Rulang Primary School

END OF YEAR EXAMINATION
SCIENCE
2024

Name: _____ ( )
Level: Primary 4
Class: Primary 4 ( )

Marks: _____ / 48
Total Time for Booklets A and B: 1 h 30 min
Date: 21 Oct 2024
Total Marks: 80

BOOKLET A

Instructions to pupils:

1. **Do not open this booklet until you are told to do so.**
2. You are required to answer **all** the questions in this booklet.
3. This question booklet consists of **15** printed pages, including the cover page.

Booklet A (24 x 2 marks)

For each of the questions from 1 to 24, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

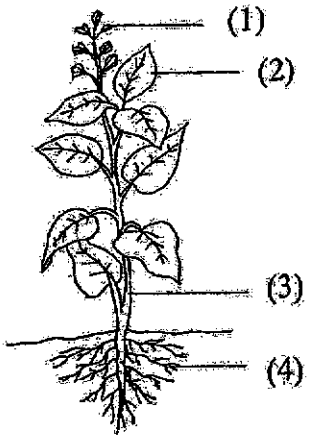
1. Which one of the following properties is true for both air and an eraser?

   (1) Both can be seen.
   (2) Both take up space.
   (3) Both have fixed shapes.
   (4) Both have fixed volumes.

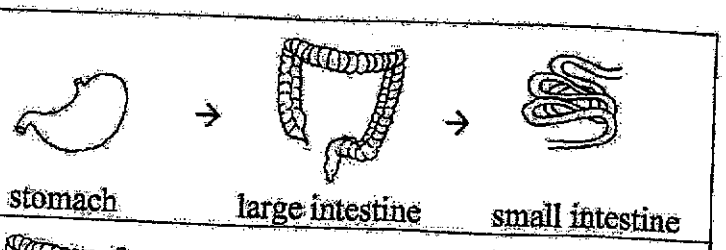
2. Matter is anything that has mass and occupies space. Which one of the following is **not** matter?

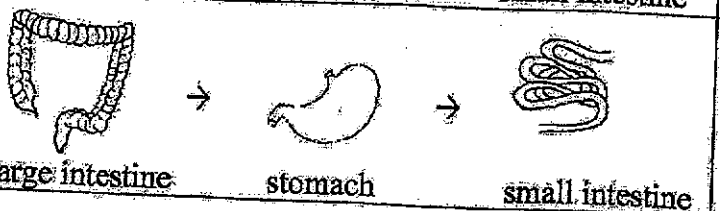
   (1) air
   (2) soil
   (3) water
   (4) shadow

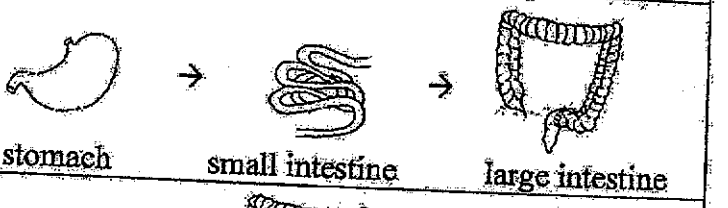
3. Which one of the following parts makes food for the plant?

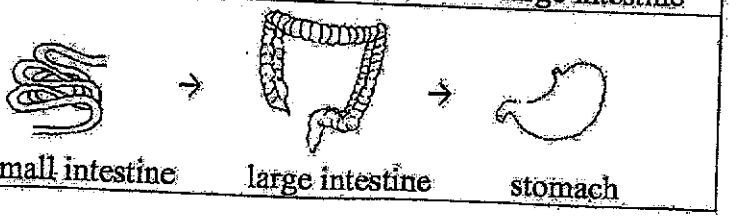


4. Which one of the following shows the correct order when food moves through some parts of the digestive system?

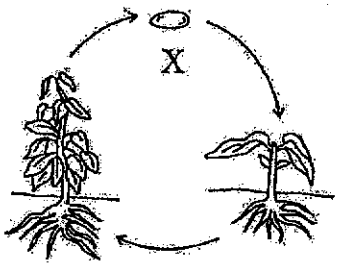
(1) 

(2) 

(3) 

(4) 

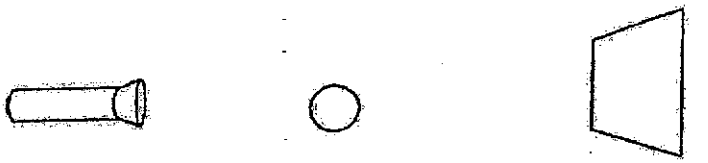
5. The diagram shows the life cycle of a plant.



What is the stage marked X?

