

## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

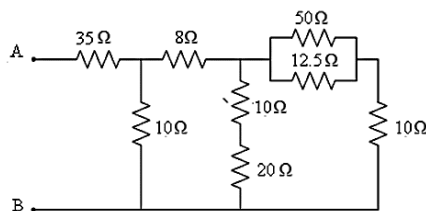
Course Code & Name : **23EET103 Electric Circuits and Electron Devices**

Course Faculty : Dr.M.Sudha

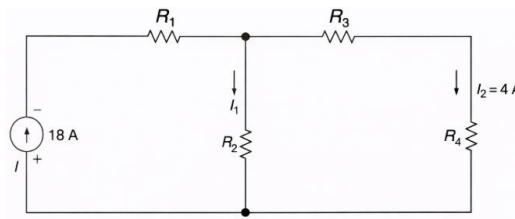
### Assignment Problems

Topics Covered: **Unit I – DC Circuits**

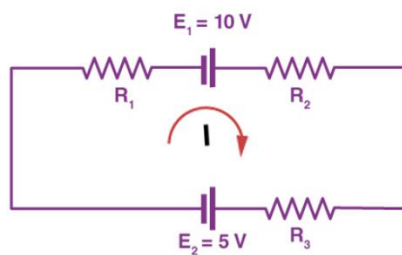
1. A 12V DC supply is connected to two resistors of  $4\Omega$  and  $8\Omega$  in series. Calculate: (i) Total resistance (ii) Circuit current (iii) Voltage drop across each resistor (iv) Total power consumed.
2. A 24V DC supply is connected to two resistors of  $6\Omega$  and  $12\Omega$  in parallel. Calculate: (i) Equivalent resistance (ii) Total current (iii) Branch currents (iv) Total power consumed.
3. A small server lab contains three devices rated 300W each operating at 48V DC. Calculate total current drawn and energy consumed in 6 hours.
4. Using Kirchoff's Voltage Law, verify that the sum of voltage drops equals supply voltage in a circuit with 20V source and resistors  $5\Omega$  and  $15\Omega$  in series.
5. Determine the equivalent resistance between terminals A & B shown in figure



6. Using Kirchhoff's First Law, determine the value of the unknown current of the circuit as shown below



7. Using Kirchhoff's Voltage Law (KVL), determine the electric current  $I$  flowing in the circuit shown below. If  $R_1 = 2 \Omega$ ,  $R_2 = 4 \Omega$ ,  $R_3 = 6 \Omega$ . All elements are connected in a single closed loop. Find the value of current  $I$ .



8. Calculate the unknown voltage across  $R_3$  resistor of the circuit as shown below by applying Kirchhoff's Loop Rule

