CATHOLIC HIGH SCHOOL

PRELIMINARY EXAMINATION (2019)

PRIMARY SIX

SCIENCE

BOOKLET A

Name: _____ ( )

Class: Primary 6 - _____

Date: 29 August 2019

28 questions

56 marks

Total Time for Booklets A and B: 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

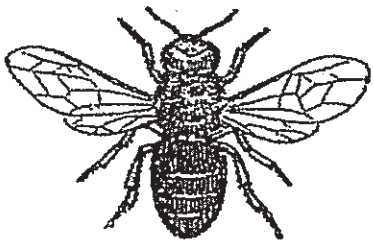
This booklet consists of 24 printed pages, excluding the cover page.

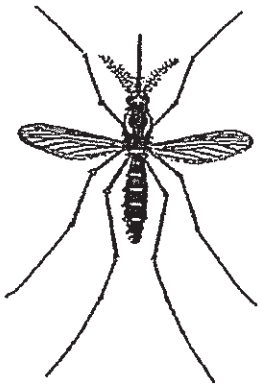
Booklet A (28 × 2 marks)

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 your answer on the Optical Answer Sheet.

(56 marks)

1 Boon Chong saw two organisms in the garden as shown below.





He made the following observations.

A Both have six legs.
B Both have two wings.
C Both have two feelers.
D Both have a hard body covering.

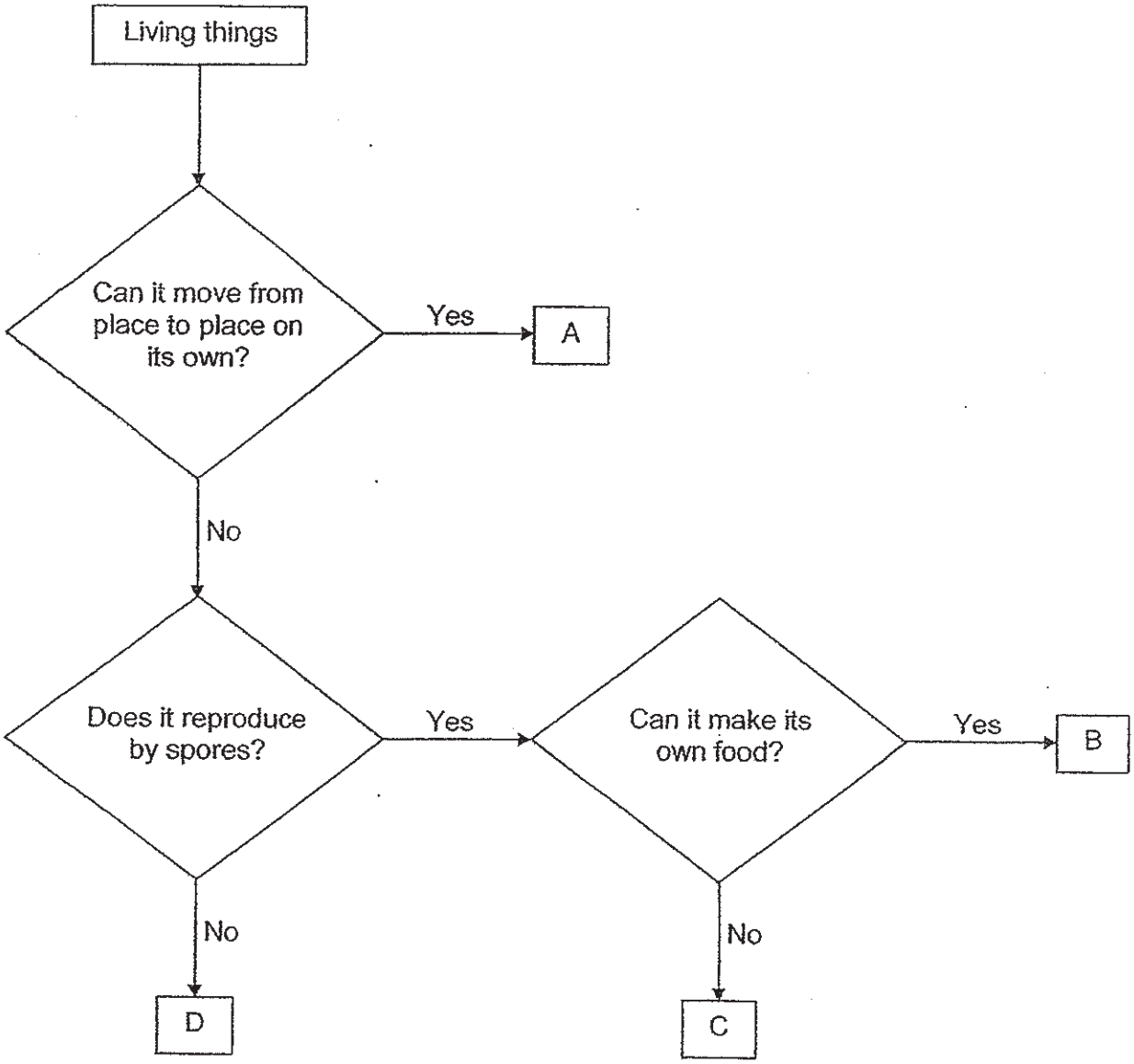
Which of the above characteristics conclude(s) that both organisms is/are insects?

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

2 Which one of the following is a function of the human muscular system?

(1) It protects the bones in the body.
(2) It helps different parts of the body to move.
(3) It breaks down food into simple substances.
(4) It transports digested food, oxygen and water around the body.

3 Study the chart below.

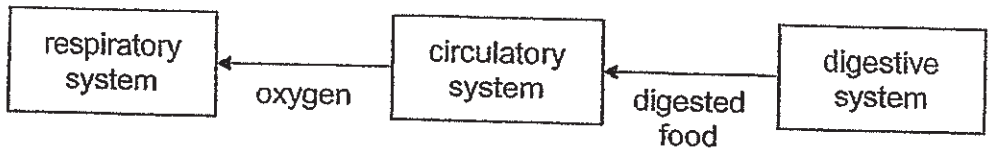


Which of the following represents B and C?

	B	C
(1)	moss	bird's nest fern
(2)	hibiscus	mushroom
(3)	bird's nest fern	mushroom
(4)	hibiscus	moss

4 Which one of the following correctly shows the movement of digested food and oxygen in the different systems of the body?

(1)



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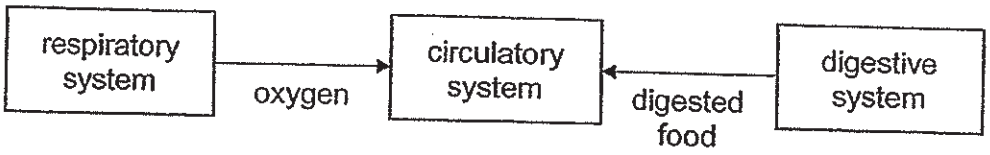

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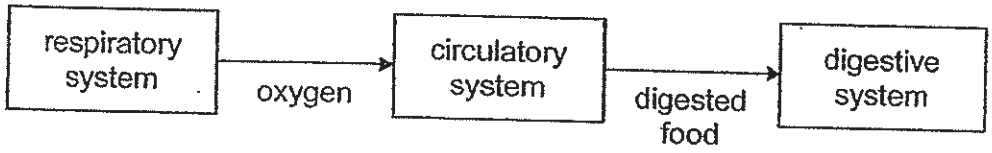

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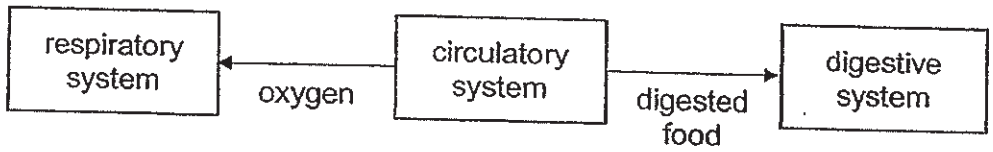
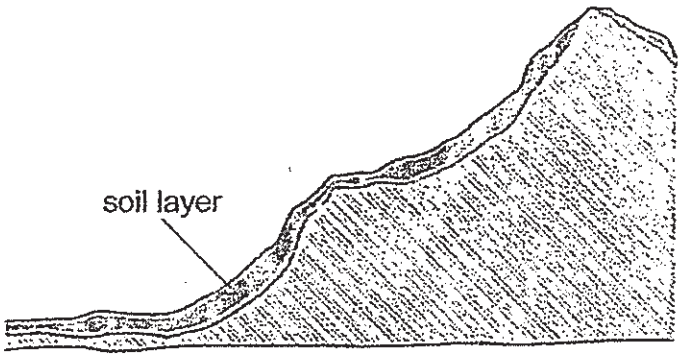


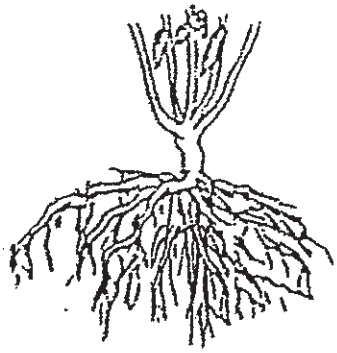
5 The diagram below shows part of a small hill.



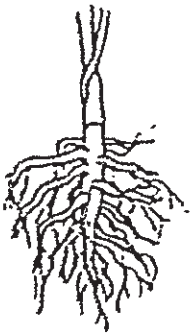
A farmer wanted to grow plants on the hill to prevent soil from being washed down by heavy rain.

Which one of the following plants should the farmer grow?

