HENRY PARK PRIMARY SCHOOL

2024 END OF YEAR EXAMINATION

SCIENCE

PRIMARY FOUR

BOOKLET A

Name: _____ ( )

Class: Primary 4 ( )

28 QUESTIONS

56 MARKS

TOTAL TIME FOR BOOKLETS A & B: 1 HOUR 45 MINUTES

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.

Marks for Booklet A: _____ / 56

Parent's Signature: _____

Sections	Marks
A	/ 56
B	/ 44
Total	/ 100

Booklet A

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)

1 Which statement is not true about animals?

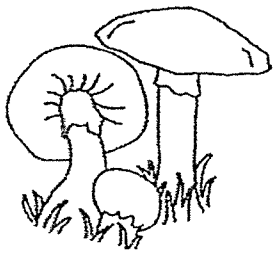
(1) They can grow.

(2) They can make food.

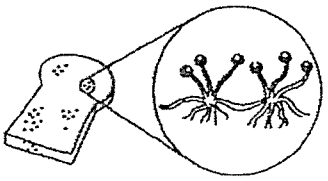
(3) They can reproduce.

(4) They respond to changes.

2 The diagram shows two types of fungi.



Mushroom



Mould

Which statement is true of fungi?

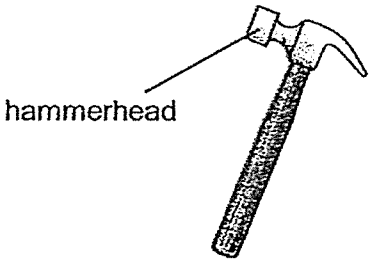
(1) They are flowering plants.

(2) They reproduce by seeds.

(3) They reproduce by spores.

(4) They are non-flowering plants.

3 The diagram shows a hammer.



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

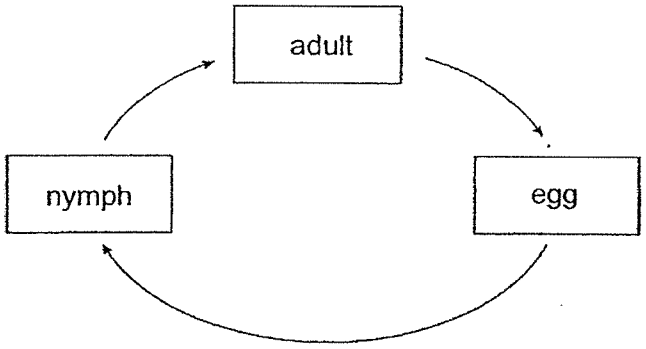
(1) bends easily

(2) can reflect light

(3) is not waterproof

(4) does not break easily

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



Which animal is likely to have the life cycle as shown above?

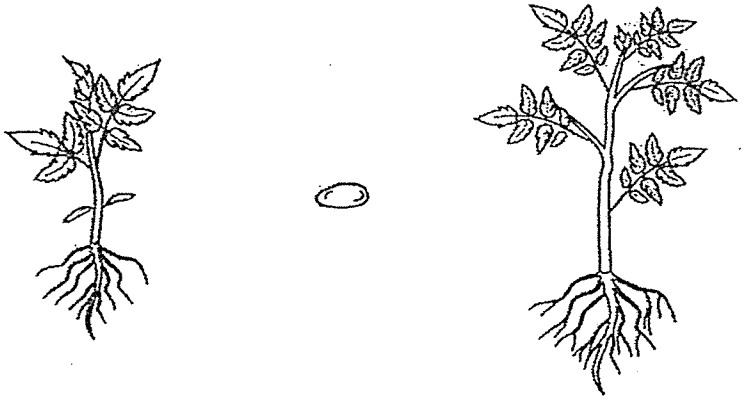
(1) frog

(2) beetle

(3) chicken

(4) grasshopper

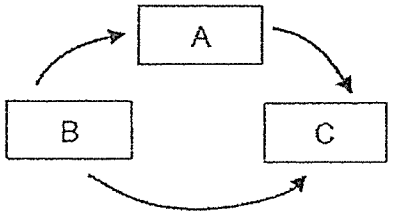
5 A, B and C are stages in the life cycle of a plant.



A B C

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

(1)



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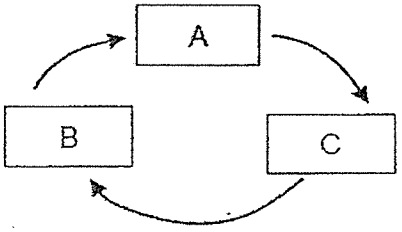

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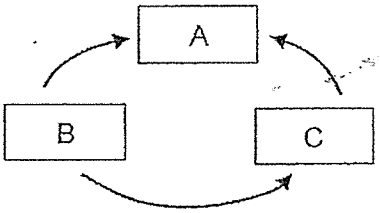

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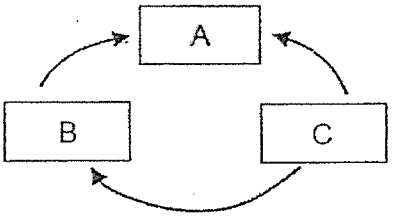
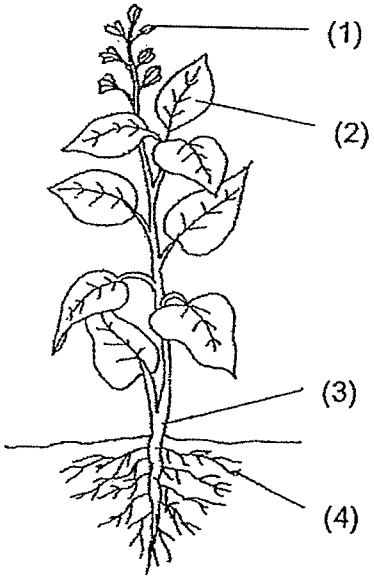


6 Which part, (1), (2), (3) or (4), takes in water for the plant?



7 In which part of the digestive system is food absorbed into the blood?

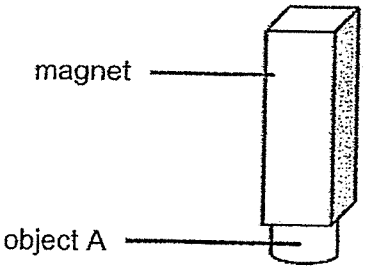
(1) gullet

(2) mouth

(3) stomach

(4) small intestine

8 Object A was attracted to a magnet, as shown in the figure below.



Object A is made of _____.

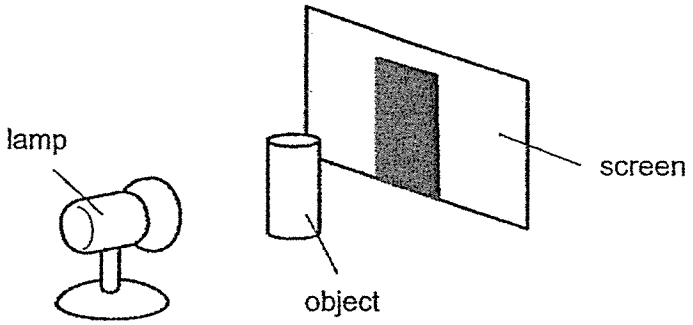
(1) iron

(2) wood

(3) rubber

(4) plastic

9



The shadow of the object is formed on the screen because _____.

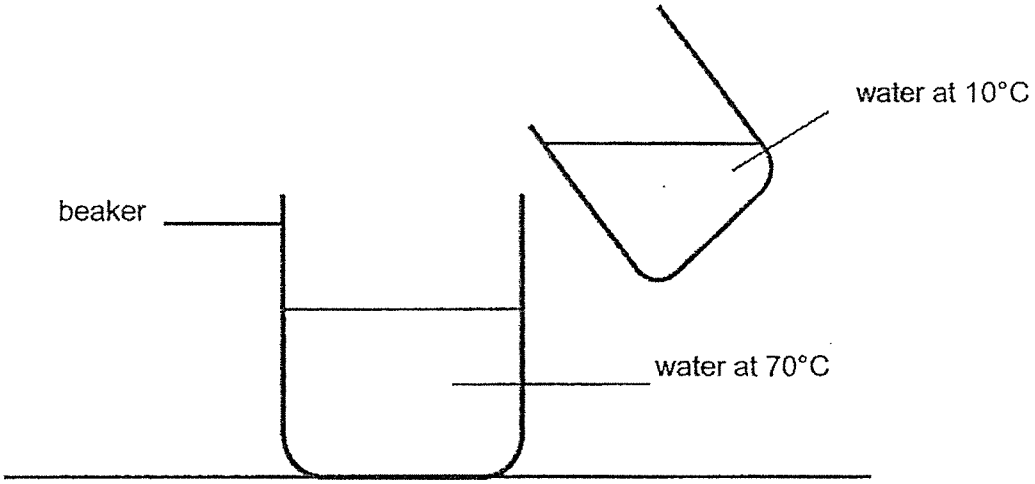
(1) the object blocks light

(2) the object reflects light

(3) the object gives off light

(4) the screen reflects light

10 Cold water at 10°C is mixed with hot water at 70°C.



What is a possible final temperature of water in the beaker?

