Rosyth School
First Semestral Assessment for 2011
STANDARD SCIENCE
Primary 5

Total Marks: 100

Name: _____

Class: Pr_____ Register No. _____ Duration: 1 h 45 min

Date: 12 May 2011 Parent's Signature: _____

Booklet A

Instructions to Pupils:

1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets, Booklet A and Booklet B.
4. For questions 1 to 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 31 to 44, give your answers in the spaces given in the Booklet B.

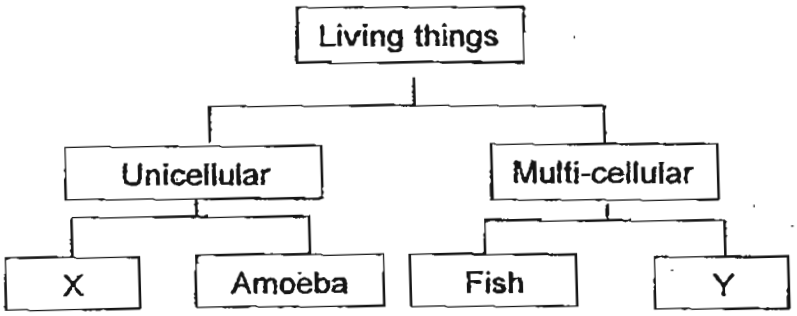
	Maximum	Marks Obtained
Booklet A	**60 marks**	
Booklet B	**40 marks**	
Total	**100 marks**	

* This booklet consists of 19 pages .

Part I (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 and 4) on the Optical Answer Sheet.**

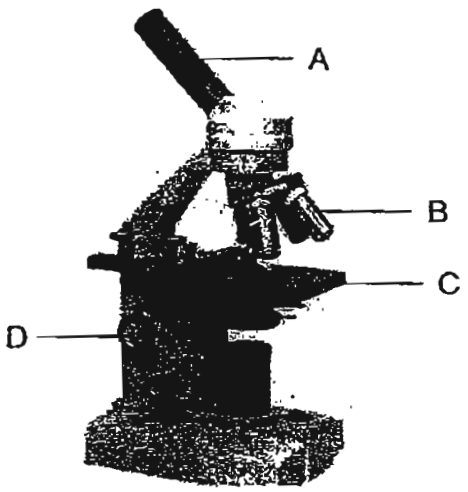
1 Study the chart below.



Which one of the following could X and Y be?

	X	Y
(1)	Elephants	Amoeba
(2)	Mushroom	Yeast
(3)	Paramecium	Duckweed
(4)	Hydrilla	Man

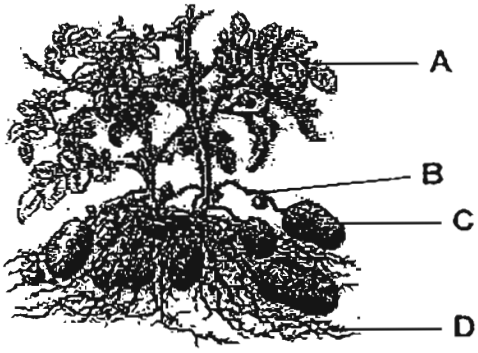
2 Alice wanted to observe a cell using the microscope as shown below.



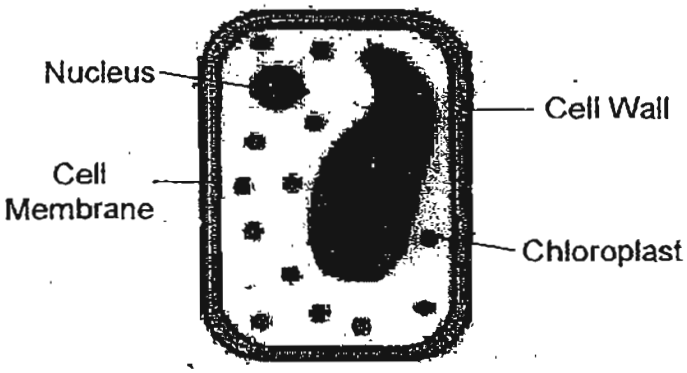
Which part of the microscope should she use to magnify her specimen?

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

3 The diagram below shows the parts of a plant.



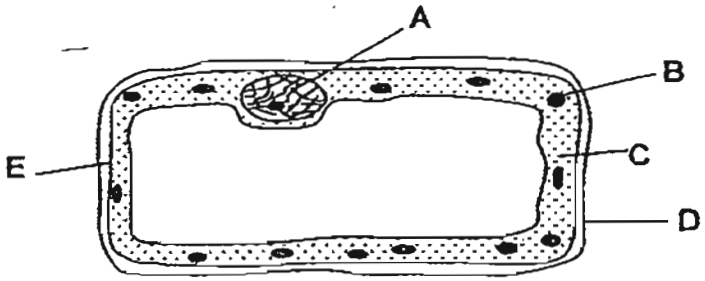
The magnified cell below is taken from a certain part of the plant.



Which part of the plant is the cell most likely be taken from?

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

4 The diagram below shows a plant cell.



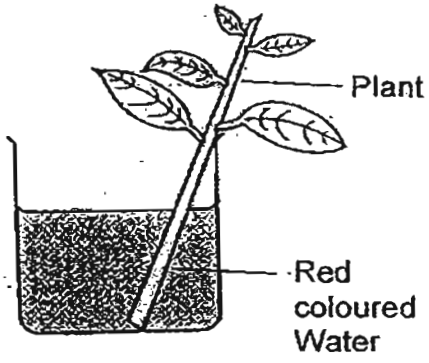
Which structures, A, B, C, D or E are also found in both root and human skin cells?

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

5 In order for Substance G to enter a plant cell and reach the nucleus, it has to pass through various parts of the cell. Which of the following shows the correct order that Substance G has to pass through to reach the nucleus?

(1) Cell Wall → Cell membrane → Chloroplast
(2) Cell Membrane → Cell Wall → Cytoplasm
(3) Cell Wall → Cell Membrane → Cytoplasm
(4) Cell Wall → Cytoplasm → Cell Membrane

6 Jonathan put a plant in a beaker of red-coloured water. The next day, he cut a cross-section of the stem. He observed that some parts of the tubes were stained red.



What is the function of the tubes that were coloured red?

(1) It helps the plant to store excess food.
(2) It transports food from the leaves to the roots.
(3) It helps the plant in the exchange of gases with the surroundings.
(4) It transports water and mineral salts from the roots to the leaves.

7 Ali wanted to investigate if the colour of dyes will affect the amount of water absorbed by the plants.

The table below shows the amount of water and colour dye given to the four balsam plants, P, Q, R and S over a period of time.

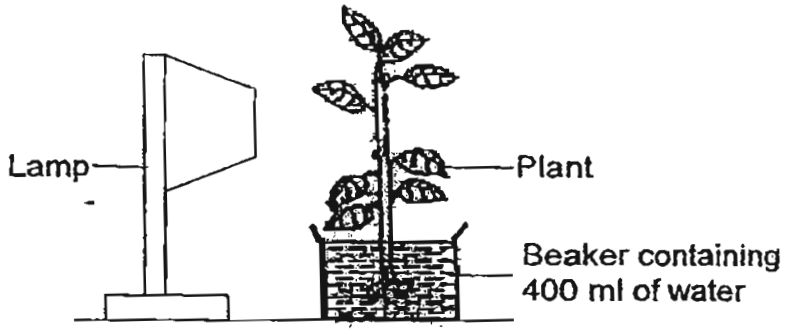
Plant	P	Q	R	S
Amount of water in the beaker	400	400	400	200
Amount of colour dye given (ml)	10	30	10	30
Colour of the dye	Blue	Red	Red	Blue

Which sets-up should he use for his experiment?