(1)



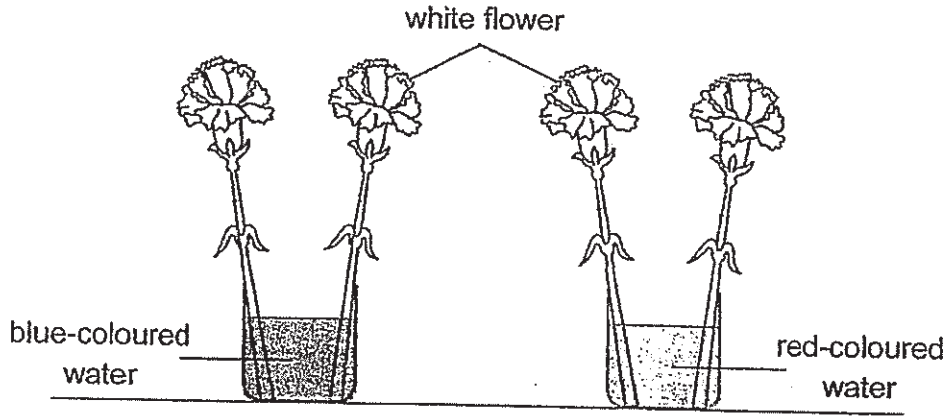
(2)



(3)

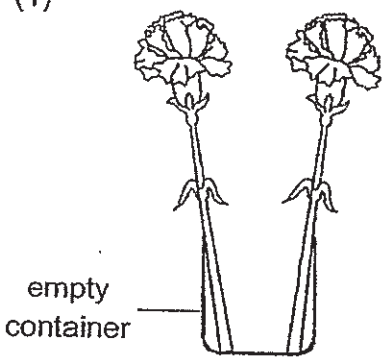
(4)

6 Amin wanted to investigate how water is transported through a type of flower. The diagram below shows two of his set-ups.



Which one of the following could be used as a control for his experiment?

(1)



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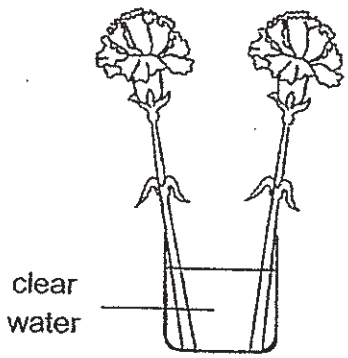

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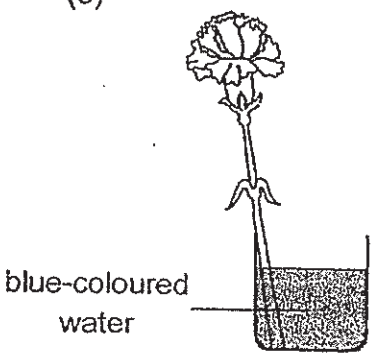

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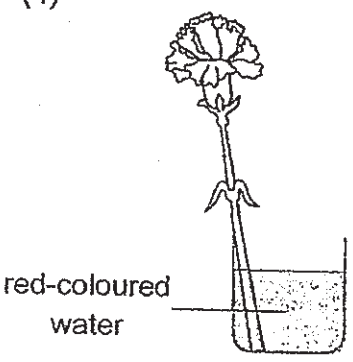
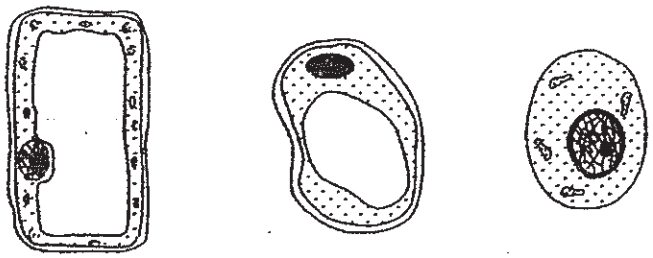


7 The diagram below shows three samples of different cells.



cell E cell F cell G

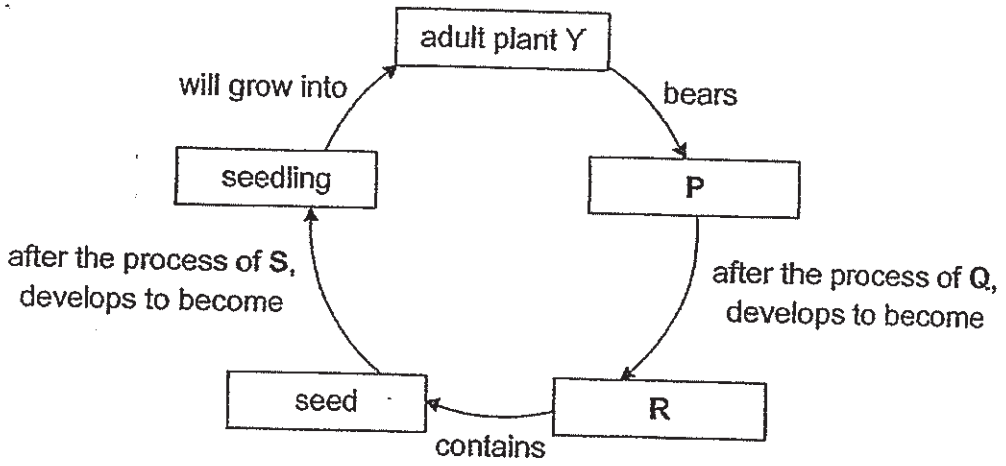
After observing the characteristics of the three cells under the microscope, Rennie made some statements.

Which statement(s) is/are correct?

A Cell G can make food.
B Cell F is most likely a root cell.
C Cell E is most likely to increase in size.

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

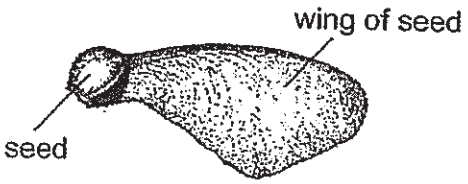
8 The diagram below shows the development of plant Y.



Which of the following correctly represents P, Q, R and S?

	P	Q	R	S
(1)	fruit	fertilisation	flower	pollination
(2)	flower	pollination	fruit	dispersal
(3)	fruit	dispersal	flower	germination
(4)	flower	fertilisation	fruit	germination

9 Prakesh wanted to find out how the height at which the seeds are dropped affects the distance travelled.

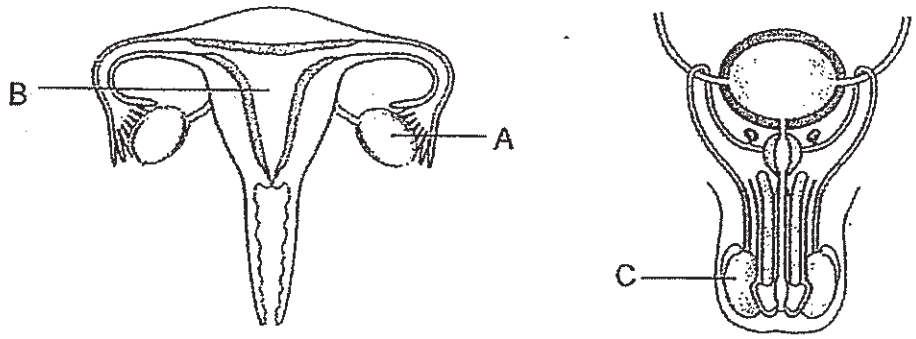


Which variable(s) should be kept constant for a fair test?

A size of seeds
B mass of seeds
C length of wings of seeds
D height at which the seeds is dropped

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

10 The diagrams below show the male and female reproductive systems.



Which of the following correctly describes the functions of the parts labelled A, B and C?

	A	B	C
(1)	produces female reproductive cells	where the egg and sperm fuse	produces male reproductive cells
(2)	produces female reproductive cells	where the fertilised egg develops	produces male reproductive cells
(3)	where the fertilised egg develops	where the egg and sperm fuse	produces female reproductive cells
(4)	produces male reproductive cells	where the fertilised egg develops	where the egg and sperm fuse

11 A scientist conducted a study and observed that organism R prefers a dark and wet environment.

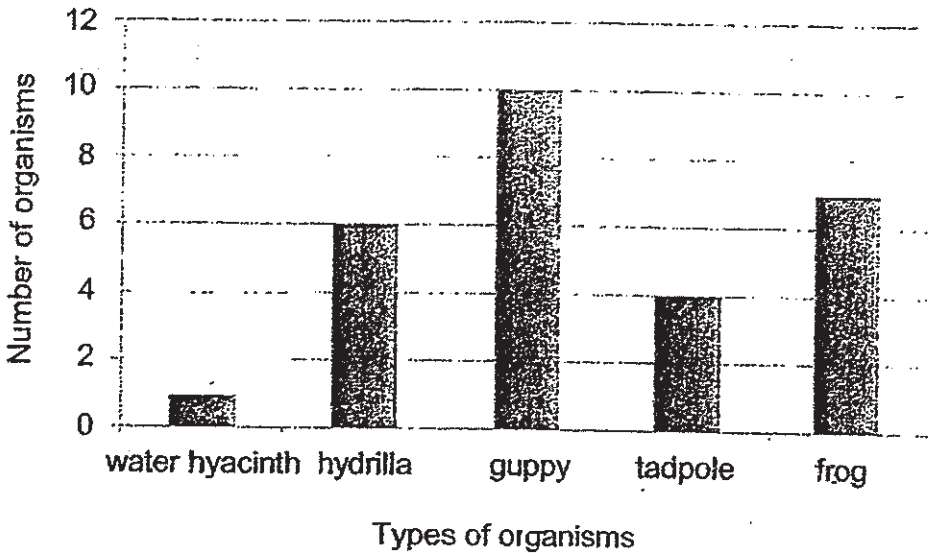
The table below shows two physical characteristics A and B, and the habitats that organisms live in.

