Name:_____(  )

Class: Primary 4 _____

# CHIJ ST NICHOLAS GIRLS' SCHOOL

SIMPLE IN VIRTUE

STEADFAST IN DUTY

德 纯 义 学

## Primary 4
## Second Semestral Assessment – 2009
## SCIENCE

### BOOKLET A

2nd October 2009

**Total Time for Booklets A and B: 1 hour 45 minutes**

**30 questions**
**60 marks**

**This paper consists of 15 printed pages.**

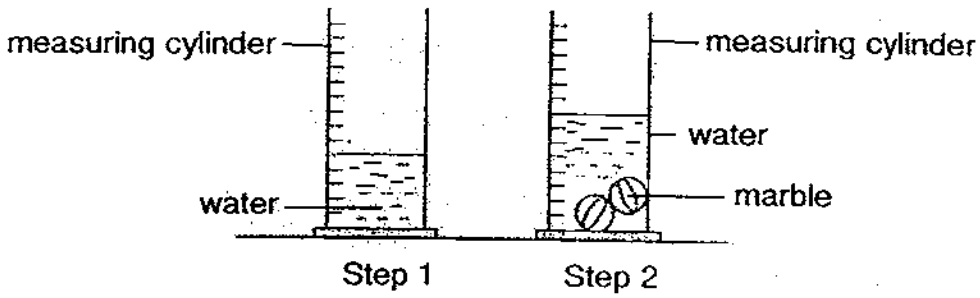
**Do not open this booklet until you are told to do so.**
**Follow all instructions carefully.**
**Answer all questions.**

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**Section A : ( 30 x 2 MARKS )**

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

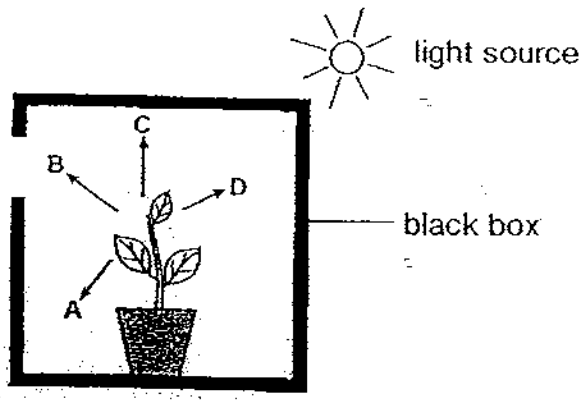
1. James conducted an experiment using water, a measuring cylinder and two marbles as shown below.




Which one of the following conclusions can James make from the experiment?

(1) Water is transparent.
(2) Water occupies space.
(3) Marbles has a definite mass.
(4) Marbles have a definite volume.

2. The diagram below shows a potted plant which was placed in a black box with a small hole for 2 weeks.



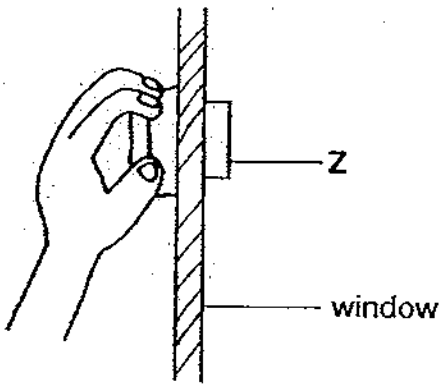

Which direction, A, B, C or D, will the plant grow towards?

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



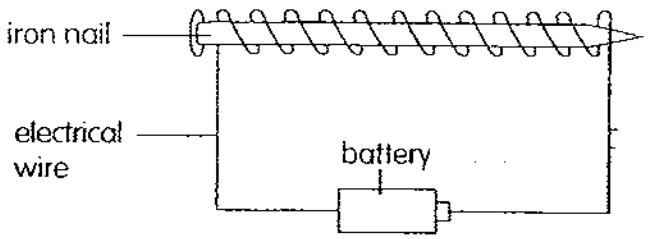
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3. Samuel used object Z to clean windows. Object Z is wrapped with a piece of cloth. If he was holding a piece of magnet, name the object that material Z could be used to make?




(1) Table cloth
(2) Toothbrush
(3) Electrical wire
(4) Classroom whiteboard

4. The diagram shows a temporary magnet.




Which of the following factors will affect the strength of the temporary magnet?

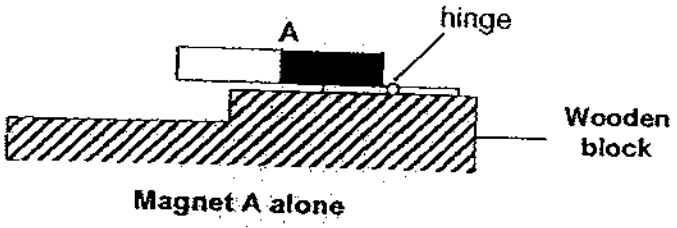
A The size of the battery.
B The colour of the wire used.
C The number of batteries used.
D The number of turns of the wire around the nail.

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

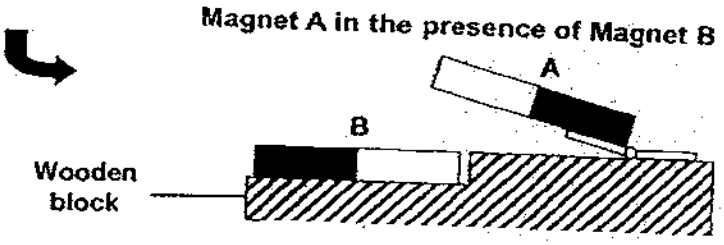


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5. Study the diagrams below. A hinge is fixed onto a piece of wooden block. A hinge is a flexible device that allows the turning or pivoting of a part, such as a door or lid, on a stationary frame.




Magnet A alone

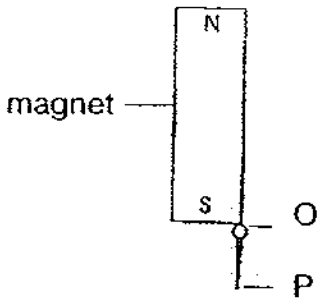



What is/are the effects of magnets as demonstrated in the experiment above?

A Magnetic force of repulsion
B Magnetic force of attraction
C Magnetic force can act from a distance
D Magnetic force of repulsion and attraction

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

6. A pin was magnetized by a bar magnet as shown in the diagram below.




Which of the following correctly states the poles of O and P?

| | Poles of O | Poles of P |
|---|---|---|
| (1) | North | South |
| (2) | South | North |
| (3) | North | North |
| (4) | South | South |

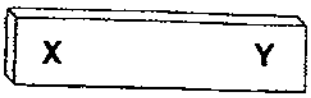


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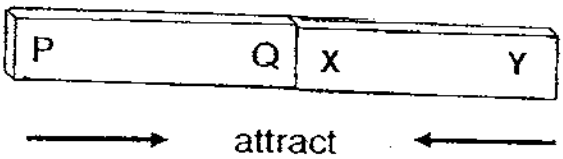
7. Which one of the following statements is true?

(1) All eggs are protected by a hard shell.
(2) All living things reproduce by laying eggs.
(3) All animals go through a 3-stage life cycle.
(4) A life cycle stops when the adult dies before it reproduces.

