

NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 1, 2004
PRIMARY SIX
SCIENCE

Name : _____ ()

Section A : /60

Class : Primary 6 _____

Section B : /40

Date : 4 March 2004

Marks : /100

Parent's Signature _____

Section A (30 x 2 marks)

Choose the most suitable answer and shade the corresponding oval in the Optical Answer Sheet (OAS) provided.

1. All electrical wires must be made of _____ and covered with _____ respectively.

- (1) good conductors of electricity ; good conductors of heat
- (2) good conductors of electricity ; insulators of electricity
- (3) magnetic materials ; non-magnetic materials
- (4) poor conductors of electricity ; good conductors of electricity

2. Look at the items given below



These items of woolen clothing can keep us warm on cold days because they _____.

- A. are flexible
- B. are made of things that were once alive
- C. slow down heat loss from our body to the surrounding air
- D. trap air that is a poor conductor of heat

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

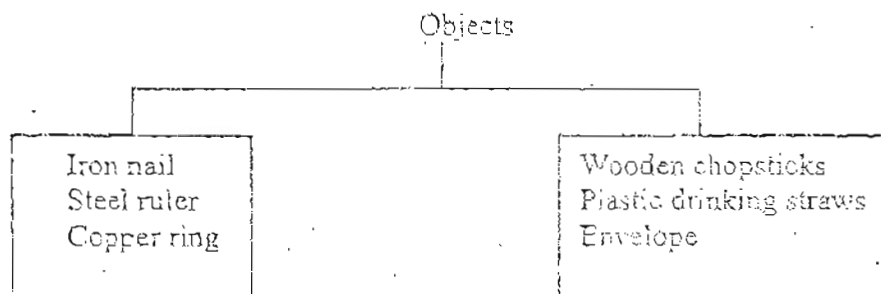
3. Which one of the following describes the energy conversion in an incineration power plant ?

- (1) Potential Energy of petroleum → Kinetic Energy of steam → Kinetic Energy of turbines → Electrical Energy
- (2) Potential Energy of garbage → Kinetic Energy of steam → Kinetic Energy of turbines → Electrical Energy
- (3) Potential Energy of garbage → Potential Energy of steam → Kinetic Energy of turbines → Electrical Energy
- (4) Potential Energy of petroleum → Potential Energy of steam → Kinetic Energy of turbines → Electrical Energy

4. When coal is burned to produce electricity, the electrical energy produced is less than the potential energy in the coal. Which of the following best explains this?

- (1) Some of the potential energy in the coal is converted into forms of energy other than electricity.
- (2) As coal is heated, some of the particles in them move so fast that they are destroyed.
- (3) The intense heat required to release its stored energy destroys some of the energy in coal.
- (4) The amount of potential energy in fuels is overestimated.

5. The following are classified into 2 groups.



How are the objects classified?

They are classified according to whether they are _____

- (A) magnetic or non-magnetic
- (B) hard or soft
- (C) metals or non-metals
- (D) conductors or non-conductors of electricity

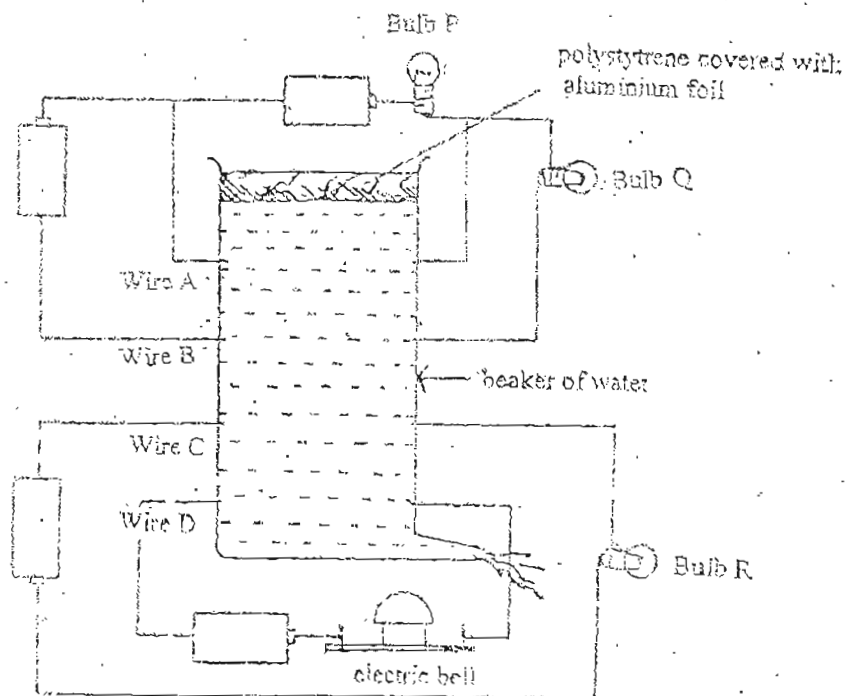
- (1) A and B
- (2) C and D only
- (3) B, C and D only
- (4) A, B, C and D

6. Danny puts a few drops of iodine solution on some mushrooms, a fried egg, some 'beehoon' and biscuits to test for the presence of starch. Which of the following will be the expected outcome?

- A. Iodine on the mushroom and egg remained brown.
- B. Iodine on the fried egg and 'beehoon' remained brown.
- C. Iodine on the 'beehoon' and biscuits turned dark blue.
- D. Iodine on the biscuits and mushrooms turned dark blue.

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

7. In the set-up shown, water is allowed to flow out of a small outlet at the bottom right of the beaker. As the water flows out of the beaker, the piece of polystyrene moves along with it. What happens when the aluminium foil touches the bare ends of wires D?



- (1) Bulb P and Bulb Q will light up.
- (2) Only Bulb R will light up.
- (3) The electric bell will ring.
- (4) Bulb R will light up and the electric bell will ring.

8.



