MAHA BODHI SCHOOL
2023 END OF YEAR EXAMINATION
PRIMARY FOUR SCIENCE
(BOOKLET A)

Name : _____ ( )

Class : Primary 4 _____

Date : 26 Oct 2023

Total Duration for Booklets A and B: 1 h 45 min

INSTRUCTIONS TO CANDIDATES:

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Shade your answers in the Optical Answer Sheet (OAS) provided.

This booklet consists of **19** printed pages.

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BOOKLET A : [28 x 2 marks = 56 marks]

For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Use a 2B pencil to shade your answer on the Optical Answer Sheet (OAS).**

1. Which of the following is **NOT** a source of heat?

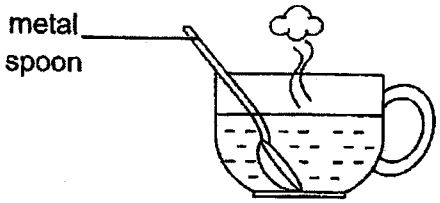
   (1) The Sun

   (2) A lighted bulb

   (3) A lighted candle

   (4) A woollen jacket

2. Jonas places a metal spoon in a cup of hot coffee.



a cup of hot coffee

The spoon becomes hotter after a while.
Which one of the following explains this?

(1) The cup loses heat to the hot coffee.

(2) The spoon loses heat to the hot coffee.

(3) The spoon gains heat from the hot coffee.

(4) The hot coffee gains heat from the spoon.

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3. Which of the following is a source of light?

(1)



an apple

(2)



a fire

(3)



the moon

(4)



a mirror

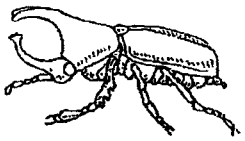
4. Matter is anything that has mass and occupies space.
Which one of the following is **NOT** matter?

(1) air
(2) water
(3) stone
(4) shadow

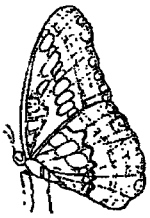
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5. Which animal has a 3-stage life cycle?

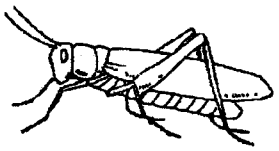
(1) beetle



(2) butterfly



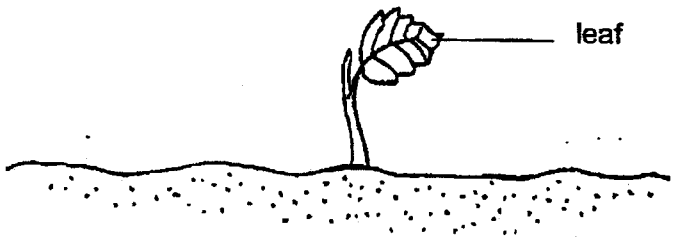
(3) grasshopper



(4) mosquito



6. The diagram below shows a young plant.



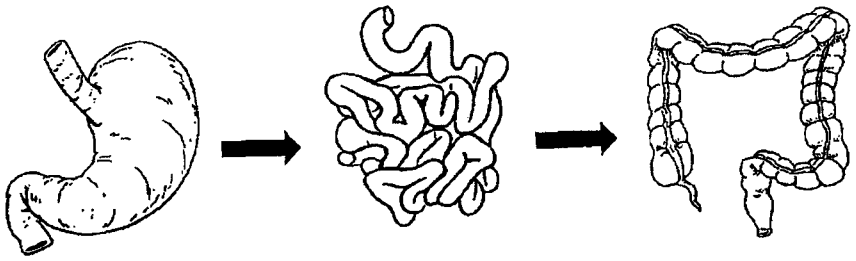
The leaf helps the plant to _____.

(1) make food
(2) grow upright
(3) absorb water
(4) absorb nutrient

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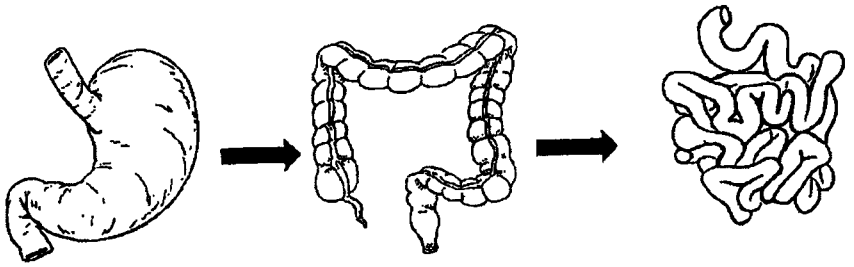
7. Which one of the following shows the correct order when food moves through some parts of the digestive system?

(1)



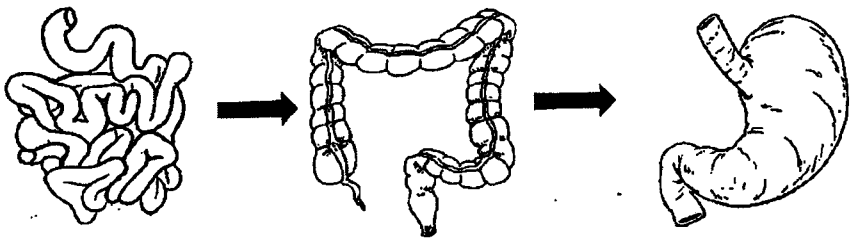
stomach → small intestine → large intestine

(2)



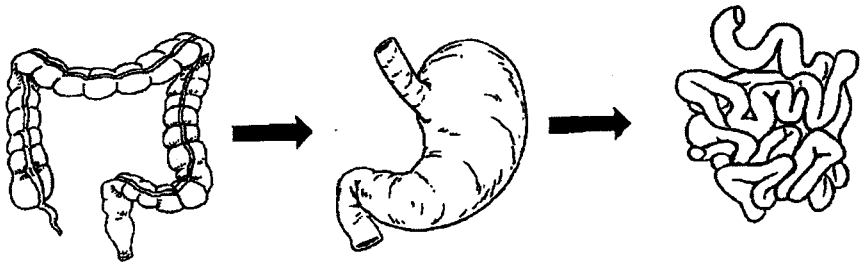
stomach → large intestine → small intestine

