



**PEI HWA PRESBYTERIAN PRIMARY SCHOOL
PRELIMINARY EXAMINATION**

**PRIMARY 6
SCIENCE**
24th AUGUST 2017

(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

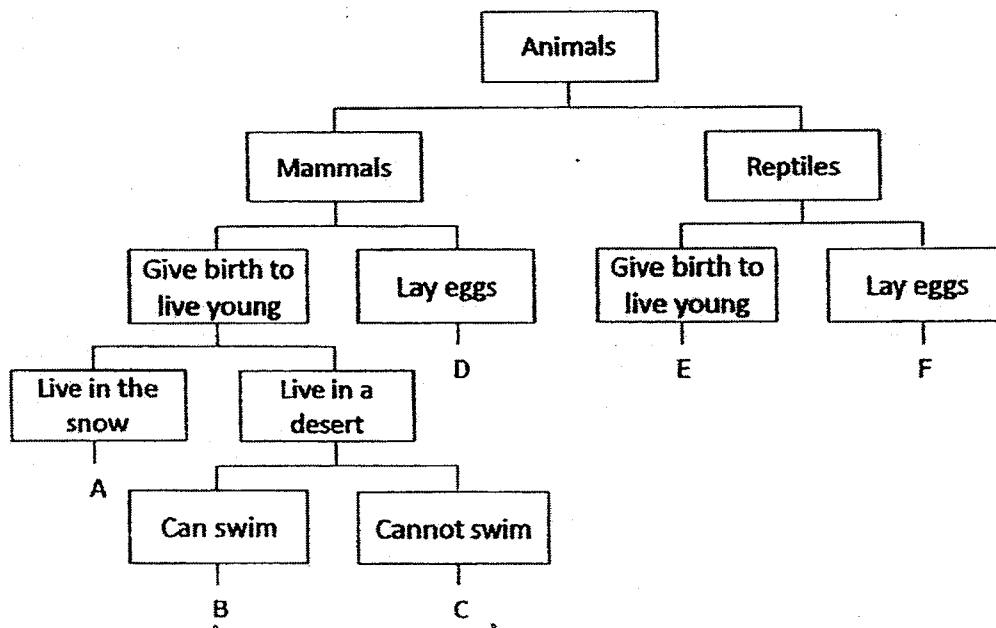
INSTRUCTIONS TO CANDIDATES

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 15 pages in this booklet, excluding the cover page.

For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet. (56 marks)

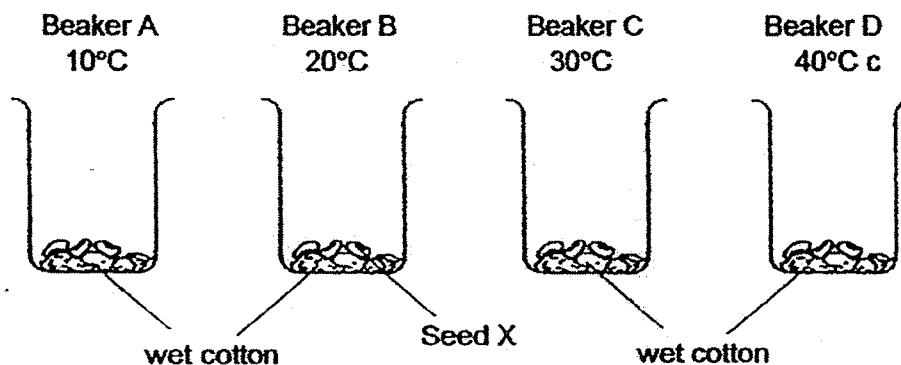
- 1 The classification chart below shows some similarities and differences among animals A, B, C, D, E and F.



From the classification chart, we can conclude that _____.

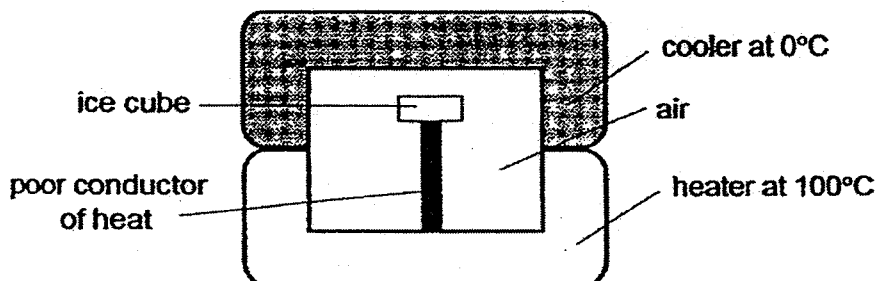
- (1) all reptiles lay eggs
 - (2) A and C give birth to live young
 - (3) mammals living in a desert cannot swim
 - (4) mammals that live in the snow give birth to live young to keep its young warm
- 2 A frog lays many eggs each time. Which of the following statements explains how this helps frogs in their survival?
- (1) To provide more food for its predators.
 - (2) To ensure equal number of male and female frogs.
 - (3) To sink to the bottom of the pond so that it could hide from predators.
 - (4) To increase the chance of the eggs hatching into young and growing into adults.

- 3 Merlin carried out an experiment using 4 similar beakers of equal number of similar seed X.



At the end of the experiment, he noticed that only the seeds in Beaker B germinated. What can Merlin conclude from the experiment?

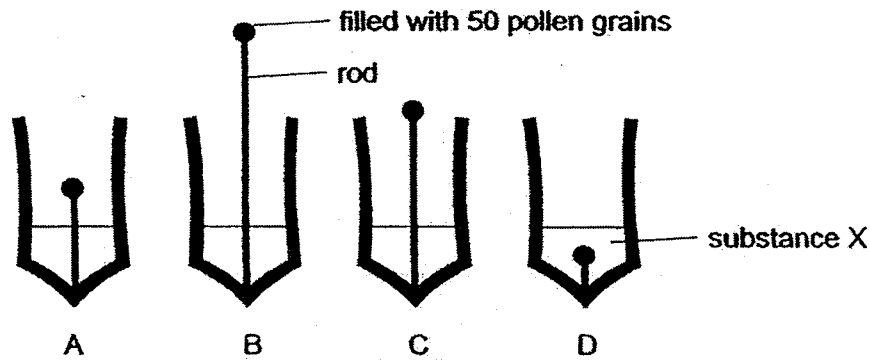
- (1) Seed X germinates only at 20°C.
 - (2) Seed X germinates faster at 20°C.
 - (3) Seed X in Beakers A, C and D are dead.
 - (4) Seed X needs air, warmth and water to germinate.
- 4 Thomas set up a container which was completely sealed using a cooler and a heater as shown below.



What would Thomas most likely observe after a few hours?

- (1) The ice remained solid.
- (2) The ice melted completely.
- (3) All the water escaped from the set-up.
- (4) All the water was collected on the heater.

- 5 Yun Zhao wanted to find out how the distance between the pollen grains and nectar would affect the amount of pollen grains collected by Insect Z. He used substance X which attracts Insect Z and set up the experiment as shown below. He filled the ends of each rod with 50 pollen grains.



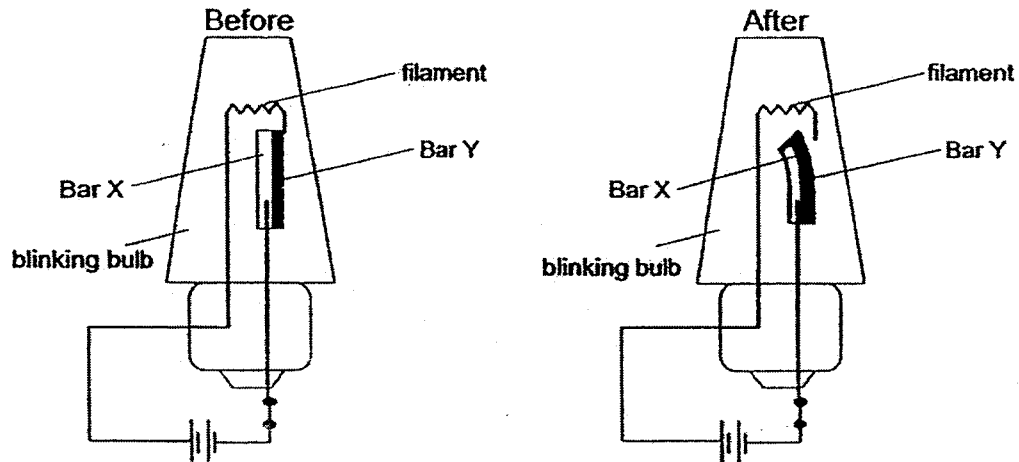
Yun Zhao observed that Insect Z visited all the set-ups the same number of times and recorded the amount of pollen grains left on the rod in the table below.

