



**NAN HUA PRIMARY SCHOOL  
CONTINUAL ASSESSMENT 1 2014  
PRIMARY SIX  
SCIENCE**

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

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

Date : 6 March 2014

Duration : 1 hr 45 min

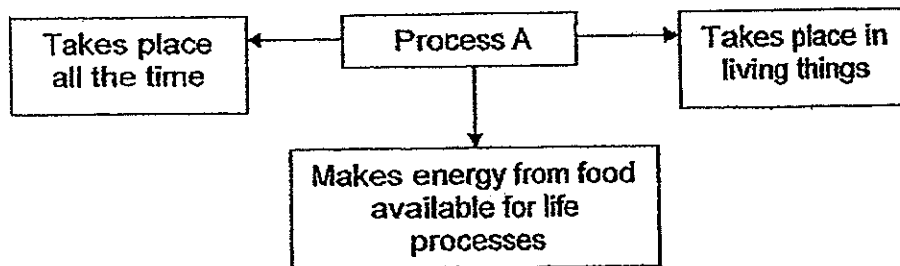
MARKS	
Sect A:	/ 60
Sect B:	/ 40
<b>Total :</b>	<b>/ 100</b>

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

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

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

1. Study the flowchart below.



What is Process A?

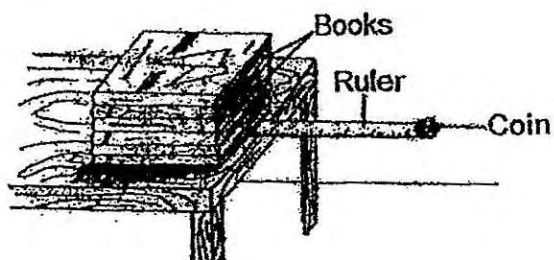
- (1) Digestion
- (2) Breathing
- (3) Respiration
- (4) Photosynthesis

2. Which of the following statements about energy is true?

- A The Sun is our main source of energy.
- B Only living things need energy to work.
- C Light energy from the Sun keeps the water cycle going.
- D Food consumers are indirectly dependent on the Sun for energy.

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

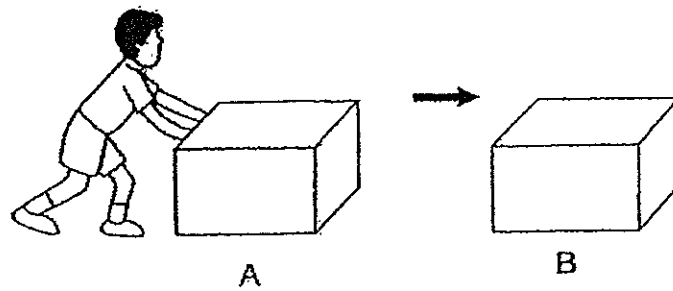
3. Norman placed a ruler at the edge of the table and held it with several books as shown below. Then he used it to launch a coin into the air. However, the coin did not go very far. Which of the following changes would help to make the coin go further?



- A Pull the ruler lower.
- B Use a heavier coin.
- C Move the coin nearer to the books

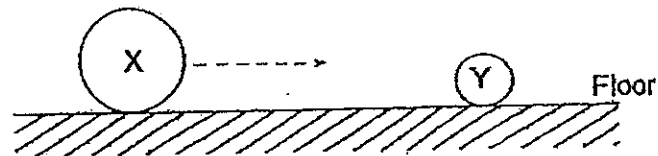
- (1) A only
- (2) B only
- (3) A and C only
- (4) A, B and C

4. The diagram below shows a boy moving a box from position A to B.



Which of the following statement(s) is not true of the force used?

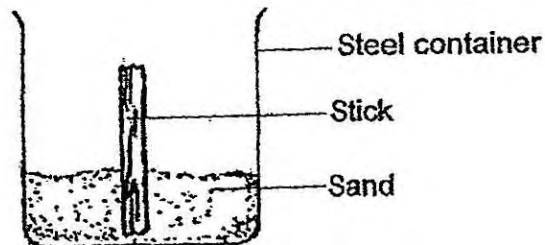
- (1) A push is being applied on the box.
  - (2) The force can be seen as the box moves.
  - (3) The force causes the box to move forward.
  - (4) Both the direction of the force and box move in the same direction.
5. Look at the diagram below.



Ball X and Ball Y are made of the same material. Ball X is rolling on the floor in the direction shown. It hits Ball Y which is stationary. What do you think is likely to happen to Ball X?

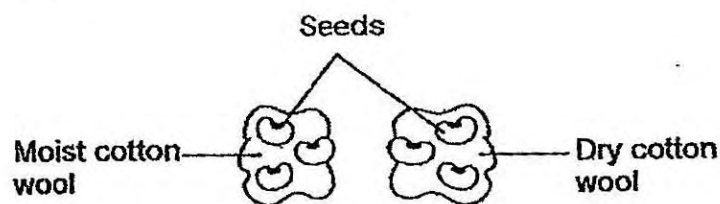
- (1) Ball X will stop suddenly.
- (2) Ball X will move more slowly in the same direction.
- (3) Ball X will move more slowly in the opposite direction.
- (4) Ball X will move more quickly in the opposite direction.

6. The diagram below shows that sand has been poured into a steel container to hold up a stick. The sand is able to prop up the stick,



What force enables the stick to be propped up in the sand?

- (1) Frictional force
  - (2) Electrical force
  - (3) Magnetic force
  - (4) Gravitational force
7. Samy placed some seeds on a moist cotton wool and some on a dry cotton wool.



What is the aim of his experiment?

- (1) To find out if soil is needed for seeds to germinate.
- (2) To find out if water is needed for seeds to germinate.
- (3) To find out if cotton wool is needed for seeds to germinate
- (4) To find out if oxygen dissolved in water is needed for the seeds to germinate.

8. Which of the following statements on reproduction of humans are correct?

- A All eggs are fertilised externally.
- B One female eggs can be fertilised by many sperms.
- C Males produce sperms and the females produce eggs.
- D After fertilisation, the fertilised eggs will develop into a baby.

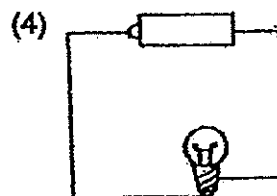
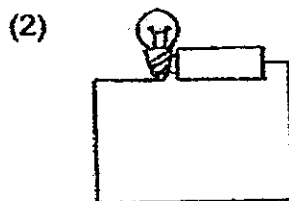
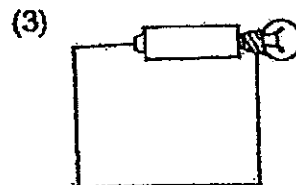
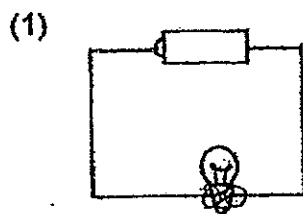
- (1) A and B only
- (2) A and C only
- (3) B and D only
- (4) C and D only

