NANYANG PRIMARY SCHOOL

PRIMARY 6 SCIENCE

SEMESTRAL ASSESSMENT 1
2019

BOOKLET A

Date : 15 May 2019
Duration : 1 h 45 min

Name : _____ ( )

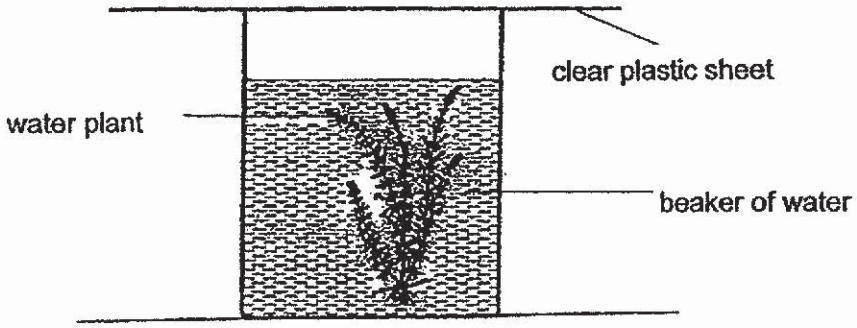
Class: Primary 6 ( )

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

Booklet A consists of 18 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. Indicate your choice (1, 2, 3 or 4) and shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.

1. Alicia prepared the set-up in the morning as shown below. She then placed it in an open field for 24 hours.



At every six-hour interval, she tested a sample of the water from the beaker by adding liquid A to it.

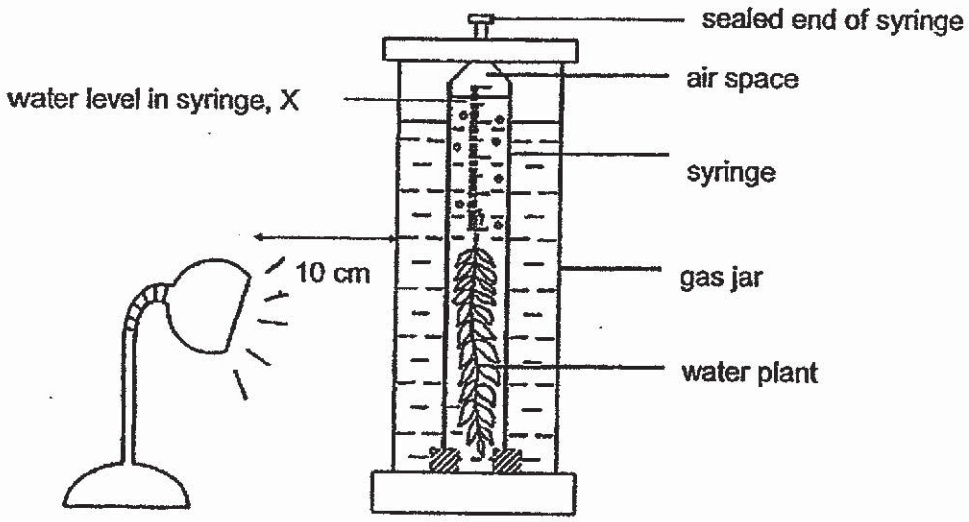
Liquid A causes a colour change in the water as shown below.

Amount of carbon dioxide in the water	low	high
Colour of water with liquid A	yellow	red

What would be the colour observed when Alicia tested water samples taken at noon and at midnight?

	At noon	**At midnight**
(1)	red	red
(2)	red	yellow
(3)	yellow	yellow
(4)	yellow	red

2. Winnie set up an experiment in a dark room as shown below.



She placed a table lamp at a distance from the gas jar. After half an hour, she observed that the water level, X, in the syringe changed.

How did the water level, X, change and what was the reason for its change?

	Water level X	Reason
(1)	rises	Heat from the lamp caused the water to expand.
(2)	rises	The plant gave out water during photosynthesis.
(3)	falls	Oxygen released by the plant gets collected in the air space.
(4)	falls	Carbon dioxide in the air space is taken in by the plant.

3. Which of the following statements about food made during photosynthesis are correct?

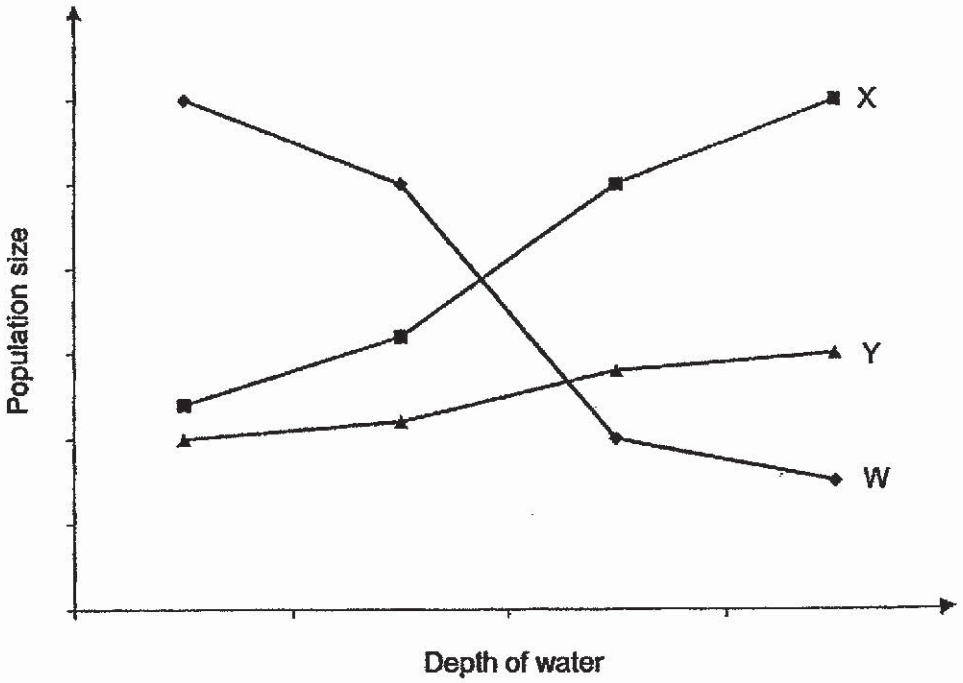
A Food made by plants can be stored as starch.
B Plants make use of the food that they made for energy.
C Food made in the leaves is transported to all parts of the plant.
D Excess food that plants made can be stored in different plant parts.

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

4. Which one of the following represents a single population?

(1) All the insects found in a field.
(2) All the birds counted in one day in a garden.
(3) All the animals and plants living on an island.
(4) All the bacteria of the same kind found in yoghurt.

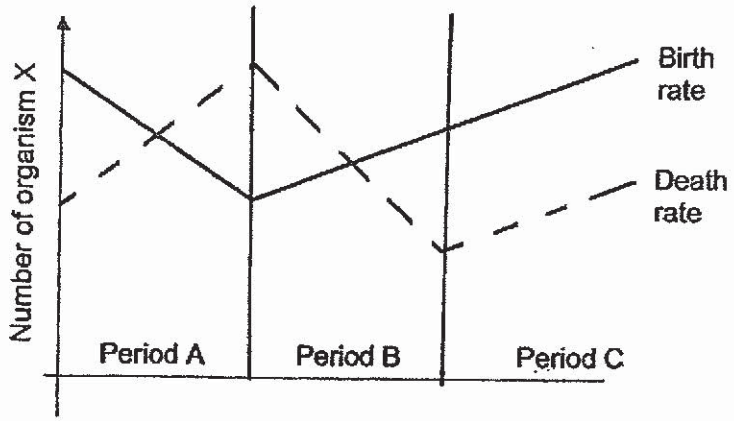
5. The graph below shows the population size of three different organisms, W, X and Y, at different water depths.
As the depth of a pond increases, the amount of light that passes through the water decreases.



Which organism(s) survive(s) better when there is less light?

(1) X only
(2) W and X only
(3) W and Y only
(4) X and Y only

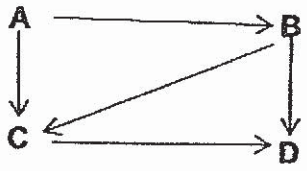
6. The graph below shows the birth and death rates of a population of organism X.



Which period(s) show(s) a decrease in the population of organism X?

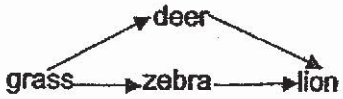
(1) A only
(2) B only
(3) A and B only
(4) A and C only

7. In the food web shown below, which organism is most likely a plant?



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

8. A safari park is a large area where wild animals are kept in the open and may be observed by visitors driving through. The diagram shows a food web in one location of the safari park.



