Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII EXAMINATION – WINTER 2015

Subject Code: 172605 **Date: 04/12/2015**

Subject Name: Rubber Adhesion and Adhesion Science

Time: 10:30am to 1:00pm **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).	**List the properties of Resin in Rubber Lattices or adhesives.**	
	(ii).	**Define the term: (i) Dilute, (ii) Primer**	
	(iii).	**Give the chemical name and structure of TDI.**	
	(iv).	**Write the two component solvent mixtures for preparing Nitrile rubber adhesive.**	
	(v).	**Give difference between Adhesion & Cohesion.**	
	(vi).	**What do you mean by mastics?**	
	(vii).	**Write the functions of metal oxides in Neoprene rubber adhesive.**	
Q. 2	**(a)**	**Write the advantages and disadvantages of Adhesive bonding.**	**(07)**
Q. 2	**(b)**	**Explain in detail about design of adhesive bonds.**	**(07)**
		OR	
	(b)	**Give the difference between Water based Vs solvent based Vs Hot melts adhesives.**	**(07)**
Q. 3	**(a)**	**Describe the resin functions in rubber based adhesives.**	**(07)**
	(b)	**Discuss the suitable combinations of accelerators system for NR latex adhesives.**	**(07)**
		OR	
Q. 3	**(a)**	**Short note on: "Pressure sensitive adhesives."**	**(07)**
	(b)	**Explain in detail about non vulcanizing Natural rubber adhesive.**	**(07)**
Q. 4	**(a)**	**Describe the compounding of Nitrile rubber cements.**	**(07)**
	(b)	**Discuss the effects of compounding and processing variables on Neoprene AF based adhesives.**	**(07)**
		OR	
Q. 4	**(a)**	**Short note on: "Nitrile rubber Latex adhesives."**	**(07)**
	(b)	**Explain in detail about properties and testing of Neoprene rubber adhesives.**	**(07)**

…….P.T.O…….

Q. 5	**(a)**	**Discuss polyurethane rubber adhesives with or without addition polyisocyanate.**	**(07)**
	(b)	**Explain the properties of Cynoacrylate adhesive bonds.**	**(07)**

OR

Q. 5	**(a)**	**Short note on: 'Polyurethane Stabilization"**	**(07)**
	(b)	**Describe the applications of Cynoacrylate adhesives.**	**(07)**

****