RED SWASTIKA SCHOOL

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2011 SEMESTRAL ASSESSMENT 2

SCIENCE
PRIMARY 4

Name : _____ ( )

Class : Primary 4/ _____

Date : 2 Nov 2011

BOOKLET A

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

Booklet A: 30 questions (60 marks)

Note:

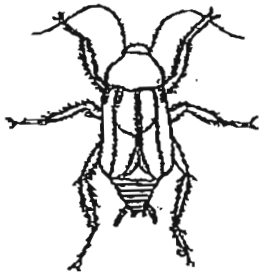
1. Do not open the booklet until you are told to do so.
2. Read carefully the instructions given at the beginning of each part of the booklet.
3. Do not waste time. If the question is too difficult for you, go on to the next question.
4. Check your answers thoroughly and make sure you attempt every question.
5. In this booklet, you should have the following:
   a. Page 1 to Page 22
   b. Questions 1 to 30

Section A

For Questions 1 to 30, choose the most suitable answer and shade its number in the OAS provided.

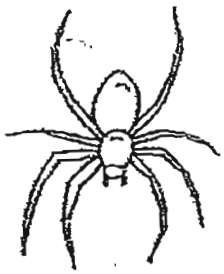
1. Which one of the following animals below is an insect?

A



B

C



D

(1) A and B only

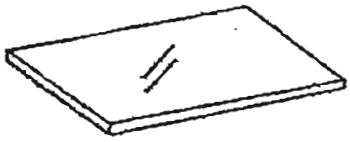
(2) A, B and C only

(3) A, B and D only

(4) A, B, C and D

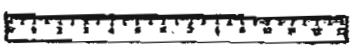
2. Which one of the following objects can be bent most easily without breaking?

(1) A sheet of glass



(2) A wooden spoon

(3) A plastic ruler

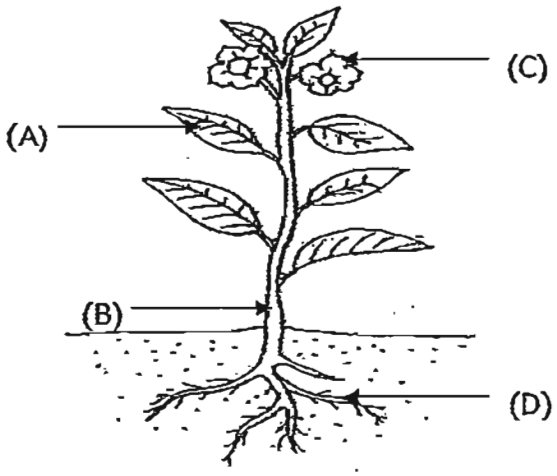


(4) A towel

3. What is the main function of the large intestine?

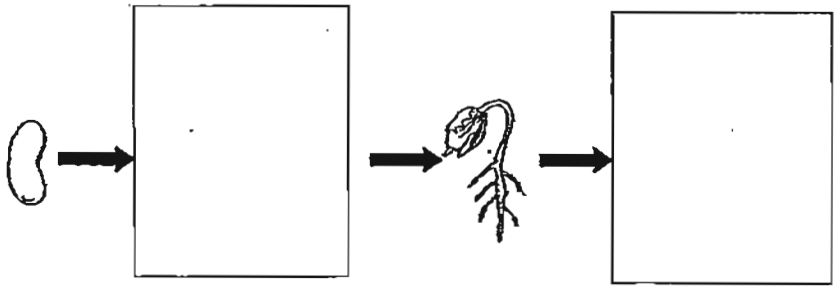
(1) It allows undigested food to be passed into the blood.
(2) It allows water to be passed into the blood.
(3) It removes digested food from the body.
(4) It removes undigested food out of the body.

4. Melvin showed Mary a plant. He pointed at one part and said that this part of the plant helps it to make food. Which part of the plant was he pointing at?



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

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

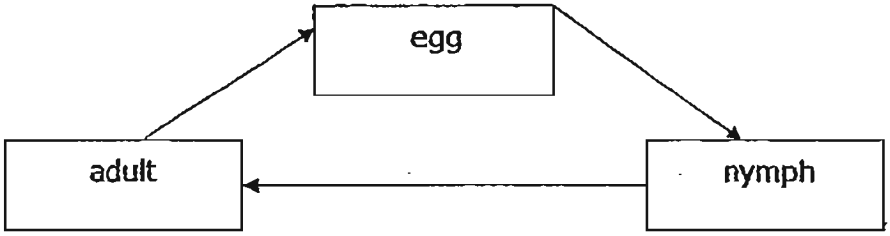


X Y

Which one of the following shows the correct stages for X and Y?

	X	Y
(1)		
(2)		
(3)		
(4)		

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



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

(1) beetle

(2) butterfly

(3) duck

(4) cockroach

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

Which one of the following is not matter?

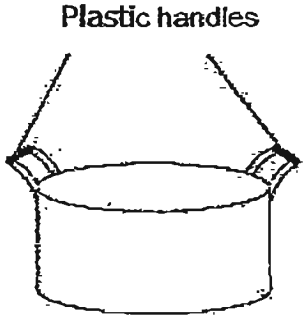
(1) oxygen

(2) shadow

(3) sand

(4) water

8. Pei Qi boiled some water in the pot shown below.



She is able to hold the pot of boiling water using the plastic handles. This is because plastic is a _____.

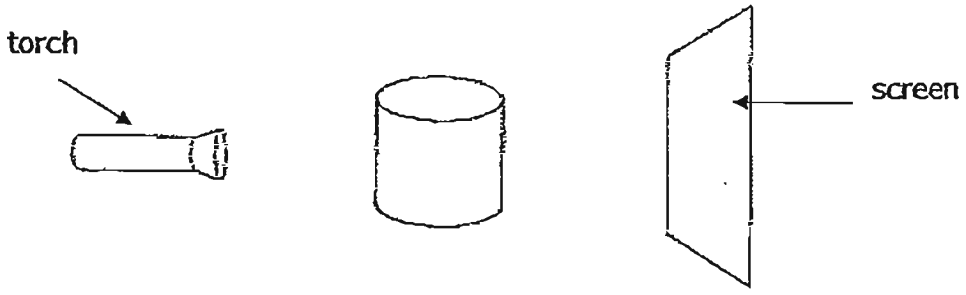
(1) good conductor of heat

(2) strong material

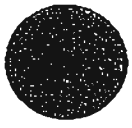
(3) heavy material

(4) poor conductor of heat

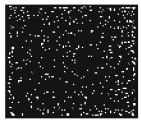
9. Mdm Koh shines a torch on a wooden container as shown below.

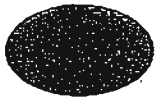


Which one of the following shows the shadow of the wooden container on the screen?

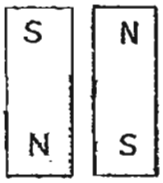
(1) 

(2) 

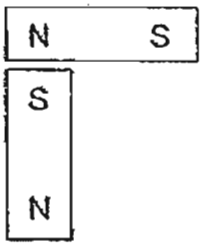
(3) 

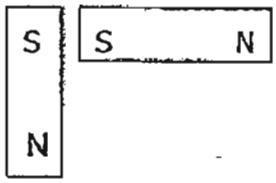
(4) 

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

(1) 

(2) 

(3) 

(4) 

11. On a learning journey to the Singapore Botanic Gardens, Wei Jian noticed Animal X on the ground. He noted the following characteristics.

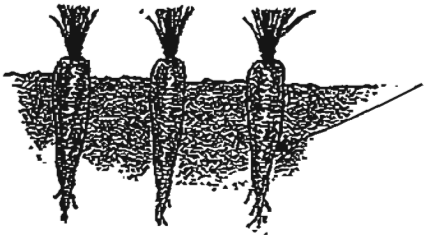
A: It is small.
B: It has wings.
C: It has six legs.
D: It feeds on some food found on the ground.

He concluded that Animal X is an insect.

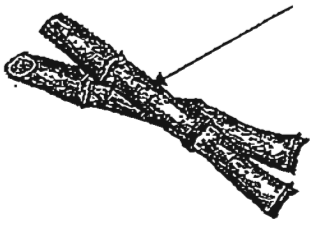
Which of the above characteristics has/have helped him confirm it?

