

**Nan Hua Primary School**  
**Continual Assessment 1 - 2006**  
**Science**  
**Primary Six**

Name : \_\_\_\_\_ (    )  
 Class : Primary 6 \_\_\_\_  
 Date : \_\_\_\_\_

Section A: \_\_\_\_\_ / 60  
 Section B: \_\_\_\_\_ / 40  
 Total Marks: \_\_\_\_\_ / 100

Duration : 1 h 45 min

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

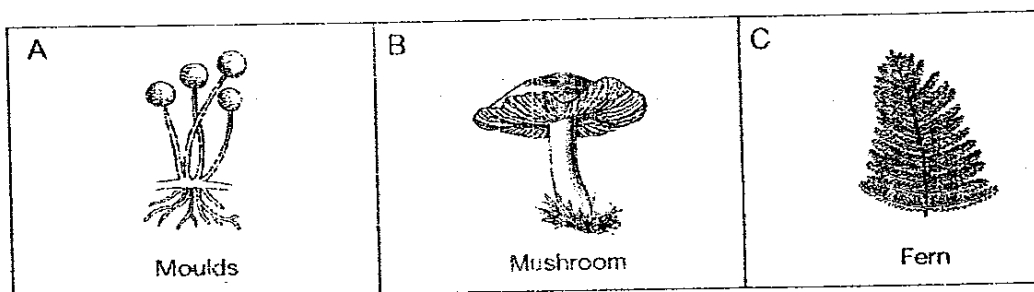
**Section A (30 X 2 marks)**

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) and shade the correct oval on the Optical Answer Sheet (OAS) provided.

1. The table below shows the body covering of some animals. Which one of the sets below has all the animals grouped **correctly**?

	Feathers	Scales	Hair
(1)	Penguin	Scorpion	Kangaroo
(2)	Crow	Snail	Cobra
(3)	Ostrich	Snake	Lion
(4)	Vulture	Spider	Gorilla

2.



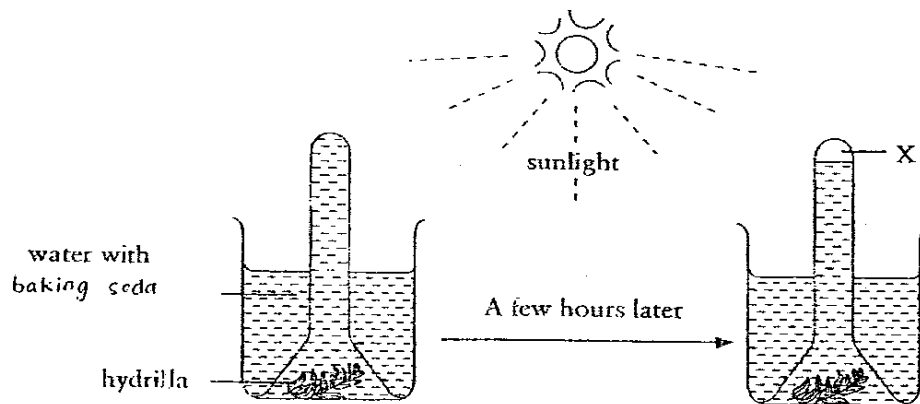
Mervyn grouped the above organisms in the same group because they \_\_\_\_\_

- (1) grow from seeds
- (2) cannot make food
- (3) reproduce from spores
- (4) produce beautiful flowers

3. Which of the following has no kinetic energy?

- (1) An arrow being shot across.
- (2) A man pushing a stationary car.
- (3) A boy riding on the roller coaster
- (4) A motorcyclist reducing his motor speed.

4. Nurul set up an experiment as shown below.

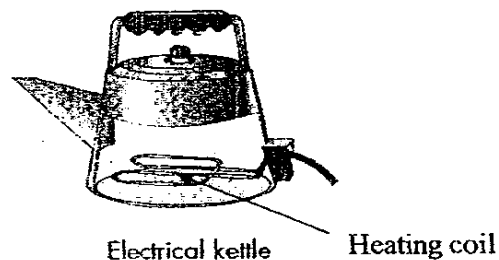


After some time, a gas was collected at X. Which of the following statements about the gas collected is true?

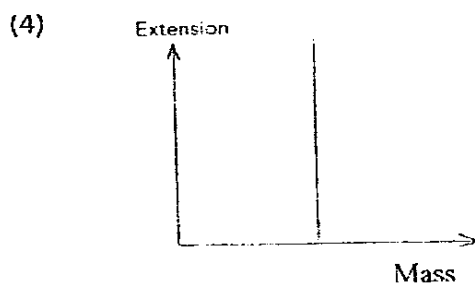
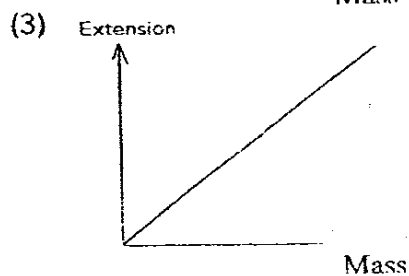
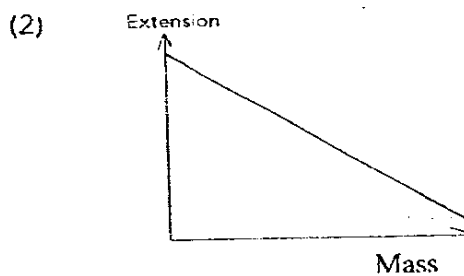
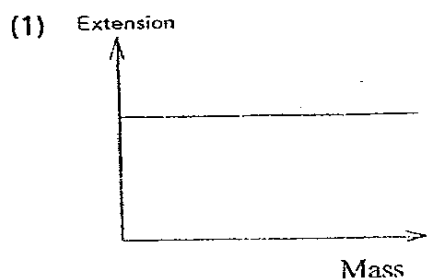
- (1) The gas will turn limewater chalky.
  - (2) The gas is required for photosynthesis.
  - (3) More gas would be collected if less hydrilla was used.
  - (4) The gas collected shows that the hydrilla is making food.
5. The diagram shows an electrical kettle. What properties can be used to describe the material that is used in a heating coil that enables the water to be heated and boiled when the switch is on?

- A: Degree of transparency
- B: Thermal property
- C: Magnetic property
- D: Electrical property

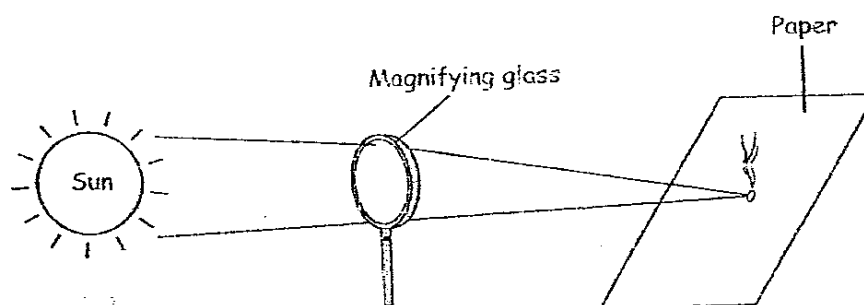
- (1) A and B
- (2) A and C
- (3) B and C
- (4) B and D



6. Which one of the following graphs **correctly** shows the relationship between the extension of a spring and the mass of the object hung on the spring?

