

B.Pharm IV Year I Semester (R19) Regular Examinations January 2023

INSTRUMENTAL METHODS OF ANALYSIS

Time: 3 hours

Max. Marks: 75

PART – A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
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| (a) Define Beer and Lambert's law with equation. | 2M |
| (b) Discuss briefly the principle of fluorimetry. | 2M |
| (c) Name different types of sampling techniques used in IR spectroscopy. | 2M |
| (d) Discuss the principle of Nephelo turbidometry. | 2M |
| (e) What is electrophoresis? | 2M |
| (f) What are adsorption and partition column chromatography? | 2M |
| (g) Discuss the applications of HPLC. | 2M |
| (h) Define chromophore and auxochrome. | 2M |
| (i) Classify ion exchange resins. | 2M |
| (j) Write applications of Gel Chromatography. | 2M |

PART – B

(Answer any two questions: 02 X 10 = 20 Marks)

- 2 Explain with a neat schematic diagram of the instrumentation and working of a double beam UV-Vis spectrophotometer. 10M
- 3 Compare and differentiate thin-layer chromatography vs radial paper chromatography in detail. 10M
- 4 (a) Summarize in detail about HPLC. 5M
 (b) Justify the statement "HPLC is better than HPTLC". 2M
 (c) Draw a neat and labeled diagram of HPLC. 3M

PART – C

(Answer any seven questions: 07 X 05 = 35 Marks)

- 5 Discuss the solvent effect in UV-Vis spectroscopy. 5M
- 6 Describe photomultiplier tube with its principle and neat diagram. 5M
- 7 Explain the principle and applications of flame photometry with neat labelled diagram. 5M
- 8 (a) What is the different mode of chromatograms in IR spectrophotometry? 2M
 (b) Discuss with schematic diagram. 3M
- 9 Write different methods for preparations of TLC plates. 5M
- 10 Discuss the different development techniques used in paper chromatography. 5M
- 11 Write down the advantages and disadvantages of gas chromatography. 5M
- 12 Explain the manufacture of cation exchange resin and anion exchange resin. 5M
- 13 Explain the principle and theory of gel chromatography. 5M
