

## METHODIST GIRLS' SCHOOL

Founded in 1887

END-OF-YEAR EXAMINATION 2020  
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: \_\_\_\_\_ (    )

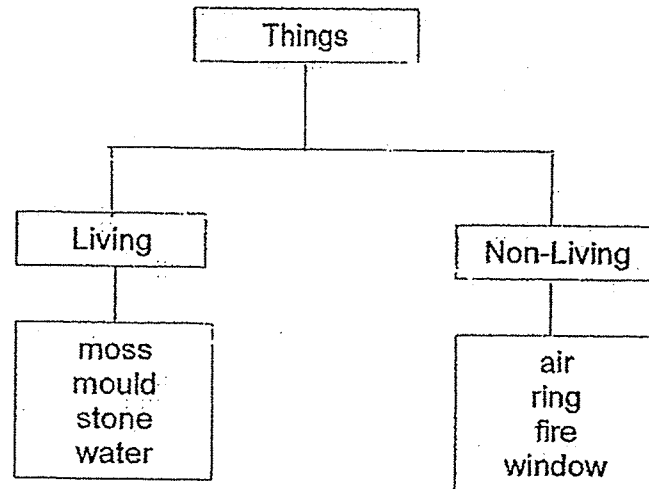
Class: Primary 3. \_\_\_\_\_

Date : 27 October 2020

This booklet consists of 12 printed pages including this page.

For each question from 1 to 20, 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). [40 marks]

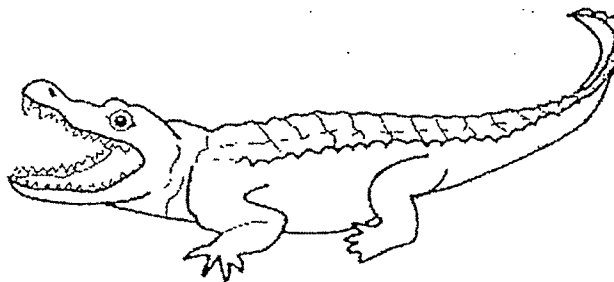
1 The table below shows a classification diagram.



Which of the following things are **wrongly** classified?

- (1) Air and moss
- (2) Stone and air
- (3) Moss and mould
- (4) Stone and water

2 Study the organism as shown below.

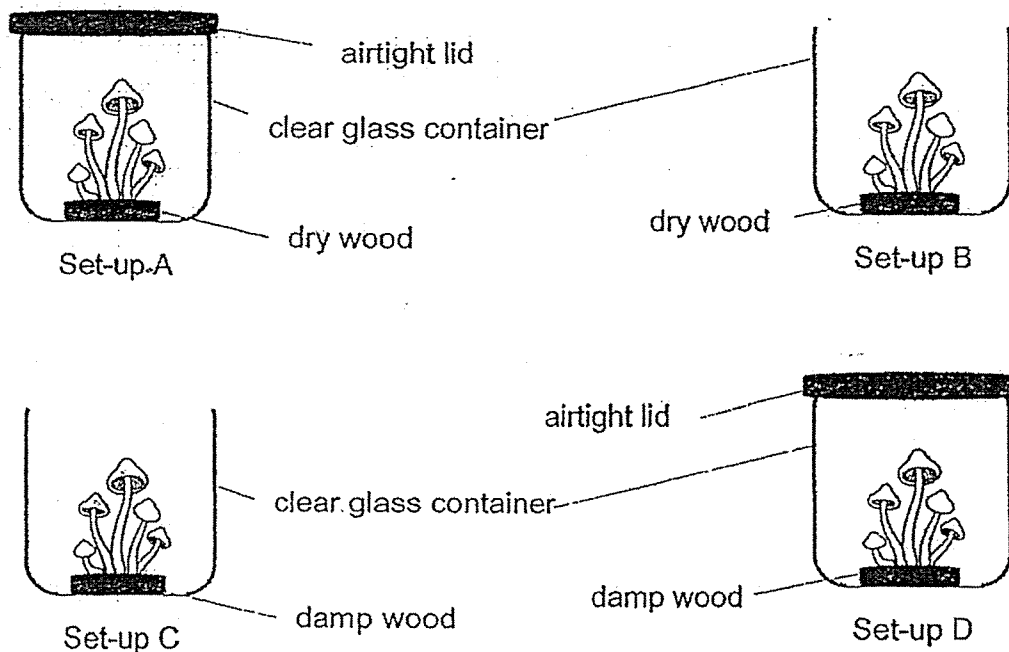


Which one of the following is correct for the above organism?

	Animal Group	Characteristic
(1)	Amphibian	It has a hard outer covering.
(2)	Reptile	It has a head, thorax and abdomen.
(3)	Amphibian	It breathes with lungs and moist skin.
(4)	Reptile	It has dry skin covered with scales.

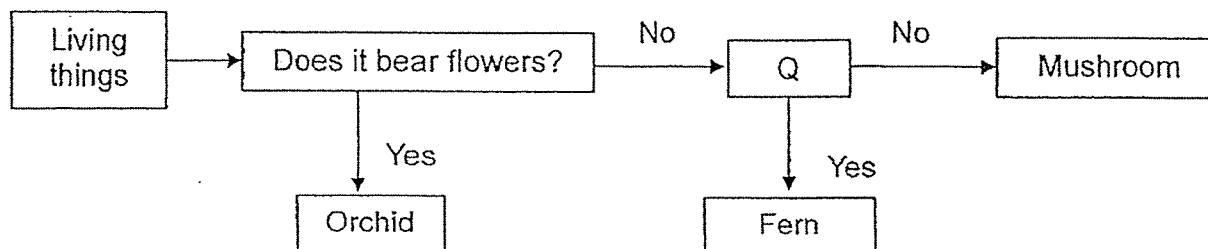
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- 3 Enya grew some fungi in four set-ups, A, B, C and D, as shown in the diagrams below. She wanted to find out if fungi need water to grow.



