

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – WINTER 2018****Subject Code:2162605****Date:04/12/2018****Subject Name:Thermoplastics Elastomers & Polymer Blends****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) List the commercially available Block copolymers with suitable example. (03)
- (b) Mention importance of hard segment & soft segment in Thermoplastic Elastomer & polymer blends. (04)
- (c) “The largest application area for the Polyolefin Thermoplastic Elastomers is in the Automotive Market.” Justify in detail. (07)
- Q. 2** (a) Give the Disadvantages of Thermoplastic Elastomers over Conventional Elastomers. (03)
- Q. 2** (b) List the factors affecting TPE properties and grades. (04)
- Q. 2** (c) Explain any two environmental properties of Polyester Thermoplastic Elastomers in detail. (07)
- OR**
- (c) Write a note on Specific applications: “Adhesives of Styrene TPEs”. (07)
- Q. 3** (a) List the key properties of Polyester thermoplastic Elastomers. (03)
- (b) Explain the free extrusion process for Polyester thermoplastic Elastomers. (04)
- (c) Discuss in detail about compounding of SBS block polymers. (07)
- OR**
- Q. 3** (a) How the SBS block polymer properties are affected by modification with LDPE? (03)
- (b) Explain the banbury mixing process for the thermoplastic styrene copolymer. (04)
- (c) Describe about the mould design aspects of injection moulding for Polyester thermoplastic Elastomers. (07)
- Q. 4** (a) Give the significance of Hytel elastomer (Polyester TPE). (03)
- (b) Explain the processing of EVA based thermoplastic elastomer. (04)
- (c) Short note on: “NBR- PVC blends”. (07)
- OR**
- Q. 4** (a) Write the application of Ethylene Ethyl Acetate Copolymers (EEA). (03)
- (b) Explain the dynamic vulcanization for TPE blends. (04)
- (c) List the polysiloxane based TPE. Explain any one in detail. (07)

- Q. 5** (a) Mention the importance of Diisocyanate in TPU Elastomer. (03)
(b) Describe any four Extrusion processing problems and solution for the thermoplastic polyurethane elastomer. (04)
(c) Which are the tests conducted for thermoplastic Elastomer products? Explain it in detail. (07)

OR

- Q. 5** (a) Write the synthesis of Thermoplastic 1, 2- Polybutadiene. (03)
(b) Short note on: "Somel TPO". (04)
(c) Discuss in detail about polymerization processes of Thermoplastic Polyurethane Elastomer. (07)

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