# CBCS SCHEME

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## Fourth Semester B.E. Degree Examination, Feb./Mar. 2022
## 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 voltammeter. **(10 Marks)**
   b. With neat block diagram, explain the working of digital multimeter. **(10 Marks)**

### OR

**4** a. With net 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. Explain digital storage oscilloscope with neat diagram. **(10 Marks)**

### OR

**6** a. Explain the operation of sampling oscilloscope with neat block diagram. **(10 Marks)**
   b. Draw the basic diagram of a Cathode Ray Tube. Explain the features of a CRT. **(10 Marks)**

### Module-4

**7** a. Explain Wheatstone's bridge with a neat diagram. What are its advantages? 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 position 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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