Which 2 set-ups should she choose to conduct her experiment?

- (1) A and B
  - (2) B and C
  - (3) B and D
  - (4) C and D
- 4 Study the flowchart on living things as shown below.



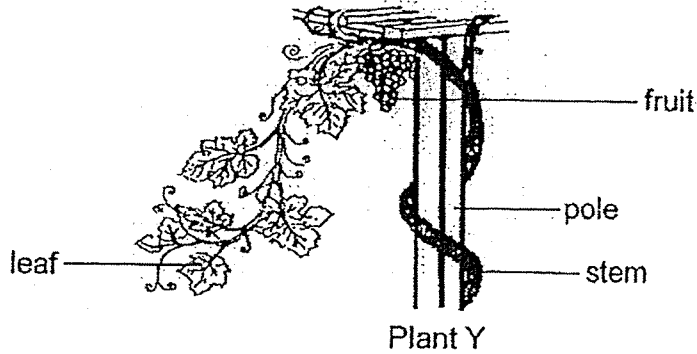
What can question Q be?

- (1) Does it have seeds?
- (2) Does it have spores?
- (3) Does it make its own food?
- (4) Does it respond to changes?

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4.

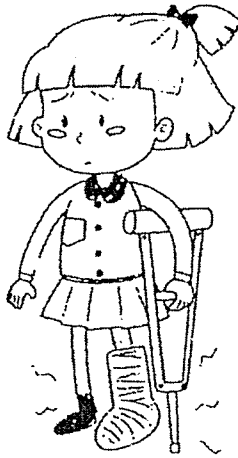
- 5 Look at the picture of plant Y below.



Based on the picture, we observed that plant Y \_\_\_\_\_.

- (1) is a flowering plant
- (2) reproduces by spores
- (3) can move around freely
- (4) has a strong stem to support itself to get sunlight

- 6 The picture below shows an injured girl.

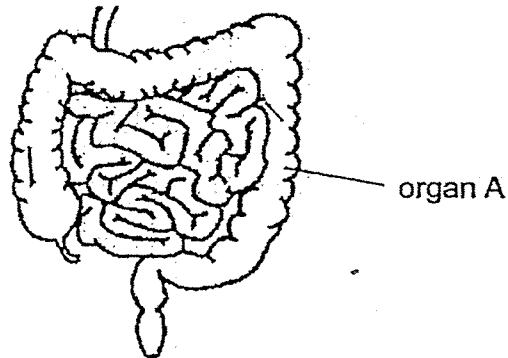


Which body system is most likely **not** able to function properly?

- (1) Skeletal system
- (2) Digestive system
- (3) Circulatory system
- (4) Respiratory system

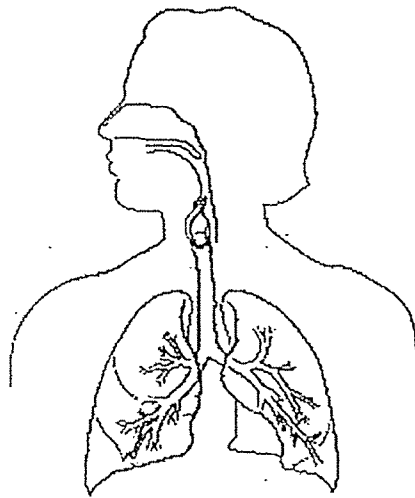
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- 7 The diagram below shows parts of the digestive system.



What is the function of organ A?

- (1) It digests food and absorbs nutrients.
  - (2) It breaks down food into smaller pieces.
  - (3) It absorbs water from the undigested food.
  - (4) It pushes food from the mouth to the stomach.
- 8 The diagram below shows body system X which helps to remove carbon dioxide from the body.



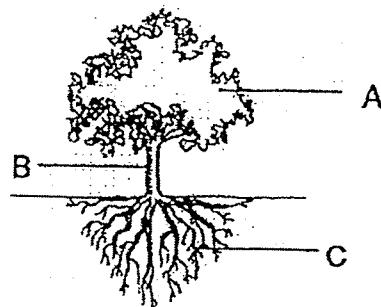
Body system X

Which one of the following is another function of body system X?

- (1) It supports the body upright.
- (2) It takes in oxygen for the body.
- (3) It provides digestive juices for our food.
- (4) It carries air, water and digested food to all parts of our body.

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- 9 Study the diagram of a plant below with different parts labelled A, B and C.



Which of the following about the plant parts and their functions are correct?

	Make food for the plant	Hold the plant firmly to the ground
(1)	A	B
(2)	B	C
(3)	A	C
(4)	B	A

- 10 Jason conducted an experiment to find out which material A, B, C or D, is the most suitable for making boots for fishmongers as shown below.



He soaked the 4 materials in 4 similar beakers containing 200 ml of water each. After some time, he removed the materials and recorded the amount of water left in each beaker as shown in the table below.

