

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

# GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Sem-V<sup>th</sup> Examination December 2010

Subject code: 151701

Subject Name: Industrial Measurement

Date: 15 /12 /2010

Time: 03.00 pm - 05.30 pm

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) Define temperature. Explain different temperature scales. **07**  
(b) Explain metallic – expansion type thermometers, with application. **07**

- Q.2** (a) Discuss construction and basic principle of RTD. List out different metals used in RTDs. **07**  
(b) Discuss two wire and three wire Wheatstone Bridge Circuits to measure RTD resistance. **07**

**OR**

- (b) Discuss four wire Wheatstone Bridge Circuits to measure RTD resistance. **07**  
What is its prime advantage?

- Q.3** (a) What is a thermistor? Explain its basic principle, working and construction. **07**  
(b) Explain Seebeck, Peltier and Thomson effects. **07**

**OR**

- Q.3** (a) Explain principle and operation of pitot tube. **07**  
(b) Explain Ultrasonic level switches. **07**

- Q.4** (a) Discuss principle working and applications of Strain gauge type pressure measuring instrument. **07**  
(b) Explain McLeod Vacuum Gauge in detail. **07**

**OR**

- Q.4** (a) Discuss Principle and types of Manometers. **07**  
(b) Explain Principle, construction and operation of air purge system used to measure level. **07**

- Q.5** (a) Write a note on Impeller Turbine type mass flow meter. **07**  
(b) Explain principle and operation of laser Doppler anemometer. **07**

**OR**

- Q.5** (a) Write a note on flow switch. **07**  
(b) List out factors to be considered to select and design a flow meter for an application. **07**

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