CATHOLIC HIGH SCHOOL

END-OF-YEAR EXAMINATION (2020)

PRIMARY FIVE

SCIENCE

BOOKLET A

Name: _____ ( )

Class: Primary 5 - _____

Date: 3 November 2020

28 questions

56 marks

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

INSTRUCTIONS TO CANDIDATES

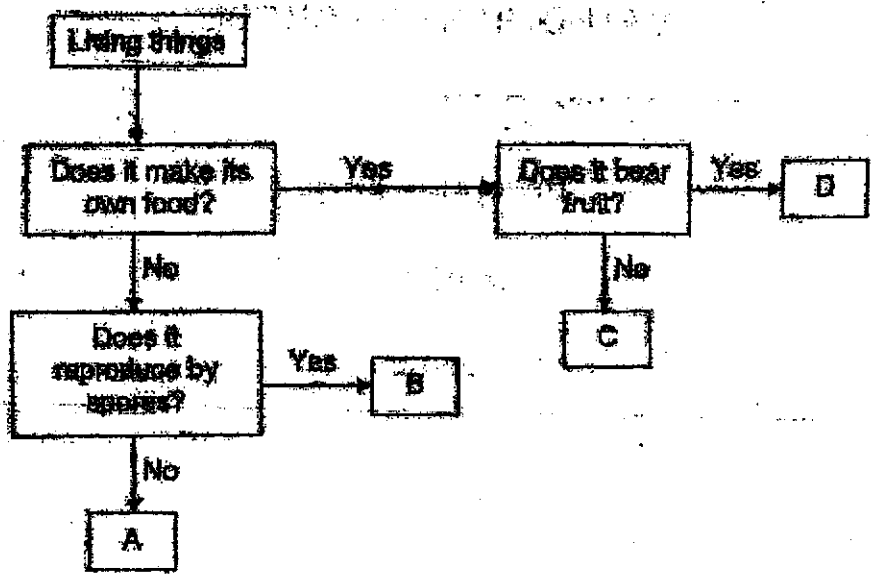
Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

This booklet consists of 18 printed pages, excluding the cover page.

Booklet A (26 × 2 marks)

For each question from 1 to 26, 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. (52 marks)

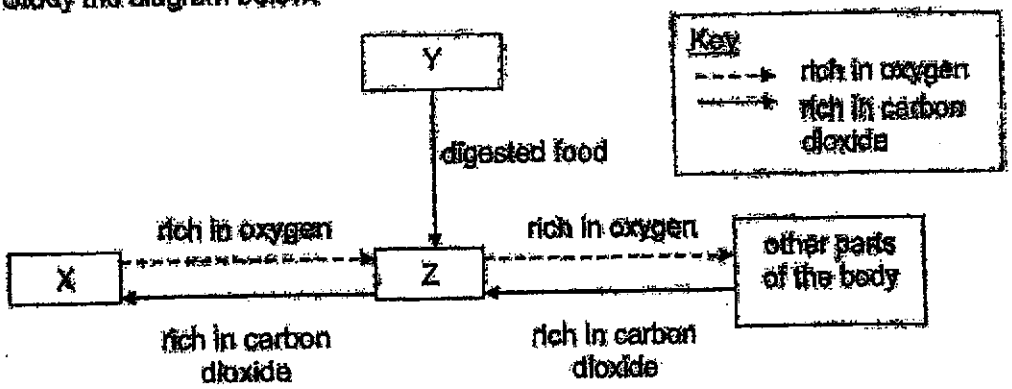
1 Study the diagram below.



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

	A	B	C	D
(1)	animal	mushroom	fern	flowering plant
(2)	mushroom	fern	bacteria	flowering plant
(3)	bacteria	animal	fern	flowering plant
(4)	bacteria	mushroom	animal	mushroom

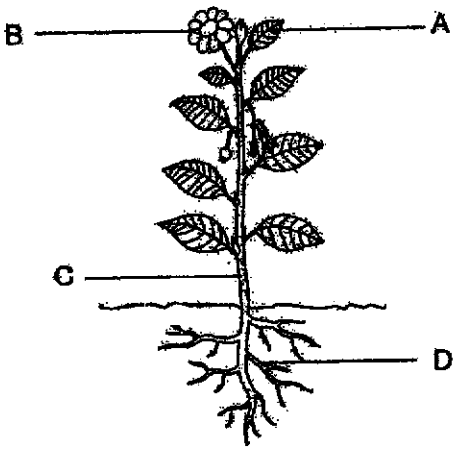
2 Study the diagram below.



Which of the following correctly represents systems X, Y and Z?

	X	Y	Z
(1)	respiratory	circulatory	digestive
(2)	digestive	respiratory	circulatory
(3)	circulatory	digestive	respiratory
(4)	respiratory	digestive	circulatory

3 Study the diagram below.



Which statement is **not** correct?

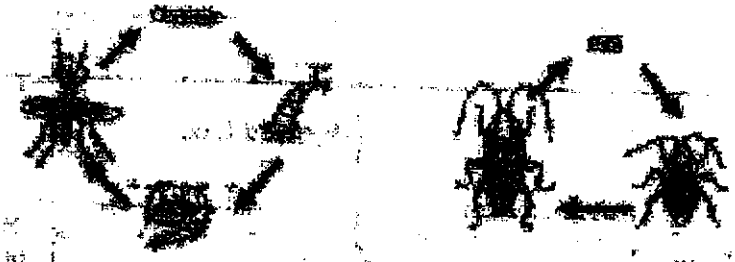
(1) Part B is found in all plants.

(2) Part C holds the plant upright.

(3) Part A needs sunlight to make food.

(4) Part D absorbs water and mineral salts from the soil.

4 Study the life cycles of insects X and Y.



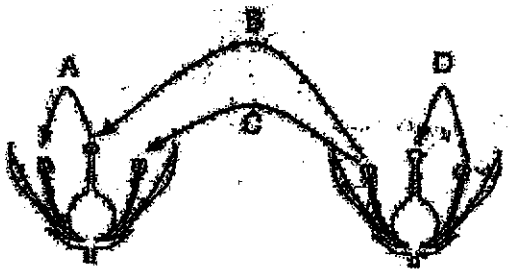
Insect X Insect Y

Based on the diagrams above, which statements are correct?

A Both insects can live on land and in water.
B The young of Y resembles its adult but not the young of X.
C Both insects have different number of stages in their life cycles.
D The young of X takes a longer time to develop into the adult stage than the young of Y.

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

5 The diagram shows flower G and flower H.

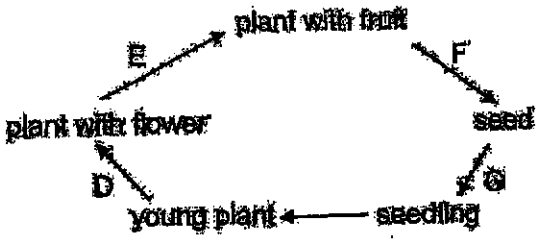


flower G flower H

Which arrows show possible paths for pollination to take place?

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

6 The diagram below shows the developmental stages of a flowering plant.



Where do the processes, fertilisation and germination take place?

