Anglo-Chinese School
(Primary)
A Methodist Institution
(Founded 1886)

END OF YEAR EXAMINATION 2024
SCIENCE
PRIMARY FOUR
BOOKLET A

Name: _____ ( ) Class: Primary 4 ____

Date: 24 October 2024 Total Time for Booklets A and B: 1 h 45 min

Additional Materials: Optical Answer Sheet (OAS)

INSTRUCTIONS TO CANDIDATES

1. Write your name, index number and class in the spaces provided.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers on the Optical Answer Sheet (OAS) provided. Only the OAS will be marked.

This booklet consists of 21 printed pages including this cover page.

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) and shade your answer on the Optical Answer Sheet.

(56 marks)

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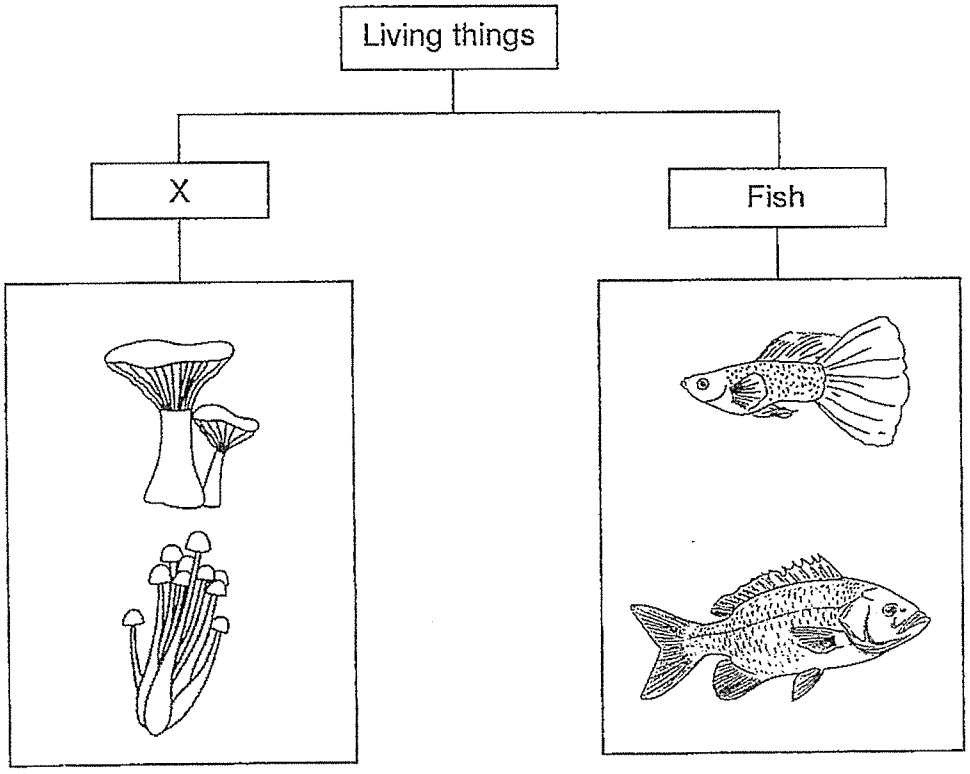
1 The table below shows how some living things can be grouped.

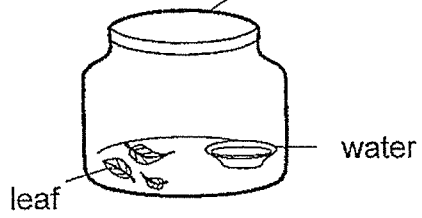


Which one of the following is the most suitable heading for group X?

(1) plants
(2) fungi
(3) reptiles
(4) bacteria

2 Lisa learns that all living things need air, water and food to stay alive. Which set-up can she use to keep her grasshopper alive?

(1)



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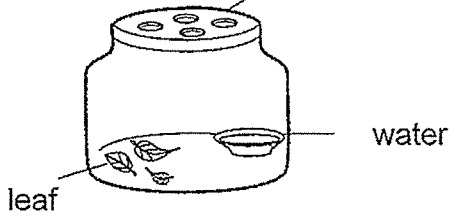

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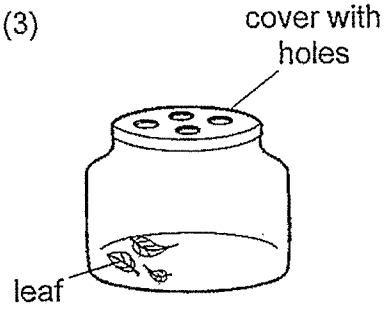

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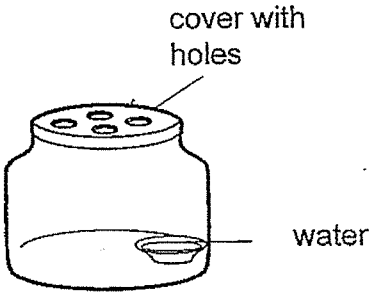
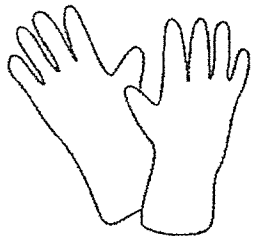


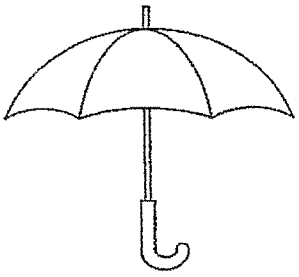
3 Which of the following objects is **not** made of waterproof material?

(1)



rubber gloves

(2)

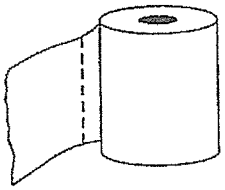


plastic umbrella

(3)

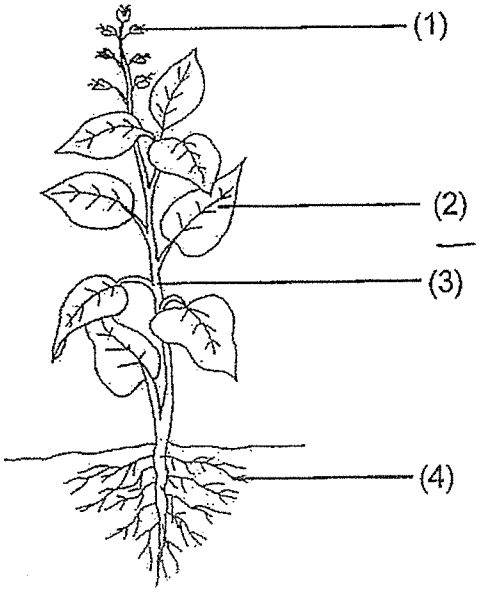
metal fork

(4)

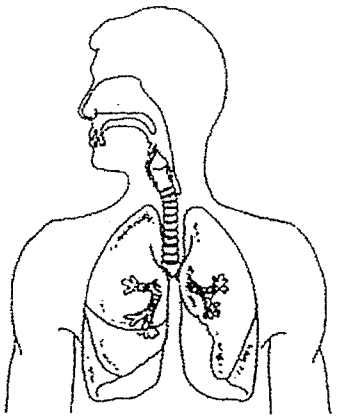


toilet paper

4 Which part, (1), (2), (3) or (4), makes food for the plant?

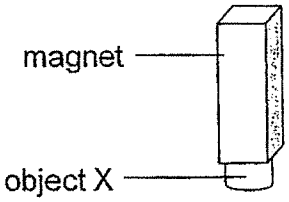


5 Which human system is shown in the diagram?



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

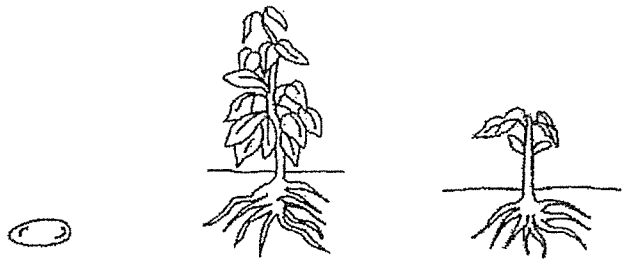
6 Object X was attracted to a magnet, as shown in diagram.



Object X is made of _____.

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

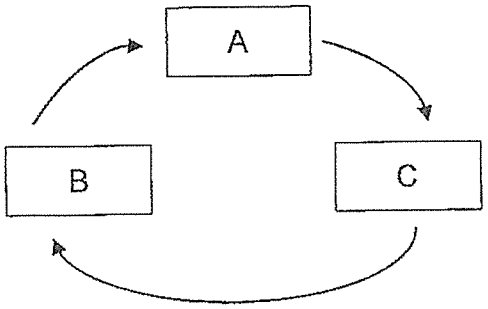
7 A, B and C are stages in the life cycle of a plant.



