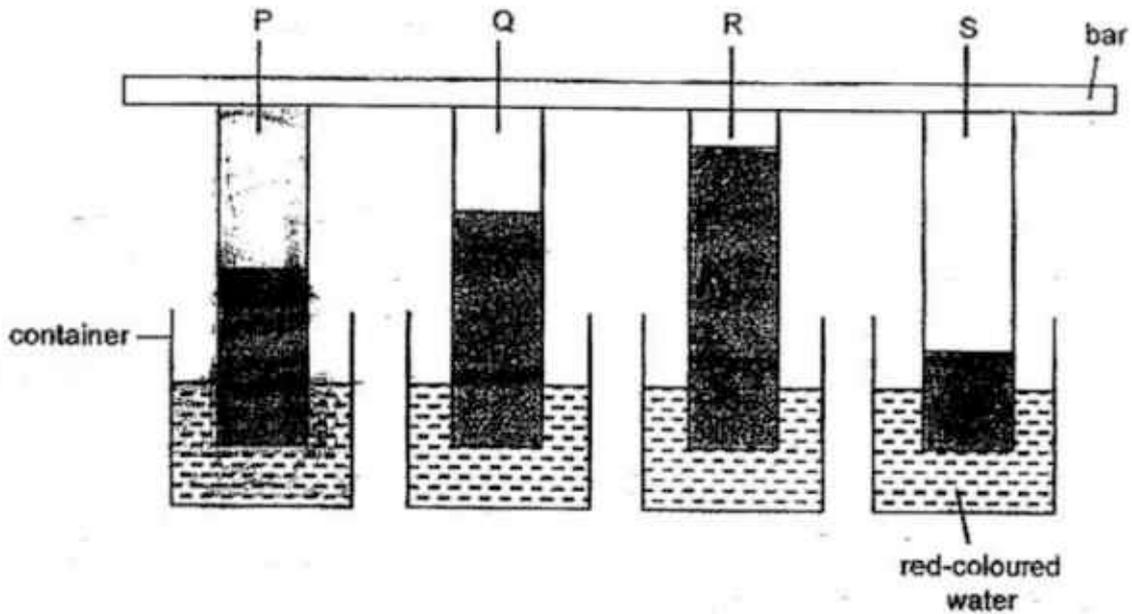
---



---



36. Diane wanted to find out how much water different materials could absorb. She hung 4 strips made of different materials, P, Q, R and S, over 4 identical containers of red-coloured water as shown below. Her observation after 10 minutes is shown below.



- (a) Based on *Diana's observation*, which material is most suitable for making amount? Explain why. [1m]

---

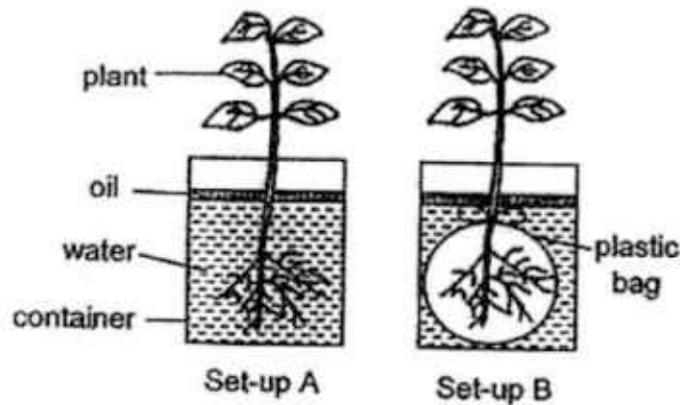
---

- (b) Besides the amount of red-coloured water in each *beaker*, state 2 other variables which must be kept the same when conducting this experiment. [2m]

---

---

37. Ramesh placed the following set-ups with 2 plants in identical containers, each containing 200 ml of water as shown below, near a window. After 2 days, he measured the amount of water in each beaker.



(a) Complete the table below with the letters, A and B, to show the correct results of the experiment. [1m]

Amount of water left in each beaker (ml)	Set-up
200	
185	

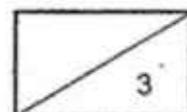
(b) Based on the above results, what conclusion can Ramesh make about the roots? [1m]

\_\_\_\_\_

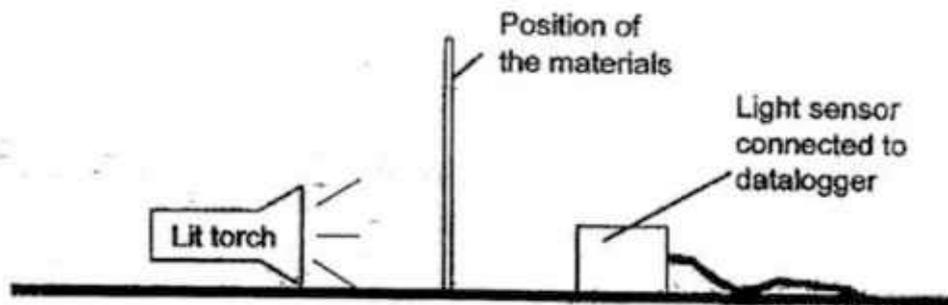
(c) After 3 days, the plant in set-up B started turning yellow. What will happen to the plant in set-up B after 10 days? [1m]

\_\_\_\_\_

\_\_\_\_\_



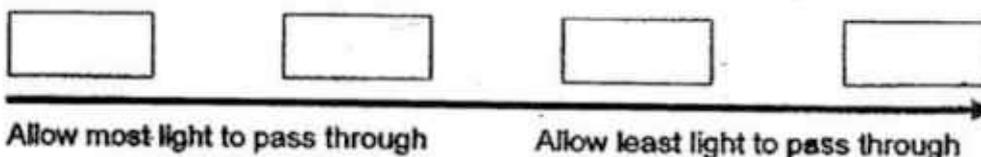
38. Mr Wong carried out an experiment to investigate the amount of light passing through four different materials, A, B, C and D.



When no material was placed between the torch and light sensor, the amount of light detected was 1000 units. The table below shows the amount of light passing through the four materials.

Material	Amount of light detected (units)
A	999
B	0
C	19
D	500

- (a) Arrange the materials, A, B, C and D, according to the amount of light that can pass through them in the boxes below. [1m]



- (b) Mr Wong wants to build a shelter to provide shade for the spectators watching a soccer match. Based on the results, which one of the materials, A, B, C or D, will be most suitable to make the shelter? Explain your choice. [1m]

---



---

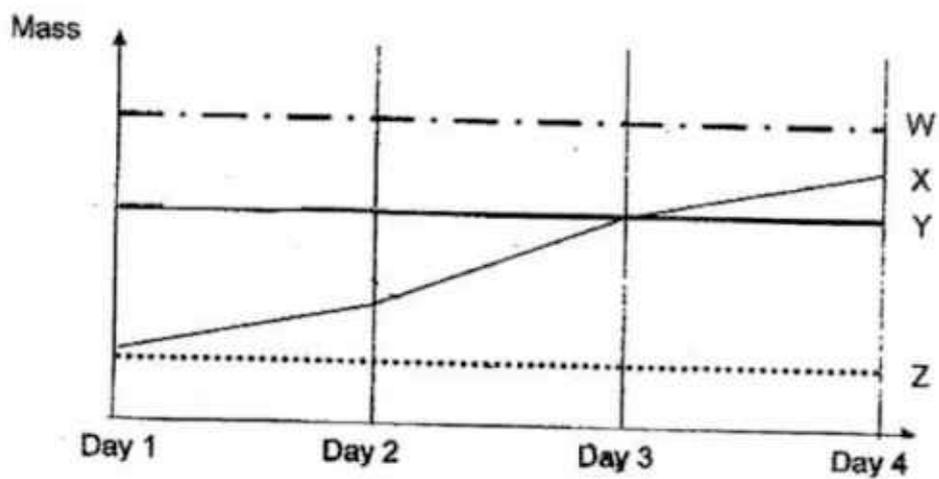
- (c) Other than the positions of the torch and light sensor, state another 2 variables which Mr Wong needs to ensure that they are kept constant for a fair test. [2m]

---



---

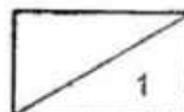
(d) The diagram below shows a graph of the mass of the different stages of a butterfly.



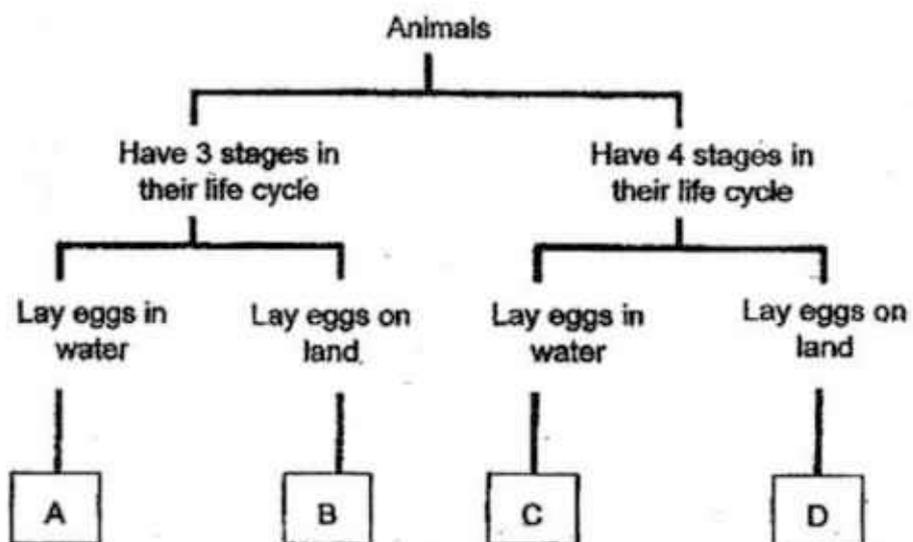
Which line in the graph, W, X, Y or Z, represents the mass of a butterfly larva?  
Explain why.

[1m]

---



39. Study the classification chart below.



(a) State one similarity between Animals B and D. [1m]

\_\_\_\_\_

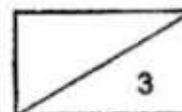
(b) State one difference between Animals B and D. [1m]

\_\_\_\_\_

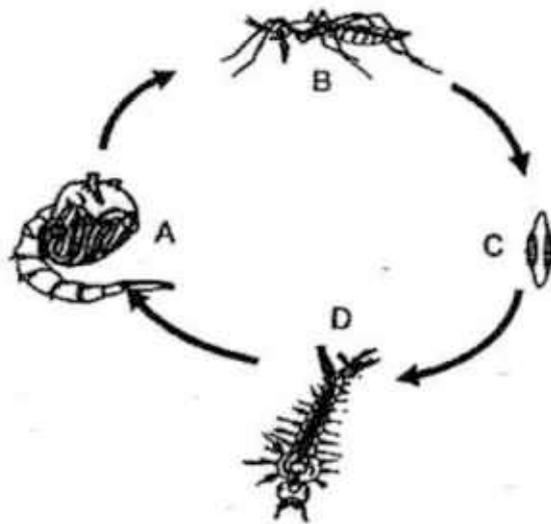
(c) Which of the letters, A, B, C or D, represent the following animals? [1m]

(i) frog : \_\_\_\_\_

(ii) butterfly : \_\_\_\_\_



40. Study the life cycle below.



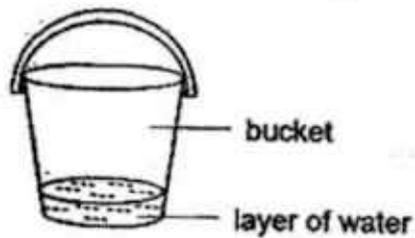
(a) At which stage(s), A, B, C and/or D, of the life cycle above does the animal live in water? [1m]

\_\_\_\_\_

(b) At which stage of the life cycle, A, B, C or D, would it be the most difficult to get rid of the mosquito? [1m]

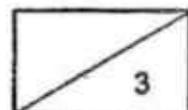
\_\_\_\_\_

(c) Jess noticed that there was some water collected in the bucket left in her home. There were some young mosquitoes in the water.

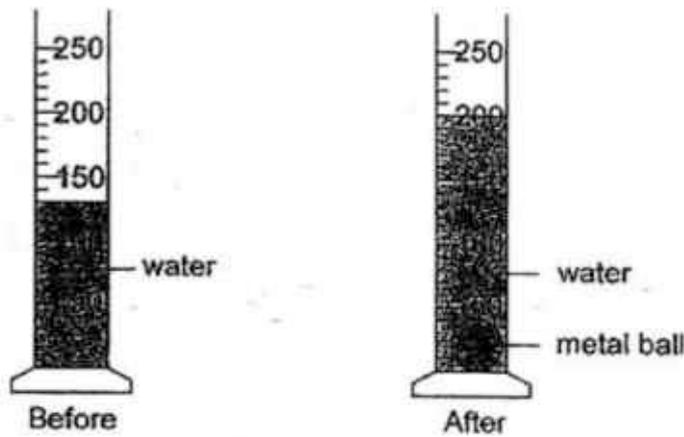


What can she do to get rid of them?

[1m]



41. Roy poured some water into a 250 cm<sup>3</sup> measuring cylinder. He lowered a metal ball into the cylinder until it was fully submerged as shown below.



- (a) What is the volume of the metal ball ? [1m]

---

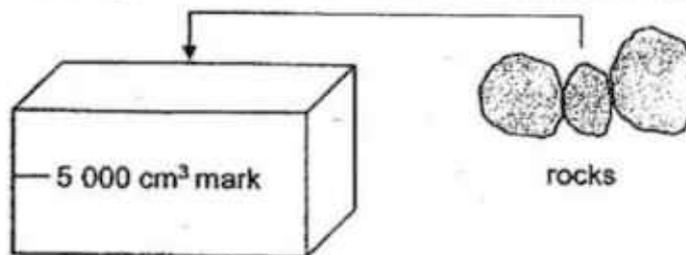
- (b) He repeated the experiment with a rubber ball that had the same shape and size as the metal ball. Predict if the water level would be higher, lower or remain the same as when the metal ball was in the water. Explain why. [1m]

---



---

- (c) Roy has a fish tank. He had to pour 5 000 cm<sup>3</sup> of water to reach the mark as shown below.



After adding some rocks in the fish tank, he noticed that he did not need to pour 5 000 cm<sup>3</sup> of water to reach the mark. Why is this so? [2m]

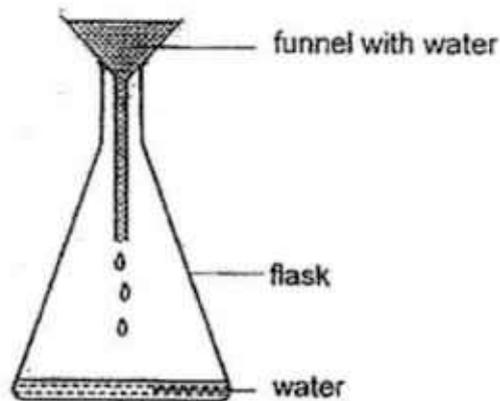
---



---



42. Xander placed a funnel filled with water on top of a flask as shown below.



He observed that the water **did not flow easily** into the flask. After several seconds, the water stopped flowing completely.

- (a) Explain why the water in the funnel stopped flowing into the flask. [2m]

---

---

- (b) (i) What can Xander do to allow the water to flow into the flask easily? [1m]

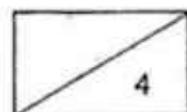
---

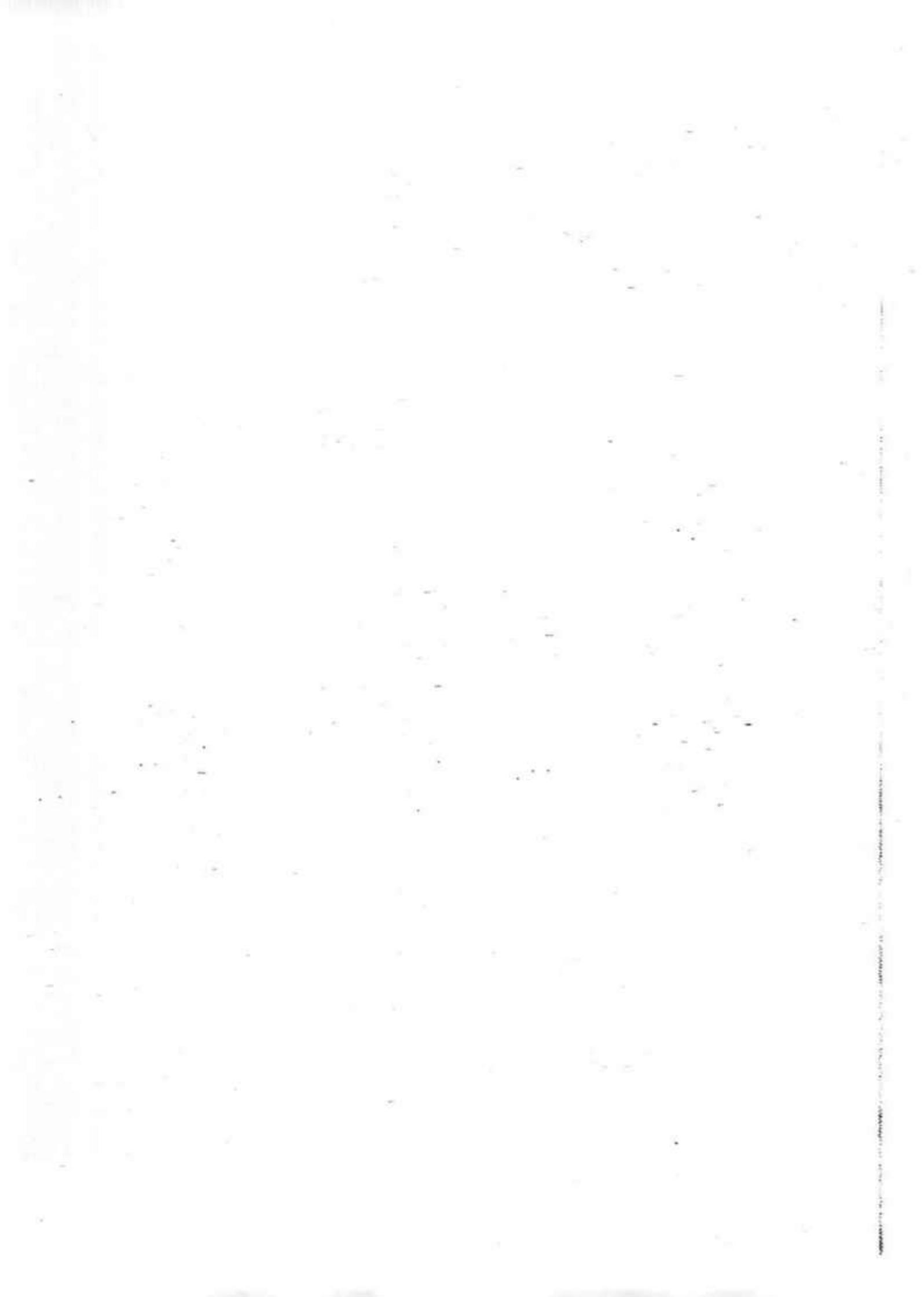
---

- (ii) Explain your answer in (i). [1m]

---

End of Paper





**EXAM PAPER 2017 (P4)**

**SCHOOL : Tao Nan**

**SUBJECT : Science**

**TERM : SA1**

**ORDER CALL :**

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

29)a)X : Gullet

b)Y : Mouth

c)Z : Small intestine

30)a)Organisms X : Group C

Organisms Y : Group B

b)It is the bird's nest fern. The bird's nest fern reproduces from spores unlike the organisms in group D which reproduces from seeds.

31)Allow most light to pass through – clear glass window

Allow some light to pass through – tracing paper,

Allow no light to pass through – wooden table , aluminium foil , text book , mirror

32)a)Organisms A and B have the egg stage

b)Organisms A has a 3 stage life cycle while organisms B has a 4 stage life cycle.

33)a)It is A , B and C

b)It has a flowers and it bears fruits

34)sand – Yes , Yes

Oil – No , Yes

Water – No , Yes

Air – No , No

Pencil – Yes , Yes

Ice cubes – Yes , Yes

35)a)Rod A is made of non-magnetic material while rod B is made of magnetic material.

b)Hassan could add more batteries to the set-up

c)Metal bar J is a magnetic, Like poles of both magnet are facing each other, hence they repel.

