

**UKA TARSADIA UNIVERSITY**  
**M. Pharm. (Pharmaceutical Analysis) (2<sup>nd</sup> Semester)**  
**040060202: Pharmaceutical Analysis-II**

**Duration: 3 hours**

**Maximum marks: 70**

**Instructions:**

1. Attempt all questions
2. Write each section in a separate answer book.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks allocated to that question.
5. Draw diagrams/figures wherever necessary.

**SECTION-1**

**Q.1] (a) Explain the principle of following: (any two) [2 x 3 = 6]**

- 1) Super critical fluid chromatography
- 2) Counter current chromatography
- 3) Hydrophobic interaction chromatography

**(b) Attempt any one: [1 x 5 = 5]**

- 1) Describe instrumentation of GC-MS with suitable diagram.
- 2) Explain the significance of LC-MS in quantification of drugs in biological samples with suitable examples.

**Q.2] Attempt any two: [2 x 6 = 12]**

- 1) What is peptide mapping? Discuss its uses and limitations.
- 2) Explain the role of Ion exchange chromatography in analysis of amino acids. Discuss the factors affecting retention in IEC.
- 3) Explain the terms: Column switching, Ultra filtration, Solid phase extraction.

**Q.3] Attempt any two [2 x 6 = 12]**

- 1) Define the terms in SEC: Exclusion limit, Permeation limit and Selective permeation range. State the applications of SEC.
- 2) Explain the principle of isoelectric focusing and state its applications.
- 3) Discuss pre column and post column derivatization in amino acid analysis.

## SECTION-2

**Q.4] (a) Define the following terms: (any six) [6 x 1 = 6]**

- |                          |                          |
|--------------------------|--------------------------|
| 1) Enantiomeric impurity | 5) Degradation product   |
| 2) Impurity profile      | 6) Reporting threshold   |
| 3) Residual solvent      | 7) Unidentified impurity |
| 4) Potential impurity    |                          |

**(b) Attempt any one: [1 x 5 = 5]**

- 1) Discuss the role of spectroscopic methods in analysis of antidiabetics, analgesics and antipyretics.
- 2) Explain the principle of flow injection analysis.

**Q.5] Attempt any two: [2 x 6 = 12]**

- 1) Discuss the role of thermal methods in solid state analysis with suitable examples.
- 2) Compare and contrast continuous flow and discrete automated systems. Give the advantages and disadvantages of each type of automated system.
- 3) Discuss the principles and procedures involved in analysis of pharmaceutical dosage forms containing antihistaminics.

**Q.6] Attempt any two [2 x 6 = 12]**

- 1) Define the terms: Extractive value, Crude fiber content, Pesticidal residue, Bitterness index, Ash value, Quality control.
- 2) Describe WHO guidelines for quality control of raw materials used in herbal formulations.
- 3) Discuss the role of chromatographic techniques in phytochemical analysis with suitable examples.