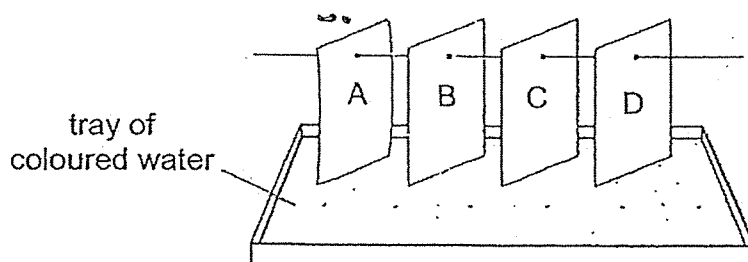
Material	Amount of water left in beaker (ml)
A	120
B	200
C	50
D	90

Based on the above results, the material most suitable for making the boots is

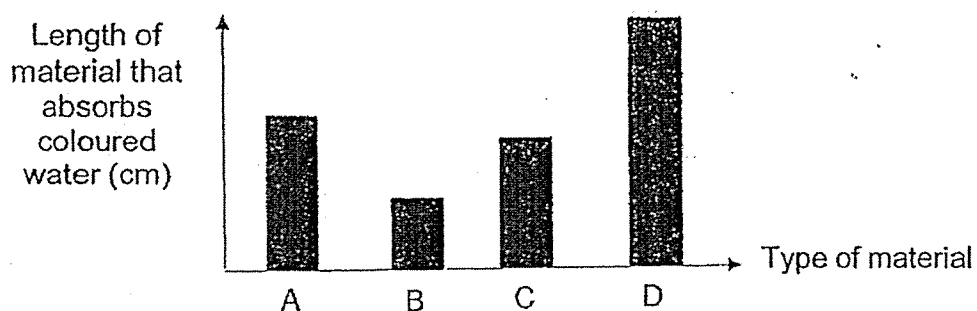
- (1) A  
(2) B  
(3) C  
(4) D

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- 11 Tim wanted to find out which material is most suitable for making a towel. He placed four different materials, A, B, C and D, into a tray of coloured water as shown in the diagram below.



The graph below shows the results of his experiment.



Based on the above results, which material is most suitable for making a towel?

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

- 12 The table below shows the properties of four different materials, P, Q, R and S.

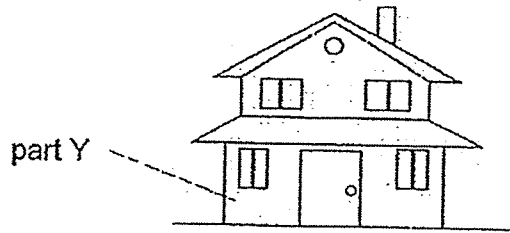
Material	Transparent	Strong	Waterproof
P	Yes	No	Yes
Q	No	No	No
R	No	Yes	No
S	No	Yes	Yes

Which material is most suitable for making bags to hold wet groceries so that water would not leak out?

- (1) Material P
- (2) Material Q
- (3) Material R
- (4) Material S

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- 13 The picture below shows a house with part Y labelled.

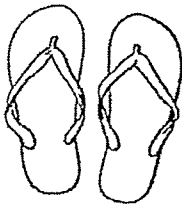


Which of the following are important properties of material for making part Y?

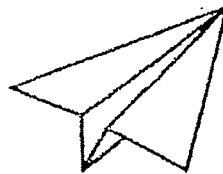
- A It is strong.
- B It is flexible.
- C It is waterproof.
- D It can sink in water.

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

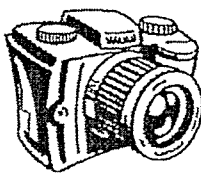
- 14 Study the objects as shown below.



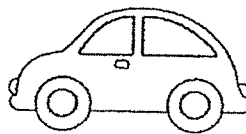
slippers



paper aeroplane



camera



toy car

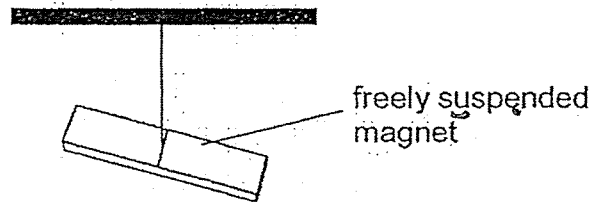
Which of the above objects is not a system?

- (1) toy car
- (2) camera
- (3) slippers
- (4) paper aeroplane

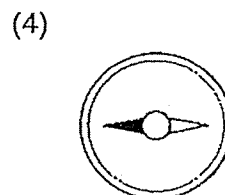
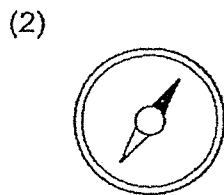
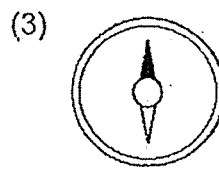
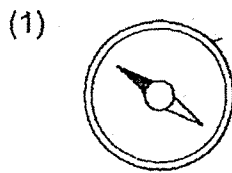
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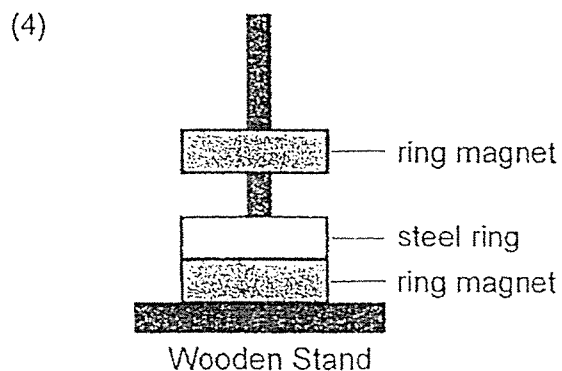
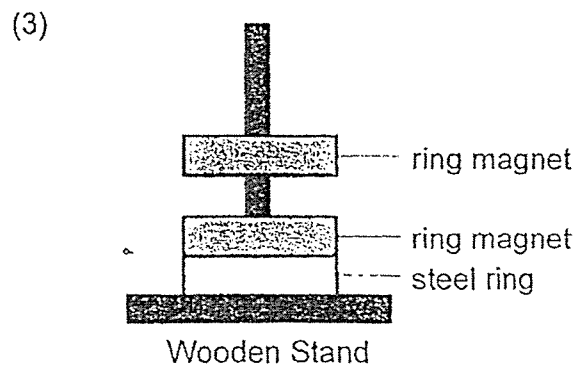
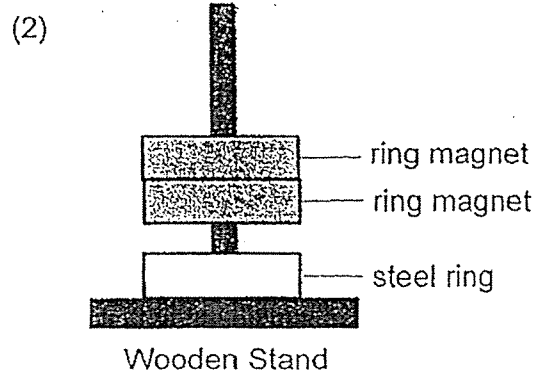
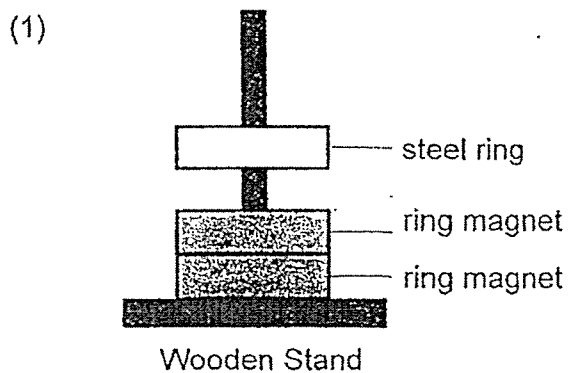
- 15 The diagram below shows a freely suspended magnet after it has come to rest.



