

SEMESTER-III
4. Polymer Science III

Time: 3 Hrs.

M.M. 100 marks

Note: The paper will be divided into two sections.

Section-A M.C.Q.50 (10 from each section)

Total-50 marks

Section-B: Two questions are from each unit will be asked with internal choice and the candidate is required to attempt five questions.

Total-50 marks

Unit-I

Inorganic and Organic Polymer: Introduction, Inorganic reaction mechanism, Condensation organ metallic, polymers, Addition polymers, coordination polymers, Sol Gel, Portland cement, Silicates, Silicon dioxide, Asbestos, Diamond, Graphical, Polysulphur

Unit-II

Additives: Fillers, Reinforcements ,coupling agents, composites ,Nan composites , plasticizers, antioxidants, stabilizer (heat, ultra violet), flame retardants ,colorants, curing agents, blowing agent, lubricants, inhibitors

Unit-III

Conducting Polymer: Definition, Inherently conducting polymer: polyacetylene, polydiacetylene, polyaniline, poly (p-phenylene sulphide), photo conducting polymers

Unit-IV

Colloid chemistry of polymers: polymers as surfactants and their influence on properties like strength, polymer adhesion, polymer gel, classification of polymer gels, gel formation condition, polymer gels as disperse, colloidal systems, polymer foams

Unit-V

Outline manufacturing and properties of

Polyethylene	Polyimides
Polypropylene	Polyacrylonitriles
Polystyrene	Polyvinyl alcohol
Polymethylmethacrylate	Polyvinyl acetate
Polyvinyl chloride	Phenol formaldehyde resin
Polyurethanes	Urea formaldehyde resin
Polyesters	Melamine formaldehyde
Polycarbonates	Melamine formaldehyde resin
Polyamides	Epoxy resins.

Recommended Books:

1. Polymer science: V.R. Goowarika,r,N.V. Viswanathan,Jayadev Sridhar
2. Text book of polymer science: Fred W. Billmeyer
3. Polymer science & Technology: Joel R. Fried
4. Polymer Science and Technology: Premamoy Ghosh