Habitat	Characteristic A	Characteristic B
desert	low	high
garden	high	high
Q	high	low
P	low	low

Which habitat does organism R live in and what are the characteristics of A and B?

	Habitat of organism R	Characteristic A	Characteristic B
(1)	Q	temperature	amount of light
(2)	P	temperature	amount of light
(3)	Q	amount of water in the soil	amount of light
(4)	P	amount of water in the soil	temperature

12 Rita counted all the plants and animals found in a pond and recorded the results in the graph as shown below.



Which statement(s) about the plants and animals is/are correct?

A There is only one pond community.
B There are three populations of plants and animals.
C There are twenty-eight populations of plants and animals.

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

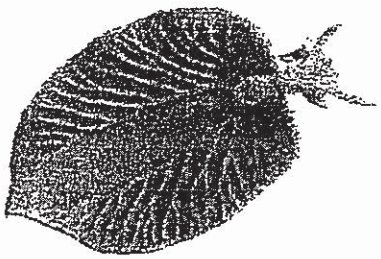
13 Large areas of forests are cleared by burning or cutting down trees to make more space for farming or housing as shown in the diagram below.

Which of the following are the effects of deforestation?

A soil erosion
B organisms lose their habitats
C Earth's temperature increases
D water in rivers and lakes become polluted

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

14 Organism S lives in the water and is able to trap chloroplasts after feeding on algae as shown in the diagram below.



When organism S is placed in a water tank under the light without food for two months, it is still alive.

Which one of the following explains why organism S is still alive after two months?

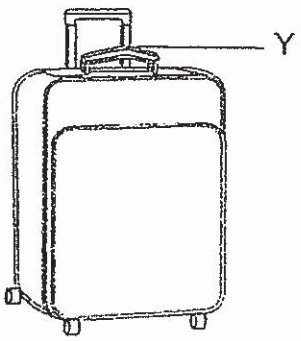
(1) Organism S feeds on the water.

(2) Organism S absorbs the light energy.

(3) Organism S has stored food in its body.

(4) Organism S is able to make its own food.

15 The diagram below shows a luggage with a handle labelled as Y in the diagram below. The maximum mass the luggage can hold is 30 kg.



Which properties of the handle ensure that the luggage can be transported from one place to another?

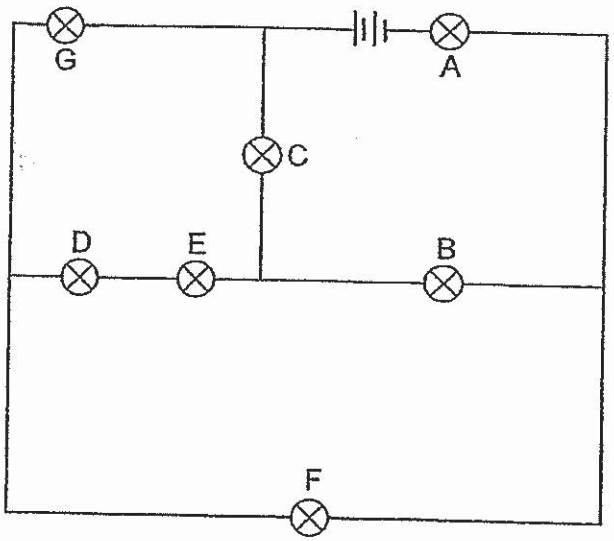
(1) strength and flexibility

(2) strength and waterproof

(3) flexibility and waterproof

(4) flexibility and ability to float on water

16 Study the circuit diagram.



Three bulbs remain lit up when two of the bulbs are not working.
Which bulbs are **not** working?

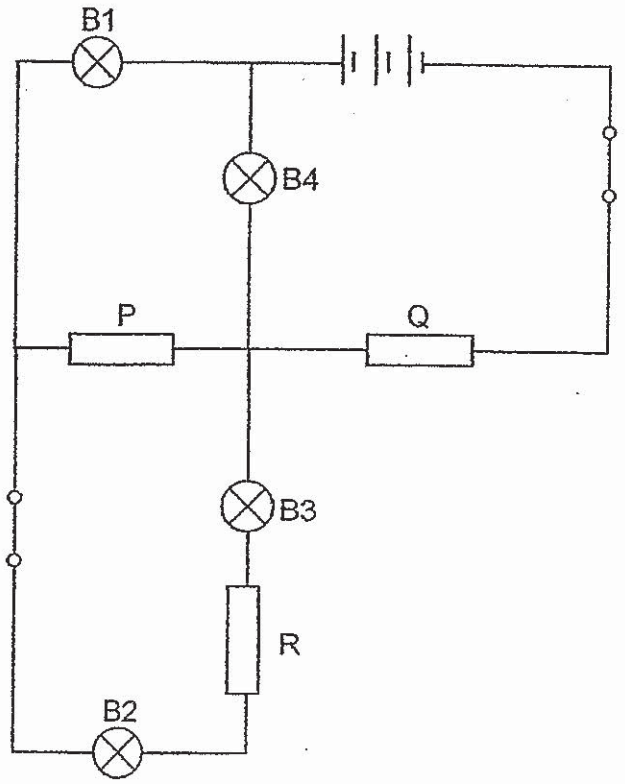
(1) A and G

(2) B and F

(3) D and E

(4) F and G

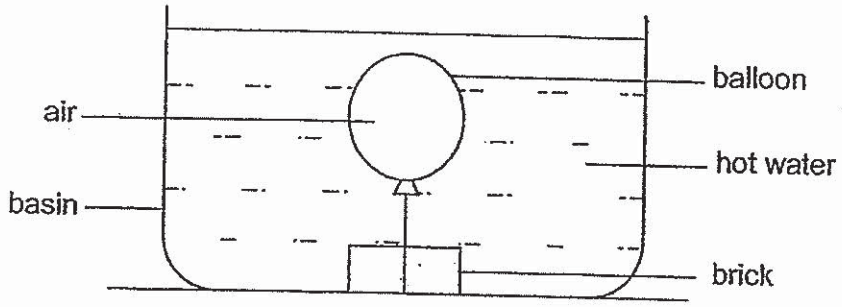
17 Johanna connected three objects P, Q and R into a circuit as shown in the diagram below.



When Johanna closed both switches, only B1 and B4 lit up.
Based on the result, what could the objects be made of?

	Object P	Object Q	Object R
(1)	glass	plastic	rubber
(2)	copper	rubber	aluminum
(3)	silver	steel	plastic
(4)	aluminum	rubber	glass

18 Study the diagram below.



The balloon became larger after some time.
What happened to the mass and volume of the air in the balloon?

	Mass of air	Volume of air
(1)	increased	increased
(2)	decreased	no change
(3)	no change	increased
(4)	decreased	decreased

19 The table below shows the melting and boiling points of three substances X, Y and Z.

Substance	Melting point (°C)	Boiling point (°C)
X	10	90
Y	40	150
Z	95	200

Based on the data given in the table above, which one of the following statements is correct?

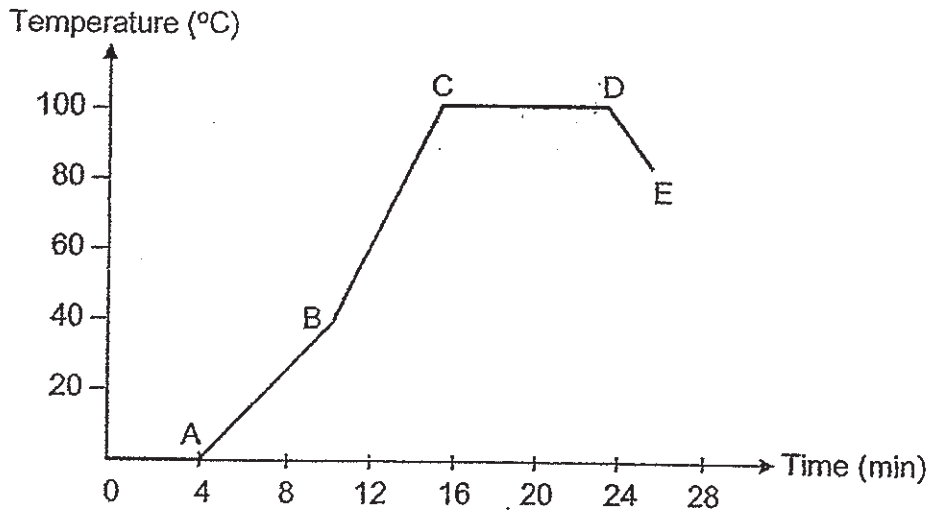
(1) X and Y are solids at 45°C.

(2) Y and Z are gases above 170°C.

(3) At 85°C, X is a liquid and Z is a solid.

(4) At 200°C, Y is a liquid and Z is a gas.

20 The graph below shows the temperature of water over a period of time.

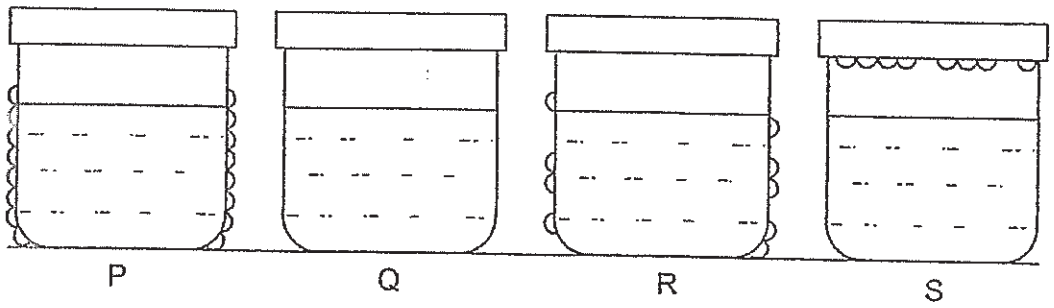


Based on the graph above, which statement(s) is/are correct?

