National Institute of Technology Srinagar

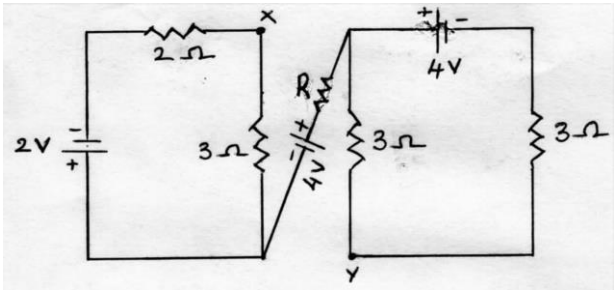
Basic Electrical Engg. | Sem II – CHM

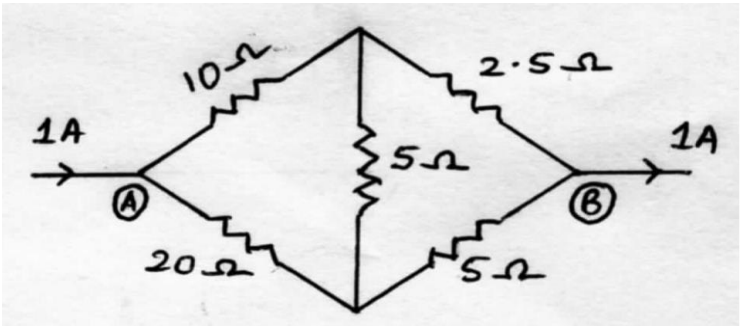
Assignment # 01: DC Circuits

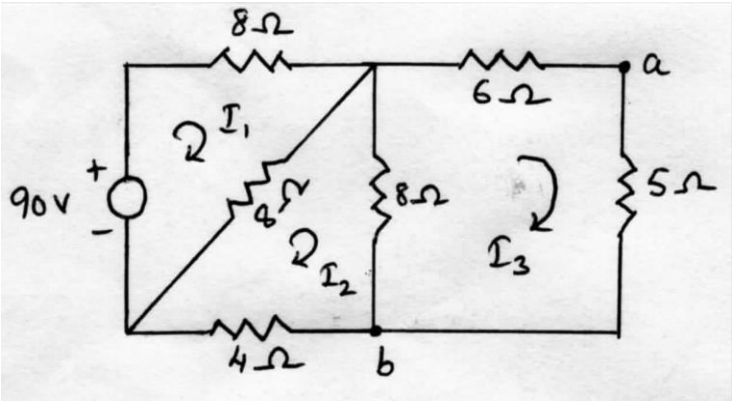
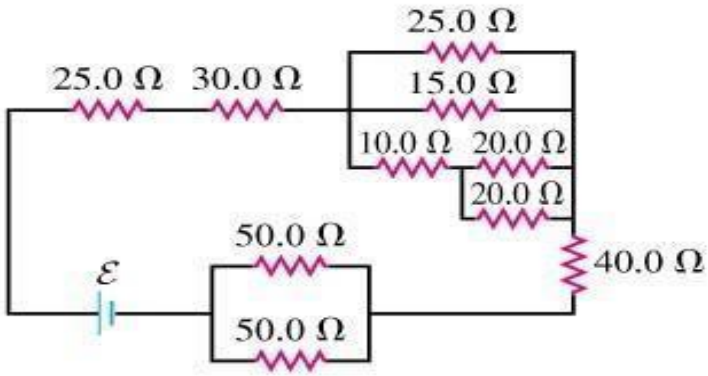
Date of issue: 19 June 2020 | Submission Due: **24 June 2020**

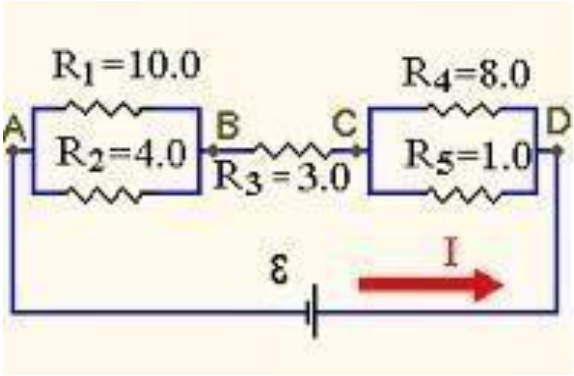
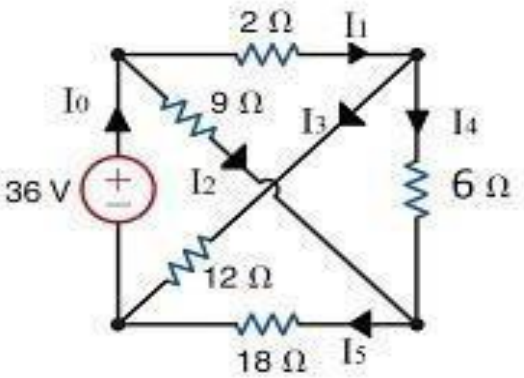
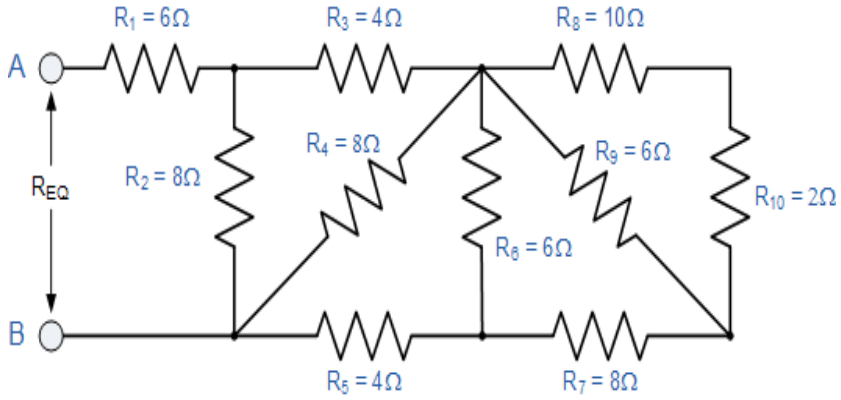
Instructions:

