

Name: _____ ()

Class: Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 5

Semestral Assessment 1 – 2013

SCIENCE

BOOKLET A

15 May 2013

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

30 questions
60 marks

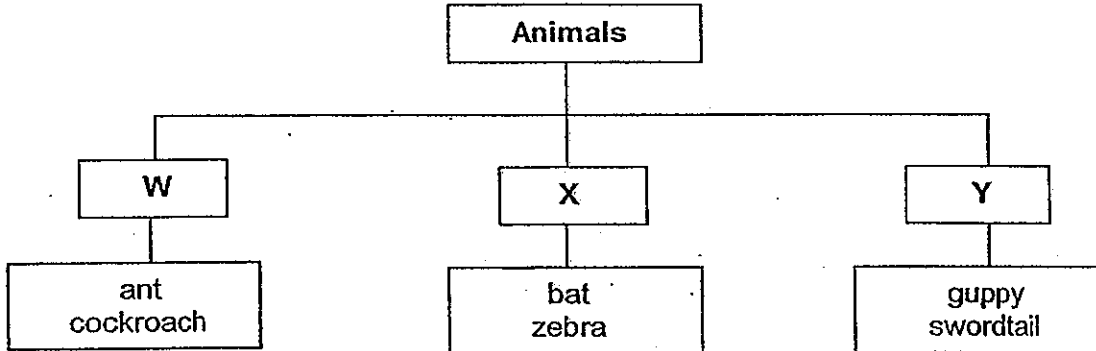
Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

This booklet consists of 21 printed pages.

Section A : (30 x 2 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.

1. Study the classification chart below.



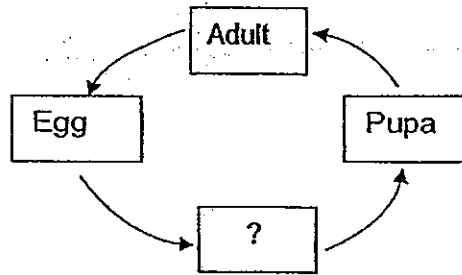
Which one of the following is the most suitable heading for each group of animals?

	W	X	Y
(1)	6 legs	2 legs	no legs
(2)	insects	mammals	fish
(3)	lay eggs	give birth	lay eggs and give birth to young
(4)	fly	run	swim

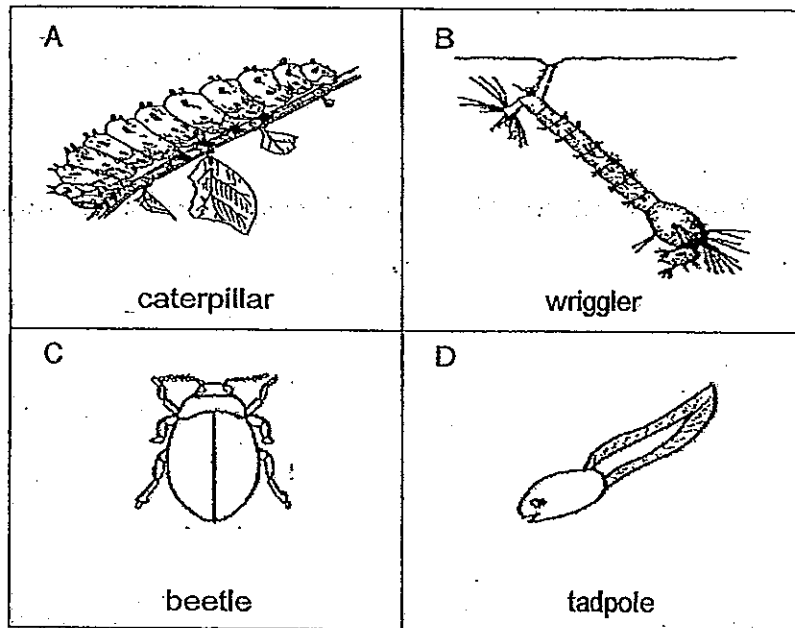
2. The table below compares a muscle cell and a celery leaf cell. Which one of the following correctly shows the difference between the two cells?

	Muscle cell	Celery leaf cell
(1)	Has a cell membrane	Has no cell membrane
(2)	Has no cytoplasm	Has cytoplasm
(3)	Has no cell wall	Has cell wall
(4)	Contains hereditary materials in the nucleus	Does not contain hereditary materials in the nucleus

3. The diagram below shows the life cycle of an organism.

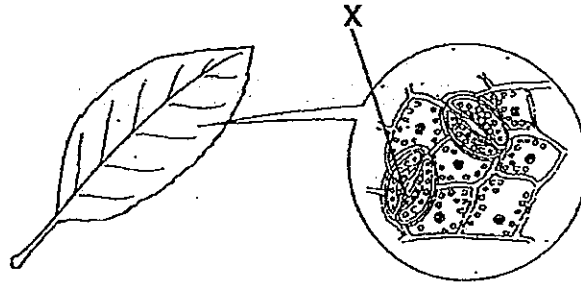


Which of the following organisms can be used to complete the above life cycle?



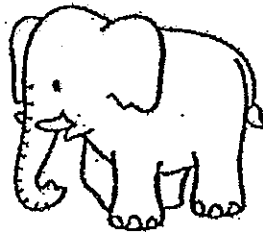
- (1) A and B only
- (2) A and C only
- (3) B and D only
- (4) C and D only

4. The diagram below shows part X found on the enlarged view of a leaf of a tropical plant.



Which of the following statements about part X are correct?

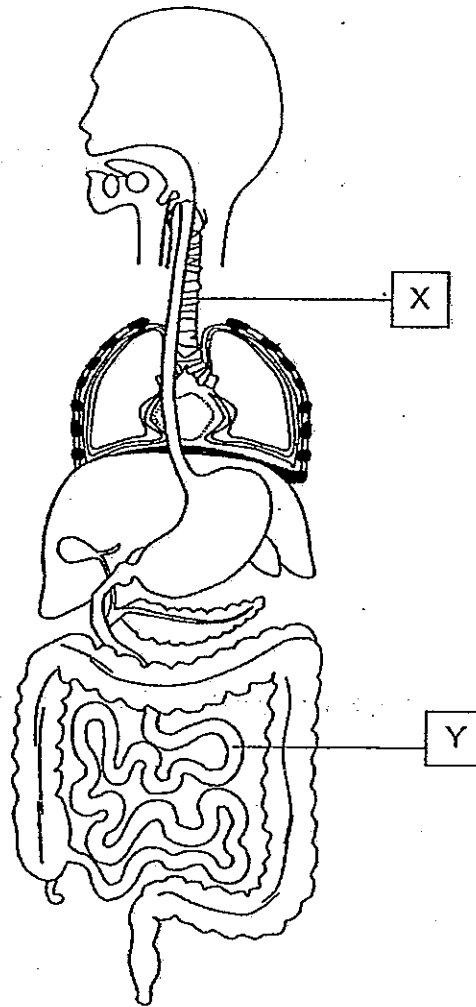
- A It opens to absorb water for the plant.
 - B It allows gaseous exchange to take place.
 - C It is found mostly on the underside of leaves
 - D It traps energy from the sun for the plant to make food.
- (1) A and D only
 - (2) B and C only
 - (3) B and D only
 - (4) A, B and C only
5. The diagram below shows a baby elephant.



Which of the following statements about the animal are true?

- A Each of its cells has a cell wall.
 - B It has cells that carry out different functions.
 - C As it grows, its cells increase in size and number.
 - D Its skeletal structure provides support and enables it to move.
- (1) A and C only
 - (2) B and D only
 - (3) B, C and D only
 - (4) A, B, C and D

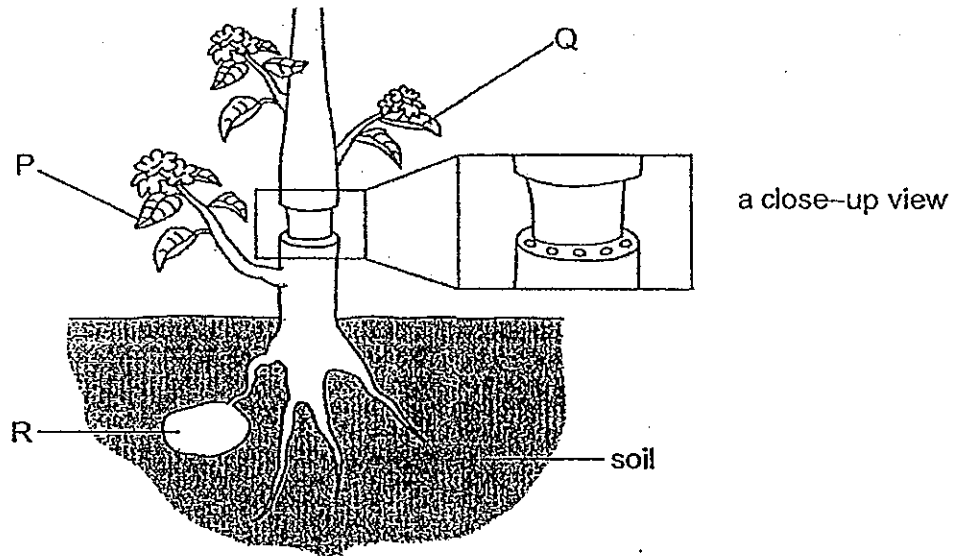
6. Look at the diagram below.



Which one of the following correctly describes the functions of the parts labelled X and Y?

	X	Y
(1)	To allow food to travel to the stomach	To absorb water from undigested food
(2)	To allow air to pass to the lungs	To absorb water from undigested food
(3)	To allow air to pass to the lungs	To allow absorption of nutrients into the bloodstream
(4)	To allow food to travel to the stomach	To allow absorption of nutrients into the bloodstream

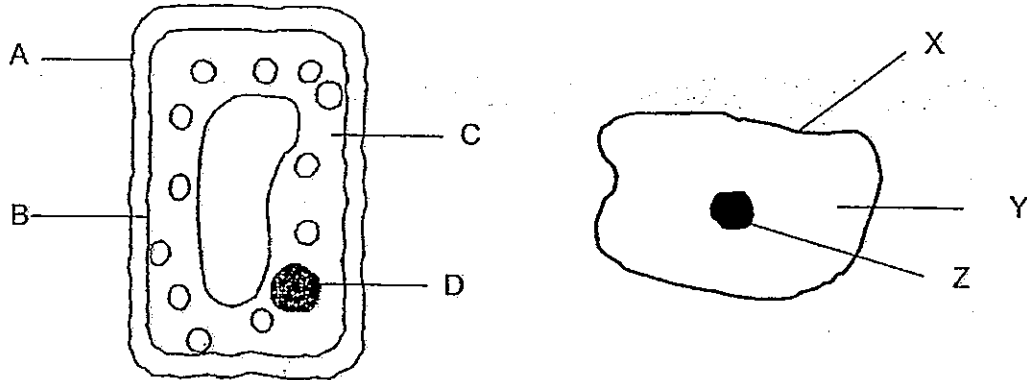
7. Sandra removed an outer ring of a stem from a plant as shown below. As a result, the tubes carrying food and water were removed



After a week, Sandra made some observations about parts P, Q and R of the plant above. Which one of the following correctly depicts Sandra's observations?

