

COMP 4 – 4 (RC)

S.E. (Comp.) (Semester – IV) (Revised 2007-08)
Examination, November 2010
ELECTRONIC MEASUREMENTS

Duration : 3 Hours

Total Marks : 100

Instruction : Answer *five* questions by selecting at least *one* question from *each* Module.

MODULE – I

1. a) Explain : 6
 - i) International standards
 - ii) IEEE standards.
- b) Describe the different types of errors found in measurement systems. 8
- c) What are the three principles followed by the metric system of units ? 6
2. a) Explain a electronic multimeter in detail. 8
- b) With a neat diagram explain principal working of a Ramp type DVM. 8
- c) Explain working of vector impedance meter. 4

MODULE – II

3. a) With a neat diagram distinguish between dual beam and dual trace CRO. 10
- b) Sketch a CRT and explain the functions of its major components. 6
- c) Explain how focusing of the electronic beam is carried out in an oscilloscope. 4
4. a) With the help of a block diagram, explain the operation of a frequency synthesized signal generator based on the indirect method, using a PLL. 8
- b) With the help of a suitable diagram explain the operation of sine wave generator. 8
- c) Mention and explain in brief any two applications of sweep generator. 4

MODULE – III

5. a) With the help of a suitable block diagram explain the operation of the frequency selective wave analyzer. 8
- b) Mention and explain any two applications of wave analyzer. 4
- c) Explain spectrum analyzers for higher frequencies. 8

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6. a) List and explain measurement errors for frequency and time measurements made by an electronic counter. 8
- b) Draw the basic block diagram of a digital frequency meter and explain it in detail. 8
- c) Discuss how frequency range can be extended in frequency counter. 4

MODULE – IV

7. a) Explain in brief the various types of photo sensitive devices. Mention their applications. 8
- b) Explain the constructional features of a thermocouple temperature transducer. 6
- c) State the selection criteria for a transducer. 6
8. a) Explain with neat block diagram the DAS system in detail (Digital). 8
- b) Explain A/D multiplexing and D/A multiplexing. 6
- c) Explain how interfacing transducers to electronic control and measuring systems done. 6
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