MAHA BODHI SCHOOL

2019 SEMESTRAL ASSESSMENT 2

PRIMARY FOUR SCIENCE

(BOOKLET A)

Name : _____ _____ ( )

Class : Primary 4 _____

Date : 1 November 2019

Total Duration for Booklets A and B: 1 h 30 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 **18** printed pages.

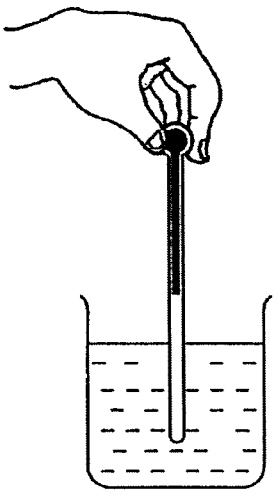
BLANK PAGE

BOOKLET A : [27 x 2 marks = 54 marks]

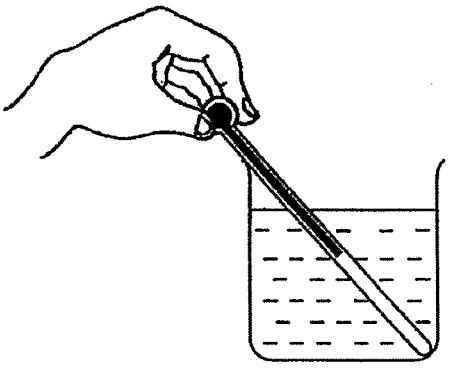
For each question from 1 to 27, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade your answer on the Optical Mark Sheet.**

1. Which of the following is a correct position of the thermometer when taking temperature reading of the water?

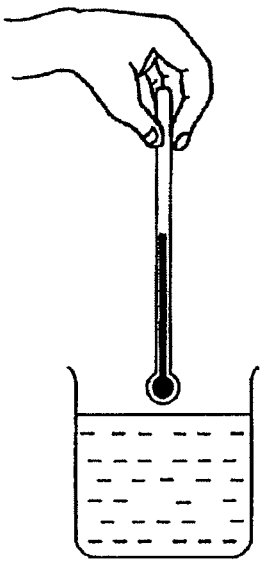
(1)



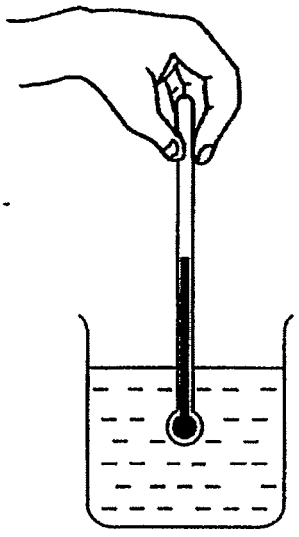
(2)



(3)



(4)



2. Which one of the following substances has a definite shape?

(1) air
(2) paint
(3) coffee
(4) drawing paper

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

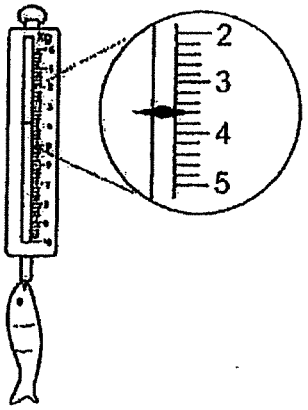
(1) 
an orange

(2) 
a fire

(3) 
the moon

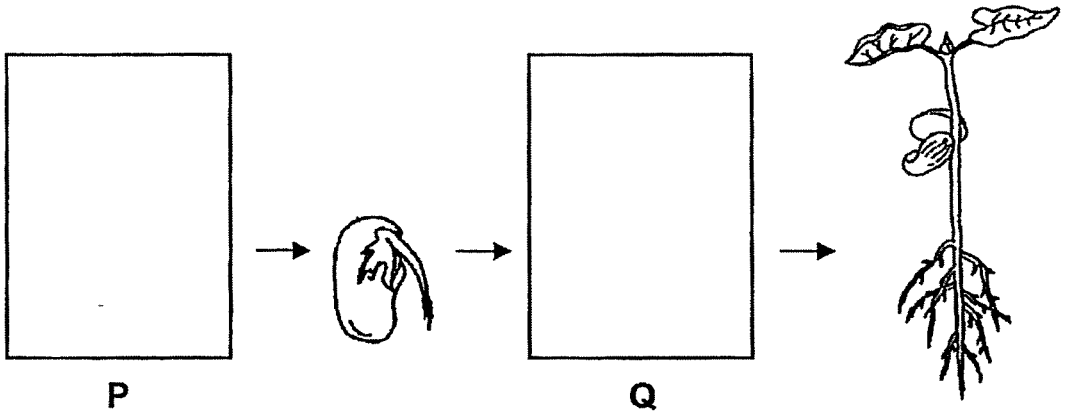
(4) 
a leaf

4. The reading on the weighing scale shows that the mass of the fish is _____ kg.

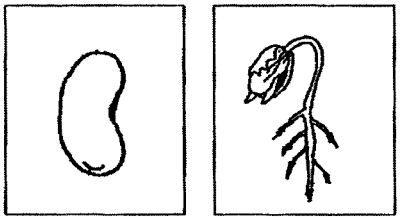


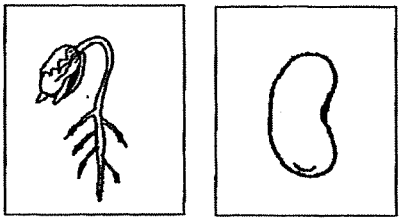
(1) 3.3
(2) 3.6
(3) 3.8
(4) 4.2

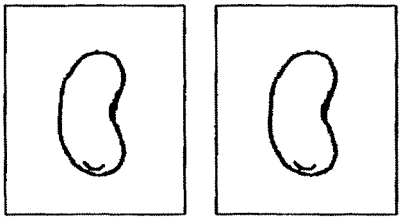
5. The diagram below shows the growth of a young plant with two missing stages P and Q.

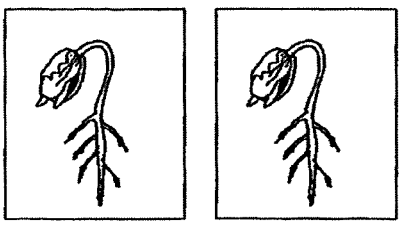


Which one of the following shows the correct stages for P and Q?

