RAFFLES GIRLS' PRIMARY SCHOOL

Practice Paper (PA2)
2021

Section A	/50
Section B	/40
Your score **out of 90**	
Parent's signature	

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

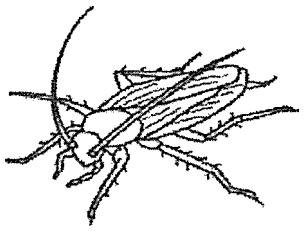
SCIENCE Duration: 1 h 30 min

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 animal has a 4-stage life cycle?

(1)



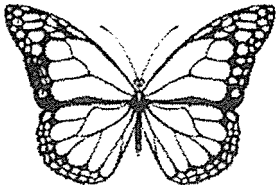
cockroach

(2)



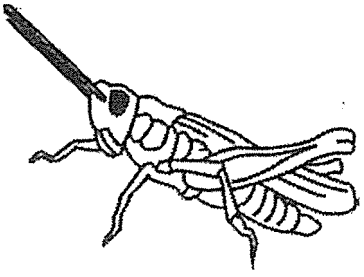
frog

(3)



butterfly

(4)



grasshopper

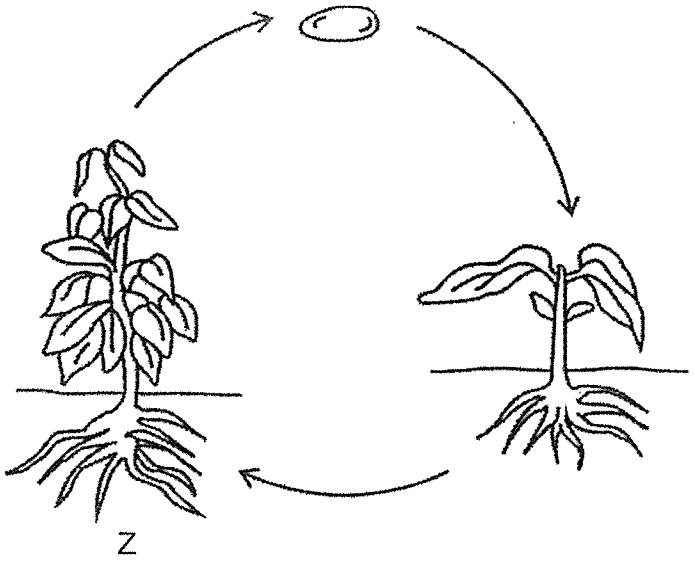
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2. Which animal has a nymph as a stage in its life cycle?

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

3. The diagram shows the life cycle of a plant.



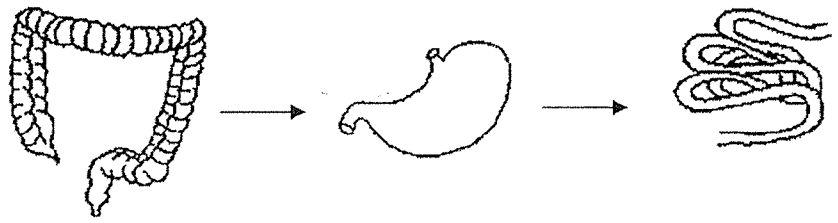
What is the stage marked Z?

(1) egg
(2) seed
(3) adult plant
(4) young plant

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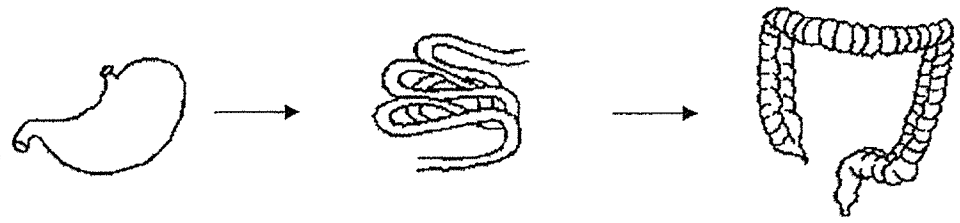
4. Which one of the following shows the correct order when food moves through some parts of the digestive system?

(1)



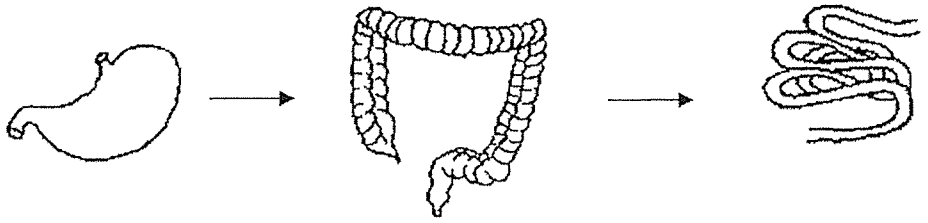
large intestine → stomach → small intestine

(2)



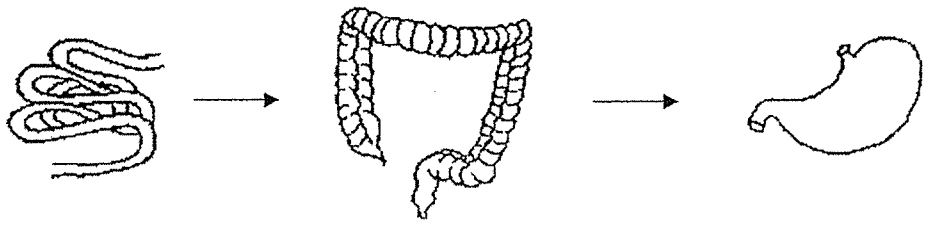
stomach → small intestine → large intestine

(3)



stomach → large intestine → small intestine

(4)

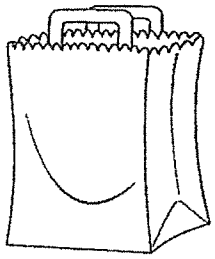


small intestine → large intestine → stomach

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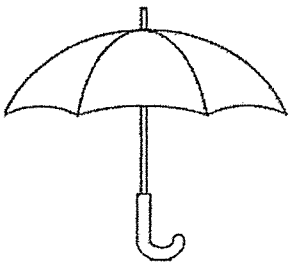
5. Which one of the following objects is **not** made of a waterproof material?

(1)



paper bag

(2)



plastic umbrella

(3)



metal fork

(4)



rubber gloves

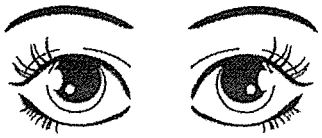
6. Matter is anything that has mass and occupies space.
Which one of the following is **not** matter?

(1) air
(2) juice
(3) water
(4) thunder

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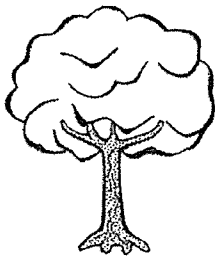
7. Which one of the following is a source of light?

(1)



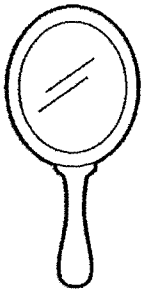
eyes

(2)



tree

(3)



mirror

(4)



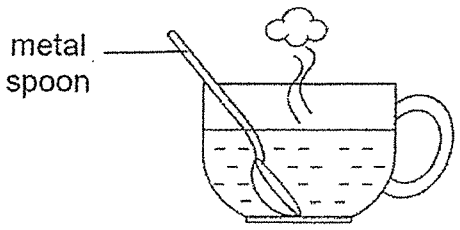
fire

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

(1) the sun
(2) a boiling kettle
(3) a lighted flame
(4) a woollen blanket

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



a cup of hot tea

The tea becomes colder after a while.
Which of the following explains this?

