



NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 1 2010
PRIMARY SIX
SCIENCE

Name : _____ ()

Class : Primary 6 / _____

Date : 3 March 2010

Duration : 1 hr 45 min

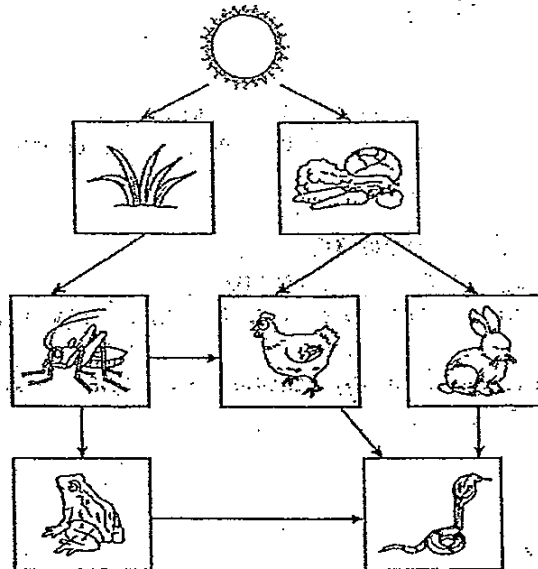
MARKS	
Sect A:	/ 60
Sect B:	/ 40
Total :	/ 100

Parent's Signature : _____

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

For each question from 1 to 20, 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. Study the diagram below carefully.



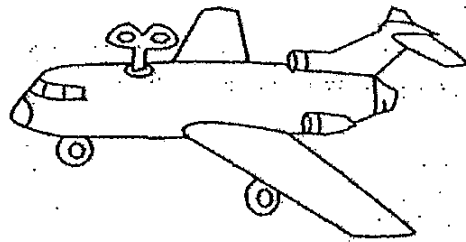
What can you infer from the above information?

- (1) Plants make food from carbon dioxide and water.
- (2) All living things need air, food and water to survive.
- (3) Living things need energy to carry out life processes.
- (4) The Sun is the primary source of energy for plants and animals.

2. Fossil fuels and batteries are two sources of potential energy. How are they different?

- (1) Fossil fuels are formed from the remains of dead plants and animals while batteries are man-made.
- (2) Fossil fuels have chemical energy while batteries have electrical energy.
- (3) The energy of fossil fuels can be destroyed while the energy in the batteries cannot.
- (4) The chemical energy in fossil fuels is changed to electrical energy when burnt while that in batteries is changed to light energy only in a closed circuit.

3. Leming has a toy aeroplane as shown below.

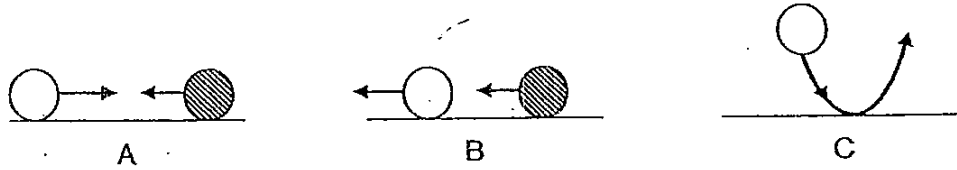


He turns the key a few times to wind it up. Then he puts it on the floor. Which of the following statements are true of the toy aeroplane when it is placed on the floor before release?

- (A) It possesses elastic potential energy.
- (B) It possesses gravitational potential energy.
- (C) Its spring possesses more elastic potential energy if the key is given more turns.
- (D) The potential energy of the toy aeroplane will change to kinetic energy when it is released.

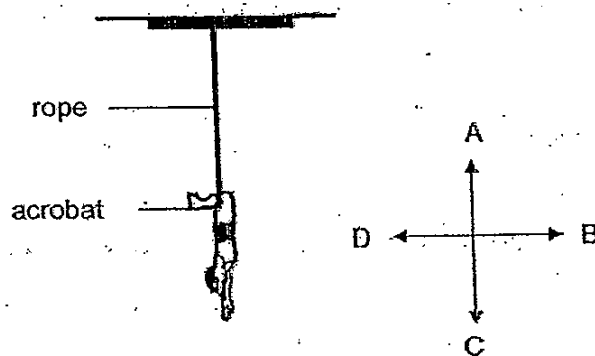
- (1) A and B only
- (2) A and C only
- (3) A, C and D only
- (4) A, B, C and D

4. Which of the following are examples that show a force that can change both the direction and speed of a moving object?



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

5. The diagram below shows an acrobat hanging on a trapeze (swing) in a circus.

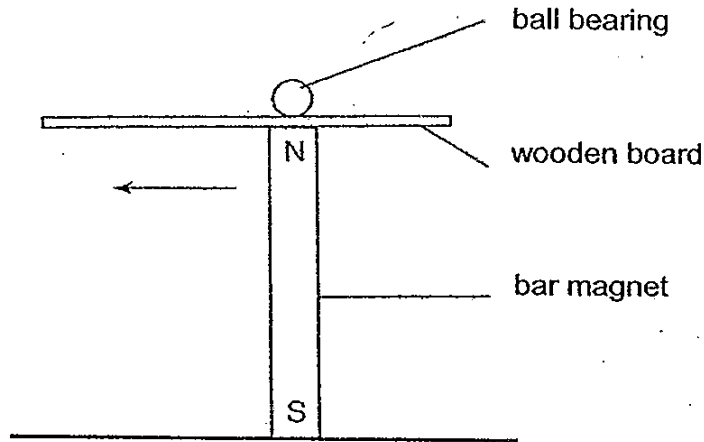


Which arrow, A, B, C or D, shows the direction of Jim's weight?

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

The acrobat's

6. Meiling set up an experiment as shown below. She placed a ball bearing on a wooden board and held a bar magnet under the board as shown in the diagram.



As she moved the bar magnet across the wooden board to the left as indicated by the arrow, the ball bearing would move in the same direction.

When the wooden board was replaced by a steel sheet, the ball bearing did not move even when the magnet was moved to the left.

Which one of the following is/are likely to be the reason(s) for the observation that she has made?

- A: The ball bearing is not magnetic.
- B: The magnetism of the magnet is not strong enough
- C: The magnetic force of the magnet cannot pass through the magnetic object.

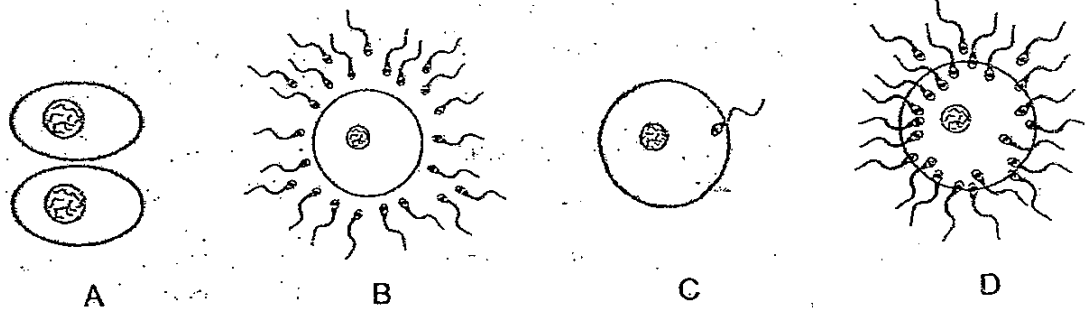
- (1) C only
- (2) A and C only
- (3) B and C only
- (4) A, B and C

7. Which of the following statements are true?

- A: All flowers have male and female parts.
- B: Pollen grains are stored in the pollen sacs.
- C: Most grasses are wind-pollinated flowering plants
- D: The male parts of a flower consist of the filament and the anther.
- E: Flower petals are brightly coloured to attract insects for pollination.

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

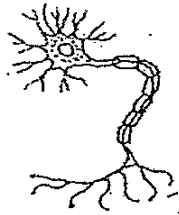
8. Study the diagrams below.



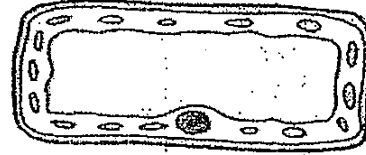
Which of the following shows fertilisation taking place?

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

9. The diagram below shows two cells, Cell X and Cell Y.



Cell X

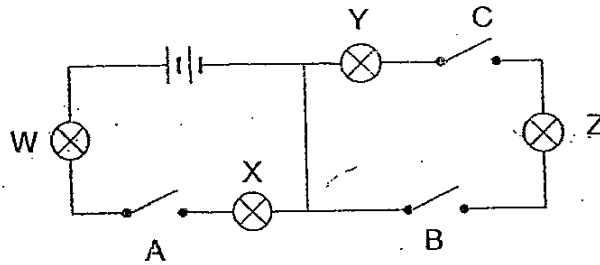


Cell Y

Which of the following correctly shows one similarity and one difference between the two cells?

	Similarity	Difference
(1)	Both cells have a nucleus.	Cell X is found in plants while Y is found in animals.
(2)	Both cells have a cell wall.	Cell X has a cytoplasm while Cell Y has no cytoplasm.
(3)	Both cells have a cell membrane.	Cell Y has chloroplasts but Cell X has no chloroplasts.
(4)	Both cells are too small to be seen with the naked eye.	Cell Y has a cell part which contains genetic information but not Cell X.

