Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEM-V Examination-Nov/Dec.-2011

Subject code: 152303 **Date: 26/11/2011**

Subject Name: Plastics Recycling and Waste Treatment

Time: 2.30 pm -5.00 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)**	Discuss various sources of generation of Plastics Waste in detail	**07**
	(b)	Define and explain the terms-Primary Recycling, Secondary Recycling, Tertiary Recycling, Quaternary Recycling,	**07**
Q.2	**(a)**	With the help of equations describe direct reuse of PET recycling. List various methods for Reuse of PET after modification.	**07**
	(b)	Explain 1. Glycolysis 2. Ammonolysis and Enzymatic Depolymerisation with help of equations.	**07**
		OR	
	(b)	Explain how the inline PVC film scraps is produced and how it is recycled?	**07**
Q.3	**(a)**	Explain in detail about the various sources of PVC scrap in detail	**07**
	(b)	With the help of figures explain the identification of symbols of different Plastics.	**07**
		OR	
Q.3	**(a)**	Explain Chemical Recycling of Polymer in detail with help of block diagram and equations	**07**
	(b)	What are the sources of Medical Plastics wastes? Mention the design and management steps for effective and easy to make a waste pit.	**07**
Q.4	**(a)**	Discuss the various sources of Nylon waste generated in Industries.	**07**
	(b)	Write in detail for the methods for recycling of different types of waste generated by Nylon.	**07**
Q.4	**(a)**	Discuss Chemical/Tertiary Recycling. Give a list of Tertiary process of Re-processing of plastics for condensation polymer and Vinyl & Cyclic monomers.	**07**
Q.4	**(b)**	Explain complete process of recycling of High Density Polyethylene Containers	**07**
Q.5	**(a)**	Give steps for Recycling Process as Technologies for value addition in multy-polymer product recycling	**07**
	(b)	Explain complete process of recycling of Plastics Woven sack waste.	**07**
Q.5	**(a)**	What is Biodegradable Polymer? Give its examples. Give Block diagram for "Cradle to Grave concept for Biodegradable materials in fast-food restaurant packaging applications.	**07**
	(b)	Discuss the factors affecting the degradability of Plastics.	**07**

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