

FACULTY OF PHARMACY

B. Pharmacy VII - Semester (PCI) (Main & Backlog) Examination, March 2024

Subject: Instrumental Methods of Analysis

Time: 3 Hours

Max. Marks: 75

PART - A

Note: Answer all the questions.

(10 x 2 = 20 Marks)

1. Explain bathochromic shift and Hypsochromic shift with examples.
2. What are chromophores and auxochromes. Give examples.
3. Write the principles of absorption in IR spectroscopy.
4. Write the principles of partition and adsorption chromatography.
5. Write the different fuel gases and oxidants used in the flame photometry technique.
6. Write the different types of stationary phases used in gel permeation chromatography separations.
7. Write the ion exchange mechanism in ion exchange chromatography.
8. Define the Capacity factor.
9. Write the effect of solvent on the absorption maximum of compounds.
10. Write the applications of affinity chromatography.

PART - B

Note: Answer any two questions.

(2 x 10 = 20 Marks)

11. Describe different components of IR spectrophotometer with a neat labelled diagram.
12. Explain the principles and experimental details of Paper chromatography.
13. Explain the principles and instrumentation of the HPLC technique.

PART - C

Note: Answer any seven questions.

(7 x 5 = 35 Marks)

14. Describe the Jablonski diagram and explain different internal and external processes in fluorescence emission.
15. Explain the factors affecting Ion exchange Chromatography and applications of the technique.
16. Explain different sample handling techniques used in IR spectroscopy.
17. Write the Instrumentation and applications of the flame photometry technique.
18. Write short notes on nepheloturbidometry.
19. Describe the different types of detectors used in UV spectrophotometers.
20. Explain the different development techniques used in paper chromatography.
21. Write the principles and applications of Atomic absorption spectroscopy.
22. Discuss the theory and principles of separation in capillary electrophoresis.