



QP CODE: 25024594



Reg No :

Name :

M.Sc DEGREE (CSS) EXAMINATION, APRIL 2025

Fourth Semester

M Sc ANALYTICAL CHEMISTRY

ELECTIVE - CH820402 - INSTRUMENTAL METHODS OF ANALYSIS

2019 ADMISSION ONWARDS

12F7ACE7

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

Weight 1 each.

1. Name the common sources used in an AAS instrument. How do they differ from one another?
2. Discuss the advantages of electrothermal atomization in AAS.
3. What are major components of a non-dispersive instrument used for Atomic fluorescence measurements?
4. Mention atleast four applications of Raman spectroscopy in the study of inorganic species.
5. What are the types of magnets used in NMR spectroscopy?
6. Describe a method for measuring the turbidity of a sample.
7. What do you mean by colorimetric titration?
8. What are the different fragmentation modes in mass spectrometry?
9. What is ISS? What information can be obtained from it?
10. List out few advantages of STM.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

Weight 2 each.

11. Distinguish between FET and MOSFET.
12. Write a note on X-ray fluorescence in Atomic X-ray spectrometry.
13. Briefly describe the sources used in IR spectrometry.
14. Explain the instrumentation of a refractometer.





15. Briefly explain the principle of polarimetry.
16. Explain the atomic and molecular mass spectral instrumentation.
17. What is XPS? Explain the principle of XPS.
18. State the differences between SEM and TEM.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. What are chemical interferences in AAS measurements? How it can be minimized?
20. Discuss (a) the instrumentation of powder X-ray diffraction method (b) determination of sodium chloride structure by powder method.
21. Discuss various types of instruments used in UV-Visible spectroscopy.
22. Give a brief description on various components of Spectrofluorometer.

(2×5=10 weightage)

