

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII • EXAMINATION – WINTER 2013

Subject Code: 172304**Date: 28-11-2013****Subject Name: Manufacturing of Thermoplastics Materials****Time: 10:30 TO 01:00****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) With a neat sketch of flow diagram, describe the emulsion process of manufacturing PVC. What are the main advantages and disadvantages of the process? **07**
- (b) Describe briefly the process of manufacturing PTFE. What are the special properties of PTFE compared to those of the other polymers? **07**
- Q.2** (a) What is polyethylene? Mention the different sources from which its monomer is obtained; differentiate between the several types of polyethylene manufactured industrially. **07**
- (b) What are the sources for the monomer of polypropylene? Describe a commercial process for the manufacture of Isotactic- Polypropylene with a suitable flow diagram. **07**
- OR**
- (b) What are the different grades of PS generally marketed? Discuss the properties of PS and its structure. **07**
- Q.3** (a) 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**
- (b) How is vinyl chloride polymerized? Describe with a neat sketch of the flow diagram, the suspension process of manufacturing PVC. **07**
- OR**
- Q.3** (a) What are the different forms of Polypropylene? Discuss the type of catalyst employed for the manufacture of polypropylene and properties of the three forms of the polymer. **07**
- (b) What are electro conducting polymers? List various electro conducting polymers and give their applications. **07**
- Q.4** (a) Explain liquid crystal polymers along with its properties and applications. **07**
- (b) Give structure of Polyether Ether Ketone (PEEK) and discuss its properties along with applications. **07**
- OR**
- Q.4** (a) Give properties and application of PVF and PVDF. **07**
- Q.4** (b) Describe manufacturing of Polystyrene by Suspension Polymerisation with a suitable flow diagram. List various disadvantages of the process. **07**
- Q.5** (a) Give the chemical reaction by which styrene monomer can be prepared. **07**
- (b) Explain manufacturing of polycarbonate (PC) by interfacial polymerisation also mention its properties. **07**
- OR**
- Q.5** (a) How is nylon 6 prepared industrially? Giving a neat sketch of the flow diagram, describe the process. Mention important properties and uses of nylon 6. **07**
- (b) Write Short notes on i) Acrylonitrile Butadiene Styrene (ABS) and ii) Styrene Acrylonitrile (SAN) **07**
