Rosyth School
End-of-Year Examination 2024
SCIENCE
Primary 4

Name: _____ Total Marks: /60

Class: Pr 4 _____ Register No. _____

Date: 24 October 2024 Parent's Signature: _____

Duration: Total time for Booklets A and B: 1h 45min

Booklet A

Instructions to Pupils:

1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets, Booklet A and Booklet B
4. For questions 1 to 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.** (60 marks)

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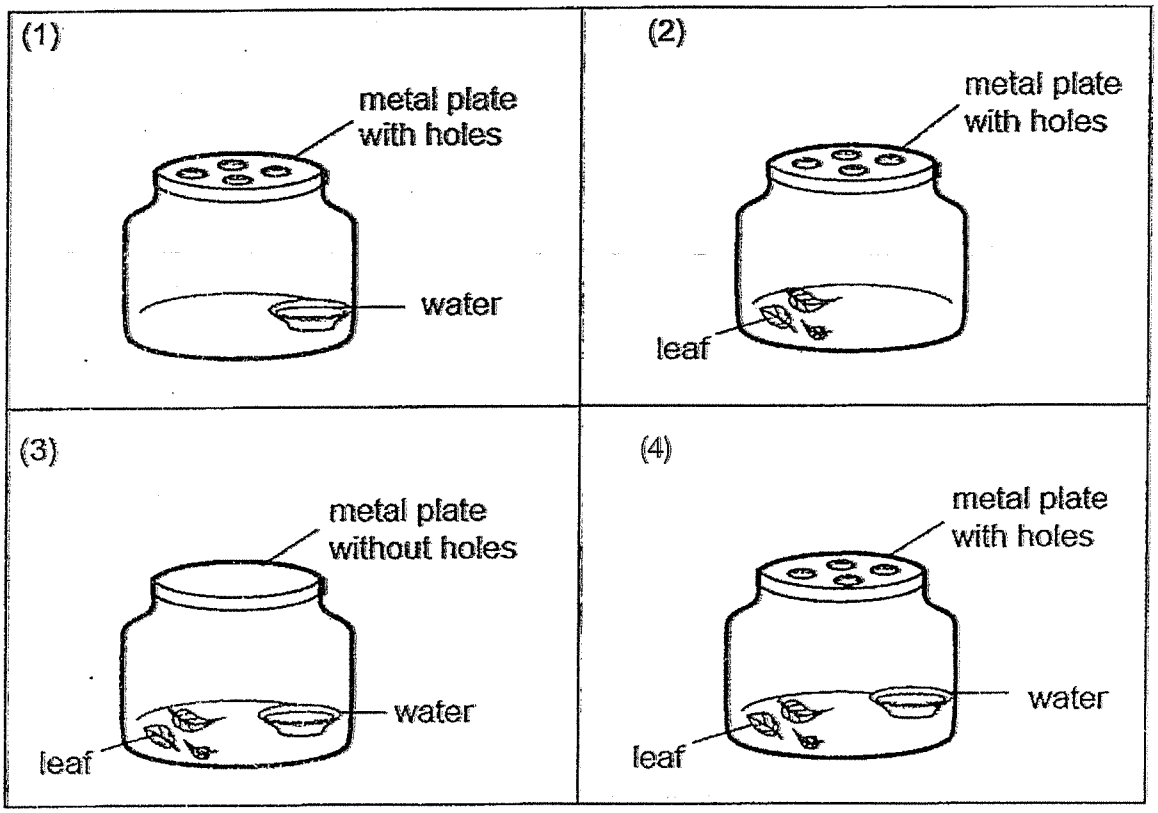
1. Zoe learns that all living things need air, water and food to stay alive.
Which set-up can she use to keep her grasshopper alive?

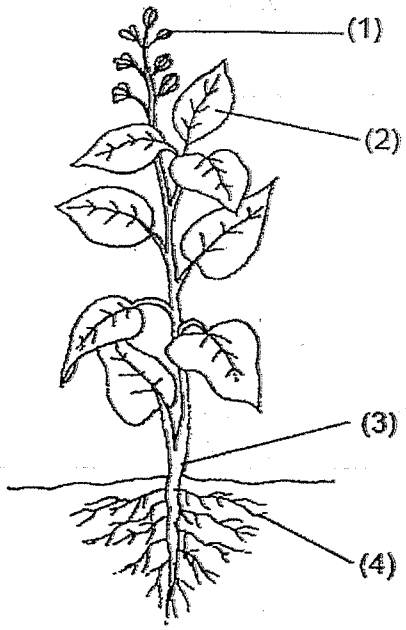


2. Sam made the following observations on the life cycle of an animal.
   - There are three stages in the life cycle.
   - The young looks like the adult.

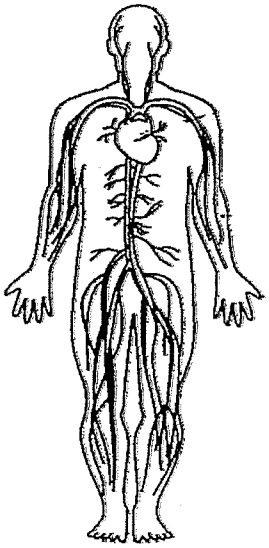
Which animal was Sam observing?

(1) frog
(2) butterfly
(3) mosquito
(4) cockroach

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

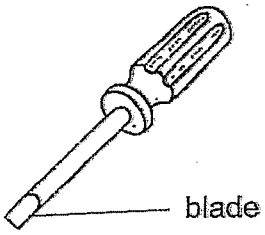


4. Which human system is shown in the diagram?



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

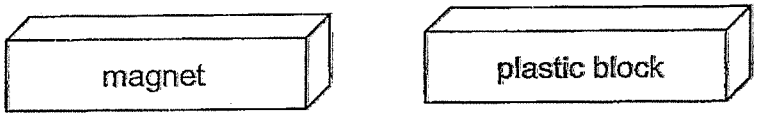
5. The diagram shows a screwdriver.



Metal is used to make the blade of the screwdriver because metal _____.

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

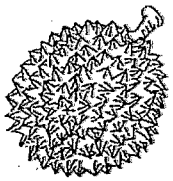
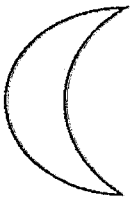
6. The diagram shows a magnet brought near a plastic block.



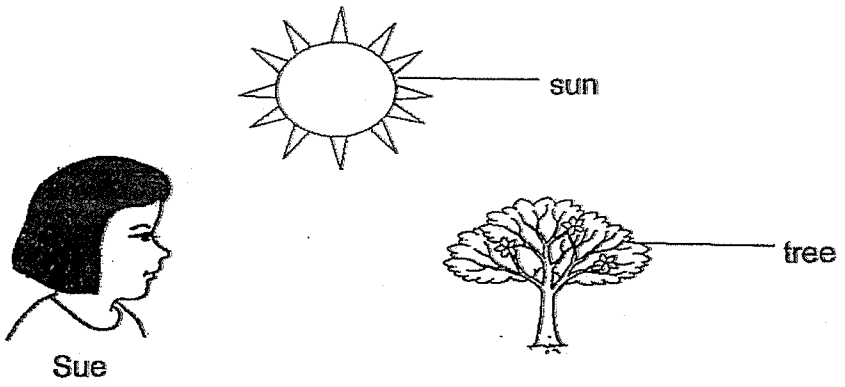
What will happen to the plastic block?

(1) It will move up.
(2) It will not move.
(3) It will move to the left.
(4) It will move to the right.

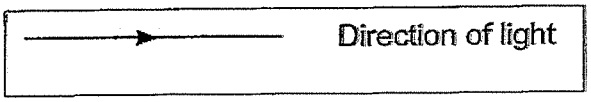
7. Which one of the following is a source of light?

