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南侨小学

NAN CHIAU PRIMARY SCHOOL

Semestral Assessment 2

2009

Science Booklet A

Primary Four

Section A	60
Section B	40
Total	100

Name: _____( )

Class: Pr 4 _____

Duration (Booklets A & B): **1 h 45 min**

Date: **5 Nov 2009**

Parent's Signature: _____

Instructions to Pupils:

1. Do NOT open this booklet until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.

*This paper consists of **16** pages altogether.
(excluding this page)

Setter: Mrs Jessy Low

Section A (30 x 2 marks)

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

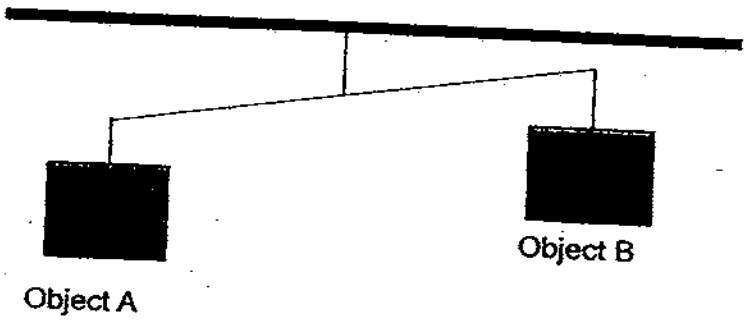
1. Study the table below.

Matter	Non Matter
Air	Heat
Book	Sunlight
X	Y

Which one of the following pairs of items best represents X and Y respectively?

(1) Fire and wine
(2) Water and sand
(3) Wind and shadow
(4) Oxygen and sponge

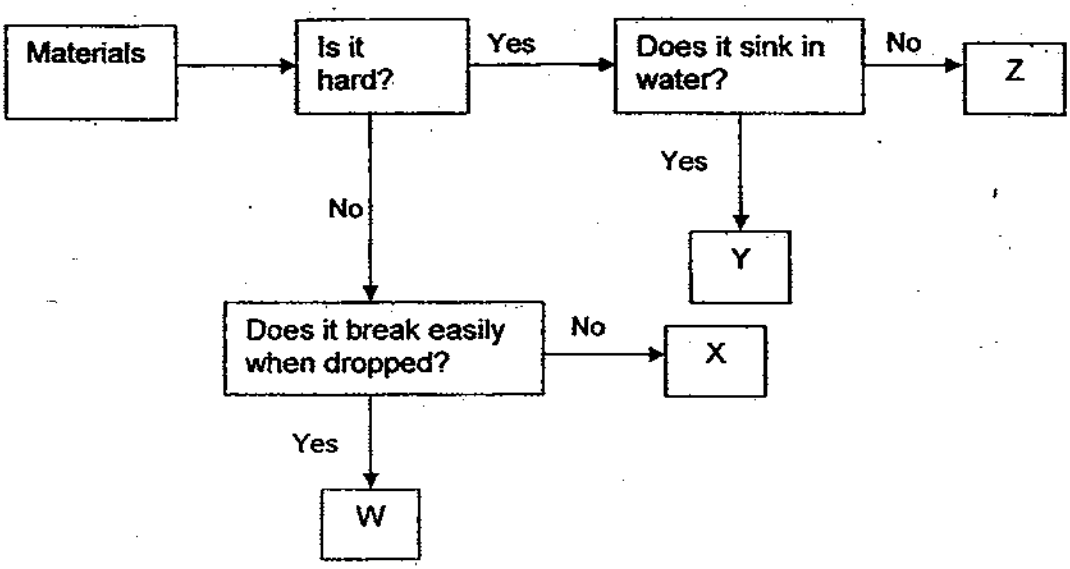
2. Peter placed 2 objects of the same size and shape on a balance. The balance tilted downwards to one side as shown below.



Based on the above, Peter can conclude that _____.

(1) Objects A and B are made of different materials
(2) Object A has mass while Object B does not
(3) Objects A and B occupy different amount of space
(4) Object B can be compressed but Object A cannot

3. Study the flowchart below.

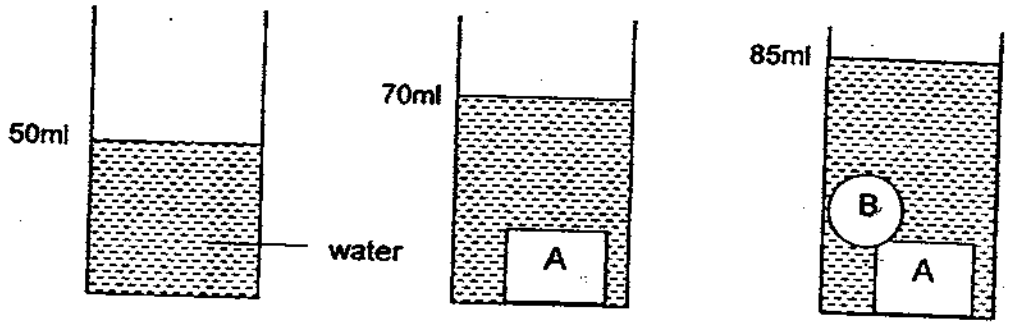


What could X and Y be?

	X	Y
A:	Sponge	50-cent coin
B:	Wooden ruler	Cork
C:	Glass	Handkerchief
D:	Handkerchief	Brick

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

4. Andy placed objects A and B into a beaker of water as shown below. He observed the difference in water level as the objects were put into the water.



Based on the experiment, Andy can conclude that both solids (A and B) and liquid _____.

A: have the same volume
B: have definite volume
C: occupy space
D: have mass

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

5. The adult cockroach and nymph are different in that _____.

A: they do not feed on the same type of food
B: the nymph is smaller than the adult cockroach
C: the nymph has wings but the adult cockroach does not
D: the adult cockroach can reproduce but the nymph cannot

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

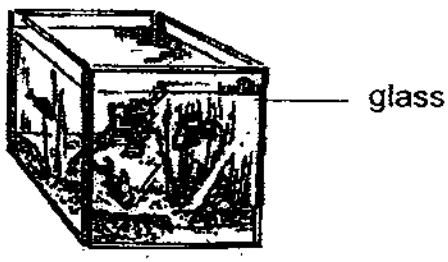
6. Charmaine made some statements about the plant shown below.

Which of the following statement(s) she made was/were correct?

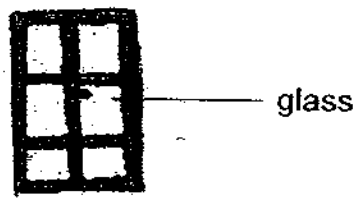
A: It can make food.
B: It cannot move on its own.
C: It has a stem to transport water from the roots.

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

7. Study the diagrams below.



Fish tank



Window pane

Which of the following properties of glass is/are important in the making of fish tanks and window panes?

