PEI HWA PRESBYTERIAN PRIMARY SCHOOL

SEMESTRAL ASSESSMENT 2

PRIMARY 4

SCIENCE

(BOOKLET A)

29 OCT 2015

Name: _____ ( )

Class: Teamwork _____

Total time for Booklets A and B: 1 h 30 min

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

This booklet consists of 17 printed pages, excluding the cover page.

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice and shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet provided. (60 marks)

1 Sarah took a photograph of plant X at the beginning and at the end of the month as shown below.

Beginning of month

End of month

What could Sarah conclude about plant X based on her photographs?
Plants can _____.

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

2 Rena made the following observations on the life cycle of an animal.

- The young does not look like the adult.
- There are three stages in the life cycle.

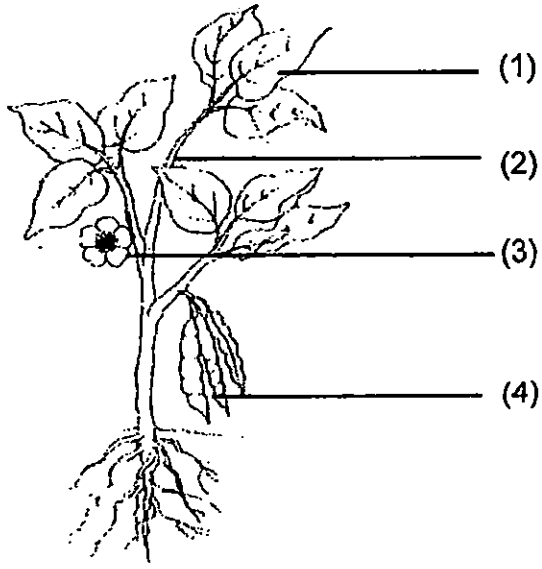
Which animal was likely to be observed by Rena?

(1) Frog
(2) Beetle
(3) Butterfly
(4) Cockroach

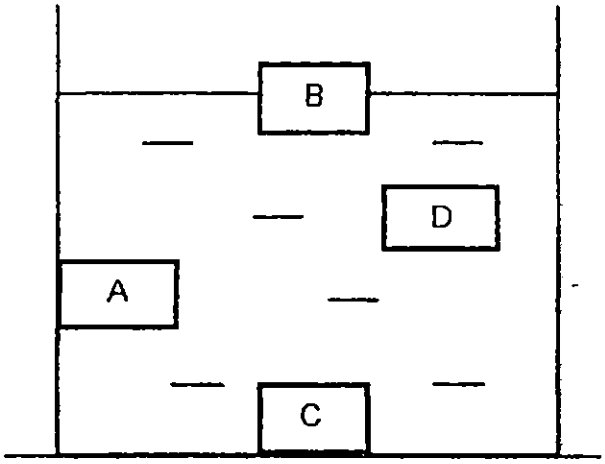
3 In the human digestive system, food is absorbed into the blood in the _____.

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

4 Bethany pulled out a plant from her school garden. Which part, (1), (2), (3) or (4) helps the plant to stay upright?



5 Benny put a solid metal block into a container of water.



At which position (A, B, C or D) would the solid metal block most likely to be found?

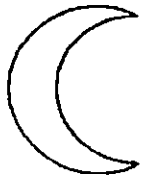
(1) A
(2) B
(3) C
(4) D

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

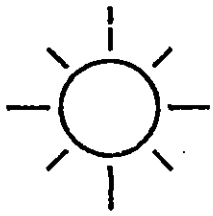
(1) A plastic spoon
(2) A handkerchief
(3) A wooden chopstick
(4) A sheet of glass

7 Which of the following is a source of light?

(1) Moon



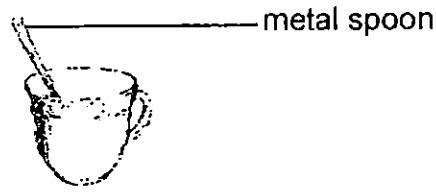
(2) Sun



(3) Fly

(4) Magnifying glass

8 Ronald places a metal spoon in a cup of hot tea.

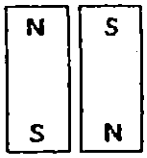


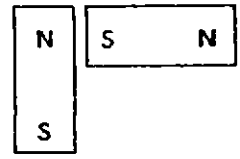
a cup of hot tea

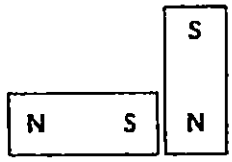
The spoon becomes hotter after a while. Which of the following explains this?

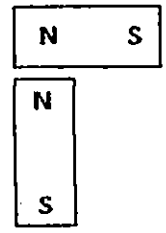
(1) The cup loses heat to the spoon.
(2) The spoon loses heat to the hot tea.
(3) The hot tea gains heat from the spoon.
(4) The spoon gains heat from the hot tea.

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

(1)


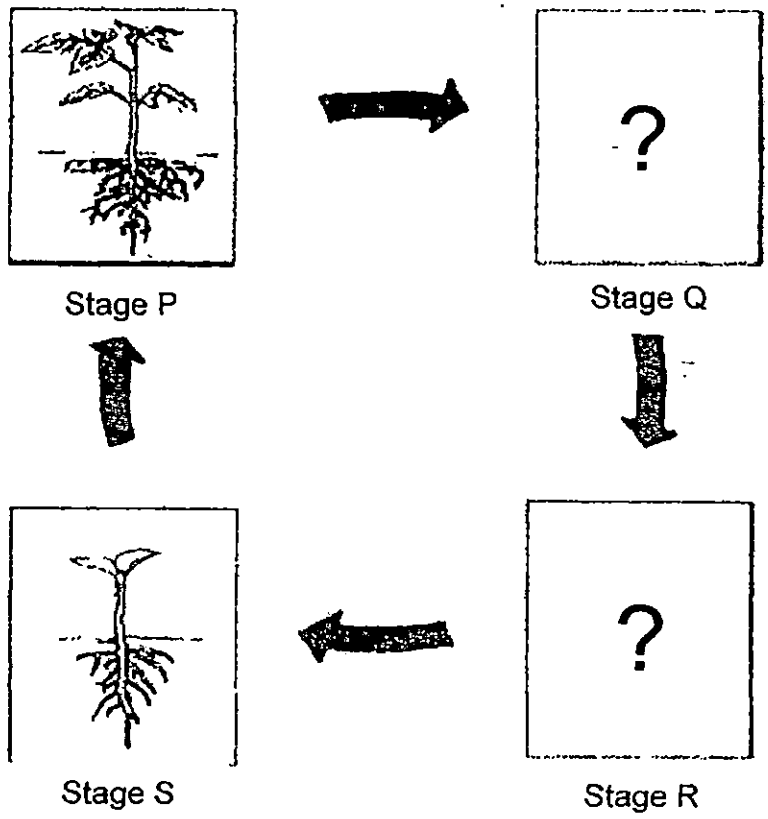
(2)


(3)


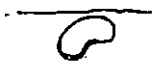
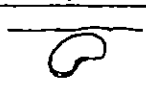
(4)


Study the diagram below and answer questions 10 to 11.