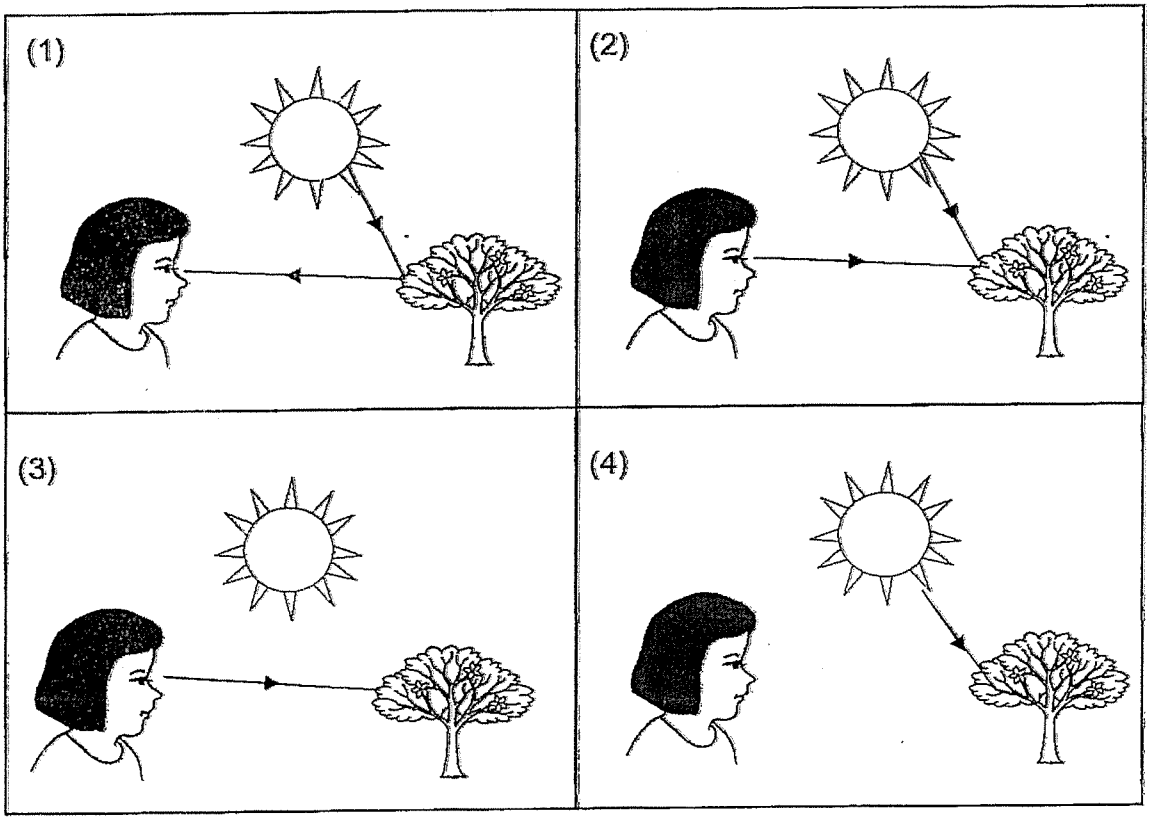
(1)  a fire	(2)  a durian
(3)  the moon	(4)  a leaf

8. Look at the picture below.



Which one of the following explains why Sue can see the tree in the park?

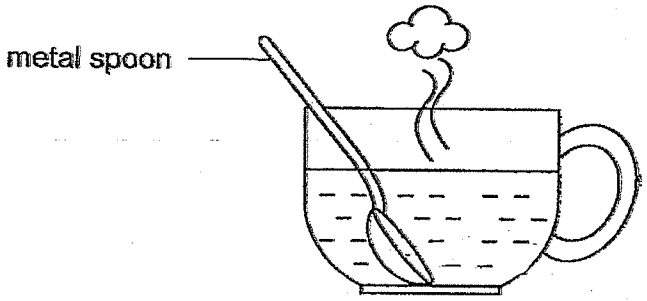




9. Which one of the following is **not** a source of heat?

(1) the Sun
(2) a lighted bulb
(3) a candle flame
(4) a woollen jacket

10. Danny places a metal spoon in a cup of hot coffee.



a cup of hot coffee

The spoon becomes hotter after a while.
Which one of the following explains this?

(1) The cup loses heat to the hot coffee.
(2) The spoon loses heat to the hot coffee.
(3) The hot coffee gains heat from the spoon.
(4) The spoon gains heat from the hot coffee.

11. The table below shows the characteristics of four animals, J, K, L and M.

Animal	Method of reproduction	Body covering
J	lays eggs	scales
K	lays eggs	feathers
L	gives birth	hair
M	gives birth	moist scales

Which of the animal J, K, L or M is the bird?

(1) J
(2) K
(3) L
(4) M

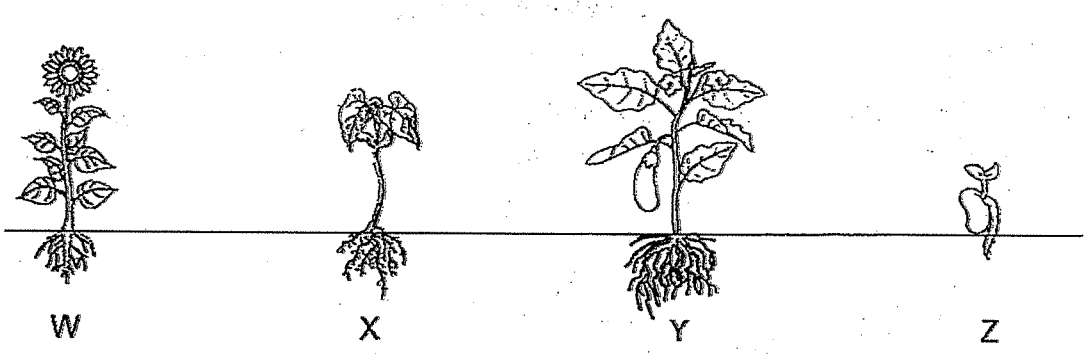
12. Which of the following human system is matched **incorrectly** to its part?

	Human System	Part
(1)	muscular	heart
(2)	muscular	muscles
(3)	skeletal	skull
(4)	skeletal	rib cage

13. Zul had a stomachache and passed out watery stools.
Which part of his digestive system is not functioning well?

(1) gullet
(2) stomach
(3) small intestine
(4) large intestine

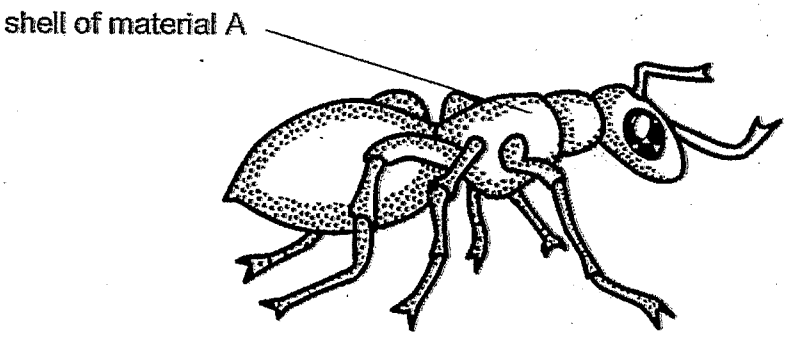
14. Look at the pictures of the four different plants below.



Which of the above plants, W, X, Y and/or Z, **cannot** make their own food?

