R18

Reg. No:

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY: PUTTUR
(AUTONOMOUS)
B. TECH I Year II Semester Supplementary Examinations Dec 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 explain Ohm's law and its limitations.	5M
	b	State and prove Kirchhoff law's with an example.	5M

OR

2	Derive an expression for RMS and Average value of sine waveform.	10M

UNIT-II

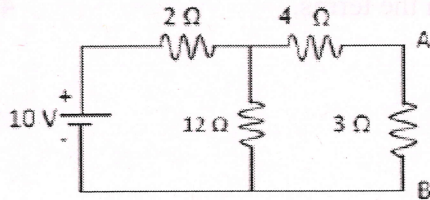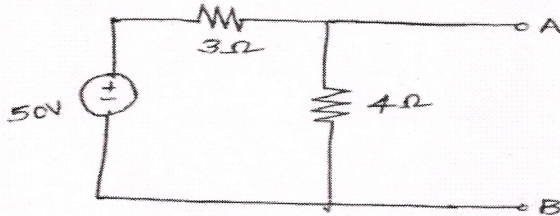|			
3	a	State and Explain Thevenin's Theorem.	4M
	b	Find Thevenin's equivalent circuit across AB for the circuit shown in below.	6M

Fig. (1)

OR

4	a	State and Explain Norton's theorem.	4M
	b	Find Norton's equivalent circuit across AB for the circuit shown in below.	6M

UNIT-III

5	a	Explain the working principle of DC Motor in detail.	5M
	b	Derive Torque equation of dc motor.	5M

OR

6	a	Explain the working principle of a transformer.	4M
	b	Explain OC and SC test of a single phase transformer.	6M

PART – B
UNIT-I

7   a Describe the working of a PN junction diode with neat diagram.   5M

     b With a neat sketch explain the V-I characteristics of the diode.   5M

OR

8   a With a neat sketch explain the operation of Half-wave rectifier.   5M

     b Derive an expression for ripple factor of a Half- wave rectifier with and without load.   5M

UNIT-II

9   a What is a Transistor?   2M

     b With a neat sketch explain how current flows in a transistor.   8M

OR

10 a Explain the working of the CB configuration of a BJT.   5M

     b Derive an expression between I_b, I_c and I_e of a BJT.   5M

UNIT-III

11 Draw and Explain the construction of n-channel Depletion mode MOSFET. Explain how current flows through the MOSFET.   10M

OR

12 a With a neat sketch explain the working principle of JFET.   6M

     b Write the expression for drain current of JFET and explain the terms.   4M

*** END ***