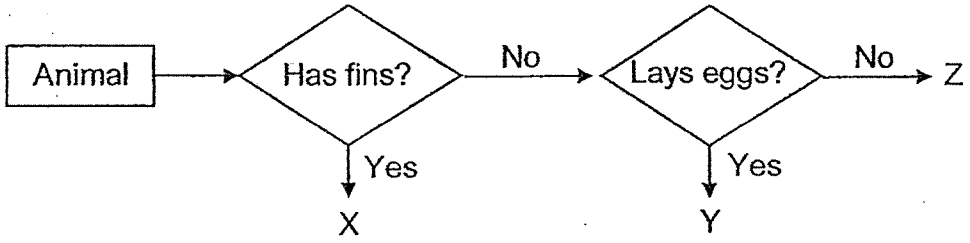
(1) 80°C

(2) 70°C

(3) 50°C

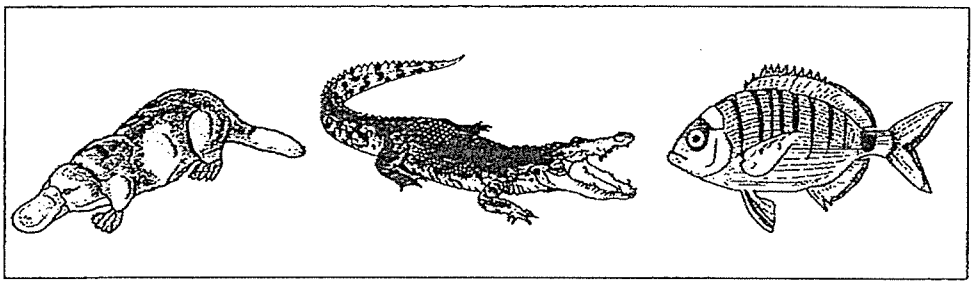
(4) 10°C

11 Three animals are classified in the chart shown below.

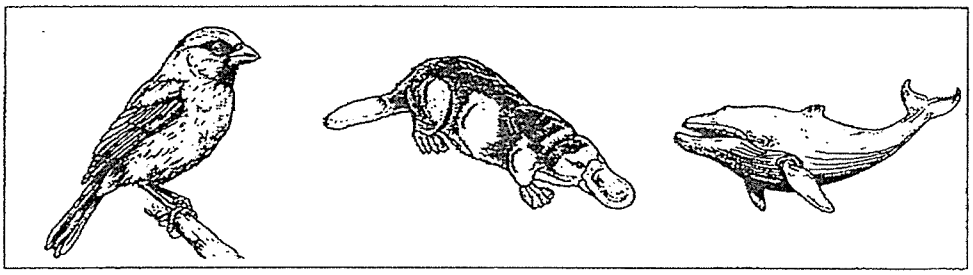


Which of the following could be the three animals?

(1)



(2)



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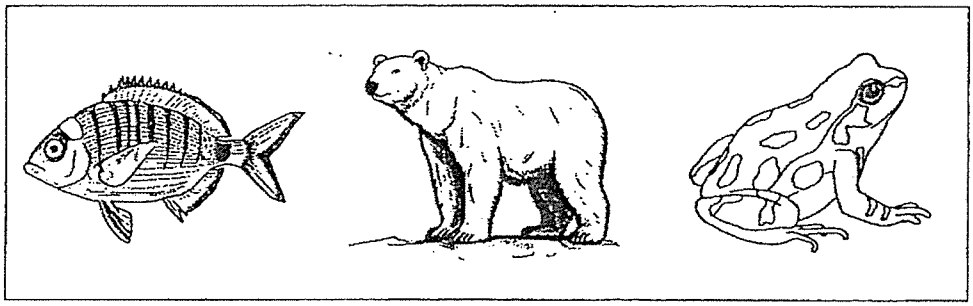

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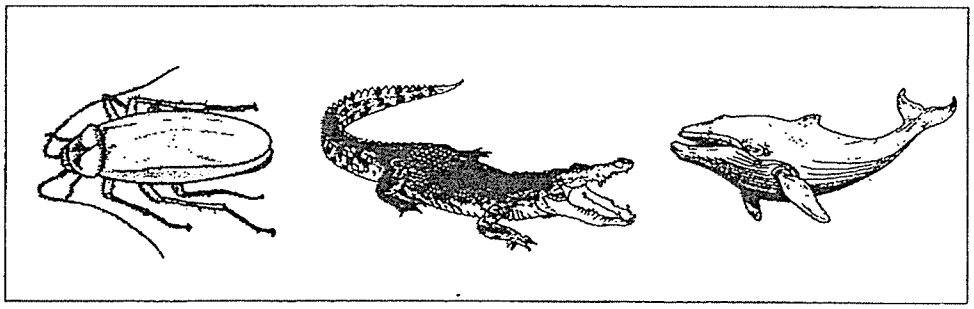


12 Rani wrote down some notes to compare the characteristics of a rose plant and bird's nest fern in her notebook. She accidentally spilled some ink over her notebook at sections X and Y as shown below.

Characteristics	Living Things	
	Bird's Nest Fern	Rose Plant
[redacted] X	no	yes
Does it reproduce from spores?	[redacted] Y	no
Does it have roots and leaves?	yes	yes

Which of the following could represent sections X and Y?

	X	Y
(1)	Does it need water to live?	no
(2)	Does it produce flowers?	yes
(3)	Does it respond to changes?	no
(4)	Does it make its own food?	yes

13 Sam filled a balloon with air. Object X was placed on the balloon as shown in diagram 1.

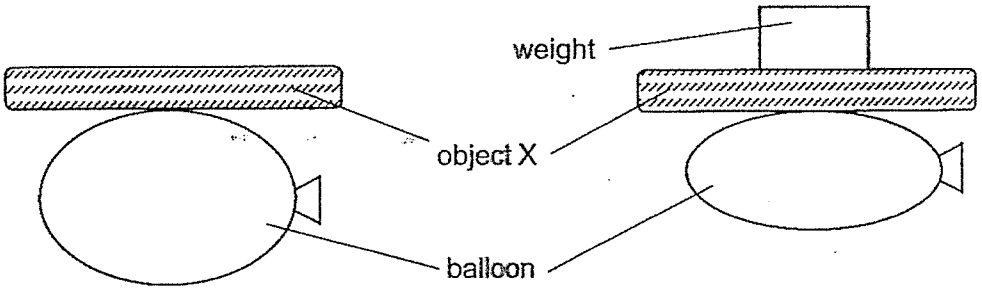


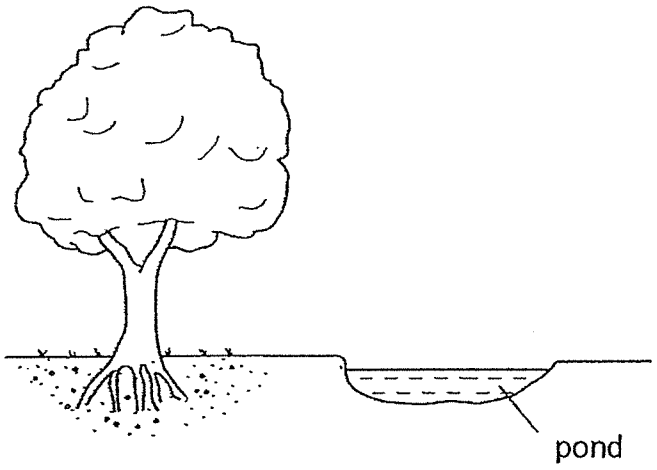
Diagram 1 **Diagram 2**

A weight was then placed on object X and the balloon as shown in diagram 2.

Based on Sam's observation in diagrams 1 and 2, what can he conclude about object X and the air in the balloon?

	Object X	Air in the balloon
(1)	Has no mass	Has definite shape
(2)	Has definite shape	Has no definite shape
(3)	Can be compressed	Has no definite shape
(4)	Can be compressed	Cannot be compressed

14 The diagram shows a pond in Mary's school.



Mary observed 3 types of animals, X, Y and Z living near the pond.
Only animals Y and Z lay their eggs in the pond. The young of animals Y and Z live in water. The table shows the number of days needed for their eggs to hatch.

	Observation
Animal	**Number of days needed for eggs to hatch**
X	4
Y	2
Z	20

On day 15, what would Mary most likely find in the pond?

