MAHA BODHI SCHOOL
2020 SEMESTRAL ASSESSMENT 2
PRIMARY FOUR SCIENCE
(BOOKLET A)

Name : _____ ( )

Class : Primary 4 _____

Date : 5 November 2020

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

INSTRUCTIONS TO CANDIDATES:

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Shade your answers in the Optical Answer Sheet (OAS) provided.

This booklet consists of **14** printed pages.

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BOOKLET A : [28 x 2 marks = 56 marks]

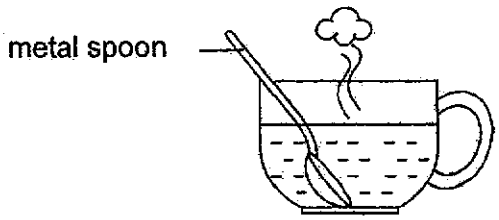
For each question from 1 to 27, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade your answer on the Optical Answer Sheet.**

1. Henry boiled some soup in the pot shown below.

He is able to hold the pot of boiling soup using the rubber handles. This is because rubber is a _____.

(1) light material
(2) flexible material
(3) poor conductor of heat
(4) good conductor of heat

2. Ronald places a metal spoon in a cup of hot coffee.

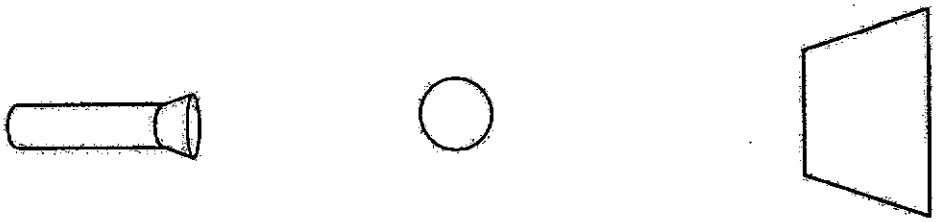


The spoon becomes hotter after a while.

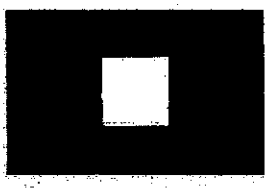
Which one of the following explains this?

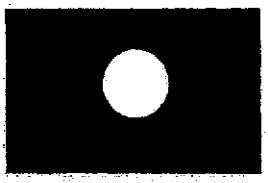
(1) The cup loses heat to the hot coffee.
(2) The spoon loses heat to the hot coffee.
(3) The hot coffee gains heat from the spoon.
(4) The spoon gains heat from the hot coffee.

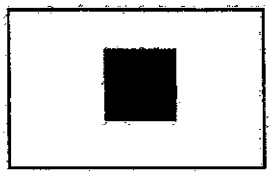
3. The set-up below shows light shining on a wooden ball.

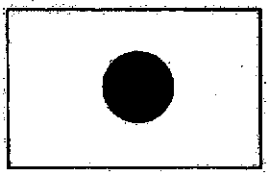


Which one of the following would likely be seen on the screen?

(1) 

(2) 

(3) 

(4) 

4. Which animal has a larva as a stage in its life cycle?

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

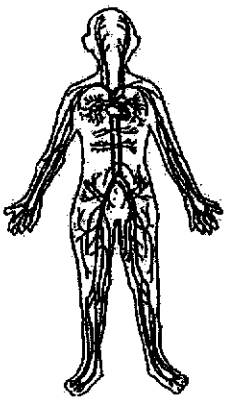
5. Which one of the following properties is true for both air and a ball?

(1) They can be seen.
(2) They take up space.
(3) They have fixed shapes.
(4) They have fixed volumes.

6. What is the function of a stem on a plant?

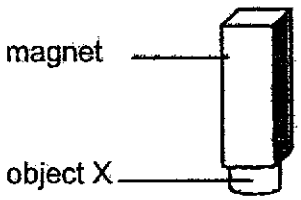
(1) makes food
(2) takes in water
(3) holds plant upright
(4) takes in mineral salts

7. Which organ system is shown in the diagram?



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

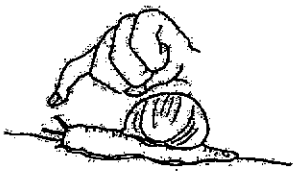
8. A magnet attracts object X as shown in the diagram below.



Object X is made of _____.

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

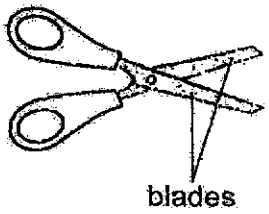
9. A snail hides itself in its shell when touched.



This shows that the snail is a living thing because it can _____.

(1) grow
(2) breathe
(3) respond
(4) reproduce

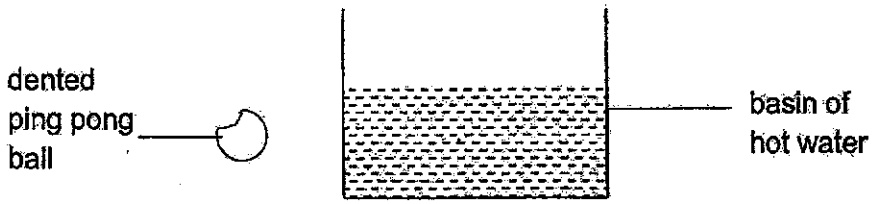
10. The diagram shows a pair of scissors.



Metal is used to make the blades of the scissors because metal _____.

