Reg. No:

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY: PUTTUR
(AUTONOMOUS)
B. TECH I Year II Semester Regular Examinations May 2019
BASIC ELECTRICAL AND ELECTRONICS ENGINEERING
(CE, AGE)

Time: **3 hours**   Max. Marks: **60**
(Answer all Six Units 6 X 10 = 60 Marks)

PART- A
UNIT-I

1	a	State and prove Kirchhoff law's with an example.	5M
	b	Explain about passive elements in detail.	5M

OR

2	Three resistances of values 4Ω, 6Ω and 10Ω are connected in series across 40V DC supply. Calculate (i) Equivalent resistance of the circuit. (ii) The total current of the circuit. (iii)The voltage drop across each resistor. (iv) The power dissipated in each resistor.	10M

UNIT-II

3	a	State and explain Superposition theorem.	4M
	b	Calculate the current in 3Ω resistor in the fig. using super position theorem.	6M
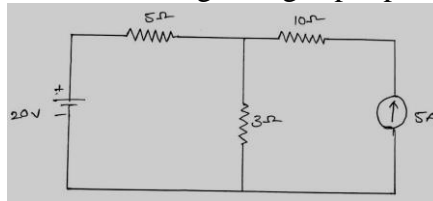
OR

4	a	Define and explain about Impedance parameters.	5M
	b	Define and explain about Y- parameters.	5M

UNIT-III

5	a	Explain about constructional details of dc motor.	5M
	b	A 6 pole lap wound shunt motor has 500 conductors, the armature and shunt field resistances are 0.05Ω and 25Ω respectively. Find the speed of the motor if it takes 120A from dc supply of 100V flux per pole is 20mwb.	5M

OR

6	a	Explain principle of operation of transformer.	5M
	b	Derive EMF equation of a transformer.	5M

PART – B
UNIT-I

7	a	What is Doping? Describe P-and N-type semiconductors.	5M
	b	Explain the behavior of PN junction diode.	5M

OR

8	a	What is a Zener diode.	4M
	b	Explain how current flows in a Zener diode in reverse bias with necessary diagrams.	6M

UNIT-II

9	a	Describe the constructional features of a Junction Field Effect Transistor. What is the Difference between a P type and N type JFET? Draw the cross-sectional view and show the Symbolic representation of each type of the transistor.	5M
	b	Explain in detail the theory of operation of n-channel JFET.	5M

OR

10	**a**	What is a Transistor?	4M
	b	Explain the operation of NPN transistor in three regions specified in the output characteristics.	6M

UNIT-III

11	Draw and Explain the construction of n-channel Enhancement mode MOSFET.	10M

OR

12	Compare BJT, JFET and MOSFET.	12M

*** END ***