



**Rosyth School**  
**Second Semestral Examination for 2015**  
**SCIENCE**  
**Primary 4**

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

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

Date: 29<sup>th</sup> October 2015 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 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.**

**\* This booklet consists of 19 pages.**

**BookletA (60 marks)**

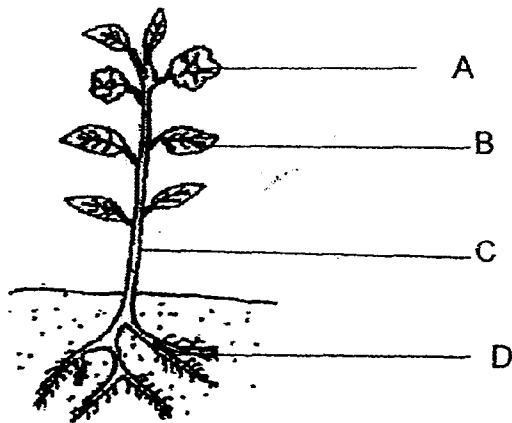
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

1. When Peter tried to touch the snail in his garden, it hid itself in its shell.



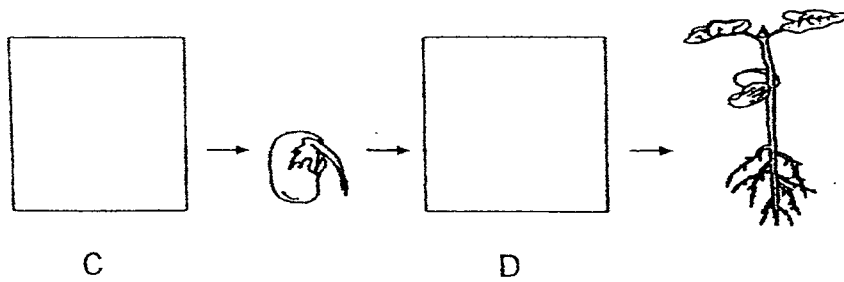
This shows that the snail is a living thing because it can \_\_\_\_\_.

- (1) die
  - (2) move
  - (3) reproduce
  - (4) respond to changes
2. Which part A, B, C or D makes food for the plant?



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

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



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

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

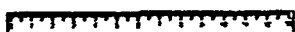
4. In which part of the digestive system is food absorbed into the blood?

- (1) gullet
- (2) stomach
- (3) small intestine
- (4) large intestine

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

(1) A wooden ruler

(2) A blanket



(3) A plastic fork

(4) A sheet of glass



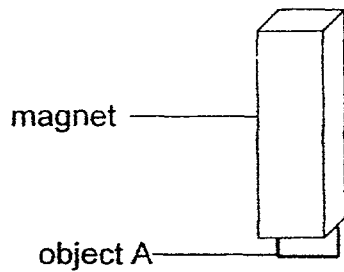
6. Which one of the following substances has a fixed shape?

- (1) air
- (2) oil
- (3) water
- (4) pencil

7. Which one of the following properties is true for both oxygen and a piece of cloth?

- (1) They can be seen.
- (2) They take up space.
- (3) They have fixed shapes.
- (4) They have fixed volumes.

8. An object A was attracted to a magnet, as shown in the figure below.



Object A is made of \_\_\_\_\_.

- (1) plastic
- (2) rubber
- (3) wood
- (4) iron

9. Which one of the following is a source of light?

(1)



a mirror

(2)



a candle flame

(3)



the moon

(4)

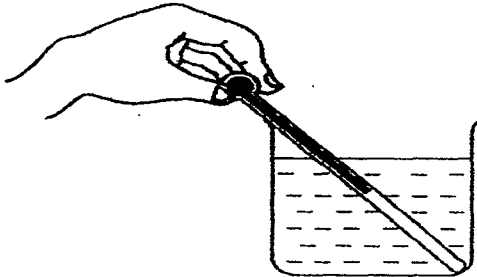


a leaf

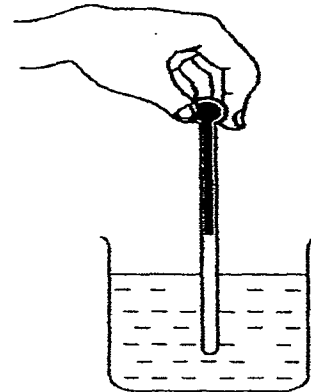
10. Catherine wants to measure the temperature of hot water in a beaker.

Which one of the following diagrams shows the correct position of the thermometer when taking the temperature reading?

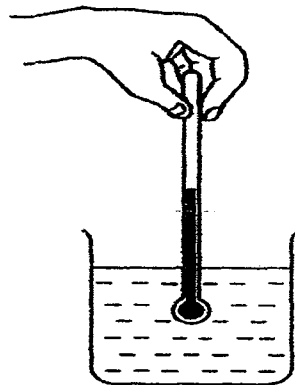
(1)



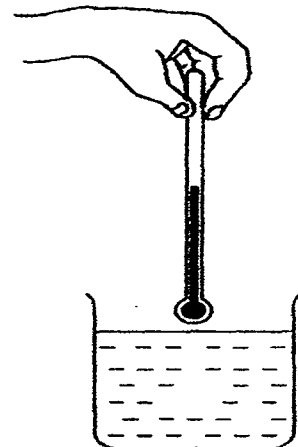
(2)



(3)



(4)

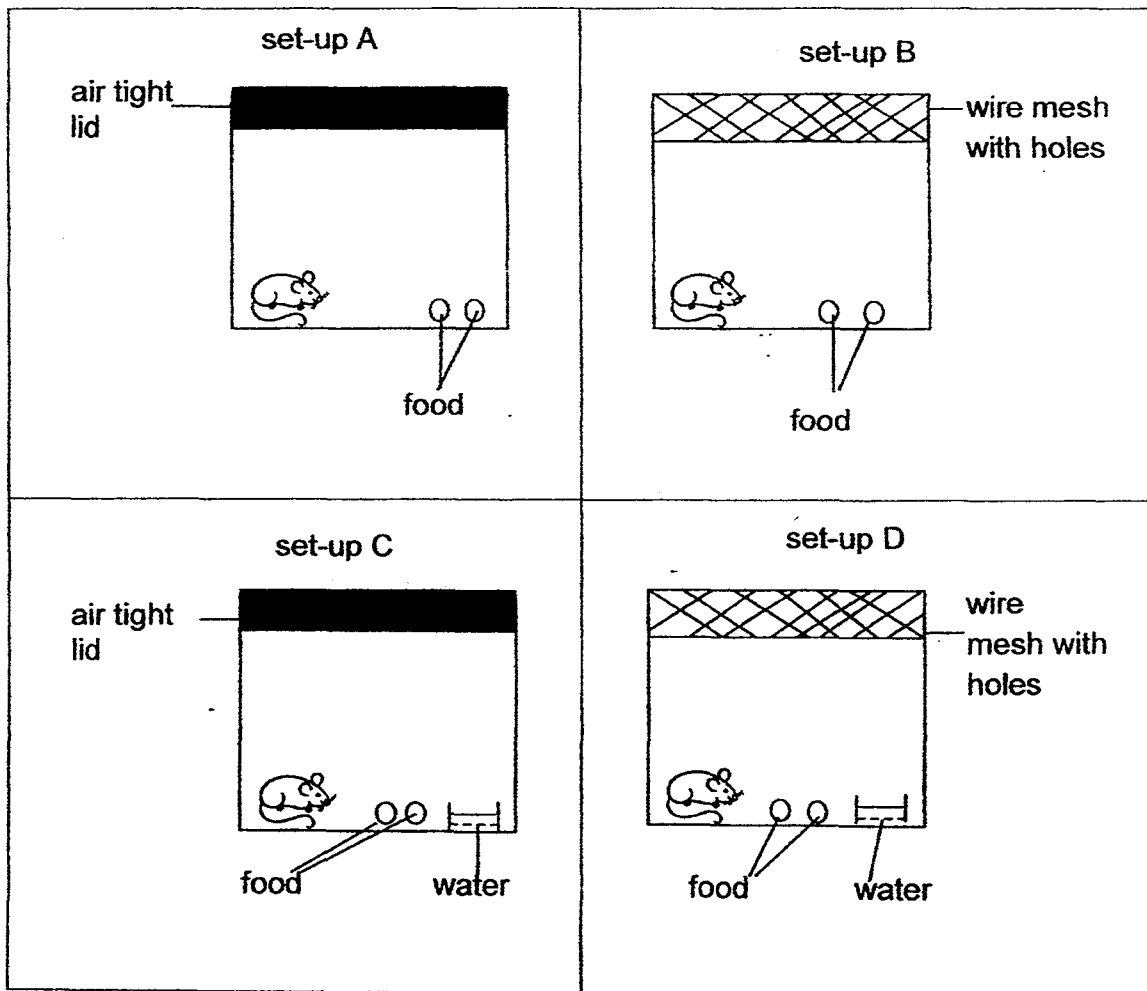


11. Which of the following statement(s) is/are true about mushrooms?

- A: Mushrooms feed on decaying matter that they grow on.
- B: Mushrooms reproduce by spores found in between the gills.
- C: Mushrooms sometimes produce seeds like flowering plants.
- D: Mushrooms contain chlorophyll that help them make their own food.

