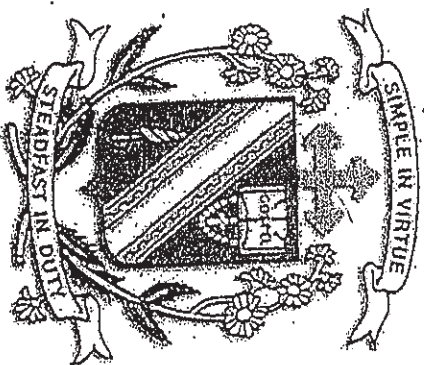


Name: _____ ()

Class: Primary 6 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL (Primary)



2010 First Continual Assessment SCIENCE

BOOKLET A

3 March 2010

Total Time for Booklets A and B: 1 hr 45 min

30 questions
60 marks

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

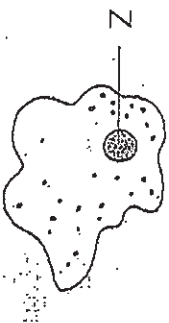
Parent's Signature / Date

This paper consists of 20 printed pages.

Section A (30 x 2 = 60 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.

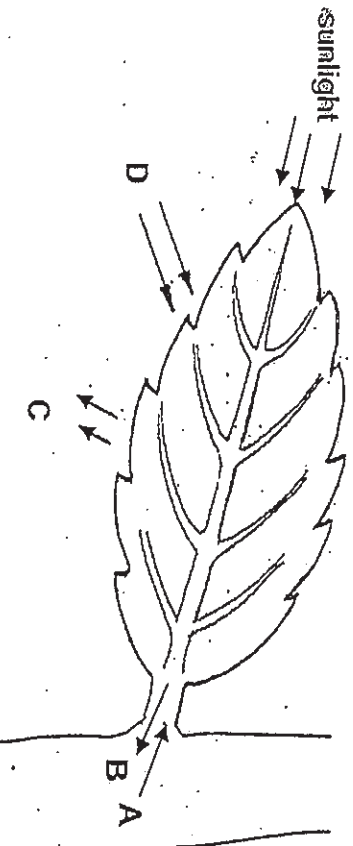
1. The diagram below shows a cell.



What is the function of the part labelled Z?

- (1) It gives the cell a regular shape.
- (2) It controls all activities in the cell.
- (3) It contains chlorophyll which traps light energy.
- (4) It controls substances that move in and out of the cell.

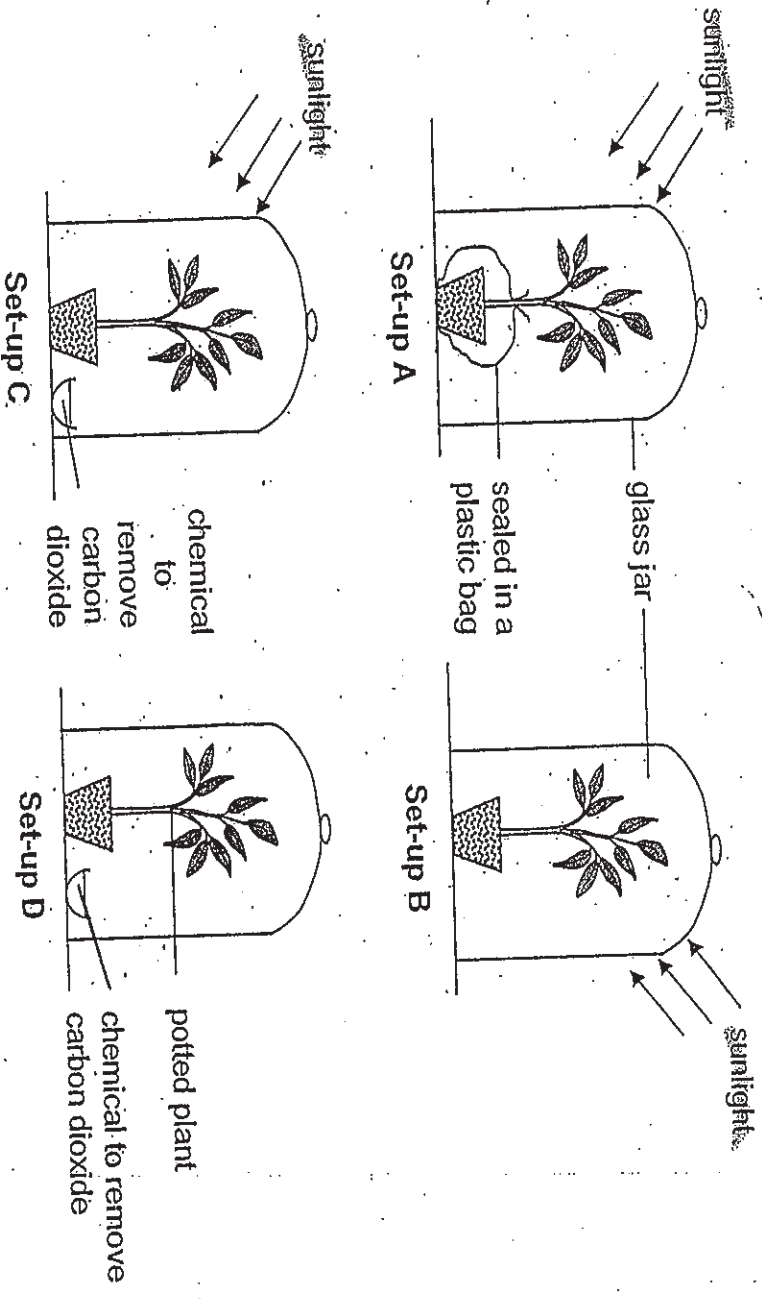
2. The diagram below shows a life process carried out by a green leaf on a plant.



Which one of the following groups of matter correctly represents A, B, C and D?

	A	B	C	D
(1)	Sugar	Water	Carbon dioxide	Oxygen
(2)	Sugar	Carbon dioxide	Water	Oxygen
(3)	Water	Carbon dioxide	Sugar	Oxygen
(4)	Water	Sugar	Oxygen	Carbon dioxide

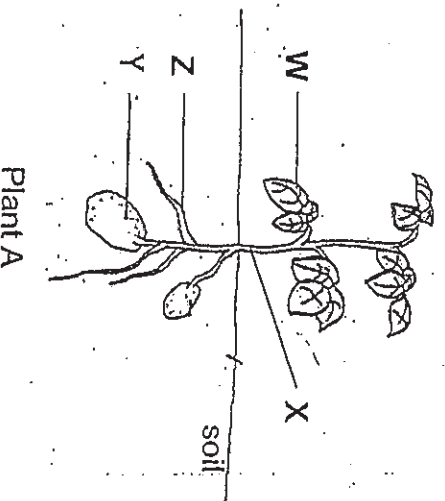
3. David wants to show that carbon dioxide is needed for photosynthesis to take place. He intends to carry out starch tests on some leaves to help him in his investigation. He uses 4 similar plants of similar size and sets up the investigation as shown in the diagram below. All set-ups are exposed to the sunlight except set-up D, which is placed in the dark.



Which two of the above set-ups should he use to carry out a fair test?

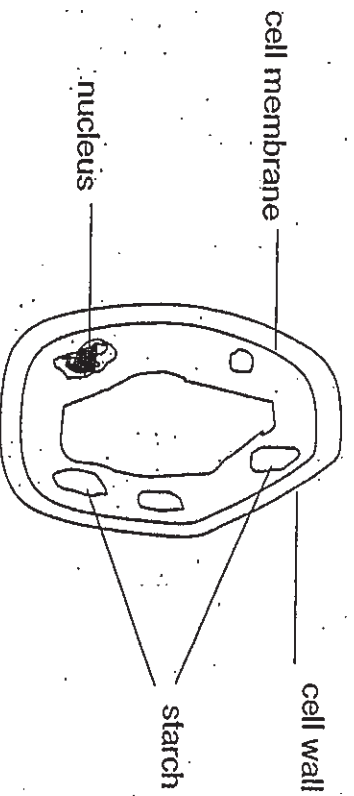
- (1) A and B
- (2) A and C only
- (3) B and C only
- (4) C and D only

4. The diagram below shows the parts of plant A.



Plant A

The magnified cell below is taken from a certain part of plant A.



The cell above is least likely to have taken from part _____ of the plant.

