METHODIST GIRLS' SCHOOL

Founded in 1887

END-OF-YEAR EXAMINATION 2022
PRIMARY 3
SCIENCE

BOOKLET A

Total Time for Booklets A and B: 1 hour 30 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.

Name _____ ( )

Class: Primary 3._____

Date : 31 October 2022

This booklet consists of 16 printed pages including this page.

For each question from 1 to 23, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS). [46 marks]

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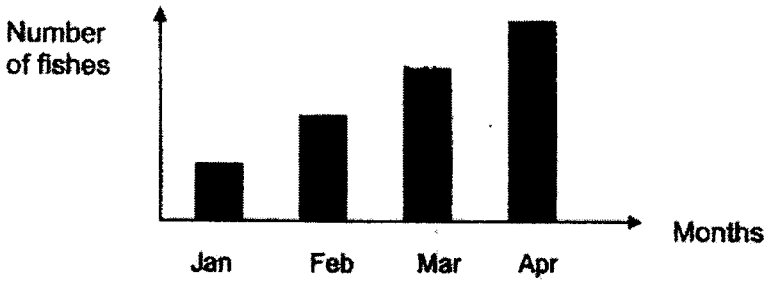
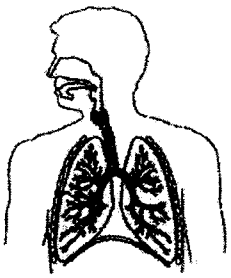
1 Sam puts five fishes in a tank in January and feeds them every day. He did not add in new fishes into the tank. He recorded his observations of the fishes over the next four months.



Which characteristic of living things did Sam observe about the fishes based on the graph above?

(1) They grow bigger.
(2) They move by themselves.
(3) They respond to their surrounding.
(4) They reproduce and increase in number.

2 Study the human system X below.



- It takes in air into the body.
- One of its organs is protected by the ribcage.

Which one of the following is also a function of human system X?

(1) It gives the body a shape.
(2) It removes air from the body.
(3) It removes undigested food from the body.
(4) It transports water to all parts of the body.

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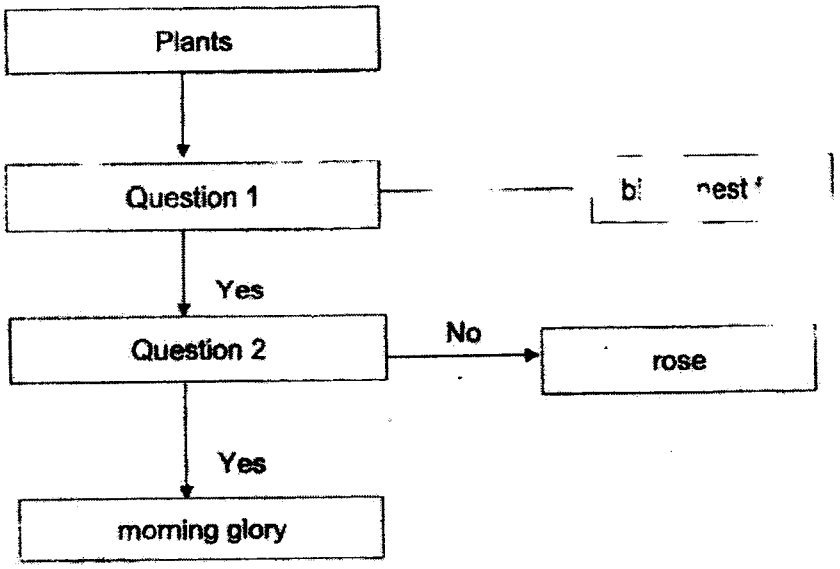
3 Three plants are classified in the flowchart as shown below.


morning glory


bird's nest fern


rose



What are questions 1 and 2?

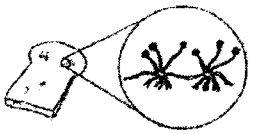
	Question 1	Question 2
(1)	Does it have a weak stem?	Does it reproduce by se ?
(2)	Does it reproduce by seeds?	Does it have a weak stem?
(3)	Does it have a weak stem?	Does it reproduce by spores?
(4)	Does it reproduce by spores?	Does it have a weak stem?

