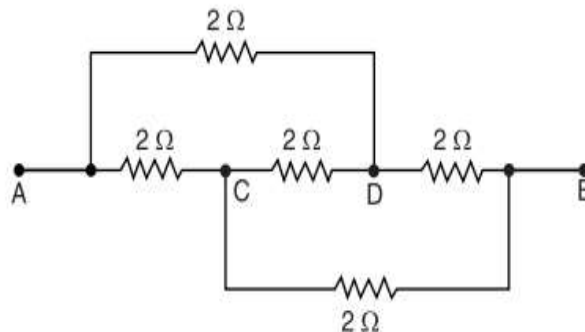


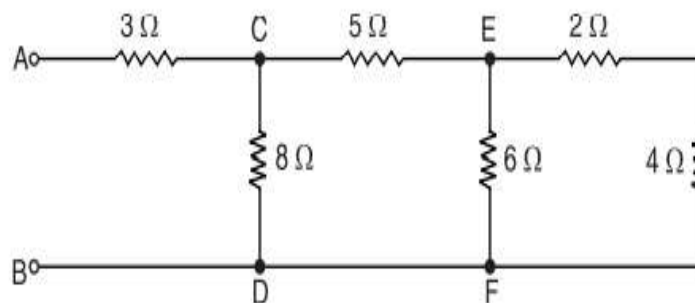
EEE1001 – BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

DIGITAL ASSIGNMENT – I

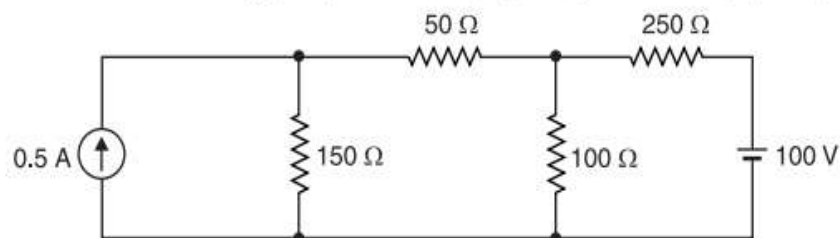
1. A battery has an e.m.f. of 12.8 V and supplies a current of 3.2 A. What is the resistance of the circuit? How many coulombs leave the battery in 5 minutes?
2. A 100 V lamp has a hot resistance of $250\ \Omega$. Find the current taken by the lamp and its power rating in watts. Calculate also the energy it will consume in 24 hours.
3. Five equal resistors each of $2\ \Omega$ are connected in a network as shown in Figure, Find the equivalent resistance between points A and B.



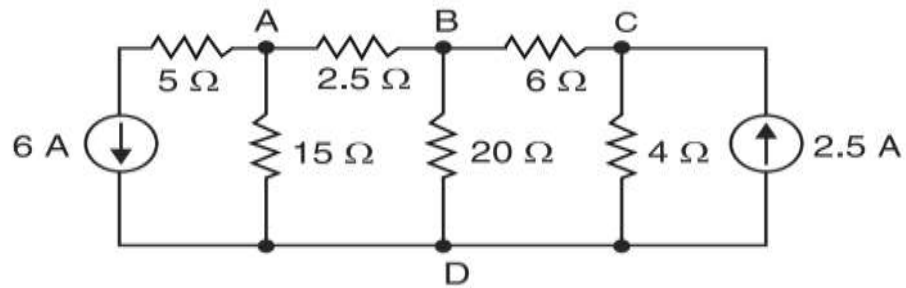
4. Six resistors are connected as shown in Figure. If a battery having an e.m.f. of 24 volts and internal resistance of $1\ \Omega$ is connected to the terminals A and B, find (i) the current from the battery, (ii) p.d. across $8\ \Omega$ and $4\ \Omega$ resistors and (iii) the current taken from the battery if a conductor of negligible resistance is connected in parallel with $8\ \Omega$ resistor.



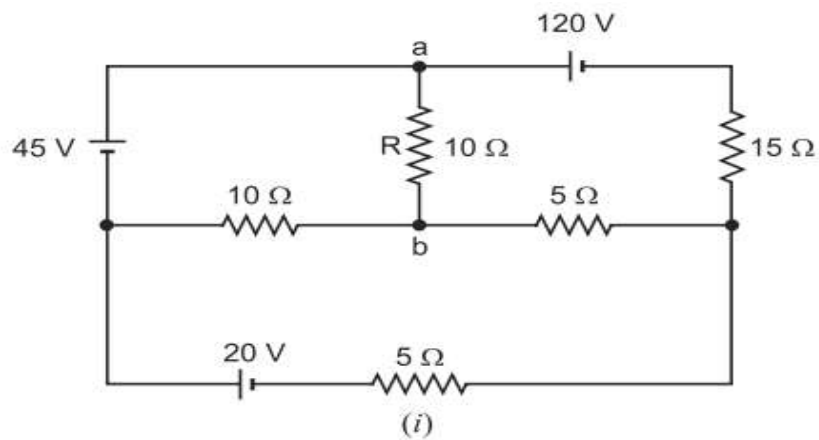
5. For the network shown in Figure, find the mesh currents I_1 , I_2 and I_3 .



6. Solve the circuit shown in Figure using nodal analysis.



7. Using Thevenin's theorem, find the current through resistance R connected between points a and b in Figure.



8. Determine the value of R_L in Figure for maximum power transfer and evaluate this power.

