RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (2) 2019

Section A	/50
Section B	/40
Your score **out of 100%**	
Parent's signature	

Name : _____ **Index No.:**_____**Class: P4**____ **Date:**_____

30 October 2019 **SCIENCE** **ATT: 1 h 30 min**

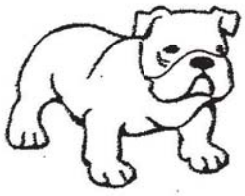
SECTION A (25 x 2 marks)

For each question from 1 to 25, 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 (OAS) provided.

1. Which of the following is a living thing?



(1)



(2)



(3)



(4)

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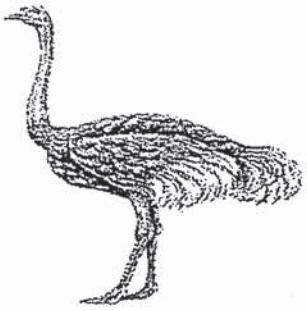
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2. Which of the animals shown below is **NOT** a bird?

(1)



(2)



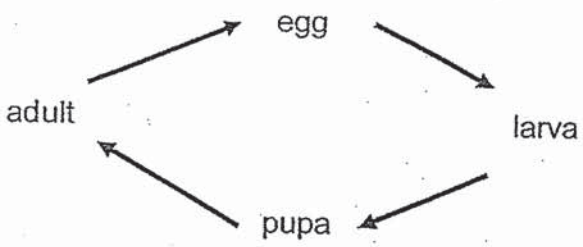
(3)



(4)



3. The diagram below shows the different stages in the life cycle of an animal.



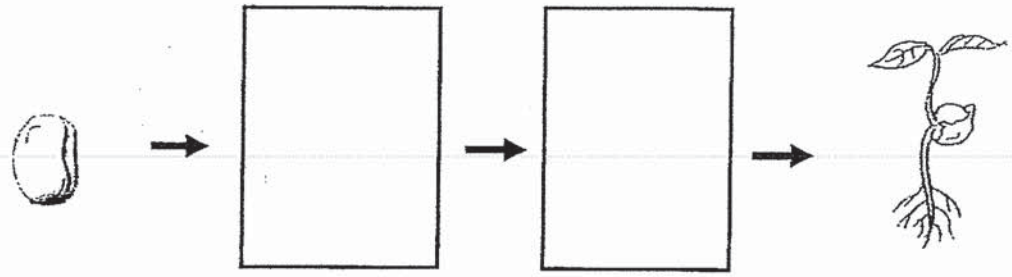
Which animal is likely to have the life cycle as shown above?

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

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4. The diagram below shows the growth of a plant with two missing stages, B and C.



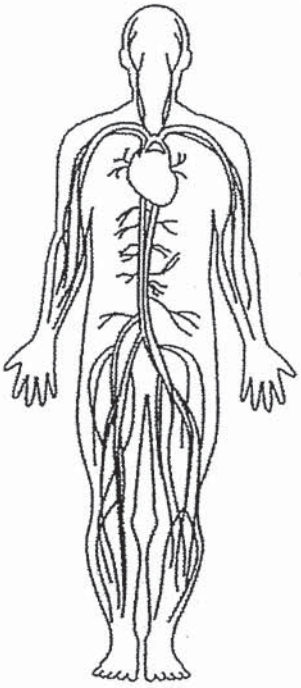
Which of the following shows the correct stages for B and C?

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

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5. Which organ system is shown in the diagram?



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

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6. Which of the following objects can be bent easily without breaking?

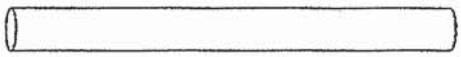
(1) A metal spoon



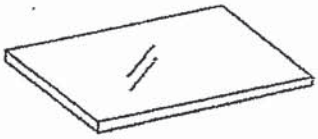
(2) A cotton T-shirt



(3) A wooden rod



(4) A sheet of glass



7. Which of the following properties is true for both air and a pen?

(1) They can be seen.
(2) They occupy space.
(3) They can be compressed.
(4) They have fixed volumes.

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8. Which of the following is a source of light?

(1)



the moon

(2)



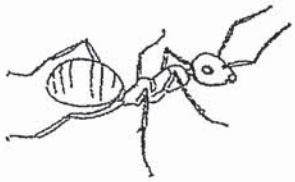
an apple

(3)



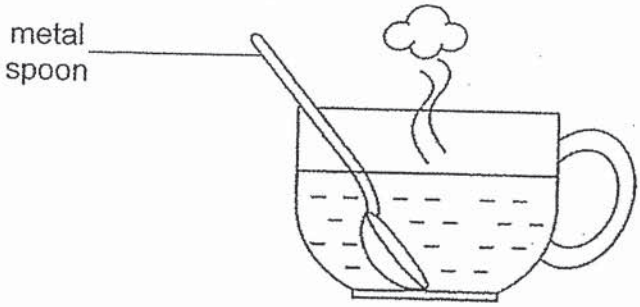
fire

(4)



an ant

9. Jane places a metal spoon in a cup of hot tea.



a cup of hot tea

The spoon becomes hotter after a while.

Which of the following explains this?

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

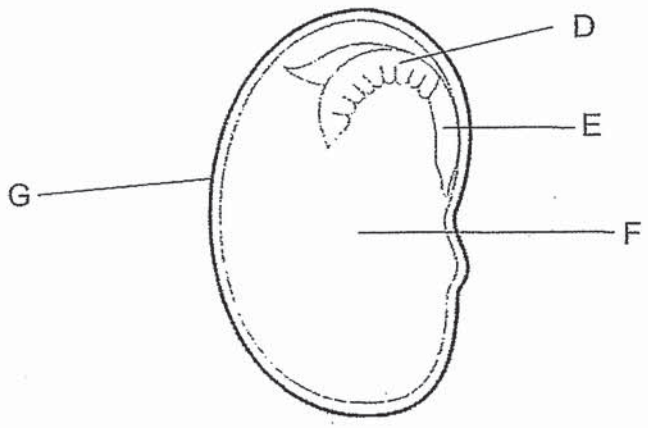
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10. Which of the following can be attracted by a magnet?

(1) iron ball
(2) rubber ball
(3) plastic ball
(4) wooden ball

11. The diagram below shows a seed with its labelled parts D, E, F and G.

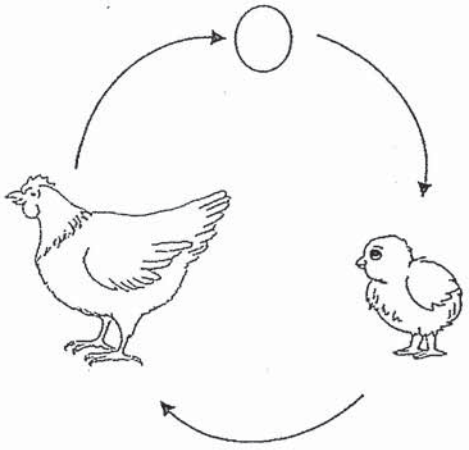


Which part of the seed protects the baby plant?