(3)



small intestine → large intestine → stomach

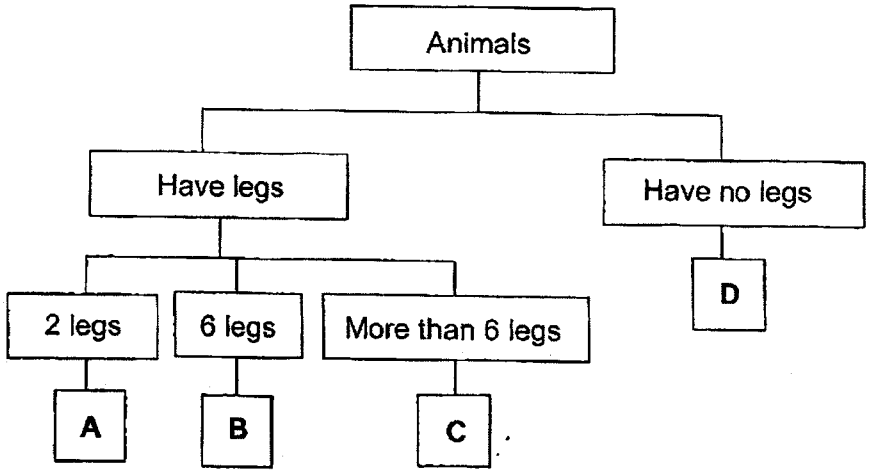
(4)



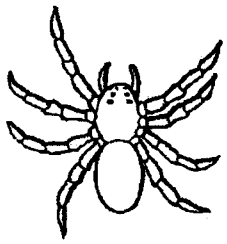
large intestine → stomach → small intestine

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8. Study the chart below.



Where would you put this animal in the chart above?

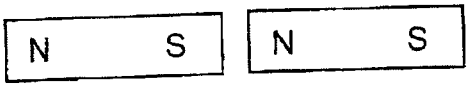


(1) A
(2) B
(3) C
(4) D

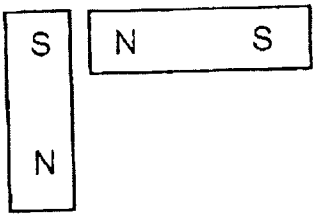
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9. In which one of the following will the two magnets push each other away?

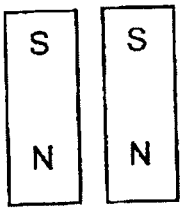
(1)



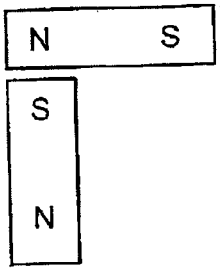
(2)



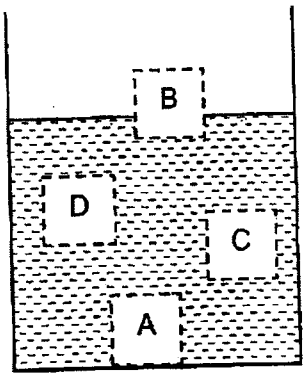
(3)



(4)



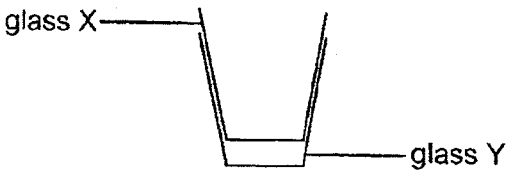
10. Jason put a wooden block into a container of water.
At which position, A, B, C or D, would the block most likely to be found?



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

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11. Both glasses, X and Y, were stuck together as shown in the diagram below.



Which of the following is the best way to separate the two glasses?

(1) Pour hot water into glass X.

(2) Place only glass Y in a container of ice cubes.

(3) Place both glasses X and Y in a container of hot water.

(4) Place ice cubes in glass X and glass Y in a container of hot water.

12. Bala had four similar cups made of different materials, K, L, M and N. He poured an equal amount of hot water at 70°C into each cup. After 15 minutes, the temperature of the water was measured and recorded in the table below.

	Material			
	K	**L**	**M**	**N**
Temperature of water after 15 minutes (°C)	35	60	23	48

Based on the results, which material is the poorest conductor of heat?

(1) K

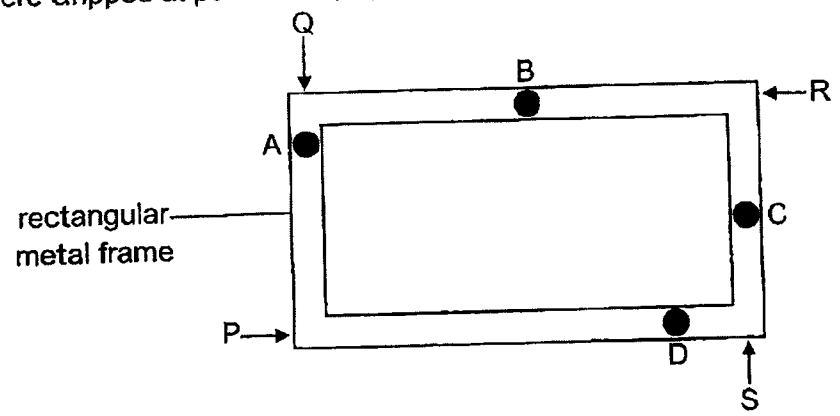
(2) L

(3) M

(4) N

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13. The diagram below shows a rectangular metal frame. Four similar drops of wax were dripped at positions A, B, C and D of the frame.



Chloe heated the metal frame at one of the points. She recorded the time taken for the wax to melt completely in the table below.

Position of wax	Time taken (min)
A	9
B	7
C	3
D	1

Based on the results above, at which point, P, Q, R or S, was the metal frame heated?

(1) P

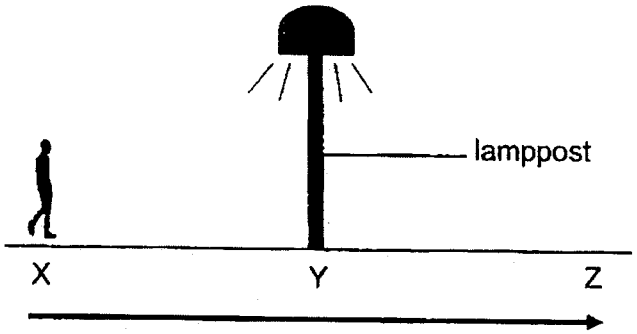
(2) Q

(3) R

(4) S

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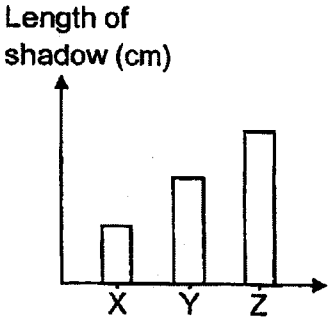
14. Jaydan walked from point X to point Z one night, passing a lamppost at point Y as shown in the diagram below.



