

**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
Q.1	(a) Write Major sources of plastic waste	03
	(b) Write structure of : PET, PU, PVC, Nylon 6	04
	(c) Write a note on Diff. technology used for devalcunization of end of life tyre	07
Q.2	(a) Write about handling of E-waste	03
	(b) Write chemistry of polystyrene and it's Recycling	04
	(c) How do we identify the plastic waste and also mention their separation technique	07
OR		
	(c) Write about general techniques used for recycling of scrap tyres	07
Q.3	(a) Write brief note on the comparison of Thermoset & thermoplastic compounds	03
	(b) Explain the pyrolysis of scrap tyres with the help of diagram	04
	(c) Write a note on the recycling of nylon-6 from waste tyres	07
OR		
Q.3	(a) Write any TWO industries working on the recycling of polymer and give their information.	03
	(b) Write in detail about thermo chemical technique for devalcunisation of scrap rubber	04
	(c) Write a note on recycling of PET	07
Q.4	(a) Write Principle behind 3 R	03
	(b) Write a note on different grinding techniques for polymer	04
	(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.	07
OR		
Q.4	(a) Compare recycling of Industrial and consumer plastic waste.	03
	(b) Write a note on reclaiming process via twin screw extruder	04
	(c) Explain in detail :- Lamination technique	07



- 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**