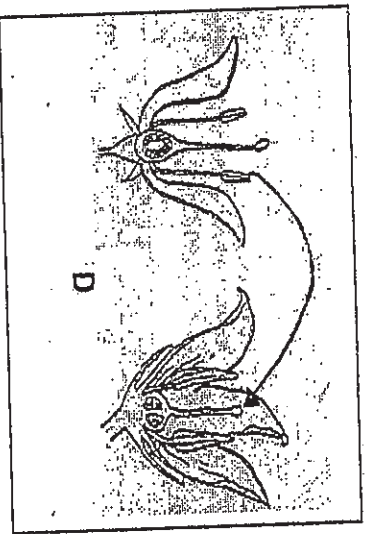
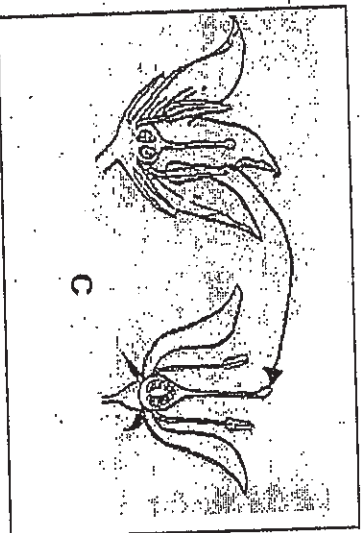
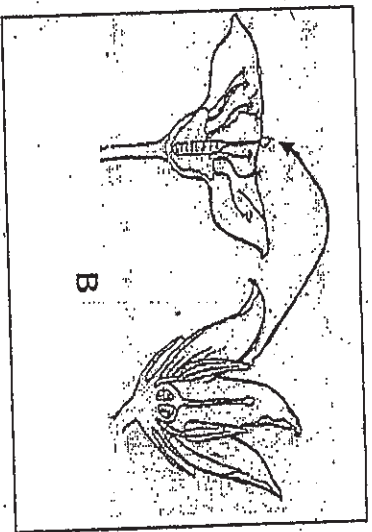
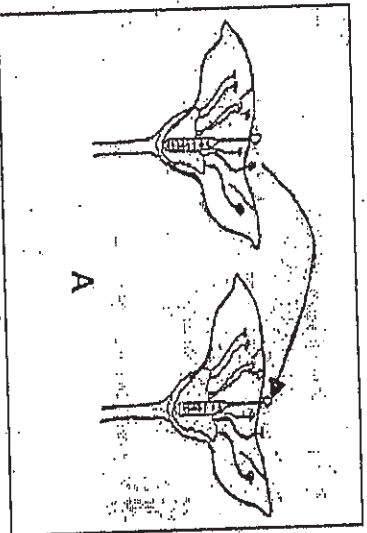
- (1) W
- (2) X
- (3) Y
- (4) Z

5. Which one of the following statements does not show the importance of water to plants?

- (1) Seeds cannot germinate.
- (2) Fertilization cannot take place.
- (3) Plant cells cannot be kept firm.
- (4) Plants will not be able to transpire.

6.

The diagrams below show four pairs of flowers, A, B, C and D. The arrows show the transfer of pollen grains.



Which pair(s) of flowers would most likely develop into fruit(s)?

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

7.

A substance has to pass through various parts of a plant cell before reaching the nucleus. Which of the following shows the correct order of these parts?

- (1) Cell wall, cytoplasm, cell membrane.
- (2) Cell wall, cell membrane, cytoplasm.
- (3) Cell membrane, cell wall, cytoplasm.
- (4) Cell membrane, cytoplasm, cell wall.

8. Nora recorded her observations of four organisms P, Q, R and S in the table below.

Organism	Observation
P	Gives off oxygen
Q	Reproduce by spores
R	Gives off carbon dioxide
S	Needs water and mineral salts

Based on the information given, which of the following organism(s) is/are ~~definitely~~ a plant?

- (1) P only
 (2) S only
 (3) P and R only
 (4) P, R and Q only

9. Five pupils observed the ~~cells of some organisms~~ under a microscope. They recorded their observations and conclusions in the table below.

Name of pupil	Observation on cell parts seen	Conclusion on type of cell
Ali	Cytoplasm, nucleus, cell membrane	Animal
May	Nucleus, cell wall, cell membrane, chloroplasts	Plant
Emily	Cell membrane, nucleus, chloroplasts	Fungi
Mei Ling	Cell membrane, cell wall, nucleus	Plant
Nancy	Cell membrane, cell wall, nucleus, cytoplasm	Animal

Which of the pupils made the ~~correct~~ conclusion?

- (1) Ali, May and Mei Ling
 (2) Ali, Emily and Mei Ling
 (3) May, Emily and Nancy
 (4) Emily, Mei Ling and Nancy

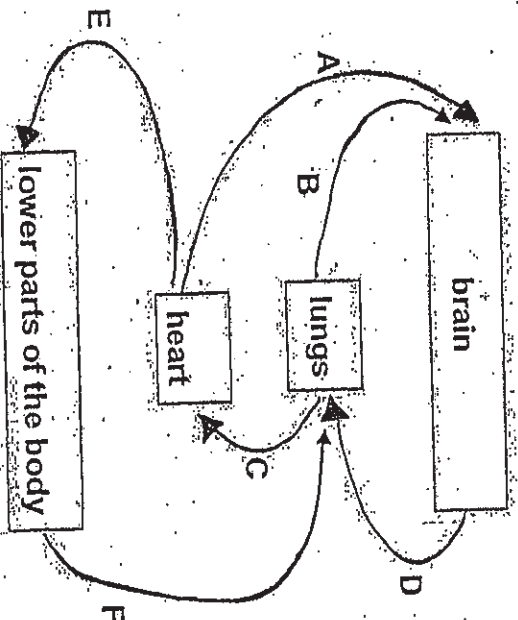
10. The table below shows the observations of 3 objects X, Y and Z.

Object	Observation	
	Come from plants?	Turn iodine solution dark blue?
X	Yes	Yes
Y	Yes	No
Z	No	No

Which one of the following lists shows correctly what objects X, Y and Z are?

	X	Y	Z
(1)	noodles	bread	salt
(2)	potato	sugar	mushroom
(3)	banana	rice	beef
(4)	rice	flour	prawn

11. The diagram below shows how blood travels in the human body. Arrows A, B, C, D, E and F represent the movement of blood.

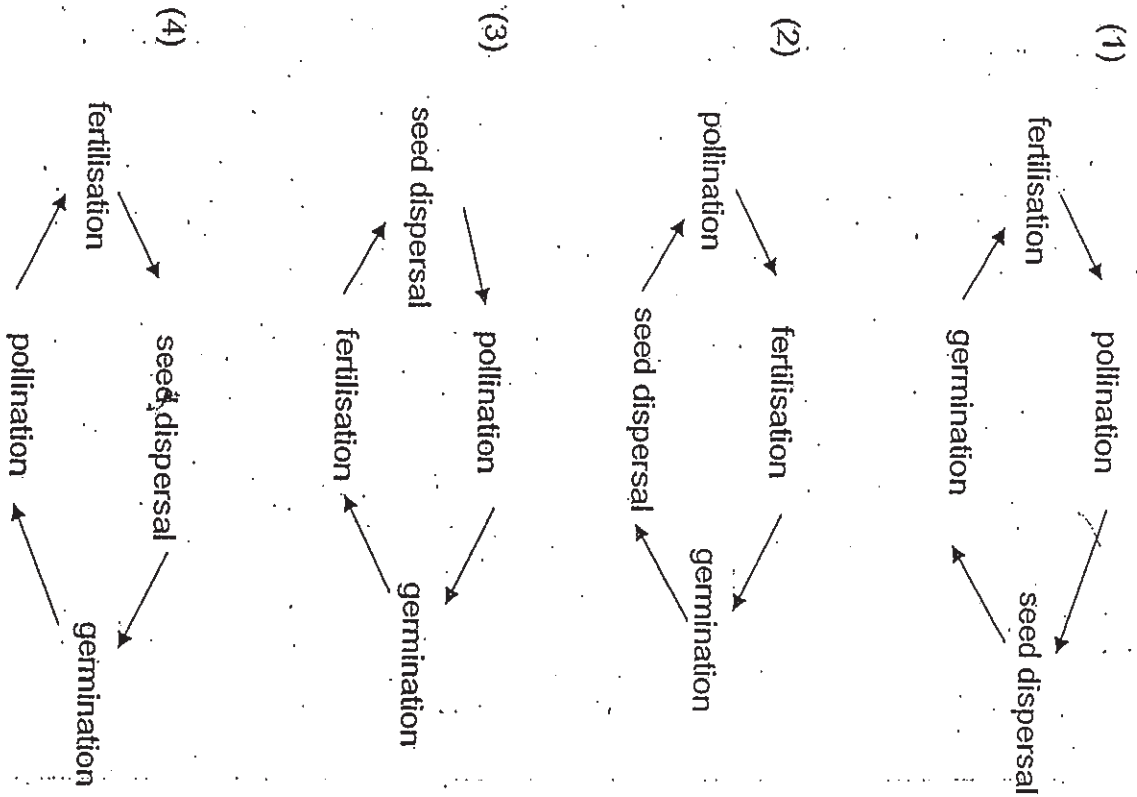


Which arrow(s) in the above diagram is/are not correct?

