Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII EXAMINATION – WINTER 2015

Subject Code: 173701 **Date:09/12/2015**

Subject Name: Industrial Waste management

Time: 10:30am to 1:00pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	State why wastewaters should be characterized closest to their sources and discus show the parameters for the characterization of a wastewater stream should be decided?	**07**
	(b)	The sewage of a town is to be discharged into a river stream. The quantity of sewage produced per day is 6 million liters, and its BOD is 280mg/l. If the discharge in the river is 220mg/l and if its BOD is 5 mg/l, find out the BOD of diluted water.	**07**
Q.2	**(a)**	What are major objectives of CETP included for the protecting of environment?	**07**
	(b)	What are the methods for handling of hazardous wastes?	**07**
		OR	
	(b)	Concept of pre treatment of waste is also associated with sustainable development. Prove your statement with one suitable and real example	**07**
Q.3	**(a)**	What are steps involved in the production of DM water	**07**
	(b)	Explain the followings facts with suitable technical comments only (Use examples if they have) a) Sustainable manufacturing is widely accepted concept by various organization for reducing of cost b) Zero waste is a philosophy that encourages the redesign of resource life cycles c) Raw Materials = Products + Waste Products + Stored Products + Losses (Where losses are unidentified material)	**07**
		OR	
Q.3	**(a)**	What is foul condensate? Where it is generated? And how to manage it?	**07**
	(b)	How the process cost of wine industry can be reduced. Explain it with proper flow chart	**07**
Q.4	**(a)**	Apply the concept of integrated management approach in textile industry with a proper flow diagram	**07**
	(b)	Sometime neutralization tank is provided /install either before primary treatment or before secondary treatment .Why it is so? State your reason in both of case.	**07**
		OR	
Q.4	**(a)**	125 cumecs of sewage of city is discharged in a perennial river which is fully saturated with oxygen and flows at a minimum rate of 1600 cumecs with a minimum velocity of 0.12 m/sec. If the 5 day BOD of sewage is 300 mg/l, find out where the critical DO will occur in the river. Assume (1) The coefficient of purification of the river as 4.0 (2) The ultimate BOD as 125% of the day BOD of mixture of sewage and river water	**07**
	(b)	List out various problems associated with steam generation and explains how these problems can be fixing and manage.	**07**

Q.5	**(a)**	Draw the schematic arrangement of a simple gas turbine power plant and their environment concern issues	**07**
	(b)	What are differences of between? (with suitable examples) a) End of pipe approach and cleaner production b) In-process recycling and On-site recycling	**07**

OR

Q.5	**(a)**	Explain the 5S system involve in housekeeping	**07**
	(b)	Explain the followings statements a) Purposes served by internal treatment of boiler feed water, and chemicals used in the treatment b) Boiler blow-down and its environmental and energy concerns	**07**

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