PAPER ID-311090

Subject Code: BP701T

Roll No: | | | | | | | | | | | | |

# BPHARM
## (SEM VII) THEORY EXAMINATION 2023-24
## INSTRUMENTAL METHODS OF ANALYSIS – THEORY

**TIME: 3 HRS** **M.MARKS: 75**

**Note:** 1. Attempt all Sections. If require any missing data; then choose suitably.

### SECTION A

**1. Attempt *all* questions in brief.** **10 x 2 = 20**

| | |
|---|---|
| a. | Give one example for strong cation exchange resin and strong anion exchange resin. |
| b. | Write about stationary phases used in Affinity chromatography. |
| c. | What do you understand by wet packing and dry packing? |
| d. | What is mulling and pelleting technique? |
| e. | Write the sources of I.R radiation. |
| f. | Differentiate Nephelometry and Turbidimetry. |
| g. | Define chromophores and auxochromes with suitable example. |
| h. | Write the I.R functional bands for amines and ketones. |
| i. | What is hypsochromic shift?. |
| j. | Elaborate the column types in HPLC. |

### SECTION B

**2. Attempt any *two* parts of the following:** **2 x 10 = 20**

| | |
|---|---|
| a. | Describe the principle, instrumentation and few applications of atomic absorption spectroscopy. |
| b. | Explain the instrumentation of HPLC with a neat sketch. Write a note on Van Deemter equation. |
| c. | Derive Beer Lambert's law. Explain the working of photomultiplier tube. |

### SECTION C

**3. Attempt any *five* parts of the following:** **5 x 7 = 35**

| | |
|---|---|
| a. | Describe the principle of fluorescence with Jablonski's diagram. What do you mean by quenching. |
| b. | Explain FT-IR spectrometer with interferogram. |
| c. | Elaborate the interferences in flame photometry with its counter measures to prevent them. |
| d. | Explain the principle involved in ion exchange chromatography. Write the factors affecting ion exchange. |
| e. | Outline the detectors used in Gas chromatography. What do you know about size exclusion chromatography? |
| f. | Describe the types of paper chromatography in detail. |
| g. | Write the principle and instrumentation of paper electrophoresis. |