(1) X only
(2) X and Z only
(3) W and Y only
(4) None of the above

15. An insect is covered in a shell that supports its body and protects its organs. This shell is made of material A.



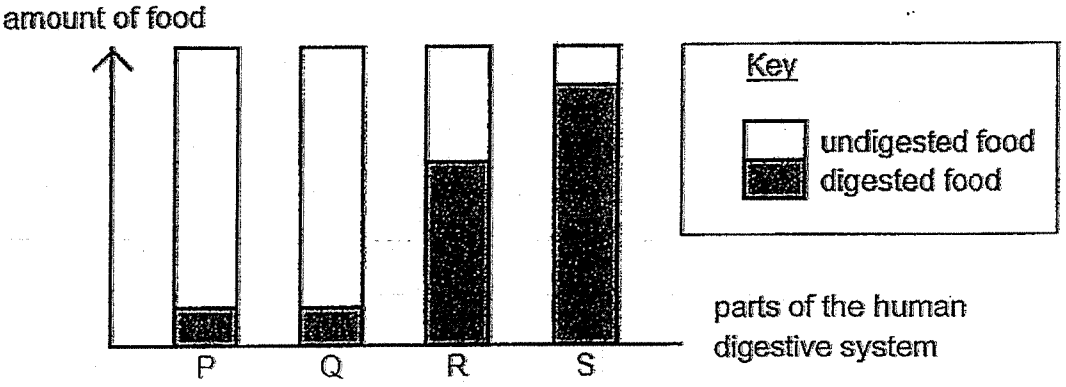
Which property of material A allows the shell to perform the functions described?

(1) strength
(2) flexibility
(3) waterproof
(4) ability to float

16. Study the graph below to answer questions 16 and 17.

P, Q, R and S represent the different parts in the human digestive system.

The graph below shows the amount of undigested and digested food leaving the different parts of the human digestive system.



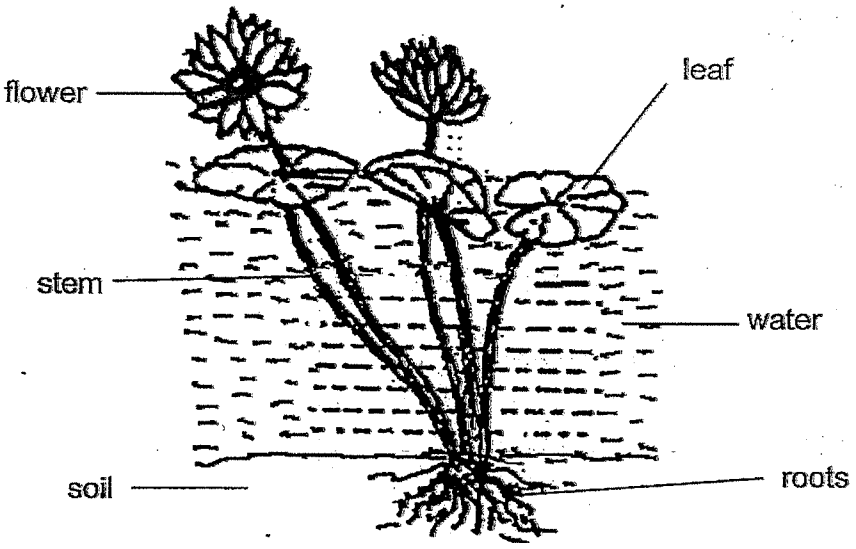
Based on the graph above, identify parts P, Q, R and S.

	P	Q	R	S
(1)	gullet	mouth	small intestine	stomach
(2)	mouth	gullet	stomach	small intestine
(3)	large intestine	small intestine	gullet	mouth
(4)	mouth	gullet	small intestine	large intestine

17. What happens to the amount of undigested food and digested food in the next part of the human digestive system after leaving part S?

	Undigested food	Digested food
(1)	decreases	remains the same
(2)	remains the same	increases
(3)	remains the same	decreases
(4)	decreases	increases

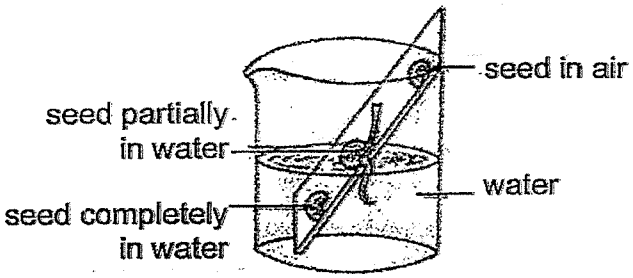
18. The picture below shows a water plant in a pond.



Which of the following plant part and the function is **not** correct for this plant?

	Plant part	Function of the plant part
(1)	leaf	takes in and gives out gases
(2)	stem	takes in water and minerals
(3)	roots	hold the plant to the soil
(4)	flower	develops into a fruit

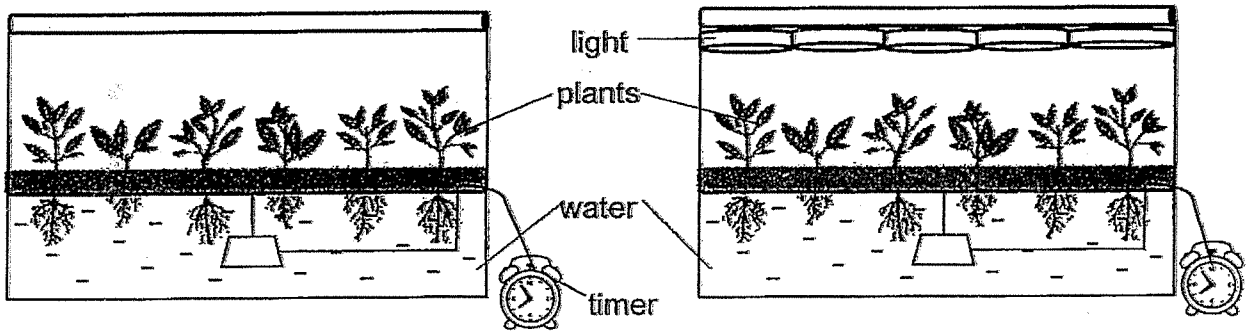
19. Ali carried out an experiment as shown below.



Based on the observation, which of the following is the changed variable?

(1) presence of air
(2) volume of water
(3) presence of light
(4) number of seeds