(1) young of animals X and Y

(2) young of animals of Y and Z

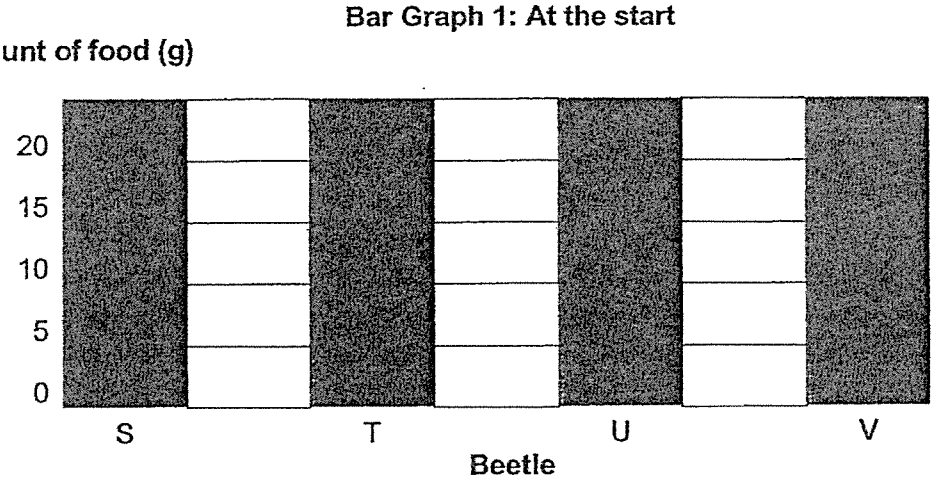
(3) young of animal Y and eggs of animal Z

(4) young of animal X and eggs of animal Z

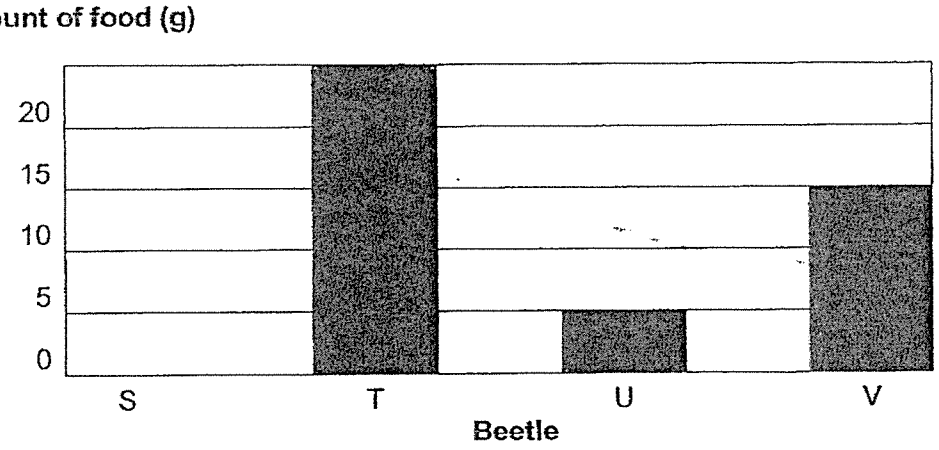
15 Four beetles, S, T, U and V, were kept in different containers. They were at different stages of growth.

Bar graphs 1 and 2 show the amount of food given to each beetle at the start and the amount of food left after 3 days respectively.

Bar Graph 1: At the start



Bar Graph 2: After 3 days



Based on the information given above, which beetle is likely to be at the pupal stage?

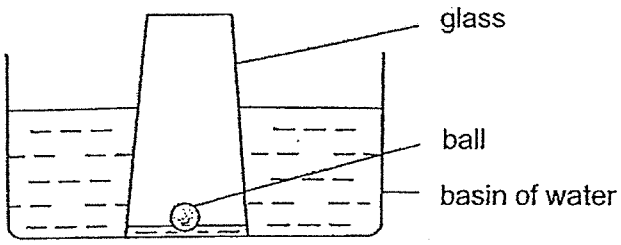
(1) S

(2) T

(3) U

(4) V

16 Yelin lowered an empty glass with a small ball into a basin of water as shown below. She observed that the water level inside the glass was not the same as the water level outside. The ball still floated on the water.



What could be the main reason for the difference in the water level inside and outside the glass?

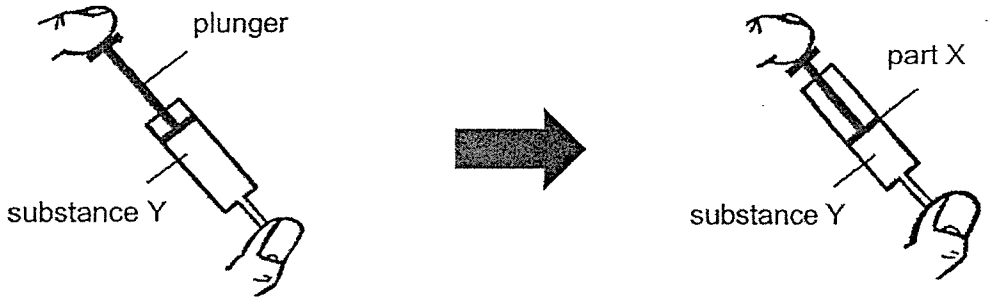
(1) The ball in the glass occupied space.

(2) The air trapped in the glass occupied space.

(3) The ball pushed the water out from the glass.

(4) The air trapped in the glass dissolved in the water.

17 Mark pushed the plunger of a syringe as shown below.



He was able to push the plunger until it reached part X.

Based on this experiment, what can Mark conclude about substance Y?

(1) Substance Y has mass.

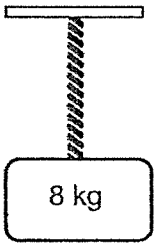
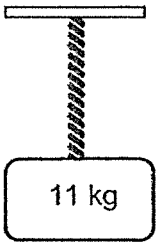
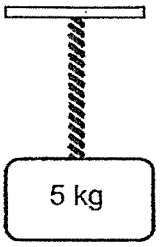
(2) Substance Y has a definite shape.

(3) Substance Y has a definite volume.

(4) Substance Y does not have a definite volume.

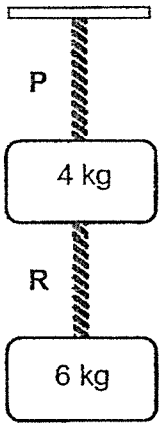
18 Mel tested the strength of three ropes P, Q and R.

The ropes are made of different materials. The diagram below shows the result of her test.

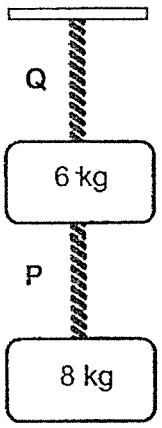
Maximum weight added without breaking the rope (kg)		
Rope P	Rope Q	Rope R
		

Based on the result, which one of the following arrangements was possible to ensure none of the ropes broke?

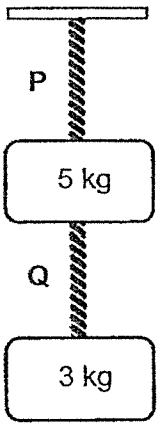
(1)



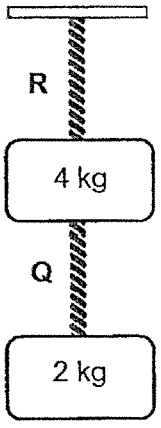
(2)



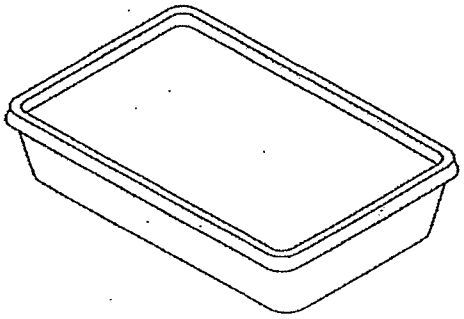
(3)



(4)



19 Tom packs a plastic lunch box daily in his school bag to bring some food to school.



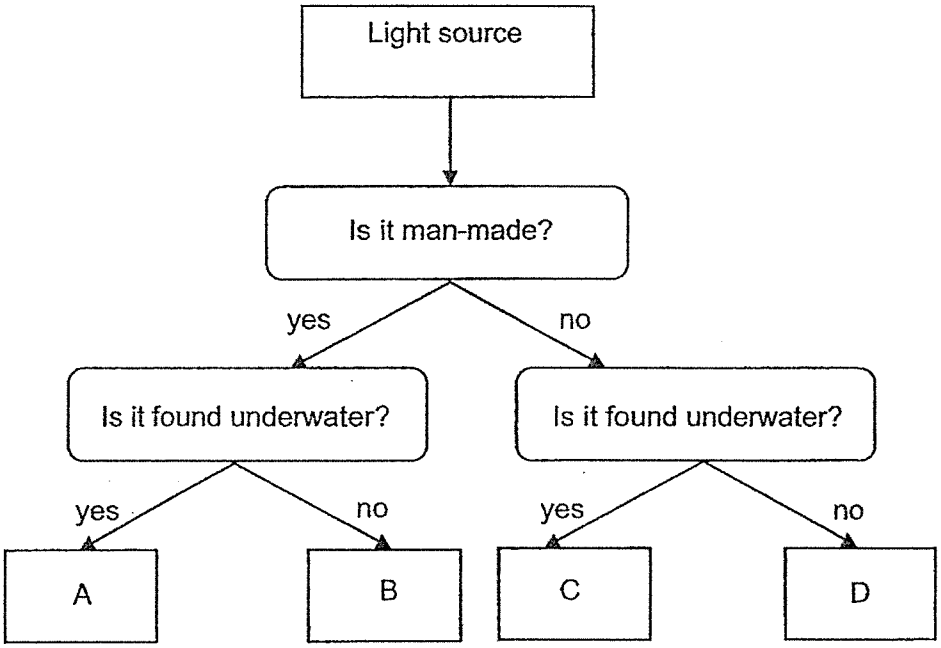
He normally packs some chicken rice with gravy.
He also wants to keep the food warm for a long time.