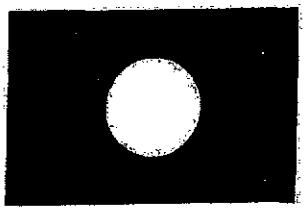
(1) egg
(2) seed
(3) adult plant
(4) young plant

6. The set-up below shows light shining on a wooden ball.

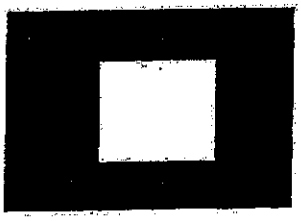


Which one of the following would likely be seen on the screen?

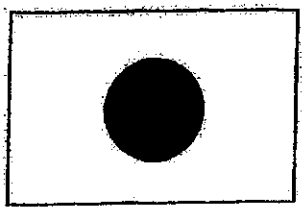
(1)



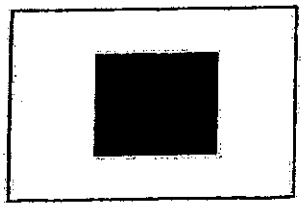
(2)



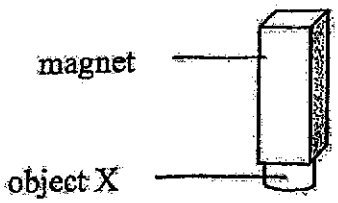
(3)



(4)



7. Object X is attracted to a magnet, as shown in the figure below.



Object X is made of _____.

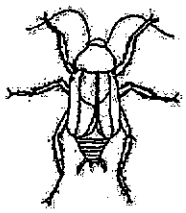
(1) iron
(2) wood
(3) plastic
(4) rubber

8. Which statement is **not** true about animals?

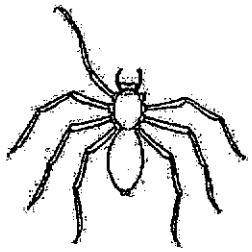
(1) They can grow.
(2) They can move.
(3) They can reproduce.
(4) They can make food.

9. Which one of the animals shown below is **not** an insect?

(1)



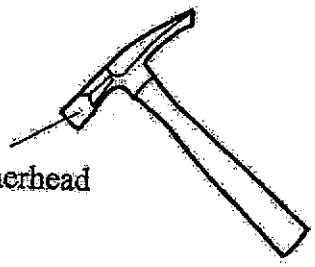
(2)



(3)

(4)

10. The diagram shows a hammer.

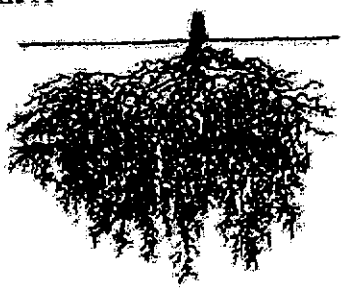


Metal is used to make the hammerhead of the hammer because metal _____.

(1) can reflect light
(2) does not break easily
(3) can bend without breaking
(4) does not allow light to pass through

11. Study the roots of four plants below. Which plant is most likely to stay upright and not be blown over by strong winds on a stormy day?

(1) Plant A

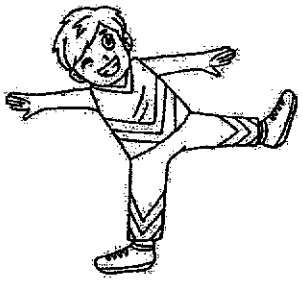


(2) Plant B

(3) Plant C

(4) Plant D

12. Khairul enjoys balancing on one leg.



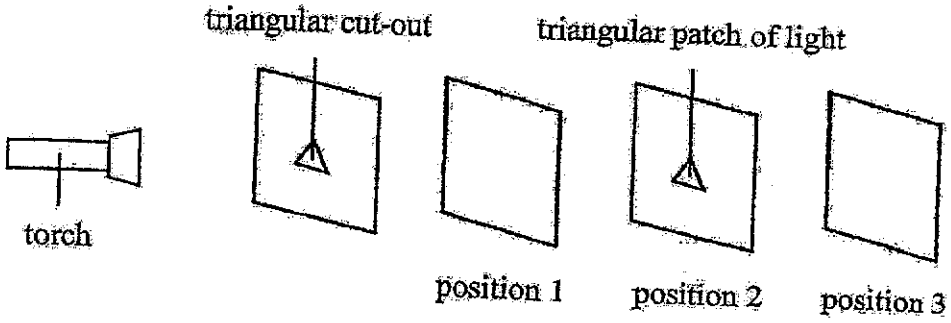
Which two body systems work together to enable him to stay balanced?

A: Skeletal system
B: Muscular system
C: Circulatory system
D: Respiratory system

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

13. An experiment was set up in a dark room. A cardboard with a triangular cut-out and three different pieces of materials, P, Q and R, were placed in a straight line in front of a torch. The property of the materials is given in the table below.

