PEI HWA PRESBYTERIAN PRIMARY SCHOOL

PRELIMINARY EXAMINATION

PRIMARY 6
SCIENCE
(BOOKLET A)

27 AUG 2015

Name: _____ ( )

Class: Resilience _____

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

INSTRUCTIONS TO CANDIDATES

1. Write your Name, Class and Register No. in the spaces provided above.
2. DO NOT turn over this 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.

This booklet consists of 19 printed pages, 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 and shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet.

(60 marks)

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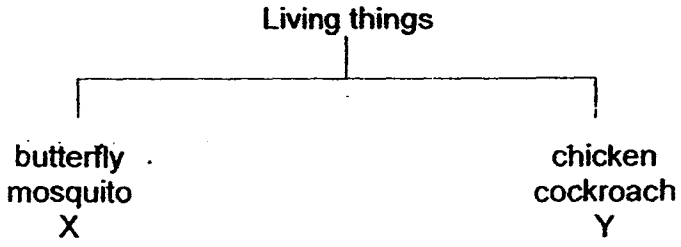
1 John classified the following living things as shown.



Which of the following correctly shows what X and Y could be?

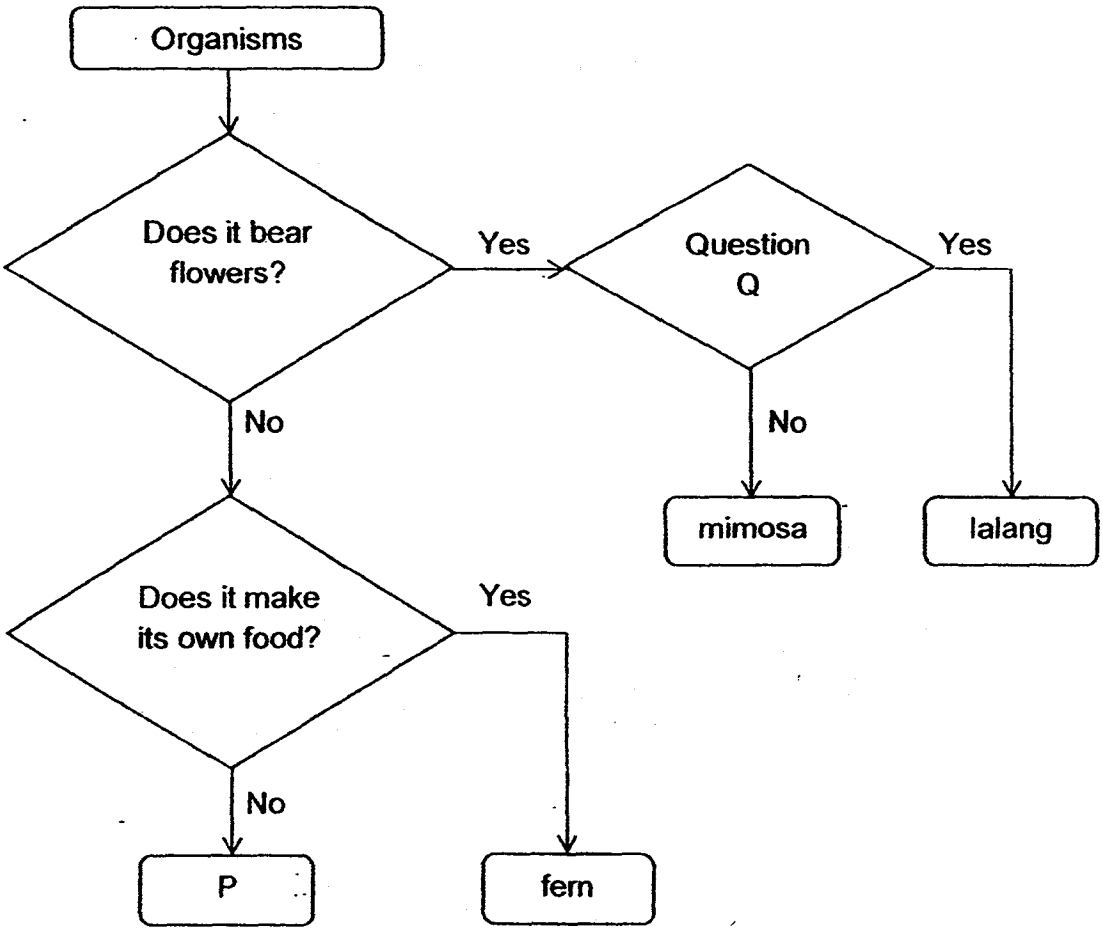
	X	Y
(1)	beetle	grasshopper
(2)	frog	sparrow
(3)	bat	ant
(4)	dragonfly	rabbit

2 Which of the following characteristics can be used to separate insects from mammals?

A Number of legs
B Presence of wings
C Number of body parts
D Type of body covering

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

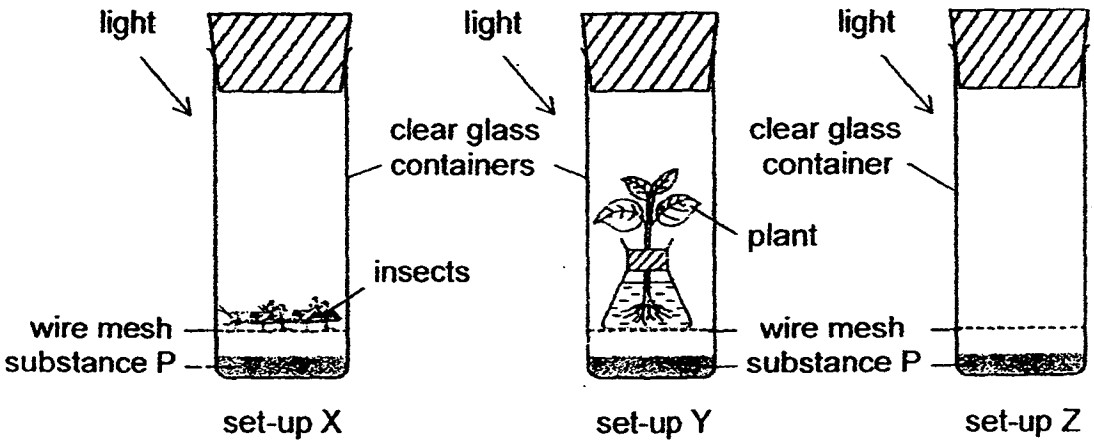
3 Study the flow chart below.



Which one of the following is correct?

	P	Question Q
(1)	P is a non-flowering plant	Are the seeds dispersed by wind?
(2)	P is not a plant	Are the seeds dispersed by animals?
(3)	P is a non-flowering plant	Are the seeds dispersed by animals?
(4)	P is not a plant	Are the seeds dispersed by wind?

4 Study the three set-ups X, Y and Z below.



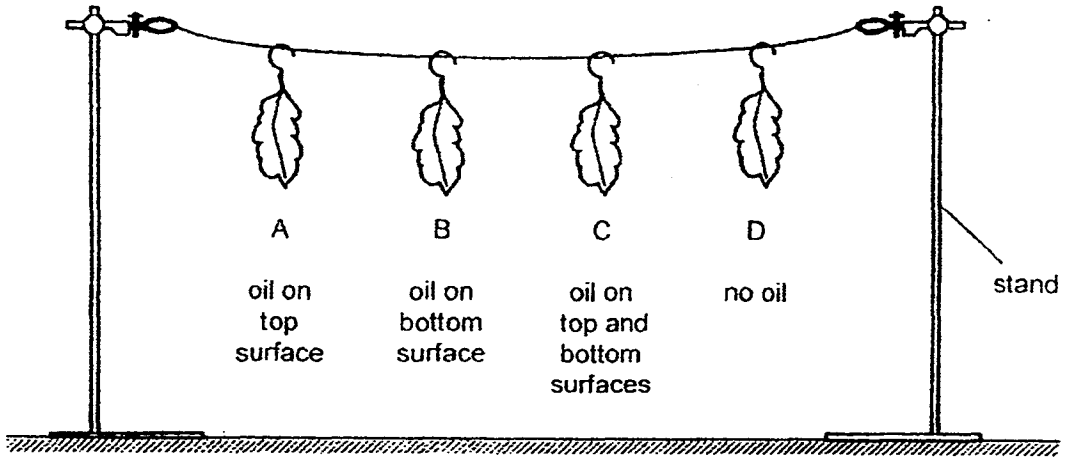
Substance P changes colour as shown below.

Amount of oxygen in the set-up	**less than normal**	**normal**	**higher than normal**
Colour of substance P	green	purple	yellow

What is the colour of substance P in each set-up after 6 hours?

	set-up X	**set-up Y**	**set-up Z**
(1)	green	purple	yellow
(2)	green	yellow	purple
(3)	yellow	green	purple
(4)	yellow	purple	green

5 Kevin set up an experiment using four similar leaves A, B, C and D. He coated some surfaces of the leaves with oil that did not drip. Each leaf was weighed and then hung up in an open area as shown below.