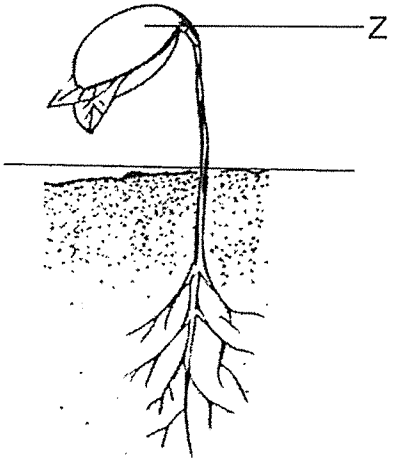
(1) The cup loses heat to the tea.
(2) The spoon loses heat to the tea.
(3) The tea gains heat from the surrounding air.
(4) The surrounding air gains heat from the tea.

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

(1) iron rod
(2) glass rod
(3) plastic rod
(4) copper rod

11. The picture below shows a seedling.

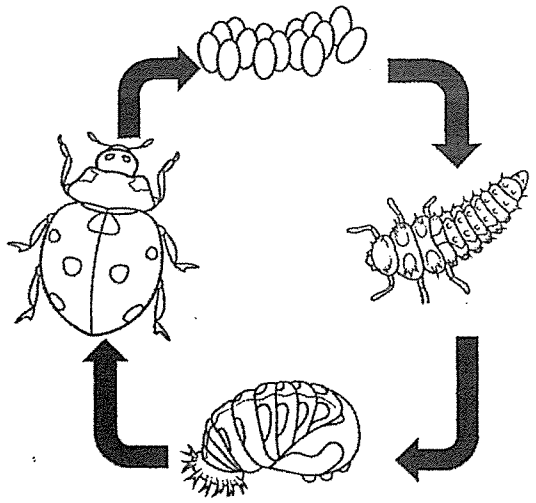
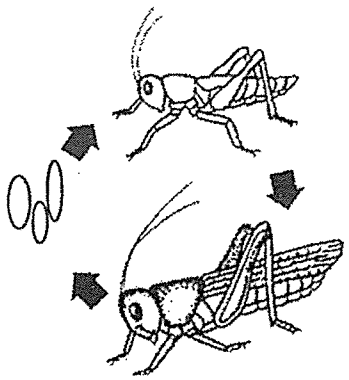


What is the function of the part marked Z?

(1) protects the baby plant
(2) grows into a new plant
(3) makes food for the seedling
(4) provides food for the seedling

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12. The diagram below shows the life cycle of animals X and Y.

Animal X	Animal Y
	

Based on the information in the diagrams above, which of the following statement(s) is/are true?

A The adults of animals X and Y live in water.

B Animals X and Y give birth to their young alive.

C The young of animal Y looks like its parent.

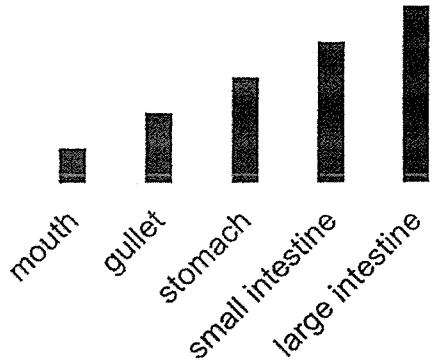
D Animals X and Y have different number of stages in their life cycles.

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

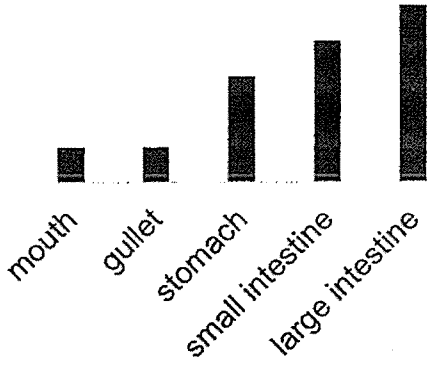
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13. Which one of the following graphs shows the amount of undigested food over time as it travels from the mouth to the large intestine?

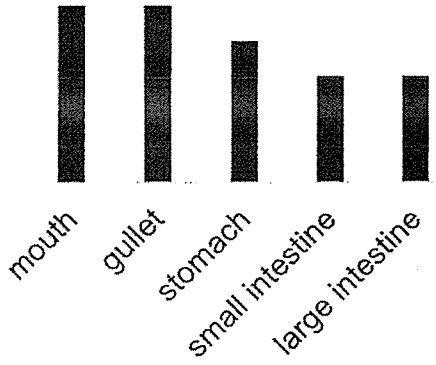
(1)



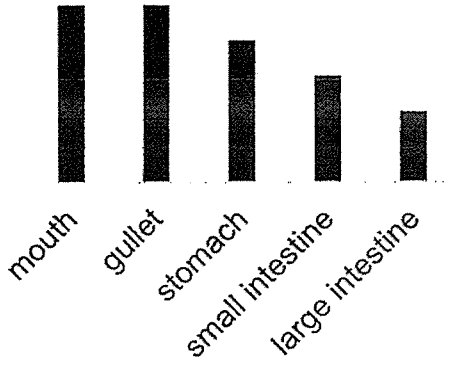
(2)



(3)



(4)



14. The following are statements about the plant transport system.

A: The leaves make food for the plant.

B: The plant transport system is made of food-carrying tubes only.

C: The roots transport water and mineral salts to all parts of the plant.

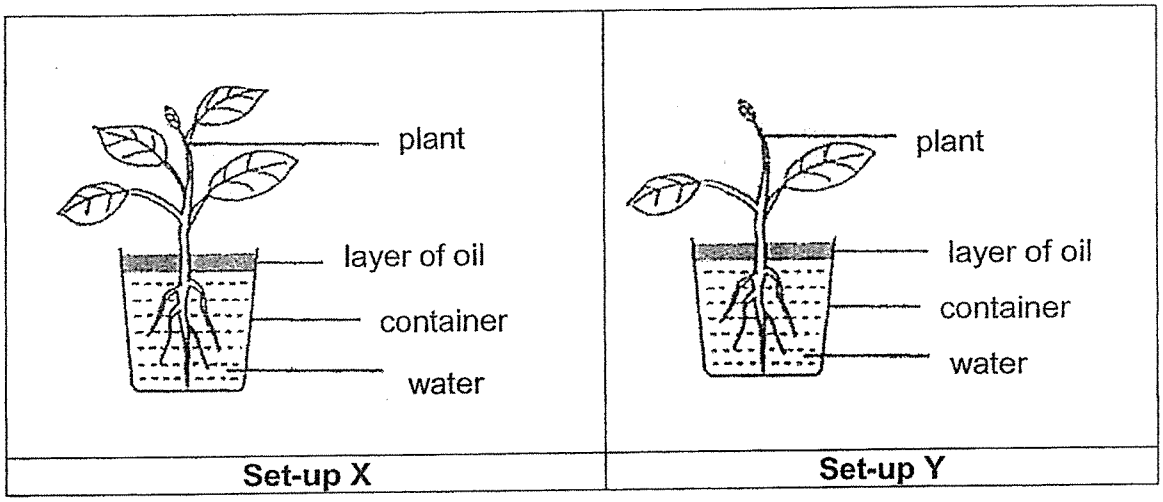
D: The stem transports food from the leaves to the flowers through the food-carrying tube.

Which statements about the plant transport system are correct?

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

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15. Jia Ling wanted to find out if the number of leaves on a plant affects the volume of water absorbed by a plant. She placed the two set-ups near a window as shown below.



