



## 2024 PRIMARY 4 END-OF-YEAR EXAMINATION

Name : \_\_\_\_\_ (   )

Date: 24 October 2024

Class : Primary 4 (   )

Time: 8.00 a.m. - 9.30 a.m.

Duration: 1 hour 30 minutes

# SCIENCE

## BOOKLET A

### INSTRUCTIONS TO CANDIDATES

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

Booklet A	44
Booklet B	36
Total	80



**Booklet A (22 x 2 marks)**

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

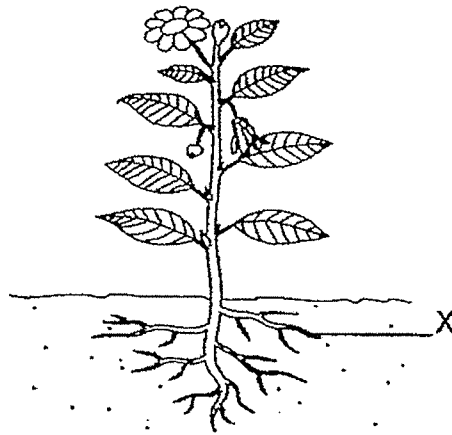
(44 marks)

1. Study the table below.

Which animal group is matched with the correct body covering?

	<b>Animal Group</b>	<b>Body covering</b>
(1)	bird	moist skin
(2)	reptile	scales
(3)	mammal	feathers
(4)	amphibian	hair

2. The diagram below shows the different parts of a plant.



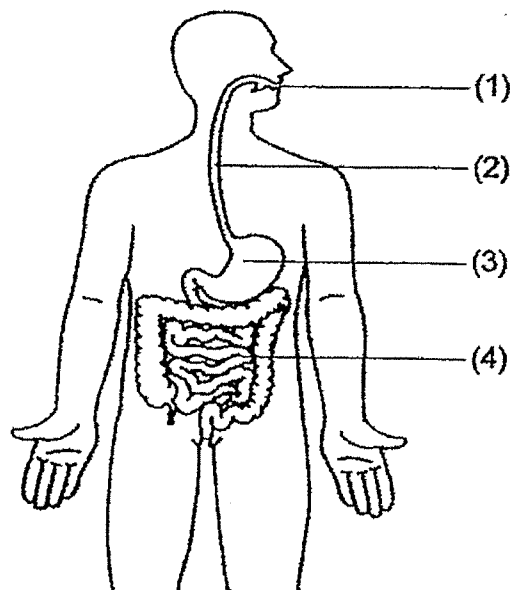
Which of the following are the functions of part X?

- A produces fruits
- B makes food for the plant
- C absorbs water for the plant
- D holds the plant firmly to the soil

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

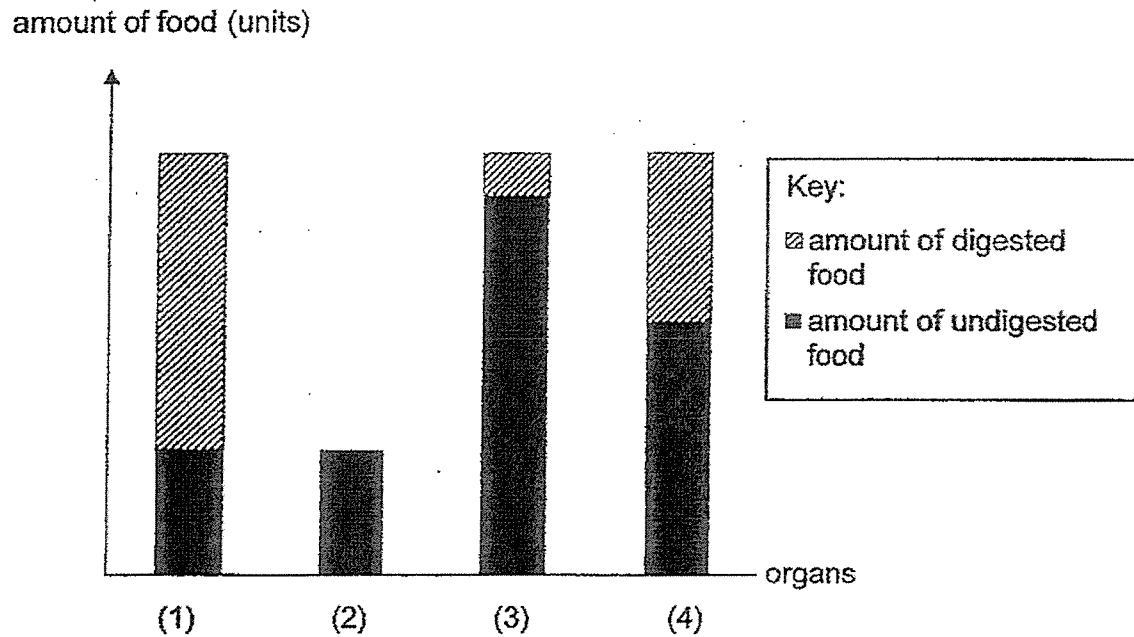
3. The diagram below shows the human digestive system and its organs.

Digestion does not take place at one of the organs. Which organ is that?

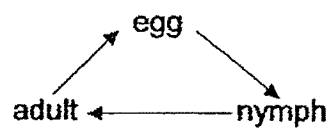


4. The graph below shows the amount of digested and undigested food in the different parts of the digestive system just before it leaves each organ.

Which bar graph correctly represents the large intestine?



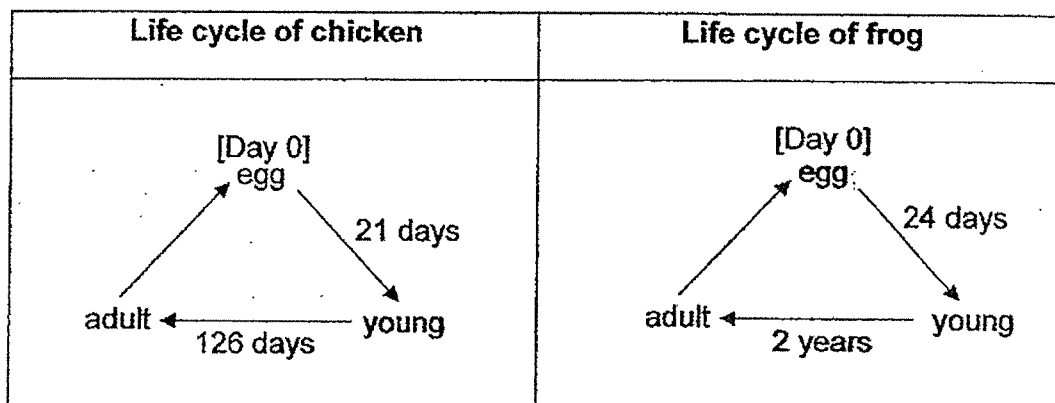
5. The diagram below shows the life cycle of an animal.



Which animal undergoes the similar life cycle as shown above?