Group A

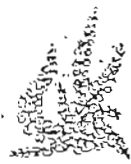


Group B

Gavin was told to group the following organisms shown below according to how they were similar to those above



1



2



3



4



5

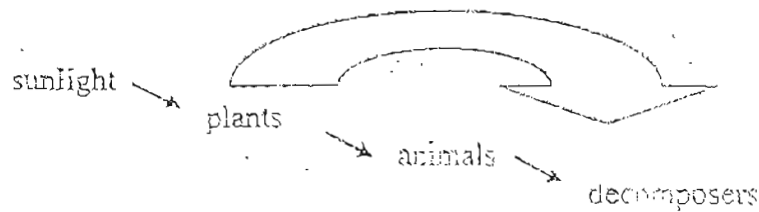


6

Which of the following shows correctly how he has grouped them?

	Group A	Group B
(1)	2,3,5,6	1,4
(2)	2,5,6	1,3,4
(3)	5,6	1,2,3,4
(4)	2,4,5,6	1,3

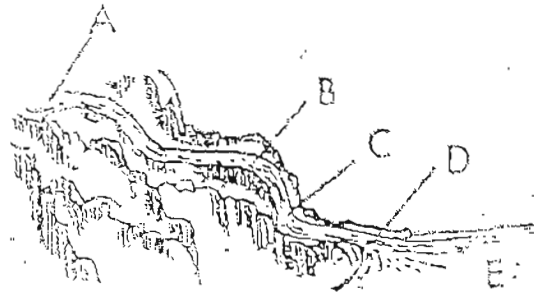
9. The diagram shows the energy flow through a food web.



What happens to the energy leaving the decomposers?

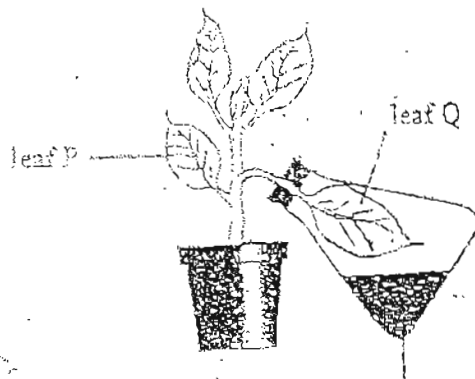
- (1) It is lost as heat.
- (2) It is reflected back to the sun.
- (3) It is stored as potential energy.
- (4) It is used to power factories.

10. Refer to the diagram below. Which part of the river has the most kinetic energy?



- (1) AB
- (2) BC
- (3) CD
- (4) DE

11. The set up shown below was left in the light for 5 days. Leaves P and Q were then tested for starch.



A substance is used to remove carbon dioxide in the conical flask

The results of the experiment are as shown.

Leaf P : Drop of iodine turned dark blue
 Leaf Q : No change in iodine

This set-up was used to show that during the process of photosynthesis where starch was being formed, _____.

- (1) oxygen would have been released
- (2) oxygen would have been taken in
- (3) carbon dioxide would have been released
- (4) carbon dioxide would have been taken in

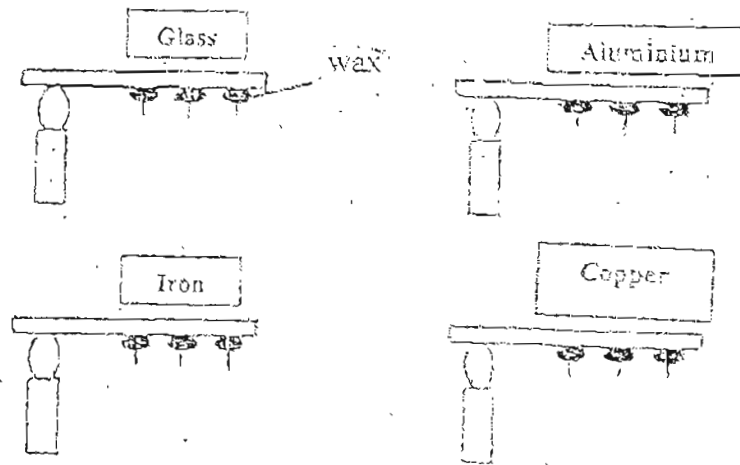
12. Some leaves of plants have one or more of these features:

- A: waxy surface
- B: large surface area
- C: hairs on the underside

Which of these features will help to reduce water loss from the leaves?

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

13. Four rods of equal diameter and length were set up as shown in the diagram below. Three drawing pins were placed on the wax which was attached on the underside of each rod. The rods were then heated at one end for a few minutes as shown in the diagrams below.



The results were recorded in the table as shown below.

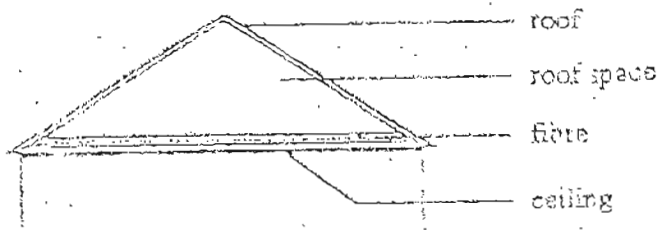
Rods	Number of pins left
Glass	3
Iron	1
Aluminium	2
Copper	0

The experiment demonstrates that _____

- A: glass conducts heat better than iron
- B: copper is the best conductor of heat
- C: iron conducts heat better than aluminium

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

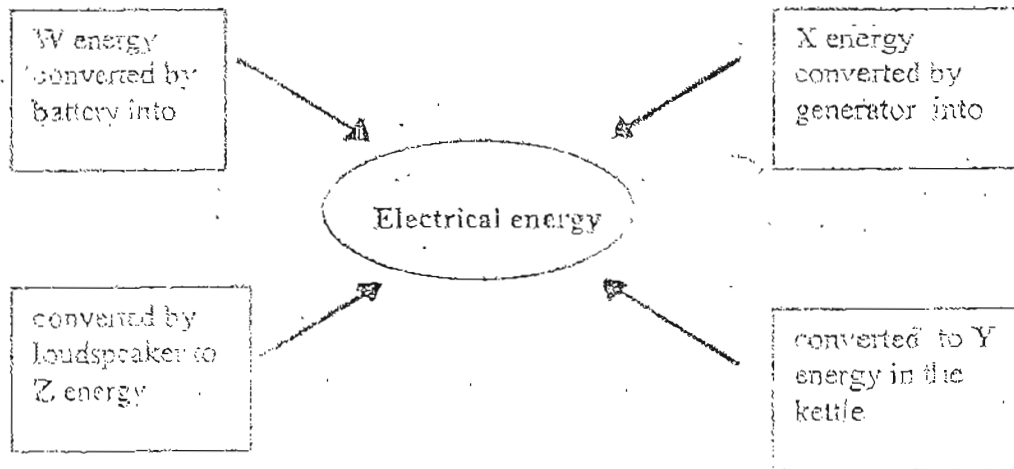
14. Fibre is a material that is used to insulate homes against heat.



