CATHOLIC HIGH SCHOOL

MID-YEAR EXAMINATION (2019)

PRIMARY FIVE

SCIENCE

BOOKLET A

Name: _____ ( )

Class: Primary 5 - _____

Date: 16 May 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 15 printed pages, excluding the cover page.

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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 Sandra observed organism X and completed the following table.

Observation	Yes	No
Has hair		√
Has scales		√
Lives on land	√	
Lives in water	√	
Has moist skin	√	

What is organism X?

(1) fish
(2) reptile
(3) mammal
(4) amphibian

2 Which of the following statements are correct about ferns and mushrooms?

A Both ferns and mushrooms require air all the time.
B Ferns reproduce from seeds while mushrooms reproduce from spores.
C Ferns are able to make their own food but mushrooms cannot make their own food.

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

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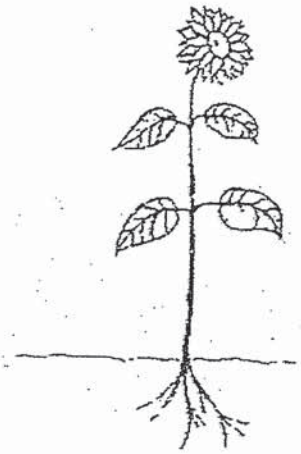
3 The functions of four body systems, A, B, C and D, are stated below.

System A Supports the body and gives it the shape
System B Takes in oxygen and gives out carbon dioxide
System C Transports food, water, oxygen and waste within the body
System D Breaks down food into simpler substances for the body to absorb

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

	A	B	C	D
(1)	Digestive	Circulatory	Respiratory	Skeletal
(2)	Skeletal	Respiratory	Circulatory	Digestive
(3)	Digestive	Skeletal	Respiratory	Circulatory
(4)	Skeletal	Circulatory	Digestive	Respiratory

4 The diagram below shows a plant.



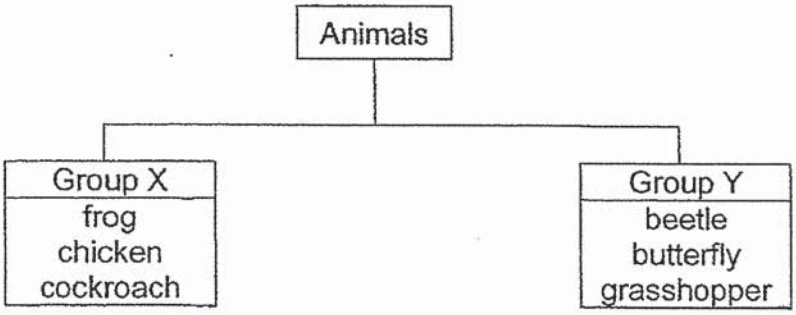
Which of the following matches the plant part to its function?

	Plant part	Function
(1)	roots	absorb water and mineral salts
(2)	stem	holds the plant firmly to the ground
(3)	leaf	holds the plant upright to trap more sunlight
(4)	flower	makes food for the plant and gives out oxygen

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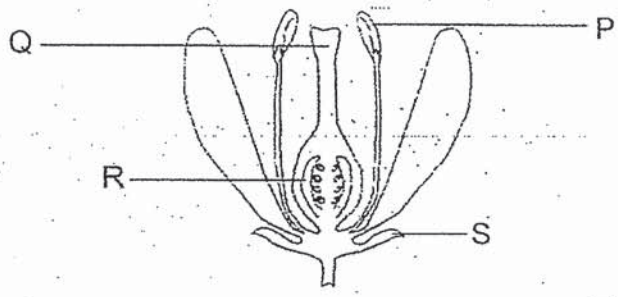
5 The diagram below shows how some animals are classified according to their life cycles.



Which animal is grouped incorrectly?

(1) frog
(2) beetle
(3) chicken
(4) grasshopper

6 The diagram below shows the flower of a plant.



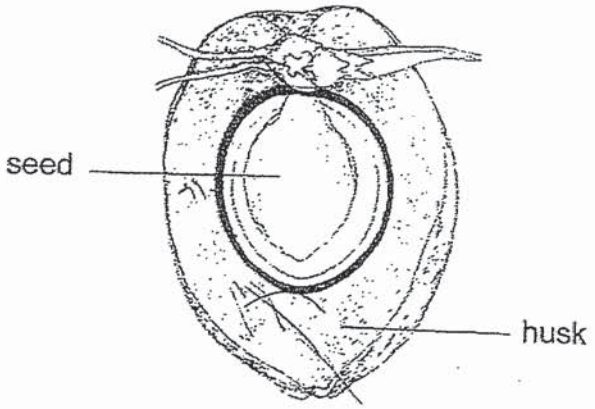
Which parts of the flower contain pollen grains and ovules?

	pollen grains	ovules
(1)	P	Q
(2)	P	R
(3)	Q	R
(4)	Q	S

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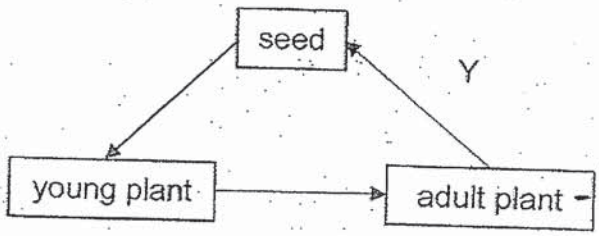
7 The diagram below shows the inside of a fruit that has been cut open.



The fruit is dispersed by water as it has a _____.