10 Kathryn planted a seed and observed the various stages of its life cycle. The diagram below shows the growth of her young plant, with two missing pictures at stages Q and R.



Which one of the following pictures shows the correct stages for Q and R?

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

11 At which stage in the above life cycle will the plant start to require light to make food?

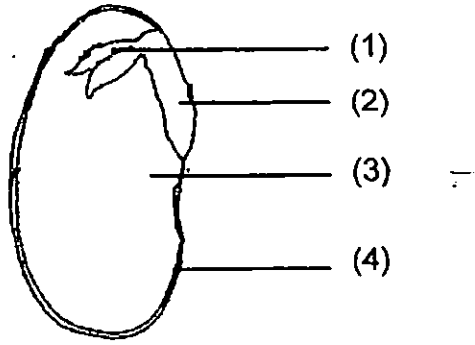
(1) P

(2) Q

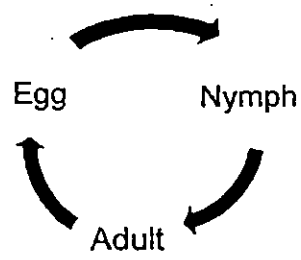
(3) R

(4) S

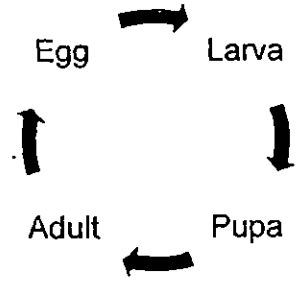
12 Before the plant requires light to make food, which part of the seed (1, 2, 3 or 4) labelled below provides the seedling with energy to grow?



13 Study the life cycles of two different animals, Animals X and Y, below.



Animal X



Animal Y

Which of the following statements are correct about the life cycles of Animals X and Y?

A The young of animal Y looks like the adult.
B Both animals have an egg stage in their life cycles.
C Animal Y does not feed or move from place to place at the pupa stage.
D The life cycle of Animal Y takes place in water while the life cycle of Animal X takes place on land.

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

14 Dinah bought the following items from the supermarket.

250g

250g

250g

All the items have the same _____.

A mass
B shape
C volume

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

15 George placed a magnet near three different objects A, B and C and recorded his observations in a table below.

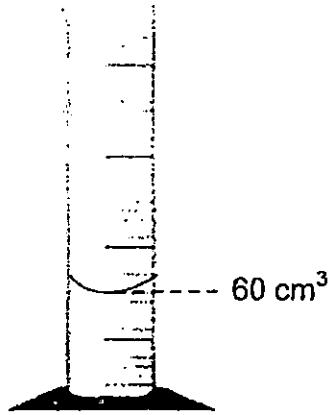
Objects	Attracted to a magnet?	Repelled by a magnet?
A	Yes	No
B	No	No
C	Yes	Yes

Based on the information in the table, which of the three objects is/are likely to be another magnet?

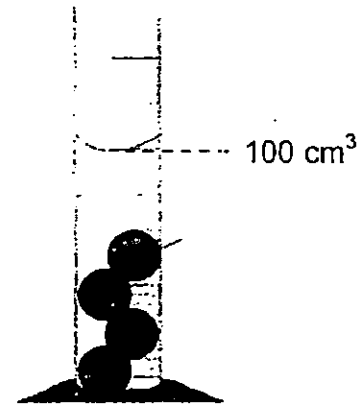
(1) A only
(2) C only
(3) A and C only
(4) A, B and C

Study the diagrams below and answer questions 16 and 17.

16 Elena conducted an experiment shown below.



At the start



After 4 similar plastic balls added

Which of the following statements about the experiment are correct?

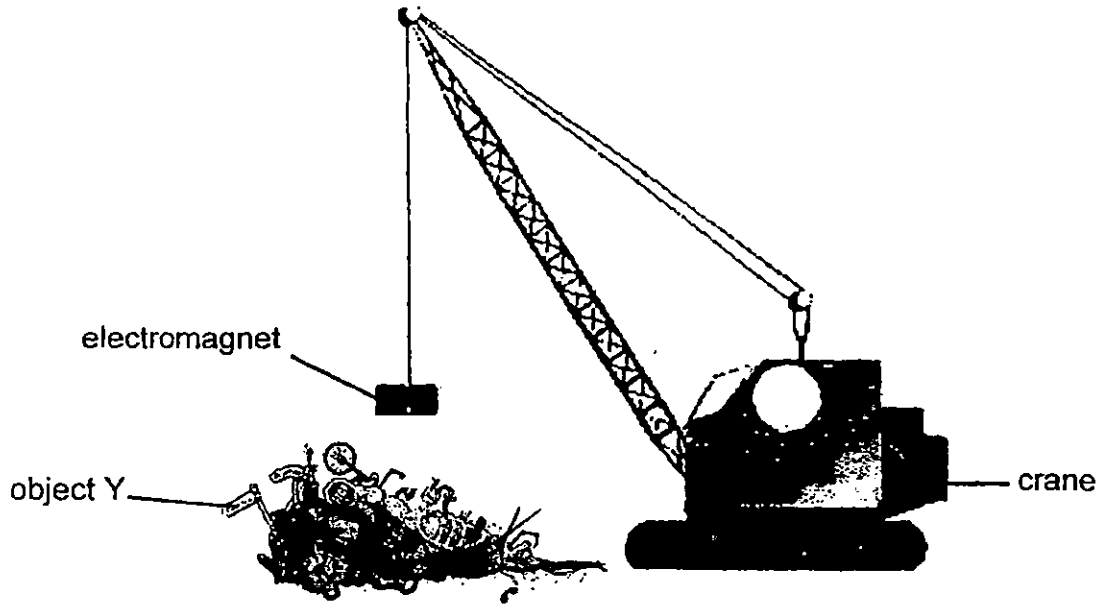
A The balls sink in the water.
B There is only 60 cm^3 of water in the measuring cylinder.
C The water level rises when the balls are dropped into the measuring cylinder.

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

17 If all the balls are of identical size and made of the same material, what is the volume of each ball?

(1) 10 cm^3
(2) 40 cm^3
(3) 60 cm^3
(4) 100 cm^3

18 The picture below shows a crane using an electromagnet to pick up object Y for recycling.



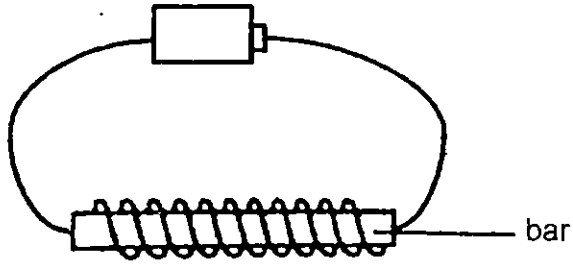
Which of the following is the most likely materials used to make Object Y?

(1) Iron
(2) Wood
(3) Plastic
(4) Copper

19 The young of a grasshopper goes through a process known as moulting. Which of the following statements about this process is <u>not</u> correct?

