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## GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-VII • EXAMINATION – SUMMER • 2015

Subject code: 171303 Date: 12/05/2015 **Subject Name: Industrial Water Pollution and Control** Time: 02.30pm-05.00pm **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. (a) Giving appropriate examples compare domestic wastewater and industrial 07 0.1 wastewater. 07 Suggest the measures to reduce the strength of the wastewater. (a) Enlist the primary and secondary benefits of pollution control. **Q.2 07** (b) Explain the basic objectives of setting up a CETP? Describe limitations of 07 CETPs. OR What is volume reduction? Enlisting the different techniques of volume reduction, **07** explain any one in detail. (a) A municipal waste water treatment plant discharges treated effluent in to a 07 Q.3 surface stream. The flow rate of waste water is 10.000 m<sup>3</sup>/day. BOD<sub>5</sub> of 50 mg/L, DO concentration of 2 mg/L and temperature of 20°C. The stream (up stream from the point of waste water discharge) has a flow of 0.5 m<sup>3</sup>/s, a BOD<sub>5</sub> of 3.0 mg/L, DO concentration of 7 mg/L and temperature of 20°C. The deoxygenation constant is 1.23 d<sup>-1</sup> & reaeration constant is 0.4 d<sup>-1</sup>. Determine the critical DO deficit, assuming saturated DO concentration to be 9.1 mg/L (at  $20^{0}C$ **(b)** Explain the steps of Waste management hierarchy in an industry. 07 (a) Write down the manufacturing process, sources and treatment of wastewater **Q.3** 10 for any one of the following industries: (i) Composite dairy (ii) Fertilizer (iii) Pulp & Paper Write a note on Equalization and proportioning. **04 (b)** Differentiate between effluent standards and stream standards giving advantages 07 **Q.4** (a) and disadvantages. **07 (b)** Explain the phenomena of Lake stratification and overturn. OR

(a) What are the different techniques to remove oil and grease from waste water?

Explain any one removal technique along with a neat sketch.

**Q.4** 

**07** 

	<b>(b)</b>	Enlist and explain briefly the points to be considered for discharge of effluents in to river.	07
Q.5	(a)	Explain any one control measure for controlling oil spills.	07
	<b>(b)</b>	What is neutralization? Explain the different methods for neutralization of acidic	07
		wastes?	
		OR	
Q.5	(a)	Enlist and explain the causes and effects of 'Oil Pollution'.	08
	<b>(b)</b>	Give the classification of lakes based on productivity and biological zones.	06