Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V • EXAMINATION – SUMMER 2013

Subject Code: 151302 **Date: 16-05-2013**

Subject Name: Advanced Environmental Instrumentation

Time: 10.30 am - 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.**

Q.1	**(a)**	Explain "Jackson Candle Turbidity Meter" with neat sketch.	**07**
	(b)	Write the working principle of flame photometer.	**07**
Q.2	**(a)**	Write a short note on applications of conductivity meter	**07**
	(b)	Write the sources of Turbidity in river water. What is significance of turbidity?	**07**
		OR	
	(b)	Write a short note on Electrochemical cell.	**07**
Q.3	**(a)**	Write a short note on pH meter and its applications in environmental engg field.	**07**
	(b)	Explain the merits and demerits of the gas chromatograph.	**07**
		OR	
Q.3	**(a)**	Write the working principle of Ion Selective meter.	**07**
	(b)	Derive and explain Lambert's and Beer's law.	**07**
Q.4	**(a)**	How total Organic carbon is measured in TOC analyzer?	**07**
	(b)	Write a short note on High Performance Liquid chromatograph	**07**
		OR	
Q.4	**(a)**	Analyst reported the following percentage (%) of Fe in a sample. 9.76, 9.75, 9.66, 9.69, 9.80, 9.79 and 9.73 Calculate mean, medium, range, average deviation, relative deviation, standard deviation and co-efficient of variation.	**08**
	(b)	What is chromatography? Explain stationary phase in chromatography	**06**
Q.5	**(a)**	Explain the working principle and operation of each unit of Colorimeter with sketch.	**07**
	(b)	Write a short note on UV-visible Spectrophotometer.	**07**
		OR	
Q.5	**(a)**	Explain the following terms with examples: (i) Standard Deviation (ii) Relative deviation	**07**
	(b)	Write a short note on Bio-assay test.	**07**

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