	Part P	Part Q	Part R
(1)	Green	Wilted	Smaller
(2)	Wilted	Green	Smaller
(3)	Wilted	Green	Bigger
(4)	Green	Wilted	Bigger

8. The diagram below shows two cells examined under a microscope.

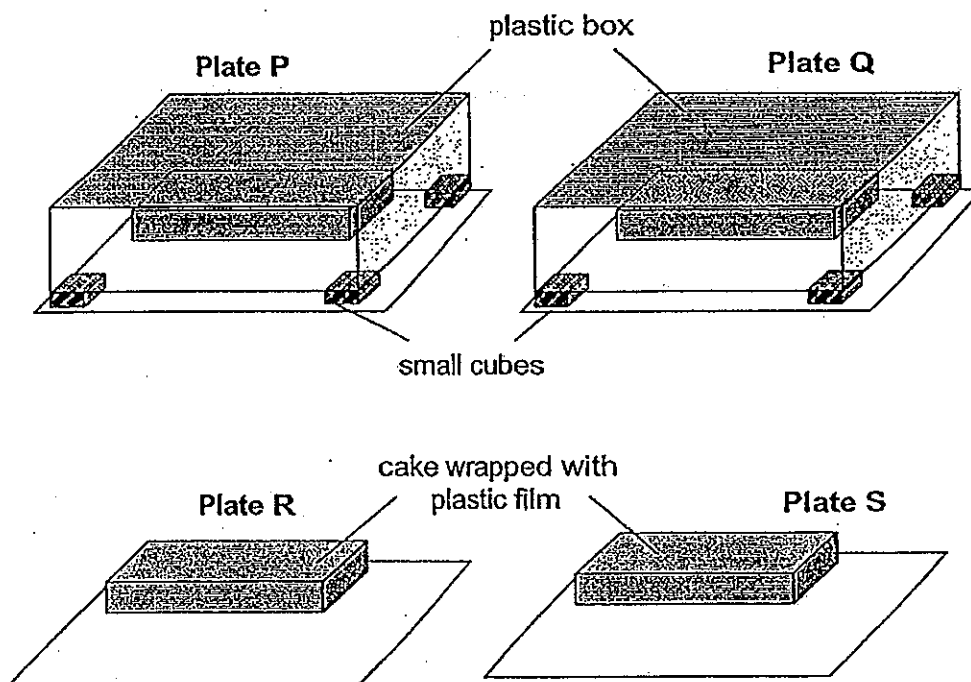


Which parts of the above cells are correctly matched to their function?

	Parts	Functions
(1)	A and Y	Give the cells their regular shape.
(2)	B and X	Control the movement of substances in and out of the cells.
(3)	C and Y	A jelly-like substance which controls all the activities of the cells.
(4)	D and Z	Control the production of food.

9. A group of pupils conducted an investigation to find out which conditions are best suited for the growth of mould. They cut a big piece of cake into four quarters and put each quarter onto a different plate. They placed the plates in the open for an hour so that mould spores could fall on all four pieces of cake. Then they did the following to each smaller piece of cake.

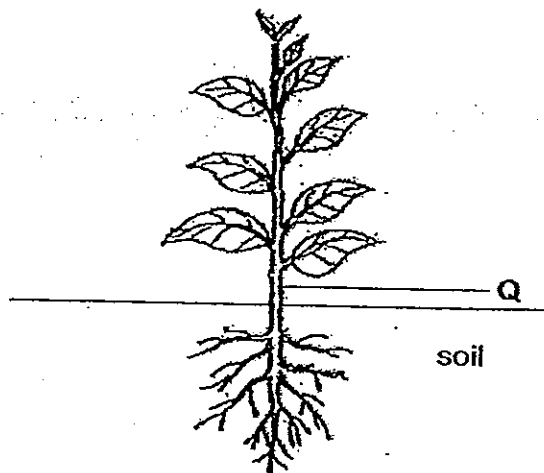
Plate P:	They covered the cake with a clear plastic box. The box stood on four small cubes to let air in.
Plate Q:	They moistened the cake with water and covered it the same way as Plate P.
Plate R:	They wrapped the cake in a plastic film so that no air could get in.
Plate S:	They moistened the cake with water, then wrapped it with a plastic film so that no air could get in,



What can the pupils find out from the experiment?

- (1) They can only find out whether mould needs air to grow.
- (2) They can only find out whether mould needs water to grow.
- (3) They can find out whether mould needs air and water to grow.
- (4) They can find out whether mould needs air, water and light to grow.

10. The diagram below shows a plant.



Which of the following are functions of Q?

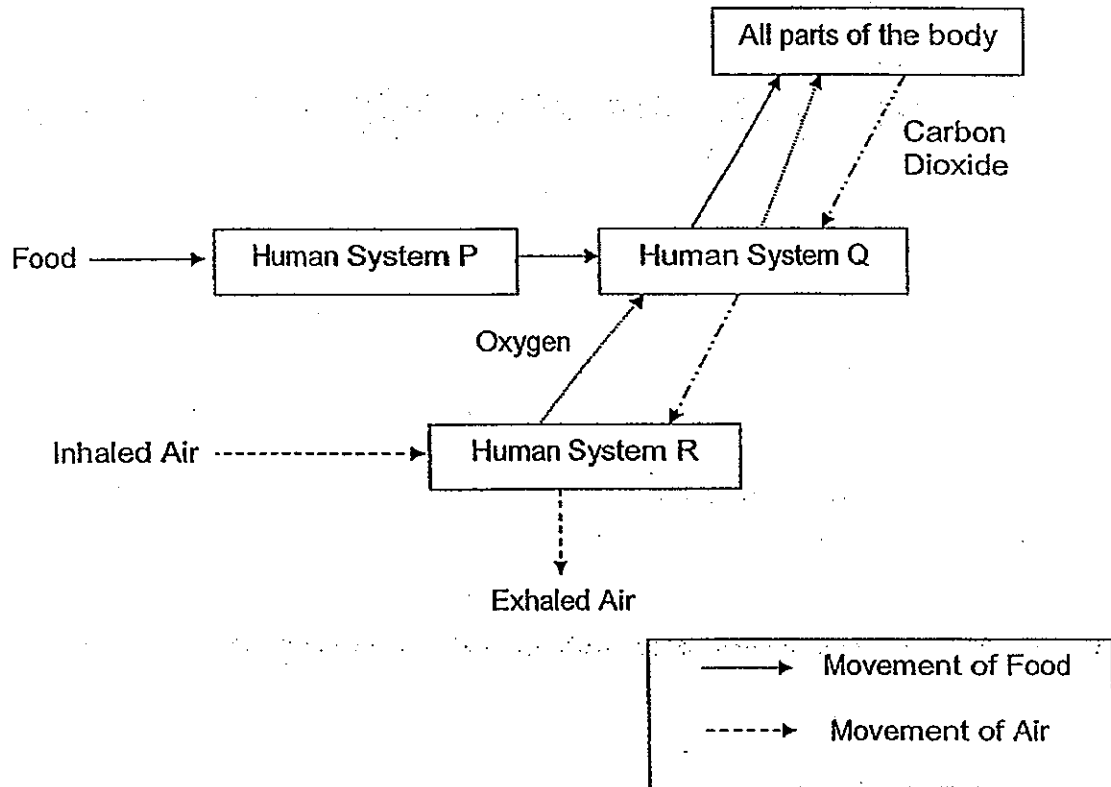
- A Holds the plant firmly to the ground.
- B Absorbs water and mineral salts from the soil.
- C Carries water and mineral salts to the leaves.
- D Holds the plant upright to obtain maximum amount of sunlight.

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

11. A well-watered plant was kept in a dark cupboard for three hours. Which one of the following would not be able to carry out its functions?

- (1) nucleus
- (2) cell wall
- (3) cytoplasm
- (4) chlorophyll

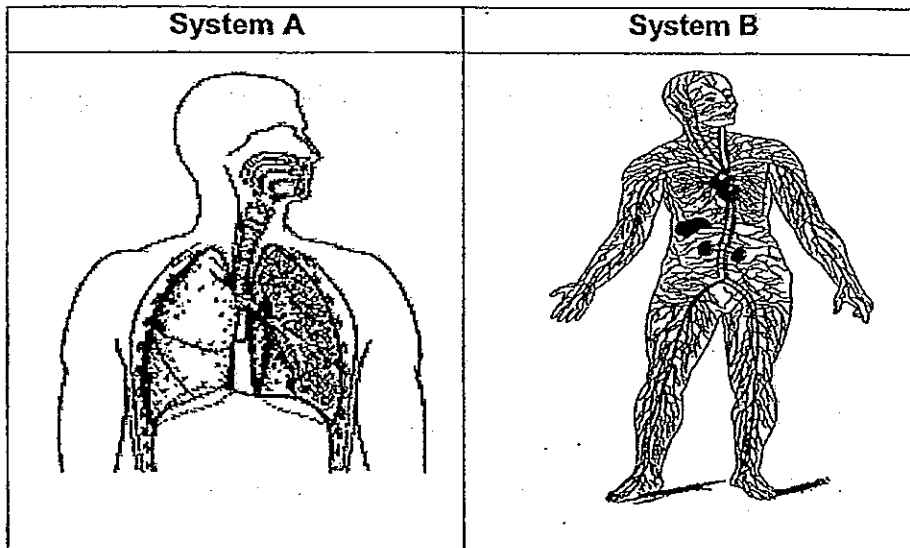
12. The diagram below shows the different systems P, Q and R in a human body.



Which one of the following correctly represents human systems P, Q and R?

