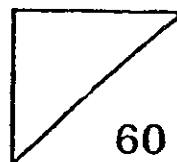




Rosyth School
Semestral Examination 1 for 2013
STANDARD SCIENCE
Primary 5



Name: _____

Total
Marks:

Class: Pr 5 - _____ Register No. _____ Duration: 1 h 45 min

Date: 15 May 2013 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, write your answers in the spaces given in Booklet B.

* This booklet consists of 18 pages.

Part I (60 MARKS)

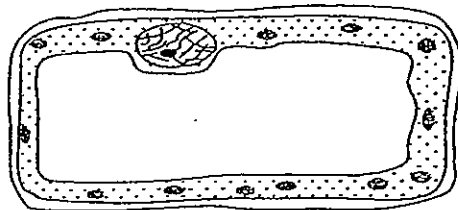
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Which of the following is/are a unit of life for all living things?

- A : cell
- B : organ
- C : system

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

2. Which group of living things contains cells as shown below?

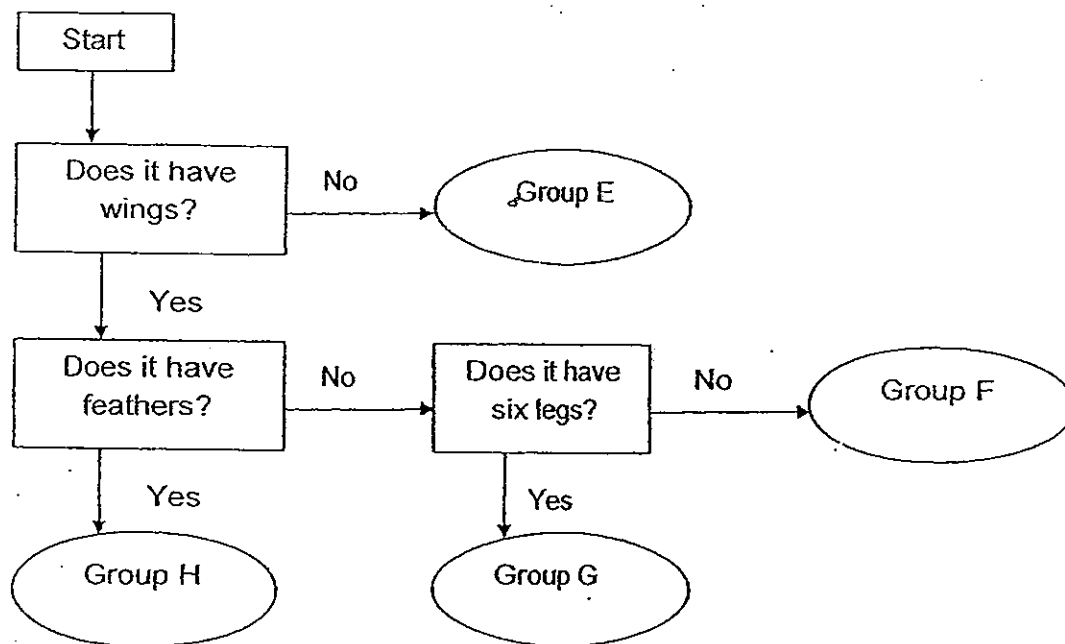


- (1) Plants
- (2) Fungi
- (3) Animals
- (4) Bacteria

3. Which system helps the animal to obtain oxygen for survival?

- (1) Skeletal
- (2) Muscular
- (3) Digestive
- (4) Respiratory

4. Study the flowchart below.



Which groups may consist of mammals?

- (1) E and H
- (2) E and F
- (3) G and H
- (4) F and G

5. Which one of the following is true about all animal cells?

- (1) All have a nucleus.
- (2) All have a regular shape.
- (3) All do not have vacuoles.
- (4) All do not have a cell wall.

6. A group of students took a sample of cells and observed them under a microscope. There were no chloroplasts in the cells. They made the following statements:

Andrew: The cells cannot carry out photosynthesis.

Jane: The cells do not have chloroplasts but can still be plant cells.

David: The cells do not have a cell wall because they do not have chloroplasts.

Mary: The cells cannot be from a plant because they do not have chloroplasts.

Which of them is/ are correct?

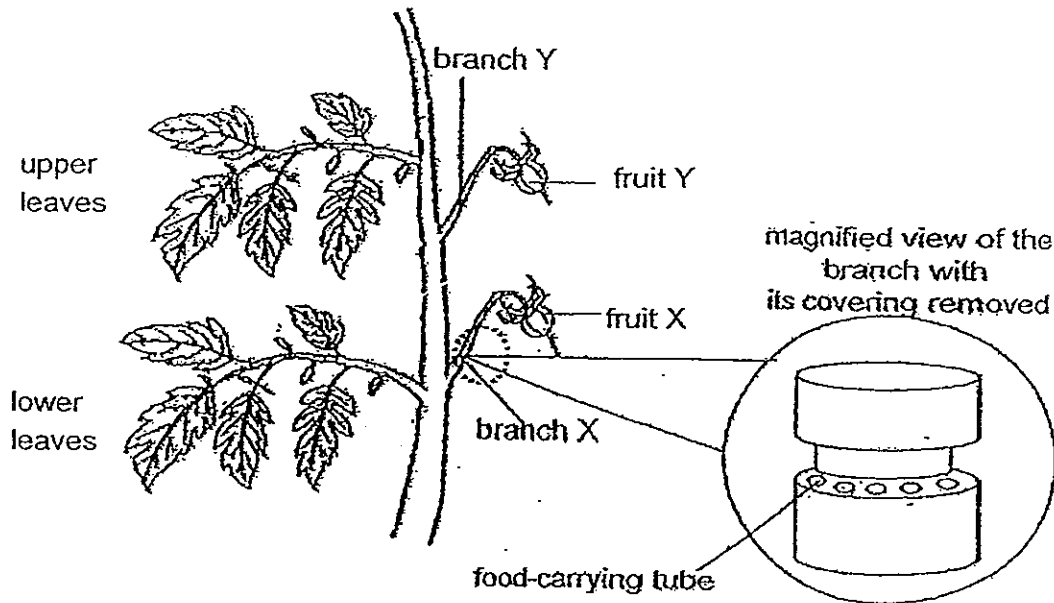
- (1) Andrew only
 - (2) David and Mary only
 - (3) Andrew and Jane only
 - (4) Andrew, David and Mary only
7. Mr Tan carried out an experiment by placing identical cells into salt solutions, each containing different amounts of salt. After some time, he then measured the size of the cells and recorded it in the table below.

	Amount of salt (g) dissolved in 100ml of water	Size of the cell (units)
A	10	7
B	0	8
C	30	5
D	20	3

Which of the above is an experimental control set-up?

