

**Primary Six
Science
Semestral Assessment One**

Section A

For each question from 1 to 30, four options are given. One of them is correct. Make your choice (1, 2, 3 or 4) and write your answer in the boxes provided.

1. Droplets of water found on the leaves early in the morning is a result of _____.

- (1) condensation
- (2) freezing
- (3) melting
- (4) evaporation

2. Which of the following is not a cause of air pollution?

- (1) Smoke from factories
- (2) Smoking a cigarette
- (3) Exhaust fumes from cars
- (4) Spraying weedkillers on crops

3. Clothes will dry fastest on a _____ day.

- (1) cloudy
- (2) rainy
- (3) sunny
- (4) windy

4. Which of the following is not a result of global warming?

- (1) Greenhouse effect
- (2) Ice melting at the polar regions
- (3) Sea levels rising
- (4) Flooding

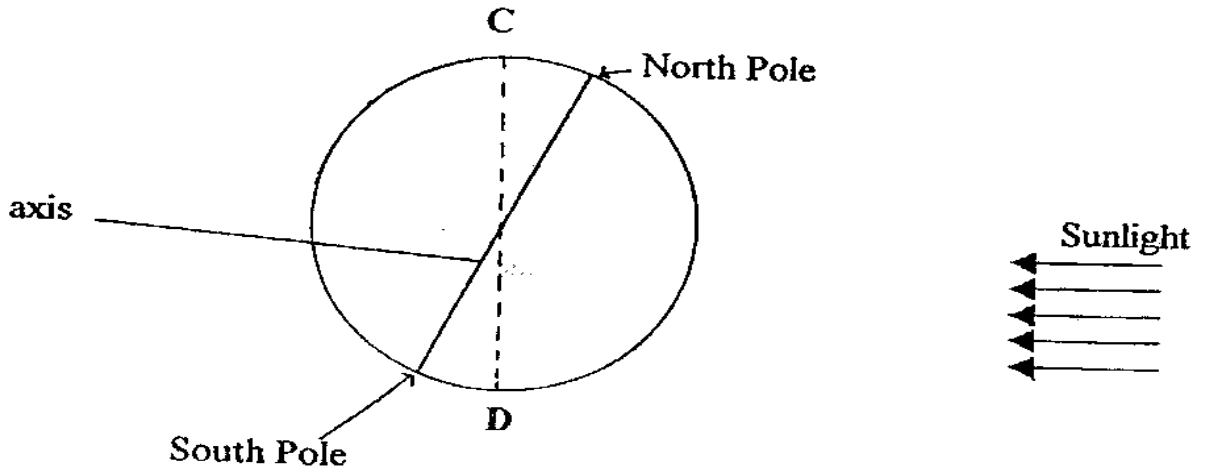
5. The table below shows the observations of 4 rivers.

	Colour	Smell	Presence of living organisms
River A	Yes	No	Abundance
River B	No	No	Some
River C	No	No	Abundance
River D	Yes	Yes	Some

A group of scouts wants to boil some water for drinking. Which of the rivers has water that is most probably safe for drinking?

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

6.



Study the diagram above.
Why is the line CD drawn?

- (1) To indicate where the Equator is.
- (2) To show the parts that experience day and night.
- (3) To show how far the North Pole is from the South Pole.
- (4) To divide the Earth into the Northern Hemisphere and Southern Hemisphere.

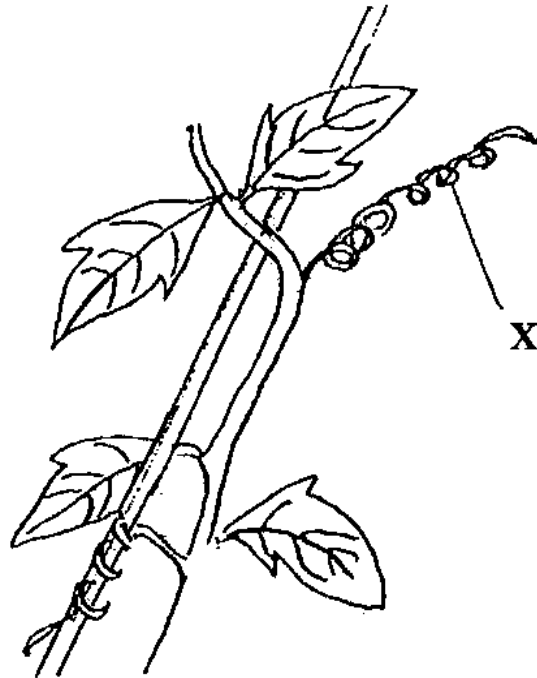
7. Study the classification diagram below carefully.

Plants		
A	B	C
Cattail Sedge	Hydrilla Cabomba	Water Hyacinth Water Lettuce

Which of the following plants can be put in Group B?

