

**QP CODE: 212329**

**Reg. No:.....**

**Second Semester M. Pharm Degree Regular/Supplementary Examinations  
October 2023**

**M.Pharm (Pharmaceutical Analysis)**

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

**(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. Elaborate the various novel sample preparation techniques employed in bioanalysis of drugs and metabolites from biological matrices.
2. Define the term bioequivalence. Write a note on the design and evaluation of bioequivalence studies carried out as per guidelines.
3. Discuss in detail the various biopharmaceutical factors affecting drug bioavailability.

**Short Notes**

**(9x5=45)**

4. Compare and contrast LLE and SPE techniques.
5. Explain the alternative methods of dissolution testing.
6. Discuss in brief the PK-PD interactions.
7. Explain the importance and applications of toxicokinetic studies.
8. Explain cytochrome P450 based drug interactions.
9. Describe the principle and applications of MTT Assays.
10. Principle and applications of flow cytometry.
11. Explain various types of cell cultures used for in vitro studies.
12. Discuss in brief the purpose of bioavailability studies.

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