PRIMARY 4 SCIENCE

SEMESTRAL ASSESSMENT 2
2016

BOOKLET A

Date : 24 October 2016

Duration : 1 h 45 min

Name :_____ ( )

Class: Primary 4 ( )

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet A consists of 23 printed pages including this cover page.

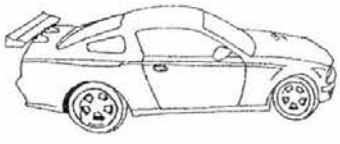
Section A (28 x 2 marks = 56 marks)
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.**

1. Which one of the following is a living thing?

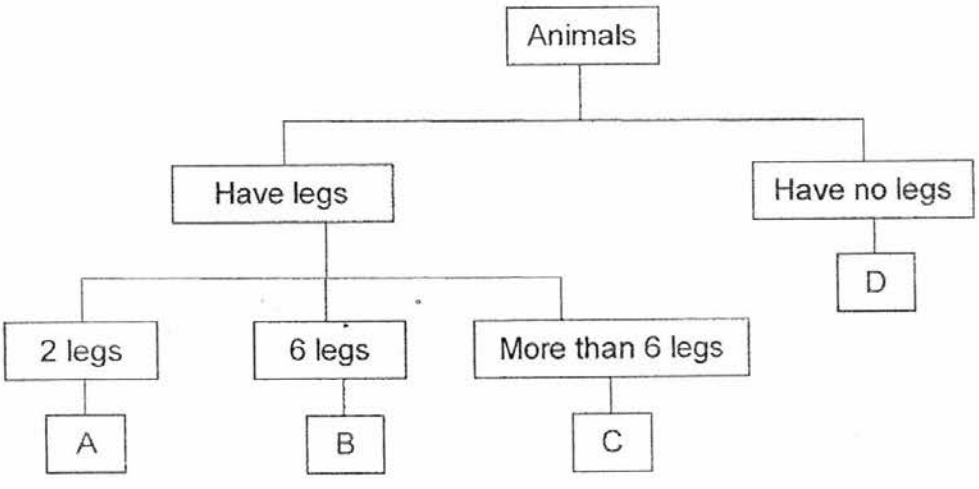

(1)


(2)

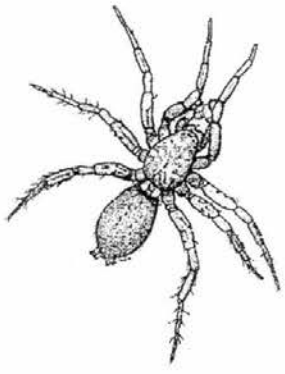

(3)


(4)

2. Study the chart below.

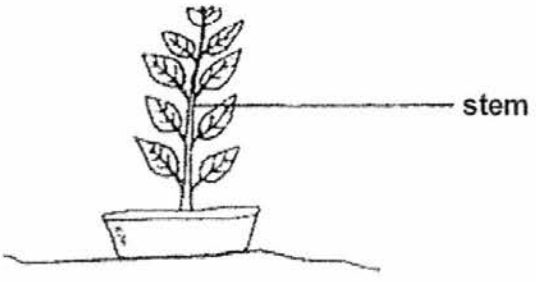


Where would you put this animal in the chart above?



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

3. The diagram below shows a plant.



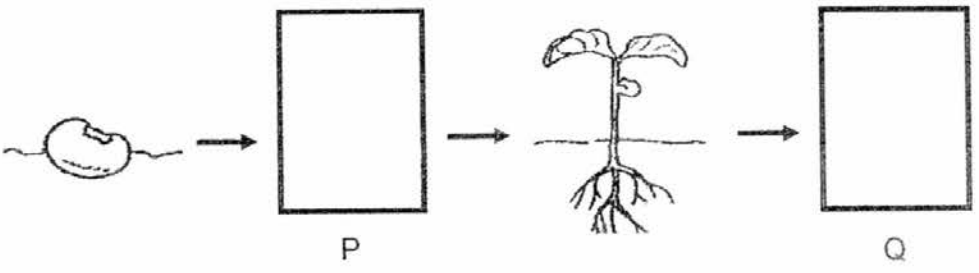
The stem helps the plant to _____.

(1) make food
(2) grow upright
(3) absorb water
(4) absorb nutrient

4. In which part of the digestive system is water absorbed from undigested food?

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

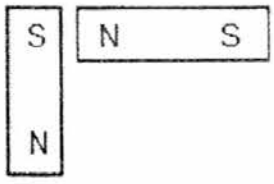
5. The diagram below shows the growth of a young plant with two missing stages, P and Q.

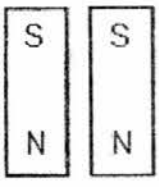


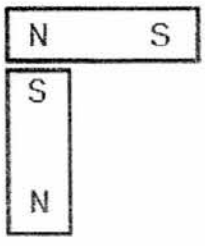
Which one of the following shows the correct stages for P and Q?

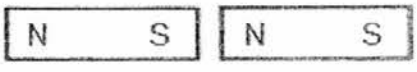
	P	Q
(1)		
(2)		
(3)		
(4)		

6. In which one of the following will the two magnets push each other away?

(1) 

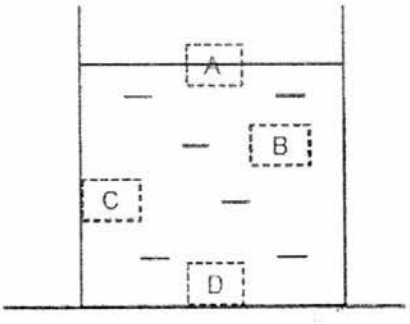
(2) 

(3) 

(4) 

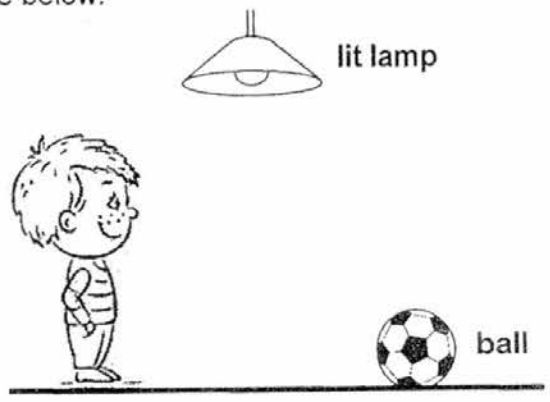
7. Elizabeth put a solid glass block into a container of water.

At which position, A, B, C or D, would the solid glass block most likely be found?

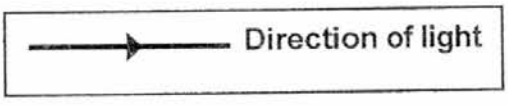


(1) A
(2) B
(3) C
(4) D

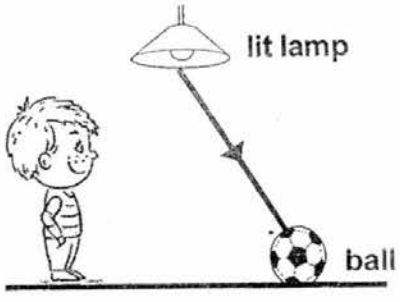
8. Look at the picture below.



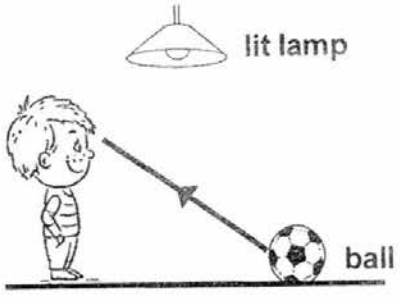
Which one of the following explains how the boy can see the ball on the ground?



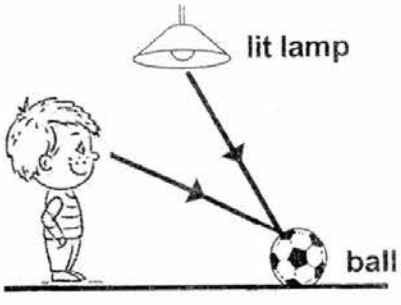
(1)



(2)



(3)



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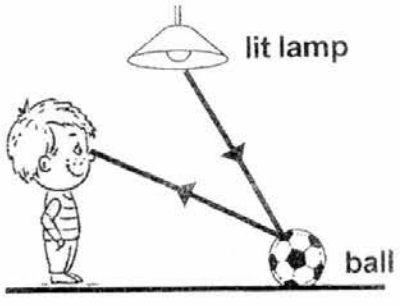
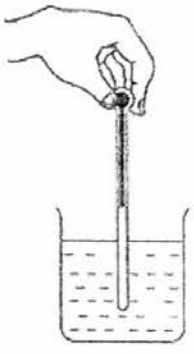


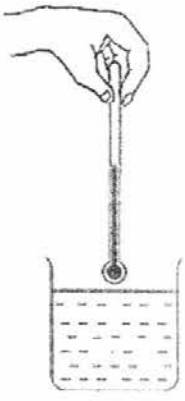
9. Becky wants to measure the temperature of hot water in a beaker.

