U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

June 2025 Semester End Main Examinations

Programme: B.E. **Semester: VII**

Branch: Civil Engineering **Duration: 3 hrs.**

Course Code: 22CV7PEIWT **Max Marks: 100**

Course: Industrial Wastewater Treatment

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

			UNIT - I	*CO*	*PO*	Marks
1	a)		Bring out clearly the difference between domestic sewage and industrial wastewater	*CO1*	*PO1*	**10**
	b)		Enumerate the effects of Industrial wastewater disposal on streams and municipal wastewater treatment plant.	*CO1*	*PO1*	**10**
			OR			
2	a)		Discuss the importance of treatment of industrial wastewater	*CO1*	*PO1*	**10**
	b)		Briefly discuss the effluent and stream standards for disposal of industrial waste water.	*CO1*	*PO1*	**10**
			UNIT - II			
3	a)		100 m^3/s of sewage of a city is discharged in a perennial river which is fully saturated with oxygen and flows at a minimum rate of 1250 m^3/s with a minimum velocity of 0.15 m/s. If the 5-day BOD of the sewage is 260 mg/L, find out where the critical DO will occur in the river. Assume (i) f = 4.0, (ii) Co-efficient of DO as 0.11 (iii) Ultimate BOD as 125 % of the 5-day BOD of the mixture of sewage and river water.	*CO2*	*PO1*	**10**
	b)		With neat diagram explain the various zones of self-purification of stream	*CO2*	*PO1*	**10**
			OR			
4	a)		Explain the working principle, advantages and limitations of using AAS	*CO2*	*PO1*	**10**
	b)		With a neat diagram explain oxygen sag Curve	*CO2*	*PO1*	**10**

			UNIT - III			
	5	a)	Explain various methods of strength reduction with respect to industrial wastewater.	*CO2*	*PO1*	**10**
		b)	Bring out the effects of various pretreatment methods adopted in Industrial wastewater treatment.	*CO2*	*PO1*	**10**
			OR			
	6	a)	Explain various methods of volume reduction with respect to industrial wastewater.	*CO2*	*PO1*	**10**
		b)	Write a note on plug flow and CSTR	*CO2*	*PO1*	**10**
			UNIT - IV			
	7	a)	Explain the methods adopted for removal of organic dissolved solids from wastewater	*CO3*	*PO1*	**10**
		b)	Explain the methods adopted for treatment and Sludge solids	*CO3*	*PO1*	**10**
			OR			
	8	a)	Explain sludge drying beds and centrifuge.	*CO3*	*PO1*	**10**
		b)	Explain multi stage evaporators and sludge conditioning	*CO3*	*PO1*	**10**
			UNIT - V			
	9	a)	Explain the manufacturing process and treatment of wastewater in Tanning industry	*CO3*	*PO1*	**10**
		b)	Explain the manufacturing process and treatment of wastewater in Cotton textile industry	*CO3*	*PO1*	**10**
			OR			
	10	a)	Explain the manufacturing process and treatment of wastewater in Dairy industry	*CO3*	*PO1*	**10**
		b)	Explain the manufacturing process and treatment of wastewater in pharmaceutical industry	*CO3*	*PO1*	**10**

****