

Name: _____ ()

Class: Primary 5. _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 5
Semestral Assessment 1 – 2012
SCIENCE
BOOKLET A
10 May 2012

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

30 questions
60 marks

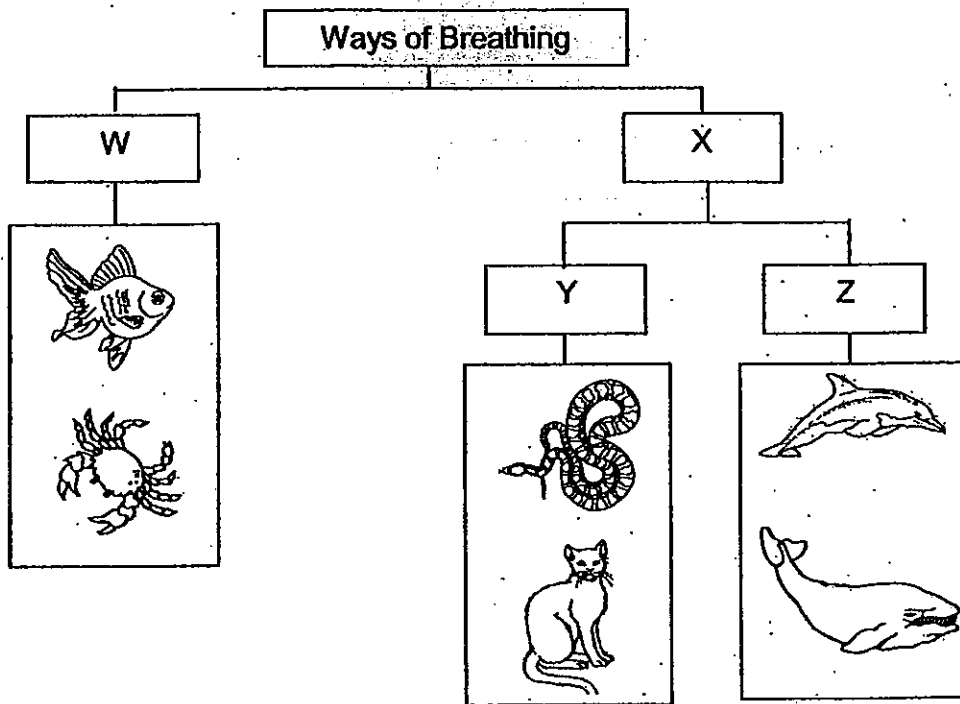
Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

This booklet consists of ~~19~~ 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. The diagram below shows some animals classified according to the way they breathe.



Which one of the following correctly represents headings W, X, Y and Z in the classification chart above?

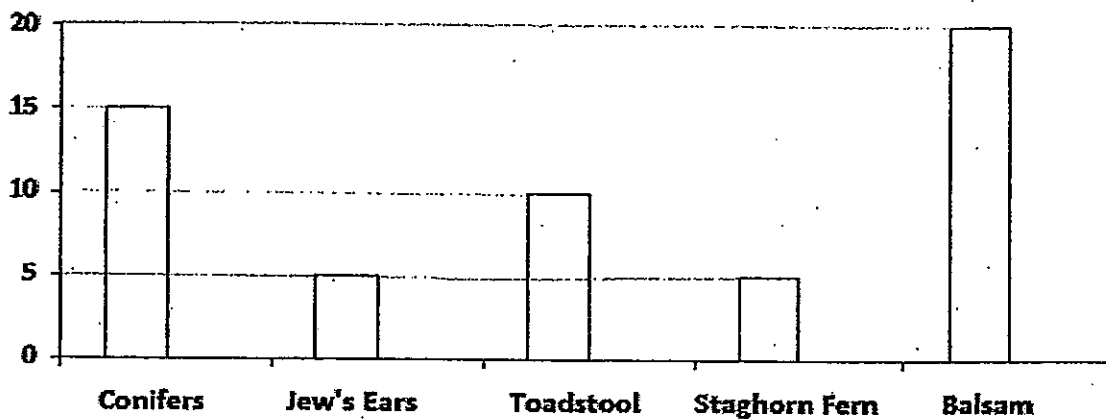
	W	X	Y	Z
(1)	gill chamber	lungs	nostrils	skins
(2)	gill chamber	nostrils	lungs	blowholes
(3)	gills	skins	noses	nostrils
(4)	gills	lungs	nostrils	blowholes

2. Which of the following are examples of living things responding to changes in the surrounding?

- A A mouse scurrying away when it sees a cat.
- B The leaves on a tree swaying in the air when there is wind.
- C A boy blinks his eyes when a fly flies towards his face.
- D A girl's long hair moving when she is running.

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

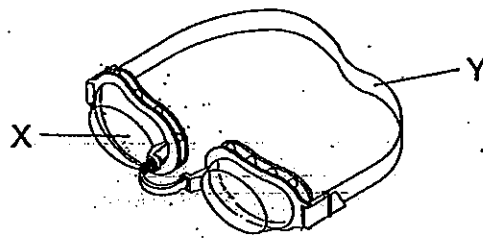
3. The graph below shows the organisms found in a school.



Which one of the following shows the correct number of each type of organisms?

	Flowering plants	Non-flowering plants	Fungi
(1)	25	20	10
(2)	20	20	15
(3)	20	5	30
(4)	35	10	10

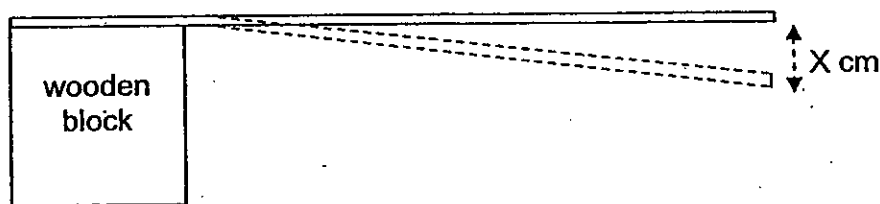
4. The diagram below shows a pair of swimming goggles.



Which one of the following identifies the correct properties of materials for making parts X and Y?

	X	Y
(1)	opaque	rough
(2)	flexible	opaque
(3)	transparent	flexible
(4)	flexible	strong

5. Sam conducted an experiment to test the flexibility of different types of materials. Four similar rulers made of different materials, H, I, J and K, were each placed on a wooden block. He depressed each ruler in the same way until it broke. He recorded the distance (X) at which the ruler broke.



The table below shows his observation of distance X for each type of material tested.

Material	H	I	J	K
X (cm)	3	0.5	4	2

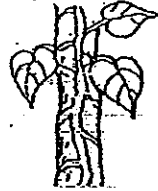
Based on his observation, which one of the following statements is correct?

- 1) Material J is the least flexible.
- 2) Material I is more flexible than K and J.
- 3) Material K is more flexible than H but less flexible than I.
- 4) Material H is more flexible than K but less flexible than J.

6. Observe the two different plants as shown below.



plant A



plant B

Which one of the following differences can be observed between plants A and B?

Differences	
Plant A	Plant B
1) climbs on support	does not climb on support
2) has entire edge leaves	has jagged edge leaves
3) has big fruits	has heart-shaped leaves
4) has fruits	has no fruits

7. Study the life cycles below.



life cycle of cockroach

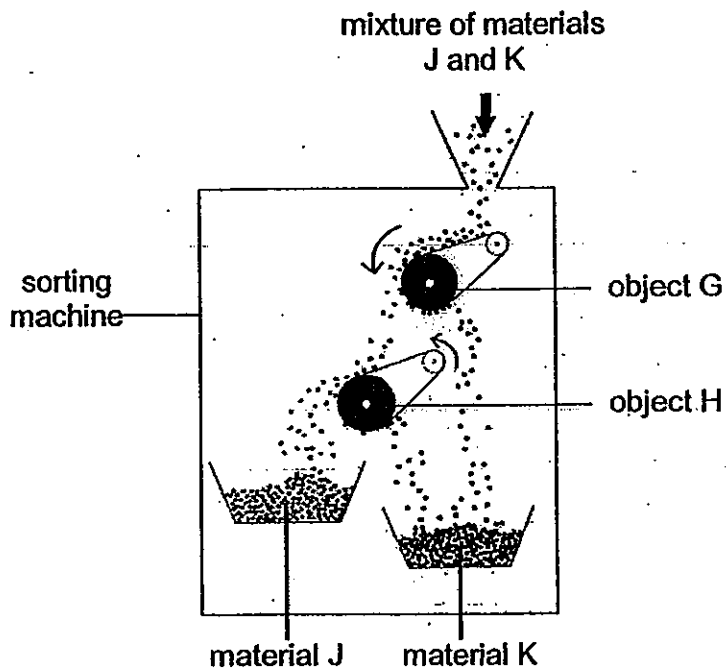


life cycle of mealworm

Based on the diagram above, what do the young in stages X and Y have in common?

