

QP CODE: 114328

Reg. No:.....

**First Semester M.Pharm Degree Regular/Supplementary Examinations
April 2023
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. Write in detail about principle, method and applications of PCR
2. Explain the basic principles of recombinant DNA technology. List down its applications. Mention the roles of restriction enzymes in recombinant DNA technology
3. Describe gene therapy. Explain various types of gene transfer techniques

Short Notes

(9x5=45)

4. Explain MAP kinase pathways of intracellular communications
5. Explain various genetic factors controlling the gene expression
6. Describe how genetic variation in drug transporter system affects drug response
7. Nitric oxide as a second messenger in signal transduction
8. Explain briefly the principle and applications of flow cytometry
9. Explain any two methods of sequencing of gene and its applications
10. Explain cloning and mapping of human diseased genes
11. Explain with diagram about molecular structure of ligand gated ion channels
12. Explain nutrigenomics