If there is a shortage of zebra in that area of a safari park, which of the following could the lions do?

A Eat the bark and roots of a tree.
B Hunt for more deer in that area of the safari park.
C Move to another area of the safari park to hunt for zebra.

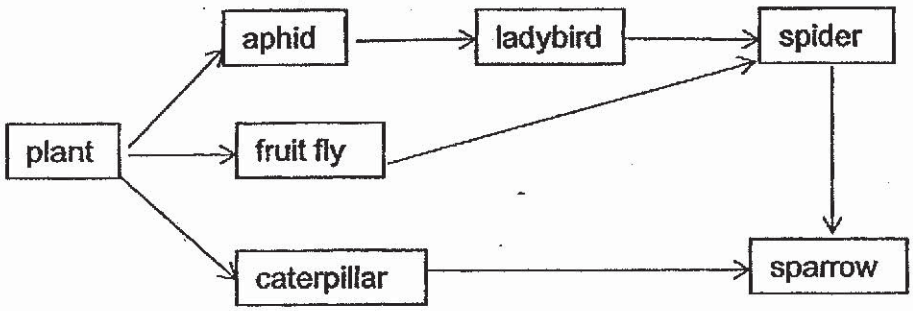
(1) B only
(2) A and B only
(3) A and C only
(4) B and C only

9. Which of following organisms break down dead matters into simpler substances?

A fern
B moss
C mould
D bacteria

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

10. The food web below shows the food relationships of different organisms living in a garden community.



Based on the food web above, which organisms are both predators as well as prey?

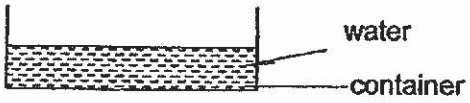
(1) aphids only
(2) ladybird and spider only
(3) caterpillar and sparrow only
(4) fruit fly, spider and sparrow only

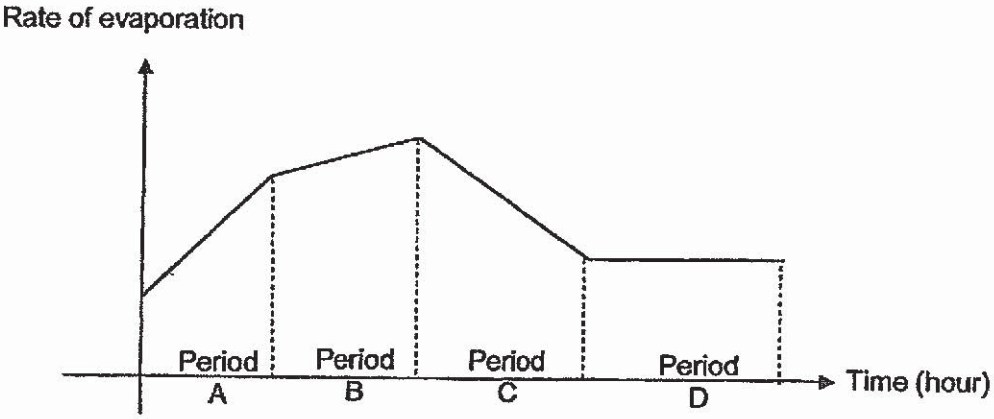
11. Which of the following explain why the water cycle on Earth can take place repeatedly?

A Water freezes at 0°C and boils at 100°C.
B Water has no definite shape but has a definite volume.
C Water can condense when it comes into contact with a cooler surface.
D Water can change from one state to another when it gains or loses heat.

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

12. The graph below shows the changes in the amount of water left in the container shown below over a period of time.





Which one of the following statements is a possible explanation for the change in the rate of evaporation of the water in the container?

	Period	Change in rate of evaporation	Explanation
(1)	A	increased	There was the most amount of water at the start.
(2)	B	increased	There was an increase in the temperature of the surrounding air around the container.
(3)	C	decreased	There was a decrease in the exposed surface area of water in the container.
(4)	D	remained constant	All the water in the container had completely evaporated.

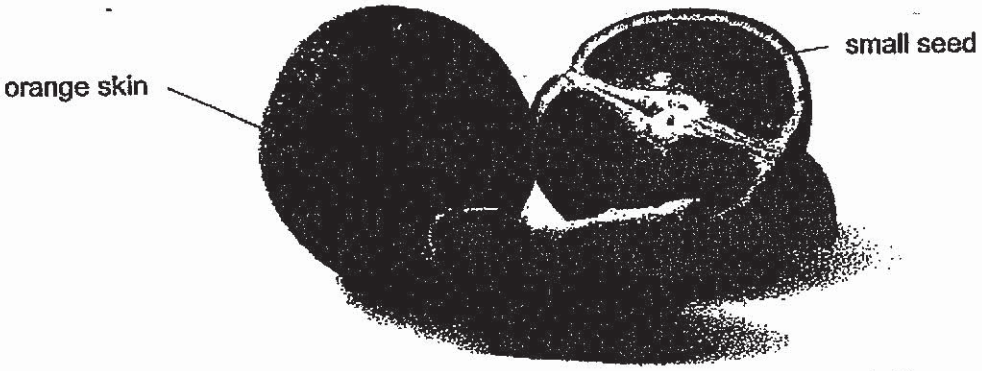
13. The table below shows the characteristics of three different flowers, A, B and C.

Characteristics	Flowers		
	A	B	C
Does it produce nectar?	Yes	No	Yes
Does it have sticky stigma?	Yes	No	Yes
Does it have brightly coloured and large petals?	No	Yes	Yes
Does it have stigma and anthers dangling outside the flower?	No	Yes	No

Based on the information above, which of the following flower(s) is/are most likely pollinated by insects?

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

14. The diagram below shows two oranges. One of them had been cut open.

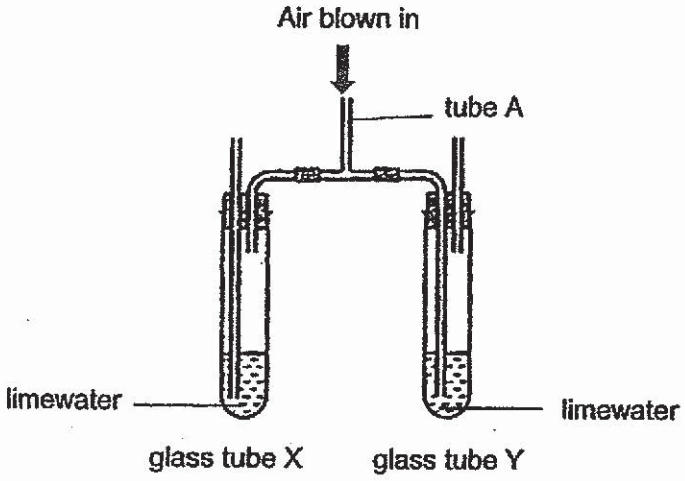


Which of the following characteristics most likely help in the dispersal of its seeds?

A It is round.
B It is fleshy and juicy.
C Its skin is bright in colour.
D Its seeds are small, hard and indigestible.

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

15. Dylan set up the following apparatus with the same amount of limewater poured into identical glass tubes, X and Y.



Air was being blown into tube A continuously for 15 seconds.

Which one of the following describes Dylan's observation and the explanation for the observation?

(1) The limewater in X and Y remained clear as there was no carbon dioxide in Dylan's breath.

(2) Only the limewater in X turned cloudy after coming into contact with the carbon dioxide in Dylan's breath.

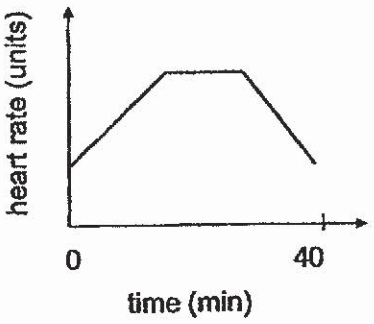
(3) The limewater in Y turned cloudy faster than X after coming into contact with the carbon dioxide in Dylan's breath.

(4) The limewater in X and Y turned equally cloudy after coming into contact with the carbon dioxide in Dylan's breath.

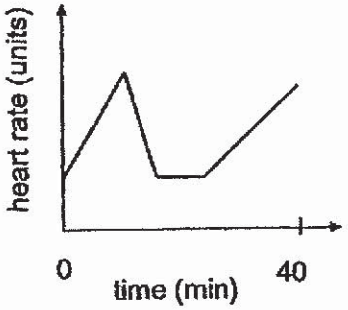
16. During her exercise, Wan Ru ran up a hill, rested for 10 minutes at the top of the hill and then ran down the hill. She ran at a constant speed and took 40 minutes to complete her exercise.

