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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech III Year I Semester Supplementary Examinations December-2021

ELECTRICAL MEASUREMENTS
(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 60

PART-A

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

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|---|---|---|----|
| 1 | a | The general balance condition for AC bridge is given by | 2M |
| | b | Electrostatic type instruments are primarily used as | 2M |
| | c | Phantom loading for testing of energy meters is used | 2M |
| | d | The speed of energy meter can be controlled by | 2M |
| | e | A DC Potentiometer can be used for measuring | 2M |

PART-B

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

UNIT-I

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|---|--|---|-----|
| 2 | | Explain the working of universal shunt used for multi range ammeters and derive expressions for resistances of different sections of a universal shunt for 3-range ammeter. | 10M |
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OR

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| 3 | | Design an Aryton shunt to provide an ammeter with the current ranges 1 A, 5 A and 10 A. The basic meter resistance is 50 ohm and full scale deflection current is 1 mA | 10M |
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UNIT-II

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| 4 | a | Draw the circuit of a Kelvin's double bridge used for measurement of low resistances. Derive the condition for balance. | 5M |
| | b | Explain classification of resistances. | 5M |

OR

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| 5 | a | Explain the features of De-Sauty's Bridge with a neat sketch. | 5M |
| | b | List the advantages and disadvantages of Maxwell's Bridge. | 5M |

UNIT-III

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| 6 | | Give the constructional details of electro-dynamometer type wattmeter with a neat sketch. | 10M |
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OR

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| 7 | | Explain with a neat sketch the construction and working of a single-phase Dynamometer type Wattmeter. | 10M |
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UNIT-IV

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| 8 | a | Discuss C T and P T. | 6M |
| | b | Why secondary of C.T should not be open? | 4M |

OR

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| 9 | a | With neat figure, explain the working of an AC Potentiometer. | 5M |
| | b | Discuss the significance of standardization. | 5M |

UNIT-V

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| 10 | a | Derive the equation of motion for Ballistic Galvanometer. | 5M |
| | b | Explain six point methods. | 5M |

OR

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| 11 | a | Explain the construction and working principle of Flux meter with a neat diagram. | 5M |
| | b | Determine leakage factor with flux meter. | 5M |

END