METHODIST GIRLS' SCHOOL

Founded in 1887

END-OF-YEAR EXAMINATION 2024
PRIMARY 4
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 4._____

Date : 22 October 2024

This booklet consists of 17 printed pages including this page.

For each question from 1 to 24, 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).

[48 marks]

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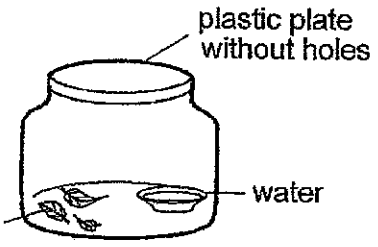
1 Living things need air, food and water to stay alive.
Which set-up should be used to keep a grasshopper alive?

(1)



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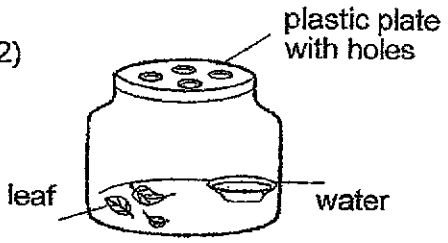

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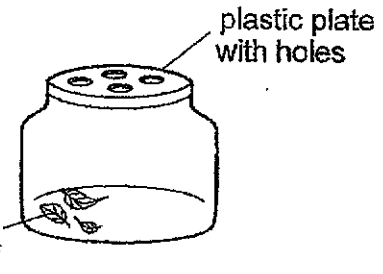

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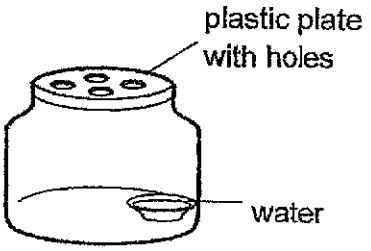


2 The diagram below shows a young plant.

The leaf helps the plant to _____.

(1) absorb minerals

(2) absorb water

(3) grow upright

(4) make food

(Go on to the next page)

3 Which characteristic is used to identify an insect?

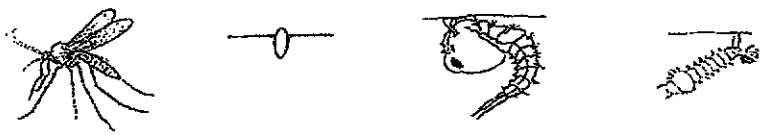
(1) They have hair.

(2) They have wings.

(3) They have six legs.

(4) They live in water.

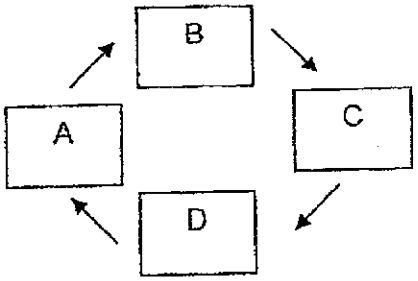
4 A, B, C and D are the various stages in the life cycle of a mosquito.



A B C D

Which of the following correctly shows the life cycle of a mosquito?

(1)



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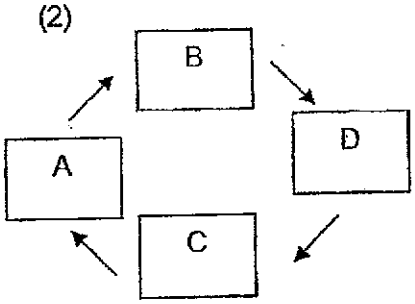

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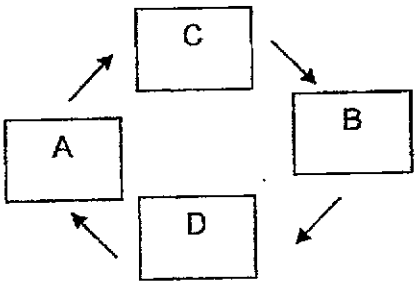

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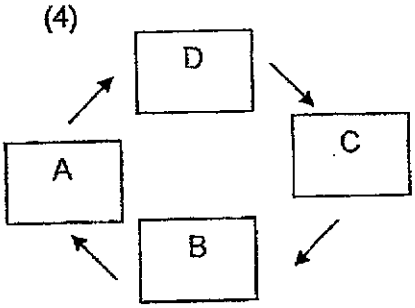

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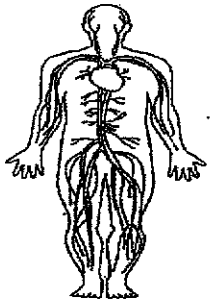
5 Which human system is shown in the diagram below?



(1) skeletal system

(2) muscular system

(3) circulatory system

(4) respiratory system

6 The table below shows the characteristics that 3 living things, X, Y and Z have.

Characteristics \ Living things	X	Y	Z
Make its own food	Yes	No	No
Can be useful / harmful	Yes	Yes	Yes
Needs microscope to see it	No	No	Yes

Which of the following groups do X, Y and Z belong to respectively?

	X	Y	Z
(1)	fungi	fern	bacteria
(2)	fern	fungi	bacteria
(3)	bacteria	fungi	fern
(4)	fern	bacteria	fungi

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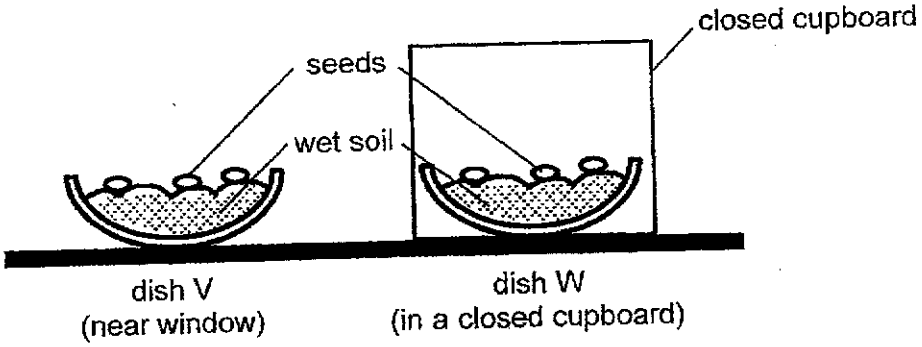
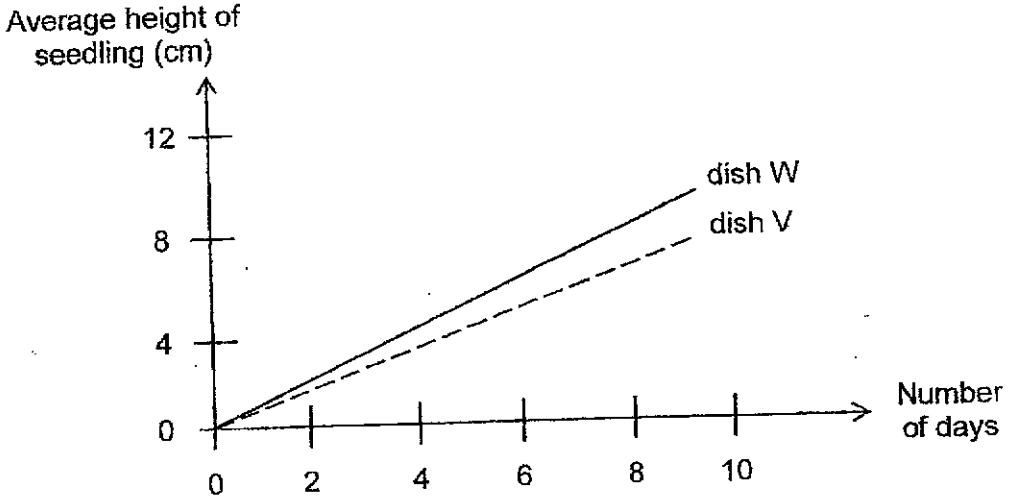
7 May placed three similar seeds in each of the two similar dishes, V and W, which contained wet soil. She placed dish V near the window in her room and dish W in a closed cupboard. The experimental set-up is shown below.



