ANNA UNIVERSITY COIMBATORE

B.E. / B.TECH. DEGREE EXAMINATIONS : MAY / JUNE 2010

REGULATIONS : 2007

FOURTH SEMESTER : ECE

070290048 - MEASUREMENTS AND INSTRUMENTATION

TIME : 3 Hours Max.Marks : 100

PART – A

(20 x 2 = 40 MARKS)

ANSWER ALL QUESTIONS

1. What are the different types of standards?
2. List out the static characteristic of a measuring system.
3. Distinguish between zero drift and span drift.
4. How Q meter is used to measure the characteristic impedance of a transmission line?
5. What you meant by GUI? and mention its functions.
6. Mention the advantages of virtual instruments over conventional instruments.
7. Why is virtual instrumentation necessary?
8. Mention the some applications of virtual instrumentation.
9. What is sweep generator? Mention its advantages.
10. List out the applications of frequency synthesizer.
11. What is the function of real time spectrum analyzer?

12. Draw a simplified block diagram for time interval measurement.
13. Classify various types of transducers.
14. Define gauge factor of strain gauges.
15. Give the factors to be considered for selecting a transducer.
16. Mention some merits of capacitive transducer.
17. What are the various methods of recording data?
18. List the advantages and disadvantages of LCD.
19. Write the purpose of multiplexing.
20. Why an A/D converter is usually considered as an encoder?

PART – B

(5 x 12 = 60 MARKS)

ANSWER ANY FIVE QUESTIONS

21. Describe the construction, principle of working and applications of a permanent magnetic moving coil instruments.

22. Explain any one bridge circuit for the measurement of inductance.

23. Write short notes about virtual instrumentation and explain its relation to the operating system.

24. (i) Discuss in detail about harmonic distortion analyzer. (6)
    (ii) With neat diagram explain RF signal generators. (6)

25. (i) What are the various types of oscilloscopes? (6)

(ii) Explain the block diagram of a general purpose oscilloscope and also describe about the observation of waveform on CRO. (6)

26. (i) Explain the principle of inductive and capacitive transducer. (6)

(ii) Explain the construction and working of LVDT with a neat sketch. (6)

27. (i) Write short notes on liquid crystal displays.

(ii) Draw and explain the block diagram of digital data acquisition system.

28. (i) Give the basic block diagram of a digital data recording system. (8)

(ii) Define the following terms for D/A converters. (4)

a) Resolution and b) conversion time

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