How does fibre prevent heat from passing easily through the ceiling?

- (1) Fibre is cold.
- (2) Fibre traps air.
- (3) Fibre is tightly packed together.
- (4) Fibre allows air to pass through easily.

15. Study the diagram below. The letters W, X, Y, and Z represent _____.



	W	X	Y	Z
1.	potential	kinetic	heat	sound
2.	potential	sound	kinetic	heat
3.	kinetic	heat	potential	sound
4.	kinetic	sound	heat	potential

16. An animal P had a mass of 5 grams when it was 1 week old. It had a mass of 30 grams when it was a month old. Which of the following would have contributed to the increase in its mass?

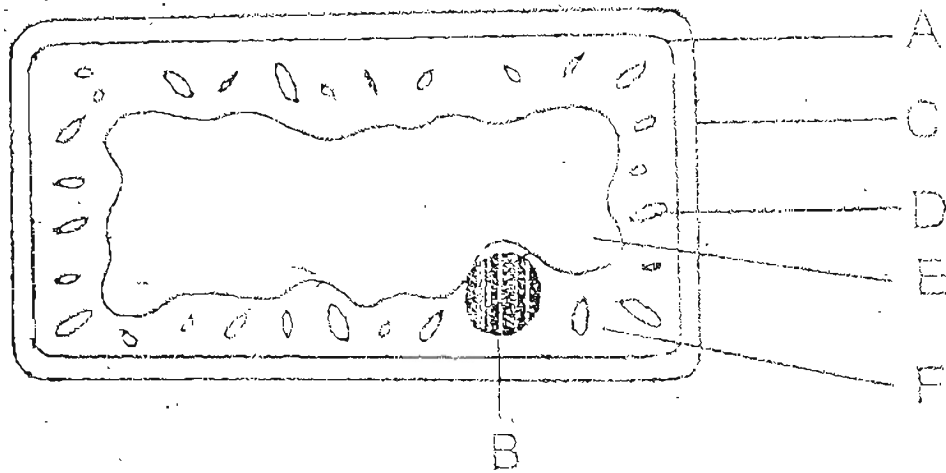
- A Cell growth
- B Cell death
- C Cell division

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

17. Respiration takes place in the _____ of a cell.

- (1) nucleus
- (2) cytoplasm
- (3) cell wall
- (4) cell membrane

18. Which parts of this diagram can only be found in plant cells?

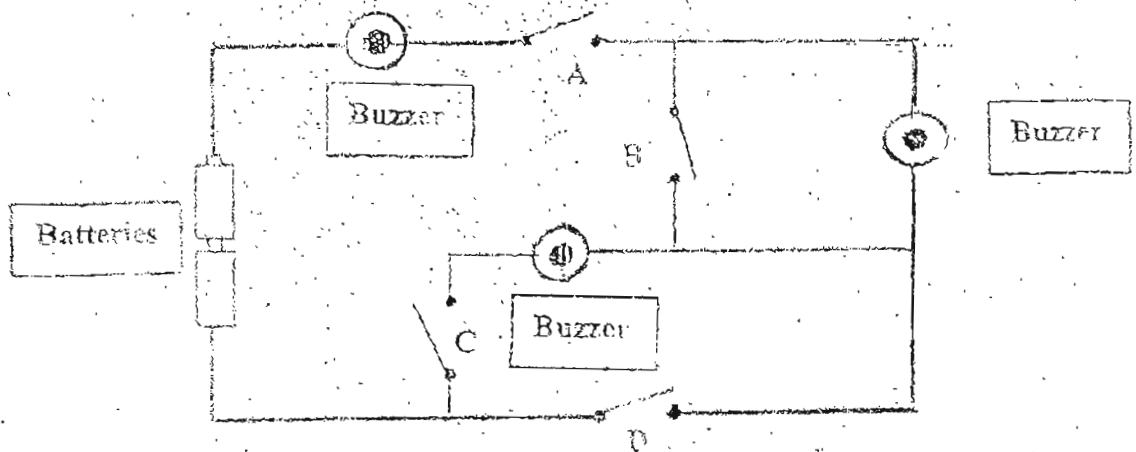


- (1) A and B only
- (2) C and D only
- (3) E and F only
- (4) C, D and E only

19. Cell sap is a _____.

- (1) medium for chemical reactions to take place
- (2) solution containing sugars and other substances
- (3) thin partially permeable layer
- (4) thin lining in a plant cell

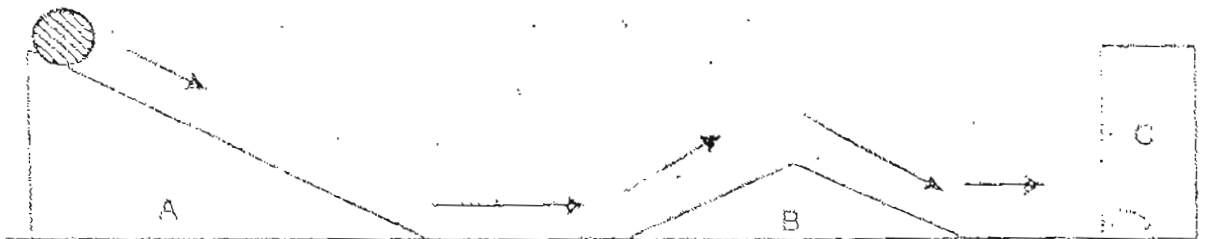
20.



In order to produce the most sound energy from the above set-up, which of the switches must be closed?

