

QP CODE: 211329

Reg. No:.....

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

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 gas chromatography with special emphasis on various detectors used.
2. Explain in detail the different types of ionization techniques used in mass spectrometry.
3. Discuss in detail the principle and working of FT NMR.

Short Notes **(9x5=45)**

4. Discuss in brief the various stationary phase used in chiral chromatography technique.
5. Explain nuclear magnetic double resonance spectroscopy.
6. Explain in brief the various modes of capillary electrophoresis.
7. Explain on size exclusion chromatography.
8. Discuss in brief the various stages of method development using HPLC Technique.
9. Explain on Mc Lafferty rearrangement.
10. Discuss in brief DART MS Analysis technique.
11. Explain on spin splitting.
12. Discuss in brief the various applications and practical aspects of preparative HPLC Technique.