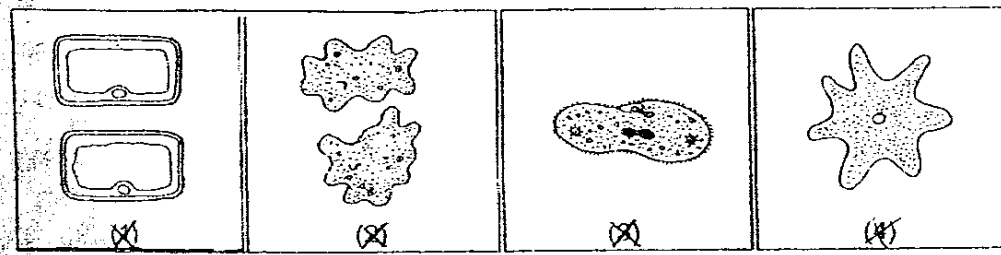


7. In the experiment shown below, \_\_\_\_\_ energy <sup>is</sup> converted to \_\_\_\_\_ energy.

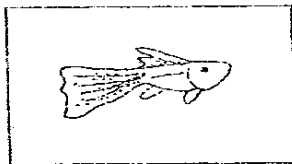


- (1) light, heat
- (2) heat, light
- (3) light, electrical
- (4) solar, wind

8. Look at the diagrams of some cells below. Which one of them is taken from the skin of a fruit?



9. Which are the **similarities** between a guppy and a hamster?



- A: Both lay eggs.
- B: Both have lungs.
- C: Both need oxygen to survive.
- D: Both can move from place to place.

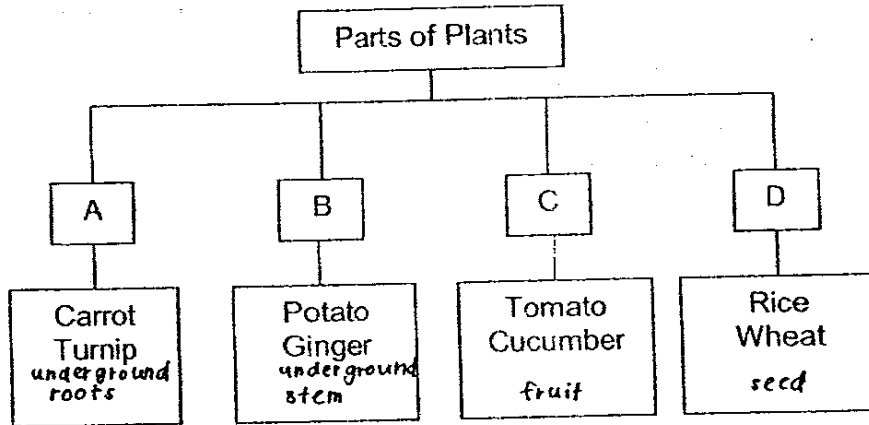
- (1) A and B only
- (2) B and C only
- (3) C and D only
- (4) A, C and D only

10. Organisms from millions of years ago died and were buried underground. After a period of time, these organisms were turned into fossil fuels. Fossil fuels possess \_\_\_\_\_ energy.

*stored energy*

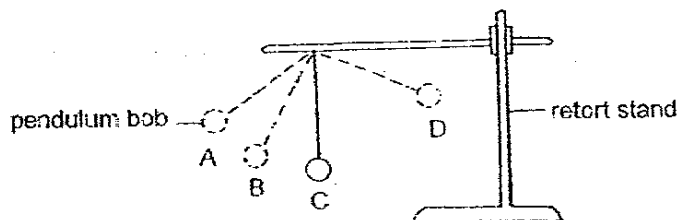
- (1) heat
- (2) light
- (3) nuclear
- (4) chemical potential

11. Starch can be stored in different parts of plants. In the classification table below, what is the correct heading for each group?



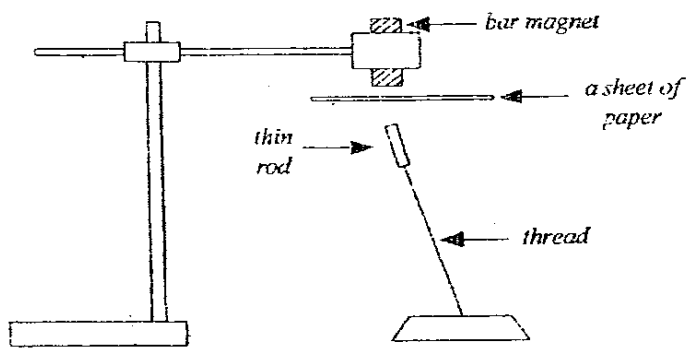
	A	B	C	D
(1)	Underground Roots	Fruits	Seeds	Underground Stems
(2)	Underground Stems	Underground Roots	Fruits	Seeds
(3)	Fruits	Seeds	Underground Stems	Underground Roots
(4)	Underground Roots	Underground Stems	Fruits	Seeds

12. At which position does the pendulum bob shown below has the most potential energy?



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

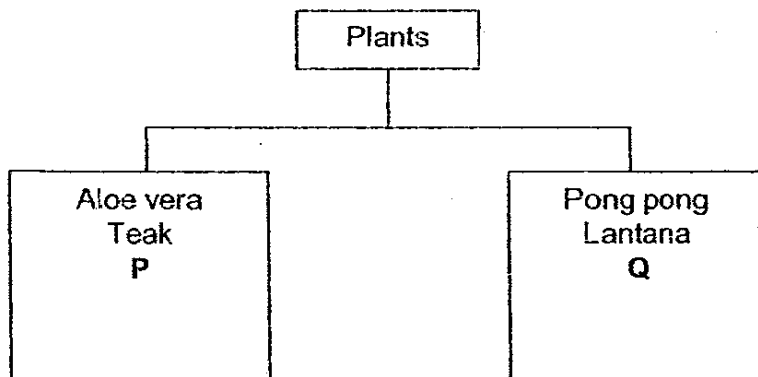
13. An experiment is set up as shown in the diagram below.



Thin rods made of copper, rubber and iron are tied to the thread individually and placed below the bar magnet that is separated by a sheet of paper. Which one of the statements is **true**?

- (1) Only the iron rod will remain suspended.
- (2) Only the rubber rod will not be suspended
- (3) Only the copper rod will remain suspended.
- (4) No rod will remain suspended if the sheet of paper is removed.

14. Study the classification chart below.



What is P and Q most likely to be?

	P	Q
(1)	Jelutong	Hibiscus
(2)	Rattan	Periwinkle
(3)	Fig	Rose
(4)	Pineapple	Fragipanni

15. Food and fuels are two sources of potential energy. Which one of the following does **not** correctly show the difference between the two?