(1) P and Q
(2) P and R
(3) Q and S
(4) R and S

Refer to the following set-up to answer questions 8 and 9.

Siva wanted to find out how the amount of light would affect the amount of water taken in by plants. He prepared a set-up as shown below.



8 Which of the following set-up(s) would be possible for him to carry out the experiment?

Set-up	Variables to be kept the same	Variables to be changed
A	Distance between the plant and the lamp , amount of water and the number of leaves	Intensity of lamp
B	Distance between the plant and the lamp , amount of water and intensity of lamp	Number of leaves
C	Number of leaves, the amount of water and intensity of lamp	Distance between the plant and the lamp
D	Distance between the plant and the lamp, intensity of lamp and number of leaves	Amount of water

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

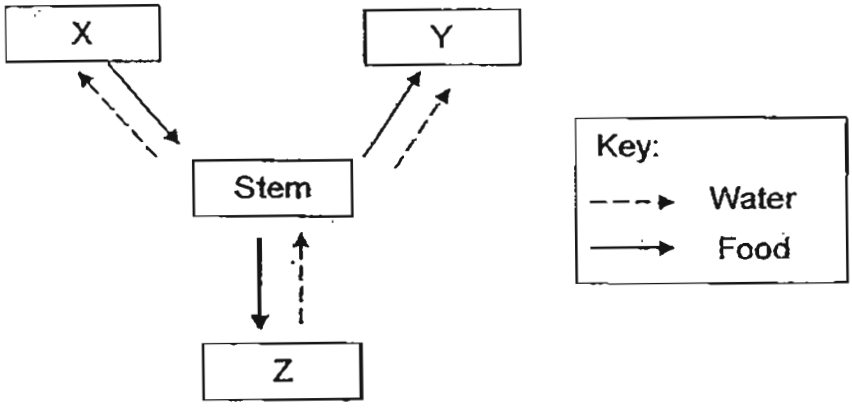
9 He then recorded his results in a table as shown below.

Intensity of light (Lux)	Amount of water left in the beaker (ml)
100	180
120	165
140	140
160	110
180	110

What is the most possible conclusion he can draw from the results obtained?

(1) The intensity of light affects the amount of water taken in by a plant.
(2) The intensity of light does not affect the amount of water taken in by a plant.
(3) The plant absorbed the greatest amount of water when the intensity of light was the least.
(4) The plant absorbed the greatest amount of water when the intensity of light was the highest.

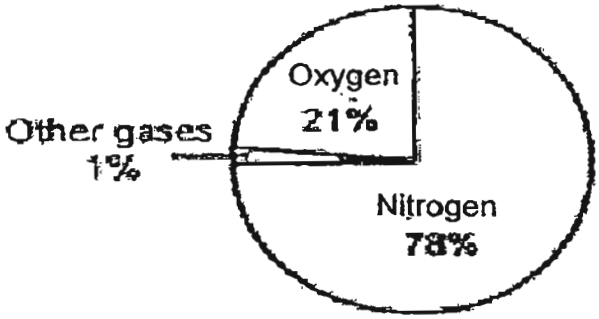
10 The diagram below shows the direction in which food and water are transported to different parts of a plant.



Which of the following shows the parts of the plant that are represented by X, Y and Z correctly?

	X	Y	Z
(1)	Leaves	Flowers	Roots
(2)	Roots	Flowers	Leaves
(3)	Flowers	Leaves	Roots
(4)	Leaves	Roots	Flowers

11 Refer to the composition of air as shown below.



Five people were trapped in a lift for 15 minutes. In which of the above gases, would there be a change?

(1) Oxygen only
(2) Nitrogen only
(3) Oxygen and other gases only
(4) Nitrogen and other gases only

12 Which one of the following shows the correct path in which oxygen is transported around our body?

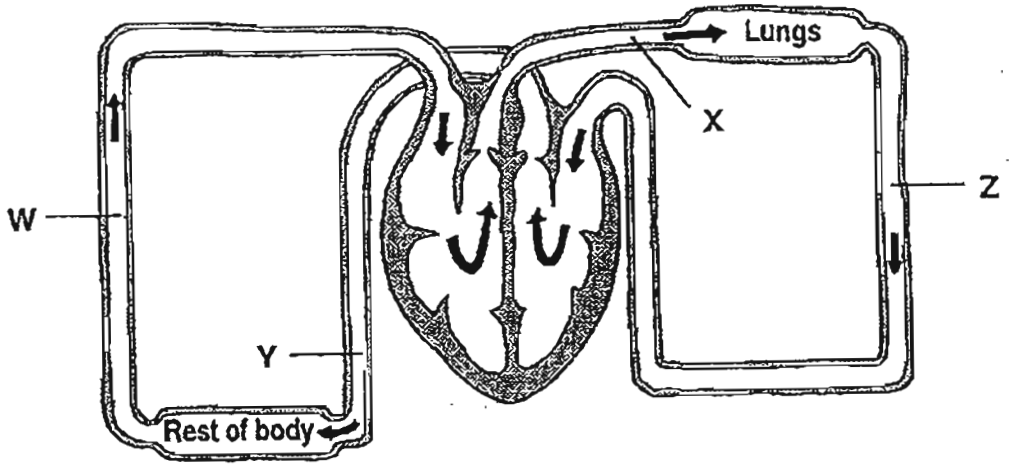
(1) Windpipe → Lungs → Heart → Rest of the body
(2) Lungs → Heart → Windpipe → Rest of the body
(3) Heart → Lungs → Windpipe → Rest of the body
(4) Windpipe → Heart → Lungs → Rest of the body

13 Which of the following form parts of the human circulatory system?

A: Nose
B: Heart
C: Lungs
D: Blood
E: Blood vessels

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

14 The diagram below shows how blood is circulated in our body.



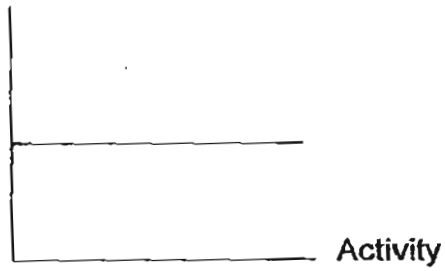
Which of the following statements are true about the content of our blood at W, X, Y and Z?

A: The blood at Y is rich in oxygen.
B: The blood at X is rich in oxygen.
C: The blood at W is rich in carbon dioxide.
D: The blood at Z is rich in carbon dioxide.

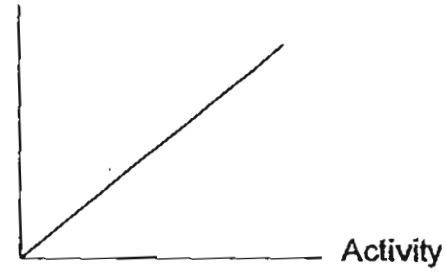
(1) A and B only
(2) A and C only
(3) A, B and C only
(4) A, B, C and D

15 Tom carried out three activities for 15 minutes each. The activities were walking, resting on a bench and then running respectively. Which one of the following graphs correctly shows Tom's heart rate for his three activities?

