

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII (NEW) EXAMINATION – SUMMER 2022

Subject Code:3172616**Date:14/06/2022****Subject Name:Silicone Rubber Technology****Time:02:30 PM TO 05:00 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.

- Q.1** (a) Draw the basic structure of Silicone rubber. (03)
(b) Classify Silicone Elastomer as per different side groups. Write with abbreviation. (04)
(c) Describe the molding sequence for compression molding of Solid Silicon rubber. (07)
- Q.2** (a) Write about the glass Transition Temperature and flexibility of Silicon rubber. (03)
(b) Write about effect of catalytically active metals on Organosiloxane compounding. (04)
(c) Give necessary reaction mechanisms for synthesis of Silicone rubber and explain in detail. (07)

OR

- (c) Write about mixing of Heat vulcanizable solid Silicon rubber in Two-roll Mixing mill with schematic diagram. (07)
- Q.3** (a) Name the widely used reinforcing agent used for Silicone rubber. Mention its basic grades. (03)
(b) Write about causes and remedies for problems occurred during compound preparation on Two-roll mill. (04)
(c) Write about important characteristics and limitations of Silicone rubber. (07)

OR

- Q.3** (a) Give reaction mechanism for Peroxide vulcanization of Silicon rubber. (03)
(b) Write about Troubleshooting during Extrusion of Silicone rubber. (04)
(c) Explain about Compounding and processing of Silicone Elastomer. (07)
- Q.4** (a) Write about Permeability property of Water based Silicone Elastomer. (03)
(b) Mention various applications of Silicone water based Elastomers. Explain about any one. (04)
(c) Write in detail about Grignard synthesis. (07)

OR

- Q.4** (a) Write about Thermal property of Water based Silicone Elastomer. (03)
(b) Draw the schematic diagram for Silicone water based Elastomers preparation. (04)
(c) Describe Direct synthesis process. Write its disadvantages also. (07)
- Q.5** (a) Give reaction mechanism for crosslinking of RTV silicone rubber with Alkoxy crosslinker. (03)
(b) Write about desirable features of Liquid Silicone rubber. (04)
(c) What is One-pack RTV system? Explain in detail. (07)

OR

- Q.5** (a) Give reasons for use of RTV silicone in Mold making applications. (03)
(b) Write about properties and applications of Liquid Silicone rubber. (04)
(c) List out basic grades of Two-pack RTV system. Explain it in detail. (07)
