Anglo-Chinese School
(Primary)

A Methodist Institution
(Founded 1886)

**SEMESTRAL ASSESSMENT TWO 2022**
**SCIENCE**
**PRIMARY THREE**
**BOOKLET A**

**Name:** _____ ( ) **Class: Primary 3** ____

**Date: 28 October 2022** **Total Time for Booklets A and B: 1 h 45 min**

**INSTRUCTIONS TO CANDIDATES**

1. Write your name, index number and class in the spaces provided.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answer on the Optical Answer Sheet (OAS) provided.

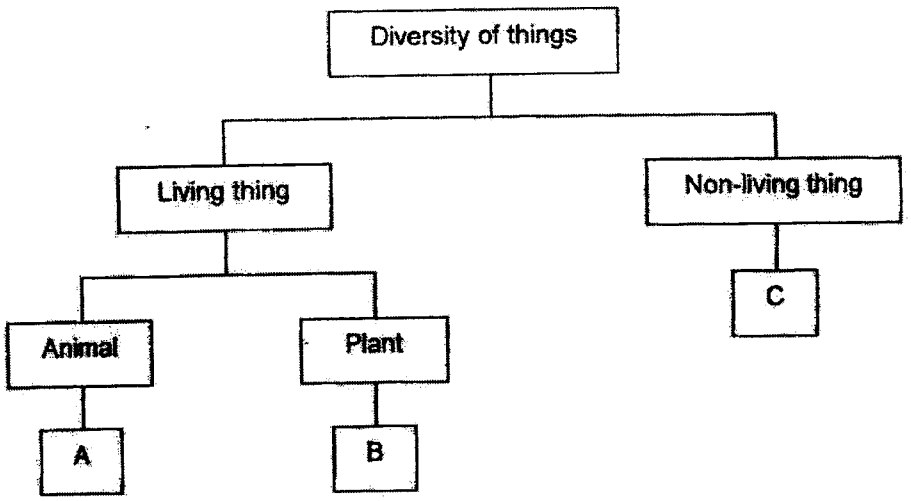
This question paper consists of 17 printed pages including this cover page.

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For each question from 1 to 22, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet. (44 marks)

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1 The classification chart shows how three things are grouped.

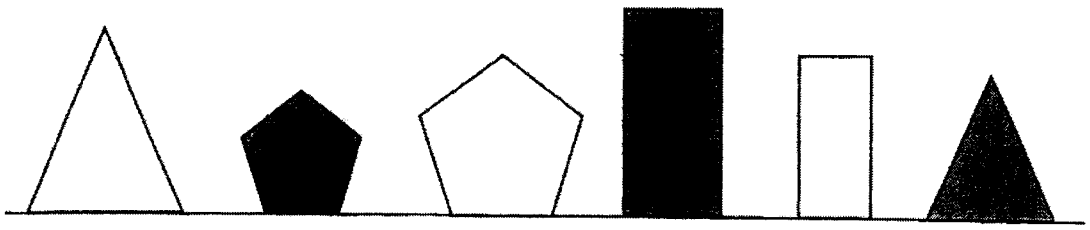



Which of the following is correct?

| | A | B | C |
|---|---|---|---|
| (1) | Fish | Mushroom | Clock |
| (2) | Snail | Fan | Magnet |
| (3) | Moss | Rose | Spoon |
| (4) | Snake | Fern | Cup |

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2 Study the six objects carefully.



Tom can classify them based on the following characteristics:

A Shape

B Colour

C Number of sides

Which of the following characteristic(s) should he use if he wants to classify the objects into two groups only?

