

GUJARAT TECHNOLOGICAL UNIVERSITY**Diploma Engineering - SEMESTER-IV • EXAMINATION – SUMMER • 2014****Subject Code: 3341703****Date: 29-05-2014****Subject Name: Process Instrumentation-I****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.
4. English version is considered to be Authentic.

- Q.1** (a) Enlist different types of pressure and define them. **07**
(b) Explain detail construction for Orifice plate. **07**
- Q.2** (a) List types of error. Explain each one. **07**
(b) List out elastic type pressure sensing elements and explain Bourdon Tube type Pressure sensor in detail. **07**
- OR
- (b) State importance of pressure measurement in process industries. **07**
- Q.3** (a) Describe working principle and construction for Capacitance type pressure measuring devices with neat sketch and give its merits and demerits. **07**
(b) Which Factors are to be considering for flow meter selection. **07**
- OR
- Q.3** (a) Explain pressure switch with schematic diagram. **07**
(b) Explain principle, working and construction for any one ultrasonic flow meter. **07**
- Q.4** (a) Explain working principle and construction for target flow meter. **07**
(b) Explain working principle and construction for Vortex flow meter. **07**
- OR
- Q.4** (a) Explain differential pressure type flow Transmitter with neat schematic diagram. **07**
(b) Derive Bernoulli's theorem with flow equation for incompressible fluids. **07**
- Q.5** (a) Explain Hair type hygrometer with schematic diagram **07**
(b) Explain optical method for speed measurement. **07**
- OR
- Q.5** (a) Explain wet and dry bulb type hygrometer with schematic diagram **07**
(b) Explain A.C. tachometer in detail. **07**