(1) The nymph moults more than once.
(2) The nymph moults to become a pupa.
(3) The nymph moults so that it can grow bigger.
(4) The nymph sheds its old body covering and grows a new one.

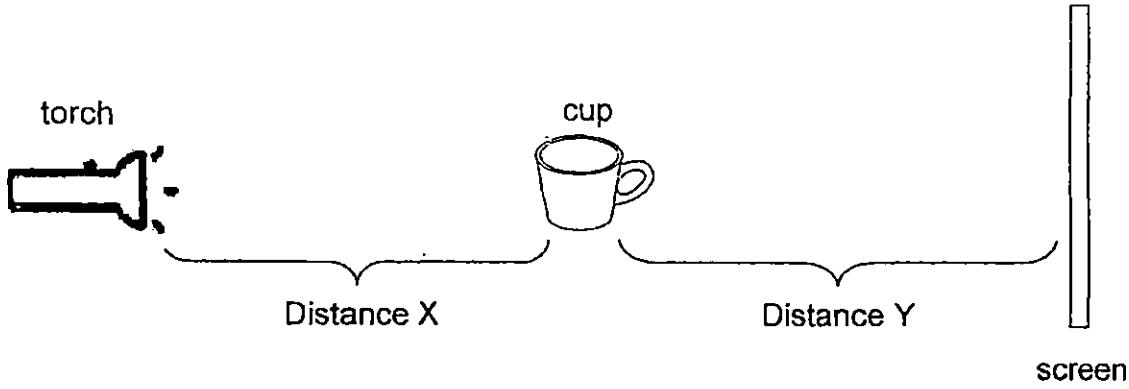
20 Hannah set up the following to make an electromagnet to attract some iron nails.



However, she found that the bar did not attract any iron nails that were brought near to it. Which of the following is the correct reason?

(1) The bar should not be coiled with wires.
(2) Two bars should be used instead of one.
(3) Steel nails should be used instead of iron nails..
(4) A non-magnetic material had been used for the bar.

21 James set up an experiment shown below to find out how the distance between the torch, the cup and the screen would affect the size of shadow the cup cast on the screen.

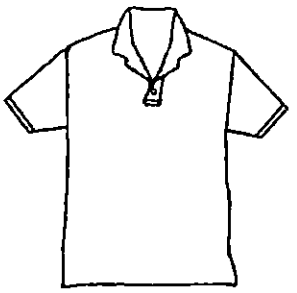


Which two of the following actions will cause the shadow of the cup to increase in size?

A Increase the distance X.
B Increase the distance Y.
C Decrease the distance X.
D Decrease the distance Y.

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

22 Adam wanted to make a new uniform.

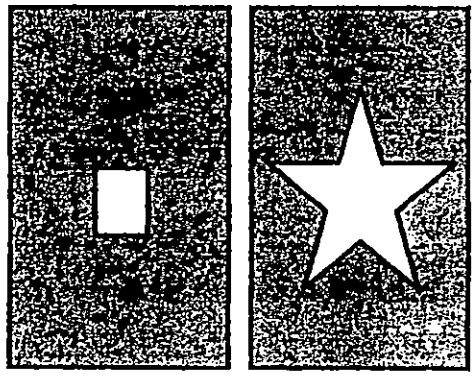


Which of the following properties listed is/are the reason(s) why a material is chosen to make the uniform?

A It is strong.
B It is flexible.
C It allows light to pass through.

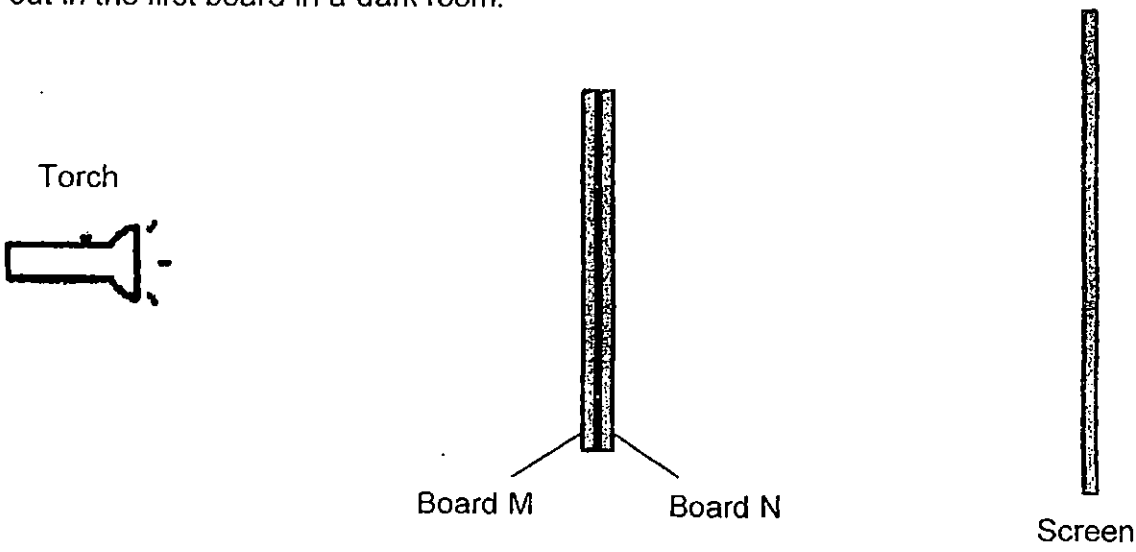
(1) A only
(2) C only
(3) A and B only
(4) A, B and C

23 Jill set up the following experiment using two pieces of wooden boards M and N with cut-outs as shown below.



Board M Board N

She placed the two boards in a straight line and shone a torch through the cut-out in the first board in a dark room.



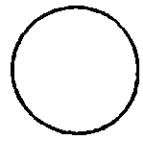
What is the shape of the light patch on the wall?

(1)

(2)

(3)

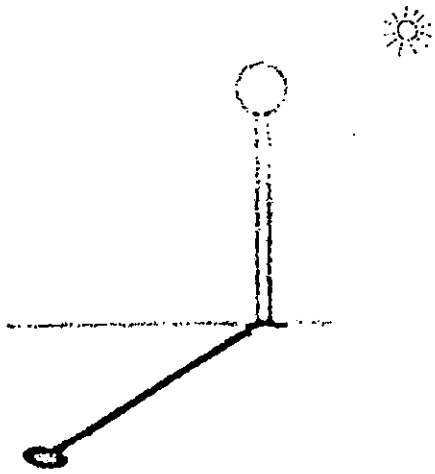
(4)



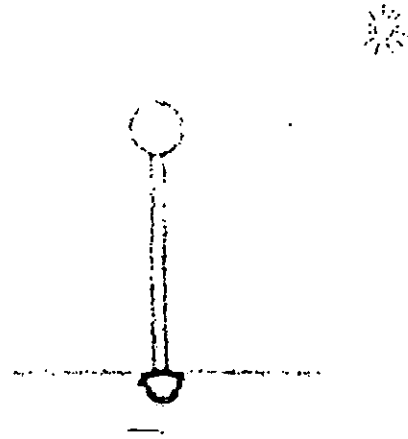
24 One day, Adam was playing in the playground in the late afternoon when the sun was setting. He noticed that the lamp post cast a shadow on the ground.