9. What are the common cell parts found in both the leaf of a hibiscus plant and the root of a sweet potato plant?

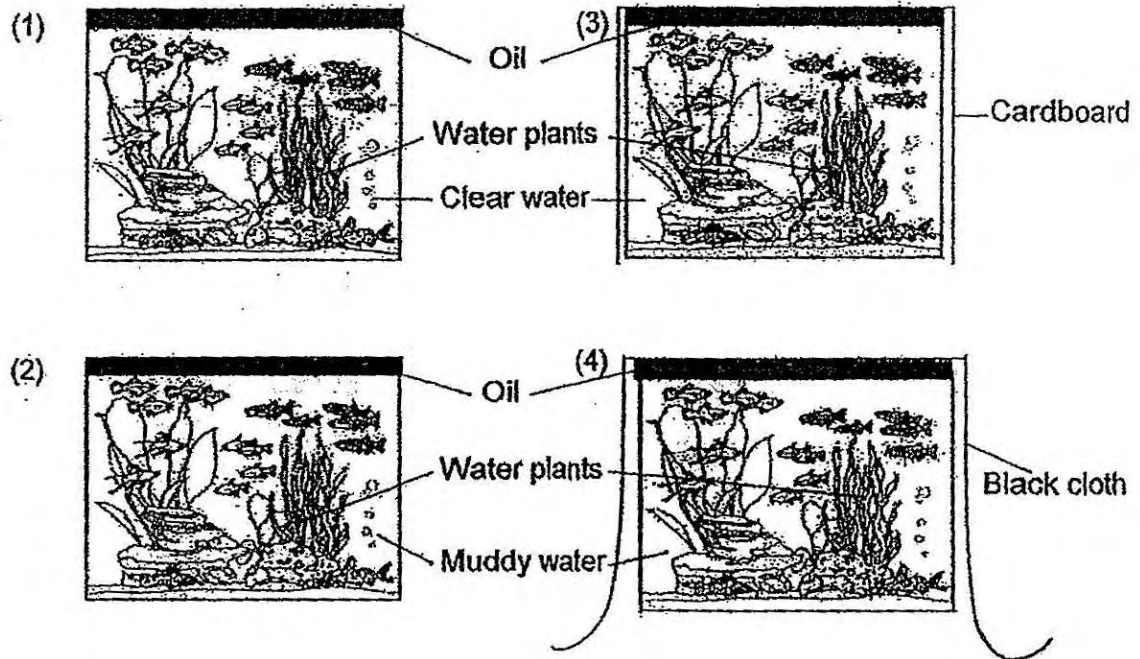
- A Nucleus
- B Cell wall
- C Chloroplast
- D Cell membrane

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

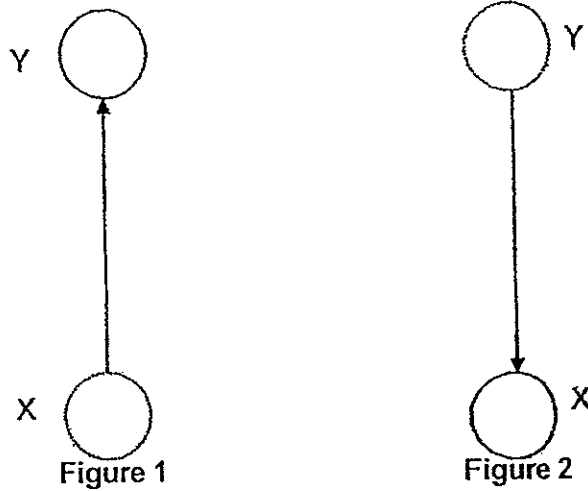
10. Which bulb in the following circuits will not light up?



11. Four similar fish tanks are placed in a sunny place. In which tank will the fish be able to survive the longest?



12. A ball was thrown straight up into the air. It moved from X to Y as shown in Figure 1 and then dropped to X as shown in Figure 2.



Identify the energy that is increasing or decreasing from Figure 1 and 2

	Kinetic energy of the ball from X to Y	Potential energy of the ball from Y to X
(1)	decreases	decreases
(2)	increases	decreases
(3)	increases	increases
(4)	decreases	increases

13. Which of the following statements are true of magnetic force?

- A It can act from a distance.
- B It travels only in straight line.
- C It exerts a force on all metallic materials.
- D We can see the effects of a magnetic force.

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

14. If the gravitational pull on Earth decreases, which of the following are likely to happen?

- A Objects will weigh less.
- B Objects will fall more slowly.
- C We will be able to jump higher.
- D We will be able to lift heavy objects more easily

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

15. A marble was pushed with the same amount of force across four different types of surfaces, A, B, C and D. The table below shows the distance travelled by the marble before it came to a stop.

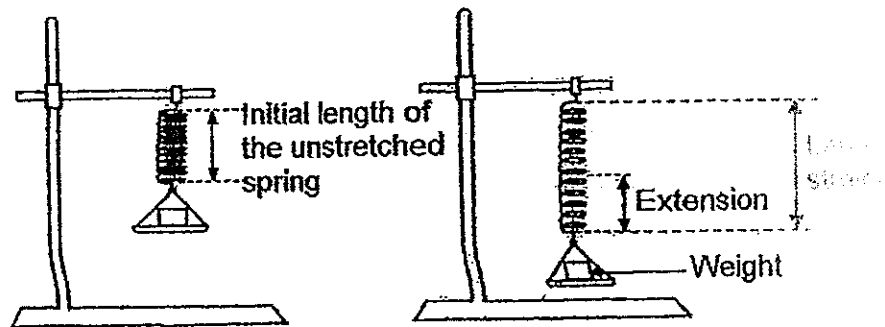
Surface	A	B	C	D
Distance travelled (cm)	66	21	35	54

Which one of the following sets of surfaces best matches the distances recorded above?

	A	B	C	D
(1)	aluminium	wood	glass	carpet
(2)	glass	carpet	wood	aluminium
(3)	carpet	glass	aluminium	wood
(4)	wood	aluminium	carpet	glass



16. Mr Lim set up the following experiment. First he measured the initial length of the spring. Then he placed a 50-gram, 100-gram and 150-gram weight individually in the pan and measured the length of stretched spring and recorded the readings in a table shown below.



Weights (g)	Length of stretched spring (cm)
50	9
100	11
150	13

What is the initial length of the spring?

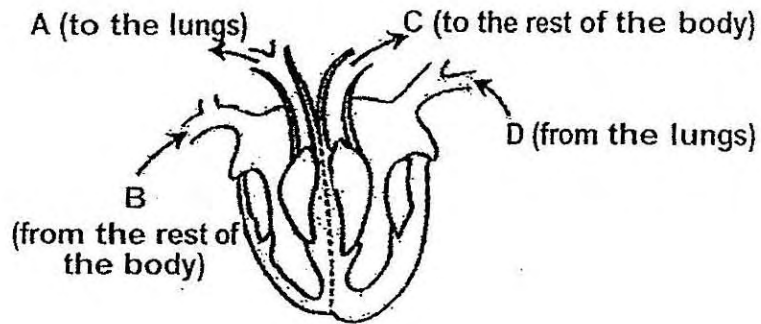
- (1) 2 cm
  - (2) 7 cm
  - (3) 9 cm
  - (4) 13 cm
17. May conducted an experiment with the flowers in her garden. She wanted to find out if a flower can develop into a fruit when a certain part of a flower is removed. She used the same type of flower for her experiment.

Flower X: Style is removed  
 Flower Y: Anthers are removed.  
 Flower Z: Petals are removed.

