

R16**Code No: 135CD****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, May/June - 2019****ELECTRONIC MEASUREMENTS AND INSTRUMENTATION****(Common to EEE, ECE)****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 and may have a, b, c as sub questions.

PART - A**(25 Marks)**

- 1.a) List types of errors. [2]
- b) How do you extend the range of ammeter? [3]
- c) What is the principle of heterodyne wave analyzer? [2]
- d) What is the arbitrary wave generator? [3]
- e) What are the applications of CRO? [2]
- f) What is the need of Delay line in CRO? [3]
- g) Classify the transducers. [2]
- h) Give the principle of Thermocouple and mention its application. [3]
- i) What is the need of bridges in measuring systems? [2]
- j) List important blocks of data Acquisition system. [3]

PART - B**(50 Marks)**

- 2.a) What are the types of Ohmmeter? Describe them.
 - b) Explain the working of True RMS responding Voltmeter with a neat sketch. [4+6]
- OR**
- 3.a) What are the Static characteristics of measuring systems? Define them.
 - b) Describe the D'Arsonval principle. [6+4]
- 4.a) What is the need of power analyzers? Explain.
 - b) Draw the block diagram of function generator and explain the function of each block. [4+6]
- OR**
- 5.a) Describe the working of RF Signal generator.
 - b) Draw the block diagram AF wave analyzer and explain its working. [4+6]
- 6.a) Draw the Block schematic of CRO and explain function of each block.
 - b) Describe the working principle of Sampling Oscilloscopes. [6+4]
- OR**
- 7.a) How do you measure Time and Frequency using CRO? Explain.
 - b) Compare and contrast sampling and storage oscilloscopes. [4+6]

- 8.a) Describe the working principle of Bounded strain gauged.
b) What is the function of Piezo electric transducer? Mention its advantages and applications. [4+6]

OR

- 9.a) Describe the working of LVDT and mention its applications.
b) Explain about Magneto-strictive transducers and mention its limitation. [5+5]

- 10.a) Explain how could you measure resistance using Wheat stone bridge and derive relation for unknown resistance.
b) How do you measure liquid level? Explain. [5+5]

OR

- 11.a) How do you measure Velocity? Explain.
b) Discuss about Displacement meters. [5+5]

---ooOoo---