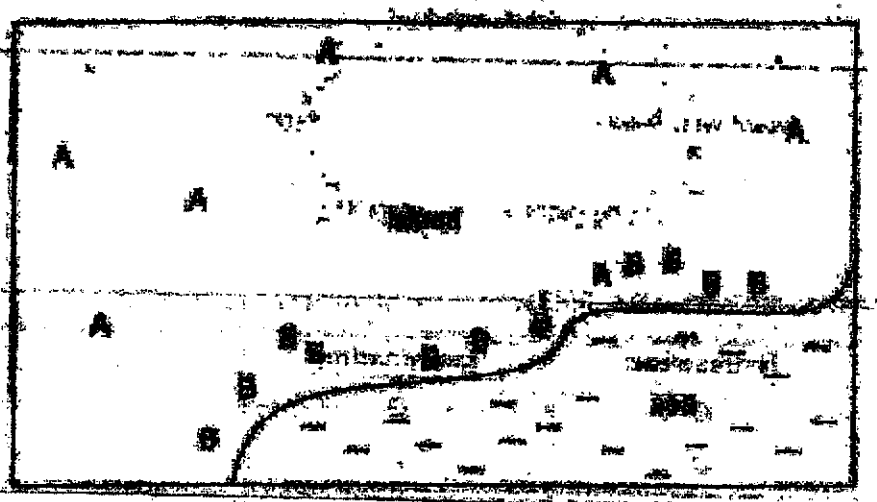
	fertilisation	germination
(1)	D	G
(2)	D	F
(3)	E	F
(4)	E	G

7 Which statements correctly show the similarities between sexual reproduction in humans and in flowering plants?

A Both require pollination to take place before fertilisation.
B Both require male and female reproductive parts for reproduction.
C Both the ovaries will swell to become fruits and the ovules will become seeds.
D Both the male reproductive cell fuses with the female reproductive cell during fertilisation.

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

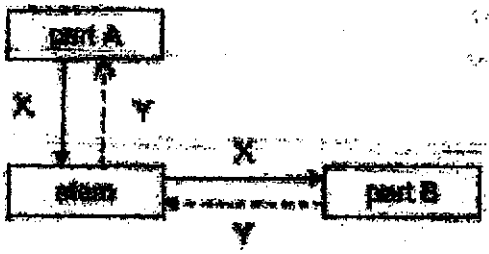
8 [illegible] part of the plant where the types of plants A and B are grown.



Which row of the following is likely to represent the dispersal method of the fruits of plants A and B?

	A	B
(1)	water	splitting action
(2)	splitting action	wind
(3)	animal	water
(4)	water	animal

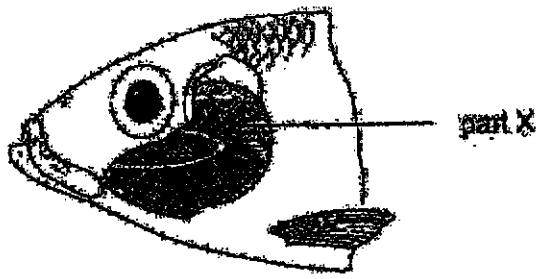
9 The diagram below shows how substances X and Y are transported in the different parts of the plant.



What are parts A and B, and substances X and Y?

	part A	part B	X	Y
(1)	flower	leaf	food	water
(2)	leaf	roots	food	water
(3)	leaf	roots	water	food
(4)	leaf	flower	water	food

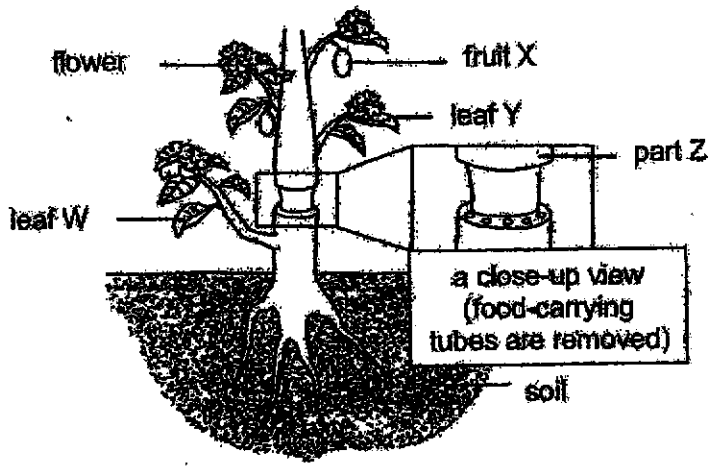
10 The following diagram shows the respiratory system of a fish.



Which statement is not correct about part X?

(1) It is protected with a cover.
(2) It has a rich supply of blood vessels.
(3) It absorbs water containing dissolved oxygen.
(4) It releases carbon dioxide that dissolves into the water.

11 Mrs Sim removed the food-carrying tubes from the stem of a plant as shown below. The water-carrying tubes remained in the stem.



After some time, she observed some changes in the plant.
Which statement is correct?

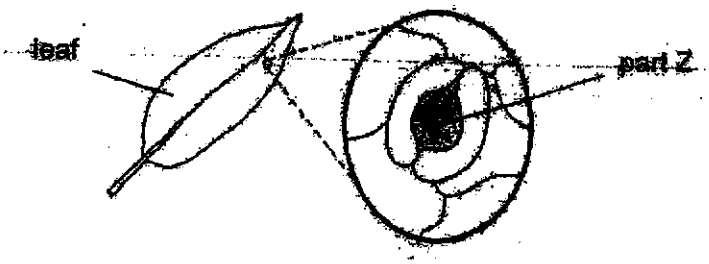
(1) Leaf W remained green as food made by the plant was transported there.
(2) Fruit X became bigger than normal as more water was being stored there.
(3) Part Z was slightly swollen as water could not be transported from the stem to the roots.
(4) Leaf Y remained green as removing the food-carrying tubes did not affect the process of photosynthesis.

12 Tom wanted to find out if the colour of leaves affect the ability of the leaves to photosynthesise. Which variable(s) should Tom keep constant?

A size of leaves
B colour of leaves
C amount of water given to the plant
D amount of carbon dioxide in the air

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

13 The diagram below shows part Z which is found on the leaf of a plant.



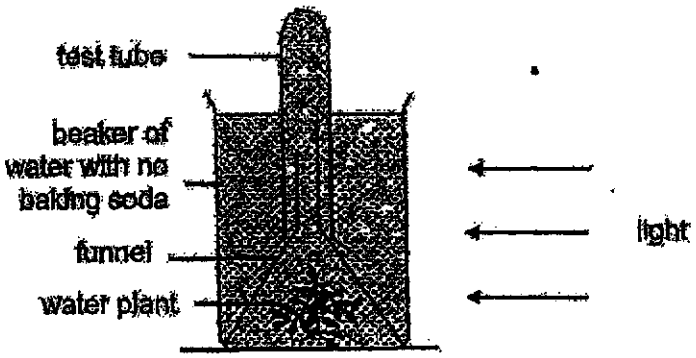
Some pupils made the following statements.

Maya	More of part Z can be found on the underside of the leaf.
Fatimah	Part Z helps the plant absorb sunlight during photosynthesis.
Jaden	Part Z allows for gaseous exchange.

Which pupil(s) is/are correct?

(1) Maya only
(2) Fatimah only
(3) Maya and Jaden only
(4) Maya and Fatimah only

14 Set-up A below is used to find out how the rate of photosynthesis is affected by the amount of carbon dioxide in the water.



Set-up A

Different amounts of baking soda is added to three other set-ups B, C and D to increase the amount of carbon dioxide dissolved in the water.

Which should be measured to show the rate of photosynthesis in each set-up?

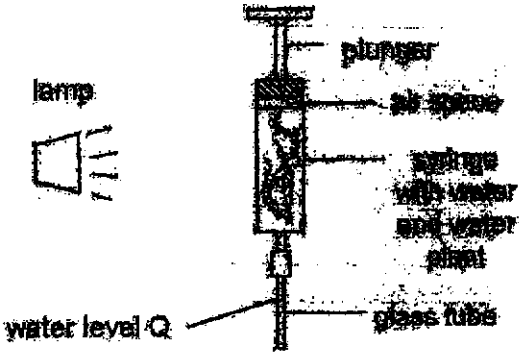
(1) the mass of baking soda added

(2) the volume of water added in the test tube

(3) the amount of oxygen trapped in each test tube

(4) the number of bubbles of carbon dioxide released by the water plant

15 Amy conducted an experiment with the set-up below. She switched on the lamp and observed that the water level Q in the glass tube moved after some time. The plunger remained at the same place.