May then dusted pollen grains from the same type of flower over Flowers X, Y and Z. She observed them for two weeks. Which of the flowers are most likely to produce fruit after two weeks?

- (1) Flowers X and Y
- (2) Flowers Y and Z
- (3) Flowers X and Z
- (4) None of the flowers

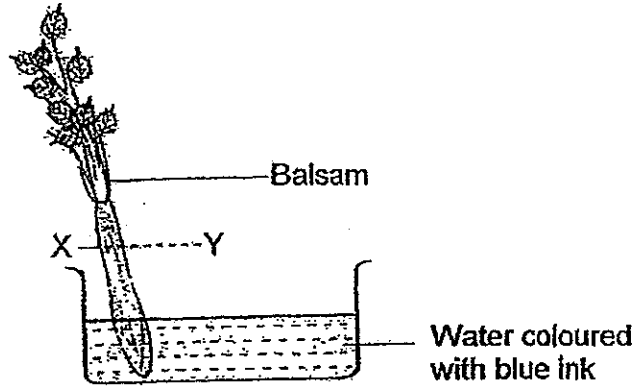
18. The diagram below shows how blood is circulated in our body.



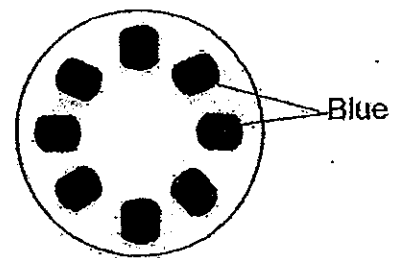
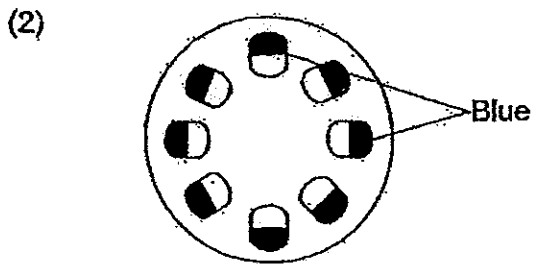
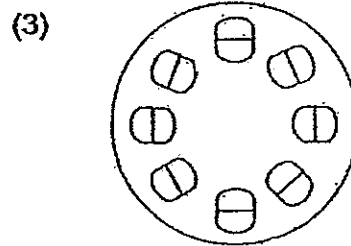
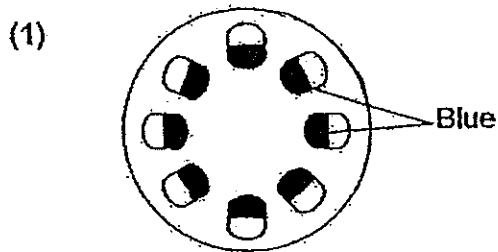
Which one of the following correctly shows the amount of carbon dioxide in our blood at A,B,C and D?

	More carbon dioxide	Less carbon dioxide
(1)	A and B	C and D
(2)	B and D	A and C
(3)	A and D	B and C
(4)	C and D	A and B

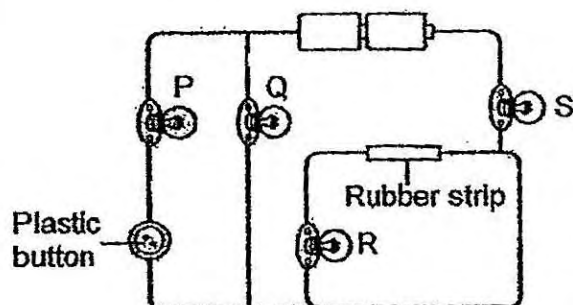
19. A stalk of balsam was placed in water that was coloured with blue ink. The next day, the stalk was removed and cut across XY as shown in the diagram below.



Which of the following shows the cross-section that would be observed in XY?

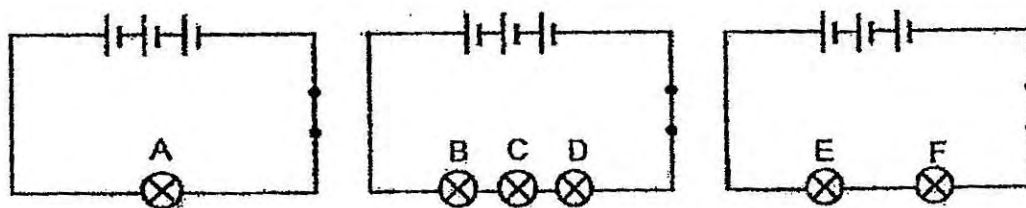


20. There are four identical bulbs, P, Q, R and S, in the circuit.



Which of the bulbs will not light up when all the circuit components are connected properly?

- (1) Q and S only
  - (2) P and R only
  - (3) P, Q, R and S
  - (4) None of the bulbs
21. Identical switches, bulbs and dry cells are used in the circuit below.

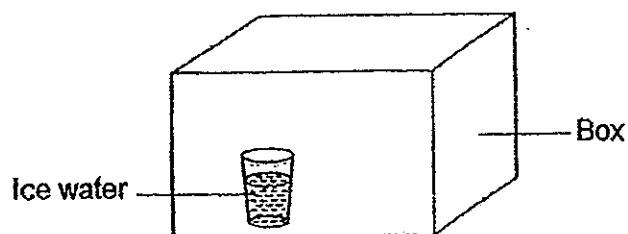


All the bulbs in the circuits light up. Which of the following statements about the bulbs are true?

- A Bulbs A is the brightest.
- B Bulbs E is brighter than Bulb C.
- C Bulbs E and F have the same brightness.
- D Bulbs B, C and D have the same brightness.

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

22. A glass of ice water at a temperature of  $10^{\circ}\text{C}$  is placed in an air-tight box as shown in the diagram below.

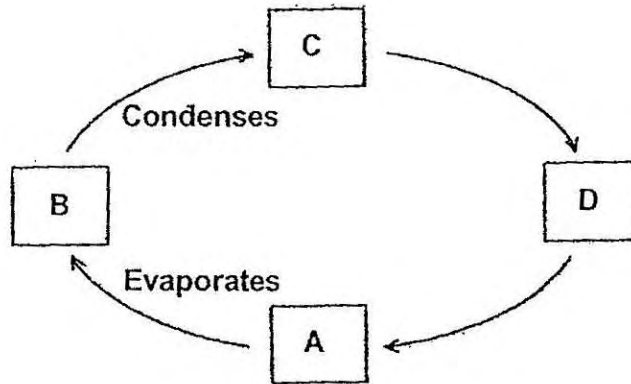


What will happen to the air in the air-tight box after 2 minutes?

- A The air will become hotter.
- B The air will become cooler.
- C The air will contain less water vapour.
- D The air will contain more water vapour.

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

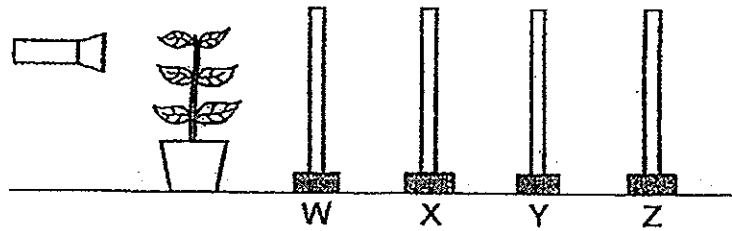
23. Study the diagram shown below.



