

Code No: R1642042

**R16**

**Set No. 1**

**IV B.Tech II Semester Regular/Supplementary Examinations, July - 2021**  
**ELECTRONIC MEASUREMENTS AND INSTRUMENTATION**  
**(Electronics and Communication Engineering)**

**Time: 3 hours**

**Max. Marks: 70**

*Question paper consists of Part-A and Part-B*

*Answer ALL sub questions from Part-A*

*Answer any FOUR questions from Part-B*

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**PART-A (14 Marks)**

1. a) Explain the procedure how to find Errors in Measurement with example. [3]
- b) Formulate an equation for the measured value of total harmonic distortion. [2]
- c) Distinguish between analog and digital storage oscilloscope. [2]
- d) List out the different Precautions to be taken when using a Bridge with one example. [2]
- e) What is a Transducer? Give the classification of transducers. [2]
- f) Explain the characteristics of Digital Data Acquisition System. [3]

**PART-B (4x14 = 56 Marks)**

2. a) Draw the circuit diagram of series type, and shunt type Ohmmeters and explain its operation in detail. [7]
- b) With necessary block diagram, explain the function of differential voltmeter. [7]
3. a) Describe the circuits and working of wave analyzers used for audio frequency and megahertz range. [7]
- b) Discuss in detail about the fixed and variable type of signal generators. [7]
4. a) Explain the Measurement procedure of Lissajous patterns with one example. [7]
- b) Explain the operation of vertical amplifier used in a CRO. [7]
5. Draw the circuit of Schering bridge and explain its utility, also derive expressions for unknown components. [14]
6. a) Explain the principle of operation of strain gauges with the help of neat diagrams. [7]
- b) What is a thermistor? Explain. Write about its advantages and disadvantages. [7]
7. a) With neat sketch explain the measurement of Velocity [7]
- b) Define Humidity. Explain the procedure for the measurement of humidity. [7]