

GUJARAT TECHNOLOGICAL UNIVERSITY**M.E Sem-I Regular Examination January / February 2011****Subject code: 712401N****Subject Name: Plastic Materials****Date: 31 /01 /2011****Time: 02.30 pm – 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.

- Q.1** (a) Discuss in detail about emulsion polymerization. **07**
(b) Define number average molecular weight and briefly describe any one method used to measure number average molecular weight. **07**

- Q.2** (a) Describe the manufacturing, properties and applications of PP. **07**
(b) Write about the polymerization, structure and properties of High density polyethylene. **07**

OR

- (b) How styrene is made and describes the methods of producing polystyrene? **07**

- Q.3** (a) Write about copolymers of styrene and their importance. **07**
(b) Write down the important properties, processing characteristics and applications of polyacetal. **07**

OR

- Q.3** (a) Write a short note on : (i) PA 66 (ii) PET **07**
(b) Give the structural features of PTFE and its properties. **07**

- Q.4** (a) Why polyimide is called a high performance polymer? Give detailed properties and applications of polyimide. **07**
(b) What are LCP and conducting polymers? Discuss in detail. **07**

OR

- Q.4** (a) Write down the properties and applications of PEEK. **07**
(b) How Polycarbonates are made and give its use? **07**

- Q.5** (a) Give the reactions of phenol and formaldehyde and how phenolic resins are produced. **07**
(b) Give the structure of epichlorohydrin and bisphenol and write their reaction and mention their end product. **07**

OR

- Q.5** (a) Write down the hardening agent for epoxy resin and also explain the properties and applications of these cured resins. **07**
(b) Write down the general properties and applications of PU. **07**