A Water lost heat between DE as there was a decrease in the temperature.
B There was no heat gain between CD because the temperature remained at 100°C.
C Water gained heat between AC as there was an increase in the temperature.

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

21 Four identical covered beakers P, Q, R and S contained the same amount of water set at different temperatures.



After five minutes, water droplets were observed for some of the beakers as shown above.

Which one of the following represents the correct order of temperatures of the four beakers of water, from the lowest to the highest?

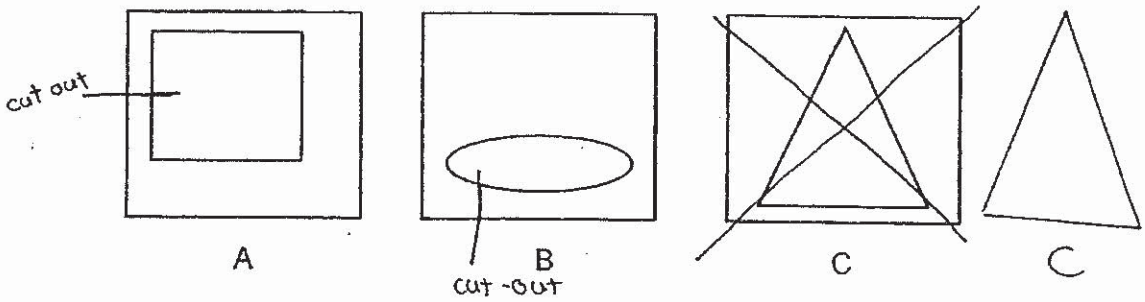
(1) Q, R, S, P

(2) Q, S, R, P

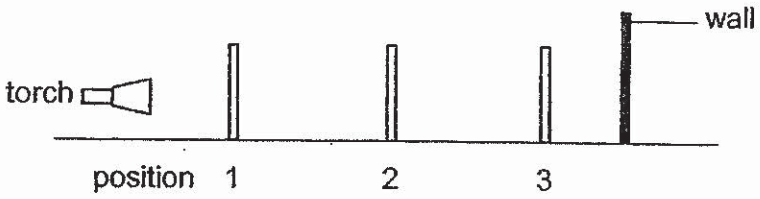
(3) P, R, S, Q

(4) P, R, Q, S

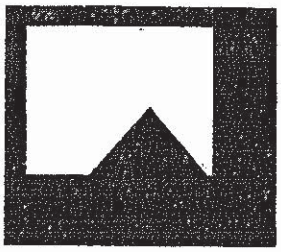
22 Le Ting was given three cards of the same size A, B and C ~~with out out shapes~~.



She then placed all three cards together as shown in the diagram below.



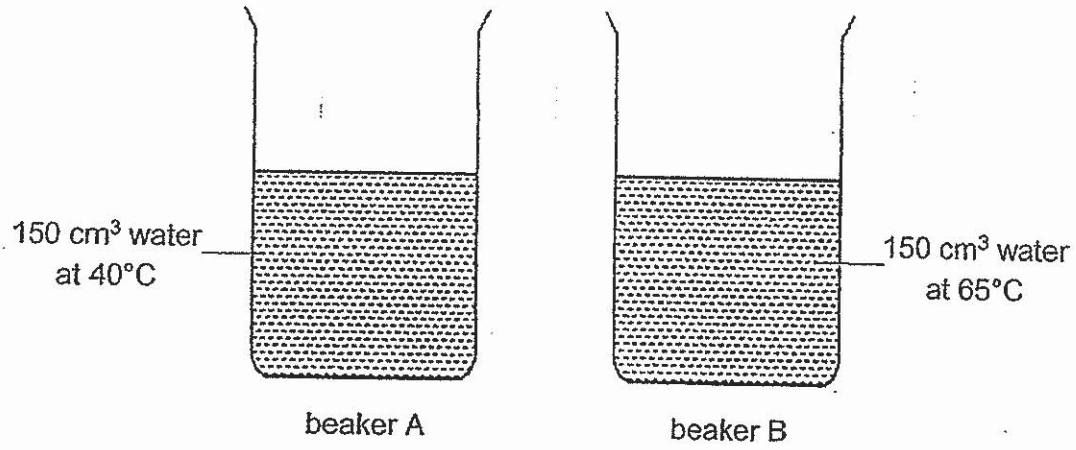
The diagram below shows the shadow on the wall.



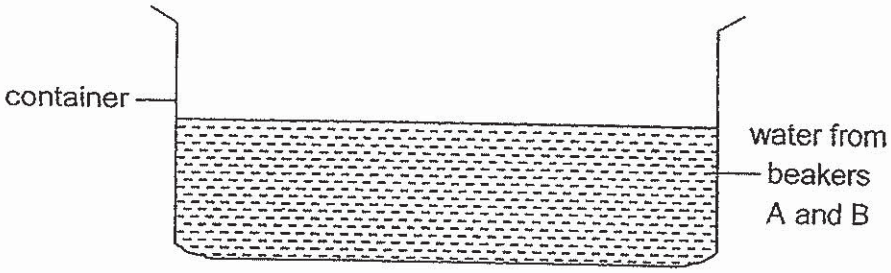
Which of the following correctly represents A, B and C?

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

23 The diagram below shows two beakers A and B containing an equal amount of water. Temperature of the surrounding air was 30°C.



Weihua emptied both beakers into a container and measured the temperature of the water.



What would be the final temperature of the water in the container after 24 hours?

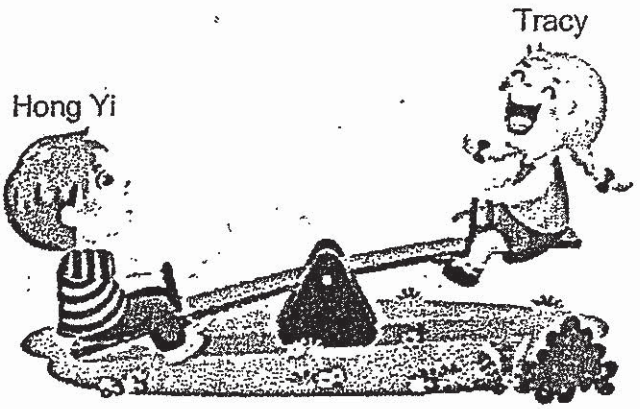
(1) 30°C

(2) 40°C

(3) 65°C

(4) 105°C

24 Study the diagram below.



When a pushing force is applied by Tracy using her feet, she moves upwards while Hong Yi moves downwards.

Which effect(s) of forces is/are demonstrated by the above activity?

A A force can move a stationary object.
B A force can change the shape of an object.
C A force can speed up or slow down an object.
D A force can change the direction of motion of an object.

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

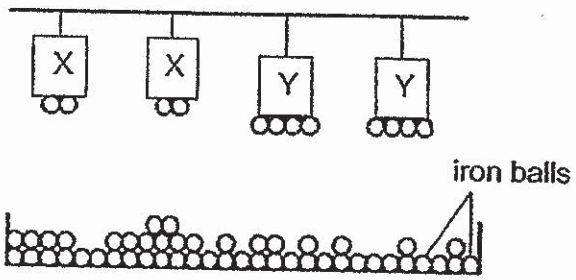
25 Gavin made two claims.

- A magnet made of material X has greater magnetic force than that made of material Y.
- Magnetic force is affected by the distance of the magnet from the object it is to attract.

He prepared a set-up using magnets made of materials X and Y to verify his claims.

Which one of the following set-ups did he use to verify both claims?

(1)



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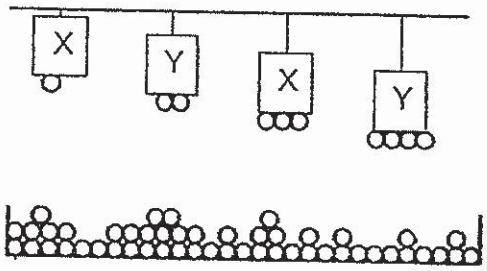

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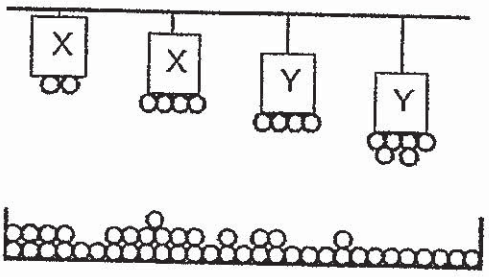
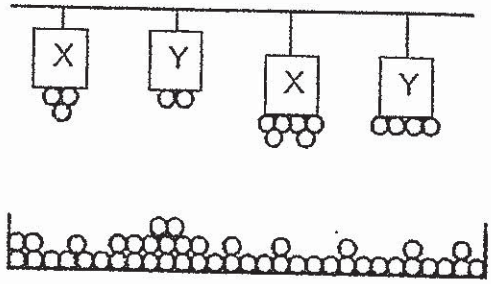


(4)



26 Wei Lin conducted an experiment using a wooden block and a wooden plank as shown in Diagram 1.

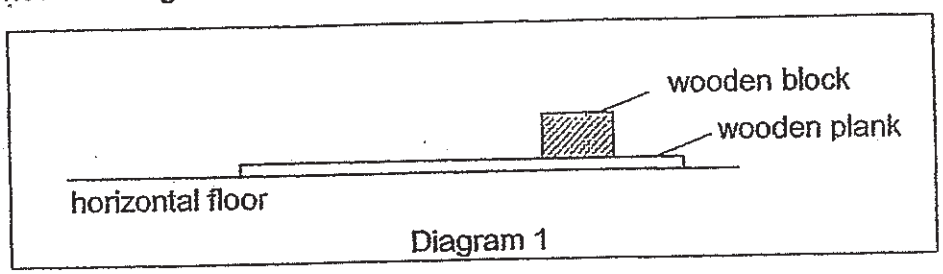


Diagram 1

She raised one end of the wooden plank slightly and observed that the wooden block did not slide down as shown in Diagram 2.

