

Pei Chun Public School
Semestral Assessment 1 – 2009
Science
Primary 6

Name : _____ ()

Date : 15 May 2009

Class : Pri. 6 ()

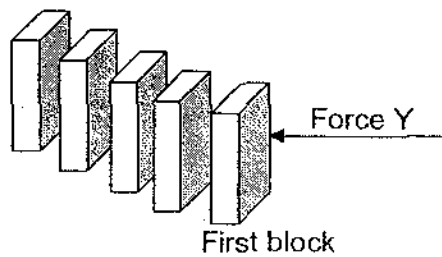
Science Teacher : _____

Time : 1h 45 min

Section A (25 × 2 marks)

For questions 1 to 25, choose the most suitable answer and shade its number (1, 2, 3 or 4) on the Optical Answer Sheet.

1. A few wooden blocks are arranged as shown below. A strong force, Y, is applied to the first block.



The above diagram shows that Force Y can _____

- A/ change the position of an object
B/ move a stationary object
C: stop a moving object

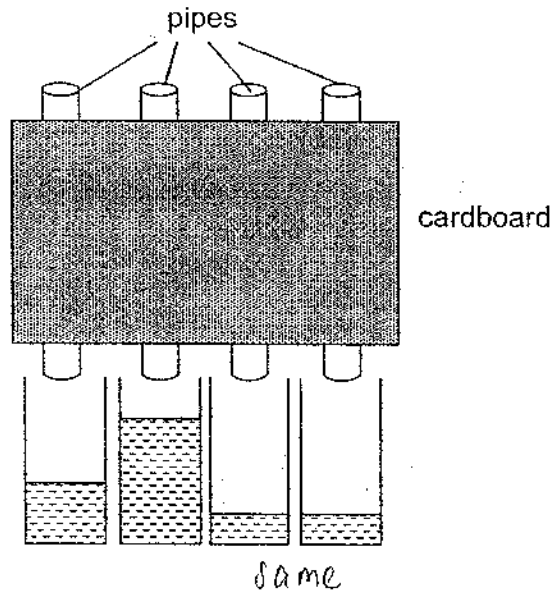
- (1) B only
(2) A and B only
(3) B and C only
(4) A, B and C

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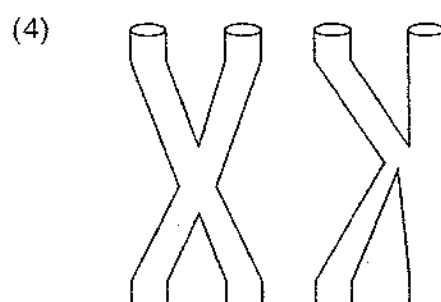
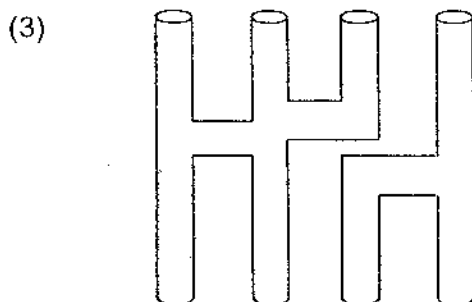
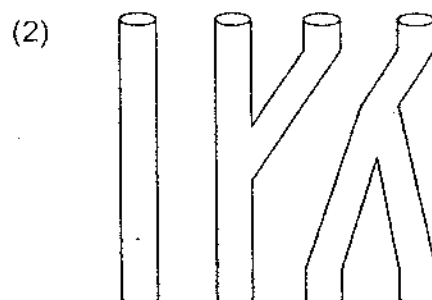
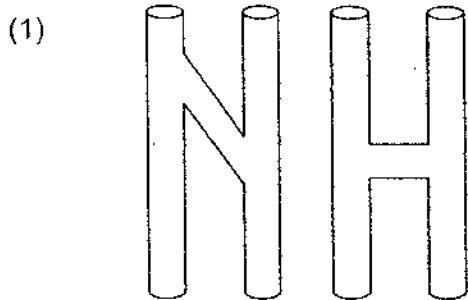
47
46

2. A cardboard covers a series of pipes. An equal amount of water is poured into each pipe at the top.

The diagram below shows how much water came out of each pipe.

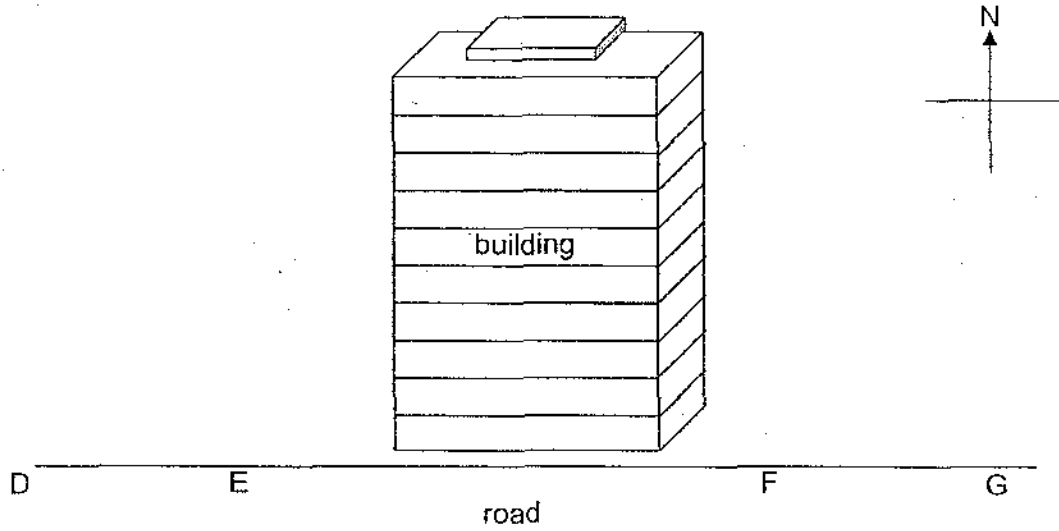


Which of the following best shows the arrangement of the pipes when the cardboard is removed?



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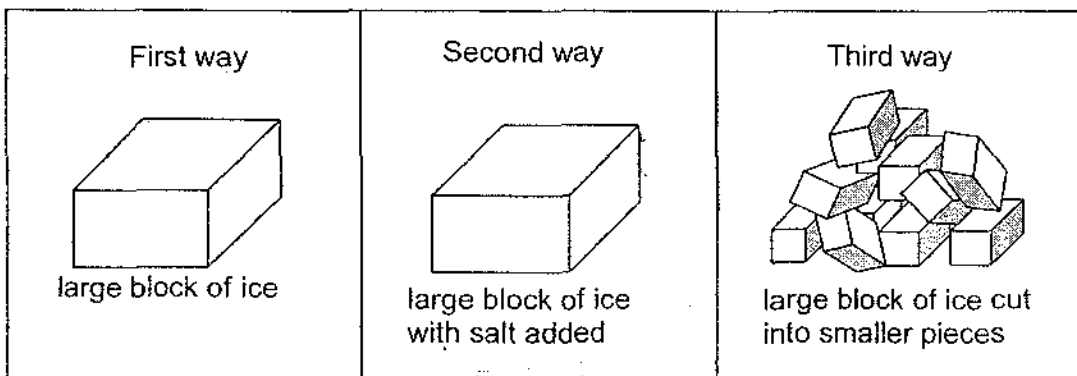
3. Jessica wants to park her car near a building at 1 p.m. as the building can block part of the road from sunlight. She wants her car to be in the shade as much as possible.



Given that any shadow produced is the shortest at noon, at which point (D, E, F or G) should she park her car?

- (1) D
 - (2) E
 - (3) F
 - (4) G
- ()

4. The diagram below shows three ways in which the same volume of ice is melted at the same place.

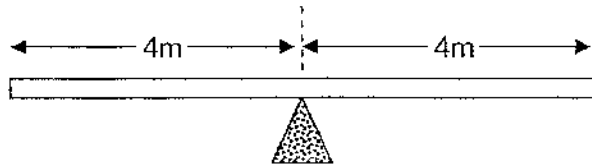


Compared to the first way, do the other two ways melt the ice at a faster or slower rate?

(X)	Second way	Third way
(X)	slower	slower
(X)	faster	faster
(X)	slower	faster
(A)	faster	slower

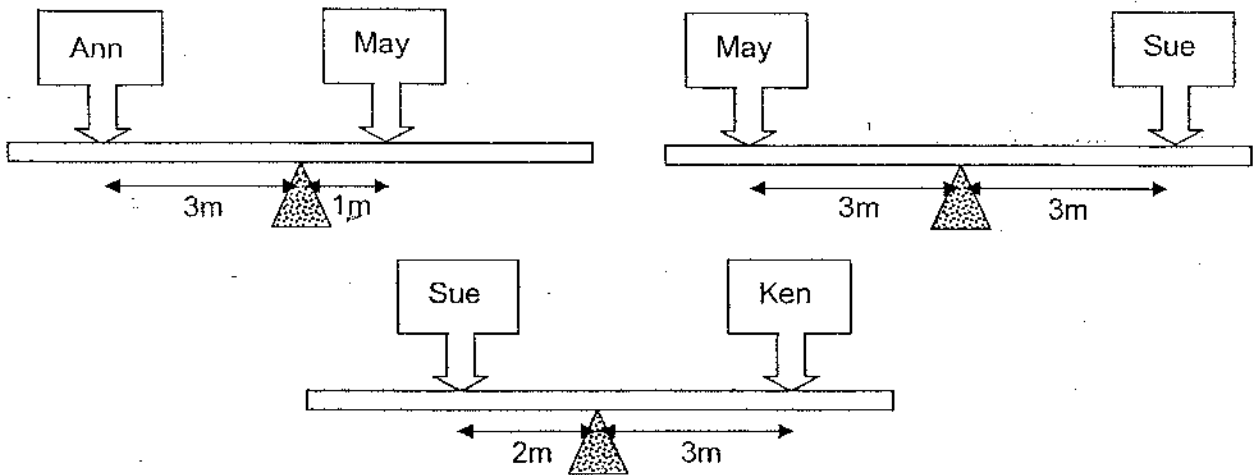
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5. Four children went to a park to play on a see-saw as shown.