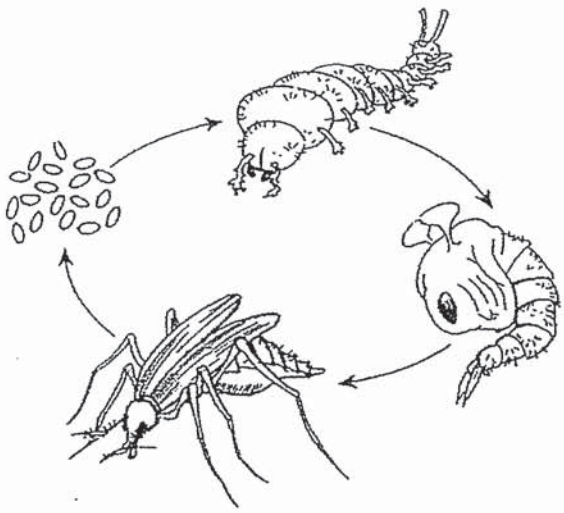
(1) D
(2) E
(3) F
(4) G

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12. The diagrams below shows the life cycles of animals A and B.



Animal A



Animal B

Which of the following statements are correct?

A Both animals lay eggs.

B Both adults have wings.

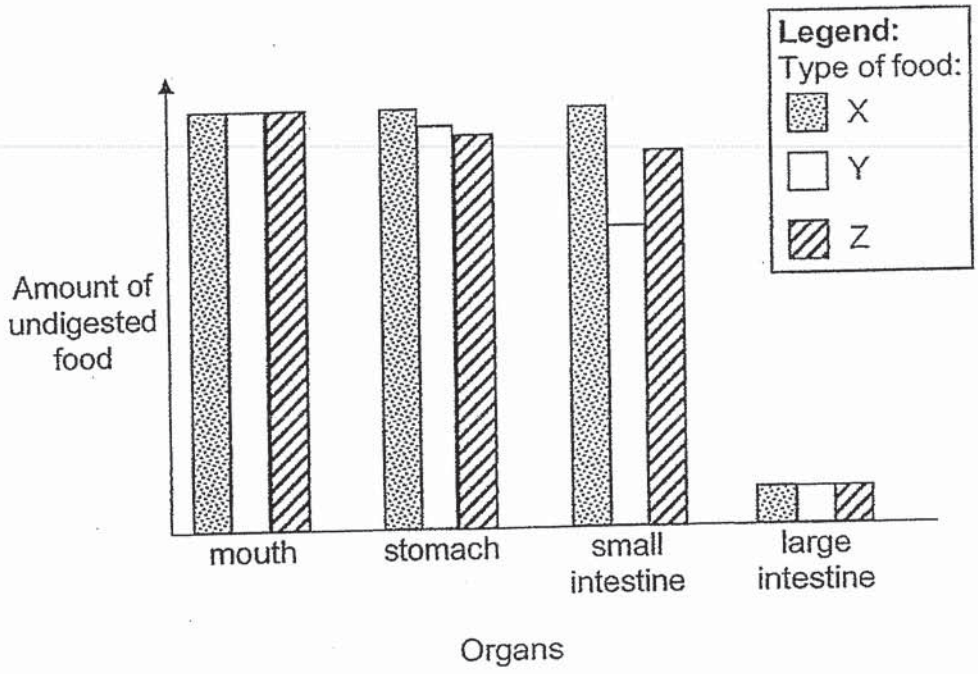
C The young of animal A resembles its parents but not the young of animal B.

D Animal A has four stages in its life cycle but animal B has three stages in its life cycle.

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

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13. The graph below shows the amount of undigested food X, Y and Z as they enter the different organs.



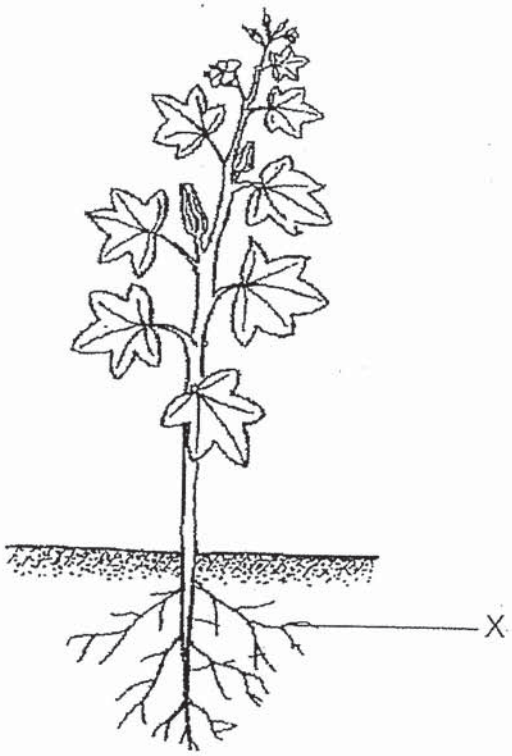
Based on the graph above, which of the following statements is correct?

(1) Digestion of food Z starts in the stomach.
(2) Food Y is digested completely in the stomach.
(3) Digestion of food Y starts in the small intestine.
(4) Food X is mostly digested in the small intestine.

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14. The diagram below shows a picture of a plant with one of its parts labelled X.



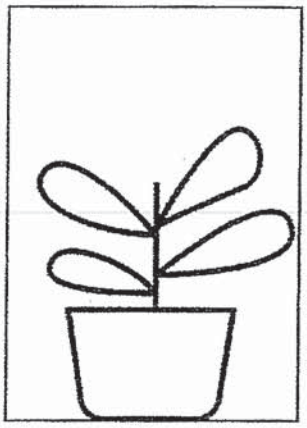
Which of the following states the function of part X?

(1) Makes food for the plant.
(2) Takes in water from the ground.
(3) Takes in sunlight for the plant to make food.
(4) Transports food from the leaves to other parts of the plant.

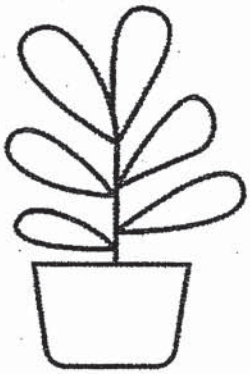
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15. Joyce placed a plant in a box as shown in the diagram below.

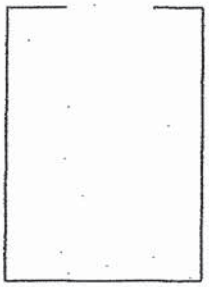


She then made a hole on the box and placed it in the field. She watered the plant daily and observed the plant for two weeks. The diagram below shows the plant after two weeks.



Which of the following boxes shows the correct position of the hole on the box?