- (1) beetle
- (2) butterfly
- (3) mosquito
- (4) cockroach

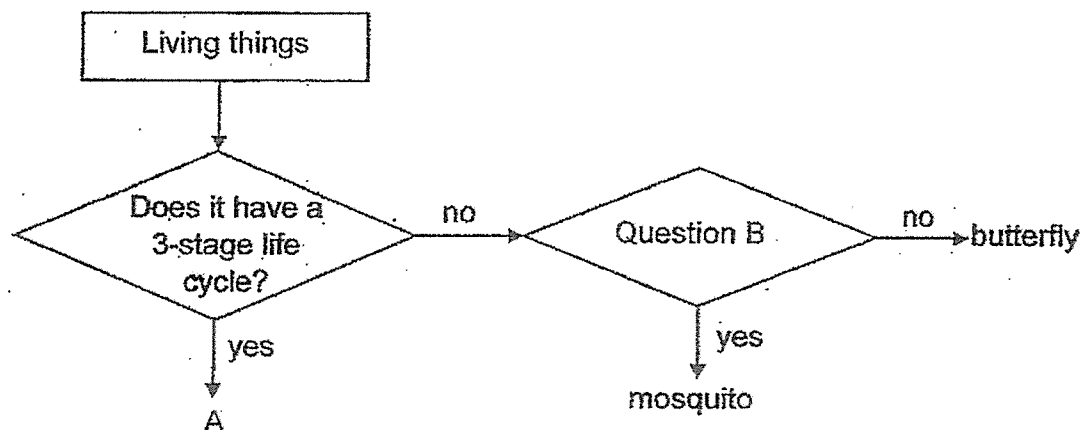
6. Siti observed the life cycle of the chicken and the frog. She recorded the number of days taken for some of the stages in the life cycles below.



At which stage would each animal be on Day 22?

Life cycle		
	chicken	frog
(1)	egg	young
(2)	young	egg
(3)	young	young
(4)	adult	egg

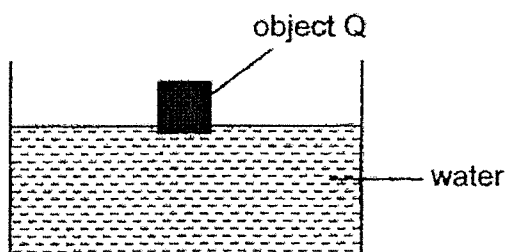
7. Study the flow chart below.



Which of the following represents living thing A and Question B?

	Living thing A	Question B
(1)	beetle	Does the young moult?
(2)	plant	Does the young resemble the adult?
(3)	beetle	Does the young resemble the adult?
(4)	plant	Does it lay eggs in water?

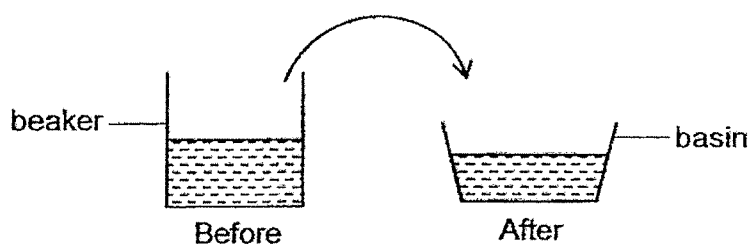
8. Ben released object Q into a basin of water and observed the following as shown in the diagram.



Based on the diagram above, which of the following correctly states the material object Q could be made of and the reason for his observation?

	Material	Reason
(1)	metal	It is strong.
(2)	ceramic	It is waterproof.
(3)	plastic	It is transparent.
(4)	wood	It can float on water.

9. Joshua pours a beaker of water into a basin as shown in the diagram below.



Based on the diagram above, which of the following correctly shows the property of water?

The water \_\_\_\_\_.

- (1) has mass
- (2) can be compressed
- (3) has no definite shape
- (4) has no definite volume

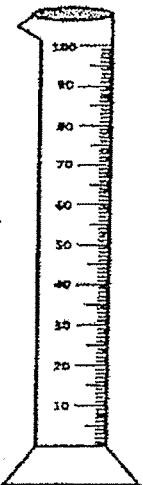
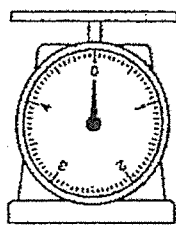
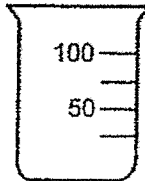

10. Study the classification table below.

Group M	Group N
sound	oxygen
light	cooking oil
shadow	sand

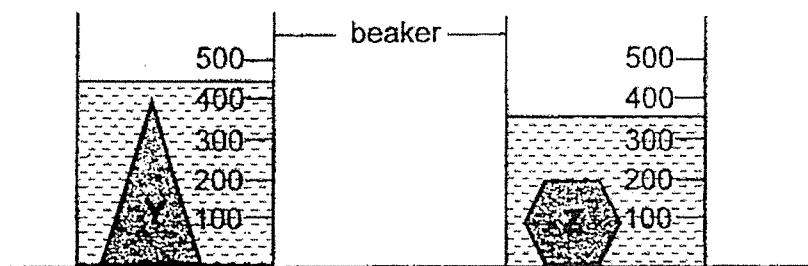
How are the above items classified?

	Group M	Group N
(1)	matter	non-matter
(2)	non-matter	matter
(3)	gas	solid
(4)	solid	liquid

11. Which of the following instruments can be used to measure exactly  $35 \text{ cm}^3$  of water?

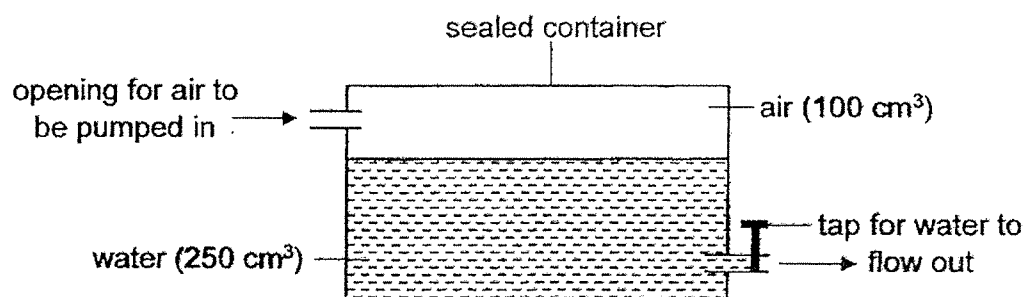
 <p>measuring cylinder</p>	 <p>weighing scale</p>	 <p>beaker</p>	 <p>thermometer</p>
(1)	(2)	(3)	(4)

12. Sam has two identical beakers each containing 200 ml of water. He then places solid objects, Y and Z, into each beaker and the water levels rise as shown in the diagram below.



What can Sam conclude from his observation?

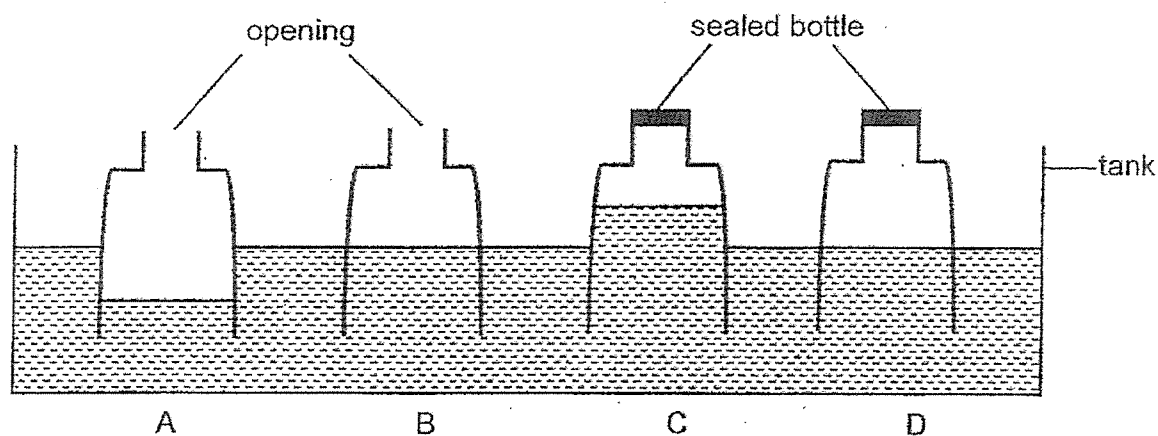
- (1) Object Y is heavier than object Z.
  - (2) Object Z has a smaller mass than object Y.
  - (3) Object Z occupies less space than object Y.
  - (4) Object Y has a smaller volume than object Z.
13. Rosa conducted an experiment using the set-up as shown below.