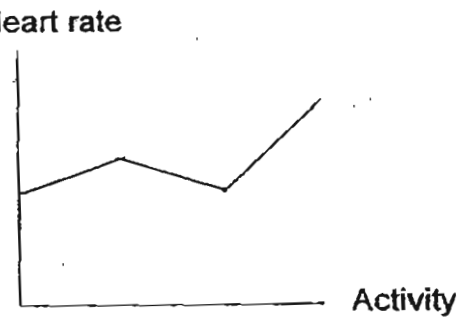
(1)



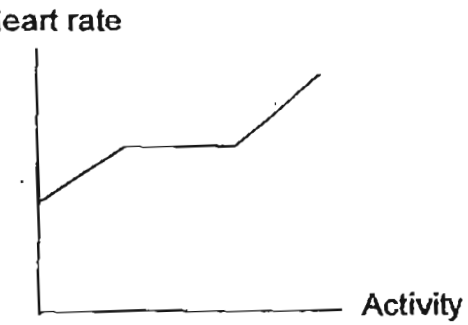
(2)



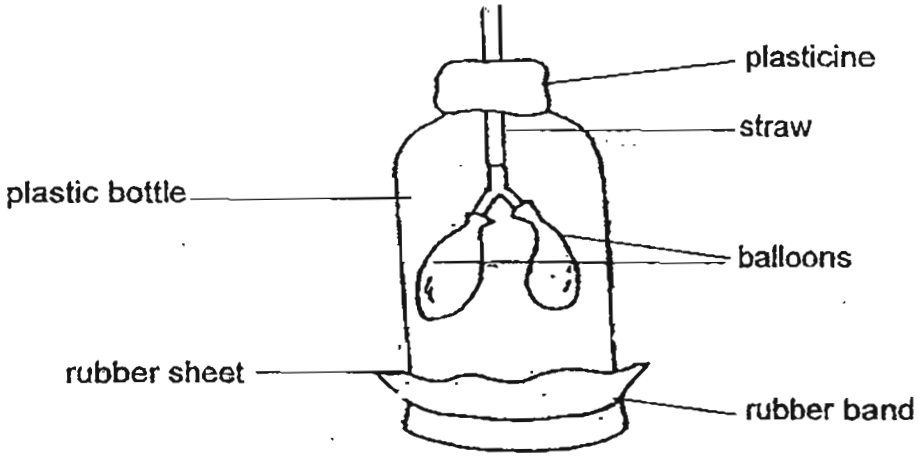
(3)



(4)



16 Diana built a model of the human respiratory system using some recycled materials. This is what the model looked like.



Which parts of the human respiratory system do the balloon and the straw represent?

	Balloon	Straw
(1)	lungs	gullet
(2)	lungs	windpipe
(3)	mouth	nose
(4)	chest	throat

17 Which of the following statement(s) is/are true about the plant and the human transport system.

A: Both systems have tubes.
B: Both systems transport dissolved nutrients.
C: Both systems transport water, food and air.
D: Both systems transport substances in one direction only.

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

18 The table below shows the amount of energy needed to do different activities.

Activity	Amount of energy needed for one minute of activity (kJ)	Breathing rate (Number of inhalations per minute)
A	130	50
B	30	20
C	310	80
D	300	80

What is the relationship between the amount of energy needed for the activity and the amount of oxygen taken in by the body?

(1) The greater the amount of energy needed by the activity, the less the amount of oxygen taken in by the body.

(2) The greater the amount of energy needed by the activity, the more the amount of oxygen taken in by the body.

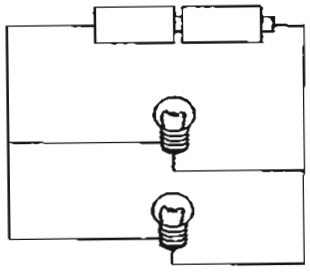
(3) The more the amount of oxygen taken in by the body, the greater the amount of energy needed by the body.

(4) The less the amount of oxygen taken in by the body, the greater the amount of energy needed by the body.

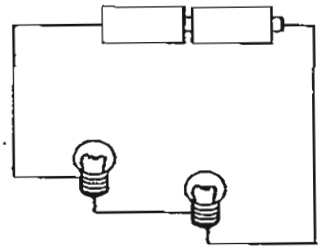
19 Melissa wanted to cut down on electricity in her household and did a check on the ways she uses electrical appliances at home. Which one of the following is not a way to conserve electricity?

(1) Use energy-saving bulbs in her room.
(2) Close the refrigerator door fully after use.
(3) Use the fan instead of the air-conditioner.
(4) Put the computer on sleeping mode instead of switching off.

20 Study the two set-ups below.



Set-up A



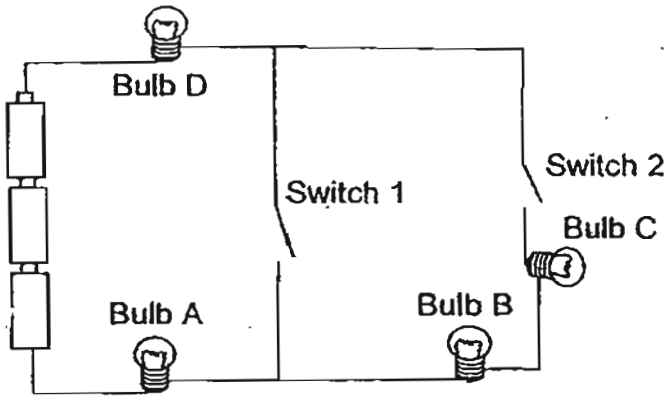
Set-up B

Which of the following statement(s) is/are true?

A: The bulbs in Set-up B are arranged in series.
B: The bulbs in Set-up A are brighter than the bulbs in Set-up B.
C: The batteries in Set-up B will last longer that the batteries in Set-up A.

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

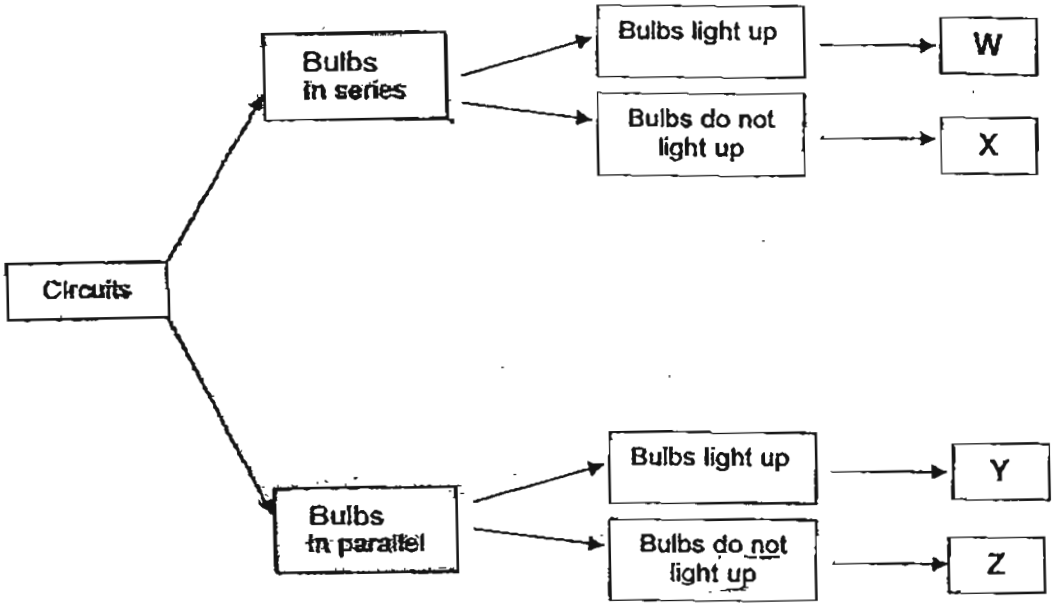
21 Study the circuit below.



