



Reg. No. :

Name :

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

Time : 3 Hours

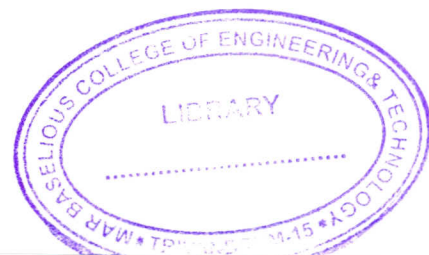
Max. Marks : 100

Instruction : Answer all questions.

PART – A

1. Distinguish between grab sampling and composite sampling.
2. Explain terms i) BOD ii) COD iii) TOD iv) ThOD.
3. Calculate the value of rate constant (base 10) if 90% of ultimate BOD is satisfied in 5 days.
4. Explain the process of De-oxygenation of streams.
5. Distinguish between Discrete settling and Flocculent settling.
6. If the contribution of suspended solids and BOD is 90 gm and 75 gm per capita per day, estimate the population equivalent of
 - i) A combined system serving 1200 persons and having 125 gm/capita daily of BOD and
 - ii) 50,000 litres daily contribution of industrial wastewater contain 1800 mg/l of suspended solids.
7. Explain break through curve of adsorption.
8. List out the different manufacturing processes involved in pulp and paper industry.

(8×5=40 Marks)



P.T.O.



PART – B

Module – I

9. A wastewater sample contains 300 mg/L of ketone ($\text{CH}_3\text{CO C}_2\text{H}_5$). Determine COD of the sample. Assuming the rate constant as 0.1 per day, calculate the ultimate BOD and 5 day BOD of wastewater. Assume COD as 0.8 times ThOD and 2 times BOD. 20

OR

10. Discuss the effects of industrial wastes on streams. 20

Module – II

11. Explain with the help of a sketch the process of self purification of streams and discuss the factors affecting it. 20

OR

12. A stream having a flow of $1 \text{ m}^3/\text{s}$ and BOD of 4 mg/l is saturated with DO. It receives an effluent discharge of $0.25 \text{ m}^3/\text{s}$ having BOD 20 mg/l and DO 4 mg/l. If the average velocity of flow is 0.15 m/s, calculate the DO deficit at points 20 km and 40 km downstream. Assume that the temperature is 20°C throughout and BOD is measured at 5 days. Take rate constants for effluent and stream as 0.12 and 0.30 per day respectively and saturation DO at 20°C as 9.17 mg/l. 20

Module – III

13. Discuss the different types of wastes generated in a tannery industry and describe the different treatment options. 20

OR

14. Explain the different methods that can be adopted in an industry for removing inorganic dissolved solids from wastewater. 20

(3×20=60 Marks)
