

Name : _____ ()

Class : Primary 4 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 4

Semestral Assessment 1 – 2009

SCIENCE

BOOKLET A

14 May 2009

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

This booklet consists of 18 printed pages.

30 questions

60 marks

Do not open this booklet until you are told to do so.

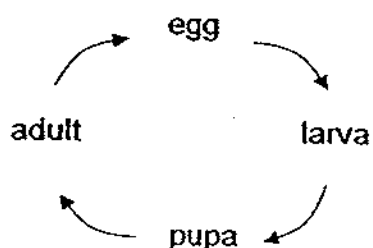
Follow all instructions carefully.

Answer all questions.

Section A : (30 x 2 marks)

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

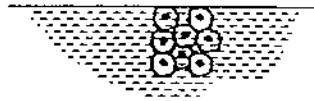
1. The diagram below shows the life cycle of organism X. At its adult stage, it is useful to the farmer but at its larval stage, it is harmful.



Which one of the following animals is most likely to be organism X?

- (1) Moth
 - (2) Mosquito
 - (3) Cockroach
 - (4) Mealworm
2. Which of the following animal(s) has/have a life cycle similar to that of the eagle?
- A Frog
 - B Butterfly
 - C Cockroach
 - D Grasshopper
- (1) B only
 - (2) A and B only
 - (3) B, C and D only
 - (4) A, C and D only

3. The diagram below shows the eggs of an animal.



Which one of the following animals could have laid the eggs above?



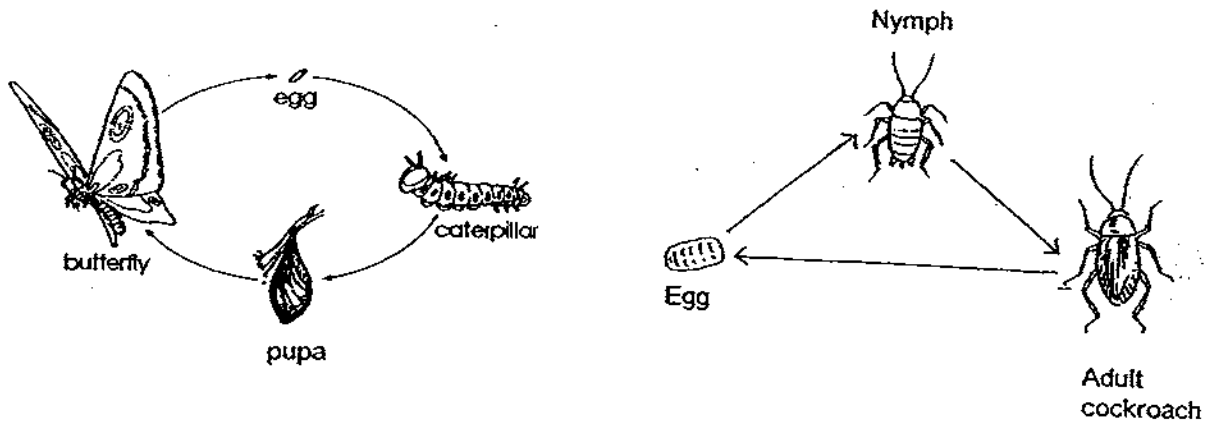
4. Fang Fang did a study on three animals, X, Y and Z. She drew a checklist and placed a tick (✓) in the box when she made the observation. At the end of her study, the completed checklist is as follows:

Observation	Animal X	Animal Y	Animal Z
Eggs are laid in water.	✓	✓	
There are 3 stages in the life cycle.		✓	
It has six legs.	✓		✓

Which one of the following lists shows the animals with the correct characteristics described in the table above?

	Animal X	Animal Y	Animal Z
(1)	mosquito	frog	housefly
(2)	frog	dragonfly	beetle
(3)	housefly	butterfly	grasshopper
(4)	mosquito	cockroach	butterfly

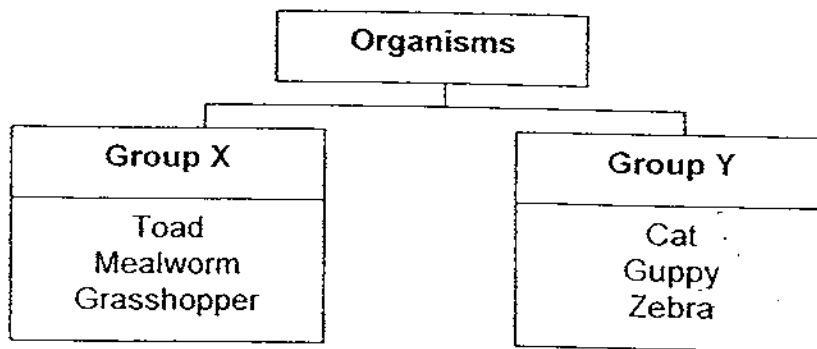
5. The diagram below shows the life cycles of the butterfly and cockroach.



Which one of the following statements about the two life cycles is false?

- (1) The caterpillar moults but the nymph does not.
- (2) The pupa does not take in food but the nymph does.
- (3) The young of the butterfly and cockroach hatch from fertilised eggs.
- (4) The cockroach has a 3-stage life cycle while the butterfly has a 4-stage life cycle.

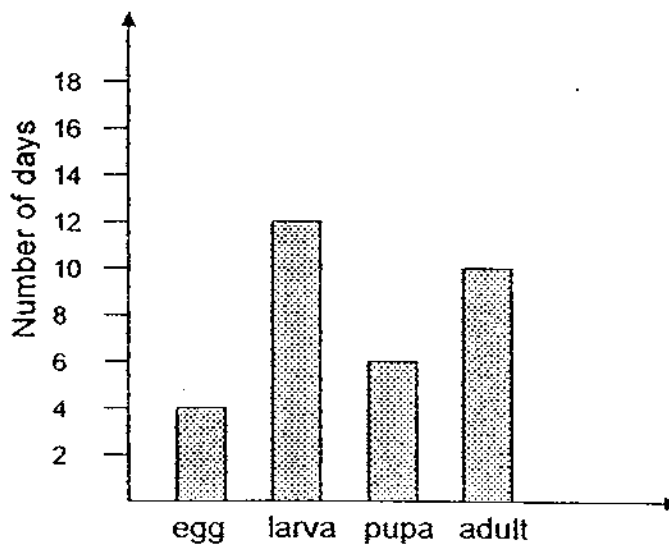
6. Study the classification chart below carefully.



Which one of the following lists shows the most suitable headings for Group X and Group Y respectively?

