Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2153509 **Date:10/05/2017**

Subject Name: Liquid Effluent Treatment-1

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.**

			MARKS
Q.1		**Define the followings:**	**14**
	1	Sedimentation	
	2	Equalization	
	3	Disinfection	
	4	Sterilization	
	5	Contamination	
	6	Activated sludge	
	7	Water Demand	
	8	Biodegradation	
	9	BOD	
	10	Turbidity	
	11	Dissolve solids	
	12	Alkalinity	
	13	Chemical oxygen demand	
	14	Colour	
Q.2	**(a)**	What are the environmental significance of wastewater?	**03**
	(b)	Explain the measurement of Suspended solids in a given wastewater sample.	**04**
	(c)	How the industrial waste water can be treated? Discuss various stages of treatment.	**07**
		OR	
	(c)	What do you understand by wastewater? Briefly discuss the various sources of wastewater generation.	**07**
Q.3	**(a)**	Draw a suitable diagram of neutralization and equalization tank.	**03**
	(b)	Draw a suitable diagram of effluent treatment plant.	**04**
	(c)	State and describe BOD & COD test that may be carried out to know the characteristics of wastewater.	**07**
		OR	
Q.3	**(a)**	Draw a flow diagram of STP for small city.	**03**
	(b)	Write down standards for wastewater discharge in river or stream.	**04**
	(c)	Discuss the working of Grit chamber with suitable diagram.	**07**
Q.4	**(a)**	Discuss the classification of Screens.	**03**
	(b)	Deduce the expression for the first stage BOD.	**04**
	(c)	State and describe physical treatment of wastewater.	**07**
		OR	
Q.4	**(a)**	Write a short note on water demand.	**03**
	(b)	Discuss the various factors that affect the water demand.	**04**
	(c)	Deduce an expression of discrete particle settling.	**07**

Q.5	**(a)**	Write a short notes on Ion exchange process.	**03**
	(b)	Explain the working of FBR with suitable diagram.	**04**
	(c)	Discuss the working of trickling filter with its application and suitable diagram.	**07**

OR

Q.5	**(a)**	Write short notes on water borne disease.	**03**
	(b)	Write a note on advance wastewater treatment.	**04**
	(c)	Discuss the methods of collection of surface water from water bodies.	**07**

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