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

11. Shu Ling puts a dented ping pong ball into a basin of hot water.

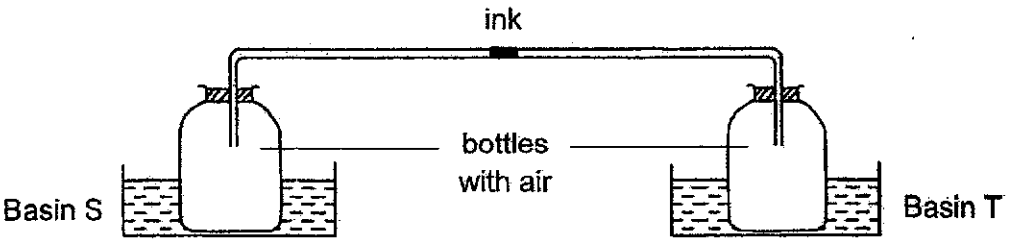


What will she observe after the dented ping pong ball is pushed down with a pair of tongs into the basin of hot water for a few minutes?

A. The shape of ping pong ball changes.
B. The water level in the basin increases.
C. The volume of ping pong ball increases.
D. The volume of water in the basin increases.

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

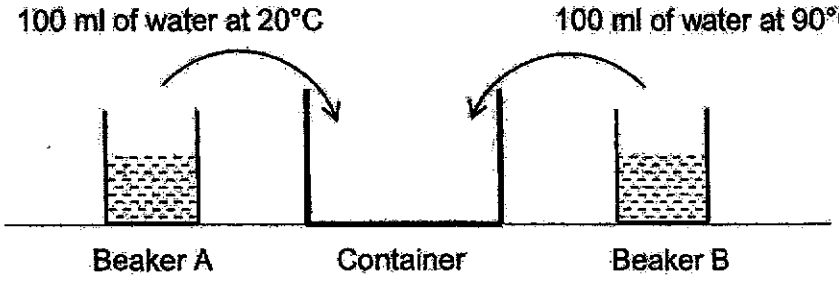
12. Study the set-up shown below. Paul connected two identical bottles using a glass tube with a drop of ink. He placed one bottle in basin S and the other bottle in basin T. Both basins contained same amounts of water at different temperatures.



Which of the following is correct?

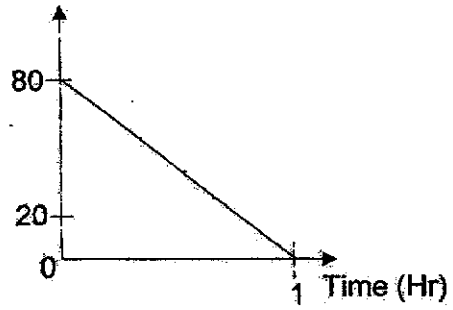
		Temperature of water (°C)	
	Movement of ink	Basin S	Basin T
(1)	←	10	80
(2)	←	50	50
(3)	→	10	80
(4)	→	30	30

13. Beaker A contained 100 ml of water at 20°C. Beaker B contained 100 ml of water at 90°C. Sharifah poured all the water in both beakers into a container as shown in the diagram below.

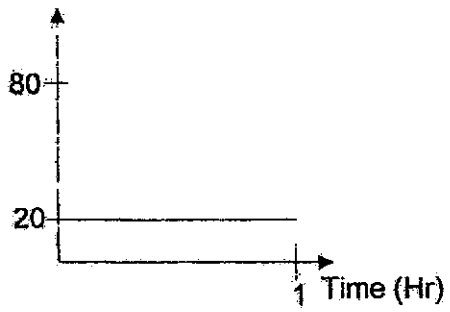


Which of the graphs below shows the temperature of the water in the container after an hour?

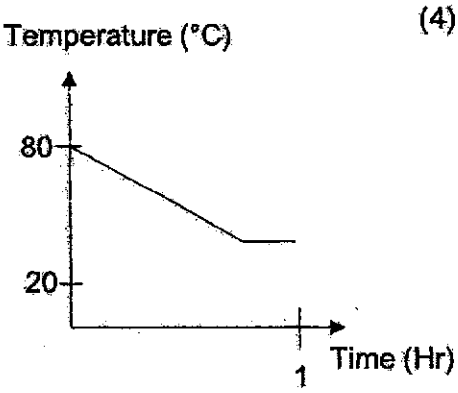
(1)



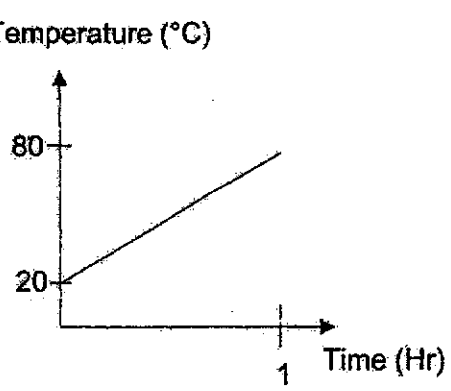
(2)



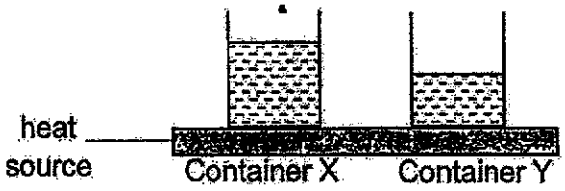
(3)



(4)



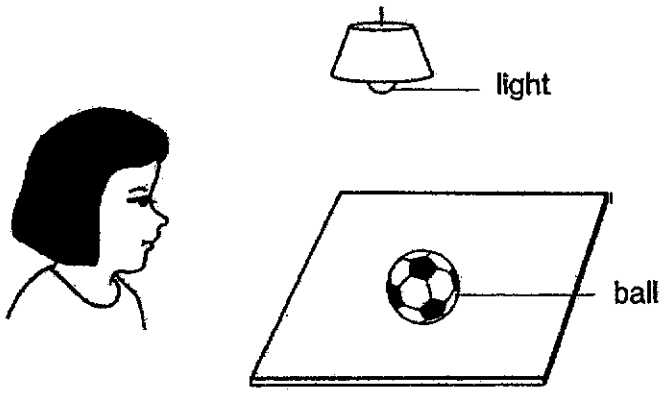
14. Two identical containers, X and Y, were filled with different amounts of tap water. The containers were heated at the same time for 15 minutes.