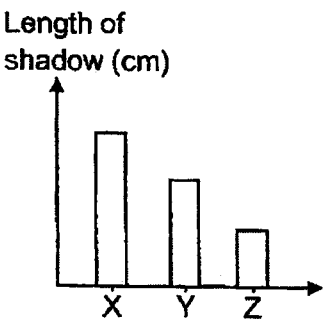
The lamppost was the only source of light.

Which of the graphs below shows how the length of his shadow changed as Jaydan walked from points X to Z?

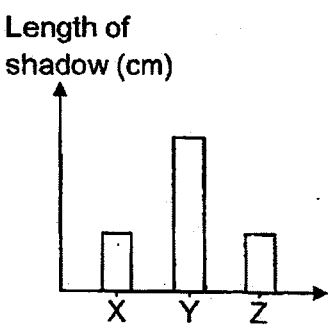
(1)



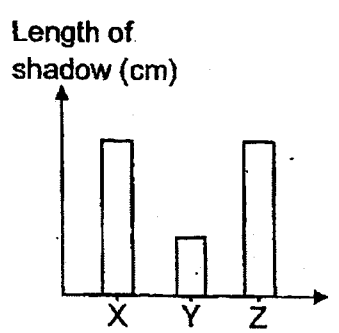
(2)



(3)

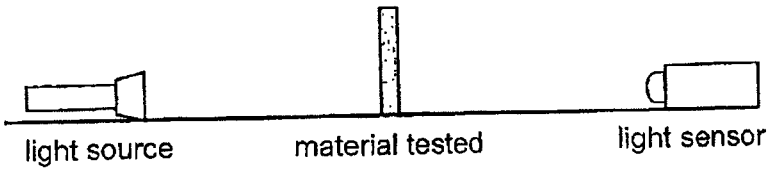


(4)



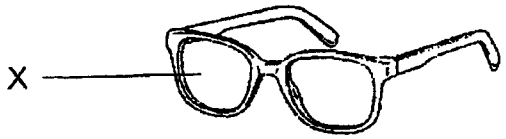
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15. Four different materials E, F, G and H of equal size and thickness were used in the set-up as shown below.



A light sensor was used to measure the amount of light that passed through each material. The results are shown in the table below.

Material	Amount of light recorded (units)
E	5400
F	350
G	70
H	2100

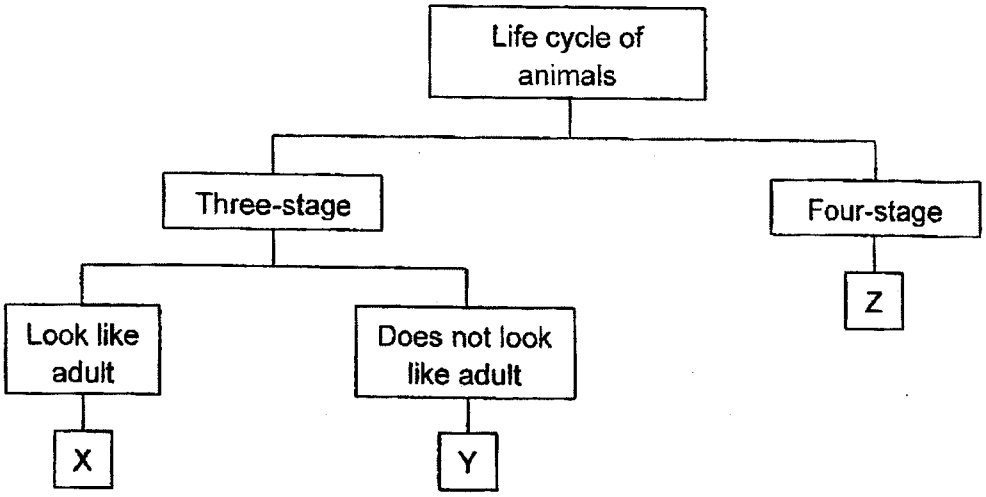


Based on the results, which material E, F, G or H is most suitable for making part X of the spectacles so that the user can see through it most clearly?

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

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16. Study the chart below.

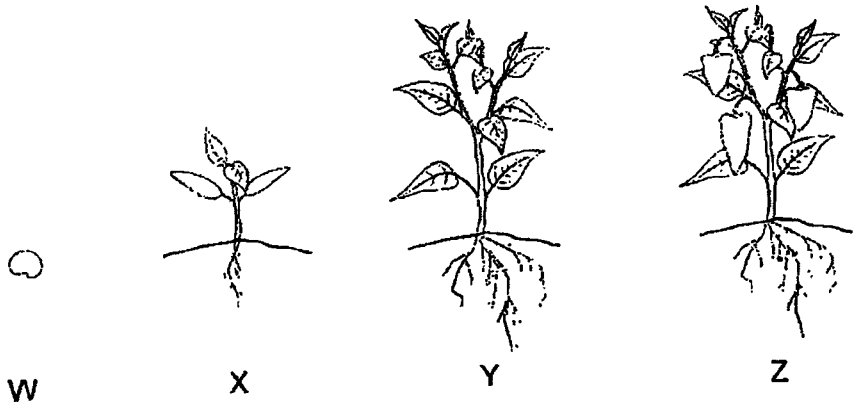


Which of the following correctly shows animals X, Y and Z?

	X	Y	Z
(1)	frog	mealworm beetle	cockroach
(2)	cockroach	butterfly	mealworm beetle
(3)	cockroach	frog	mealworm beetle
(4)	grasshopper	cockroach	butterfly

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17. The diagrams below show the different stages in the life cycle of plant M.

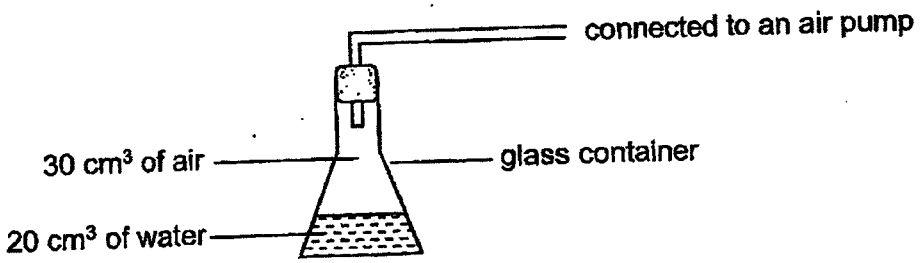


Which of the following statements are correct?