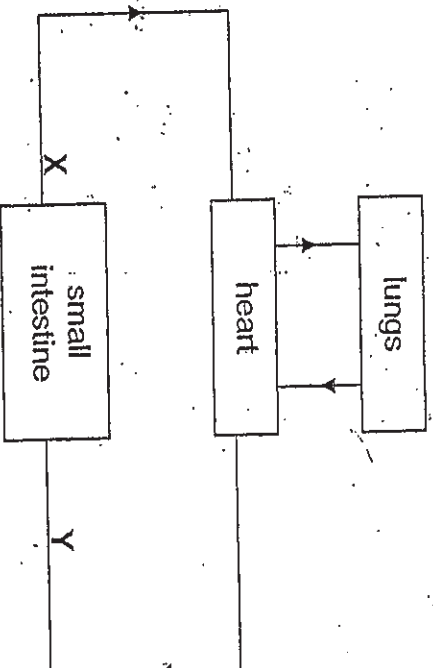
- (1) B only
 (2) A and E only
 (3) C and D only
 (4) B, D and F only

→ pollination

12. Which of the following shows the correct processes in the sexual reproduction of a flowering plant?



13. The diagram below shows how blood flows in certain parts of the body a few hours after a meal.



When compared with the blood in Y, the blood in X has _____.

- (1) less carbon dioxide and less digested food
- (2) less carbon dioxide and more digested food
- (3) more carbon dioxide and less digested food
- (4) more carbon dioxide and more digested food

14. The table below shows the breathing rates of people when they are resting.

Breathing Rates	
People	Average Breath Per Minute
Baby girls	38
6-year-old girls	25
6-year-old boys	25
11-year-old girls	20
Mothers	18

From the information given, we can conclude that _____.

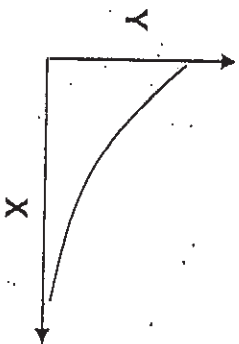
- (1) boys breathe faster than girls
- (2) baby girls breathe faster than baby boys
- (3) younger people breathe faster than older people
- (4) the higher the breathing rate the faster the heart beats

15. 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

16. When John walks up a slide, he gains potential energy and this energy is converted into kinetic energy as he slides down. The graph below shows the changes in energy as he slides down the slide.



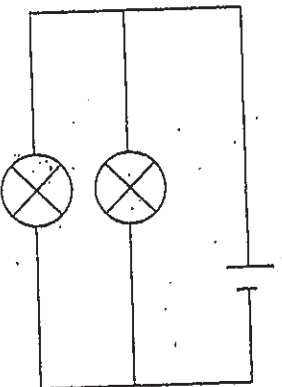
Which one of the following pairs of headings shows the correct labels for X and Y respectively?

	X	Y
(1)	Potential energy	Height
(2)	Potential energy	Kinetic energy
(3)	Height	Kinetic energy
(4)	Kinetic energy	Height

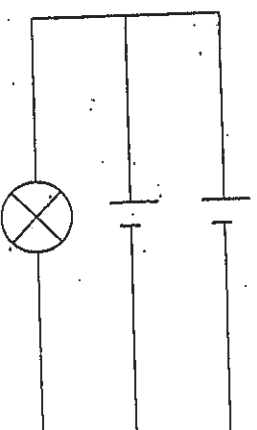
17. Which one of the following is not a form of energy?

- (1) Light
- (2) Sound
- (3) Friction
- (4) Electricity

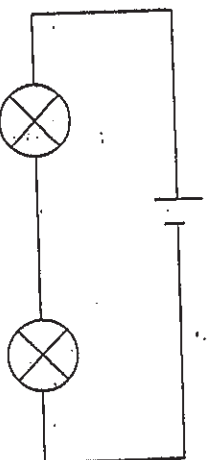
18. The batteries and bulbs in the four circuits, W, X, Y and Z, below are identical.



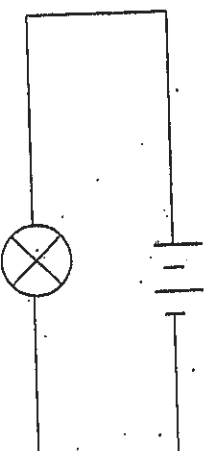
circuit W



circuit X



circuit Y



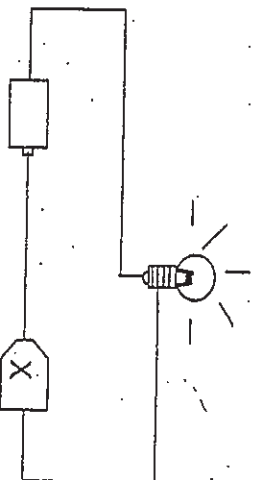
circuit Z

In which one of the above circuits, W, X, Y and Z, will the bulb(s) remain lit for the longest period of time?

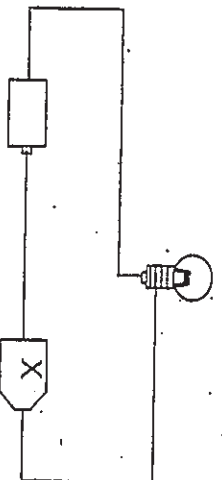
- (1) Circuit W
- (2) Circuit X
- (3) Circuit Y
- (4) Circuit Z

19. Ivan's friend gave him an electric circuit consisting of a bulb joined by wires to a battery and a mystery object, X.

The bulb lighted up when the circuit was closed.



When he changed the position of the mystery object as shown below, the bulb did not light up.



Which one of the following objects is most likely to be object X?

- (1) A bulb
- (2) A battery
- (3) A paper clip
- (4) A carbon rod

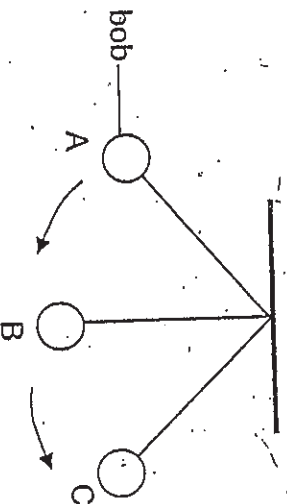
20. Four pupils, when asked to give a statement about forces, gave the following:

- Aziz : A force is a push or a pull.
- Ben : A force can be seen and felt.
- Cathy : A force can change the mass of an object.
- Dollah : A force can change the volume of air.

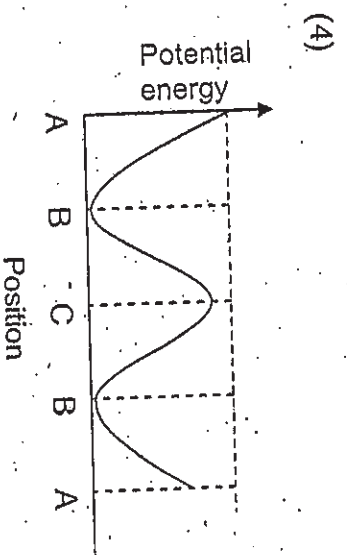
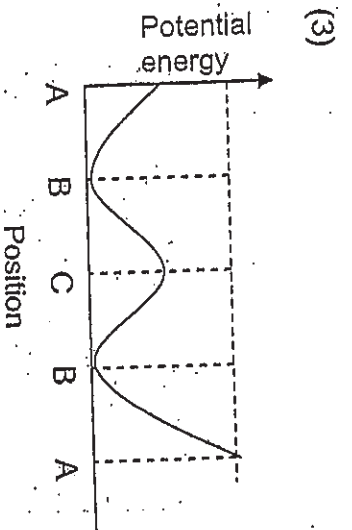
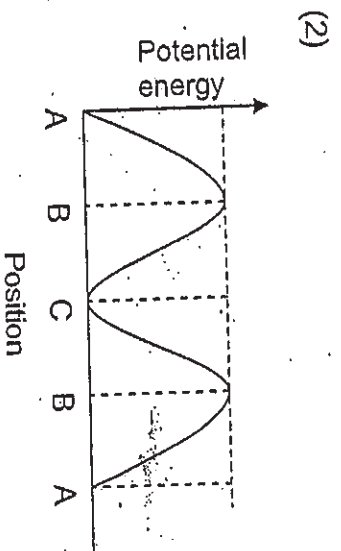
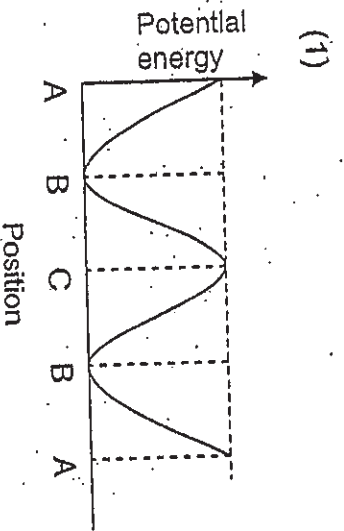
Who made a correct statement?