20. Banu set up two hydroponic systems, A and B, as shown below.

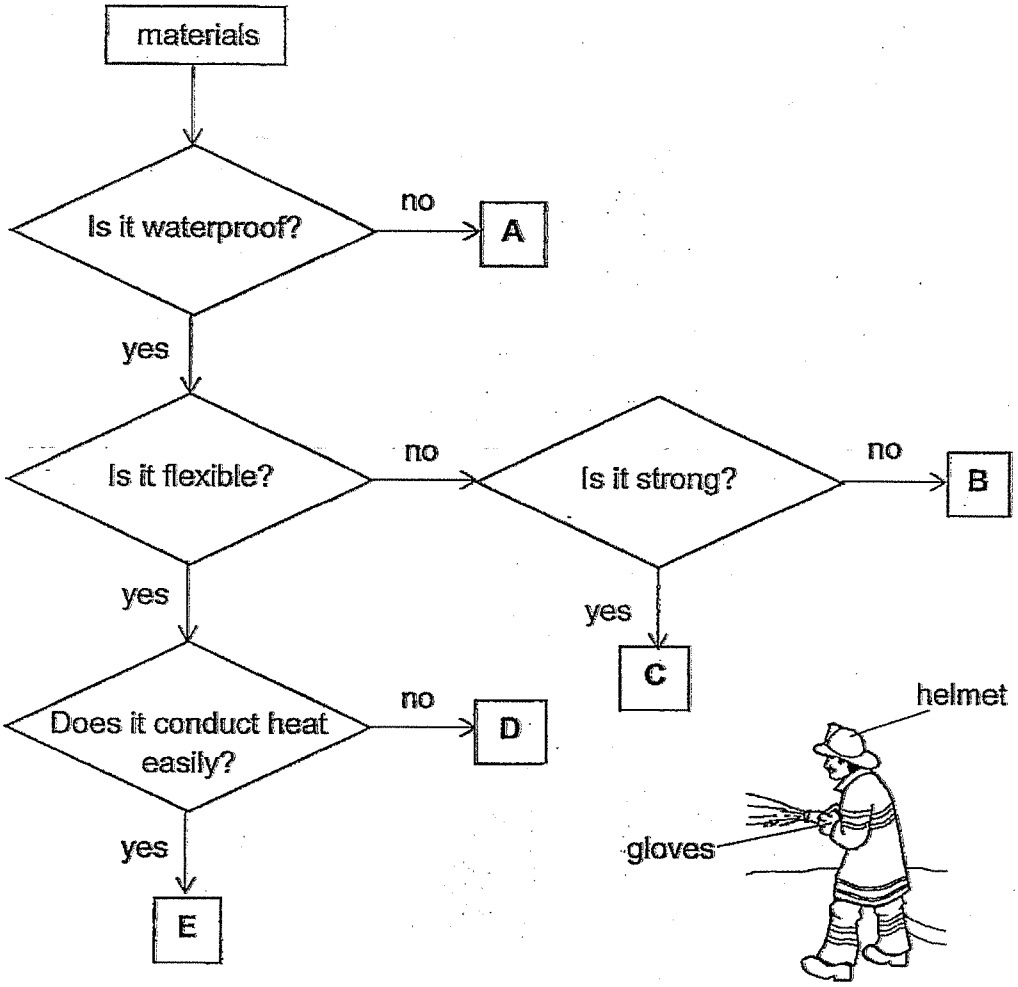


Set-up A Set-up B

Based on the observation, what is most likely the aim of the experiment?

(1) To find out if the amount of light affects the growth of plants.
(2) To find out if the amount of time affects the growth of plants.
(3) To find out if the volume of water affects the growth of plants.
(4) To find out if the number of leaves affects the growth of plants.

21. The flow chart below shows the properties of materials, A, B, C, D and E.



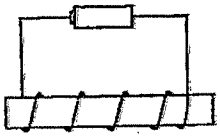
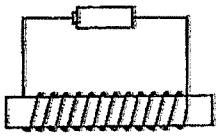
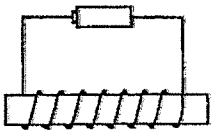
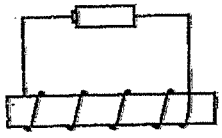
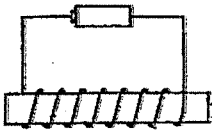
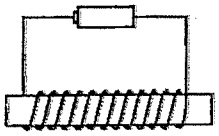
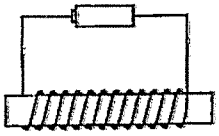
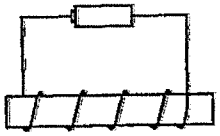
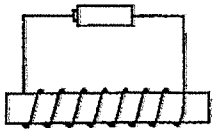
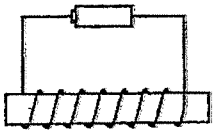
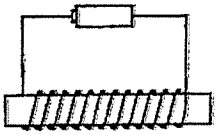
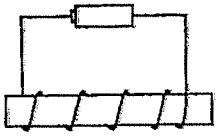
A firefighter wears the helmet to protect his head and gloves to prevent himself from being burnt. Based on the information above, which of the following shows the most suitable material for making the gloves and helmet for the firefighters?

	Gloves	Helmet
(1)	D	B
(2)	B	E
(3)	D	C
(4)	C	A

22. The number of iron nails that electromagnets, X, Y and Z, could attract is recorded in the table below.

Electromagnet	Number of iron nails attracted
X	7
Y	16
Z	4

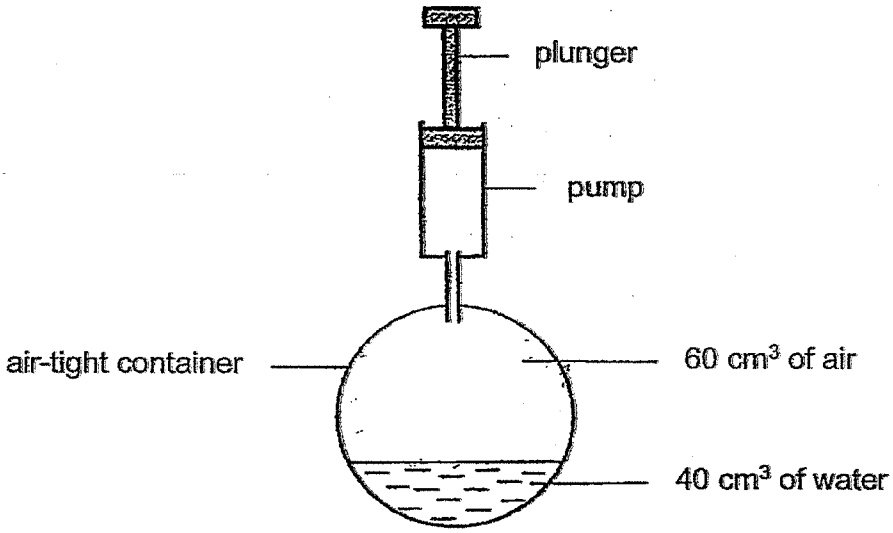
Based on the above results, which of the following set-ups could represent electromagnets, X, Y and Z, correctly?

	X	Y	Z
(1)			
(2)			
(3)			
(4)			

23. Which one of the following is a matter?

(1) air
(2) light
(3) heat
(4) shadow

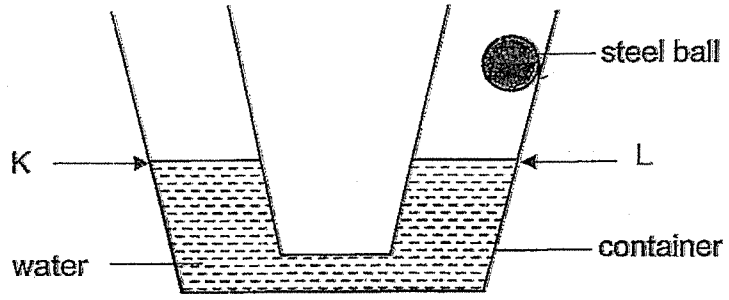
24. The container holds 40 cm^3 of water and 60 cm^3 of air.



When the plunger was pushed in completely, 10 cm^3 of air was forced into the container. What would be the final volume of air in the container?

(1) 40 cm^3
(2) 50 cm^3
(3) 60 cm^3
(4) 70 cm^3

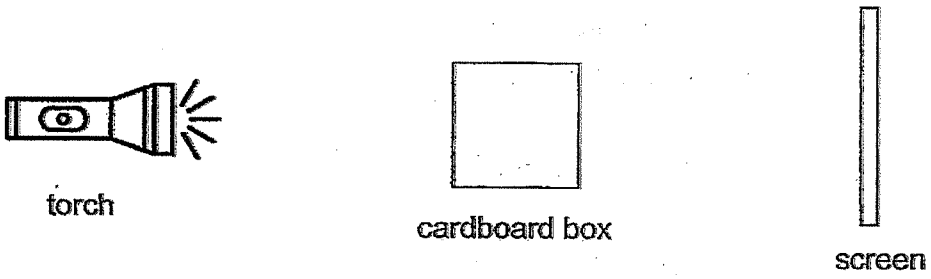
25. Study the diagram below.



