PAYA LEBAR METHODIST GIRLS' SCHOOL (PRIMARY)

END-OF-YEAR EXAMINATION 2022

PRIMARY FOUR

SCIENCE

BOOKLET A

NAME : _____ ( )

CLASS : P4 _____

DATE : 27 OCTOBER 2022

TOTAL TIME FOR BOOKLETS A & B: 1 hour and 45 minutes

INSTRUCTIONS TO PUPILS

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

ANSWER ALL QUESTIONS.

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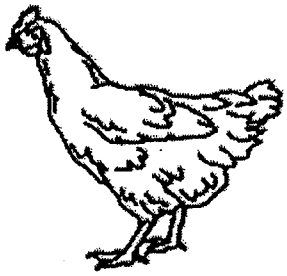
Section A (28 x 2 = 56 marks)
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Which statement is true about most amphibians?

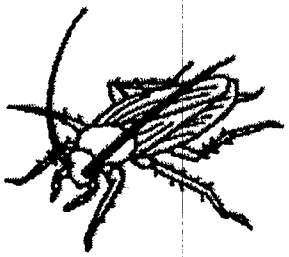
   (1) They have tails.
   (2) They give birth to their young.
   (3) They are covered with feathers.
   (4) They can live on land and in water.

2. Which animal has a 4-stage life cycle?

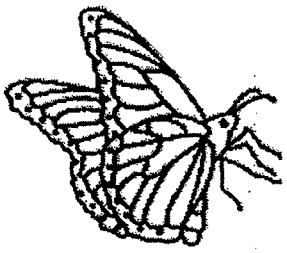
(1) chicken



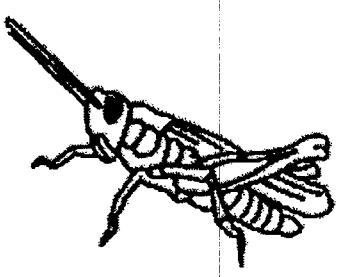
(2) cockroach



(3) butterfly



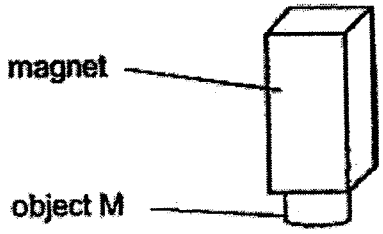
(4) grasshopper



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3. An object M was attracted to a magnet, as shown in the figure below.



Which material is object M made of?

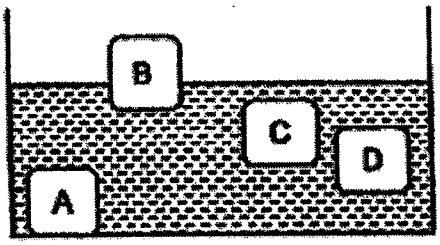
(1) steel
(2) wood
(3) plastic
(4) rubber

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

(1) sand
(2) sound
(3) oxygen
(4) apple juice

5. Bruce put a metal solid block into a container of water.

At which position, A, B, C or D, would the block most likely to be found?

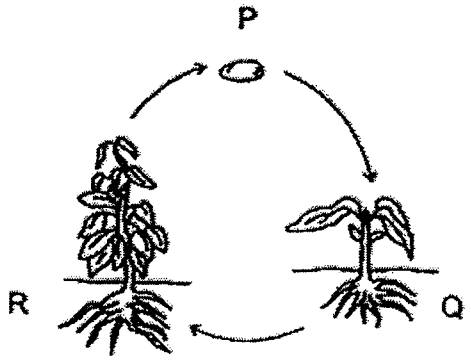


(1) A
(2) B
(3) C
(4) D

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6. The diagram shows the life cycle of a plant.



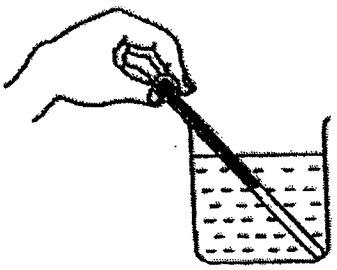
What is the stage marked Q?

(1) egg
(2) seed
(3) adult plant
(4) young plant

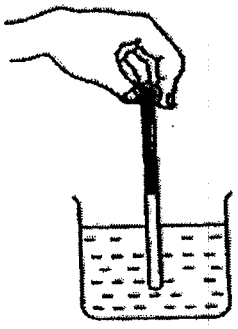
7. Eunice wants to measure the temperature of hot water in a beaker.

Which one of the following diagrams shows the correct position of the thermometer when taking the temperature reading?

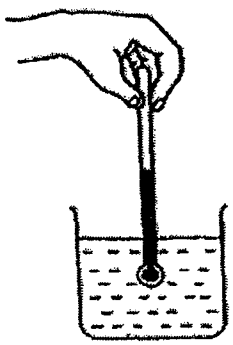
(1)



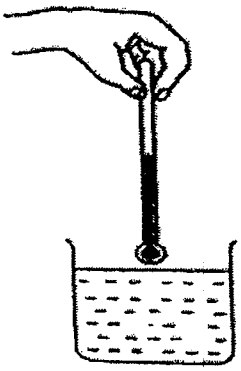
(2)



(3)



(4)



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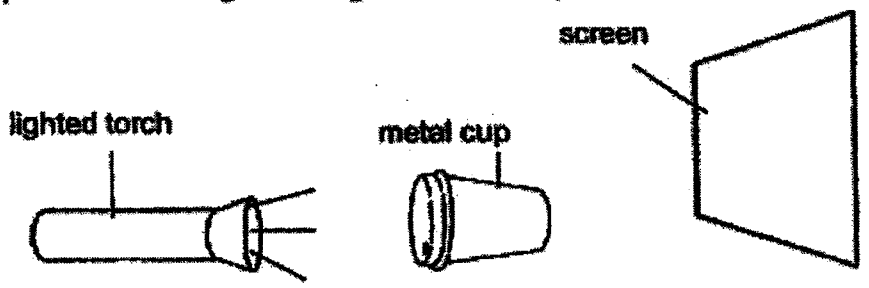
8. The arrows (⟶) in the diagram below show the direction of movement of a substance in plants.

roots ⟶ stem ⟶ leaves

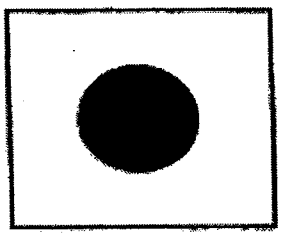
What is this substance?

(1) air
(2) soil
(3) food
(4) minerals

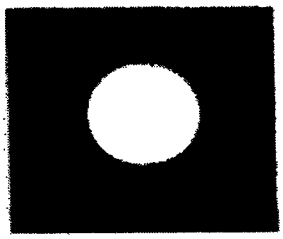
9. The set-up below shows light shining on a metal cup.

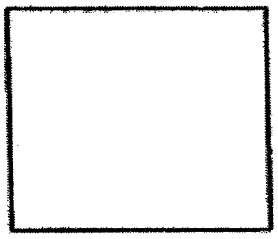


Which one of the following would likely be seen on the screen?

(1)


(2)


(3)


(4)


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10. Mikayla places a metal spoon in a cup of hot coffee.

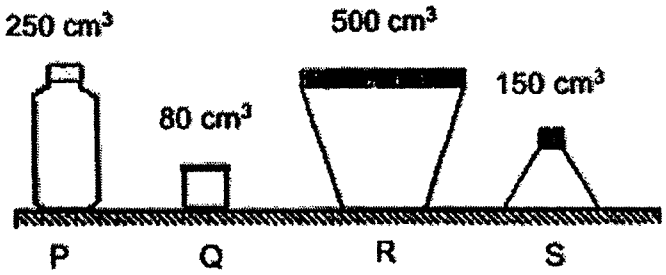


a cup of hot coffee

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.

11. Sam has four containers, P, Q, R and S, as shown in the diagrams below.



Which of the containers can he use to hold 100 cm³ of water?