She removed 50 cm<sup>3</sup> of water from the container and pumped in another 100 cm<sup>3</sup> of air. What is the final volume of air in the container?

- (1) 150 cm<sup>3</sup>
- (2) 200 cm<sup>3</sup>
- (3) 250 cm<sup>3</sup>
- (4) 350 cm<sup>3</sup>

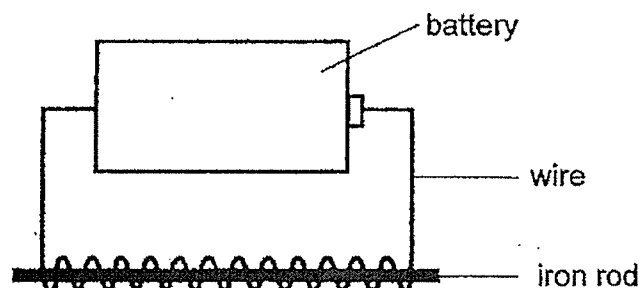
14. Four identical empty bottles, A, B, C and D, were pushed into a tank filled with water as shown in the diagram below. Two bottles, C and D, were sealed before being pushed into the water:



Which bottle shows the correct water level in the bottle?

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

15. Paul made the following electromagnet to attract some iron nails.

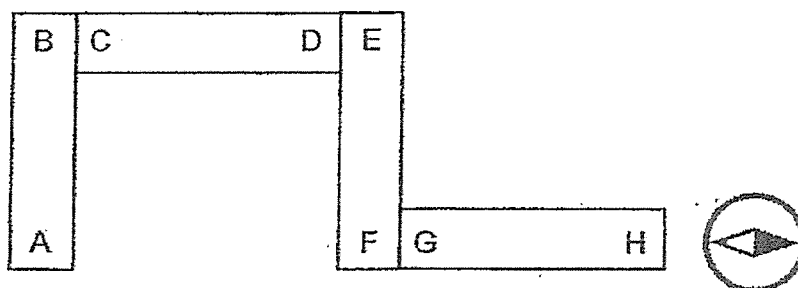


Which of the following method(s) can Paul use to attract more iron nails?

- A use a shorter wire
- B increase the number of batteries
- C change the iron rod to a plastic rod
- D reduce the number of coils of wire around the iron rod

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


16. Four magnets are arranged as shown below. A compass is placed near pole H.




Which of the following shows the correct observation when the ends of two magnets are placed near to each other and a compass is placed at one end?

- (1) 


A	B	C	D
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- (2) 


B	A	E	F
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- (3) 

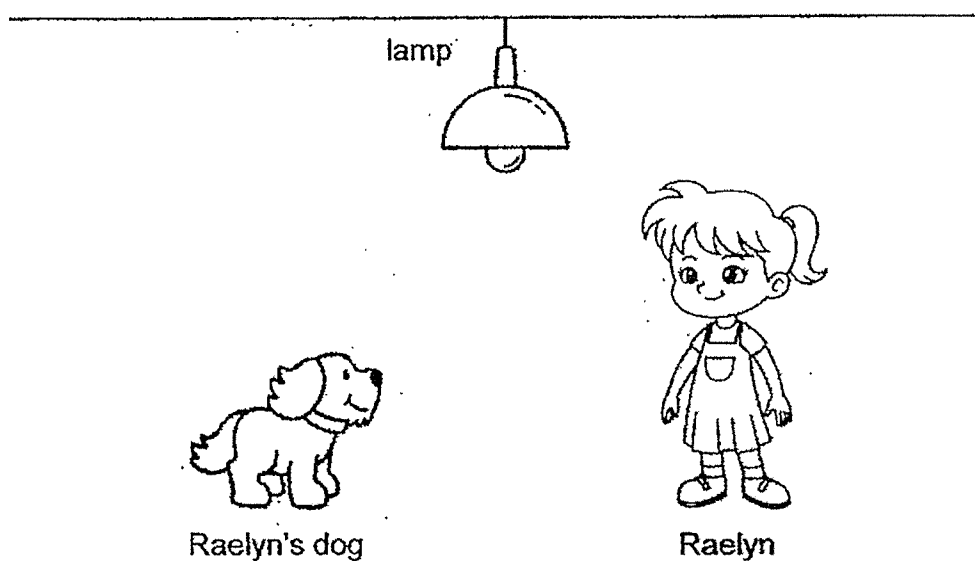
D	C	H	G
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- (4) 

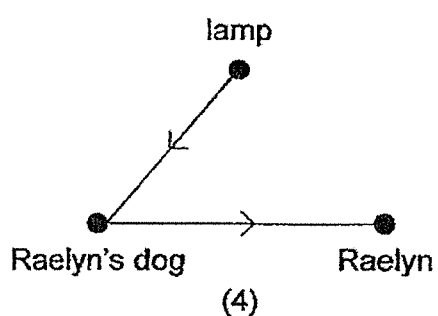
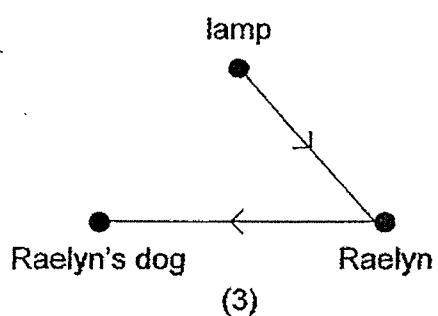
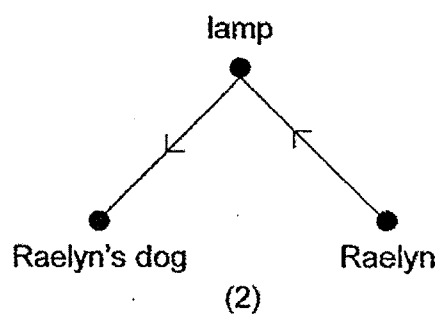
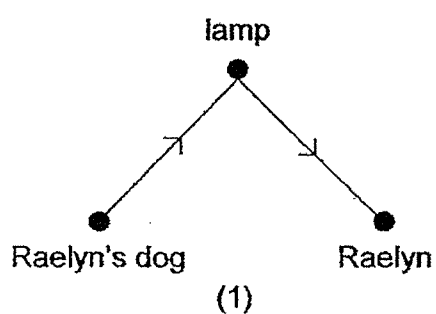
F	E	H	G
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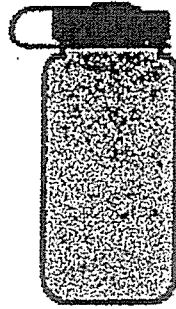
17. Study the diagram below.



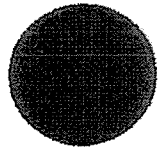
Which of the following shows the path of light that **enabled** Raelyn to see her dog?



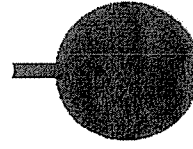
18. The diagram below shows an opaque bottle.



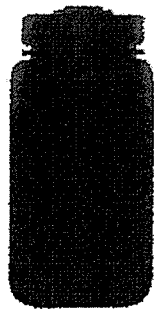
Which of the following shadows cannot be formed by the bottle?