(1) large seed
(2) sweet smell
(3) smooth skin
(4) fibrous husk

8 Study the diagram below.

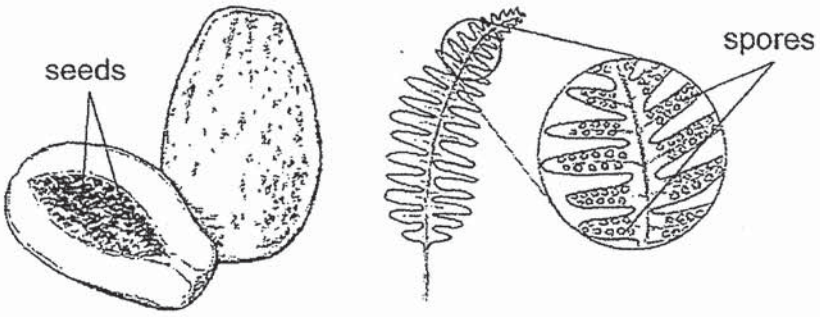


What are the processes that take place at X and Y?

	Process(es) at X	Process(es) at Y
(1)	fertilisation	pollination
(2)	germination	dispersal
(3)	pollination and fertilisation	dispersal and germination
(4)	germination	pollination, fertilisation and dispersal

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9 Study the diagram below.



Which of the following statements describe the similarities between the seeds of the papaya and the spores of the fern leaf?

A They are dispersed by wind.
B They can grow into new plants.
C They are produced in large numbers.

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

10 Why is sexual reproduction in humans important?

(1) It ensures the survival of humans.
(2) It prevents the extinction of all living things.
(3) It allows the male and female reproductive cells to be produced.
(4) It ensures that all observable characteristics from both parents are passed down to the young.

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11 Three pupils made the following statements about the reproductive systems of humans and flowering plants.

Nita	Fertilisation occurs in both systems.
Alice	Pollination occurs in both plants and humans.
Junbiao	Flowering plants can be pollinated by wind and animals.

Which of the pupils is/are correct?

(1) Alice

(2) Nita and Alice

(3) Nita and Junbiao

(4) Nita, Alice and Junbiao

12 The table below shows some of the characteristics of Luke's parents and himself.

	Eyelid	Earlobe	Long hair
Luke's father	double	attached	Yes
Luke's mother	single	detached	No
Luke	double	detached	Yes

Based on the table, how many characteristics did Luke inherit from each of his parents?

(1) One from his father and one from his mother

(2) Two from his father and one from his mother

(3) One from his father and two from his mother

(4) Two from his father and two from his mother

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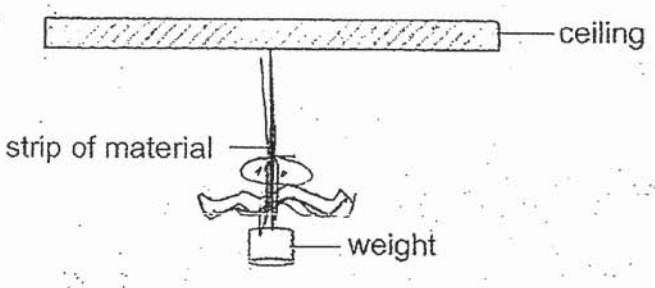
13 Ahmad made three statements about sexual reproduction in flowering plants and humans.

A Fertilisation occurs in the female reproductive part of the reproductive system.
B Reproductive cells are produced in the anthers.
C The fertilised egg is found in the ovary.

Which of the above statements is/are correct about sexual reproduction in flowering plants and humans?

	Flowering plants	Humans
(1)	B	A and C
(2)	A and C	C
(3)	A, B and C	A
(4)	A, B and C	A and C

14 George compared the strength of three strips of materials.



He recorded the number of weights the strip of material could hold before it broke.

Which variables should George keep the same in order for him to carry out a fair test?

A number of weights
B length of the strip of material
C thickness of the strip of material

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

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15 Hannah was given three rods, X, Y and Z, as shown below.



She brought the bar magnet closer to each rod and recorded her observations in the table as shown below.

Rod	Observations
X	A and B are attracted by the north pole of the magnet.
Y	B is repelled by the south pole of the magnet.
Z	It remained at the same position.

Which of the following statements is correct?

(1) Rod Y is a magnet.

(2) Rods X and Y are magnets.

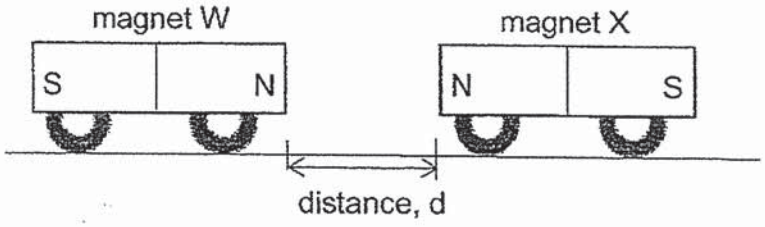
(3) Rods Y and Z are magnetic materials.

(4) Rod Z can be made into a temporary magnet.

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16 Mina secured two magnets, W and X, on top of two wheels each. The magnets were placed facing each other at a distance as shown below.



When Mina brought magnet W closer towards magnet X, magnet X started to move away from magnet W. She recorded the distance, d, after magnet X stopped moving away from magnet W.

She repeated the experiment by replacing magnet X with magnet Y and magnet Z. The results are shown in the table below.

magnet	distance, d (cm)
X	8
Y	2
Z	12

Which one of the following statements is correct about Mina's conclusion?

(1) Magnet Z is weaker than magnet Y.

(2) Magnet Y is stronger than magnet X.