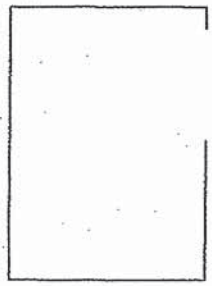
(1)



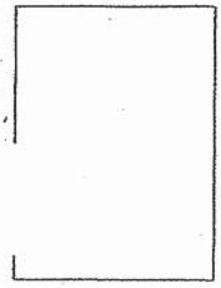
(2)



(3)



(4)



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16. Ali moulds a lump of plasticine into a large ball as shown in diagram 1. He then cuts the plasticine ball into four equal parts to mould into four cubes as shown in diagram 2.

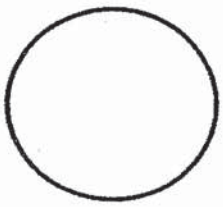


Diagram 1

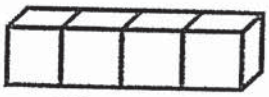


Diagram 2

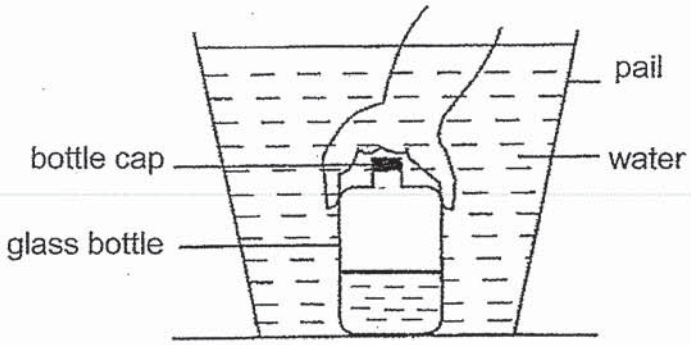
Based on above observations, which one of the following is true?

	Mass	Volume
(1)	The total mass of the plasticine remains the same.	The total volume of the plasticine remains the same.
(2)	The total mass of the plasticine remains the same.	The total volume of the plasticine decreases.
(3)	The total mass of the plasticine decreases.	The total volume of the plasticine decreases.
(4)	The total mass of the plasticine increases.	The total volume of the plasticine remains the same.

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17. Devi placed a glass bottle with its cap inside the pail of water as shown below.



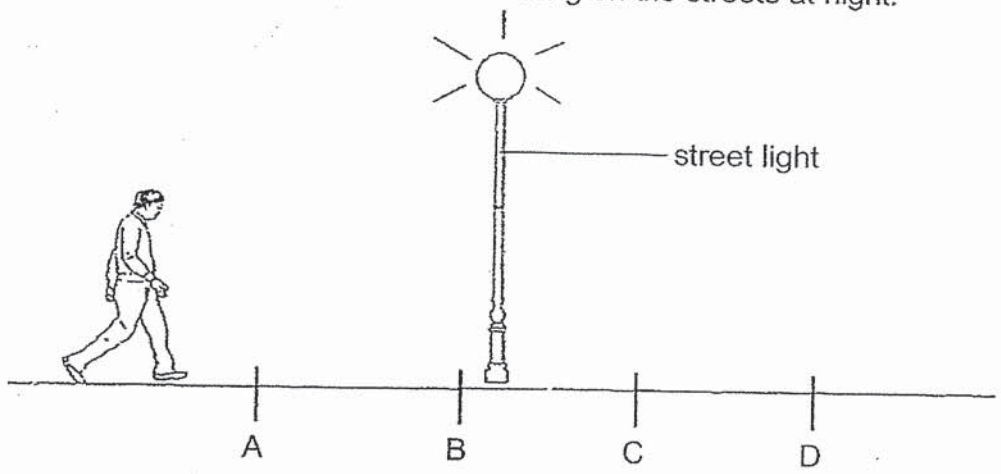
When she unscrewed and removed the cap in the water, which of the following would happen?

A The water level in the pail would decrease.
B Bubbles would be formed in the pail of water.
C The water level in the glass bottle would increase.

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

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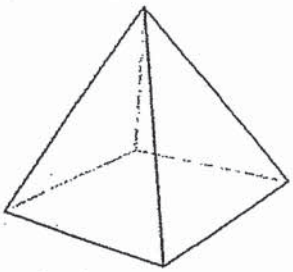
18. The diagram below shows a man walking on the streets at night.



At which of these positions will the shadow of the man be the shortest?

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

19. Object Z shown below is made of wood.



Which one of the following shadows cannot be made by object Z?

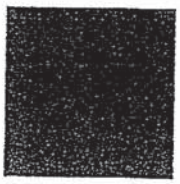
(1)



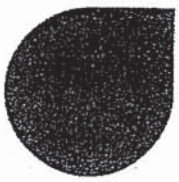
(2)



(3)

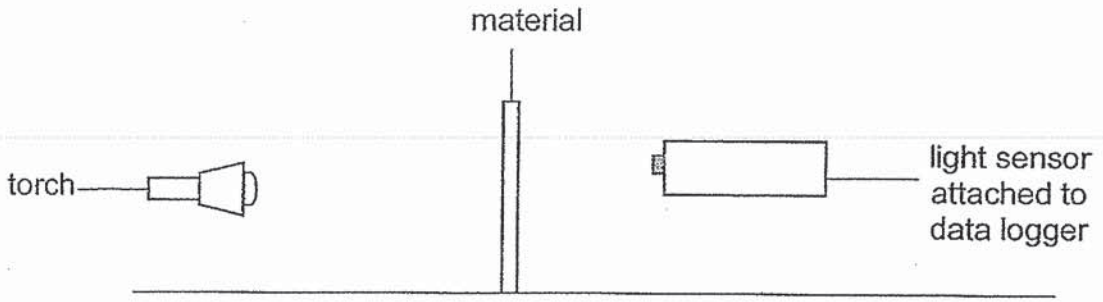


(4)



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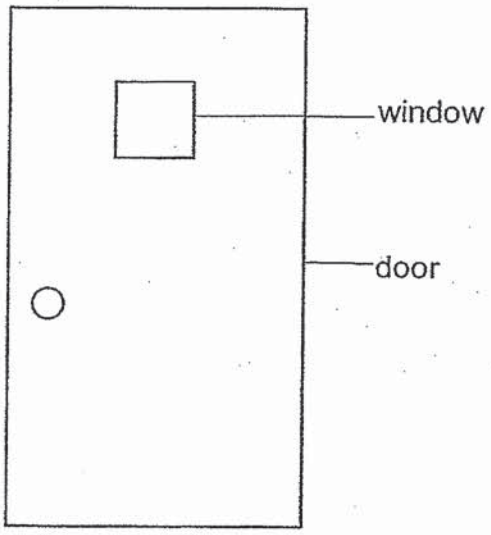
20. Jackson conducted an experiment to find out the amount of light that could pass through four materials P, Q, R and S. The materials were of identical size and thickness.



The table below shows the result of the experiment.

