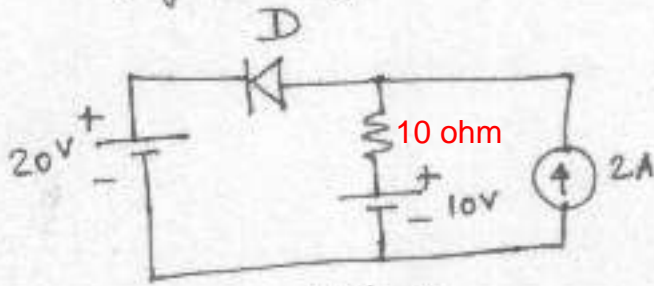


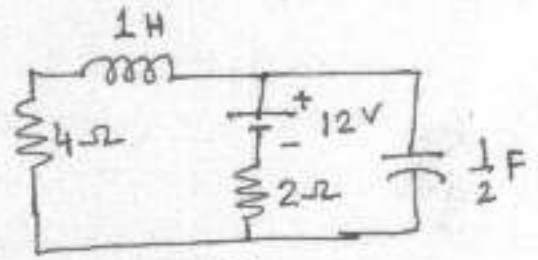
Tutorial-6

①

① Verify Tellegen's Theorem for the following networks.



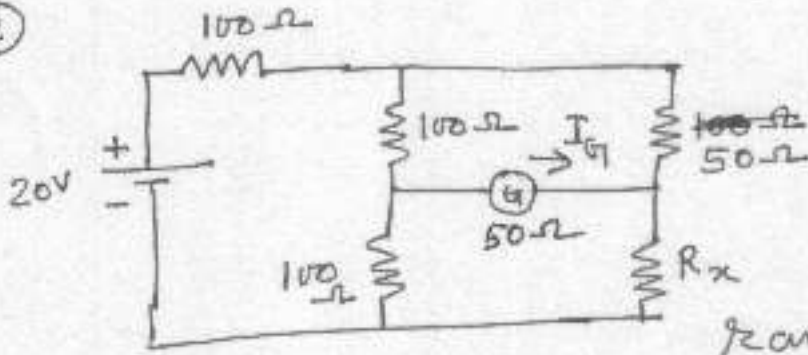
ckt. A



ckt. B

Assume both the ckt's to be in steady state and diode D to be ideal.

②

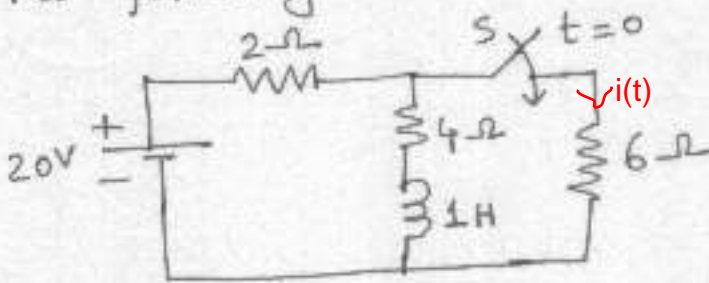


R_x has nominal value of 50Ω with $\pm 10\%$ tolerance. Calculate variation range of I_G using

compensation theorem.

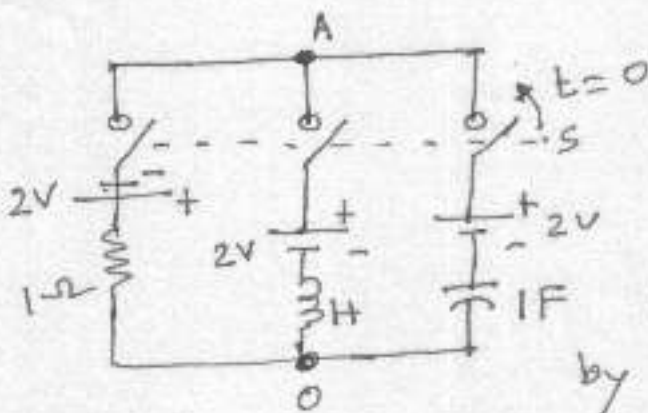
③

Use compensation theorem to calculate $i(t)$ in the following network.



