

ANNA UNIVERSITY OF TECHNOLOGY, COIMBATORE  
B.E. / B.TECH. DEGREE EXAMINATIONS : NOV / DEC 2011  
REGULATIONS : 2008  
FIFTH SEMESTER - ECE  
080290028 - MEASUREMENTS AND INSTRUMENTATION

Time: 3 Hours

Max.Marks : 100

PART - A

(10 x 2 = 20 MARKS)

ANSWER ALL QUESTIONS

1. Define: i) Precision ii) Dead space.
2. Is the scale of PMMC instrumentation uniform? Justify.
3. What are the features of the virtual instrumentation?
4. What is debugging?
5. List the applications of a spectrum analyzer.
6. What is a function generator?
7. What is a passive transducer? Give examples.
8. What is special about a capacitive transducer.
9. Define quantum efficiency.
10. Give the different elements which comprise the data acquisition system.

PART - B

(5 x 16 = 80 MARKS)

ANSWER ALL QUESTIONS

11. a. i) Explain the various standards of measurement. (8)  
ii) Explain the vector voltmeter. (8)

(OR)

11. b. i) Derive the equation for the capacitance and distortion factor of a suitable bridge. (8)  
ii) Explain how Q factor is measured using a Q meter? (8)

12. a. What is virtual instrumentation? Discuss VI application for instrument controller

(OR)

- b. i) Explain the graphical palettes and tools in labview. (8)  
ii) What is GUI? Give its merits (8)

13. a. i) Explain the wavemeter. (8)  
ii) Explain how phase angle and time delay is measured using a CRO? (8)

(OR)

- b. i) Explain the working of a simple sweep-frequency generator. (8)  
ii) Explain the heterodyne wave analyzer. (8)

14. a. i) Explain the unbounded strain gauge. (8)  
ii) Explain the resistance thermometers. (8)

(OR)

- b. i) Explain the piezo electric transducers (8)  
ii) Explain the thermoelectric transducers used for measuring the temperature. (8)

15. a. Explain the fiber optic power measurement.

(OR)

- b. With a schematic representation explain the IEEE 488 bus.

\*\*\*\*\*THE END\*\*\*\*\*