NANYANG PRIMARY SCHOOL

PRIMARY 6 SCIENCE

SEMESTRAL ASSESSMENT 1
2017

BOOKLET A

Date : 8th May 2017
Duration : 1 h 45 min

Name : _____.( )

Class: Primary 6 ( )

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet A consists of 22 printed pages including this cover page.

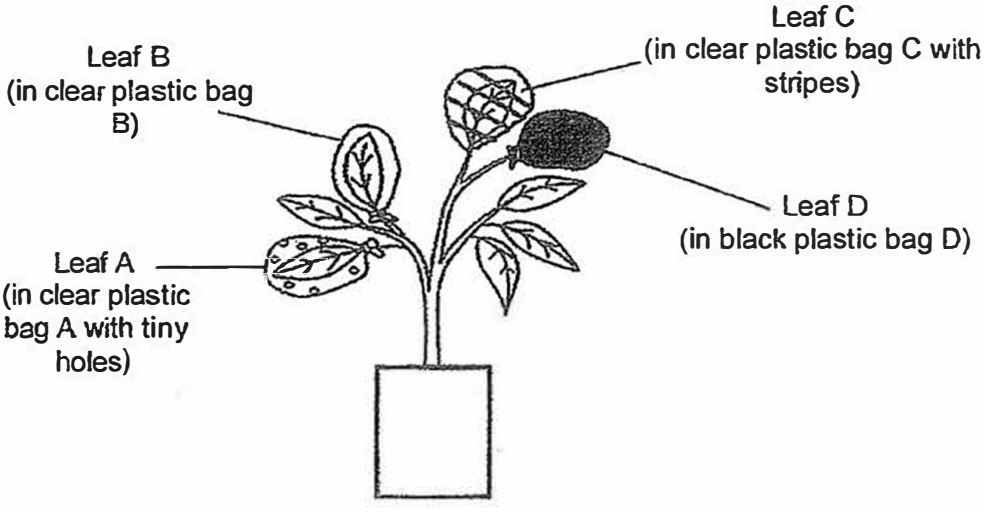
Section A (28 x 2 marks = 56 marks)
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.**

1. Which of the following are used by plants to carry out the process of photosynthesis?

A Heat
B Oxygen
C Sunlight
D Carbon dioxide

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

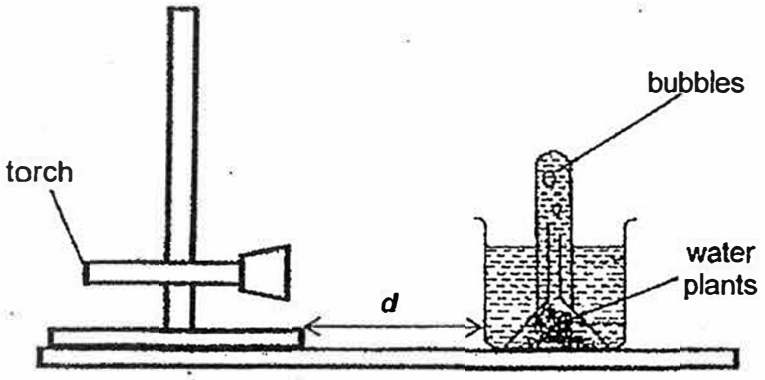
2. Lisa set up an experiment as shown below. She wrapped four similar leaves in different types of plastic bags. The plastic bags were of the same size. She left the plant under bright light for 4 hours.



Which plastic bag would contain the highest amount of carbon dioxide after 4 hours?

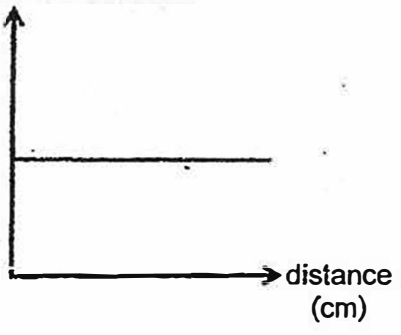
(1) A
(2) B
(3) C
(4) D

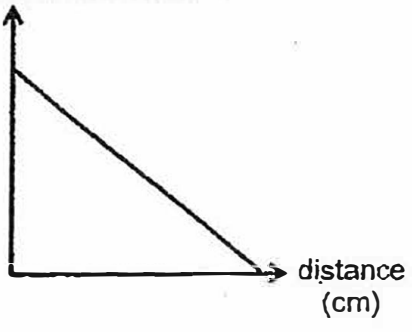
3. Bryan set up the experiment as shown below.



He made 3 identical set-ups using the same amount and same type of plants. He changed the distance, ***d*** between the torch and the plant. For each of the set-up, he counted the total number of bubbles produced over a period of 5 minutes.

Which one of the following graphs shows the correct relationship between the distance, ***d*** and the number of bubbles produced?

(1)


(2)


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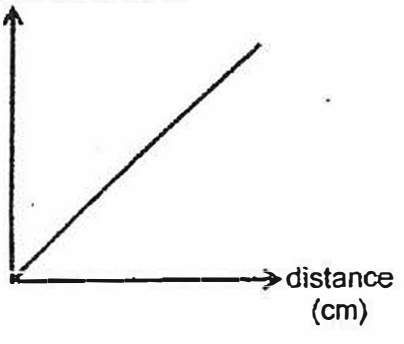

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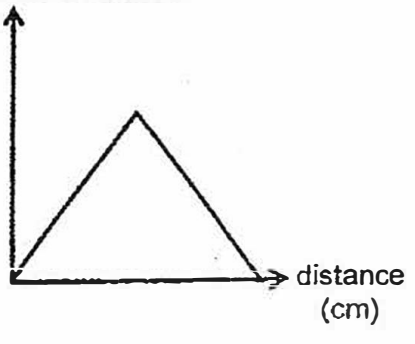


4 Fruit trees, vegetables and butterflies make up a community in a farm. A farmer sprayed insecticide on the vegetables regularly when he found that they were being eaten by caterpillars. The butterflies in the farm help in pollinating the fruit trees.

How would the spraying of insecticide affect the amount of vegetables and fruits produced over a period of three months?

	Production of vegetables	**Production of fruits**
(1)	increase	remain the same
(2)	increase	decrease
(3)	decrease	remain the same
(4)	decrease	decrease

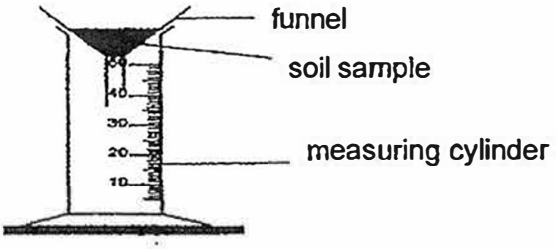
5. The table below shows the characteristics of the environment found in four different habitats.

Habitat	**Factors affecting the environment**		
	temperature of the surrounding air	**water**	**light**
A	extremely low	exists as icebergs and icy streams	present only during certain months of the year
B	hot during the day but cold at night	very little	plenty during the day
C	cool	found in the soil	very little most of the time
D	hotter during the day	plentiful	more on the water surface than below

In which one of the following habitats can water snails, tadpoles and water hyacinths all be found?

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

6. Irene collected soil samples A, B and C. She prepared three identical set-ups as shown below and poured ~~35ml~~ **45ml** of water onto each soil sample during the experiment.



Irene measured the amount of water collected in the measuring cylinder after 2 minutes and recorded it in the table below. She repeated this for all three soil samples.

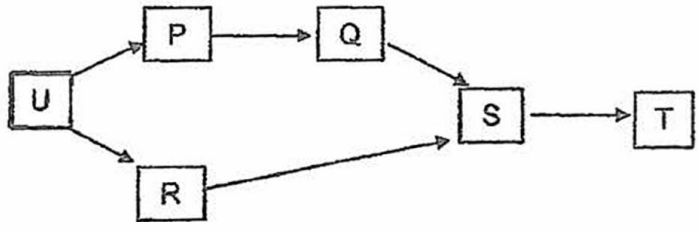
Sample	Amount of water collected (ml)
A	35
B	5
C	15
D	40

In a rice plantation, a flooded paddy field is needed for the seedlings to grow.

Based on the above results, which type of soil sample, A, B, C ~~or~~ **and** D, is the most suitable for use in the paddy field?

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

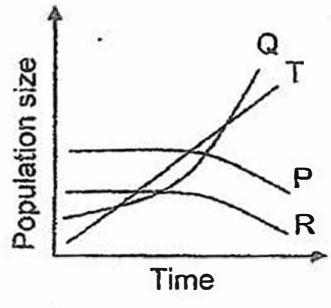
7. The food web below shows the relationships between organisms P, Q, R, S, T and U



There is a sudden mass migration of S out of the habitat.