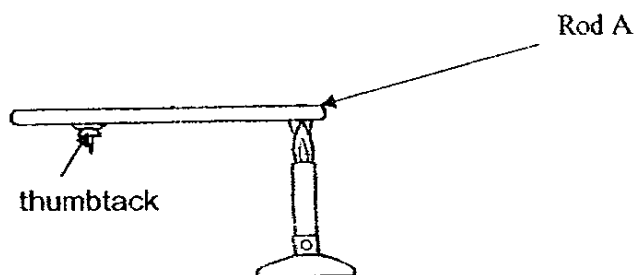
	Food	Fuels
(1)	Edible	Inedible
(2)	Entirely man-made	Found naturally
(3)	Keep us alive	Help us to work
(4)	For living things	For non-living things

16. Reproduction of cells takes place all the time \_\_\_\_\_.

A: to stop cells from dying  
B: to increase the size of cells  
C: to replace old and damaged cells

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

17. Look at the diagram of the set-up below.

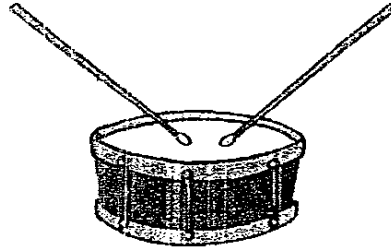


A thumbtack was attached with wax to four different rods, A, B, C and D. Each rod was then heated. The thumbtack on rod C dropped off in the shortest time. What material is rod C most likely made of?

- (1) plastic  
(2) glass  
(3) copper  
(4) cork

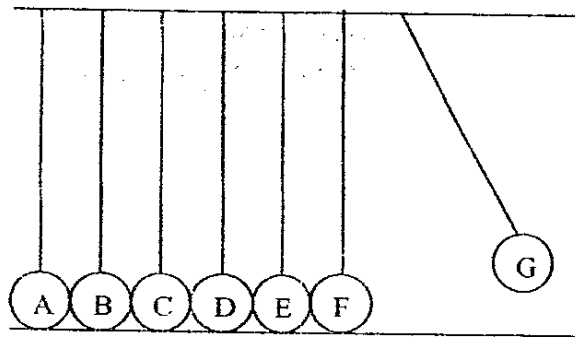
18. What kind of energy conversions occur when you beat a drum?

- A: Heat energy
- B: Light energy
- C: Sound energy
- D: Kinetic energy
- E: Potential energy



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

19.

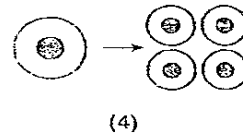
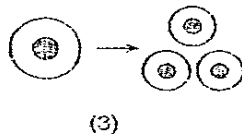
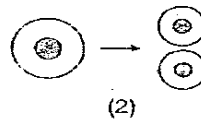
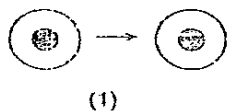


Seven metal balls (A, B, C, D, E, F and G) are hung with each ball just touching the next one as shown above.

If Ball G is pulled to the right and released, which ball or balls will swing to the left?

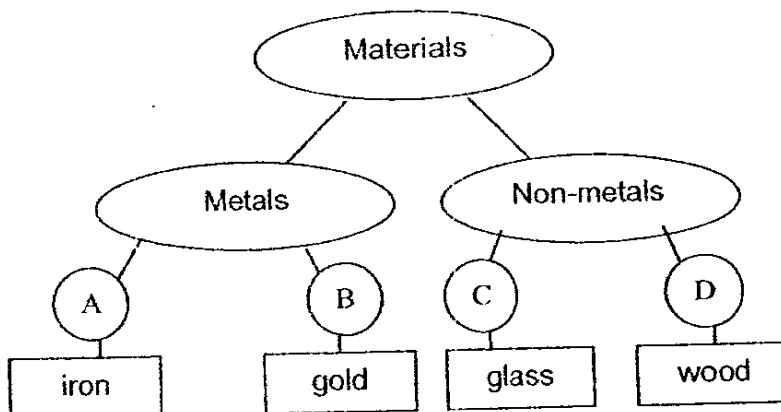
- (1) A only
- (2) B and C only
- (3) D, E and F only
- (4) All the balls

20. Which one of the following shows correctly the process of cell division?





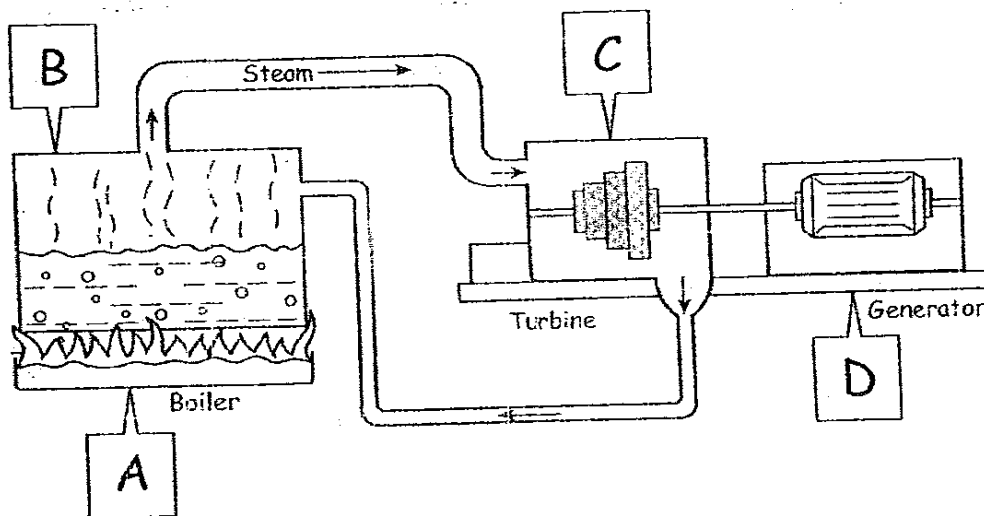
21. Look at the classification chart below.



Which option (1, 2, 3, 4) correctly describes A, B, C and D?

	A	B	C	D
<input checked="" type="checkbox"/>	Electrical conductor	Electrical insulator	Magnetic	Non-magnetic
<input checked="" type="checkbox"/>	Magnetic	Non-magnetic	Transparent	Opaque
<input checked="" type="checkbox"/>	Non-magnetic	Magnetic	Fragile	Durable
<input checked="" type="checkbox"/>	Thermal conductor	Thermal insulator	Magnetic	Non-magnetic

22.



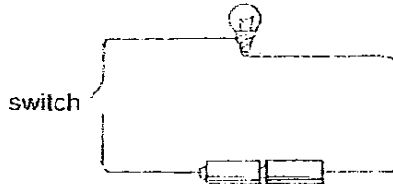
At B, what causes the change of state from water to steam?

- (1) Heat energy of the water.
- (2) Potential energy of the fuel.
- (3) Potential energy of the water.
- (4) Potential energy from the burning fuel.  
Heat

23. Drills that are used to cut through rocks to reach oil deep in the earth have diamonds fitted on them because diamonds are \_\_\_\_\_.