In which direction did the water level Q move and what was the reason for the movement?

	water level Q moved	reason
(1)	up	Air moved into the glass tube.
(2)	up	Heat from the lamp caused the water to expand.
(3)	down	Plant gave out water during photosynthesis.
(4)	down	Oxygen collected in the air space.

16 Weenie wants to make a bookshelf for his books. The table below shows the properties of four different materials A, B, C and D.

material	strong	waterproof	flexible
A	✓	✓	
B	✓		✓
C		✓	
D		✓	✓

Which material should Weenie choose?

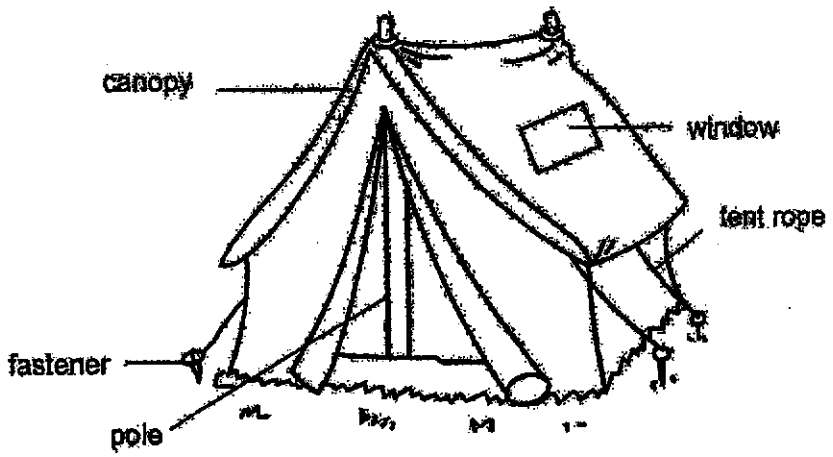
(1) Material A

(2) Material B

(3) Material C

(4) Material D

17 Some pupils came up with a sketch design of a tent for their camping trip. They added a window in the sketch for them to look at the stars at night.



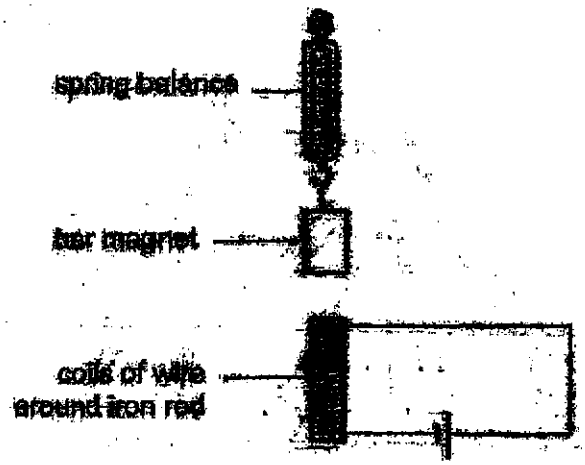
They chose four materials shown in the table below based on their properties.

material	properties
P	• waterproof • transparent
Q	• not transparent • waterproof
R	• strong • flexible
S	• strong • not flexible

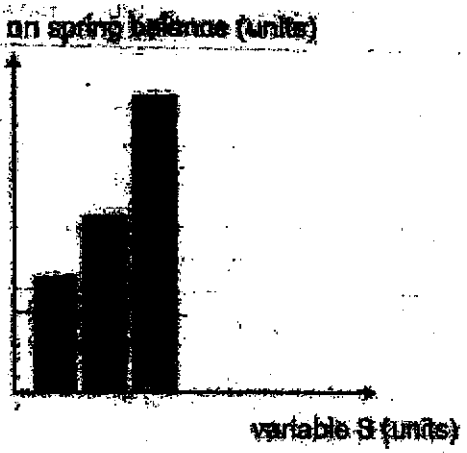
Which one of the following correctly represents P, Q, R and S?

	canopy	fastener	tent rope	window	pole
(1)	Q	S	Q	R	P
(2)	R	Q	R	P	R
(3)	R	Q	P	Q	S
(4)	Q	S	R	P	S

18 Haemen prepared a set-up as shown below. —



He then made some changes to the value of a variable, S, in the set-up above and recorded the readings on the spring balance as shown in the graph below.

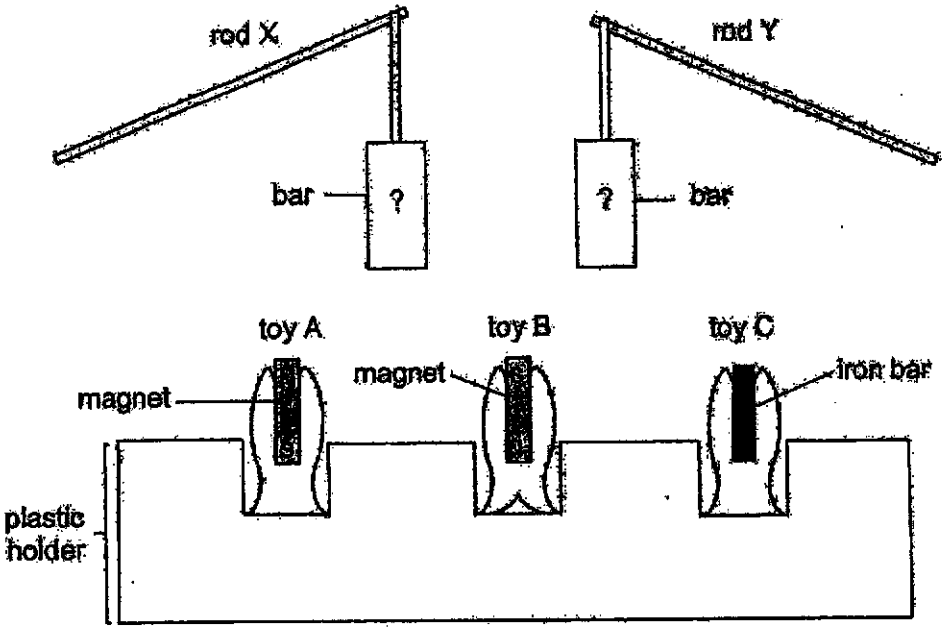


Based on the above results, which of the following could represent variable S?

A number of batteries connected in series
B amount of heat applied to the bar magnet
C number of coils of wire around the iron rod

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

16 Yusri made a game using the objects shown below.

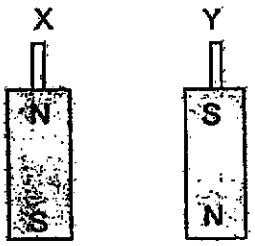


The lower end of the bar was used for catching a toy.

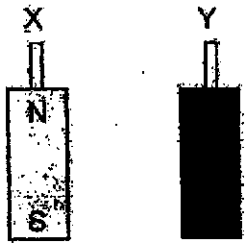
Rod X could catch toys A and C only.
Rod Y could catch toys A and B only.

Which of the following shows the bars for rods X and Y?