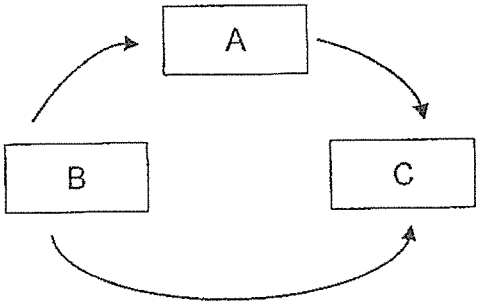
A B C

Which of the following shows the correct life cycle of the plant?

(1)



(2)



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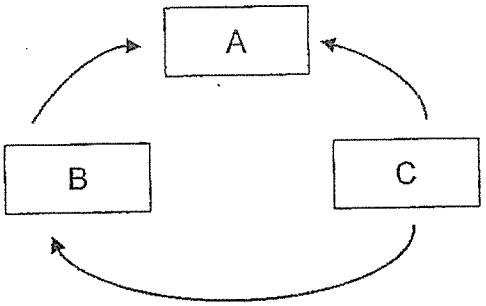
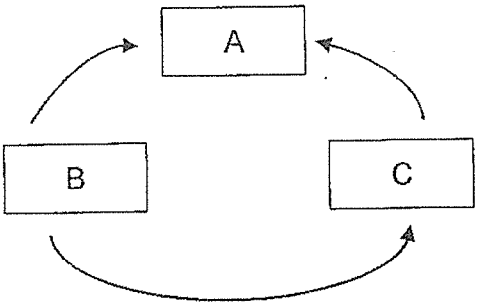


(4)

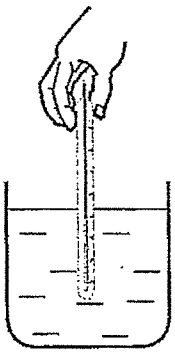


8 Matter is anything that has mass and occupies space. Which one of the following is not matter?

(1) air
(2) milk
(3) sand
(4) shadow

9 Catherine 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)



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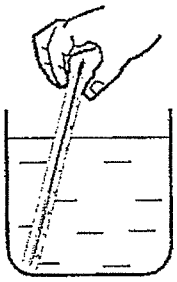

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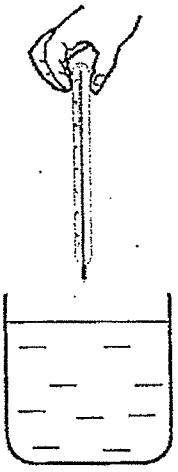

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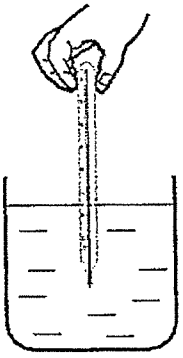
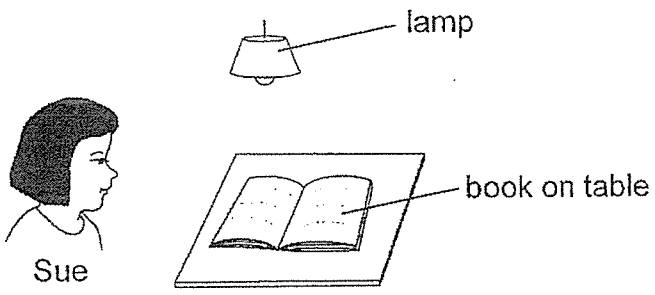


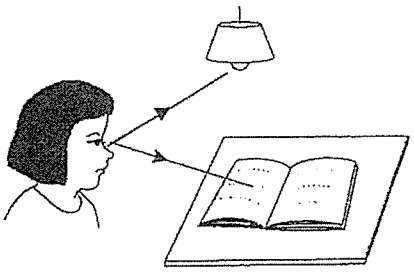
10 Look at the picture below.



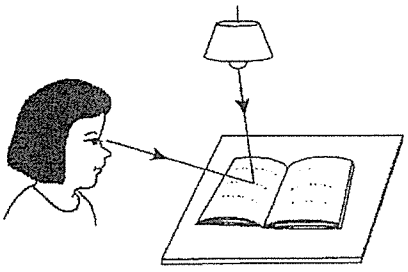
Which one of the following explains why Sue can see the book on the table?

→ direction of light

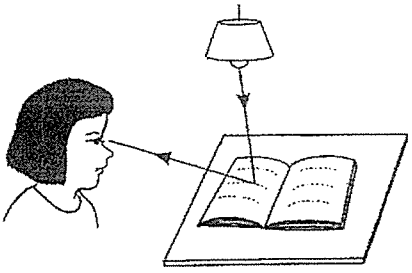
(1)



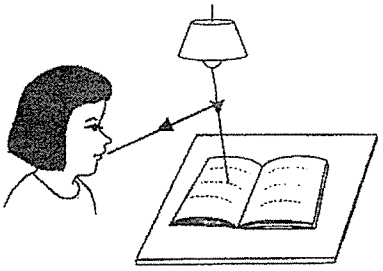
(2)



(3)

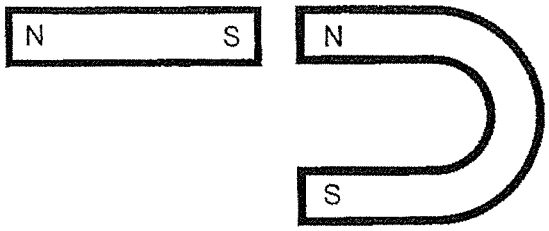


(4)

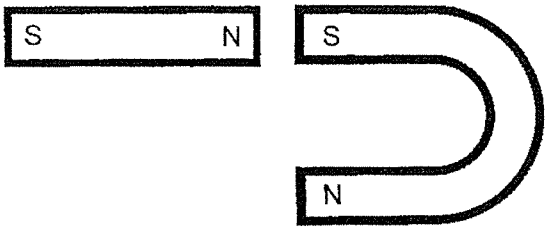


11 In which of the following will the two magnets repel each other?

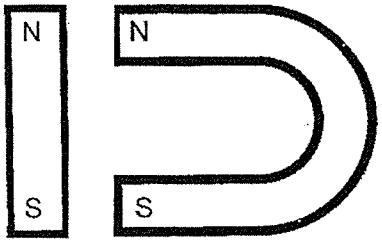
(1)



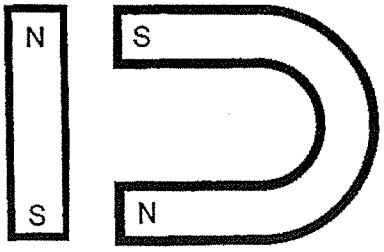
(2)



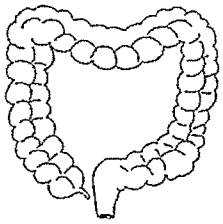
(3)



(4)

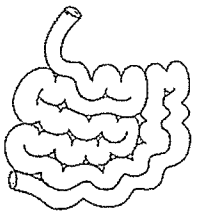


12 The following parts X, Y, and Z can be found in the human digestive system.



X

Y



Z

Which one of the following shows the correct order in which food moves through these parts?

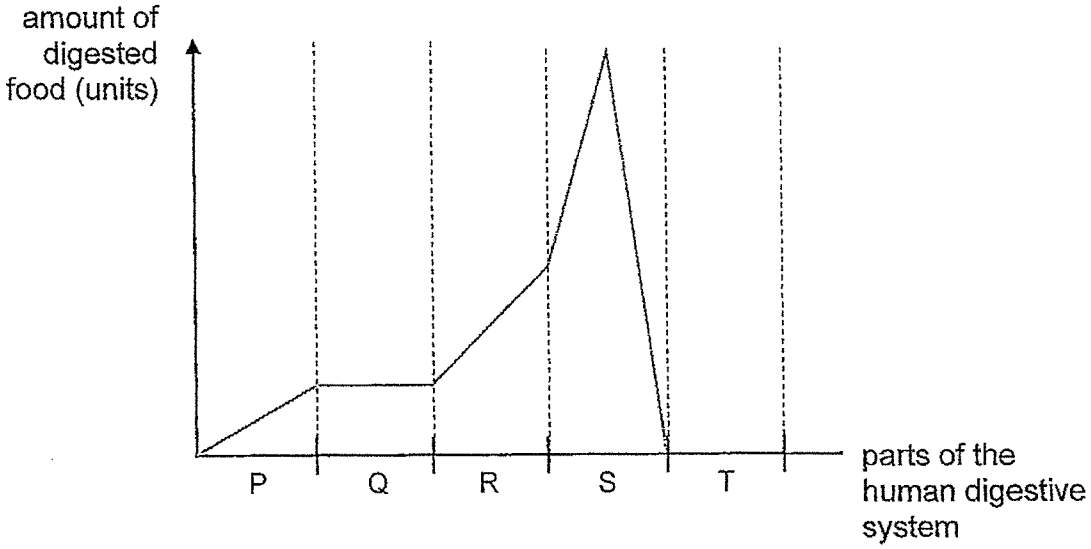
(1) X ⟶ Y ⟶ Z

(2) Y ⟶ X ⟶ Z

(3) Y ⟶ Z ⟶ X

(4) Z ⟶ Y ⟶ X

13 The graph below shows how the amount of digested food changes as it moves along the parts of the human digestive system.



