

PEI CHUN PUBLIC SCHOOL
PRIMARY 4
END-OF-YEAR EXAMINATION 2022

SCIENCE
(BOOKLET A)

Additional Materials: Optical Answer Sheet (OAS)

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

Name: _____ ()

Class: Primary 4 / () _____

Date: 27 October 2022

Science Teacher: _____

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 on the Optical Answer Sheet (OAS) provided.

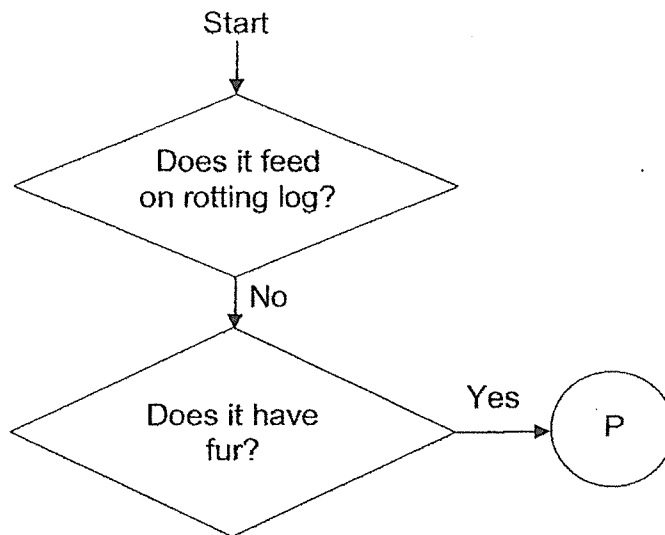
Section A (28 × 2 marks)

For questions 1 to 28, choose the most suitable answer and shade its number (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.

1 Which one of the following statements is true for **all** plants?

- (1) They grow on land.
- (2) They have strong stems.
- (3) They make their own food.
- (4) They have flowers and fruits.

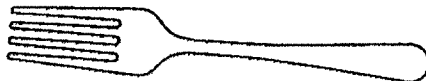
2 Study the diagram below.



What could P be?

- (1) fish
- (2) fungi
- (3) bacteria
- (4) mammal

3 The diagram shows a fork.

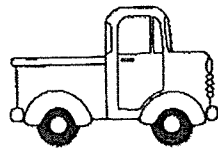


Metal is used to make the fork because metal _____.

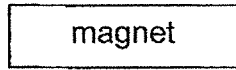
- (1) is shiny
- (2) is strong
- (3) sinks in water
- (4) conducts heat well

- 4 The diagram shows a magnet brought near a plastic toy truck.

plastic toy truck

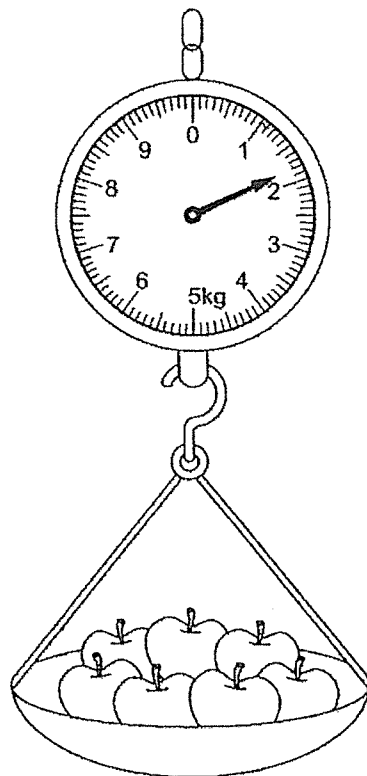


magnet



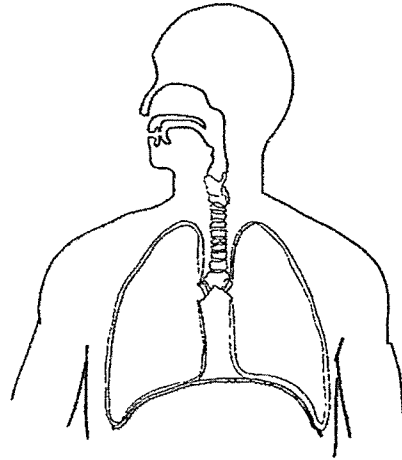
What will happen to the plastic toy truck?

- (1) It will move up.
 - (2) It will not move.
 - (3) It will move to the left.
 - (4) It will move to the right.
- 5 The reading on the weighing scale shows that the mass of the apples is _____ kg.



- (1) 1.6
- (2) 1.8
- (3) 2.0
- (4) 2.2

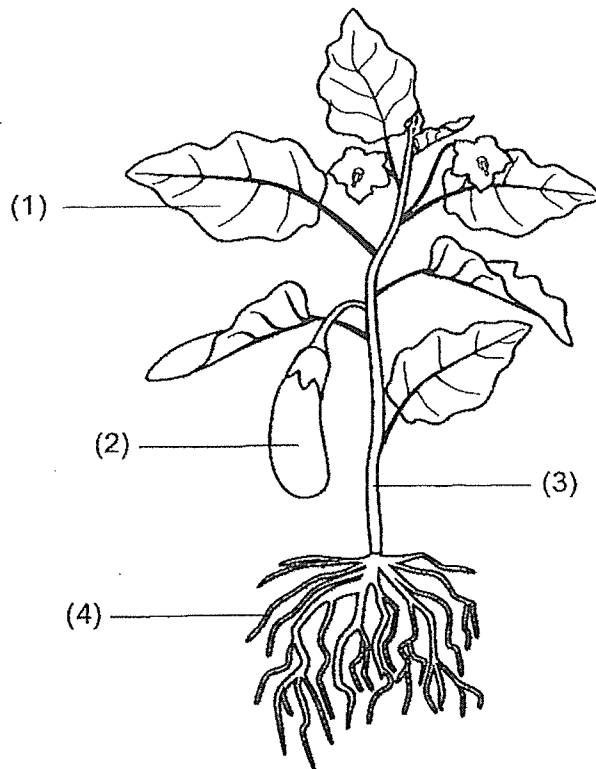
6 Which organ system is shown in the diagram?



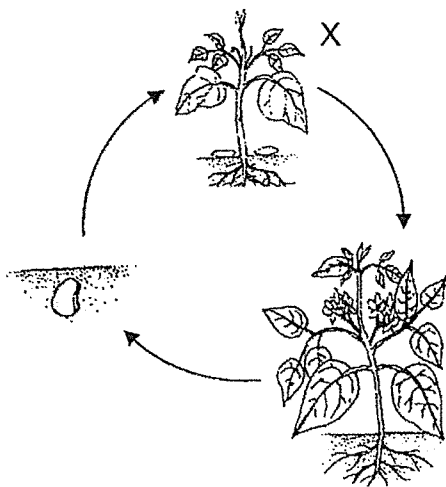
- (1) skeletal system
- (2) muscular system
- (3) circulatory system
- (4) respiratory system

7 The diagram shows a plant.

Which part, (1), (2), (3) or (4), is the stem?



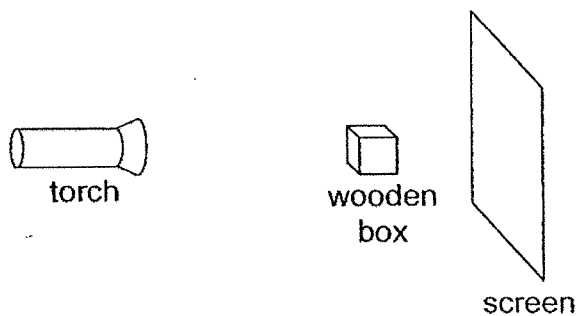
8 The diagram shows the life cycle of a plant.