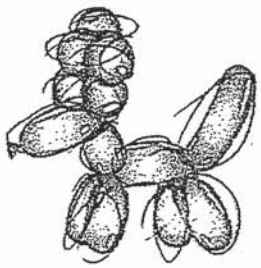
(3) Magnet Z is stronger than magnets X and Y.

(4) Magnets X and Y are stronger than magnet Z.

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17 A balloon sculptor inflated a long brown balloon and twisted it a few times into the shape of a dog.



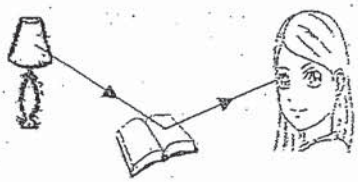
What properties of air were changed?

A mass of air
B shape of air
C colour of air
D volume of air

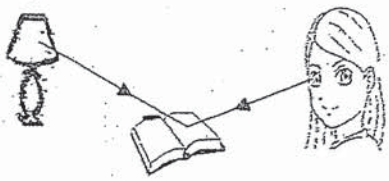
(1) C only
(2) A and C only
(3) B and D only
(4) A, B and D only

18 Li Ling was reading a book. Which one of the following diagrams allows Li Ling to read the book?

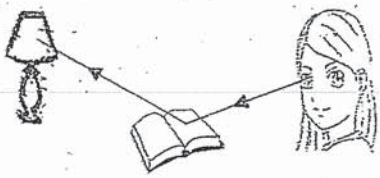
(1)



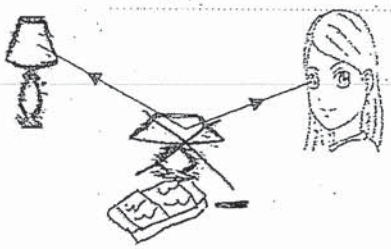
(2)



(3)

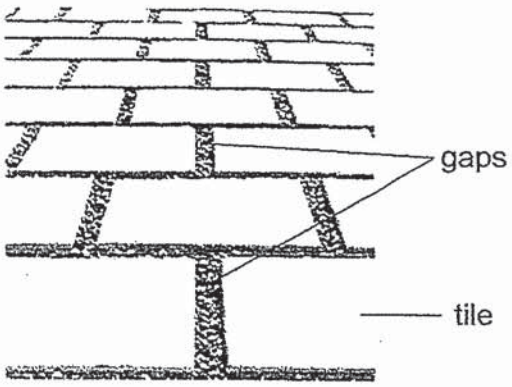


(4)



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19 The diagram shows that there are gaps in between the tiles.



What happens to the gaps as the temperature rises?

(1) The gaps become larger as the tiles expand.
(2) The gaps become larger as the tiles contract.
(3) The gaps become smaller as the tiles expand.
(4) The gaps become smaller as the tiles contract.

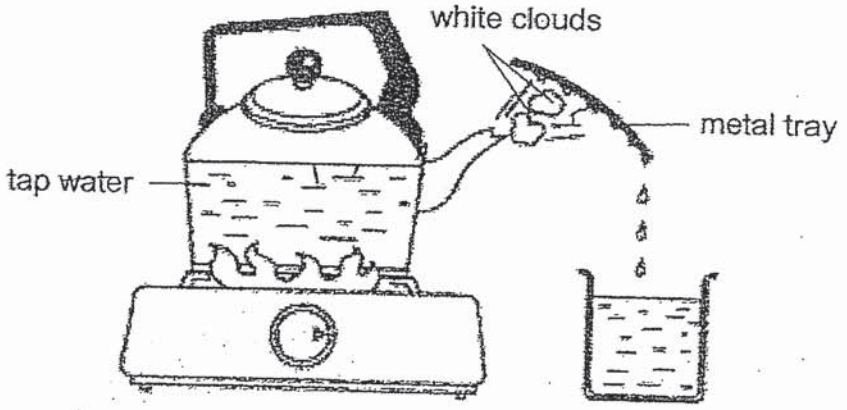
20 What will be the result of the following activities?

- Oil spills from ships at sea.
- Discharge of chemical wastes by factories into drains.
- Soil is blown into the river after the nearby trees are cut down.

(1) Desalination
(2) Water pollution
(3) Water conservation
(4) Water consumption

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21 A kettle containing some tap water was heated until it boiled. White clouds were seen coming out of the spout. A metal tray was placed above the spout of the kettle.



Which of the following statements about the experiment is **not** correct?

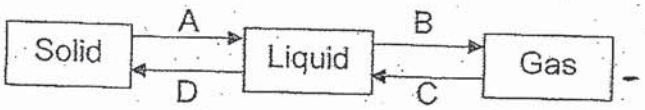
(1) The white clouds were made up of tiny water droplets.

(2) The tap water gained heat and turned into gaseous state which were the white clouds.

(3) The metal tray became warm eventually and fewer water droplets were formed on the tray.

(4) The hot water vapour from the spout touched the cooler surface of the metal tray, lost heat and condensed into water droplets.

22 The diagram below shows the change of states of a substance. The different processes are represented by A, B, C and D.



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

	A	B	C	D
(1)	freezing	condensation	melting	boiling
(2)	boiling	freezing	condensation	melting
(3)	melting	boiling	condensation	freezing
(4)	condensation	melting	boiling	freezing

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23 Mr Singh used four set-ups, W, X, Y and Z, as shown in the table below. He wanted to find out how temperature of water affects the rate of evaporation.