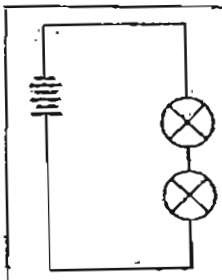
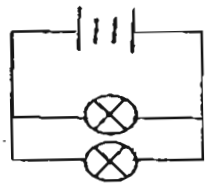
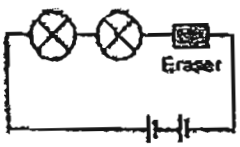
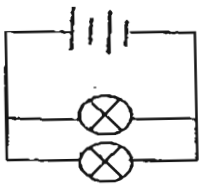
Which one of the following correctly shows the bulbs that will light up when the two switches were closed one at a time?

	Only Switch 1 is closed	Only Switch 2 is closed
(1)	A and B	C and D
(2)	A and D	B, C and D
(3)	A and D	A, B, C and D
(4)	B,C and D	A and D

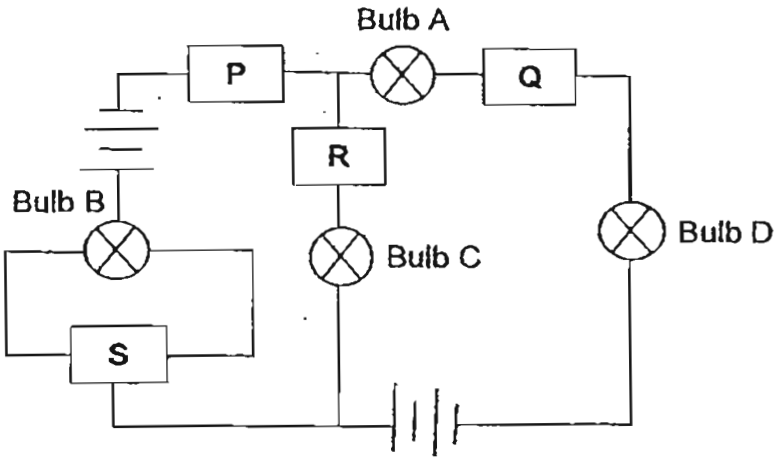
22 Study the flow chart below.



Which of the following matches the circuits shown in the table?

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

23 Jason set up an electrical circuit with materials, P, Q, R and S as shown below.



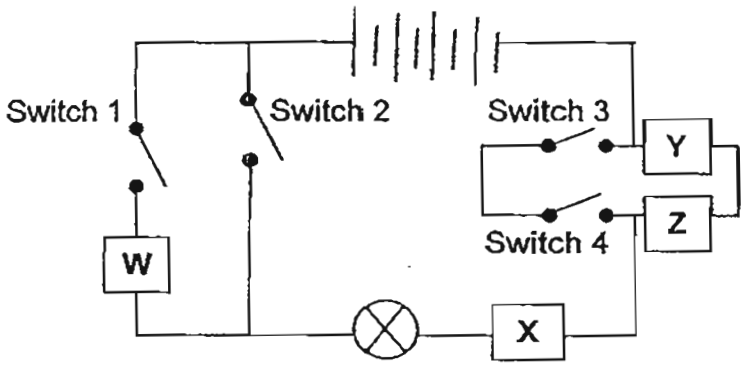
He recorded his observations in the table below.

Bulb	Did the bulb light up?
A	Yes
B	No
C	Yes
D	Yes

Jason was trying to find out _____.

(1) which material could conduct electricity best.
(2) if different materials could conduct electricity.
(3) if different materials affect the brightness of the bulb.
(4) if the arrangement of bulbs will enable the bulb to light up.

24 The diagram below shows an electrical circuit. W, X , Y and Z are objects placed in the circuit.



The table below shows what happens when the various switches were kept open only.

Switches	Did the bulb light up?
2 and 3 only	Yes
1 and 3 only	No
2 and 4 only	Yes
1 and 4 only	No

Based on the data above, which of the following is a non-conductor of electricity?

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

25 Joan planted 4 pots of chilli plants in garden soil. Each pot was given the same amount of fertiliser. Each pot of plant was given a specific amount of water each day and the height of the plant was observed after two weeks as shown below.

Pot	A	B	C	D
Amount of water given daily(ml)	5	10	15	20
Height of chilli plants at the end of 2 weeks(cm)	4	9	11	14

What was the aim of Joan's experiment?

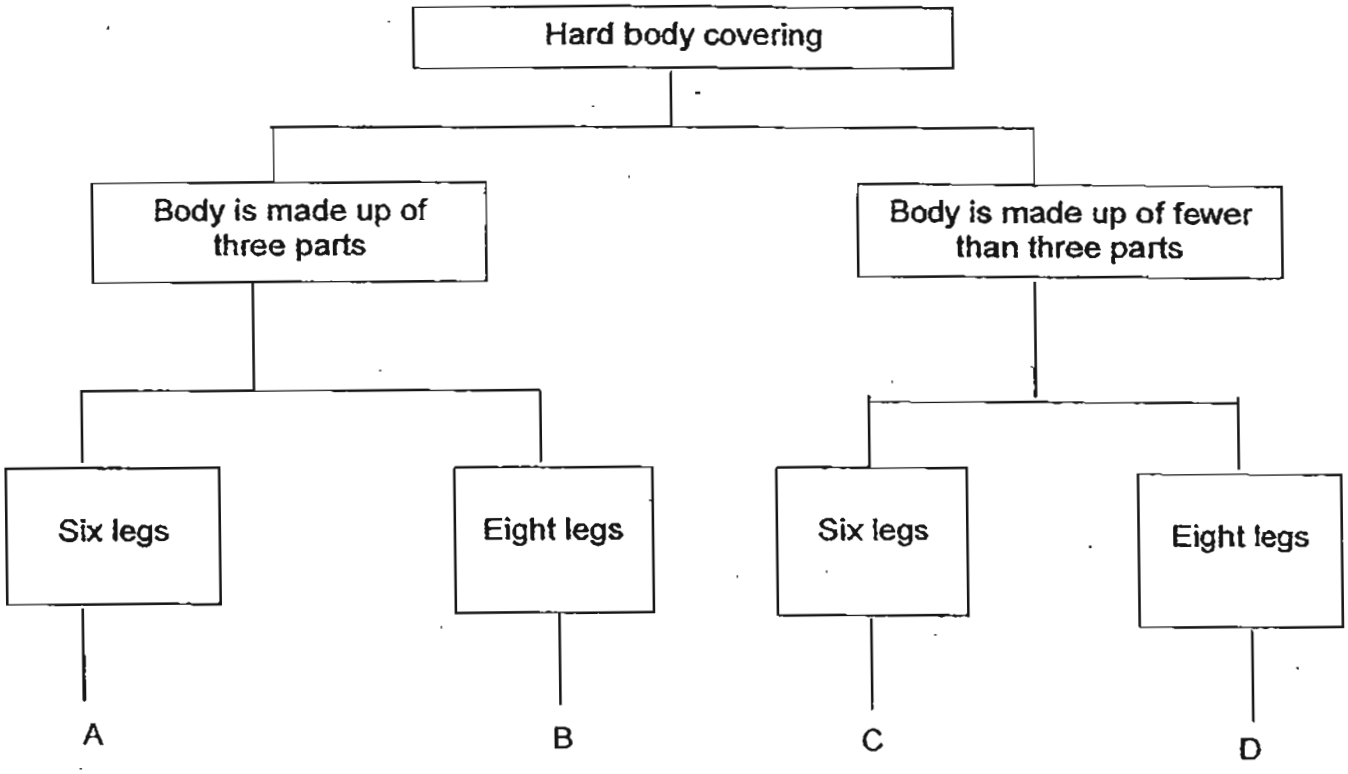
(1) To find out if fertiliser affects the growth of the plants.
(2) To find out if overcrowding affects the growth of the plants.
(3) To find out if the type of soil affects the growth of the plants.
(4) To find out if the amount of water affects the growth of the plants.

