

**GUJARAT TECHNOLOGICAL UNIVERSITY****B. E. Sem-III (Remedial) Examination May 2011****Subject code:132602****Subject Name: Rubber Technology****Date:25/05/2011****Total Marks: 70****Time: 10.30 am – 01.00 pm****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) List the natural sources of starch as a natural polymer.
- (ii) Explain the importance of chlorine ( Cl ) atom in polymer structure.
- (iii) List any two major sources of ethylene monomer.
- (iv) Write the difference between homo polymer and co-polymer.
- (v) Define the term: “Glass Transition temperature”.
- (vi) What do you mean by “Polymer degradation”?
- (vii) Explain the term “Thermo setting resins”.

**Q.2** (a) Explain the importance of protein as a natural polymer. **(07)**  
 (b) Explain about “Amoxidation process” for the production of Acrylonitrile monomer. **(07)**

**OR**

(b) List the types of method for the production of styrene monomer and explain any one in detail. **(07)**

**Q.3** (a) List the monomeric additives present in final polymer compositions and explain the importance of any two additives in details. **(07)**  
 (b) What do you mean by Crystallinity? Explain the factors affecting polymer crystallinity. **(07)**

**OR**

**Q.3** (a) “Hydrogen element is important in polymer chemistry”. Explain the statement in detail. **(07)**  
 (b) Short note on Thermal transitions in polymers. **(07)**

**Q.4** (a) List the basic types of polymer degradation and explain in detail. **(07)**  
 (b) Define the term: “Orientation”. Explain the relation between Orientation and Crystallization. **(07)**

**OR**

**Q.4** (a) Explain the mechanism of Sorption of Inert Sorbets’ on polymer. **(07)**  
 (b) Short note on Axes of orientation. **(07)**

**Q.5** (a) Explain about production of Phenolic resins in detail. **(07)**  
 (b) Explain the “Bud grafting” process as a vegetative propagation method for Hevea brasiliensis tree. **(07)**

**OR**

**Q.5** (a) Explain the properties and applications of Amino resins. **(07)**  
 (b) Draw the schematic diagram showing the principle regions of mature trunk of Hevea brasiliensis tree and explain it in detail. **(07)**

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