

Seat No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV(NEW) – EXAMINATION – SUMMER 2019****Subject Code:2143602****Date:17/05/2019****Subject Name: Rubber Chemistry & Natural Polymers****Time:02:30 PM TO 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.

		MARKS
Q.1	(a) Draw the Structure of (a) Neoprene (b) SBR (c) IIR	03
	(b) Write down brief chemistry of Natural Rubber.	04
	(c) Explain in detail about production of Butyl Rubber	07
Q.2	(a) What are the % composition of latex?	03
	(b) How to synthesize polyisoprene.	04
	(c) Briefly explain about production of NBR with neat flow diagram.	07
	OR	
	(c) Explain in detail about Epoxy resin.	07
Q.3	(a) Draw structure of (a) Bis-phenol A (b) Poly Acrylonitrile	03
	(b) Write a short note on EPDM.	04
	(c) What do you mean by vulcanization? Explain Sulphur vulcanization in detail.	07
	OR	
Q.3	(a) Write down different properties of Neoprene.	03
	(b) How to coagulate polychloroprene latex.	04
	(c) Explain in brief about different elastomeric materials used in industries.	07
Q.4	(a) Explain how Proteins are classified under natural polymer via its chemistry.	03
	(b) Explain Chemistry of Chitin and Chitosan.	04
	(c) Write a short note on modification of natural polymers and rubber.	07
	OR	
Q.4	(a) What are the different factors to be consider while selecting Polyols?	03
	(b) How Poly lactic acid (PLA) is synthesized?	04
	(c) Explain in detail about production of Acrylonitrile monomer.	07
Q.5	(a) What do you mean by Forming process in rubber vulcanization?	03
	(b) What are the different ingredients used for NBR polymerization.	04
	(c) Explain different types of Polyols with its properties and structure.	07
	OR	
Q.5	(a) Explain in brief about Chemistry of Starch and lignin.	03
	(b) Explain Process of Polyurethane Adhesives.	04
	(c) Explain in detail about Mechanism of Crosslinking in rubber vulcanization.	07