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

12. Choose the correct classification of the parts of the living things indicated by the arrows shown below.

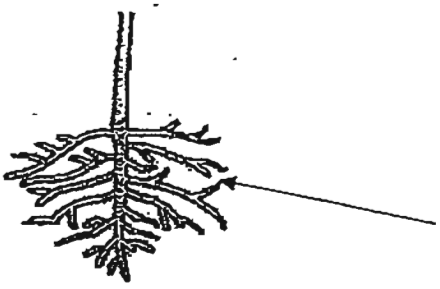


A



B

C

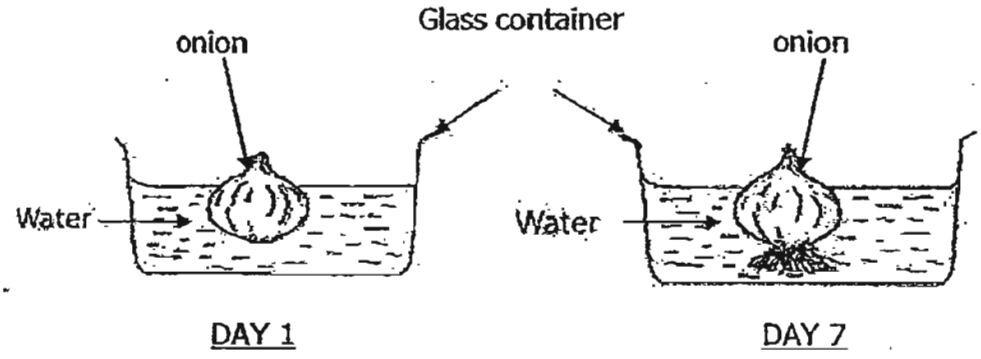


D

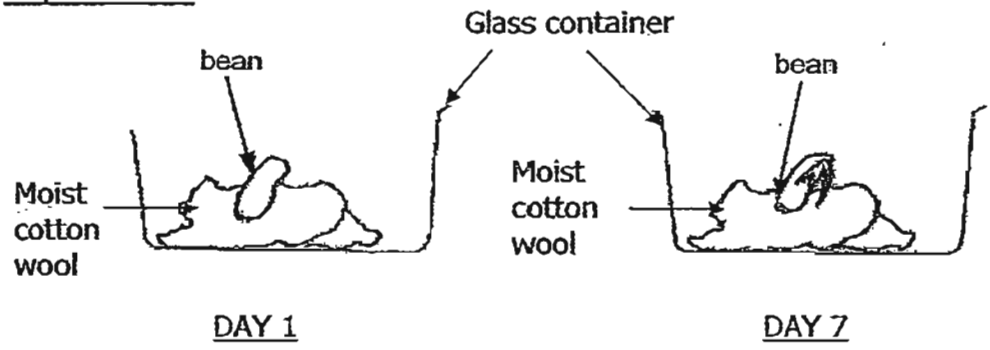
	Stems	Roots
(1)	B, C	A, D
(2)	A, B	C, D
(3)	B, D	A, C
(4)	A, D	B, C

13. Patricia carried out two experiments as shown below.

Experiment 1



Experiment 2

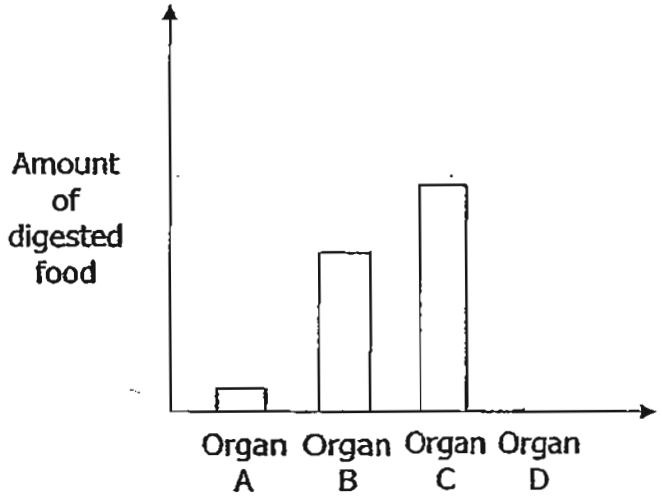


She observed the onion and the bean only on the 7th day. What could Patricia conclude from her observation?

A: Both the onion and the bean need water to grow.
B: Both the onion and the bean need soil to grow.
C: The roots of both the onion and the bean grow first.
D: The shoot of the onion grow faster than the bean.

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

14. The graph below shows the amount of digested food found in four different organs of a human digestive system before absorption into the blood stream.



Which organ is the small intestine?

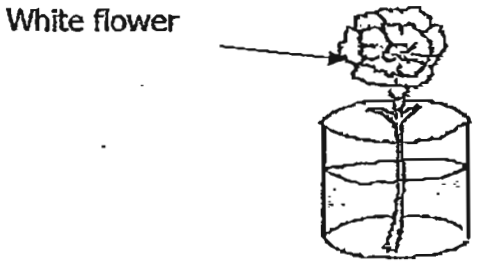
(1) Organ A

(2) Organ B

(3) Organ C

(4) Organ D

15. Hisham put a few drops of purple ink into a beaker of water. He placed a white flower into the beaker as shown below.



After a few hours, he noticed that the flower had turned purple.

Based on the experiment above, the statement that best explains his observation is 'Water was_____.'

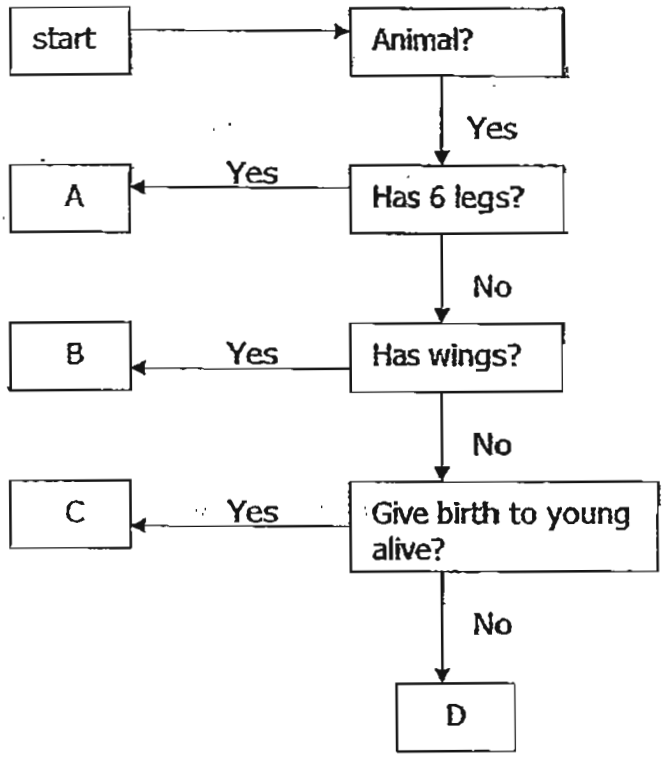
(1) absorbed by the tiny tubes of the stem and carried to the roots

(2) absorbed by the tiny tubes of the roots and carried to the flower

(3) absorbed and transported through the tubes in the stem to other parts of the plant

(4) absorbed by the roots and transported through the tiny tubes in the stem to other parts of the plant

16. The diagram below shows a flow chart.



Peter caught an animal which does not have 6 legs but has wings. Which letter best describes the animal?

(1) A

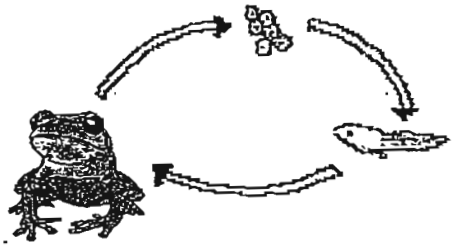
(2) B

(3) C

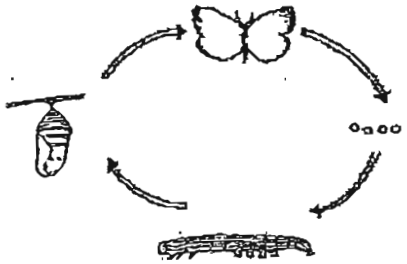
(4) D

17. The diagrams below show the life cycles of two animals, A and B.

Animal A



Animal B



Which of the following statements best describe(s) both animals A and B?

A: Both animals lay their eggs in water.
B: The young of both animals do not look like the adults.
C: Both animals have 4 stages in their life cycles.

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

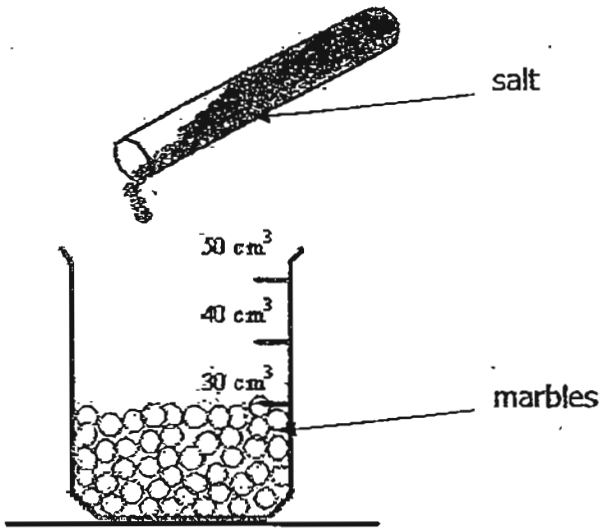
18. The table below describes the life cycles of two animals, X and Y. A tick (√) indicates that the statement is true of the animal.

	Characteristics	Animal X	Animal Y
(a)	The young looks like its adult.	√	
(b)	It has four stages in its life cycle.		√
(c)	It is a pest in one or more stages of its life cycle.	√	√
(d)	It feeds on plants in one or more stages of its life cycle.	√	√

Which of the following pairs are most likely animal X and animal Y?

