

**M.Sc. Semester-III**  
**Organic Chemistry Paper –II**  
**Industrial Chemistry**  
**CHNN-602-(O)**

**Unit-1 Basic Principle of Unit Process & GMP, GLP: 25% (15 Hours)**

Basic Chemical Data, Batch Versus Continuous Operation, Design Flowcharts, Chemical Process Selection, Safety Hazards, Fire and Toxic Materials, Research and Development, Patents. Good Manufacturing Practice and Laboratory Practice.

Unit Process and Unit Operations, Nitration, Halogenation, Animation, Sulphonation and Hydroxylation.

**Unit-2: Soap, Detergents and Preservatives: 25% (15 Hours)**

Detergents, Surfactants, Alkyl Benzenes, Fatty Acids and Fatty Alcohols, Soaps. Essential Oils, Constituents, Animal Fixatives, Fruit Concentrates, Vanilla, Chocolate, Monosodium Glutamate, Food Additives, Preservatives.

**Unit-3: Oils, Fats & Agrochemicals: 25% (15 Hours)**

Vegetable Oils, Cotton Seed Oil, Hydrogenation, Agrochemicals, Insecticides, Fungicides, Weedicides, Rodenticides, Plant Nutrients, Plant Hormones.

**Unit-4 Pulp & Paper: 25% (15 Hours)**

Pulp, Pulping Process, Sugar-Ethanol Industries Base Carboxyl Manufacture of Paper and Rayon.

**Basic Text & Reference Books:**

1. Industrial Chemistry By B.K Sharma
2. Unit Processes in Organic Synthesis. By P. H. Groggins
3. Shreves Chemical Process Industries By George T Austin
4. Industrial Organic Chemistry by Klaus Weissermann