Name: _____ ( )

Class: Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 5
Semestral Assessment 1 – 2015
SCIENCE

BOOKLET A

14 May 2015

Total Time for Booklets A and B: 1 hour 45 minutes

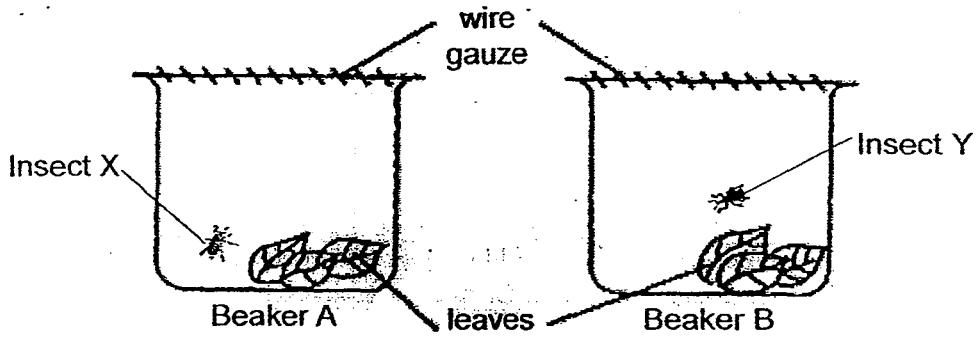
30 questions
60 marks

Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

This booklet consists of 22 printed pages.

Section A (30 x 2 marks = 60 marks)
For each question from 1 to 30, 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. Two different insects, X and Y, were put into two separate beakers at the same location with the same number of leaves plucked from the same plant.



After one week, Insect X was dead but Insect Y was still alive.
Based on the above observation, which one of the following explanations is most likely correct?

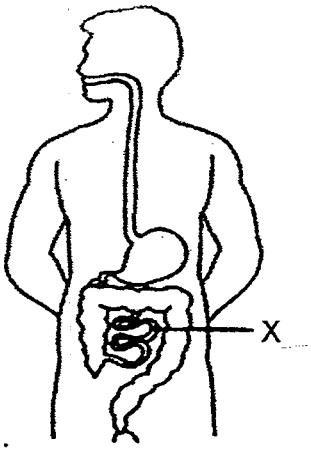
(1) Insect Y requires more food than insect X.
(2) There is less oxygen in beaker A than in beaker B.
(3) Insect X feeds on animals while insect Y feeds on plants.
(4) The leaves in beaker A dry up faster than the leaves in beaker B.

2. Which of the following statements are true about most mammals?

A They feed their young with milk.
B They give birth to their young alive.
C They have hair as their outer coverings.

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

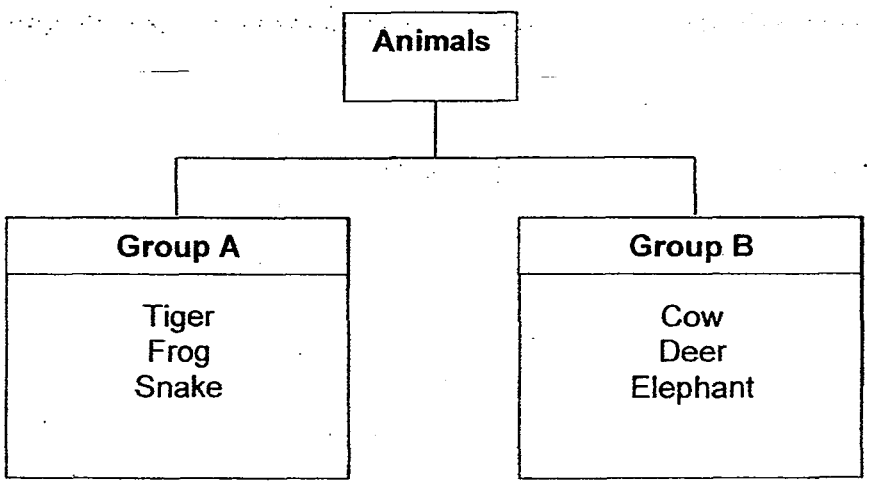
3. The diagram below shows some organs in the human body



Which of the following statements about organ X is **true**?

(1) No digestion is happening here
(2) All the water in the digested food is absorbed here.
(3) Digested food is absorbed into the bloodstream here.
(4) Solid wastes are stored here before passing out of the body.

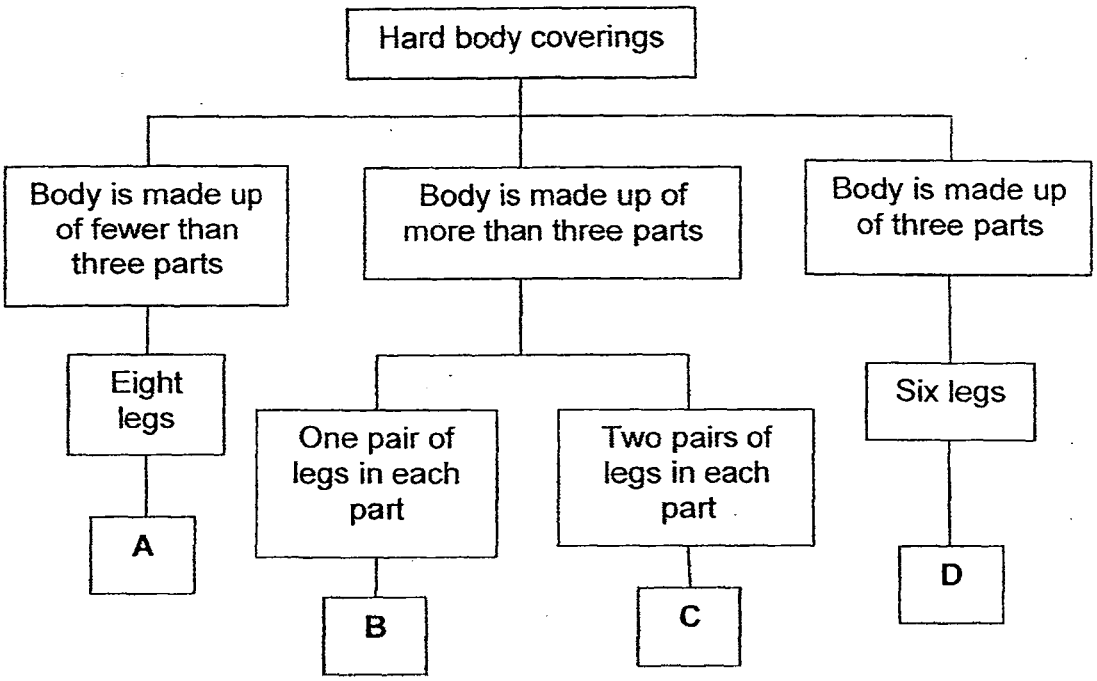
4. Study the classification chart below carefully.



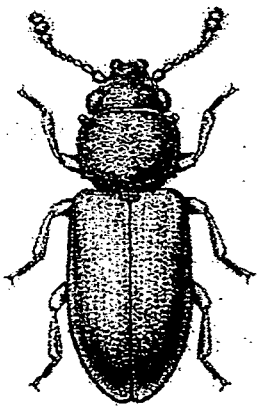
The animals in Groups A and B are classified according to _____.

(1) The way they move
(2) the food they eat
(3) their outer coverings
(4) the way they reproduce

5. Study the classification table below.



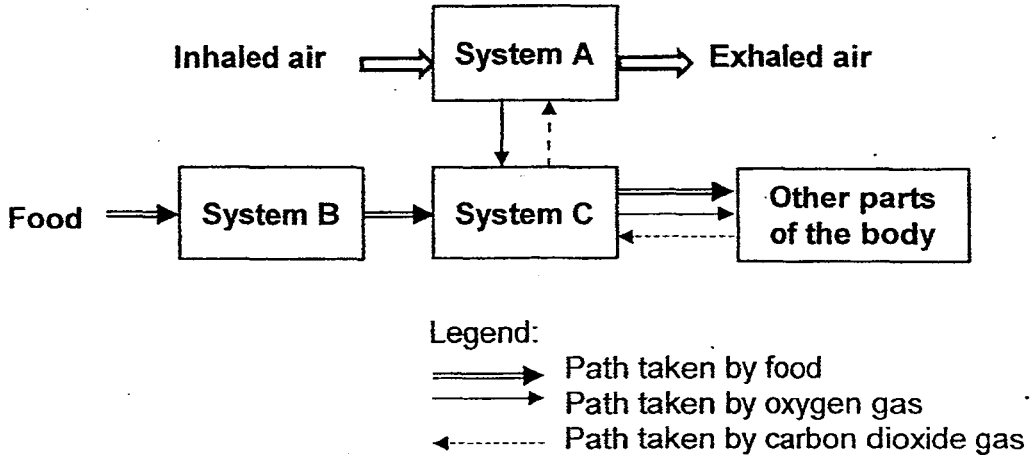
Daniel found an animal and noticed that it had a hard body covering.



Which group, A, B, C or D, does this animal belong to?

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

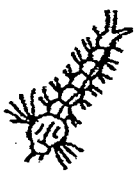
6. The diagram below shows how the three systems in a human body work together to keep the body functioning.



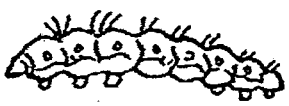
What do the systems A, B and C represent?

	System A	System B	System C
(1)	Respiratory	Circulatory	Digestive
(2)	Circulatory	Digestive	Respiratory
(3)	Respiratory	Digestive	Circulatory
(4)	Digestive	Respiratory	Circulatory

7. The pictures show a stage in the life cycle of a mosquito and a butterfly respectively.



wriggler

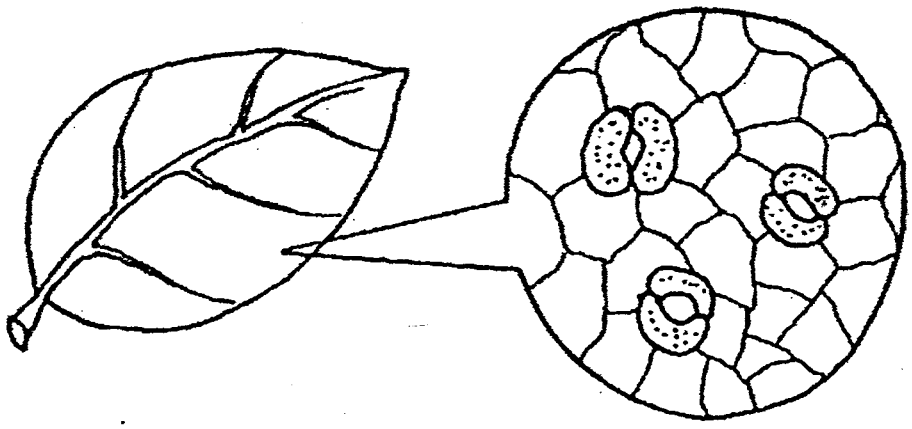


caterpillar

In what ways are the animals in the stage shown above similar?