8. XY is an iron bar which was made into a temporary magnet by magnet PQ.

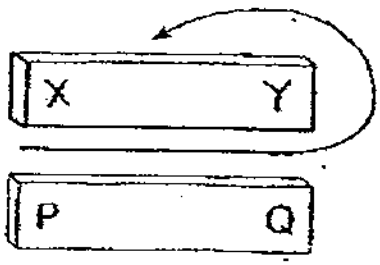



When XY was brought near magnet PQ, both magnets attract as shown below.

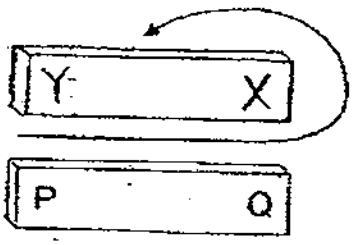



Which one of the following diagrams shows how XY was magnetized?

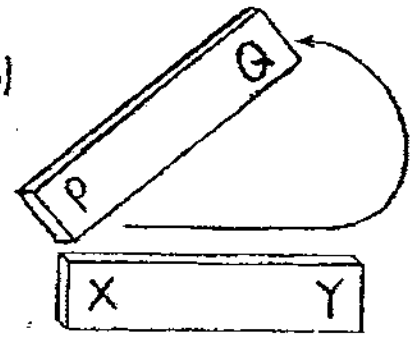
(1)



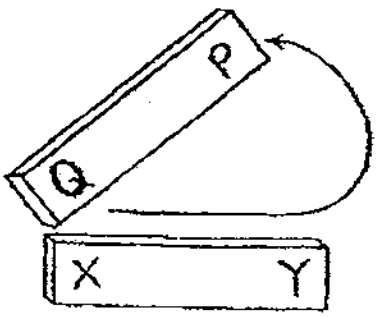

(2)




(3)



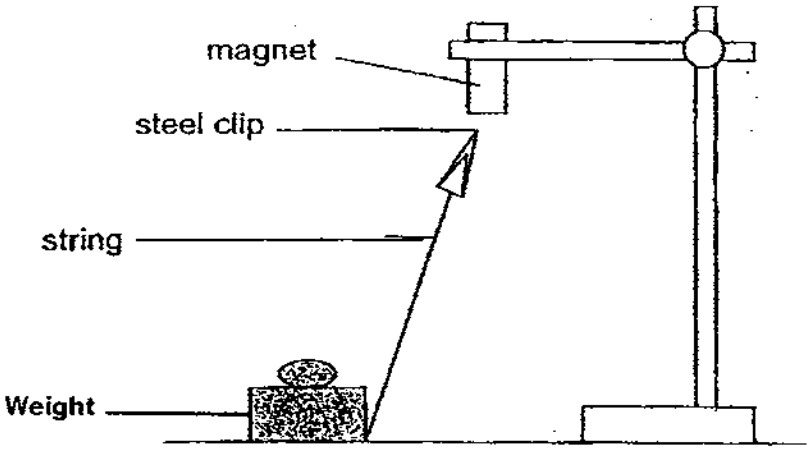

(4)






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9. Beatrice sets up an experiment as shown below.




Some pieces of materials are placed carefully between the magnet and the paper clip. Which of the following will **not** cause the paper clip to fall?

(1) Iron sheet
(2) Nickel sheet
(3) Cobalt sheet
(4) Aluminum sheet

10. Study the classification table below carefully.

| Characteristics | Animal X | Animal Y |
|---|---|---|
| Lay eggs | Yes | Yes |
| Feed on plants | Yes | Yes |
| Has a three-stage life cycle? | No | Yes |
| Is a pest in one or more of its stages in its life cycle? | Yes | Yes |

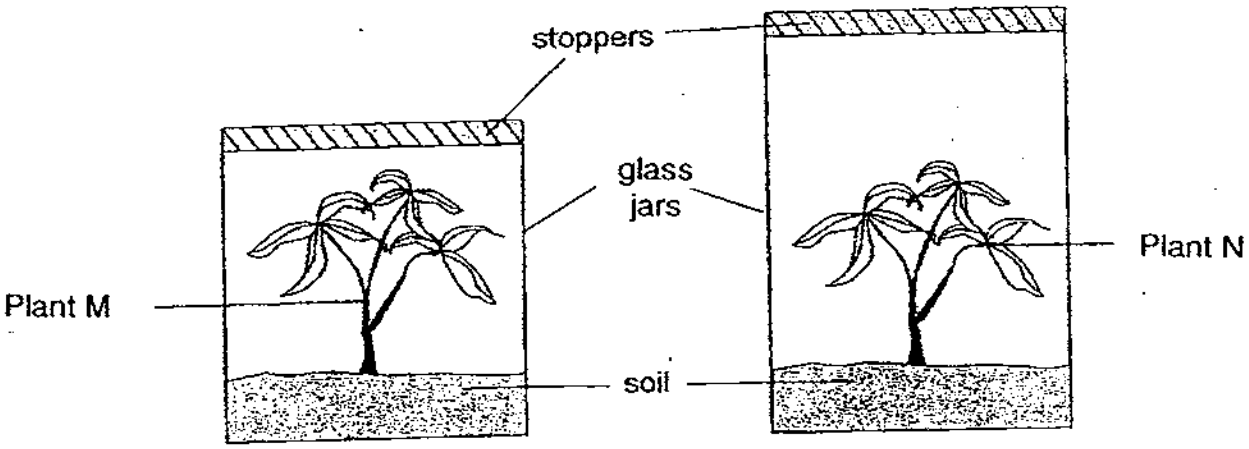
Which of the following correctly name the animals as described above.

| | Animal X | Animal Y |
|---|---|---|
| (1) | Butterfly | Grasshopper |
| (2) | Earthworm | Dragonfly |
| (3) | Grasshopper | Butterfly |
| (4) | Ladybird | Grasshopper |



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11. Peter set up an experiment by putting two similar plants, M and N in two glass jars of different sizes as shown below.

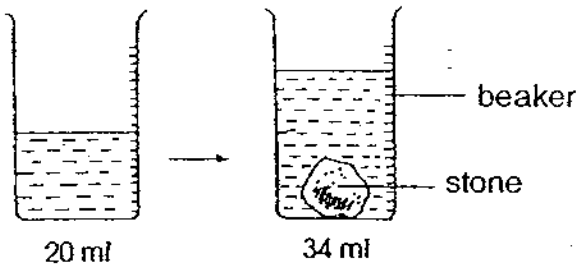



The two plants were watered before putting on the stoppers. The two jars were placed near a window. He made some observations on the appearance of the two plants over a month.

The objective of the experiment is to find out if the _____.