	P	Q	R
(1)	Circulatory System	Digestive System	Respiratory System
(2)	Digestive System	Circulatory System	Respiratory System
(3)	Respiratory System	Circulatory System	Digestive System
(4)	Digestive System	Respiratory System	Circulatory System

13. The diagram below shows 2 systems, A and B, in the human body.



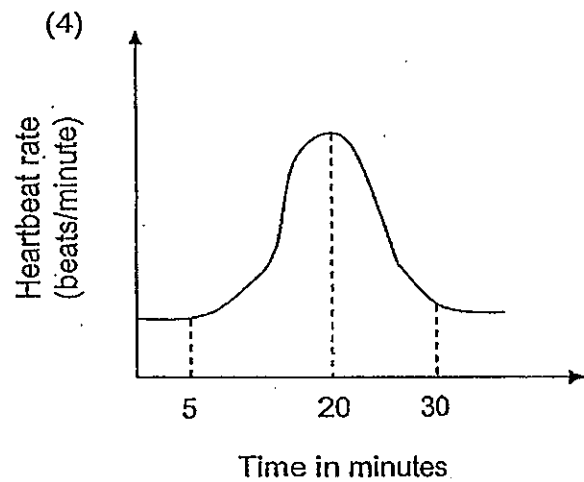
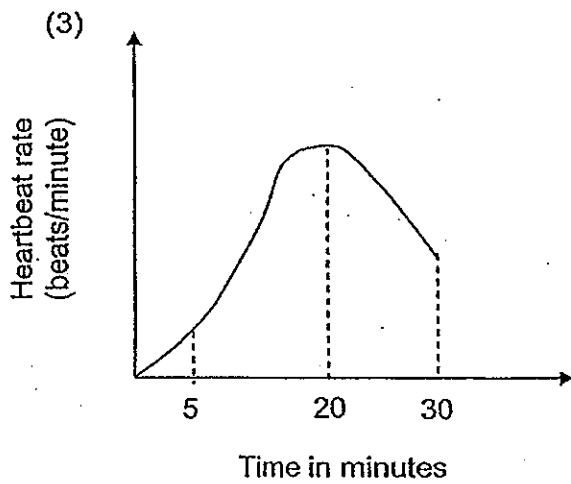
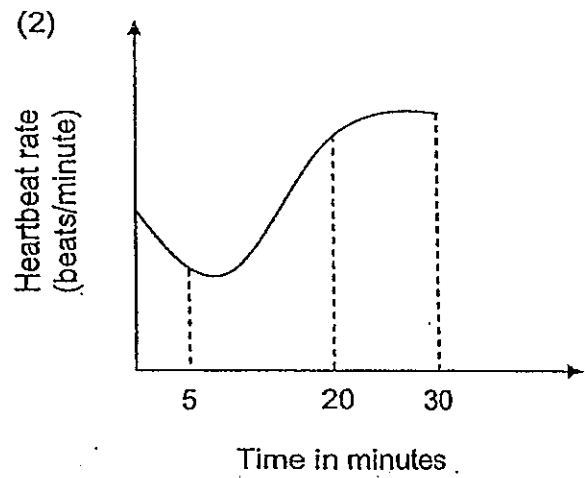
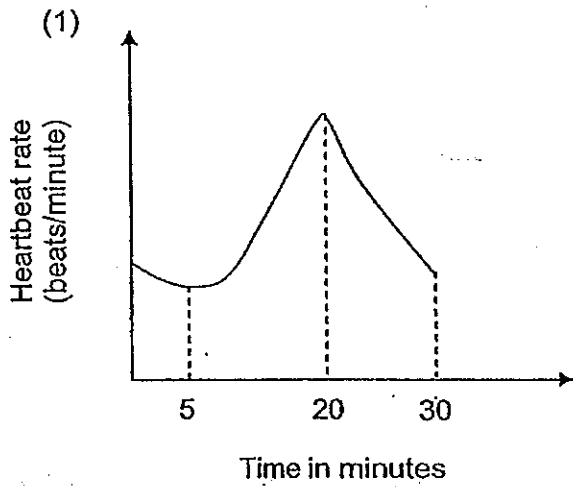
Which of the following statements about the above systems are true?

- A Exchange of gases takes place in System A.
- B System B supports the human body and gives its shape.
- C System A and B work together to allow cells in the body to get oxygen.
- D System B transports only oxygen, digested food and water to all parts of the body.

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

14. Jackson read a book for 5 minutes before he started to run on the treadmill for 15 minutes. He then stopped to rest for 10 minutes.

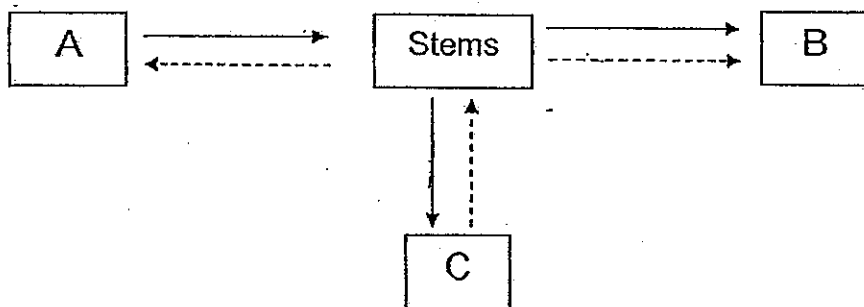
Which one of the following graphs best represents possible changes in his heartbeat rate during the above activities?



15. Which one of the following correctly describes the movement of the ribcage, diaphragm and chest when a person inhales?

	Ribcage	Diaphragm	Chest
(1)	Move in and downwards	Move downwards	Expands
(2)	Move in and downwards	Move upwards	Contracts
(3)	Move out and upwards	Move downwards	Expands
(4)	Move out and upwards	Move upwards	Contracts

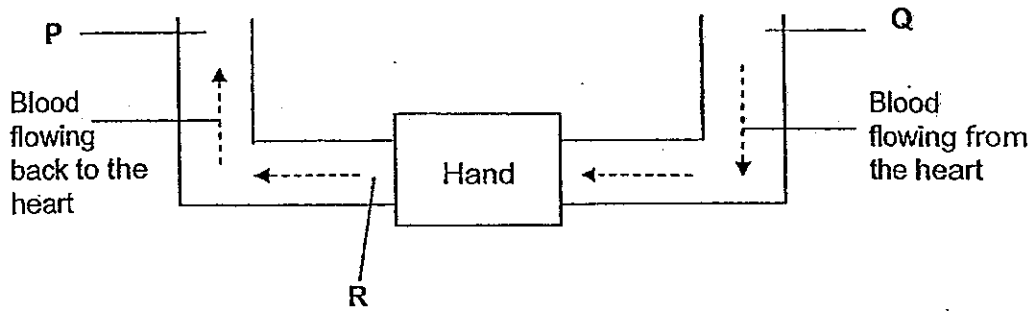
16. The diagram below shows the direction in which food and water are transported to different parts of a plant.



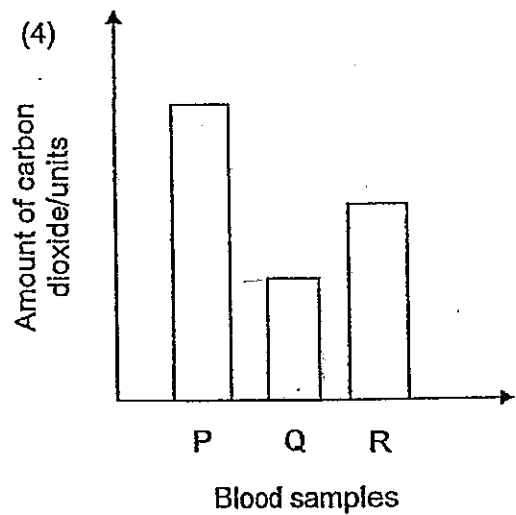
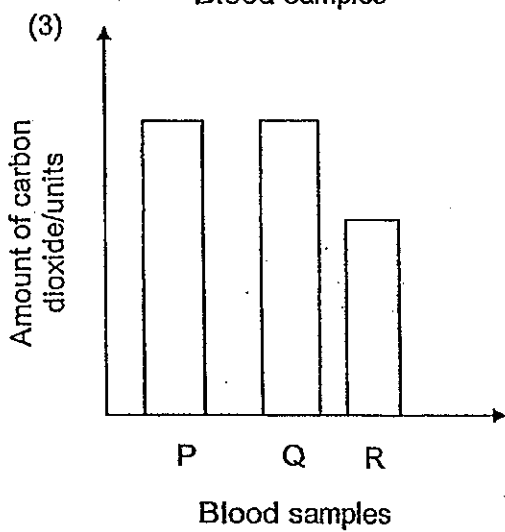
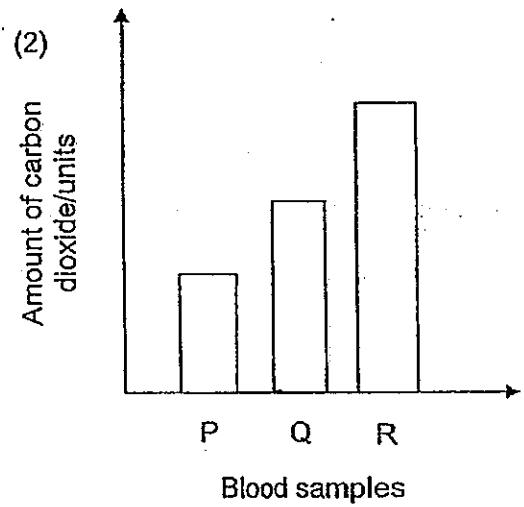
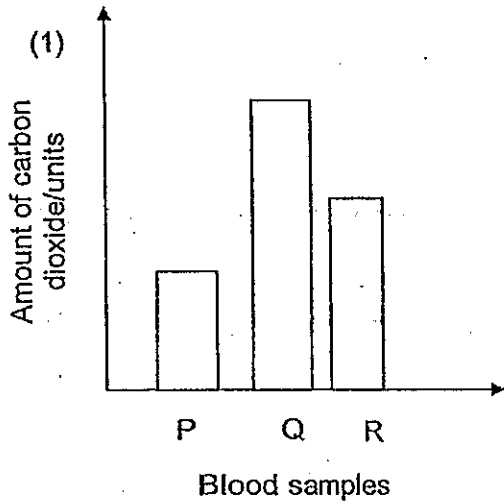
Which one of the following best represents the parts A, B and C?

