Class 1

Q1. Define i) Current ii) Voltage iii) Power

Q2. Define i) Ohm's Law ii) Active & Passive Elements

Q3. Define i) Resistance ii) Conductance

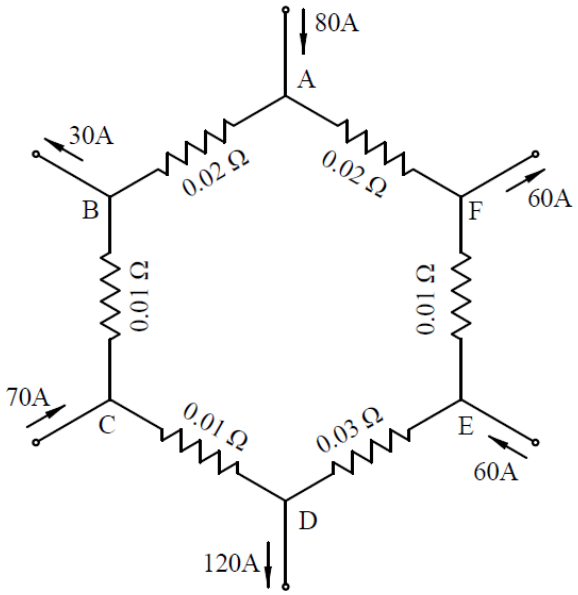
Q4. Write a short note on Active & Passive Sign Conventions.

Class 2

Q1. State & Explain i) KCL ii) KVL

Q2. Discuss in brief i) Ideal Voltage Source ii) Ideal Current Source

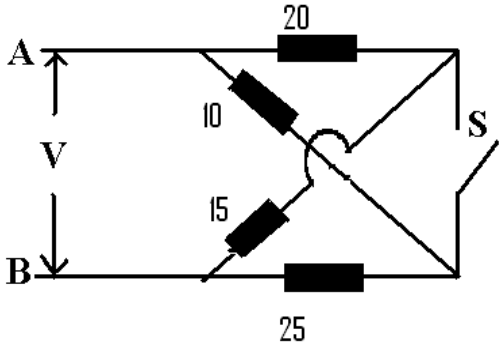
Q3. Find the current in all the branches in the network shown.



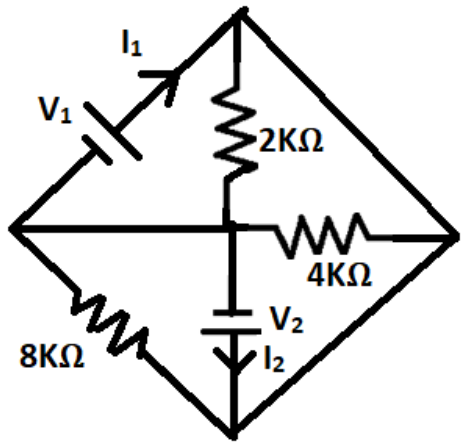
Class 4

Q1. A 100W, 120V lamp is connected in series with another lamp of 40W, 120V and the combination is connected across 240V supply mains. Calculate the value of the resistance to be connected across the second lamp, so that each lamp may get the proper current at rated voltage.

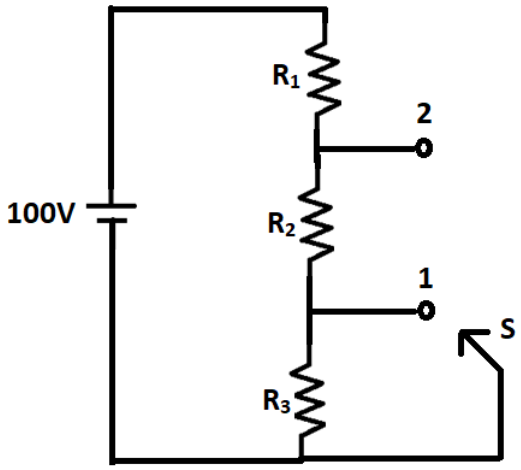
Q2. Find the value of Voltage V_{AB} , if the current through 15 Ω resistor is 3A when the switch S is (i) Closed and (ii) Open. (All the values are in Ohms)



Q3. For the circuit shown, find V1 and V2 and also the power dissipated in each of the resistors. Given I1 =5mA and I2 = 3mA.



