

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- VIth SEMESTER-EXAMINATION – MAY- 2012****Subject code: 161705****Date: 19/05/2012****Subject Name: Instrumentation Measurement-II****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) (1) Explain in detail “Liquid chromatography “ **04**
(2) Explain Ostwald Viscometer in detail with neat diagram **03**
(b) Explain design and selection of strain gauge load cell for measurement of force. **07**
- Q.2** (a) What is meant by pH, write necessary equations and explain more detail of ion selective electrode **07**
(b) Define viscosity and give more brief of its behavior and explain cone and plate viscometer **07**
- OR**
- (b) What is conductivity, how it measures, and write in brief its application **07**
- Q.3** (a) Explain in detail residual chlorine analyzer **07**
(b) Explain in detail “Mass Spectroscopy“ with necessary diagram **07**
- OR**
- Q.3** (a) Explain in detail atomic absorption spectroscopy **07**
(b) Explain the length measurement using position sensitive photocells **07**
- Q.4** (a) How to use a bubble tube for the measurement of density? What are the limitations of that technique? **07**
(b) Write a short note on **07**
1) Semiconductor detector
2) Helium ionization detector
- OR**
- Q.4** (a) Explain in detail moisture measurement **07**
(b) Explain in detail application guideline for analytical instruments **07**
- Q.5** (a) Write a short note on **07**
1) Thermal Analysis 2) Polarography
(b) Explain dynamic displacement measurement calibration in terms of vibration and write an application of vibration measurement **07**
- OR**
- Q.5** (a) How to measure oxygen using paramagnetic oxygen analyzer **07**
(b) Explain in detail IR Spectroscopy **07**
