

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2014****Subject code: 1720310****Date: 25-06-2014****Subject Name: Industrial Measurements****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.
4. Draw neat sketches and diagram wherever necessary.

- Q.1** (a) Explain the functional elements of an instrument system with necessary diagrams in detail. Make the block diagram showing the functional elements of a pressure gauge. **07**
- (b) How the performance of measuring instrument is characterized? Discuss the static and dynamic characteristic of an instrument in detail. **07**
- Q.2** (a) Describe, with neat sketches, the construction and working of LVDT with its advantages and disadvantages. **07**
- (b) Describe, with neat sketches, the construction and working of A.C & D.C tachogenerator for speed measurement. **07**
- OR**
- (b) Explain with neat sketches, the construction and working of in line stationary torque sensors and in line rotating torque sensors. **07**
- Q.3** (a) Describe, with neat sketches, the construction and working of pirani gauge for pressure measurement. **07**
- (b) Describe, with neat sketches, the construction and working of McLeod gauge for pressure measurement. **07**
- OR**
- Q.3** (a) Describe, with neat sketches, the construction and working of Thermocouple gauge for pressure measurement. **07**
- (b) Describe, with neat sketches, the construction and working of ionization gauge for pressure measurement. **07**
- Q.4** (a) Describe, with neat sketches, the construction and working of orifice meter for flow measurement. **07**
- (b) Describe, with neat sketches, the construction and working of magnetic flow meter for flow measurement. **07**
- OR**
- Q.4** (a) Describe, with neat sketches, the construction and working of Rota meter for flow measurement. **07**
- (b) Describe, with neat sketches, the construction and working of turbine meter for flow measurement. **07**
- Q.5** (a) Explain with neat sketches, the construction and working, advantages and disadvantages of a resistance thermometer. **07**
- (b) Describe, with neat sketches, pneumatic telemetry system in detail. **07**
- OR**
- Q.5** (a) Explain with neat sketches, the construction and working principles, advantages and disadvantages of a thermocouple for temperature measurement. **07**
- (b) Describe, with neat sketches, electrical telemetry system in detail. **07**