Q4. In the circuit shown, current in the network is 50 A & 70 A when the switch is in position 1 and 2 respectively and 25 A with switch open. Find the value of resistors.



Class 6

Q1. Discuss in brief i) Practical Voltage Source ii) Practical Current Source

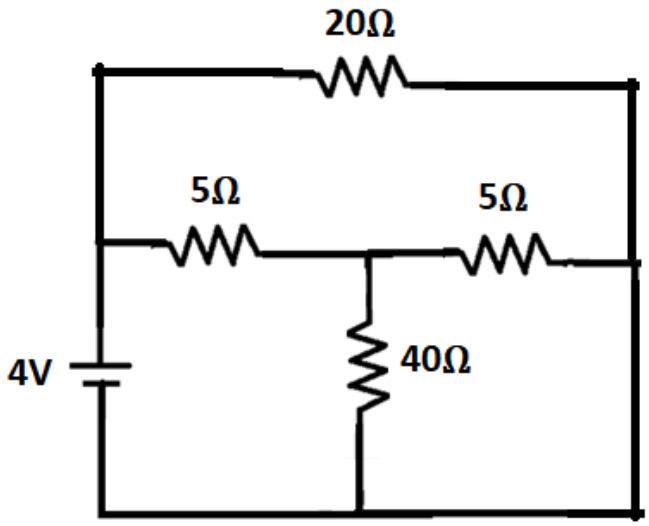
Q2. Two batteries A and B are connected in parallel and a load of 10Ω is connected across them. Battery A has an emf of 9V and internal resistance of 0.5Ω and B has an emf of 12V and internal resistance of 1Ω. Determine i) the magnitude and the direction of current flowing through load resistance, ii) current supplied by each battery and iii) potential difference across the load resistance.

Q3. A current of 20A flows through two ammeters A and B joined in series. Across A the potential difference is 0.2V and across B it is 0.3V. Find how the same current will divide between A and B when they are joined in parallel.

Class 8

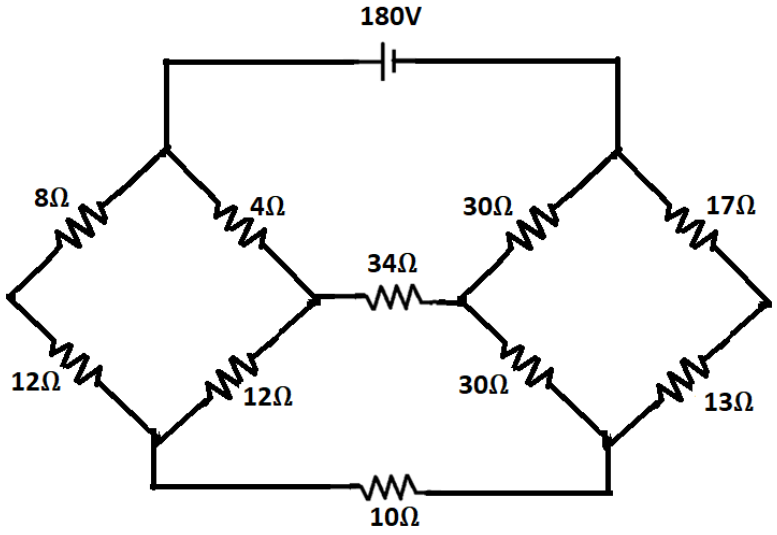
Q1. Derive how a delta connected set of resistors can be transformed to its equivalent star.

Q2. Find current delivered by 4V battery in the network shown using Star Delta Transformations.