A compass is brought near to one end of the freely suspended magnet. Which one of the following diagrams best represents the compass?

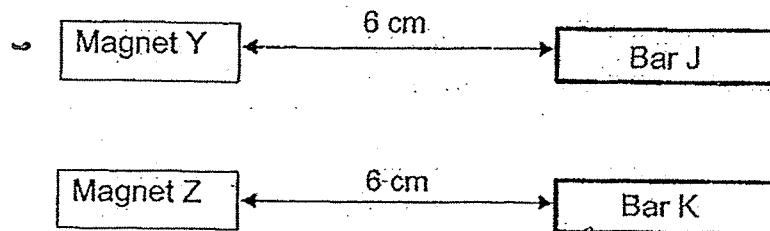


- 16 Cheryl was playing with two ring magnets and a steel ring. She stacked all the three rings on top of one another through a wooden stand. Which one of the following shows a possible interaction?



(Go on to the next page)

- 17 Jake placed two identical magnets, Y and Z, at an equal distance of 6 cm from two metal bars, J and K, as shown in the diagram below.



He moved Magnets Y and Z towards Bars J and K respectively until they came into contact. He observed that Bar K moved towards Magnet Z when Magnet Z was 4 cm away from it. Bar J did not move throughout.

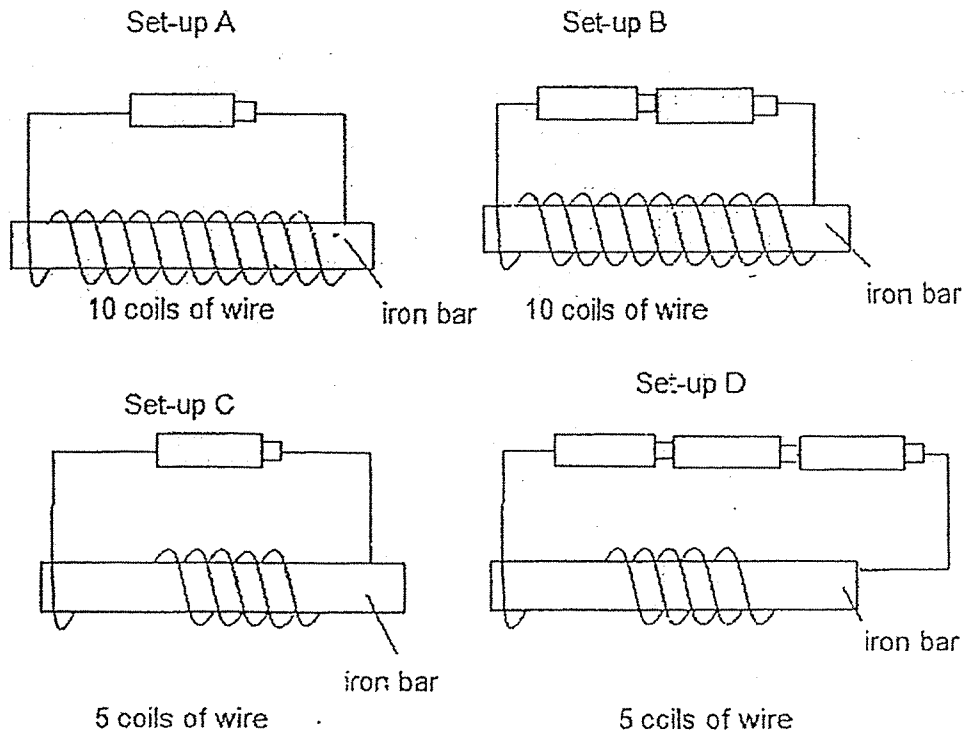
Based on Jake's observations, which of the following statements are true?

- A Bar J is non-magnetic.
- B Bar K is stronger than bar J.
- C Magnet Z is weaker than Magnet Y.
- D Bar K can become a temporary magnet.

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

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- 18 Daniel wanted to find out if the number of coils of wire around a bar would affect the strength of an electromagnet.