Property of material	Material
Allows most light to pass through	P and R
Does not allow light to pass through	Q

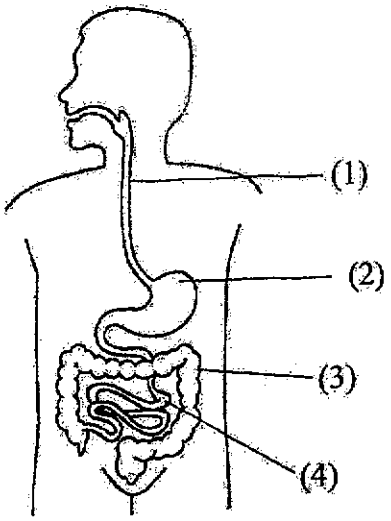


How should materials P, Q and R be arranged such that a triangular patch of light can be seen at position 2?

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

14. Kaito is unwell and passes out watery stools whenever he uses the toilet.

Which part of Kaito's digestive system is not functioning well?

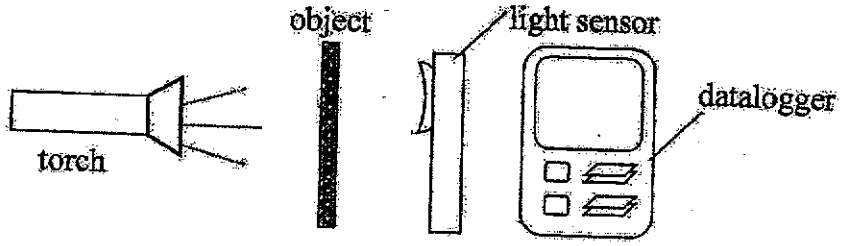


15. Mosquitoes can spread diseases by biting people. The people living in a neighbourhood noticed an increase in the number of mosquitoes there. They decided to solve the problem by overturning pails and emptying flower pot plates to reduce the number of mosquitoes.

At which stage(s) of the life cycle of the mosquito are the people trying to get rid of the mosquitoes?

(1) Adult only
(2) Adult and egg only
(3) Larva and pupa only
(4) Egg, larva and pupa only

16. Felicia conducted the experiment shown below in a dark room.



She used three different unknown objects X, Y and Z and recorded the readings in the table below using the light sensor.

Objects	Amount of light detected by the light sensor (unit)
X	0
Y	50
Z	120

She wrote down a few conclusions based on her recorded readings.

A: Object X allows some light to pass through.
B: Object Z does not allow any light to pass through.
C: Object Y allows less light to pass through it than object Z.
D: Object Z allows more light to pass through it than object X.

Which of the following conclusions are correct?

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

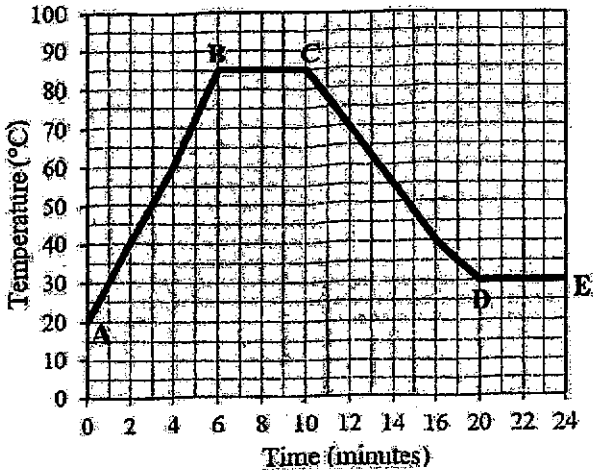
17. Which of the statements below correctly define heat and temperature?

G: Heat is a form of energy.
H: Heat moves from a cooler object to a warmer object.
I: Temperature measures the degree of hotness of an object.
J: Temperature measures how much an object expands or contracts.

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

18. Belle heated substance P over a flame until it boiled, then removed it from the flame and allowed it to cool to room temperature.

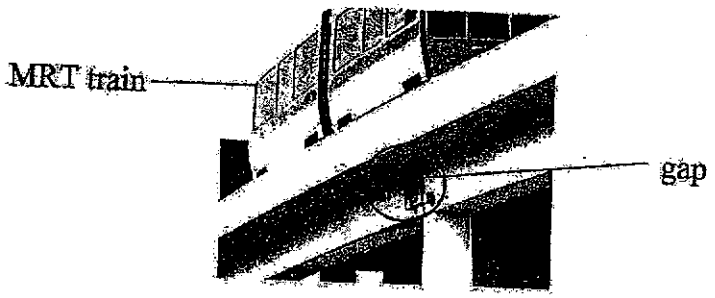
The graph below shows the temperature of substance P during the experiment.



Which one of the following statements is true?

(1) The room temperature was 85°C.
(2) Substance P lost heat from stage D to stage E.
(3) Substance P gained heat from stage A to stage B.
(4) The temperature of substance P increased from stage A to stage C.