- A Both cannot fly
 - B Both do not feed
 - C Both do not moult
 - D Both cannot reproduce.
- 1) A and B only
 - 2) A and D only
 - 3) B and C only
 - 4) A, B and C only

8. The diagram below shows a sorting machine that can separate materials based on their magnetic properties.

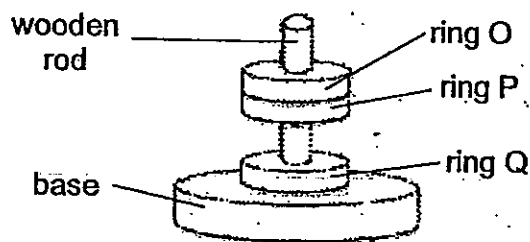


Based on the diagram above, which of the following statements are true?

- A Only object G is a magnet.
- B Only object H is a magnet.
- C Both objects G and H are magnets.
- D Material J is a magnetic material.
- E Material K is a magnetic material.

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

9. The diagram below shows how three iron rings, O, P and Q, come to rest when slotted onto a wooden rod.



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

- (1) Rings O and P are magnets.
 - (2) Rings O and Q are magnets.
 - (3) Rings P and Q are magnets.
 - (4) Rings O, P and Q are magnets.
10. Diana conducted an experiment with 4 set-ups S, T, U and V. Each set-up comprised a container with tap water. The table below shows the details of each set-up at the start of the experiment.

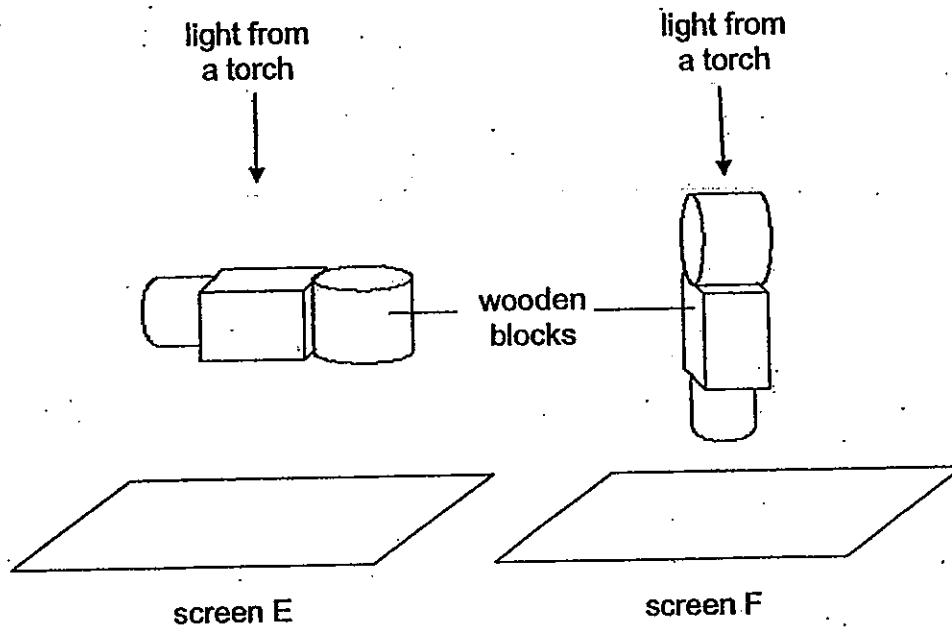
	Experiment			
	S	T	U	V
Room temperature (°C)	33	26	26	26
Size of the opening of container (cm ²)	20	20	20	15
Volume of water (cm ³)	250	250	300	250

Diana wanted to find out how the rate of evaporation of water was affected by the size of the opening of each container.

Which two set-ups should Diana compare?

- (1) S and T
- (2) S and U
- (3) U and V
- (4) T and V

11. Esther glued three wooden blocks together and held them in two different positions as shown below. She used a torch to shine on the wooden blocks in a dark room.



Which one of the following sets is the shadows that she would observe?

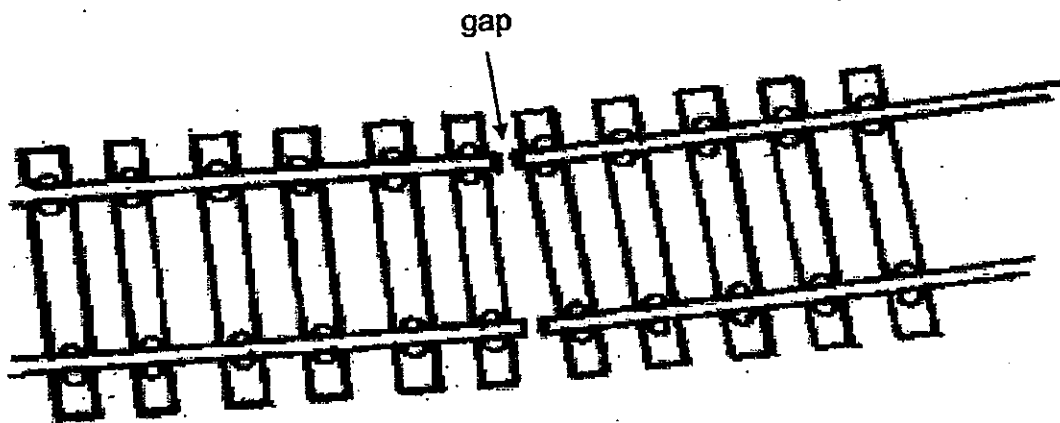
	Screen E	Screen F
(1)		
(2)		
(3)		
(4)		

12. Which of the following are examples of matter?

- A steam
- B light
- C shadow
- D electricity
- E nitrogen

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

13. The diagram below shows some gaps on the MRT track as shown below. The gaps were found at regular intervals along the track.

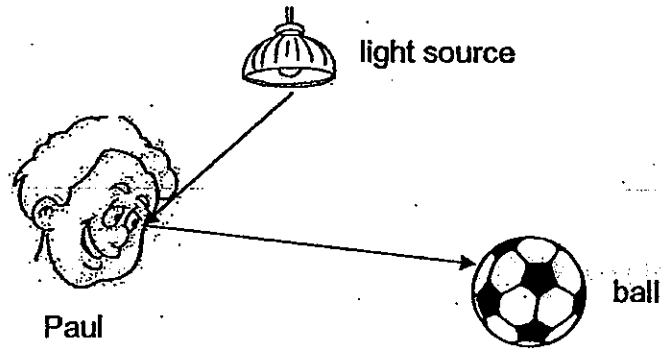


Which one of the following explanations about the presence of gaps is correct?

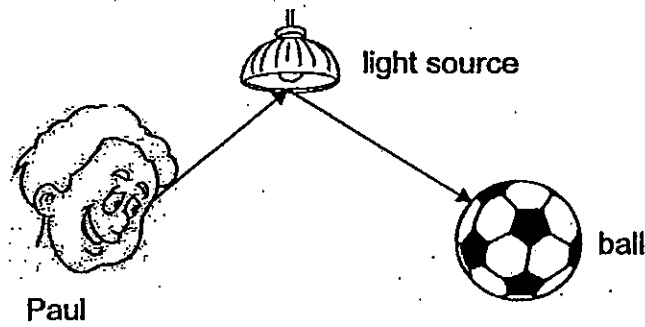
- (1) The gaps are caused by wear and tear.
- (2) The gaps are part of the decorative design.
- (3) The gaps are meant to reduce materials used.
- (4) The gaps prevent the track from buckling on hot days.

14. Paul can see a ball in a well-lit room. Which one of the following diagrams shows how light enables him to see the ball? The arrows (\rightarrow) show the direction of light.

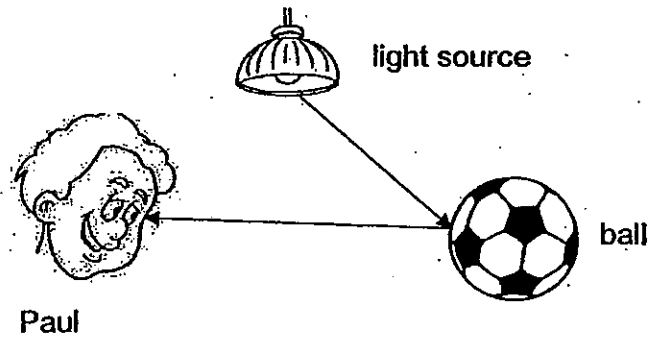
(1)



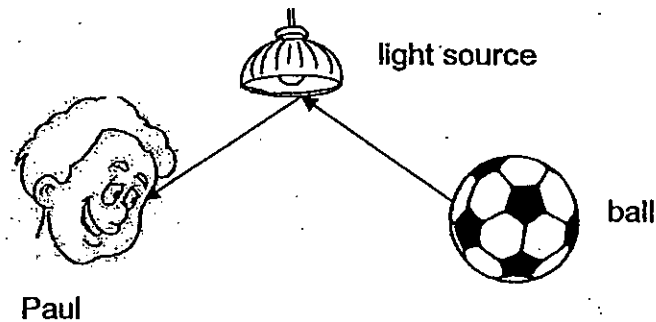
(2)



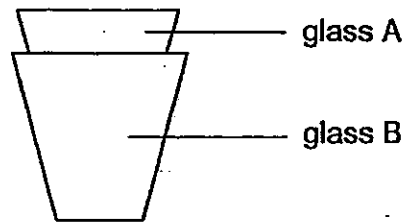
(3)



(4)



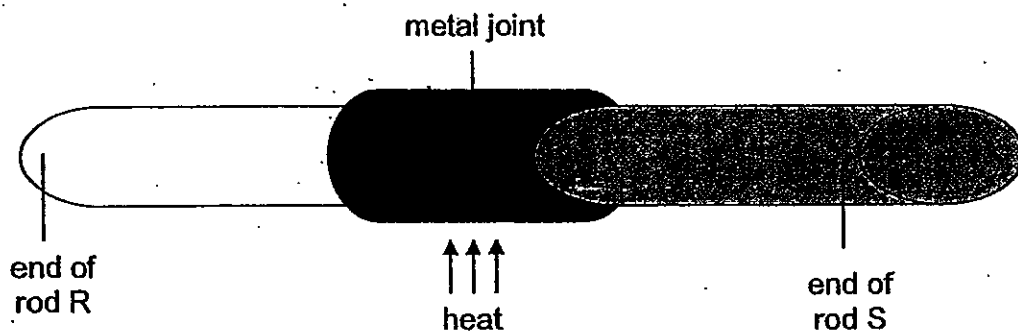
15. The diagram below shows two glasses stuck to each other.