	Group X	Group Y
(1)	Lay eggs	Give birth to young alive
(2)	Have a 4-stage life cycle	Have a 3-stage life cycle
(3)	Young do not resemble the parents	Young resemble the parents
(4)	Have young that live in water	Have young that live on land

7. The graph below shows the stages in the life cycle of an insect and the length of time the insect remains at each stage of its life cycle.



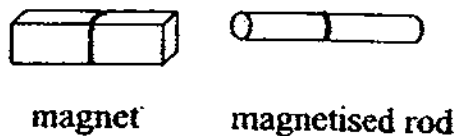
How many days does the insect take to become a pupa after the egg is laid?

- (1) 6 days
 - (2) 12 days
 - (3) 16 days
 - (4) 22 days
8. Which of the following objects make(s) use of electromagnets?

- A Compass
- B Door bell
- C Hand bag
- D Fridge door

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

9. The diagram below shows a bar magnet and a magnetised rod.



Which one of the following statements about the magnet and the magnetised rod is not correct?

- (1) They can be used to find directions.
 - (2) They can be used to show magnetic force of attraction.
 - (3) They can be used to show magnetic force of repulsion.
 - (4) They can be used to show that the magnetised rod is made of iron.
10. The diagram below shows a bar magnet and a nail. The S-pole of the magnet can attract end A of the nail.



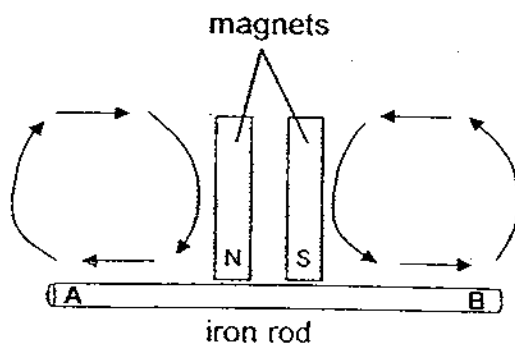
Based on the observation above, which one of the following statements about the set-up can we be sure of?

- (1) The nail is magnetised.
- (2) The nail is made of steel.
- (3) The N-pole of the magnet can repel end A of the nail.
- (4) The N-pole of the magnet can attract end B of the nail.

11. Which one of the following is a natural magnet?

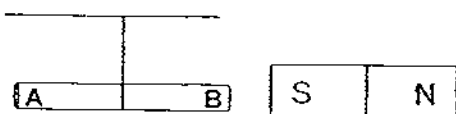
- (1) Limestone
- (2) Lodestone
- (3) Bar magnet
- (4) Horse-shoe magnet

12. An iron rod is magnetised by using the stroking method, as shown below. The rod is then suspended from a string and a bar magnet is brought near the rod.

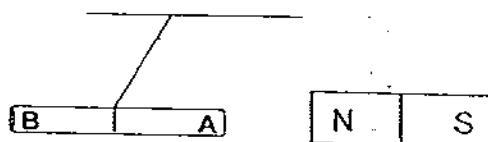


Which one of the following correctly shows what happens when the magnet is brought near the iron rod?

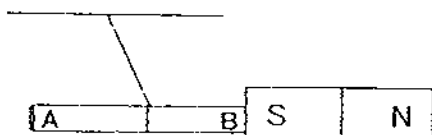
(1)



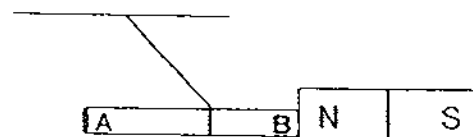
(2)



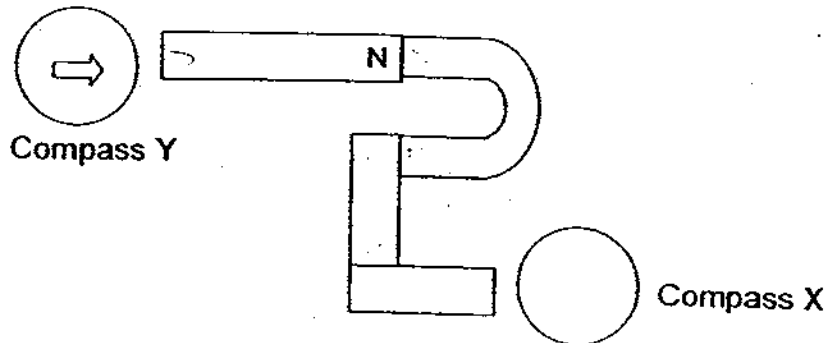
(3)



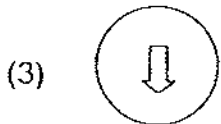
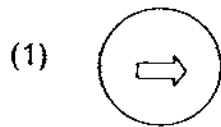
(4)



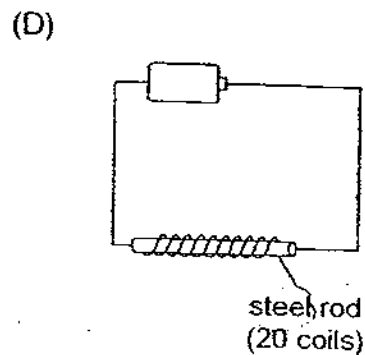
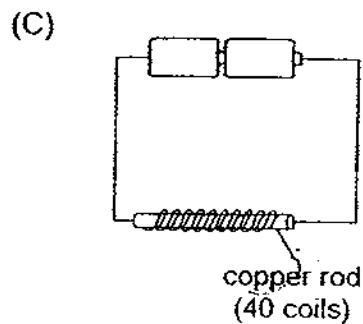
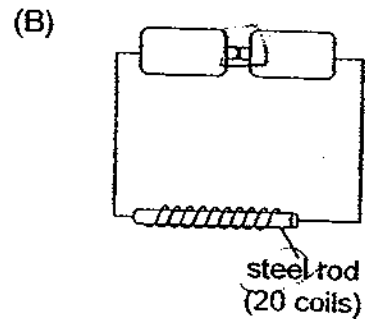
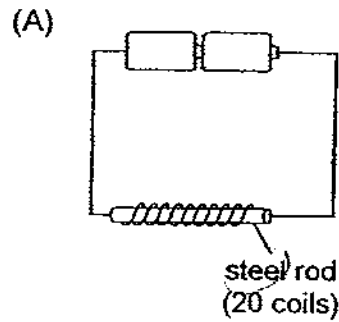
13. There are 3 bar magnets, one u-shaped magnet and two compasses in the set-up below.



Which one of the following compasses correctly represents Compass X in the above set-up?



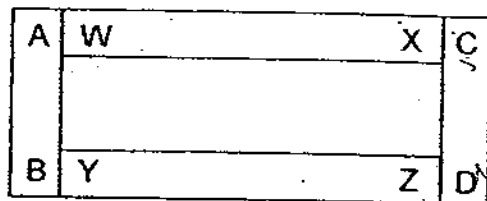
14. Winston set up 4 circuits, A, B, C and D below to investigate the strength of electromagnets.