(1) 

(2) 

(3) 

(4) 

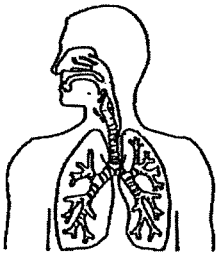
6. The arrows (⟶) in the diagram show the direction of movement of a substance in plants.

leaves ⟶ stem ⟶ roots

What is this substance?

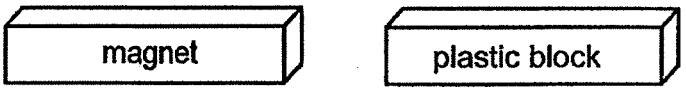
(1) minerals
(2) soil
(3) food
(4) water

7. Which organ system is shown in the diagram?



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

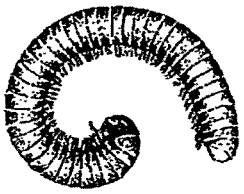
8. The diagram shows a magnet brought near a plastic block.



What will happen to the plastic block?

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

9. A millipede coils itself when touched.



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

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

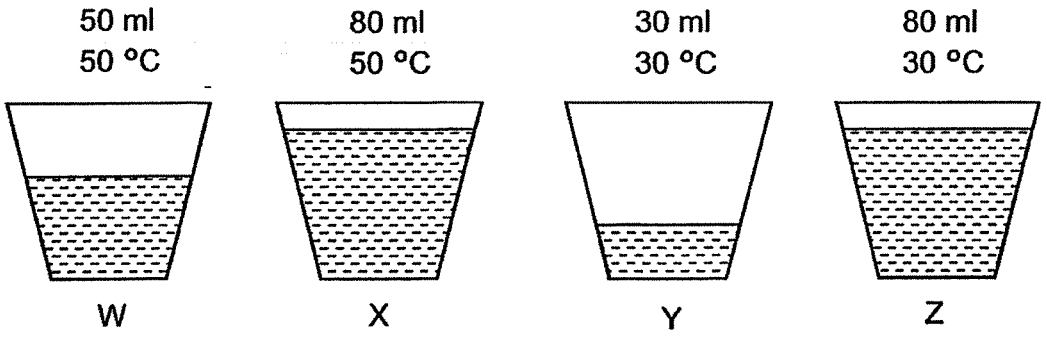
10. The diagram shows a cutting knife.



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

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

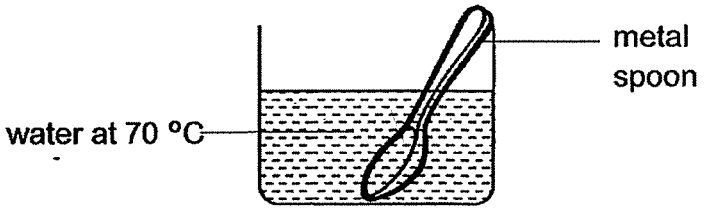
11. The diagram below shows four containers W, X, Y and Z each filled with different volumes of water at different temperatures.



Which of the containers of water has the most amount of heat?

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

12. A metal spoon was placed in a container of water at 70 °C as shown below.

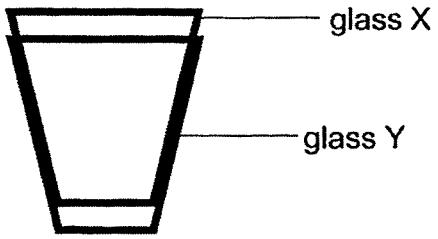


Which of the following statements are true?

A. The water loses heat to the metal spoon.
B. The metal spoon gains heat from the water.
C. The water loses heat to the surrounding air.
D. The surrounding air gains heat from the water.

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

13. The diagram below shows two glasses, X and Y, which are stuck together.

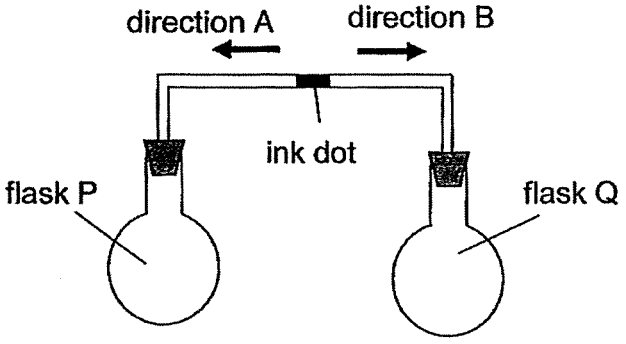


Which of the following actions and explanations correctly show how glasses X and Y can be separated?

	Action	Explanation
A.	Put hot water into glass X	Glass X will contract
B.	Put ice cubes into glass X	Glass X will contract
C.	Put glass Y in hot water	Glass Y will expand
D.	Put glass Y in ice	Glass Y will expand

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

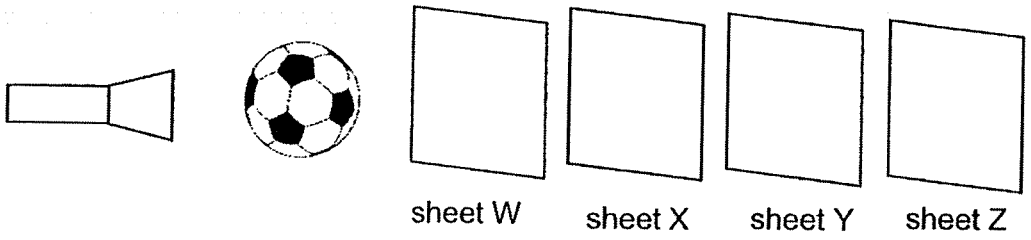
14. Study the set-up below.



Which of the following correctly describes the movement of the ink dot and the explanation when flask Q is placed in a basin of ice.

	direction of ink dot	Explanation
(1)	A	Air in flask Q contracted.
(2)	A	Air in flask P expanded.
(3)	B	Air in flask Q contracted.
(4)	B	Air in flask P expanded.

15. Linda conducted an experiment as shown in the diagram below. She placed a torch, football and four sheets of different materials in a straight line. She then turned on the torch.



A circular dark shadow was formed on sheet Y.

Based on the observation, which of the following can be concluded?

