17

PEI HWA PRESBYTERIAN PRIMARY SCHOOL

SEMESTRAL ASSESSMENT 1

PRIMARY 6

SCIENCE

13th May 2016

(BOOKLET A)

Name:_____ ( )

Class: Primary 6 Resilience _____

Additional Material(s): Optical Answer Sheet (OAS)

Total time for Booklets A and B: 1 h 45 mins

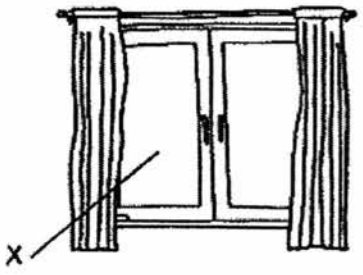
INSTRUCTIONS TO CANDIDATES

1. Write your Name, Class and Index No. at the spaces provided above.
2. DO NOT turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers on the Optical Answer Sheet (OAS) provided.

There are a total of 19 pages in this booklet, excluding the cover page.

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade the oval on the Optical Answer Sheet (OAS). (60 marks)

1 Aden stands in front of the window and is able to see his friend outside.



What is the property of the part labelled X that allows Aden to see his friend?

(1) It is strong.
(2) It breaks easily.
(3) It allows light to pass through.
(4) It allows water to pass through.

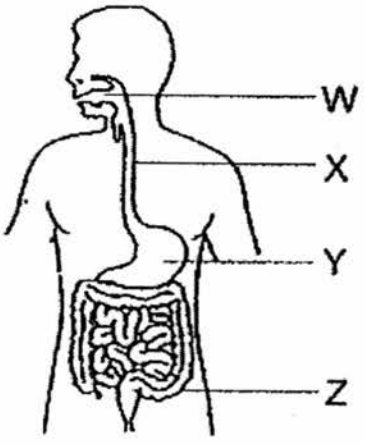
2 The table below shows the properties of some objects. A tick (✓) shows that the object has that property and a cross (x) shows that it does not have that property.

Object	Properties		
	Allows light to pass through	Breaks easily	Sinks in water
A	x	✓	✓
B	x	✓	x
C	✓	x	✓
D	x	x	x

Which of the following objects is likely to be made of ceramic?

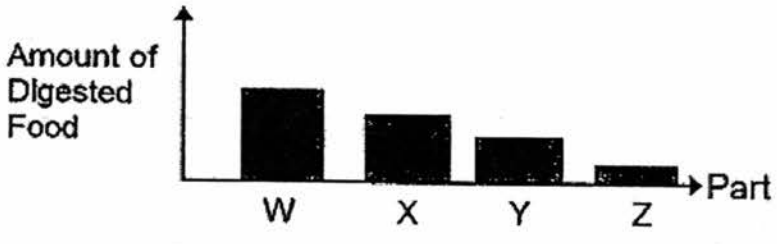
(1) A
(2) B
(3) C
(4) D

The diagram below shows the human digestive system with 4 parts labelled W, X, Y and Z.



Which one of the following graphs correctly shows the amount of digested food in each part when the human digestive system functions properly?

(1)



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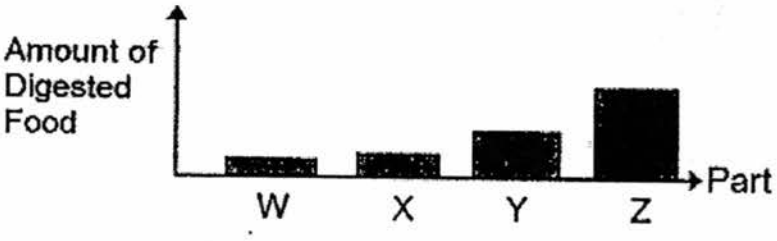
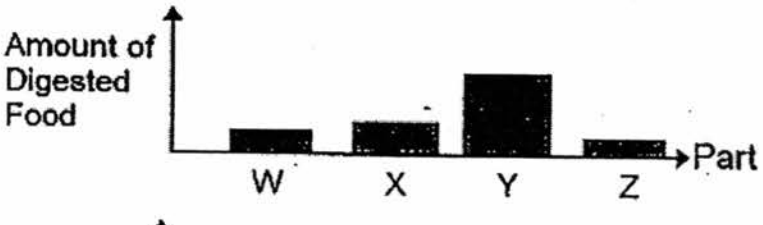
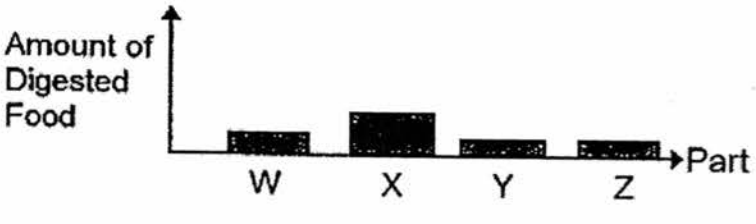


(3)



(4)



4 Diagram 1 below shows a measuring cylinder containing certain amount of water. Diagram 2 shows the same cylinder of water when Object P is placed into it.

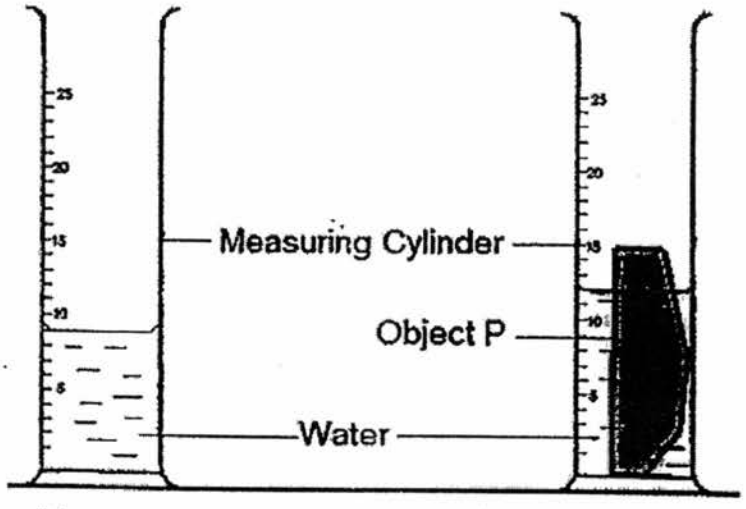
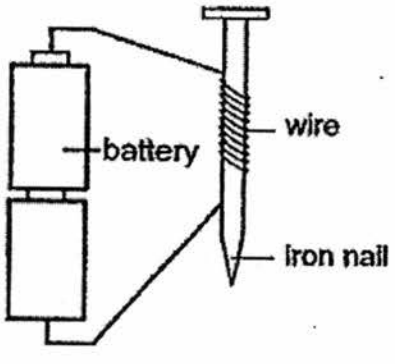


Diagram 1 Diagram 2

From the diagrams, the volume of the object is most likely _____.

(1) 3 cm^3
(2) between 3 cm^3 and 6 cm^3
(3) between 7 cm^3 and 15 cm^3
(4) 15 cm^3

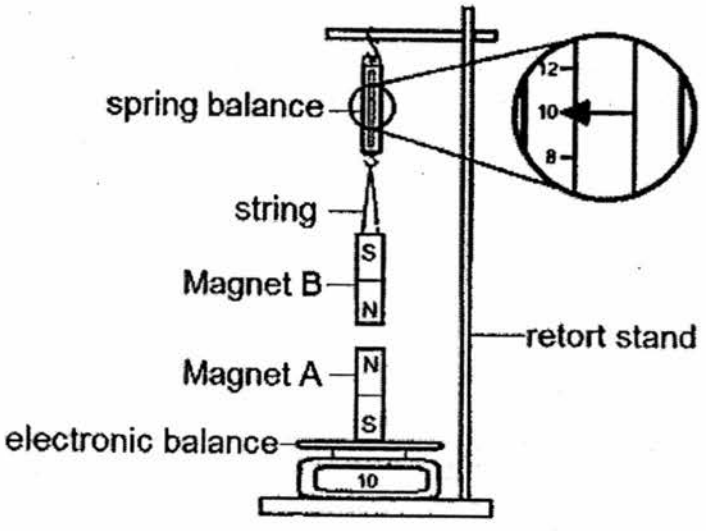
5 Brandon made an electromagnet. However, the electromagnet is unable to attract a steel paper clip as shown below.



Which of the following actions will enable the electromagnet to attract the paperclip?

(1) Heat the iron nail.
(2) Change the iron nail to a plastic nail.
(3) Change the steel paperclip to an aluminium paper clip.
(4) Increase the number of coils of wire round the iron nail.

6 Abby set up an experiment using two strong magnets of different masses as shown in the diagram below. Magnet A was placed on an electronic balance while Magnet B was suspended from a spring balance.



She recorded the readings of the spring balance and electronic balance in the table below:

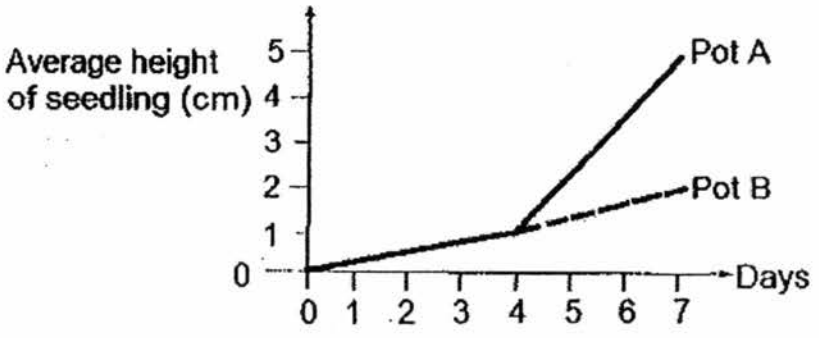
Reading on Spring balance (Units)	Reading on Electronic balance (Units)
10	10

Next, she replaced Magnet A with an aluminum bar of the same mass.

Which of the following about the readings on the electronic balance and spring balance is correct?

	Reading on Spring balance (Units)	Reading on Electronic balance (Units)
(1)	12	8
(2)	8	12
(3)	8	8
(4)	12	12

7 Ali had two similar pots of the same soil, labelled A and B. He placed 10 bean seeds in each pot. He placed Pot A in a dark cupboard and Pot B in a bright place. As the seeds germinated, Ali measured the height of the seedlings daily and presented the graph below.



Which of the following statement can be concluded from the graph?

(1) All the seeds germinated by Day 4.

(2) Light is necessary for the germination of seeds.

(3) Seedlings in the dark grow taller than seedlings in the light.

(4) The seedlings in Pot A have more leaves than those in Pot B.