(1) They feed on the same type of food.
(2) They live in water throughout this stage of their life cycle.
(3) They both do not feed a lot at this stage of their life cycle.
(4) They do not look like their parent at this stage of their life cycle.

8. The diagram below shows the stomata found on the underside of a leaf.



Which one of the following parts in the human body performs a function similar to that performed by the stomata?

(1) Heart

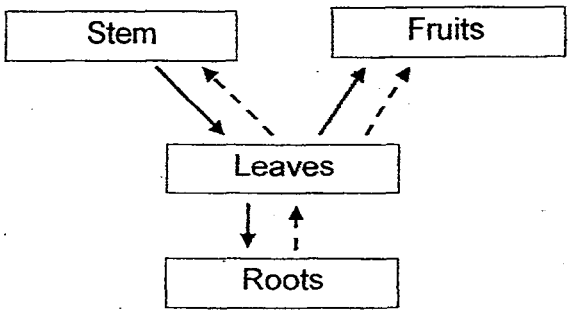
(2) Lungs

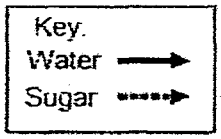
(3) Stomach

(4) Small Intestine

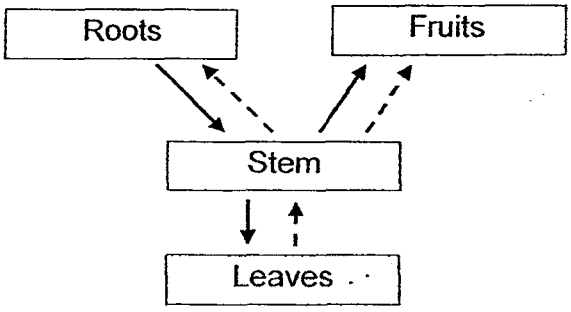
9. Which one of the diagrams below correctly shows the transport of water and sugar in a plant?

(1)

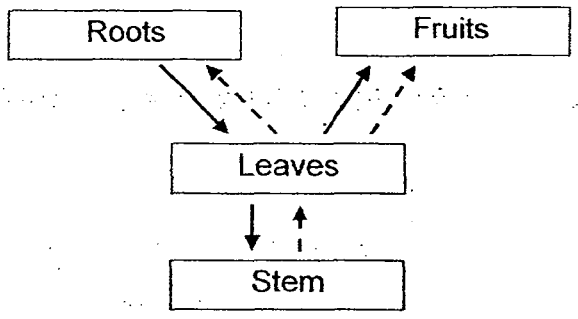




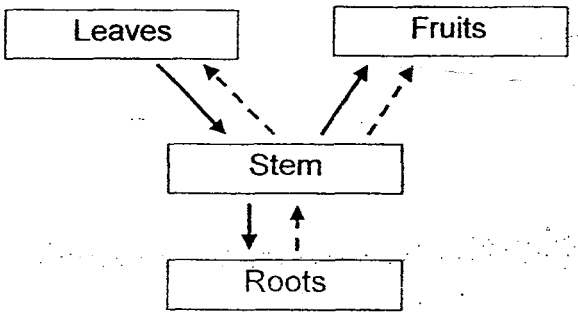
(2)



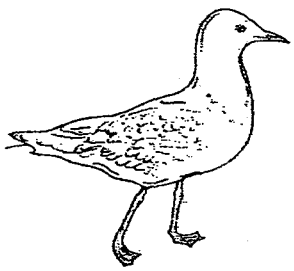
(3)



(4)



10. Study the two animals below carefully.



Seagull

Penguin

In what way(s) is/are the two animals similar?

A They both have a beak.

B Their female lays eggs.

C They have wings and are able to fly.

D They have feathers as their outer coverings.

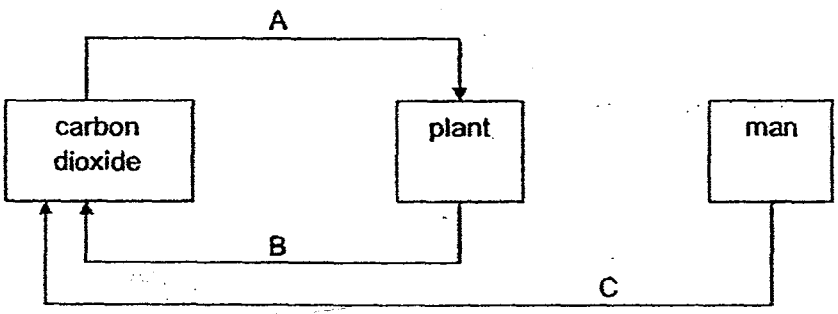
(1) A only

(2) A and C only

(3) B and C only

(4) A, B and D only

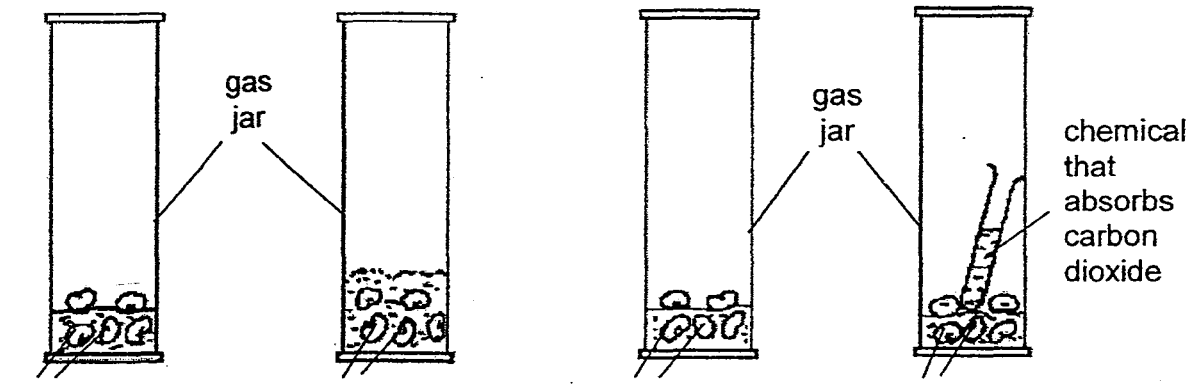
11. The diagram below shows three processes, A, B and C, taking place in living things. The arrows show the flow of carbon dioxide during the processes.



What processes do A, B and C represent?

	Process A	Process B	Process C
(1)	Photosynthesis	Respiration	Respiration
(2)	Respiration	Photosynthesis	Photosynthesis
(3)	Photosynthesis	Respiration	Photosynthesis
(4)	Respiration	Photosynthesis	Respiration

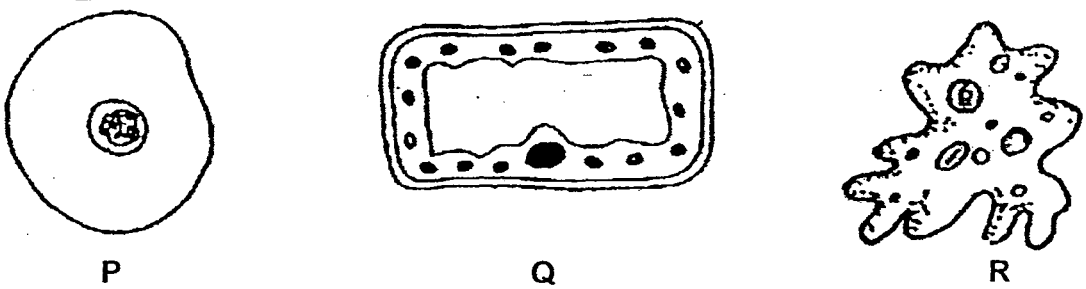
12. Each of the following jars contains five seeds. Jars B, C and D are placed near the window while Jar A is placed in the refrigerator.



In which jar(s) will the seeds be able to germinate?

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

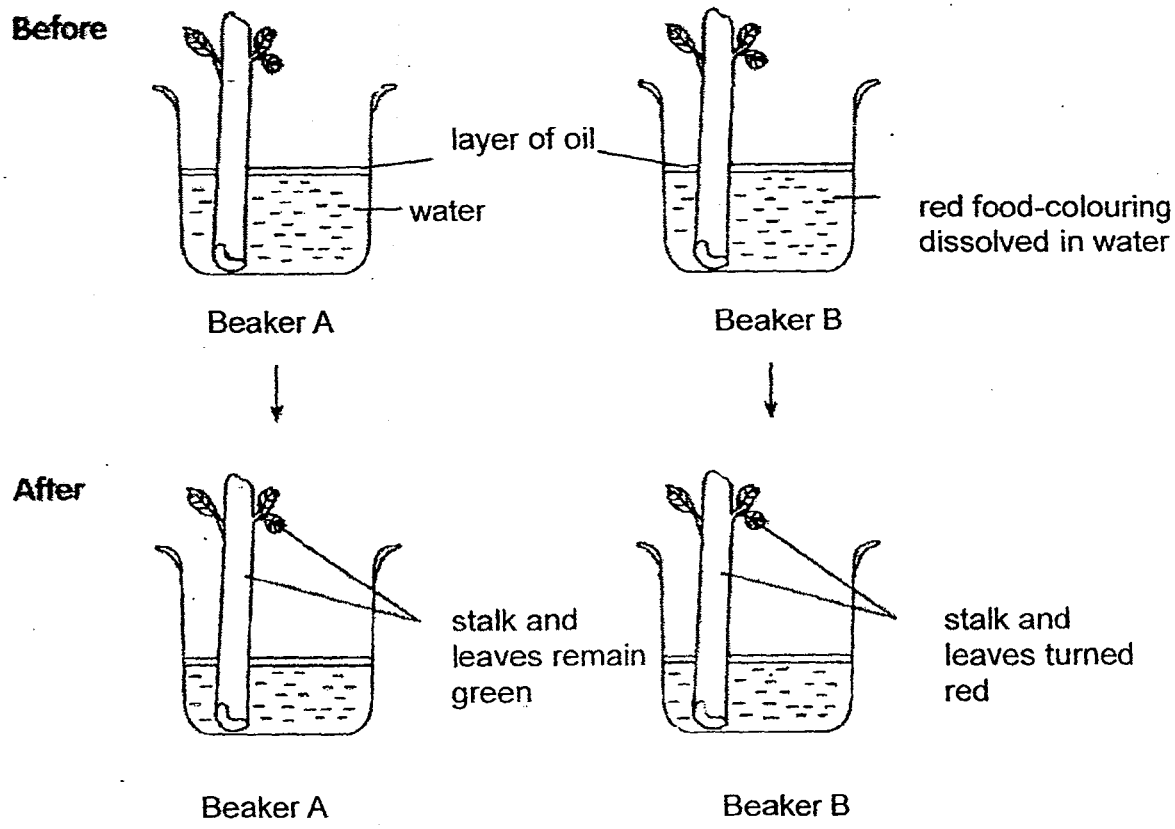
13. The diagrams below show 3 different cells, **P**, **Q** and **R**, each carrying out life processes



Which one of the following matches the type of cells to the process(es) that is / are carried out?