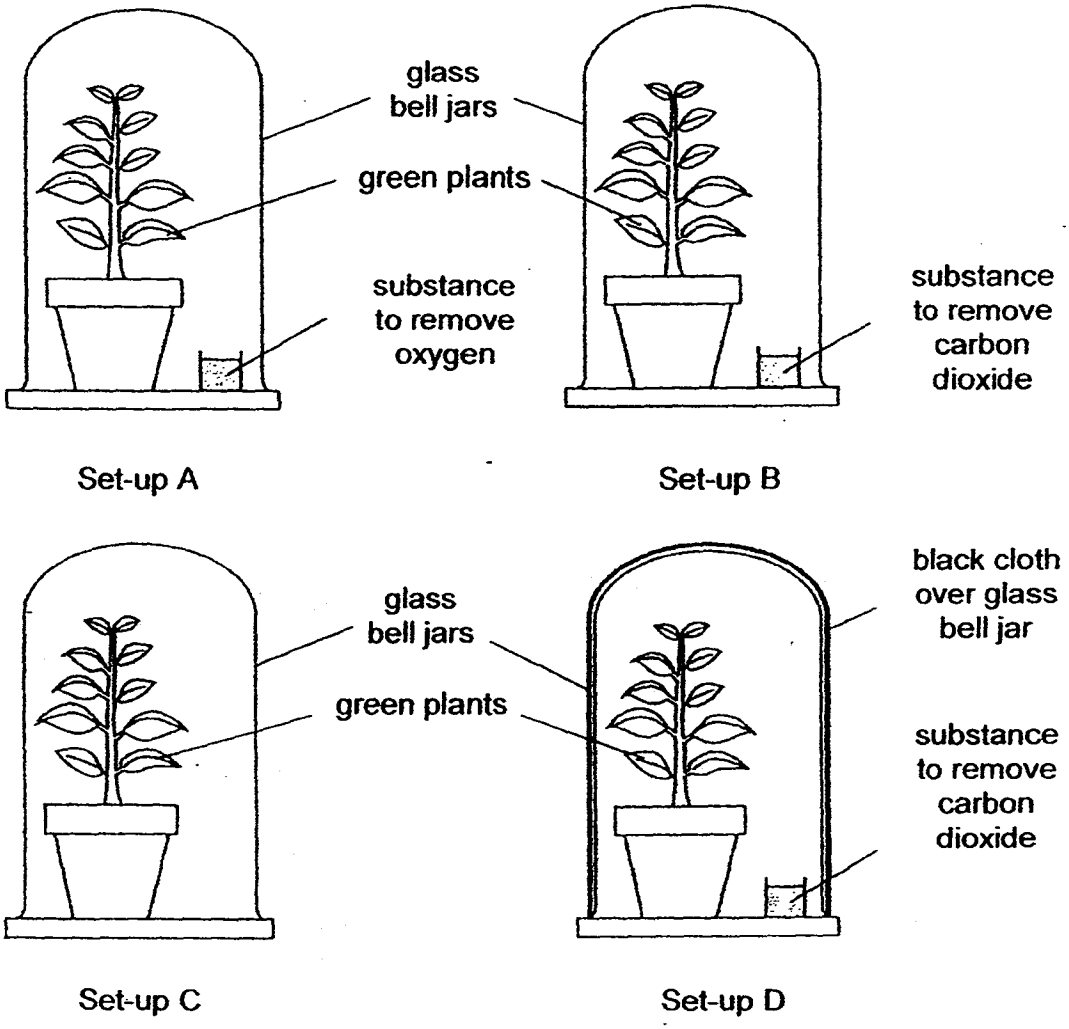
After 6 hours, each leaf was weighed again and the loss in mass was recorded in the table below.

	leaf A	leaf B	leaf C	leaf D
Loss in mass (g)	7	3	0	10

Which of the following can be concluded from the results?

(1) Leaf C lost the most amount of water.
(2) There are no stomata on the top surface of the leaves.
(3) There are more stomata on the bottom surface than the top surface of the leaves.
(4) Leaf D has the most amount of water in the leaf at the end of the experiment.

6 Jane conducted an experiment to find out if carbon dioxide is needed for photosynthesis. She prepared four set-ups shown below.

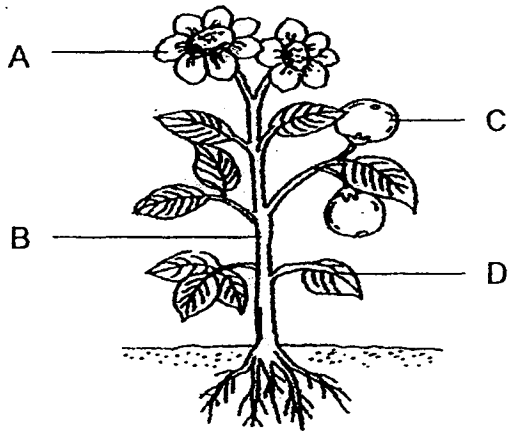


Which two set-ups should Jane use to carry out her experiment?

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

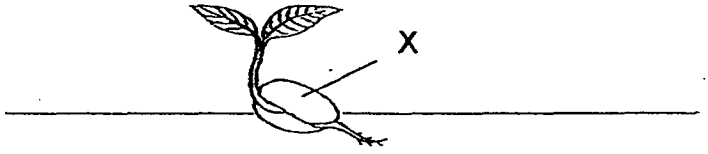
7 Plants take in water from the soil through their roots.

Where is the water transported to?



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

8 Samuel recorded the following information of the organism shown below in his notebook.

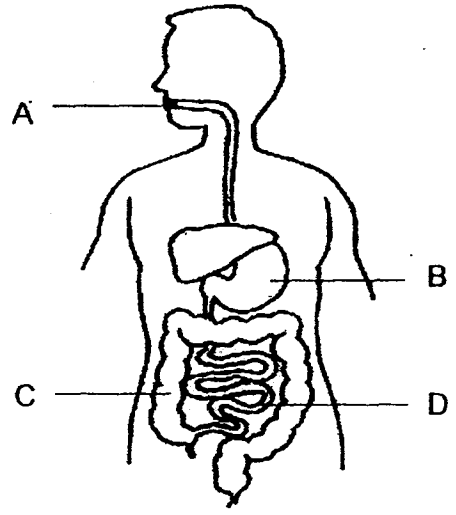


A This plant reproduces by seeds.
B The seed depends on part X to grow.
C The seed can only germinate when there is water and sunlight.
D Part X will continue to grow bigger as the seedling grows to an adult plant.

Which statement(s) is/ are correct about organism?

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

9 The diagram below shows the human digestive system.



In which parts, A, B, C or D, are digested food and water absorbed into the blood vessel?

	Part that absorbed	
	digested food	**water**
(1)	D	C
(2)	C	B
(3)	A	D
(4)	B	C

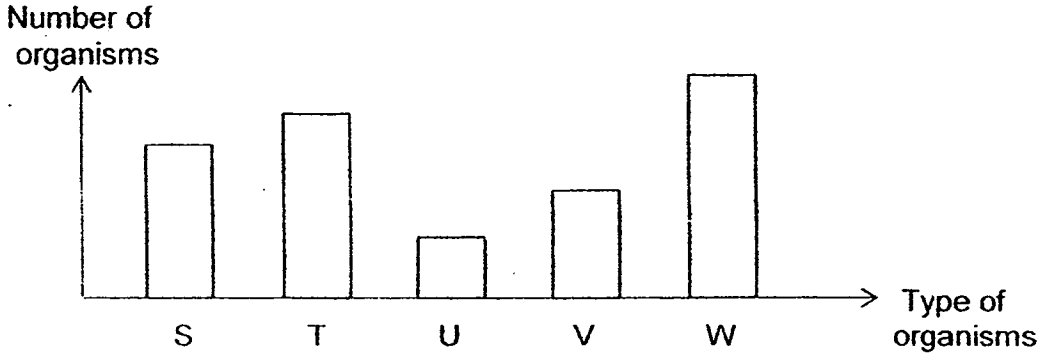
10 The following relationships were observed among four living things E, F, G and H.

E feeds on H.
G feeds on E and H.
H gets its food from F.

Which one of the following classifications is correct?

	producer	**prey**	**predator**	**prey and predator**
(1)	F	E	G	H
(2)	G	E	F	H
(3)	F	H	G	E
(4)	G	F	H	E

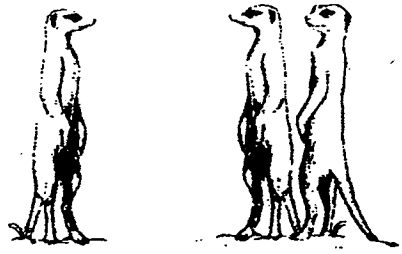
11 The graph below shows the five populations of organisms living in a community.