	Animal X	Animal Y
(1)	mosquito	grasshopper
(2)	grasshopper	butterfly
(3)	frog	mosquito
(4)	butterfly	beetle

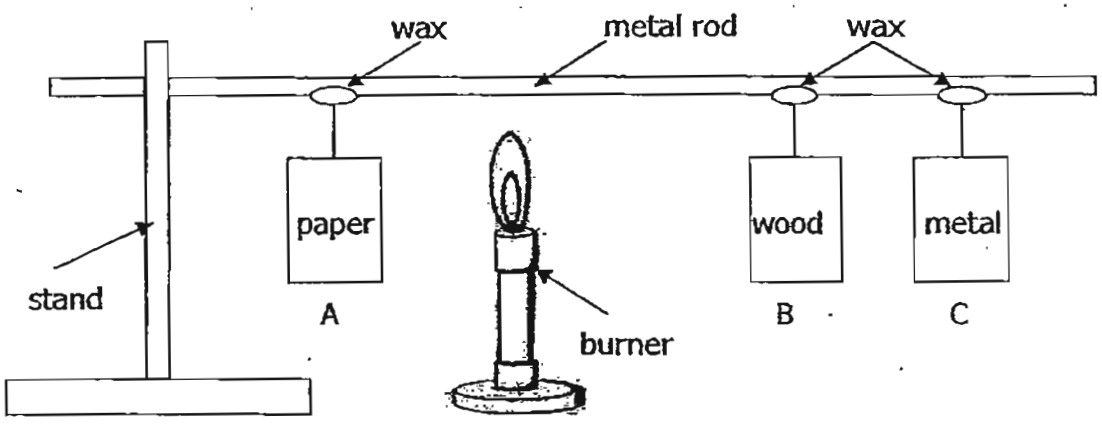
19. A beaker was filled with some marbles and placed on a table as shown below. The marbles reach the 30 cm^3 mark on the beaker. 10 cm^3 of salt was added into the beaker. The beaker was then shaken for 10 seconds before it was placed on the table again.



The estimated volume of the marbles and the salt in the beaker would be _____.

(1) 24 cm^3
(2) 34 cm^3
(3) 40 cm^3
(4) 42 cm^3

20. The diagram below shows a metal rod being attached to a stand. Three different boxes, A, B and C, of the same mass, are attached to the metal rod using the same amount of wax and a string of the same length. The metal rod is heated by a burner.



Rearrange the boxes in order, starting from the box that drops from the metal rod first.

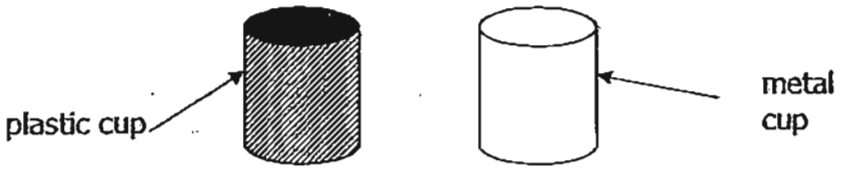
(1) A, B, C

(2) B, A, C

(3) C, A, B

(4) C, B, A

21. Rahim conducts an experiment in a classroom at room temperature. He uses his hands to touch a metal cup and a plastic cup at the same time. Both cups are empty and are similar in size and thickness.



Which statement best describes how he feels the moment he touches the two different cups at the same time?

(1) Both his hands feel cool when he touches the two cups.

(2) Both his hands feel warm when he touches the two cups.

(3) The hand that touches the metal cup feels cooler than the hand that touches the plastic cup.

(4) The hand that touches the metal cup feels warmer than the hand that touches the plastic cup.

22. Shirley conducted an experiment. She filled four cups of the same size with the same amount of hot tea. Each cup is made of a different material but has the same thickness.

Cup A 

Cup B 

Cup C 

Cup D 

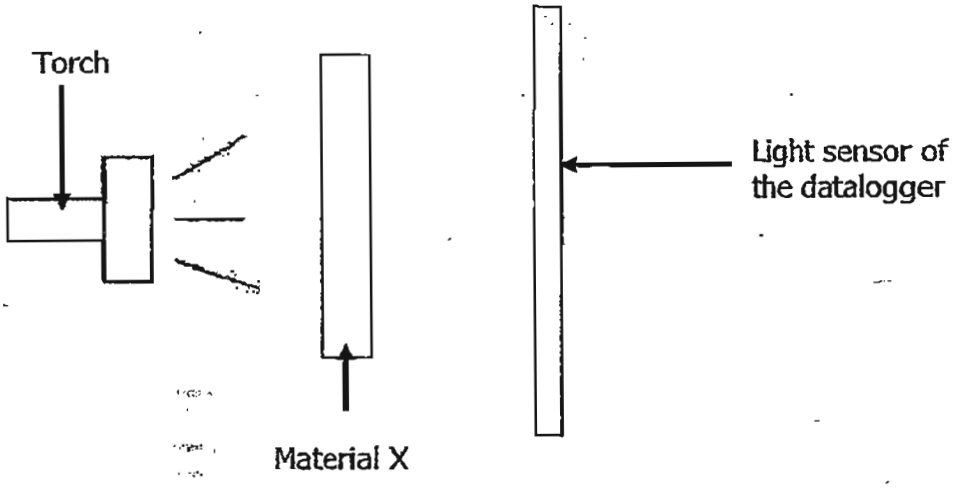
Next, she measured the temperature of the tea at the start and end of the experiment 20 minutes later and recorded them as shown in the table below.

	Temperature of tea (°C)	
Type of cup	**At the start**	**End**
A	60	50
B	60	30
C	80	40
D	80	60

Based on the experiment above, which material, A, B, C or D, is most suitable for making a lunch box that can keep food warm for at least an hour?

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

23. Mdm Nora conducted an experiment with four different materials, W, X, Y and Z using a datalogger. An example of a set-up with material X is shown below.



The results of the experiment is recorded below.

Material	1st reading (lux)	2nd reading (lux)	3rd reading (lux)
No material	5000	5000	5000
W	2300	2400	2350
X	3000	3400	3500
Y	0	0	0
Z	4600	4500	4570

Mdm Nora wants to make curtains for her room. The material chosen must allow some light to enter the room in the day and the light must be the least glaring.

Which material is the most suitable?

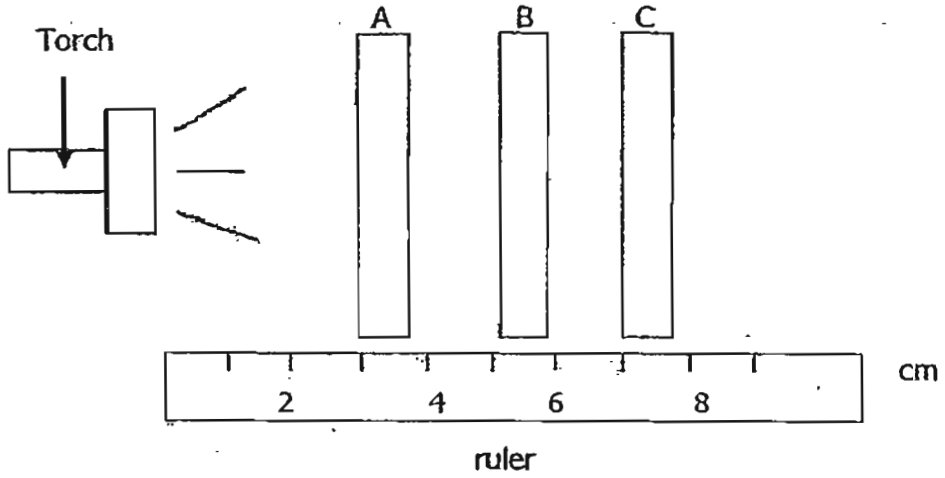
(1) W

(2) X

(3) Y

(4) Z

24. Peter carried out an experiment using three different materials, A, B and C, which are placed on the 3-cm, 5-cm and 7-cm mark respectively. A torch is shone on the materials as shown in the diagram below. He discovered that light can only reach the 3cm-mark on the ruler.



ruler

Materials A, B and C are then rearranged and placed on the 3-cm, 5-cm and 7-cm marks and the distance the light travels from the torch is recorded as shown in the table below.

Order of Materials	Distance the light travels (cm)
C, B and A	7
B, A and C	5

Which material(s) allow(s) light to pass through?

(1) A only

(2) B only

(3) A and B only

(4) B and C only

25. Xiu Wuan wants to build a house for her pet kitten as shown in Diagram 1. Diagram 2 below shows how the house looks like when it is viewed from the top.

Side View

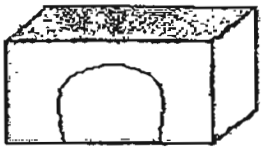


Diagram 1

Top View

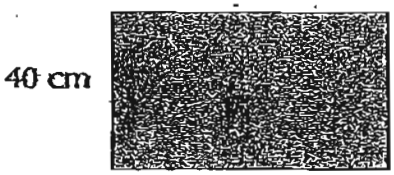


Diagram 2

Xiu Wuan wants to make use of coloured materials for the top of the house. The table below shows some information about the coloured materials which she could make use of.

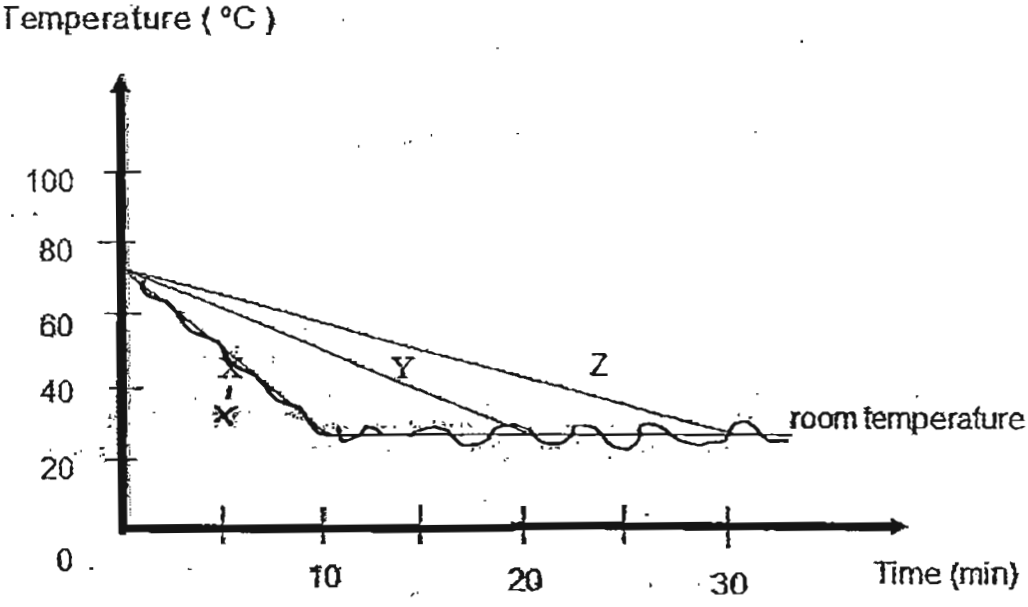
Material	Colour	Size	Easy to cut
Q	Dark Green	80 cm x 120 cm	No
R	White	40 cm x 40 cm	No
S	Light yellow	150 cm x 150 cm	Yes
T	Dark red	40 cm x 60 cm	Yes

From her Science lesson, Xiu Wuan knows that light colours like white and yellow reflect the light rays and allow a surface to stay cool. Dark colours like black absorb heat and make a surface hot easily.

