ANNA UNIVERSITY COIMBATORE

B.E. / B.TECH. DEGREE EXAMINATIONS : JUNE 2009

REGULATIONS : 2007

FOURTH SEMESTER : ELECTRONICS AND COMMUNICATION ENGINEERING

070290048 - MEASUREMENTS AND INSTRUMENTATION

TIME : 3 Hours **Max.Marks : 100**

PART – A

(20 x 2 = 40 MARKS)

ANSWER ALL QUESTIONS

1. List the static characteristics of a measuring Instrument.
2. State the precautions and techniques used for reducing errors.
3. What are the disadvantages of hay's bridges?
4. State the merits and demerits of moving iron meter.
5. Differentiate between conventional instrument and virtual instruments.
6. List the various analog interfaces used in VI.
7. State the demerits of conventional instruments.
8. List some of the graphical programming palettes used in front panel.
9. Which method should be adopted for applying calculated output correction?
10. What are various free running sweeps?
11. What is meant by phantom loading ?
12. State the uses of harmonic distortion analyzer.
13. Define the gauge factor of strain gauges
14. What is piezoelectric transducer?

15. What are gauges used for measurement of low pressure ?
16. What are the classification methods of transducer?
17. State the uses of recorders in digital Instrumentation system.
18. Draw the diagram of analog multiplexer circuit.
19. Mention the various classification of fibre optic measurements.
20. What is optical time domain reflectometer?

PART – B

(5 x 12 = 60 MARKS)

ANSWER ANY FIVE QUESTIONS

21. a) Explain Maxwell's inductance capacitance bridge with necessary diagrams. (6)

    b) Derive the expressions for Anderson's bridge. (6)

22. Explain the construction and working of

    a) Moving iron meter and (6)

    b) PMMC meter (6)

23. a) Describe the architecture of a virtual instrument. (6)

    b) Draw the front panel and block diagram for 3 phase power measurement using VI. (6)

24. a) Explain the measurement of phase and frequency [using Lissajous Patterns] in CRO. (6)

    b) Explain a frequency measurement scheme with neat block diagram. (6)

25. Explain construction and working of :

a) LVDT linear variable differential transformer. (6)

b) Any one type of capacitive transducer. (6)

26. Discuss the working of the following

a) Function generator (6)

b) Signal generator (6)

27. Write short notes on the following

a) Analog to digital,converter (6)

b) Digital recording system. (6)

28. Discuss briefly about the following

a) IEEE488 bus [GPIB] interface (6)

b) Fiber optic measurements for power and system loss. (6)

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