R16

Code No: 138FY

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year II Semester Examinations, July - 2023

ELECTRONIC MEASURING INSTRUMENTS

(Common to CE, EEE, ME, CSE)

Time: 3 Hours **Max. Marks: 75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

1.a)	What is Resolution?	[2]
b)	Define the Fidelity and Lag.	[3]
c)	What are the specifications of AF generators?	[2]
d)	Write the applications of sweep frequency generators.	[3]
e)	What is automatic ranging in DMM?	[2]
f)	What are the essential parts of a ramp type digital voltmeter?	[3]
g)	What is servo transducer?	[2]
h)	Write the applications of FM method of magnetic tape recording.	[3]
i)	Define transducer?	[2]
j)	Explain the working of thermocouples.	[3]

PART – B

(50 Marks)

2.a) Describe the different types of errors occurs in measurement with one example.
b) List out the dynamic characteristics of any measurement system. [5+5]

OR

3.a) What are the different static characteristics of a measurement system? Explain detail.
b) What is dynamic error? Plot it with respect to time delay. [5+5]

4. Draw the block diagram and explain the operation of arbitrary waveform generator with suitable example. [10]

OR

5.a) Explain about the working of pulse wave generator.
b) Discuss the basic principle of RF Signal Generator. [5+5]

6. Write short notes on the following with respect to CRO.
a) Delay line. b) Sync Selector circuit. c) CRO probes. [3+3+4]

OR

7.a) Describe in detail the Lissajous method of frequency measurement.
b) Draw and explain solid state DC Voltmeter. [5+5]

8.a) Write the basic operating principle of digital tape recording.
b) What are the various methods of recording data? [6+4]

OR

9. Draw a neat diagram of X-Y recorder and explain its working in detail. [10]

10. Explain the construction and working of a strain gauge in detail. [10]

OR

11.a) Discuss about working of hotwire anemometers.
b) Explain the working of LVDT in detail. [5+5]

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