Q.1 [CO2] In the circuit shown in Fig.1, the network is described by the following Y-parameter

matrix $\begin{bmatrix} I_1 \\ I_2 \end{bmatrix} = \begin{bmatrix} 0.2 & 0.4 \\ 0.3 & 0.6 \end{bmatrix} \begin{bmatrix} V_1 \\ V_2 \end{bmatrix}$, Find the voltage gain $\left(\frac{V_2}{V_1}\right)$.
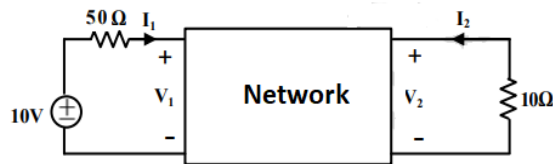

Fig.1

Q.2 [CO2] Find the impedance parameters Z_{11}, Z_{12}, Z_{21} and Z_{22} of the two port network as shown in Fig. 2.
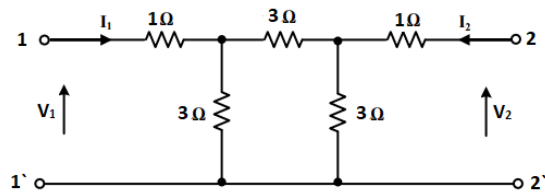

Fig.2

Q.3 [CO2] For the two port network shown in Fig.3, the impedance matrix is given as follows:

$$\begin{bmatrix} V_1 \\ V_2 \end{bmatrix} = \begin{bmatrix} 4 & 6 \\ 8 & 10 \end{bmatrix} \begin{bmatrix} I_1 \\ I_2 \end{bmatrix}$$
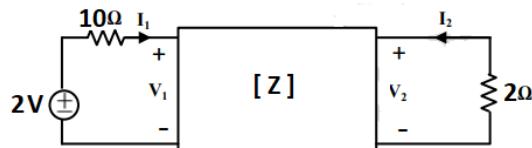
Calculate the average power delivered to 2 Ω resistor.

Fig.3

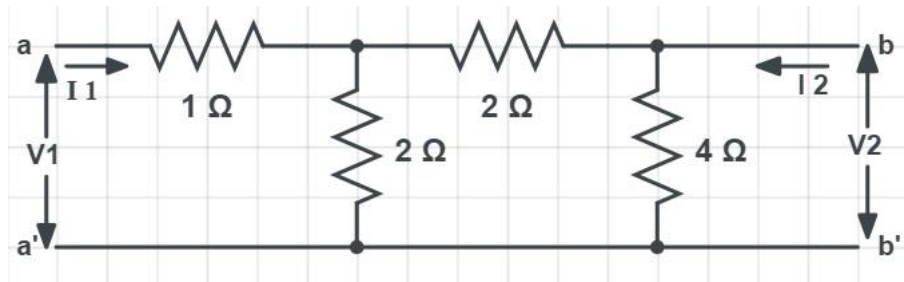**Q.4 [CO2] Find h-parameters for the network shown in figure 4.**

Fig.4

Q.5 [CO2] Find the value of current I_1 and I_2 for the circuit shown in Fig. 5, for this network Z-parameter matrix is given as follows:

$$\begin{bmatrix} V_1 \\ V_2 \end{bmatrix} = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} \begin{bmatrix} I_1 \\ I_2 \end{bmatrix}$$
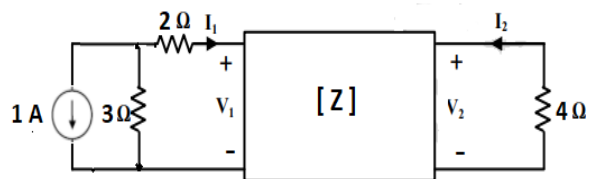

Fig.5

Q.6 [CO2] Find the impedance parameters Z_{11}, Z_{12}, Z_{21} and Z_{22} of the two port network shown in Fig.6.
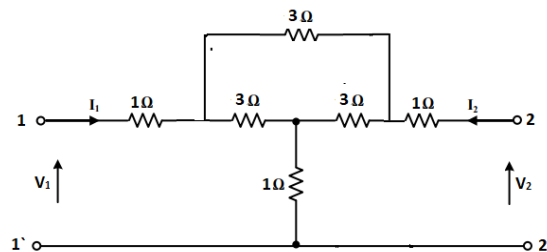

Fig.6