Based on the information above, which of the following food chain is **possible?**

(1) T → U → V
(2) W → S → U
(3) W → V → S
(4) U → T → W

12 The diagram shows a population of Animal M.

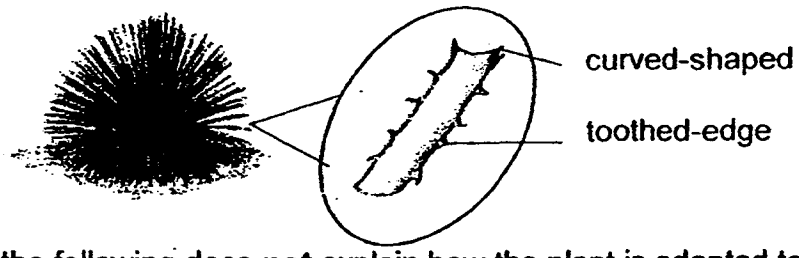


Several Animal M often stand on their rear legs and gaze alertly over the open area where they live. They watch the skies and give a sharp, shrill call when they see hawks and eagles. The other animals would then run and hide in **underground burrows.**

Which of the following statements show how the population of Animal M works together in numbers?

(1) Animal M gives a sharp, shrill call to alert others when they find food.
(2) Animal M stands guard to look out for birds that can snatch them from the ground.
(3) Animal M stands on their rear legs to warn other animals of their presence.
(4) Animal M gazes over the open area where they live to search for a hiding place.

13 The diagram below shows a plant with long roots and curved-shaped leaves. The leaves have small surfaces and are toothed-edge.



Which of the following does **not** explain how the plant is adapted to survive in the desert?

(1) The long roots go deep underground to absorb water.
(2) The toothed-edge leaves prevent animals from feeding on them.
(3) The curved-shaped leaves channel rain water to the stem and base.
(4) The small surfaces of the leaves reduce water loss through its stomata.

14 Bird P lives in a very cold environment.

Bird P

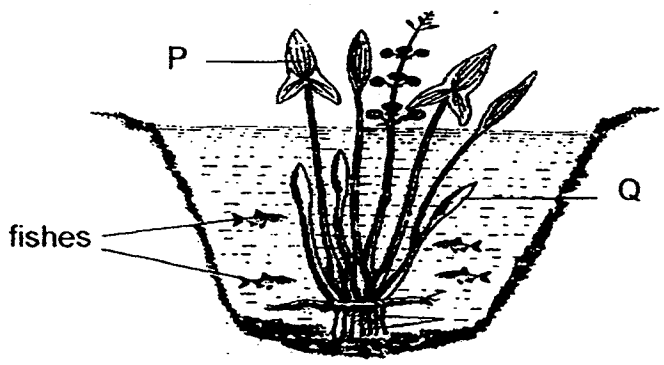
Bird P usually stands with its back facing the sun and stays close to another Bird P.

Which of the following are the reasons for such behaviour?

A Bird P stays close to one another to keep warm.
B Bird P stays close to one another for protection from predators.
C The black surface on Bird P's back absorbs the heat from the sun.
D The black surface on Bird P's back helps it blend in with the surrounding.

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

15 The diagram below shows a plant and some fishes in a pond.

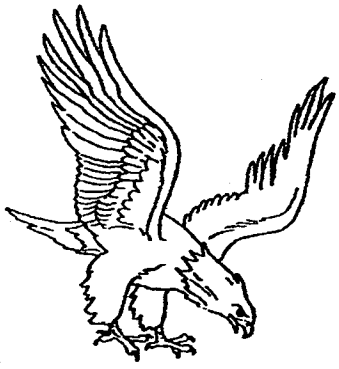


Leaf P is growing above water and leaf Q is growing in the water. Small fishes swim among the submerged leaves.

Which one of the following statements about Leaf P and Leaf Q is **not** correct?

(1) Leaf Q provides shelter to the fishes.
(2) Leaf P is a source of food for the fishes.
(3) Leaf Q can absorb dissolved carbon dioxide from the water.
(4) Leaf P is broader than Leaf Q so that it can absorb more sunlight for photosynthesis.

16 The diagram below shows an eagle searching for food.



Which one of the following structural adaptations of the eagle is **not** correctly matched to its function?

	Structural adaptation	Function
(1)	good eyesight	to spot prey from far above the ground
(2)	sharp pointed beak	to catch and hold on to prey
(3)	layer of feathers	to trap air to keep warm
(4)	streamlined body shape	to use less energy to fly through the air

17 Fruit trees, vegetables and butterflies make up a community in a farm. The farmers sprayed insecticide on the vegetables when he found that they were eaten by caterpillars.

How would the spraying of insecticide affect the amount of fruits and vegetables produced and the population of butterflies?

	fruits	vegetables	butterflies
(1)	decrease	increase	decrease
(2)	increase	increase	decrease
(3)	decrease	increase	increase
(4)	increase	decrease	increase

18 The conditions in habitats S, T, U and V are given in a table below.

Habitat			
S	**T**	**U**	**V**
sunny	sunny	dark	shady
grassland	sandy soil	damp	muddy soil
moderate amount of water available	little rainfall throughout the year	a lot of dead plant matter	fresh water

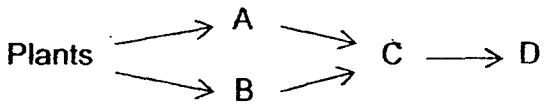
Organisms A and B have the following characteristics.

Organism A	Organism B
has swollen stem	feeds on wood
has needle-like leaves	hides under dead logs

In which habitat can we find the organisms A and B?

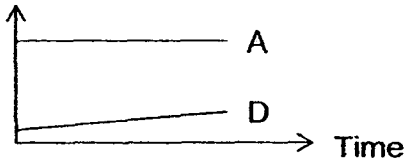
	Organism A	Organism B
(1)	V	T
(2)	S	V
(3)	U	S
(4)	T	U

19 Food relationships between some organisms are shown in the food web below.

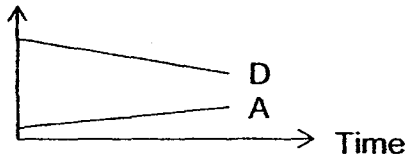


If the population of Animal C decreases, which of the following graphs shows the changes in the population of Animal A and D?

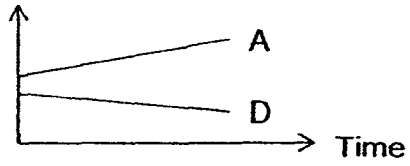
(1) Population



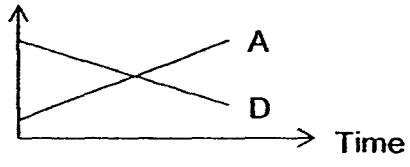
(2) Population



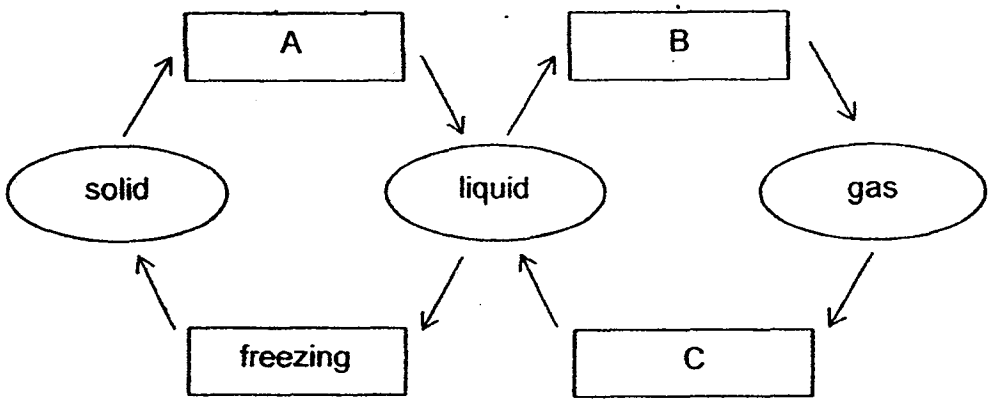
(3) Population



(4) Population



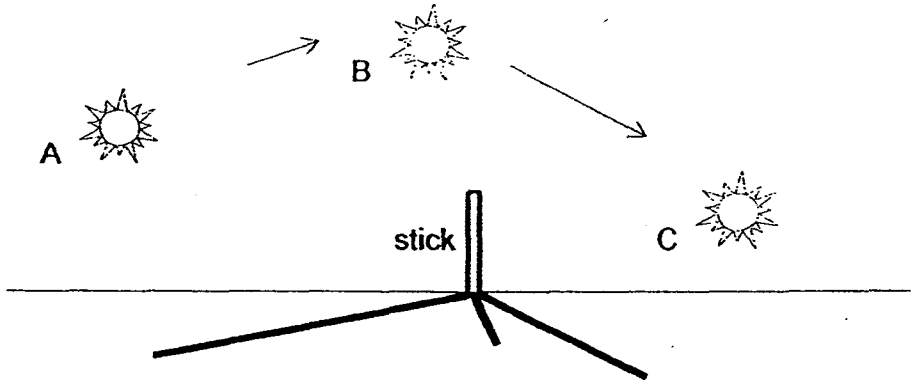
20 The diagram below represents the changes of state of water.