(Go on to the next page)

4 Four students, each made a statement about the living things as shown below.


banana plant


squirrel


bread mould

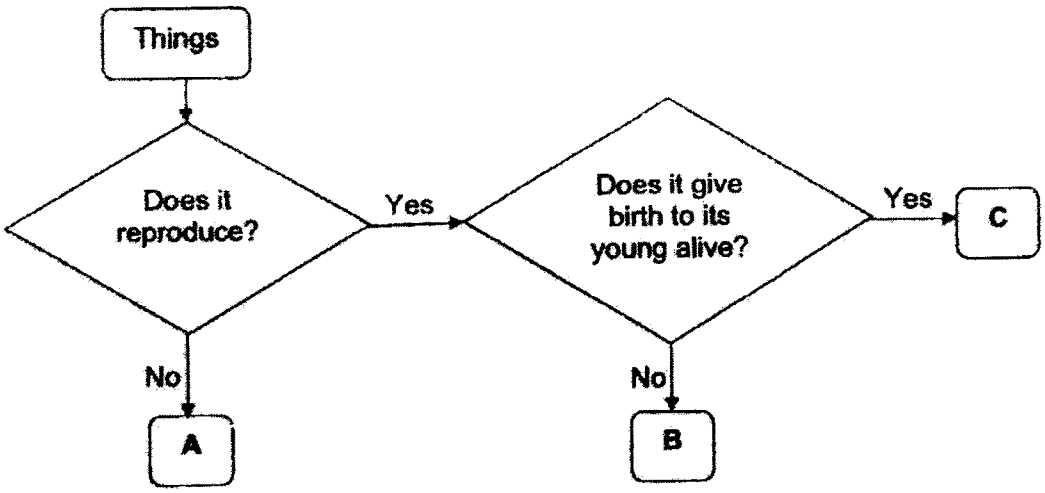
Amy:	The banana plant bears fruits so it is a flowering plant.
Betty:	The banana plant and bread mould are fungi but the squirrel is an animal.
Candice:	The bread mould is a type of non-flowering plant.
Dennis:	The banana plant can make its own food but the squirrel and bread mould cannot make its own food.

Who made the statements that are correct?

(1) Amy and Betty only
(2) Amy and Dennis only
(3) Betty and Candice only
(4) Candice and Dennis only

(Go on to the next page)

5 Study the flowchart below carefully.

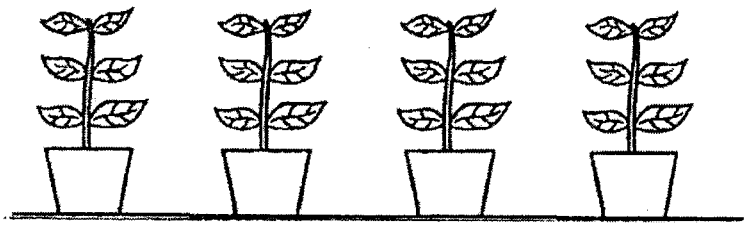


Which of the following could be A, B and C?

	A	B	C
(1)	ruler	crocodile	brick
(2)	brick	frog	bat
(3)	ruler	crocodile	parrot
(4)	cat	brick	bat

(Go on to the next page)

6 Siti wanted to find out whether the amount of fertilizer affects the growth of a plant. She used four identical potted plants and gave each of them the same amount of water as shown below.



0g fertilizer 10g fertilizer 20g fertilizer 50g fertilizer

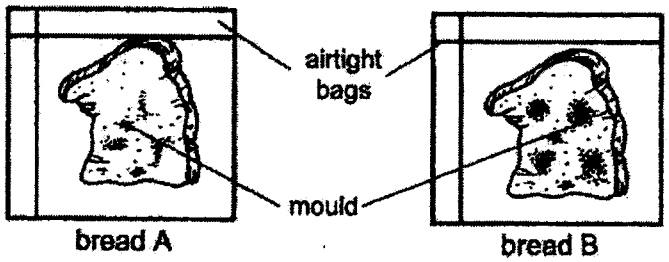
To ensure a fair test, which variables should Siti keep the same?

A Type of potted plant
B Type of fertilizer used
C Amount of fertilizer used
D Amount of sunlight each plant received

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

7 Johnny did an experiment with two similar slices of bread, A and B. He placed them into airtight bags. Then, he placed bread A in the refrigerator and bread B on the table.

After three weeks, he observed the following on each slice of bread as shown below.



Based on Johnny's experiment, what could he conclude about the growth of mould on the bread?

(1) Mould does not need food to grow.
(2) Mould does not need water to grow.
(3) Mould grows faster when there is more water.
(4) Mould grows faster when the surroundings are warm.

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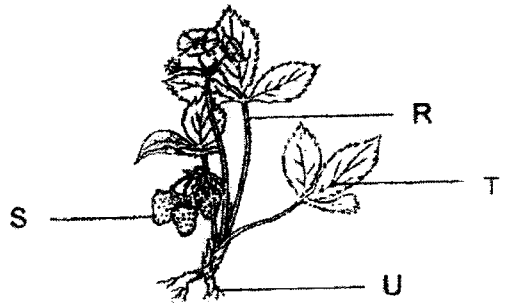
8 The diagram below shows a strawberry plant with parts labelled R, S, T and U.