Which one of the following graphs shows how the populations of P, Q, R and T are likely to be affected?

(1)



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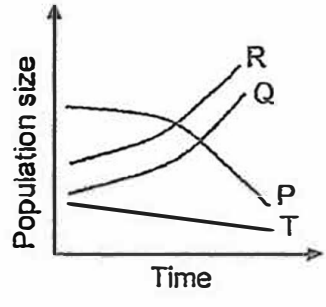

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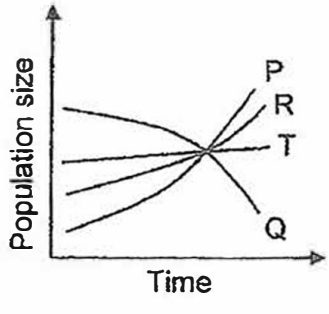
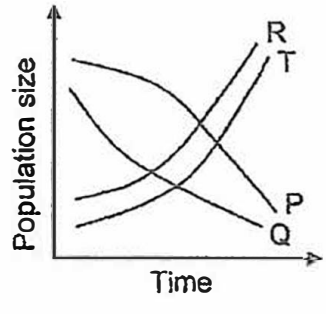


(4)



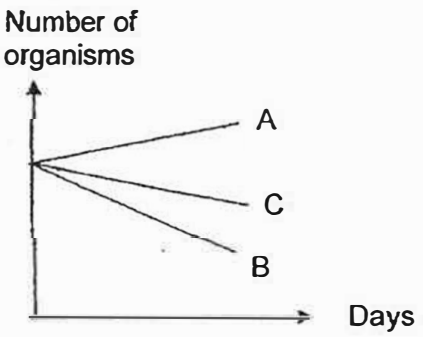
8. The following relationships were observed among four living things, K, L, M and N, of which one organism is a food producer.

K feeds on M. N feeds on K. M gets its food from L. N feeds on M but does not feed on L.

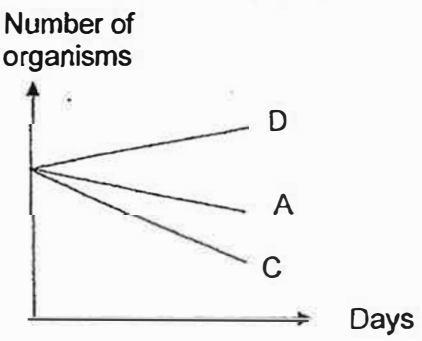
Which one of the following classifications is correct?

	producer	prey	prey and predator	predator
(1)	L	N	K	M
(2)	N	K	M	L
(3)	L	M	K	N
(4)	N	L	M	K

9. Four different organisms A, B, C and D, belonging to the same food chain are used in an experiment. In the first enclosure, only organisms A, B and C are put together while in the second enclosure, only organisms A, C and D are put together. B is the only food producer in the food chain.



Enclosure 1



Enclosure 2

Which one of the following correctly identifies the roles of organisms A, C and D?

	Prey	Predator	Both a prey and a predator
(1)	A	C	D
(2)	D	C	A
(3)	C	A	D
(4)	C	D	A

10. Four pupils came up with the following conclusions while reading up about decomposers.

Jason: Decomposers break down their own food and produce oxygen for animals to respire.
Gabriel: Decomposers help to get rid of dead organisms and wastes and prevent them from piling up.
Naomi: Decomposers help to break down animal wastes and remains of the plants and animals to make the soil fertile for the food producers.
Arielle: Decomposers speed up the process of decomposition by breaking down dead plants and animal wastes into smaller pieces.

Which of the pupils had made the correct conclusions?

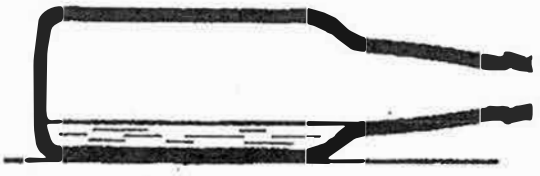
(1) Arielle and Jason
(2) Arielle and Naomi
(3) Gabriel and Naomi
(4) Gabriel, Naomi and Arielle

11. Which of the following observations involve(s) the condensation of water?

A Rain falling from the clouds.
B Pouring a cup of water to drink.
C Puddle of water getting smaller in size.
D "Mist" forming at the mouth of a boiling kettle.

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

12. Jordan placed a bottle of water on the table at room temperature (30°C) shown in the diagram below.



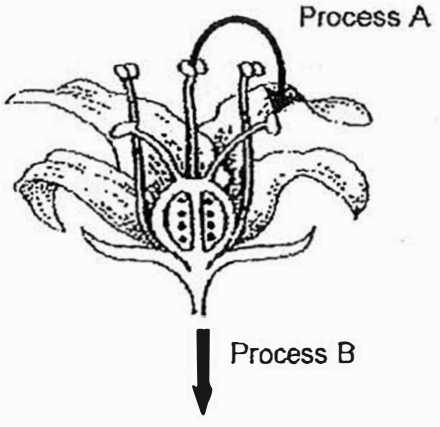
He wanted the water in the bottle to evaporate as fast as possible.

Which of the following methods would enable Jordan to speed up the rate of evaporation?

A Place the bottle in a box.
B Position the bottle to stand upright.
C Place a fan at the mouth of the bottle
D Place a heating coil next to the bottle.

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

13. Study the diagram below.

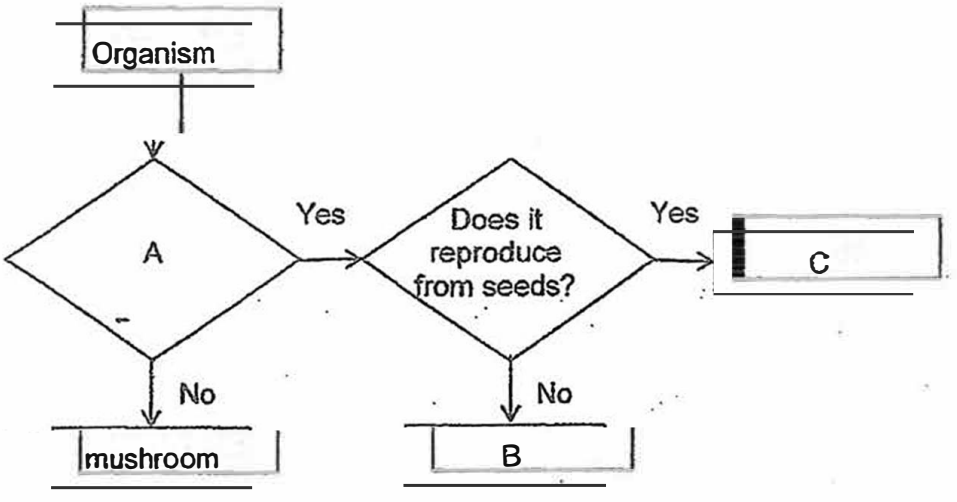


The ovary develops into W.
The ovule develops into X.

Which one of the following correctly represents processes A and B and parts W and X?

	Process A	Process B	Part W	Part X
(1)	fertilisation	seed dispersal	seed	fruit
(2)	fertilisation	germination	fruit	seed
(3)	pollination	fertilisation	fruit	seed
(4)	pollination	fertilisation	seed	fruit

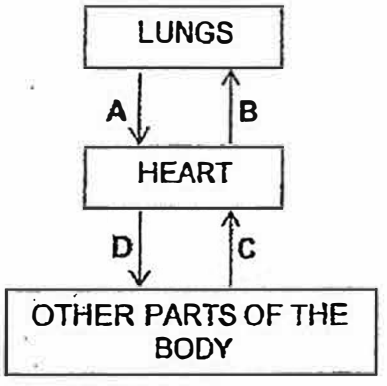
14. The flow chart below shows how some organisms are classified.



Which one of the following could represent A, B and C correctly?

	A	B	C
(1)	Does it have spores?	bird's nest fern	bracket fungus
(2)	Does it bear flowers?	mango	moss
(3)	Does it make its own food?	moss	angsana
(4)	Are its seeds scattered by animals?	staghorn fern	coconut

15. Study the diagram below. The arrows, A, B, C and D, represent blood vessels carrying blood to and from the lungs, heart and other parts of our body.



Which one of the following correctly shows the comparison of the amount of oxygen and carbon dioxide in the four blood vessels?

(1) The blood in A has less oxygen than the blood in D.
(2) The blood in B has more oxygen than the blood in C.
(3) The blood in C has less carbon dioxide than the blood in D.
(4) The blood in D has less carbon dioxide than the blood in C.

16. Faeka watered a potted plant with white flowers with some water containing blue food dye. After a few hours, she noticed that some parts of the flowers had turned blue.