Which one of the following correctly describes the processes at A, B and C?

	A	B	C
(1)	melting	evaporation	condensation
(2)	condensation	evaporation	melting
(3)	melting	condensation	evaporation
(4)	condensation	melting	evaporation

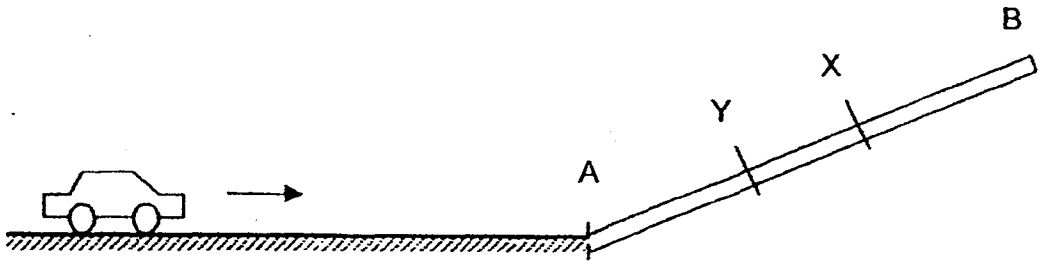
21 The diagram below shows the shadows of a stick as the Sun moves from position A to C.



As the Sun moves from position A to C, what can be said about the shadow of the stick?

(1) The shadow of the stick is the longest when the Sun is at A.
(2) The shadow of the stick is the shortest when the Sun is at C.
(3) The shadow of the stick formed when the Sun is at B is the same length as the stick.
(4) The shadow of the stick formed when the Sun is at A is longer than the shadow formed when the Sun is at B.

22 Samuel pushed a toy car towards a wooden plank AB as shown in the diagram. The toy car went up the plank, stopped at X and rolled down the plank.

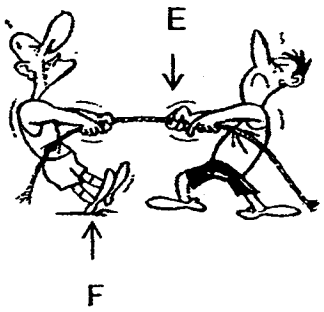


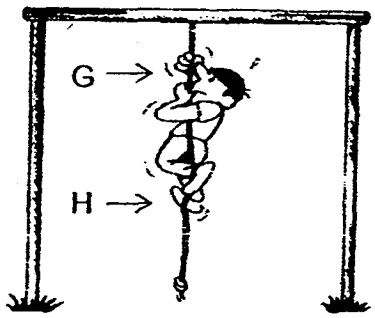
Samuel pushed the same toy car from the same starting point again. But this time, the toy car stopped at Y and rolled down the plank.

Which of the following could explain why the toy car did **not** reach X when Samuel pushed it the second time?

(1) The toy car has a smaller mass.
(2) The speed of the toy car was greater.
(3) The kinetic energy of the toy car was smaller.
(4) More kinetic energy was converted to gravitational potential energy.

23 Many of our activities involved pulling and pushing. E, F, G and H are the forces exerted by the men.

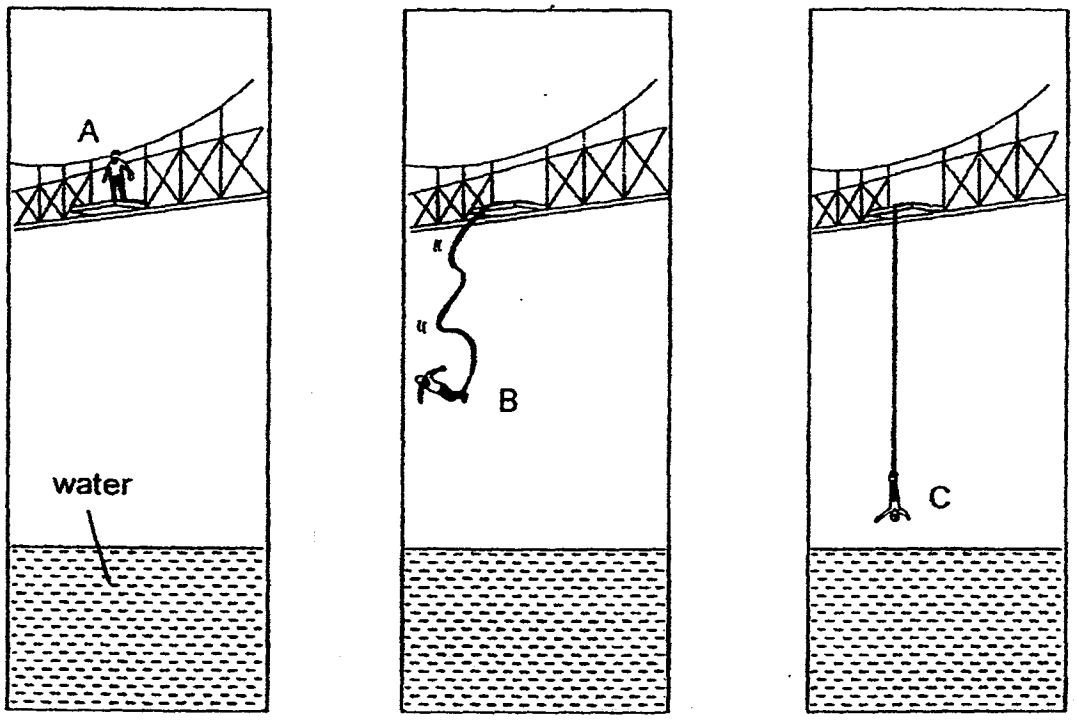




Which one of the following shows the correct force?

	Push		Pull	
(1)	F	H	E	G
(2)	E	G	F	H
(3)	F	E	H	G
(4)	G	H	E	F

24 A man did a bungee jump from a bridge as shown below.

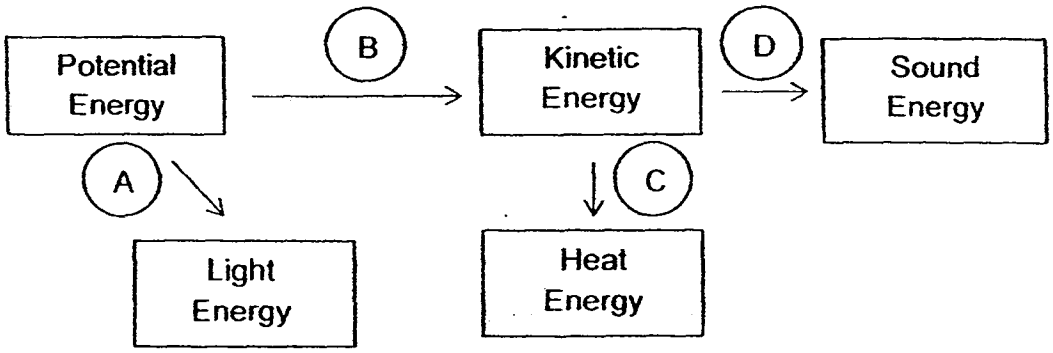


The man stood at A before jumping off the bridge. When he jumped off, he fell towards the water. After bouncing up and down a few times, he came to a stop at C.

Which one of the following statements about the man is correct?

(1) The amount of kinetic energy of the man at C is zero.
(2) The gravitational force acting on the man is the greatest at A.
(3) The amount of kinetic energy of the man is lower at B than at A.
(4) The amount of gravitational potential energy of the man is the lowest at B.

25 The diagram below shows some energy conversions.



A, B, C and D are 4 different actions as listed below.

A Burning a candle
B Roller coaster going up the track
C Rubbing your hands together
D Blowing a whistle

Which actions A, B, C and D are correctly represented in the diagram?

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

26 Deforestation is harmful to our environment.

What is the impact of deforestation?

A Less variety of animals
B More rainfall in the forest
C Less carbon dioxide in the air
D More soil being washed away by rain

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

27 The Earth has experienced an increase in the temperature of the air over the last ten years due to global warming.

Which of the following activities can contribute to global warming?

A Driving a petrol car to work
B Building more incinerators to burn rubbish
C Turning on the air-conditioner in the bedroom
D Growing different types of plants in the garden

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

28 Ahmad arranged four metal bars, EF, GH, WX and YZ, in the following ways. The bars attracted each other without any repulsion. Two bars are magnets and the other two bars are iron bars.

He was then told that EF is a magnet and E is the N-pole, and F will repel X when placed facing each other.