8 Figures 1 and 2 show how gases are transported in the circulatory system of a fish and a human respectively.

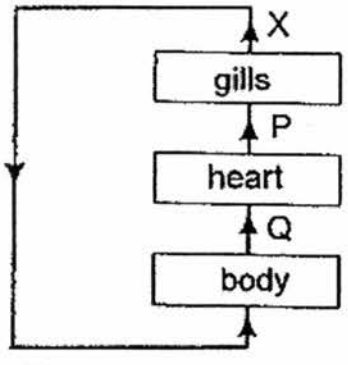


Figure 1 - Fish

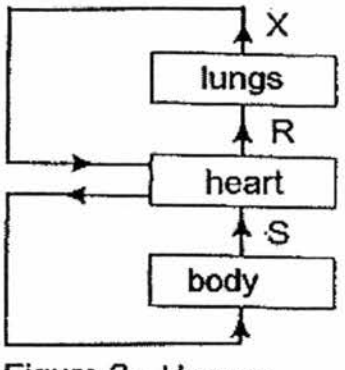
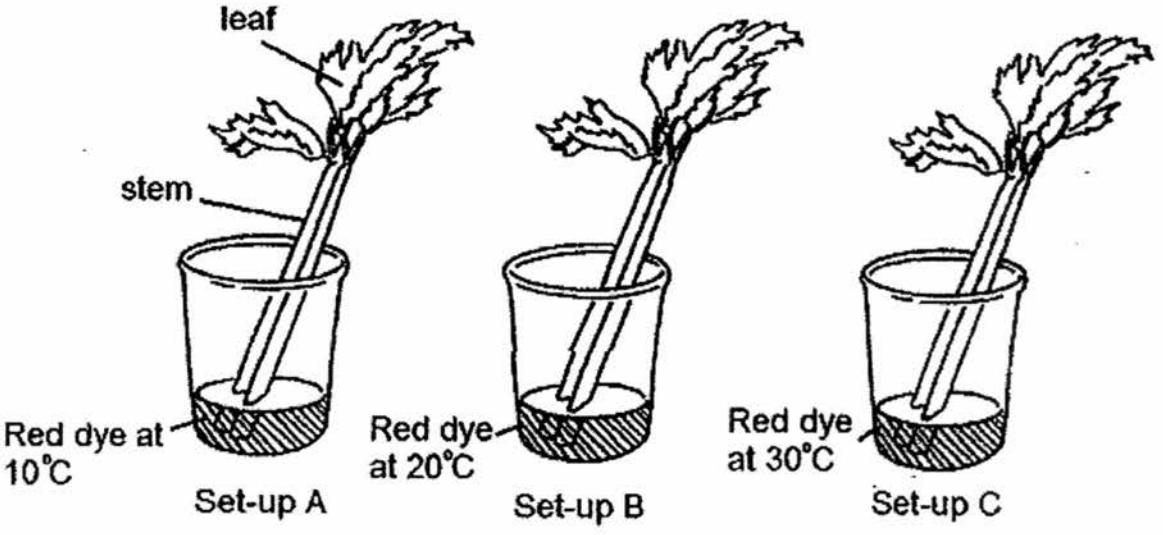


Figure 2 - Human

Which of the following correctly shows the amount of carbon dioxide in P, Q, R and S as compared to the amount of carbon dioxide at X?

	P	Q	R	S
(1)	Higher	Lower	Higher	Lower
(2)	Higher	Higher	Lower	Lower
(3)	Lower	Lower	Lower	Lower
(4)	Higher	Higher	Higher	Higher

9 Devi placed three similar-sized stalks of celery plant into identical cups containing red dye at different temperatures as shown below.



The temperature of the red dye was maintained throughout the experiment. Devi observed the leaves of the celery for 5 days and recorded her results in the table below:

Set-up	**A**	**B**	**C**
Temperature of red dye (°C)	10	20	30
Number of days for leaves to turn red	5	3	1.5

Based on the information given above, which one of the following statements is incorrect?

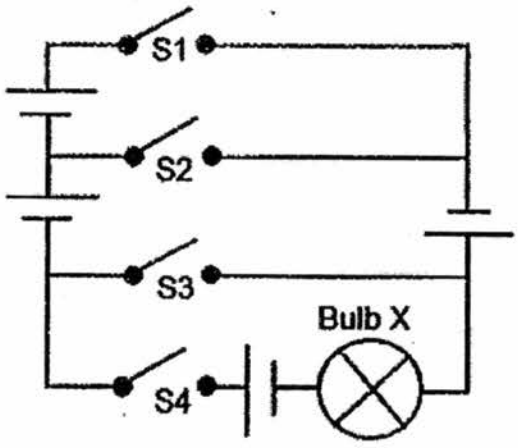
(1) The leaf of the celery plant contains water-carrying tubes.

(2) The stem of the celery plant contains water-carrying tubes.

(3) The lower the temperature of the red dye, the higher the speed that water is taken in by the celery plant.

(4) The higher the temperature of the red dye, the higher the speed that water is taken in by the celery plant.

10 The diagram below shows an electric circuit with identical switches and batteries.



Which of the following will cause Bulb X to light up the brightest?

	S1	S2	S3	S4
(1)	Close	Close	Open	Open
(2)	Close	Open	Close	Open
(3)	Open	Close	Open	Close
(4)	Open	Open	Close	Close

11 A boy kicks a ball upwards into the air. The ball reaches a maximum height and then falls downwards to the ground.

Which of the following statements about the moving ball is correct?

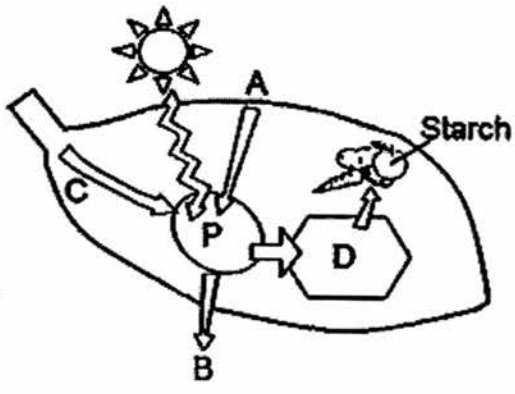
(1) No force acts on the ball at the maximum height.

(2) Gravity acts on the ball throughout the path of motion.

(3) The ball travels at a constant speed throughout the motion.

(4) Gravity acts on the ball only after it has attained its maximum height and falling downwards.

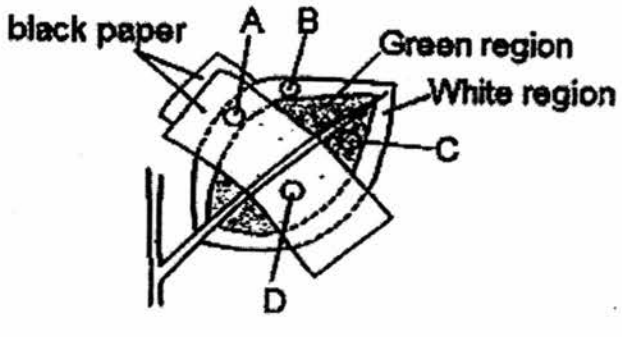
12 The diagram below shows a life process, P, carried out in a green leaf on a plant.



Which one of the following correctly represents A, B, C and D?

	A	B	C	D
(1)	Oxygen	Water	Carbon dioxide	Sugar
(2)	Carbon dioxide	Water	Sugar	Oxygen
(3)	Carbon dioxide	Oxygen	Water	Sugar
(4)	Sugar	Oxygen	Water	Carbon dioxide

13 A plant with leaves of green and white regions was left in a dark cupboard for 48 hours. The top and underside of one leaf was each partially covered by a strip of black paper, as shown in the diagram below.



The plant was then left under the sun. After 48 hours, the leaf was plucked off and both strips of black paper were removed. The leaf was then tested for the presence of starch. In which of the areas labelled A, B, C and D is starch found?

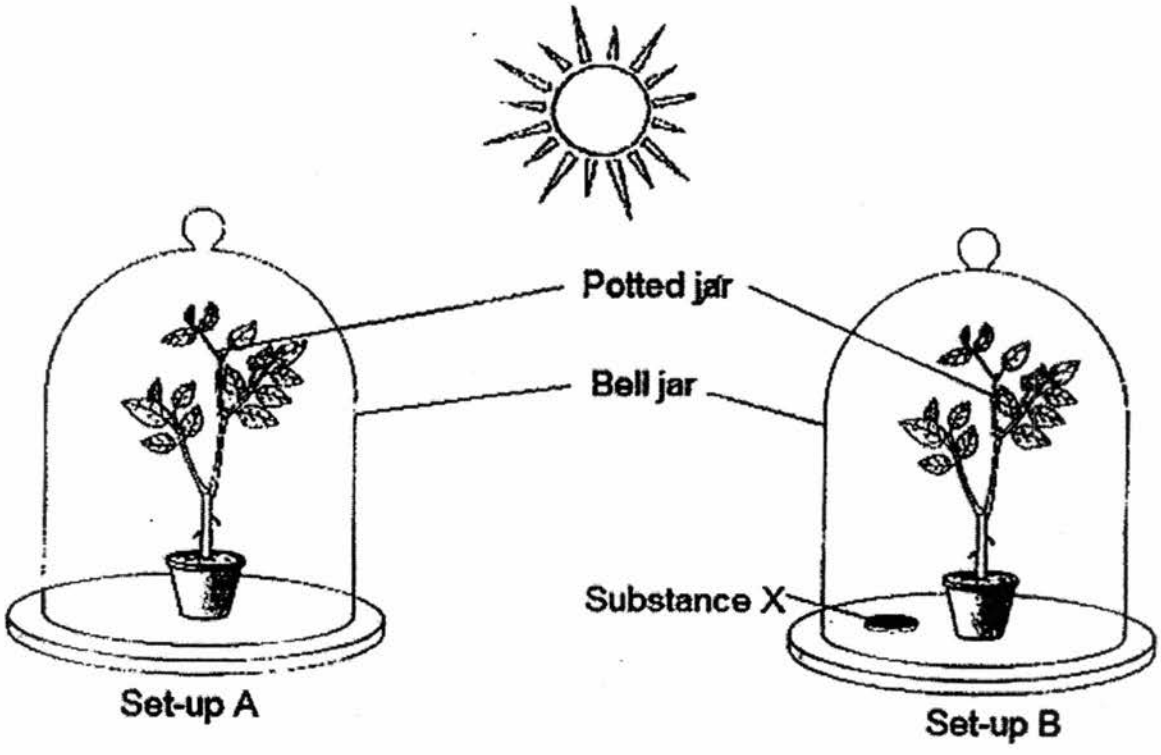
(1) C only

(2) B and C only

(3) A and D only

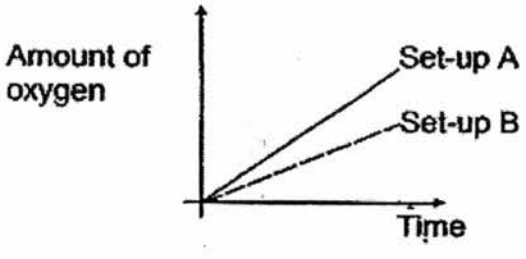
(4) A, B and D only

14 Edward prepared two set-ups, A and B as shown below. He gave both the plants the same amount of water. He placed Substance X which is used to remove carbon dioxide from the surrounding air in Set-up B. He placed both the set-ups under the sun for 24 hours.