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

21. A ball is released from the top of ramp A. It travels downwards and along the floor. Then it travels up ramp B and down before it is stopped by C



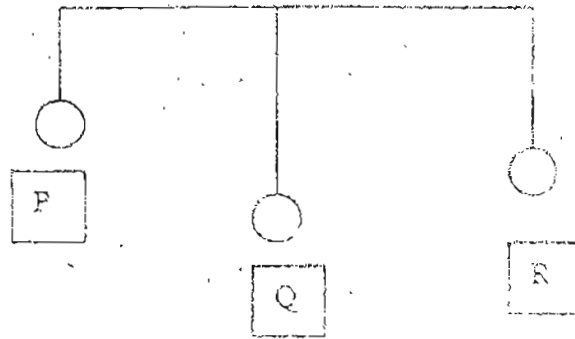
Which one of the following statements is correct?

- (1) There is no friction whenever the ball rolls down.
- (2) When the ball is released, the ball gains potential energy.
- (3) The ball will stop at C because it has lost some of its kinetic energy.
- (4) When the ball travels up B, kinetic energy is changed to potential energy.

22. A marble rolling down a ramp changes its potential and kinetic energy. Which of the following shows the correct energy change as it is rolling down?

	Kinetic Energy	Potential Energy
(1)	Decreases	No change
(2)	Increases	No change
(3)	Increases	decreases
(4)	No change	decreases

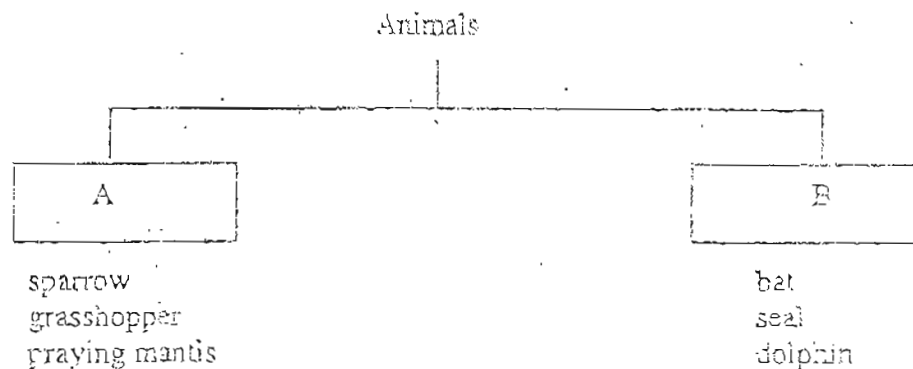
23. Benjamin hung 3 objects P, Q and R, all of the same size but of three different materials from 3 different brands of rubber bands. All the rubber bands were of the same length.



Which of these statements are definitely true?

- (A) P is the lightest.
 (B) All 3 objects have potential energy.
 (C) Q is heavier than R.
 (D) R will possess kinetic energy when the rubber band is cut.
- (1) A and C only (2) B and D only
 (3) A, B and D only (4) A, B, C and D

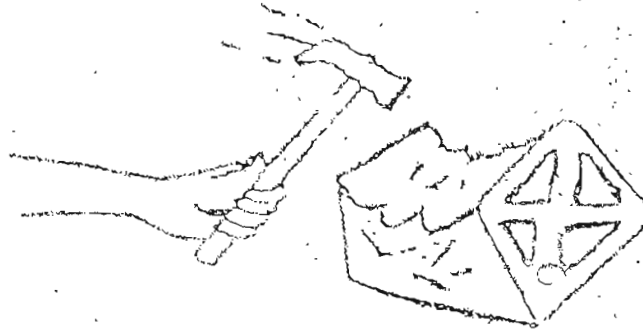
24. Study the classification table below



Which headings best fit A and B respectively?

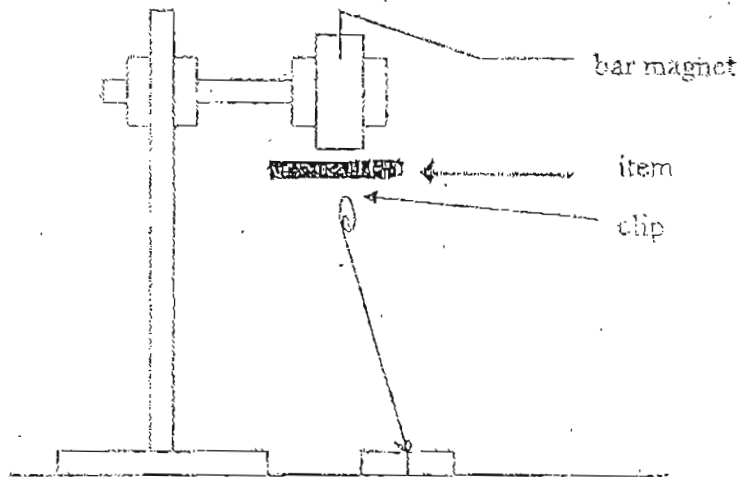
	A	B
(1)	Insects	Mammals
(2)	Lay eggs	Give birth
(3)	Live on land	Live in water
(4)	Have 3-stage life cycle	Have 4-stage life cycle

25. In the activity below, some of the movement energy is converted into _____



- (1) sound energy only
 (2) heat and magnetic energy
 (3) sound and heat energy
 (4) sound and stored energy

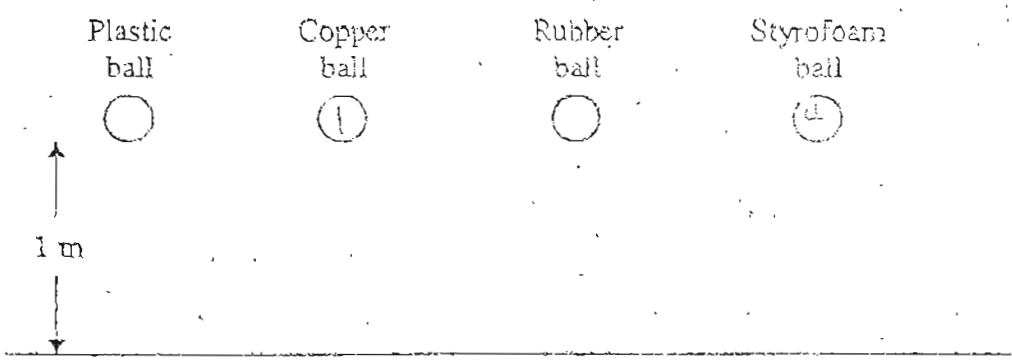
26. May set up an experiment as shown below. Then she placed four items, one at a time, between the magnet and the clip and observed if the paper clip dropped or remained where it was.



