Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII EXAMINATION - SUMMER 2016

Sul	bject Code:171301	Date:16/05/2016
Tin	bject Name:Advanced Wastewater Treatment Technologies ne:02:30 PM to 05:00 PM	Total Marks:
70	cructions:	
mst	 Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. 	
Q-1	(a) With the help of neat diagram explain the concept of RO and electro dialysis.	07
	(b) Discuss in detail the Environmental Applications of Membrane	s. 07
Q-2	(a) Explain the difference between 'Tertiary treatment' and 'Advantage wastewater treatment' with the help of neat sketch.	nced 07
	(b) With the help of neat diagram Explain the process of Resin regeneration.	07
	OR	
	(b) Enlist and explain the concept of Ion exchange for water and wastewater treatment. Also enlist its applications for water and wastewater treatment.	07
Q-3	 (a) Define the terms: (i) Permeate (ii) Retentate (iii) Membrane fouling (iv) Recover (v) Trans membrane pressure (vi) Flux (vii) Influent. 	07
	(b) Enlist and explain the modes of operation of membrane filtratio OR	on. 07
Q-3	(a) Enlist and explain the Advanced oxidation processes for treatmeters.	ent of 07
	(b) Differentiate between:(i) Maintenance cleaning and Recovery cleaning.(ii) External MBR and Immersed MBR.	07
Q-4	(a) Write a Short note on Adsorption isotherms.	07
	(b) Write a Short note on Hybrid membrane system. OR	07
Q-4	(a)Write a Short note on Gravity Thickener.	07
	(b) Enlist the sludge dewatering methods and explain any one.	07
Q-5	(a) Write a note on biological nitrogen removal processes	07
•	(b) Explain the chemical precipitation method for phosphorus remo	
Q-5	(a) Explain the mechanism involved in the softening of non carbon hardness of magnesium.	ate 07
	(b)Write a Short note on Land treatment.	07