CBCS SCHEME

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18MT46

Fourth Semester B.E. Degree Examination, June/July 2023
Instrumentation and Measurements

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. With a neat diagram, explain the elements of generalized measurement system. **(10 Marks)**

b. Explain deflection and null type instrument with neat figures and give comparison between them. **(10 Marks)**

OR

2 a. Briefly explain input-output configurations of measuring instruments and measurement systems. **(10 Marks)**

b. Explain the functions and any two applications of measurement systems. **(10 Marks)**

Module-2

3 a. Explain the working principle of successive approximation digital voltmeter. **(10 Marks)**

b. With neat block diagram, explain the working of digital multimeter. **(10 Marks)**

OR

4 a. With neat block diagram, explain the working of digital frequency meter. **(10 Marks)**

b. With neat block diagram, explain digital measurement of time. **(10 Marks)**

Module-3

5 a. With neat block diagram, explain Dual Beam CRO. **(10 Marks)**

b. With neat block diagram, explain Dual Trace CRO. **(10 Marks)**

OR

6 a. Explain the operation of sampling oscilloscope with neat block diagram. **(10 Marks)**

b. Draw the basic diagram of a CRT. Explain the features of CRT. **(10 Marks)**

Module-4

7 a. Explain Whetstone's bridge with a neat diagram. What are its limitations? Write its applications. **(10 Marks)**

b. Explain Maxwell's bridge with a neat diagram. What are the advantages and limitations of Maxwell's bridge? **(10 Marks)**

OR

8 a. Explain Wagner's earth connection with a neat diagram. **(10 Marks)**

b. Explain Wien's bridge with a neat diagram and derive the equation for frequency of the applied voltage. **(10 Marks)**

Module-5

9 a. Define an electrical transducer. List the factors to be considered while selecting a transducer. **(10 Marks)**

b. With neat diagram, explain resistive positive transducer. **(10 Marks)**

OR

10 a. Explain the construction and working of LVDT. **(10 Marks)**

b. Explain the basic operation of i) LED ii) LCD. **(10 Marks)**

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