

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (NEW) EXAMINATION – WINTER 2018

Subject Code: 2162602

Date: 20/11/2018

Subject Name: Synthetic Rubbers

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.

- Q.1** (a) Give the name of monomers and structure of Propylene Oxide rubber (GPO). **03**
(b) Write about basic catalyst systems and their importance for synthesis of Isoprene rubber. **04**
(c) Explain the manufacturing Process of Butyl Rubber. **07**
- Q.2** (a) Mention the important grades of Fluorocarbon Elastomer with their monomer composition. **03**
(b) Give the synthesis reaction for Polypentenamer. **04**
(c) Polymerization temperature is an important variable in determining the character of Polychloroprene rubber". Justify the statement. **07**
- OR**
- (c) Explain the Manufacturing Process of Neoprene Rubber. **07**
- Q.3** (a) Give the general synthesis reaction for Polysulfide rubber. **03**
(b) Name the rubber which is used in manufacturing of soft contact lenses. Why? **04**
(c) Write the beneficial properties and applications of Ethylene Propylene Diene Methylene Rubber (EPDM). **07**
- OR**
- Q.3** (a) How the rubberiness is achieved in Hypalon? **03**
(b) Write about the Abbreviation and structural formula for Epichlorohydrin terpolymer. **04**
(c) Which characteristics are required for third monomer used in synthesis of Ethylene Propylene Diene Methylene Rubber (EPDM)? Write their name, structure and give comparison between them. **07**
- Q.4** (a) Why copolymerize the Styrene and Butadiene rather than blend the homopolymers? **03**
(b) Draw the flow diagram of Batch process of Styrene butadiene rubber (SBR). **04**
(c) Explain the Manufacturing Process of Nitrile Rubber. **07**
- OR**
- Q.4** (a) Write the Disadvantages of Carbon black Master batch Styrene Butadiene Rubber. **07**
(b) Write a brief note on Oil Extended Styrene Butadiene Rubber (OESBR). **07**
- Q.5** (a) Give any two important application of Ethylene Vinyl Acetate (EVA). **03**
(b) Mention the important grades of Fluorocarbon Elastomer with their monomer composition. **04**

- (c) Silicon rubber is the versatile Rubber.” Justify the statement. **07**
- OR**
- Q.5** (a) Mention the limitations of Polybutadiene Rubber (PBR). **03**
- (b) Give the general properties of Fluororubber (FKM). **04**
- (c) Discuss about the Mixing operation, Processing Problem and their remedies for Silicone rubber. **07**
