SE-ET Sem III (old)
E.I.

08/12/2014

QP Code :12321

(OLD COURSE)

(3 Hours) [Total Marks : 100

N.B.: 1. Question no. **1** is **compulsory**.

2. Out of remaining questions attempt any **four** questions.

3. Assume suitable **data** if **required**.

4. **Figures** on **right** hand side indicate marks.

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1. Solve any four [20]
   a. Explain data transmission techniques.
   b. Explain universal counter.
   c. Explain intensity modulation and velocity modulation in CRO.
   d. Explain the block diagram of data logger. State its few areas of application.
   e. Explain the factors that cause errors during Q measurement.

2. a. Explain how Q meter is used for the measurement of low impedance. What are the various sources of errors in Q meter. [10]
   b. With the help of diagram explain construction and operation of RTD. [10]

3. a. What are Lissajous patterns? How they are use for measurement of frequency and phase? [10]
   b. Explain the principle of operation of strain gauge. Explain different types. [10]

4. a. Draw and explain the block diagram of DSO. Describe the various modes of operation. [10]
   b. A 4-bit R-2R ladder type digital to analog converter has input 1010 and reference voltage 10 V. Find its output voltage and conversion resolution. [6]
   c. A 41/2 digit voltmeter is used for voltage measurement. [4]
      I. How 15.684V would be displayed on 2V, 20V, 200V range.
      II. How 0.6935 would be displayed on 2V, 20V range.

5. a. Explain the functions of various controls on front panel of CRO. [10]
   b. Explain the working principle of network analyzer with block diagram. [10]

6. a. With the help of block diagram explain the function of digital frequency meter. [10]
   b. Explain Pulse code modulation technique. [10]

7. a. Explain Total Harmonic Distortion analyzer. [6]
   b. Explain various performance parameters of ADC. [7]
   c. Explain Phase shift keying using block diagram. [7]
