

**M.Sc. IV SEMESTER [MAIN/ATKT] EXAMINATION  
JUNE - JULY 2024**

**MICROBIOLOGY**

Paper - IV  
**[Cell Biology]**

*[Max. Marks : 75]*

*[Time : 3:00 Hrs.]*

*[Min. Marks : 26]*

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**Note :** Candidate should write his/her Roll Number at the prescribed space on the question paper.  
Student should not write anything on question paper.  
Attempt five questions. Each question carries an internal choice.  
Each question carries **15 marks**.

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**Q. 1** Describe the structure of Prokaryotic cell and its composition in detail. Also mention name of five prokaryotic organism.

**OR**

Discuss models of the biomembrane with the help of well labelled diagram.

**Q. 2** Write an essay on Active Transport.

**OR**

Write note on the following -

- i) Endocytosis.
- ii) Diffusion.

**Q. 3** Describe electron transport complexes in detail and their biological significance.

**OR**

Discuss structure of chloroplast in detail with the help of well labelled diagram. Write its importance also.

**Q. 4** Explain structure of Endoplasmic reticulum. Define GERL complex.

**OR**

Discuss structure of nucleus in detail. Write its significance in biological process.

**Q. 5** Write an essay on Secondary Messengers.

**OR**

Write note on -

- i) Phases of Cell Cycle.
- ii) Protein Kinase G.