36)a)Material R. It absorbed the most red-coloured water. It cloud dry the person using the towel most.

b)Size of strip. Length of strip in red-coloured water

37)a)200 – B

185 – A

b)Roots help the plant to take in water

c)The plant in set-up B will die

38)a)A – D – C – B

b)B. It does not allow light to pass through

c)The thickness of the materials must be the same. The place where the experiment was carried out must be the same.

39)a)They lay eggs on land

b)Animal B has a 3 stage life cycle while animal D has a 4 stage life cycle.

c)i)frog – A

ii)butterfly – D

40)a)It is C , D and A

b)It is B

c)She could cover the water with oil

41)a)It is 70cm<sup>3</sup>

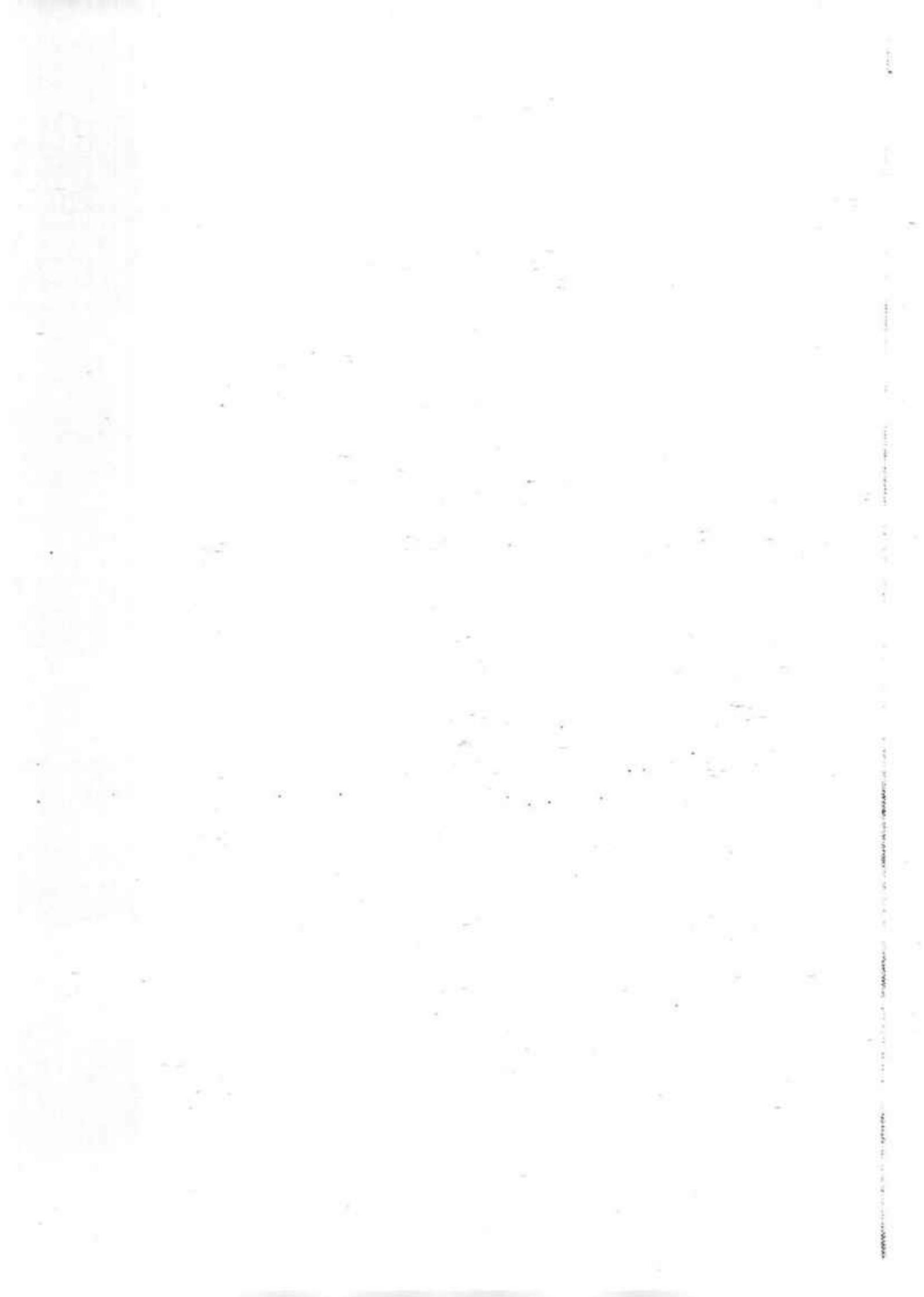
b)The water level would remain the same. Even though the metal ball may be heavier than the rubber ball but their volume is the same so the water level will still be the same.

c)Rocks take up space.

42)a)There is air in the flask. Even though air can be compressed, it can only be compressed to a certain extent.

b)Lift up the funnel

c)Air in the flask can escape and there is space for the water to flow in.



# Anglo-Chinese School (Junior)



## SEMESTRAL ASSESSMENT 2 (2017)

PRIMARY 4

SCIENCE

BOOKLET A

Thursday

2 November 2017

1 hr 30 min

Name: \_\_\_\_\_ ( ) Class: 4.( )

### INSTRUCTIONS TO PUPILS

- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 25 questions in this booklet.
- 4 Answer ALL questions.
- 5 Shade your answers in the Optical Answer Sheet (OAS) provided.

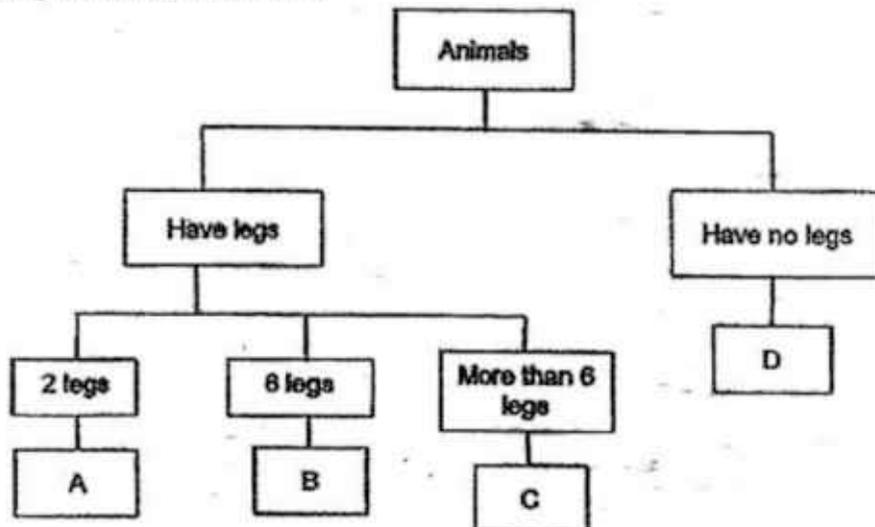
---

**This question paper consists of 16 printed pages (inclusive of cover page).**

**Booklet A (50 marks)**

For each question from 1 to 25, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade your answer on the Optical Answer Sheet. (25 x 2 marks)

1. Study the classification below.



Which letter A, B, C or D, best represents the animal shown below?

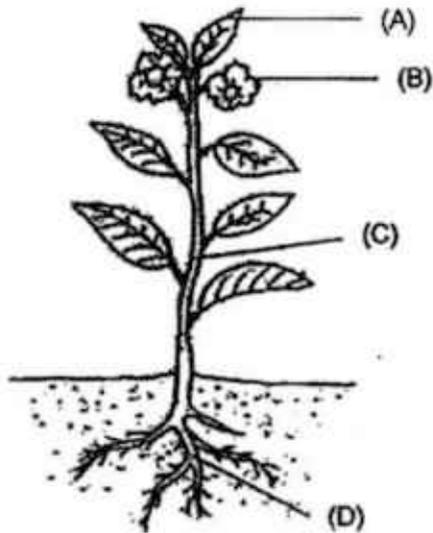


- (1) A  
 (2) B  
 (3) C  
 (4) D
2. In which part of the digestive system is digested food absorbed into the blood?
- (1) Gullet  
 (2) Stomach  
 (3) Small intestine  
 (4) Large intestine

3. Which one of the following properties is true for both air and a pencil?

- (1) They can be seen.
- (2) They take up space.
- (3) They have fixed shapes.
- (4) They have fixed volumes.

4. The diagram shows a plant.



Which part A, B, C or D is the stem of the plant?

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

5. Which one of the following is a source of light?



an orange



the moon

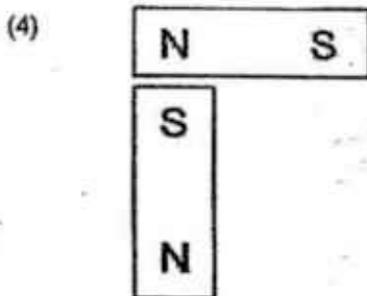
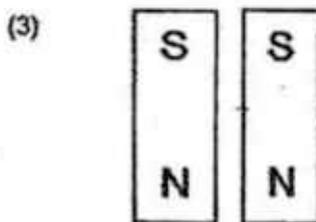
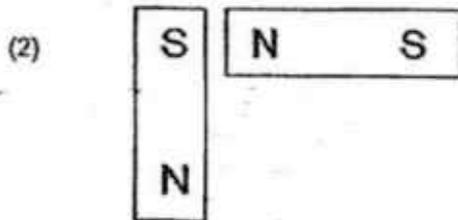
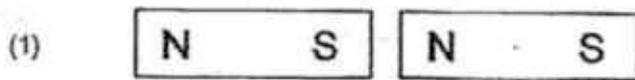


a candle flame



a leaf

6. In which one of the following will the two magnets push each other away?



7. Jonathan observed 3 things, A, B and C over a month. He recorded his observations in the table below. A tick (✓) means that the following observation was made.

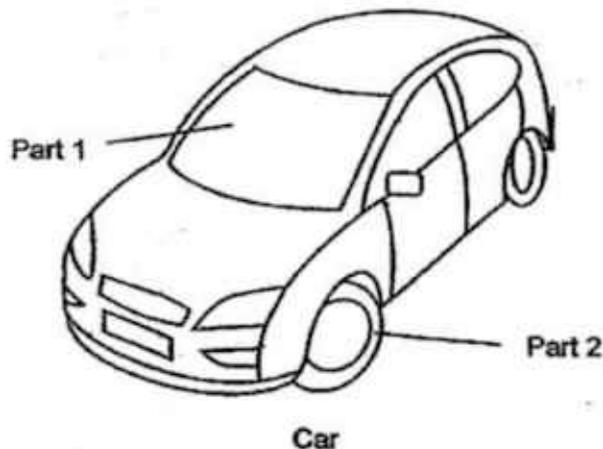
Observations	A	B	C
Grows towards sunlight	x	✓	x
Responds to changes around it	✓	✓	x
Needs air, food and water to survive	✓	✓	x

Which of the following best describes the 3 things?

	A	B	C
(1)	Lamp	Cat	Grass
(2)	Button	Grass	Bacteria
(3)	Rose Plant	Bacteria	Button
(4)	Cat	Rose Plant	Lamp

8. Susan wanted to find out what materials are used to create the parts of a car. She conducted several tests on materials M, N and O and recorded her findings in the table below.

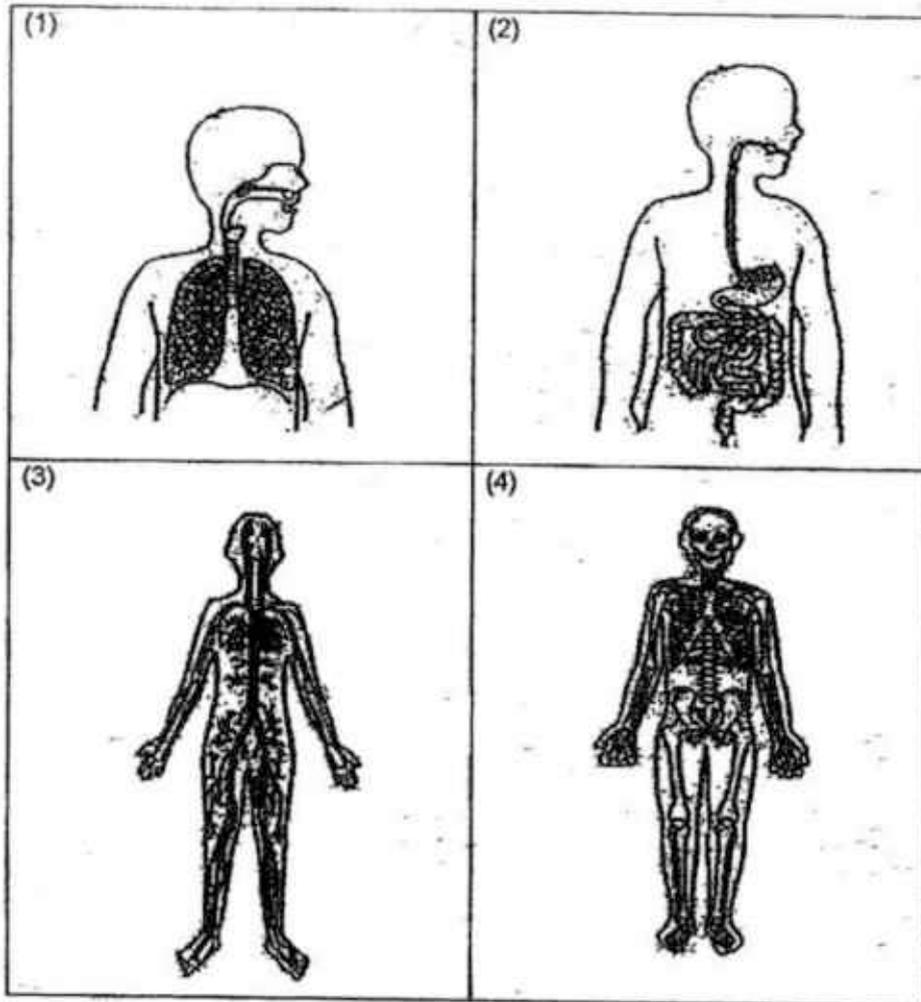
	Material M	Material N	Material O
Is it flexible?	Yes	No	Yes
Is it waterproof?	Yes	Yes	No
Does it allow light to pass through?	No	Yes	No



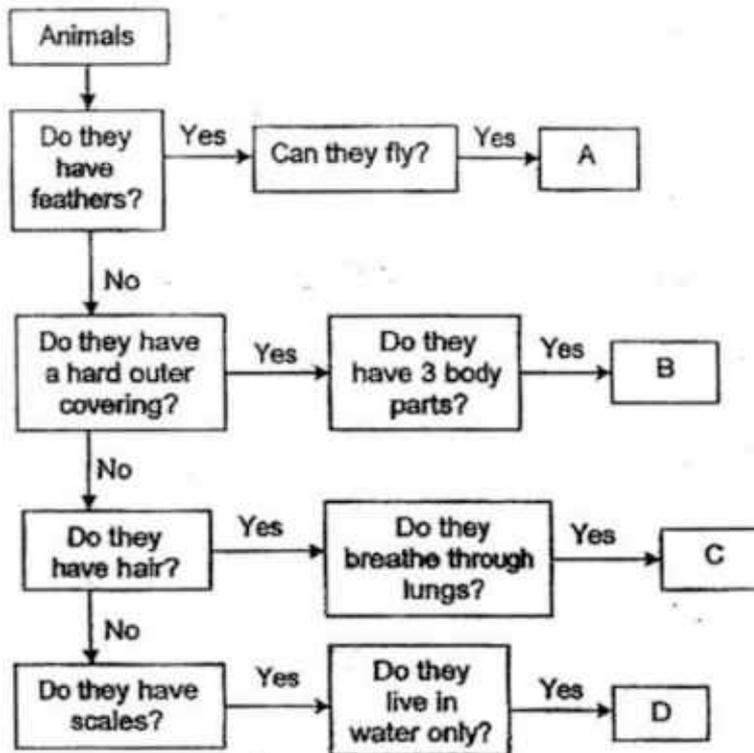
What materials are parts 1 and 2 made of?

	Part 1	Part 2
(1)	Material N	Material O
(2)	Material M	Material O
(3)	Material O	Material M
(4)	Material N	Material M

9. The diagrams below show some human body systems. Which of the systems below helps to break down food into simple substances?



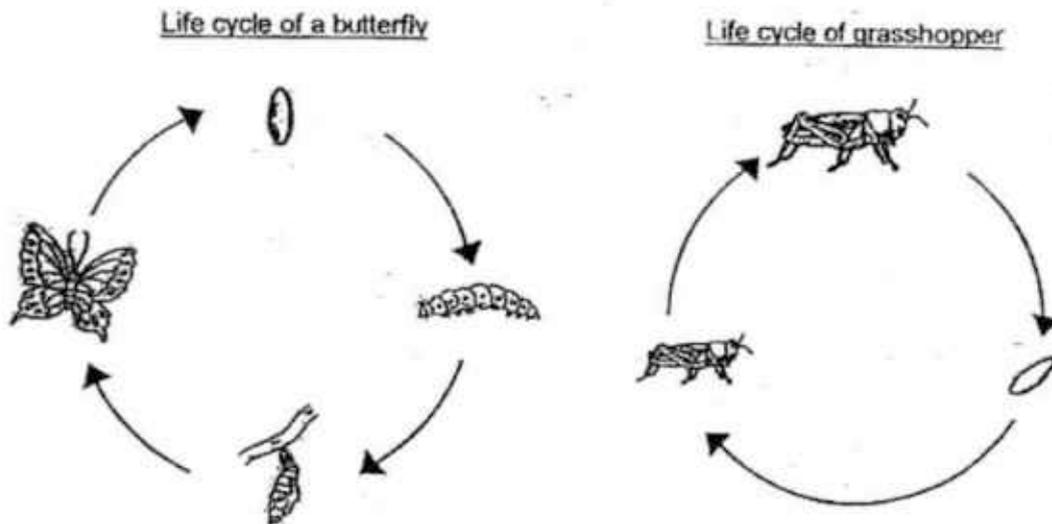
10. Study the flowchart below.



The letters A, B, C and D are used to represent different groups of animals in the flowchart. Which of the following correctly represents A, B, C and D?

	A	B	C	D
(1)	Bird	Mammal	Fish	Insect
(2)	Mammal	Insect	Amphibian	Fish
(3)	Insect	Fish	Bird	Amphibian
(4)	Bird	Insect	Mammal	Fish

11. The diagram below shows the life cycle of a butterfly and a grasshopper.



What is the similarity between the two life cycles?

- (1) Both start with the egg stage.
  - (2) Both animals at the adult stage can fly.
  - (3) Both spend part of their life cycle in water.
  - (4) Both have the same number of stages in their life cycle.
12. Asher placed 4 identical balsam plants in identical vases. The table below shows the amount of water given to each plant every day and their location.

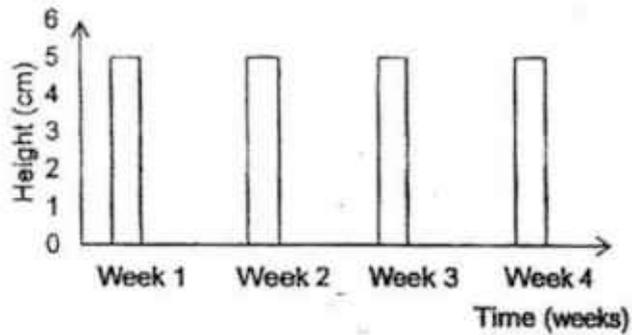
Vase	Volume of water (ml)	Location
W	150	Classroom
X	150	Store room
Y	150	Field
Z	150	Cupboard

After a month, Asher noticed that only the balsam plant in vase Y continues to grow well. Asher was trying to find out if \_\_\_\_\_.

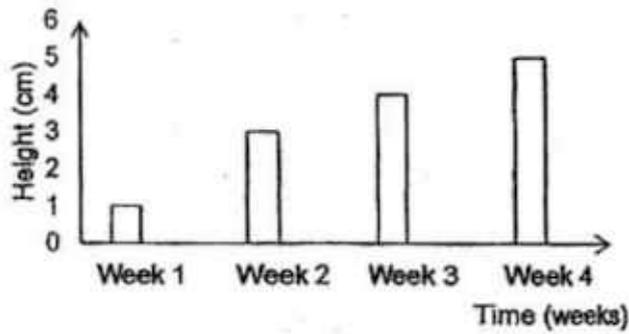
- (1) water is needed for the plant's growth
- (2) the type of vase affects the plant's growth
- (3) the amount of water given to plants affect their growth
- (4) the amount of light received by the plants affect their growth

13. As a seed grows into an adult plant, its height changes. Which of the graphs below shows the growth of a seed into an adult plant over a period of 4 weeks?