If the four items used in this experiment were a sheet of steel, copper, glass and iron respectively, which one of the following would show accurately what May had observed?

	Steel	Copper	Glass	Iron
(1)	Dropped	Dropped	Remained	Dropped
(2)	Dropped	Remained	Remained	Dropped
(3)	Remained	Remained	Dropped	Remained
(4)	Remained	Dropped	Dropped	Remained

27. Matilda released four different types of balls of the same size and volume from the same height above the ground in an enclosed room.



Which one of the following sets of results correctly shows the result she obtained?

(1)

Types of balls	Plastic	Copper	Rubber	Styrofoam
Time taken (sec)	2	1	3	3.5

(2)

Types of balls	Plastic	Copper	Rubber	Styrofoam
Time taken (sec)	2	1	3.5	3

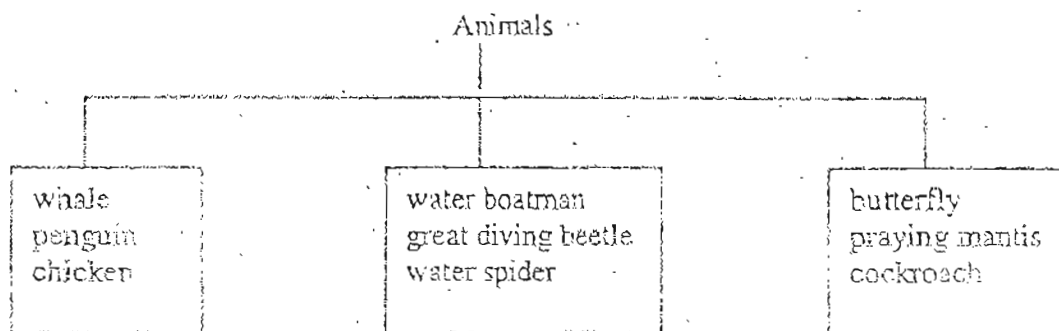
(3)

Types of balls	Plastic	Copper	Rubber	Styrofoam
Time taken (sec)	1	1	1	1

(4)

Types of balls	Plastic	Copper	Rubber	Styrofoam
Time taken (sec)	2	3	1	1

28. Study the classification table below.



The animals are classified according to _____.

- (1) what they feed on
- (2) how they breathe
- (3) where they are found
- (4) how they move

29. Which one of the statements is false?

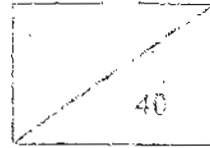
- (1) Electricity can pass through copper, steel, iron, nichrome, brass, carbon and aluminium.
- (2) Insulators are non-conductors of electricity and they prevent us from getting electrocuted.
- (3) Silk, wool, leather, rattan and wood are materials that were once alive.
- (4) Animals can move but plants and fungi cannot.

30. Which of the following statements about heat transfer is/are correct?

- F: Water gains heat as it freezes.
 - Q: Heat is lost to the surrounding air as water evaporates.
 - R: Water vapour loses heat as it condenses on the surface of a glass of ice water.
 - S: A piece of butter placed on the table gains heat and melts.
- (1) S only
 - (2) F and Q only
 - (3) R and S only
 - (4) All of the above

Name : _____

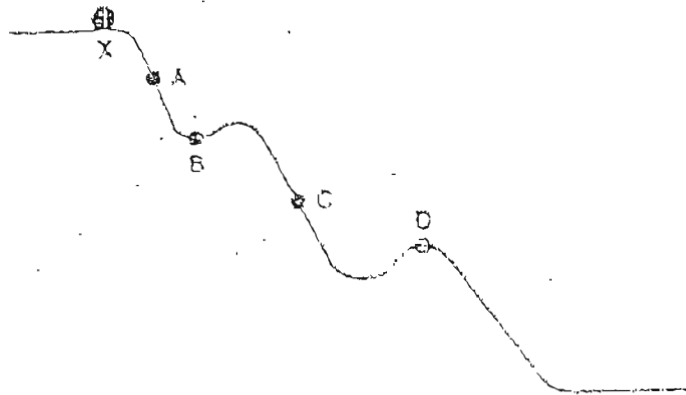
Class: _____



SECTION B (40 MARKS)

Write your answers to questions 31 – 46.

31. A ball starting at point X rolls down a hill as shown in the diagram.



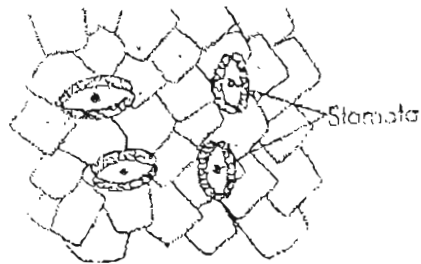
(a) What form of energy does the ball possess at point X? (1m)

(b) At which point does the ball have half of its maximum kinetic energy?
(Disregard the force of friction) (1m)

(c) Besides friction, name another force which is acting on the rolling ball. (1m)

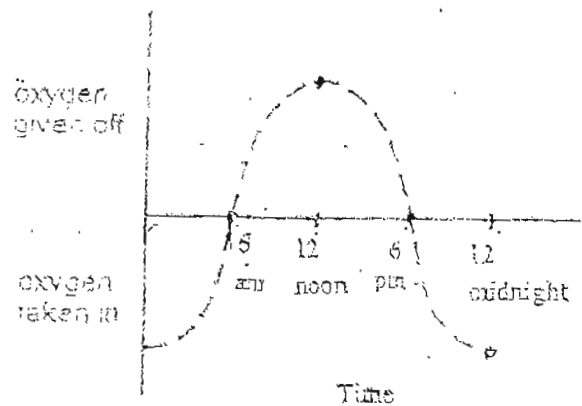
32. The diagram below shows the stomata of a green leaf.