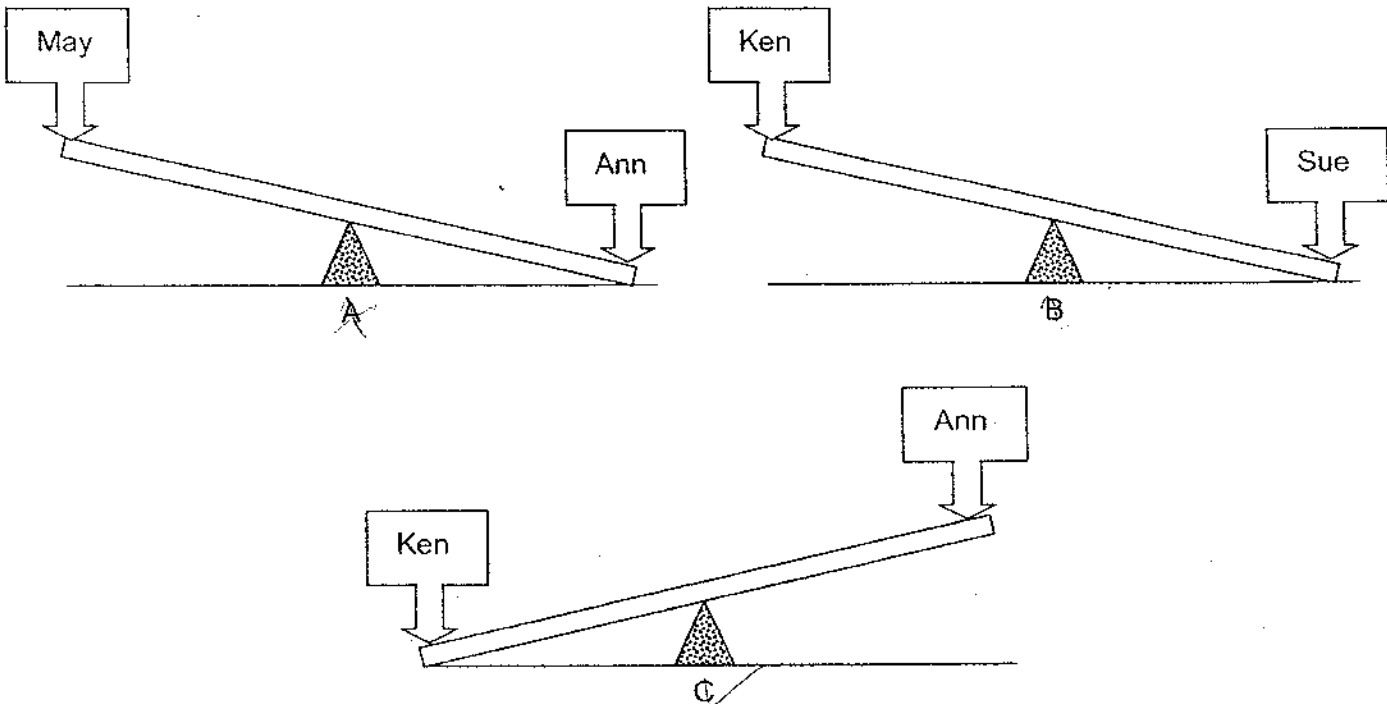


The children had different masses. However, they could balance each other by changing their positions on the see-saw.

The diagram below shows how they balanced the see-saw.



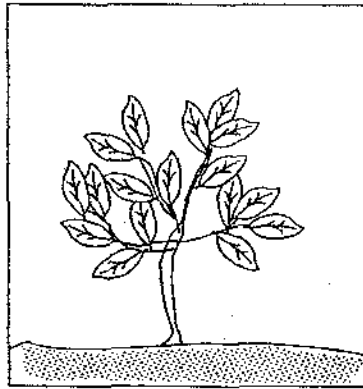
Which of the following diagrams show(s) what happened when two of them sat at the ends of the see-saw?



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

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6. A plant with woody stem is smeared with a layer of oil on both surfaces of the leaves.



both surfaces of the leaves smeared with oil

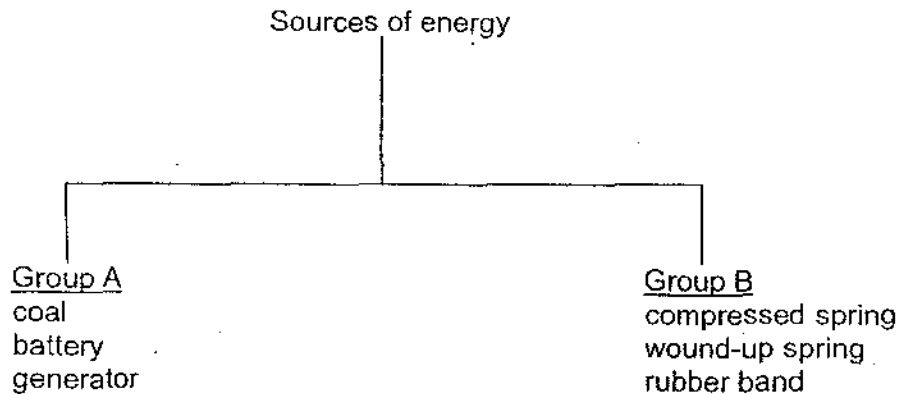
Which of the following indicates correctly whether the plant will still be able to carry out photosynthesis and/or respiration?

Key:
 ✓ able to carry out
 × not able to carry out at all

	Photosynthesis	Respiration
(1)	×	×
(2)	✓	×
(3)	✓	✓
(4)	×	✓

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7. The classification chart shows some sources of energy.

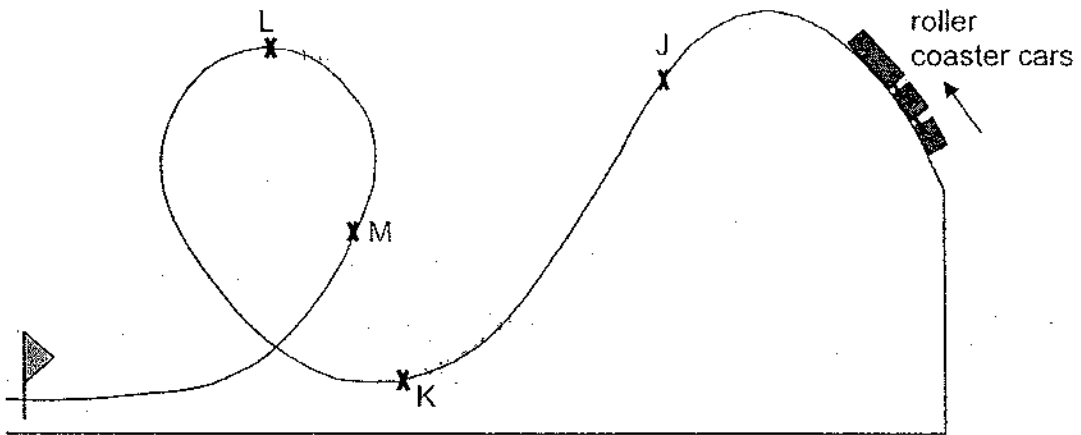


Which of the items are wrongly placed in the classification chart?

- (1) generator only
 (2) generator and rubber band only
 (3) rubber band and wound-up spring only
 (4) battery, rubber band, and compressed spring only

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8. A roller coaster changes gravitational potential energy into other forms of energy. The diagram shows a side view of a roller coaster ride.



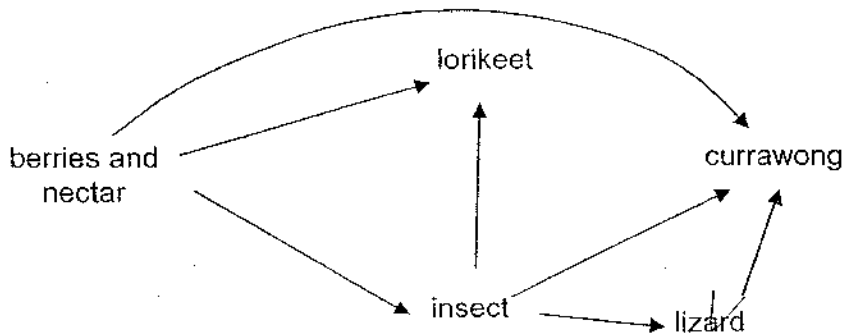
At which one of the points (J, K, L or M) along the ride would the roller coaster cars have the most gravitational potential energy?

- (1) J
- (2) K
- (3) L
- (4) M

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For questions 9 and 10, use the information below.

Part of the food web in a bushland area is shown below.



