

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2020****Subject Code:2171303****Date:21/01/2021****Subject Name:Industrial Water Pollution & Control****Time:10:30 AM TO 12:30 PM****Total Marks: 56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is equalization? Explain its importance in treatment of wastewater. **03**  
(b) Enlist the methods of volume reduction and explain any one. **04**  
(c) What is Strength Reduction? How can strength reduction of wastewater be achieved? **07**
- Q.2** (a) What are the points to be kept in mind while selecting river as a disposal sink? **03**  
(b) A stream survey has revealed that the reaeration constant is  $0.05 \text{ d}^{-1}$  and the deoxygenation constant is  $0.03 \text{ d}^{-1}$ . If the initial DO deficit is  $5.00 \text{ mg/L}$  and the ultimate BOD after mixing is  $12.00 \text{ mg/L}$ , how long will it take to reach the critical point in the DO sag and what will be the value of critical DO deficit? **04**  
(c) Differentiate clearly between Stream standards and effluent standards highlighting the benefits and drawbacks of both. **07**
- Q.3** (a) How does industrial wastewater differ from domestic waste water? **03**  
(b) Enlist and explain the types of conveyance systems for transporting effluents at CETP. **04**  
(c) Explain the objectives of CETP. **07**
- Q.4** (a) Explain the different zones of lake based on biological activity. **03**  
(b) Explain why there is a need to recycle and reuse the wastewater. **04**  
(c) Enlist the treatment technologies for strong industrial wastewaters and explain any one in detail. **07**
- Q.5** (a) Enlist the technologies to remove oil and grease from wastewater **03**  
(b) Enlist the sources of oil pollution in industries and explain the effects of oil pollution. **04**  
(c) Write a short note on Dissolved Air Flotation technique for treatment of oil and grease from wastewater. **07**
- Q.6** (a) Enlist the objectives of proportioning the wastewater. **03**  
(b) What is neutralization? Explain any one method of neutralization. **04**  
(c) Enlist and explain the primary and secondary benefits of pollution control in industries. **07**
- Q.7** (a) Differentiate between criteria and standards **03**  
(b) Enlist and explain the milk processing steps and identify the sources of waste water along with a neat sketch. **04**

- (c) Explain the line of treatment for dairy wastewater for satisfying the discharge norms. **07**

- Q.8**
- (a) Differentiate between concentration based and load based standards. **03**
  - (b) Identify the sources of wastewater for vegetable and chrome tanning. **04**
  - (c) Draw a schematic flow diagram of typical Effluent Treatment Plant for cotton textile mill wastewater and explain each process in brief. **07**

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