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

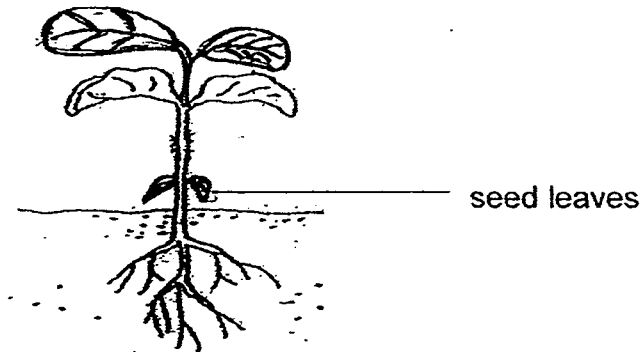
12. Ali prepared four set-ups as shown below to find out if living things need air to survive.



Which pair of set-ups should Ali choose to conduct a fair test?

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

13. The picture below shows a seedling.



Which of the following statements about the plant at this stage of its life cycle are true?

- A: It can now reproduce.
- B: It can use its leaves to make its own food.
- C: It does not use the food from the seed leaves.
- D: It does not depend on its roots to obtain water from the soil.

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

14. Mary observed animal A and animal B. She recorded her observations on the checklist shown below. A tick (✓) means that the animal has the particular characteristic and a cross (x) means that the animal does not have the particular characteristic.

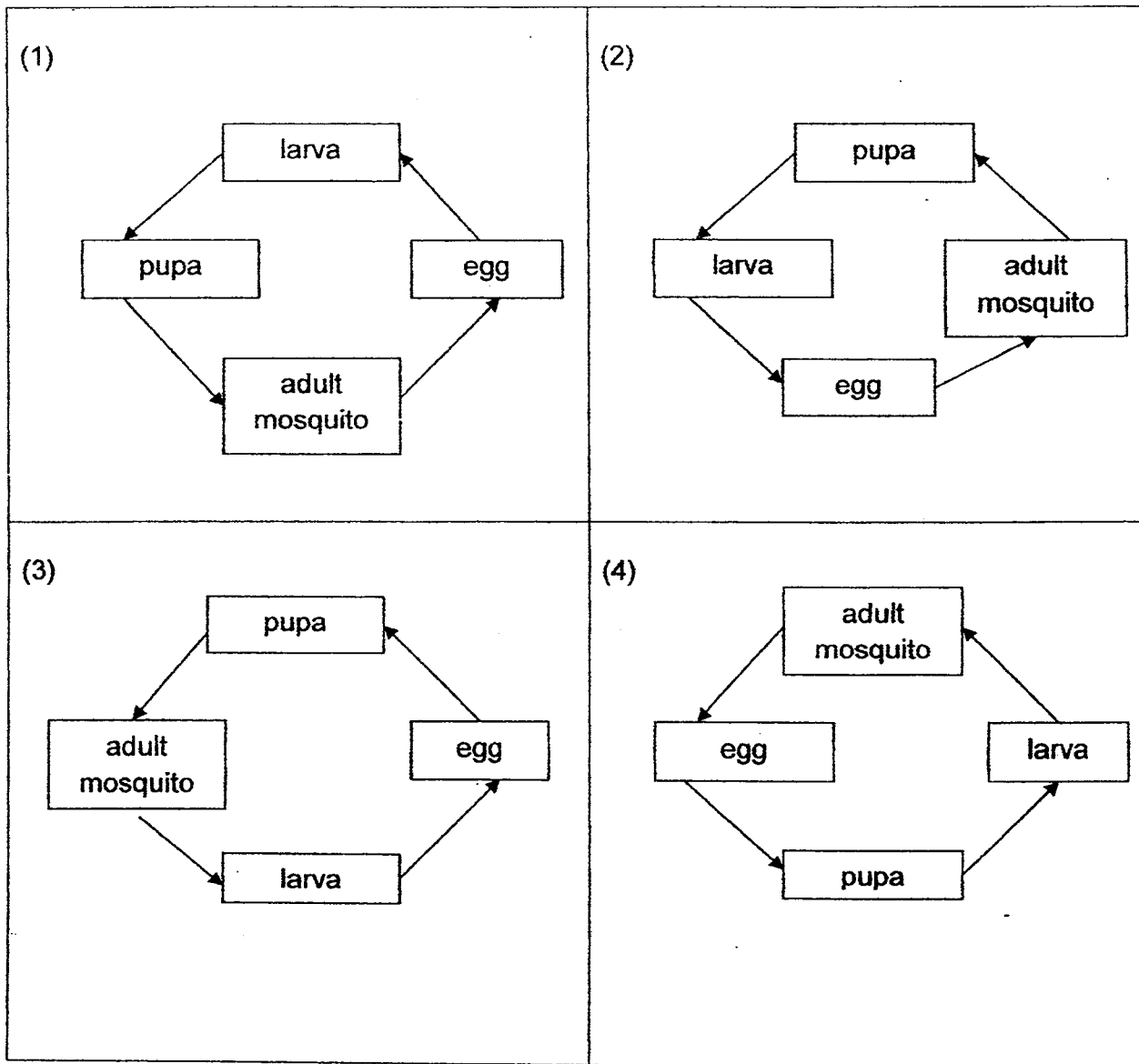
	animal A	animal B
Eggs are laid in water	✓	x
There are 4 stages in its life cycle	x	✓
It has six legs	x	✓

Which of the following could be animals A and B?

	animal A	animal B
(1)	butterfly	chicken
(2)	butterfly	cockroach
(3)	frog	butterfly
(4)	frog	cockroach



15. Which one of the following shows the stages of the life cycle of the mosquito in the correct order?



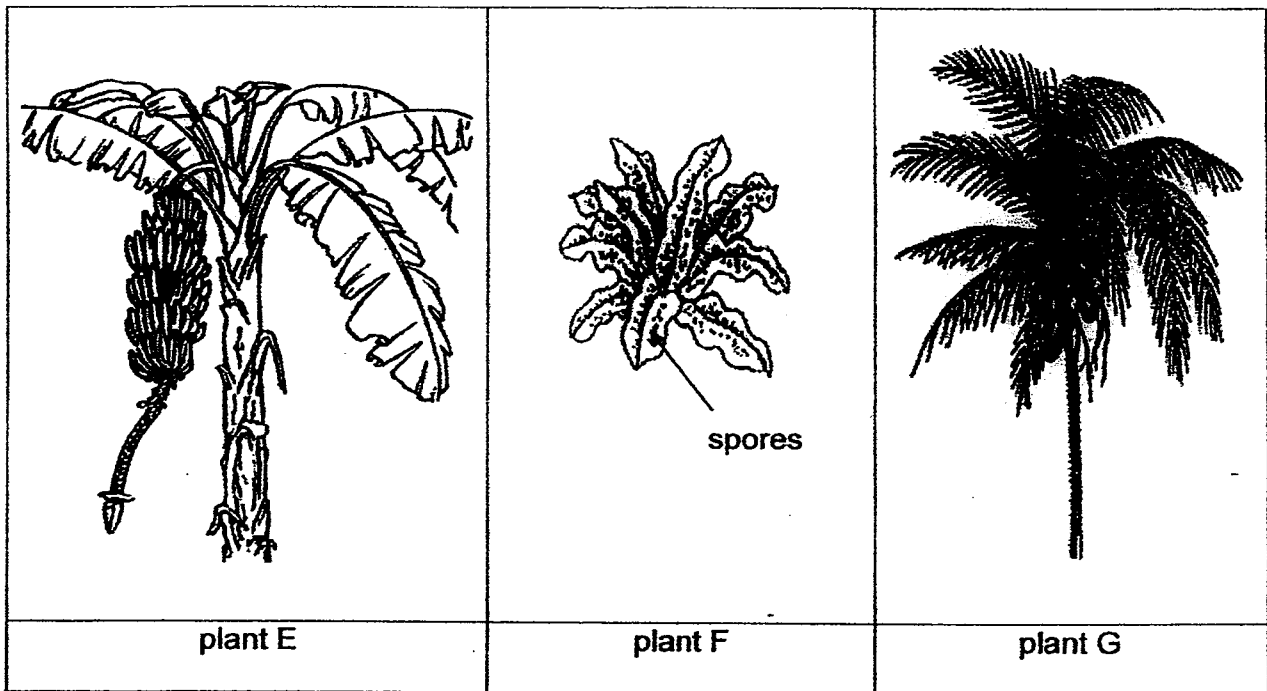
16. Tom observed the growth of a tomato plant from a seed to an adult plant. He took down some notes on different pieces of paper. Help Tom arrange the sequence of the growth of the plant.

A: Flowers appear  
 B: Shoot appears  
 C: Leaves appear  
 D: Fruits appear  
 E: Roots appear

(1) B, E, C, A, D  
 (3) B, A, E, C, D

(2) E, B, C, D, A  
 (4) E, B, C, A, D

17. Peter, Ali and Sue came across three different types of plants E, F and G as shown in the diagram below.



They made the following statements about these plants:

Peter: G is a flowering plant since it bears fruits.

Sue: E, F and G are non-flowering plants as they do not bear flowers.

Ali: F is a non-flowering plant because it makes its own food and reproduces by spores.

Which of these statements(s) is/are correct?

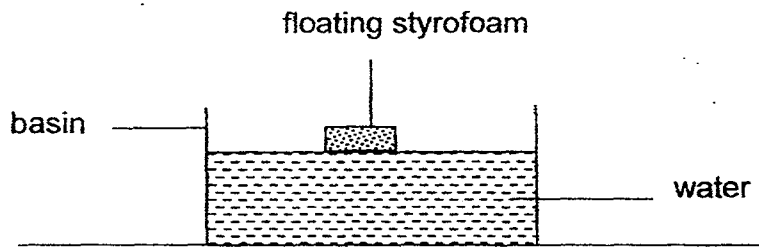
(1) Peter only

(3) Peter and Ali only

(2) Sue and Ali only

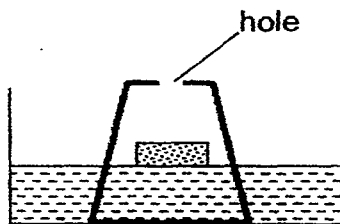
(4) Peter and Sue only

18. The diagram below shows a piece of styrofoam floating in a basin of water.

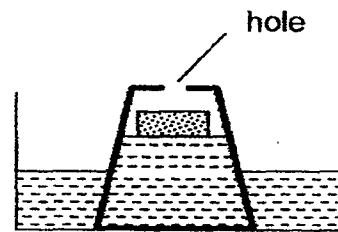


Four plastic cups were inverted over the styrofoam and held down as shown below.

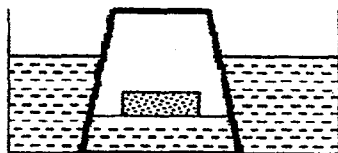
Which of the diagrams show what could possibly happen to the styrofoam and water?



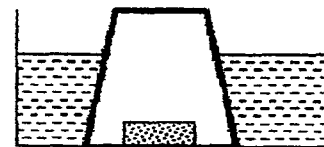
A



B



C

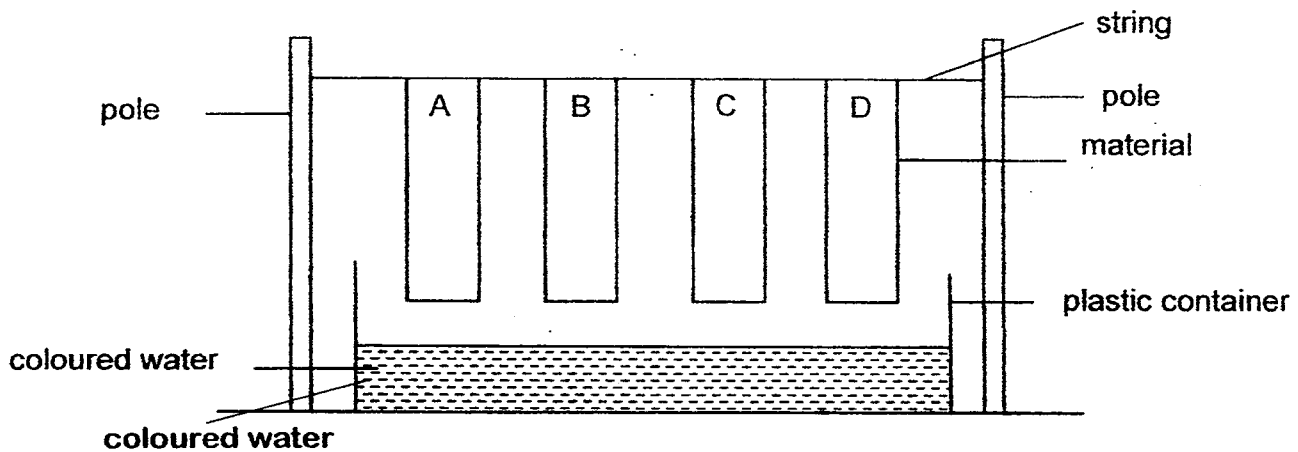


D

- (1) A and B only
- (3) B and D only

- (2) A and C only
- (4) C and D only

19. Four different materials, A, B, C and D, of the same size and shape were used in the experiment set-up as shown below.



The materials were then lowered into the container with coloured water. 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	14
B	10
C	0
D	8

Based on the table above, which material is the most suitable for making a raincoat?

- (1) Material A  
(3) Material C

- (2) Material B  
(4) Material D

20. Ali measured the volume and mass of three balls made of different materials. He recorded the results in the table below.

Ball	Volume(cm <sup>3</sup> )	Mass(g)
ball A 	50	500
ball B 	150	300
ball C 	200	300

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

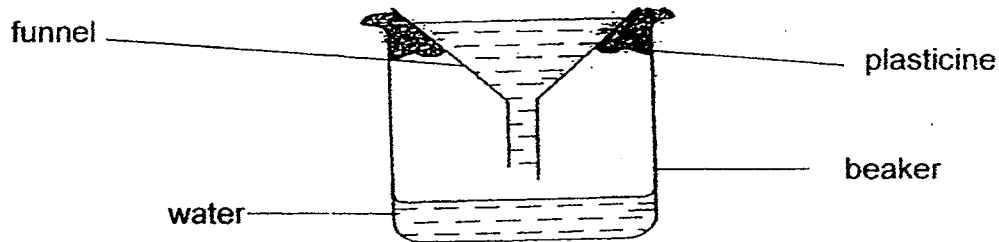
- (1) A smaller object occupies less space than a bigger object.
  - (2) Objects that are of different sizes can have the same mass.
  - (3) Objects that are of different sizes occupy different amount of space.
  - (4) Objects that occupy less space are lighter than objects that occupy more space.
21. The table below shows the properties of J, K, L and M. A tick (✓) means that the object has the particular property and a cross (×) means that the object does not have the particular property.

	J	K	L	M
It occupies space.	✓	✓	×	✓
It has a fixed shape.	×	✓	×	×
It has a fixed volume.	✓	✓	×	×

Based on the information given above, which one of the following statements is **false**?

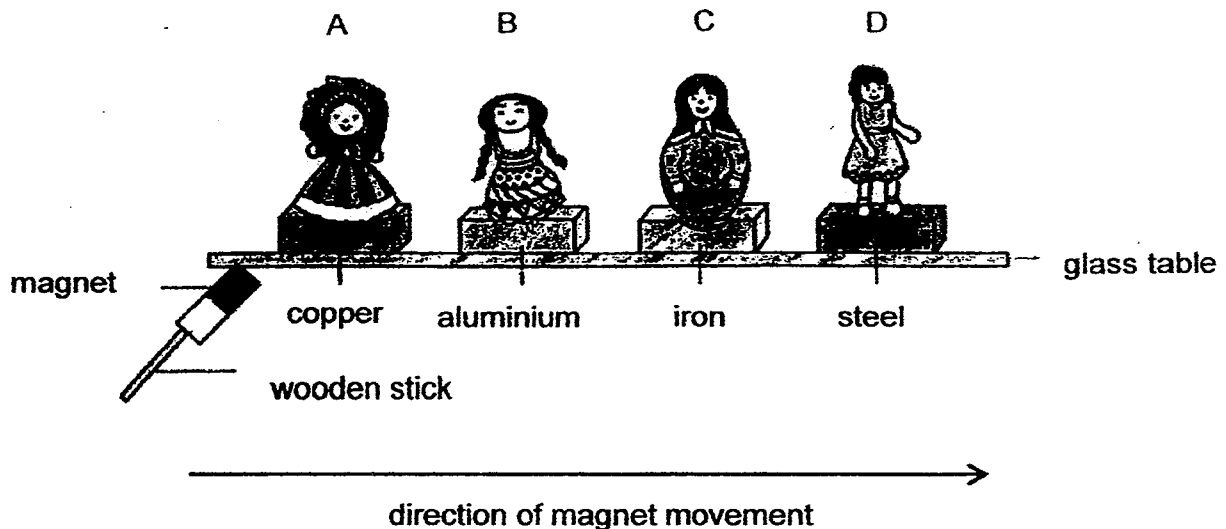
- (1) M can be compressed.
- (2) L does not have mass.
- (3) J and M will take the shape of the container.
- (4) J, K, L and M are all different states of matter.

22. Mei Ling poured water into a beaker through the funnel. Gaps between the beaker and the funnel were covered with plasticine. She observed that the water flowed into the beaker slowly at first and then it stopped flowing.



Why did the water stop flowing into the beaker?

- (1) The opening of the funnel was too small.
  - (2) The plasticine stopped the water from flowing in.
  - (3) The plasticine allowed air in the beaker to escape.
  - (4) There was no space for the water to flow into the beaker.
23. Sandra had 4 paper dolls. She attached each doll to a different material. Then, she placed the 4 dolls on a glass table as shown below.

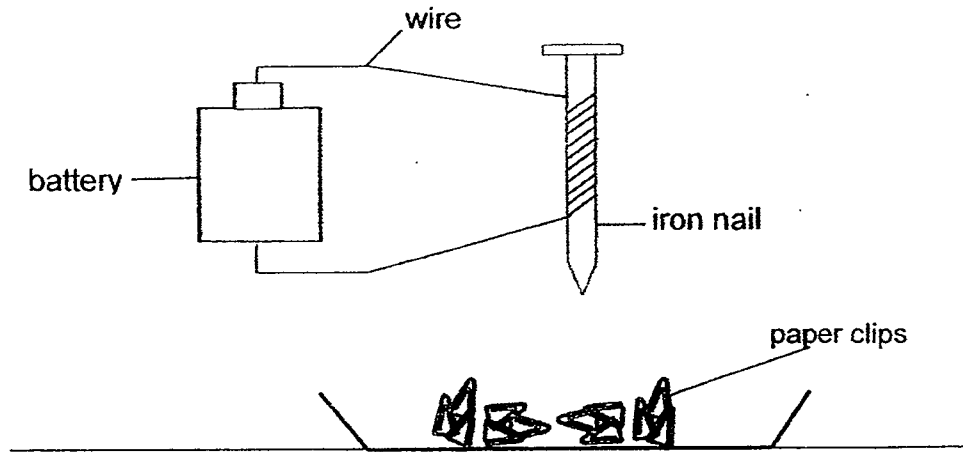


Sandra taped a strong magnet to one end of a wooden stick. She then placed it under the glass table to try to move the dolls.

Which dolls would move with the wooden stick?

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

24. Vivian made an electromagnet as shown below.



She changed the number of coils around the iron nail and counted the number of paper clips attracted by the nail. The results were shown in the table below.

	set-up E	set-up F	set-up G	set-up H
Number of coils around the iron nail	5	10	15	20
Number of paper clips attracted by the iron nail	2	5	10	14

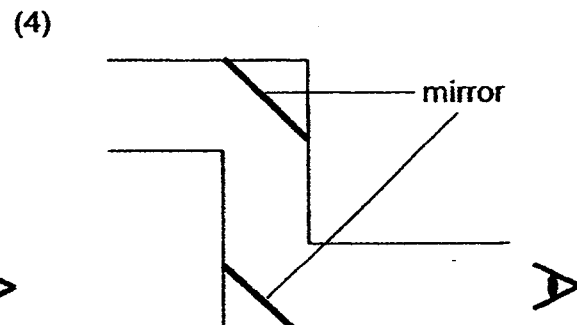
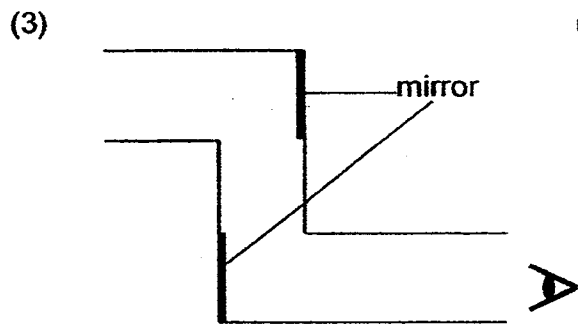
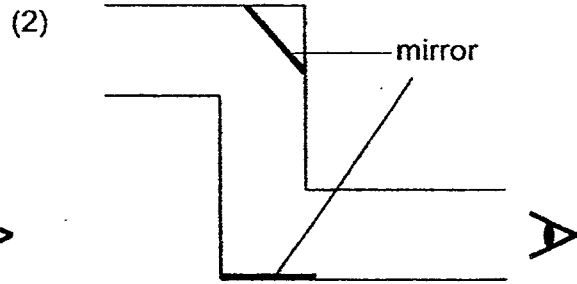
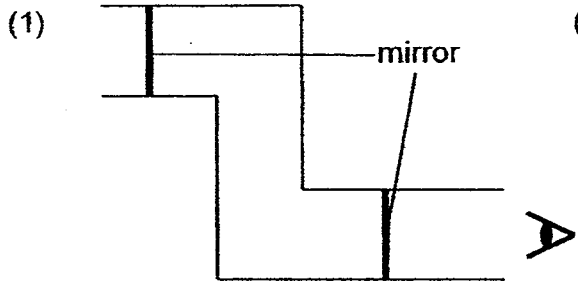
Based on the results above, which of the statements are true?

- A: The iron nail in set-up E has the weakest magnetism.
- B: The strength of the magnet depends on the number of batteries.
- C: The iron nail in set-up G is a stronger magnet than the iron nail in set-up F.
- D: The strength of the magnet depends on the number of coils around the iron nail.

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

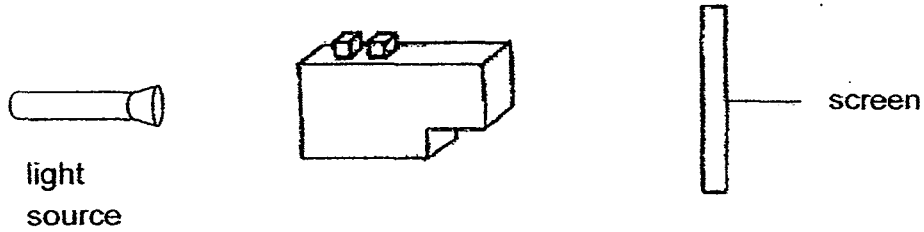
- (2) B and D only
- (4) A, C and D only

25. Which of the following shows the correct arrangement of mirrors in a periscope?





26. A shadow was cast on the screen from a light source as shown in the diagram below.



Which one of the following diagram shows the shadow that is cast on the screen?

(1)



(2)



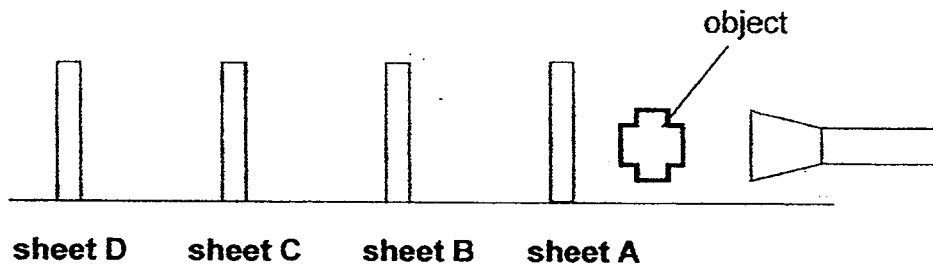
(3)



(4)



27. The experiment shown below was carried out in a dark room. Sheets A, B, C and D were arranged in a straight line. An object was placed in front of sheet A.

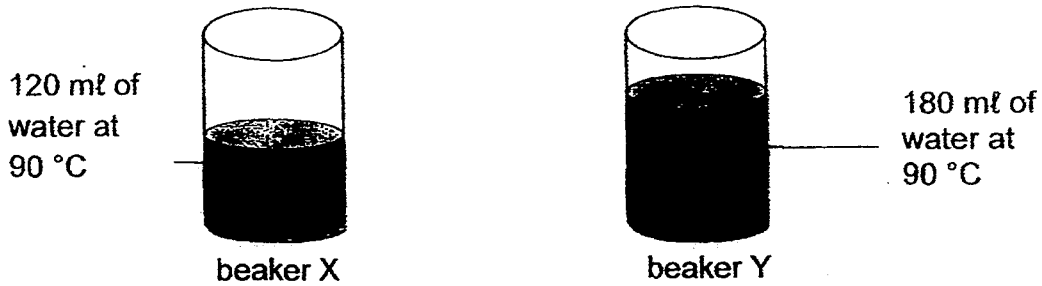


When the torch was switched on, a shadow of the object was formed on sheet C.

Which of the following correctly describes the properties of the materials of sheets A, B, C and D?

	<b>Transparent</b>	<b>Opaque</b>	<b>Not possible to tell</b>
(1)	A and B	C	D
(2)	A	C and D	B
(3)	B	A and C	D
(4)	B and D	C	A

28. The diagram below shows two beakers, X and Y, filled with different amounts of water. The water in both beakers was heated up to 90 °C.

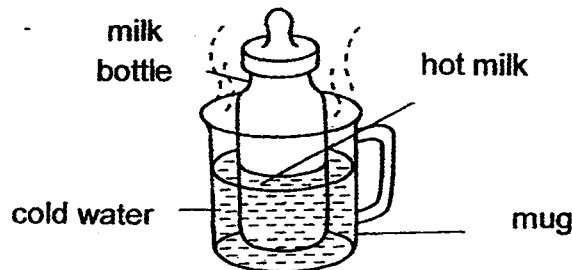


A group of friends then said the following statements about the heat energy in the two beakers.

- Billy: Beaker X will have more heat energy as the amount of water is less than beaker Y.  
 Tom: Beaker Y will have more heat energy as the amount of water is more than beaker X.  
 Jack: Beaker X will have less heat energy at first but the heat energy will be more than beaker Y after some time.  
 Sam: The amount of heat energy in both beakers is the same as the temperature of water in both beakers is the same.

Which one of the above statements is true about the amount of heat energy in the two beakers?

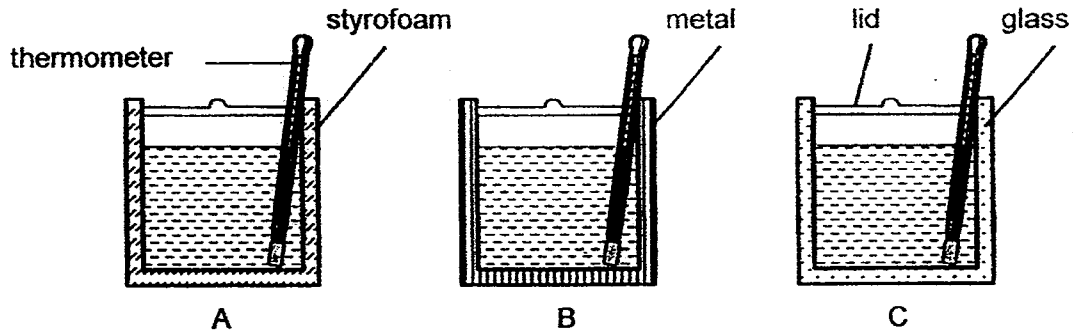
- (1) Billy  
 (2) Tom  
 (3) Jack  
 (4) Sam
29. Susan wanted to cool down the milk for her daughter. She then placed the milk bottle in a mug of cold water as shown below.



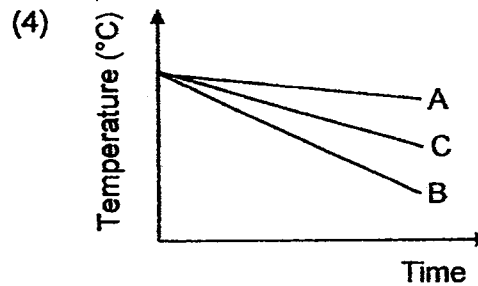
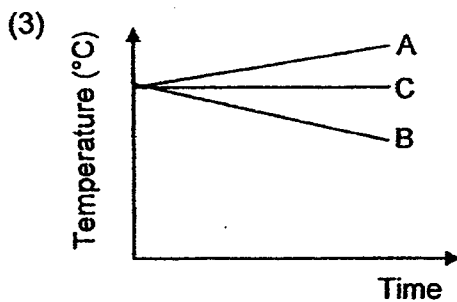
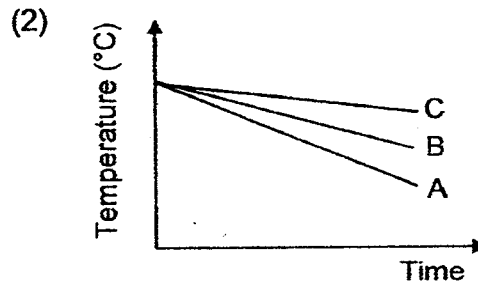
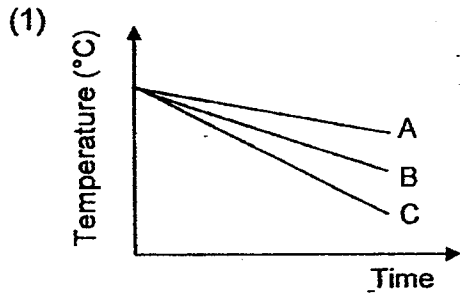
Which of the following correctly shows the objects in the above set-up that had gained heat or lost heat after 10 minutes?

	<b>hot milk</b>	<b>mug</b>	<b>cold water</b>
(1)	lost heat	lost heat	gained heat
(2)	gained heat	gained heat	lost heat
(3)	lost heat	gained heat	gained heat
(4)	gained heat	lost heat	gained heat

30. Three similar-sized containers A, B and C were filled with 500 ml of boiling water each. The containers were made of different materials. A thermometer was placed in each container. Each container was covered with a lid as shown in the diagram below. The containers were then left on a table for an hour.

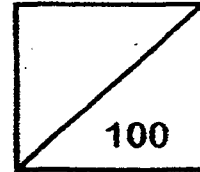


Which one of the following graphs shows the change in the temperature of the water in each container?





**Rosyth School**  
**Second Semestral Examination for 2015**  
**SCIENCE**  
**Primary 4**



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

Total  
Marks:

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

Date: 29<sup>th</sup> October 2015 Parent's Signature: \_\_\_\_\_

---

---

## **Booklet B**

**Instructions to Pupils:**

1. For questions 31 to 44, write your answers in the spaces given in this booklet.

	<b>Maximum</b>	<b>Marks Obtained</b>
<b>Booklet A</b>	<b>60 marks</b>	
<b>Booklet B</b>	<b>40 marks</b>	
<b>Total</b>	<b>100 marks</b>	

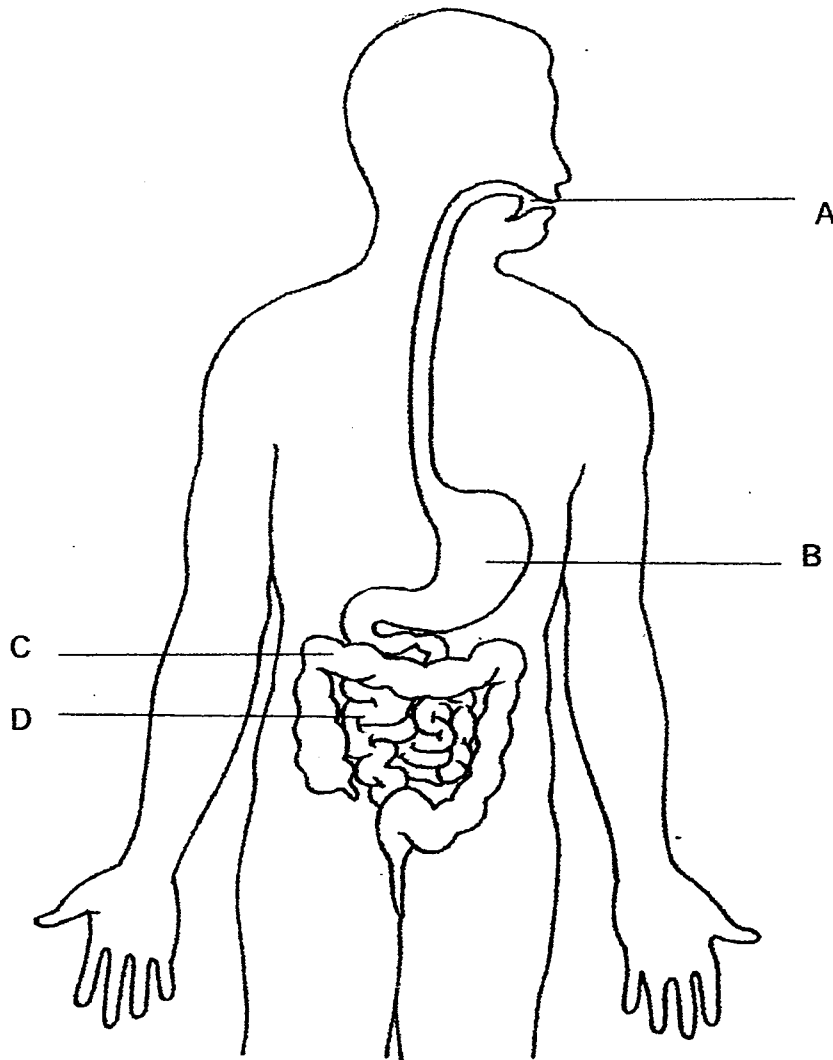
**\* This booklet consists of 15 pages.**

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

**Booklet B (40 marks)**

For questions 31 to 44, write your answers in this booklet.

31. The diagram below shows part of the human digestive system.

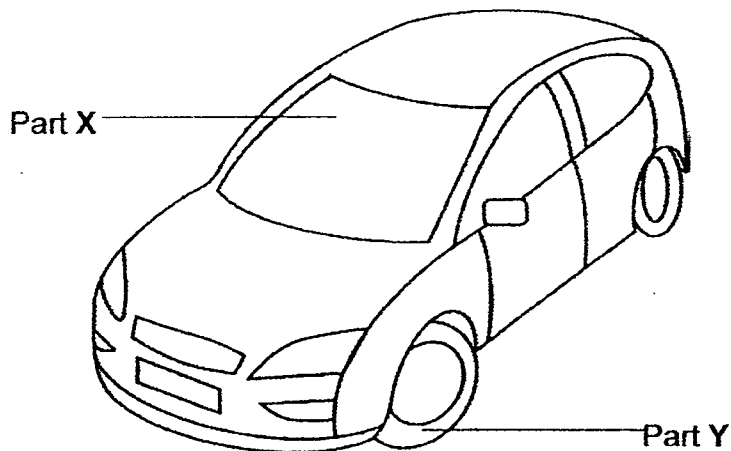


Identify the part where

(a) digested food is absorbed by the body : \_\_\_\_\_ (1m)

(b) there is no digestion : \_\_\_\_\_ (1m)

32. The diagram below shows a car.

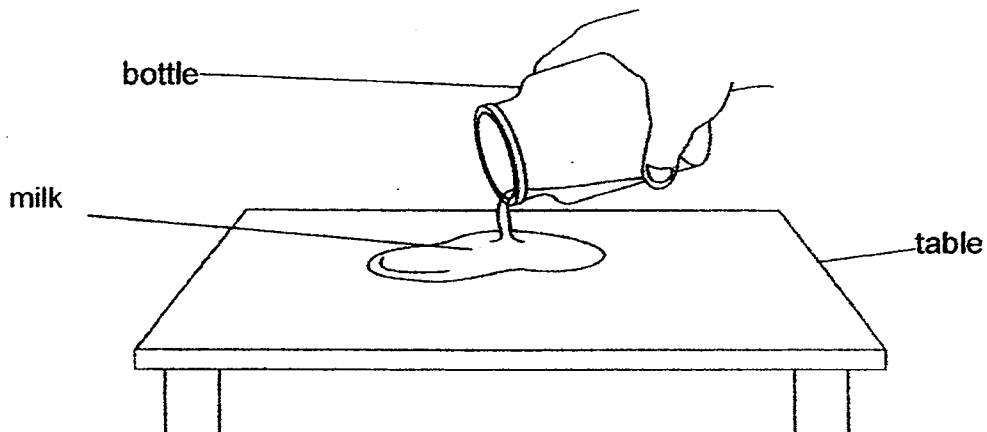


- (a) Part X is made of glass because it allows \_\_\_\_\_ to pass through so that the driver can see the road. (1m)
- (b) Part Y is made of \_\_\_\_\_ because Y has to be flexible. (1m)

33. Choose the correct words from the box to fill in the blanks below.

solid	liquid	gas
-------	--------	-----

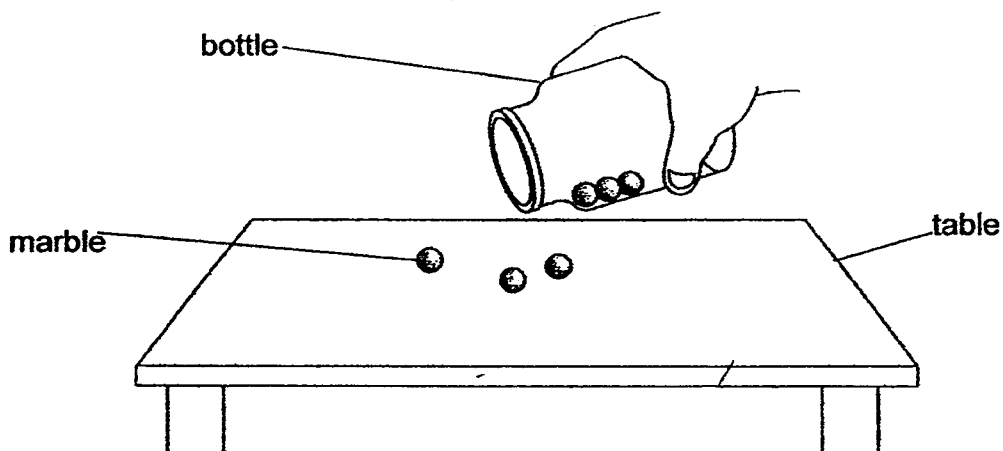
(a) Ali pours milk from a bottle onto a table as shown below.



The volume of milk remains the same but its shape changes.

This shows that milk is a \_\_\_\_\_ (1m)

(b) Ali pours some marbles from a bottle onto a table as shown below.

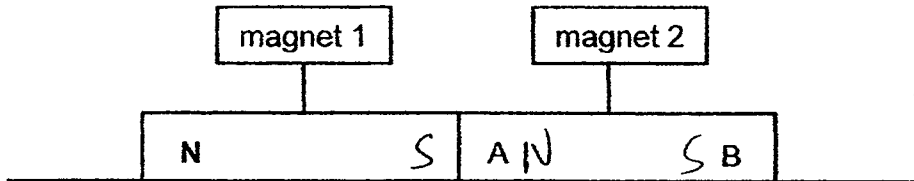


The shape and volume of the marbles remains the same.

This shows that a marble is a \_\_\_\_\_. (1m)



34. Two magnets are placed together as shown below.



The north pole of magnet 1 is labelled N.

Name the poles labelled A and B on magnet 2.

(2m)

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

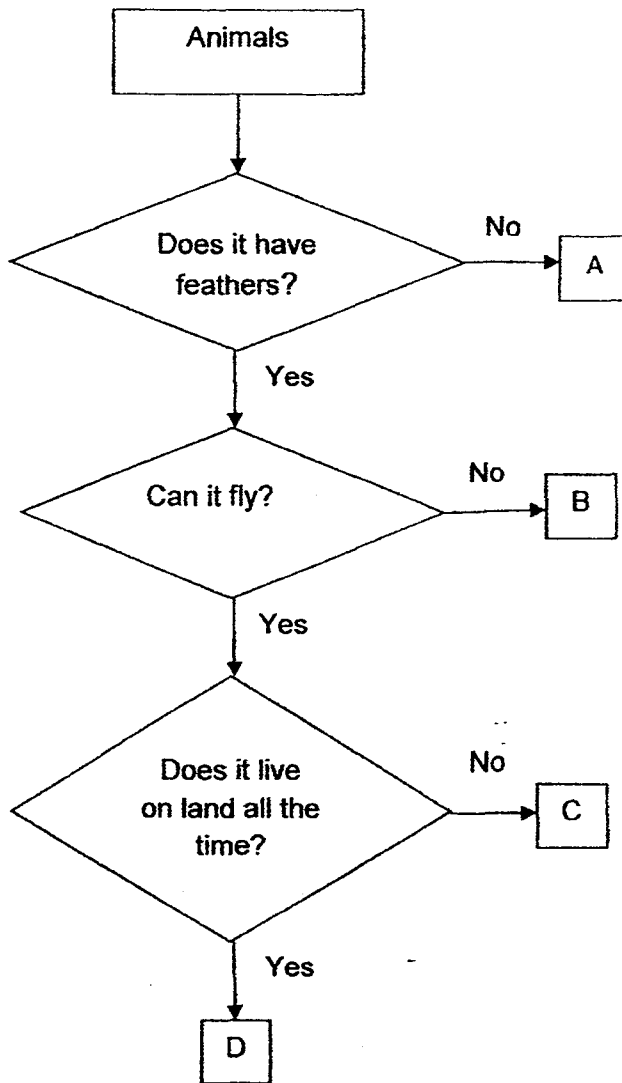
B: \_\_\_\_\_

35. The diagram below shows a frying wok.






- (a) The handle is made of wood because it is a \_\_\_\_\_ conductor of heat. (1m)
- (b) The wok is made of metal because it is a \_\_\_\_\_ conductor of heat. (1m)

36.



- (a) According to the flow chart, state one difference between animals A and B. (1m)
- 
- (b) Which of the groups best represents a duck? (1m)
- 
- (c) Besides the characteristics shown in the flow chart above, state one other characteristic of animal D. (1m)
-

37. Grace had three pieces of bread. The first piece of bread was placed in container W. She sprinkled water on the second piece of bread and placed it in container X. She toasted the third piece of bread and placed it in container Y.

 <p>W</p>	 <p>X</p>	 <p>Y</p>
original bread	bread sprinkled with water	toasted bread

After a few days, she spotted some black spots on bread W and X.

- (a) What were the black spots most likely to be? (1m)

\_\_\_\_\_

- (b) Grace noticed that bread Y looked the same as before. Explain how this is possible. (1m)

\_\_\_\_\_

\_\_\_\_\_

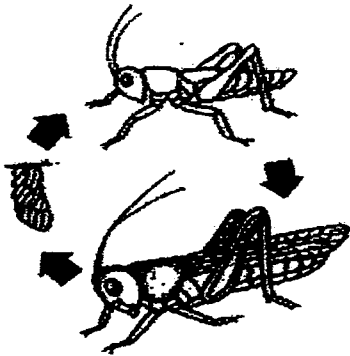
- (c) Name one other condition for the black spots found on the breads to grow? (1m)

\_\_\_\_\_

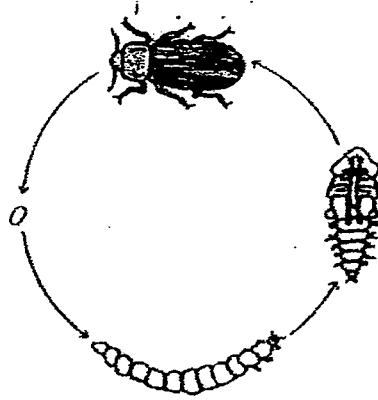
- (d) Identify the changed variable in the above experiment. (1m)

\_\_\_\_\_

38. Compare the two life-cycles below.



life cycle of a grasshopper



life cycle of a mealworm beetle

(a) Based on the diagrams, state 2 differences between the life cycle of a grasshopper and a mealworm beetle. (2m)

Difference 1: \_\_\_\_\_

\_\_\_\_\_

Difference 2: \_\_\_\_\_

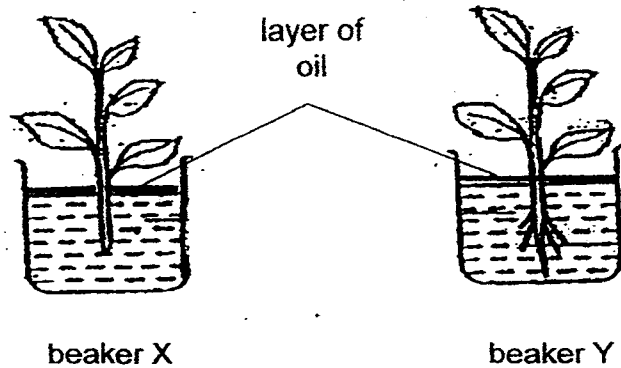
\_\_\_\_\_

(b) Lina observed that the larva of the mealworm beetle moulted several times. Explain why the animal has to moult at this stage? (1m)

\_\_\_\_\_

\_\_\_\_\_

39. Aminah set up an experiment as shown below.



She filled beakers X and Y with water. After this, she poured a layer of oil on top of the water to prevent any loss of water to the surroundings. Both beakers were left in the same location. The volume of water was measured after 5 days.

(a) Describe what Aminah would observe about the water level in beakers X and Y after 5 days. (1m)

Water level in beaker X: \_\_\_\_\_  
\_\_\_\_\_

Water level in beaker Y: \_\_\_\_\_  
\_\_\_\_\_

(b) What could be a possible reason for Aminah's observation about the water level in beaker Y? (1m)

\_\_\_\_\_

(c) Describe the appearance of the leaves on the plant in beaker X on the fifth day? (1m)

\_\_\_\_\_



(c) State two properties of air that are shown in the experiment above. (2m)

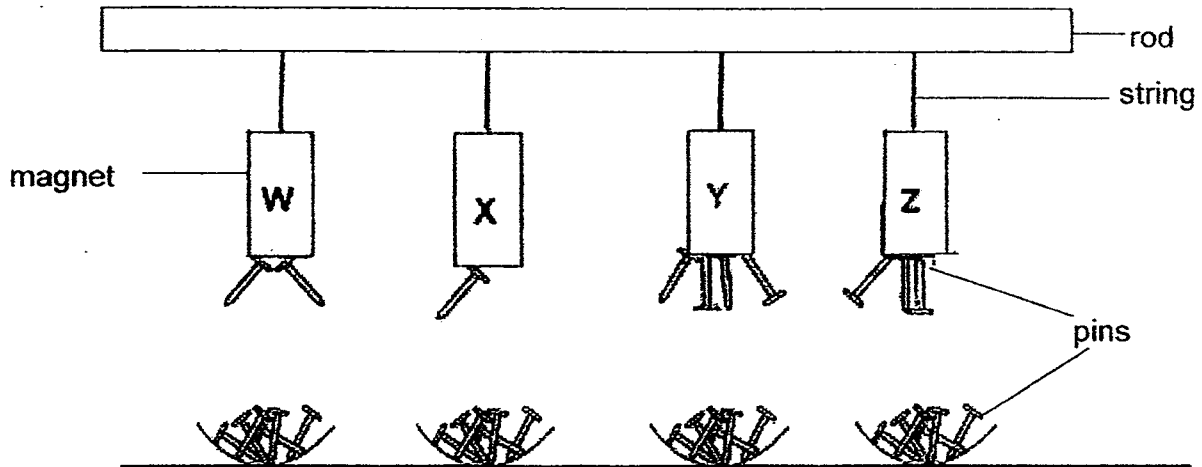
Property 1: \_\_\_\_\_

\_\_\_\_\_

Property 2: \_\_\_\_\_

\_\_\_\_\_

41. John hung four different bar magnets of the same size, W, X, Y and Z as shown below.



- (a) What was the aim of his experiment? (1m)

---



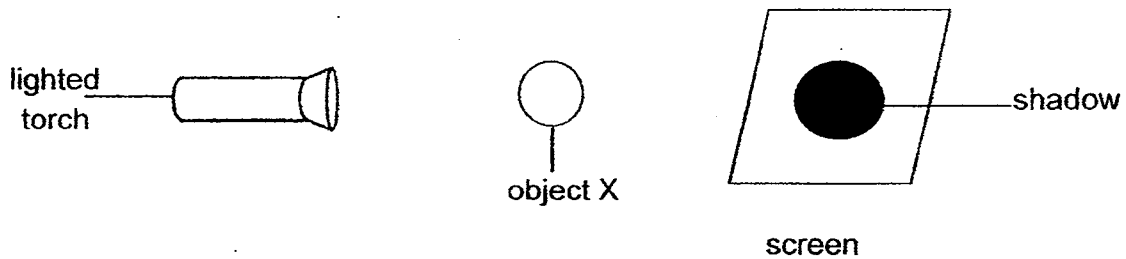
---

- (b) Identify and tick (✓) the correct variables shown in the table below. (2m)

Type of variables	Changed variable	Variable kept the same	Measured variable
(a) Length of strings to hang the magnets			
(b) Bar magnets			
(c) Distance between the magnets and the pins			
(d) The number of pins attracted by the magnets.			



42. Billy conducted an experiment as shown below. He placed object X between a lighted torch and a screen. A dark shadow was formed on the screen.



- (a) What would happen to the shadow if object X was moved closer to the screen? (1m)

---

---

- (b) What should Billy do if he wanted to get a lighter shadow? (1m)

---

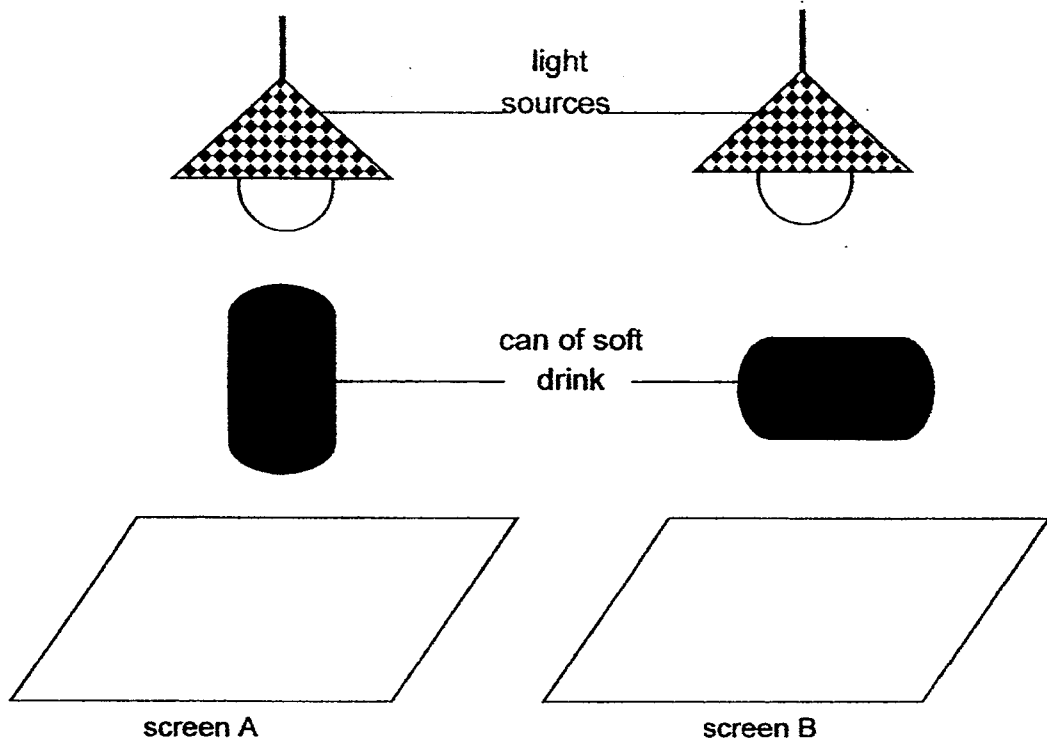
---

- (c) State a property of light which causes a shadow to be formed. (1m)