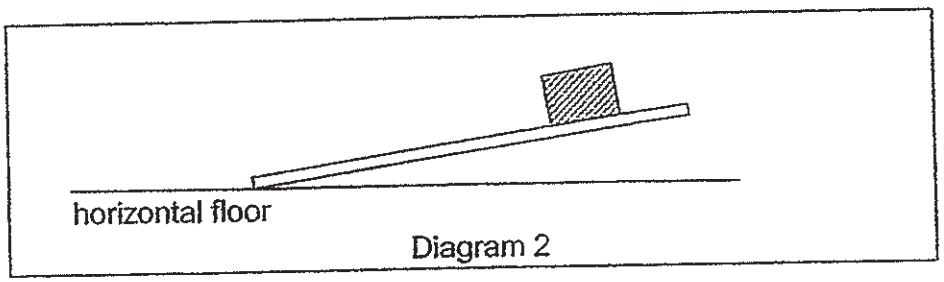


Diagram 2

However, when she raised the same end of the wooden plank high enough, the wooden block slid down as shown in Diagram 3.

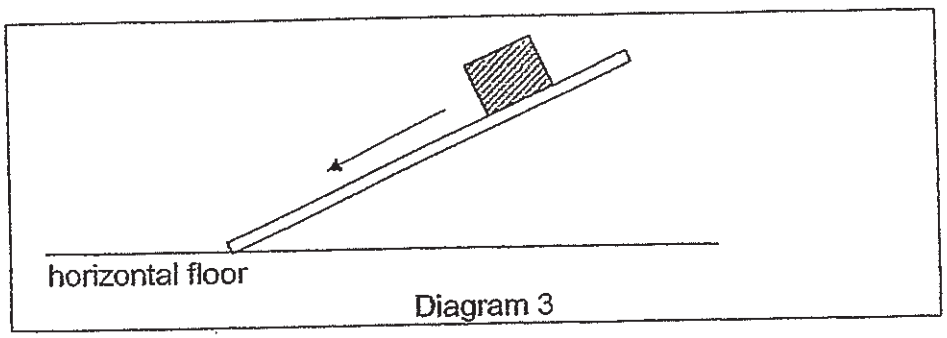


Diagram 3

Which statements are correct?

A Frictional force acted on the wooden block as it slid down the wooden plank in Diagram 3.

B Gravitational force acting on the wooden block in Diagram 2 was greater than that in Diagram 1.

C No gravitational force was acting on the wooden block when it was resting on the wooden plank in Diagram 1.

D Gravitational force was greater than the frictional force causing the wooden block to slide down the wooden plank in Diagram 3.

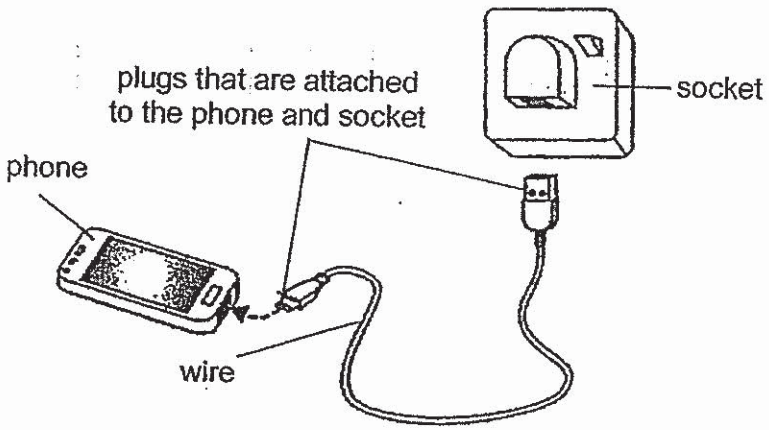
(1) A and D only

(2) B and C only

(3) A, B and D only

(4) A, B, C and D

27 When the battery of the handphone is fully charged, it is unplugged from the socket.



Which one of the following represents the energy conversion of the handphone when it is switched on?

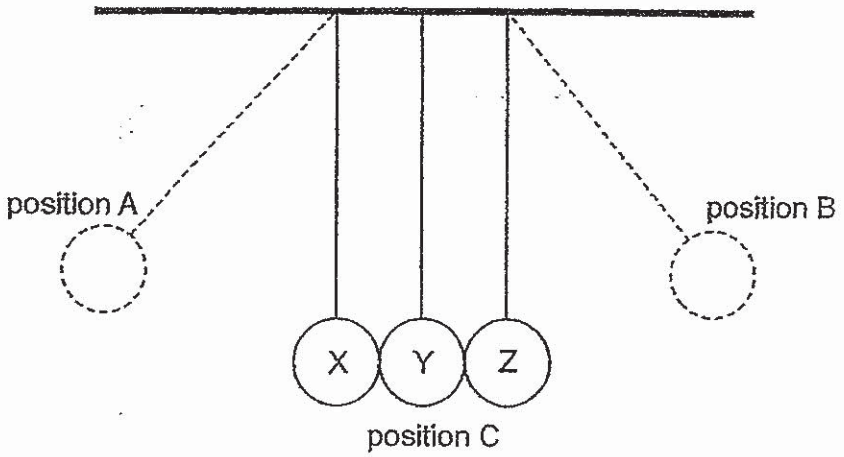
(1) heat energy ⟶ electrical energy ⟶ sound and light energy

(2) kinetic energy ⟶ electrical energy ⟶ sound and light energy

(3) electrical energy ⟶ potential energy ⟶ sound and light energy

(4) potential energy ⟶ electrical energy ⟶ sound and light energy

28 The diagram below shows three metal balls X, Y and Z each hung by a string from a support.



When ball X is moved up to position A and released, it swings back and strikes ball Y at position C. Ball X comes to a complete stop while ball Z moves in the opposite direction, reaching position B before swinging back towards ball Y and striking it at position C.

Which statements correctly describe balls X and Z?

A Gravitational potential energy increases as ball X moves from position C to position A.

B Gravitational force acting on ball Z increases as it moves from position B to position C.

C The distance moved by ball X to position A is less than the distance moved by ball Z to position B.

D Kinetic energy is transferred from ball X to ball Y to ball Z when ball X is released from position A and strikes ball Y at position C.

(1) A and D only

(2) B and C only

(3) A, B and D only

(4) B, C and D only

CATHOLIC HIGH SCHOOL

PRELIMINARY EXAMINATION (2019)

PRIMARY SIX

SCIENCE

BOOKLET B

Name: _____ ( )

Class: Primary 6 - _____

Date: 29 August 2019

Parent's Signature: _____

Booklet A	56
Booklet B	44
Total	100

12 questions

44 marks

Total Time for Booklets A and B: 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

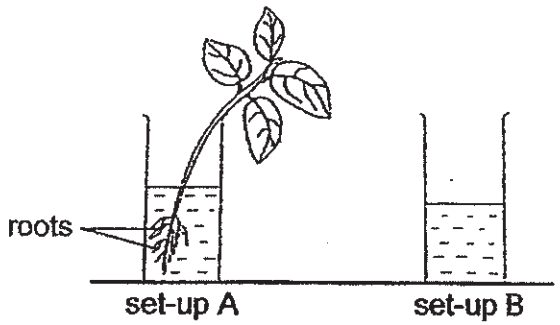
Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

This booklet consists of 16 printed pages, excluding the cover page.

Booklet B (44 marks)

For questions 29 to 40, write your answers in this booklet.
The number of marks available is shown in brackets [ ] at the end of each question or part question. (44 marks)

29 Lynn wanted to find out the volume of water taken in by a plant. She placed a plant in a measuring cylinder as shown in set-up A. Set-up B act as a control to ensure a fair test.



Set-ups A and B were left in the open for a week. The table below shows the volume of water on Day 1 and Day 7 of the experiment.

