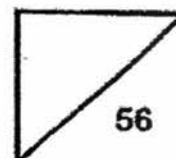




**Rosyth School**  
**Second Semestral Examination for 2017**  
**SCIENCE**  
**Primary 4**

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

Total  
Marks:



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

Register No. \_\_\_\_\_ Duration: 1 h 45 min

Date: 27<sup>th</sup> October 2017

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

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## 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.

\* This booklet consists of 20 printed pages (including cover page).

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**BookletA (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.

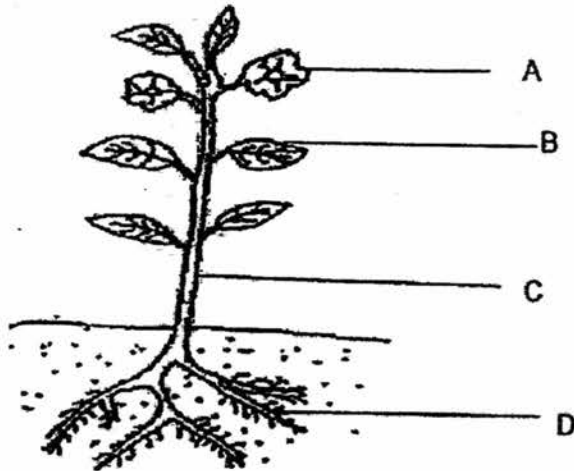
1. The figure below shows a mimosa plant.



When you touch it, its leaves will close up. This shows that the mimosa plant is a living thing because it can \_\_\_\_\_.

- (1) die
- (2) move
- (3) reproduce
- (4) respond to changes

2. Which part A, B, C or D absorbs water for the plant?



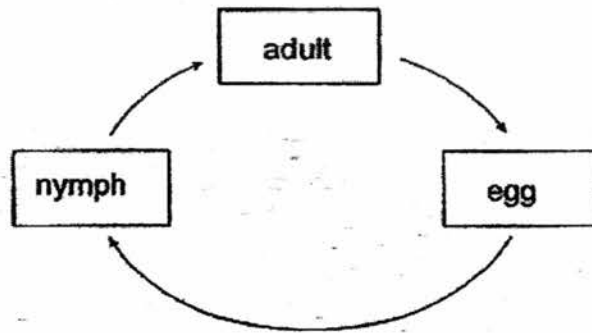
- (1) A
- (3) C

- (2) B
- (4) D

3. Which one of the following shows the correct order when food moves through some parts of the digestive system?



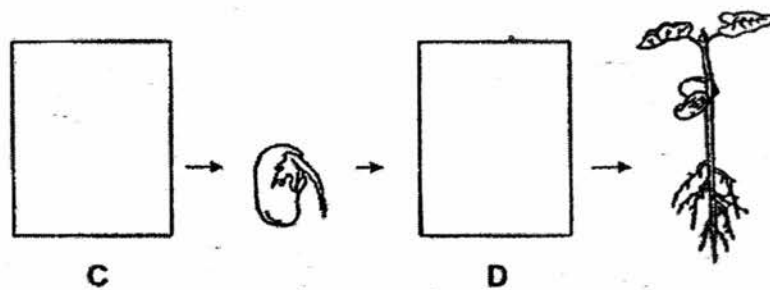
4. The diagram below shows the life cycle of an animal.



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

- (1) frog
- (2) grasshopper
- (3) butterfly
- (4) chicken

5. The diagram below shows the growth of a young plant with two missing stages C and D.

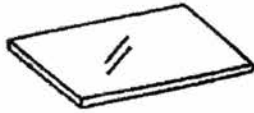


Which one of the following shows the correct stages for C and D?

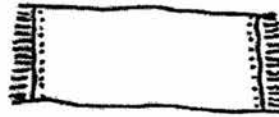
	C	D
(1)		
(2)		
(3)		
(4)		

6. Which one of the following objects can be bent easily without breaking?

(1) A sheet of glass



(2) A towel



(3) A plastic fork



(4) A metal ruler



7. Matter is anything that has mass and occupies space.

Which one of the following is not a matter?


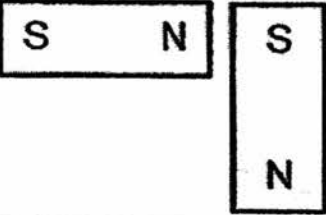
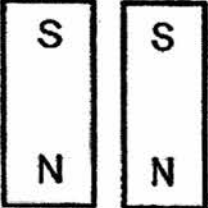
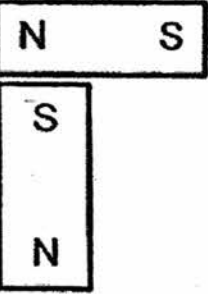
(1) air

(2) sand

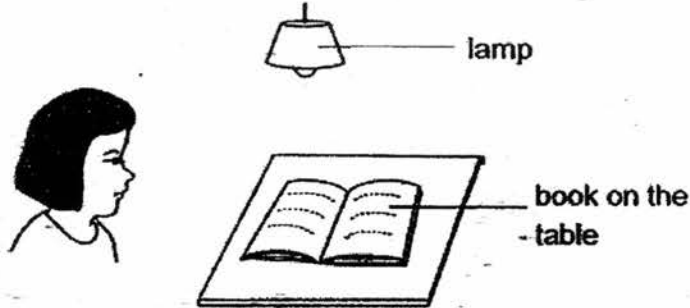
(3) shadow

(4) orange juice

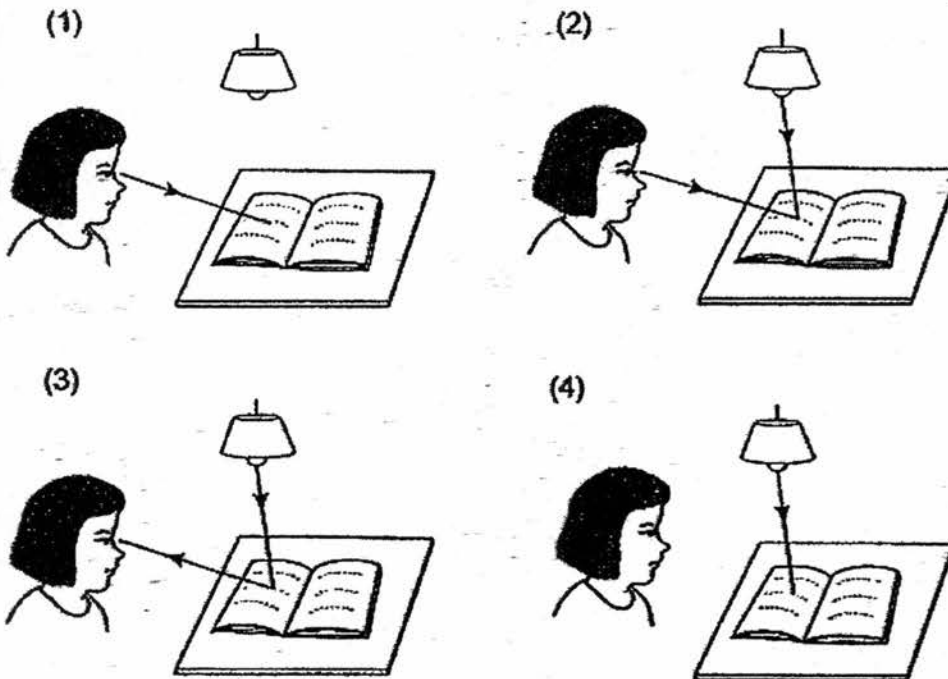
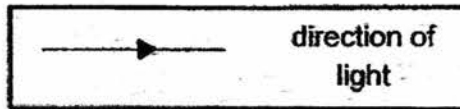
8. In which one of the following will the two magnets push each other away?

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

9. Look at the picture below.



Which of the following explains why Jane can see the book on the table?