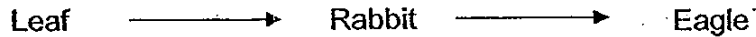
10. Study the diagram below carefully.



Which statement is true?

- (1) When switch B is closed only, Bulb Z will light up.
- (2) When switch A is closed, Bulbs W and X will light up.
- (3) When switches B and C are closed, Bulbs Y and Z will light up.
- (4) When switches A and B are closed, Bulbs W, X and Y will light up.

11. The diagram below shows the transfer of energy from one living thing to another through the food they eat.

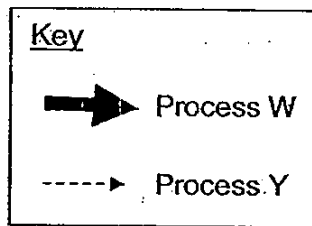
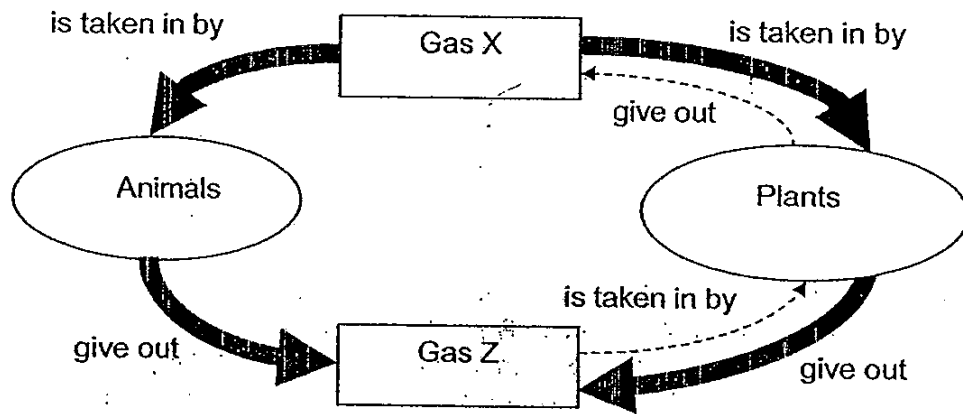


Which other animals can be a direct energy source for the eagle?

A	Lion
B	Frog
C	Snake
D	Leopard

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

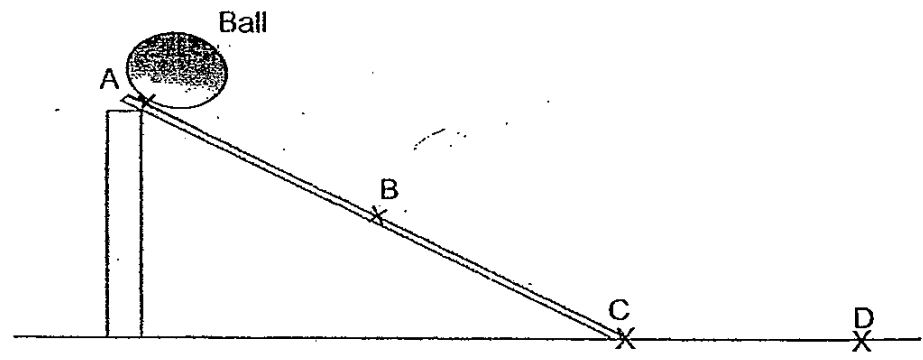
12. Study the diagram below.



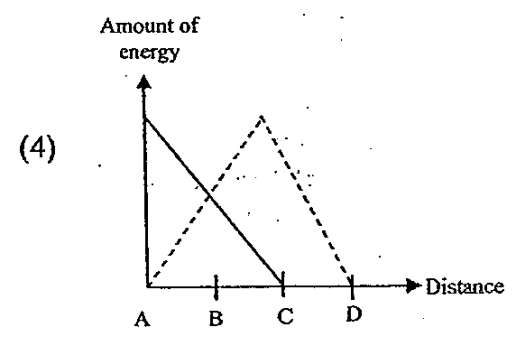
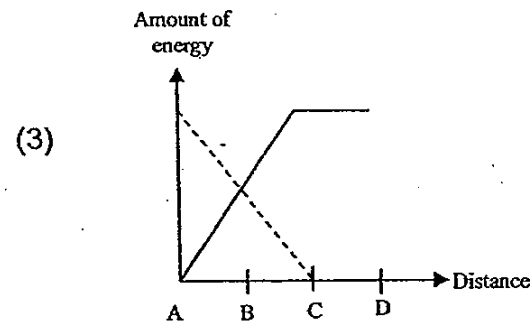
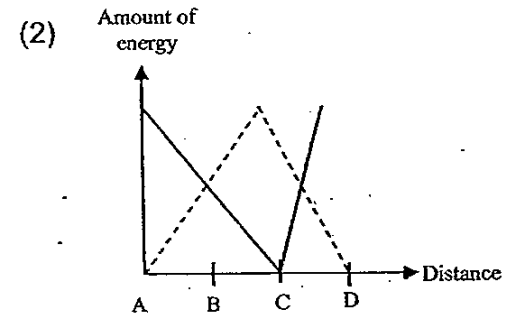
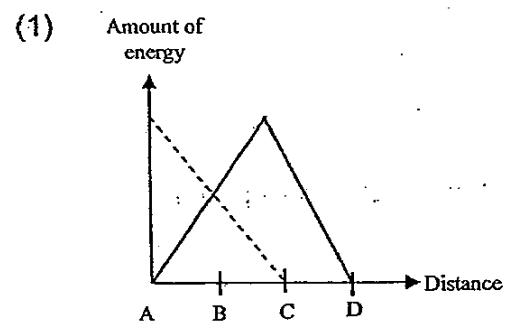
Based on the diagram above, which of the following best represents W, X, Y and Z respectively?

	W	X	Y	Z
(1)	Photosynthesis	Oxygen	Respiration	Carbon Dioxide
(2)	Respiration	Carbon Dioxide	Photosynthesis	Oxygen
(3)	Photosynthesis	Carbon Dioxide	Respiration	Oxygen
(4)	Respiration	Oxygen	Photosynthesis	Carbon Dioxide

13. A ball rolls down from Point A and stops rolling at Point D.



Which one of the following graphs shows the changes in the amount of gravitational potential energy and kinetic energy of the ball from Point A to Point D correctly?

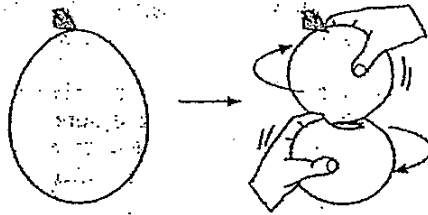


Key:
 ——— Gravitational Potential Energy
 ——— Kinetic Energy

14. What is the energy change that occurs when John throws a stone and hits a glass window?

- (1) Potential energy → Sound Energy + Heat Energy
- (2) Kinetic energy → Potential energy + Sound Energy + Heat Energy
- (3) Kinetic energy → Potential Energy → Sound Energy + Heat Energy
- (4) Potential energy → Kinetic Energy → Sound Energy + Heat Energy

15. Study the diagram below.

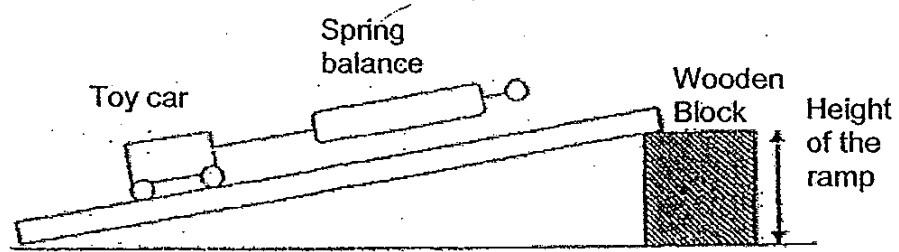


The above example shows that a force can change the _____ of balloon.

- A: Shape
- B: Weight
- C: Mass
- D: Size

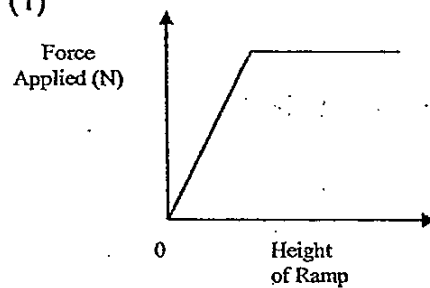
- (1) A and B only
- (2) A and D only
- (3) B and C only
- (4) C and D only

16. Mrs Nair carried out an experiment to find out how the amount of force applied to pull a toy car up a ramp changes with the height of the ramp as shown in the diagram below. She varied the height of the ramp by changing the number of the wooden blocks.

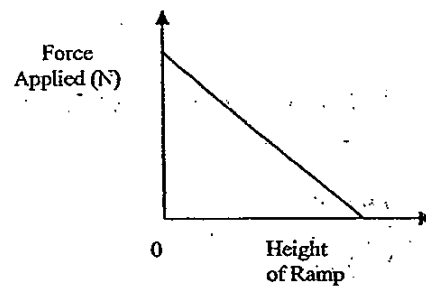


Which one of the following graphs most likely shows the results of her observation?