Set-up	Volume of water (cm^3)	
	Day 1	Day 7
A	1500	1350
B	1500	1450

(a) What was the volume of water taken in by the plant? [1]

_____

(b) How does set-up B help to ensure a fair test? [1]

_____

_____

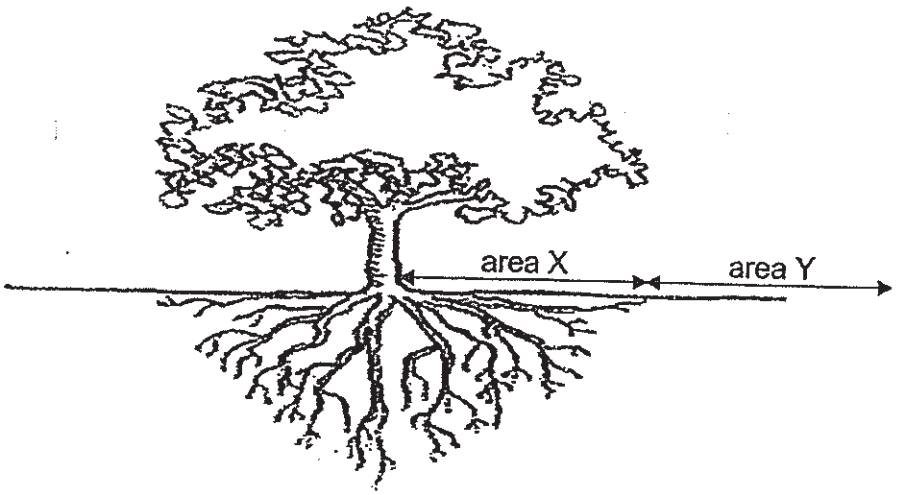
(c) If set-up B was removed, suggest what Lynn could do to set-up A to obtain an accurate result. [1]

_____

(Go on to the next page)

SCORE 3

30 In the diagram below, seeds dispersed from the tree may fall in any of the two areas X or Y.



(a) List all the conditions necessary for seeds to germinate. [1]

_____

(b) From the diagram above, give a reason why seeds falling in area X are less likely to germinate. [1]

_____

_____

(c) Some of the seeds in area X were able to germinate and grow into young plants. It was observed that these young plants in area X were taller and thinner. Explain why. [1]

_____

_____

(Go on to the next page)

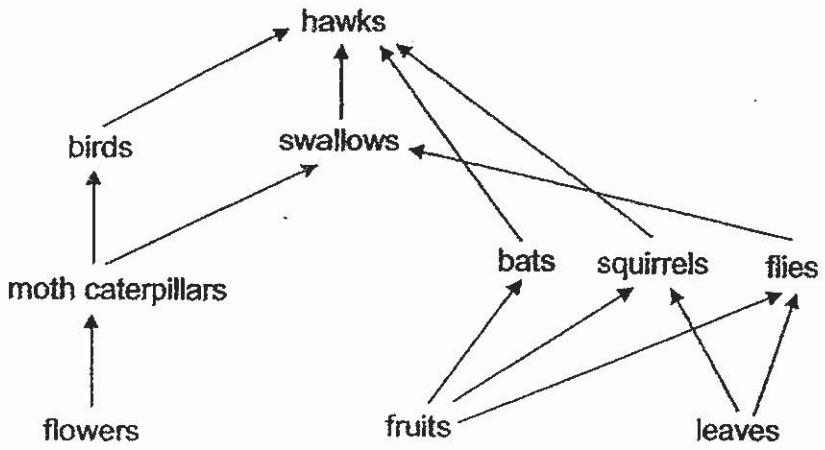
SCORE	/ 3

31 (a) State what a population is. [1]

_____

_____

(b) Study the food web below. The flowers, fruits and leaves of a wild fruit tree are food sources for the organisms.



In the food web above, explain which animal would be most affected if the flowers of the wild fruit tree were **not** pollinated? [2]

_____

_____

_____

(Go on to the next page)

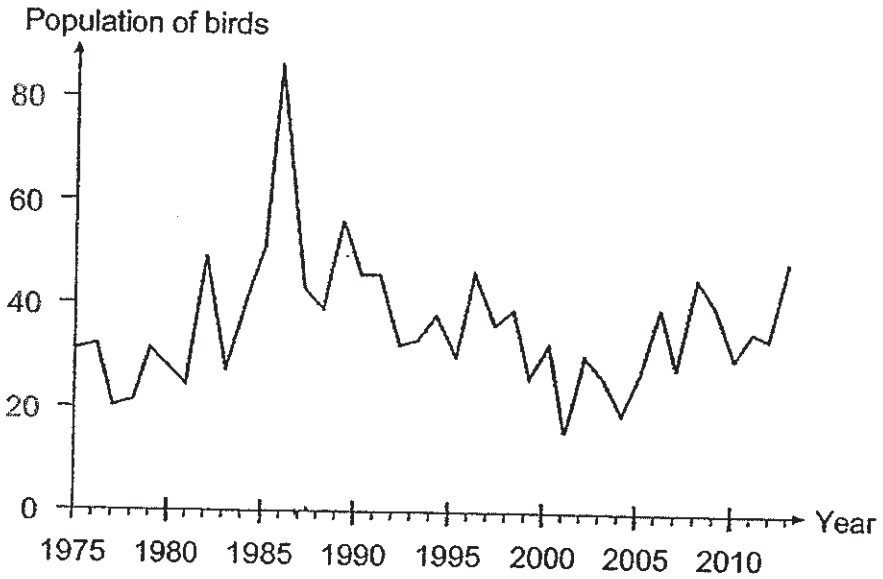
SCORE	3

Continue from Question 31

(c) Study the food chain below.

flowers ⟶ moth caterpillars ⟶ birds ⟶ hawks

The graph below shows how the population of birds in the food chain above changed over a period of time.



Based on the results in the graph, suggest two years where the population of hawks was probably the least. Explain your answer for each year. [2]

(i) Year: _____

Explanation:

_____

_____

(ii) Year: _____

Explanation:

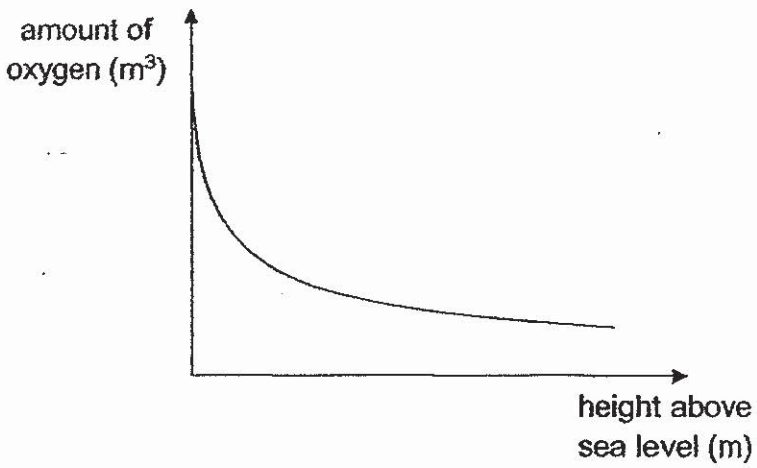
_____

_____

(Go on to the next page)

SCORE	/ 2

32 The amount of oxygen in the atmosphere changes at different heights above sea levels.



Ahmad went on an overseas mountain climbing trip.

(a) State the relationship between the amount of oxygen and the height above sea level. Explain how Ahmad's heart rate would change as he climbed up the mountain. [2]

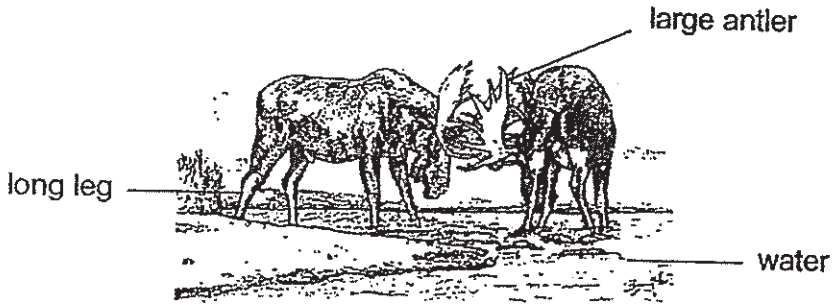
Mason is a mountain guide and lives in the mountains.

(b) Explain why Mason has bigger lungs and heart when compared to those who live below the mountains. [2]

(Go on to the next page)

SCORE	/4

33 Male of animal D lives in a cold and thick forested environment. It can swim and run very fast. It has a large variety of food source that can be found on land and water. During the mating season, the males of animal D will challenge each other.



(a) Based on the diagram above, give two reasons how having large antlers help the male of animal D in its survival. [2]

(i) _____

_____

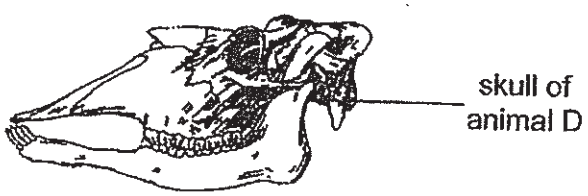
(ii) _____

_____

(b) Apart from being able to run faster with its long legs, state another advantage of this structural adaptation of animal D. [1]

_____

_____



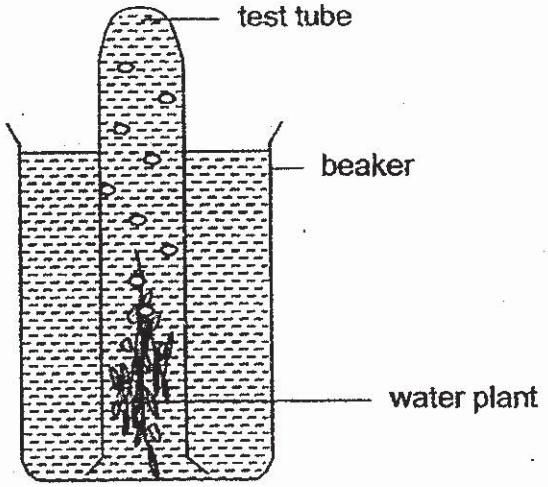
(c) Based on the structure of animal's D skull as shown above, suggest the diet of animal D. [1]

_____

(Go on to the next page)

SCORE	/ 4

34 Meili added chemical X into the set-up below to increase the amount of carbon dioxide.



after adding chemical X

After adding a spoonful of chemical X, she placed the set-up under the sun. She measured the number of bubbles produced in the set-up for ten minutes.

