Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. - SEMESTER - VI • EXAMINATION - WINTER 2012

Subject code: 162304 Date: 05/01/20			
-		Name: Reaction Engineering & Rheology .30 pm - 05.00 pm Total Marks: 70	
Insti		•	
111511		Attempt any five questions.	
	2.	Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a)	Explain the order and molecularity of reaction with examples? Write the difference between the order of reaction and molecularity of reaction?	07
	(b)	•	07
Q.2	(a) (b)	Write the mechanism and kinetics of anionic polymerization Explain on plug flow rectors in detail	07 07
	(b)	OR State and explain the elementary and non-elementary reaction with examples? Write the difference between the elementary and non-elementary reaction?	07
Q.3	(a) (b)	Explain with neat sketch of any single ideal reactor Explain the Effect of rate of strain with respect to time on mechanical behavior of polymeric materials	07 07
		OR	
Q.3	(a) (b)	Express the WLF equation? State and Explain shear thinning and shear thickening of polymer melts.	07 07
Q.4	(a)	Explain The Voigt Oelvin element for a viscoelastic material.	07
	(b)	Write on Weissenberg effect of polymer melt solution OR	07
Q.4	(a) (b)	Explain the time dependant fluids, shear rate dependant fluids State and explain the power law equation	07 07
Q.5	(a) (b)	Explain the Measurements of Rheological properties by Moony Viscometer Write on analysis of rheological parameters of calendaring process OR	07 07
Q.5	(a)	State the following	07
		i. Apparent viscosityii. Activation energy and its significance	
		iii. Activation energy and its significance iii. Continuous stirrer tank reactor (CSTR)	
	(b)		07

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