Which one of the following diagrams shows the correct position of the thermometer when taking the temperature reading?

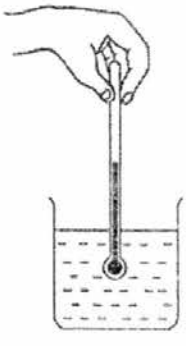
(1)



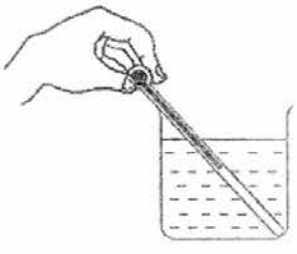
(2)



(3)



(4)

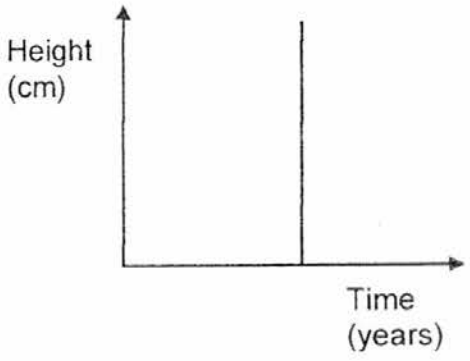


10. Which one of the following properties is **true** for both air and water?

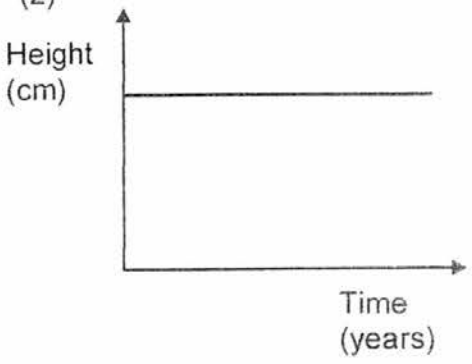
(1) They can be seen.
(2) They take up space.
(3) They have fixed shapes
(4) They have fixed volumes.

11. Which graph shows the correct height of a toy lion over a few years?

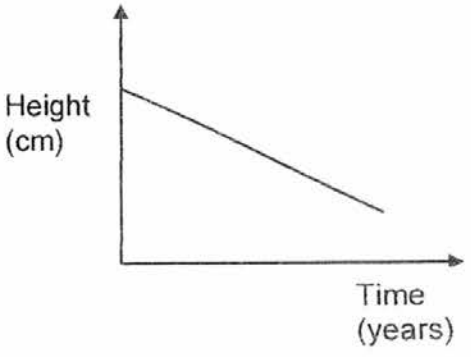
(1)



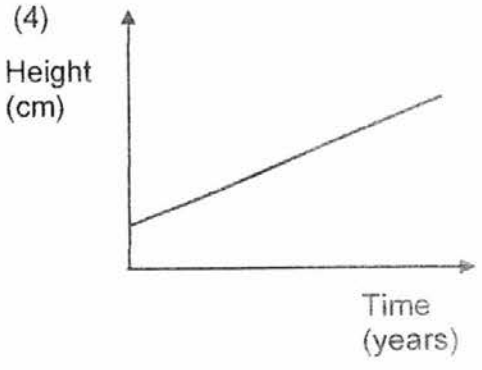
(2)



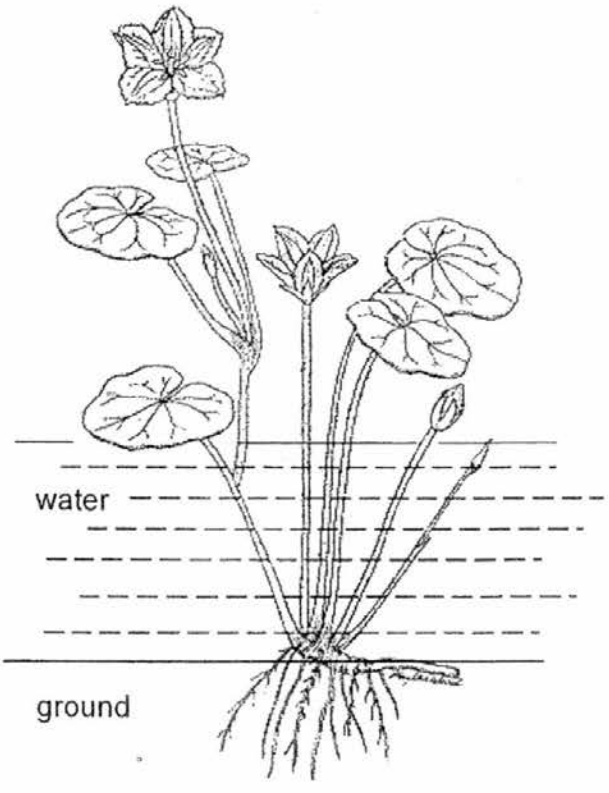
(3)



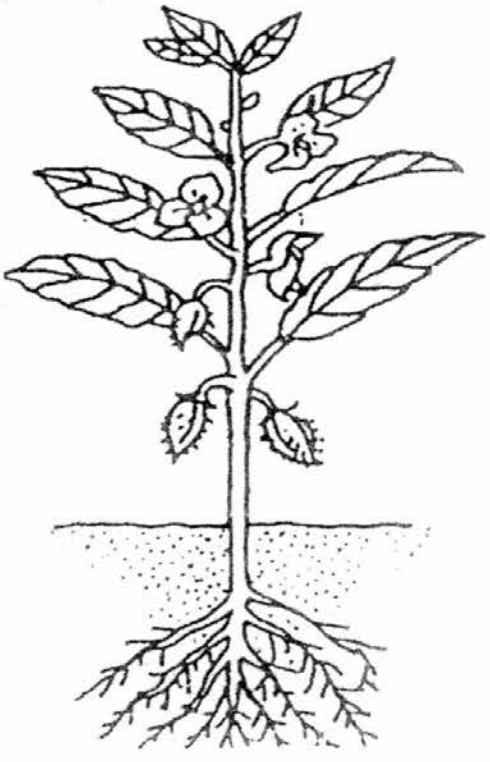
(4)



12. The following diagrams show two different types of plants.



Plant X



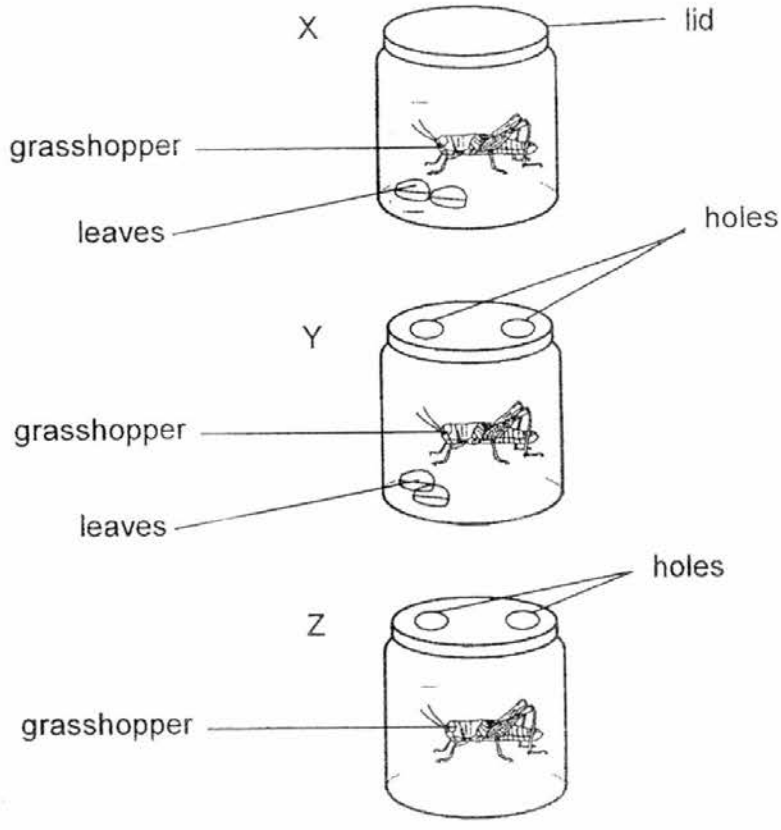
Plant Y

Based on the diagrams, which of the following statements about the two plants are **not** true?

