

GUJARAT TECHNOLOGICAL UNIVERSITY**M.E Sem-II Examination July 2010****Subject code: 721607****Subject Name: Polymer Materials & Testing****Date: 08 /07 /2010****Time: 11.00am – 1.30pm****Total Marks: 60****Instructions:**

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

- Q.1** Answer the following. **12**
1. Write about Polybutadiene (BR) Rubber
 2. What do you mean by Thermoplastic Elastomers? Which features are required for a material to act as a Thermoplastic Elastomer? List the major types of Thermoplastic elastomer
- Q.2 (a)** List the processes for production of Acrylonitrile monomer. Discuss in detail about any one. **06**
- (b)** Write in detail about Polyethylene as a Plastics material. **06**
- OR**
- (b)** Short note on Polypropylene polymer. **06**
- Q.3** Define the term 'Fibre. Discuss the different properties of Synthetic Fibres. **12**
- OR**
- Q.3** Discuss the different methods of Spinning a Polymer **12**
- Q.4** How the heating test should be performed for Identification of Polymers? Which points should be observed? Write the observations for self extinguishes polymers **12**
- OR**
- Q.4** Write the importance of Tear Strength properties for vulcanized rubber. Discuss the procedure, calculations & principle of the method. **12**
- Q.5** Answer the following **12**
1. Discuss the Electron Microscopy & Scanning Electron Microscopy technique for polymer analysis.
 2. Explain the experimental methods for Differential Thermal Analysis equipment. Write its applications to polymers also.
- OR**
- Q.5** Answer the following. **12**
1. List the Optical properties required to test polymer materials. Write any three in detail.
 2. Discuss about the Impact Tests.