(1) A only

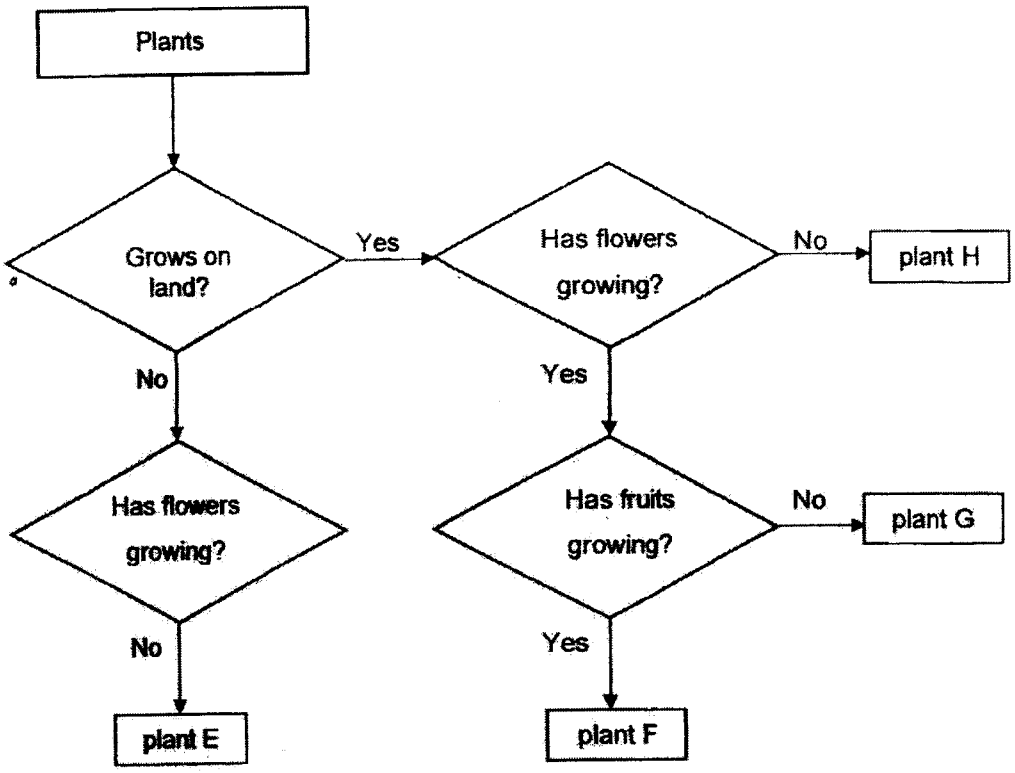
(2) B only

(3) C only

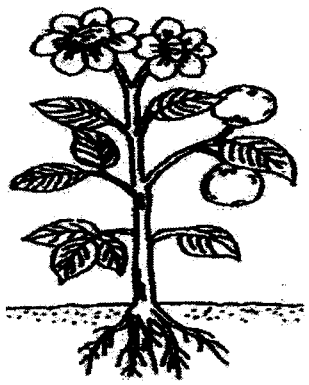
(4) A, B and C

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3 The chart shows the characteristics of plants E, F, G and H.




Based on the chart above, which plant, E, F, G or H, correctly identifies the plant shown below?



(1) Plant E

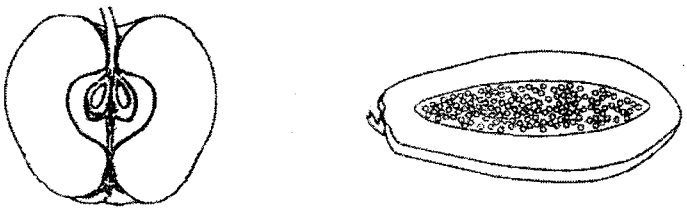
(2) Plant F

(3) Plant G

(4) Plant H

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4 The diagram shows two types of fruits that are cut into half.



Based on the diagrams above, how are the fruits similar?

(1) They are sweet.

(2) They contain seeds.

(3) They come from ferns.

(4) They develop from leaves.

5 The table shows some characteristics of two animals A and B.

| Animal | Characteristics |
|---|---|
| A | Has three body parts |
| B | Has feathers as body covering |

Based on the information given in the table above, which of the following is correct?

| | A | B |
|---|---|---|
| (1) | mammal | bird |
| (2) | insect | mammal |
| (3) | insect | bird |
| (4) | mammal | insect |

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6 Which of the following group of animal gives birth to their young?

(1) Bird

(2) Reptile

(3) Mammal

(4) Amphibian

7 Which of the following statements about bacteria is correct?

(1) All bacteria are harmful.

(2) Bacteria come in different shapes.

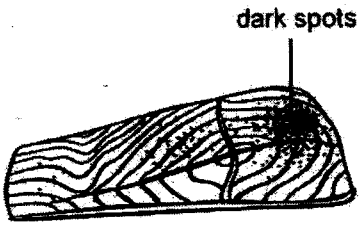
(3) All bacteria can be seen without a microscope.

(4) Bacteria do not need air, food and water to survive.

8 The diagrams show a slice of fish meat placed in a warm, dark and moist place over a month.



Start of month




End of month

What could the dark spots possibly be?

(1) soil

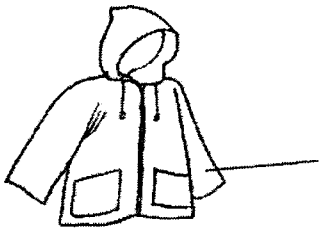
(2) mould

(3) flowers

(4) mushroom

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9 A person puts on a raincoat to keep himself dry in the rain.

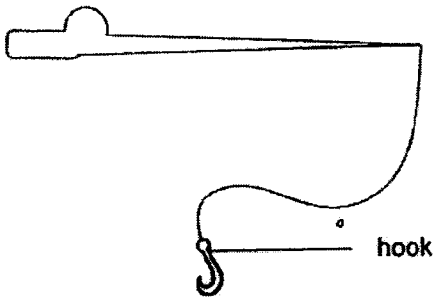



Based on the properties shown in the table, which material is most suitable for making a raincoat?

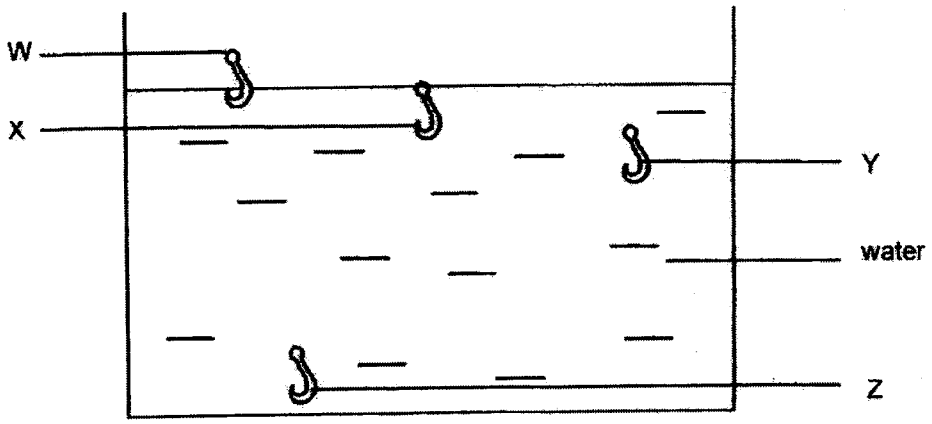
| | | Property | |
|---|---|---|---|
| | **Material** | **Flexible** | **Waterproof** |
| (1) | A | Yes | No |
| (2) | B | No | Yes |
| (3) | C | No | No |
| (4) | D | Yes | Yes |

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10 The diagram shows a fishing rod used to catch fishes.




Oshen tested hooks made of different materials, W, X, Y and Z, in a tank of water.



