Q.P.Code:23EE0201b | R23 | H.T.No.

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. I Year I Semester Regular & Supplementary Examinations December/January-2025/2026
BASIC ELECTRICAL & ELECTRONICS ENGINEERING
(Common to CSE, EEE & CSIT)

Time: 3 Hours **Max. Marks: 70**

***Note:** Answer **PART-A** from pages **2 to 20** and **PART-B** from **21 to 39.**

PART-A (ELECTRICAL)

(Answer all the Questions **5 x 1 = 5** Marks)

1	a	Define Active Power.	CO1	L2	1M
	b	Define Faradays law.	CO2	L1	1M
	c	Which instrument is used to measure the DC quantity?	CO2	L1	1M
	d	What are the Conventional Energy sources?	CO3	L1	1M
	e	What is the power rating of Air Conditioner and Fan?	CO3	L1	1M

(Answer all Three Units 3 x 10 = 30 Marks) (ELECTRICAL)

UNIT-I

2	a	What are the equations of AC Voltage and Current.	CO1	L1	2M
	b	Define the following i)Waveform, ii) Time period, iii) frequency, iv) Amplitude	CO1	L2	8M

OR

3	a	Derive voltage and current relationship with Phasor diagram in resistive circuit.	CO1	L4	5M
	b	Derive voltage and current relationship with Phasor diagram in inductive circuit	CO1	L4	5M

UNIT-II

4		Draw and Explain the constructional diagram of a single phase transformer.	CO2	L4	10M

OR

5	a	Explain the operating principles of Moving Iron instruments	CO2	L2	5M
	b	Determine the unknown resistance using Wheatstone bridge	CO2	L3	5M

UNIT-III

6		What is solar power plant? Explain the operation with layout	CO3	L1	10M

OR

7	a	What are the functions of electric fuse?	CO3	L1	5M
	b	What is an electric shock? How to prevent electric shock at home?	CO3	L1	5M

PART-B(ELECTRONICS)

(Answer all the Questions **5 x 1 = 5** Marks)

1	f	Define biasing.	CO1	L1	1M
	g	What is meant by semiconductor?	CO1	L4	1M
	h	What is a step-down transformer?	CO2	L3	1M
	i	What is the necessary of the coupling capacitor?	CO2	L4	1M
	j	Write the names of basic logical operators.	CO3	L3	1M

(Answer all Three Units **3 x 10 = 30** Marks) (ELECTRONICS)

UNIT-IV

8		With the neat sketch ,Explain the operation of an NPN transistor and PNP transistor.	CO1	L3	10M

OR

9		With a neat sketch Explain the input and output and current gain characteristics of a transistor in common Emitter (CE) configuration.	CO1	L1	10M

UNIT-V

10		Explain the working of a full wave bridge rectifier with a neat diagram with wave forms.	CO2	L1	10M

OR

11		Draw the block diagram of Public Addressing System and explain the function of each block.	CO2	L3	10M

UNIT-VI

12		Explain about Logic gates with symbols and truth table.	CO3	L1	10M

OR

13		Define combinational circuit? Explain Half Adder and Full Adder with truth table.	CO3	L2	10M

*** END ***