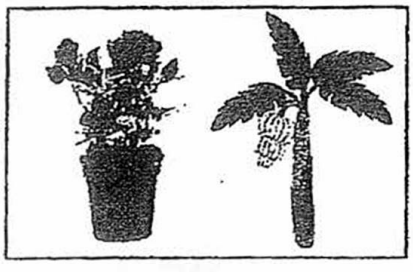
Which one of the following statements correctly explains why some parts of the flowers turned blue?

(1) Water is taken in by the stomata of the plant.
(2) The stem transports water from the roots to all parts of the plant.
(3) The stem transports food from the leaves to all parts of the plant.
(4) The stomata allow water exchange between the plant and the surroundings.

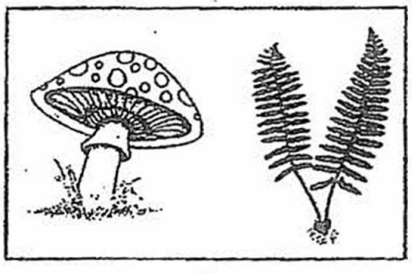
17. Which one of the following correctly shows where digestion of food and absorption of digested food takes place in the human digestive system?

	Part involved in the digestion of food	Part involved in the absorption of digested food
(1)	Mouth	Large Intestine
(2)	Gullet	Small intestine
(3)	Stomach	Small Intestine
(4)	Small intestine	Large Intestine

18. Study the two groups of organisms, W and V, below.



W



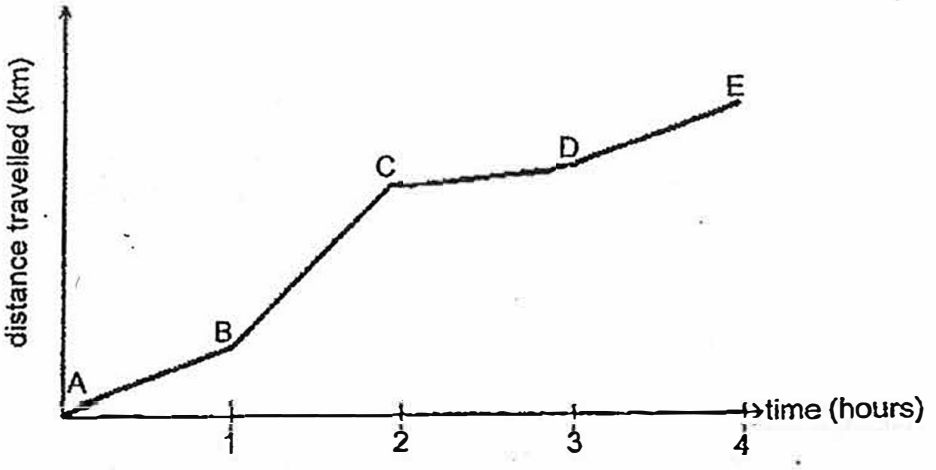
V

Which one of the following correctly describes the organisms in groups W and V?

	Group	Makes its own food	Bears fruits
(1)	W	No	Yes
(2)	V	No	No
(3)	W	Yes	Yes
(4)	V	Yes	No

19. Jenny was cycling along a road on East Coast Park.

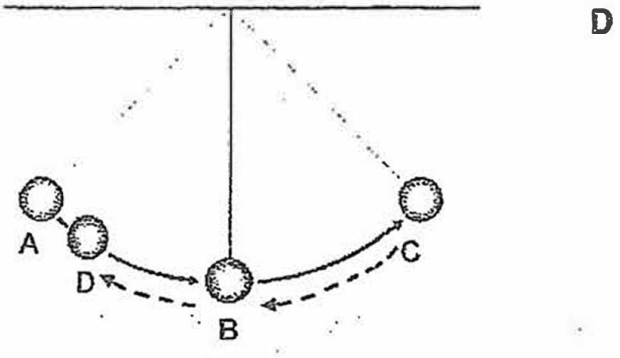
The graph below shows the distance travelled by Jenny during a period of 4 hours.



Based on the graph above, at which period did Jenny possess the greatest amount of kinetic energy?

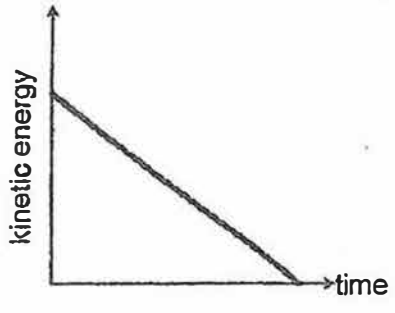
(1) AB
(2) BC
(3) CD
(4) DE

20. The diagram below shows a metal ball. Daniel released it from point A and it moved to points B and C before being caught at point D again.

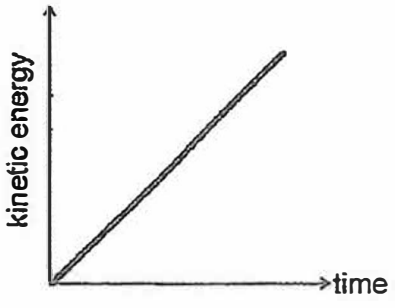


Which of the following graphs shows how the kinetic energy of the metal ball varied with time as it moves from point A to C and back to point D?

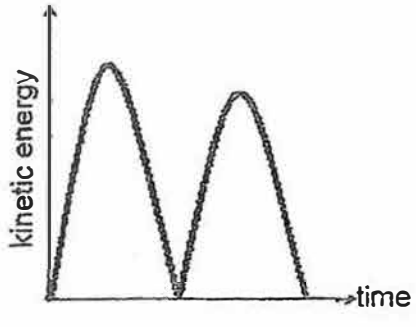
(1)



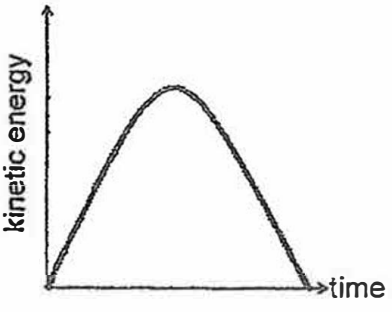
(2)



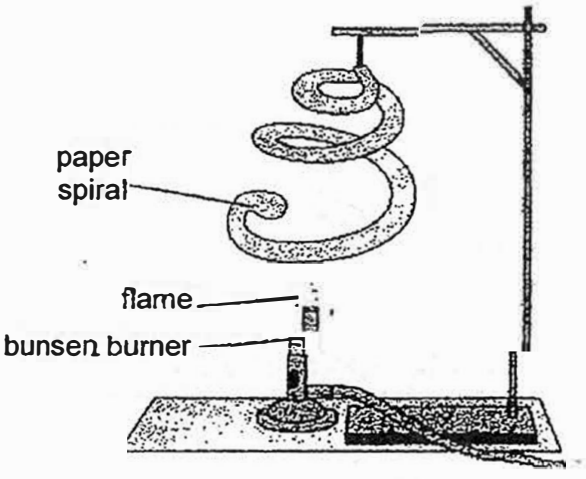
(3)



(4)



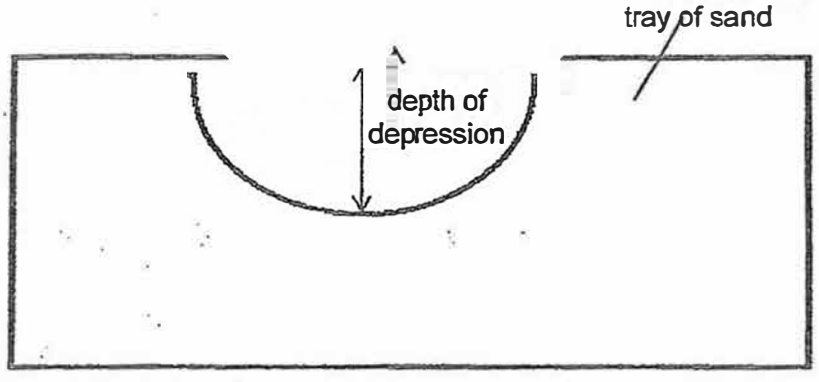
21. A bunsen burner was placed under a piece of paper spiral as shown in the figure below. After some time, the paper spiral started to spin.



Which one of the following correctly shows the energy conversion as the bunsen burner is switched on?

(1)	Chemical potential Energy	→	Heat Energy	→	Kinetic Energy	→ Kinetic Energy
(2)	Chemical Potential Energy	→	Solar Energy	→	Heat Energy	→ Kinetic Energy
(3)	Chemical Potential Energy	→	Light Energy	→	Heat Energy	→ Gravitational Potential Energy
(4)	Chemical Potential Energy	→	Kinetic Energy	→	Kinetic Energy	→ Gravitational Potential Energy

22. Marcus dropped a ball into a tray containing some sand. He measured the depth of the depression as shown in the diagram below. Marcus repeated the experiment using the set-up but each time he changed the height at which the ball was dropped.

