R19

Reg. No:

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech I Year II Semester Regular Examinations October-2020
BASIC ELECTRICAL ENGINEERING
(Electronics & Communication Engineering)

Time: 3 hours   Max. Marks: 60
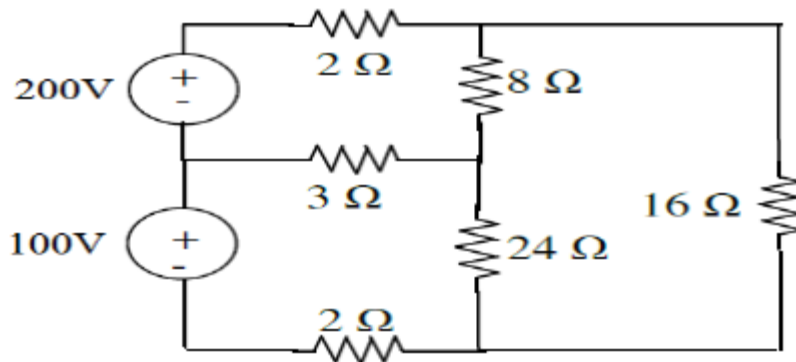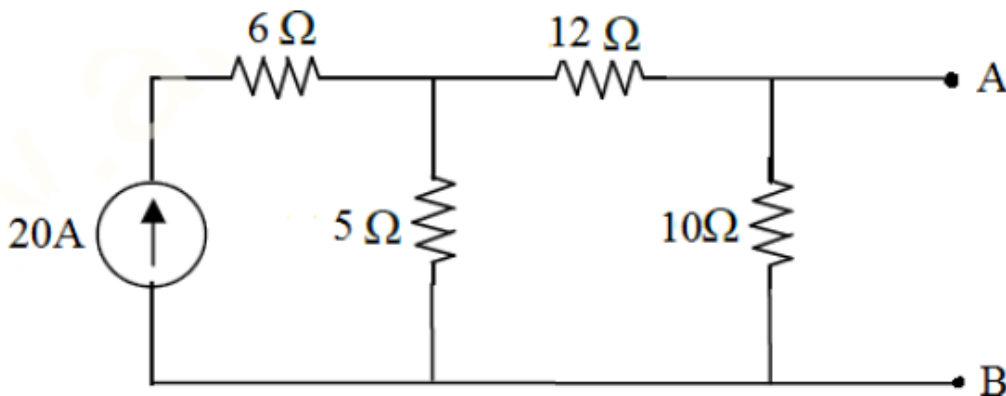
(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

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

   b State and explain Thevinin's theorem.   **6M**

OR

2 a Determine the equivalent Capacitance when the resistors are connected in series &   **6M**
      parallel.

   b Find the Norton's equivalent for the circuit shown below.   **6M**

UNIT-II

3 Derive an expression for the current and impedance for a series RL and RC circuit excited by a sinusoidally alternating voltage. Draw the phasor diagrams. **12M**

OR

4 **a** Explain resonance for series RLC circuit and derive the equation for resonant frequency. **7M**

b A series RLC circuit of R=40Ω, L=50.07mH and a capacitor is connected across a 400V, 50Hz, A.C. supply. This RLC combination draws a current of 10A. Calculate: **5M**

a) power factor of the circuit

b) Capacitor value.

UNIT-III

5 List the various types of D.C Generators and Explain in detail. **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 anyone example. **7M**

UNIT-IV

7 **a** Write the short notes on Voltage Regulation & Efficiency. **6M**

b Derive an EMF equation of a single-phase transformer. **6M**

OR

8 Explain working principle of induction motor in detail. **12M**

UNIT-V

9 With neat diagrams, explain various types of fuses used in electrical wiring systems. **12M**

OR

10 Define the following: **12M**

i) What is the difference between wire and cable?

ii) Fusing Current

iii) Fusing Factor

iv) Rated Current

v) Fuse element

*** END ***