

B. Pharm. (CBCS Pattern) Sem-VII
BP701T : Instrumental Methods of Analysis

P. Pages : 3

Time : Three Hours



GUG/W/22/14143

Max. Marks : 75

- Notes :
1. Diagrams and Chemical equation should be given wherever necessary.
 2. Illustrate your answers wherever necessary with the help of neat sketches.
 3. All questions are compulsory.

1. Multiple Choice Questions.

1x20

- 1) In UV spectroscopy, electrons are transferred from -----
a) Ground to higher b) Higher to ground
c) Alters d) None
- 2) In spectrofluorometer, the lamp used as a source is
a) Hg core xenon b) Xenon
c) Tungsten d) D₂
- 3) IR spectroscopy involves the frequency range between
a) 3000 – 300 cm⁻¹ b) 4000 – 400 cm⁻¹
c) 1500 – 1000 cm⁻¹ d) 4000 – 400 m⁻¹
- 4) In flame photometry, the data analysis is carried out by plotting graph.
a) Adsorption Vs. Concentration
b) Absorption Vs. Concentration
c) Intensity Vs. Concentration
d) Both (a) and (b)
- 5) Metal ions are determined with
a) IR b) Flame photometry
c) Nephelo-turbidometry d) AAS
- 6) In turbidometry, the detector commonly used as
a) Photo tube b) PMT
c) Photo voltaic cells d) Both (a) & (c)
- 7) In reverse phase chromatography, the stationary phase is
a) Polar b) Non – Polar
c) Semi – Polar d) Both (a) and (b)
- 8) Column chromatography is based on
a) Adsorption b) Partition
c) Absorption d) Both (a) and (b)
- 9) Amino acids are detected with the reagent
a) Ninhydrin b) Vanillin
c) Ferric chloride d) P-anisaldehyde – sulphuric acid

- 10) The unit of R_f value is
 - a) mm
 - b) cm
 - c) minute
 - d) none
- 11) Paper partition chromatography is
 - a) Gas-liquid
 - b) Liquid-liquid
 - c) Solid-liquid
 - d) Gas-solid
- 12) The bore size of silica capillary is
 - a) 10 – 25 μm
 - b) 20 – 30 μm
 - c) 75 – 200 μm
 - d) 25 – 75 μm
- 13) The non – polar compound is used in GC column is
 - a) Carbowaxes
 - b) Diethylhexyl phthalate
 - c) Silicane gum rubber
 - d) Hearne
- 14) Boron tri chloride reagent is used in
 - a) Sialylation
 - b) Alkylation
 - c) Acylation
 - d) Chiral derivatization
- 15) In reverse phase made, the stationary phase is
 - a) Polar
 - b) Semi-Polar
 - c) Packed with ligand
 - d) Non-Polar
- 16) The analytical column diameter is varied from
 - a) 2 mm to 4 mm
 - b) 2 mm to 50 mm
 - c) 4 cm to 5 cm
 - d) 2 cm to 25 cm
- 17) A example of weak anion exchanger in IEC.
 - a) Carboxymethyl
 - b) Quaternary ammonium
 - c) Diethylaminoethyl
 - d) Methyl sulfonate
- 18) Ion exchange media is
 - a) Sepharose
 - b) Mini beads
 - c) Mini beds
 - d) (a) and (b) both
- 19) The soft gel used in gel chromatography is
 - a) Porous glass
 - b) Polymers
 - c) Dextran
 - d) Bio-beads
- 20) Affinity chromatography is used in
 - a) Antigen : antibody reaction
 - b) Enzyme array
 - c) (a) and (b) both
 - d) None

2. Long answer questions solve **any two**.

**2x10
=20**

- 1) Explain single and double beam spectrophotometer with their differences.
- 2) Explain Instrumentation in IR spectroscopy.
- 3) Write the classification and theory of Ion-exchange chromatography.

3. Short answer question solve any seven.

**7x5
=35**

- 1) What is quenching in fluorimetry.
- 2) Discuss the source of radiation and detectors used in IR spectroscopy.
- 3) Explain monochromators used in flame photometry.
- 4) Explain advantages, disadvantages and applications of partition chromatography.
- 5) Describe the various methods of evaluation of TLC and also, explain the advantages and disadvantages of TLC.
- 6) Explain the principle involved in electrophoresis.
- 7) Write the advantages and disadvantages of Gas Chromatography.
- 8) Explain the classification of Ion exchange resins.
- 9) Write about the steps involved in gel electrophoresis.