	Allow light to pass through	Do not allow light to pass through	Not able to tell
(1)	Y	W and X	Z
(2)	W and X	Y	Z
(3)	W and X	Z	Y
(4)	X and Z	W	Y

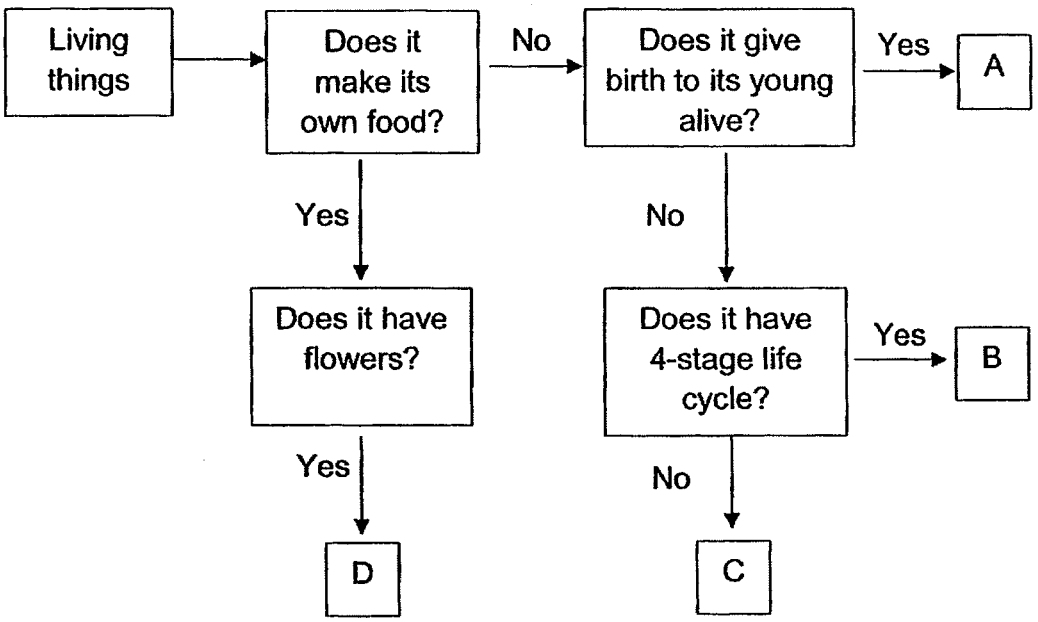
16. Study the table below.

	The young looks like the adult	Has 3-stage life cycle
Animal X	✓	✓
Animal Y	×	✓

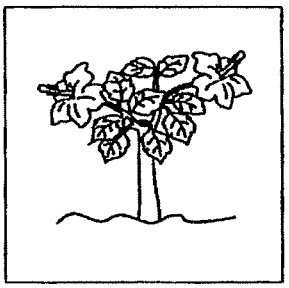
Based on the information above, which of the following pair of animals most likely to represents animals X and Y?

	Animal X	Animal Y
(1)	frog	cockroach
(2)	chicken	beetle
(3)	beetle	chicken
(4)	cockroach	frog

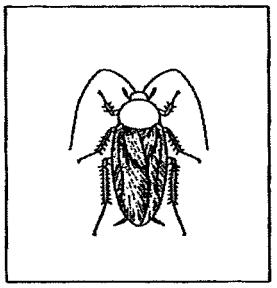
17. Study the chart below.



Linda wanted to place organisms P and Q in the chart above.



Organism P

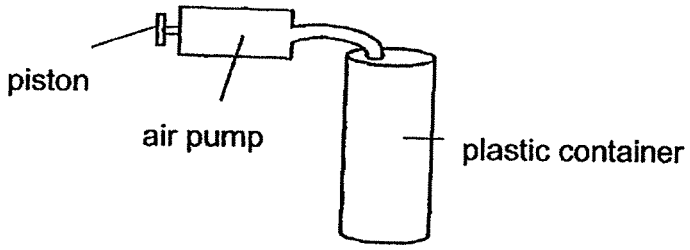


Organism Q

Where would you place organisms P and Q in the chart above?

	Organism P	Organism Q
(1)	A	B
(2)	D	C
(3)	C	A
(4)	D	B

18. A plastic container has a capacity of 300 cm^3. It was filled with 200 cm^3 of water. An air pump was attached to it as shown below. Each time the piston was pushed, 100 cm^3 of air was forced into the plastic container.

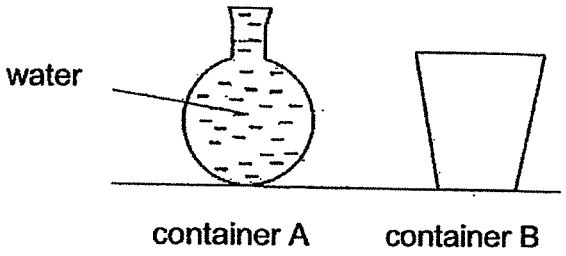


When Karen pushed the piston in three times, she observed that the size of the container remained the same.

Which one of the following best explains her observation?

(1) Air takes up space.
(2) A solid takes up space.
(3) Air can be compressed.
(4) A solid has a fixed shape.

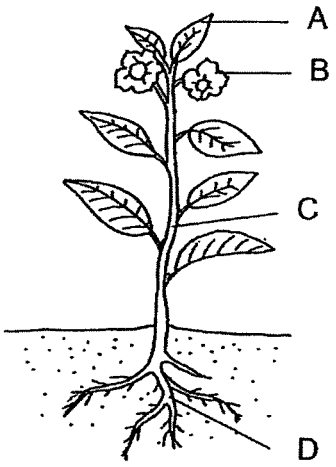
19. The diagram below shows two containers, A and B, of the same volume. Container A is filled to the brim with water as shown in the diagram below.



Which one of the following is most likely to happen when all the water is poured from container A into container B?

(1) The volume of water increases.
(2) The volume of water decreases.
(3) The water takes the shape of container B.
(4) The height of the water in container A and container B is the same.

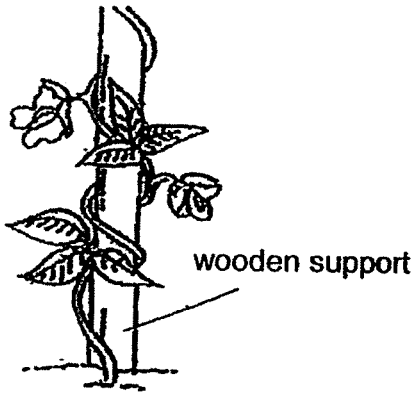
20. The diagram below shows a plant.