What will happen to the water level at K and L and the volume of water in the container when the steel ball is gently rolled into the water completely?

	water level at K	water level at L	volume of water
(1)	increases	increases	remains the same
(2)	decreases	increases	increases
(3)	increases	decreases	decreases
(4)	decreases	decreases	remains the same

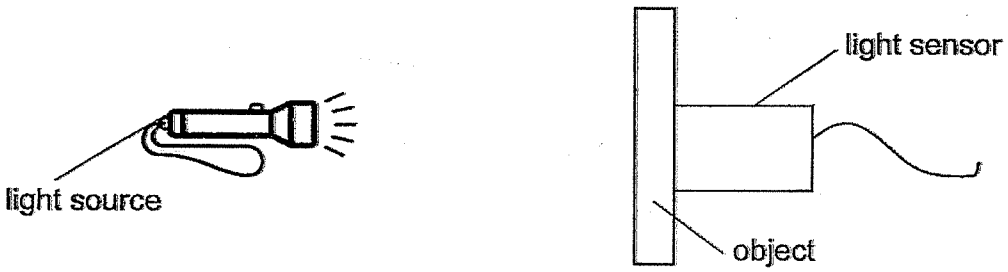
26. When the light from the torch shines on the cardboard box, a shadow is cast on the screen.



To make the shadow bigger, you should move the _____.

(1) cardboard box nearer to the torch
(2) screen nearer to the cardboard box
(3) cardboard box further away from the torch
(4) torch further away from the cardboard box

27. Joseph set up an experiment below to find out how the thickness of an object would affect the amount of light passing through it.

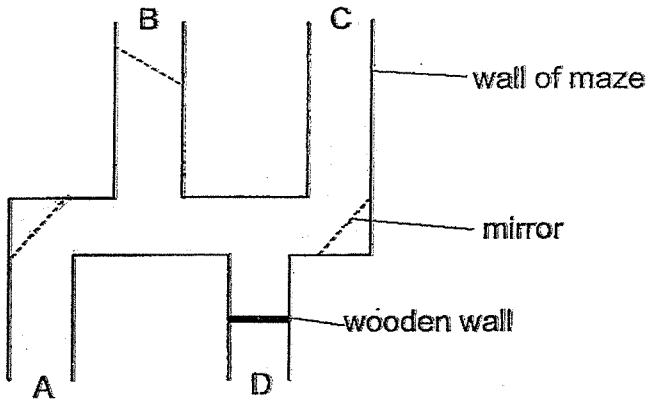


Which of the following variables should Joseph keep the same to ensure a fair test?

A: The type of light source
B: The material of the object
C: The thickness of the object
D: The distance between the light sensor and the light source

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

28. Jacky and Dan entered a maze as shown below. There were 3 mirrors placed at different parts of the maze. A wooden wall was set up in the maze as shown below.

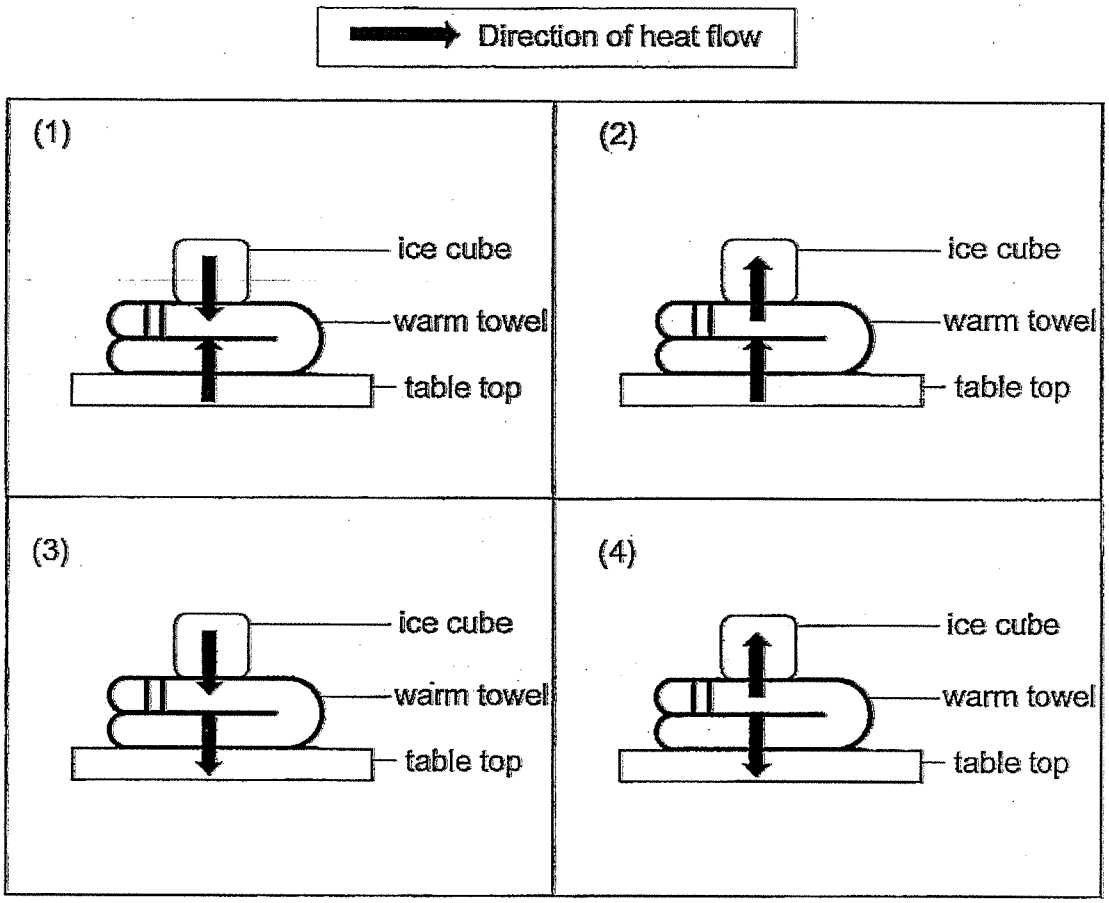


Where would the positions of Jacky and Dan be in the maze so that they could see each other?

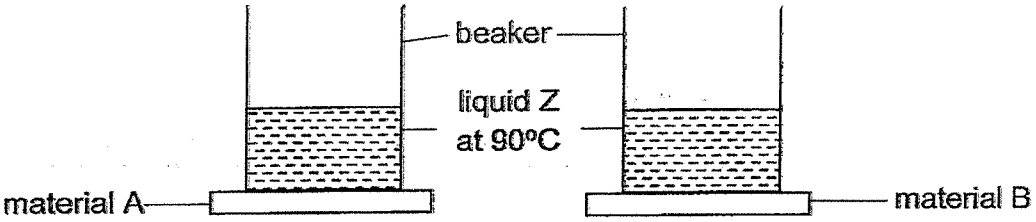
	Position of Jacky	Position of Dan
(1)	A	D
(2)	B	C
(3)	C	A
(4)	D	B

29. Savinah placed a warm towel of 60°C on a table top. The temperature of the table top is 24°C. She then placed an ice cube on top of the warm towel.

Which one of the following correctly shows how heat travels between the ice cube, warm towel and table top during the first two minutes?

