

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V • EXAMINATION – WINTER 2013****Subject Code: 150603****Date: 04-12-2013****Subject Name: Environmental 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 in detail Bacterial growth in terms of number and biomass. **07**
(b) Enumerate different sources of water. Explain surface sources in detail. **07**

- Q.2** (a) Define BOD. Where BOD test results are used? Enumerate limitations of BOD test. **07**
(b) Wastewater containing 130 mg/l of BOD_5 after preliminary treatment is discharged to a river at a rate of 75000 m³/d. the river has a minimum flow rate of 6 m³/s, a BOD_5 of 2mg/l, and a velocity of 2.4 km/hr. After the wastewater is mixed with the river contents, the temperature is 20°C and the dissolved oxygen is 75 percent of saturation. Determine the oxygen sag at the critical point and the distance of $x_c/2$ above and below the critical point. $k' = 0.25/d$, $k'_2 = 0.4/d$. **07**

OR

- (b) What do you mean by waterborne diseases? Write specific agent, reservoir, common vehicle, symptoms in brief for (i) Typhoid fever (ii) Infectious hepatitis. **07**

- Q.3** (a) Write short notes on various types of traps. **07**
(b) Write short notes on the systems of plumbing. **07**

OR

- Q.3** (a) Discuss in detail: Disposal of treated wastewater onto land. **07**
(b) Discuss in brief: Precautionary measures to be followed during plumbing work. **07**

- Q.4** (a) What are the different methods of solid waste treatment? Discuss sanitary landfill in detail. **07**
(b) Describe different methods for air pollution control. Discuss electrostatic precipitator in detail. **07**

OR

- Q.4** (a) Write short note on classification and sources of air pollutants. **07**
(b) What is solid waste management? Describe it with flow diagram indicating its all functional elements. **07**

- Q.5** (a) Define noise pollution. How sound is measured? What are the different sources of noise? **07**
(b) Write short note on environmental impact assessment. **07**

OR

- Q.5** (a) Write sources and health effects of (i) Mercury (ii) Arsenic **07**
(b) Write short note on environmental audit. **07**
