

**Code No: 115AM****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, November - 2015****ELECTRONIC MEASUREMENTS AND INSTRUMENTATION****(Electronics and Communication Engineering)****Time: 3 hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks.

**PART - A (25 Marks)**

- 1.a) Distinguish between accuracy and precision. [2]
- b) Enumerate the salient features of a measuring system. [3]
- c) What is Barkhausen Criteria for sustained oscillation? [2]
- d) Draw the block diagram of spectrum analyzer. [3]
- e) What will happen when sweep signal is applied to horizontal plates of CRO? [2]
- f) Draw the internal structure of CRT and list its functions. [3]
- g) What are the factors to be considered for selections of transducers? [2]
- h) What are the applications of LVDT? [3]
- i) Give the significance of Kelvin Bridge. [2]
- j) Write about velocity measurement system. [3]

**PART - B (50 Marks)**

- 2.a) Describe the Operating Principle involved in the integrating type digital voltmeter with a neat block diagram.
- b) List out the advantages of Digital Voltmeter over other voltmeters. [6+4]

**OR**

- 3.a) How do you extend the range of a given ammeter and voltmeter?
- b) Explain different types of errors in digital voltmeters. [5+5]

- 4.a) State the application of a spectrum analyzer.
- b) Draw the block diagram of a distortion measuring component type meter and explain its working. [5+5]

**OR**

5. Discuss the following with neat block diagram.
  - a) Pulse wave generator
  - b) Square wave generator. [5+5]

6. How does the Digital storage Oscilloscope differ from the conventional storage oscilloscope using a storage cathode ray tube? What are the advantages of each? [10]

**OR**

7. Discuss about the electrostatic focusing deflection system of a CRO with necessary diagrams. [10]

8. What is meant by Piezo electric transducer? Explain its working with a neat block diagram. [10]

**OR**

9. Describe the construction and working of potentiometer type resistance transducer for measuring linear displacement. [10]

10. Draw the block diagram of analog data acquisition system and explain the function of the components. [10]

**OR**

11. Explain how the Humidity and Moisture are measured. [10]

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