Which of the following correctly identifies the plant parts and its functions?

	Makes food for the plant	Anchors the plant to the ground	Holds the plant upright
(1)	B	C	D
(2)	A	D	C
(3)	A	C	D
(4)	B	D	C

21. The diagram below shows a plant around a wooden support.

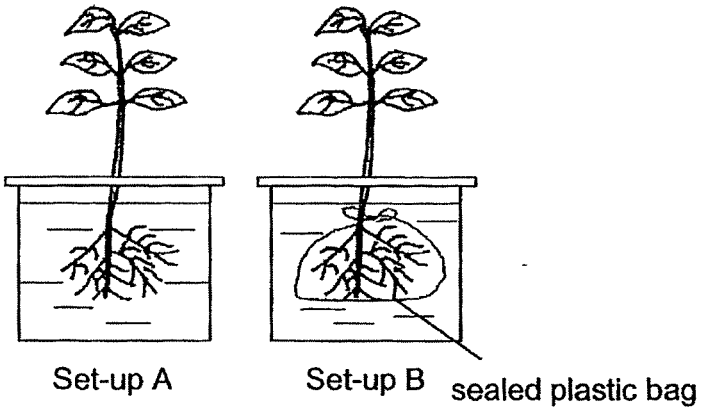


Based on your observation of the plant above, which of the following statements about the plant are correct?

A. The plant has a weak stem.
B. The plant will produce fruits.
C. The plant is a flowering plant.
D. The plant uses its leaves to climb up the support for sunlight.

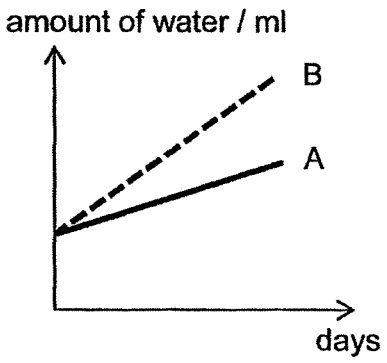
(1) A and B only
(2) B and D only
(3) A, B and C only
(4) A, B, C and D

22. Gerald carried out an experiment to find out if roots absorb water. He used set-ups A and B as shown in the diagram below. After three days, he recorded his results in a graph to show the change in the amount of water in the set-ups.

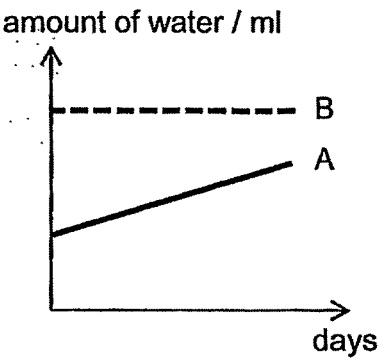


Which of the following graphs shows the change in the amount of water in set-ups A and B after three days?

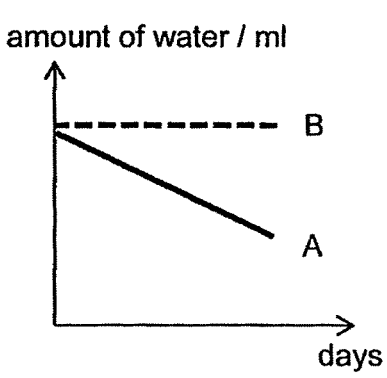
(1)



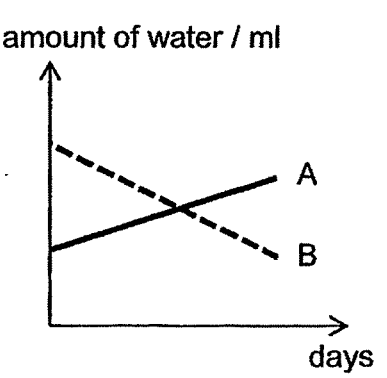
(2)



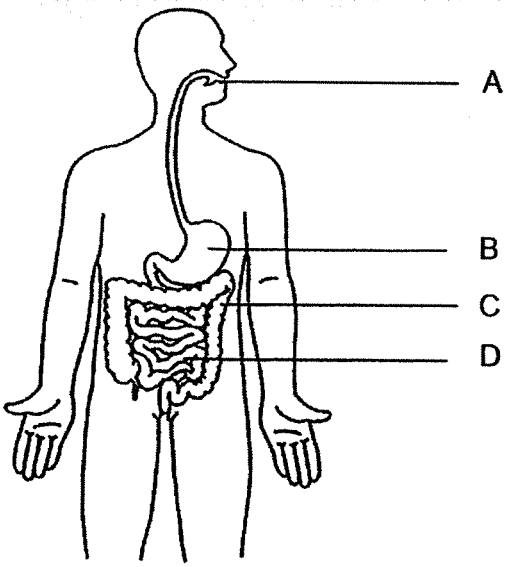
(3)



(4)



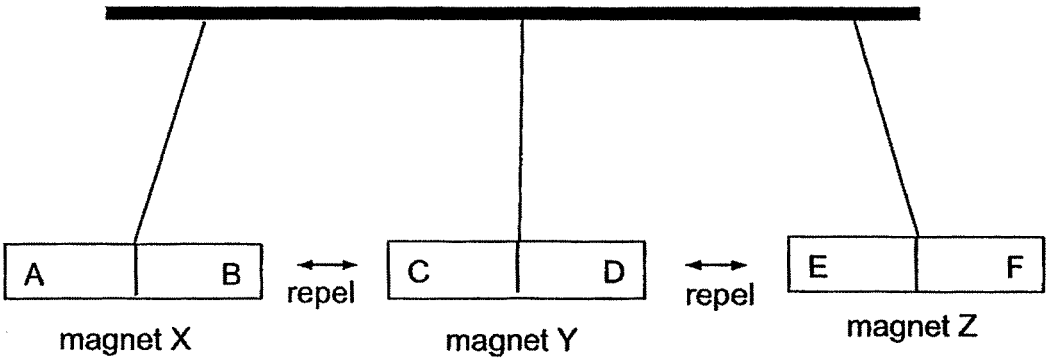
23. The diagram below shows the human digestive system.