Which of the following diagram shows the shadow of the lamp post correctly?

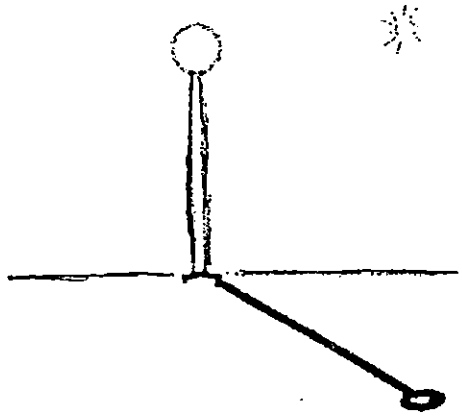
(1)



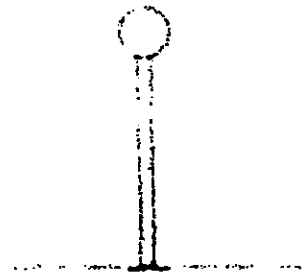
(3)



(2)

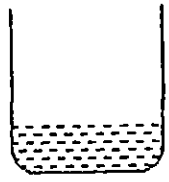


(4)



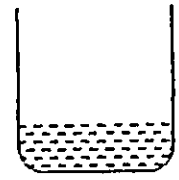
25 The beakers below contain water at different temperatures. Which of the following beakers contains water with the most heat energy?

(1)



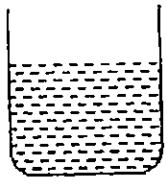
1000 mℓ at 20°C

(2)



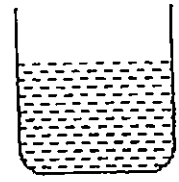
1000 mℓ at 30°C

(3)



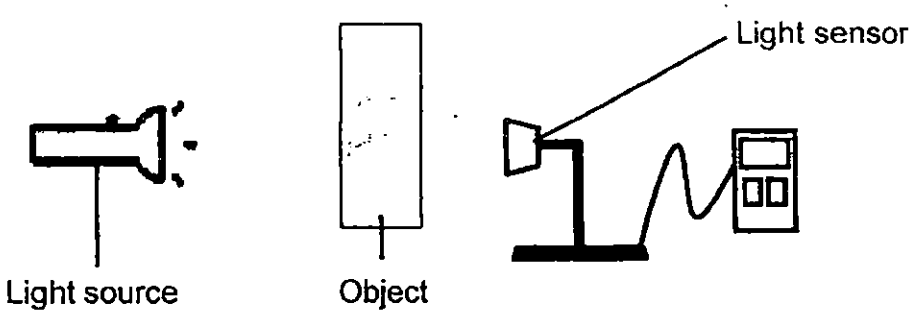
2000 mℓ at 40°C

(4)



2000 mℓ at 80°C

26 A light sensor has a scale from 0 to 5. Objects that do not block light will show the highest reading 5, while objects that block light will show the reading 0.



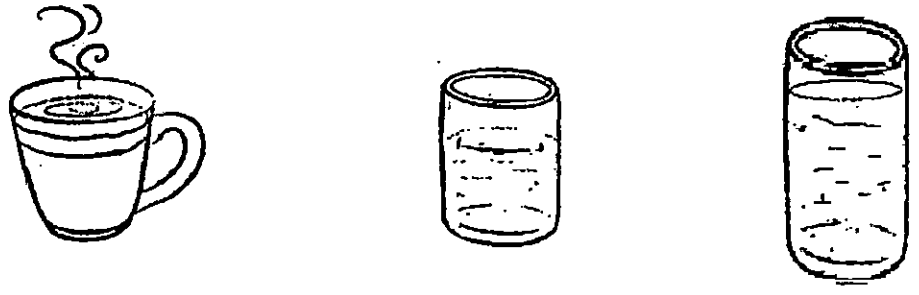
The table below shows the result on the sensor when light was shone on four objects, K, L, M and N.

Object	K	L	M	N
Reading on sensor	3	1	0	5

Based on the results above, which two of the objects are made of materials which are <u>not</u> suitable to make the glass walls of a fish bowl?

(1) K and M
(2) M and N
(3) L and M
(4) L and N

27 Sarah made a cup of tea with water at 95 °C and realised that it was too hot to drink. She poured the tea into a bigger glass and mixed in an equal amount of cold water at 5 °C so that it is not too hot for her to drink.

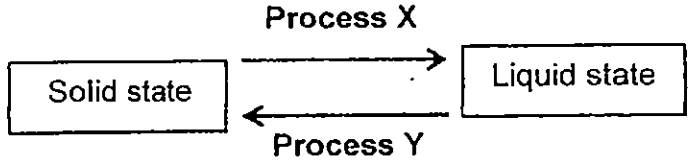


Hot tea at 95°C | Cold water at 5 °C | Tea Mixture

What was the possible temperature of the tea mixture?

(1) 100°C
(2) 95°C
(3) 45°C
(4) 5°C

28 Water in the solid state can be changed into the liquid state through Process X. It can then be changed from liquid state back to the solid state through Process Y.



Which of the following correctly describe what happen in Processes X and Y?

	Process X	Process Y
(1)	Heat gained by solid	Heat gained by liquid
(2)	Heat gained by solid	Heat lost by liquid
(3)	Heat lost by solid	Heat lost by liquid
(4)	Heat lost by solid	Heat gained by liquid

29 Newborn babies are often wrapped in cotton blankets to keep them warm.

This is because cotton is_____.

A able to trap air
B a source of heat
C a poor conductor of heat

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

30 The classification table below shows how materials are classified into two groups.

Group E	Group F
Gold ring Copper pot Aluminium tray	Paper bag Plastic cup Cotton blanket

What are the most suitable headings for Groups E and F?

	Group E	Group F
(1)	Non-metals	Metals
(2)	Magnetic objects	Non-magnetic objects
(3)	Good conductors of heat	Poor conductors of heat
(4)	Objects made from things that come from the ground	Objects made from things that come from plants or animals

PEI HWA PRESBYTERIAN PRIMARY SCHOOL

SEMESTRAL ASSESSMENT 2

PRIMARY 4
SCIENCE
(BOOKLET B)

29 OCT 2015

Name: _____ ( )

Class: Teamwork _____

Parent's Signature

Total time for Booklets A and B: 1 h 30 min

INSTRUCTIONS TO CANDIDATES

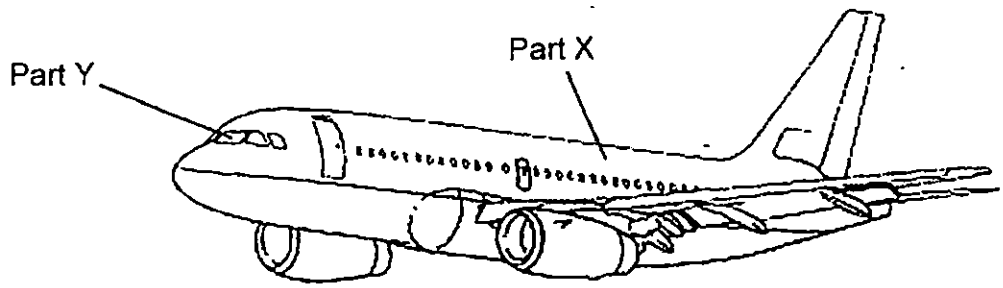
1. Write your Name, Class and Register No. in the spaces provided above.
2. DO NOT turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write all your answers in this booklet.