May recorded her observations in the graph below.



She made the following statements about her observation.

A Light was necessary for the seeds to grow.
B The seeds in dish W did not have air to grow.
C The seedlings in the cupboard grew taller than those placed near the window.

Which statement(s) is/are correct?

(1) A only

(2) C only

(3) B and C only

(4) A, B and C

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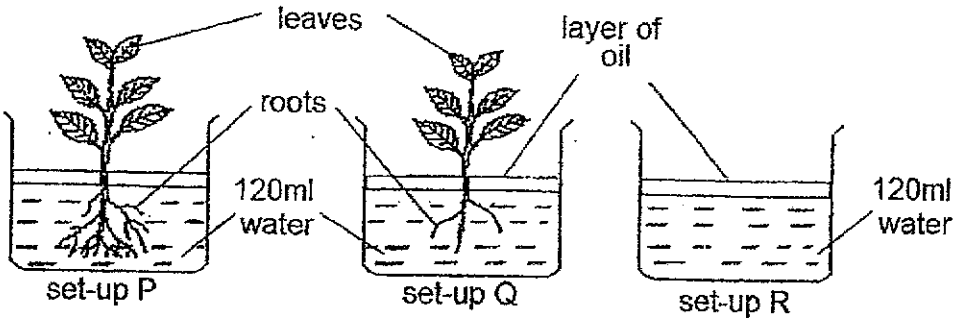
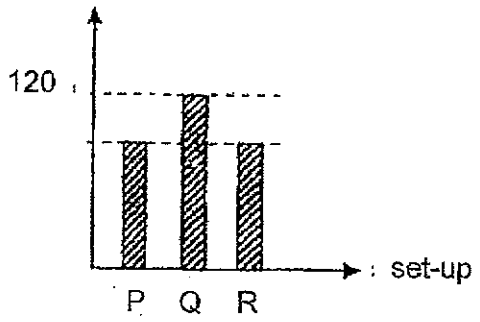
8 Alyssa set up the experiment as shown below.

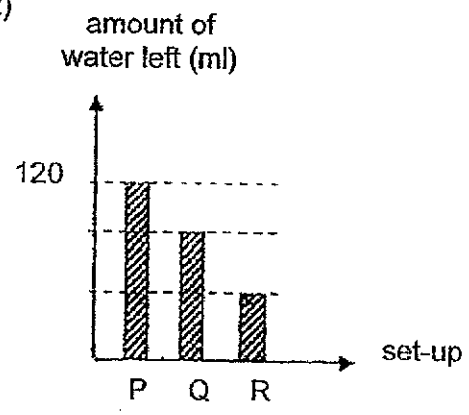


She left the set-ups near a window for three days.
Which one of the following graphs most likely shows the amount of water left in each set-up after three days?

(1)



(2)



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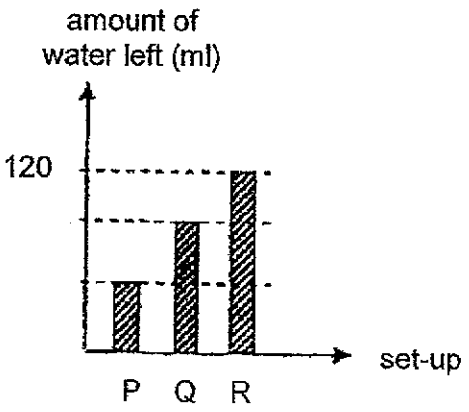

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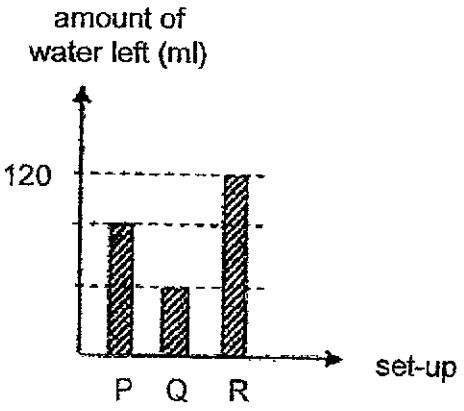

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9 Wei Ling collected some information on three different organisms P, Q and R and recorded it in a table as shown below.

	Organisms		
Characteristics	**P**	**Q**	**R**
Its young moults	Yes	Yes	Yes
Has 3 stages in its life cycle	Yes	Yes	No
Spends part of its life cycle in water	Yes	No	No

Based on the information given, which of the following statements are correct?

A P can be a chicken.

B Q can be a cockroach.

C The young of R does not look like its adult.

(1) A and B only

(2) A and C only

(3) B and C only

(4) A, B and C only

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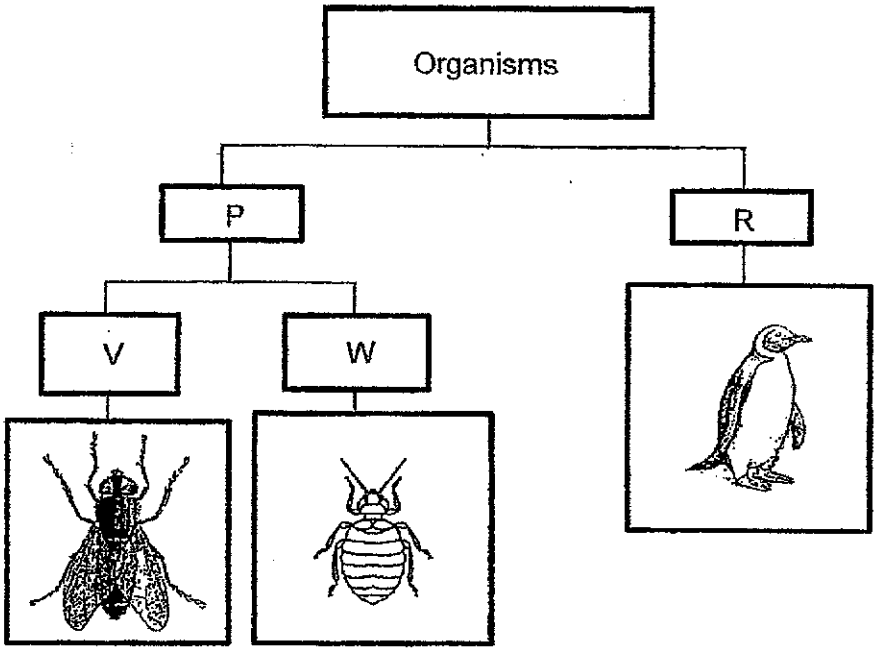
10 Study the chart below.