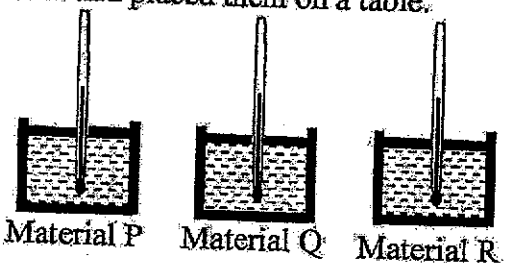
19. William notices that there are gaps between the concrete slabs of the track while walking below the MRT tracks.



What is the purpose of these gaps?

(1) To allow air to enter when the MRT train is travelling
(2) To allow for expansion of the concrete slabs on a hot day
(3) To allow for contraction of the concrete slabs on a cold day
(4) To reduce the amount of materials required to build the MRT tracks

20. Sarah filled up three containers made of different materials, P, Q and R, with water at 60°C and placed them on a table.



She recorded the time taken for the water to reach room temperature for each set-up in the table below.

Materials	Time (minutes)
P	15
Q	10
R	30

Which one of the following sets best represents materials Q and R?

	Material Q	Material R
(1)	Steel	Wood
(2)	Wood	Steel
(3)	Iron	Steel
(4)	Steel	Iron

21. The diagrams below show two living things.

strawberry plant

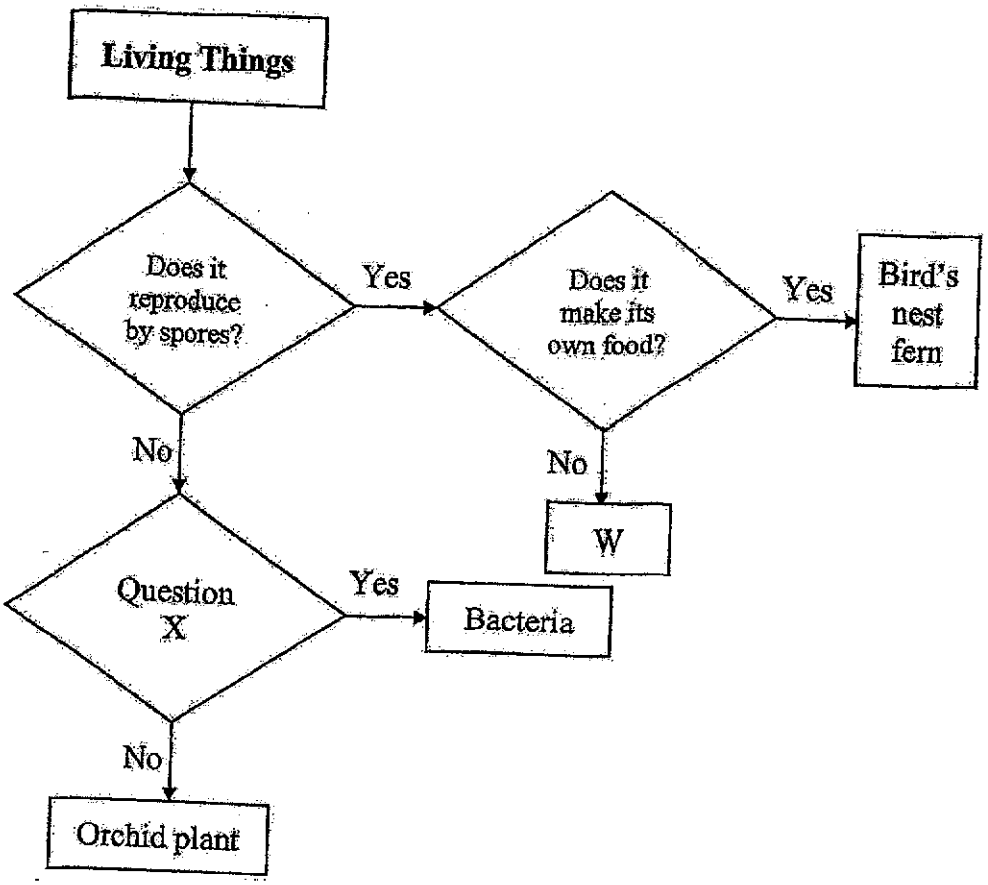
bird's nest fern

Which of the following statements is/ are correct?

A: Both plants reproduce by spores.
B: Both plants make their own food.
C: Both plants have flowers and fruits.

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

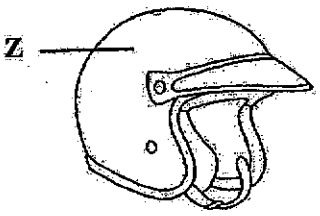
22. Study the flowchart below carefully.



Which of the following correctly represents W and question X?

	W	Question X
(1)	Mushroom	Can it only be seen under the microscope?
(2)	Rose	Is it a flowering plant?
(3)	Yeast	Does it make its own food?
(4)	Hibiscus	Is it a non-flowering plant?