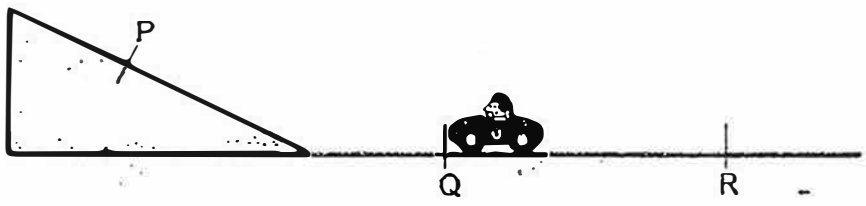


	Height A	Height B	Height C	Height D
Depth of depression (cm)	3.5	2.7	3.1	4.0

Marcus recorded the results as shown in the table above. Which one of the following correctly matches the height from which the balls were dropped?

	Height A (cm)	Height B (cm)	Height C (cm)	Height D (cm)
(1)	75	70	65	60
(2)	70	60	65	75
(3)	70	65	60	75
(4)	70	75	65	60

23. Mustafa placed a wound up plastic toy car at position Q, pulled it backwards to position R and released it. It moved up a ramp, stopped at P and rolled back to somewhere between Q and R.



What could he do to make the toy car move higher than P?

(1) He could use a higher ramp.
(2) He could use a toy car with a bigger mass.
(3) He could put some sand between P and Q.
(4) He could use the same toy car with a smaller mass.

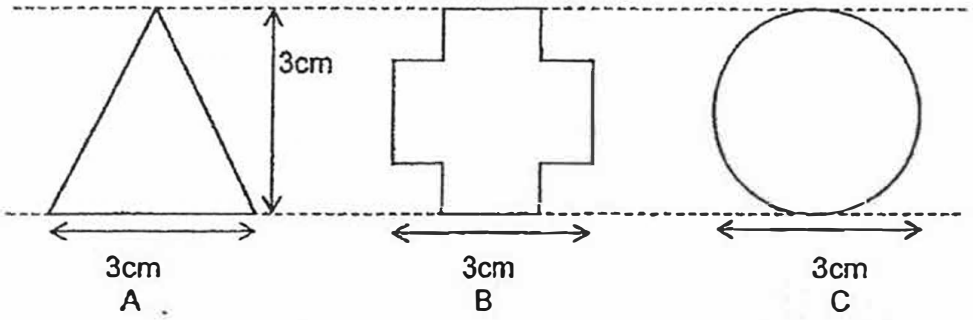
24. Kai Kai wanted to move a soccer ball to point Z. He kicked the ball at point P. It rolled forward and stopped at point Q.

Which of the following statements are possible reasons why the ball stopped at point Q?

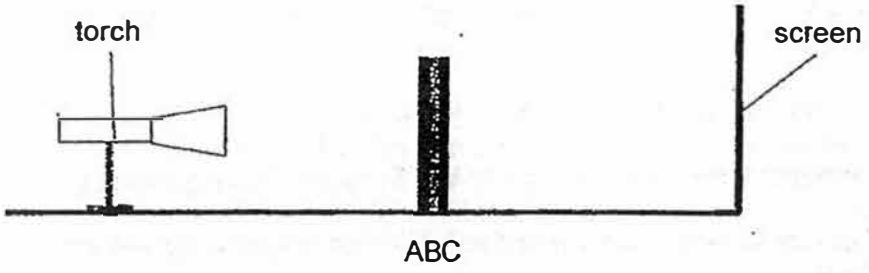
A The ball slowed down due to air resistance.
B Gravitational force acting on the ball was the same from P to Z.
C Frictional force between the ball and the ground was greatest at Q.
D The ball slowed down due to frictional force between the ball and the floor.

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

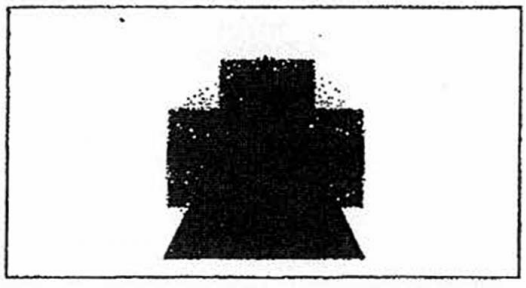
25. The set-up below shows three pieces of cards made up of three different materials, A, B and C.



The three pieces of cards were then glued together and placed between a torch and screen as shown below.



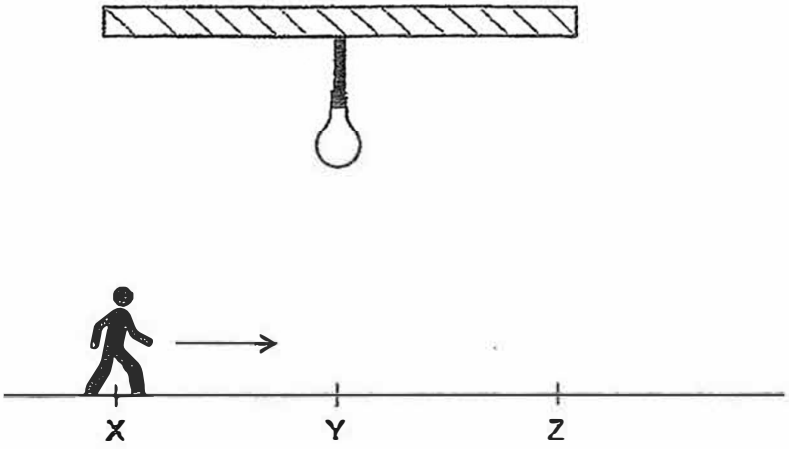
The diagram below shows what was seen on the screen.



Which one of the following correctly shows the properties of materials A, B and C?

	Allow most light to pass through	Allow some light to pass through	Does not allow light to pass through
(1)	A	A	B
(2)	A	B	C
(3)	B	C	A
(4)	C	B	A

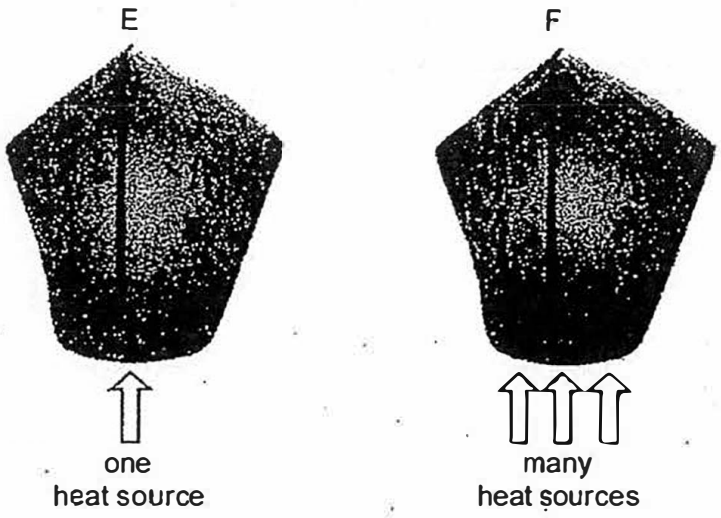
26. Yu Jun walked in a straight line from points X to Z as shown in the figure below. At point Y, he was directly under the lamp. The distance between points X and Y is the same as the distance between points Y and Z.



Which one of the following statements is **not** correct?

(1) His shadow was shortest at Y.
(2) His shadow at X was longer than his shadow at Z.
(3) As he walked from Y to Z, his shadow became longer.
(4) He would see his own shadow in front of him as he walked from Y to Z.

27. The diagram shows 2 identical paper lanterns, E and F.



Which one of the following observation and explanation after 10 minutes is correct?

	E	F	Explanation
(1)	rise	rise faster	The air in lantern F gains heat more quickly from the candles. Hot air rises and it lifts the lantern upwards faster.
(2)	rise	rise faster	Lantern F gains more heat from the candles and expands. The lantern rises upwards faster.
(3)	rise faster	rise	The air in lantern E gains heat more quickly from the candle. Hot air rises and it lifts the lantern upwards faster.
(4)	rise faster	rise	Lantern E gains more heat from the candle and expands. The lantern rises upwards faster.

28. The table below shows the state of a block of ice at regular intervals inside four similar containers made of four different materials, A, B, C and D. The four containers are placed in a classroom at room temperature.

