

Rajiv Gandhi University of Health Sciences, Karnataka

VII Semester B. Pharm Degree Examination – 25-Apr-2025

Time: Three Hours

Max. Marks: 75 Marks

INSTRUMENTAL METHODS OF ANALYSIS

Q.P. CODE: 5029

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. Define and derive Beer and Lambert's law. Add a note on its deviations and limitations.

OR

Explain briefly the instrumentation of IR spectroscopy.

2. Enlist the detectors and sample injection techniques used in Gas Chromatography and explain in detail each of two.

SHORT ESSAYS

7 x 5 = 35 Marks

3. Explain the construction and working of photomultiplier tube and barrier layer cell.

OR

Discuss the single component & multi component analysis by UV spectroscopy.

4. Discuss the principle and various gels used in gel chromatography.

OR

Discuss the principle and applications of Flame photometry.

5. What is absorption and partition column chromatography? Give its advantages and disadvantages.
6. Discuss the applications of HPLC.
7. Define and classify Ion Exchange resins. Add a note on factors affecting Ion exchange.
8. Discuss the different development techniques used in Paper Chromatography.
9. Explain the principle and techniques involved in Paper Electrophoresis.

SHORT ANSWERS

10 x 2 = 20 Marks

10. Define chromophore and auxochrome? Give one example for each.
11. Solvent effect on UV absorption spectra.
12. Write the vibrational frequencies of alcohols and amines in IR spectroscopy.
13. Write the principle involved in Nepheloturbidometry.
14. What is temperature programming in gas chromatography?
15. Define R_f value? Name the factors that affect R_f value.
16. What is regeneration of ion exchange resins?
17. What is affinity chromatography?
18. Name the molecular vibrations in IR spectroscopy.
19. What is edge effect? How to minimize it.