Using the information in the table above, which material is the most suitable for making the top of the house so that it can be kept cool for the kitten?

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

26. Mrs Wong poured some hot water into three different containers, X, Y and Z. The containers are of the same size but made of different materials. The time taken for the water to cool down in each container is shown in the graph below.



Which sentence below best concludes her observations on the experiment?

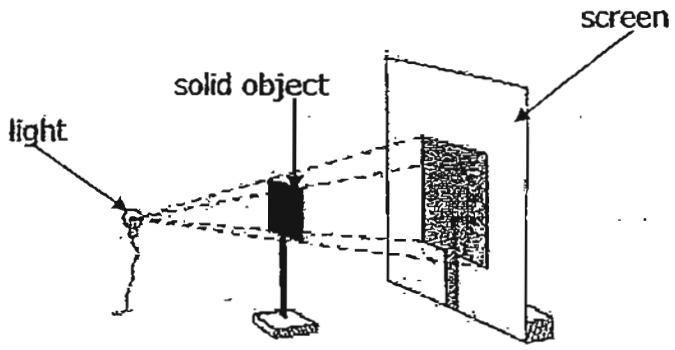
(1) Container X is a poorer heat conductor than Y but a better heat conductor than Z.

(2) Container X is a better heat conductor than Y but a poorer heat conductor than Z.

(3) Container Y is a poorer heat conductor than Z but a better heat conductor than X.

(4) Container Y is a better heat conductor than Z but a poorer heat conductor than X.

27. The picture below shows how the shadow of a solid object is formed.

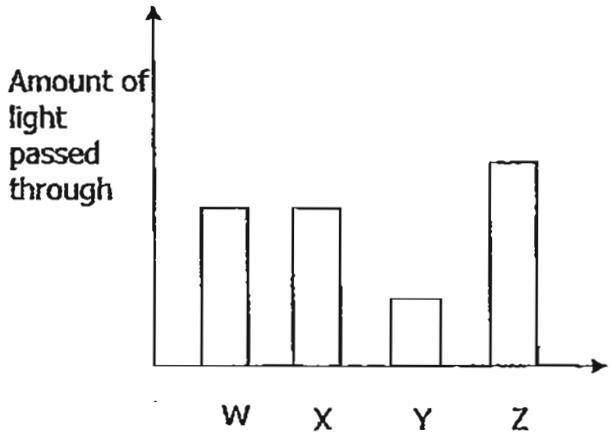


The light source is moved closer to the solid object without moving the solid object and the screen. What will happen to the shadow on the screen?

The shadow will _____.

(1) disappear
(2) become larger
(3) become smaller
(4) remain the same

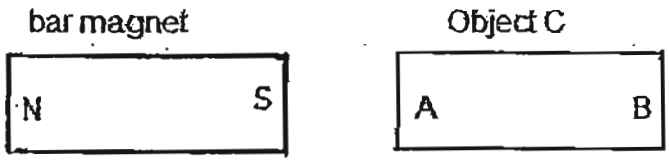
28. May used a light sensor and a datalogger to find out how much light passes through four sheets, W, X, Y and Z. The four sheets were made of four different materials. The results were shown in the bar graph below.



Which sheet will form the lightest shadow?

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

29. Lily wanted to test if Object C is a magnet by using a bar magnet as shown below.

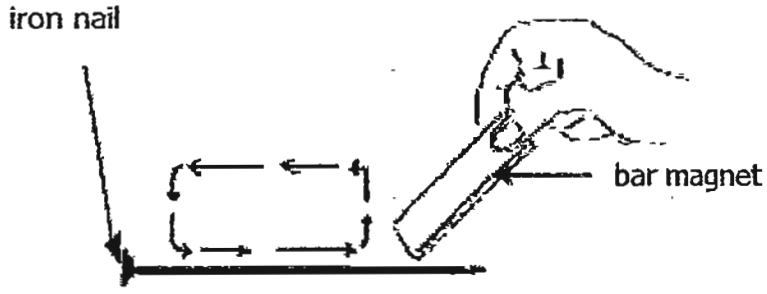


She predicted the following reactions before she carried out her experiment.

Which of her predictions would allow Lily to conclude that Object C is a magnet?

	bar magnet	**A**	**B**
(1)	N-pole	Repel	Repel
(2)	S-pole	Attract	Attract
(3)	N-pole	Repel	Attract
(4)	S- pole	No reaction	No reaction

30. Sajeeh conducted an experiment as shown below. He used a bar magnet to stroke an iron nail in the direction shown.



These were the steps he did:

Step 1	Used one end of the magnet to stroke the nail in one direction 30 times.
Step 2	After stroking for 30 times, he placed the nail near some paper clips.

He found out that 2 paper clips were attracted to the nail.

He then continued the following steps:

Step 3	He repeated step 1 on another similar nail but increased the number of strokes to 50.
Step 4	He placed the nail near some paper clips again.

He found out that 5 paper clips were attracted to the nail.

What was the aim of his experiment?

He wanted to find out if _____.

(1) the nail could be magnetised by the magnet using the 'stroke' method.

(2) the type of nail would affect the number of paper clips the nail attracts

(3) the number of strokes made by a magnet would affect the magnetic strength of the nail

(4) the number of strokes made by a magnet would affect how well the nail attracts paper clips

END OF SECTION A

RED SWASTIKA SCHOOL

RED SWASTIKA SCHOOL

2011 SEMESTRAL ASSESSMENT 2
SCIENCE
PRIMARY 4

Name : _____ ( )

Class : Primary 4/ _____

Date : 2 Nov 2011

BOOKLET B

14 Questions
40 Marks

In this booklet, you should have the following:
a. Page 23 to Page 40
b. Questions 31 to 44

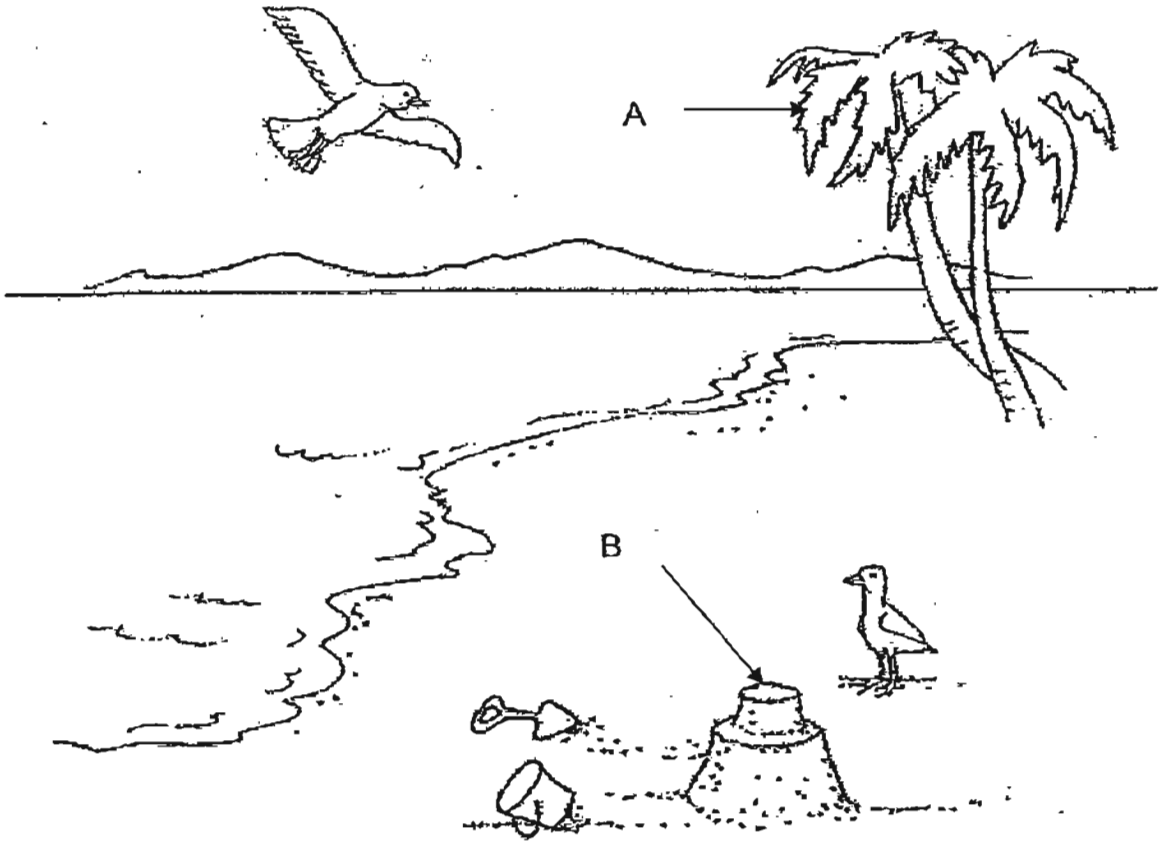
MARKS

	OBTAINED	POSSIBLE
BOOKLET A		60
BOOKLET B		40
TOTAL		100

Parent's Signature : _____

Section B
Answer all the questions in the spaces provided.