Which one of the following graphs correctly represents Wan Ru's pulse rate during the 40 minutes?

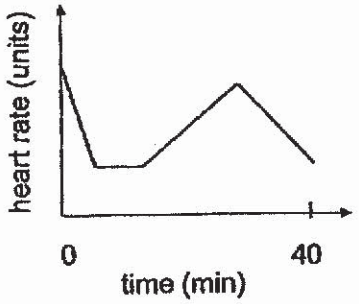
(1)



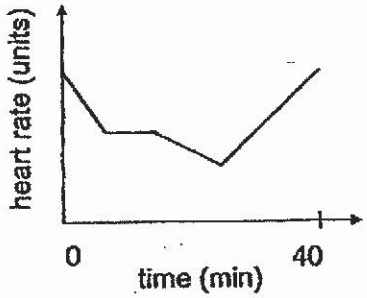
(2)



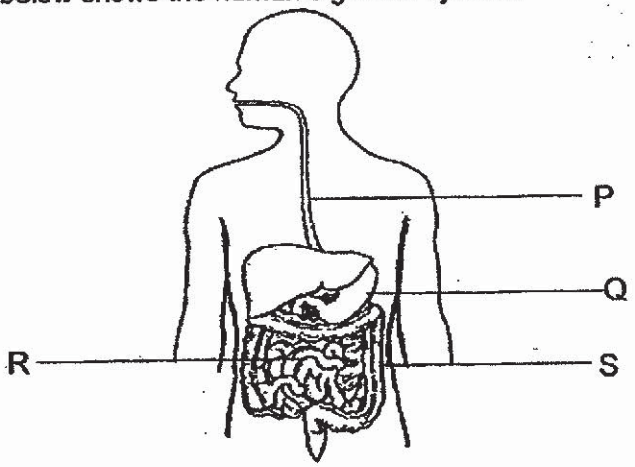
(3)



(4)



17. The diagram below shows the human digestive system.



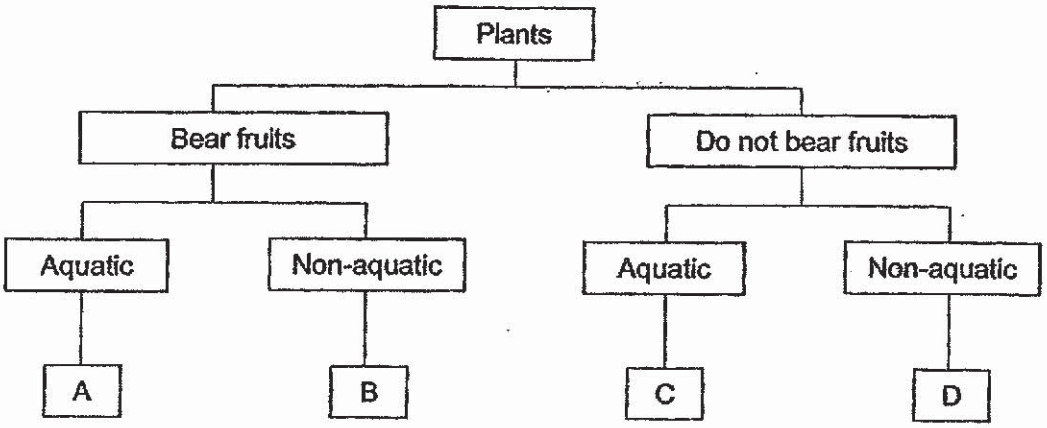
At which part of the human digestive system would digested food be passed into the circulatory system?

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

18. The table below shows the characteristics of plants P and Q. A tick (✓) shows that the plant has the characteristic stated.

Characteristics \ Plant	P	Q
Has flowers		✓
Grows on land	✓	

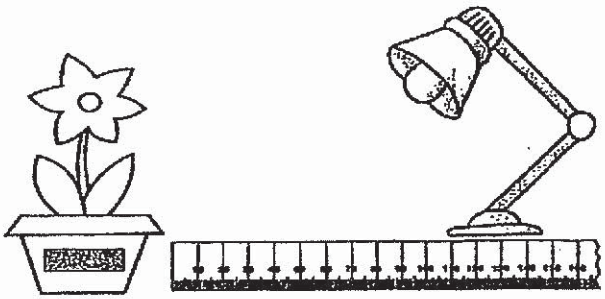
Study the classification chart below.



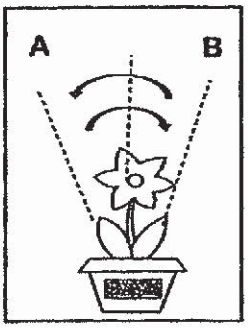
Based on the information above, which letters best represent plants P and Q?

	Plant P	Plant Q
(1)	C	A
(2)	C	B
(3)	D	A
(4)	D	B

19. Priscilla used a solar-powered toy flower to carry out an experiment as described in the table below.



Set-up of experiment



movement of flower

Step	Procedure
1	Place a lamp about 5 cm away from the toy flower.
2	Turn on the lamp and observe the number of rounds that the toy flower makes. In each round, the flower moves from A to B then back to A.
3	Record the number of rounds the toy flower moves in 5 minutes.
4	Repeat steps 1, 2 and 3 by placing the lamp at the 10 cm mark and 15 cm mark of the ruler.

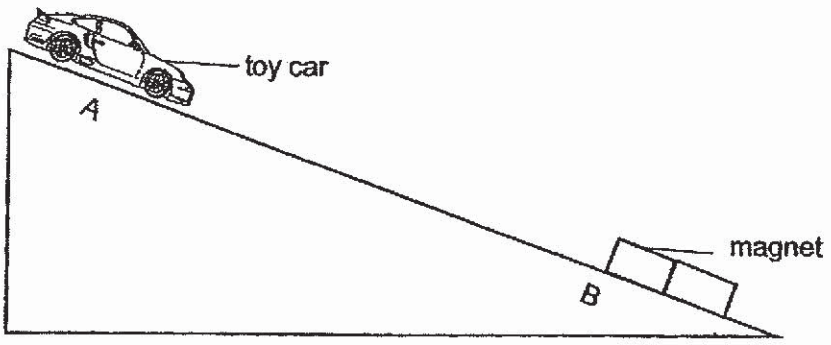
Priscilla wrote the following aims and conclusions for the experiment.

	Aim	Conclusion
A	To find out how the intensity of light affects the amount of electricity produced.	When there is more electrical energy, the light is more intense.
B	To find out how the intensity of light affects the speed at which the toy moved.	The greater the light intensity, the faster the toy moved.
C	To find out how the intensity of light affects the amount of electricity produced.	The greater the light intensity, the greater the amount of electrical energy.
D	To find out the how the intensity of light affects the speed at which the toy moved.	Light intensity has no effect on the amount of electrical energy produced.

Which of the following statements are possible aims and conclusions for her experiment?

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

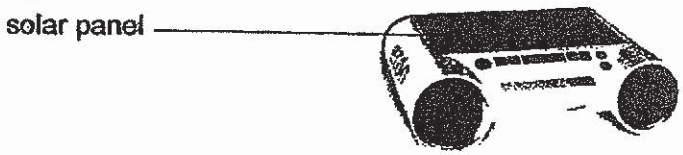
20. A steel toy car was moving down a slope as shown below.



Which of the following shows the change in gravitational potential energy and kinetic energy of the toy car as it moved from A to B?

	Gravitational potential energy	Kinetic energy
(1)	decrease	remains the same
(2)	remains the same	remains the same
(3)	decrease	increase
(4)	increase	increase

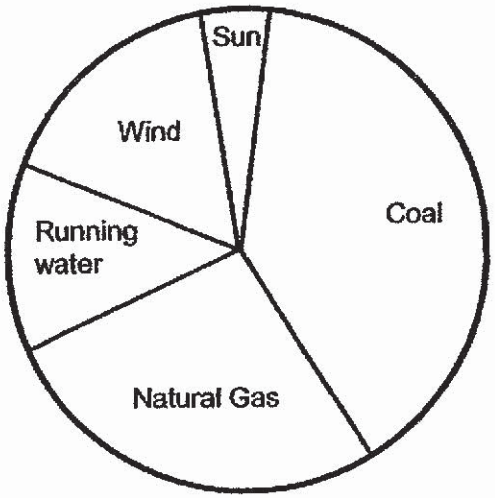
21. The diagram below shows a solar-powered radio. The radio can only work when placed in a bright location.