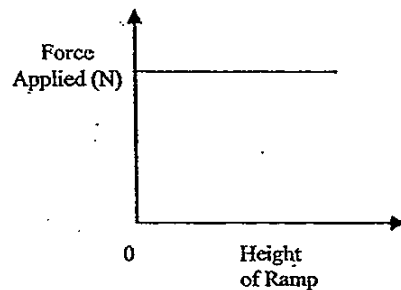
(1)



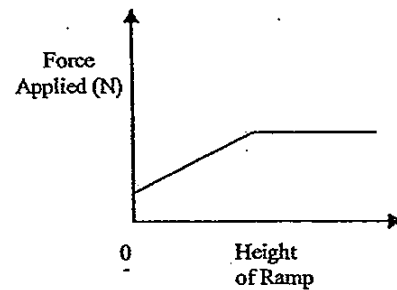
(2)



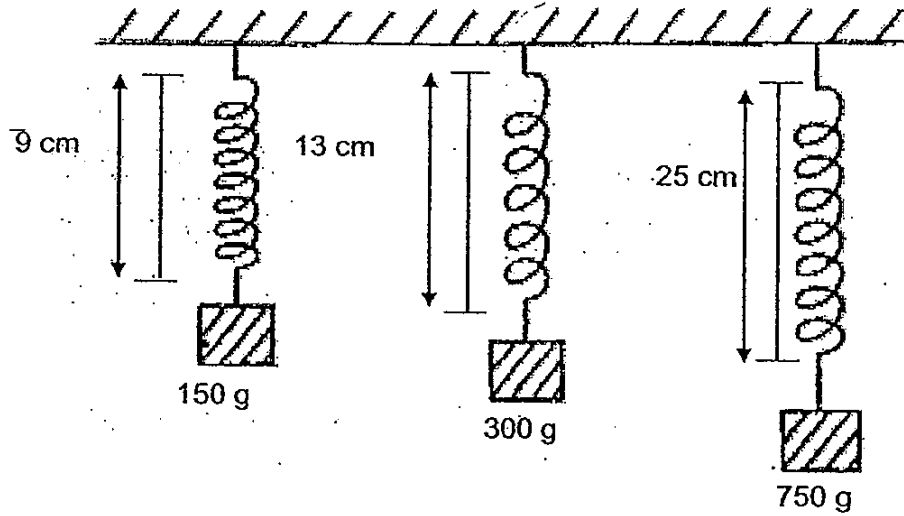
(3)



(4)



17. The diagram below shows the length of the spring when different weights were hung from it.

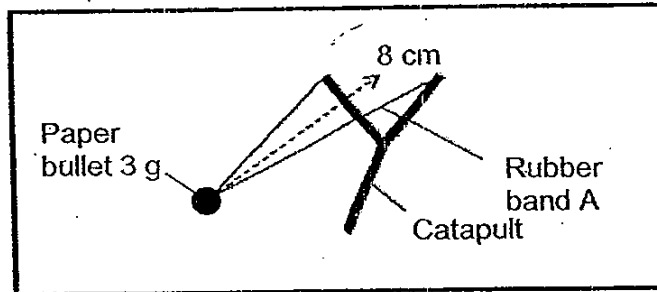


What was the original length of spring most likely to be?

- (1) 4 cm
- (2) 5 cm
- (3) 12 cm
- (4) 16 cm

18. Jeremy wants to find out which Rubber band A, or B would help him to shoot a paper bullet a further distance.

He first carried out the experiment with Rubber band A as shown in the diagram below.



Which of the following shows what Jeremy should do to carry out the test on Rubber band B to ensure a fair experiment is being carried out?

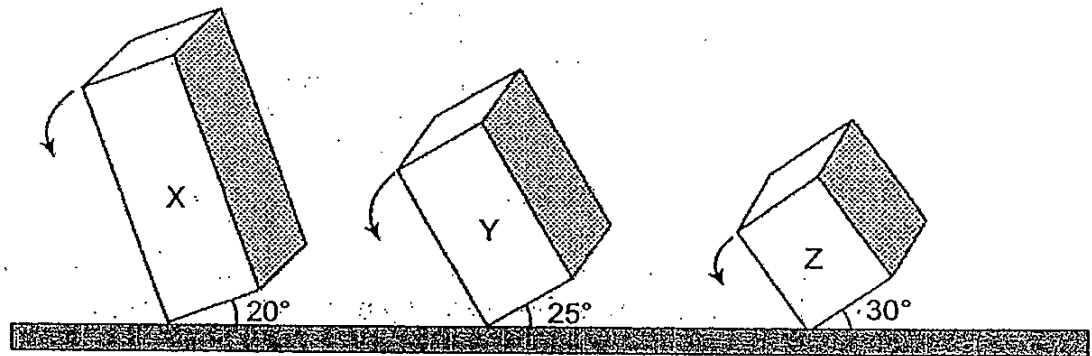
- (1)

(2)

(3)

(4)

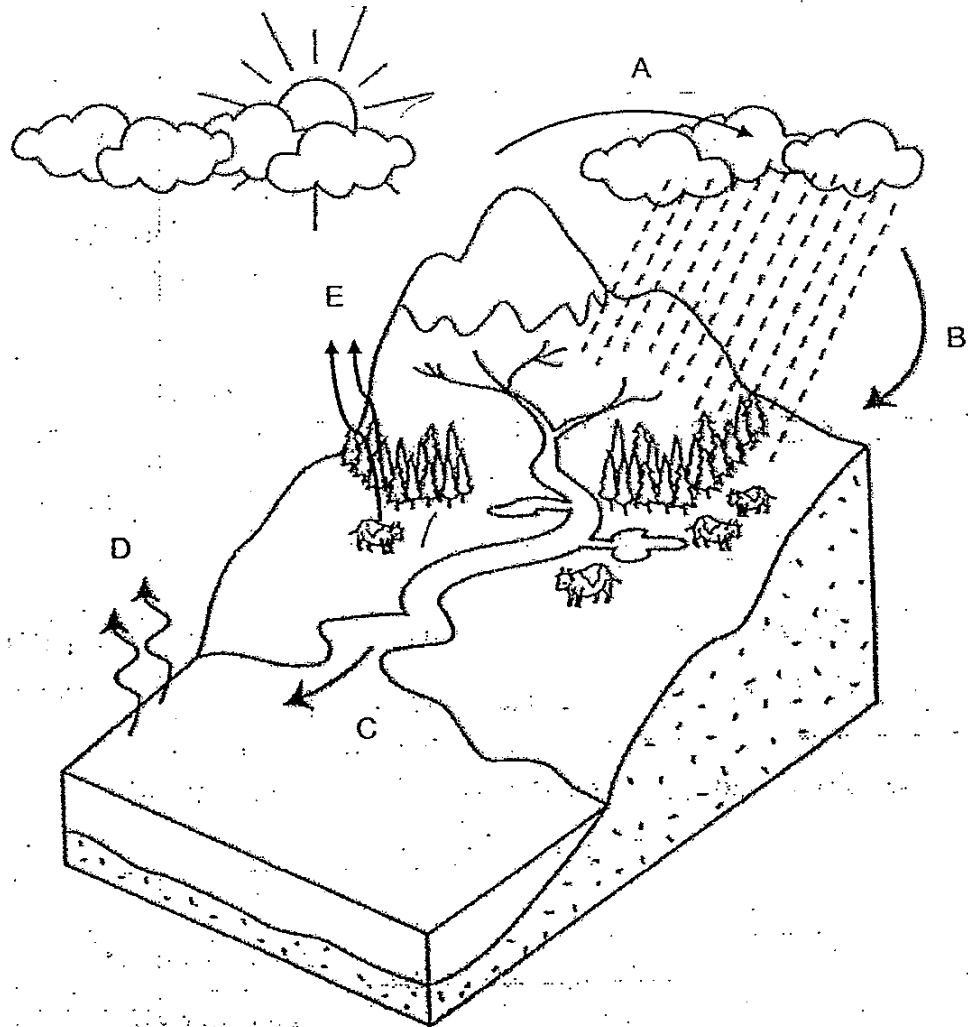
19. The following diagram shows three wooden blocks, X, Y and Z, of the same base area but different heights. They are tilted slowly until the boxes fall in the direction as indicated by the arrows. The angles at which the tilted boxes topple over are marked as shown in the diagram.



What can you conclude from the observations?

- (1) The wooden block of less height will topple more easily.
- (2) The base area of the wooden block affects the angle at which it topples.
- (3) The greater the height of the wooden block, the smaller the angle at which it topples.
- (4) The greater the height of the wooden block, the bigger the angle at which it topples.

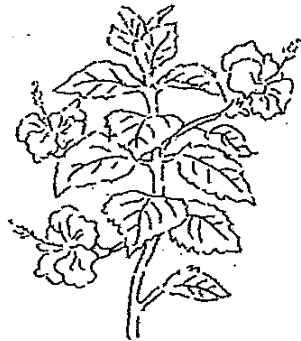
20. The diagram below shows the process of water cycle.