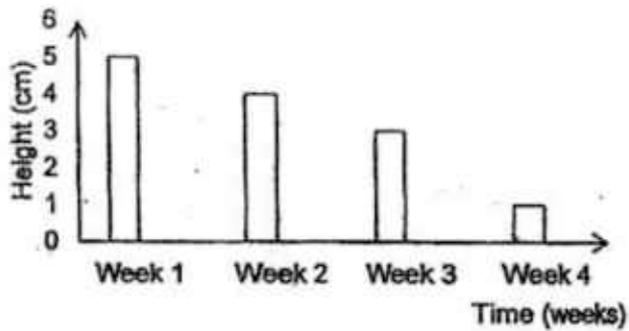
(1)



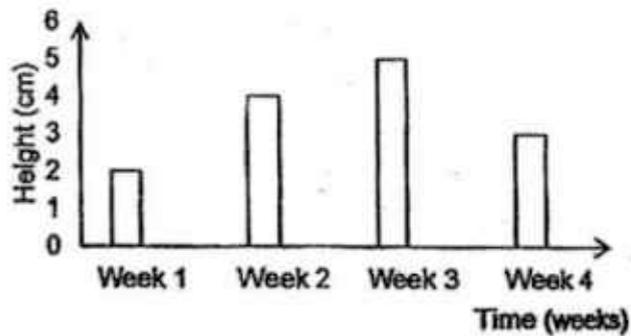
(2)



(3)



(4)



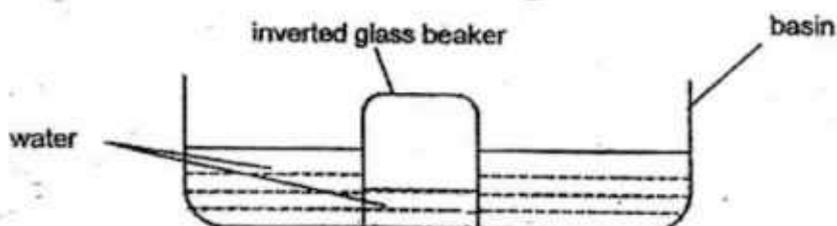
14. The table below shows the properties of substances J, K and L. A tick (✓) means the substance has the property.

Properties			
	Does it have a definite shape?	Does it have a definite volume?	Can it be compressed?
J	x	x	✓
K	x	✓	x
L	✓	✓	x

Which one of the following examples best represents substances J, K and L?

	J	K	L
	Oil	Marble	Oxygen
(2)	Oxygen	Oil	Marble
	Marble	Oxygen	Oil
	Oxygen	Marble	Oil

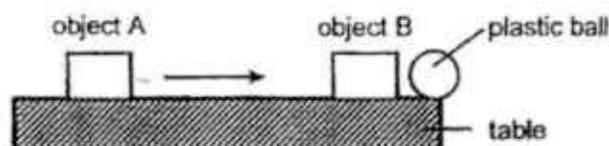
15. Rina took an empty glass beaker, inverted it and pushed it into a basin of water as shown below. She observed a small amount of water enter the glass.



What does this show about the property of air?

- (1) Air has mass.
- (2) Air can be compressed.
- (3) Air has a definite shape.
- (4) Air has a definite volume.

16. Alex set up an experiment as shown below. He moved object A towards object B and recorded his observation. He replaced object B with object C and repeated his experiment and recorded his observations in the table below. Object A did not come into contact with other objects during the experiment.

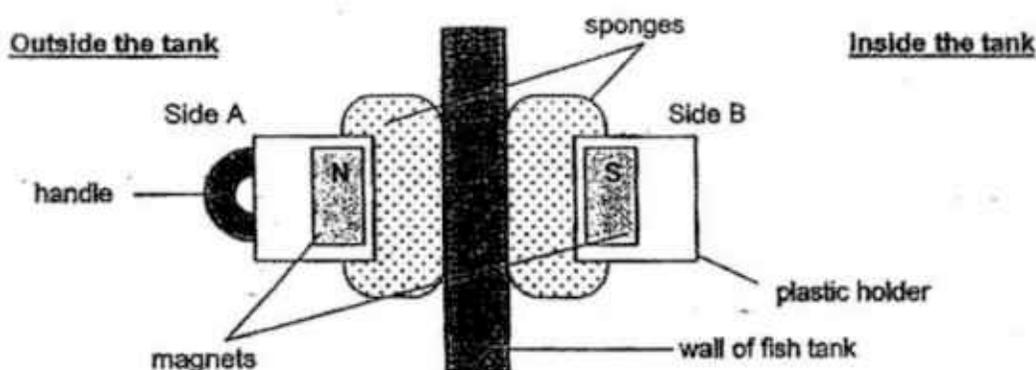


Object	Observations
B	Ball pushed off the table by object B
C	Ball remained in place

What can objects A, B and C be?

	A	B	C
(1)	Plastic cube	Magnet	Magnet
(2)	Steel cube	Plastic cube	Magnet
(3)	Magnet	Magnet	Plastic cube
(4)	Iron cube	Steel cube	Plastic cube

17. Max bought a device to clean his fish tank. It is used to clean both sides of the fish tank as shown in the diagram below.

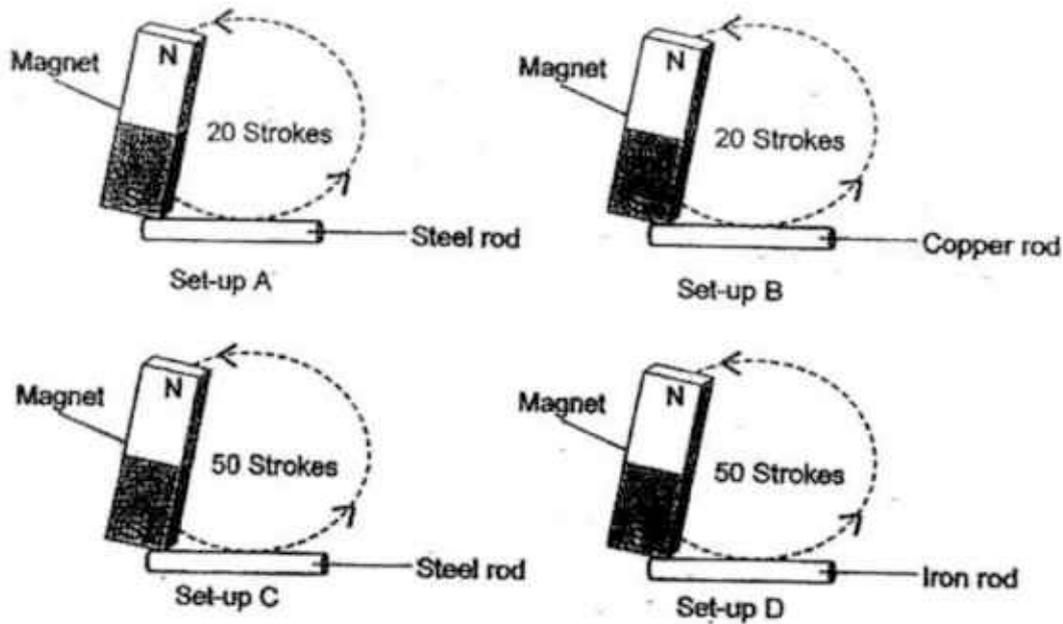


When side A is moved across the fish tank, side B also moves in the same direction as side A. Max noticed that there were magnets on both sides of the device.

Which of the following reasons explains what material the wall of the fish tank must be made of for the device to work?

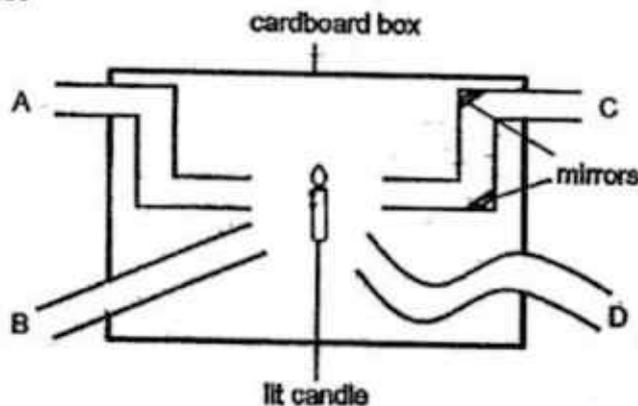
	Material	Explanation
(1)	Iron	Iron is a magnetic material.
(2)	Steel	To allow side A and B to be attracted.
(3)	Glass	Glass allows magnetism to pass through it.
(4)	Plastic	Plastic does not allow magnetism to pass through it.

18. Gabriel conducted an experiment as shown below using four set-ups, A, B, C and D. He used the same type of magnet and rods of the same mass and size for each set up.



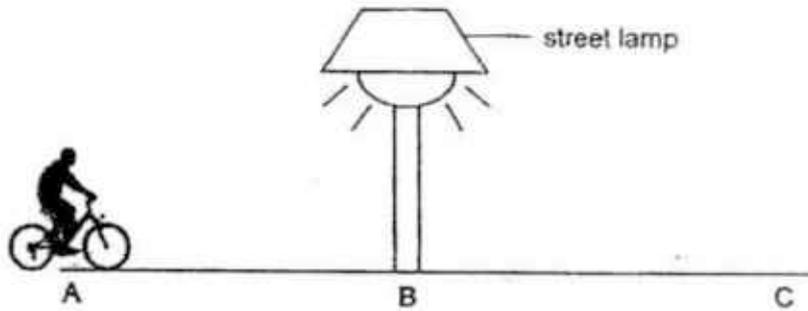
Gabriel wants to test whether the magnetic strength of a rod is affected by the number of times it is stroked with a magnet. Which 2 set-ups should Gabriel use to conduct a fair experiment?

- (1) A and B
  - (2) A and C
  - (3) B and C
  - (4) C and D
19. A lit candle was placed in the middle of a cardboard box as shown below. Four tubes, A, B, C and D were placed in the box. Which tube(s) can be used to view the candle?

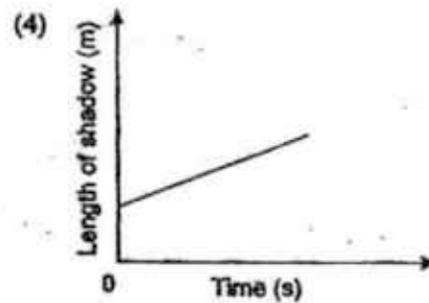
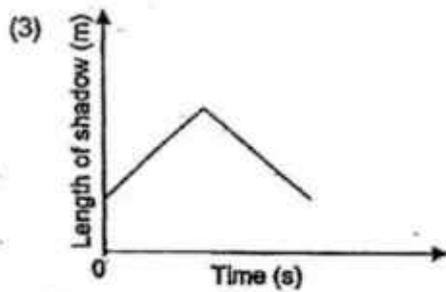
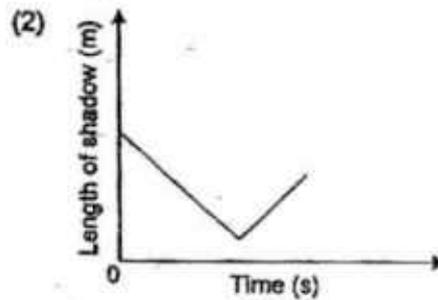
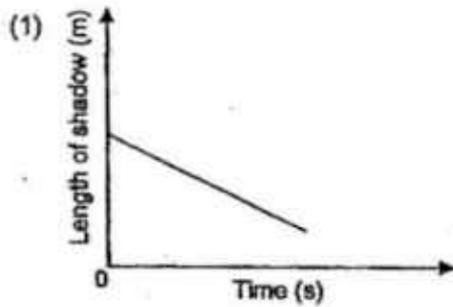


- (1) C only
- (2) B and C only
- (3) A, B and C only
- (4) A, B, and D only

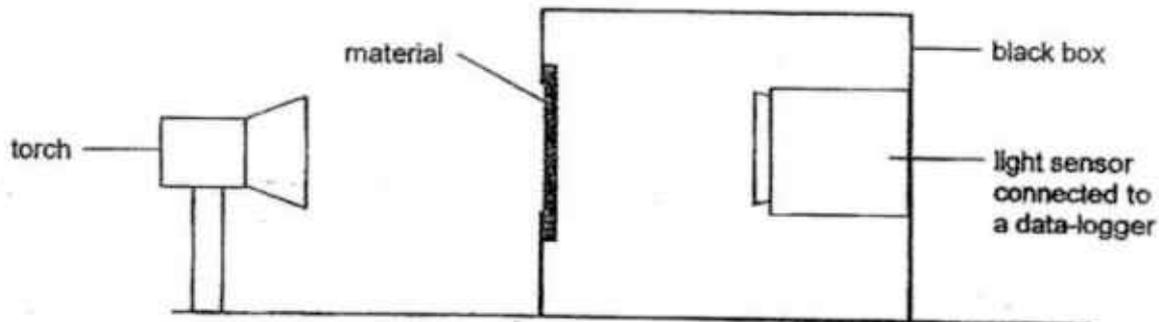
20. Joe cycled down a road at night past a lighted street lamp from point A to C.



Which one of the following graphs shows correctly the changes in the length of Joe's shadow as he cycles from point A to point C over a period of time?



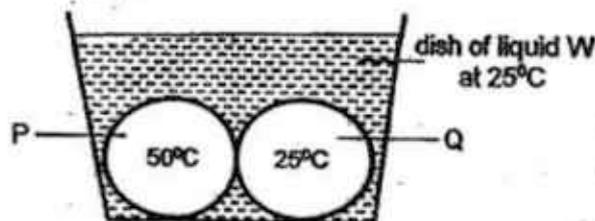
21. Alvin sets up an experiment using a torch, a black box, a light sensor and a set of materials. The light sensor is working on a scale of 0 to 10. The data-logger will show a reading of '0' if no light is detected and '10' for the most light detected.



Which of the following is most likely the readings recorded by the data-logger if the materials Alvin tested were a cardboard, clear plastic and a piece of frosted glass?

	Cardboard	Clear plastic	Frosted glass
(1)	10	10	0
(2)	5	0	10
(3)	0	10	5
(4)	0	5	10

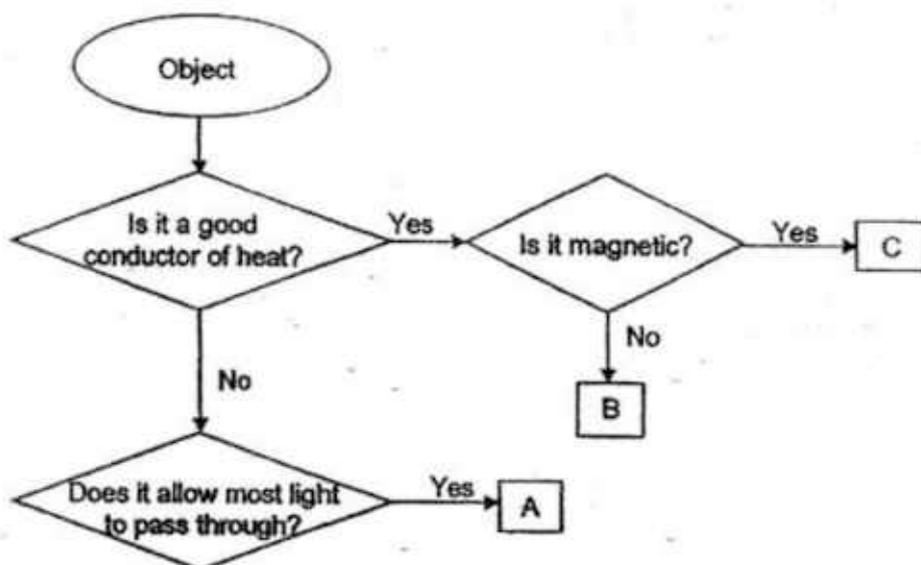
22. Alan used two similar metal objects, P and Q, made of the same material and heated the objects to a temperature of  $50^{\circ}\text{C}$  and  $25^{\circ}\text{C}$  respectively. He then placed them together into a dish containing liquid W at  $25^{\circ}\text{C}$  as shown below.



Which one of the following shows the heat flow immediately after P and Q were placed into the water?

- (1) P loses heat to Q only
- (2) P gains heat from W only
- (3) P loses heat to Q and W
- (4) Q loses heat to P and W loses heat to P

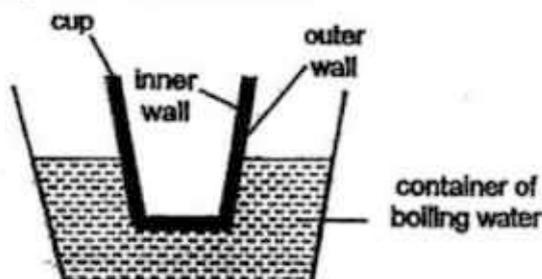
23. Study the flow chart below.



Based on the information above, which one of the following best represents objects A, B and C?

	Object A	Object B	Object C
	clear plastic cup	steel cup	aluminum cup
	aluminum cup	clear plastic cup	steel cup
	steel cup	aluminum cup	clear plastic cup
(4)	clear plastic cup	aluminum cup	steel cup

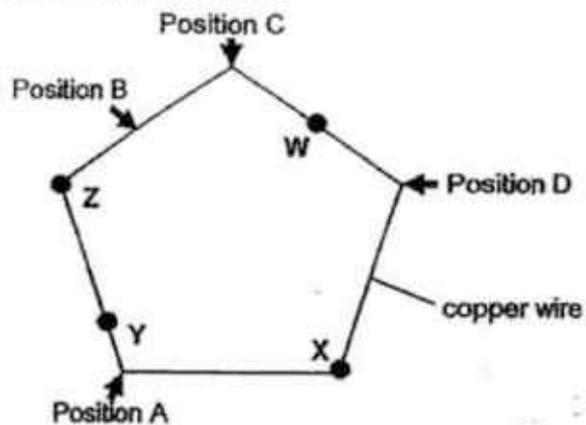
24. Paul took a cup made of glass out of the freezer and placed it into a container of boiling water as shown below.



He observed that the outer wall of the cup cracked. Which of the following best explains his observations?

- (1) The cup expanded more than it contracted.
- (2) The outer wall of the cup was gaining heat but the inner wall of the cup was losing heat.
- (3) The inner wall of the cup contracted faster than the outer wall of the cup.
- (4) The outer wall of the cup expanded faster than the inner wall of the cup.

25. Muthu placed the same amount of wax at 4 points, W, X, Y, and Z, on a piece of copper wire that was bent into the shape of a pentagon with sides of equal length. When the copper wire was strongly heated at a certain position, the wax began to melt in the order of W, Z, Y, X.



At which position, A, B, C or D, was the wire most likely heated?

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

**End of Booklet A**

**SEMESTRAL ASSESSMENT 2 (2017)**

**PRIMARY 4**

**SCIENCE**

**BOOKLET B**

**Thursday**

**2 November 2017**

**1 hr 30 min**

Name: \_\_\_\_\_ ( ) Class: 4.( ) Parent's Signature \_\_\_\_\_

**INSTRUCTIONS TO PUPILS**

- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 13 questions in this booklet.
- 4 Answer ALL questions.
- 5 The marks are given in the brackets [ ] at the end of each question or part question.