	Photosynthesis	**Respiration**
(1)	Q only	P and Q only
(2)	Q only	P, Q and R only
(3)	P and R only	P and Q only
(4)	Q and R only	P, Q and R only

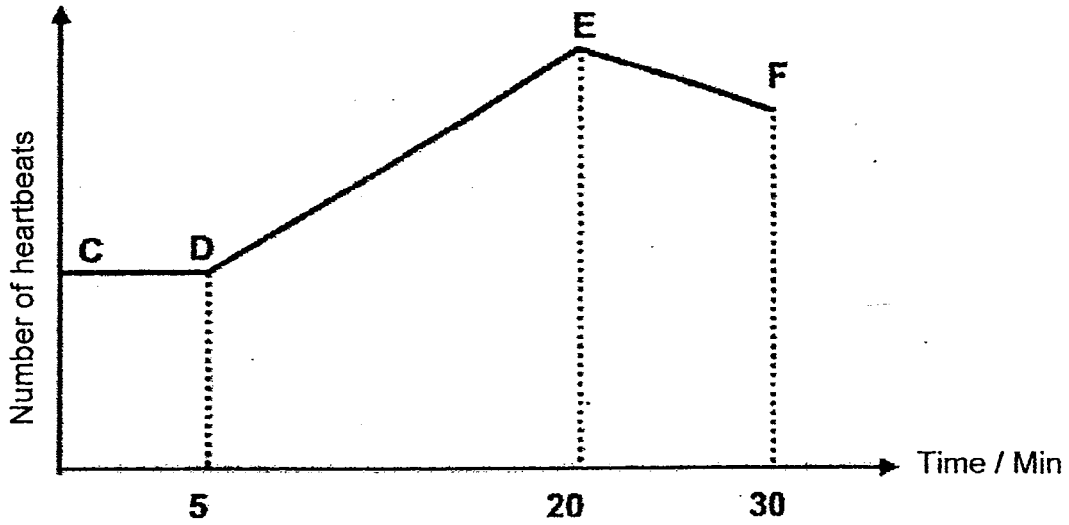
14. Melanie set up the experiment as shown below.



Which one of the following represents the correct observation and conclusion made by Melanie about the experiment?

	Observation	Conclusion
(1)	**No** change in the water level in both beakers after experiment	Without roots, the celery stalks cannot take in water.
(2)	**Only** water level in Beaker A dropped.	Celery stalks only transport water that is not coloured
(3)	Water level in both beakers dropped.	**Celery leaves absorb water and** dissolved substances.
(4)	Only celery stalks and leaves in Beaker B were coloured red.	Tubes in celery stalks transport water and dissolved substances.

15. Riley jogged for 30 minutes. The graph below shows his heartbeats over the duration.

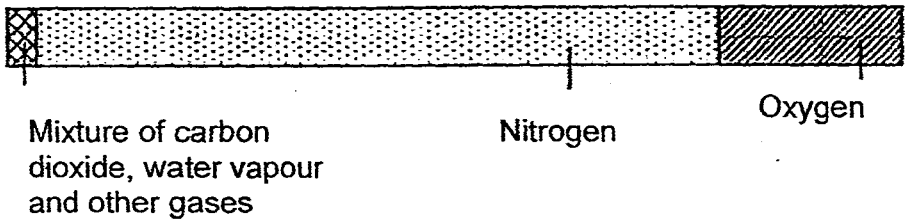


Which of the following statements correctly describe what was happening during the period indicated by the line DE on the graph?

A Riley's breathing rate is increasing.
B Riley's body is using more energy.
C Riley's body is producing less carbon dioxide.
D Riley's heart is pumping blood at a faster rate.

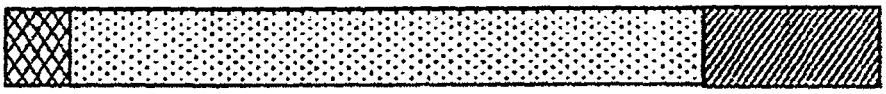
(1) A and B only.
(2) B and C only.
(3) A, B and D only.
(4) A, C and D only.

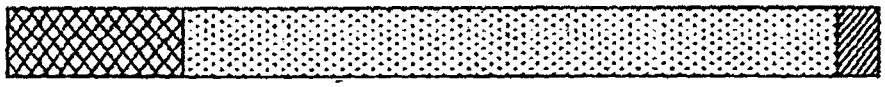
16. The normal proportion of gases present in the atmosphere is as shown below.

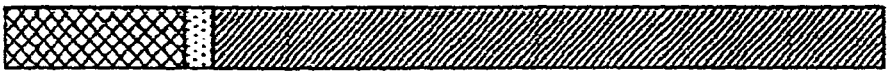


Some people were trapped in the lift. After about an hour, the people complained that they were feeling faint and breathless. Which one of the following best shows the composition of air in the lift?

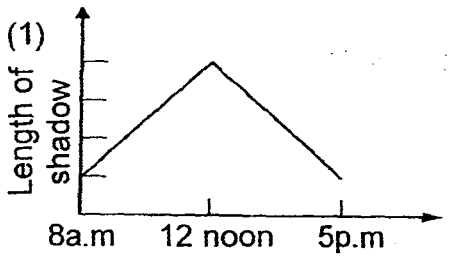
(1) 

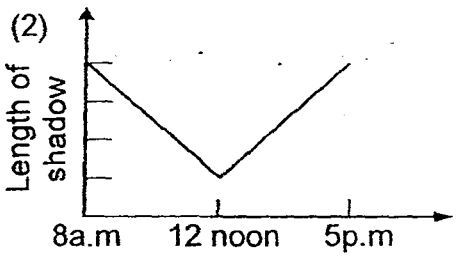
(2) 

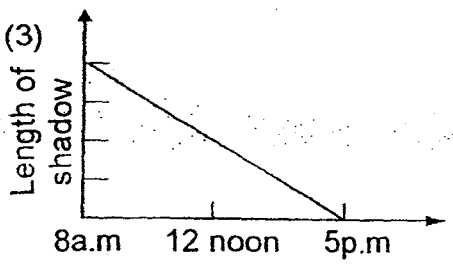
(3) 

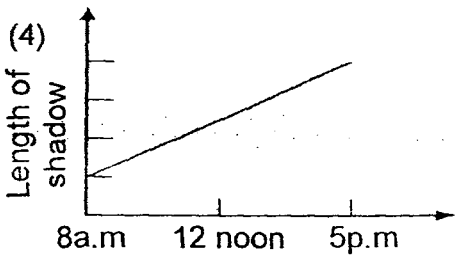
(4) 

17. Which one of the following graphs correctly shows the changes in the length of a shadow cast by a tree during the day?

(1)


(2)


(3)


(4)


18. Study the diagram below carefully.

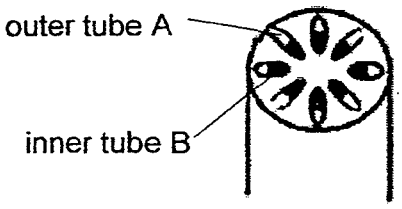


Diagram A

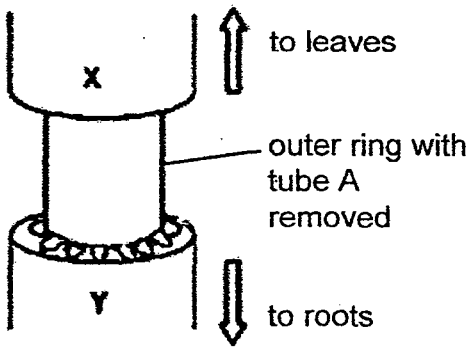
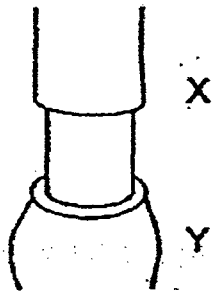


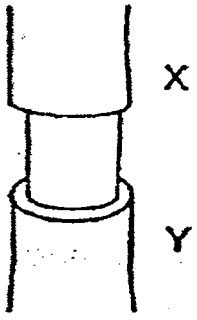
Diagram B

Diagram A shows the cross section of the stem with two different sets of tubes, A and B. If the outer ring of the stem is cut in such a way that only the outer tube A are removed as shown in Diagram B above. Which one of the following diagrams would show the appearance of the section after some time?