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

11. Two fruits of similar size were found growing on a plant. A farmer removed a part of the branch as shown below.

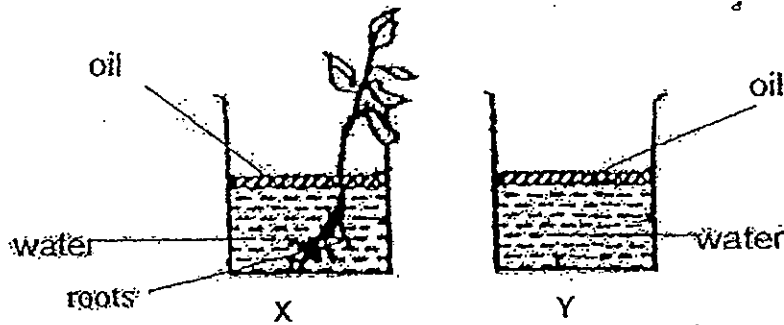


After a few weeks, he noticed that fruit Y had grown but fruit X had not. Which of the following statements explains this observation?

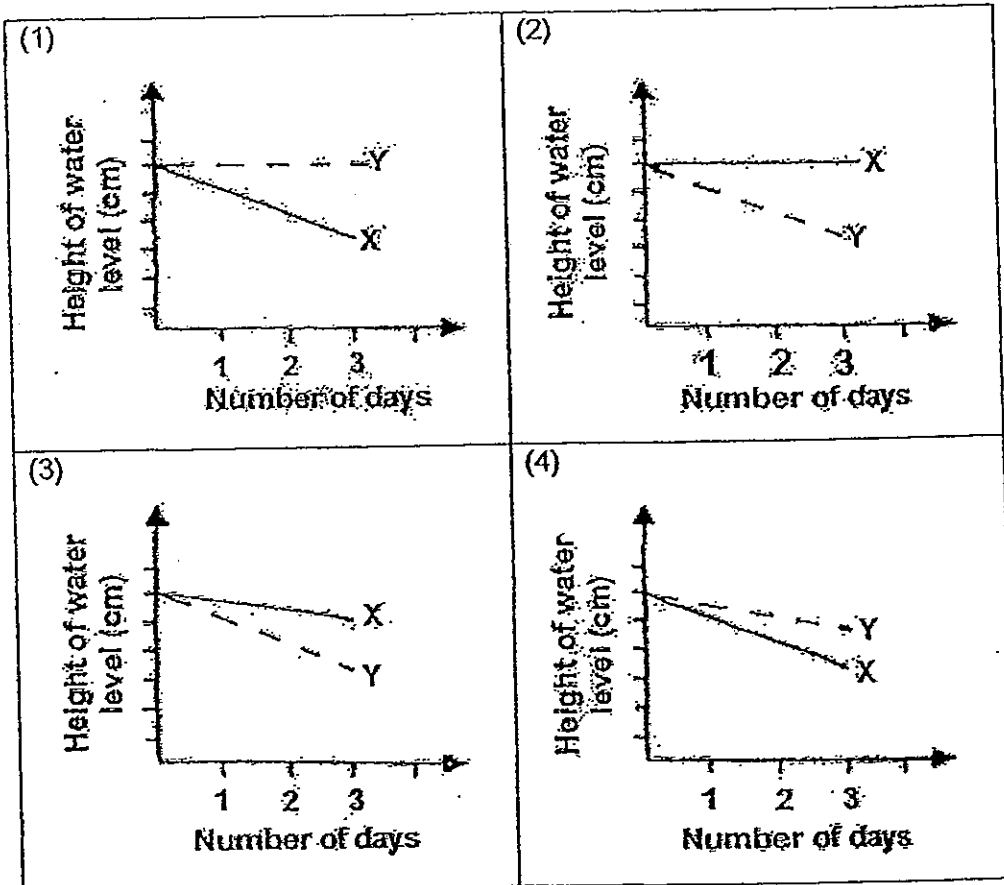
- (1) Food stored in fruit Y is not transported to fruit X.
- (2) Only the upper leaves can make food for branch Y.
- (3) Water taken in by the roots can be transported to branch Y only.
- (4) Food made by the leaves was transported to fruit Y but not fruit X.

12. Sally poured in an equal amount of water in each of the Beakers X and Y. She placed a balsam plant with roots in Beaker X then added a thin layer of oil to each beaker.

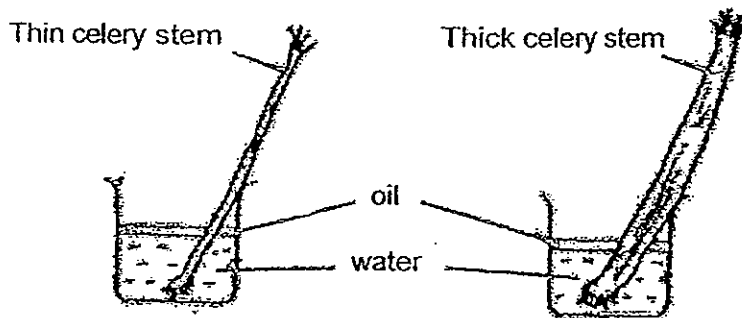
Next, she placed both beakers near a window and recorded the height of the water level in each beaker over a period of 3 days.



Which one of the following graphs shows correctly the changes in the water level in both Beakers X and Y?



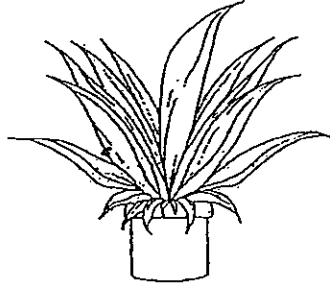
13. Study the experimental set-up below.



