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 latices.	**03**
		OR	
Q. 3	**(a)**	Discuss about the production of Sulfur-modifiable Polychloroprene rubber latices 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 latices in detail.	**07**
	(b)	Write about the properties, applications, preparation and importance of Artificial latices of Reclaimed rubber.	**07**
		OR	
Q.5	**(a)**	Differentiate the N R Latex and Artificial latices. Highlight the points.	**07**
	(b)	Short note on Artificial latices of Isobutene-Isoprene Rubber.	**07**

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