Set-up	A	B	C	D
Amount of pollen grains left	2	48	35	49

Which of the following best describes the results?

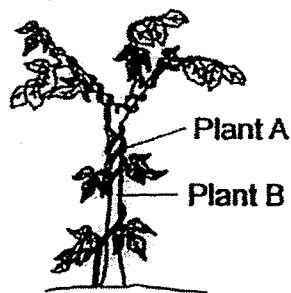
- (1) Set-ups B and D did not attract Insect Z.
 - (2) Insect Z is attracted to pollen grains which are near the nectar.
 - (3) The position of pollen grains in set-up A allows most pollen grain to be collected.
 - (4) The position of pollen grains in set-up D allows most pollen grains to be collected.
- 6 Which of the following is true about the developing human baby in a mother's womb?
- (1) The developing baby carries out life processes only after he is born.
 - (2) The developing baby contains genetic information only from his mother.
 - (3) The gender of the developing baby will only be determined after he is born.
 - (4) The developing baby depends on his mother for nutrients when he is in his mother's womb.

- 7 Sid Ann wanted to find out how her blinking Christmas lights work. She studied the bulbs of her Christmas lights and drew out the circuit diagram as shown below.



After a few tests, she found out that bars X and Y are made out of different materials. Which of the following statements best describes the property of bars X and Y that allows the bulb to blink?

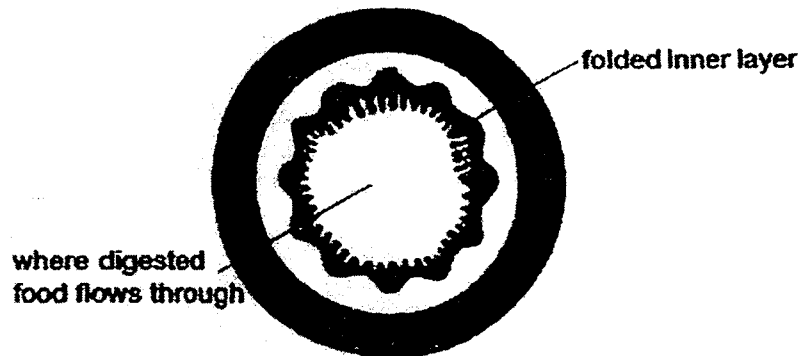
- (1) Bar X reflects more light than bar Y making the bulb blink.
 - (2) Bar Y was a conductor of electricity and bar X was an insulator making the bulb blink.
 - (3) Bar Y was a better conductor of heat thus it expands more than bar X when heated.
 - (4) Bar X was a magnet and bar Y was a magnetic material thus attracting the two bars together.
- 8 Plant A grows around Plant B.



If the branch of Plant B is cut off, what would happen to Plant A?

- (1) Plant A will die as it cannot make its own food.
- (2) Plant A will die as it cannot absorb water from Plant B.
- (3) Plant A will still survive as it only uses Plant B for support.
- (4) Plant A will still survive as it can still absorb water from the branch of Plant B.

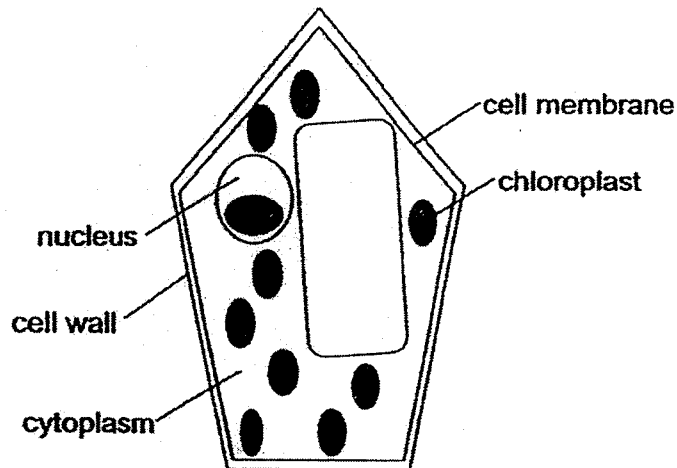
- 9 The diagram below shows the cross-section of the small intestine.



Cross-section of small intestine

Explain why the inner layer is folded.

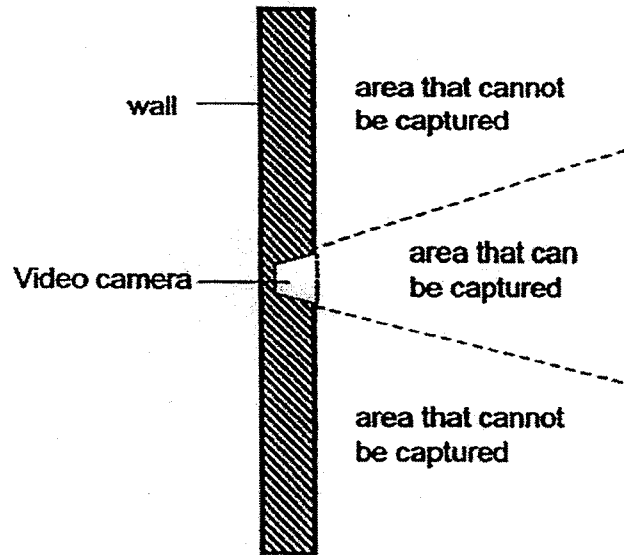
- (1) It is to trap the nutrients so that it could be absorbed.
 - (2) It is to filter away bigger substances so that it will not be absorbed.
 - (3) It is to clean the digested food so only good nutrients are absorbed.
 - (4) It is to have a greater exposed surface area for more nutrients to be absorbed.
- 10 Dr Jones discovered a new single-celled organism with the structure as shown below.



From the structure above, what can be concluded about the organism?

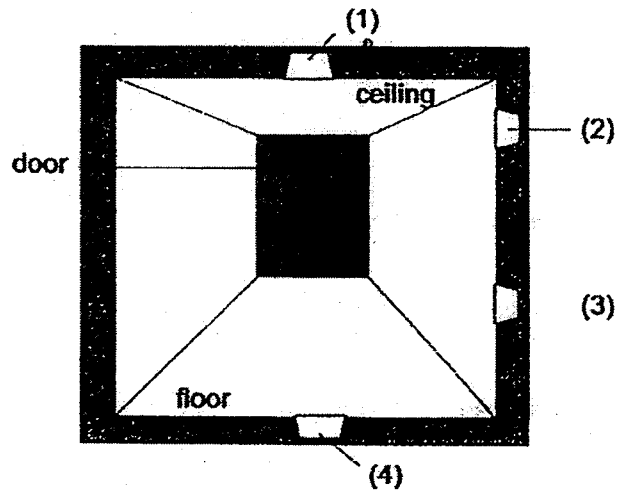
- (1) It is harmful to humans.
- (2) It can make its own food.
- (3) It does not contain genetic information.
- (4) It cannot be killed because of its cell wall.

- 11 Cho hid a video camera in the wall which would capture the image of anyone who walks within a specific area as represented by the dotted lines below.

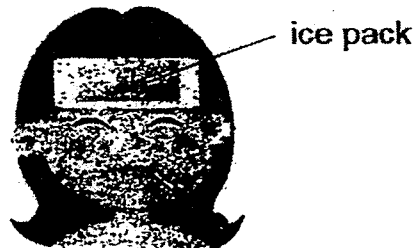


Side View

Which is the best fixed position (1, 2, 3 or 4) he should place his camera so that he would be able to see his kitten as it walks through the corridor?