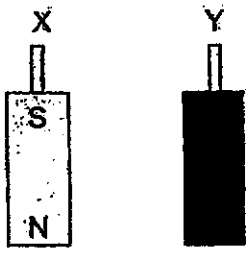
(1)



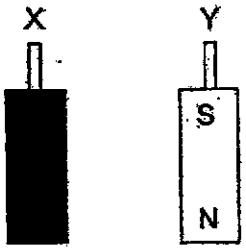
(2)



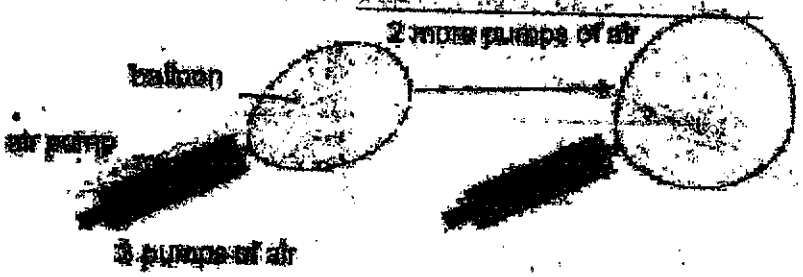
(3)



(4)



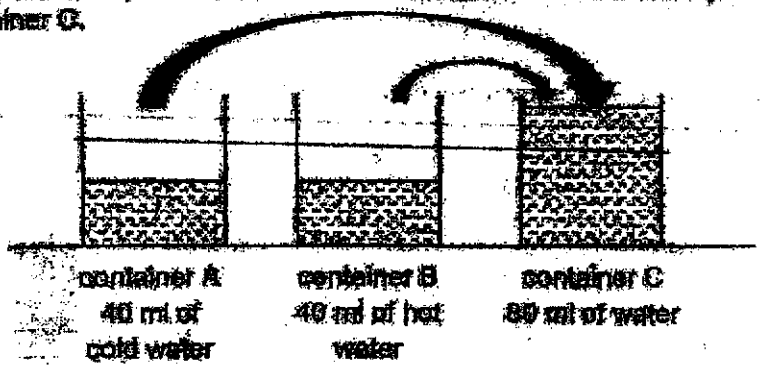
20 Ali is blowing into a balloon as shown below using an air pump.



What happens to the total volume and the mass of air in the balloon after two more pumps of air are given?

	total volume of air in balloon	mass of air in balloon
(1)	increases	increases
(2)	remains the same	increases
(3)	remains the same	remains the same
(4)	increases	remains the same

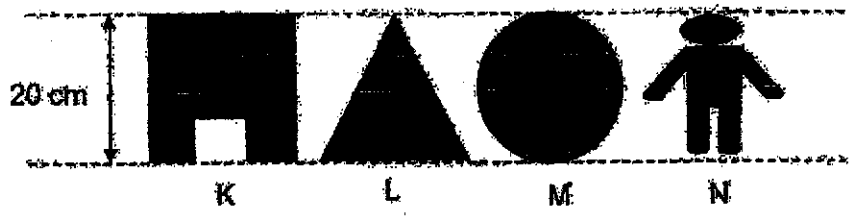
21 Study the set-up below. The water in containers A and B were poured into container C.



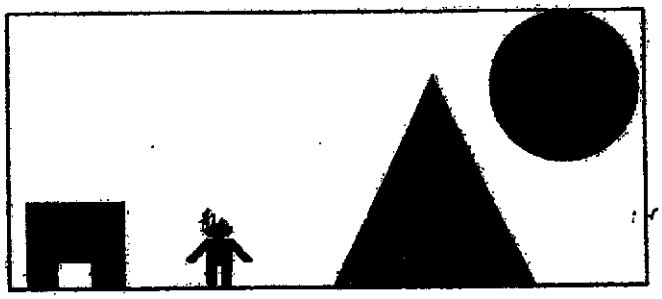
What was the temperature of water in containers A and B at first, and in container C?

	temperature of water (°C)		
	container A	container B	container C
(1)	5	80	85
(2)	15	90	70
(3)	15	75	20
(4)	80	20	60

22 The diagram below shows four cut-outs K, L, M and N from a piece of cardboard.



The shapes were then used to create a scene in a shadow puppet show as shown below. The positions of both the light and the screen are fixed.



Which of the following shows the correct order of the cut-outs from the nearest to the screen to the furthest from the screen?

	nearest to screen →			furthest from screen
(1)	M	L	N	K
(2)	L	M	K	N
(3)	K	N	L	M
(4)	N	K	M	L

23 The table below shows the melting point and boiling point of some substances.

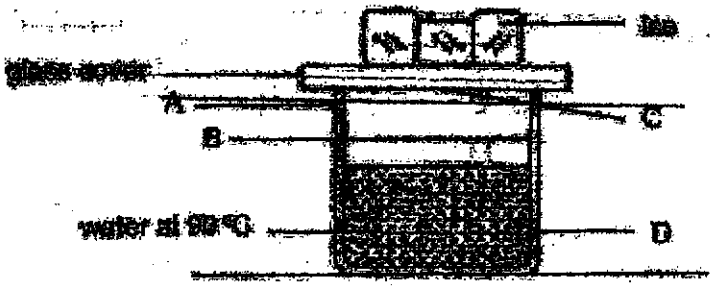
substance	melting point (°C)	boiling point (°C)

Based on the table above, which statements are correct about the substances?

A [illegible]
B Substance Q is in the liquid state at 80 °C.
C All the substances are in the liquid state at 40 °C.
D Substances P and R are in the gaseous state at 70 °C.

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

24 Xuan Kai set up an experiment as shown in the diagram below.



After a while, he noticed that some water droplets had formed. Where were the water droplets formed?

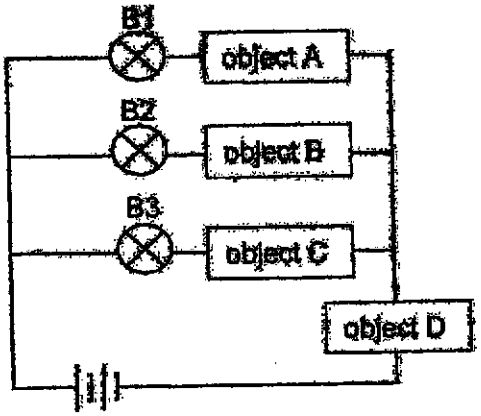
(1) A and B only
(2) A and D only
(3) B and C only
(4) C and D only

25 Mei Ien hung a wet towel in the bathroom. Which of the following ways would help to dry the towel faster?

A fold the towel in half
B open the door of the bathroom
C use a hairdryer to blow the towel

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

26 Dev set up an electric circuit as shown below.

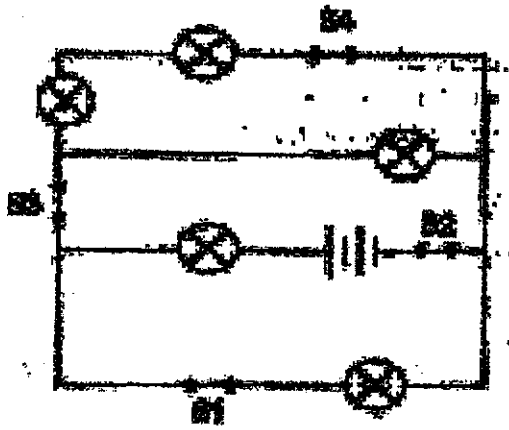


He observed that only B2 lit up.

Which objects were used in the set-up above?

	object A	object B	object C	object D
(1)	metal ruler	coin	eraser	marble
(2)	marble	metal ruler	coin	eraser
(3)	eraser	coin	marble	metal ruler
(4)	coin	marble	metal ruler	eraser

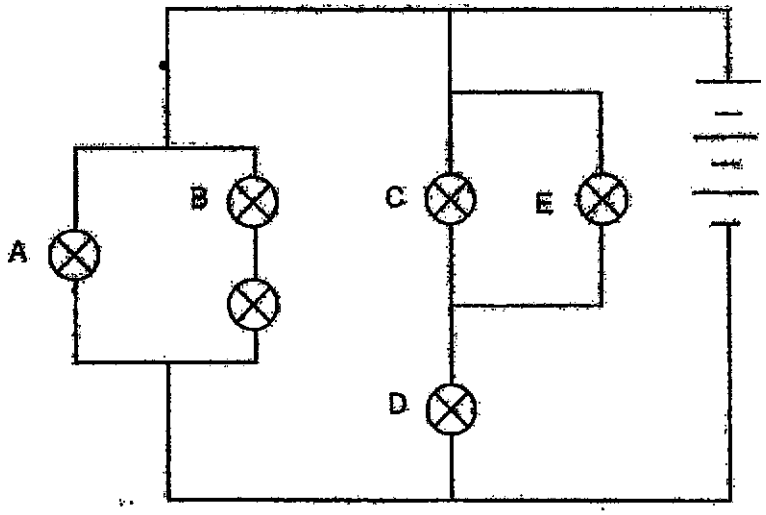
27 Simon set up a circuit as shown below. All the bulbs and batteries are identical.



