GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-VII • EXAMINATION – SUMMER • 2015

Subject Name: Manufacturing of Thermoplastics Material.

Date: 04/05/2015

Total Marks: 70

Subject Code: 172304

Instructions:

Time:02.30pm-05.00pm

1. 2. 3.	Mak	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a) (b)	What is polyethylene? Mention the different sources from which its monomer is obtained. Differentiate between the several types of polyethylene manufactured industrially. (a) Write briefly on how the different processes for manufacturing polyethylene developed. (b) Compare the properties for LDPE and HDPE.	07 07	
Q.2	(a) (b)	How HDPE is prepared industrially? Explain Ziegler Process in detail. Describe the commercial process of manufacturing Nylon 6, 6. What are its important properties and applications? OR	07 07	
	(b)	What are the different forms of Polypropylene? Discuss the type of catalyst employed for the manufacture of polypropylene and give the properties of the 3 forms of the polymer.	07	
Q.3	(a)	What are the sources for the monomer of polypropylene? Describe a commercial process for the manufacture of "Isotactic PP" with a suitable flow diagram.	07	
	(b)	How Vinyl Chloride is is polymerized? Describe Suspension process of manufacturing PVC with a neat sketch of its flow diagram.	07	
Q.3	(a)	Explain manufacturing of polycarbonate (PC) by interfacial polymerisation also mention its properties.	07	
	(b)	Compare the structure of PVC with that of PE and explain how the structure is related to its properties. What are the important fields of application of PVC?	07	
Q.4	(a)	How is polystyrene manufactured industrially by the mass polymerisation (Tower process)? Explain.	07	
	(b)	What are the different grades of PS generally marketed? Discuss the properties of PS and its structure. OR	07	
Q.4 Q.4	(a) (b)	Give the chemical reaction by which Styrene monomer can be prepared. Name some fluorine containing polymers and give their molecular structures. What are the specific characteristics related to their molecular	07 07	

structures?

Q.5	(a)	Describe briefly the process of manufacturing PTFE. What are the 07
		special properties of PTFE compared to those of the other polymers?

(b) Write Short note on a) Acrylonitrile Butadiene Styrene (ABS) and b) 07 Styrene Acrylonitrile (SAN)

OR

Q.5	(a)	Describe manufacturing of Polystyrene by Suspension Polymerisation	07
		with a suitable flow diagram. List various disadvantages of the process.	

(b) Give properties and application of PVF and PVDF.

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