Which one of the following can be correctly placed in the boxes?

	A	B	C	D
(1)	Clouds	Rain	Water	Water vapour
(2)	Water	Water vapour	Clouds	Rain
(3)	Water	Clouds	Water vapour	Rain
(4)	Clouds	Water vapour	Rain	Water

24. Ben carried out the following experiment in a dark room. He arranged a torch, a potted plant and four sheets of different materials as shown below. When the torch was switched on, a dark shadow of the plant was cast on Sheet Y only.

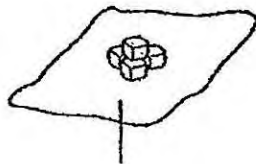


Which of the following conclusion(s) can be made from the experiment?

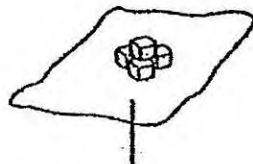
- A Sheet Z is transparent.
- B Sheet Y blocks light completely.
- C Sheet W and X allow light to pass through.
- D Sheet W, X and Y allow light to pass through but Sheet Z blocks light completely.

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

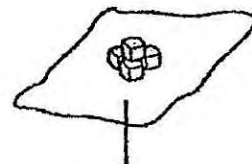
25. Tammy has three types of fabric. She wants to find out the type of fabric that can slow down heat loss to the greatest extent. She cuts a piece from each type of fabric and uses it to wrap some ice cubes. Then, she observes the conditions of the ice cubes every 5 minutes.



Fabric A



Fabric B



Fabric C

Which variables must she keep constant so that a fair test is conducted?

- A The number of ice cubes used.
- B The size of the ice cubes at the end of the experiment.
- C The size of each piece of fabric used for the experiment.
- D The surface area of the ice cubes in contact with the fabric.

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

26. Study the three animals below carefully.



Chicken



Frog



Cockroach

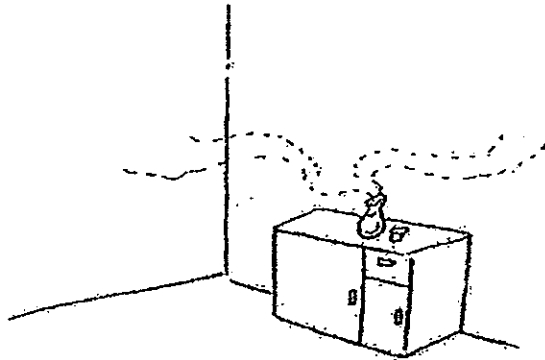
Which of the following statements about the animals are false?

- A They feed on animals only.
- B They have a 3-stage life cycle.
- C Their young do not have wings.
- D Their young do not resemble them.

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



27. When a bottle of perfume is opened at one corner of a room, the scent of the perfume can be detected at other corners of the room very quickly.



Which of the following characteristics of matter is related to this phenomenon?

- (1) Matter has mass.
  - (2) Gases can spread out to occupy more space.
  - (3) Gases can be compressed to occupy less space.
  - (4) Liquids have no definite shape but have a definite volume.
28. The table below compares some information of plants and animals.

	<b>Plants</b>	<b>Animals</b>
A	Fixed in one place.	Move from place to place by themselves.
B	All cells contain chloroplasts.	All cells do not contain chloroplasts.
C	Make their own food.	Feed on other living things.
D	Generally have leaves, a stem and roots and are usually green.	Various body forms, usually a head and a body.

Which of the following comparisons are true?

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

29. Compare the two groups of animals.

Group X
Goldfish Guppy Seabass Molly

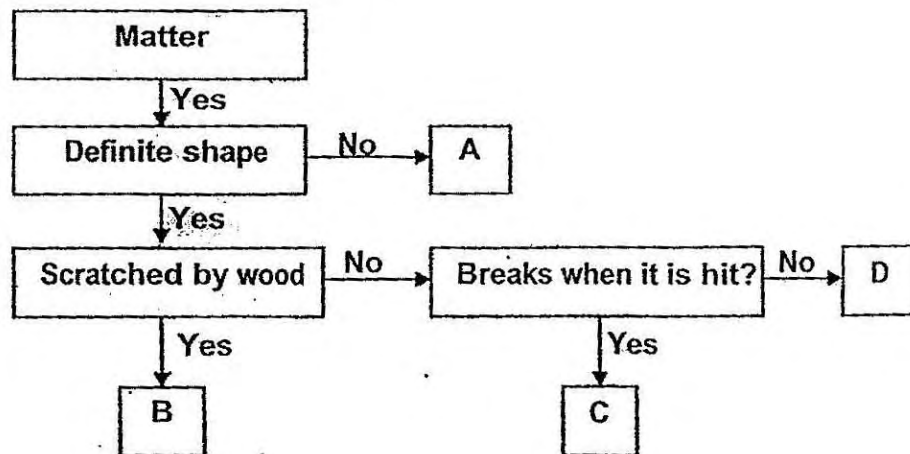
Group Y
Platypus Parrot Spiny Anteater Bat

In what ways are the animals in Group X and Group Y similar?

- A The have scales.
- B They reproduce sexually.
- C They lay hard-shelled eggs
- D They breathe with their gills.

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

30. Study the flow chart below carefully.



Which of the letters below best represents a steel bar?

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

End of Section A



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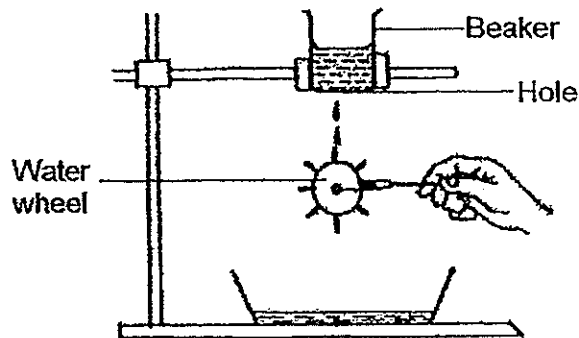
MARKS	
40	

**Section B: (40marks)**

Write your answers to question 31 to 44.

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

31. Study the diagram below.



(a) What will happen to the water wheel? [1]

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(b) What will happen when the size of the hole is increased? Explain your answer. [2]

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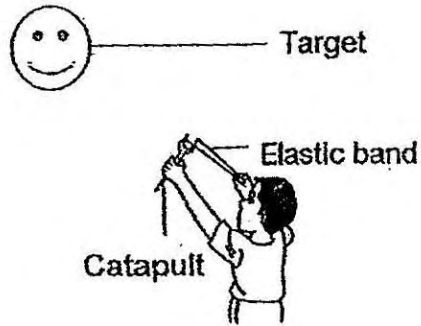
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Score	3
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32. The diagram below shows a boy who is about to release a stone from the catapult.