- 12 Wendy had a fever. Her mum gave her an ice pack to place on her forehead as shown below.



Explain how the ice pack will help Wendy bring her temperature down.

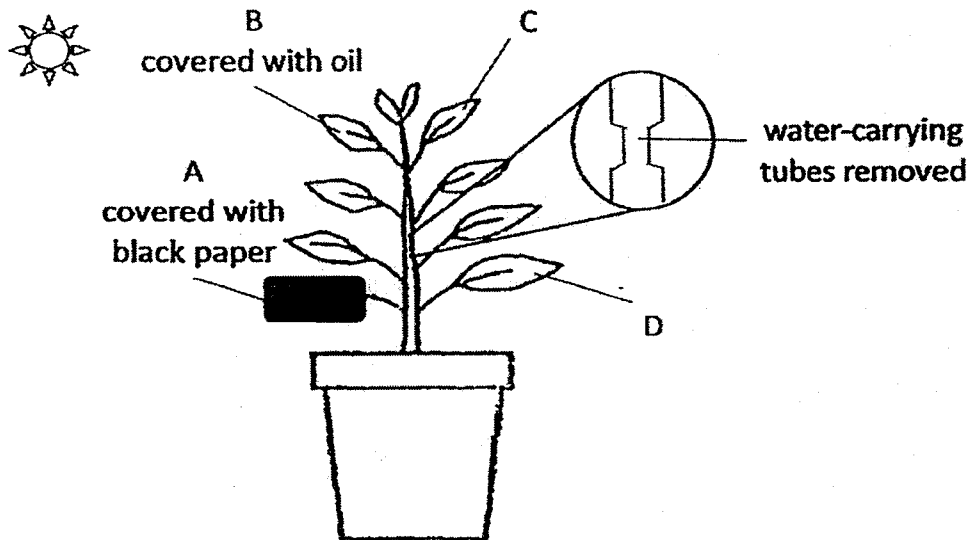
- (1) The ice pack will lose heat, making Wendy lose heat.
 - (2) The ice pack will gain heat from Wendy, making her lose heat.
 - (3) The ice pack will gain heat from Wendy, making her gain heat.
 - (4) The ice pack will transfer coldness to Wendy, making her feel colder.
- 13 Mel listed down the different ways plants and animals obtain their food in the table below.

	Plants	Animals
A	Need sunlight to make food	Need the sun for food indirectly
B	Use oxygen and water to photosynthesize	Need oxygen to survive and hunt for food
C	Food is transported throughout the whole plant through the food-carrying tubes	Food is transported throughout the whole body through the digestive system
D	Excess energy is stored as starch which can be used when required	Excess energy is stored as fats which can be used when required

Which differences, A, B, C and/or D are correct?

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

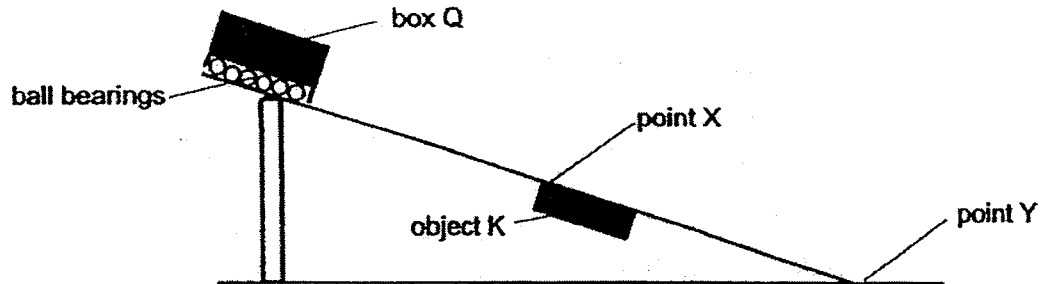
- 14 Yan Hao placed a potted plant in a dark cupboard for 48 hours. After 48 hours, he removed the potted plant and placed the plant in an open field exposed to sunlight for 1 day as shown in the diagram below.



Which leaves, A, B, C and/or D will remain yellowish-brown after a starch test?

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

- 15 Mandy carried out the following experiment. She placed box Q on a ramp and made her observation. She repeated her experiment again and placed some ball bearings between box Q and the ramp.



She recorded her observations in the table below.

	Observation
Box Q on ramp	Box Q did not move
Box Q on iron ball bearings	Box Q stopped at point X

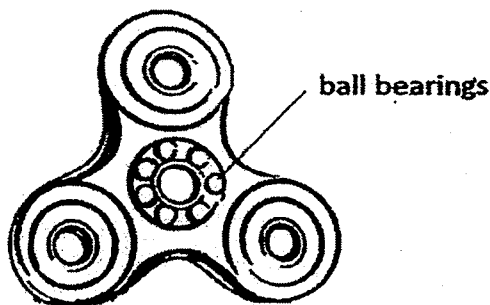
From her observation, why do you think box Q stopped at point X when placed on the iron ball bearings?

- (1) The amount of gravitational force is greater at point X.
 - (2) There is no more gravitational potential energy at point X.
 - (3) The ball bearing was attracted by object K which was a magnet.
 - (4) All of the kinetic energy of the ball bearings was converted to other forms of energy as it roll down from the starting point to point X.
- 16 Organism G lives in dark caves with no light source.

What can organism G do to increase its chance to mate and reproduce?

- (1) It could glow to attract its mate.
- (2) It could dance and expands its chest to attract its mate.
- (3) It could fight other males of organism G to attract its mate.
- (4) It could reveal its colourful body covering to attract its mate.

- 17 Ethan had a fidget spinner which he took apart and saw the ball bearings in it as shown below.



He was curious to find out how the number of ball bearings would affect the time it took for the fidget spinner to come to a stop. Which variable is not necessary for Ethan to take note of as he carried out the experiment?

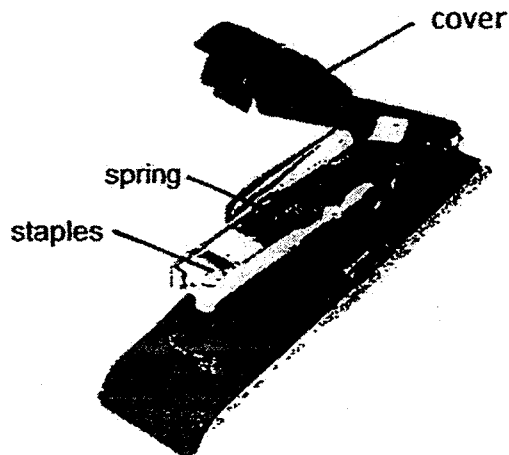
- (1) The amount of force applied to the fidget spinner.
 - (2) The number of ball bearings in the fidget spinner.
 - (3) The number of turns it took before it come to a stop.
 - (4) The time taken for the fidget spinner to come to a stop.
- 18 Valerie was carrying 5kg weights to exercise her arms. She then brought the same weights into a swimming pool. She recorded the maximum amount of times she was able to lift the weights in 1 minute both on land and in the swimming pool. The data was shown in the table below.

Number of times the weights were lifted	
On land	In swimming pool
20 times	50 times

Why is Valerie able to lift the weights more times in the swimming pool?

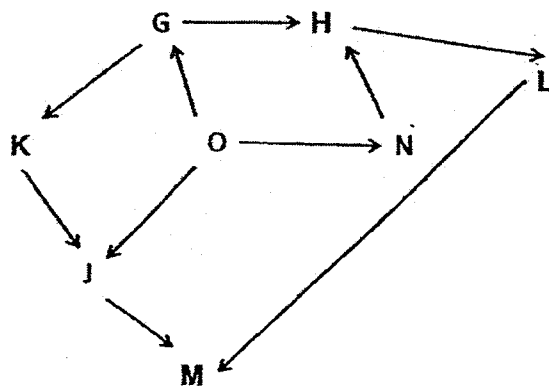
- (1) Valerie has more energy on land than in water.
- (2) The weights have less mass in the swimming pool.
- (3) The water exerts an upward pushing force on the weights.
- (4) The gravitational force acting on the weights in the swimming pool is less.

