

Nanyang Primary School  
First Continual Assessment 2004  
Science  
Primary Six

CA1

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

Date: \_\_\_\_\_

Class: Primary 6 ( )

Score: \_\_\_\_ / 100

Parent's Signature: \_\_\_\_\_

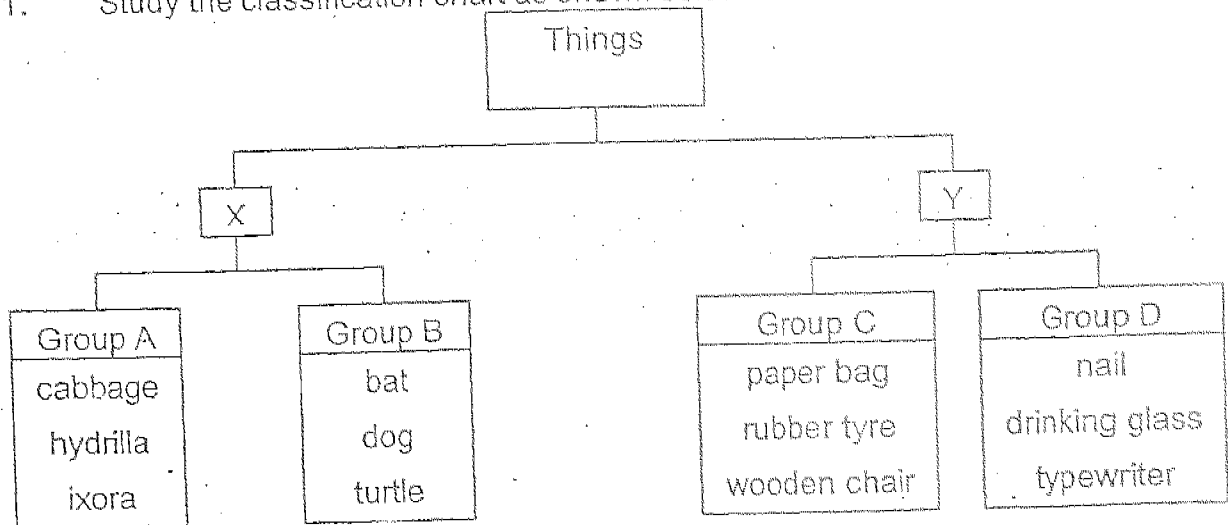
Duration: 1h 45 min

Setters: Mrs. Tan Yoke Cheng & Ms. Brenda Kok

**Section A ( 30 x 2 = 60 marks )**

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

1. Study the classification chart as shown below.

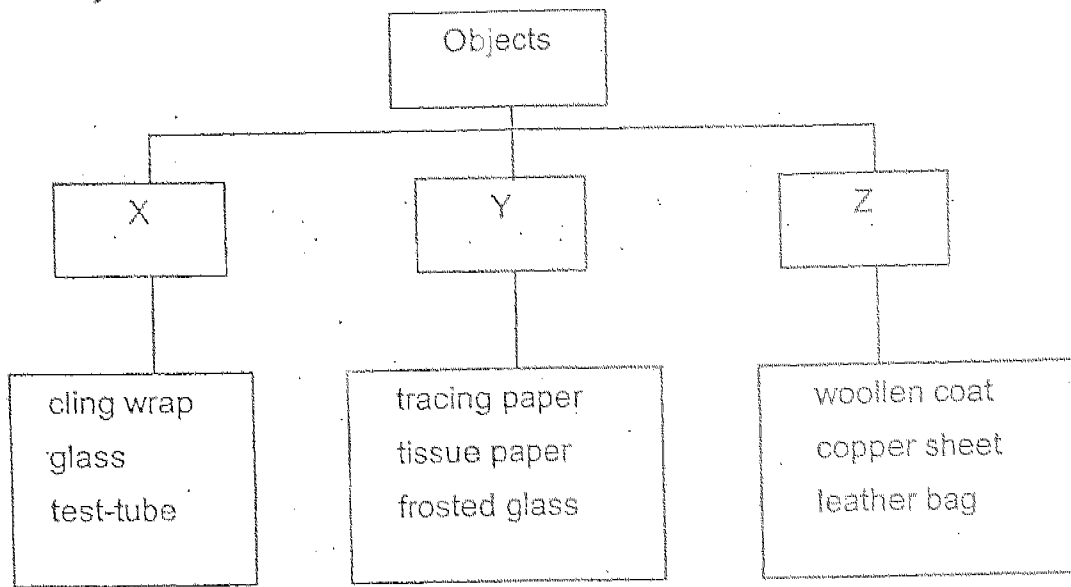


In which of the following groups would you place the words "termite" and "computer" respectively?

- (1) A and C  
(3) B and C

- (2) A and D  
(4) B and D

2. Study the classification chart as shown below.

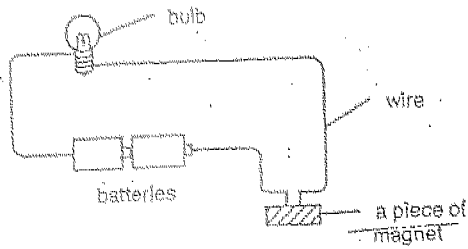


A porcelain cup can be grouped under \_\_\_\_\_.

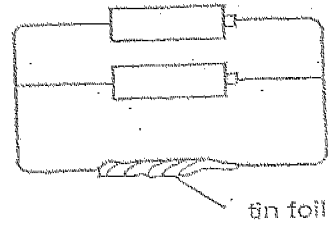
- (1) Y only
- (2) Z only
- (3) X and Y only
- (4) X and Z only

3. Which one of the following circuits as shown below will not allow electricity to pass through?

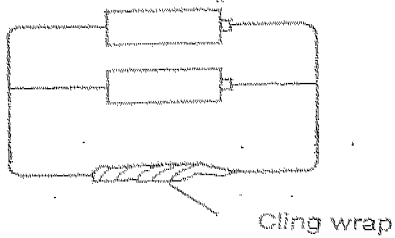
(1)



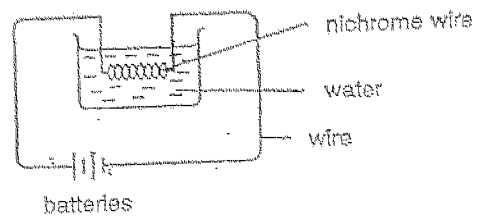
(2)



(3)



(4)



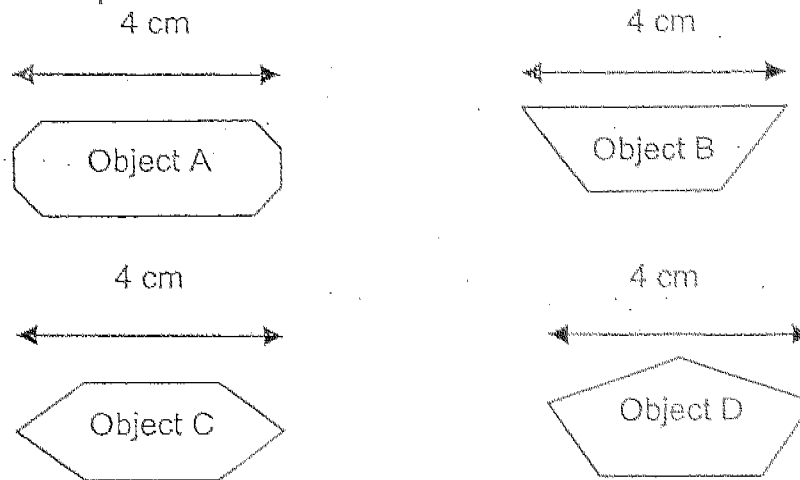
4. The table below shows some objects classified under 3 different groups P, Q and R.

Group	P	Q	R
Objects	nail screw	T-shirt towel	raincoat cling wrap

The objects in each group is classified according to \_\_\_\_\_

- (1) their shapes
- (2) their weight
- (3) what they are made of
- (4) what they are used for.