Which of the following statements is correct?

(1) Digestion ends in Part C.
(2) Part B is where digestion first starts.
(3) Food is completely digested in Part D.
(4) Part A does not contain digestive juices.

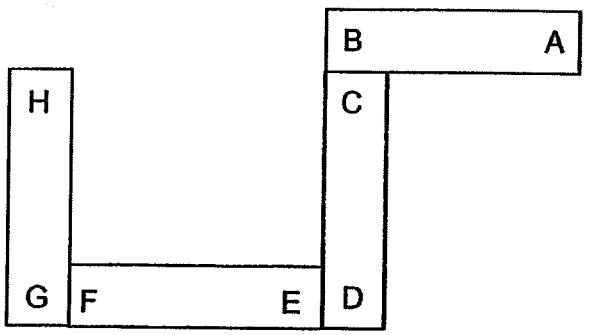
24. Henry hung three similar magnets X, Y and Z on a rod. The diagram below shows magnet Y pushing magnet X and magnet Z away. The letters A, B, C, D, E and F represent the poles of the 3 magnets.



What would happen to the set-up above if Henry replaces magnet Y with an iron rod?

(1) Magnet X and Z will repel the iron rod.
(2) Magnet X and Z will attract the iron rod.
(3) Magnet X will repel the iron rod while magnet Z will attract the iron rod.
(4) Magnet Z will repel the iron rod while magnet X will attract the iron rod.

25. The diagram below shows four identical bar magnets.

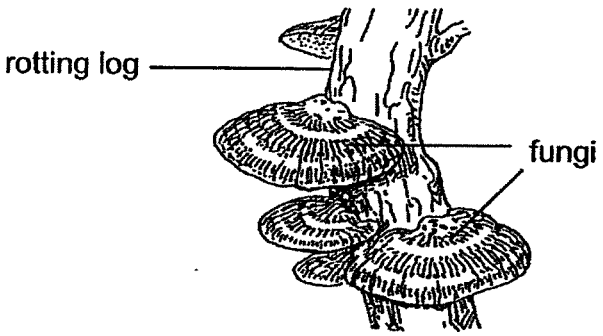


Based on the diagram above, which of the following statements about the poles of the magnet are true?

A. Poles B and G are like poles.
B. Pole H will repel poles F and D.
C. Pole D will repel pole B and attracted to pole F.
D. Pole E will repel pole A and be attracted to pole H.

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

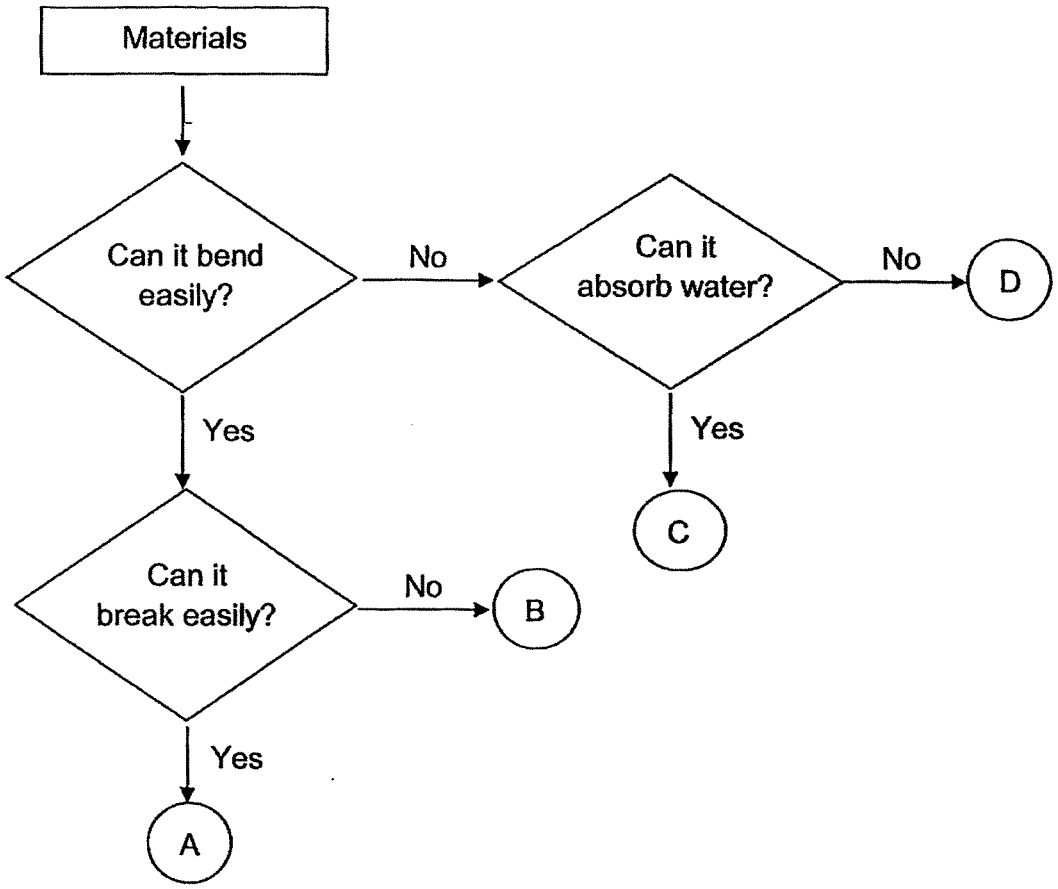
26. The diagram below shows fungi growing on a rotting log.



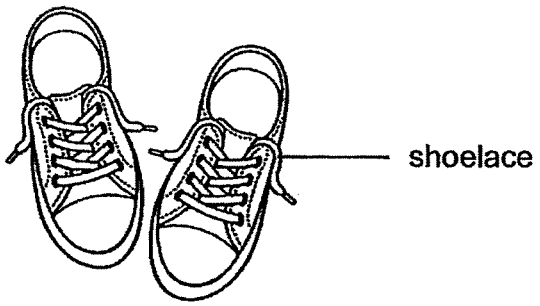
Why does the fungi grow on the rotting log?

(1) Fungi can get more water.
(2) Fungi can get more sunlight.
(3) Fungi can feed on the rotting log.
(4) Fungi are protected by the rotting log.

