Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER– I• EXAMINATION – WINTER 2014

Subject Code: 2711707 **Date:09/01/ 2015**

Subject Name: Water and Wastewater Technologies

Time:02:30 p.m. to 05:00 p.m. **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)**	What do you understand by potable water standard? Explain. Discuss quality criteria of water used for industries.	**07**
	(b)	With a short note on water quality indices.	**07**
Q.2	**(a)**	With a neat sketch explain various water treatment units.	**07**
	(b)	Also enlist important wastewater effluent standards.	**07**
		OR	
	(b)	Explain importance of aeration in water treatment. Also describe the various methods of aeration for water treatment.	**07**
Q.3	**(a)**	Define coagulation and flocculation. Enlist various coagulants and discuss their merits and demerits.	**07**
	(b)	Explain necessity of disinfection in water treatment. What are the requirements of a good disinfectant?	**07**
		OR	
Q.3	**(a)**	With a neat schematic diagram explain wastewater treatment process.	**07**
	(b)	Draw the sketch of conventional trickling filter. Also discuss the process of formation of biological slime layer in it	**07**
Q.4	**(a)**	What are biological unit processes? Explain its importance in wastewater treatment.	**07**
	(b)	Write short note on Rotating Biological Contactor.	**07**
		OR	
Q.4	**(a)**	With a neat diagram explain principle and working of Activated Sludge Process.	**07**
	(b)	Write a short note on ultrafilteration and Nanofilteration.	**07**
Q.5	**(a)**	Discuss the factors affecting the sludge digestion process.	**07**
	(b)	Enlist various membrane processes and explain any one in detail.	**07**
		OR	
Q.5	**(a)**	Distinguish between Slow sand filters and Rapid sand filters.	**07**
	(b)	Write a short note on tertiary treatment processes for water and wastewater treatment.	**07**

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