Material	Amount of light that pass through the material (units)
P	0
Q	100
R	250
S	700

Jackson wanted to make a small window on the door to allow him to see what is in the room clearly as shown in the diagram below.

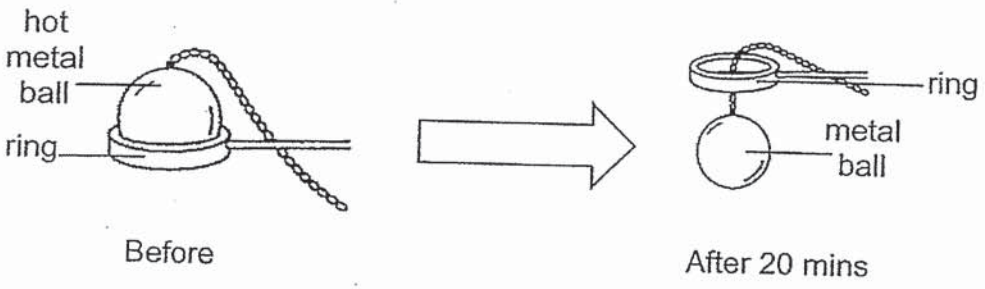


Which material is the most suitable to make the window shown in the diagram above?

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

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21. The diagram below shows a hot metal ball resting on the ring.



Before

After 20 mins

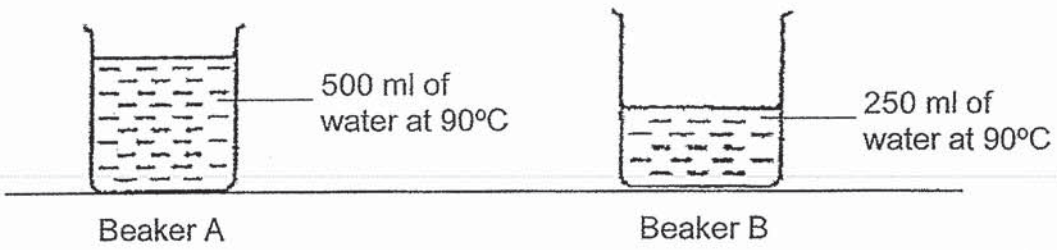
Which one of the following statements explains why the metal ball was able to go through the ring after twenty minutes?

(1) The ring lost heat to the metal ball and expanded.
(2) The metal ball lost heat to the ring and contracted.
(3) The metal ball gained heat from the ring and expanded.
(4) The ring gained heat from the metal ball and contracted.

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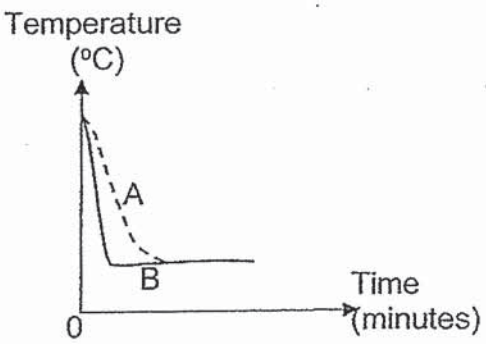
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22. Two identical beakers, A and B, were filled with some water of 90°C as shown in the diagram below. They were placed on the table for some time.

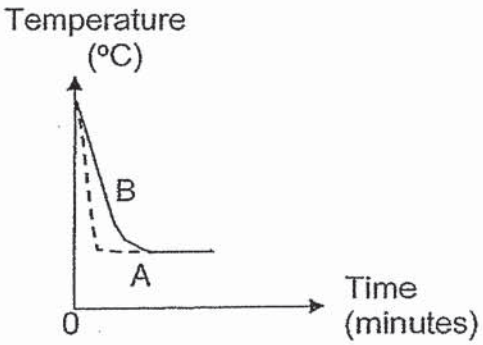


Which of the following graphs shows the decrease in temperature of the water in beakers A and B over a period of time correctly?

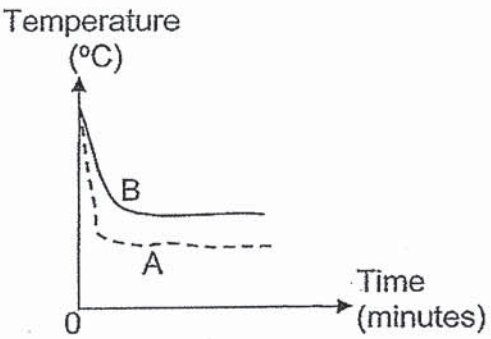
(1)



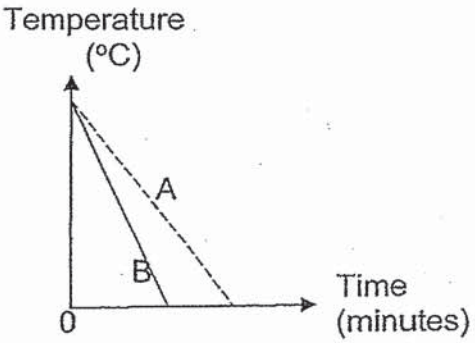
(2)



(3)

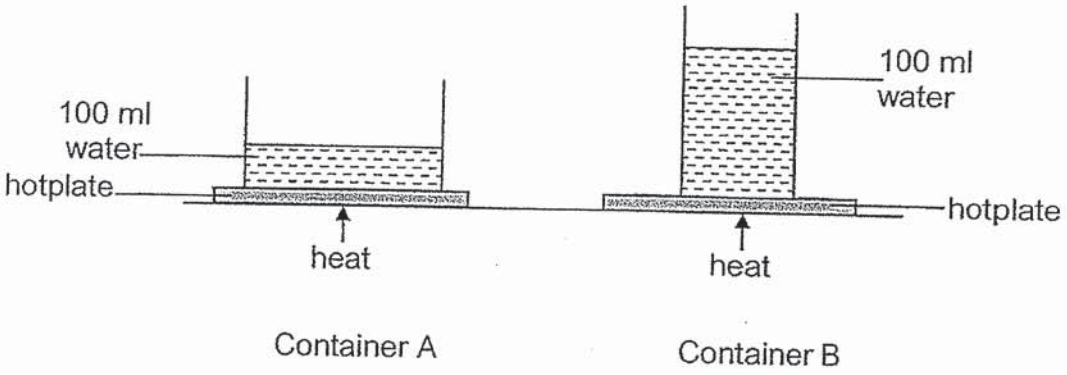


(4)



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23. Amy heated 100 ml of water in two different containers, A and B, made of the same material as shown in the diagram below.



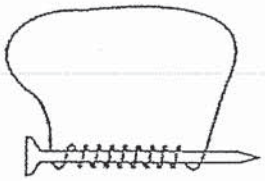
After ten minutes, Amy observed that the water in only one of the containers started boiling.

Which of the following provides the correct explanation for her observation?