(1) bigger jar allows plant N to grow taller
(2) stoppers allowed light to pass through
(3) smaller jar has more nutrients for the plants
(4) stopper prevented plant pest from harming the plants

12. Which one of the following statements describes the aim of the experiment below?

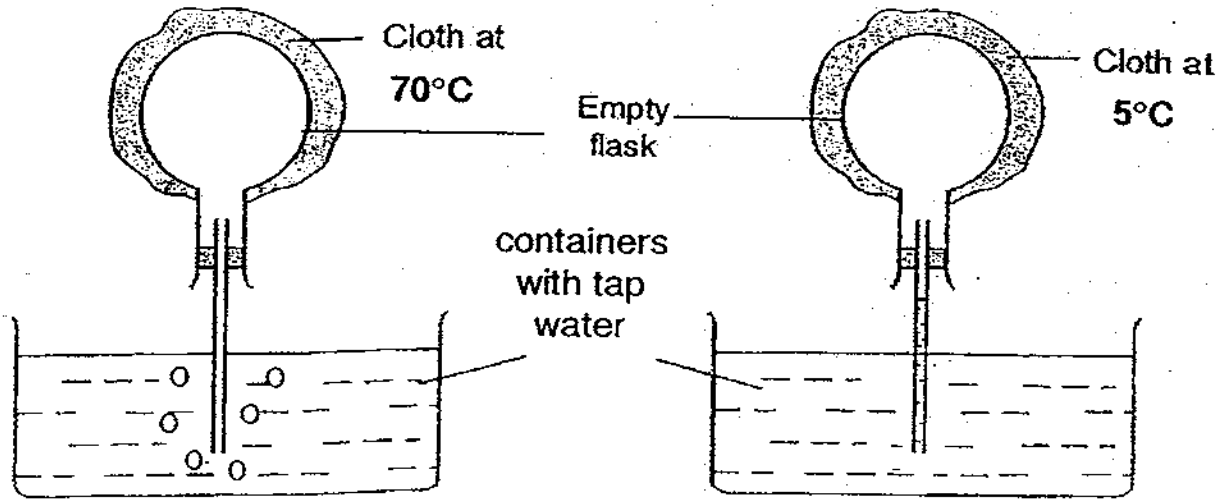



(1) To find the volume of the beaker.
(2) To find the volume of the stone.
(3) To find the volume of the water.
(4) To find the mass of the stone.



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13. An empty flask fixed with a glass tube is wrapped with a piece of warm cloth. It is being inverted with its glass tube placed in the tap water as shown below. 5 minutes later, a piece of cold cloth replaced the warm cloth.




Start of the experiment

After 5 minutes

Which one of the following observations can be made 2 minutes later after the piece of warm cloth was replaced by the cold cloth?

(1) More bubbles come out from the glass tube.
(2) The tap water level in the container increases
(3) Water will enter the flask through the glass tube.
(4) The tap water level in the container will not change.

14. At which stages of the life cycle of the mosquito are the easiest to kill them to prevent them from spreading diseases?

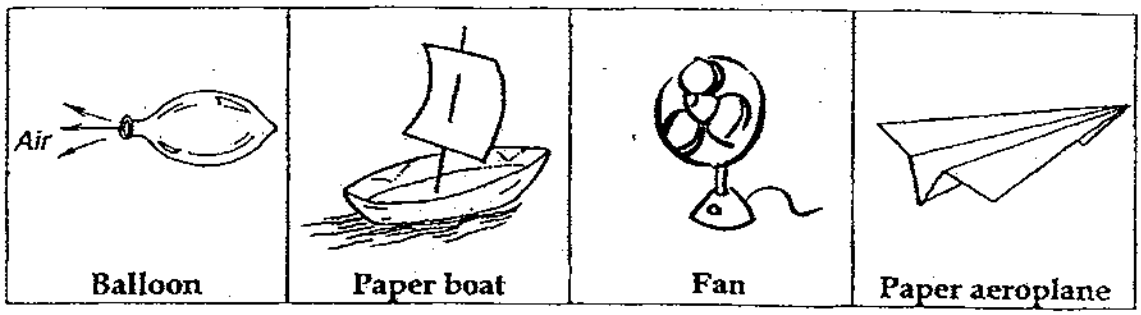
A Egg
B Larva
C Pupa
D Adult

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



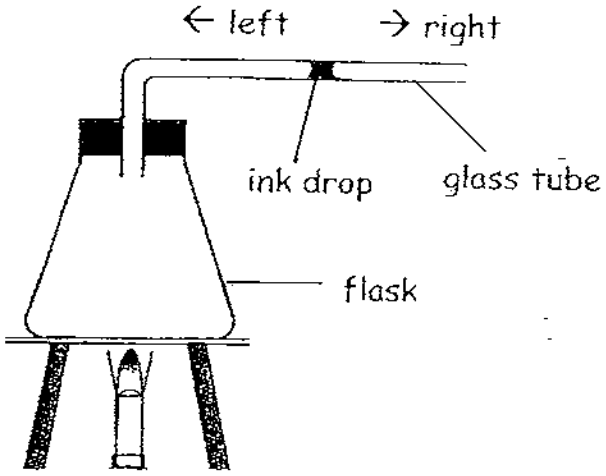
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15. Study the objects below. Which objects use compressed air to work or move?




(1) Fan
(2) Balloon
(3) Paper boat
(4) Paper aeroplane

16. The diagram shows a flask fixed with a glass tube. Air is trapped in the flask by an ink drop. When the flask is heated, the ink drop moves to the _____.

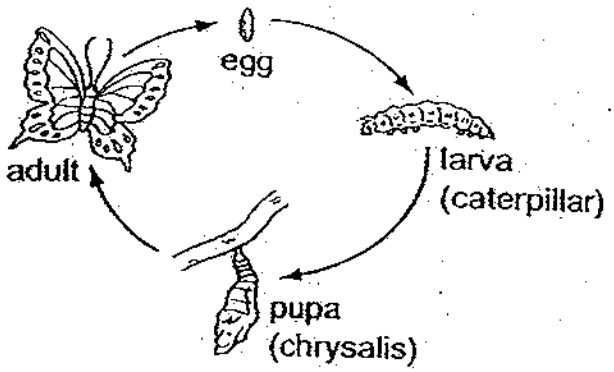



(1) left as the heated air in the flask expands
(2) left as the heated air in the flask contracts
(3) right as the heated air in the flask expands
(4) right as the heated air in the flask contracts



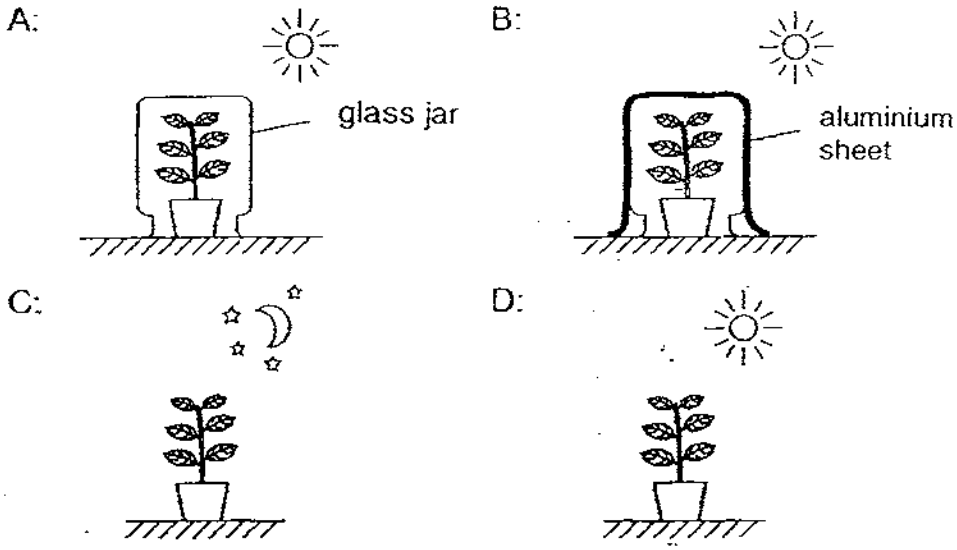
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17. The diagram below shows the life cycle of a butterfly. At which stage is the butterfly considered useful to the gardener?