	A	B	C
(1)	Roots	Fruit	Leaves
(2)	Leaves	Fruit	Flowers
(3)	Fruit	Leaves	Roots
(4)	Leaves	Roots	Fruit

17. The diagram below shows the flow of blood through a part of our body.



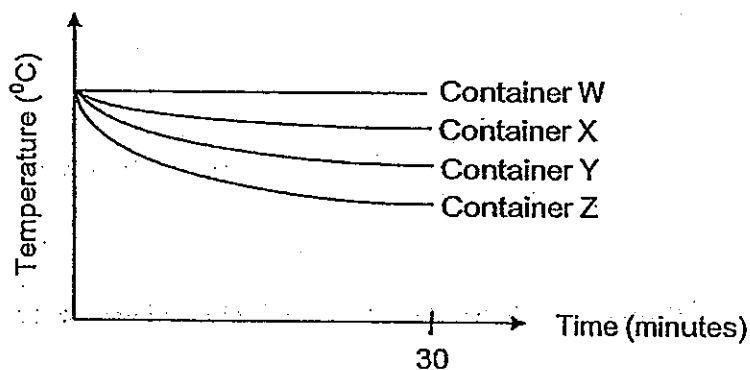
Blood samples, P, Q and R, are taken from different parts of the blood vessels in the body as shown in the diagram above. Which one of the following bar graphs best represents the amount of carbon dioxide in the blood samples?



18. Air is different from water in that air _____

- (1) has mass
- (2) occupies space
- (3) can be compressed
- (4) has a definite volume

19. Sally poured equal amounts of hot chocolate into containers W, X, Y and Z that were made of different materials. She then measured the temperature of the hot chocolate for 30 minutes. Her results were shown in the graph below.



If Sally wanted a container to keep her ice-cream cold, which container, W, X, Y or Z, should she use?

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

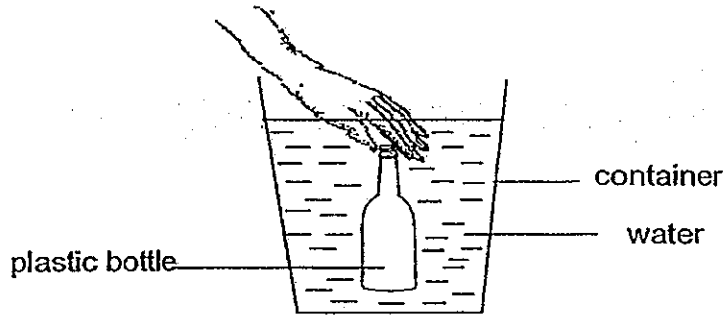
20. The table below shows the freezing point of three substances X, Y and Z.

Substance	X	Y	Z
Freezing point (°C)	8	35	133

Based on the information given above, which one of the following statements is correct?

- (1) X is a solid at 6°C.
- (2) X and Y are both liquids at 20°C.
- (3) Y and Z are both gases at 150°C.
- (4) Z can be a liquid or a gas at 133°C.

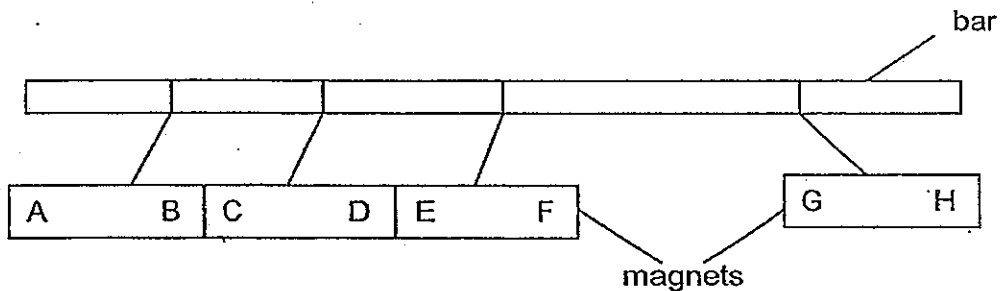
21. Jayden pushed an empty plastic bottle into a container of water as shown in the diagram below.



Which of the following would take place if Jayden were to unscrew and remove the cap of the bottle in the container of water?

- A Water rushes into the bottle.
 - B Air in the bottle becomes compressed.
 - C The water level in the container remains the same.
 - D Bubbles moves up rapidly to the surface of the water.
- (1) A and B only
 - (2) A and D only
 - (3) B and C only
 - (4) A, B and D only

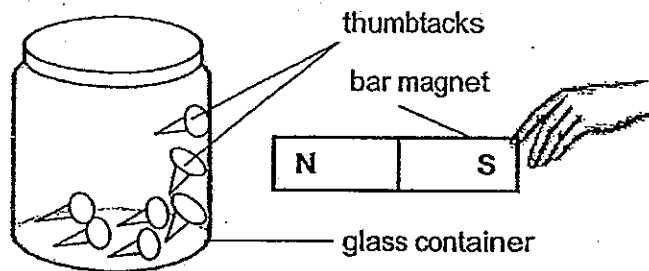
22. The diagram below shows four identical magnets hanging freely on a bar. A, B, C, D, E, F, G and H are poles of the magnets.



Based on the above observation, which one of the following statements is true about the magnets?

- (1) B will repel E.
- (2) A and D are like poles.
- (3) C will be attracted to G.
- (4) F and H are like poles.

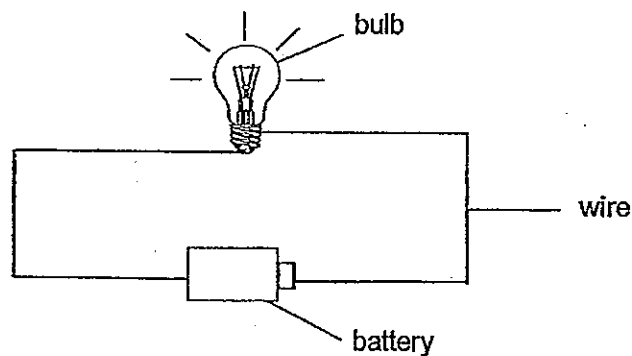
23. Kimberly held a bar magnet near a glass container containing thumbtacks. She noticed some thumbtacks appear to float above the base of the glass container as shown in the diagram below.



Given that the thumbtacks were made of the same material, which of the following conclusions could Kimberly make based on her observation?

- A The thumbtacks are magnetic.
 - B The thumbtacks are made of steel.
 - C Magnetism can act from a distance.
 - D The magnetic force is able to pass through the glass container.
- (1) A and C only
(2) B and D only
(3) A, C and D only
(4) A, B, C and D

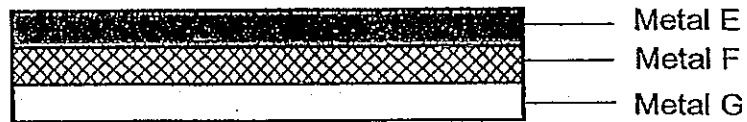
24. Study the circuit below.



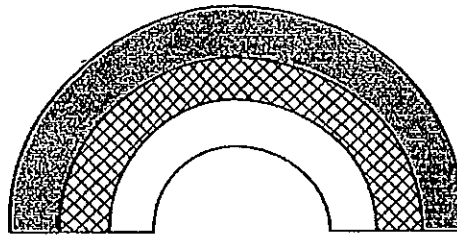
In the circuit above, electricity passes through the _____.

- (1) wire only
- (2) wire and bulb only
- (3) battery and bulb only
- (4) wire, battery and bulb

25. Shaun had a metal bar which was made up of three different types of metals E, F and G.



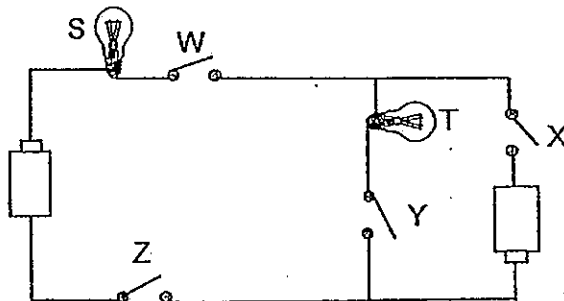
After heating the metal bar for 20 minutes, Shaun observed that the metal bar became curved as shown below.



Which one of the following conclusions could Shaun make about the metals E, F and G?

- (1) Only Metal E
- (2) Metal E expanded the most
- (3) Metal G contracted the most.
- (4) Metal F expanded less than Metal G.

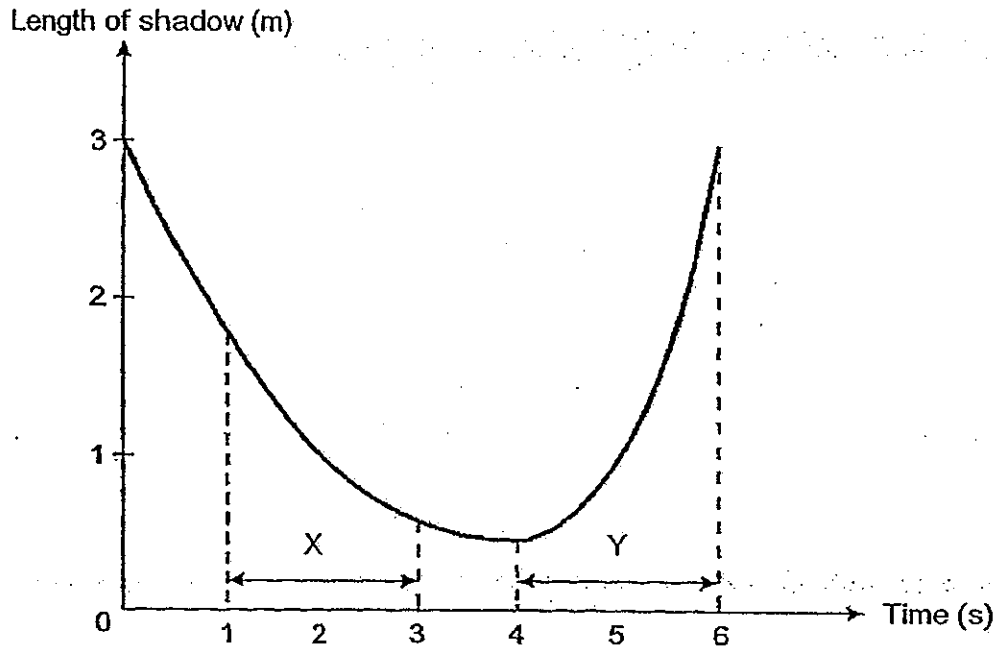
26. Study the circuit below.



Which one of the following positions of the switches will result in only bulb S lighting up?