Based on the information given, which of the following statements are true?

A Part R digests the most amount of food.
B The digested food is absorbed at Organ T.
C Parts Q and T do not produce digestive juice.
D Parts P, R and S are able to produce digestive juice.

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

14 Jonathan wrote the following observations about animal X in his notebook.

Animal X

It has 4 stages in its life cycle.

The young lives in water while the adult lives on land.

Which one of the following animals can X be?

(1) frog
(2) beetle
(3) chicken
(4) mosquito

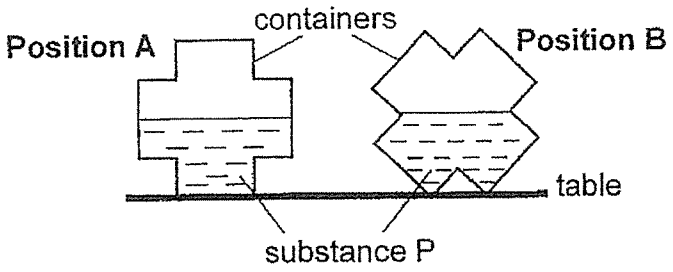
15 Arif made some observations about three things, P, Q and R and recorded them in the table below.

	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	water
(2)	air	marble	water
(3)	air	water	marble
(4)	water	air	marble

16 The diagram below shows a container filled with substance P being placed in two different positions, A and B.



Based on the diagram above, what can you conclude about substance P?

(1) P has mass.

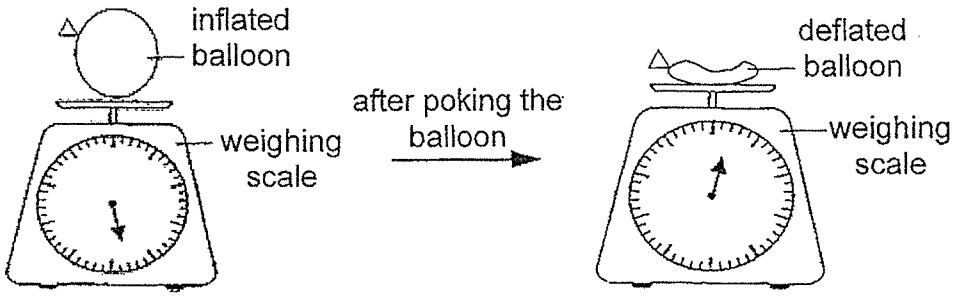
(2) P has no definite shape.

(3) P cannot be compressed.

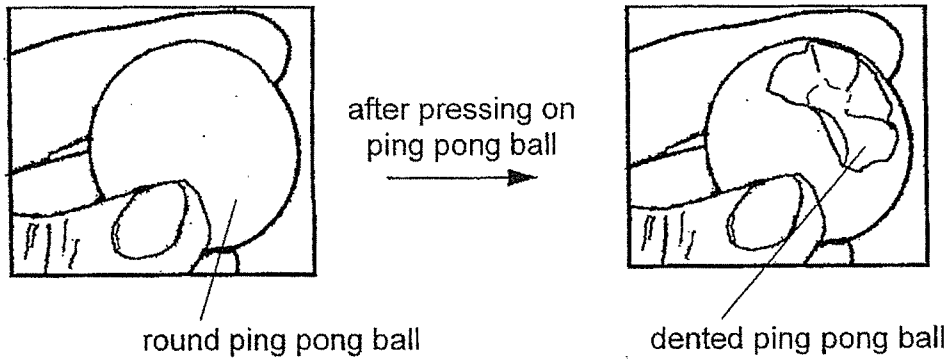
(4) P does not have a definite volume.

17 Which of the activities below shows that gas occupy space?

(1)



(2)



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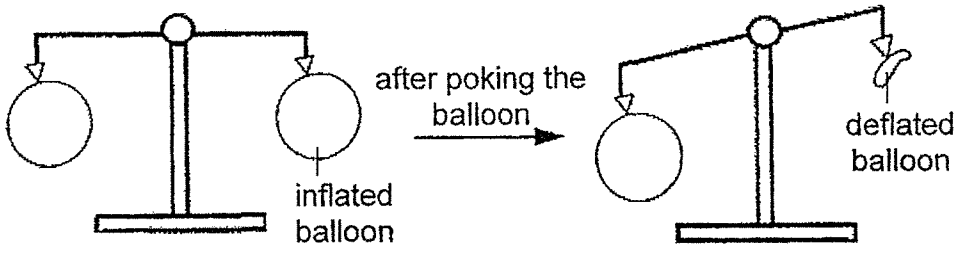
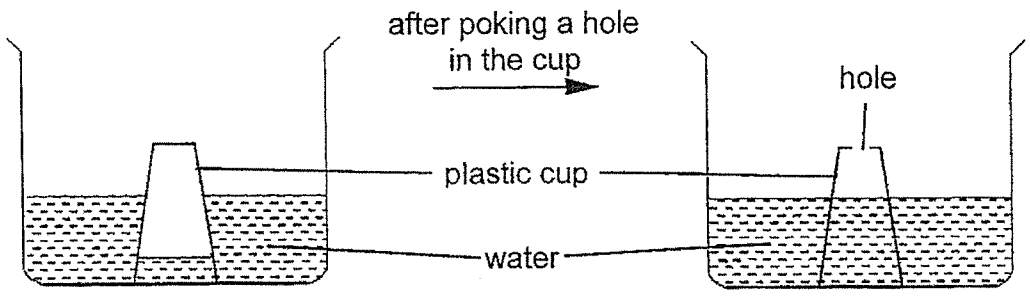
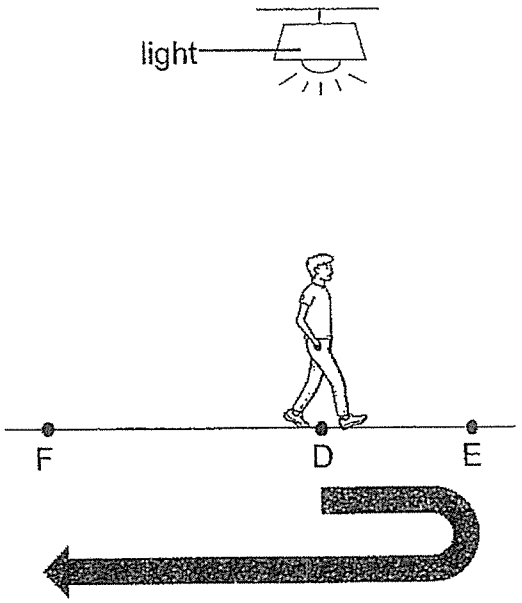


(4)

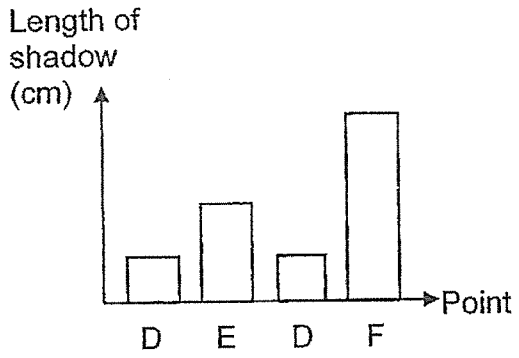


18 Study the diagram. The arrow shows the path that Gerald walked.

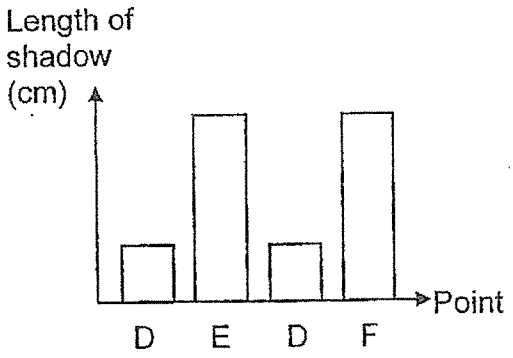


Based on the diagram above, which one of the following bar graphs shows how the length of his shadow would change during his walk?