(1) Egg
(2) Larva
(3) Pupa
(4) Adult

18. Observe the following set-ups. In each set-up, a pot of plant was given a different environment.



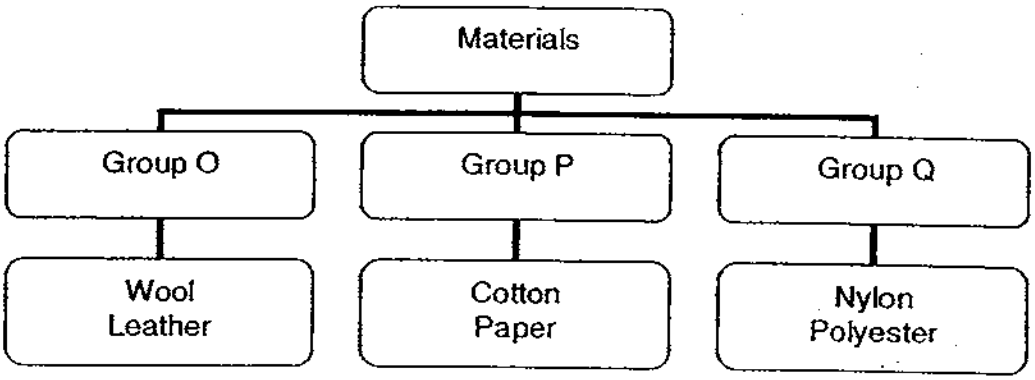

Which set-up(s) will the plant **not** able to make food?

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



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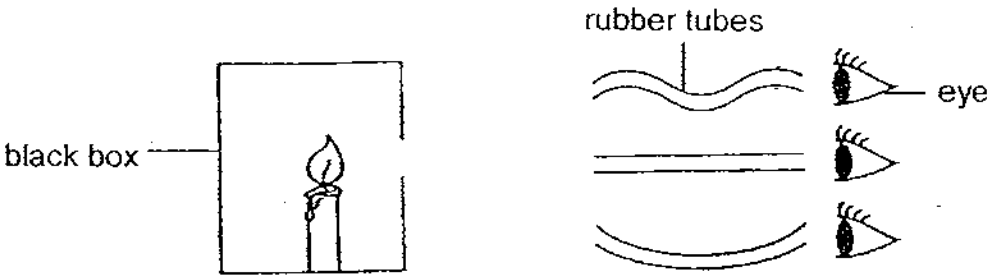
19. Study the classification chart below.




Which of the following are the suitable headings for Groups O, P and Q?

| | Group O | Group P | Group Q |
|---|---|---|---|
| (1) | Animals | Man-made | Plants |
| (2) | Plants | Man-made | Animals |
| (3) | Animals | Plants | Man-made |
| (4) | Plants | Animals | Man-made |

20. Study the experiment below. The objective of the experiment is to find out if light _____.

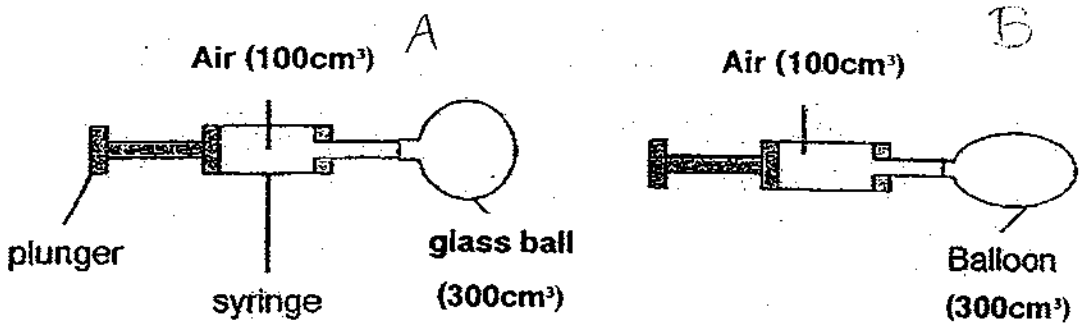



(1) travels in a straight line
(2) can pass through the box
(3) source is the burning candle
(4) from the burning candle can be reflected into the eye



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21. The diagram below shows 2 syringes containing 100cm³ of air each. Syringe A is connected to a hollow glass ball that has a volume of 300cm³ while syringe B is connected to a balloon with 300cm³ of air.




Which one of the following shows the most likely amount of air in the glass ball and in the balloon respectively after the plungers are pushed in all the way?

| | Volume of air (cm³) | |
|---|---|---|
| | Glass ball | Balloon |
| (1) | 100 | 300 |
| (2) | 300 | 300 |
| (3) | 300 | 400 |
| (4) | 400 | 400 |

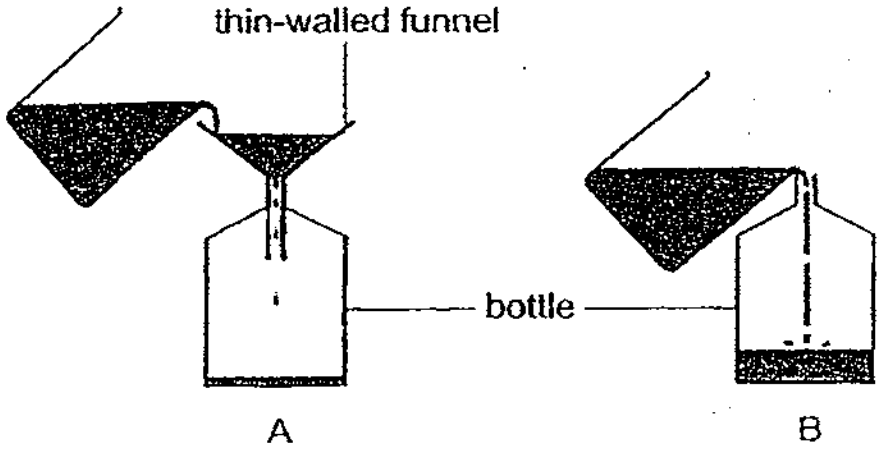
22. Which one of the following is characteristic of a matter?

(1) It is either a push or a pull.
(2) It has mass and occupies space.
(3) It can be converted into other forms.
(4) It cannot be seen but its effects can be observed.



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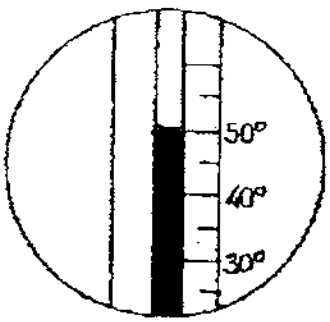
23. Megan tried pouring the same liquid into two bottles. She uses a funnel in set-up A but not in set-up B. Which one of the following statements explains why the liquid in set-up B flows into the bottle faster?