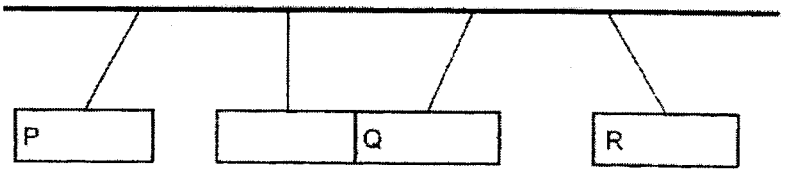

Tank with water

Which material, W, X, Y or Z, is the most suitable to catch fishes found at the bottom of the sea?

(1) W
(2) X
(3) Y
(4) Z

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**11** The diagram below shows three bar magnets suspended on strings. P, Q and R are poles of the magnets.

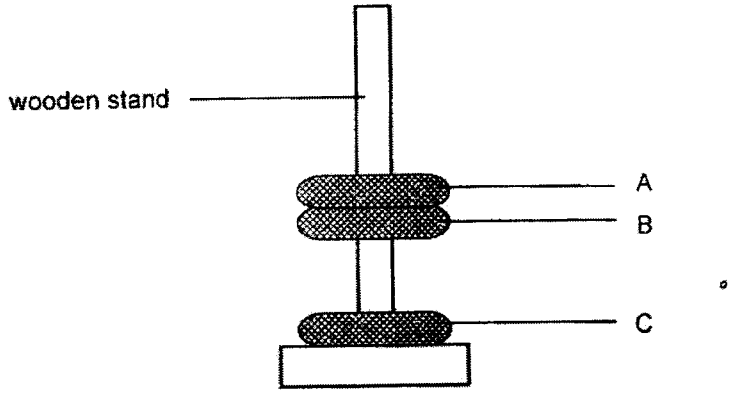



Which of the following are the poles P, Q and R?.

| | P | Q | R |
|---|---|---|---|
| (1) | South | North | South |
| (2) | South | South | North |
| (3) | North | South | South |
| (4) | North | North | North |

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12 Lola has three discs made of different materials, A, B, and C as shown.




When the three discs are slotted through the wooden stand, which of the following conclusion can be made?

(1) Object A is magnetic.

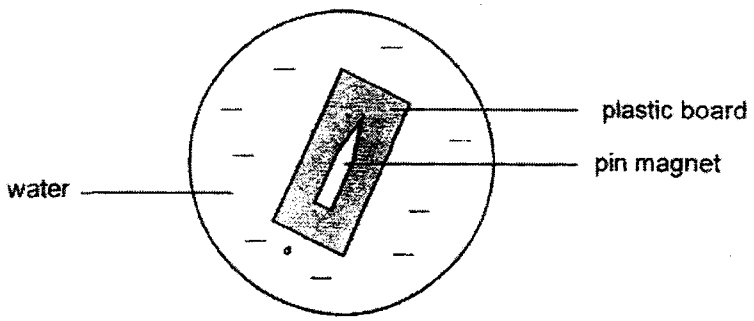
(2) Both A and B are magnets.

(3) Both B and C are magnets.

(4) Object C can repel object A.

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13 Sandeep placed a pin magnet on a plastic board and left them in water as shown. She repeated the experiment using pins (E, F, G and H). They are made of different materials.




The following table shows the results of the final resting positions of the pin magnets for each trial.

| Pin | E | F | G | H |
|---|---|---|---|---|
| Trial 1 | | | | |
| Trial 2 | | | | |
| Trial 3 | | | | |

Based on the results, which pin(s) would most likely be found in compasses?

(1) E only

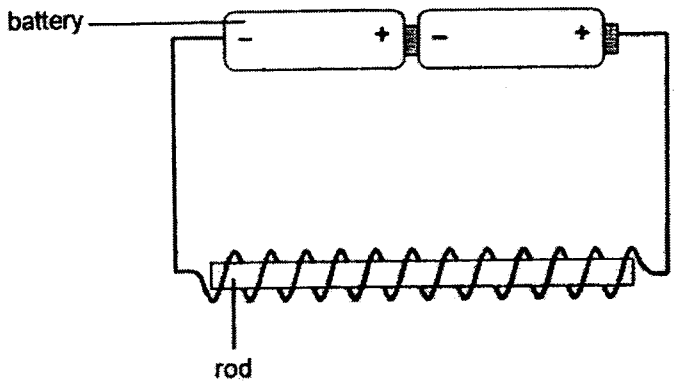
(2) F only

(3) E and H only

(4) F and G only

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14 Shazam made a temporary magnet as shown.




He repeated the set-up with rods made of different materials, W, X, Y and Z. The number of iron nails they could attract is shown in the table below.

| Rod | W | X | Y | Z |
|---|---|---|---|---|
| Number of iron nails attracted | 10 | 5 | 0 | 7 |

Which rod would most likely be made of ceramic?

(1) W

(2) X

(3) Y

(4) Z

15 Which of the following methods would demagnetise a temporary magnet?

A Drop it many times.

B Put it on a ceramic plate.

C Hit it many times with a hammer.

D Stroke it many times in the same direction using a wooden spoon.

(1) A and C only

(2) B and D only

(3) A, B and C only

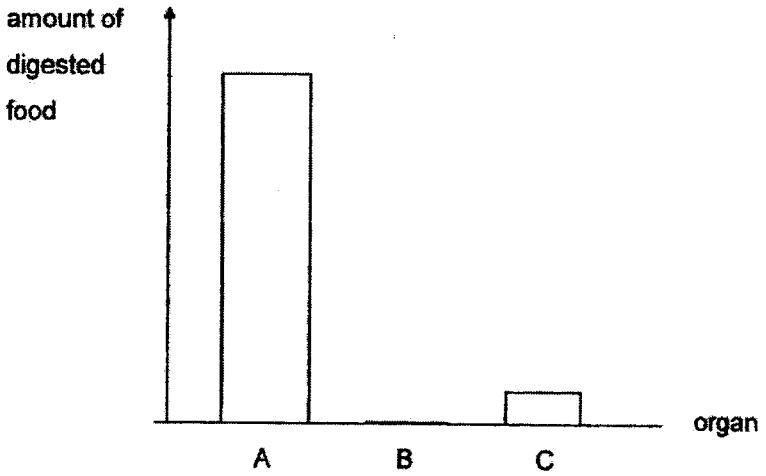
(4) B, C and D only

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16 Which object can be used to make into an electromagnet?