9. How many organisms in the food web is/are both a predator and a prey?

- (1) 1
- (2) 2
- (3) 3
- (4) 4

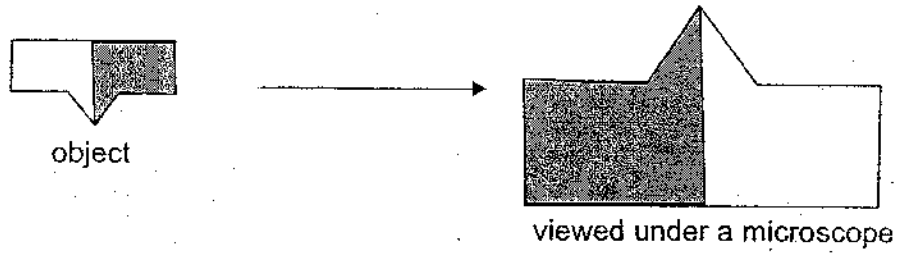
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10. Which of the organisms is/are both plant and animal eaters?

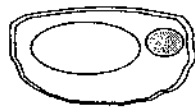
- (1) lorikeet
- (2) insect and lorikeet
- (3) currawong and lizard
- (4) lorikeet and currawong

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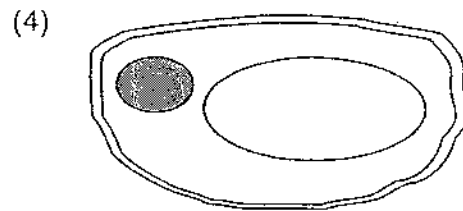
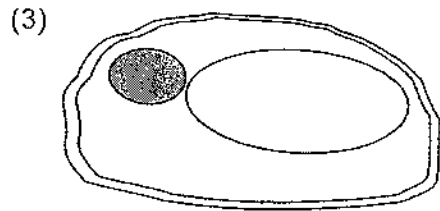
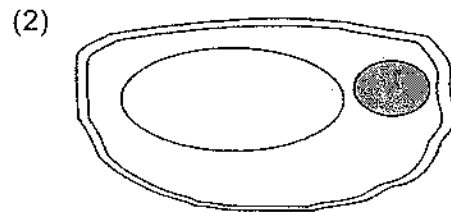
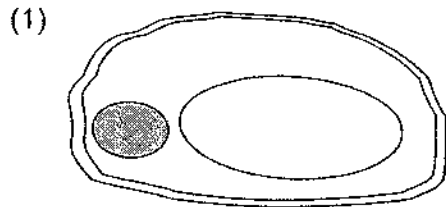
11. The diagram below shows how an object appears when viewed under a microscope.



A pupil wanted to view the cell shown below under the microscope.

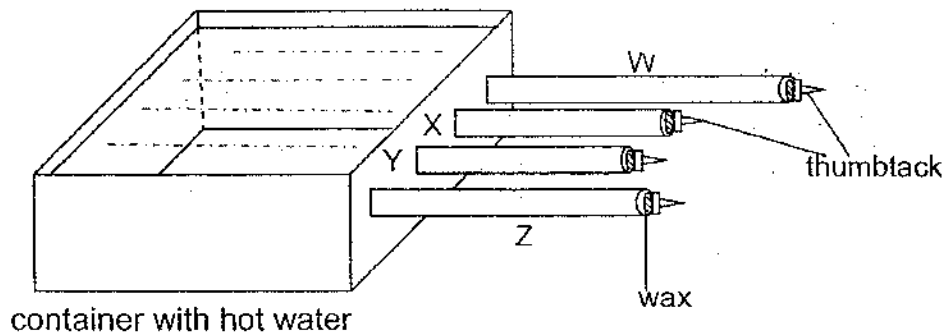


Based on the above, how will the cell appear?



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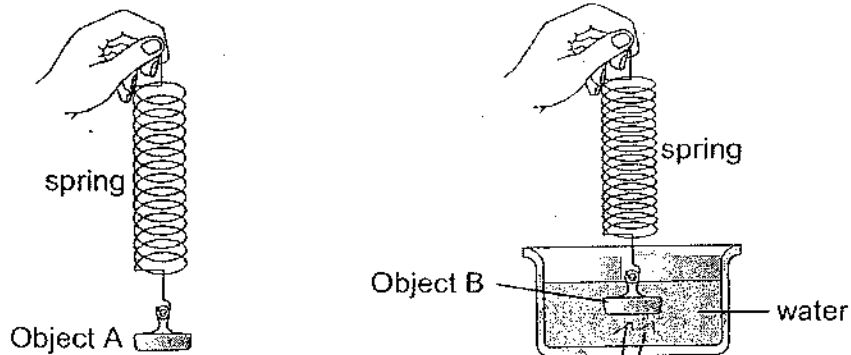
12. John set up an investigation below to compare the heat conductivity of four rods (W, X, Y and Z) made of different materials. He dripped a drop of wax at the end of each rod and placed an identical thumbtack on the wax. He arranged the rods as shown below, with an equal length of the rods inserted into the container.



He observed that the thumbtacks dropped at the same time.

Could he make any conclusion for the materials?

- (1) No, the investigation is not a fair one.
 (2) No, the time taken for the pin to drop was the same.
 (3) Yes, Material W is the best conductor of heat.
 (4) Yes, Material Y is the worst conductor of heat. ()
13. Objects A and B have the same mass. The diagram below shows the forces acting on the two objects when they are hung on identical springs.



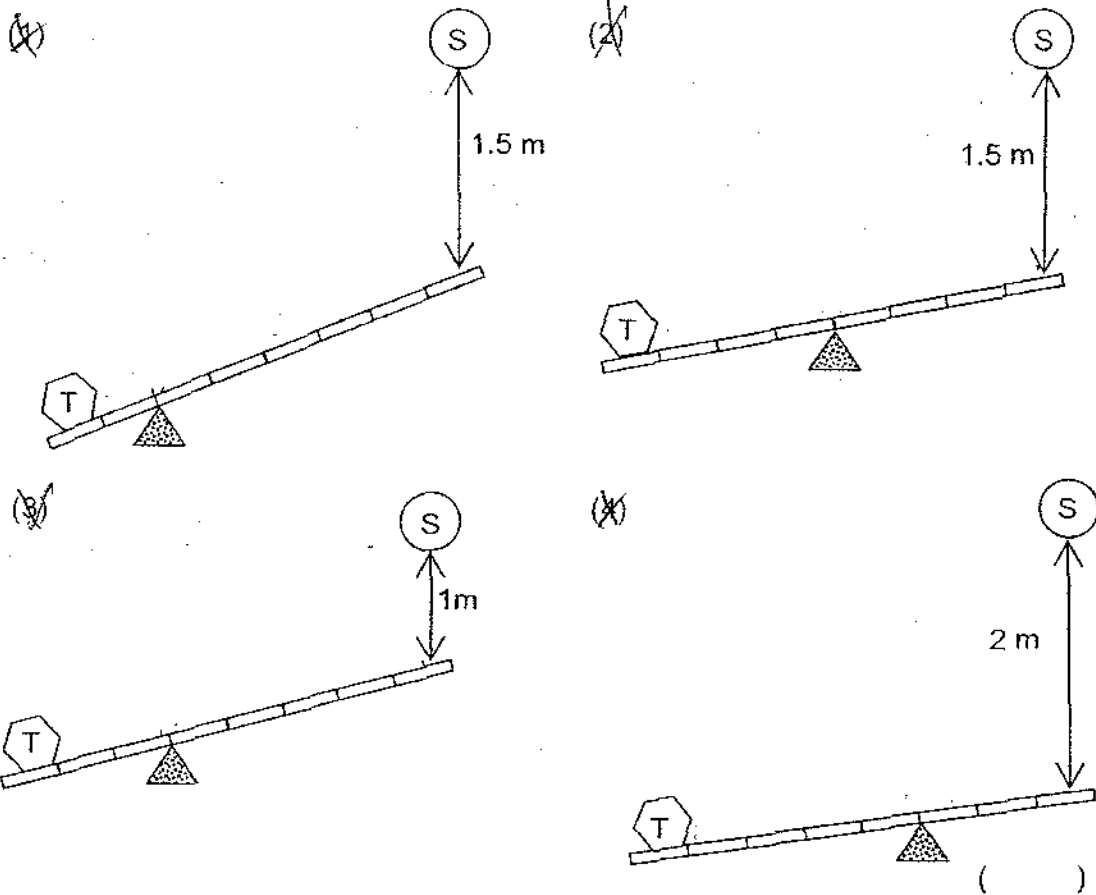
Which of the following statements is/are true?

- A: Both objects have the same weight.
 B: There is an additional force acting upwards on Object B only.
 C: The gravity acting on Object A is different from that acting on Object B.

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

14. Ahmad dropped a ball S, weighing 1 kg, from different heights on a lever. He measured the distance 'jumped' by object T.

Which of the following would result in object T "jumping" the highest?



15. A group of pupils collected the information on the number of aquatic plants in the school pond, and presented the information in a table. There are 50 plants in the pond.