Based on the information given, which of the following properties explain why plastic is a suitable material for the lunch box?

A It is waterproof.
B It is a poor conductor of heat.
C It allows most light to pass through.

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

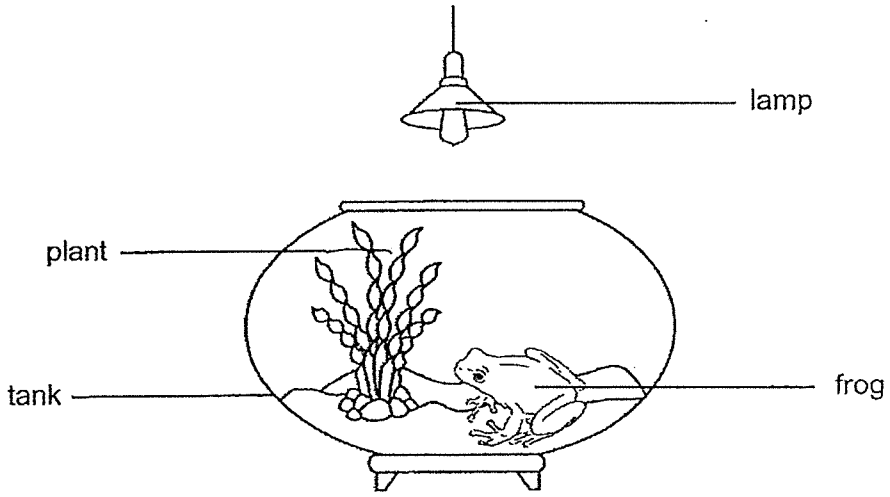
20 Suhailah observed four different light sources at the beach one night.
She classified them as shown below.



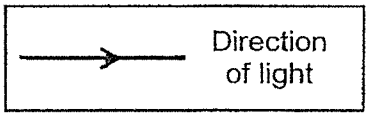
One of the light sources is a jellyfish.
Which light source is a jellyfish?

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

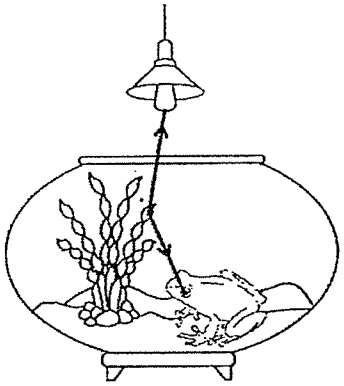
21 Look at the picture below.



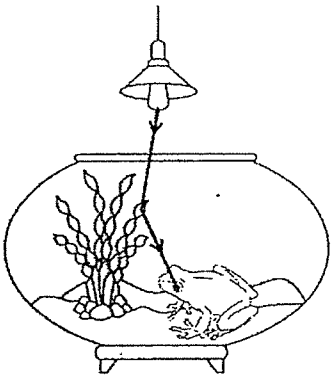
Which of the following explains why the frog can see the plant?



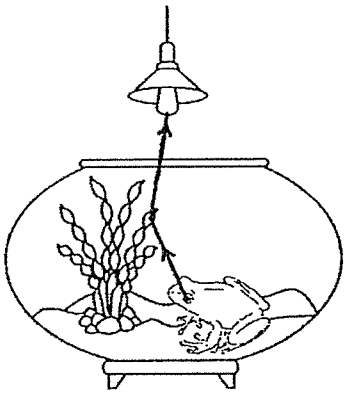
(1)



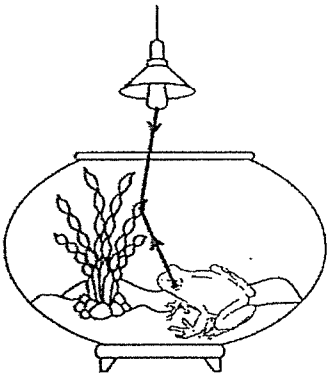
(2)



(3)



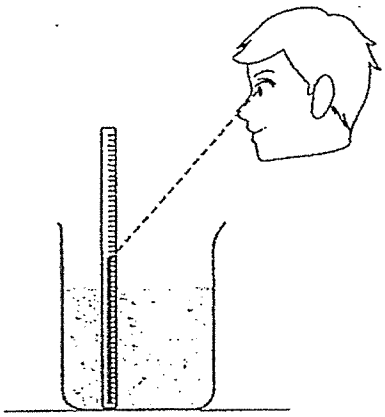
(4)



22 Jake wants to measure the temperature of water in a beaker using a thermometer.

Which of the following diagrams shows the correct position for Jake to read the temperature of water on the thermometer?

(1)



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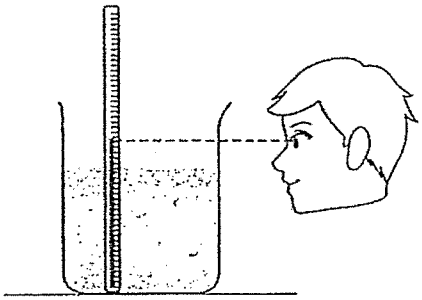
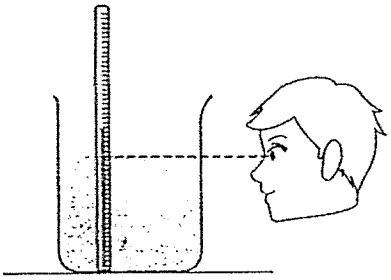
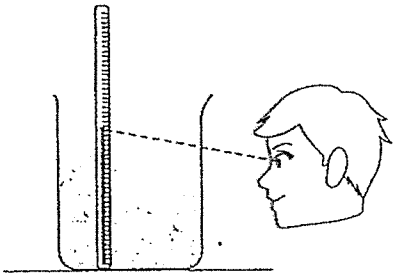


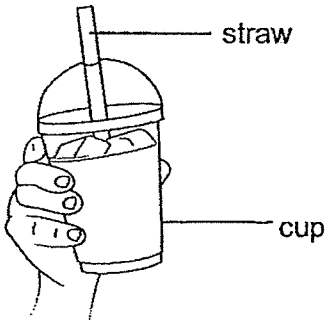
(3)



(4)



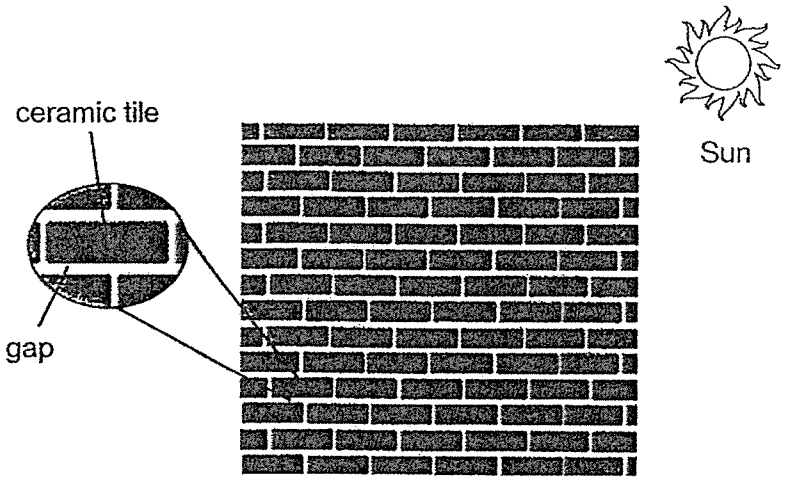
23 Carrie added ice cubes to her drink in a cup. Her hands felt cold when she held the cup.



Which of the following explains why her hands felt cold?

(1) Her hands lost heat to the cup.
(2) The cup lost heat to the ice cubes.
(3) The ice cubes gained heat from the cup.
(4) The water in the cup lost heat to the ice cubes.

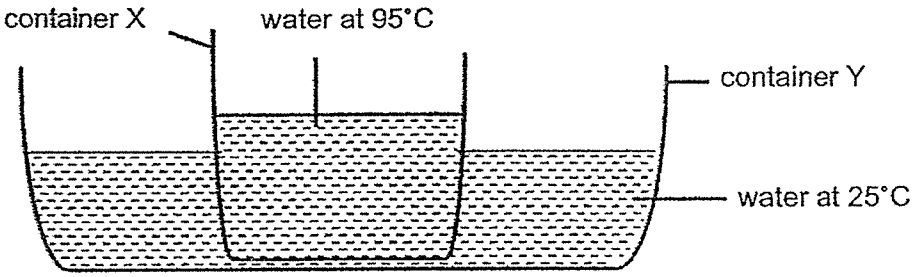
24 The diagram below shows a wall with ceramic tiles facing the Sun.