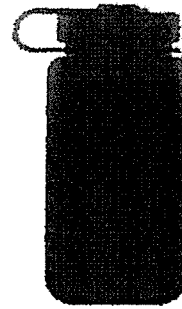
(1)



(2)

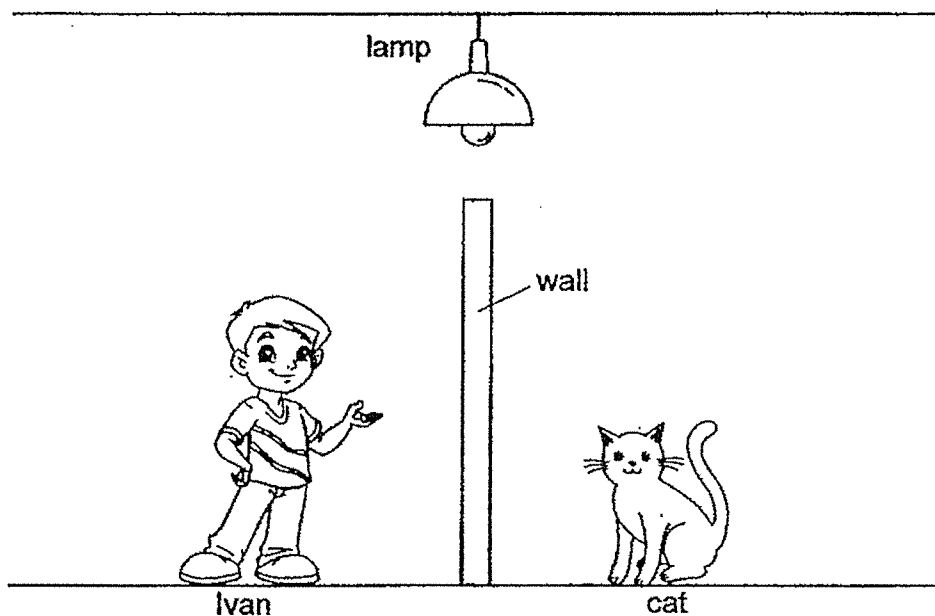


(3)



(4)

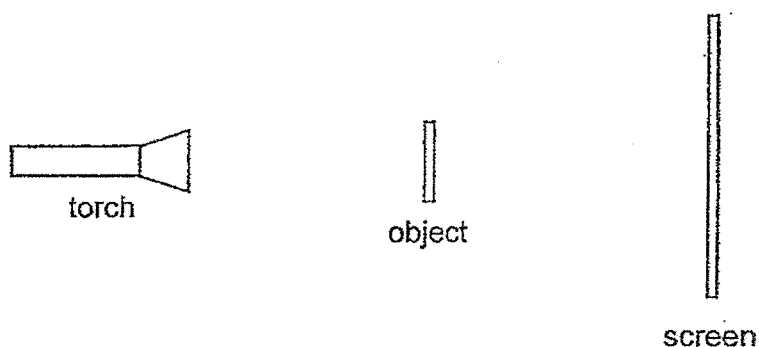
19. With the lamp switched on, Ivan could not see his cat when his cat moved to the other side of the room, which is separated by a wall.



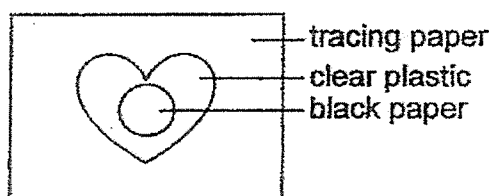
Which of the following explains why Ivan could not see his cat?

- (1) The cat did not reflect light.
- (2) The cat did not give off light.
- (3) The wall did not allow light to pass through.
- (4) The light from the lamp did not enter his eyes.

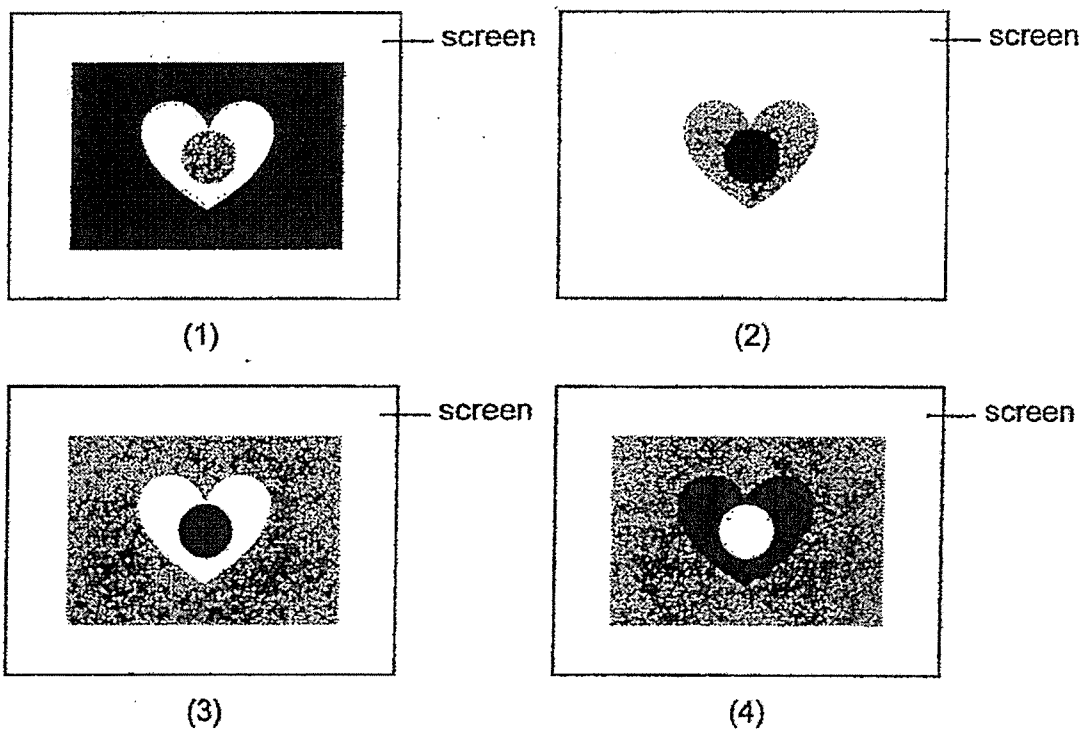
20. Cheryl sets up an experiment in a dark room as shown below.



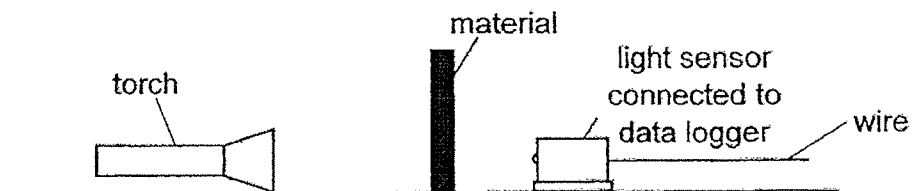
The object is made up of different materials as shown below.



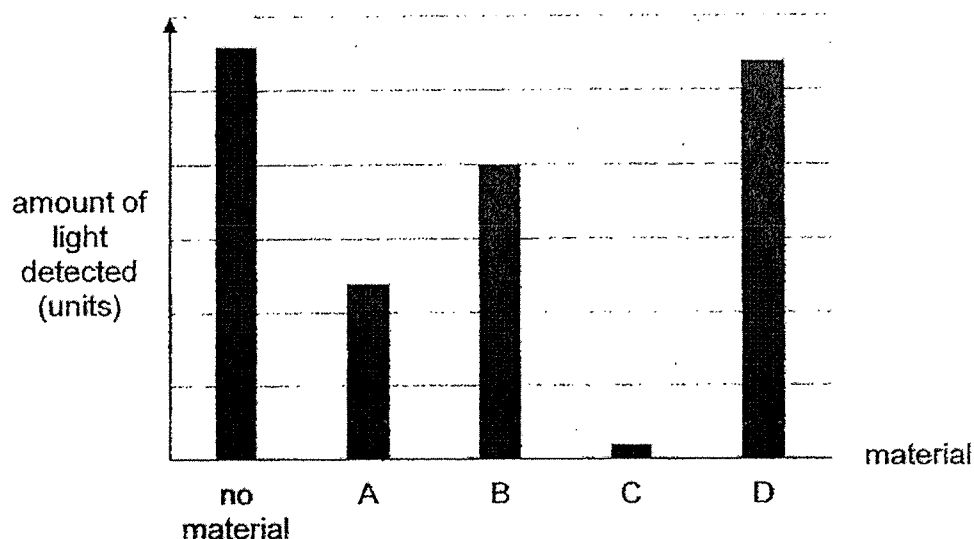
When the torch is switched on, which of the following could be seen on the screen?