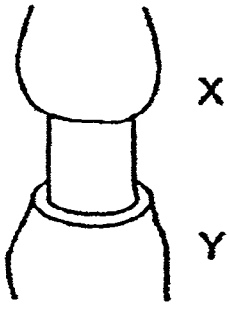
(1)



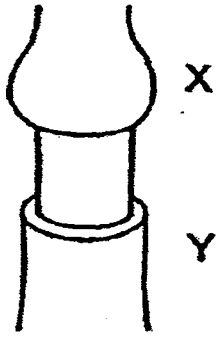
(2)



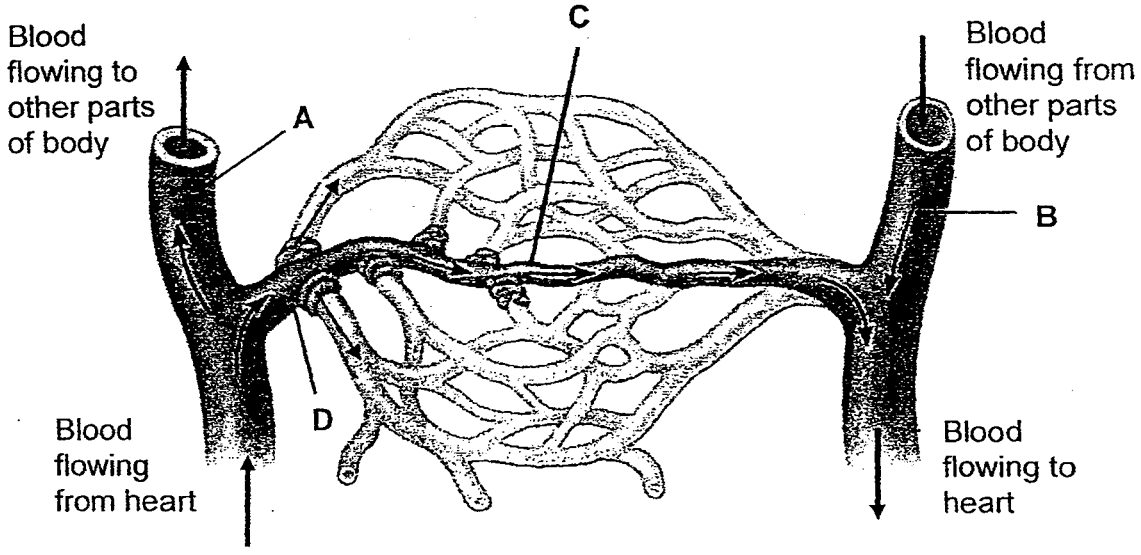
(3)



(4)

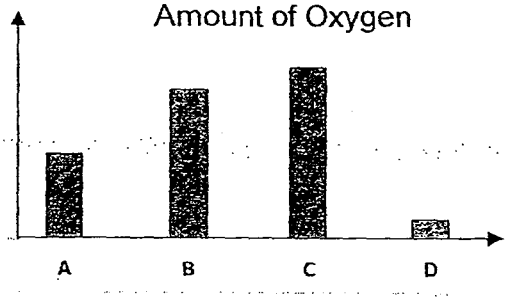


19. The diagram below shows the blood vessels in a human circulatory system.

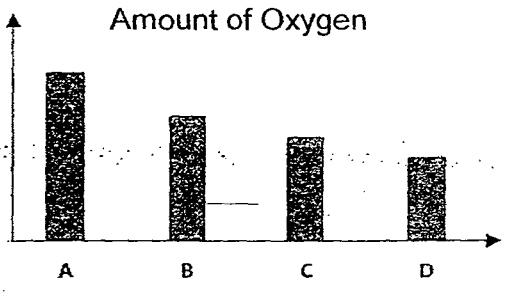


Blood samples, A, B, C and D, were taken from four parts of the blood vessels as shown in the diagram. Which one of the following bar graphs shows the amount of oxygen in the blood samples?

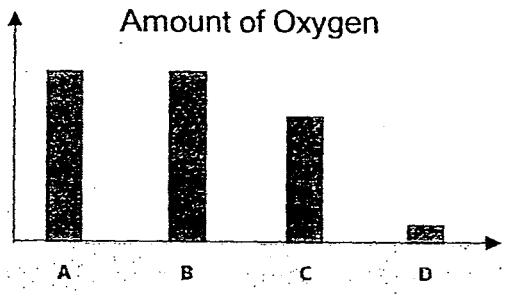
(1)



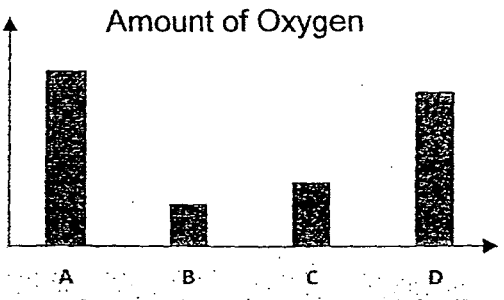
(2)



(3)



(4)



20. The table below shows the boiling points and melting points of substances P, Q, R and S.

	Melting point(°C)	Boiling point (°C)
P	35	97
Q	4	36
R	56	190
S	10	65

Which of the above substances will be at liquid state at 33 °C?

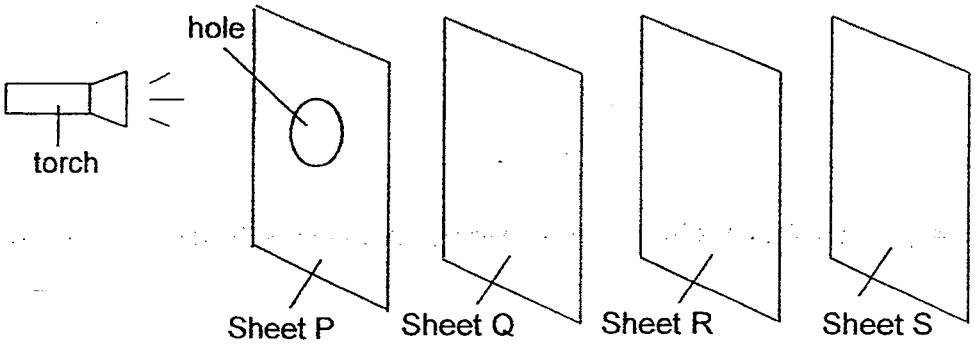
(1) P only

(2) P and R only

(3) Q and S only

(4) Q, R and S only

21. The experiment shown below was carried out in a dark room.

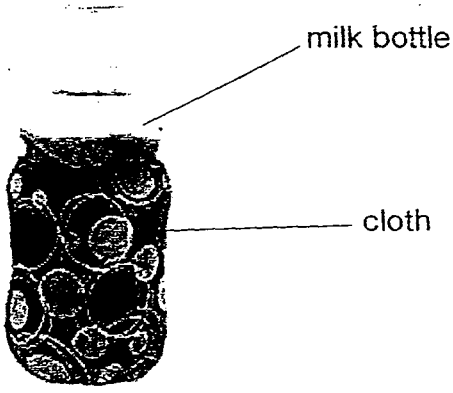


Sheets P, Q, R, and S, were placed in a straight line. When the torch was switched on, a bright circular patch of light was observed on **Sheet R** only.

Which one of the following correctly describes the properties of the materials that sheets, P, Q, R and S, are made of?

	Allows light to pass through	**Does not allow light to pass through**	**Not possible to tell**
(1)	P and Q	R and S	none
(2)	Q	R	P and Q
(3)	P	Q	R and S
(4)	Q	P and R	S

22. Jane poured some warm milk in a baby milk bottle. She then wrapped the bottle with a layer of cloth as shown below. Half an hour later, the cloth was removed and the milk was still warm.



Which of the following are possible reasons why the milk was still warm after half an hour?

A The cloth is a poor conductor of heat.

B The milk gained heat slowly from the surrounding.

C Heat from the milk cannot pass through the plastic milk bottle.

D The cloth trapped a layer of air which reduced the heat loss from the milk to the surrounding.

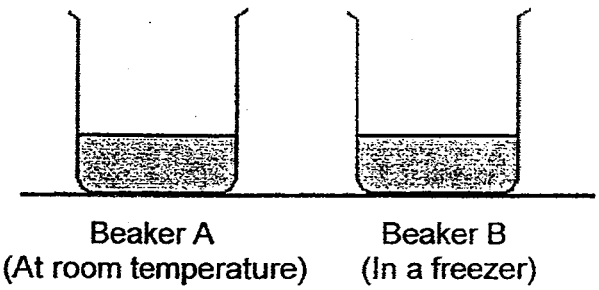
(1) A and D only

(2) A and B only

(3) B, C, and D only

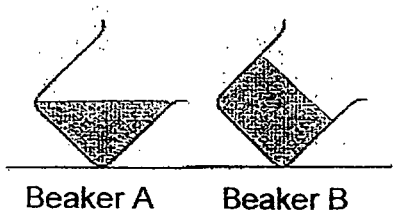
(4) A, B, C and D

23. Ron filled two beakers, A and B, with 250cm^3 of water each. He left Beaker A at room temperature and placed Beaker B in a freezer. After 6 hours, both beakers were tilted sideways.

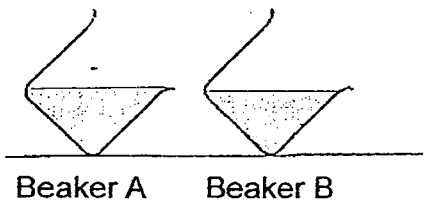


Which one of the following shows what Ron would observe when the beakers were tilted?

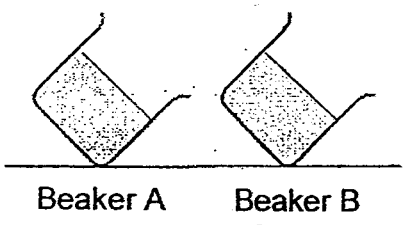
(1)



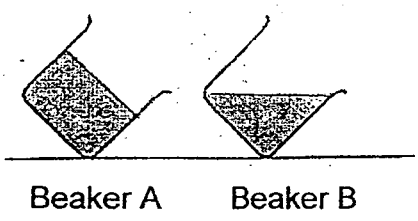
(2)



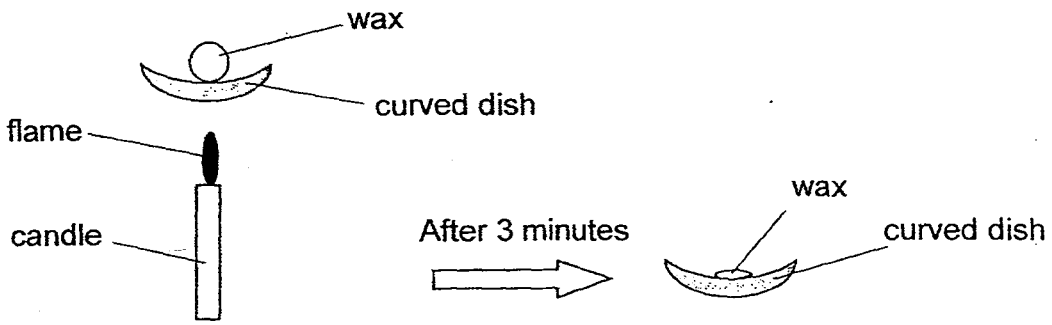
(3)



(4)



24. Banu took six pieces of wax of the same mass and heated each of them in curved dishes, A, B, C, D, E and F. These six dishes are made of different materials.