- (1) very hard.
- (2) very flexible
- (3) transparent to light.
- (4) poor conductors of heat

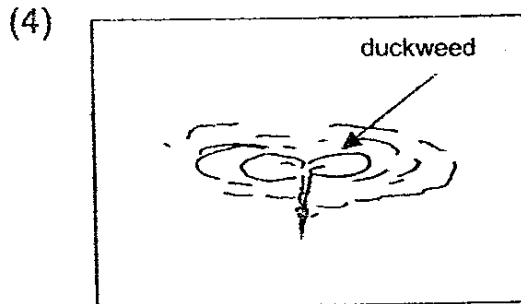
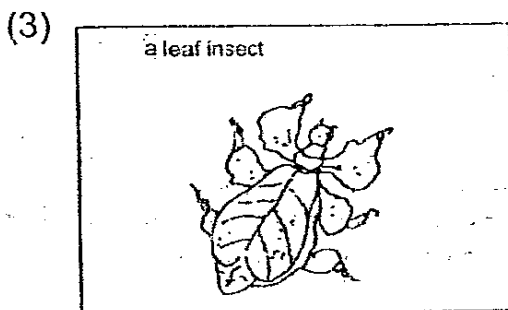
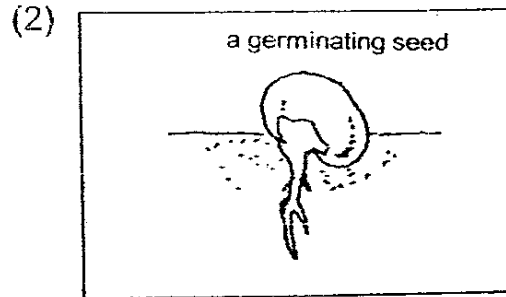
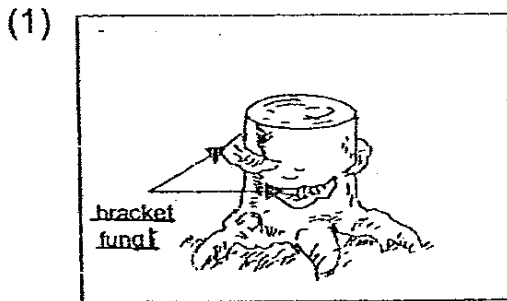
24. The figure below shows an electric circuit.



Which of the following gives the correct energy changes that take place when the switch is closed?

- (1) Electrical energy  $\longrightarrow$  Heat + Light energy
- (2) Electrical energy  $\longrightarrow$  Heat energy  $\longrightarrow$  Light energy
- (3) Kinetic energy  $\longrightarrow$  Electrical energy  $\longrightarrow$  Heat + Light energy
- (4) Potential energy  $\longrightarrow$  Electrical energy  $\longrightarrow$  Heat + Light energy

25. The diagrams below show some organisms. Which one of them is making food?



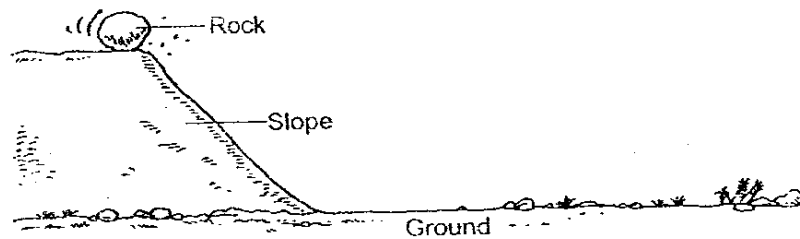
26. Four blocks, P, Q, R and S, of different mass are each attached to the spring one at a time. The length of the spring is measured and recorded in the table below.

Block	Length (mm)
P	350
Q	729
R	655
S	373

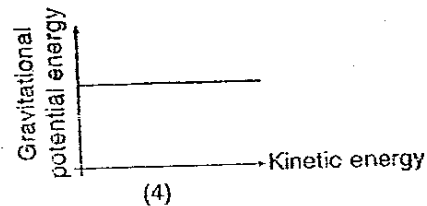
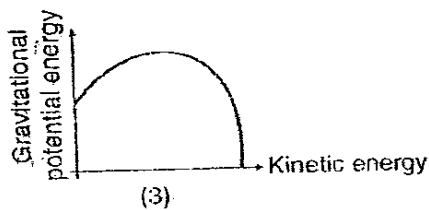
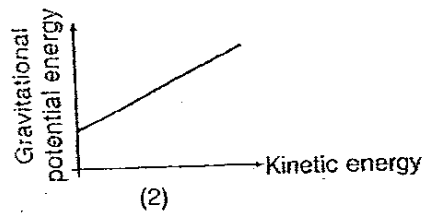
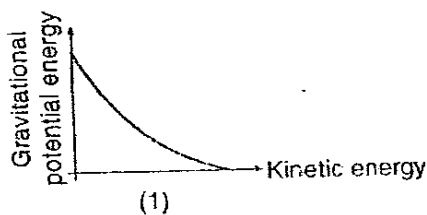
Arrange the mass of the blocks in **increasing** order.

- P, Q, R, S
- Q, R, S, P
- P, S, R, Q
- S, P, Q, R

27.



A rock rolls down a slope. Which of the following graphs shows the correct change in gravitational potential energy and kinetic energy of the rock as it rolls to the ground?



28. Study the information below carefully.

When iodine solution is added to test a freshly cut green leaf for starch, it does not turn dark blue. A positive result is obtained only after the leaf is treated with boiling water that breaks down cell membranes.

What can you infer from the above information?

A: The leaf contains starch only after it is put in boiling water.

B: Iodine solution cannot pass through cell membranes.

C: Iodine solution turns dark blue in the presence of cell membranes.

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

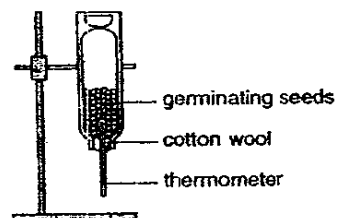
29. Compare the statements for photosynthesis and respiration in the table below and see which of the following comparisons are true?

	Photosynthesis	Respiration
<input checked="" type="checkbox"/>	Uses carbon dioxide and produces oxygen	Uses oxygen and produces carbon dioxide
<input checked="" type="checkbox"/>	Energy is stored in food.	Energy is released from food.
<input checked="" type="checkbox"/>	Takes place only in cells that contain chlorophyll	Takes place only in animal cells.
<input checked="" type="checkbox"/>	Light energy is converted into chemical energy	Chemical energy is converted into light energy.

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

30. Some seeds were soaked in water and a solution was added to kill the microbes present without killing the seeds. When the seeds began to germinate, they were placed in moist cotton wool and enclosed in a test-tube with a thermometer in it. A rise in the reading of the thermometer was noted the next day. What could be inferred from the experiment?