(1) gloves
(2) steel rod
(3) silver coin
(4) rubber band

17 The graph shows the amount of digested food found in organs A, B and C, of the human digestive system.

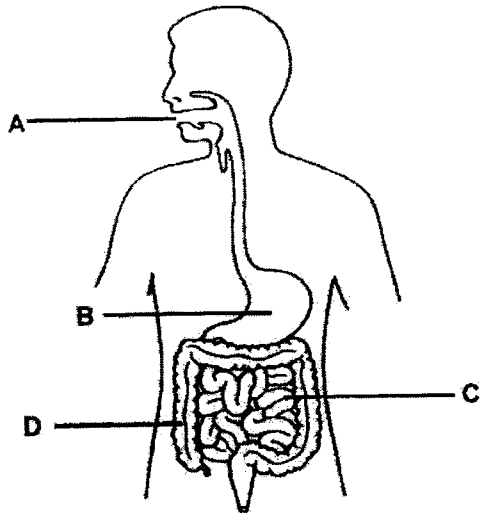



Based on the information, which organs in the digestive system best represents A, B and C?

| | A | B | C |
|---|---|---|---|
| (1) | small intestine | stomach | large intestine |
| (2) | small intestine | large intestine | mouth |
| (3) | stomach | small intestine | large intestine |
| (4) | stomach | small intestine | mouth |

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For questions 18 and 19, study the diagram of the human organ system.




**18** In which part of the human organ system is water absorbed from undigested food?

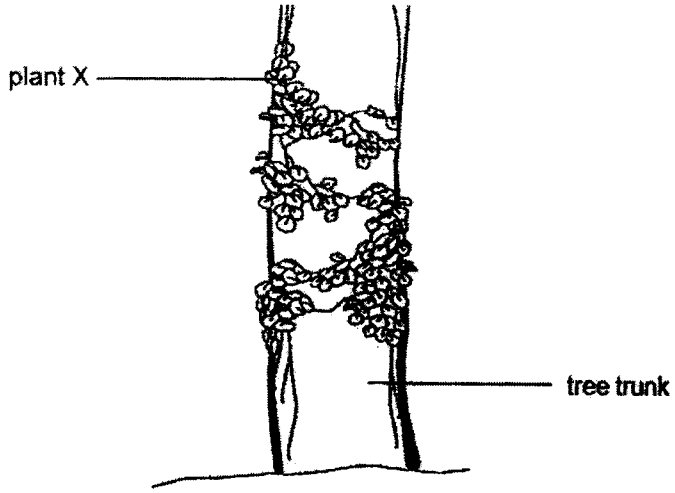
(1) A
(2) B
(3) C
(4) D

**19** In which part of the human organ system does digestion of food start?

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

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20 The diagram shows plant X growing on a tree trunk.




Based on the diagram only, which of the following can be concluded about plant X?

(1) Plant X has a weak stem.

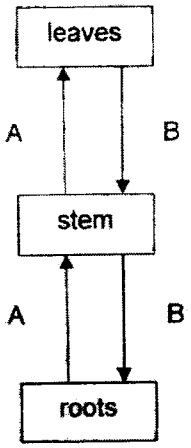
(2) Plant X is a flowering plant.

(3) Plant X is found in forests only.

(4) Plant X does not need water to survive.

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21 The diagram shows the transport of substances in a plant system.

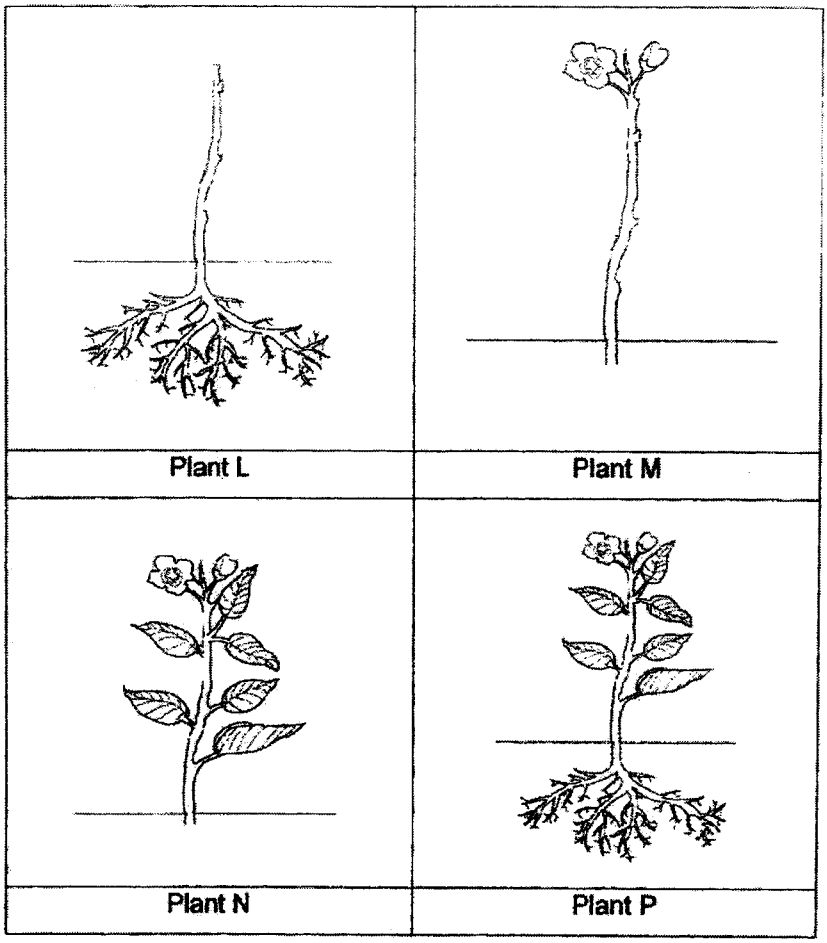



Based on the diagram, what do A and B represent?

| | A | B |
|---|---|---|
| (1) | water | minerals |
| (2) | food | water |
| (3) | minerals | food |
| (4) | water | sunlight |

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22 The diagrams show hibiscus plants with some of their parts removed.




