

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

P. Pages : 3

Time : Three Hours



GUG/W/24/14143

Max. Marks : 75

- Notes :
1. All questions are compulsory.
 2. Select correct option from multiple choice question.

1. Multiple choice questions.

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- 1) For separation of the poly olefins ----- is used as mobile phase.
a) Trichloro benzene b) Dichloro benzene
c) Chlorobenzene d) Toluene
- 2) In size-exclusion HPLC, ----- will get eluted first followed by ----- molecules:
a) Larger, smaller b) Smaller, larger
c) Polar, Non polar d) Both a & b
- 3) Capillary columns are open tubular columns constructed from which of the following material:
a) Fused silica b) Stainless steel
c) Glass d) None of the above
- 4) What is the role of nitrite ion in the estimation of sulfanilamide?
a) To form diazo compound b) To form azo compound
c) To give color d) As a base
- 5) In paper chromatography ----- is done prior to application for amino acids and sugars.
a) Deionization b) Demineralization
c) Desalting d) Both b and c
- 6) ----- is not a type of zone electrophoresis:
a) Micro electrophoresis
b) Paper electrophoresis
c) Cellulose active electrophoresis
d) Gel electrophoresis
- 7) Most commonly used detectors in the nephelometry and turbidimetry is:
a) Photovoltaic cell b) Golay detectors
c) PMT d) ECD
- 8) The fraction of free atom that is thermally excited is governed by a
a) Boltzmann law b) Hooke's law
c) Nernst law d) Faraday law

- 9) ----- is used for separation of sugars
 - a) Sodium silicate
 - b) Calcium silicate
 - c) Magnesium silicate
 - d) Both a & b
- 10) Prism is made up of:
 - a) Glass
 - b) Quartz
 - c) Fused silica
 - d) All of the above
- 11) Cyclic diene having conjugated double bonds in different rings are called as -----
 - a) Homoannular dienes
 - b) Heteroannular diene
 - c) Both a & b
 - d) None of these
- 12) Fluorescence intensity is proportional to concentration of substance only when the absorbance is less than
 - a) 0.01
 - b) 0.02
 - c) 0.03
 - d) 0.5
- 13) ----- of the following transition occurs in IR Spectroscopy?
 - a) Electronic transition
 - b) Vibrational transition
 - c) Rotational transition
 - d) All of the above
- 14) ----- consists of spirally wound nichrome wire:
 - a) Nernst glower
 - b) Golbar source
 - c) Incandescent lamp
 - d) Mercury arc lamp
- 15) IR grating have ----- grooves per mm:
 - a) 2000-6000
 - b) 10-100
 - c) 200-500
 - d) None of these
- 16) The measurement of ----- forms basis of flame photometry:
 - a) Absorbed photons
 - b) Emitted photons
 - c) Excited photons
 - d) All of these
- 17) When acetylene along with air as oxidant gives temperature of -----:
 - a) 1500 °C
 - b) 2100 °C
 - c) 2500 °C
 - d) 2200 °C
- 18) A compound which is not retained will elute out of the column at -----?
 - a) Dead time
 - b) Void time
 - c) Threshold time
 - d) Both a & b
- 19) Commonly used material for tubing of HPLC is:
 - a) PEG polymer
 - b) PEE
 - c) PEEK
 - d) All of the above
- 20) 2, 4 – DNP is used for visualization of:
 - a) Sugars
 - b) Alkaloids
 - c) Aldehydes and Ketones
 - d) Carboxylic acid

- 2.** Solve the following **any two**. **20**
- a) Differentiate between Atomic absorption and Atomic Emission. Describe Principle, various interference & instrumentation of AAS?
 - b) Explain in detail about principle, Instrumentation & application of UV-Visible spectroscopy?
 - c) Describe the principle, instrumentation and applications of HPLC?
- 3.** Solve the following **any seven**. **35**
- a) “Thin-layer chromatography is superior to other types of chromatographic methods” Explain this statement.
 - b) Write a note on electronic transitions in UV-Visible spectroscopy?
 - c) What is Fingerprint region? Explain fundamental modes of vibrations in poly atomic Molecules?
 - d) Discuss significance of derivatization in Gas Chromatography.
 - e) Define and distinguish between fluorescence & phosphorescence. Write the various factors affecting the phenomenon of fluorescence?
 - f) Explain Isocratic & Gradient Elution in HPLC.
 - g) Give theory of Gel Electrophoresis. Explain factors affecting electrophoretic mobility?
 - h) Add a note on Affinity Chromatography.
 - i) Write a note on softening of water by ion exchange process.
