

## ***B.Tech. Degree VIII Semester (Supplementary) Examination, September 2008***

### **CE 803 A/B (D) INDUSTRIAL WASTE ENGINEERING AND MANAGEMENT (2002 Scheme)**

Time: 3 Hours

Maximum Marks: 100

- I a) Why by product recovery is said to be the Utopian aspect of industrial waste treatment? (10)  
b) What are the different types of standards available to control stream pollution? Explain. (10)
- OR**
- II a) Good house keeping minimizes industrial pollution. Comment. (10)  
b) What is meant by equalization? State its advantages. How will you fix the capacity of the equalization tank? (10)
- III a) Derive Streeter Phelp's equation? What are the assumptions made? (10)  
b) Write note on :  
i) Water reuse ii) Ocean disposal of waste (10)
- OR**
- IV a) What are the factors affecting self purification capacity of stream? (10)  
b) An industry is located on a relatively clear stream. The stream has a BOD of 10 mg/l and a dissolved oxygen content of 7.5 mg/l. Flow of the stream is 50m<sup>3</sup>/s. The industrial waste water has BOD of 500mg/l, flow of 5m<sup>3</sup>/s and dissolved oxygen content of 5mg/l. Dissolved oxygen content at saturation is 8.38mg/l. The deoxygenation constant is 3.3 /day and reaeration constant is 0.29/day. Assuming complete mixing of waste water and stream find i) initial oxygen deficit ii) BOD just down stream of the outfall iii) minimum dissolved oxygen content in the stream iv) the time to reach the minimum dissolved oxygen content. (10)
- V a) Explain any one attached growth aerobic system with sketch. Discuss the advantages of attached growth process of treatment for industrial waste treatment. (10)  
b) Explain i) ion exchange process ii) reverse osmosis (10)
- OR**
- VI a) Explain attached and suspended growth system with examples. (10)  
b) Write note on : i) stabilization pond ii) aerated lagoon (10)
- VII Explain with a flow diagram the process involved in **any one** of the following industry i) Textile industry ii) Tannery. Also explain the characteristics of the waste water and draw a suitable treatment process. (20)
- VIII a) Explain briefly the principle and operation of an electrostatic precipitator for particulate removal. (10)  
b) Discuss the role of EIA as a major tool in selection of site for an industry. (10)
- OR**
- IX a) Explain how we can control volatile organic compounds. (10)  
b) Write short notes on:  
i) Environmental auditing ii) Ecolabelling (10)

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