Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY ME - SEMESTER(NEW) EXAMINATION – SUMMER - 2017

Subject Code:2743002 Date:0			3/05/2017	
Til Ins	me:0 tructic 1. 2. 3.	2:30 pm to 05:00 pm Total Marks: ons: Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	70	
Q.1	(a) (b)	Explain in brief about free radical polymerization reaction. Give detailed classification of polymers with suitable examples.	07 07	
Q.2	(a) (b)	Define 'number-average molecular weight and 'weight average molecular weight'? Discuss any one method of measuring molecular weight of polymer. Stating 'Carother's theory, derive 'Carother's equation'.	07 07	
	(b)	Write a short note on molecular weight distribution and polydispersity index.	07	
Q.3	(a) (b)	Give a comparative account of emulsion and suspension polymerization techniques. Write a note on 'bulk polymerization'. State its advantages and disadvantages.	07 07	
Q.3	(a) (b)	With suitable example explain mechanism of cationic addition polymerization. Write a short note on polymer degradation.	07 07	
Q.4	(a)	What do you understand by polymer processing? Explain in detail 'Blow molding process.	07	
	(b)	Explain stereoisomerism in polymers	07	
Q.4	(a) (b)	Write a note in brief about various methods of polymer processing. Considering steady state assumption, derive kinetic expression for free radical polymerization.	07 07	
Q.5	(a)	Give a comparative account of 'addition polymerization' and 'condensation Polymerization'.	07	
	(b)	Explain elastomers, plastics and fibres on the basis of intermolecular force of attraction.	07	
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Q.5	(a)	Give 'Mark-Hawkinns Skauda Equation', and explain how molecular mass can be determined from intrinsic viscosity	07	
	(b)	Write in brief about following: stress-strain properties; ultimate elongation, toughness, tensile strength and modulus.	07	