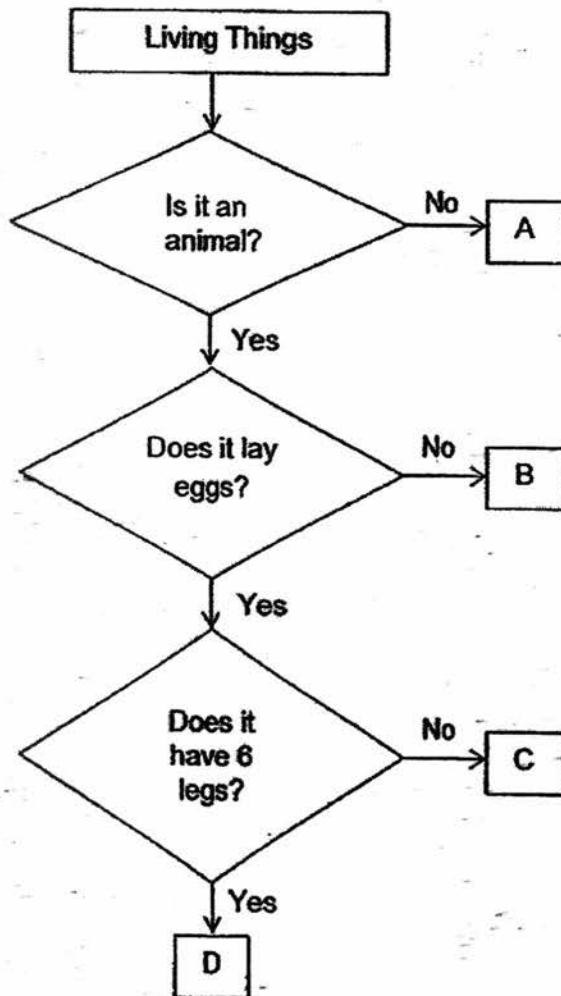




10. Which of the following is not a source of heat?

- (1) sun
- (2) blanket
- (3) lit bulb
- (4) candle flame

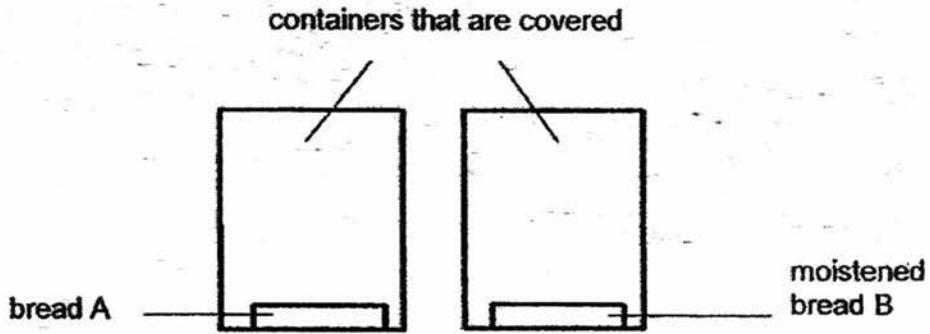
11. Study the flowchart below carefully.



Which one of the following is the correct classification for the living things A, B, C and D?

	A	B	C	D
(1)	fungi	fish	insect	bird
(2)	fungi	mammal	bird	insect
(3)	plant	bird	mammal	insect
(4)	plant	mammal	fish	bird

12. Sheila wanted to find out if the amount of moisture affects the amount of mould growing on the bread. She placed 2 similar pieces of bread, bread A and bread B, in two containers that are covered. Sheila put some water on bread B only.

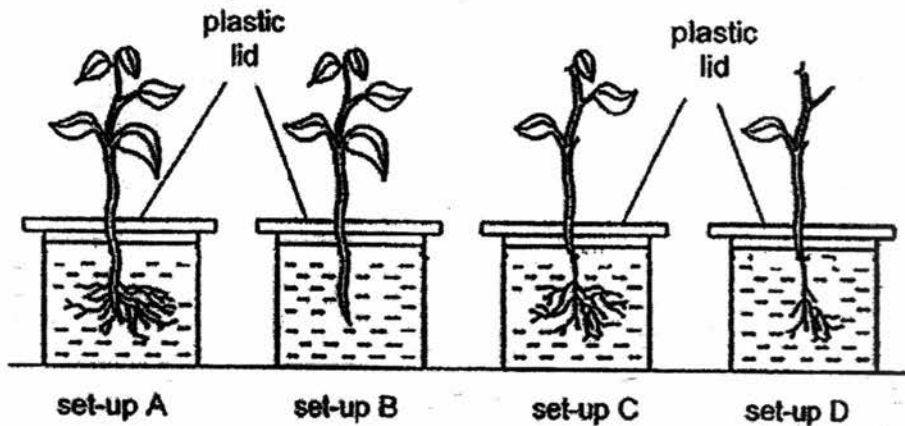


Which of the following would she most likely to observe?

<p>(1)</p> <p>bread A                      bread B</p>	<p>(2)</p> <p>bread A                      bread B</p>
<p>(3)</p> <p>bread A                      bread B</p>	<p>(4)</p> <p>bread A                      bread B</p>

13. Cheng Yi wants to show that plants take in water through their roots.

He has four plants of the same type. Some of the plant parts were removed as shown below in set-ups A, B, C and D. Each of the set-up contained 300 ml of water.



Which two set-ups should he use to carry out his test?

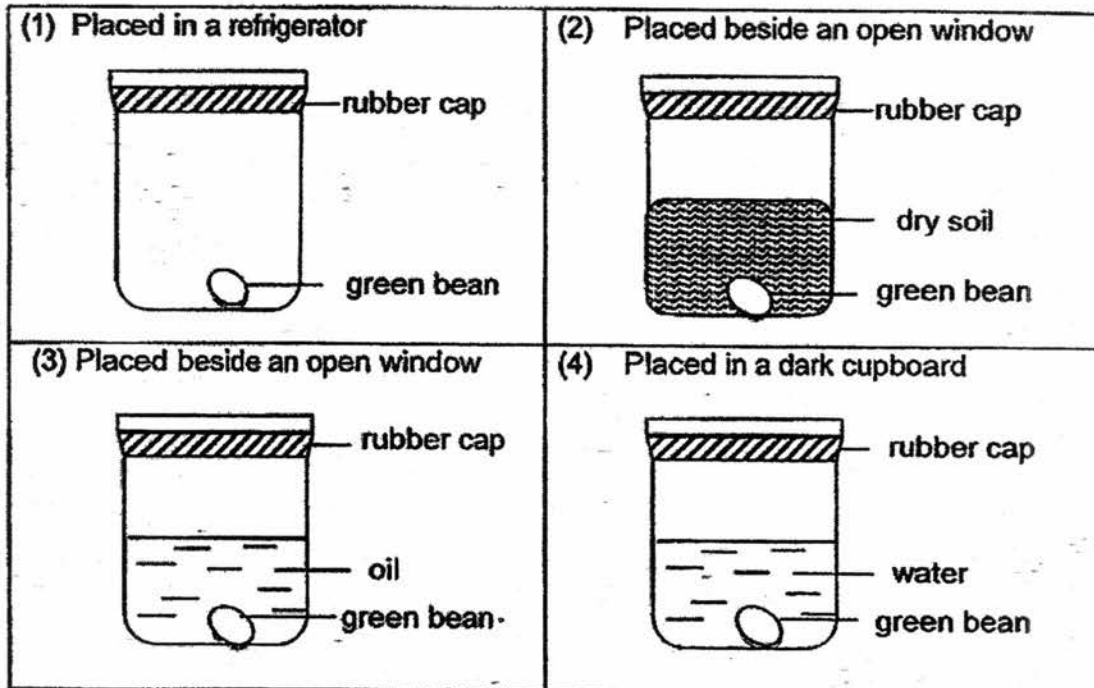
- (1) A and B  
 (2) A and C  
 (3) B and C  
 (4) C and D
14. The table below shows the comparisons between a butterfly and a frog.