Conditions at the start of experiment	W	X	Y	Z
Volume of water (ml)	100	100	100	100
Temperature of room (°C)	28	20	28	28
Temperature of water (°C)	40	60	40	60
Exposed surface area of water (cm^3)	100	100	200	200

Which two set-ups should Mr Singh use to ensure a fair test?

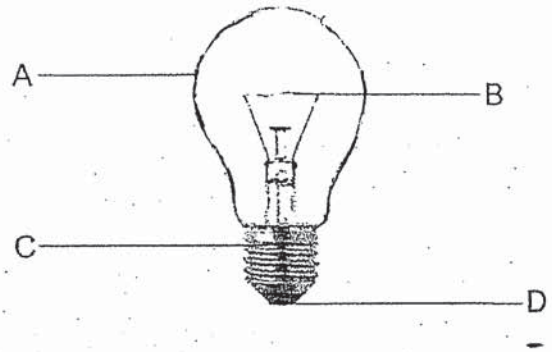
(1) W and Z

(2) X and W

(3) X and Y

(4) Y and Z

24 The diagram below shows a light bulb.



Which two parts of the light bulb must be connected properly in an electric circuit for the bulb to light up?

(1) A and B

(2) A and D

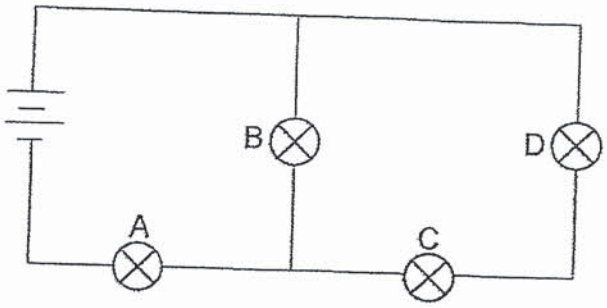
(3) B and C

(4) C and D

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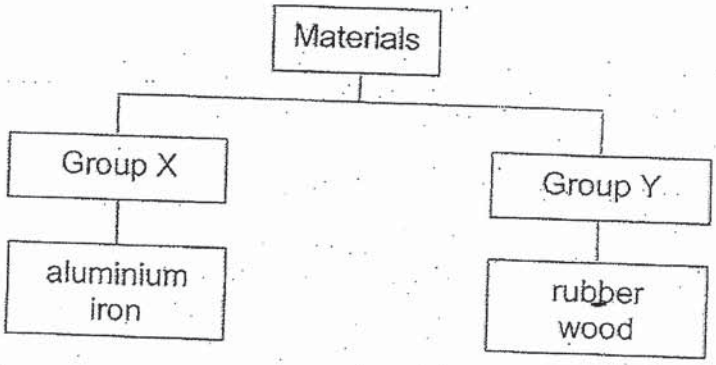
25 The diagram below shows four bulbs connected to two batteries.



When one of the bulbs is faulty, the other three bulbs will remain lit. Which bulb is faulty?

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

26 Study the chart below.

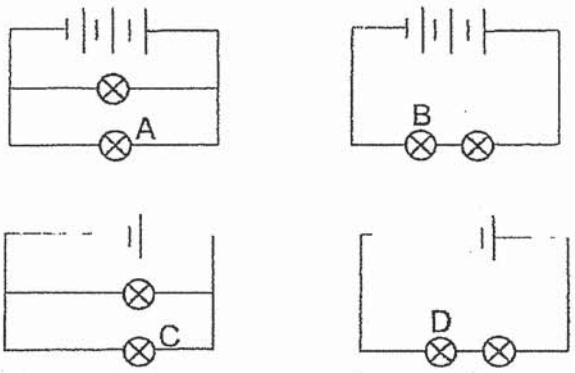


What are the suitable headings for Groups X and Y?

	Group X	Group Y
(1)	waterproof	non-waterproof
(2)	magnetic	non-magnetic
(3)	electrical conductors	electrical insulators
(4)	poor conductors of heat	good conductors of heat

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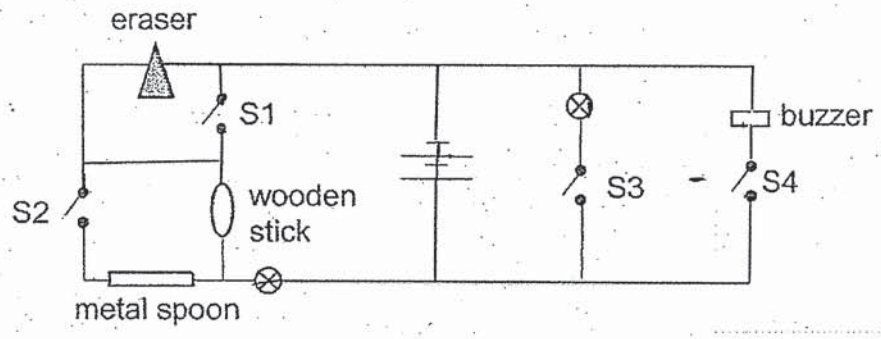
27 Identical bulbs and batteries are used in the circuit diagrams as shown below.



Which bulb is the dimmest?

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

28 Study the circuit below. There are four switches in the circuit.



Which of the following will result in the sounding of the buzzer and with only one bulb lighted up?

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

End of Booklet A

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CATHOLIC HIGH SCHOOL

MID-YEAR EXAMINATION (2019)

PRIMARY FIVE

SCIENCE

BOOKLET B

Name: _____ ( )

Class: Primary 5 - _____

Date: 16 May 2019

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

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 14 printed pages, excluding the cover page.

