

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI • EXAMINATION – WINTER • 2014****Subject Code: 161705****Date: 03-12-2014****Subject Name: Instrumentation Measurement-II****Time: 02:30 pm - 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) Give explanation about following terms. **07**
(i) Density (ii) Viscosity (iii) Strain (iv) Shear thickening
(v) chromatography (vi) Bingham Plastic (vii) Ion-selective electrodes
(b) Explain force balance method in detail. **07**
- Q.2** (a) (i) Measurement of density using buoyancy. **04**
(ii) Explain any two solid moisture measurement techniques. **03**
(b) Explain reference electrodes in detail. **07**
- OR**
- (b) Explain various techniques of electronic length measurement. **07**
- Q.3** (a) (i) Explain brittle lacquers method. **04**
(ii) Explain Capillary viscometer in detail with neat diagram. **03**
(b) Explain any two vibration measurement application. **07**
- OR**
- Q.3** (a) Explain Thermal Conductivity Detector in detail. **07**
(b) Explain High-Performance Liquid Chromatography in detail. **07**
- Q.4** (a) Give two differences between bonded and unbounded strain gauge. Explain semiconductor gauge in detail. **07**
(b) Describe paramagnetic oxygen analyzer. **07**
- OR**
- Q.4** (a) Write a short note on Applications of Conductivity meter. **07**
(b) Explain DP transmitter with repeater for density measurement. **07**
- Q.5** (a) Explain electron Paramagnetic Resonance (EPR) in detail. **07**
(b) Explain the concept of PH in detail. **07**
- OR**
- Q.5** (a) Explain Mass Spectroscopy with necessary diagram. **07**
(b) Explain X-ray spectroscopy with suitable diagram. **07**