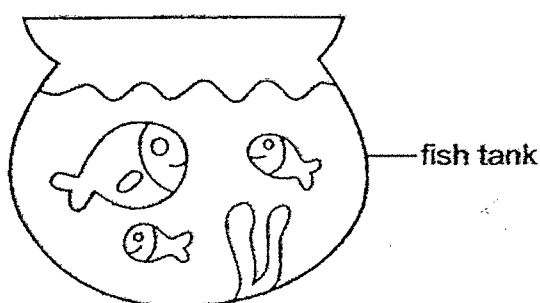
21. An experiment was conducted to compare the amount of light that passes through four different materials, A, B, C and D.



The readings of the light sensor are shown in the bar graph below.

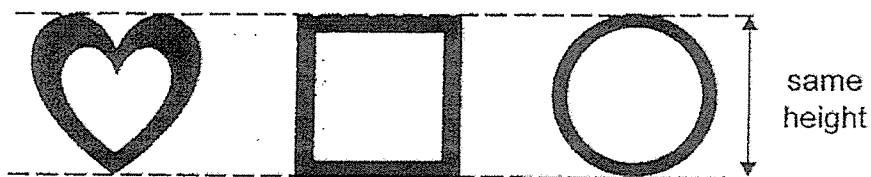


Based on the bar graph above, which of the materials, A, B, C or D, is most suitable to make a fish tank as shown below?

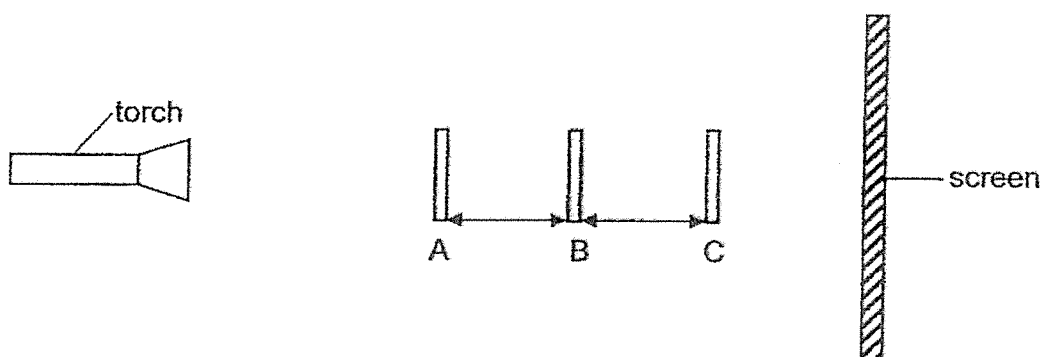


- (1) material A
- (2) material B
- (3) material C
- (4) material D

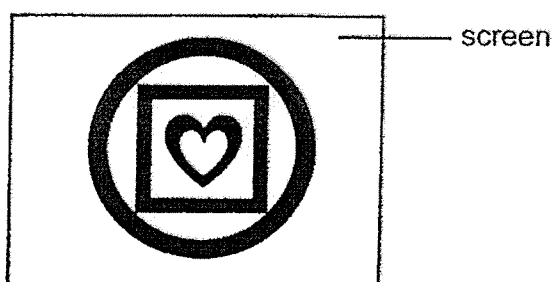
22. John cut a heart, square and circle with hollow centres out of cardboard, as shown below. The shapes are of equal height.




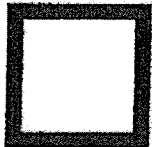

These shapes are placed in front of a torch at positions A, B and C as shown below.



The diagram below shows the shadow that is cast on the screen.



Which of the following best represents where the different shapes were placed at?

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

End of Booklet A





## 2024 PRIMARY 4 END-OF-YEAR EXAMINATION

Name : \_\_\_\_\_ (   )

Date: 24 October 2024

Class : Primary 4 (   )

Time: 8.00 a.m. - 9.30 a.m.

Duration: 1 hour 30 minutes

# SCIENCE

## BOOKLET B

### INSTRUCTIONS TO CANDIDATES

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

Booklet A	44
Booklet B	36
Total	80



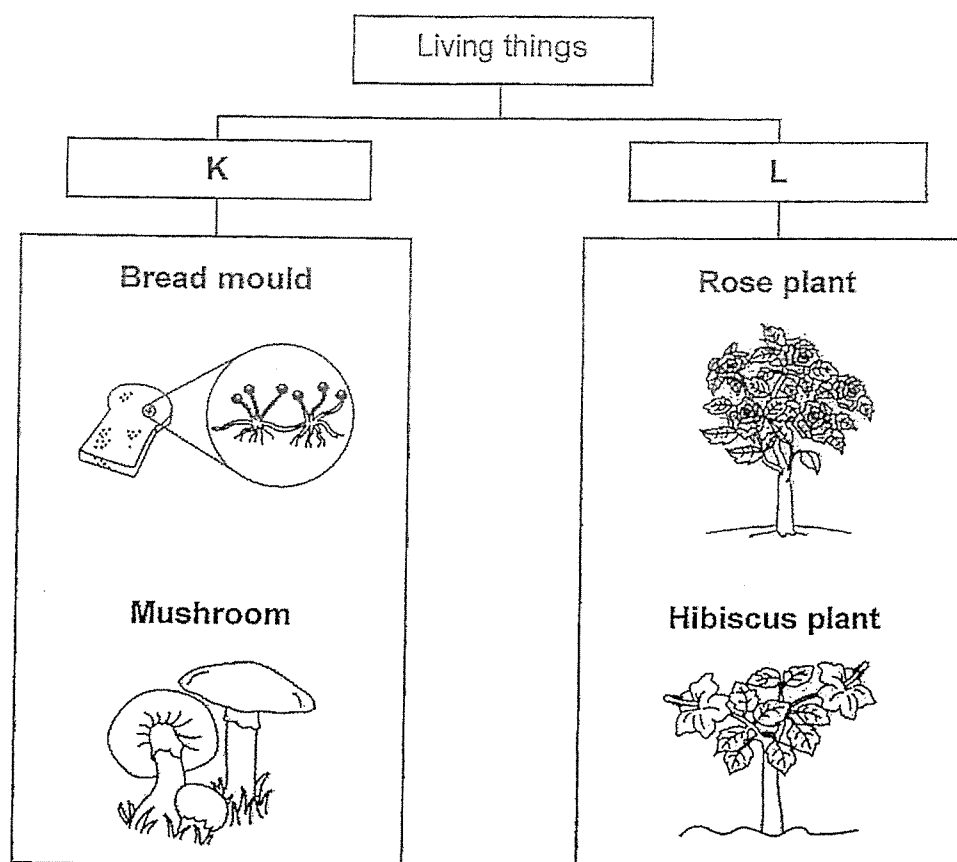
**Booklet B (36 marks)**

For questions 23 to 34, write your answers clearly in this booklet.

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

(36 marks)

23. Study the 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
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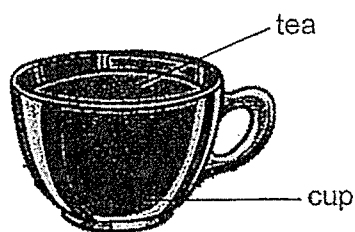
**K:** \_\_\_\_\_

**L:** \_\_\_\_\_

24. Fill in the correct parts of a plant in the table. [2]

	Function of a plant part	Plant part
(a)	It makes food for the plant.	
(b)	It holds the plant firmly to the ground.	