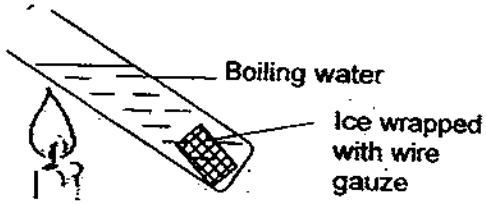
A: Easily breakable
B: Strong
C: Transparent
D: Waterproof

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

8. Which one of the following statements is not a function of the skeletal system?

(1) It supports our body.
(2) It gives shape to our body.
(3) It protects some of our organs.
(4) It helps us to digest our food.

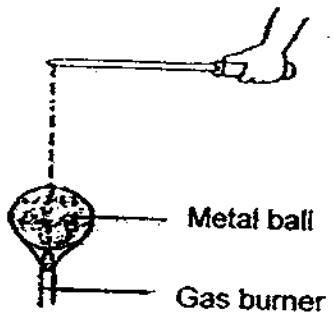
9. Helen carried out an experiment as shown below. She found that the ice at the bottom of the test tube did not melt even though the water at the surface was boiling.



What does this experiment show?

(1) Heat does not travel downwards.
(2) Water is a poor conductor of heat.
(3) The candle flame is not strong enough.
(4) The wire gauze is a poor conductor of heat.

10. The diagram below shows a a metal ball being heated by a gas burner.

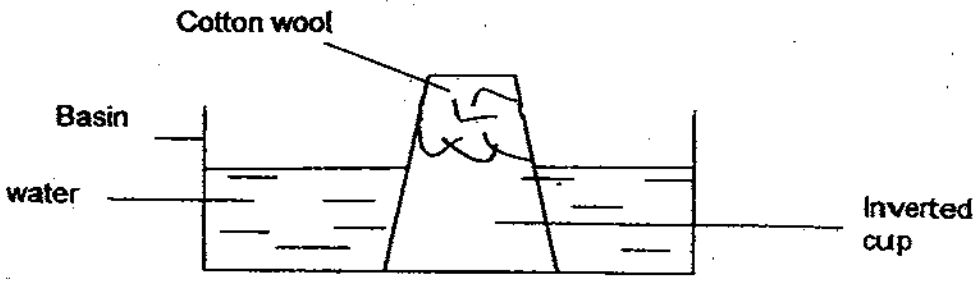


When the metal ball is heated, _____.

A: it expands
B: its mass increases
C: its temperature rises
D: it loses heat to the surrounding

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

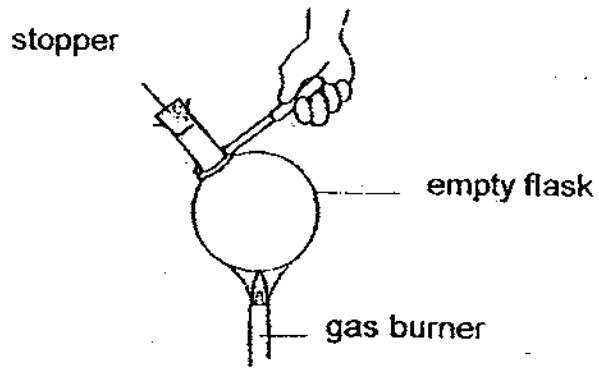
11. Lee Ling pressed a piece of cotton wool onto the bottom of the cup and pushed the inverted cup into the basin of water.



From the experiment, Lee Ling recorded her observation and conclusion. Which of the following are the correct observation and conclusion made by Lee Ling?

	Observation	Conclusion
(1)	The cotton wool was wet	Water takes up space
(2)	The cotton wool was dry	Air occupies space
(3)	The cotton wool was wet	Water has mass
(4)	The cotton wool was dry	Air has mass

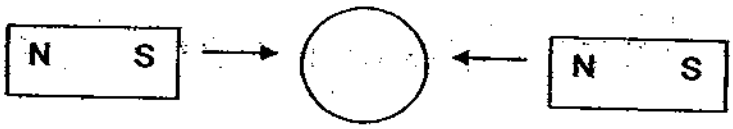
12. An empty round-bottomed flask was heated over a gas burner. The stopper popped out after a while.



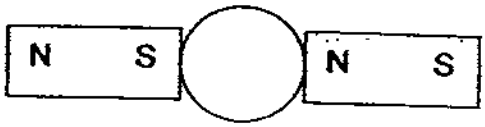
Why did the stopper pop out?

(1) The stopper expanded and popped out.
(2) The air inside the empty flask expanded and pushed the stopper out.
(3) The air inside the empty flask contracted and pushed the stopper out.
(4) The mouth of the flask contracted and pushed the stopper out.

13. A ball was placed in the middle of two magnets as shown below.



When both magnets were moved towards the ball, the ball was attracted to both the magnets.



What could the ball be made of?

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

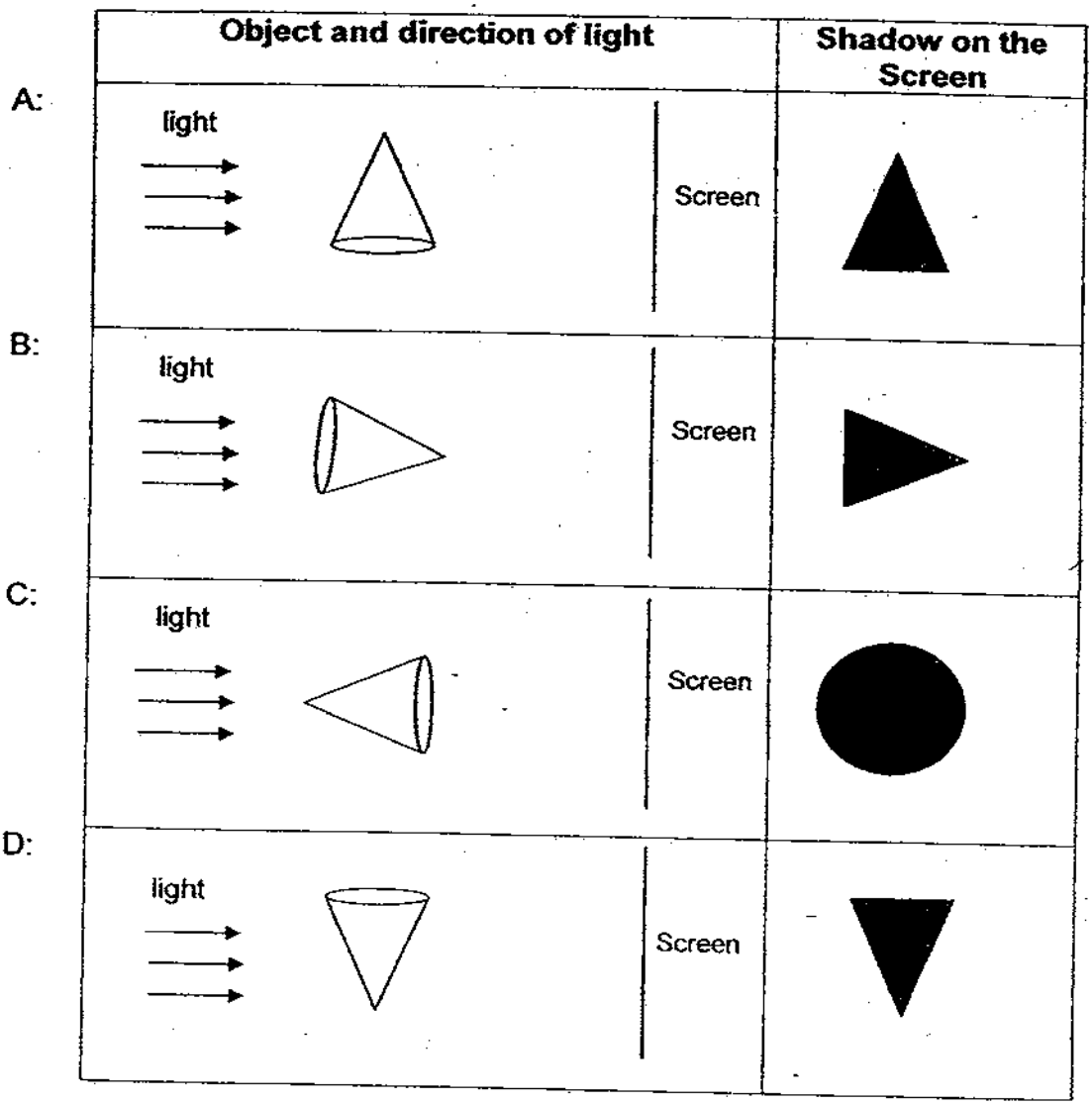
14. Study the classification table below.

