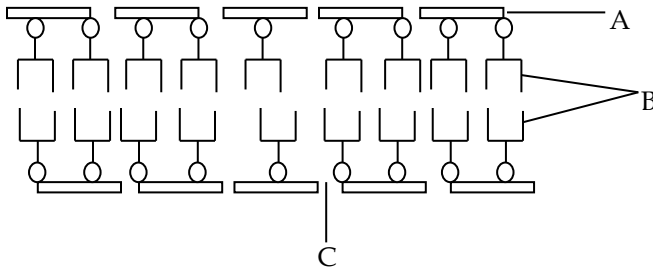
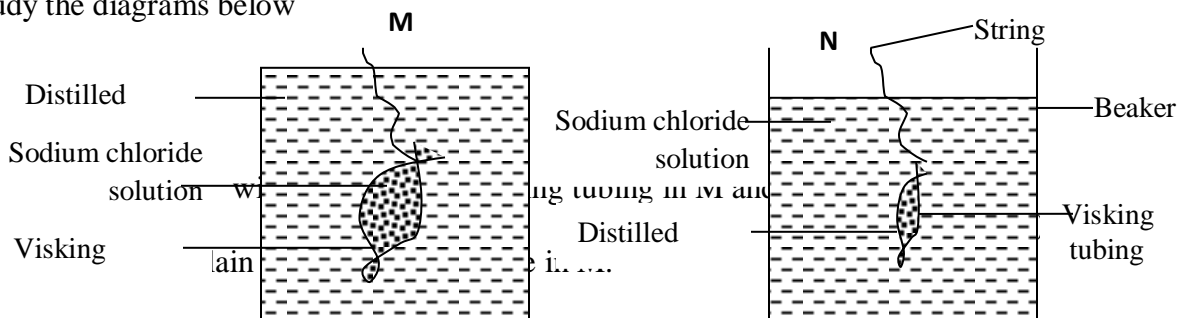


Form 2 Biology

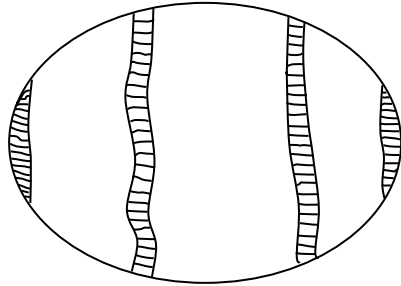
1. Name the branch of Biology that deals with the study of animals (1 mark)
2. Give two characteristics that distinguish scientific names of organisms from the ordinary names.(2 marks)
3. a). Guinea grass is a common type of grass that grows in East Africa. Its scientific name is *Panicum maximum*.
 - i). What is its species name? (1 mark)
 - ii). Which genus does it belong? (1 mark)
- b). i). The scientific name of a certain cockroach is *Paviplaneta Americana*. Where does its species name suggest it comes from? (1 mark)
- ii). A student wrote the binomial name of the African Elephant as '*loxodonta Africana*'. Explain what the student has done incorrectly. Rewrite the binomial name of the elephant so that it is correct (2 marks)
- c). There are 1500000 different types of organisms on earth. Why should we classify them?(2 marks)
4. For each of the following examples state the characteristics of life that one being demonstrated.
 - a) A cheetah chasing after a gazelle (1 mark)
 - b) Somebody listening to the radio and clapping their hands in rhythm with the music.(2 marks)
 - c). A cow giving birth to a calf (1mark)
 - d). A footballer panting at the end of a game (1mark)
5. a). Define the term Diffusion (1 mark)
- b). Mention **two** roles of Diffusion in living organisms (2 marks)
- c). State **three** factors that affect the rate of Diffusion (3 marks)
6. Below is a diagram of the cell membrane



- a). Identify the parts labeled A,B and C (3 marks)
- b). State the three physiological process that takes place within the cell membrane (3 marks)
- c). State one major function of the cell membrane (1 mark)
- d). Mention any two properties of the cell membrane (2 marks)
7. a) Define the term cell physiology (1 mark)
- b). State any two physiological process which takes place within living cells apart from Osmosis, diffusion and active transport (2 marks)
8. Study the diagrams below



- iii). What does a visking tubing correspond to in a living organism (1 mark)
9. a). Define the term cell specialization. (2 marks)
 b). Give two examples of specialized cells. (2 marks)
10. A form one student, trying to estimate the size of onion cells observed the following on a microscopic field of view.



He counted 20 cells across the field of view.

- (a) Calculate the size of one cell in micrometers. 1mm = 1000 micrometers (2 marks)
 b). State the function of a mirror in a microscope (1 mark)
 c). Mention three structures of an animal cell which can be seen with the help of a light Microscope. (2 marks)
11. Fill in the table below (2 marks)

Part of microscope	Function
1. Limb (arm)	_____
2. _____	Provides firm and steady support
3. _____	Brings image into focus and magnifies it
4. Condenser	_____
5. Body tube	_____

12. Mention the main differences between plants and animals (4 marks)

	Plants	Animals
1.		
2.		
3.		

13. Plant cells do not burst when placed in distilled water while animal cells burst. Explain (2 marks)
14. In a meal a person is advised to take more vegetable and fruits. What are the roles of these food substances in digestion? (3 marks)
15. State three adaptations of aquatic plants to photosynthesis (3 marks)
16. Explain the importance of saliva in digestion (2 marks)
17. Study the dental formula below

I $\frac{0}{4}$; C $\frac{0}{0}$; PM $\frac{3}{3}$; M $\frac{2}{3}$;

(a) Identify with a reason, the mode of feeding of the animal whose dental formula is given above (3marks)

(b) Calculate the total number of teeth in the mouth of the above animal (1 mark)

18. a) State the functions of the following cell organelles (6 marks)

i) Cell wall.

ii) Vacuole.

iii) Nucleus.

iv) Mitochondria.

v) Lysosomes

vi) Endoplasmic reticulum.

b) What are the adaptations of mitochondria to its functions? (2 marks)

c) State the similarities between Chloroplasts and Mitochondria. (4 marks)