- 19 Claire was observing a stapler and noticed that it has a spring. When she opened the cover to refill it with staples, the spring in the stapler was compressed. The spring would then slowly move back to its original length when she used the stapler to staple worksheets.



Which of the following statement correctly describes a force at work on the staples as the stapler stapled the worksheets?

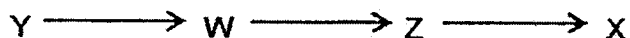
- (1) Gravitational force acted on the stapler to pull down the staple.
 - (2) Pushing force exerted by the spring to move the staple forward.
 - (3) Magnetic force of the worksheet pulled the staple towards the worksheet.
 - (4) The pulling force exerted by the staples as the spring is being compressed.
- 20 The diagram below shows a food web in a community.



Using the food web, which organisms are meat-eaters only?

- (1) G, H, L and N
- (2) H, J, K and M
- (3) H, K, L and M
- (4) J, K, M and N

- 21 Fred observed the number of organisms W, X, Y and Z in habitat K for 4 years. Below shows the food chain of the organisms in the habitat.



The table below shows the result Fred collected over the 4 years.

	Year			
	2014	2015	2016	2017
Population of organism W	160	190	140	260
Population of organism X	15	16	15	15
Population of organism Y	401	431	444	480
Population of organism Z	80	75	100	80

What could be the reason for the decrease in the population of organism W in 2016?

- (1) Habitat K faced drought.
 - (2) An increased population of organism Z.
 - (3) A new prey for organism W was introduced.
 - (4) There was less food for organism W to feed on.
- 22 Pei Yee wanted to create a disposable cup. She conducted an experiment to find out which material is the most biodegradable. She used 100g of materials A, B, C and D and left them in damp soil for a few years. She measured the mass of materials at the end of the experiment in the table below.

Material	A	B	C	D
Mass of material left at the end of the experiment (g)	20	100	60	50

Which material should she use to make her cups?

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

- 23 Heide saw that plant Q is able to survive well in a cold environment with heavy snowfall.



Plant Q

She observed that the snow was mainly found on the leaves furthest away from the trunk of the tree and on the ground. Heide listed down some adaptations which she believed help plant Q to survive.

- A It has needle-like leaves to reduce water loss..
- B It has waxy leaves to reflect light away from the leaves
- C It is shaped like a cone to allow snow to flow down.
- D Its leaves are packed closely together to protect most of the leaves from the snow.

Which statements correctly describe the adaptations of plant Q for it to survive in heavy snowfall?

- (1) A and B only
 - (2) C and D only
 - (3) A, C and D only
 - (4) A, B, C and D
- 24 The statements below describe some changes in the environment in the recent years.
- A Sea level rising
 - B Heavy rain which causes flood in certain areas
 - C Lack of rain causing drought in certain areas
 - D Increased deaths of marine life due to harmful chemical waste

Which of the changes are the effects of global warming?

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

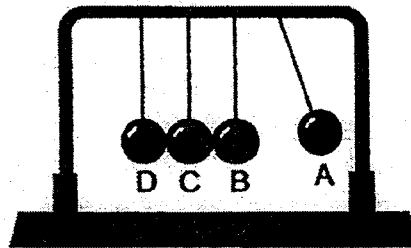
25 Nandini discovered organism O which has the following characteristics.

- It is cylindrical in shape with little hair.
- It has poor eyesight.
- It is able to use very little oxygen for life processes.
- It has long curved claws with short limbs.
- It has a sensitive nose to sense its surroundings.

Which habitat would organism O most likely be living in?

- (1) Pond
- (2) Arctic
- (3) Desert
- (4) Underground

26 Newton was playing with his new toy shown below.

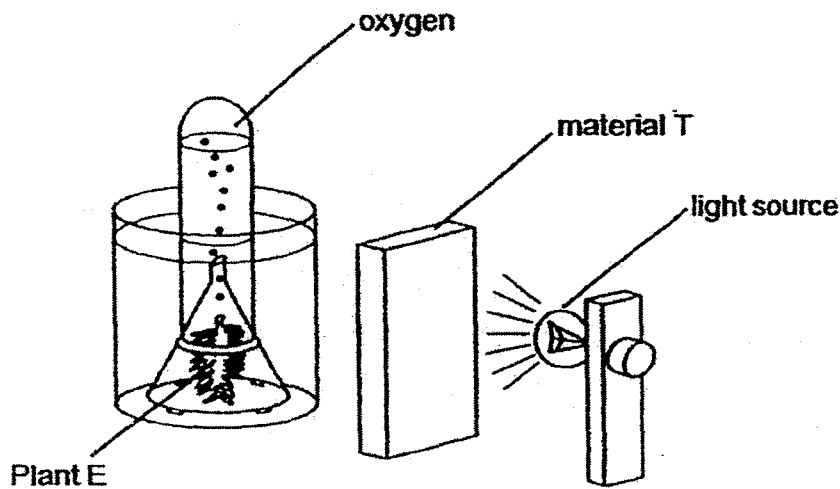


He realised that when he released ball A from a certain height, it would hit ball B but balls B and C would not move. Instead, ball D would move upwards to a height almost equal of that of the release point of ball A.

What is the energy conversion taking place in balls B and C that allows ball D to move upwards?

- (1) Sound and heat energy of balls B and C converted to kinetic energy of ball D.
- (2) Gravitational potential energy of balls B and C converted to kinetic energy of ball D.
- (3) Sound energy of ball B is converted to kinetic energy ball C and transferred to kinetic energy of ball D.
- (4) Kinetic energy of ball B transferred to kinetic energy of ball C and transferred to kinetic energy of ball D.

27 Bob carried out an experiment as shown below.



Bob replaced material T with 3 other materials and repeated the experiment. He recorded his results in the table below.

Material	Number of bubbles produced in 1 minute
T	60
U	25
V	55
W	9

Based on the experiment, which of the 2 variables should be kept the same to ensure that the experiment is fair?

- (1) Type of material and type of plant.
- (2) Thickness of material and amount of light.
- (3) Amount of water and amount of oxygen collected.
- (4) Distance of plant from light source and number of bubbles.

28 Some organisms K were swimming around organism S, which was on a small iceberg. Organism S stayed at the centre of the iceberg. After a while, one of the organisms K swam towards the iceberg, creating a wave which tilted the iceberg, making organism S slide into the water. Another organism K, waiting on the side of the iceberg, swam towards organism S and ate it.

What can you conclude about the way organism K has adapted?

- (1) It has the ability to swim at high speeds to hunt for its prey.
- (2) It worked in groups to hunt for a prey that is difficult to reach.
- (3) It swims in groups to keep itself warm in the cold environment.
- (4) It has a layer of blubber to protect itself from other organisms hunting it.

PRELIMINARY EXAMINATION

**PRIMARY 6
SCIENCE**
24th AUGUST 2017

(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

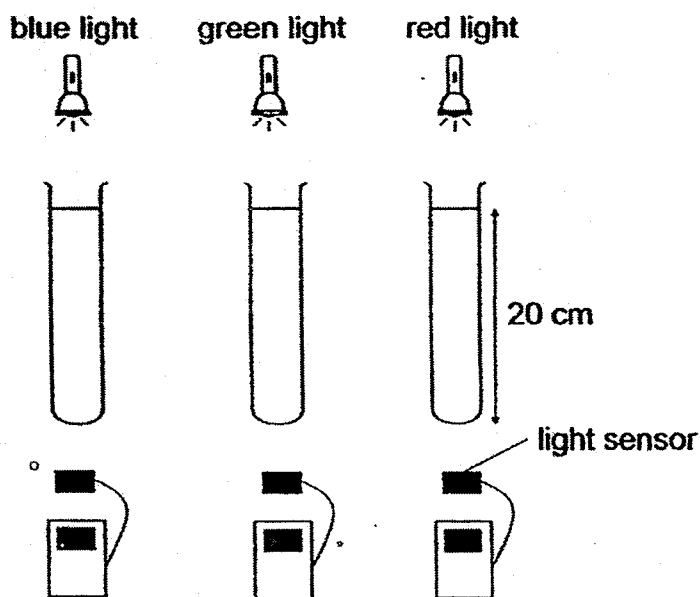
Marks (Booklet A) :	56
Marks (Booklet B) :	44
Total Marks (Booklet A & B) :	100

There are a total of 13 pages in this booklet, excluding the cover page.

