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Reg. No. : .....

Name : .....

Eighth Semester B.Tech. Degree Examination, May 2013
(2008 Scheme)
08.807.3 Elective – V : INDUSTRIAL WASTE WATER MANAGEMENT (C)

Time : 3 Hours Max. Marks : 100

PART – A

Answer **all** questions.

1. List the various waste water characteristics.
2. Distinguish equalization and proportioning of wastes.
3. What is the 5 day BOD at 20°C for a waste water sample having 3d BOD at 25°C as 100 mg/l. Reaction rate K at 20°C (base e) is 0.2 per day.
4. Explain the laboratory procedure for the determination of COD of a waste water sample.
5. Explain the processes of Deoxygenation and Reoxygenation in streams.
6. Explain the flotation process in industrial waste water treatment.
7. Explain the process of coagulation and list the different coagulants used.
8. List the pollutants present in tannery wastes. **(5×8=40 Marks)**

PART – B

Module – I

9. A waste water contains 150 mg/l ethylene glycol ($C_2H_6O_2$), 100 mg/l phenol 40 mg/l sulphide and 125 mg/l ethylene diamine hydrate. Compute the COD, BOD, TOC of waste water if $\frac{COD}{BOD} = 1.5$ and $\frac{BOD}{TOC} = 0.5$ and $\frac{COD}{TOC} = \frac{1}{2.5}$. **20**

OR

10. Describe how waste strength reduction can be achieved in industries. **20**

P.T.O.

Module – II

11. Explain the different zones of settling with neat sketches. **20**

OR

12. A stream having a rate of reaeration = 0.55/d, rate of deoxygenation = 0.23/d and D.O at saturation is receiving a waste water of DO = 4 mg/l and BOD = 745 mg/l. Calculate the DO deficit at a point one day distant from the point of reference, the critical deficit, critical time and the position of critical deficit. D.O. at saturation at 20°C is 9.17 mg/l. **20**

Module – III

13. Discuss the different waste water sources in a paper and pulp industry and describe the possible treatment methods for them. **20**

OR

14. a) Explain the different parameters affecting the rate of adsorption of a pollutant.
    b) Explain break through curve of adsorption. **20**