A Only plant Y bears fruits.
B Both plant X and plant Y needs water.
C Only roots of plant Y anchors it to the ground.

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

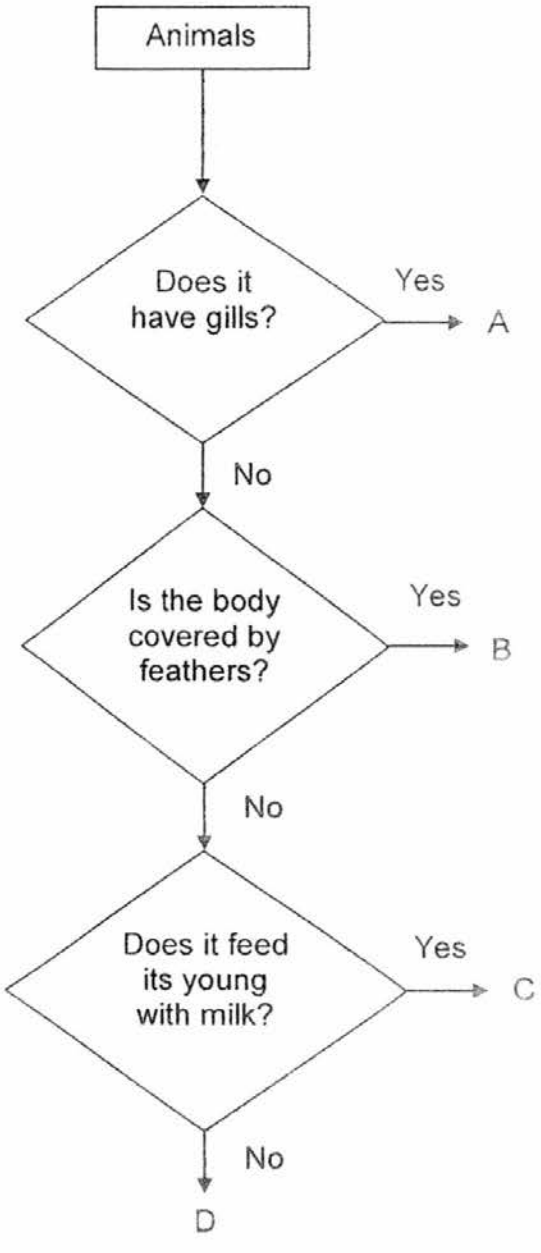
13. Ivy kept three grasshoppers in three different set-ups, X, Y and Z.



Based on the conditions in the 3 set-ups, which one of the following would be the most likely observation?

	grasshopper alive for the longest period of time	grasshopper alive for the shortest period of time
(1)	Y	X
(2)	X	Y
(3)	Y	Z
(4)	Z	Y

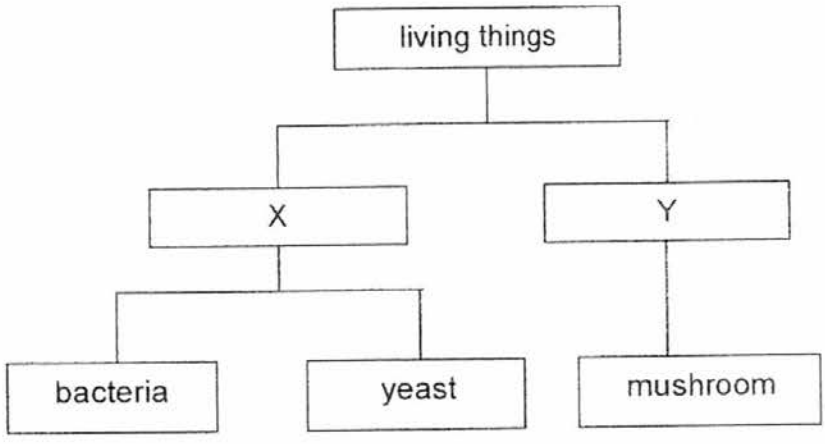
14. Study the flowchart below carefully.



Which one of the following could represent A, B, C and D?

	A	B	C	D
(1)	fish	insect	bird	mammal
(2)	fish	bird	mammal	insect
(3)	reptile	bird	insect	mammal
(4)	reptile	fish	mammal	bird

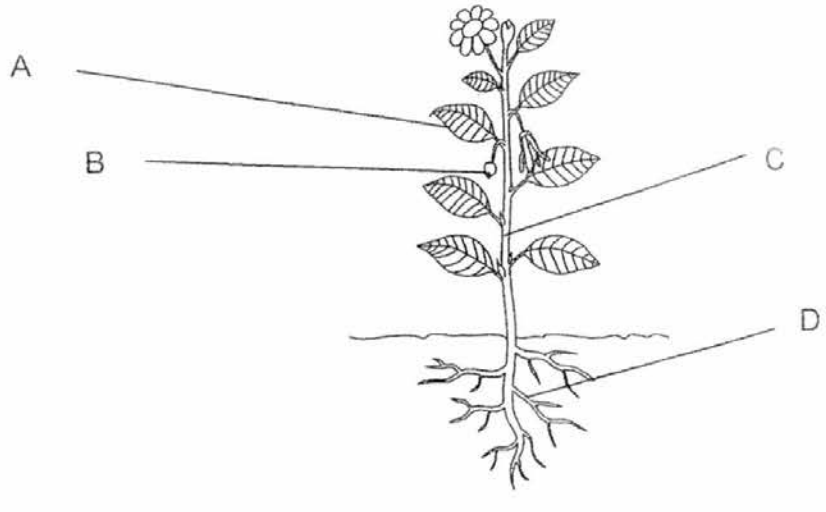
15. Study the classification chart below.



Which one of the following letters best represent headings X and Y?

	X	Y
(1)	reproduce by seeds	reproduce by spores
(2)	can make its own food	cannot make its own food
(3)	cannot be seen clearly with naked eye	can be seen clearly with naked eye
(4)	cannot reproduce	can reproduce

16. Which one of the following statements about plant parts A, B, C and D is **incorrect**?

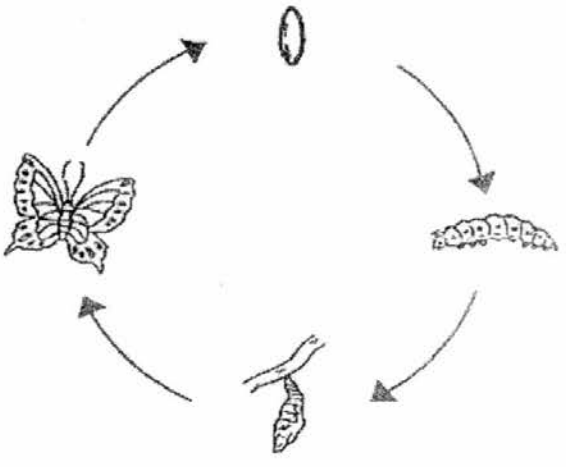


(1) A makes food for the plant.
(2) B takes in food for the plant.
(3) C transports water and food for the plant.
(4) D absorbs water and mineral salts for the plant.