The plant will not be able to absorb water and mineral salts if Part _____ is removed.

(1) R
(2) S
(3) T
(4) U

9 Janet had two similar plants, R and S, as shown in the diagram below. She cut off all the roots of plant S but not the roots of plant R. She then put both pots of plants in the garden.

plant R
roots were not cut off

plant S
roots were all cut off

After a thunderstorm, one of the two plants fell out of the pot.
Which plant fell out and why?

	Plant	Reason
(1)	R	The roots of the plant took in too much water.
(2)	R	The roots of the plant were unable to hold the plant firmly to the soil.
(3)	S	The plant had no roots to take in enough water.
(4)	S	The plant had no roots to hold the plant firmly to the soil.

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10 Diagram 1 shows a plant with parts labelled V, W, X and Y.
Diagram 2 shows tiny openings that can be found on one part of the plant.

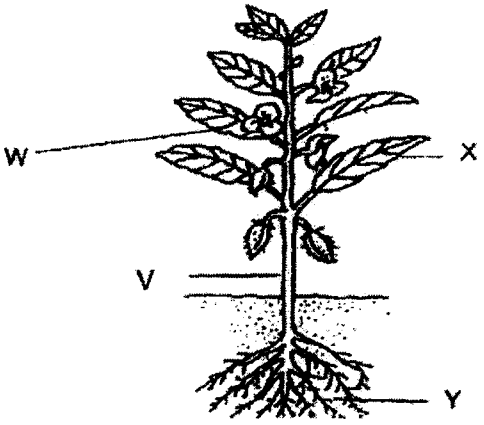

Diagram 1

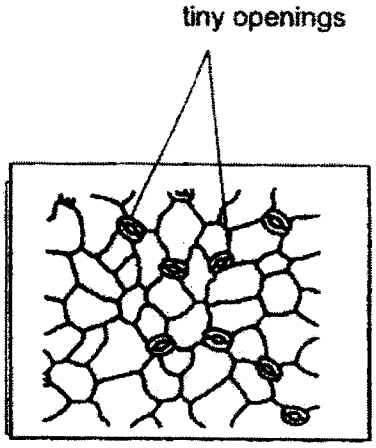

Diagram 2

Which part of the plant can these tiny openings be found and what is its function?

	Part of the plant	Function
(1)	V	To take in food
(2)	W	To absorb sunlight
(3)	X	To take in and give out air
(4)	Y	To absorb water and mineral salts

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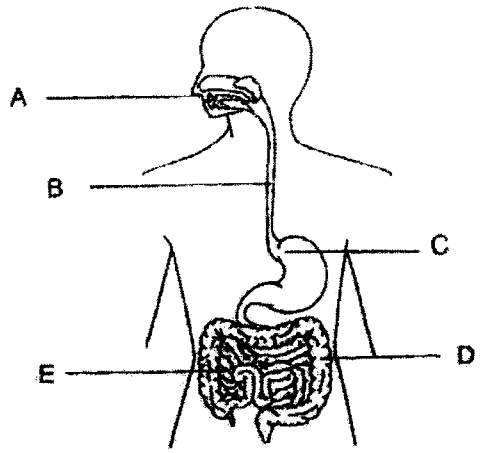
11 The diagram below shows the human digestive system.



Which of the following shows how food travels through the digestive system?

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

12 David wanted to find out if the amount of water affected the growth of mushrooms on tree logs, A, B and C as shown below.

log A – open field
5 ml of water

log B – garden
10 ml of water

log C – science lab
15 ml of water

David's teacher told him that he did not conduct a fair experiment. What should he do to conduct a fair test?

(1) Increase the length of log A.
(2) Add more mushrooms to log B.
(3) Reduce the amount of water for log C.
(4) Put all the three logs in the same place.

(Go on to the next page)

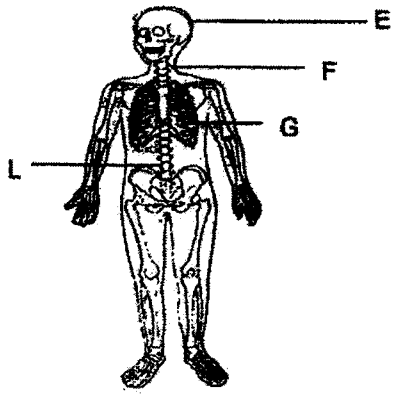
13 Lily wants to find out the type of food that insect Q prefers to eat. She prepares four set-ups using similar containers for her experiment.