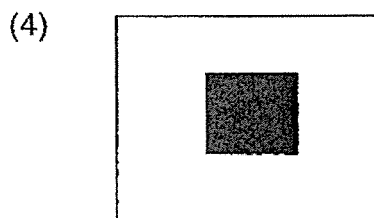
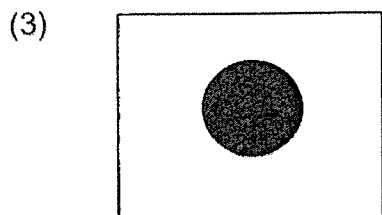
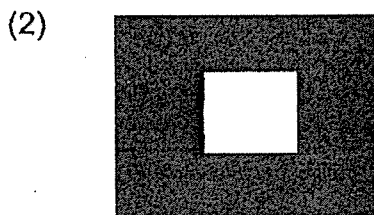
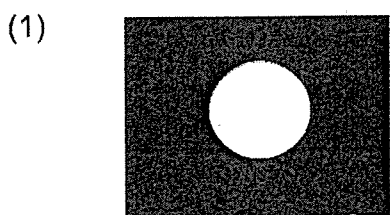
What is the stage marked X?

- (1) pupa
- (2) seed
- (3) adult plant
- (4) young plant

9 The set-up below shows light shining on a wooden box.



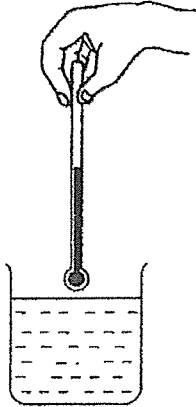
Which of the following would likely be seen on the screen?



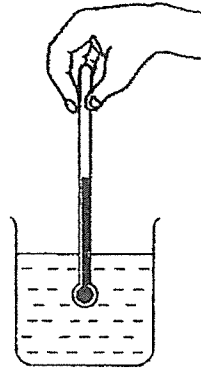
10 Amir wants to measure the temperature of cold water in a beaker.

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

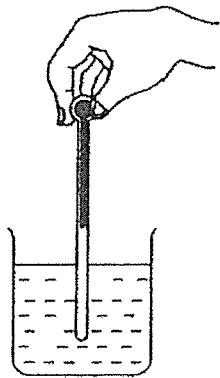
(1)



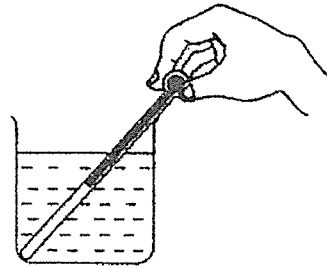
(2)



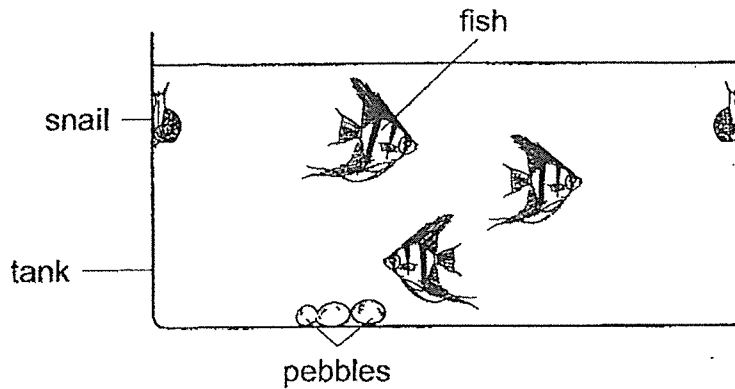
(3)



(4)



11 Study the diagram below.



Which classification is correct?

	Living things	Non-living things
(1)	tank, fish	snail, pebbles
(2)	pebbles, tank	fish, snail
(3)	fish, snail	- tank, pebbles
(4)	tank, fish, snail	pebbles

12 Which of the following does **not** show that living things respond to changes?

- (1) The length of a tree's shadow decreases at noon.
- (2) The mimosa plant folds up its leaves when touched.
- (3) The girl sneezes loudly as she enters the cold room.
- (4) The zebra runs away when it spots a tiger approaching.

13 Which of the following characteristics is/are found in amphibians, but **not** in fish?

- A They lay eggs.
- B They have gills.
- C They breathe through moist skin.

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

14 Four different materials, P, Q, R and S, each of mass 20 g, are soaked in water for a day. The table below shows the mass of the material after it was removed from the water.

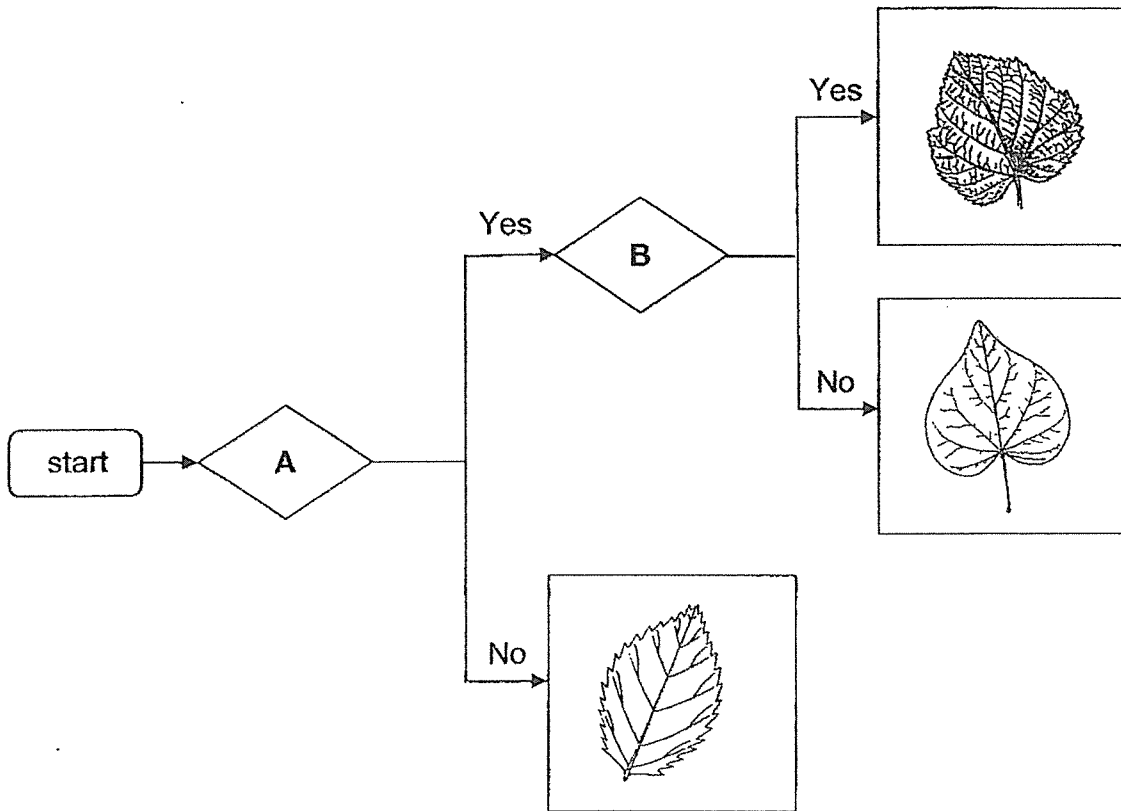
Material	P	Q	R	S
Mass after removal from water (g)	45	20	35	30

Which material is most suitable to make part X of an umbrella?



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

15 The chart shows how some leaves are classified.



Which of the following represents A and B?

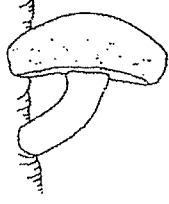
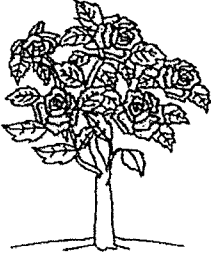
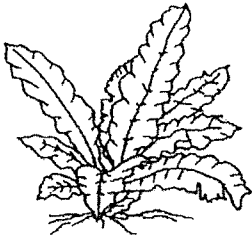
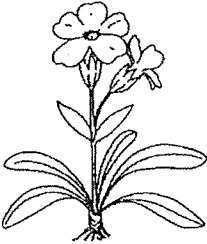
	A	B
(1)	oval-shaped	toothed edge
(2)	toothed edge	oval-shaped
(3)	heart-shaped	toothed edge
(4)	toothed edge	heart-shaped

16 Which of the following statements about the life cycle of a grasshopper is/are correct?

- A The young looks like the adult.
- B The young does not need food.
- C There are four stages in the life cycle.

