

ANNA UNIVERSITY OF TECHNOLOGY, COIMBATORE

B.E. / B.TECH. DEGREE EXAMINATIONS : NOV / DEC 2010

REGULATIONS : 2008

FIFTH SEMESTER : ECE

080290028 - MEASUREMENTS AND INSTRUMENTATION

TIME: 3 HOURS

MAX. MARKS: 100

PART -A

(20 x 2 = 40 MARKS)

ANSWER ALL QUESTIONS

1. List any four static characteristics of a measuring system.
2. List out the classification of standards.
3. What is the difference between moving iron and moving coil instruments?
4. Define vector impedance meter, also write any two applications.
5. Define virtual instruments.
6. Give the applications of virtual instruments.
7. Define function generator.
8. List out the types of synthesizer and there uses.
9. Define swept frequency generator.
10. Write the two modes are used to set the swept frequency range.
11. List the different types of distortion caused by amplifier.
12. Define total harmonic distortion.
13. Define accelerometer and list their types.
14. Write the use of capacitive transducer.
15. Define piezoresistive gauges.
16. Give the advantages of LVDT.
17. What are the two group of materials used for piezo-electric effect?
18. Draw the electrical equivalent circuit of a crystal.

19. Write the component of analog data-acquisition system.

20. What is IEEE488 bus system?

PART - B

(5 x 12 = 60 MARKS)

ANSWER ANY FIVE QUESTIONS

21. Explain the construction and working principle of PMMC instruments, Derive the equation for deflection if the instrument is spring controlled, and Discuss their advantage and disadvantage.
22. Derive the equation of balance for an Anderson's bridge; draw the phasor diagram for conduction under balance. Discuss their advantage and disadvantage.
23. Briefly explain the DASLAB functional modules and give the essential features of Data-acquisition boards.
24. (a) Explain with neat diagram basic element of function generator. (8)
(b) Define spectrum analyzers, and list their types. (4)
25. (a) with neat diagram explain functions of CRO. (6)
(b) Explain lissajous pattern characteristics appear on CRT. (6)
26. Explain with neat diagram working principle of LVDT, state their advantage and Disadvantages.
27. Explain with neat diagram, working principle of successive approximation method of Analog to Digital converter.
28. Explain with suitable diagram, the working of an X-Y recorder describe its application.

*****THE END*****