Seat No.: _____ Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III (New) EXAMINATION – WINTER 2018

Subject Code:2133505 Date:05/12/2018

Subject Name:Chemistry for Environmental Science and Technology

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.**

			MARKS
Q.1	**(a)**	Define the term Environment. Explain biotic components of environment.	**03**
	(b)	Explain Le Chatelier's principle with example.	**04**
	(c)	Enlist the methods of DO measurements. Explain any one of them briefly.	**07**
Q.2	**(a)**	Define the followings: 1) Molecular Polarity 2) Cohension 3) Oxidation reaction	**03**
	(b)	Discuss the phenomenon of photochemical smog with suitable diagram.	**04**
	(c)	What is the principle of TOC analyzer? Discuss its working with suitable diagram.	**07**
		OR	
	(c)	Define atmosphere. Draw a temperature Vs altitude profile of atmosphere and explain each segment of atmosphere.	**07**
Q.3	**(a)**	Write a short note on greenhouse gas effect.	**03**
	(b)	Discuss the segments of environment.	**04**
	(c)	What are the causes of taste and odour in water? Explain the measurement of taste and odour in water.	**07**
		OR	
Q.3	**(a)**	Enlist the various methods of disinfection.	**03**
	(b)	Discuss the sampling of wastewater.	**04**
	(c)	Define the term disinfection? Explain the chemistry involve in disinfection by chlorine.	**07**
Q.4	**(a)**	What are the discharge standards for following parameters as per CPCB: pH, BOD, COD, Ammonical-N, Suspended solids, Oil & grease	**03**
	(b)	Define the term hardness. Discuss its types with environmental significance.	**04**
	(c)	Classify and discuss types of solids present in wastewater.	**07**
		OR	
Q.4	**(a)**	Write a short note on conductivity.	**03**
	(b)	Explain working principle of spectrophotometer.	**04**
	(c)	Discuss the sources of environmental toxicity.	**07**
Q.5	**(a)**	Enlist chemical characteristics of wastewater.	**03**
	(b)	Discuss the working of zeolite based water softening unit.	**04**
	(c)	How the excess amount of fluoride can be removed from drinking water. Explain with suitable diagram.	**07**
		OR	
Q.5	**(a)**	Discuss working principle of pH meter.	**03**
	(b)	Write short notes on coagulation and flocculation.	**04**
	(c)	What is the principle of flame photometer? Draw a working diagram and discuss its components.	**07**