Set-up	Number of insect Q	Type of food	Amount of food (g)
A	10	oats	30
B	20	oats	50
C	10	bread	30
D	15	bread	50

Which two set-ups should she compare to ensure that it is a fair test?

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

14 Study the diagram of the skeletal system.



Which parts of the skeletal system protects the brain, heart and lungs respectively?

	Brain	Heart	Lungs
(1)	E	G	G
(2)	E	F	G
(3)	F	G	L
(4)	F	L	G

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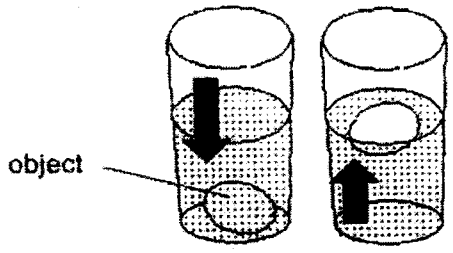
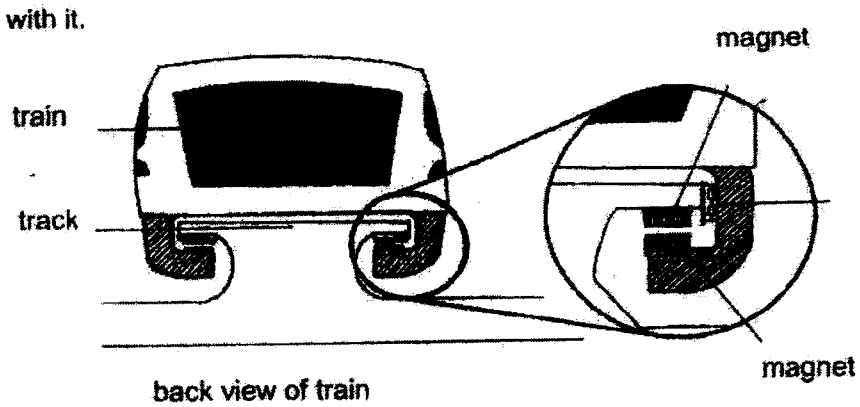
15 Boon Teck pushed an object to the bottom of a container of water as shown below.



When Boon Teck took away his hand, he observed that the object moved back up to the surface of the water. The arrow signs show the direction of the movement of the object. Which property of material did he test?

(1) Strength
(2) Flexibility
(3) Waterproof
(4) Ability to float or sink

16 A "Maglev" train is a special train that is able to move above the track without any contact with it.



back view of train

Which one of the following statements explains how the magnets are able to keep the "Maglev" train above the track?

(1) Like poles of the magnets repel
(2) Like poles of the magnets attract
(3) Unlike poles of the magnets repel
(4) Unlike poles of the magnets attract

(Go on to the next page)

17 Ahmad used the stroke method to magnetise an iron rod as shown in diagram 1 below. After stroking it 10 times, he brought the iron rod near a tray of paper clips and saw that it attracted four of them as shown in diagram 2 below.

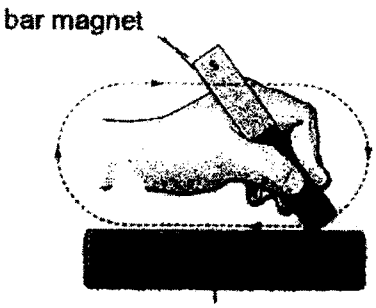


Diagram 1

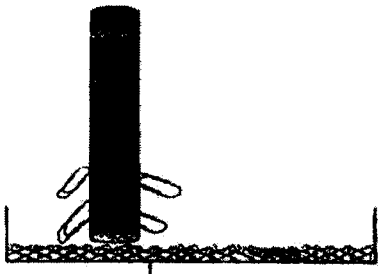


Diagram 2

What should Ahmad do if he wants to attract more paper clips?

(1) Use a rod magnet
(2) Change the iron rod to a copper rod
(3) Stroke the rod 20 more times in the same direction
(4) Use the south pole of the magnet to stroke the iron rod 20 times

18 Meena wears a raincoat to keep out the rain as shown below.

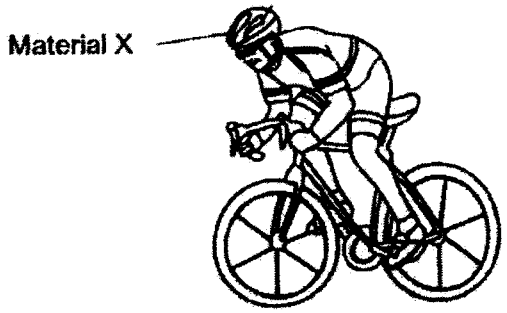
What properties of the material make it suitable for making the raincoat?

