

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI EXAMINATION – SUMMER 2025

Subject Code: 3162607

Date: 22-05-2025

Subject Name: High Performance Elastomers

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.

- Q.1** (a) Give differences between High Performance Elastomers and General-purpose rubbers. **03**
(b) Give synthesis reaction for Hydrogenated Nitrile rubber. Write about its advantageous properties. **04**
(c) Explain about significance of RDB level on characteristics of Hydrogenated Nitrile Rubber. **07**

- Q.2** (a) Give synthesis reaction for EVA Copolymer. **03**
(b) Write about properties and applications of EVA copolymer. **04**
(c) Write in detail about basic monomers and cure site monomers used for Acrylic Elastomers with structure. **07**

OR

- (c) Explain in detail about Ethylene – Acrylic rubber (AEM) with synthesis reaction. **07**

- Q.3** (a) Draw the structure of Hypalon. **03**
(b) Give difference between Chlorinated Polyethylene (CM) and Chlorosulfonated Polyethylene (CSM). **04**
(c) Explain about Reed process in detail. **07**

OR

- Q.3** (a) Mention Optimum Chlorine and Sulfur content in Chlorosulfonated Polyethylene (CSM). **03**
(b) Write about properties and applications of Chlorosulfonated Polyethylene (CSM). **04**
(c) Explain in detail about compounding of Hypalon. **07**

- Q.4** (a) List the important properties of Fluoro Elastomers. **03**
(b) Write in brief about processing of Fluoro Elastomers. **04**
(c) Describe in detail about curing systems for Fluoro Elastomers. **07**

OR

- Q.4** (a) Mention major applications of Viton. **03**
(b) Give reason for Metal oxide incorporation during compounding of FKM. **04**
(c) Write about basic types of Fluoro Elastomers and their characteristics. **07**

- Q.5** (a) Give synthesis reaction for Polysulfide rubber. **03**
(b) Write in brief about Thiokol A. **04**
(c) Describe the basic types of Epichlorohydrin rubbers with their synthesis reaction. **07**

OR

- Q.5** (a) Mention important properties and applications of Polysulfide rubber. **03**
(b) Write in brief about Thiokol FA. **04**
(c) Write about compounding, properties and applications of Epichlorohydrin rubbers. **07**