<b>Booklet</b>	<b>Possible Marks</b>	<b>Marks Obtained</b>
<b>A</b>	<b>50</b>	
<b>B</b>	<b>40</b>	
<b>PBA</b>	<b>10</b>	
<b>Total</b>	<b>100</b>	

---

**This question paper consists of 14 printed pages (inclusive of cover page).**

**Booklet B (40 marks)**

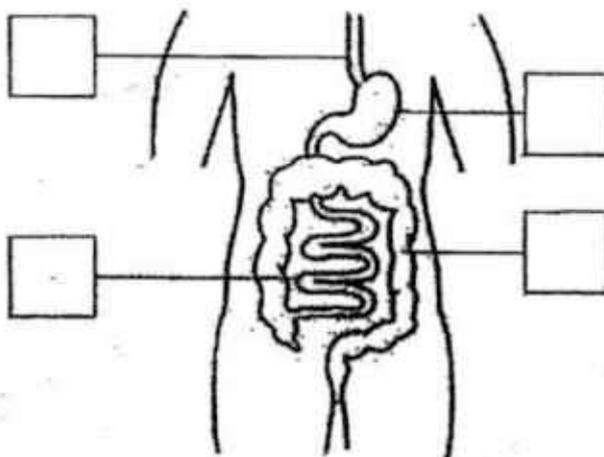
For questions 26 to 38, write your answers in this booklet.

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

26. The diagram shows parts of the human digestive system.

(a) Tick (✓) the correct box to show where the stomach is.

[1]



Fill in the blanks using the following words.

large intestine	gullet	small intestine	mouth
-----------------	--------	-----------------	-------

(b) Partially digested food from the stomach is next passed on to the

[1]

\_\_\_\_\_

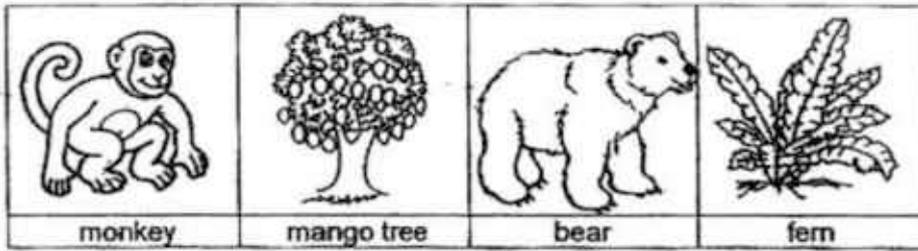
(c) \_\_\_\_\_ is where water is absorbed [1]  
from the undigested food.

(Go on to the next page)

SCORE	3
-------	---

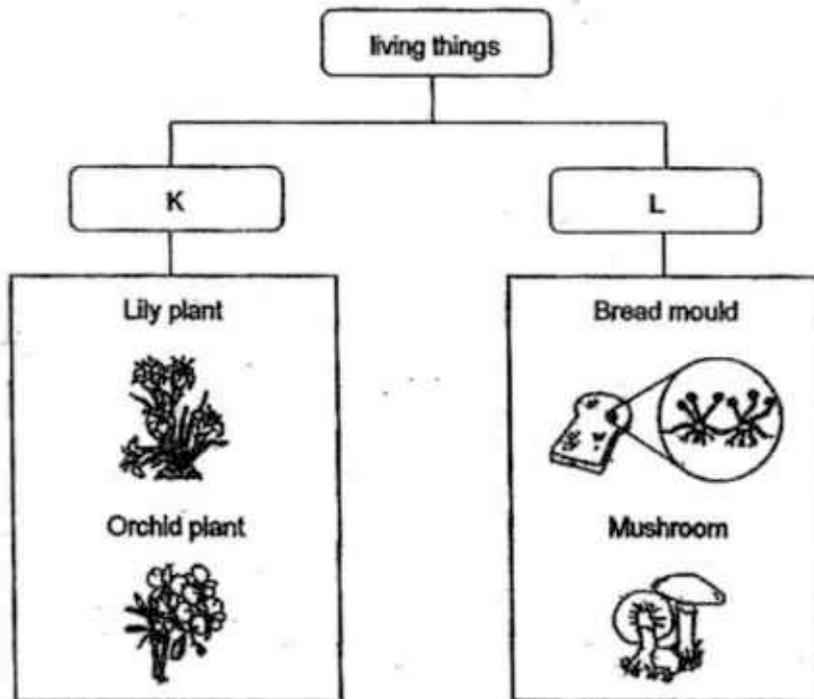
27 (a) Classify the following living things into animals and plants.

[2]



animals	plants

(b) Study the classification chart below.



Choose the correct words from the box to give suitable headings for K and L.

[2]

flowering plants    non-flowering plants    fungi    bacteria

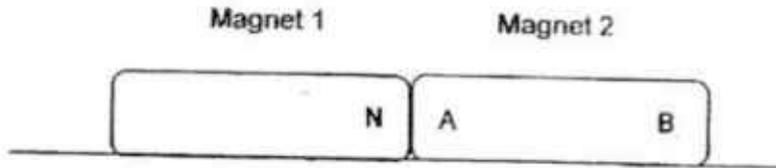
K: \_\_\_\_\_

L: \_\_\_\_\_

(Go on to the next page)

SCORE	4
-------	---

28. Two magnets are placed together as shown below.



- (a) The north pole of magnet 1 is labelled N.  
Name the poles labelled A and B on magnet 2.

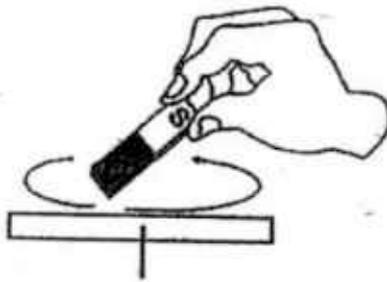
[2]

A: \_\_\_\_\_

B: \_\_\_\_\_

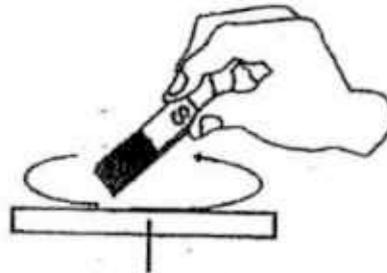
- (b) Jane stroked two identical iron rods X and Y with the same magnet as shown in the figure below.

10 strokes



Rod X

50 strokes



Rod Y

Both rods became magnets and were used to attract identical pins.

Circle the correct answer below.

[1]

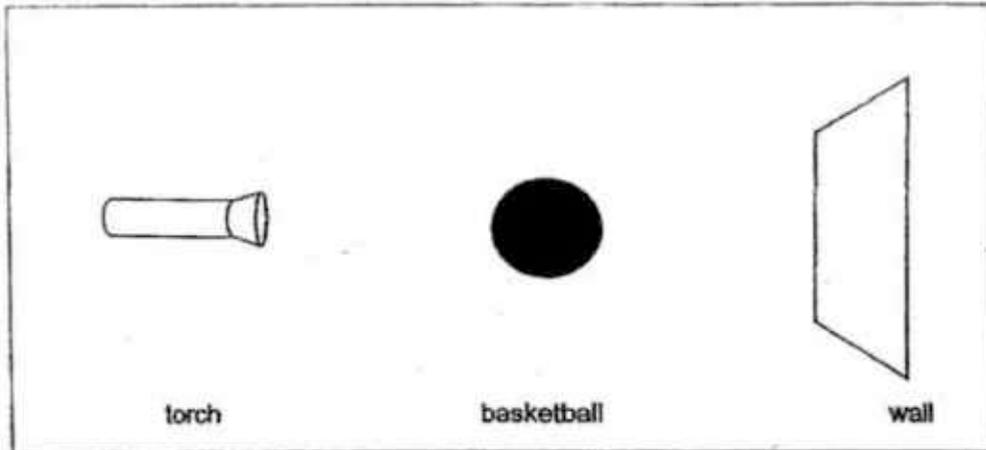
Rod X attracted \_\_\_\_\_

( fewer pins than / the same number of pins as / more pins than )

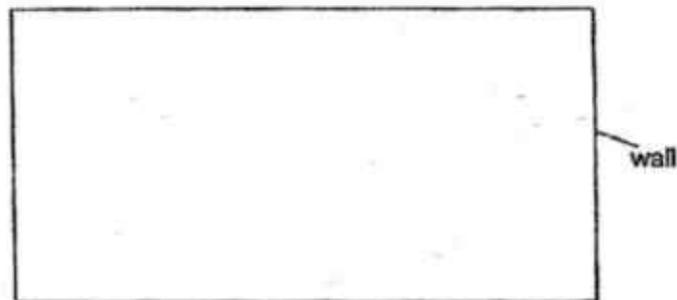
(Go on to the next page)

SCORE	
	3

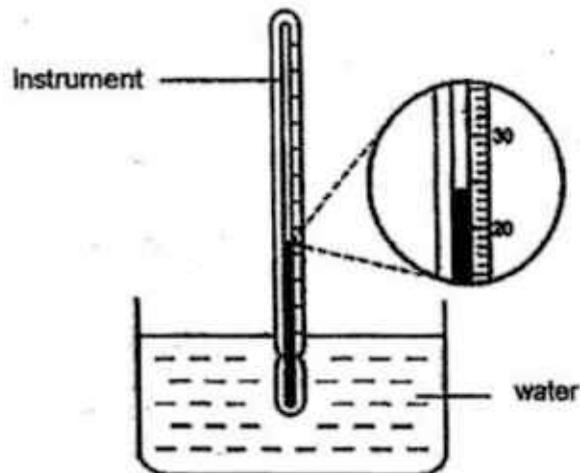
29. Tom shines a torch on a basketball and a shadow is formed on a wall.



- (a) A shadow is formed when light is \_\_\_\_\_ by an object. [1]
- (b) Draw the shadow of the basketball that is formed on the wall. [1]



Tom used an instrument to measure the temperature of water in a glass.



- (c) What is the instrument called? [1]

\_\_\_\_\_

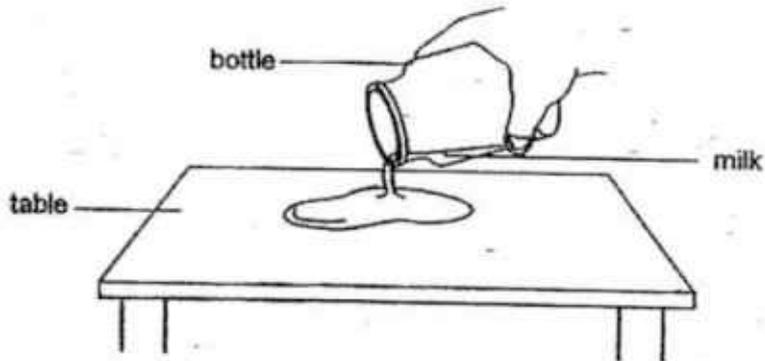
(Go on to the next page)

SCORE	/
	3

30. Choose the correct words from the box to fill in the blanks below.

solid	liquid	gas
-------	--------	-----

- (a) Ali pours milk from a bottle onto a table as shown below.

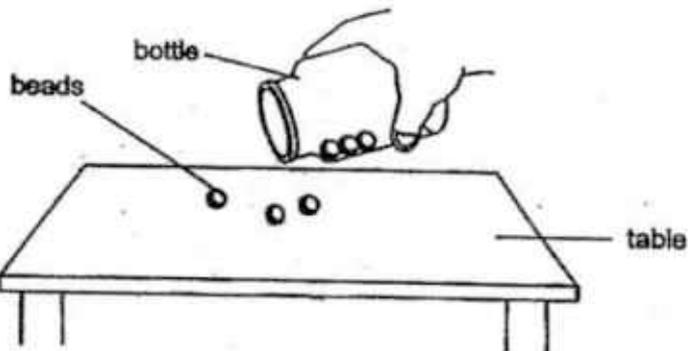


The volume of milk remains the same but its shape changes.

This shows that milk is a \_\_\_\_\_.

[1]

- (b) Ali pours some beads from a bottle onto a table as shown below.



The shape and volume of the beads remain the same.

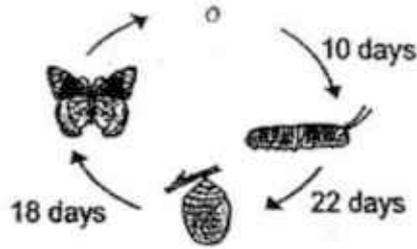
This shows that a bead is a \_\_\_\_\_.

[1]

(Go on to the next page)

SCORE	2
-------	---

31. The picture below shows the life cycle of a butterfly. The number of days shows the time taken for the animal to grow to the next stage.



- (a) Name the stage of the life cycle of the butterfly where it is considered most harmful to farmers. Explain why.

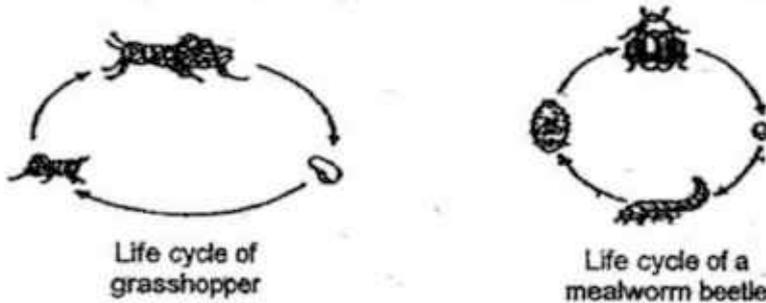
[1]

---



---

Study the life cycle of a grasshopper and a mealworm beetle as shown below.



- (b) State one similarity between the 2 life cycles above.

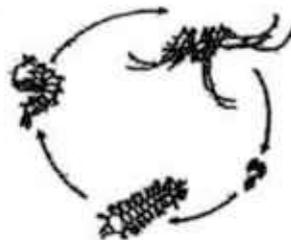
[1]

---



---

Study the life cycle of the mosquito below.



- (c) State one difference between the life cycle of the mosquito and the life cycle of a grasshopper.

[1]

---

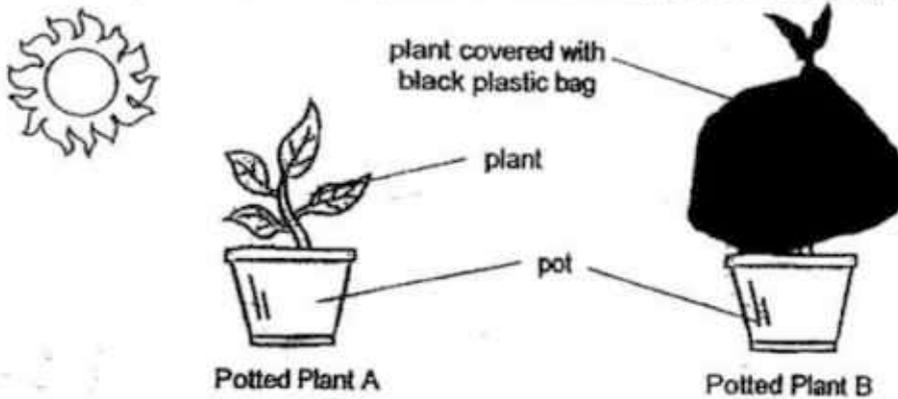


---

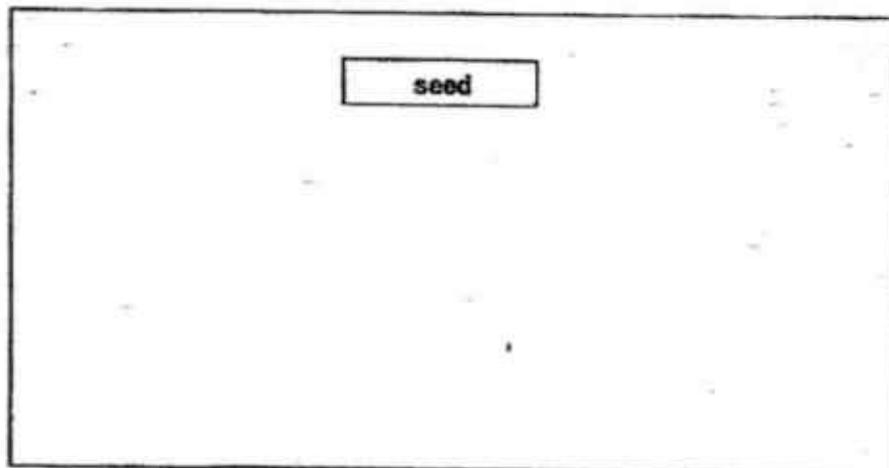
(Go on to the next page)

SCORE	3
-------	---

32. Rozie wanted to find out if light is needed for plants to grow. So, she placed two identical tomato plants in pots in her school field and covered Plant B with a black plastic bag. She watered each plant with the same amount of water every day.



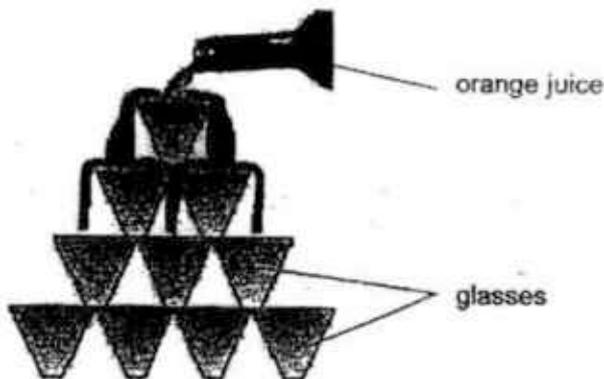
- (a) State two other variables which need to be kept constant so that the experiment would be fair. [1]
- \_\_\_\_\_
- \_\_\_\_\_
- (b) What results would Rozie need to compare for her to conclude that light is needed for plants to grow well? [1]
- \_\_\_\_\_
- \_\_\_\_\_
- (c) At which stage of the life cycle of the tomato plant will flowers develop? [1]
- \_\_\_\_\_
- (d) Draw the life cycle of the tomato plant below starting from the seed stage. [1]



(Go on to the next page)

SCORE	4
-------	---

33. Anne carried out an experiment at home. She arranged some glasses in the form of a triangle stacked on top of each other as shown below. She poured orange juice into the top glass and let it flow down to the glasses at the bottom. Once all the glasses were filled to the brim, she stopped pouring.



Anne conducted the experiment again. This time she placed three ice cubes into each glass before pouring out the orange juice. As a result, Anne had to pour lesser amount of orange juice into each glass to reach its brim.

- (a) State 2 properties of liquid based on Anne's

---



---

- (b) Using the property of matter, explain how placing ice cubes into each glass resulted in lesser amount of orange juice poured.

---

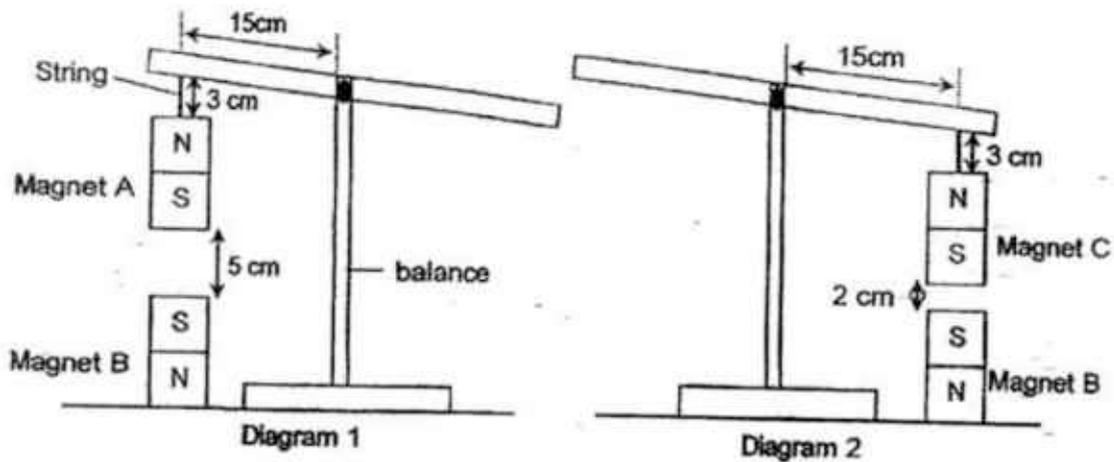


---

(Go on to the next page)

SCORE	3
-------	---

34. John has three magnets, A, B and C, of the same size and mass of 100g. He set up an experiment on a table using a balance and magnets A and B as shown in diagram 1. He repeated his experiment with magnets B and C as shown in diagram 2.



John observed that the distance between Magnet A and Magnet B was 5 cm and the distance between Magnet C and Magnet B was 2 cm.

