EE 1100 Basic Electrical Engineering
March-June 2023
Tutorial-1

1) In the circuit shown below (Fig1), find v.

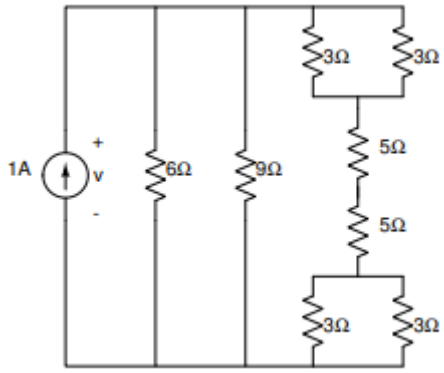

Fig1

2) A certain voltage is +10 V for 20 ms and -10 V for the succeeding 20 ms. It continues oscillating in this fashion. The voltage is present across a 50Ω resistor. Over any 40 ms interval find the average values of the voltage, current.
3) Find the value of R_A in the circuit below (Fig2).

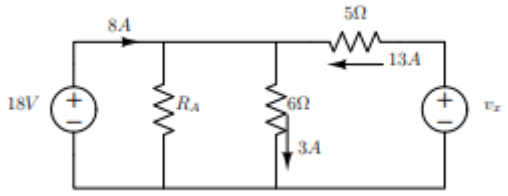

Fig2

4) Determine v_x in the circuit (Fig3)

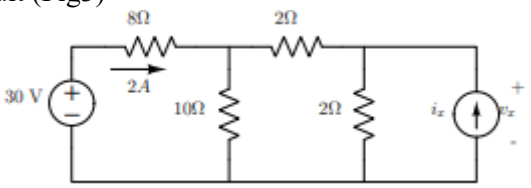

Fig3

5) In the following circuit (Fig4), calculate the power dissipated or generated in each element. State clearly whether it is dissipated or generated.

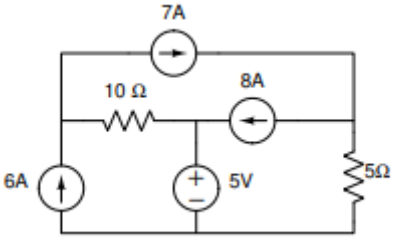

Fig4

6) For the given circuit (Fig5) determine the power absorbed by each resistor and the power supplied by each current source

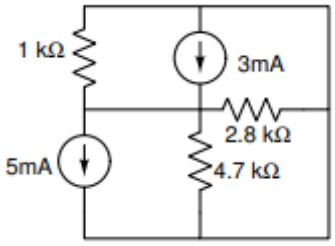

Fig5

7) For the following circuit (Fig6), find V_A by nodal analysis

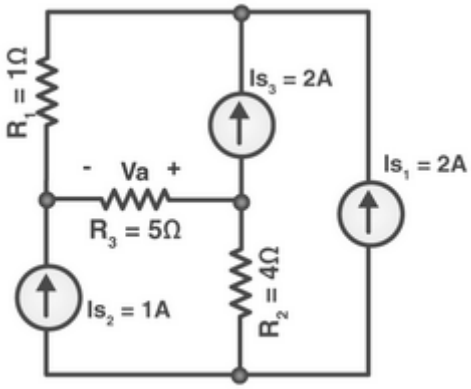

Fig6

8) Most homes use solid copper wire having a diameter of 1.63mm to provide electrical distribution to outlets and light sockets. Determine the resistance of 75 meters of solid copper wire having the above diameter.

9) A digital voltmeter having an internal resistance of 5MΩ is used to measure the voltage across terminals a and b in the circuit shown in Fig7. Determine the reading on the meter.

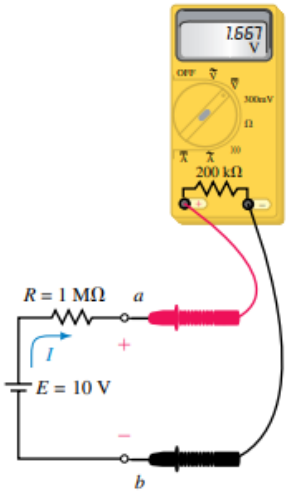

Fig7