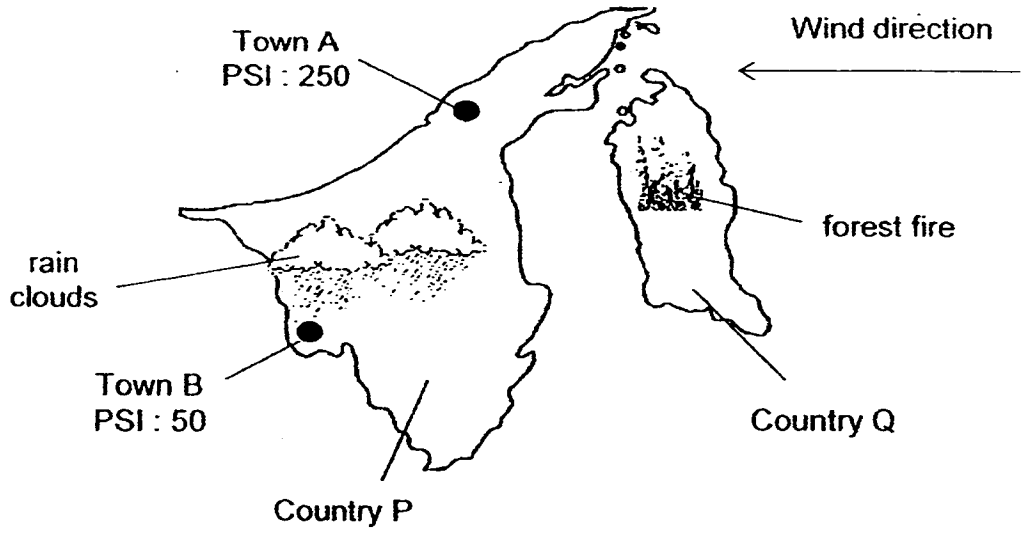
Based on the information given above, which two of the following statements would be true of the metal bars?

A YZ is an iron bar.
B H will be attracted to Z.
C GH is a magnet and G is the S-pole.
D WX is a magnet and W is the N-pole.

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

29 The Pollutant Standards Index (PSI) is a type of air quality index that indicates how polluted the air is.

The map below shows the PSI of different locations in Country P. Country P is experiencing hazy conditions due a forest fire in Country Q.

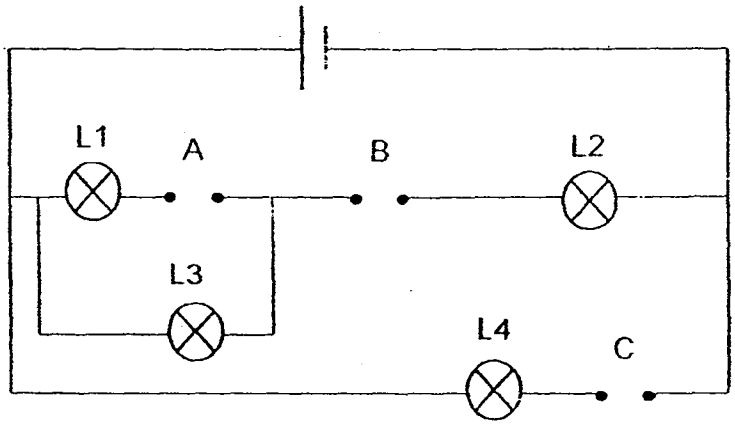


Which two of the following explain why the PSI at Town A is higher than the PSI at Town B?

A Country P is larger than Country Q.
B The rain has washed away some of the dust in the air.
C Town A is located further from the forest fire than Town B.
D The wind has blown the ash from the forest fire in Country Q to Town A.

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

30 Matthew had three bars, X, Y and Z, made of unknown materials. He placed them in various positions, A, B and C, of the circuit shown below.



The results of the experiment were shown in the table below. A tick (√) was placed in the box when any of the lamps, L1, L2, L3 or L4, lit up during the experiment.

Positions where bars were placed			**Lamp**			
A	B	C	L1	L2	L3	L4
X	Y	Z	√	√	√	

Which of the following would show the correct results if the bars X, Y and Z, were placed at different positions?

	Positions where bars were placed			**Lamp**			
	A	B	C	L1	L2	L3	L4
(1)	Y	X	Z	√	√		√
(2)	Z	Y	X	√		√	√
(3)	Z	X	Y	√	√	√	
(4)	X	Z	Y				√

PEI HWA PRESBYTERIAN PRIMARY SCHOOL

PRELIMINARY EXAMINATION

PRIMARY 6

SCIENCE

(BOOKLET B)

27 AUG 2015

Name: _____ ( )

Class: Resilience _____

Parent's Signature

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

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

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

This booklet consists of 15 printed pages, excluding the cover page.

For questions 31 to 44, write your answers in the spaces provided.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

(40 marks)

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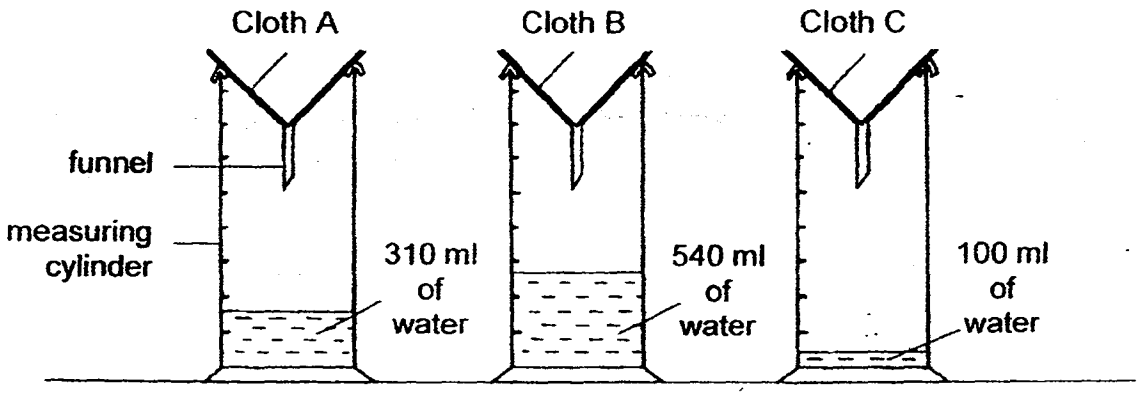
31 Alice conducted an experiment with three different cloths, A, B and C. She wanted to find out how much water can be absorbed by the different cloths.

She lined 3 similar funnels with the cloths. She poured the same amount of water onto each cloth and allowed the water to flow through the cloth into 3 similar measuring cylinders.

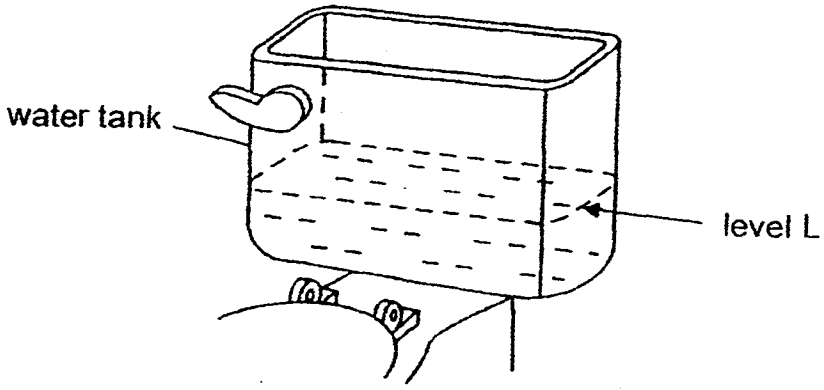
The diagrams below show the results she obtained.



(a) Based on Alice's results, which one of the cloths, A, B or C, should she use to make a towel? Give a reason for your answer. [1]

(b) State one other variable that Alice should keep constant to make her experiment a fair test. [1]

32 A water tank used for flushing a toilet bowl is shown below. The flushing and re-filling system is not shown in the diagram.



After flushing, water enters and re-fills the tank. The tank will stop filling when the water reaches level L.

Michael wanted to use less water to flush the toilet bowl. Jenny suggested putting a sealed, empty plastic bottle into the water tank.

(a) However, Jenny's suggestion does not help to reduce the amount of water used to flush the toilet bowl. Give a reason **why her suggestions does not help.** [1]

_____

_____

(b) What should be done to make Jenny's suggestion work? [1]

_____

_____

(c) Jenny's suggestion is based on a property of matter. State this property. [1]

_____

_____

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

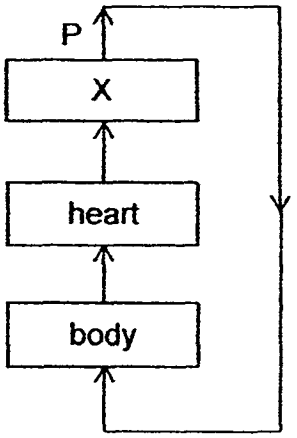


Figure 1 (fish)

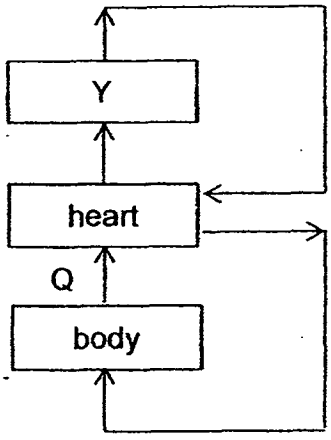


Figure 2 (human)

(a) Name the organs which X and Y represent. [1]

X : _____

Y : _____

(b) State one difference in terms of the amount of oxygen found in the blood flowing at P and Q. [1]

_____

_____

34 Samantha found 2 plant stems, A and B, in her garden.

She made a cut in the stems to obtain a sample of their cells. She observed them under a microscope and noticed some similarities and differences.