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

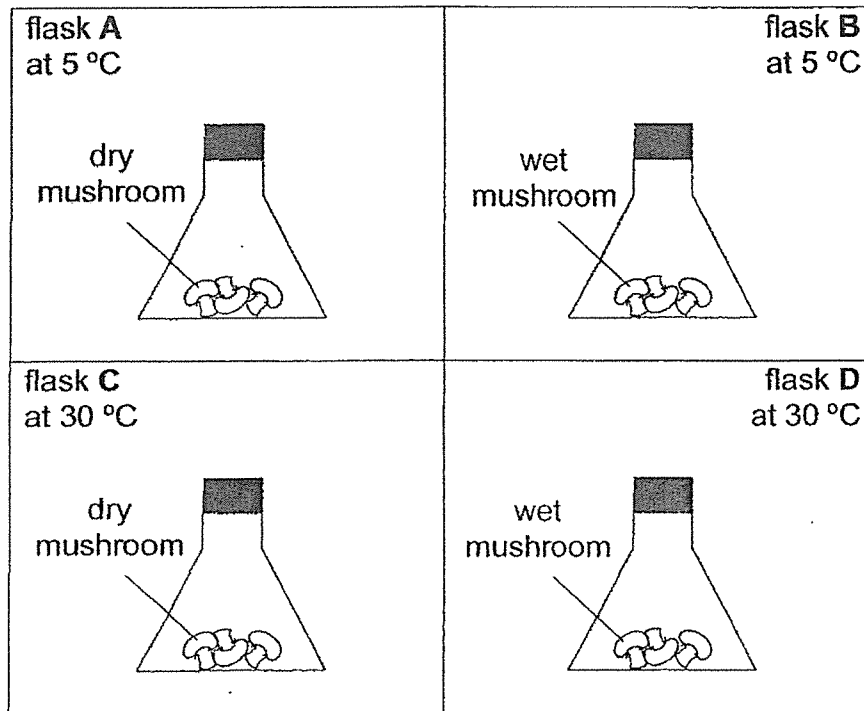
17 Study the classification table below.

Living things	
K	L
	
	

Which of the following is correct?

	K	L
(1)	non-flowering plants	flowering plants
(2)	reproduce from spores	reproduce from seeds
(3)	need support to grow	do not need support to grow
(4)	can only be seen under microscope	can be seen without microscope

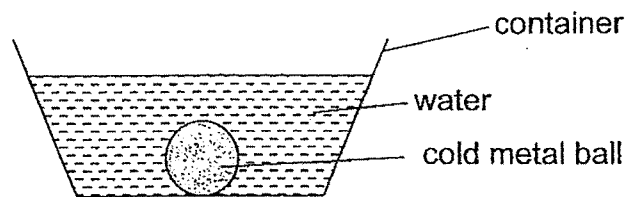
18 Yin Yin wanted to investigate the effect of water on the growth of mould on mushrooms.



Which two flasks should she compare in order to draw a conclusion?

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

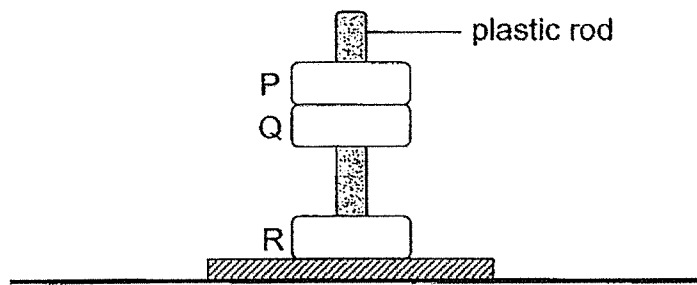
19 A cold metal ball was placed in a container of water at room temperature as shown in the diagram below.



Which of the following shows the flow of heat?

- (1) container → water → metal ball
- (2) metal ball → water → container
- (3) metal ball → container → water
- (4) water → metal ball → container

- 20 In the set-up below, P, Q and R are three rings that pass through a smooth plastic rod.

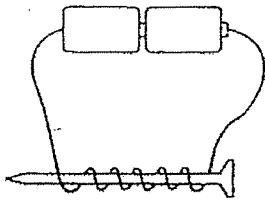


Which of the following is possible?

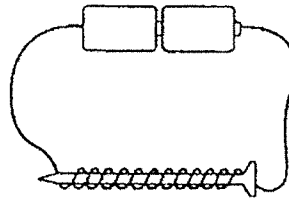
	P	Q	R
(1)	steel	magnet	rubber
(2)	rubber	steel	magnet
(3)	rubber	magnet	magnet
(4)	magnet	magnet	steel

- 21 Which is the strongest electromagnet?

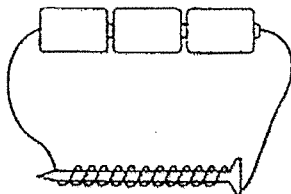
(1)



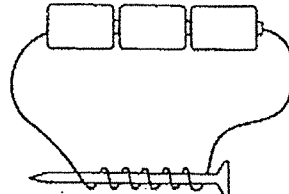
(2)



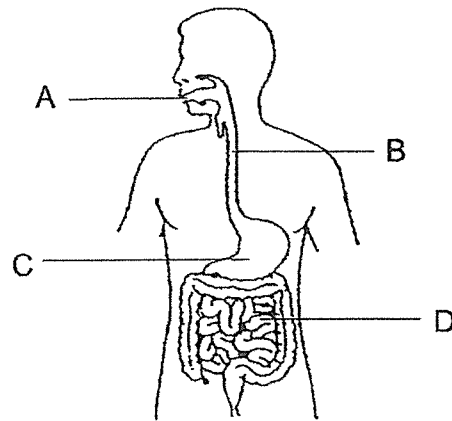
(3)



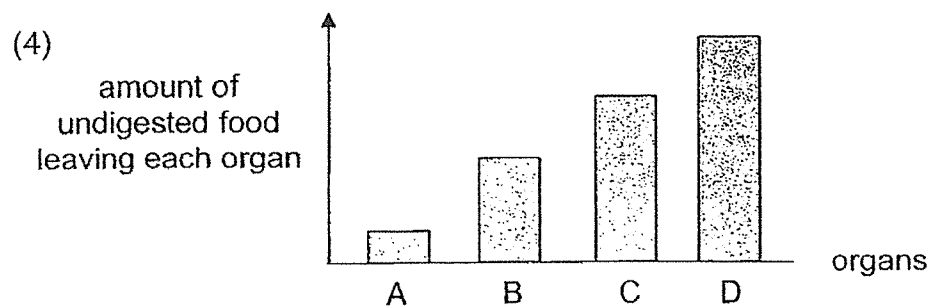
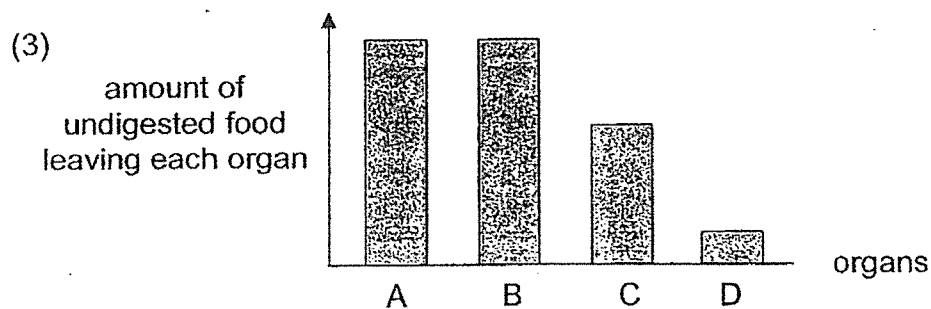
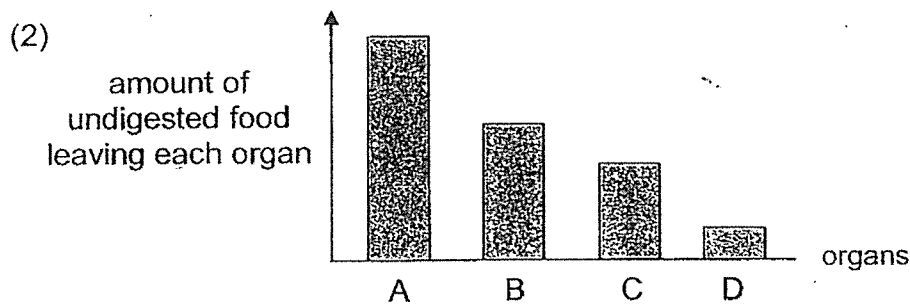
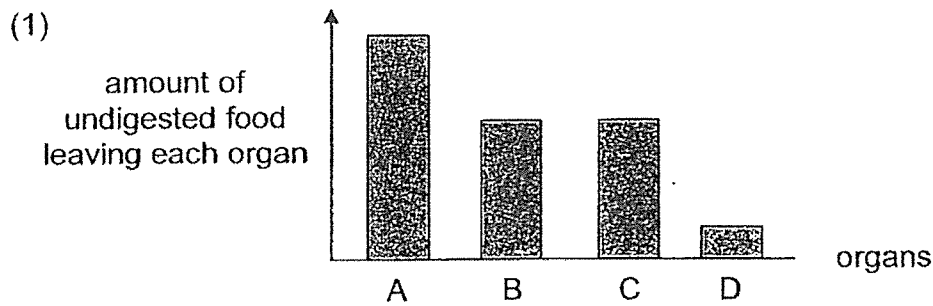
(4)