Group A	Group B
Silk dress Woollen sweater	Cotton shirt Tyre

Which one of the following objects would you place in Group A?

(1) Magazine
(2) Plastic ruler
(3) Glass bottle
(4) Leather wallet

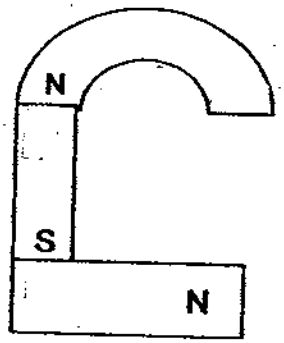
15. Which of the following correctly matches the object to the shadows cast?



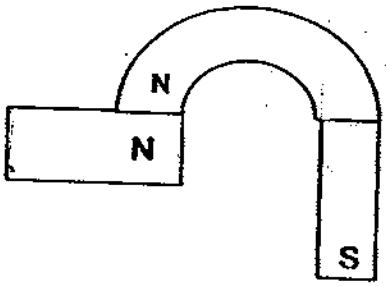
(1) A and B only
(2) B and C only
(3) A, B and D only
(4) A, C and D only

16. Which of the following shows the possible arrangement of the magnets?

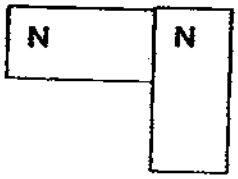
(1)



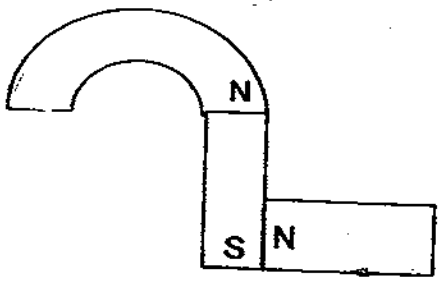
(2)



(3)

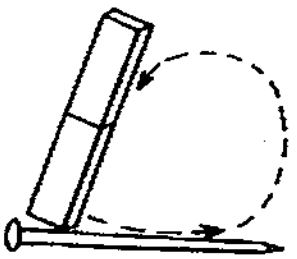


(4)

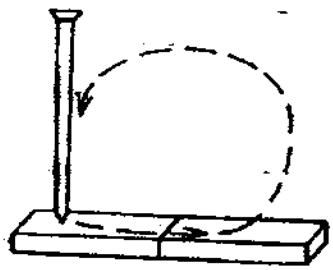


17. Which of the following diagrams shows the correct method of making a temporary magnet?

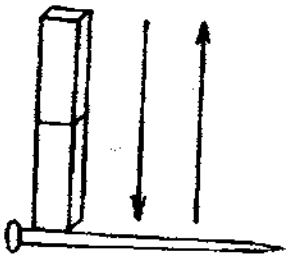
(1)



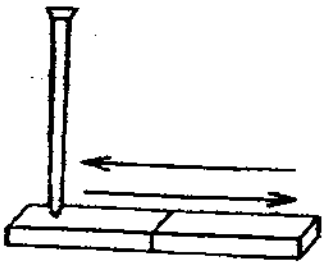
(2)



(3)



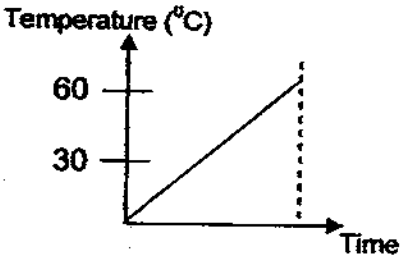
(4)



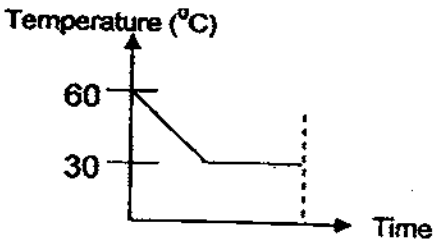
18. A glass of hot water with a temperature of 60°C was left on the table. The room temperature was about 30°C.

Which of the following graphs correctly shows the changes in the temperature of water as it was left on the table overnight?

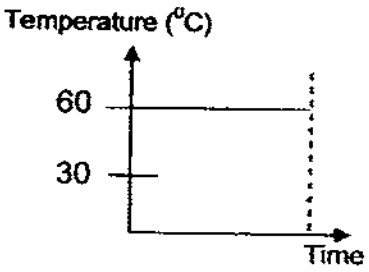
(1)



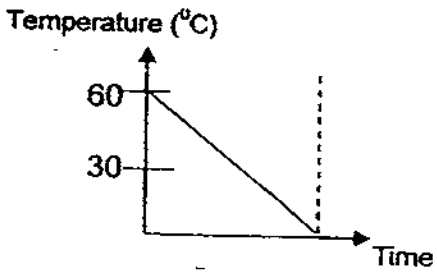
(2)



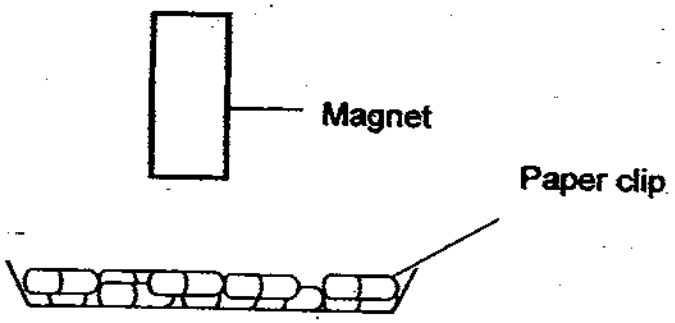
(3)



(4)



19. Alex had 4 different magnets, A, B, C and D. He held the magnets one at a time at the same height above a tray of paper clips as shown below.