25. The picture below shows a cup of tea.

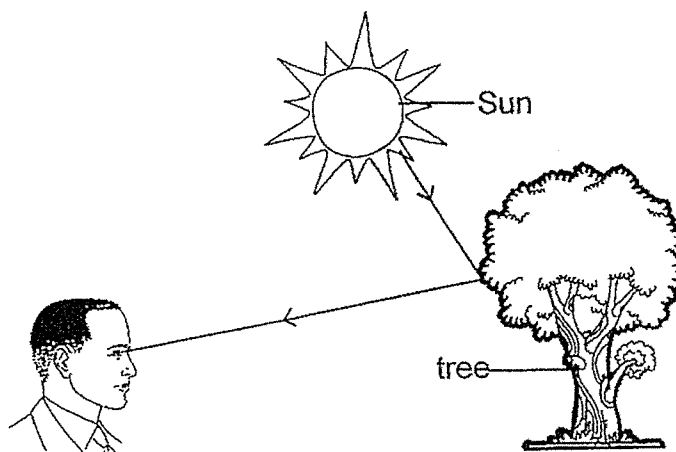


Circle the correct state of the following things. [2]

(a) tea: solid / liquid / gas

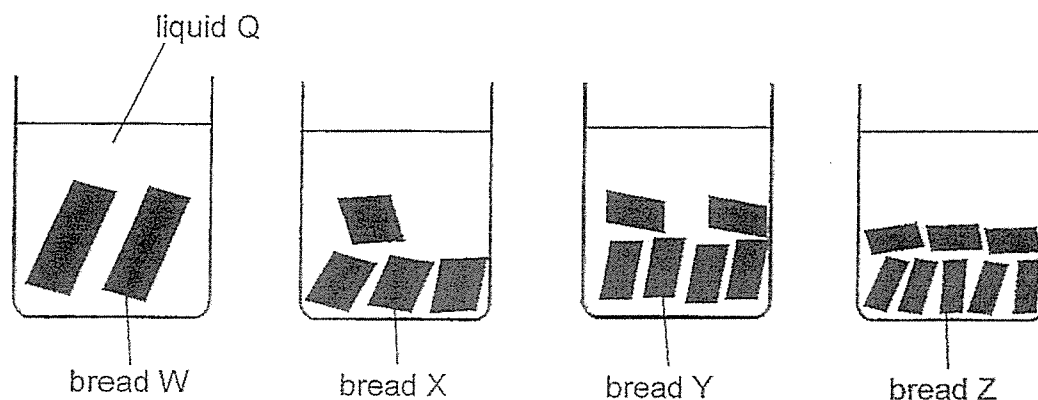
(b) cup: solid / liquid / gas

26. The diagram below shows how Mr Lee sees a tree. [2]



The \_\_\_\_\_ from the Sun is \_\_\_\_\_ by the tree and enters Mr Lee's eyes.

27. Sally used four identical slices of bread, W, X, Y and Z, in an experiment. She cut each slice of bread into different number of smaller pieces and placed them into four identical beakers filled with equal amount of liquid Q as shown below.



Sally noticed that the pieces of each bread started breaking down and recorded the time taken for the bread to be completely broken down into simpler substances.

Bread	Number of pieces each bread was cut into	Time taken for the bread to be completely broken down (min)
W	2	45
X	4	40
Y	6	32
Z	8	28

- (a) What could liquid Q be? [1]

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- (b) What is the relationship between the number of pieces each bread was cut into and the time taken for the bread to be completely broken down? [1]

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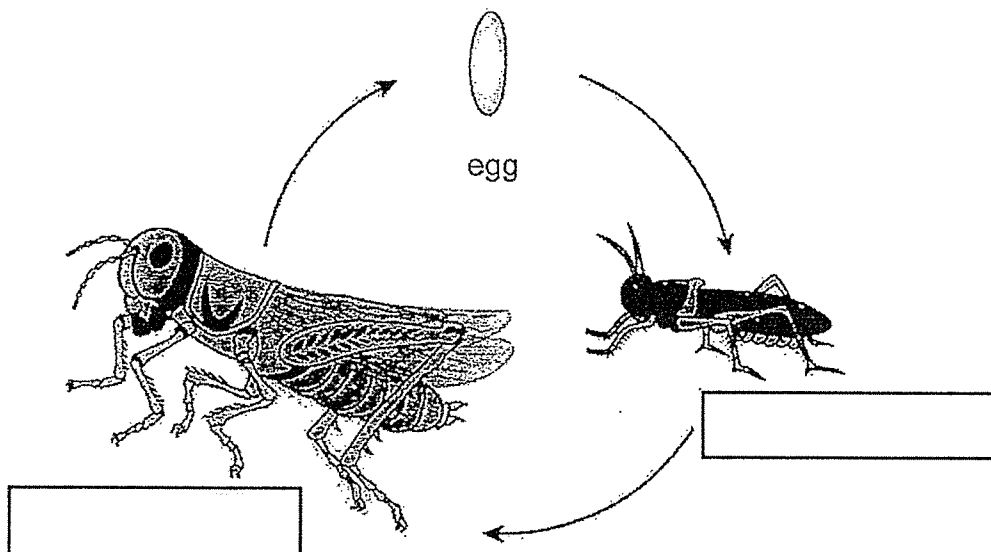
- (c) After the experiment, Sally concluded that chewing of food is helpful to digestion. Explain why. [2]

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28. The diagram below shows the life cycle of a grasshopper.

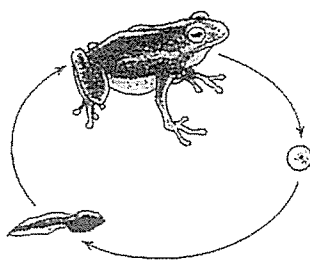
- (a) Name the stages in the life cycle of a grasshopper. [1]



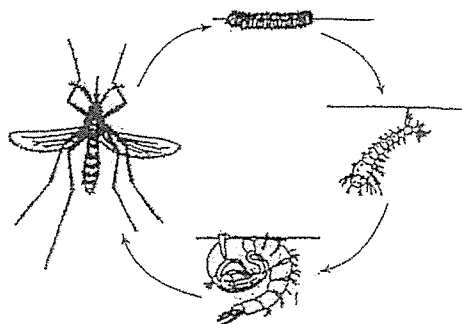
- (b) Why does a female grasshopper lay many eggs at a time? [1]

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29. Study the life cycle of the animals shown below.



life cycle of a frog



life cycle of a mosquito

- (a) State one similarity and one difference between the two life cycles shown above. [2]

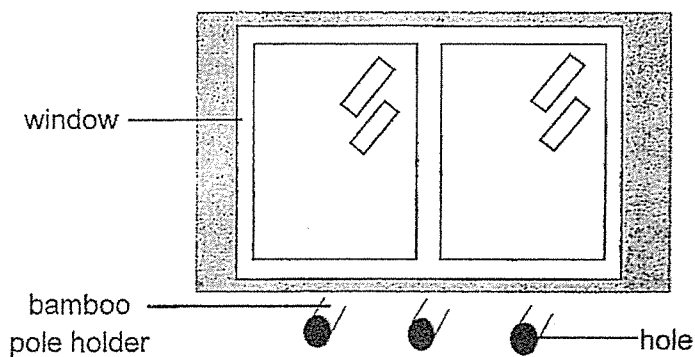
Similarity: \_\_\_\_\_

\_\_\_\_\_

Difference: \_\_\_\_\_

\_\_\_\_\_

After a rain, water is often found in the holes of bamboo pole holders outside the windows.