17. Which one of the following parts of a human body are **correctly** matched to the body system?

	Digestive System	Skeletal System	Respiratory System
(1)	mouth	rib cage	blood
(2)	gullet	skull	heart
(3)	nose	rib cage	lungs
(4)	stomach	backbone	windpipe

18. Study the life cycle of the animal shown below.

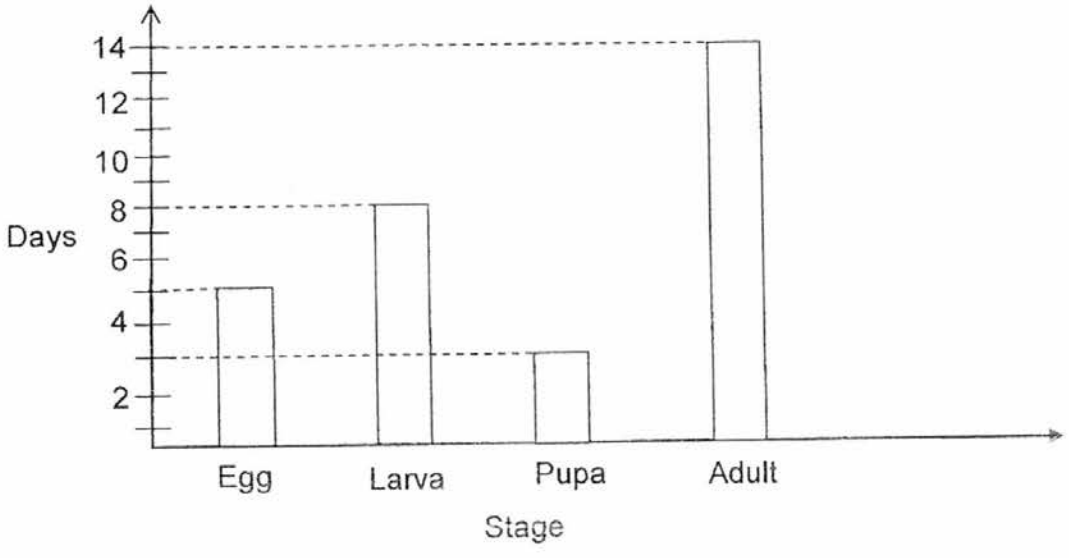


Which of the following statement(s) about the life cycle of the animal is/are correct?

A The young of the animal resembles the adult.
B The animal undergoes moulting at the larval stage.
C There are four stages in the life cycle of the animal.

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

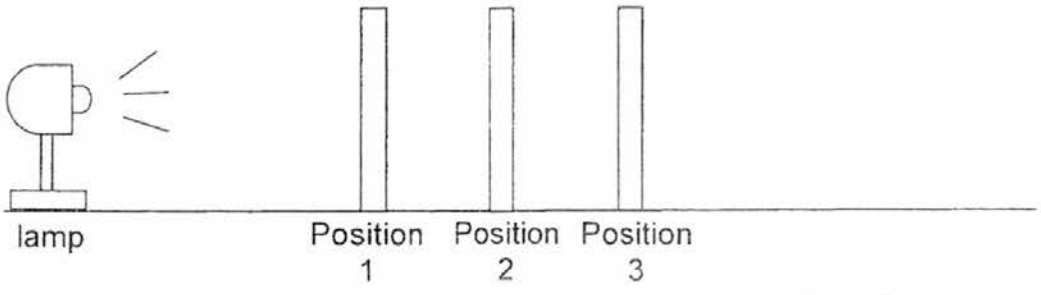
19. The graph below shows the number of days an insect spends at each stage of its life cycle.



How many days does the young take to become an adult **after** the egg is hatched?

(1) 3
(2) 11
(3) 14
(4) 30

20. The following experiment was set in a darkened room.

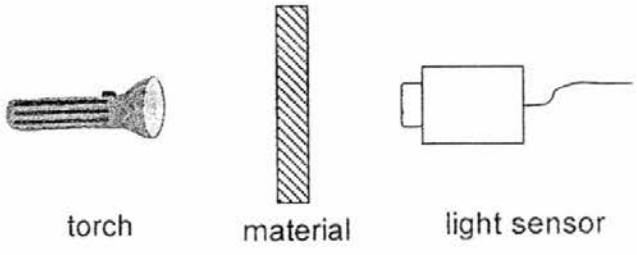


Beck Song placed 3 different materials, tracing paper, ~~drawing paper~~ cardboard and clear plastic sheet, at different positions. The three materials are of similar size and thickness. He changed the positions of the materials and recorded his observations.

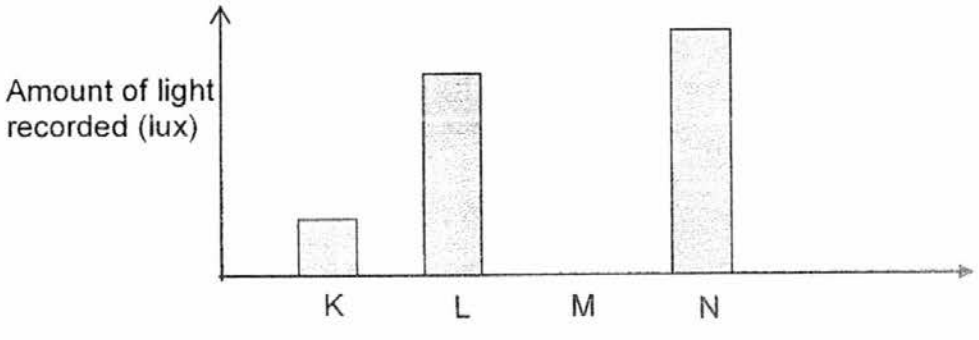
Which one of the following shows the most likely observation on the material at Position 3?

	Position 1	Position 2	Position 3	Observation at Position 3
(1)	clear plastic sheet	tracing paper	cardboard	A faint light can be seen on the cardboard.
(2)	cardboard	tracing paper	clear plastic sheet	A faint light can be seen on the clear plastic sheet.
(3)	tracing paper	cardboard	clear plastic ~~paper~~ sheet	A bright light can be seen on the clear plastic paper.
(4)	cardboard	clear plastic sheet	tracing paper	A faint light can be seen on the tracing paper.

21. Jayden used a light sensor to measure the amount of light that passed through 4 different materials, K, L, M and N.



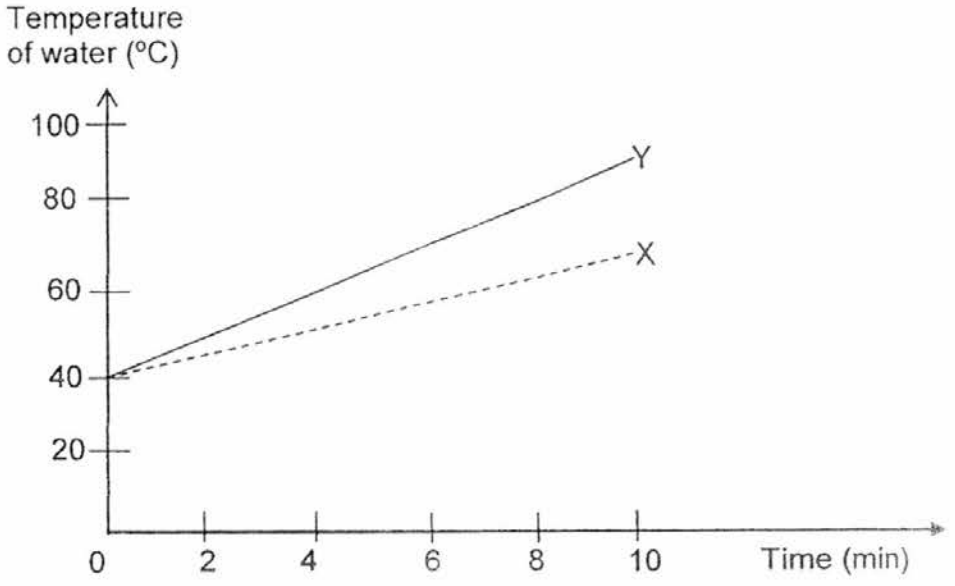
The graph below shows the results of the experiment.



Which one of the following could most likely represent material L?

(1) mirror
(2) tissue paper
(3) aluminium foil
(4) clear plastic sheet

22. Ruth filled two identical beakers made of different materials, X and Y, with an equal amount of water and heated the beakers of water for 10 minutes. A thermometer was used to measure the temperature of water in each beaker and the graph below shows the results.

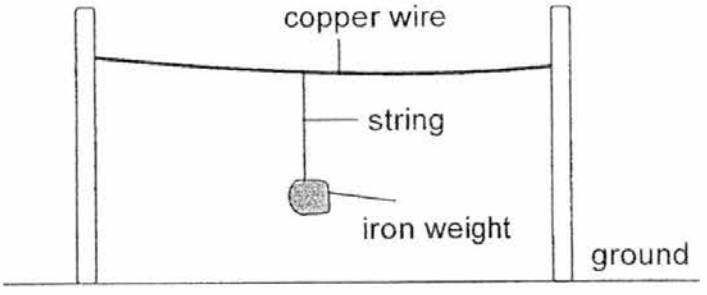


Based on the graph, which of the following statement(s) is/are true?

A Beaker X conducted heat to the water slower than Beaker Y.
B Water in each beaker was at 40°C at the start of the experiment.
C Both beakers of water reached the same temperature after 10 minutes.

