GUJARAT TECHNOLOGICAL UNIVERSITY ME – SEMESTER-1 (NEW) EXAMINATION – WINTER 2016

Subject Code: 2711707 Date:05/01/2017 Subject Name: WATER & WASTEWATER TECHNOLOGIES Time: 2:30 pm to 5:00 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)	Explain what do you understand by water quality requirement. Also enlist five potable water standards	07
	(b))	Explain important physical, chemical and biological parameters of water.	07
Q.2	(a) (b)	Explain and enlist physical, chemical and physio-chemical processes in detail. Write a short note on biological processes	07 07
	(b)	Enlist and explain the importance of primary, secondary and tertiary treatment for water purification.	07
Q.3	(a) (b)	With a neat diagram explain water treatment plant with functions of each unit. Explain the process of aeration and gas transfer in detail.	07 07
Q.3	(a)	OR Explain types of settling. Explain in detail with neat sketches different types of sedimentation tanks.	07
	(b)	What do you understand by stability of colloids and destabilization of colloids. Explain.	07
Q.4	(a)	Differentiate between (1) Rapid sand filters and slow sand filters (2) Suspended growth process and Attached growth process	07
	(b)	Write a short note on (1) Sludge Digestors (2) Rotating biological Contactor. OR	07
Q.4	(a) (b)	Explain importance of disinfection. Also discuss factors affecting disinfection. Explain : (1) Ozonation (2) Clarriflocculation	07 07
Q.5	(a) (b)	Explain with neat sketch working of Trickling filter. Explain in detail sludge treatment methods.	07 07
Q.5	(a)	Write Short note on (1) Reverse Osmosis (2) Nanofilteration and Ultrafilteration	07
	(b)	Explain in detail Activated Sludge Process.	07