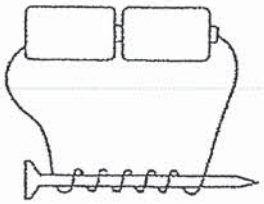
	Container	Explanation
(1)	A	The container had less surface area in contact with the hotplate. Therefore, water in the container gained heat faster.
(2)	A	The container had more surface area in contact with the hotplate. Therefore, water in the container gained heat faster.
(3)	B	The container had less surface area in contact with the hotplate. Therefore, water in the container gained heat faster.
(4)	B	The container had more surface area in contact with the hotplate. Therefore, water in the container gained heat faster.

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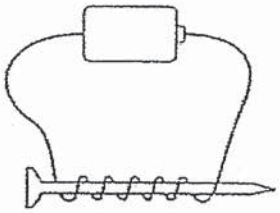
24. Jenny wanted to carry out an experiment to find out whether the number of turns of the coils would affect the strength of a magnet. She prepared four different set-ups as shown below. For each set-up, she tested the strength of the magnet by counting the number of steel paper clips it could attract.



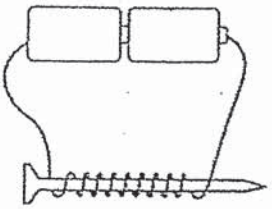
Set-up R



Set-up S



Set-up T



Set-up U

Which two set-ups above should she use to conduct a fair test?

(1) R and U

(2) S and T

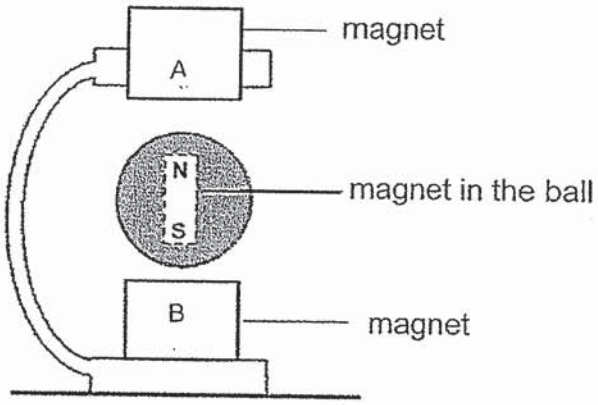
(3) S and U

(4) T and U

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25. The diagram below shows a toy that makes use of magnets. It has a ball containing a magnet floating in between poles A and B of the two magnets respectively.



Based on the information above, which one of the following represents the poles of the magnets at A and B?

	A	B
(1)	North	North
(2)	South	North
(3)	North	South
(4)	South	South

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Name : _____ Index No: ____ Class: P4_____

40

SECTION B (40 marks)

For questions 26 to 37, write your answers clearly in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

26. Draw lines to match the two organ systems to their functions. [2]

organs systems	functions
skeletal system	takes air into and out of the body
	transports digested food, water and oxygen to all parts of the body
respiratory system	supports our body and gives it shape

27. (a) Fill in the correct parts of a plant in the table. [2]

Functions of plant parts	Plant parts
It holds the plant upright.	
It makes food for the plant.	

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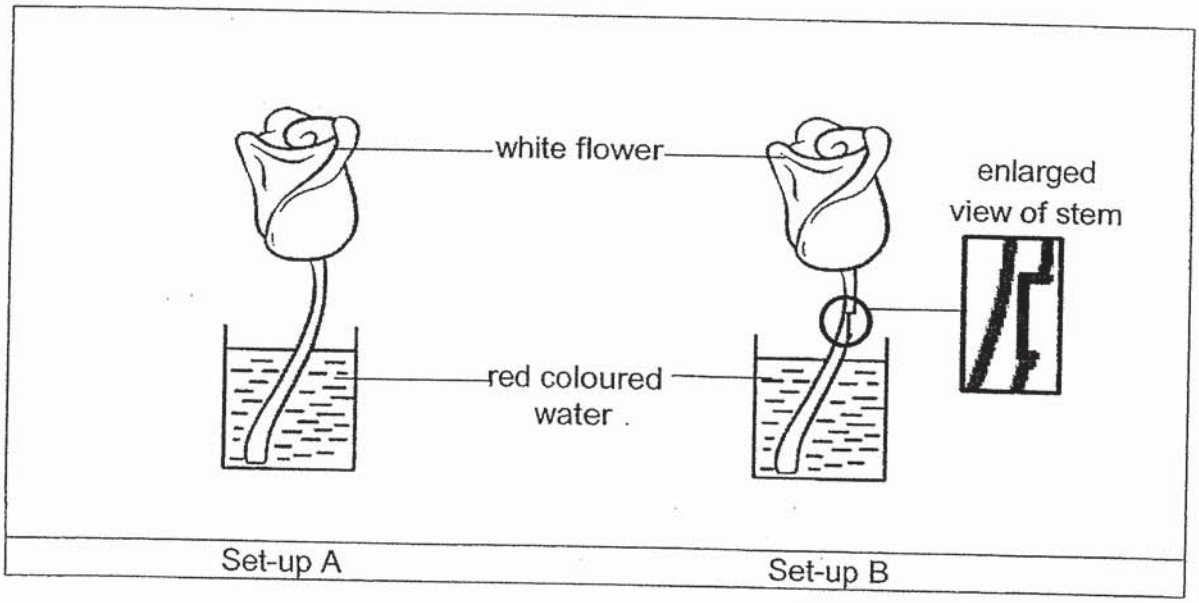
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Ann had two identical stalks of white flowers. She made a cut on the stalk of the flower in set-up B and left the two stalks of flower in identical beakers for three days as shown in the diagram below.



Ann noticed that the flowers in both set-ups were stained red.

(b) Explain why the flowers were stained red. [1]

_____

_____

(c) Ann observed that one of the flowers was a lighter shade of red as compared to the other flower.

In which set-up did the flower show a lighter shade of red?
Explain your answer [2]

_____

_____

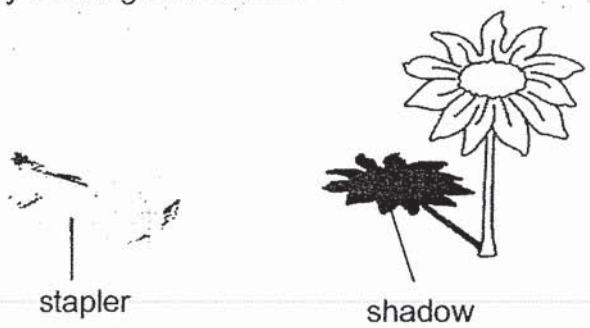
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28. Study the diagrams below.

