Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. Sem. – IInd - Examination – June/July- 2011

Subject code: 1720310

Subject Name: Industrial Measurements

Date:01/07/2011 **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. **Draw neat and clean schematic diagram wherever necessary.**

Q.1 **(a)** What is the difference between static and dynamic characteristics? Classify following characteristics as static or dynamic and explain each of them in brief: **07**

1. Fidelity
2. Drift
3. Resolution
4. Repeatability

(b) Define torque. Explain in-line rotating torque sensor. **07**

Q.2 **(a)** Classify level measurement techniques. Explain air purge system for liquid level measurement. **07**

(b) Describe Linear Variable Differential Transformer. Discuss it's applications. **07**

OR

(b) Explain eddy current level measurement technique. **07**

Q.3 **(a)** What are the primary elements and secondary elements used in differential flow meter? Enumerate them and explain any one primary element. **07**

(b) What is the principle of variable area flow meter? Explain Rotameter. **07**

OR

Q.3 **(a)** Explain principle, construction and working of magnetic flow meter. **07**

(b) Draw neat schematic diagrams for following flow measurement techniques: **07**

1. Heat transfer and hot wire types of thermal flow meters
2. Rotating vane meter

Q.4 **(a)** Discuss different types of pressure. Show relationship between them. Enumerate various pressure measurement techniques. **07**

(b) Draw neat schematic diagram of each type of manometer and compare them. **07**

OR

Q.4 **(a)** Compare resistance thermometer and thermocouple. Compare various thermocouple types with the help of their emf chart. **07**

(b) Explain bimetallic thermometer. **07**

Q.5 **(a)** Explain construction and working of McLeod gauge. **07**

(b) Explain any one non-contact type of temperature transducer. **07**

OR

Q.5 **(a)** Explain principle, construction and working of vibrating tube densitometer. **07**

(b) Explain capacitance type non-contact thickness gauge. **07**

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