Which of the following is correct for P, R, V and W?

	P	R	V	W
(1)	No feathers	Has feathers	Lays egg	Does not lay eggs
(2)	3 pairs of legs	Fewer than 3 pairs of legs	Has wings	No wings
(3)	Has wings	No wings	Does not lay eggs	Lay eggs
(4)	Lays eggs	Does not lay eggs	More than 3 pairs of legs	3 pairs of legs

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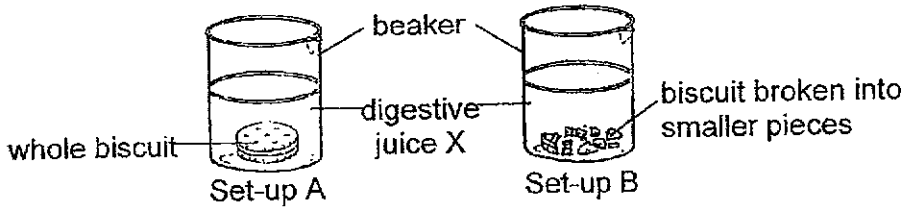
11 Mary wanted to find out if surface area of biscuit would affect the time taken to be completely digested. She prepared two set-ups, A and B, as shown in the diagram below.



Which variables should she keep the same to ensure a fair test?

A Type of biscuit
B Amount of digestive juice X
C Size of the biscuit added into digestive juice X
D Time taken for biscuit to be digested completely

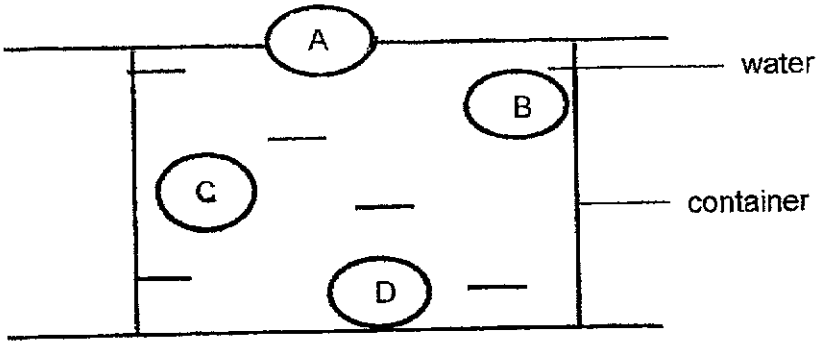
(1) A and B only

(2) B and C only

(3) A and C only

(4) A, B, C and D

12 Bruce put a metal solid ball into a container of water.
At which position, A, B, C or D, would the ball most likely be found?



(1) A

(2) B

(3) C

(4) D

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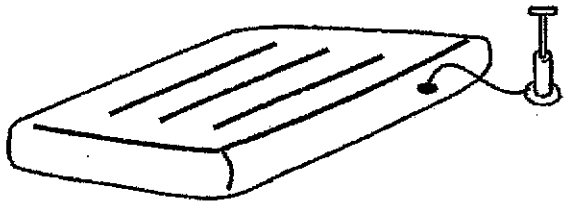
13 Ravi pumps air into a float.



More air can be pumped into the float even though it is already filled with air. This is because air _____.

(1) is matter

(2) has a fixed shape

(3) has no definite mass

(4) has no definite volume

14 The diagram shows a plastic block brought near to a magnet.

What will happen to the magnet?

(1) It will not move.

(2) It will move down.

(3) It will move to the left.

(4) It will move to the right.

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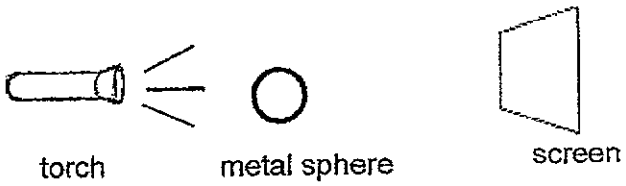
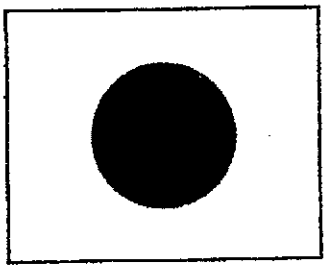
15 The set-up below shows light shining on a metal sphere.

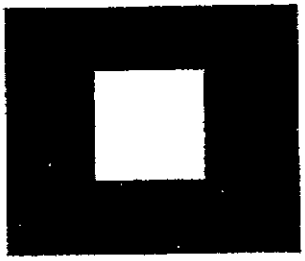


Which of the following would likely be seen on the screen?

(1)



(2)



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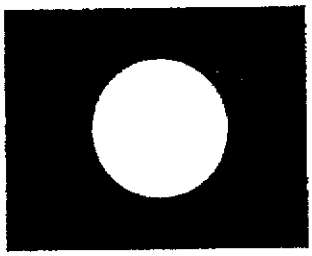
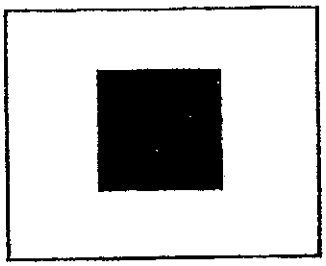


(4)



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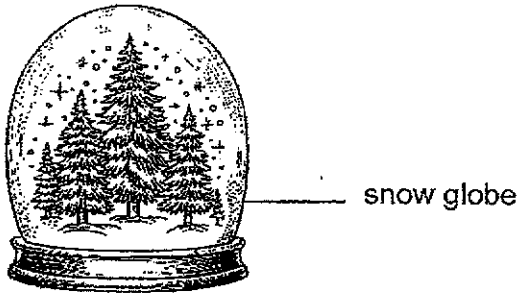
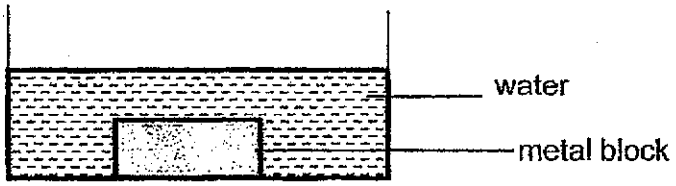
16 Peter has a snow globe on his table as shown in the diagram below.



