

Code No.: EC743PE/EC724OE

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CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
IV-B.TECH-I-Semester End Examinations (Supply) – April- 2024
ELECTRONIC MEASUREMENTS AND INSTRUMENTATION
(Common for ECE, CSE)

[Time: 3 Hours]

[Max. Marks: 70]

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 20 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

(20 Marks)

1. a) Define Accuracy and Resolution. [2M]
- b) Give a classification of voltmeters. [2M]
- c) Mention the various types of signal analyzer. [2M]
- d) Give the functions of an attenuator in a signal generator. [2M]
- e) What are the two modes of operation in dual trace oscilloscope? [2M]
- f) How frequency can be measured using Lissajous figures. [2M]
- g) What are the main elements of velocity transducer. [2M]
- h) List the advantages of Thermocouples. [2M]
- i) List out the different Limitations of Wheat stone's Bridge. [2M]
- j) What are the different types of temperature measuring devices. [2M]

PART-B

(50 Marks)

2. Draw the block diagram of measuring system. Explain the function of each block. [10M]
- OR**
3. Explain the working of a basic DC voltmeter. How can its range be extended? [10M]
4. Explain with suitable block diagram how an AF sine/ square generator works. [10M]
- OR**
5. Draw the block diagram of a function generator and explain its working. [10M]
6. Explain the operation of a sampling oscilloscope with a neat block schematic diagram. [10M]
What is its advantage over the conventional oscilloscope?
- OR**
- 7.a) How to measure time, period and frequency using oscilloscope? [5M]
- b) Explain the working of Dual Trace Oscilloscope. [5M]
- 8.a) Illustrate and explain the working of LVDT. [5M]
- b) Describe the hotwire anemometer and explain. [5M]
- OR**
9. Derive gauge factor due to change in dimensions of a strain gauge element when it is subjected to tensile force. [10M]
10. Draw the circuit diagram of Maxwell Bridge for inductance measurements. Obtain an expression for unknown inductance by using this bridge. [10M]
- OR**
11. What are the different methods for measurement of Liquid level? Explain any one method. [10M]
