

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

Subject Code: 163504**Date: 26-05-2014****Subject Name: Liquid Effluent Control- I****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) What are the common sources of water for a water supply scheme? **07**
 Explain in brief.
- (b) Draw the flow sheet showing sequence of various treatment units of a typical Water treatment plant. Also list these treatment units sequentially. **07**
- Q.2** (a) Write short notes on: (1) Types of sewage & Sewage Systems AND **07**
 (2) Component of Sewage System
- (b) Explain briefly the general methods of distribution of water employed in municipal water supply schemes. **07**
- OR**
- (b) Explain briefly the following process: **07**
 (1) Break point Chlorination (2) Super Chlorination
 (3) Plain Chlorination (4) De-chlorination
- Q.3** (a) Discuss the use of chlorine as disinfecting agent with reference to: **07**
 (1) It's disinfecting action (2) It's dose (3) It's forms (4) Testing it's residuals
- (b) What is MBR? Explain its working principle and application in effluent control. **07**
- OR**
- Q.3** (a) Explain the importance of determination of solids in sewage. How do you **07**
 determine the suspended solids in a given sample of waste water?
- (b) What is the difference between BOD & COD? Explain population equivalent. **07**
- Q.4** (a) What is BOD? Deduce an expression for BOD with time. What are the factors on **07**
 which the de-oxygenation constant (k) depends?
- (b) What do you mean by quality & characteristics of sewage? Enlist all the **07**
 parameters and explain any three of them in brief with their discharge limits
- OR**
- Q.4** (a) Give a list of methods available for treatment of Industrial effluent Explain **07**
 Biological treatment with a suitable diagram in brief.
- (b) Describe the aim of the following effluent treatment method: **07**
 (1) Screens (2) Activated Sludge process (3) Sedimentation
 (4) Grit Chamber (5) Imhoff Cone (6) Decanter
- Q.5** (a) Why Coagulant is used in the sewage treatment? Name a few coagulant used. **07**
 Describe a method of application of any one of the coagulant.
- (b) What is the status of water pollution control in India and how is it monitored and **07**
 controlled?
- OR**
- Q.5** (a) Explain the administrative control on environment in India. **07**
- (b) Write a short notes on health issues related to liquid effluent and also give name **07**
 of at least five waterborne disease caused by microbes.
