Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII(NEW) • EXAMINATION – WINTER 2016

Subject Code:2173513 **Date:29/11/2016**

Subject Name:Newer waste water treatment systems (Department Elective - II)

Time:10.30 AM to 1.00 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)**	Enlist the pollutants which need to be removed by 'Advanced Wastewater treatment'. Explain your objections if they are not controlled.	**07**
	(b)	Enlist and explain in detail softening and disinfection processes for water treatment?	**07**
Q.2	**(a)**	What is adsorption? What are the factors on which adsorption depends?	**07**
	(b)	Explain the construction and working of 'Membrane processes?	**07**
		OR	
	(b)	Enlist and explain the concept of Ion exchange for water and wastewater treatment also explain its applications for water and wastewater treatment.	**07**
Q.3	**(a)**	Which are the unit processes and unit operations which fall under 'Advanced wastewater treatment'? High light the purpose of each.	**07**
	(b)	Explain in detail the coagulation and flocculation process for wastewater treatment?	**07**
		OR	
Q.3	**(a)**	Explain the applications of membrane technologies in wastewater treatment?	**07**
	(b)	Explain Screening and sedimentation process in detail?	**07**
Q.4	**(a)**	Explain water quality parameters in detail?	**07**
	(b)	What is the philosophy of waste water treatment?	**07**
		OR	
Q.4	**(a)**	How is the estimation of wastewater quantity done and explain the discharge standards for wastewater?	**07**
	(b)	Explain sewerage system in detail?	**07**
Q.5	**(a)**	Explain preliminary treatment in detail?	**07**
	(b)	Explain aerobic process of wastewater treatment in detail?	**07**
		OR	
Q.5	**(a)**	Explain the process of Tertiary treatment for wastewater in detail?	**07**
	(b)	Explain anaerobic process of wastewater treatment in detail?	**07**

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