	Switch W	Switch X	Switch Y	Switch Z
(1)	Open	Closed	Closed	Open
(2)	Closed	Closed	Open	Closed
(3)	Open	Open	Closed	Closed
(4)	Closed	Closed	Open	Open

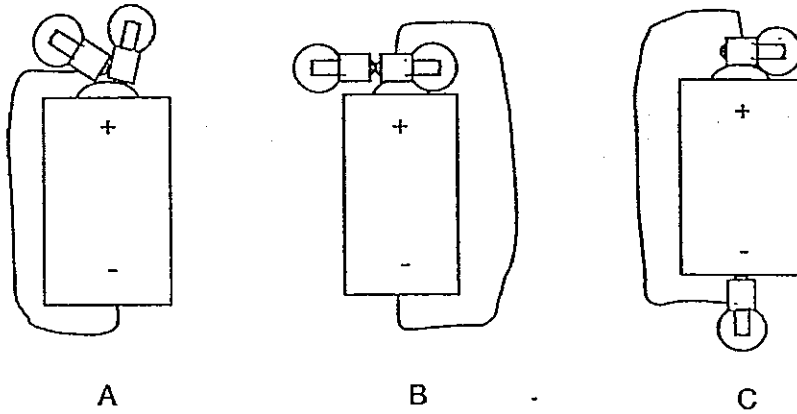
27. The graph below shows how the length of Adele's shadow changes over a period of time as she walks in a straight line near a street lamp at night.



Which of the following statements are correct?

- A Adele is walking directly below the lamp at the 4th second.
 - B Adele is walking towards the lamp during the period X and away from the lamp during the period Y as shown in the graph.
 - C Adele is walking at a faster speed during the period X compared to the period Y.
 - D Adele is walking towards the lamp during the period Y and away from the lamp during the period X as shown in the graph.
- (1) A and B only
(2) C and D only
(3) A, B and C only
(4) A, C and D only

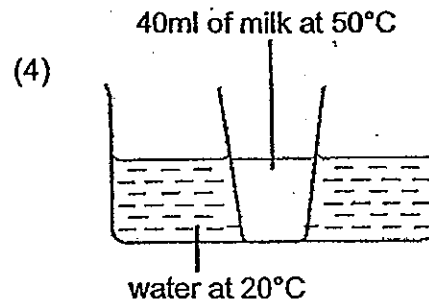
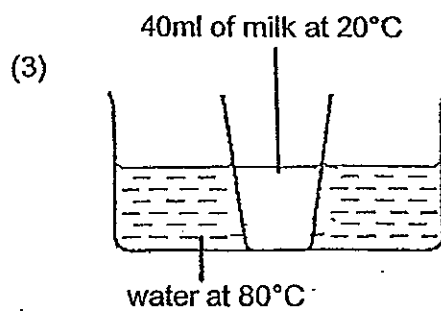
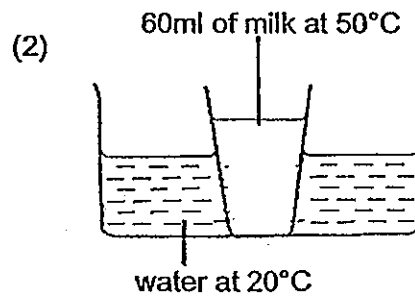
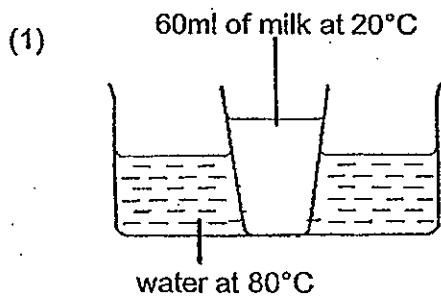
28. Look at the diagrams below.



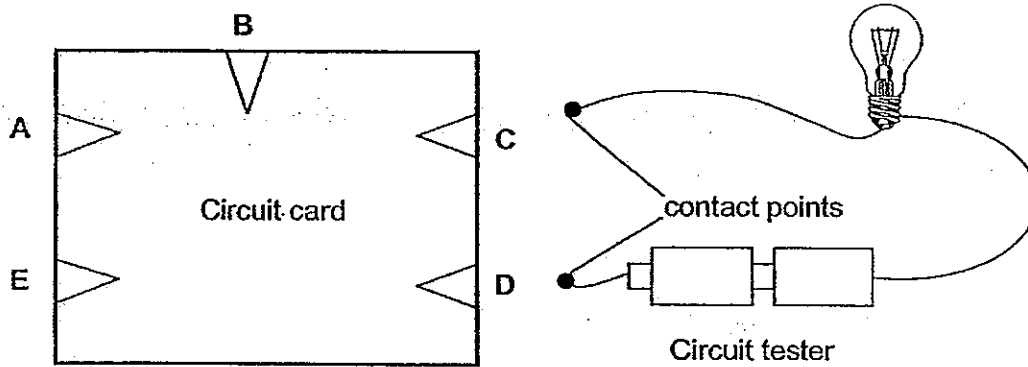
Which one of the above circuit arrangements will enable both bulbs to light up?

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

29. In which one of the following set-ups will the milk gain the most amount of heat at the end of 5 minutes?



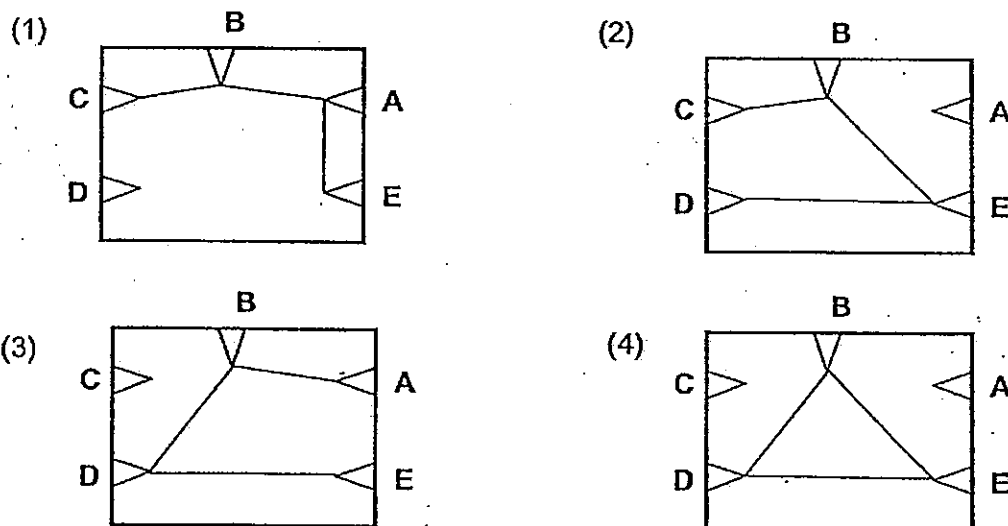
30. The diagram below shows a circuit tester and a circuit card. A, B, C, D and E are clips on the circuit card.



The table below shows the results obtained when the contact points on the circuit tester are connected to different pairs of clips on the circuit card shown above.

Pairs of connected clips	Results
A and C	Bulb is not lighted
A and D	Bulb is not lighted
B and C	Bulb is lighted
B and D	Bulb is lighted
B and E	Bulb is lighted
D and E	Bulb is lighted

Based on the results shown in the table above, which one of the following shows the correct connection of the wires behind the circuit card?

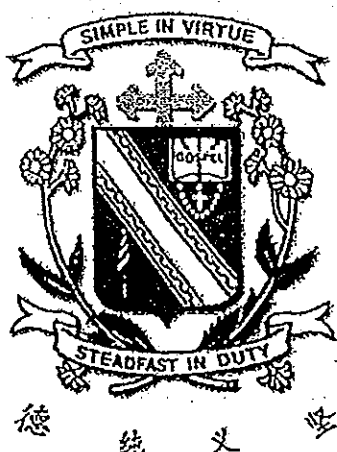


End of Section A

Name: _____ ()

Class: Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 5
Semestral Assessment 1 – 2013
SCIENCE
BOOKLET B
15 May 2013

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 14 printed pages.

Booklet A	60
Booklet B	40
Total	100

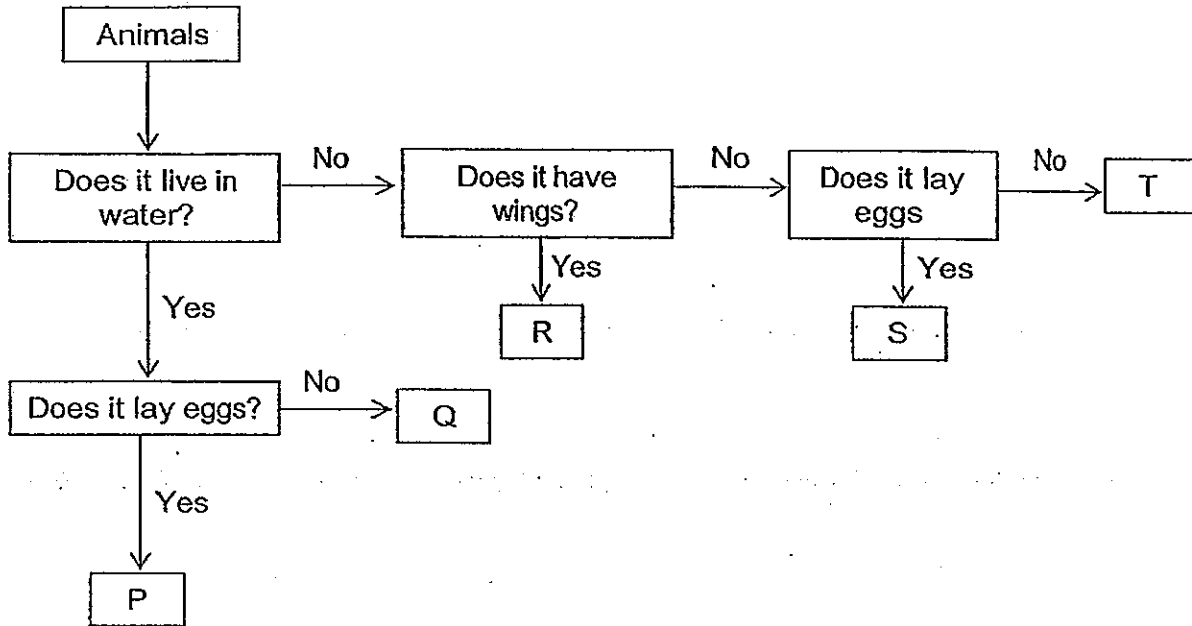
Parent's signature/Date

SECTION B (40 MARKS)

Answer the following questions in the spaces provided.