- (a) Give a reason why the distance between Magnet C and Magnet B was less than the distance between Magnet A and Magnet B. [1]

---



---

- (b) If Magnet A was flipped over, predict the new distance between Magnet A and Magnet B. Explain your prediction. [1]

---



---

- (c) If John replaced Magnet C with an iron bar, what would he observe about the distance between the iron bar and Magnet B? Give a reason for your answer. [1]

---

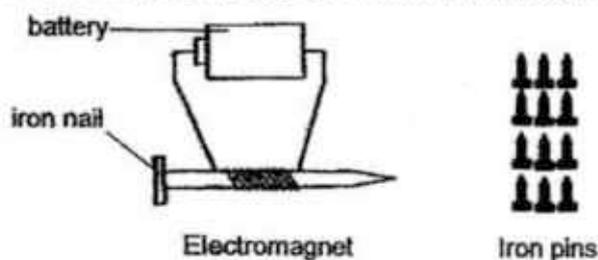


---

(Go on to the next page)

SCORE	3
-------	---

35. Samuel set up an experiment as shown in the diagram below. He recorded the number of iron pins attracted to the electromagnet as he increased the number of batteries in the electromagnet. He kept the distance between the electromagnet and the iron pins the same. He recorded his observations in the table below.



<b>Number of batteries</b>	0	1	2	3
<b>Number of iron pins attracted</b>	X	2	4	6

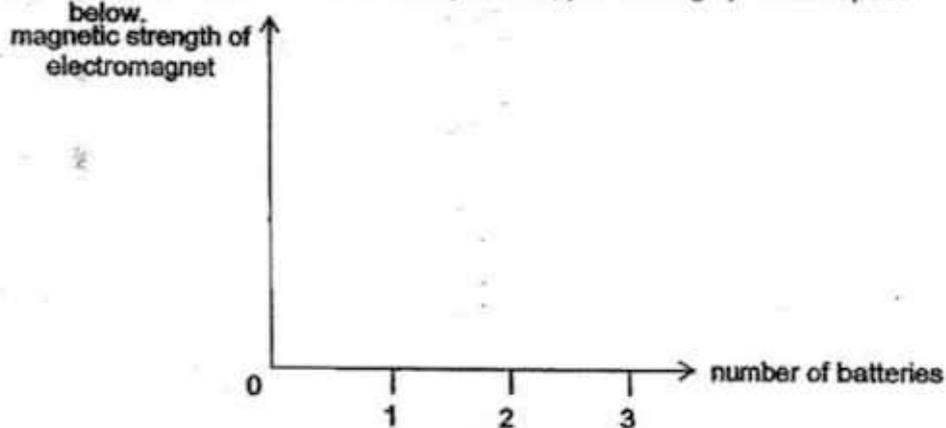
- (a) What is the value of X? Give a reason for your answer. [1]

---



---

- (b) Using the results of Samuel's experiment, plot a line graph in the space below. [1]



- (c) Samuel changed 1 more variable and carried out the experiment again. He recorded his observations in the table below.

<b>Number of batteries</b>	0	1	2	3
<b>Number of pins attracted</b>	X	5	7	9

What variable could Samuel have changed to get the new results if he used the same iron nail? [1]

---

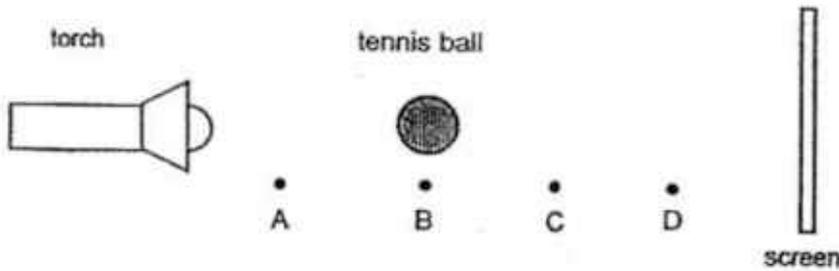


---

(Go on to the next page)

SCORE	3
-------	---

36. Gareth conducted an experiment by placing a tennis ball of height 2 cm between a torch and a screen as shown in the diagram below.



The tennis ball is moved to several positions, A, B, C and D, between the torch and screen. At each position, the height of the shadow formed on the screen is measured and recorded in the table below.

Position of tennis ball	Height of shadow (cm)
A	12
B	9
C	7
D	5

- (a) Based on the result of the experiment, what is the relationship between the distance of the tennis ball to the torch and the height of the shadow formed? [1]

---



---

- (b) The tennis ball is moved to different positions. Predict the new height of the shadow that will be formed on the screen. Write your answers in the table below. [1]

Position of tennis ball	Height of shadow (cm)
Between A and B	
Between D and Screen	

- (c) If Gareth used a clear glass ball for the experiment, what will he observe about the shadow on the screen? Give a reason for your answer. [1]

---

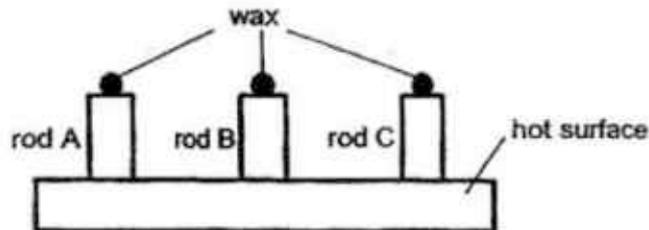


---

(Go on to the next page)

SCORE	3
-------	---

37. Brandon used three rods, A, B and C, of the same length but made of different materials and placed them on a hot surface as shown below. He placed the same amount of wax at the top end of each rod.



Brandon recorded the time taken for the wax to melt completely in the table below.

Rod	Time taken for wax to melt completely (minutes)
A	10
B	5
C	3

- (a) Based on the results of Brandon's experiment, what is the aim of his experiment?

[1]

---



---

- (b) If Brandon increased the thickness of rod B and repeated the experiment, would the time taken for the wax to melt completely be longer or shorter? Explain your answer.

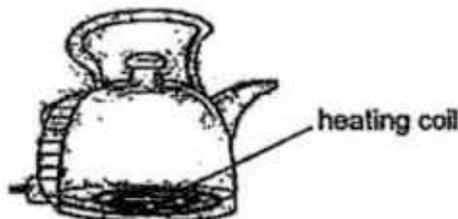
[1]

---



---

- (c) The picture below shows an electric kettle.



Which of the rods is most suitable to make the heating coil in the electric kettle? Explain your answer.

[1]

---

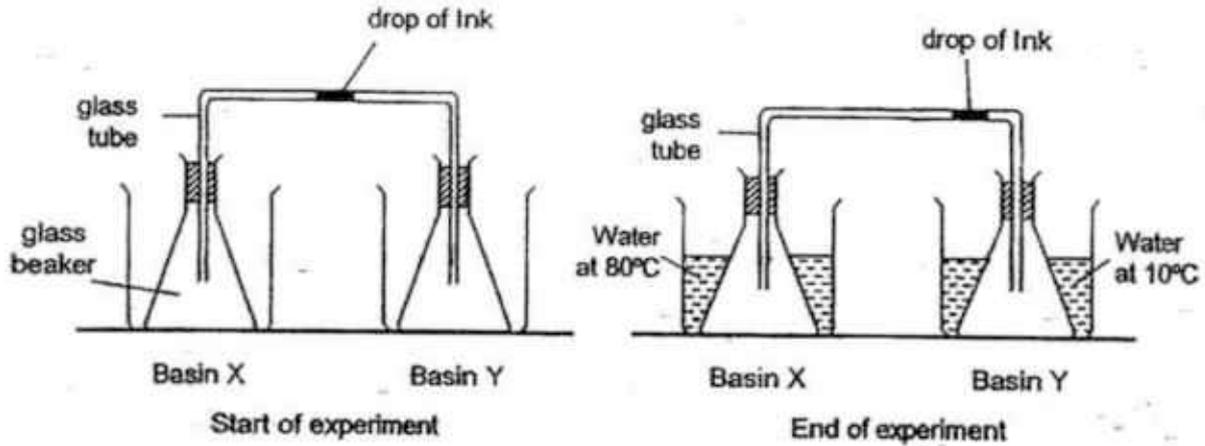


---

(Go on to the next page)

SCORE	3
-------	---

38. Patrick set up an experiment using two identical glass beakers and two stoppers. He connected the two beakers with a glass tube which had a drop of ink in the middle at the start of the experiment. He then placed the beakers into identical basins X and Y. Patrick then poured hot water at 80°C into basin X and cold water at 10°C into basin Y. At the end of the experiment, the drop of ink moved to the right as shown below.



- (a) Explain why the drop of ink moved to the right at the end of the experiment [2]

---

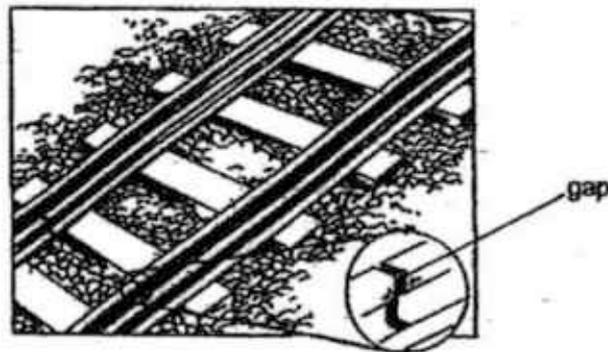


---



---

- (b) The diagram below shows a train track that is made of metal.



- What can be observed about the gap on a hot day? Explain why. [1]

---



---

End of Paper

SCORE	3
-------	---

EXAM PAPER 2017 (P4)

SCHOOL : ACS

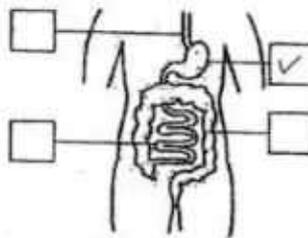
SUBJECT : SCIENCE

TERM : SA2

ORDER CALL :

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

26)a)



26)b)small intestine

c)Large intestine

27)a)animals \_\_\_\_\_ Plants

monkey

mango tree

bear

fern

b)K : flowering plants

L : fungi

28)a)A: South

B: North

b)fewer pins than

29)a)blocked

b) 

c)Thermometer

30)a)liquid

b)solid

31)a)Larva it will eat the farmers plant.

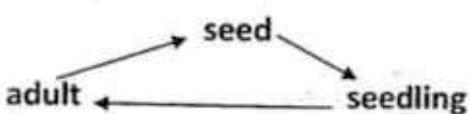
b)They both have an egg stage.

c)The life cycle of mosquito has 4 stages but the grasshopper has 3 stages in its life cycle.

32)a)The type of soil and the same type of plant.

b)Plant A grew better than Plant B.

c)Adult.

d) 

33)a)Liquid occupy space and has a definite shape.

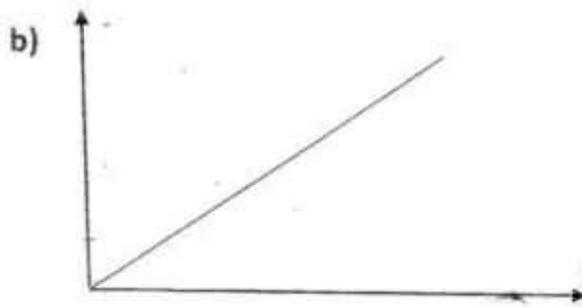
b)The ice cube takes up space in the glass there will be less space for the orange juice to fill up the glasses.

34)a)Magnet C and B were weaker than magnet A and B.

b)The unlike poles of magnet A and B are fusing each other and attracted.

c)The distance would be closer. The iron bar is a magnetic material and will be attracted to magnet B.

35)a)0. There were no batteries so it could power the electromagnet.



c)Increased the number of coins around the iron nail.

36)a)The further away the torch is from the ball, the shorter the height of the shadow is.

b)10cm / 3 cm

c)Glass is a transparent object thus allows most light to pass through.

37)a)To find if different materials for the rod will affect the time taken for the wax to melt.

b)As more heat would be needed.

c)Rod C. It heats up the fastest so it will heat up the water in the kettle faster.

38)a)The heat from the water in Basin X caused the air to expand and the air in Basin Y contracted therefore the air in Basin X pushed the ink to the right.

b)It will be shorter the metal track gain heat and expanded.



**METHODIST GIRLS' SCHOOL**

Founded in 1887



**END-OF-YEAR EXAMINATION 2017  
PRIMARY 4  
SCIENCE**

**BOOKLET A**

**Total Time for Booklets A and B: 1 hour 30 minutes**

**INSTRUCTIONS TO CANDIDATES**

**Do not turn over this page until you are told to do so.**

**Follow all instructions carefully.**

**Answer all questions.**

**Shade your answers in the Optical Answer Sheet (OAS) provided.**

**Name: \_\_\_\_\_ ( )**

**Class: Primary 4. \_\_\_\_\_**

**Date : 31 October 2017**

**This booklet consists of 20 printed pages including this page.**

For each question from 1 – 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet.

[58 marks]

- 1 Alice has a mini fish bowl with two guppies and some water plants as shown below. She feeds them with some tubifex worms each day. After a month, she noticed that the fish bowl is now too small for them.



This shows that the guppies are living things because they \_\_\_\_\_.

- (1) grow
  - (2) respond
  - (3) breathe
  - (4) reproduce
- 2 The diagram below shows a plant. Which part of the plant absorbs water and mineral salts for the plant to make food?



(Go on to the next page)

3 Study the pictures below.



Straw mushroom



Bird's Nest Fern

Which of the following statement/s about the organisms above is/are correct?

- A Both have no leaves.
- B Both reproduce from spores.
- C Both are non-flowering plants.
- D Both cannot make their own food.

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

4 The picture below shows Animal X.

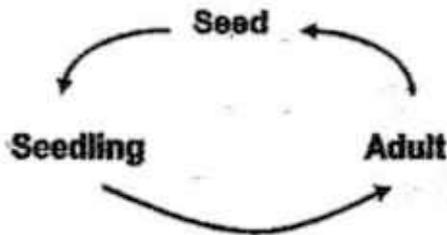


Which group of animals does Animal X belong to and what is its special characteristic?

	Group of animal	Characteristic
1	Birds	It has wings.
2	Birds	It is covered with feathers.
3	Mammals	It has hair.
4	Mammals	It has two legs.

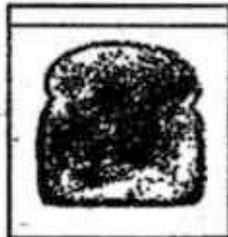
(Go on to the next page)

- 5 The diagram below shows the life cycle of a plant.

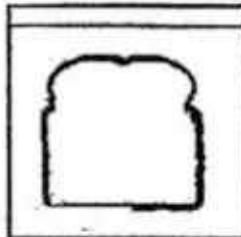


Based on the above life cycle, which one of the following statements is definitely true?

- (1) It is a flowering plant.
  - (2) It will grow into a tree.
  - (3) The fruit can be eaten.
  - (4) It cannot make its own food.
- 6 Ali had two pieces of bread, A and B. He toasted Bread A for 3 minutes. He then sprinkled an equal amount of water onto each slice of bread and placed bread, A and B, into separate plastic bags and left them on the kitchen table for five days.



Bread A (toasted)

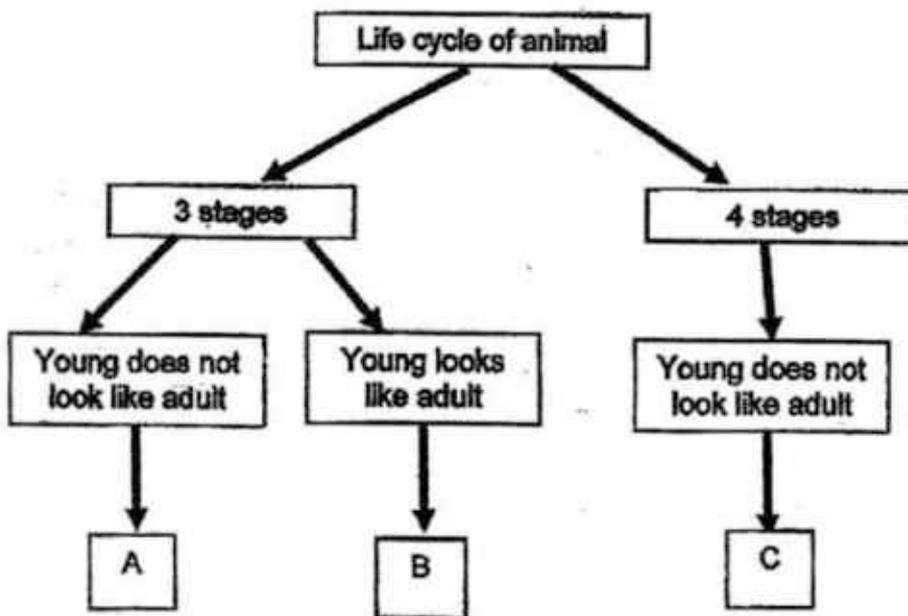


Bread B (plain)

On the fifth day, what would Ali observe on the two pieces of bread?

- (1) Mould is found growing on Bread A but not Bread B.
- (2) More mould is found growing on Bread B than Bread A.
- (3) Less mould is found growing on Bread B but not Bread A.
- (4) The same amount of mould is found on both pieces of bread.

7 Study the classification chart below.

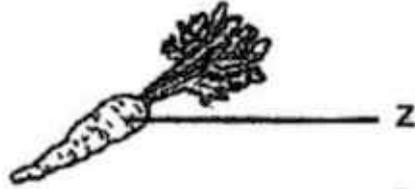


Which one of the following represents animal A, B and C?

	A	B	C
(1)	grasshopper	toad	cockroach
(2)	toad	cockroach	housefly
(3)	butterfly	cockroach	toad
(4)	butterfly	grasshopper	toad

(Go on to the next page)

- 8 The picture below shows a picture of a carrot plant.

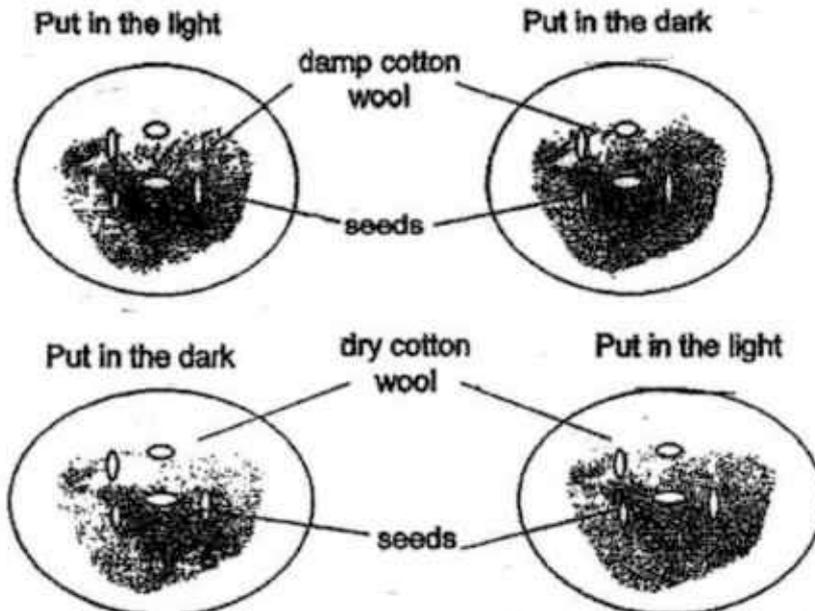


How is part Z useful to the plant?

- A It stores food for the plant.  
 B It provides support by anchoring the plant  
 C It absorbs water and minerals needed for growth.  
 D It transport food made by the leaves to all plant parts.

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

- 9 Rama set up an experiment as shown in the diagram below. At the end of the experiment, he observed that the seeds grew into seedlings in some petri-dishes but not in others.



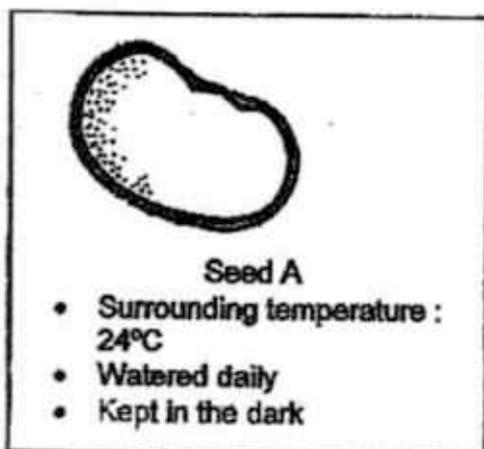
Rama was trying to find out if seeds need \_\_\_\_\_.