Which one of the following statements about the rods in the set-ups is correct?

- (1) The rod in circuit C is the strongest electromagnet.
- (2) The rods in circuits A and D are temporary magnets.
- (3) The rods in circuits A and B have the same magnetic strength.
- (4) The rods in circuits A and D can attract the same number of paper clips.

15. The diagram below shows the arrangement of four bar magnets into a rectangular frame.

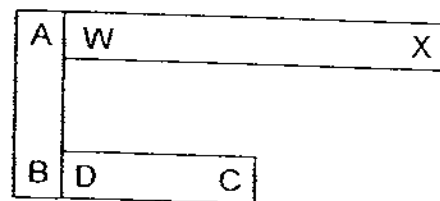


Which one of the following arrangements is not possible?

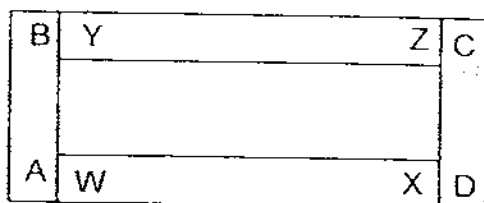
(1)



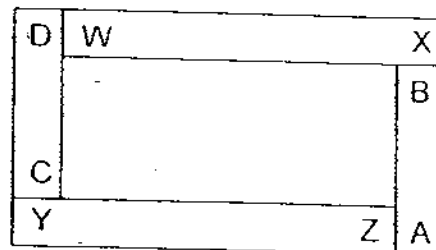
(2)



(3)



(4)



16. Light is not matter because _____

- (1) it can travel
- (2) it has no mass
- (3) it can be reflected
- (4) it is a form of energy

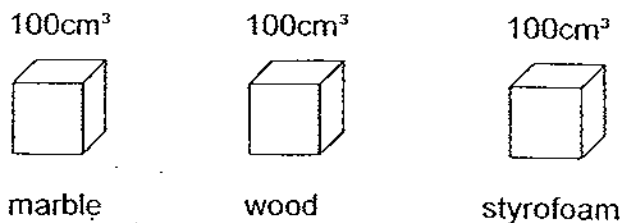
17. Su Ming recorded the properties of some matters in the table below. Which one of the matter is correctly described?

	Type of matter	Has a definite shape?	Has a definite volume?	Occupies space?	Can be compressed?
(1)	Milk	No	Yes	Yes	No
(2)	Oxygen	No	Yes	No	Yes
(3)	Cotton wool	No	No	Yes	Yes
(4)	Sugar	No	Yes	Yes	No

18. The state of matter depends on its _____.

- (1) size
- (2) mass
- (3) material
- (4) temperature

19. The diagram below shows three cubes of the same size but different materials.



Which one of the following statements about the three cubes is correct?

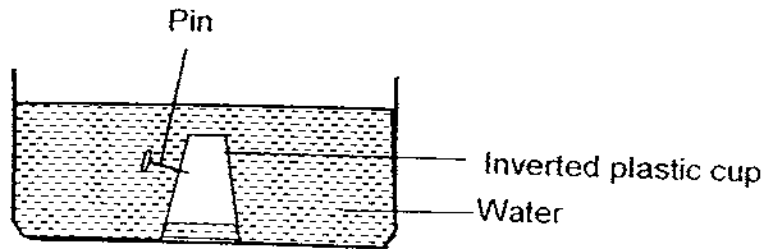
- (1) They all have the same mass.
- (2) They occupy the same amount of space.
- (3) The styrofoam and the wooden cubes have the same weight.
- (4) The marble cube takes up less space than the styrofoam and wooden cubes.

20. Which of the following matter is/are in the liquid state?

- A dew
- B mist
- C steam
- D water vapour

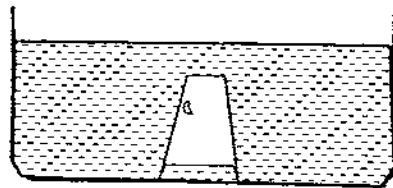
- (1) A only
- (2) A and B only
- (3) C and D only
- (4) B, C and D only

21. Hashim took an empty plastic cup, inverted it and pushed it into a basin of water. He then used a pin to pierce a hole at the side of the cup as shown in the diagram below.

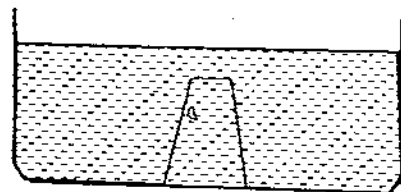


Which one of the following diagrams shows what would happen to the plastic cup after he had pierced the hole?

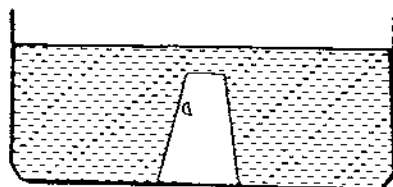
(1)



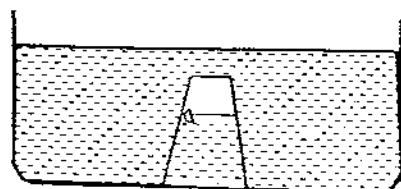
(2)



