

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VI • EXAMINATION – SUMMER • 2014

Subject Code: 160604**Date: 28-05-2014****Subject Name: Water and Waste Water Engineering****Time: 10:30 am - 01:00 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) Discuss different water sources for water supply in a town? Draw a complete flow diagram of water supply scheme. **07**
- (b) Draw a complete flow diagram of Wastewater Treatment plant and describe the function of its each unit **07**
- Q.2** (a) Describe different types of screens and design a Intake fitted with coarse screen for a flow of 0.1 cumecs. **07**
- (b) How the diameter of rising main is determined? Give the step wise procedure for finding BHP of centrifugal pumps **07**
- OR**
- (b) Write short notes on (i) Factors affecting sludge digestion (ii) Types of settling phenomena **07**
- Q.3** (a) Explain the theory of sedimentation and prove that settling velocity does not depend upon depth of sedimentation tank. **07**
- (b) Write short notes on (i) SOR and WOR (ii) Types of coagulants **07**
- OR**
- Q.3** (a) What are different types of water demands? Describe any three methods of Population forecasting. **07**
- (b) What is clariflocculator? Design a clariflocculaor for out flow of 250 m³/hr. Assume suitable data as per manual. **07**
- Q.4** (a) Explain the theory of filtration and troubles in RSF. Design a RSF for getting out flow of 0.2 cumecs. **07**
- (b) Describe different layout of distribution network systems and discuss their merits and demerits. **07**
- OR**
- Q.4** (a) Enumerate different sewer appurtenances and describe man hole with sketch **07**
- (b) Describe different hydraulic characteristics of circular sewer in running full and partial full conditions. **07**
- Q.5** (a) What is HRTF? Determine the size of HRTF for flow of 4.5 Mld. If recirculation ratio = 1.4, BOD of wastewater =250 mg/l and final effluent desired = 50 mg/l. **07**
- (b) What are biological processes? Differentiate suspended growth process and attached growth process. **07**
- OR**
- Q.5** (a) How is recirculation done in activated sludge process? Draw a flow diagram of wastewater treatment using ASP. **07**
- (b) Design a septic tank with soak pit for 100 users. **07**