- (a) The force of impact on the target made by the stone when the elastic band is released depends on some factors. Identify two factors that will affect the impact made on the targets. [2]

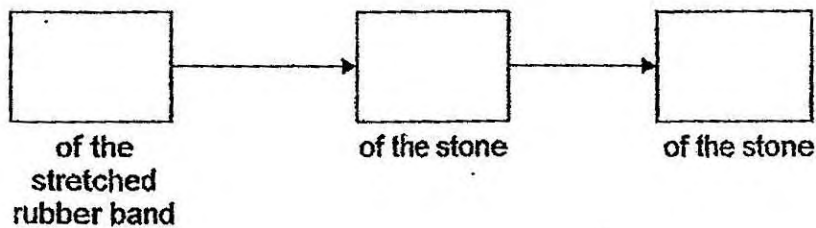
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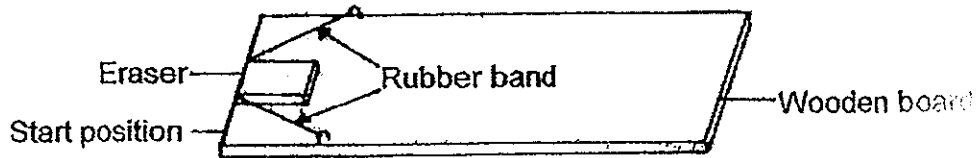
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- (b) Write down the main energy conversion when he releases the stone in the catapult. [1]



33. Jonathan used some rubber bands to set up an experiment as shown below,



He held an eraser on the board at the start position, released it and let it slide along the board. He did this for three times and recorded the distances moved by the eraser. He then repeated the experiment after spreading some talcum powder on the board.

	1	2	3	4
Board without talcum powder	10.8cm	12.5cm	12.3cm	11.8cm
Board with talcum powder	13.1cm	12.5cm	13.8cm	14.1cm

- (a) What is the independent variable in this experiment?

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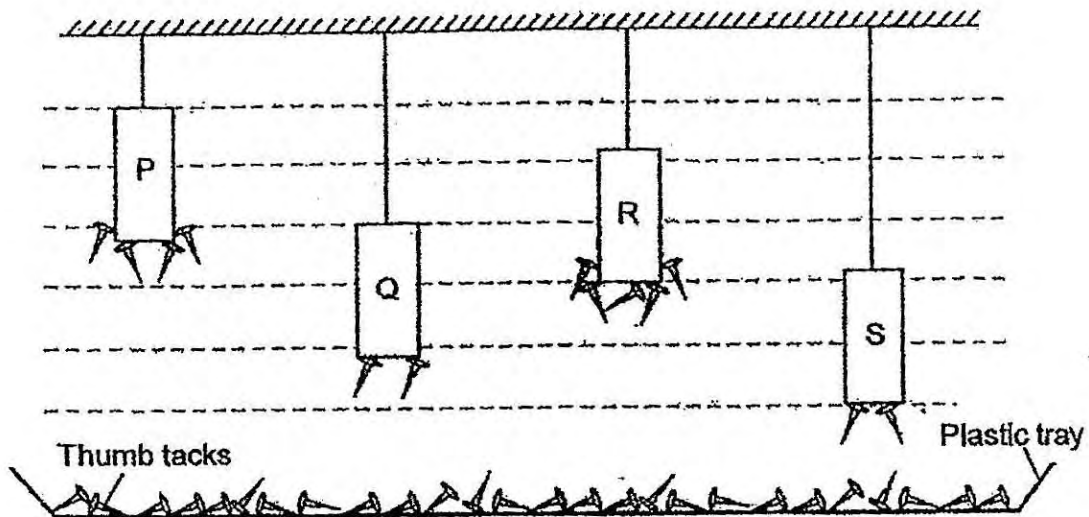
- (b) What is the effect of the force exerted by the stretched rubber band on the eraser?

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34. Paul wanted to compare the magnetic force of four magnets, P, Q, R and S. The magnets were of the same size. He set up the experiment below and observed the number of thumbtacks that were attracted by each magnet.



From the result of his experiment as shown above, Paul could not conclude which magnet has the strongest magnetic force.

- (a) How would Paul change his set-up so that he would be able to find out which magnet was the strongest? [1]

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- (b) Using the same set-up as shown in the diagram above, Paul replaced magnet S with another magnet A of the same size.

State two possible observations that could be made if magnet A was a weaker magnet than magnet S. [2]

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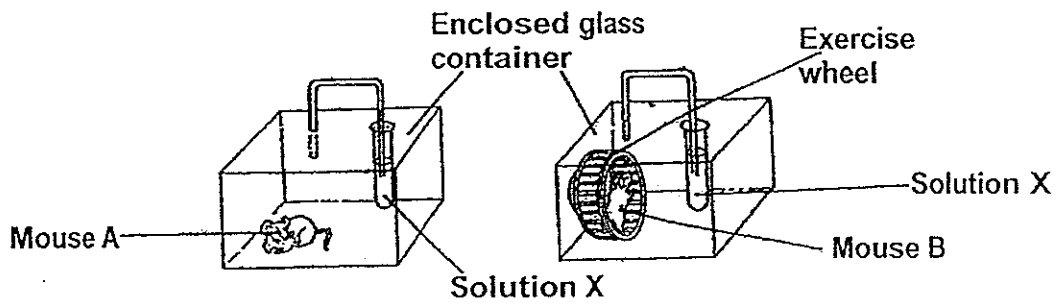


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35. Helen set up the experiment as shown below to find out the rate of respiration with increased activity.



(a) What could solution X be? [1]

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(b) Which mouse respiring faster? Why did the mouse respire faster and how did Helen come to the conclusion? [2]

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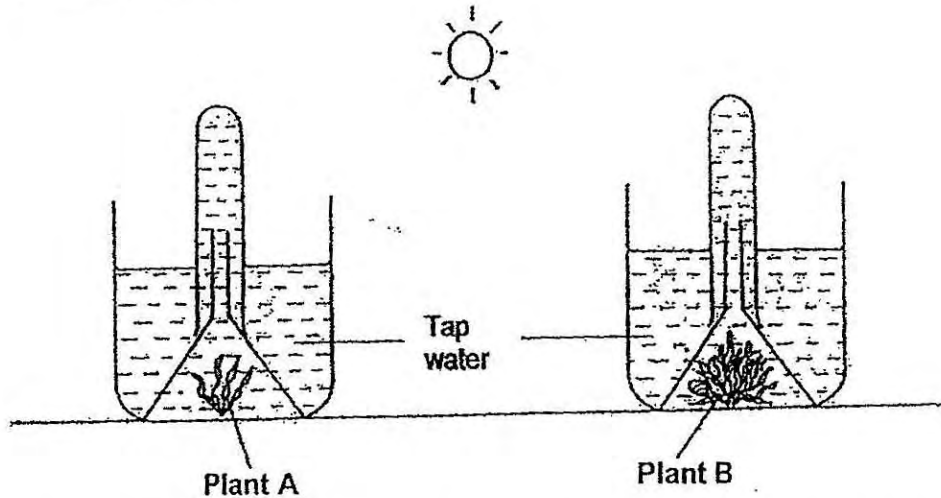
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Score	3
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36. The diagram below shows an experiment that Sam set up. He wanted to find out if the number of leaves on the plant will affect the rate of photosynthesis.



After two days, Sam noted the amount of gas collected from the two plants and recorded the results in the table below.