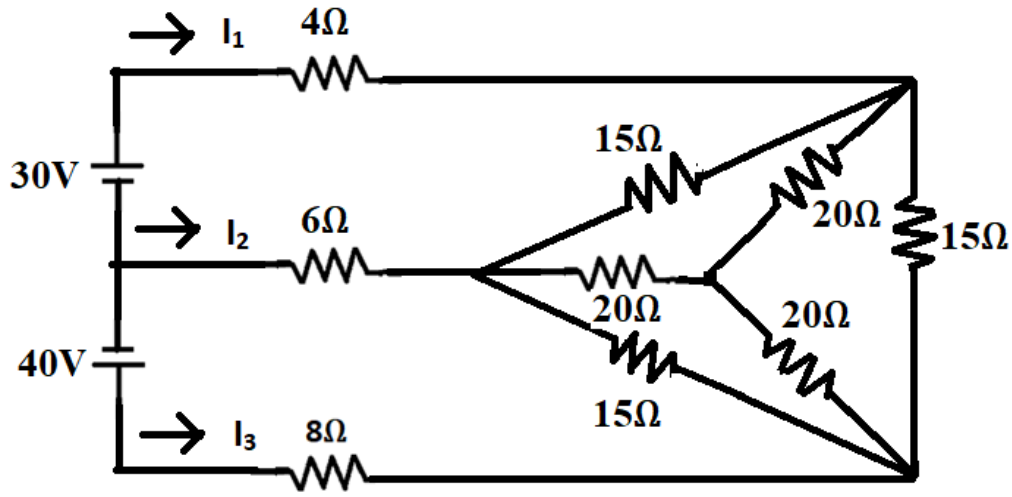


Class 9

Q1. Use Star Delta Transformations to find the current through 10Ω resistor in the network below.



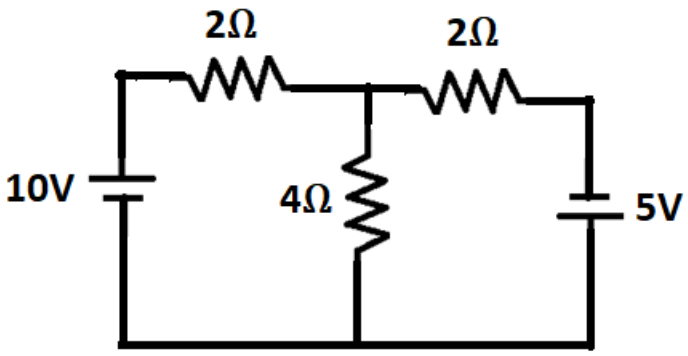
Q2. Use Star Delta Transformations to find I_1 , I_2 & I_3 in the network below.



Class 11

Q1. Explain by an example, the difference between a Loop & a Mesh.

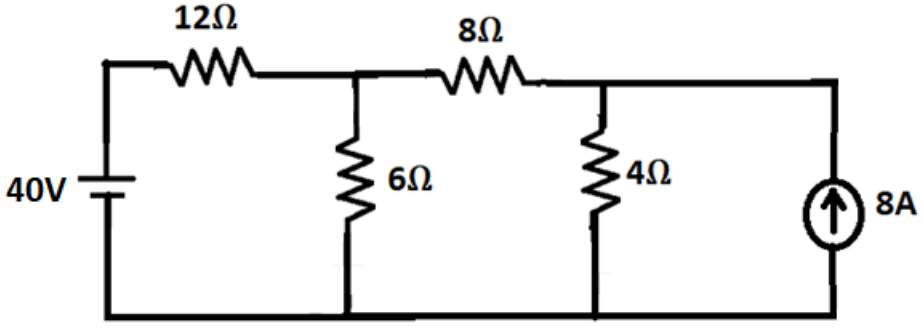
Q2. Find the current through 4Ω resistor in the network shown using Mesh Analysis.



Class 12

Q1. Why can't we apply KVL in a Mesh containing current sources?

Q2. Find the current through 6Ω resistor using Mesh Analysis.