All the bulbs were lit when all the four switches were closed. He wanted the most number of bulbs to light up when only one switch is open. Which switch should be open?

(1) S1
(2) S2
(3) S3
(4) S4

28 Study the circuit below. All the bulbs and batteries are identical.



Daneesh conducted experiments 1 and 2 using the circuit shown above.

In both experiments, Daneesh removed one light bulb and observed how many light bulbs would remain lighted up. The table below shows his observations.

	number of bulbs that remained lighted up
experiment 1	3
experiment 2	4

Which of the following correctly shows which light bulb Daneesh removed in each of the experiment?

	bulbs removed in	
	experiment 1	experiment 2
(1)	C	A
(2)	C	B
(3)	D	A
(4)	D	B

End of Booklet A

CATHOLIC HIGH SCHOOL

END-OF-YEAR EXAMINATION (2020)

PRIMARY FIVE

SCIENCE

BOOKLET B

Name: _____ _____ ( )

Class: Primary 5 - _____

Date: 3 November 2020

Parent's Signature: _____

Booklet A	56
Booklet B	44
Total	100

13 questions

44 marks

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

INSTRUCTIONS TO CANDIDATES

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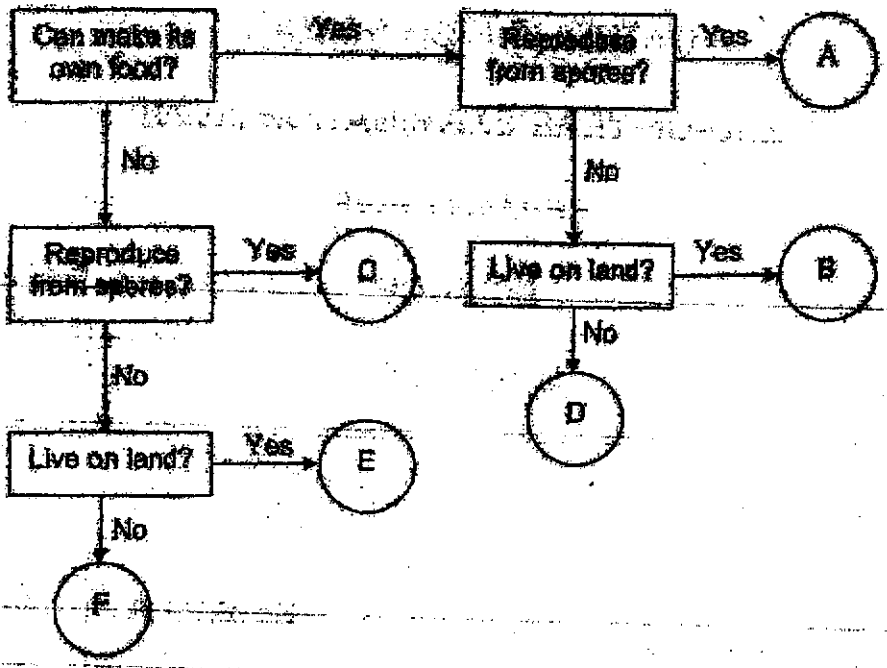
Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

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

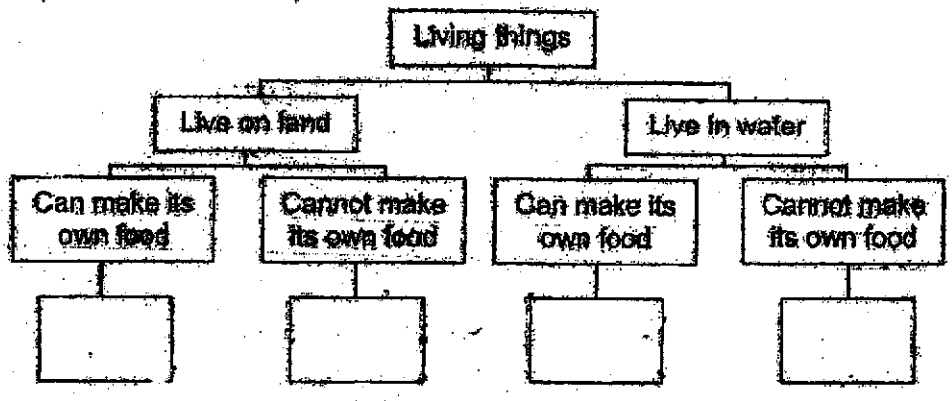
Booklet B (44 marks)

For questions 28 to 47, 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)

28 The diagram below shows six living things, A, B, C, D, E and F.



(a) Classify the living things B, D, E and F in the chart below. [2]



(b) Give a reason why living things A and C cannot be classified in the diagram above. [1]

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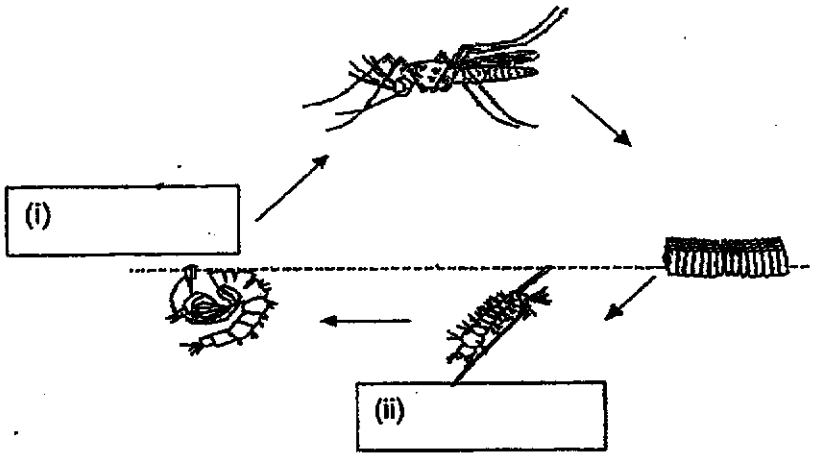
SCORE	/3

30 The diagram below shows the life cycle of an Aedes mosquito.



(a) Name the missing stages of the life cycle above. [1]

The table below shows the effect of temperature on the average time taken for an Aedes mosquito to hatch from an egg and develop into an adult.

temperature (°C)	average length of the life cycle of an Aedes mosquito (days)
16	43
22	25
28	13
33	12

(b) Based on the information given, state the relationship between temperature and the average length of the life cycle of an Aedes mosquito. [1]

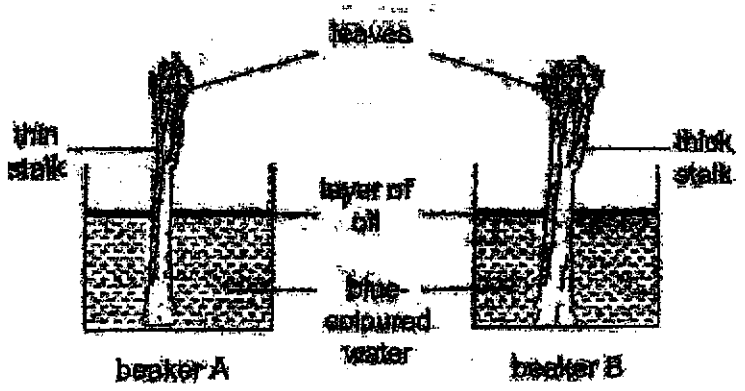
_____

_____

(Go on to the next page)