He was able to see the tree in the snow globe.
What is the property of the snow globe?

	Allows light to pass through	**Reflects light**
(1)	Yes	No
(2)	No	Yes
(3)	No	No
(4)	Yes	Yes

17 A metal block was placed in a fridge until its temperature was 2°C. It was then placed into a container of water at room temperature of 30°C.



Which of the following correctly shows the change in temperature of the water after one minute and the reason?

	Change in temperature of water	**Reason**
(1)	decrease	The water lost heat to the metal block.
(2)	increase	The water gained heat from the metal block.
(3)	increase	The water gained heat from the surroundings.
(4)	decrease	The water lost heat to the surroundings.

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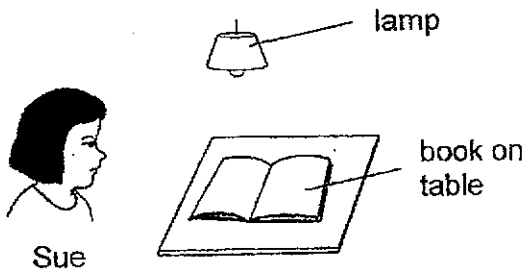
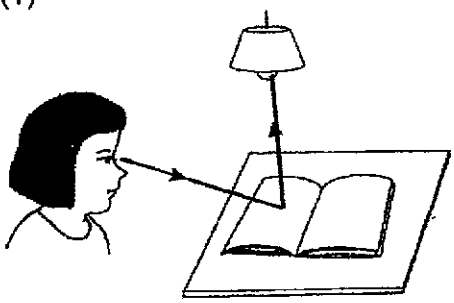
18 Look at the picture below.



Which one of the following explains why Sue can see the book on the table?

direction of light

(1)



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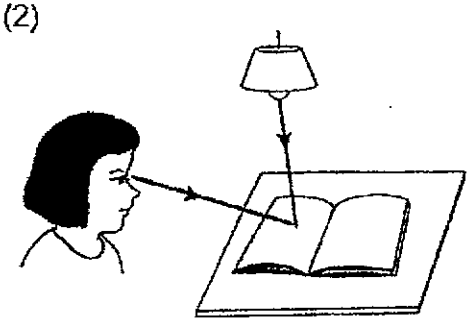

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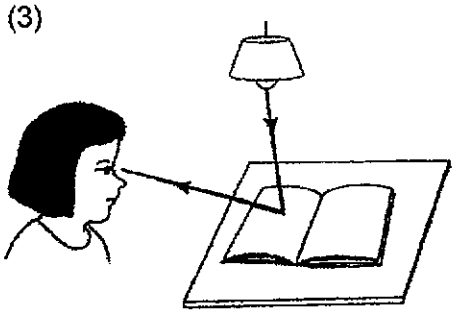

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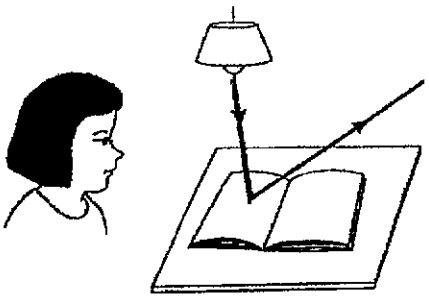
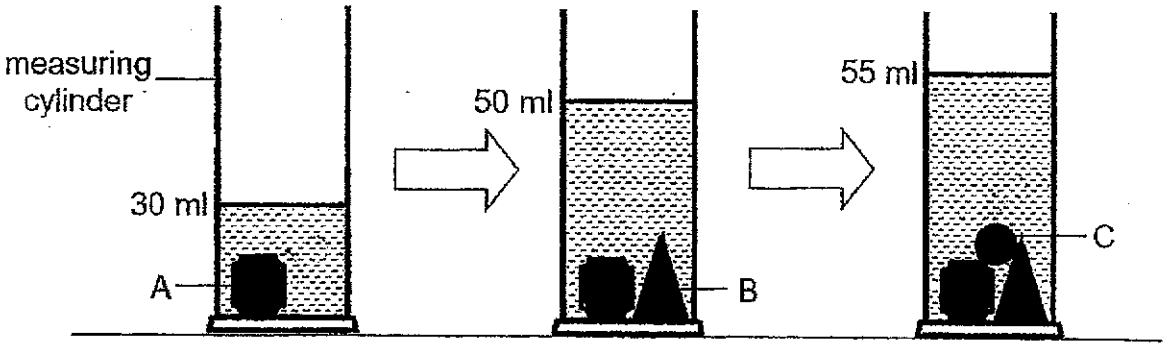


19 Siti poured 20 ml of water into a measuring cylinder. She then placed object A into the cylinder, followed by object B and finally object C.



Which of the following observations is correct?

(1) Object A is heavier than object C.

(2) Object B is heavier than object A.

(3) Object C has a larger volume than object A.

(4) Object B has a larger volume than object A.

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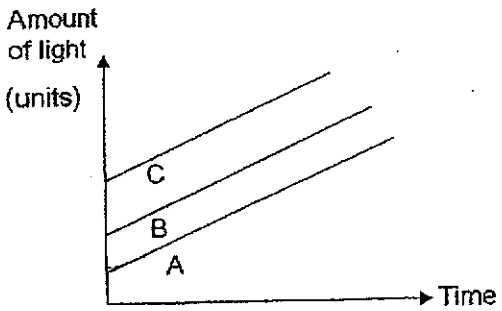
20 Four pupils set up an experiment to measure the amount of light passing through three different materials, A, B and C for 10 seconds as shown in the diagram.

Their observations are shown below.

Materials	Amount of light passed through
A	Very little light
B	Some light
C	Most light

Which graph shows their results correctly?

