

QP CODE: 114328

Reg. No:.....

**First Semester M.Pharm Degree Regular/Supplementary Examinations
November 2021
M.Pharm (Pharmacology)**

**Paper IV – Cellular and Molecular Pharmacology (MPL 104T)
(Common for 2017 and 2019 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. Explain various phases of cell cycle with a diagrammatic representation. Add a note on regulation of cell cycle
2. Explain intercellular and intracellular cell signaling pathways
3. What are the various types of cell culture. Explain the characterization of cells and applications of cell culture

Short Notes

(9x5=45)

4. Explain about ELISA and western blotting techniques
5. What are receptors. Explain about nuclear receptors
6. Describe micro array technique
7. Explain polymorphisms affecting drug metabolism
8. The principles and applications of flow cytometry
9. Various vectors for gene delivery
10. Describe cell necrosis and autophagy
11. Explain about genetic variation and its role in pharmacology
12. Biosimilars.
