

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VIII (NEW) - EXAMINATION – SUMMER 2018****Subject Code: 2183611****Date: 02/05/2018****Subject Name: Recycling and Packaging of Polymer and Rubber (Department Elective – X)****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
<b>Q.1</b>	(a) Write Major sources of plastic waste	<b>03</b>
	(b) Write structure of : PET, PU, PVC, Nylon 6	<b>04</b>
	(c) Write a note on Diff. technology used for devalcunization of end of life tyre	<b>07</b>
<b>Q.2</b>	(a) Write about handling of E-waste	<b>03</b>
	(b) Write chemistry of polystyrene and it's Recycling	<b>04</b>
	(c) How do we identify the plastic waste and also mention their separation technique	<b>07</b>
	<b>OR</b>	
	(c) Write about general techniques used for recycling of scrap tyres	<b>07</b>
<b>Q.3</b>	(a) Write brief note on the comparison of Thermoset & thermoplastic compounds	<b>03</b>
	(b) Explain the pyrolysis of scrap tyres with the help of diagram	<b>04</b>
	(c) Write a note on the recycling of nylon-6 from waste tyres	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Write any TWO industries working on the recycling of polymer and give their information.	<b>03</b>
	(b) Write in detail about thermo chemical technique for devalcunisation of scrap rubber	<b>04</b>
	(c) Write a note on recycling of PET	<b>07</b>
<b>Q.4</b>	(a) Write Principle behind 3 R	<b>03</b>
	(b) Write a note on different grinding techniques for polymer	<b>04</b>
	(c) Describe various flexible packaging surfaces used for different purposes. How, the printing of these is done? Discuss the details of any one of the processes of printing used on this.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Compare recycling of Industrial and consumer plastic waste.	<b>03</b>
	(b) Write a note on reclaiming process via twin screw extruder	<b>04</b>
	(c) Explain in detail :- Lamination technique	<b>07</b>

- Q.5** (a) Describe the product characteristics and packaging requirements as well suggest suitable materials for milk and dairy products. **03**
- (b) Explain how recycling of post consumer polymer is carried out. Enlist the types of plastic containers that should not be recycled. **04**
- (c) Write detail note on the recycling classification **07**
- OR**
- Q.5** (a) Describe the properties and application of PVDC polymer films **03**
- (b) Explain “Use of Nanotechnology for reclaim rubber” **04**
- (c) Write note on Meaning, Function, Types, Importance & Features of Packaging **07**

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