He then recorded down the number of paper clips each magnet attracted in the table below.

Magnet	Number of paper clips attracted
A	2
B	4
C	3
D	6

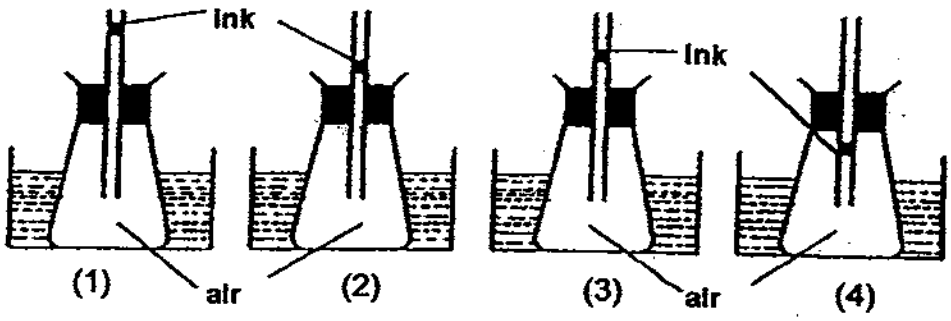
Which of the magnet is the strongest?

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

20. A beaker of ice was left on the table. After a while the ice started to melt. Which statement below describes what took place in the process of melting?

(1) The ice lost heat and melted.
(2) The ice gained heat and melted.
(3) The beaker gained heat and melted the ice.
(4) The surrounding gained heat and melted the ice.

21. Four conical flasks were placed into four basins of hot water. The water in each basin was at different temperatures. Which basin of water had the highest temperature?



22. Sam brought the north pole of Magnet A near four objects (W, X, Y and Z). He then repeated the experiment by bringing the south pole of Magnet A near the four objects.

The table below shows the results of his experiment.

Object	Attracted to Magnet A	Repelled by Magnet A
W	Yes	No
X	Yes	Yes
Y	No	No
Z	No	No

Based on the above, Object(s) _____ is/are magnet(s).

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

23. X, Y and Z represent the three states of matter.

X	Y	Z
Definite volume, Definite shape	Definite volume, No definite shape	No definite volume, No definite shape

The changes in the state of water are shown below.

water → ice → water → steam

Which of the following correctly represents the changes in the state of water as shown above?

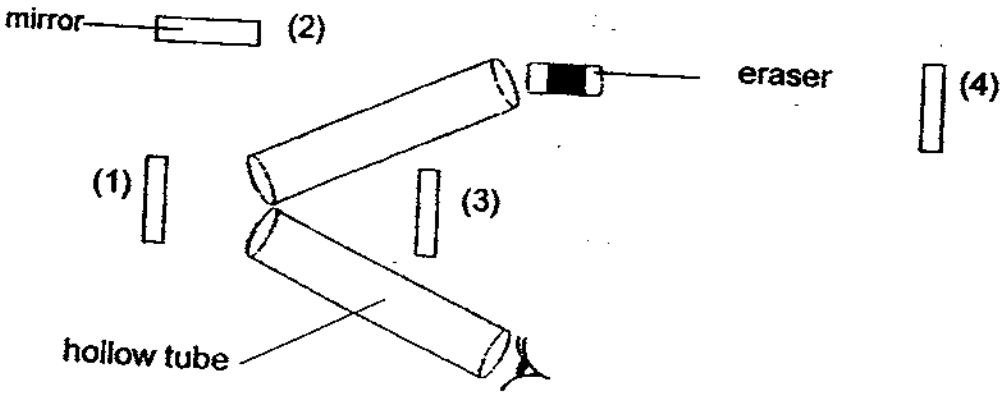
(1) X → Y → X → Z

(2) Z → Y → Z → X

(3) X → Y → Z → Z

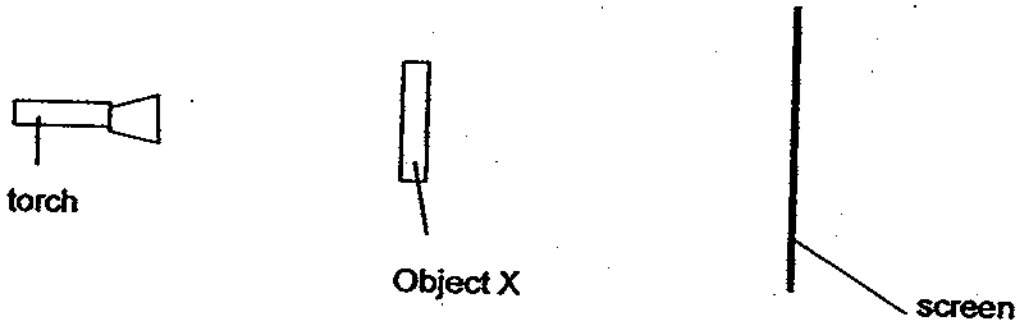
(4) Y → X → Y → Z

24. The diagram below shows 2 hollow tubes. Mirrors were placed at different positions. At which location should the mirror be placed so that the eraser could be seen?

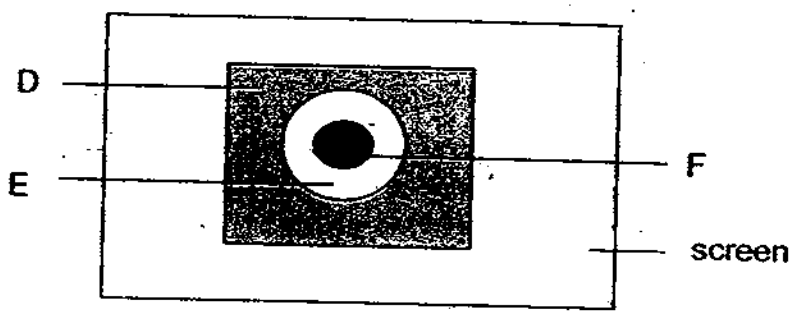


QUESTION 25

25. Study the diagram below.



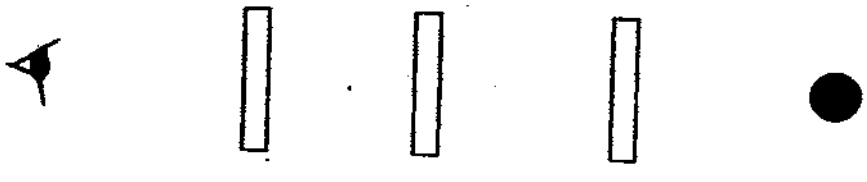
When the torch is switched on, the following was seen on the screen.



Which of the following would parts, D, E and F, most likely be?

	Part D	Part E	Part F
(1)	Clear Plastic	Cardboard	Tracing Paper
(2)	Cardboard	Frosted Glass	Clear Plastic
(3)	Tracing paper	Clear Plastic	Cardboard
(4)	Cardboard	Clear Plastic	Tracing paper

26. Gina had three sheets of materials, P, Q and R. She noticed that when she placed the ball at the end of the three sheets, she could not see the ball. However, when she placed the ball in between sheets P and Q, she could see the ball clearly.