Which of the following graph would show the amount of oxygen in both set-ups over time?

(1)



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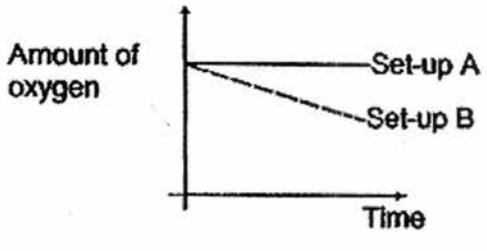
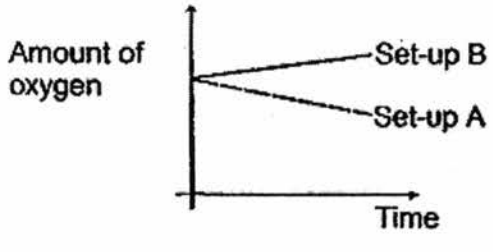


(3)



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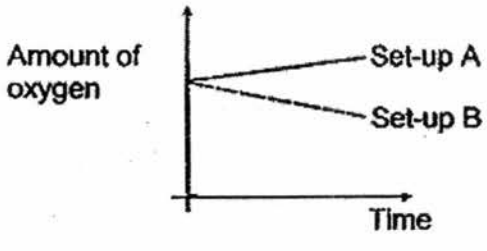
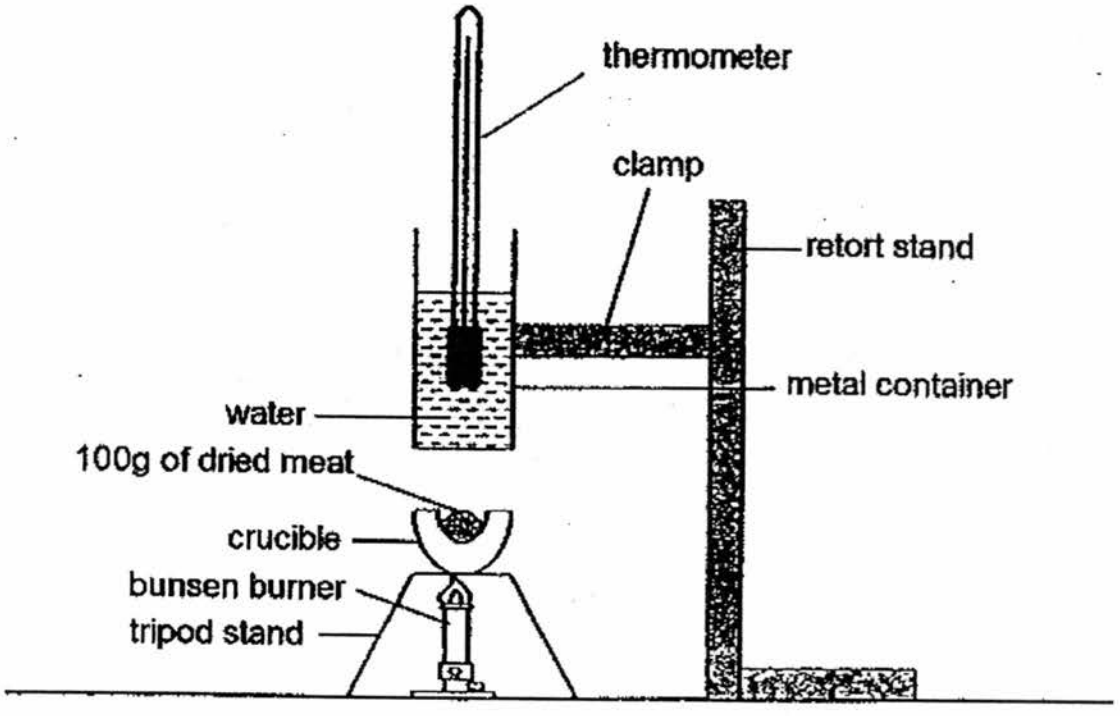


15 Francisca conducted an experiment as shown below. She placed 100g of dried meat in a crucible and burned it over a bunsen burner for 30 minutes. The temperature of the water was measured with a thermometer. She repeated the experiment with 100g of mash potatoes, and then followed by a block of butter of the same mass.



The results are recorded in the table below.

Type of food	Initial temperature of water (°C)	Final temperature of water (°C)
Dried Meat	29	77
Mashed Potato	29	56
Butter	29	89

What can Francisca infer from the results of her experiment?

A The three types of food are sources of energy.

B The three types of food can give off heat energy when heated.

C Butter produced more energy than dried meat and mashed potato.

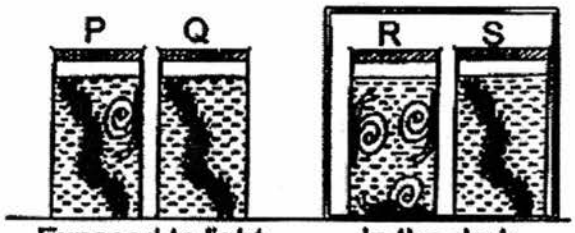
(1) A only

(2) A and B only

(3) B and C only

(4) A, B and C

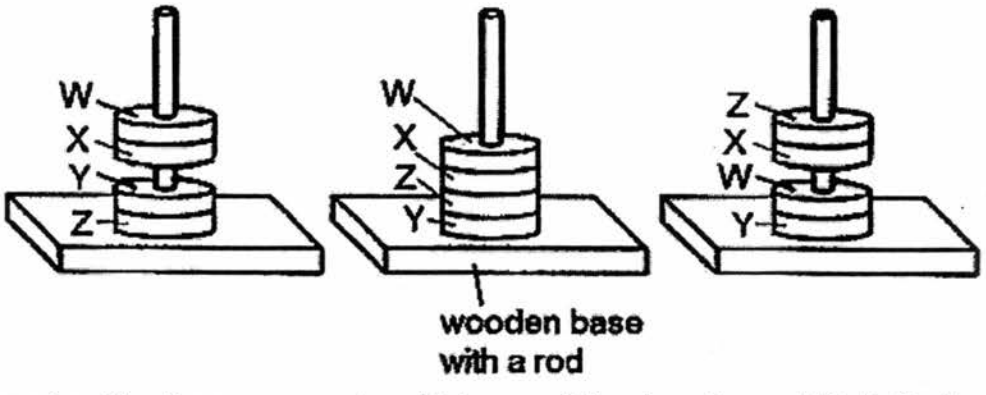
16 Judy set up the following apparatus as shown below. Containers P and R contained 1 and 3 water snails respectively while Containers P, Q and S contained an identical water plant each. The containers were sealed and left standing for one day.



Assuming all the living things are still alive at the end of the experiment, arrange in order, the amount of carbon dioxide in each container at the end of the experiment, starting from the least to the most.

	Least amount of carbon dioxide → Most amount of carbon dioxide			
(1)	P	Q	R	S
(2)	Q	S	P	R
(3)	R	S	P	Q
(4)	Q	P	S	R

17 The diagrams below show 3 different arrangements of 4 rings being slotted through a rod. Out of the 4 rings, W, X, Y and Z, 3 of them are ring magnets and 1 of them is an iron ring.

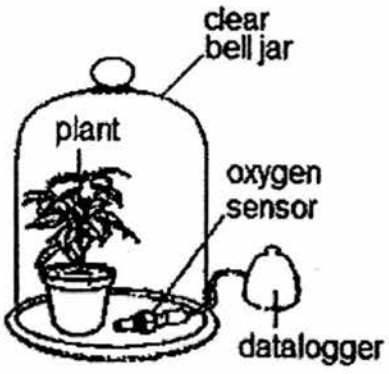


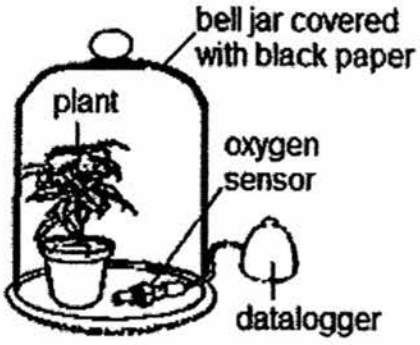
Based on the 3 arrangements, which one of the rings is most likely the iron ring?

(1) W (2) X

(3) Y (4) Z

18 **Harry set up an experiment to investigate how the presence of light affects the rate of photosynthesis of a plant.**

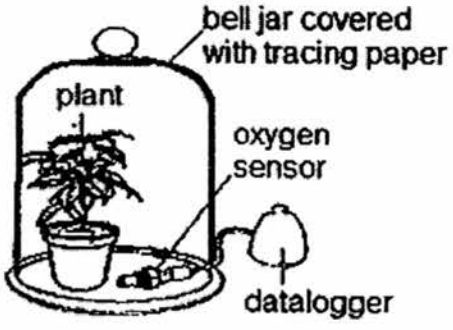




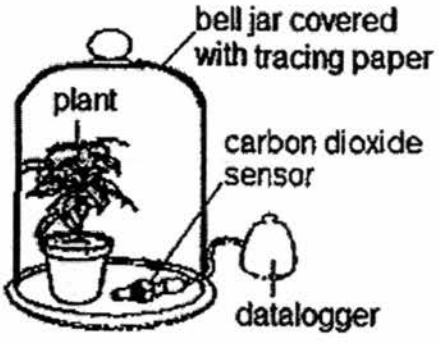
Harry's teacher told him that he should include a control in his experiment to assist him to make a valid conclusion.

Which one of the following is a suitable control for his experiment?

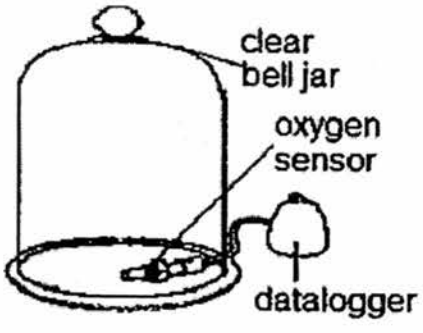
(1)



(2)



(3)



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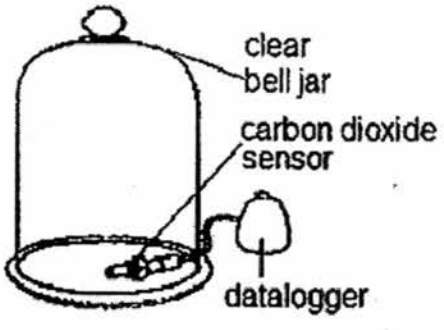


19 Which of the following has a different form of potential energy from the others?

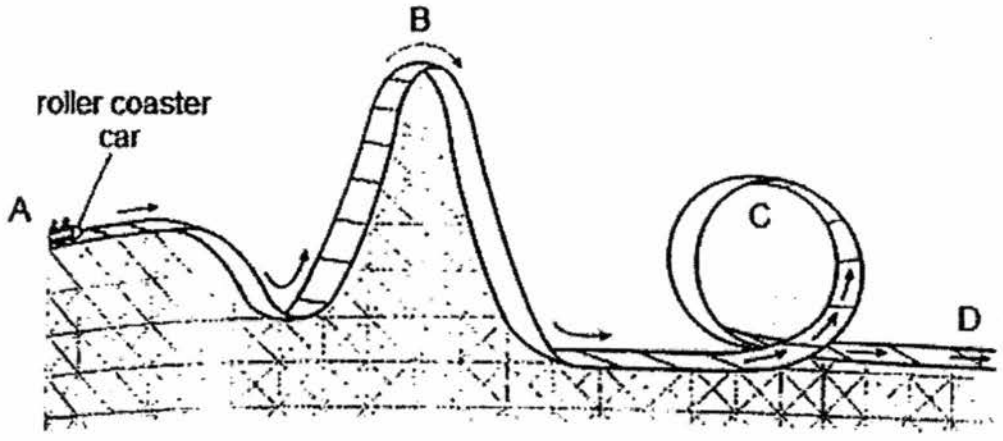
(1) firewood

(2) solid fuel

(3) car battery

(4) stretched rubber band

20 The diagram below shows part of a roller coaster ride that can be found in amusement parks. The roller coaster car started moving at A and travelled to D.