Marks (Booklet A) :	60
Marks (Booklet B) :	40
Total Marks (Booklets A & B) :	100

This booklet consists of 12 printed pages, excluding the cover page.

Write your answers to the questions 31 to 44 in the spaces provided.
The number of marks available is shown in brackets [ ] at the end of each question or part question. (40 marks)

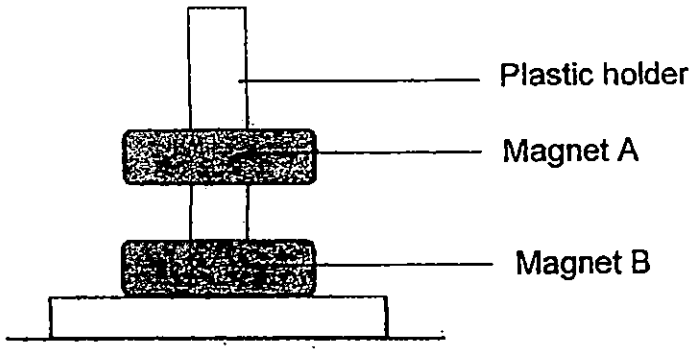
31 The diagram shows an aeroplane.



(a) Part X is made of _____ because Part X has to be strong. [1]

(b) Part Y is made of glass because it allows _____ to pass through so that the pilot can see out. [1]

32 Alice placed two ring magnets, A and B, through a plastic holder as shown below.



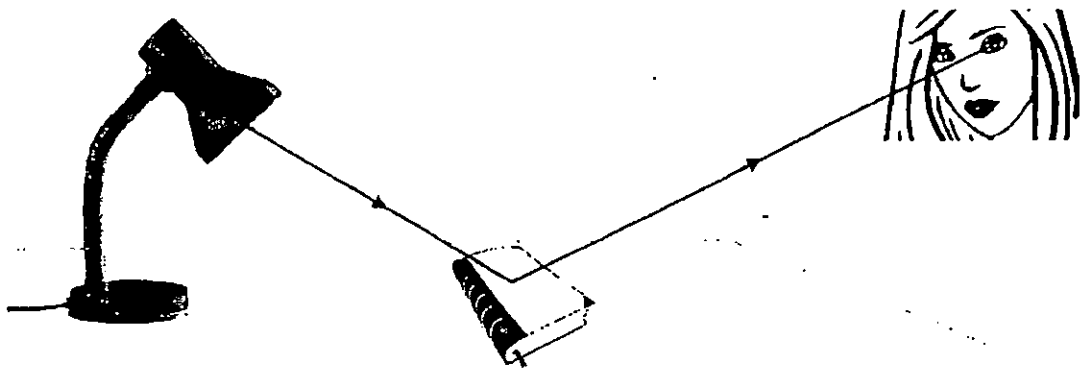
(a) The holder was made of plastic and did not attract the magnets.

Plastic is a _____ material. [1]

(b) Why was magnet A floating above magnet B?

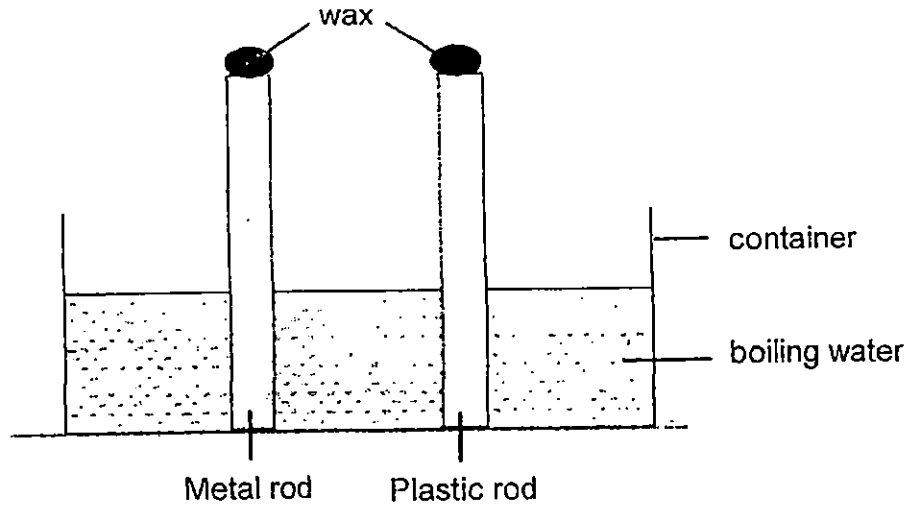
Magnet B was _____ Magnet A. [1]

33 Nisha can see the book on the table when she switches on the table lamp on her desk.



The _____ from the lamp is _____ by the book and enters Nisha's eyes. [2]

34 Ken placed a metal rod and a plastic rod into a container of boiling water as shown below. Equal amounts of wax were put on the tip of both rods.

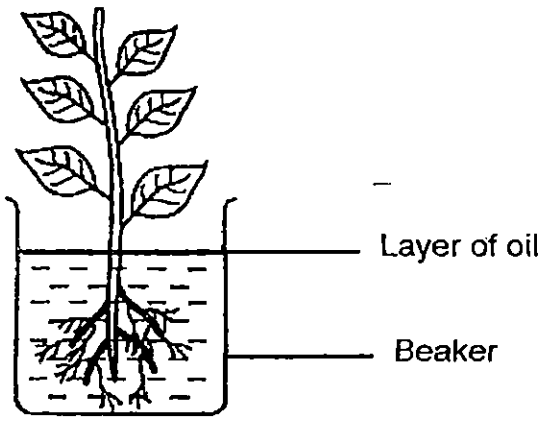


The wax on the metal rod melted _____ than the wax on the plastic rod, as metal is a _____ conductor of heat than plastic. [2]

35 (a) Fill in the correct parts of a plant in the table below. [2]

Functions of plant parts	Plant parts
Makes food for the plant	
Obtains water for the plant	