A Strong
B Flexible
C Waterproof
D Transparent

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

(Go on to the next page)

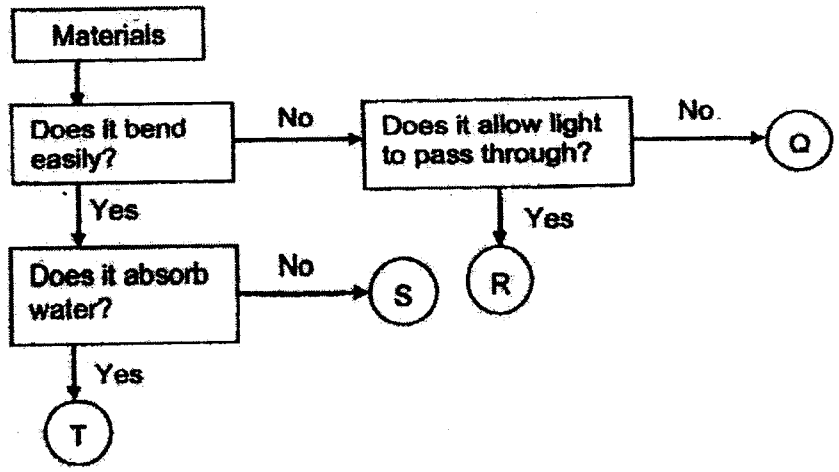
19 Bryan wears a helmet whenever he rides a bicycle to protect his head.



What can material X be and what is the reason that makes it suitable to make the helmet?

	Material	Reason
(1)	Metal	It is strong and flexible.
(2)	Metal	It is strong and transparent.
(3)	Plastic	It is strong and waterproof.
(4)	Plastic	It is transparent and waterproof.

20 Study the flowchart as shown below.



Which material is suitable to be used to make a floor tile?

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

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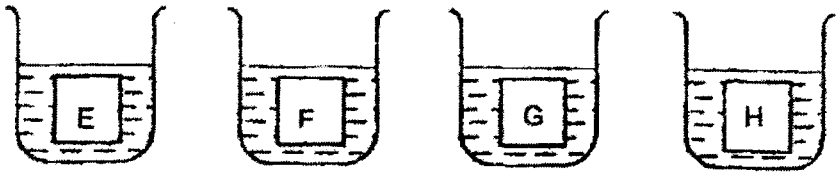
21 Four pieces of different materials, E, F, G and H, of the same size were each weighed before they were put into the beakers of water as shown below.



After 15 minutes, each piece was weighed again. Their masses were recorded in the table below.

Material	Mass at the beginning (g)	Mass after 15 minutes (g)
E	10	15
F	15	15
G	10	20
H	15	20

Which material is most suitable for making a bath towel?

(1) E
(2) F
(3) G
(4) H

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22 Diagram 1 below shows a ring magnet lowered onto a tray of steel pins.
Diagram 2 shows the bottom view of the ring magnet labelled parts X, Y and Z.

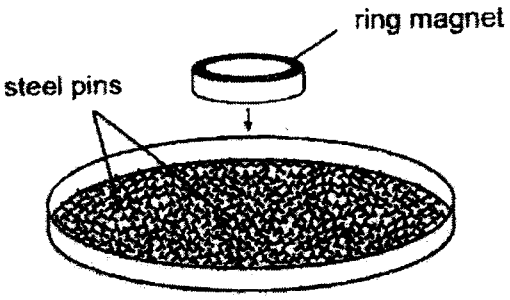

Diagram 1

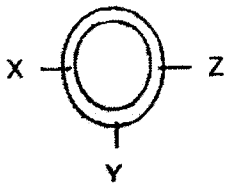

Diagram 2
Bottom view of magnet

What would be the most likely observation?

(1) Parts X, Y and Z will not attract any steel pins because the ring magnet has no poles.

(2) Part Y will attract the least number of steel pins as the centre of the magnet has the weakest magnetic force.

(3) Parts X, Y and Z will attract the same number of steel pins as the magnetic strength is the same at different positions.

(4) Parts X and Z will attract the greatest number of steel pins as the poles of the magnet have the strongest magnetic force.

