Seat No.: _____ Enrolment No._____

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 m^3/d. the river has a minimum flow rate of 6 m^3/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**

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