Seat No.: Enrolment No.	Seat No.:	Enrolment No.
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GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI • EXAMINATION - WINTER • 2014

	•	Code: 162302 Date: 28-11-2014	
Ti	Subject Name: Plastic Structure Property and Relationship Time: 02:30 pm Total Marks: 70 Instructions:		
111.	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a) (b)	Compare: Linear, branched, cross linked and network Polymers. Explain effect of plasticizer on the properties of polymer.	07 07
Q.2	(a) (b)	What is Glass Transition Temperature (Tg)?Explain about factors affecting on it in detail. Explain about stress-strain curve for plastics material and analyze the properties	07
	(0)	of plastics from it. OR	U I
	(b)	Explain effect of molecular weight on the properties of polymer.	07
Q.3	(a) (b)	Explain properties of Nylons with reference to their molecular structure. Compare: Crystalline Polymer with Amorphous Polymer. OR	
Q.3	(a) (b)	List the chlorine contain plastics material with molecular structure. Explain specific properties related to molecular structure. Discuss effect of hydrogen on Polymer properties.	
Q.4	(a)	(1) PE has a Tg of -20°C. Why is it that it appears to be solid at room temperature? (2) What make PVC self extinguishing?	07 07
	(b)	Explain effect of Polar group on the electrical properties of polymer. OR	07
Q.4	(a) (b)	Explain classification of polymer on basis of Tacticity. Define: Dielectric constant, Power factor, Haze, Gloss, Dielectric strength, Dipole moment, Creep	07 07
Q.5	(a)	Discuss the relation between structure and properties of Polyacetal. Mention the important properties and application of Polyacetal.	07
	(b)	Explain effect of molecular orientation on the properties of polymer. OR	07
Q.5	(a) (b)	Compare: Homopolymer with Copolymer How does bond strength affect thermal stability in a polymeric material? Explain with example.	07 07