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

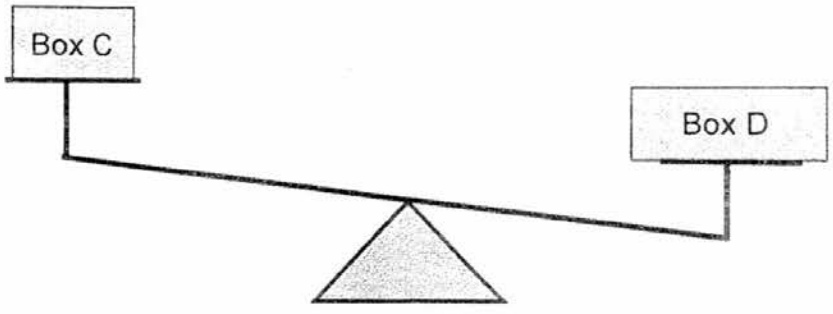
23. Andrew tied an iron weight to a string and hung it from a piece of copper wire as shown below.



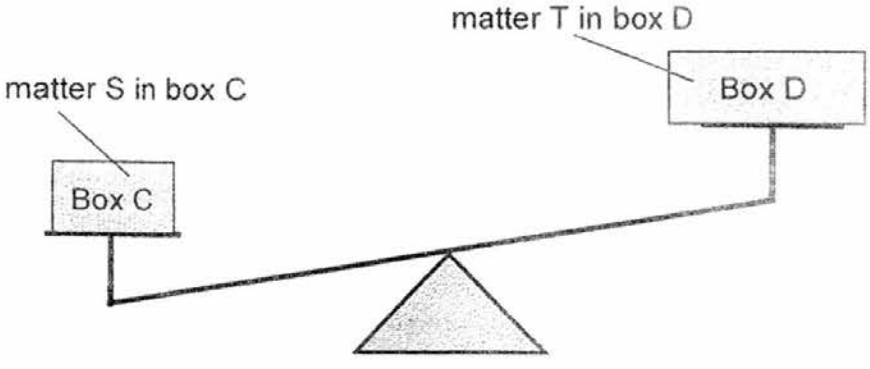
When the copper wire is heated, what will mostly likely happen to the iron weight?

(1) It will be lower as the string expands.
(2) It will be lower as the copper wire expands.
(3) It will be higher as the copper wire contracts.
(4) It will be at the same height as the copper wire is a poor conductor of heat.

24. Two boxes, C and D, are made of the same material with the same thickness. Box C is smaller than box D. The diagram below shows the balance scale when the two **empty** boxes are placed on it.



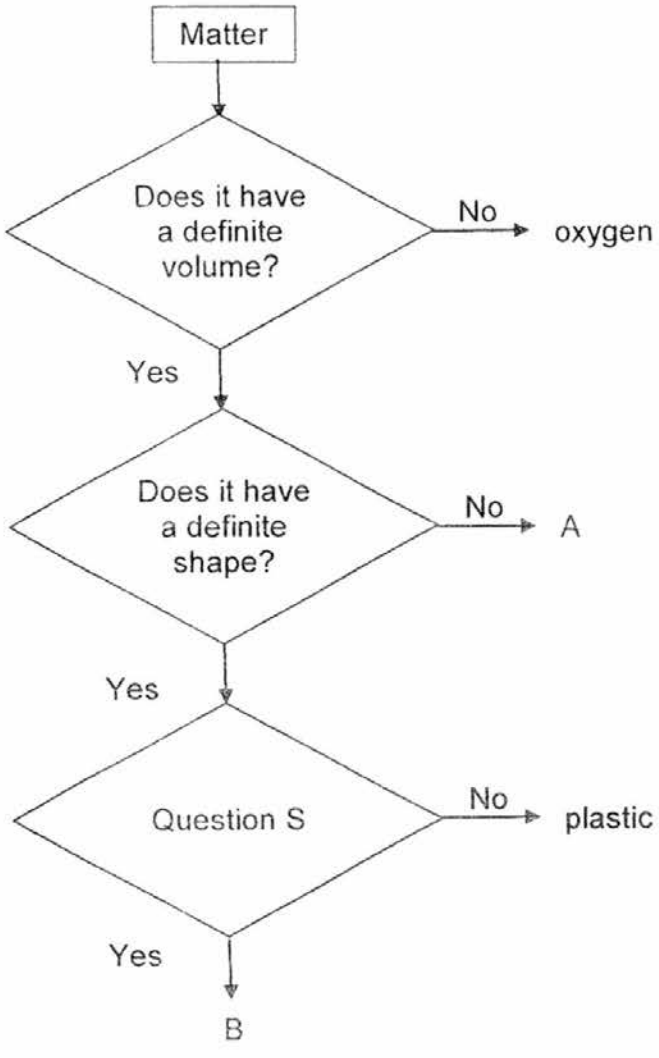
Matter S was the placed in box C and matter T was placed in box D. The diagram below shows the balance scale when the two boxes were placed on it.



Which of the following statements is/are **true**?

(1) Matter S and T have the same mass.
(2) Box C has a greater mass than Box D.
(3) Matter S has a greater mass than matter T.
(4) Matter S is a liquid and matter T is a solid.

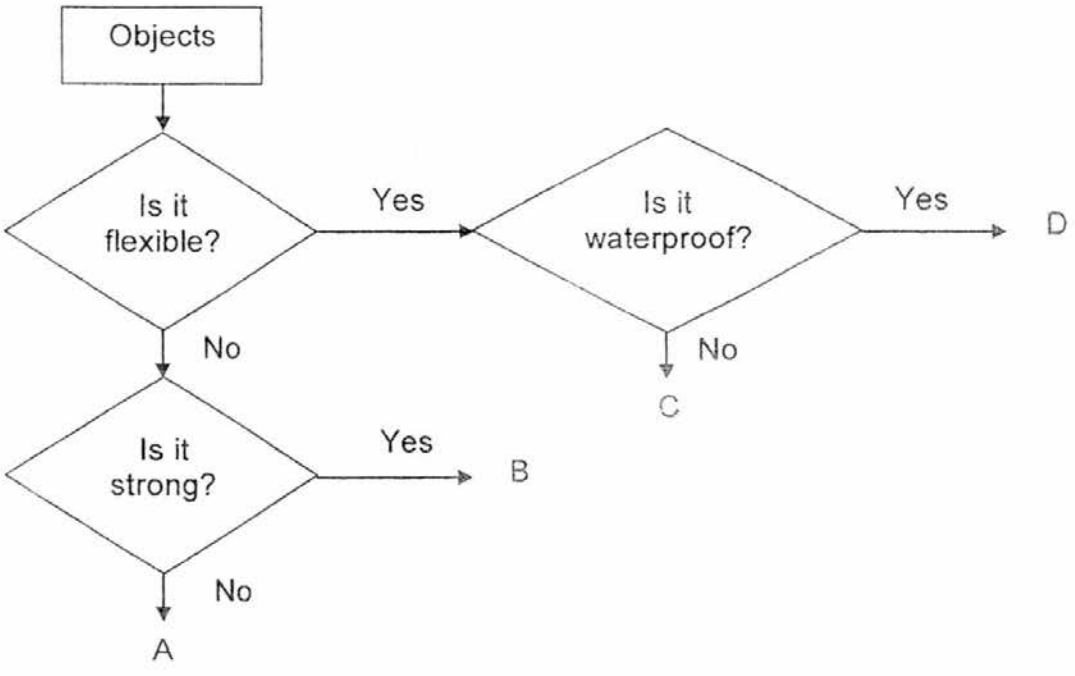
25. Study the flowchart below.



Which one of the following correctly states what matter A, B and question S are?

	A	Question S	B
(1)	carbon dioxide	Is it a good conductor of heat?	copper
(2)	water	Is it a magnetic material?	iron
(3)	air	Is it a good conductor of heat?	iron
(4)	honey	Is it a magnetic material?	copper

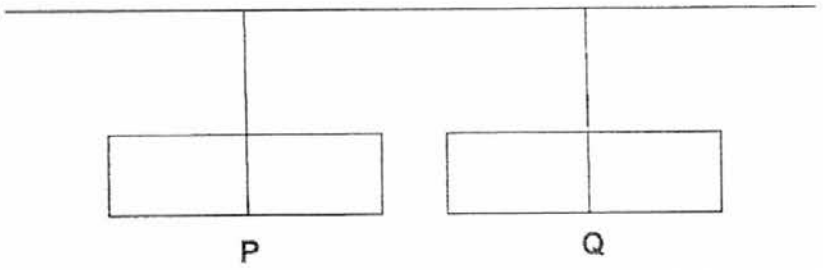
26. Study the flow chart below.