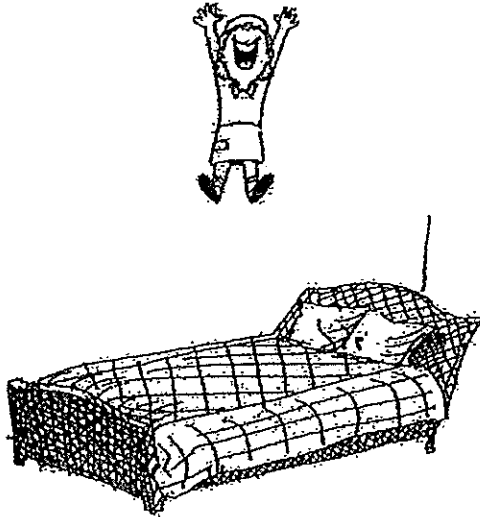
Plant	Amount of gas collected ( $\text{cm}^3$ )
A	5
B	16

- (a) What was the gas collected at the test tube? [1]
- \_\_\_\_\_
- (b) What is the relationship between the number the of leaves and the rate of photosynthesis? [1]
- \_\_\_\_\_
- \_\_\_\_\_
- (c) Explain how the number of leaves affect the amount of oxygen collected. [1]
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

Score	3
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37. Shalome likes to jump on her spring mattress as it lifts her up in the air as shown below.



Explain, in terms of energy conversion, how does jumpig on the spring mattress a few times enable her to reach a higher height? [2]

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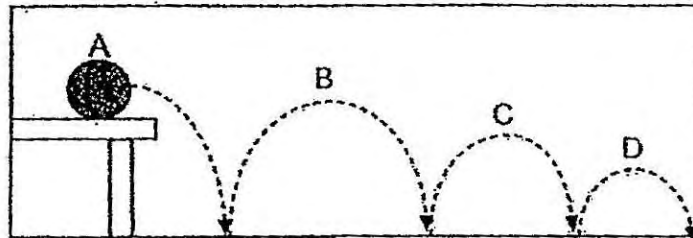
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Score	2
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38. Jane dropped a ball from a table. The path it took is represented by the dotted lines in the diagram.



Jane repeated the above experiment three times and recorded the bouncing height of the ball, B, C and D, in the table as shown below.

Number of tries	Height (cm)		
	B	C	D
1	77	59	43
2	74	58	39
3	80	63	38
Average	77	60	40

- (a) Why did Jane conduct the experiment three times? [1]

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- (b) Write down the energy conversion from Position A to B. [1]

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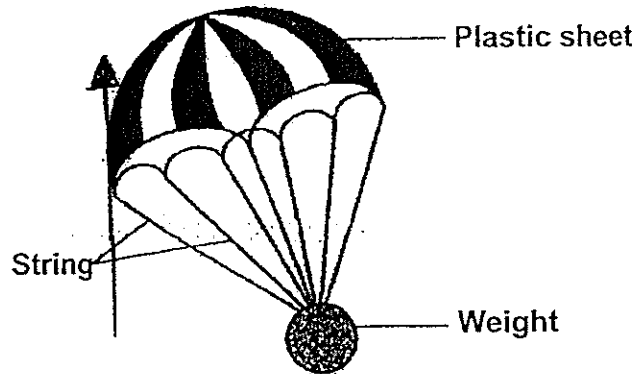
- (c) Why did the ball not bounce back to the original height? [1]

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39. Adam threw a toy parachute from the top of the roof. Within seconds, it fell to the ground.



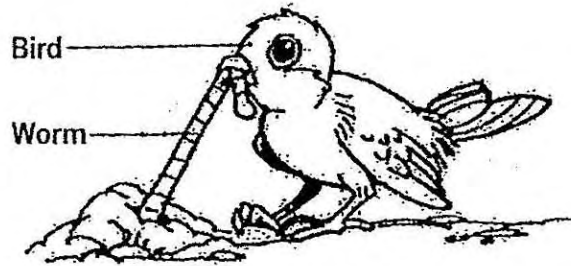
- (a) Label and draw arrow(s) in the diagram above to indicate the force(s) acting on the parachute. [2]
- (b) Suggest one method to keep the parachute in the air for a longer time. [1]

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Score	3
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40. In the diagram below, a bird is trying to pull a slippery worm out of the ground.



- (a) Is it easy for the bird to pull out the slippery worm? Why? [1]

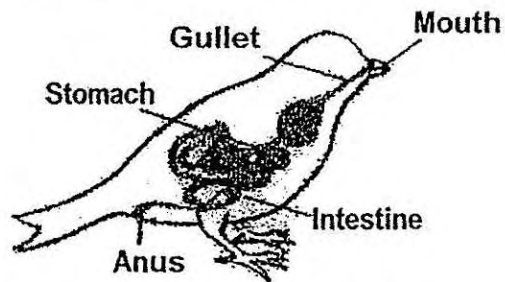
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- (b) The bird has no teeth to chew the worm. The picture below shows the digestive system of a bird.



- How does the slippery surface of the worm help the bird to eat the worm? [2]

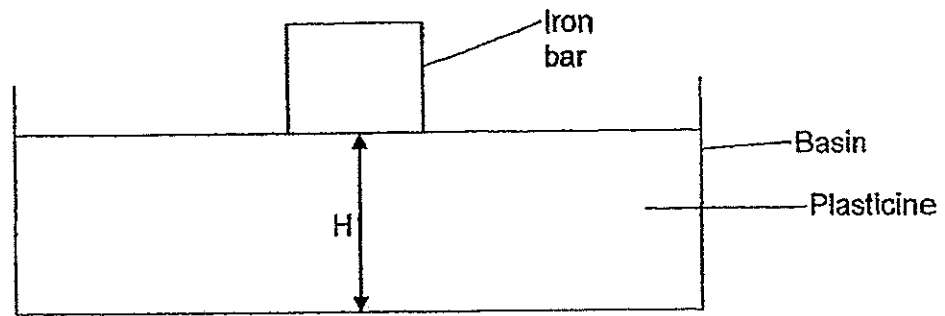
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Score	3
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41. Martin set up the experiment as shown in the diagram below.



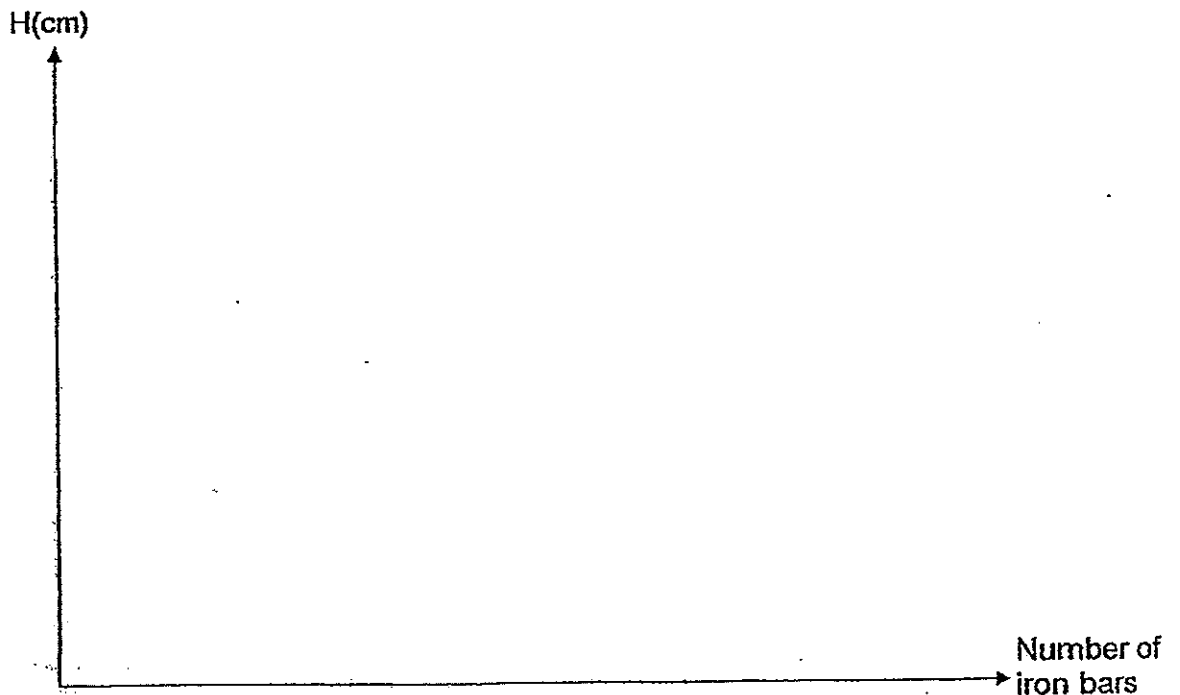
He added an iron bar on the plasticine and measured the height of the plasticine,  $H$ . He continued stacking more iron bars on top of each other and recorded the height of the plasticine.