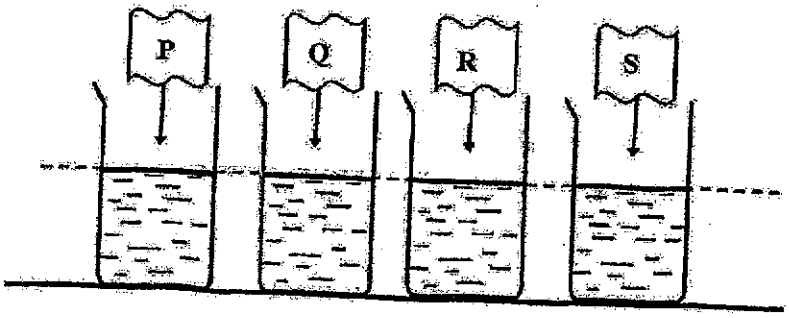
23. Which material is the most suitable for making part Z of a motorcycle helmet?



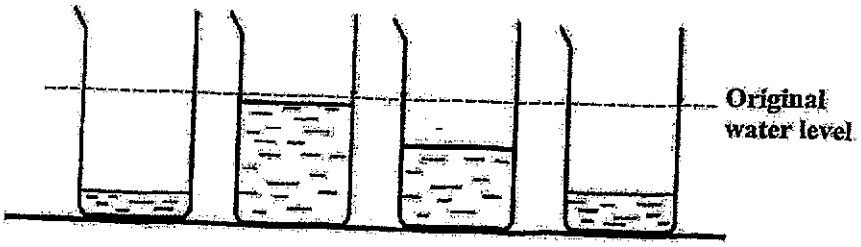
Key:
✓: Yes
X: No

		Properties		
	Material	**Strong**	**Waterproof**	**Flexible**
(1)	**A**	✓	X	✓
(2)	**B**	X	X	✓
(3)	**C**	X	✓	✓
(4)	**D**	✓	✓	X

24. Jeremy filled up four identical beakers with 100ml of water each and placed four different materials, P, Q, R and S, of the same size into the beakers as shown below.



He removed the materials after 10 minutes. The remaining water in each beaker is as shown below.



Which material is the most suitable for making a raincoat?

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

Rulang Primary School

END OF YEAR EXAMINATION
SCIENCE
2024

Name: _____( ) **Marks:** ____/ 32

Level: Primary 4 **Date:** 21 Oct 2024

Class: Primary 4 ( )

BOOKLET B

Instructions to pupils:

1. **Do not open this booklet until you are told to do so.**
2. You are required to answer **all** the questions in this paper using your own words / expressions as far as possible.
3. All drawings / diagrams must be clearly shown and labelled.
4. Marks will be deducted for wrongly spelt key words.
5. This question booklet consists of **11** printed pages, including the cover page.

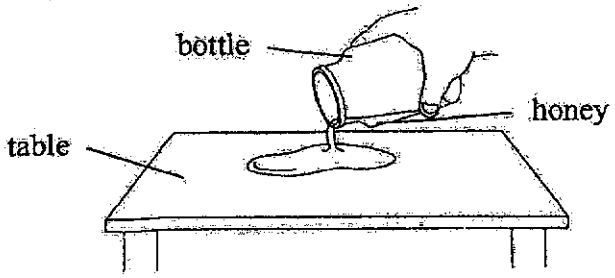
Section B (32 marks)

Write your answers to questions 25 to 35 in this booklet.

25. Choose the correct words from the box to fill in the blanks below.

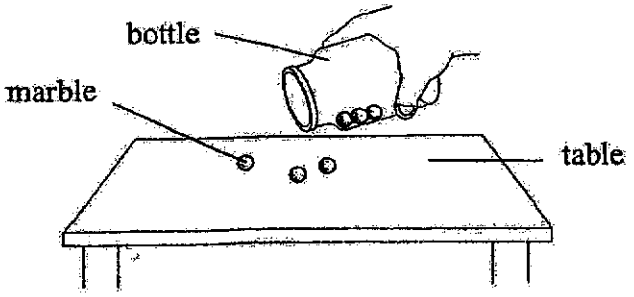
solid	liquid	gas

(a) Ali pours honey from a bottle onto a table as shown below.



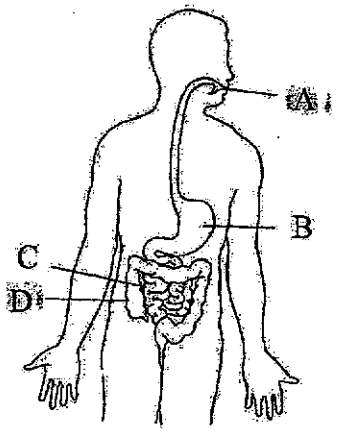
The volume of honey remains the same but its shape changes. This shows that honey is a _____. [1]

(b) Ali pours some marbles from a bottle onto a table as shown below.