- (1) Seeds need air, water and warmth for germination.
- (2) Energy is released when germinating seeds respire.
- (3) The germinating seeds gain heat from the surrounding air.
- (4) Carbon dioxide is produced when germinating seeds respire.



Nan Hua Primary School  
Continual Assessment 1 - 2006  
Science  
Primary Six

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

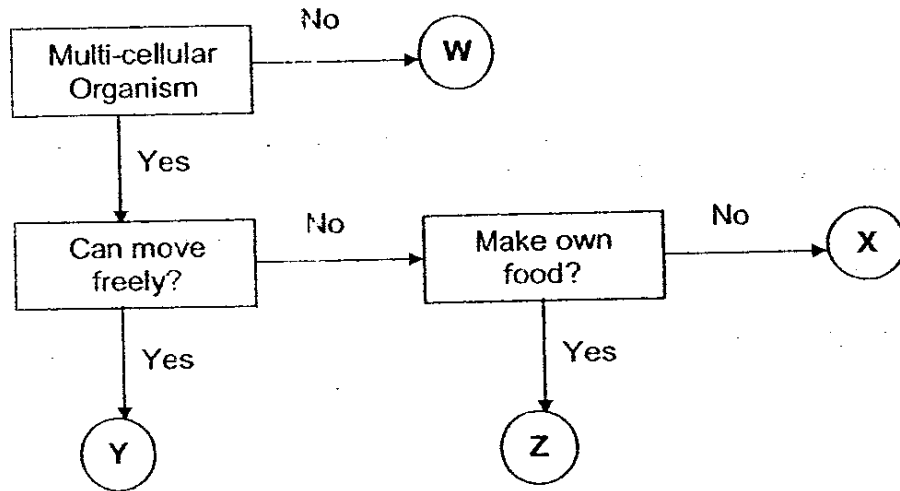
Section B: \_\_\_\_\_ / 40

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

Section B (40 marks)

Fill in the blanks with the correct answers.

31. Study the flow chart carefully.



(a) How does Organism Y differ from Organism Z? (1 m)

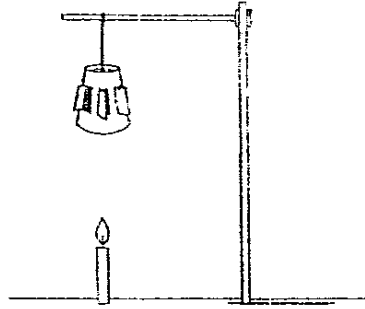
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(b) Which group of organisms does Z represent? (1 m)

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32



When the candle is lighted, the cup above it is seen to move after a while..

a) What causes the cup to move? (1m)

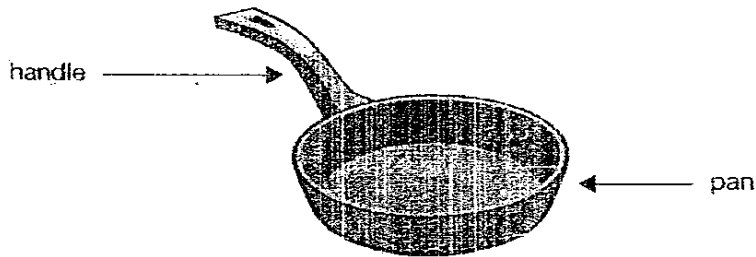
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b) State the energy changes which have taken place in the set-up. (1m)

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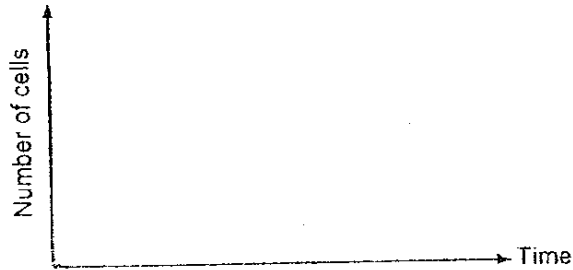
33. The picture shows a frying pan.



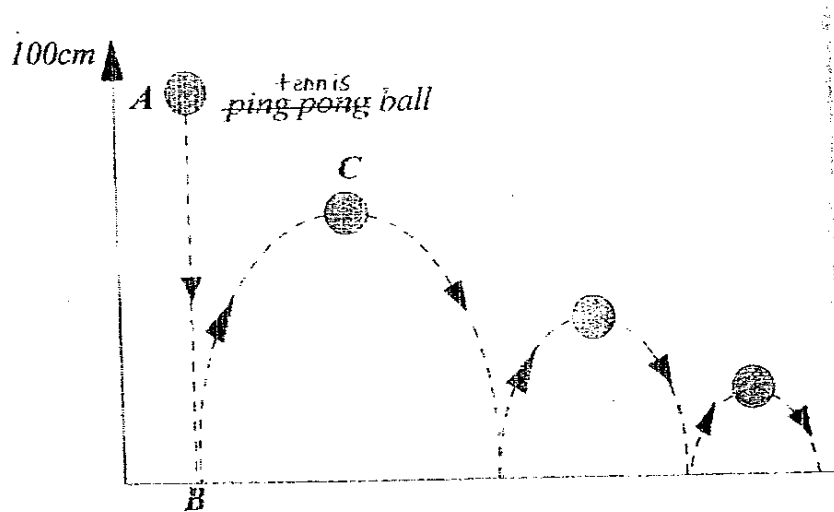
The frying pan has parts made of different materials.  
In the table below, state the material each part is made of and give one property of each material. (2m)

Part of Frying Pan	Type of Material	Property of the Material
Handle		
Pan		

34. Cells of a plant multiply by cell division. Draw a graph to show the results of cell division of a cheek cell over a period of time. (2m)



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



Why do you think the ball does not bounce back to the same height it is dropped from. Explain your answer. (2m)