A. Plant M is a non-flowering plant.
B. Plant M has a four-stage life cycle.
C. Plant M can make its own food at X.
D. Z shows the adult stage of the life cycle of plant M.

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

18. Study the set-up below. The volume of the air-tight glass container is 50 cm^3.



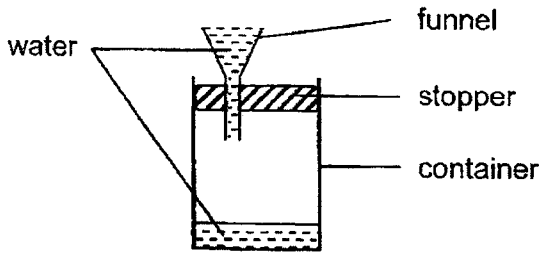
Using the air pump, 10 cm^3 of air is added into the container.

What is the final volume of the air in the glass container?

(1) 10 cm^3
(2) 20 cm^3
(3) 30 cm^3
(4) 40 cm^3

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19. Water was very quickly poured into a container with a funnel. The diagram below shows water had stopped flowing into the container after some time.



Which of the following best explains why the water had stopped flowing?

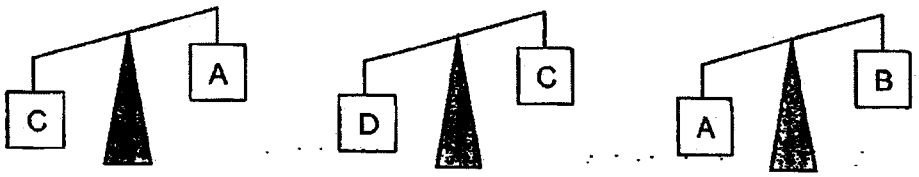
(1) The air in the container occupied space.

(2) The water in the container occupied space.

(3) The air in the container had no definite shape.

(4) The water in the container had no definite shape.

20. Four objects A, B, C and D have different masses. The diagrams below show the results when two objects are placed on a balance.



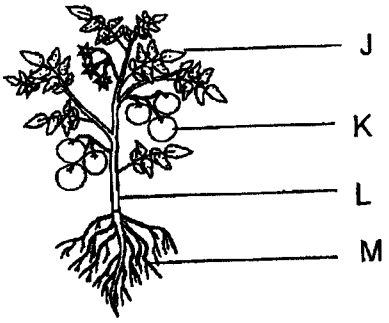
Based on the results, which of the following shows the correct arrangement of objects from the lightest to the heaviest?

	Lightest → Heaviest			
(1)	B	A	C	D
(2)	B	C	A	D
(3)	D	A	C	B
(4)	D	C	A	B

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21. Two pupils, Ali and Peter, made the following observations about the same part of a plant.

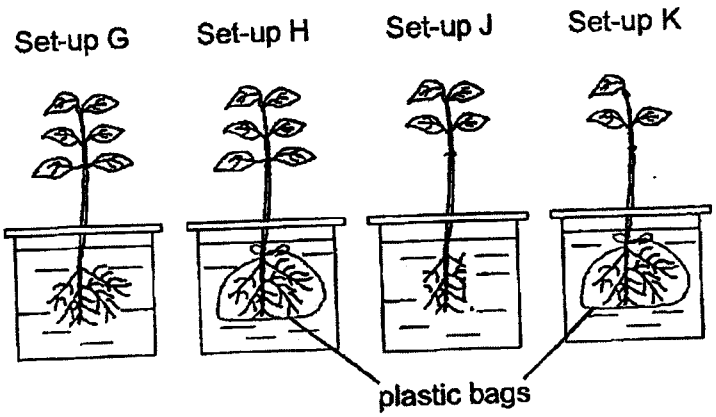
Ali: It supports the plant.
Peter: It holds the leaves up so that they can get sunlight.



Which part, J, K, L or M, of the plant are they observing?

(1) J
(2) K
(3) L
(4) M

22. Joanne sets up an experiment to find out if the roots of plants took in water. She wrapped the roots of plants in set-up H and K. She then placed the four plants in containers with the same amount of water as shown in the diagram below.



Which of the two set-ups above should she use to conduct the experiment?

(1) G and H only
(2) G and J only
(3) H and K only
(4) J and K only

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23. Jenny observed the growth of a plant. At the end of each day, she recorded her observations in the table below.

Day	Height of plant (cm)	Number of leaves
2	0	0
4	1	0
6	3	0
8	5	3

On which day would the plant be making food?

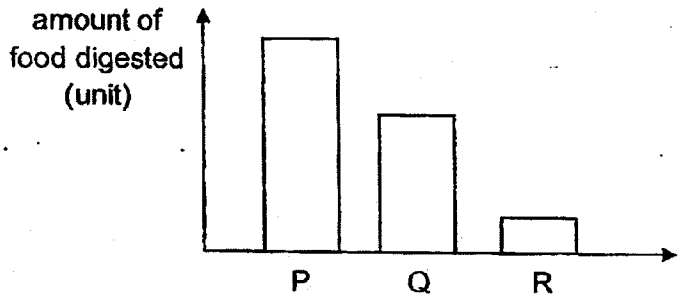
(1) Day 2

(2) Day 4

(3) Day 6

(4) Day 8

24. P, Q and R represent organs in a human digestive system. The graph below shows the amount of food digested in each organ.

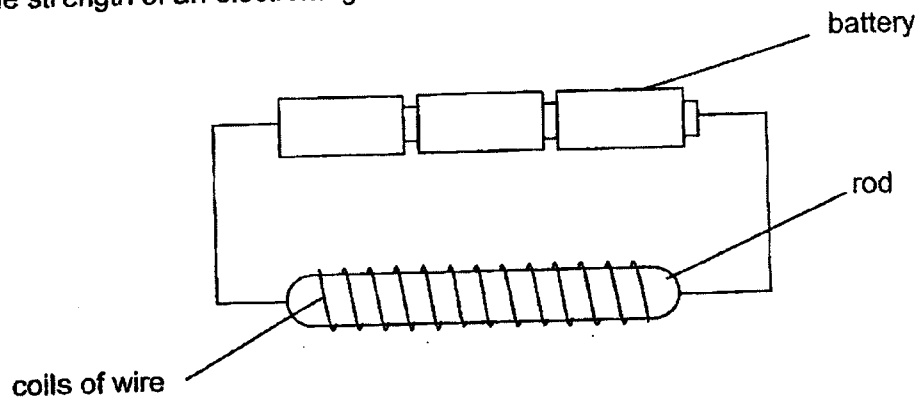


Which of the following correctly identifies organs P, Q and R?