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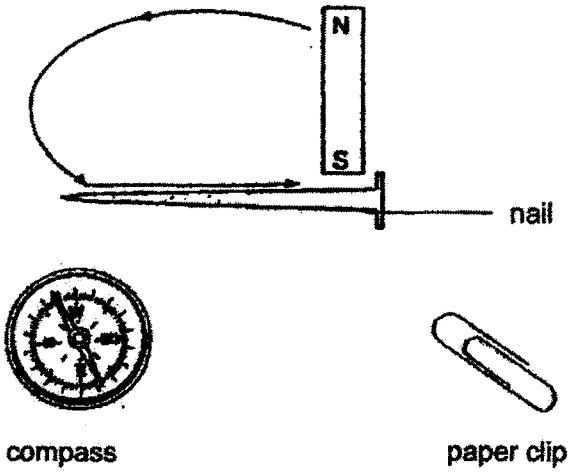
23 Raju wanted to find out whether a nail was magnetized by the stroke method. He placed the nail near a compass and a paper clip.



He recorded his observations below.

A The nail attracted the paper clip.
B When the nail was brought near to the compass, the compass needle moved.
C When suspended freely, the nail stopped moving and points in the East-West direction.

Which of the observations help Raju to conclude that the nail was magnetised?

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

End of Booklet A

METHODIST GIRLS' SCHOOL

Founded in 1887

END-OF-YEAR EXAMINATION 2022
PRIMARY 3
SCIENCE

BOOKLET B

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES
Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.

Name: _____ ( )

Class: Primary 3._____

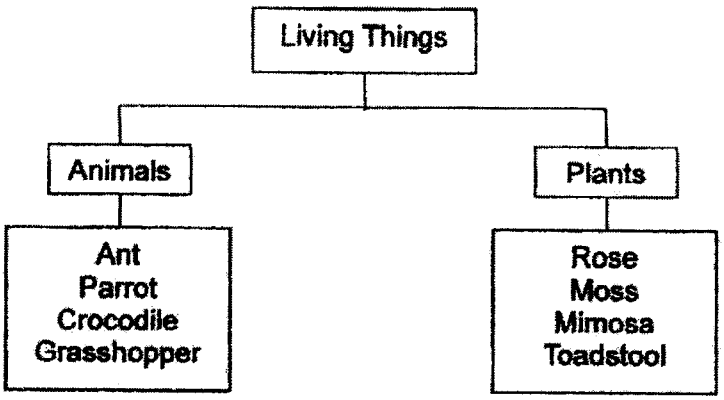
Date : 31 October 2022

Booklet A	46
Booklet B	24
Total	70
Parent's Signature	

This booklet consists of 11 printed pages including this page.

For questions 24 to 30, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question. [24 marks]

24 Study the classification chart below carefully.



(a) Based on the classification chart above, which living thing is wrongly classified? Give a reason for your answer. [1]

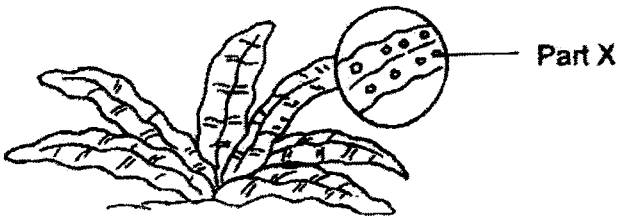
(b) Give an example of an organism that belongs to the same group of living things as your answer in (a). [1]

(c) How do plants and animals get their food? [1]

3

(Go on to the next page)

25 Study the picture of the bird's nest fern below.



(a) What is Part X that is found on the underside of the leaves of the bird's nest fern? [1]

_____

(b) What is the function of Part X? [1]

_____

_____

(c) Which group of living things does the bird's nest fern belong to? [1]

_____

3

(Go on to the next page)

26 The picture below shows animal E.

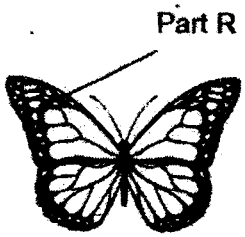
Animal E

Which animal group does E belongs to? State one characteristic to explain your answer. [1]

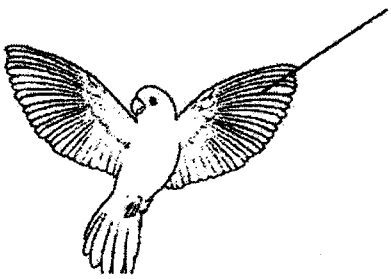
(a) _____

_____

Study animals F and G as shown below.