(1)



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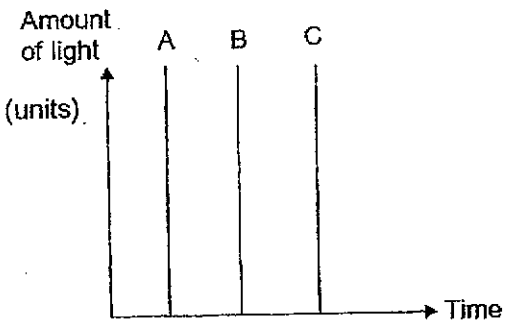

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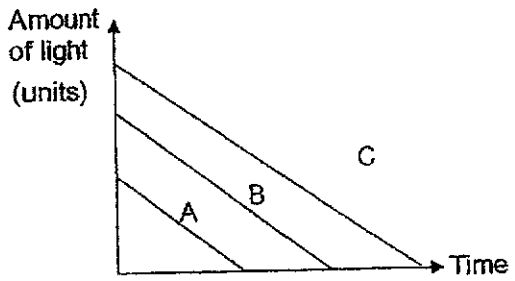

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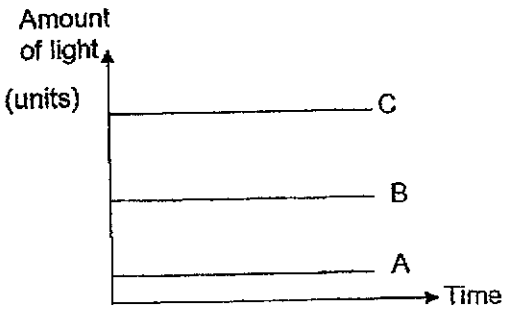

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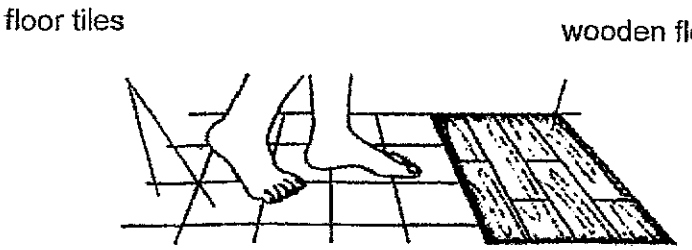
21 Natalie walked barefooted on some floor tiles and then on a wooden floor.



Why did she feel cold on the tiles but not on the wooden floor?

(1) The tile lost heat to her feet.

(2) The wood gained heat from her feet.

(3) The tile is a poorer conductor of heat than wood.

(4) The tile is a better conductor of heat than wood.

22 Mother heated some buns with a liquid filling in a pot as shown in Diagram 1.

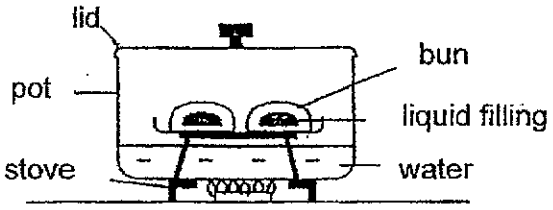


Diagram 1

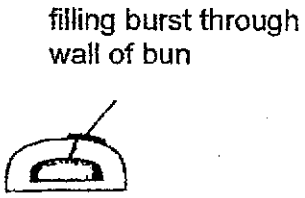


Diagram 2

After some time, Mother noticed the filling had burst through the wall of the bun as shown in Diagram 2.

Which of the following best explains why?

(1) The filling lost heat and contracted more.

(2) The filling lost heat and expanded more.

(3) The filling gained heat and expanded more.

(4) The filling gained heat and contracted more.

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23 Rani filled a container with water as shown in Diagram 1. She then put in a metal cube into the container and observed that the water level rose as shown in Diagram 2 below.

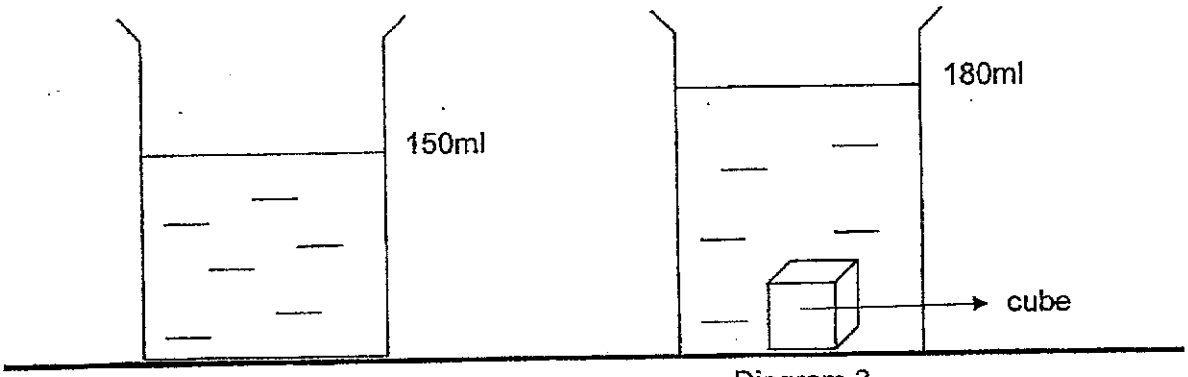


Diagram 1 Diagram 2

Which one of the following statements best explains Rani's observation?

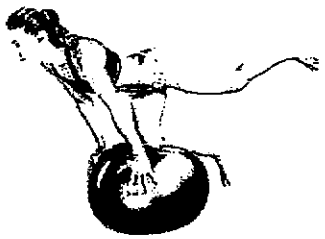
(1) The cube took up space in the container.

(2) The water increased in mass when the cube was put in.

(3) The water increased in volume when the cube was put in.

(4) The cube increased in volume when it was placed into the container.

24 Mandy was doing some exercises with an inflated gym ball as shown below.



What would happen to the air in the gym ball when she was balancing on it?

(1) The mass of air decreases.

(2) The volume of air increases.

(3) The mass of air remains the same.

(4) The mass and volume of air decreases.

End of section A

METHODIST GIRLS' SCHOOL

Founded in 1887

END OF YEAR EXAMINATION 2024
PRIMARY 4
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 4. _____

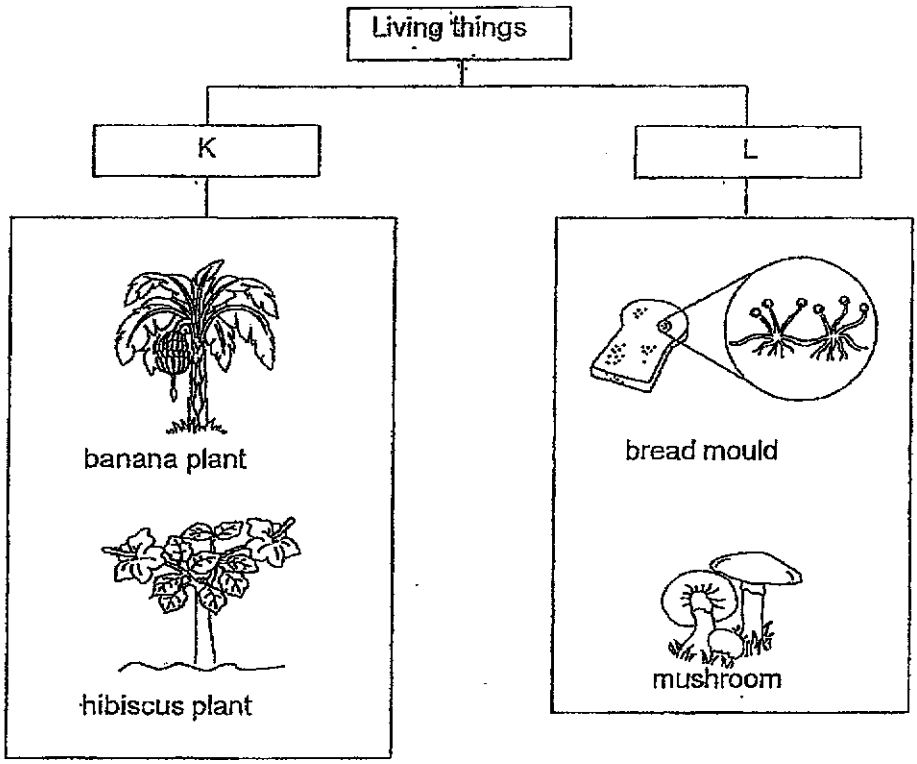
Date : 22 October 2024

Booklet A	48
Booklet B	32
Total	80
Parent's Signature	

This booklet consists of 12 printed pages including this page.

