

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VII EXAMINATION – SUMMER 2016****Subject Code:170803****Date:10/05/2016****Subject Name:Electrical and Electronics Measuring Instruments****Time:02:30 PM to 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.

- Q.1 (a) Explain construction and working of L.V.D.T. 07  
(b) What is measurement standard? List out different types of standard. Explain voltage standard in brief. 07

- Q.2 (a) Explain construction and working of potential transformer. Also explain ratio and phase angle error. 07  
(b) Explain Maxwell's bridge for measurement of unknown inductance. Also determine condition for balance with phasor diagram. 07

**OR**

- (b) Define: (1) Accuracy (2) Precision (3) Resolution (4) Sensitivity (5) Threshold (6) Drift (7) Reproducibility 07

- Q.3 (a) Describe the working of Hay's bridge for the measurement of inductance. Derive the condition for balance and draw the phasor diagram. 07  
(b) What are the problems associated with high resistance? Explain any one method for measurement of insulation resistance of a cable. 07

**OR**

- Q.3 (a) Explain working of Anderson bridge. Also derive equation when the bridge in balance condition. 07  
(b) Write a short note on De Sauty's bridge. 07

- Q.4 (a) What is an electrical transducer? What are the basic requirements of transducer? Give the classification of transducer. 07  
(b) Explain construction and working of Hall effect transducer. 07

**OR**

- Q.4 (a) Give construction and explain working of Thermocouple. Also state merits and demerits and application of it. 07  
(b) Explain working principle of induction type energy meter. 07

- Q.5 (a) Explain a method for measuring of insulation resistance of cable. 07  
(b) Explain with block diagram the working of Digital Storage Oscilloscope 07

**OR**

- Q.5 (a) Draw the block diagram of basic CRO. Also describe procedure to measure Time, frequency and phase angle using CRO. 07  
(b) Explain with the help of block diagram the working of spectrum analyzer. 07

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