Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) EXAMINATION – SUMMER 2019

Subject Code: 2150603 Date: 31/05/2019

Subject Name: Environmental Engineering

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	**(a)**	Explain growth pattern of bacteria based upon the numbers.	**03**
	(b)	Enlist and explain any two methods of population forecasting.	**04**
	(c)	The BOD6 of a wastewater is determined to be 400 mg/L at 20^0C. The k value at 20^0C is known to be 0.23 per day. What would be BOD8 value if tests were run at 15^0C?	**07**
Q.2	**(a)**	Explain chemicals parameters of drinking water in detail.	**03**
	(b)	Write a short note on composting as a method of disposal of solid waste.	**04**
	(c)	A city discharges 110 cusec of sewage into a river, which is fully saturated with oxygen and flowing at a rate of 1500 cusec during its lean days with the velocity of 0.1 m/sec. the 5 days BOD of sewage at the given temperature is 300 mg/l.find when and where the critical DO deficit will occur in the downstream portion of the river and what is its amounts. Assume coefficient of purification of the stream as 4.0 and deoxygenation constant as 0.1	**07**
		OR	
	(c)	Explain 1^{st} stage BOD and derive its formula with usual notations $L_t=L_O(1-10^{-Kt})$.	**07**
Q.3	**(a)**	Distinguish between BOD and COD	**03**
	(b)	Explain the difference between pyrlosis and incineration	**04**
	(c)	Explain the different components of houses drainage systems.	**07**
		OR	
Q.3	**(a)**	Distinguish between aerobic and anaerobic decompositions of waste water.	**03**
	(b)	Explain the difference between primary and secondary pollutant.	**04**
	(c)	Explain solid waste collection services.	**07**
Q.4	**(a)**	Explain the difference between Sound and noise.	**03**
	(b)	Explain effects of air pollution on human beings.	**04**
	(c)	Describe the device used for control of particulate matter.	**07**
		OR	
Q.4	**(a)**	Explain noise rating systems.	**03**
	(b)	Explain effects of air pollution on plants.	**04**
	(c)	Explain control of noise pollution.	**07**
Q.5	**(a)**	Explain the Difference between temporary hardness and permanent hardness.	**03**
	(b)	Discuss the self purification of stream.	**04**
	(c)	Write short notes on various types of traps.	**07**
		OR	
Q.5	**(a)**	Explain different factors affecting the water demand.	**03**
	(b)	Explain classification of solid waste.	**04**
	(c)	Describe role of microbes in the environment.	**07**

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