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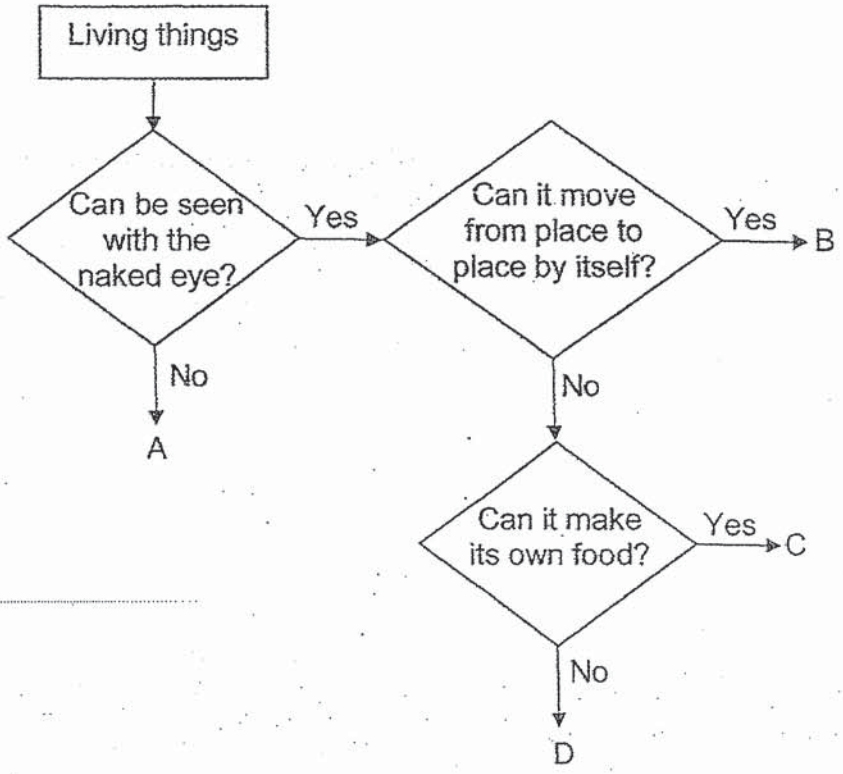
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Booklet B (44 marks)

For questions 29 to 41, 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 The chart below shows the similarities and differences among four living things.



(a) Based on the chart, which of the living things, A, B, C or D, is yeast? [1]

_____

(b) State one similarity between living things B and C. [1]

_____

_____

(c) State one difference between living things C and D. [1]

_____

_____

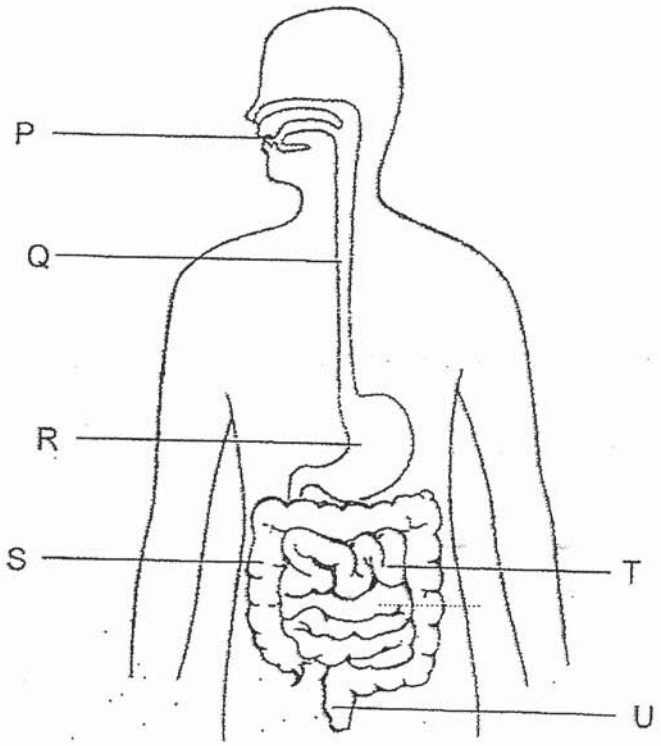
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SCORE	3

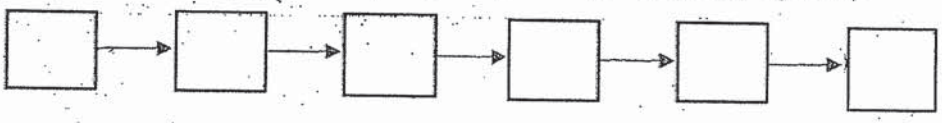
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30 The diagram below shows a human body system.



(a) Using the letters (P to U) given in the diagram above, list the organs in order of the undigested food passing through the body system. [1]



(b) Name the organs in which digestion does not take place. [1]

_____

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SCORE	2

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31 Sandra studied the life cycle of insect X. She recorded the number of days for each stage of its life cycle. Her results are shown in the table below. However, she did not present the stages of the life cycle in the correct order.

