O.P.Code:23EE0201a | 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
(Electronics and Communications Enigneering)

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

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

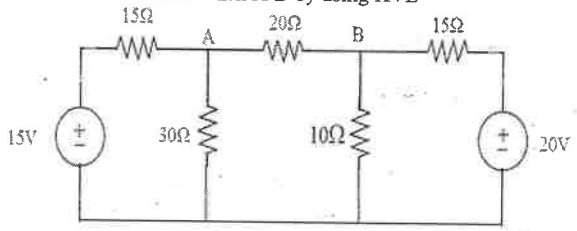
PART-A (ELECTRICAL)
(Answer all the Questions 5 x 1 = 5 Marks)

1	a	State ohm's law.	CO1	L1	1M
	b	Write any three applications of a DC Motor.	CO2	L1	1M
	c	What are The types of MI instruments?	CO2	L1	1M
	d	Define unit of Electrical Energy.	CO3	L1	1M
	e	What are the different types of Earthing?	CO3	L1	1M

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

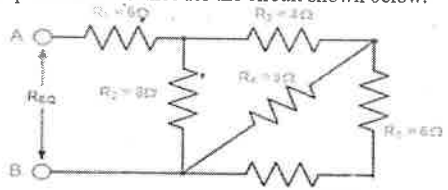
UNIT-I

2	a	State and explain Kirchhoff's laws.	CO1	L1	5M
	b	Determine the current in branch A-B by using KVL	CO1	L2	5M



OR

3	a	Find equivalent resistance when three resisters are connected in parallel.	CO1	L1	4M
	b	Find the equivalent resistance for the circuit shown below.	CO1	L3	6M



UNIT-II

4		Draw and explain the construction of DC machine.	CO2	L4	10M

OR

5		Explain construction and operating principle of Permanent Magnet Moving Coil (PMMC) instruments.	CO2	L2	10M

UNIT-III

6		Explain the Layout and operation of Hydel power generating station.	CO3	L2	10M

OR

7		Explain the calculation of electricity bill for domestic consumers.	CO3	L2	10M

PART-B(ELECTRONICS)
(Answer all the Questions 5 x 1 = 5 Marks)

1	f	Define doping.	CO1	L1	
	g	Define amplifier.	CO2	L4	
	h	What is an emitter?	CO2	L1	
	i	List the names of universal gates with symbols.	CO3	L4	
	j	What is an Excess3 code?	CO3	L1	

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

UNIT-IV

8		Explain the operation of PN junction diode under forward bias and reverse bias conditions with the help of V-I characteristics curve.	CO1	L5	1

OR

9		Briefly explain the operation of a small signal CE amplifier	CO1	L2	1

UNIT-V

10		Explain the Block diagram description of a dc power supply with a detailed explanation of all blocks.	CO2	L1	1

OR

11		Draw the block diagram of Electronic Instrumentation System and explain the function of each block.	CO2	L1	1

UNIT-VI

12		Convert the following into binary to decimal, decimal into hexadecimal i) $(1101.1)_2$ ii) $(1100.001)_2$ iii) $(5386.34)_{10}$ iv) $(214.35)_{10}$	CO3	L1	1

OR

13		Define sequential circuit. And explain about Flip flops, registers, and counters.	CO3	L4	1

*** END ***