Seat No.:	Enrolment No
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GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER-1 (NEW) EXAMINATION – WINTER 2016

Subject Code: 2711808 Da		Date: 05/01/2017	
Subj	ect N	Name: Water & Wastewater Technologies	
1 1			Total Marks: 70
Instru			
	2.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
	J	rigures to the right indicate run marks.	
Q.1	(a)	Define the terms with its units: (i) Food to microbe ratio (ii) Oxygen Uptake Rate	07
		(iii) Sludge Volume Index	
	(b)	Define the terms with its units: (i) Surface Over Flow Rate (iii) Weir Over Flow Rate (iii) Scour Velocity	07
Q.2	(a)	Write difference between Step Aeration process & Extended ae process	ration 07
	(b)	Give the difference between Flocculation and Coagulation.	07
		OR	
	(b)	Determine the daily and annual primary sludge production for sewage treatment plant having following operating characteristic	07
		Flow = 0.05 m ³ /s, Influent SS =155 mg/l,Removal efficiency =53%,Volatile solids = 70%,Specific gravity of VS=2.50,Fixed solids =30%,Specific gravity of FS=2.50	
Q.3	(a)	Giving difference between	07
		(i) Suspended growth process and attached growth process(ii) Aerobic processes and anaerobic processes	
	(b)	Explain the mechanisms of Rapid Sand Filter. OR	07
Q.3	(a)	If the F/M ratio of a 0.45 m ³ /s activated sludge plant is 0.25 d ⁻¹ , influent BOD ₅ after primary settling is 120 mg/L and the MLVS 2000 mg/L, what is the volume of the aeration tank?	
	(b)	Explain different types of settling.	07
Q.4	(a)	Give classification of screens. Explain its purposes and write f	factors 07
	(b)	affect on head loss through screens. Give classification of Grit chamber and explain any one in deta OR	nil. 07
Q.4	(a)	What is adsorption ?Explain factors affect on it.	07
~	(b)	explain the factors affecting BOD test.	07
Q.5	(a)	Enlist and explain the stages in anaerobic digestion	07
	(b)	Write a short note on Tube Settler.	07

Q.5 (a) What is purpose of disinfection of water? Explain factors affect on it. 07

(b) Explain conventional activated sludge process with neat sketch. 07