	P	Q	R
(1)	mouth	stomach	small intestine
(2)	stomach	small intestine	mouth
(3)	small intestine	mouth	stomach
(4)	small intestine	stomach	mouth

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25. Jason wanted to find out whether the number of coils of wire around a rod affects the strength of an electromagnet.



The table below shows the three different set-ups.

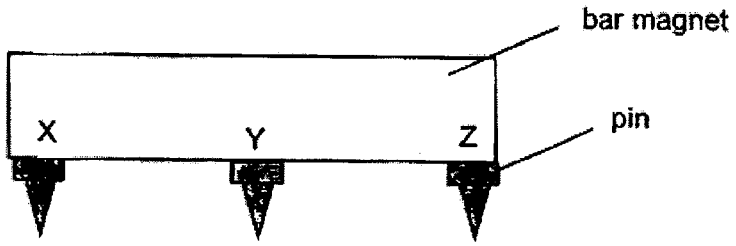
Set-up	Number of batteries	Number of coils	Material of rod
A	3	10	iron
B	3	20	steel
C	3	20	iron

Which set-ups should he use for his experiment?

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

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26. Lingling placed a pin at point, X, Y and Z of a bar magnet.



The mass of the heaviest pin that can be attracted at the points without dropping is shown in the table below.

	X	Y	Z
Mass of heaviest pin held (g)	5	2	5

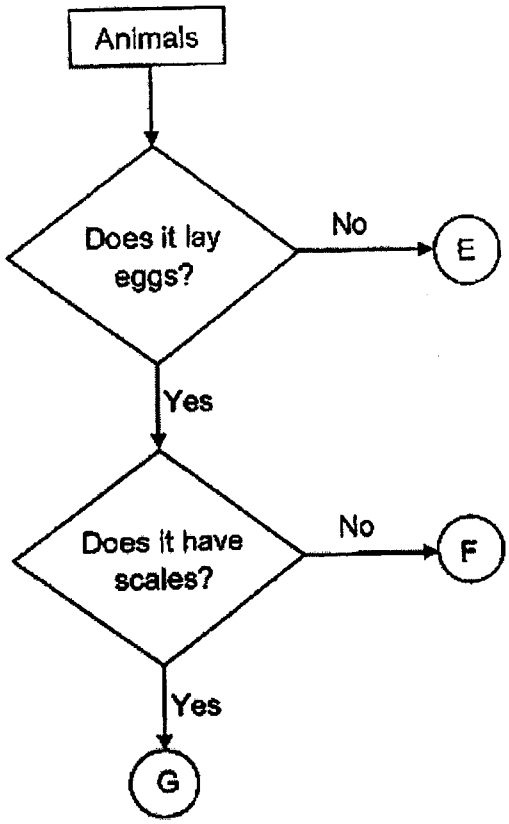
Which of the following can be concluded from the results?

A. The North pole of the magnet is at X.
B. The pin is made of a magnetic material.
C. The magnetic pull at Y is weaker than the magnetic pull at Z and X.

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

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27. Study the flowchart below.



Which of the following shows the correct animal groups for E, F and G?

	E	F	G
(1)	bird	mammal	reptile
(2)	reptile	bird	mammal
(3)	mammal	bird	reptile
(4)	mammal	reptile	bird

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28. Firemen wear the clothing as shown when they put out fires.



Based on the properties shown below, which material, A, B, C or D is most suitable for making the firemen's clothing?

	Material	Property			
		strong	flexible	waterproof	good conductor of heat
(1)	A	no	yes	no	yes
(2)	B	yes	no	yes	no
(3)	C	yes	yes	yes	no
(4)	D	yes	yes	yes	yes

END OF BOOKLET A

GO ON TO BOOKLET B

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MAHA BODHI SCHOOL
2023 END OF YEAR EXAMINATION
PRIMARY FOUR SCIENCE
(BOOKLET B)

Name: _____( )

Class: Primary 4 _____

Date : 26 Oct 2023

Total Duration for Booklets A and B: 1 h 45 min

INSTRUCTIONS TO CANDIDATES:

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Write all your answer in this booklet.

Booklet	Marks Obtained	Max Marks
A		56
B		44
Total		100

Parent's signature: _____

This booklet consists of **13** printed pages.

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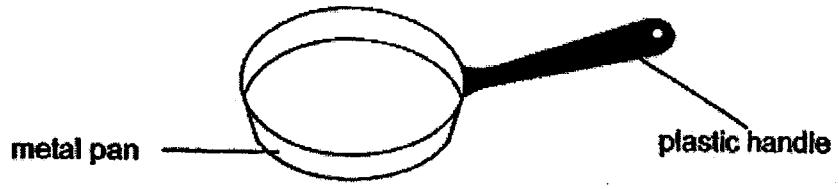
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BOOKLET B : [44 marks]
For questions 29 to 40, write your answers in this booklet.

The number of marks available is shown in the brackets [ ] at the end of each question or part-question.

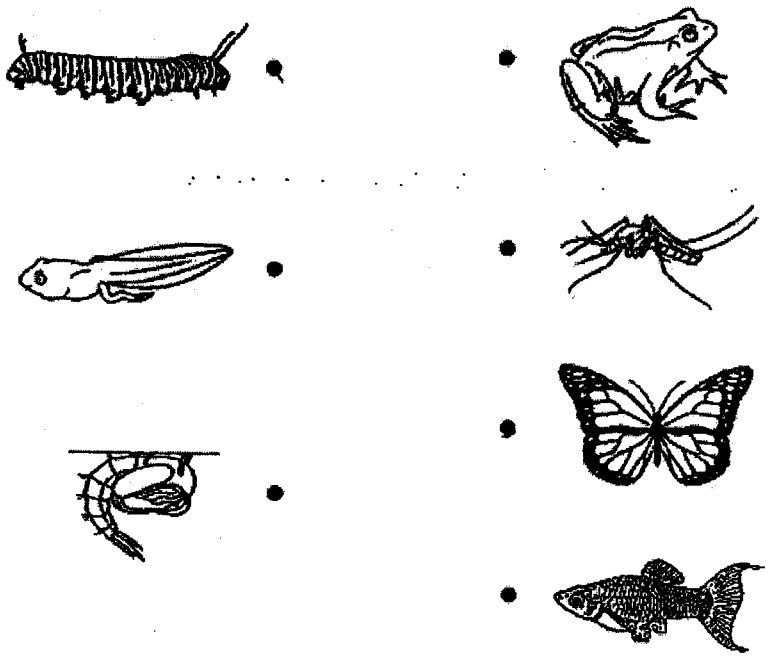
29. The diagram below shows a frying pan.



