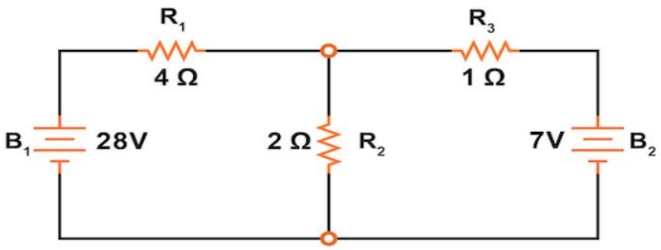
Basic Electrical and Electronic Circuits (BEC) COURSE- (23EC1203)

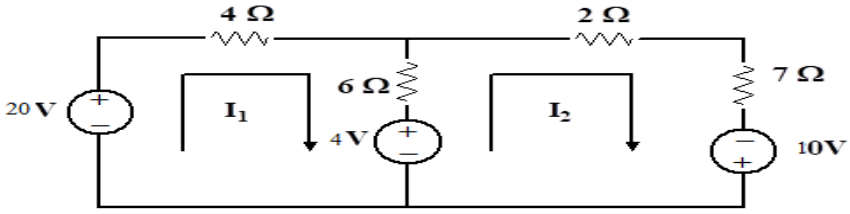
I -B.TECH EVEN SEMESTER

Questions For Review on CO-1

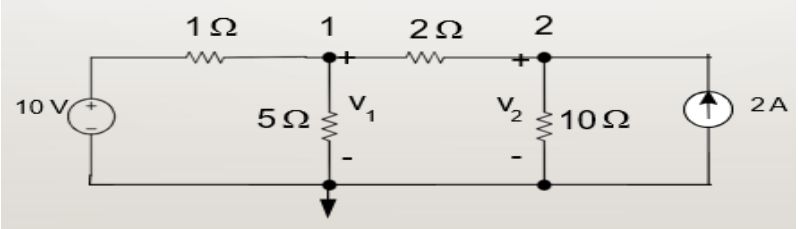
1. Calculate the current passes through the 2Ω resister in the given network using the superposition theorem.



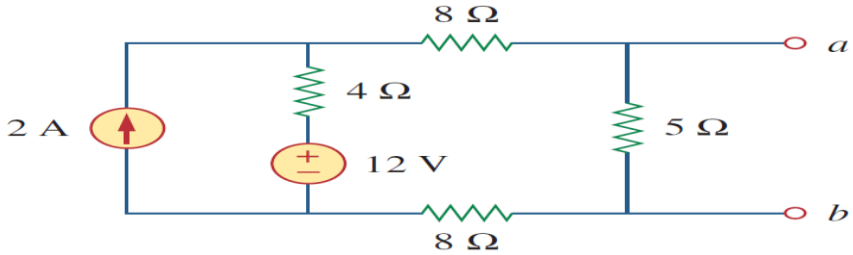
2. Write the mesh equations and solve for the currents I_1, and I_2



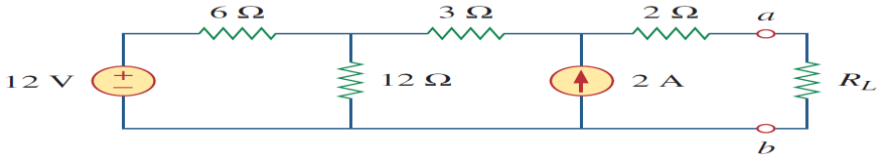
3. Determine the voltage V1 and V2 using node analysis.



4. Find the Norton's equivalent for the circuit shown below



5. Find the value of R_L for maximum power transfer for the below mentioned circuit and also find the maximum power



6. If four Inductors aare connected in case i) parallel each of 60 Henry each ii) in series with L1=L2=10H, L3=L4=20H, then calculate the total equivalence inductance in both cases?

7. Calculate the total circuit current in the given circuit (1.34)

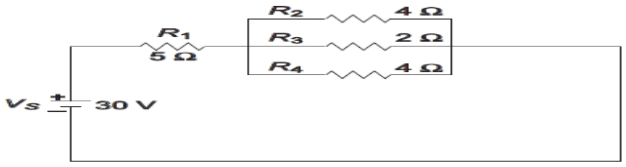
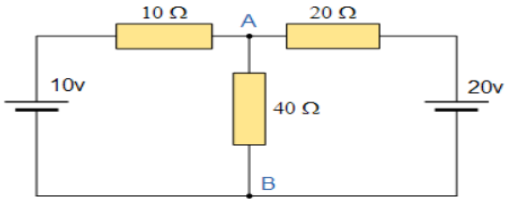


Fig. 1.34

8 State and explain Thevenin's theorem with its equivalent circuit ?

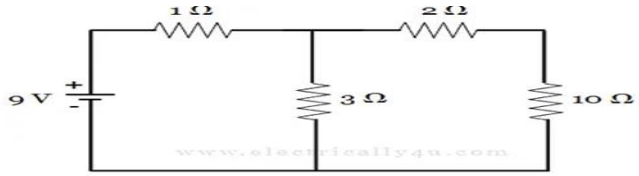
9 Find the Thevenin's voltage across 40 ohm resistance in the given circuit?