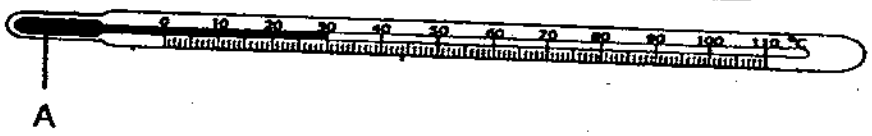
Based on the above, which of the following most likely describes materials P, Q and R?

	P	Q	R
(1)	Opaque	Transparent	Not possible to tell
(2)	Opaque	Opaque	Transparent
(3)	Transparent	Not possible to tell	Opaque
(4)	Not possible to tell	Transparent	Transparent

27. Which of the following is a good conductor of heat?

(1) Ceramic cup
(2) Plastic spoon
(3) Stainless steel fork
(4) Wooden chopstick

28. Part A helps to read the temperature. It _____ when heated.



(1) contracts
(2) evaporates
(3) expands
(4) melts

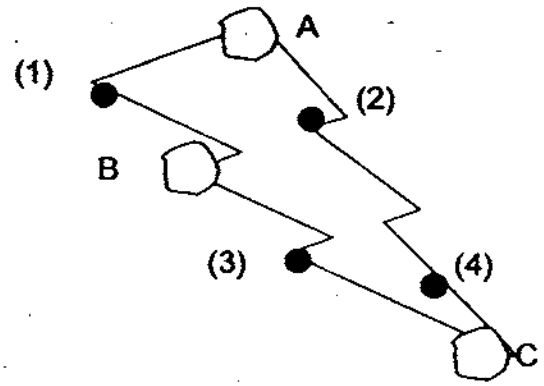
29. Jimmy divides his bar magnet into four parts and records the number of paper clips each part attracts in the table below.

Parts of a magnet	A	B	C	D
Number of paper clips each part attracts	10	9	4	2

Based on the table, the two poles of the bar magnet are most likely to be at _____.