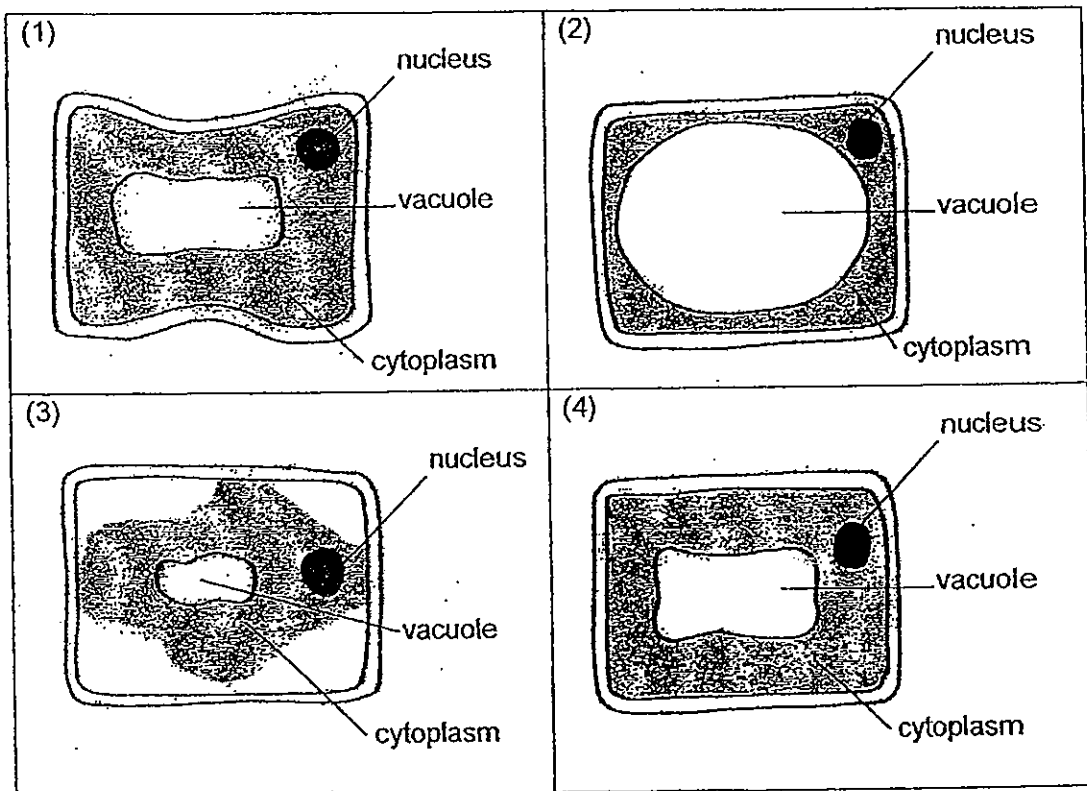
Which one of the following is a possible aim for the above set-up?

- (1) To find out if plants take in water.
- (2) To find out if plants need water-carrying tubes to transport water.
- (3) To find out if the thickness of the stem will affect the rate at which the plant makes food.
- (4) To find out if the number of water-carrying tubes will affect the rate of water taken in by the plants.

14. The plant below was left in the sun for a month without water. A sample of its cells was then taken and viewed under a microscope.



Which of the following are you most likely to see?



15. In which of the following parts can digestive juices be found?

- A: Mouth
- B: Stomach
- C: Small intestine
- D: Large intestine

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

16. Which system transports digested food to all parts of the body?

- (1) Muscular
- (2) Digestive
- (3) Circulatory
- (4) Respiratory

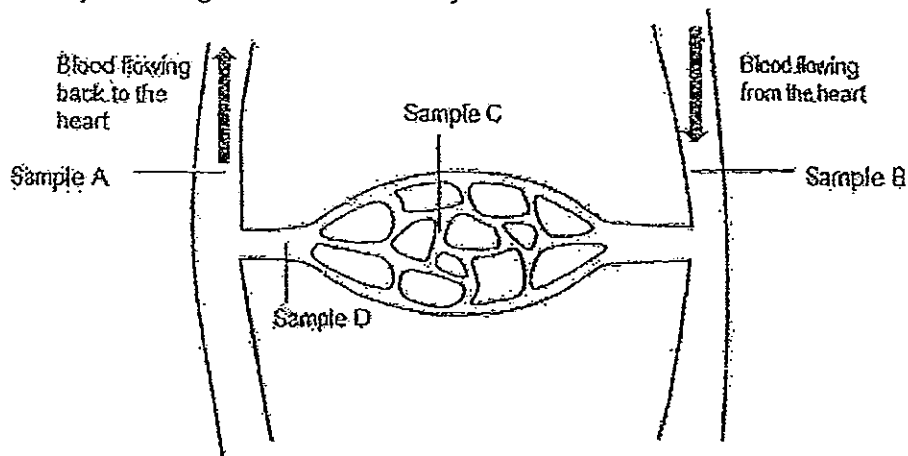
17. The table below shows Andrew's pulse rate when he carries out three different activities.

Activity	Pulse rate per minute
A	80
B	105
C	60

Which of the following is likely to represent the three activities correctly?

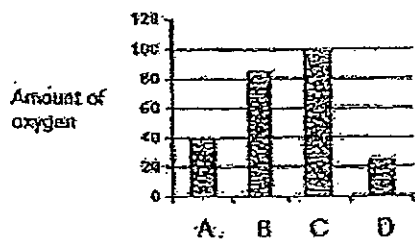
	Activity A	Activity B	Activity C
(1)	Playing soccer	Walking along the beach	Sleeping
(2)	Walking along the beach	Playing soccer	Sleeping
(3)	Sleeping	Walking along the beach	Playing soccer
(4)	Sleeping	Playing soccer	Walking along the beach

21. Study the diagram below carefully.

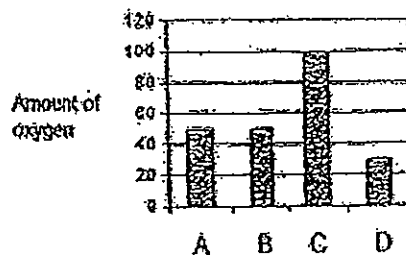


Blood samples A, B, C and D were taken from different blood vessels in the body. Which graph most appropriately shows the amount of oxygen in the blood samples?

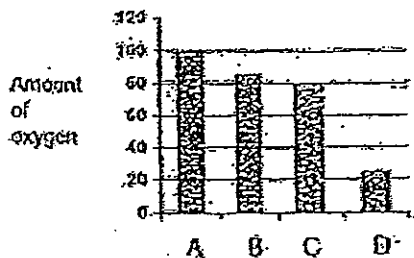
(1)



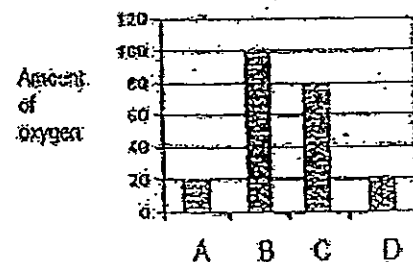
(2)