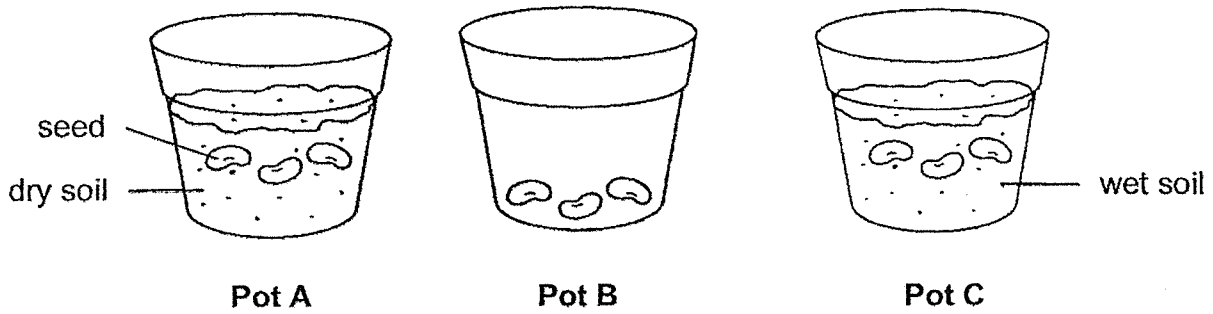
22 The diagram below shows the human digestive system.



Which of the graph shows the correct amount of undigested food leaving each organ after a meal?



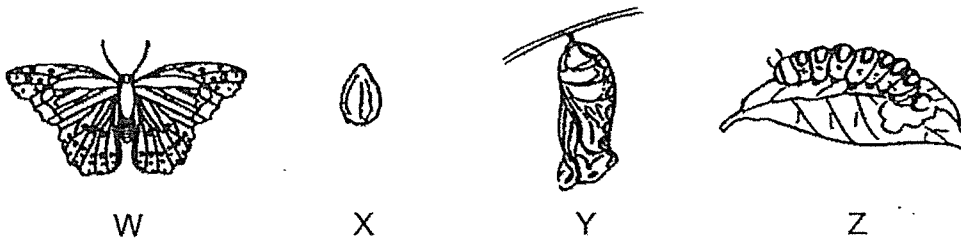
23 James conducted an experiment by placing the same number of seeds in three pots in a room as shown.



Only the seeds in pot C grew. The above experiment shows that _____ is needed for seeds to grow.

- (1) soil
- (2) light
- (3) water
- (4) space

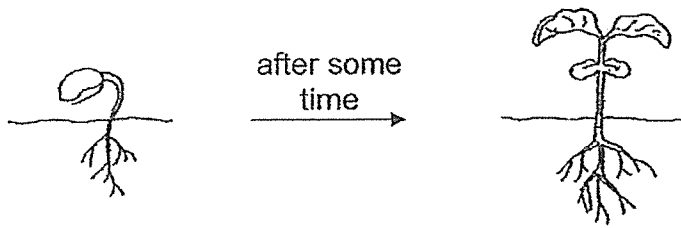
24 W, X, Y and Z are the various stages in the life cycle of a butterfly.



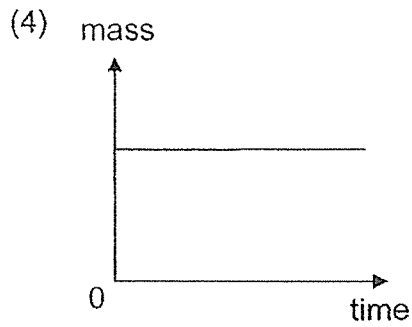
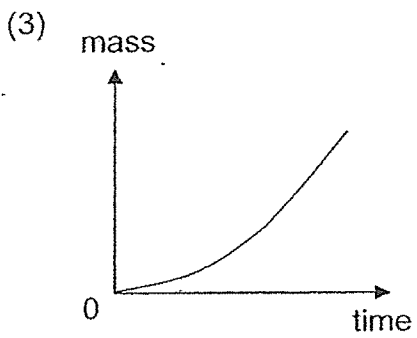
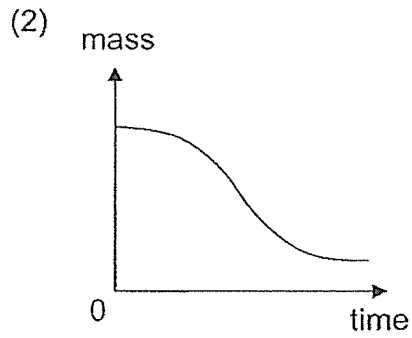
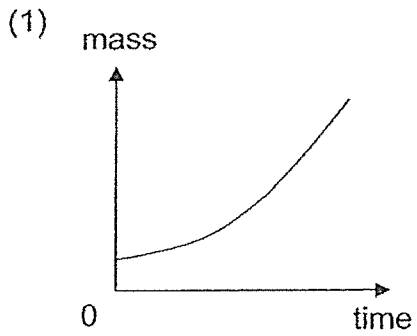
Which of the following correctly shows the life cycle of a butterfly?

- (1)
- (2)
- (3)
- (4)

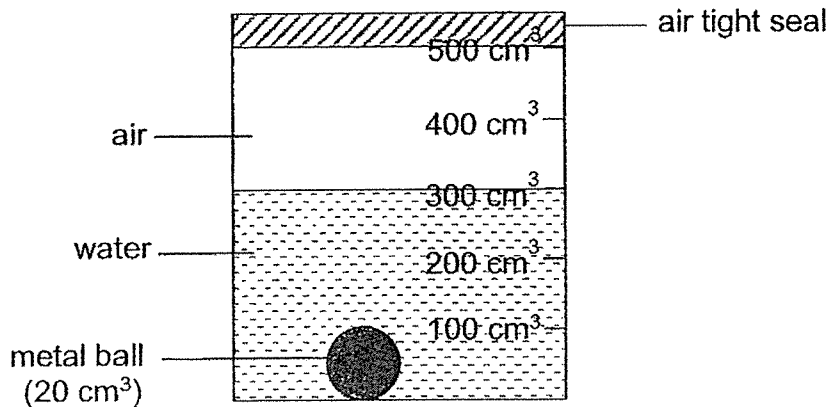
25 The diagram below shows how a plant changes after some time.



Which of the following graphs show how the mass of the plant changes with time?



