

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2024****Subject Code:3152312****Date:25-11-2024****Subject Name:Adhesives and Sealants in Plastics****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.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) List the properties important for adhesion.	03
	(b) Describe various theories of adhesion.	04
	(c) Discuss on water based adhesives preparation, properties and applications	07
Q.2	(a) List applications of Adhesives for building construction.	03
	(b) Write short note on solvent based adhesives.	04
	(c) Explain briefly Polyurethane & Isocyanate based adhesive.	07
	OR	
	(b) Explain preparation, properties and applications of RTV.	07
Q.3	(a) Define silane coupling agent. Give its general structure	03
	(b) Discuss polysulfide sealant and adhesives.	04
	(c) Discuss on water based adhesives preparation, properties and applications..	07
	OR	
Q.3	(a) Give three applications of Phenolic resin adhesive.	03
	(b) Write short note on epoxy resin used for adhesive.	04
	(b) Explain briefly on butyl rubber and polyisobutylene based adhesives.	07
Q.4	(a) Name Adhesives used for wood bonding and packaging.	03
	(b) Discuss preparation and properties of PVA adhesives.	04
	(c) Discuss on silicone based adhesives, sealants and abrasives.	07
	OR	
Q.4	(a) What are coupling agents?	03
	(b) Explain organofunctionalsilane coupling agents briefly.	04
	(c) Write short note on (i) acrylic adhesives, (ii) anaerobic adhesives (iii) cyanoacrylate adhesives.	07
Q.5	(a) Define sealants its form and type.	03
	(b) Describe different types of joint designs with its advantages and disadvantages.	04
	(c) Write short note on (i) Wood adhesive, (ii) Coated abrasives.	07
	OR	
Q.5	(a) Define Adhesive and Cohesive joint failure.	03
	(b) Write short note on conductive adhesive.	04
	(c) Write short note on structural adhesives used in aerospace and automobile industry.	07