(1) P and R only
(2) Q and S only
(3) P, R and S only
(4) P, Q, R and S

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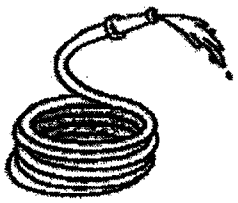
12. Which statement about the fern and the mushroom is correct?

(1) Both grow only on trees.
(2) Both reproduce from spores.
(3) Both are non-flowering plants.
(4) Both cannot make their own food.

13. Mary carried out some tests on 4 different materials, P, Q, R and S. She recorded her observations in the table below.

	Materials			
	P	Q	R	S
Is it flexible?	No	Yes	No	Yes
Is it waterproof?	No	Yes	Yes	Yes
Does it break easily?	Yes	Yes	No	No

Mary wants to make a rubber hose as shown below.



Which materials, P, Q, R or S should she use to make the hose?

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

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14. Abigail made some observations about the matter P, Q and R and recorded them in the table below.

	P	Q	R
Has definite volume	No	Yes	Yes
Has definite shape	No	Yes	No

What could P, Q and R be?

	P	Q	R
(1)	marble	air	milk
(2)	air	marble	milk
(3)	air	milk	marble
(4)	milk	air	marble

15. Ali painted the surfaces of all the leaves of a plant with thick paint and left it in the garden. The plant is watered daily. A few weeks later, the plant died because it did not have _____.

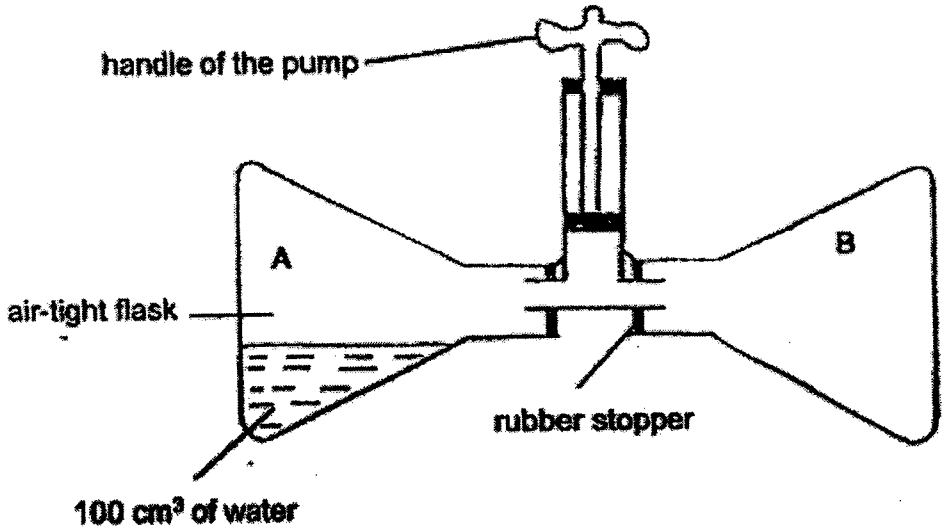
A air
B water
C sunlight
D nutrients

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

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16. The diagram below shows two flasks, A and B, attached to a pump.



Flasks A and B are air-tight. The capacity of each flask is 400 cm³. Flask A has 100 cm³ of water in it.

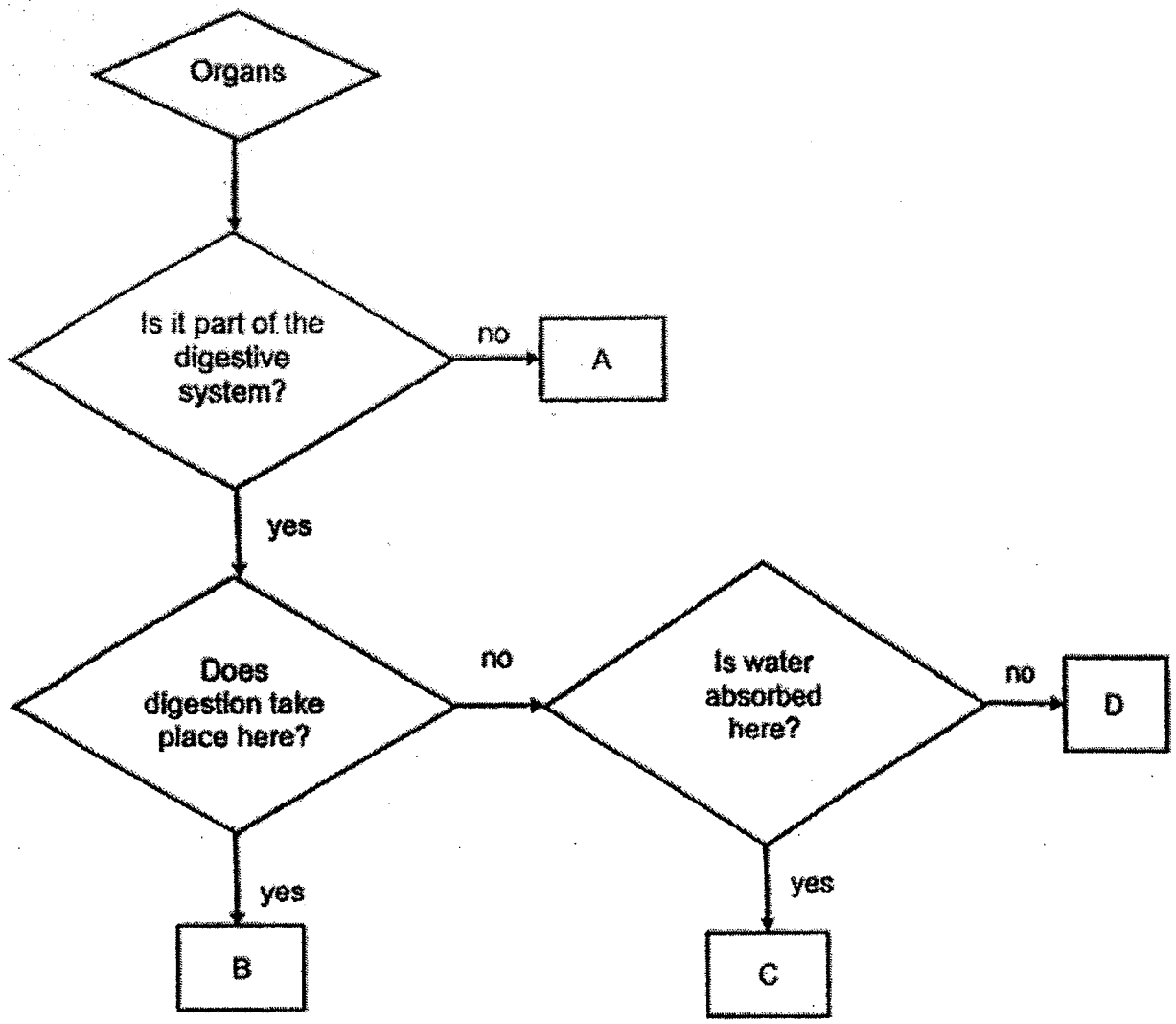
50 cm³ of air is pumped each time when Ahmad pushes down the handle of the pump. If Ahmad pushes down the handle twice, what is the final volume of air in each flask?

	Volume of air (cm³)	
	Flask A	Flask B
(1)	200	300
(2)	200	500
(3)	300	400
(4)	300	500

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17. Study the flowchart below.



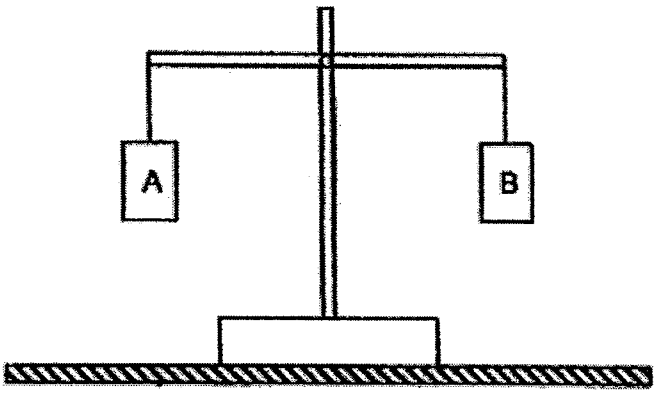
Which of the following correctly represent A, B, C and D?

