Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII EXAMINATION – SUMMER 2025

Subject Code:3171303 Date:16-05-2025

Subject Name:Industrial Wastewater Pollution and Control

Time:02:30 PM TO 05:00 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)**	Explain the method of disposal of effluent into ocean.	**03**
	(b)	What is meant by industrial water pollution? Describe what happens when waste water from industries is discharged into nearby stream.	**04**
	(c)	Why there are different discharge standards for different environmental sinks? Give your comments.	**07**
Q.2	**(a)**	Enlist and explain the primary and secondary benefits of pollution control in industries.	**03**
	(b)	Explain the different zones of lake based on biological activity.	**04**
	(c)	What is Strength Reduction? How can strength reduction of wastewater be achieved?	**07**
		OR	
	(c)	What is Volume reduction? Enlist different technique of volume reduction. Explain any one in detail.	**07**
Q.3	**(a)**	Enlist the sources of oil pollution in industries and explain the effects of oil pollution.	**03**
	(b)	Write a short note on Mechanical Air Flotation technique for removal of oil and grease from wastewater.	**04**
	(c)	Write a short note on "Basic water quality parameter required for boiler feed water and cooling water."	**07**
		OR	
Q.3	**(a)**	Explain why there is a need to recycle and reuse the wastewater.	**03**
	(b)	Write a short note on Parallel Plate Separator removal technology for oil and grease from wastewater.	**04**
	(c)	Enlist treatment technologies adopted for treatment of industrial wastewater at CETP. Explain importance of each unit of treatment at CETP.	**07**
Q.4	**(a)**	Enlist the objectives of proportioning the wastewater.	**03**
	(b)	What is Equalization? Explain its importance in treatment of wastewater.	**04**
	(c)	Explain Self-Purification capacity. Enlist and explain factors affecting self-purification capacity of river.	**07**
		OR	
Q.4	**(a)**	With the help of a neat sketch explain "DO sag curve".	**03**

	(b)	What is neutralization? Explain any one method of neutralization.	**04**
	(c)	Derive the equation for steady state concentration of pollutant in a lake.	**07**
Q.5	**(a)**	Explain the objectives of setting up a CETP.	**03**
	(b)	Differentiate clearly between Stream standards and effluent standards highlighting the benefits and drawbacks of both.	**04**
	(c)	Write down waste water characteristics of effluent generated from textile industries. Also draw suitable waste water treatment plant for the same.	**07**

OR

Q.5	**(a)**	State the limitations of a CETP.	**03**
	(b)	What is evaporation? How is it useful for treatment of strong industrial waste?	**04**
	(c)	Identify various sources of wastewater generation from pulp and paper industry & suggest appropriate treatment flow diagram to achieve effluent standards.	**07**

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