Seat No.:	Enrolment No

## GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA ENGINEERING - SEMESTER-V • EXAMINATION – SUMMER 2013			
	•	Code: 351703 Date: 16-05-2013 Name: Analytical Instrumentation	
Ti	•	0:30 am - 01:00 pm Total Marks: 70	
	1. 2.	Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.	
		Each question carry equal marks (14 marks) Draw the figure wherever required	
Q.1	(a)	Draw the schematic diagram of the X-Ray absorption spectrography.& explain in brief.	07
	(b)	Explain the working principle of the ESR	07
Q.2	(a) (b)	List the property of Ceseium- 134 Explain the working principle of the NMR OR	07 07
	(b)	What is the importance of Gas Chromatograph? Explain Basic Parts of a Gas Chromatograph.	07
Q.3	(a)	Which are application guidelines needed to be considered for Analytical Systems - online Analysers?	07
	(b)	How does the refractometer function ? OR	07
Q.3	(a) (b)	List the Properties of Ultrasonic waves. State the properties of Cobalt-60.	07 07
Q.4	(a) (b)	How does polarography function? Explain the working principle of oxygen analyser using electrical method.  OR	07 07
Q. 4	(a) (b)	Draw the electrical conductivity cell. Explain its working principle. How can one measure Viscosity by Saybolt's viscometer?	07 07
Q.5	(a) (b)	Explain the working principle of hotwire thermal conductivity cell.  How does Saturated Calomel Electrode electrode measure pH? Explain.  OR	07 07
Q.5	(a) (b)	How does Measuring Electrode measure pH? Explain How can we measure the specific gravity of the sample by Radio Active Densitometer?	07 07

\*\*\*\*\*