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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)B.Tech III Year I Semester Regular Examinations Feb-2021
ELECTRONIC MEASUREMENTS AND INSTRUMENTATION
(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 60

PART-A

(Answer all the Questions 5 x 2 = 10 Marks)

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| 1 | a | Define sensitivity and resolution. | 2M |
| | b | Differentiate between dual beam and dual trace CRO. | 2M |
| | c | Mention the applications of function generator. | 2M |
| | d | What is meant by q-meter? | 2M |
| | e | Name one passive and active sensor. | 2M |

PART-B

(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

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| 2 | a | Explain about dynamic characteristics of measuring instrument. | 5M |
| | b | Explain with the help of circuit diagram, the construction & working of a series type ohmmeter. | 5M |

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| 3 | a | With neat sketch, explain thermocouple type RF ammeter. | 5M |
| | b | Explain about multirange AC voltmeter. | 5M |

UNIT-II

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| 4 | Draw the block diagram of a general-purpose oscilloscope (CRO) and explain function of each block. | 10M |
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| 5 | a | Explain Two electron beam (dual beam) CRO? | 5M |
| | b | State the standard specifications of a sample CRO. | 5M |

UNIT-III

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| 6 | a | Draw the circuit diagram and explain the working of a spectrum analyzer | 5M |
| | b | What is distortion? What does a distortion analyzer measure? | 5M |

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| 7 | a | Draw the block diagram of a function generator and explain its operation. | 6M |
| | b | List the application of wave analyzers. | 4M |

UNIT-IV

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| 8 | Explain any Two-ac bridges to measure unknown Inductance. | 10M |
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| 9 | a | Discuss the working principle of Q-meter & its applications. | 5M |
| | b | An A.C bridge as the following constants Arm AB-capacitor of $0.1\mu\text{F}$ in parallel with $2\text{K}\Omega$ resistor, Arm AD-resistance of $5\text{K}\Omega$, Arm BC capacitor of $0.25\mu\text{F}$, Arm CD-unknown capacitor CX and RX in series f-2KHz. Determine the unknown capacitance and dissipation factor. | 5M |

UNIT-V

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| 10 | a | How to convert linear variable displacement into electrical voltage using transducer? | 5M |
| | b | Discuss about Sensors and Transducers. | 5M |

OR

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| 11 | a | Explain the operation of Thermistor. | 5M |
| | b | Explain the operation of potentiometric transducer. | 5M |

END