- (1) Mosquito Fern
- (2) Arrowhead
- (3) Elodea
- (4) Arrowhead

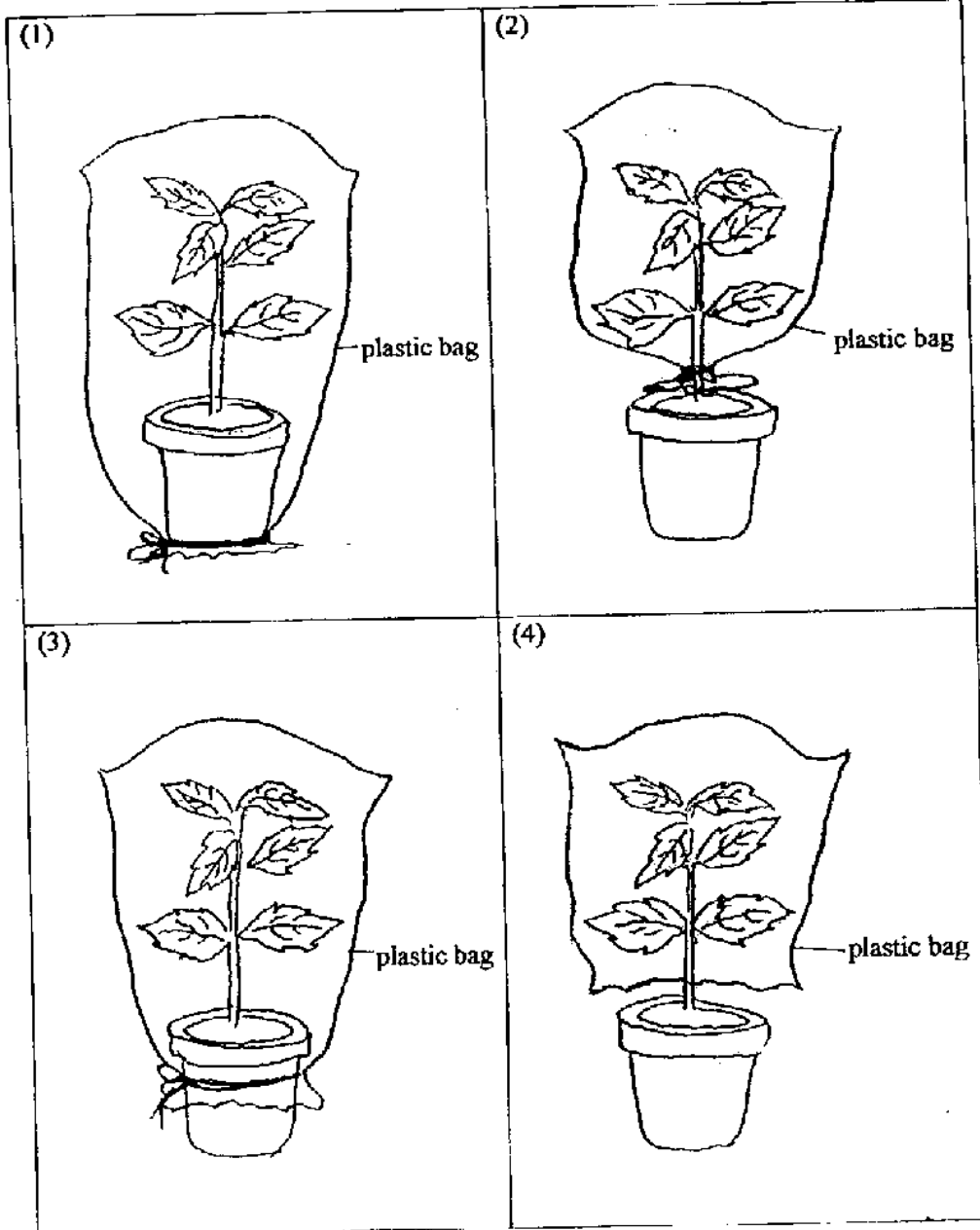
8.



How does the structure X help the above plant?

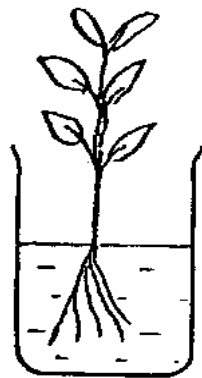
- (1) To absorb moisture in the air.
- (2) To make food.
- (3) To absorb nutrients from other plants.
- (4) To get enough sunlight.

9. Peter wants to find out if the leaves of a green plant give off water. Which of following setups shows the correct way the plastic bag is to be used for the experiment?



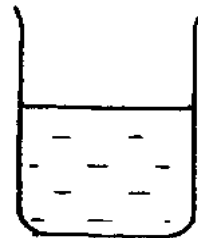
10. The diagram below shows two identical beakers A and B containing 250 ml of water each. A plant is put into beaker A only. Both beakers are placed at the same window sill for a day.

Beaker A



250 ml
of water

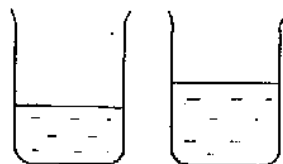
Beaker B



250 ml
of water

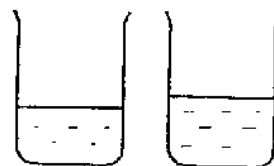
Which of the following diagrams shows the **most likely** amount of water left in the two beakers when the plant is removed from beaker A after a day?

