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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)**B.Tech III Year I Semester Supplementary Examinations August-2022****ELECTRONIC MEASUREMENTS AND INSTRUMENTATION**

(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

**UNIT-I**

- 1 a Define the terms in dynamic characteristics L2 6M  
 i) Speed of Response      ii) Fidelity      iii) Lag.  
 b With neat sketch explain thermocouple type RF ammeter. L2 6M

**OR**

- 2 a A D'Arsonval movement with a full-scale deflection current of 50  $\mu$ A and internal resistance of 500 $\Omega$  is to be converted into a multirange voltmeter. Define the value of multiplier required For 0-20V, 0-50V, 0-100V. L6 6M  
 b Explain with the help of circuit diagram the construction & working of a series type ohm meter. L2 6M

**UNIT-II**

- 3 a Draw the block diagram of a general-purpose oscilloscope (CRO) and explain function of each block in brief. L4 6M  
 b State the various applications of an oscilloscope. L3 6M

**OR**

- 4 a Describe in details the construction and working of a digital storage oscilloscope. L2 6M  
 b Explain with a diagram how phase can be measured using a Lissajous method. L2 6M

**UNIT-III**

- 5 a What are the different specifications of arbitrary waveform generator? L2 6M  
 b Draw the block diagram of a function generator and explain its operation. L4 6M

**OR**

- 6 a Describe with diagram the operation of a Logic analyzer. L2 6M  
 b What is distortion? What does a distortion analyzer measure? L2 6M

**UNIT-IV**

- 7 a How the Maxwell Bridge can be used for measuring an unknown inductance? Explain briefly. L2 6M  
 b What are the applications of Wheatstone bridge? List out its limitations. L4 6M

**OR**

- 8 a Describe the operation of the Wheatstone bridge & derive the expression for current when the bridge is unbalanced. L1 6M  
 b What is interference & explain noise reduction techniques. L2 6M

**UNIT-V**

- 9 a Define a transducer. What are the different types of Transducers? L1 6M  
 b Draw the diagram of Resistance Thermometer & explain briefly. L3 6M

**OR**

- 10 a Briefly discuss about Velocity transducers. L2 6M  
 b With a neat sketch explain the operation of LVDT. L1 6M

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