- (1) light to grow  
 (2) can grow in cotton wool  
 (3) water and light to grow into seedlings  
 (4) water, light and cotton wool to grow into seedlings

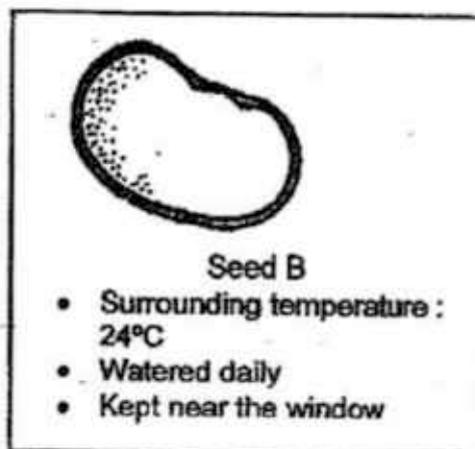
(Go on to the next page)

- 10 All prepared four set-ups as shown below to find out if light is needed for germination.

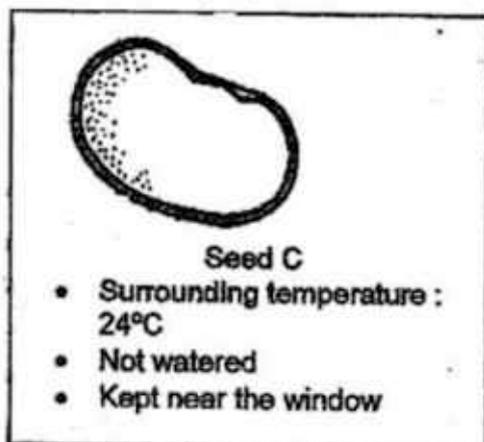
Set-up A



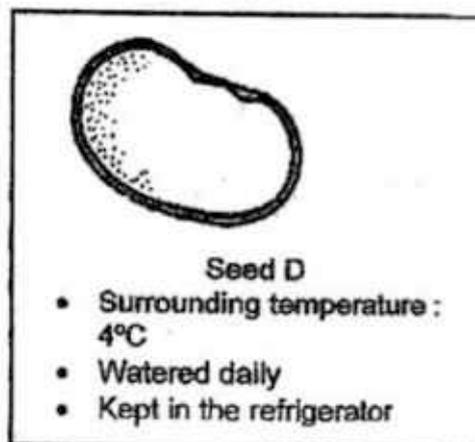
Set-up B



Set-up C



Set-up D



Which two set-ups should Ali use for his experiment?

- (1) Set-ups A and B
- (2) Set-ups C and D
- (3) Set-ups A and D
- (4) Set-ups B and C

(Go on to the next page)

- 11 The diagram below shows a ribcage.



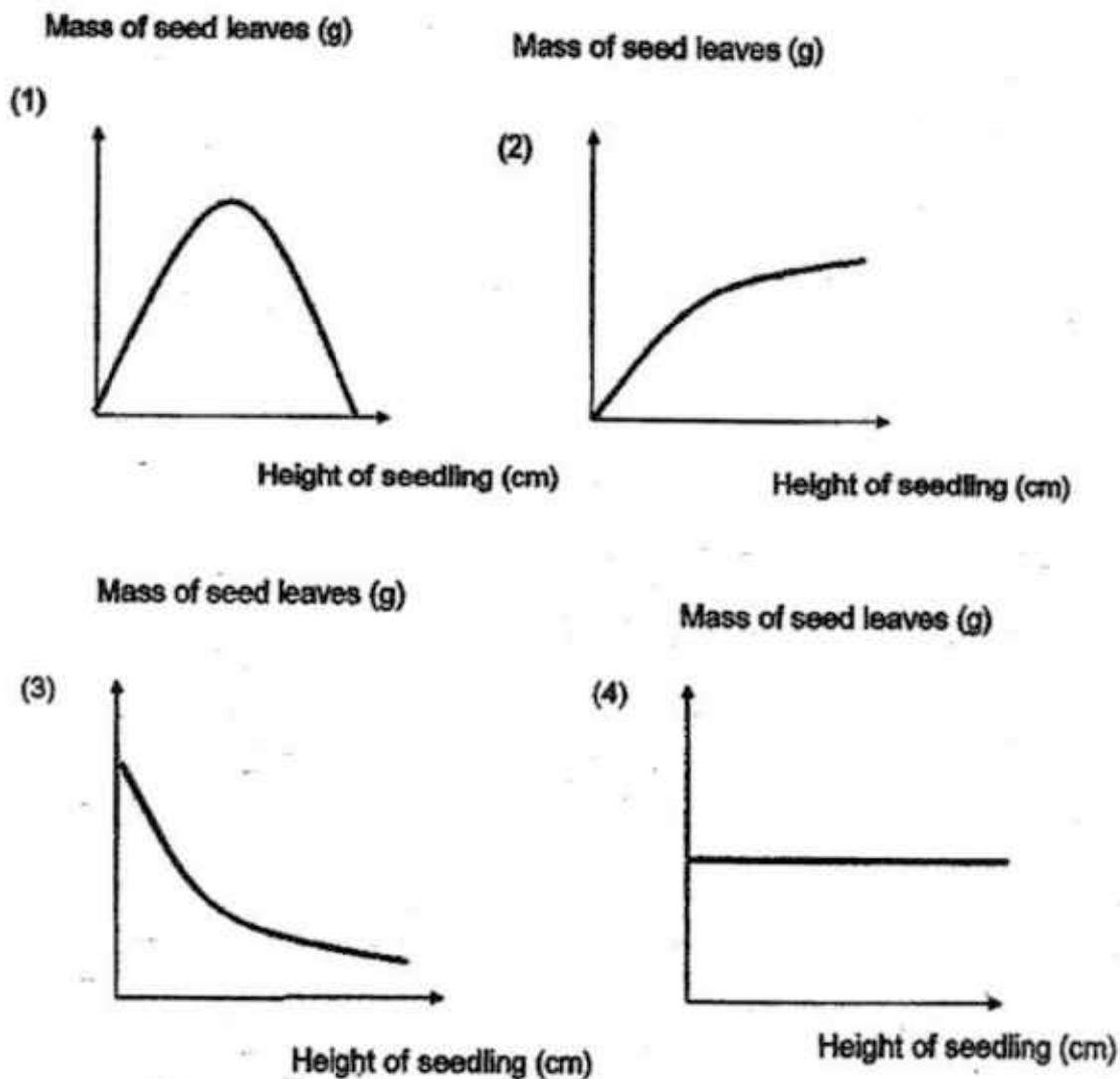
Which of the following statements about the ribcage are true?

- A It gives shape to the body.
- B It is part of the muscular system.
- C It is connected to the backbone.
- D It protects the brain, heart and lungs.

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

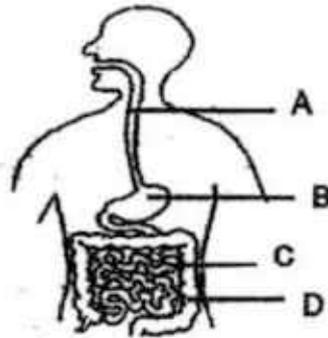
- 12 Sally grew some bean seeds and she recorded the changes in the mass of the seed leaves and the height of the seedlings.

Which graph below shows the correct relationship between the mass of the seed leaves and the height of the seedling?



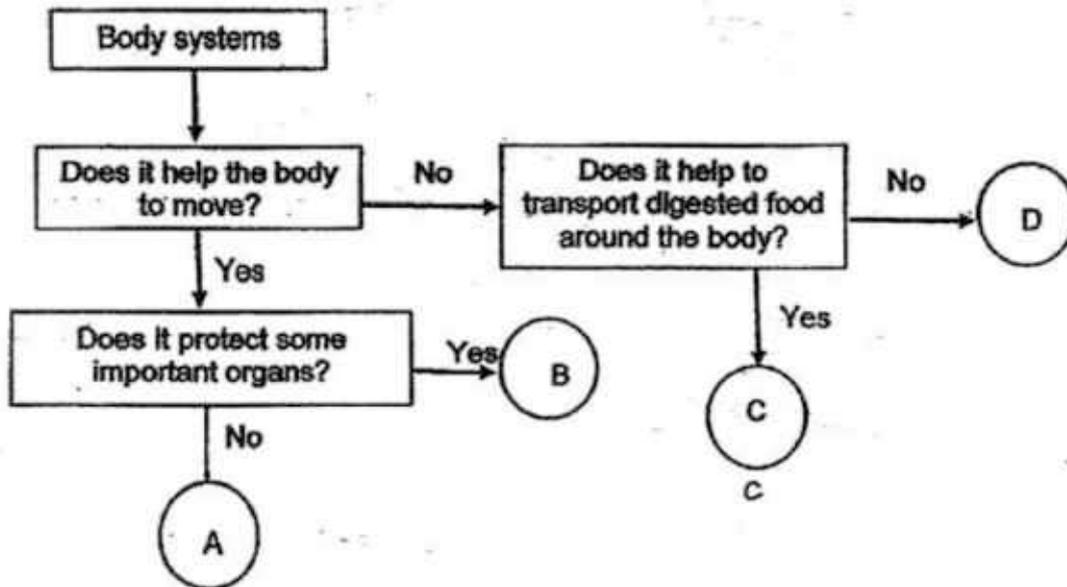
(Go on to the next page)

- 13 Study the human digestive system as shown below.



Which part absorbs water from the undigested food?

- (1) A  
 (2) B  
 (3) C  
 (4) D
- 14 The flowchart below shows some body systems, A, B, C and D working together.



Which one of the following best represents the skeletal system?

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

(Go on to the next page)

16 Which object will break easily when it is bent?

(1)



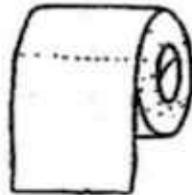
shirt

(2)



sponge

(3)



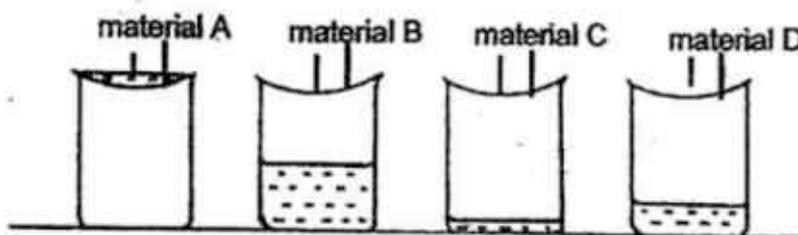
toilet roll

(4)



wooden ruler

16 Four different materials, A, B, C and D, were used to cover each beaker. 200ml of water was then poured onto the material into each beaker. The amount of water that passed through the material and collected in each beaker is shown below.



Which material is most suitable to be used for making a drinking straw?

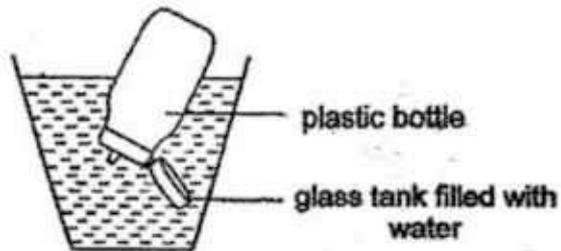
- (1) Material A
- (2) Material B
- (3) Material C
- (4) Material D

(Go on to the next page)

17 Which one of the following properties is true for both snow and oxygen?

- (1) They can be seen.
- (2) They occupy space.
- (3) They can be compressed.
- (4) They have definite shapes.

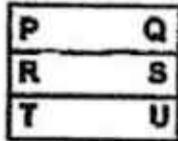
18 Nurul immersed a plastic bottle into a glass tank filled with water. She gave a tight squeeze on the empty bottle before releasing it.



Which one of the following would not be observed?

- (1) Some water would enter the bottle.
- (2) The water level in the tank increased.
- (3) Some bubbles were seen in the water.
- (4) The volume of plastic bottle remained the same.

- 19 Siti had arranged three bar magnets as shown below.

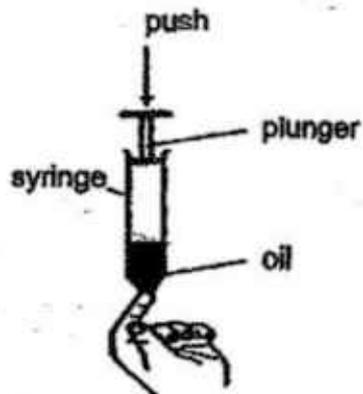


Which one of the following is another possible arrangement?

<p>(1)</p>	<p>(2)</p>
<p>(3)</p>	<p>(4)</p>

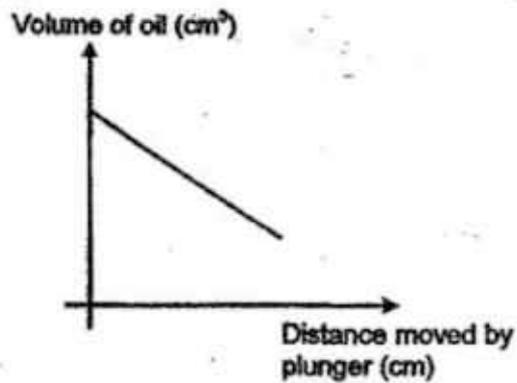
(Go on to the next page)

- 20 Maria performed an experiment with a syringe which is half filled with oil. She covered one end of the syringe and tried to push the plunger down.

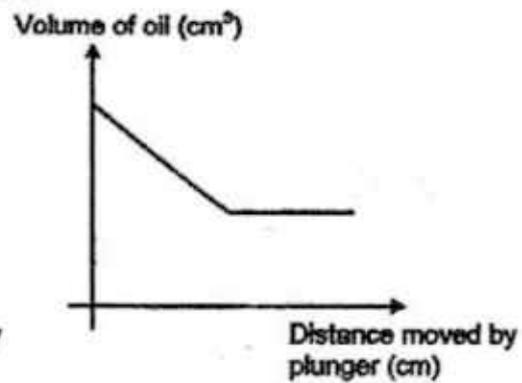


Which one of the following graphs shows the correct change in the volume of oil as the plunger was pushed down?

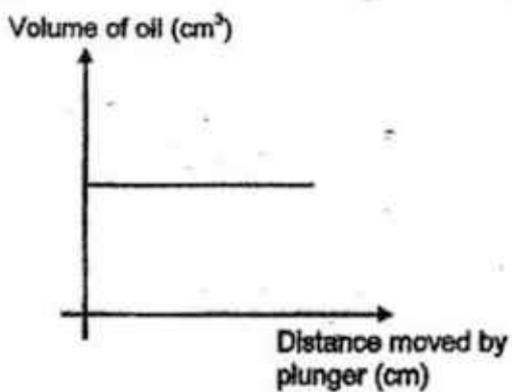
(1)



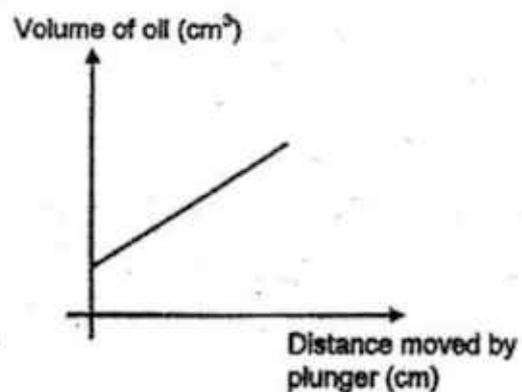
(2)



(3)



(4)



(Go on to the next page)

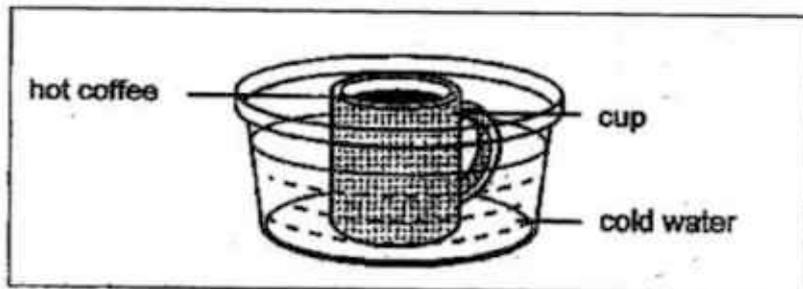
- 21 The ring and ball below are made of the same material.



At room temperature, the ball is unable to pass the ring. After heating the ring for ~~some~~ while, the ball passed through ring easily.

What material could the ring possibly be made of?

- (1) iron
  - (2) glass
  - (3) plastic
  - (4) rubber
- 22 A cup of hot coffee is placed into a basin of cold water.



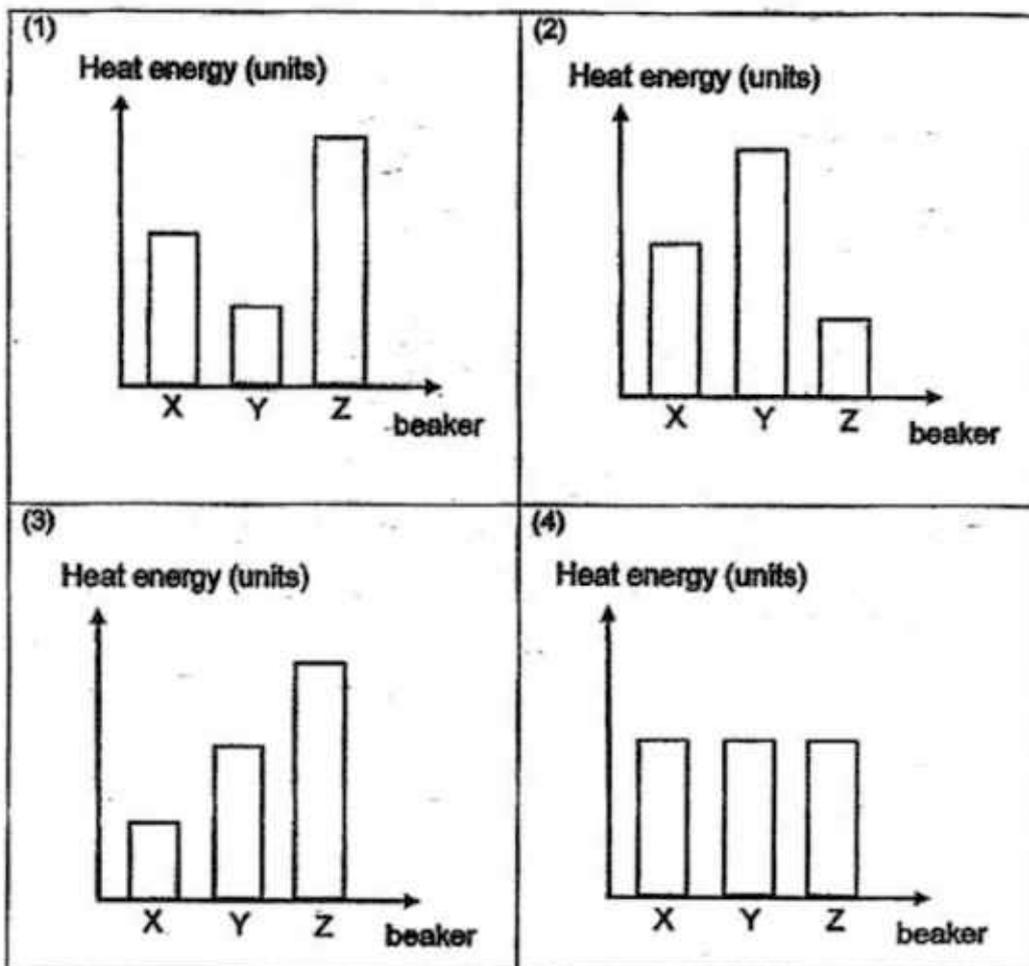
Which one of the following correctly describes the heat transfer that takes place?

	Cold water	Coffee	Cup
(1)	Heat gain from cup	Heat loss to cup	Heat gain from hot coffee
(2)	Heat gain from cup	Heat gain from cup	Heat gain from hot coffee
(3)	Heat loss to cup	Heat loss to cup	Heat loss to hot coffee
(4)	Heat loss to cup	Heat gain from cup	Heat loss to hot coffee

- 23 Three similar beakers were filled with water and heated for six minutes. The table below shows the amount of water in each beaker and the temperature of water before and after they were heated.

