2023/12

SET A

B. PHARM.
SEVENTH SEMESTER
INSTRUMENTAL METHOD OF ANALYSIS
BP701T [REPEAT]
[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***

1. UV cutoff wavelength of water is
   a. 198 nm b. 191 nm
   c. 204 nm d. 205 nm
2. Which type of column is commonly used for the separation of enantiomers?
   a. Phenyl b. amino
   c. C-18 d. Chiral
3. Length range of column used in HPLC.
   a. 80-100 cm b. 5-30 cm
   c. 1-10 cm d. All of the above
4. For the detection of amino acids which reagents are used.
   a. Ninhydrin reagent b. Conc. HCl
   c. Wagner reagents d. Conc. H2SO4
5. In flame photometry λ is used for _____ purpose.
   a. Quantitative b. Both a and c
   c. Qualitative d. None of these
6. 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
7. If the particle size of stationary phase increases it leads to separation
   a. Decreases b. Increases
   c. No effect d. Both b and c
8. 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
9. Which of the following is not a factor influencing fluorescence intensity.
   a. temperature b. Rigidity of structure
   c. conjugation d. Source of light
10. 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

11. 1mg is equal to-
    a. 1000 µg
    b. 10000 µg
    c. 10 µg
    d. 500 µg

12. Which of the following is most commonly used column for HPLC?
    a. C-10
    b. C-8
    c. C-4
    d. C-18

13. In normal-phase chromatography, the mobile phase is
    a. Polar
    b. Non-polar
    c. Both
    d. None of these

14. Most commonly used stationary phase in TLC is ____
    a. Silica gel-G
    b. Silica gel-GH
    c. Alumina
    d. Silica gel-H

15. Principle involved in Thin Layer chromatography is
    a. Adsorption
    b. partition
    c. Both a and b
    d. None of these.

16. A device that converts radiation energy to electrical signals is called ___.
    a. Recorder
    b. Amplifier
    c. Monochromator
    d. Detector

17. Diffraction grating consists of a ____.
    a. Glass
    b. Quartz
    c. Alkyl halide
    d. All of the above.

18. In which the type of vibration bond angle is altered.
    a. Asymmetrical vibration
    b. Symmetrical vibration
    c. Bending vibration
    d. All of the above.

19. Which of the following is a GC detector?
    a. Katharometer
    b. Bolometer
    c. Thermocouple
    d. Golay Cell

20. 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.

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PART-B :Descriptive

Time : 2 hrs. 30 min. Marks : 35

[Answer any seven (7) questions]

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]

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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