	A	B	C	D
(1)	mouth	large intestine	small intestine	stomach
(2)	mouth	small intestine	windpipe	large intestine
(3)	nose	small intestine	large intestine	gullet
(4)	windpipe	large intestine	mouth	gullet

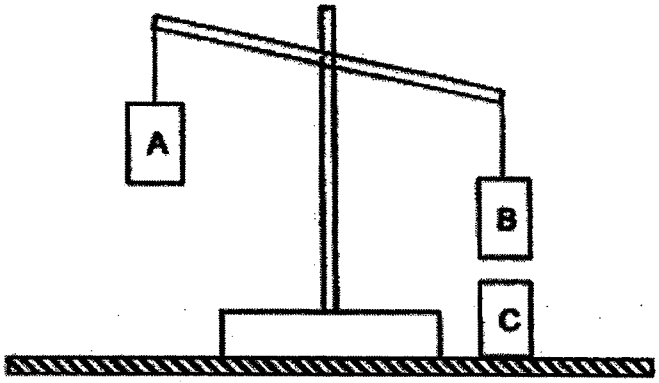
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18. The diagram below shows a balance with two objects, A and B, hung at both ends.



When object C is placed directly below object B, the balance moved, as shown below.



Based on the observation above, what could objects B and C be?

	object B	object C
(1)	iron box	magnet
(2)	magnet	copper box
(3)	copper box	iron box
(4)	iron box	iron box

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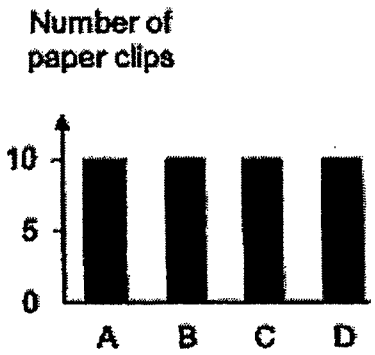
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19. Alice wanted to test the magnetic strength at the various points, A, B, C and D, of a bar magnet as shown below.

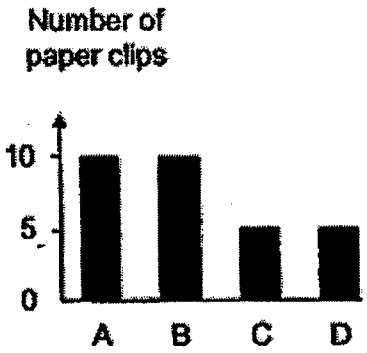


She puts the bar magnet into a bag full of paper clips. Which one of the following graphs shows the correct number of paper clips attracted to the different points of the bar magnet?

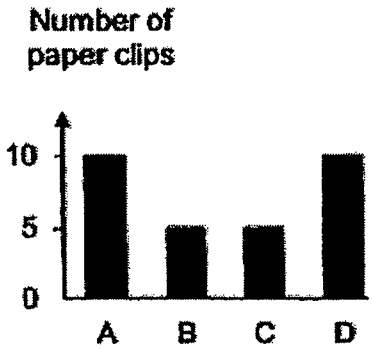
(1)



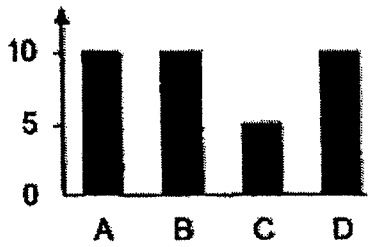
(2)



(3)



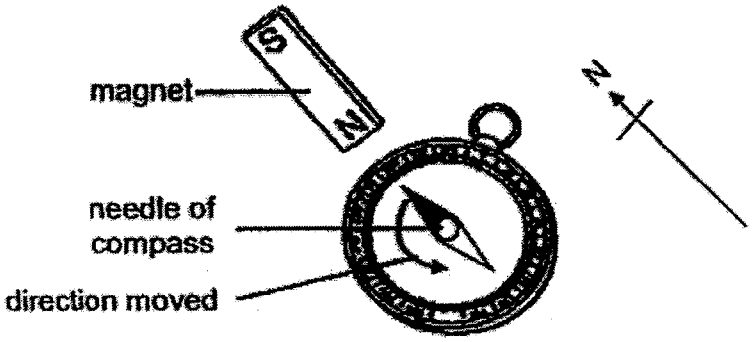
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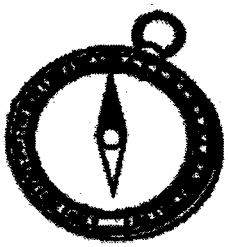
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20. Sarah brought a magnet near a compass and observed that the needle of the compass moved away from the magnet as shown below by the arrow.



Which of the following shows the position of the needle when Sarah removed the bar magnet?

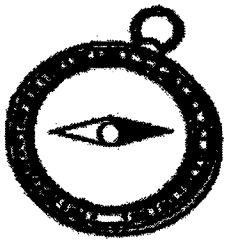
(1)



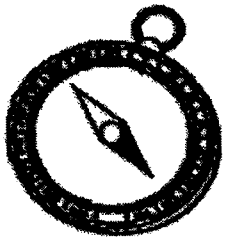
(2)



(3)



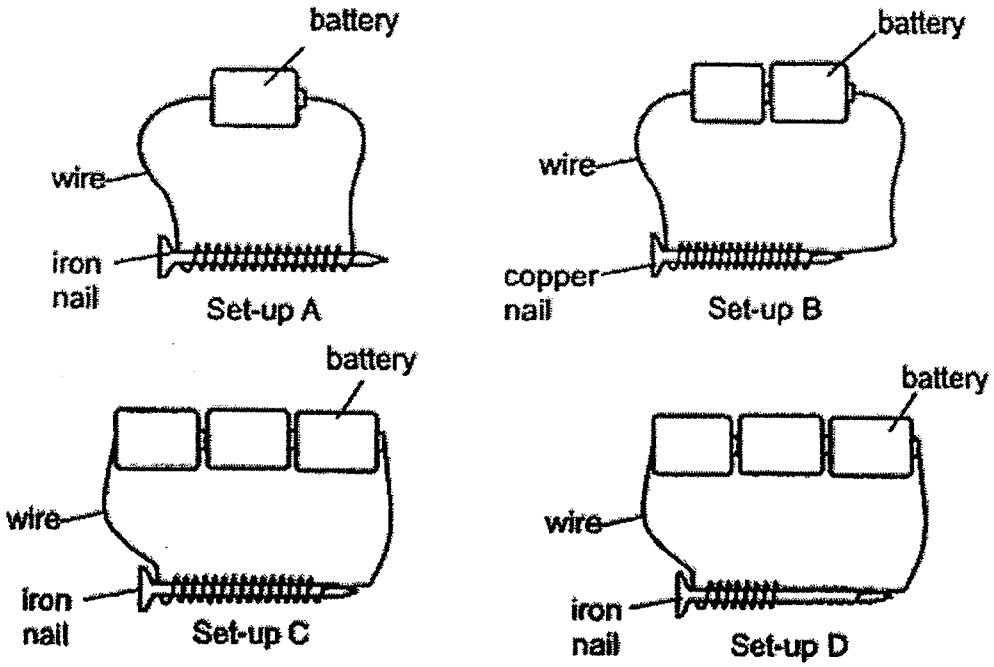
(4)



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21. Ava would like to find out if the number of batteries affects the strength of the electromagnet.



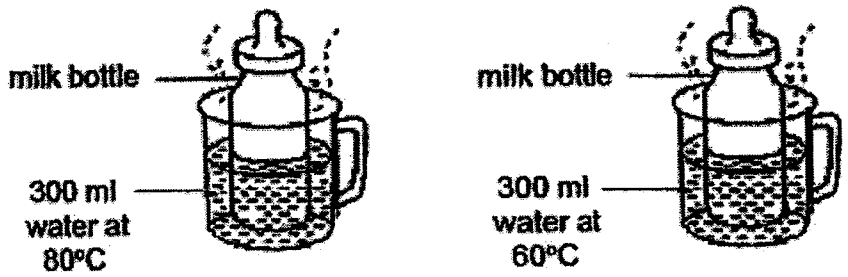
Which of the following set-ups should she use?

