

QP Code: 831006

Reg. No.....

**Eighth Semester B. Pharm Degree Regular/Supplementary
Examinations March 2026
Advanced Instrumentation Techniques
(2017 Scheme)**

Time: 3 Hours

Max. 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 diagrams wherever necessary*

Essays

(2x10=20)

1. Explain different x-ray diffraction methods along with its applications.
2. Discuss the principle, instrumentation and applications of thermogravimetric analysis (TGA).

Short Notes

(7x5=35)

3. Define Chemical shift and explain various factors affecting chemical shift.
4. Write fragmentation process in Mass Spectroscopy.
5. Write the general principle and procedure involved in solid phase extraction technique.
6. Enlist various hyphenated techniques. Explain LC-MS/MS in detail.
7. Discuss the calibration of HPLC.
8. Write note on bioluminescence assay, Enlist the application of ELISA.
9. Explain validation as per ICH and USFDA guidelines.

Answer Briefly

(10x2=20)

10. Explain spin-spin coupling.
11. Enlist various ionization techniques.
12. Applications of DSC.
13. Principle involved in DTA.
14. Calibration of UV-visible Spectrophotometer.
15. Calibration of fluorimeter.
16. Explain Quadrupole mass analyzer.
17. Limitations and applications of radioimmuno assay.
18. Principle of mass spectroscopy.
19. Principle involved in C-NMR.

CORRECTION / NO-CORRECTION FILE
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QPCODE: 831006

Dated: 24-03-2026

Question No.8

Replaced with "Write note on counter current extraction".

Corrections/Modifications/Replacement of Questions if any shall be made available to all students. Take the print out of the Correction File in such cases and distribute to all students.

(Sd/-)

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