Which of the following gives the correct temperature of water in the containers after 15 minutes?

	Container X	Container Y
(1)	28°C	28°C
(2)	70°C	55°C
(3)	55°C	70°C
(4)	50°C	50°C

15. Study at the picture below.



Which of the following statements correctly explains why the girl was able to see the ball on the table?

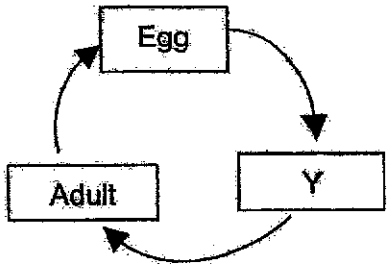
(1) Light fell onto the ball on the table.

(2) Light was reflected from the ball to her eyes.

(3) Light shone into her eyes to allow her to see.

(4) Light was reflected from her eyes onto the ball.

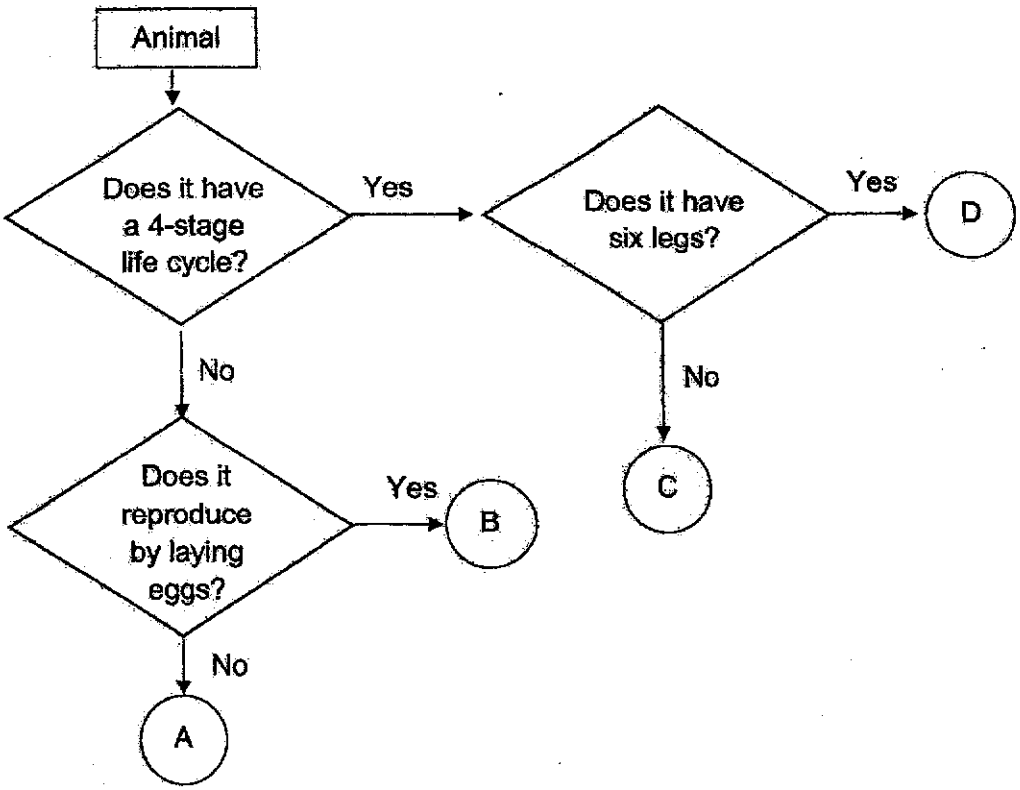
16. Study the life cycle of a grasshopper below.



Stage Y is a _____.

(1) pupa
(2) larva
(3) nymph
(4) seedling

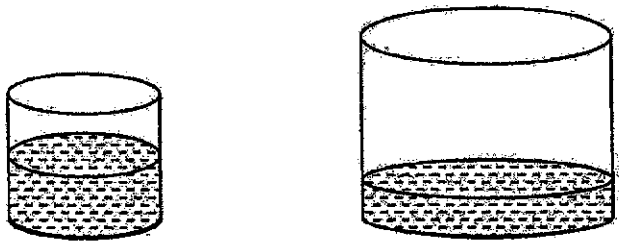
17. Study the flowchart below.



Based on the flowchart above, which letter best represents a mealworm beetle?

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

18. Devi had two empty containers M and P. She poured 200 ml of coloured water into container M. She then poured all the coloured water from container M into container P as shown below.



Container M Container P

Based on her observations, which of the following statements is not correct?