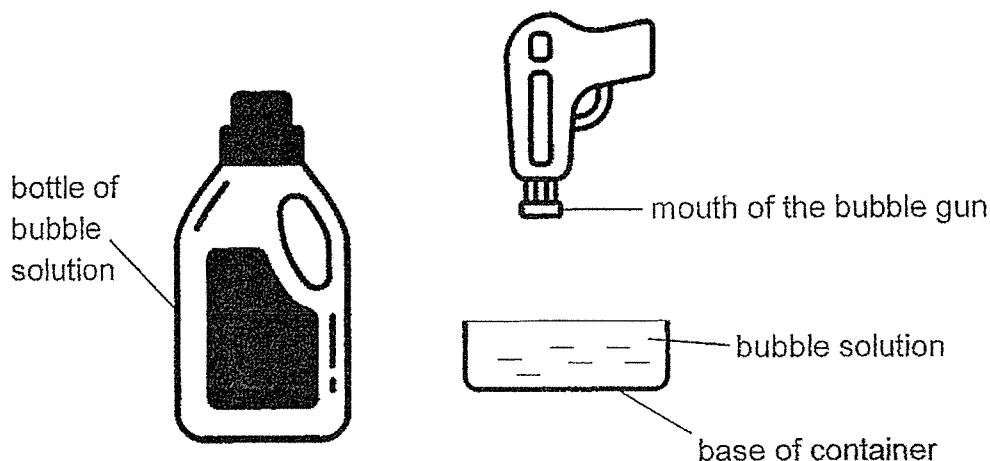


- (b) Based on the life cycle of a mosquito, explain why it is important to cover the holes of the bamboo pole holders. [2]

\_\_\_\_\_

\_\_\_\_\_

30. Steve has a new bottle of bubble solution as shown below. He poured some of the solution into a container until it was filled to the brim. Then he submerged the mouth of the bubble gun into the container until it touched the base of the container.



- (a) What would Steve observe when he submerged the mouth of the bubble gun into the container of bubble solution? [1]

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- (b) Explain your answer in (a). [1]

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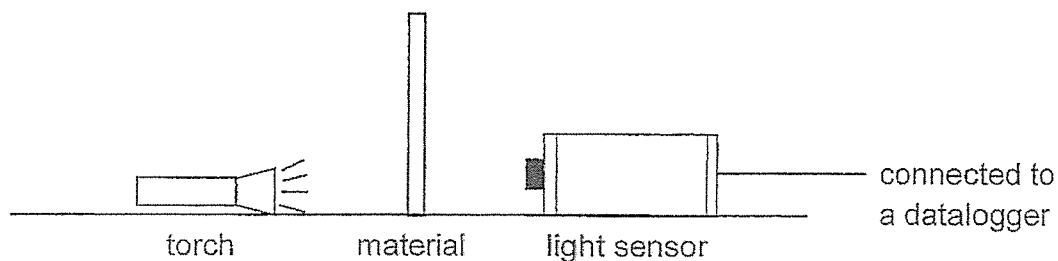
- (c) Whenever Steve used up the bubble solution in the container, he refilled it with the bottle of bubble solution. After several rounds of refilling, he realised that the bottle felt lighter. Explain why using a property of matter. [2]

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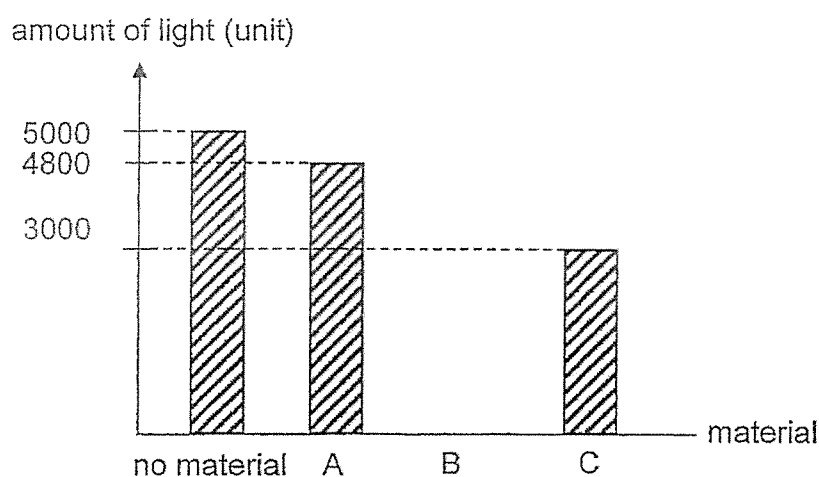


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31. Joy carried out an experiment to investigate the amount of light passing through three different materials, A, B and C.



The results of her experiment detected by the light sensor are shown below.



- (a) Based on the above readings, what can you conclude about the property of material A? Explain why. [1]

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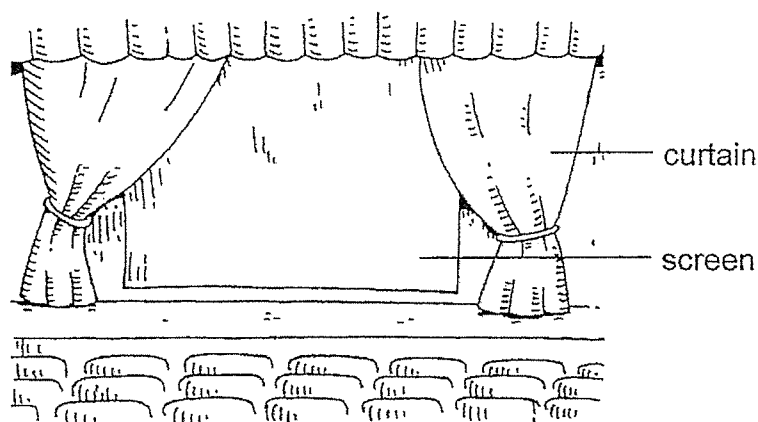
- (b) What can Joy do to ensure that her results are reliable? [1]

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- (c) Joy wants to buy stage curtains for the school hall.



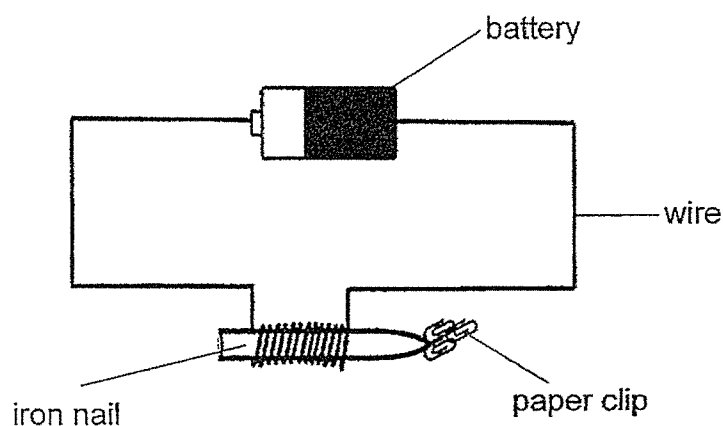
Based on the results, which material, A, B or C, should she buy for the stage curtains? Explain why. [2]

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32. An electromagnet is set up as shown below.



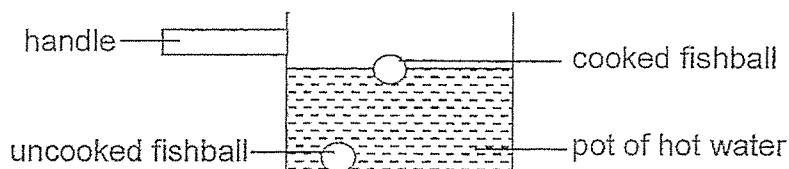
What are the two ways to increase the number of paper clips attracted by the iron nail? [2]

1. 

