

**SARDAR PATEL UNIVERSITY**  
**Programme & Subject: B.Sc (Industrial Chemistry-Vocational)**  
**Semester: VI**  
**Syllabus with Effect from: November-2013**

<b>Paper Code: US06CICV03</b>	<b>Total Credit: 3</b>
<b>Title of Paper: Polymers</b>	

Unit	Description in Detail	Weightage (%)
I	Introduction, General characteristics of polymers in comparison with common organic compounds. Nomenclature. Classification of polymers, Different types and method of Polymerizations.	25%
II	Molecular weight and molecular weight distribution number, weight and viscosity average molecular weights of polymers. Methods of determining molecular weight, Practical significance of molecular weight distribution. Glassy state, Glass transition temperature (T <sub>g</sub> ), Factors affecting T <sub>g</sub> , Crystallinity in polymers.	25%
III	Thermosetting Polymers: Introduction, Synthesis, Chemistry, Properties and Applications of Phenol formaldehyde, Melamine formaldehyde resins, Polyurethanes, Epoxy resins, Grades of epoxy resins, Curing process and its importance with mechanism. Elastomers, Polybutadiene and Neoprene.	25%
IV	Detailed study of the following thermoplastic polymers with respect to Synthesis, Chemistry, Properties and Application Polyolefine Polyethelenes, LDPE, HDPE, Polypropylene, Polyvinyl chloride, Teflon, polystyrene. Homopolymers, Copolymers such as SBR, ABS, SAN. Polyvinyl acetate and its modifications. Polyamides: Nylon-6 and Nylon-66.	25%

**Basic Text & Reference Books:**

- Textbook of Polymer Science, John Wiley and Sons, D.D. Deshpande.
- Physical Chemistry of Macromolecules. Vishal Publications, New Delhi 1985
- Polymer Science V. R. Gowarikar N.V. Vishwanathan and J. Sreedhan, Wiley Eastern Ltd., 1986.