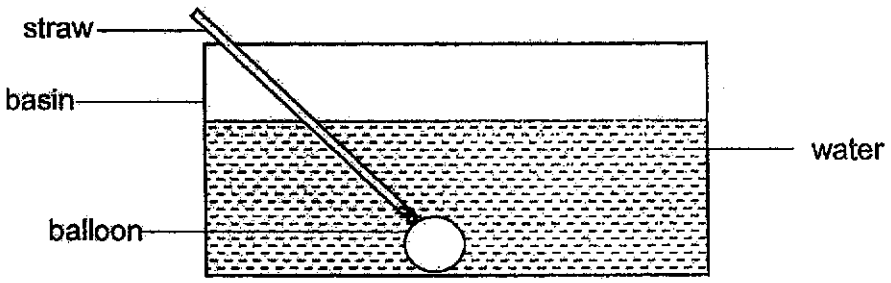
(1) The water takes the shape of containers M and P.

(2) The mass of water in both containers are the same.

(3) The volume of water in both containers are the same.

(4) The water in container M was compressed when poured in P.

19. Alden set up an experiment as shown below. He tied a metal straw to a deflated balloon and put it in water. He then blew some air into the balloon.



Which one of the following statements is true after he blew air into the deflated balloon?

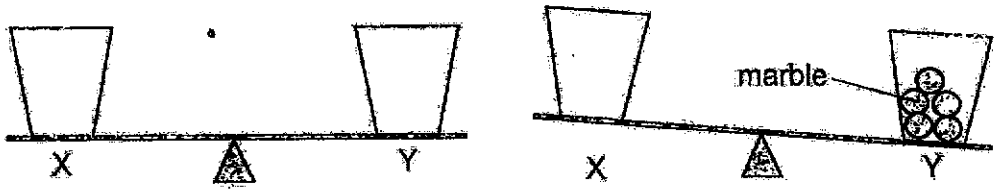
(1) The water level will fall.

(2) The water level in basin will rise.

(3) There will not be a change in the water level.

(4) The volume of water in the basin will increase.

20. Jane had two identical cups, X and Y. She placed the cups on a balance as shown in diagram. She then placed five marbles in cup Y and observed that the balance tilted to one side as shown below.



Which one of the following conclusions is correct?

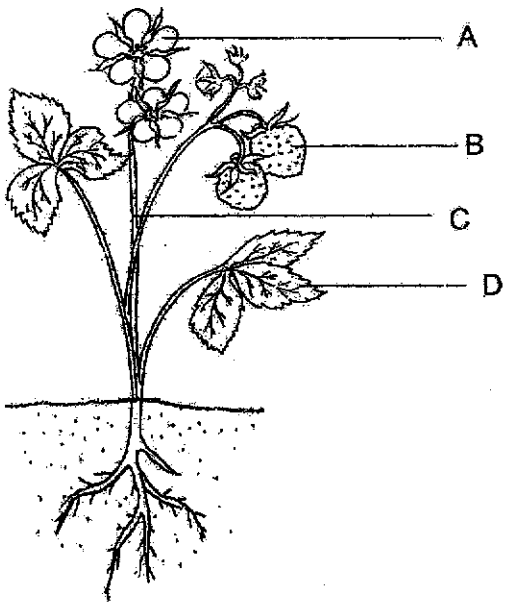
(1) Air in cup Y is compressed.

(2) Cup X has a greater mass than cup Y.

(3) Cup Y has a greater mass than cup X.

(4) Marbles in cup Y occupy space and have mass.

21. The diagram below shows a plant.



Which one of the plant parts, A, B, C or D, helps the plant to make food?

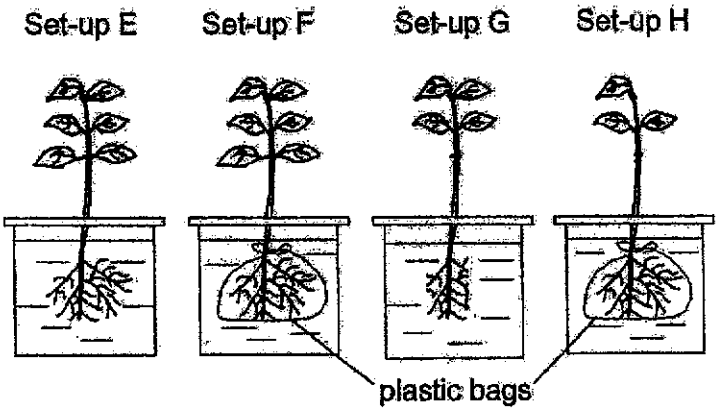
(1) A

(2) B

(3) C

(4) D

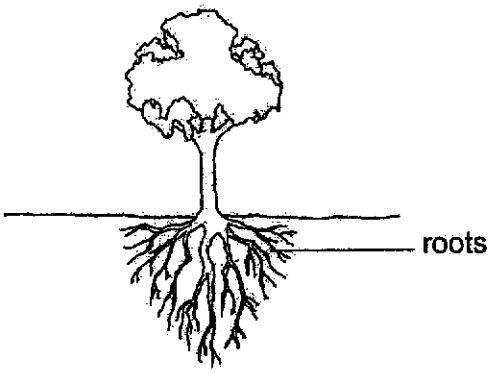
22. Hannah sets up an experiment to find out if the roots of plants took in water. He wrapped the roots of plants in set-up F and H. He then placed the four plants in containers with the same amount of water as shown in the diagram below.



Which of the two set-ups above should she choose to conduct the experiment?

(1) E and F only
(2) E and G only
(3) F and H only
(4) G and H only

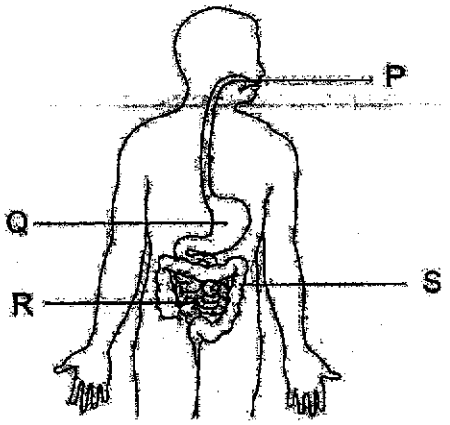
23. The diagram below shows a tree.



