Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III • EXAMINATION – WINTER • 2014

Subject code: 2132602 **Date: 01-01-2015**

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 characteristics and importance of C-F bond in Polymers.

(ii) Why Tapping of NR latex is done before Sunrise?

(iii) List the basic types of protein with example.

(iv) Draw the structure of following monomers: (i) Vinyl chloride (ii) Isoprene

(v) Give the equation to calculate Pore radius for porous sorbent.

(vi) Arrange the following Polymers in Ascending order of their Thermal stability: (i) Polyethylene (ii) Polystyrene (iii) Poly α–methyl styrene

(vii) Write the advantages of Amino resins over phenolics.

Q. 2 (a) Discuss the importance of mobility during Orientation. How it can be achieved? Explain the ways. **(07)**

Q. 2 (b) Short note on Vegetative propagation. **(07)**

OR

(b) Give a detailed description about Hevea Brasiliensis tree and structure of trunk with schematic diagram. **(07)**

Q. 3 (a) Write a detailed note on Cellulose and regenerated cellulose. **(07)**

(b) Discuss the importance of Carbon element in various forms in polymer chemistry. **(07)**

OR

Q. 3 (a) Write the sequence of steps for Polypeptide synthesis and explain the process. **(07)**

(b) List the monomeric ingredients added during compounding of polymer and explain the function of any three. **(07)**

Q. 4 (a) Write the characteristics of Styrene monomer and explain its synthesis by giving reaction. **(07)**

(b) Discuss about Oxidative Degradation of Polymer with all necessary reactions. **(07)**

OR

Q. 4 (a) Write the name and characteristics of monomer manufactured by Sohio process and explain its synthesis by giving reaction mechanism. **(07)**

(b) What do you mean by Polymer Degradation? Describe the Polymer Degradation by involving substituent group with example. **(07)**

Q. 5 (a) Discuss about properties of polymer which influenced by Degree of Crystallinity in detail. **(07)**

(b) Write about the production of Phenolic resin. **(04)**

(c) Explain the use of porophores in formation of Porous structure of Polymers. **(03)**

OR

Q. 5 (a) Write about Glass transition temperature (Tg) with schematic diagram and explain any three influencing factors. **(07)**

(b) Write the properties and applications of Epoxy resins. **(04)**

(c) Discuss the mechanism of Sorption in Polymers. **(03)**

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