

QP CODE: 211329

Reg. No:.....

**Second Semester M. Pharm Degree Regular/Supplementary Examinations
November 2024**

M.Pharm (Pharmaceutical Analysis)

**Paper I: Advanced Instrumental Analysis (MPA 201T)
(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. With a neat diagram, explain in detail the instrumentation of high-performance liquid chromatography with special emphasis on various detectors used.
2. Discuss in brief the basic configurations, characteristics, and method of separation in capillary electrophoresis.
3. Enlist the various analyzers used in mass spectrometry. Explain in detail the construction and working of TOF and FT-ICR mass analyzers.

Short Notes

(9x5=45)

4. Discuss in brief sample preparation techniques in HPLC.
5. Enlist the various system suitability parameters. Explain peak resolution.
6. Explain the principle of separation in ion exchange chromatography technique. Add a note on various stationary and mobile phases used.
7. Explain affinity chromatography.
8. Discuss in brief mass fragmentation and its rules.
9. Explain on CE-MS technique.
10. Discuss in brief NOESY and COSY technique.
11. Explain in detail the interfaces used in tandem MS technique.
12. Discuss in brief the principle of separation in super critical fluid chromatography.
