Question Bank

Circuit & Network Theory
(Both E&TC & Electrical Engg)
(Made by Smt. Astamita Mishra)

Q-1 (a) State Ohm's law.

(b) State KCL & KVL.

(c) Define (i) charge (ii) current (iii) power.

(d) Define node & branch.

(e) Distinguish between node & mesh.

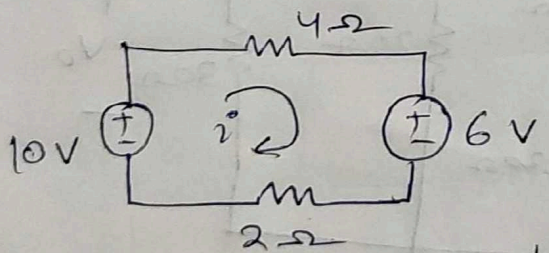
(f) State Norton's theorem.

(g) State Thevenin's theorem.

(h) State superposition theorem.

(i) State maximum power transfer theorem.

(j)



The loop equation for the circuit shown above is,

(a) $-10 + 4i + 6 + 2i = 0$

(b) $10 + 4i + 6 + 2i = 0$

(c) $10 + 4i - 6 + 2i = 0$

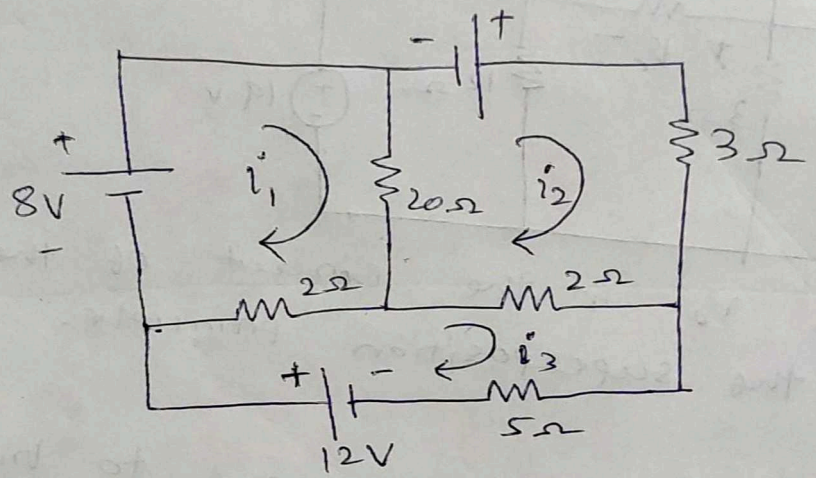
(d) $-10 + 4i - 6 + 2i = 0$

Q-2

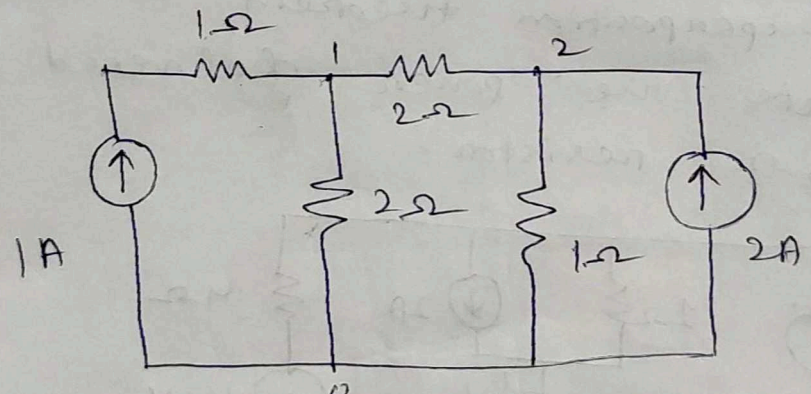
(a) Explain about nodal analysis & write steps for applying nodal analysis.

(b) Explain about Mesh analysis & write steps for writing mesh analysis.