What is the energy conversion that takes place when the radio is being used?

(1)	light energy	→	chemical potential energy	→	sound energy
(2)	light energy	→	electrical energy	→	sound energy
(3)	electrical energy	→	chemical potential energy	→	sound energy
(4)	chemical potential energy	→	electrical energy	→	sound energy

22. The diagram shows the sources of energy in Country S.



Which one of the following statements is true?

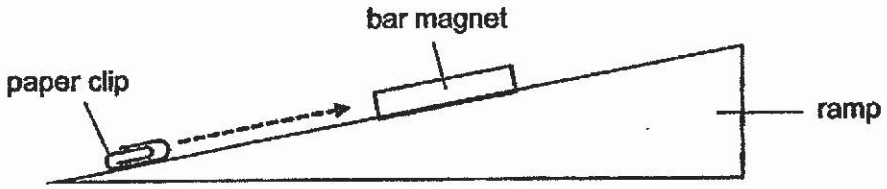
(1) Country S does not use solar energy.

(2) Country S uses energy mostly from fossil fuels.

(3) Country S uses the least energy from the wind.

(4) Country S uses equal amounts of energy from running water and natural gas.

23. Nikhil placed a bar magnet in the middle of a ramp as shown in the diagram below. He observed that the paper clip moved up the ramp and became attached to the magnet.

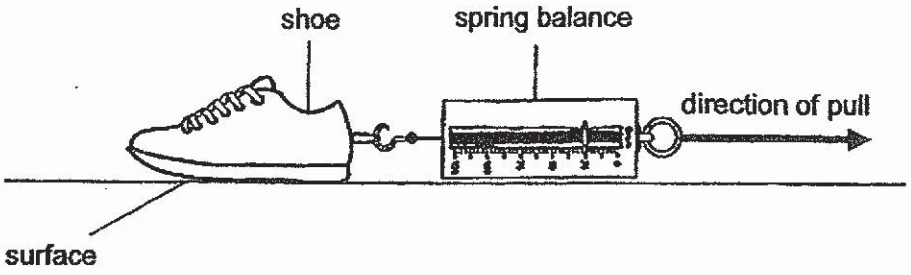


Which of the following forces are acting on the paper clip as it moves up the ramp?

A Frictional force
B Magnetic force
C Gravitational force
D Elastic spring force

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

24. Charles conducted an experiment as shown below. He hooked a spring balance onto a shoe and pulled it along the same distance on 4 different surfaces, P, Q, R and S, as shown in the diagram below.



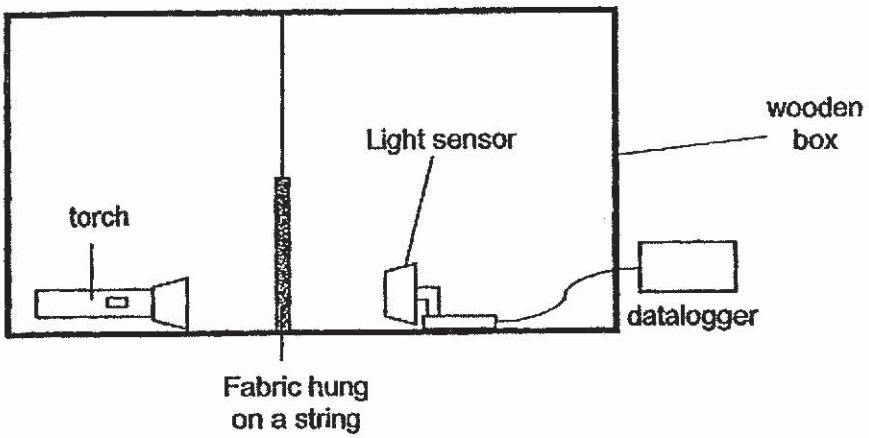
The amount of force needed to pull the shoe across the different surfaces is shown in the table below.

Type of surface	Amount of force needed (units)
P	18
Q	11
R	9
S	15

Based on the information above, on which one of the surfaces is Charles most likely to slip and fall?

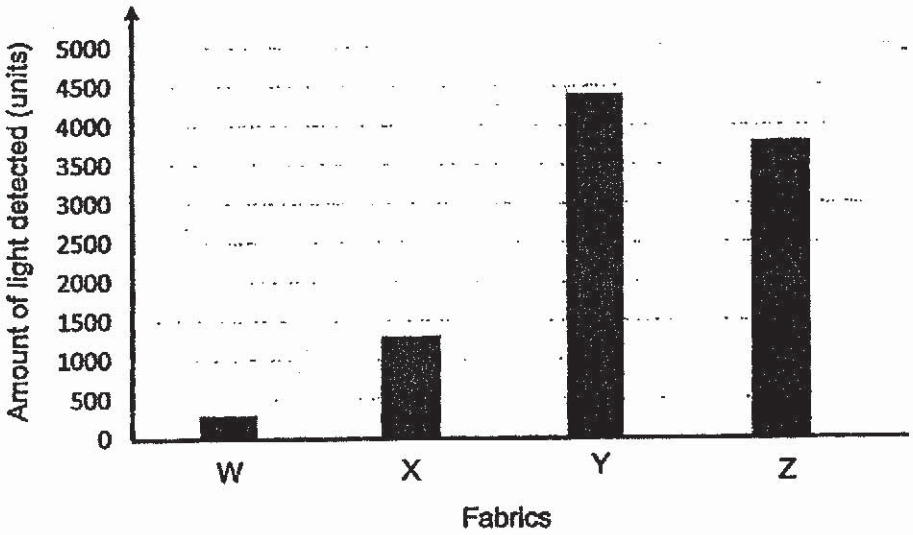
(1) P
(2) Q
(3) R
(4) S

25. Kai Lin set up the following experiment to measure the amount of light passing through 4 different pieces of fabric, W, X, Y and Z.



The datalogger detected 5000 units of light when no fabric was hung.

The results were shown in the graph below.

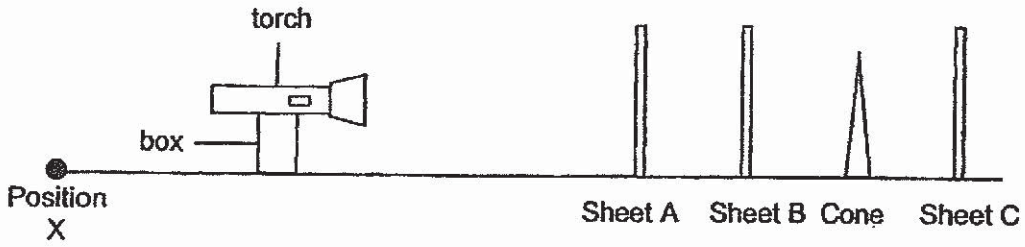


Kai Lin wanted to use one of the pieces of fabric to make curtain A to block out some light and another piece of fabric to make curtain B to block out most light from her bedroom.

Which of the following show the best choices of fabrics to make curtains A and B?

	Curtain A	Curtain B
(1)	W	X
(2)	W	Y
(3)	Y	W
(4)	Y	Z

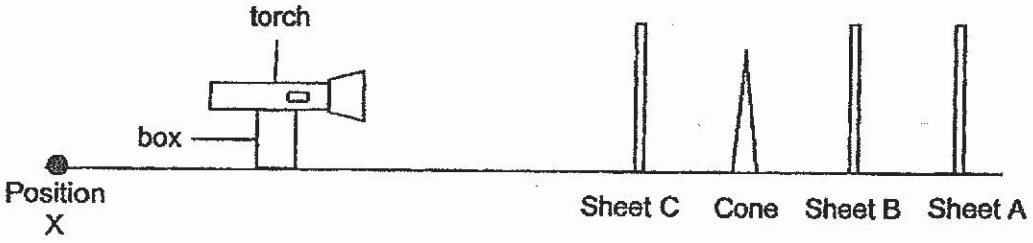
26. Wati set up an experiment in a dark room using a torch, a cone, and 3 sheets, A, B and C, which are made of different materials. She supported the torch on a box and arranged the objects as shown below.



Wati switched on the torch and made the following observations when standing at position X.

- Sheet B has a shiny surface.
- Sheet C and the cone could not be seen.

Wati rearranged the objects as shown below.



