IV - SEMESTER

Paper II- Organic Spectroscopy -- II

**UNIT-I**

Optical rotatory dispersion and circular dichroism: Phenomena of ORD and CD. Classification of ORD and CD Curves; Cotton effect curves and their application to stereochemical problems; the Octant rule and its application to alicyclic ketones.

**UNIT-II**

Improving the NMR spectrum: the mean, pulse experiment, new techniques in FT NMR.spectroscopy: the separation of chemical shift and coupling on to different axes (2D-NMR,cosy), spin decoupling, the nuclear over hauser effect associating the signals from directly bonded 13 C arid IH.

ESR Derivative curves: values and hyperfine splitting.

**UNIT-III**

Fragrmentation processes; fragmentation associated with functional groups; rearrangement and mass spectra of some chemical classes.

Structural elucidation of Organic compounds by a combined application of the special methods of Units 1-III.

**UNIT-IV**

Separation Techniques; Instrumentation – Gas Chromatography, High performance Liquid Chromatography, X – Ray diffraction (XRD)

Text\_books:

1) Spectroscopic Methods in Organic Chemistry. Forth Edition D.M. Williams and

I. Fleming Tata - McGraw Hill, New Delhi, 1990. For all spectral methods

except ORD and CD and ESR.

2) Organic Spectroscopy, Second Edition, W.Kemp, ELBS Macmillan, 1987 for

ORD and CD and ESR.

Books in Ileterence:

1) Book 2 mentioned above.

2) Applications of absorption spectroscopy of Organic Compounds J.R.Dyer,

Prentice Hall of India, New Delhi, 1984.

3) Spectrometric identification of . Organic Compounds, Fourth Edition, R.M.

Silverstein; G.C.Vasslellr and T.C. Merill, Johne Willey, Singapore, 1981.For

ORD and CD "Applications of Optical rotation and Circular Dichroism", G.C.

Barret, in "Elucidation of Organic structures by Physical and Chemical Methods"

Part I (Eds) K.W. Bentley and G.W.Rirty John Wiley, 1972, Chapter VIII (only

those aspects mentioned in the syllabus).