(2m)



The main function of the stomata is to enable the green leaf absorb _____ which is necessary for photosynthesis to take place. The stomata are found mainly on the _____ of leaves.

33. The graph below shows the amount of oxygen given off and taken in by a tree over a period of 24 hours.



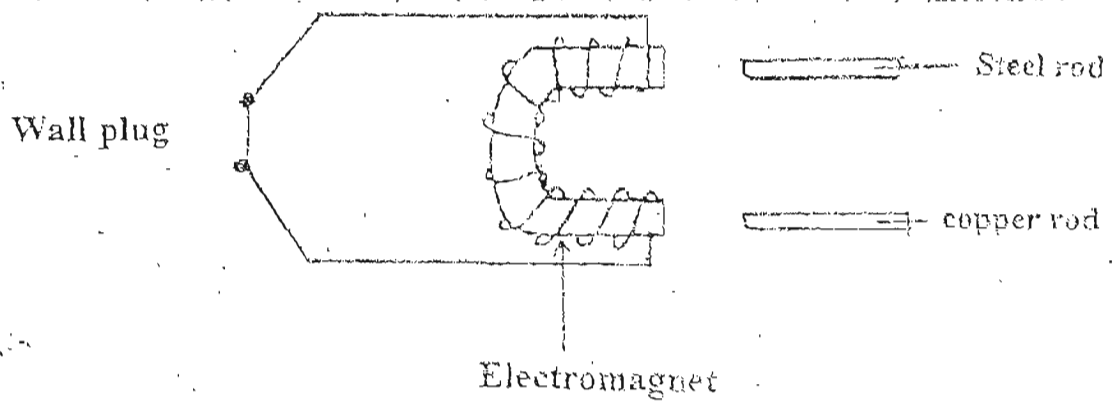
(a) When was the rate of photosynthesis the highest?

(1m)

(b) Explain your answer in (a).

(2m)

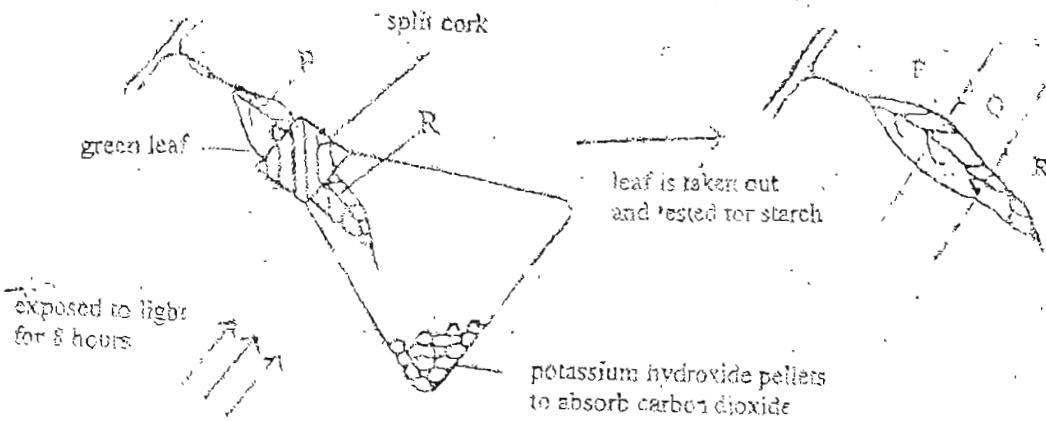
34. Study the diagram below.



(a) What will happen to the rods when the electromagnet is brought close to them? (1m)

(b) Why does this happen? (1m)

35. The diagram below shows an experiment that investigated photosynthesis.



(a) What are the colours of regions P and R after the leaf had been tested for starch?

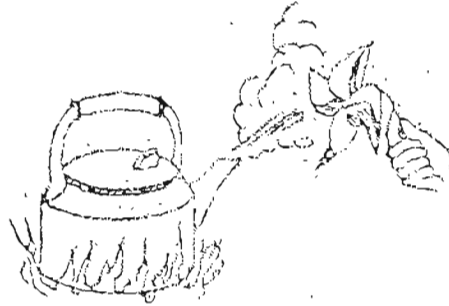
P: _____ (1m)

R: _____ (1m)

(b) Give a reason for your answer in (a)

(2m)

36. Look at the diagram below

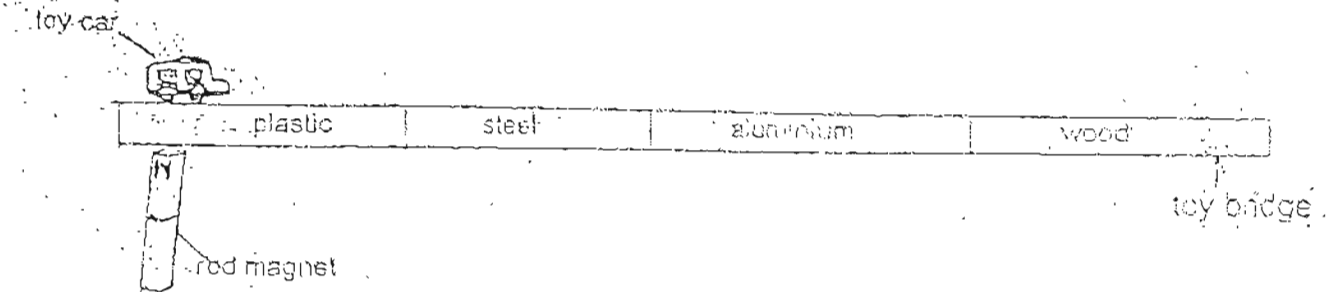


A paper windmill is brought near to the spout of the kettle when the water in the kettle boils.

