

**First Semester M.Pharm Degree Regular/Supplementary Examinations
April 2025
M.Pharm (Pharmacology)
Paper IV – Cellular and Molecular Pharmacology (MPL 104T)
(Common for 2019 and 2024 Scheme)**

Time: 3 Hours

Total Marks: 75

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Draw table/diagrams/flow charts wherever necessary*

Essays

(3x10=30)

1. General mechanism, types and applications of restriction enzymes.
2. Principle and applications of cell viability assays.
3. Explain the significant genetic polymorphism at various sites in a G-protein coupled receptor with examples emphasizing their pathological aspects.

Short Notes

(9x5=45)

4. Types, structure and functions of endoplasmic reticulum.
5. Explain necrosis and autophagy.
6. Mitogen activated protein kinase pathway.
7. Calcium as a second messenger.
8. Applications of recombinant DNA technology.
9. Polymorphism in ATP-binding cassettes.
10. Immunotherapeutics in clinical practice.
11. Cyclic GMP pathway.
12. Nuclear receptors - structure and cell signaling.