26 Which of the following statements about fungi are correct?

A: Fungi needs air, food and water to stay alive.
B: Fungi are plants but they cannot make their own food.
C: Fungi feed on plants and animals which are alive or dead.
D: Fungi are micro-organisms that break down food into simpler substances.

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

27 Study the classification table below.

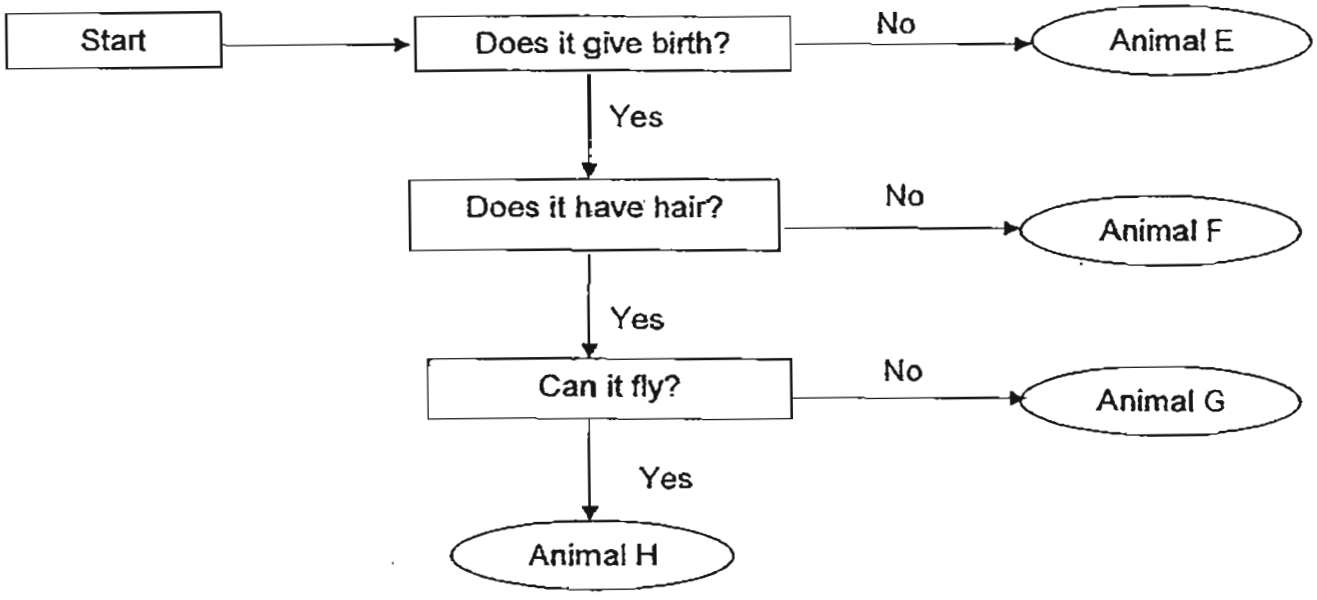


Munshi found the animal shown below in the garden. He noticed that it had a hard body covering.

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

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

28 The diagram below shows how some animals have been classified.

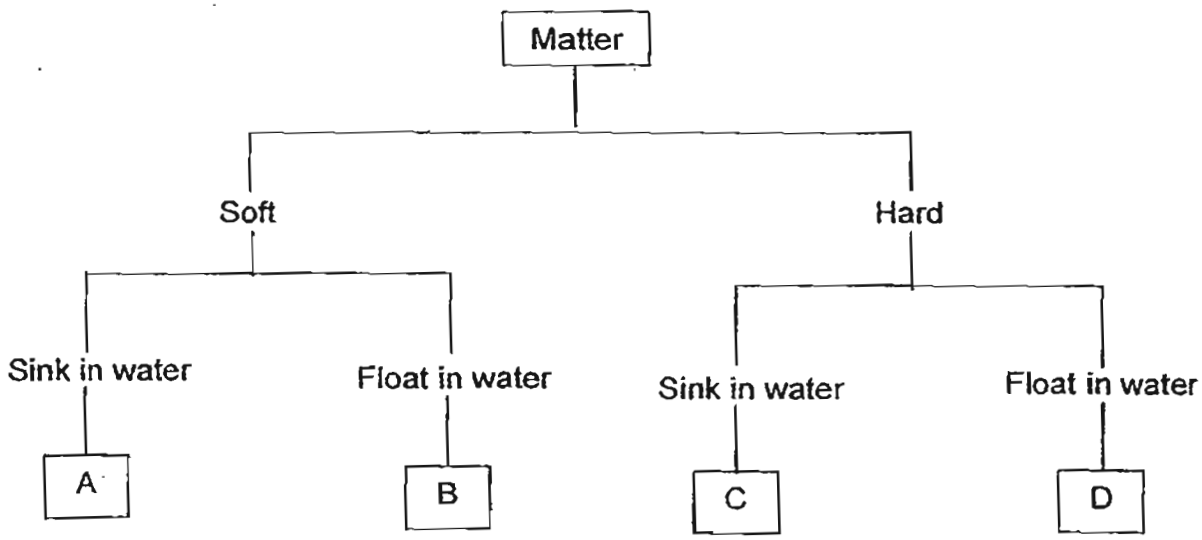


What is/are the similarities between Animal G and Animal H?

A: Both of them give birth.
B: Both of them can fly.
C: Both of them have hair.