She repeated the experiment with two spoonfuls of chemical X and recorded her results in the table below.

	Number of bubbles produced	
Time (min)	**1 spoonful of chemical X**	**2 spoonfuls of chemical X**
0	0	0
2	2	3
4	4	7
6	6	9
8	9	12
19	13	16

(a) Identify the gas present in the bubbles. [1]

_____

SCORE 1

Continue from Question 34

(b) Based on the experiment, what is the effect of the amount of chemical X on the rate of photosynthesis? [1]

_____

_____

(c) Give a reason why Meili filled the test tube completely with water at the start of the experiment. [1]

_____

_____

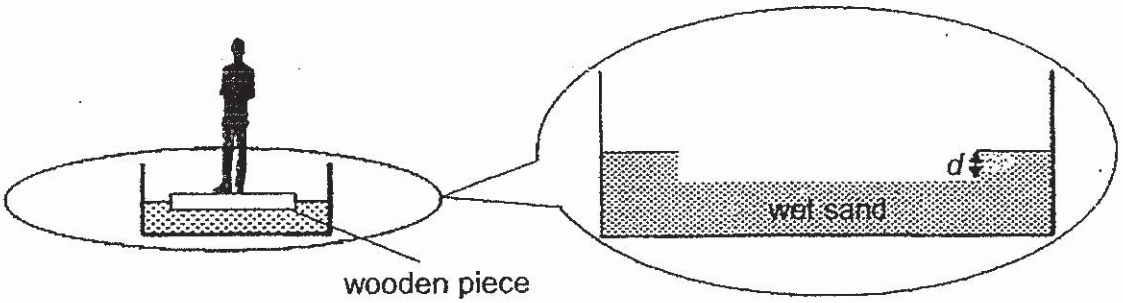
(d) Suggest a control set-up to show that the increase in the number of bubbles was caused by chemical X. [1]

_____

_____

(Go on to the next page)

35 Meng Ki placed a square wooden piece onto a trough of wet sand and stood on it. He lifted the wooden piece and measured the depth of the depression, *d*, made in the wet sand as shown below.



He repeated the experiment with square pieces of different dimensions and recorded the results in the table below.

Area of square wooden piece (cm^2)	Depth of depression, *d* (cm)		
	1st try	2nd try	3rd try
400	2.0	2.3	2.2
625	1.4	1.3	1.5
900	1.0	0.9	1.0
1225	0.7	0.6	0.8

(a) Based on the results in the table above, what is the relationship between the depth of depression made and the area of the square wooden piece? [1]

_____

_____

(b) For an area of 400 cm^2, give a reason why the depth of depression, *d*, was different for each try. [1]

_____

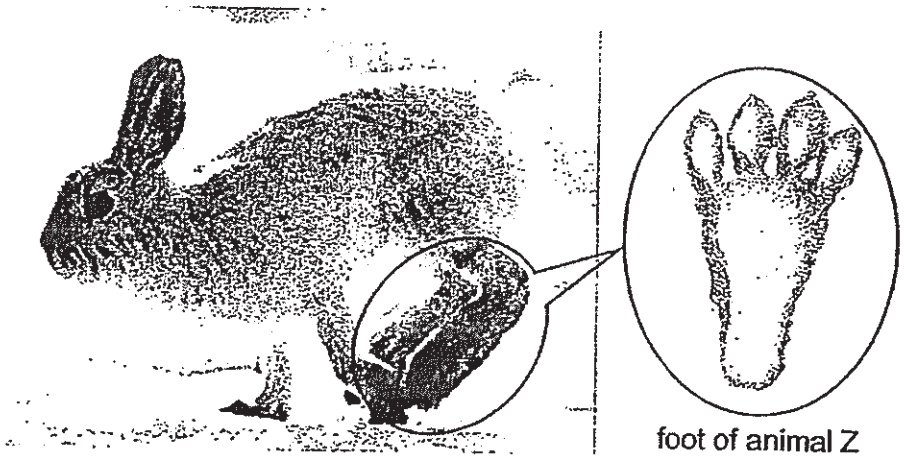
_____

(Go on to the next page)

SCORE	/ 2

Continue from Question 35

The diagram below shows animal Z in a snow-covered environment.



foot of animal Z

(c) Animal Z has noticeably large hind feet with enlarged toes. The toes spread out and flatten as the animal puts its weight on them.

Using the findings from Meng Ki's experiment, explain how the feet of animal Z are adapted to walk on the soft snow. [2]

_____

_____

_____

(d) Give a reason why having large feet that are adapted to walk on the soft snow is an advantage when animal Z is threatened by a larger animal. [1]

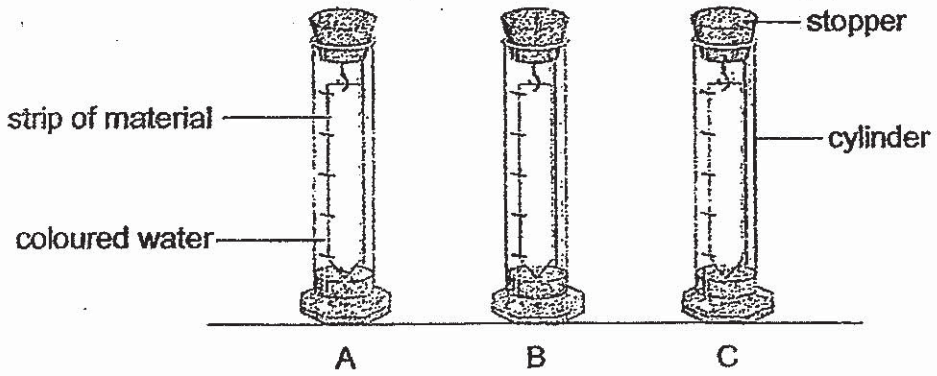
_____

_____

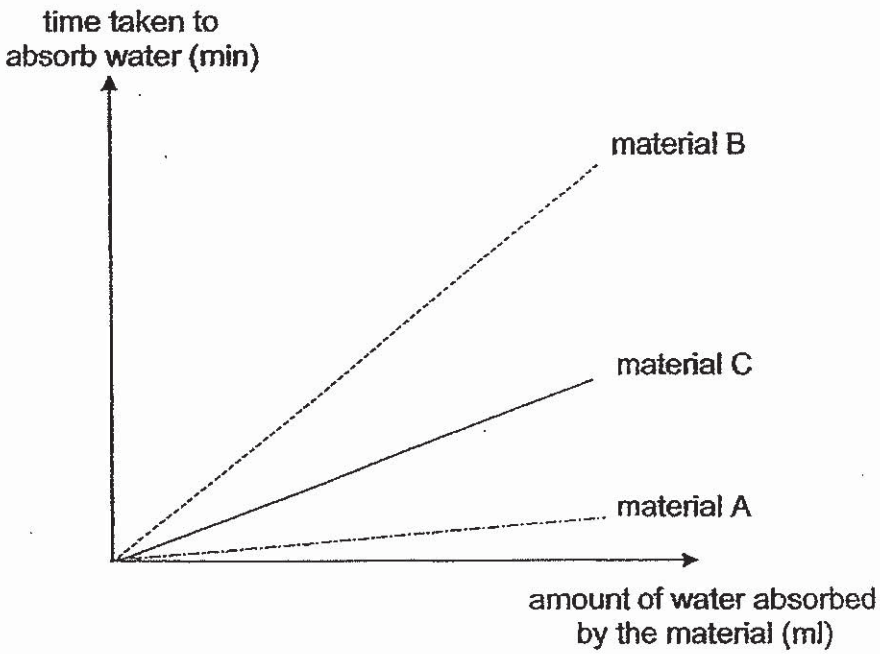
(Go on to the next page)

36 Sammy wanted to find out how well material A, B and C can absorb water. He conducted an experiment as shown in the diagram below.

He hung three similar strips made of different materials into identical cylinders filled with the same amount of coloured water.



He measured the time taken for each strip to absorb all the water and the results were plotted in the graph below.



(a) Why was a stopper placed at the opening of the cylinder? [1]

_____

_____

(Go on to the next page)

SCORE 1

Continue from Question 36

(b) Based on the graph, which material should Sammy choose to make the children's bath mat if he wants to keep their feet dry? Explain why. [1]

_____

_____

(c) When making the children's bath mat, Sammy then decided to attach a layer of rubber below the material. Give a reason why Sammi added the layer of rubber. [1]

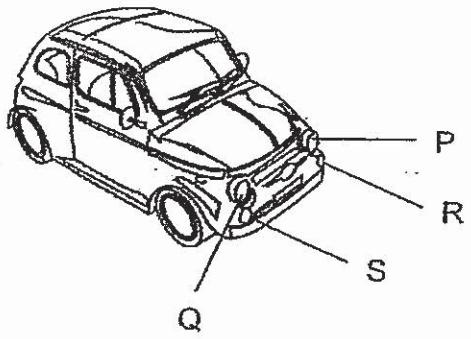
_____

_____

(Go on to the next page)

SCORE	/2

37 The diagram below shows the positions of light bulbs P, Q, R and S.



There are two switches S1 and S2 located at the bottom of the battery-operated toy car.

The bulbs in the toy car will light up as shown in the table below.

