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

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (OLD) - EXAMINATION – SUMMER 2017

Subject Code: 152303 **Date: 01/05/2017**

Subject Name: Plastics Recycling & Waste Treatment

Time: 02:30 PM to 05:00 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)**	Which are the sources of plastic waste? Explain them in detail	**07**
	(b)	Define the following 1) Industrial plastic waste 2) Nuisance plastics 3) Scrap plastics 4) Primary Recycling 5) Secondary recycling 6) Tertiary Recycling 7) Quarternary recycling	**07**
Q.2	**(a)**	Explain the life cycle analysis of plastics waste.	**07**
	(b)	Discuss various size reduction methods and explain them with suitable diagram.	**07**
		OR	
	(b)	What are biodegradable plastics? Explain them briefly.	**07**
Q.3	**(a)**	Write a short note on various plastics identification codes with their properties and applications.	**07**
	(b)	Describe solvent extraction technique for separation of mixed plastic waste.	**07**
		OR	
Q.3	**(a)**	Write as short note on use of plastic waste as fillers.	**07**
	(b)	What is medical plastic waste and how is it generated? Give details of its disposal.	**07**
Q.4	**(a)**	Write s short note on float/sink (density) separation of mixed plastic waste.	**07**
	(b)	Explain the recycling process of plastics woven sack waste.	**07**
		OR	
Q.4	**(a)**	Discuss various problems associated with incineration of pure plastics waste.	**07**
	(b)	Discuss in details about recycling of multilayer packaging film waste.	**07**
Q.5	**(a)**	Discuss secondary recycling of plastics waste by Co-extrusion and Co-injection moulding.	**07**
	(b)	Define pyrolysis. List different types of pyrolysis systems and explain about fluidized bed pyrolysis reactor.	**07**
		OR	
Q.5	**(a)**	List and explain important steps in PET recycling process.	**07**
	(b)	Give details of recycling of PU waste.	**07**

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