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

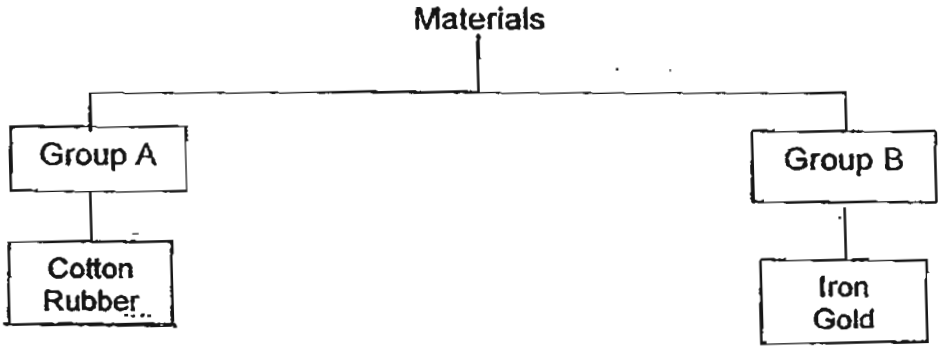
29 Look at the classification chart below.



In the chart above, where can a metal nail be placed?

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

30 Study the classification diagram below.



	Group A	Group B
(1)	Materials which are man-made	Materials which come from natural sources
(2)	Materials which are water-proof	Materials which are non water-proof
(3)	Materials which sink in water	Materials which float in water
(4)	Materials which come from plant parts	Materials which come from the ground

End of Part I

Rosyth School
First Semestral ssessment for 2011
STANDARD SCIENCE
Primary 5

Name: _____ Total Marks: 40

Class: Pr _____ Register No. _____ Duration: 1 h 45 min

Date: 12 May 2011 Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 31 to 44, give your answers in the spaces given in this Booklet B.

* This booklet consists of 14 pages.

Part II (40 marks)

For questions 31 to 44, write your answers in this booklet.

31 Leena observed some cells under a microscope. After some time, she observed that there were more cells.

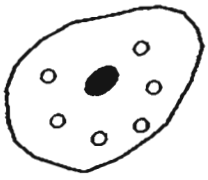
(a) Why was there an increase in the number of cells? [1]

She carried out an investigation to find out the effect of the amount of sugar on the number of cells. She then recorded her results in the table below.

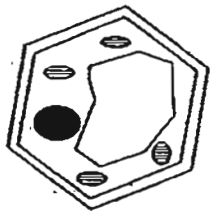
Amount of sugar (g)	Number of cells
5	12
7	20
9	34
11	50

(b) What was the relationship between the amount of sugar and the number of cells? [1]

32 The diagram below shows two types of cells.



Cell A



Cell B

(a) Identify the plant and animal cells. [1]

Plant Cell: _____

Animal Cell: _____

(b) What is found in the cytoplasm of a plant cell but not in an animal cell? [1]

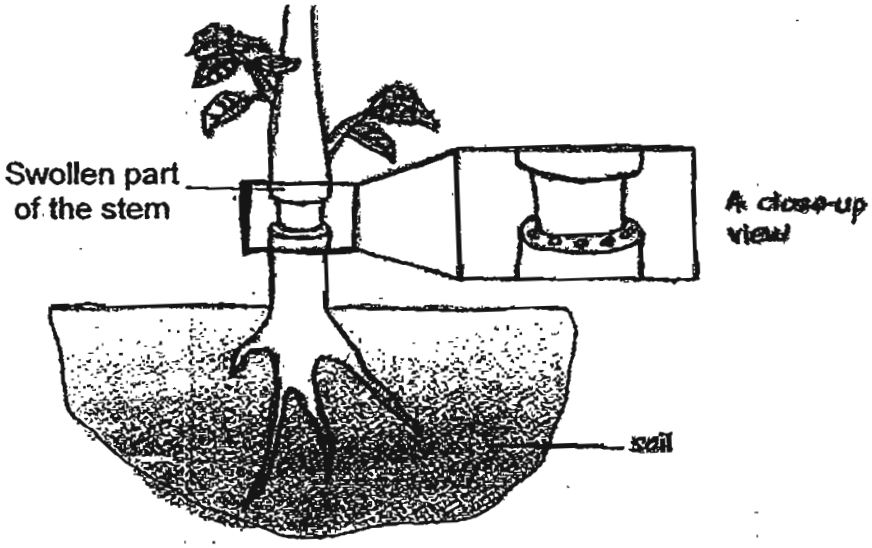
_____

(c) What is the function of the part mentioned in (b)? [1]

_____

_____

33 An outer ring of a stem was removed from a plant as shown below. A few days later, the stem above the cut-out area became swollen as shown below.

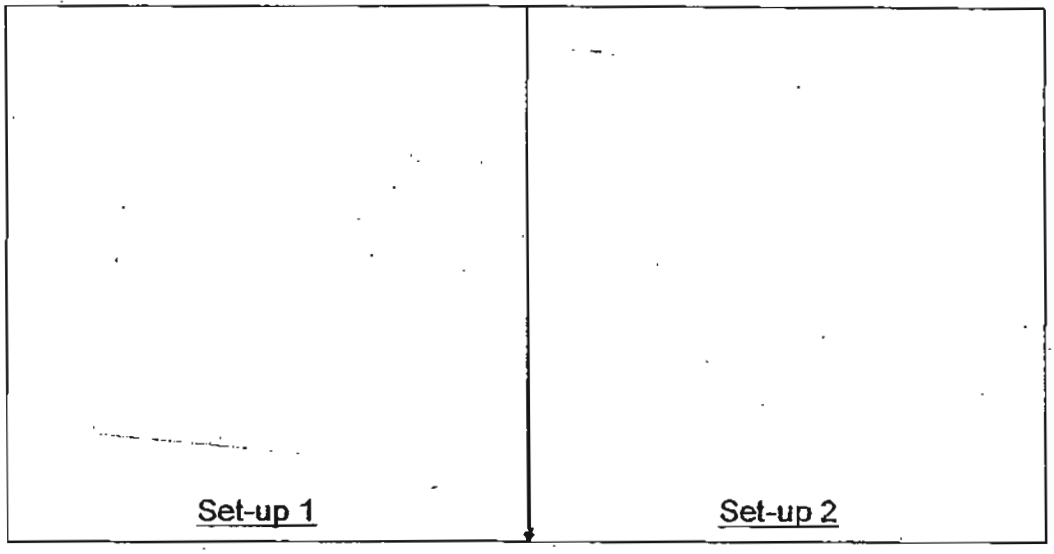


(a) Which tube of the plant transport system was removed? Explain your answer. [2]

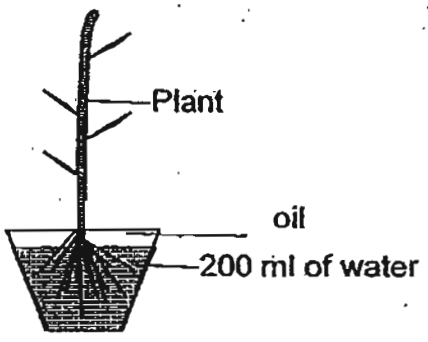
(b) After sometime, the roots began to die in the above plant. Explain why. [1]

34 Kate wanted to investigate if the number of leaves were more, would the amount of water absorbed by the plant be affected.