5. Shane used equal amounts of plasticine to make four objects A, B, C and D which were all 4 cm long. These four objects were moulded into four different shapes as shown below.



He dropped each object one at a time into a clear tank of water. He then measured the time taken for each to reach the bottom of the tank.

What was the aim of the above experiment?

He wanted to find out how \_\_\_\_\_.

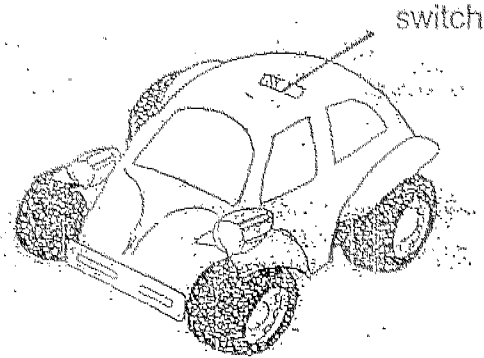
- (1) the length of the object affected the time taken for it to reach the bottom of the tank.
- (2) the shape of the object affected the time taken for it to reach the bottom of the tank.
- (3) the weight of the object affected the time taken for it to reach the bottom of the tank.
- (4) the amount of water used in the tank affected the time taken for the object to reach the bottom of the tank.

6. Which one of the following are sources of potential energy?

- A sun
- B peanut
- C waves
- D refuse

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

7. The picture below shows a toy car.



The toy car starts to move forward and makes a beeping sound when the switch is pushed to the left. What is the source of energy of this toy car?

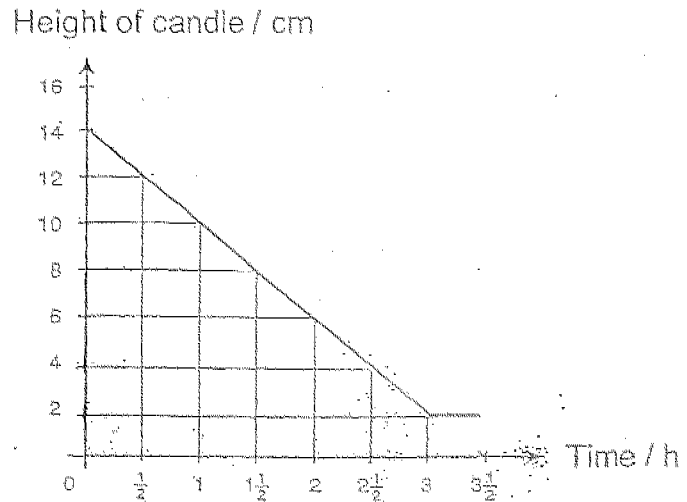
- (1) petrol
- (2) battery
- (3) compressed spring
- (4) twisted rubber band

8. Which of the following objects possess potential energy only?

- A A rotating windmill
- B A stretched catapult
- C A lighted torchlight
- D A boulder perched at the top of a steep cliff

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

9. Jonathan lit a candle and left it to burn till the entire length of the wick is burnt off. He measured the height of the burning candle every half an hour interval. Then he drew a graph as shown below.



Which of the following statements is true of what was recorded?

- A The original height of candle was 14 cm.
- B For every hour, the candle was burnt by 2 cm.
- C 2 cm of the solid wax is left behind.

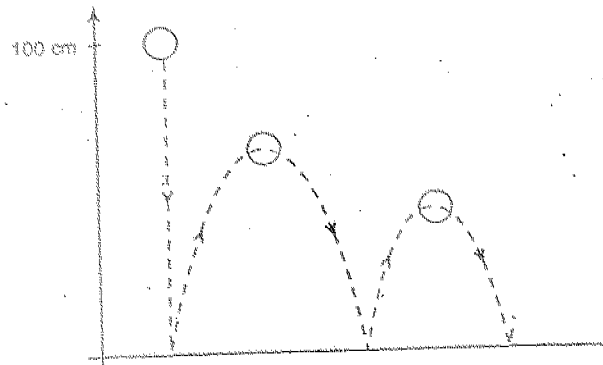
(1) B only

(2) A and B only

(3) A and C only

(4) A, B and C

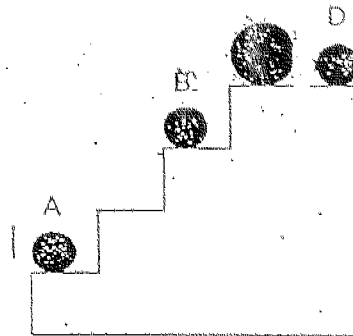
10. A tennis ball was dropped from a height of 1 m from the ground. It bounced to a lower height each time it hit the ground as shown in the diagram below.



Why did the tennis ball not bounce back to the same height from which it was first dropped?

- (1) Gravity pulled the ball more with each bounce.
- (2) Its energy was used to overcome air resistance only.
- (3) All of its potential energy was transformed into sound energy.
- (4) Some of its potential energy was used in overcoming friction between the floor and the ball and air resistance.

11. Four iron balls are placed on the steps of a stairway as shown below. The mass of balls A, B and D is 500g each and that of ball C is 1kg.

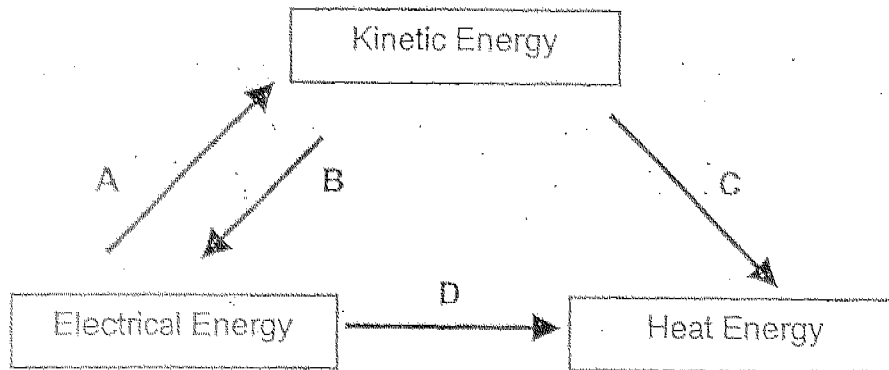


Arrange these iron balls starting with the one that has the least potential energy to the one that has the most potential energy

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



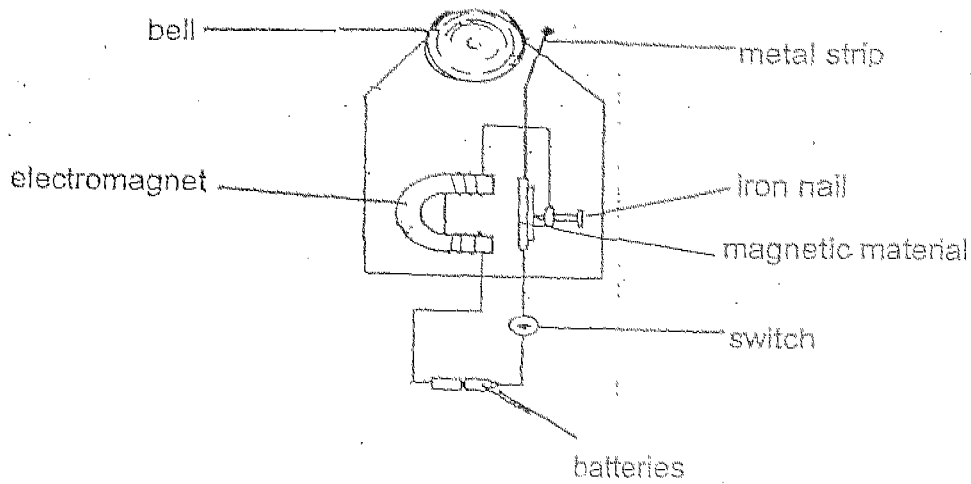
12. The diagram as shown below shows how energy can be converted from one form to another.