(a) What do you think would happen to the windmill? (1m)

(b) What does this experiment show? (1m)

37. Bruce made a toy bridge from four kinds of materials. Then he placed an iron cast toy car on it. He used a rod magnet to move the toy car from one end of the bridge to the other as shown in the diagram. (2m)



He found that he could not make it move over one of the materials. This is

because _____ force cannot pass through _____

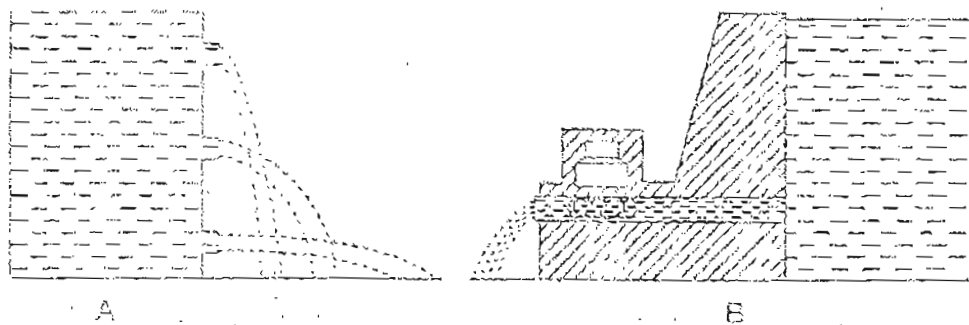
38. A marble is released from a height of 50 cm at some distance from the empty match box along the plane as shown in the diagram below. When the marble is released it rolls down and pushes the matchbox away.



- (a) What would happen to the matchbox if the height of the ramp were increased by another 20 cm? (1m)

- (b) Give a reason for your answer in (a).

39. Diagram A shows how water trickles from holes of the same size in a container. Diagram B shows a dam with a generator for electricity.

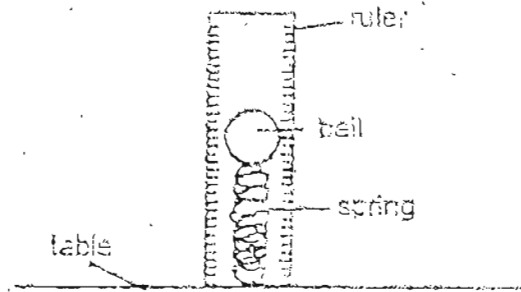


- (a) Why are openings of dams near the bottom? (1m)

- (b) Describe the energy conversion in the dam that generates electricity. (1m)



40. In an experiment, Danny compressed a spring and put a ball on the compressed spring as shown below. He measured the length of the compressed spring and then released the spring. He then measured the height the ball reached.



Length of compressed spring	5cm	4cm	3cm	2cm
Height of ball reached	2cm	4cm	6cm	8cm

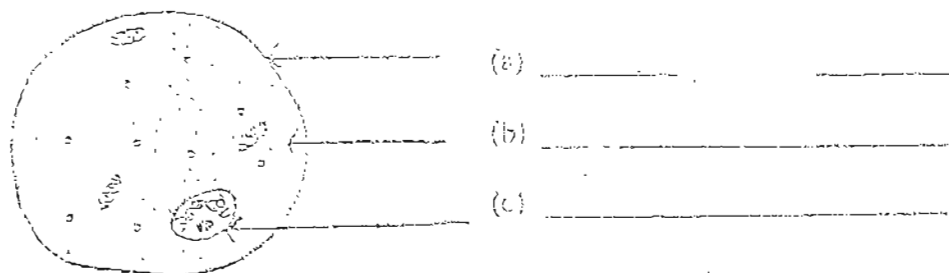
- (a) Which variable did Danny change in his experiment? (1m)

- (b) What energy change took place when the compressed spring was released? (1m)



- (c) If Danny wanted the ball to reach a height of about 10 cm, what should he do? (1m)

41. Label the parts of the animal cell. (3m)

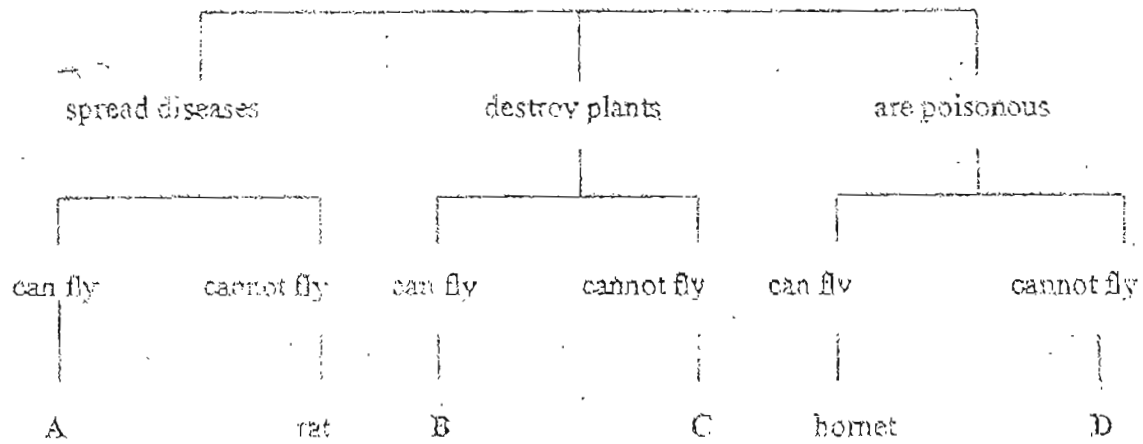


42. Name two differences between a plant cell and an animal cell.

(2m)

43.

HARMFUL ANIMALS

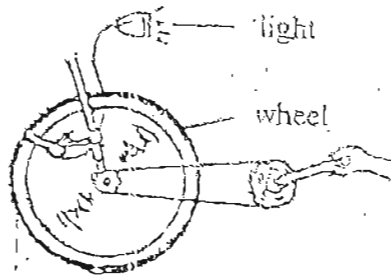


Write down an example of an animal that fits the description for A, B, C and D. (4m)

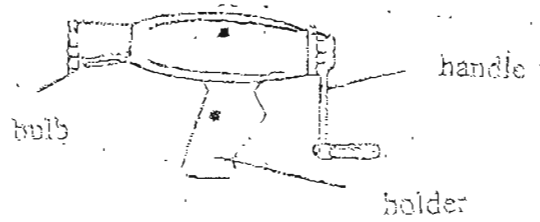
- (a) Animal A _____
- (b) Animal B _____
- (c) Animal C _____
- (d) Animal D _____