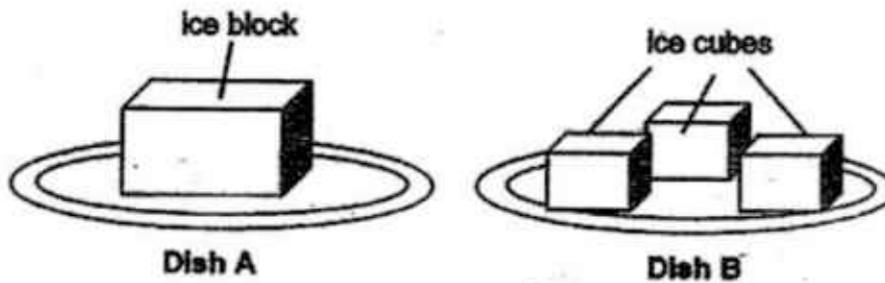
Beaker	Amount of water (ml)	Starting temperature ( $^{\circ}\text{C}$ )	Ending temperature ( $^{\circ}\text{C}$ )
X	400	26	98
Y	200	26	98
Z	600	26	98

Which one of the graphs below shows the amount of heat energy of the water in the beakers after six minutes?



(Go on to the next page)

- 24 Ravi placed an ice block and ice cubes on two dishes, A and B, on a table in the kitchen. The ice block and ice cubes were made from an equal amount of water.



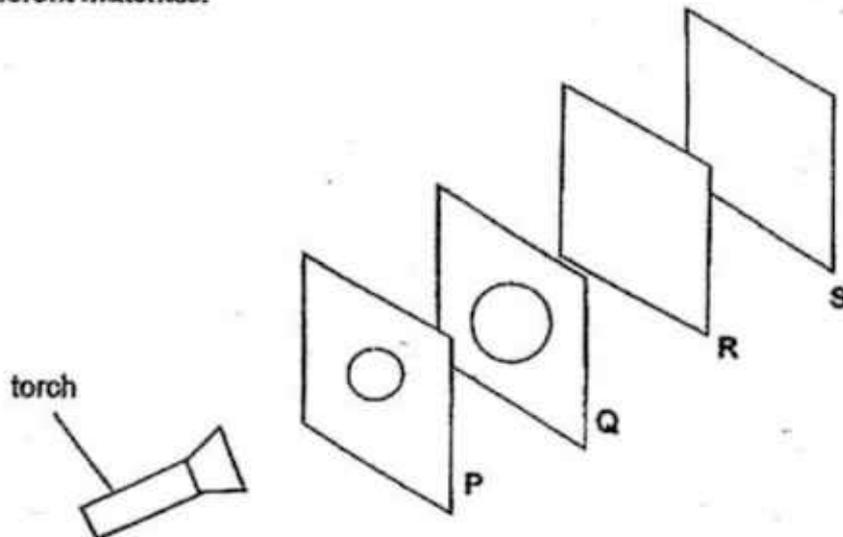
Which dish would Ravi observe the ice to melt completely first and what is the reason?

	Dish	Reason
(1)	A	The ice block gains heat faster.
(2)	A	The ice block has a greater exposed surface area to gain heat from the surrounding.
(3)	B	The ice cubes lost heat slower.
(4)	B	The ice cubes have a greater exposed surface area to gain heat from the surrounding.

- 25 Which one of the following is not a source of light?

- (1) Sun
- (2) Star
- (3) Moon
- (4) Lightning

- 26 Zhi Ling carried out an experiment in a dark room. She lined four 25-cm square sheets P, Q, R and S in front of a torch as shown below. The distance between the square sheets was equal. The square sheets were made of different materials.



The diameters of the circular holes cut in sheets P and Q are 5 cm and 10 cm respectively. When she switched on the torch the shadow that formed on sheet S is as shown below.

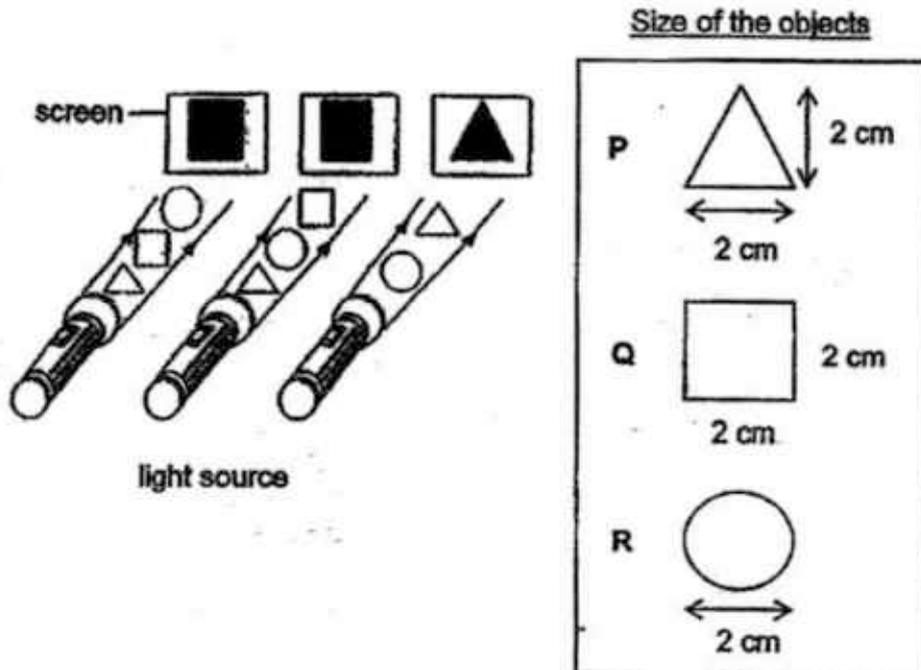


Which one of the following shows the suitable materials used to make the four square sheets?

	P	Q	R	S
(1)	clear glass	cardboard	tracing paper	aluminium
(2)	tracing paper	aluminium	clear plastic	cardboard
(3)	cardboard	tracing paper	aluminium	clear plastic
(4)	tracing paper	clear plastic	clear glass	aluminium

(Go on to the next page)

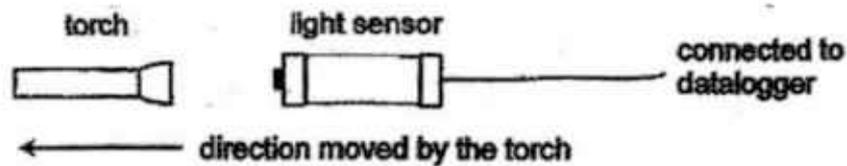
- 27 Two or three of these objects, P, Q, and/or R, were placed close to each other in a straight line in front of the light source as shown below.



Based on the shadows formed on the screens, which one of the following statements is correct?

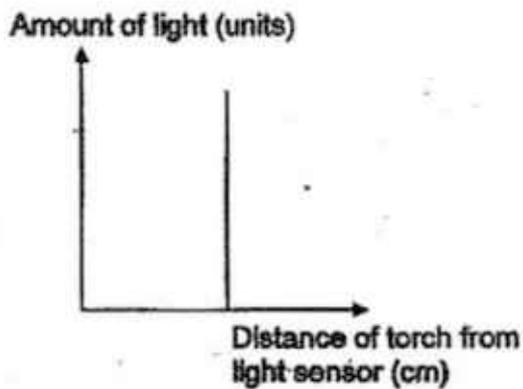
- (1) Object R is opaque.
- (2) Object P is transparent.
- (3) Object Q is translucent.
- (4) Objects P and Q are opaque.

- 28 A light sensor attached to a data logger measures the amount of light that it is exposed to.

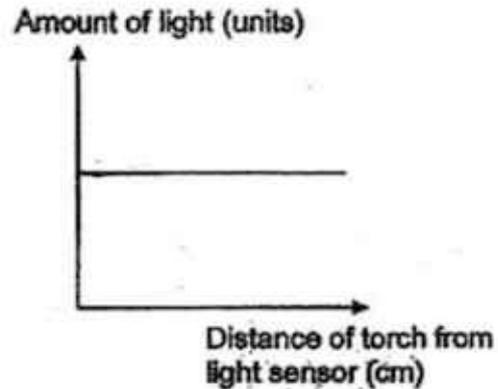


Which one of the following graphs shows how the reading of the data logger changes as the torch is moving away from the light sensor as indicated by the arrow above?

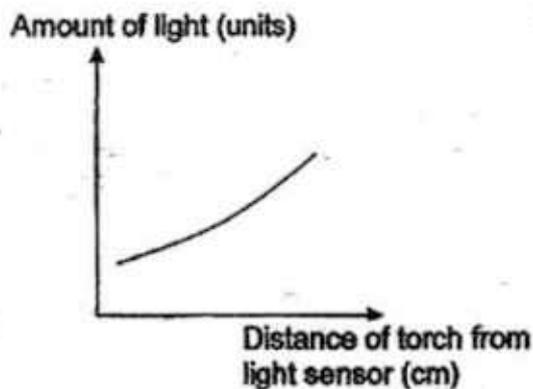
(1)



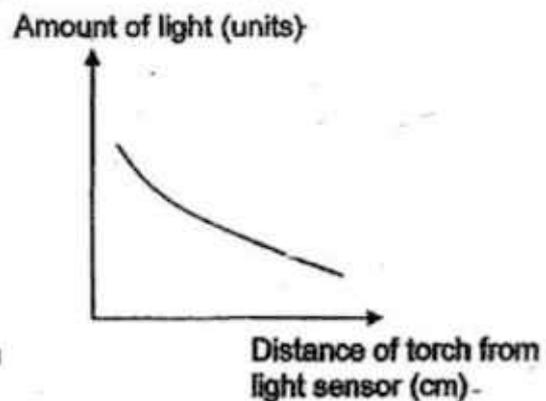
(2)



(3)



(4)



**END-OF-YEAR EXAMINATION 2017  
PRIMARY 4  
SCIENCE**

**BOOKLET B1**

**Total Time for Booklets A and B: 1 hour 30 minutes**

**INSTRUCTIONS TO CANDIDATES**

**Do not turn over this page until you are told to do so.**

**Follow all instructions carefully.**

**Answer all questions.**

Name: \_\_\_\_\_ ( )

Class: Primary 4. \_\_\_\_\_

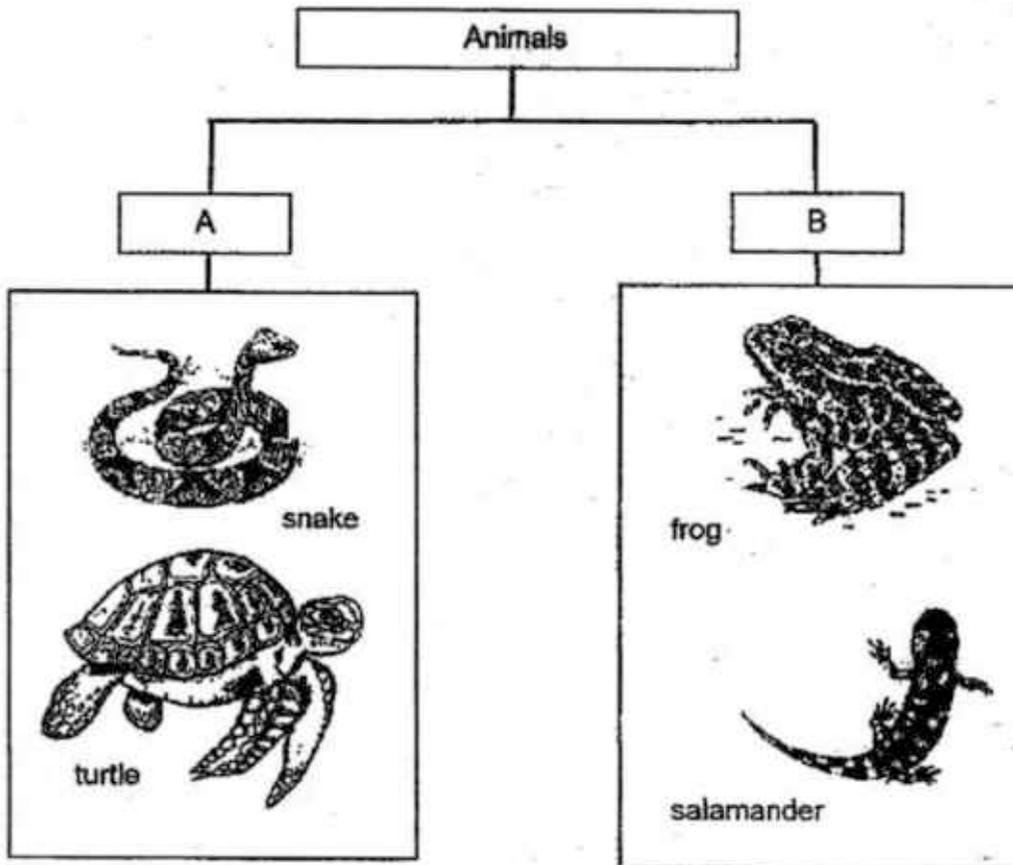
Date : 31 October 2017

Booklet A	56
Booklet B1	17
Booklet B2	17
Total	90
Parent's Signature	

**This booklet consists of 8 printed pages including this page.**

For questions 29 to 35, write your answers in the spaces provided. The number of marks available is shown in the brackets [ ] at the end of each question or part question.

29 Study the classification chart below.



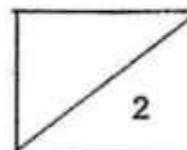
Fill in the correct words from the box to give a suitable heading for A and B.

[2]

reptiles          lizards          amphibians          mammals

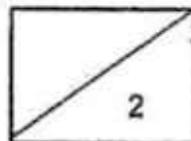
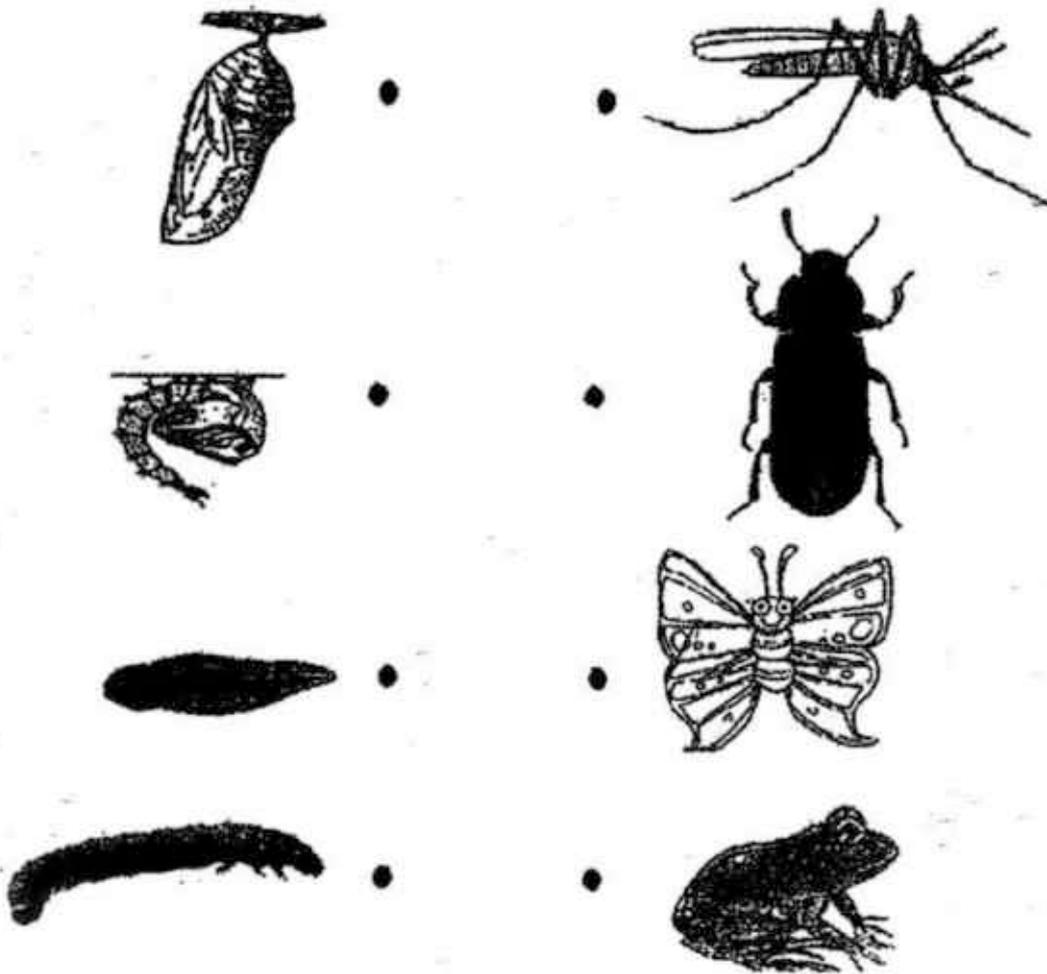
A : \_\_\_\_\_

B : \_\_\_\_\_



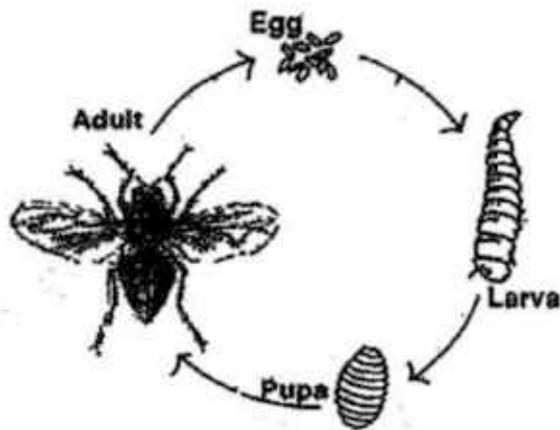
(Go on to the next page)

- 30 The diagram below shows the young and adult of some organisms. Draw lines to match the young with the correct adult. [2]



(Go on to the next page)

31 Devi studied the life cycle of Organism A as shown below.



- (a) Which group of animal does Organism A belong to?  
Give a reason for your answer.

[1]

---



---

Organism A lays eggs which will hatch into larvae on rotten flesh of dead animals. The larvae grow in size after some time.

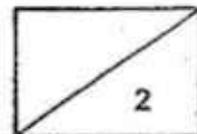
- (b) Why does Organism A lay its eggs on rotten flesh?

[1]

---

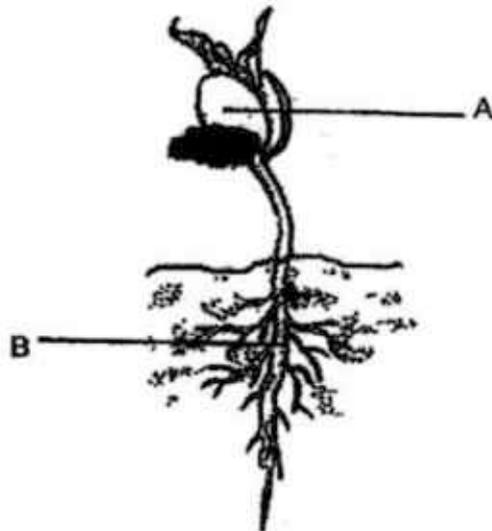


---



(Go on to the next page)

32 The picture below shows a seedling.



(a) Identify the parts, A and B, of the seedling. [1]

A: \_\_\_\_\_

B: \_\_\_\_\_

(b) Why is it important for the seedling to have Part A at this stage? [1]

---



---



---

(c) What will happen to the seedling if all of Part B are being removed? Explain your answer. [1]

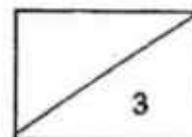
---



---



---



(Go on to the next page)

- 33 Jalil observed the plants growing in a park. He classified the plants Group X and Group Y as shown below.



Group X



Group Y

- (a) Based on the pictures above, state a difference between the stems of the plants in Group X and Group Y. (Do not compare their sizes.) [1]

---



---

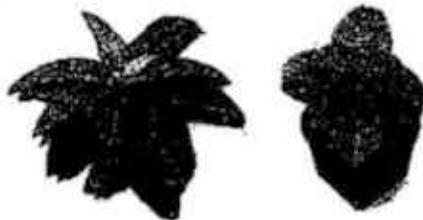
- (b) Based on the pictures above, write down one similar characteristic between the plants in Group X and Group Y? [1]

---



---

Jalil also observed that the leaves of some plants in the park are arranged in a very special way shown in the diagram below.

