Rajiv Gandhi University of Health Sciences, Karnataka

VIII Semester B. Pharm Degree Examination – 05-Dec-2022

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
   Discuss background and principles of **Analytical** method validation as per USFDA regulations.

2. Explain the production and detection of X-rays by Debye scherrer method.

SHORT ESSAYS **7 x 5 = 35 Marks**

3. Discuss the principle and working of DTA.
   OR
   Describe the theory of Mass spectrometry

4. Explain the methodology involved in the calibration of HPLC.
   OR
   Write the importance of Radio immune assay.

5. Explain the concept of ELISA and its application as the diagnostic test for HIV.
6. Explain validation parameter for electronic balance.
7. Explain the terms of Chemical shift and Spin-Spin coupling, Coupling constant.
8. **Explain the LC-MS/MS analytical techniques and its applications.**
9. Describe the principle and procedure involved in the solid phase extraction.

SHORT ANSWERS **10 x 2 = 20 Marks**

10. **Applications of GC-MS/MS.**
11. Calibration of Fluorimeter.
12. Define Singlet and Doublet.
13. **"What is differential scanning" calorimetry?**
14. Radio Immuno Assay.
15. **What is chemical Ionization? Give example**
16. **Differentiate between H-NMR and ^{13}C-NMR**
17. **Important features of calibration of UV-visible Spectrophotometer.**
18. Define full validation and partial validation.
19. **Advantages of HPTLC-MS.**

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