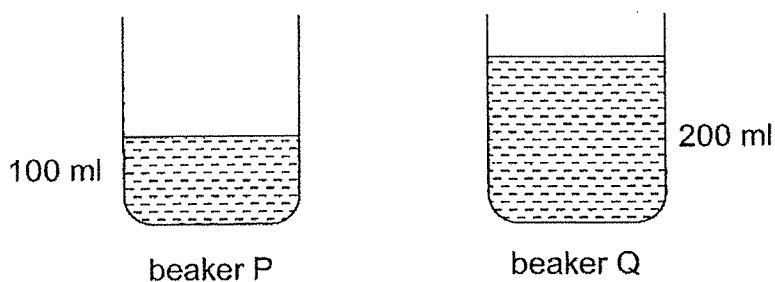
- 26 Vignesh placed a metal ball of volume 20 cm^3 into a container. He then poured some water into the container, pumped in 250 cm^3 of air and sealed the container. The diagram shows what he observed.



Which of the following shows the volumes of the water and air in the container?

	Water	Air
(1)	300 cm^3	250 cm^3
(2)	280 cm^3	200 cm^3
(3)	280 cm^3	250 cm^3
(4)	300 cm^3	200 cm^3

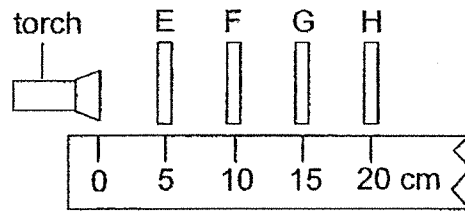
- 27 Two identical beakers, P and Q, contained different volumes of water at the same temperature of $90\text{ }^\circ\text{C}$.



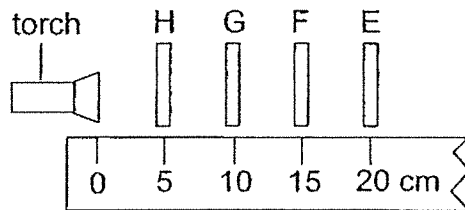
Which of the following statements about the two beakers of water is correct?

- (1) The water in both beakers have the same amount of heat.
- (2) The water in beaker P is colder than the water in beaker Q.
- (3) The water in beaker P has less heat than the water in beaker Q.
- (4) The water in beaker P will reach room temperature slower than the water in beaker Q.

28 Jake conducted an experiment to investigate whether light can pass through four sheets, E, F, G and H, made of different materials. The sheets are arranged in set-ups, W and X, as shown.

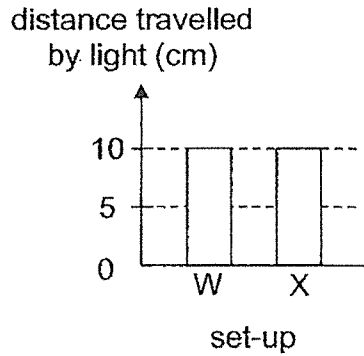


Set-up W



Set-up X

The distance travelled by the light for each set-up was measured and the results are shown in the chart below.



Based on Jake's results, which of the following materials allow light to pass through?

- (1) E and F only
- (2) E and H only
- (3) F and G only
- (4) E, F, G and H

End of Section A

PEI CHUN PUBLIC SCHOOL
PRIMARY 4
END-OF-YEAR EXAMINATION 2022

SCIENCE
(BOOKLET B)

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

SECTION A	56
SECTION B	44
TOTAL	100

Name: _____ ()

Class: Primary 4 / () _____

Date: 27 October 2022

Science Teacher: _____

Parent's Signature: _____

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 your answers in this booklet.

Section B (44 marks)

For questions 29 to 41, write your answers in the spaces provided.

29

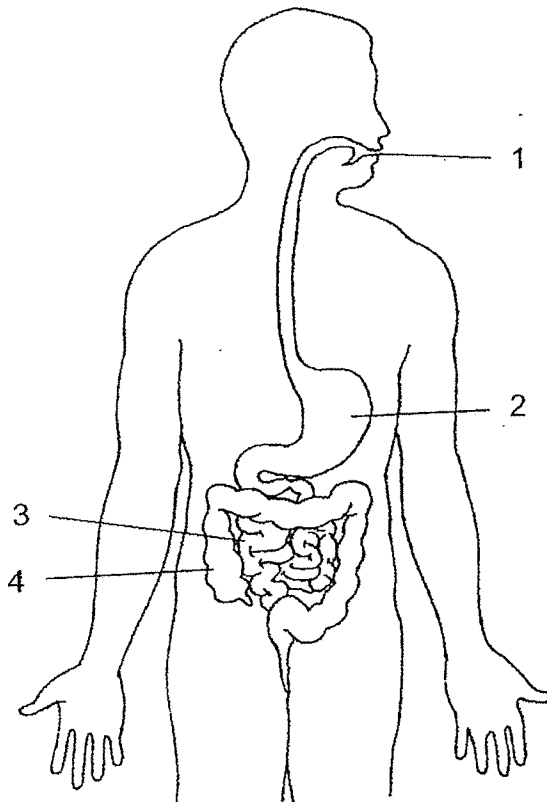


(a) The boy needs air, food and _____ to stay alive. [1]

(b) The boy becomes taller after some time.

This shows that he can _____ . [1]

30 The diagram below shows the human digestive system.



Identify the part where:

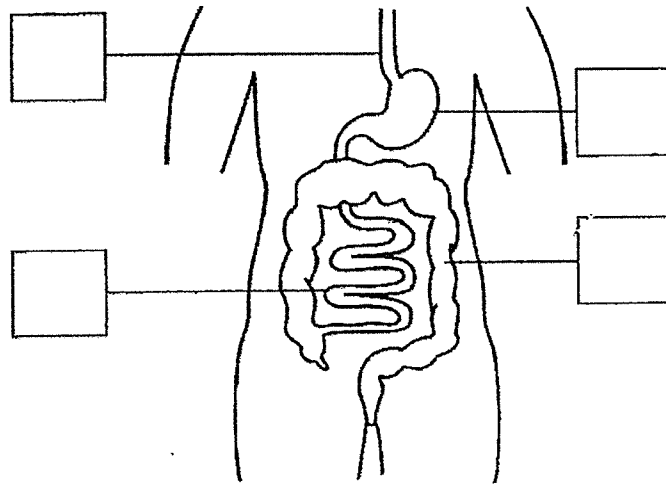
(a) digestion first takes place : _____ [1]

(b) - food is completely digested : _____ [1]

SCORE	
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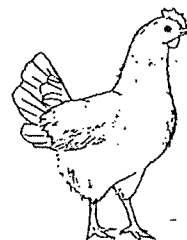
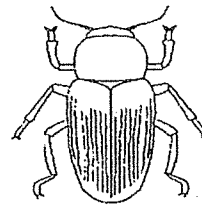
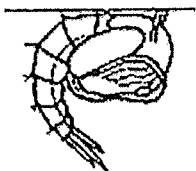
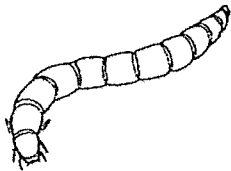
(c) Tick (✓) the correct box to show where the stomach is.

[1]



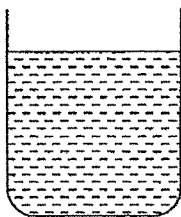
31 The diagram below shows the young and adult of some organisms. Draw lines to match the young with the correct adult.

[3]



SCORE	
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32 The diagram below shows a beaker of water.



(a) Circle the correct state of water. [1]

solid / liquid / gas

(b) Fill in the blanks using the correct words in the box.

solid	decreases	liquid
increases	remains unchanged	gas

(i) When heat is taken in by the water, its temperature _____ [1]

(ii) The beaker of water is put over a hot stove. After some time, the water will change its state to become a _____ [1]

33 (a) State what is matter. [1]

(b) Classify the following into matter and non-matter. [1]

air	sound	milk	cat
-----	-------	------	-----

Matter	Non-matter

SCORE	
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- 34 Salim was shown some information on three animals, X, Y and Z, in a table. A tick (✓) shows that the animal has the characteristic.