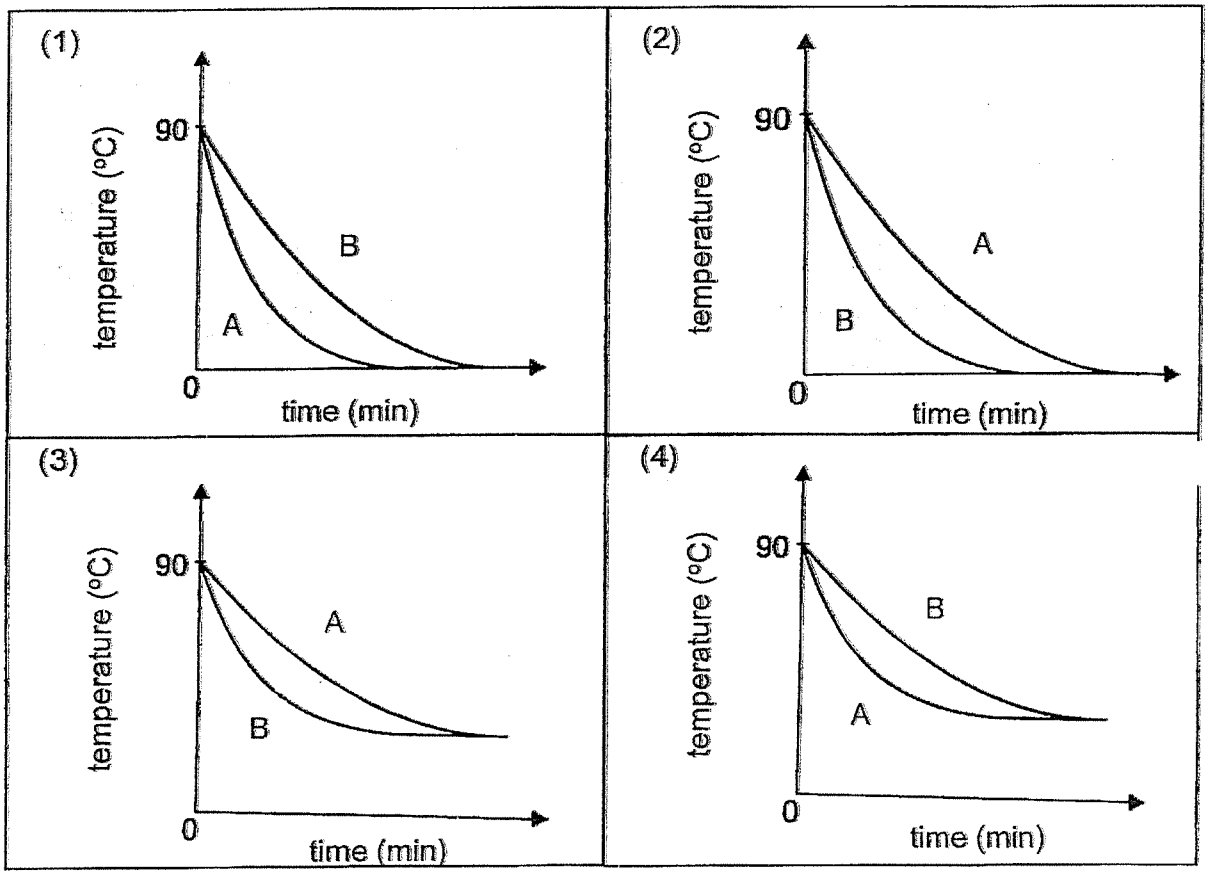


30. Sean wanted to find out if material A or B is a better conductor of heat. He placed a beaker containing liquid Z at 90°C on materials A and B respectively at room temperature of 25°C.



He recorded the change in temperature of liquid Z in each beaker. He then concluded that material B was the better conductor of heat.

Which one of the following graphs best represents the temperature of liquid Z in each beaker over some time?



GO ON TO BOOKLET B

Rosyth School
End-of-Year Examination 2024
SCIENCE
Primary 4

Total Marks: 40

Name: _____

Class: Pr 4 _____ Register No. _____

Date: 24 October 2024 Parent's Signature: _____

Duration: Total time for Booklets A and B: 1h 45min

Booklet B

Instructions to Pupils:

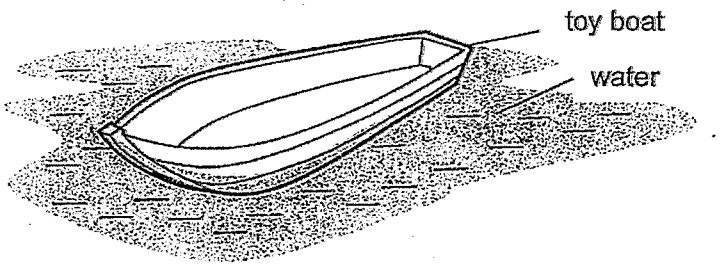
1. Please do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.

	Maximum	Marks Obtained
Booklet A	**60 marks**	
Booklet B	**40 marks**	
Total	**100 marks**	

* This booklet consists of 12 printed pages (including this cover page).

For questions 31 to 41, write your answers in this booklet. (40 marks)

31. Martha places a toy boat in water.



The toy boat stays on the surface of water.

(a) This shows that the toy boat _____ in water. [1]

(b) Circle the correct answer. [1]

Water cannot enter the boat because it is made of a (*flexible* / *strong* / *waterproof*) material.

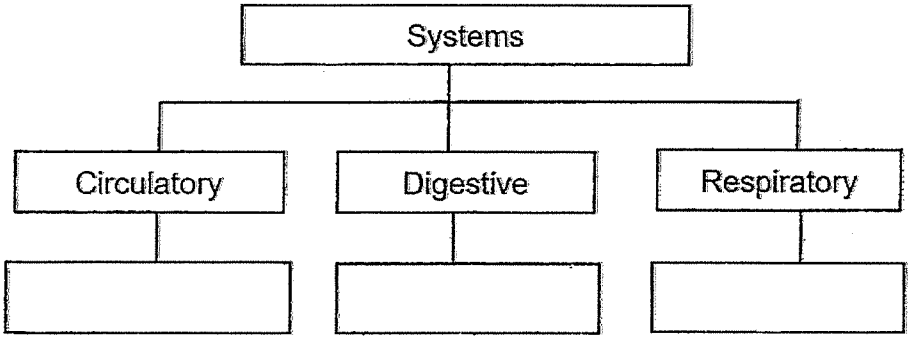
(c) Fill in the blanks with the correct answers. [2]

The toy boat is a matter because it _____ and

_____ .

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

Mouth	Nose	Heart

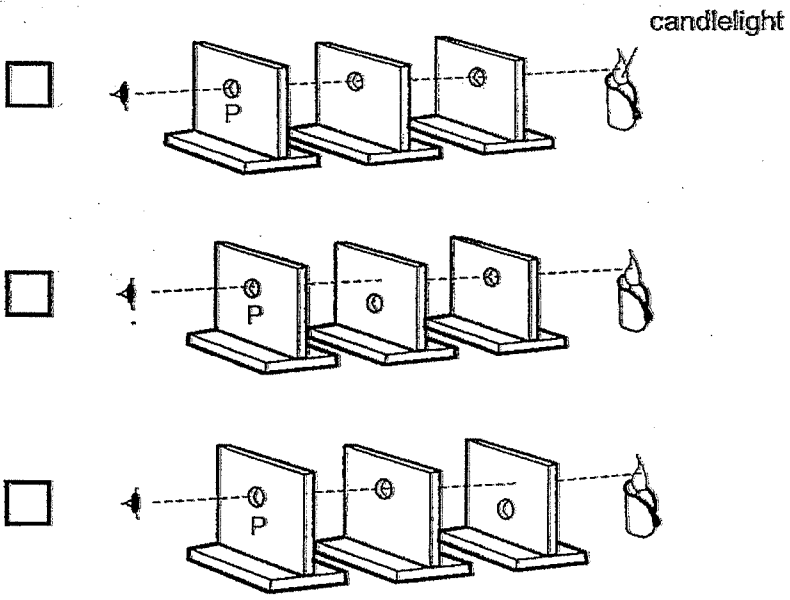


33. Tick (✓) the box if each of the following has a definite shape and/or a definite volume. [3]

		Has a definite shape	Has a definite volume
(a)	water		
(b)	plastic bottle		
(c)	air		

34. Cindy conducts an experiment to investigate how light travels.

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



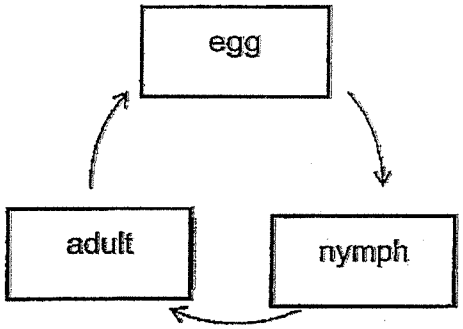
(b) Circle the correct answer. [1]

The candlelight is the (*shadow* / *source of light*) in this experiment.