(a) The handle is made of plastic because it is a _____ conductor of heat. [1]

(b) The pan is made of metal because it is a _____ conductor of heat. [1]

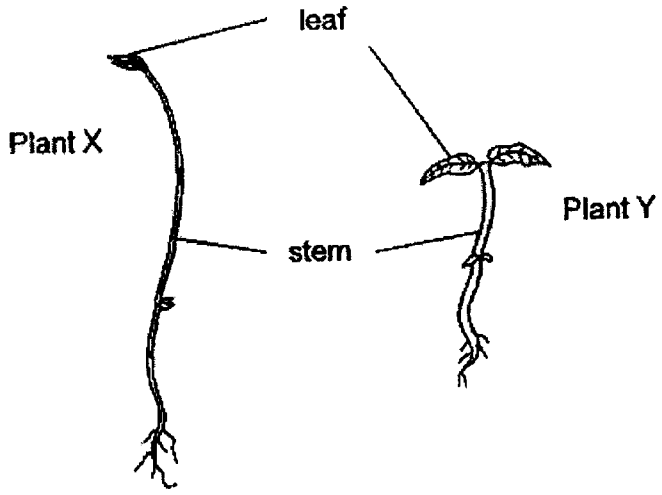
30. The diagram below shows the young and adult of some animals.
Draw lines to match the young with the correct adult. [3]



Marks : / 5

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31. The diagram below shows two plants.



(a) What is one difference between the stem of plant X and the stem of plant Y? [1]

The stem of plant X is _____ than the stem of plant Y.

(b) The _____ help both plants to take in water in the soil. [1]

32. Fill in the blanks in the table with names of broad groups of living things. [3]

Group	Characteristics
	Use their gills to breathe
	Body covered with feathers
	Give birth to young

Marks : / 5

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33. The diagrams below show a frog and its eggs.





(a) How many stages are there in the life cycle of a frog? [1]

(b) How does laying many eggs help in the life cycle of a frog? [1]

(c) **30 frog eggs were placed into a tank for observation over some time.** The **table below shows the results at the start of each week.**

Week	0	1	2	3
Number of eggs	30	26	16	1

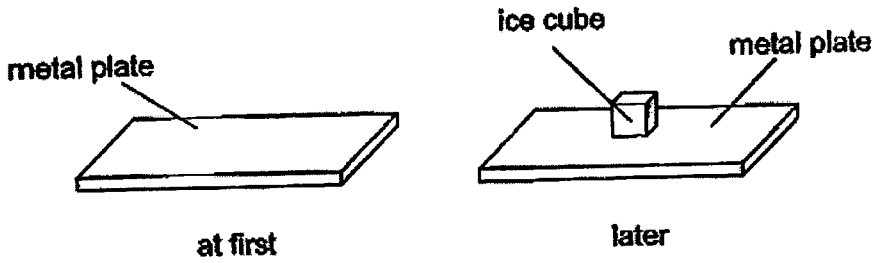
(i) How did the number of eggs change over the three weeks? [1]

(ii) The eggs were not removed from the tank and no eggs died. What else could have happened to cause the number of eggs to change? [1]

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34. (a) Denise placed a metal plate on a table. She then placed a piece of ice cube on the metal plate as shown below.



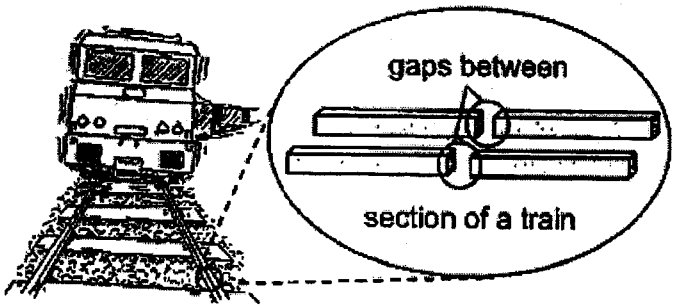
(i) Explain why the temperature of the metal plate decreased after the ice cube was placed on it. [1]

(ii) What was the change in state of the ice cube after 15 minutes? [1]

Marks : /2

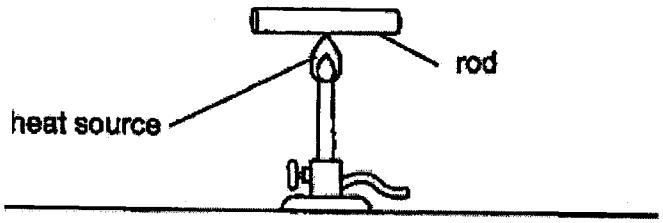
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34. (b) At a train station, Denise observed that there were gaps between the sections of the train track as shown in the diagram below.



Explain why the gaps between the sections of train tracks are important on a hot day. [1]

(c) She conducted an experiment using the set-up as shown below.



She recorded the length of the rod before and after heating. She repeated the experiment with another rod made of a different material. Her results were shown in the table below.

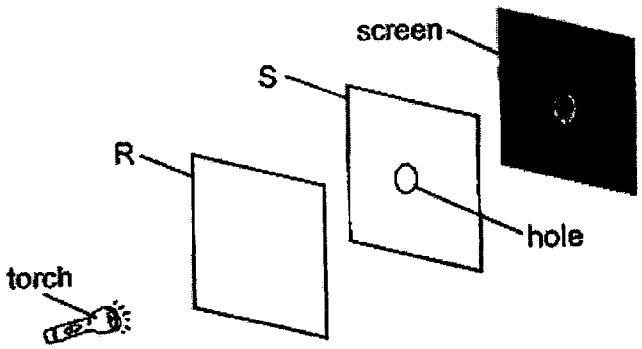
Material of rod	Length before heating (cm)	Length after heating (cm)
X	10	11
Y	10	13

Based on the results above, which material, X or Y, is more suitable to make the train tracks at the train station? Explain your answer. [2]

Marks : / 3

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35. Charles carried out an experiment in a dark room. Sheets R and S were arranged in a straight line.



When the torch was switched on, a bright patch of light was seen on the screen.

