

C 22009

(Pages : 2)

Name.....

Reg. No.....

FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, JUNE 2017

Chemistry

CH 4E 04—INSTRUMENTAL METHODS OF ANALYSIS

(2010 Admissions)

Time : Three Hours

Maximum : 36 Weightage

Section A

Answer all questions.

Each question carries a weightage of 1.

1. What is molar absorptivity ? Explain its significance.
2. Why water cannot be used as a solvent for Infrared spectroscopy ?
3. What is polarographic maxima ? How it can be suppressed ?
4. Bring out the significance of half-wave potential.
5. What is meant by R_f and R_x values in chromatography ?
6. Compare gas chromatography with liquid chromatography.
7. TG studies always require DTA also ; Why ?
8. Why α - alumina is used as a reference material in DTA ?
9. How do you estimate the nitrate content in water ?
10. What is acid rain ? Explain.
11. How is blood sugar estimated ?
12. How is the acidity of milk measured ?
13. What are biosensors ? Give an example.
14. What is meant by RIA ?

(14 × 1 = 14 weightage)

Turn over

Section B

Answer any seven questions.

Each question carries a weightage of 2.

15. Discuss the principle involved in SEM.
16. Describe the principle involved in amperometry.
17. Write a note on chronopotentiometry.
18. Explain the basic difference between DTA and DSC.
19. Describe the principle involved in TG.
20. Describe the fate of the air pollutants CO and SO₂ in the air.
21. Define iodine value and saponification value. What do these values indicate as far as the oil is concerned ?
22. How is cholesterol estimated ?
23. Write a note on Hapten inhibition test.
24. Discuss the applications of Western blott technique.

(7 × 2 = 14 weightage)

Section C

Answer any two questions.

Each question carries a weightage of 4.

25. Give an account of the principle and instrumentation involved in AAS. Discuss the important applications of AAS.
26. Discuss the theory, instrumentation and applications of atomic fluorescence spectrometry.
27. Give an account of the principle, instrumental set up and applications of HPLC. Mention its advantages over other chromatographic methods.
28. How are water pollutants classified ? What is the significance of BOD and COD ? How BOD and COD in a sample of waste water can be analysed ?

(2 × 4 = 8 weightage)