(a) Draw and label the two set-ups needed for the experiment in the space provided below. [2]



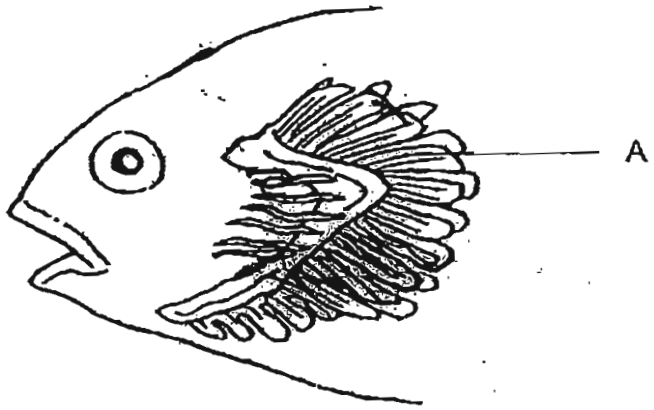
In another set-up, she removed all the leaves of a plant as shown below to observe the amount of water in the container.



After a few days, she observed that there was 180ml of water in the container.

(b) What conclusion can she make from the result obtained? [1]

35 Adeline opened up the gill cover of a fish and observed the part labelled A as shown below.



(a) Which part of the human body system has the same function as part A? [1]

_____

(b) State the similar function the two parts have. [1]

_____

_____

36 Mr Lim carried out four different activities. He measured his pulse rate and his breathing rate for each activity that he carried out. The results were recorded in the table below.

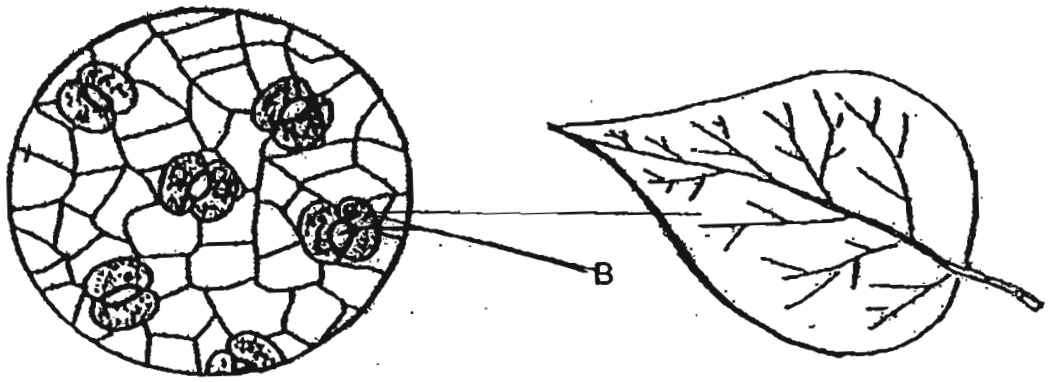
Pulse rate (Heartbeats per minute)	Breathing rate (Number of inhalations per minute)
60	25
130	85
70	35
120	70

(a) What is the relationship between Mr Lim's pulse rate and his breathing rate? [1]

(b) Name the two systems involved in the above activities. [1]

(c) Explain how the two systems work together for the above relationship mentioned in (a). [2]

37 Arul did a cross-section of the Leaf A and observed it under a microscope. He observed structure B as shown below.



Leaf A

(a) Identify structure B. [1]

_____

(b) What is the function of structure B? [1]

_____

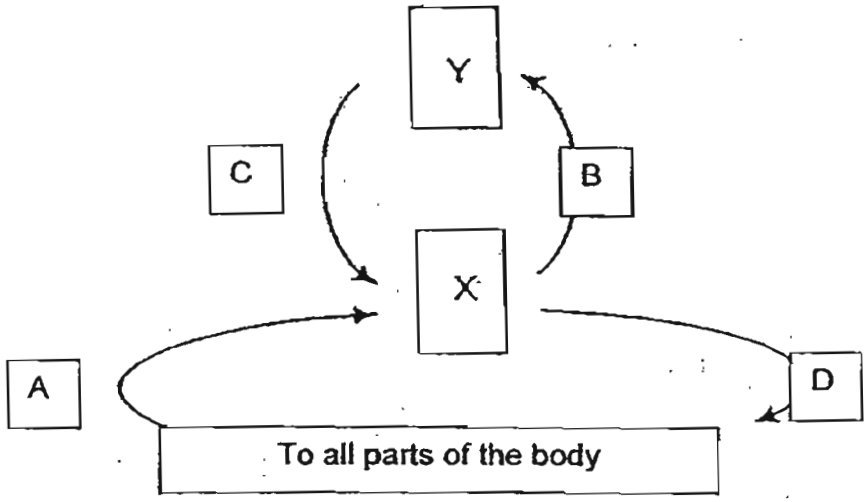
_____

(c) Describe how you can show that there is more of structure B on the underside of a leaf than on the upper side of a leaf. [2]

_____

_____

38 The diagram below shows the movement of blood in the human body.



Arrows A, B, C and D represent the movement of blood. Boxes X and Y represent two organs.

(a) Name the organs which X and Y represent. [1]

X: _____

Y: _____

(b) Which arrow(s) should represent the movement of blood rich in carbon dioxide? [1]

_____

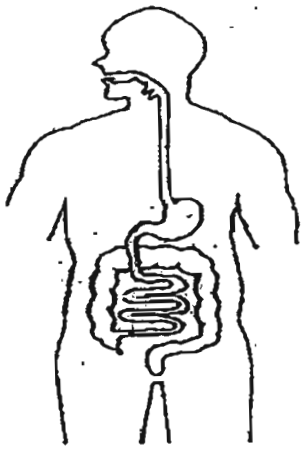
(c) Explain why the amount of oxygen in the blood is lower at A than at C. [1]

_____

_____

_____

39 Weiwei drew the digestive system of a human body as shown below.



(a) What will happen if the large intestine was not working properly in the system? [1]

_____

_____

Weiwei used a knife to cut a piece of carrot.

(b) Which part of the digestive system does a similar action take place? Label and name the part in the system above. [1]

(c) Explain how that part of the digestive system in (b) work similar to a knife. [1]

_____

_____

40 Ravi grew two pots of tomato plants. He observed the growth of the plants. He wanted to find out if the plants grew better in garden soil or clayey soil. Ravi felt that there were some variables that could affect the growth of the tomato plants. The variables are shown in the box below.

Variables

- Type of soil
- Amount of soil
- Location of plants in the garden

(a) Identify the variable(s) that must be kept the same and the variable(s) that can be changed for a fair test. [1]

Variable(s) that must be kept the same	Variable(s) that can be changed

(b) How does the location of plants in the garden affect the growth of the tomato plants? [1]

_____

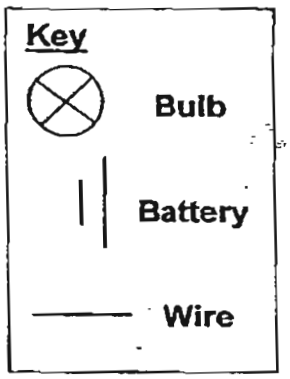
_____

41 Ivy was given the following items to find out if the number of bulbs in a circuit will affect the brightness of the bulb.

