

Reg. No:

--	--	--	--	--	--	--	--	--	--

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

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

ELECTRICAL MEASUREMENTS
(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 60

PART-A

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

- | | | | |
|---|---|---|----|
| 1 | a | Which of the following are integrating instruments | 2M |
| | b | Which bridge is used for the measurement of low resistance? | 2M |
| | c | Potential transformers are used in | 2M |
| | d | Voltbox is basically a device used for | 2M |
| | e | The equation of motion of galvanometer at any instant is given by | 2M |

PART-B

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

UNIT-I

- | | | | |
|---|---|--|----|
| 2 | a | How the electrical measuring instruments are classified? | 5M |
| | b | Discuss about errors and compensations of measuring instruments. | 5M |

OR

- | | | | |
|---|---|--|----|
| 3 | a | Describe the construction and working of attraction type MI instrument? | 5M |
| | b | A moving coil instrument has a resistance of 10 ohm and gives a full scale deflection when carrying 50mA. Show how it can be adopted to measure voltage upto 750 V and current of 100 A. | 5M |

UNIT-II

- | | | | |
|---|--|--|-----|
| 4 | | Explain substitution method and potentiometer method for measuring medium resistances. | 10M |
|---|--|--|-----|

OR

- | | | | |
|---|--|---|-----|
| 5 | | Explain the construction and working of Anderson Bridge with suitable diagrams. | 10M |
|---|--|---|-----|

UNIT-III

- | | | | |
|---|---|--|----|
| 6 | a | A single phase kilo watt hour meter makes 500 revolutions per kilo watt hour. It is found on testing as making 40 revolutions in 58.1 seconds at 5KW full load. Find the percentage error. | 5M |
| | b | Explain driving system, moving system and braking system in a single phase induction type energy meter. | 5M |

OR

- | | | | |
|---|--|---|-----|
| 7 | | Give the constructional details of electro dynamometer type wattmeter with a neat sketch. | 10M |
|---|--|---|-----|

UNIT-IV

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

OR

- | | | | |
|---|---|--|----|
| 9 | a | How do you Standardize a Potentiometer? Explain with a neat diagram. | 5M |
| | b | Discuss slide wire DC Potentiometer. | 5M |

UNIT-V

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

OR

- 11 a How do you measure leakage factor using Flux meter. 5M
- b Explain the method of measuring core losses using A.C potentiometer method. 5M

END

UNIT-I

- 1 Explain induction motor and synchronous motor for measuring induction motor.
- 2 Explain the construction and working of Anderson bridge with suitable diagram.

UNIT-II

- 1 A single phase line with two wires spaced 300 cm apart has its wire diam. 1.2 cm. Find the leakage factor.
- 2 Explain charging system, monitoring system and battery system in a single phase induction type energy meter.

OR

- 1 Draw the constructional details of electro dynamometer type wattmeter with a neat diagram.

UNIT-III

- 1 Draw the constructional details of electro dynamometer type wattmeter with a neat diagram.
- 2 Why secondary of C.T. should not be open?
- 3 Draw the constructional details of a transformer. Explain with a neat diagram.
- 4 Explain the DC transmission.