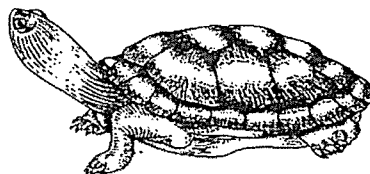
Characteristic	X	Y	Z	Bird
Has wings		✓		
Has skin covered with scales			✓	
Has fewer than 3 pairs of legs	✓		✓	

- (a) Identify all characteristics of a bird by ticking (✓) the correct box(es) in the table above. [1]

- (b) State a difference between animal X and Z. [1]

- (c) Salim guessed that animal Y could be an insect. Use a characteristic given in the table above to explain why he made this guess. [1]

- (d) (i) The diagram below shows a tortoise.



Match the tortoise to the correct letter (X, Y or Z) in the table.

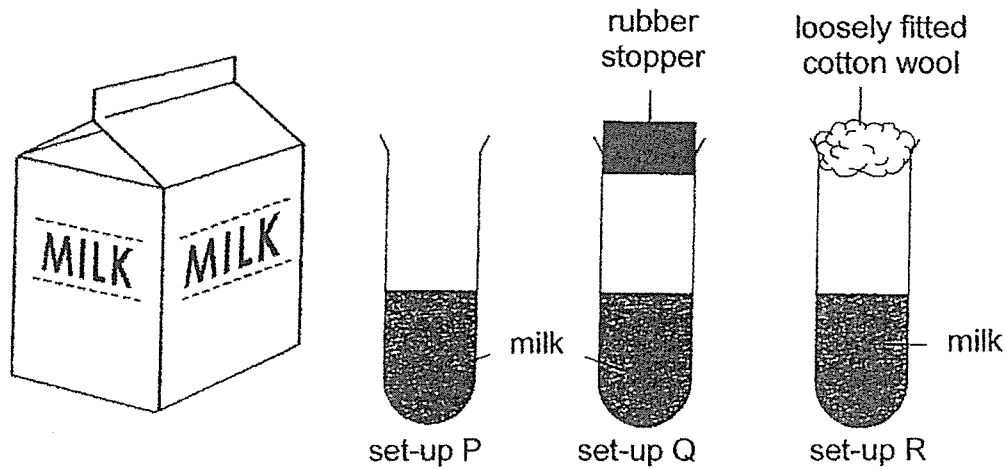
It is animal _____ [1]

- (ii) Name the animal group that the tortoise belongs to. [1]

SCORE	
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- 35 Jim learnt that bacteria present in the air cause food to turn bad. He also learnt that when food is exposed to more air, the food turns bad faster.

Jim carried out an experiment using a packet of milk and the 3 set-ups shown below.



He put the same amount of milk in three test tubes and left the tubes at room temperature. For each set-up, he recorded the number of hours for the milk to turn bad.

- (a) (i) In which set-up, P, Q or R, does the milk take the longest time to turn bad? [1]

- (ii) Give a reason for your answer in (a)(i). [1]

- (b) Jim repeated his experiment by placing the three set-ups in the refrigerator. He observed that the milk in all three set-ups took a longer time to turn bad.

What can he conclude from his observation?

Tick (✓) the correct box.

[1]

As temperature increases, the bacteria reproduces faster.

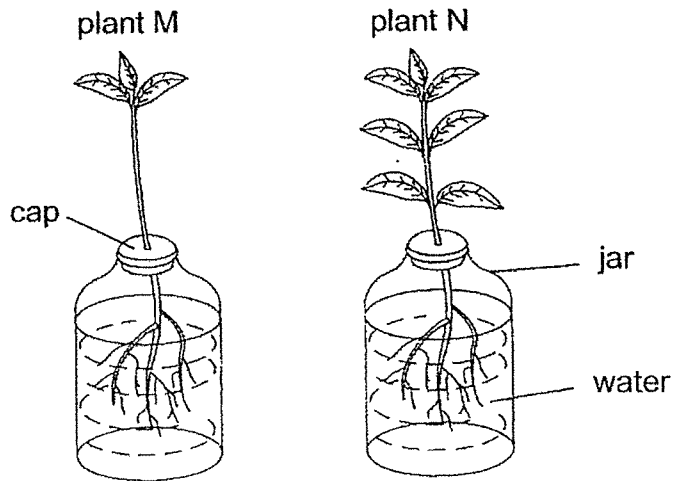
As temperature increases, the bacteria reproduces slower.

Temperature does not affect how fast bacteria reproduces.

SCORE	
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- 36 Bala conducted an experiment to find out if the number of leaves on a plant would affect the amount of water taken in by the plant.

He placed two plants in identical jars. Both jars contained the same amount of water.



- (a) Bala predicted that plant N would absorb more water after some time.

What observation would show that plant N absorbed more water? [1]

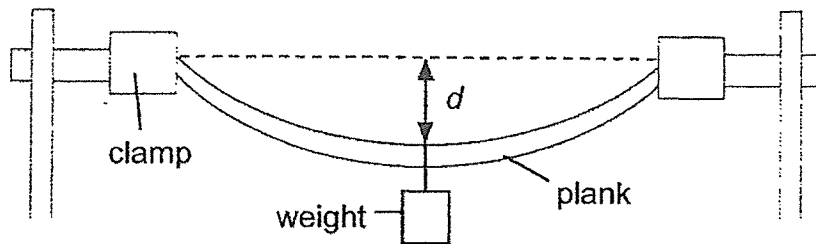
- (b) Name the part of the plant that allows it to stay upright. [1]

- (c) After two weeks, plant N survived but not plant M.

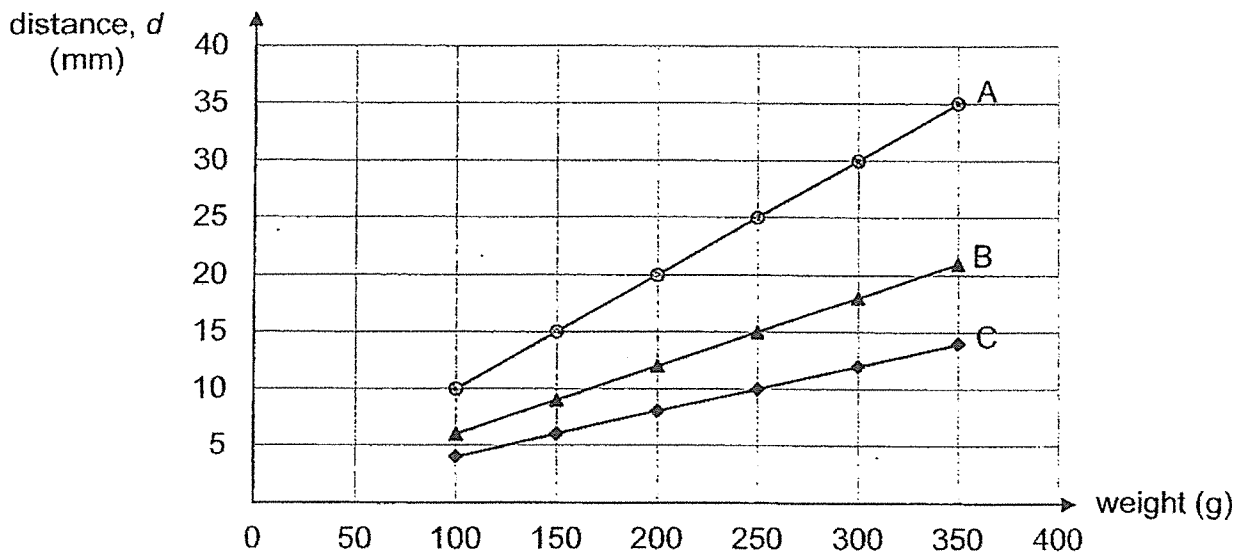
Suggest a reason how having more leaves helped plant N to stay alive. [1]

SCORE	
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- 37 Zhiyong carried out an experiment to compare three similar planks made of different materials, A, B and C. He measured the distance, d , at the middle of the plank after adding each weight.



His results are shown below.



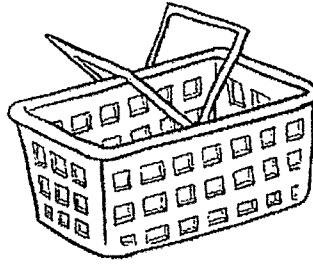
- (a) How did distance, d , change when more weight was added to the planks?[1]

- (b) Which condition(s) should Zhiyong keep the same so that his experiment was a fair one? Tick (✓) the correct box(es). [1]

- distance d
- material of plank used
- thickness of the plank

SCORE	
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(c) The diagram below shows a basket.

