





- 11 Solve for the current  $I$  in the figure 5 using Norton's Theorem. (10)

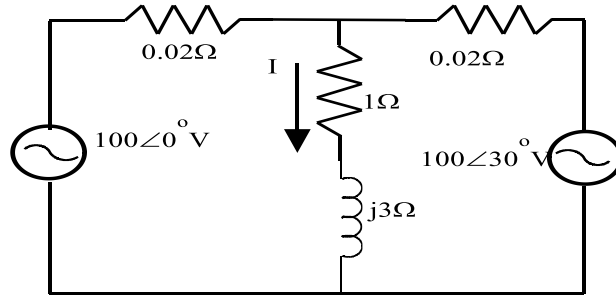


Fig. 5

**PART C**

*Answer any two full questions, each carries 10 marks.*

- 12 a) A series RC circuit with  $R=10\Omega$  and  $C=4\mu\text{F}$  has an initial charge  $Q_0=800\mu\text{C}$  on the capacitor. At  $t=0$ , the switch is closed to apply a constant dc voltage source of 100V. Sketch the transformed circuit. Find the resulting current transient if the charge on the capacitor has the same polarity as deposited by the source. (10)
- 13 a) In the network shown in figure 6, the switch is opened at  $t=0$ . Find out the current through the  $1\Omega$  resistor after opening the switch. (10)

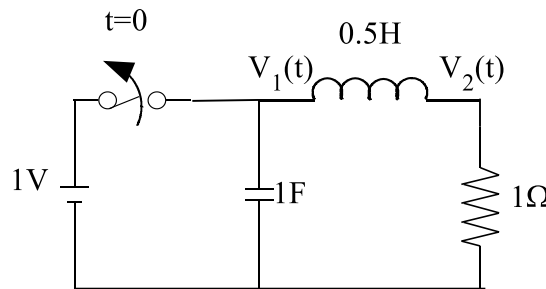


Fig. 6

- 14 a) In the RL circuit shown in figure 7, the switch is in position 1 long enough to establish steady state conditions and at  $t=0$ , it is switched to position 2. Find the resulting current. (10)

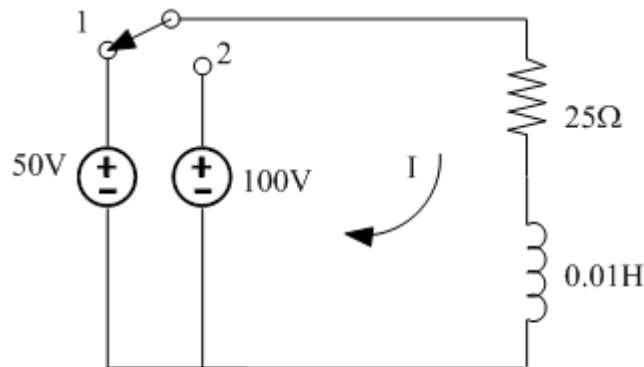


Fig. 7

## PART D

*Answer any two full questions, each carries 10 marks.*

- 15 a) Find the Z and Y parameters of the given  $\pi$ - network. (10)

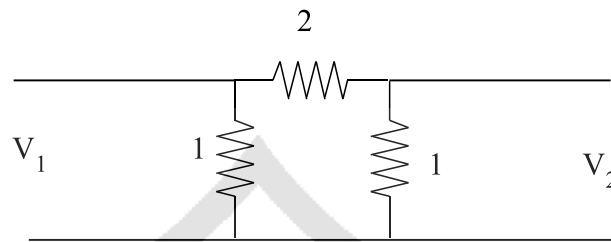


Fig. 8

- 16 Find the first and second order Cauer forms of the function,  $z(s) = \frac{2s^2 + 8s + 6}{s^2 + 2s}$  (10)

- 17 Find the two canonical Foster networks with elements for the impedance (10)  
function,  $Z(s)$  given by  $Z(s) = \frac{(s+1)(s+3)}{s(s+2)}$

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