

QP Code: 831006

Reg. No.....

**Eighth Semester B. Pharm Degree Regular/Supplementary
Examinations July 2024
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. What are thermogravimetric analysis and differential scanning calorimetry. Explain their principles.
2. Explain on interfaces used in LC-MS/MS. Differentiate HPTLC and HPLC. (5+5)

Short Notes

(7x5=35)

3. What are spin – spin and spin – lattice relaxation.
4. Explain the principle of Time of Flight analyser.
5. Explain differential thermal analysis.
6. Explain the calibration of IR spectrophotometer.
7. What are the advantages and disadvantages of Radio Immune Assay.
8. How multiple extraction with smaller volume of solvent is better than single extraction with larger volume. Explain with a suitable example.
9. Explain hyphenated techniques. What are its advantages

Answer Briefly

(10x2=20)

10. Write the principle behind X-ray diffraction method.
11. How many spin quantum numbers a nucleus can have and how they distinguished.
12. What is spin flip in NMR spectroscopy.
13. List the general information a mass spectrum can give.
14. Name any one gas phase ionization technique and one desorption ionization technique.
15. Name any one hard ionization technique and one soft ionization technique.
16. List any two methods of finding limit of detection and limit of quantification in analytical method validation.
17. What is counter current extraction.
18. What is the standard used for checking the wavelength accuracy in Infra-Red Spectrophotometer
19. What is the difference between LC-MS and LC-MS/MS.