Which one of the following statements explains why the tree will not get blown away during a heavy rain?

(1) Its leaves spread out to protect it.
(2) Its trunk holds the tree to the ground.
(3) Its roots hold the tree firmly to the ground.
(4) Its branches support the tree from being blown away.

24. Study the diagram below.

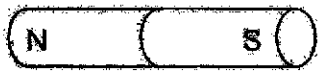


Identify the parts where digestion takes place.

(1) P and Q only
(2) R and S only
(3) P, Q and R only
(4) Q, R and S only

25. Valerie placed objects A, B, C and D near the North pole of a magnet, one at a time, and recorded her observations in the table below.


object



magnet

Object	Observation
A	Repulsion
B	Attraction
C	No reaction
D	Attraction

Based on her observation, which statement is true?

(1) Object C is made of steel.
(2) Objects B and D have the same magnetic strength.
(3) Object A will be attracted by the South pole of the magnet.
(4) Objects B and D will be repelled by the South pole of the magnet.

26. Two strong bar magnets are placed next to each other on a table. A plastic ping pong ball is placed at the edge of the table.

What will most likely happen to the ping pong ball when magnet X is pushed towards magnet Y as shown above?

The ping pong ball will _____.

(1) not move as it is a non-magnetic material

(2) be compressed as it has no definite volume

(3) move to the left as it is attracted by magnet Y

(4) roll off the table as the two magnets repel each other

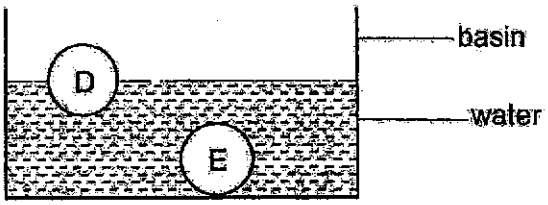
27. Study the table below. It shows the characteristics of living things P, Q, and R. A tick (✓) shows that the characteristic is present.

	Characteristics		
Living thing	makes its own food	reproduce by spores	have scales
P	x	x	✓
Q	x	✓	x
R	✓	✓	x

Which one of the following below best represents the living things P, Q and R?

	P	Q	R
(1)	fungi	fern	reptile
(2)	fish	fern	fungi
(3)	reptile	fungi	fern
(4)	fern	fungi	fish

28. Mei Xin placed two similar sized balls, D and E, made of different materials in a basin of water as shown below.



Based on her observation, what can Mei Xin conclude about the materials for D and E?

(1) D is heavier than E.

(2) D is smaller than E.

(3) D absorbs more water than E.

(4) D floats on water but E does not.

END OF BOOKLET A

GO ON TO BOOKLET B

MAHA BODHI SCHOOL
2020 SEMESTRAL ASSESSMENT 2
PRIMARY FOUR SCIENCE
(BOOKLET B)

Name: _____ ( )

Class: Primary 4 _____

Date : 5 November 2020

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

INSTRUCTIONS TO CANDIDATES:

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Write all your answer in this booklet.

Booklet	Marks Obtained	Max Marks
A		56
B		44
Total		100

Parent's signature: _____

This booklet consists of **14** printed pages.

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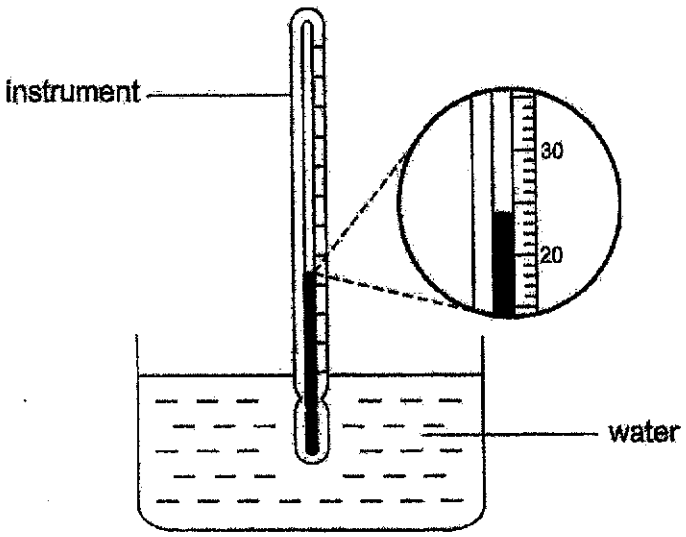
BOOKLET B : [44 marks]
For questions 29 to 41, write your answers in this booklet.

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

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



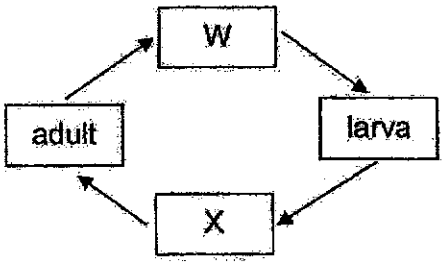
(a) What is the instrument called? [1]

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

_____ °C

Marks : / 2

30. The diagram below shows the stages in the life cycle of a butterfly.



Choose the correct words from the box to answer the questions below.

pupa	egg	caterpillar	seed

(a) Name the two stages W and X. [2]

W : _____

X : _____

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

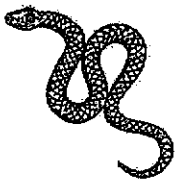
_____

31. Fill in the correct parts of a plant in the table. [2]

Functions of plant parts	Plant parts
It takes in water for the plant.	
It makes food for the plant.	