Which of the following correctly represents heat loss and heat gain respectively?

	Heat Loss	Heat Gain
(1)	A	D, E
(2)	A	C, E
(3)	C, E	B
(4)	D, E	A

21. The following table shows the comparison between sexual reproduction in plants and humans.



Plant



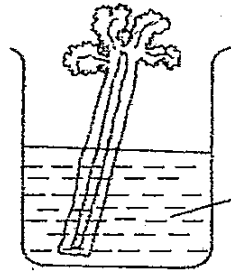
Human

	In Humans	In Plants
Female sex cells	Eggs	X
Male sex cells	Sperms	Pollen grains
After fertilisation	A baby is formed	Y

Which of the following best represents X and Y respectively?

	X	Y
(1)	Eggs	Fruits are formed
(2)	Style	Seeds are formed
(3)	Ovules	Seeds are formed
(4)	Ovary	Fruits are formed

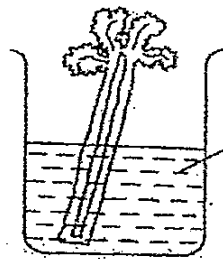
22. Ruxin wants to find out if the tubes found in celery stalks absorb water. She sets up the experiment as shown below.



200 ml of water with red food colouring

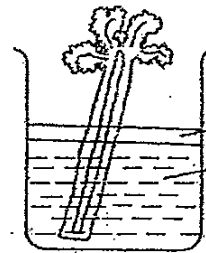
Which one of the following should she use as a control?

(1)



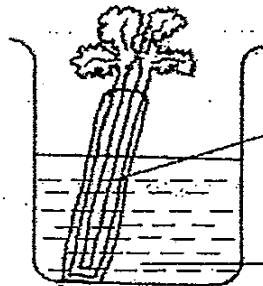
200 ml of water

(2)



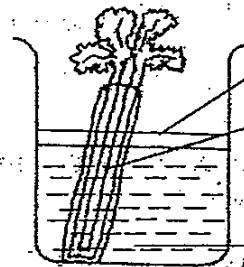
oil
200 ml of water with red colouring

(3)



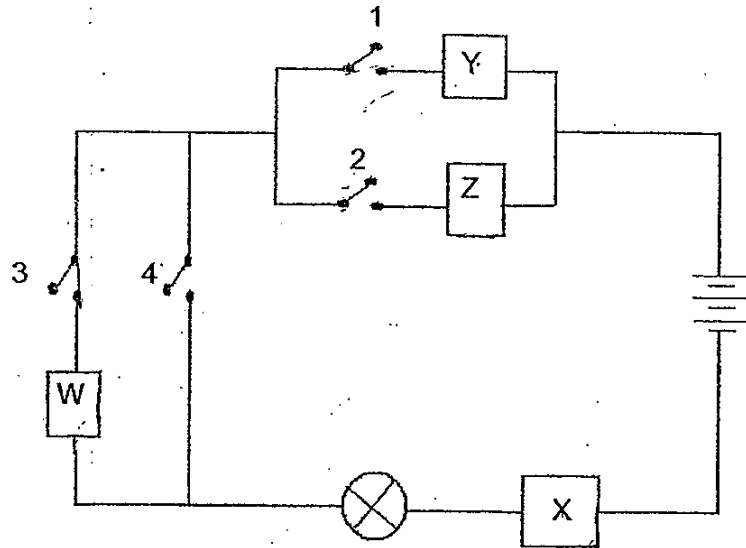
Cling wrap wrapped around celery stalk
200 ml of water with red colouring

(4)



oil
Cling wrap wrapped around celery stalk
200 ml of water with red colouring

23. The diagram below shows an electrical circuit. W, X, Y and Z are objects placed in the circuit. 1, 2, 3 and 4 are switches.



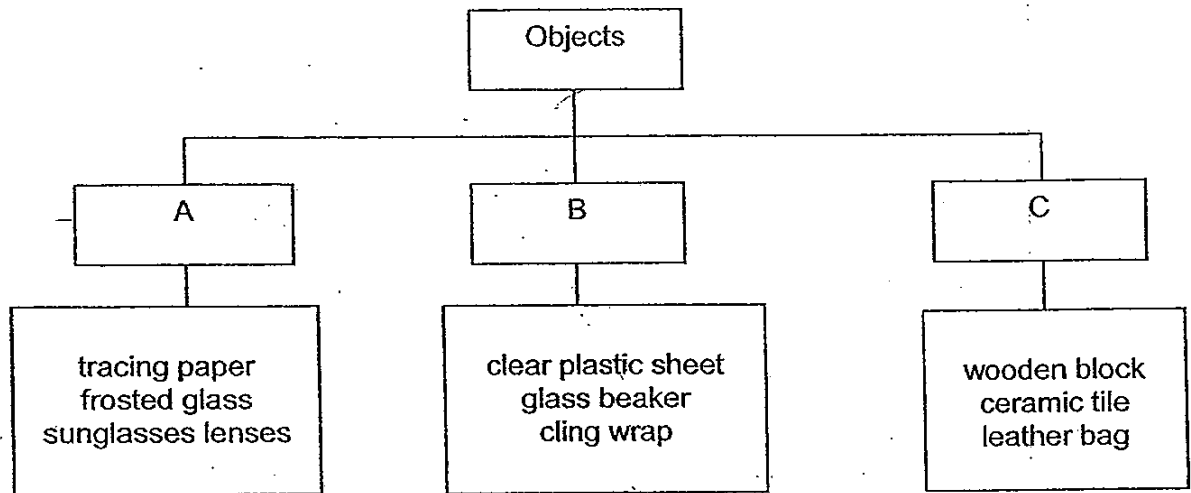
The table below shows what happens when the various switches are opened.

Switches opened	Did the bulb light up?
2 and 3 only	Yes
1 and 3 only	No
2 and 4 only	Yes
1 and 4 only	No

Based on the data above, which of the following is a non-conductor of electricity?

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

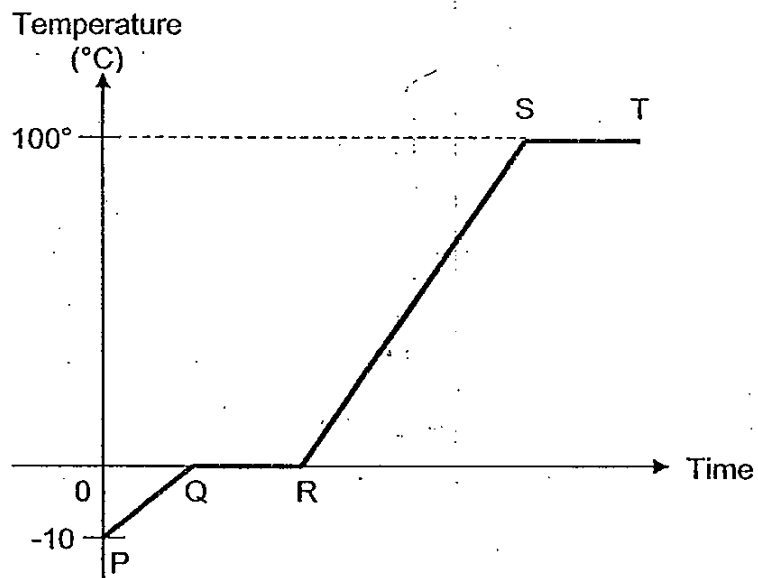
24. Eddy classified some objects in a chart as shown below.



Eddy can put a brick under _____.

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

25. The graph below shows how the temperature of Substance X changed when it was heated.



What is most likely to be happening from R to S?

- A : Substance X is melting to become liquid.
- B : The temperature of Substance X is increasing.
- C : Substance X is losing heat to the surrounding air.
- D : Substance X is gaining heat from a bunsen burner.

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

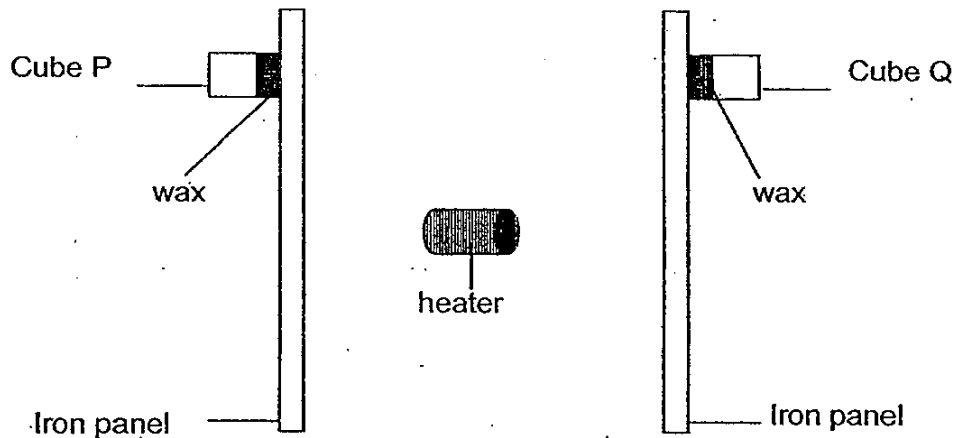
26. Rambo did a science project on the life cycles of Animal X and Y. He drew a checklist and put a tick in the box when he made the observation.