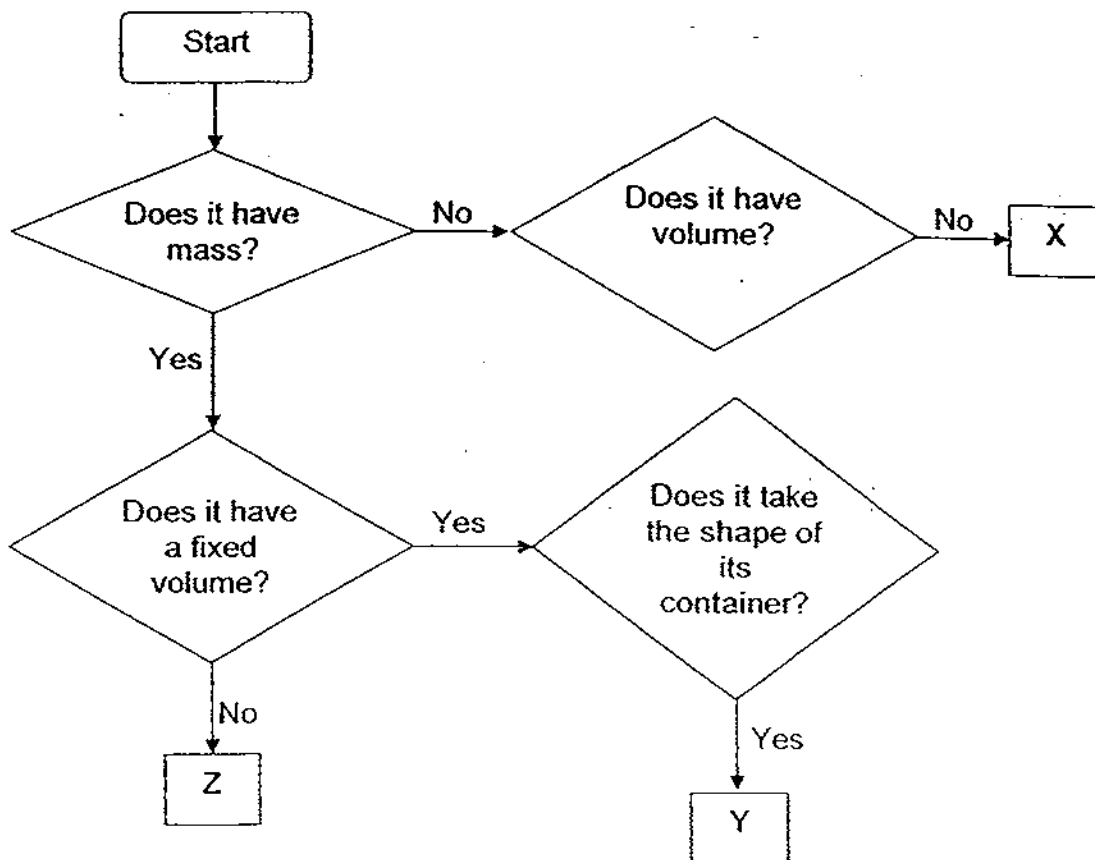
(3)



(4)



22. Study the flow chart below carefully.



Based on the flow chart above, which of the following statements are true?

- A X is not matter.
- B Y is a solid.
- C Z is a gas.
- D Z could be water.

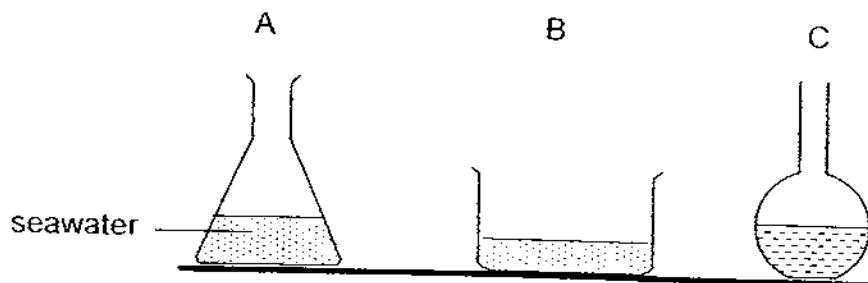
- (1) A and C only
- (2) B and D only
- (3) A, C and D only
- (4) A, B, C and D

23. W, X, Y and Z are matters with the characteristics shown by a tick (✓) in the table below.

Characteristics	W	X	Y	Z
Occupies space	✓	✓	✓	✓
Has a definite volume	✓	✓		✓
Takes the shape of its container	✓		✓	✓
Takes the size of its container	✓		✓	

Based on the information above, which one of the above matters is oxygen?

- (1) W
 (2) X
 (3) Y
 (4) Z
24. Sofia poured 50ml of seawater into each of the 3 different containers as shown below.



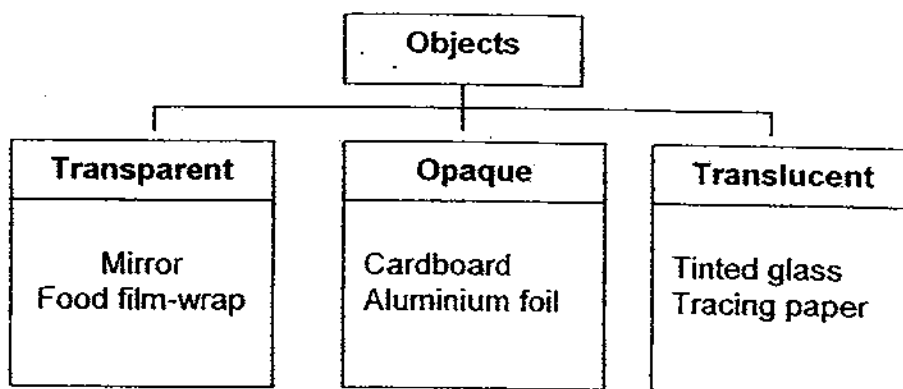
At the end of her experiment, she wrote down four statements about her investigation.

- A Seawater has mass.
 B Seawater takes up space.
 C Seawater has no definite shape.
 D Seawater cannot be compressed.

Which of her statements is/are not based on the above experiment?

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

25. Study the classification chart below carefully.



Which one of the following objects is wrongly classified?

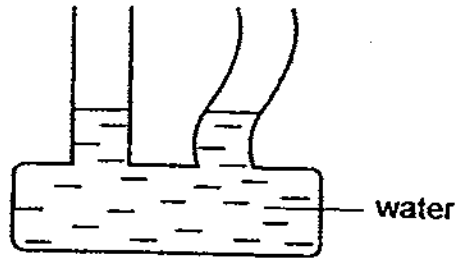
- (1) Mirror
- (2) Tinted glass
- (3) Aluminium foil
- (4) Food film-wrap

26. Which of the following objects allow only some light to pass through?

- A Oil
- B Tea
- C Tap water
- D Foolscap paper

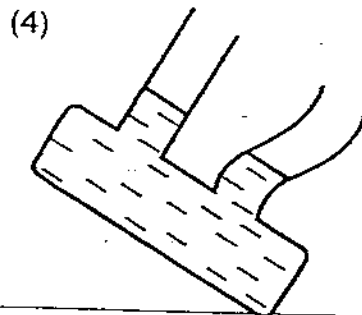
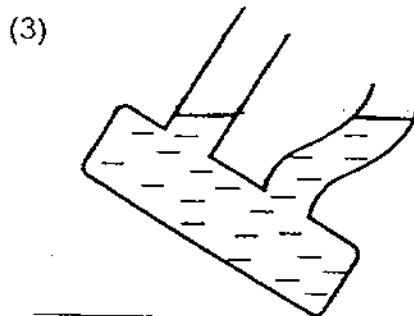
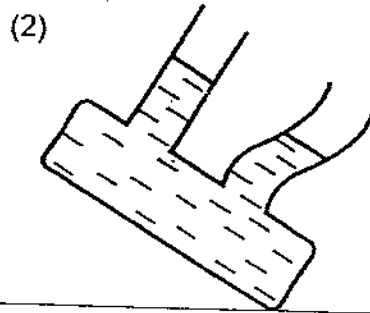
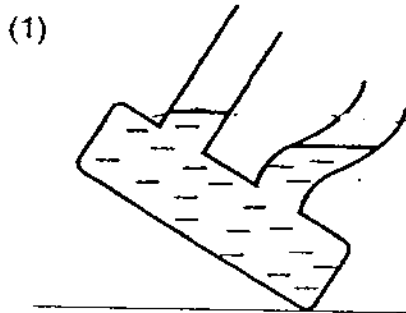
- (1) A and D only
- (2) A, B and D only
- (3) B, C and D only
- (4) A, B and C only

