

# Syllabus for Entrance Examination - M. Tech. in Surface Coating Technology

2024-25

- ❖ **Basics of Resins:** Addition and condensation polymerization, Types of Polymer, Techniques of Polymerization, Copolymerization, Types of Copolymers, Concept of Reactivity, Crosslinking of Polymers, Natural Resins and synthetic Polymers, Water borne coating, High solids coating, Radiation cure coatings, Powder coatings, High performance coating, Manufacturing of paints.
- ❖ **Characterization:** Mechanical, Rheological, Optical, Morphological, Topological, Thermal, barrier, Corrosion, Chemical and weather resistance properties.
- ❖ **Additives:** Wetting and dispersing agents, Viscosity control, Anti-skin, Dryers, Mating agents, Flow and leveling agents, Thyrotrophic agents, Mar resistance, Anti-foam, Anti-settling, desiccants, Anti-rust, Protective colloids, Biocide, Adhesion promoter, UV-Stabilizers, Initiator, Blow, Plasticizers, etc.
- ❖ **Application Techniques:** Brush, Screen printing, Spray, powder, Dip-coating, ED, Fluidized Bed, Electrostatic spray gun.
- ❖ **Solvents:** Theory of solutions, Solvents, True and diluents, Types of solvents, Solvents use in paint and printing inks.
- ❖ **Pigments:** Extenders, Types of pigments, Pigmentary properties.
- ❖ **References**

Additives for coating by J. Bieleman

A manual of resins for surface coating By M. J. Husband

Paints, coatings and solvents by D. Staye

Paints and surface coating theory and practice by R. L. Lambourna

Pigments handbook by T. C. Patton

Resins for surface coating by P.K.T. Oldering

Coating technology handbook by D. Satas