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

31. Study the flowchart below.



(a) Based on the information given in the above flowchart, what are the 2 differences between animal S and animal Q? [1]

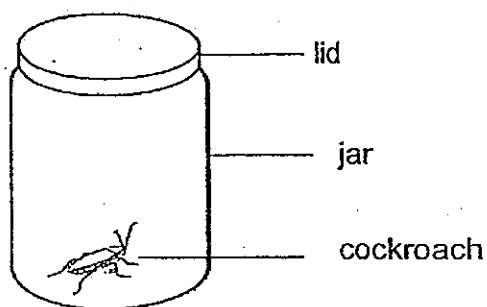
- (i) _____
- (ii) _____

(b) Identify the letter in the above flowchart (P, Q, R, S or T) that best represents each of the following animals. [2]

Animal	Letter
Grasshopper	
Dog	
Goldfish	
Whale	



32. Nathania kept a cockroach in a jar as shown below.



Put a tick (✓) in the boxes to indicate how the composition of the various gases in the jar would change over one day. [1½]

(a)	Carbon dioxide	Increased	Decreased	Stayed the same
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	Oxygen	Increased	Decreased	Stayed the same
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	Nitrogen	Increased	Decreased	Stayed the same
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

33. The table below shows the pulse rate of Tessa as she exercises.

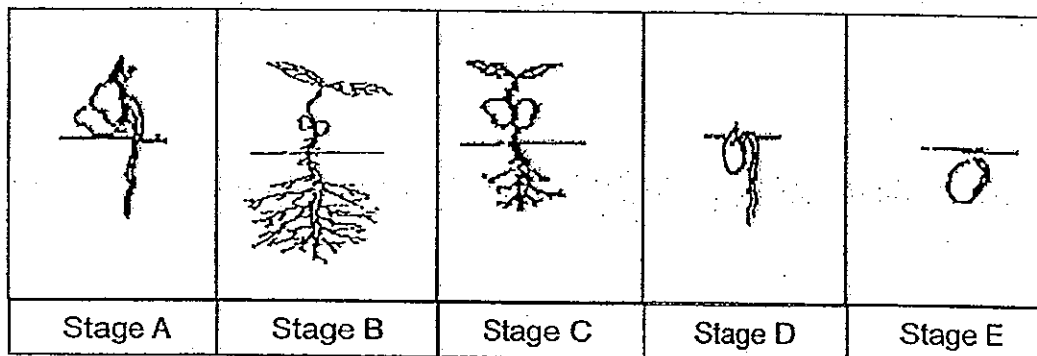
Duration of exercise (in minutes)	4	8	12	16
Pulse rate per minute	60	68	76	84

(a) Based on the table above, what is the relationship between the duration of exercise and the pulse rate per minute? [1]

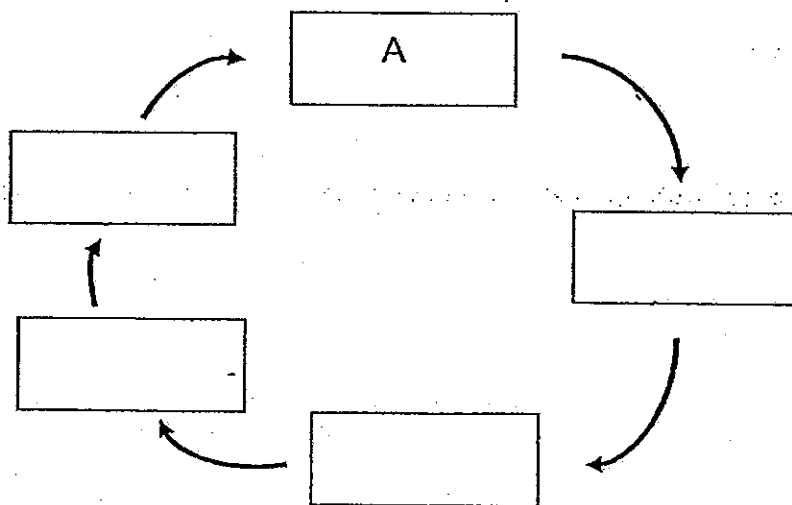
(b) Explain your answer in (a). [2]



34. The pictures below shows the different stages in the life cycle of a bean plant.



(a) Complete the stages by writing the letters, B, C, D and E, in the boxes below to show the correct order of the life cycle of the bean plant. Stage A has been done for you. [2]



(b) At stage A, how does the seedling obtain the food it needs for growth? [1]

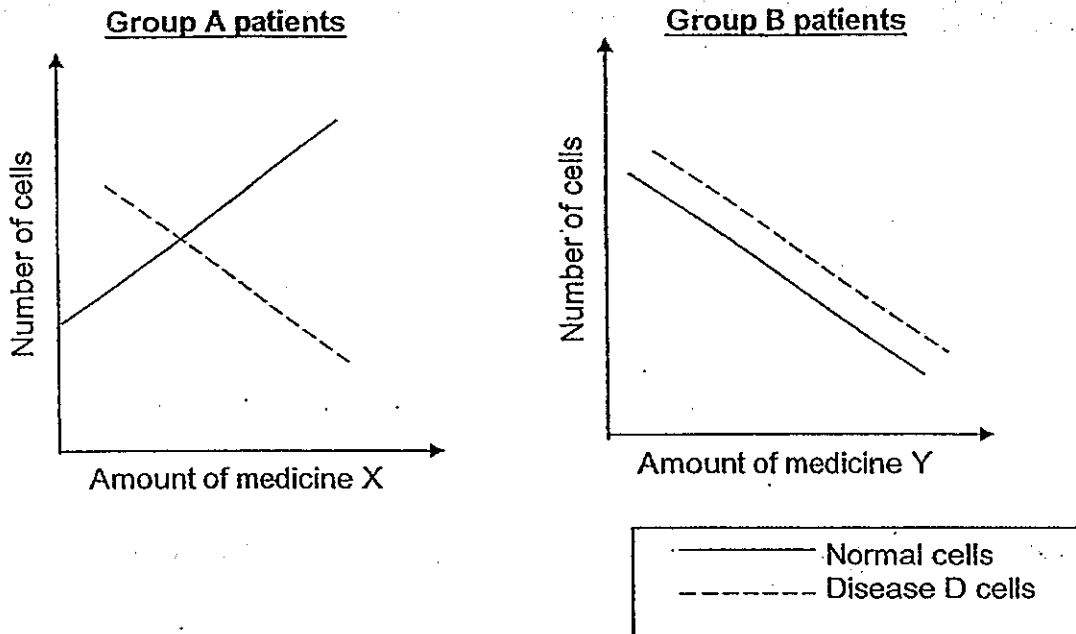
(c) Beside water, list 2 other conditions that must be present for a seed to germinate. [1]

(i) _____

(ii) _____

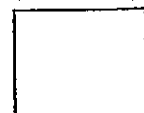


35. Doctor Wong, a doctor who specialized in treating disease D, conducted a research on two different types of medication for destroying disease D cells. He divided his patients suffering from disease D into two groups A and B. He administered medicine X to group A patients and medicine Y to group B patients. He recorded his findings in the graph below.

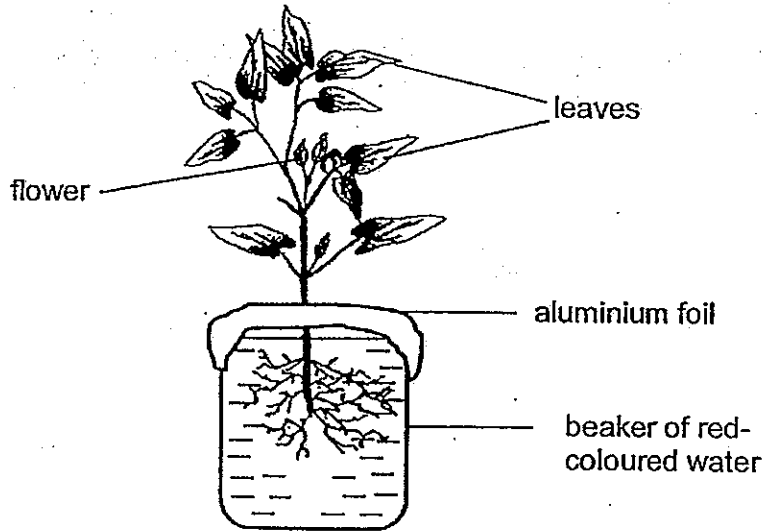


- (a) Based on the above graphs, which medicine, X or Y, is better for treating disease D? [1]

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



36. Jovi placed a healthy plant in a beaker of red-coloured water as shown in the diagram below. He covered the top of the beaker with aluminium foil. Two days later, Jovi observed that the flowers had turned red.

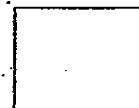


(a) State 2 other observations Jovi would have made of the above set-up. [2]

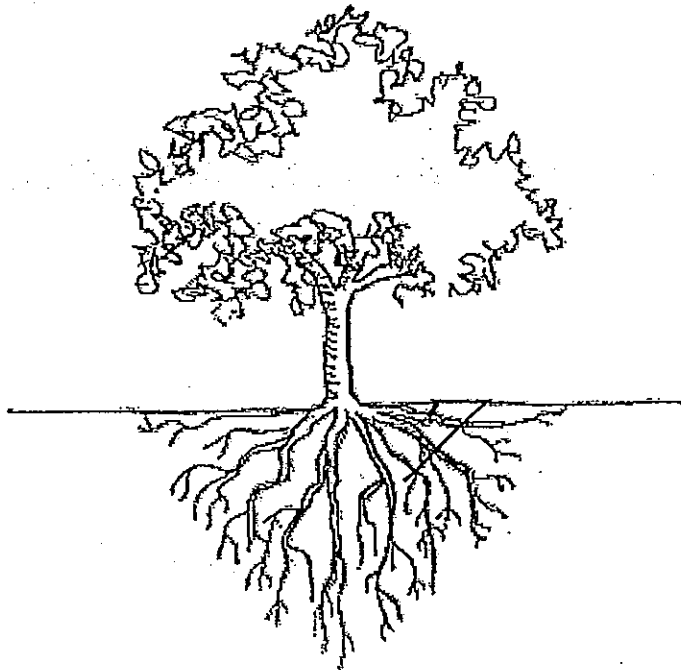
Observation 1: _____

Observation 2: _____

(b) Explain why the flowers turned red? [1]



37. The diagram below shows a tree.

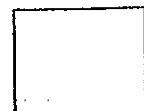


Cell X and Y are taken from the tree above and observed under the microscope.

