

C 82386

(Pages : 2)

Name.....

Reg. No.....

**FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, JUNE 2015**

(CUCSS)

Chemistry

**CH4 E04—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. Distinguish between Nephelometry and Turbidometry.
2. Fluorimetry is considered as a more sensitive technique compared to absorption spectrometry. Why ?
3. Distinguish between SEM and TEM.
4. How do you determine kinetic energy of photoelectrons in XPS ?
5. What is anodic stripping voltammetry ?
6. Polarographic experiments are carried out using 3-electrode assembly. Why ?
7. Name two detectors used in HPLC.
8. Write van Demter equation. Explain the terms.
9. What is thermometric titration ?
10. TG and DTA are complimentary techniques. Justify the statement.
11. Explain the significance of (a) BOD ; (b) COD.
12. How is mercury in polluted water estimated ?
13. Define Saponification value of oil. Explain its significance.
14. What is radio-immuno assay ?

(14 × 1 = 14 weightage)

**Section B***Answer any seven questions.**Each question carries a weightage of 2.*

15. Explain the working of a hollow cathode lamp.
16. Briefly discuss the various atomization techniques.
17. Explain briefly principle and applications of AFM.

**Turn over**

18. Discuss the principle and applications of chronopotentiometry.
19. Discuss the use of crown ethers in separation science.
20. Name two detectors used in GC. Explain the working of one of them.
21. What is DMA ? Discuss.
22. How is CFC in air estimated ? Explain.
23. How is blood urea estimated ? Discuss.
24. Name two biosensors. Explain the working of one them.

(7 × 2 = 14 weight)

### Section C

Answer any **two** questions.

Each question carries a weightage of 4.

25. Discuss the instrumentation of UV-visible spectrophotometer.
26. Discuss the theory and applications of coulometric method of analysis.
27. Discuss the instrumentation in TG.
28. List the heavy metal pollutants in water. How are they estimated ? Discuss.

(2 × 4 = 8 weight)