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## GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering - SEMESTER-IV • EXAMINATION - WINTER • 2014 Subject Code: 341702 Date: 29-11-2014 **Subject Name: Process Instrumentation-I** 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. English version is considered to be Authentic. Define error. List types of error and explain each in brief. 07 **Q.1** (a) Define the following terms 07 (b) (i) Accuracy (ii) Precision (iii) Resolution (iv) Reynolds's number (v) Humidity (vi) Range (vii) Laminar flow 07 0.2 List out elastic type pressure sensing elements and explain bellows type (a) pressure sensor. Give importance of standards of measurements. (b) 07 OR (b) Enlist types of manometer and explain working principle and construction for **07** U tube manometer. **Q.3** (a) Describe pressure switch with schematic diagram. **07** Describe dead weight tester with schematic diagram. (b) 07 OR **07** 0.3 Explain working of Thermal conductivity gauge for vaccum measurement. (a) Explain construction and working of LVDT type pressure measurement. (b) **07 Q.4** State importance of flow measurement in process industries. 07 (a) Explain principle, construction and working of Rotameter with neat diagram. (b) **07** Q. 4 Explain detail construction for Venturi tube. 07 (a) Draw the schematic diagram of electromagnetic flow meter and explain it with 07 (b) merits and demerits. **Q.5** Explain photoelectric type speed measurement. 07 (a) Explain wet and dry bulb type hygrometer method. (b) **07** Q.5 What is hygrometer? Explain hair hygrometer. 07 (a) Explain electronics flow transmitters with neat diagram. (b) **07** 

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