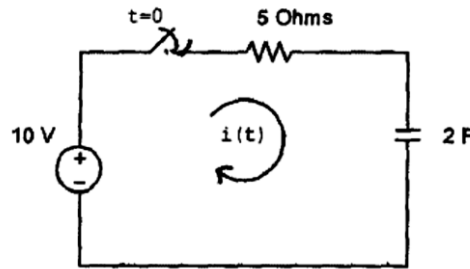
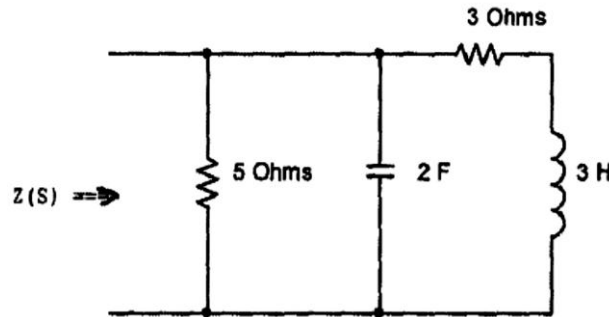


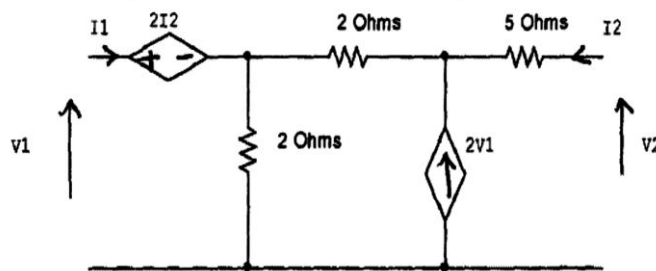
- b) In the following series RC circuit the switch is closed at $t=0$, find the expression for the current through the capacitor and sketch $i(t)$ versus t . 05



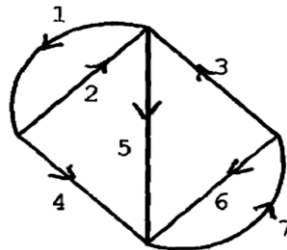
- c) Find the driving point impedance for the following network. 05



3. a) Find the ABCD parameters for the following 2-port network 10

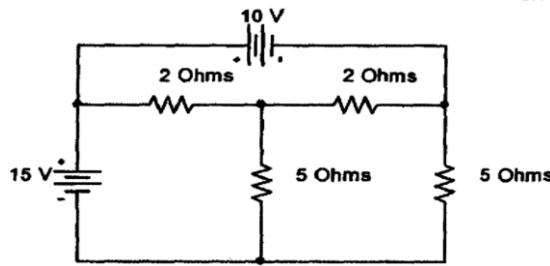


- b) Check whether the following functions are Hurwitz 05
 i) $F(S) = S^5 + 4S^3 + 2S$
 ii) $F(S) = S^5 + 2S^4 + 5S^3 + 10S^2 + 4S + 8$
 c) The graph of a network is given below. Obtain the tieset matrix. 05

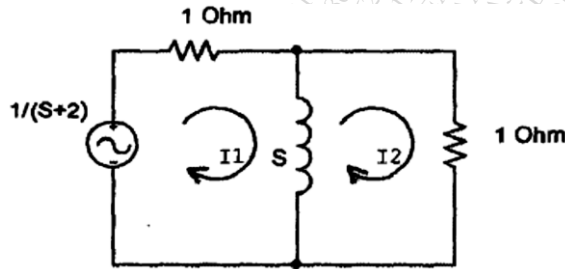


4. a) Synthesize the following driving point impedance function in Cauer-I and Foster-I forms. 10
 $Z(s) = (S^2 + 2)(S^2 + 6)/3S(S^2 + 5)$
 b) Obtain h parameters in terms of z parameters. 05
 c) State and prove initial value theorem. 05

5. a) For the following network obtain the KVL equilibrium equation in matrix form using the concept of graph theory and hence find the link currents. 10

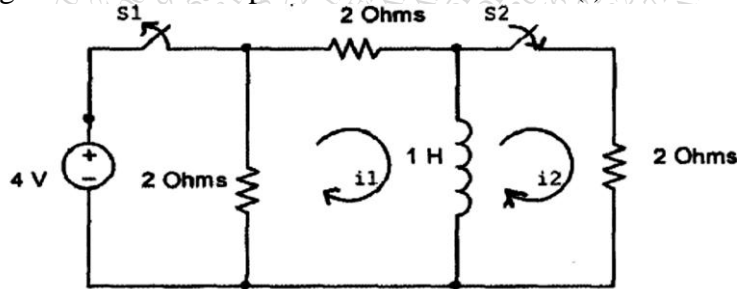


- b) Find $I_2(S)$ for the following transformed circuit and hence find $i_2(t)$ using Inverse Laplace Transform. 05



- c) Test whether the following function is a Positive Real function. 05
 $F(s) = (S^4 + 14S^2 + 45) / (S^3 + 7S)$

6. a) In the circuit given below, the switch S_1 is opened and the switch S_2 is closed at $t=0$. The switch S_1 was closed for a long time before it is opened. Find the current $i_2(t)$ 10



- b) For the following ladder network find V_2/V_1 , I_1/V_1 and V_2/I_1 10

