

**VINAYAKA MISSION'S RESEARCH FOUNDATION
(Deemed to be University) , SALEM**

**B.PHARM. DEGREE EXAMINATION – October 2021
Eighth Semester**

ADVANCED INSTRUMENTATION TECHNIQUES

Time : Three hours

Maximum: 75 marks

I. Write essay on any **TWO** questions: (2 x 10 = 20)

1. Explain the principle involved in the Chemical ionization. Write the merit and demerits. Explain the working of Quadra pole and Ion trap mass analyzer.
2. Discuss the principle and working of DTA (Differential Thermal Analysis)
3. Write the principle involved in the X-ray crystallography. Explain the importance of structural elucidation in X-ray diffraction spectroscopy.

II. Write short answers on any **SEVEN** questions: (7 x 5 = 35)

4. Discuss the identification powder diffraction pattern in X-ray diffraction spectroscopy.
5. Classify different kinds of ELISA and explain each of them in details.
6. Explain the methodology involved in the qualification of UV-VIS Spectrophotometer.
7. Explain the principle and different methods of Radio Immuno Assay.
8. Describe the principle and procedure involved in the solid phase extraction.
9. What is theoretical plate, HETP, retention and asymmetry factor?
10. Describe the theory of Mass spectrometry.
11. Explain the methodology involved in the qualification of HPLC.
12. Write the importance of radio immune assay.

III. Write short notes on : (10 x 2 = 20)

13. Factors influencing on Chemical Shift.
14. Write the concept of Miller indices.
15. Define Bragg's law.
16. Name the detector used in Flame Photometer.
17. Qualification of IR Spectrophotometer.
18. Define ELISA and its uses.
19. Application of GC
20. Define quenching and give example.
21. Define single and doublet.
22. Enlist application of western blot.