Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY BE- SEMESTER-III (NEW) • EXAMINATION – SUMMER 2015

Subject Code: 2132301 Date: 09/06/2015 Subject Name: INTRODUCTION TO PLASTICS MATERIAL SCIENCE Time: 02.30pm-05.00pm Total Marks: 70

•	4	4 •	
Ins	trn	ctio	nc.

1. Attempt all question

- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

Q.1	(a)	Explain difference between low molecular weight compound and polymer with suitable examples.		
	(b)	Give classification of polymer. Explain any two in detail.	07	
Q.2	(a) (b)	List methods of polymerization. Explain Bulk polymerization in detail. Write note on: (1) Initiators (2) Inhibitors OR	07 07	
	(b)	Explain the mechanism of Ionic polymerization.	07	
Q.3	(a) (b)	Compare: Addition Polymerization with Condensation Polymerization. Explain coordination polymerization with example. OR	07 07	
Q.3	(a)	Explain about Number Average and Weight Average molecular weight concept for polymer.	07	
	(b)	Define and explain about Glass Transition Temperature (Tg). List the factors affecting the Tg.	07	
Q.4	(a)	Explain the variation of specific volume with change in temperature for crystalline, amorphous and partially crystalline polymer.	07	
	(b)	Explain about Linear, Branched and cross-linked polymer with suitable example. OR	07	
Q.4	(a)	Short note: (1) Tg and Plasticizers (2) Tacticity	07	
	(b)	Define Crystallinity. Explain about effect of Crystallinity on properties of Polymers.	07	
Q.5	(a)	Explain Gas phase polymerization in detail.	07	
	(b)	Explain the following with relation to polymer molecule: (1) Hydrolysis (2) Acidolysis	07	
		OR		
Q.5	(a)	Explain: Polydispersity and Molecular Weight Distribution in Polymers.	07	
	(b)	Compare: Thermosets with Thermoplastics	07	