She recorded her observations in the table below.

Cell part	Cell A	Cell B
Cell wall	Yes	Yes
Nucleus	Yes	Yes
Cytoplasm	Yes	Yes
Chloroplasts	Yes	No
Cell membrane	Yes	Yes

(a) Samantha was told that one of the stems is from a cactus plant while the other one is from an onion.

Based on the observations in the table above, identify the stems, cactus or onion, from which Cell A and Cell B were taken from. [1]

Cell A : _____

Cell B : _____

(b) Explain why chloroplasts is present in Cell A but not in Cell B. [2]

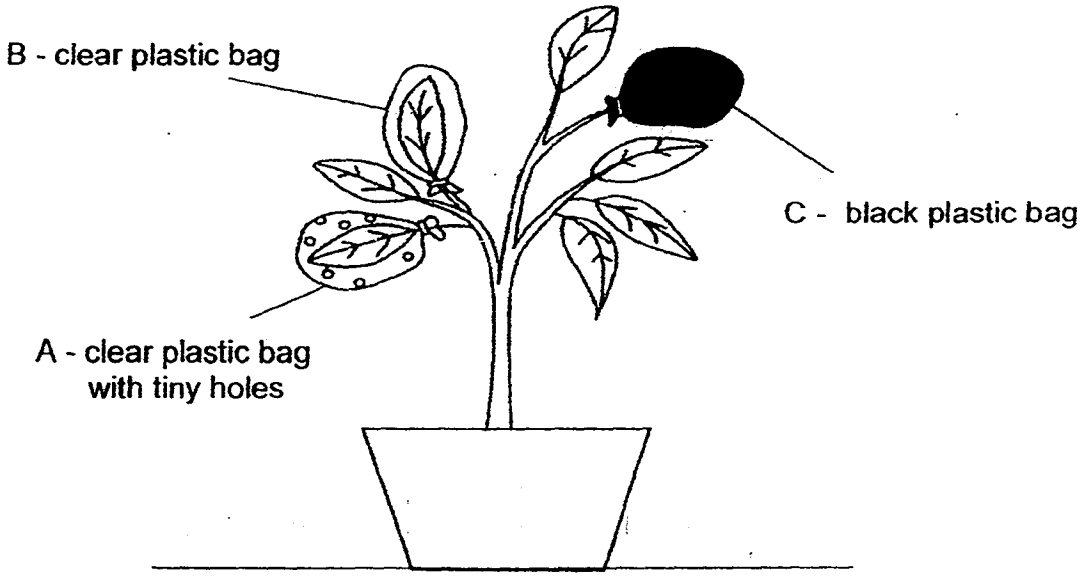
_____

_____

_____

_____

35 William set up an experiment. He wrapped three similar leaves in different types of plastic bags. The plastic bags are of the same size. He left the plant under bright light for a few hours.

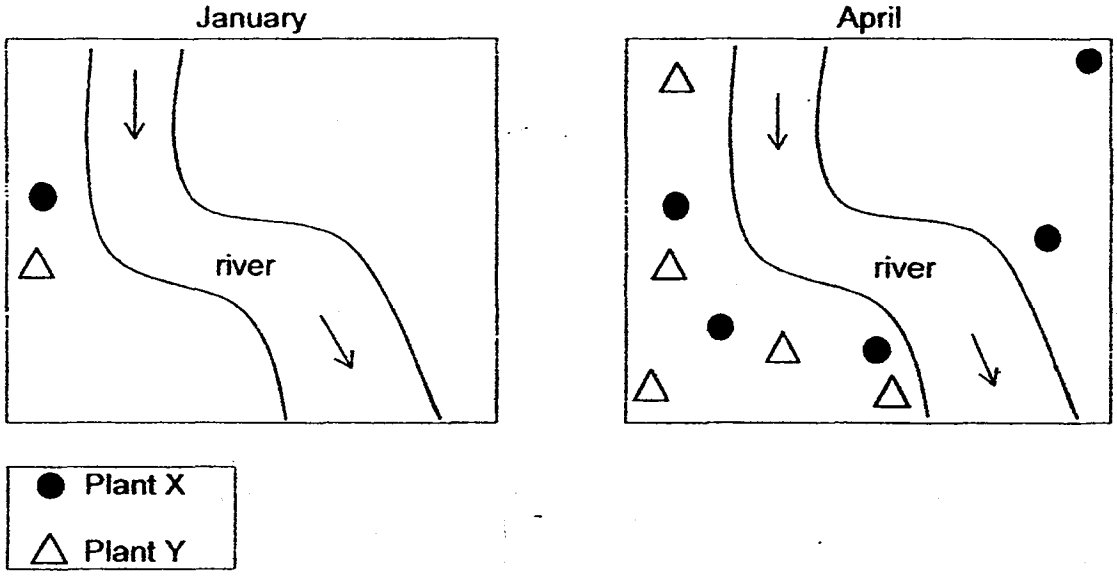


(a) After 5 hours, which plastic bag will contain the most amount of carbon dioxide? Give a reason for your answer. [1]

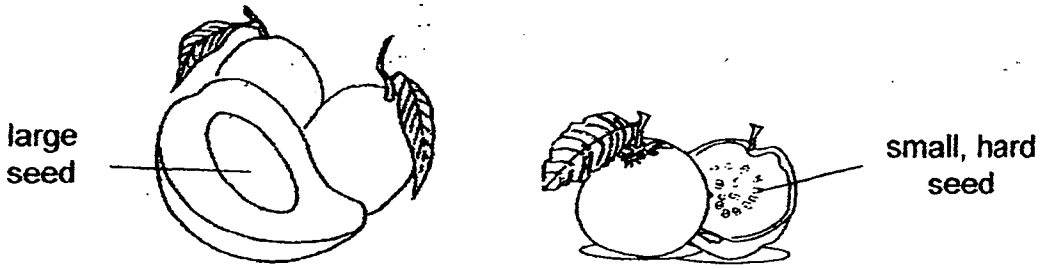
(b) William found that the leaf in plastic bag A has the most starch. Explain why this is so. [2]

36 The map below shows the number of wild plants X and Y on a piece of land over a period of time.

Many small birds feed on the fruits from plants X and Y.



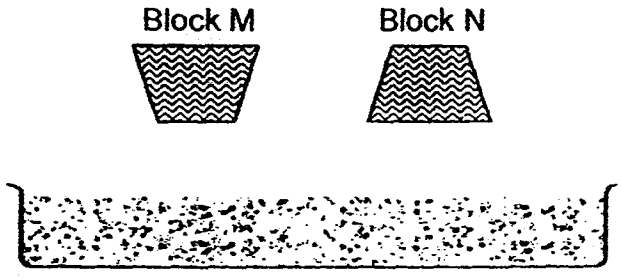
Which one of the following is likely to be the fruit of plant X?
Choose your answer and tick (√) in the box.



Explain your answer. [2]

37 Peter filled up a container with sand and dropped two wooden blocks, M and N, from the same height onto the sand as shown below. The two blocks have the same mass but have a different base area.

He measured the depth of the dents made by the blocks in the sand.

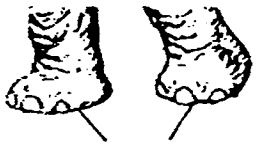


His results are shown below.

Block	Base area of block (cm^2)	Depth of dent (cm)
M	4	7
N	16	3

(a) From Peter's results, how would the base area of the block affect the depth of the dent made by the block in the sand? [1]

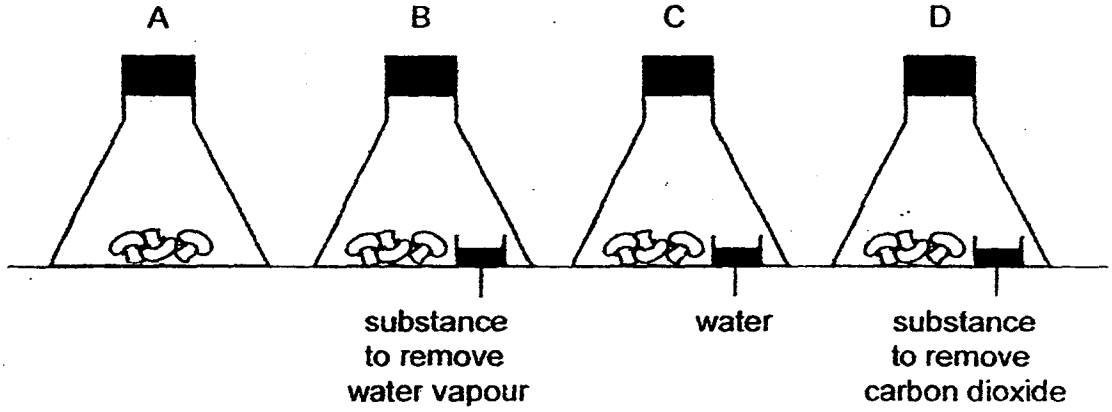
(b) Animal G can be found along the beach. It has feet with a large base.