For questions 25 to 35, 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. [32 marks]

25 Study the classification chart below.



Choose the correct words from the box to give suitable headings for K and L. [2]

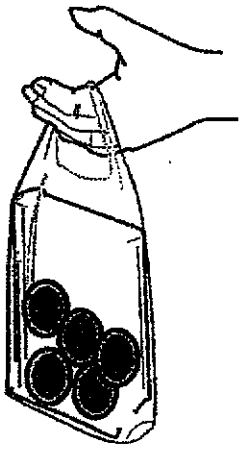
flowering plants	non-flowering plants	fungi	bacteria

K: _____

L: _____

2

26 Kim carries some fruits in a clear plastic bag.



Fill in the blanks using the correct words in the box.

strong	flexible	waterproof	light

(a) The plastic bag does not break even though the fruits are heavy.

This shows that the plastic bag is _____ [1]

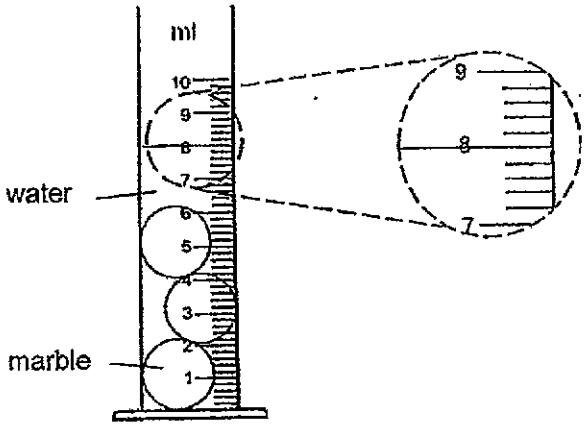
(b) The fruits in the plastic bag will not get wet.

This is because the plastic bag is _____ [1]

2

(Go on to the next page)

27 Water is poured into a measuring cyclinder containing three marbles.



(a) State the reading of the water level.

_____ ml [1]

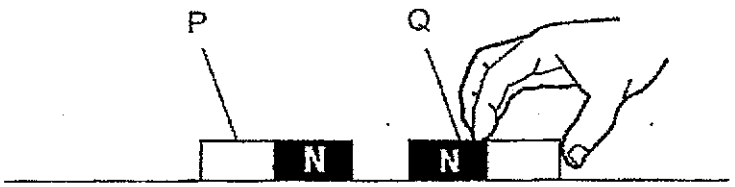
Circle the correct answers for (b)

(b) Water can fill the spaces between the marbles because water has no fixed (mass / shape / volume). [1]

2

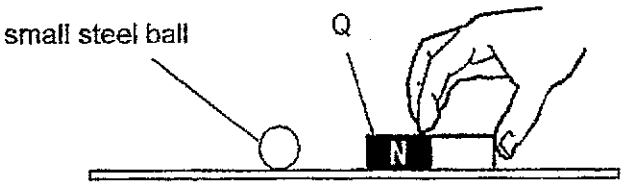
(Go on to the next page)

28 Magnet Q is brought near another magnet P.

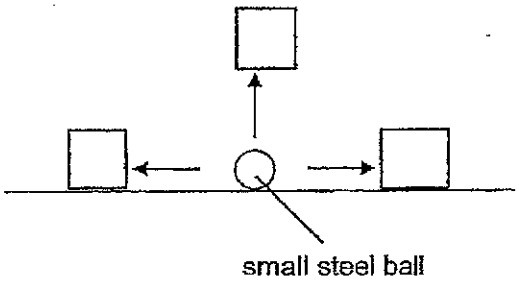


(a) As the poles of both magnets are facing each other, P and Q will _____. [1]

(b) Q is the brought near a small steel ball.



Tick (✓) the box that shows the direction the steel ball will move. [1]

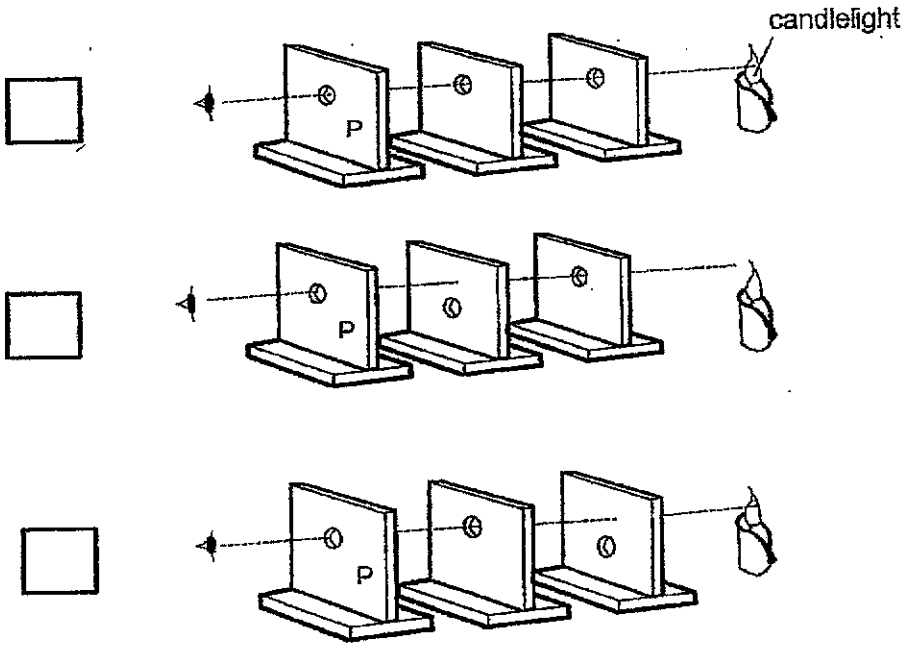


2

(Go on to the next page)

29 Haijun conducts an experiment to investigate how light travels.

(a) Tick (✓) the box for the set-up which allows Haijun to see the candlelight when he looks through the hole at P. [1]