27. The communicating vessel below is filled with some water.

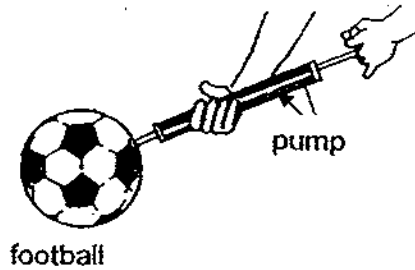


Communicating vessel

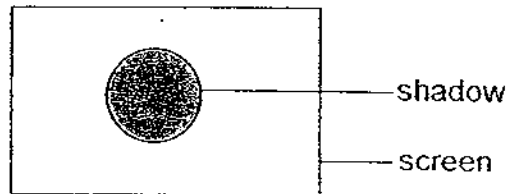
Which one of the following diagrams shows the correct position of the water in the vessel when it is tilted?



28. When more air is pumped into a football, it does not become bigger. This shows that air _____.

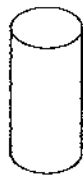


- (1) occupies space
 - (2) can be compressed
 - (3) has a definite mass
 - (4) has a definite volume
29. An object was placed in front of a light source. The following shadow was formed on the screen.



Which one of the following objects could not have formed such a shadow?

(1)



A piece of chalk

(2)



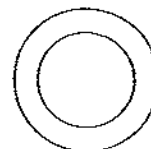
A wooden cone

(3)



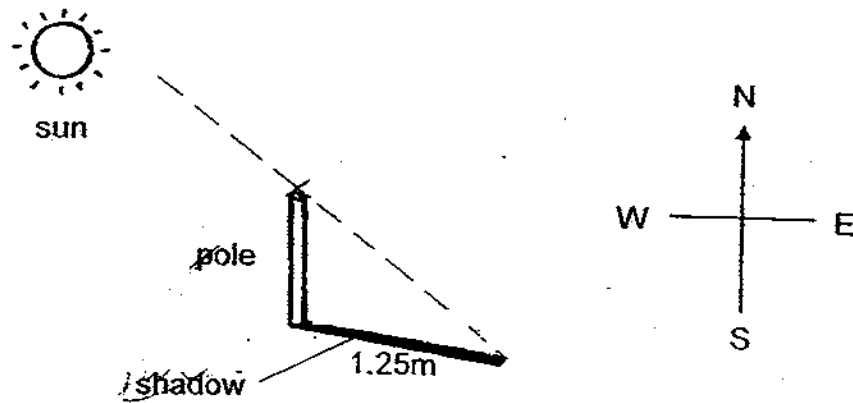
A porcelain bowl

(4)

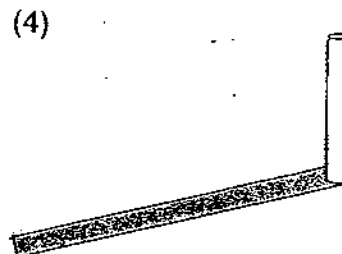
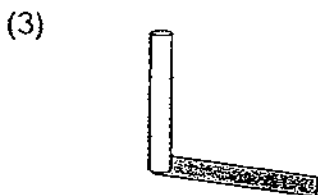
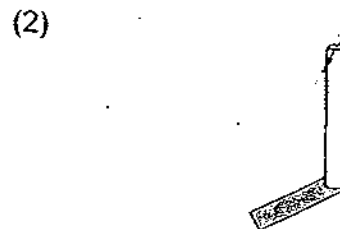
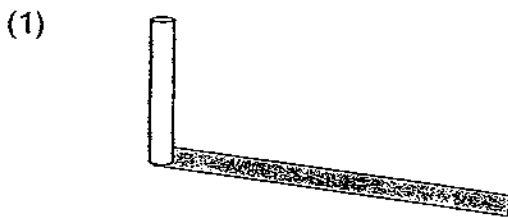