Animals G's feet

Based on Peter's experiment above, explain why having a large base for its feet is an advantage for animal G when it moves on the beach. [1]

38 Three mushrooms of the same type were placed in each of the flasks, A, B, C and D, and kept airtight as shown: The flasks were kept at different temperatures and observations of the mushrooms were recorded in the table below.



A (√) shows signs of decay while (X) shows no sign of decay.

Temperature (°C)	A	B	C	D
5	X	X	X	X
7	X	X	√	X
8	X	X	√	X
11	√	X	√	√
13	√	X	√	√
15	√	X	√	√

(a) State all the conditions that cause decay. [1]

_____

(b) Give a reason why the mushroom in flask B did not show signs of decay. [1]

_____

(c) Based on the table shown above, explain why the observation for the mushrooms in flasks A and D are the same at the different temperatures. [1]

_____

_____

39 The table below shows the freezing points of three substances X, Y and Z and their state at 75°C.

Substance	Freezing point (°C)	State of substance at 75°C
X	10	liquid
Y	45	gas
Z	80	solid

(a) Based on the given information, what could be the boiling point of substance Y? [1]

_____

(b) (i) Using the information given in the table, what is the maximum temperature at which all three substances be in the same state? [1]

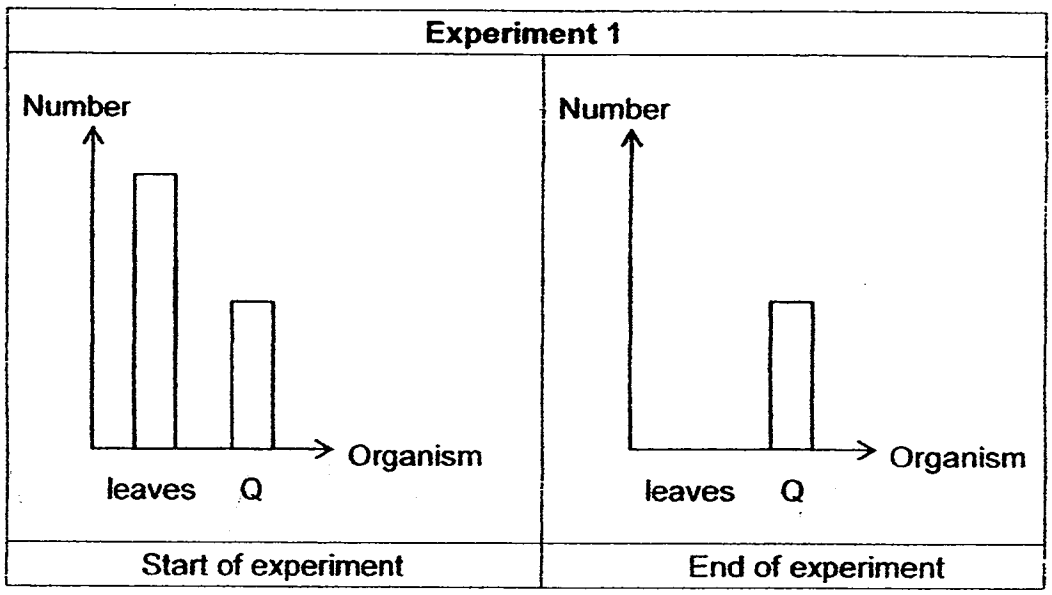
_____

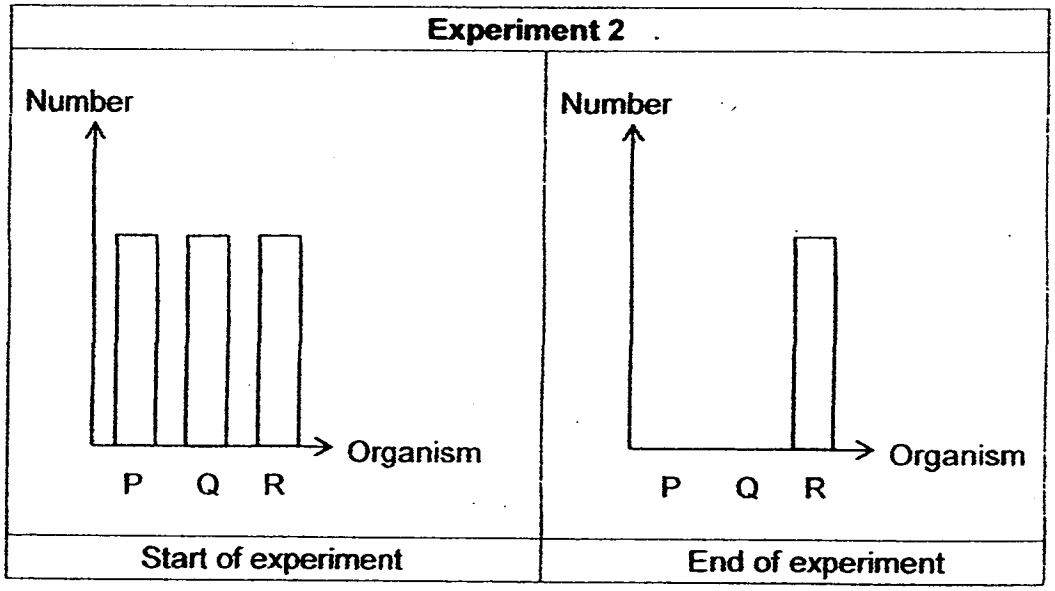
(ii) What will be the state of the three substances at the temperature mentioned in b(i)? [1]

_____

40 Patrick conducted two experiments to find out about the diet of organisms P, Q and R.

The graphs below shows the observations of the experiments conducted over a few days.





All organisms were healthy and they did not reproduce during the experiment.

Question 40 continues on page 11

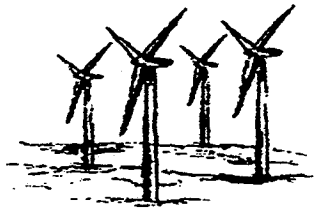
(a) Given that organism P is a meat-eater, draw a possible food relationship among the plant, organism P, organism Q and organism R. [2]

Plant →

(b) In the wild, these organisms form a community.

Suggest what may happen to the population of organism P if organism R is removed from the environment. Explain your answer. [1]

41 The diagrams below show 2 examples of renewable sources of energy.

Light energy from the Sun	Kinetic energy from wind
	
solar panels at a solar farm	windmills at a wind farm
• Energy is collected during day time • Farms are found in open areas	• Energy is collected when it is windy • Farms are found near coastal area, on top of hills or large unobstructed areas

(a) State one advantage and one disadvantage of using renewable sources of energy. [2]

Advantage : _____

_____

Disadvantage : _____

_____

(b) The energy from the Sun is collected during day time. How can this energy be used at night? [1]

_____

_____

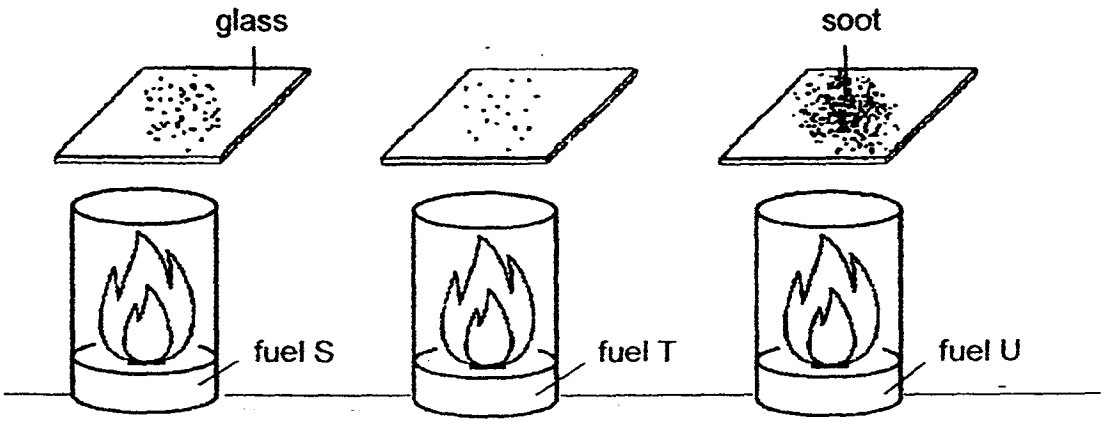
(c) Why are we unable to build a windmill farm in Singapore? [1]

_____

_____

42 An experiment was carried out to compare three types of fuel, S, T and U used in motorcars.

The same amount of the three fuels was burnt and a glass sheet was placed on top of the containers. The amount of soot collected after one minute is shown below. Soot is a black powdery substance that pollutes the air and is produced when fuels are burned.