		Butterfly	Frog
A	Young	Does not resemble the adult	Resembles the adult
B	Number of stages	4 stage	3 stage
C	Method of reproduction	Lays eggs	Lays eggs
D	Number of legs at adult stage	Six legs	Four legs

Which of the above comparisons are correct?

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

15. A dry green bean seed was placed in each of the four containers as shown below. Which of the seed will germinate?



16. Vira had 4 types of materials W, X, Y and Z of the same thickness. She used the same torch to find out which material would allow the most light to pass through.

The table below shows the results of her experiment.

Material	Distance of material from torch light (cm)	Amount of light that passed through (lux) (The higher the value, the more light passes through)
W	100	110
X	200	90
Y	300	70
Z	400	50

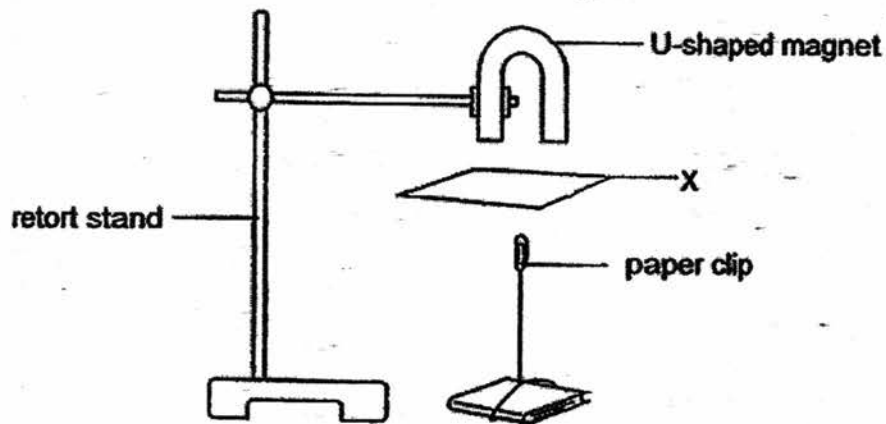
Vira concluded that Material W allowed the most light to pass through.

Do you think Vira was correct?

- (1) She is not correct because she used 4 types of materials.
- (2) She is correct because she used the same intensity of light.
- (3) She is correct because the materials were of the same thickness.
- (4) She is not correct because the distance of the material from the torch light is not the same.



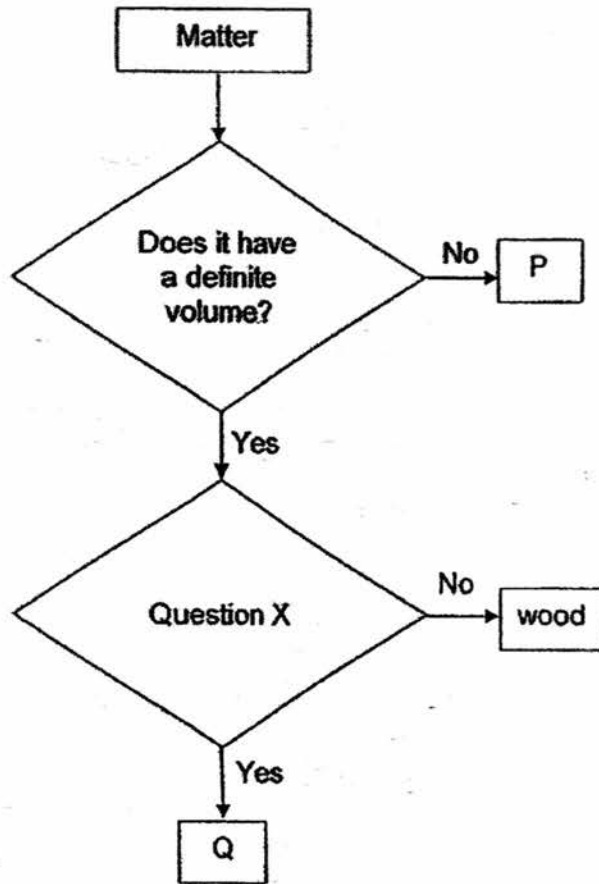
19. Study the diagram below. A piece of X is placed between the U-shaped magnet and the paper clip. The paper clip remains standing as shown in the diagram.



State the property of material X.

- (1) magnetic
- (2) non-magnetic
- (3) good conductor of heat
- (4) good conductor of electricity

20. Study the diagram below.

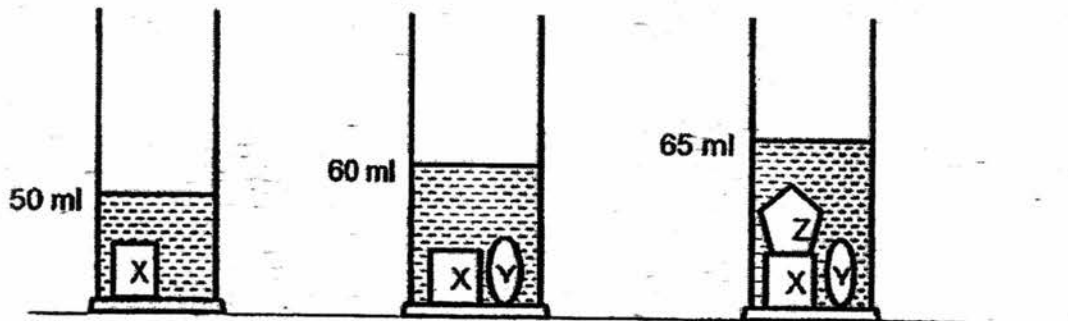


Which one of the following correctly states what P, Question X and Q are?

	P	Question X	Q
(1)	marble	Is it a magnetic material?	iron
(2)	oxygen	Is it a good conductor of heat?	iron
(3)	water	Can it be compressed?	air
(4)	clouds	Does it have a definite shape?	air

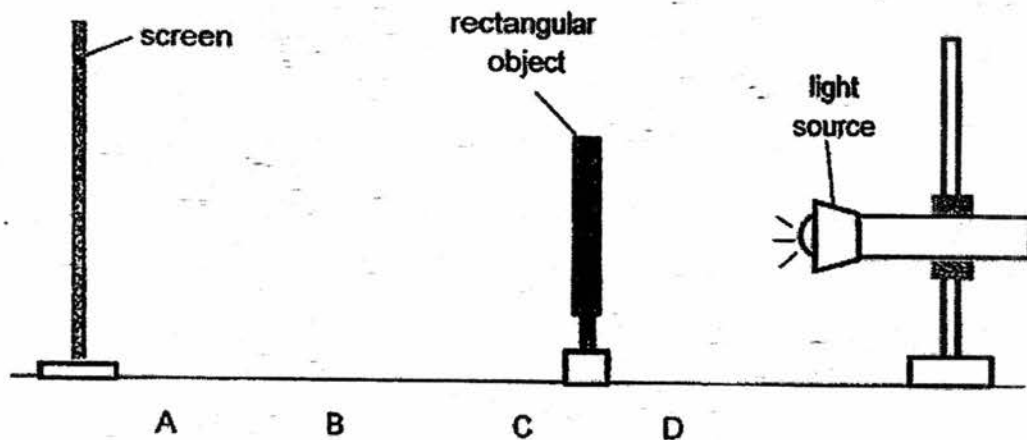
21. Gopal poured 30 ml of water into a measuring cylinder. He then placed object X into the cylinder, followed by object Y and finally object Z.

Gopal drew his observations as shown below.



Based on the information above, which one of the following observations is correct?

- (1) Object X has a greater mass than object Y.
  - (2) Object Y has a greater mass than object Z.
  - (3) Object Z has a greater volume than object Y.
  - (4) Object X has the greatest volume among the 3 objects.
22. Study the experimental set-up below.

