

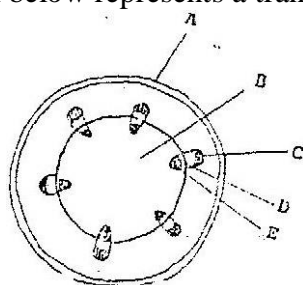
- Motor vehicles move, use energy and produce carbon dioxide and water. Similar characteristics occur in living organisms yet motor vehicles are not classified as living (3 mks)
- Name the organelle that performs each of the following functions in a cell (2mks)
 - Proteins synthesis
 - Transport of cell secretions
- State two ways in which some fungi are harmful to man (2mks)
- Explain what would happen to red blood cells if they are placed in a concentrated salt solution (2mks)
- State the role of light photosynthesis (2 mks)
- State the functions of blood plasma 4mks
- Complete the table below on mineral nutrition in plants (3mks)

Mineral element	Function	Deficiency symptoms
	Synthesis of proteins and protoplasm	Stunted growth and yellowing of leaves
Calcium		
	Forms part of chlorophyll	Yellowing of leaves

- Explain why animal cells burst when placed in a hypotonic solution (2mks)
- name the disease caused by *Mycobacterium tuberculosis* (1mk)

SECTION B (40 MARKS)

- An experiment was carried out to investigate the rate of reaction shown below
 Sucrose \rightarrow Fructose + Glucose
 For the products fructose and glucose to be formed, it was found that substance K was to be added and the temperature maintained at 37°C. When another substance L was added, the reaction slowed down and eventually stopped.
 - Suggest the identify of substances K and L (2mks)
 - Other than temperature state three ways by which the rate of reaction could be increased (3 mks)
 - Explain how substance L slowed down the reaction (2mks)
- The diagram below represents a transverse section of a young stem



- Name the parts labeled A and B (2 mks)
- State the functions of the parts labeled C, D and E (4mks)

- (c) List three differences between the section shown above and one that would be obtained from the root of the same plant (3 mks)
12. Explain how the following factors affect the rate of diffusion
- (a) Surface area to volume ratio (2mks)
- (b) Size of molecules (2mks)
- (c) Thickness of membranes (2mks)
13. Name two hormones involved in digestion process (2mks)
14. Explain five adaptations of the leaf to photosynthetic function (10 mks)

SECTION C (40 Mks)

Answer questions 15 (compulsory) in the spaces provided and one question from this section in the spaces provided after question 17

15. Give the differences between open and closed circulatory systems (3mks)

16. Give the differences between veins and arteries (5mks)

17. Explain