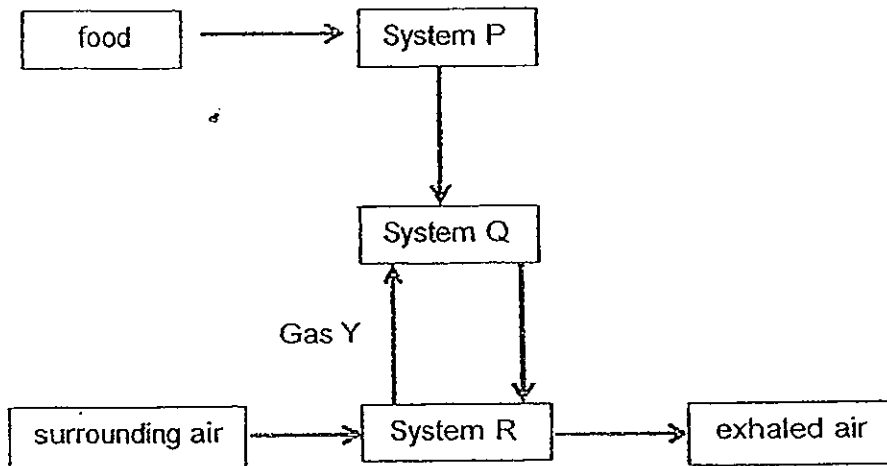
(3)



(4)



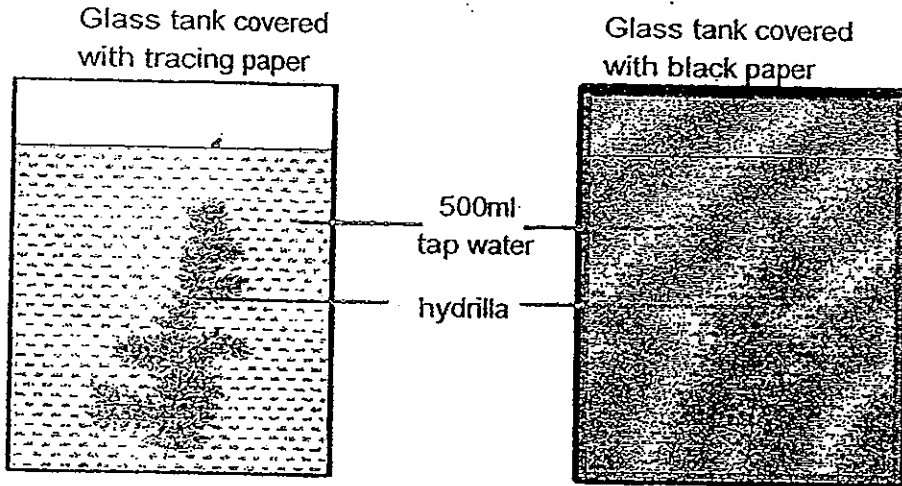
22. The diagram below shows how food and gases are transported in the human body.



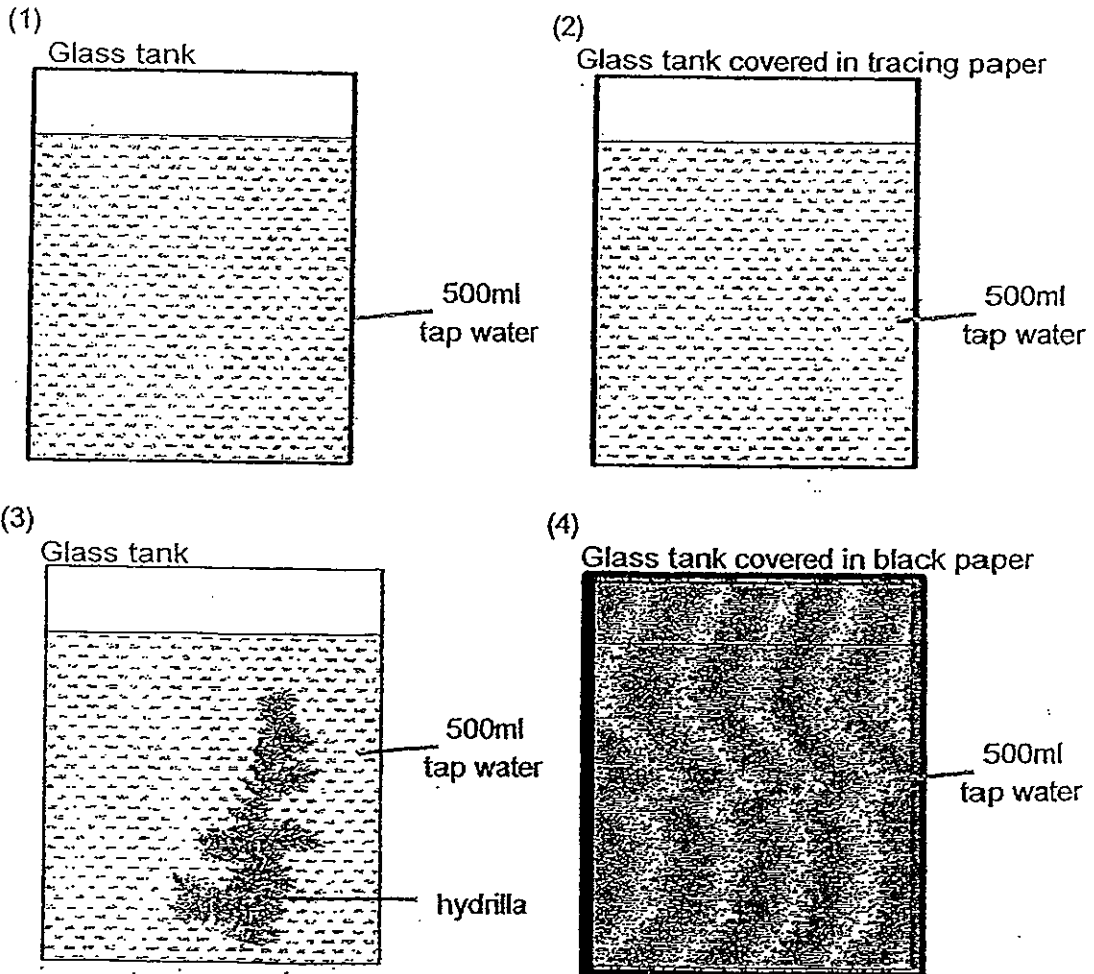
Which systems do P, Q and R represent and what is Gas Y?

	System P	System Q	System R	Gas Y
(1)	Digestive	Respiratory	Circulatory	Carbon dioxide
(2)	Digestive	Circulatory	Respiratory	Carbon dioxide
(3)	Digestive	Respiratory	Circulatory	Oxygen
(4)	Digestive	Circulatory	Respiratory	Oxygen

23. Kester set up an experiment as shown below. He wanted to find out how the amount of sunlight affects the growth of a hydrilla plant.



Which one of the following set-ups should he use as a control experiment?



24. Jason scratched Materials A, B, C and D with the following objects. He recorded 'Yes' if the material was scratched by the object and 'No' if the material was not scratched by the object as shown below.

