Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – VI (NEW).EXAMINATION – WINTER 2016

Subject Code: 2161711 **Date: 26/10/2016**

Subject Name: Environmental Instrumentation

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.**

Q.1	**(a)**	Explain glass electrode for pH measurement with its advantages and disadvantages and maintenance.	**07**
	(b)	Explain settling of discrete particles with equations.	**07**
Q.2	**(a)**	What is conductivity? Give the classification of conductivity meter in Environmental Engineering Field.	**07**
	(b)	Explain the working principle and operation of each unit of gas chromatograph with sketch.	**07**
		OR	
	(b)	Write a short note on flame ionization detector.	**07**
Q.3	**(a)**	Explain principle, construction and working of Thermal Conductivity Detector.	**07**
	(b)	Draw the layout of HPLC instrument. Explain the importance of degasser and guard column.	**07**
		OR	
Q.3	**(a)**	Explain the working principle and operation of each unit of High Performance Liquid Chromatograph with sketch.	**07**
	(b)	Explain non-open channel waste water flow measurement.	**07**
Q.4	**(a)**	Explain bubbler and ultrasonic type level sensing technology with their advantages and disadvantages.	**07**
	(b)	Define how thermal plants are responsible for air pollution?	**07**
		OR	
Q.4	**(a)**	List out the Level measurement techniques for ground water monitoring wells. Explain any one of them.	**07**
	(b)	Write a note on standard applications of ultraviolet analyzers.	**07**
Q.5	**(a)**	Explain SO2 monitoring analyzer.	**07**
	(b)	Explain CO monitoring analyzer.	**07**
		OR	
Q.5	**(a)**	Explain Beer's law.	**07**
	(b)	Explain NOx monitoring analyzer.	**07**

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