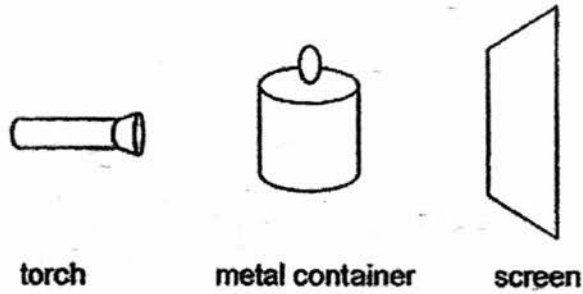


At which position should the rectangular object be placed so that it would cast the tallest shadow on the screen?

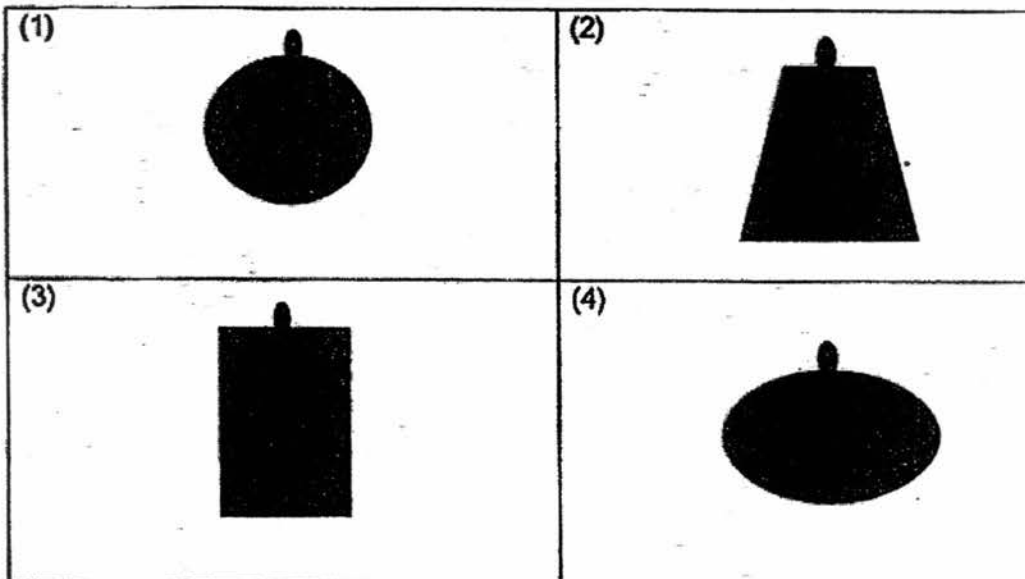
- (1) A
- (2) B
- (3) C
- (4) D



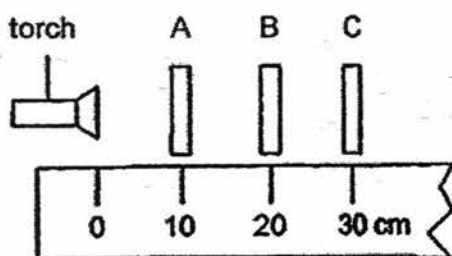
23. Susan shines a torch on the metal container as shown below.



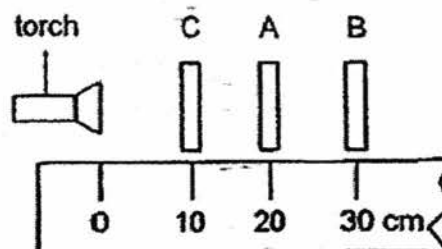
Which one of the following shows the shadow of the metal container on the screen?



24. An experiment was conducted to investigate whether light can pass through three sheets, A, B and C made of different materials. The sheets were arranged in two set-ups P and Q as shown.

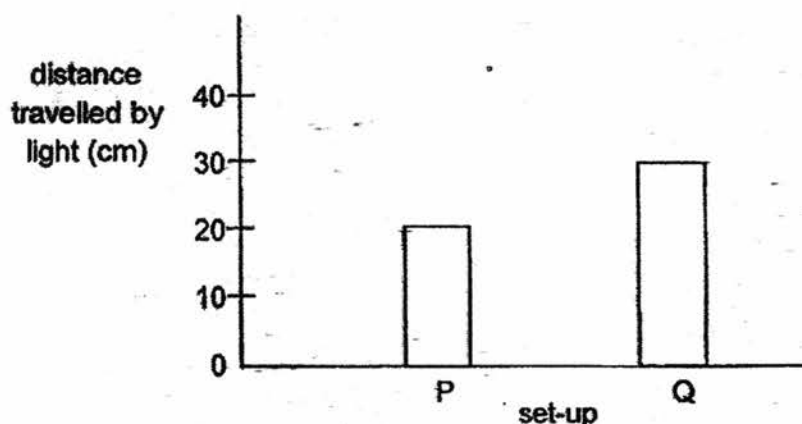


set-up P



set-up Q

The distance travelled by the light for each set-up was measured and the results are shown in the chart below.



Which one of the following correctly describes sheets A, B and C?

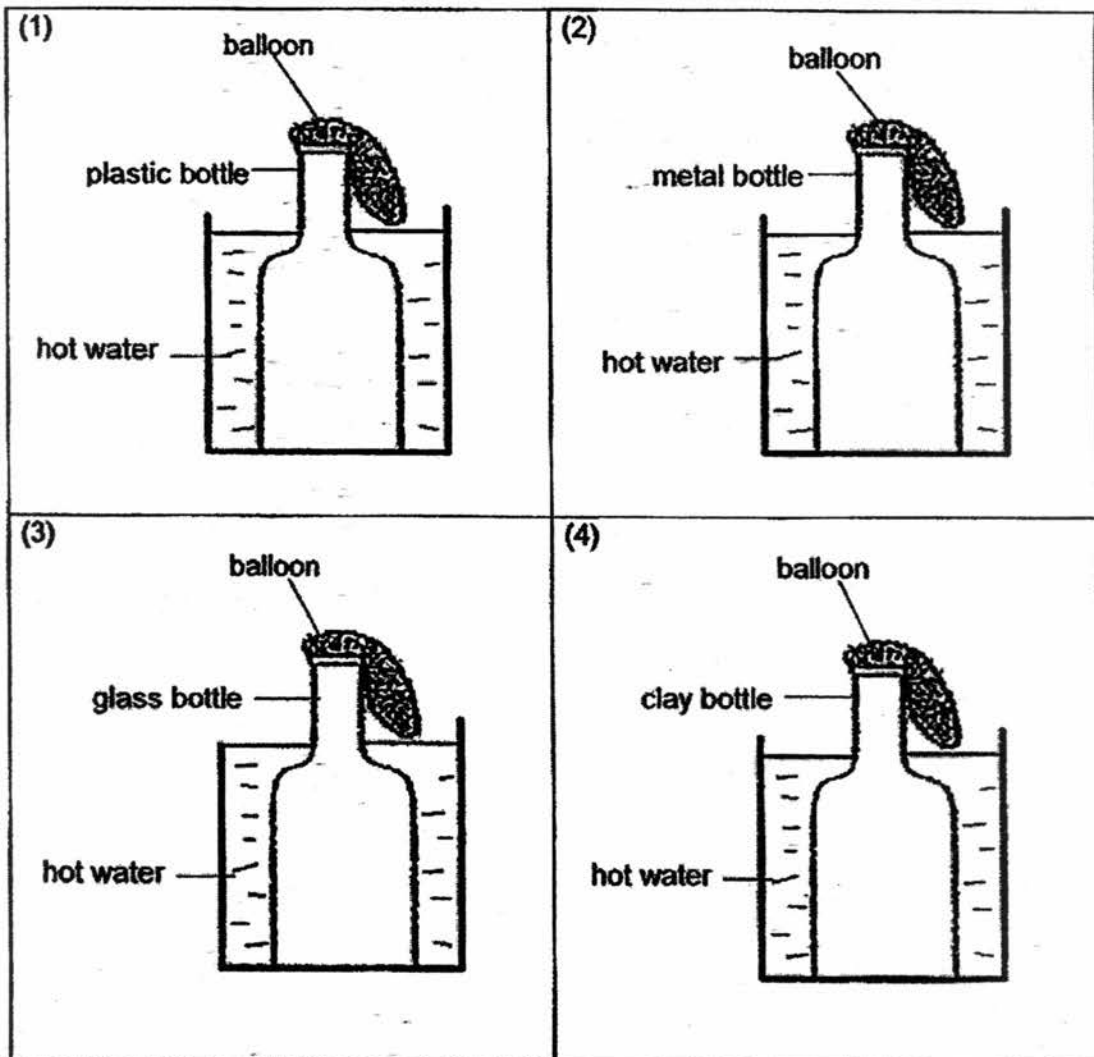
	Does it allow light to pass through?		
	A	B	C
(1)	yes	yes	no
(2)	no	no	yes
(3)	yes	no	yes
(4)	no	yes	no

25. Paul placed some ice on a metal tray. After a while, he observed that the metal tray felt cold to his touch and the ice melted. He made some conclusions.