(c) What can Cindy conclude about how light travels? [1]

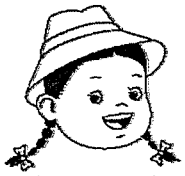
_____

35. The diagram below shows the life cycle of Living Thing Y.



Life cycle of Living Thing Y

(a) In the box(es) below, tick (✓) the correct statement(s) that best describes the life cycle of Living Thing Y. [1]



Student A

Living Thing Y is most likely an insect. ☐

Student B

The young of Living Thing Y does not resemble the adult. ☐

Student C

Living Thing Y lays one egg at a time. ☐

(b) State one similarity between the life cycles of Living Thing Y and a plant. [1]

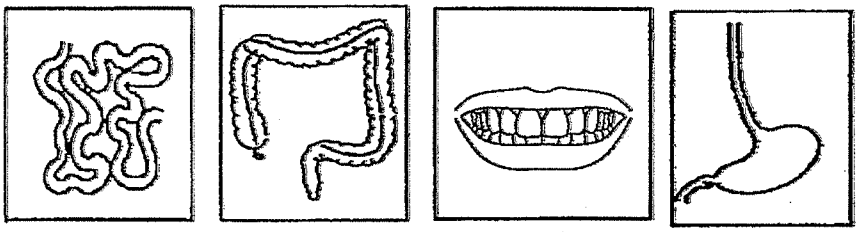
_____

_____

(c) Circle another living thing that has a similar life cycle as living thing Y. [1]

(*chicken* / *frog* / *mealworm beetle* / *grasshopper*)

36. The diagrams below show four parts, A, B, C and D, of a human system.



(a) State the human system that part A, B, C and D belong to. [1]

_____

(b) What is the function of the human system identified in part (a)? [1]

_____

_____

(c) State one difference between part A and B in terms of their absorption of substances into the bloodstream. [1]

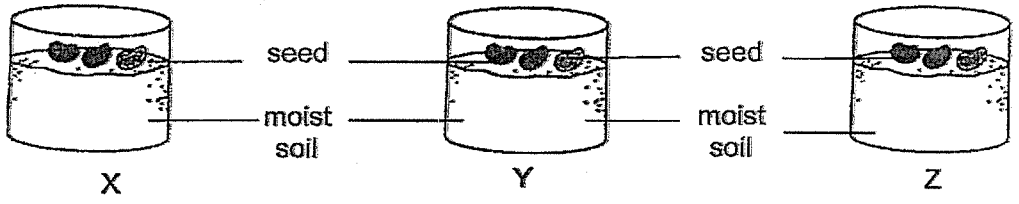
_____

_____

(d) Which parts, A, B, C and D, produce digestive juices? [1]

_____

37. Container X, Y and Z have the same amount of moist soil and same number of similar seeds. The containers are placed in locations with different surrounding temperatures.



(surrounding temperature of 5°C) (surrounding temperature of 28°C) (surrounding temperature of 35°C)

The results are recorded below.

	Height of the seedling (cm)				
Container	**Day 0**	**Day 2**	**Day 4**	**Day 6**	**Day 8**
X	0	0	0	0	0
Y	0	1	2	3	4
Z	0	2	3	4	5

(a) Which part of the plant appears first? [1]

_____

(b) What is the function of the plant part identified in part (a)? [1]

_____

(c) Based on the results, give a reason why the seeds in container X did not germinate. [1]

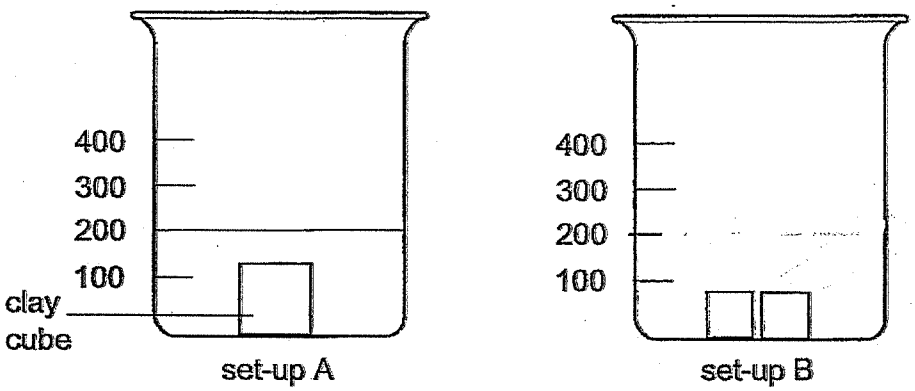
_____

(d) Compare the results of container Y and Z. [1]
State the relationship between the surrounding temperature and the height of the seedling.

_____

_____

38. Suzy placed a clay cube into a beaker containing 100 cm^3 of water. The water level rose to the level shown in set-up A.



(a) What is the state of matter of the clay cube? [1]

_____

(b) What property of matter causes the water level to rise? [1]

_____

(c) Suzy then cut the same clay cube into two smaller pieces of clay cubes and put them into the beaker as shown in set-up B.

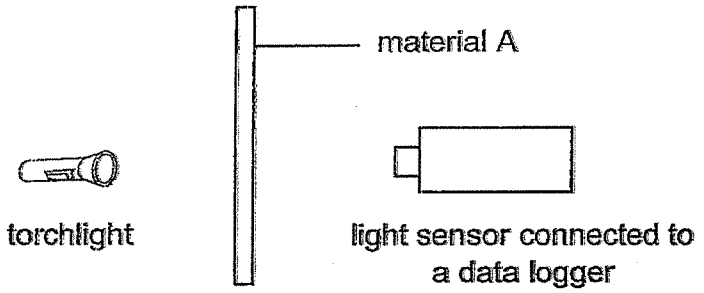
Using a pencil and a ruler, draw the water level in set-up B. [1]

(d) What property of the clay cube support your answer in (c)? [1]

_____

_____

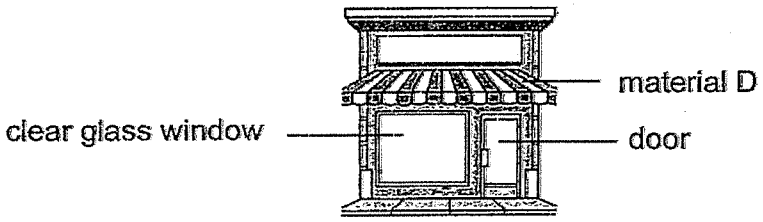
39. Justin conducted an experiment in a completely dark room to find out the amount of light that could pass through material A.



He repeated this experiment using different materials, B and C, one at a time. He then recorded the results in the table below.

Type of material	Amount of light detected by the light sensor (lux)
A	500
B	40
C	1200
D	?

The picture below shows a shop.



(a) Material D is used to make the shelter of the shop. It does not allow light to pass through. What is the amount of light detected by the light sensor? [1]

_____ lux

(b) The clear glass window of a shop is designed to allow people to see inside the shop clearly. Based on Justin's experiment, which material, A, B or C, is most suitable for making the clear glass window? Give a reason. [1]

_____

_____

QUESTION 39 CONTINUES ON THE NEXT PAGE

(c) Material B is used to make the door of the shop. Explain why the shoppers can see the door. [1]

(d) Give a reason why Justin conducted the experiment in a completely dark room. [1]

40. Mary wanted to cool down a bottle of water quickly. She placed the bottle of water on top of a block of ice as shown below in the diagram 1.