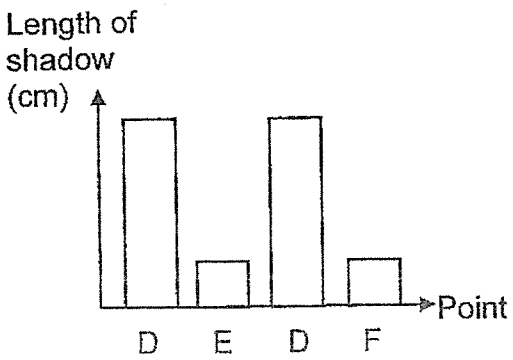
(1)



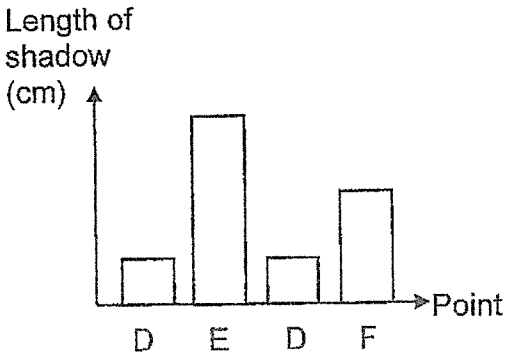
(2)



(3)



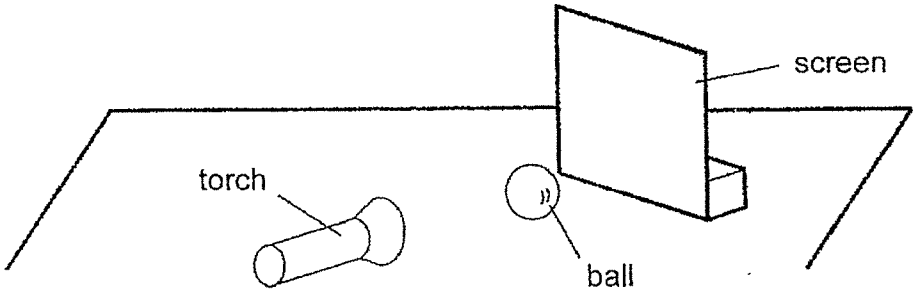
(4)



19 Which of the following is placed in the correct group?

	Light source	Non-light source
(1)	sun	star
(2)	sun	moon
(3)	mirror	moon
(4)	mirror	star

20 In the set-up, the shadow of a ball was formed on a screen.



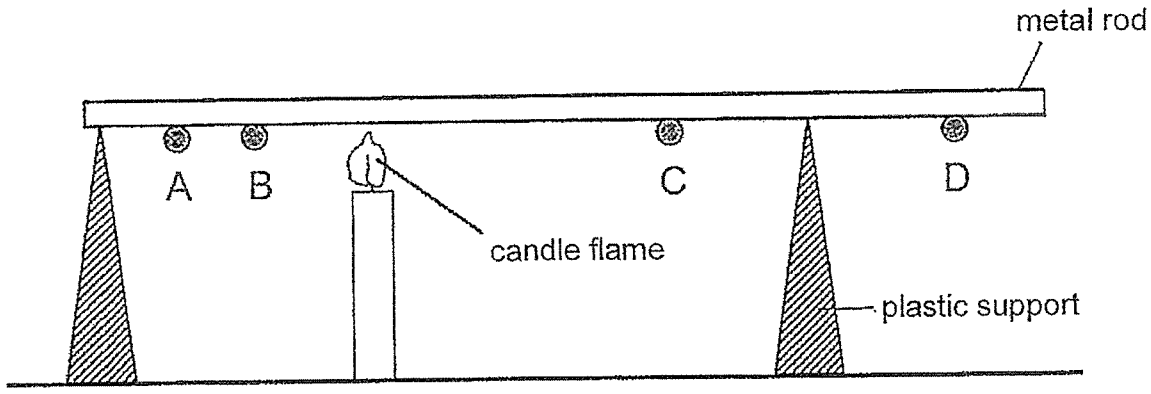
Which of the following will make the shadow larger?

(1) Move the ball nearer to the screen.
(2) Move the screen nearer to the ball.
(3) Move the ball nearer to the torch light.
(4) Move the torch light further from the ball

21 Which one of the following objects is not a source of heat?

(1) A lit torch
(2) A wool jacket
(3) A candle flame
(4) A cup of boiling water

22 Study the diagram below. A, B, C and D are pieces of wax.



What is the correct order in which the pieces of wax will drop?

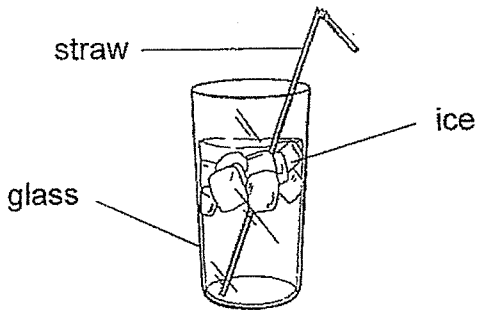
(1) A → B → C → D

(2) B → A → C → D

(3) B → C → A → D

(4) D → C → A → B

23 Jenny places a straw in a glass of water.



a cup water

Which one of the following statements is correct about the heat transfer?

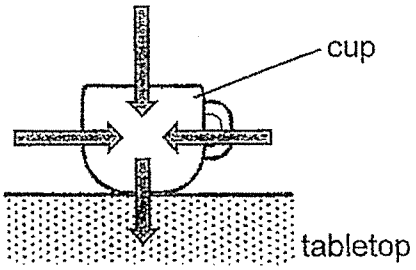
(1) The water gains heat from the ice.

(2) The ice transfers coldness to the straw.

(3) The straw gains coldness from the water.

(4) The glass loses heat to the ice and water.

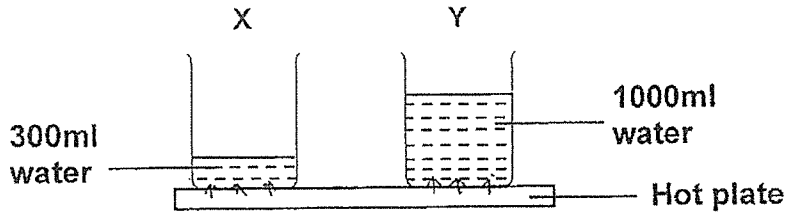
24 Study the diagram below. The arrows show the direction of heat flow between the cup, tabletop and surrounding air.



Which of the following most likely shows the temperature of the cup, tabletop and surrounding air?

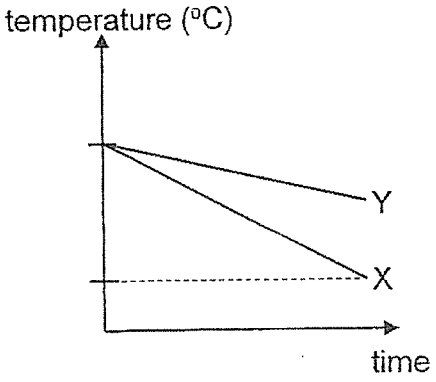
	Temperature (°C)		
	cup	**tabletop**	**surrounding air**
(1)	10	15	25
(2)	15	25	10
(3)	15	10	25
(4)	25	15	10

25 Two beakers, X and Y, with different amounts of water of the same temperature are heated on a hot plate.

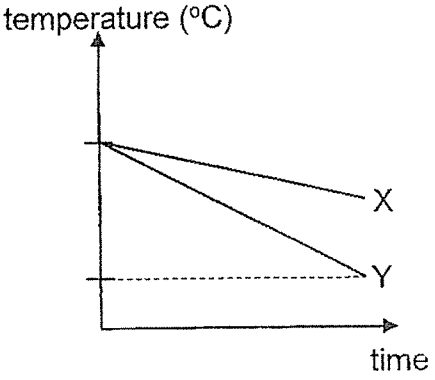


Which of the following graphs shows the change in the temperature of water in X and Y as they are being heated?

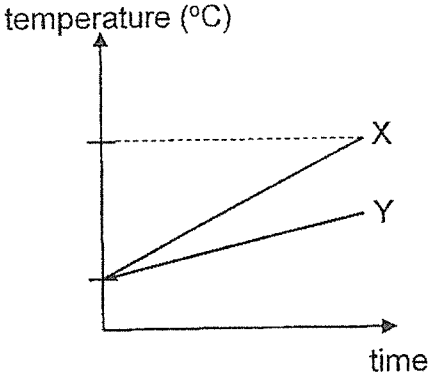
(1)



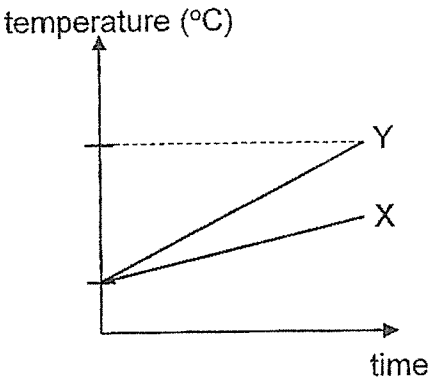
(2)



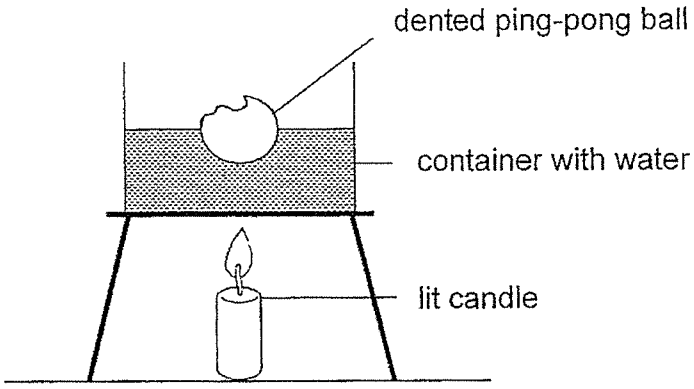
(3)



(4)



26 Study the diagram below.



After some time, the ping pong ball went back to its original shape. Which one of the following reasons explains this observation?