(1)



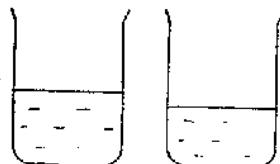
200 ml
of water 250 ml
of water

(2)



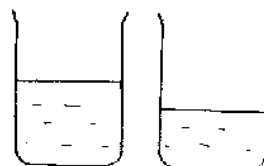
200 ml
of water 230 ml
of water

(3)

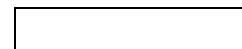


230 ml
of water 200 ml
of water

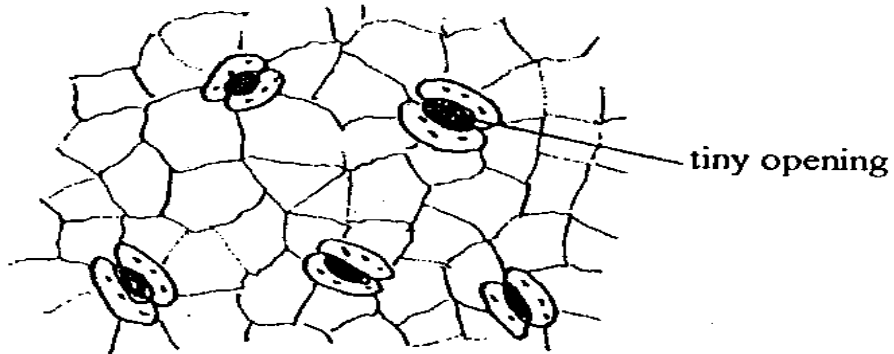
(4)



250 ml
of water 200 ml
of water



11. The diagram below shows tiny openings found on the underside of a leaf as seen from a microscope.

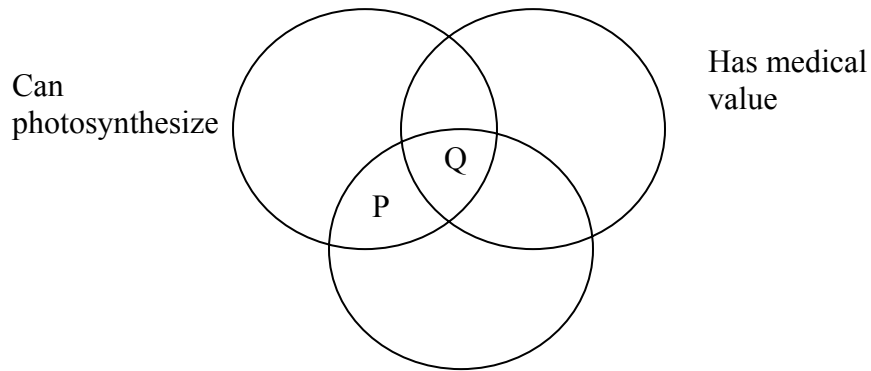


Which of the following is/are the function(s) of these tiny openings found in a leaf?

- A: For exchange of gases with the surroundings.
- B: To trap sunlight.
- C: To enable excess water to escape.

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

12. Study the Venn Diagram below carefully.



Which of the following plants are most likely to be P and Q?

	P	Q
(1)	Papaya	Tapioca
(2)	Ixora	Cucumber
(3)	Allamanda	Poppy
(4)	Rose	Sweet Potato

13. Four children , Wince, Zen, Ben and Willy from Science Club were asked to carry out an experiment to test for the presence of starch in a sweet potato. They cut the sweet potato into 2 pieces and then put a few drops of iodine on each piece. They realized that the iodine turned dark blue almost immediately for each piece of sweet potato. Each child then attempted to provide an explanation as to why they concluded that starch was present in the sweet potato.

Wince: Starch is made in the green leaves of the sweet potato plant and then stored in its roots.

Zen: Sugar found in the roots changes into starch in the presence of sunlight.

Ben: Sugar is made in the leaves and then transported to the roots and then stored there as starch.

Willy: Starch is made as water interacted with chlorophyll in the presence of sunlight and then stored in the roots.

Among the four children, who gave the best explanation as to why the iodine turned dark blue?

- (1) Wince
- (2) Zen
- (3) Ben
- (4) Willy

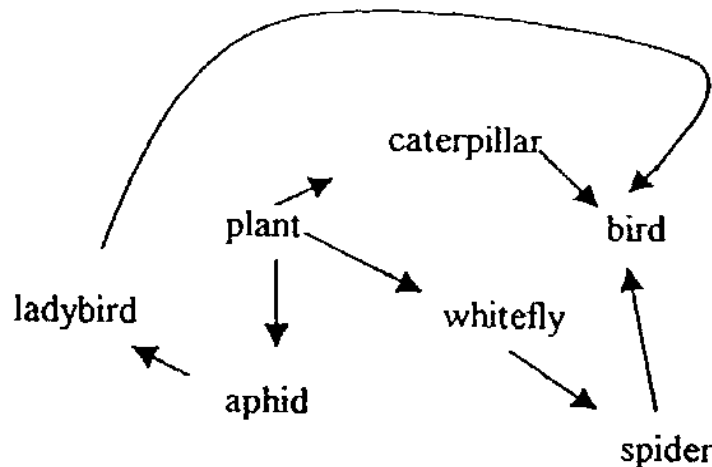
14. Which one of the following statements is true?

- (1) The mosquito larva breathes through its gill chamber.
- (2) The turtle can store oxygen in its muscles and blood.
- (3) The polar bear has a layer of fat under its skin to keep it warm.
- (4) A seahorse has a streamlined body and is a fast swimmer.

15. Which one of the following animals has oar-like legs to help it move in water?

- (1) Dragonfly nymph
- (2) Crab
- (3) Water boatman
- (4) Mudskipper

16. Study the food web below.

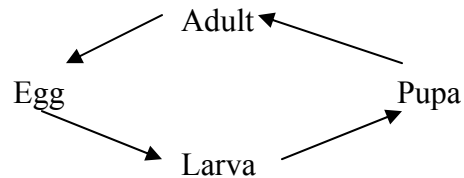


Which of the organisms will increase in number if there is a decrease in the bird population?