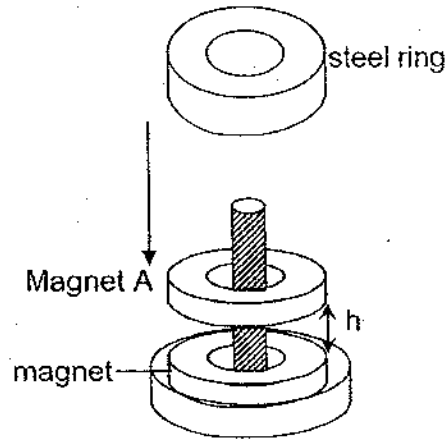
Type of plants	Total number of aquatic plants (%)
duckweed	50
hydrilla	14
water lettuce	12
water lily	12
others	12

Based on the table above, which of the following statements is definitely correct?

- There are five populations of aquatic plants in the pond.
- There are two types of floating plants in the pond.
- Duckweeds occupy the most space in the pond.
- None of the above

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16. Siva places a steel ring lightly on top of Magnet A as shown. The letter h represents the distance between the two magnets.



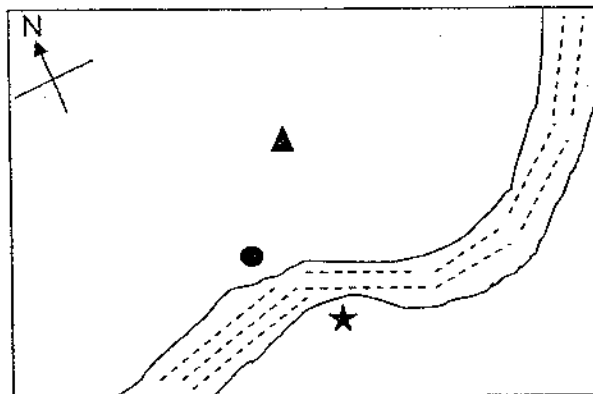
What will happen to h, the distance between the two magnets?

- (A) No change. The steel ring does not affect the force of repulsion.
 (B) Increase. The steel ring increases the magnetic force of magnet A.
 (C) Decrease. The mass of the steel ring weakened the force of repulsion.
 (D) Decrease. The force of gravity acting on the steel ring overcomes all or part of the force of repulsion. ()

17. Three plants bear fruits at the same time. The initial positions of the three plants are indicated on the map (▲, ●, ★). The animals living on the land cannot swim. The wind is blowing from the north.

Other information:

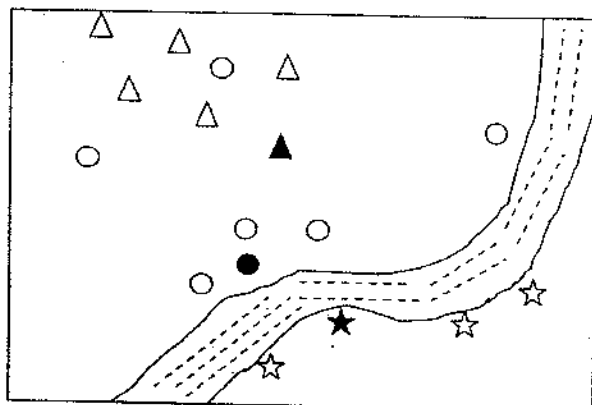
- (i) The fruit of Plant ▲ is light and has soft hair. △ is its young plant.
 (ii) The fruit of Plant ● is juicy and fleshy. ○ is its young plant.
 (iii) The fruit of Plant ★ has a fibrous husk. ☆ is its young plant.



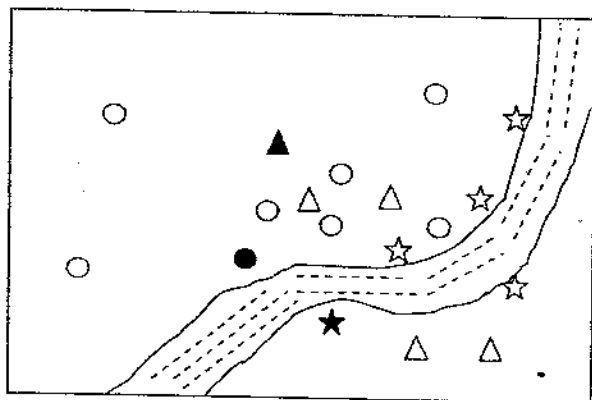
After a few months, some fruits grow into new plants.

Which of the following shows the most likely locations of their young plants?

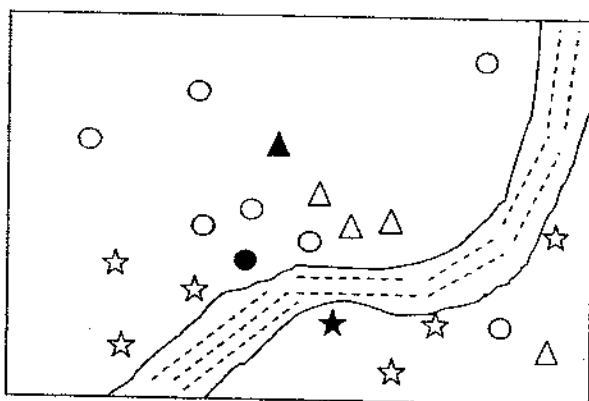
~~(1)~~



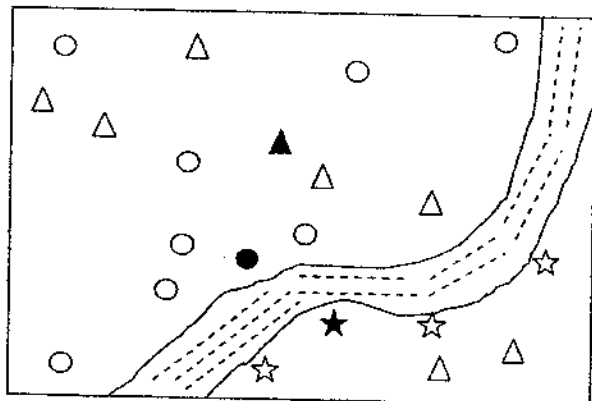
~~(2)~~



~~(3)~~

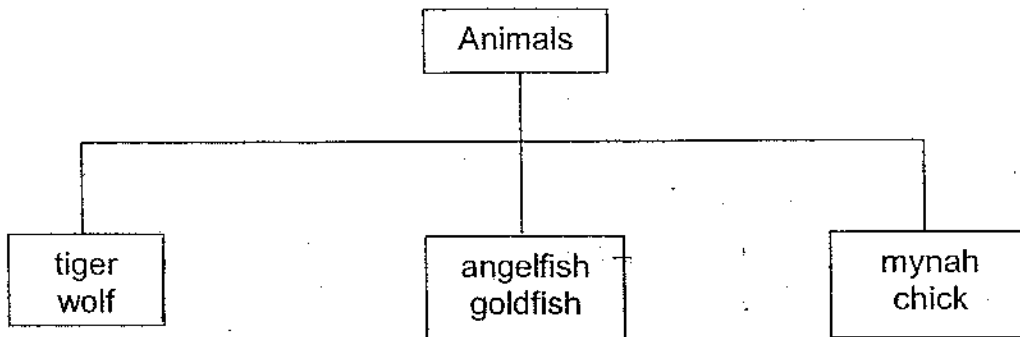


~~(4)~~



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18. The classification chart shows how some animals are grouped.



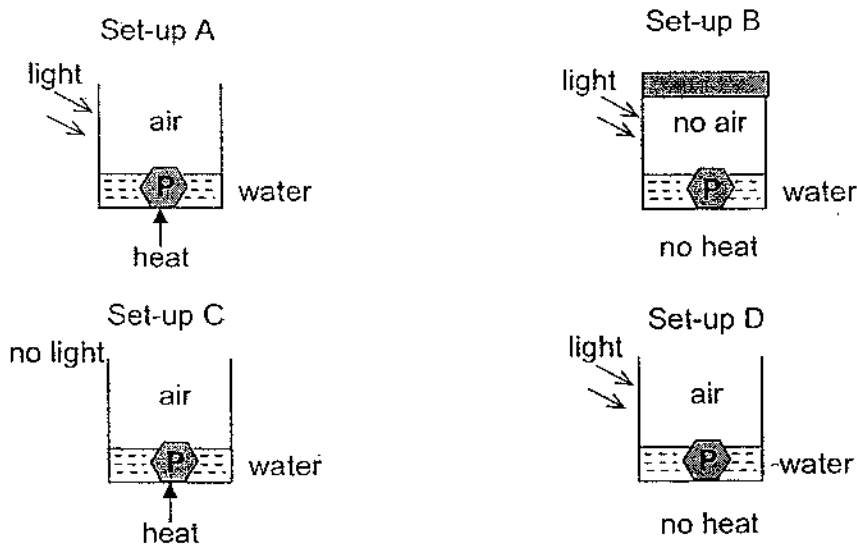
The animals are grouped according to _____.

- A: their body coverings
- B: whether they are mammals, fish or birds
- C: whether they lay eggs or do not lay eggs
- D: whether they are carnivores, herbivores or omnivores

Which of the above groupings are correct?