Which set of activities best represents the conversion of energy above?

	A	B	C	D
(1)	Using an electric motor	Turning a wind turbine	Rubbing your hands together	Using an electric iron
(2)	Rubbing your hands together	Using an electric iron	Using an electric motor	Turning a wind turbine
(3)	Using an electric iron	Using an electric motor	Turning a wind turbine	Rubbing your hands together
(4)	Turning a wind turbine	Rubbing your hands together	Using an electric iron	Using an electric motor

13. Study the diagram of an electric bell as shown below.  
The bell makes a sound when the metal strip hits against it.

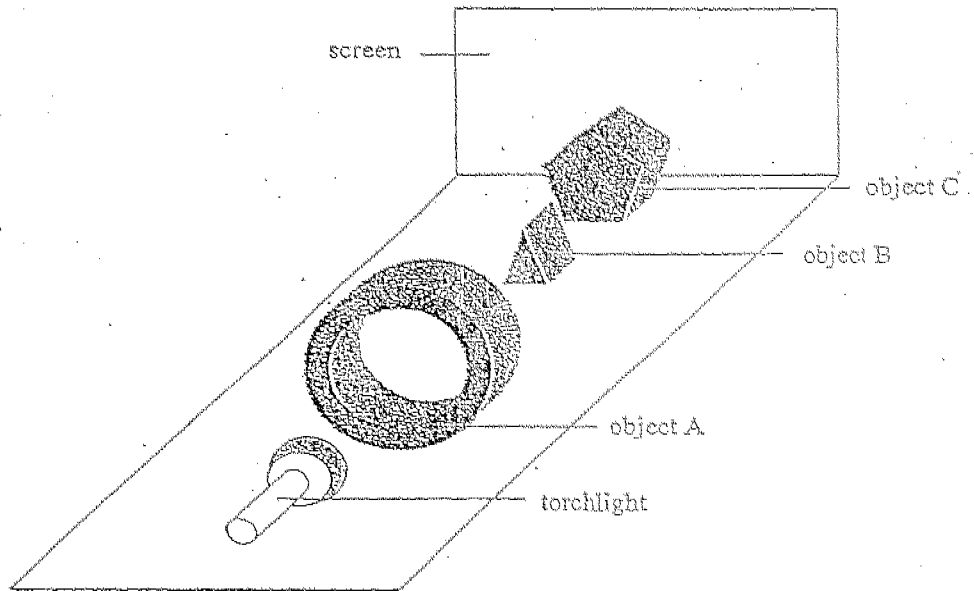


Which one of the following describes correctly the energy conversion in the above circuit when it is closed?

- (1) electrical energy  $\longrightarrow$  chemical potential energy  $\longrightarrow$  heat energy + sound energy
- (2) chemical potential energy  $\longrightarrow$  electrical energy  $\longrightarrow$  kinetic energy  $\longrightarrow$  sound energy
- (3) kinetic energy  $\longrightarrow$  chemical potential energy  $\longrightarrow$  electrical energy  $\longrightarrow$  heat energy
- (4) chemical potential energy  $\longrightarrow$  kinetic energy  $\longrightarrow$  electrical energy  $\longrightarrow$  sound energy + heat energy

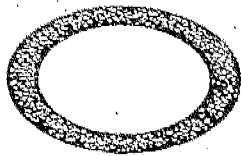


16. Three objects A, B and C were placed one in front of the other and a torchlight is shone on them from the front as shown below.

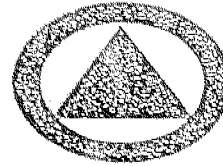


Which of the following images are most likely to be seen on the screen?

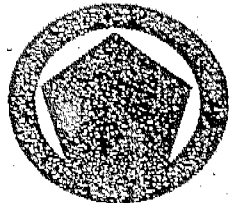
A



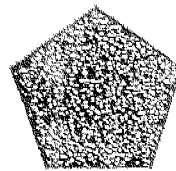
B



C



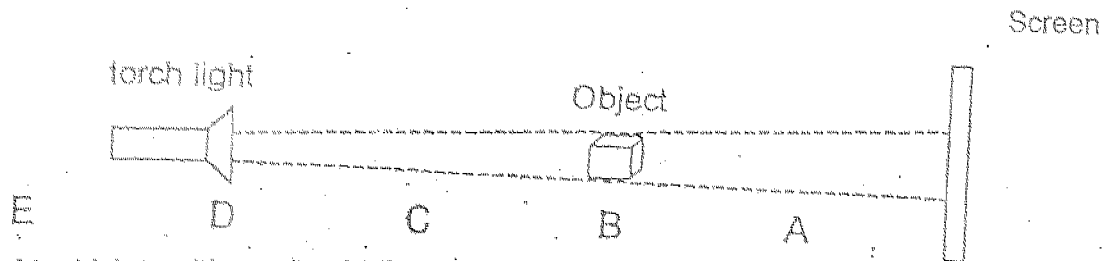
D



- (1) A and B only  
 (3) B and C only

- (2) A and D only  
 (4) C and D only

17. A torchlight was placed at position D which shone at an object at position B as shown below. A shadow was cast on the screen.

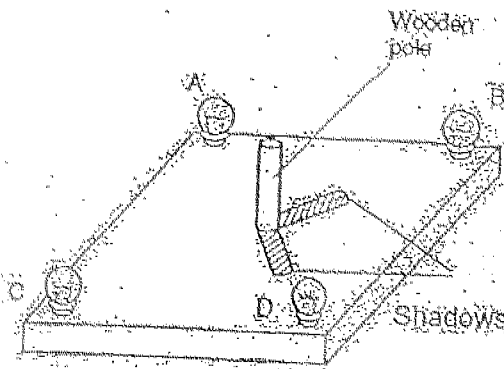


At which positions should the torchlight and the object be placed so as to obtain a larger shadow on the screen than before?

	Position of torchlight	Position of Object
(i)	D	A
(ii)	E	D
(iii)	C	B
(iv)	E	A
(v)	D	C

- (1) (i) and (ii) only                      (2) (ii) and (iii) only  
 (3) (iii), (iv) and (v) only              (4) (ii), (iii) and (v) only

18. A wooden pole is placed in the middle of a square board.



Which of the bulbs have to be switched on so that the shadows of the wooden pole are formed as shown above?

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

19. Look at the 3 groups of living things below.

Group X	Group Y	Group Z
Cow Grass Elodea Hibiscus	Bracket fungus Mushroom Toadstool	Dragonfly nymph Spider Tadpole

Which of the following reasons can be used to classify them into the 3 Groups, X, Y and Z ?

- A According to their habitat
- B According to their form
- C According to their movement
- D According to their nutrition

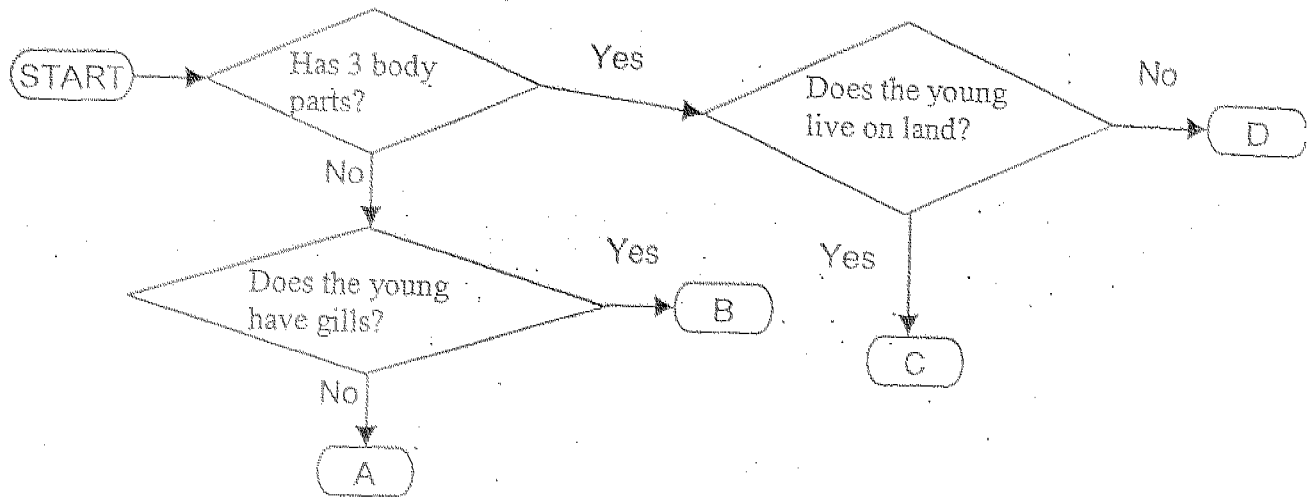
- ~~(1)~~ A and B only
- ~~(3)~~ C and D only

