Sea	t No.:	Enrolment No		
Sul	hiect	GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-VI (NEW) - EXAMINATION – SUMMER 2016 Code:2162602 Date:09/05/	/2016	
	-		2010	
	•	Name: Synthetic Rubbers		
			Total Marks: 70	
Inst	ructio			
	2. 3.	Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.		
Q. 1	Answer the following.		(14)	
	(i)	Give the general synthesis reaction for Polysulfide rubber.		
	(ii)	How the rubberiness is achieved in Hypalon?		
	(iii)	List the methods for production of Carboxylated Elastomers.		
	(iv)	Name the rubber which is used in manufacturing of soft contact lenses. Why?		
	<b>(v)</b>	Give the synthesis reaction for Polypentenamer.		
	(vi)	Write the abbreviation of Acrylic rubbers and draw its structure.		
	(vii)	List the basic types of Epichlorohydrin polymers with their abbreviation.		
Q. 2	(a)	Write about different types of blends of Acrylonitrile-Butadiene Rubber with other polymers.	(07)	
Q. 2	<b>(b)</b>	Explain the effect of sequence distribution of monomers in Ethylene-Propylene Diene Methylene Rubber.	(07)	
		OR		
Q. 2	<b>(b)</b>	List the basic types of process for production of Ethylene-Propylene Diene Methylene Rubber and explain about any one in detail.	(07)	
Q. 3	(a)	Write about the characteristics of Polybutadiene rubber.	<b>(07)</b>	
	<b>(b)</b>	Explain the manufacturing of Silicon rubber with necessary reaction steps.	<b>(07)</b>	
	` '	OR	, ,	
Q. 3	(a)	Which polymerization technique is used for synthesis of Polybutadiene rubber? Explain in detail with schematic diagram.	(07)	
	<b>(b)</b>	Write about vulcanization of Silicon rubber with reaction mechanism.	<b>(07)</b>	
Q. 4	(a)	Give the basic classification of Isoprene rubber. Write about their catalyst system and chemical composition.	(04)	
	<b>(b)</b>	Mention the important grades of Fluorocarbon Elastomer with their monomer composition.	(03)	
	<b>(c)</b>	Answer the following:		
	(i)	Why Butyl rubber has excellent air impermeability property?	(02)	
	(ii)	Which problems occurred during processing of Butyl rubber? Explain it and write their remedies.	(05)	
		OR		

Write about compounding of Isoprene rubber.

Why Fluorocarbon Elastomers are important for Automotive applications?

Draw the flow diagram for production of Butyl rubber and explain it in detail.

(04)

(03)

**(07)** 

Q. 4

(a)(b)

**(c)** 

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Q. 5	(a)	Discuss about vulcanization chemistry of Polychloroprene rubber.	<b>(07</b> )
	<b>(b)</b>	Short note on Oil Extended Styrene Butadiene Rubber.	(07)
		OR	
Q. 5	(a)	"Polymerization temperature is an important variable in determining the character of Polychloroprene rubber". Justify the statement.	(07)
	<b>(b)</b>	Discuss the effects of Styrene/Butadiene ratio on various properties of Styrene Butadiene Rubber with graphical representation.	(07)

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