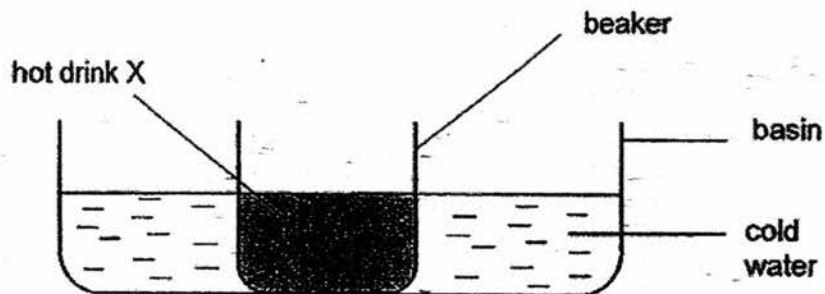
Which one of his statements is not correct?

- (1) The ice gained heat from the metal tray and melted.
  - (2) The ice gained heat from the surrounding air and melted.
  - (3) The metal tray felt cold because heat travelled away from Paul's hands.
  - (4) The metal tray felt cold because heat from the ice travelled to the metal tray.
26. Siti has 4 set-ups as shown below.

In which set-up will the balloon inflate first?



27. Joe poured some hot drink X into a beaker and placed it in a basin of cold water as shown in the diagram below.

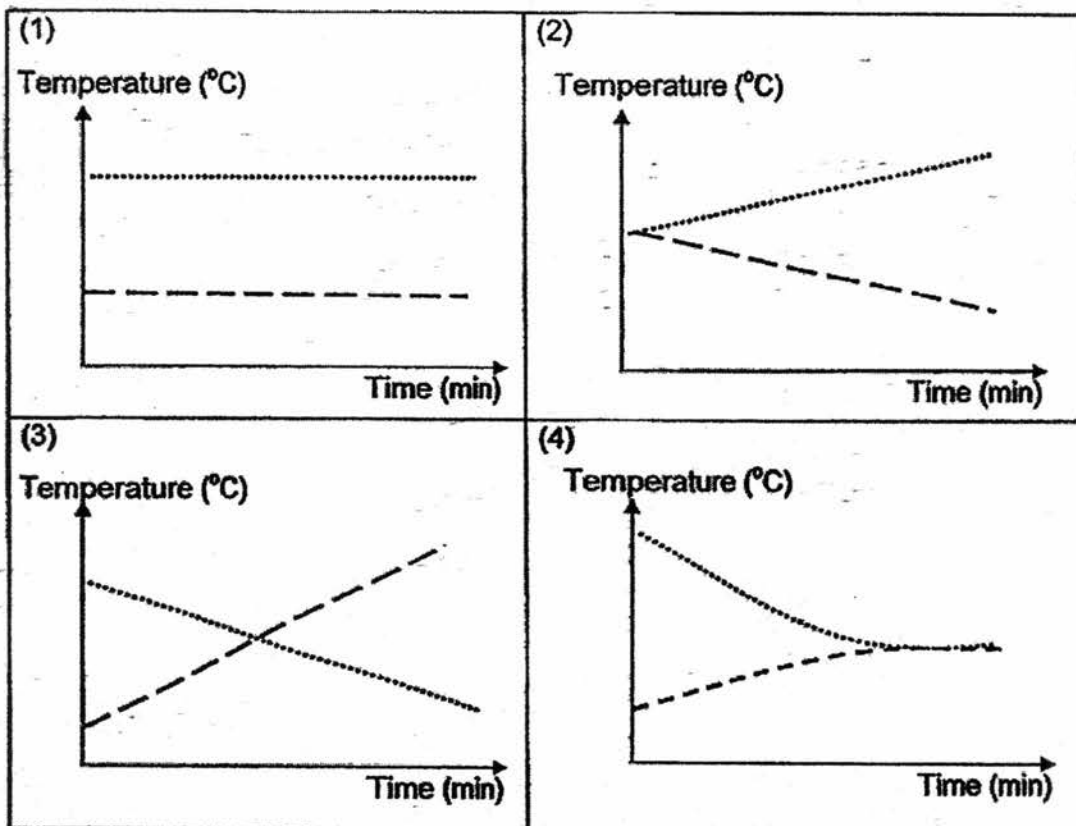


He then plotted a graph to show the temperatures of drink X and water over a period of time.

Which of the graphs below shows the correct temperature changes of drink X and water after some time?

Legend

drink X	.....
water	---



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



At room temperature, the ball was able to pass through the ring. After heating the ball for a while, the ball was not able to pass through the ring.

Which one of the following explains this observation?

	ring	ball
(1)	expanded	contracted
(2)	expanded	remained the same size
(3)	remained the same size	expanded
(4)	remained the same size	contracted

End of Booklet A



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**Rosyth School**  
**Second Semestral Examination for 2017**  
**SCIENCE**  
**Primary 4**

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

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

Date: 27<sup>th</sup> October 2017 Parent's Signature: \_\_\_\_\_

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## Booklet B

**Instructions to Pupils:**

1. For questions 29 to 41, give your answers in the spaces given in this Booklet B.

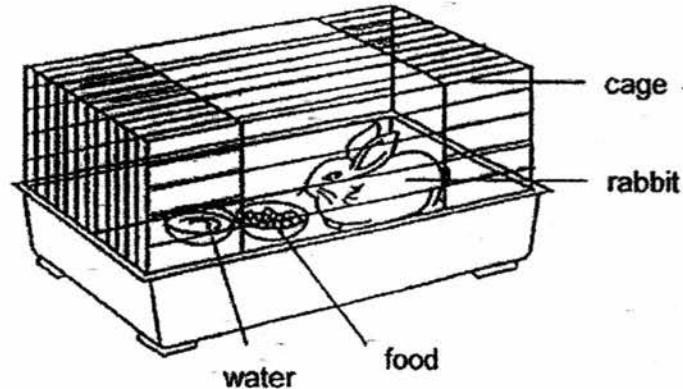
	<b>Maximum</b>	<b>Marks Obtained</b>
<b>Booklet A</b>	<b>56 marks</b>	
<b>Booklet B</b>	<b>44 marks</b>	
<b>Total</b>	<b>100 marks</b>	



**Booklet B (44 marks)**

For questions 29 to 41, write your answers in this booklet.