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

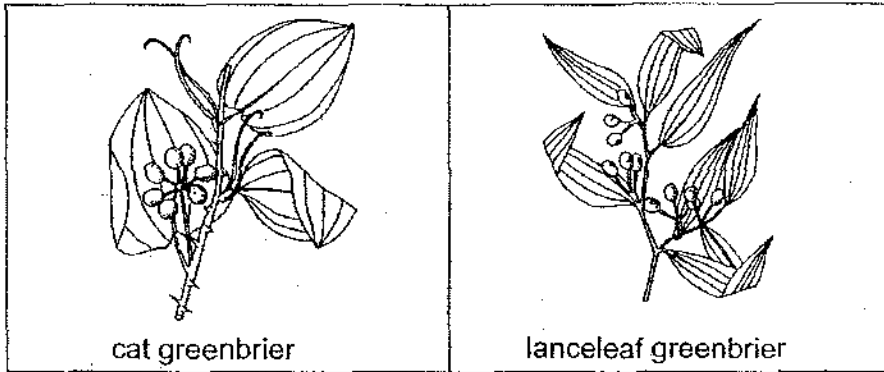
19. Mark carried out an experiment to find out the condition(s) necessary for a change to occur in Substance P. He used four set-ups, A, B, C and D, as shown below.



After some time, he observed that Substance P had changed in set-ups A and D but not in set-ups B and C. Which one of the following shows the condition(s) necessary for the change?

- (1) light only
 - (2) air and light only
 - (3) heat and light only
 - (4) heat and water only
- ()

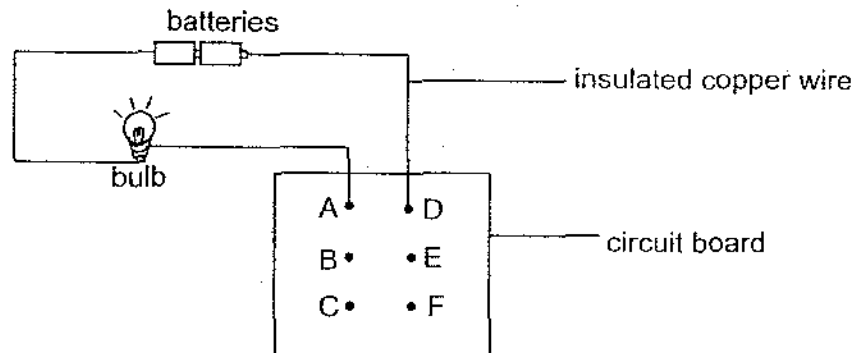
20. The diagrams below show the leaves and fruits of two greenbrier species.



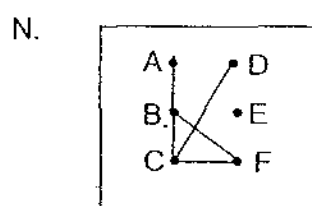
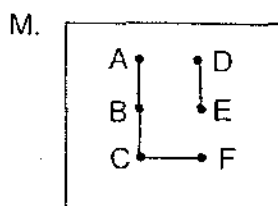
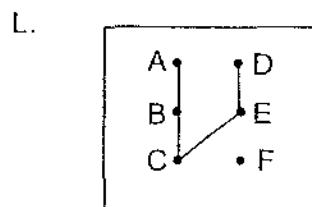
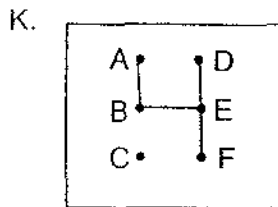
Which of the following statements is not correct?

- (1) ✓ Cat greenbrier has heart-shaped leaves, but lanceleaf greenbrier has lance-shaped leaves.
- (2) ✗ Cat greenbrier has fruits grown in bunches, but lanceleaf greenbrier has fruits grown singly.
- (3) ✓ Cat greenbrier has thorns, but lanceleaf greenbrier does not.
- (4) ✗ None of the above. ()

21. The bulb in the circuit diagram shown below lights up when the wires are connected to pins A and D of a circuit board.



Which of the following connections of wires at the back of the circuit board will cause the bulb to light up?

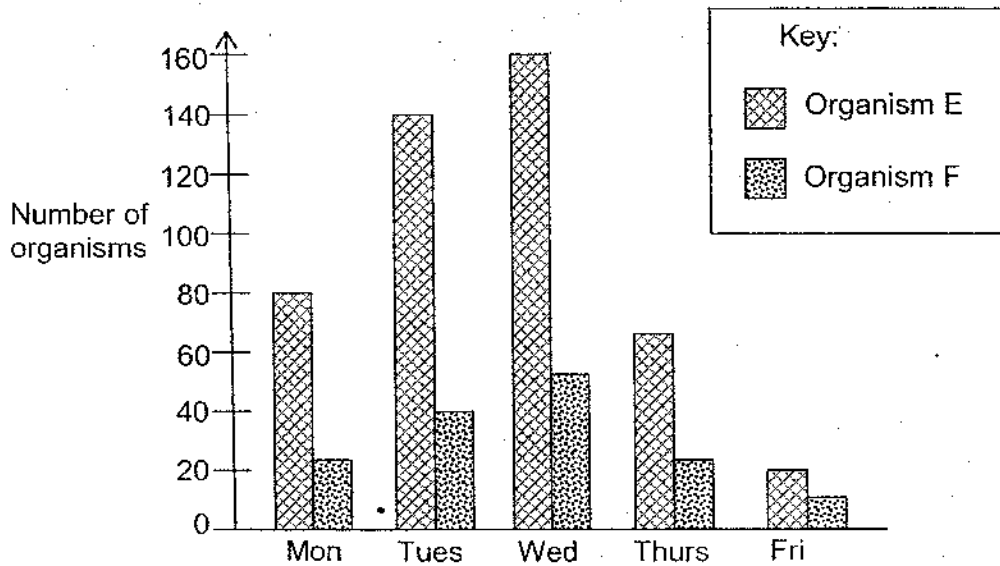


- (1) K and L only
- (2) M and N only
- (3) K, L and M only
- (4) K, L and N only

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22. Some pupils made a study of two types of organisms, E and F, in a park. They counted the number of organisms E and F there and noted the weather over five days. The results are shown below.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Weather	Sunny	Cloudy	Rainy	Sunny	Sunny



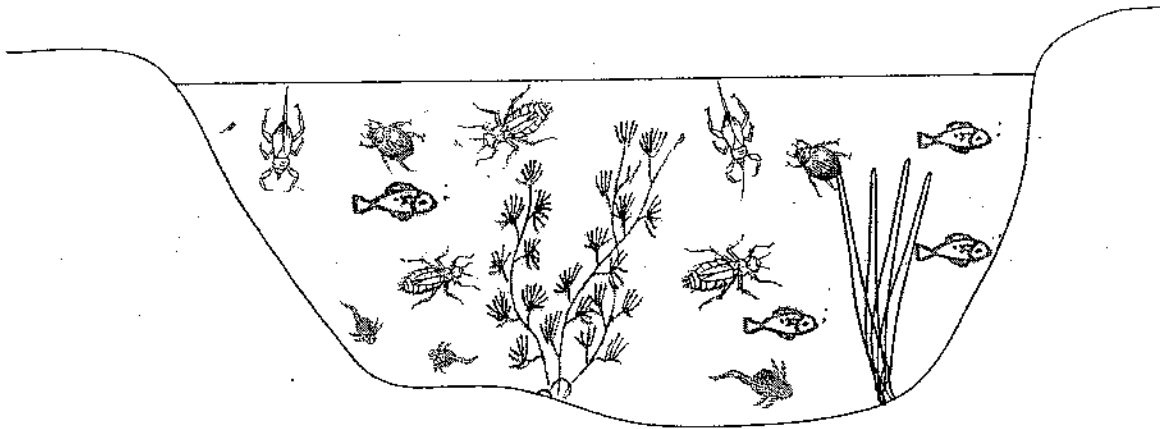
Based on the information in the graph and table, which of the following statements is/are definitely correct?

- A The number of organism E increases as the number of organism F increases.
- B The number of organism E increases during rainy weather.
- C Organism F can be the predator of Organism E.
- D Organism F feeds on animals only.

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

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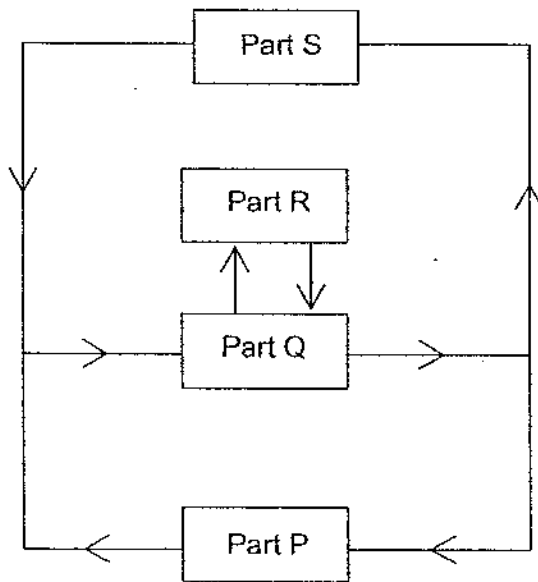
23. The diagram below shows the organisms living in a pond.



Based on the diagram, which of the following statements is correct?