Which one of the following statements about the roller coaster car is correct?

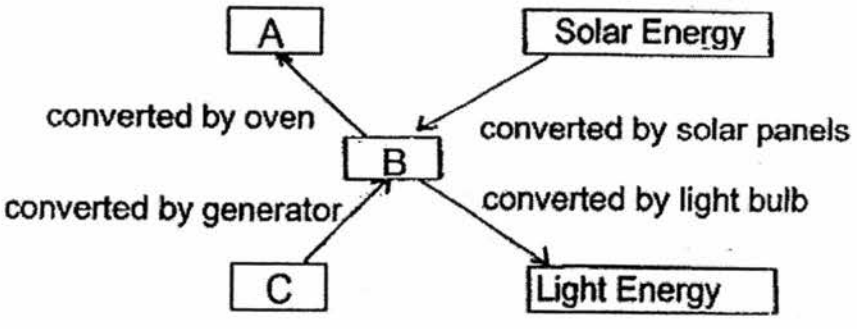
(1) The kinetic energy of the roller coaster car at C is zero.

(2) The roller coaster car has the greatest kinetic energy at B.

(3) The gravitational potential energy possessed by the car at B is more than the gravitational potential energy possessed by the car at C.

(4) Its total potential and kinetic energy at C is greater that its total potential and kinetic energy at B.

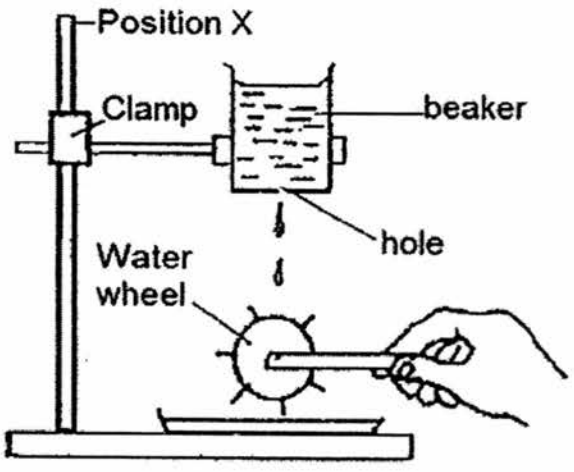
21 The diagram below shows how energy is converted from one form to another in 4 different objects.



Which one of the following represents the energy labelled A, B and C?

	A	B	C
(1)	Light	Heat	Electrical
(2)	Sound	Potential	Heat
(3)	Sound	Electrical	Heat
(4)	Heat	Electrical	Kinetic

22 Jack set up an experiment as shown in the diagram below.



Which of the following would happen if Jack raises the clamp for the Beaker to Position X?

A The water wheel will spin faster.

B The water wheel will spin slower.

C The water hitting the wheel will have more kinetic energy.

D The water at the hole will possess more gravitational potential energy.

(1) A and C only

(2) A and D only

(3) A, C and D only

(4) B, C and D only

23 Which one of the following statements about energy is true?

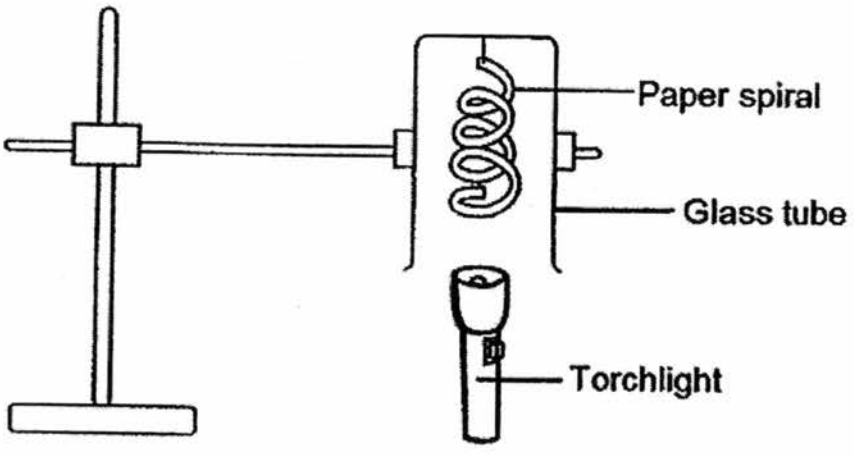
(1) Energy can only be found in living things.

(2) Energy can be created but not destroyed.

(3) Energy is needed by non-living things to do work.

(4) Solar energy is a form of non-renewable energy source.

24 Xavier prepared a set-up as shown below. He observed that the paper spiral began to spin 5 minutes after the torchlight was turned on.



Which one of the following correctly describes the energy conversion from the time the torchlight was switched on until the time the spiral began to spin?

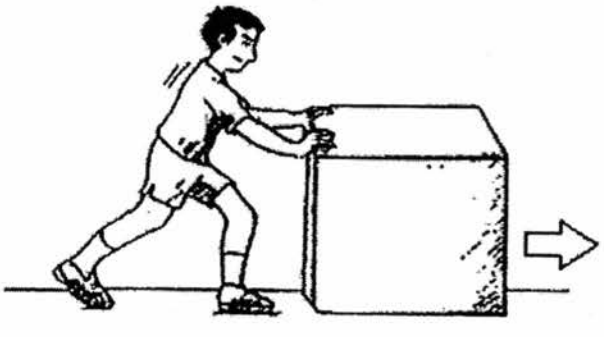
(1) chemical potential energy → electrical energy → light energy → kinetic energy

(2) chemical potential energy → electrical energy → kinetic energy → light energy

(3) chemical potential energy → electrical energy → kinetic energy → heat energy

(4) chemical potential energy → electrical energy → heat energy → kinetic energy

25 Kai Leong pushes a box in the direction as shown in the diagram below.



Which one of the following must happen for the box to move in the direction shown?

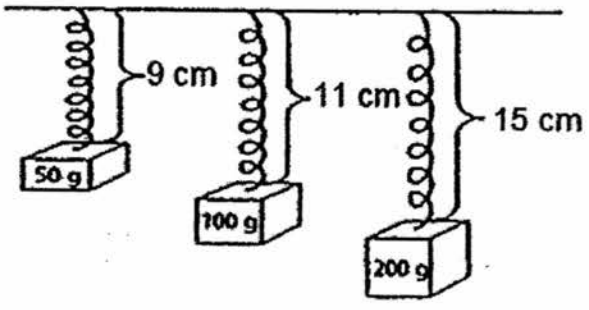
(1) The frictional force acting against the box must be greater than the force applied by Kai Leong.

(2) The gravitational force and the frictional force acting on the box must be equal.

(3) The force applied by Kai Leong must be greater than the frictional force acting against the box.

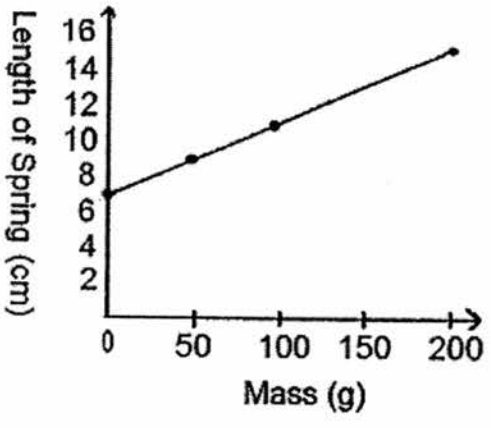
(4) The frictional force acting against the box must be greater than the gravitational force acting on the box.

26. Larry was given a spring that was 7 cm long as shown in the diagram below. He hung a 50g mass on it and measured the length of the spring as 9 cm. He then repeated his experiment with masses 100g and 200g.

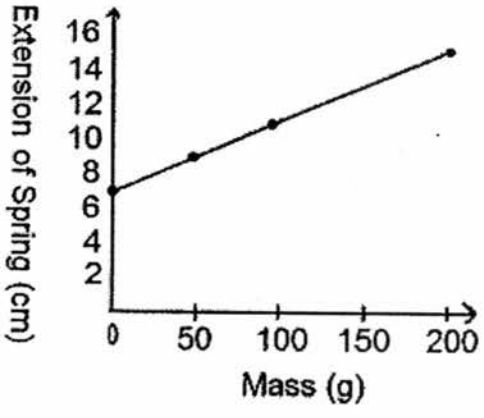


He then plotted 4 different graphs to shown his results as shown below.

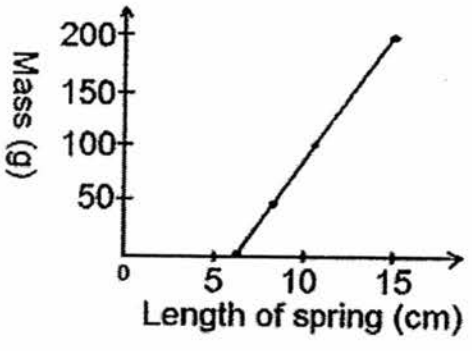
A



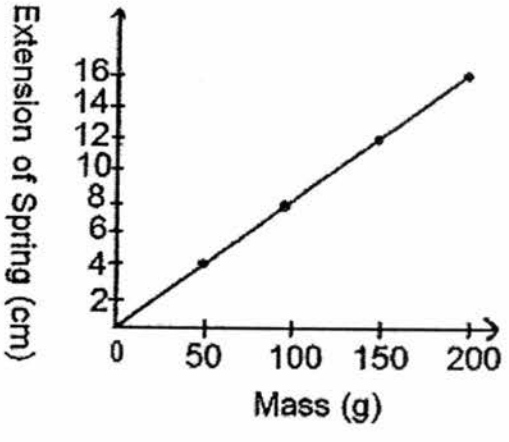
B



C



D



Which of the following graphs can be used to represent Larry's results?