Which of the following explains why the tiles are built with gaps in the wall?

(1) To prevent the tiles from cracking
(2) To allow the tiles to expand on a hot day
(3) To allow the tiles to cool down on a hot day
(4) To prevent the tiles from overheating in the Sun

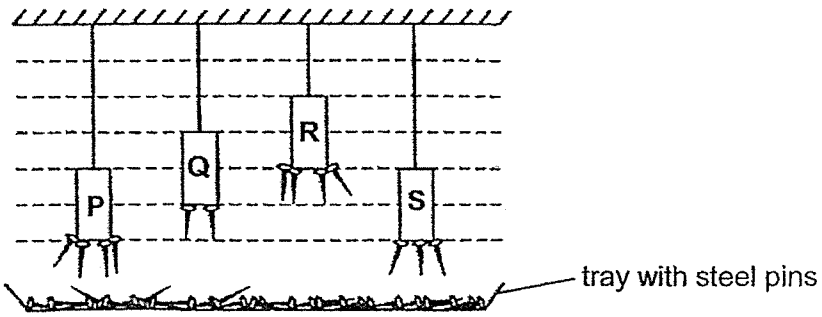
25 An experiment was set up using two containers of water. Container X contained hot water at 95°C. It was placed in container Y with water at 25°C. The containers were left in a room of 30°C.



What would be the likely temperature of water in containers X and Y after one day?

	Temperature of water in container X (°C)	Temperature of water in container Y (°C)
(1)	95	120
(2)	70	55
(3)	30	30
(4)	25	95

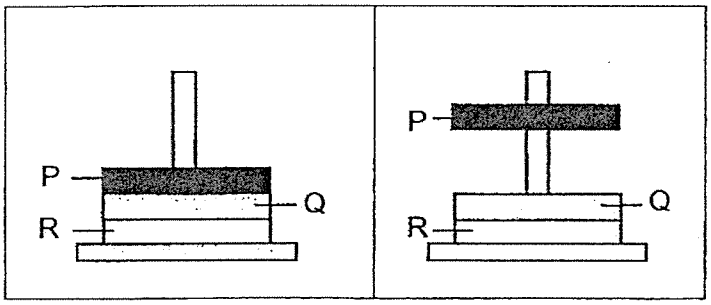
26 Jonathan wanted to know the strength of bar magnets P, Q, R and S. He set up the experiment as shown below. The diagram shows the number of steel pins each bar magnet could attract when placed at a certain height from the tray.



Based on the result, which of the following is correct?

	Strongest Magnet	Weakest Magnet
(1)	P	S
(2)	P	Not possible to tell
(3)	R	Not possible to tell
(4)	Not possible to tell	Q

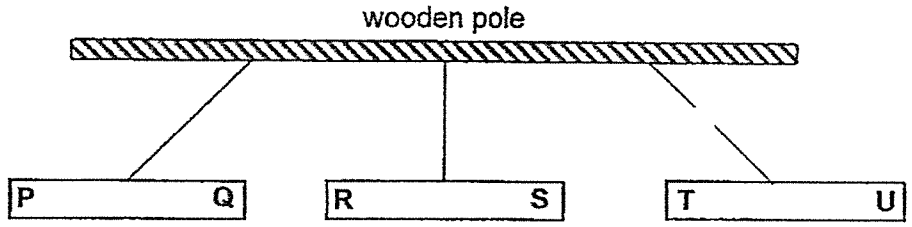
27 Zi Xun arranged three metal rings, P, Q and R in two different ways as shown below.



Based on the information given, which of the following is correct about P, Q and R?

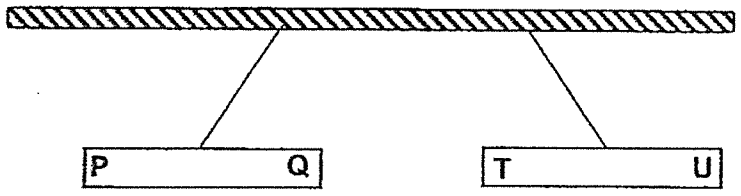
	P	Q	R
(1)	magnetic material	magnetic material	magnet
(2)	magnet	magnet	magnetic material
(3)	magnetic material	magnet	magnet
(4)	magnetic material	magnet	magnetic material

28 The diagram below shows what happened when Sally hung three bar magnets on a wooden pole.

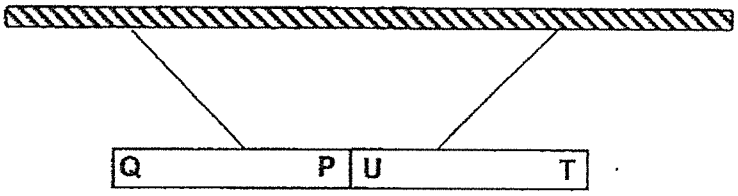


Based on the diagram given above, which of the following arrangements of the bar magnets is / are **not** possible?

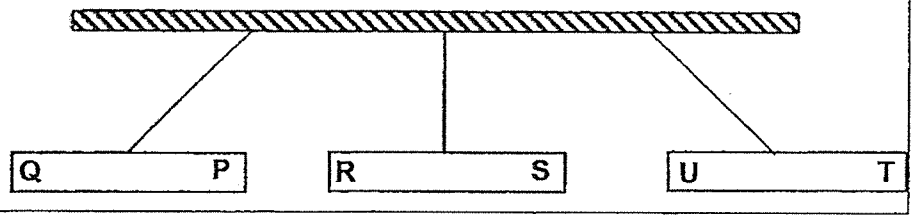
A



B



C



(1) B only

(2) A and B only

(3) A and C only

(4) B and C only

~ End of Booklet A ~

HENRY PARK PRIMARY SCHOOL

2024 END OF YEAR EXAMINATION

SCIENCE

PRIMARY FOUR

BOOKLET B

Name: _____ ( )

Class: Primary 4 ( )

13 QUESTIONS

44 MARKS

TOTAL TIME FOR BOOKLETS A & B: 1 HOUR 45 MINUTES

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.

Marks for Booklet B: _____ / 44

Section B

For questions 29 to 41, write your answers in the space provided.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

(44 marks)

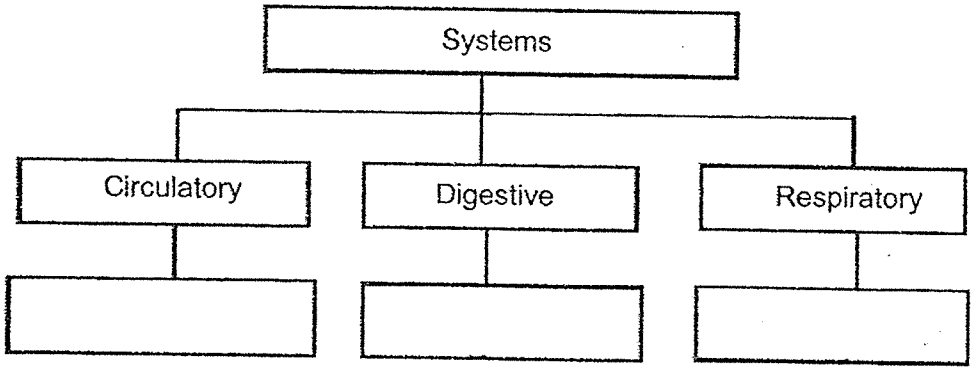
---

29 Tick (✓) the box if each of the following has a definite shape and/or a definite volume. [3]

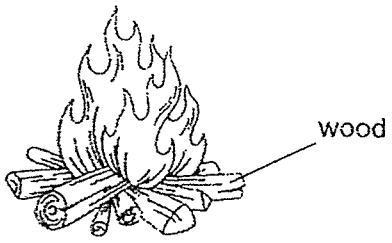
		Has definite shape	Has definite volume
(a)	air	☐	☐
(b)	marble	☐	☐
(c)	milk	☐	☐

30 Classify the following parts into the correct human systems. [3]

nose large intestine heart



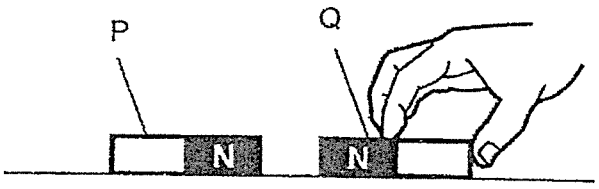
31 Burning wood provides energy.



The two forms of energy from burning wood are _____ [2]

and _____

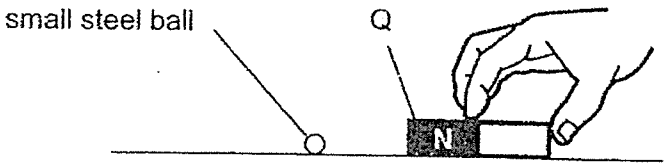
32 Magnet Q is brought near another magnet P.