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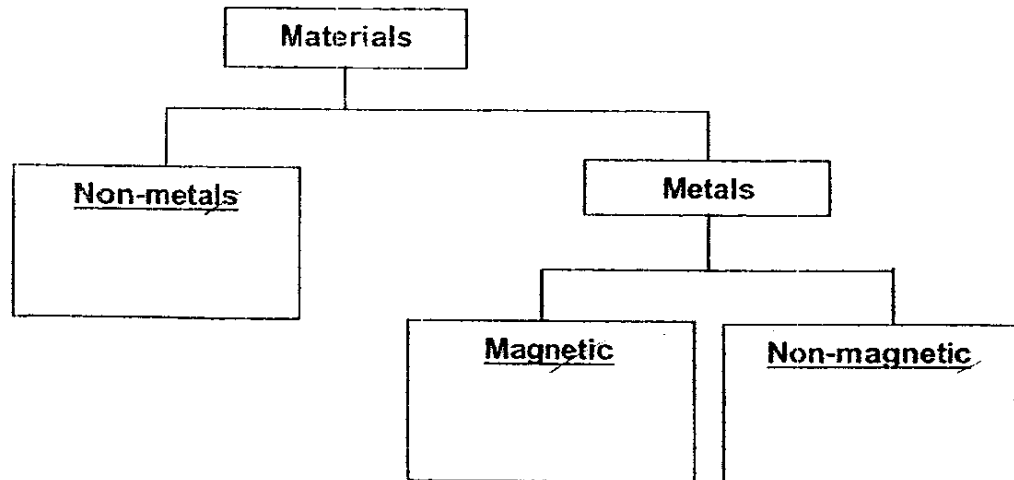
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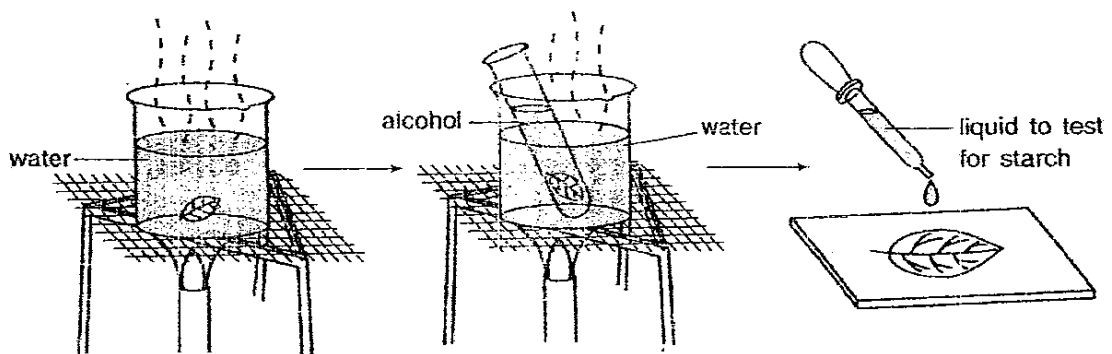
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36. Look at the following materials and put them in the correct group below. (3m)

Fabric	Nickel	Steel
Aluminium	Silver	Weed



37. Jane plucked a leaf from her garden and tested the leaf for starch as shown in the pictures below.



- (a) What is the purpose of placing the leaf in alcohol? (1m)

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- (b) What colour change is observed when we place a drop of iodine solution onto the leaf? (1m)

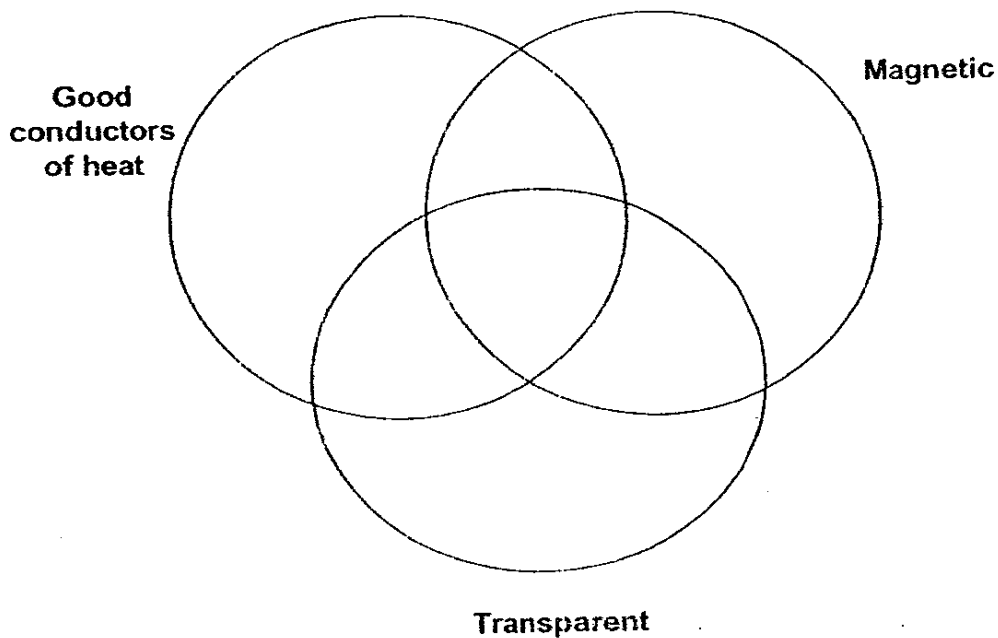
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39. Study the information provided in the table below regarding a few objects.

Objects	Good conductor of heat	Magnetic	Transparent
Steel nail	Yes	Yes	No
Wooden rod	No	No	No
Diamond	Yes	No	Yes
Copper pipe	Yes	No	No

Fill in the following Venn diagram with the 4 objects given in the table above. (4m)

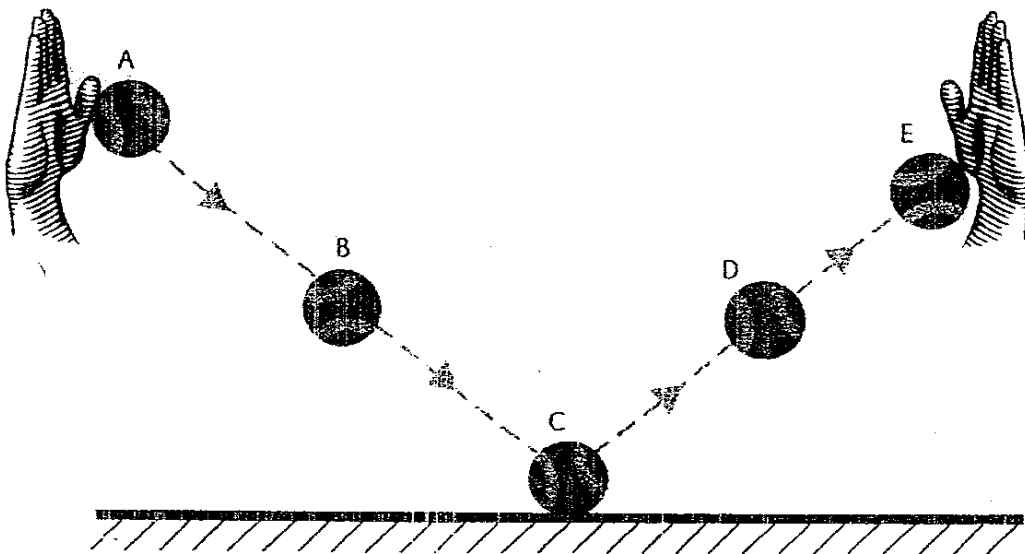


40. Put a T for each true statement and a F for each false statement. (2m)

(a)	All living things need energy.	
(b)	Some energy can be used to generate electricity.	
(c)	The higher an object is, the less energy it stores.	
(d)	The sounds from sirens and fire alarms are examples of sound energy	

38. John throws a ball to Peter who catches it as shown in the diagram below.

(a) State the positions where the ball has:



(i) potential energy only (1m)

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(ii) potential and kinetic energy (1m)