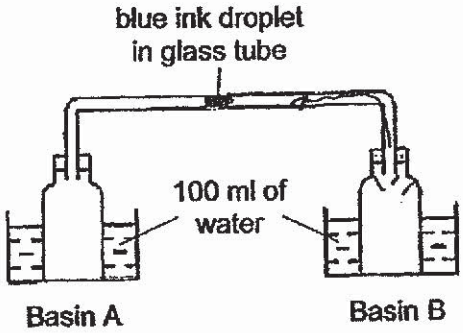
She then made the following observations when standing at position X.

- A dark shadow is formed on Sheet B by the cone.
- The cone could be seen clearly.

Which of the following correctly matches the properties to the sheets and cone?

	Allows most light to pass through	Does not allow light to pass through
(1)	Sheet A and sheet B	Sheet C and cone
(2)	Sheet A and sheet C	Sheet B and cone
(3)	Sheet B and cone	Sheet A and sheet C
(4)	Sheet C and cone	Sheet A and sheet B

27. Aniq connected 2 empty bottles with a glass tube which has a droplet of blue ink placed in the middle. Each bottle was then placed into a basin of water as shown in the diagram below.



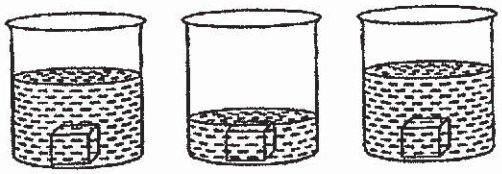
After a while, the droplet of blue ink moved towards the bottle in basin A and dripped into it.

Which of the following changes would together cause the droplet of ink to drip into the bottle in basin A the fastest?

A Increase the width of basin A
B Decrease the width of basin B
C Increase the temperature of the water in basin A
D Increase the temperature of the water in basin B

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

28. Arturo poured different amounts of water at different temperatures into each of the 3 identical beakers, P, Q and R, as shown in the diagram below. He then placed an ice cube of the same size into each beaker at the same time.



Arturo measured the time taken for the whole ice cube to melt completely in the water. Arrange the beakers in order of the amount of time taken to melt the whole ice cube, starting with the shortest amount of time.

	Shortest time ⟶		Longest time
(1)	P	Q	R
(2)	Q	P	R
(3)	Q	R	P
(4)	R	Q	P

~ END OF BOOKLET A ~

NANYANG PRIMARY SCHOOL

PRIMARY 6 SCIENCE

SEMESTRAL ASSESSMENT 1
2019

BOOKLET B

Date : 15 May 2019

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 24 May 2019. 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 BOOKLEY UNTIL YOU ARE TOLD TO DO SO.
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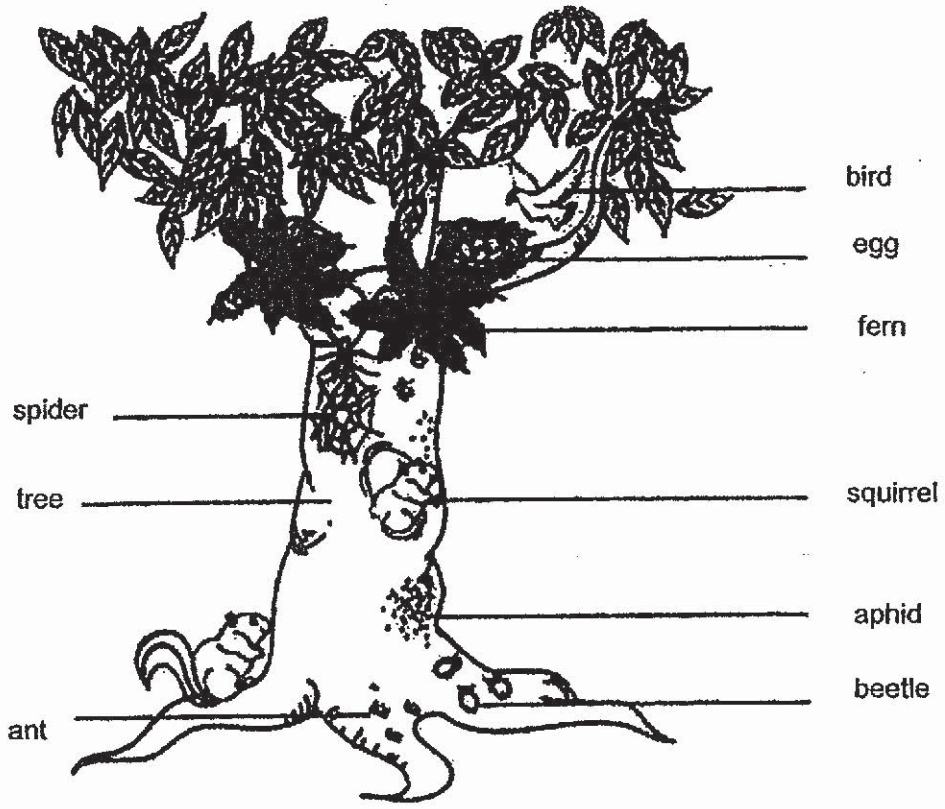
Booklet B consists of 17 printed pages including this cover page.

Section B
Write your answers to questions 29 to 40 in the spaces provided.

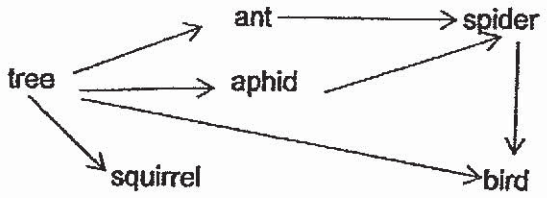
29. The diagram below shows different organisms found living together in a tree.



(a) Describe what a tree community is, using specific examples of the organisms shown in the diagram above. [1]

1

The tree provides food and shelter to the organisms living in it. The tree also benefits from these organisms. Study the food web below and answer part (b).



(b) Based on the food web, describe how the tree benefits from the birds and the spiders living in it. [2]

(i) the tree benefits from the birds:

_____

_____

(ii) the tree benefits from the spiders:

_____

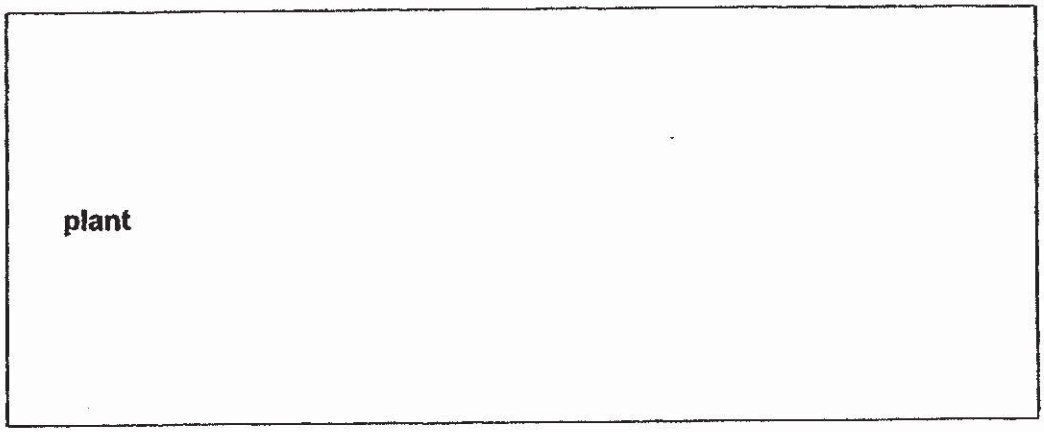
_____

2

30. Study the following food chains carefully. They show the food relationships of organisms living in one habitat.

- Plant → squirrel → python
- Plant → caterpillar → toad → python
- Plant → millipede → centipede → toad → python

(a) Construct one food web in the space provided based on the 3 food chains above.[2]



(b) How would the squirrel population be affected immediately and after a period of time if the number of pythons were to decrease?Explain your answer. [2]

(i) Immediate effect:

_____

_____

_____

(ii) After some time:

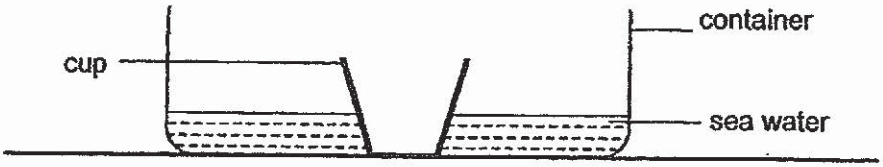
_____

_____

_____

4

31. Lucas was given a container of sea water to obtain pure water from it.
The diagram below shows the initial set-up given to him before he conducted his experiment.