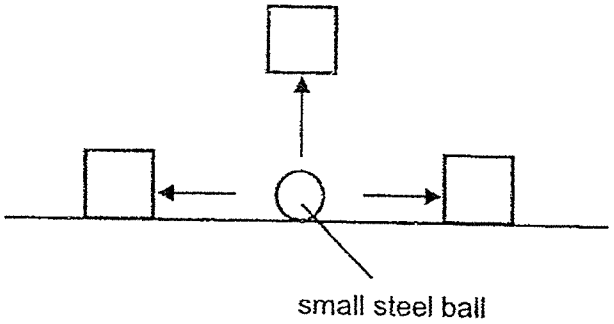
a) As the same poles of both magnets are facing each other, P and Q will [1]

_____

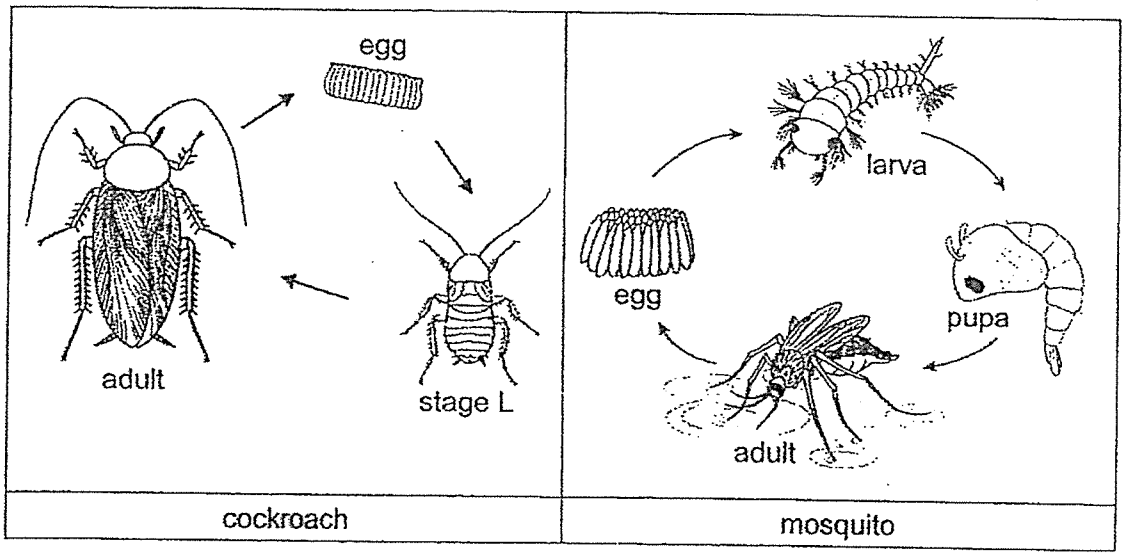
Q is then brought near a small steel ball.



b) Tick (✓) the box that shows the direction the steel ball will move. [1]



33 The diagram below shows the life cycle of a cockroach and a mosquito.



a) Which animal group(s) do the cockroach and the mosquito belong to? Explain your answer. [1]

b) Name stage L in the life cycle of the cockroach. [1]

c) State one difference between the two life cycles shown above. [1]

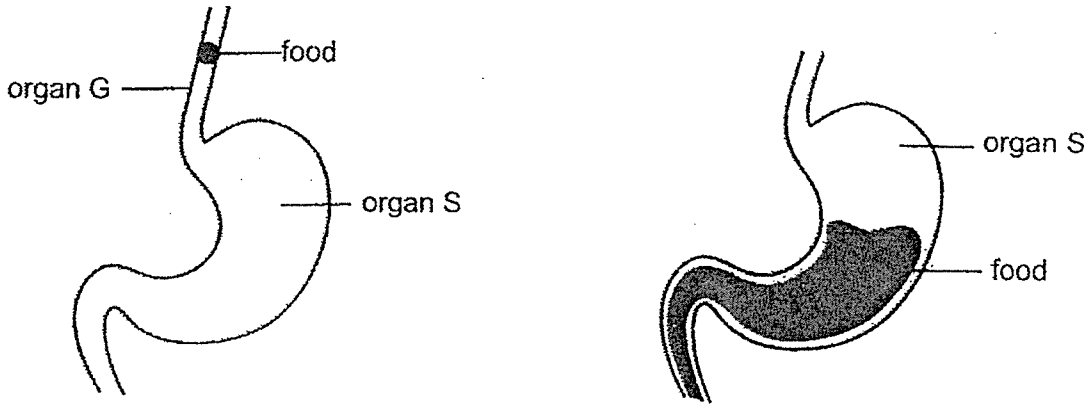
The table below shows the time taken for mosquitoes to reach the adult stage at different temperatures after the eggs are laid.

Surrounding Temperatures (°C)	27	30	34
Time taken for a mosquito to reach adult stage after eggs are laid (days)	18	13	9

d) Based on the information given, describe how changes in the surrounding temperatures are likely to affect the length of one complete life cycle of a mosquito. [1]

34 a) Describe what happens to the food when it enters the mouth that helps to speed up the digestion of the food. [2]

The diagrams show part of the human digestive system.



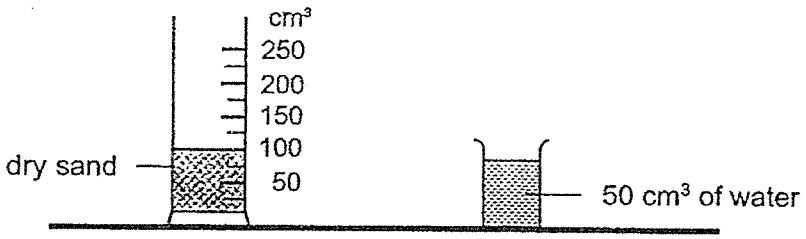
The diagrams show some food before it enters organ S and the same food leaving organ S four hours later.

b) State the function of organ G. [1]

c) In the diagram above, the food becomes liquid as it leaves organ S. [1]

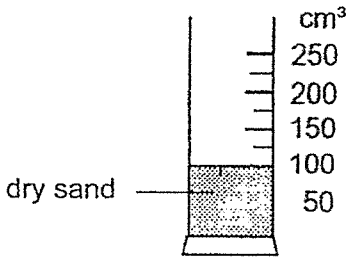
Give a reason for the change in appearance of the food.

35 Molly had 100 cm³ of dry sand in a measuring cylinder and 50 cm³ of water in a beaker as shown below.



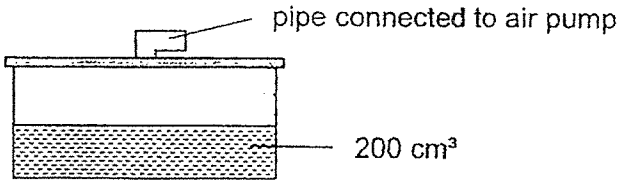
She poured the water slowly into the measuring cylinder without spilling.

a) In the measuring cylinder given below, using a pencil and a ruler, draw the water level that Molly will observe after pouring in the water. [1]



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

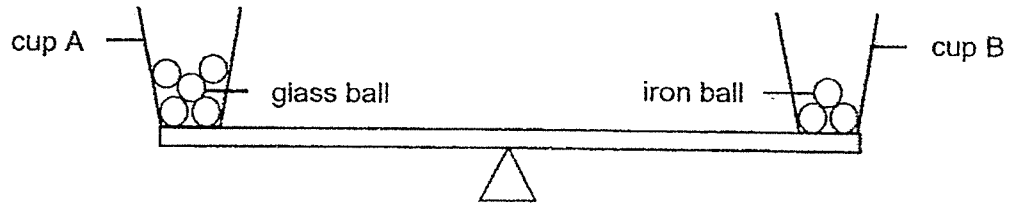
Belle poured 200 cm³ of water into a 500 cm³ container. She used a cover fixed with a pipe to seal the container as shown below.



She then pumped in 50 cm³ of air into the container through the pipe.

c) What is the volume of air in the container? Explain your answer. [2]

36 Siva placed identical cups A and B onto a balance.
He, then, put some glass balls and iron balls, of identical size, into cups A and B respectively as shown below.



a) Based on the diagram, is the mass of 1 glass ball **less than**, **more than**, or **the same** as 1 iron ball? [1]

_____

The iron balls are heated and placed back into cup B on the same balance.

b) A student predicted that the side of the balance with cup B containing the heated iron balls will tilt downwards.

Do you agree with her? Explain your answer. [1]

_____

_____

Siva poured water into cups A and B without spilling.

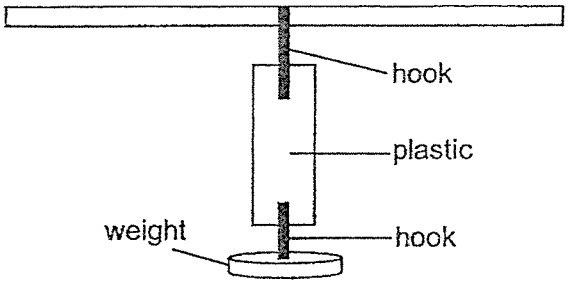
c) Which of the cups, A or B, shown in the diagram above, requires more water to be filled completely to the brim?