For questions 29 to 41, write your answers in the booklet.

The number of marks available is shown in brackets [] at the end of each question or part question. (44 marks)

- 29 Mr Lim conducted an experiment as shown below. Each test tube was filled with the same amount of water. He used different colours of light with equal intensity. He kept the distance between the light and the surface of the water the same.



He measured the amount of light that passed through the test tubes using a light sensor and recorded the results in the table below.

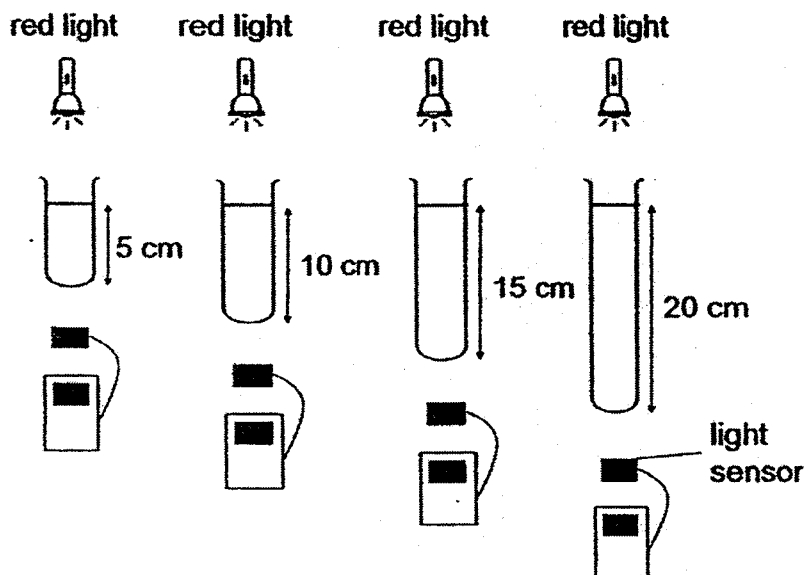
Colour of light	blue	green	red
Amount of light that pass through (unit)	20	10	0

- (a) Based on the results, what can he conclude about the colours of the light? [1]

- (b) Based on the results, which colour of light, blue, green or red, should he use when he goes for deep sea diving to observe marine organisms? Explain why you say so. [1]

Question 29 continues on Page 17

From the results, Mr Lim decided to find out how the depth of water affected the amount of red light detected by the light sensor. He kept the distance between the red light and the surface of the water the same and used 4 similar test tubes of different lengths as shown below.



Mr Lim recorded the results as shown below.

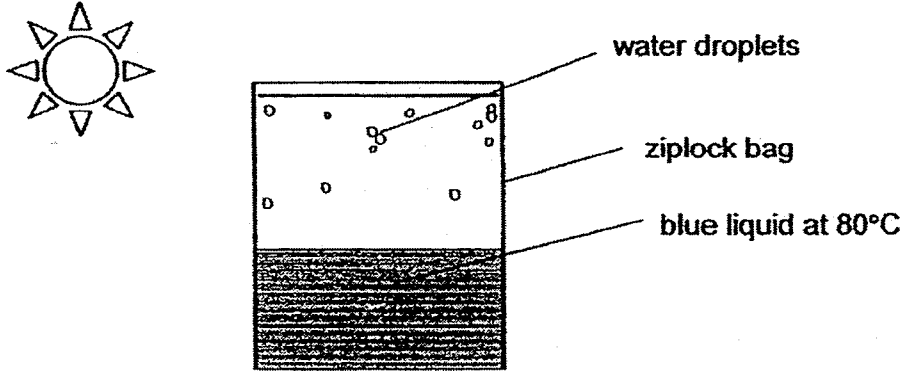
Depth of water (cm)	5	10	15	20
Amount of red light detected (unit)	15	10	5	0

- (c) From the results, what is the relationship between the depth of water and the amount of red light detected by the light sensor? [1]

- (d) Mr Lim's father commented that his experiment is not fair as the height of the test tubes are not the same. Do you agree? Explain your answer. [1]

- (e) Explain how keeping the distance between the light and the surface of the water the same makes it a fair test. [1]

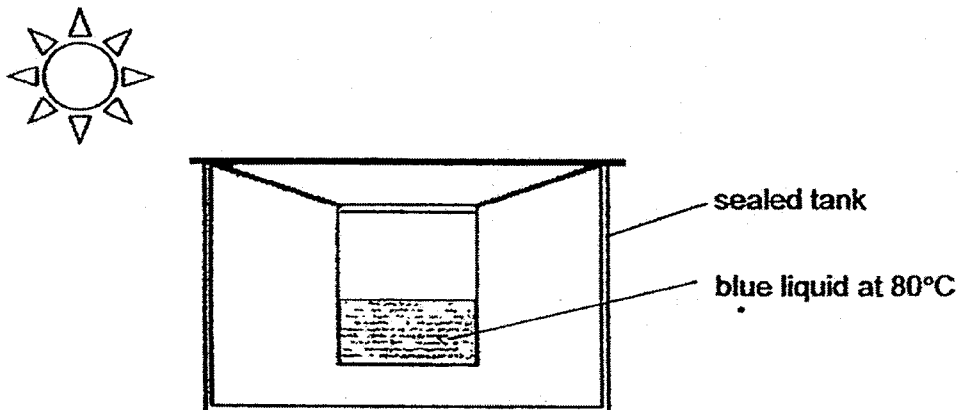
- 30 Ming Jie sealed 100 ml of blue liquid at 80°C in a ziplock bag and placed it in an open field. After a few hours, Ming Jie observed that the amount of blue liquid has reduced and water droplets were found in the ziplock bag as shown below.



- (a) State the colour of the water droplets. [1]

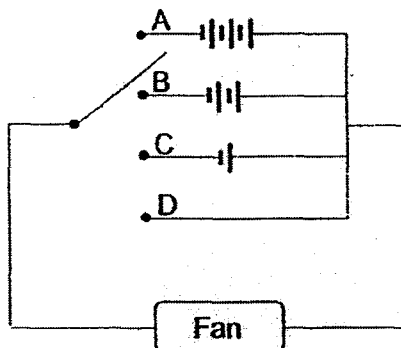
- (b) Describe how the water droplets were formed in the ziplock bag. [2]

Ming Jie repeated the experiment by suspending a similar ziplock bag in a large sealed tank by tying it at the corners of the tank as shown below.