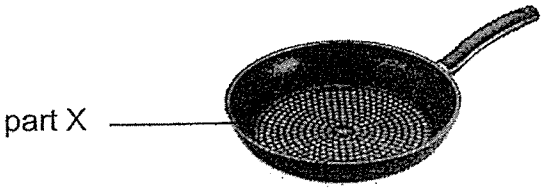
Set-up X | **Set-up Y**

Which one of the following shows the correct change in the volume of water in both set-ups and its corresponding reason?

	Volume of water in set-up X	Volume of water in set-up Y	Reason
(1)	increase	decrease	The roots in set-up Y take in more water than the roots in set-up X.
(2)	decrease	decrease	The roots in set-up X take in more water than the roots in set-up Y.
(3)	increase	increase	The leaves in set-up Y receive more water than the leaves in set-up X.
(4)	decrease	decrease	The leaves in set-up X receive less water than the leaves in set-up Y.

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16. The diagram below shows a picture of a frying pan.



The table below shows the physical properties of materials A, B, C and D.
A tick (✓) indicates the physical property of the material.

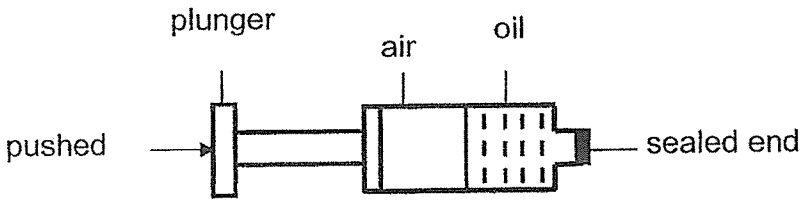
Material	Physical Property		
	Strong	Flexible	Waterproof
A	√		√
B	√	√	√
C		√	
D			√

Based on the information given in the table, which one of the following materials is best used for making part X?

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

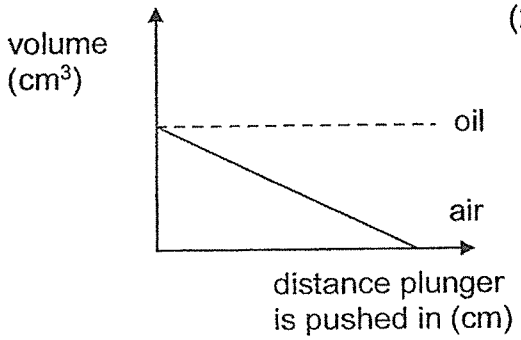
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17. A syringe is half filled with oil and air as shown in the diagram below. The end of the syringe is sealed. The plunger is pushed as shown in the diagram below.

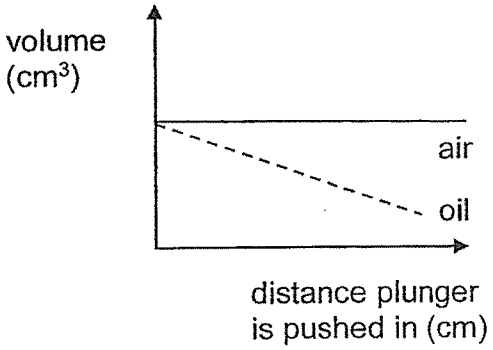


Which one of the following graphs shows the change in the volume of oil and air as the plunger is pushed in?

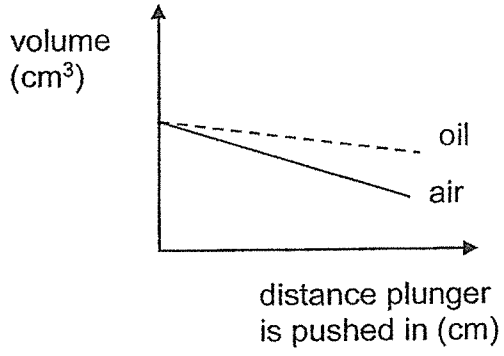
(1)



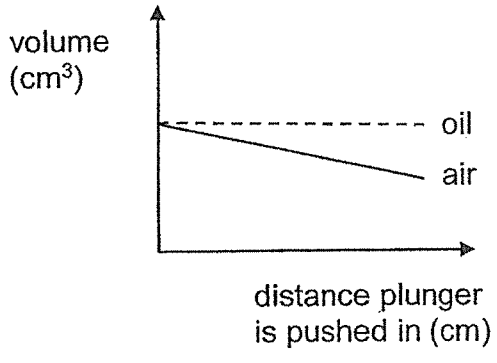
(2)



(3)

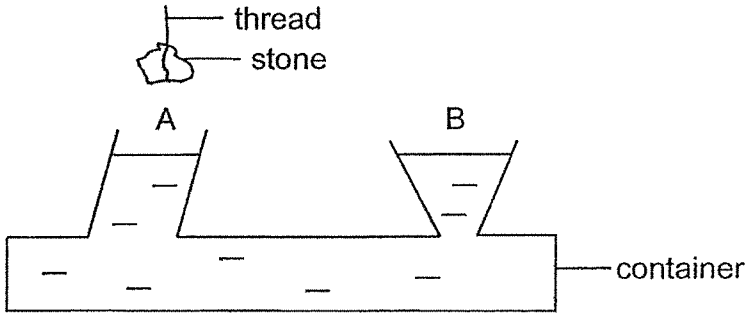


(4)



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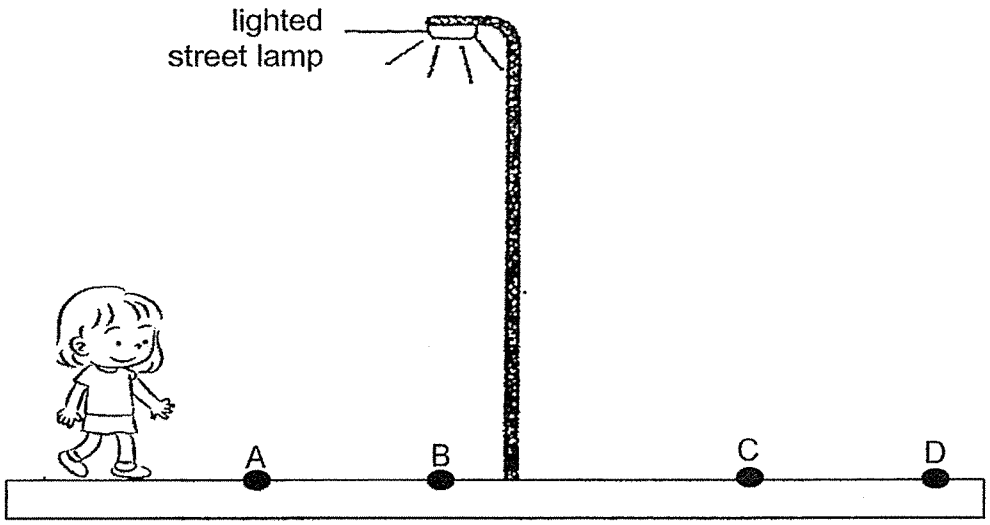
18. A container filled with water has two openings, A and B, as shown in the diagram below.



A stone tied to a thread is carefully lowered into opening A as shown.
What will happen to the water level at B?