Animal F



Animal G

(b) How do both animals F and G move with their body parts, R and S? [1]

_____

_____

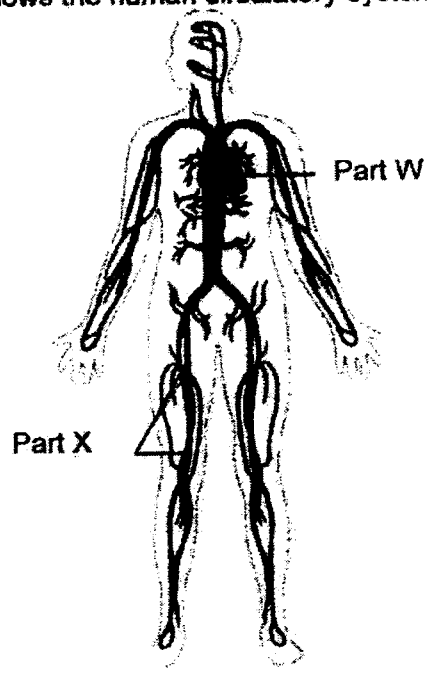
(c) How do animals E, F and G reproduce? [1]

_____

3

(Go on to the next page)

27 The diagram below shows the human circulatory system.



(a) Name Parts W and X of the human circulatory system. [1]

Part W: _____ Part X: _____

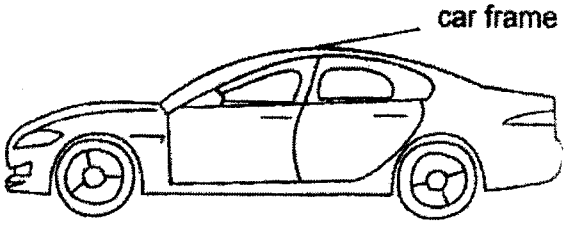
(b) Blood found in the human system above carries substances around the body. Name all the substances that are carried by the blood to all parts of the body. [1]

_____

_____

(Go on to the next page)

Study the car frame as shown in the diagram below.



(c) Name the human body system that serves the same function as the car frame. [1]

_____

(d) How is the function of the car frame similar to the human body system you have identified in (c)? [1]

_____

_____

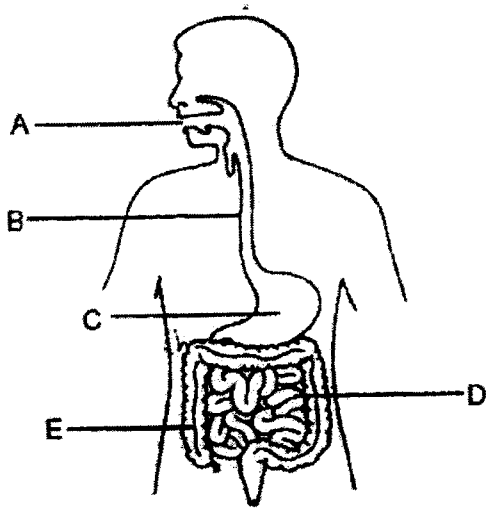
(e) What does the system identified in (c), together with the muscular system enable us to do? [1]

_____

5

(Go on to the next page)

28 The diagram below shows parts A, B, C, D and E of the human digestive system.



(a) Which part(s) A, B, C, D and/or E, of the human digestive system produce(s) digestive juices? [1]

_____

(b) Name the part of the digestive system which absorbs water from undigested food. [1]

_____

(c) Put a tick (✓) in the correct boxes for the statements below. [1]

Statement	True	False
Food is fully digested in part C.		
Digested food passes through the walls of part E.		

3

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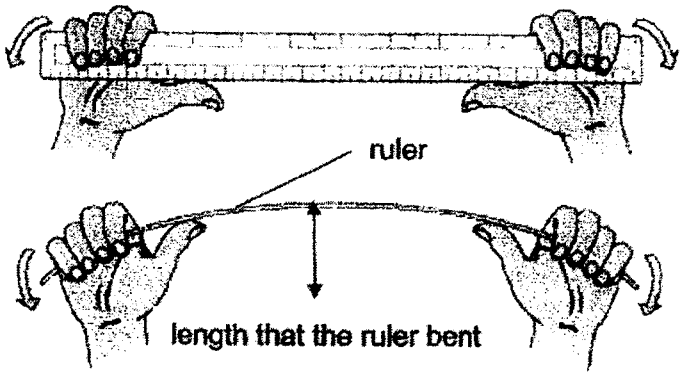
29 Lynn had three rulers made of different materials, X, Y and Z. She then measured the length each ruler could bend.



She recorded the results as shown in the table below.

Material	Length that the ruler bent (cm)
X	10
Y	1
Z	5

(a) Based on the results, which material X, Y or Z is the least flexible? Explain why. [1]

(Go on to the next page)

Lynn's brother wore a life vest during his canoeing practice.