31. Huiyin saw some living things and non-living things on the beach.



State if A and B are living things or non-living things. (2 m)

(a) A is a _____.

(b) B is a _____.

2

32. Choose the correct words from the box to answer the questions below.

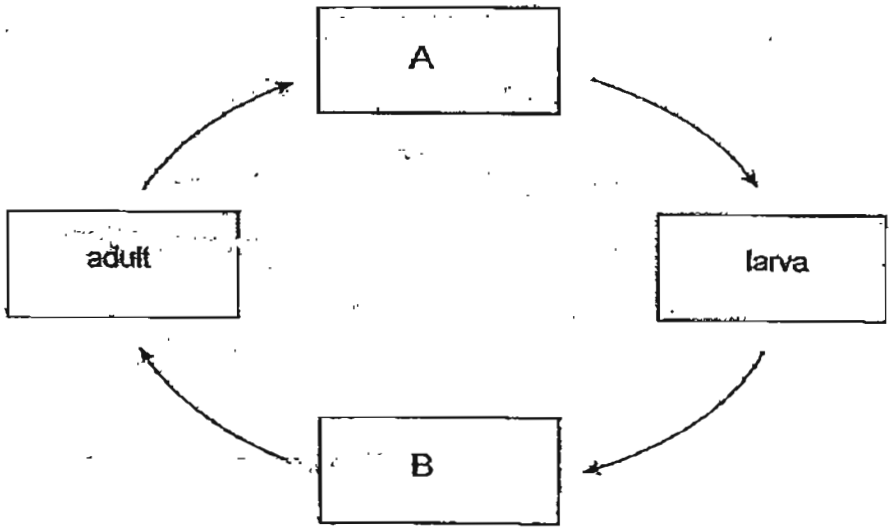
gullet	mouth	small intestine	large intestine	stomach

In a human digestive system, name the part where

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

(b) Digestion is completed : _____ (1 m)

33. The diagram below shows the stages in the life cycle of a butterfly.



Choose the correct words from the box to answer the questions below. (2 m)

wriggler	egg	pupa	seed

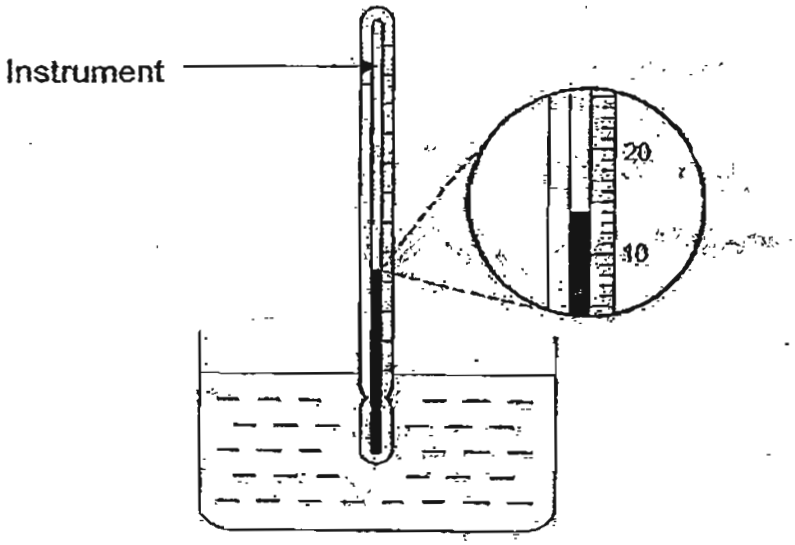
Name the two stages A and B.

(a) Stage A - _____

(b) Stage B- _____

4

34. Ahmad used an instrument to measure the temperature of cold water in a glass.



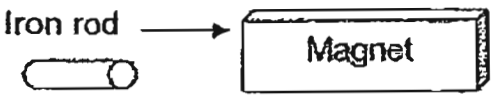
(a) What is the instrument called? (1 m)

_____

(b) What is the temperature of the water in the glass? (1 m)

_____ °C

35. Paul places a magnet near an iron rod. The iron rod moves towards the magnet in the direction shown by the arrow.



For questions (a) and (b), write a **word** or **phrase** in the blanks given.

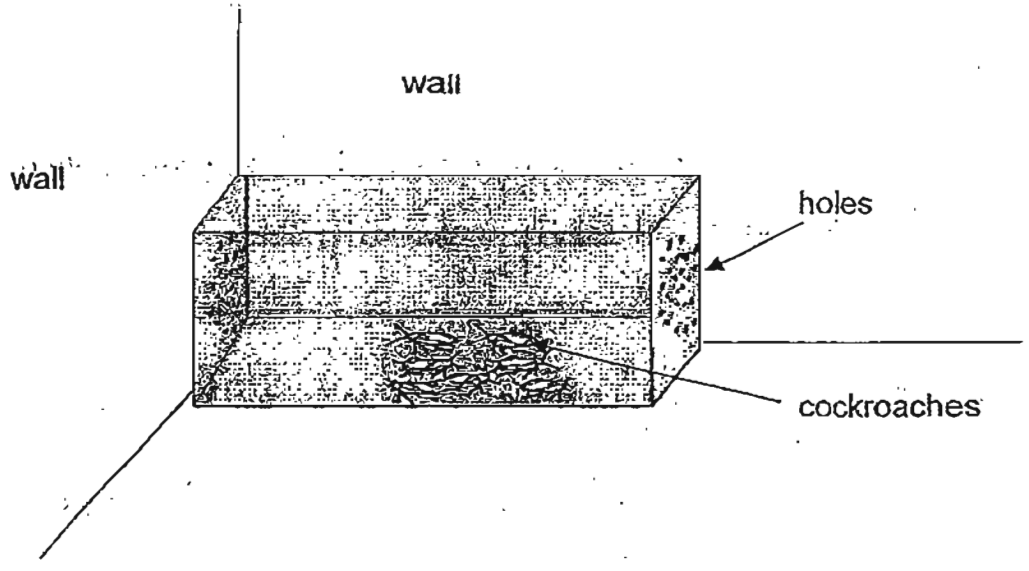
(a) The magnet exerts a _____ on the iron rod and attracts the iron rod. (1 m)

(b) Paul's observation shows that iron is a _____. (1 m)

4

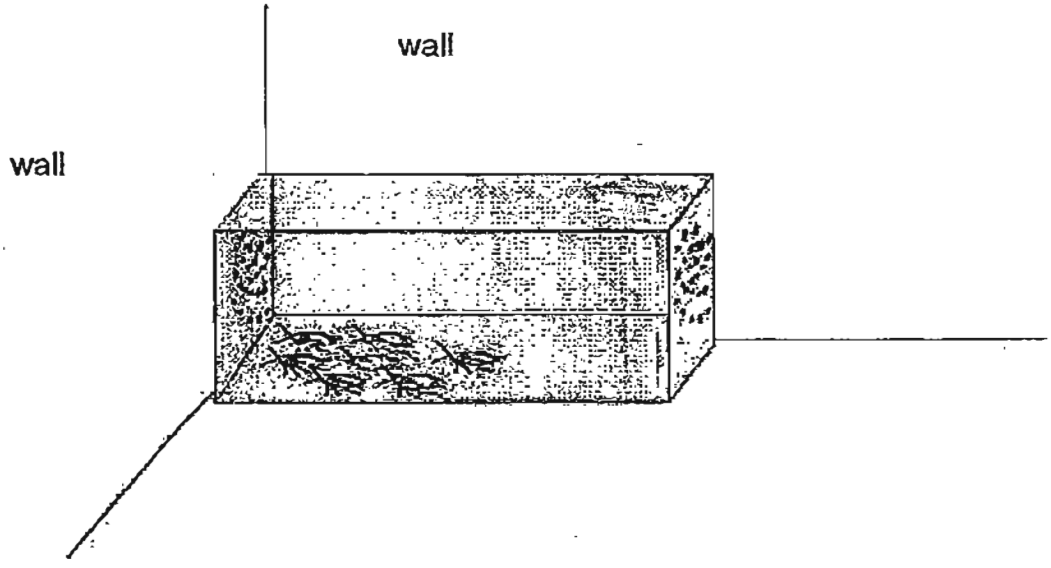
36. Marcus conducted an experiment with a sealed black container as shown below in Diagram 1. The container has holes on both sides. One side of the container with holes is placed against the wall. There are some cockroaches in the container.

Diagram 1



When Marcus shone his torch at a specific position, he observed the change shown below in Diagram 2.