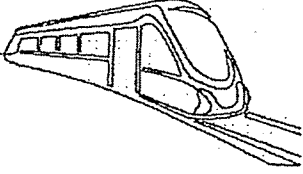
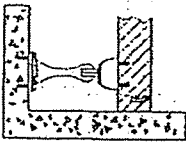
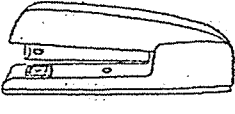
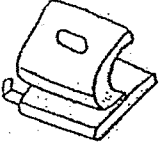


Which two set-ups should he use to conduct a fair experiment?

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

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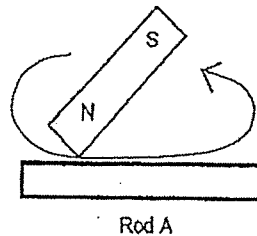
19 Study the objects as shown below.

			
A: maglev train	B: door stopper	C: stapler	D: hole puncher

Which of the above objects use magnets to function?

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

20 Siva used a magnet to stroke Rod A as shown below.



He brought Rod A towards a tray of staple bullets and observed the number of staple bullets that moved towards Rod A. He repeated his experiment with Rods B and C that are made of same material as Rod A, using the same magnet. His observations are recorded in the table below.

Rod	Number of staple bullets that moved towards the rod
A	4
B	9
C	1

Based on the results above, which of the following shows the possible number of times he stroked each rod?

	Rod A	Rod B	Rod C
(1)	40	10	80
(2)	80	40	10
(3)	10	80	40
(4)	40	80	10

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Founded in 1887



END-OF-YEAR EXAMINATION 2020  
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 : 27 October 2020

Booklet A	40
Booklet B	30
Total	70
Parent's Signature	

This booklet consists of 12 printed pages including this page.

For questions 21 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. [30 marks]

21 Study the two groups of organisms in the table below.

Group A	Group B
tiger	butterfly
mouse	crocodile
bat	eagle

Give suitable headings for Groups A and B.

[1]

(a) Group A: \_\_\_\_\_

Group B: \_\_\_\_\_

(b) An animal X is observed to have the following characteristics:

It lives on land.

It has moist skin.

(i) Name the animal group that animal X can be classified into.

[1]

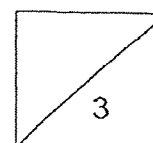
\_\_\_\_\_

(ii) State another characteristic of animal X.

[1]

\_\_\_\_\_

\_\_\_\_\_

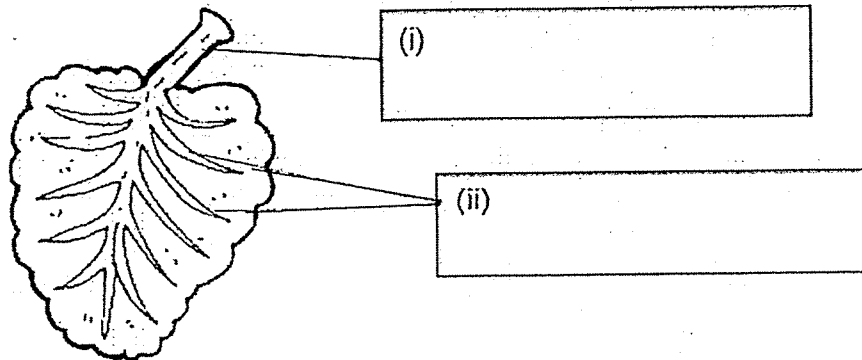


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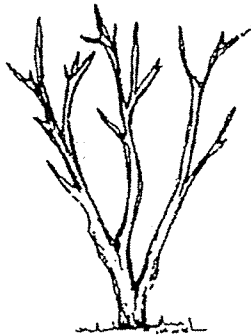
24 Label the parts of the leaf shown in the diagram below.

[1]

(a)



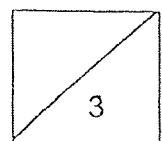
(b) The leaves of a plant are removed as shown below.



What would happen to the plant after one week? Explain your answer. [2]

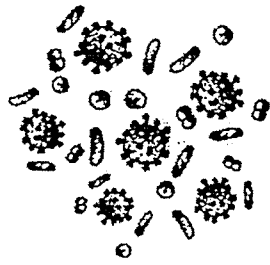
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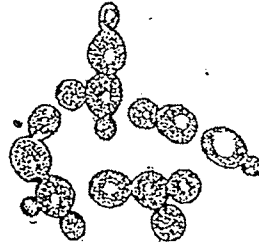


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- 22 Study the two organisms below.



bacteria



yeast

- (a) What equipment would be required for one to see these organisms? [1]

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- (b) How do these organisms obtain food? [1]

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- 23 Mr Ng created a robotic animal below.



- (a) Which animal group does the robot look like the most? [1]

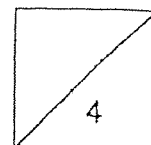
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- (b) State a reason why it is not considered a living thing even though it can move when the switch is turned on. [1]

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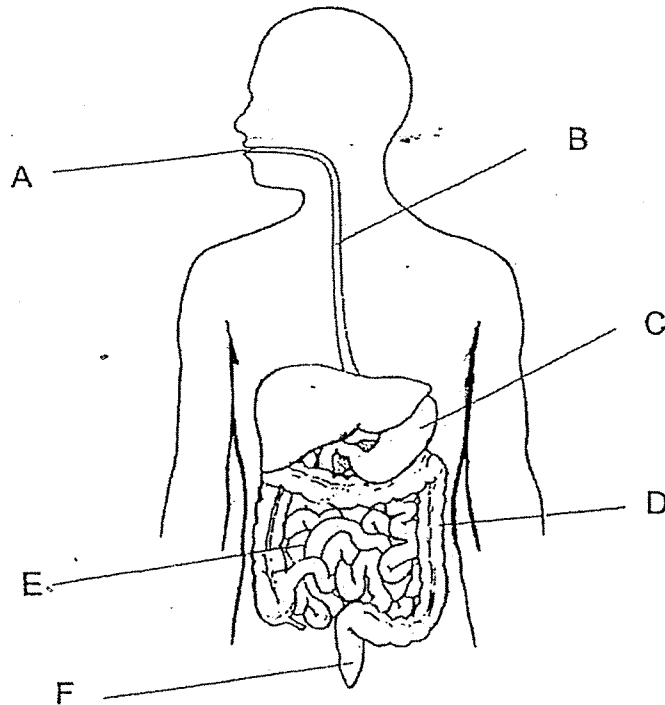
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- 25 The diagram below shows a human digestive system with different organs labelled A, B, C, D, E and F.