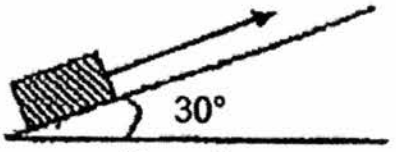
(1) A only

(2) D only

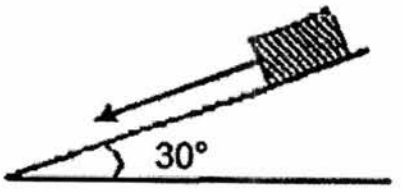
(3) A and B only

(4) A and C only

27 The diagrams below show a 20-kg metal box being pulled by Linda along 4 slopes of smooth surfaces made of the same material.

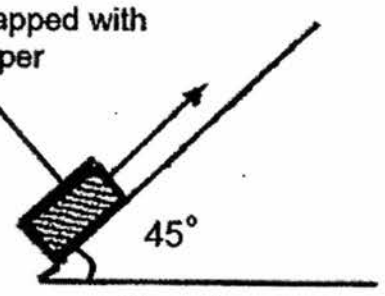


Slope A



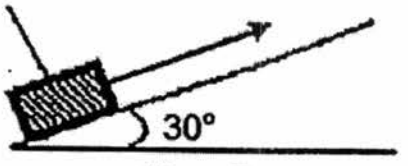
Slope B

Box wrapped with sandpaper



Slope C

Box wrapped with sandpaper



Slope D

Arrange in order, the amount of force needed by Linda to move the box, from the least amount of force to the most amount of force.

	Least amount ⟶ Most amount			
(1)	B	D	A	C
(2)	B	A	D	C
(3)	C	A	B	D
(4)	C	D	A	B

28 The table below provides the physical characteristics in 4 different habitats (P, Q, R and S).

Physical factors	Habitats			
	P	Q	R	S
Moisture	High	Low	High	Low
Average temperature (°C)	30	23	21	18
Intensity of light	High	Low	Low	High

Plant X was observed to grow well in a damp and shaded environment with temperature ranging from 15 to 25°C.

In which one of the following habitats can you find the most number of Plant X?

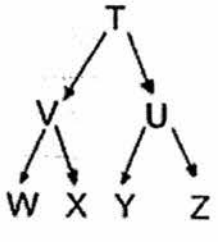
(1) P
(2) Q
(3) R
(4) S

29 Organisms *T*, *U*, *V*, *W*, *X*, *Y* and *Z* live in the same habitat. Study the information below carefully.

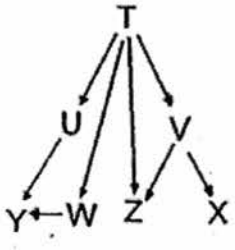
T is a plant.
U and *V* are plant eaters.
W and *X* are animal eaters.
Y and *Z* are plant and animal eaters.

Based on the information above, which of the following food webs correctly shows the food relationships of the organisms?

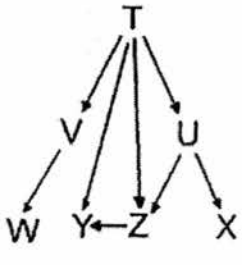
(1)



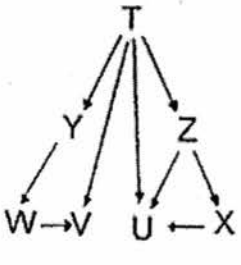
(2)



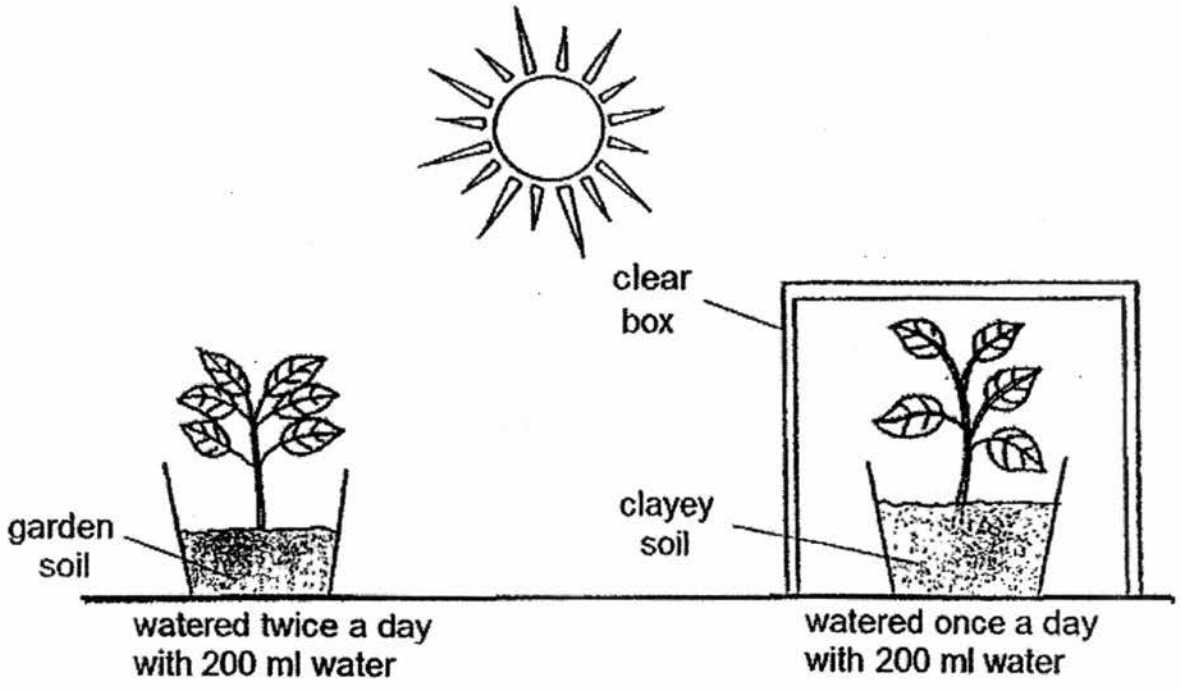
(3)



(4)



30 Raju wanted to find out if the type of soil a plant is grown in would affects its growth. The diagram below shows the experiment he carried out.



His teacher told him that his test was unfair. Which of the following are possible reasons why he said that?

A Both plants should be watered twice a day.

B The clear box in Set-up B should be removed.

C Both plants should have the same number of leaves.

D The type of soil used in both pots should be clayey soil.

(1) A and B only

(2) A, B and C only

(3) A, C and D only

(4) B, C and D only

PEI HWA PRESBYTERIAN PRIMARY SCHOOL

SEMESTRAL ASSESSMENT 1

PRIMARY 6

SCIENCE

13th May 2016

(BOOKLET B)

Name: _____( )

Class: Primary 6 Resilience _____

Parent's Signature

Total time: 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

1. Write your Name, Class and Index No. at the spaces provided above.
2. DO NOT turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write all your answers in this booklet.

FOR TEACHER'S USE

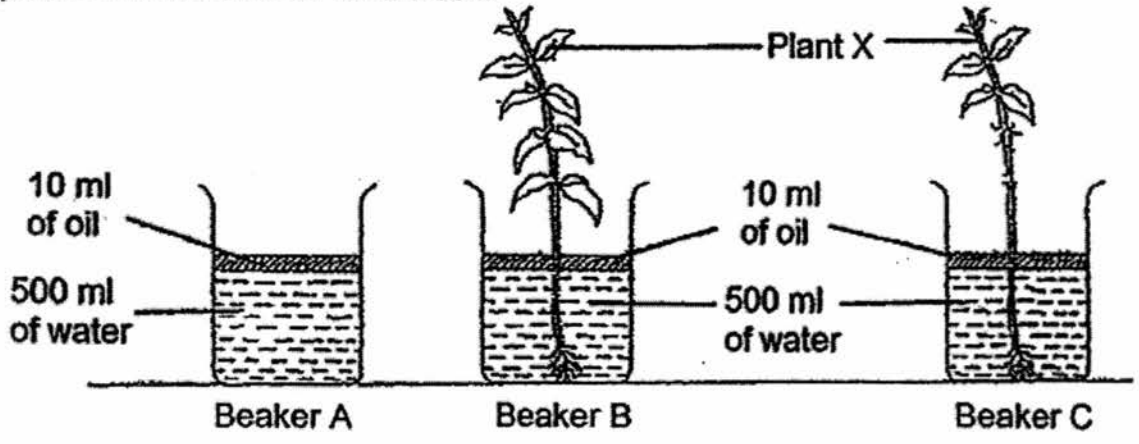
Marks (Booklet A) :	60
Marks (Booklet B) :	40
Total Marks (Booklet A & B) :	100

There are a total of 15 pages in this booklet, excluding the cover page.

For questions 31 to 44, write your answers in the booklet.

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

31 Siti carried out an experiment as shown below. All of 3 beakers were left at the same place near the window for a week.



Siti recorded the volume of water in each beaker on Day 1 and Day 7 in the table below.

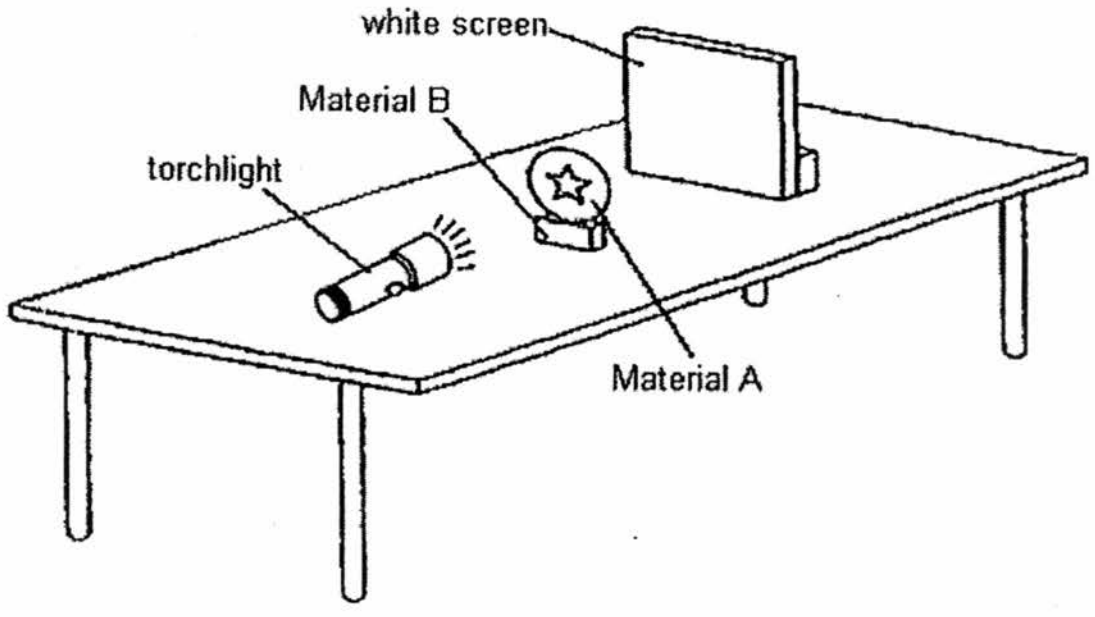
Beaker	Volume of water (ml)	
	Day 1	Day 7
A	500	500
B	500	230
C	500	350

(a) What was the aim of Siti's experiment? [1]

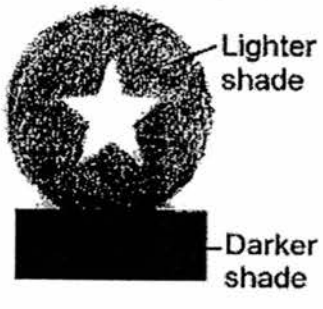
(b) Explain why there was less water in Beaker B than Beaker C on Day 7. [2]

(c) Give a reason how leaving her set-up at the same place helps to make her experiment a fair test. [1]

32 Tom carried out the following experiment in a dark room using the set-up below. An object made up of Material A and Material B is placed between a torchlight and a white screen.