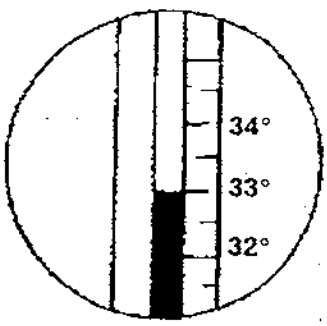

(1) There is lesser amount of liquid in set-up B.
(2) There is more space to allow air to escape in set-up B.
(3) The liquid in set-up A was poured in quicker than in set-up B.
(4) The funnel is too small to allow the liquid in set-up A to flow quickly.

24. The diagrams below show four temperature readings. Which one of the following readings shows the most possible temperature of Singapore in an open field on a sunny day?

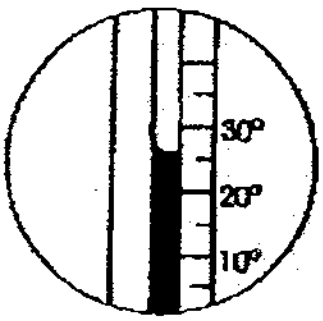
(1)



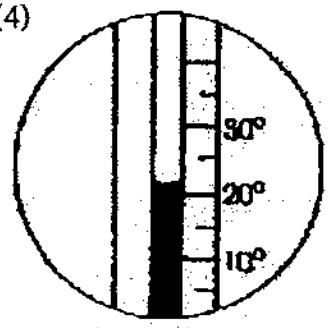

(2)




(3)




(4)



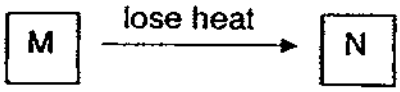



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25. Which one of the following is **not** a light source?

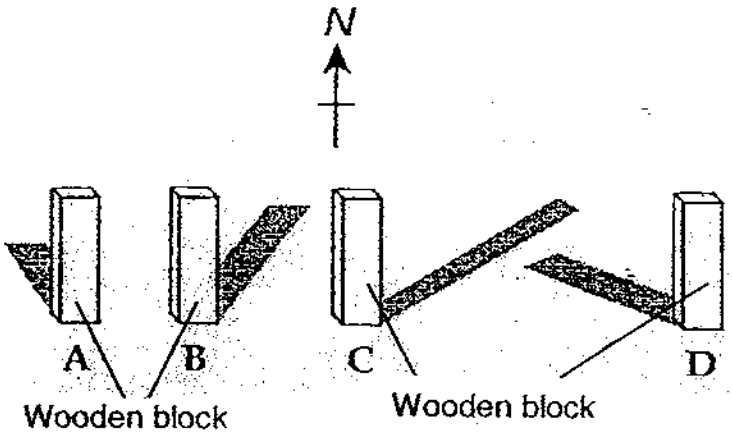
(1) Star
(2) Moon
(3) Firefly
(4) Table lamp

26. The diagram below shows the effect of heat loss. What can M and N be?




| | M | N |
|---|---|---|
| (1) | Ice | Water |
| (2) | Water | Water vapour |
| (3) | Candy floss | Syrup |
| (4) | Water | Ice |

27. The diagram below shows the positions of the shadow cast by a wooden block at four different times of the day. Match the shadow to the correct time.




| | 8 a.m. | 11 a.m. | 3 p.m. | 6 p.m. |
|---|---|---|---|---|
| (1) | A | B | C | D |
| (2) | B | C | A | D |
| (3) | C | B | A | D |
| (4) | D | A | B | C |



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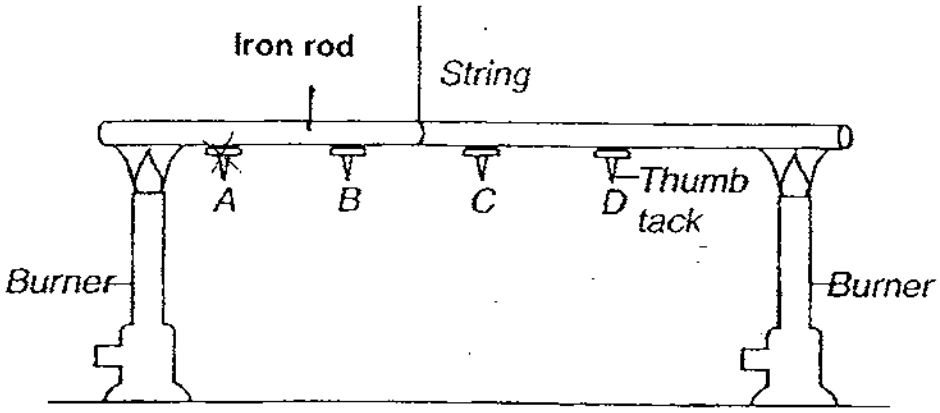
28. Which one of the following describes heat and temperature correctly?

| | Heat | Temperature |
|---|---|---|
| (1) | Is a form of energy | Measures the amount of heat |
| (2) | Is a state of matter | Measures the amount of heat |
| (3) | Heat is temperature | Temperature is heat |
| (4) | Measures the amount of heat | Measures how fast heat is gain or loss |

29. Substance Z freezes at 10°C and boils at 150°C. Which of the following shows the correct state of substance Z at 0°C and at 100°C.

| | State of substance Z at | |
|---|---|---|
| | 0°C | 100°C |
| (1) | Solid | Gas |
| (2) | Solid | Liquid |
| (3) | Liquid | Gas |
| (4) | Liquid | Solid |

30. The diagram below shows the positions of four thumbtacks, A, B, C & D attached to an iron rod with wax.




When the iron rod is heated with 2 burners as shown in the diagram above, which thumbtack will fall last?

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

**- End of Section A -**



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Name: _____ (  )

Class: Primary 4 _____

# CHIJ ST NICHOLAS GIRLS' SCHOOL

SIMPLE IN VIRTUE

STEADFAST IN DUTY

德 纯 义 坚

## Primary 4
## Second Semestral Assessment – 2009
## SCIENCE

### BOOKLET B

2nd October 2009

| | |
|---|---|
| Booklet A | 60 |
| Booklet B | 40 |
| Total | 100 |

**Total Time for Booklets A and B: 1 hour 45 minutes**

**14 questions**
**40 marks**

**This paper consists of 12 printed pages.**

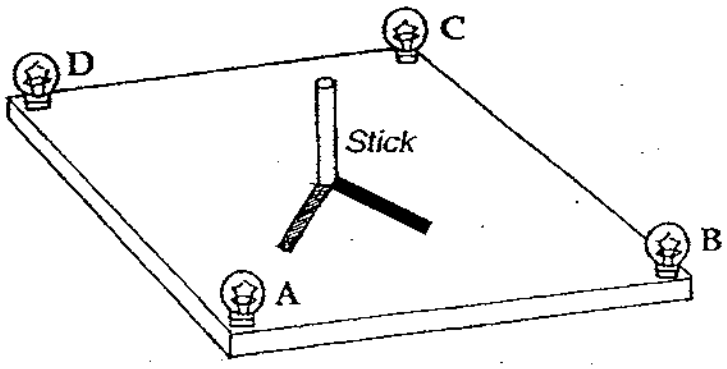
**Do not open this booklet until you are told to do so.**
**Follow all instructions carefully.**

_____
Parent's Signature/Date

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**Section B : (30 marks)**
**Answer all questions.**

31. The set-up below shows a square wooden board with 4 bulbs and a stick in the middle. Some bulbs were switched on and the shadows were formed.