- (a) In the table below, write the letters to match the suitable organ to its function. You need not use all the letters. [2]

Organ	Function
	Solid waste is passed out of the body through this opening.
	Food is chewed into smaller pieces here.
	Digested food is absorbed into the blood here.
	A mixture of undigested food and water is found here.

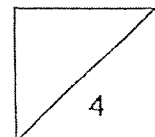
- (b)(i) Name the substance produced in organs A and C. [1]

\_\_\_\_\_

- (ii) What is the function of the substance in (i)? [1]

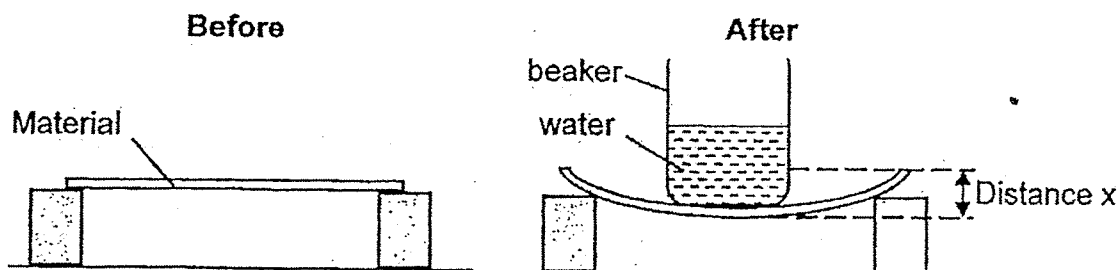
\_\_\_\_\_

\_\_\_\_\_



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- 26 Mrs Sim conducted an experiment on different materials A and B. She placed the same beaker of water on each material and measured distance  $x$  as shown below.



- (a) What is the property of material that Mrs Sim was testing? [1]

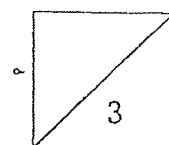
\_\_\_\_\_

- (b) Put a tick (✓) for the variable(s) that is/are kept the same in order to conduct a fair experiment. [1]

Variables	Tick (✓)
The thickness of the material	
The type of material	
The position where the beaker is placed on the material	
The distance at which the material bent	

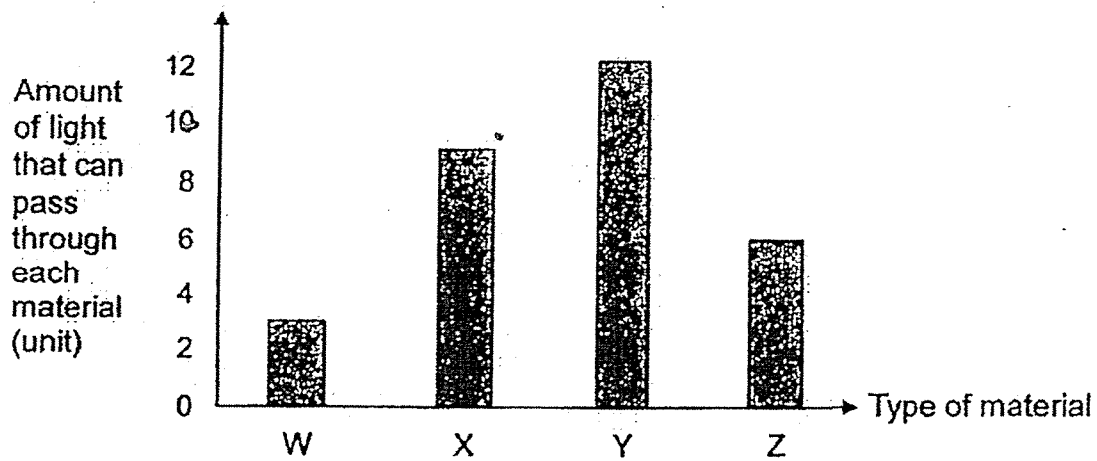
- (c) How could Mrs Sim be sure of the results of her experiment? [1]

\_\_\_\_\_

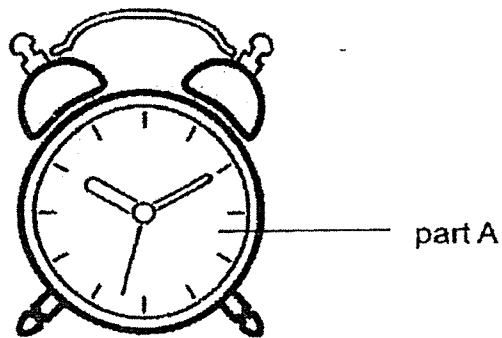


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- 27 The table below shows the amount of light that can pass through materials W, X, Y and Z.



The picture below shows a clock. Part A is the cover of the clock.

