

GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER – VI (OLD).EXAMINATION – WINTER 2016

Subject Code: 161705**Date: 24/10/2016****Subject Name: Instrumentation Measurement - II****Time: 10:30 AM to 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) Give two differences between bonded and unbonded strain gauge. Explain semiconductor gauge in detail. **07**
- (b) Describe paramagnetic oxygen analyzer. **07**
- Q.2** (a) Explain Mass Spectroscopy with necessary diagram. **07**
- (b) Draw the functional block diagram of X-ray absorption spectroscopy and discuss the importance of each block in brief. **07**
- OR**
- (b) Explain High-Performance Liquid Chromatography in detail. **07**
- Q.3** (a) Define Viscosity with necessary equation and discuss Newtonian and non-Newtonian behavior of various fluids in detail. **07**
- (b) Explain electron Paramagnetic Resonance (EPR) in detail. **07**
- OR**
- Q.3** (a) Define Density. Discuss the hydrostatic head method for density measurement. **07**
- (b) Explain DP transmitter with repeater for density measurement. **07**
- Q.4** (a) List the moisture measurement technique. Explain conductivity technique for moisture measurement in textile and paper industry. **07**
- (b) Define Vibration and Explain mass spring seismic sensor for measurement of vibration. **07**
- OR**
- Q.4** (a) What is spectroscopy? Explain atomic absorption spectroscopy. **07**
- (b) Explain reference electrodes in detail. **07**
- Q.5** (a) Explain Flame photometric detector (FPD) with its schematic, operation, limitation, benefits and application. **07**
- (b) What is load cell? Explain its construction, working and application. **07**
- OR**
- Q.5** (a) Explain Non Dispersive IR spectroscopy in detail with diagram. **07**
- (b) Write a short note on: **07**
- 1) Semiconductor detector
 - 2) Helium ionization detector
