BP701T: Instrumental Methods of Analysis (Theory)

MCQ Assessments

Unit V: Ion Exchange Chromatography, Gel Chromatography, Affinity Chromatography

1. What is the principle of Ion Exchange Chromatography?
   a) Separation based on size
   b) Separation based on ion charge
   c) Separation based on solubility
   d) Separation based on boiling point

2. Which type of resin binds positive ions in Ion Exchange Chromatography?
   a) Cation exchange resin
   b) Anion exchange resin
   c) Gel resin
   d) Affinity resin

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

4. What is an application of Affinity Chromatography?
   a) Quantifying metal ions
   b) Purifying proteins
   c) Measuring light absorption
   d) Identifying functional groups

5. What factor affects ion exchange in chromatography?
   a) Light intensity
   b) Ionic strength of mobile phase
   c) Sample color
   d) Detector type

6. What is the role of a ligand in Affinity Chromatography?
   a) Detects compounds
   b) Binds specific target molecules
   c) Increases flow rate
   d) Selects wavelengths

7. What is an example of a gel matrix in Gel Chromatography?
   a) Silica gel
   b) Sephadex
   c) Paper
   d) C18

8. What is the capacity factor in Ion Exchange Chromatography?
   a) Time for separation
   b) Resin’s ion-binding ability
   c) Column length
   d) Solvent volume

9. What separates molecules in Gel Chromatography?
   a) Charge
   b) Size
   c) Solubility
   d) Color

10. Which chromatography uses specific molecular interactions?
    a) Ion Exchange Chromatography
    b) Gel Chromatography
    c) Affinity Chromatography
    d) Column Chromatography

Answer Key for Unit V MCQ
1. b) Separation based on ion charge (Understanding)
2. a) Cation exchange resin (Remembering)
3. b) Porous gel matrix (Remembering)
4. b) Purifying proteins (Applying)
5. b) Ionic strength of mobile phase (Applying)
6. b) Binds specific target molecules (Understanding)
7. b) Sephadex (Remembering)
8. b) Resin’s ion-binding ability (Understanding)
9. b) Size (Understanding)
10. c) Affinity Chromatography (Understanding)