- (1) Aziz only
- (2) Aziz and Dollah
- (3) Ben, Cathy and Dollah
- (4) Aziz, Cathy and Dollah

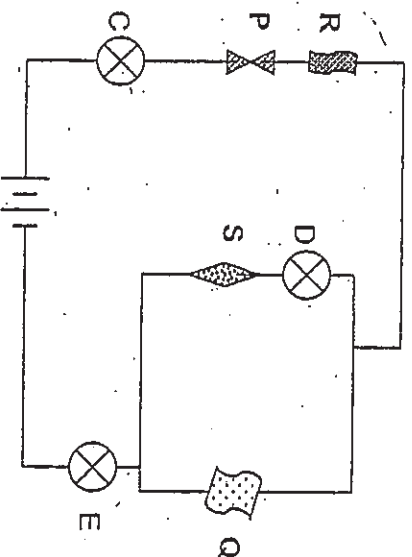
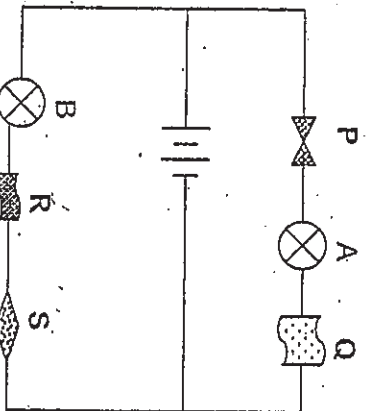
21. Tom carried out an experiment with a pendulum as shown in the diagram below. He lifted the bob to position A and let it swing to position C and then back to A.



Which one of the following graphs shows the change in potential energy of the bob as it swung from A to C and then back to A?



22. Shawn set up the following electrical circuits to find out if materials, P, Q, R and S could conduct electricity.



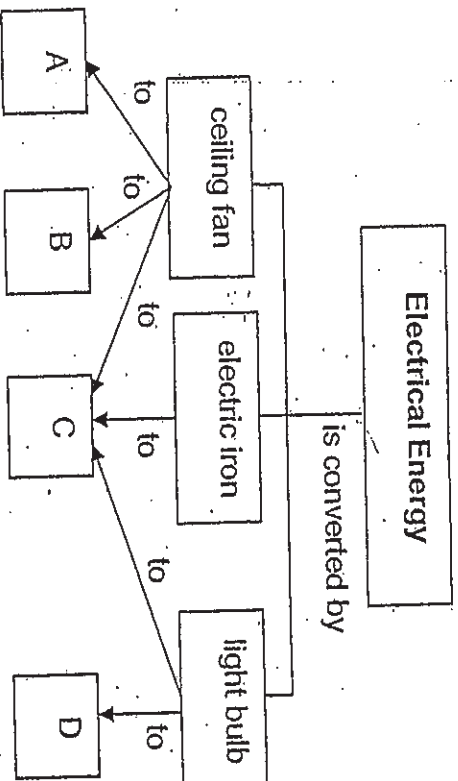
He recorded his observations in the table below.

Bulb	Did the bulb light up?
A	Yes
B	No
C	Yes
D	No
E	Yes

From the observations, which one of the following groupings is correct?

	Electrical conductors	Electrical insulators
(1)	P, Q	R, S
(2)	S	P, Q, R
(3)	P, Q, R	S
(4)	Q	P, R, S

23. The graphic organizer below shows the conversion of electricity to other forms of energy, A, B, C and D, by some household electrical appliances.



Identify energy A, B, C and D.

	A	B	C	D
(1)	kinetic	sound	heat	light
(2)	kinetic	potential	light	heat
(3)	sound	chemical	heat	light
(4)	heat	light	sound	kinetic

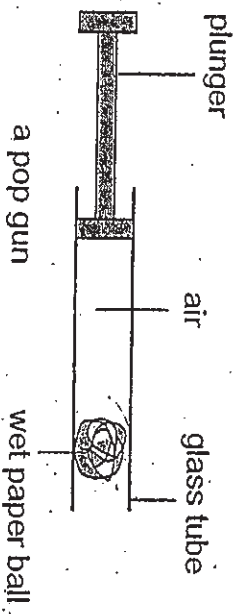
24. A spring was stretched when different weights were hung from it. The length of the spring is recorded in the table below.

Weight	20g	40g	80g	100g
Length in cm	8	10	14	16

What is the extension of the spring when a 50-gram weight is hung from it?

- (1) 5 cm
 (2) 6 cm
 (3) 11 cm
 (4) 12 cm

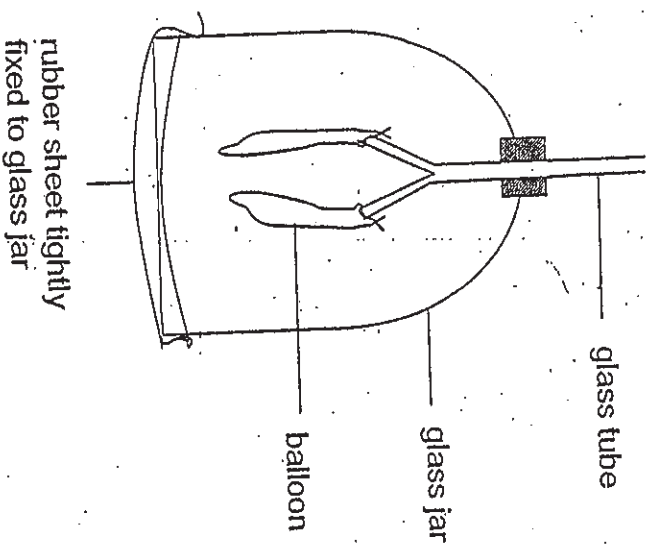
25. The diagram below shows a pop gun.



When the plunger of the pop gun is pushed, the air in the glass tube will force the wet paper ball out. Which form(s) of energy does/do the compressed air have?

- A Heat energy
B Sound energy
C Kinetic energy
D Potential energy.
- (1) B only
(2) D only
(3) B and C only
(4) A, B and C only

26. A group of students built the following model to demonstrate breathing in a human body.

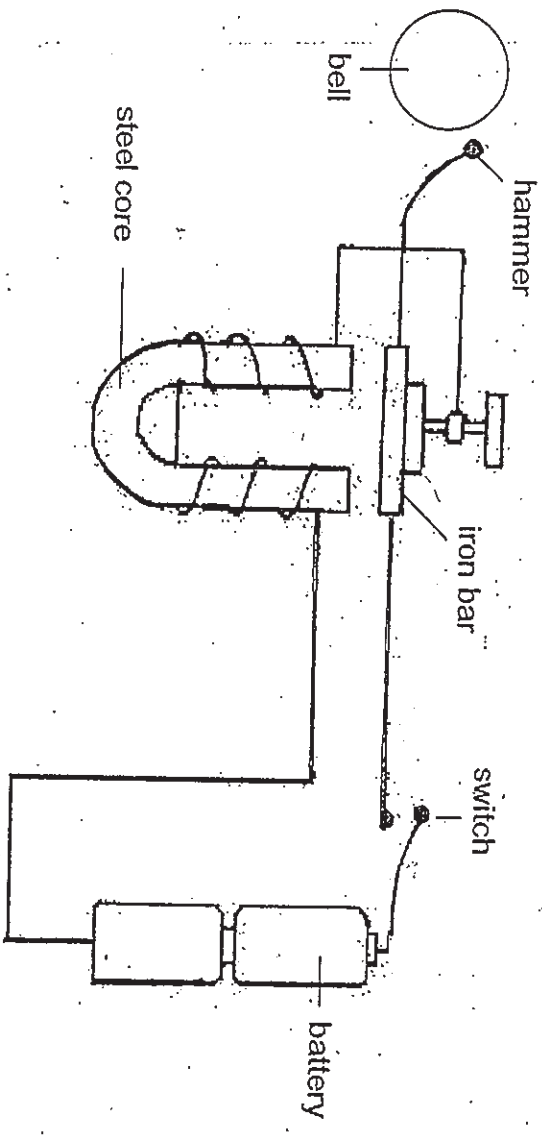


Which of the following statements describe why the above is not an accurate model to show the action of breathing when the rubber sheet is pulled down?

- A The movement of the ribs is not shown during breathing.
- B The movement of diaphragm is not shown during breathing.
- C The balloons do not inflate when air is drawn in during breathing.
- D The glass jar cannot be enlarged when air is drawn in during breathing.