Three of the plants died after two weeks. Which plant is most likely to be healthy after two weeks?

(1) Plant L

(2) Plant M

(3) Plant N

(4) Plant P

(Go on to Booklet B)

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**SEMESTRAL ASSESSMENT TWO 2022**
**SCIENCE**
**PRIMARY THREE**
**BOOKLET B**

**Name:** _____ ( ) **Class: Primary 3** ____

**Date: 28 October 2022** **Total Time for Booklets A and B: 1 h 45 min**

_____
**Parent's/ Guardian's signature**

**INSTRUCTIONS TO CANDIDATES**

1. Write your name, index number and class in the spaces provided.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

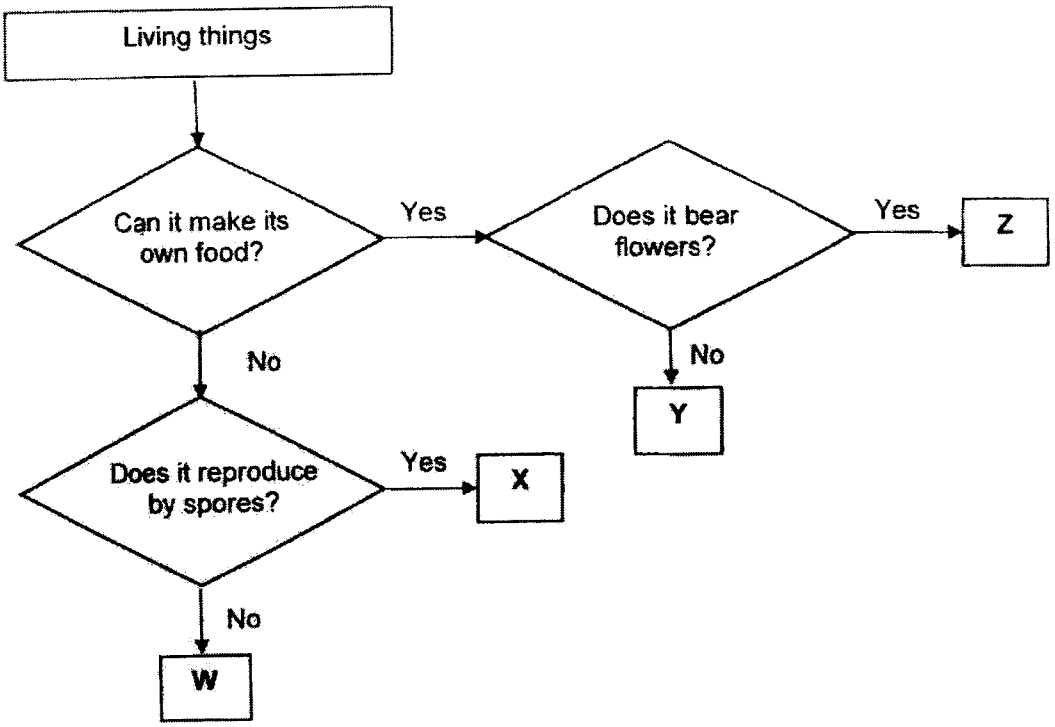
| BOOKLET | MAX MARKS | MARKS OBTAINED |
|---|---|---|
| A | 44 | |
| B | 36 | |
| Total | 80 | |

This question paper consists of 11 printed pages including this cover page.

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For questions 23 to 32, write your answers in this booklet.
The number of marks available is shown in brackets [ ] at the end of each question or part question.
(36 marks)

**23** Study the flow chart as shown.




**(a)** Write the letter, W, X, Y or Z, that best represents the living things listed below. [3]

(i) Bird' nest fern: _____

(ii) Mushroom: _____

(iii) Durian tree: _____

**(b)** Based only on the flow chart above, state one difference between W and X. [1]

_____

(Go on to the next page)

Score 4

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**24** The characteristics of three animals are shown in the table.

| Animal | Has feathers? | Gives birth to young? | Number of legs |
|---|---|---|---|
| Q | Yes | No | 2 |
| R | No | No | 6 |
| S | No | Yes | 4 |

**(a)** Based only on the table, state one similarity between animals Q and R. [1]

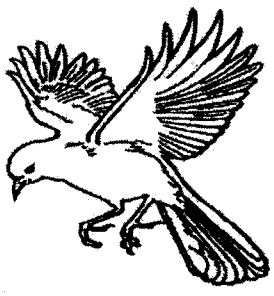
_____

**(b)** State the group of animals that animal R most likely belongs to.

[1]

_____

Study the picture of a living thing below.