- (a) Identify the force that is acting on the plasticine when the iron bars are placed on it. [1]

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- (b) Sketch a graph to show the height of the plasticine,  $H$ , when more weights are added. [2]

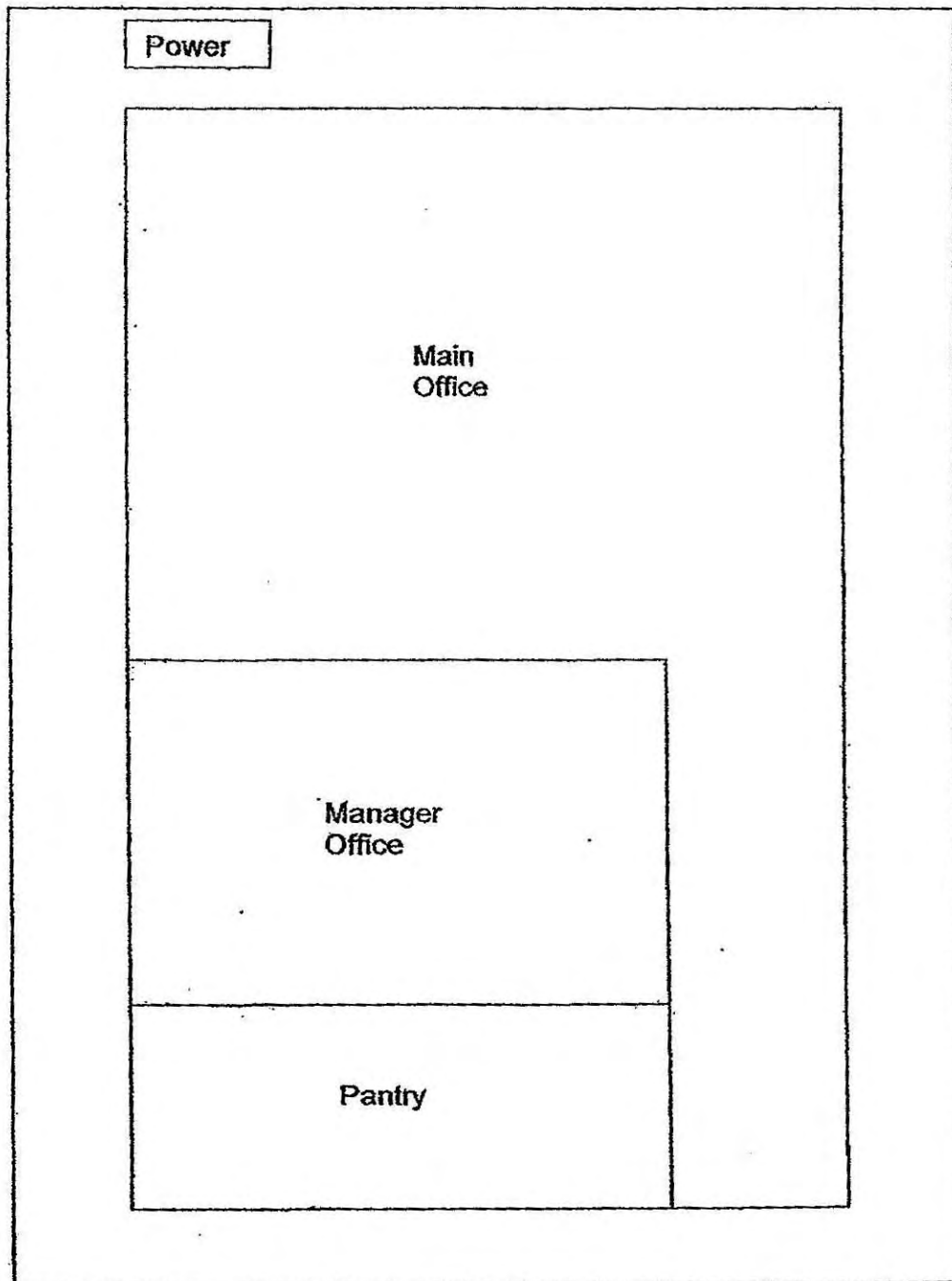


Score	3
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42. Mr Lim is designing the light system in his office. He wants all the lights in the rooms to lit up independently and to remain lit even if one of the bulbs fuses.

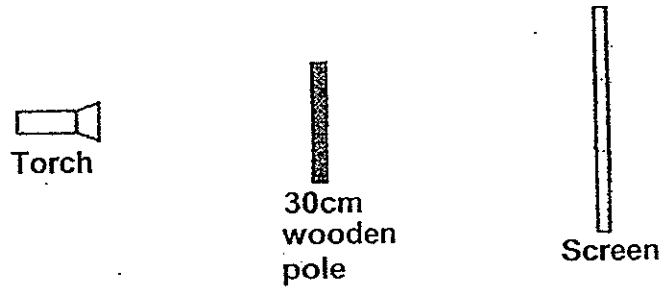
Construct a circuit diagram in the box below.

[2]



Score	2
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43. Study the set-up below.



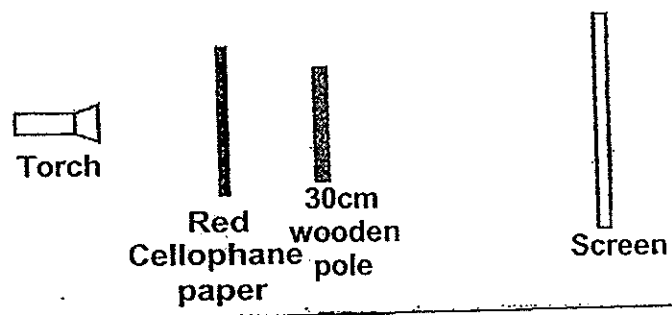
When the torchlight was shone on the wooden pole, a dark shadow of the wooden pole was cast on the screen.