His science teacher provided him with the following apparatus:

- a clear plastic sheet
- a 10 g weight
- some sticky tape
- a stove

He then recorded the procedure of the experiment in the table below.

Step	Procedure
1	Cover the container with a clear plastic sheet.
2	Use some sticky tape to stick the sides of the plastic sheet to both sides of the container.
3	Place a weight in the middle on the surface of the plastic sheet.
4	Place the set-up on a stove and turn it on for 30 minutes.
5	Collect pure water in the cup.

(a) Explain why the set-up was placed on a stove. [1]

_____

_____

(b) Explain how the above experiment enabled him to obtain fresh water in the cup from the sea water. [2]

_____

_____

3

32. Mr Koh placed five identical fruits, A, B, C, D and E, in rooms of different temperatures and measured the time taken for each fruit to split. The results of his experiment are shown below.

	Temperature (°C)				
	20	**25**	**30**	**35**	**40**
Fruit	**A**	**B**	**C**	**D**	**E**
Time taken to split (hrs)	Did not split	24	10	5	1

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

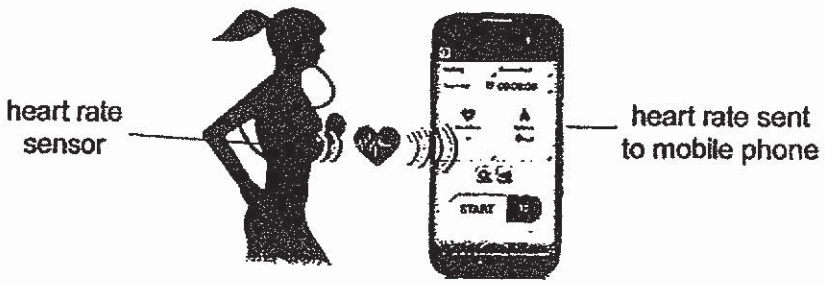
(b) Based on the results above, state the relationship between the temperature and the time taken for the fruit to split. [1]

Mr Koh observed that Fruit E split with the greatest force and dispersed the seeds the furthest away.

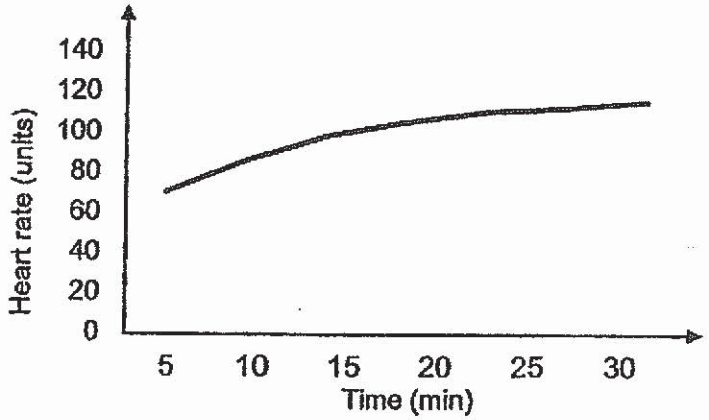
(c) State an advantage of dispersing the seeds far away from the parent plant. [1]

(d) State one characteristic of a fruit that disperses its seeds by splitting. [1]

33. The diagram below shows Peifen wearing her heart rate sensor while she is jogging. The sensor detects her heart rate and sends the data to her mobile phone.



Her heart rate during her 30-minute jog is shown in the graph below.



(a) State the function of the heart in the circulatory system. [1]

(b) Describe the change in her heart rate and explain why it has to change with time during exercise as shown in the graph above. [2]

34. Figure 1 below shows the cut-section of a stem and insect A feeding on it. This insect inserts its long and pointed mouthpart into the stem to obtain nutrition.

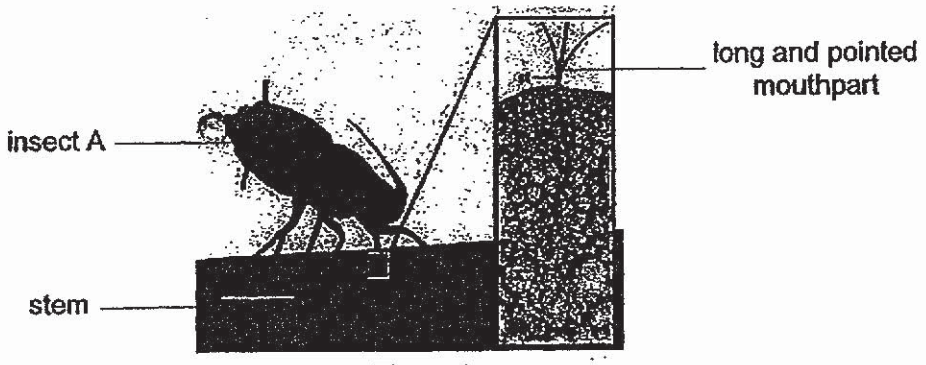


Figure 1

(a) State the part in the stem of the plant which insect A obtains its nutrition from. [1]

While obtaining its nutrition, insect A is known to inject a harmful liquid into the stem of the plant. Figure 2 below shows the leaf of the plant turning white after being infested by insect A.

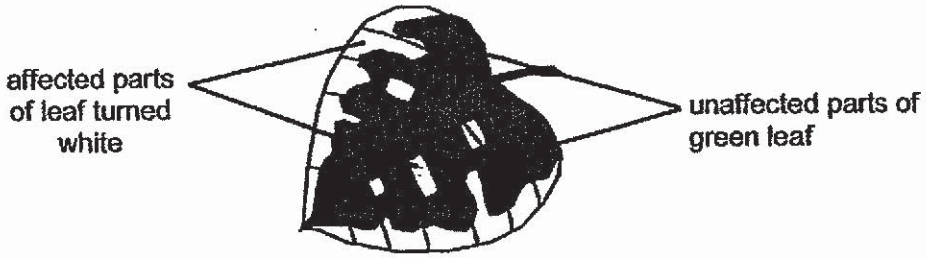
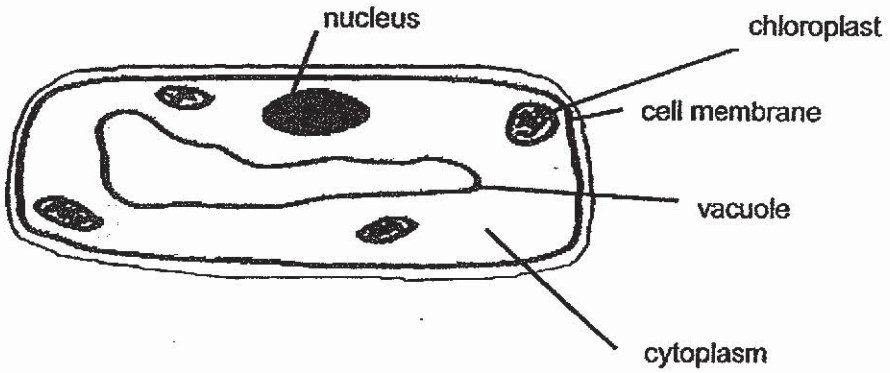


Figure 2

(b) Based on figure 2, state which part of the leaf cell was damaged by the liquid to cause the change from green to white. [1]

(c) Explain how the plant might eventually die if it continues to be infested by insect A. [1]

35. Qi Qi tried to draw a cell as shown below but she missed drawing one part of the cell.



(a) **Draw** the missing part of the cell for her and **label** it. [1]

(b) State 2 other characteristics of the cell above that enables Qi Qi to identify and draw the missing part in (a). [1]

_____

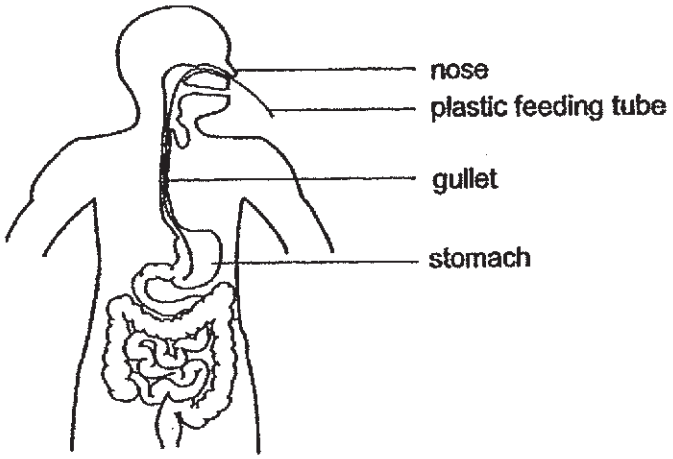
_____

(c) State the function of the nucleus. [1]

_____

_____

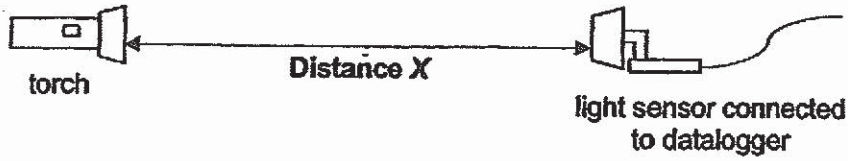
36. The diagram below shows a patient who was not able to chew after a jaw surgery. A plastic tube was inserted through the nose and gullet into the stomach directly. Nutritional drinks, that still needed to be digested, were then poured through the opening of the tube into the stomach once every few hours.