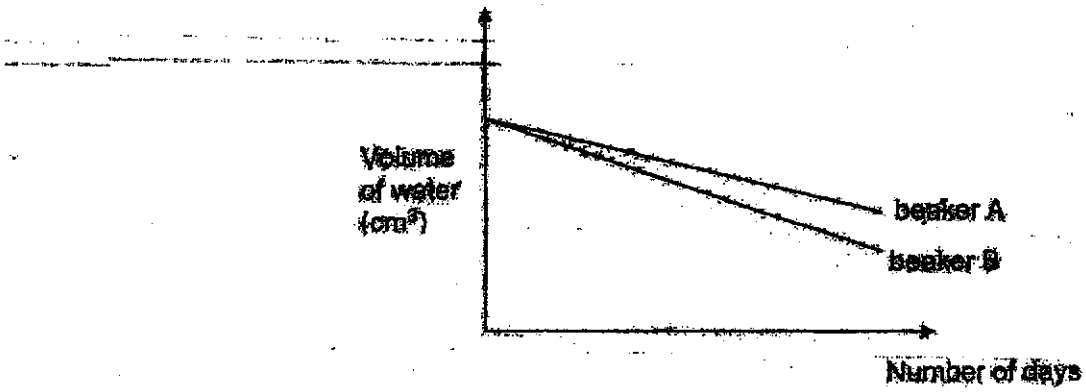
SCORE	/ 2

9 Misha set up an experiment as shown below. She placed a stalk of celery in each beaker. She poured an equal amount of oil and blue-coloured water into similar beakers A and B. She then placed the beakers near the window.



(a) What is the purpose of putting oil into both beakers? [1]

The volume of water was observed and recorded daily over a period of four days and the results were shown in the graph below.



(b) What was the aim of Misha's experiment? [1]

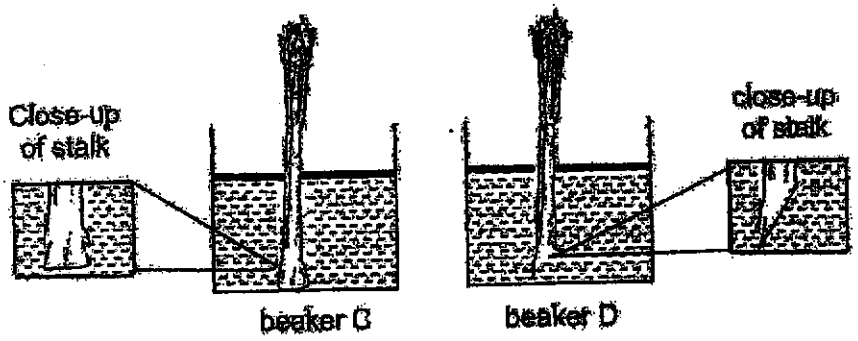
(Go on to the next page)

SCORE 2

Continue from Question 31

Misha conducted another experiment using two similar celery stalks and placed each into similar beakers C and D as shown in the diagram below.

The stem of the celery in beaker C was left uncut while the stem of the celery in beaker D was cut at a slanted angle.



(c) Would the decrease in volume of water in beaker D be less than, the same as or greater than that in beaker C? Give a reason for your answer. [1]

(Go on to the next page)

SCORE	0/1

32 Diagrams 1 and 2 show the plant and human reproductive systems respectively.

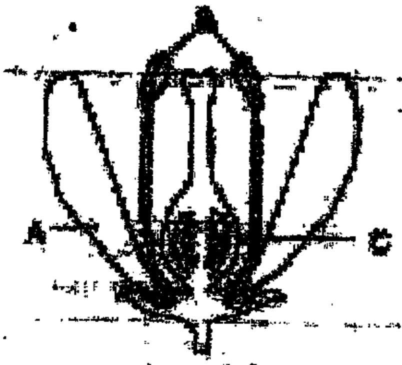


diagram 1

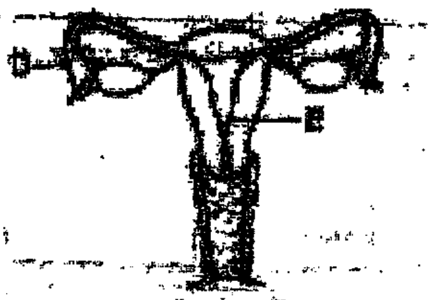


diagram 2

(a) In diagram 1, which part(s) of the flower A, B or C, can be removed such that the flower can still grow into a fruit? Explain your answer. [2]

____

____

____

(b) Based on the two diagrams above, which parts, A, B, C, D or E, correctly identify where fertilisation takes place in the plant and human reproductive systems? [1]

____

____

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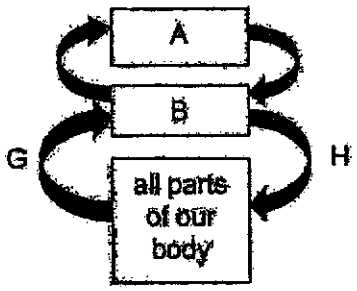
SCORE	$2\frac{1}{2}$ / 3

33 The diagram below shows how blood travels in our body.



(a) Name organs A and B. [1]

organ A: _____ organ B: _____

(b) Name one substance in the blood where its amount is higher in G than in H. [1]

_____

The table below shows the heart rate of two runners at rest and while jogging.

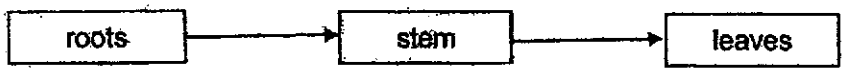
runner	heart rate (beats per minute)	
	at rest	while jogging
X	70	100
Y	80	125

(c) Why do the runners have a higher heart rate while jogging than at rest? [1]

_____

_____

The diagram below shows the movement of water in a plant.



(d) State one difference between the direction of movement of water in plants and the direction of movement of blood in the human body. [1]

_____

_____

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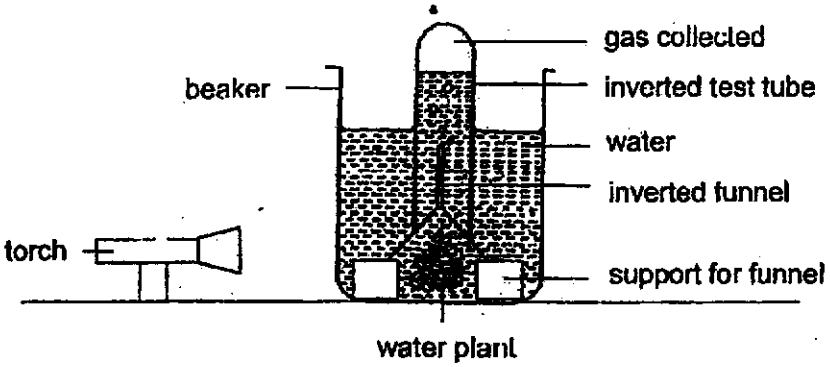
SCORE	/4

34 Robert set up the experiment as shown below in a dark room to find out which colour of light allows the highest rate of photosynthesis.



He shone the torch at the water plant for 25 minutes. He observed the number of bubbles given out by the water plant during that time and recorded the results in the table below. He then repeated the experiment using different coloured lights.

colour of lights	number of bubbles produced
red	16
blue	22
green	0
yellow	14

(a) Based on Robert's results, what could he conclude from his experiment? [1]

(b) With the same set-up, suggest another observation Robert coud measure to achieve the same aim. [1]

(Go on to the next page)

SCORE 2

Continue from Question 34

Robert also wanted to find out if the amount of light affects the number of bubbles produced.

(c) Describe how Robert could carry out the experiment without changing any of the above apparatus. [2]

Action: _____

_____

Reason: _____

_____

(d) Describe the process of photosynthesis in green plants. [1]

_____

_____

_____

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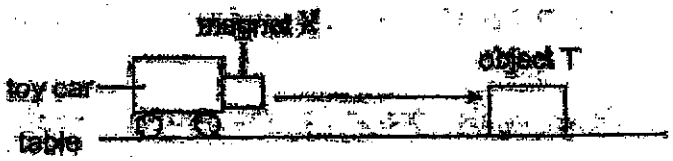
SCORE	3

35 Martin attached magnet X to a toy car and placed the toy car on a table. He observed that the toy car moved towards object T as shown by the direction of the arrow below.