Container	State of ice		
	20 min later	40 min later	60 min later
A	solid	solid	solid
B	solid	solid	liquid
C	solid	liquid	liquid
D	liquid	liquid	liquid

Based on the results above, which one of the following statements is true?

(1) D is the best conductor of heat.
(2) C is the poorest conductor of heat.
(3) A is a better conductor of heat than B.
(4) B is a better conductor of heat than D.

PRIMARY 6 SCIENCE

SEMESTRAL ASSESSMENT 1

2017

BOOKLET B

Date : 8th May 2017

Duration : 1 h 45 min

Name : _____ **( )**

Class: Primary 6 ( )

Marks Scored:

Booklet A:		56
Booklet B :		44
Total :		100

Any query on marks awarded should be raised by 18th May 2017. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.

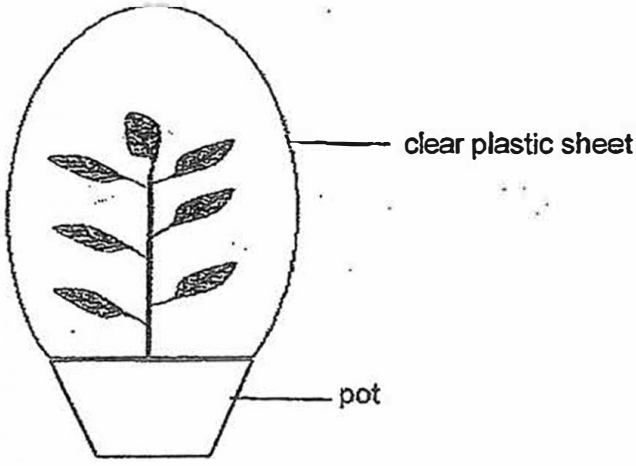
Parent's signature: .....

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet B consists of 20 printed pages including this cover page.

Section B (44 marks)
Write your answers to questions 29 to 41 in the spaces provided.

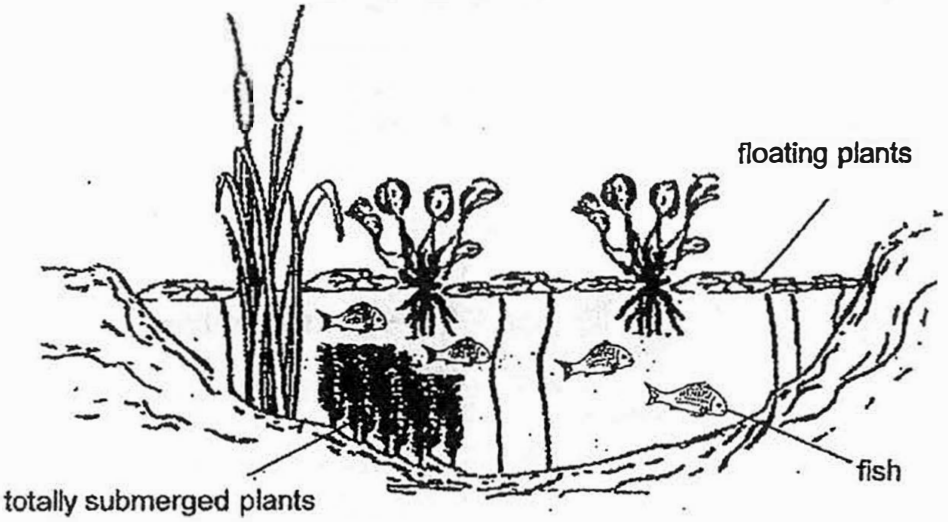
29. The diagram below shows a well-watered plant with a clear plastic sheet tied around it. The plant has been kept in the dark for 48 hours.



The pot of plant was then placed under the sun for 12 hours and the leaves were tested for starch using iodine.

What would be the colour of iodine on the leaves after the test? Explain your answer. [2]

30. The diagram below shows a pond.



The surface of the pond is mostly covered with floating plants.
It was observed that the population of the fish and the fully submerged plants started to decrease after some time.

(a) Give two reasons for the decrease in the population of fish. [2]

i) _____

_____

ii) _____

_____

(b) Suggest a benefit that the fish could provide for the submerged plants. [1]

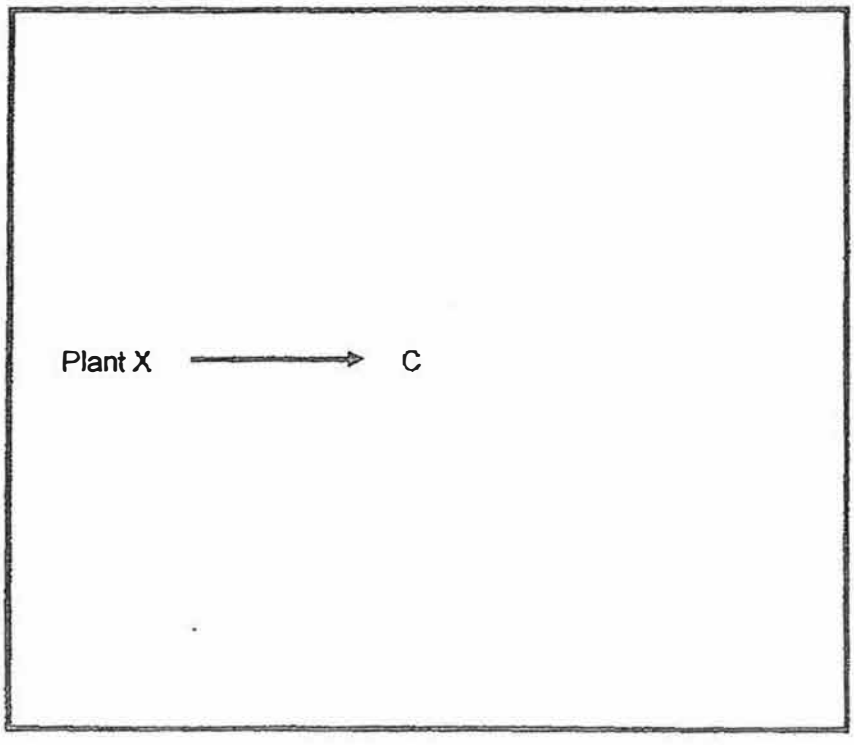
_____

_____

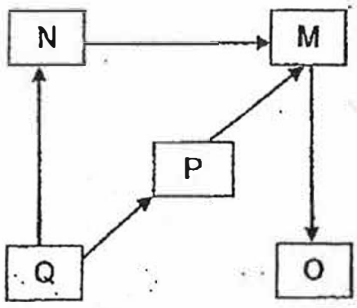
31. Ming Ling caught 4 different types of fish, A, B, C and D, from a river and he conducted 5 experiments in an aquarium to study the food relationships between these fishes. He also added water plants X in some of his experiments. The table below shows the results of the experiments conducted over a period of time.

Experiment	Number of live organisms on the 1st day					Number of live organisms on the last day				
	Plant X	A	B	C	D	Plant X	A	B	C	D
1	10	4	0	0	0	10	0	0	0	0
2	10	4	0	4	0	5	4	0	2	0
3	10	0	0	4	4	3	0	0	4	4
4	0	4	0	4	4	0	4	0	2	1
5	0	4	4	0	0	0	0	4	0	0

(a) In the space below, draw arrows to complete the food web for plant X and fishes A, B, C and D. [2]



(b) The diagram shows a food web of five organisms M, N, O, P and Q in Ming Ling's garden.

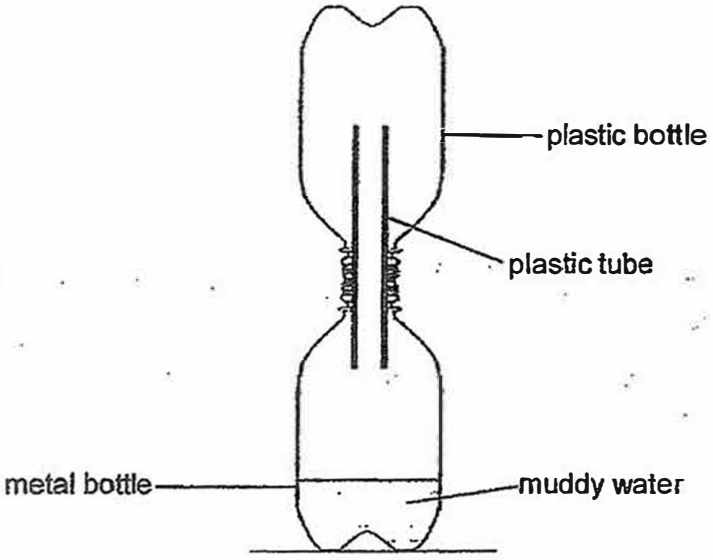


Ming Ling noticed that one of the organisms is a plant and its population size has been decreasing over the past three months. He wanted the plant population to increase eventually.