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

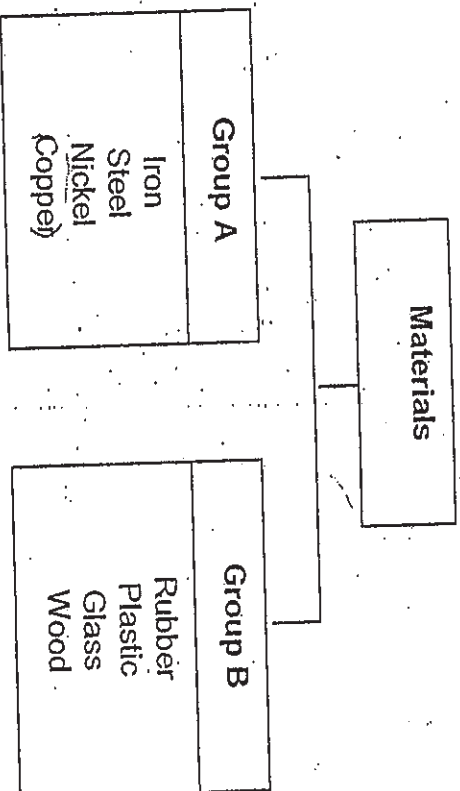
27. The diagram below shows a simple electric bell.



Which one of the following shows the energy changes that occur in the correct order when the circuit is closed?

- (1) electrical energy → sound energy → kinetic energy → magnetic energy
- (2) electrical energy → magnetic energy → kinetic energy → sound energy
- (3) potential energy → electrical energy → kinetic energy → sound energy
- (4) potential energy → electrical energy → magnetic energy → sound energy

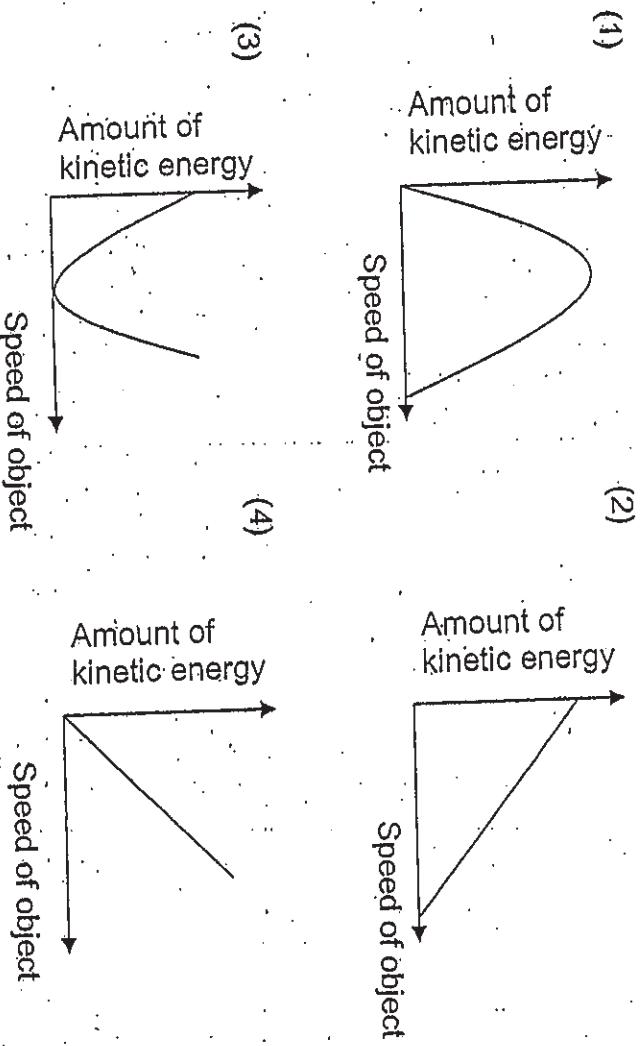
28. Study the classification table below carefully.



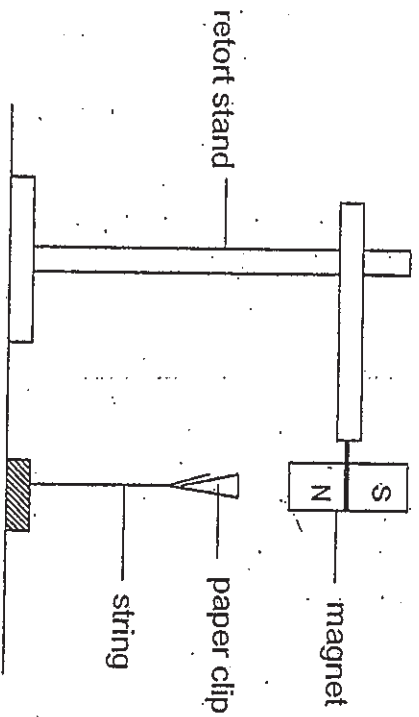
How are the materials in the table above classified?

	Group A	Group B
(1)	Magnetic	Non-magnetic
(2)	Conductor of heat	Non-conductor of heat
(3)	Conductor of electricity	Insulator of electricity
(4)	Non-metal	Metal

29. Which one of the following graphs shows the correct relationship between the amount of kinetic energy an object has and the speed of the object?



30. Study the diagram below carefully.



What conclusion can we draw from this experiment?

- A N-pole is the strongest.
- B Like poles repel and unlike poles attract.
- C Magnetic force can act from a distance.
- D Magnetic force acting on the paper clip is stronger than the gravitational force.