Explain your answer. [2]

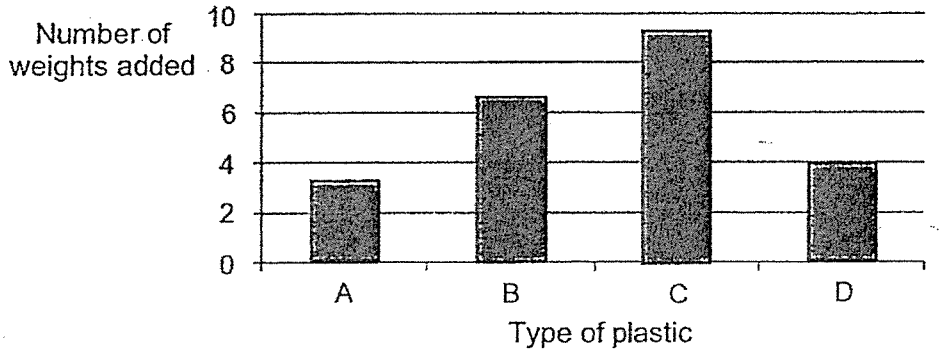
_____

_____

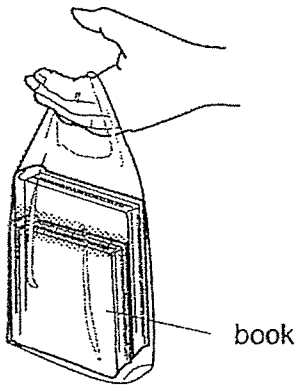
37 An experiment was conducted to test the strength of four different types of plastics, A, B, C and D.
Each piece of plastic was cut to similar sizes, and hung one at a time, onto the set-up shown below.



Each weight was added till the plastic tore. The data was recorded in the graph below. The weights are



Darius carries some heavy books in a plastic bag as shown below.



a) Which type of plastic (A, B, C or D) will be most suitable to make the plastic bag shown above? Explain why. [2]

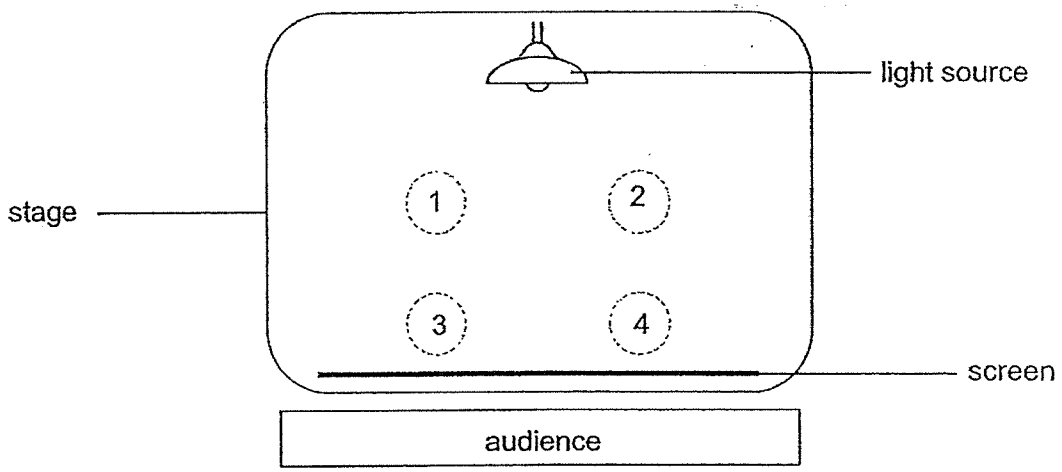
_____

_____

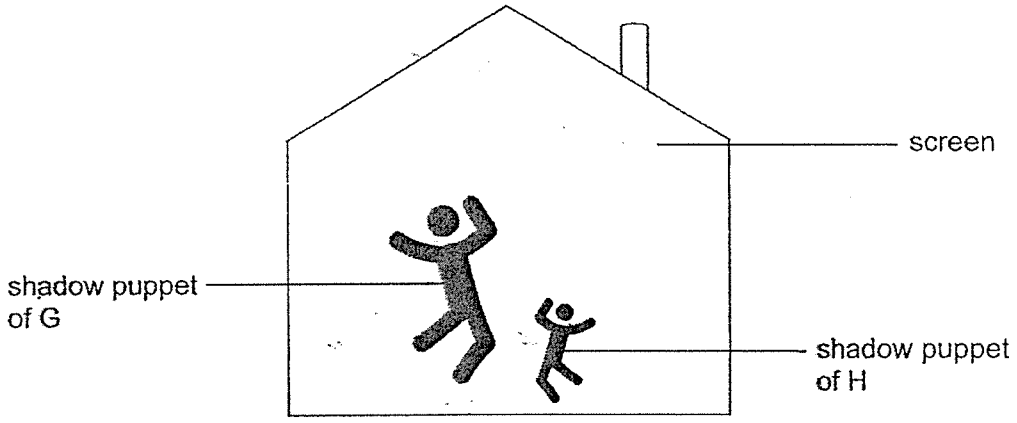
b) State another property of plastic that makes it a suitable material for making bags. [1]

_____

38 The diagram shows the layout of a stage for a shadow puppet show.



During the show, two plastic puppets, G and H of the same size and shape were used. The audience watching the show saw the shadows of the puppets on the screen as shown below.



a) Which positions 1, 2, 3 or 4 were puppets G and H placed to form the shadow above? [2]

Position of puppet G: ☐ Position of puppet H: ☐

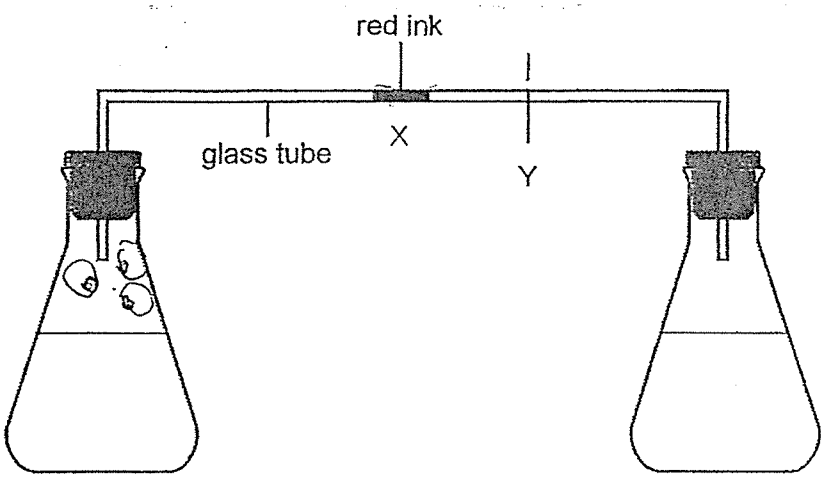
b) Explain your answer for the position of puppet H in (a). [1]

_____

_____

_____

39 Ben connected two flasks, A and B, with a glass tube containing red ink at position X as shown below.



i) ☐ ii) ☐

Ben added same volume of **hot water** and **cold water** into the two flasks at the same time to the above set-up to move the red ink to position Y.

a) Fill in the boxes (i) and (ii) in the above diagram with **hot water** and **cold water** correctly so that the red ink will move to position Y immediately. [1]

b) Explain your answers in (a). [2]

Box (i): _____

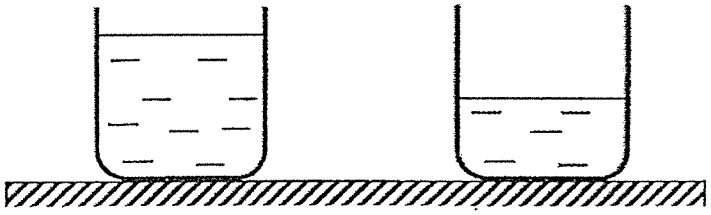
_____

Box (ii): _____

_____

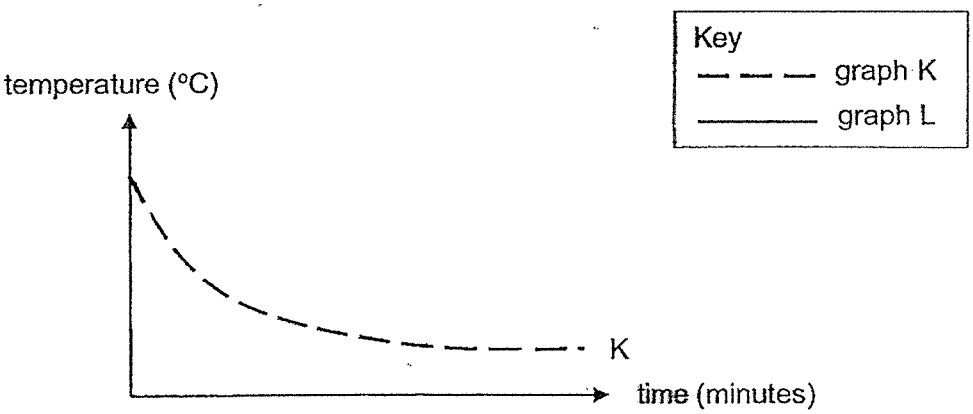
Question 39 continued

Ben placed two empty identical beakers, K and L, both initially at room temperature on a table.
He poured 500 ml of water into beaker K and 250 ml of water into beaker L as shown below.