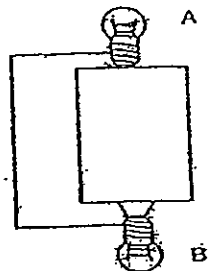
	Scratched by:			
	Metal ruler	Wooden rod	Glass rod	Chalk
Material A	yes	yes	yes	no
Material B	yes	no	no	no
Material C	no	no	no	no
Material D	yes	no	yes	no

Arrange the materials in terms of their hardness. Begin with the material with the least hardness.

- (1) C, B, D, A
 - (2) C, D, B, A
 - (3) A, D, B, C
 - (4) A, B, D, C
25. Which one of the following materials are conductors of electricity?

- (1) Plastic and Iron
- (2) Glass and Steel
- (3) Silver and Copper
- (4) Nylon and Aluminium

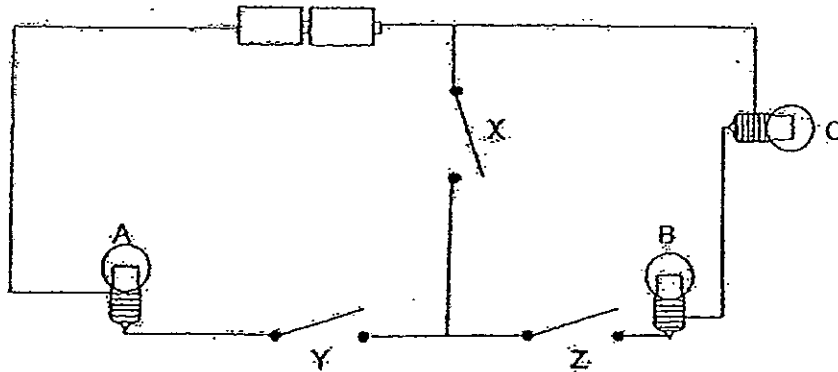
26. Ken connected a battery and 2 bulbs as shown below.



Which of the following observations would Ken observe?

- (1) Both A and B lit up.
- (2) A lit up but B did not.
- (3) B lit up but A did not.
- (4) Both A and B did not light up.

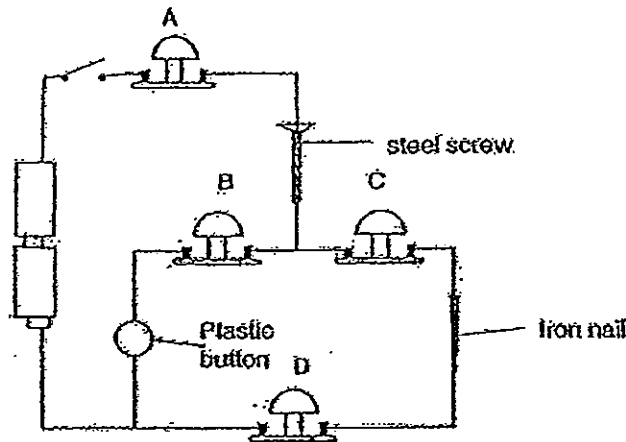
27. Study the circuit below.



If switches X and Y are closed, which bulb(s) will light up?

- | | |
|------------------|-----------------------|
| (1) A only | (2) B and C only |
| (3) A and C only | (4) None of the bulbs |

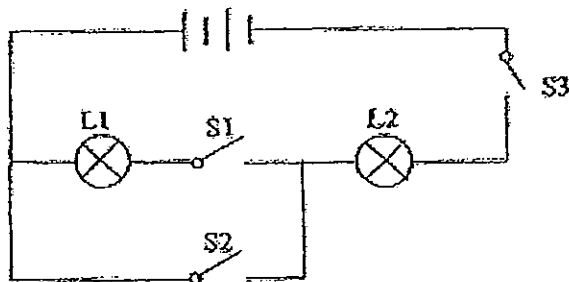
28. Study the circuit below. There are 4 bells, A, B, C and D connected in the circuit.



Which of these bells will ring when the switch is closed?

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

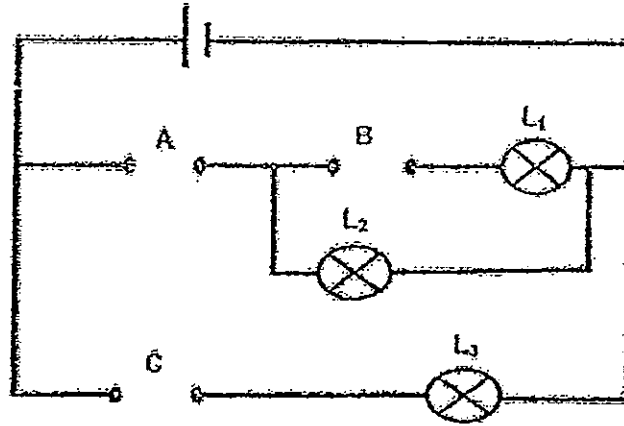
29. A circuit is set up using two bulbs, L1 and L2, and three switches, S1, S2 and S3 as shown in the diagram below.



Which one of the following set-ups is correct?

	S1	S2	S3	L1	L2
(1)	closed	open	open	lighted up	not lighted up
(2)	open	closed	open	not lighted up	lighted up
(3)	closed	open	closed	lighted up	not lighted up
(4)	open	closed	closed	not lighted up	lighted up

30. Tom has 3 rods, P, Q and R, made of different materials. He placed them in various positions, A, B and C, of the circuit shown below.



The results of the experiment were shown in the table below. When any of the bulbs, L1, L2, or L3, lit up during the experiment, a tick (✓) was placed in the box.

Position where rods were placed			Bulbs		
A	B	C	L1	L2	L3
Rod P	Rod Q	Rod R		✓	✓
Rod Q	Rod R	Rod P			✓

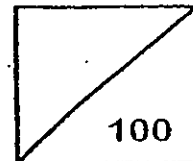
Based on the above results, which one of the following materials are conductors of electricity?

- (1) P and Q only (2) P and R only
 (3) Q and R only (4) P, Q and R

End of Booklet A



Rosyth School
Semestral Examination 1 for 2013
STANDARD SCIENCE
Primary 5



Name: _____

Total
Marks:

Class: Pr 5- _____ Register No. _____ Duration: 1 h 45 min

Date: 15 May 2013 Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 31 to 44, write your answers in the spaces given in this booklet.

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

* This booklet consists of 11 pages.

PART II (40 MARKS)

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

31. A group of students carried out an experiment to find out the effectiveness of different types of herbs in soap against bacteria. They put an equal amount of soap in 4 petri-dishes and measured the area in which bacteria grew.

The results were recorded as shown below.