- (c) Will there be water droplets formed on the inner surface of the sealed tank? Explain your answer. [2]

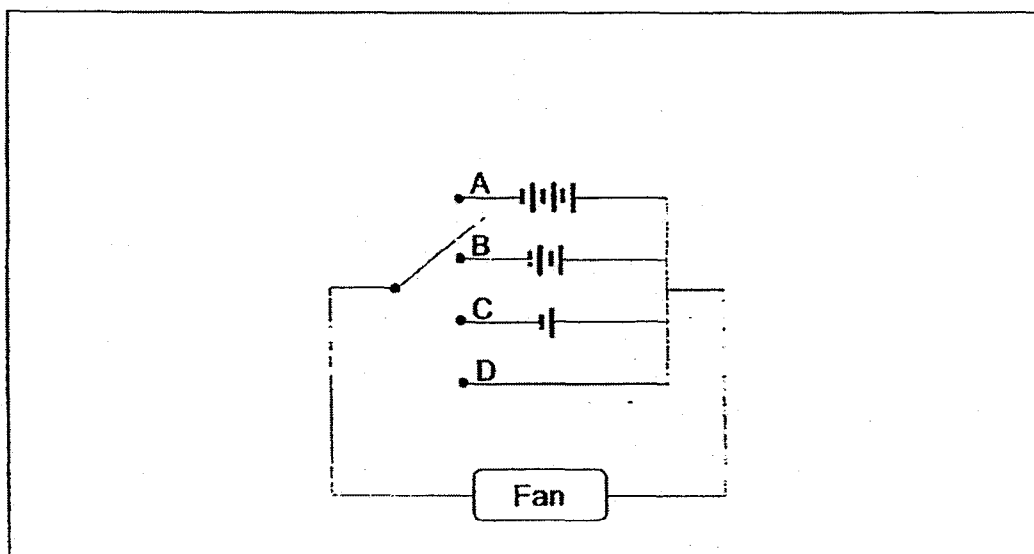
- 31 Kayla wanted to set up a circuit which can change the speed of her fan. She drew out the circuit diagram as shown below. When she closed the circuit at Point D, the fan did not work. However, when she closed the circuit at point C, the fan worked.



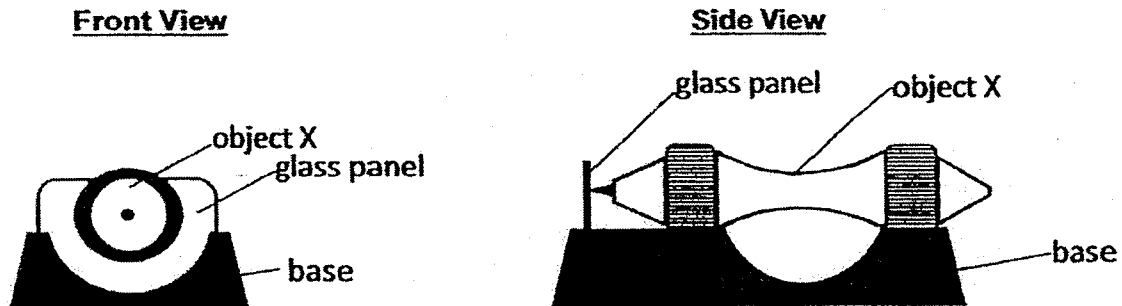
- (a) Explain why the fan did not work when she closed the circuit at point D. [1]

- (b) When Kayla closed the circuit using point B and then point C, she noticed a difference in the speed of the fan. Explain why there is a difference in the speed of the fan. [1]

- (c) She wanted to have an additional speed to her fan. Draw what she can do to modify the circuit diagram below. [1]



- 32 Ahmad received a toy made of three separate objects, the glass panel, object X and the base as shown below.



When Ahmad placed object X over the base, he observed that object X floated. He spun object X and realised that it would spin for at least 5 minutes before it stopped spinning.

- (a) Explain how object X was able to float and spin for a long time. [2]

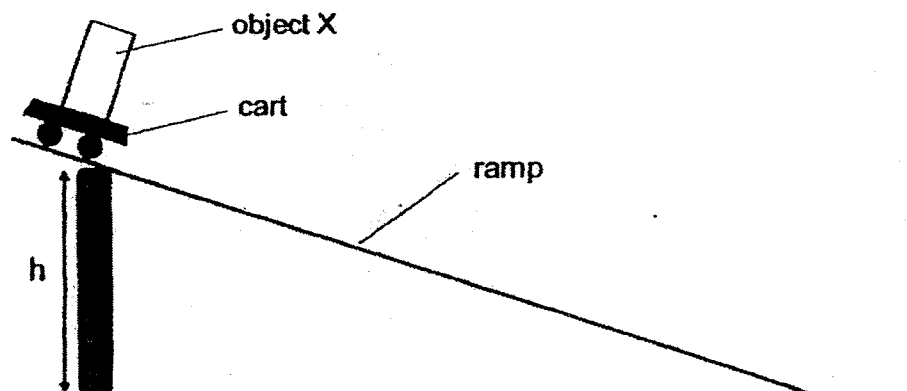
- (b) What is the purpose of the glass panel of the toy? [1]

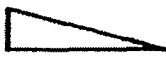
- 33 Jenny had watery stools. Her mother told her that it could be something wrong with her large intestine that caused the watery stools.

- (a) Explain why her mother said so. [1]

- (b) Her mother told her to drink plenty of water when she was having watery stools. Explain why she said so. [2]

- 34 Anika conducted an experiment to find out how different shaped objects on a cart would affect the time taken for it to reach the base of a ramp. The different objects are of the same mass and the distance and the height of the ramp is kept the same as shown in the diagrams below.



Object X	Object Y	Object Z
		

Anika recorded the results in the table below.

Object	Time taken for cart to reach the base of a ramp (s)		
X	97	95	96
Y	83	84	69
Z	51	50	50

- (a) Anika's sister commented that all her results are reliable.
Do you agree? Explain your answer.

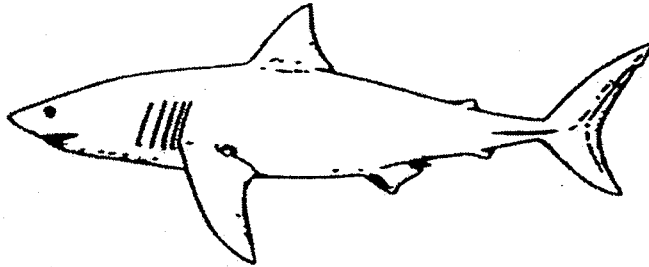
[1]

- (b) Explain why Object Z took the shortest time to reach the base of the ramp.

[1]

Question 34 continues on Page 22

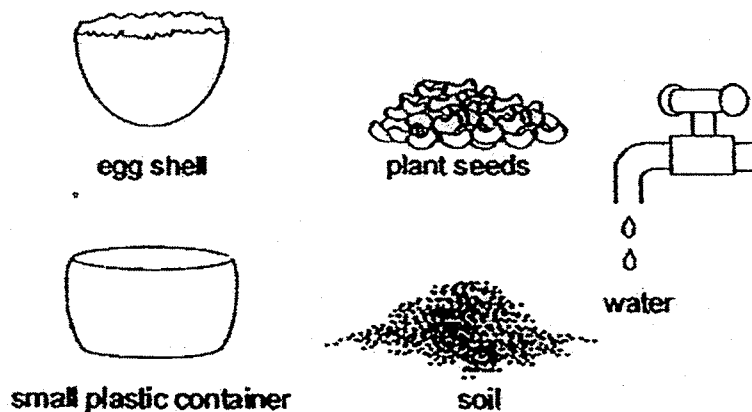
- (c) Animal D lives in the ocean.



Based on Anika's experiment, explain how Animal D's body shape is an advantage for its survival.

[2]

- 35 Mei Yin wanted to find out if the roots of a growing plant would exert a force. The diagram below shows the materials she can use for her experiment.



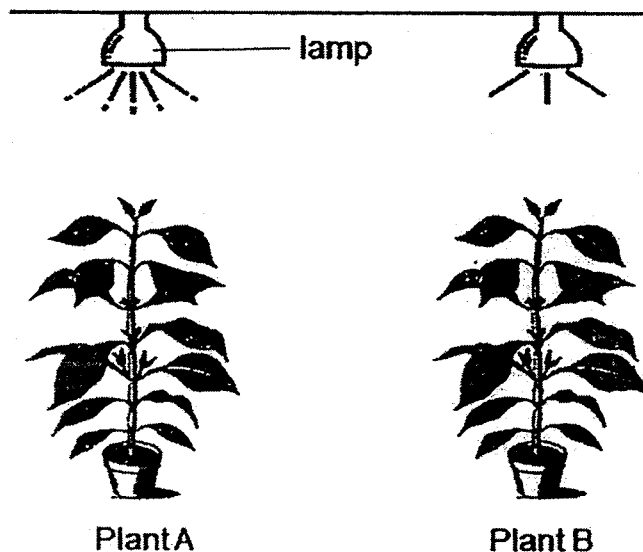
- a) Describe how Mei Yin can carry out this experiment. (She need not use all the materials.)