Observation	Animal X	Animal Y
The animal has 6 legs.	✓	✓
The young lives in water.	✓	
There are 3 stages in the life cycle.		✓

Which of the following animals could be Animal X and Y?

	Animal X	Animal Y
(1)	Beetle	Grasshopper
(2)	Guppy	Cockroach
(3)	Mosquito	Grasshopper
(4)	Beetle	Mosquito

27. Sophie placed two cubes, P and Q, painted in different colours onto two iron panels at the same height respectively. The iron panels are placed at equal distance away from the heater as shown in the diagram below. Then she started heating the iron panels at the same time.



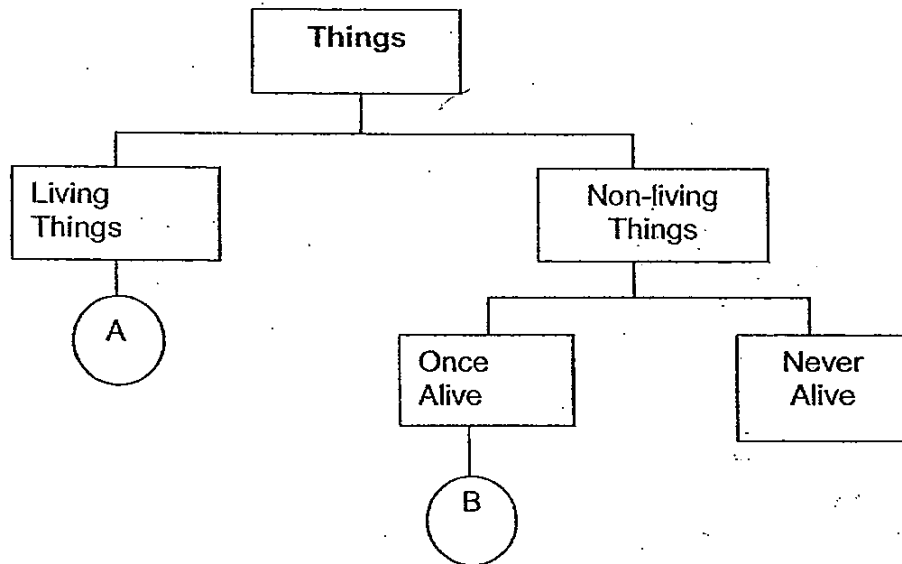
She repeated the same experiment with another two coloured cubes, R and S, and recorded the results as shown in the table below.

Cube	Time taken for the cube to drop (sec)
P	54
Q	30
R	18
S	43

One of the cubes was painted black, while the rest were painted orange, green and white. Based on the data above, which of the following cubes was painted black?

- (1) P
- (2) Q
- (3) R
- (4) S

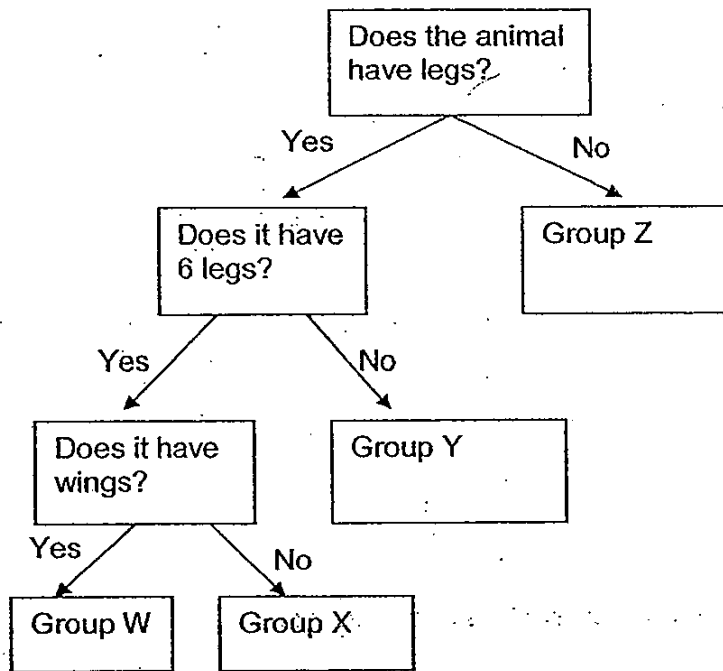
28. Look at the classification below.



Which of the following represents A and B correctly?

	A	B
(1)	Bread Mould	Leather Sofa
(2)	Guinea Pig	Plastic Bag
(3)	Horseshoe Magnet	Wooden Stool
(4)	Apple Pie	Caterpillar

29. Samantha used the flow-chart below to group some animals.



Which of the following animals belongs to Group X?

- (1) ant
- (2) slug
- (3) spider
- (4) housefly

30. Jacqueline brought Object A and B near each other. The two objects were attracted to each other. When Object A and B are placed near a magnet, it was observed that only Object A repelled from the magnet. Jacqueline then made the following deductions:

A: Object A is a magnet.
B: Object B is made of aluminium.
C: Object A is made of magnetic material.

Which of the following statement(s) is/ are likely to be correct?

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

THE END



**NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 1 2010
PRIMARY SIX
SCIENCE**

Name : _____

Class : Primary 6 / _____

MARKS
<div style="border: 1px solid black; width: 100%; height: 100%; position: relative;"> 40 </div>

Section B: (40marks)

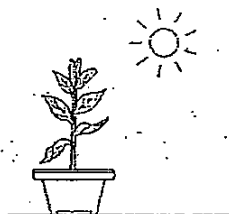
Write your answers to question 31 to 44.

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

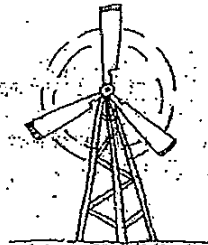
31. Energy is required to make things work. Study the diagrams below.



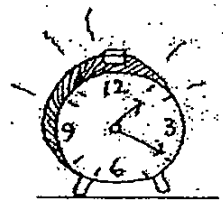
A



B



C



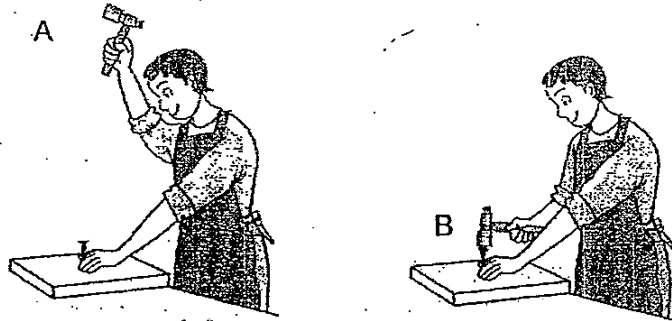
D

Each of the diagrams shows the work being carried out. In the table below, state its source of energy and the type of energy it provides in order for the work to be done. [4]

Picture No.	Type Of Work	Source of Energy	Type of energy which the Energy Source provides
A	Jumping		
B	Photosynthesis		
C	Spinning of blades		
D	Moving of the minute and hour hands		

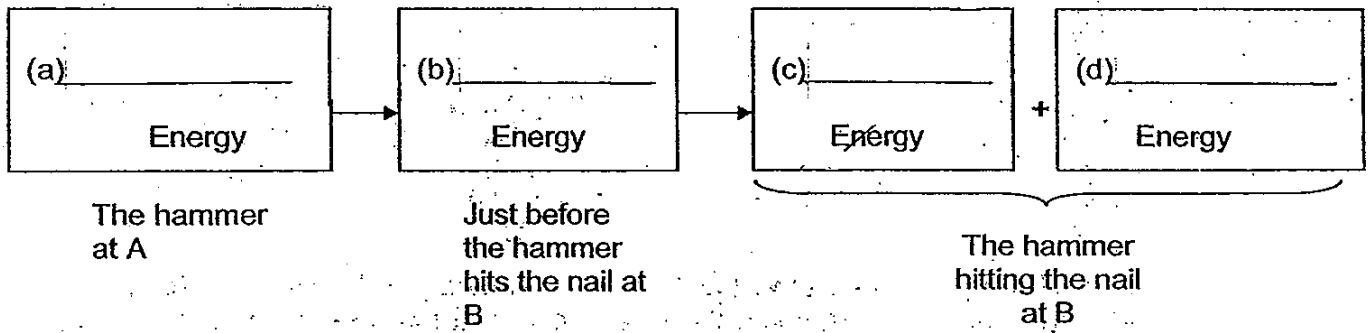
Score	<div style="border: 1px solid black; width: 100%; height: 100%; position: relative;"> 4 </div>
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32. Mr Roger hammered a nail several times into a piece wood as shown in the diagram below.