(1) increases
(2) decreases
(3) stays the same
(4) decreases and then increases

19. Jean is walking under a street lamp at night as shown below.

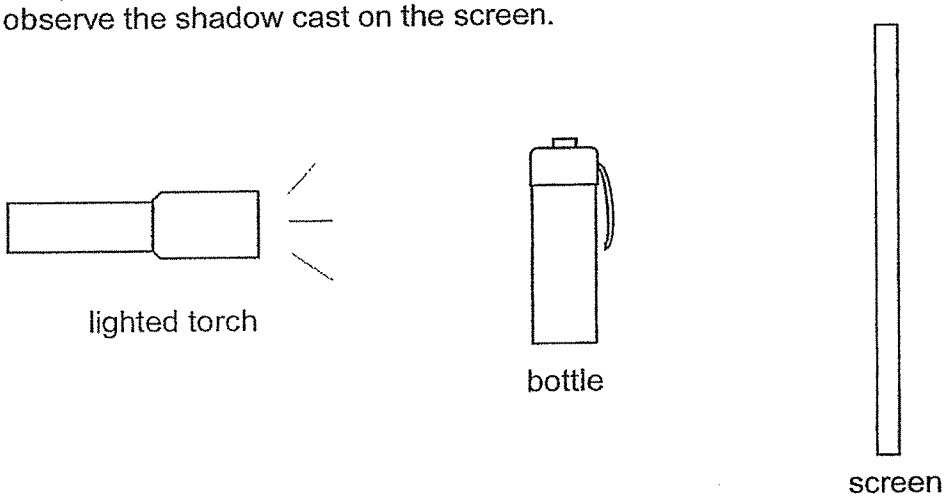


At which position, A, B, C or D, will her shadow be the shortest?

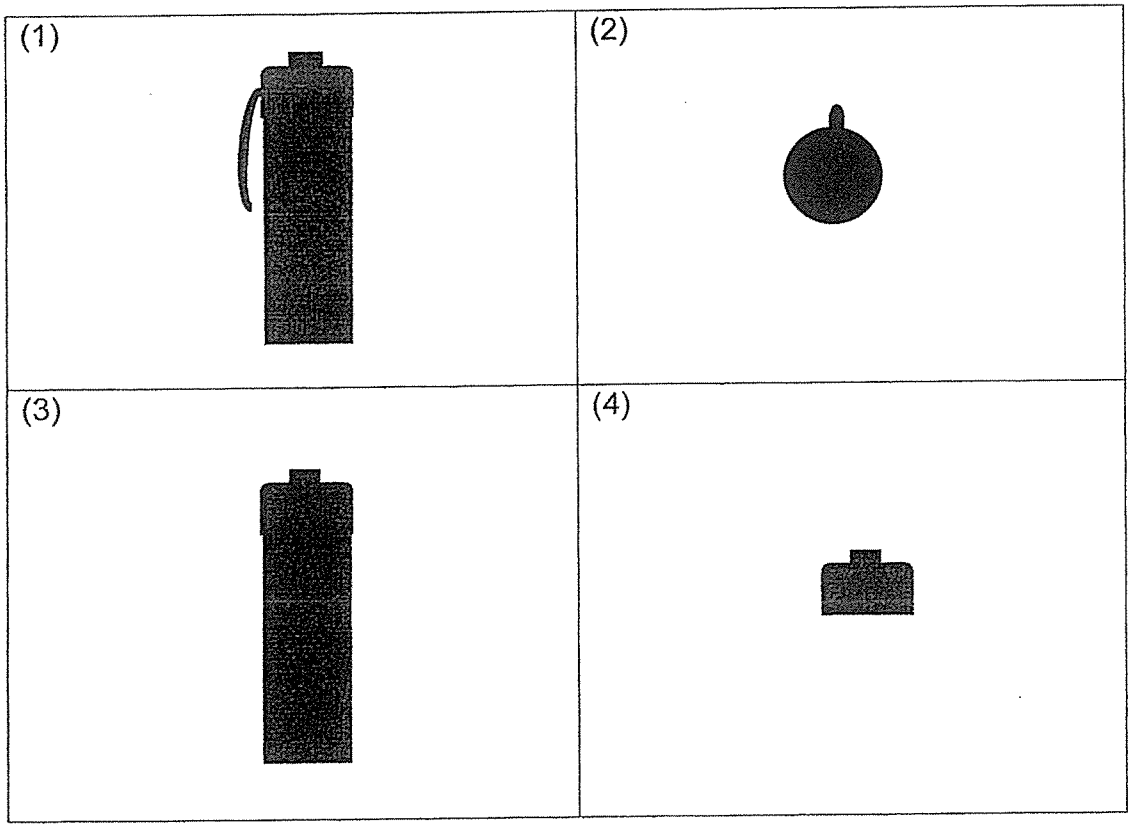
(1) A
(2) B
(3) C
(4) D

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20. Mary prepared a set-up as shown below. She tried to change the position of the bottle and observe the shadow cast on the screen.

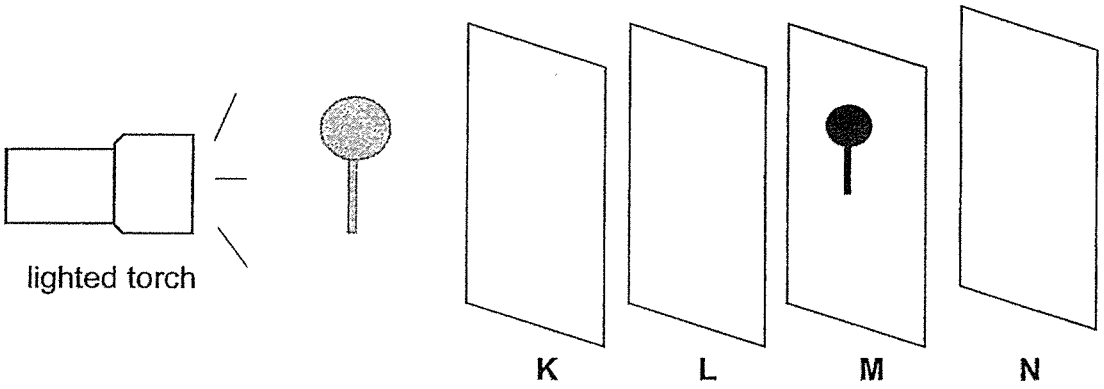


Which one of the following **cannot** be a shadow cast by the bottle on the screen?



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21. Four sheets, K, L, M and N, made of different materials of identical size and thickness are shown below. The sheets are arranged in a straight line. They are placed in front of a torch as shown. When a torch is switched on, a shadow is cast on sheet M only.



Which of the following correctly describes the properties of sheets K, L, M and N?

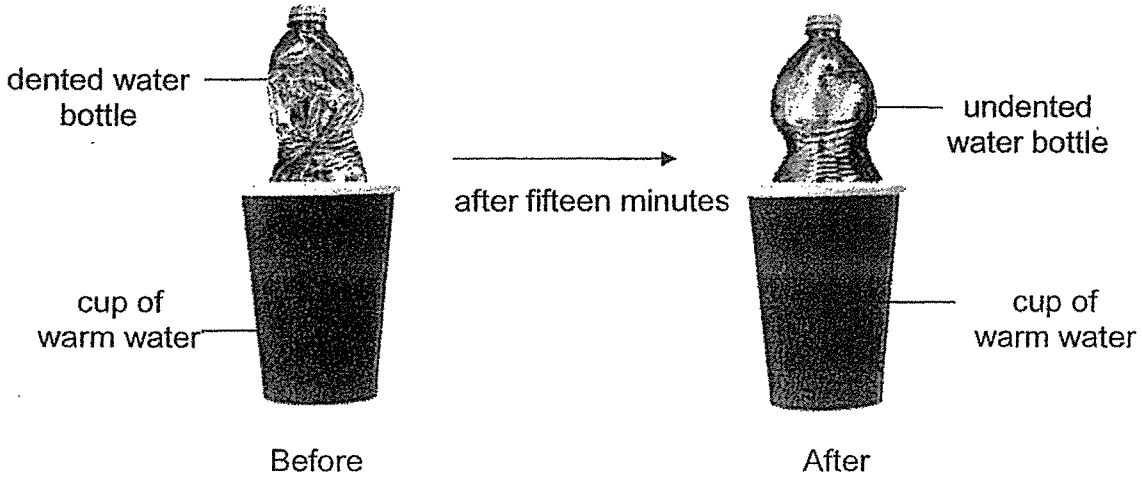
	Allows most light to pass through	Allows no light to pass through	Not possible to tell
(1)	L	K, M	N
(2)	L	M	K, N
(3)	K, L	M	N
(4)	K, L	N	M

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22. Which one of the following statements about heat and temperature is correct?