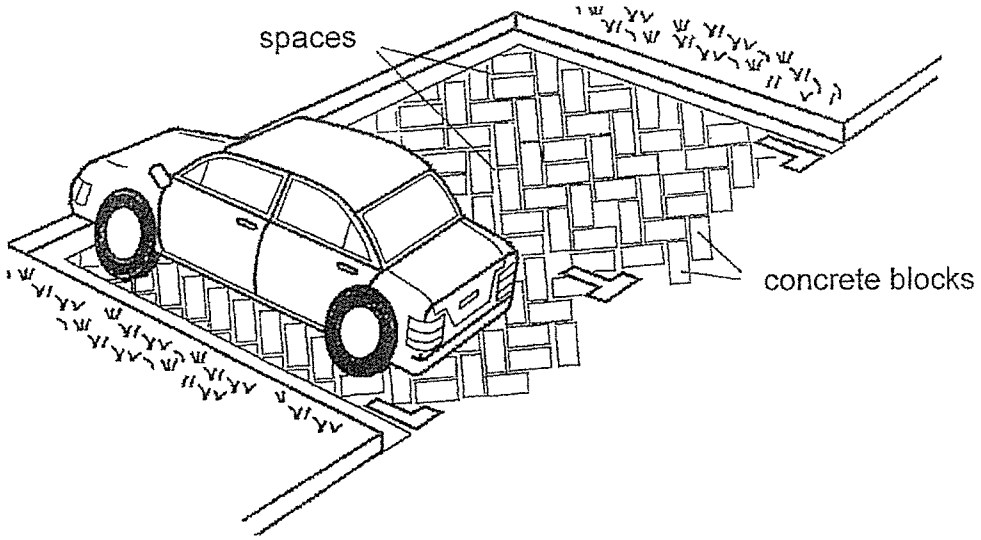
(1) The air in the ping pong ball lost heat and contracted.

(2) The air in the ping pong ball gained heat and expanded.

(3) The surface of the ping pong ball lost heat and contracted.

(4) The surface of the ping pong ball gained heat and expanded.

27 The diagram below shows carpark lots that are covered with concrete blocks with spaces as shown.



The purpose of the spaces is to allow the _____ .

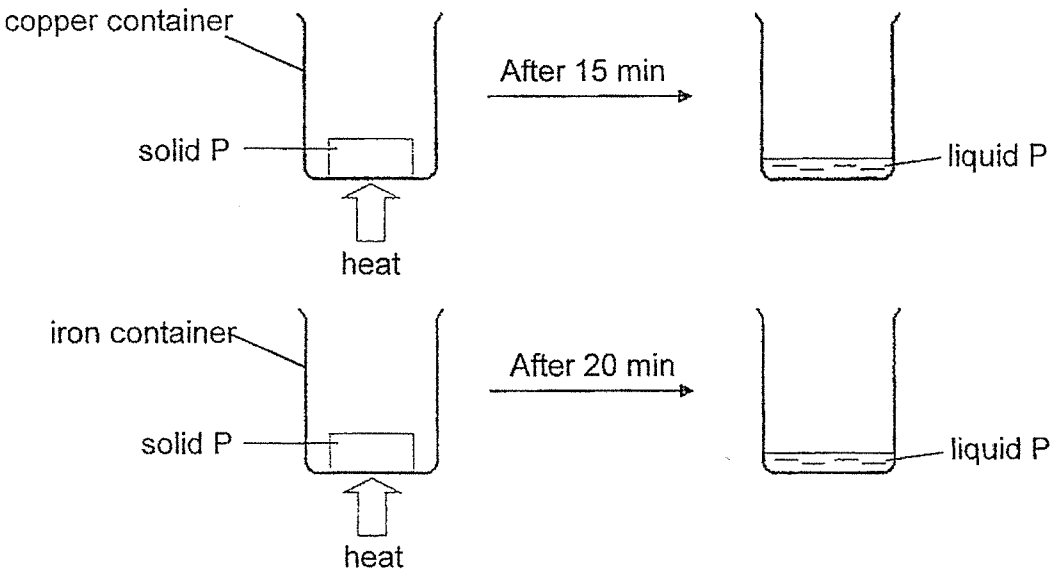
(1) spaces to gain heat and expand in hot weather.

(2) spaces to lose heat and contract in cold weather.

(3) concrete blocks to gain heat and expand in hot weather.

(4) concrete blocks to lose heat and contract in cold weather.

28 Ameen placed a piece of solid P in a copper container and an iron container. Both the containers are of the same size and thickness. Both solid P are also of the same size. He applied the same amount of heat and recorded the time it takes for solid P to turn into liquid P completely.



Which of one of the following is his hypothesis?

(1) Copper melts solid P faster than iron.

(2) Heat is needed to change solid P to liquid P.

(3) The volumes of solid P and liquid P are the same.

(4) Copper allows heat to pass through faster than iron.

(Go on to Booklet B)

Anglo-Chinese School
(Primary)
A Methodist Institution
(Founded 1886)

END OF YEAR EXAMINATION 2024
SCIENCE
PRIMARY FOUR
BOOKLET B

Name: _____( ) Class: Primary 4 ____

Date: 24 October 2024 Total Time for Booklets A and B: 1 h 45 min

_____
Parent's/ Guardian's signature

INSTRUCTIONS TO CANDIDATES

1. Write your name, index number and class in the spaces provided.
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 this booklet.

BOOKLET	MAX MARKS	MARKS OBTAINED
A	56	
B	44	
Total	**100**	

This booklet consists of **13** printed pages including this cover page.

For questions **29 to 42**, write your answers in this booklet.

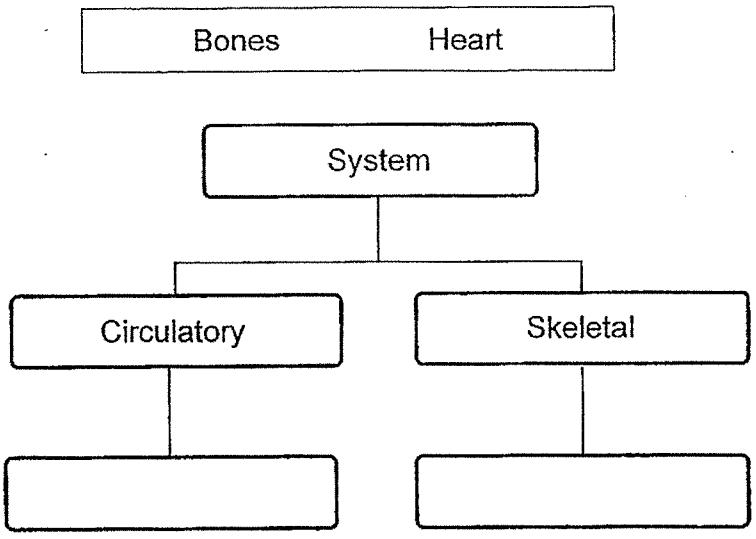
The number of marks available is shown in brackets [ ] at the end of each question or part question.