- (A) Spider
- (B) Whitefly
- (C) Caterpillar
- (D) Ladybird

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

17.



Which of the following organisms do not have the type of life cycle shown above?

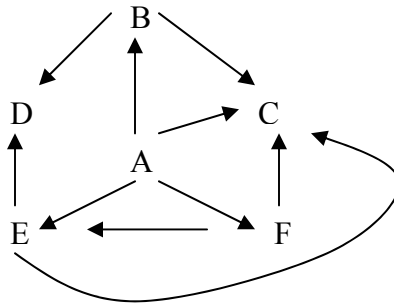
- (A) Butterfly
- (B) Cockroach
- (C) Mosquito
- (D) Frog

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

18. Which one of the following is not an adaptation for flight in birds?

- (1) Feathers
- (2) Hollow bones
- (3) Small in size
- (4) Well-developed wings

19. Study the food web below.
A, B, C, D, E and F are organisms living in a certain community.



How many omnivores are there?

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

20. The events listed (not in order of sequence) took place when disease killed most of the lions in a jungle.

- A: The zebra population quickly increased.
B: Overgrazing resulted in insufficient food for the zebras.
C: The zebra population slowly decreased.
D: Too large a zebra population resulted in overgrazing.

The correct sequence should be:

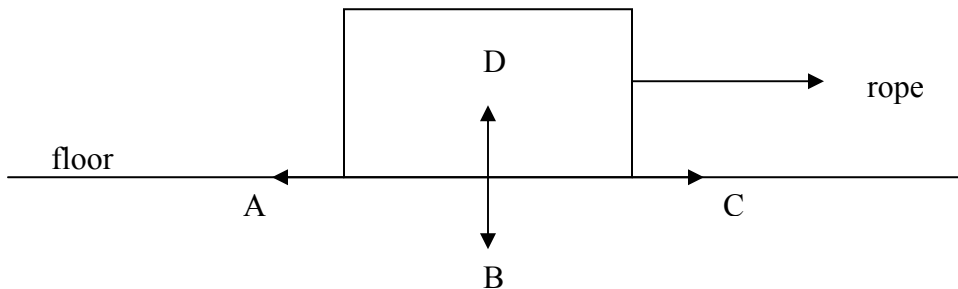
	1 st	2 nd	3 rd	4 th
(1)	D	A	B	C
(2)	A	D	B	C
(3)	C	B	A	D
(4)	B	C	D	A

21. The animals listed in the table below have body coverings to protect them from extreme temperatures or from predators, or both. Which of the animals is classified wrongly?

Animals	Protect from extreme temperature	Protect from predators	Both
Polar bear	✓		
Snow shoe rabbit			✓
Turtle			✓
Porcupine fish		✓	

- (1) Polar bear
 (2) Snow shoe rabbit
 (3) Turtle
 (4) Porcupine fish

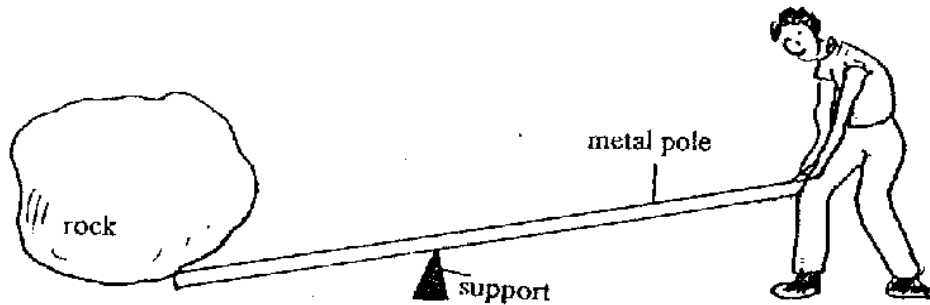
22. The wooden box below is tied to a rope and is moved along the floor by pulling the rope.



Which of the four arrows A, B, C or D shows correctly the direction of the friction when the box is moving?

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

23.



The picture above shows a man using a metal pole to move a heavy rock. What must he do if he wants to apply less effort to move the rock?

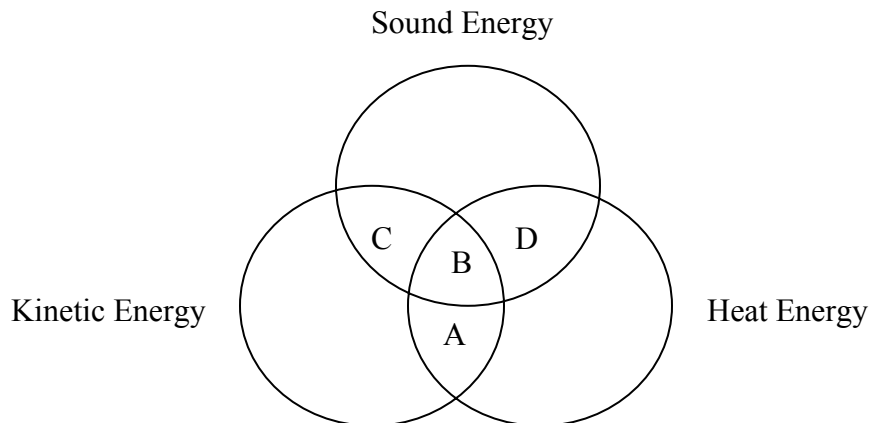
- (1) Apply the force nearer to the support.
- (2) Apply the force between the support and the rock.
- (3) Move the support nearer to the rock.
- (4) Move the support nearer to him.