Set-up	Area of bacterial growth (cm ²)
Soap only	15.0
Soap + Herb A	9.2
Soap + Herb B	12.5
Soap + Herb C	2.1

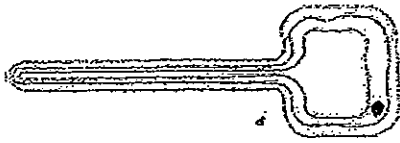
- (a) How do bacteria multiply? (1 mark)

- (b) What is the purpose of the set-up that contains only soap? (1 mark)

- (c) Which herb would you recommend to be used in the homemade soap? Explain your choice. (1 mark)

32. State one similarity and one difference between a root hair cell and a human cheek cell with regard to the parts of a cell. (2 marks)

Root hair cell



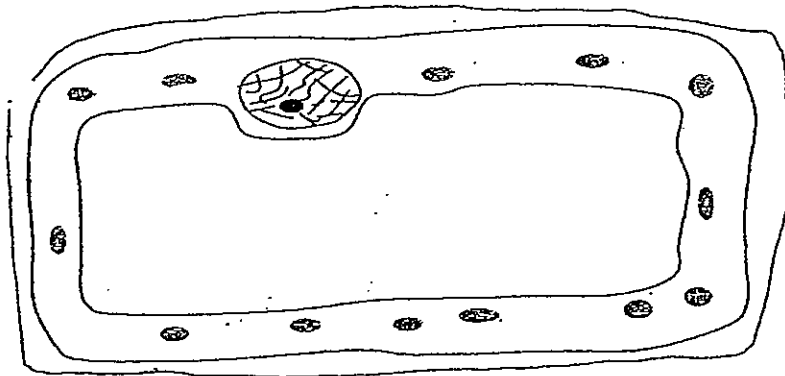
Human cheek cell



Similarity:

Difference:

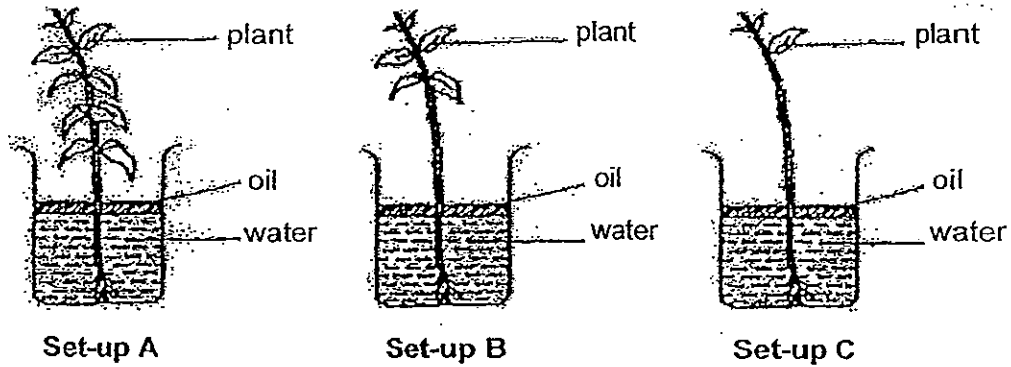
33. Study the plant cell drawn by Sammy.



- (a) Draw the missing part of the cell and label it. (1 mark)
- (b) State the function of the missing part in (a). (1 mark)

- (c) Label the part of the cell that controls cell activities. (1 mark)

34. Three plants were placed in identical beakers containing water at the same level as shown below. They were left near a window for an hour.



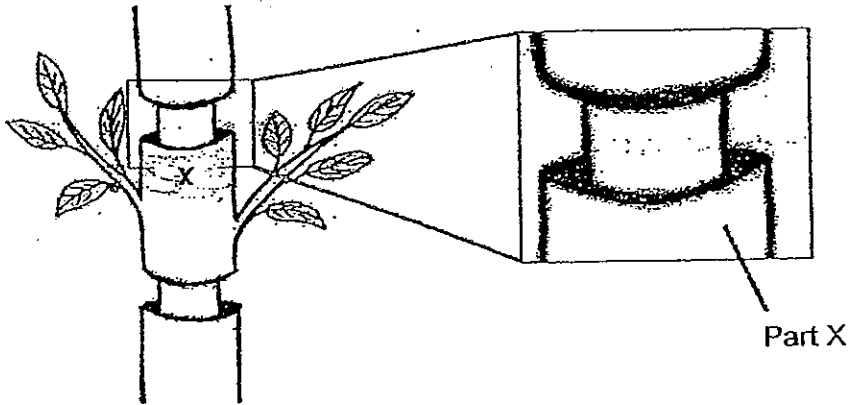
At the end of the experiment, the height of the water in each jar was measured.

- (a) What is the aim of the experiment above? (1 mark)

- (b) Describe how the water reaches the leaves. (1 mark)

- (c) Why do all plant cells need water? (1 mark)

35. Jordan removed two rings of food carrying tubes from a plant for an experiment as shown below.



- (a) What will happen at Part X? (1 mark)

- (b) Explain your observation in (a). (1 mark)

- (c) What will happen to the plant after some time? Why? (1 mark)

36. Read the following carefully.

- A: The lungs expand.
- B: The air goes into the lungs.
- C: Air goes through the nose.
- D: The air goes into the windpipe.
- E: Hairs in the nose trap dust and dirt present in the air.

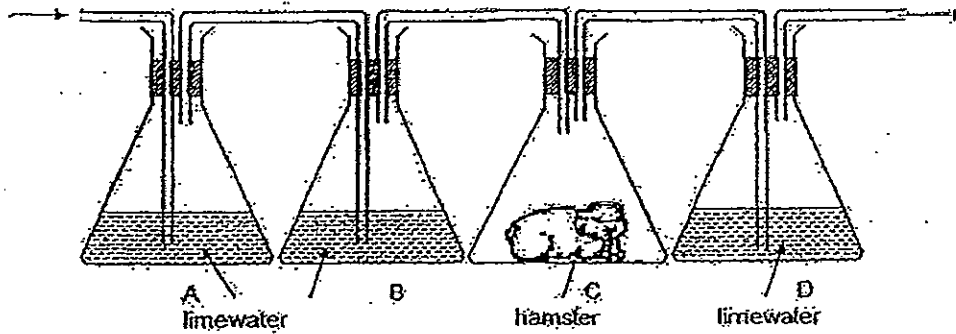
(a) Arrange them in the correct order to describe what happens during breathing. The first one has been done for you. (1 mark)



(b) What happens when air enters the lungs? (1 mark)