Which one of the following steps will be most effective in separating the two glasses?

	Glass A	Glass B
(1)	Pour in some hot water	Partially submerge it in hot water
(2)	Pour in some cold water	Partially submerge it in cold water
(3)	Pour in some cold water	Partially submerge it in hot water
(4)	Pour in some hot water	Partially submerge it in cold water

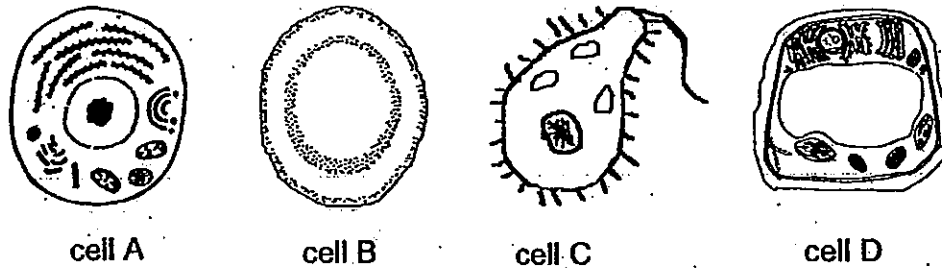
16. Philip conducted an experiment using two similar painted rods of different materials, R and S, bonded together by a metal joint. He held each end of the rods and heated the metal joint. After some time, he felt that rod R was getting hotter but not rod S.



Which one of the following conclusions can he make from this experiment?

- (1) Rod R is a better conductor of heat than rod S.
- (2) Rod S is a better conductor of heat than rod R.
- (3) Rod R is made of metal and rod S is made of wood.
- (4) Rod S is made of metal and rod R is made of wood.

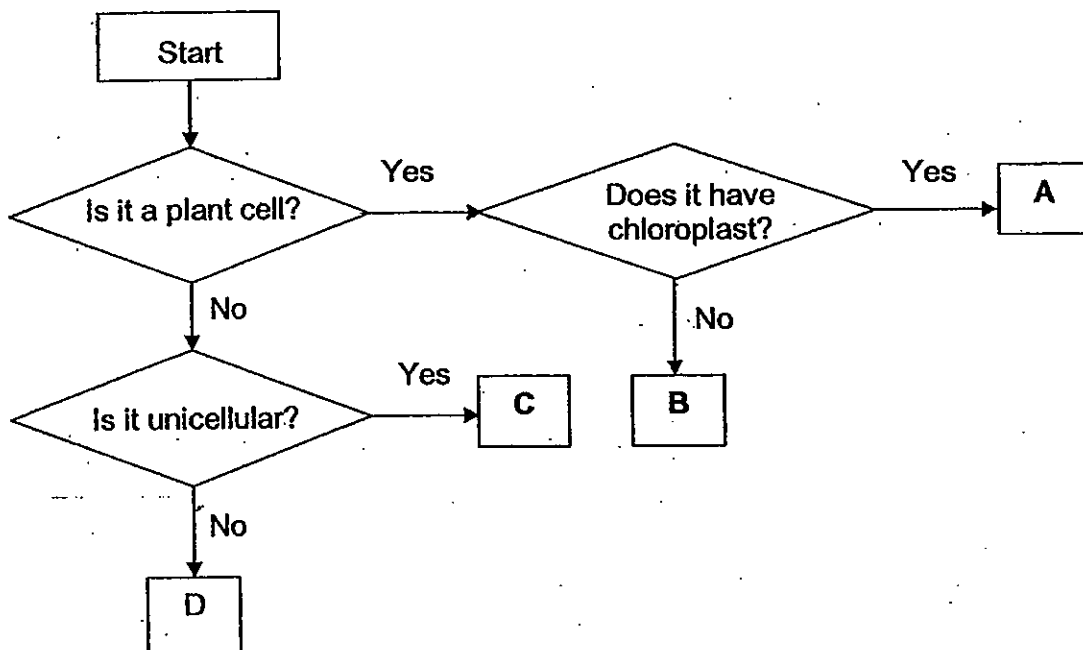
17. The diagram below shows four different types of cells.



Which of the above cells are animal cells?

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

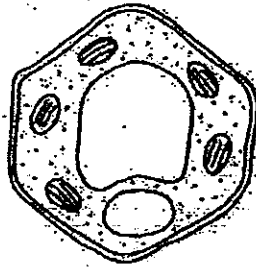
18. The flowchart below is used to classify 4 specimens: a leaf cell, an onion cell, a cheek cell and a yeast cell.



Based on the above flowchart, which one of the following correctly matches the letters A, B, C and D to the 4 specimens?

	A	B	C	D
1)	leaf cell	yeast cell	onion cell	cheek cell
2)	onion cell	yeast cell	leaf cell	cheek cell
3)	leaf cell	onion cell	yeast cell	cheek cell
4)	leaf cell	onion cell	cheek cell	yeast cell

19. Elvin observed the cell below with a microscope and concluded that it was a plant cell.



Which characteristics of the cell helped Elvin to conclude that it was a plant cell?

- A: It has a nucleus.
- B: It has a cell wall.
- C: It has chloroplasts.
- D: It has a cell membrane.

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

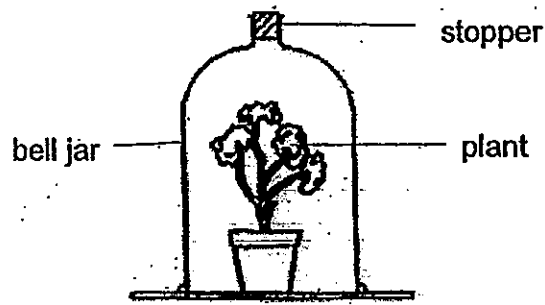
20. The following are a few statements about the process of breathing and respiration.

- A During respiration, energy is released for the body to do work.
- B Respiration occurs in plants while breathing occurs in animals.
- C Breathing occurs at all times but respiration only occurs when our body exerts itself.
- D During breathing, air is taken into the lungs but only oxygen is absorbed by the body.

Which of the statements above about breathing and respiration is/are true?

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

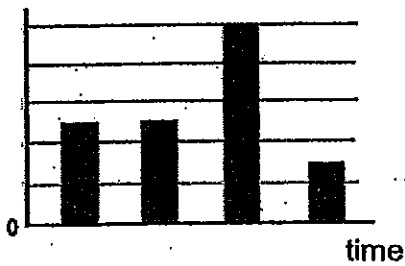
21. A plant in a bell jar as shown below was placed in an open space.



Which one of the following graphs correctly shows the amount of carbon dioxide recorded in the jar from morning till noon on a clear day?

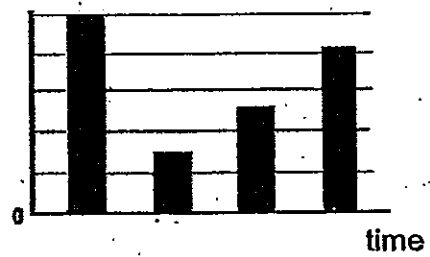
1)

amount of carbon dioxide in the bell jar (cm^3)



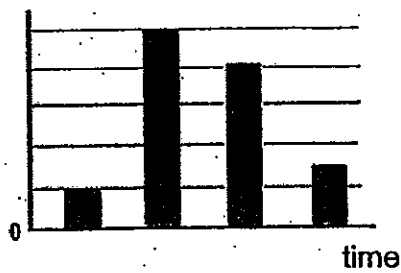
2)

amount of carbon dioxide in the bell jar (cm^3)



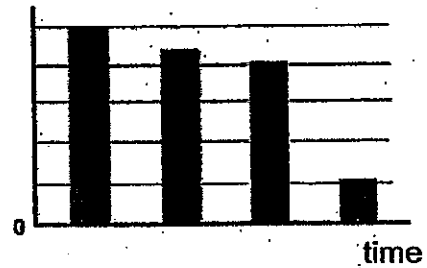
3)

amount of carbon dioxide in the bell jar (cm^3)

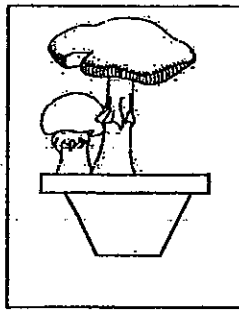


4)

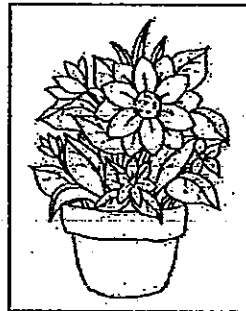
amount of carbon dioxide in the bell jar (cm^3)



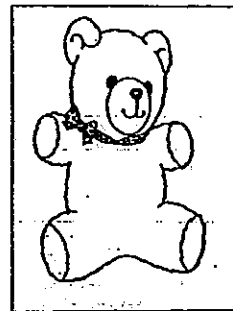
22. The diagram below shows four glass containers, A, B, C and D, each containing different objects.