Diagram 2



(a) Draw a cross (X) in Diagram 2 above to indicate the position of the torch. (1 m)

1

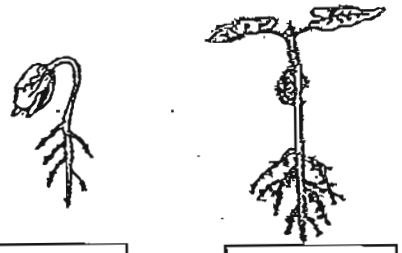
(b) Based on part (a), what was the change Marcus observed? (1 m)

(c) Explain the observation in part (b). (2 m)

(d) Why did Marcus use a black container to conduct his experiment? (1 m)

4

37. The diagram below shows two different stages of growth of a bean seed.



Stage X | Stage Y

Lucas said that the seedling is able to make food at both stages X and Y but May said that the seedling can only do so at stage Y.

(a) Who made the correct statement? Explain why the statement was correct. (1 m)

_____

_____

May started to grow some bean plants. For one of the plants, she measured the size of the seed leaves and the height of the plant and recorded the data in a table as shown below.

Size of the seed leaves	4 mm	3 mm	2 mm	1 mm
Height of the plant	2 cm	3 cm	4 cm	5 cm

(b) What is the relationship between the size of the seed leaves and the height of the plant? (1 m)

_____

_____

(c) Explain the answer in part (b). (1 m)

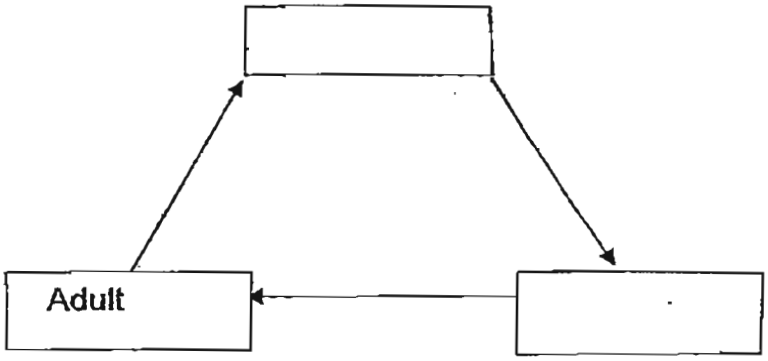
_____

_____

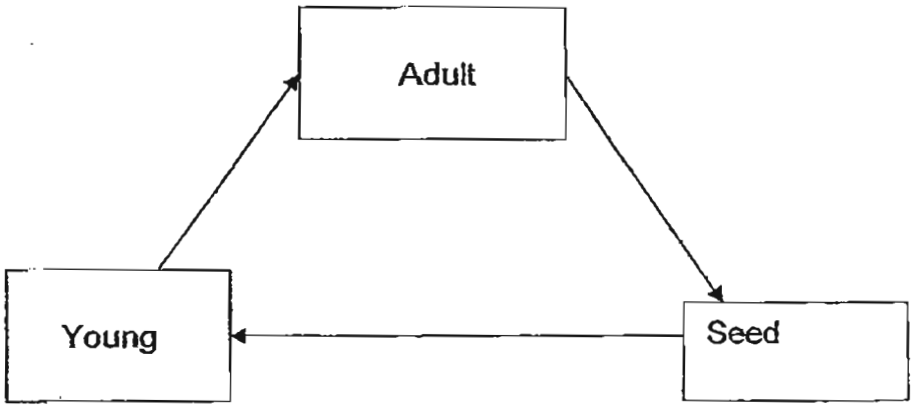
3

38. The diagrams below show an incomplete life cycle of a grasshopper and the life cycle of a plant. Both the organisms are found in the same garden.

(a) Fill in the boxes with the correct stages of the life cycle of a grasshopper. (1m)

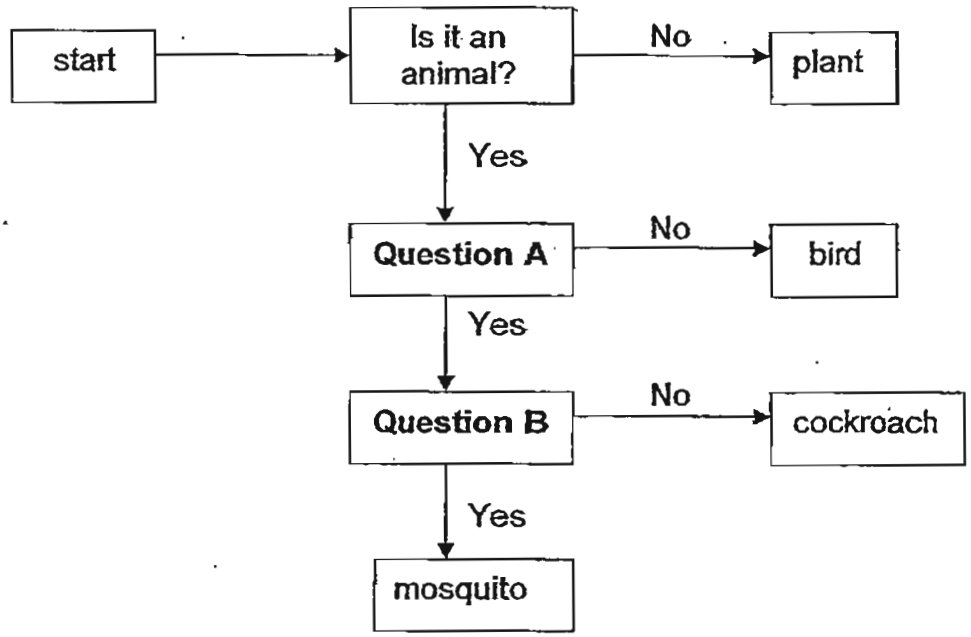


(b) Based on the life cycle of the plant shown below, explain what will happen if all the adult plants are eaten up by the grasshoppers. (1 m)



2

39 (a) The diagram below shows a flow chart.



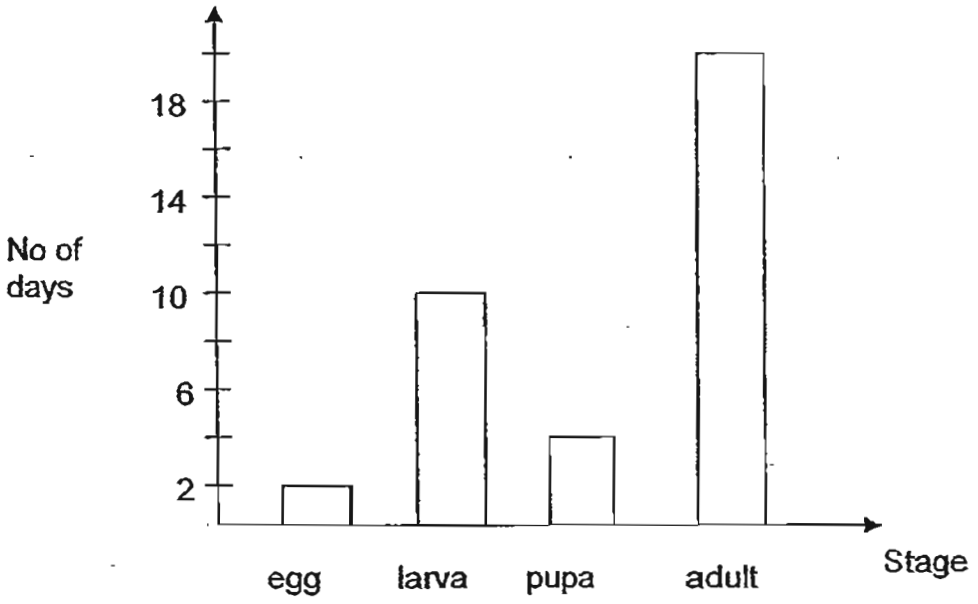
Suggest a possible question each for A and B. (2 m)

(i) Question A _____

(ii) Question B _____

2

(b) The graph below shows the number of days of each stage in the life cycle of a mosquito.



(i) How many days would it take for the young to become an adult mosquito after it is hatched? (1 m)

(ii) At which stage(s) would be the easiest to destroy this pest? Explain your answer. (1 m)

2

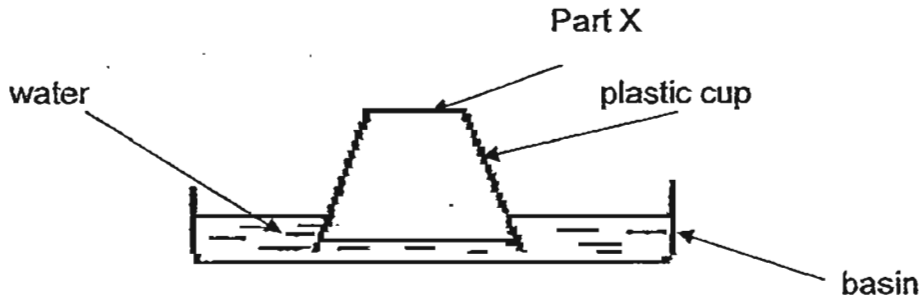
40. There are four items listed below:

- wind
- dust
- frozen ice cream
- sauce

(a) Classify the 4 items into the correct groups in the table shown below. (1 m)

Gas	Liquid	Solid

(b) Mrs Lee inverted a plastic cup and pushed the cup vertically into a basin of water as shown below.



