Seat No.:	Enrolment No.
scat ino	Emonicit No.

Subject Code: 172605

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

BE - SEMESTER-VII • EXAMINATION - WINTER • 2014

Date: 29-11-2014

**Subject Name:** Rubber Adhesion & Adhesion Science Time: 10:30 am - 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. Answer the following. **(14)** Q. 1 Give the difference between Storage Life & Pot Life of adhesives. (i) (ii) In which solvents NBR rubber is insoluble? (iii) Write the importance of Plasticity Retention Index (PRI). List out the disadvantages of Neoprene rubber adhesives. (iv) Write the chemical formula of PAPI. (v) (vi) Define the role of Silane coupling agent in adhesives. Give the name of diluents for Epoxy Resin based adhesives. (vii) Q. 2 Discuss the design of Adhesive bond. (07)(a) Short note on "Pressure sensitive adhesives". (b) (07)OR Explain the function of Resins in rubber based adhesives. (b) (07)Discuss the Non vulcanizing natural rubber adhesive by using formulation. Q. 3 (07)(a) (b) Describe the compounding of adhesive based on Neoprene latex. (07)OR Q. 3 Write the merits and demerits of rubber based adhesive system. (07)(a) How the viscosity is important for adhesives? Write about the method to control (b) (07)the viscosity for Neoprene based adhesives. Q. 4 (a) Discuss the important characteristics of Epoxy resin adhesives. (07)List the responsible features for the effectiveness of Isocyanate based adhesive. (b) (07)OR Explain the chemistry of Epoxy resin based adhesives. **Q.** 4 (a) (07)Describe the preparation of polyurethane adhesive without addition of (b) (07)Isocyanate. ----P.T.O.--`Discuss the theory of adhesive action for Cynoacrylate adhesive. Q. 5 (07)(a) Write the properties & applications for Nitrile rubber cements (07)(b) OR Give the comparison of Water based Vs Solvent based Vs Hot melt adhesives. (07)Q. 5 (a) How the different grades of Polymers & Solvents can be selected to prepare the (07)(b) Nitrile rubber adhesive. Explain it.

\*\*\*\*\*