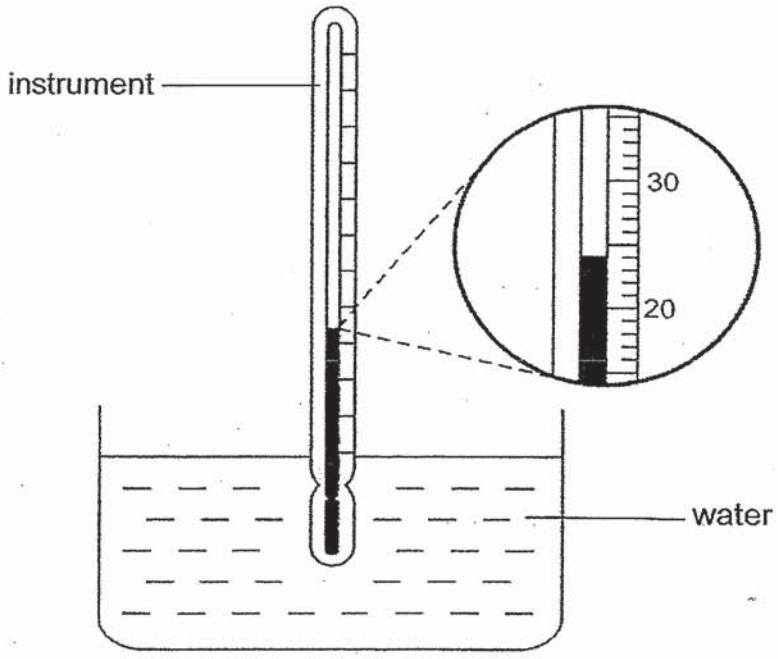


Circle the correct answer.

(a) A stapler (is / is not) a matter as it (has / does not have) mass. [1]

(b) A shadow (is / is not) a matter as it (occupies / does not occupy) space. [1]

29. Alice used an instrument to measure the temperature of water in a glass.



(a) What is the instrument called? [1]

_____

(b) What is the temperature of the water in the glass? [1]

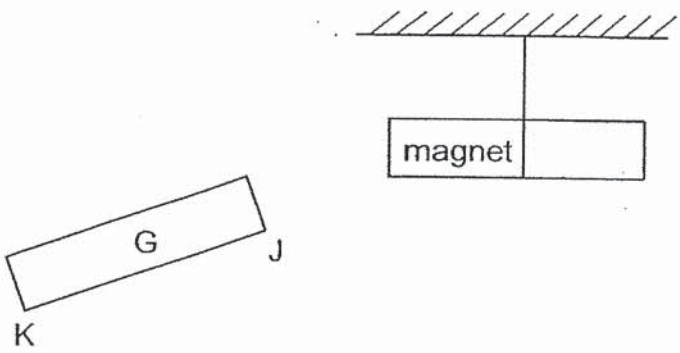
_____°C

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30. When end J of object G is brought near a magnet as shown, the magnet moves away.



(a) This shows that object G is a _____ [1]

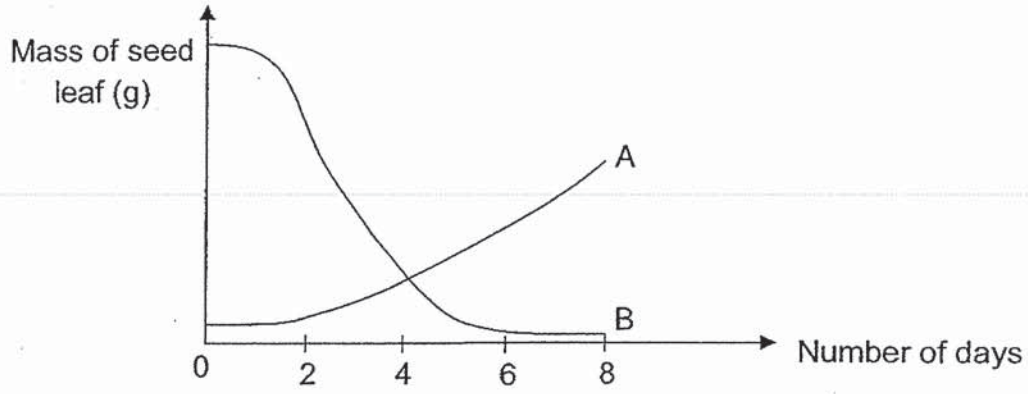
(b) When end K is brought near to the magnet, it _____ the magnet. [1]

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	2

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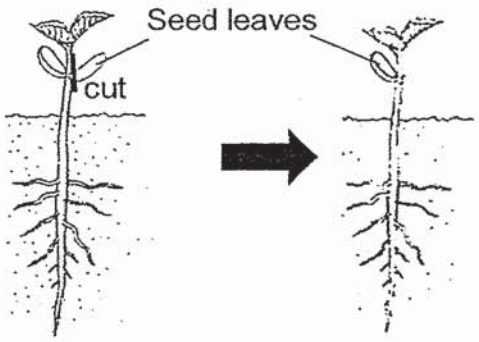
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31. Karen planted a seed into a pot and observed its growth for eight days. She recorded the mass of the seed leaf and the shoot of the seedling during the experiment. The graph below shows her result.



(a) Which line, A or B, shows how the mass of the seed leaf changes during the experiment? Explain your answer. [2]

(b) Karen accidentally cut a seed leaf as shown in the diagram below.



Will the seedling be able to grow if there is only one seed leaf left? Explain your answer. [2]

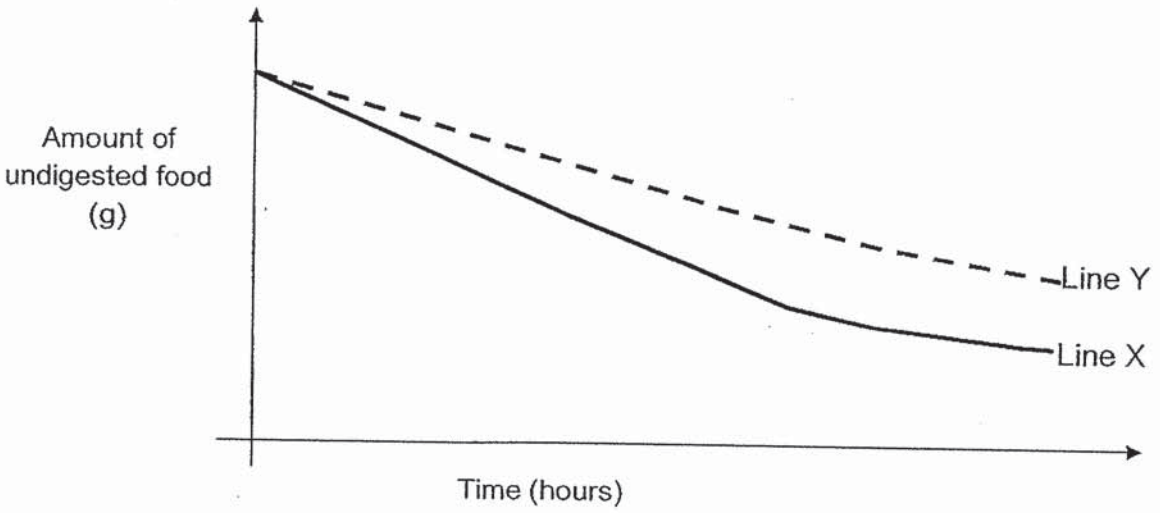
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32. Krishna conducted an experiment to compare the rate of digestion of food of his grandmother and mother. Some of his grandmother's teeth were removed while his mother had a full set of teeth.