29. Study the diagram below.



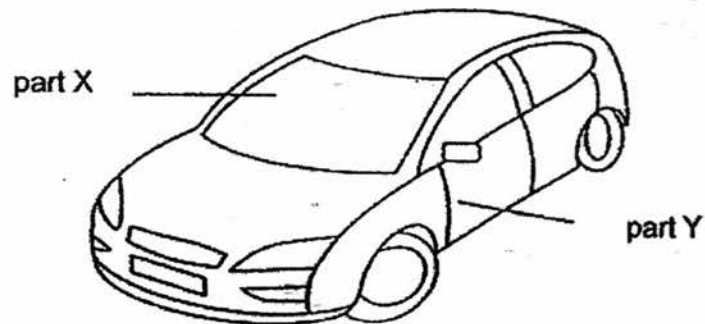
(a) After a few days, what will happen to the amount of water in the bowl? [1]

\_\_\_\_\_

(b) Based on the diagram above, state what the rabbit needs to stay alive. [1]

\_\_\_\_\_

30. The diagram below shows a car.



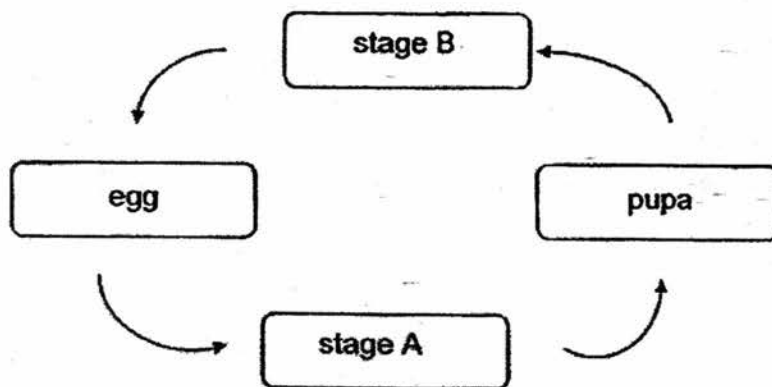
(a) Part X is made of glass because it allows \_\_\_\_\_ to pass through so that the driver can see the road. [1]

(b) Part Y is made of \_\_\_\_\_ because Y has to be strong. [1]

31. Fill in the correct parts of a plant to match its functions. [2]

Function of plant part	Plant part
It makes food for the plant.	
It holds the plant upright.	

32. The diagram below shows the stages in the life cycle of a mealworm beetle.



- (a) Name the two stages A and B. [2]

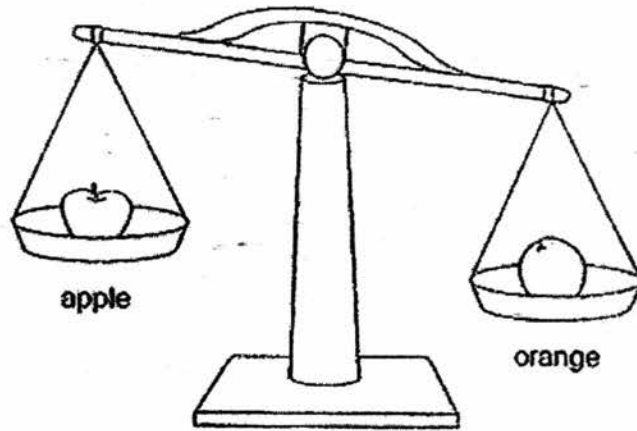
(i) stage A : \_\_\_\_\_

(ii) stage B : \_\_\_\_\_

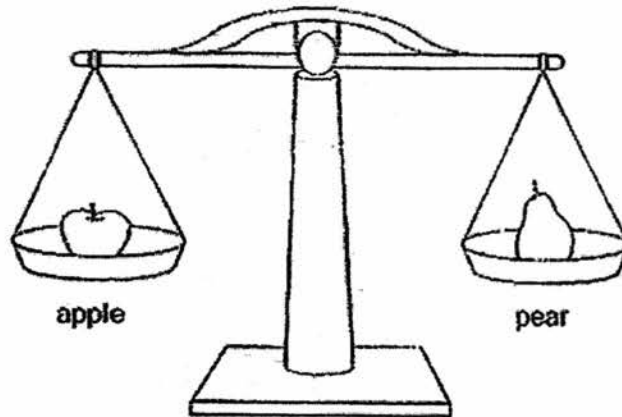
- (b) Circle an animal that has a similar life cycle as the mealworm beetle. [1]

frog / mosquito / cockroach

33. John compares the mass of three fruits.  
Study the diagrams below and **circle** the correct comparison.

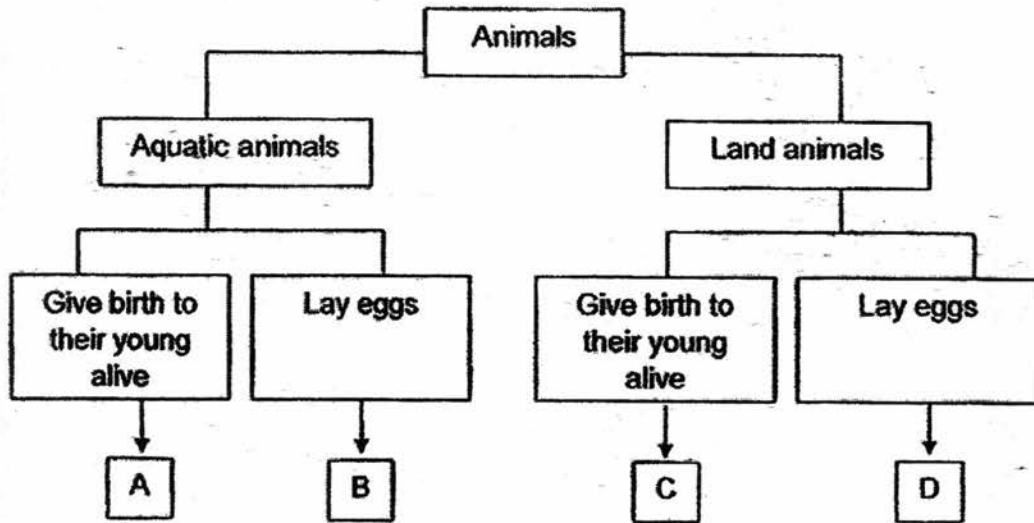


- (a) The apple is lighter than / has the same mass as / is heavier than the orange. [1]



- (b) The apple is lighter than / has the same mass / is heavier than the pear. [1]
- (c) A measuring cylinder / beam balance is used to measure the mass of an object. [1]

34 Look at the classification table below.



(a) State one characteristic of animal A. [1]

---

(b) State one similarity between animal B and animal D. [1]

---

---

(c) State one difference between animal C and animal D. [1]

---

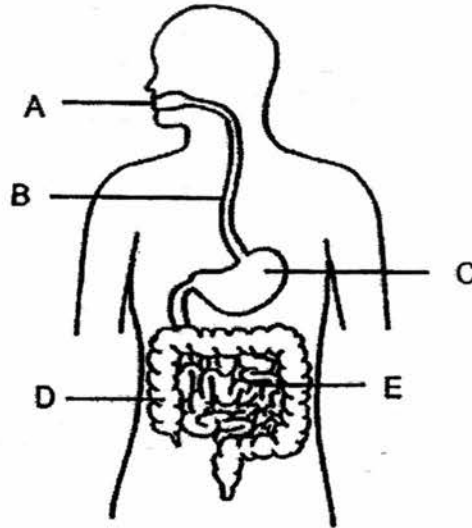
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(d) In which group, A, B, C or D, will you classify a chicken? Explain your answer. [1]

---

---

35. The diagram below shows the human digestive system.



(a) Name part 'B'. [1]

\_\_\_\_\_

(b) In which part, A, B, C, D or E does digestion begin? [1]

\_\_\_\_\_

(c) In which part, A, B, C, D or E is water absorbed from the undigested food? [1]

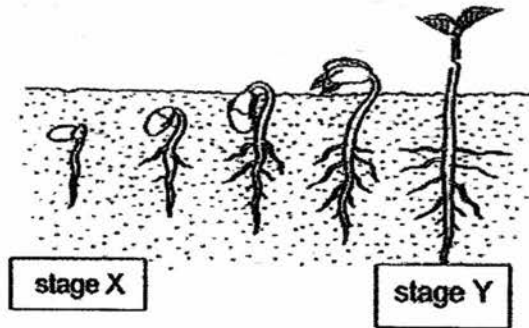
\_\_\_\_\_

(d) What happens to the food once it has been digested in the small intestine? [1]

\_\_\_\_\_

\_\_\_\_\_

36. The diagram below shows the developmental stages of a plant.



(a) State the way the plant obtains food in the developmental stage X and stage Y. [2]

stage X:

---

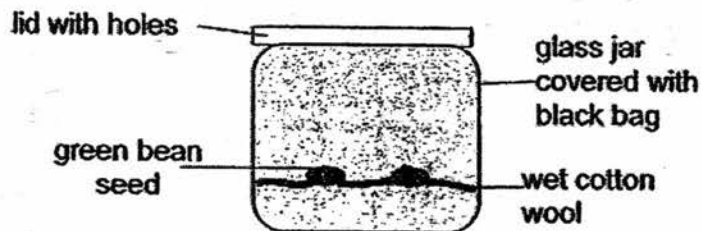
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stage Y:

---

---

Mick put some wet cotton wool into a glass jar. He then placed some green bean seeds on the cotton wool. He covered the glass jar with a black bag as shown below.