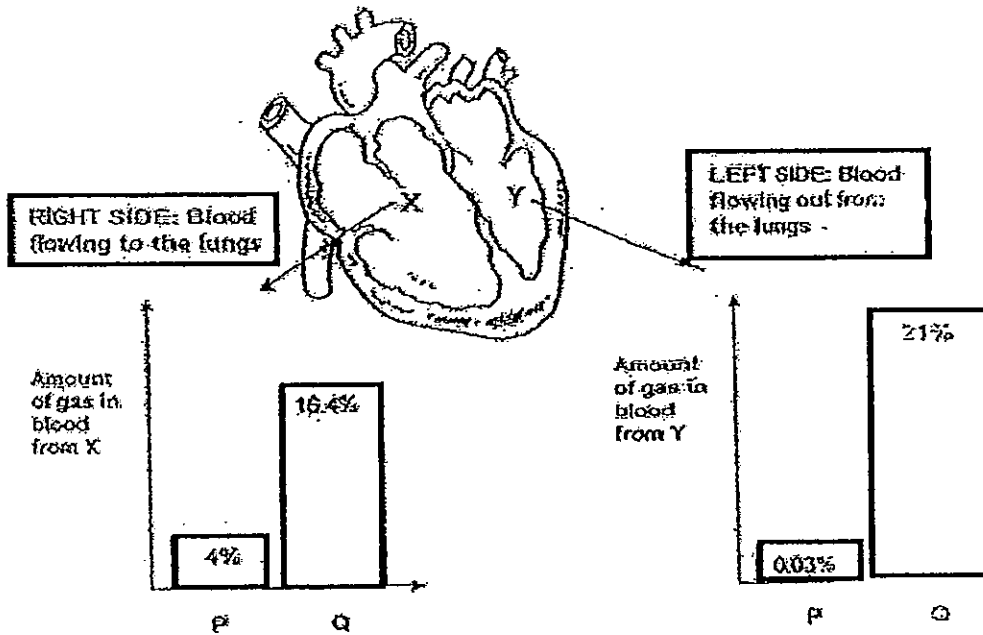
37. Eric studied an experiment as shown below.

Air pumped in.



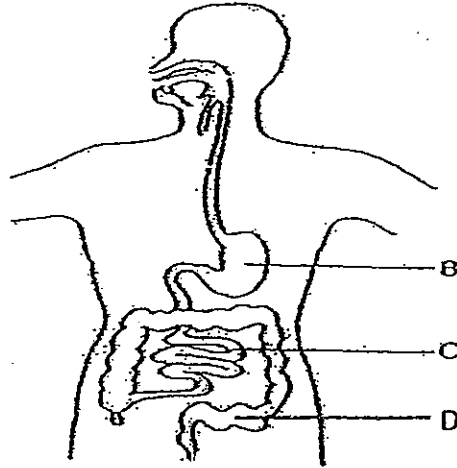
(a) What will happen to the limewater in D? (1 mark)

38. The diagram below shows a human heart. There are two parts labelled X and Y. Gases P and Q are found in parts X and Y. The amount of P and Q found in X and Y is represented in the graphs below.



- (a) Identify gas P and Q (1 mark)
- (i) P is _____
- (ii) Q is _____
- (b) Describe how the circulatory system and the respiratory system work together to ensure that Gas P is removed from the body. (2 marks)

39. The diagram below shows the human digestive system.



(a) What are the organs labelled B and C? (1 mark)

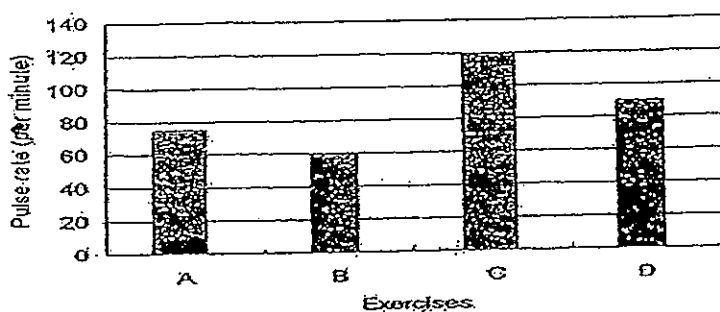
B: _____

C: _____

(b) State the function of organ D. Explain why this function is important to the human body. (2 marks)

(c) Would you agree that the digestive system is more important than the circulatory and respiratory systems. Explain your choice. (1 mark)

40. John carried out an experiment to find out the change in pulse rate after exercising. After each exercise, he measured his pulse rate. He recorded the results and drew a graph as shown below.



- (a) Arrange the exercises, starting with the least vigorous to the most vigorous. (1 mark)

- (b) Explain why his pulse rate is faster for more vigorous exercises. (1 mark)

John also measured his breathing rate after each activity. The results are shown in the table below.

Type of Activity	Pulse rate	Breathing Rate
A	78	40
B	60	20
C	120	80
D	90	65

- (c) What is the relationship between John's pulse rate and his breathing rate? (1 mark)

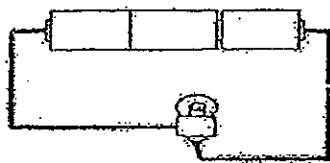
- (d) Name the two systems that are involved in the above activities. (1 mark)

41. The properties of 3 materials are as stated below.

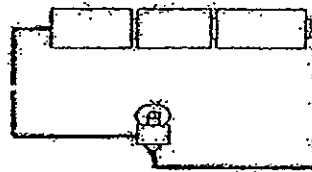
Properties	Material A	Material B	Material C
Strength	weak	strong	medium
Hardness	soft	hard	hard
Light or heavy	heavy	light	light
Waterproof	waterproof	not waterproof	waterproof

(a) Which material would you use to make a beach ball? Explain your answer. (1 mark)

42. Aaron used new batteries and bulbs of similar voltage to set up 2 circuits as shown below.



Set-up C



Set-up D

(a) State the difference between the brightness in the bulb in set-up C and set-up D? (1 mark)

(b) What has caused the above difference in set-up C? (1 mark)

43. Kenny wants to find out how the number of batteries in a circuit will affect the brightness of a bulb. State the following variables. (3 marks)

(a) Measured variable:

(b) Changed variable:

(c) Variable to be kept the same:

44. Helen had a battery and a bulb as shown in figure 1.

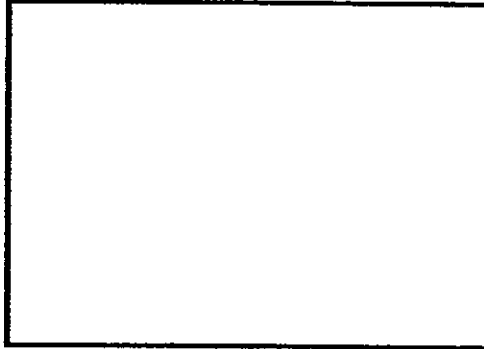


Figure 1

- (a) Connect the battery and bulb above to form a closed circuit. Use lines to represent wires. (1 mark)

Next, Helen added another bulb as shown below in figure 2.

