

COURSE CODE - 2030105

PG DEGREE EXAMINATION- JAN 2009

M.SC (CHEMISTRY)

SPECTROSCOPY AND SPECTROMETER

(For the Candidates Admitted from Calendar Year 2007 on wards)

Time: 3 hours

Max. Marks: 75

Section-A

Answer All Questions:

15X1=15

1. What is mean by visible spectra
2. Write IR region
3. What is mean by absorption spectra.
4. What is mean by NMR
5. What is mean by FT NMR
6. What is mean by chemical shift
7. Write the basic principle of two dimentional NMR Spectroscopy.
8. Write the applications of NMR
9. What is mean by Homocosity
10. What is mean by molecular ions
11. What is mean by Isotope ions
12. What is fragment ions
13. Write UV region
14. Write the principle of NMR
15. Write the principle of mass spectrometry

Section – B

Answer Any Five Questions:

5X6=30

16. a. Write above chromophores
(Or)
b. Explain intra and inter molecular hydrogen bonding
17. a. Explain nuclear spin and magnetic moments of a nucleus
(Or)
b. Write about FTNMR
(Or)
18. a. Explain ^{13}C NMR spectroscopy
(Or)
b. Write about factors affecting ^{13}C chemical shifts
19. a. Explain the FAB measurement technique
(Or)
b. Write about rearrangement Ions
(Or)
20. a. Write about identification of organic compounds using UV spectroscopy
(Or)
b. Write about identification of organic compounds using IR spectroscopy

Section – C

Answer any Two Questions:

2X15=30

21. Write about
 - i. Anxothroms and
 - ii. Wood ward – Fieser Rules.
22. Write about factors influencing proton chemical shifts
23. Explain basic principles of two dimentional NMR spectroscopy
24. Write a note on fragment ions of odd and even electron types
25. Explain the identification of organic compounds using NMR Spectroscopy.