BP701T: Instrumental Methods of Analysis (Theory)

MCQ Assessments

Unit III: Introduction to Chromatography, Column Chromatography, TLC, Paper Chromatography, Electrophoresis

1. What is the Rf value in TLC?
   a) Ratio of solvent to sample volume
   b) Distance traveled by compound ÷ distance traveled by solvent
   c) Time for separation
   d) Column efficiency

2. What is the stationary phase in Paper Chromatography?
   a) Organic solvent
   b) Water on paper
   c) Silica gel
   d) Gas

3. What separates molecules in electrophoresis?
   a) Size and charge
   b) Color
   c) Boiling point
   d) Solubility

4. What is the stationary phase in Column Chromatography?
   a) Liquid
   b) Solid adsorbent
   c) Gas
   d) Gel matrix

5. Which technique uses a polar stationary phase and non-polar mobile phase?
   a) Reverse phase chromatography
   b) Normal phase chromatography
   c) Ion exchange chromatography
   d) Gel chromatography

6. What is an application of TLC in pharmaceuticals?
   a) Measuring light absorption
   b) Identifying drug impurities
   c) Quantifying metal ions
   d) Determining molecular vibrations

7. What is the development technique in Paper Chromatography where solvent moves upward?
   a) Descending
   b) Ascending
   c) Two-dimensional

d) Radial

8. What type of electrophoresis separates proteins using a gel matrix?
   a) Paper electrophoresis
   b) Capillary electrophoresis
   c) Gel electrophoresis
   d) Moving boundary electrophoresis

9. What does HETP measure in chromatography?
   a) Sample concentration
   b) Column efficiency
   c) Solvent flow rate
   d) Detector sensitivity

10. What factor affects electrophoretic mobility?
    a) Light intensity
    b) Molecular charge
    c) Solvent color
    d) Column length

Answer Key for Unit III MCQ
1. b) Distance traveled by compound ÷ distance traveled by solvent (Understanding)
2. b) Water on paper (Remembering)
3. a) Size and charge (Understanding)
4. b) Solid adsorbent (Remembering)
5. b) Normal phase chromatography (Understanding)
6. b) Identifying drug impurities (Applying)
7. b) Ascending (Remembering)
8. c) Gel electrophoresis (Remembering)
9. b) Column efficiency (Understanding)
10. b) Molecular charge (Applying)