Enrollment No./Seat No.:

GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering - SEMESTER - V EXAMINATION - WINTER 2025

Subject Code: 115AB01 **Date: 06-12-2025**

Subject Name: Advanced Industrial Waste Treatment Technology

Time: 10:30 AM TO 01:00 PM **Total Marks: 70**

Instructions

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

			Marks
Q.1	**(a)**	Define industrial wastewater and list out the major sources.	**03**
	(b)	Which are the factors affecting the generation of industrial wastewater?	**04**
	(c)	Write about the toxicity of industrial effluents and its implications on human health and environment.	**07**
Q.2	**(a)**	Which are the different types of industrial wastewater.?	**03**
	(b)	Explain how industrial activities contribute for the water pollution.	**04**
	(c)	Describe the characterization of industrial wastewater and the importance of its variables.	**07**
		OR	
	(c)	How does industrial wastewater affect the environment?	**07**
Q.3	**(a)**	Define chemical coagulation in wastewater treatment.	**03**
	(b)	Why is chemical storage important in a wastewater plant?	**04**
	(c)	Write the advantages and limitations of using chemical coagulation for industrial effluents.	**07**
		OR	
	(a)	Write the process of chemical oxidation in wastewater treatment.	**03**
	(b)	What are limitation and drawback Common Effluent Treatment Plants (CETP)?	**04**
	(c)	Describe the process of neutralization and its importance in treating acidic and alkaline industrial effluents.	**07**
Q.4	**(a)**	What is an individual (ETP) Effluent Treatment Plants?	**03**
	(b)	What are the benefits of zero effluent discharge systems?	**04**
	(c)	Which are the different methods of disposal of industrial wastewater?	**07**
		OR	
	(a)	Which are the advantage of joint treatment of industrial wastewater?	**03**

	(b)	What is an RO reject?	**04**
	(c)	Write short on: Industrial reuse of wastewater and its benefits.	**07**
Q.5	**(a)**	What is the source of wastewater in the textile industry?	**03**
	(b)	Write characteristic of textile wastewater.	**04**
	(c)	Explain source of textiles waste and the recommended process for their treatment with suitable schematic diagram.	**07**

OR

	(a)	Explain a wastewater flow sheet?	**03**
	(b)	What are the necessities and importance of industrial wastewater reuse?	**04**
	(c)	Explain the environmental impacts of wastewater from pulp & paper, sugar, and distilleries.	**07**

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