Seat No.:	Enrolment No

Subject Code: 161705

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

BE - SEMESTER-VI • EXAMINATION - WINTER • 2014

Date: 03-12-2014

N. C.	.~,,~~		
	•	Name: Instrumentation Measurement-II	
		2:30 pm - 05:00 pm Total Marks: 70	
Ins	truction		
	1. 2. 3.	Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.	
Q.1	(a)	Give explanation about following terms.  (i)Density (ii) Viscosity (iii) Strain (iv) Shear thickening  (v) chromatography (vi)Bingham Plastic (vii) Ion-selective electrodes	07
	<b>(b)</b>	Explain force balance method in detail.	07
Q.2	(a)	<ul><li>(i) Measurement of density using buoyancy.</li><li>(ii) Explain any two solid moisture measurement techniques.</li></ul>	04 03
	<b>(b)</b>	Explain reference electrodes in detail.  OR	07
	<b>(b)</b>	Explain various techniques of electronic length measurement.	07
Q.3	(a)	<ul><li>(i) Explain brittle lacquers method.</li><li>(ii) Explain Capillary viscometer in detail with neat diagram.</li></ul>	04 03
	<b>(b)</b>	Explain any two vibration measurement application.  OR	07
Q.3	(a) (b)	Explain Thermal Conductivity Detector in detail.  Explain High-Performance Liquid Chromatography in detail.	07 07
Q.4	(a)	Give two differences between bonded and unbounded strain gauge. Explain	07
	<b>(b)</b>	semiconductor gauge in detail.  Describe paramagnetic oxygen analyzer.  OR	07
Q.4	(a) (b)	Write a short note on Applications of Conductivity meter. Explain DP transmitter with repeater for density measurement.	07 07
Q.5	(a) (b)	Explain electron Paramagnetic Resonance (EPR) in detail.  Explain the concept of PH in detail.	07 07
		OR	
Q.5	(a) (b)	Explain Mass Spectroscopy with necessary diagram.  Explain X-ray spectroscopy with suitable diagram.	07 07

\*\*\*\*\*