A gold ring

30. David measured the length of the shadow of a pole at 2pm of a certain day.



Which one of the following diagrams shows the shadow of the pole at 8am of the same day?



~~~~~ END OF SECTION A ~~~~~

Name : \_\_\_\_\_ ( )

Class : Primary 4 \_\_\_\_\_

## CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 4

Semestral Assessment 1 – 2009

SCIENCE

BOOKLET B

14 May 2009

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

This booklet consists of 12 printed pages.

14 questions  
40 marks

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

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

\_\_\_\_\_  
Parent's Signature/Date

**Section B: 40 marks**

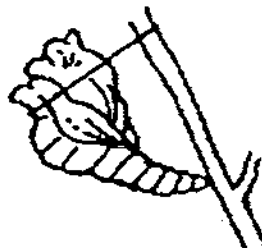
For questions 31 to 46, write your answers in this booklet.

The number of marks available is shown in the brackets [ ] at the end of each question or part question.

31. The diagram below shows the young of two different animals, X and Y.



Organism X



Organism Y

(a) State one difference between the two organisms. [1]

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(b) State one similarity between the two organisms. [1]

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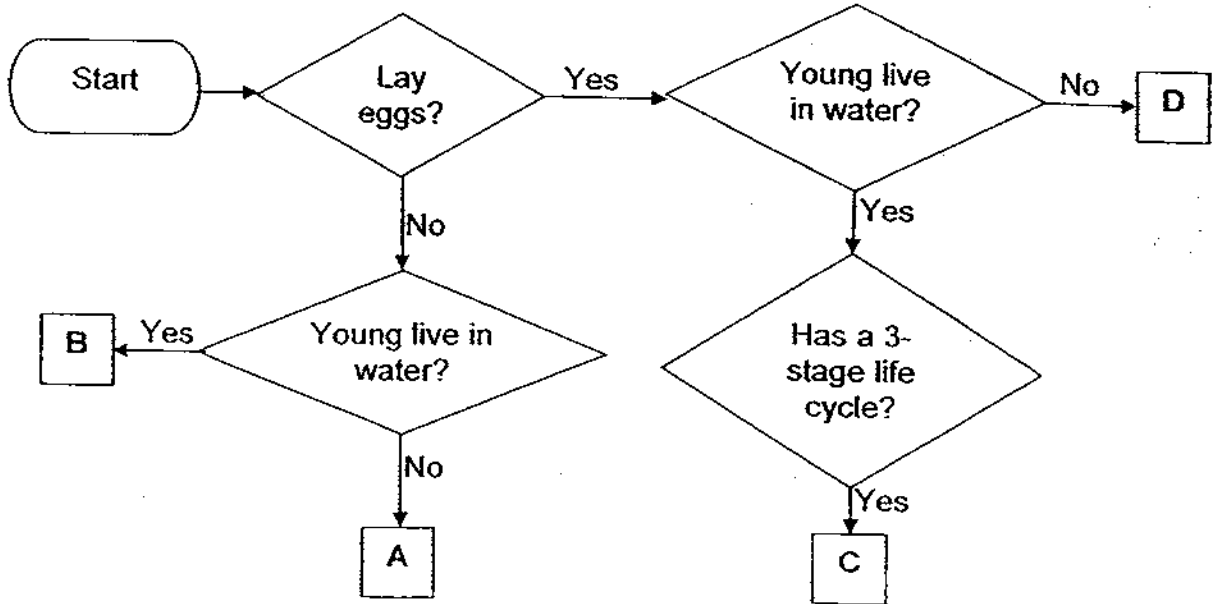
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(c) What would organism Y develop into? [1]

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32. Study the flow chart below carefully.

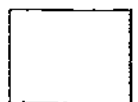


(a) State one similarity between Animals B and C. [1]

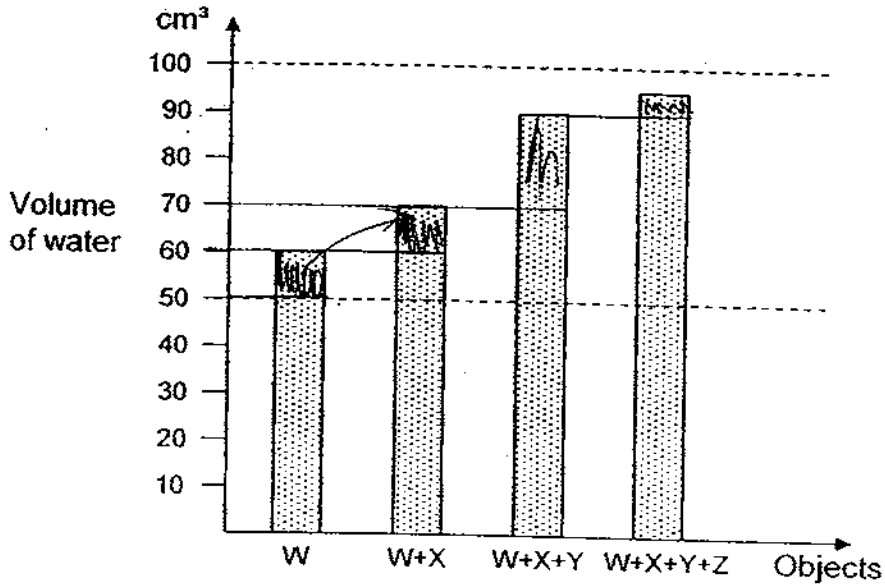
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(b) Based on the flow chart above, state whether each of the following statements is **true (T)**, **false (F)** or **not possible to tell (NP)**. Write your answers in the correct boxes on the right. [2]

|       |                                                                             |  |
|-------|-----------------------------------------------------------------------------|--|
| (i)   | Both animals C and D are insects.                                           |  |
| (ii)  | The young of animals A and D hatch from eggs and they do not live in water. |  |
| (iii) | Animal B could be a dragonfly.                                              |  |
| (iv)  | Animal C could be a frog.                                                   |  |

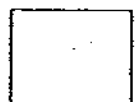


33. There are four solid objects, W, X, Y and Z. When object W is placed into a measuring cylinder containing  $50 \text{ cm}^3$  of water, the water level rises to  $60 \text{ cm}^3$ . Then object X is placed into it followed by object Y, and finally object Z. The graph below shows the water level after each object has been placed into the cylinder.



Based on the results as shown in the graph above, state whether each of the following statements is true (T), false (F) or not possible to tell (NP) in the boxes next to the statements. [4]

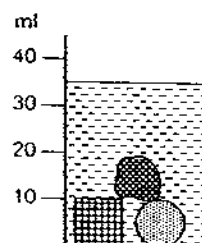
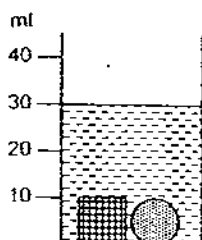
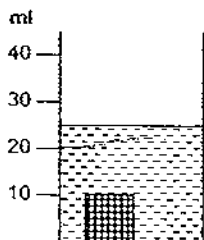
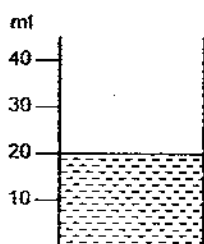
- (a) The amount of water in the cylinder increases after each object is placed into it.
- (b) Object W and object X have the same mass.
- (c) The volume of object W is  $60 \text{ cm}^3$ .
- (d) Object Y has a larger volume than object Z.



34. The diagram below shows three objects, A, B and C.



The three objects are put into a container of water, one at a time, as shown in the diagram below.



(a) Based on the experiment above, what can you conclude about the volume of the three objects? [1]

