Code No: RR320402 **RR**

III B.Tech II Semester(RR) Supplementary Examinations, May 2010
ELECTRONIC MEASUREMENTS AND INSTRUMENTATION
(Electronics & Communication Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Explain the following
   i. Accuracy
   ii. Error
   iii. Linearity
   iv. Precision
   (b) Discus main differences between accuracy and precision.
   (c) Explain about peak responding voltmeter. [8+4+4]

2. (a) Draw the Anderson bridge and derive the balancing conditions.
   (b) An ac bridge is fed with a source of frequency 1 kHz, acorss BD. The detector is connected across AB. The arm AB has R = 450 ohm; arm BC has R = 300 ohm in series with C = 0.256μ f; arm CD has the unknown component; arm DA has R = 200 ohm in series with L = 15.9 mHo Find the constants of arm CD. [8+8]

3. (a) Briefly discuss the various sources of errors in a current transformer.
   (b) Discuss the following two techniques used to reduce errors in CTs.
   i. Design of Core
   ii. Turns compensation. [8+8]

4. (a) Explain how do you interface the seven-segment display to a counter and Explain the importance of open collector outputs.
   (b) Explain in details about frequency mode errors and period mode errors. [8+8]

5. (a) Derive the equations for Resistive voltage divider and capacitive voltage divider of compensated attenuator .
   (b) Explain the method of finding phase, frequency relationship of two waveforms using Lissajous figures.
   (c) What are the advantages of using an active probe. [6+6+4]

6. (a) Explain the Digital data recording technique.
   (b) Explain the tracking generator counter applications. [8+8]

7. (a) Explain the operation of piezoelectric type accelerometer.
   (b) Explain the operation of platinum resistance thermometer. [8+8]

8. (a) What is an LVDT? Where is it used? Explain its operating principle [2+2+4]
   (b) What are linearity and sensitivity of resistance transducers? [8]

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