The shape and volume of the marbles remain the same. This shows that a marble is a _____. [1]

26. The diagram below shows the human digestive system.

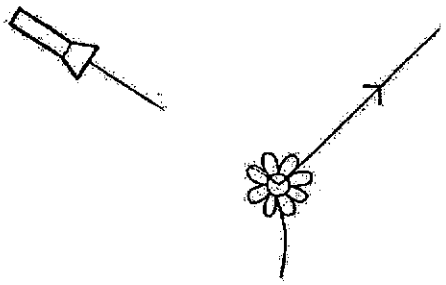


Identify the parts where

(a) digestion first takes place: _____ [1]

(b) there is no digestion: _____ [1]

27. The diagram shows how Mary sees a flower.



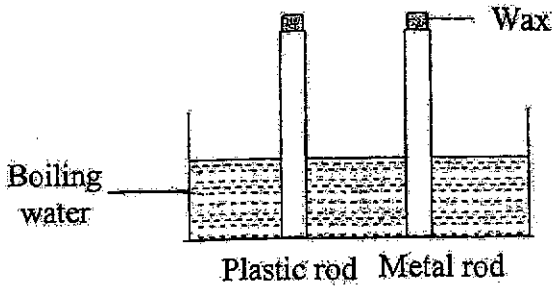
Fill in the blanks using the correct words in the box.

absorbed	reflected	house	source

(a) The torch is the light _____. [1]

(b) Light is _____ by the flower. [1]

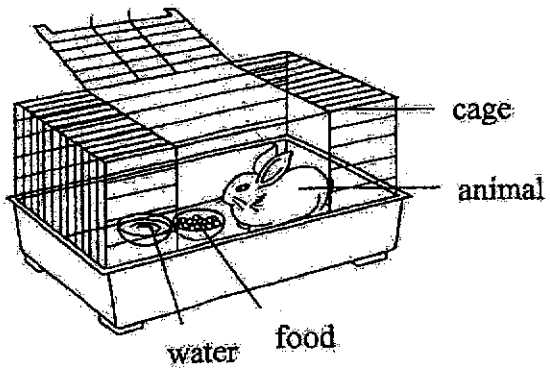
28. James placed a plastic rod and a metal rod into a tank of boiling water as shown below. Equal amounts of wax were put on both rods.



What would he observe and why? [2]

The wax on the metal rod melted _____ than the wax on the plastic rod, as metal is a _____ conductor of heat than plastic.

29. Study the diagram below.



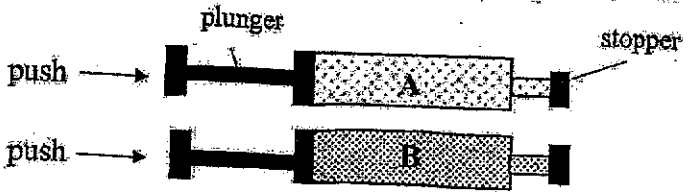
(a) After a few days, will the amount of food in the bowl increase, decrease or remain the same? [1]

_____

(b) Based on the diagram above, name one substance this animal needs so that it can remain alive. [1]

_____

30. Jack had two similar syringes containing substances A and B in different states. He placed a stopper at the end of each syringe to seal it.



Jack gave each plunger a push and recorded his observations below.

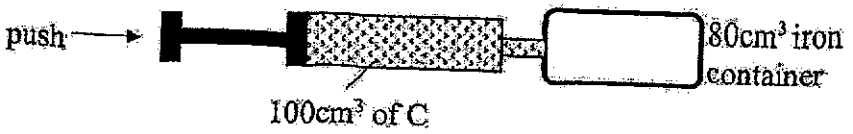
A: The plunger moved into the syringe and stopped midway.
B: The plunger could not be moved at all.

(a) Based on Jack's observations, write down the states of substances A and B. [2]

A: _____

B: _____

(b) Jack attached another syringe that was filled with $100cm^3$ of substance C to an empty $80cm^3$ iron container as shown.



He managed to push the plunger easily and pumped substance C into the container completely.

What would be the total volume of substance C in the container after he pushed the plunger? [1]

