Q.P. Code: 19EE0239 **R19**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech I Year II Semester Supplementary Examinations July-2021

BASIC ELECTRICAL ENGINEERING

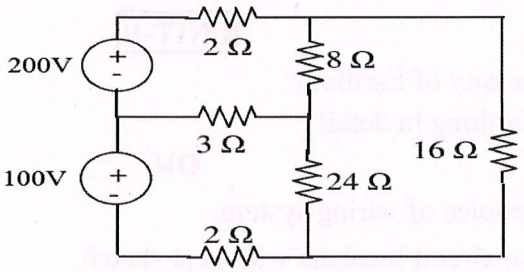
(Electronics and Communication Engineering)

Time: 3 hours Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1 **a** Determine the mesh currents for the circuit shown below. **6M**



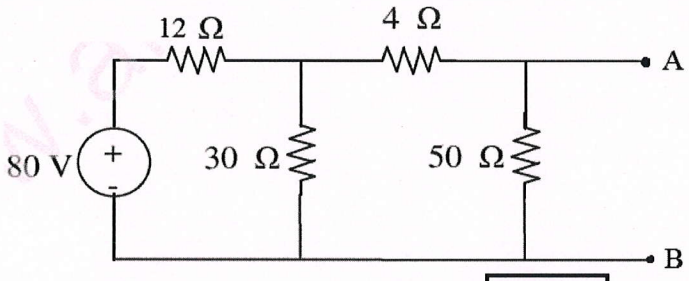
b State & explain Super position theorem. **6M**

OR

2 **a** Determine the Equivalent Resistance when the resistors are connected in Series & Parallel. **6M**

b **6M**

Find the Thevenin's equivalent for the circuit shown below



UNIT-II

3 **a** Derive an expression for RMS and AVERAGE values of sinewave form. **8M**

b An alternating current is expressed as I = 14.14 sin 314t. Determine. **4M**
Maximum current (ii) RMS current (iii) Frequency
(iv) Instantaneous current when t = 0.04msec.

OR

4 **a** Explain Resonance for series RLC circuit and derive the equation for resonant frequency.\ **8M**

b A series RLC circuit of R=40 Ω, L= 50.07mH and a capacitor is connected across a 400V, 50Hz, A.C supply. This RLC combination draws a current of 10A.Calculate Power factor of the circuit and Capacitor value. **4M**

UNIT-III

5		Explain the Constructional details of D.C machine with neat sketch.	12M

OR

6	a	What is the necessity of speed control?	5M
	b	How to control the speed of D.C. Shunt motor. Explain it with any one example.	7M

UNIT-IV

7	a	Derive an EMF equation of a single-phase transformer.	6M
	b	A single-phase transformer has 400 turns on primary winding 1000 turns on secondary winding. If it is operating at 50Hz supply with a maximum flux of 0.045Wb.Find (i) Primary &Secondary induced EMF (ii) EMF induced per turn.	6M

OR

8		Explain the Procedure for calculating the regulation of 3-Phase Alternator using Synchronous Impedance Method.	12M

UNIT-V

9	a	What is the necessity of Earthing?	6M
	b	Explain Plate Earthing in detail.	6M

OR

10	a	Explain about choice of wiring system.	6M
	b	Explain any two circuit breakers with neat sketch.	6M

*** END ***