24. Which of the following statements are correct?

- A: Weight is a form of energy.
- B: Fuels possess kinetic energy.
- C: Energy is required to exert a force.
- D: The most important source of energy in our environment is the Sun.

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

25. Study the venn diagram below carefully.



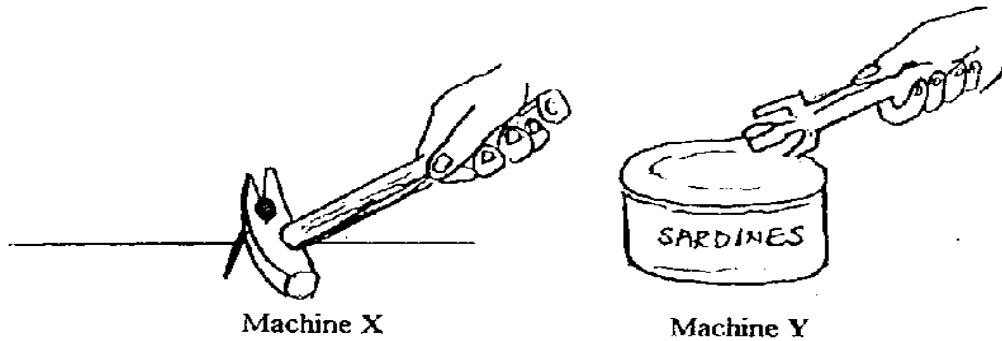
When a construction worker used a pneumatic drill to bore holes in the ground, a few types of energy are produced. Which letter A, B, C or D in the above venn diagram correctly represents the types of energy produced by the drill?

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

26. A screw is an example of a/an _____ and a screwdriver is an example of a/an _____ when a screwdriver is used to tighten a screw.

- (1) wheel and axle inclined plane
- (2) wheel and axle lever
- (3) lever wheel and axle
- (4) inclined plane wheel and axle

27.



Which one of the following statements about Machine X and Machine Y are correct?

- A: Both machines are levers.
- B: A small effort is needed to overcome a heavy load.
- C: Both machines have the fulcrum between the load and the effort.
- D: To make work easier, the force should be applied near the end of the handles.

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

28. Sue uses a broom to sweep the floor of her living room as shown below.

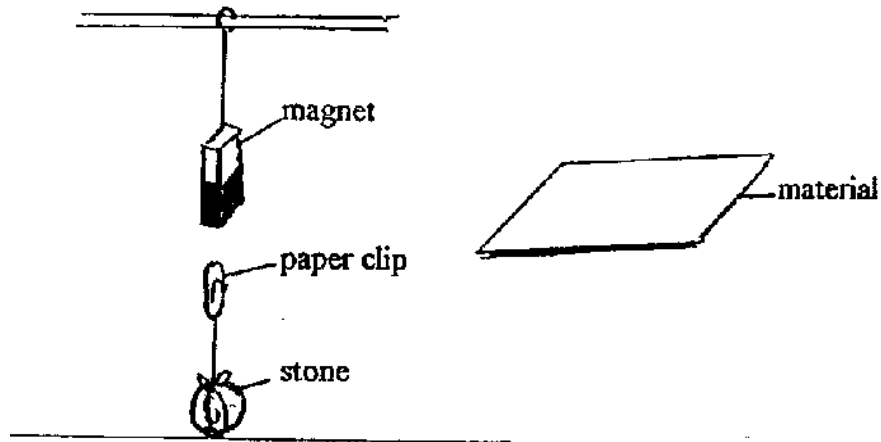


Her grandmother tells her that the broom is a type of simple machine. Which of the following is the correct reason for using the broom to sweep the floor?

- A: It reduces the amount of effort used.
- B: It enables the load to move a longer distance than the effort.
- C: It changes the direction of the force applied.
- D: It requires more effort to overcome a smaller load.

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

29. Jerry wants to find out whether the pull of a magnet is effective when it is blocked by certain materials. He sets up an experiment as shown below by placing different materials between the magnet and a safety pin which is attached to a heavy stone.