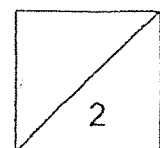


Based on the results shown in the graph, which material is most suitable for making part A? Explain your answer. [2]

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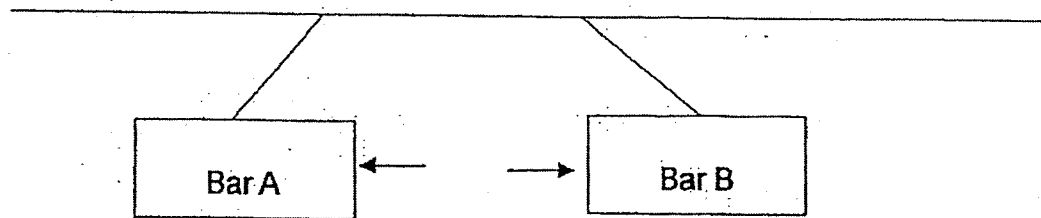


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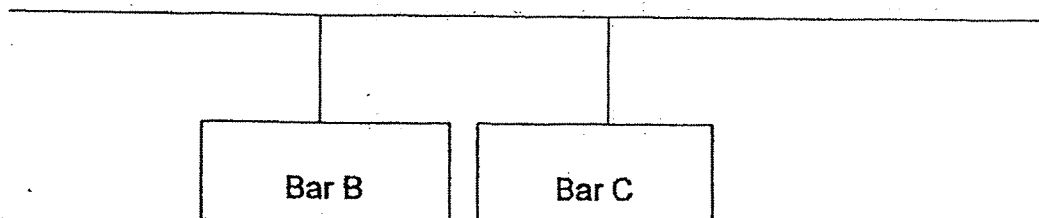


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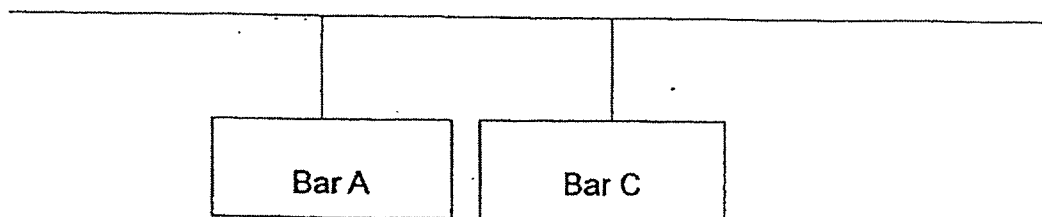
- 28 Jane conducted some experiments using metal bars. She hung metal bars A, B and C next to each other and observed the following interactions.



Bars A and B pushed each other away



No interaction between Bars B and C



No interaction between Bars A and C

- (a) Based on Jane's observations above, which bar is likely made of aluminium? Fill in the blanks below. [1]

- (i) Bar \_\_\_\_\_ because it is made of a \_\_\_\_\_ material.

State the reason for your answer above. Circle the correct answers below. [1]

- (ii) It cannot be ( repelled by / attracted to ) the other two bars which are ( metals / magnets ).

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- (b) In Jane's next experiment, she hung two metal objects, W and X, apart from each other as shown in Figure 1.

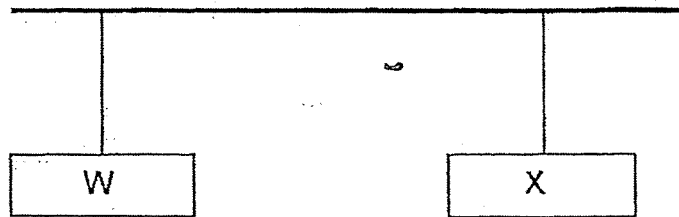


Figure 1

She hung a magnet between objects W and X. She observed that object X moved away from the magnet while object W moved towards the magnet as indicated by the arrows in Figure 2.

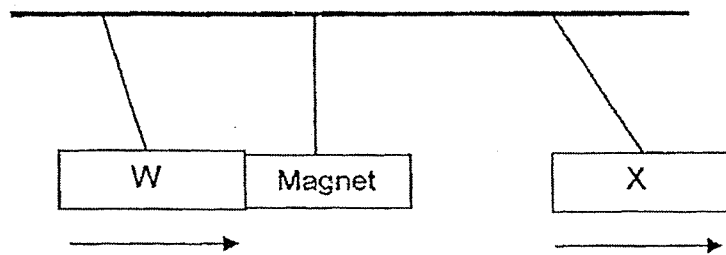


Figure 2

- (i) Based on her observations above, what can object X be? Explain your answer. [1]

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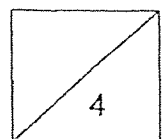
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- (ii) Explain why object W moved towards the magnet. [1]

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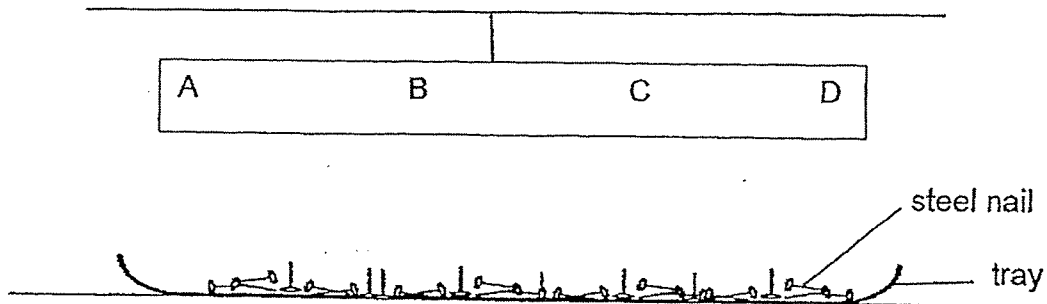


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- 29 Ali hung a magnet with parts labelled A, B, C and D above a tray of steel nails.



He recorded the number of steel nails attracted to each part of the magnet in the table below.