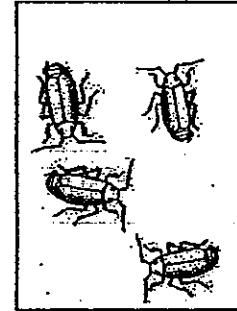
A: live mushrooms



B: live plants



C: toy bear

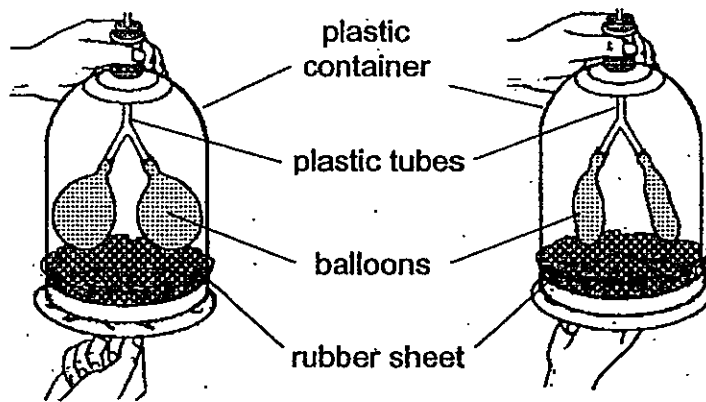


D: live cockroaches

The glass containers were sealed at the same time and placed near a window for eight hours from 10am to 6pm on a sunny day. Which pair of containers can be used in an experiment to show that living things give out carbon dioxide during respiration?

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

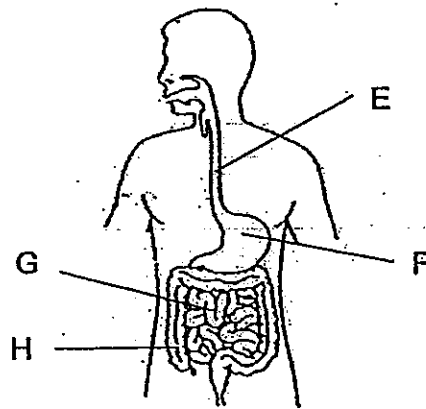
23. A model of a human system is built as shown below.



Which parts of the system do the plastic tubes, balloons and rubber sheet represent?

	plastic tube	balloon	rubber sheet
(1)	windpipe	lung	diaphragm
(2)	gullet	air sacs	rib cage
(3)	windpipe	air sacs	ribcage
(4)	gullet	lungs	diaphragm

24. The diagram below shows parts of the human digestive system.



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

- A Part E takes air to the lungs.
- B Part G contains digestive juice.
- C Part H is where water is being absorbed into the body.
- D Part F is where food is digested and absorbed into the body.

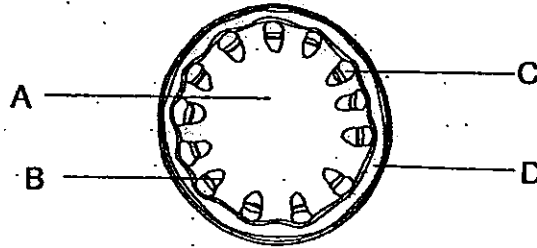
- 1) A and B only
- 2) B and C only
- 3) C and D only
- 4) A, B, C and D

25. Which one of the following correctly shows what happens to the human chest, diaphragm and ribs when a person is taking a deep breath?

	Lungs	Diaphragm	Rib cage
(1)	expand	moves upwards	moves inwards
(2)	expand	moves downwards	moves outwards
(3)	contract	moves upwards	moves outwards
(4)	contract	moves downwards	moves inwards

26. Which two parts of the human digestive system would contain the same amount of partially digested food?
- (1) Mouth and gullet
 - (2) Gullet and stomach
 - (3) Stomach and small intestine
 - (4) Small intestine and large intestine

27. The diagram below shows the cross-section of a plant stem.

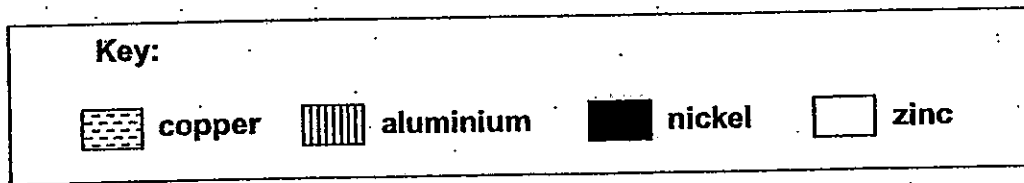
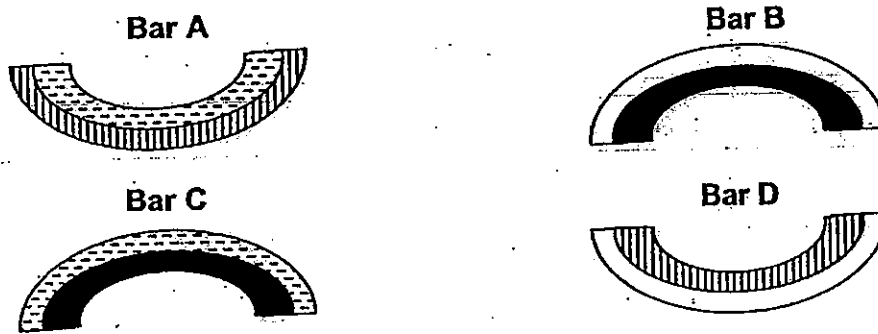


Which one of the following parts of the stem A, B C or D transports food from the leaves to other parts of the plant?

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

28. Bars A, B, C and D are each made by joining together two different metal strips of the same length. Fanny heated the four bars for 10 minutes each.

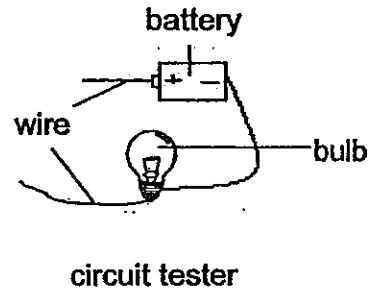
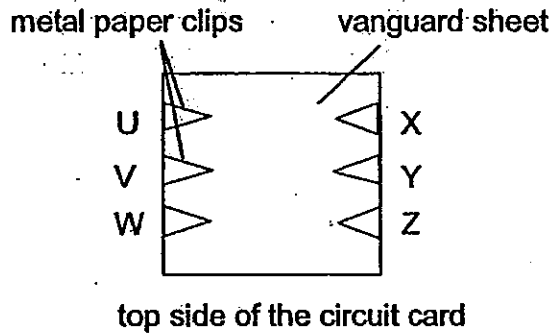
The diagram below shows her observations at the end of 10 minutes.



Which one of the following shows the arrangement of the metals according to the rate of expansion, starting with the one that expands the least?

- (1) copper, nickel, aluminium and zinc
- (2) aluminium, nickel, zinc and copper
- (3) zinc, aluminium, copper and nickel
- (4) nickel, copper, aluminium and zinc

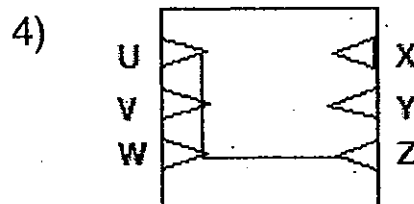
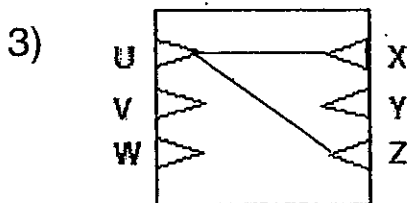
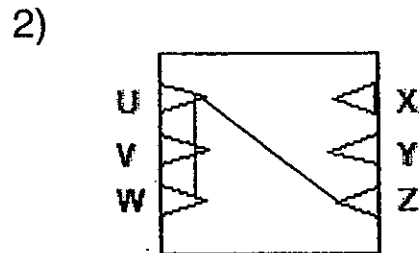
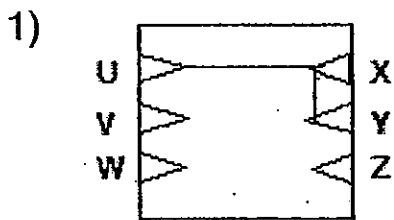
29. Esther made a circuit card as shown below. Some of the metal paper clips are connected with wires on the underside of the card. She then used a circuit tester to find out which metal paper clips are connected by wires. The bulb in the circuit tester will light up only when the wires of the circuit tester and the metal paper clips are connected to form a closed circuit.