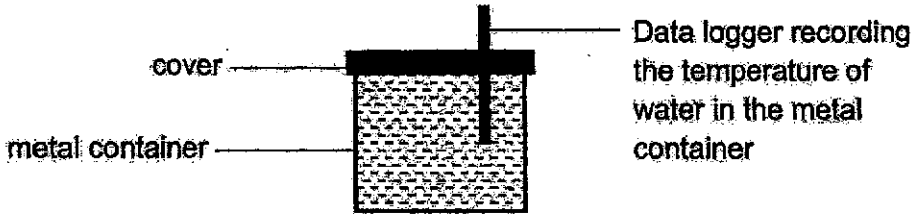
Marks : / 5

32. Draw lines to match the following animals to the correct groups. [3]

Animals	Groups
	• mammal
	• reptile
	• bird
	• amphibian

Marks : / 3

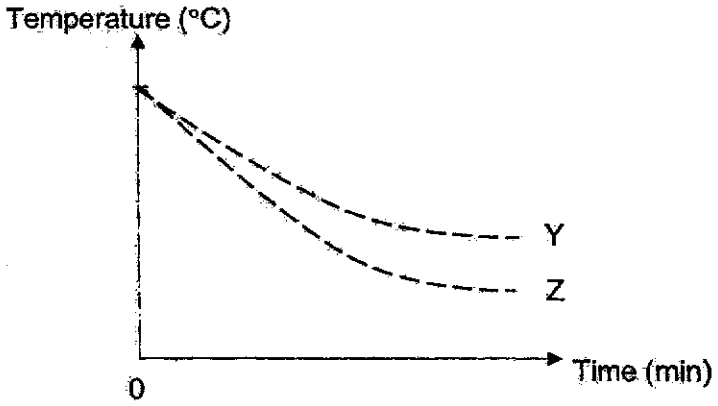
33. (a) Jason poured 500ml of water at 70°C into a metal container and sealed it as shown in the diagram below.



The temperature of the water was taken at regular intervals using the data logger. After 20 minutes, the temperature of the water changed.

(i) Explain the change in the temperature of water after 20 minutes. [1]

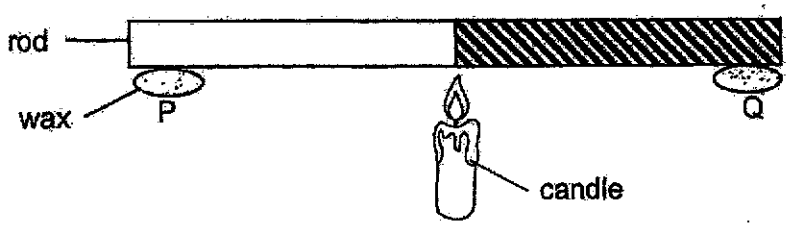
Jason repeated the experiment using a plastic container. The graph below shows the change in the temperature of water using the metal and plastic containers.



(ii) Which line, Y or Z, in the graph above shows the temperature of the water in the plastic container? Explain your answer. [1]

Marks : / 2

(b) The rod shown below is made of two materials, metal and plastic. Two pieces of wax of the same size, P and Q, are attached to the two ends of the rod at equal distance from the flame.



(i) What will you observe to identify which part of the rod is made of metal or plastic? [1]

_____

_____

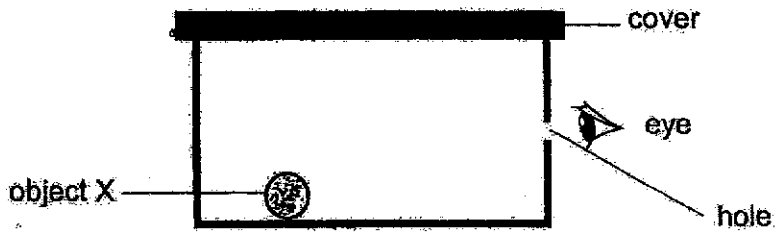
(ii) Explain your observation in (i). [1]

_____

_____

Marks : / 2

34. An object X was placed in a black sealed box with a small hole at the side.



Patricia looked through the hole in the box to see what the object X was.

(a) She could not see object X. Explain why. [1]

(b) Without changing the box, what could she do so that she can see the object X in the box. [1]

(c) Patricia changed the cover of the box and she was able to see object X in the box through the new cover.

What can you conclude about the property of the material of the new cover? [1]

Marks : / 3

35. The adult Aedes mosquito spreads dengue fever in human.
The table below shows how temperature affects the duration of the different stages in the life cycle of the Aedes mosquito.

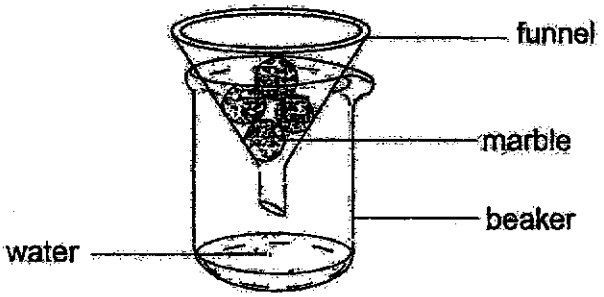
Temperature (°C)	Duration (days)			
	Egg stage	Larval stage	Pupal stage	Total
24	2	9	2	13
26	2	8	2	12
28	2	7	2	11
30	2	6	2	10

(a) Which stage of the mosquito life cycle is affected by the increase in temperature? [1]

(b) Based on the results above, explain how the increase in temperature affects the duration of the complete life cycle of the mosquito. [2]

(c) State one way how we can prevent the breeding of mosquitoes at home. [1]

36. Ali set up an experiment to find out the different properties of matter. He placed four marbles into a funnel. Then, he poured 50ml of water into the funnel as shown below.