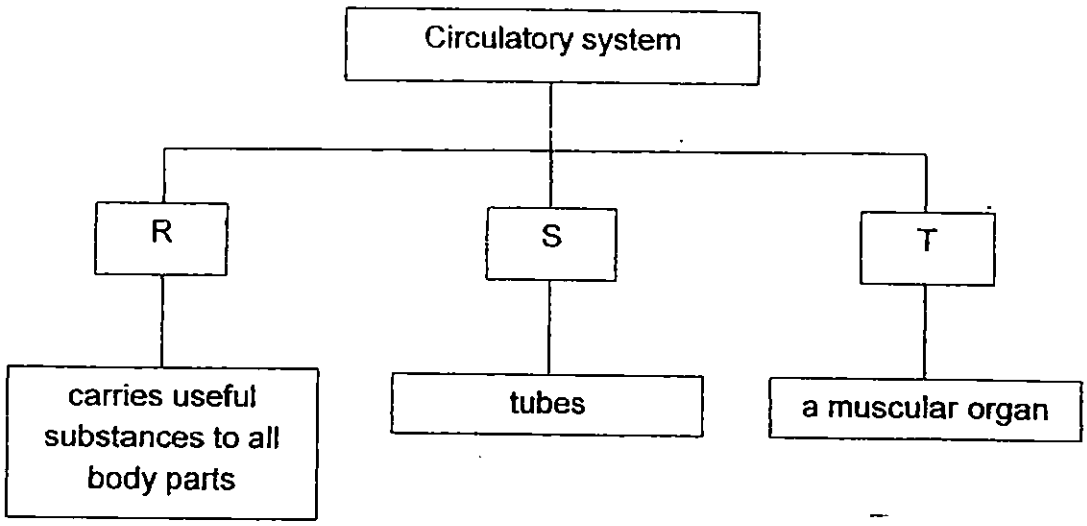
(b) Kenneth placed a whole plant into a beaker of water. He then placed a layer of oil on the surface of the water.



After 2 days, he observed that the water level in the beaker dropped. Give a reason why the water level dropped. [1]

(c) Kenneth's mother said that the oil prevented the loss of water to the surrounding air. Explain why this is important in the experiment. [1]

35 36. Study the classification chart below. R, S and T are parts of the circulatory system.



(a) Identify the parts of the circulatory system, R, S and T by completing the following table. [1½]

	R	S	T
Parts of the circulatory system			

(b) Name 2 useful substances to the body that are carried by R. [1]

_____

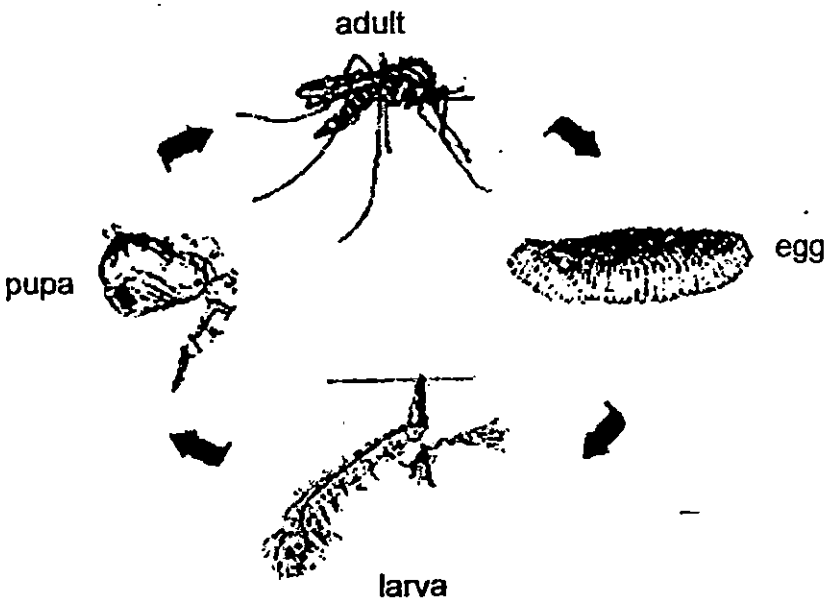
(c) Describe the function of T. [1]

_____

(d) Which part of the skeletal system protects T? [½]

_____

37 Study the following life cycle of a mosquito.



(a) State two differences between the mosquito at the larva stage and the pupa stage. (Do not compare size, shape or colour) [2]

(i) _____

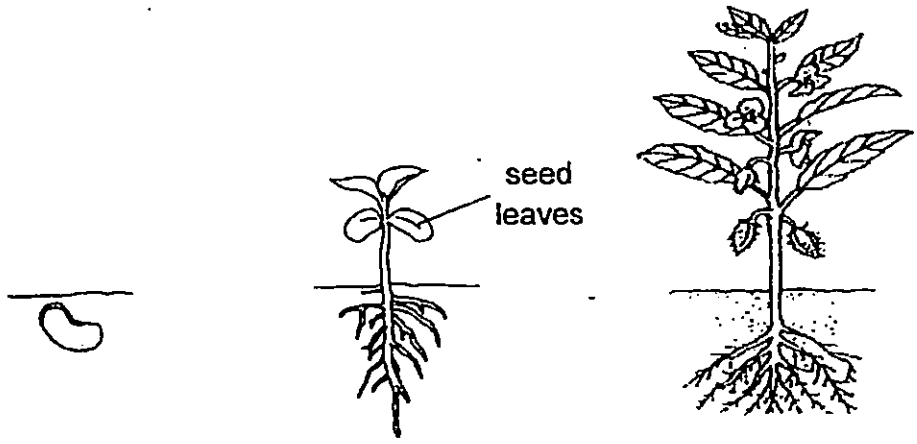
(ii) _____

(b) Mosquitoes are pests because they spread diseases to Man. Suggest one thing we can do to prevent mosquitoes from breeding in our houses. [1]

_____

_____

38 The diagram below shows the stages in the life cycle of a plant.

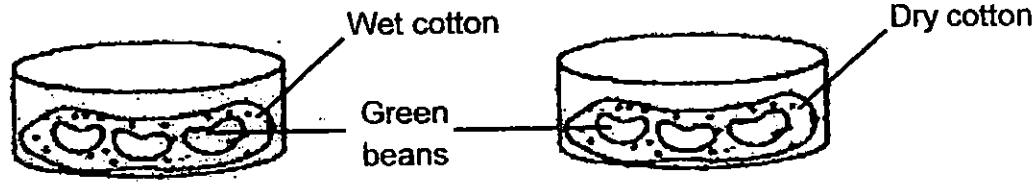


Stage A **Stage B** **Stage C**

(a) Name the stages A and B in the life cycle of the plant. [2]

A : _____ B : _____

(b) Leslie placed some green beans in two containers, Container A and Container B. He placed both containers in a warm area. After a few days, the green beans in Container A germinated but those in Container B did not.