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

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22. Mariah took out two identical bottles of milk from the refrigerator and placed them in two containers as shown below.



Set-up A Set-up B

Four children observed the set-ups for 10 minutes. Each made a statement about their observations.

John	:	Heat will travel from the hot water to the milk.
Peter	:	Heat will travel from the milk to the hot water.
Ali	:	There is more heat in Set-up B than Set-up A.
Lisa	:	The temperature of milk in both bottles will increase.

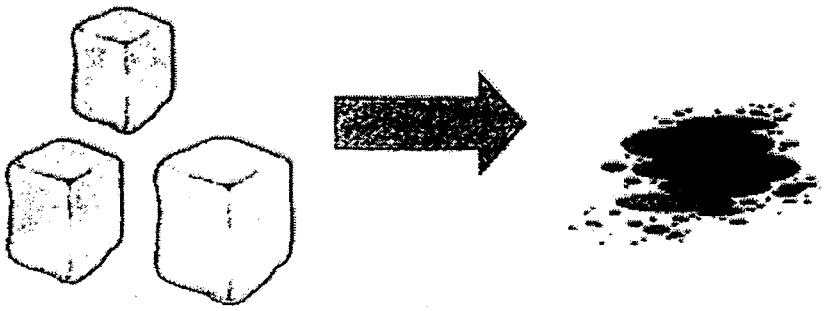
Who has/have made the correct statement(s)?

(1) John only
(2) Peter only
(3) John and Lisa only
(4) Peter, Lisa and Ali only

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23. A few ice cubes were placed in a room. The ice cubes changed to water after 5 minutes.



ice cubes water

Which one of the following explains what happened to the ice cubes?

(1) The ice cubes lost heat and turned from liquid to solid.

(2) The ice cubes gained heat and turned from solid to liquid.

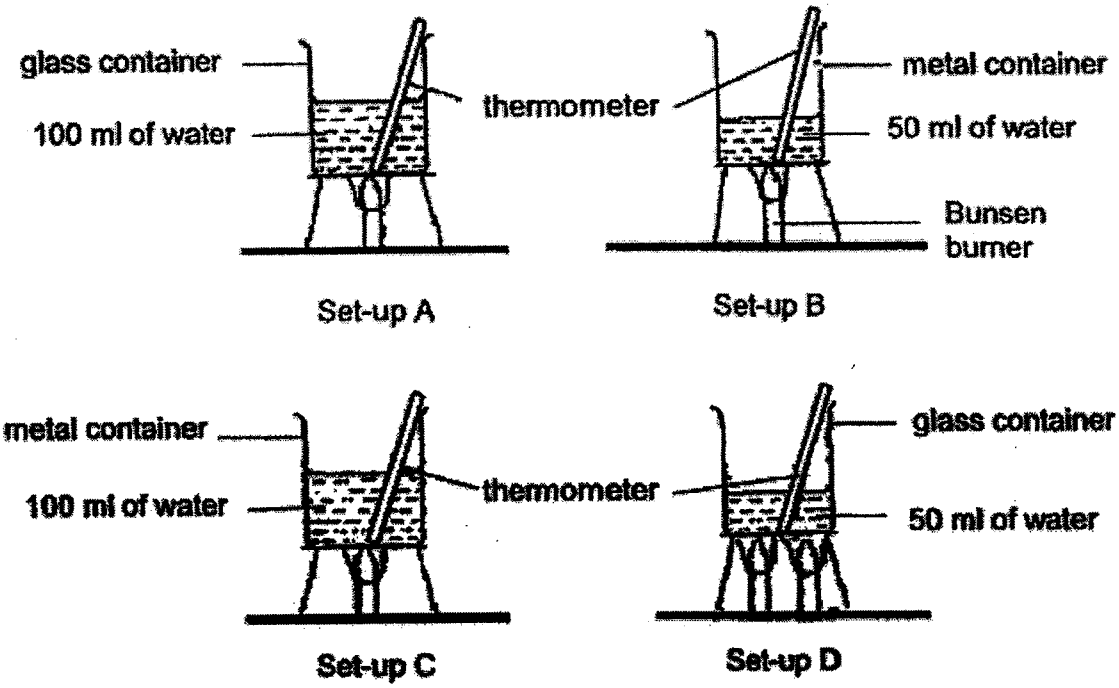
(3) The ice cubes lost coldness and turned from solid to liquid.

(4) The ice cubes gained coldness and turned from liquid to solid.

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24. Sue Ann prepared four set-ups A, B, C and D. She wanted to find out whether water would boil faster in a metal or glass container.



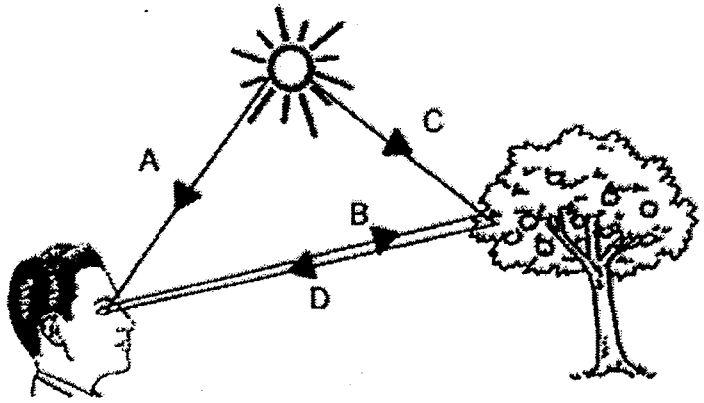
Which two set-ups should Sue Ann use to conduct a fair test?

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

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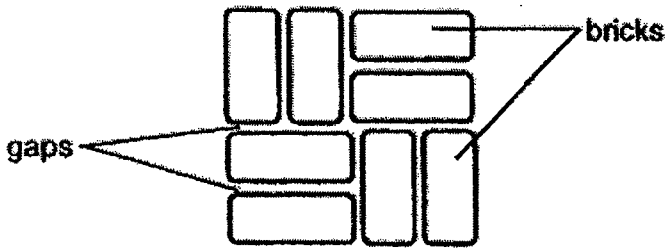
25. The diagram below shows some paths of light, A, B, C and D.



Which paths of light allowed the man to see the tree?

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

26. There are many gaps between the bricks on a footpath as shown.



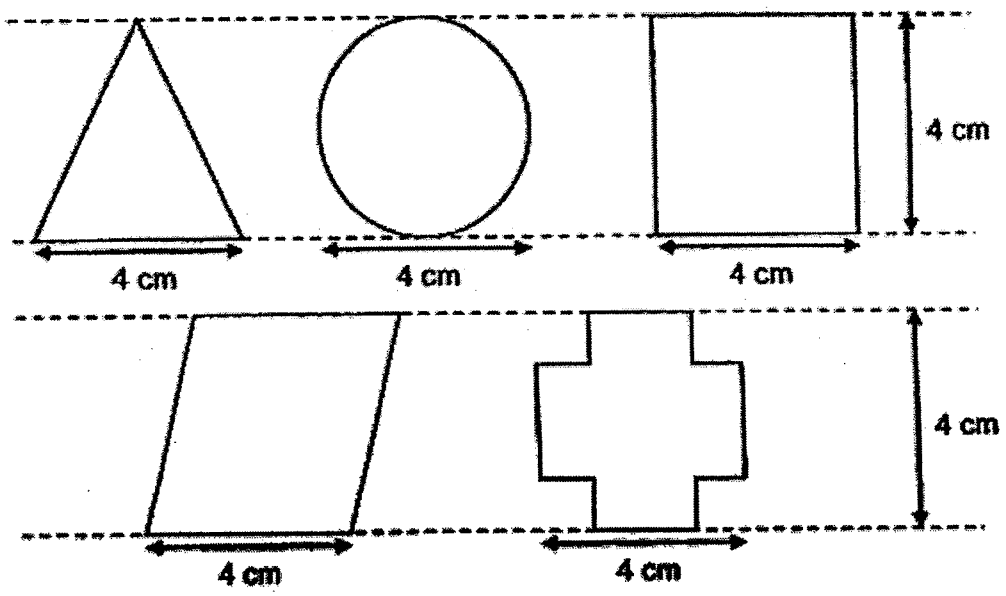
Which one of the following explains the purpose of having these gaps?