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

30. Three blobs of wax, A, B and C, were placed on different parts of a metal plate shown below.



Blob C melted, followed by Blob B and then finally Blob A. Where was the source of heat on the metal plate?

~~~~~ *End of Section A* ~~~~~
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NAN CHIAU PRIMARY SCHOOL

Semestral Assessment 2

2009

Science Booklet B

Primary Four

Name: _____( ) Marks: 40

Class: Pr 4 _____ Duration (Booklets A & B): 1 h 45 min

Date: 5 Nov 2009 Parent's Signature: _____

Instructions to Pupils:

1. Do NOT open this booklet until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.

*This paper consists of 14 pages altogether.
(excluding this page)

Setter: Mrs Jessy Low

Section B: (40 marks)

For question 31 to 44, write your answers in the space provided.

31. The diagram shows the skeleton of an animal.

For each of the statements below, decide if it is "True" or "False" or "Not Possible to Tell" and tick (√) in the correct column provided.

	Statements	True	False	Not Possible to Tell
(a)	The animal has a tail.			
(b)	The animal is a mammal.			
(c)	The animal does not have a ribcage.			
(d)	The animal gives birth to young alive.			

(2m)

32. Wei Ming made a hole in a can of condensed milk as shown below.

He tried pouring the milk out but found that it flowed out very slowly.

(a) Without opening the can, suggest a way to allow the condensed milk to flow out faster.

_____

(1m)

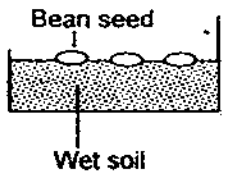
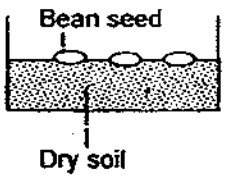
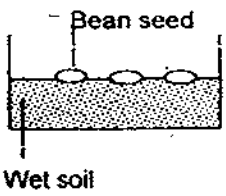
(b) Explain how your suggestion in (a) would enable the milk to flow out faster.

_____

_____

(1m)

33. Danny set up the experiment below to test the conditions needed for bean seeds to germinate.

Placed in the refrigerator	Placed in a dark room	Placed next to an open window
		
Setup A	Setup B	Setup C

(a) Danny observed that seeds germinate only in one setup. Identify the setup.

_____

(1m)

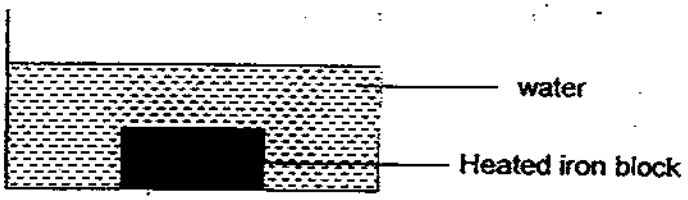
(b) Explain why the seeds did not germinate in the other two setups.

_____

_____

(1m)

34. Janet heated an iron block to 90^0C. She then put the iron block into a basin containing water at 50^0C.

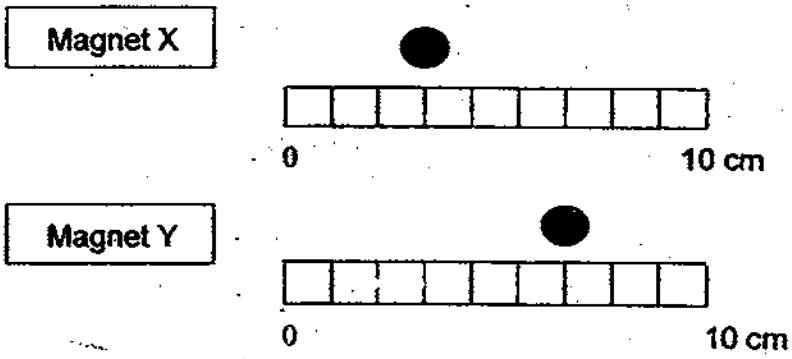


Complete the table below by stating whether there was an increase or decrease in temperature and explain clearly what caused the change in temperature.

		Change in temperature (state whether increase or decrease)	**Explain what caused the change in temperature**
(a)	Water		
(b)	Iron block		

(3m)

35. Jenny was given two magnets, X and Y, a ruler, and a nickel coin. She discovered that Magnet X was able to attract the coin when it was 4 cm away while Magnet Y could attract the same coin when it was 7 cm away.



(a) Which magnet, X or Y is stronger?

_____

(1m)

(b) Explain your answer in (a).

_____

_____

(1m)

36(a) Luke placed a metal cube into a glass beaker and it fitted into the glass beaker tightly, as shown in Diagram A. He then heated the glass beaker over a strong flame as shown in Diagram B.

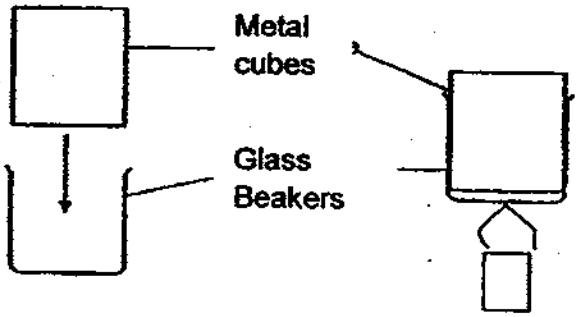


Diagram A

Diagram B

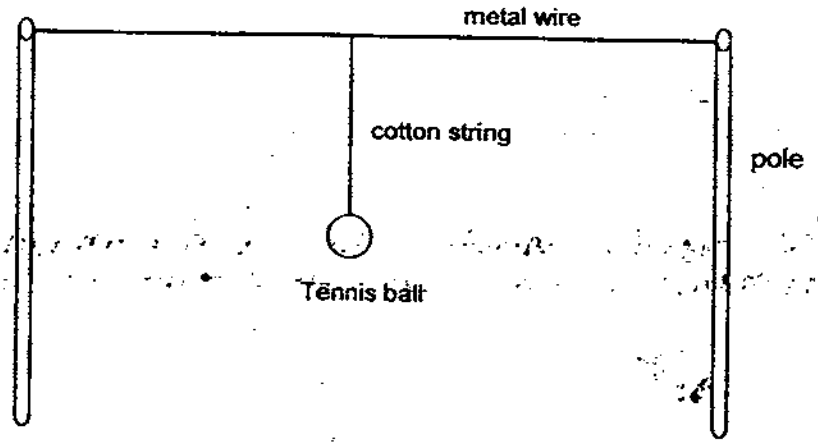
The glass beaker cracked after being heated for 15 minutes. What is the reason for this?

_____

_____

(1m)

36(b) Luke hung a tennis ball on a metal wire in the school field.



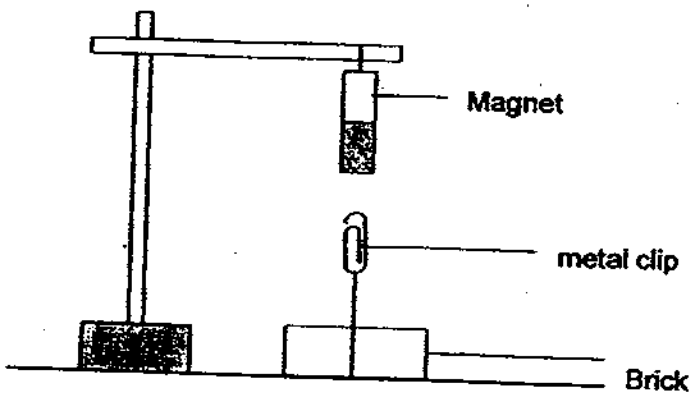
He observed that after two hours in the hot sun, the metal wire became longer and the tennis ball was lowered. If a cotton rope was used instead of the metal wire, would his observations be the same? Give the reason for your answer.

_____

_____

(1m)

37. Xavier carried out the following experiment. He observed that the metal clip appears to "float in the air". His teacher told him that the metal clip appears to "float in the air" as it was attracted by the magnet.



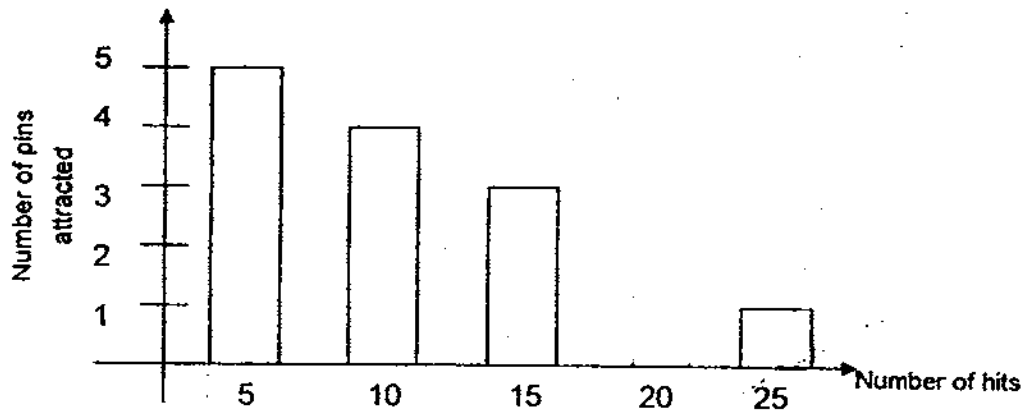
(a) What would happen to the metal clip if Xavier placed a plastic sheet between the magnet and metal clip?

(1m)

