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SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act, 1956)

Course & Branch: B.E-EEE

Title of the Paper: Instrumentation Systems

Max. Marks: 80

Sub. Code: 414503

Time: 3 Hours

Date: 10/11/2010

Session: FN

PART - A

(10 X 2 = 20)

Answer ALL the Questions

1. Differentiate Resolution and Threshold.
2. How are the absolute and relative errors expressed mathematically?
3. Differentiate sensor from transducer.
4. Mention the use of capacitive transducer.
5. What is multiplexing?
6. What is the need of sample and hold circuit?
7. Explain the characteristics of time domain output device used in measurements.
8. What is PAM?
9. What are the different types of magnetic recording?
10. What are the main parts of cathode ray tube?

PART – B

(5 x 12 = 60)

Answer All the Questions

11. Define and explain the static characteristics of an instrument.
(or)
12. Draw and explain the general block diagram of measurement system.
13. (a) Describe the different criteria for selection of transducers for a particular application.
(b) Explain the different principles of working of capacitive transducers.
(or)
14. (a) What are the various transducers for temperature measurement?
(b) Explain the function of piezo electric transducer.
15. Explain the generalized diagram of a digital data acquisition system and give the use of data acquisition system.
(or)
16. With circuit diagrams explain the following
(a) Voltage Controlled Oscillator
(b) Sample/Hold circuit.
17. (a) Define PDM.
(b) Describe the pulse duration modulation (PDM) as used in magnetic tape recording and explain its merits and demerits.
(or)
18. Write short notes on FM and AM techniques.
19. Explain the internal structure of CRT and describe the principles of electrostatic focusing.
(or)
20. Explain the detail the process of recording and reading in an audio cassette tape.