\_\_\_\_\_

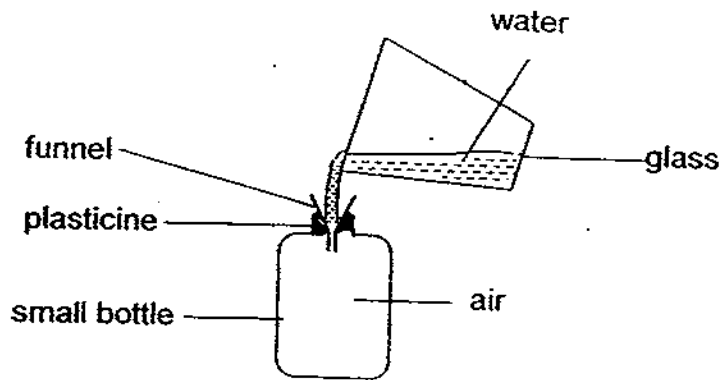
(b) From the experiment above, state two properties of the objects. [2]

(i) \_\_\_\_\_

(ii) \_\_\_\_\_



35. Mina wanted to fill the small bottle with some water from a glass as shown in the diagram below.



- (a) Mina found that the water did not flow into the bottle easily. What could be the reason? [2]

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- (b) Without adding or removing anything from the above set-up, suggest one way to make the water flow into the bottle more easily? [1]

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- (c) Explain your answer in (b). [1]

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36. Two identical syringes, as shown in the diagram below, containing substances X and Y respectively. The tips of both syringes are sealed. The plunger in the syringe with substance X cannot be pushed in while the plunger in the syringe with substance Y can.



- (a) What can you conclude about substances X and Y? [2]

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- (b) Give an example of substances X and Y. [2]

X: \_\_\_\_\_

Y: \_\_\_\_\_

37. Ali held an empty plastic bottle below the surface of water in a container as shown in the diagram below.



State two observations he would likely see when he removed the bottle cap under water. [2]

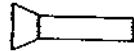
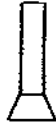
(i) \_\_\_\_\_

(ii) \_\_\_\_\_



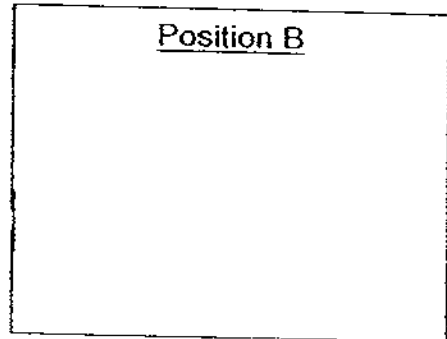
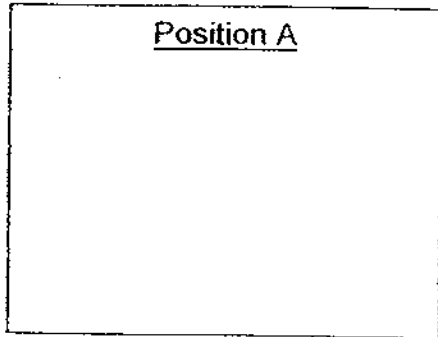
38. Lucy shone her torch on a cup from two positions, A and B, as shown in the diagram below.

Position A



Position B

(a) Use a pencil to draw the shadows formed in the boxes below. [2]



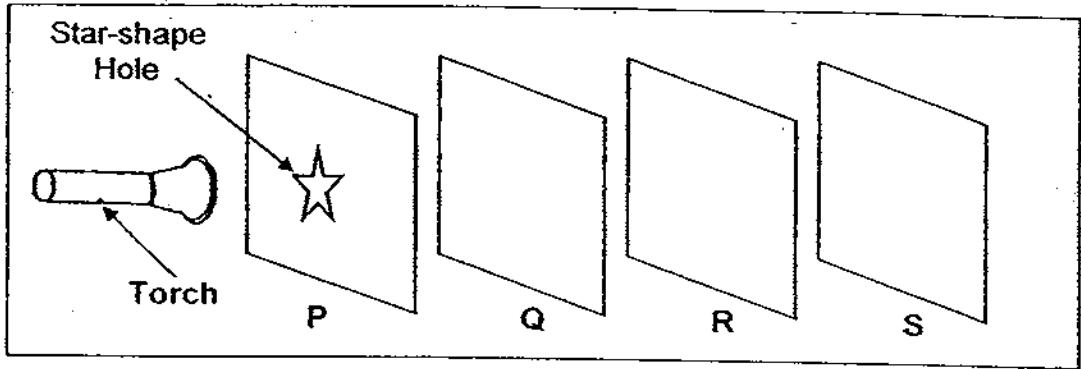
(b) Explain how a shadow is formed. [1]

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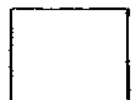
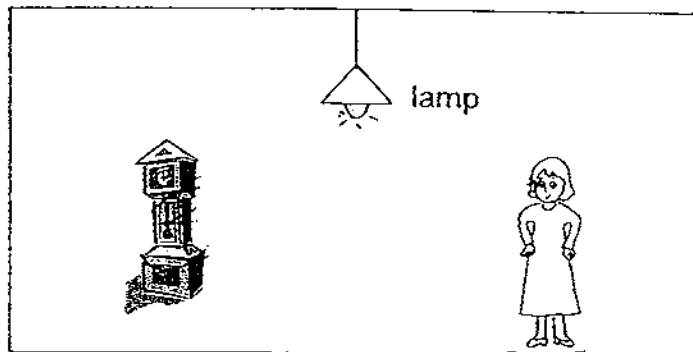
39. Four sheets of materials, P, Q, R and S, are arranged in a straight line. Each sheet is made from one of three different materials listed in the table below. Sheet P has a star shape cut-out as shown in the diagram.



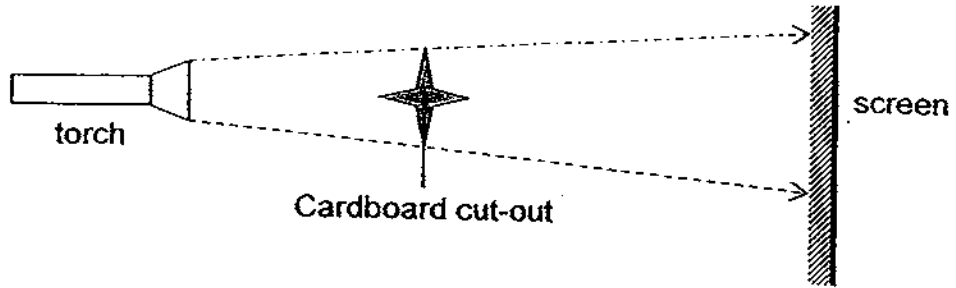
When the torch is switched on, a very bright star-shaped patch of green light is seen on sheet R. Based on the information given above, show the type of material sheets P, Q, R and S are made of by putting a tick (  $\checkmark$  ) in the correct boxes. [2]

| Materials | Clear glass | Green cellophane | cardboard | Not possible to tell |
|-----------|-------------|------------------|-----------|----------------------|
| P         |             |                  |           |                      |
| Q         |             |                  |           |                      |
| R         |             |                  |           |                      |
| S         |             |                  |           |                      |

40. The diagram below shows that the lamp is the only light source in the room. Draw arrows to show how light travels to enable the girl to see the grandfather's clock in the room. [2]



41. Dollah shone a torch at the cardboard cut-out and observed a shadow being formed on the screen.

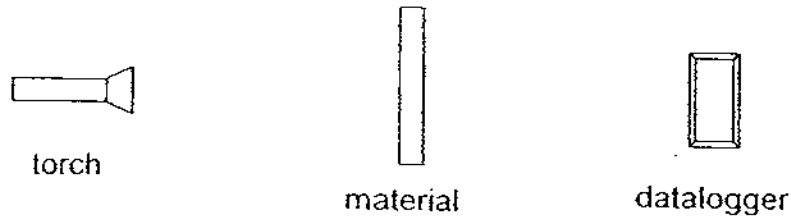


Suggest two ways to increase the size of the shadow formed on the screen.

[2]

- (i) \_\_\_\_\_
- (ii) \_\_\_\_\_

42. Sharon carried out the following experiment to investigate the transparency of four materials, W, X, Y and Z.



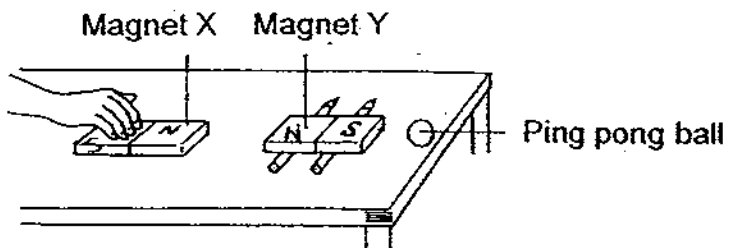