(a) Based on his observation, Martin cannot conclude that object T is a magnet. Give a reason. [1]

(b) Using only magnet X and object T, describe what Martin should do to conclude whether object T is a magnet or not. [2]

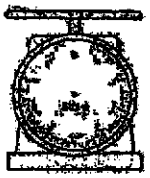
(c) Martin then replaced magnet X with a bigger magnet and carried out a similar experiment.

He predicted that the toy car would move towards object T at a faster rate as a bigger magnet would have greater magnetic strength.
Do you agree? Give a reason for your answer. [1]

(Go on to the next page)

SCORE	4/4

36 Gary wanted to find out the volume of a marble. He used a kitchen scale to do so.



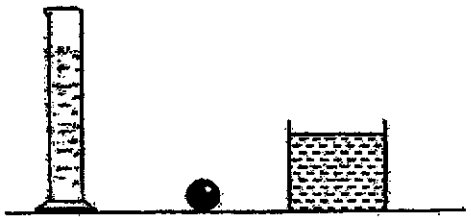
kitchen scale

marble

(a) Joshua told Gary that he had used the wrong apparatus. What could the kitchen scale be used to find out about the marble? [1]

_____

Joshua told Gary to use the apparatus below.



measuring cylinder

25 cm^3 marble

50 cm^3 beaker full of water

Gary poured the beaker of water into the measuring cylinder. Then, he dropped in the marble gently as shown in the diagram below.

marble

(b) State the reading for the new water level observed. [1]

_____

(c) What could Gary conclude about the marble in this experiment? [1]

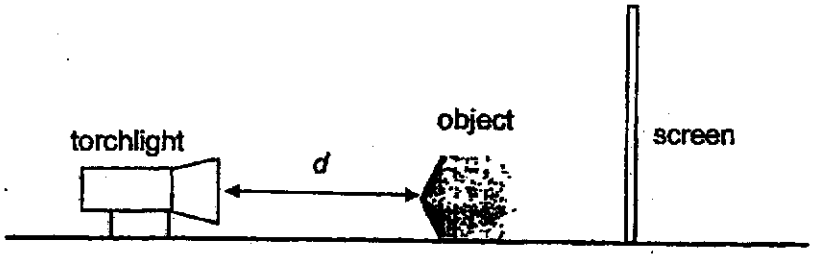
_____

_____

(Go on to the next page)

SCORE	/ 3

37 Faridah conducted an experiment to investigate how the distance between the torchlight and object, *d*, would affect the height of the shadow.



She measured the height of the shadow formed on the screen and repeated the experiment three times before changing the distance.
She recorded the results in the table below.

d (cm)	height of the shadow (cm)			
	try 1	try 2	try 3	average
10	8.3	8.5	8.6	8.5
15	5.4	5.2	5.1	5.2
20	3.5	3.1	3.3	3.3

(a) Why did Faridah repeat the experiment three times for each distance? [1]

_____

_____

(b) If Faridah kept distance *d* at 10 cm, how would the height of the shadow change if the screen was moved further away from the object? [1]

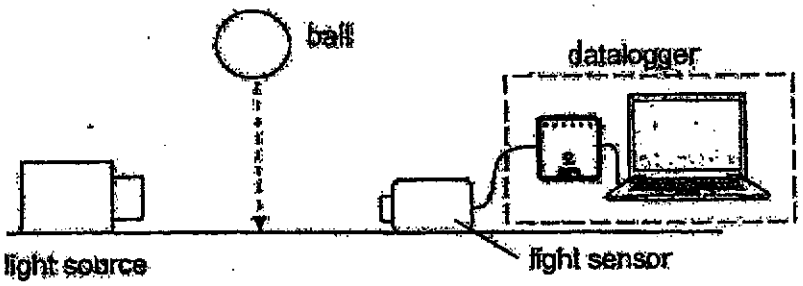
_____

(Go on to the next page)

SCORE 2

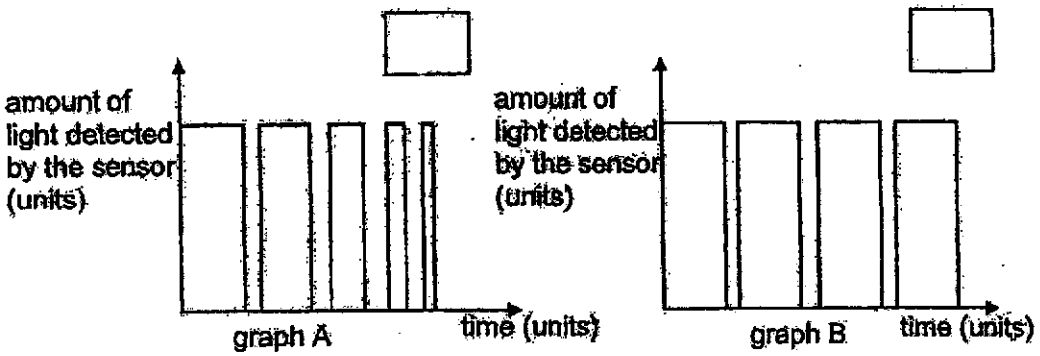
Continue from Question 37

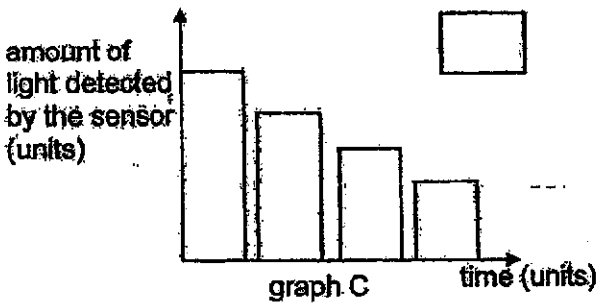
In another experiment, a ball was dropped in between a light source and a light sensor as shown in the diagram below.



As the ball bounced, it bounced lower. The duration of light captured by the light sensor decreased. The amount of light detected by the light sensor was then recorded.

(c) Which graph A, B or C correctly shows the results of the experiment? Put a tick (✓) in the correct box provided [1]





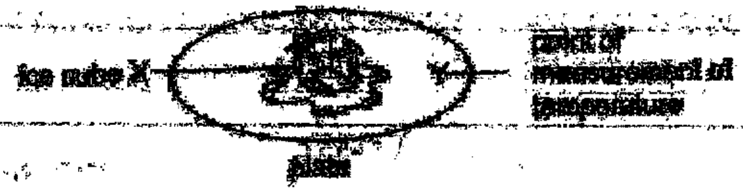
(d) State the property of light demonstrated in the experiment above. [1]

_____

(Go on to the next page)

SCORE / 2

38 Kannan placed ice cube X on a plate as shown below.



She used a sensor to measure the temperature of the plate at point Y and recorded the results below.

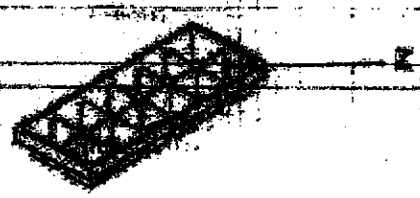
Time (mins)	temperature of plate (°C)
0	27
1	26
3	25
5	23

(a) Give a reason why the temperature of point Y decreased. [1]

____

____

After ice cube X had melted completely, the water from the ice cube was left on the plate for an hour. The water was poured back into part Z of the same tray used to make ice cube X and placed in the freezer.



