

Rajiv Gandhi University of Health Sciences, Karnataka

VIII Semester B. Pharm Degree Examination – 13-Nov-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 instrumentation of Mass Spectrometer and its applications

OR

Write the principle involved in crystallographic studies by X-ray diffraction. Give the importance of Bragg's law in X-ray diffraction spectroscopy

2. Explain the instrumentation of application of NMR spectroscopy

SHORT ESSAYS

7 x 5 = 35 Marks

3. Explain the terms of Chemical shift and Spin-Spin coupling. Coupling constant

OR

Describe the principle involved in mass spectrometry

4. Enlist different X-ray diffraction techniques and explain the any one detail

OR

Discuss the principle and working of DTA

5. Explain calibration parameters for electronic balance
6. Describe the Radio Immunological assays and its applications
7. Explain the principle and procedure involved in the liquid-liquid extraction
8. Write the instrumentation of LC-MS/MS
9. Discuss the applications of GC-MS/MS

SHORT ANSWERS

10 x 2 = 20 Marks

10. Spin-Spin coupling
11. Define molecular ion and fragment ion
12. Write applications of DSC
13. Define validation
14. Enlist the ionization techniques in mass spectrometry
15. Discuss the types of relaxation in NMR spectroscopy
16. Write the various components of Radio Immune Assay
17. Enlist the advantages of solid phase extraction
18. Write the applications of HPTLC-MS
19. Enlist the various factors affecting chemical shift
