

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – I • EXAMINATION – WINTER 2012

Subject code: 714003N

Date: 12-01-2013

Subject Name: Rubber Cultivation & Rubber Latices

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) Explain the Principal characteristics and structural features of latex vessels for Hevea Brasiliensis tree with schematic diagram. **07**
- (b) List the name of Natural latices Other than obtain from Hevea Brasiliensis tree. Explain about all the types in detail. **07**
- Q. 2** (a) Answer the following:
- (i) How the water sensitivity of deposits from synthetic Latices can be reduced? **04**
- (ii) “Mechanical stability of N R latex is a curios characteristic.” Justify the statement. **03**
- Q. 2** (b) Discuss about mechanism and kinetics of Emulsion polymerization reaction with conversion-time curve for synthetic lattices. **07**
- OR**
- (b) Write the classification of the principal methods for partial agglomeration of synthetic latices. Discuss any one method in detail. **07**
- Q. 3** (a) Draw the Outline flow diagram of a typical process of Styrene Butadiene Copolymer lattices by continuous Emulsion Polymerization and explain the process in detail. **07**
- (b) Answer the following:
- (i) Explain the Emulsion Copolymerization of Acrylonitrile and Butadiene in Detail. **04**
- (ii) Show the effect of Acrylonitrile content upon the Glass transition temperature and Swelling properties of Acrylonitrile Butadiene Copolymer lattices. **03**
- OR**
- Q. 3** (a) Discuss about the production of Sulfur-modifiable Polychloroprene rubber lattices by Emulsion Polymerization. **07**
- (b) Short note on Latices of Vinylchloride-Vinylidene chloride copolymers. **07**
- Q. 4** (a) Explain the Sulfur Prevulcanisation Process for N R latex. **07**
- (b) Write about the Principal conclusion for High Energy Radiation prevulcanisation for N R Latex. **07**
- OR**
- Q. 4** (a) Describe the “Chloroform-coagulation test” for the Assessment of degree of vulcanization for Prevulcanised N R Latex. **07**
- (b) Write about Vulcanizing ingredients for Preparation of Sulfur Prevulcanised N R Latex. **07**
- Q.5** (a) Discuss about methods of producing artificial lattices in detail. **07**
- (b) Write about the properties, applications, preparation and importance of Artificial lattices of Reclaimed rubber. **07**
- OR**
- Q.5** (a) Differentiate the N R Latex and Artificial lattices. Highlight the points. **07**
- (b) Short note on Artificial lattices of Isobutene-Isoprene Rubber. **07**
