

B.Tech. (Chemical Engineering) Sixth Semester (C.B.S.)

Environmental Engineering

P. Pages : 1

NRT/KS/19/3790

Time : Three Hours



Max. Marks : 80

- Notes :
1. All questions carry marks as indicated.
 2. Due credit will be given to neatness and adequate dimensions.
 3. Assume suitable data whenever necessary.
 4. Illustrate your answers whenever necessary with the help of neat sketches.
 5. Solve **any five** questions.

1. a) Why COD value is higher than that of BOD value? Explain. 8
 b) The BOD of waste water is determined to be 210 mg/l at 20°C, what will be the ultimate BOD? What will be BOD₁₀? If the sample had been incubated at 30°C, what would be BOD₅ have been? 8

$$K_{20} = 0.23/\text{day}, k_T = k_{20} (1.05)^{T-20}$$
2. a) Describe the plume behaviour in relation with various meteorological parameters. 10
 b) The behaviour of particulate matter in atmospheric pollution is influenced by their relative sizes. Explain how? 6
3. The design stack height of Chimney is 250m, which Emitts sulphur dioxides at a rate of 500 g/s in summer season in the month of June having moderate wind speed at the stack altitude. 16
 Estimate the concentration of SO₂ downward for the following conditions.
 i) $\langle \rho_{\text{SO}_2} \rangle \langle 1000, 0, 0, 250 \rangle$ ii) $\langle \rho_{\text{SO}_2} \rangle \langle 1000, 50, 0, 250 \rangle$
 iii) $\langle \rho_{\text{SO}_2} \rangle \langle 1000, 50, 20, 250 \rangle$
4. a) Mention different Air pollution control methods. Explain any one in detail. 10
 b) Explain the sources & characteristics of Air pollution. 6
5. a) Describe the Activated Sludge process in detail. 8
 b) Distinguish between Activated Sludge Process & Trickling filter. 8
6. a) List out the different solid waste disposal methods. Explain the sanitary landfilling with neat sketch. 8
 b) Classify the Hazardous waste. Describe the hazardous waste management strategy. 8
7. a) Explain the pollution control process in Dairy Industry. 8
 b) Explain the polluttional sources & characteristics of Sugar Industry. 8
8. Write brief notes on **any two**. 16
 i) Global Environmental Policies ii) Environmental Impact Assessment
 iii) E-Waste iv) Global Warming