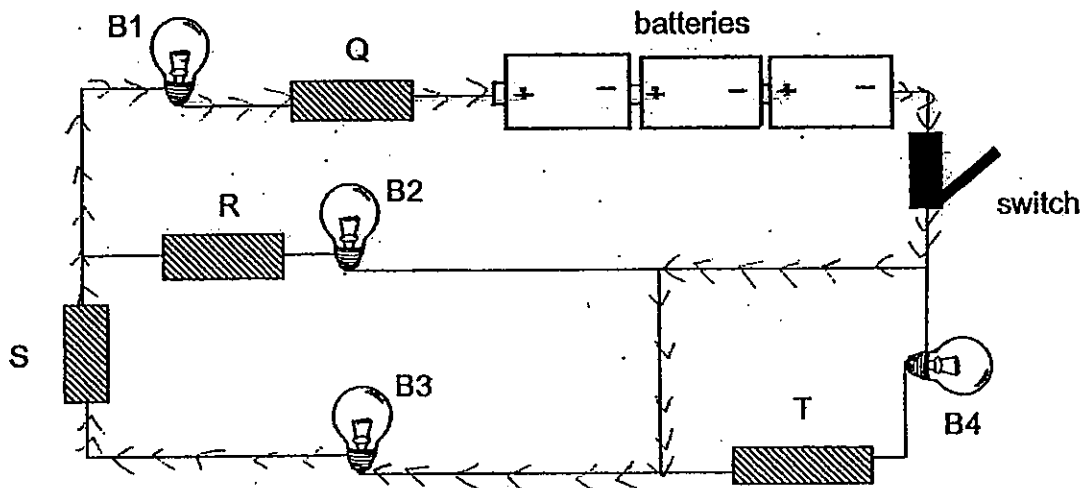
The result of the circuit test is listed below. A tick (✓) indicates that the bulb lights up when connected to the following metal paper clips of the circuit card.

Metal paper clips	UX	VY	WZ	UZ	WX
Bulb	✓			✓	

Which one of the following shows the correct wire connection on the underside of the card?



30. A circuit is set up with four objects Q, R, S and T as shown below.



When the switch is closed, light bulbs B1, B2 and B3 light up. Based on the above observation, identify the properties of the objects to enable the light bulbs to light up.

Objects				
	Q	R	S	T
1)	electrical conductor	electrical conductor	electrical conductor	electrical insulator
2)	electrical insulator	electrical conductor	electrical insulator	electrical insulator
3)	electrical conductor	electrical insulator	electrical conductor	electrical conductor
4)	electrical conductor	electrical conductor	electrical insulator	electrical insulator

End of Section A

Name : _____ ()

Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 5
Semestral Assessment 1 – 2012
SCIENCE
BOOKLET B
10 May 2012

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 15 printed pages.

Booklet A	60
Booklet B	40
Total	100

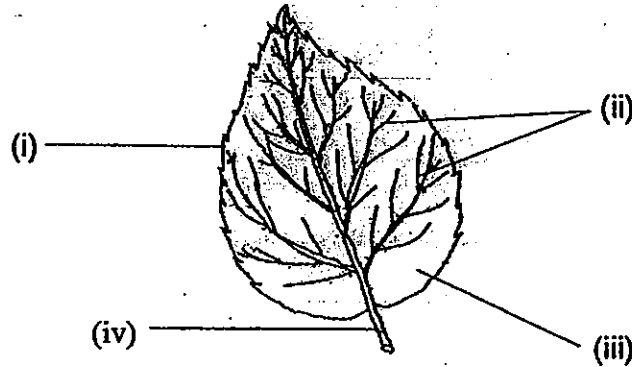
Parent's Signature/Date

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.

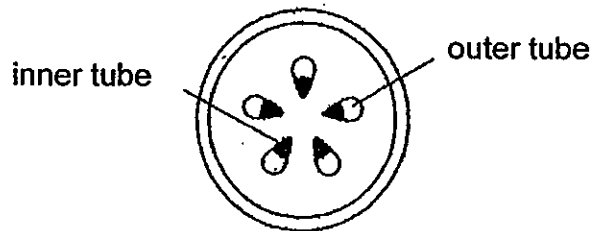
31. The diagram below shows a leaf.



(a) Identify the labelled parts (i), (ii), (iii) and (iv) in the diagram above. [2]

Leaf parts	Name of leaf parts
(i)	
(ii)	
(iii)	
(iv)	

(b) When Sarah looked at the cross-section of part labeled (iv) under a microscope, she saw long tubes in it. Identify the outer tube and state its function. [1]

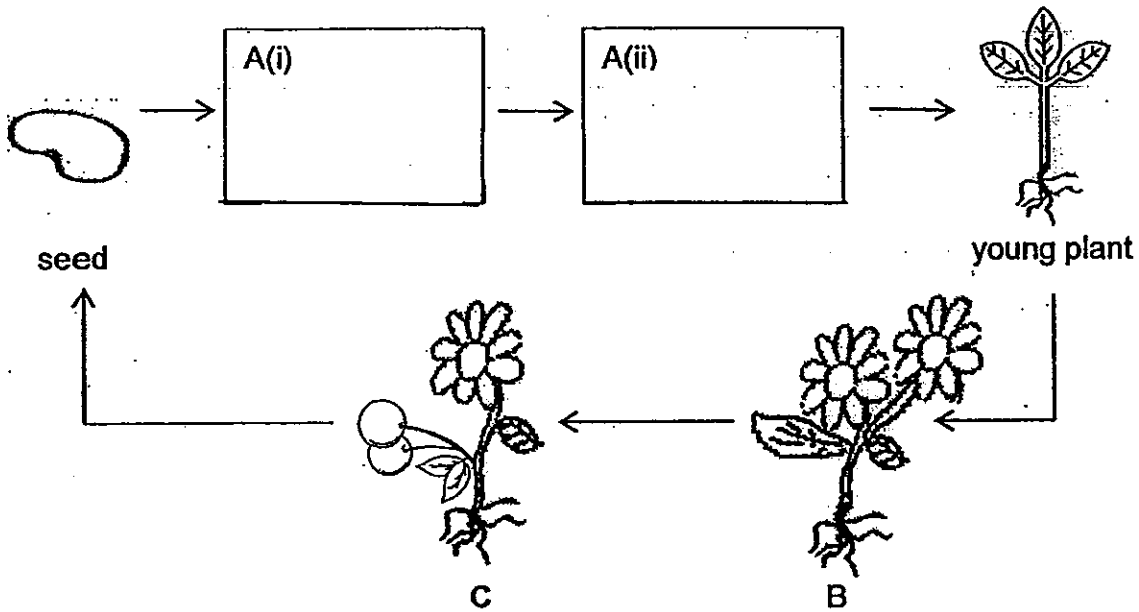


	Name	Function
Outer tube		

32. (a) Complete the flowchart below by drawing the two missing stages of growth A(i) and A(ii) from a seed to a young plant. Your drawing must show clearly the development for A(i) and (ii) as described below. [1]

A(i): This is when the first part of the new plant starts to grow out from the seed

A(ii): This is when the next part of the new plant starts to grow



- (b) Name the process when a seed grows into a young plant. [1]

- (c) State the three conditions necessary for stage A of the plant cycle. [1½]

(i) _____

(ii) _____

(iii) _____

33. Faith observed four cells D, E, F and G under a microscope. The observations were recorded below.

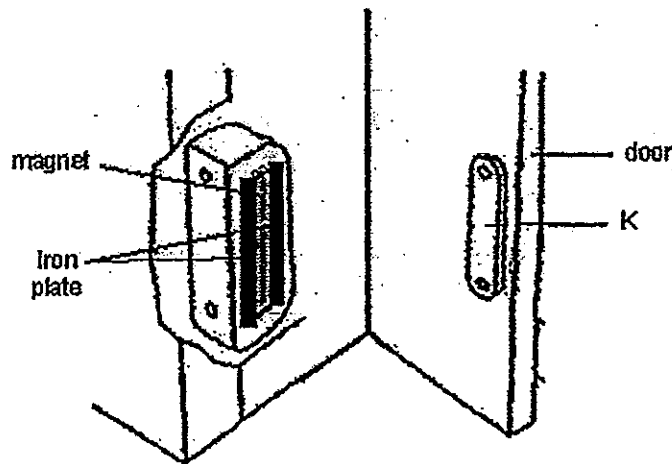
Cell observed	Presence of cell parts observed under the microscope?				
	Cell wall	Nucleus	Cell membrane	Chloroplasts	Cytoplasm
Cell D	Yes	Yes	Yes	Yes	Yes
Cell E	No	Yes	Yes	No	Yes
Cell F	No	No	Yes	No	Yes
Cell G	Yes	Yes	Yes	No	Yes

- (a) In the table below, identify the cells by putting a tick (✓) to indicate if each cell is a plant cell or an animal cell. [2]

Cells	Plant cell	Animal cell
D		
E		
F		
G		

- (b) Identify the part of the organism that cell G is mostly to be taken from? Give a reason for your answer. [1]

34. The diagram below shows a door catch used on the door of a cupboard. When the door is closed, part K comes into contact with the iron plates instead of the magnet and is pulled tightly shut by them. Both Part K and the iron plates are not magnets.