(1) Temperature is a form of energy.
(2) Heat is the quantity of hotness of an object.
(3) A 20 g and 40 g object at 90 °C have the same amount of heat.
(4) Temperature of an object can be accurately measured by touching it.

23. Sara placed an empty and dented plastic water bottle into a cup of warm water as shown in the diagram below. After fifteen minutes, she noticed that the water bottle was no longer dented.

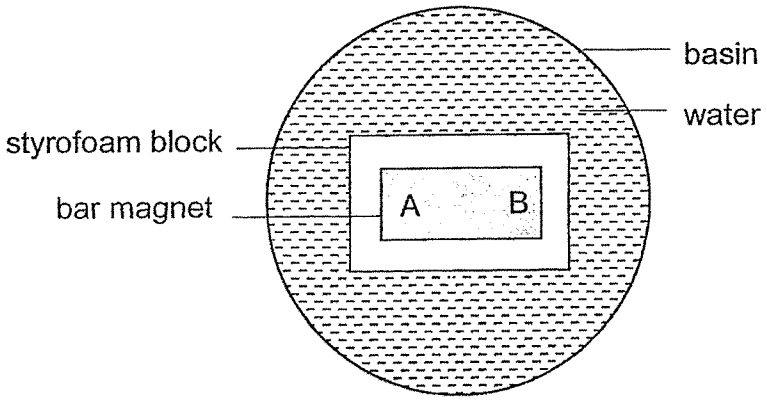


Which of the following explains her observation?

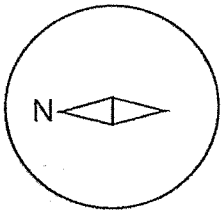
(1) The warm water lost heat to the surrounding air.
(2) The surrounding air gained heat from the warm water.
(3) The air in the bottle lost heat to the surrounding air and expanded.
(4) The air in the bottle gained heat from the warm water and expanded.

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24. Sam attached a bar magnet with poles A and B onto a piece of styrofoam block and spun it in a basin of water.
The diagram below shows the top view of the set-up when the magnet stopped spinning.



The diagram below shows the north direction indicated by the compass.

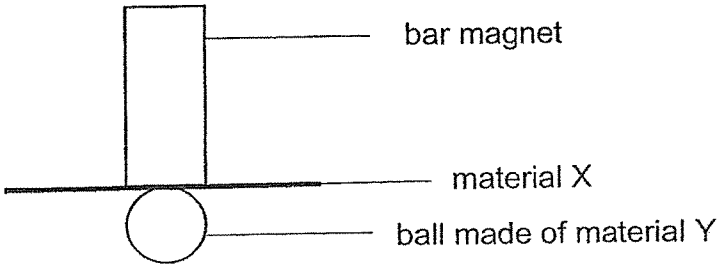


The above bar magnet was then brought near another bar magnet.
Which of the following shows the correct interaction between the two bar magnets?

	Arrangement of magnets	Interactions
(1)	A B N S	The bar magnets repelled each other.
(2)	A B S N	The bar magnets attracted each other.
(3)	B A N S	The bar magnets repelled each other.
(4)	B A S N	The bar magnets repelled each other.

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25. Billy placed a sheet of material X in between a bar magnet and a ball made of material Y as shown in the diagram below. The bar magnet attracted the ball.



Which one of the following statements is correct?

(1) Material Y can be made into magnets.
(2) The bar magnet is attracted to material X.
(3) Material X can attract magnetic materials.
(4) The ball is made of a non-magnetic material.

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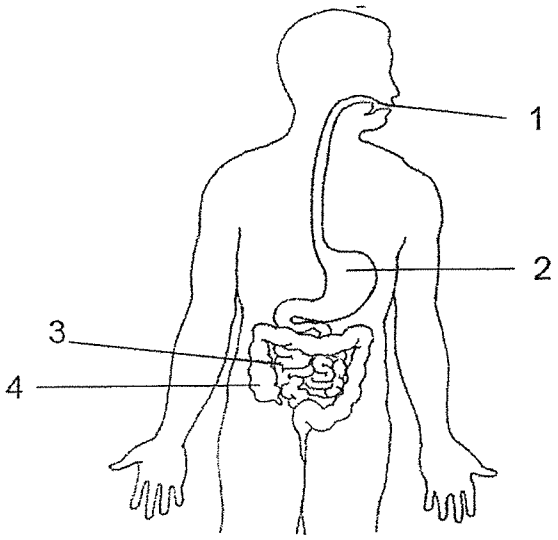
40

Name : _____ Index No: ____ Class: P4_____

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. The diagram shows the human digestive system.



Identify the part where

(a) digestion is completed: _____ [1]

(b) water is absorbed : _____ [1]

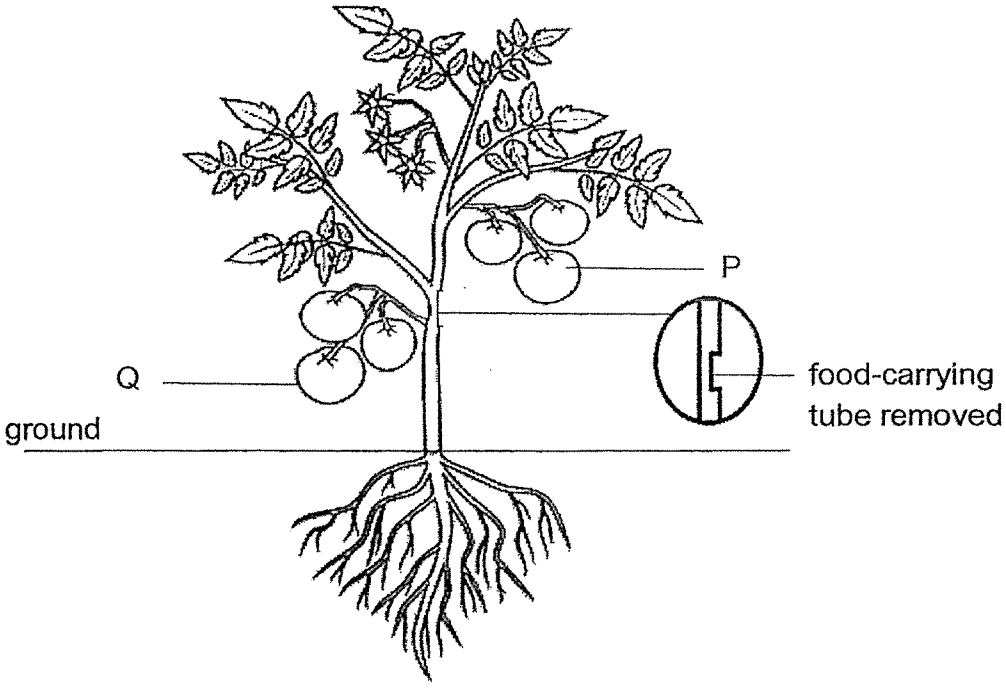
27. (a) Fill in the correct parts of the plant in the table. [2]

	Functions of plant parts	Plant parts
(i)	It holds the plant firmly to the soil.	
(ii)	It allows the plant to exchange gases with the surrounding air.	

Score 4

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(b) Devi made a cut in the stem and removed the food-carrying tube as shown below.