(a) Study the statements in the table below. Fill in the table with true or false. [1]

Statements	True / False
The shape of the marbles will not change if they are placed in a different beaker.	
The volume of air in the beaker increased as the water was poured into the beaker.	

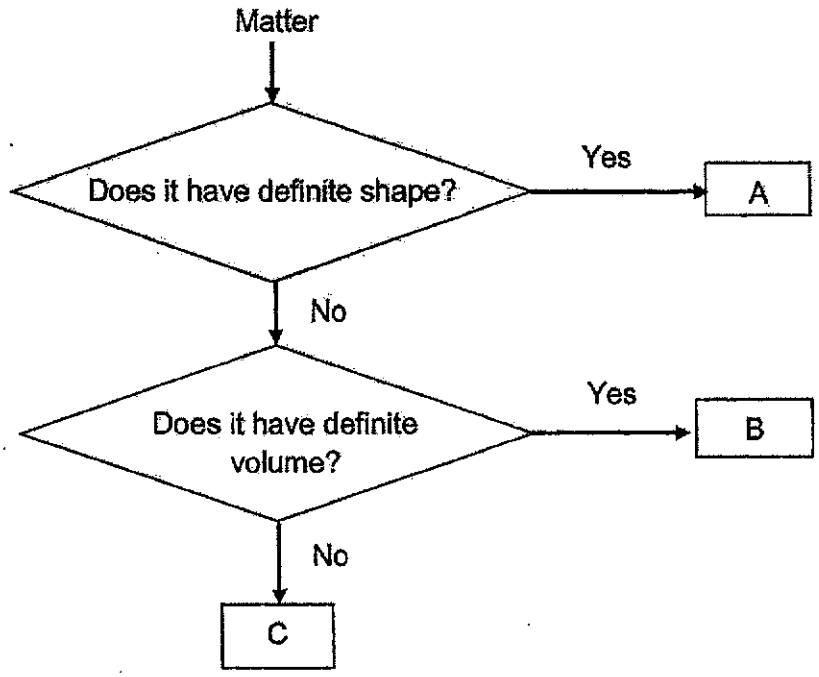
(b) Give a reason why the water was able to flow past the marbles and down into the beaker. [1]

(c) (i) If no water was spilled during the experiment, state the amount of water collected in the beaker at the end of the experiment. [1]

(ii) Based on the properties of matter, explain your answer in (i). [1]

Marks : / 4

37. Study the flowchart below.



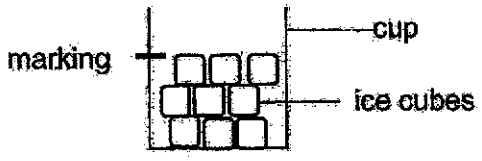
(a) Which matters, A, B or C best represent a stone and oxygen?
Fill in the blanks below with the letters A, B or C. [2]

(i) Stone : _____

(ii) Oxygen: _____

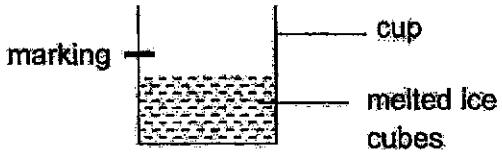
Marks : /2

37. (b) Jennifer left a cup of ice cubes on the table She marked the level of ice cubes in the cup using a marker as shown below.



(i) She returned an hour later and the ice cubes had melted.
State the change in the state of matter in the experiment above. [1]

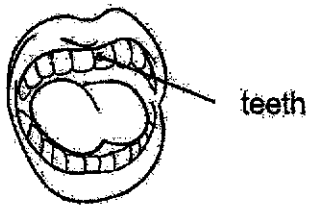
(ii) She observed that the level of melted ice cubes was lower than the marking made before the ice cubes melted as shown below.



Based on the properties of matter, explain why the marking of melted ice cubes is lower although no water spilled out of the cup. [2]

Marks : / 3

38. (a) The diagram below shows a human mouth.



State one way how the mouth helps in the digestion of food. [1]

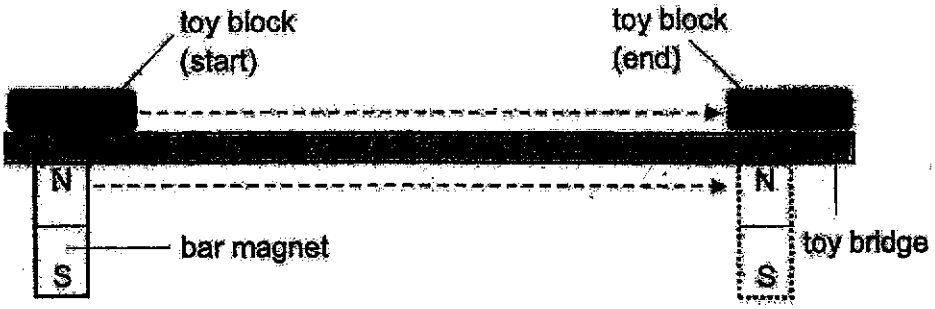
(b) The graph below shows the amount of digested food in four different organs in the digestive system.