27. Study the flowchart below.



The diagram below shows a pair of shoe.



Based on the flowchart, which material A, B, C or D is most suitable to make the shoelace?

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

END OF BOOKLET A

GO ON TO BOOKLET B

MAHA BODHI SCHOOL

2019 SEMESTRAL ASSESSMENT 2

PRIMARY FOUR SCIENCE

(BOOKLET B)

Name: _____ ( )

Class: Primary 4 _____

Date : 1 November 2019

Total Duration for Booklets A and B: 1 h 30 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		54
B		36
Total		90

Parent's signature: _____

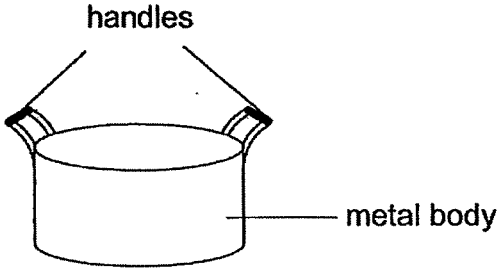
This booklet consists of **11** printed pages.

BLANK PAGE

BOOKLET B : [36 marks]
For questions 28 to 40, 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.

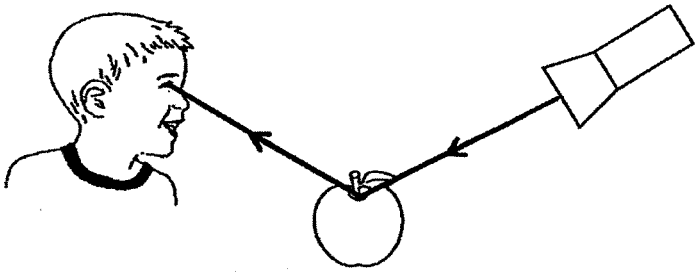
28. The diagram below shows a pot used for boiling water.



(a) The handles are made of plastic because plastic is a _____ conductor of heat. [1]

(b) The body of the pot is made of metal because metal is a _____ conductor of heat. [1]

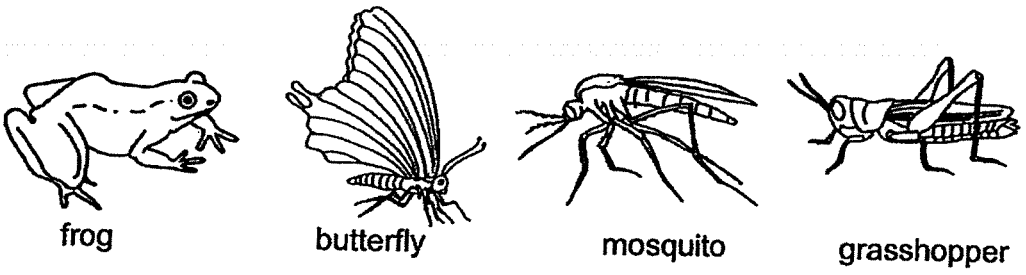
29. The diagram below shows how James sees the apple.



The _____ from the torch is _____ by the apple and enters James' eye. [2]

Marks : / 4

30. Classify the following animals according to the number of stages in their life cycle. [2]



frog butterfly mosquito grasshopper

Three stages	Four stages

31. Jasmine observed and grouped some things as shown in the table.

F	G
elephant bee mushroom	rock tablecloth pencil

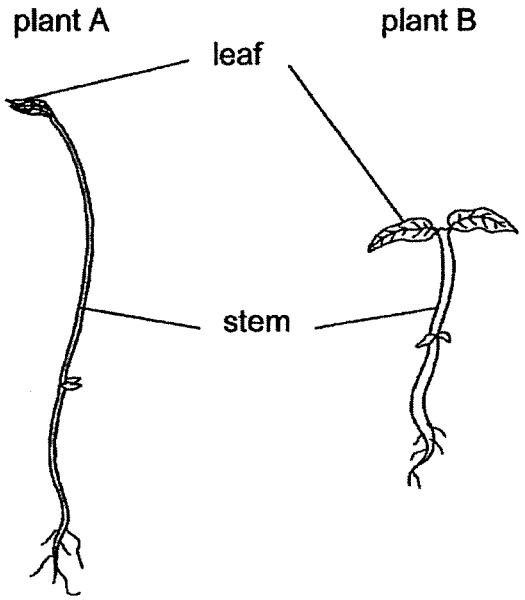
(a) What are the suitable headings for groups F and G? [2]

Group F: _____

Group G: _____

Marks : / 4

32. The diagram below shows two plants.



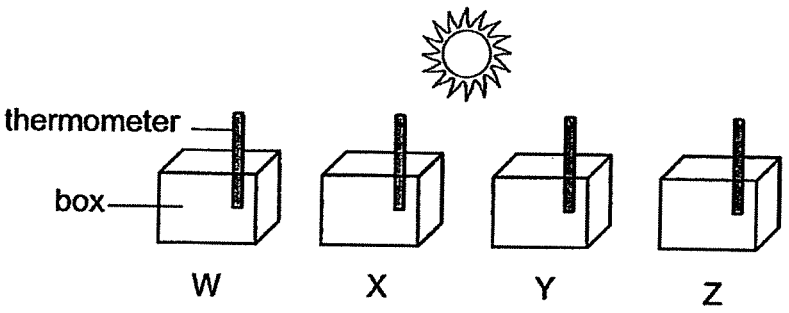
(a) What is one difference between the stem of plant A and the stem of plant B? [1]

The stem of plant B is _____ than the stem of plant A.

(b) The leaves help both plants make _____ in the light. [1]

Marks : / 2

33. Jonathan conducted an experiment. He placed four boxes under the hot sun. The boxes were of the same size but made of different materials W, X, Y and Z.



After twenty minutes, he measured the temperature of air in the boxes using a thermometer and recorded his results in the table below.