[2]

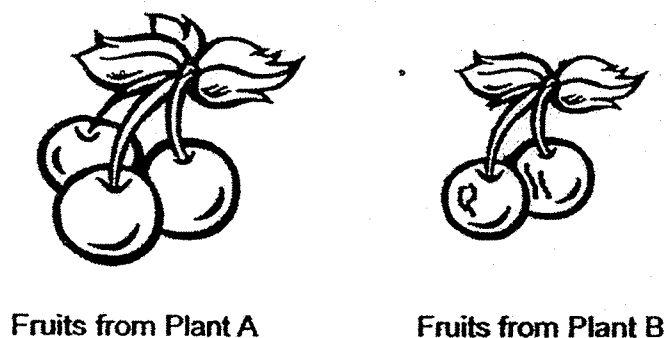
- b) Mei Yin wanted to have reliable results for her experiment. However, she only has time to repeat the experiment one more time. State what she can do to ensure the reliability of her experiment.

[1]

- 36 Ben carried out an experiment using two similar pots of plant, Plant A and Plant B. He placed both pots of plant under different lit lamps of different light intensity as shown below.



After some time, the two plants produced fruits as shown below.



Ben observed that fruits from Plant A are bigger and healthier as compared to fruits from Plant B.

- (a) Explain why the fruits from Plant A grew bigger and healthier. [2]

- (b) Park X has many healthy ferns. With the recent haze, the ferns in Park X became unhealthy. Based on Ben's experiment, explain why this is so. [1]

- 37 Gary went for a medical check-up where his doctor showed him how a healthy blood vessel looks like as compared to his blood vessel as shown in the diagram below.



Healthy blood vessel

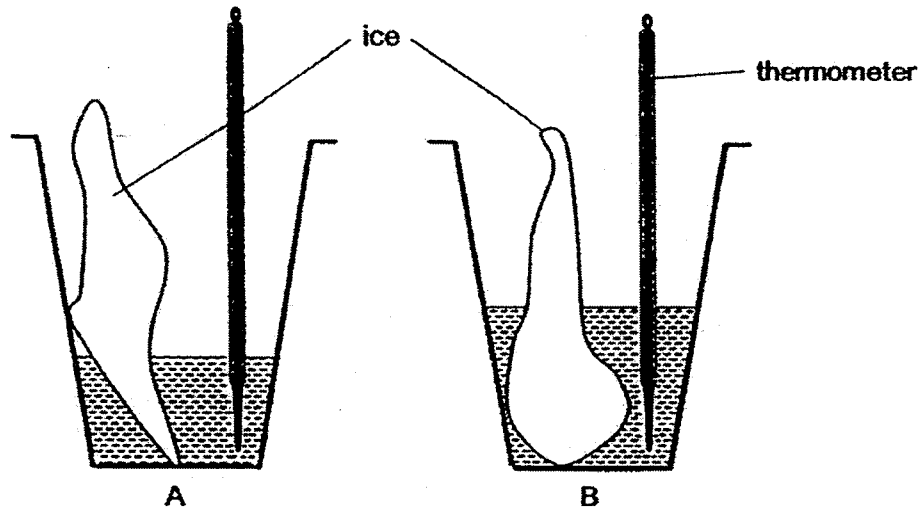
Gary's blood vessel

The doctor said that he has a high risk of getting a heart attack where his heart would stop beating. The doctor reminded him that all organs in our body needs blood rich in oxygen for them to work well.

- (a) Explain why Gary is at high risk of a heart attack. [1]

- (b) Suggest what Gary could do if he wants to lower his risk of getting a heart attack. [1]

- 38 Shay conducted an experiment by placing the same volume of ice into 2 similar cups, A and B, filled with equal amounts of water. She placed both cups in a room as shown in the diagram below.



- (a) Explain why the water level in cup B is higher than in cup A at the start of the experiment as seen in the diagram above.

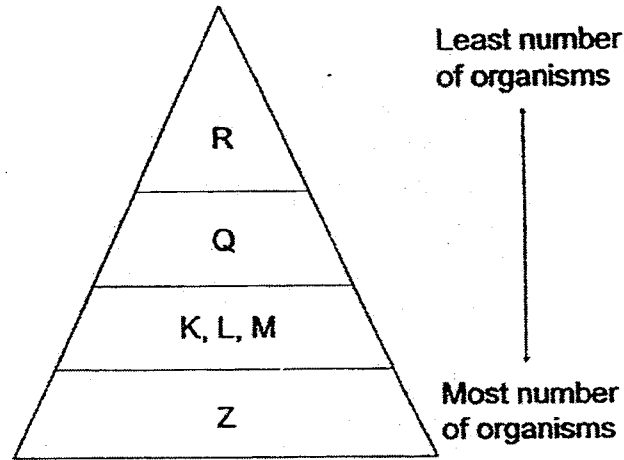
[1]

°

- (b) Which water in the cup, A or B, will have a lower temperature after 1 minute? Explain your answer.

[2]

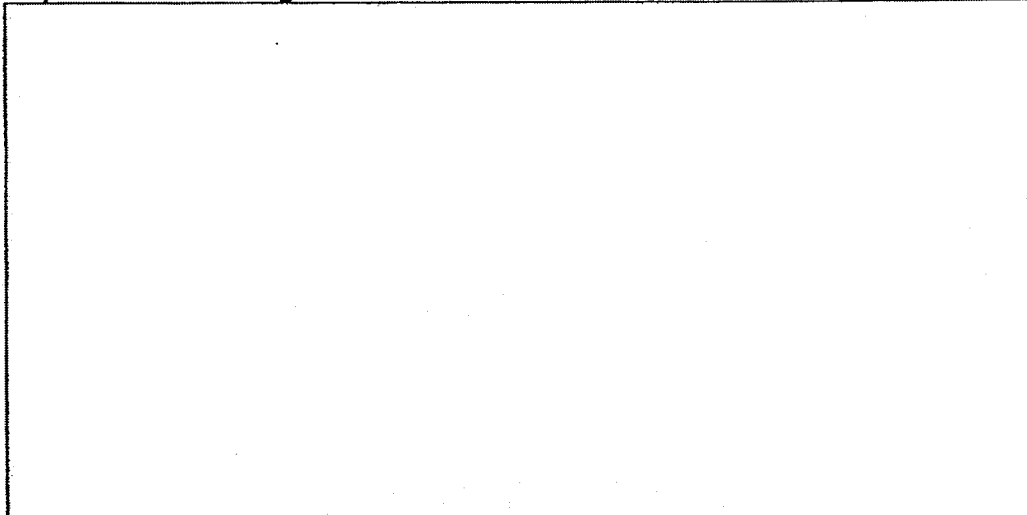
- 39 Ming Hui identified all the different organisms and its population in habitat W. She drew out a pyramid with the different organisms as shown below.



With further observations, she listed down the interactions between some organisms as shown below.

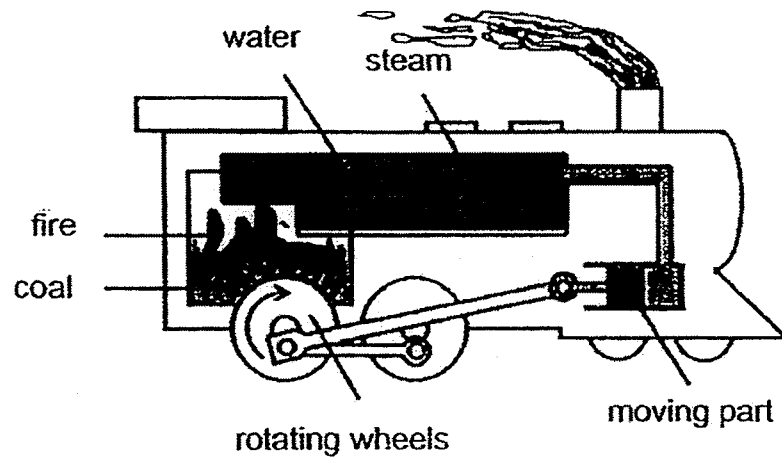
- R is the predator of K and L.
- Q is an omnivore which feeds on M and Z.
- M is the prey of Q and R.

