Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III • EXAMINATION – WINTER 2013

	•	Code: 133602 Date: 26-11-2013	
Su	bject	Name: Polymer Chemistry for Chemical Technology	
Tiı	ne: 0	2.30 pm - 05.00 pm Total Marks: 70	
Inst	tructio	ns:	
		Attempt all questions.	
		Make suitable assumptions wherever necessary.	
	3.	Figures to the right indicate full marks.	
. .	()		~=
Q.1	(a)	Objective type questions	07
		Fill in the blanks	
		Macromolecules concept was given by	
		2. Full form of Teflon is	
		3. Anionic Polymerization is also known as	
		4. Kevlar was invented by	
		5. Monomer for PVC is	
		6. DMT is a raw material for	
	(1.)	7. Methyl Methacrylate is monomer for	~=
	(b)	Write Short Note on any two of the following	07
		1. Herman Staudinger	
		2. P.J.Flory.	
		3. Karl Ziegler	
		4. Giulio Natta	
		5. Stephanie Kwolek	
Q.2	(a)	Write detail note on the mechanism of free radical polymerization. Explain	07
	. ,	degree of polymerization.	
	(b)	Write detail note on the kinetic of free radical polymerization.	07
	` /	OR	
	(b)	Write detail note on the kinetic of cationic polymerization.	07
0.3	()		0.7
Q.3	(a)	Write notes on the production of any two monomers	07
		a) Styrene,	
		b) Butadiene,	
		c) DMT	
		d) TDI	
		e) MDI	
	(b)	Write note on the Number average and Weight average molecular weights &	07
	(D)	polydispersity index.	07
		OR	
Q.3	(a)	What is glass transition temperature of polymers? Explain various factors	07
Q. .5	(a)	affecting it.	07
	(b)	Write about Viscometry method for molecular weight determination of	07
	(0)	polymers.	07
Q.4	(a)	What are LCST and UCST? Explain with the help of phase diagrams.	07
	(b)	Write in detail about historical developments in polymers and various end use	07
		sectors of polymers.	
		OR	
Q.4	(a)	Explain molecular weight determination methods for polymers. Write in detail	07
		about GPC method.	

	(b)	What is living polymerization? Write in detail about its kinetic.	07
Q.5	(a)	Write a detail note on types of refinery and various important processes involved in refineries.	07
	(b)	Explain in detail about bulk, suspension, solution and emulsion polymerization techniques of polymerization? Write their advantages and disadvantages. OR	07
Q.5	(a) (b)	Explain in detail about polymers, classification of polymers. Give examples of addition, condensation, natural, synthetic and semi synthetic polymers.	07 07
