

(3 Hours)

[Total Marks : 80

- N.B. :
1. Question No.1 is compulsory
 2. Attempt any three questions from remaining five questions.
 3. Assume any suitable data where ever required.
 4. Figures to the right indicate full marks.

- 1 Attempt any four
 - a. What is off-line Equalization? 5
 - b. Write down classification of stream. 5
 - c. Write short note on recovery of potash from distillery waste 5
 - d. The waste water of a town is to be discharged into a river stream. The quantity of waste water produced per day is 7 million liters and its BOD is 260 mg/lit. If the discharge in the river is 160 lit/sec and its BOD is 5 mg/lit, find out the BOD of the diluted water. 5
 - e. What is sulphitation process in Sugar Industry? 5
- 2 a. A city discharges 1500 liter per second of waste water into a river, whose minimum rate of flow is 3500 lit per second. The temperature of waste water as well as river water is 20°C. The 5day BOD of waste water at that temperature is 300mg/lit and that of river water is 1 mg/lit. The DO content of waste water is zero and that of the stream is 90% of the saturation D.O. If the minimum D.O. to be maintained in the stream is 4.0mg/lit. Find out the degree of waste water treatment, required. 10
Assume the coefficient of de-oxygenation (K_D) as 0.1 and coefficient of re-oxygenation (K_R) as 0.4.
- b. Discuss briefly the various treatment methods available for sugar wastes. Which of them would you recommend for sugar mills in Maharashtra? 10
- 3 a. Explain with the help of flow sheet how you will treat wastes from electroplating industry. 10
- b. Explain in detail volume and strength reduction of industrial waste. 10
- 4 a. What is Environmental Impact assessment? Why EIA is done? Explain the same with following context 10
 - i) Screening
 - ii) Scoping
 - iii) Prediction
 - iv) Reporting

TURN OVER

- b. What are the effects of dissolved inorganic solids on river? Discuss the methods to control them with merits and demerits. 10
- 5 a. List different types of aerobic and anaerobic treatment. Explain any one in detail. Also discuss the role of anaerobic treatment in the treatment of industrial waste. 10
- b. Explain manufacturing of leather industry. Show the points of addition of heat, water, chemicals etc. on the flow sheet and give characteristics of wastes. 10
- 6 Write short note on (Any four) : 20
- a. Neutralization
 - b. Effluent standards and stream standards
 - c. Treatment of refineries waste
 - d. Treatability study
 - e. Save all from Pulp and Paper Industry

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