

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2020****Subject Code:2172608****Date:28/01/2021****Subject Name:Rubber Adhesion & Adhesion Science****Time:10:30 AM TO 12:30 PM****Total Marks: 56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q. 1**
- | | | |
|-----|---|-----------|
| (a) | Define the term: (i) Adhesion, (ii) Adhesive. | 03 |
| (b) | Give the classification of Adhesives base on their functions. | 04 |
| (c) | Write the advantages and disadvantages of adhesives bonding. | 07 |
- Q. 2**
- | | | |
|-----|---|-----------|
| (a) | Discuss about the Silico-Phosphate cements. | 03 |
| (b) | Draw the schematic represents of types of stresses in adhesive joints. | 04 |
| (c) | List out the important factors for adhesive selection. Explain any one in detail. | 07 |
- Q. 3**
- | | | |
|-----|--|-----------|
| (a) | How to overcome the poor tack in SBR? | 03 |
| (b) | Write the suitable SBR adhesive formulation for Heat resistant adhesive application. | 04 |
| (c) | Describe in detail about the Non vulcanizing Natural rubber based adhesive. | 07 |
- Q. 4**
- | | | |
|-----|--|-----------|
| (a) | Write the functions of tackifier in rubber adhesive. | 03 |
| (b) | Short note on: "Reclaimed rubber adhesive". | 04 |
| (c) | Discuss the suitable combinations of accelerators system for NR latex adhesives. | 07 |
- Q. 5**
- | | | |
|-----|---|-----------|
| (a) | Write the three component solvent mixtures for preparing Nitrile Rubber adhesive. | 03 |
| (b) | Short note on: "Heat activated Nitrile Rubber Adhesive". | 04 |
| (c) | Explain in detail about properties and testing of Neoprene rubber adhesives. | 07 |
- Q. 6**
- | | | |
|-----|--|-----------|
| (a) | List out the disadvantages of Neoprene rubber adhesives. | 03 |
| (b) | Describe the function of resins in Neoprene Adhesive. | 04 |
| (c) | Discuss in detail about compounding of Nitrile Rubber Adhesives. | 07 |
- Q. 7**
- | | | |
|-----|---|-----------|
| (a) | List the curing system for butyl rubber adhesive. | 03 |
|-----|---|-----------|

- (b) Give the name of resin which is used in Butyl rubber and Polyisobutylene adhesive. **04**
- (c) Describe the applications of Cyanoacrylate adhesives. **07**
- Q. 8**
- (a) Give the advantages of Cyanoacrylate adhesives. **03**
- (b) Mention the difference between Storage Life & Pot Life of adhesives. **04**
- (c) Discuss in detail about mixing and processing techniques for Butyl rubber Adhesive. **07**

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