Which one of the following best represents objects A, B, C and D?

	A	B	C	D
(1)	crayon	plastic bag	cotton shirt	leather belt
(2)	leather belt	cotton shirt	plastic bag	crayon
(3)	crayon	metal pipe	cotton shirt	plastic bag
(4)	plastic bag	crayon	leather belt	cotton shirt

27. The diagram below shows what happens when two bars, P and Q, are hung near each other.

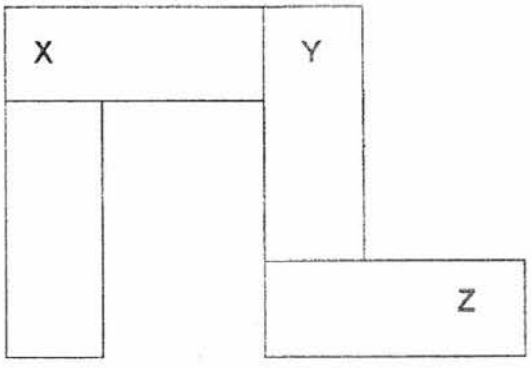


Based on the results, which of the following statements could be **true**?

A Both bars P and Q are magnets.
B Both bars P and Q are magnetic materials but not magnets.
C Bar P is a non-magnetic material and bar Q is a magnet.
D Both bars P and Q are non-magnetic materials.

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

28. Wendy found 4 magnets arranged in the following pattern.



Which of the following could be the poles of the magnets at X, Y and Z?

	X	Y	Z
A	N	N	S
B	N	S	N
C	S	N	S
D	S	S	N

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

NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

SEMESTRAL ASSESSMENT 2
2016

BOOKLET B

Date : 24 October 2016

Duration : 1 h 45 min

Name : _____ ( )

Class: Primary 4 ( )

Marks Scored:

Booklet A:		56
Booklet B :		44
Total :		100

Any query on marks awarded should be raised by 4th November 2016. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.

Parent's signature: .....

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet B consists of 13 printed pages including this cover page.

Section B (44 marks)
Write your answers to questions 29 to 41 in the spaces provided.

29. Draw lines to match the parts of a plant to its function. [2]

Parts	Function
roots	It makes food for the plant.
leaf	It obtains water for the plant

30. David places a magnet near an iron rod. The iron rod moves towards the magnet.

Choose the correct word(s) in the box below to help you answer (a) and (b).

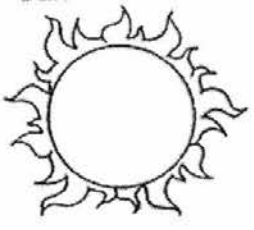
magnet	magnetic
flexible	strong

(a) The _____ exerts a force of attraction on the iron rod. [1]

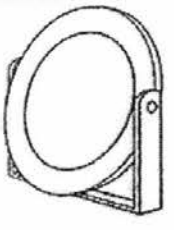
(b) David's observation shows that iron is a _____ material. [1]

31. Look at the pictures. Tick (√) the sources of light. [2]

☐ sun



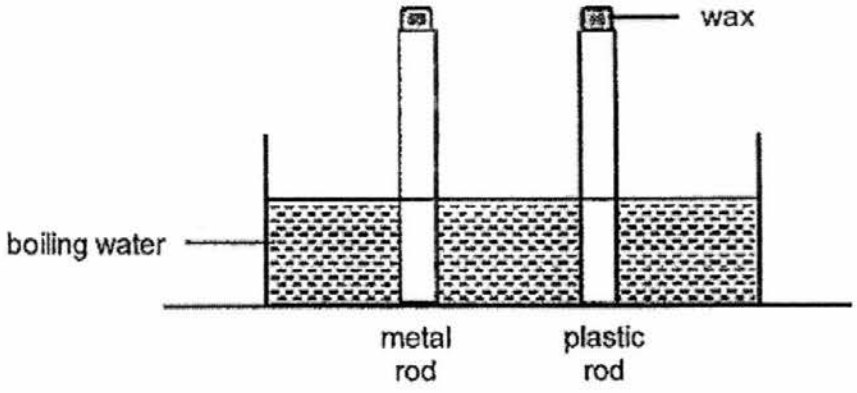
☐ mirror



☐ eyes

☐ lamp

32. Shanti placed a metal rod and a plastic rod into a tank of boiling water as shown below. Equal amounts of wax were put on both rods.



Fill in the blanks below.

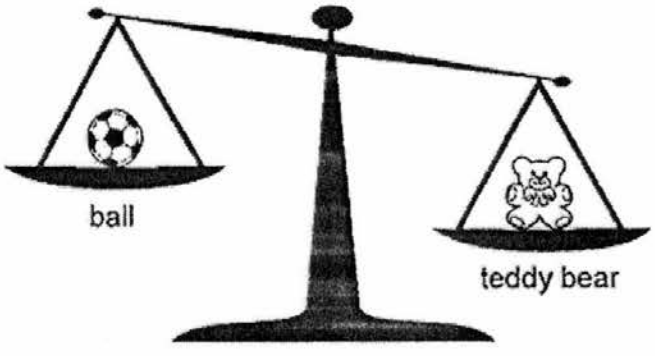
(a) The wax on the plastic rod melted _____ than the wax on the metal rod. [1]

(b) Metal is a _____ conductor of heat than plastic. [1]

33. Reza compares the mass of three toys.

Study the diagrams below and circle the correct comparison.

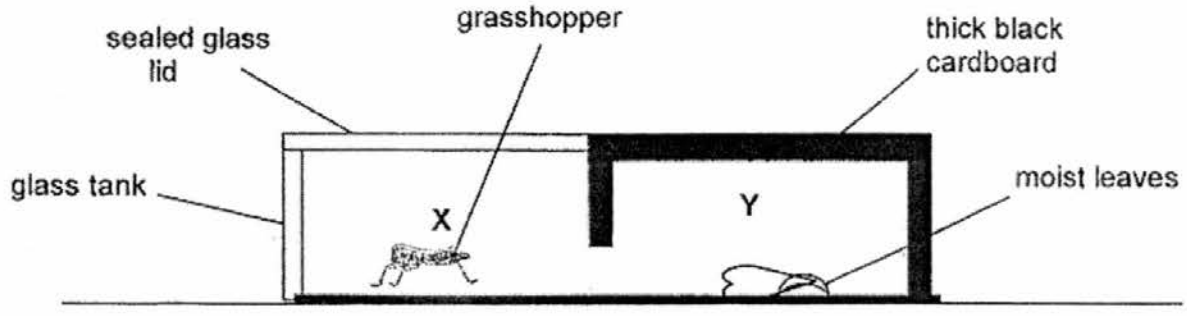
(a) The toy car 'is heavier than' / 'has the same mass as' / 'is lighter than' the ball.
[1]



(b) The ball 'is heavier than' / 'has the same mass as' / 'is lighter than' the teddy bear. [1]

34. Mindy prepared a set-up for an experiment. She divided a sealed glass tank into two parts, X and Y, as shown in the diagram below. Part Y of the glass tank was covered with a piece of thick black cardboard. She placed a grasshopper in part X of the glass tank and left enough moist leaves for the grasshopper to eat for a week.

Then she placed the glass tank near an open window on a bright and sunny day.



5 minutes later, Mindy observed that the grasshopper moved towards Part Y of the glass tank.

(a) Which characteristic of living things was shown in the observation made by Mindy? [1]

_____

_____

(b) A week later, Mindy found that the grasshopper had died. Give 2 possible reasons why the grasshopper died. [2]

(i) _____

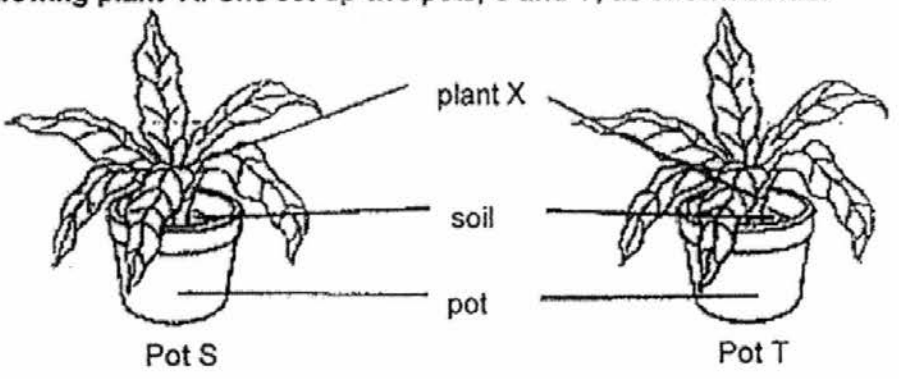
(ii) _____

(c) State another characteristic of living things that is not shown in the experiment above. [1]

_____

_____

35. Su Ling wanted to find out which type of soil was more suitable for growing plant X. She set up two pots, S and T, as shown below.