- (1) There is only one population of plants.
- (2) There are six populations of organisms living there.
- (3) The organisms living there form the pond community.
- (4) The largest population size of an organism in the pond is three. ()

24. The diagram shows how blood flows in certain parts of the body.

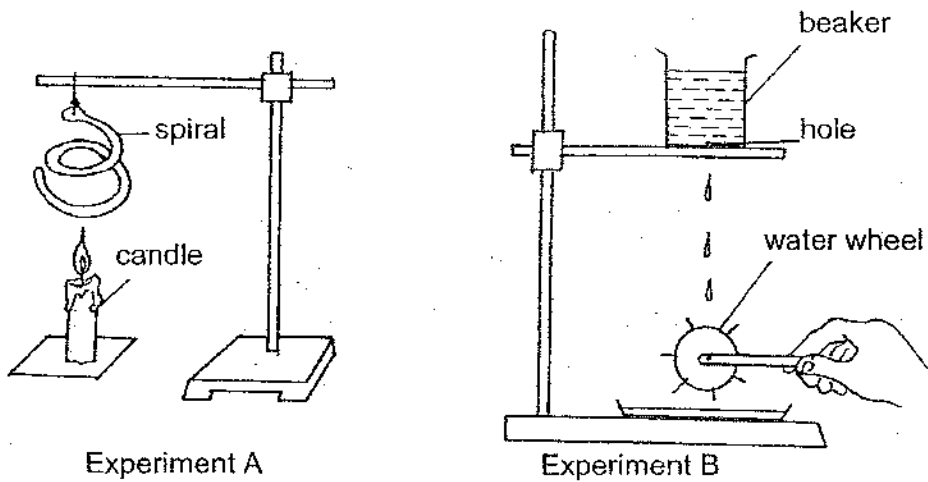


Which of the following is correctly matched to parts P, Q, R and S?

	Part P	Part Q	Part R	Part S
(1)	lungs	heart	nose	head
(2)	legs	lungs	heart	head
(3)	legs	lungs	heart	windpipe
(4)	legs	heart	lungs	head

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25. Mrs Zhan, a teacher, demonstrated two experiments as shown.



Her pupils made some conclusions based on the experiments.

- Eddy : - Both experiments have different sources of energy.
- Lisa : Both experiments produce kinetic energy.
- Xiu Xiu: Heat energy is produced in Experiment A only.
- Zainal : Light energy is produced in Experiment A only.

How many pupils made the correct conclusion?

- (1) 1
- (2) 2
- (3) 3
- (4) 4

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For Questions 26 to 30, please refer to Booklet A.

End of Section A

Pei Chun Public School
Semestral Assessment 1 – 2009
Science
Primary 6

Name: _____ ()

Class: Pri. 6 ()

Date: 15 May 2009

Time: 1 hr 45 min

Science Teacher: _____

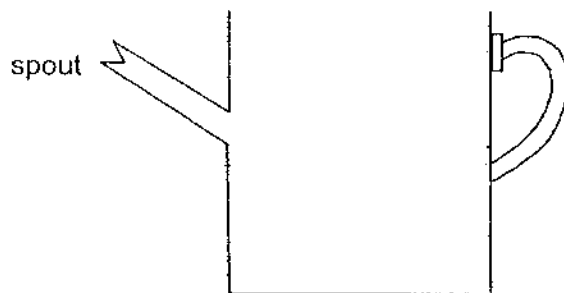
Parent's Signature: _____

Section A	60
Section B	30
Booklet K (excludes MCQ Qns)	10
Total	100

Section B (30 marks)

For questions 31 to 42, write your answers in the spaces provided.

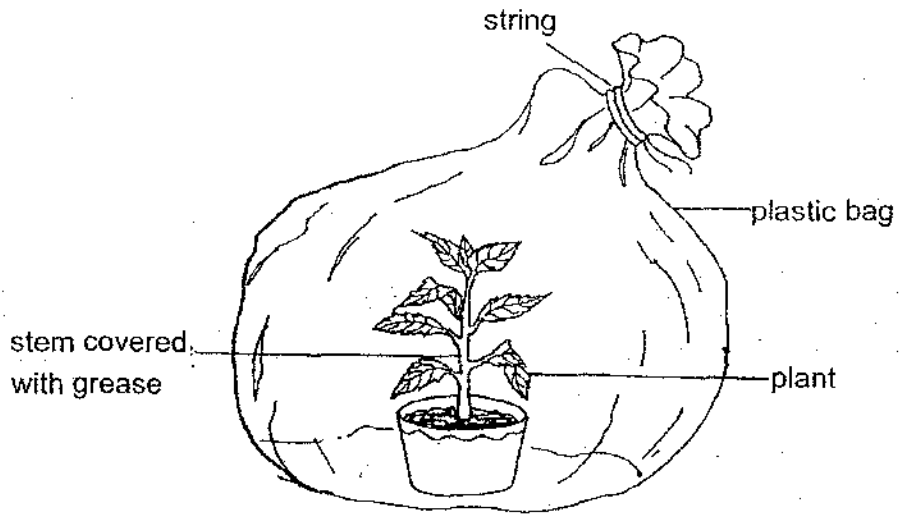
31. The diagram below shows a container.



(a) Draw the water level to show the maximum amount of water the container can hold. (1 m)

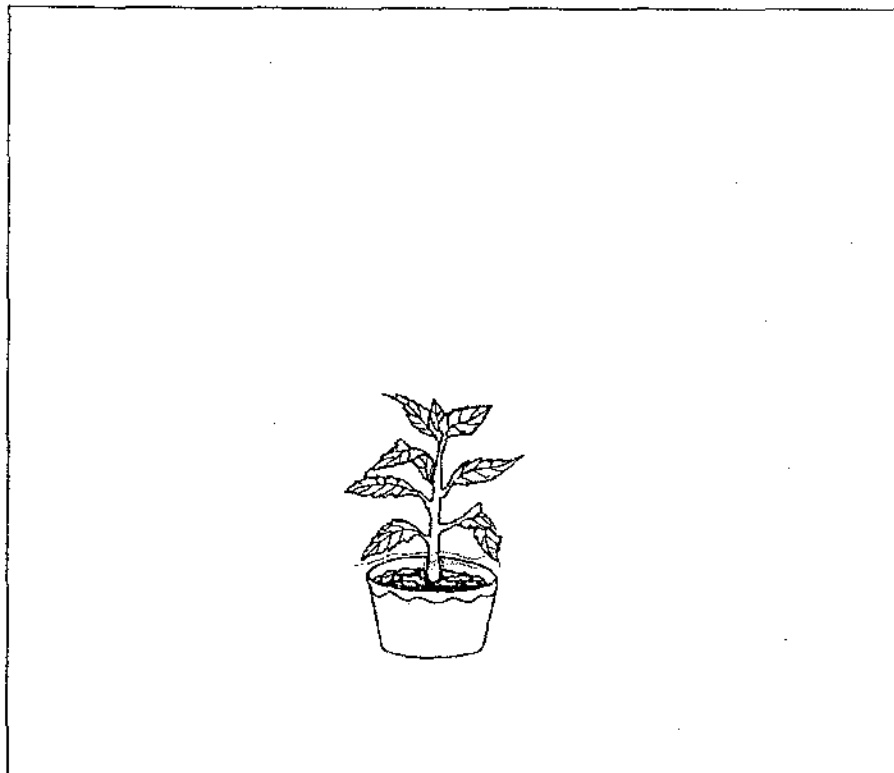
(b) Explain your answer in (a). (1 m)

32. Mark wanted to show that the leaves of a plant give out water. He covered the stem of the plant with grease and placed the pot of plant into a plastic bag as shown.



- (a) Explain why the set-up was wrong. (1 m)

- (b) Draw in the box below what he should have done with the plastic bag and the string provided. Label the plastic bag and string. (1 m)



33. Kai Xin knew three ways of folding paper plane. He wanted to find out the best way to fold the paper plane.
Describe the second and last step to complete the steps Kai Xin would have to take for his experiment to be fair. (2 m)

Step 1 : Use three pieces of identical paper to fold the paper planes in different ways.

Step 2 : _____

Step 3 : Record and measure the distance travelled by each plane.

Step 4 : Repeat steps 2 and 3 twice, and compute the average distance travelled by each plane.

Step 5 : _____

34. Below shows the key for identifying some animals.

<u>A key to some animals:</u>			
1.	(a)	No legs	Go to 2
	(b)	Three pairs of legs	Go to 5
2.	(a)	Soft body with large foot	Go to 3
	(b)	Soft long narrow body	Go to 4
3.	(a)	Shell	snail
	(b)	No shell	slug
4.	(a)	Body not divided	roundworm
	(b)	Body divided by rings	earthworm
5.	(a)	Wings	Go to 6
	(b)	No wings	Go to 11
6.	(a)	Two pairs of wings	Go to 7
	(b)	One pair of wings	Go to 10
7.	(a)	Scaly wings	Go to 8
	(b)	Transparent wings	Go to 9
8.	(a)	Antennae feather-like	moth
	(b)	Antennae have club-shaped ends	butterfly
9.	(a)	Both pairs of wings same size	damselfly
	(b)	Hind wings smaller than front wings	mayfly
10.	(a)	Sucking mouth parts	mosquito
	(b)	No sucking mouth parts	cane fly

(a) Ray was given an animal to identify. It had four clear wings and three pairs of legs. The front wings were much larger than the hind wings.