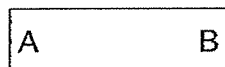


(i) Based on Zhiyong's experiment, which material, A, B, or C, is most suitable to be used for making the basket? Explain your answer. [1]

(ii) State another property of the material that makes it suitable to be used to make the basket. [1]

SCORE	
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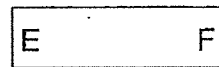
- 38 Lee Meng conducted an experiment using three metal bars, W, X and Y as shown in the diagram. He labelled the ends of the bars as shown below. Bars W and X are magnets and bar Y is made of iron.



bar W
(magnet)



bar X
(magnet)



bar Y
(iron bar)

He placed one end of a bar near to one end of another bar and recorded his observations.

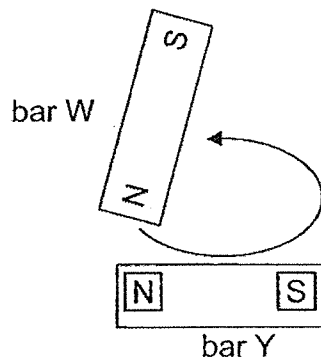
- (a) Fill in the table by putting a tick (✓) in each row to show his observations.

[2]

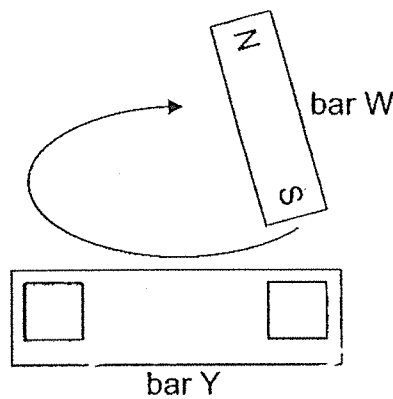
Experiment	Observation		
	Attraction	Repulsion	No effect
<p>bar W bar X</p>			
<p>bar W bar X</p>			
<p>bar W bar Y</p>			
<p>bar W bar Y</p>			

SCORE	
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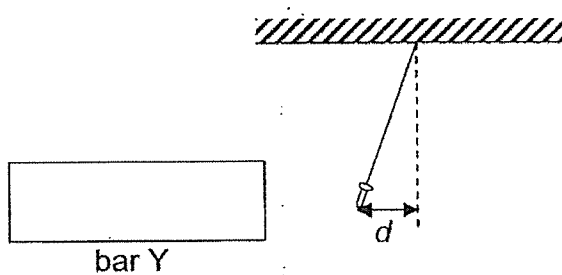
- (b) Lee Meng used the North pole of bar W to magnetise bar Y using the 'stroke' method. The poles of bar Y after it was magnetised is shown in the diagram.



What would the poles of bar Y be if Lee Meng had stroked bar Y in the way as shown in the diagram below instead? Fill in the boxes with 'N' or 'S'. [1]



- (c) Lee Meng placed the magnetised bar Y at a fixed position near a hanging pin as shown. He measured the distance d moved by the pin from the vertical position.

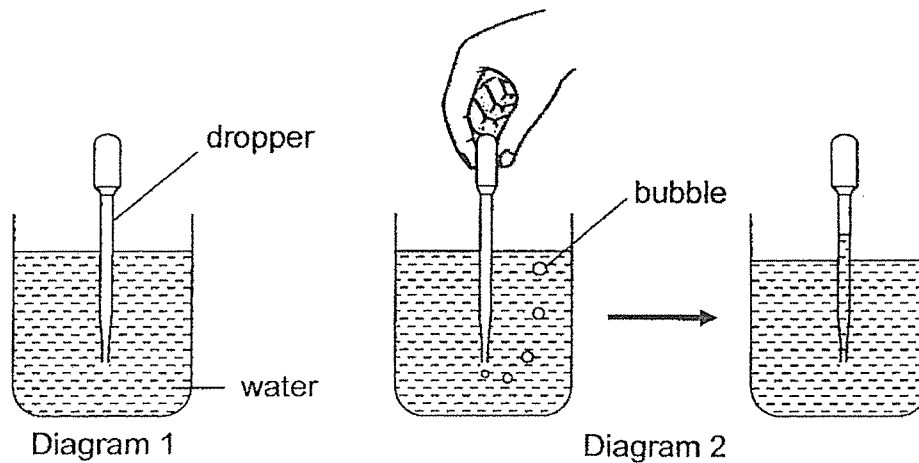


- (i) How does increasing the number of times he stroked bar Y affect distance d moved by the pin? [1]

- (ii) Explain your answer in (c)(i). [1]

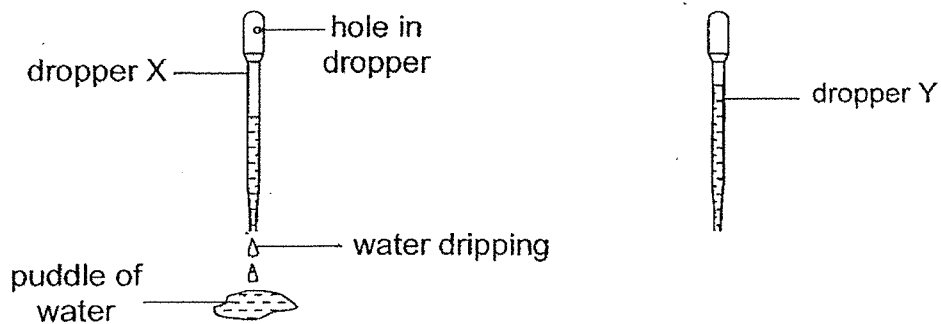
SCORE	
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- 39 Cheryl dipped an empty dropper in a beaker of water. She observed that water did not enter the dropper as shown in Diagram 1. When Cheryl squeezed the top part of the dropper, she observed some bubbles escaping from the opening. Then, water entered the dropper as shown in Diagram 2.



- (a) Explain why the water did not enter the dropper when it was first dipped in the beaker of water. [1]

- (b) Cheryl filled two droppers, X and Y, with the same amount of water. She noticed that there was a hole at the top part of dropper X and water dripped out of dropper X forming a puddle. However, no water dripped out of dropper Y.

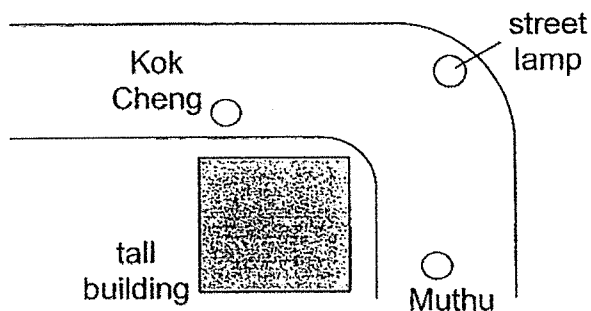


- (i) Explain why the water dripped out of the dropper when there was a hole. [1]

- (ii) What property of matter is shown by the water as it dripped out and formed the puddle? [1]

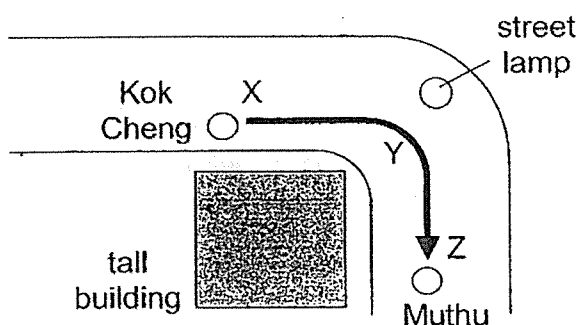
SCORE	
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40 Kok Cheng and Muthu were standing near a tall building along a street as shown in the diagram. The street lamp ensured that the area is well-lit.



(a) What property of light prevented Kok Cheng from seeing Muthu? [1]

(b) Kok Cheng walked towards Muthu from point X to point Z as shown.