(a) Which bulbs are **not** switched on to form the shadows as shown? [1]

_____

_____

(b) Explain how a shadow is formed. [1]

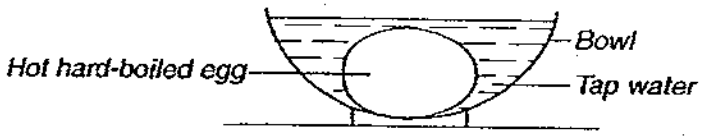
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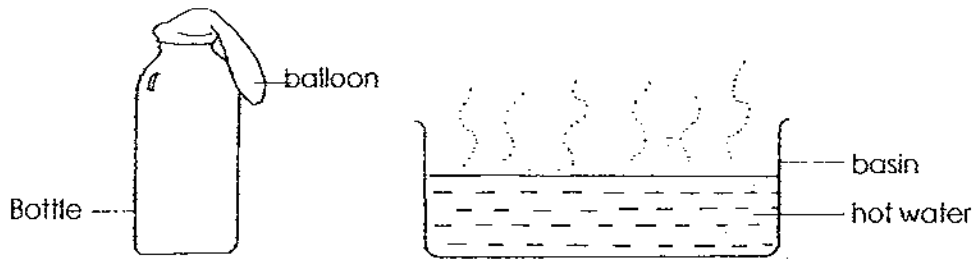
32. The diagram below shows a hot hard-boiled egg being placed in a bowl of tap water.




(a) What happened to the temperature of the tap water after a few minutes? [1]

(b) Explain your answer in (a) above. [1]

33. Study the diagram below.



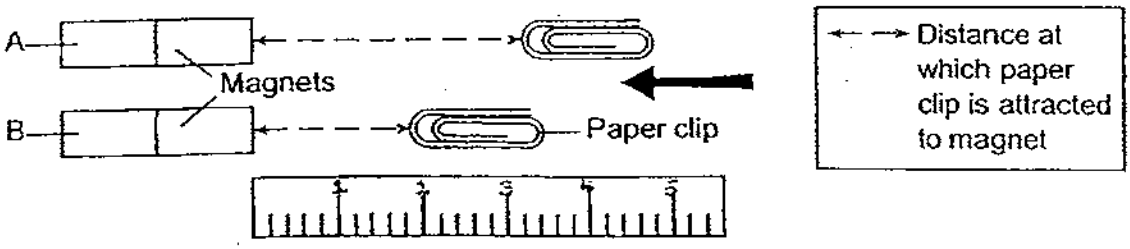

(a) What happens to the balloon when the bottle is placed in the basin of hot water. [1]

(b) Explain your answer in (a) in relation to heat transfer. [2]



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34. Harry set up the experiment below. The paper clips were slowly pushed towards the magnet until they were attracted by the magnets. He measured the distance at which the paper clips were attracted to the magnets.




(a) Which is a weaker magnet? [1]

_____

(b) Explain your answer in part (a). [2]

_____

_____

35. The classification table shows the grouping of some animals according to their life cycles.

| Group O | Group P | Group Q |
|---|---|---|
| Cat | Hen | Housefly |
| Guppy | Grasshopper | Damselfly |
| Rabbit | Cockroach | Moth |

(a) Identify the animal that has been classified wrongly in the classification table above. [1]

_____

(b) In which group, O, P or Q should the animal named in (a) be classified? [1]

_____

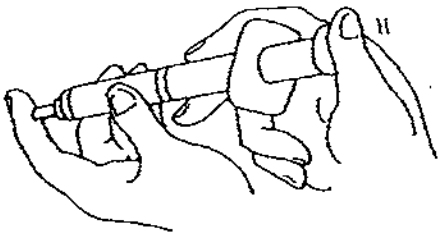
(c) Write an appropriate heading for animals in Group Q. [1]

_____



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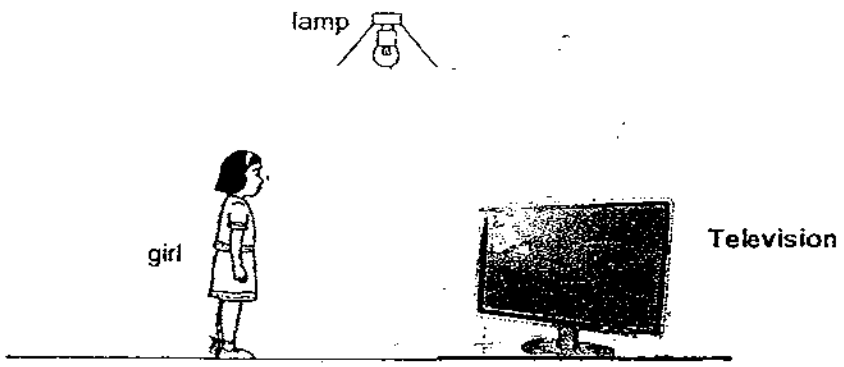
36. Karlyn tried to push the plunger of her syringe filled with liquid as shown in the diagram below.



~~(b)~~ (a) Do you think she is able to push the plunger into the syringe? Explain your answer. [1]

(b) If Karlyn can push the plunger into her syringe easily, what could be in her syringe? Explain your answer. [1]

37. (a) Draw arrows to represent how light ray travels so that the girl is able to look at the television which was **not** switched on. [1]




(b) Draw the shadow of the girl and the television in the diagram above. [2]



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38. Study figure 1 below carefully. Four similar cans were placed on a tray of sand. Four blocks of the same size labelled A, B, C and D were dropped from the same height and the results are shown in figure 2.

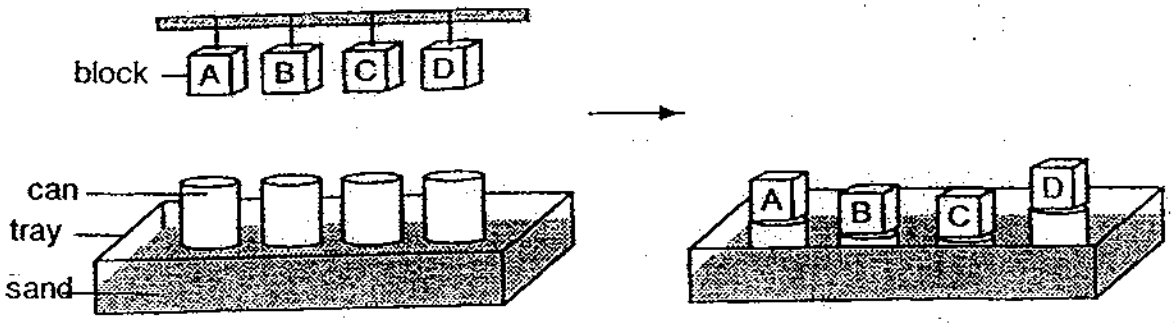
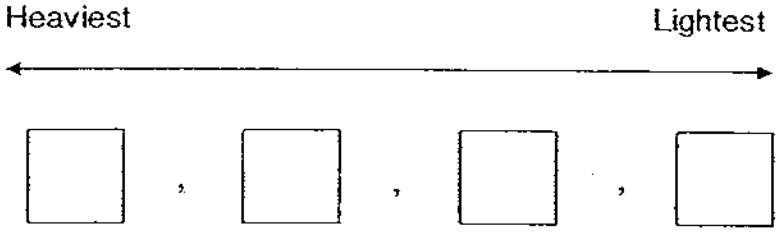