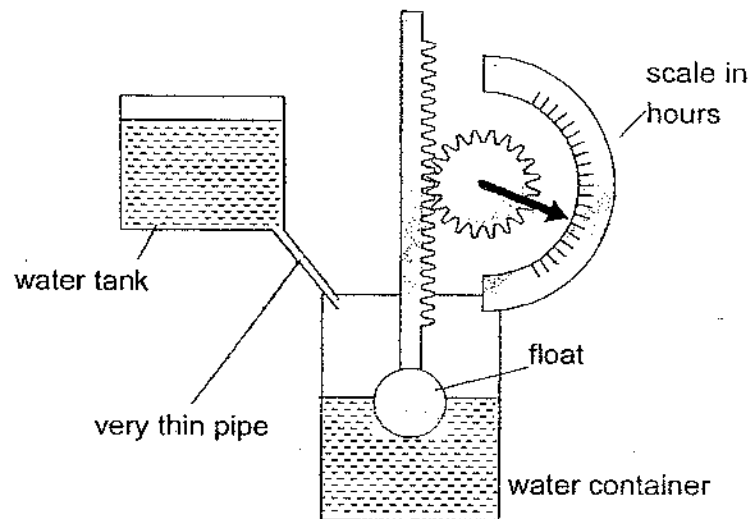
Based on the key, what was the animal? (1 m)

(b) Based on the key, which characteristic would be the most useful in distinguishing between a cane fly and a moth?

(1 m)

(c) Based on the key, state the three characteristics of a roundworm. (1 m)

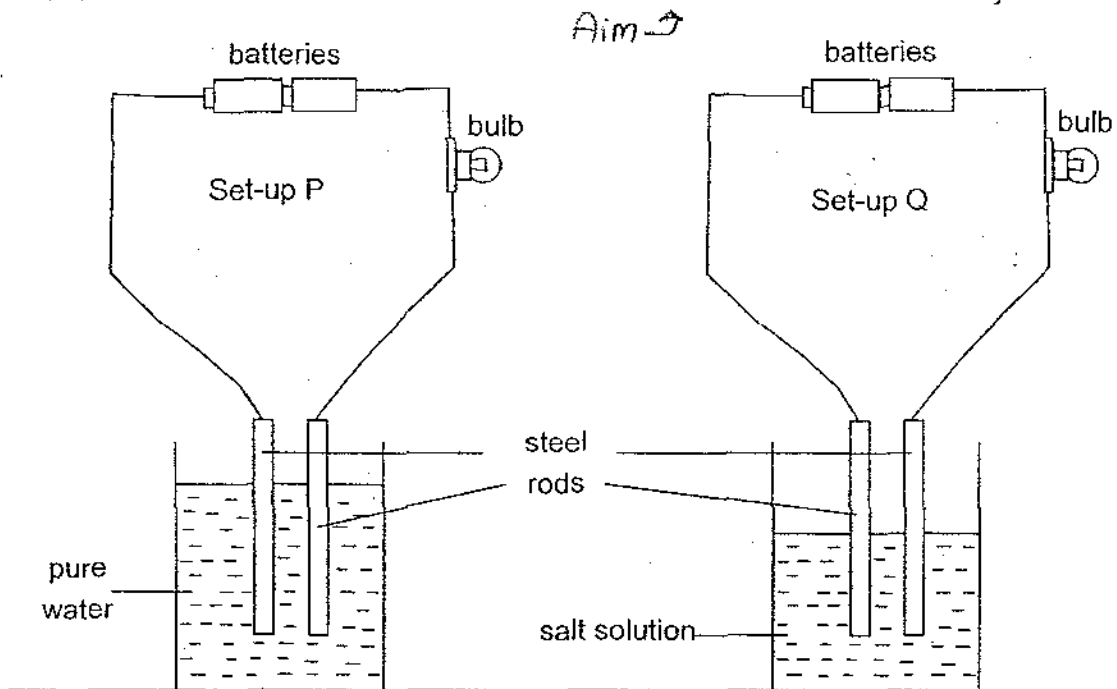
35. The diagram shows an ancient water clock.



(a) Does the hand on the clock move clockwise or anticlockwise as water flows from the water tank to the water container? (1 m)

(b) Name the simple machine used in the ancient water clock. (1 m)

36. Pure water is a non-conductor of electricity. Hui Hui sets up an experiment as shown below to find out whether salt solution is able to conduct electricity.



- (a) Is the experiment a fair one? Give a reason. (1m)

- (b) Which of the set-ups above is a control? How does it act as a control? (1m)

- (c) Using the set-ups, how does Hui Hui know whether salt solution conducts electricity? (1m)

37. Kian Hua said that the moon changes its shape because the amount of light shining on it changes. Give two reasons why his statement was wrong. (2 m)

Reason 1: _____

Reason 2: _____

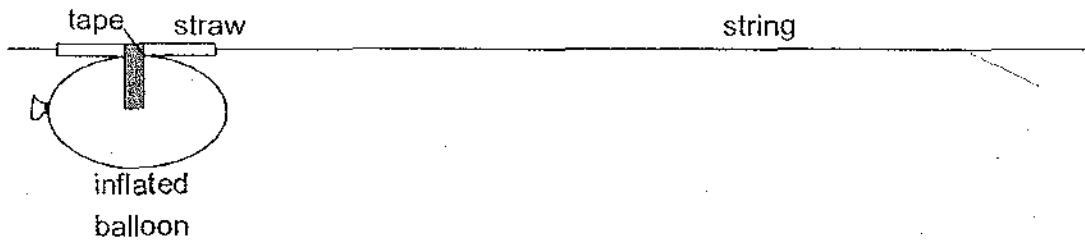
38. The table below shows the number of animals living in a pond community.

Organisms	Number of Organisms
frog	7
mosquito	14
water snail	8
dragonfly	10
wiggler	8
tadpole	8
toad	3
dragonfly nymph	11

- (a) How many populations of organisms are there? (1 m)

- (b) Which population has the largest number? What is the size of that population? (1 m)

39. Mei Tian set up a game using a balloon, a string, a tape and a straw.

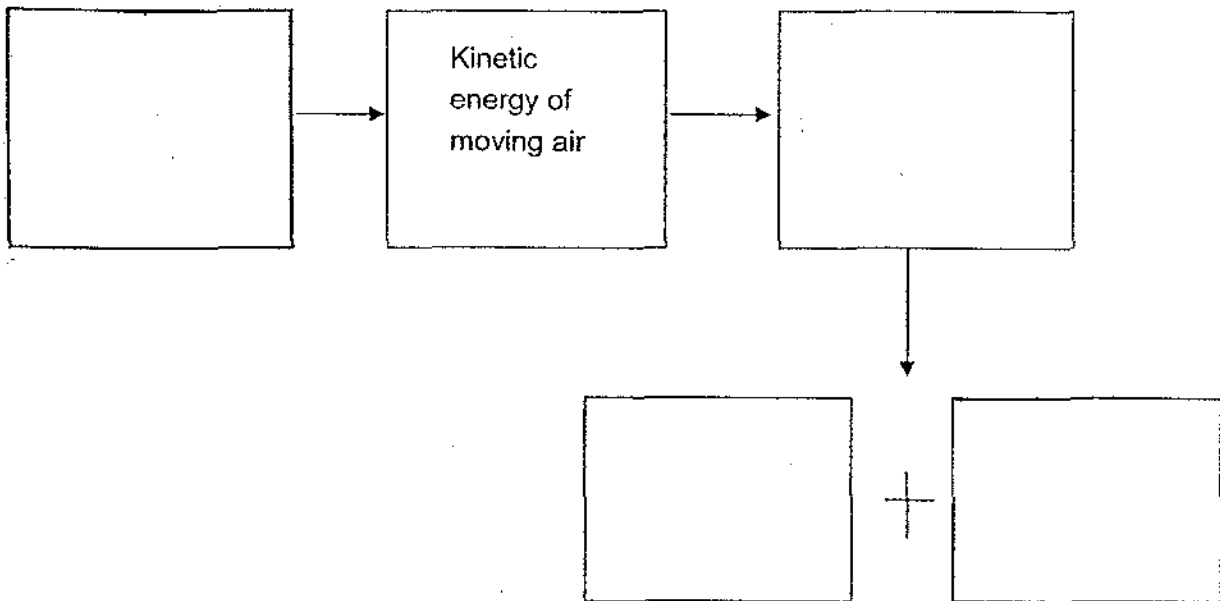


He inflated a balloon and taped it to a straw. He released the balloon. The balloon moved along the string as the straw glided through.

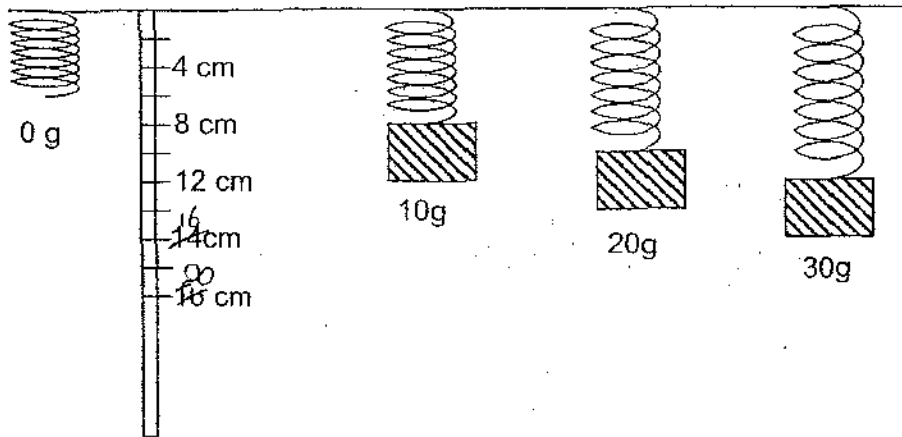
(a) What was the source of energy that caused the balloon to move? (1 m)

(b) State the conversion of energy that took place when he released his hand. (2 m)