- (a) Suggest a reason why the door catch is designed such that part K does not come into contact with the magnet directly? [1]

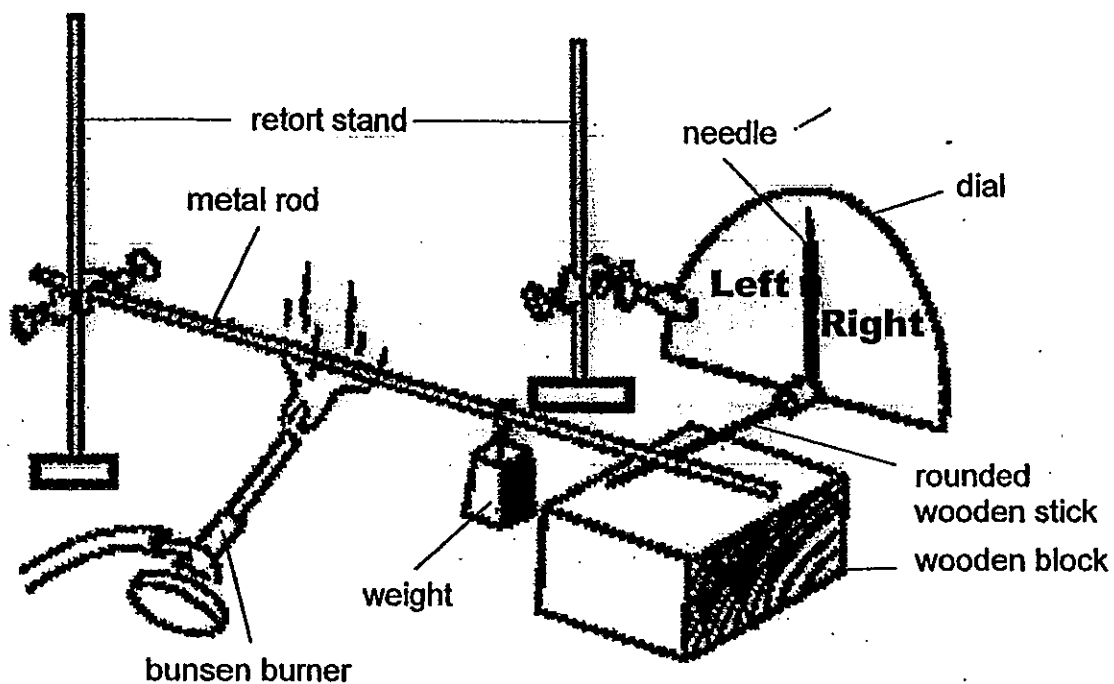
- (b) Explain how the iron plates could pull part K towards them even though they are not magnets. [1]

- (c) Name two possible materials that can be used to make part K. [1]

(i) _____

(ii) _____

35. Alice set up an experiment as shown below.

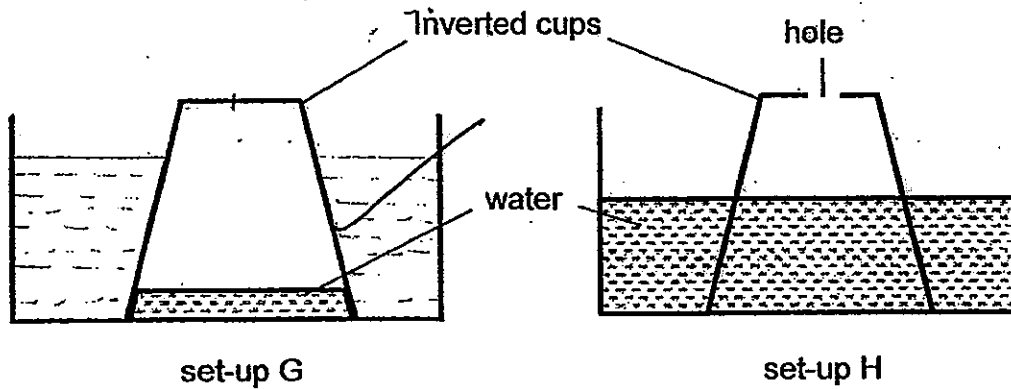


She heated the metal rod and the needle started to move after some time.

(a) Which direction, left or right, would the needle move? [1]

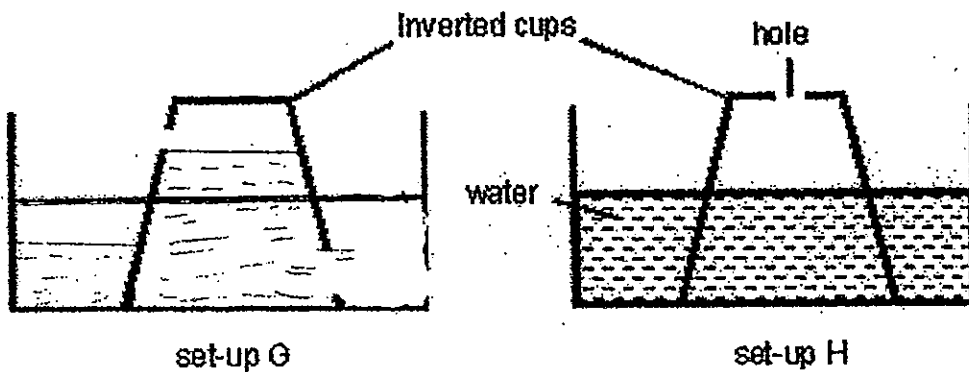
(b) Explain why the needle moved. [2]

36. Steve conducted an experiment to find out if air is a matter. He filled in the same amount of water in two similar containers and pushed two inverted cups into the water. He drew his observations below and realised that he did not draw the water level in the container in set-up G.



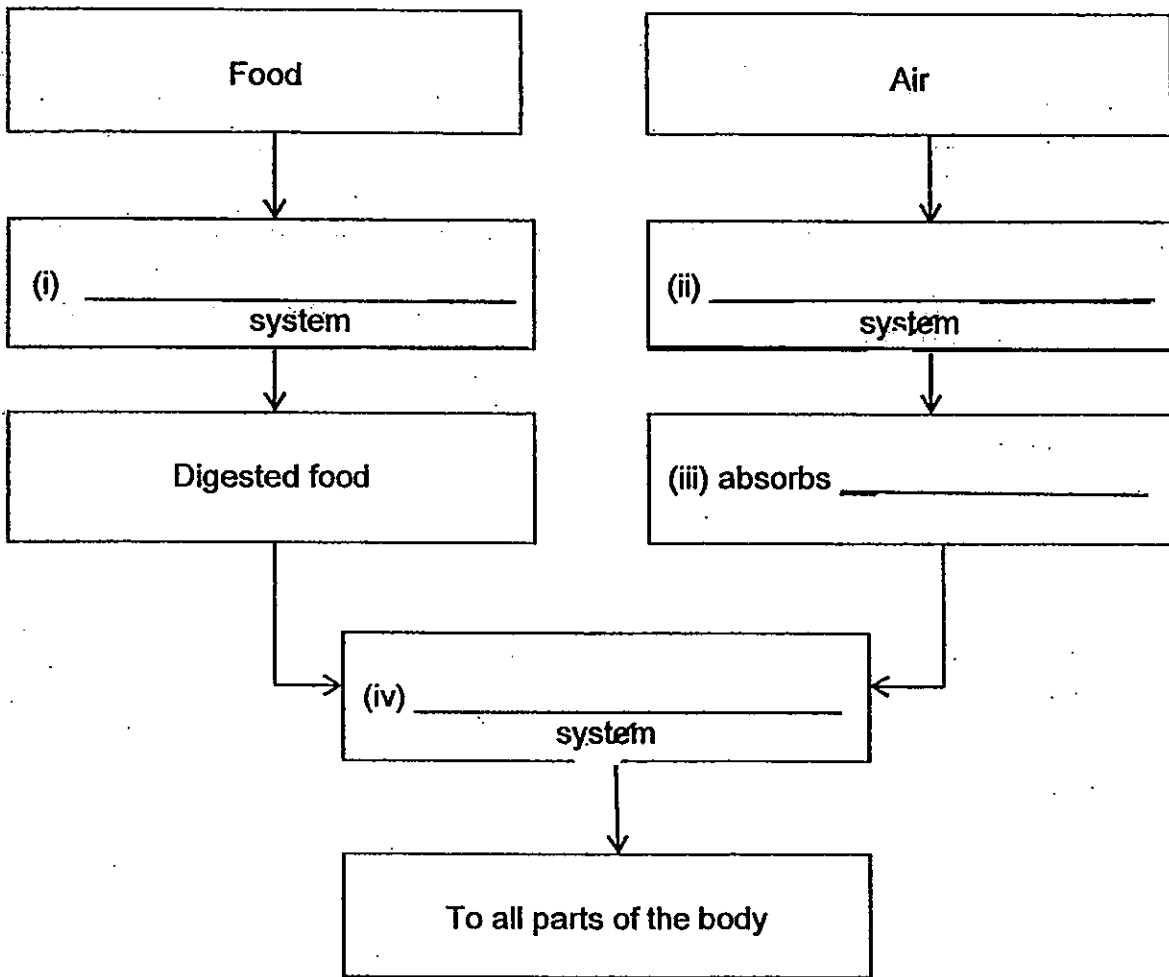
- (a) Draw the water level in the container in set-up G. [1]
- (b) Based on the observation, what can Steve conclude about air? [1]

