

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VI • EXAMINATION – SUMMER 2013

Subject Code: 160905

Date: 30-05-2013

Subject Name: Electrical and Electronic Measurement

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.

- Q.1** (a) State the methods for measurement of high resistance and explain the construction and working of megger. **07**
- (b) Explain the following terms **07**
1. Sensitivity 2. Reproducibility 3. Drift 4. Precision 5. Linearity
6. Dead time 7. Repeatability
- Q.2** (a) Explain Anderson bridge with vector diagram and also derive balance equation. **07**
- (b) What are the errors in the measurement of A. C. bridge? Suggest remedies for eliminating errors. **07**
- OR**
- (b) Explain Owen bridge with vector diagram. **07**
- Q.3** (a) Explain principle and working of digital LCR meter. **07**
- (b) Explain Heavyside mutual inductance bridge. **07**
- OR**
- Q.3** (a) Discuss the Varley loop test method for detection of cable fault. **07**
- (b) Describe the working of low voltage Schering bridge. Derive the equation for capacitance and dissipation factor. **07**
- Q.4** (a) Explain Murray loop test for location cable fault. **07**
- (b) Derive equation for ratio and phase angle error of a potential transformer. **07**
- OR**
- Q.4** (a) What are the different difficulties encountered in the measurement of high resistance? Explain how these difficulties are over come. **07**
- (b) Draw the circuit of Kelvin's double bridge used for measurement of low resistance. Derive the condition for balance. **07**
- Q.5** (a) Explain Hetrodyne wave analyser. **07**
- (b) Discuss effect of change in burden and power factor on the ratio and phase angle of CTs. **07**
- OR**
- Q.5** (a) Describe the method for determination of B-H curve of magnetic material. **07**
- (b) Describe application of instrument amplifier. **07**