(44marks)

29 Fill in the blanks in the table with names of broad groups of living things. [2]

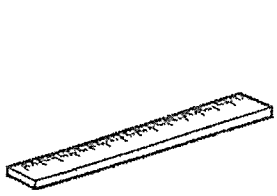
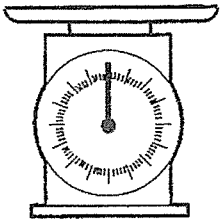
Group	Characteristic
	Body covered with feathers
	Dry skin with scales

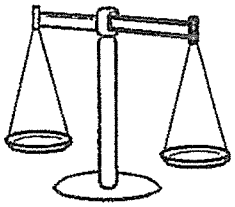
30 Classify the following parts into the correct human systems. [2]



Score 4

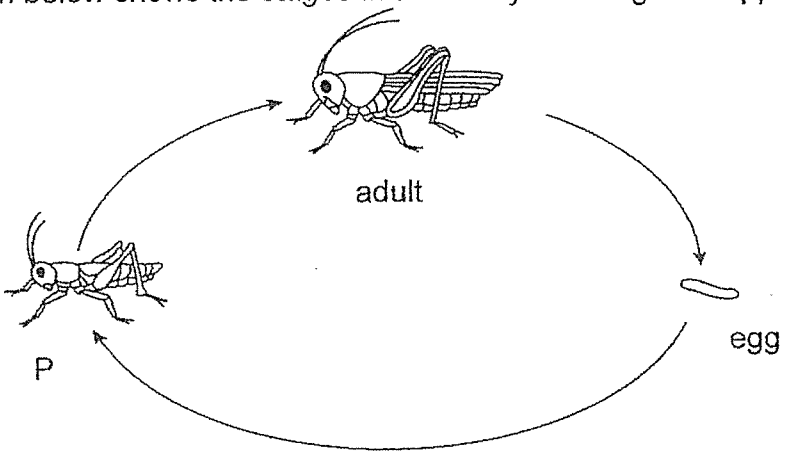
31 Which of the following equipments can be used to measure the mass of a marble?
Tick (✓) two correct boxes. [2]



☐ ☐ ☐ ☐

32 The diagram below shows the stages in the life cycle of a grasshopper.



(a) Name stage P. [1]

_____

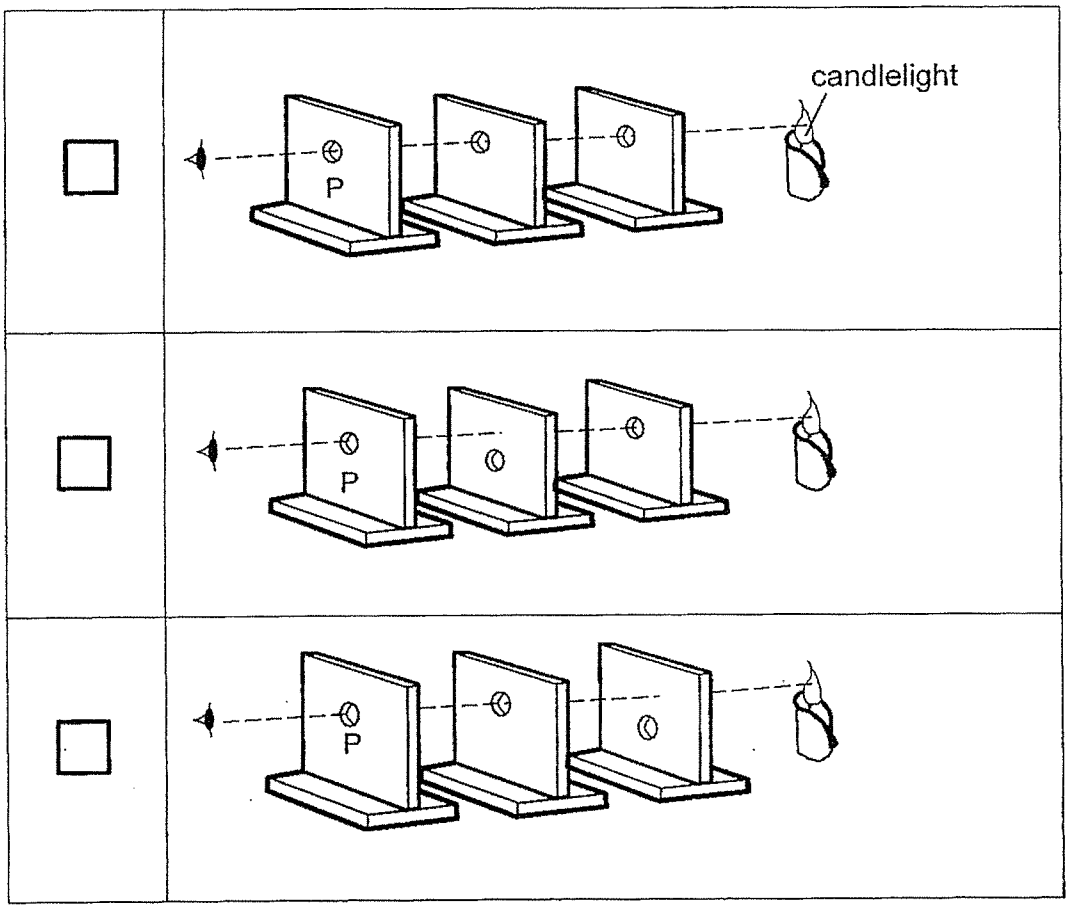
(b) State one other animal that has a similar life cycle as a grasshopper. [1]

_____

Score	/ 4

33 Haijun conducts an experiment to investigate how light travels

(a) Tick (✓) the box for the set-up which allows Haijun to see the candlelight when he looks through the hole at P. [1]



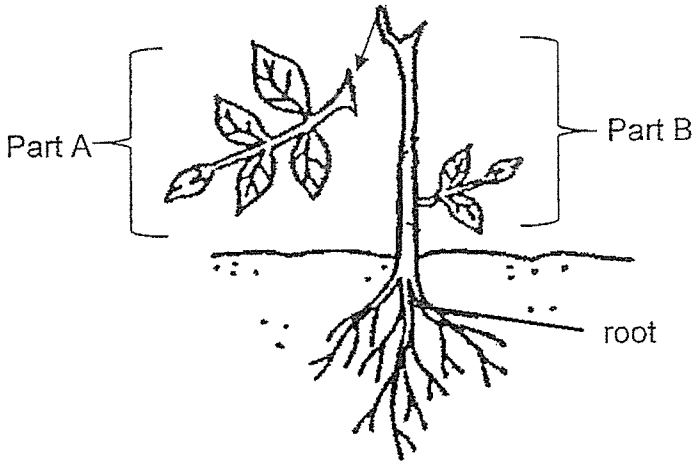
(b) What can Haijun conclude about how light travels? [1]

_____

_____

Score 2

34 The stem of a plant broke during a heavy rain. Part A of the plant broke as shown in the diagram.



(a) Part A of the plant died. Explain why. [2] 0

_____

_____

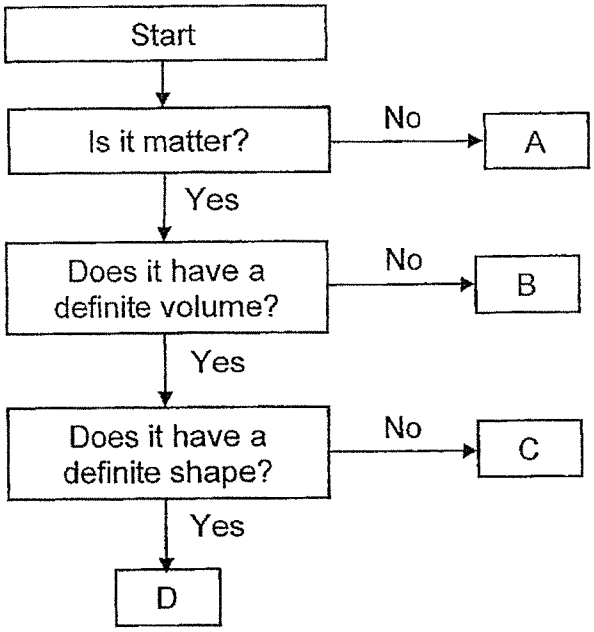
(b) Explain how part B was not washed away by the heavy rain. [2]

_____

_____

Score	/ 3

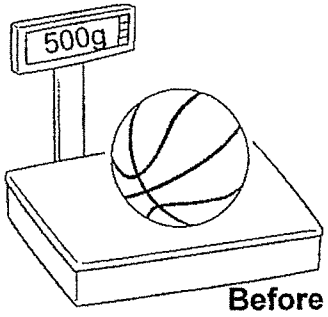
35 Study the chart below.

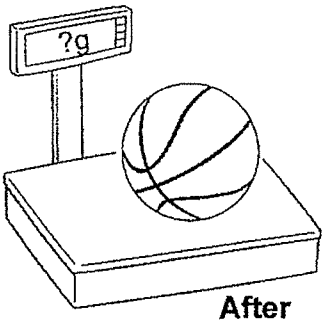


(a) What state of matter is C in? [1]

(b) Based on the chart above, state all the similarities between C and D. [1]

The picture below shows a basketball before and after more air was pumped into it.



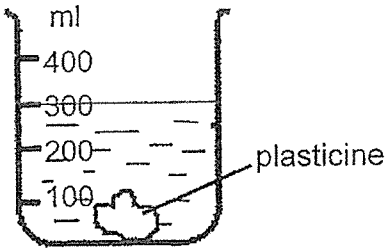


(c) State if the mass of the basketball increases, decreases or remains the same. Explain. [1]

(d) It was noticed that even when the basketball was fully inflated, more air could be pumped in. Explain. [1]

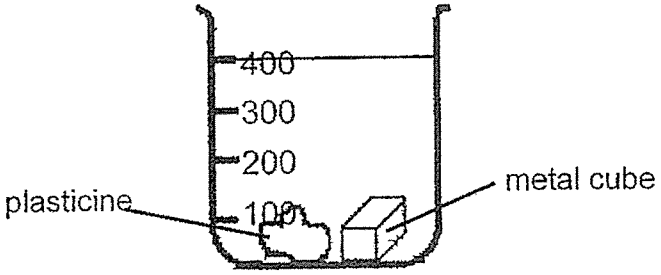
Score	/4

36 The diagram below shows a plasticine that Jane placed in a beaker of water.



She then carefully placed a metal cube of volume 100cm3 into the beaker of water.