(c) Determine current is 5Ω resistor by Mesh analysis



(d)



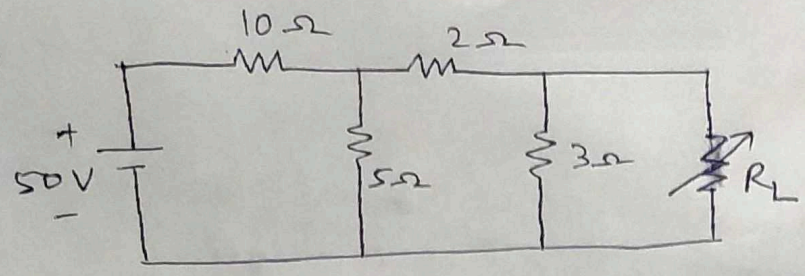
Determine the voltage 1 and 2 of the network in the figure by nodal analysis.

(e) State and prove Reciprocity theorem.

(f) State & derive the condition for Maximum power transfer theorem.

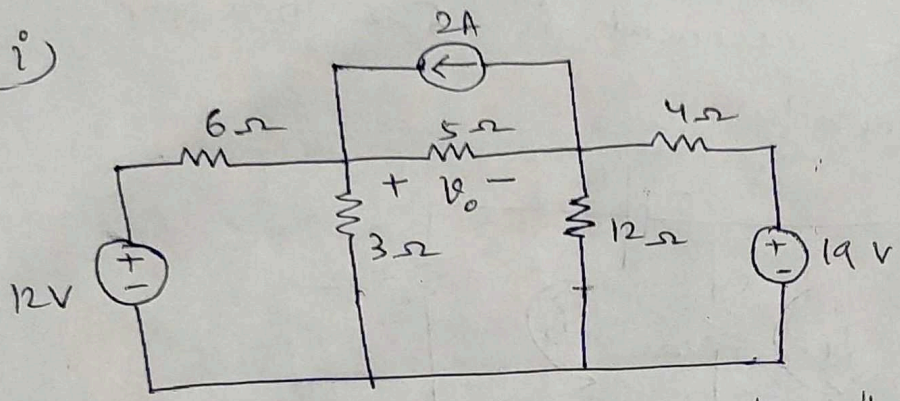
(g) State and prove millman's theorem.

(h)



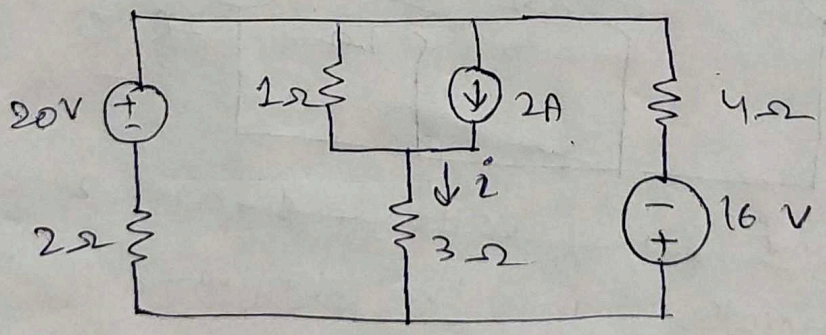
Find the value of R_L so that maximum power will flow in the circuit.

(i)

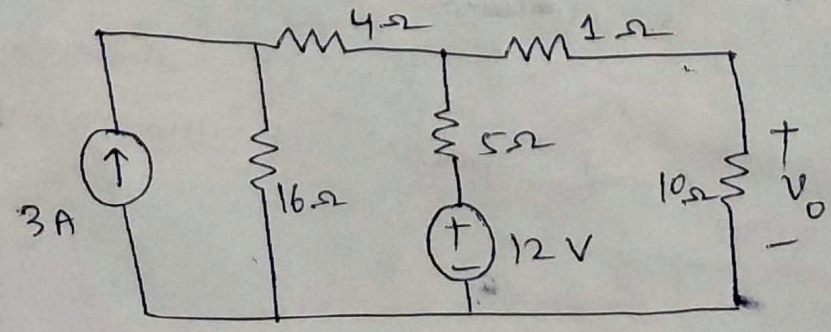


Determine v_o in the circuit of the figure using the superposition principle.

