

Code No: 115AM

R13

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)

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| 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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