He switched on the torch and shone the light on the object, and noticed that a shadow was cast on the white screen as shown below:



(a) Based on the shadow observed, state the properties of Material A and Material B. [2]

Material A : _____

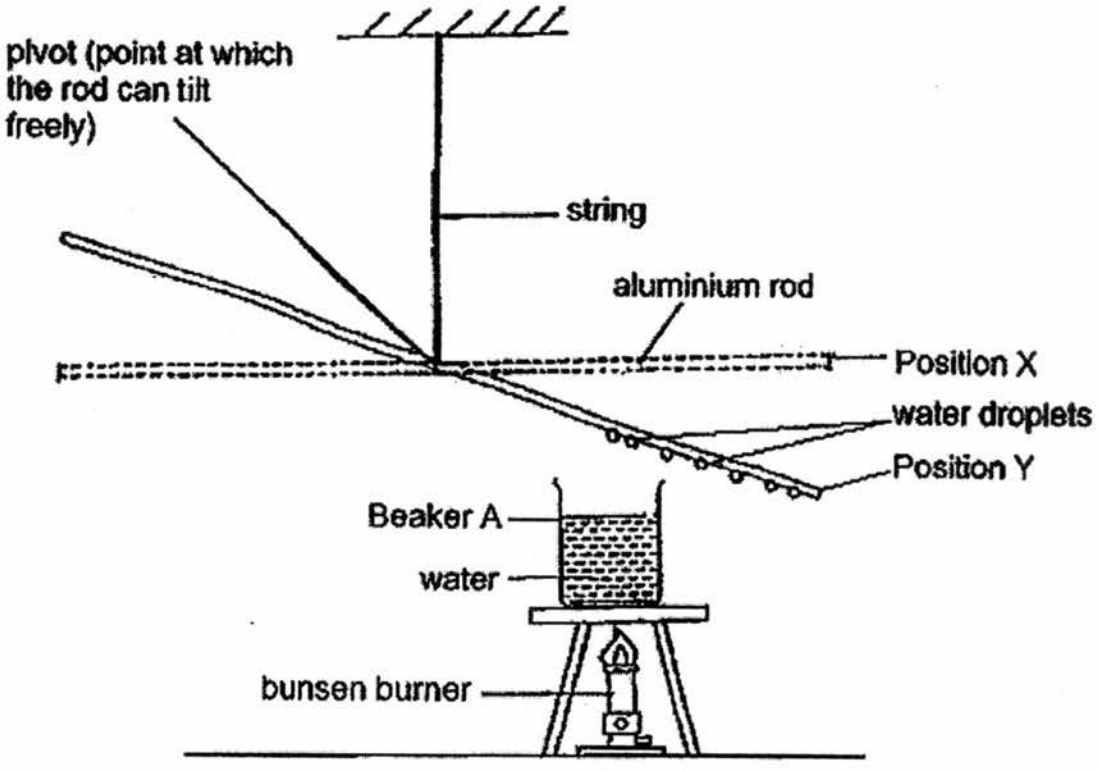
Material B : _____

(b) If Tom were to move the object towards the torch, what change would he see in his observation on the white screen? [1]

_____

_____

33 Wei Liang conducted an experiment by using the set-up shown below.

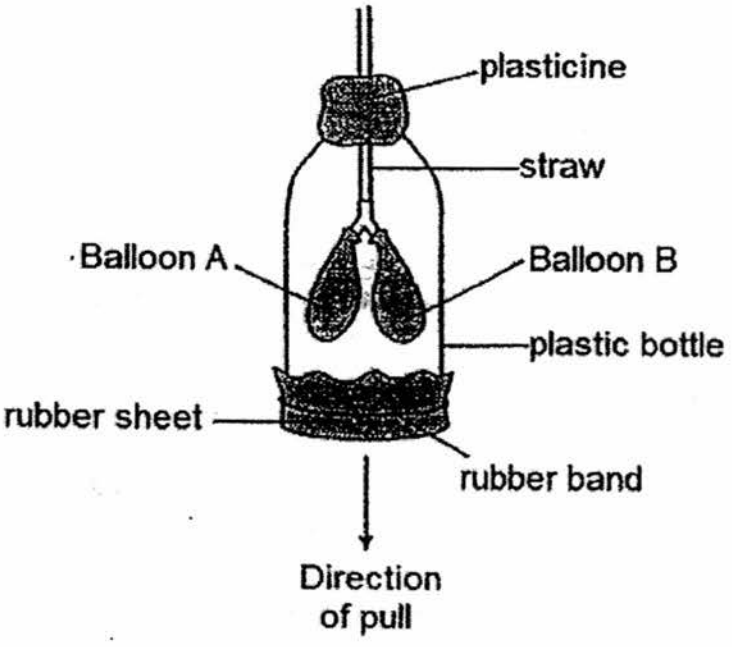


He observed that after a while, the water in Beaker A boiled and turned into steam. The aluminium rod tilted and the end of the rod moved from Position X to Position Y after a few minutes.

(a) Describe how the aluminium rod moved from Position X to Position Y. [2]

(b) Wei Liang waited for the aluminium rod to cool down to room temperature and replaced Beaker A with another beaker with the same volume of water. He observed that the aluminium rod took longer time to move to Position Y. Suggest a reason for his observation. [1]

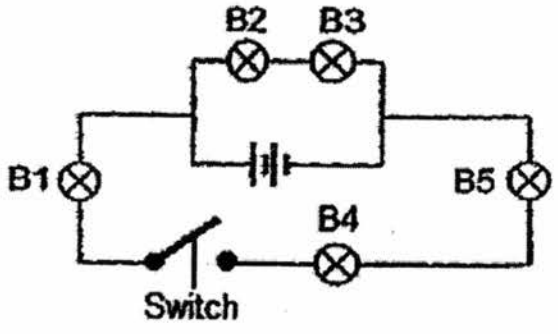
34 Zachary cut off the bottom of a plastic bottle and built a model of the human respiratory system as shown in the diagram below.



(a) What would happen to Balloons A and B when the rubber sheet is pulled downwards from the bottom of the bottle? Explain your answer. [2]

(b) Zachary found out that the lungs cannot function if there is a hole in the lungs. Based on the model, explain why this is so. [1]

35 Study the circuit diagram shown below. All the bulbs (B1, B2, B3, B4 and B5) are lit when the switch is closed.



Write down the minimum number of bulbs that would remain lit when one of the bulbs in the circuit is blown. Give a reason for your answer. [2]

(a) Minimum number of bulbs remaining lit : _____

Reason :_____

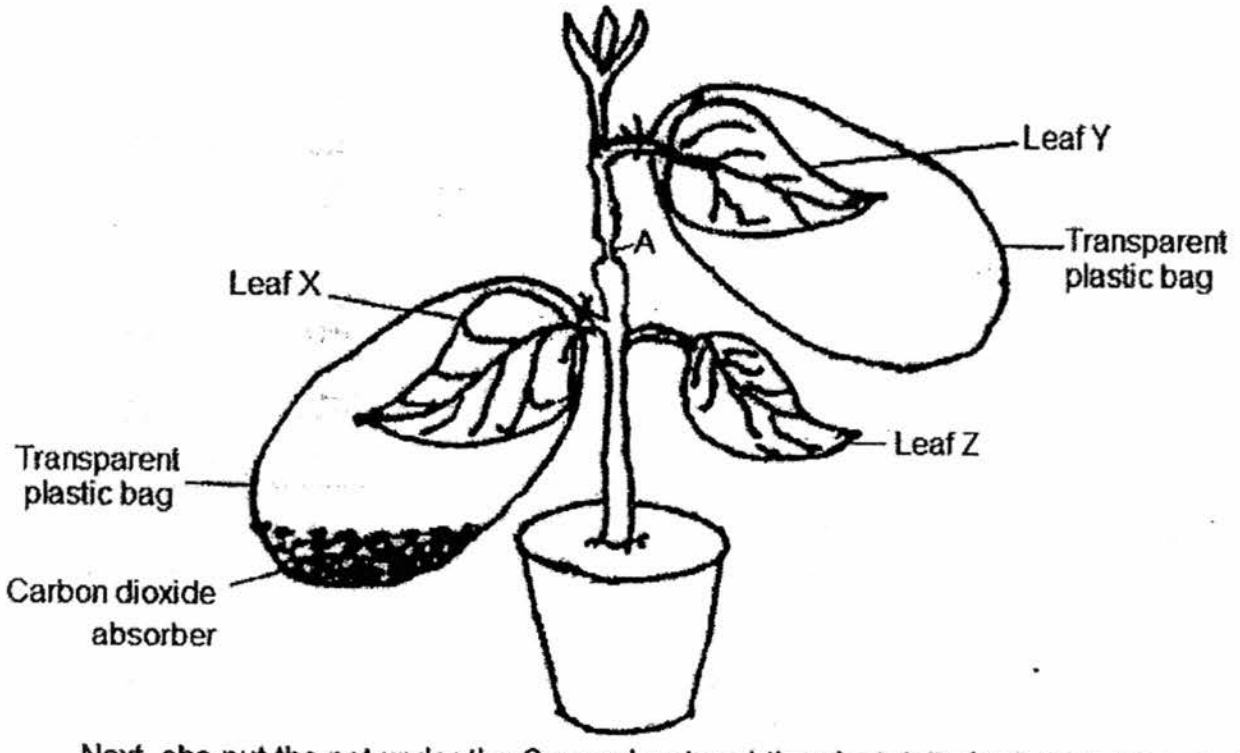
_____

(b) Maximum number of bulbs remaining lit : _____

Reason _____

_____

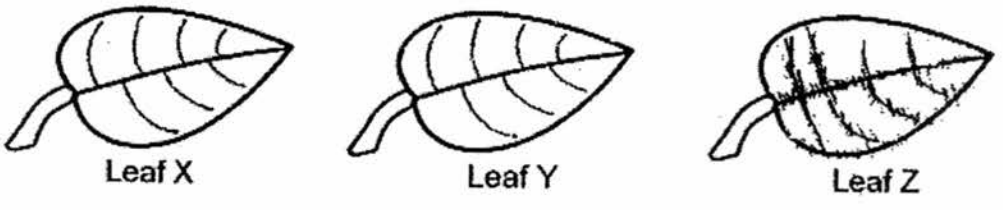
36 Ramlah removed the water-carrying tubes from a plant by making a ring around the stem at A. In addition, she wrapped Leaf X and Leaf Y with 2 separate transparent plastic bags. In the plastic bag containing Leaf X, she put some carbon dioxide absorber. She then put the pot of plant in a dark cupboard for 24 hours. The diagram below shows her experimental set-up.