(1) To allow space for the bricks to expand on a hot day.
(2) To allow space for the bricks to contract on a cool day.
(3) To allow space for the air between the gaps to expand on a hot day.
(4) To allow space for the air between the gaps to contract on a cool day.

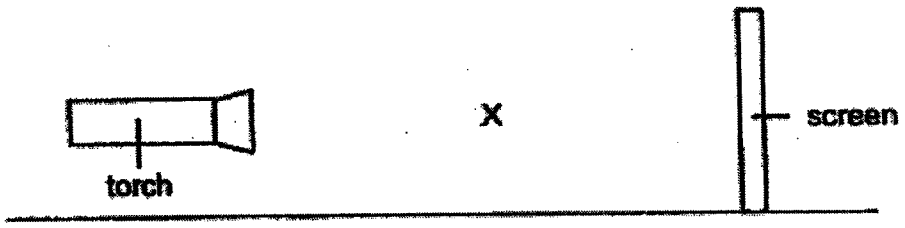
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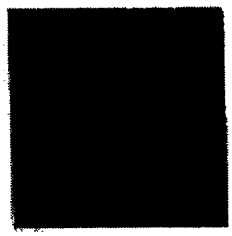
27. James was given five pieces of cardboards in different shapes as shown below.



He then stacked some cardboards together and placed them between a torch and a screen at point X.



What is the most number of pieces of cardboards James could stack together and still form the following shadow on the screen?

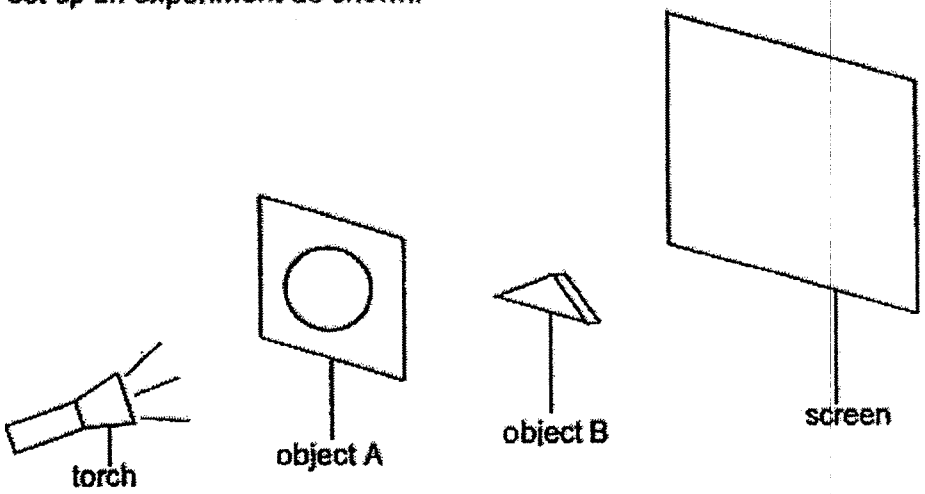


(1) 1
(2) 5
(3) 3
(4) 4

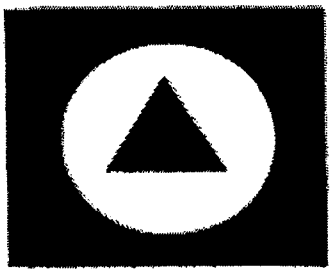
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28. Gina set up an experiment as shown.

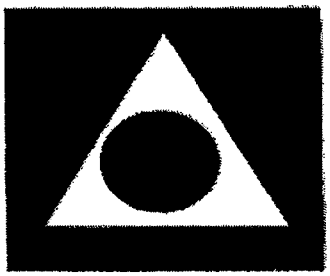


The shadow observed on the screen is shown below.

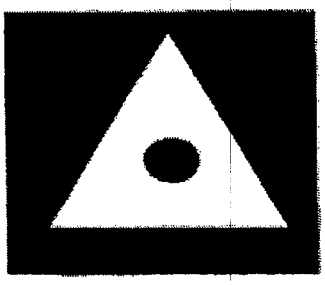


Gina moved object B closer to the screen. Which one of the following shows the shadow on the screen?

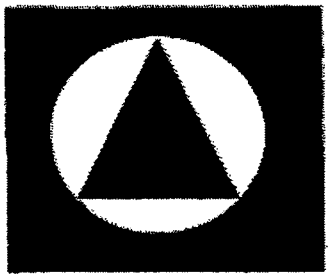
(1)



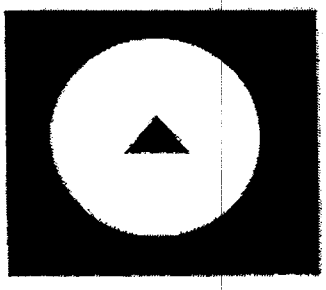
(2)



(3)



(4)



END OF BOOKLET A

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PAYA LEBAR METHODIST GIRLS' SCHOOL (PRIMARY)

END-OF-YEAR EXAMINATION 2022

PRIMARY FOUR

SCIENCE

BOOKLET B

NAME : _____ ( )

CLASS : P4 _____

DATE : 27 OCTOBER 2022

TOTAL TIME FOR BOOKLETS A & B: 1 hour and 45 minutes

BOOKLET A	/ 56
BOOKLET B	/ 44
TOTAL	/100

Parent's Signature: _____

INSTRUCTIONS TO PUPILS

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

ANSWER ALL QUESTIONS.

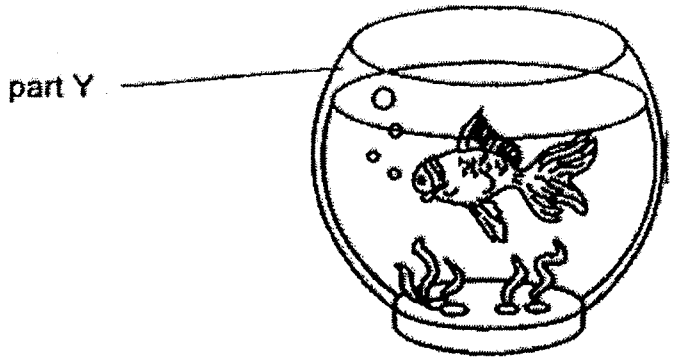
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SECTION B: 44 Marks

For questions 29 to 41, 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.

29. The diagram below shows an aquarium.



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

light	steel	bends
strong	breaks	glass

Part Y is made of _____ because it allows _____ to pass through so that we can see the fish. However, part Y _____ easily when dropped.