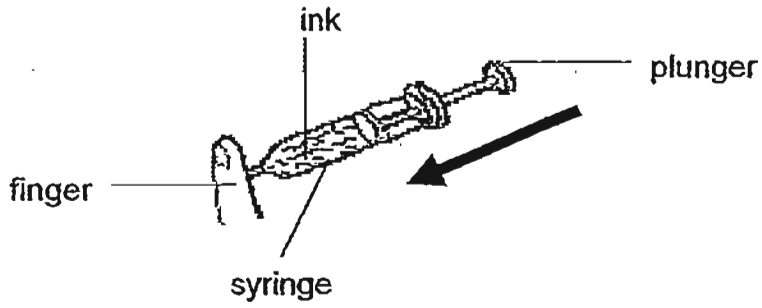
She observed the water level in the plastic cup. She then poked two holes on part X of the cup.
Explain what would happen to the water level in the plastic cup. (1 m)

_____

_____

2

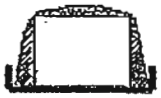
(c) Nicole put some ink into a syringe and pushed the plunger until all the air is removed. She then covered the tip of the syringe with her finger and tried to push the plunger again in the direction of the arrow as shown below.



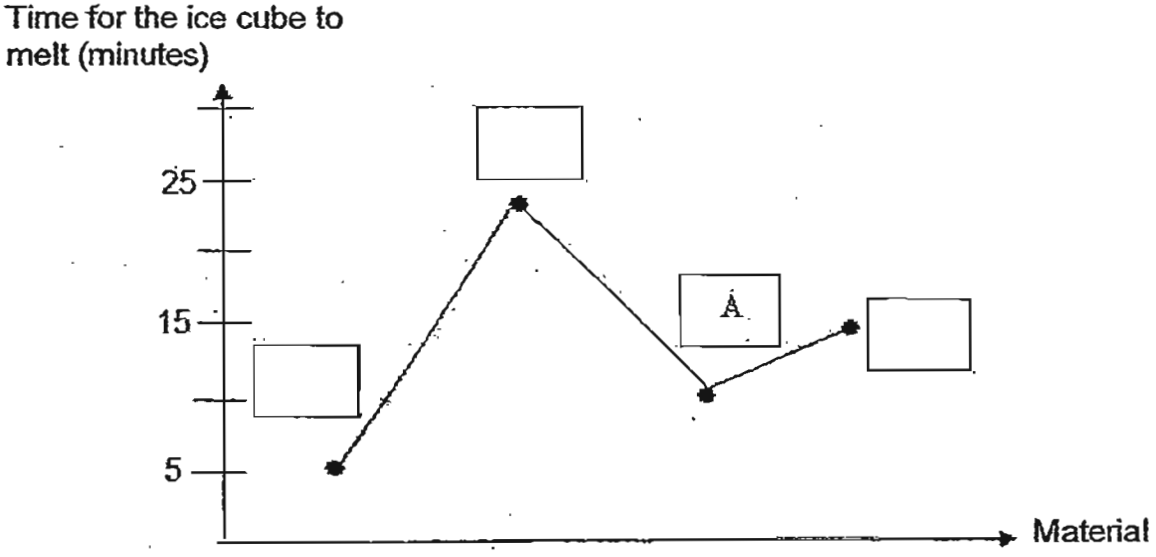
She discovered that the plunger could not be pushed any further. What properties of matter does the ink show? (1 m)

1

41. Suzie put four ice cubes on four separate dishes. She left one uncovered and covered the rest with different materials, P, Q and R. She recorded how long it took for each ice cube to melt as shown in the table below.

Material	A	P	Q	R
				
Time for ice cube to melt (minutes)	10	5	23	15

(a) Write P, Q or R in each box on the line graph below to name which material each point represents.(1 m)



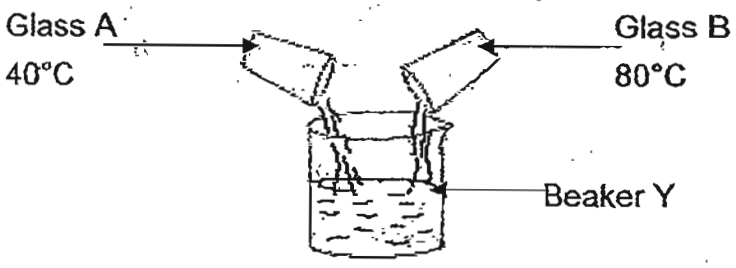
(b) Compare material R with materials P and Q. What can you conclude about material R? (1 m)

_____

_____

2

(c) Glass A contained water with a temperature of 40°C. Glass B contained water with a temperature of 80°C. Kelly poured an equal amount of water from Glass A and Glass B into an empty beaker, Beaker Y. She carried out this experiment at a room temperature of 28°C.



(i) What would be the likely temperature of water in Beaker Y at first and 60 minutes later? (1 m)

At first: _____

60 minutes later: _____

(ii) Explain your answers in part (i). (1 m)

_____

_____

_____

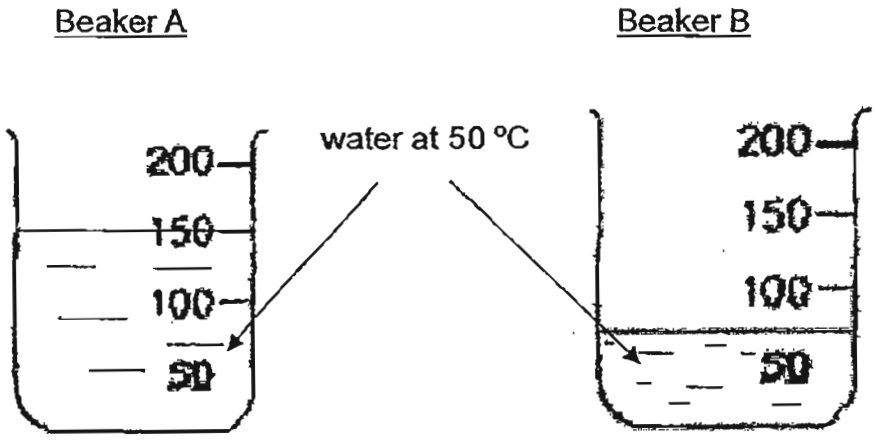
2

42. (a) Mr Tan carried out the following experiment in a room. He filled two beakers, A and B with the same amount of tap water at room temperature. Then he added the same amount of ice into each beaker and measured the temperature of the water after 10 minutes. The results were shown in the table below.

Beaker	Temperature of the water
A	25 °C
B	18 °C

(i) Mr Tan selected Beaker B to keep his drink warm. Did he make a right choice? Explain your answer. (1 m)

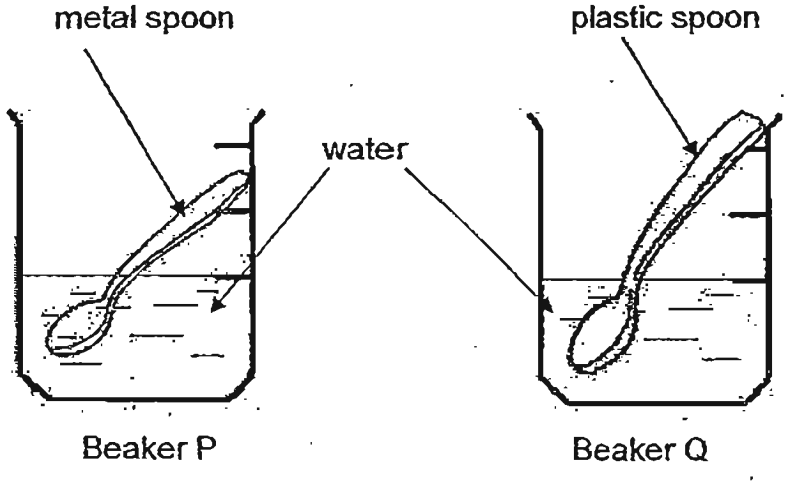
(ii) Mr Tan conducted another experiment and put different amounts of hot water at 50 °C in Beaker A and B as shown below.



Mr Tan said that the water in both beakers have the same temperature and same amount of heat. He is only partly correct. What should the correct statement be? (1 m)

2

(b) An experiment is set up as shown below. The same amount of water is poured into two beakers, P and Q , of similar size and material. A metal spoon is put in beaker P while a plastic spoon is put in beaker Q.

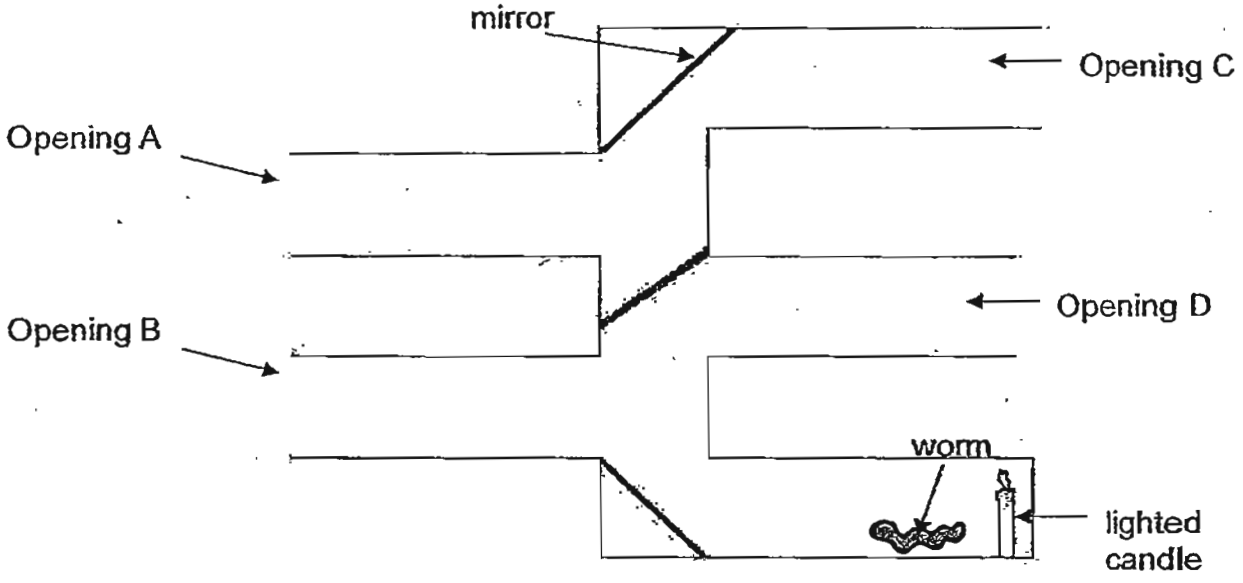


The aim of the experiment is to find out which material of the spoon is a better conductor of heat. Which other variable should remain unchanged in order to conduct a fair test? (1 m)

_____

1

43. Robert carried out an experiment to find out about the reflection of light as shown below. There are four openings, A, B, C and D and three mirrors.