(a) Draw the new water level in the diagram below after the metal cube was placed into the beaker. [1]



Jane removed the plasticine and reshaped it into a ball. She then carefully placed the plasticine ball into the beaker together with the metal cube.

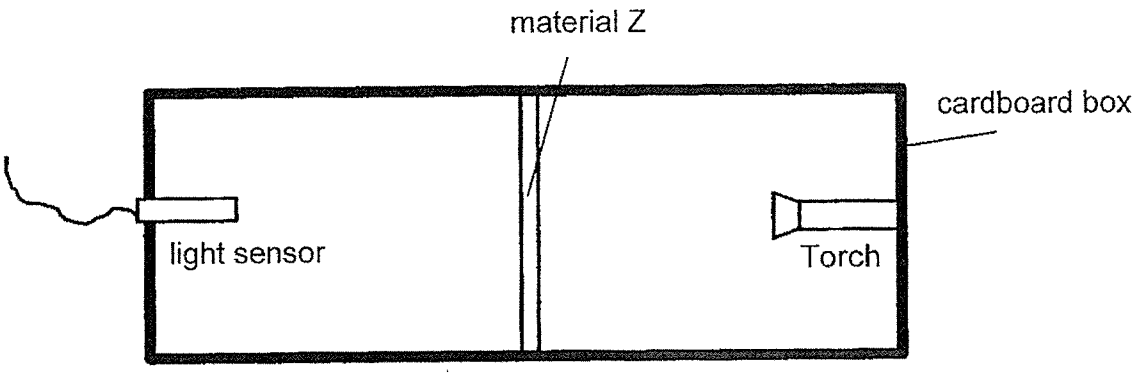
(b) Would the water level be higher, lower or the same as **(a)**? Explain. [2]

_____

_____

Score	/ 3

37 Matthew wanted to find out how the thickness of material Z can affect the amount of light passing through it. He carried out an investigation in a thick cardboard box as shown below.



He placed material Z of different thickness between the light sensor and the torch and recorded the amount of light passing through it. The results are shown in the table below.

Thickness of Material Z (mm)	Amount of light detected by the light sensor (units)
2	600
4	450
6	300
8	150
10	0

(a) State the relationship between the thickness of material Z and the amount of light passing through it. [1]

_____

_____

(b) Predict what will be the amount of light detected by the light sensor when 12 mm of material is used. Give a reason for your prediction. [2]

_____

_____

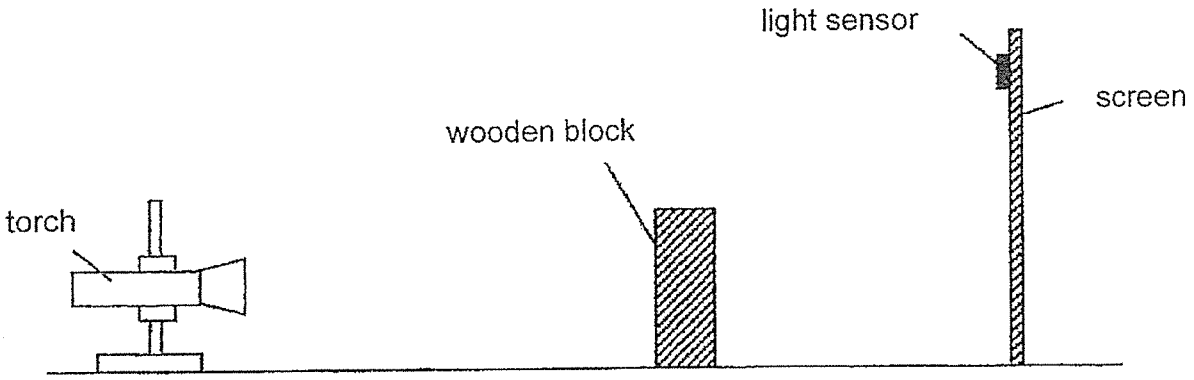
(c) Explain why the investigation need to be conducted in a thick cardboard box. [1]

_____

_____

Score / 4

38 Hannah set up the following experiment in a dark room. A light sensor was attached on the screen and gave a reading of 30 units. She also observes that a shadow is formed on the screen by the wooden block.



(a) What would happen to the reading on the light sensor if the torch is moved further away from the wooden block? [1]

_____

_____

(b) What should Hannah do to get a smaller shadow while keeping the reading on the light sensor at 30 units? [1]

_____

_____

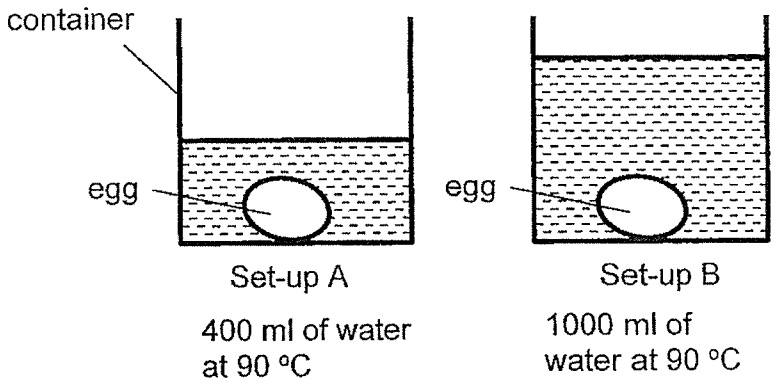
(c) How can Hannah increase the reading on the light sensor to 50 units while getting a smaller shadow? [1]

_____

_____

Score	/ 3

39 Jack conducted an experiment in his kitchen using the set-ups below.



The eggs were submerged for ten minutes. They were then cracked open to observe how cooked each egg was.

(a) State what temperature is. [1]

_____

_____

(b) Which egg, A or B will be more cooked? Explain. [2]

_____

_____

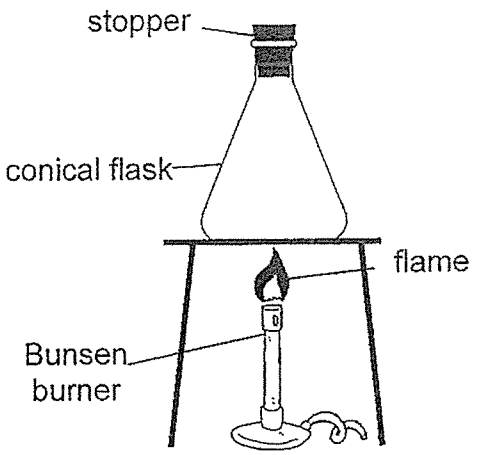
(c) State two other variables that must be kept the same for the experiment to be a fair test. [1]

_____

_____

Score / 4

40 Sam heated an empty conical flask with a stopper over a bunsen burner shown in the diagram below.



(a) The stopper popped out after 5 minutes of constant heating. Explain why. [2]

_____

_____

_____

(b) Without changing the equipment, suggest one way to shorten the time required to observe the same effect in **(a)**. Explain your answer. [2]

_____

_____

_____

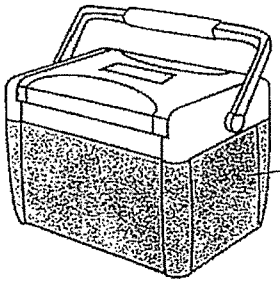
Score	/4

41 Warren conducted an experiment on three solid blocks made of materials, A, B and C, of the same size and thickness. He heated the three materials and measured the time taken for each to increase from 30°C to 50°C. The table below shows his results.

Materials	Time taken for the experiment (second)
A	50
B	80
C	35

(a) What type of measuring instruments did Warren use to conduct this experiment? [2]

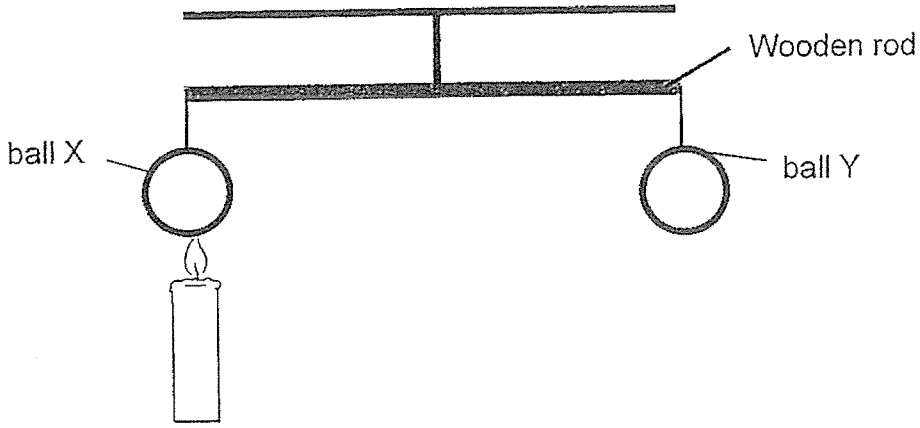
Warren wants to make a container to store ice.



