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GUJARAT TECHNOLOGICAL UNIVERSITY ME – SEMESTER I (NEW) – • EXAMINATION – SUMMER 2016 Subject Code: 2711705 Date:19/05/2016 **Subject Name: ADVANCES IN ENVIONMENTAL LABORATORIES** 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) Define the terms: Resistance, Conductance, Specific Conductance and Cell 07 Constant in detail. **(b)** Write steps to measure pH and Electrode potential of water sample? 07 **Q.2** (a) Write in brief about various columns used in Gas Chromatography. 07 (b) Write down characteristics of carrier gas used in GC and give suitable examples **07** for particular analysis. OR 07 (b) Draw neat and labeled diagram for instrumental set up of GC and describe in brief. Q.3 (a) Explain briefly premix Burner (Flame Atomizer) used in AAS along with its 07 principle, mechanism, advantages. 07 (b) Write a note on reverse phase and normal phase, isocratic and gradient elution in HPLC. OR Q.3 (a) Discuss refractive index detector used in HPLC with diagram. 07 (b) Discuss general requirements of pumps. Explain any one pump which is used in **07** 

HPLC with diagram.

Q.4	(a)	Explain the basic principle and working of Flame Ionization Detector used in GC with Application.	07
	<b>(b)</b>	Discuss source of Radiation for visible region in Spectroscopy.	07
		Discuss its Merits and Demerits.	
		OR	
Q.4	(a)	Discuss Mass Spectroscopy and its Applications in detail.	07
	<b>(b)</b>	Give difference between Turbidity and Naphelometry techniques. Write environmental applications of these techniques.	07
Q.5	(a)	Principle for AAS is? Discuss double beam AA Spectrophotometer with diagram.	07
	<b>(b)</b>	Explain Calibration Curve method for Spectrophotometer by giving suitable example for analysis of any one water quality parameter.	07
		OR	
Q.5	(a)	Give notes on Polarography technique with principle and instrumental setup.	07
	<b>(b)</b>	What is Voltametry? Give application with respect to environmental analysis.	07

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