(b) State what Mick will observe about the seeds after a few days? [1]

---

---

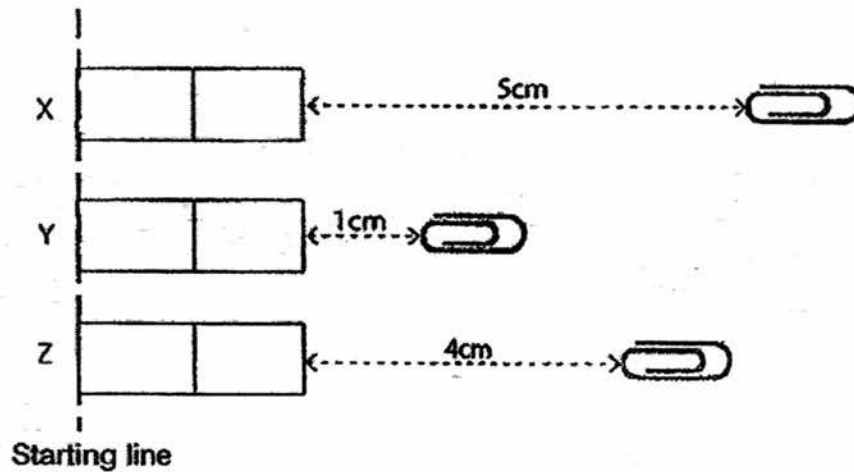
(c) Explain your answer in part (b). [1]

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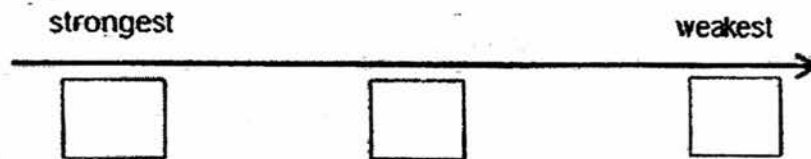
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37. Jun Jie placed three bar magnets, X, Y and Z, on the same starting line. He then slowly pushed a similar paper clip towards each magnet. He measured the longest distance at which each paper clip was attracted to each magnet. The result is as shown below.



- (a) Based on the results, arrange the magnets X, Y and Z in the correct order from the strongest to the weakest magnet. [1]

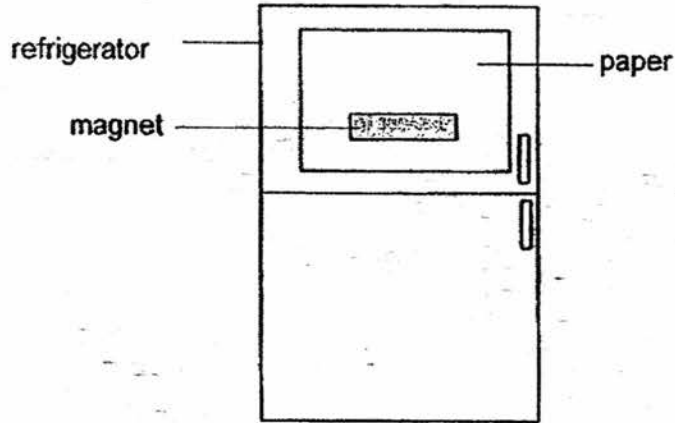


- (b) Based on the above experiment, tick the correct boxes in the table below. [2]

Variables	Changed	Measured	Kept the same
Material of paper clip			
Number of paper clip used			
Distance at which paper clip was attracted to magnet			
Bar magnet used			

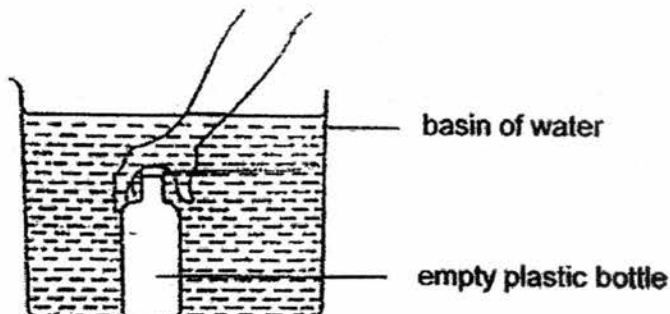
Question 37 continues on the next page

- (c) Which magnet X, Y or Z should Jun Jie use to attach a piece of paper on the refrigerator to ensure that it does not slip off the refrigerator? [1]



Magnet \_\_\_\_\_

38. Rajesh pushes an empty plastic bottle into a basin of water as shown below. He then unscrews and removes the bottle cap.



- (a) State one observation that Rajesh would see in the bottle. [1]

---

- (b) Give a reason for your observation in (a). [1]

---

Rajesh placed the bottle, air and water in the two groups as shown below.

<b>Group P</b>	<b>Group Q</b>
Water	Bottle
Air	

- (c) Give a suitable heading for P and Q. [1]

P \_\_\_\_\_

Q \_\_\_\_\_

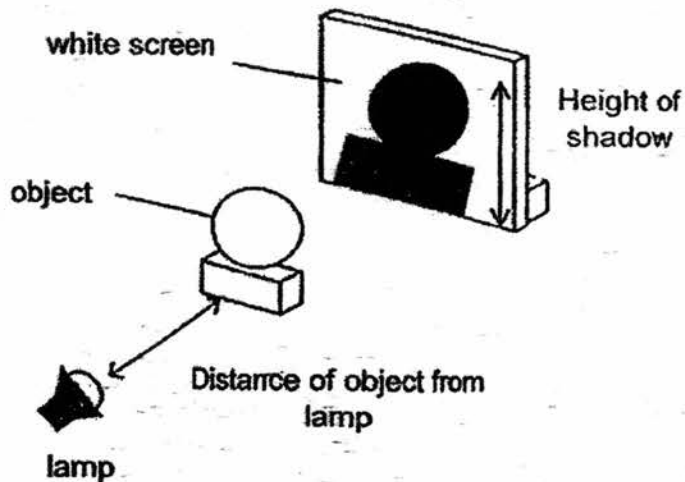
- (d) State one similar property between Group P and Group Q. [1]

---



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39. Mei Ling wanted to find out how the distance of the object from the lamp affects the height of the shadow formed on the screen.



She recorded her results in the table below.