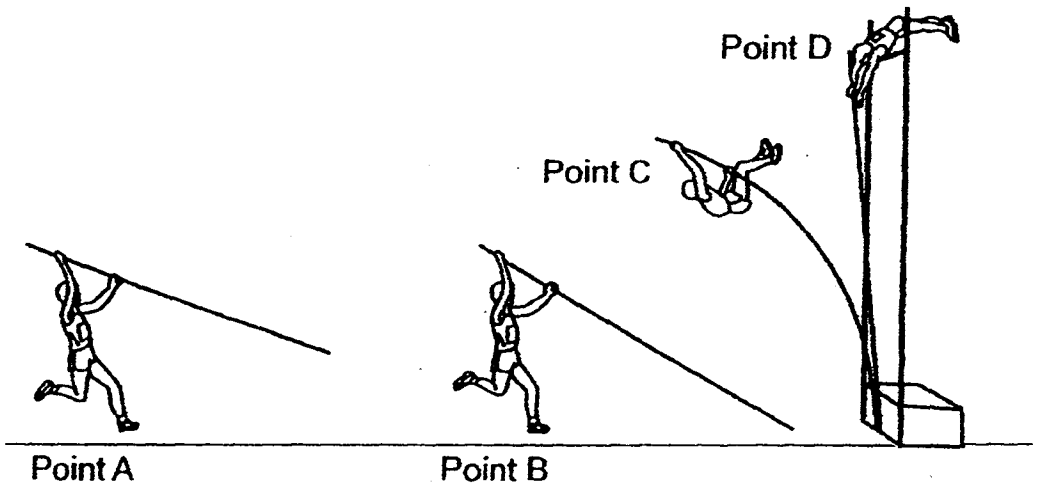


(a) To reduce air pollution, which type of fuel would you recommend to motorist? Explain your answer [1]

(b) Plants growing near industrial estate usually have their leaves covered with soot.

Explain how the plants would be affected by the soot. [2]

43 The diagram shows a man participating in a sport called pole vaulting. From point A, he will run towards point B and lunge up in the air with the help of a pole until he crosses a bar at point D, the highest point.



(a) State the main form of energy that the man possesses at : [2]

Point B : _____

Point D : _____

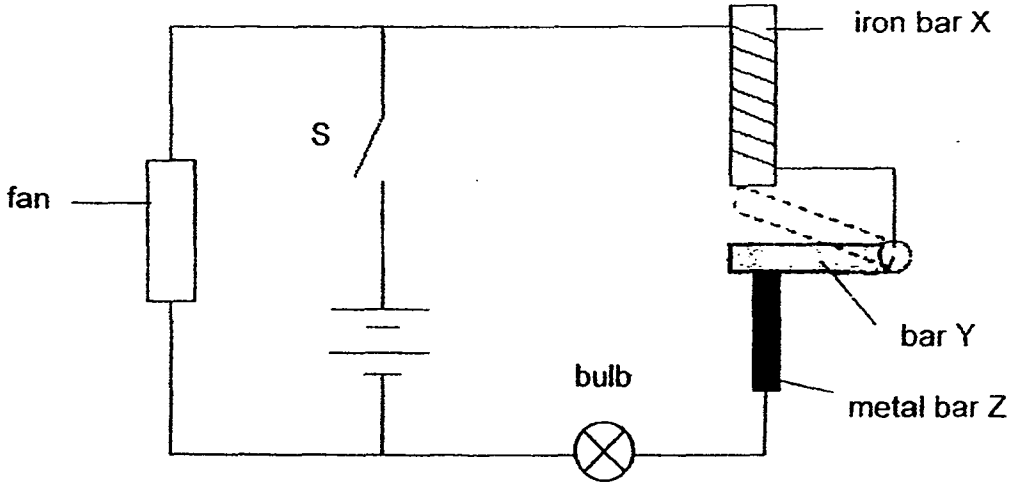
(b) The pole is made of a material that is flexible. Explain how this property of the material helps the man to pole vault over the bar. [1]

_____

_____

_____

44 Study the circuit shown below. When John closed switch S, he noted that the fan turned on and the light bulb turned on and off repeatedly.



(a) Explain how the light bulb was turned on and off repeatedly. [2]

(b) John replaced bar Y with a wooden bar. What happened to the fan and light bulb when he closed switch S? Explain your answer. [2]

End of paper

EXAM PAPER 2015
LEVEL : PRIMARY 6
SCHOOL : PEI HWA PRESBYTERIAN PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : PRELIMINARY EXAMINATION

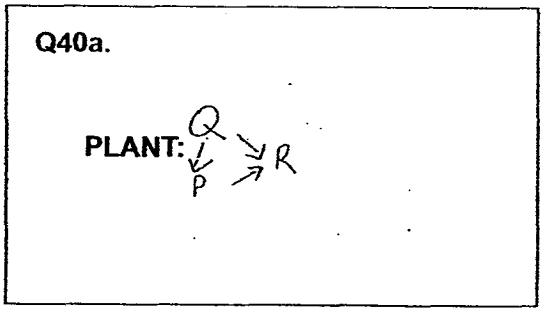
BOOKLET A

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	3	4	2	3	2	3	2	1	3
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	2	3	3	2	2	1	4	3	1
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	3	1	1	4	1	3	2	3	4

BOOKLET B

Q31a. Based on Alice's results, Alice should use cloth C to make a towel. A towel needs to be absorbent so that it can absorb the water. Cloth allows the least amount of water to pass through as compared to the other cloths, so it is the most absorbent.
Q31b. Thickness of the towel.
Q31a. The sealed empty plastic bottle will float on water.
Q31b. Fill the plastic with stones.
Q31c. Matter occupies space.
Q33a. X : Gills Y : Lungs Q33b. The amount of oxygen in the blood flowing at P is higher than the amount of oxygen in the blood flowing at Q.
Q34a. Cell A: Cactus Q34a. Cell B: Onion
Q34b. The stem in the cactus plant carries out photosynethesis. The onion, the stem cannot make food , so there is no chloroplast in the stem.
Q35a. After 5 hours, the black plastic bag, C will contain the most amount of carbon dioxide. No light is allowed to pass through the black plastic bag. However for the other plastic bags, light is allowed to pass through for the leaves to phtosynethesise and make food, since C cannot photosynethesize, it will respire instead and produce carbon dioxide. Hence, C will contain the most amount of carbon dioxide.
Q35b. The plastic bag A has holes for more carbon dioxide to enter. When there is more carbon dioxide, the leaf in plastic bag A will photosynthesize and make more food than the rest. However, plastic bag B has no holes so there is a limited amount of carbon dioxide for the leaf in B to photosynthesize. In C, the leaf cannot even photosynthesize, at all. Thus, the leaf in plastic bag A has the most starch.
Q36. The seed of Plant X was dispersed by the small birds on both sides of the land, however the seed of Plant Y was only found on one side. This means that one of the seeds were too hard to eat so the bird spit it out before travelling to the other side, which was Plant Y's seeds. Plant X 's seeds were small and hard so the bird only digest the seed and passed it out as faeces on the other piece of land.
Q37a. The least base area of the block will make a depth of bigger area in the sand.
Q37b. The least the base area of Animal G's feet, the greater the depth of the footprints made by animal G in the sand. Animal G's foot has a large base, so the footprint made by Animal G in the sand would be very little. This makes it easier for it to move around as its feet will not be stuck or sink into the footprints.
Q38a. Warmth, air, water Q38b. There was a substance of remove water vapor and without moisture, decay will not occur so the washroom in B did not show sights of decay.
Q38c. Carbon dioxide is not needed in decomposition.
Q39a. 75°C Q39bi) 10°C Q39bii) Solid
Q40a. **SEE PICTURE** Q40b. The population of organism P will increase. When R is removed from the environment, P has no predator to feed on it anymore and will not have a competitor for its food, Q.

Q40a.



Q41a. Advantage : Does not cause harm to the environment.
Q41a. Disadvantage : Energy would not be collected when it is not windy or at night.
Q41b. The energy from the sun can be converted to electrical energy to be used at night.
Q41c. Singapore is a humid country and it is not very windy.
Q42a. I would recommend fuel T. It produces the least amount of soot and soot pollutes the air so I would choose a type of fuel which is T that produces the least amount of soot.
Q42b. The plant's chlorophyll and stomata would be blocked by the soot. This prevents the plants from receiving much light to photosynethesize and make food. The stomata will also be blocked and gaseous exchange would be difficult.
Q43a. Point B : Kinetic Energy, Point D : Gravitational potential energy
Q43b. The material can be bent easily and he can use it to help him plunge up in the air.
Q44a. When the switch is closed, the fan is turned on. The circuit is complete and electricity in the circuit magnetizes the iron bar and it becomes an electromagnet. Bar Y, a conductor of electricity and also a magnetic material was attracted to iron bar X , and the circuit was broken. When the circuit was broken, the iron bar X is demagnetized and bar Y moves back to its original position , completing the circuit again. This process is repeated, causing the light bulb to turn on and off repeatedly.
Q44b. *Answer not available.*

THE END