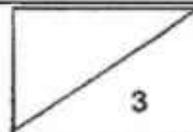


- (c) How does the arrangement of the leaves help the plant to survive better? [1]

---



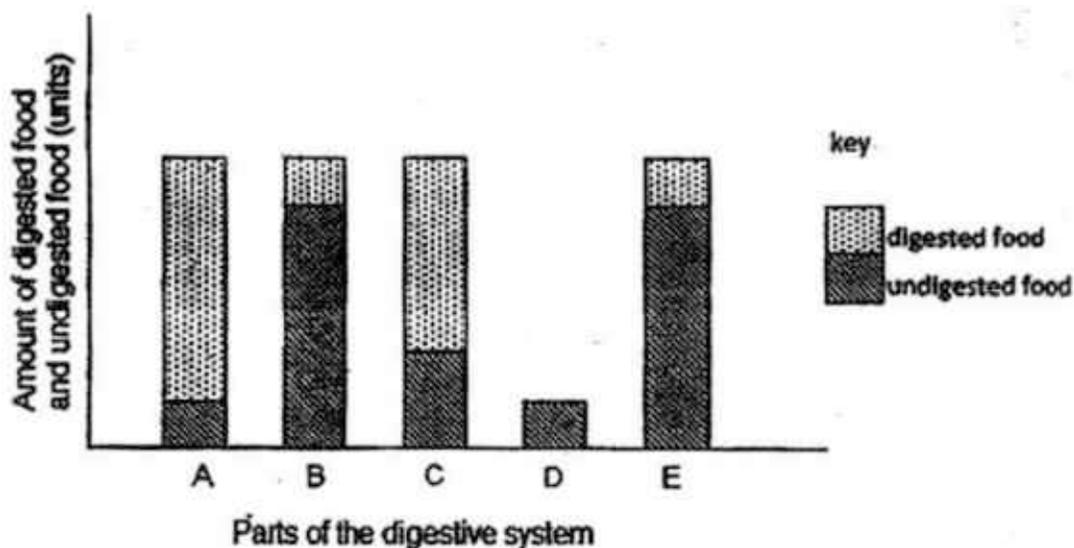
---



(Go on to the next page)

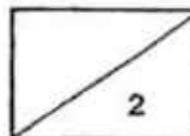
- 34 The graph below shows the amount of digested and undigested food found in each part of the digestive system just before the food moved to the next part of the system.

The parts, A, B, C, D and E of the digestive system are not arranged in order.



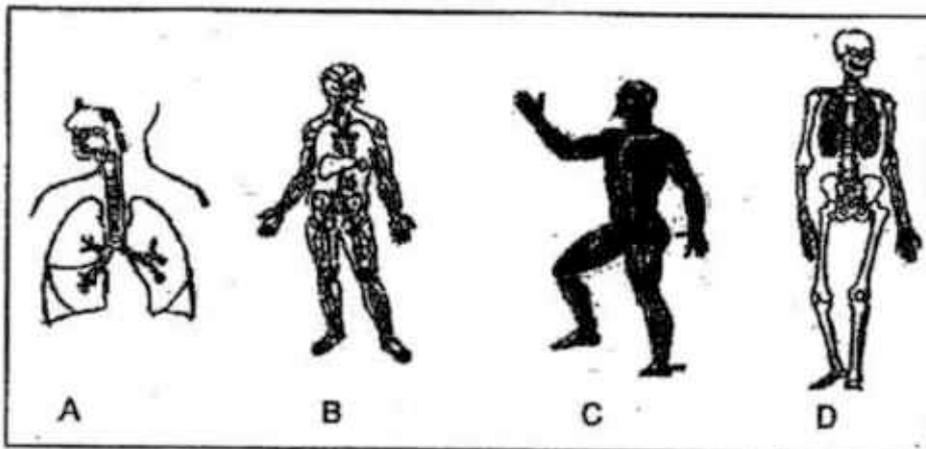
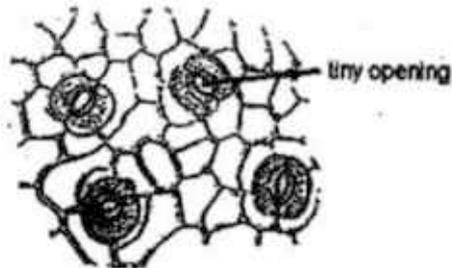
Name the body parts of the digestive system represented by A, C, D and E. [2]

Letter	Organs in the digestive system
A	
B	Gullet
C	
D	
E	



(Go on to the next page)

- 35 Study the diagrams of the stomata and the different human systems in the body as shown below.



- (a) Which one of the systems, A, B, C or D in the human system performs a similar function as the stomata in the leaf? Name the system. [1]

---

- (b) Explain the similarity in the function of both the stomata and the system chosen in (a). [1]

---



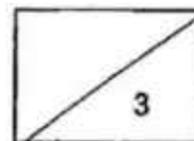
---

- (c) What could a person do when human systems C and D work together?

---



---



**END-OF-YEAR EXAMINATION 2017  
PRIMARY 4  
SCIENCE**

**BOOKLET B2**

**Total Time for Booklets A and B: 1 hour 30 minutes**

**INSTRUCTIONS TO CANDIDATES**

**Do not turn over this page until you are told to do so.**

**Follow all instructions carefully.**

**Answer all questions.**

**Name: \_\_\_\_\_ ( )**

**Class: Primary 4. \_\_\_\_\_**

**Date : 31 October 2017**

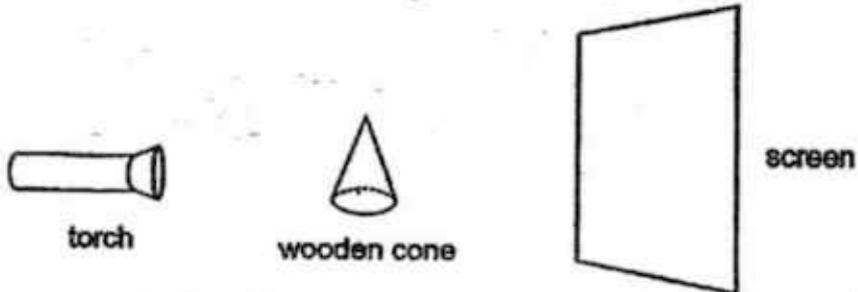
<b>Booklet B2</b>	<b>17</b>
-------------------	-----------

**This booklet consists of 8 printed pages including this page.**

For questions 36 to 42, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

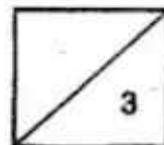
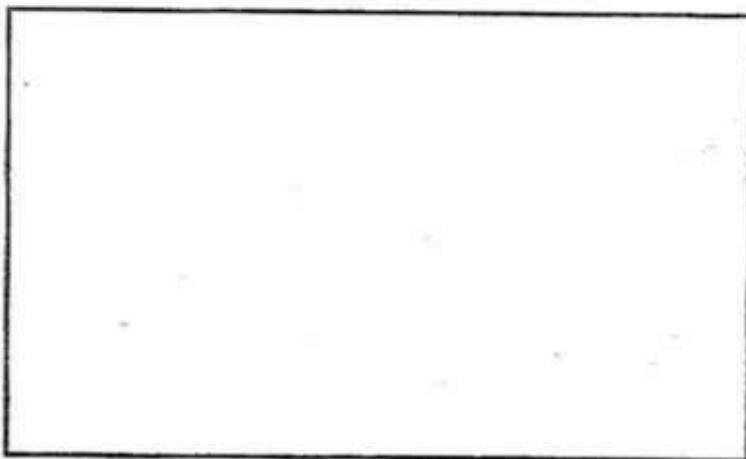
[17 marks]

36 Samy shines a torch on a wooden cone and a shadow is formed on the screen.



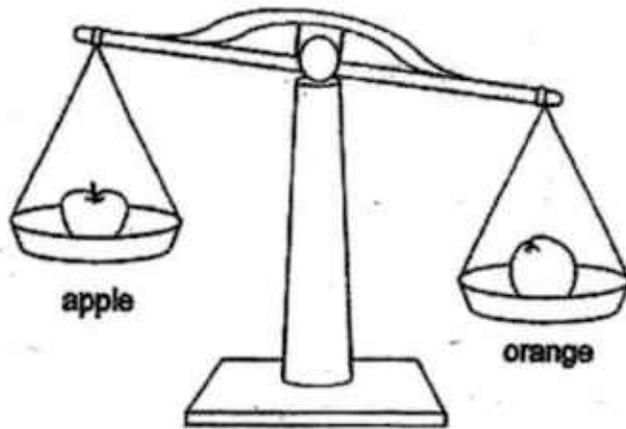
Fill in the blanks with an appropriate answer.

- (a) A shadow is formed when light is \_\_\_\_\_ by an object. [1]
- (b) When the torch moves further away from the cone, the shadow becomes \_\_\_\_\_. [1]
- (c) Draw the shadow of the cone that is formed on the screen. [1]



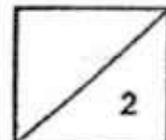
(Go on to the next page)

37 Gopal set up the apparatus as shown below.



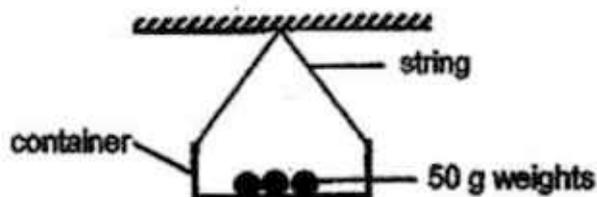
Study the set-up and circle the correct answers for questions (a) and (b).

- (a) The 'mass' / 'volume' of the orange is [1]
- (b) 'greater than' / 'the same as' / 'smaller than' the apple. [1]



(Go on to the next page)

- 38 Mrs Lee conducted an experiment with three different types of strings of similar length and thickness. She placed 50 g weights in a container held by each string (as shown below) until it broke.



Mrs Lee's results were recorded in the table below.

String	Number of 50 g weights added
A	7
B	11
C	3

- (a) What was Mrs Lee trying to find out? [1]

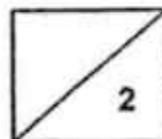
---

- (b) Based on Mrs Lee's results, which string should she use to make a fishing line? Explain your answer. [1]

---

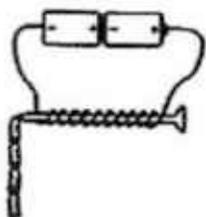


---



(Go on to the next page)

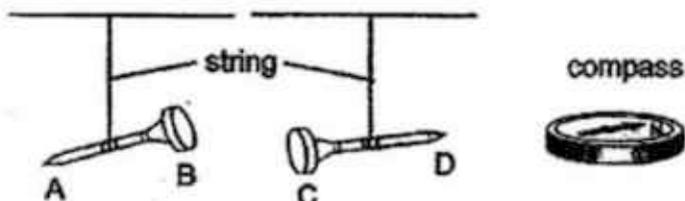
- 39 Bala made an electromagnet using an iron nail as shown below. He placed some paper clips near the electromagnet and recorded his observations in the table below.



Number of coils	Number of paper clips attracted
8	11
11	15
14	19
17	23

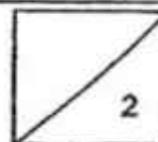
- (a) What could Bala conclude about the electromagnetic strength based on the table above? [1]

- (b) Bala magnetised two more nails by the method above and suspended each nail by a string separately. The nails then came to rest in the directions as shown below.



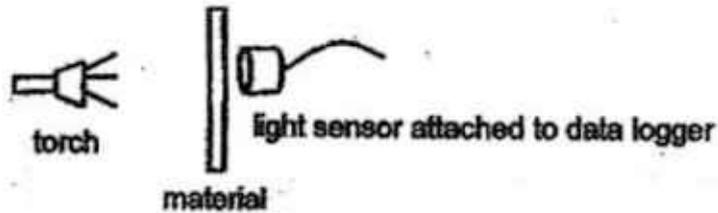
A magnet is then brought close to each nail as shown in the table below. Put a tick (✓) in the correct boxes to indicate the interaction between each nail and the magnet. [1]

	Case	Attracted	Repelled
(i)			
(ii)			

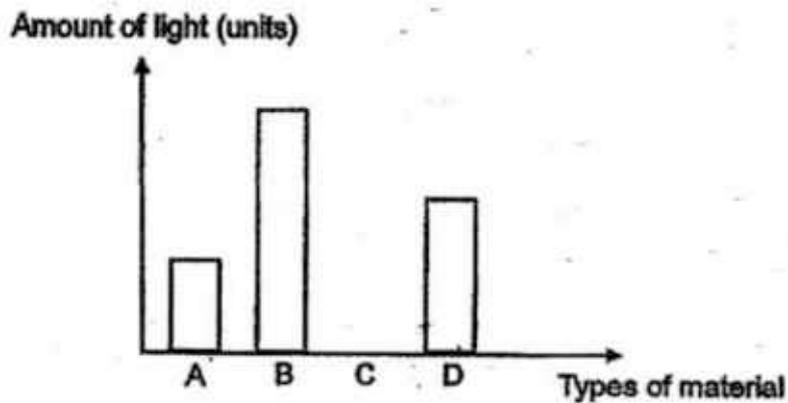


(Go on to the next page)

- 40 Mr Lee wanted to know how much light passes through materials, A, B, C and D. He set up the experiment as shown below.



The results were recorded in the graph below.



Mr Lee would like to make a tank for his aquarium.



Which material, A, B, C or D, should Mr Lee choose to make his tank? Explain your answer clearly. [2]

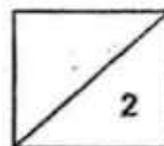
---



---

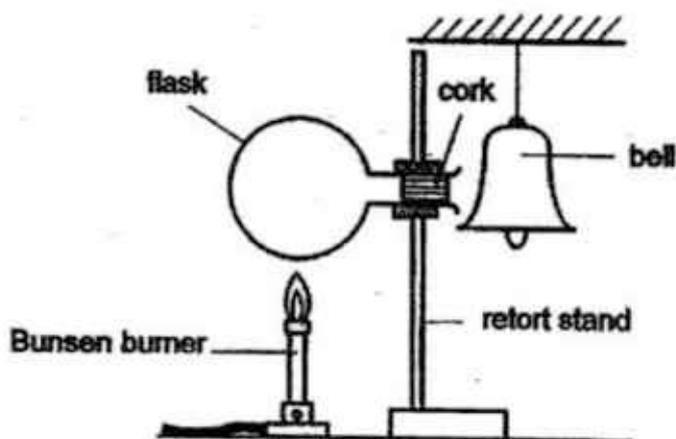


---



(Go on to the next page)

- 41 Lily set up a flask near a bell as shown below. The flask was loosely fitted with a cork and held by a retort stand. She then gently heated the flask using a Bunsen burner.



After some time, a sound was made by the bell.

- (a) What had caused the bell to sound? [1]

---



---

- (b) Explain your answer in (a). [1]

---



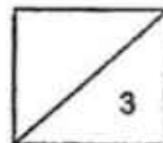
---

- (c) If Lily had used a smaller flame, would the time taken for the bell to sound be longer or shorter? Explain your answer. [1]

---

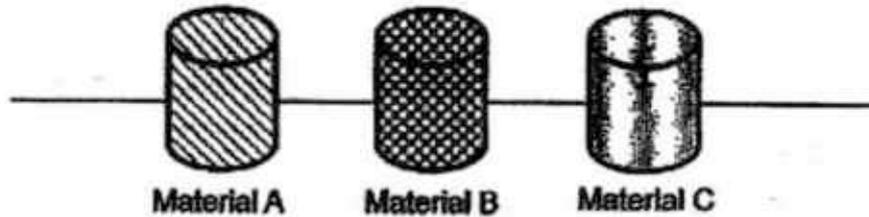


---

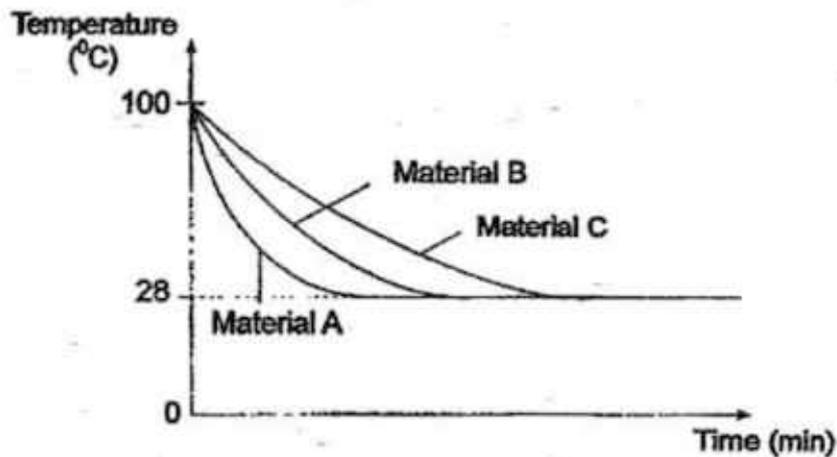


(Go on to the next page)

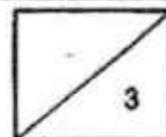
- 42 Ms Shah poured an equal amount of boiling water into three identical containers made of different materials, A, B and C, as shown below.



Ms Shah recorded the temperature of the water in each container at regular intervals for 40 minutes. She then plotted her results in the graph as shown below.



- (a) Why did the temperature of water in all the three containers become  $28^{\circ}\text{C}$  after 40 minutes? [1]
- \_\_\_\_\_
- \_\_\_\_\_
- (b) Ms Shah would like to choose a suitable material for making a cooler bag to keep her cold drinks cool for a longer period of time. Based on the results given, which material, A, B or C, would be the most suitable for making the cooler bag? Explain your answer. [2]
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_



EXAM PAPER 2017 (P4)

SCHOOL : MGS

SUBJECT : SCIENCE

TERM : SA2

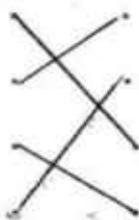
ORDER CALL :

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

29)A : reptile

B : Amphibians

30)



31)a)Insects. The adult have six legs. All insects have 6 legs.

b)So that when the egg is hatched, the young would be able to feed on the rotten flesh immediately. Allowing it to grow in size.

32)a)A : seed leaves

B : roots

32)b)The seedling's first leaves are not fully develop. Part A, the seed leaves provides the plant with food as the leaves are not fully develop. Without Part A, the seed would die, as it needs food to survive.

c)The seed would die. The seedling needs water and mineral salt. Part B is the roots. Removing the roots the seedling would not be able to have water mineral slats as the roots absorb water. The seedling would be uprooted too. The roots anchors the plant firmly to the ground.

33)a)Group X stems are strong and is able to support the plant upright to taken in sunlight while Group Y has a weak stem and is not able to support the plant.

b)Both of them are flowering plant.

c)The leaves are more widespread. This will help the leaves absorb maximum sunlight to make food for the plant.

34)A --- small intestine

B--- Gullet

C---stomach

D---large intestine

F---mouth

35)a)System A. Respiratory system.

b)Both the stomata and the respiratory system helps to allow the plant and body to take in oxygen and get rid of carbon dioxide allowing carbon dioxide to be removed from the plant and body.

c)A person could kick a ball.

36)a)blocked

b)smaller

c)



37)a) mass

b) greater than

38)a) Mrs Lee was trying to find out which A, B or C is the strongest.

b) A. fishing line must support the most weight of the fish and string B is the strongest.

39)a) As the number of coils increased, the strength of the magnetic strength of the electromagnet increases to attract more paper clips.

b) i) Attracted      ii) Repelled

40) B. B is transparent. It allows all light to pass through completely compared to A, C and D. Hence, using D allows Mr Lee to see the fishes in the aquarium most clearly compared to C, D and A.

41)a) The cork popped out of the flask and hit the bell.

b) The Bunsen burner heated the flask causing the air in the flask to gain heat from the flask and expand. Some air then escaped into the surrounding heating the bell ringing it.

c) Longer. The air in the glass would take a longer time to gain heat from the Bunsen burner and expand.

42)a) The boiling water loses heat to the surrounding air and reaches room temperature  $28^{\circ}\text{C}$ .

b) Material C. C is the poorest conductor of heat compared to A, B as it the boiling water in it lost heat to the surrounding. Hence when Mrs Shah puts her drink into the material C, the drinks would gain heat from C the slowest compared to A and B. Helping it to keep cool.

