Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII • EXAMINATION – WINTER • 2014

Subject Code: 172304 Date: 27-11-2014

Subject Name: Manufacturing of Thermoplastics Materials

Time: 10:30 am - 01:00 pm Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	What is Polyethylene? Explain with neat sketch, the manufacturing process of Low Pressure Polymerisation Process of Ethylene for manufacturing High Density Polyethylene. List the names of the companies and trade names to manufacture- LDPE, LLDPE & HDPE	**07**
	(b)	Describe the manufacturing process of Polypropylene by Ziegler Natta process with diagram. Give its general properties, manufacturers list with trade names.	**07**
Q.2	**(a)**	With help of flow diagram, describe the Emulsion Process for manufacturing PVC. What are the main advantages and disadvantages of this process?	**07**
	(b)	Discuss, how are the properties of Polyacrylates related to their structures? Also mention the important applications of PMMA.	**07**
		OR	
	(b)	How Vinyl Chloride is polymerised? With the help of neat sketch, describe the manufacturing of PVC by Suspension Process.	
Q.3	**(a)**	Write short notes on (i) Mass Polymerisation by Tower Process for Styrenics.(ii) High Impact Polystyrenes (HIPS)	**07**
	(b)	Write short notes on (i) ABS Plastics and its applications (ii) Manufacturing of PVC by Suspension Polymerisation	**07**
		OR	
Q.3	**(a)**	What are Biopolymers? List various Biopolymers and explain Polysaccharides in detail.	**07**
	(b)	What are Electro Conducting Polymers? List various Electro Conducting Polymers and give their applications.	**07**
		OR	
Q.4	**(a)**	Write Short notes on (i) Compounding of PVC (II) Continuous Melt Poly condensation process for PET manufacture.	**07**
	(b)	Explain manufacturing of polycarbonate (PC) by Interfacial Polymerisation. Give its properties and applications.	**07**
		OR	
Q.4	**(a)**	Give important copolymers of polystyrene? Write brief notes on them.	**07**
	(b)	What are the different grades of PS generally marketed? Discuss the properties of PS and its applications.	**07**
Q.5	**(a)**	Describe manufacturing of Polystyrene by Suspension Polymerisation with a suitable flow diagram. List various disadvantages of the process.	**07**
	(b)	Give properties and application of PVF and PVDF.	**07**
		OR	
Q.5	**(a)**	Give the chemical reactions by which Styrene monomer can be prepared.	**07**
	(b)	Name some fluorine containing polymers and give their molecular structures. What are the specific characteristics related to their molecular structures?	**07**

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