ELECTRICAL ENGINEERING DEPARTMENT

ELL202 CIRCUIT THEORY

MINOR II 07/10/2016 09:30-10:30 MM:30

Q1. The switch S in the network shown in Fig.1 is opened at t=0. Starting with the transformed network, determine the voltage across the switch for t>0-. (8)

Q2. The switch in the network shown in Fig.2 is in position *a* until a steady state is reached. At t=0, the switch is moved to position *b*. Determine the transform of the voltage across the capacitor using Thevenin's theorem. (6)

Q3. Two poles of the double-tuned circuit shown in Fig.3 are located at s=-4+j70 and at s=-4+j80. Determine the values of all network elements assuming that R=1 ohm. What will be the shape of the magnitude response of the voltage transfer function for this network? Determine all possible information about the magnitude response. (8)

Q4. Determine the h-parameters of the network in Fig.4 from the basic definition of these parameters. Draw the transform domain diagrams for computation of each parameter. (8)

-x-x-x-x-x-x-x-x-x-

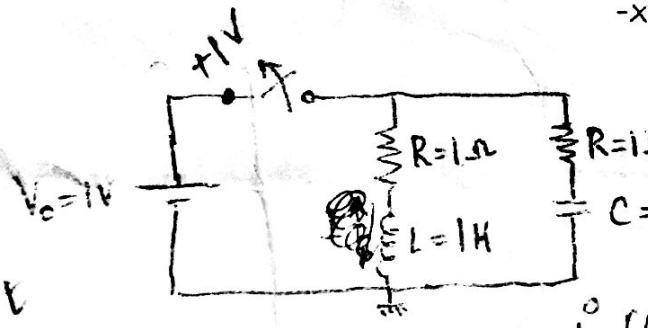

Fig. 1

$i_L(0^-) = 1 = V_c(0^-)$

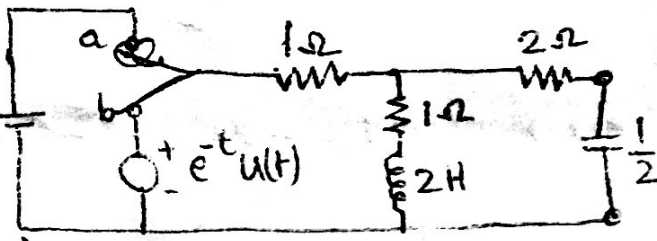

Fig. 2

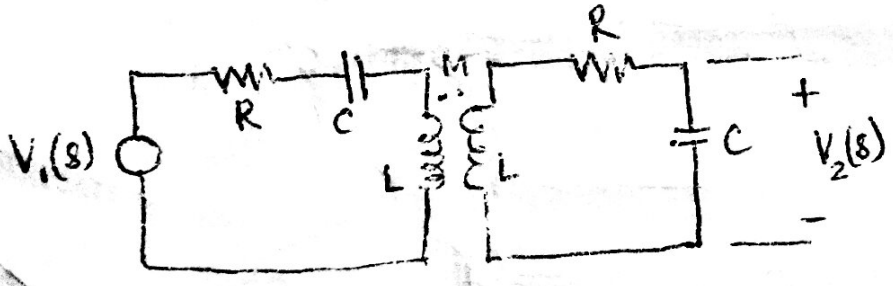

Fig. 3

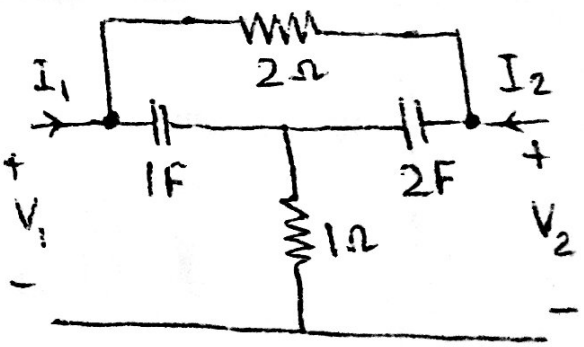

Fig. 4