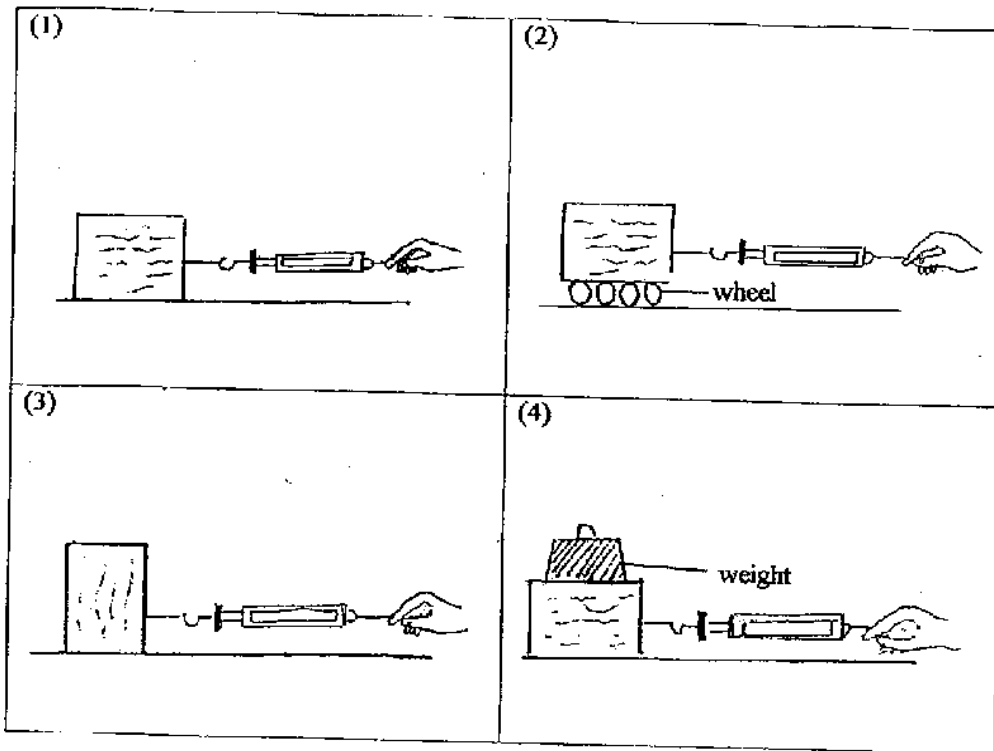
Below is a description of the different set-ups.

Set-up	Type of material used	Thickness of material (mm)	Distance between magnet and pin (cm)
A	Plastic	2.5	2
B	Glass	2.0	2
C	Copper	1.5	2
D	Iron	1.5	2

Which two set-ups should be used to make the experiment a fair one?

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

30. Study the 4 diagrams below carefully. The same block of wood is pulled across the same table in the manner shown in each diagram. Which of the following set-ups will produce **the greatest frictional force**?



Section B

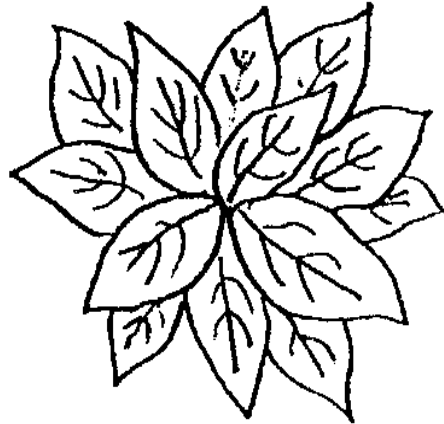
Write your answers for questions 31 to 46 in the spaces provided.

31. Fill in the blanks below with a correct word.

(a) When we eat the string beans, that part of the plant we eat is the _____. [1 mark]

(b) As a green plant makes food, _____ is transported out of the leaves through tubes and stored in other parts of the plant as _____. [2 marks]

32.



The diagram above shows the arrangement of the leaves of a plant when viewed from above.

Give **one** reason why the leaves spread out and grow in this way.

33. Study the following classification table below.

Group A	Group B	Group C	Group D
Balsam	Moss	Ginger	Rose
A	B	C	D

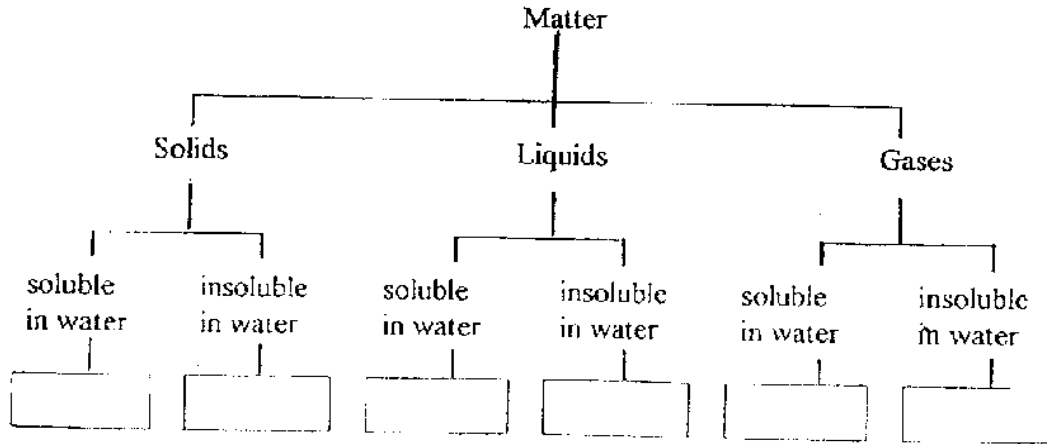
The plants are grouped by the way they reproduce.
The letters A, B, C and D represent four different types of plants.

Tick (✓) the following statements appropriately.

		True	False	Impossible to Tell
(a)	Plant A produces flowers			
(b)	Plant B is poisonous			
(c)	Plant C is grown from a seed			
(d)	Plant D is a food producer			

[4 marks]

34. In the classification diagram shown below, write the words, 'oxygen' and 'cooking oil' in the 2 correct boxes.



35. List 3 processes whereby carbon dioxide is added to the atmosphere.

(a) _____

(b) _____

(c) _____

[3 marks]

36. Deforestation is the cutting down of trees on a large scale. Explain how this will increase the 'greenhouse effect'.

[2 marks]

37. Study the table below carefully.

Animals	
P	Q
water stick insect	prawn
rabbit	tadpole
fox	mosquito lava

The above animals are classified into Group P and Group Q.
Write a suitable heading for P and Q.