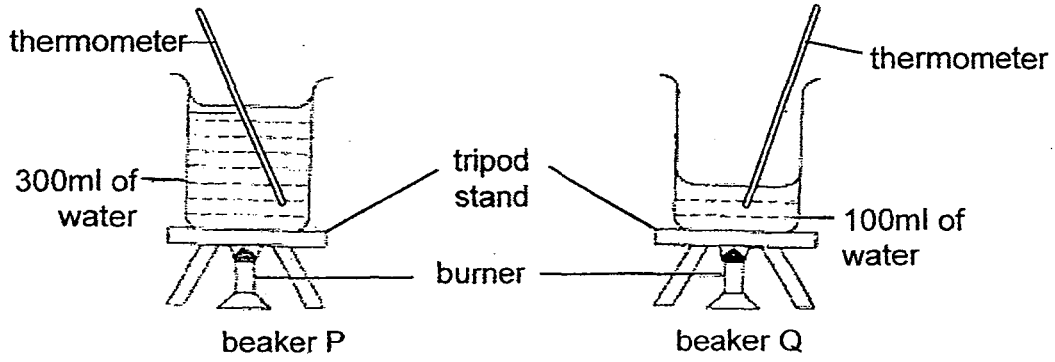


Banu heated each piece of wax for 3 minutes. Then she quickly separated the solid wax from the liquid wax and measured the mass of solid wax left. The results were plotted in a graph as shown below.

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

(1) Materials C and F are most likely metals.
(2) Material D is a better conductor of heat than material E.
(3) Material F is a poorer conductor of heat than material B.
(4) Material C is the poorest conductor of heat among all the materials.

25. Jane filled 2 beakers, P and Q, with 300 ml and 100 ml of water respectively. She recorded the time taken for the water in the beakers to boil and continued heating the water even after they had boiled.



Which of the following statement(s) best describe(s) what she would observe?

A The water in beaker Q took a shorter time to boil.

B The temperature of the water kept on rising throughout the experiment.

C The water in beaker Q is hotter than the water in beaker P at the end of the experiment.

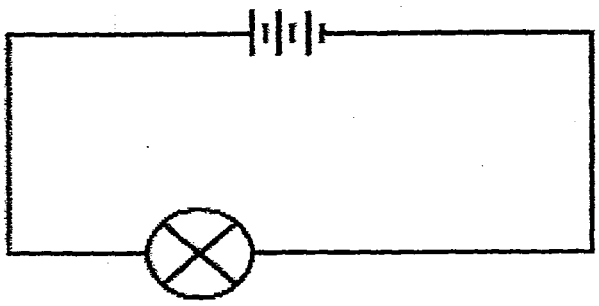
(1) A only

(2) B and C only

(3) A and B only

(4) A, B and C

26. Phyllis set up an electric circuit shown below. The bulb remained unlit.



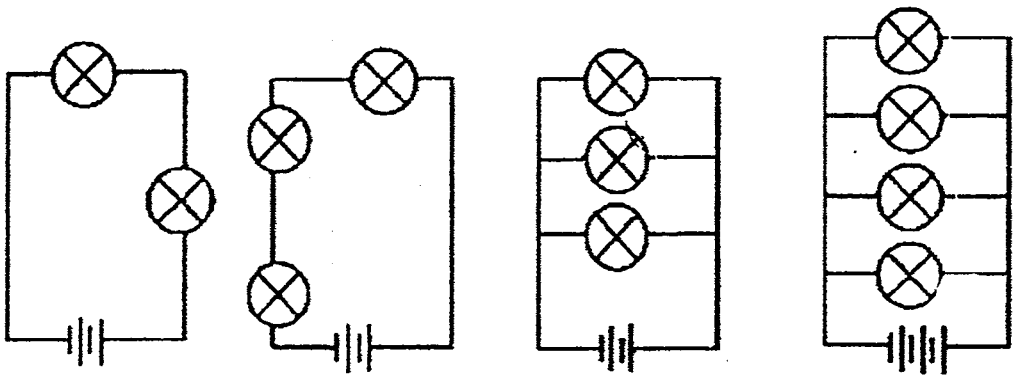
Phyllis's friends tried to explain why the bulb remain unlit.

Alief : Bulb is fused.
Brian : Batteries are flat.
Colette : Wire is made of copper.
Deanne : Batteries are connected wrongly.

Which of Phyllis's friends gave the possible explanations?

(1) Alief and Brian only
(2) Alief and Deanne only
(3) Brian, Colette and Deanne only
(4) Alief, Brian and Colette only

27. Study the circuits below. The circuits have similar bulbs, wires and batteries.



Circuit A **Circuit B** **Circuit C** **Circuit D**

Arrange the circuits from the one with the brightest bulbs to the least brightest bulbs.

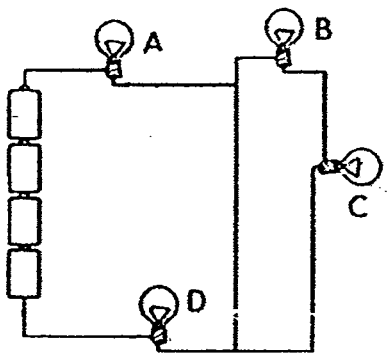
(1) C, A, B, D

(2) A, C, D, B

(3) D, C, A, B

(4) B, C, A, D

28. The electric circuit below is set up using similar bulbs, wires and batteries.



If Bulb B fuses,which bulbs will remain lit?

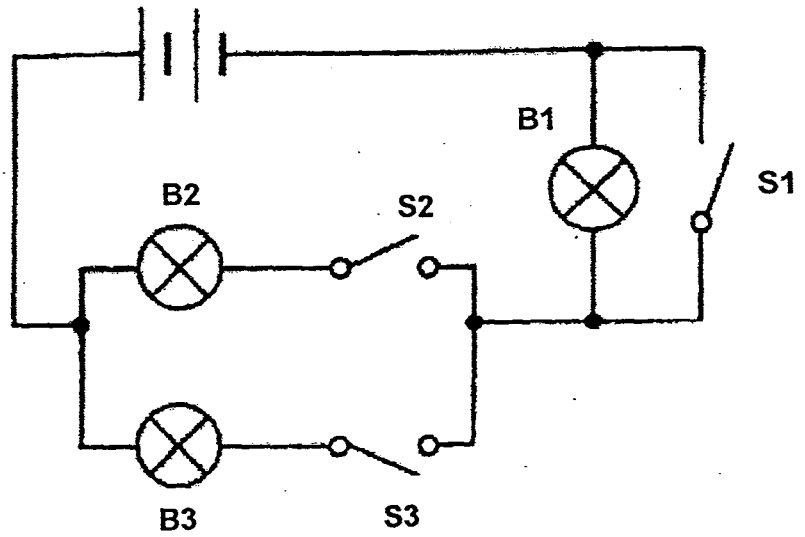
(1) A and C only

(2) A and D only

(3) A, C and D only

(4) None of the bulbs

29. Study the circuit diagram shown below carefully.



Which one of the following statements about the circuit is correct?

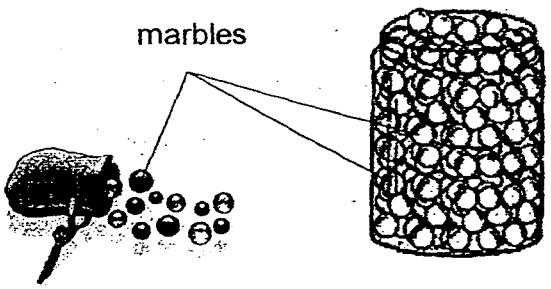
(1) B2 and B3 will light up when only S2 is closed.

(2) Only 1 bulb will light up if any 1 switch is closed.

(3) B1, B2 and B3 will light up when only S1 is closed.

(4) Only 2 bulbs will light up when either S2 or S3 is closed.

30. Susan tried to put more marbles into a jar filled with marbles. No matter how hard she shook the jar, she simply could not fit in any more marbles into the jar.



Which of the properties of matter below explain why she was not able to add more marbles into the jar?

(1) The marbles have mass.

(2) The jar cannot be compressed.

(3) The marbles are of different size.

(4) The marbles take up space and cannot be compressed.

END OF BOOKLET A

Name : _____ _____ ( )

Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 5
Semestral Assessment 1 – 2015
SCIENCE

BOOKLET B

14 May 2015

Booklet A	60
Booklet B	40
Total	100

Total Time for Booklets A and B: 1 hour 45 minutes

14 questions
40 marks

Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

This paper consists of 16 printed pages.

_____

Parent's Signature/Date

Section B (40 marks)
For questions 31 to 44, 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.