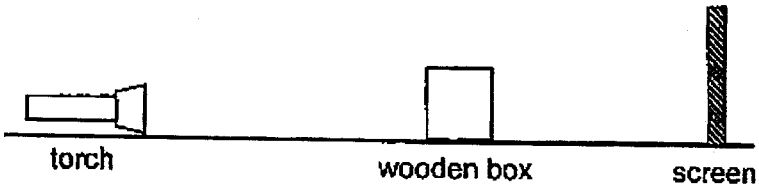
(a) Based on the above information, put a tick (✓) in the table below to show the correct properties of sheets R and S. [2]

Sheet	Does not allow light to pass through	Allows some light to pass through	Allows most light to pass through
R			
S			

Marks : / 2

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35. Charles carried out another experiment using the set-up as shown below.



When Charles shone the torch on the wooden box, a shadow was formed on the screen. He repeated the experiment with different distances between the torch and the wooden box. His results are shown in the table below.

Distance between torch and wooden box (cm)	Height of the shadow formed on the screen (cm)
11	4
9	5
7	7

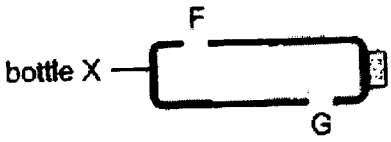
(b) (i) How does the distance between the torch and the wooden box affect the height of the shadow formed? [1]

(ii) State the variable that was measured in the above experiment. [1]

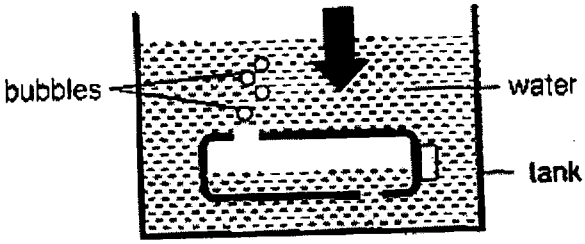
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36. Tricia made two holes, F and G, on an empty bottle X as shown below.



When she pushed bottle X into a tank of water, the water level in the bottle rose and bubbles escaped from hole F.



(a) What was inside bottle X at the start of the experiment? [1]

_____

(b) Which property of a liquid is shown when water took both the shape of the bottle and the shape of the tank? [1]

_____

_____

(c) Explain why the water level in the tank rose when bottle X was pushed into the water. [1]

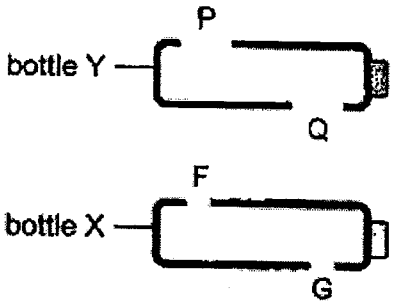
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36. (d) Tricia repeated the experiment with another similar empty bottle Y that had bigger holes, P and Q than bottle X.

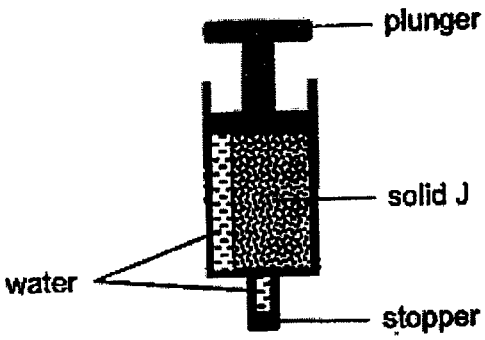


When Tricia pushed bottle Y into the tank of water, she observed that the water level in bottle Y rose faster and more bubbles escaped.
Explain her observation. [2]

Marks : /2

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37. The diagram below shows a syringe filled with a block of solid J and some water.



(a) The shape of solid J did not change when it was placed in the syringe. The plunger could not be pushed downwards.
State two properties of a solid that could explain these observations. [2]

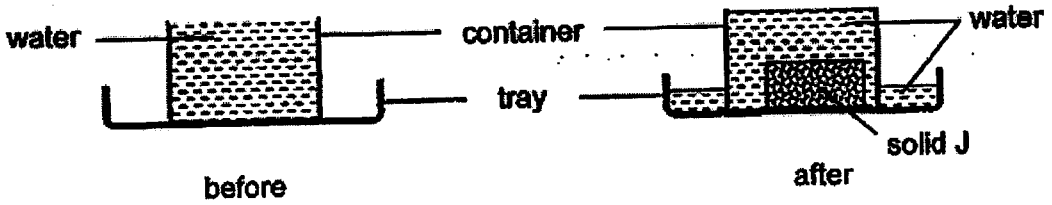
Property 1: _____

_____

Property 2: _____

_____

Solid J was removed from the syringe and placed gently into a container of water. Some water overflowed and the water was collected in a tray.



(b) What does the amount of water collected in the tray represent? [1]

_____

(c) There was water on Solid J before it was lowered into the container of water.

State how did this affect the amount of water collected in the tray? [1]

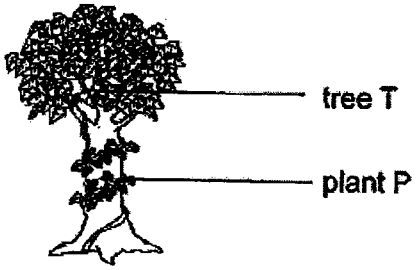
_____

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38. (a) The diagram below shows plant P and tree T.

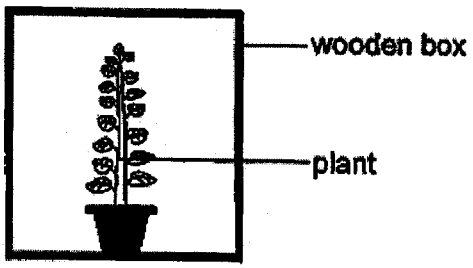


List two reasons why plant P climb upwards on tree T. [2]

(i) _____

(ii) _____

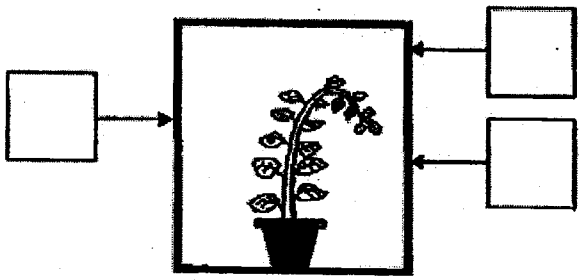
(b) Hazel wanted to find out how light affects the growth of a plant. She used the set-up shown below.



