

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
ME – SEMESTER IV (NEW) – • EXAMINATION – SUMMER 2016

Subject Code: 2743002

Date:04/05/2016

Subject Name: Polymer Science and Technology

Time:10:30 am to 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) State and explain various methods of degradation of polymers. **07**
(b) What are important physical properties of polymer? Explain few of them. **07**
- Q.2** (a) Explain classification of polymer with appropriate examples. **07**
(b) State various techniques of polymerization and explain any one in detail. **07**
- OR**
- (b) Differentiate between addition and condensation polymerization with example. **07**
- Q.3** Describe in detail various reaction engineering aspects of polymerization with special reference to reactor design and molecular weight of polymer. **14**
- OR**
- Q.3** (a) What is rheology of polymer system? Explain in detail. **07**
(b) Explain polymerization reactor for industrial polymerization of Butadiene rubber. **07**
- Q.4** With special reference to mechanism and kinetics, explain chain growth polymerization phenomena in detail. **14**
- OR**
- Q.4** With special reference to kinetics and co-polymerization fundamentals, explain step growth polymerization in detail. **14**
- Q.5** (a) Explain various measuring techniques for molecular weight of polymer. **07**
(b) Write a short note on polymer structure. **07**
- OR**
- Q.5** (a) State various unit operations applied in different types of polymer industries. **07**
(b) Explain essential features of process used for production of Polystyrene. **07**