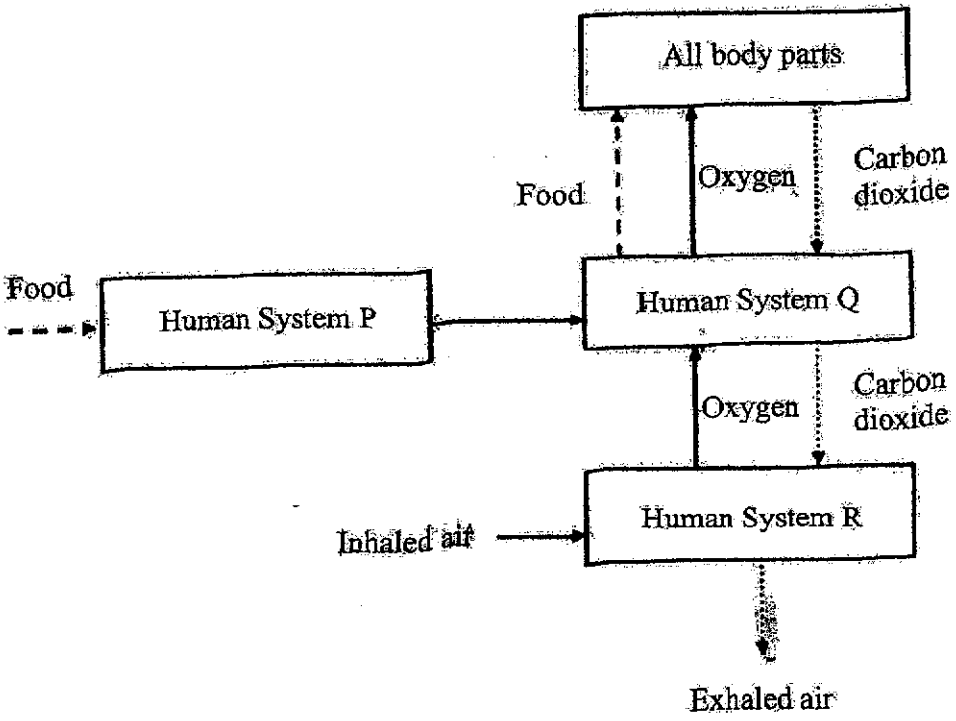
Total volume of C in the container (cm^3)	Tick the correct answer
80	
100	
180	

(c) What could Jack conclude about the physical property of substance C from his experiment? [1]

_____

_____

31. The diagram below shows how the human systems, P, Q and R, work together.



(a) Identify the human system R. [1]

_____

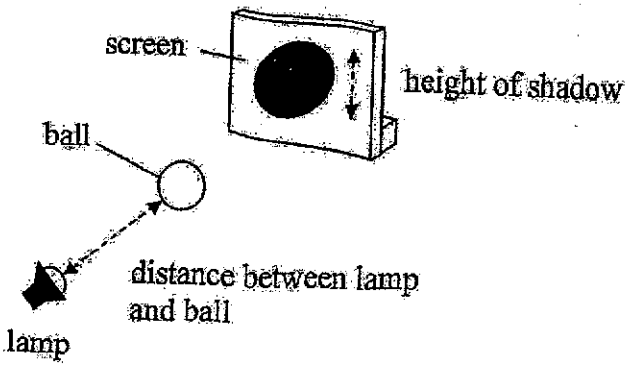
(b) What is the function of human system P? [1]

_____

(c) Which two human systems below must work together so that all parts of the body can get oxygen? Tick (✓) the correct box below. [1]

☐ P and Q ☐ P and R ☐ Q and R

32. Zac conducted an experiment below.



He placed a ball between a lamp and a screen. He measured the height of the shadow cast on the screen. He repeated the experiment by moving the lamp away from the ball and recorded his findings as shown below.

Distance between lamp and ball (cm)	Height of shadow (cm)
5	15
10	13
15	11
20	7

(a) Explain how a shadow is formed. [1]

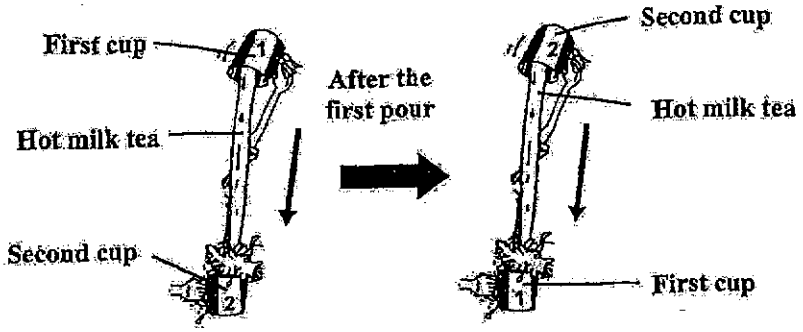
(b) Without moving the ball, suggest two ways in which Zac can form a larger shadow of the ball on the screen. [2]

(i)

(ii)

33. Rahman prepared a cup of hot milk tea and measured its temperature. He poured the hot milk tea continuously from one cup to another and back, as shown below. He then recorded its temperature between each pour in the table below.