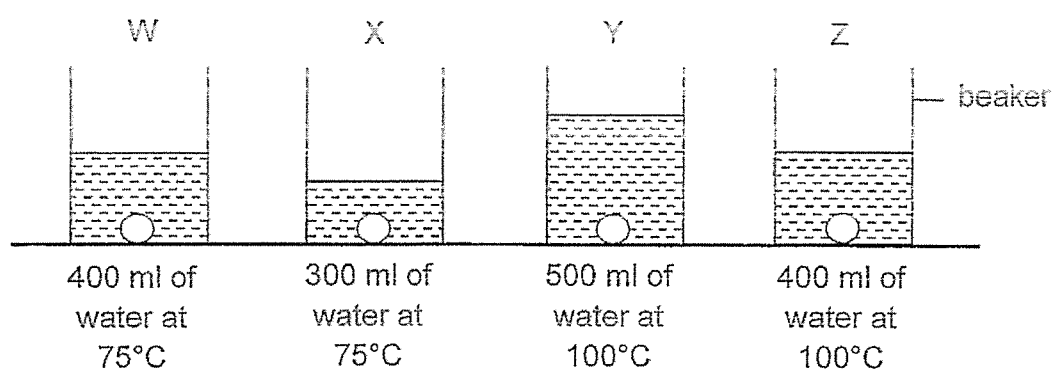
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2. 

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33. Jerome wanted to find out the fastest way to cook fishballs in a pot of hot soup. Uncooked fishballs sink to the bottom of the pot. Once they are cooked, the fishballs float.



Jerome conducted an experiment using the four set-ups, W, X, Y and Z. Four identical uncooked fishballs were placed into a beaker of hot water as shown below. He recorded the time taken for each fishball to float to the surface.



- (a) In the table above, write in the box a possible time taken for the fishball to float in set-up Z. [1]

Set-up	Time taken for the fishball to float (s)
W	200
X	240
Y	120
Z	<div style="border: 1px solid black; width: 50px; height: 30px; display: inline-block;"></div>

- (b) Based on the table, the fishball cooked the fastest in set-up Y.  
Explain why. [2]

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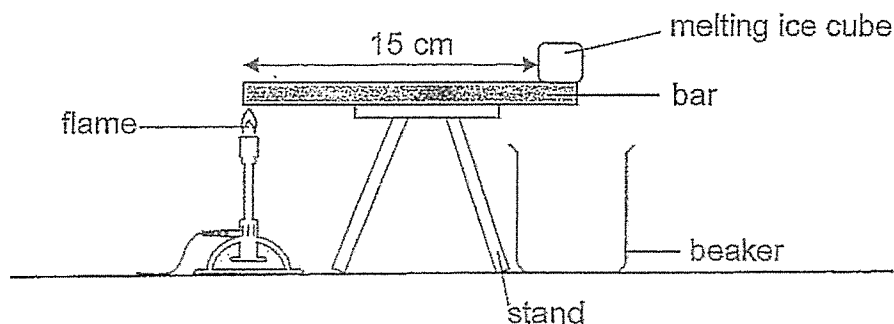
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- (c) Give an example of a suitable material to make the handle of the pot so that  
Jerome will not burn his hands when he holds it. [1]

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34. Taufik wanted to find out which bar made of material, P, Q, R or S, is the best conductor of heat. He put an identical ice cube at the end of each bar and heated the bar over a flame. He measured the volume of water collected in the beaker after 1 minute.



He repeated this experiment for each of the materials and recorded the results in the table below.

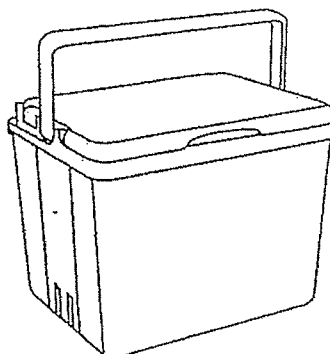
Material	Volume of water collected in the beaker (ml)
P	8
Q	6
R	3
S	10

- (a) State one other variable that must be kept constant for a fair test. [1]

- (b) Arrange the material from the best conductor of heat to the poorest conductor of heat. [1]

best conductor of heat     →  →  →     poorest conductor of heat

Taufik wanted to make a cooler box to keep ice cream cold for the longest time.



- (c) Based on the results of his experiment, which material, P, Q, R or S would be most suitable as a cooler box? Explain why. [2]

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End of Paper

## ANSWER KEY

LEVEL : PRIMARY 4  
SCHOOL : TOA NAN SCHOOL  
SUBJECT : SCIENCE

### BOOKLET A

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

Q21 4      Q22 4

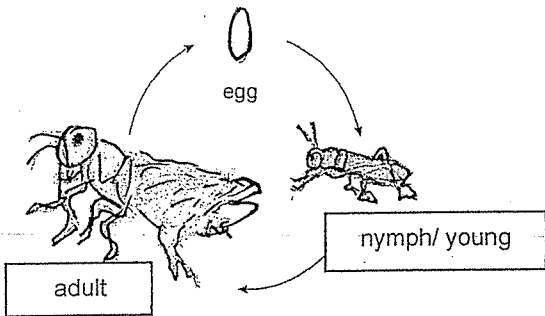


Tao Nan School  
P4 Science End-of-Year Examination 2024  
Simplified Answer Key (Booklet B)

Name: \_\_\_\_\_

Class: 4 \_\_\_\_\_

This answer key only serves as a reference. Variations of students' answers have been accepted if they have shown conceptual understanding.

Qn	Suggested Answer
23	K: fungi L: flowering plant
24	(a) leaf / leaves (b) root(s)
25	(a) liquid (b) solid
26	light; reflected
27a	digestive juice(s) / saliva / gastric juice
b	As the number of pieces each bread was cut into increases, the time taken for the bread to be completely broken down decreases. (vice versa)
c	Chewing breaks food down into smaller pieces, so there is more exposed surface area of the food to digestive juice and food will be digested faster / digested in a shorter time.
28a	 <p>The diagram illustrates the life cycle of a grasshopper. It starts with an 'egg' at the top. An arrow points down to a 'nymph/young' stage, which is depicted as a small grasshopper. Another arrow points down to an 'adult' stage, shown as a larger grasshopper. A final arrow points from the adult back up to the egg, completing the cycle.</p>
b	A female grasshopper lays many eggs at a time to increase the chance of the eggs hatching / growing into nymph / becoming an adult.
29a	<p><u>Similarity</u></p> <p>Both young do not resemble / look like the adult. Both have an egg/adult stage. Both the egg/young stage are found in water.</p> <p><u>Difference</u></p> <p>The frog has a 3-staged life cycle but the mosquito has a 4-staged life cycle. The mosquito has a larval / pupal stage but the frog does not.</p>
b	This prevents water from entering / collecting in the holes so that the mosquitoes cannot lay eggs.

30a	The bubble solution will overflow / spill out.
b	The bubble gun takes up the space previously occupied by the bubble solution. / The bubble gun has displaced the bubble solution.
c	After several rounds of refilling, the bottle feels lighter because there is less bubble solution and the mass of the bubble solution decreased.
31a	Material A allows most light to pass through.
b	She can redo/repeat the experiment/test.
c	[Claim] Material B. [Evidence] No light can pass through material B. [Reason] Curtains made of material B will not allow the audience to see the screen/the performers behind the curtains when the curtains are down.
32	Increase the number of batteries Increase the number of coils of wire around the iron nail.
33a	Any number between 120 and 200
b	Set-up Y has the most amount of water at the highest/higher temperature [Evidence]. Hence, the fishball will gain heat from the hot soup the fastest [Reason].
c	Plastic/Rubber/Wood. (or any other poor conductor of heat)
34a	Distance between the flame and bar/material or The position of the flame from the ice cube or Thickness/length of the material/bar or Intensity of the flame
b	S, P, Q, R
c	[Claim] Material R. [Evidence] The amount of water collected in the beaker is the least/ R is the poorest conductor of heat/R gains heat the slowest. [Reason] so the ice cream will gain heat the slowest from the material/surroundings.

END