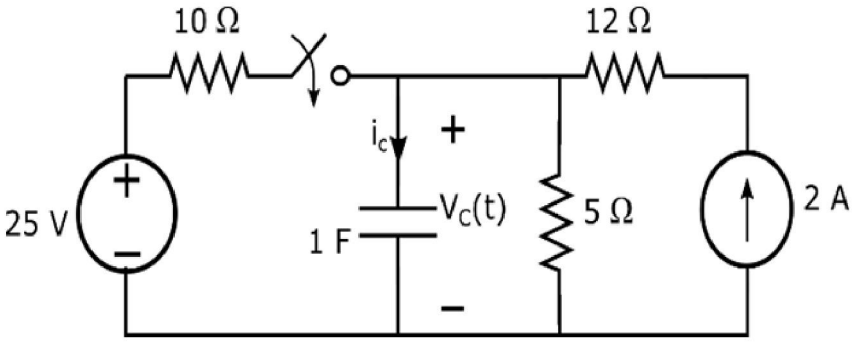


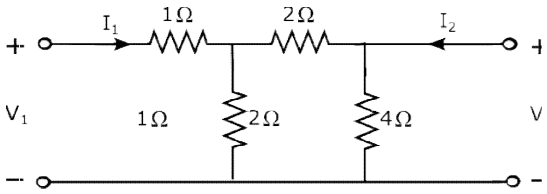
PART C

Answer any two full questions, each carries 20 marks

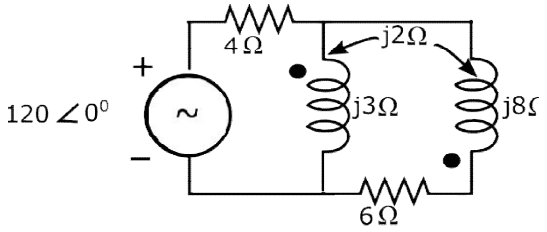
7 a) Differentiate between self-inductance and mutual inductance. (2)

b) Give the expressions of quality factor of series and parallel RLC networks. (3)

c) Find the ABCD parameters of the network shown. (7)



d) Find the current through 6Ω resistor using mesh analysis. (8)



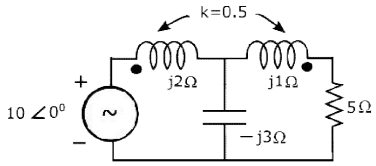
8 a) Explain the term selectivity. (2)

b) Draw the series and parallel connection of two port network and derive the parameter matrices for the resultant network. (8)

c) Draw the circuit of a single tuned circuit and derive an expression for output voltage. (10)

9 a) Explain the following termsand write the relation between them: (4)
i) Bandwidth ii) Q factor.

b) Find the drop across 5 Ω resistor. (6)



c) Currents I_1 and I_2 entering at port 1 and port 2 respectively of a two-port network are given by (10)

$$I_1 = 0.5V_1 - 0.2V_2$$
$$I_2 = -0.2V_1 + V_2$$

Find Y, Z and ABCD parameters. From Y parameters, check whether the network is reciprocal and symmetrical.

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