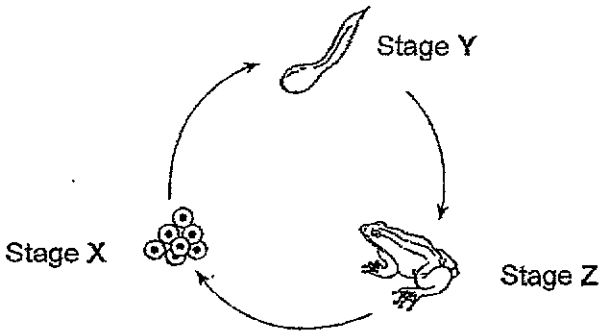


(b) What can Haijun conclude about how light travels? [1]

_____

2

30 Study the life cycle of the frog as shown below carefully.



(a) Which two characteristics of living things are shown in the life cycle of the frog? [1]

(i) _____

(ii) _____

(b) What are two differences between the characteristics of the frog at stage Y and stage Z of its life cycle? [2]

Difference 1: _____

_____

_____

Difference 2: _____

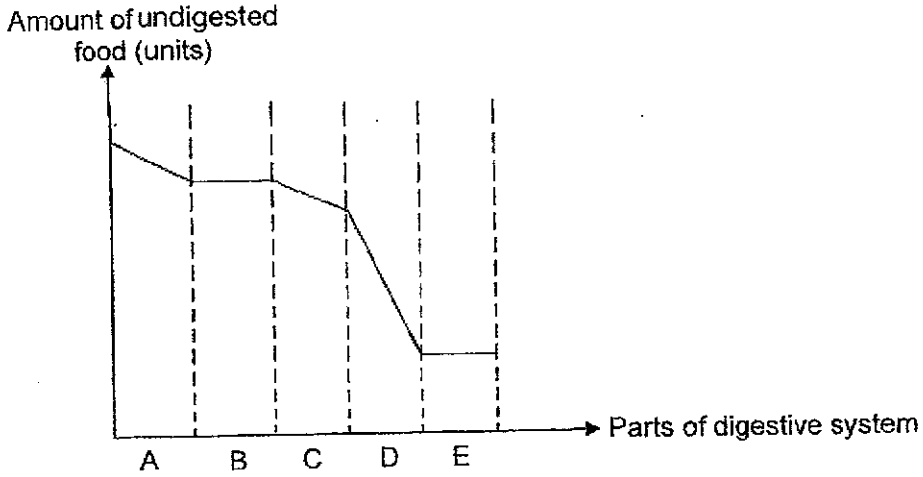
_____

_____

3

(Go on to the next page)

31 Siti had a plate of chicken rice for dinner. The graph below shows how the amount of undigested food changed as the food passed through the different parts of her digestive system.



(a) What is digestion? [1]

(i) _____

_____

(ii) Explain how chewing helps in speeding up the digestion process. [1]

_____

_____

(b) Based on the graph above, in which part of Siti's digestive system, A, B, C, D or E, was the food completely digested? Give a reason for your answer. [1]

_____

_____

(c) Name the organ that represents part E and state its function. [1]

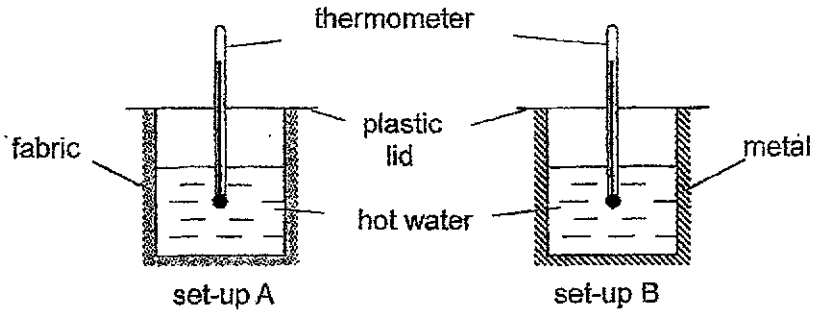
_____

_____

4

(Go on to the next page)

32 Leela wrapped two identical glass beakers with different materials as shown below. She filled both beakers with the same volume of hot water at 90°C, and then placed them in a room at 28°C.



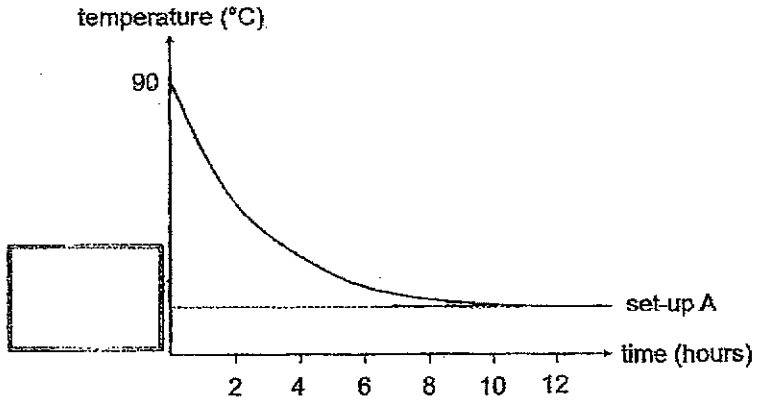
(a) Leela observed that the temperature of hot water in both beakers decreased after some time. Explain why. [1]

(b) Leela measured the temperature of the water in set-up A at different times and plotted her results in the graph shown below.

(i) Write in the box below the temperature observed after 12 hours. [1]

(ii) Draw a line in the graph to show how the temperature of water in set-up B changes over time, compared to the temperature of water in set-up A. [1]

(bi)

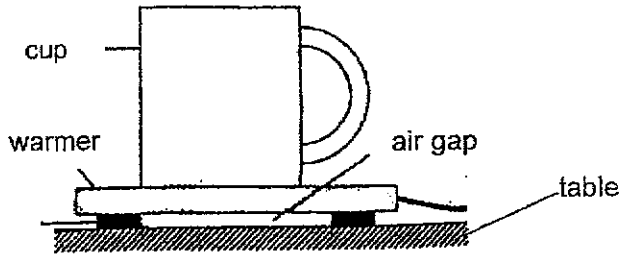


(c) Why must Leela have the same volume of water in each set-up? [1]

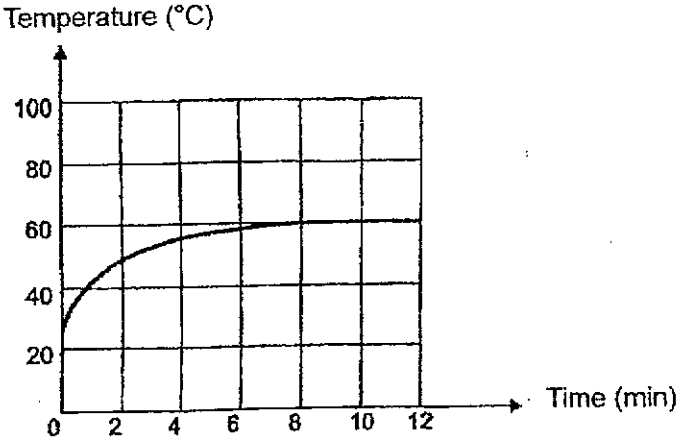
4

(Go on to the next page)

33 Peter placed a cup of coffee on an electric warmer as shown below.



Peter switched on the electric warmer. The temperature of the coffee is shown below.