P: _____

Q: _____

38. Sumei has a toy doll as shown below.



(a) How can she make the toy doll move further?

[1 mark]

(b) State the source of energy for her toy doll.

[1 mark]

39. Animals have special characteristics that enable them to cope with the living conditions in their natural habitat. Write down two adaptations of the penguins that allow them to move swiftly in water.

Adaptation 1: _____

Adaptation 2: _____

[2 marks]

40. Study the diagram below and answer the following questions.



An earthworm

- (a) How does the earthworm breathe?

[1 mark]

- (b) How can earthworms be useful to farmers? List two of them.

(i) _____

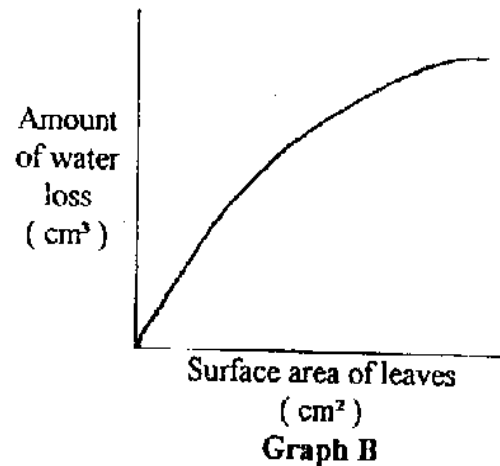
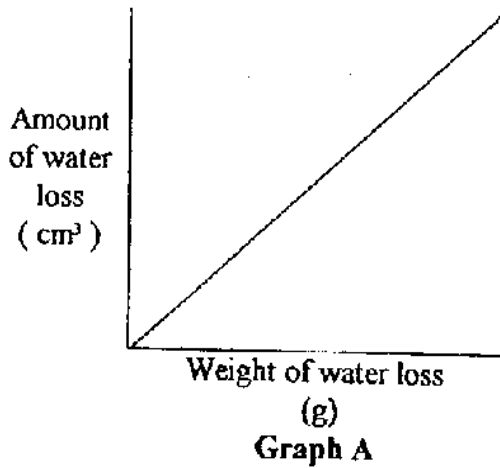
(ii) _____

[2 marks]

(c) The colour of its body is similar to the colour of its surroundings. Explain how this helps the earthworm survive in its natural habitat.

[1 mark]

41. Study the two graph below carefully.
Graph A shows how the amount of water loss is related to the weight of water loss of leaves. Graph B shows how the amount of water loss is related to the surface area of leaves.



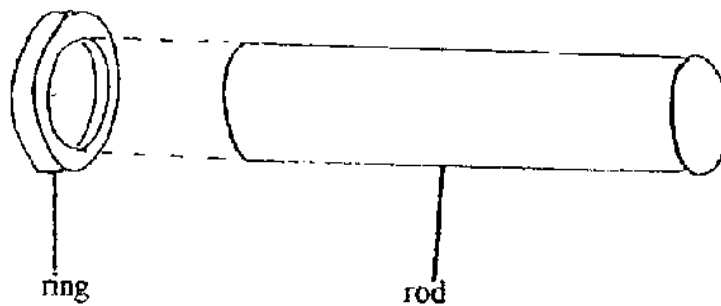
(a) What pattern can you see between the surface area of the leaves and weight of water loss?

[1 mark]

(b) Explain how a cactus plant is able to minimize water loss and survive in very dry places.

[1 mark]

42. The diagram below shows a metal ring and a metal rod. The diameter of the rod is about the same as the inner diameter of the ring. Peter tries to push the rod into the ring but he is unable to do so.



- (a) What can be done to enable the rod to be pushed into the ring?

[1 mark]

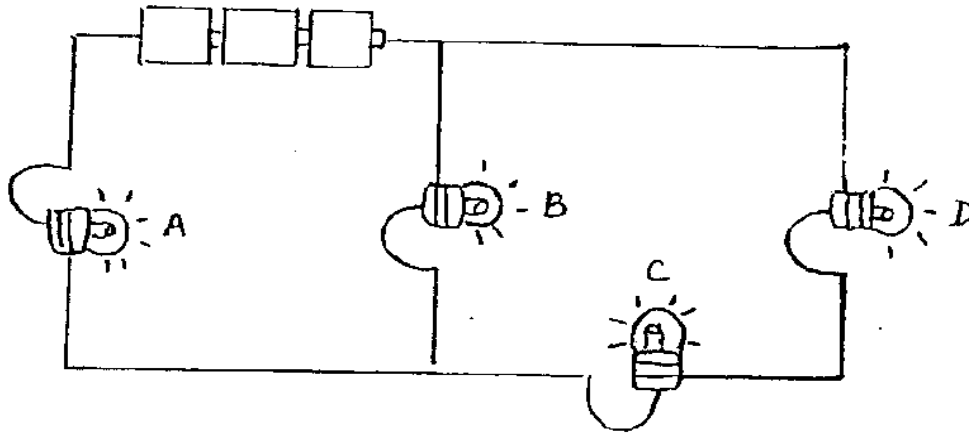
- (b) Give a reason for your answer in (a).

[1 mark]

43. The diagram below shows four lighted bulbs A, B, C and D in a circuit. Henry wants to install a switch in the circuit so that only a particular bulb can be turned on or off with the other three bulbs remaining lighted.

(a) Make an **X** on the circuit to show where the switch should be connected.

