

REV-01
BPH/93/31/36

2023/12

**B. PHARM.
SEVENTH SEMESTER
INSTRUMENTAL METHOD OF ANALYSIS
BP701T**

**SET
C**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration : 3 hrs.

Full Marks : 75

[PART-A: Objective]

Time : 30 min.

Marks : 20

Choose the correct answer from the following:

1×20=20

- 1mg is equal to-
 - a. 1000 μg
 - b. 10000 μg
 - c. 10 μg
 - d. 500 μg
2. Diffraction grating consists of a _____.
 - a. Glass
 - b. Quartz
 - c. Alkyl halide
 - d. All of the above.
3. Principle involved in Thin Layer chromatography is
 - a. Adsorption
 - b. partition
 - c. Both a and b
 - d. None of these.
4. Which of the following is most commonly used column for HPLC?
 - a. C-10
 - b. C-8
 - c. C-4
 - d. C-18
5. In normal-phase chromatography, the mobile phase is
 - a. Polar
 - b. Non-polar
 - c. Both
 - d. None of these
6. If the particle size of stationary phase increases it leads to separation
 - a. Decreases
 - b. Increases
 - c. No effect
 - d. Both b and c
7. Which of the following is a GC detector?
 - a. Katharometer
 - b. Bolometer
 - c. Thermocouple
 - d. Golay Cell
8. Which of the following is an example of a bulk property or universal detector in HPLC?
 - a. Fluorometric detector
 - b. Electrochemical detector
 - c. UV detector
 - d. Refractive Index detector
9. A device that converts radiation energy to electrical signals is called _____.
 - a. Recorder
 - b. Amplifier
 - c. Monochromator
 - d. Detector
10. Which of the following is mid-IR range for carbonyl compounds?
 - a. 1700-1750 cm^{-1}
 - b. 4000-400 cm^{-1}
 - c. 12000-4000 cm^{-1}
 - d. None of these.

11. Most commonly used stationary phase in TLC is _____.
 - a. Silica gel-G
 - b. Silica gel-GH
 - c. Alumina
 - d. Silica gel-H
12. UV cutoff wavelength of water is
 - a. 198 nm
 - b. 191 nm
 - c. 204 nm
 - d. 205 nm
13. In flame photometry λ is used for _____ purpose.
 - a. Quantitative
 - b. Both a and c
 - c. Qualitative
 - d. None of these
14. For the detection of amino acids which reagents are used.
 - a. Ninhydrin reagent
 - b. Conc. HCl
 - c. Wagner reagents
 - d. Conc. H₂SO₄
15. Length range of column used in HPLC.
 - a. 80-100 cm
 - b. 5-30 cm
 - c. 1-10 cm
 - d. All of the above
16. In which the type of vibration bond angle is altered.
 - a. Asymmetrical vibration
 - b. Symmetrical vibration
 - c. Bending vibration
 - d. All of the above.
17. The pore size of the membrane filter is
 - a. 0.22 μ
 - b. 0.45 μ
 - c. 0.60 μ
 - d. None of the above
18. Which of the following is not a factor influencing fluorescence intensity.
 - a. temperature
 - b. Rigidity of structure
 - c. conjugation
 - d. Source of light
19. Which of the following is not the application of Gel Permeation Chromatography
 - a. Relative mol. Mass determination
 - b. Purification
 - c. Protein Concentration
 - d. None of above
20. Which type of column is commonly used for the separation of enantiomers?
 - a. Phenyl
 - b. amino
 - c. C-18
 - d. Chiral

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(PART-B : Descriptive)

Time : 2 hrs. 30 min.

Marks : 35

[Answer any seven (7) questions]

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| 1. Write a note on application of gas chromatography. | 5 |
| 2. Write a note on Principle and application of flame photometry. | 2.5+2.5
=5 |
| 3. Write a note on gel chromatography. | 5 |
| 4. Write a note on fluorimetry | 5 |
| 5. Discuss in brief the methodology of TLC. | 5 |
| 6. Write a note on Detectors used in IR spectroscopy. | 5 |
| 7. Define- a. Retention factor b. Absorption maxima c. Chromophore
d. Nephelometry e. pH | 1+1+1+
1+1=5 |
| 8. Write a note on the principle and application of AAS. | 2.5+2.5
=5 |
| 9. Define electrophoretic mobility. Explain the factors affecting
electrophoretic mobility. | 2+3=5 |

(PART-C: Long type questions)

[Answer any two (2) questions]

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| 1. Discuss in brief principle, instrumentation and application of
high-performance liquid chromatography. | 3+5+2
=10 |
| 2. Write a note on derivatization in gas chromatography and
factors affecting fluorescence intensity. | 5+5=10 |
| 3. Define and derive Beer's and Lambert's law. | 5+5=10 |

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