(a) What would happen to the shadow if the wooden pole was shifted further from the source of light? [1]

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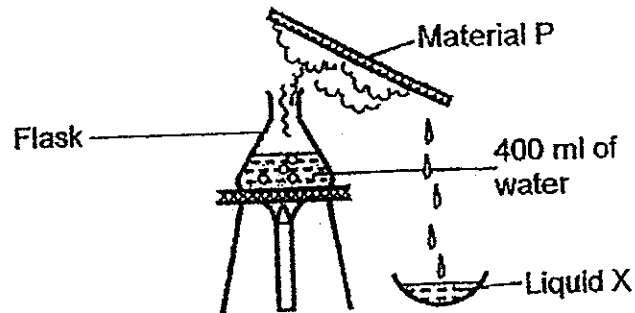
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(b) A sheet of red cellophane paper measuring 40cm by 40cm was placed between the torch and the wooden pole as shown below. Draw the shadow that he would observe on the screen in the box below. [2]



Score	3
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44. Ahmad conducted an experiment as shown below.



Four materials of the same temperature were placed above the flask, one at a time. He recorded the amount of liquid X collected in the bowl after ten minutes in the table below.

Material	Amount of Liquid X collected after 10 min (ml)
P	200
Q	50
R	110
S	75

(a) What is Liquid X? [1]

\_\_\_\_\_

(b) Explain how Liquid X was collected in the bowl? [1]

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

(c) Which material is most suitable for keeping food hot? Explain your answer. [2]

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



# ANSWER SHEET

**EXAM PAPER 2014**

**SCHOOL : NAN HUA**

**SUBJECT : PRIMARY 6 SCIENCE**

**TERM : CA1**

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

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

**31)a) If will spin.**

**b) The water wheel will turn faster with a bigger hole, there will be more mass at the same time which will increase the kinetic energy of the water being transferred to kinetic energy of the cup.**

**32)a) The amount of elastic force applied on the elastic band and the mass of the stone.**

**b) Elastic potential energy → kinetic energy → Gravitational potential energy.**

**33)a) The presence of talcum powder.**

**b) The eraser will move.**

**34)a) He should have all four magnets at the same height.**

**b) Magnet A could be attracted by Magnet R or could attract only one thumbtack.**

**35)a) Limewater.**

**b) Mouse B. The mouse needs more energy for its exercise. It respire more to buy taking in more oxygen to break down the digested food to release the energy. More carbon dioxide will also be produced during respiration to turn the limewater milky more quickly.**

36)a)Oxygen.

b)The more the number of leaves, the faster the rate of photosynthesis.

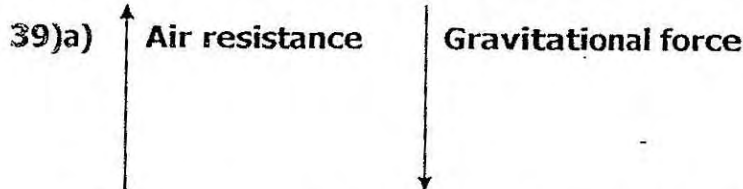
c)The greater number of leaves trap more sunlight. Thus the rate of photosynthesis increase and produces more oxygen.

37)When she jumps, the springs in the mattress will be compressed. Hence the kinetic energy of her body will be changed into elastic potential energy of the spring in the mattress. When she jumps up again, elastic potential energy from the spring in the mattress is changed back into kinetic energy and this kinetic energy is needed to her kinetic energy.

38)a)It is to collect consistent data to calculate the average reading for reliable results.

b)Gravitational potential energy → Kinetic energy → Gravitational potential energy.

c)Some of the kinetic energy has been converted to other forms of energy.



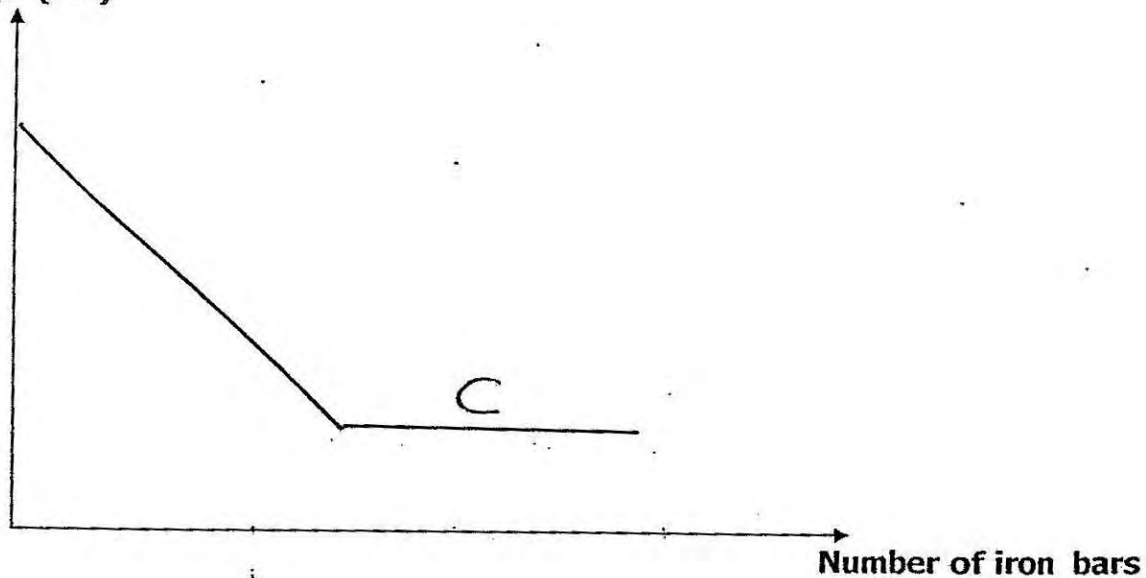
b)Use a parachute with a large exposed surface area.

40)a)Yes. The slippery surface reduces friction between the worm skin and the surface reduces friction between the worm's will use less effort to pull it eat.

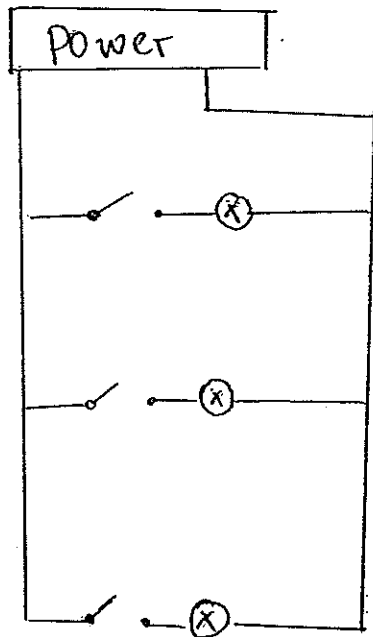
b)It helps the bird to swallow the worm faster due to the reduction in friction between the gullet worm's body.

41)a)Gravitational force.

b)H (cm)



42)



43)a)The shadow will be smaller.

b)



44)a)Pure water.

b)Water evaporates into hot water vapour as it gains heat from the heat source. Vapour condenses on the cooler surface of material P into water droplets. Due to gravity the water droplets will roll down and into the bowl at the bottom.

c)Material P. It is the poorest conductor of heat as it gains heat the slowest. The surface will be the coolest for the longest period of time and hence allows the most amount of water vapour to condense.

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