Seat No.:	Enrolment No.

Subject Code: 151303

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

Date: 09/05/2016

**BE - SEMESTER-V- EXAMINATION - SUMMER 2016** 

**Subject Name: Physico- Chemical Treatment 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. Draw a neat sketch of conventional water treatment plant and explain the function of 0.1 07 each unit. **(b)** Differentiate between: 07 (i) Rapid mixer and flocculator (ii) Coagulation and flocculation (iii) Perikinetic and ortho kinetic flocculation **Q.2** (a) Enlist and explain the mechanisms by which the colloids are stabilized. **07** 07 Explain any one type of Grit Chamber with sketch. **(b)** OR (b) What is screen? Write the purpose of screen and give detail classification of 07 screen. (a) Enlist and explain the different types of settling phenomena. 07 0.3 **(b)** Explain the terms: 07 (i) SOR (ii) WOR (iii) Scour velocity OR 0.3 Write a brief note on "Tube Settlers". 07 (a) (b) Derive the Stoke's law for the determination of settling velocity of discrete particals. 07 0.4 (a) Draw a neat sketch of Rapid Sand Filter (RSF) and explain its construction and 07 working. **(b)** Explain the mechanisms involved in removal of solids in a filter. 07 **Q.4** (a) With the help of a neat sketch explain the concept of "Break point Chlorination." 07 (b) What are the advantages of dual media filters as compared to single media 07 filters? Q.5 Explain the disinfectants used for water treatment. 07 (a) Describe the usual sources of sludge and the characteristics of sludge generated 07 in a Conventional wastewater treatment plant. OR Q.5 Describe the methods normally used to process the sludge before its final **07** disposal. Enlist & explain the Construction & working of a slow sand filter along with a neat 07 **(b)** sketch.

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