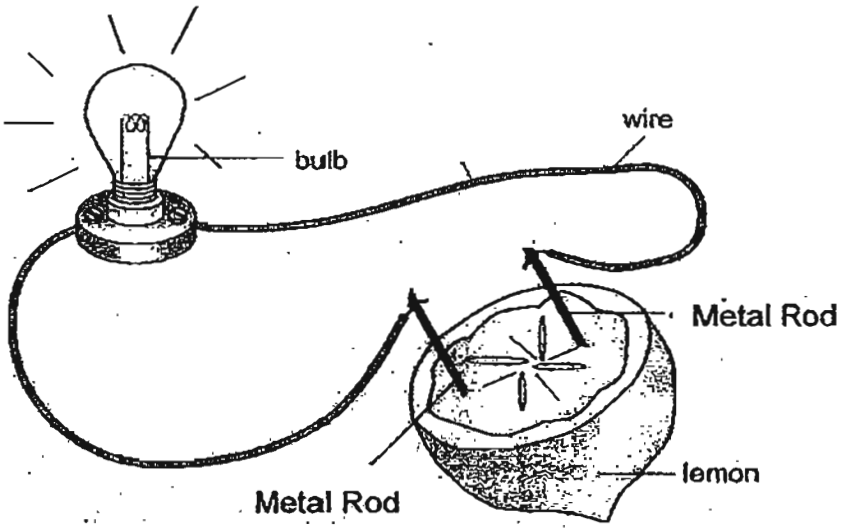
- Four bulbs.
- Two batteries.
- Some wires

Draw two circuit diagrams below to show how she would carry out the experiment. [2]

Experimental set-up	Circuit diagram
1	
2	



42 Ivan set up an electric circuit using a lemon and two metal rods. The bulb was lit as shown below.



(a) Which electrical component does the lemon represent in a circuit? [1]

_____

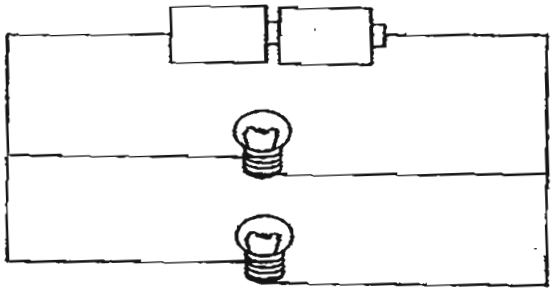
He replaced the metal rods with plastic rods.

(b) Would the bulb light up? Explain your choice. [1]

_____

_____

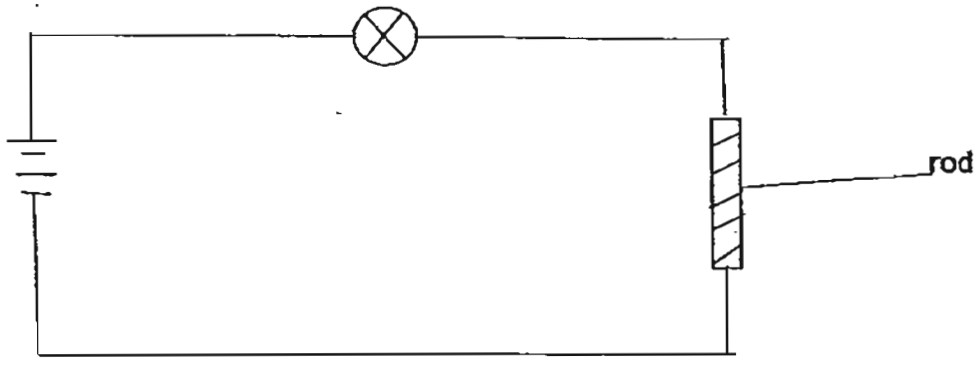
43 Study the diagram below carefully.



(a) How are the bulbs arranged? State an advantage of this arrangement at your home. [2]

(b) Draw a circuit diagram to represent the electric circuit above. [2]

44 Susan prepared an electric circuit using two batteries , a bulb, a rod and some wires. She changed the rod using materials K and L. The bulb was lit at both times.



Set up X

The table below shows the number of paper clips that were picked up when materials K and L were used to make the rod.

Materials used to make the rod	Number of paper clips picked up
K	42
L	0

(a) Why do you think Material K was able to pick up the paper clips only when the electric circuit was closed? [2]

_____

_____

(b) Give an example of Material L. [1]

_____

End of Paper

ANSWER SHEET

EXAM PAPER 2011

SCHOOL : ROSYTH PRIMARY
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
3	2	1	2	3	4	2	3	1	1	3	1	3	2	3	2	1

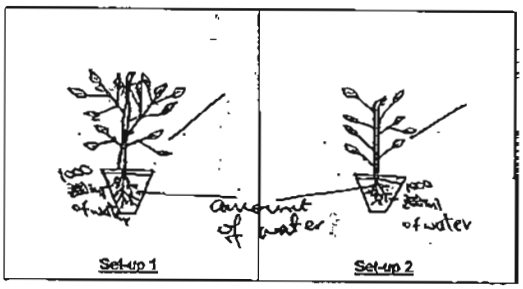
Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	4	4	3	4	2	1	4	1	1	3	3	4

31)a)There was an increase in the number of cells because it was reproducing.
b)The greater/more the amount of sugar, the greater/higher/more the number of cells.

32)a)Plant Cell: Cell B Animal Cell: Cell A
b)Chloroplasts
c)It absorbs/traps sunlight/light of the plant to make food/photosynthesis

33)a)Food-carrying tubes. Food cannot be transported and thus it has been stored causing the stem to swell.
b)The roots did not receive any food.

34)a)



b)Plants without leaves still take in water for the plant.

35)a)Lungs.
b)They carry out the exchange of gasses/Both allow gaseous exchange to take place.

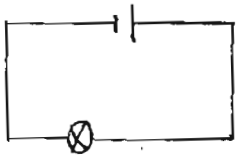
36)a)The faster Mr Lim's pulse rate, the faster his breathing rate per minute.
b)The circulatory system and the respiratory system were involved in the above activities.
c)The heart beats faster to transport blood with more oxygen, those takes in more air, so the breathing rate increases to take in more oxygen.

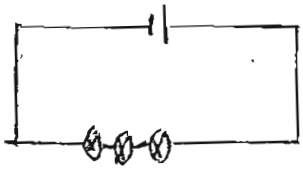
37)a)Structure B is a Stomata.
b)The function of structure B is to give out oxygen and take in carbon dioxide.
c)Place leaf A in a beaker of hot water. There will be more bubbles observed on the underside of the leaf.

38)a)X: Heart Y: Lungs
b)A and B.
c)Oxygen in the blood is lower at A as it has been used by the body(cell)Y. Oxygen in the blood is higher at C as it has just received oxygen from the lungs.

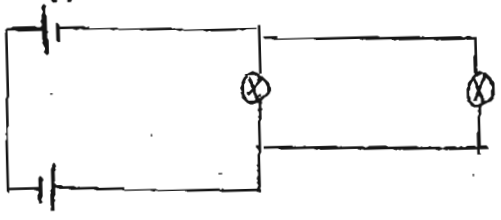
39)a)The excess water in the undigested food will not be absorbed properly.
b)The mouth has teeth to cut the food into smaller piece.

40)a)Amount of soil. Type of soil
Location of plants in the garden
b)Different parts of the garden receive different amount of light.

41)1) 

2) 

42)a)Battery.
b)No, the plastic rods are insulators and the electricity cannot flow through it.

43)a)It is arranged parallel. Even though, one bulb is fused, the rest of the bulbs will still light up, unlike in the series.
b) 

44)a)Electricity flowed through the circuit and the rod become an electromagnet allowing it to pick up the paperclips.
b)Graphite.