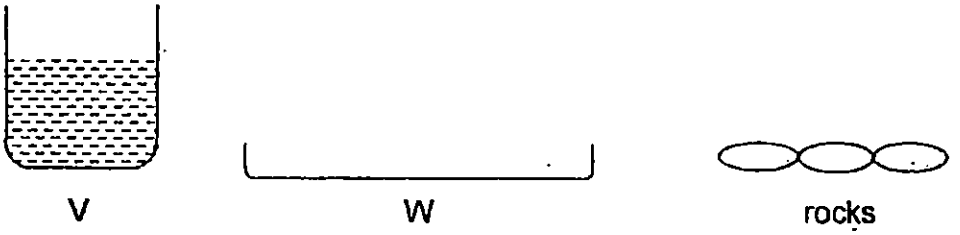


Container A **Container B**

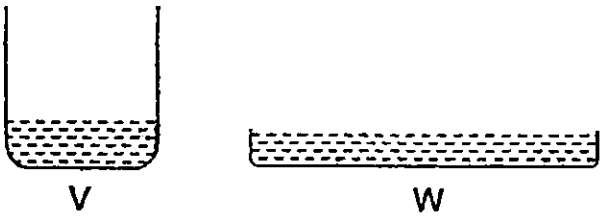
Suggest a reason why the green beans in Container B did not germinate. [1]

_____

39 Mr Tan had two containers, Containers V and W and some rocks. Container V contained some water but Container W was empty.



He wanted to pour all the water from Container V into Container W. He realised he could not as the water had reached the brim of Container W as shown below and he had to stop pouring.



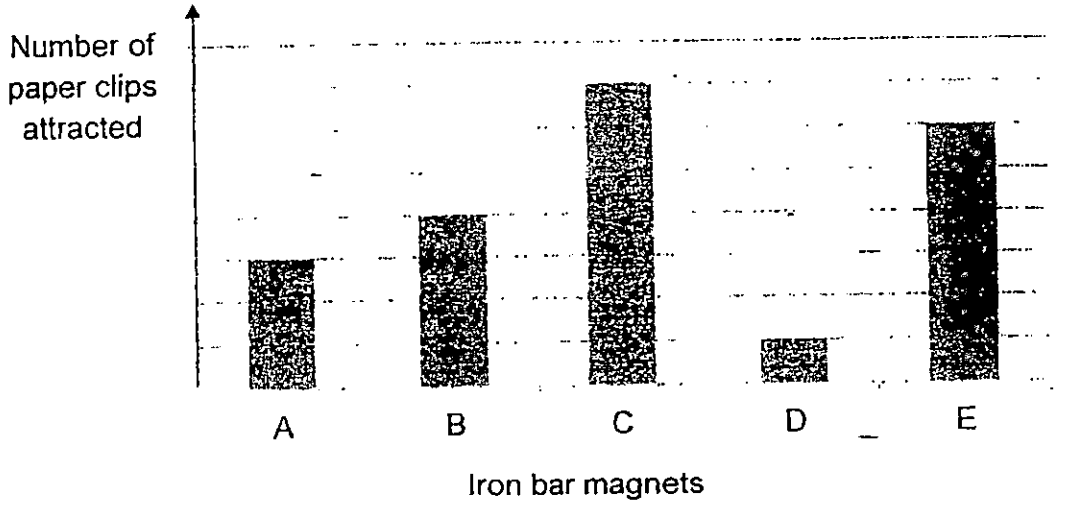
(a) Based on this experiment, state a property of matter shown by water and Container W. [2]

		Property of matter
(i)	**Water**	
(ii)	**Container W**	

(b) He then took the rocks and put them into Container W and the water overflowed. Explain why the water overflowed. [1]

_____

40 Mary used the 'stroke' method to make five magnets using a magnet and 5 similar iron bars. The following bar graph shows the number of paper clips that were picked up by the 5 iron bar magnets.



(a) Mary was given a table to match the number of strokes with the magnets. Complete the table with the correct magnet by writing **A, C, D** and **E** into the boxes below. [2]

Number of strokes	5	10	15	20	25
Iron Bar Magnet			B		

(b) What is the relationship between the number of 'strokes' and the strength of the iron bar magnet produced? [1]

41 Travis switched on a torchlight in a dark room. He observed that when he placed a soccer ball in the path of the light as shown below, a shadow is formed on the screen.

Torch

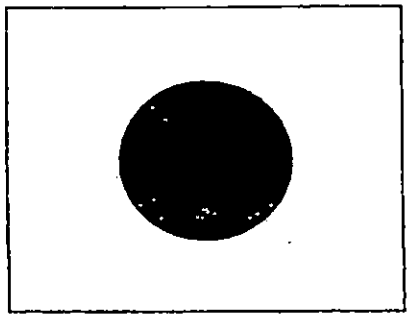
X

Soccer ball

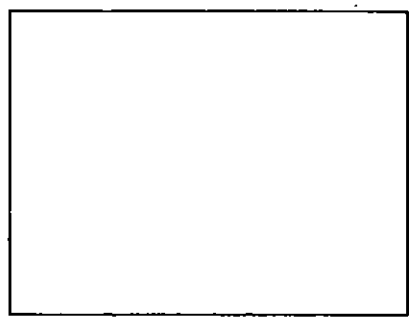
Screen

(a) State the property of light that explains why the shadow was formed. [1]

(b) If Travis moved the torchlight to position X, draw the shadow of the soccer ball which would be formed in the box below. [1]

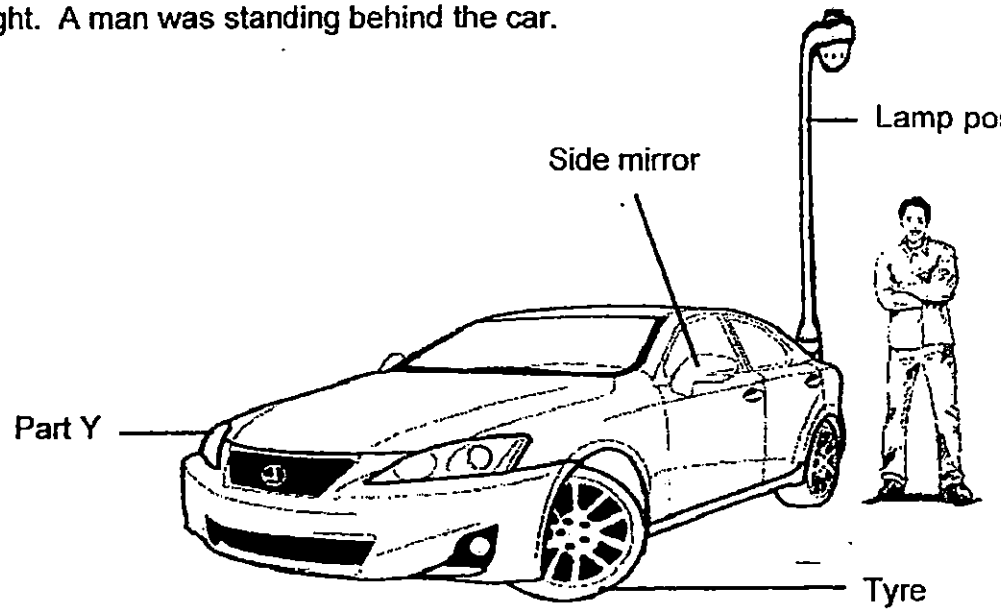


Shadow formed at the beginning



New Shadow

42 The diagram below shows a car stopping at a road side near a lamp post at night. A man was standing behind the car.



(a) How does the side mirror of the car help the driver see the man standing behind the car at night? [2]

