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GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER I (NEW) – • EXAMINATION – SUMMER 2016

Subject Code: 2711707 Date:18/05/2016 **Subject Name: Water and Wastewater Technologies** Time: 02:30 pm to 05:00 pm **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. 0.1 Discuss different characteristics of water quality in detail **07** (a) **(b)** What do you understand by water quality indices? Discuss any one method in 07 detail. **Q.2** (a) Enlist Indian standards for drinking water with significance. 07 Discuss layout of water treatment plant with neat sketch. **07 (b)** Explain the process of aeration and gas transfer in detail. 07 **(b)** 0.3 (a) Write a short note on various chemical coagulants commonly used in **07** coagulation process. Explain types of settling. Also explain in detail various types of sedimentation **07 (b)** tanks with neat sketches. OR Explain difference between rapid sand filters and slow sand filters 07 Q.3 (a) Sketch and explain working of rapid sand filters. **07 (b)** Why it is necessary to disinfect the water for public water supply schemes. **Q.4 07** (a) State the theory of disinfection of water by chlorine. Explain residual chorine, dechlorination and superchlorination. **(b)** 07 **Q.4** (a) Differentiate: (1) Coagulation and flocculation (2) Attached growth and 07 suspended growth biological process. **(b)** What do you mean by sludge handling? Explain in detail various sludge 07 treatment methods. With a neat sketch explain the working of Trickling Filter. **07 Q.5** (a) Write the principle and with a neat sketch explain Rotating Biological 07 **(b)** contactor. OR With a neat diagram explain sludge digestors and sludge digestion process. 07 Q.5 (a) Write short notes on (1) Ultrafilteration and Electrodyalisis 07 **(b)** (2) Ion Exchange Processes *****