COMP – 4-4(RC)

S.E. (Comp.) (Sem. IV) (Revised 07-08) Examination, May/June 2009

ELECTRONIC MEASUREMENTS

Duration : 3 Hours | Total Marks : 100

*Instruction : Answer **any five** questions with at least **one** question from **each** Module.*

MODULE – I

1. a) Describe the different types of errors found in measurement system. 8
   b) Explain the fundamental and derived units. 6
   c) What are IEEE standards ? How do these standards differ from those maintained by national standards laboratories ? 6

2. a) Explain PMMC mechanism with the help of a diagram. 5
   b) Explain the basic electronic multimeter. Also explain how resistance is measured. 8
   c) Draw the block diagram of a vector impedance meter and explain its operation. 7

MODULE – II

3. a) What are the functions of the delay line ? Explain the distributed parameter delay line. 7
   b) Explain the horizontal deflection system of a CRO. 7
   c) Explain block diagram of a general-purpose oscilloscope. 6

4. a) Explain wideband sweep generator. 6
   b) Explain function generator with a diagram. 8
   c) Explain pi and piston-type attenuator. 6

P.T.O.

MODULE – III

5. a) Draw block diagram of a general purpose spectrum analyzer and explain its operation. 7

   b) Draw block diagram of the heterodyning wave analyzer and explain its operation. 7

   c) List and explain applications of the spectrum analyzer. 6

6. a) Explain automatic and computing counters with neat block diagram. 7

   b) With the help of suitable diagrams, explain how a frequency counter can be used to measure the period of a waveform. 7

   c) What is a Prescalar ? What effect does it have on the performance of a frequency counter ? Explain how resolution and accuracy are affected. 6

MODULE – IV

7. a) Give the various points to be considered while choosing a transducer for a certain application. 5

   b) Write short note on : (5×3=15)

      i) Strain gage

      ii) LVDT

      iii) Thermocouples.

8. a) Explain digital data-acquisition system. 5

   b) Explain schematic of an isolation amplifier. Why it is used ? 5

   c) Explain digital to analog multiplexing. 5

   d) Write a short note on spatial encoders. 5