

M.Sc. Semester-IV
Organic Chemistry Paper-II
Industrial Organic Chemistry
CHNN-702-(O)

Unit 1: Synthetic Industries Based On Petroleum: 25% (15 Hours)

Coal, Petroleum, Natural Gas, Organic Chemicals from Coal Distillation, Refining of Crude Oil FCR Industrial Fuels, C₁, C₂, C₃, C₄ and Aromatic Chemicals. Textile Fibers Classification, Manufacture of Important Polyamide, Poly Ester Fibers.

Unit 2: Paints & Varnish, Explosive 25% (15 Hours)

Paint: Industries Paint and Varnish Classification of Paints, Manufacture of Paints. Methods of Applying Paints.

Varnish: Raw Materials Manufacture of Varnishes, Types of Varnishes.

Explosives: Propellants and Toxic Chemical Agents.

Types of Explosives, Characteristics of Explosive, Industrial Explosives, propellants, Rocket and Missiles, Propellants for Rocket, Miscellaneous Industrial Explosives Uses, Pyrotechnics, Military Explosives, Incendiaries, Toxic Chemical Agents (Weapons).

Unit 3: Industrial Polymers 25% (15 Hours)

Introduction of Polyethylene's, Manufacture of Polyethylene, Low and High Density Polyethylene co-polymers of Ethylene and Application.

Monomers, Dacron, Orlon, Bakelite, Nylon 6,6 Teflon Polymer Reactions, Hydrogenation, Addition and Substitution Aldehyde and ketonic Group Reactions. Cyclisation, Cross linkage Reaction.

Resins: Introduction & Preparation of Resins, Mechanism Type of Resin, Application

Acrylic Polymer

- 1) Poly acrylate and Poly methylated acrylate,
- 2) Poly Methyl Methacrylate
- 3) Poly Acrylonitrile

Unit 4: Selected Small Scale Industries:

25% (15 Hours)

Safety Matches, Agarbatties, Naphthalene balls, Candles, Shoe Polish, Gum paste, Pen Ink, Removal of Stains, Phenol disinfectant Soaps, Detergents.

Basic Text & Reference Books:

1. Industrial Chemistry by B.K. Sharma
2. Shereve's Chemical Process Industries by George T. Austin
3. Industrial Organic Chemistry by Klaus Weisseemann