Stage	Number of days
Egg	2
Adult	4
Pupa	6
Larva	18

(a) Write down the stages of the life cycle in the correct order. [1]

egg → ☐ → ☐ → ☐

(b) Based on Sandra's results, how many days does it take for insect X to become an adult after the egg has hatched? [1]

_____

(c) How does laying many eggs each time help insect X to survive? [1]

_____

_____

(d) Insect X has wings and spends certain stages of its life cycle in the water. Name all the stages spent in water. [1]

_____

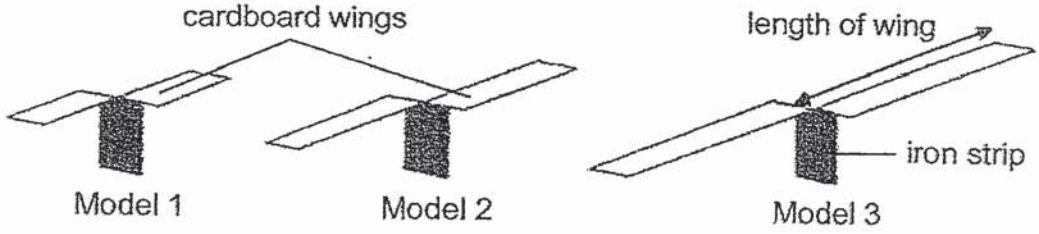
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SCORE	/ 4

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32 Max made three models using cardboard and iron strips as shown below. Each model was made of a pair of cardboard wings attached to an iron strip.



Max released the models, one at a time, from a height of 8 m. He recorded the time taken for each model to reach the ground in the table below.

Model	Time taken (s) for model to reach the ground		
	First reading	Second reading	Average reading
1	7.0	6.6	6.8
2	9.0	9.4	9.2
3	10.8	11.6	11.2

(a) Based on the results above, what is the relationship between the average time taken for the model to reach the ground and the length of wings? [1]

_____

_____

(b) State one other variable Max had to keep constant in order to have a fair test. [1]

_____

(c) Some fruits have large wing-like structures that enable the seeds to be dispersed further away from the parent plants. Explain why this is an advantage to the plants. [1]

_____

_____

(d) Fruit X is dispersed the same way as a fruit with wing-like structure. Name another characteristic that fruit X would have. [1]

_____

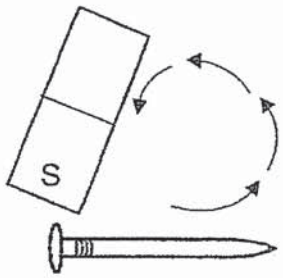
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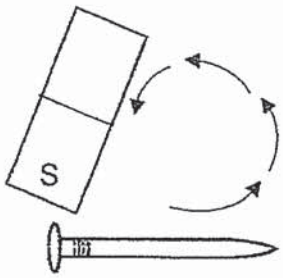
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33 Jessie made her own magnets by using the stroking method. She stroked two similar iron nails with two similar magnets as shown below.



iron nail A



iron nail B

(a) What would Jessie observe when she brought iron nails A and B close to some steel paper clips? [1]

(b) What would Jessie observe if she stroked iron nail A twice as many times as iron nail B? [1]

(c) What could Jessie do to cause the iron nails to lose their magnetism? [1]

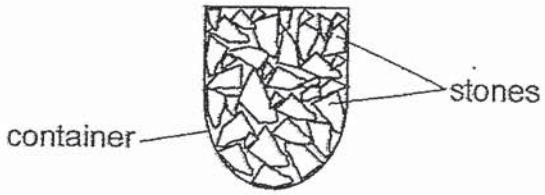
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SCORE	3

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34 Raju filled a container completely with 250 cm^3 of stones as shown below.



(a) Identify the state(s) of matter found in the above container. [1]

_____

(b) Tick (√) the box that shows the volume of the container. [1]

Volume of the container	Tick (√) the correct volume of the container
below 250 cm^3	
exactly 250 cm^3	
above 250 cm^3	

(c) Explain your answer in (b). [1]

_____

_____

(d) Raju wanted to measure the volume of a single stone. He was given a beaker with some water in it.

Arrange the following procedures in the correct order by writing 1, 2, 3 and 4 in the boxes to show the correct sequence. [1]

Procedure	Step
Calculate the difference in the water level	
Take the initial reading of the water level in the beaker	
Put the stone into the beaker of water	
Take the final reading of the water level in the beaker	

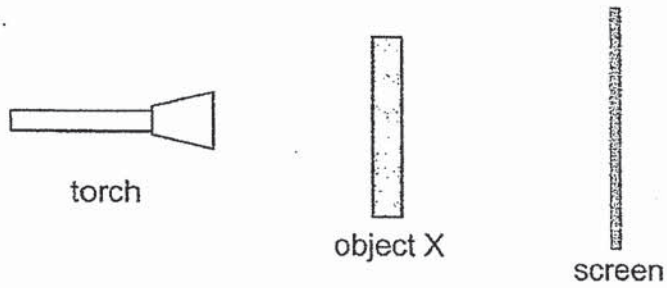
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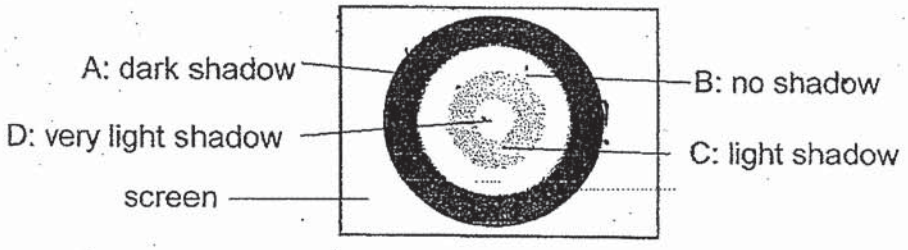
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35 An experiment was conducted to find out how different materials allow light to pass through. Object X, which is made of four different materials, A, B, C and D, is placed in between a torch and a screen as shown below.



When the torch was shone at object X, a shadow as shown on the screen below was formed.