Krishna collected 100 g of food chewed for five times by each of them and added the same amount of digestive juices to each of the food samples. He then measured the amount of undigested food in each sample over ten hours and recorded the results in the graph below.



(a) State the function of the teeth in the digestive system. [1]

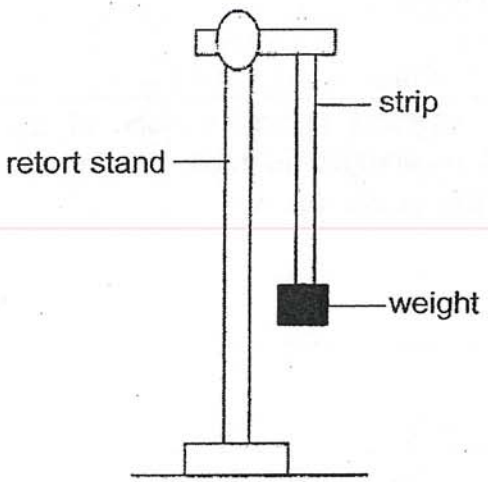
(b) Which line, X or Y, represents the rate of digestion of food chewed by his grandmother? Explain your answer. [2]

Score	
	3

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33. Jay carried out an investigation to find out the strength of four different strips made of materials A, B, C and D. He set up the experiment as shown in the diagram below.



He hung weight of mass 20g and increased the mass on each strip until it started to break. He recorded his results as shown in the table below.

Strip of Material	Mass of the weight hung on each strip before it started to break (g)
A	120
B	60
C	100
D	40

(a) Which of the following variables should Jay keep constant to ensure a fair test? Put a tick (√) in the correct box(es). [1]

Variable	Tick (√)
Length of the strip	
Material of the strip	
Thickness of the strip	

Score	
	1

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(b) Based on Jay's results, arrange the materials, A, B, C and D, in order of their strength starting with the strongest. [1]

Strongest ⟶ Weakest

☐ , ☐ , ☐ , ☐

(c) Jay claimed material B is most suitable to make into a gift pouch to hold gift with a mass of 90g. Do you agree with him? Explain your answer. [2]

_____

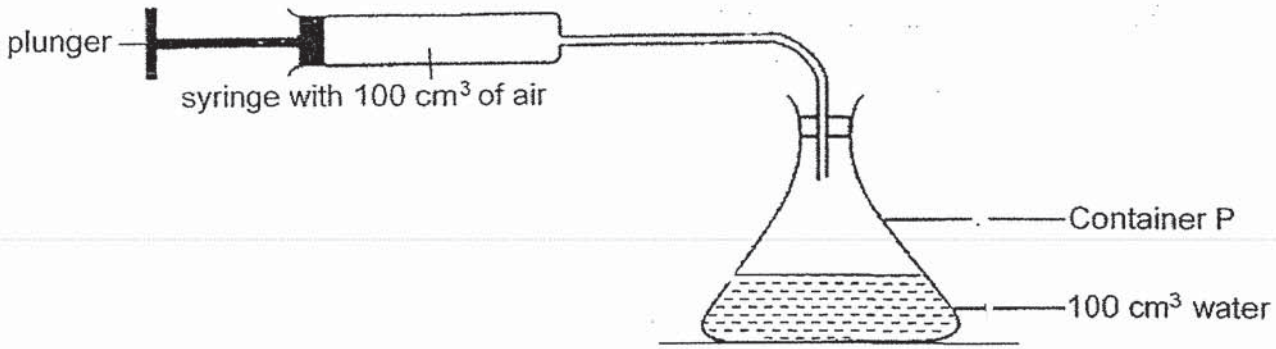
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34. Jane connected a syringe to container P as shown below. Container P had a capacity of 300 cm^3.



(a) Jane pushed the plunger in completely. What would be the volume of air and water in container P? [2]

Volume of air : _____ cm^3

Volume of water: _____ cm^3

(b) Based on your answer in part (a), what could be concluded about the property of air and liquid? [2]

(i) Property of air: _____

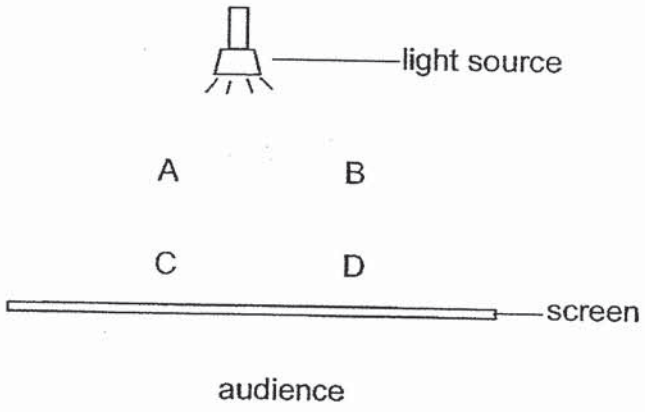
(ii) Property of liquid: _____

Score	/ 4

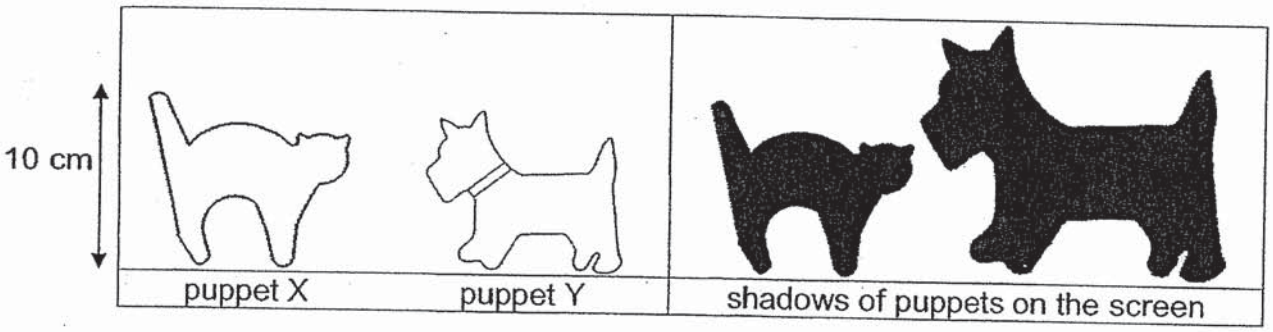
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35. The diagram below shows the layout of a puppet show. A, B C and D are the positions where the puppets were placed.



Jane has two puppets of the same size and cast the shadow as shown in the diagram below.