Part	Number of steel nails attracted
A	5
B	1
C	2
D	5

- (a) Based on his results, what can Ali conclude about parts A and D of the magnet? [2]

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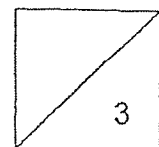
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- (b) Ali heated the magnet for some time. He observed that parts A and D of the magnet did not attract any steel nails. How does heating affect the strength of the magnet? [1]

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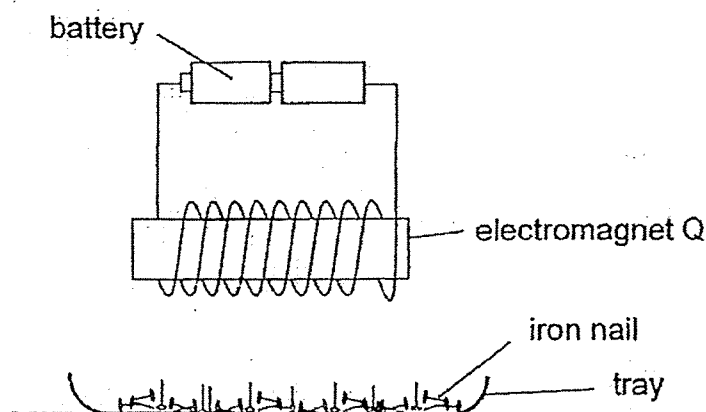


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- 30 Nathan conducted an experiment to find out how the number of coils of wire affects the strength of an electromagnet. He placed a tray of iron nails under the set-up as shown below.



He recorded the number of iron nails attracted to electromagnet Q. He repeated the experiment using a different number of coils of wire and recorded the results in the table below.

Number of coils of wire around electromagnet Q	Distance between the electromagnet and tray (cm)	Number of iron nails attracted
10	4	5
15	4	12

- (a) Based on the results, show the relationship between the number of coils of wire around the electromagnet and the strength of the electromagnet. **Circle** the correct answers below. [1]

As the number of coils of wire around the electromagnet ( increases / decreases ),  
the strength of the electromagnet ( increases / decreases ).

- (b) Other than the variable changed in the experiment, state what he can do to his set-up to make electromagnet Q attract fewer than 5 iron nails from the same distance. [1]

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Nathan repeated the experiment with another electromagnet R. His results are recorded in the table below.

Number of coils of wire around electromagnet R	Distance between the electromagnet and tray (cm)	Number of iron nails attracted
15	8	12

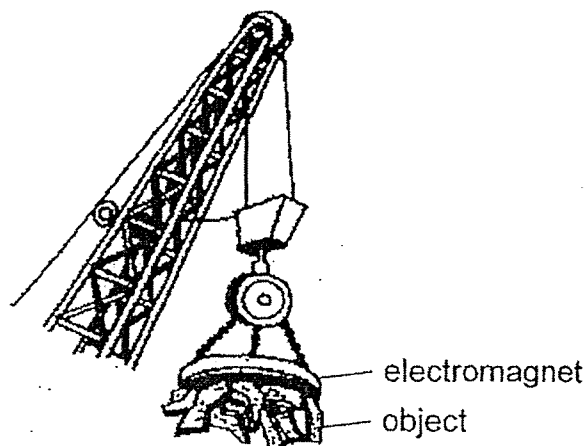
- (c) Based on the results, he concluded that electromagnet R was as strong as electromagnet Q. Was he correct? Explain your answer. [1]

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The diagram below shows a scrap iron crane with an electromagnet and some objects attached to it.



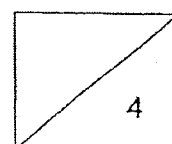
scrap iron crane

- (d) Without touching the objects, how can they be removed from the electromagnet? [1]

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## ANSWER KEY

**YEAR : 2020**

**LEVEL : PRIMARY 3**

**SCHOOL : METHODIST GIRLS' SCHOOL**

**SUBJECT : SCIENCE**

**TERM : SA2**

### BOOKLET A

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

### BOOKLET B

Q21	<p>a) Group A : Give birth to young alive. Group B : Lay eggs</p> <p>bi) Animal X can be classified onto the animal group, amphibians.</p> <p>bii) It breathes using lungs</p>
Q22	<p>a) A microscope would be required to see these organisms.</p> <p>b) They feed on other living or dead organisms.</p>
Q23	<p>a) It looks like an insect.</p> <p>b) It is not a living thing as it runs on batteries and it is not able to move by itself.</p>
Q24	<p>ai) Leaf stalk.</p> <p>aii) Leaf veins.</p> <p>b) It would die. It would die because it has no leaves and leaves are what helps the plant to make food.</p>
Q25	<p>a) F, A, E, D</p> <p>bi) Digestive system.</p> <p>bii) It breaks down food into simpler substances.</p>
Q26	<p>a) She was testing flexibility.</p> <p>b) The thickness of the material and the position where the beaker is placed on the material.</p> <p>c) She could repeat the experiment.</p>
Q27	<p>Material Y. It allows the most amount of light to pass through. Part A needs to be transparent for the time to be seen.</p>

Q28	<p>ai) Bar C because it is made of a non-magnetic material.</p> <p>aii) It cannot be repelled the other two bars which are magnets.</p> <p>bi) Object X can be a magnet as it can repel a magnet.</p> <p>bii) W was attracted to the magnet as their unlike poles were facing each other.</p>
Q29	<p>a) They are the poles of the magnet as the attracted the most amount of steel nails.</p> <p>b) Heating takes away the magnetism of the magnet.</p>
Q30	<p>a) As the number of coils of wire around the electromagnet increases the strength of the electromagnet increases.</p> <p>b) Only use one battery.</p> <p>c) No. The distance between the electromagnets and tray was different.</p> <p>d) The crane can be switched off and the objects would drop.</p>