(a) A light sensor was used to measure the amount of light that passed through object X. Match the shadows of materials A, B, C and D to the correct amount of light recorded. [2]

Amount of light (units)	71	100	0	93
Material				

(b) Which material, A, B, C or D, could be clear glass and cardboard? Write the correct letter in the box below. [1]

clear glass	
cardboard	

(c) How can the size of the shadow be increased without moving the screen? [1]

_____

_____

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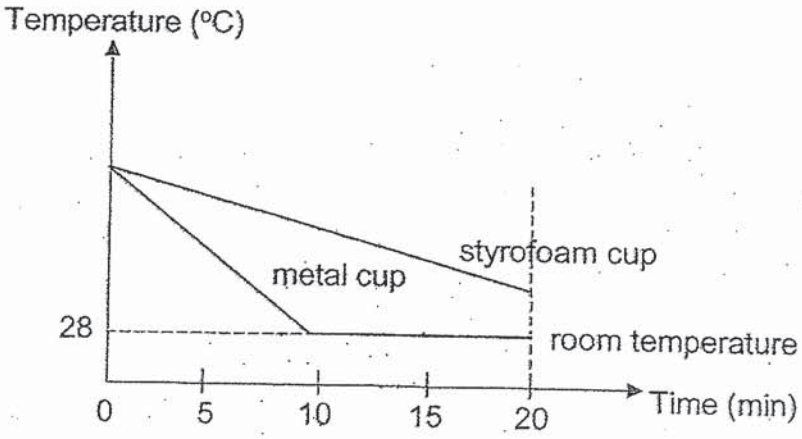
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36 The two cups below are of the same size but made of different materials. They are each filled with 250 ml of hot coffee.


metal cup


styrofoam cup

The graph below shows the changes in the temperature of coffee in each cup when the cups are left at room temperature.



(a) What causes the temperature of coffee in each cup to decrease? [1]

(b) Based on the graph, which cup should be used if the coffee needs to stay warm for a longer period of time? Give a reason for your answer. [1]

(c) What can be concluded from the results in the graph? [1]

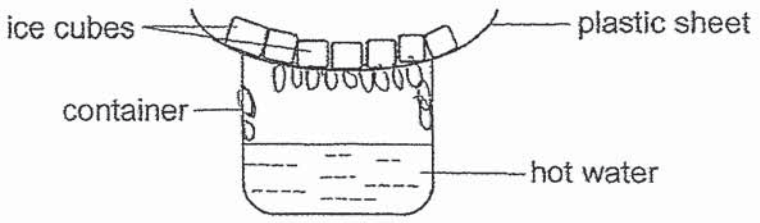
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37 Jun Xiang set up an experiment as shown below.



(a) What would Jun Xiang observe after a few minutes? [1]

_____

_____

(b) Why did Jun Xiang place ice cubes on the plastic sheet? [1]

_____

_____

(c) What is the relationship between the temperature of hot water and the rate of evaporation? [1]

_____

_____

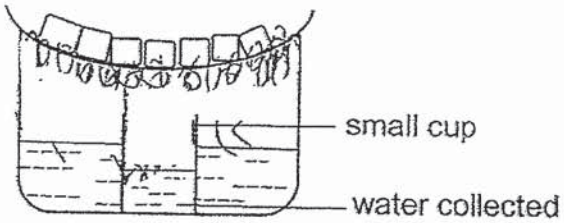
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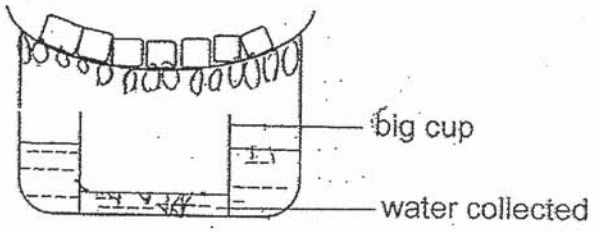
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(d) Jun Xiang placed a small cup inside the container and observed for three hours.



He repeated the experiment with a big cup as shown below.



He observed that less water was collected in the big cup than in the small cup. Explain why. [2]

_____

_____

_____

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38 The table below shows the melting and boiling points of four substances, P, Q, R and S.

Substance	Melting Point (°C)	Boiling Point (°C)
P	50	130
Q	175	300
R	100	275
S	0	100

(a) Based on the table above, write down the states of the four substances at 125°C. [2]

Substance	State
P	
Q	
R	
S	

(b) Which substance is most likely to be pure water? Give a reason to support your answer. [1]

_____

_____

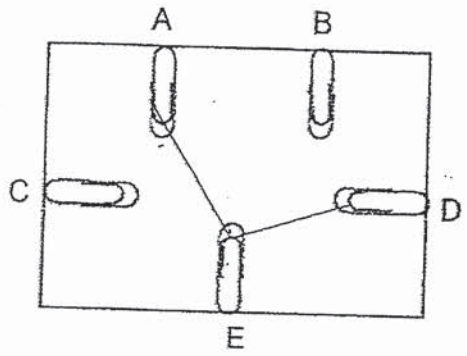
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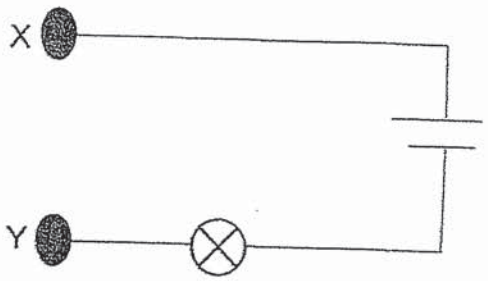
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39 The diagram below shows a circuit card and a circuit tester. Two points were connected to points X and Y of the circuit tester each time and the results were recorded.



circuit card



circuit tester

(a) Based on the connections shown in the above circuit card, complete the following table by writing a 'Yes' or a 'No'. [3]

Points at which the tester is connected	Does the bulb in the tester light up? Write 'Yes' or 'No'.
A and B	
A and E	
B and C	
B and E	
C and D	
D and E	

(b) Will the bulb light up if X and Y of the circuit tester is connected to only point A? Explain your answer. [1]

_____

_____

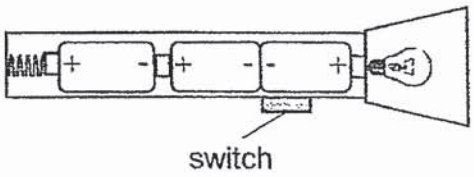
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40 Elly had just placed three new batteries into a torch. However, the torch did not work when the switch was turned on.