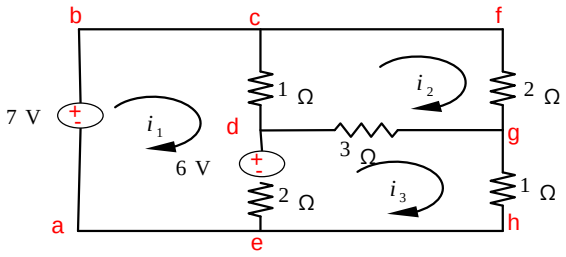
10 State and Prove Superposition theorem?

11. If Four resistors R1=R2=R3=R4=4kΩ, is connected in parallel with a power supply of 20V , then calculate total circuit current and individual currents flowing in each resistor

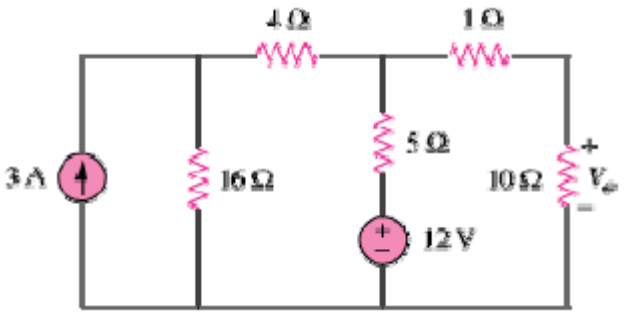
12. Determine the current flowing through 10 Ω resistor using Norton's theorem



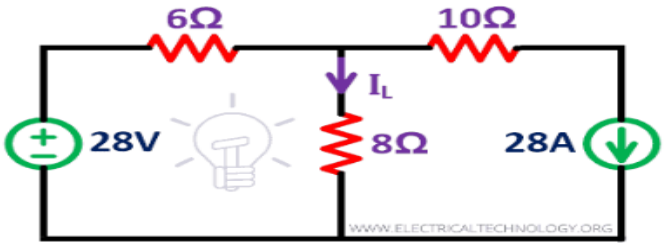
13. In the circuit shown in Figure 3 determine the mesh currents i_1,i_2,i_3



14. Apply Thèvenin's theorem to find *Vo* in the circuit of Fig.



14. Find the current (I_L) passes through the 8Ω resister in the given network using the superposition theorem



15. State and explain Maximum power transfer theorem?

16. Explain the limitations of Superposition theorem?

17. Distinguish between mesh and nodal analysis?

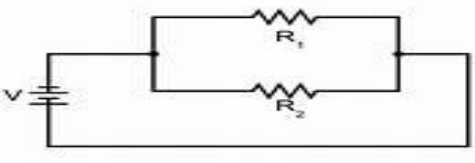
18. Differentiate Thevenin's and Nortan's Theorems in all aspects?

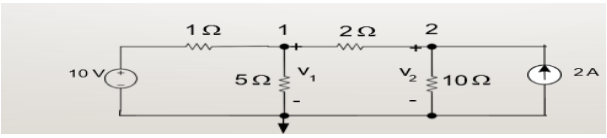
19. Mention the steps involved Thevenin's Theorem to obtain Vth, Rth

20. State and explain about the steps involved Nortan's Theorem.

2 Marks Questions

1. Explain the steps involved to calculate the Nortan's Equivalent Current and resistance?
2. Define KCL, KVL with formulae ?
3. Calculate the total inductance in a circuit in which L1=5H, L2=10H, L3=25H are connected in parallel?
4. Define Node , mesh, loop , branch ?
5. Distinguish ideal and practical voltage sources in all aspects?
6. How many Branches, loops, nodes exists in the given circuits ?





7. Define Voltage division rule ?
8. Classify various dependant sources represent with its equivalent circuits?
9. State maximum power transfer theorem?

10. Define current division rule.
11. Calculate the total inductance in a circuit in which L1=5H, L2=10H, L3=25H are connected in series ?
12. Distinguish between a Loop & Mesh of a circuit?
13. State the Thevenin's theorem ?
14. State and explain Nortan's Theorem?
15. Calculate the total capacitance in a circuit in which C1=10 µF, C2=15µ F,C3=25µF are connected in series ?
16. Distinguish Thevenin's and Nortan's theorems?
17. Mention the limitations of Super position theorem?
18. Elaborate the steps involved to perform Circuit optimization using Thevenin's Equivalent Circuit ?
19. Explain the procedural steps involved to analyse any electrical circuit using Superposition theorem?
20. Classify Active and passive elements used in Electronics, mention their symbols?