(a) In the diagram above, **put a cross (X)** at the part of the human digestive system where the digestion of food was skipped in this method of feeding. [1]

(b) Explain how the patient was still able to obtain his nutrients using this method of feeding. [2]

37. Terine wanted to find out how the distance between the torch and the light sensor affects the amount of light detected by the light sensor. She placed a light sensor at different distances, *X*, from the torch as shown in the diagram below.



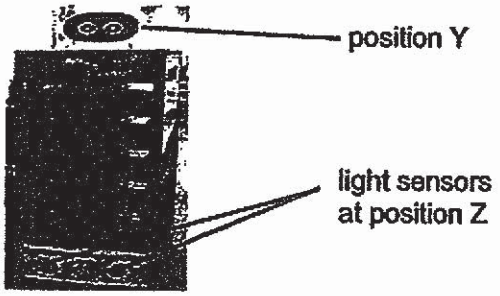
Terine recorded her results in the table below.

Distance, *X* (cm)	Amount of light detected (units)
50	900
100	750
150	580
200	350

(a) Based on the aim of her experiment, what can Terine conclude about her experiment? [1]

(b) Terine wants to ensure that the light detected by the light sensor is from the torch only. State the condition of the surroundings for her to achieve this. [1]

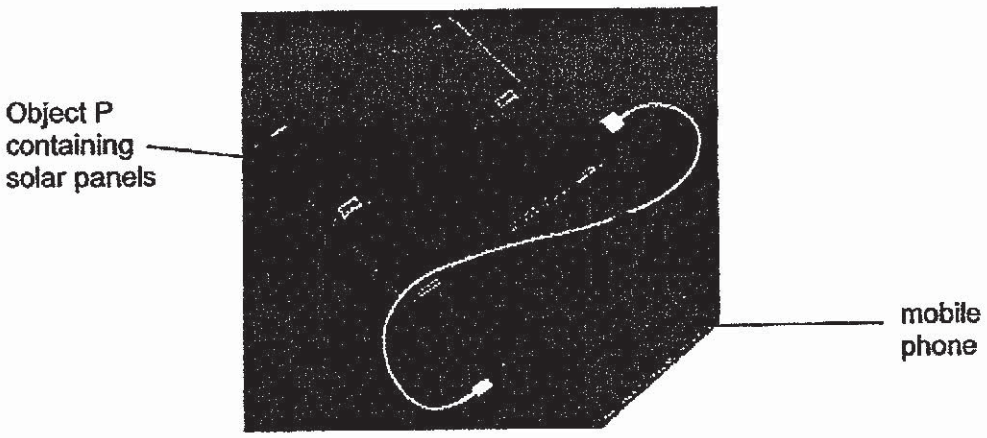
The diagram below shows a tray return robot with light sensors at position Z. Whenever a person blocks light from reaching the light sensors, the robot will stop moving to allow trays to be slotted in.



(c) Explain why the light sensors have to be placed at position Z instead of Y. [1]

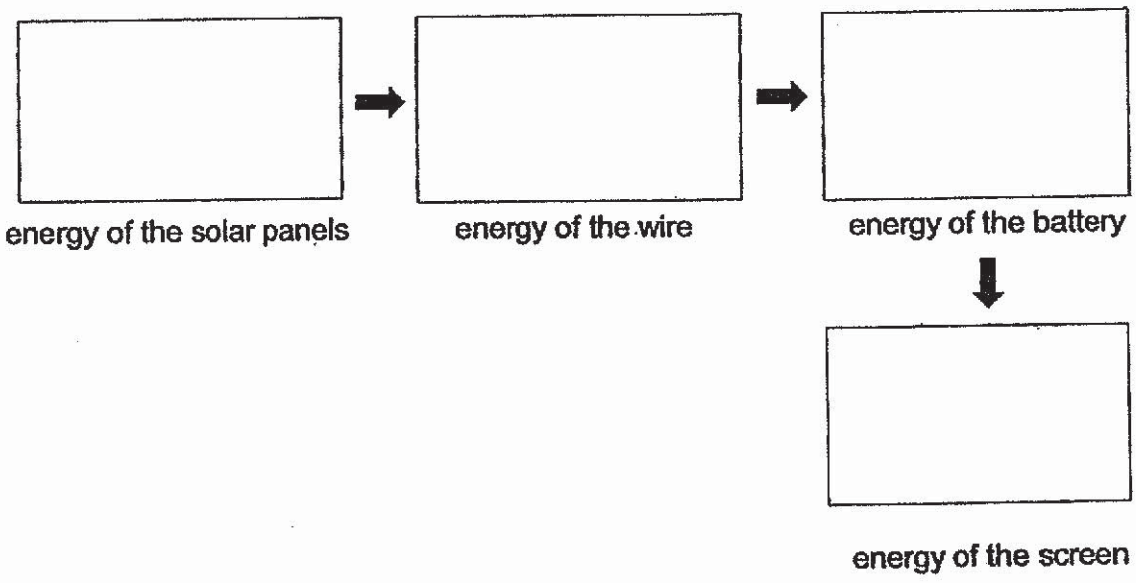
3

38. Object P can be used to charge the battery in a mobile phone as shown below. It contains solar panels.



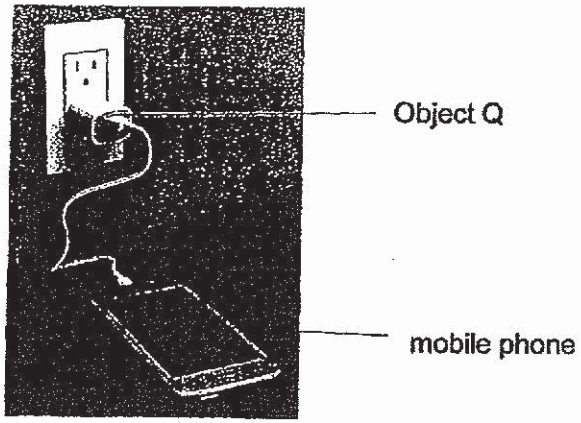
(a) Explain in terms of energy how the solar panels in object P function. [1]

(b) Fill in the boxes to show the main energy conversions that take place when the mobile phone is switched on while charging the battery using Object P. [2]



3

(c) Object Q can also be used to charge the battery in a mobile phone as shown below. It needs to be plugged into a socket that obtains electrical supply from the burning of fossil fuels.

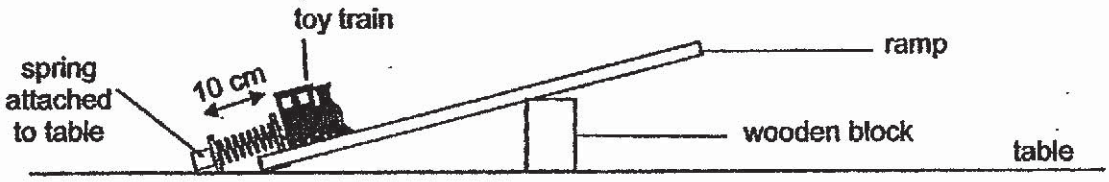


(i) State one advantage of using the source of energy for object P as compared to the source of energy for object Q. [1]

(ii) State one disadvantage of using the source of energy for object P as compared to the source of energy for object Q. [1]

39. (a) What is a force? [1]

Joe set up an experiment with a coil of spring attached to the table, a ramp, a wooden block and a toy train. The original length of the spring is 10 cm.



Joe compressed the spring to different lengths, released it and measured the distance the toy train moved up the ramp just before it slid backwards down the ramp.