44a) The splitting of a cell to produce two new cells is called _____

(1m)



a bicycle dynamo

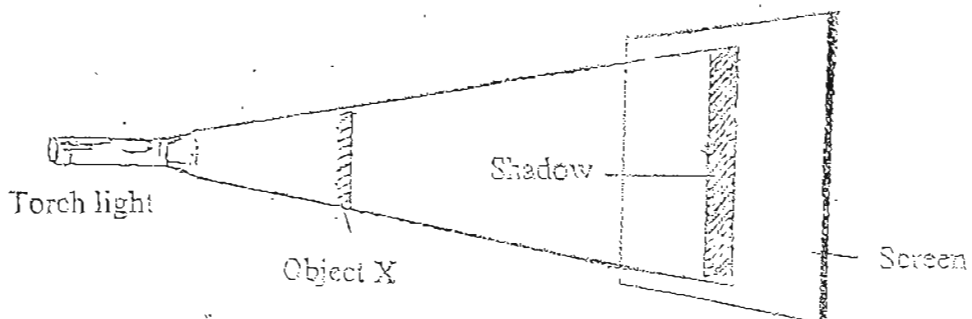


a hand-turned generator

- (b) Name the energy change in the 2 devices shown above (1m)

45. When Valerie shines the torch on object X, a shadow is formed on the screen.

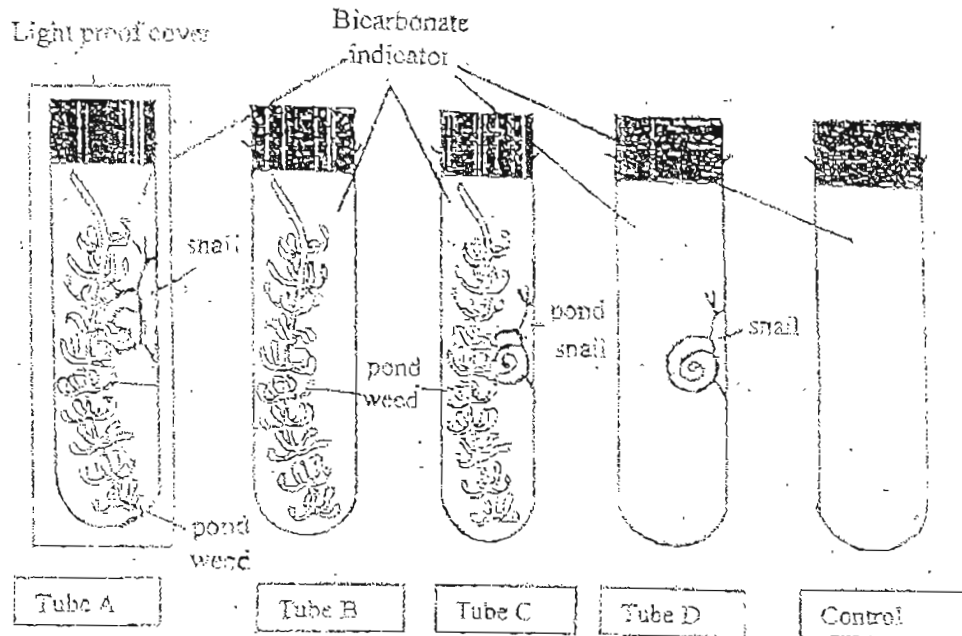
- (a) Why does the object X cast a shadow on the screen? (1m)



- (b) What must Valerie do to decrease the size of the shadow on the screen? (1m)

46. Five sealed test tubes were set up as shown. Four of them either contained aquatic plants and animals or just aquatic plants or animals.

A bicarbonate indicator was put in each test tube. The bicarbonate indicator changes from red to yellow as the concentration of carbon dioxide increases. (It does not harm the plants or animals)



- (a) At the end of the experiment, in which test tubes would the indicator change colour? (1m)

- (b) Explain your answer in (a) (2m)

NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 1 - 2004
primary 6
SCIENCE

241

- 1) 2 28) 2
- 2) 4 29) 4
- 3) 2 30) 3
- 4) 1 31) a) Gravitational potential energy
- 5) 2 b) Point C
- 6) 1 c) Air resistance
- 7) 3 32) carbon dioxide
- 8) 2 underfrond/underside
- 9) 1 33) a) When it was at 12 noon.
- 10) 2 b) That time has the most sunlight so more sunlight is absorbed and more oxygen is given out to the air.
- 11) 4
- 12) 2 34) a) The steel rod will be attracted while the copper rod will not.
- 13) 4 b) Steel is a magnetic material but copper is not.
- 14) 2
- 15) 1 35) a) Dark blue
- 16) 2 Dark brown
- 17) 2 b) P could photosynthesize as it could receive sunlight and carbon dioxide.
- 18) 2 R could not photosynthesize as it could receive sunlight but not carbon dioxide.
- 19) 2
- 20) 2 36) a) The windmill would spin.
- 21) 4 b) The steam has kinetic energy that causes the windmill to spin.
- 22) 3 37) magnetic steel
- 23) 2 38) a) The matchbox would be pushed farther away
- 24) 2 b) This would increase its gravitational potential energy which will be converted into a higher kinetic energy as it rolls down.
- 25) 3
- 26) 2 39) a) At the bottom, water pressure is the highest so the water flows out with the highest kinetic energy.
- 27) 3 b) Gravitational kinetic electrical

- 40) a) The length of compressed spring.
- b) Potential energy kinetic energy
- c) He could compress the spring to 1 cm
- 41) a) Cell membrane
- b) Cytoplasm
- c) Nucleus
- 42) i) The plant cell has chloroplast and cell wall, while the animal cell does not.
- ii) The plant cell has 5 cell parts while the animal cell has 3 cell parts.
- 43) a) mosquito/housefly
- b) locust/grasshoppers
- c) aphid
- d) black widow/cobra
- 44) a) cell division
- b) kinetic energy ---- electrical energy ---- heat and light energy
- 45) a) Light travel in a straight line.
- b) She must put the object near the screen.
- 46) a) Tube D and A
- b) In tube A, there is no sunlight so photosynthesis cannot take place. Hence, the plant and snail respire produce more carbon dioxide. In tube D, the snail respire to produce carbon dioxide.