Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA ENGINEERING – SEMESTER – VII EXAMINATION –WINTER - 2018

Subject Code: 3372305 **Date: 6- 12 -2018**

Subject Name: Recycling of Plastic

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.**
4. **Use of programmable & Communication aids are strictly prohibited.**
5. **Use of only simple calculator is permitted in Mathematics.**
6. **English version is authentic.**

Q.1		Answer any seven out of ten.	**14**
	1.	Describe 4R concept in management of plastics waste	
	2.	State sources of plastic waste.	
	3.	List various techniques used for primary recycling.	
	4.	Write recycling code of any two plastic material.	
	5.	State any four size reduction method.	
	6.	Define primary recycling.	
	7.	Draw sandwich structure of secondary recycling by co injection process.	
	8.	List any two technical approach for secondary recycling.	
	9.	List any two advantages of pyrolysis process.	
	10.	Define glycolysis.	
Q.2	(a)	Write in short about Future trends of waste disposal.	**03**
		OR	
	(a)	Define 1. Waste plastic 2.post consumer plastic waste 3.scrap plastic	**03**
	(b)	Write in short about disk mill.	**04**
		OR	
	(b)	Explain any one separation method of paper plastic mixure.	**04**
	(c)	Draw plastic cycle and explain in short.	**07**
		OR	
	(c)	Discuss separation of plastic using physical property.	**07**
Q.3	(a)	Draw vertical shaft pyrolysis reactor.	**03**
		OR	
	(a)	Draw union carbide pyrolysis system.	**03**
	(b)	Draw fluidized bed type pyrolysis reactor.	**04**
		OR	
	(b)	Draw pyrolysis system developed by japan steel work.	**04**
	(c)	List out advantages of pyrolysis process.	**07**
		OR	
	(c)	Explain recycling of PVC material.	**07**
Q.4	(a)	List & explain any three problems associated with incineration of pure plastic waste.	**03**
		OR	
	(a)	Explain in short about recycling of PET bottle.	**03**
	(b)	Explain hydrolysis as a chemical decomposition of plastic waste.	**04**

OR

	(b)	Draw incinerator suitable for plastic waste.	**04**
	(c)	Explain cryogenic grinding process as a primary recycling method.	**07**
Q.5	(a)	Explain co injection process as a secondary recycling techniques.	**03**
	(b)	Draw neat sketch of inline recycling process.	**04**
	(c)	Write any seven construction features of incinerator.	**07**

****