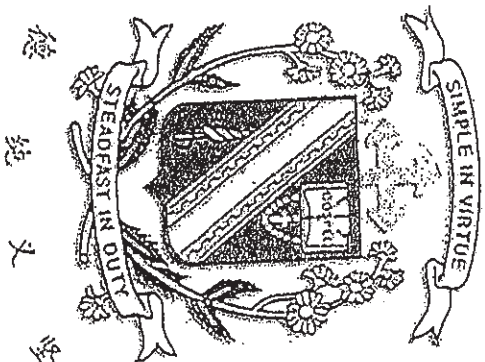
- (1) A only
- (2) C only
- (3) C and D only
- (4) A, B, C and D

~~~ End of Section A ~~~

Name: \_\_\_\_\_ (    )

Class: Primary 6 \_\_\_\_\_

# CHIJ ST NICHOLAS GIRLS' SCHOOL (Primary)



## 2010 First Continual Assessment SCIENCE

### BOOKLET B

3 March 2010

Total Time for Booklets A and B: 1 hr 45 min

14 questions  
40 marks

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

|           |   |   |
|-----------|---|---|
| Booklet A | / | 6 |
| Booklet B | / | 4 |
| Total     | / | 1 |

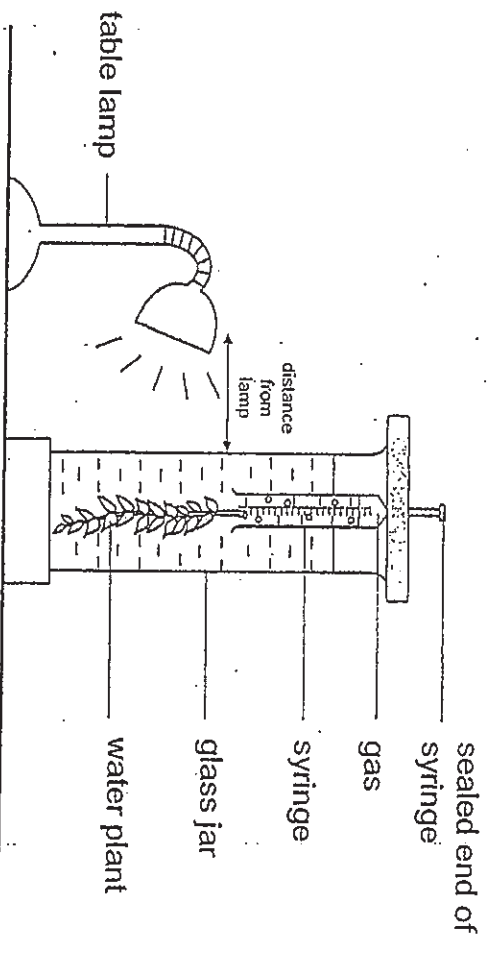
Parent's Signature / Date

This paper consists of 13 printed pages.

**Section B (40 marks)**

For questions 31 to 44, write your answers in this booklet.  
The number of marks available is shown in brackets [ ] at the end of each question or part question.

31. Eddy set up the experiment below in a dark room.



He placed the table lamp at a distance of 15 cm from the glass jar. After one hour, he observed that the syringe had collected 5 cm<sup>3</sup> of gas. He repeated the experiment by placing the lamp at distances of 20 cm, 25 cm and 30 cm from the glass jar.

(a) What was the aim of his experiment? [1]

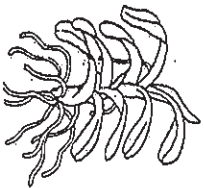
(b) Eddy found that the amount of the gas collected was different when the lamp was at a different distance from the jar. What pattern would he observe? [1]

(c) The temperature of the water in the jar will affect the amount of gas collected. State two other factors that will affect the amount of gas collected in the above experiment. [2]

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

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

32. The diagram below shows an orchid plant and a bird's nest fern.



Orchid

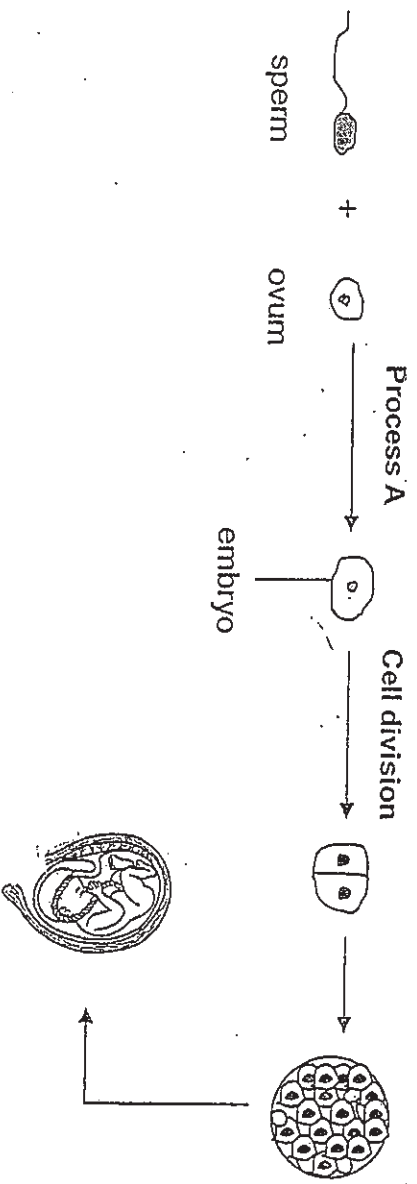


Bird's nest fern

(a) How are they different in their methods of reproduction? [1]

(b) Name another group of organisms that reproduces in the same way as the bird's nest fern. [1]

33. The diagram below shows the development of a human embryo.

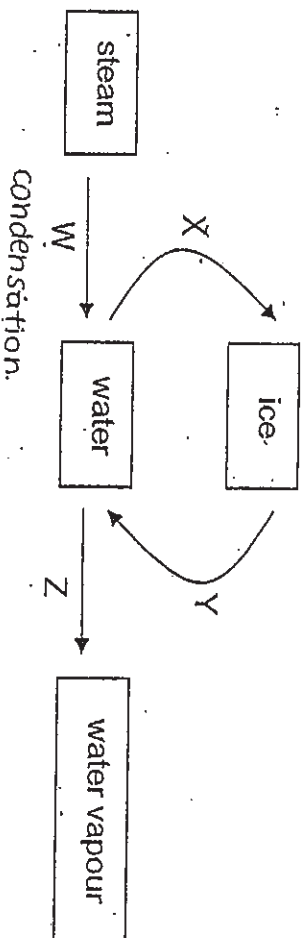


(a) Identify Process A.

[1]

(b) Process A in the development of a human being is different from the Process A in the development of a frog. In what way are they different? [2]

34. The diagram below shows the various states of water.



(a) What process does arrow W represent?

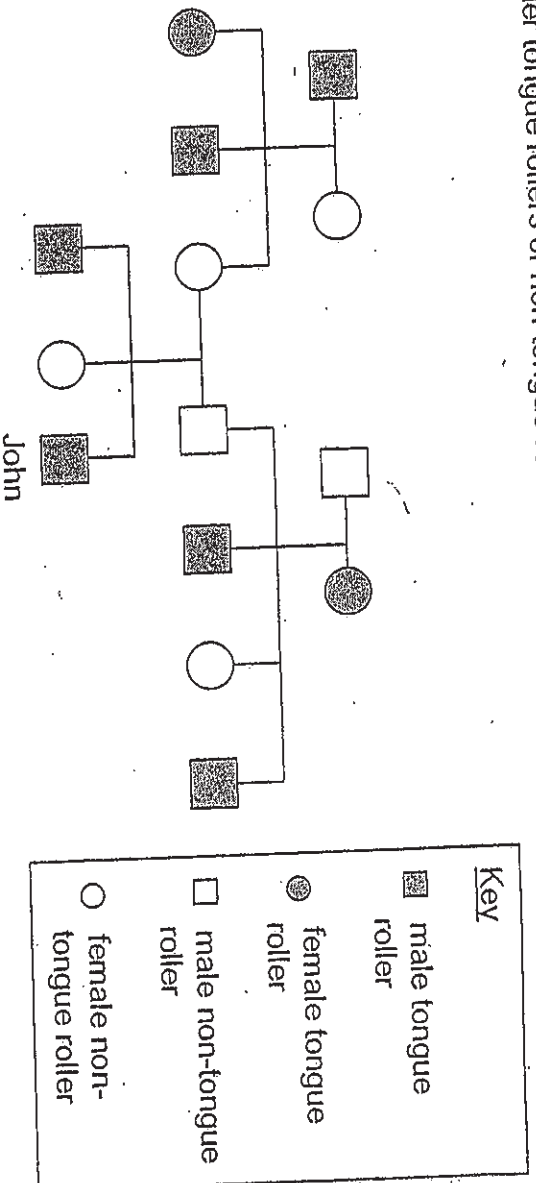
[1]

(b) In what way is process Y similar to process Z?

[1]



35. Study the family tree of John below. The family tree shows the members who are either tongue rollers or non-tongue rollers.

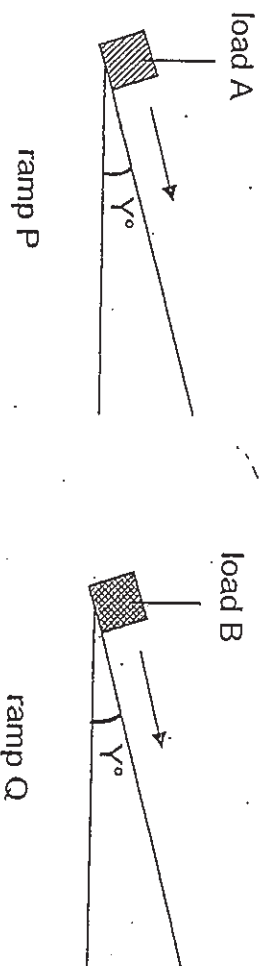


Based on the family tree above, state whether each of the following statements is True, False or Not Possible to Tell (NP). Put a tick (✓) in the appropriate boxes. [2]

|   | Statement                                                | True | False | NP |
|---|----------------------------------------------------------|------|-------|----|
| 1 | John's parents are tongue rollers.                       |      |       |    |
| 2 | All the uncles of John are tongue rollers.               |      |       |    |
| 3 | John's mother has a sister who is a tongue roller.       |      |       |    |
| 4 | At least one of John's children will be a tongue roller. |      |       |    |

36.

Nathan pushed two loads, A and B, of the same mass up to the same height using two ramps, P and Q. The two ramps had the same angle of inclination,  $Y^\circ$ . He observed that he needed more effort to push load B than load A.



- (a) Give one possible reason why a greater effort was needed to push load B than load A. [1]

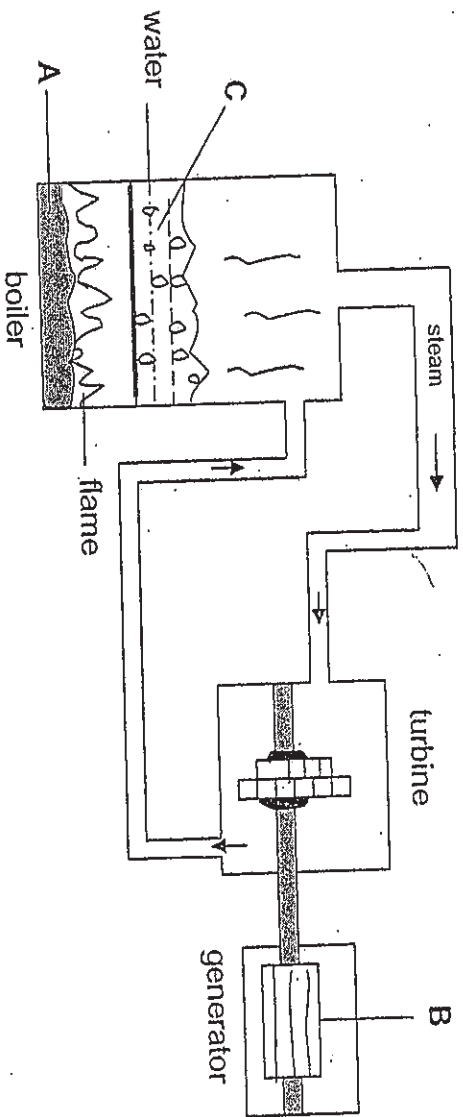
