

**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.

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|-----------|-----|---|----|
| 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 |
| <b>OR</b> |     |   |    |
|           | (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 |
| <b>OR</b> |     |   |    |
| 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 |
| <b>OR</b> |     |   |    |
| 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 |
| <b>OR</b> |     |   |    |
| 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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