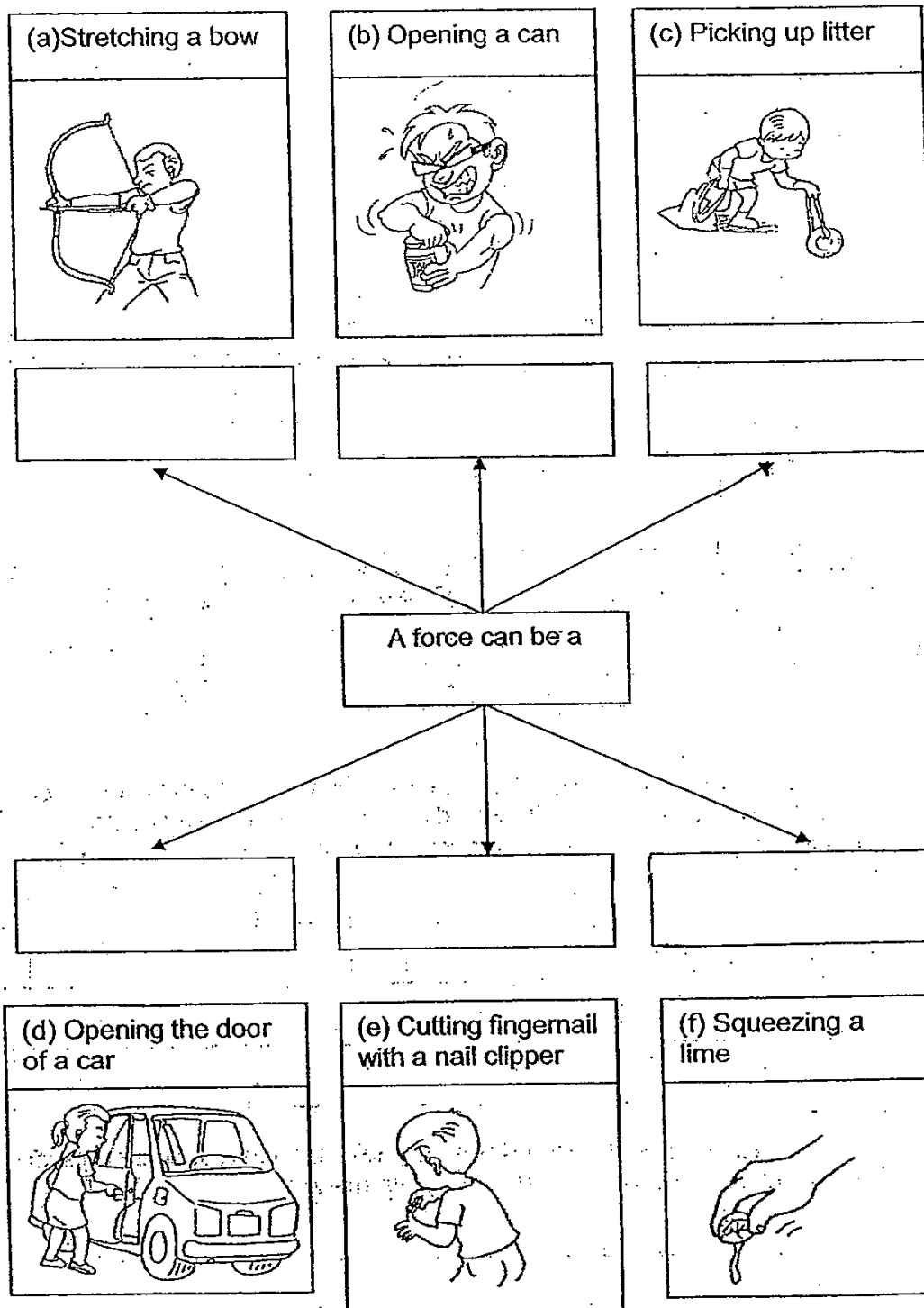
Fill in the boxes to show the energy changes took place.

[2]



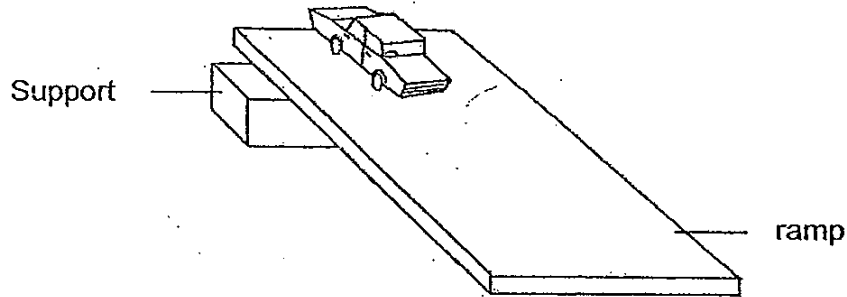
Score	2
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33. Study the chart below carefully. Fill in the boxes below to state whether the force acting on the object is a push or a pull.



Score	3
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34. Jotham set up an experiment as shown in the diagram below.



He slid his toy car down the wooden surface of the ramp. The time taken for the toy car to travel down the ramp to reach the floor was recorded. He replaced the wooden board with a styrofoam board and then a plastic board. He carried out the experiment with each ramp three times.

The table below shows the results of his experiment.

Type of ramp	Time Taken down(s)		
	1 st Attempt	2 nd Attempt	3 rd Attempt
wooden	2.5	2.8	3.2
styrofoam	3.8	4.6	3.5
plastic	1.7	2.2	1.2

(a) Look at the results carefully. The time taken by the car to travel down each ramp to the floor was inconsistently different in all the three attempts respectively. Give two possible reasons why this is so. [2]

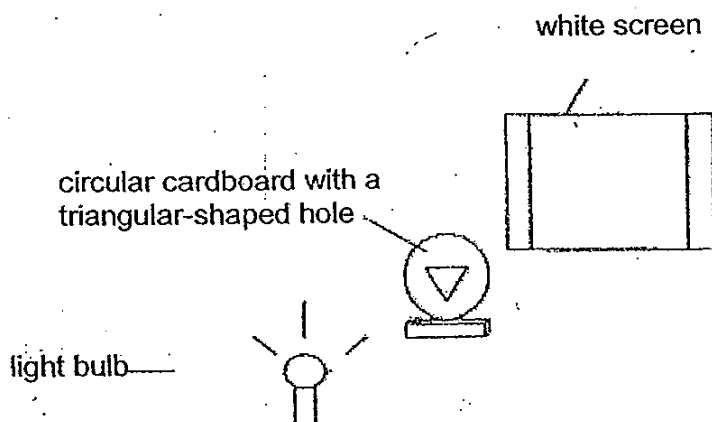
(i) _____

(ii) _____

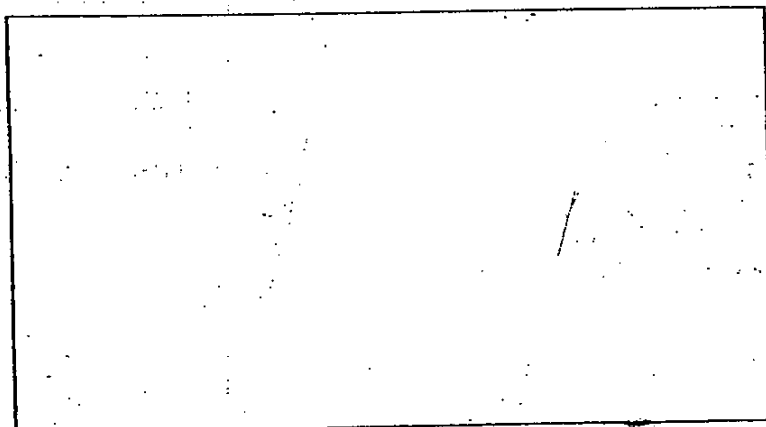
(b) On which ramp does the car consistently take the longest time to travel down the ramp? Give a possible reason for your answer. [1]

Score	3
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35. Peter conducted an experiment using the set-up below.



(a) Draw in the box below to show the shadow formed on the screen.



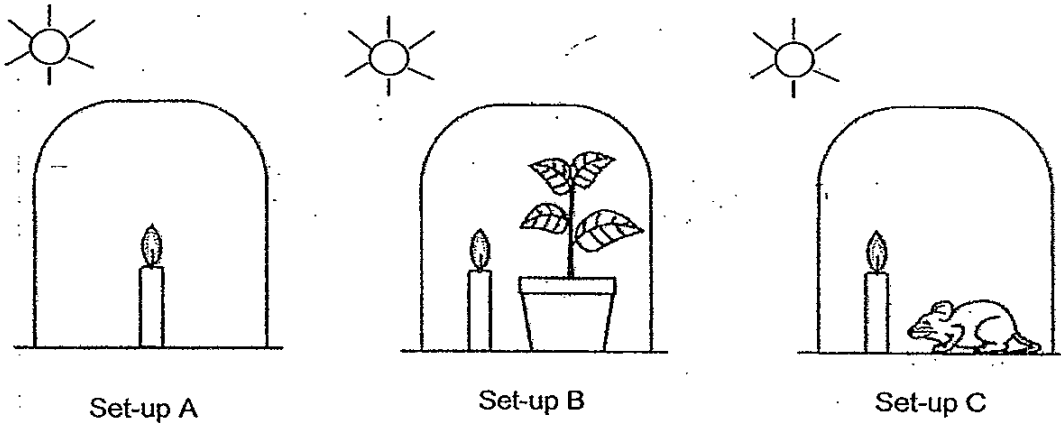
[1]

(b) What would happen to the shadow if Peter were to move the circular card nearer to the screen?

