

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III • EXAMINATION – SUMMER • 2014

Subject Code: 132602

Date: 04-06-2014

Subject Name: Rubber Technology

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** Answer the following. **14**
- i Write the chemical reaction for manufacturing of Butadiene monomer.
 - ii Write the importance of Fillers in Rubber Compounding.
 - iii What do you mean by Polymer degradation?
 - iv Explain the terms: i Adsorption ii Sorbent.
 - v Describe the mechanism of Orientation.
 - vi Explain the importance of Lignin as a Natural polymer.
 - vii Define the term: Polymer Crystallinity.
- Q. 2** a Give the schematic diagram of Hevea Brasiliensis seed and its mode of germination and explain it in detail. **07**
- Q. 2** b “Carbon is important element in polymer chemistry.” Justify the statement. **07**
- OR
- b Explain the importance of Fluorine element in polymer chemistry. **07**
- Q. 3** a Explain the importance of protein as a natural polymer. **07**
- b List the basic types of Polymer Degradation and explain it with schematic diagram. **07**
- OR
- Q. 3** a Describe in detail about Regenerated Cellulose. **07**
- b Short note on Thermal degradation of polymers. **07**
- Q. 4** a Write the name of manufacturing process for synthesis of Styrene monomer & Explain any one in detail with reaction mechanism. **07**
- b Define the Term: Glass transition temperature T_g and explain about any two factors in detail. **07**
- OR
- Q. 4** a Explain about Ammoxidation process in detail. **07**
- b Explain the influence of following factors on polymer crystallinity i Polar group ii Cooling rate iii Plasticizer. **07**
- Q. 5** a Explain the production of Phenolic Resins and write its properties and application. **07**
- b List the principal methods for Polymer Orientation. Explain any two in detail. **07**
- OR
- Q. 5** a Write about the properties and applications of Amino Resins. **07**
- b Draw the Schematic diagram showing axes of orientation. Discuss it in detail. **07**