(i) Kok Cheng could see Muthu after walking for some time.

Describe how the light from the street lamp allowed Kok Cheng to see Muthu. [1]

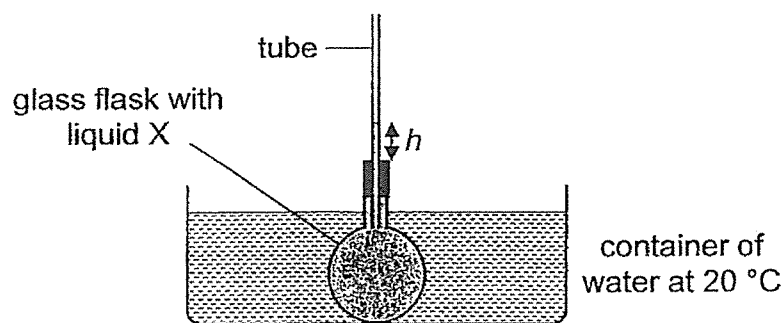
(ii) Would the length of Kok Cheng's shadow increase, decrease or remain the same as he walked from X to Y and then from Y to Z?

Put a tick (✓) in the correct boxes. [2]

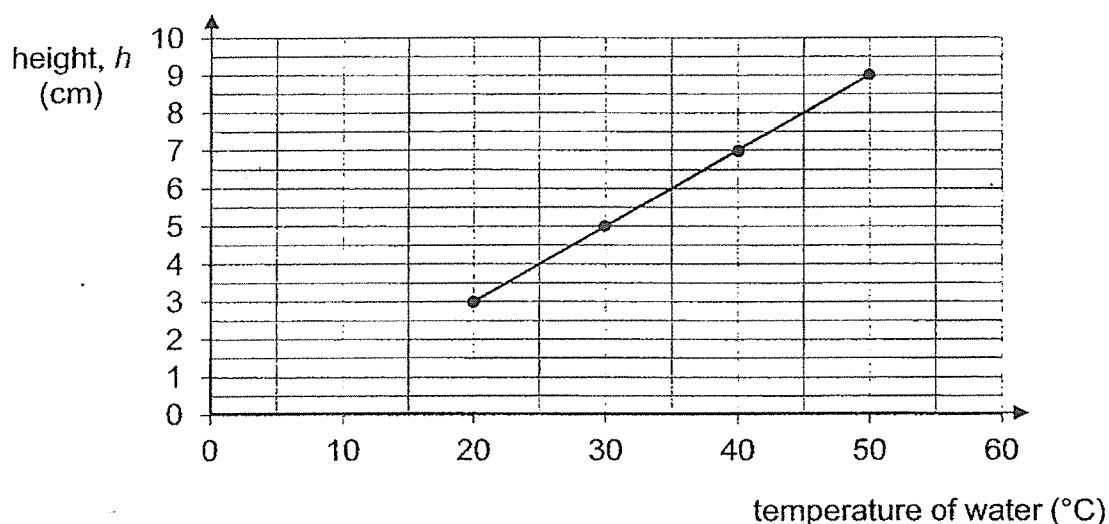
	Length of shadow		
	Increase	Decrease	Remain the same
From X to Y			
From Y to Z			

SCORE	
-------	--

- 41 Radha conducted an experiment with a glass flask with liquid X at room temperature. She placed the flask in a container of water at 20 °C as shown below. She waited for five minutes before measuring the height of liquid X in the tube, h .



She repeated her experiment by placing the glass flask in containers of water of different temperatures. Her results are shown below.



- (a) What was h when the temperature of the water was 40 °C? [1]

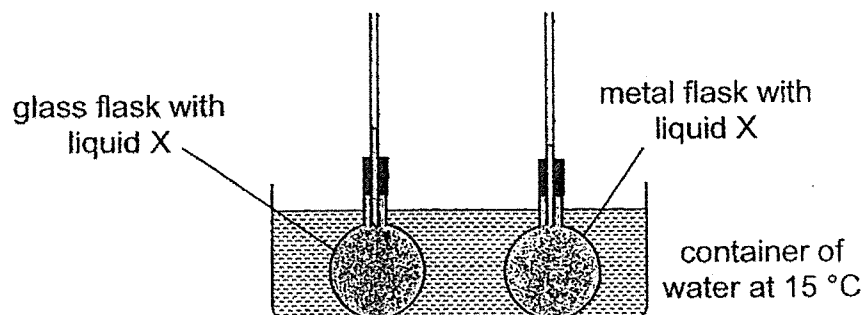
_____ cm

- (b) (i) State how h changed when the temperature of water increased from 20 °C to 40 °C. [1]

- (ii) Explain why h changed when the temperature of water increased. [1]

SCORE	
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- (c) Radha filled a similar metal flask with the same amount of liquid X at room temperature. She placed the glass and metal flasks in a container of water at 15 °C. The diagram below shows her observations after 5 minutes.



Explain why the liquid level in the tube of the metal flask was lower than that of the glass flask. [1]

End of Section B

SCORE	
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ANSWER KEY

YEAR : 2022

LEVEL : PRIMARY 4

SCHOOL : Pei Chun Public School

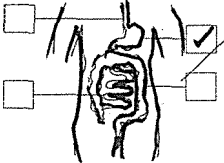
SUBJECT : SCIENCE


TERM : End of Year Examination

Booklet A

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

Booklet B

Q29	(a) water (b) grow
Q30	(a) 1 (b) 3  (c)

Q31					
Q32	<p>(a) Liquid (b) (i) increases (ii) gas</p>				
Q33	<p>(a) Matter is anything that occupies space and has mass. (b)</p> <table border="1" data-bbox="295 719 1295 936"> <thead> <tr> <th data-bbox="295 719 794 790">Matter</th> <th data-bbox="794 719 1295 790">Non-matter</th> </tr> </thead> <tbody> <tr> <td data-bbox="295 790 794 936">Air Milk cat</td> <td data-bbox="794 790 1295 936">sound</td> </tr> </tbody> </table>	Matter	Non-matter	Air Milk cat	sound
Matter	Non-matter				
Air Milk cat	sound				
Q34	<p>(a) Tick : Has wings, Has fewer than 3 pairs of legs (b) Z is covered with scales but X is not covered with scales. (c) Insect has 6 legs. (d) (i) Animal Z (ii) Reptiles</p>				
Q35	<p>(a) (i) Set-up Q (ii) There is least amount of air present in set-up Q. (b) Tick the first box. As temperature increases, the bacteria reproduces faster.</p>				
Q36	<p>(a) There was lesser amount of water in the jar with N. (b) Stem (c) The plant with more leaves can make more food.</p>				
Q37	<p>(a) When more weight was added, distance d increased. (b) Thickness of the plank (c) (i) Material C. It bent the least. (ii) strong</p>				

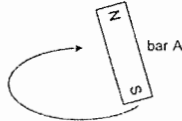
Q38

Equipment		Observation		
Bar X	Bar Y	Attraction	Repulsion	Not felt
S	S	✓		
S	C		✓	
S	N	✓		
S	S	✓		

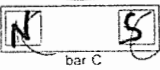
OR

Equipment		Observation		
Bar X	Bar Y	Attraction	Repulsion	Not felt
S	S		✓	
S	C	✓		
S	N	✓		
S	S	✓		

(a)



(b)



- (c) (i) Distance d increases when the number of times he stroked bar Y increases,
 (ii) When the bar was stroked more times, it became a stronger magnet.

Q39

- (a) There was air occupying the space in the dropper and the air cannot escape.
 (b) (i) Air can enter the dropper through the hole pushing the water out.
 (ii) Water has no definite shape.

Q40

- (a) Light travels in a straight line.
 (b) (i) Light from the street lamp falls on Muthu and is reflected into Kok Cheng's eyes.
 (ii) X to Y : Decrease
 Y to Z : Increase

Q41

- (a) 7cm
 (b) (i) H increased.
 (ii) Liquid X in the flask gained heat from the water and expanded.
 (c) Metal is a better conductor of heat than glass. Liquid X lost more heat to the cold water in the container and contracted more.

