

Rajiv Gandhi University of Health Sciences, Karnataka

VIII Semester B. Pharm Degree Examination – 20-Jun-2024

Time: Three Hours

Max. Marks: 75

ADVANCED INSTRUMENTATION TECHNIQUES

Q.P. CODE: 5043

Your answers should be specific to the questions asked

Draw neat labeled diagrams wherever necessary

All the Questions are compulsory

LONG ESSAYS

2 x 10 = 20 Marks

1. Explain the fundamental principles and instrumental arrangements of NMR. Write a detail note on coupling constant.
OR
Discuss the principle and working of Differential Thermal Analysis (DTA) with its applications.
2. Discuss background and principles of Bio analytical method validation as per USFDA regulations.

SHORT ESSAYS

7 x 5 = 35 Marks

3. Write the fragmentation rules in Mass Spectrometry.
OR
Describe the theory of Mass spectrometry.
4. Explain the methodology involved in the calibration of HPLC.
OR
Write the importance of solid phase extraction.
5. Give the limitations and applications of Radio Immuno Assay. Mention the its different types.
6. Explain rotating crystal technique x-ray spectroscopy
7. Enlist MS ionization techniques and explain any one.
8. Discuss the principle and application of DSC.
9. Discuss in detail principle and sampling techniques in LC-MS/MS

SHORT ANSWERS

10 x 2 = 20 Marks

10. Mention the solvents used in NMR Spectroscopy.
11. Define chemical shift
12. Define and classify validation
13. What is ELISA?
14. What is liquid-liquid extraction techniques.
15. Give the applications of x-ray diffraction method.
16. Define Bragg's law.
17. Give the important feature for calibrating UV-Visible spectrophotometer.
18. Give the basic aspects of crystals
19. What is HPTLC-MS?