- (a) Based on all the information above, draw out the food web that best represents all the organisms in habitat W. [2]



- (b) If the number of organisms K, L and M are the same when Ming Hui counted them, using only the information provided above, explain why organism M's population will decrease faster than organisms K and L when organism Z decreases. [1]

40 The diagram below shows how a steam engine train works.



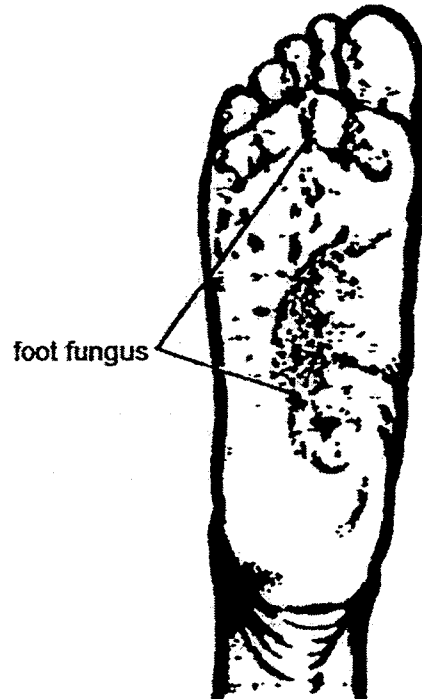
- (a) Describe the energy conversion that takes place in a steam engine train for it to move, starting with coal. [2]

- (b) State 2 negative impacts on the environment caused by the use of steam engine trains. [2]

i)

ii)

- 41 Izzy was playing in a field barefooted one day. After which she immediately put on her sock and shoes and continued playing. It was a very hot day and she was perspiring. A few days later, she was infected with foot fungus.



- (a) Explain how Izzy was infected with foot fungus. [2]

- (b) What could Izzy have done to prevent this from happening? [1]

– END OF PAPER –

PRELIMINARY EXAM PAPER 2017

SCHOOL : PEI HWA PRESBYTERIAN PRIMARY SCHOOL
SUBJECT : PRIMARY 6 SCIENCE BOOKLET A & B
TERM : PRELIMINARY EXAMINATION 2017

Booklet A:

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

Booklet B:

29a) Blue light was able to pass through the water best, followed by green light then red light.

29b) Blue. As blue light allows the most amount of light to pass through water, it would allow him to see most clearly in water to observe the marine organisms.

29c) As the depth of water increase, the amount of red light detected by the light sensor decreases.

29d) No. The height of the test tubes indicates the depth of the water, so he has to make the height of the test tubes different.

29e) This keeps the amount of light that enters the water the same.

30a) Colourless

30b) The surface of the blue liquid gains heat from the blue liquid and the water evaporated into the water vapour. The water vapour touches the cooler inner surface of the ziplock bag, lose heat and condenses to form water droplets

30c) Yes. The water vapour in the sealed tank will gain heat from the blue liquid. The warmer water vapour will then come into contact with the cooler inner surface of the sealed tank and condense to form water droplets.

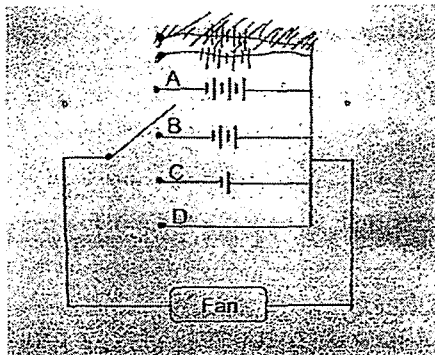
OR

No. Air in the sealed tank is a poor conductor of heat. Thus heat gained by the water vapour in the sealed tank is less, so there will not be warm water vapour to condense on the cooler inner surface of the tank.

31a) It has no batteries so no electricity to make the fan move or work.

31b) The different number of batteries will provide different amounts of chemical potential energy which will be converted in different amounts of electrical energy, resulting in different amounts of kinetic energy of the moving fan, hence different fan speeds

31c)



32a) The floating object and the base of the object has magnets and their like poles are facing each other causing force of repulsion. This makes the floating object float above the base thus having no friction between the floating object and the base making it spin for a long time.

32b) The glass panel ensures that the following object which is pushed away by force of repulsion would not float off and would stay in position.

33a) The large intestine was not able to absorb water from the undigested food, causing her to have watery stools.

34a) No. Object Y's result did not achieve at least 3 consistent results, making the data not reliable.

33b) she would need to drink plenty of water to replenish the amount of water that she has loss as she needs water to carry out life processes.

34b) Object Z is the most streamlined in shape so as it moves down the ramp, it will have the least air pushing against it, making it move down the ramp the fastest, hence having the shortest time to reach the base of the ramp.

34c) The streamlined body shape of Animal D enables it to swim faster to catch its prey or escape from Predators making it survive better.

35a)

1) Place soil into eggshell and water the soil.

2) Place seeds in the eggshell on the damp soil.

3) Wait and observe if the eggshell will crack when the roots grow.

36a) Plant A receives greater intensity of light than plant B thus the rate of photosynthesis for plant A is higher than plant B. Plant A will make more food than plant B which is transported to all parts of the plant including the fruits. The fruits will have more food stored, making Plant A's fruit bigger and healthier than Plant B's fruit.

36b) With the haze, the ferns will receive less light from the sun leading to a lower rate of photosynthesis hence the ferns become unhealthy.

37a) With the excess fat in his blood vessel, the flow of blood rich in oxygen to his heart would be less leading to a higher risk of heart attack.

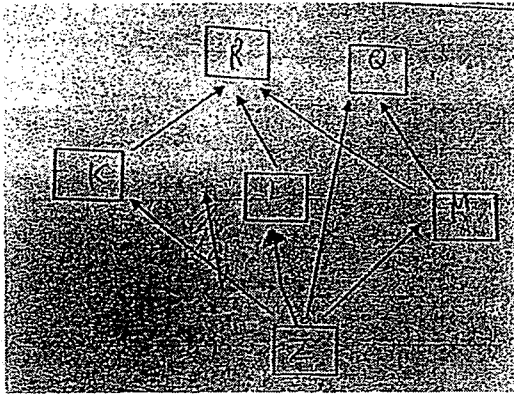
37b) Gary could exercise more to burn excess fats

38a) The amount of ice in the water of cup B is greater than the amount of ice in the water of cup A, so it takes up more space in the water in Cup B, making the water level higher.

38b) Water in cup B has a lower temperature after 1 minute as the ice has a greater exposed surface area in contact with the water as compared to the ice in cup A. Thus the water will lose heat faster than the water in cup A.

35b) She can prepare a few more similar set ups and carry the experiment out to collect at least 3 consistent results to ensure that her experiment is reliable.

39a)



39b) When organism Z decrease, organisms K, L, M and Q will decrease as they have less food from Organism Z. However, Organism M will decrease faster than K and L as Organism Q is now feeding more on Organism M due to the decrease in Organism Z.

40a) Chemical potential energy of the coal will convert into the heat energy of the fire which is transferred to the heat energy of water. The heat energy in the water will cause the water to boil and have steam which converts the heat energy into kinetic energy of steam which is transferred to the kinetic energy of them moving which is transferred to kinetic energy of the rotating wheel making the train move.

40b)

- i) Burning of fossil fuels would cause the production of too much carbon dioxide leading to increased greenhouse gases causing global warming
- ii) Air pollution
- iii) Mining of fossil fuels can destroy the natural habitats.

41a) Spores could have landed on her feet as she played barefooted. The warm and moist condition of her feet would be an ideal condition for it to grow thus infecting Izzy's feet with foot fungus.

41b) She could have ensured that her feet was dry and cool.

OR

She could have washed her feet thoroughly to ensure no spores were left on it.