B.E. Civil VIII - CBGS
Indl. Waste Treatment

30.5.16

(6)

Q.P. Code : 729502

(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

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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