(a) State what is temperature. [1]

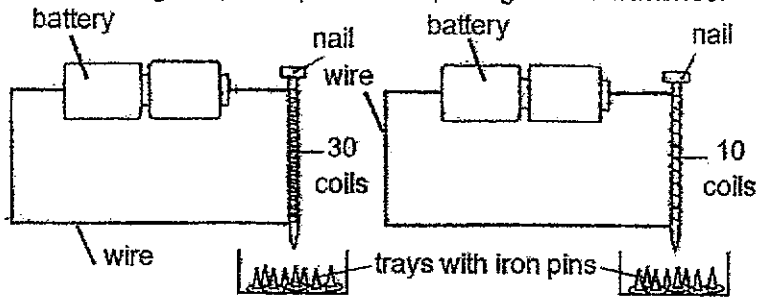
(b) What was the temperature of the coffee at 10 minutes? [1]

(c) Peter found that the top of the table under the electric warmer was not as hot as the cup. Explain why. [2]

4

(Go on to the next page)

34 Lily set up two electromagnets, set-ups A and B, using similar batteries.



set-up A set-up B

She observed and recorded the number of iron pins attracted to each of the electromagnets in the table below.

Set-up	Number of iron pins attracted to the electromagnet
A	8
B	3

(a) Which set-up has a stronger electromagnet? Explain why. [1]

(b) Lily placed the two electromagnets at the same height above the trays with iron pins. Explain how this will ensure a fair test. [1]

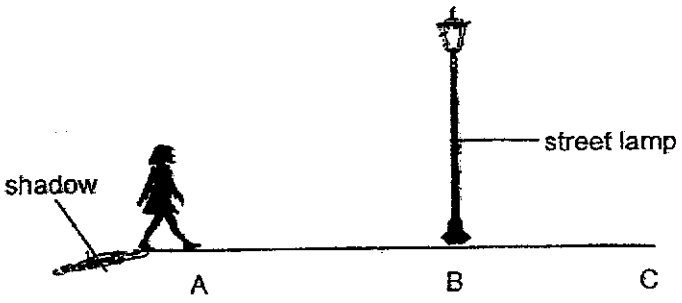
(c) Suggest one change to set-up B if Lily wants the nail to attract more iron pins. [1]

(d) She then changed the iron nail to copper nail to set-up A. What would she observe? Explain your answer. [1]

4

(Go on to the next page)

35 The diagram below shows a girl walking close to a street lamp.



(a) What property of light causes shadow to be formed? [1]

(b) What would happen to the length of her shadow as she walks from position A to B and then to C? [1]

(c) Explain why the size of the shadows would be shorter when the street lamp was raised to a higher height. [1]

3

End of paper

YEAR : 2024

LEVEL : PRIMARY 4

SCHOOL : MGS

SUBJECT : SCIENCE

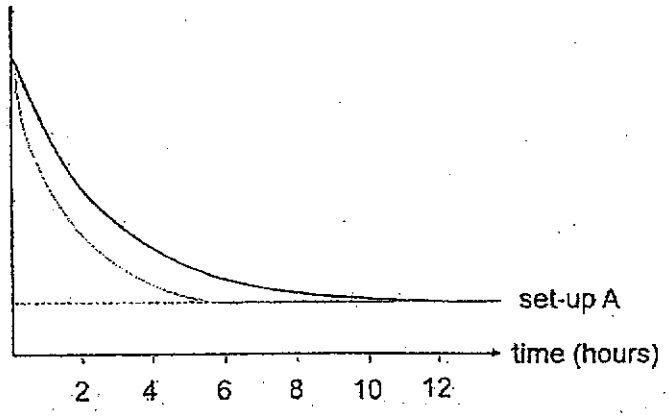
TERM : EOY

BOOKLET A

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

SECTION B:

25	K:Flowering Plants L:Fungi
26a	Strong
26b	Waterproof
27a	8 (ml)
27b	Shape
28a	Repel
28b	To The Right
29a	First Set-Up
29b	Light Travels In a Straight Line.
30a(i)	Living things grow.

30a(ii)	Living Things Reproduce.
30b	The Tadpole Breaths Through Gills And The Frog Breaths Through Lungs And Moist Skin. The Tadpole Can Be Found /Live In Water Only While The Frog Can Be Found / live on Land Or In Water.
31a(i)	Digestion Is The Process Where by Food is Broken Down Into Simpler Substances.
31a(ii)	Chewing Helps To Break Down The Food Into Smaller Pieces And It Allows More Surface Area Of The Food To Be In Contact With Digestive Juices For Faster Digestion.
31b	Part D. The Amount Of Undigested Food Leaving D Stopped Decreasing/became Constant At E.
31c	Large Intestine. Water Is Absorbed From The Undigested Food.
32a	The Water In The Breakers Lost Heat To The Surrounding.
32b(i)	$28^{o}c$
32b(ii)	

32c	Leela Used The Same Volume Of Water In Each Set-Up To Ensure A Fair Test So That There Will Be Only Changed Variable Which Is The Type Of Material Used To Wrap The Breakers
33a	Temperature Is The Mesurement Of The Degree Of Hotness Or Coldness Of An Object.
33b	$60^{o}c$
33c	Air Is a Poor Conductor Of Heat Which Slows Down Heat Flow From The Electric Warmer To The Table Top Gains Heat Slower Than The cup.
34a	The Electromagnet In Set-Up A Is Stronger . The Nail Has More Coils Of Wire Around It So It Will Have Stronger Magnetic Force / Strength.
34 b	Keeping The Same Height Above The Trays Will Ensure That The Pins Attracted Were Due To The Number Of Coils Of Wire And Not The Height Of The Electromagnet Above The Pins.
34c	Use More Batteries / Coil More Wires Around The Nail.
34d	The Copper Nail Would Not Attract Any Iorn Pins As Copper Is Non-Magnetic And Cannot Be Magnetised.
35a	When Light Is Completely Blocked By An Opaque Object,A Shadow Is Formed.
35b	The Length of Her Shadow Would Decrease As She Walks From A To B And Increase When She Walks From B To C .
35c	The Light Source / Lamp Is Further Away From The Girl So The Girl Blocks Less Light.