

Syllabus for Entrance Examination – M. Tech. in Polymer Engineering and Technology

2024-25

- ❖ **Basics of polymers:** Types of polymer, Techniques of polymerization, Types of copolymer, Concept of reactivity ratio, Natural polymers, Addition and condensation polymer, Polymer alloys and blends, Properties of commodity and engineering polymers, Thermosetting polymers and their applications, Elastomers, TPEs
- ❖ **Evaluation of polymers:** Mechanical, Rheological, Optical, Morphological, Thermal, Barrier, Weather resistance properties.
- ❖ **Additives:** Initiator, Inhibitor, Retarder, Plasticizer, Heat stabilizers, Lubricants, UV-stabilizers, Pigments and Extenders, Flame retardants and blowing agents
- ❖ **Processing of polymers:** Compression, Transfer, Injection, Extrusion, Pultrusion, Thermoforming, Calendaring, Reaction Injection moulding
- ❖ **References**

Plastics materials by J. A. Bryson

Principle of Polymerization by Odian

Polymer chemistry: An introduction by Steven

Polymer chemistry by Seymour

Polymer analysis by Steuart

Polymer processing Fundamentals by Osswald

Pigments handbook by T. C. Patton

Encyclopedia of Polymer Science and Engineering by Holman Mark