

RAN-2203080601040004
M.Sc. (Sem. I) Examination November - 2025
Microbiology (Paper : MB - 1004) Cell chemistry and Molecular Interactions
સૂચના : / Instructions

- (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book.
- (2) Figures to the right indicate full marks of the question.
- (3) Draw neat and labelled diagrams wherever necessary.

Seat No.:

--	--	--	--	--	--

Student's Signature

- Q. 1. Give detailed answers. (Any Two) (18)**
- a. Define functional genomics and discuss its role in understanding gene function and interaction.
 - b. Describe the isolation of various membranous organelles of a eucaryotic cell.
 - c. Explain the landmarks in the evolution of life on Earth.
- Q. 2. Answer the following. (Any Two) (18)**
- a. Explain advanced techniques for lipid isolation and purification with an example.
 - b. Discuss the methods used for protein structure determination.
 - c. Explain how do solutes influence the colligative properties of aqueous solutions.
- Q. 3. Answer the following. (Any Two) (18)**
- a. Describe the structure and functions of universal electron carriers.
 - b. Define bioenergetics and explain it with reference to Gibbs' free energy principles.
 - c. Explain the concept of standard reduction potential with the help of a diagram.
- Q. 4. Write short notes on any two of the following. (16)**
- a. Write short notes on nuclear hormone receptors - structure, function, and mechanism.
 - b. Describe the activation mechanism of the insulin receptor tyrosine kinase.
 - c. Discuss the gated ion channel in detail.