

**M.Sc. Semester-III**  
**Organic Chemistry Paper –I**  
**Natural Products**  
**CHNN-601-(O)**

**Unit-1 Natural Coloring Matter: 25% (15 Hours)**

Classification General Method of Structural Determination, Biosynthesis studies of Anthocyanine (Cyanin and Palargonidin, Flavones (Chrysin), Flavonols (Quercetin), Flavonone (Dihydro flavone) and Isoflavones (Daidzein), Coumarin, Quinones (Polyporic acid), Porphyrin. Chemistry of Hemin and Chlorophyll.

**Unit-2 Terpenoids: 25% (15 Hours)**

Chemistry of Abietic Acid, Gibberellic acid Gibberellin-A), Squalene, Eudesmol, Phytol and Cadinene, Zingiberene, Biosynthesis study of Triterpenoid and Tetra terpenoid

**Unit-3 Vitamins: 25% (15 Hours)**

Detailed Study of Chemistry of Thiamine (Vitamin-B1), Pantothenic Acid (Vitamin-B2), Pyridoxine-(Vitamin-B6), Ascorbic Acid (Vitamin-C) Tocopherols (Vitamin-E), Biotin (Vitamin-H), and Biological importance of Vitamins.

**Unit-4 Alkaloids: 25% (15 Hours)**

General Biogenetic Studies of Alkaloids, Chemistry of Reserpine, Colchicine, Strychnine, Morpholine, Narcotine.

**Basic Text & Reference Books:**

1. Natural Products by O.P. Agarwal, vol. 1 & 2
2. Organic Chemistry of Natural Products by G.R. Chatwal, Vol. 1 & 2
3. The Chemistry of Natural Products, K. W. Bentley, Vol. I -V (Interscience).
4. Organic Chemistry, Vol. 2, I. L. Finar, 5<sup>th</sup> Edition (1994) ELBS Publication.
5. Natural Products Chemistry, Vol. I & II K. Nakanishi et al., Academic press publication (1974).
6. The Molecules of Nature, J. B. Hendrickson, W. A. Benjamin Inc. (1965).
7. Selected Organic Synthesis, Ian Fleming John Wiley (1977).
8. Chemistry of Natural Products, N. R. Krishnaswamy, University Press (India) Ltd. (1999).
9. Classical Methods in Structure Elucidation of Natural Products, Reinhard W. Hoffmann by Wiley-VHCA.