(i) Which organ shown in the graph had the wrong amount of digested food? [1]

(ii) Explain your answer in (i). [1]

Marks : / 3

39. Gavin learnt that magnetism can pass through the toy bridge which was made of a non-magnetic material. So, he placed a bar magnet under one end of the toy bridge and used the magnet to move the toy block to the other end of the bridge as shown in the diagram below.



(a) Suggest a material which the toy bridge could be made of. [1]

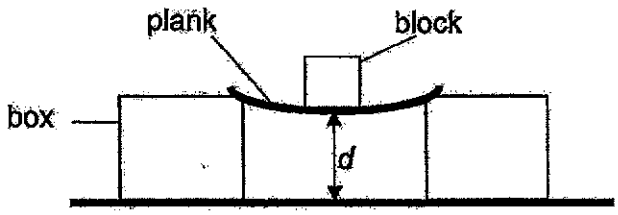
(b) Explain why the toy block was able to move with the magnet. [2]

(c) He replaced the toy block with another toy block of similar mass at the start point. Using the same bar magnet and toy bridge, he tried to move the toy block to the other end of the bridge. However, the block did not move.

Give a reason for his observation. [1]

Marks : / 4

40. James conducted an experiment using three similar planks, S, T and U, made of different materials. He placed the same block on the planks and measured the distance (*d*) between the table and the plank as shown below.

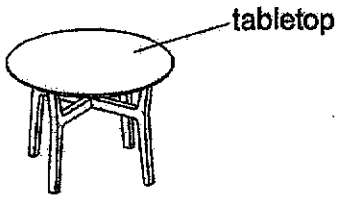


He recorded the results in the table below.

Materials	Distance(*d*) cm
S	8
T	3
U	5

(a) What property of the materials was James testing for? [1]

(b) James needed to choose a material to make a tabletop as shown below.

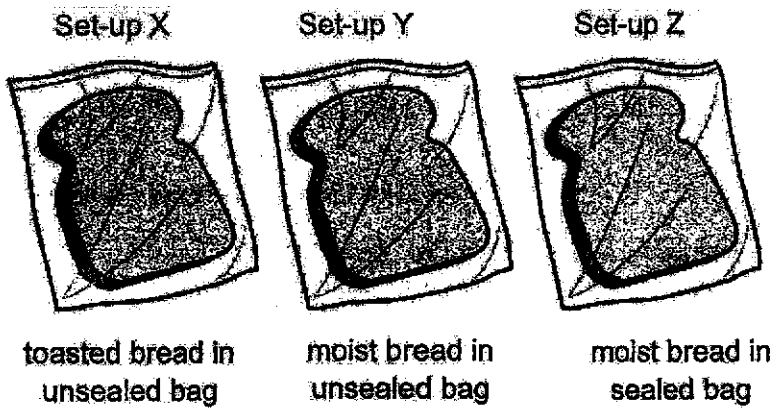


Based on the results above, which material is suitable to make the tabletop? Explain your answer. [2]

(c) James needed to put heavy books on the table. State one other property of the material to allow him to put heavy books on the table. [1]

Marks : / 4

41. The diagram below shows three different set-ups X, Y and Z with different conditions.



(a) No mould is observed in set-up X after 3 days. Explain why. [1]

_____

_____

(b) There is more mould growing in set-up Y than set-up Z. Explain why. [2]

_____

_____

_____

Marks : / 3

~ END OF PAPER ~

SCHOOL : MAHA BODHI SCHOOL

LEVEL : PRIMARY 4
SUBJECT : SCIENCE
TERM : 2020 SA2

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	4	4	2	2	3	4	1	3	2

Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	1	3	3	2	3	4	4	2	4

Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28
4	1	3	3	3	4	3	4

SECTION B

Q29)	(a) Thermometer (b) 24°C
Q30)	(a) W: egg X: pupa (b) Mosquito
Q31)	Roots Leaves
Q32)	Snake – reptile Frog – amphibian Cat – mammal
Q33)	(a) (i) The temperature of the water decreased as it lost heat to the surroundings

	(ii) Line Y which shows a slower decrease in the temperature of water. As plastic is a poorer conductor of heat, the water lost heat slower through the plastic container to the surroundings. (b) (i) Observe which was starts melting and drop first. (ii) The wax attached to the meta part drops first because metal is a better conductor of heat. Heat from the candle flame passes through the metal to melt the wax and cause it to drop first.
Q34)	(a) There was no light in the box for the object to reflect into her eyes. (b) Place a lighted torch in the box. (c) The material allows light to pass through.
Q35)	(a) Larva (b) The increase temperature decreases the duration of the life cycle. (c) Remove still water.
Q36)	(a) True, false (b) Water does not have a fixed shape (c) (i) 50ml (ii) water has fixed volume
Q37)	(a) (i) A (ii) C (b) (i) solid to liquid (ii) the ice cubes did not take the shape of the cup, so there were gaps between them. After the ice cubes melted, the water took the shape of the cup as water does not have a fixed shape.
Q38)	(a) The teeth cut the food into smaller pieces/saliva makes the food soft enough to smaller pieces. (b) (i) Large intestine (ii) There is no digested food in the large intestine. Digestion ends in the small intestine and all digested food in the small intestine goes into the blood.
Q39)	(a) Plastic/wood/rubber/glass (b) The toy was made of magnetic material so it was attracted by

	the magnet. (c) The block was made of non-magnetic material, so the magnet could not attract it.
Q40)	(a) Flexibility (b) S. It is the stiffest among the other material. The tabletop will not bend easily when we put things on it. (c) The material is strong.
Q41)	(a) The toasted bread has no water. The bread mould needs water to grow. (b) There is more air in setup Y than setup Z. the bread mould needs air to grow.