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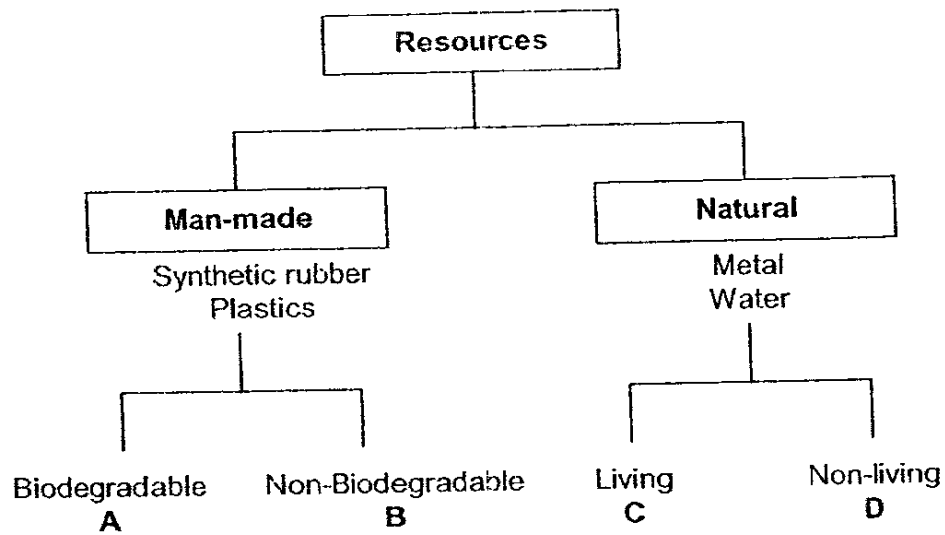
(iii) kinetic energy only (1m)

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(b) At which point does the ball have the greatest amount of potential energy? (1m)

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41. Study the classification table below.



(a) In which classification, A, B, C, D should the following materials be placed? (2m)

Paper: \_\_\_\_\_

Diamond: \_\_\_\_\_

Cocoa: \_\_\_\_\_

Nylon: \_\_\_\_\_

(b) List **two** characteristics of nylon based on the classification above. (1m)

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

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

42. Match the parts of a plant cell to the correct function. (2m)

Cell wall

Contains hereditary materials that can be passed down from one generation to another

Cell membrane

Controls substances entering and leaving the cell

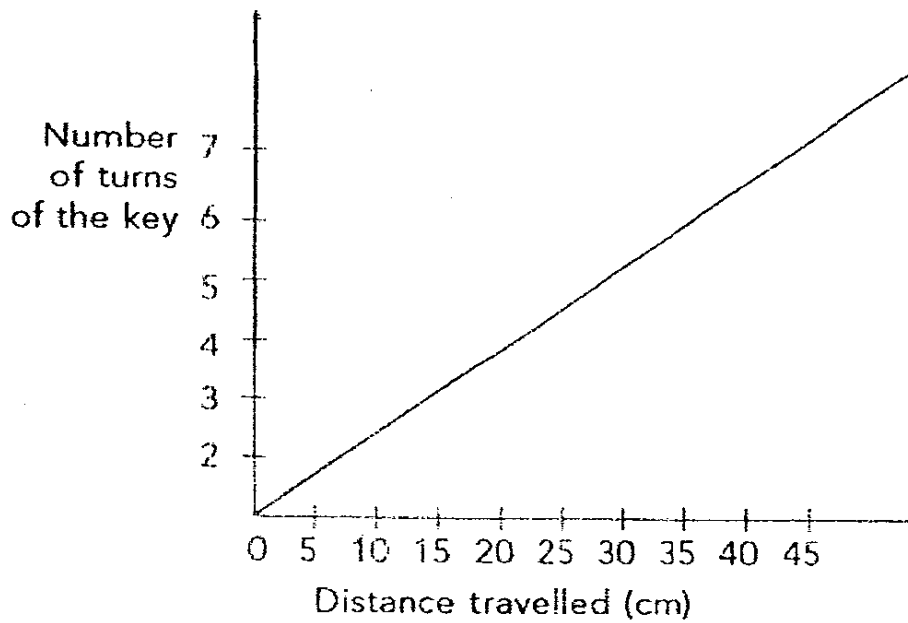
Nucleus

Contains a green pigment which is required to make food

Chloroplast

Supports the cell

43. The graph below shows the number of turns the key of a wound-up mouse was wound and the distance the mouse moved when it was released.



- (a) What is the relationship between the distance travelled and the number of turns of the key? (2m)

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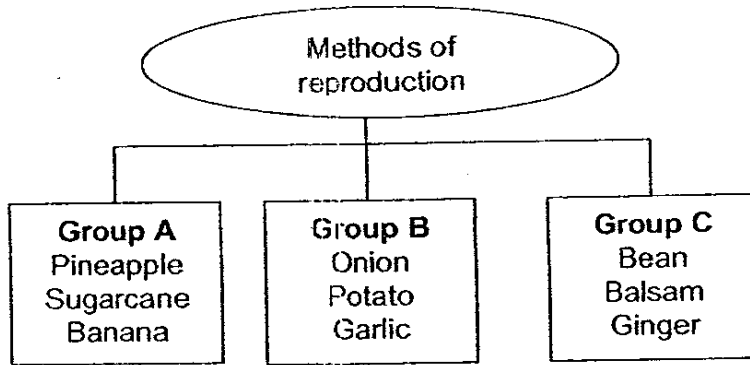
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- (b) How far do you think the mouse would move, if the key was wound 8 times?(1m)

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44. Tom classified ~~seven~~<sup>nine</sup> plants according to their method of reproduction.



(a) Which plant has been **wrongly** classified?. (1 m)

\_\_\_\_\_

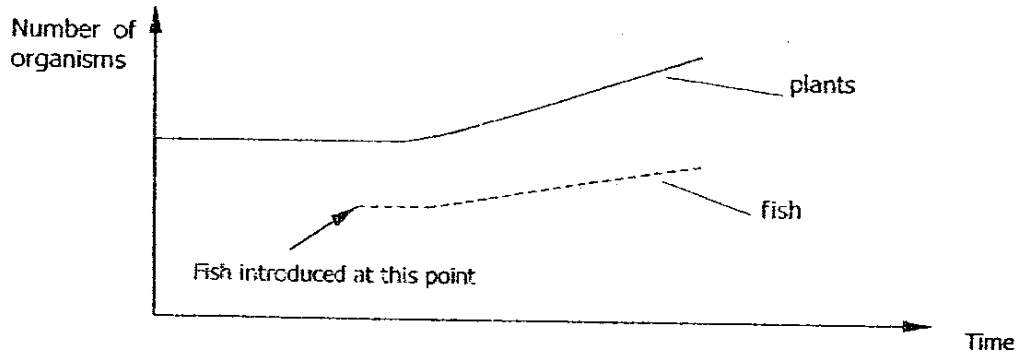
(b) Which group should it be classified? Why? (1m)

\_\_\_\_\_  
\_\_\_\_\_

45. What are the main energy changes that take place in the following cases? (3m)

Item	Main energy changes that take place
Burning wood	Chemical potential energy → _____ + _____ energy
Battery-operated clock	_____ energy → kinetic <sup>energy</sup> + sound energy
Solar-powered plane	_____ energy → _____ energy → Kinetic energy

46. The graph below shows the relationship between the number of fish (which does not feed on the plants) and the number of plants growing in the pond.



