

(3 Hours)

Marks 80

- N.B. 1 Question number ONE is compulsory
 2 Attempt any THREE questions out of remaining FIVE
 3 Figure to right indicate full marks

01. **Answer the following** **20**
 (a) Describe wastewater sample collection methods.
 (b) Explain Centrifugal scrubber with a neat diagram.
 (c) Explain noise pollution causes, consequences and abatement methods.
 (d) Write short notes on Environmental Audit.

02. (a) What are advance waste water treatments? Explain Electrodialysis process in detail with a neat diagram. **10**
 (b) Explain Plume behavior depending on atmospheric stability and wind turbulence. **10**

03. (a) Explain activated sludge process of secondary biological treatment with a neat diagram. **10**
 (b) Explain the effects of the following on environment: **10**
 (i) Ozone layer depletion
 (ii) Oxides of sulfur

04. (a) Explain the construction and working of the Venturi scrubber used for pollution control. **10**
 (b) The town discharges 17,360 m³/d of sewage into a nearby stream. The stream has a minimum flow of 0.4 m³/s, depth of 2.5 m and a velocity of 5 km/h. Other information pertaining to the stream and the sewage are as follow **10**

	Temperature °C	DO (mg/l)	BOD ₅ (mg/l)
Stream	20	8.5	10
Sewage	25	1.0	200

The deoxygenation constant (k_1) evaluated at 20 °C is 0.35 d⁻¹. Determine the critical oxygen deficit D_c and its location x_c .

05. (a) Describe solid waste disposal methods. Explain any one in detail. **10**
 (b) Draw and explain working, principle and construction of Fabric filters. **10**
06. (a) Explain in detail “Air pollution effects on Vegetation” with a neat diagram. **10**
 (b) Write a short note on: **10**
 i) Reverse Osmosis process
 ii) Adverse effect of Carbon monoxide on human