[3]

3

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30. Draw lines to match the three organ systems to their functions. [3]

organ systems		functions
respiratory system	●	● breaks down food into simpler substances
circulatory system	●	● supports our body and gives it shape
digestive system	●	● takes air into and out of the body
		● transports digested food, water and oxygen to all parts of the body

3

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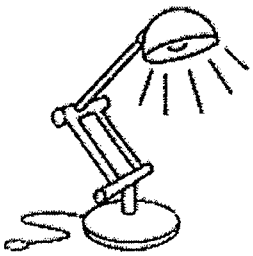
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31. Look at the pictures. Tick (✓) the sources of light. [2]

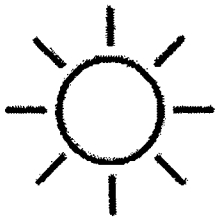
☐ eyes



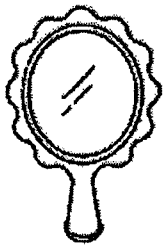
☐ lamp



☐ Sun

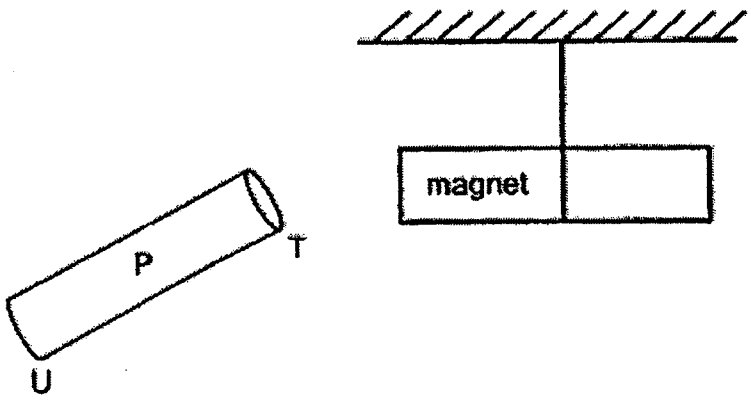


☐ mirror



2

32. When end T of object P is brought near a magnet as shown, the magnet moves away.



(a) This shows that object P is a _____. [1]

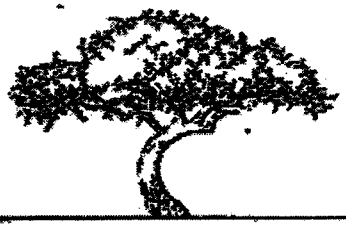
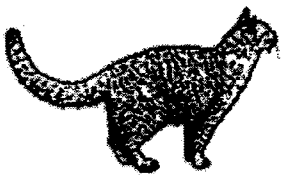
(b) When end U is brought near to the magnet, it _____ the magnet. [1]

2

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33. Fauziah classified the following living things into two groups, A and B, as shown in the table below.

Group A	Group B
 moss  tree	 cat  bat

(a) Based on the groups of living things, give suitable headings for Group A and Group B respectively. [1]

Group A: _____

Group B: _____

(b) State the outer covering for living things in Group B. [1]

_____

(c) State one difference between the living things in group A and group B in the way they obtain food. [1]

_____

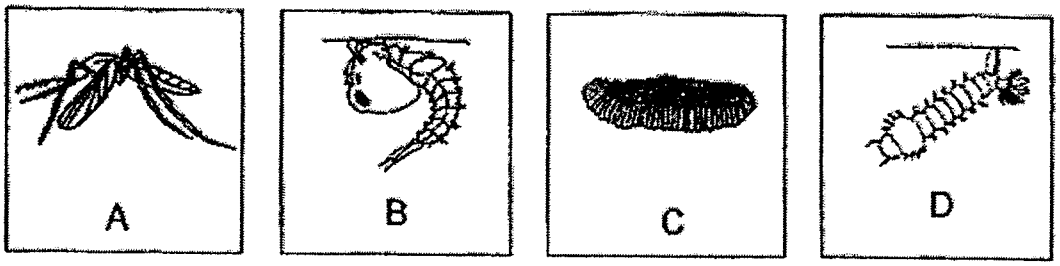
_____

3

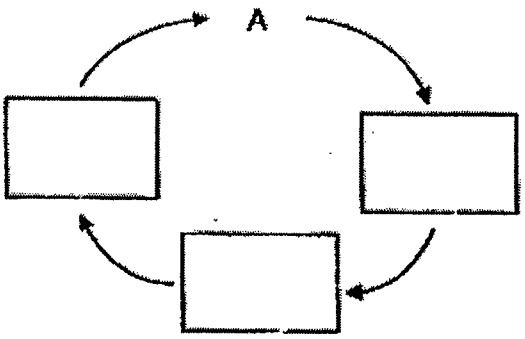
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34. Jamal has four pictures, A, B, C and D, which show the different stages of the life cycle of insect X as shown below over a period of time.



(a) Write the letters, B, C and D, in the correct order to show the life cycle of insect X in the diagram below. [1]



Jamal studied the number of days insect X spends at that stage. The adult of insect X usually lays its eggs in water. The female adult of insect X also sucks blood from humans and is usually considered a pest.

(b) Jamal says the best time to get rid of insect X is at stages B, C and D. Suggest a way he can do so. Explain why. [2]

Suggestion: _____

_____

Reason: _____

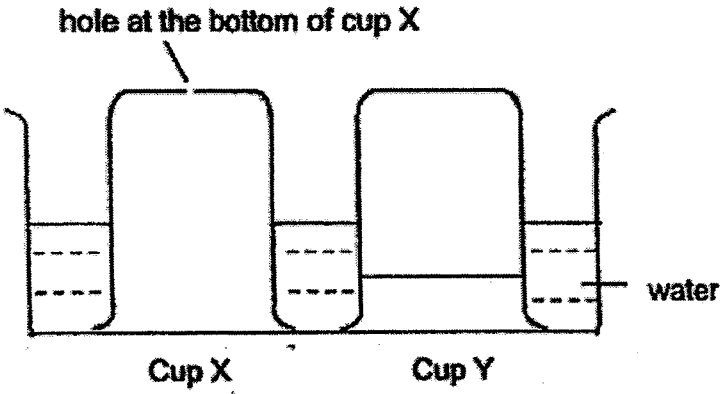
_____

3

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35. Raj pushed two inverted plastic cups, X and Y, into a basin of water as shown below. Cup X has a hole at the bottom.



(a) Use a ruler and draw the water level in Cup X. [1]

(b) Explain your answer in part (a) for Cup X. [2]

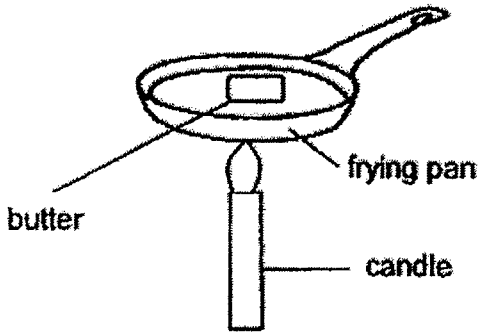
(c) Based on the observation in Cup Y, what could Raj conclude about the property of air? [1]

4

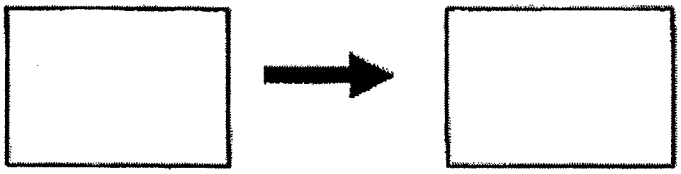
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36. Corine took out a slice of butter from the freezer. She placed and heated it in a frying pan for 5 minutes.
Corine observed that the butter melted.



(a) Name the states of the butter in the boxes below. [2]



(b) Based on Corine's observation, explain what happened to the butter. [1]

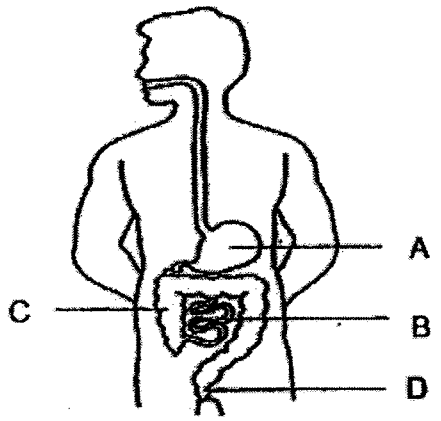
(c) Corine said that the frying pan is made of metal.
Do you agree with her? Explain why. [1]

4

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37. The diagram below shows the different parts of the human digestive system.



