

QP CODE: 212329

Reg. No:.....

**Second Semester M. Pharm Degree Regular/Supplementary Examinations
November 2025**

M.Pharm (Pharmaceutical Analysis)

Paper II: Modern Bio-Analytical Techniques (MPA 202T)

(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. Discuss in detail the principle and procedure for the protein precipitation and liquid extraction technique used for extraction of drugs from matrices.
2. Explain in detail the USFDA guidelines for bioanalytical method validation.
3. Discuss in detail the protocol for the conduct of bioequivalence studies

Short Notes

(9x5=45)

4. Role of LC-MS in bioactivity screening and proteomics
5. Principle and applications of flow cytometry.
6. The effect of protein binding interaction studies.
7. Explain in brief the alternate methods followed for dissolution testing to assess the in vitro bioavailability studies.
8. The applications of cell culture studies.
9. Define the terms relative and absolute bioavailability. Explain their importance.
10. Discuss in detail the preclinical studies to evaluate the toxic kinetics of pharmaceuticals.
11. Explain in brief about the experimental methods used to assess the solubility of pharmaceuticals.
12. Cytochrome p450 based drug interaction studies
