

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2018****Subject Code:2153602****Date:20/11/2018****Subject Name:Polymer & Rubber materials - I****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.

		MARKS
Q.1	(a) Define: (a) Stress crack resistance (b) MFI (c) glass transition temperature	03
	(b) Write difference between LLDPE and ULDPE.	04
	(c) Explain the production of Polystyrene plastic in detail with its structure and applications.	07
Q.2	(a) Write the properties of ABS.	03
	(b) What do you mean by cross linking? Explain Silane method of PE crosslinking.	04
	(c) Explain in detail production of PVC plastic material with neat flow diagram.	07
OR		
Q.3	(c) Write a short note on Polyamides.	07
	(a) Write a short note on copolymers of Poly vinyl chloride.	03
	(b) What are the different methods of HDPE Production. Explain any one in brief.	04
	(c) Write down the detail production of SBR with the help of flow sheet.	07
OR		
Q.3	(a) How the PAN polymer is synthesized?	03
	(b) What do you understand by toughening of thermoplastic elastomer? Explain with its mechanism.	04
	(c) Explain Polyesters synthesis and its applications.	07
Q.4	(a) Draw chemical structure of: Nylon 6, PMMA, PEEK	03
	(b) Draw structure and write applications of Nomex and Kevlar.	04
	(c) Write a short note on following polymeric materials along with its structure. (a) PET (b) PBT (c) PTT	07
OR		
Q.4	(a) How polypropylene is prepared? Explain with neat flow diagram.	03
	(b) Write in brief about the properties and applications of SMA copolymer.	04
	(c) Write in detail about the structure, properties and applications of EPDM.	07
Q.5	(a) Mention Tg (a) PS (b) PE (c) PP	03
	(b) Write a short note different polymers fall under the category of Liquid Crystal Polymers.	04
	(c) Explain Polycarbonate synthesis via different route and also explain its applications.	07

- Q.5**
- (a) Write the structure and applications of Polyoxymethylene polymer. **03**
 - (b) What do you mean by modified polymer? Explain in detail. **04**
 - (c) Explain in detail the production for Polyisobutylene with its structure and its applications. **07**

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