(a) State the functions of Part A and Part C. [2]

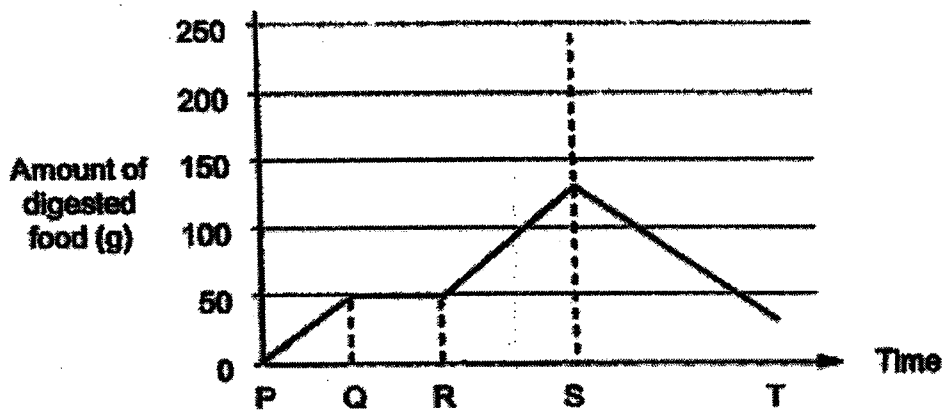
Part A: _____

_____

Part C: _____

_____

The graph below shows the amount of digested food present in a person's digestive system over a period of time.



(b) Describe how the amount of digested food changes from S to T. Explain your answer. [2]

_____

_____

4

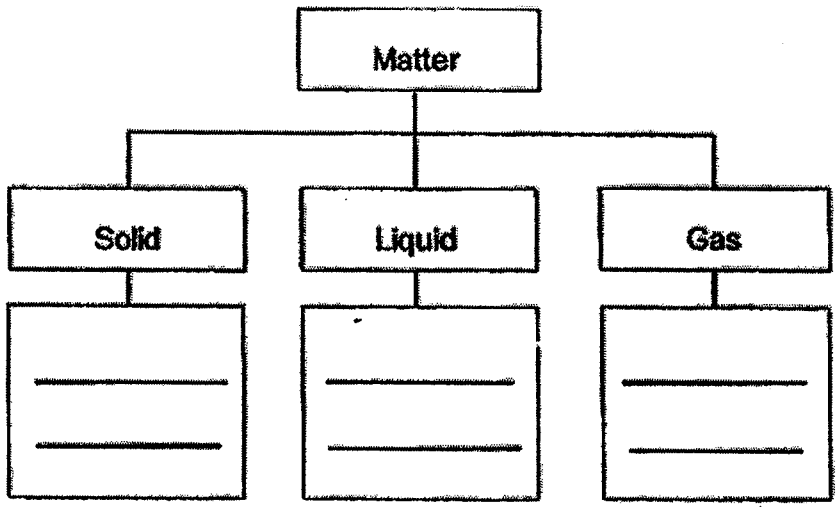
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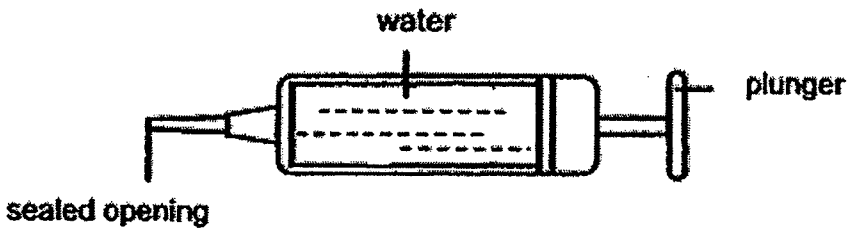
38. Four objects are listed below.

pebble	tea
air	bread

(a) Classify the four objects according to their states when they are at room temperature. [2]



(b) The syringe below contains 10 cm^3 of water. The opening of the syringe is sealed.



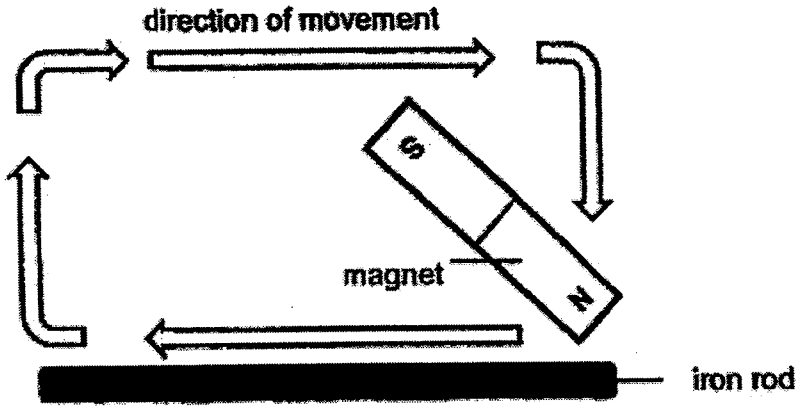
What happens to the volume of water in the syringe when the plunger is pushed? Explain why. [2]

4

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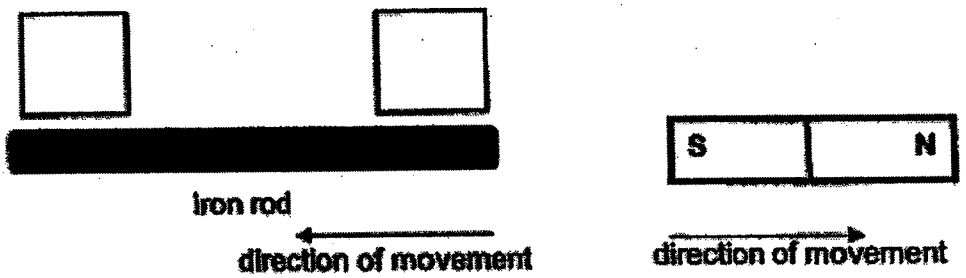
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39. Sanjay made a magnet by using a method as shown.



(a) State the name of the method above. [1]

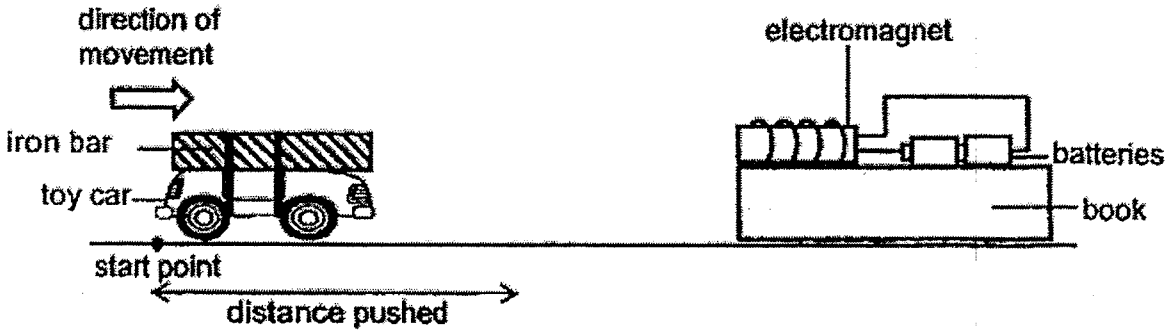
(b) He then placed the magnetised iron rod near a bar magnet and observed the following interaction. Name the poles of the iron rod in the boxes below. [1]



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Sanjay then attached the iron bar on a toy car. He placed the toy car at the start point and slowly pushed the toy car towards the electromagnet. Sanjay recorded the distance the toy car was pushed before the electromagnet could attract it.



He repeated the experiment by changing the number of batteries in the set-up each time. His results were recorded in the table as shown.

Number of batteries	Distance the toy car was pushed before being attracted by the electromagnet (cm)
2	8
3	6
4	4
5	2

(c) Why did Sanjay use an iron bar in this experiment? [1]

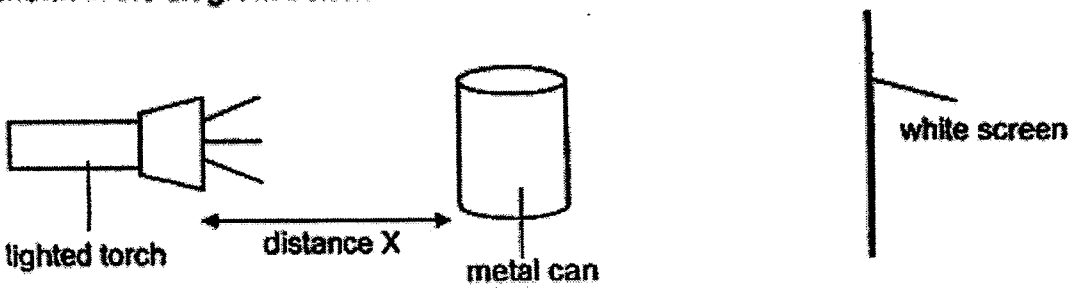
(d) Besides the number of batteries, suggest another way he can strengthen the electromagnet. [1]

4

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40. Xiao Li conducted an experiment using a torch, a metal can and a white screen as shown in the diagram below.