- ~~(2)~~ B and D only
- ~~(4)~~ B, C and D only

20. Which parts of a plant are involved in the process of successful pollination?

- (1) anther and stigma
- (2) ovary and stigma
- (3) stamen and anther
- (4) style and ovules

21. Study the flow chart carefully.



Which of the following can be placed at A, B, C and D?

	A	B	C	D
(1)	Swan	Snake	Moth	Guppy
(2)	Duck	Frog	Cockroach	Dragonfly
(3)	Butterfly	Centipede	Housefly	Mosquito
(4)	Woodlouse	Eel	Grasshopper	Praying Mantis

22. The following plants are classified according to how they reproduce.

X	Y	Z
African Violet Begonia	Banana Pineapple	Ginger Onion

Which of the following can represent X, Y and Z respectively?

	X	Y	Z
(1)	Seeds	Suckers	Roots
(2)	Roots	Underground Stems	Seeds
(3)	Leaves	Suckers	Underground Stems
(4)	Suckers	Seeds	Underground Stems





26. Use the information given below to identify Organism P and Organism Q.

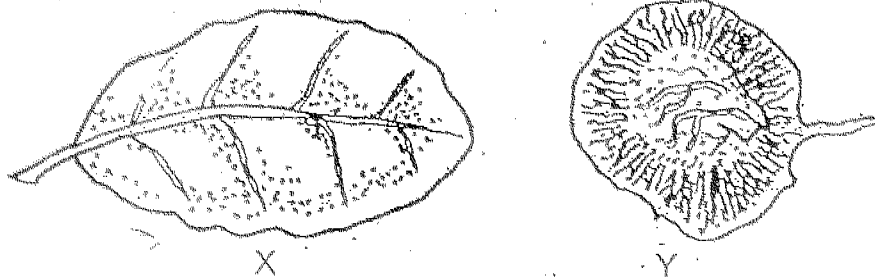
Description	Organism P	Organism Q
Lays eggs	Yes	Yes
Method of fertilisation	Internal	External
Young resembles its parent	No	No
Number of stages in its life cycles	4	3

	Organism P	Organism Q
(1)	Butterfly	Pigeon
(2)	Chick	Salmon
(3)	Housefly	Penguin
(4)	Mosquito	Frog

27. Which of the following consists of only single-cell organisms?

- (1) amoeba, yeast and flower bud
- (2) anemone, bacteria and yeast
- (3) bacteria, mushroom and bean sprouts
- (4) bacteria, paramecium and yeast

28. In the diagram below, X and Y are parts of the bryophyllum and angersana plants.

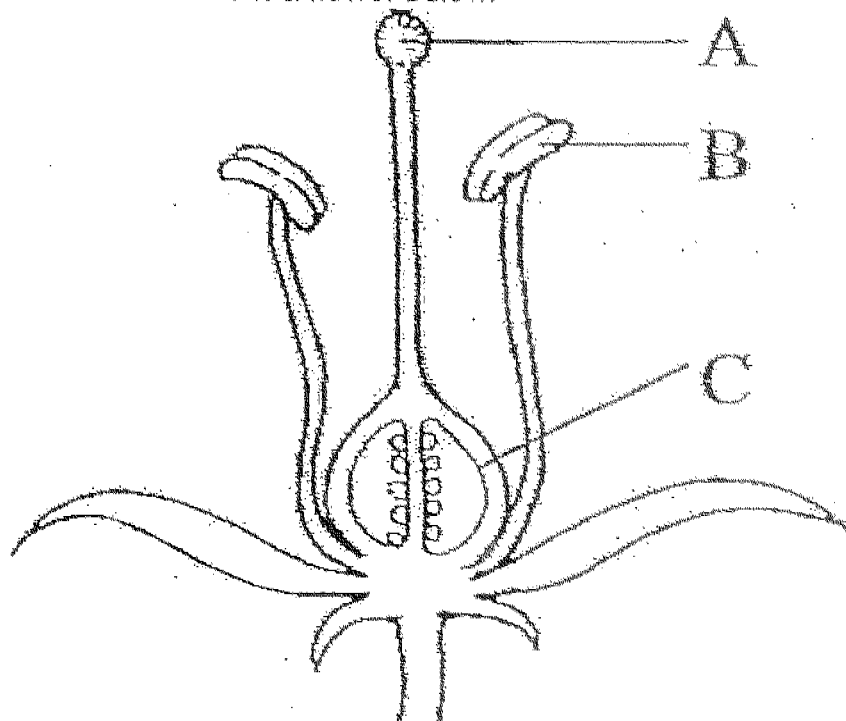


Which of the following statements about X and Y is/are true?

- A X and Y can be used to grow new plants
- B X and Y are dispersed by wind.
- C Spores can be found on X only.
- D Seeds are found in both X and Y.

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

29. Study the cross section of a flower below.



Which is/ are the female part /parts of the flower?

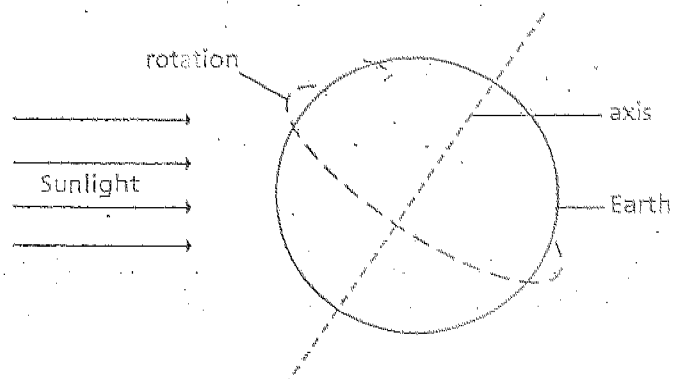
~~(4)~~ C only

~~(2)~~ A and B only

~~(3)~~ A and C only

~~(4)~~ B and C only

30. The diagram shows the Earth rotating on its own axis.



Which one of the following statements is incorrect?

- (1) The Earth completes one rotation every 24 hours.
- (2) The rotation of the Earth on its own axis causes day and night.
- (3) The Earth's rotation about its own axis causes the 4 seasons.
- (4) At any time of the rotation, only half of the Earth is lit up.

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

Class : Primary 6 ( )

Section B (40 marks)

Write your answers to questions 31 to 46 in the spaces provided.  
Marks will be deducted for misspelled key words.