Without adding more plants, he planned to introduce more of one type of organism to solve his problem.

State and explain which **one** of the above population of organisms M, N, O, P or Q Ming Ling should increase to solve his problem. [2]

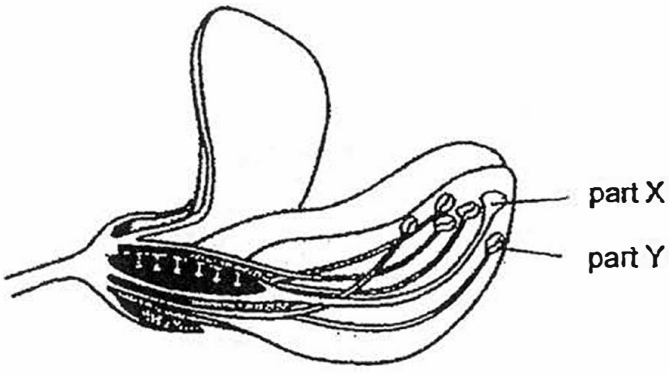
32. Devin has invented a simple device which enables a person to extract water that is safe for drinking from muddy water as shown below. He placed it under the sun for 5 hours.



(a) Based on the device above, explain how water that is safe for drinking can be collected in the plastic bottle. [2]

(b) Suggest one change Devin could make if he wanted to get more drinkable water in the plastic bottle within the same period of time. [1]

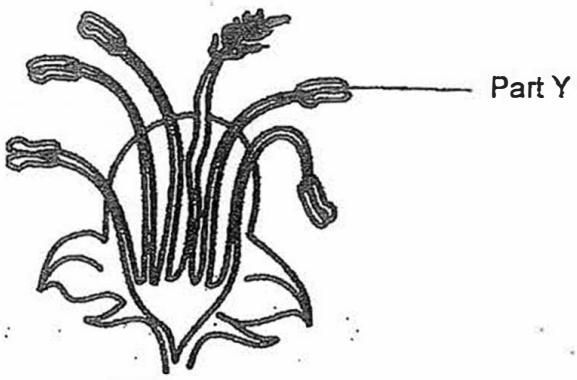
33. Jim noticed Flower T growing along the covered walkway of his school. He wanted to pluck off part X of Flower T but his classmate told him that without part X, the flower would not be able to bear fruits.



Flower T

(a) Explain why flower T will not be able to bear fruits if part X is plucked off. [2]

The diagram below shows a section of flower Z.



Flower Z

(b) Based on the diagrams above, state the method of pollination for flowers T and Z and give a reason for your answer. [2]

(i) Method of pollination for Flower T:

_____

Reason: _____

_____

_____

(ii) Method of pollination for Flower Z:

_____

Reason: _____

_____

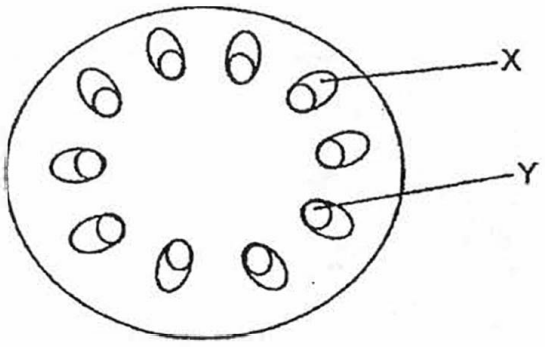
_____

(c) State the function of Part Y of both flowers T and Z. [1]

_____

_____

34. Michael put a plant in a beaker of red-coloured water. After two days, he cut the stem and a section of the stem is shown below. He noticed that tube Y appeared red in colour.



(a) What are the functions of tubes X and Y? [2]

Tube X: _____

_____

Tube Y: _____

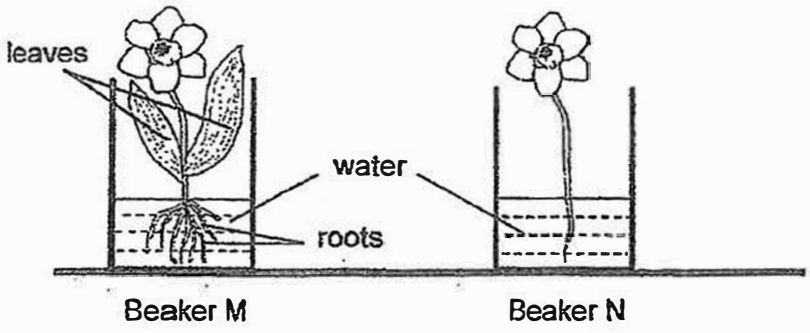
_____

(b) The plant used has white flowers. Explain why the flowers appeared red after 4 days. [1]

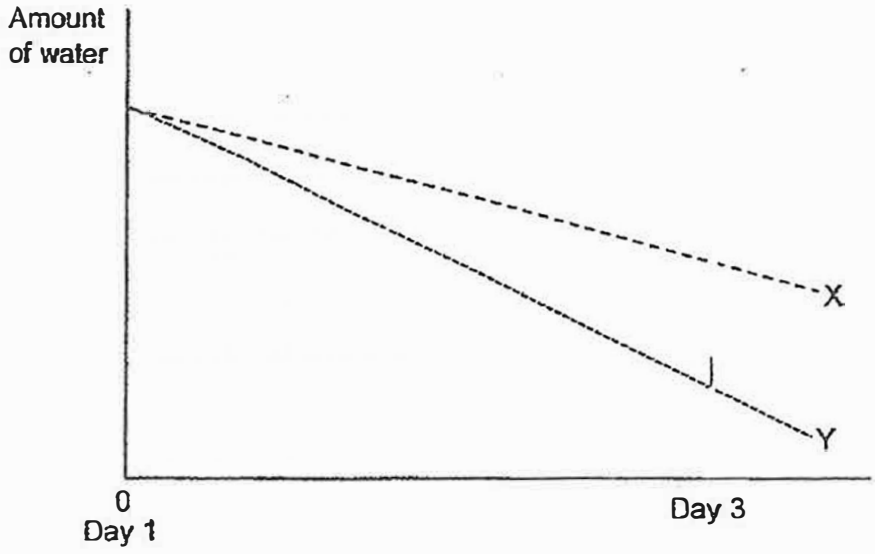
_____

_____

35. Jie Qi wanted to find out how the amount of water in a beaker is affected by the presence of roots. She placed 2 almost identical plants in beakers M and N as shown below.



Beakers M and N were left on the table by the side of the classroom for a week. The graph below shows the volume of water in Beakers M and N on Day 1 and Day 3 of the experiment.

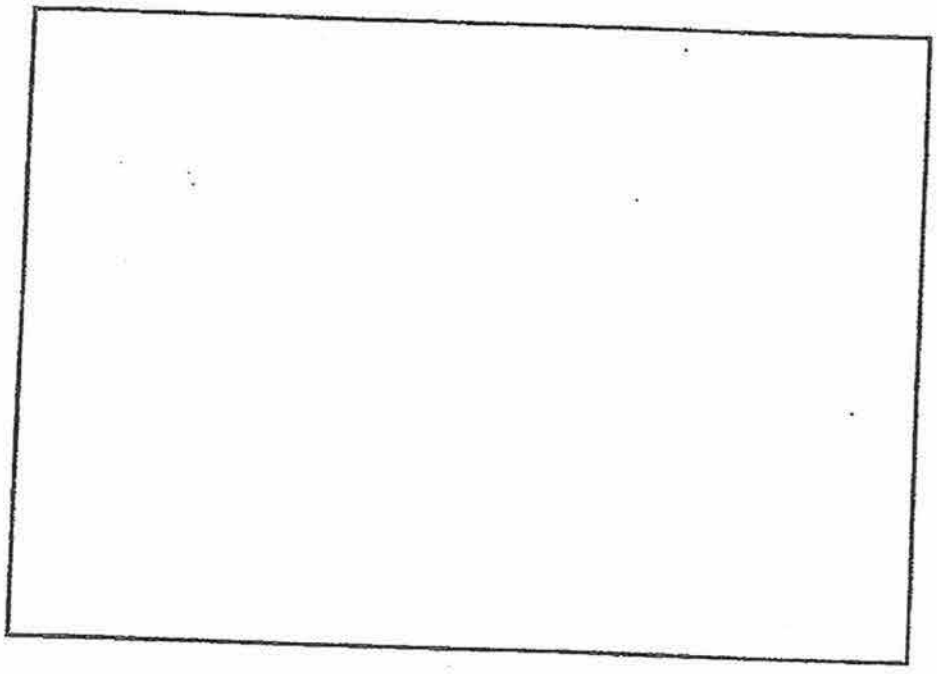


(a) Which graph, X or Y, correctly shows the amount of water left in Beaker M at the end of Day 3? Explain your answer. [1]

(b) Jie Qi's teacher told her that it was not a fair test. Explain why her experiment is not a fair test. [1]

36. Jack used a microscope to observe a leaf cell of a plant. His teacher instructed him to draw the cell in his Science journal.