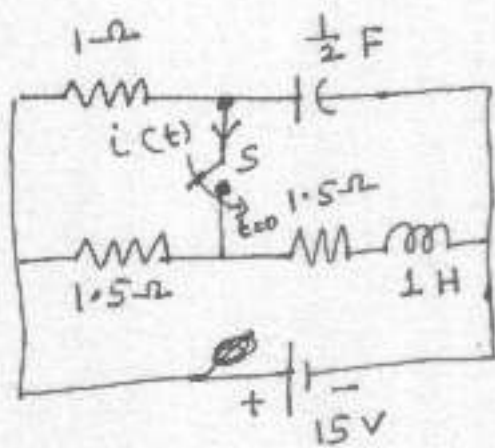
ckt. was in steady state before switching. Verify your result by solving it using Thevenin theorem.

④



Assume zero initial conditions. Tripple pole switch S is closed at $t=0$. Get $v_{A0}(t)$ for $t>0$ by using Millman's theorem.

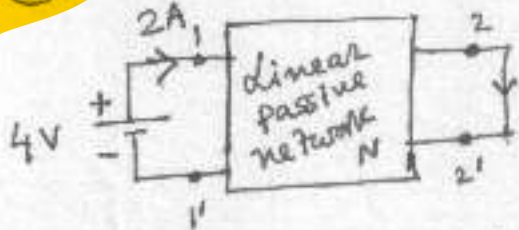
⑤



②
After s.s has been reached, s is closed at $t=0$. Calculate $i(t)$ for $t>0$ by using

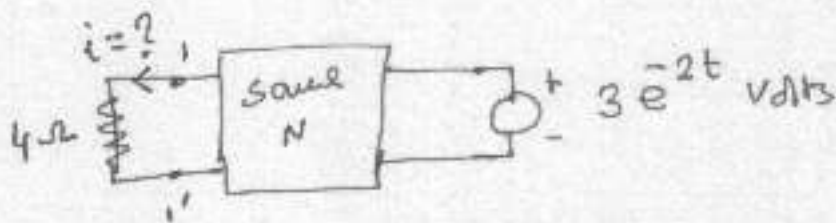
- Thevenin Theorem.
- Mesh Analysis.

⑥



When 4v is applied at 1-1', & current in 2-2' is 1 A & 2 A in 1-1' as shown. To the same network if

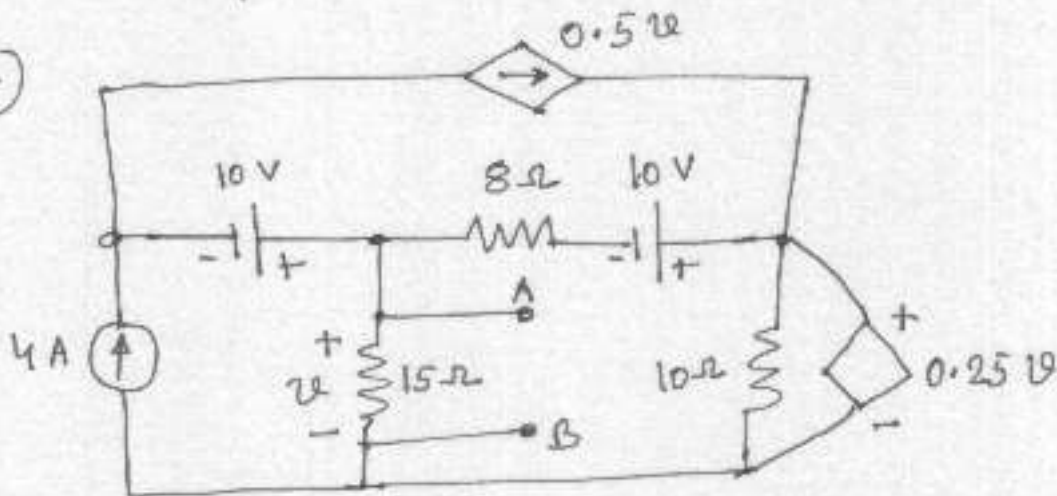
$3e^{-2t}$ v is applied what will be i in 1-1'?



Apply suitable network theorems to get the result.

Make necessary assumptions

⑦



- use superposition Theorem to get v .
- Get Thevenin Equivalent ckt across AB.