[1]

Score	2
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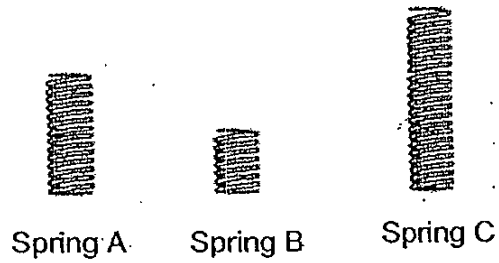
36. Study the experimental set-up shown below. All the 3 set-ups are exposed to strong sunlight.



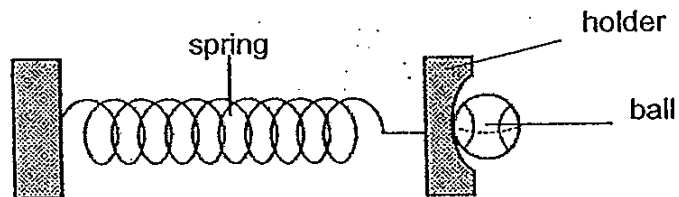
In which bell jar will the candle burn for the longest time? Give a reason for your answer. [2]

Score	2
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37. Alice has three coils of steel springs, A, B and C.



She connects each of the spring to a ball which is placed in a holder as shown below.



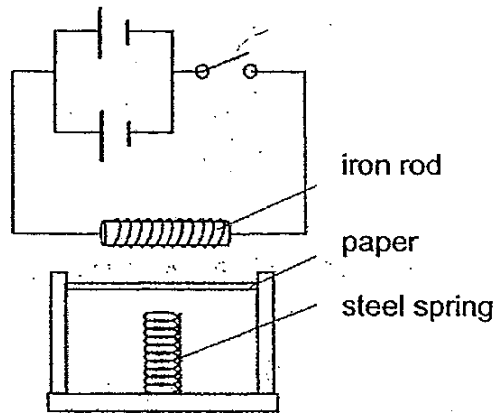
When the spring is compressed and released, the ball will move.

fully

(a) Which of the springs, A, B or C should she use to make the ball move over the longest distance? Give a reason for your answer. [2]

Score	2
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(b) Alice used one of the steel springs in another set-up as shown below.

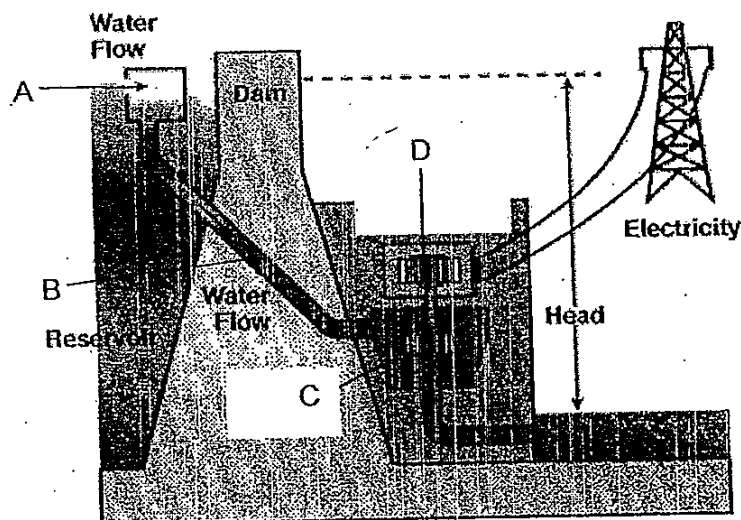


She observed that the spring stretched towards the iron rod and broke through the paper.

What can Alice do to make the spring stretch more without changing the number of batteries and the spring? [1]

Score	1
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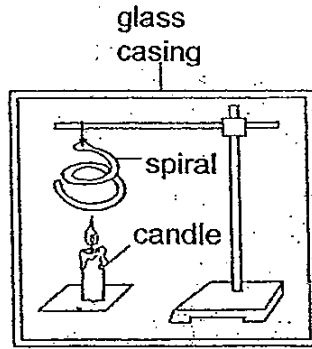
38. The diagram below shows a hydroelectric power station. A and B are points along the path of flow of water from the dam to the power station.



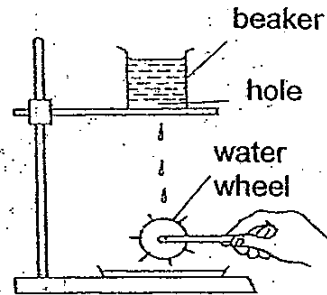
- (a) What form(s) of energy does the water have at A? [1]
-
- (b) Write the energy conversions that take place From Point A to D shown in the diagram above. [1]
-
- (c) Give one advantage of using the energy of running water instead of fuels to generate electricity. [1]
-

Score	3
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39. The diagrams below shows the set-up of two experiments.



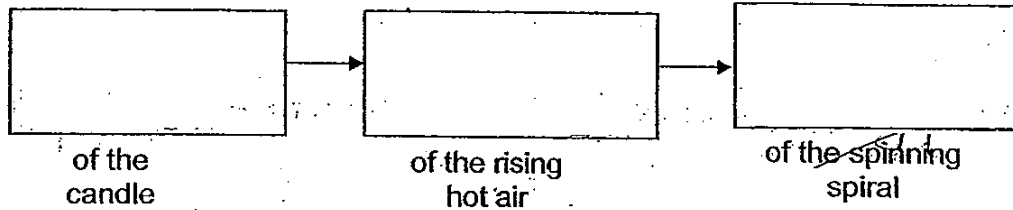
Experiment A



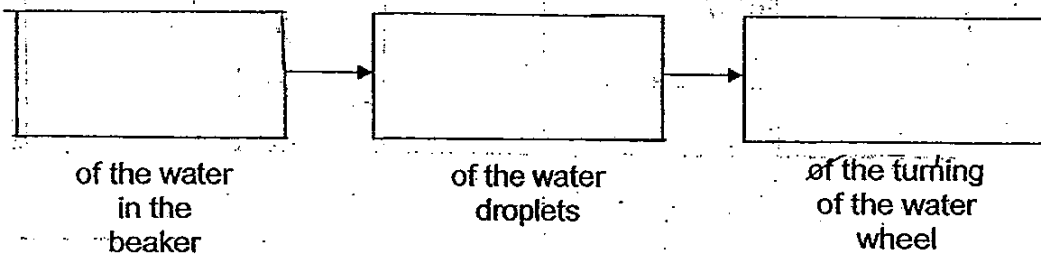
Experiment B

(a) Complete the diagram below to show the energy conversion that has taken place in Experiment A and B: [2]

Experiment A:



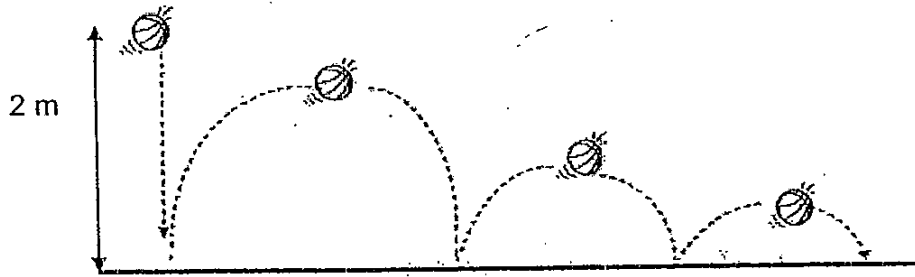
Experiment B:



(b) Suggest one thing we could do to make the water wheel in Experiment B turn faster. [1]

Score	3
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40. Germaine drops a basketball from a height of 2 m above the ground. It bounces to a lower height each time it hits the ground as shown below until it finally stops.

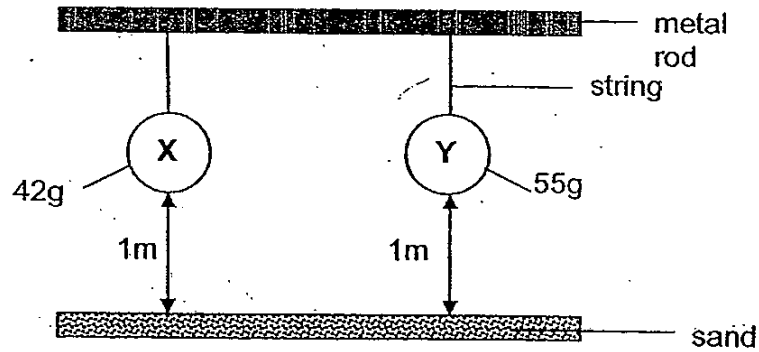


- (a) Identify the force that is acting continuously on the basketball. [1]

- (b) Why does the basketball rise to a lower height after each rebound? [1]

Score	2
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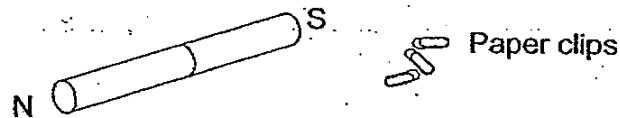
41. Kelvin hung both objects, X and Y, with a mass of 42g and 55g respectively on the metal rod at a height of 1 m above a tray of sand as shown below.