Figure 1 Figure 2

~~(b)~~ (a) Arrange by writing the letters A, B, C and D starting with the heaviest to the lightest block. [2]

Heaviest Lightest



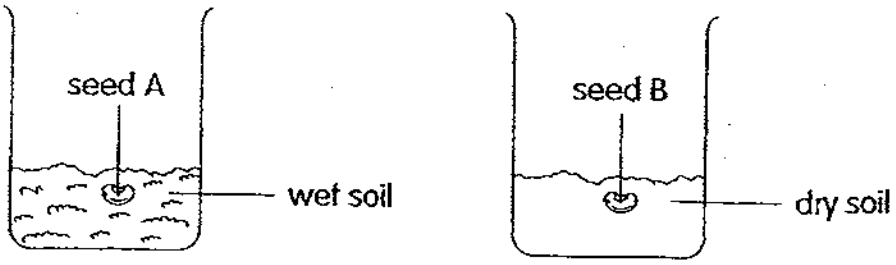
(b) Which state of the matter are the 4 blocks? [1]

(c) Describe the characteristics of the state of the matter in your answer in part (b). [1]



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39. Sherlyn conducted an experiment as shown below.



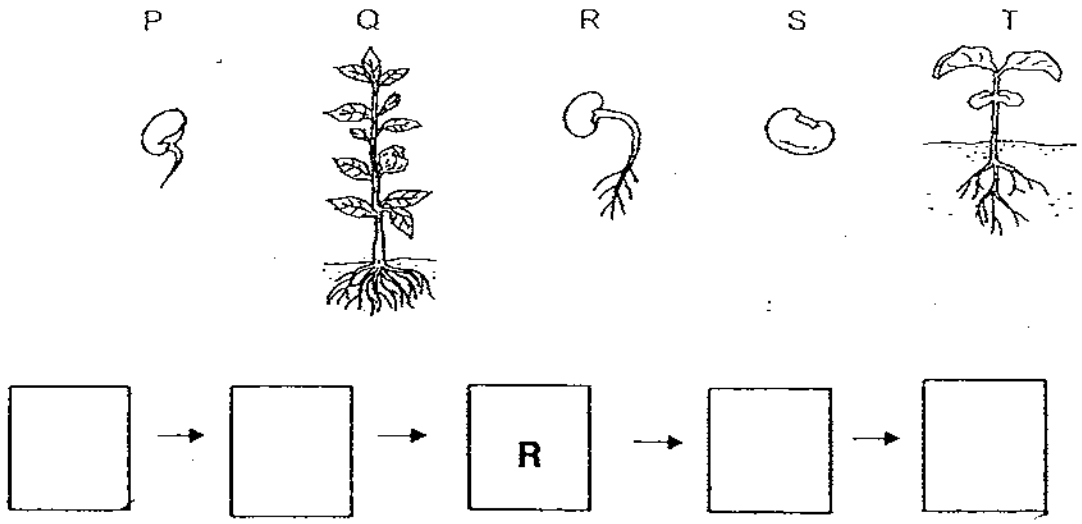

(a) Which seed will grow into a seedling after a few days? [1]

_____

(b) What is the aim of this experiment? [1]

_____

(c) Complete the life cycle of plant by writing the letters (P,Q, R, S, T) to show the correct order of growing stages in the boxes provided below. [2]






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40. Figure A below shows how an iron nail is magnetised. The magnetized nail is then placed next to the compass as shown in figure B.

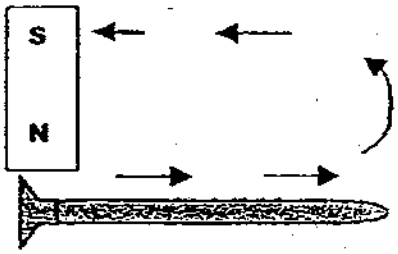



Figure A

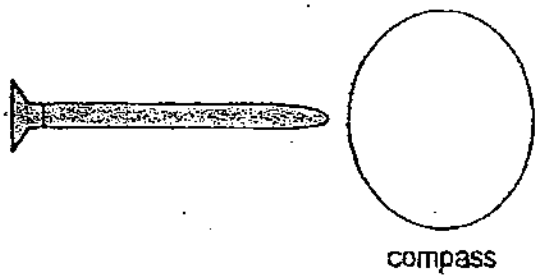



Figure B

~~(b)~~ (a) The compass needle in figure B is not shown. Draw the correct position of the compass needle and label 'N' for North direction in figure B. [1]

(b) Name the method used to magnetise the iron nail in figure A. [½]

_____

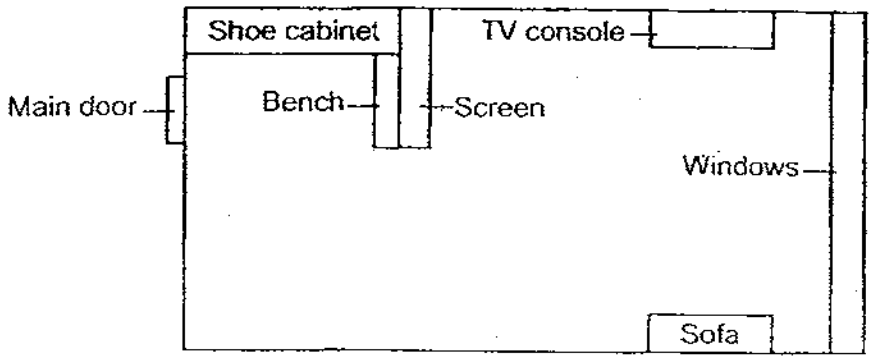
~~(b)~~ (c) Name another method to magnetise the iron nail other than the method name in (b). [½]

_____



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41. Mrs Tan wants to put a screen in her living room to ensure that when the main door is left open, passers-by will not be able to look into her living room clearly. At the same time, she wants to be able to put on her shoes without having to switch on the light or open the main door.




a) Suggest the most suitable material for the screen. [1]

_____

b) Why did you suggest the material mentioned in part (a)? [2]