**(c)** Based only on observations from the picture, can this living thing be animal S? Give a reason. [2]

_____

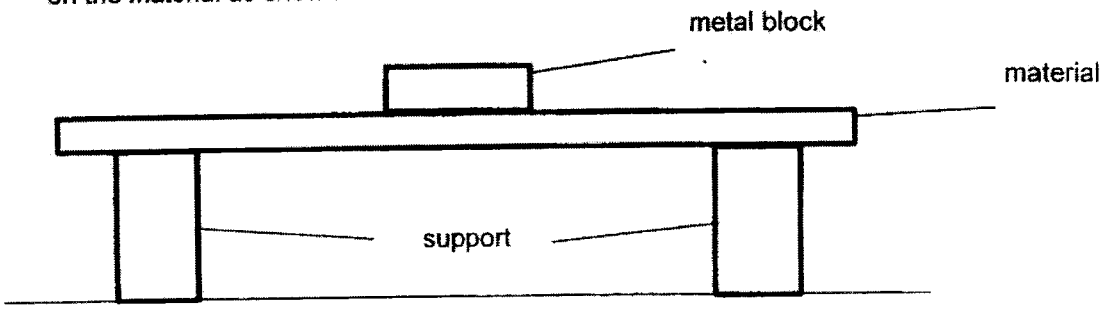
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| Score | /4 |
|---|---|

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25 Ali tested three different materials, P, Q and R, by placing identical metal blocks, one by one, on the material as shown.




He recorded the number of metal blocks added to break each material below.

| Material | Number of metal blocks added when material broke |
|---|---|
| P | 2 |
| Q | 10 |
| R | 5 |

**(a)** State the property of material that Ali was testing. [1]

_____

**(b)** Ali is as heavy as four metal blocks. Which material(s), P, Q or R, can he use to make a chair to sit on safely? [2]

_____

**(c)** Put a tick (✓) to show which variable(s) he needs to keep the same to ensure a fair test. [1]

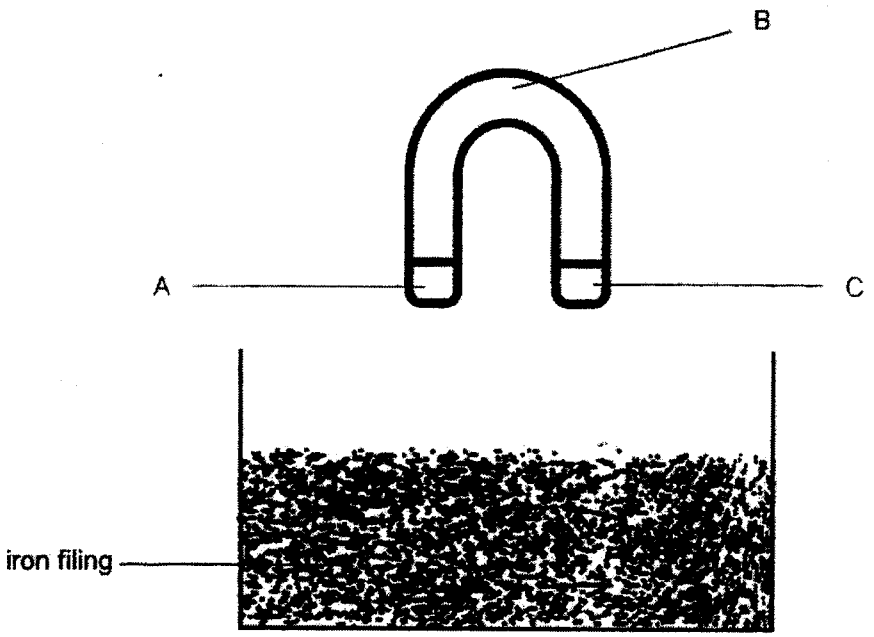
| Variable | To keep the same [tick (✓)] |
|---|---|
| Number of metal blocks | |
| Type of material | |
| Thickness of material | |

(Go on to the next page)

| Score | /4 |
|---|---|

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**26** The magnet is immersed fully in a container of iron filing.




**(a)** Which part(s), A, B and/ or C, of the magnet will most iron filing be attracted to? [1]

_____

**(b)** Which characteristic of magnets explains your answer in part (a)? [1]

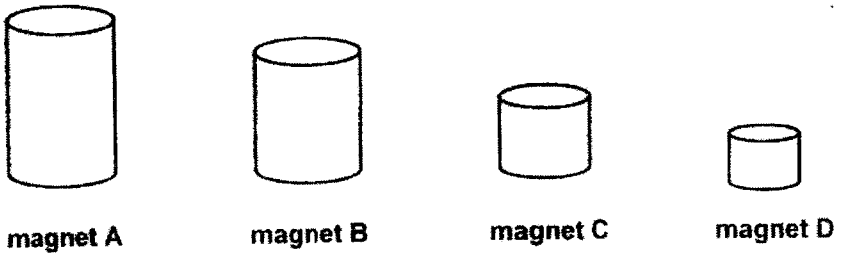
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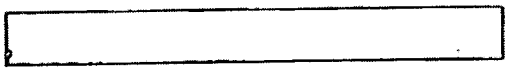
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| Score | /2 |
|---|---|

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27 Nicky has four magnets, A, B, C and D. She used them to stroke four identical iron bars for 30 times.



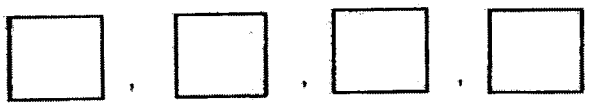



iron bar

She recorded the number of pins each iron bar attracted in the table below.

| Iron bar that was stroked with magnet | A | B | C | D |
|---|---|---|---|---|
| Number of pins attracted | 16 | 12 | 10 | 15 |

(a) Arrange the strength of magnets from strongest to weakest. [1]



strongest ⟶ weakest

(b) Based on the results, what can you conclude about the size of magnets and their magnetic strength? [1]

_____

(c) Besides using a stronger magnet, suggest another way to increase the strength of a temporary magnet using the stroke method. [1]

_____

(d) Nicky replaced the iron bar with an aluminium one. Will the aluminium bar attract any pins after it is stroked by magnet A? Explain. [1]

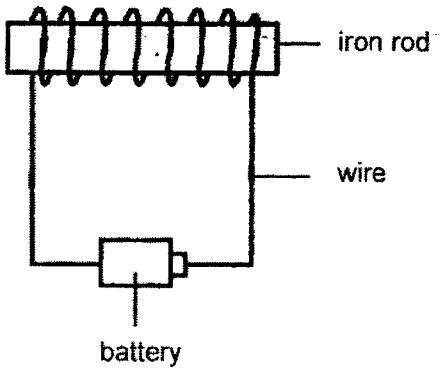
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| Score | / 4 |
|---|---|

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28 Suresh wanted to make the iron rod into a temporary magnet as shown.