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- (b) State two forces that were acting on the loads as they were being pushed up the ramps. [2]

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

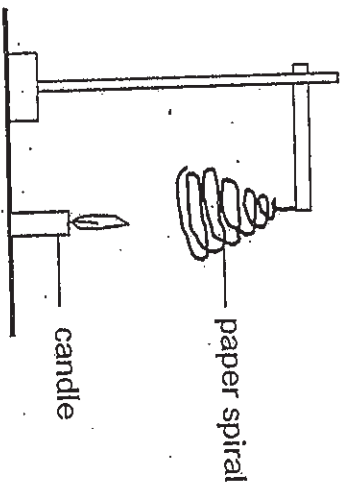
37. The diagram below shows the various stages involved in the generation of electricity in a power station. State the change of energy at the part marked A and B. [2]



Part A:

Part B:

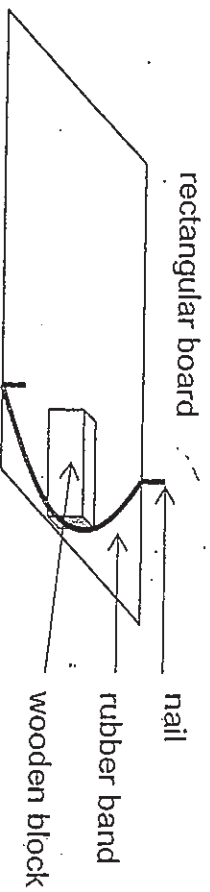
38. The diagram below shows a paper spiral hung on a retort stand. When a lit candle is placed directly under the paper spiral as shown in the diagram, the spiral will spin.



- (a) Explain what causes the paper spiral to spin.

- (b) What type of energy does the candle possess?

39. A group of students carried out an experiment with 3 rectangular boards of different surfaces, P, Q and R. A wooden block was made to move over the 3 different surfaces as shown in the diagram below.



The results are recorded in the table below.

| Surface | Distance moved by the wooden block |
|---------|------------------------------------|
| P       | 25 cm                              |
| Q       | 16 cm                              |
| R       | 31 cm                              |

- (a) What is the aim of this experiment?

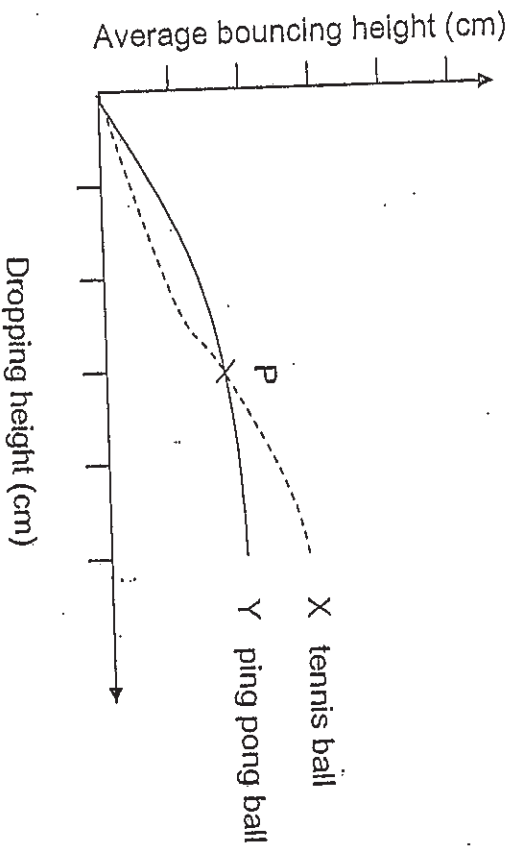
[1]

- (b) Based on the results recorded, what conclusion can they draw about the surfaces of the boards?

[2]

40.

May carried out an experiment with a ping pong ball and a tennis ball. She dropped the balls from a certain height which she called the dropping height, and measured the height which the balls bounced up which she called the bouncing height. She repeated the experiment several times and plotted the graph as shown below.



(a) Why did she repeat the experiment several times?

[1]

\_\_\_\_\_

(b) The two lines in the graph meet at point P. What does it mean?

[1]

\_\_\_\_\_

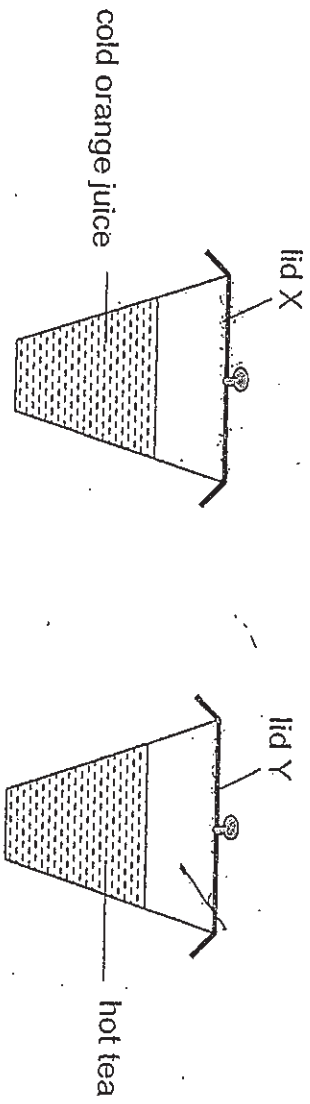
(c) What can you say about the two lines, X and Y before and after point P?

[2]

\_\_\_\_\_

\_\_\_\_\_

41. Judy placed a glass of cold orange juice and a glass of hot tea on the table as shown in the diagram below. She covered both glasses with similar metal lids, X and Y, respectively.



After five minutes, she found water droplets formed on both the lids.

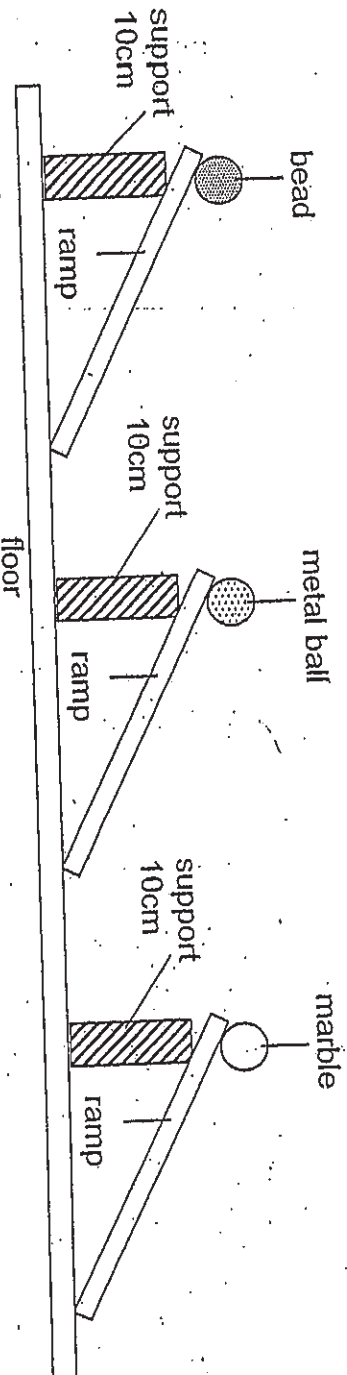
- (a) Show, by drawing on the diagram, the water droplets that formed on lid X and lid Y. [2]

- (b) Explain clearly why water droplets were formed on metal lid Y. [2]

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42. James set up an experiment as shown in the diagram below. He released a bead, a marble and a metal ball of the same size from the top of 3 identical ramps.

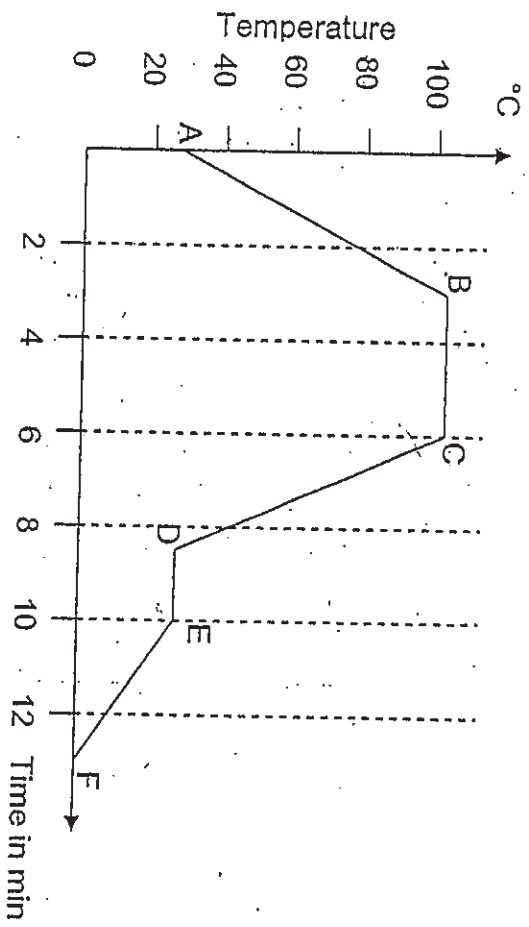


The experiment was carried out three times for each of the objects. The times taken for the object to reach the floor are recorded in the table below.

| Object     | Time taken (sec)    |                     |                     | Average |
|------------|---------------------|---------------------|---------------------|---------|
|            | 1 <sup>st</sup> Try | 2 <sup>nd</sup> Try | 3 <sup>rd</sup> Try |         |
| Bead       | 3.3                 | 3.0                 | 3.6                 | 3.3     |
| Metal ball | 1.6                 | 1.8                 | 1.4                 | 1.6     |
| Marble     | 1.9                 | 2.4                 | 4.3                 | 2.2     |

- (a) The times taken for each object to reach the floor are different in the three tries. Give one possible reason for this. [1]