(b) Which material A, B or C, should Warren choose to keep the ice cold for the longest time? Explain why. [2]

Score 4

42 Peiling balanced two identical metal balls, X and Y, on a wooden rod. She then placed a lit candle directly under ball X.



Circle the correct answer.

(a) After 5 minutes, the wooden rod [1]

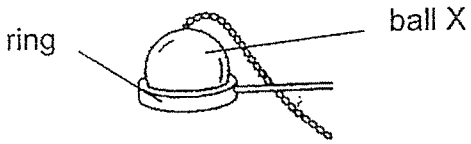
(tilts towards ball X / tilts towards ball Y / remains balanced) .

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

_____

_____

She then tried to put ball X through a ring as shown but was unable to do so.



(c) Given that the ball was able to go through the ring before the experiment, explain her observation. [1]

_____

_____

(d) Peiling accidentally touched the wooden rod but her hand did not feel hot. Explain. [1]

_____

_____

End of Paper

Score	/4

Anglo-Chinese School
(Primary)
A Methodist Institution
(Founded 1886)

2024 P4 End-Of-Year Examination Corrections Template

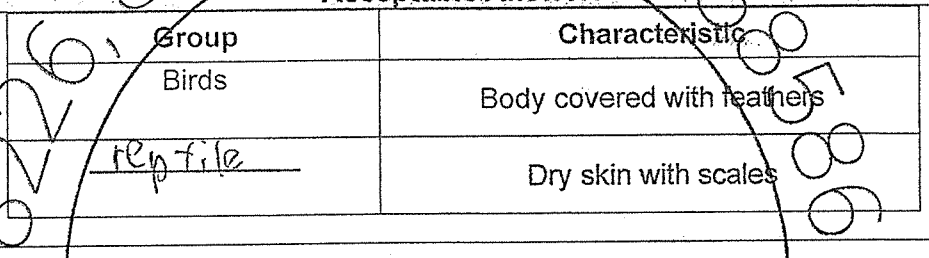
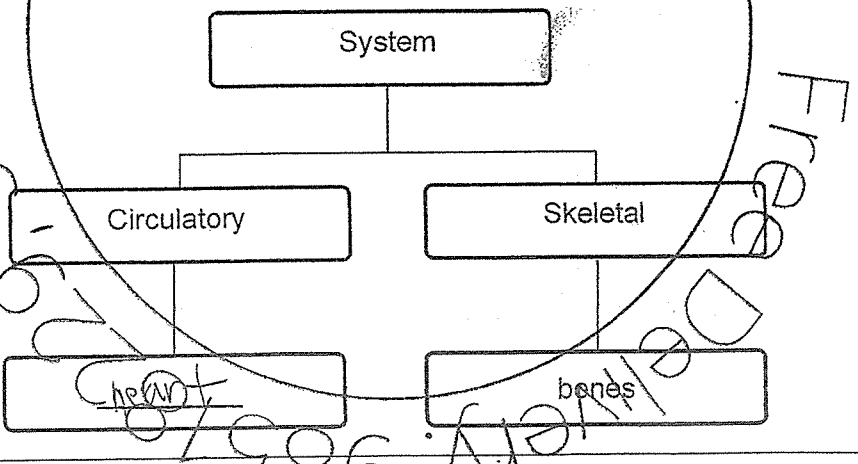
Name: _____ ( ) Class: Primary 4____

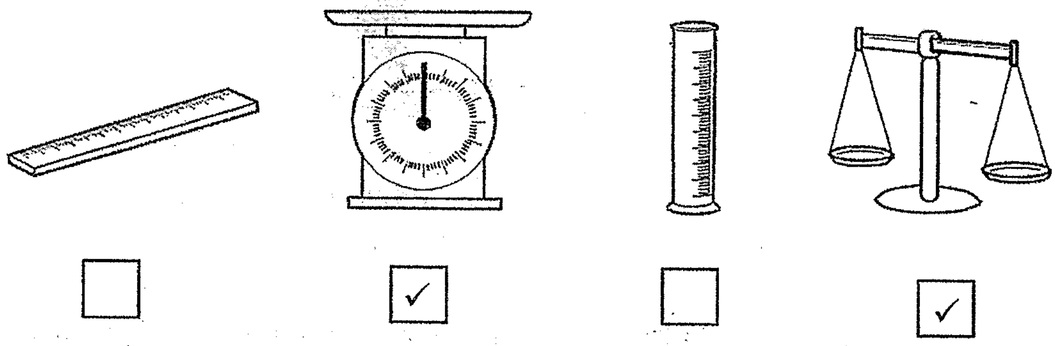
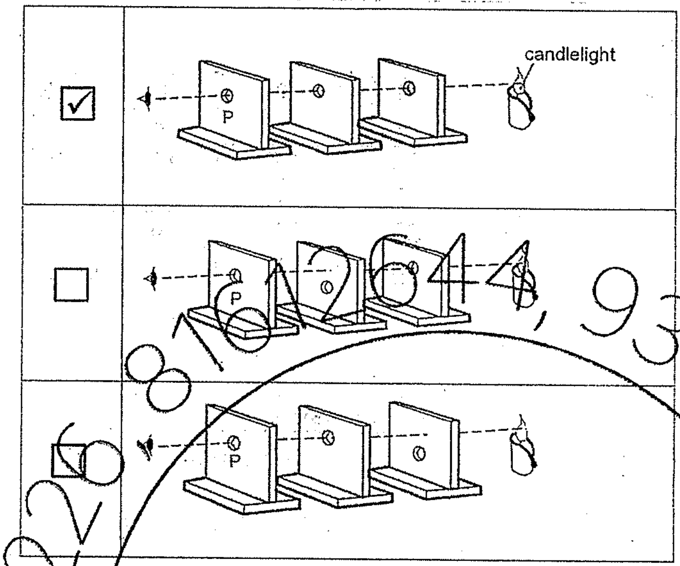
Date: _____

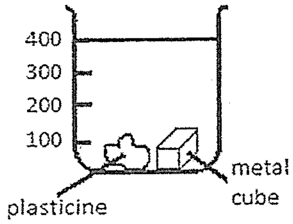
Booklet A [1 correct – 2 marks]

1	2	3	4	5	6	7	8	9	10
2	2	4	2	3	1	1	4	4	3
11	12	13	14	15	16	17	18	19	20
3	3	2	4	2	2	4	1	2	3
21	22	23	24	25	26	27	28		
2	2	4	3	3	2	3	4		

Booklet B

Qn/ Part	Acceptable Answers
29	
30	

31	
32(a)	nymph
32(b)	cockroach / frog / chicken
33(a)	
33(b)	Light travels in straight line.
34(a)	The stem is not able to transport water and mineral salts; from the roots to part A.
34(b)	Part B still has roots, which hold the plant firmly to the ground.
35(a)	Liquid
35(b)	Both are matter and have a definite volume.
35(c)	Increases, air added in has mass.

35(d)	Air can be compressed.
36(a)	
36(b)	C/E: The water level would be the same. R: The volume of plasticine / the space taken by it did not change. Or the plasticine has a definite volume.
37(a)	As the thickness of material Z increases, the amount of light passing through it decreases.
37(b)	C: 0 units. E: As no light is able to pass through 10mm of Material Z, R: As 12mm is thicker, than 10mm, no light will be able to pass through it too.
37(c)	Ensure that the torch is the only source of light.
38(a)	The reading on the light sensor would decrease.
38(b)	Move the wooden block nearer to the screen. / Move the wooden block away from the torch.
38(c)	Move the screen nearer to the wooden block.
39(a)	Temperature is the measurement of how hot or cold an object is.
39(b)	C: B. E: Both set-ups have water of the same temperature but there is more water in set up B, so it has more heat. R: So, the egg gained more heat from the water and becomes more cooked in B.
39(c)	The material of container, Type of egg.
40(a)	The air in the flask gained heat from the flame and expands, pushing the stopper upwards until it pops out.
40(b)	increase the flame intensity. The air in the flask will gain more heat and expand faster.

41(a)	Infra-red thermometer, Stop-watch
41(b)	C: Material B. E: B took the lowest time to increase in temperature from 30 to 50°C; R: The ice will gain heat from the surrounding the slower.
42(a)	(tilt towards ball X / tilt towards ball Y / ~~remains balanced~~).
42(b)	Heating ball X does not change its mass.
42(c)	Ball X had gained heat and expanded so it became bigger in size.
42(d)	The wooden rod is a poor conductor of heat so heat flowed from it to her hand slowly.