- (c) If Steve were to make two holes in the cup in set-up G before inverting it into the container of water again as shown in the diagram below, complete the diagram for set-up G by drawing the water level inside and outside the cup. (Note: Set-up H is provided for comparison) [1]



37. The flowchart below shows how different human body systems work together to support life processes.

(a) Complete the flowchart by filling in the blanks (i) to (iv). [2]

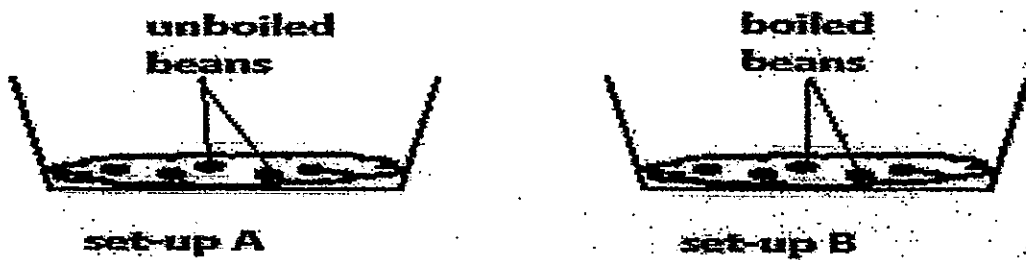


(b) State the main functions of the body systems listed below. [1]

	Body Systems	Main Functions
(i)	Skeletal	
(ii)	Muscular	

move.

38. Peter wanted to find out if boiled beans can be grown. He prepared 2 set-ups by putting different types of green beans on wet cotton wool as shown below:



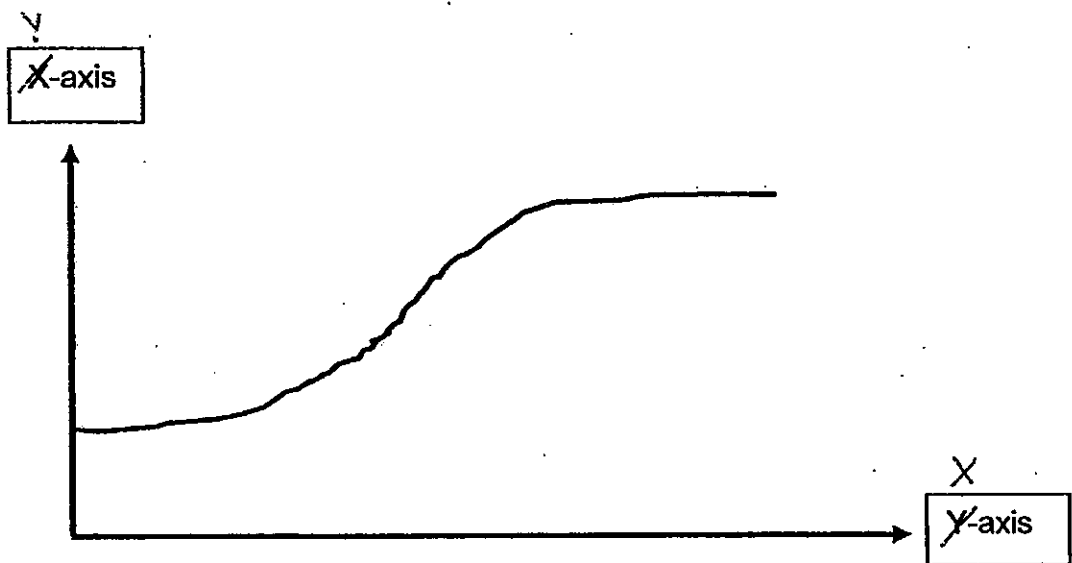
A week later, Peter noticed that the beans in set-up A grew but not those in set-up B.

- (a) What is the variable changed in this experiment? [½]

- (b) What is the purpose of set-up A? [1]

- (c) What can Peter conclude from this experiment? [½]

39. Chloe did her 1.6km run and recorded her heartbeat every minute using a datalogger. The datalogger displayed the graph as shown below.



a
 (a) The small datalogger screen did not show the labels for the X-axis and Y-axis clearly. Write the label for each axis below. [1]

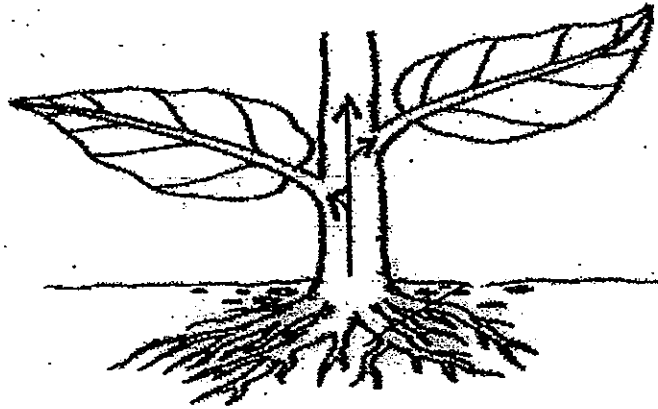
(i) ~~X~~-axis: _____

(ii) ~~Y~~-axis: _____

b
 (a) Arrange the order of activities which caused the increased in Chloe's heartbeat by writing the numerals 1 to 4 in the boxes below. The first one has been done for you. [1]

Activities	Order of activities
Heart rate increases	
Body needs more energy and oxygen	
Heart needs to pump more blood carrying nutrients and oxygen around the body	
Chloe starts to run	1

40. The arrows in the diagram below show the movement of materials in a plant.

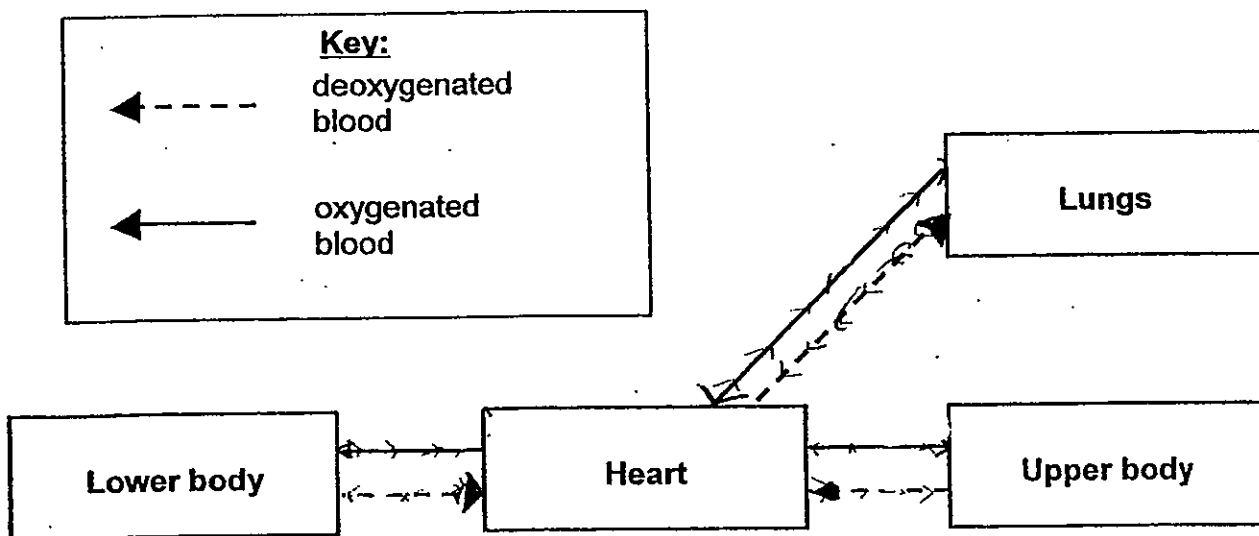


(a) Name two materials that are transported as shown by the arrows above. [1]

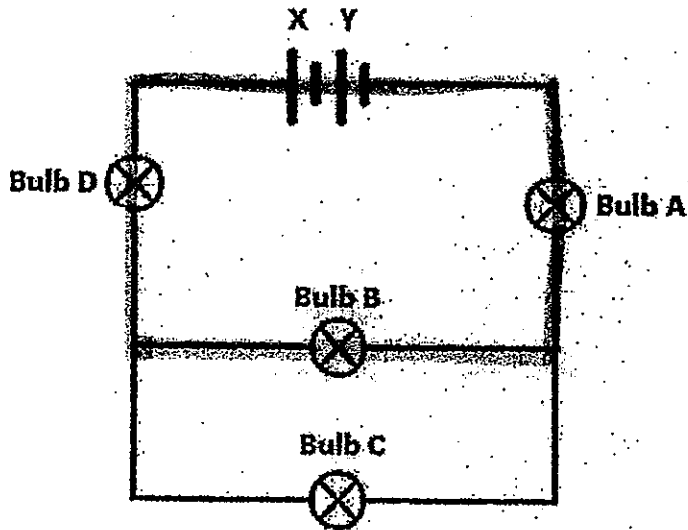
(i) _____

(ii) _____

(b) The lines in the diagram below show how blood is transported in the human body. Using the key given, complete the circulatory diagram by drawing the missing arrowheads (▶) on the lines to indicate the direction of blood flow from one part of the body to another. [2]



41. A circuit is set up with one fused bulb and three in working condition. The bulbs are connected to batteries X and Y as shown below.