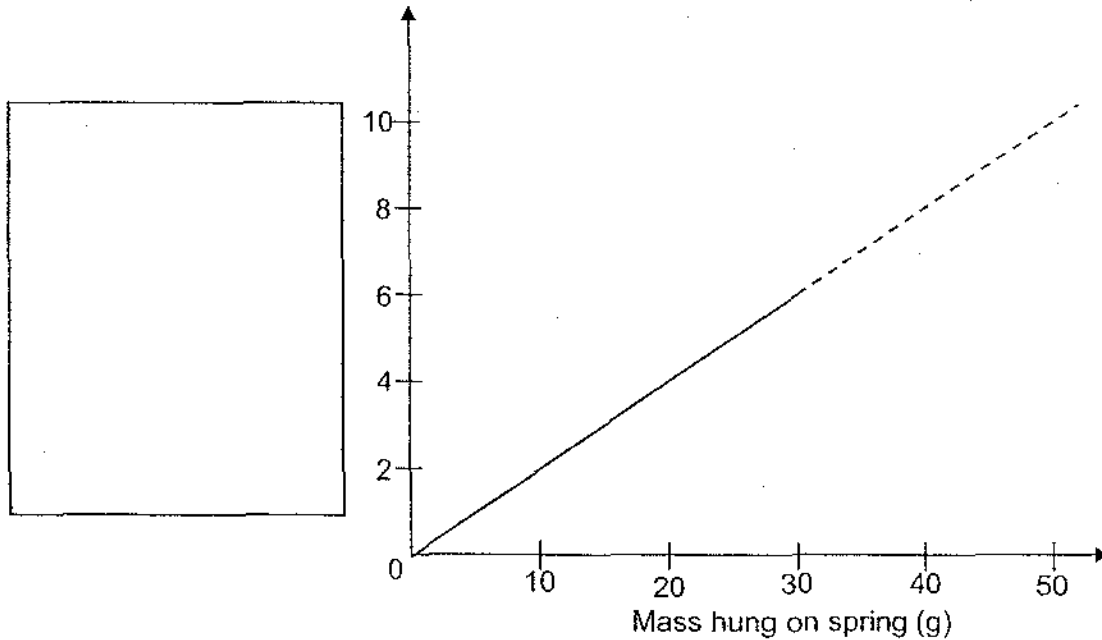
(2 m)



40. The diagram below shows the different extensions of a spring when different weights were hung on it.



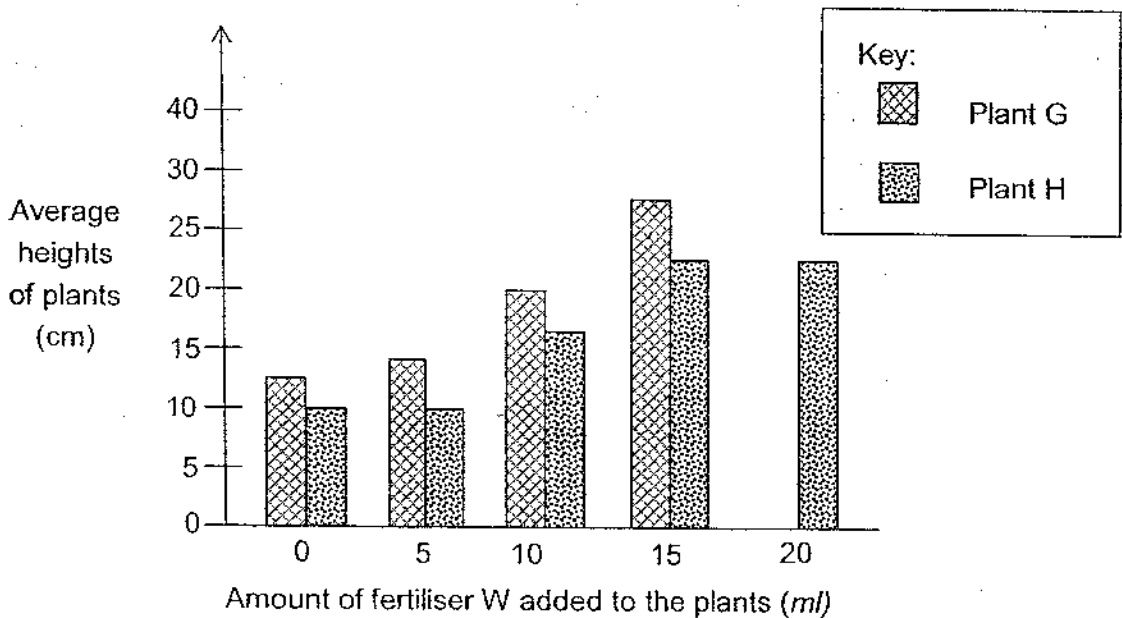
(a) A graph was plotted below based on the above results.
Write in the box provided the label for the vertical axis for the graph. (1 m)



(b) What is the length of the spring when an object of 45 g is hung on it? (1 m)

41. Fertiliser W is being tested on two types of plants, G and H. The plants are grown under the same conditions but with different amounts of fertiliser W added. The same amount of fertiliser W is added to ten plants and their average heights after 14 days are calculated.

The graph below shows the average heights of plant G and H after 14 days.

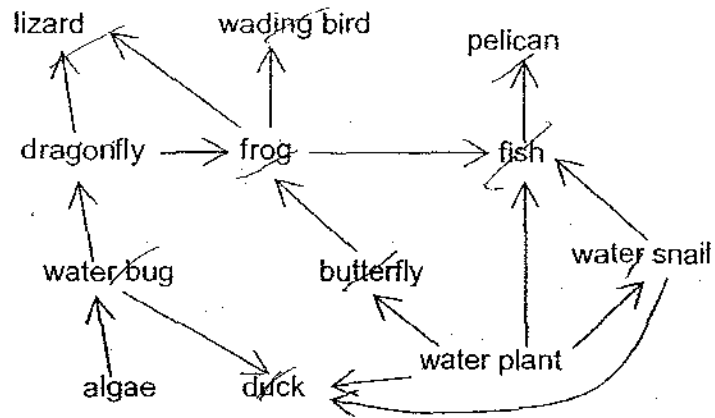


(a) Based on the graph, describe clearly how the fertiliser W affects the growth of plant G. (2 m)

(b) Explain why there is a need for growing the plants without any fertilisers. (1 m)

(c) Why is there a need to use ten plants to get the average heights? (1 m)

42. The diagram shows a food web.



(a) Name the food producers in the food web. (1 m)

(b) Using the given food web, draw a classification table based on the diet of the food consumers. (2 m)

For Questions 43 to 46, please refer to Booklet K.

End of Section A B

ANSWER SHEET

EXAM PAPER 2009

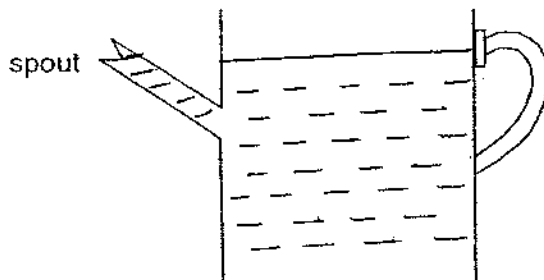
**SCHOOL : PEI CHUN PRIMARY
SUBJECT : PRIMARY 6 SCIENCE**

TERM : SA1

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

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	26 to 30
1	2	2	4	3	3	4	3	No ques

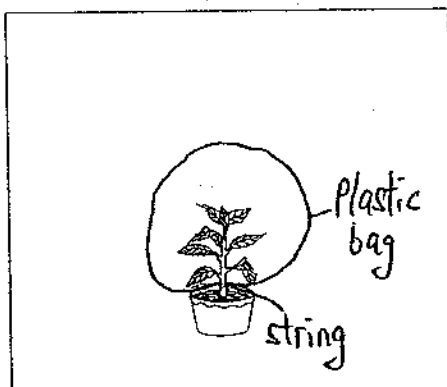
31)a)



b)The spout of the container is lower than the brim of the container. Therefore, the water level cannot be higher than the spout.

32)a)The water droplets condensing inside the plastic bag could have come from the water in the soil.

b)



33) Step 2: Launch all three paper aeroplanes into the air from the same position and using the same strength at the same time.

Step 5: Compare the average distance travelled by each plane. The plane that travelled the furthest distance has been folded in the best way.

34)a) Mayfly.

b) The number of wings.

c) It has no legs, a soft long narrow body and its body is not divided.

35)a) Clockwise.

b) Gears.

36)a) Yes. The amount of water or salt solution does not affect whether water or salt solution conduct electricity.

b) It confirms that salt solution conducts electricity.

c) The bulb in set-up Q would light up.

37) 1) The different phases of the moon are caused by the revolution of the moon around the earth.

2) The moon is always half lit by the sun.

38)a) 5.

b) Mosquito. The size of their population is 22.

39)a) The compressed air in the balloon.

b) Potential energy of the compressed air in the inflated balloon → Kinetic energy of moving air → Kinetic energy of the moving balloon → Sound energy + Heat energy.

40)a) Extension of the spring (cm)

b) 15cm

41)a) As more fertiliser W is added, the average height of plant G increases. However, when too much fertiliser W is added, plant G died.

b) It acts as a control for comparing the height of the plants.

c) To obtain more accurate and reliable results.

42)a)Algae and water plant.

b)

Food Consumers

Herbivores

Water bug

Butterfly

Water snail

Carnivores

Dragonfly

Lizard

Frog

Wading bird

Pelican

Omnivores

Duck

Fish

43 to 46 No ques