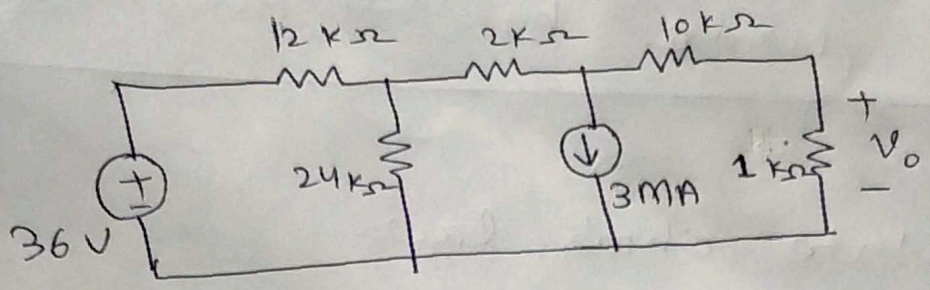
(j) Use superposition theorem to find (i). Calculate the power delivered to the 3Ω resistor.



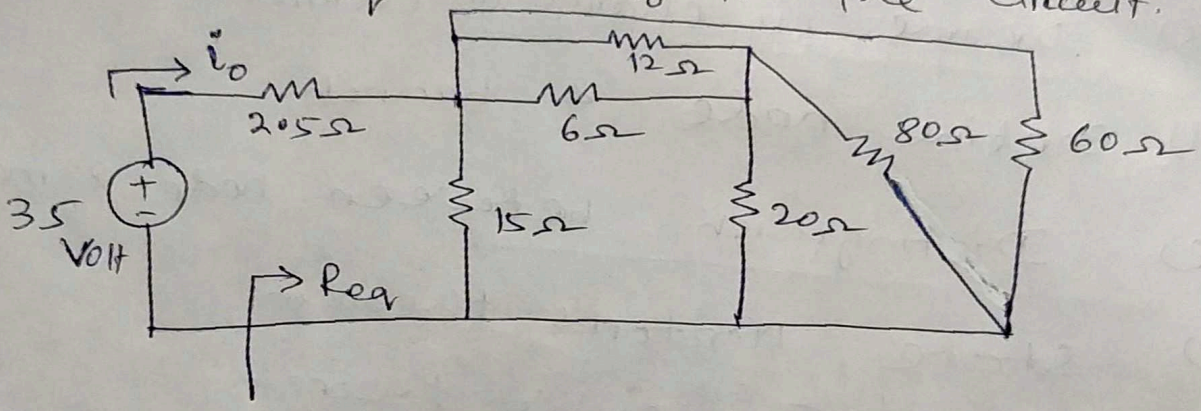
(K) Apply Thevenin's theorem to find v_o in the circuit of the figure below.



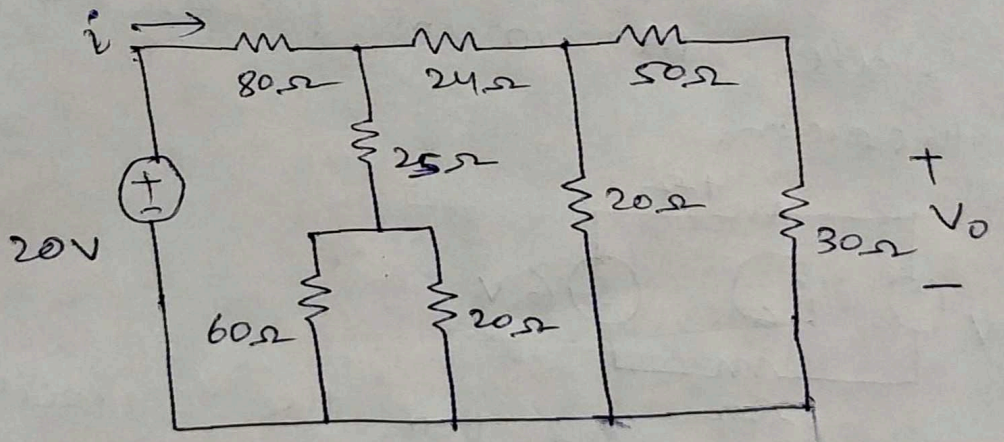
(l) Use Norton's theorem to find 'Vo' in the circuit of the figure below.



(m) Find Req and 'io' in the circuit.



(n) Find i & Vo in the circuit.



(o) calculate Io in the circuit.