

M.Sc. (Botany) Semester - 1 (CBCS) Examination
OCT/NOV-2025 (AS PER SYLLABUS YEAR JUNE-2023)
Cell Biology (Core (New-23))

Time: 2:30 Hours**Marks:70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

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- Que.1 Answer the following (*any 7*) (14)
- 1) What are 'cardiolipin' in Mitochondria?
 - 2) Explain the function of microtubules.
 - 3) What are porins?
 - 4) State the types of Endoplasmic reticulum? Explain the difference between them.
 - 5) What are proto-oncogenes?
 - 6) What is exocytosis?
 - 7) Define the term diffusion.
 - 8) What do you mean by 'Blebbing'? Where do they occur?
- Que.2 Answer the following (*any two*) (14)
- 1) Explain in detail Cyclins and cyclin-dependent Kinase
 - 2) Write a note on the Cell cycle
 - 3) Explain in detail the ultrastructure of the nucleus and nucleolus
- Que.3 Answer the following (*any two*) (14)
- 1) Explain the biogenesis of Mitochondria. Describe TIM – TOM mechanism
 - 2) Explain in detail the function of the Glyoxysome system
 - 3) Write a note on the ultrastructure of the Chloroplast
- Que.4 Answer the following (*any two*) (14)
- 1) Ca⁺⁺ dependent homophilic and non-homophilic cell-cell adhesion
 - 2) Explain the functions of intracellular junctions.
 - 3) Describe the role of associated proteins.
- Que.5 Answer the following (*any two*) (14)
- 1) Explain in detail the Receptor Tyrosine Kinase.
 - 2) Describe intrinsic and extrinsic pathways in detail
 - 3) State the mechanism of HIV with reference to immune system of human beings.
