

M.E. CHEMICAL ENGINEERING FIRST YEAR FIRST SEMESTER – 2025, 1st Year, 1st Semester
ENVIRONMENT POLLUTION AND ECOLOGY

Time – Three hours

Full marks –100

Answer any Five questions

1. i. Briefly describe Grazing food chain 4
 ii. For a chemical Plant (Petrochemical plant) describe the hazard and risk factors and briefly describe the Hazop/Hazard analysis for this plant. 16

2. a) 1st stage of BOD of a sample is 60 mg/L. 5 day BOD at 20C is 40 mg/L. What will be the reaction rate constant if the sample temperature is at 30C? 7
 An organic waste sample has molecular formula $C_5H_7O_2N$. Its concentration in a waste stream is 210 mg/L. Calculate carbonaceous, nitrogenous, and ultimate oxygen demands in mg/L. 10
 Briefly describe sustainable development 3

3. i. Briefly describe particulate matter present in air and how it affects human health. 5
 ii. The noise levels at a particular location are 60dB, 75dB, 77dB and 85dB measured during an hour of the day. Find out the average noise levels at the location. 5
 iii. It is required to find out the day-night equivalent noise levels at a location. The three-hourly day average values in dB are 42, 55, 56 and three-hourly night average values in dB are 46,48,50. Compute Ldn. 10

4. Steel Industry is proposed to set up in a particular area. Describe the procedure for applying to Pollution Control board for environment Clearance for the proposed plant. What are the different Environmental rules we have to consider in this case? 20

5. Briefly describe the ecology of wetlands. If any process plant will be set up in this area, describe the effect on ecology, limnonology and food web due to this process plant 5 +15

6. What is called as LC_{50} . And TU Chronic. 4
 What is catabolism and anabolism. 7+3
 Classify the water pollution depending on different pollutants? 6