Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER-I(New course) • EXAMINATION - WINTER- 2015

Subject Code: 2711707 Subject Name: Water and Wastewater Technologies			Date: 02/01/2016	
Tir	-	30 pm to 5:00 pm Total Marks: 7	70	
		Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a)	Enlist two physical, chemical and biological parameters of water quality requirements.	07	
	(b)	Explain what do you mean by wholesome water? Define potable water and enlist potable water standards.	07	
Q.2	(a) (b)	What do you understand by water quality index? Explain in detail. What objectives are achieved by aeration of water? Sketch and explain various types of aerators.	07 07	
	(b)	OR Explain the process of aeration and gas transfer in detail.	07	
Q.3	(a) (b)	Write a short note on clariflocculation Explain types of settling. Also explain in detail various types of sedimentation tanks with neat sketches.	07 07	
		OR		
Q.3	(a) (b)	Explain mechanism of filtration. Also explain modes and operational problems. Sketch and explain working of rapid sand filters.	07 07	
Q.4	(a) (b)	Enlist various methods of disinfection and explain each method in short. Explain pre chlorination post chlorination and break point chlorination in detail. OR	07 07	
Q.4	(a)	Differentiate: (1) Coagulation and flocculation (2) Attached growth and suspended growth biological process.	07	
	(b)	Explain in detail various sludge treatment methods.	07	
Q.5	(a)	With a neat sketch explain the working of Trickling Filter. Discuss the formation of slime layer in it.	07	
	(b)	With a neat sketch explain Activated sludge process. OR	07	
Q.5	(a) (b)	Explain sludge digestion process. With a neat diagram explain sludge digestors. Write short notes on (1) Membrane processes for wastewater treatment (2) Nano-filtration and ultrafiltration	07 07	
