

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2018****Subject Code: 2172605/2172608****Date: 03/12/2018****Subject Name: Rubber Adhesion & Adhesion Science****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** (a) What do you mean by mastics? (03)
(b) Define the term: (i) Tack, (ii) Adhesion. (04)
(c) Give the difference between Water based Vs solvent based adhesives. (07)
- Q.2** (a) How the viscosity is important for adhesives? Explain it. (03)
(b) Describe the types of joints. (04)
(c) Explain the pressure sensitive rubber based adhesives. (07)
- OR**
- (c) Discuss about function of resins in rubber based adhesives. (07)
- Q.3** (a) Write the two component solvent mixtures for preparing Nitrile rubber adhesive. (03)
(b) Mention the specific applications of NBR adhesive. (04)
(c) Describe in detail about vulcanizing NR based adhesive with suitable application. (07)
- OR**
- Q.3** (a) Discuss the Reclaimed rubber adhesive. (03)
(b) Write the importance of reinforcing agents in natural rubber adhesive. (04)
(c) Discuss in detail about compounding of Nitrile Rubber adhesive. (07)
- Q.4** (a) List out the advantages of Neoprene rubber adhesives. (03)
(b) Describe the characteristics of neoprene types used in latex adhesives. (04)
(c) Explain the reasons for the effectiveness of polyurethane and isocyanate based adhesives. (07)
- OR**
- Q.4** (a) Write the suitable SBR adhesive formulation for sprayable adhesive application. (03)
(b) List the properties of SBR in adhesives. (04)
(c) Describe in details about application methods of neoprene adhesives. (07)
- Q.5** (a) Write the chemical name and structure of MDI and TDI. (03)
(b) Give the advantages of Cyanoacrylate adhesives. (04)
(c) Describe the mixing and processing techniques for Butyl caulks and mastics. (07)
- OR**
- Q.5** (a) Name the curing system for butyl rubber adhesive. (03)
(b) Discuss about the polymeric additives use for butyl and polyisobutylene base adhesive. (04)
(c) Explain the properties of Cyanoacrylate adhesive bonds. (07)
