

**QP CODE: 212329**

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

**Second Semester M. Pharm Degree Regular/Supplementary Examinations  
February 2021**

**M.Pharm (Pharmaceutical Analysis)**

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

**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 US "FDA guidelines for Bio analytical methods validation

2. Explain apparatus used in various in vitro dissolution and drug release testing as per USP.

3. Explain at least five pharmacokinetic/pharmacodynamic models of drug interaction.

**Short Notes**

**(9x5=45)**

4. Explain Solid Phase Micro Extraction (SPME).

5. Explain five major biopharmaceutical factors affecting bioavailability.

6. Explain the role of CYP 3A subfamily enzymes in drug metabolism.

7. Explain the factors affecting culturing of cell lines.

8. Explain cryopreservation. What is its role in cell culture experiments.

9. Growth pattern of culture cells.

10. Bioequivalence study design.

11. Explain the best analytical technique for metabolite identification and why.

12. Explain rat liver microsome. What are the factors to be considered for selecting RLM for a study.

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