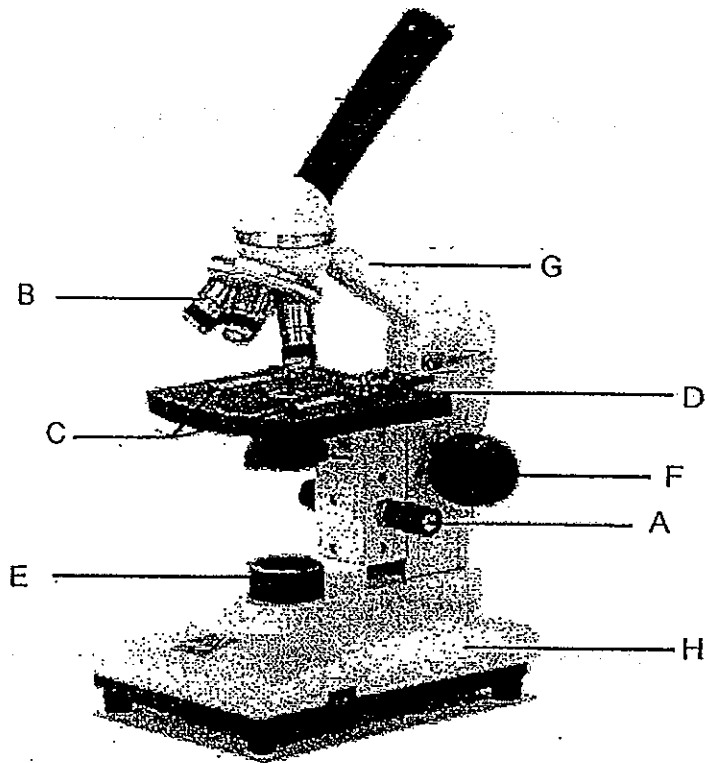
The information of the two cells, X and Y, is recorded in the table below.
A tick (✓) shows the presence of the cell part.

	Parts of a cell		
	nucleus	cell wall	chloroplasts
X	✓	✓	
Y	✓	✓	✓

- (a) Draw a line pointing to the part of the tree where cell X is most likely to be taken from and label it as 'X'. [1]
- (b) Draw a line pointing to the part of the tree where cell Y is most likely to be taken from and label it as 'Y'. [1]
- (c) Based on the information in the table above, state what cell Y can do that cell X cannot. [½]

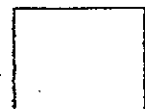


38. The diagram below shows a microscope.

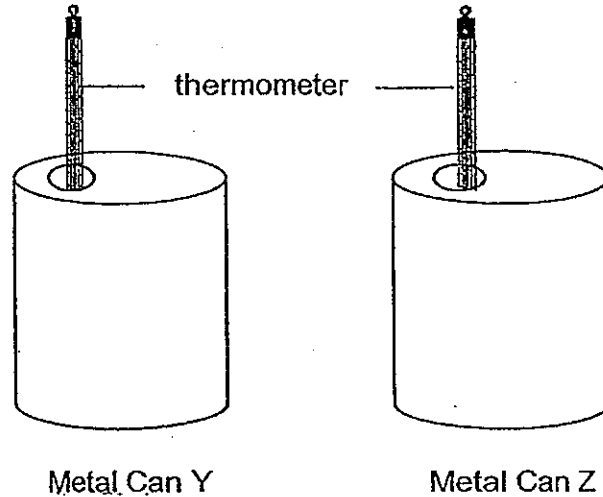


In each blank below, write the letters, A, B, C, D, E, F, G or H, to match the labelled parts with their functions in the boxes provided. [2½]

	Function	Part
(i)	Shines light on the specimen.	
(ii)	The parts to be held when carrying the microscope.	
(iii)	It is used to make fine adjustments to get a sharp view of the specimen.	
(iv)	The microscope slides are placed here to be observed.	
(v)	It magnifies the specimen.	



39. An experiment was conducted with two similar sized metal cans, Y and Z, made of different materials as shown below. Hot water at 90°C was poured into the two cans before they were placed on a table in a room. Temperature of the hot water in the two cans was then measured at 3-minute intervals for 15 minutes.



The readings were recorded in the table below.

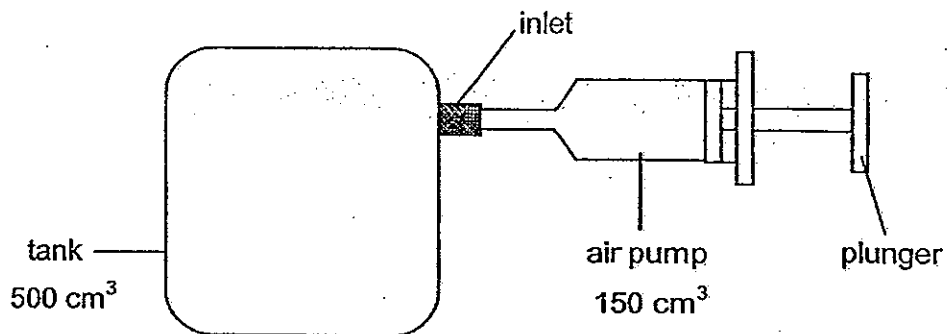
Time (minutes)	Temperature of water ($^{\circ}\text{C}$)	
	Metal Can Y	Metal Can Z
0	90	90
3	78	84
6	66	77
9	54	71
12	42	64
15	30	58

- (a) Based on the results from the table above, what can you conclude about the heat conductivity of Can Y and Can Z? Explain your answer. [2]

- (b) State one other variable that has to be kept constant in order to make the experiment a fair one. [1]



40. An air pump is used to pump air into a tank via an inlet as shown in the diagram below. The tank and the air pump have a capacity of 500 cm^3 and 150 cm^3 respectively.

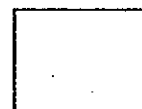


- (a) State what would happen to the volume and mass of air in the tank (**increase, decrease or remain the same**) after John has pushed in the plunger of the air pump 5 times. [1]

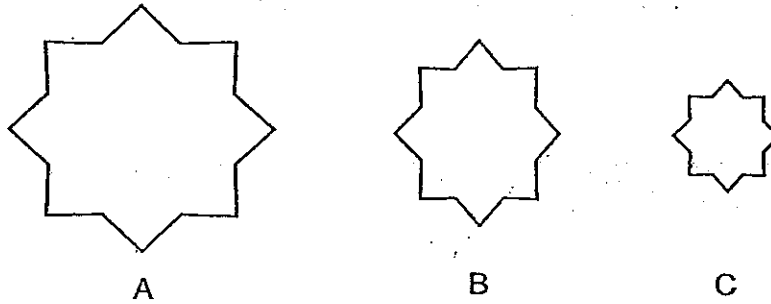
(i) Volume of air : _____

(ii) Mass of air : _____

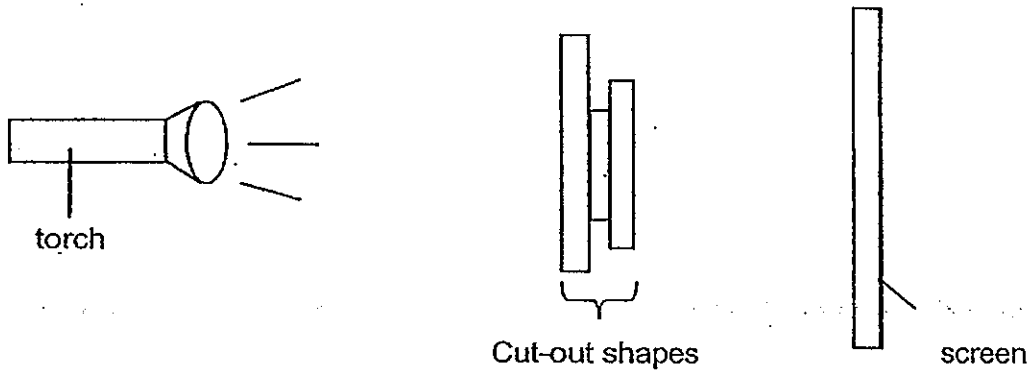
- (b) Explain your answer in part a(i). [2]



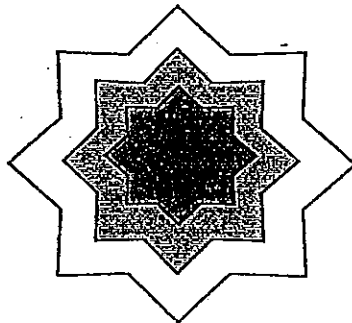
41. Randy cut out 3 shapes, A, B and C, from different materials as shown in the diagram below. The cut-out shapes are of different sizes.



He stacked the cut-out shapes together and placed them between a torch and a fixed screen as shown below.



Randy observed the following shadow on the screen.



(a) Based on the above shadow, draw lines to match the cut-out shapes A, B and C to the materials that they could be made of. [1½]

- | | | |
|-----|---|--|
| A • | • | <input type="checkbox"/> Frosted glass |
| B • | • | <input type="checkbox"/> Clear glass |
| C • | • | <input type="checkbox"/> Wood |

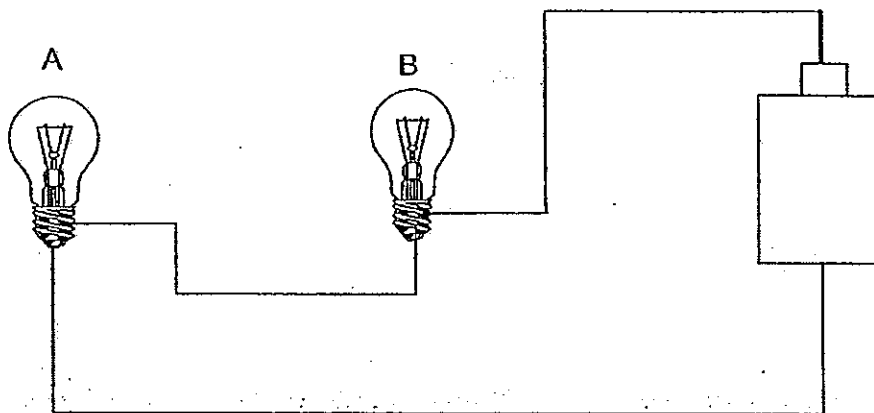


(b) Using the same apparatus, suggest 2 ways Randy could cast a smaller shadow on the screen. [2]

