Paper – III CHN-703(P) Physical Chemistry

Unit :- 1

- **Copolymerization :** Basic, Kinetics of free Radical Copolymerization, Binary co-polymerization equation, Types of co-polymerization (Alternate, Ideal, Random Alternate, Blocl and Crystallinity)
- Composition of copolymers, Readivity Ratios.
- **Step polymerization:** Mechanesim of step polymerization, polyfunctional step polymerization.
- **Crystallinity in polymer :** Degree of crystallinity, Determination of Crystallinity, Morphology of Crystalline Polymer (Lamellae, spherulites, Helix),

Unit :- 2

- **Polymer Synthesis :** bulk polymerization, precrptation, Emulsion polymerization, Suspension polymerization, Interfacial polymerization,
- Methods for determination of average molecular weight of polymer: (colligative property measurement, Light Scattering method, Dilute solution viscometry, Ultra Centrifugation,
- **Weight Distrubution Methods :**Gel Permission Chromatography and others.

Unit :- 3

- **Rheology of polymer :** Hook's equation, Newton equation, Maxwell and Voigt model, Deformation behavior of materials Relaxation and Retradation.
- **Polymer Processing :** Compounding, Casting, Moulding, Foaming, Rein forcing, Fiber spinning.

Unit :- 4

- ¤ Analysis and Testing of Polymer
- Chemical analysis
- Spectroscopic methods
- X- Ray Dyfraction Analysis
- Microscopy
- Thermal Analysis
- Physical Testing