

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII • EXAMINATION – WINTER 2013****Subject Code: 170904****Date: 28-11-2013****Subject Name: Industrial Instrumentation****Time: 10:30 TO 01:00****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) What is Transducer? Explain advantages of electrical transducer. **07**
(b) Explain difference between 1) Active transducer-Passive transducer. **07**
2) Primary transducer- Secondary transducer.

- Q.2** (a) What is Gauge factor and Piezo resistive effect? Derive the expression for that in terms of passion's ratio. **07**
(b) State different temperature compensation techniques used with strain gauge. Explain any one in detailed. **07**

OR

- (b) Explain semiconductor strain gauge. Also state its advantages and applications. **07**

- Q.3** (a) Explain construction and working of L.V.D.T with appropriate characteristics. **07**
(b) Write short note on Hall effect transducer. **07**

OR

- Q.3** (a) Explain working of Piezoelectric transducer. State it's applications. **07**
(b) Write short note on Synchros. **07**

- Q.4** (a) Explain construction and working of Column type load cell. State its applications. **07**
(b) Write short note on Ultrasonic flow meter. **07**

OR

- Q.4** (a) State different methods for torque measurement. Explain any one in detailed. **07**
(b) Write short note on Hot wire anemometer. **07**

- Q.5** (a) State different pressure measurement techniques. Explain any one in detail. **07**
(b) Write short note on Thermister for temperature measurement **07**

OR

- Q.5** (a) State different vacuum pressure measurement techniques. Explain any one in detail. **07**
(b) Explain Thermocouple for temperature measurement. **07**
