

Paper Id:

100228

Roll No.

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B. TECH.
(SEM VI) THEORY EXAMINATION 2018-19
ENVIRONMENTAL ENGINEERING-II

Time: 3 Hours**Total Marks: 100****Note:** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A**

1. **Attempt all questions in brief.** **2 x 10 = 20**
- a. Enumerate the total amount of solid waste present in water.
 - b. Calculate one day 37⁰C BOD of sewage sample whose 5 days BOD is 100mg/l.
 - c. What are the effects which occur on water after filtration?
 - d. Write short notes on trickling filter.
 - e. Explain softening of water.
 - f. What do you mean by disinfection in treating public water supply?
 - g. Explain the purpose of electrolysis.
 - h. Write short note on residual chlorine.
 - i. What is BOD?
 - j. Define hardness of water.

SECTION B

2. **Attempt any three of the following:** **10 x 3 = 30**
- a. Explain in detail absorption and ion exchange process of treatment of waste water.
 - b. Discuss in detail the ways to remove hardness of waste water and the chemicals involved in hardness.
 - c. Write a detail note on pre chlorination and post chlorination.
 - d. Explain biodegradable and non-biodegradable waste present in water.
 - e. The average sewage flow from sewage is 80 x10⁶ L/D. If the average 5-day BOD is 285 mg/l. Calculate the total 5-day oxygen demand in kg and population equivalent of sewage. Assume per capita demand of BOD per day is 75 g.

SECTION C

3. **Attempt any one part of the following:** **10 x 1 = 10**
- (a) Name and discuss the four mechanism occur during the coagulation.
 - (b) Why are coagulants used in waste treatment? List various coagulants used in the process.
4. **Attempt any one part of the following:** **10 x 1 = 10**
- (a) Discuss the various important tests to be carried out to know the properties of various waste present in waste water.
 - (b) Explain conventional trickling filters with neat sketches.
5. **Attempt any one part of the following:** **10 x 1 = 10**
- (a) Explain the importance of determining solids dissolved in water. How do you determine the amount of solids dissolved in waste water.
 - (b) Explain activated sludge treatment in detail.
6. **Attempt any one part of the following:** **10 x 1 = 10**
- (a) What are the main sources of water pollution in industrial township?
 - (b) How will you determine the quantity of oil and grease in waste water sample?
7. **Attempt any one part of the following:** **10 x 1 = 10**
- (a) Discuss how the efficiency of water supply can be increased by adopting suitable treatment techniques.
 - (b) Explain dewatering of sludge in detail.