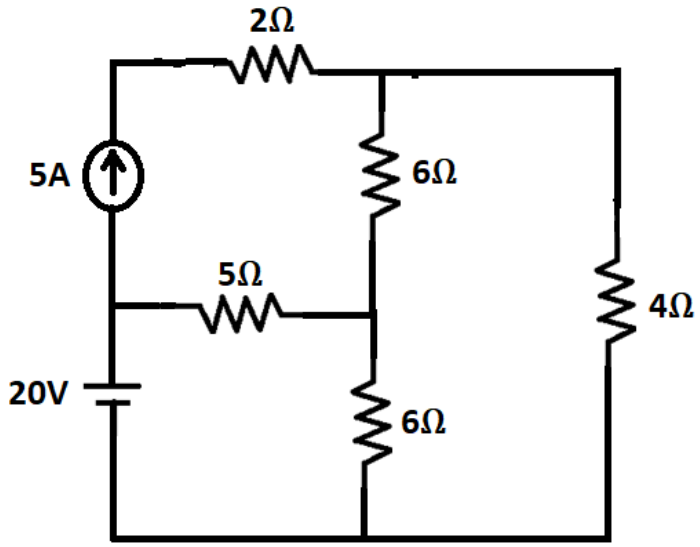
Class 14

Q1. Define i) Linear Element ii) Linear Circuit

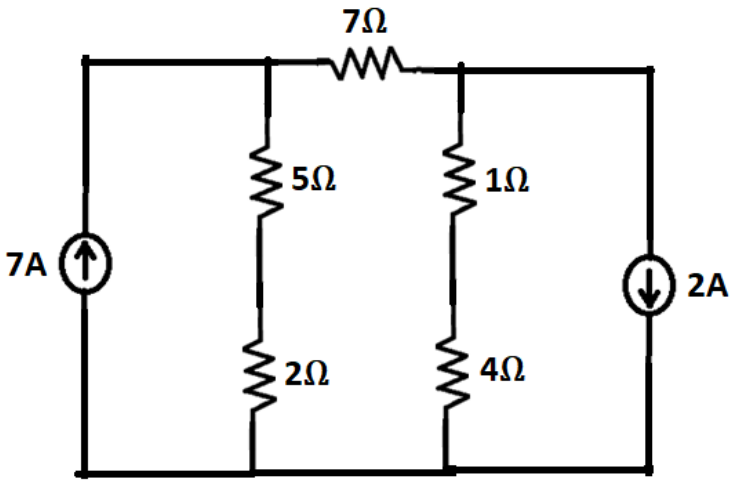
Q2. State Superposition Theorem

Class 15

Q1. Find the current through 4Ω resistor using Superposition Theorem.



Q2. Find the voltage across 7Ω resistor using Superposition Theorem.



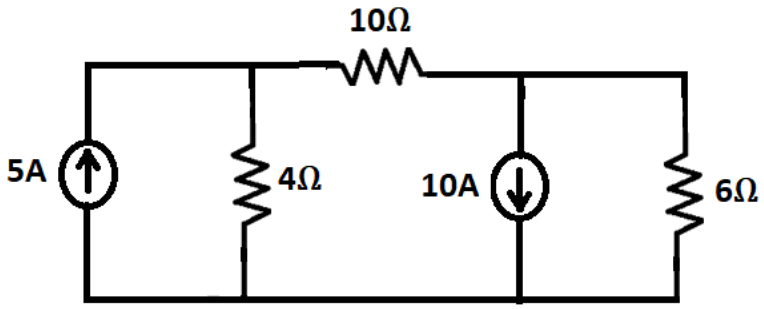
Class 16

Q1. State Thevenin's Theorem. Draw Thevenin's Equivalent network.

Q2. Give the steps to obtain V_{TH} & R_{TH}.

Class 17

Q1. Using Thevenin's Theorem, obtain the current through 10Ω resistor in the network shown.



Q2. Obtain Thevenin's equivalent across the terminals A & B in the network below: