Rulang Primary School

SEMESTRAL ASSESSMENT 2
SCIENCE
2015

Name: _____ ( ) **Marks:** _____ / 60

Level: Primary 4 **Total Time for Booklets**

Class: Primary 4 ( ) **A and B:** 1 h 30 min

Setter: Mdm Sarifah Hasliza **Date:** 3 Nov 2015

Total Marks: /100

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 **17** printed pages, including the cover page.

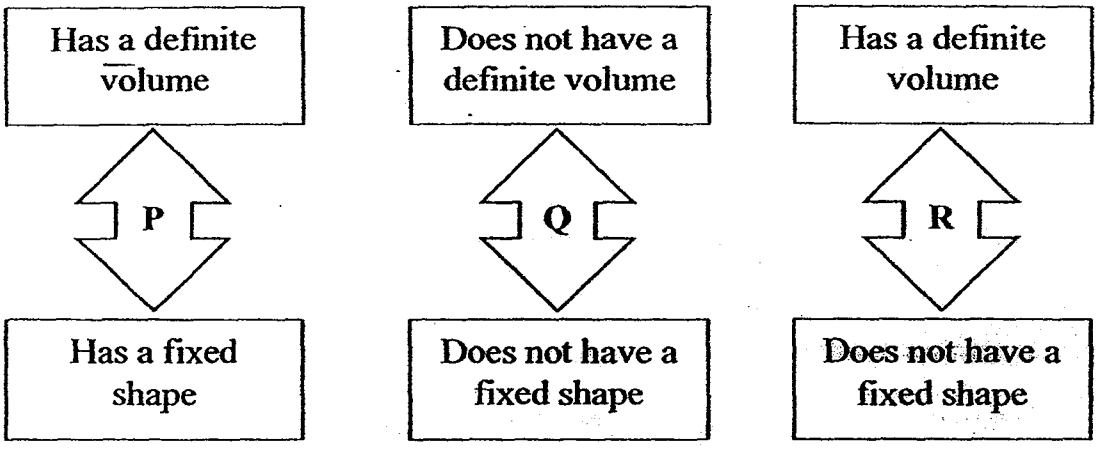
Section A (30 x 2 marks)

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. Matter is anything that has mass and occupies space. Which one of the following is not an example of matter?

   (1) Light
   (2) Bottle
   (3) Oxygen
   (4) Motorcycle

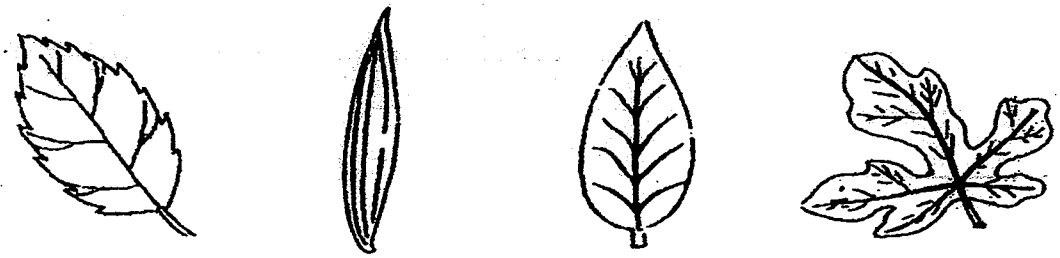
2. Study the diagram below carefully.



Which one of the following sets best fits the properties above?

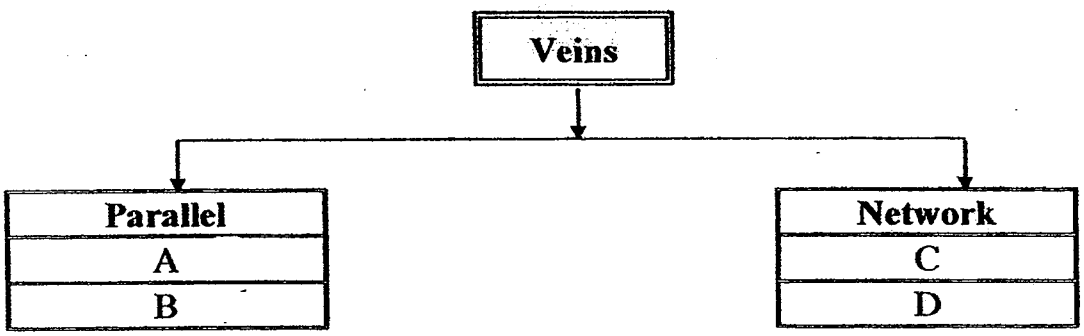
	P	Q	R
(1)	Cloud	Ice	Steam
(2)	Box	Carbon dioxide	Water
(3)	Milk	Purse	Oxygen
(4)	Paper	Shadow	Sand

3. Kate plucked four leaves, A, B, C and D, as shown below from the same garden.



A B C D

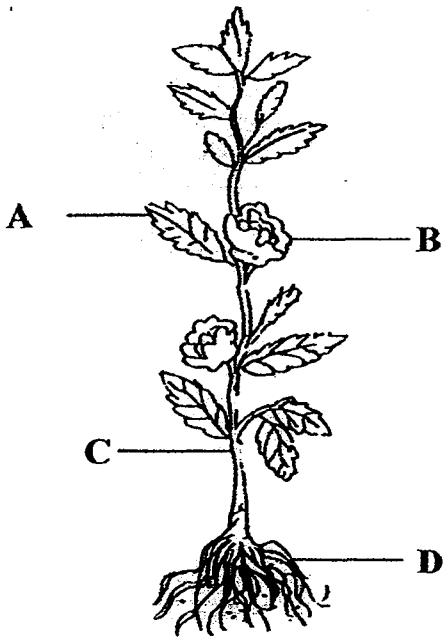
She then classified the leaves based on their veins as seen below.



Which of the four leaves has / have been classified correctly?

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

4. The picture below shows a flowering plant.



Which part is the stem?

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

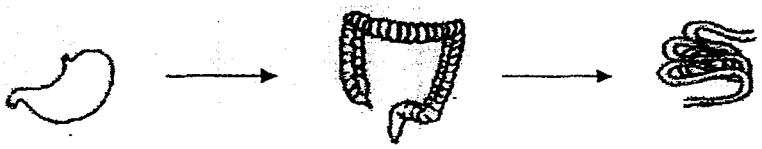
5. Study the classification chart below carefully.

Human body systems		
Respiratory	**Digestive**	**Skeletal**
Mouth	Large intestine	Skull
Lung	Heart	Backbone

Which one of the following has been classified wrongly?

(1) Heart
(2) Skull
(3) Mouth
(4) Large intestine

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

(1) 

Stomach **Large intestine** **Small intestine**

(2) 

Large intestine **Stomach** **Small intestine**

(3) 

Stomach **Small intestine** **Large intestine**

(4) 

Small intestine **Large intestine** **Stomach**

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

(1) 

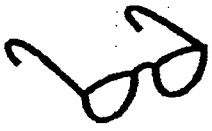
A lighted candle

(2) 

A mirror

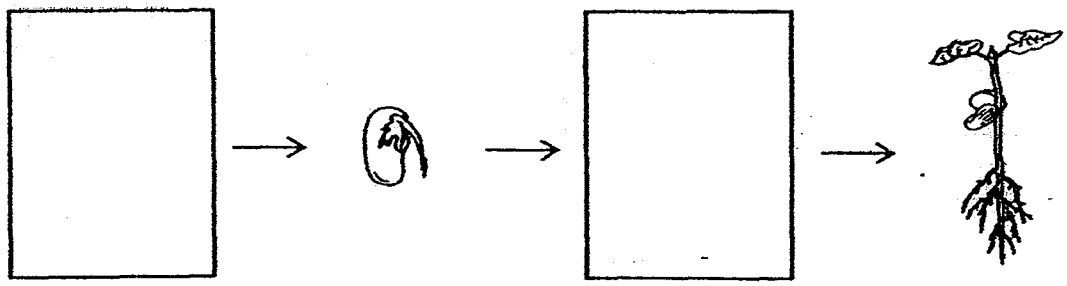
(3) 

The moon

(4) 

A pair of spectacles

8. The diagram below shows the growth of a young plant with two missing stages, A and B.

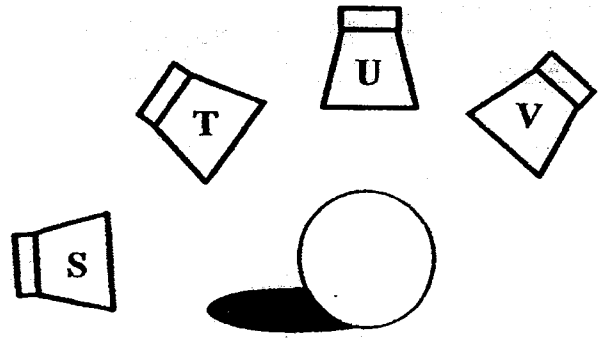


A B

Which one of the following sets shows the correct stages for A and B?

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

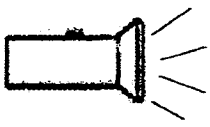
9. The picture below shows the shadow cast by a wooden ball when one of the four lights, S, T, U and V, was switched on.



Which light was switched on?

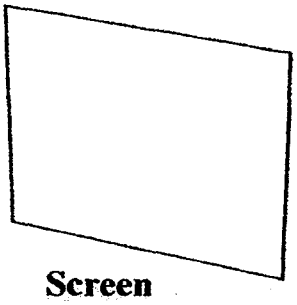
(1) S
(2) T
(3) U
(4) V

10. Leroy placed a metal container between a torch and a screen. There was a star painted on one side of the container.



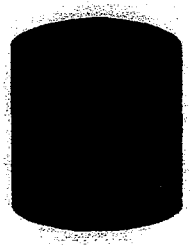
Torch

Metal container

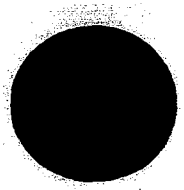


Screen

He tried to form shadows of different shapes by turning the container at different angles to face the torch. Which of the following shadows would <u>not</u> be cast on the screen?

(1) 

(2) 

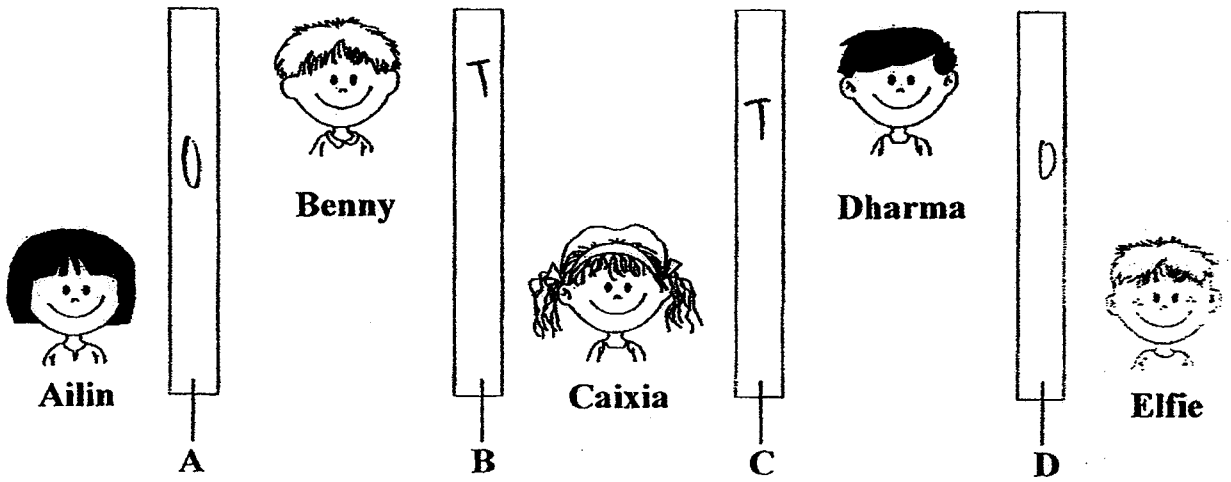
(3) 

(4) 

11. A factory made four types of materials, A, B, C and D. The materials were classified in the table below.

Allow light to pass through them	Do not allow light to pass through them
B	A
C	D

Mr Lim chose all the four materials from the above table to build walls for a playroom. He asked five children to stand behind the walls as shown in the diagram below.



Which one of the following statements is true?

(1) Caixia could see Ailin.
(2) Dharma could see Elfie.
(3) Ailin could not see Dharma.
(4) Benny could not see Caixia.

12. Four pupils made the following comparison between heat and temperature.

Jazz: The temperature of an object is a measurement of how much an object expands or contracts.
Hayden: The temperature of an object is a measurement of its degree of hotness.
Elvin: Heat moves from a cooler object to a warmer object.
Kimberly: Heat can only come from natural sources like the Sun.

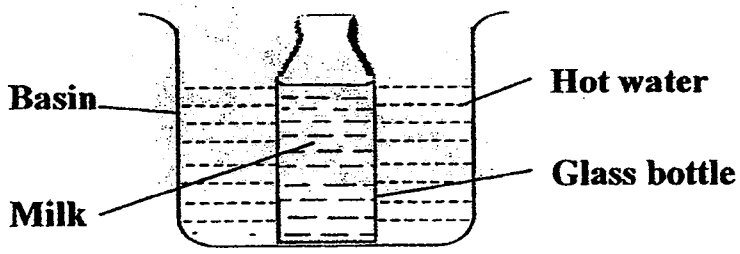
Whose statements is / are correct?

(1) Jazz only
(2) Hayden only
(3) Hayden and Elvin only
(4) Elvin and Kimberly only

13. We feel cool in an air-conditioned room because our body is _____.

(1) too hot
(2) losing heat
(3) gaining heat
(4) not producing heat

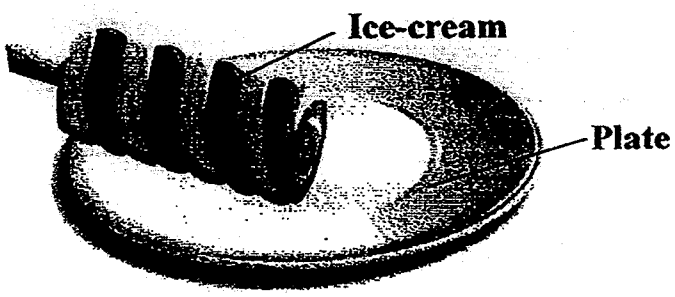
14. Elysha wanted to heat up a bottle of milk which was at room temperature. She placed the glass bottle into a basin filled with hot water.



Which one of the following observations would take place?

(1) The hot water lost heat to the milk only.
(2) The temperature of the hot water increased.
(3) The temperature of the glass bottle remained the same.
(4) The temperature of the milk would increase after a while.

15. Samuel took out an ice-cream from the freezer and placed it on a plate as shown below.

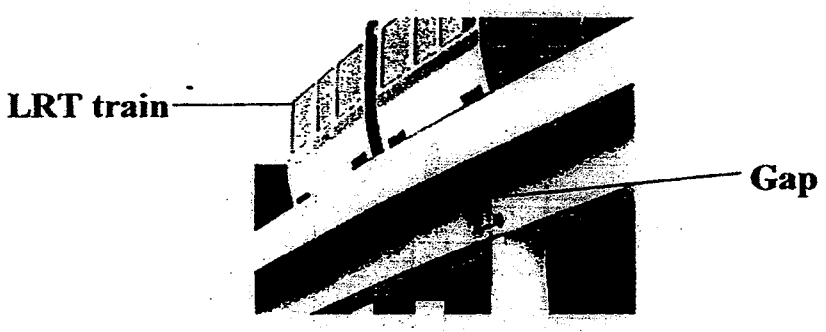


Which of the following statements are true?

A: The plate loses heat to the ice-cream.
B: The surrounding air gains heat from the ice-cream.
C: The ice-cream gains heat from the surrounding air.
D: The temperature of the ice-cream will never reach room temperature.

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

16. Karen noticed that there were gaps between the concrete slabs of the track while walking below the LRT tracks.



The purpose of these gaps is to _____.

(1) allow ventilation when the LRT train is travelling
(2) allow for expansion of the concrete slabs on hot days
(3) allow for contraction of the concrete slabs on cold days
(4) reduce the amount of materials required to build the LRT tracks

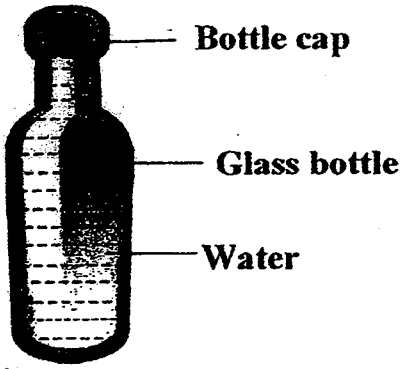
17. Suzy conducted an experiment to keep her porridge warm for as long as possible. She poured the same amount of porridge into four similar bowls made of different materials, A, B, C and D. She measured the temperature of the porridge at the start and end of the experiment.

Material of bowl	Temperature of porridge at start of experiment (°C)	Temperature of porridge at end of experiment (°C)
A	90	50
B	90	40
C	90	30
D	90	35

Which bowls are the best and worst for keeping the porridge warm for the longest time?

	Best for keeping the porridge warm	Worst for keeping the porridge warm
(1)	A	C
(2)	C	A
(3)	D	B
(4)	B	D

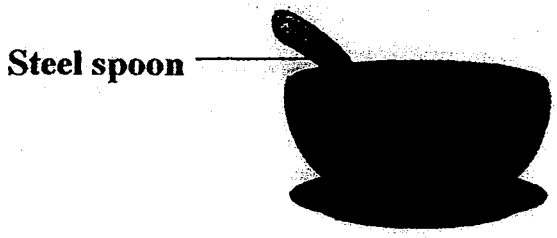
18. Jayden capped a glass bottle filled with water to the brim and placed it in a freezer. One day later, he noticed that the water had frozen and the glass had cracked.



What caused the glass to crack?

(1) Water is a poor conductor of heat.
(2) The water expanded when it froze.
(3) The glass bottle expanded faster than the water.
(4) The glass bottle expanded when left in the freezer.

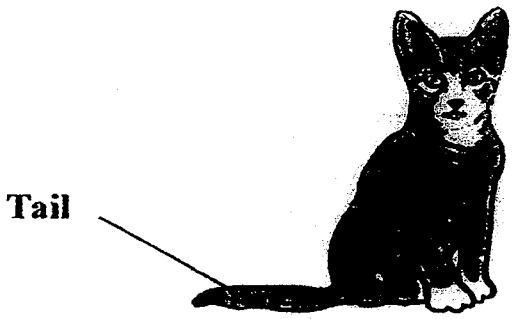
19. Jennifer places a steel spoon in a bowl of hot soup.



The spoon becomes hot after a while. Which one of the following explains this?

(1) The bowl loses heat to the hot soup.
(2) The spoon loses heat to the hot soup.
(3) The hot soup gains heat from the spoon.
(4) The spoon gains heat from the hot soup.

20. Jamal notices that his pet cat will curl its tail whenever he touches it.



This shows that the cat is a living thing because it can _____.

(1) grow
(2) breathe
(3) respond
(4) reproduce

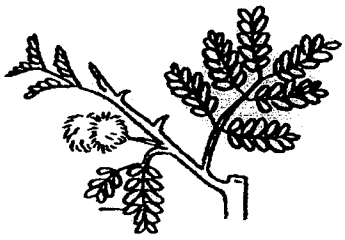
21. Which one of the following is a flowering plant?

(1) 

Mushroom

(2) 

Bird's nest fern

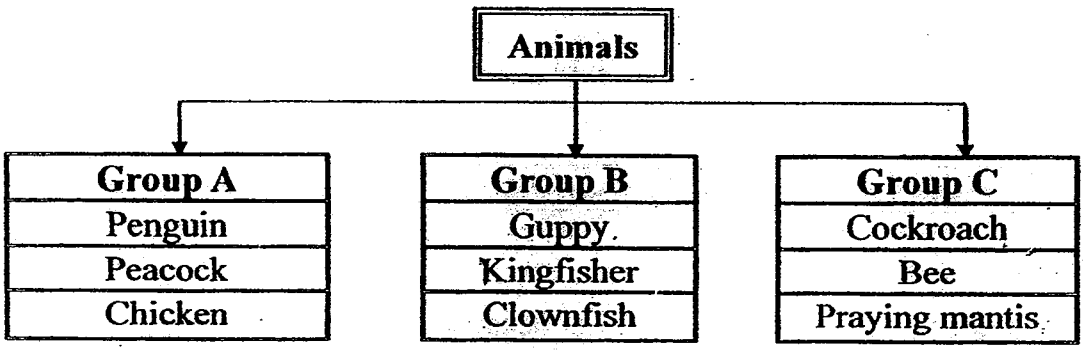
(3) 

Mimosa plant

(4) 

Moss

22. Study the classification chart below carefully.



Which animal is classified incorrectly?

(1) Peacock
(2) Chicken
(3) Kingfisher
(4) Praying mantis

23. Mushrooms and toadstools are <u>not</u> plants because they _____.

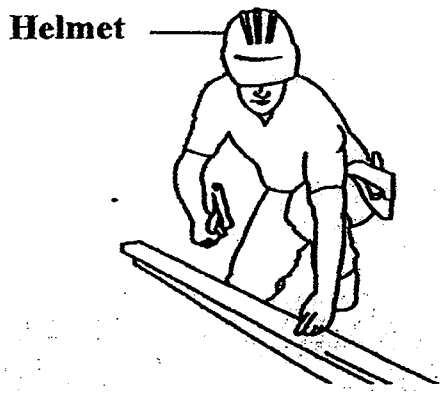
(1) reproduce by spores
(2) feed on living things
(3) cannot make their own food
(4) do not need air, sunlight and water to grow

24. Which of the following statements about flowers are true?

A: They contain chlorophyll.
B: They can grow singly or in clusters.
C: Some of them give off a pleasant smell.

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

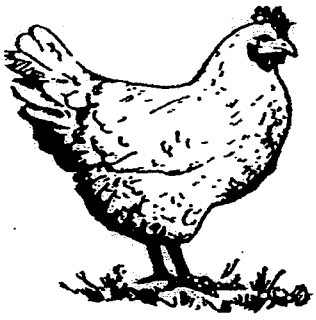
25. The diagram below shows a helmet that is used at a construction site. The helmet is used to protect the head of a construction worker.



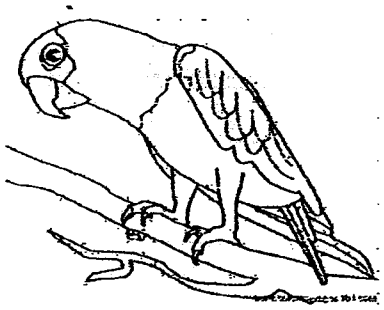
Plastic is chosen to make the helmet because it is _____.

(1) strong
(2) flexible
(3) able to float on water
(4) does not allow light to pass through

26. Study the animals below carefully.



Animal A



Animal B

Which one of the following is a common observable characteristic of the animals?

(1) They have beaks.
(2) They feed on fish and plants.
(3) They reproduce by giving birth.
(4) They have an outer covering of scales.

27. Which one of the following can be attracted by a magnet?

(1) Zinc
(2) Steel
(3) Plastic
(4) Rubber

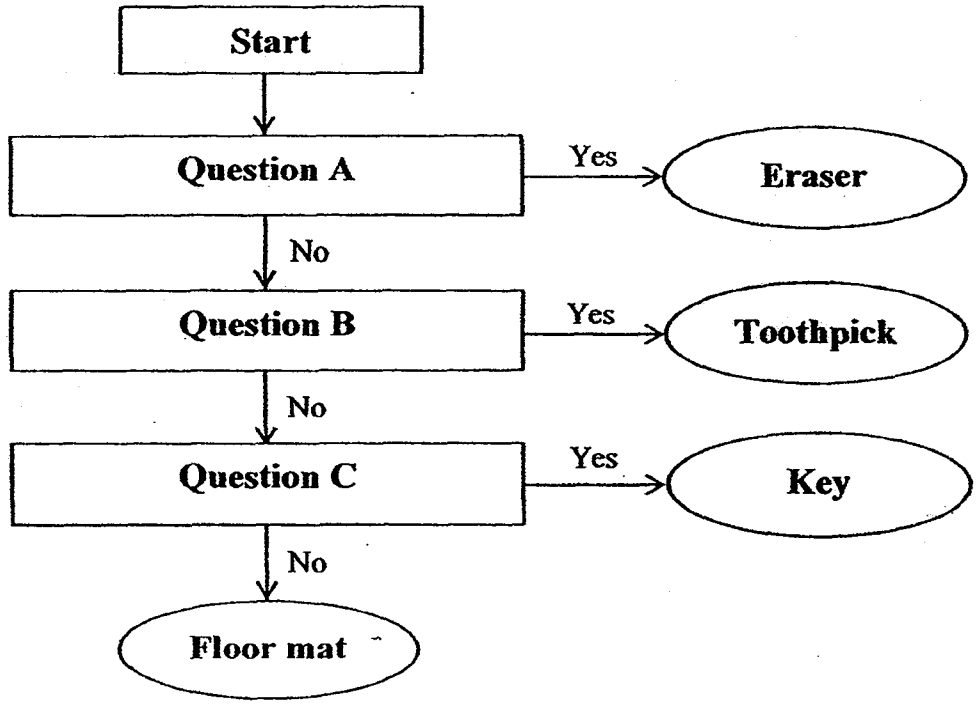
28. The table below shows the properties of four objects. A tick (✓) indicates that the object has that particular property.

	Objects			
Property	**Window pane**	**T-shirt**	**Wooden plank**	**Rubber gloves**
X	✓			✓
Floats on water			✓	

Which one of the following is likely to be property X?

(1) Elastic
(2) Flexible
(3) Waterproof
(4) Transparent

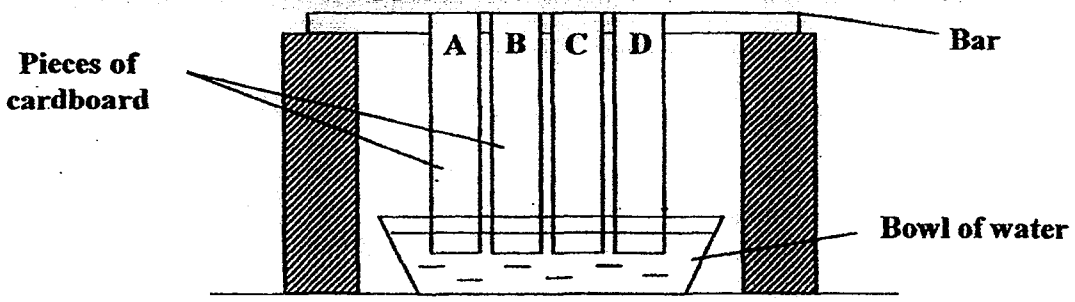
29. Study the flowchart below carefully.



What can questions A, B and C be?

	Question A	Question B	Question C
(1)	Is it made of wood?	Is it made of rubber?	Is it made of metal?
(2)	Is it made of rubber?	Is it made of wood?	Is it made of metal?
(3)	Is it made of metal?	Is it made of wood?	Is it made of rubber?
(4)	Is it made of rubber?	Is it made of metal?	Is it made of wood?

30. Walter prepared four pieces of cardboard, A, B, C and D, of equal length but with different thickness. He hung them on a bar above a bowl of water with one end dipping in the water as shown in the diagram below.



He then noted the time each piece of cardboard took to absorb water completely and recorded the results in the table below.

Cardboard	Thickness	Time taken for cardboard to absorb water completely
A	2 mm	3 minutes
B	8 mm	10 minutes
C	1 mm	1 minutes
D	5 mm	5 minutes

How long would a piece of cardboard of thickness of 6 mm take to absorb water completely?

(1) Less than 5 minutes
(2) More than 10 minutes
(3) More than 3 minutes but less than 5 minutes
(4) More than 5 minutes but less than 10 minutes

Rulang Primary School

SEMESTRAL ASSESSMENT 2
SCIENCE
2015

Name: _____ ( ) **Marks:** _____ / 40

Level: Primary 4 **Date:** 3 Nov 2015

Class: Primary 4 ( ) **Parent's Signature:** _____

– BOOKLET B

Instructions to pupils:

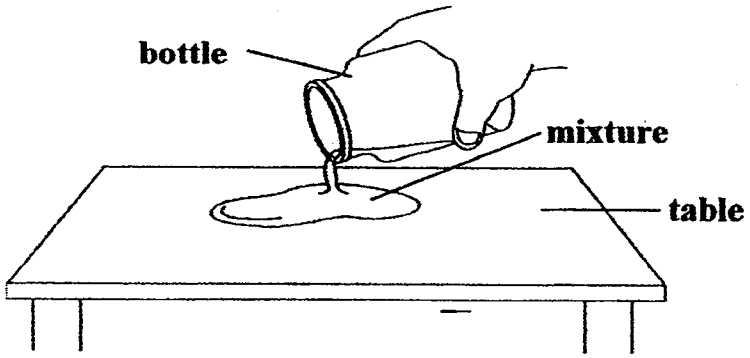
1. **Do not open this booklet until you are told to do so.**
2. You are required to answer **all** the questions in this paper using your own words / expressions as far as possible.
3. All drawings / diagrams must be clearly shown and labelled.
4. Marks will be deducted for wrongly spelt key words.
5. This question booklet consists of **16** printed pages, including the cover page.

Section B (40 marks)
Write your answers to questions 31 to 44 in this booklet.

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

Solid	Liquid	Gas

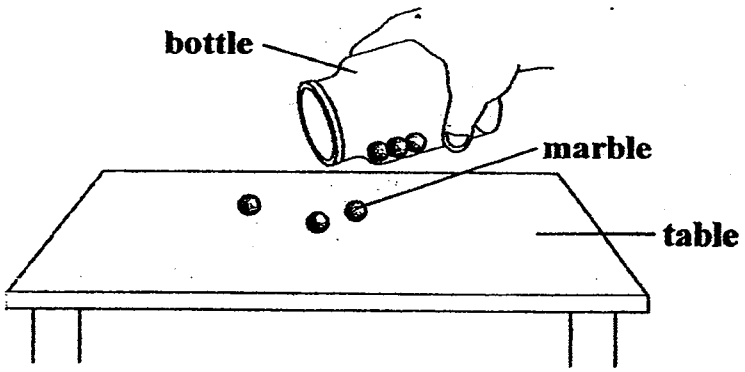
(a) Jonas pours a mixture from a bottle onto a table as shown below.



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

This shows that the mixture is a _____ (1 m)

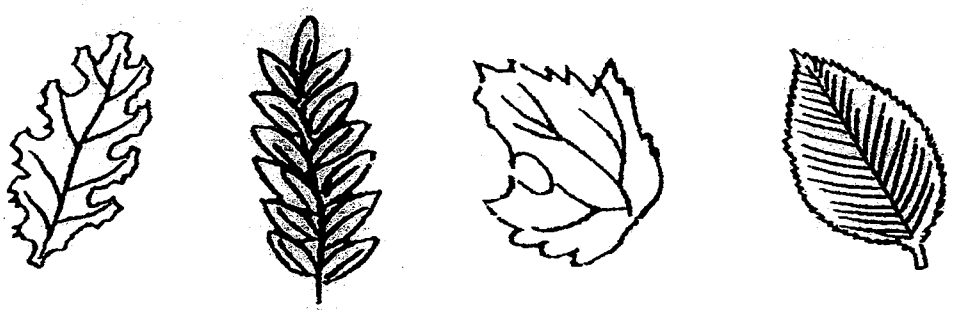
(b) Jonas pours some marbles from a bottle onto a table as shown below.



The shape and volume of the marbles remain the same.

This shows that the marble is a _____ (1 m)

32. The diagram below shows four leaves A, B, C and D.



A B C D

(a) Based on the diagrams above, write down the headings of two categories which you can place the leaves under. Then classify leaves A, B, C and D according to the categories in the table below. (3 m)

_____ edges	_____ edges

(b) Shania was given a leaf. She labelled its parts as shown below.

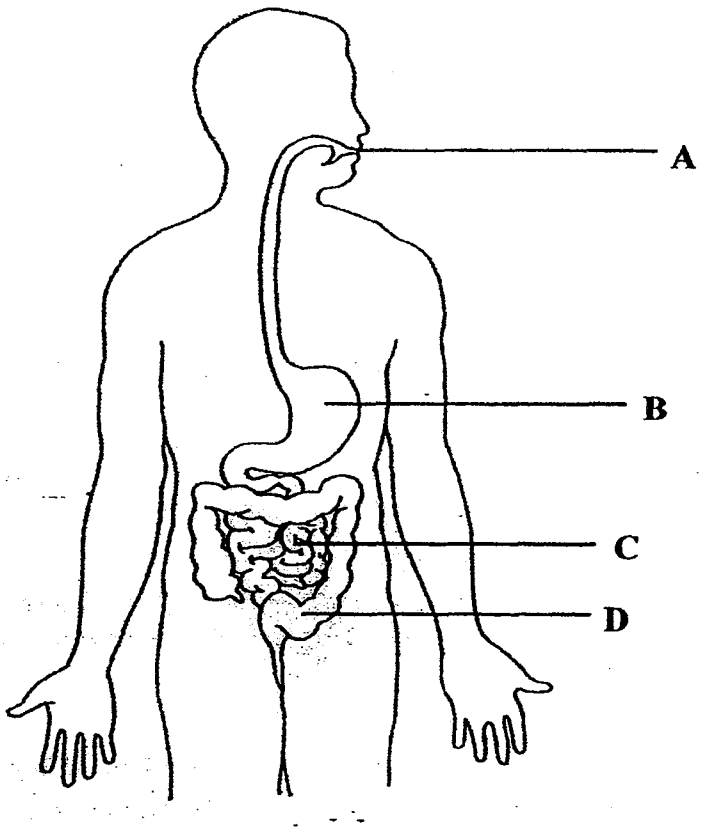
Her teacher told her that she had made an error in identifying one part of the leaf. Identify the part that was labelled wrongly. What should the correct label be? (1 m)

_____

33. The functions of three different human systems are given in the table below. Complete the table by naming the correct human systems to match their functions. (3 m)

Human System	Function
(i)	It protects our vital organs such as the heart and lungs.
(ii)	It helps different parts of the body to move.
(iii)	It transports waste materials and carbon dioxide away from all parts of the body.

34. The diagram below shows the human digestive system.

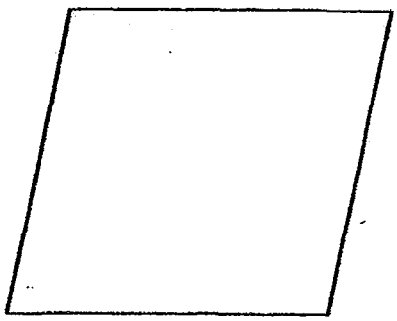


Identify the parts where:

(a) digestion first takes place: _____ (1 m)

(b) there is no digestion at all: _____ (1 m)

35. Study the diagram below.



Torchlight **Object X** **Screen**

(a) Aishah placed object X between the screen and the torchlight. When she switched on the torchlight, no shadow was formed on the screen. Explain why no shadow was formed on the screen. (1 m)

_____

_____

(b) What should Aishah do to object X in order for it to form a shadow on the screen? (1 m)

_____

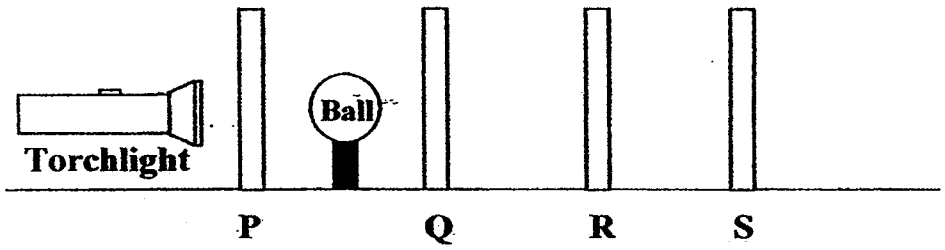
_____

(c) When Aishah replaced object X with a tissue box, a shadow was formed. How should she move the tissue box in order to get a bigger shadow? (1 m)

_____

_____

36. Aloysius set up an experiment in a dark room as shown below. A ball was placed in between sheets P and Q. When the torch was switched on, a dark shadow of the ball was cast on sheet R only.



(a) What conclusion could Aloysius draw about sheets P and Q? (1 m)

_____

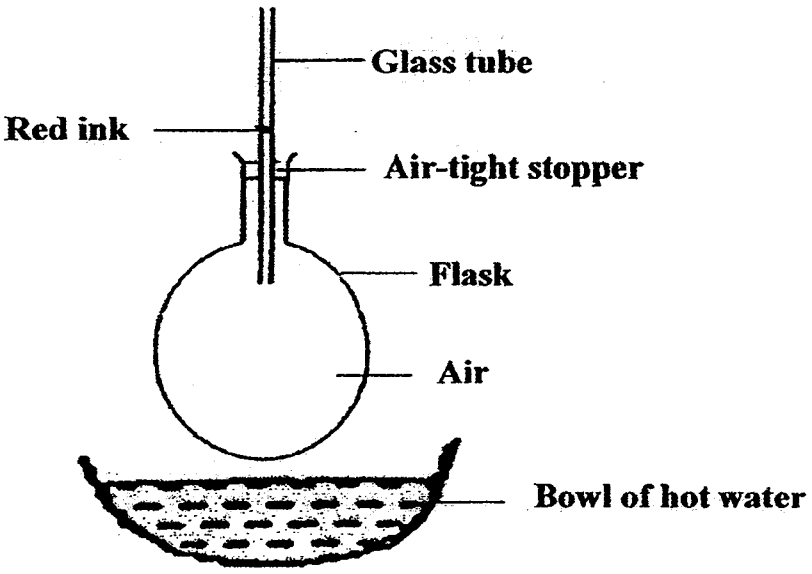
_____

(b) If Aloysius removed sheet S, what would happen to the shadow formed on sheet R? Explain your answer clearly. (2 m)

_____

_____

37(a) Jolin set up an experiment as shown below.



(i) What would happen to the red ink after the flask was lowered into the bowl of hot water for 30 seconds? (1 m)

_____

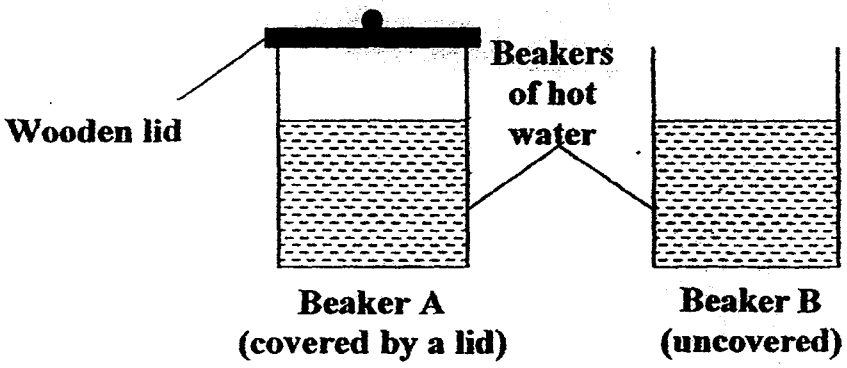
_____

(ii) Explain your answer in (ai) clearly. (1 m)

_____

_____

37(b) Jolin carried out another experiment as shown in the diagram below. She filled two similar beakers, A and B, with hot water at 90°C.

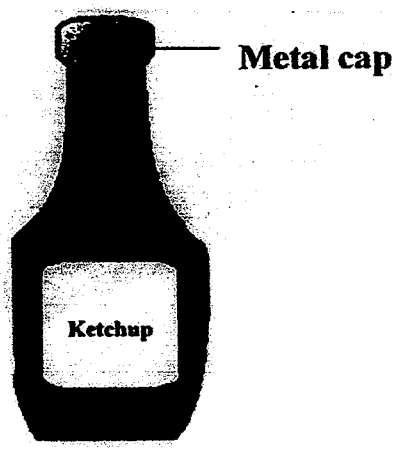


She measured the temperature of the water in the two beakers every 2 minutes. The results are shown in the table below.

Time taken (min)	0	2	4	6	8
Temperature of water in Beaker A (°C)	90	87	82	76	70
Temperature of water in Beaker B (°C)	90	84	79	70	59

Explain clearly why there was a difference in the temperatures of water between beakers A and B? (2 m)

38. Mrs Lee wanted to open a bottle of ketchup that she had just taken out from the refrigerator. She decided to pour some cold water over the metal cap of the bottle. She found that she could not open the bottle.



(a) Why was she unable to open the bottle? Explain your answer. (2 m)

_____

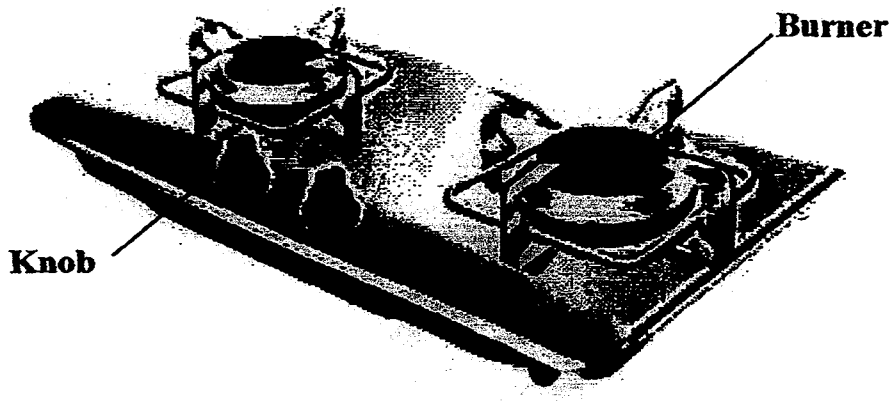
_____

(b) What should Mrs Lee do to open the bottle of ketchup? (1 m)

_____

_____

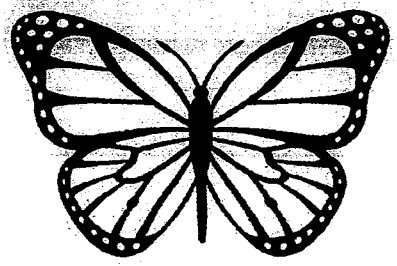
39. The diagram below shows a stove.



(a) The knob is made of plastic because it is a _____ conductor of heat. (1 m)

(b) The burner is made of metal because it is a _____ conductor of heat. (1 m)

40. Study the two animals shown below carefully. Compare the two animals and complete the graphic organiser below. (3 m)



Butterfly **Caterpillar**

Similarity

Where they can be found	(a)

Difference with regard to

Butterfly

(b)
(i) the way it moves:

_____

_____

(ii) the food it eats:

_____

_____

the way they move and the food they eat

Caterpillar

(c)
(i) the way it moves:

_____

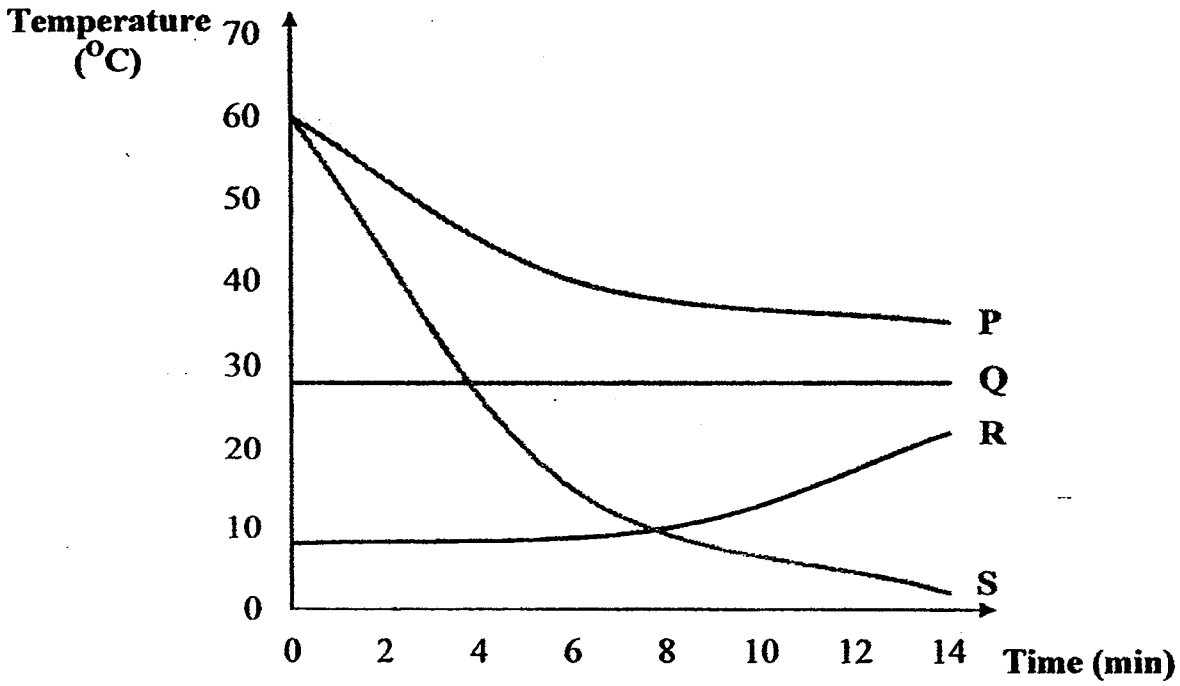
_____

(ii) the food it eats:

_____

_____

41. The graph below shows the changes in the temperature of 4 beakers of water, P, Q, R and S. The beakers were placed at different locations and had different starting temperatures. The temperatures were recorded over a period of 14 minutes.



(a) Which beaker (P, Q, R or S) in the graph above represents a beaker of water left at room temperature in the living room of a house for 14 minutes? (1 m)

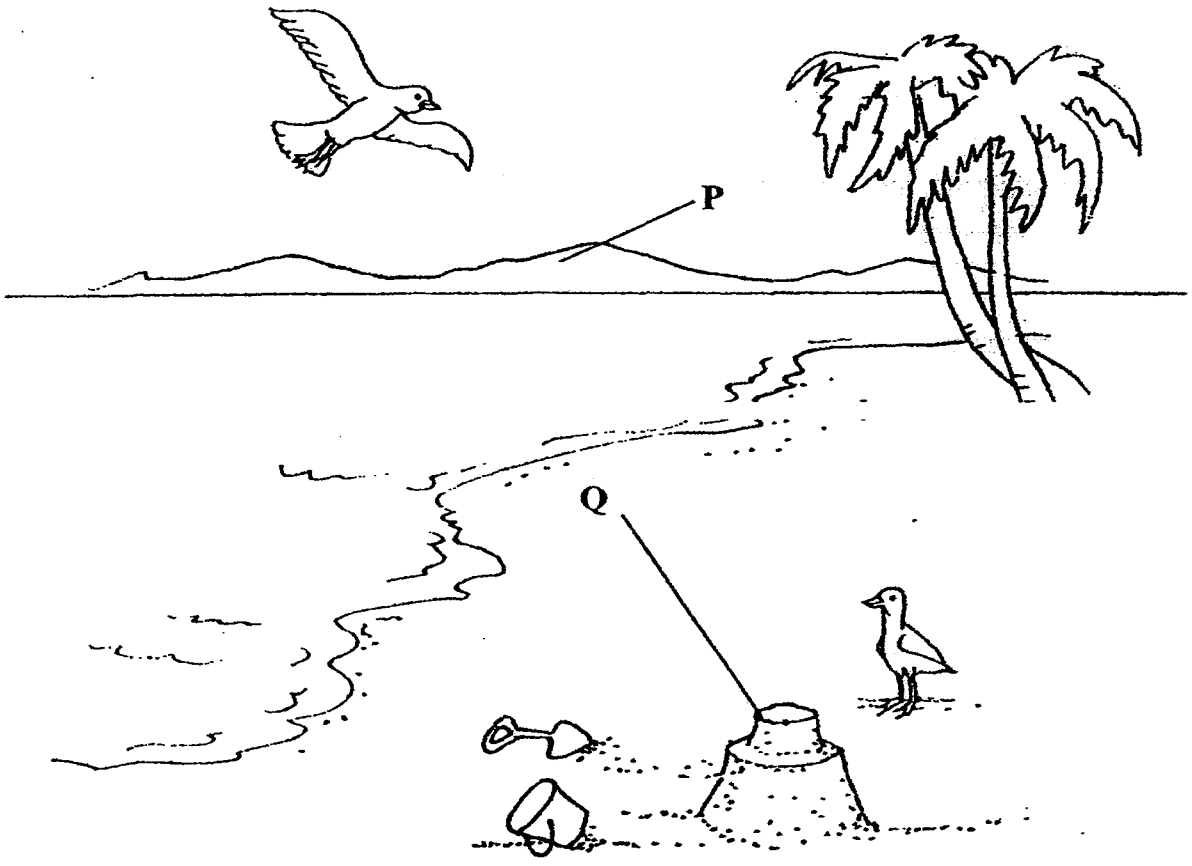
_____

(b) Which beaker was the coolest 14 minutes later? What could have been done to the beaker of water to cool it down the fastest? (2 m)

_____

_____

42. Linda saw some living and non-living things on the beach.

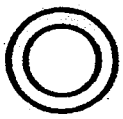


State if P and Q are living or non-living things.