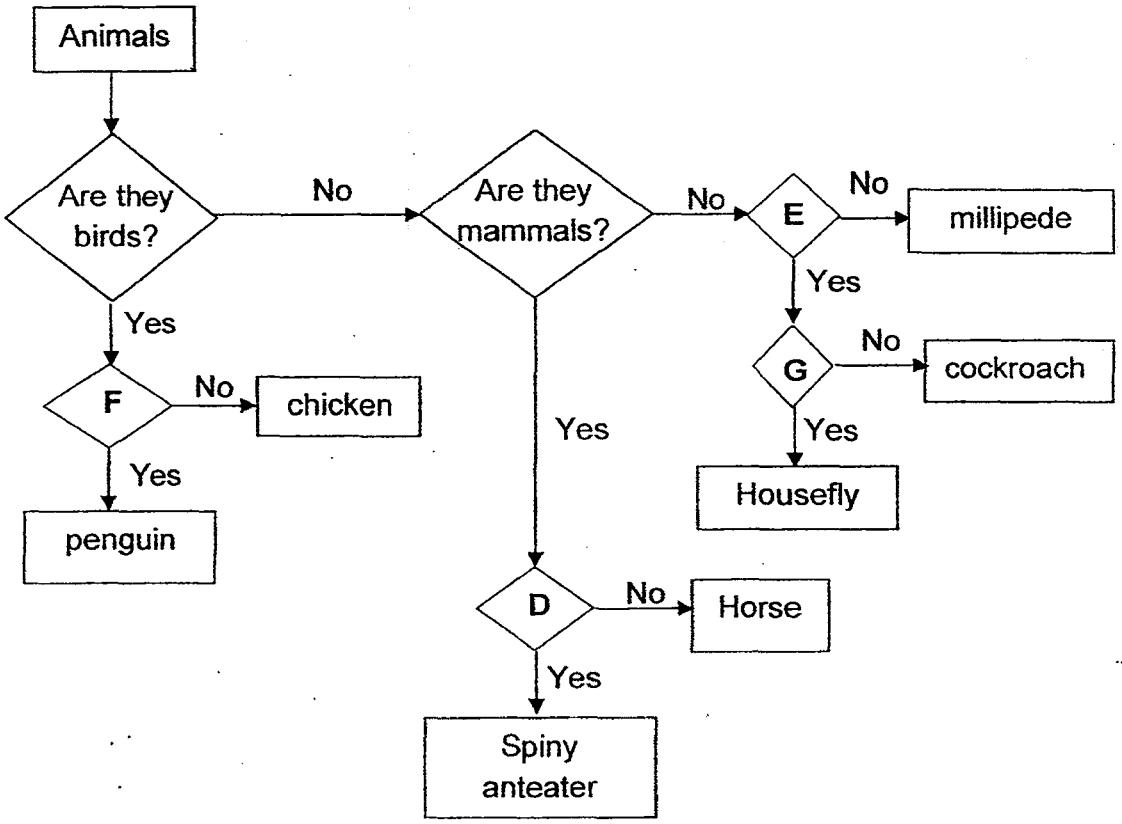
31. Study the characteristics of four things, P, Q, R and S, shown below.

Thing	Responds to changes	Moves from place to place on its own	Able to reproduce	Makes its own food
P	√			
Q	√	√	√	
R	√	√		
S	√		√	√

Based on the information given in the table above, indicate whether each of the following statements is True (T), False (F) or Not Possible to Tell (NP) in the space provided. [2]

	Statement	T / F / NP
(a)	S is most likely a plant.	
(b)	Q and S reproduce by laying eggs.	
(c)	P and R do not need food to survive.	
(d)	P, Q, R and S are all alive since they respond to changes.	

32. Study the flow chart on animals below.

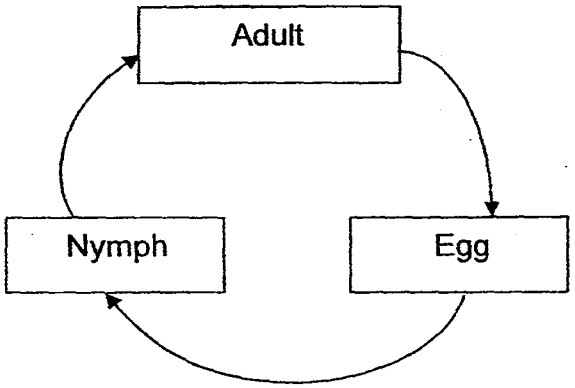


Each of the letters, D, E, F and G, in the flow chart represents a question.

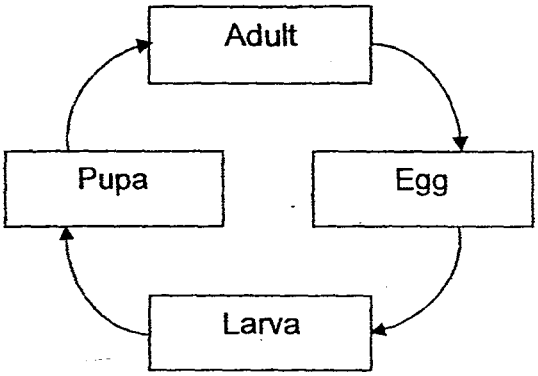
Write the letter, **D, E, F or G,** in the correct boxes below to indicate the question they represent. Each letter can only be used **once**. [4]

Questions	Letter
Can they swim?	
Are they insects?	
Are they reptiles?	
Do they lay eggs?	
Do they have many legs?	
Do they have a larval stage in their life cycle?	

33. The diagrams below show the life cycles of two animals.



Life cycle of Animal A



Life cycle of Animal B

Based on the diagrams above, list one similarity and one difference between the life cycles of Animal A and Animal B. [2]

Similarity:

_____

_____

_____

Differences:

_____

_____

_____

34. Kartika observed some cells from plants and animals under the microscope. She recorded her observations in the table below.

	Cell A	Cell B	Cell C
Nucleus	Yes	Yes	Yes
Cell Wall	Yes	No	No
Chloroplast	No	No	No
Cell Membrane	Yes	No	Yes

(a) Her teacher said she made an error in one of her observations. For which cell, A, B or C, was the wrong observation made? Explain why. [1]

_____

_____

_____

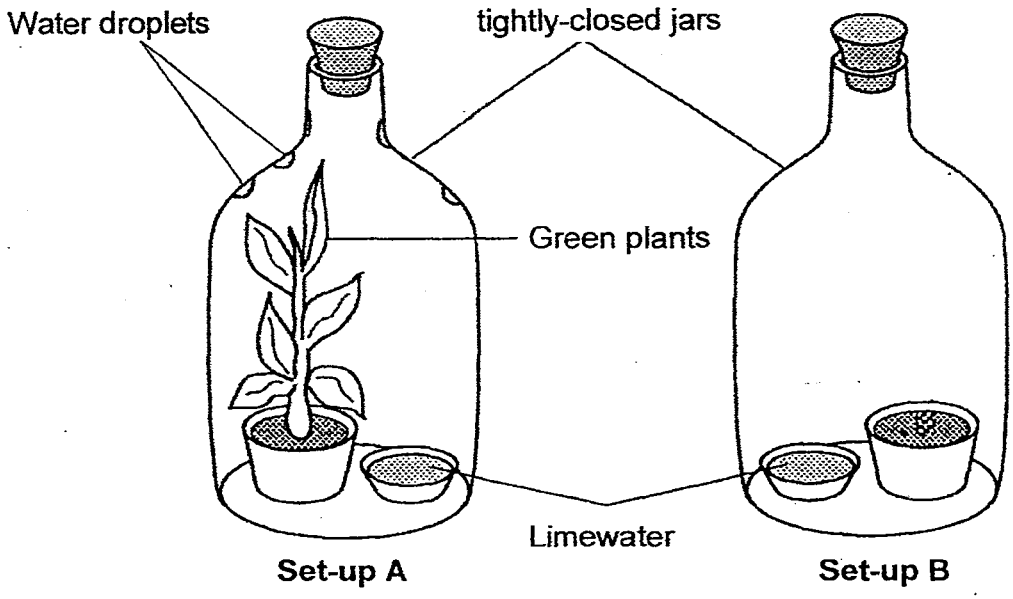
(b) Which cell is most likely taken from the bulb of an onion? Explain why. [2]

_____

_____

_____

35. Qiaoyi set up an experiment as shown below.



The two set-ups, A and B, are placed in a locked cupboard for two days. After two days, she observed that the limewater in beaker A has turned very chalky while the limewater in beaker B has turned slightly chalky.

(a) Name the process that happened which caused the limewater in dish A to turn chalky. [1]

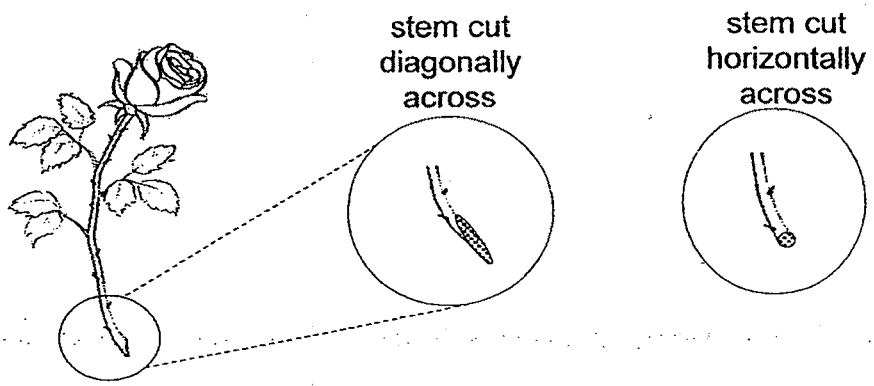
(b) Explain why the lime-water in set-up B has turned only slightly chalky as compared to the lime-water in set-up A. [2]

36. The plant and human transport system transport materials around the body.

(a) List two differences between the plant and human circulatory system. [2]

Difference:

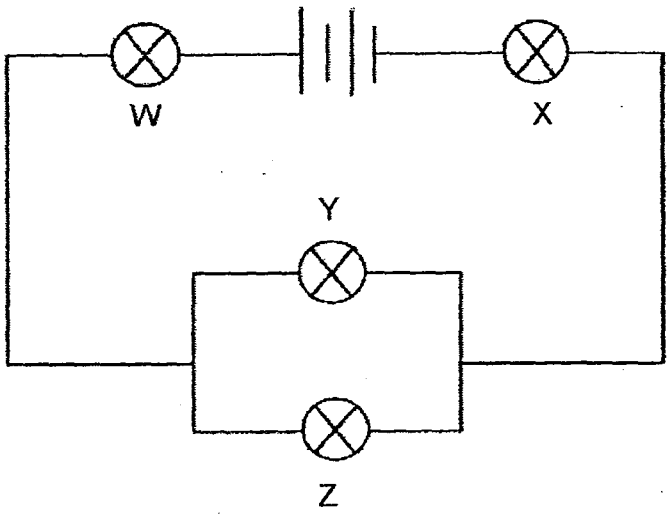
Difference:



If you look closely at the stems of flowers immersed in vases of water in a flower shop, you would notice that the ends are cut diagonally rather than horizontally across.