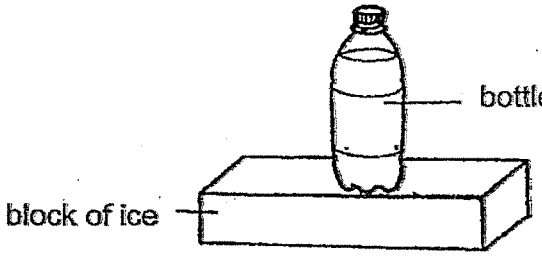


Diagram 1

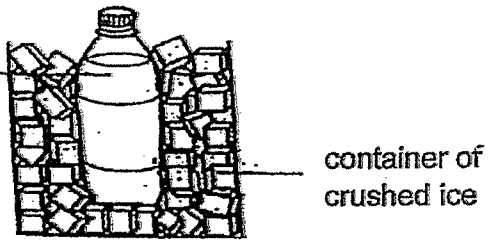
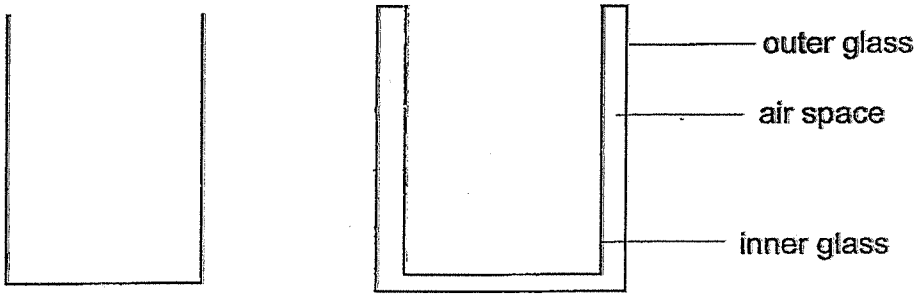


Diagram 2

(a) Explain how would placing a bottle of water in a container of crushed ice help to cool it faster, as shown in diagram 2. [2]

Mary then poured 100 ml of cold water from the bottle into two glasses, A and B. Glass A is single-layered while glass B is double-layered with air space in between.

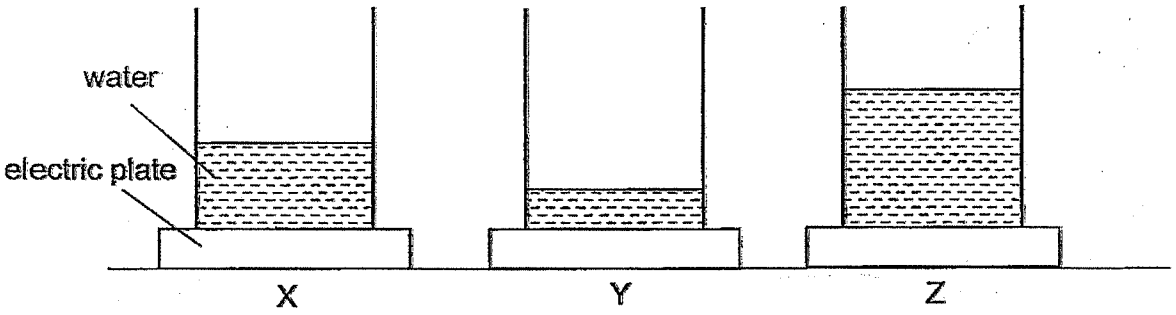


glass A glass B

After some time, Mary measured the temperature of the water in both glasses.

(b) Explain why the water in glass B is colder than the water in glass A. [2]

41. The diagram below shows three beakers, X, Y and Z, with different volumes of water. They were placed on three identical electric plates and heated till the water boiled.

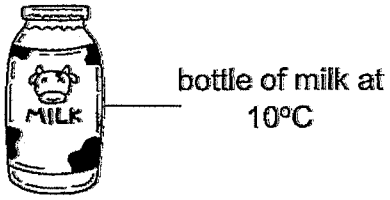


The time needed for the water to reach 100°C was recorded down.

(a) Based on the diagram above, arrange beakers, X, Y and Z, in the table below, beginning with the beaker of water that took the shortest time to boil to the beaker of water that took the longest time. [1]

Shortest time to boil →		**Longest time to boil**

Sophia took a bottle of cold milk out of the fridge as shown below.



(b) She used one of the beakers of boiling water to warm the cold milk. What happens to the water level in the beaker when she put the bottle of milk into one of the beakers of boiling water? [1]

_____

QUESTION 41 CONTINUES ON THE NEXT PAGE

(c) In which beaker of boiling water, X, Y or Z, should she put the bottle of milk to warm the milk the fastest? Explain your answer. [2]

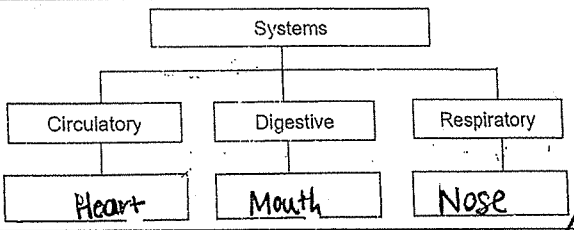
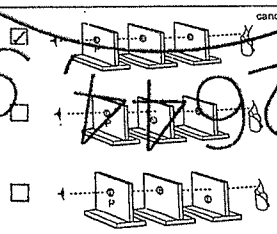
_____

_____

END OF PAPER

YEAR : 2024
LEVEL : PRIMARY 4
SCHOOL : ROSYTH SCOOL
SUBJECT : SCIENCE
TERM : END OF YEAR EXAMINATION

Q1	4	Q2	4	Q3	2	Q4	3	Q5	2
Q6	2	Q7	1	Q8	1	Q9	4	Q10	4
Q11	2	Q12	1	Q13	4	Q14	4	Q15	1
Q16	2	Q17	3	Q18	2	Q19	2	Q20	1
Q21	3	Q22	4	Q23	1	Q24	3	Q25	1
Q26	1	Q27	3	Q28	3	Q29	4	Q30	3

Q31	a) float b) waterproof c) has mass occupies space
Q32	
Q33	a) has a definite volume (water) b) has definite shape and volume (plastic bottle) c) none (air)
Q34	 a) b) source of light c) light travels in a straight line
Q35	a) living thing Y is most likely an insect (Student A) b) Both have a three stage life cycle c) grasshopper
Q36	a) digestive system b) the digestive system breaks down food into simpler substance for absorption of nurtirents /digested food.

	c) b absorbs water from undigested food but A absorbs digested food into the blood stream d) A,C,D
Q37	a) roots b) it absorbs water and mineral salts from the soil c) there is no warmth d) As the surrounding temperature increases , the height of the seedling increases.
Q38	a) solid b) solid occupies space c) 200 d) solids have a definite volume
Q39	a) 0 b) c : C b) E It had the most amount of light detected by the light sensor , thus it allows light to pass through so people are allowed to see inside the shop clearly. c) light from the sun shines on the door and the door reflects the light to the shopper's eyes d) .The light sensor will only detect the light from the torch.
Q40	a) The crushed ice has more exposed surface area in contact with the bottle of water. More heat is lost to the ice. b) Air is a poor conductor of heat so the water in glass B gains heat from the surroundings slower , this allows heats from the surrounding to flow to the cold water.
Q41	a) Y,X,Z b) the water level in the beaker increases. c) Z. Z has the most volume of water so it has the most amount of heat , hence , the milk will gain the most amount of heat from the water.

END 2