Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER - V (NEW) EXAMINATION - WINTER 2015

Subject Code: 2152306		t Code: 2152306 Date:08/12/2015	Date:08/12/2015	
Ti	ime: 1 struc	t Name: Chemistry of Plastic Materials 10:30am to 1:00pm Total Marks: 7 tions: 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks.	'0	
Q.1	(a) (b)	What is a Polymer? Explain Addition and Condensation Polymerization with suitable example & Enlist polymerization techniques. What is functionality? State the functionality of the monomers: styrene, pentaerythritol, 1, 4-butane diol, ethylene glycol.	07 07	
Q.2	(a) (b)	Name the monomers of the following natural polymers and give their use also. (i) Starch (ii) Proteins (iii) Rayon (iv) Cellulose (v) Nucleic acids. Give ten differences between Thermoplastic and Thermoset.	07 07	
	(b)	OR What are the chain transfer agents? Explain their role in polymerization?	07	
Q.3	(a) (b)	What is Natural Rubber? Give the structure of polyisoprene & Explain the extraction of Latex in detail. What is Compounding? Explain Vulcanization & mastication of rubber in detail.	07 07	
Q.3	(a) (b)	OR Write structure, preparation, properties & application of chlorinated rubber. Explain the chemistry of Free-Radical polymerization? Give any two examples.	07 07	
Q.4	(a) (b)	Why styrene does undergo anionic polymerization easily? Discuss. Write structure, preparation, properties & application of EPOM.	07	
Q.4	(a) (b)	OR Write down the preparation of Resol and explain the curing process for Novalac. What is Polyacetals? Explain Polyoxymethylene preparation with structure, property and Application.	07 07	
Q.5	(a) (b)	Write down the curing process for epoxy. Explain synthesis of thermoplastic polyester. Explain the role of initiators, accelerators & inhibitors in unsaturated polyester. OR	07 07	
Q.5	(a) (b)	Show the structure of Nylon 6, Nylon 66, Polycarbonate, ABS, PPS, and PEEK & PTFE. Write down the chemistry of Isotactic Polypropylene. Explain Chemical & physical properties of PP.	07 07	