Next, she put the pot under the Sun and watered the plant daily for 3 days. The plant was given equal amount of water daily.

After 3 days, Ramlah plucked Leaf X, Y and Z from the plant and used iodine solution to test for the presence of starch. Iodine solution turns dark blue in the presence of starch.

(a) In the diagrams below, shade Leaf X, Leaf Y and/or Leaf Z that would turn dark blue. [1]



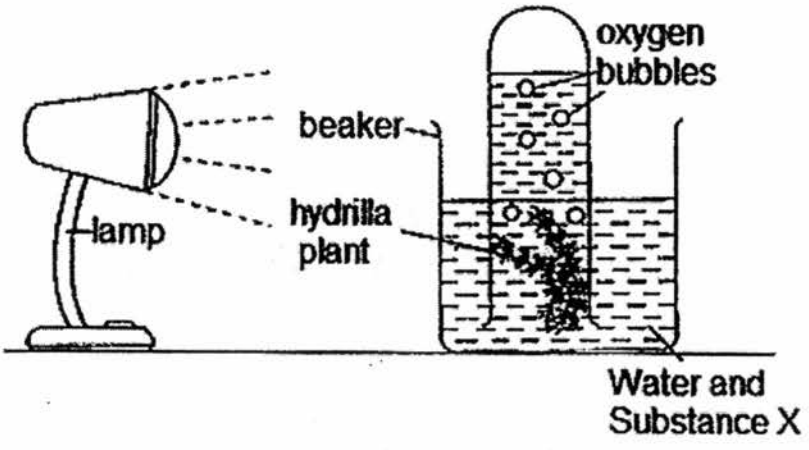
(b) Explain your answer in (a). [2]

_____

_____

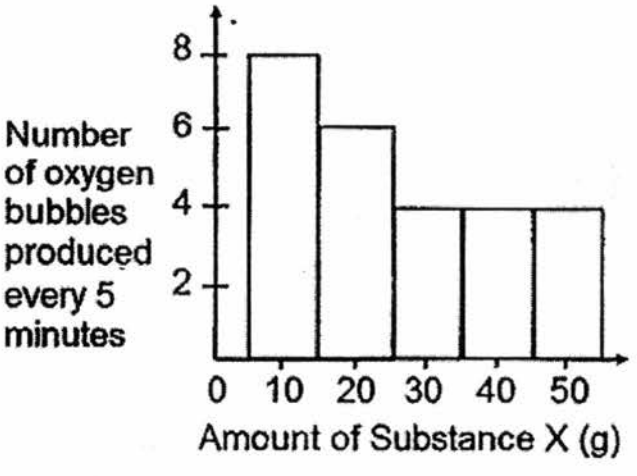
_____

37 Anthony set up an experiment in a dark room using a hydrilla plant to find out the effect of Substance X on the rate of photosynthesis as shown in the diagram below.



He counted the number of oxygen bubbles given out by the hydrilla plant for 5 minutes. He repeated the experiment 5 times with different amount of Substance X. He then plotted his results in Graph A as shown below.

Graph A



(a) Based on the graph, what could Anthony conclude about the number of oxygen bubbles given out and the amount of Substance X? [1]

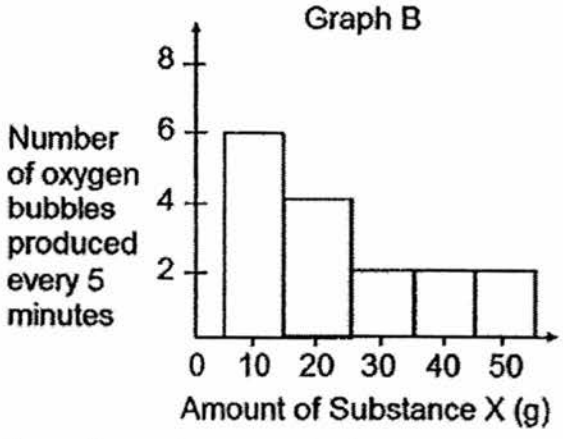
_____

_____

_____

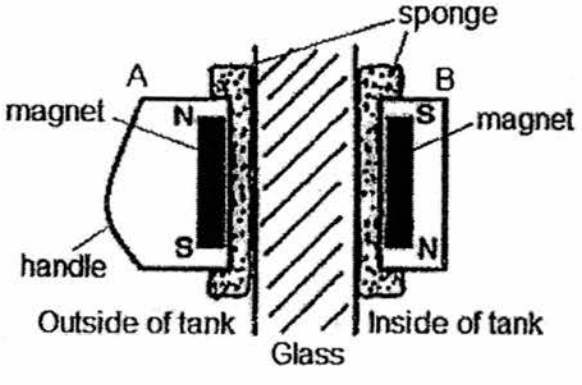
Question 37 continues on Page 27

Anthony repeated his experiment by adjusting his set-up, without introducing or removing anything from his set-up. He obtained a new sets of results as shown in Graph B below.



(b) What could Anthony have done to obtain the results as shown in Graph B? Explain your answer. [2]

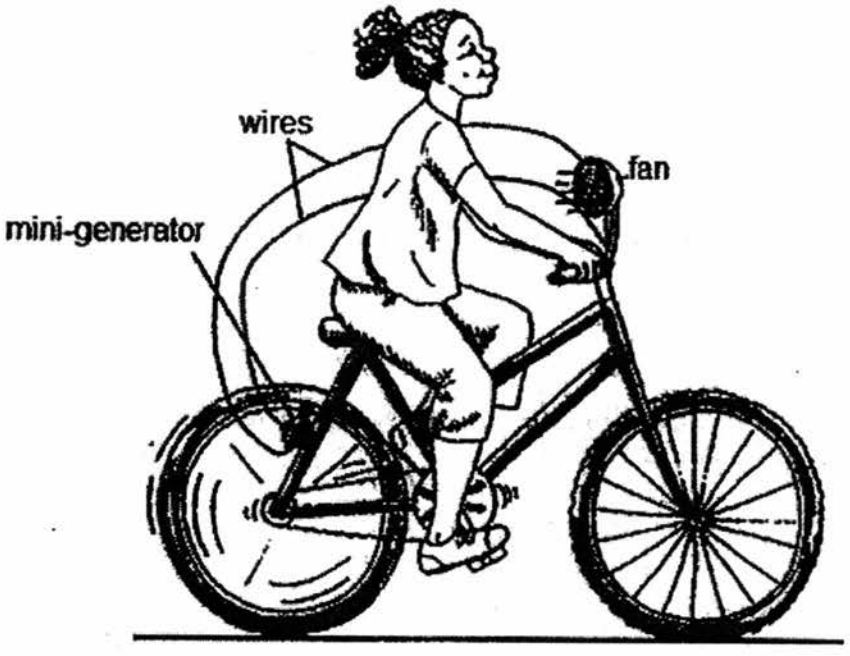
38 Pei Ling wanted to clean the interior part of her glass aquarium. She then bought with a device as shown below to help her do just that



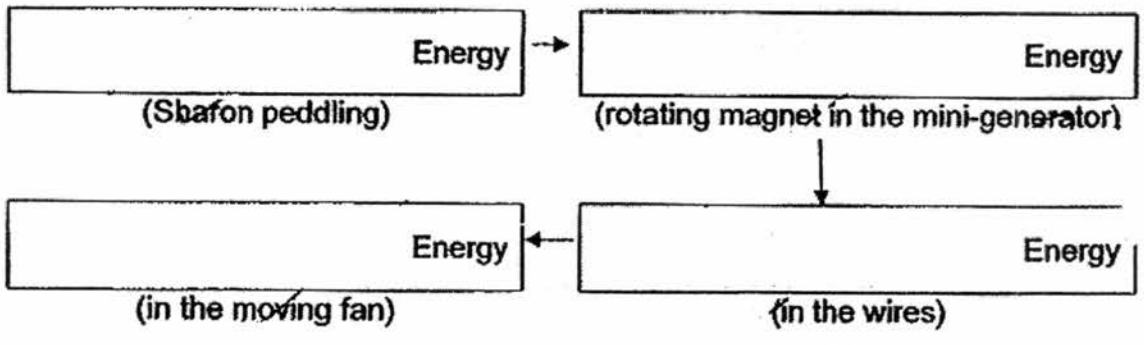
a) Name the force(s) acting on the device throughout the time when Pei Ling is cleaning the glass aquarium? [1]

b) When Pei Ling replaced the magnet in Part B with a steel bar. She noticed that the device still worked. Explain why. [1]

39 Sharon attached a dynamo to the rear wheel of her bicycle. The dynamo is connected to a fan by wires. She noticed that the fan worked when she paddled on her bicycle for a few seconds.



(a) Complete the energy conversion that allows the ~~lamp to lit up.~~ fan to move. [2]

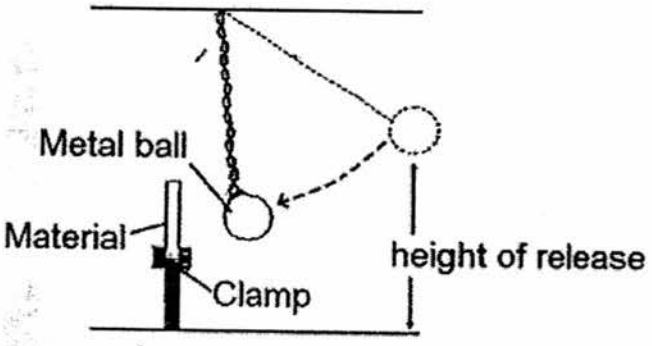


(b) Give a reason why cycling is an environmentally-friendly mode of transport. [1]

_____

_____

40 Ali hung a metal ball to a chain connected to the ceiling. He then raised the metal ball to a certain level as shown below and released it. As the metal ball swung downwards, it hit a piece of material that was put in its path. He adjusted the height of release of the metal ball and recorded the minimum height (*h*) he needed to break the material after the ball was released. The process was repeated with different types of materials.



He recorded the height of release of the ball which broke the different materials in the table below.