After each test, Suresh increased the number of coils of wire around the iron rod. He then tested his temporary magnet and recorded his observations in the table below.

| Number of coils | Number of staples attracted |
|---|---|
| 5 | 2 |
| 10 | 5 |
| 20 | 9 |
| 30 | 14 |

**(a)** Name the method used to make the temporary magnet. [1]

_____

**(b)** Based on his results, state the number of staples attracted when there are 20 coils of wire around the iron rod. [1]

_____

**(c)** Based on his results, what is the relationship between the number of coils around the iron rod and the number of staples attracted? [1]

_____

_____

**(d)** Suggest another way to increase the number of staples attracted to the temporary magnet. [1]

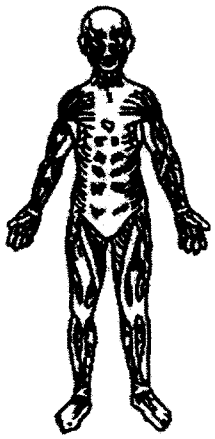
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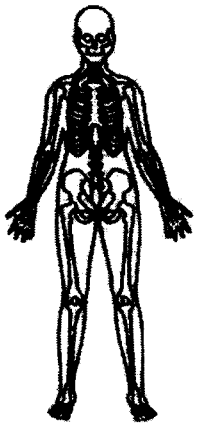
| Score | / 4 |
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29 Study the diagrams of organ systems of the human body.



T



U

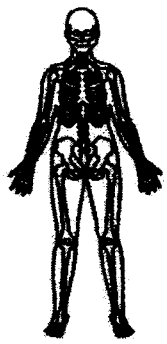
(a) Name organ systems T and U. [2]

T : _____

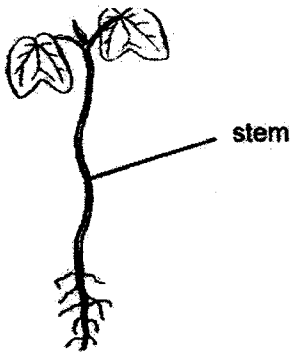
U : _____

(b) Using a pencil and ruler, label the part in system U that protects the heart. [1]

(c) Tick (✓) the correct statement that shows the similarity in functions between system U and the stem of a plant. [1]



U



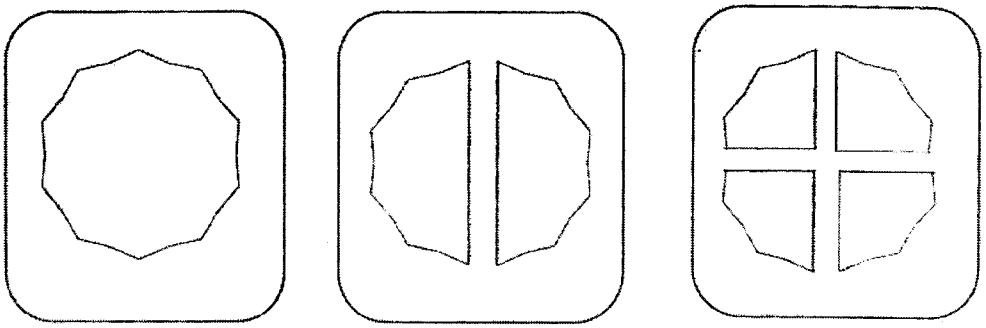

| Function | Correct statement [tick (✓)] |
|---|---|
| Both work together with the muscular system. | |
| Both support and keep the living thing upright. | |
| Both absorb water to keep the living thing alive. | |

(Go on to the next page)

Score 4

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30 Quinn prepared three trays of jellies of the same size. She cut each of the jellies differently as shown.



jelly 1 jelly 2 jelly 3

She added the same amount of digestive juices to each tray. After 24 hours, the jellies turned into watery substances. She measured the amount of watery substance formed and recorded the results.

| Jelly | Amount of watery substance formed (ml) |
|---|---|
| 1 | 1 |
| 2 | 3 |
| 3 | 6 |

**(a)** Tick (✓) the correct statement that shows the aim of this experiment. [1]

| Aim of experiment | Correct statement [tick (✓)] |
|---|---|
| To find out the time taken for jellies to melt. | |
| To find out how breaking jellies into smaller pieces affects the speed of digestion. | |
| To find out how different brands of jellies affects the speed of digestion. | |

**(b)** Quinn repeated the experiment three times. Give a reason. [1]

_____

**(c)** Which part of the digestive system breaks food up into smaller pieces? [1]

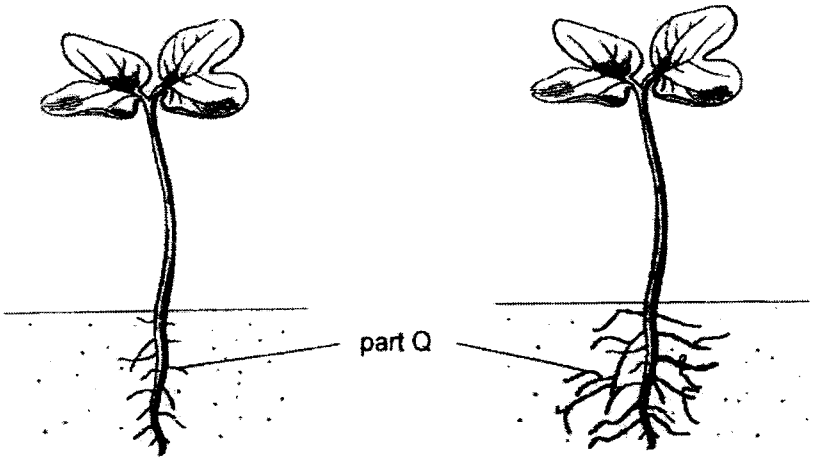
_____

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| Score | 3 |
|---|---|

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31 The diagrams show two plants of the same kind.