(b) Based on the results, which material X, Y or Z is most suitable for a life vest? Explain why. [1]

_____

_____

(c) State a property of material that makes the canoe safe for its use. [1]

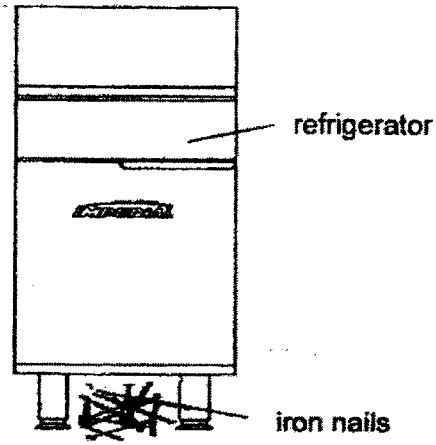
_____

_____

3

(Go on to the next page)

30 Su Mei accidentally dropped a box of iron nails onto the floor and about 10 iron nails rolled under the refrigerator as shown below.



She tried to use a small magnet to retrieve the iron nails under the refrigerator.

(a) Su Mei observed that 5 iron nails moved towards the magnet. Explain why the iron nails moved. [1]

_____

_____

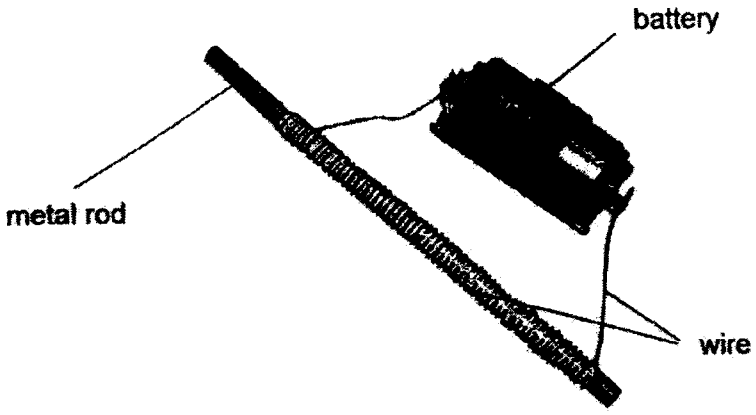
(b) State one reason why the remaining iron nails did not move towards the magnet. [1]

_____

_____

(Go on to the next page)

She thought of an idea to retrieve her remaining iron nails using the set-up as shown below. She pushed it under the refrigerator and managed to get back 3 iron nails this time.



(c) Explain how Su Mei managed to get back the 3 iron nails using the set-up above. [1]

_____

_____

(d) State one change Su Mei could make to her setup mentioned in (c) to retrieve the remaining 2 iron nails without changing the metal rod. [1]

_____

_____

End of Booklet B

4

YEAR : 2022
LEVEL : PRIMARY 3
SCHOOL : METHODIST GIRLS' SCHOOL
SUBJECT : SCIENCE
TERM : END OF YEAR EXAMINATION

(BOOKLET A)

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

(BOOKLET B)

Q24

(a) Toadstool, because it is a type of fungi, not a plant as it does not make its own food and instead feeds on other organisms, dead or alive.

(b) Mould.

(c) Plants make their own food by trapping sunlight, and animals eat other organisms, such as plants and even other animals.

Q25

(a) Spores.

(b) Part X helps the bird's nest fern to reproduce, so it will not go extinct.

(c) Plants

Q26

(a) Insects. Animal E has three body parts, and all insects have three body parts.

(b) Parts R and S help animas F and G to fly when the two parts move back and forth.

(c) They lay eggs.

Q27

(a) Part W: Heart
Part X: Blood vessels

(b) Digested food, oxygen, water and minerals.

(c) Skeletal system

(d) It protects the things inside, support and gives the car shape, like how the skeletal system protects some of the organs inside it, gives the body shape and support it.

(e) They enable us to move.

Q28

(a) A, C, and D

(b) Large intestine

(c)

Statement	True	False
Food is fully digested in part C.		✓
Digested food passes through the walls of part E.		✓

Q29

(a) Y, because it bent the least out of the three materials, so it is the least flexible.

(b) X. It is the most flexible as it bent 10cm. Thus, it is the most comfortable for the user to wear the life vest.

	(c)	It is able to float on water, so it will not sink.
Q30	(a)	They are made of magnetic materials, so they were attracted to the magnet.
	(b)	The magnet's magnetic force is not strong enough to attract all the iron nails.
	(c)	She turned the metal rod into an electromagnet by using the electrical method, and the magnetic force was stronger.
	(d)	She can increase the number of batteries.