Material	Minimum height of release to break the material, *h* (cm)
A	12
B	5
C	16
D	23

(a) Which material (A, B, C or, D) is the strongest? Explain your answer. [1]

_____

_____

(b) Using Material A, Ali repeated the experiment and released the ball at 10 cm. He observed that the metal ball did not break the material when the ball hit it. Explain ~~your answer~~. [1]

_____

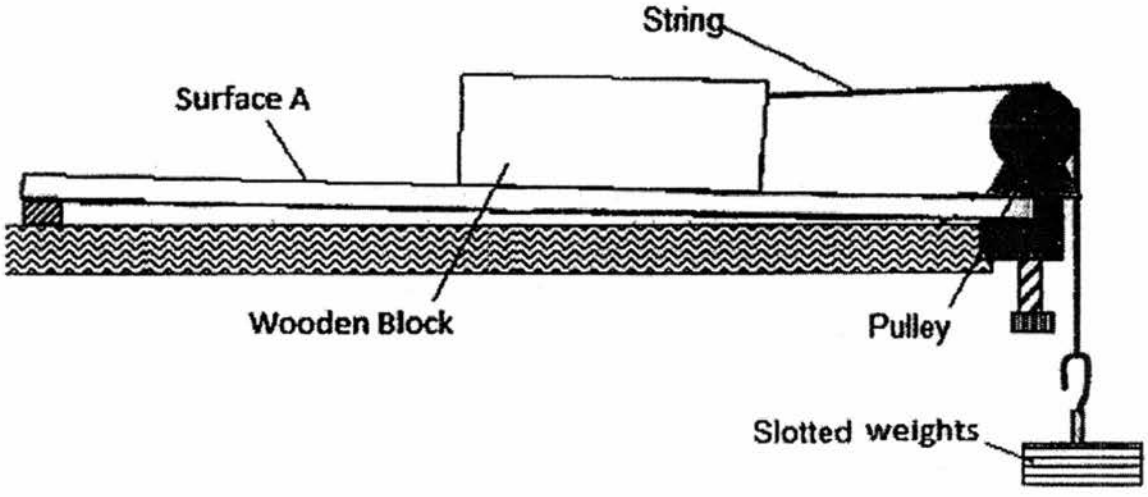
_____

(c) Would the mass of the metal ball affect the value of *h* in the above experiment? Explain your answer. [1]

_____

_____

41 Josh wanted to find out which surface he should use to layer the road at a traffic junction. He set up an experiment as shown below. Weights were added, one at a time, till the wooden block just started to move over Surface A.



The experiment was repeated by replacing Surface A with Surfaces B, C and D, one at a time. The minimum weight required to move the wooden block was recorded in the table shown below.

Type of Surface	Minimum weight required to move the wooden block (g)
A	130
B	90
C	200
D	145

(a) Based on the results above, arrange the types of surface, A, B, C and D, in order from the roughest to the smoothest. [1]

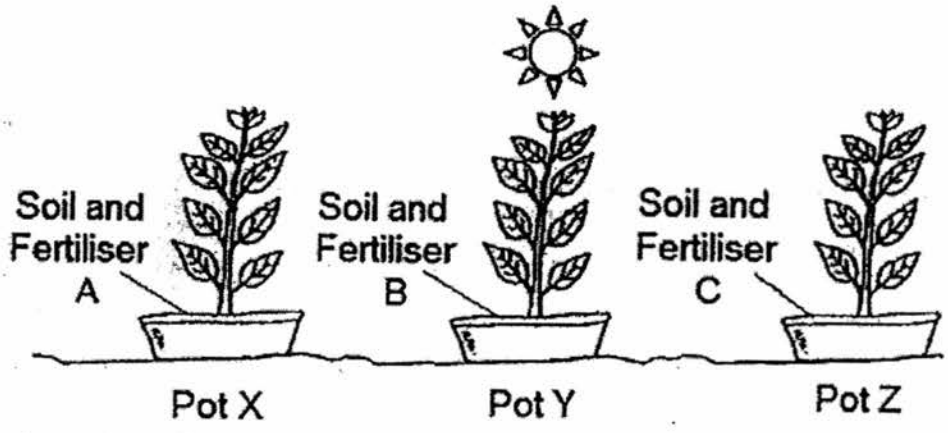
Roughest →			Smoothest

(b) Based on your answer in (a), state and explain which surface (A, B, C or D) should Josh use to layer the traffic junction. [1]

_____

_____

42 Zayn set up an experiment to find out how the type of fertilizer, A, B and C, would affect the growth of balsam plants. He planted balsam plants of the same height (20 cm each) at the beginning of the experiment as shown below.



After 1 month, he measured the height of each of the balsam plant and drew up a table to record his results as shown below.

Pot	Type of Fertilizer	Height of plant after 1 month (cm)
X	A	35
Y	B	35
Z	C	20

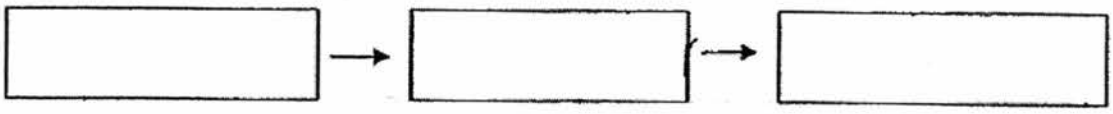
Zayn's father told him that he needed one more set-up to allow him to confirm that the fertilisers affect the growth of the plant.

(a) In the space below, draw a well-labeled diagram to show how the set-up would look like. [2]

(b) Zayn's father suggested to have 3 more pots of plants for each fertilizer used. Give a reason why Zayn's father said so. [1]

43 Farmer Lim used Chemical X to kill the caterpillars that were eating the leaves of his Mulberry plants. After a few days, he found several dead birds. These birds are natural predators of caterpillars in his farm.

(a) Using the information given, complete the food chain below. [1]



(b) Farmer Lim did not want to harm the birds and decided to spray a natural Substance Y on the leaves of his plants to keep butterflies away from them instead. Why did Farmer Lim want to keep the butterflies away? [1]

_____

_____

(c) Predator C feeds on the birds. After using Substance Y for some time, Farmer Lim noticed that the population of Predator C decreased. Explain why. [1]

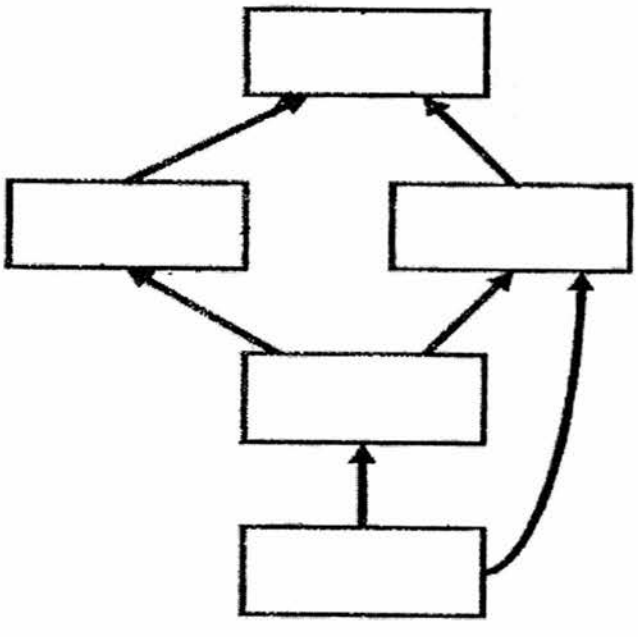
_____

_____

44 Study the food relationships found in a grassland habitat below.

Food	Consumer
 Grass	 Insects  Mouse
 Insects	 Rat  Mouse
 Rat  Mouse	 Snake

(a) Based on the food relationships above, complete the food web below. [1]



Question 44(b) continues on Page 34

(b) An ecologist working in the grassland noticed that there was a sudden decrease in snakes in the grassland due to a disease. State the immediate effect on the population of the insects. Give a reason for your answer. [2]

Effect on insects: _____

Reason : _____

_____

_____

End of Paper

SCHOOL : PEI HWA PRESBYTERIAN PRIMARY SCHOOL
LEVEL : PRIMARY 6
SUBJECT : SCIENCE
TERM : SEMESTRAL ASSESSMENT 1

CONTACT :

BOOKLET A

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	1	3	2	4	3	3	4	3	3

Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	3	1	4	4	4	4	3	4	3

Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	3	3	4	3	1 or 4	2	3	3	2

BOOKLET B

31 a) To find out whether the number of leaves on a plant will affect the amount of water it takes in.

b) There are more leaves in Beaker B than Beaker A and more photosynthesis takes place and more water is absorbed.

C) So that the surrounding temperature is the same.

32 a) Material A: Translucent. / Material B: Opaque

b) The shadow would get bigger.

33 a) The water vapour condensed on the cooler surface of the aluminium rod into water droplets. The water droplets have weight and moved the aluminium rod down.

b) The other beaker was a poorer conductor of heat than Beaker A.

34 a) They will inflate and become bigger. That is because the rubber sheet pulled the balloon down, and air enters the through the straw forcing it to inflate.

b) Air will escape from the balloon and push on the balloon, and the balloon cannot inflate.

35 a) 2. When either B1, B4 or B5 is blown, B2 or B3 still form a closed circuit.

b) 3. When either B2 or B3 is blown, B1, B4 or B5 still form a closed circuit.

36 a) Leaf Z.

b) Z has both carbon dioxide and water, allowing it to photosynthesise and make starch, unlike Y which does not have water and X does not have carbon dioxide.

37 a) When the amount of substance X is increased to 20g, the amount of bubbles decreases and remains the same after that when X increases.

b) He moved the lamp away from the beaker. When the amount of light decreases, rate of photosynthesis decreases.

38 a) Friction, magnetic and gravitational forces.

b) Steel is a magnetic material and get attracted by the magnet.

39 a) Kinetic Energy → Kinetic Energy → Electrical Energy → Kinetic Energy.

b) It does not produce exhaust fumes.

40 a) D. The metal ball needs to be lifted to the greatest height to have more gravitational potential energy to break the material.

b).There is less gravitational potential energy to be converted to kinetic energy to break the object.

C) Yes. The more mass the metal ball has, the greater the gravitational potential energy the ball has.

41 a) Roughest C, D A B (Smoothest)

b) C has the greatest amount of friction between the wheel and the road, so it is the safest to be used to stop the car.

42 a)

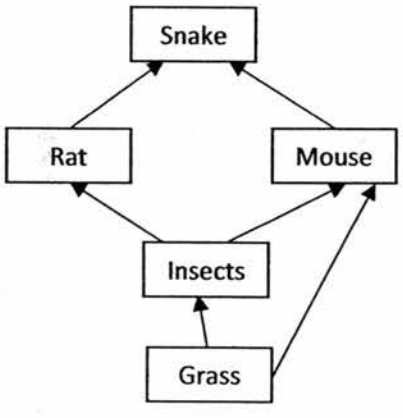
b) To ensure that his results are reliable.

43 a) Plants → Caterpillars → Birds

b) So that butterflies cannot lay eggs on the leaves and there would be no caterpillars.

c) As the number of caterpillar decreases, the number of bird decreases as there is less food for the birds. And as the number of bird decreases, there is less food for predator C.

44 a)



b) Effect on insects: The population will decrease.

Reason: The population of rat and mouse increases as there is less snake to feed on them. As the population of rats and mouse increases, they will feed on more insects.