(a) Which opening should Robert place his eyes at in order to see the worm? (1 m)

_____

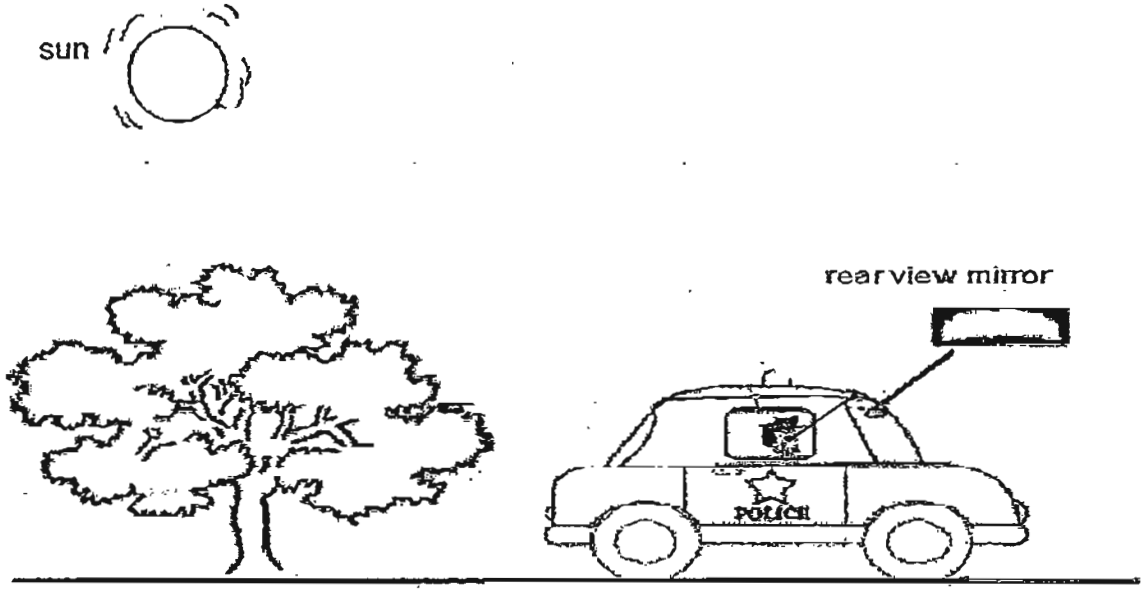
(b) Which properties of light is shown in the above experiment? (1 m)

_____

_____

2

43 A policeman was driving a patrol car and he saw a tree behind him using the rear view mirror in the car.



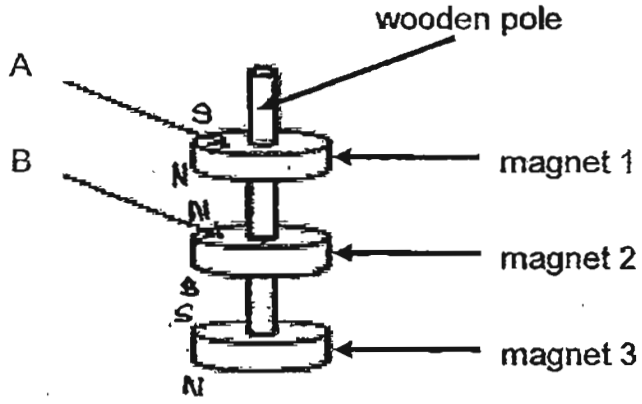
(c) Using lines and arrows, explain how the policeman was able to see the image of the tree on the rear view mirror. (1 m)

(d) Where would the shadow of the car be if the car stopped in the position as shown in the picture above?

Draw a cross (X) in the diagram above to show the position of the shadow.(1 m)

2

44. Look at the picture shown below.



(a) If B represents the N-pole of the magnet, what pole will A be? (1 m)

(b) Explain your answer in part(a). (1 m)

END OF SECTION B
Please check your work carefully.

2

Answer Ke

EXAM PAPER 2011

SCHOOL : RED SWASTIKA
SUBJECT : PRIMARY 4 SCIENCE

TERM : SA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
3	4	2	1	4	4	2	4	3	4	2	1	1	3	3	2	2

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	2	1	3	1	1	4	3	4	2	4	3	3

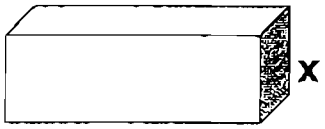
31)a)A: living thing **b)B: non-living thing**

32)a)Mouth **b)Small intestine**

33)a)Egg **b)Pupa**

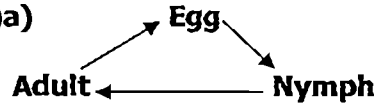
34)a)Laboratory thermometer. **b)14℃**

35)a)force **b)magnetic material**

36)a) 

b)He observed that the cockroaches moved away from the light.
c)The cockroaches prefer a darker living condition and responded/reacted to the increase in light by moving away from the light.
d)To ensure that the box receives light from the opening./ No (other)light coil be reflected, No other parts of the box will reflect light.

37)a)May. At stage Y, the seedling has developed green leaves which allow the plant to make food.
b)As the plant increases in height/ become taller, the size of the seed leaves decrease/ become smaller.
c)At the plant grows taller it, uses the food stored in the seed leaves and sauses the size of the seed leaves to be smaller.

38)a) 

b)There coil be no more seeds or young plants as there will be no adult plant to reproduce seeds to grow into new young plants.

39)a)i)Is it an insect ?/OR Does it have six legs?/3 body parts?/feelers?.
ii)Does it have four stages of life-cycle?.
b)i)14 days.
ii)Egg. It does not fly at this stages. It is found in coater.

40)a)

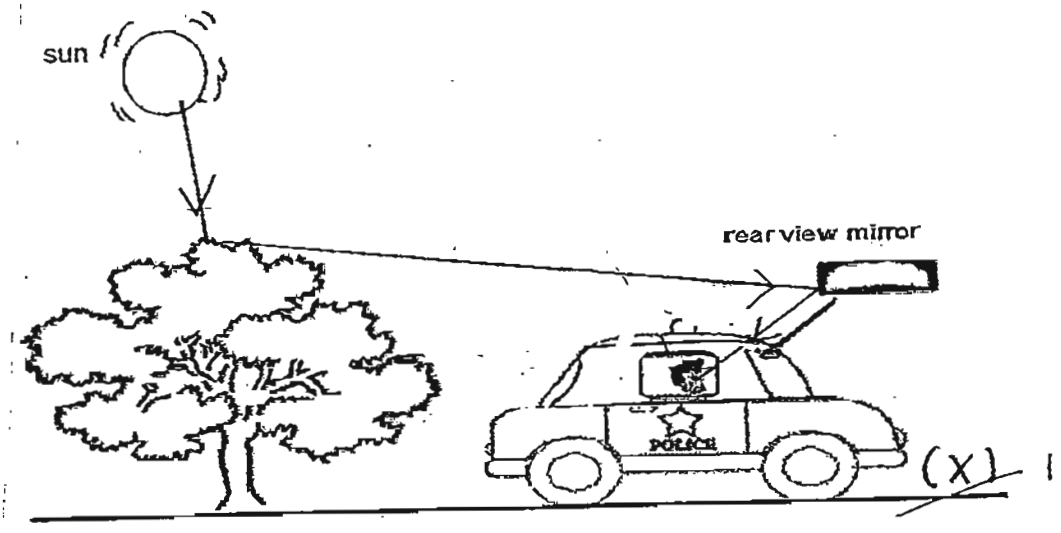
Gas	Liquid	Solid
Wind	Sauce	Frozen ice cream
		Dust

b)The water level would rise. Air escaped from the holes to allow water to enter the cup to take up space.
c)The ink/liquid/water has a definite volume and cannot be compressed hence the plunger cannot be pushed any further.

41)a)P, Q, A, R
b)Material R is a poorer conductor of heat than P but a better conductor of heat than Material Q.
c)i)At first: 60℃
60 minutes later: 28℃
ii)Heat flows from the coater with higher temperature to the water lower temperature until the temperature become the same as the room temperature/temperature of the surroundings.

42)a)i)Yes, he made a right choice. Beaker B is a poorer B is a conductor of heat than Beaker A and it does not allow heat to flow through as easily to melt the ice/less heat flows to melt the ice/allows heat to flow through more slowly.
ii)Both the coater in A and B has the same temperature but the water in A has more heat than water in.
b)Size of the spoon./Temperature of the coater.

43)a)Opening D.
b)Light travel in straight line and can be reflected by a mirror.
C,d)



44)a)A is a South-pole
b)Because B repelled the underside of A and only like poles repelled, so the underside of A is a North-pole, therefore A is a South-pole.