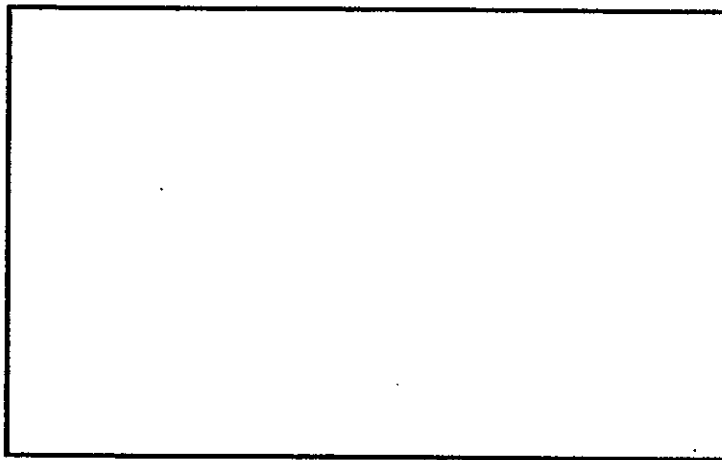


Figure 2

- (b) Connect the battery and bulbs above to form another closed circuit. The bulbs in figure 2 must be of the same brightness as the bulb in figure 1. Use lines to represent wires. (1 mark)
- (c) Give an advantage and a disadvantage for the circuit in figure 2. (2 marks)

Advantage:

Disadvantage:



ANSWER SHEET

EXAM PAPER 2013

SCHOOL : ROSYTH

SUBJECT : PRIMARY 5 SCIENCE

TERM : SA1

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

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

31)a) Cell Division.

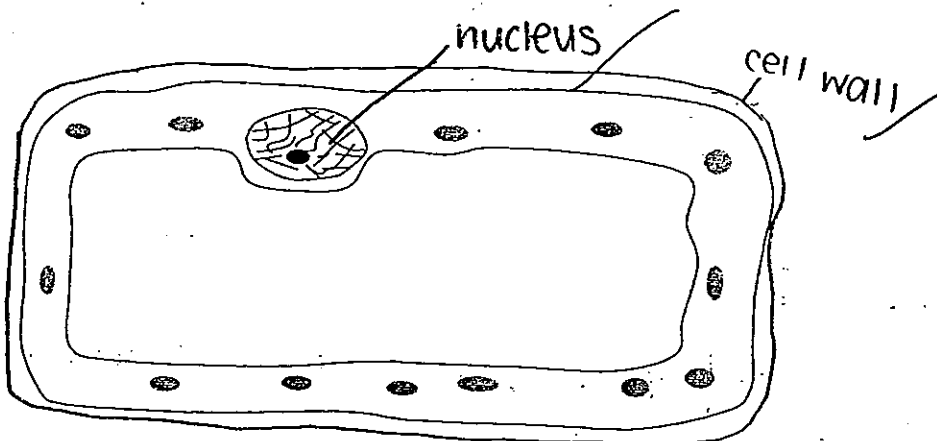
b) It is prove that only the herb affect the bacterial growth.

c) It has the smallest area of bacteria growth hence is the most effective to prevent the cells from multiplying.

32) Similarity : Both cell have a nucleus.

Difference : Root hair cell have a cell wall but the human cheek cell does not have a cell wall.

33)a)c)



33)b)It gives the plant its shape.

34)a)To find out if the number of leaves affects the amount of water taken in by the plant.

b)The root in the water and the water-carrying tube transport the water to all parts of the plant.

c)It is to make cells firm so the plant is upright.

35)a)Part X will be swollen.

b)The food made by the plant cannot be transported therefore the food would be transported there.

c)The plant will die. Food made by the leaves cannot be transported to the roots.

36)a)A→C→E→D→B

b)Exchange of gases: oxygen enters the lungs through the walls into the blood and carbon dioxide is removed in the blood into the lungs.

37)a)It will turn chalky.

b)To find out if living things give out carbon dioxide during respiration.

38)a)i)carbon dioxide. ii)oxygen

b)The circulatory system transports gas from the body to the lungs. The respiratory system carries out gaseous exchange in the lungs to remove gas.

39)a)B: stomach C: small intestine

b)It absorbs the water from the undigested food so that the body will not lose too much water.

c)No. The body needs all the systems to work together.

40)a)B,A,D,C

b)More oxygen is needed for vigorous exercise so the pulse is faster.

c)The higher the pulse rate the breathing rate also increases.

d)Respiratory system and circulatory system.

41)a)C. It has to be waterproof so that if it falls on to the water it won't tear and it must be light for us to hit.

b)No. It is not waterproof and will absorb water.

42)a)D will light up brightly but set-up C will not.

b)In set-up C, two batteries are arranged with negative poles facing each other.

- 43)a) Brightness of a bulb.
- b) Number of batteries
- c) No. of bulb.

44)a)

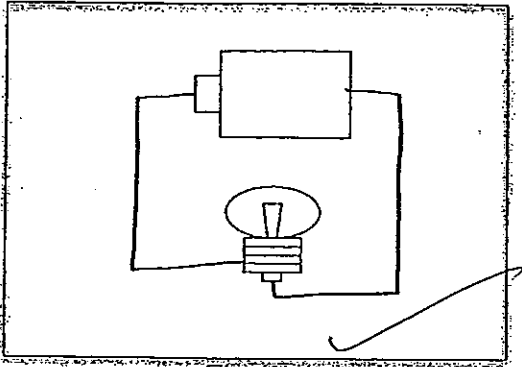


Figure 1

b)

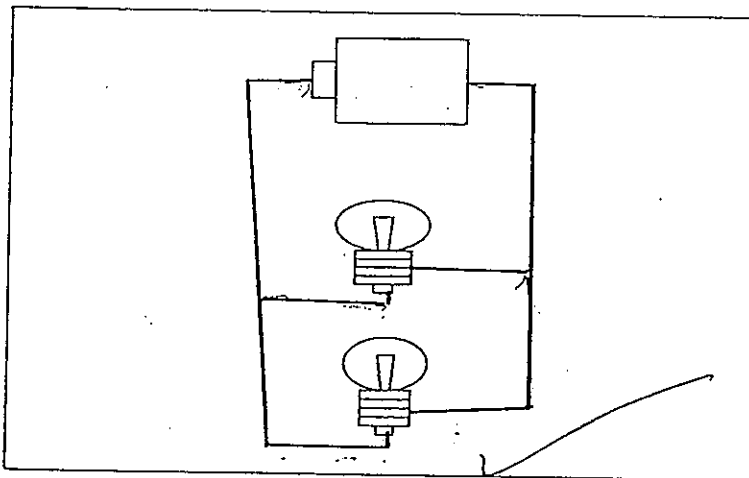


Figure 2

- c) Advantage: If 1 bulb blow, the other still remain lightly.
- Disadvantage : It use a lot of electricity.

