

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2018****Subject Code:2152303****Date:16/11/2018****Subject Name:Plastics Recycling & Waste Treatment****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) List and explain the sources of plastic waste	03
	(b) Explain the flow of plastic products and plastic waste.	04
	(c) List the methods of separation of paper/plastic mixture and explain the wet separation process.	07
Q.2	(a) Define 1) Nuisance plastics 2) Primary Recycling 3) Pyrolysis	03
	(b) Explain the float sink separation technique to separate mixtures of plastics.	04
	(c) List and explain the problems associated with incineration of pure Plastics Waste.	07
	OR	
	(c) Explain the separation of plastics from plastic-coated fabric.	07
Q.3	(a) List and explain the physical properties which are used as a basis of separation process.	03
	(b) Write a short note on use of plastic waste as fillers.	04
	(c) Explain techniques of size reduction of municipal solid refuse.	07
	OR	
Q.3	(a) Explain the in-line automatic recycling system for primary recycling of waste plastics.	03
	(b) How is the recycling of HDPE containers done?	04
	(c) Explain the recycling of medical plastic waste.	07
Q.4	(a) List the problems associated with pyrolysis of pure plastic waste.	03
	(b) Explain the identification codes of Plastics with its properties and applications.	04
	(c) With a neat figure explain the Union Carbide's cryogenic grinding for granulating difficult materials.	07
	OR	
Q.4	(a) List the technical approaches to secondary recycling.	03
	(b) Describe the environmental implications of Recycling and Polymer Degradation.	04
	(c) Explain the secondary recycling by co-extrusion and co-injection moulding.	07
Q.5	(a) List the advantages of pyrolysis.	03
	(b) Explain the working of Mitsubishi Reverzer Equipment for mechanical reworking of plastics.	04

- (c) With a neat sketch explain the parts of a typical incinerator. 07

OR

- Q.5 (a) Explain Electrodynamics Separation of paper/plastic mixture. 03
(b) What is Landfill? List techniques of Landfilling and explain Sanitary Landfill. 04
(c) Explain the recycling of PET through Glycolysis, Hydrolysis and Methanolysis. 07
