Seat No.:	Enrolment No.
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GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V (NEW) - EXAMINATION - SUMMER 2017

Subject Code: 2152306 Date: 03/05/2017

Subject Name: Chemistry of Plastic Materials

Time: 02:30 PM to 05:00 PM Total Marks: 70

Instructions:

1. Attempt all questions.

2. Make suitable assumptions wherever necessary.

3. Figures to the right indicate full marks.

			MARKS
Q.1	177	Short Questions	14
V.1	1	Basic requirement of monomer to undergo polymerization is	1
	2	Give two example of Initiators	1
	3	What type of catalysts used in co-ordination polymerization	1
	4	Define Functionality	1
	5	Define Degree of polymerization	1
	6	Give the classification of Polymerization techniques	1
	7	Define Glass Transition temperature	1
	8	Density of HDPE is	1
	9	Bakelite is also known as	1
	10	Give two example of engineering plastics	1
	11	Define Tacticity	. 1
	12	The polymer developed by using cellulose is	1
	13	Give an example of self polycondensation polymer	1
	14	Write the general formula for number average molecular weight.	1
Q.2	(a)	Define: Polymer and oligomer.	03
	(b)	Express an equation for kinetic chain length	04
	(c)	Describe briefly about step polymerization with an example.	07
		OR	
	(c)	Describe briefly about classification of polymers in detail?	07
Q.3	(a)	Write Mayo equation for finding degree of polymerization	03
	(b)	Write the kinetics for Anionic polymerization	04
	(c)	Write the mechanism and kinetics for Free radical polymerization in detail?	07
		OR	
Q.3	(a)	Write the structures of Ethyl cellulose and polyisoprene rubber.	03
	(b)	Write structure, preparation, properties and application for Cellulose Nitrate	04
	(c)	Discuss in detail about Conversion of latex into smoke rubber.	07
Q.4	(a)	Write the preparation of Nylon 66.	03
	(b)	Draw the neat sketch of PP manufacturing Process	04

	(c)	Write structure, preparation, properties and application for PTFE.	07
		OR	
Q.4	(a)	Write the properties and application of Polycarbonate	03
	(b)	Distinguish between LDPE and UHMWPE	04
	(c)	How ABS is prepared? Also write its properties and application.	07
Q.5	(a)	Write the Preparation of Urea formaldehyde	03
	(b)	Difference between Thermoplastics and thermoset	04
	(c)	Write structure, preparation, properties and application for Phenol Formaldehyde.	07
		OR	
Q.5	(a)	Write the properties and application of Melamine formaldehyde	03
	(b)	Write a short note on Epoxy Resins	04
	(e)	List out the factors affecting Tg of polymer in detail.	07
