Seat No.:	Enrolment No.

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-VI • EXAMINATION - SUMMER 2013** 

Subj	ect C	ode: 162302 Date: 27-05-2013	}
Subj	ect Na	ame: Plastic Structure Property and Relationship	
		<b>30 am - 01.00 pm</b> Total Marks: 70	)
Instru	ctions:	Atomick all amore Comp	
	2. N	Attempt all questions.  Take suitable assumptions wherever necessary.  Igures to the right indicate full marks.	
Q.1	(a)	What is Glass Transition Temperature (Tg)? Describe factors affecting Tg.	07
	(b)	Explain how the structure of a polymer affects its mechanical properties.	07
Q.2	(a) (b)	What is Hydrogen bonding? Explain effect of it on properties of polymers. Discuss the relation between the structure and the properties of polyacetal resins. Mention the important properties and applications of polyacetals.  OR	07 07
	(b)	Explain effect of oxygen on properties of Polymer which contain silicone in chain.	07
Q.3	(a)	Explain about the factors determining crystallinity.	07
	(b)	Explain about effect of Plasticizer and Heat stabilizers on Polymers.  OR	07
Q.3	(a)	What is conformation and configuration?	<b>07</b>
		Explain classification of Polymer on basis of Tacticity.	
	<b>(b)</b>	Explain how the structure of a polymer affects its electrical properties.	07
Q.4	(a)	Discuss: How are the properties of polyacrylates related to their structure? List the important application of PMMA.	07
	(b)	Name some fluorine containing polymers and give their molecular structures. What are the specific characteristics related to their molecular structures?  OR	07
Q.4	(a)	Explain, how the structures of nylons are related to their properties.	07
Q.4		Explain the properties of unsaturated polyester resins with reference to their molecular structures.	07
Q.5	(a) (b)	Explain effect of molecular orientation on properties of Polymer. S.N. Polymer solubility	07 07
0.5	( )	OR	07
Q.5	(a) (b)	Explain how the structure of a polymer affects its chemical properties.  Define: Haze, Gloss, Reflectance, Dissipation factor, Dielectric strength, Volume resistivity and Surface resistivity	07 07

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