plant 1 plant 2

**(a)** Name part Q. [1]

_____

**(b)** State a function of part Q. [1]

_____

**(c)** Which plant will be more easily removed from the soil completely? Explain. [2]

_____

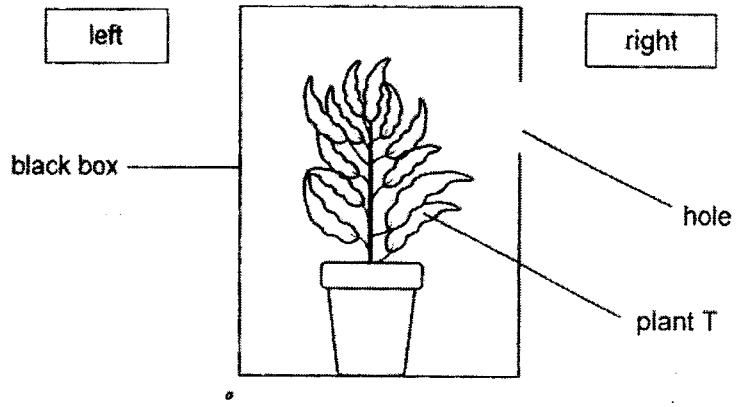
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| Score | / 4 |
|---|---|

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32 Frankie placed a potted plant T in a black box with a hole.



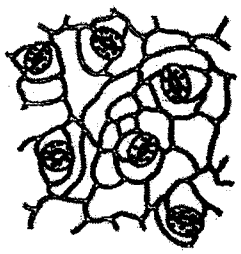

**(a)** Predict which direction, left or right, the leaves of plant T will grow towards. [1]

_____

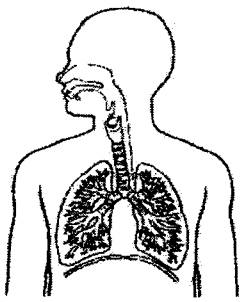
**(b)** Give a reason why the leaves grow in that direction. [1]

_____

The diagrams show tiny openings of leaves under the microscope and an organ system of a human body.



tiny openings of leaves under the microscope



organ system of a human body

**(c)** How are the tiny openings of leaves similar to the organ system of a human body? [1]

_____

_____

**End of Paper**

| Score | 3 |
|---|---|

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A c S (P)

## 2022 P3 SA2 Science (Answer Key)

**Booklet A**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 2 | 2 | 2 | 3 | 3 | 2 | 2 | 4 | 4 | 1 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 3 | 4 | 3 | 1 | 2 | 2 | 4 | 1 | 1 | 3 | 4 |

**Booklet B**

| Qn/ Part Qn | Acceptable Answers |
|---|---|
| 23 (a) | (i) Bird's nest fern: Y<br>(ii) Mushroom: X<br>(iii) Durian tree: Z |
| (b) | X reproduces by spores but W does not (reproduce by spores) |
| 24 (a) | Both do not give birth to young. |
| (b) | Insects / insect |
| (c) | No.<br>The animal has 2 legs but animal S has 4 legs. |



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**25**

**(a)** Strength

**(b)** Q and R.

**(c)**

| Variable | Tick (✓ ) the variable(s) that should be kept the same |
|---|---|
| Number of metal blocks | |
| Type of material | |
| Thickness of material | ✓ |

**26**

**(a)** A and C

**(b)** Magnets are strongest at its poles.

**27**

**(a)** A, D, B, C

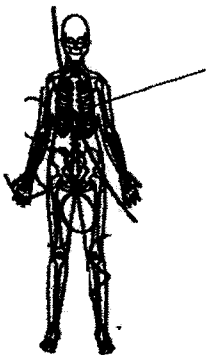
**(b)** The size of magnets has no relationship to the strength of their magnetism.

**(c)** Stroke the iron bar/ temporary magnet more times using a magnet.

**(d)** No. Aluminium is a non-magnetic material.



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| | |
|---|---|
| **28** | |
| **(a)** | Electrical method |
| **(b)** | 9 / nine |
| **(c)** | As the number of coils (around the iron rod) increases, the number of staples attracted increases. |
| **(d)** | Increase the number of batteries. |
| **29** | |
| **(a)** | T: muscular system<br>U: skeletal system |
| **(b)** | <br>Ribcage / rib |
| **(c)** | Tick: Both support and keep the living thing upright. |



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| | |
|---|---|
| **30**<br>**(a)** | Tick: To find out whether breaking jellies into smaller pieces can affect digestion. |
| **(b)** | To obtain reliable results. |
| **(c)** | Teeth/ Mouth |
| **31**<br>**(a)** | Roots |
| **(b)** | Hold/ Anchor the plant (firmly) in the ground/ soil. |
| **(c)** | Plant 1. Plant 1 has less roots than Plant 2 to hold the plant in the ground. |
| **32**<br>**(a)** | Right. |
| **(b)** | Leaves need (sun)light to make food (½ m) so the plant grew towards the light (½ m). |
| **(c)** | Both functions to exchange gases/ air.<br>Both take in and give out air/ gases.<br>Both functions to respire.<br>Both breathes. |



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