(i) State the function of the food-carrying tube. [1]

_____

_____

(ii) After a week, she observed that fruit Q was smaller than fruit P. Explain her observation. [2]

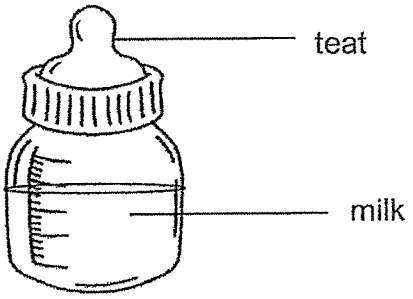
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Score	/ 3

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28. The diagram below shows a bottle of milk.

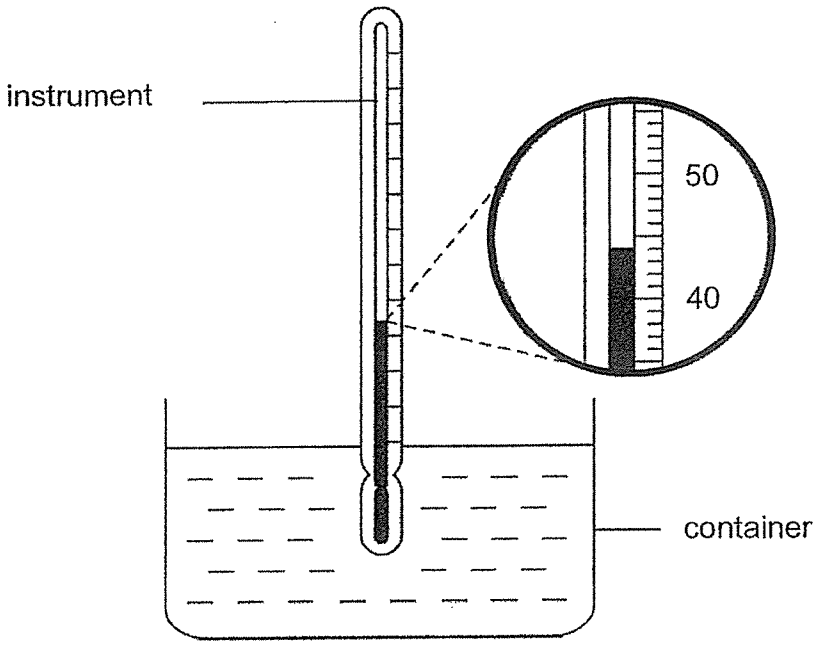


Complete the sentences to state if the parts are solid, liquid or gas.

(a) The teat is a _____ [1]

(b) Milk is a _____ [1]

29. Siti used an instrument to measure the temperature of water in a container.



(a) What is the instrument called?

_____ [1]

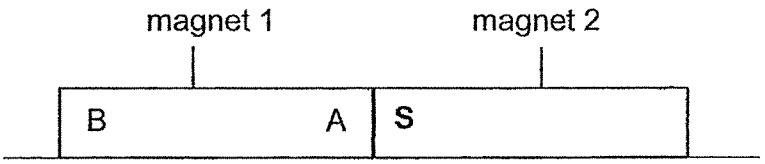
(b) What is the temperature of water in the glass?

_____ °C [1]

Score	4

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30. Two magnets are placed together as shown below.



The south pole of magnet 2 is labelled **S**.

Name the poles labelled A and B on magnet 1.

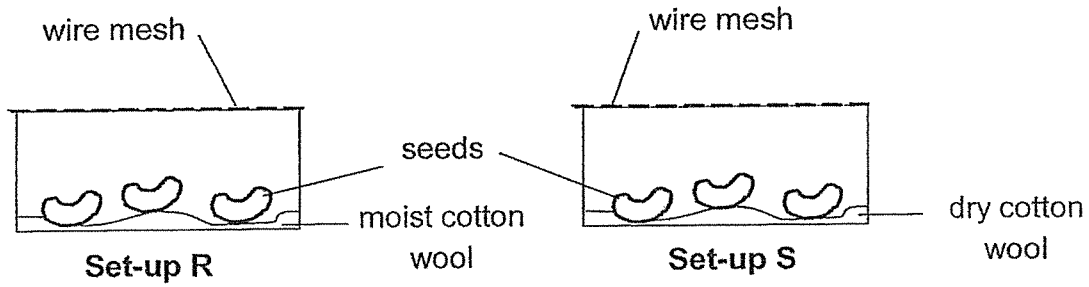
A: _____ [1]

B: _____ [1]

Score	
	2

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31. Kathy prepared two set-ups, R and S, using identical seeds as shown in the diagrams below. She wanted to find out if water is needed for the seeds to germinate. She placed both set-ups in a room near the window.



(a) State another variable that Kathy must keep the same to conduct a fair experiment. [1]

_____

(b) Kathy predicted that the seeds in set-up S will germinate. Do you agree with her? Explain your answer. [1]

_____

_____

Continue on next page

Score 2

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Continued from previous page

Kathy conducted another experiment to study if the amount of fertiliser added affects the height of the plant. She placed four set-ups with identical pots and plants near a window. She added identical amount of water to all the set-ups daily. The table below shows the heights of the plants at the end of the second week.

Set-up	Amount of fertilizer (g)	Height of the plant at the end of the second week (cm)
A	50	5
B	80	10
C	110	18
D	140	18

(c) Based on the results, state the relationship between the amount of fertiliser added and the height of the plant. [1]

_____

_____

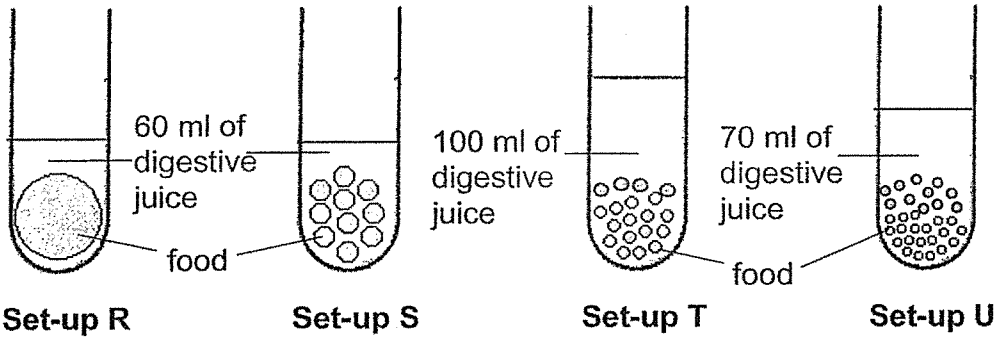
(d) State the least amount of fertiliser needed for the plant to reach its maximum height. [1]

_____

Score	/2

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32. Ravi conducted an experiment to find out if breaking food into smaller pieces affects the time taken for the food to be completely digested. He prepared four set-ups as shown in the diagram below. Each of the set-up had an equal mass of biscuit broken into smaller pieces.



(a) Which set-up(s) should Ravi use for his experiment?
Give a reason for your answer. [1]

_____

_____

The time taken for the biscuit to be completely digested in each set-up is shown in the table below.