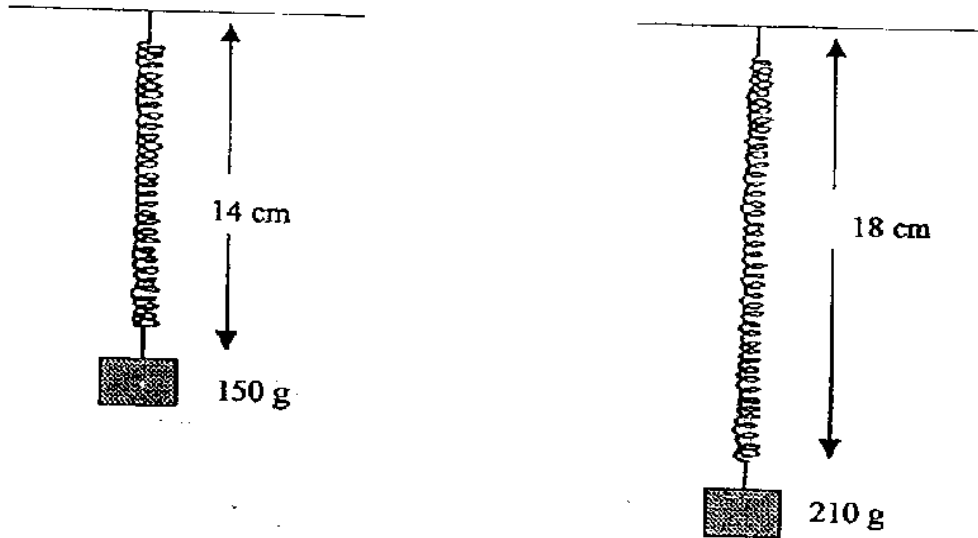
[1 mark]



(b) State which bulb (A, B, C or D) the switch controls.

[1 mark]

44. The diagram below shows the length of a uniform spring when two different weights are attached to it.



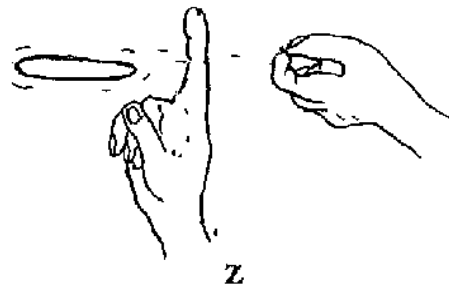
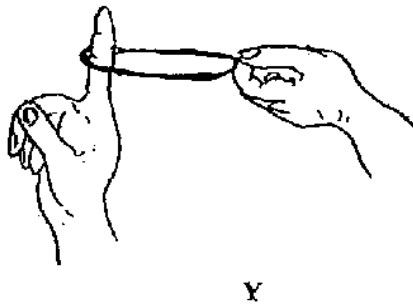
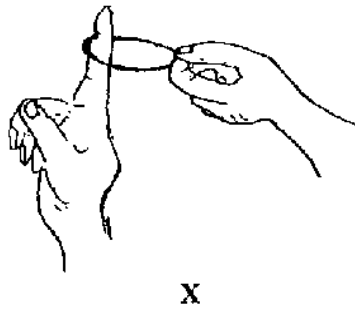
- (a) Based on the above diagrams, the **original length** of the spring is most likely to be _____ cm.

[1 mark]

- (b) If the spring extends by 5 cm, a weight measuring _____ g is most likely hung from the spring.

[1 mark]

45.



The diagrams X, Y and Z show a rubber band being shot.

(a) Fill in the following blanks to describe energy changes.

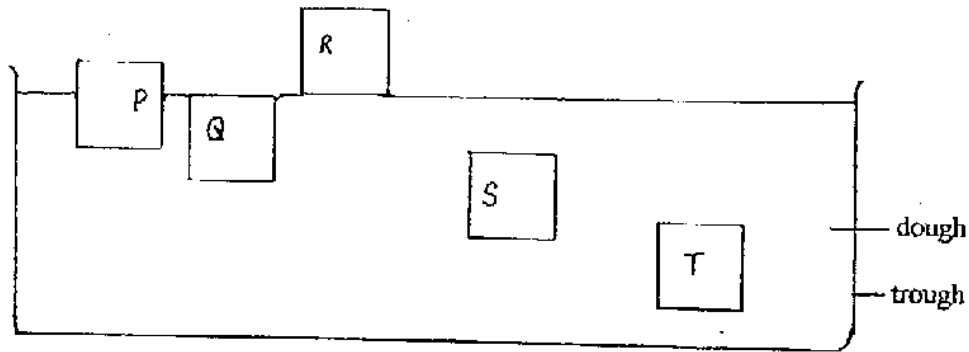
The energy kept by the stretched rubber band in Y is called _____ energy and this energy is transferred to it as _____ energy in Z.

[2 marks]

(b) The moving rubber band in Z will gradually slow down and drop to the ground. What causes the rubber band to slow down?

[1 mark]

46. Five objects, P, Q, A, S and T of the same shape and size are dropped from the same height on a trough containing a very large amount of evenly kneaded dough of flour. The diagram below shows the five positions of the five objects on the dough after they have landed on it.



- (a) Arrange the objects according to their weights in ascending order.

[1 mark]

- (b) What will happen to the five objects if they are dropped from a higher level?

[1 mark]

- (c) Explain your answer in (b).

[1 mark]