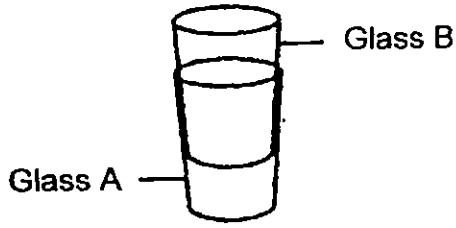
_____

_____

(b) Part Y covers the light bulb of the head lamps of the car. State the property of material that is suitable to make Part Y. [1]

_____

43 Mrs Tan needed help to separate two of her glasses which were stuck together. She was not able to pull them apart.

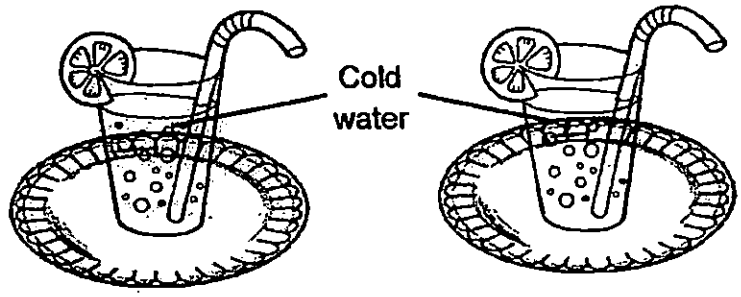


(a) State two things you would do to help Mrs Tan separate the glasses without breaking them. [2]

(i) _____

(ii) _____

(b) Mrs Tan used the glasses to hold the same amount of cold water of the same temperature. Then, she placed the glasses on two plates made of two different materials and left them on a warm kitchen table.



Glass A on metal plate Glass B on styrofoam plate

(i) Which glass (A or B) would contain water of a lower temperature than the other after ten minutes? [1]

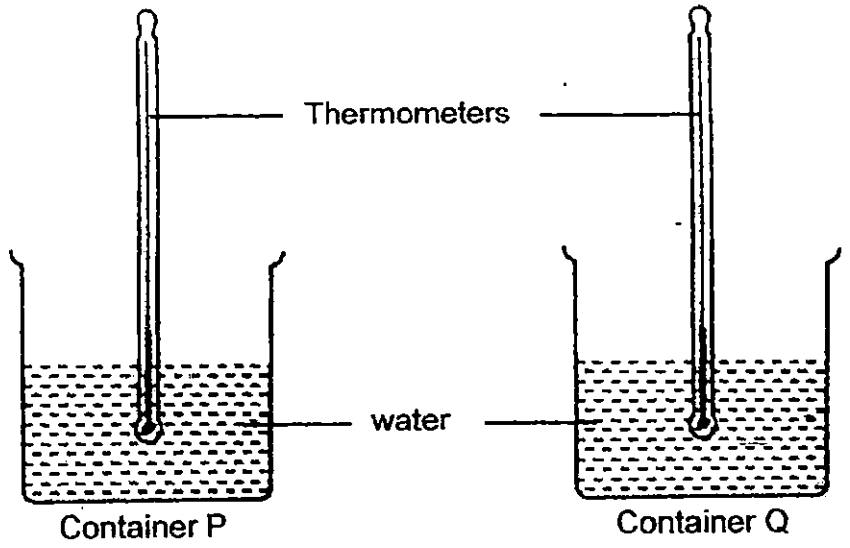
_____

(ii) Give a reason for your answer in (b)(i). [1]

_____

_____

44 Raja placed the same amount of water in two containers of the same size, Containers P and Q. At first, the temperature of the water was 100°C. He put each container in different parts of the room. The room temperature was 30°C.



The table below shows the temperature reading of the water in each container after thirty minutes.

Container	P	Q
Temperature	75°C	50°C

(a) David said that the water had lost heat to the surroundings. Which container of water had lost more heat to the surroundings? [1]

_____

(b) Give a possible reason why the container in (a) lost more heat to the surrounding. [1]

_____

(c) What do you think would be the temperature of the water in both containers after one day? [1]

_____

– END OF PAPER –

EX

LEVEL : PRIMARY 4
SCHOOL : PEI HWA PRESBYTERIAN PRIMRY SCHOOL
SUBJECT : SCIENCE
TERM : SA2

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
1	1	4	2	3	2	2	4	4	2
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
4	3	2	1	2	4	1	1	2	4
Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30
3	3	1	1	4	3	3	2	2	3

Q31a. metal Q31b. light

Q32a. non-magnetic Q32b. repelled

Q33. Light / reflected Q34. Faster / better

Q35a. leaves / roots

Q35b. The roots of the plant absorbed water for the plant.

Q35c. It is to ensure that the drop in water level is caused by the roots.

Q36a. R: blood S: Blood vessels T: Heart

Q36b. They are digested food and water.

Q36c. The muscular organ permits movement of the body, maintains posture, and circulates blood throughout the body. Q36d. Rib cage

Q37a (i) The larva moves from place to place but the pupa does not move from place to place

Q37a. (ii) The larva moults to grow bigger but the pupa does not moult to grow bigger.

Q37b. Pour away all stagnant water.

Q38a. A: Seed B: Young plant

Q38b. There was no water for the seeds to germinate. Thus, the green beans in container B did
not germinate.

Q39a(i). Water - It does not has a definite volume
Q39a (ii). Container W: It has a definite shape.

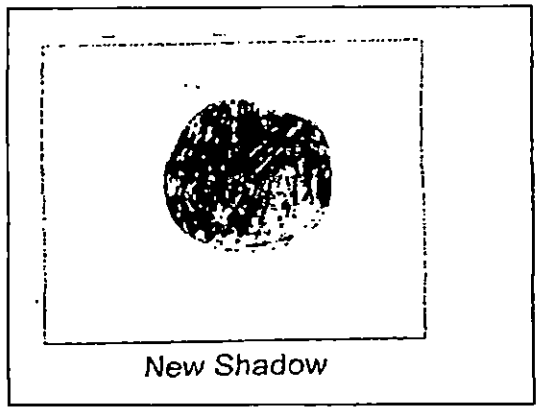
Q39b. Sold takes up space that were previously occupied by water thus displacing the water.

Q40a. D / A / B / E / C

Q40b. The more the number of strokes, the strength of the iron bar magnet produced is stronger.

Q41a. Light travels in a straight line.

Q41b. **SEE PICTURE**



Q42a. Light from the lamp post shine on the man and then from the mirror into the driver' s eyes.

Q42b. It allows all light to pass through.

Q43a (i) Pour cold water into Glass B.

Q43a (ii) Dip glass A into hot water.

Q43b (i) Glass B

Q43b (ii) Styrofoam is a poorer conductor of heat so the water in Glass B will not gain heat from the warm table as quickly.

Q44a. Container Q.

Q44b. Container Q is a better conductor of heat.

Q44c. 30°C

THE END