When both objects were released at the same time, Kelvin noticed that both objects made a depression in the sand.

- (a) Which object will make a deeper depression in the sand? Give reason for your answer. [2m]

- (b) Susie placed some paper clips made of steel about 4 cm away from the north pole of a rod magnet. The paper clips were observed to be attracted to the magnet.



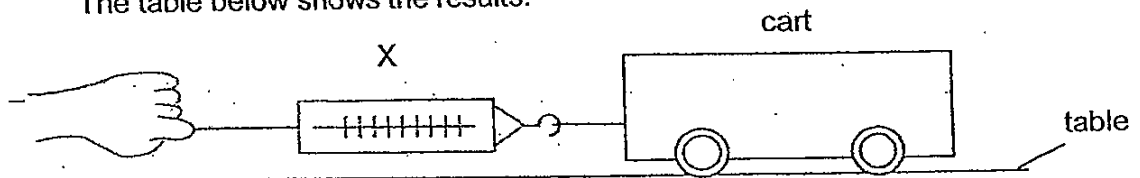
- (i) What can you infer from the above observation on magnetism? [1m]

- (ii) She placed a sheet of steel plate between the magnet and the paper clips. Will the paper clips be attracted to the magnet? Give a reason for your answer. [1m]

Score	4
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42. Mun Hon prepared a set-up as shown below to find out the force needed to pull a cart placed on table. He recorded the force needed and repeated the experiment several times, each time adding more mass to the cart.

The table below shows the results.



Mass added to the cart (g)	0	50	100	150	200	250
Force needed (N)	7	16	25	34	43	52

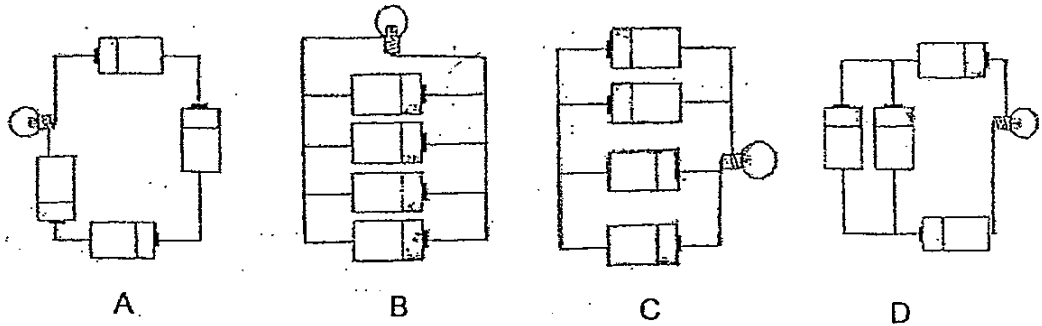
- (a) Instrument X is usually used to measure the amount of force. What is instrument X? [1m]

- (b) What is the relationship between the mass added to the cart and the force needed to pull the cart? [1m]

- (c) Mun Hon wants to reduce the amount of force needed to pull the cart without removing any items from the set-up. Suggest one way he could do this and give a reason for your answer. [1m]

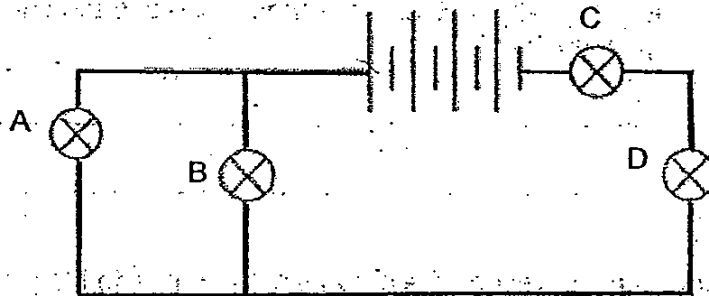
Score	3
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43. Study the four circuits below. All the batteries, bulbs and wires used in each electrical circuit are identical. Arrange the brightness of the bulb in the circuits from the least bright to the brightest. [2]



- (a) Arrange the brightness of the bulb in the circuits above from the least bright to the brightest. [2]

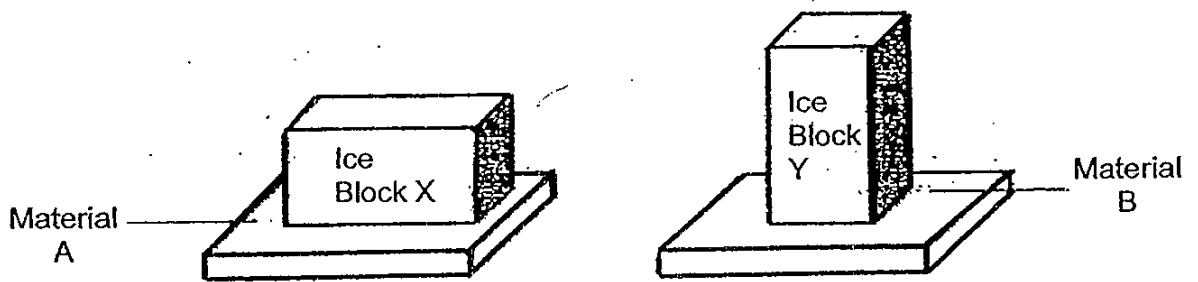
Study the circuit below. All the bulbs in the closed circuit are shining brightly.



- (b) Which of the bulbs in the above circuit will continue to light up if Bulb C fuses? [1]

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

44. John wanted to find out if Material A or B is a better conductor of heat. He took Material A and Material B that are of the same size and placed them on a table. He placed ice blocks of the same size on each material and took note of which block of ice melted faster.



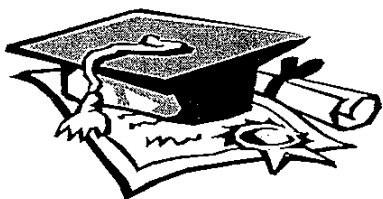
- (a) John's classmate commented that his experiment was not a fair one. Do you agree? Give a reason for your answer. [1]

- (b) Based on the experiment, put a tick(✓) in the correct box. [1]

Objects	Heat Gain	Heat Loss	No Change
Ice Block X			
Material A			

Score	2
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End of Paper

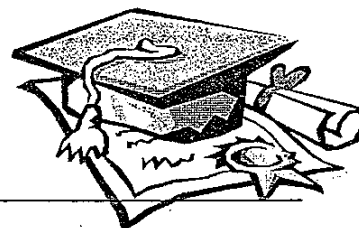


ANSWER SHEET

EXAM PAPER 2010

SCHOOL : NAN HUA PRIMARY
SUBJECT : PRIMARY 6 SCIENCE

TERM : CA1



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

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

- 31) A) food-----chemical energy
B) Sun -----light energy
C) Wind-----kinetic energy
D) Batteries-----chemical energy

32) a) Gravitational b) Kinetic c) Sound d) Heat

33) a) a pull b) a pull c) a pull d) a pull e) a push f) a push

34) a) i) The starting point may not be the same.

ii) The force used to push the car down was inconsistent.

b) The Styrofoam ramp always takes the longest time to slide down the ramp because the friction between the Styrofoam surface and the wheels of the car is the greatest.

35) a)

b) The shadow cast would be smaller.

36) Set up B. The level of oxygen increases as the plant releases oxygen as it makes use of the carbon dioxide release by the burning candle and sunlight to photosynthesise oxygen is required for burning.

37)a) Spring C. Spring C will be compressed the most when pressed down. Thus, it has the greatest elastic potential energy, which will make the ball move over the longest distance.

b) She could increase the number of coils around the iron rod.

38)a) It has gravitational potential energy.

b) Gravitational potential energy \rightarrow kinetic energy of the water \rightarrow kinetic energy of the turbine \rightarrow Electrical energy + Heat energy.

c) It is a renewable source of energy.

39)a) Heat energy \rightarrow Kinetic energy \rightarrow Kinetic energy.

Gravitational potential energy \rightarrow kinetic energy \rightarrow kinetic energy.

b) Make the hole bigger.

40)a) Gravitational force.

b) Some of the energy has been converted to heat energy and sound energy.

41)a) Object Y would make a deeper depression as there is more gravitational force acting on the object Y as pressure equals to force divided by area of the object so the heavier the object, the larger the pressure and thus, the deeper the depression.

b)i) The magnetic force/ magnetism can act from a distance.

ii) No, as magnetic force cannot pass through magnetic objects.

42)a) It is a spring balance.

b) The more the mass, the more force needed to pull the cart.

c) He could apply some talcum powder/oil/water/lubricant on the table to reduce friction between the surface of the table and wheels of the cart.

43)a) B,C,D,A b) None of the bulbs.

c) When bulb C fuses there will be a gap in the circuit/open circuit. Thus the electric current cannot flow through all the bulb.

44)a) The area of surface in contact of ice block A and ice block B with the material are not the same.

b) X \rightarrow Heat Gain.

A \rightarrow Heat Loss.