(a) Based on the diagram, state the reason why the torch did not work. [1]

_____

_____

(b) Even after Elly has corrected the reason stated in (a), the torch did not work. What could have been another possible reason? [1]

_____

_____

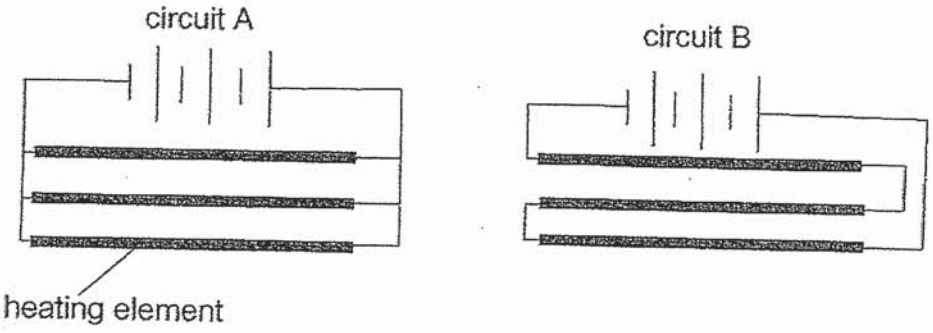
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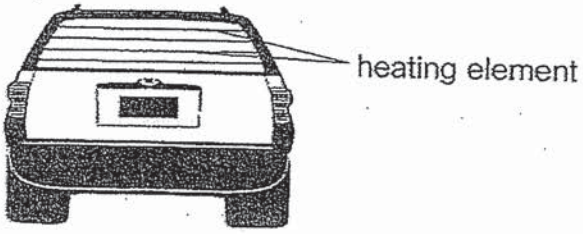
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41 A heating element gives off heat when electric current flows through it. These heating elements are found at the back windscreen of cars. The diagram below shows two different ways of connecting the heating elements in the circuits.





(a) Name the arrangements of the heating elements in circuits A and B. [1]

Circuit A: _____

Circuit B: _____

(b) Which circuit, A or B, should be used in the car? Explain your answer. [1]

_____

_____

(c) State two properties of the heating elements that make it suitable to be used in the back windscreen of a car. [1]

_____

_____

End of Booklet B

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ANSWER KEY

YEAR : 2019
LEVEL : PRIMARY 5
SCHOOL : Catholic High School
SUBJECT : Science
TYPE : Mid Year Examination

Booklet A

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

Booklet B

Q29.

a) Living thing A
b) It could be seen with the naked eye.
c) C can make its own food while D cannot.

Q30.

a) P,Q,R,T,S,U
b) Large intestine, gullet.

Q31.

a) Larva, Pupa, Adult
b) 24 days
c) If some eggs get eaten by predators, it will still help to increase the chances of eggs hatching and growing into adults.
d) Egg, Larva, pupa.

Q32

:he length of the wing is longer, the time taken to reach the ground is longer.
ss of iron strip.

c) It is to reduce overcrowding such as competition for water, space, nutrients and sunlight.
d) It is light.

Q33.

a) The steel paper clips will be attracted.
b) Iron nail A will attract more steal paper clips than iron nail B.
c) She can drop it several times.

Q34.

a) Gas and solid

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b) Above 250
c) There is some air in between the stones and air occupies space so the total volume of the container should be more than 250cm cube.
d) 4,1,2,3

Q35.
a) C,B,A,D
b) B,A
c) Move the torch closer to the object.

Q36.
a) The coffee loses heat to the surrounding air.
b) Styrofoam cup. The temperature of the coffee in the styrofoam cup remains above room temperature at the 20th minute.
c) The metal cup is a better conductor of heat than the Styrofoam cup.

Q37.
a) Ice cubes are melting. Water droplets formed on the underside of the plastic sheet. Water droplets formed in the inner surface of the container.
b) To make the plastic sheet cooler so that condensation can take place faster.
c) As the hot water gets hotter, it evaporates faster.
d) The exposed surface area of the water in the container in set up 2 is smaller so the rate of evaporation of water is slower which in turn result in lesser water vapour formed and hence condensation is also slowed down.

Q38.
a) Liquid, Solid, Liquid, Gas
b) Substance S. Pure water boils at 100 degree Celsius and has a melting point of 0 degree Celsius, which is the same as substance S.

Q39.
a) No, Yes, No, No, No, Yes.
b) Yes. At point A, its an electrical conductor so electric current can flow through the closed circuit.

Q40.
a) The positive ends for the batteries was connected but in order for the bulb to light up, the positive and negative end must be connected.
b) The bulb fused.

Q41.
a) Circuit A: Parallel Circuit B: Series
b) A. The heating elements are arranged in parallels so if one heating element is faulty, the others will still heat up.
c) Conductor of electricity. Good conductor of heat. High melting point.

END.

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