31. Look at the classification chart as shown below

A	B	C	D
sparrow	wasp	spider	fish
child	praying mantis	scorpion	snail

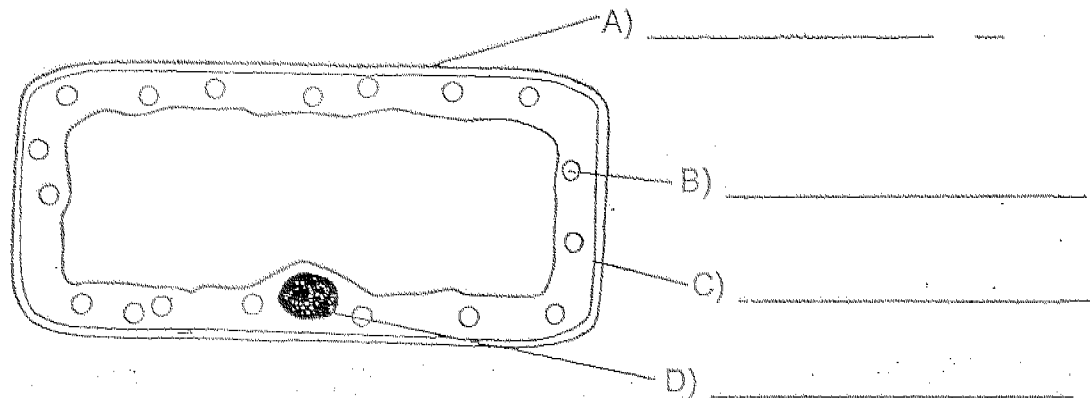
What characteristic is used to differentiate the animals above? (1 mark)

\_\_\_\_\_

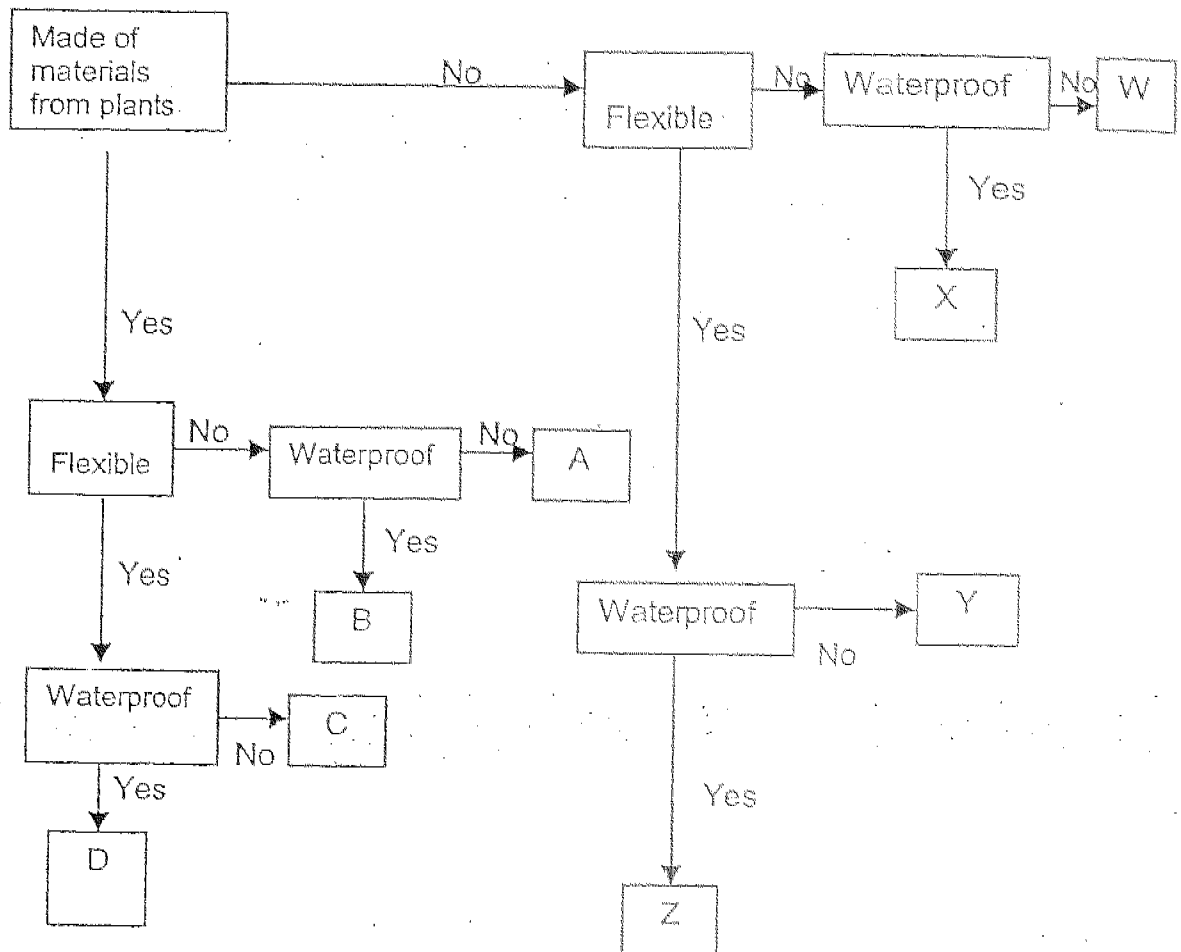
32. The diagram below shows a plant cell.

Label the parts marked A, B, C and D.

(2 marks)



33. The chart as shown below shows the characteristics of 8 different objects represented by the letters A, B, C, D, W, X, Y and Z. Refer to the chart below and answer the following questions.



(a) What characteristic(s) does / do objects A and W have in common? (2marks)

\_\_\_\_\_

(b) Which object represented by the letters A, B, C, D, W, X, Y and Z best represents a plastic sheet? (1 mark)

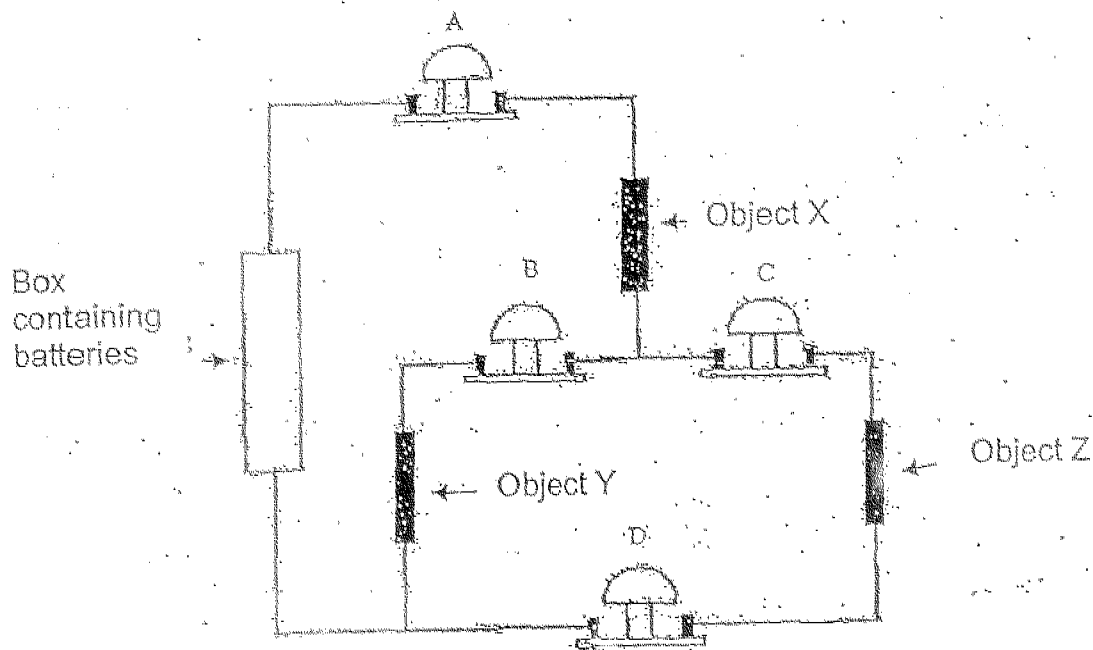
\_\_\_\_\_

(c) If the objects are to be placed into two different groups based on their characteristics above, what will be a suitable heading for each of the following groups? (1 mark)

Objects: B, D, X, Z: \_\_\_\_\_

Objects: A, C, W, Y: \_\_\_\_\_

34. The diagram below shows 4 bells A, B, C and D in a circuit that is connected correctly. Objects X, Y and Z are made of different materials.