Based on the information above,

(a) Which position, A, B, C or D, was puppet Y placed? Explain your answer. [2]

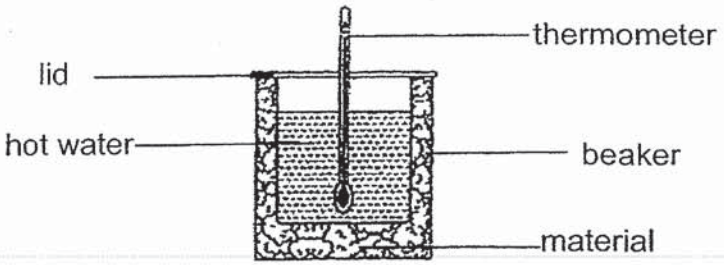
(b) State the property of the material of the screen. Explain your answer. [2]

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36. Siva wanted to find out which material, W, X or Y, is the best conductor of heat. He set up the experiment as shown in the diagram below.



The table below shows the change in the temperature of the hot water over a period of thirty minutes.

Time (minutes)	Temperature of hot water (^{0}C)		
	W	X	Y
0	70	70	70
10	50	65	68
20	40	60	65
30	30	58	61

(a) State the heat source in the experiment. [1]

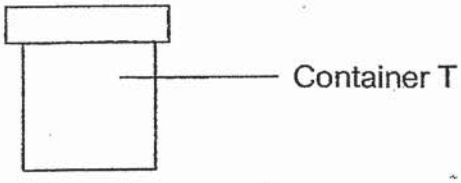
_____

(b) Which material is the best conductor of heat? Give a reason for your answer. [1]

_____

_____

Container T below is used to store ice cream.



(c) Based on the information above, which material, W, X or Y, is most suitable to make into container T to prevent the ice-cream from melting most quickly? [2]

_____

_____

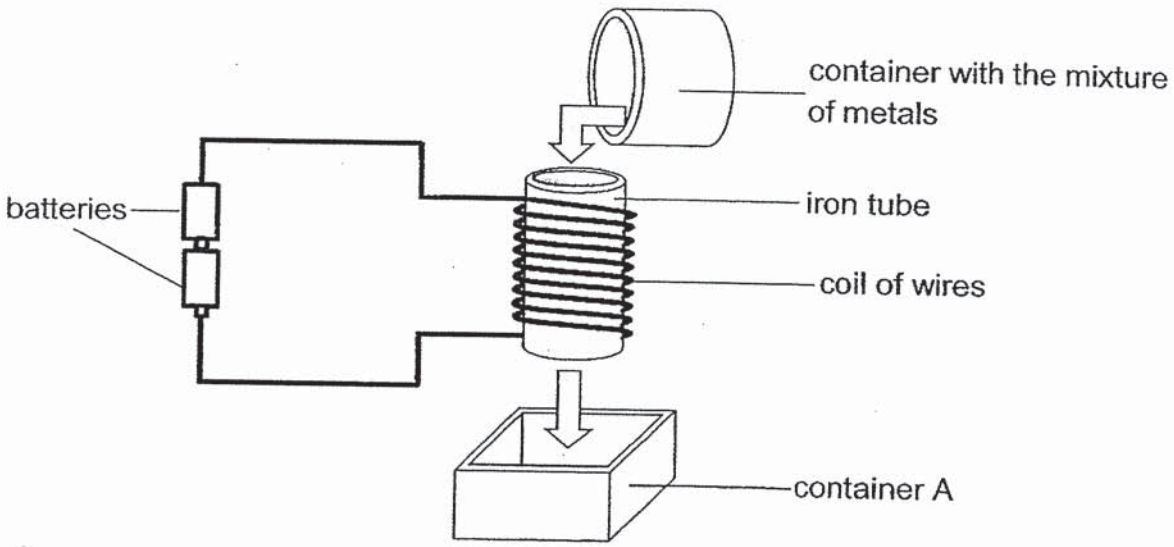
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37. Tom used the following set-up as shown below to separate magnetic metals from non-magnetic metals. Electricity could flow through the wires coiled around the iron tube.



(a) What would happen to the iron tube when electricity flowed through the wires ?

[1]

(b) Which type of material, magnetic or non-magnetic, would be collected in container A? Explain your answer.

[2]

(c) Using the same hollow iron tube, suggest one way to increase the number of magnetic metals to be separated from the non-magnetic metals within the same duration of time.

[1]

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ANSWER KEY

YEAR : 2019
LEVEL : PRIMARY 4
SCHOOL : RAFFLES GIRLS' PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : SA 2

SECTION A

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

SECTION B

Q26) skeletal system > supports our body and gives it shape
respiratory system > takes air into and out of the body

Q27a) , leaves

Q27b) The water-carrying tube in the stem transported the red-coloured water to the white flower.

Q27c) Set-up B. As Ann made a cut on the stalk of the flower in B, the stalk had lesser water-carrying tubes than the flower in A. Thus, lesser amount of red-coloured water is transported so the flower in B was a lighter shade of red than in A.

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Q28a) is, has

Q28b) is not, does not occupy

Q29a) thermometer

Q29b) 24◦c

Q30a) magnet

Q30b) attracts

Q31a) Line B. The food stored in the seed leaf was used by the germinating seed and thus decreased in mass overtime.

Q31b) Yes. The seed leaf has enough food for the seedling to consume until the true leaves are able to trap sunlight to make their own food.

Q32a) It crushes the food into smaller pieces so that the food will have a larger exposed surface area for the digestive juices to act on and be digested faster.

Q32b) Line Y. Y shows a slower digestion rate over time which indicated that food in Y had a smaller exposed surface area for the d ve juices to act on. Since the grandmother has lesser teeth, it meant that she could not chew as well as the mother.

Q33a) Length of strip, thickness of strip

Q33b) A, C, B, D

Q33c) No. The mass of weight hung on B was 60g before it broke, and it will not be able to withstand the weight of 90g, so B would break if it were to hold a gift with a mass of 90g.

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Q34a) Volume of air: 200cm^3 Volume of water: 100cm^3

Q34b) Property of air: Air can be compressed
Property of liquid: Liquids have a definite volume

Q35a) Position B. The shadow of Y was bigger than X and hence it is closer to the torch. Since the nearer objects are to the light source, the bigger the shadow, Y was at B.

Q35b) It is translucent and allows some light to pass through. The shadow will be able to form on the screen and the audience would be able to see the shadow.

Q36a) The hot water

Q36b) Material W. Temperature of the hot water decreased the most over 30 minutes. It means the hot water lost the most amount of heat to its surroundings over 30 minutes.

Q36c) Material Y. The temperature of the hot water in Y throughout the experiment was the highest amongst all 3. It shows that it is the poorest conductor of heat so the ice-cream would gain heat from the surroundings the slowest and melt the slowest.

Q37a) The iron tube will become magnetised and will act as an electro-magnet.

Q37b) Non-magnetic material. The electro-magnet is unable to attract non-magnetic material, so non-magnetic material will fall into A.

Q37c) Increase the number of coils around the iron tube.

END

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