(b) What is the reason for your answer in (a)?

(1m)

37(c) Xavier then conducted another experiment to find out how the strength of a magnet is affected when it was hit by a hammer. He counted the number of times a magnet was hit and counted how many pins it could pick up after being hit. He plotted the results in the graph below.



(i) Complete the graph above to show the number of pins attracted when Xavier hits the magnet 20 times. (1m)

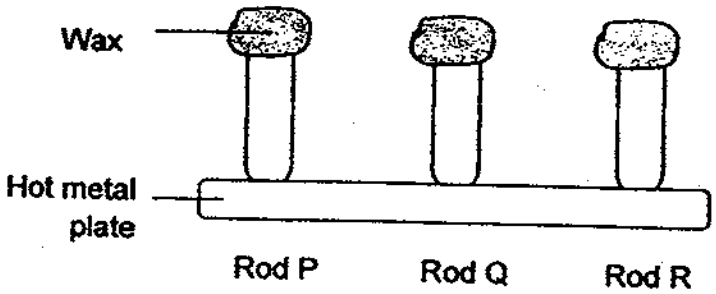
(ii) What is the relationship between the strength of the magnet and the number of times the magnet was hit?

_____

_____

(1m)

38. Jun Kai sets up an experiment using three rods, P, Q and R. The rods are made of iron, glass and clay. The three rods were placed on a hot metal plate. The wax on Rod Q melted and dripped off first followed by Rod R and finally Rod P.



(a) Which material is Rod Q made of?

_____

(1m)

(b) Explain your answer in (a).

_____

_____

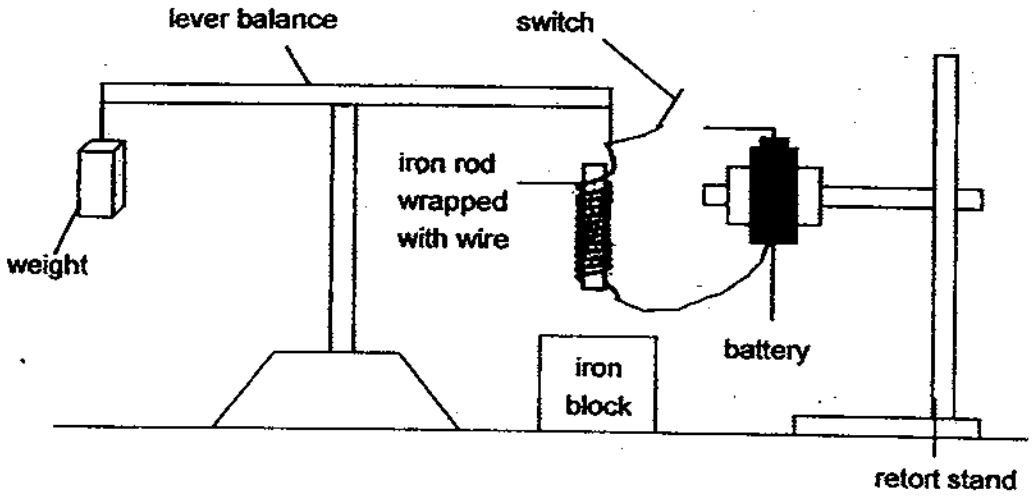
(1m)

(c) For the experiment to be a fair test, which of the following variables has/have to be kept the same? Put a tick (√) next to the variable(s) that has/have to be kept the same.

- ☐ Length of the rod
- ☐ Size of the wax
- ☐ Material of the rod
- ☐ Colour of the rod

(1m)

39. Study the diagram below carefully. The lever balance has a weight tied to one end while the other end is tied to an iron rod.



(a) What would happen to the lever balance when the switch is closed?

(1m)

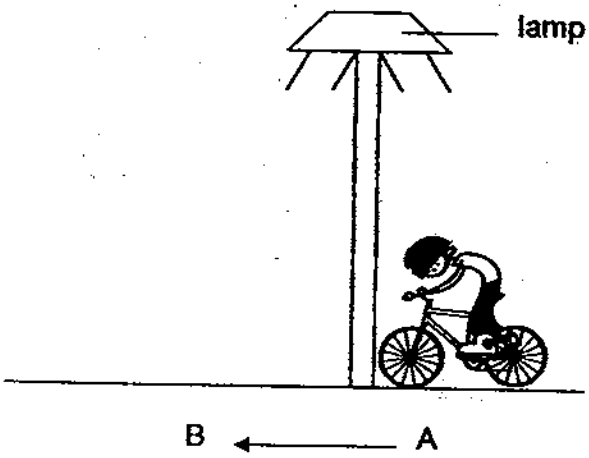
(b) Explain your answer in (a)

(1m)

(c) What would happen to the lever balance if the iron rod is replaced with a copper rod? Give the reason for your answer.

(1m)

40. Abel was cycling along the track at night. There were lamps along the track to help Abel see well. He noticed that the length of his shadow changes as he cycles from A to B.



(a) What was the light source?

_____

(1m)

(b) Describe how the shadow changes from A to B.

_____

_____

(1m)

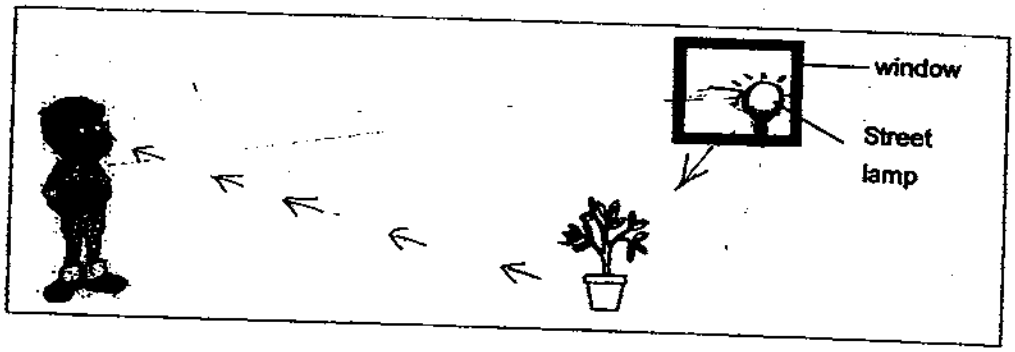
(c) Explain how shadows are formed.

_____

_____

(2m)

41. John entered a room which was dark except for the light from a street lamp coming through a small opened window.



(a) John was able to see the pot of plant. Explain how he was able to do so.

_____

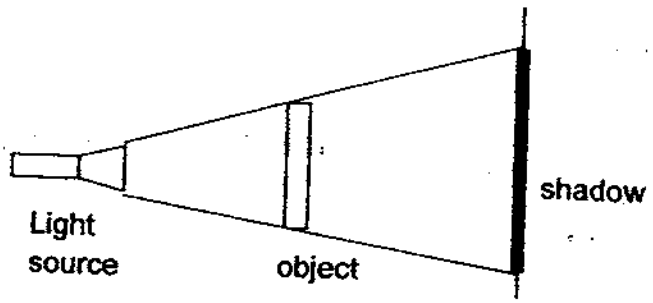
_____

(1m)

(b) On the diagram above, use arrows to show the path of light that enabled John see the plant.

(1m)

(c) Study the diagram below.



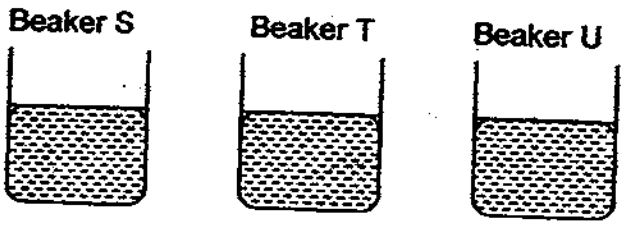
Using the same light source and object, suggest two ways to form a bigger shadow.

(i) _____

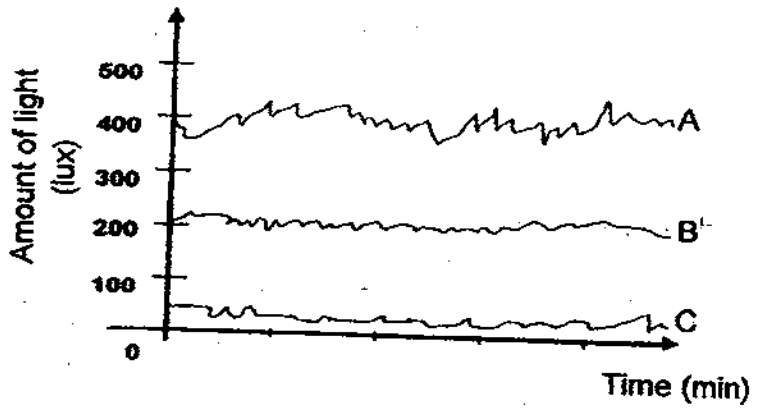
(ii) _____

(2m)

42. The beakers below contain water from three different sources, tap water, muddy pond water and rain water.



Using a datalogger, Jim measured the light intensity reading of the 3 beakers of water and plotted the graphs below.



(a) Which line graph would most likely represent the water from the muddy pond?

_____

(1m)

(b) Explain your answer in (a).

_____

_____

(1m)

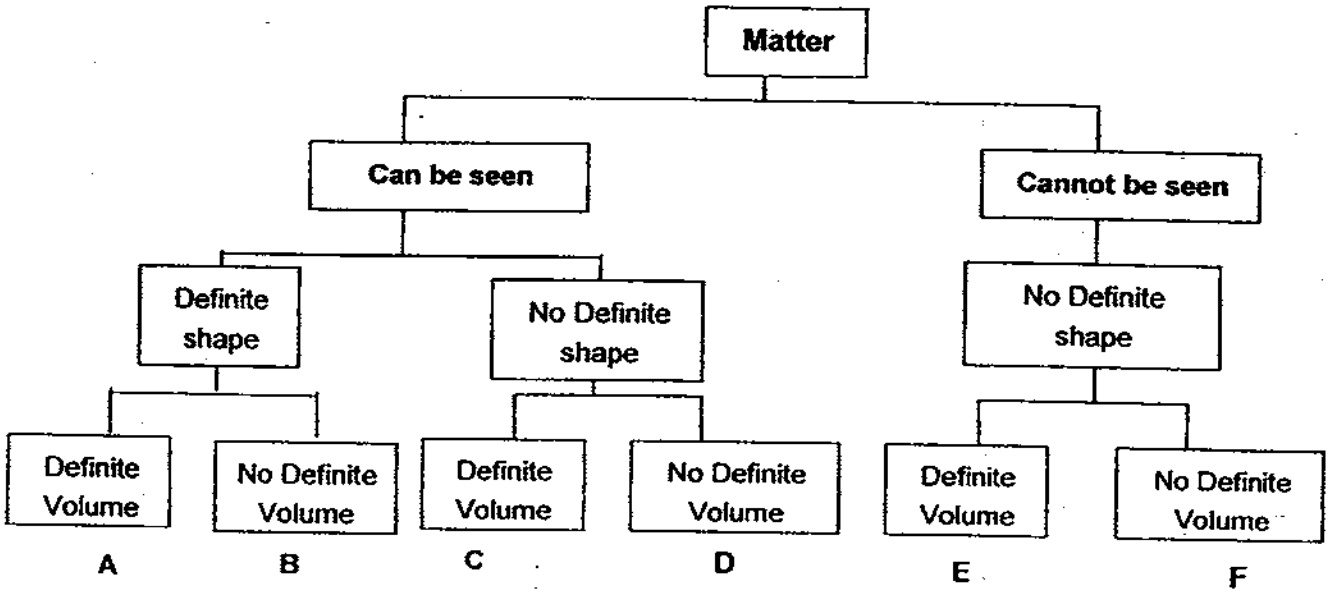
(c) There were few plants growing in the muddy pond. What was the reason for this?

_____

_____

(1m)

43. Study the classification chart below.



(a) What are the characteristics of B?

_____

_____

(1m)

(b) C and F are both matter. State another similar characteristic of C and F.

_____

(1m)

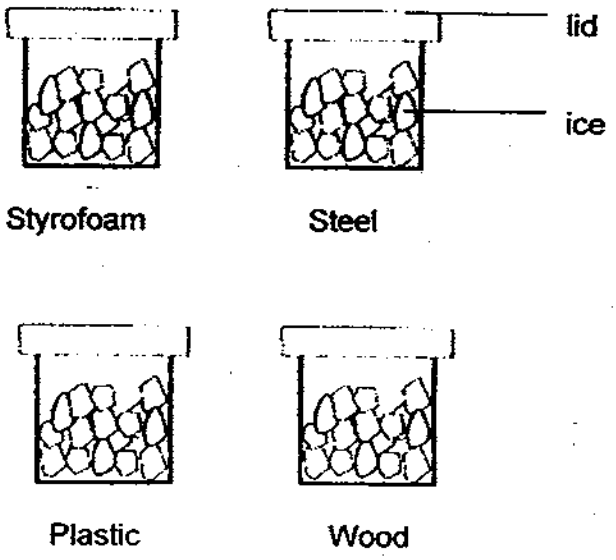
(c) Using the classification chart above, write down the letter that represents the following:

Air: _____

Coffee: _____

(1m)

44. Mrs Goh set up the experiment shown below to find out which container is the best conductor of heat. She placed 500g of similar size ice cubes into four containers, A, B, C and D, which were made of different materials. The containers were of the same size and thickness.



After 30 minutes, she took out the remaining ice cubes and measured the amount of water in each container.

(a) From which container would she get the most amount of water?

_____

(1m)

(b) Explain your answer in (a).

_____

_____

_____

_____

(2m)

