

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2023****Subject Code:3171303****Date:08-12-2023****Subject Name:Industrial Wastewater Pollution and Control****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 load based and concentration based standards with example.	03
	(b) Define CETP concept and explain its advantages.	04
	(c) Make a table of forms, industrial sources, removal mechanisms of oil and grease from the wastewater.	07
Q.2	(a) Under which circumstances sewer disposal would be selected as Environmental Sink.	03
	(b) Mention the points to be kept in mind while discharging effluent on land.	04
	(c) Define Floatation and explain IGF in detail with neat sketch.	07
	OR	
	(c) Briefly explain API separator with neat sketch.	07
Q.3	(a) What the objectives of thermal treatment for high strength wastewater?	03
	(b) Define pollution abatement and give the examples of tangible and Intangible benefits of pollution abatement.	04
	(c) Write a short note on Multi effect Distillation.	07
	OR	
Q.3	(a) Enlist sources of high strength wastewater with parameters.	03
	(b) Distinguish between Nozzle floatation and column floatation.	04
	(c) Give an example of how a process change can reduce the strength of wastewater.	07
Q.4	(a) Enlist the factors influence the planning and operation of CETPs.	03
	(b) Explain any one method of Volume reduction of wastewater with example.	04
	(c) What is scale? How is it formed and how it can be prevented?	07
	OR	
Q.4	(a) Differentiate between homogeneous and heterogeneous industries.	03
	(b) Enlist the methods of mixing in equalization basin. Explain anyone with a neat sketch.	04
	(c) Name seven major methods of neutralizing both acid and alkaline wastes and explain limestone treatment for acid wastes.	07
Q.5	(a) Define limnology and draw a deep lake showing vertical stratification.	03
	(b) Identify the sources and sinks of DO in the river.	04
	(c) Study the operation sequence in the tannery manufacturing process and identify the sources of wastewater.	07
	OR	
Q.5	(a) Differentiate between effluent and stream standards.	03

- (b) Discuss the characteristics of euphotic and benthic zone of lake. **04**
- (c) Identify and briefly describe the treatment technological options for maize effluent and highlighting merits and demerits of each. **07**
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