(i) _____

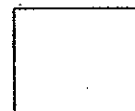
(ii) _____

42. In the circuit shown below, both bulbs A and B are lit.

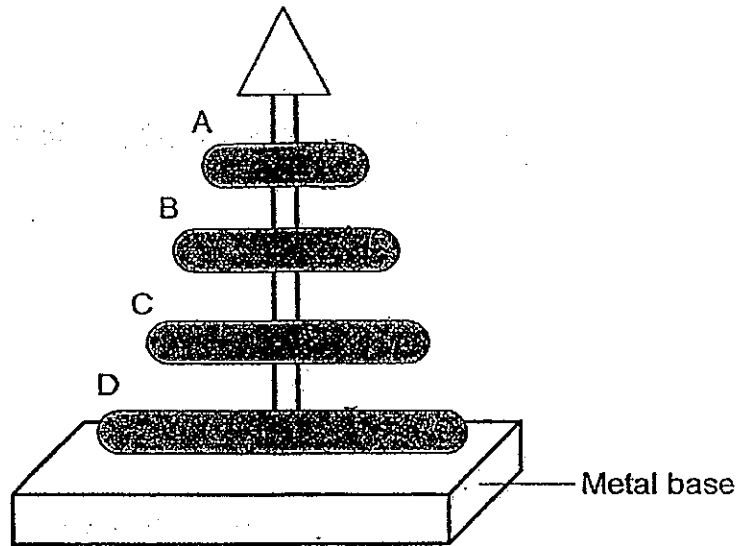


(a) Will bulb A remain lit when bulb B blows? [½]

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

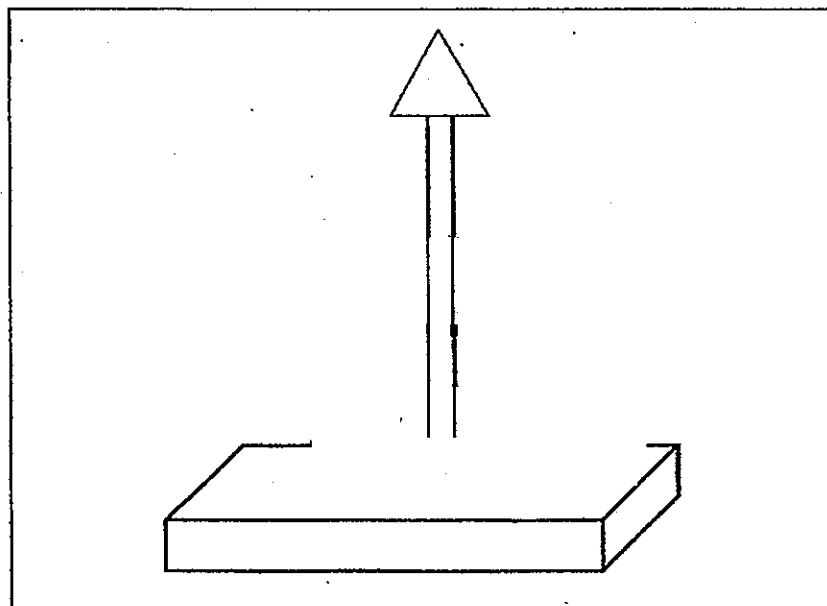


43. Abigail used four ring magnets, A, B, C and D, to form a model of a Christmas tree as shown below.

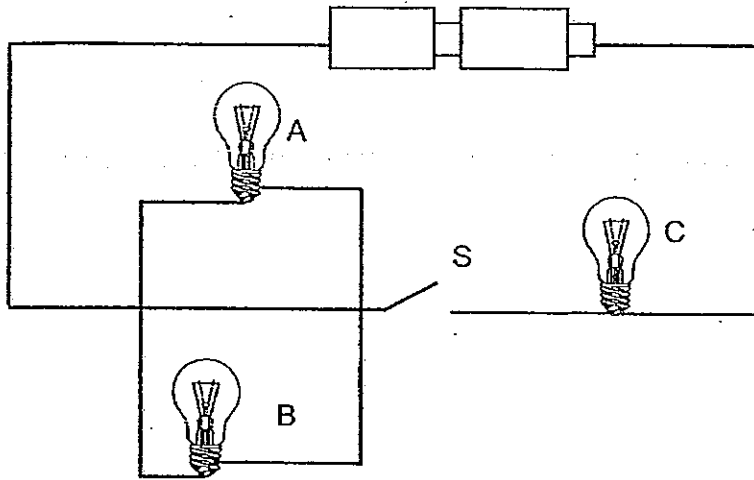


- (a) Suggest how she was able to keep the three ring magnets, A, B and C, floating above ring magnet D. [2]

- (b) Using the same set-up as in (a), complete the diagram below to show what Abigail would observe if she were to flip ring magnet A and D around. Label clearly. [2]



44. Jerome set up the following circuit.



(a) Which bulb(s) will light up when

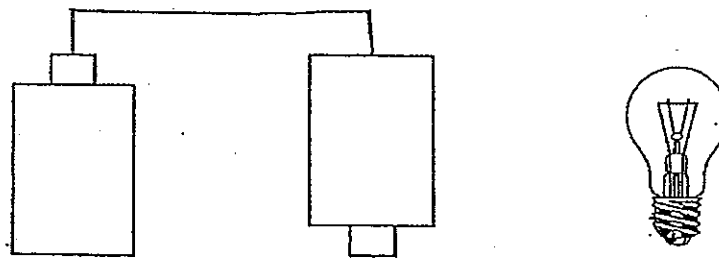
(i) Switch S is open?

[½]

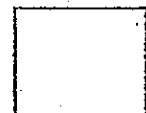
(ii) Switch S is closed?

[½]

(b) In the diagram below, draw wires to connect the bulb and the batteries so that the bulb lights up. [1½]



****End of Section B****





ANSWER SHEET

EXAM PAPER 2013

SCHOOL : CHIJ

SUBJECT : PRIMARY 5 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
2	3	1	2	2	3	4	2	3	4	4	2	1	4	3	1	4
Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30				
3	1	1	2	3	3	4	2	2	1	1	3	2				

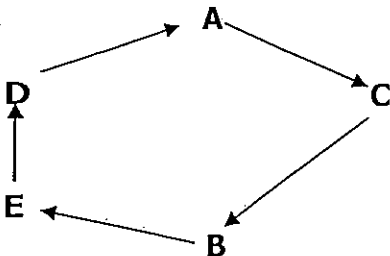
- 31)a)i)Animal S does not live in water but Animal Q lives in water.
ii)Animal Q does not lay but Animal S lays eggs.
b)R, T, P, Q

- 32)a)Increased
b)Decreased
c)Stayed the same

33)a)The greater the duration of the exercise, the greater the pulse rate per minute.

b)The more Tessa exercises, the more energy she needs. Thus, the heart pumps faster and faster.

34)a)



34)b)It obtains food and nutrients from the seed leaves.

- c)i)Warmth ii)Air

35)a)Medicine X.

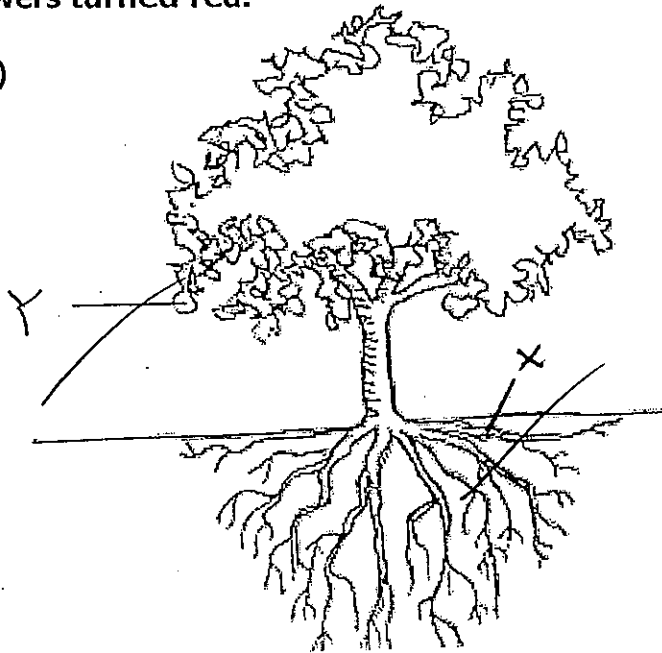
b)Although Medicine Y decreases the number of disease D cells, it also destroys normal cells. This would cause the body of the Group B patients to have a lack of cells. However, Medicine X not only destroys the disease D cells, it helps the body to produce normal cell to repulse Disease D cells, benefiting the body.

36)a)1)The amount of water would have decreased.

2)The leaves would have a hue of red.

b)The roots of the plant absorbed the red-coloured water. The red-coloured water was carried through the xylem and to the flowers, turning them red. So the flowers turned red.

37)a)b)



c)Cell Y can make food.

38)i)E ii)G,H iii)A iv)D v)B

39)a)Y is a better heat conductor than Z. The temperature of water in Y at the end of 15 minute is lower showing that Y is a better heat conductor as it conducted heat away from the water faster.

b)The amount of water in each can.

40)a)i)Remain the same.

ii)Increase.

b)Air can compressed so when the plunger is pushed in the air still occupies the same amount of space in the tank.

41)a)A → Clear glass

B → Frosted glass

C → Wood

b)i)He can move the torch further away from the screen.

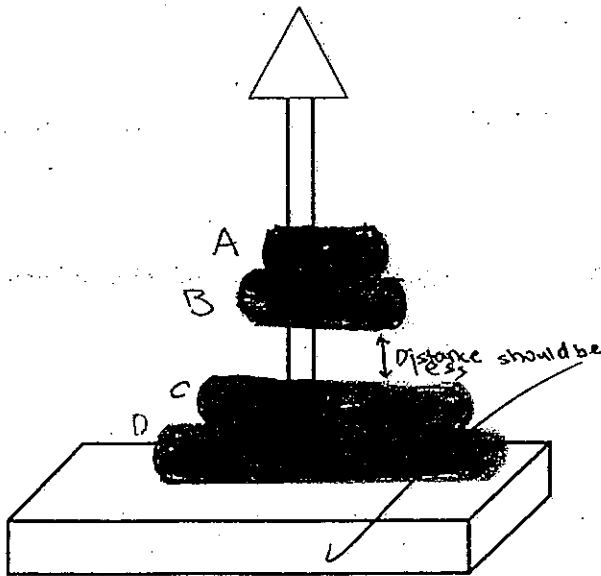
ii)He can move the cut-outs

42)a)No.

b)If bulb B blows, no electric current can flow through and the circuit is broken. Thus, bulb A will not be lit.

43)a)The like poles of the magnet are facing each other so they repel.

b)



44)a)i)None ii)A,B

b)