(i) Why is light important to the plant? [1]

_____

(ii) Hazel cut a hole in the wooden box. After a few days, the plant grew towards one side as shown.
Tick (✓) the box where the hole was most likely cut at. [1]



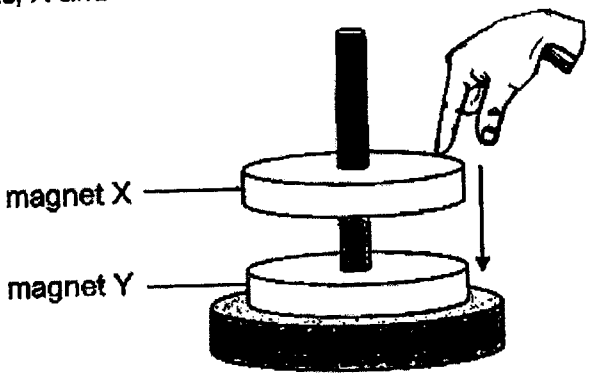
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39. (a) Name one material that can be used to make a magnet. [1]

_____

(b) Jenny used the set-up shown below to observe the interaction between two magnets, X and Y.



Jenny pressed magnet X towards magnet Y. When she released her finger, magnet X moved back to the same starting position.
Explain why magnet X moved back to the same starting position. [2]

_____

_____

_____

(c) Jenny placed three ring magnets, F, G and H such that they stayed apart as shown in Diagram 1.

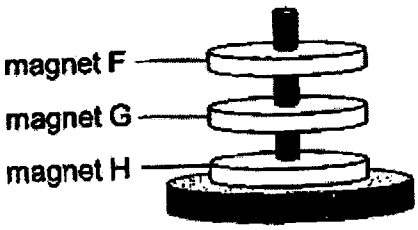


Diagram 1

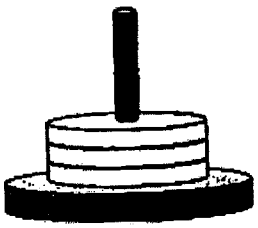


Diagram 2

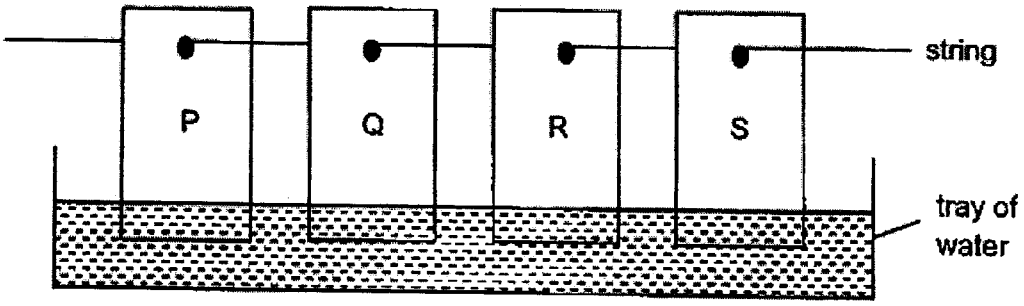
Which ring magnet, F, G or H, should Jenny flip over to make all the three ring magnets come together as shown in Diagram 2? [1]

She should flip magnet _____.

Marks : / 4

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40. Tom placed four strips of materials, P, Q, R and S into a tray of water as shown below.



The dry parts of the materials had water stains after some time. Tom recorded the greatest height of the water stain in each material. His results are shown in the table below.

Material	Height of water stain (cm)
P	12
Q	8
R	0
S	24

(a) Which property of the material did Tom test in his experiment? [1]

_____

(b) The length of the strips must be the same so that the experiment is fair. State another variable that must be kept the same. [1]

_____

(c) Based on the results, which material, P, Q, R or S is most suitable to be made into a cloth for drying a wet car? Explain your answer. [2]

_____

_____

Marks : / 4

~ END OF PAPER ~

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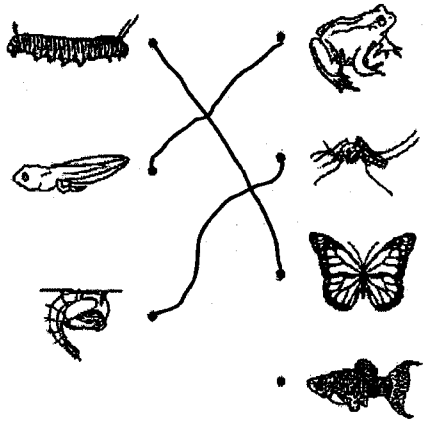
LEVEL : PRIMARY 4
SUBJECT : SCIENCE
TERM : SA2 2023

CONTACT :

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	3	2	4	3	1	1	3	3	2

Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	2	4	4	1	3	2	3	1	1

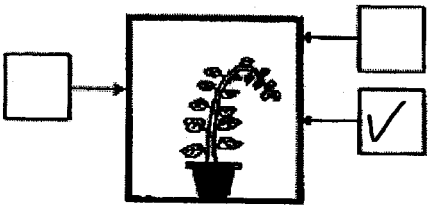
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28
3	1	4	4	1	3	3	3

Q29)	a) poor b) good
Q30)	

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Q31)	a) longer b) roots
Q32)	Fish Bird Mammal
Q33)	a)3-stages. b)Laying many eggs help's to increase the number of eggs that survive as the frogs eggs are often eaten by fish as food. c) i)The number of eggs decreased over the three weeks. ii) Some eggs became tadpoles.
Q34)	a)i)The metal plate lost heat to the ice cube. ii)From a solid to a liquid. b)The train tracks are made out of metal, metal is a good conductor of heat and conduct and gain heat fast, when metal gain heat metal will expand. So, the gaps between the section of train tracks re important so that the train tracks will have space to expand and will not break. c)Material X. Material X as the increase in length is smaller so it expands less.
Q35)	a)R --- Allows most light to pass through S --- Does not allow light to pass through b)i)When the distance between torch and the wooden box decrease the height of the shadow formed on the screen increase. ii)The height of the shadow formed on the screen.
Q36)	a) Air b) A liquid does not have a definite shape. c) Bottle X have a definite volume. d) More water could enter the bottle as more air escaped
Q37)	a)1: A solid has a definite shape. 2: A solid cannot be compressed. b)The volume of solid J.

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	c)The amount of water collected in the tray increases.
Q38)	a)i)Plant P has a weak stem. ii)The leaves of plant P cannot absorb enough sunlight to make food for the plant. b)i)The plant need light to make food. ii) 
Q39)	a) Iron b) The like poles of magnet X and Y are facing each other causing them to repel. c) G
Q40)	a) Waterproof. b) The amount of water touching the strips. c) S absorb the highest amount of water in the same amount of time so it will take the shortest time to dry the car.

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