GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VII (NEW) EXAMINATION – SUMMER 2022

Subject Code:3171303   **Date:08/06/2022**
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**.

Q.1	**(a)**	Enlist fundamental considerations for disposal of wastewater into river.	**3**
	(b)	Explain the characteristics of different zones of lake under stratification condition with neat sketch.	**4**
	(c)	Explain: self-purification capacity. Enlist and explain factors affecting self-purification capacity of river.	**7**
Q.2	**(a)**	Draw a neat sketch of "DO sag curve". And define "DO deficit"	**3**
	(b)	Enlist different steps of conservation of water in industry	**4**
	(c)	Define stream standards and effluent standards. Give at least 6 points of difference between them.	**7**
		OR	
	(c)	Write a short note on "Basic water quality parameter required for boiler feed water and cooling water."	**7**
Q.3	**(a)**	Differentiate between criteria and standards.	**3**
	(b)	Highlight the benefits of "CETP" over "end of pipe treatment at industry premises".	**4**
	(c)	Enlist treatment technologies adopted for treatment of industrial wastewater at CETP. Explain importance of each unit of treatment at CETP.	**7**
		OR	
Q.3	**(a)**	What is meant by equalization of wastewater? Explain its purpose.	**3**
	(b)	Highlight the need of Volume reduction and strength reduction of wastewater	**4**
	(c)	Enlist the techniques of strength reduction of wastewater. Explain nay three methods with example.	**7**
Q.4	**(a)**	What is importance of water balance diagram for industry?	**3**
	(b)	Enlist fundamental considerations for disposal of wastewater into Lake.	**4**
	(c)	Identify sources of water pollution generated from dairy industry & suggest Effluent treatment flow diagram.	**7**
		OR	
Q.4	**(a)**	Explain in brief the any one method for disposal of wastewater in ocean.	**3**
	(b)	Highlight the consequences is disposal standards are not followed for disposal of wastewater in lake.	**4**
	(c)	Identify various sources of wastewater generation from pulp and paper industry & suggest appropriate treatment flow diagram to achieve effluent standards.	**7**
Q.5	**(a)**	Explain incineration as a method to managing strong industrial waste.	**3**
	(b)	Explain the need of treatment of wastewater by evaporation technique.	**4**

(c) Discuss the sources of oil and grease in water courses. Also highlight effects of oil **7** and grease.

OR

Q.5 **(a)** List down the primary benefits of pollution control. **3**

(b) Enlist forms of oil. Briefly tabulate characteristics of each. **4**

(c) Enlist equipments used to remove oil and grease from wastewater. Explain any **7** one with neat sketch.

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