She then changed the distance between the torch and the metal can, X, by moving the torch. She measured the height of the shadow formed on the screen for different distances of X and recorded her findings in the table below.

Distance X (cm)	Height of the shadow formed on the screen (cm)
10	30
20	24
30	18
40	12

(a) What is the variable that has changed in the above experiment? [1]

(b) Based on the results in the table above, what is the relationship between distance X and the height of the shadow formed on the screen? [1]

(c) State distance X when the height of the shadow on the screen is 15 cm. [1]

cm

(d) When distance X is at 10 cm, and the white screen is moved further away from the metal can, what will happen to the height of the shadow formed on the screen? [1]

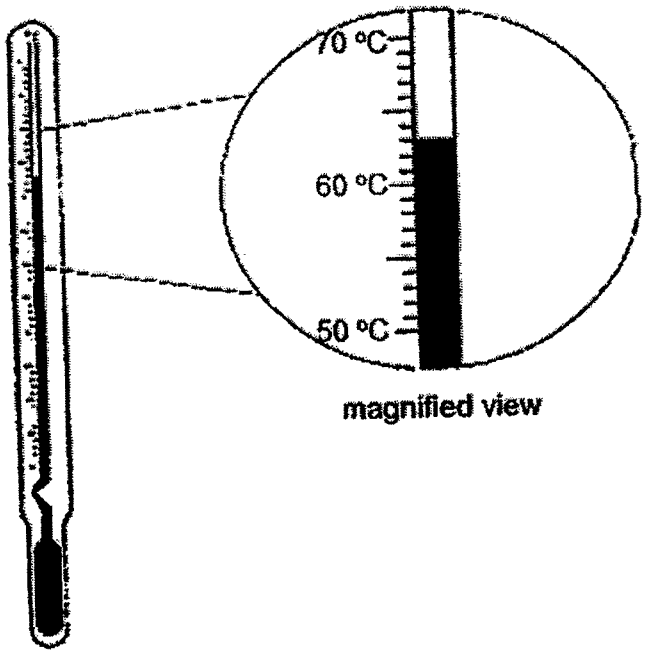
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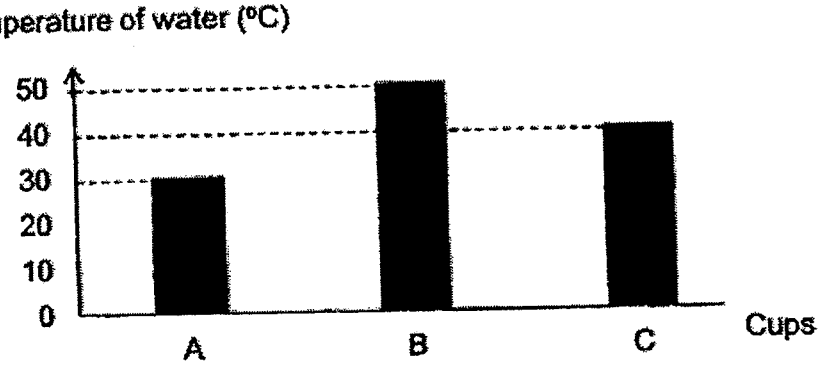
41. Wei Chye poured the same amount of water at the same temperature into three cups of similar size and placed them on a table. The cups are made of different materials.

The diagram below shows the initial temperature of water in the three cups.



(a) What is the reading shown on the thermometer? [1]

After 20 minutes, he measured the temperature of the water in the three cups again. He plotted the results as shown below.



(b) Which cup (A, B or C) should he use to keep his drink hot for the longest time? Explain. [2]

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(c) Name a material for Cup B. [1]

4

END OF BOOKLET B

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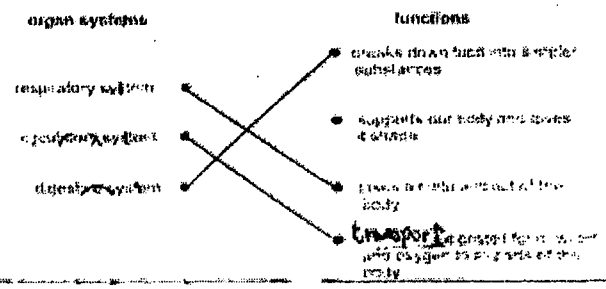
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YEAR : 2022
LEVEL : PRIMARY 4
SCHOOL : PAYA LEBAR METHODIST GIRLS' SCHOOL
SUBJECT : SCIENCE
TERM : END OF YEAR EXAMINATION

(BOOKLET A)

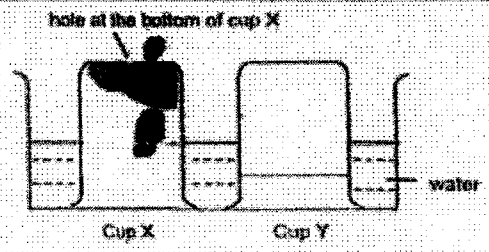
Q1	4	Q2	3	Q3	1	Q4	2	Q5	1
Q6	4	Q7	3	Q8	4	Q9	1	Q10	3
Q11	3	Q12	2	Q13	4	Q14	2	Q15	1
Q16	3	Q17	3	Q18	1	Q19	3	Q20	2
Q21	2	Q22	3	Q23	2	Q24	3	Q25	4
Q26	1	Q27	4	Q28	4				

(BOOKLET B)

Q29		Part Y is made of glass because it allows light to pass through so that we can see the fish. However, part Y breaks easily when dropped.
Q30		
Q31		✓ Lamp ✓ Sun
Q32	a)	This shows that object P is a magnet
	b)	When end U is brought near to the magnet, it attracts the magnet.
Q33	a)	Group A: Plants Group B: Animals
	b)	The living things in group B have hair as their outer covering
	c)	The living things in group A photosynthesize to make food for themselves while the living things in group B hunt for food.
Q34	a)	B→A→C→D
	b)	Suggestion: Jamal can clear any stagnant water. Reason: There is no water for the mosquito to lay its eggs.

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Q35	a)	
	b)	The air in cup X escaped through the hole, thus the water can occupy the space that was previously occupied by the air.
	c)	Air occupies space.
Q36	a)	Solid → Liquid
	b)	The butter gained heat from the candle and melted.
	c)	Yes. Metal is a good conductor of heat and allows heat to flow through quickly, and the butter melted quickly.
Q37	a)	Part A : Part A breaks down partiallly digested food into simpler substances. Part C : Part C absorbs water from undigested food.
	b)	The amount of digested food decreases from S to T. The digested food had been absorbed into bloodstream.
Q38	a)	Solid: Pebble, bread; Liquid: tea; Gas: air
	b)	The volume of the water in the syringe will remain the same. Water has an definite volume and cannot be compressed.
Q39	a)	Stroking method
	b)	N S
	c)	Iron is a magnetic material, and only magnetic materials can be attracted by the electromagnet.
	d)	He can increase the number of coils of wire around the electromagnet
Q40	a)	Distance between the torch and the metal can,
	b)	As the distance X increases, the height of the shadow formed on the screen decreases.
	c)	35 cm
	d)	The height of the shadow formed on the screen will increase.
Q41	a)	63°
	b)	B. The temperature of the water in cup B after 20 minutes was the greatest, showing that B is the poorest conductor of heat, hence, the drink will be kept hot for the longest time.
	c)	Wood.

END

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