(b) Suggest a reason why the ends of the flower stems were cut diagonally. [1]

37. Helen set up a circuit as shown below.



(a) Fill in the table below with a √ to show the type of arrangement of the bulbs in the circuit. [1]

Bulbs	Parallel	Series	Not possible to tell
Y and Z			
W and X			

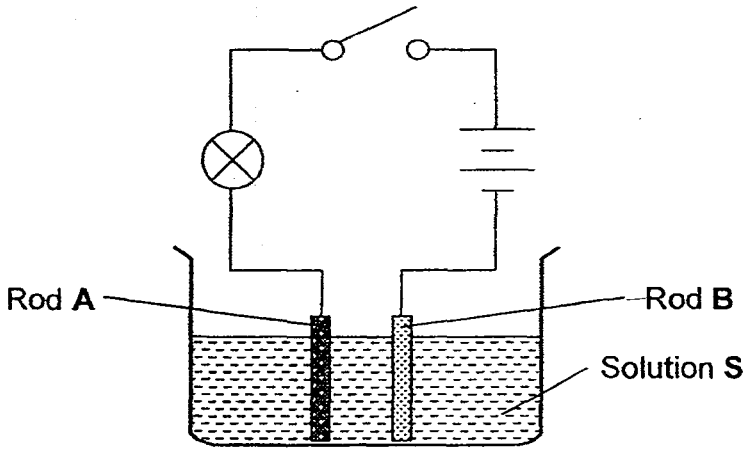
(b) If one of the bulbs fuses, what is the maximum number of bulbs that will remain lit? Give a reason for your answer. [1]

_____

_____

2

38. Harry set up an electrical circuit as shown below. He then dipped Rod A and Rod B into a beaker containing Solution S. The bulb lit up when the circuit was closed.



(a) Based on the result of the experiment above, state a common property of of Rod B and Solution S. [1]

_____

Harry then replaced Rod **A** and **B** with Rod **X** and **Y** respectively and conducted the experiment again. The results are shown in the table below.

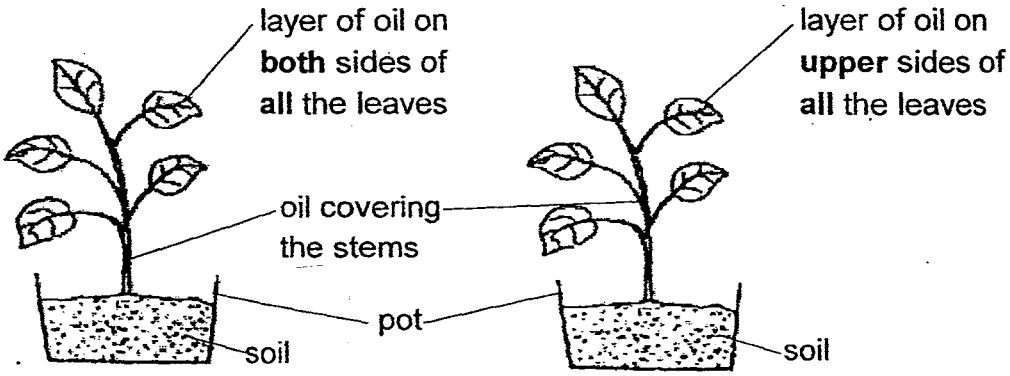
Rod	**Rod**	**Did the bulb light up?**
X	B	No
A	Y	Yes

(b) Name a suitable material that Rod X and Rod Y could be made of. [2]

Rod X: _____

Rod Y: _____

39. Dillon wanted to find out the effect of a layer of oil on the surfaces of a plant. He placed 2 similar plants. A and B, each in identical pots with an equal amount of soil. He then covered the leaves and stems of plants, A and B, with oil as shown below and placed them beside an open window.



(a) After a few weeks, Dillon made some observations of plants, A and B. Write down his observations in the table below and explain why.

Plant A:
Observation: [1]

_____

_____

Explanation: [1]

_____

_____

(b) **Plant B:**
Observation: [1]

_____

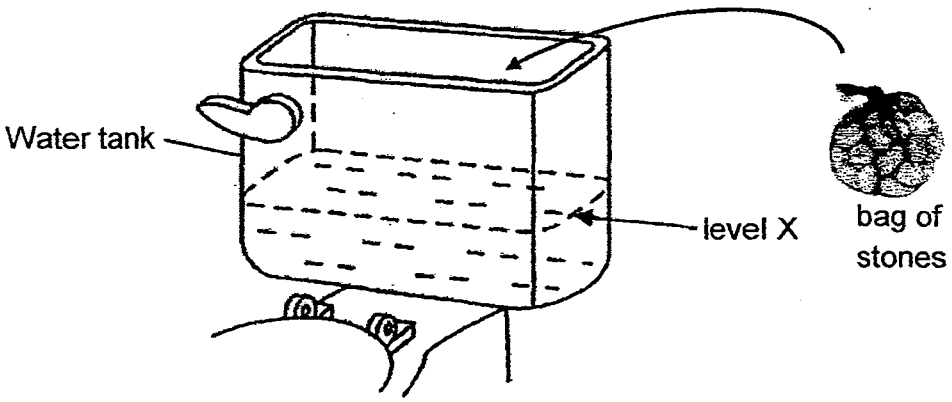
_____

Explanation: [1]

_____

_____

40. A water tank used for flushing a toilet bowl is shown below. The flushing and re-filling system is **not shown** in the diagram.



Each time after flushing, water enters and re-fills the tank. The water will stop filling the tank when the water reaches level X.

Wen Xin put a plastic bag filled with stones into the water tank after the water was filled to level X.

(a) What will Wen Xin observe about the water level as she places the bag of stones into the tank? [1]

_____

_____

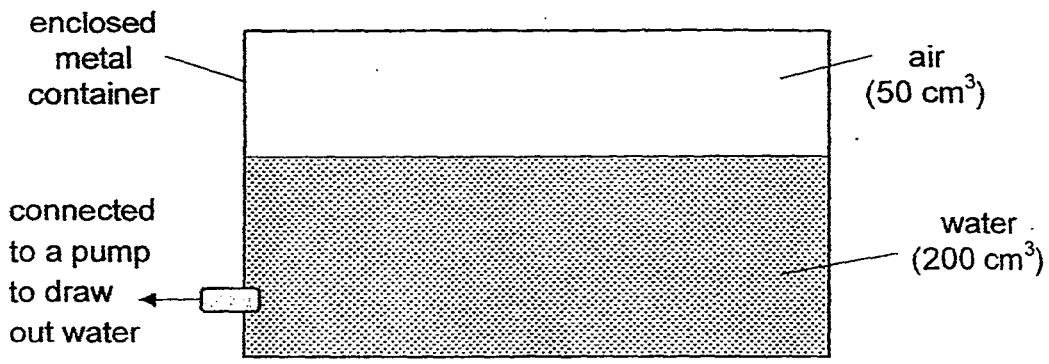
(b) Wen Xin suggests that putting the bag of stones into the tank will allow her to use lesser water to flush the toilet bowl. Explain how this helps to reduce the amount of water used.

[2]

_____

_____

41. The diagram below shows an enclosed metal container with 200 cm^3 of water and 50 cm^3 of air.



Elinor used a pump to remove 30 cm^3 of water from the container.

(a) What will be the volume of air in the container after the water was removed? [1]

_____

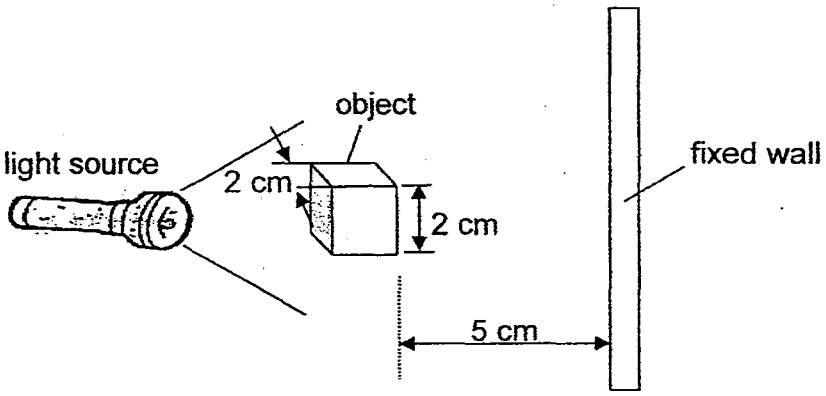
(b) Explain your answer in (a). [1]

_____

_____

2

42. Minghua placed an opaque object 5 cm away from the wall as shown below.



He measured the height of the shadow cast on the wall. He repeated the experiment by decreasing the distance between the object and the fixed wall.

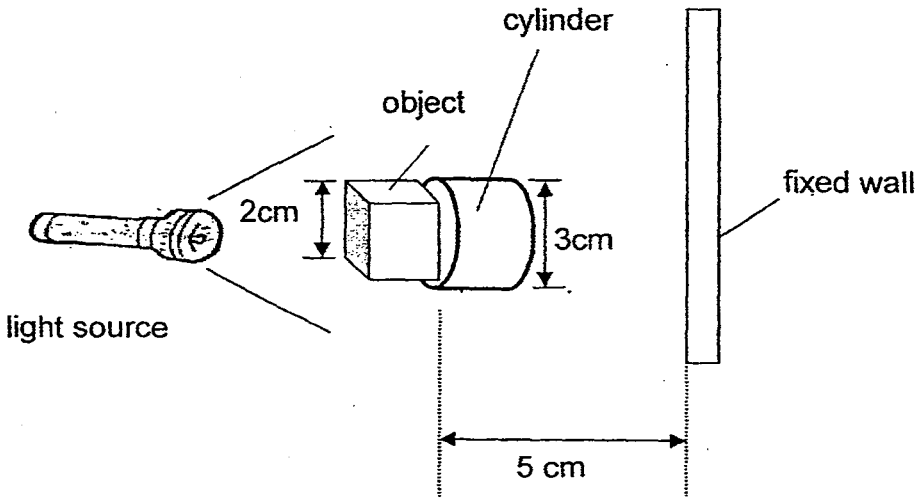
Distance between the object and the fixed wall (cm)	**Height of shadow (cm)**
5	6
4	5
3	4
2	3