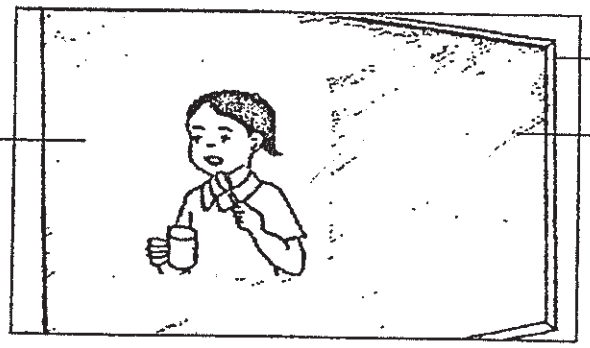
	Bulb P	**Bulb Q**	**Bulb R**	**Bulb S**
S1: closed **S2: open**	no	no	yes	yes
S1: closed **S2: closed**	yes	yes	yes	yes

When all four light bulbs are lit, all the bulbs are equally bright.

The diagram below shows part of the circuit in the toy car.
Complete and label the circuit below so that the toy car will work as described. [3]

SCORE	3

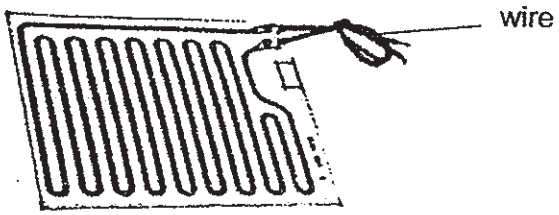
38 The diagram below shows a mirror in a bathroom immediately after Bee Leng had taken a warm shower.



She observed that part Y of the mirror appeared fogged. However, part X of the mirror appeared clear and Bee Leng could see her reflection in it.

(a) Explain how part Y of the mirror became fogged. [2]

A heating pad as shown below was mounted behind part X to ensure that this part of the mirror stayed clear each time Bee Leng turned on the switch to the warm shower.

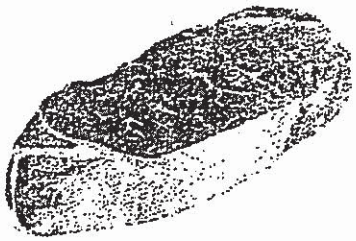


(b) Explain how the heating pad kept part X of the mirror clear when the switch was turned on. [2]

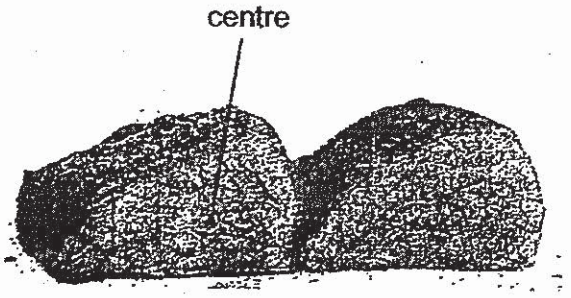
(Go on to the next page)

SCORE / 4

39 Mrs Lim wanted to grill meat in the oven. She decided to conduct an experiment to grill a few pieces of meat at 100 g each at different temperatures in the oven for 15 minutes as shown below.



before grilling



meat sliced into two after grilling

She then sliced the pieces of meat into two and made the following observations. The results of her experiment are shown in the table below.

Temperature (°C)	150	180	210
Appearance of meat in the centre when sliced into two	raw	half cooked	fully cooked

(a) Mrs Lim decided to grill a thicker piece of meat of 200 g at 210°C. Based on her results, would the time require to fully cook this piece of meat be more than, same as or less than 15 minutes? [1]

_____

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

_____

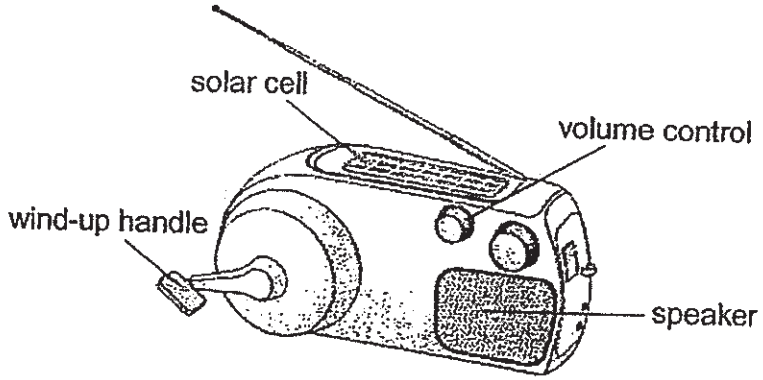
_____

_____

(Go on to the next page)

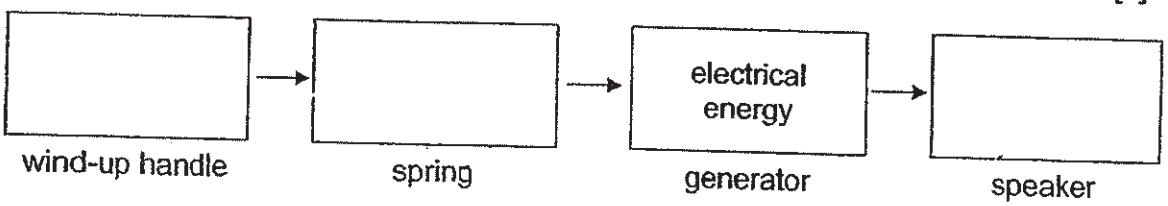
SCORE 3

40 Neela has a wind-up radio as shown below.



It does not run on batteries but is powered by a spring when it is wound up. As the spring unwinds, the generator in the radio provides the electrical energy needed.

(a) Fill in the boxes below to show the energy conversion as the wind-up handle is turned. [1]



(b) When Neela turns the volume up so that the radio is louder, the spring unwinds more quickly. Explain why. [1]

(c) The radio has a solar cell which converts light energy to electrical energy. Neela winds up her radio in an open field without changing the volume. Give a reason why the spring unwinds slower when sunlight falls on the solar cell. [1]

End of Booklet B

SCORE 3

ANSWER KEY

YEAR : 2019
LEVEL : PRIMARY 6
SCHOOL : CATHOLIC HIGH SCHOOL
SUBJECT : SCIENCE
TERM : SA2.

BOOKLET A

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

BOOKLET B

Q29 (a) $100cm^3$

(b) To compare and confirm that water lost in set-up A is due to the roots taking in the water.

(c) Lynn could put a layer of oil on the water in set-uo A.

Q30 (a) Water, oxygen and warmth

(b) The seeds dispersed in area X will compete for water.

(c) The young plants compete for sunlight as same of them were blocked by the leaves and branches.

Q31 (a) A population is a group of organisms of the same kind, living together and reproducing in a particular habitat.

(b) Bats. If the flowers were not pollinated, fertilisation could not take place and fruit would not be produced. The population of the bats would decrease as they could only feed on the fruit.

(c) (i) 2001

Explanation : The population of birds was the least so there could be fewer birds for the h[illegible]ks to feed on.

(ii) 1986

Explanatio[illegible] of birds was the greatestso the least num[illegible]reyed upon.

Q32 (a) As th[illegible]ove sea level increase, the amount of oxygen decreas[illegible]. Admad's heart rate would increase as he climbed up to the mountain His heart needed to pump blood faster to supply more oxygen to all parts of the body.

(b) The amount if oxygen is lower in the mountain than below the mountains. Mason has bigger lungs to take in more oxygen with each breath and a bigger heart to pump blood faster to supply more oxygen to all parts of the body.

Q33 (a)(i) The large antlers help male of animal D to fight predator and escape.

(ii) The large antlers help the male of animal D to win the fight and mate with the female.

(b) They can go deeper into the water to look for more food.

(c) Animal D can eat plants.

Q34 (a) Oxygen.

(b) As the amount of chemical X increases, the rate of photosynthesis also increase.

(c) To ensure the gas collected was solely produced by the plant only during photosynthesis.

(d) She can add another set-up which is identical to first set-up but without adding chemical X.

Q35 (a) As the area of square wooden piece increase, the depth of depression made decreases.

(b) Meng Ki was not standing at a constant spot on the wooden piece.

(c) When Animal Z flatten its toes would have more surface of its leg touching the snow, then will smaller depth of depression. Therefore, Animal Z could walk on snow with lesser stuck because of lesser depth of depression.

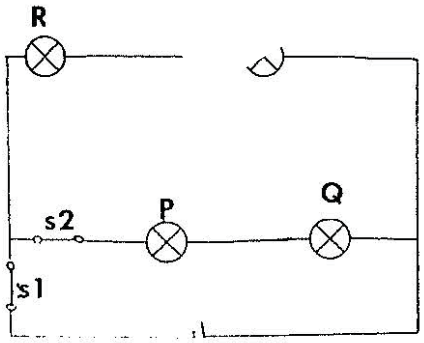
(d) Animal Z will out run its predator.

Q36 (a) To prevent any coloured water from evaporating.

(b) Material A. It absorbed the same amount of water in the shortest period of time. Material A is the most absorbent.

(c) Adding rubber creat[illegible] friction between the mat and the floor so his childre[illegible] fall.

Q37



Q38 (a) The surrounding air in the bath room gained heat from the warm water. Warm water vapour touched the cooler surface of the mirror, I lost heat and condensed to form water droplets.

(b) When the switch was closed, a closed circuit was formed so electric current flowed through the circuit. Part X of the mirror gained heat from the heating pad so warm water vapour was not able to condense.

Q39 (a) More than 15min.

(b) The thicker piece of meat has a greater mass so it will need more time for heat to be transferred from the oven to the meat for fully cooked.

Q40 (a) Kenetic energy → potential energy → electrical energy → sound energy

(b) More potential energy of the spring is converted to more electrical energy for the generator to produce a louder sound from the speaker.

(c) Since the solar cell is able to convert light energy from the sun to produce electrical energy, less potential energy the spring is needed to produce the same volume from the speaker.

END