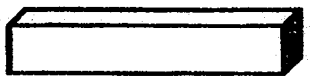
(a) P is a _____ (1 m)

(b) Q is a _____ (1 m)

43. Study the diagrams below carefully.



Steel ring



Magnet

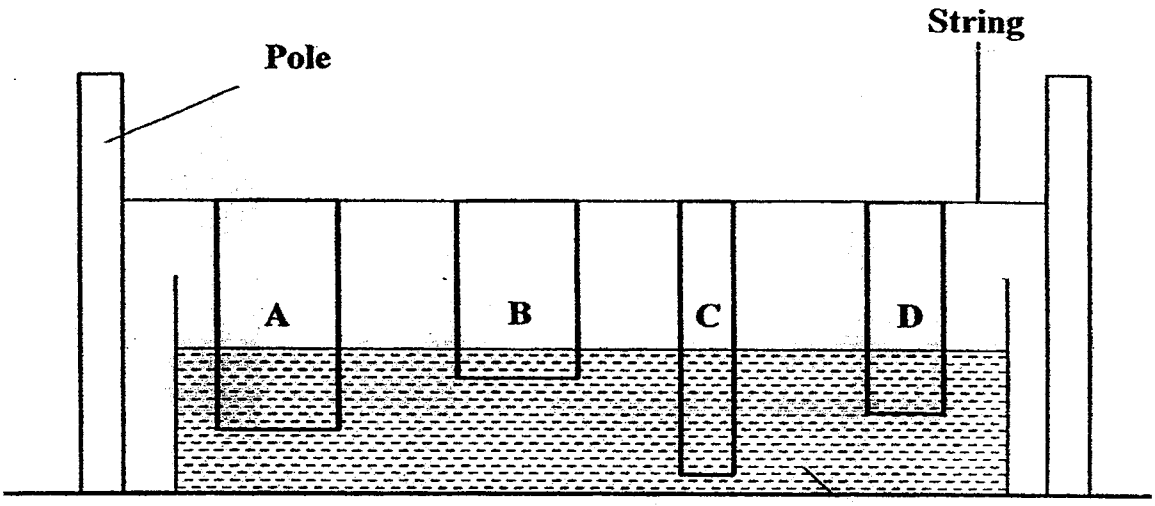
(a) Stella places a magnet near a steel ring. The ring moves towards the magnet. This is because the magnet exerts a _____ on the ring. (1 m)

(b) Choose the correct word from the box to answer the question below.

non-magnetic	**magnetic**	**strong**

Stella's observation shows that steel is a _____ material. (1 m)

44 Paul wanted to find out which material could absorb the most amount of water. He carried out an experiment using four different materials (A, B, C and D) as shown below.



(a) Paul's teacher told him that his experiment was not a fair one. Suggest two changes that Paul must make to his experiment for it to be a fair one.

(2 m)

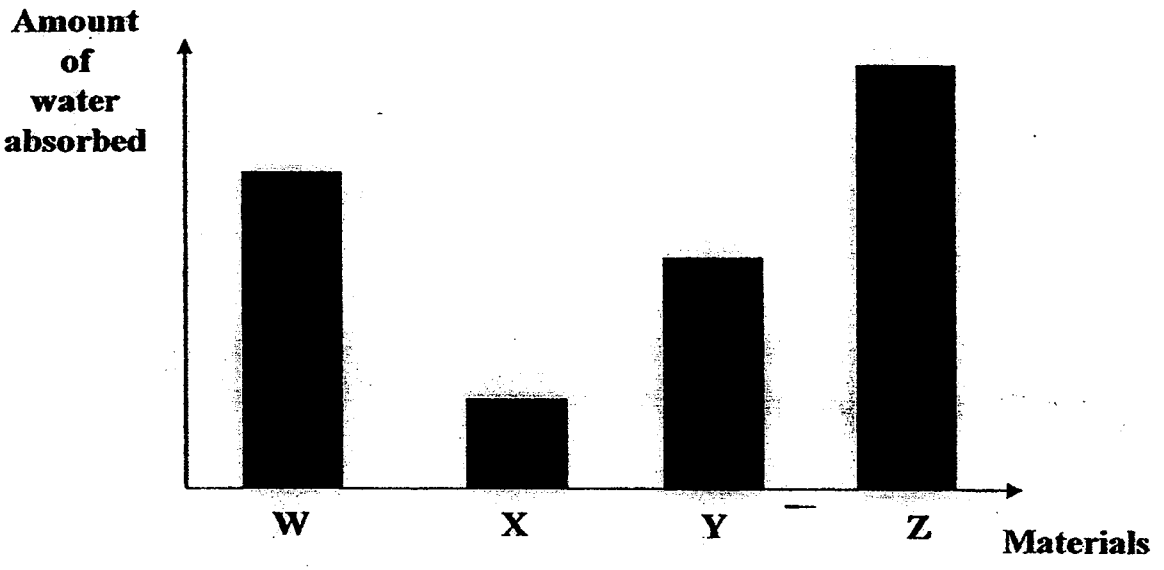
(i) _____

_____

(ii) _____

_____

(b) The bar graph below shows the amount of water absorbed by four different materials W, X, Y, and Z.



Based on the information in the graph above, which is the best material to make a raincoat? Explain your answer. (2 m)

_____

_____

END OF PAPER

EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : RULANG PRIMARY SCHOOL NANYANG PRIMARY
SUBJECT : SCIENCE
TERM : SA2

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

Q31a. Liquid
Q31b. solid

Q32a. Smooth edges ----- B
Q32a. Jagged edges ----- A , C, D

Q32b. It should be leaf veins

Q33 (i) Skeletal Q33 (ii) Muscular Q33 (iii) Circulatory

Q34a. A Q34b. D

Q35a. Object X was a transparent object, thus it allows most light to pass through so no shadow was formed on the screen.

Q35b. Aishah should change object X into an opaque object like wood.

Q35c. Move the tissue box nearer to the torchlight.

Q36a. Both P and Q are transparent as it allows most light to pass through.

Q36b. The shadow will remain the same as we cannot tell what S is made of and R is opaque so the shadow be casted on it and not let any light to pass through it.

Q37a. (i) The red ink rose

Q37a (ii) The air in the flask gained heat from the hot water and expanded, taking up more space and pushed the red ink upwards.

Q37b. The wooden lid is a poor conductor of heat, so the hot water will lose heat to the surrounding air slower than the hot water in Beaker B as the wooden lid on Beaker A prevented the air from the surroundings to gain heat from the hot water in Beaker A.

Q38a. The metal cap lost heat to the cold water and it contracted.

Q38b. She should place only the metal cap into a basin containing hot water.

Q39A. POOR Q39b. GOOD
Q40a. They can be found on plants in the garden.

Q40b (I) It flies. Q40b (ii) It feeds on nectar that is found on flowers of plants.

Q40c (i) It crawls. Q40c (ii) It eat leaves.

Q41a. Beaker Q
Q41b. Beaker S was the coolest 14 minutes later. It was put into a basin containing ice.

Q42a. P is a non living thing
Q42b. Q is a non living thing

Q43a. pull Q43b. magnetic

Q44a (i) He must change all the materials to the same length.

Q44a (ii) He must make sure that the length of the material that was put into the water to be the same.

Q44b. Material X. Material X absorbed the least amount of water and is waterproof thus it is the best material to make a raincoat.

THE END