Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V- EXAMINATION - SUMMER 2016

Subject Code: 151301			Date: 19/05/2016	
T	-	ct Name: Elements of Chemical Engineering 102:30 PM to 05:00 PM Total Marks: 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks.	70	
Q.1	(a)	On the basis of thermodynamics and chemical kinetics, give classification of reaction.	07	
	(b)	Different variables affecting the rate of reaction. Explain	07	
Q.2	(a) (b)	State and explain definitions of reaction rate. Differentiate: (i) Single and multiple reactions. (ii) Elementary and non-elementary reactions.	07 07	
	(b)	OR Discuss temperature dependency and arrhenius law.	07	
Q.3	(a) (b)	Briefly explain temperature dependency from thermodynamics. With necessary equations explain temperature dependency from collision theory.	07 07	
		OR		
Q.3	(a) (b)	By considering principles of chemical engineering, write a short note on (i) Batch reactor. (ii) Plug flow reactor. Draw a neat sketch with short note on (i) Continuous reactor. (ii) Mix flow reactor.	07	
Q.4	(a) (b)	Short note: - Space time and Space velocity. List out different parameters and information for any reactor to be design.	07 07	
		OR		
Q.4	(a) (b)	Introduce role of activation energy in chemical reaction engineering. Give relation between F and E curves with necessary information.	07 07	
Q.5	(a) (b)	Enlist applications of fluidized bed reactor with a brief note. Fixed bed reactor. Short note.	07 07	
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Q.5	(a) (b)	Various methods of RTD measurement. Discuss Consider with examples explain thermodynamic laws and heat transfer concept.	07 07	