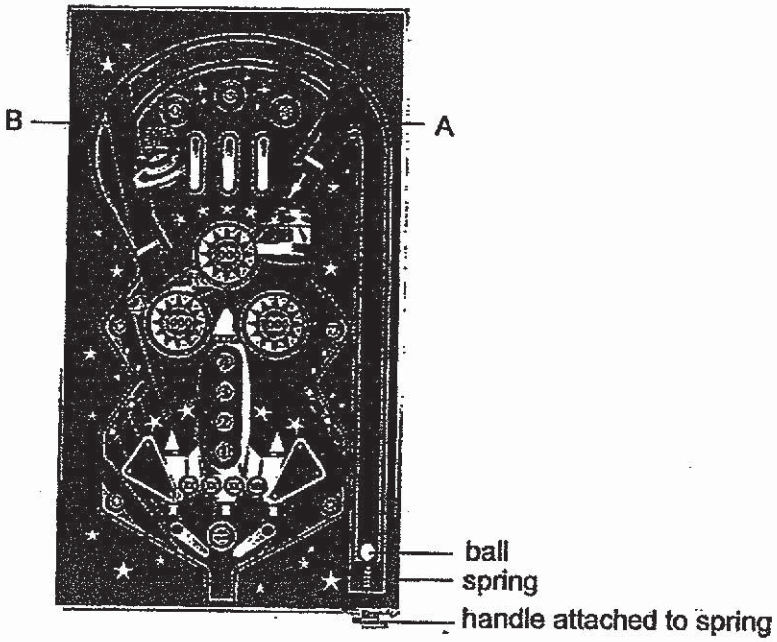
The results were shown in the table below.

Length of compressed spring (cm)	Distance toy train moved up the ramp (cm)
8	4
6	7
4	9
2	10

(b) What is the relationship between the length of the compressed spring and the distance the toy train moved up the ramp? [1]

(c) Joe applied a layer of lubricant on the surface of the ramp to increase the distance the toy train move up the ramp. Explain, in terms of forces, how this method works. [1]

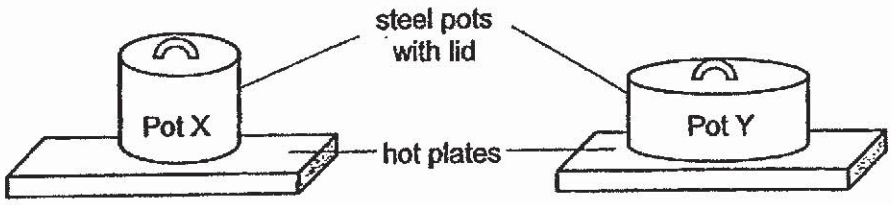
The diagram below shows a pinball game machine. A ball in the slot is launched into the game after the player pulls and releases the handle that is attached to a spring. The surface of the game machine is covered by a clear, plastic cover.



(d) Based on the results from the experiment, what should Joe do to launch the ball so that it will reach point B instead of point A? Explain your answer in terms of forces. [2]

2

40. At the start of an experiment, Sharon placed 2 steel pots of different widths, X and Y, on identical hot plates as shown in the diagram below. She then poured the same amount of water, at the same temperature, into each pot and turned on the hot plates.



After 5 minutes, the water in one of the pots started boiling first.

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

(b) In which pot, X or Y, did the water start boiling first? Explain your answer. [2]

At a party, Sharon placed some bottled drinks into a container filled with ice cubes as shown in Figure 1. However, she realised that the bottled drinks took a long time to chill. Sharon's friend suggested that she added some water into the container of ice as shown in Figure 2.

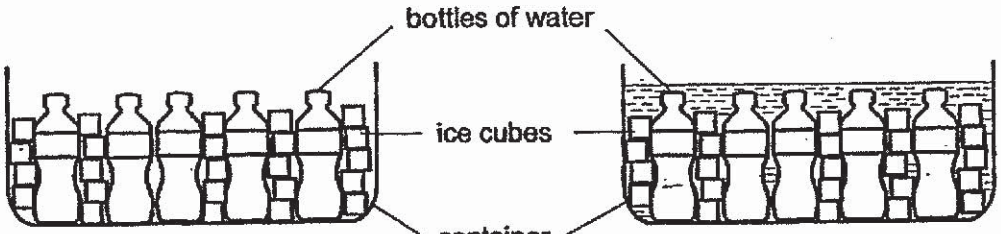


Figure 1 Figure 2

(c) Explain how adding water into the container of ice would help to chill the bottled drinks faster. [2]

~ END OF BOOKLET B ~

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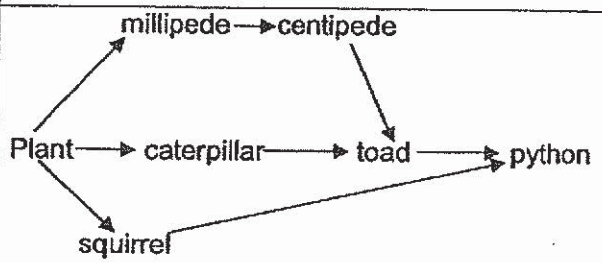
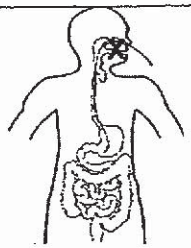
Nanyang Primary School
P6 SCIENCE SA1 2019
Suggested Answers

1.	4	6.	1	11.	3	16.	2	21.	2	26.	2
2.	3	7.	1	12.	2	17.	3	22.	2	27.	4
3.	4	8.	4	13.	3	18.	3	23.	3	28.	4
4.	4	9.	4	14.	4	19.	2	24.	3		
5.	4	10.	2	15.	3	20.	3	25.	3		

Qn No	Acceptable Answers
29(a)	The tree community is a community where different populations of plants like the fern and animals like the squirrel, birds living together in a habitat which is the tree.
b)	Bird: The bird may help in the dispersal of the seeds of the tree. Spider: The spider feeds on insects that may be harmful to the tree.
30(a)	
(b)	Immediate effect: The population of squirrel will increase/ remain the same as there are less predators. After some time: The population of squirrel will decrease as there is more competition for food.
31(a)	The stove provides heat causing the water in the seawater to gain more heat and evaporate faster.
(b)	The stove provides heat to allow the water to gain more heat to evaporate. Water vapour will lose heat to the cooler surface and condense forming water droplets which will slide down towards the cup.
32(a)	To find out how the temperature of the surroundings affect the time taken for the fruit to split.
(b)	As the temperature increases, the time taken for the fruit to split decreases.
(c)	To reduce competition for space, mineral salts, water and sunlight.
(d)	Pod-like structure
33(a).	The heart pumps blood (through the ' els) to all parts of the body.
(b)	Her heart rate increases d Her heart needs to be' re blood rich in oxygen and digested food to the different parts of h'
34(a)	Food-carrying tubes leaves cannot trap light to make food for the plant.
(b)	The harmful liquid dar ed the chloroplasts in the green leaves, causing them to turn white.
35(a)	

35(b)	The cell has chloroplasts and has a regular shape
(c)	To control all the cell activities or to contain genetic information
36(a)	
(b)	Digestion of the nutritional drink is carried out in both the stomach and small intestine and the digested food gets absorbed by the small intestine into the bloodstream.
37(a)	The further the distance between the torch and the light sensors, the less light detected by the light sensors.
(b)	Terine should conduct the experiment in a dark room.
(c)	Even a short person is still tall enough to block light from the light sensor.
38(a).	The solar panels are to trap light energy from the sun and convert it to electrical energy.
(b)	Electrical energy → Electrical energy → [Chemical] Potential energy → Light energy
(ci)	Solar energy is a renewable source of energy but fossil fuels are non-renewable sources of energy
(cii)	Solar energy does not cause pollution but burning fossil fuels do cause pollution Source of P is only available during the day but source of Q is available day and night.
39(a)	A force is a push or a pull.
(b)	As the length of the compressed spring decreases, the distance the toy train moved up the ramp increases.
(c)	The layer of lubricant would reduce the amount of frictional force between the toy train and the ramp. Hence the toy train can move a longer distance up the ramp.
(d)	Joe should pull down the handle more to compress the spring more so that there will be more elastic spring force to launch the ball further to position B.
40(a)	To find out if the amount of surface area of the pot in contact with the hot plate would affect the amount of time taken for the water to boil.
(b)	Pot Y. The surface area in contact between the pot and the hotplate is larger for pot Y than pot X. Hence the water in Pot Y gains heat from ' ot plate faster and boils earlier.
(c)	When water is being added into ' e, water would lose heat to the ice cubes and the temperature of the wate ere is more surface area of the bottles of water in contact with the cold es the rate of heat loss.