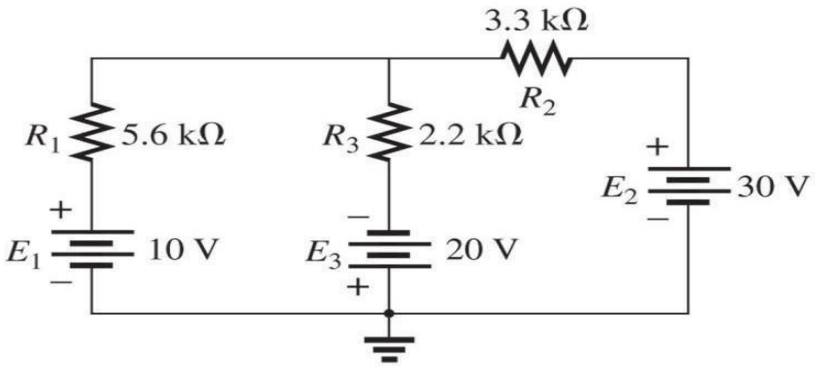
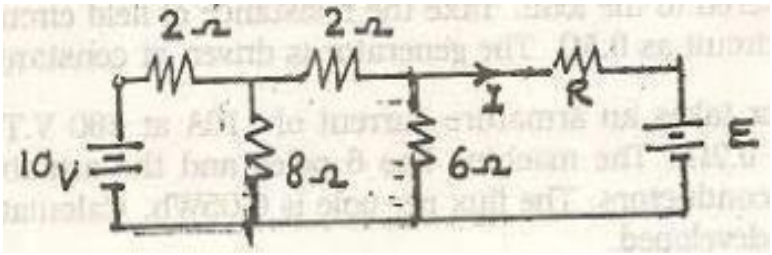
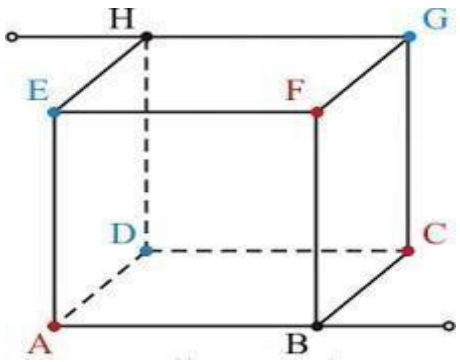
- ANSWER NEATLY AND LEGIBLY in **A4 sheets only.**
- An incomplete assignment is NOT acceptable for submission.

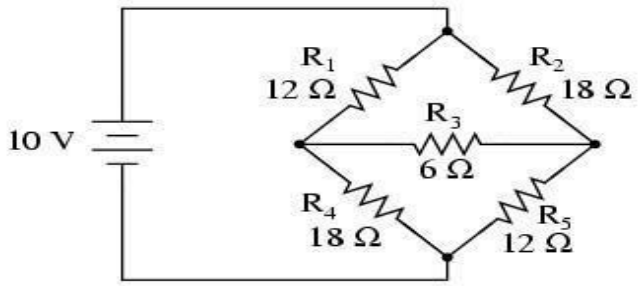
	Q1. Find the potential of *X* w.r.t. the potential of *Y*.

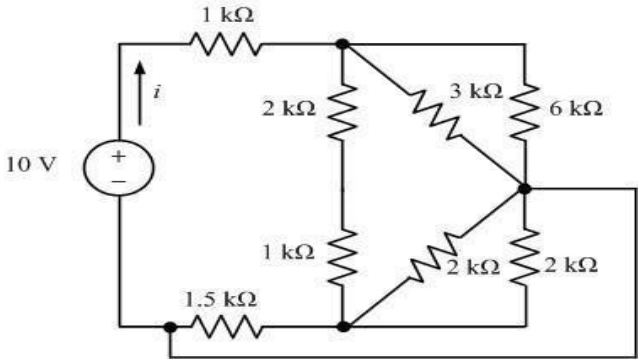
	Q2. Find the currents in all the resistors of the network. Also find the potential at *A* w.r.t. that at *B*.

	Q3. a) Find the current in the 5 Ω resistor. b) Find the potential at *b* w.r.t. that at *a* if the 5 Ω resistor is removed and the terminals *a*-*b* are open circuited. c) The 5 Ω resistor removed from the circuit and the 90 V source is replaced by a 10 Ω resistor. Determine the resistance that will be measured across *a*-*b*.
	Q4. If the drop across the 10 Ω resistor is 20 V, find the current through the 15 Ω resistor and the power supplied by the battery.

	Q5. If I = 5 A, find E, the potential at D w.r.t. the potential at B and the potential at A w.r.t. the potential at C.
	Q6.. Find all the branch currents.
	Q7. Find the equivalent resistance across A & B.

	Q8. Find all the branch currents and indicate them in the circuit diagram.
	Q9. Determine the value of E so that the current I is 0 A.
	Q10. Find the equivalent resistance across *H* & *B* if the resistance of each branch is *R*.

	Q11. Find the magnitude and the direction of the current in the 6 Ω resistor Find and indicate the drop across R_2.

	Q12. Find the drop across the 1.5 k Ω resistor and the total power dissipated in the circuit.

You are strongly advised to take the assignments very seriously.

Submission Due: **24 June 2020**

Good luck!