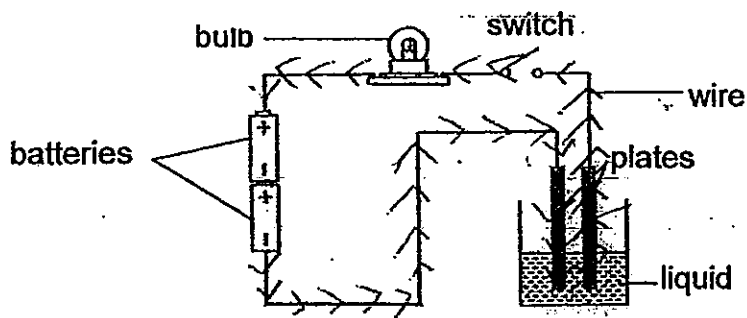


- (a) In the circuit above, if bulb B is the fused bulb, which bulb(s) will light up? [1]

- (b) If bulb A is the fused bulb, how many bulbs will light up? [1]

- (c) If battery X is flat but battery Y has enough energy to supply electric current all bulbs, how many bulbs will light up if bulb C is the fused bulb? [1]

42. Melaine set up an investigation using the apparatus as shown below. The bulb lit up when the switch was closed.



Using the same set-up above, Melaine tested 4 different types of liquid, one at a time, and recorded the brightness of the bulb in the table below.

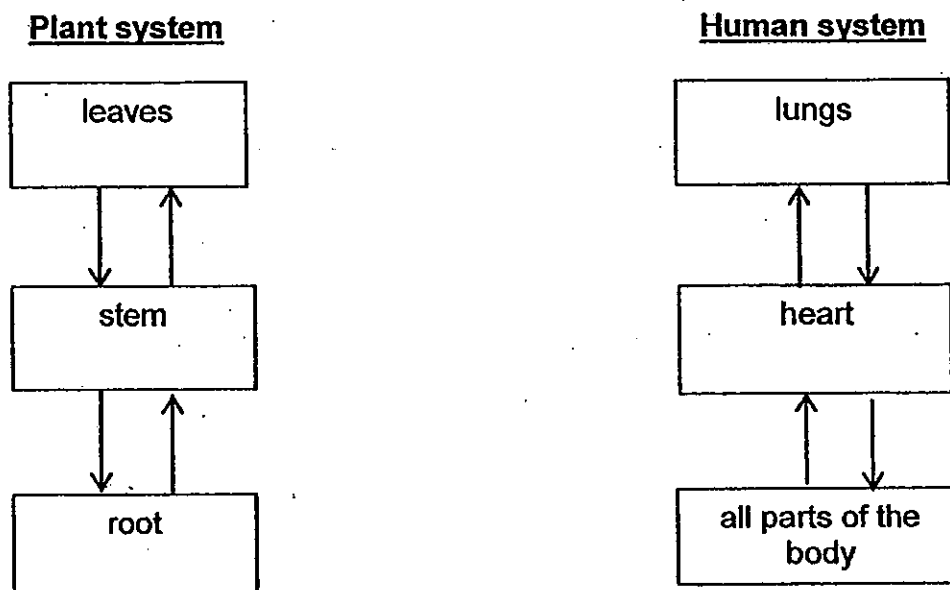
Liquid	Brightness of bulb			
	Very dim	Dim	Bright	Very bright
Q		✓		
R				✓
S			✓	
T	✓			

- (a) Identify the property of the plates used in the above experiment that allowed the above observations. [½]

- (b) Arrange the liquids, Q, R, S and T, in the order from the poorest to the best conductor of electricity. [1]

- (c) If S is salt water, explain why Melaine's mother does not allow her to swim in the sea when there is a lightning alert. [2]

43. The diagram below shows how a plant system and a human system transport materials.



(a) Based on the diagram above, identify the two materials that the human system transports but the plant system does not. [1]

(i) _____

(ii) _____

(b) Complete the paragraph below about gaseous exchange in plants by filling in the blanks with the correct answers. [2]

The leaves of the plant allow gaseous exchange to take place. On the _____ of the leaves, many tiny openings called _____ are found. Through these openings, gases such as carbon dioxide, _____ and _____ are allowed to pass through.

44. Fandi and his friends wanted to conduct an experiment to find out if different activities would affect his heartbeat. Fandi took his heartbeat after performing each activity for 10 minutes.

Activities	Heartbeats per minute
watching television	64
skipping	120
swimming	90
climbing stairs	110

- (a) Based on the Fandi's observations above, what can he conclude from his experiment? [1]

- (b) Fandi's friend told him to repeat the experiment at least three times and record his heartbeat. What was the purpose of asking Fandi to repeat his experiment at least three times? [1]

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

100
100
100
100

ANSWER SHEET

EXAM PAPER 2012

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
4	1	2	3	4	4	2	3	3	4	4	1	4	3	3	1	3

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	2	1	4	3	1	2	2	1	3	4	3	1

31)a)i)leaf edge ii)leaf vein iii)leaf blade iv)leaf stalk

b)Name : phloem

Function : Transport food from the leaves to other parts of the plant.

32)a)i)



ii)



b)Germination.

c)i)Oxygen ii)Water iii)Warmth

33)a)D : Plant cell

E : Animal cell

F : Animal cell

G : Plant cell

b)The roots of the plant. The function of the root cell is not to make food, hence, it does not have chloroplasts.

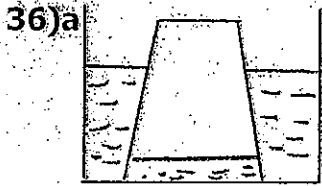
34)a)Contact would result in knocking the magnet against K which will cause the magnet to be demagnetized .

b)The iron plates are magnetized by the magnet through induction.

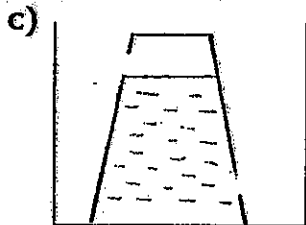
c)i)iron ii)nickel

35)a)Right.

b)The heat from the Bunsen burner caused the metal rod to expand and move towards the right. The metal rod pushes the wooden stick towards the right, causing the needle attached to it to move to the right.



b)Air is a matter that occupies space.



37)a)i)digestive system ii)respiratory iii)oxygen iv)circulatory

b)i)support the body.

ii)It work with the skeletal system to allow our body to move.

38)a)The types of green beans.

b)To show that the boiling of beans stopped them from growing.

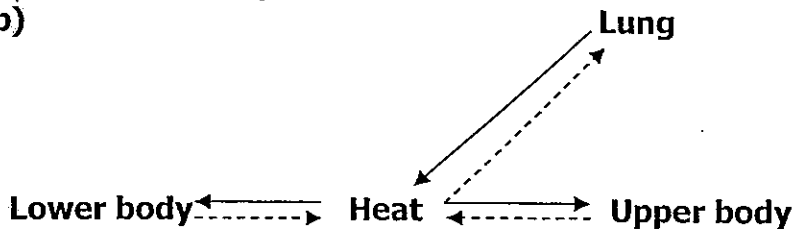
c)Boiling beans cannot germinate while unboiled beans can.

39)a)i)Heartbeat ii)Time/mins

b)4 2 3 1

40)a)i)Water. ii)Mineral salts.

b)



- 41) a) Bulbs A, C, and D.
b) None of the bulbs.
c) 3 bulbs A, B and D, will light up.
- 42) a) Conductor of electricity.
b) T, Q, S, R
c) Sea water contains salt salt water is a good conductor of electricity thus, Melaine can be electrocuted by the lightning.
- 43) a) i) Oxygen.
ii) Carbon dioxide.
b) underside / stomata / oxygen / water vapour
- 44) a) The more strenuous the activity is, the higher his heartbeats per minute.
b) To obtain a more reliable result.