For Su Ling's experiment, which variable(s) should she keep the same and which variable(s) should she change?

(a) Put a tick (√)in the correct boxes below. [2]

Variable	Keep the same	Change
i) Size of the plants		
ii) Type of soil in each pot		
iii) Amount of water given to each plant		
iv) Amount of light given to each plant		

(b) State one characteristic of plants that is different from animals. [1]

_____

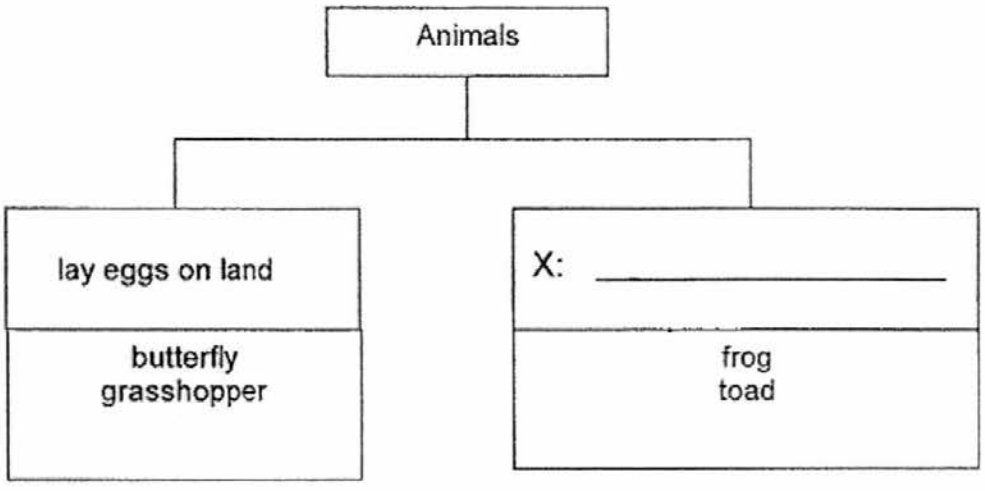
_____

(c) What observation would she have to make to conclude that the soil in Pot S is more suitable for the growth of plant X? [1]

_____

_____

36. Study the classification chart below. The following animals are classified according to the way they reproduce.



(a) In the diagram above, write a suitable heading in the box marked X. [1]

(b) State the number of stages in the life cycle of each animal below. [1]

butterfly: _____ stages

grasshopper: _____ stages

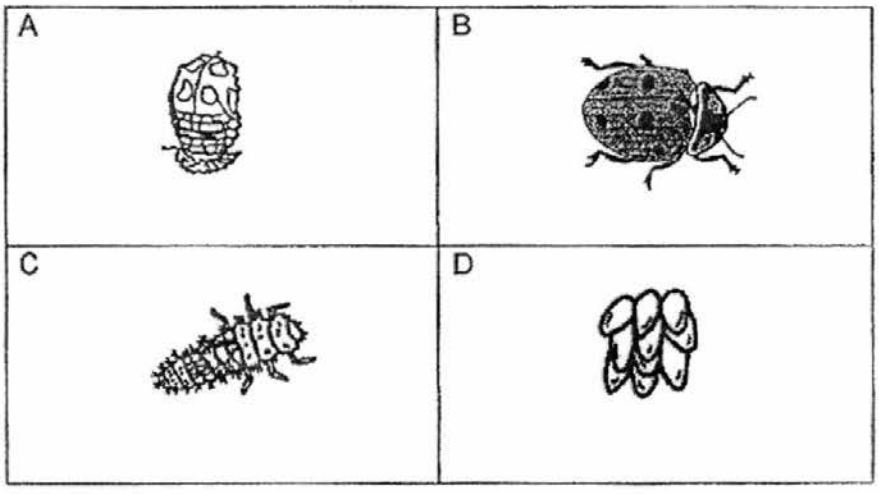
(c) In the box below, draw and label the life cycle of the cockroach. [1]
(do not need to draw the animal)

(d) State one other animal **group** not mentioned above that reproduces only by laying eggs. Give an example of an animal in the group. [2]

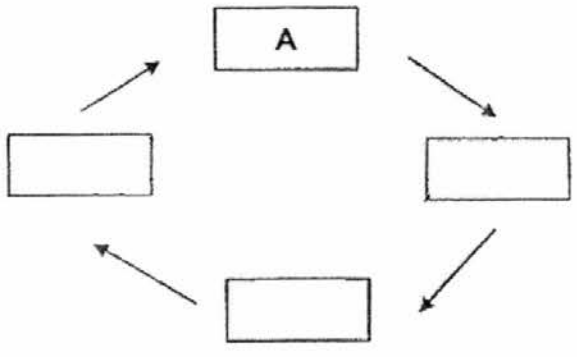
(i) Group: _____

(ii) Example: _____

37. The pictures below show the stages in the life cycle of a ladybird. The pictures have not been arranged in order.



(a) Arrange the stages of the life cycle of a ladybird in the correct order, by writing A, B, C and D, in the boxes provided. The letter is provided for you. [1]



(b) (i) At which stage, A, B, C or D will the ladybird moult? [1]

_____

(ii) Give a reason why the ladybird needs to moult. [2]

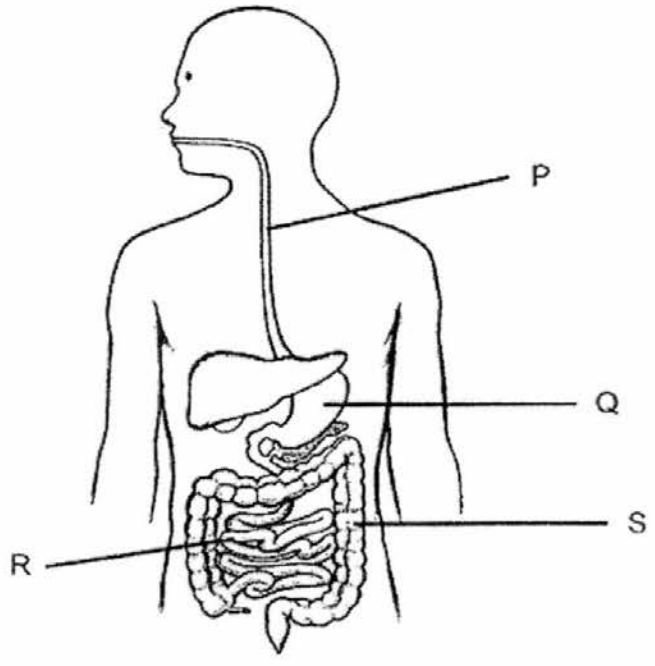
_____

_____

(c) Name an organism that has the same stages as the life cycle of the ladybird. [1]

_____

38. The diagram below represents the human digestive system.



(a) With reference to the diagram, name the parts of the digestive system represented by letters P and S. [1]

Part	Part of Digestive System
P	
S	

(b) In which part(s) P, Q, R and S, is/are digestive juices added? [1]

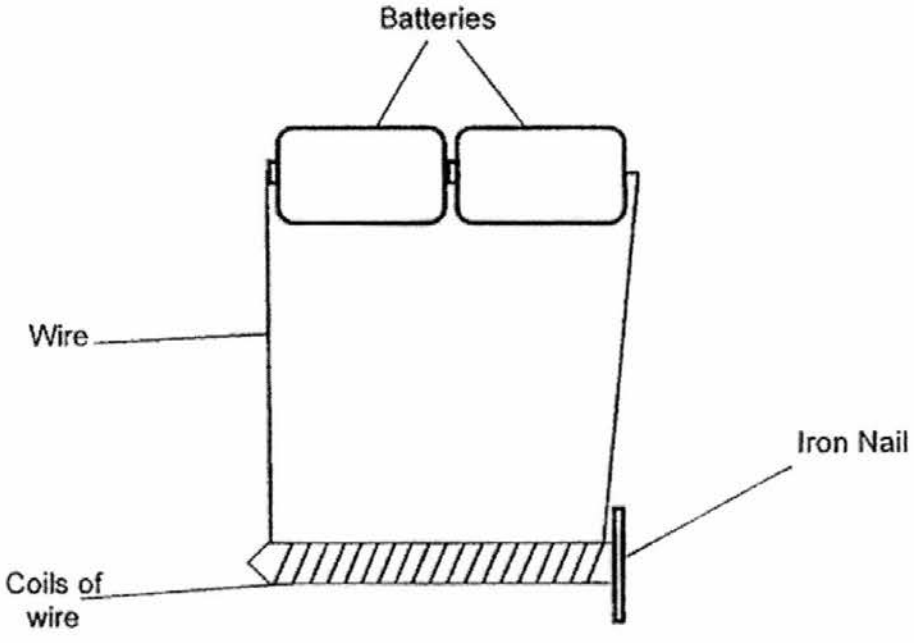
_____

(c) Write down two things that take place in part R. [2]

(i) _____

(ii) _____

39. Tim tried to set up an electromagnet circuit as shown in the diagram below. When he lowered the iron nail into a tray of steel pins, he observed that it attracted some of the steel pins.



