

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 overcome. **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**