When these objects were used to close the circuit, the following was observed.

	Rings	Does not ring
Bell A	√	
Bell B		√
Bell C	√	
Bell D	√	

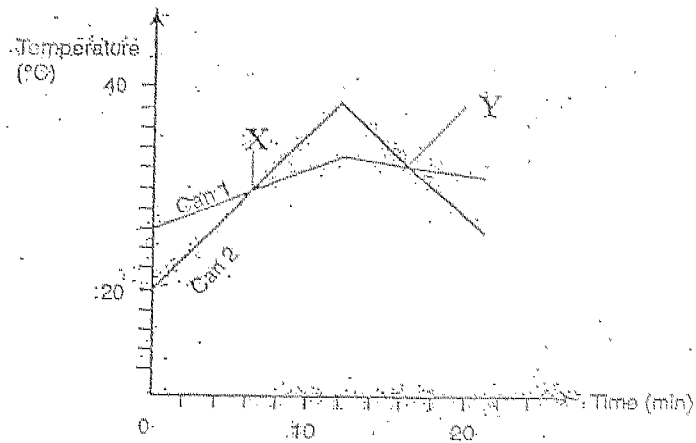
- (a) Based on the table as shown above, which object(s) X, Y and Z is / are conductors of electricity? (1 mark)

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- (b) If Object X is replaced by a wooden chopstick, how many bell(s) will not ring? (1 mark)

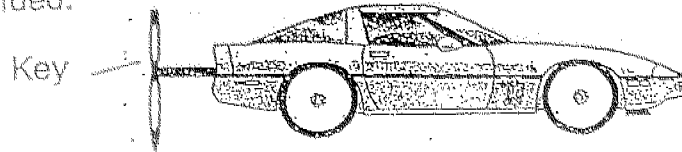
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35. Two similar tin cans of the same size were put in bright sunlight in the open field. After some time, they were then removed and brought into the shade. The graph below shows the change in the temperature of the two cans with time.



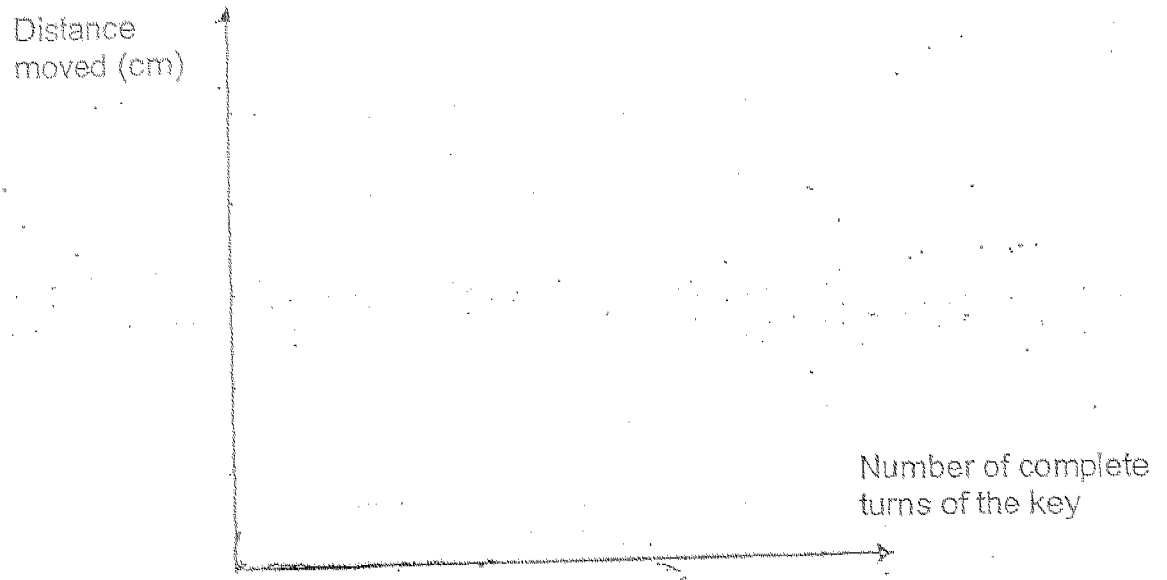
- (a) Based on the graph, which can was heated up more quickly? (1 mark)
- 
- (b) Give a possible reason why the can as mentioned in part (a) heated up more quickly. (1 mark)
- 
- (c) There were two points marked X and Y in the graph as shown above. What do these two points mean? (1 mark)
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36. A toy car was wound up different number of times and the distance it moved was recorded.



Number of complete turns of the key	2	4	8	10
Distance moved (cm)	5	10	20	25

- (a) Using the data from the table above, plot a graph to show the results. (2 marks)



- (b) Using the graph that you have plotted, what distance did the car move when it was wound six complete turns? (1 mark)

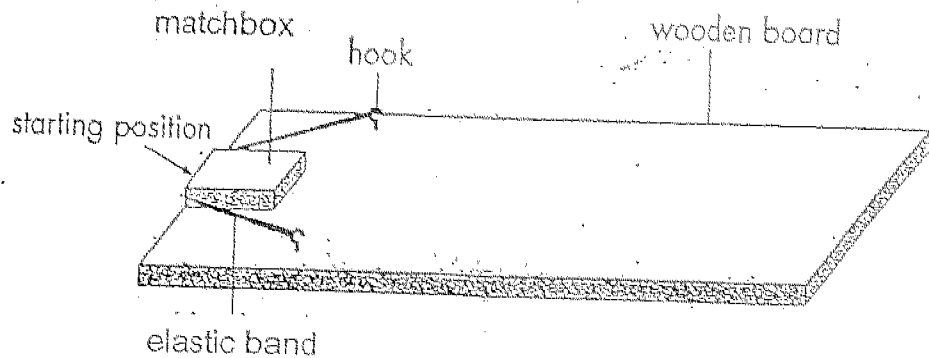
\_\_\_\_\_

- (c) What is the relationship between the number of complete turns of the key and the distance moved by the car? (1 mark)

\_\_\_\_\_

\_\_\_\_\_

37. A piece of elastic band was attached to two hooks on a wooden board as shown in the diagram below. It was stretched 5 cm backwards and an empty matchbox was placed in front of it.



- (a) Describe the changes in energy starting from the moment when the rubber band was released to the moment when it stopped. (2 marks)

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- (b) How would you make the same matchbox go further without changing the positions of two hooks? (1 mark)

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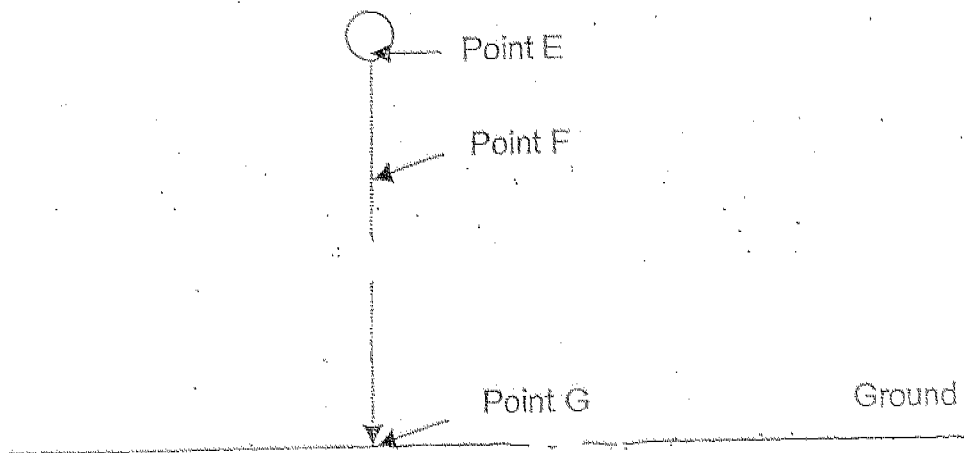
- (c) If the above experiment is repeated with the matchbox now filled with sand, it has been observed that the matchbox moved a shorter distance than before. Give a reason for this observation. (1 mark)