(a) What is the aim of Minghua's experiment? [1]

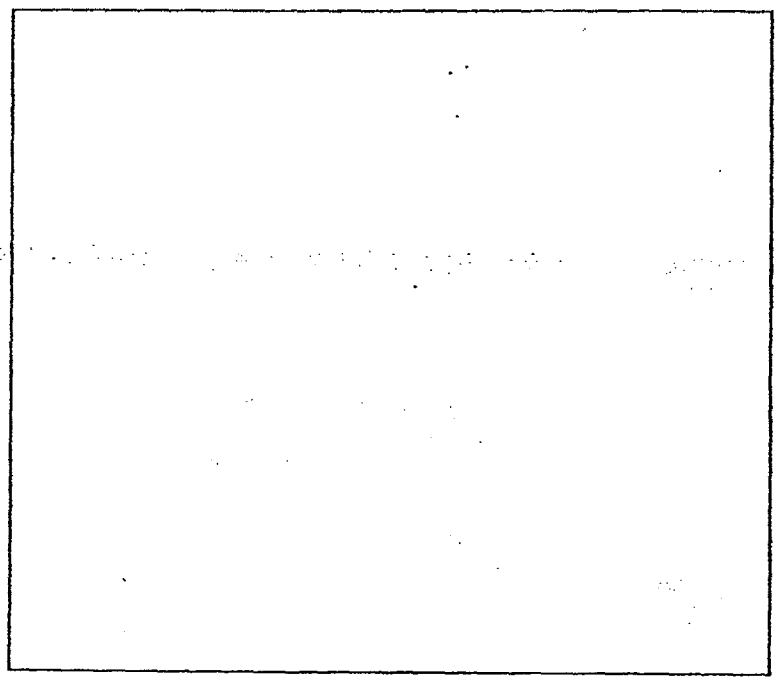
(b) Based on the results given in the table above, how would the distance between the object and the fixed wall affect the height of shadow? [1]

2

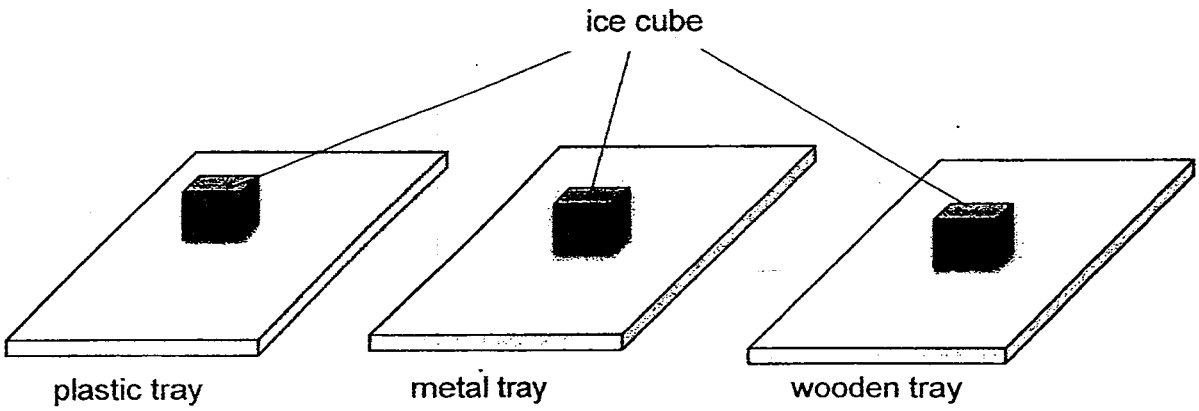
(c) Minghua then placed a wooden cylinder directly behind the object as shown below.



Draw the shadow cast on the screen in the space below. [1]



43. Ken placed a piece of ice cube on each of the three similar sized trays in a room as shown below.



(a) Based on the diagram above, write down the item that gain heat or lose heat when the ice cubes are on the trays. [2]

Item	Gain or lose heat
Ice cube	
Plastic tray	
Metal tray	
Wooden tray	

(b) Ken needs to thaw his frozen chicken quickly. Which tray should Ken choose? Explain your answer. [1]

_____

_____

3

44. Ahmad conducted an experiment by heating three rods, A, B and C, made of different materials for 30 minutes. The rods were of the same size. He recorded the lengths of each rod before and after the heating in the table below.

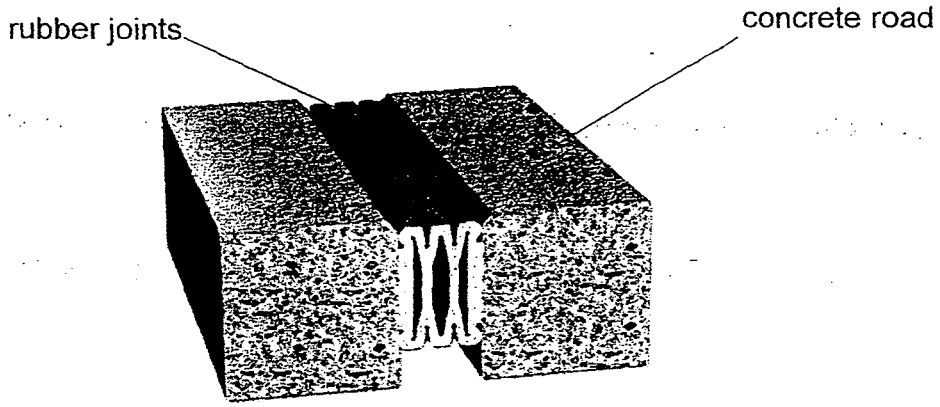
Material	Length before heating (mm)	Length after 30 minutes of heating (mm)
A	200	204
B	200	210
C	200	222

(a) Based on the results of his experiment, what could Ahmad conclude about the effect of heating on different materials? [1]

_____

_____

The concrete roads on Singapore have rubber joints in-between them.



(b) Why are the rubbers joints in-between the concrete road necessary in our country? [2]

_____

_____

_____

END OF PAPER

EXAM PAPER 2015
LEVEL : PRIMARY 5
SCHOOL : CHIJ ST NICHOLAS GIRLS SCHOOL
SUBJECT : SCIENCE
TERM : SA1

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
3	4	3	2	4	3	4	2	2	4
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
1	3	2	4	3	3	2	4	4	3
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	1	1	2	1	1	3	2	4	4

Q31a. T.
Q31b. NP
Q31c. T
Q31d. F

Q32. Can they swim - F –
Q32. Are they insects – E
Q32. Do they lay eggs – D
Q32. Do they have a larval stage in their life cycle – G

Q33. Similarity : They hatch from fertilized eggs.

Q33. Difference : - The life cycle of Animal A has only three stages while the life cycle of Animal B has four stages.

Q34a. Cell B. All cells have cell membrane but B did not have.

Q34b. Cell A. Cell A is the only plant cell and an onion bulb cell is a plant cell. Cell A also has a nucleus, cell wall and a cell membrane but does not have a chloroplast because the bulb of an onion does not need to make food.

Q35a. Respiration

Q35b. For set-up A, the plant in set – up A respired, taking in more oxygen and giving out more carbon dioxide than set up B ,causing the lime – water in set-up A to absorb more carbon dioxide and become more chalky. However, for set up B, there is no plant to give out carbon dioxide but there is s till air in the set up B and the air has carbon dioxide for the lime water to absorb. Thus, the lime water in set-up B turned less chalky than that in set up A.

Q36a. Difference : Plant transport system does not transport oxygen, carbon dioxide and waste materials but a human transport system does.

Q36a. Difference : Materials in plant transport system move in two directions but in human system, it moves in a circular direction

Q36b. The surface area of the stem in contact with the water in the vase when cut diagonally across is greater than the surface area of the stem in contact with the water in the vase when cut horizontally so the stem when cut diagonally across can absorb more water at a faster rate.

Q37a. Bulb Y and Z – Parallel Q37a. W and X : Series

Q37b. 3. If bulb Y fuses, there is still a closed circuit so the electric current can still flow through bulbs W, X and Z. Thus, the maximum number of bulbs that will remain lit when on bulb fuses is 3 bulbs.

Q38a. Both are electrical conductors.

Q38b.Rod X : Plastic Rod Y : Metal

Q39a. Plant A, observation : Plant A will die
Q39a. Observation : The oil on both leaves prevented air from entering the stomata so Plant A will die.

Q39b. Plant B, observation : Plant B will still survive.
Q39b. Explanation : Since the oil is on the upper sides of the leaves, the stomata which is on the underside of the leaves can still perform the gaseous exchange so plant B will still survive after the experiment.

Q40a. The water level will rise.

Q40b. The plastic bag with stones will take up some space in the tank, causing lesser water to fill up to level.

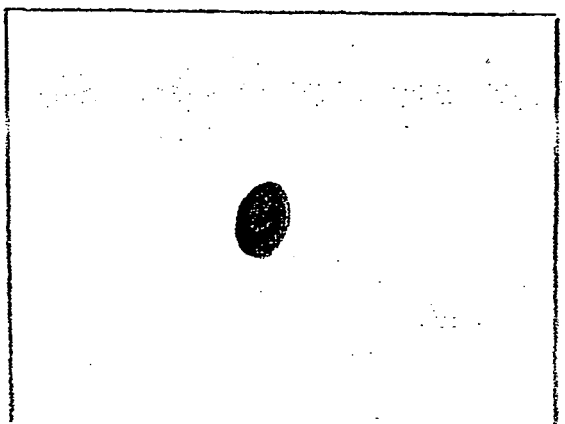
Q41a. 80cm^3

Q41b. Air has no definite volume. When 30cm^3 of water is removed, the air in the container will take up the space left by the water.

Q42a. To find out is the distance between the object and the fixed wall will affect the height of shadow cast on the fixed wall.

Q42b. The greater the distance between the object and the fixed wall, the taller the shadow.

Q42c. **SEE PICTURE**



Q43a. Ice cube – gain heat
Q43a. Plastic tray – lose heat
Q43a. Metal tray – lose heat
Q43a. Wooden tray – lose heat

Q43b. The metal tray will conduct heat to the frozen chicken faster.

Q44a. Different materials expand differently when heated.

Q44b. Singapore weather is very hot. On hot days, when the concrete road expands, the rubber joints will allow space for the expansion so the road will not be buckled easily.

THE END