(b) Would the mass of the ice cube be less than, the same as or greater than ice cube X? Explain your answer. [2]

____

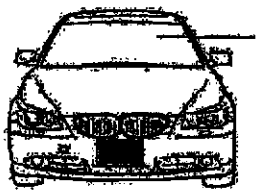
____

____

(Go on to the next page)

SCORE	3

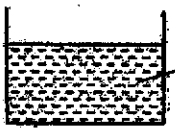
39 Mr Soh was driving his car on a cold day. Water droplets formed on the inner surface of the windscreen. He noticed that water droplets were not formed on a sunny day.



water droplets formed on inner surface of the windscreen on a cold day

(a) Explain how the water droplets were formed on a cold day. [2]

Mr Soh wanted to find out the rate of evaporation at different times of the day. He filled three similar containers with 700 ml of water each and placed each of the containers in the garden at different times of the day.



700 ml of water

At the end of each time period, he recorded the volume of water left in the container in the table below.

time period	10 am - 12 pm	3 pm - 5 pm	8 pm - 10 pm
volume of water left in the container (ml)	440	500	650

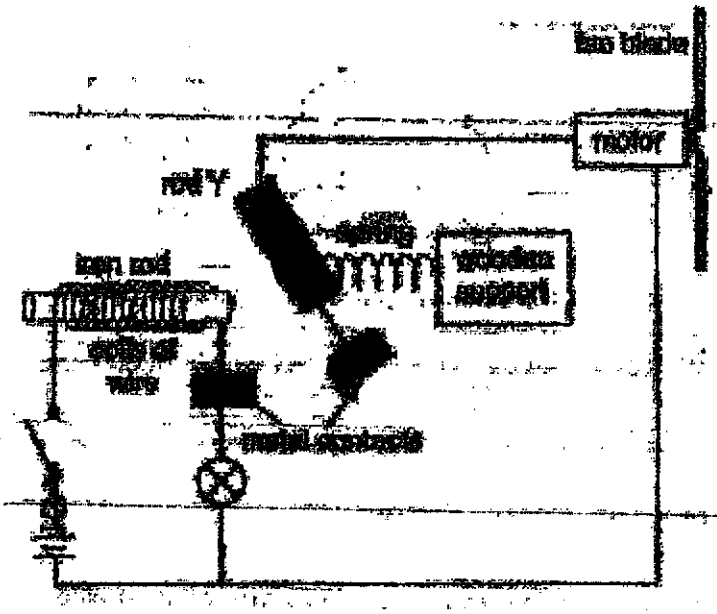
(b) Based on the results above, which period was the hottest? Explain your answer. [1]

(c) State what is evaporation. [1]

(Go on to the next page)

SCORE	/ 4

40 Fiji Ltd made an electrical system for a school project. The circuit is shown below.



When the switch was closed, the motor turned the fan blades.

(a) Apart from being an electrical conductor, state another property of the material of rod Y for the system to work. [1]

(b) Explain how the fan was able to work after the switch was closed. [2]

(c) What would happen to the brightness of the light bulb when another bulb was added between the batteries and the switch? [1]

[Go on to the next page]

SCORE /4

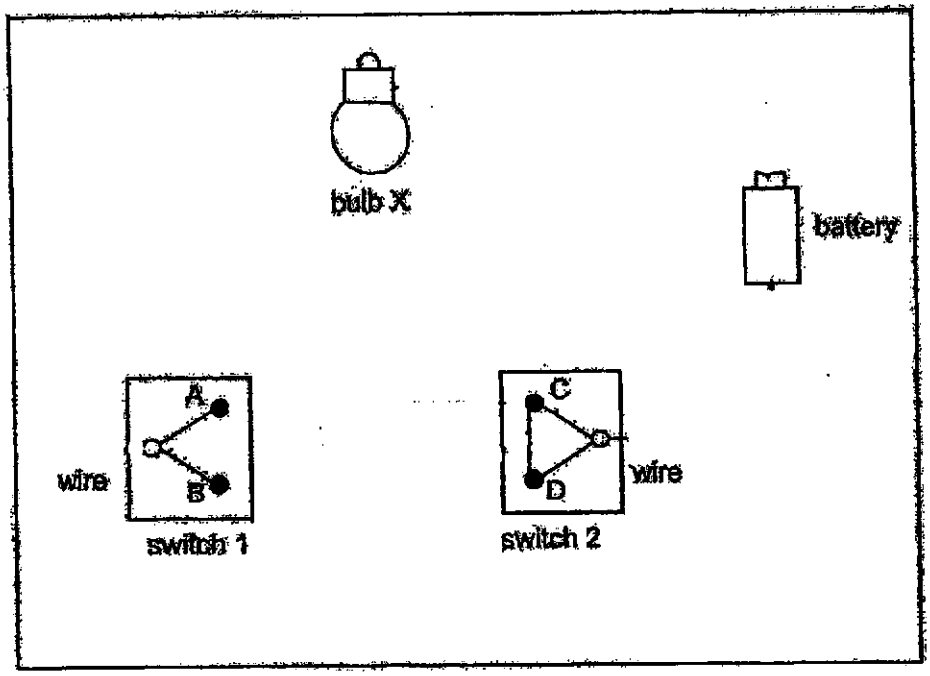
41 William wanted to set up a circuit to light up a bulb using two special switches. Switch 1 could be turned to positions A or B while switch 2 could be turned to positions C or D.

He set up the circuit so that the bulb would be lit as shown in the table below.

position of switch		bulb X is lit
switch 1	switch 2	
A	C	Yes
A	D	Yes
B	D	No
B	C	No

The diagram below shows part of the circuit.

Complete the circuit so that it would work as shown in the table above. [2]



End of Booklet B

SCORE	2

SCHOOL : CATHOLIC HIGH SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2020 EOY

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	4	1	2	4	4	2	3	2	3
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	3	3	3	4	1	4	2	2	1
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
2	4	2	3	3	3	1	4		

SECTION B

Q29)	a) B E D F b) This diagram did not provide information on whether living things A and C live on land or in water.
Q30)	a) i) Pupa ii) Larva b) As the temperature increases, the average length of the life cycle of an Aedes mosquito increases.
Q31)	a) To prevent water from evaporating. b) To find our how the thickness of the celery stalk affects the amount of water taken in by the plant. c) Greater than. The cut part of the stalk in beaker D has a larger exposed surface area (in contact with the water)
Q32)	a) A and B. The stigma from the flower can still receive pollen grains from another flower. Hence, fertilisation can occur. b) Parts C and D.

Q33)	a) A:Lungs B:Heart b) Carbon dioxide c) When they are jogging, the heart needs to pump blood faster to transport more oxygen and more digested food to all parts of the body to release more energy. d) Water is transported upwards from the roots to the leaves while blood is circulated in the human body.
Q34)	a) The plant could photosynthesise the most under blue light. b) Amount of gas collected at the top of the inverted test tube. c) Action: Vary the distance between the torch and the water plant. Reason: As the distance between the torch and the water increases, the amount of light decreases, the number of bubble decreases. The rate of photosynthesis decreases. d) Plants take in water and carbon dioxide from the surroundings in the presence of sunlight and chlorophyll it produces sugar and oxygen during photosynthesis.
Q35)	a) Object T can be a magnetic material. b) Turn the other end of object T to face magnet X. If both repel, object T is a magnet. c) No, I do not agree. The magnetic strength of a magnet does not depend on its size.
Q36)	a) Mass b) 75cm cube c) The marble has a definite volume.
Q37)	a) To get (the avg reading for) reliable results. b) The height of the shadow would increase. c) A d) Light travels in a straight line.
Q38)	a) The plate lost heat to the ice cube. b) Less than. Some water gained heat from the surroundings and evaporated. Thus, there was less water left to freeze.
Q39)	a) The water vapour in the car touched the cooler inner surface of the

	windscreen, lost heat and condensed to form water droplets. b) 10am to 12am. The volume of water left in the container was the least, which means the rate of evaporation was the fastest. c) It is the process by which a liquid turns into a gas at any temperature.
Q40)	a) Magnetic material b) After the switch was closed, a close circuit was formed, electric current could flow through. The iron rod became an electromagnet and attract rod y. The metal contacts would touch each other and the circuit would be closed, causing the motor to turn the fan blades. c) The brightness of the bulb would decrease.
Q41)