Result	A	B	C	D
Time taken for the biscuit to be completely digested (min)	9	17	21	29

(b) Based on the above results, which result, A, B, C or D, belongs to set-up R?
Explain your answer. [2]

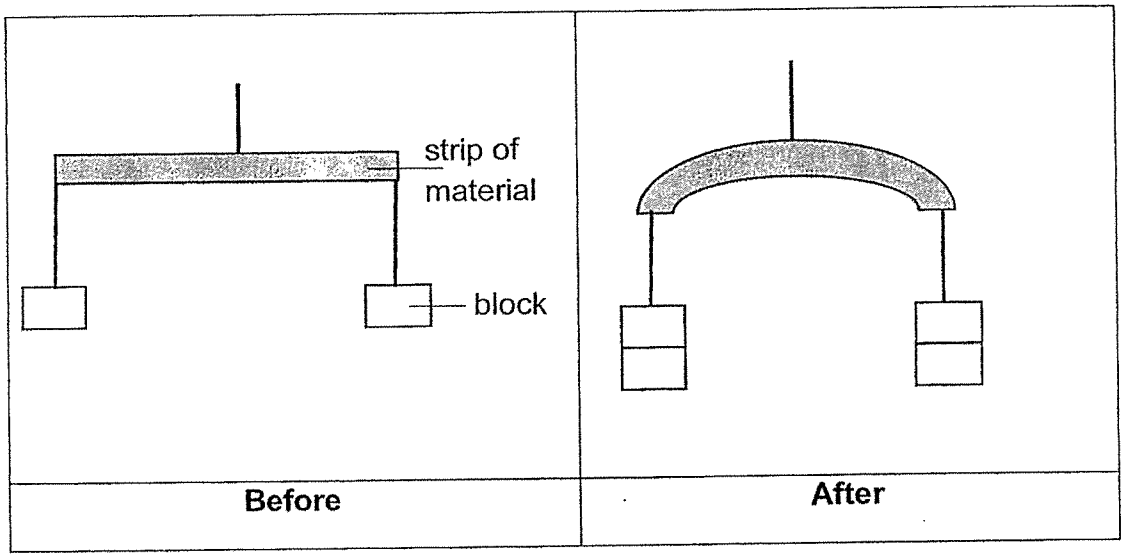
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Score	/ 3

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33. Linda carried out an investigation to find out the property of four strips of materials, A, B, C and D. She prepared the set-up as shown in the diagram below.



She hung blocks of equal masses on both ends of the strip of material until it started to bend. The experiment was repeated using different strips of materials.

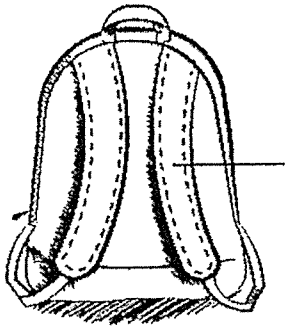
She recorded her results as shown in the table below.

Material	Number of blocks added on each strip of material until it started to bend
A	10
B	7
C	13
D	4

(a) Name the property of material tested in this experiment. [1]

_____

Linda would like to use one of the four strips of materials, A, B, C or D to make part X of the bag below.



Score	
	1

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(b) Which material, A, B, C or D, will be the most suitable for making part X? Explain your answer. [2]

_____

_____

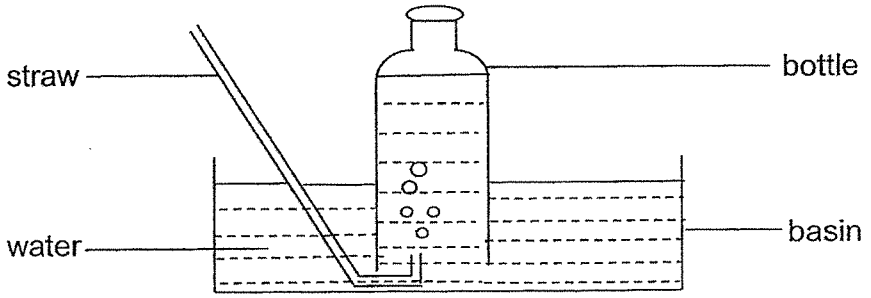
(c) State another important property that is needed to make part X. [1]

_____

Score	/3

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34. The base of a bottle was cut away. Jenny blew air into the bottle using a straw as shown in the set-up below.



(a) Will the new water level in the bottle increase, decrease or remain the same after she had blown air into the bottle?
Explain your answer. [2]

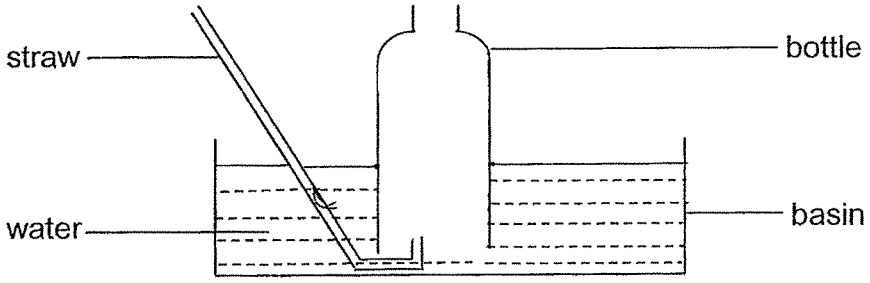
_____

_____

(b) What would happen to the volume of air in the bottle when air was blown into the bottle through the straw? [1]

_____

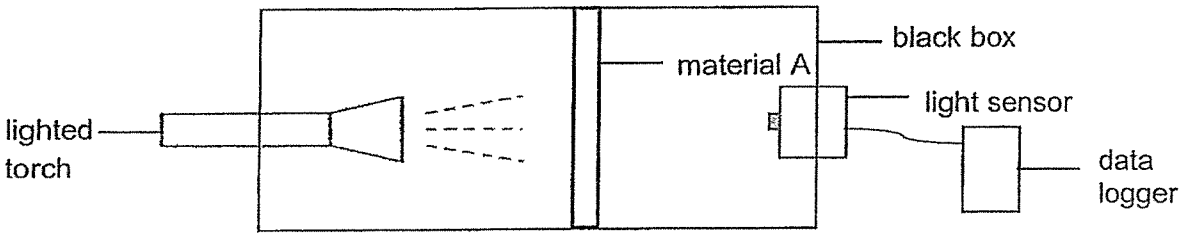
(c) Draw the water level in the bottle when the bottle lid is removed in the diagram below. [1]



Score	/4

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35. Mei Mei conducted an experiment to find out the amount of light that can pass through different materials of identical size and thickness. She prepared the set-up using material A as shown in the diagram below and measured the amount of light that passed through it using the light sensor. The amount of light from the torch is 500 lux.



She repeated the experiment by replacing with materials B and C respectively and recorded the results as shown below.

Material	Amount of light detected by light sensor (lux)
A	0
B	250
C	?

Mei Mei forgot to record the data for material C.

(a) Material C can be used to make the lenses of reading glasses.

(i) Put a tick in the box that most likely shows the amount of light detected when material C was used in the experiment. [1]

Amount of light detected by light sensor (lux)	Tick (√)
250	
420	
500	
520	

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

_____

_____

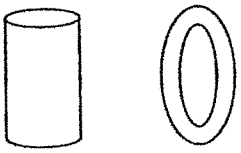
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Score	2

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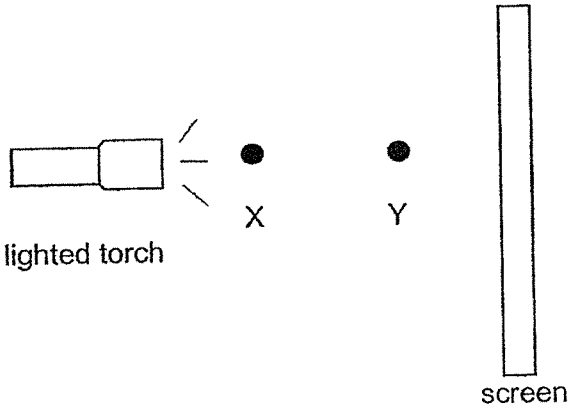
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Mei Mei conducted another experiment using objects P and Q of identical height and size as shown below.

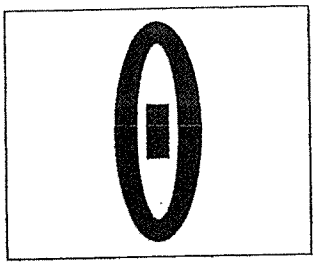


P Q

They are placed in front of a lighted torch at positions X and Y.