(a) Draw a leaf cell in the space below.
Label all the parts of the cell that you have drawn. [2]



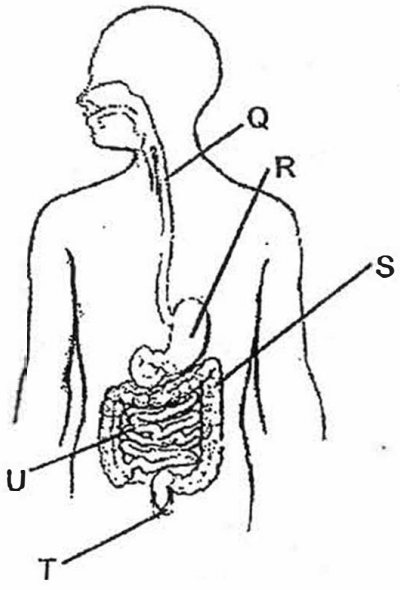
(b) In the Science laboratory, Jack continued to observe another specimen slide of the human cheek cell and noticed many differences between the cheek cell and the leaf cell.

State 2 cell parts that were present in the leaf cell but not in the human cheek cell. [1]

_____

_____

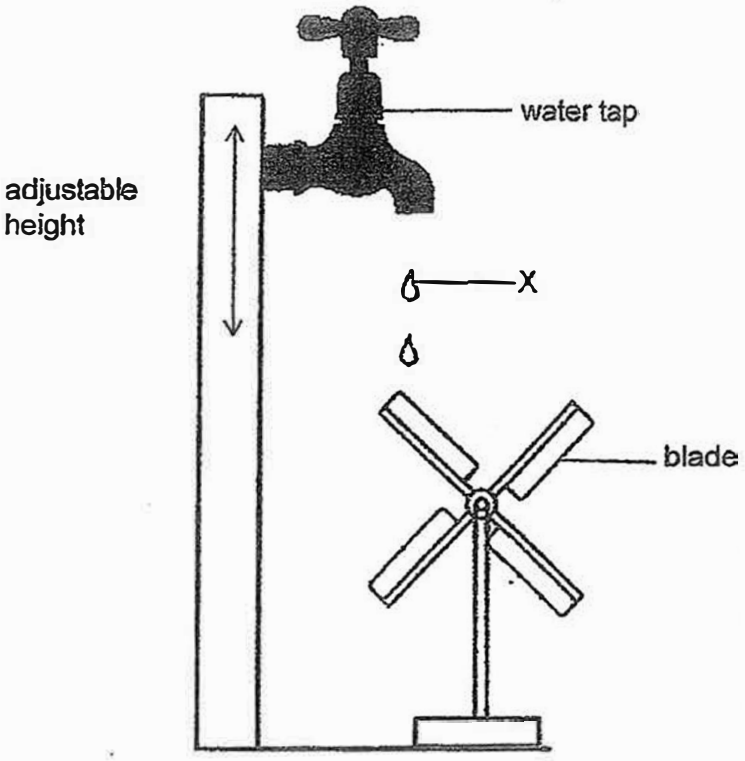
37. The diagram below shows the human digestive system.



Study the table below and put a (√) that matches the functions to their correct parts. There can be more than one (√) for each function. [2]

Functions		Parts of the digestive system				
		Q	R	S	T	U
(a)	digestion takes place					
(b)	removes water from undigested food					
(c)	churns and turns the food					
(d)	passes digested food into the bloodstream					

38. The diagram below shows a simple water mill.



The water mill would rotate as water drops onto the blade of the mill. The position of the tap is adjustable such that it can be moved upwards or downwards.

(a) What forms of energy does the water droplet at point X possess? [1]

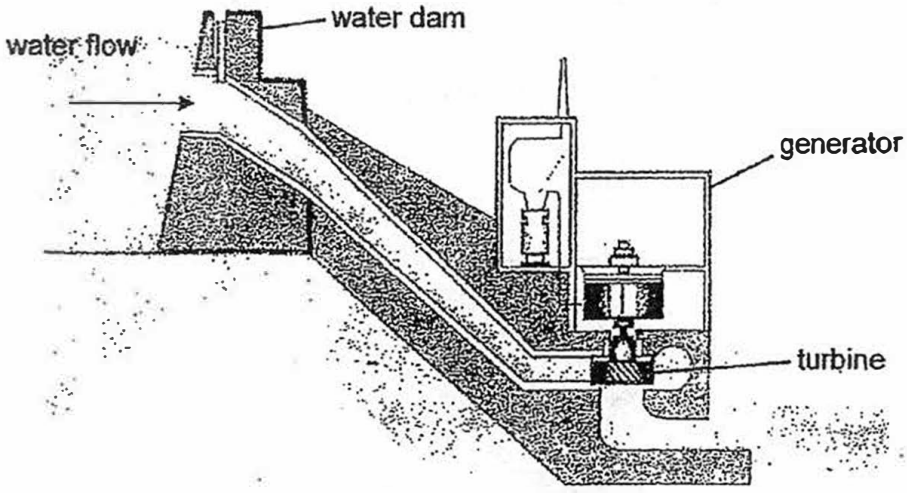
_____

(b) Suggest 2 modifications to the set up such that the water mill will spin faster. [2]

i) _____

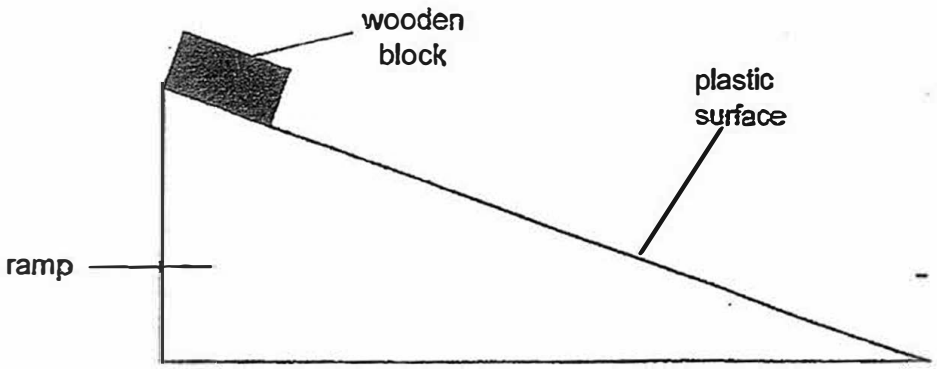
ii) _____

The diagram below shows a generator that is powered by water.



(c) Why is it necessary for the water dam to be built at a position much higher than the position of the turbine? [2]

39. Lucas released a wooden block from the top of a ramp with a surface made of plastic. He recorded the time taken for the wooden block to reach the bottom of the ramp.



He repeated the experiment on three similar ramps with different surfaces, L, M and N, and recorded the results in the table below.

Type of surface	Time taken for the wooden block to reach the bottom of the ramp (s)
plastic	25
L	16
M	9
N	32

(a) Which surface, L, M or N is most likely to be sandpaper? Give a reason for your answer. [1]

_____

_____

Lucas then added some oil on the plastic surface and repeated the experiment.