Distance of object from lamp (cm)	Height of shadow formed on the white screen (cm)
20	7
15	9
10	11

- (a) Based on the results in the table above, state the relationship between the distance of the object from the lamp and the height of shadow formed. [1]

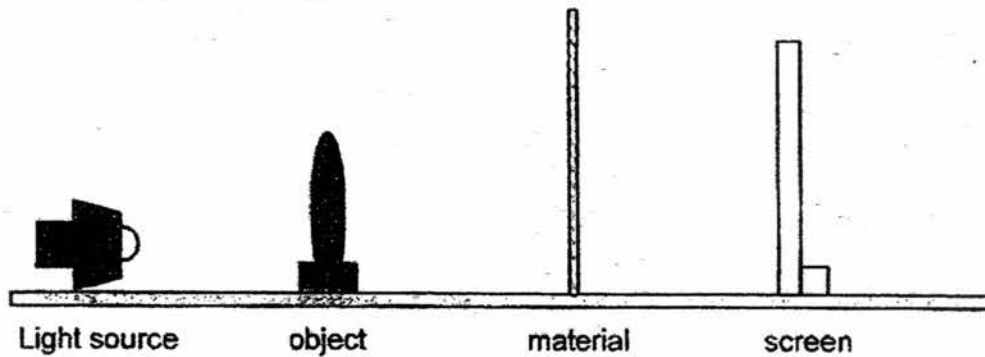
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Question 39 continues on the next page

Mei Ling then decided to test if different materials affected the shadow of the object formed on the screen. She placed each material in between the object and the screen as shown below.



The results are shown in the table below.

Material	Shadow formed on screen
X	Dark shadow
Y	Light shadow
Z	No shadow formed

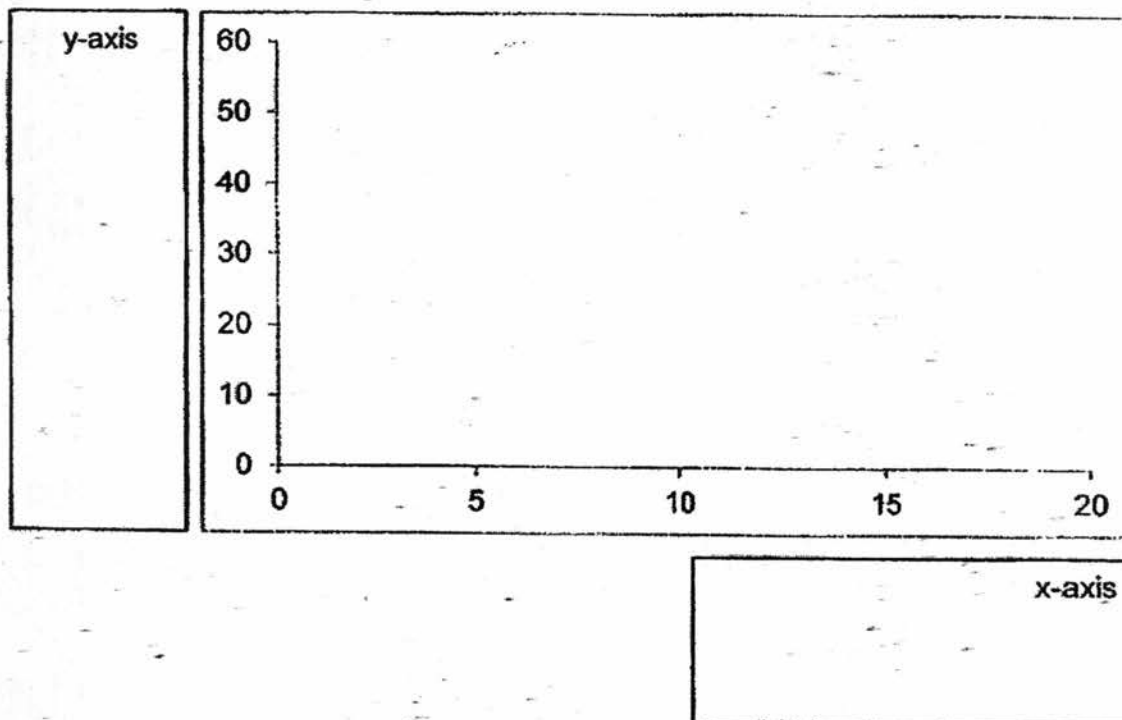
- (b) The 3 materials that she used were glass, wood and tracing paper. Based on the results obtained, identify the materials that Mei Ling used. [3]

Material	Type of material (glass / wood / tracing paper)
X	
Y	
Z	

40. Ali placed some hot water in a plastic cup and measured the temperature of the water every 5 minutes. The results of his experiment are shown in the table below.

Time (min)	Temperature of water ( $^{\circ}\text{C}$ )
0	50
5	42
10	35
15	29
20	29

- (a) Label the x-axis and the y-axis in the boxes provided below. [2]



- (b) Explain why the temperature of the water in the cup decreased over time. [1]

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- (c) Ali repeated the experiment and decided to use a metal cup in place of the plastic cup. Will the water take a shorter or longer time to reach  $29^{\circ}\text{C}$ ? [1]

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- 41 Julie conducted an experiment by heating three similar rods made of metals A, B and C for 15 minutes. She recorded the length of each rod before and after heating in the table below.

Metal	Length before heating (mm)	Length after heating (mm)
A	200	207
B	200	210
C	200	204

- (a) Julie concluded that metal B is the best conductor of heat. Do you agree? Explain your answer. [2]

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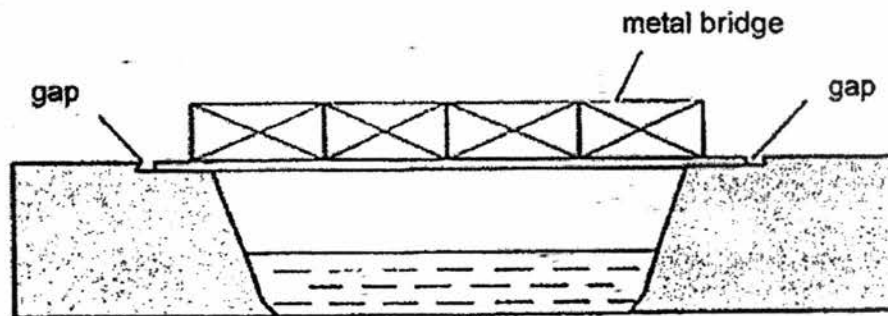


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A metal bridge has gaps at its ends as shown below.



- (b) Explain why it is necessary to have gaps at the end of the bridge. [2]

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End of Paper





EXAM PAPER 2017 (P4)

SCHOOL : ROSYTH

SUBJECT : ROSYTH

TERM : SA2

ORDER CALL :

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

29)a)The amount of water will decrease.

b)The rabbit needs air, food and water to survive.

30)a)light      b)metal

31)Leaf

Stem

32)a)i)larva      ii)adult      b)mosquito

33)a)lighter than      b)has the same mass      c)beam balance

34)a)Animal A gives birth to their young alive.

b)Bot animals B and D lay eggs.

34)c)Animal C gives birth to their young alive while animal D lays eggs.

d)D. D is a land animal that lays eggs to reproduce. A chicken lives on land and lays eggs. Hence, the chicken should be placed in D.

35)a)Gullet.

b)A.

c)D.

d)The digested food would be absorbed into the blood stream and the undigested food will go to the large intestine.

36)a)X : The seedlings obtain food from the seed leaves.

Y : The leaves make food for the plant.

b)Mick will observe that the seeds will start to germinate.

c)The seeds have air, water and warmth. Seeds need water, oxygen and warmth for germination to occur. Hence, the seeds will germinate.

37)a)X Z Y

b)

			✓
			✓
		✓	
	✓		

c)X.

38)a)The water level in the empty plastic bottle will increase.

b)When the air comes out of the bottle, the water occupies space originally occupied by air.

38)c)P : Does not have a definite shape.

Q : Has a definite shape.

d)Both group P and Q occupy space.

39)a)As the distance of the object from the lamp increases, the height of the shadow formed on the white screen decreases.

b)X : glass

Y : tracing paper

Z : wood

40)a)y -axis ---  $^{\circ}\text{C}$  Temperature of the water

X -axis --- Time (min)

b)As the time passed, the water in the cup loss heat to the surrounding air. Hence, the temperature decreased.

c)The water would take a shorter time to reach  $29^{\circ}\text{C}$ .

41)a)Yes. I do . B was the longest after heating for 15 minutes. B gained heat fastest, showing that it is the best conductor of heat.

b)The metal bridge will gain heat to allow room for expansion, so that it will not buckle or break.