- (b) Based on the results, one of the objects always reached the floor first. Which is the object? [1]
- (c) State one possible reason why the object in (b) reached the floor first. [1]
- (d) Would the results be different if he had used supports made of different materials? Explain your answer. [1]

43. The graph below shows the changes in temperature when 500 ml of water in a beaker was heated over a flame and then allowed to cool.

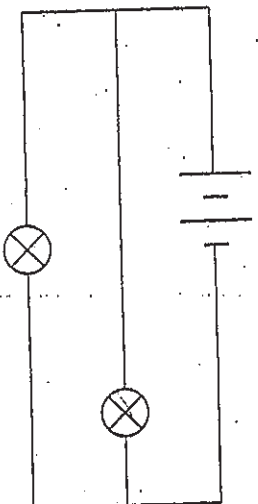


Based on the graph above, state whether each of the following statements is True, False or Not possible to tell. Put a tick (✓) in the correct box. [2]

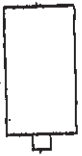
|     | Statements                               | True | False | Not possible to tell |
|-----|------------------------------------------|------|-------|----------------------|
| (a) | The water gained heat at phase BC.       |      |       |                      |
| (b) | Steam was formed at phase AC.            |      |       |                      |
| (c) | Ice was added to the water at phase CD.  |      |       |                      |
| (d) | Phase EF shows water at its solid state. |      |       |                      |



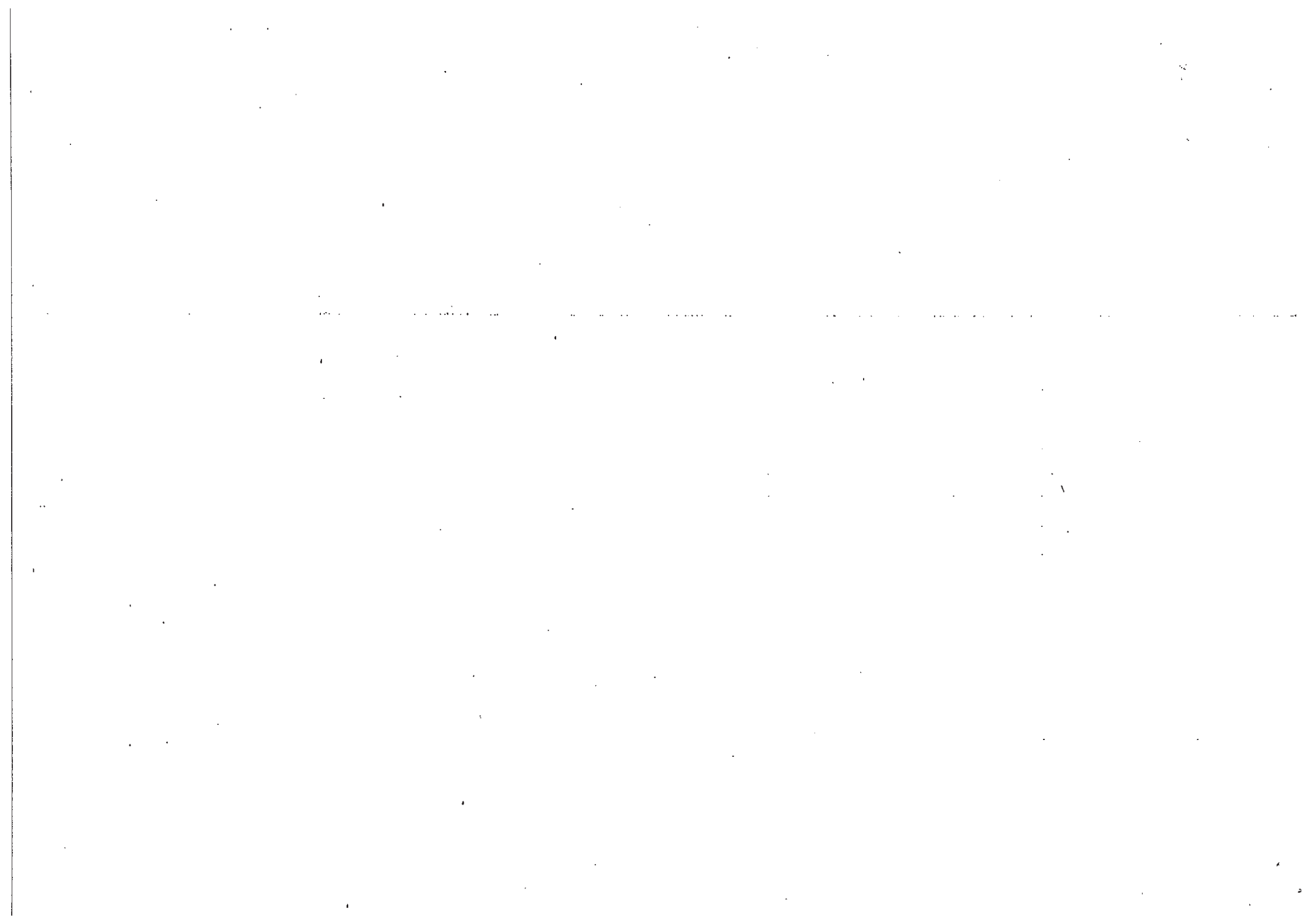
44. Study the circuit diagram below carefully.

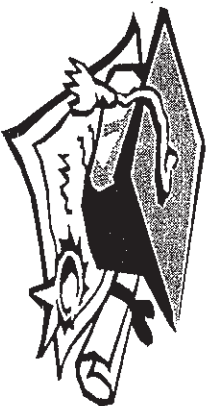


Connect the batteries and the bulbs below to form the circuit represented by the circuit diagram above. [2]



~ End of Paper ~



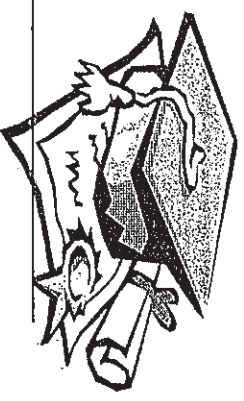


# ANSWER SHEET

**EXAM PAPER 2010**

**SCHOOL : CHIJ PRIMARY  
SUBJECT : PRIMARY 6 SCIENCE**

**TERM : CA1**



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

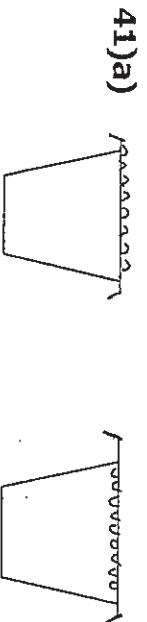
|     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Q18 | Q19 | Q20 | Q21 | Q22 | Q23 | Q24 | Q25 | Q26 | Q27 | Q28 | Q29 | Q30 |
| 2   | 2   | 2   | 4   | 3   | 1   | 1   | 2   | 1   | 3   |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

- 31)a)He is trying to find out whether the distance of the lamp affect the amount of gas collected.  
b)He could observe the further the lamp is, from the glass jar the lesser gas will be collected.  
c)i)The number of leaves the plant has  
ii)The amount of carbon-dioxide in the water.
- 32)a)The orchid reproduce by seed but the bird's nest fern reproduce by spores.  
b)Fungi.
- 33)a)Fertilisation.  
b)Human goes through internal fertilisation but a frog fertilise from external fertilisation.
- 34)a)The process is condensation.  
b)The both processes need heat to take place.
- 35)1)F 2)T 3)T 4)NP
- 36)a)Load B is rougher than load A.  
b)i)Frictional force.  
ii)Gravitational force.
- 37)A: Chemical potential energy → Heat + Light energy.  
B: Kinetic energy → electrical energy.

- 38)a) Because hot air rises and cause the paper spiral to spin.  
b) Chemical potential energy.

- 39)a) The aim is to see whether the different surfaces affect the distance moved by the wooden block.  
b) The can surface R is the smoothest while surface Q is the roughest.

- 40)a) To minimise human error.  
b) When the two balls are dropped from that particular height bounce up to the same height.  
c) Before point P, the ping pong ball bounces higher than the tennis ball bounces higher than the ping pong ball when they are dropped from the same height.



- b) When water vapour from the hot tea touches/comes into contact with the cooler inner.

- 42)a) The point where the object was realised was not the same.  
b) It is the metal ball.  
c) Because the texture of the metal ball is smoother than the texture of the other object.  
d) There will be no difference as the height of the ramp is still the same.

- 43)a) T    b) F    c) Not    d) F

44)