Number of pours	0	1	2	3	4
Temperature of hot milk tea (°C)	98	95	91	85	83

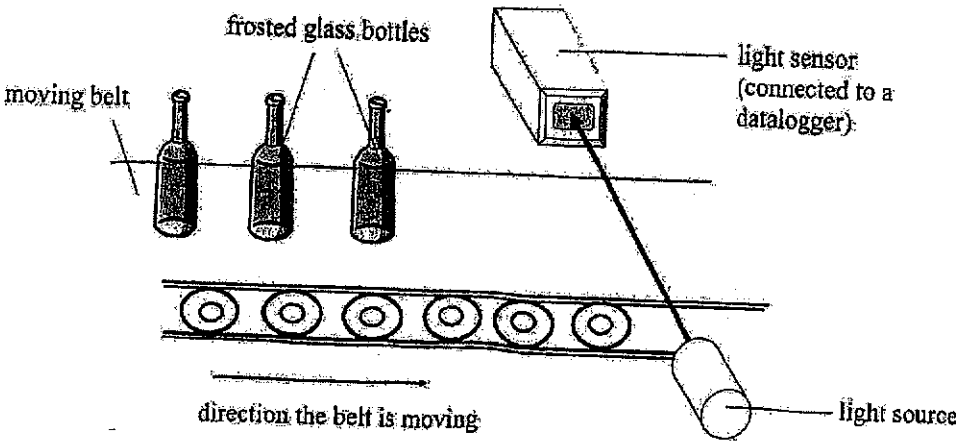


(a) Based on the data above, what was the relationship between the number of pours and the temperature of the hot milk tea? [1]

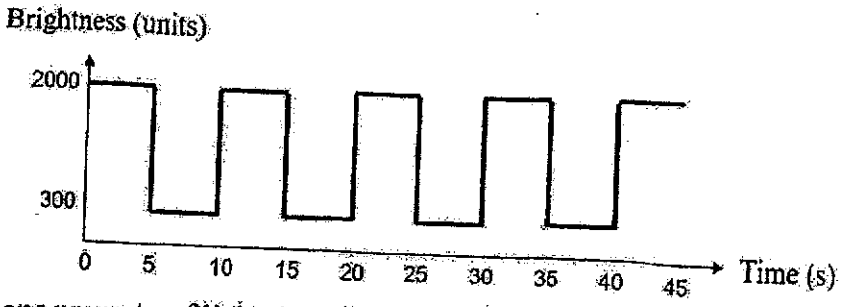
(b) Explain your answer in (a). [1]

(c) After the fourth pour, Rahman left the cup of hot milk tea on the dining table for two hours. Describe what would happen to the temperature of the hot milk tea during the next two hours. [2]

34. The diagram shows a bottle counter using a light sensor to detect frosted glass bottles on a moving belt. The belt moves at a constant speed.



The readings from the datalogger are shown in the graph below.



(a) State one property of light that allows the frosted glass bottles to be counted.

[1]

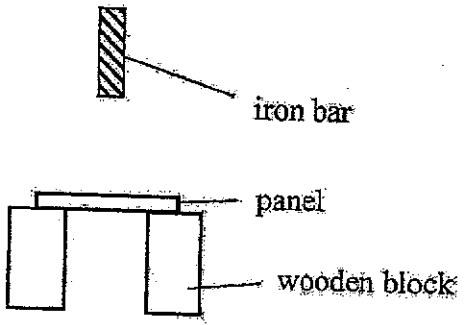
(b) Based on the graph, how many frosted glass bottles were counted in the first 35 seconds?

[1]

(c) If the frosted glass bottles were replaced with metal ones, what would happen to the readings in the graph? Explain your answer. [2]

35. Mr Tan wanted to make a fish tank. He set up an experiment to compare the strength of three different panels, A, B and C, of the same length, thickness and mass.

He dropped an iron bar on each panel and repeated the action until the panel broke.



For each panel, he counted the number of hits and recorded it in the table below.

Panel	Number of hits before panel broke
A	12
B	25
C	7

(a) Based on the results, which panel, A, B or C, is most suitable for making a fish tank? Explain your answer. [2]

(b) Name another property that the panel should have. [1]

(c) Other than the above variables, state another variable that should be kept constant to ensure a fair test. [1]

END OF PAPER

SCHOOL : RULANG PRIMARY SCHOOL

LEVEL : PRIMARY
SUBJECT : SCIENCE
TERM : 2024 SA2

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

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

Q21	Q22	Q23	Q24
1	1	4	2

Q25)	a) liquid b) solid
Q26)	a) A b) D
Q27)	a) source b) reflected
Q28)	faster / better
Q29)	a) decrease b) water
Q30)	a)A: gas B: solid b)80 c)Substance C can be compressed.
Q31)	a) Respiratory system b) It breaks down food into simple substance

	c) Q and R
Q32)	a)A shadow is formed when the object blocks the light. i)Move the torch nearer to the ball. ii)Move the screen further away from the ball.
Q33)	a) The more the hot milk tea is poured the temperature would decrease. b) As if you pour to milk tea to the other cup the cup would gain heat while the milk the milk tea will lose heat to the surrounding. c) The temperature of the hot milk tea would decrease and become room temperature.
Q34)	a) Light travels in a straight line. b) 3 c) It would decrease to zero as metal is not opaque so it won't allow light to pass through.
Q35)	a)B. As B was the one with the most amount of hits before it broke compared to the rest. Therefore, it is the strongest. b)waterproof. c)The weight of the iron bar.