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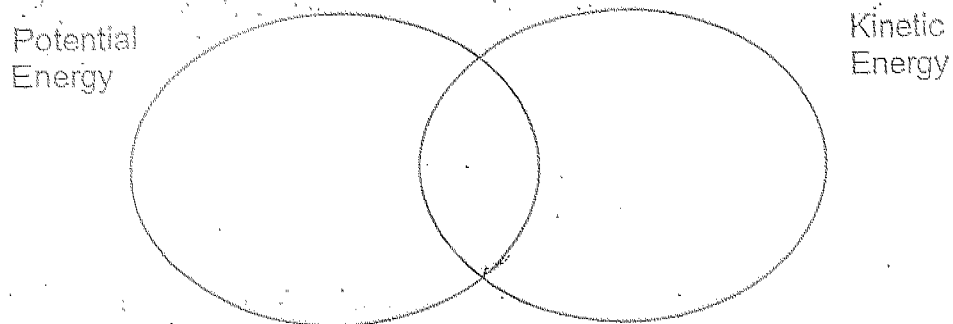


38. Pete dropped a stone from point E. The diagram below shows the path of the stone through the air to the ground.

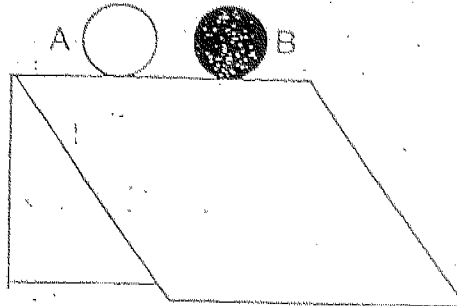


In the Venn diagram below, draw a dot next to each alphabet E, F and G to show the energy possessed by the stone at different positions as it moved through the air.

(2 marks)



39. Two balls of the same weight and size but of different surface texture, were released from the top of a wooden ramp as shown in the diagram below. Ball A moved a greater distance along the ground than Ball B.



- (a) What could be inferred about the surface texture of the two balls? (1 mark)

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- (b) How would raising the height of the ramp affect the distance moved by the two balls along the ground? (1 mark)

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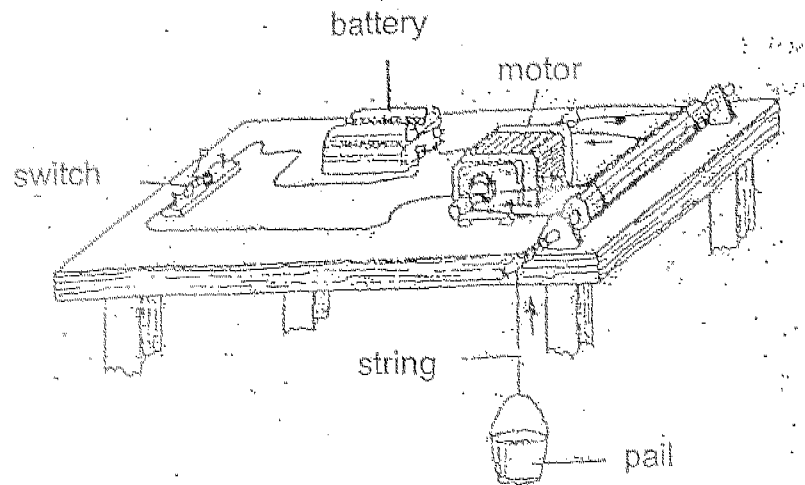
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- (c) Explain your answer in part (b). (1 mark)

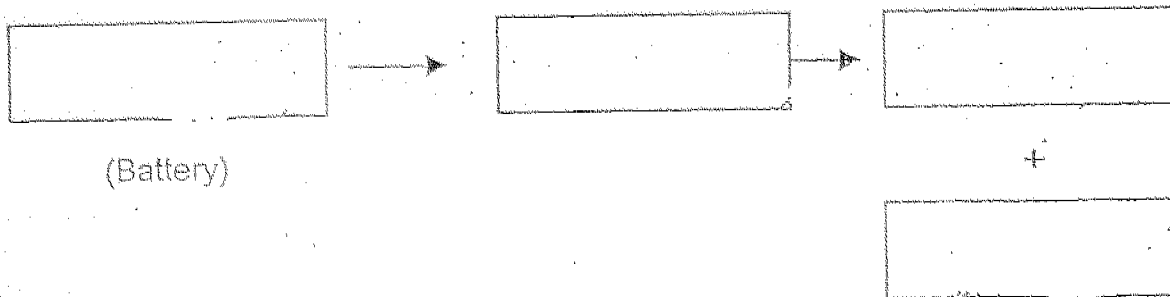
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40. A group of students set up the apparatus as shown below for their Science experiment.



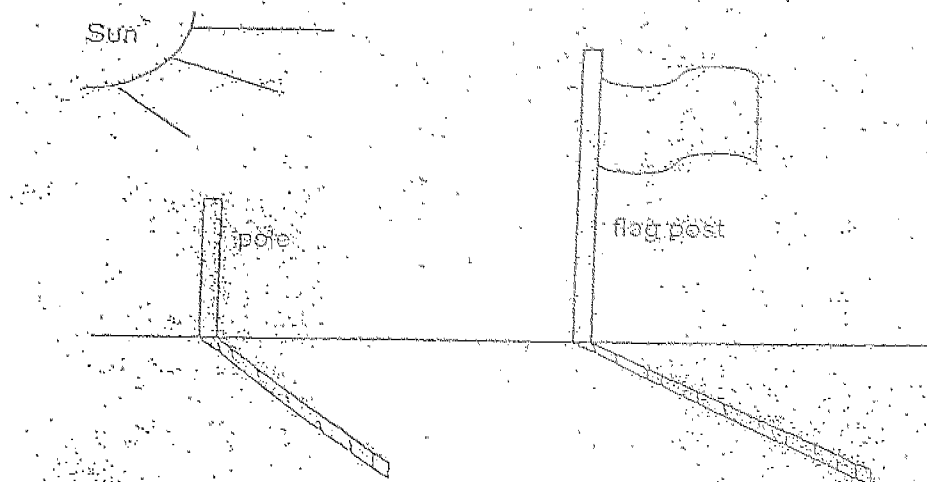
- (a) Write down the energy conversion that takes place when one of the students switches on the set-up. (2 mark)



- (b) What can be done to make the same motor lift a heavier pail of water? (1 mark)

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41. The diagram below shows a 1-metre pole which is perpendicular to the ground. At a certain time, Mary observed that its shadow was 3 metres long while a nearby flag post cast a shadow of 6 metres.



- (a) What was the height of the flag post? (1 mark)

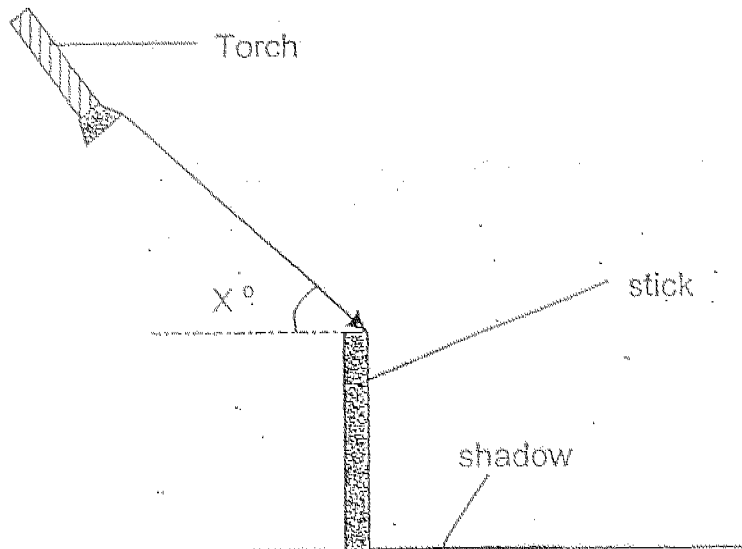
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- (b) Mary observed that the sun moved across the sky as it set in the evening. Explain clearly why she had observed this although she had read that the sun does not move in the solar system. (1 mark)

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42. Tom positioned his torchlight at an angle of  $X^\circ$  as shown in the diagram below. He shone it at a stick and then measured the length of the shadow.