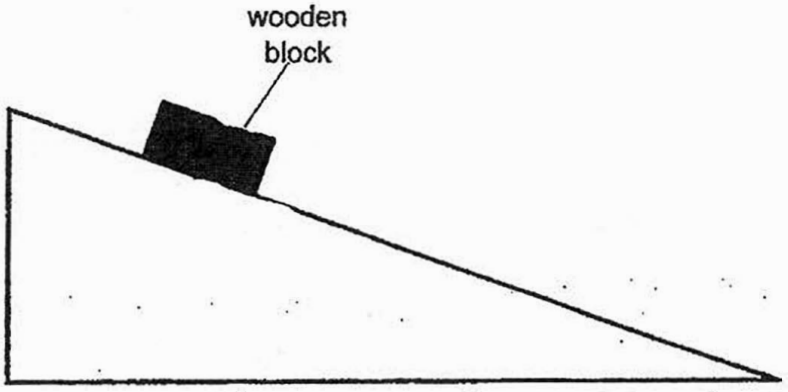
(b) What could be a possible time taken for the wooden block to reach the bottom of the ramp? Give a reason for your answer. [2]

_____

_____

_____

(c) Draw and label two forces that are acting on the wooden block as it moves down the ramp. [2]

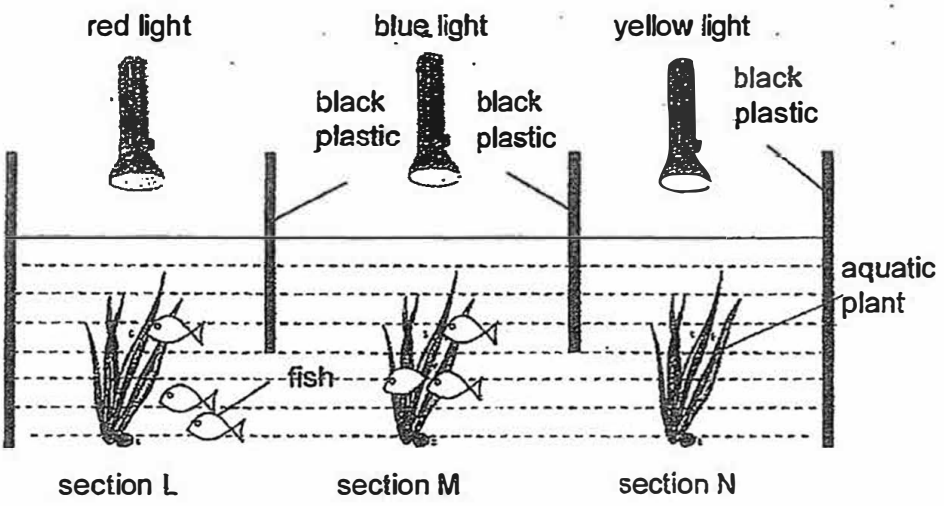


40. Sophie set up an experiment in a dark room to find out which coloured light(s) red, blue or green could be used for photosynthesis.

She divided a tank into 3 sections, L, M and N, by black plastic sheets as shown in the diagram below. The coloured lights are of the same brightness.

Before adding the aquatic plants, she noticed that the fish could be found at all the three sections.

She then introduced an aquatic plant into each section. After some time, she noticed that the fish gathered in sections L and M only.



(a) Based on Sophie's experiment, which coloured light(s) could be used for photosynthesis? Explain why. [2]

_____

_____

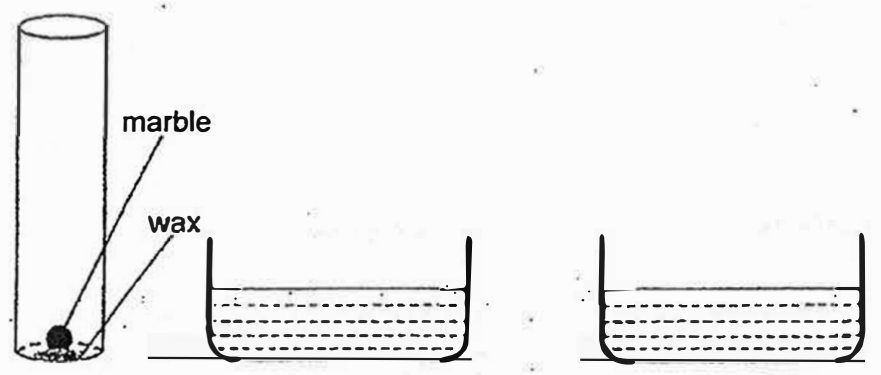
(b) Sophie removed all the aquatic plants after a day. What would she most likely observe about the fishes in the set-up after four days? Give a reason for your answer. [1]

_____

_____

_____

41. Jie Ren was asked to remove a marble which was stuck to the bottom of a tall beaker with wax. He was given two basins, each containing water of different temperatures.



tall beaker with marble stuck inside

basin A water at room temperature

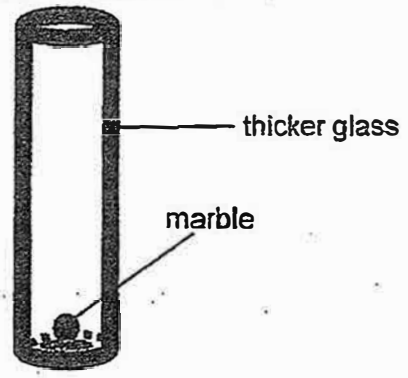
basin B water at 100°C

(a) i Using only the above apparatus, describe clearly how Jie Ren can remove the marble, without pouring the water from the basin into the tall glass beaker.

Method: [1]

(a) ii Explain your answer.

(b) Would Jie Ren be able to remove the marble if the tall beaker is made of thicker glass? Explain your answer clearly. [2]



tall beaker with marble stuck inside

EXAM PAPER 2017
LEVEL : PRIMARY 6
SCHOOL : NANYANG PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : SA1

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

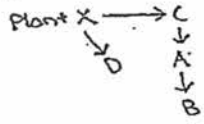
-Q29. Iodine turned blue-black. The plant could make food and the food was converted into starch.

Q30ai) As the surface is covered with plants, the submerged plants will not have enough sunlight to make food and will die, causing the fishes to lose their shelter and hence, they have lesser places to reproduce.

ii) The plants would not make food, so it does not release enough oxygen for the fish to respire.

b) When the fish breathes, it gives out carbon dioxide the submerged plants take in the carbon dioxide to make food.

Q31a)



b) Ming Ling should increase the population M. As there is more population M to eat P and N, they will decrease and thus the plant Q will have less P and N, eating it, thus the plant Q population can increase.

Q32a) The metal bottle gains heat from the sun, the muddy water in the metal bottle thus gains heat from the metal bottle and the water evaporates, turning into water vapour and rises to the plastic tube since plastic is a poor conductor of heat, it gains heat slower, the water vapour then loses heat to the cooler plastic bottle and condenses, forming water droplets in the plastic bottle.

b) To place ice cubes on the top of the plastic bottle.

Q33a) Part X is where the pollen grain from part Y is from is to land for the flower to be pollinated, if the flower cannot be pollinated, it cannot be fertilized and cannot reproduce.

bi) Animal pollination Reason: The flower has its part Y and part X inside the flower and would attract an animal using nectar and when the animal gets the nectar and when the animal gets the nectar, it brushes off pollen grains onto part X, thus pollinating it.

ii) Wind of pollination. Reason: The flower has feathery stigma and this will help to catch the pollen grains from part Y when the wind blows, thus pollinating the flower.

c) It produces pollen.

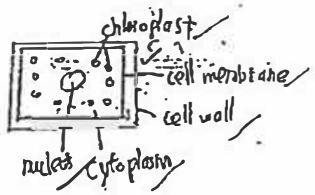
Q34a) Tube X : To transport food from the leaves to all the parts of the plant.
Tube Y: To transport water from the roots to all parts of the plant.

b) The water carrying tubes transported the water from the roots which absorbed the water to the flowers and the flowers thus turned red.

Q35a) Y. Beaker M has roots to take in water and for photosynthesise, the plant used the water to make food, thus there was a big decrease in the water.

b)Beaker N's flower did not have roots and leaves while there should only have the laves and the flower for the flower in beaker N, thus the experiment had two changed variables and it was not a fair test.

Q36a)



b) The plant call has chloroplast and cell wall while the human cheek does not.

Q37a) R and U b) S c) R d) U

Q38a) Gravitational potential energy, kinetic energy.

bi) To increase the height of the tap from the mill.

ii) To increase the rate of he water dripping from the tap.

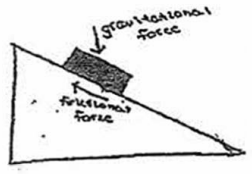
c) The water will possess more gravitational potential energy to be converted into more kinetic energy. This will then be transferred into more kinetic energy of the turbine so the generator will generate more electrical energy.

Nanyang Sec 4

Q39a) N. Sand paper is rough and thus, there will be more friction between and sand paper, thus taking longer than plastic for the block to reach the bottom of the ramp.

b) 20 seconds. Oil is a lubricant and will help to decrease the amount of friction between the block and the plastic surface.

c)



Q46a) The blue and red light. The fish gathered at the plants at section L and M as the plants had photosynthesised and give out oxygen which the fishes breathe in, thus allowing the fish to have more oxygen.

b) They will die. The fishes will have not enough oxygen to breathe as there are no more plants to produce oxygen during photosynthesis.

Q41ai) To place the tall beaker in the basin of water at 100 degrees celcius and wait for the wax to melt before taking the marble out.

ii) The beaker will gain heat from the water at 100 degress celcius, the wax will then gain heat from the beaker and melt, thus allowing the wax to melt and Jie Ren can then take the marble out.

b) No. Glass is too thick. By the time the heat travels through the glass to the was, it is not hot enough to melt the wax.