Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – VI (NEW).EXAMINATION – WINTER 2016

Subject Code: 2162602 **Date: 24/10/2016**

Subject Name: Synthetic Rubbers

Time: 10:30 AM to 01:00 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)	State the basic feature of Carboxylated Elastomers.	
	(ii)	Give the chemical name and Abbreviation for Hypalon.	
	(iii)	List the properties and applications of Acrylic Elastomer.	
	(iv)	Draw the structure of Polynorbonene.	
	(v)	Why Polysulfide rubber is having excellent solvent resistance property? Give reason.	
	(vi)	Write the characteristics and application of Hydrogel rubber.	
	(vii)	Name the important types of Flouro Elastomers.	
Q. 2	**(a)**	Discuss about the effect of Acrylonitrile content on Properties of Acrylonitrile - Butadiene Rubber.	**(07)**
Q. 2	**(b)**	Explain the production of Styrene-Butadiene Rubber by continuous process with schematic diagram.	**(07)**
		OR	
Q. 2	**(b)**	Write about the advantages and disadvantages of Carbon Black Master Batch Styrene – Butadiene Rubber (CBMBSBR).	**(07)**
Q. 3	**(a)**	List the possible vulcanization systems for Butyl rubber. Explain about all in detail.	**(07)**
	(b)	"Silicon rubber is a versatile rubber." Justify the statement.	**(07)**
		OR	
Q. 3	**(a)**	Draw and explain the flow diagram for production of Butyl rubber.	**(07)**
	(b)	Mention the necessary reaction steps for synthesis of Silicon rubber and explain it in detail.	**(07)**
Q. 4	**(a)**	List two basic types of Polychloroprene and explain their chemistry.	**(07)**
	(b)	Discuss about properties and applications of Polybutadiene rubber.	**(07)**
		OR	
Q. 4	**(a)**	Explain the effect of polymerization temperature on properties of Polychloroprene with graphical representation.	**(07)**
	(b)	Name the polymerization method used for production of Polybutadiene rubber and describe it with flow diagram.	**(07)**
Q. 5	**(a)**	Discuss about the differences between technology of Natural Rubber and Isoprene Rubber.	**(07)**
	(b)	List the basic Diene monomers used in Ethylene-Propylene Diene Methylene rubber with their structures and characteristics.	**(07)**

OR

Q. 5 **(a)** List the important grades of Isoprene rubber according to its chemistry and write the differences between them. **(07)**

(b) Discuss about properties and applications of Ethylene-Propylene Diene Methylene rubber. **(07)**