Box	Temperature of air / °C
W	32
X	25
Y	40
Z	35

(a) What is the property of the material of Box Y for its temperature reading to be the highest? [1]

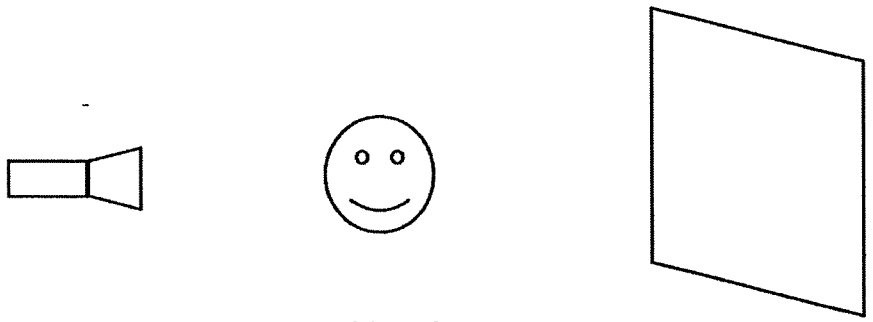
(b) Which box W, X, Y or Z should Jonathan use if he wanted to keep ice cream from melting? Explain your answer. [2]

(c) Jonathan placed all the boxes into an air-conditioned room which had a temperature of 20 °C. He measured the temperature of air inside the boxes three hours later. He observed that the air in all the boxes have the same temperature.

What is the temperature of air in the boxes three hours later? [1]

Marks : / 4

34. Shirley placed object A in between a torch and a screen in a dark room. She then switched on the torch.



torch object A screen

(a) Explain how a shadow is formed. [1]

(b) She observed that even though the torch was shining brightly, there was no shadow formed on the screen.

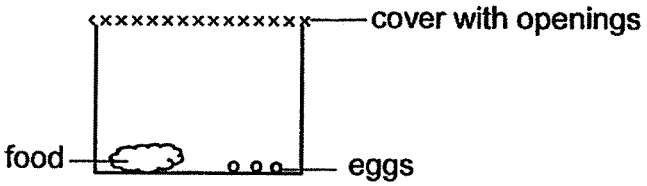
Based on her observation, suggest a property of the material that was used to make object A. [1]

(c) She replaced object A with object B and it was able to form a dark shadow on the screen when the torch was switched on.

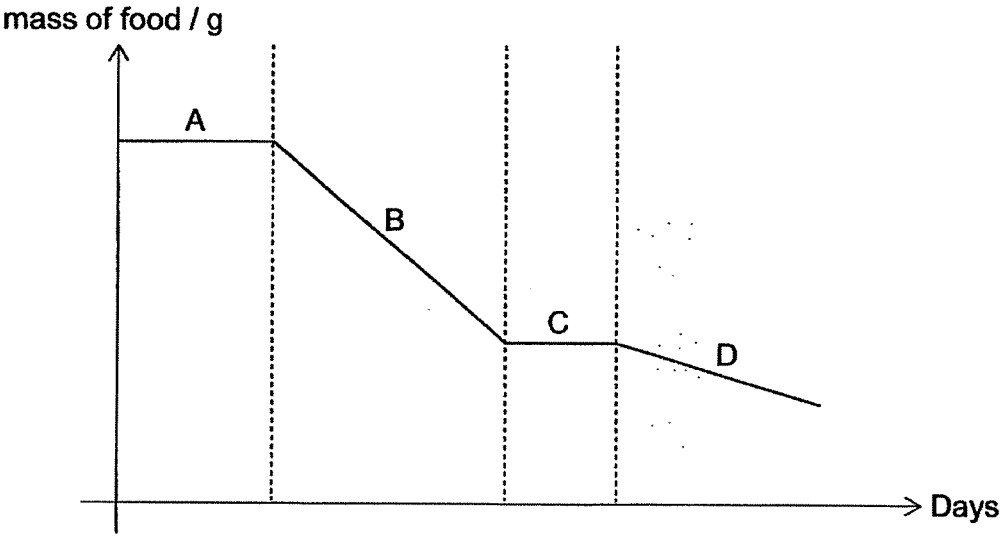
State one way Shirley could use object B to form a bigger shadow. [1]

Marks : / 3

35. Pauline placed eggs of organism X in a container with some food as shown in the diagram below.



The graph below shows the mass of the food left inside the container after 20 days. Parts A, B, C and D represent the different stages of the life cycle of organism X.



(a) Name the stage in the life cycle of organism X at part C. [1]

_____

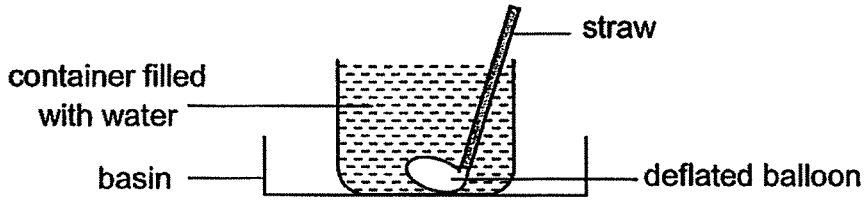
(b) Suggest a reason why the mass of the food at part B has the greatest decrease. [1]

_____

_____

Marks : / 2

36. A deflated balloon is fixed on one end of a straw and placed in a container. The container is then filled with water to the brim and placed in an empty basin as shown in the diagram below.



(a) Anne blows air through the straw. She notices that there are changes to the balloon and the water in the container.

(i) What did she observe about the balloon? [1]

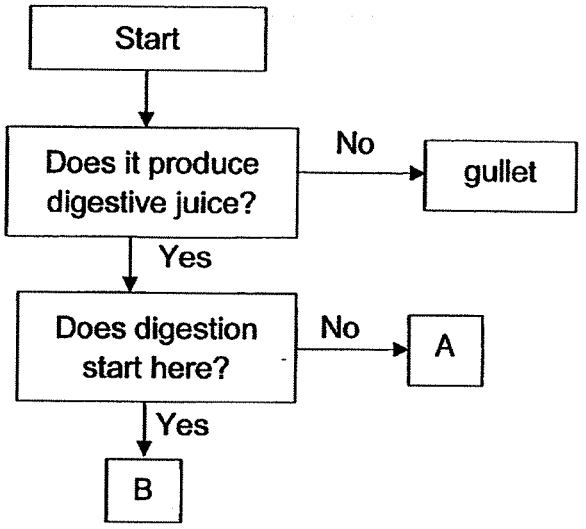
(ii) What did she observe about the water in the container? [1]

(iii) Explain your answer in a(ii). [1]

(b) What does the volume of water collected in the basin represent? [1]