Describe how the fish help increase the number of plants in the pond in terms of respiration and photosynthesis? (2m)

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END OF PAPER

Nan Hua Primary School  
Primary 6 Science CA1 Exams (2006)

(ANSWER KEY)

SECTION A : (60 MARKS)

Qn no.	Ans
1	3
2	3
3	2
4	4
5	4
6	3
7	1
8	1
9	3
10	4

Qn no.	Ans
11	4
12	4
13	1
14	2
15	2
16	1
17	3
18	4
19	1
20	2

Qn no.	Ans
21	2
22	4
23	1
24	4
25	4
26	3
27	1
28	2
29	1
30	2

SECTION B (40 MARKS)

Qn No.	Answers
31a	Organism Y can move freely while Organism Z cannot move freely.
31b	Z represents plants.
32a	The lighted candle makes its surrounding air hot and the hot air rises into the cup, thus making it move.
32b	Chemical potential energy $\longrightarrow$ heat energy $\longrightarrow$ kinetic energy.
33	Handle $\longrightarrow$ Plastic $\longrightarrow$ it is a poor conductor of heat and prevents our hand from getting burnt.
	Pan $\longrightarrow$ Metal $\longrightarrow$ it is a good conductor of heat and enables us to cook food.

Qn No.	Answers
34.	

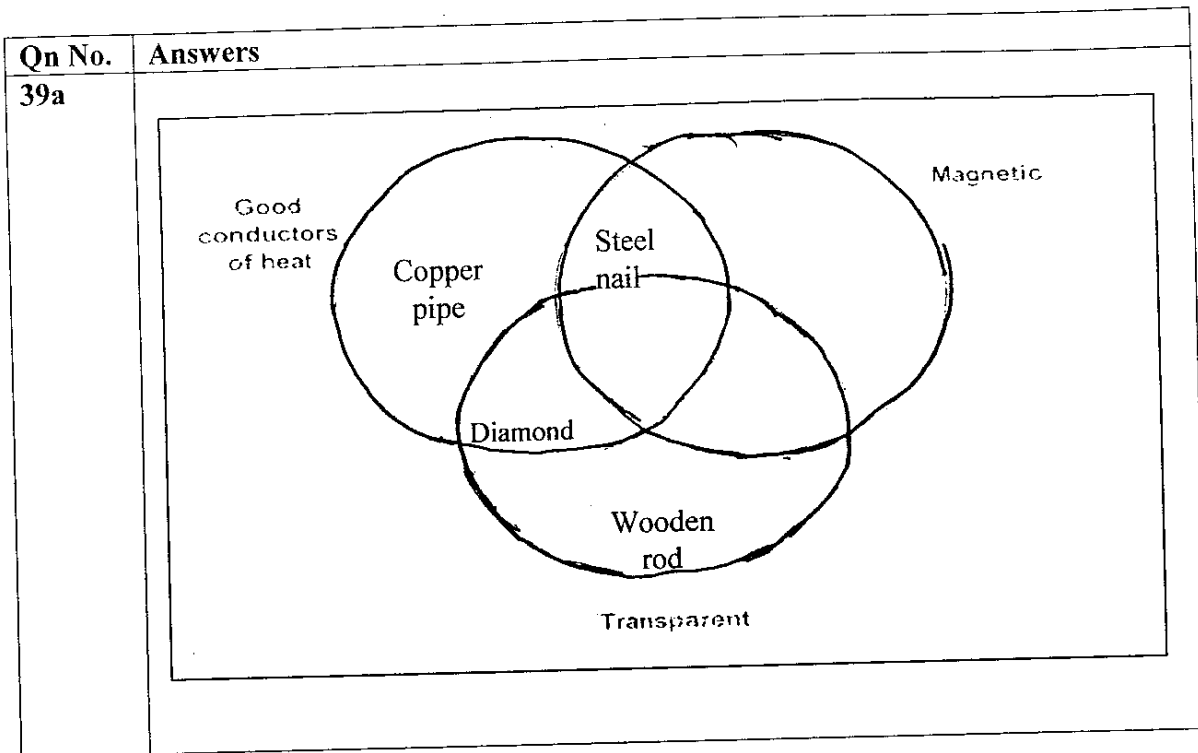
35a	It loses / converts some its energy to heat energy and sound energy every time it hits ground. Some energy is used to overcome air resistance other than losing / converting some energy to heat and sound energy at each bounce, some energy has been used to overcome air resistance.
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36a	Non-Metals	Magnetic	Non-magnetic
	Fabric	Steel	Aluminium
	Wood	Nickel	silver

37a	It is remove the chlorophyll.
37b	The iodine solution has changed from brown into to dark blue.

38a (i)	A and E
(ii)	B and D
(iii)	C
38b.	The ball has the greatest amount of potential energy at point A.





40a	True
40b	True
40c	False
40d	True

41a	Paper : A    Diamond : D    Cocoa : C    Nylon : B
41b (i)	Nylon is man-made
(ii)	Nylon is non-biodegradable

42a	<table border="0"> <tr> <td>Cell wall <i>Cell wall</i></td> <td rowspan="4" style="text-align: center; vertical-align: middle;"> </td> <td>Contains hereditary materials that can be passed down from one generation to another</td> </tr> <tr> <td>Cell membrane <i>Cell membrane</i></td> <td>Controls substances entering and leaving the cell</td> </tr> <tr> <td>Nucleus <i>Nucleus</i></td> <td>Contains a green pigment which is required to make food</td> </tr> <tr> <td>Chloroplast <i>Chloroplast</i></td> <td>Supports the cell</td> </tr> </table>	Cell wall <i>Cell wall</i>		Contains hereditary materials that can be passed down from one generation to another	Cell membrane <i>Cell membrane</i>	Controls substances entering and leaving the cell	Nucleus <i>Nucleus</i>	Contains a green pigment which is required to make food	Chloroplast <i>Chloroplast</i>	Supports the cell
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Nucleus <i>Nucleus</i>		Contains a green pigment which is required to make food								
Chloroplast <i>Chloroplast</i>		Supports the cell								

Qn No.	Answers
43a	The more the number of turns of the key, the further the distance traveled by the mouse.
43b	I think the mouse would move 50cm .

44a	The ginger has been wrongly classified.
44b	It should be classified in group B. Like the onion and potato, the ginger is an underground stem.

45	<b>Item</b>		<b>Main energy changes that take place</b>	
	Burning wood	Chemical potential energy	→	heat + light energy
	Battery-operated clock	Chemical energy	→	kinetic energy + sound energy
	Solar-powered plane	Solar energy	→	electrical energy → kinetic energy

46a	As the fish respire, oxygen and food is changed to carbon dioxide, water and energy. The carbon dioxide given out by the fish is needed by the plant to photosynthesis to make food. At the time, the oxygen given out by the plant during photosynthesis is needed by the fish to respire.
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