---

---

43. Ariel placed two identical cans of soft drink in different positions directly under identical light sources in a dark room as shown in the diagram below. Shadows were formed on screens A and B.

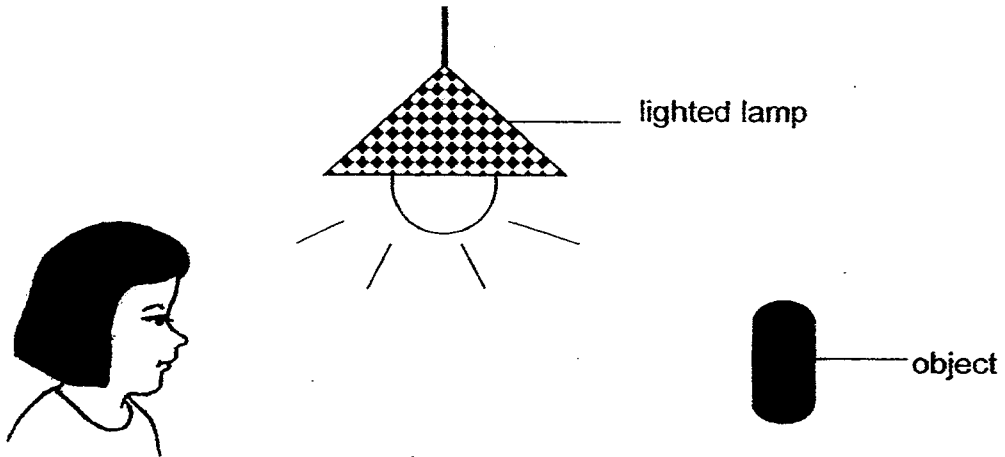


- (a) In the table below, draw the shadows that would be observed on screen A and screen B respectively. (2m)

shadow formed on screen A	shadow formed on screen B

Question 43 continues on page 14

Study the diagram below.



- (b) Explain how the lighted lamp and the reflection of light enable Ariel to see the object. (2m)

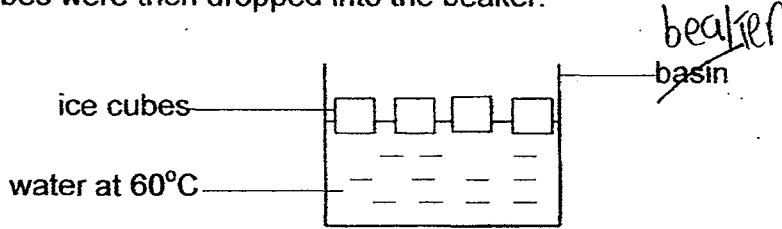
---

---

---

---

44. Water at  $60^{\circ}\text{C}$  was poured into a ~~basin~~ <sup>beaker</sup> as shown in the diagram below. A few ice cubes were then dropped into the ~~beaker~~ <sup>basin</sup>.



- (a) What would happen to the temperature of the water after a few ice cubes were dropped into the beaker? (1m)

---

- (b) Explain your answer for part (a). (1m)

---

After some time, the temperature of the water in the ~~basin~~ <sup>beaker</sup> was the same as the room temperature.

- (c) State the property of heat that caused the above to happen. (1m)

---

**End of Paper**

**EXAM PAPER 2015**  
**LEVEL : PRIMARY 4**  
**SCHOOL : ROSYTH SCHOOL**  
**SUBJECT : SCIENCE**  
**TERM : SA2**

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10
4	2	2	3	2	4	2	4	2	3
Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20
2	3	2	3	1	4	3	2	3	4
Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30
4	4	2	4	4	2	1	2	3	4

Q31a. D      Q31b. C      Q32a light      Q32b rubber

Q33a. liquid    Q33b. solid    Q34. A: North pole    Q34. B: South Pole

Q35a. poor    Q35b. good

Q36a. Animal A has no feathers but Animal B has feathers.    Q36b. C

Q36c. It has a beak.      Q37a. Mould

Q37b. She toasted the bread, so the water in the bread dries up. In order for mould to grow, it needs water.

Q37c. Food or Air      Q37d. The amount of water on the bread.

Q38a. Difference 1 : A meal worm beetle has a four stage life cycle but a grasshopper has a three stage life cycle.

Q38a. Difference 2 : The young of a grasshopper resemble the adult but the young of the meal worm beetle does not resemble the adult.

Q38b. No model answer.

Q39a. X: no change    Q39a. Y: lesser water

Q39b. The plant has root and they absorbed water.    Q39c. The leaves will wither.

Q40a. The side with jar A tilted downwards.      Q40b. 200cm<sup>3</sup>

Q40c. Property 1 : It can be compressed.      Q40c. Property 2 : It has mass.

Q41a. To find out which magnet is the strongest.

Q41b. a. variable kept the same

Q41b. b. changed variable

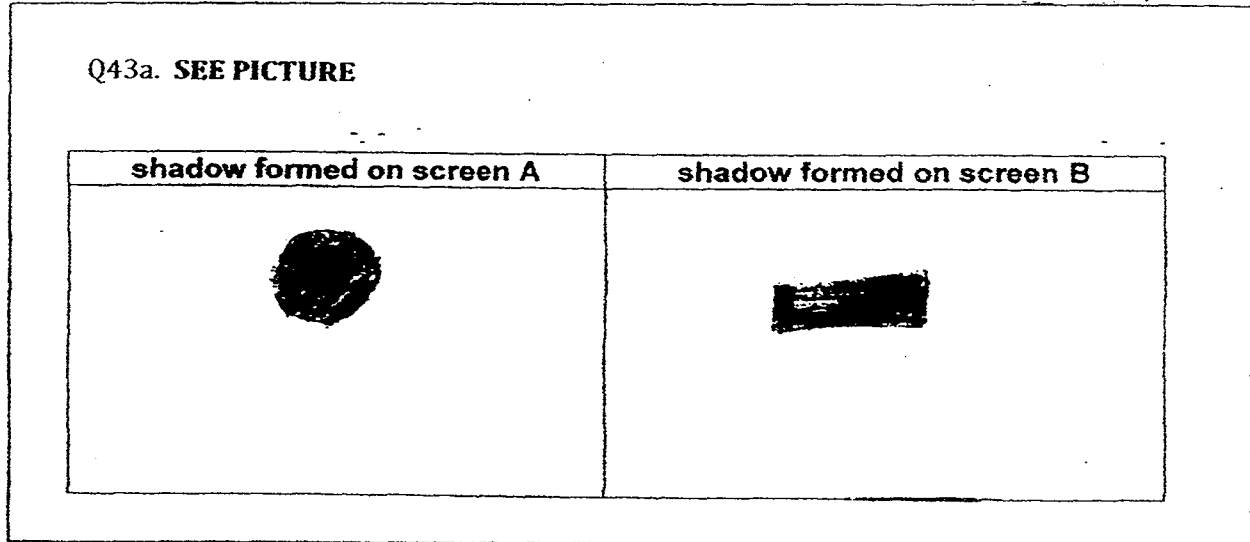
Q41b. c. variable kept the same

Q41b. d. measured variable

Q42a. The shadow will be smaller. Q42b. Use a torch that gives out lesser light.

Q42c. Light travels in a straight line.

Q43a. **SEE PICTURE**



Q43b. The light that is from the lighted lamp fall on the object, the object then reflect the light into Ariel's eyes.

Q44a. It will decrease. Q44b. The water lose heat to the ice cubes, so the temperature of the water decreases.

Q44c. It travels from a hotter region to a cooler region.

**THE END**