Marks : / 4

37. Study the flowchart below. A and B are organs in the human digestive system.



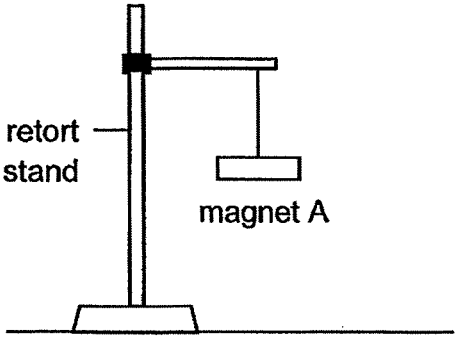
Based on the flowchart, identify the organs A and B. [2]

(a) Organ A: _____

(b) Organ B: _____

Marks : / 2

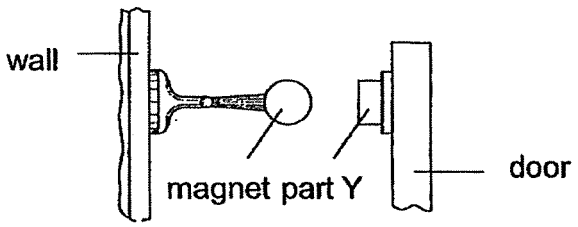
38. Magnet A was suspended with a string from a retort stand as shown in the diagram below.



(a) In which direction would the freely suspended magnet come to a rest? [1]

(b) Explain how magnet A can be used to find out if a metal bar is a magnet. [1]

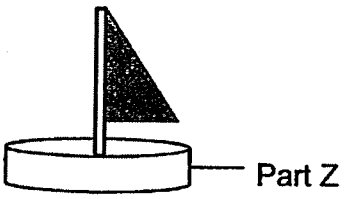
(c) The diagram below shows a magnetic door stopper that is commonly used in many homes.



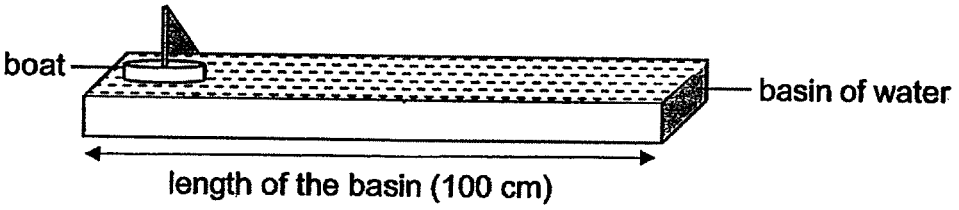
Based on the property of part Y, explain how the magnetic door stopper works. [2]

Marks : / 4

39. Alex carried out an experiment to find out which materials J, K, L and M is most suitable for making Part Z of a model boat for it to sail the longest distance.



He carried out the experiment by sailing each boat through a basin of water as shown below. All four boats could float on the water at the beginning of the experiment.



He recorded the distanced travelled by each boat made of material J, K, L or M before it sank.

Material	Distance travelled / cm
J	20
K	100
L	80
M	50

(a) What physical property of the material caused it to sink in the water? Explain your answer. [2]

_____

_____

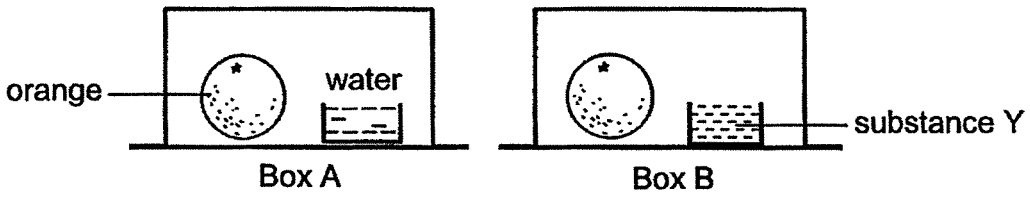
(b) Based on his results, which material is the best for making Part Z of the model boat? Explain your answer. [2]

_____

_____

Marks : / 4

40. Jeremy placed two similar oranges in two similar boxes A and B. He placed a container of water in box A and substance Y in box B. Substance Y absorbed water from the surrounding. He then placed boxes A and B in a warm place.



Five days later, Jeremy observed that one of the oranges had fungi growing on it.

(a) Which variable was changed in the experiment? [1]

Variables	Put a tick (✓) for the variable that was changed.
location	
presence of water	
temperature of surroundings	

(b) Based on his observation, which box, A or B, would have fungi growing on the orange? Give two reasons for your answer. [2]

_____

_____

_____

Marks : / 3

~ END OF PAPER ~

SCHOOL : MAHA BODHI PRIMARY SCHOOL

LEVEL : PRIMARY 4
SUBJECT : SCIENCE
TERM : 2019 SA2

SECTION A

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

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

Q 21	Q22	Q23	Q24	Q25	Q26	Q27
3	3	3	2	3	3	2

SECTION B

Q28)	a)poor b)good
Q29)	light / reflected
Q30)	Three stages: Frog, Grasshopper Four stages: Butterfly, Mosquito
Q31)	a)F : Living Things G : Non-Living Things

Q32)	a)thicker b)food
Q33)	a)Best conductor of heat. b)X. The temperature of air is the lowest so it is the poorest conductor of heat. c)20℃
Q34)	a)A shadow is formed when light is blocked by an object. b)A. Transparent. c)Move object B nearer to the torch.
Q35)	a)Pupae. b)Organism X are the most amount of food during that time.
Q36)	a)i)The balloon expanded. ii)Some water flowed out of the container. iii)The expanded balloon took up more space than before ,so there is less space for the water and the water is filled to the brim, so the water flowed out. b)The volume of air blown into the balloon.
Q37)	a)Stomach b)Mouth
Q38)	a)North-South b)Check if magnet A and the metal bar repel each other, if they do, they are both magnet, if they do not the metal bar is not a magnet. c)Part Y is mad of a magnetic material which will be attracted to the magnet.

Q39)	a)The physical property of the material is that it is not waterproof, so it absorbed some water and the water made the boat heavier, so the boat sank b)K. It travelled the longest distance, which makes it, the most waterproof material amongst the four materials.
Q40)	a)presence of water b)A. Fungi need moisture to grow and firstly substance Y absorbs water from the surrounding while water does not, secondly the water in A provided for the fungi making it easier to grow. A. There is water and warmth in the box.