

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI(OLD) – EXAMINATION – SUMMER 2019****Subject Code:160905****Date:14/05/2019****Subject Name: Electrical & Electronic Measurement****Time:10:30 AM TO 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) Classify the errors in measurement and its remedies in detail. **07**  
(b) What are the limiting errors and discuss the concept of probability of errors in detail. **07**
- Q.2** (a) Derive the expression of Anderson's bridge with its schematic and vector diagrams. **07**  
(b) Explain the working of low voltage Schering bridge with its bridge circuit and vector diagram. **07**
- OR**
- (b) Discuss that how the Wein's bridge measure the frequency with its bridge circuit. **07**
- Q.3** (a) Describe the working of digital LCR meter with neat sketches. **07**  
(b) Derive the expression for Wheatstone bridge sensitivity for equal bridge arms. **07**
- OR**
- Q.3** (a) List the various techniques for measuring high resistance and explain the working of "Loss of Charge Method" for measurement of high resistance. **07**  
(b) Explain the effect of change in burden & power factor on the ratio & phase angle of CTs. **07**
- Q.4** (a) Give detail comparison of current and potential transformers. **07**  
(b) Describe the construction and working of flux meter in detail with its neat diagram. **07**
- OR**
- Q.4** (a) List the various kinds of cable faults and explain the operation of "Varley Loop Test" with neat sketch. **07**  
(b) Discuss that how the magnetic potentiometer works in detail with relevant diagram. **07**
- Q.5** (a) Derive the expression of instrumentation amplifier with its diagram and advantages. **07**  
(b) Explain the working principle and operation of spectrum analyzer. **07**
- OR**
- Q.5** (a) Discuss the difficulties in measurement of high resistance with its remedies. **07**  
(b) Explain the four crucial terms which are associated with CTs and PTs (Instrument Transformers). **07**

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