

QP Code: 831006

Reg. No.....

**Eighth Semester B. Pharm Degree Supplementary Examinations
October 2025**

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. Discuss calibration and validation as per ICH and USFDA guidelines.
2. Explain the instrumentation and applications of NMR Spectroscopy.

Short Notes

(7x5=35)

3. Explain chemical shift and factors influencing on Chemical shift.
4. Discuss the instrumentation and applications of DSC.
5. Explain the methodology involved in the calibration of UV-visible Spectrophotometer.
6. Enlist different X-ray diffraction techniques and explain the any one detail.
7. Describe the principle and procedure involved in the solid phase extraction.
8. Explain the utilization of ELISA technology in the measurement of biological activities.
9. Give a brief outline of principle of C-NMR.

Answer Briefly

(10x2=20)

10. Enlist different ionization techniques in mass spectrometry.
11. Explain MALDI.
12. Define the Braggs law.
13. Origin of x-rays.
14. Write the calibration of HPLC.
15. Enlist the various hyphenation techniques.
16. Explain coupling constant.
17. Applications of Radio immune assay.
18. Define molecular ion and fragment ion.
19. Explain the principle of thermogravimetric analysis.

CORRECTION / NO-CORRECTION FILE
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QPCODE: 831006

Dated: 30-10-2025

Question No.8

Replaced with "Explain the principle and limitations of Radio immuno assay."

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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