(a) Give a reason why the steel pins were attracted to the iron nail. [1]

_____

_____

(b) Thomas wanted to increase the number of steel pins attracted to the iron nail.
Suggest two ways he could do this. [2]

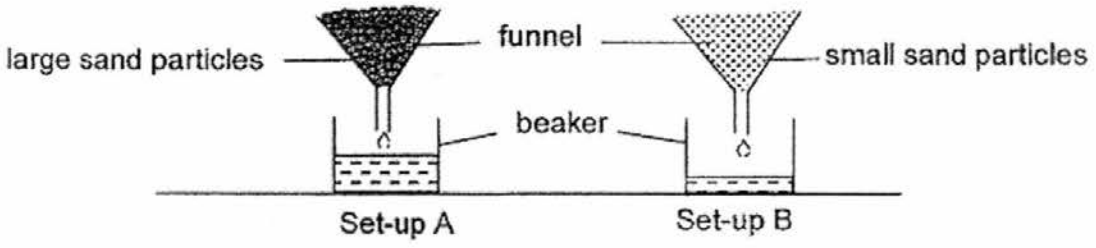
1st way: _____

2nd way: _____

(c) Give an example of an appliance where Tim can find such an electromagnet. [1]

_____

40. Azman conducted an experiment to investigate the flow of water through two different types of sand using set-ups A and B. He poured 100 cm^3 of water into the funnel of each set-up as shown.



After 10 minutes, he observed and recorded the results as shown in the table below.

	Set-up A (cm^3)	Set-up B (cm^3)
Amount of water poured at the start	100	100
Amount of water collected in the beaker after 10 mins	67	24

(a) Which type of sand particle allowed water to pass through faster? [1]

_____

(b) Based on the table, explain the observation that Azman had made. [2]

_____

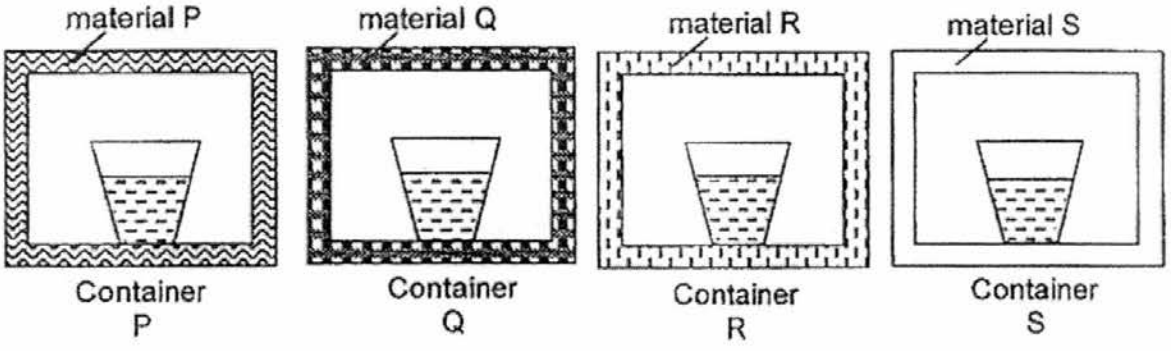
_____

(c) State the property of water that is demonstrated in the experiment. [1]

_____

_____

41. Mrs Tan conducted an experiment using containers of 4 different materials, P, Q, R and S, as shown below.



She had four identical cups of water with a temperature of 5°C in each of the containers in the living room. After 10 minutes, she measured the temperature of the water and recorded the temperature in the table shown below.

	Temperature of water (°C)	
Container	At the beginning of experiment	At the end of experiment
P	5	19
Q	5	14
R	5	8
S	5	25

(a) Other than the temperature of water, name 2 other variables that Mrs Tan must keep constant in order to conduct a fair test. [1]

(i) _____

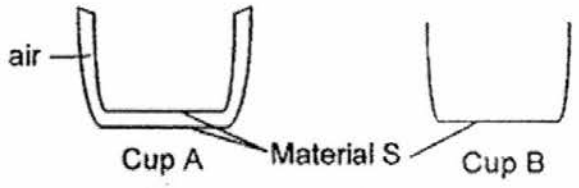
(ii) _____

(b) Mrs Tan wants to use a container to place a chocolate bar to ensure it melts the slowest. Which container, P, Q, R or S, should she use? Explain your choice. [2]

_____

_____

(c) Mrs Tan used Material S to make a cup. She poured the same amount of hot tea into a single-layer cup and a double-layer cup as shown below. The double layer cup has air trapped in between the layers.



Explain why the double-layer cup A felt cooler than the single-layer cup B when she holds the cup. [1]

SCHOOL : NANYANG PRIMARY SCHOOL
LEVEL : PRIMARY 4
SUBJECT : SCIENCE
TERM : SA2

SECTION A

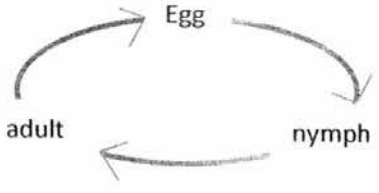
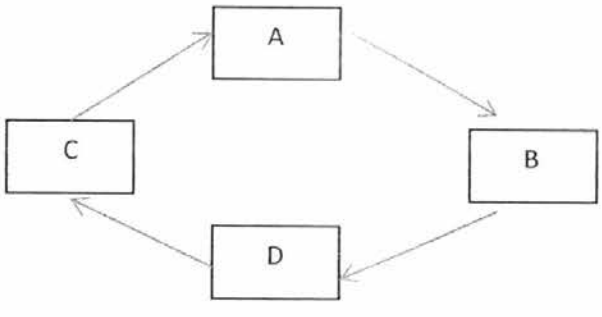
Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	3	2	4	3	2	4	4	3	2

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

Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28
2	3	2	3	2	3	4	2

SECTION B

Q29)	Roots → It obtains water for the plant Leaf → It makes food for the plant
Q30)	(a) Magnet (b) Magnetic
Q31)	Sun, lamp

Q32)	(a) slower (b) better
Q33)	(a) has the same mass as (b) is lighter than
Q34)	(a) Living things respond to changes around them. (b) (i) There was no food (ii) The grasshopper used up the air in the tank. (c) Living things grow.
Q35)	(a) (i) keep the same (ii) change (iii) keep the same (iv) keep the same (b) Plants make their own food while animals do not make their own food. (c) The plant in Pot S grew taller than the plant in Pot T.
Q36)	(a) X : lay eggs in water (b) Butterfly : 4 stages Grasshopper : 3 stages (c) (d)  (e) (i) Group : birds (ii) example : penguins
Q37)	(a) 

	(b) (i) C (ii) It grows but the outer covering does not grow. (c) butterfly
Q38)	(a) P : gullet S : large intestine (b) Q and R (c) (i) Digested food gets absorbed into the blood stream. (ii) Digestion ends there.
Q39)	(a) The iron nail became an electromagnet. (b) 1st way : Add more batteries to it. 2nd way : Add more coils of wire around the iron nail. (c) Oven
Q40)	(a) Large sand particles (b) Large sand particles has more air spaces between them to allow more water to flow through them faster resulting in more water collected in set up A. (c) Water has no definite shape.
Q41)	(a) (i) The thickness of the materials. (ii) Amount of water in the cups. (b) Container R. The temperature of the water in Container R was the lowest after 10 minutes so Container R is the poorest conductor of heat. (c) Air trapped in cup A is a poor conductor of heat so heat from the hot tea will travel to Mrs Tan's hand slower and she will feel that cup is cooler than Cup B.