A dark shadow is cast on the screen as shown below.



(b) State the property of the screen. [1]

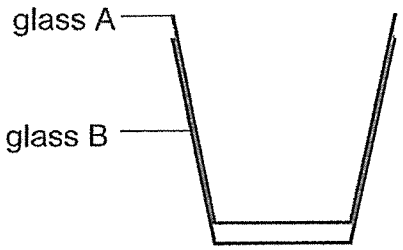
(c) Based on the shadow shown above, fill in the box with 'X' or 'Y' to show the correct positions of objects P and Q. [1]

Objects	Position
P	
Q	

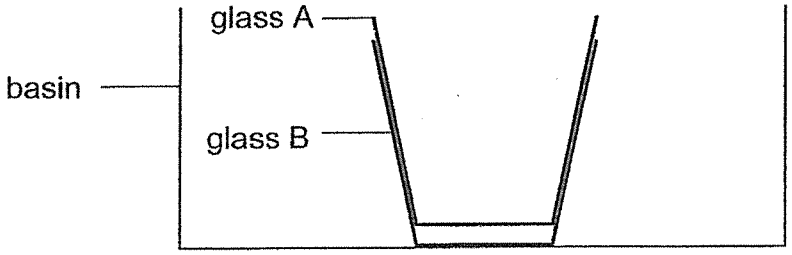
Score / 2

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36. Sally wanted to separate two identical glasses, A and B, which were stuck to each other, as shown in the diagram below.



Sally's mother advised her to use ice cubes and hot water to separate the glass.



(a) Where should Sally place the ice cubes and hot water in the set-up above in order to separate the glasses most quickly? [1]

(i) ice cube - _____

(ii) hot water - _____

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

_____

_____

Score	
	2

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(c) Sally measured and recorded the temperature of the hot water in the ~~basin~~ bowl for sixty minutes in the table below.

Time (min)	Temperature of the water in the bowl (°C)
0	80
10	65
20	49
30	32
40	28
50	28
60	?

Predict the temperature of water in the ~~basin~~ bowl at the end of sixty minutes. [1]

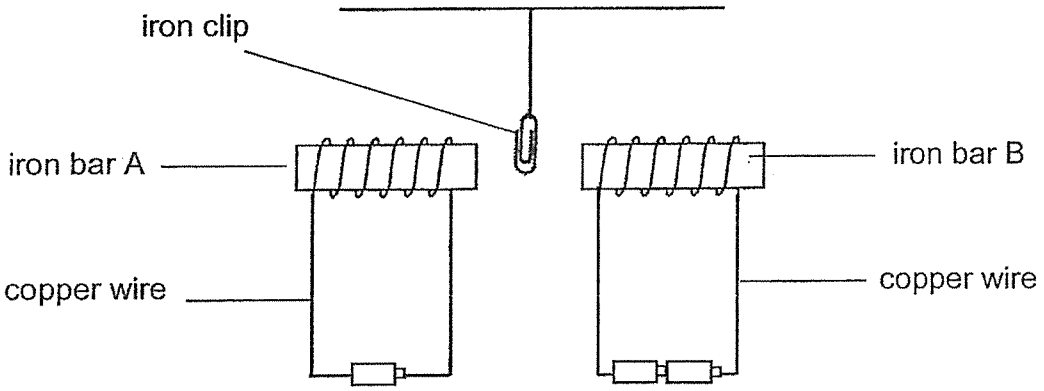
_____

_____

Score	/ 4

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37. John set up two electromagnets using similar iron bars, A and B. He placed an iron clip at the same distance between two electromagnets as shown in the diagram below.



There were the same number of copper wire coiled around both iron bars.

(a) Describe what would happen to the paper clip in the set-up above. [1]

_____

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

_____

_____

(c) What will happen to the iron clip if both iron bars were replaced with aluminium bars? [1]

_____

_____

End of Paper

Score	
	4

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YEAR : 2021
LEVEL : PRIMARY 4
SCHOOL : Raffles Girls' Primary School
SUBJECT : Science
TERM : Practice Paper (JA2)

Section A

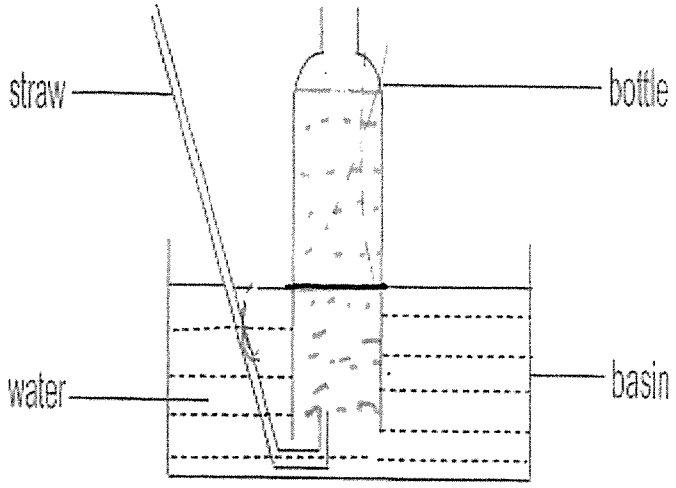
Q1	3	Q2	4	Q3	3	Q4	2	Q5	1
Q6	4	Q7	4	Q8	4	Q9	4	Q10	1
Q11	4	Q12	4	Q13	3	Q14	1	Q15	2
Q16	1	Q17	4	Q18	1	Q19	2	Q20	4
Q21	3	Q22	2	Q23	4	Q24	3	Q25	1

Section B

Q26	(a) 3 (b) 4
Q27	(a) (i) Roots (ii) Leaf (b) (i) It transports food from the leaves to all parts of the plant. (ii) Part of the food-carrying tubes that lead to Q has been removed. Lesser food made by the leaves is able to be transported to Q. The food-carrying tubes to P are still intact thus food will be able to be transported to P.
Q28	(a) solid (b) liquid
Q29	(a) clinical thermometer (b) 44°C
Q30	A : North-pole B : South-pole

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<table>
<tr><td>Q31</td><td>(a) Kathy must use the same containers
(b) No. The seed in set-up S did not have water to survive. So it will not germinate, thus I do not agree with Kathy.
(c) As the amount of fertiliser added increases to 110g, the height of the plant increases.
(d) 110g</td></tr>
<tr><td>Q32</td><td>(a) Set-up R and S. The food in set-up S is broken into smaller pieces while the food in set-up R is not.
(b) The food in R took the longest time to digest as it had the smallest exposed surface area.</td></tr>
<tr><td>Q33</td><td>(a) Flexibility
(b) Material D. It has the least number of blocks added until it bended. Thus it is the most flexible material.
(c) It must be strong.</td></tr>
<tr><td>Q34</td><td>(a) Decrease. Air would occupy the space previously occupied by the water.
(b) It would increase.


(c)</td></tr>
<tr><td>Q35</td><td>(a)(i) 500
(ii) The lenses of a reading glasses is transparent and allows most light to pass through.
(b) the screen does not allow light to pass through.
(c)
<table><tr><td>P</td><td>Y</td></tr><tr><td>Q</td><td>X</td></tr></table></td></tr>
</table>

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Q36	(a)(i) In glass A (ii) In the basin (b) So that glass B will gain heat from the hot water and expand. Glass A will lose heat to the ice and contracts. (c) 28°C
Q37	(a) Iron bar B would attract the paper clip. (b) The magnetic force of iron bar B is stronger as the set up has more batteries thus attracting the paper clip. (c) The iron clip will remain in the same position.

END

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