_____

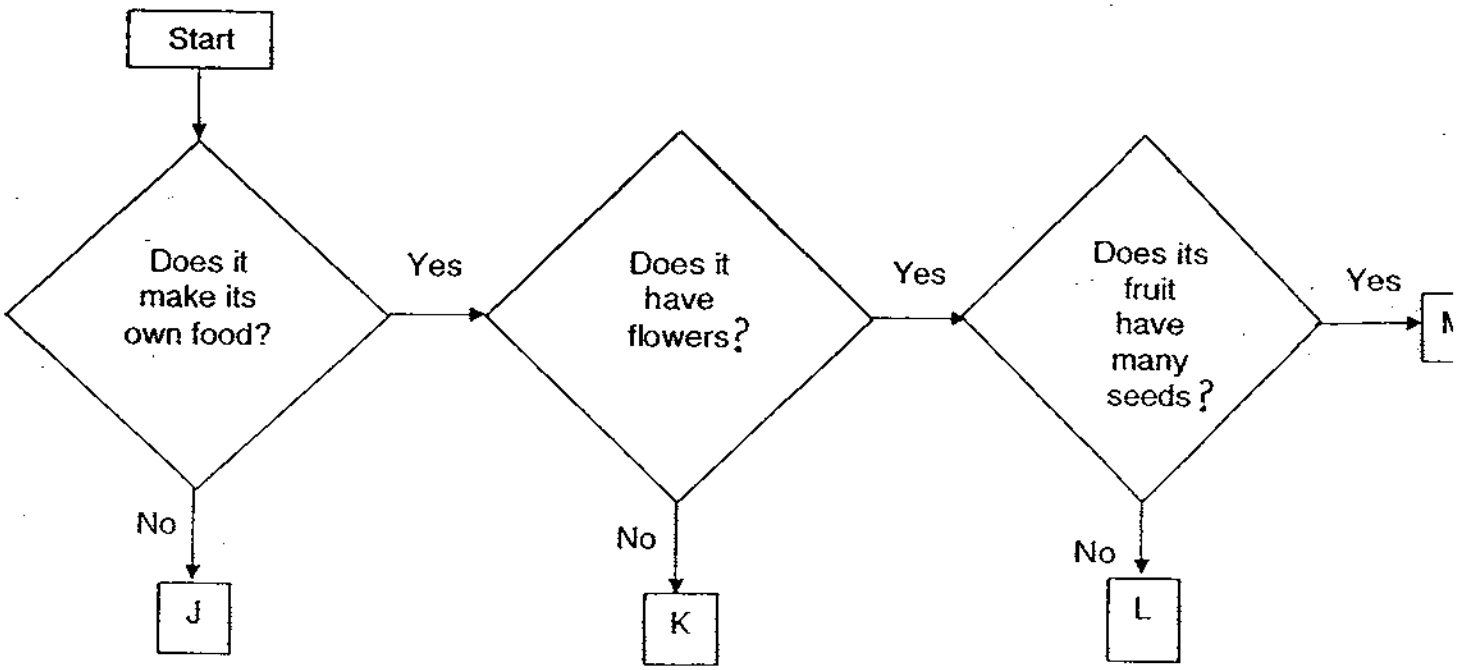
_____

_____



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42. Study the flow chart below carefully.




Which of the following letters(J,K,L or M) represent the following organisms? [3]

(i) Papaya: _____

(ii) Moss: _____

(iii) Mould: _____



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43. a) Draw and label a simple diagram of the life cycle of the mealworm. (Do not draw pictures) [2]

b) Name the stage(s) at which the insect is considered a pest to the gardeners? [1]

_____

c) In what way does the insect considered useful to the bird owners? [1]

_____



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44. David has a bar magnet as shown in figure 1 and a horse-shoe magnet in figure 2. David lowered a bar magnet into a bowl of paper clips. When he raised the bar magnet, he observed what was shown below.

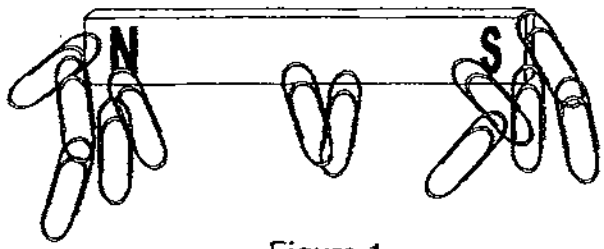



Figure 1

a) What can he conclude about the strength of the magnet from figure 1 as shown above? [1]

_____

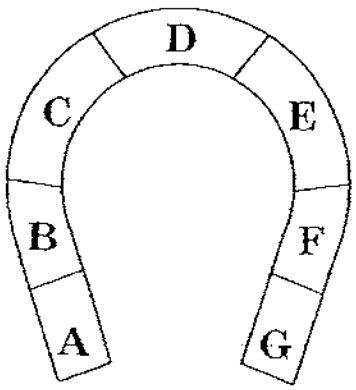



Figure 2

b) Based on what he has observed in figure 1, identify which position, A, B, C, D, E, F or G, of the horse-shoe magnet is/are the weakest? [1]

_____

**---- End of Paper ----**



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# Answer Ke

**EXAM PAPER 2009**

**SCHOOL : CHIJ PRIMARY**
**SUBJECT : PRIMARY 4 SCIENCE**

**TERM : SA2**

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

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

**31)a)Bulbs A and B are not switched on.**
**b)Shadows are formed when an opaque object blocks the path of light.**

**32)a)It will increase.**
**b)The hard-boiled egg is hotter than the tap water. Therefore, heat flows from the egg to the water until they reach the same temperature.**

**33)a)The balloon will inflate slowly.**
**b)The heat from the hot water hearts up the air in the bottle. Hot air expands and inflates the balloon attached.**

**34)a)magnet B.**
**b)Magnet A can attract a paper clip from a far distance but magnet B can only attract the clip at a nearer distance.**

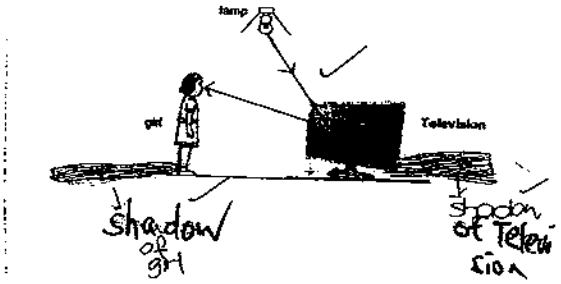
**35)a)Damselfly.**
**b)Group P.**
**c)Animal which lays eggs and have a 4-staged life cycle.**

**36)a)No. Water cannot be compressed.**
**b)It could be air. Air can be compressed.**



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**37)a)b)**




**38)a)C,B,A,D**

**b)The four blocks are in the solid state.**

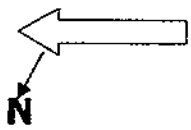
**c)Solid has definite shape, definite volume has mass and occupies space.**

**39)a)Seed A.**

**b)To observe whether seeds need water to grow into a seedling.**

**c)S→P→R→T→Q**

**40)a)**




**b)The stroking method.**

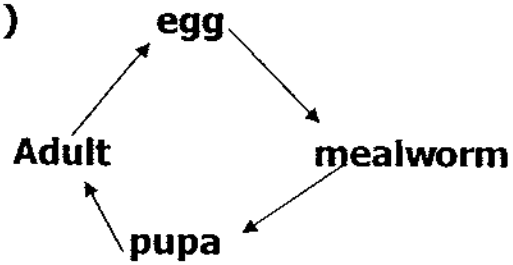
**c)The electrical method.**

**41)a)Frosted glass.**

**b)The translucent material allows some light to pass through. Thus, it enables Mrs Tan to put on her shoes without having her to switch on her lights. The passers by who walk past the windows cannot see what is behind the screen clearly.**

**42)i)M ii)K iii)J**

**43)a)**






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**43)b)The adult stage and larva stage.**
**c)The mealworms can be used to feed the birds.**

**44)a)The force of magnets are strongest at its poles.**
**b)Position D of the horse-shoe magnet is the weakest.**



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