For a fair experiment, which of the following variables must she keep the same and which must she change? Put a thick (✓) in the appropriate boxes to indicate your answer.

[2]

| Variables                                    | Same                     | Change                   |
|----------------------------------------------|--------------------------|--------------------------|
| Distance between the torch and the material. | <input type="checkbox"/> | <input type="checkbox"/> |
| The type of materials.                       | <input type="checkbox"/> | <input type="checkbox"/> |
| The torch                                    | <input type="checkbox"/> | <input type="checkbox"/> |
| The thickness of the materials.              | <input type="checkbox"/> | <input type="checkbox"/> |



43. Samy set up an experiment as shown below.



(a) What will happen to the ping pong ball when Samy brings Magnet X near to Magnet Y? [1]

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

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44. John found that an iron nail could pick up paper clips when he put a magnet at one end of the nail as shown in Figure 1 below.

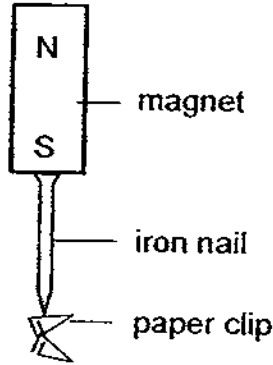


Figure 1

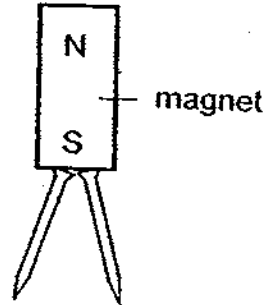


Figure 2

- (a) Explain why the nail could pick up paper clips when a magnet was attached to one end of the nail. [1]

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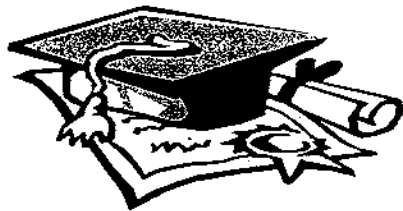
- (b) John also discovered that when he put two nails at the same end of the magnet, as shown in Figure 2, the tips of the two nails would always turn away from each other. What could be the reason? [2]

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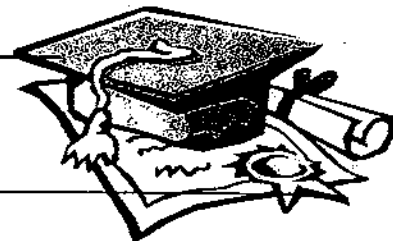
ANSWER SHEET

EKAM PAPER 2009

SCHOOL : CHIJ PRIMARY SCHOOL

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA 1



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

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

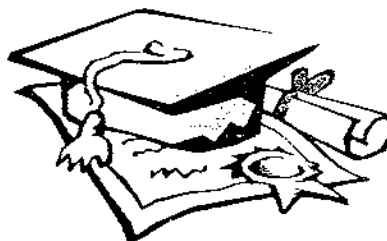
- 31)a)Organism X lives in water but organism Y lives on land.
 b)Both do not take in any food.
 c)Organism Y will develop into a butterfly.

- 32)a)Both animals' youngs live in water.
 b)i)NP ii)F iii)F iv)T

- 33)a)F b)NP c)F d)T

- 34)a)The three objects have the same volume.
 b)i)They occupy space.
 ii)They have a definite volume.

- 35)a)The air inside the bottle occupies space and it could not escape so water cannot enter the bottle easily.
 b)Poke a few holes on the plasticine.
 c)The air will escape from the holes, so it does not block the water from filling the bottle.



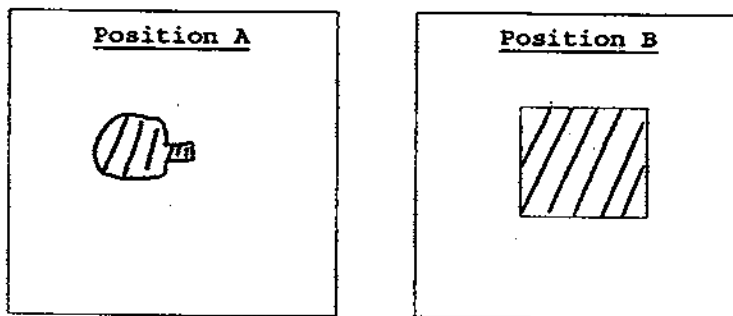
36)a) Substance X cannot be compressed but substance Y can be compressed.

b) X: Orange juice. Y: Carbon dioxide.

37)i) Water will go into the bottle.

ii) The water level in the container will decrease.

38)a)



b) A shadow is formed when an opaque object blocks the path of light from a light source.

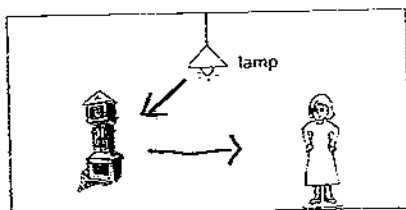
39) P: cardboard

Q: Green cellophane

R: cardboard

S: Not possible to cell

40)



41)i) Move the cardboard cut-out towards the torch.

ii) Move the torch towards the cardboard cut-out.

42) Same

Change

Same

Same

43)a)The two pencils will roll and Magnet Y will be dropped onto the table and Magnet will hit the ping pong ball off the table.

b)Magnet X will repel Magnet Y as they have like poles facing each other so magnet Y will roll on the pencils, moving closer to the ping pong ball finally pushing it off the table.

44)a)The nail was magnetized and so it was able to pick up paper clips.

b)The tips of the two nails are live poles as like poles repel so they push each other away.