~~~End of Section B~~~

ANSWER SHEET

EXAM PAPER 2009

SCHOOL : NAN CHIAU PRIMARY
SUBJECT : PRIMARY 4 SCIENCE

TERM : SA2

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

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

31)a)T b)Not c)F d)Not

32)a)He can make more holes on the can.
b)The air can enter the can through the first hole to occupy the space in the can, pushing milk out through the second hole.

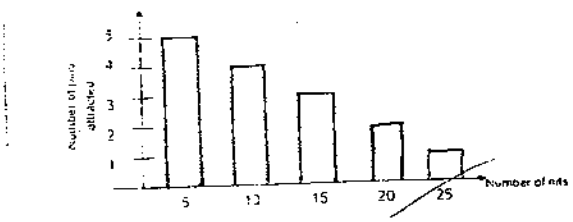
33)a)Setup C.
b)Setup A do not have warmth while B do not have water.

34)a)increase→Water gained heat from the iron water.
b)decrease→Iron block lost heat to the water.

35)a)magnet Y.
b)Y can attract the coin at the further distance.

36)a)The metal will expand faster than the glass beaker.
b)No. Cotton is a poor conductor of heat, the rope will not expand as much and the ball will only be lowered slightly.

37)a)The metal clip will also "float in the air".
b)The plastic sheet is a non-magnetic object and magnetic force can pass through it.
c)i)



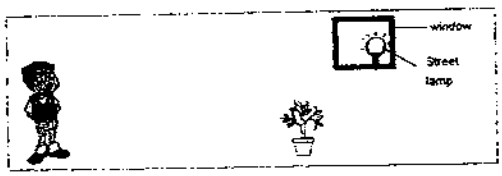
37)ii)The more hits on the magnet the weak the magnet.

38)a)Iron.
b)Rod Q took the shortest time to melt the wax.
c)Length of the rod. Size of the wax.

39)a)The lever balance will tilt down wards the iron rod.
b)The iron become an electromagnet when the switch closed and pulls towards the iron block.
c)The lever will remain balanced.

40)a)Light.
b)At A the shadow is shorter as compared to the shadow at B which is longer.
c)Light travel in straight line and when the light is block by an object the shadow will formed.

41)a)The light from the lamp fell on the plant and is reflected to John's eyes.
b)



c)i)Move the object nearer to the light source.
ii)Move the light source nearer to the object.

42)a)Line graph C.
b)The reading for Group C is the largest showing that, the amount of light passing through was the least.
c)very little liquid passes through the muddy water so plant cannot make its own food.

43)a)It can be seen have definite shape and no definite volume.
b)They both has no definite shape.
c)Air: F Coffee: C

44)a)Seed.
b)Steed is the best conductor of hest hence it can transfer heat from the surrounding to the ice cubes the faster test.