

Rajiv Gandhi University of Health Sciences, Karnataka

VII Semester B. Pharm Degree Examination – 15-Mar-2021

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 the equation for Beer-Lamberts law. Add a note on deviations and limitations of Beer-Lamberts law.

OR

Write a note on theory and applications of IR spectrophotometry. Explain different sampling techniques employed in IR spectroscopy.

2. Describe in brief the principle, instrumentation and applications of gas chromatography.

SHORT ESSAYS

7 x 5 = 35 Marks

Define and distinguish between fluorescence and phosphorescence. Write the various factors affecting the phenomenon of fluorescence.

OR

Define wavelength, wave number, frequency, transmittance and absorptivity.

4. Explain the instrumentation and working of atomic absorption spectroscopy.

OR

Define and classify chromatography with suitable examples.

5. Explain the practical aspects/steps involved in TLC.
6. Describe the different types of paper electrophoresis.
7. Explain the detectors used in HPLC.
8. What are ion-exchange resins? Classify and explain the ideal properties of ion exchange resins.
9. Explain the principle and theory of gel chromatography.

SHORT ANSWERS

10 x 2 = 20 Marks

10. Mention in brief the importance of multicomponent analysis in UV spectroscopy.
11. Define chromophore and auxochrome with examples.
12. Name the fuel and gases used in flame emission spectroscopy.
13. Write the vibrational frequency of alcohol and carbonyl group.
14. Write the difference between nephelometry and turbidometry.
15. What are the elution techniques in column chromatography?
16. Define R_f and R_m values with their significance.
17. What is guard column? Write its significance.
18. What is the role of ligand in chromatography?
19. Write the applications of affinity chromatography.