He repeated the experiment, increasing the angle of the light source each time. Then he recorded his observation as follows:

Angle of light source (degrees)	Length of shadow (cm)
50	20
60	15
70	10
80	5
90	0
100	?
110	10
120	15

- (a) Based on the results, what is the length of the shadow when the angle of the light source is at  $100^\circ$ ? (1 mark)

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- (b) From his observation, what can he conclude about the relationship between the angle of the light source and the length of the shadow formed? (2 marks)

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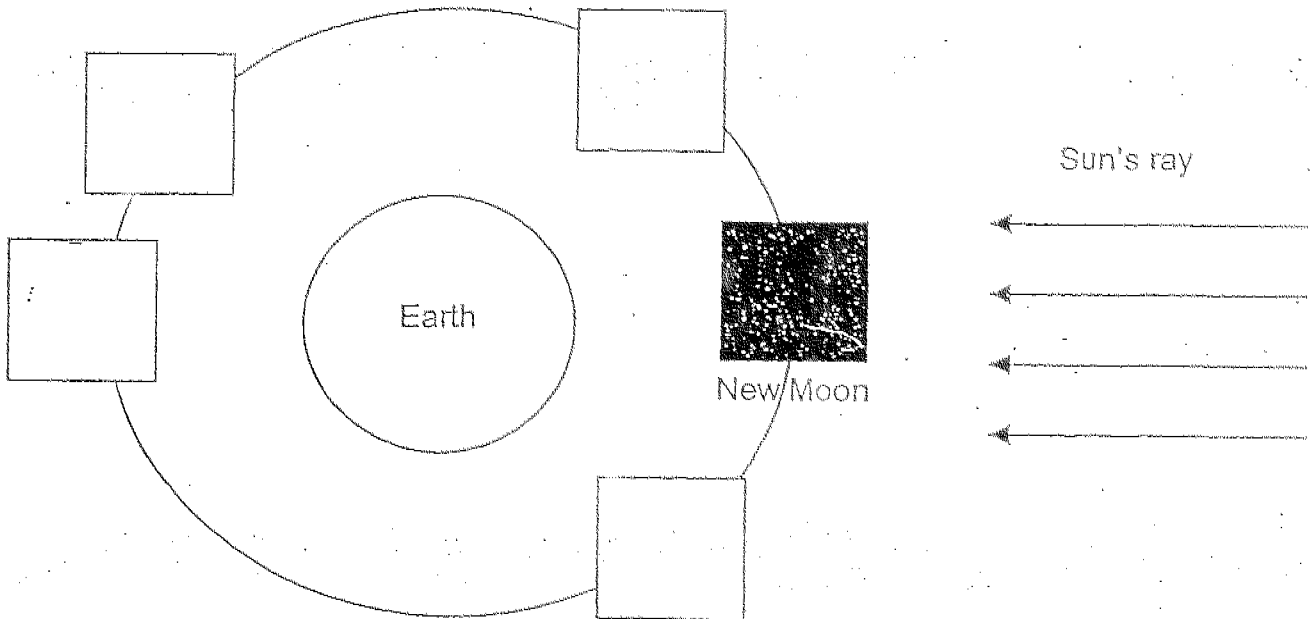


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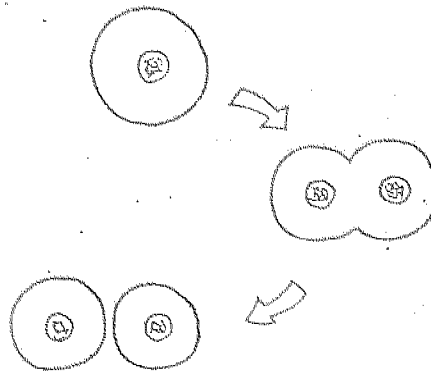
43. Read the statements below.  
Put a tick (✓) in the correct column for each statement. (2 marks)

Characteristics	True	False	Not possible to tell
Fungi absorb food from dead organisms only			
Plants cannot move freely from one place to another by themselves			
Yeast is a type of fungus			
Plants grow best in soil			

44. In the diagram below, draw the different phases of the moon as viewed from the Earth in the boxes given. (2 marks)



45. Our cells undergo a process as shown below.



(a) Name the process that the cell is undergoing. (1 mark)

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(b) Give one reason why our cells undergo such a process. (1 mark)

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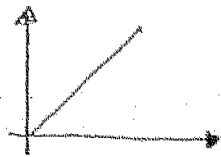
46. Fill in the table below to compare the male and female reproductive systems. (2 marks)

	Female reproductive system	Male reproductive system
Type of sex cells produced		
Organ that produces the sex cells		

-----END OF PAPER-----

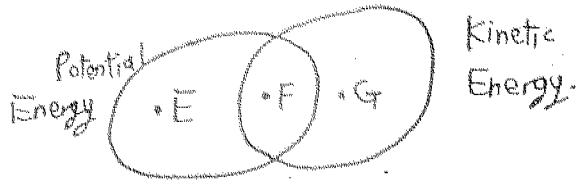
NANYANG PRIMARY SCHOOL  
 FIRST CONTINUAL ASSESSMENT 2004  
 SCIENCE  
 PRIMARY SIX

CA7

- 1) 4                    28) 1
- 2) 2                    29) 3
- 3) 3                    30) 3
- 4) 3                    31) Number of legs.
- 5) 2                    32) A : CELL wall
- 6) 4                    B : Chloroplast
- 7) 2                    C : Cell membrane
- 8) 4                    D : Nucleus
- 9) 3                    33) a) They are not flexible and not water-proof.
- 10) 4                    b) Object Z
- 11) 2                    c) Water proof
- 12) 1                    Not water proof
- 13) 2                    34) a) Objects X and Z
- 14) 3                    b) All the bells.
- 15) 4                    35) a) Can 2
- 16) 4                    b) IT has a darker colour.
- 17) 4                    c) Both cans have the same temperature at that time of heating.
- 18) 1
- 19) 2
- 20) 1
- 21) 2
- 22) 3
- 23) 3
- 24) 4
- 25) 2
- 26) 4
- 27) 4
- 36) a)  b) 15 cm
- c) Everytime when the key wound-up twice, the car will move 5 cm.
- 37) a) Elastic potential energy ---- kinetic energy  
 ----- heat energy + sound energy.
- b) I would extend the elastic band to its maximum length.
- c) Having the same amount of elastic potential energy: but the energy is used to move a heavier load.



38)



39) a) Ball A's surface texture is smoother than Ball B's.

b) Ball A and B would move a greater distance than before.

c) Raising the height of the rump increases the gravitational potential energy of the balls. More potential energy will be converted into kinetic energy.

40) Chemical potential energy --- Electrical energy --- kinetic energy ---- gravitational potential energy

b) To add more batteries.

41) a) 2 metres

b) The Earth is rotating on its axis from West to East.

42) a) 5 cm

b) As the angle of the light source increases, the length of the shadow decreases. When the angle of the light source goes above 90°, the length of the shadow increases.

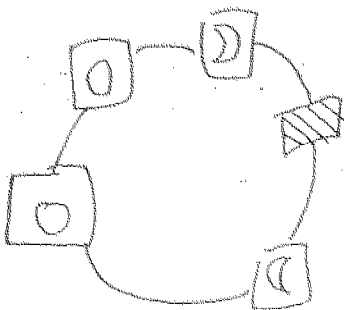
43) False

True

True

Not possible to tell

44)



45) a) Cell division

b) To replace old and damaged cells.

46) Egg

Sperm