Beaker K Beaker L

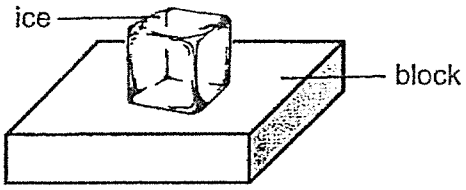
The temperature of water in beakers K and L were recorded every minute for some time.
The graph below shows the changes in the temperature of the water in beaker K.



The temperature of water in each beaker was the same at the start of the experiment.

c) Use a pencil to draw on the diagram above, the graph to show the changes in the temperature of the water in beaker L. [1]

40 Ihsan conducted an experiment using four similar blocks made of different materials, P, Q, R and S.
He placed an ice cube on each of the blocks as shown below measured the time taken for the ice to melt completely.



Time taken for the ice to melt completely on each block is measured and recorded in the table below.

Material of block	Time taken for ice to melt completely (s)
P	70
Q	210
R	180
S	140

a) State the aim of the experiment. [1]

_____

b) State two variables of the block that must be kept the same to ensure a fair test. [1]

(i) _____ of the block

(ii) _____ of the block

Ihsan wanted to serve ice cream on plates for his friends. He wanted the ice cream to remain cool for the longest time so that the ice cream does not melt easily.

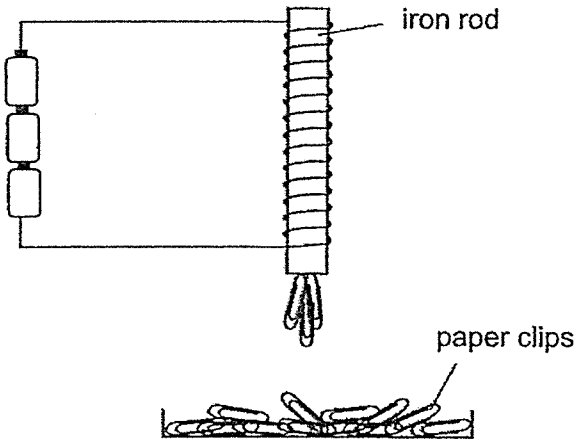
c) Based on the results of his experiment, which material P, Q, R and S is most suitable to make the plates? Explain why. [2]

_____

_____

_____

41 Bella wanted to find out if the number of coils affect the strength of an electromagnet. She carried out an experiment to determine the strength an electromagnet as shown in the diagram below.



Bella repeated the experiment using different number of coils and recorded her results as shown in the table below.

Number of turns of coils	Number of paper clips attracted
5	6
10	13
15	18
20	24
25	31

a) State the relationship between the number of coils and the strength of the electromagnet. [1]

_____

_____

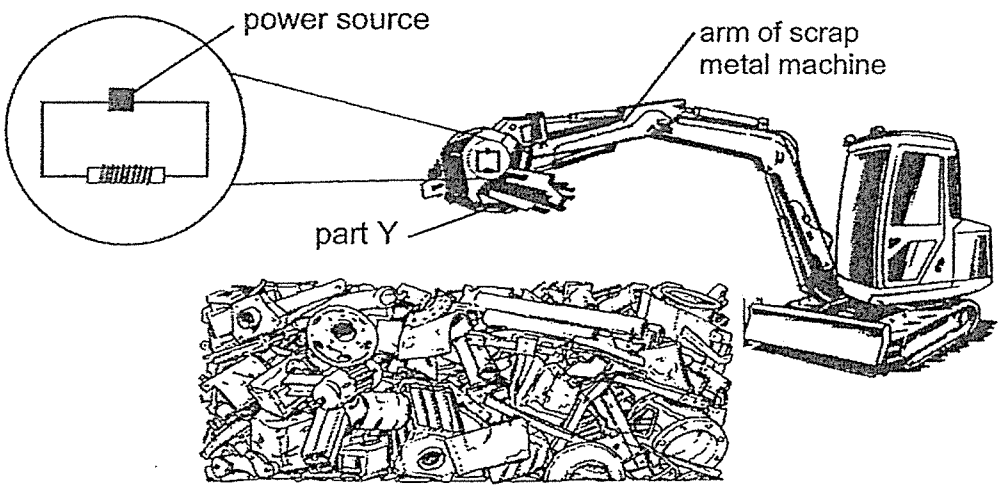
b) Bella used the same iron rod during the experiment.
Explain how using the same iron rod helps to make the experiment a fair test. [1]

_____

_____

Question 41 continued

A scrap metal machine uses an electromagnet in its arm to separate metals from waste materials as shown in the diagram below.



c) Describe what will be observed when the source of electricity is turned on. Explain your answer. [2]

_____

_____

_____

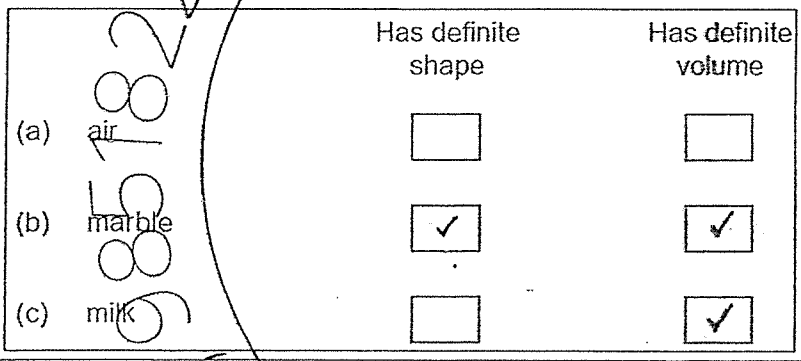
~ End of Booklet B ~

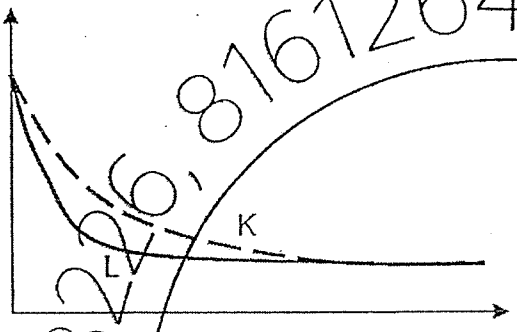
P4 SC EOY 2024 – Answer Key
(Henry Park Primary School)

Booklet A

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

Booklet B – OE Questions

QN	Answer
29	
30	Nose (respiratory), heart (circulatory) and large intestine (digestive)
31	heat and light
32	a) repel b) Tick (✓) ⟶
33	a) Insect . Both animals have six legs / have three body parts. b) nymph / young c) Mosquitoes have a pupal stage in their life cycle, but the cockroaches do not. Mosquitoes have 4 stages (in their life cycle) while cockroaches have 3 stages (in their life cycle) The young of the cockroach looks like the adult but the young of the mosquitoes does not. d) As surrounding temperatures increases the length of one complete lifecycle of a mosquito becomes decreases.
34	a) Food is chewed into smaller pieces food and is broken down into simple or simpler substances. b) Organ G pushes food / moves food down / transports food to the stomach. c) Digestive juices break food down into simpler / simple substances.

35	a) Water level should be drawn below 150 ml and above 100 ml b) There are tiny air spaces in the sand. Some water takes up the spaces between the sand. c) 300 cm^3 as air can be compressed / has no definite volume / has indefinite volume.
36	a) Less than b) No, the mass of the iron ball does not increase / change when it expands. c) Cup B as the iron balls occupy less space (in the cup). /lesser balls so more space.
37	a) Claim - Plastic C. Evidence - It is able to hold the most number of weights without breaking so it is the strongest b) It is waterproof / flexible/flexibility
38	a) Position of puppet G – 1, Position of puppet H – 4 b) The puppet must be closer to the screen. /Puppet H is further away from the light source.
39	a) (i) Flask A – hot water, (ii) Flask B – cold water b) Air in flask A gains heat from the hot water and expands. OR Air in flask B loses heat to the cold water [1] and contracts. c) 
40	a) To find out if / how the material of the block affects the time taken for the ice cube to melt completely. b) Temperature of block Thickness / size / length / breadth / width / volume / mass / shape of block c) Material Q. Ice takes the longest time to melt **completely** on the block. OR Q is the poorest conductor of heat / Q allows heat to flow from the surrounding air to the ice cream slowest.
41	a) As the number of turns of coils increases the strength of the electromagnet increases b) It ensures that the only variable that changes in this experiment is the number of turns of the coils OR It ensures that the only variable that affects the strength of the electromagnet is the number of turns of the coils. c) Magnetic metals will be attracted to the part Y of the machine as part Y becomes an electromagnet / temporary magnet / magnet when the source of electricity is turned on.

END