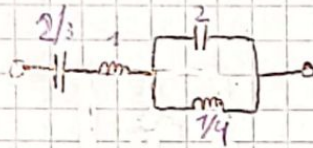


Tarea Semanal N° 9

$$⑦ \quad Z(s) = \frac{(s^2+3)(s^2+1)}{s(s^2+2)} = \frac{k_0}{s} + \frac{2k_1 s}{(s^2+2)} + \frac{k_{\infty} \cdot s}{s^2+2}$$

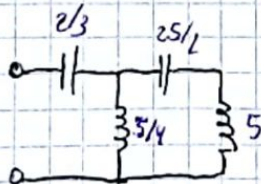
$$k_0 = \lim_{s \rightarrow 0} Z(s) \cdot s = \frac{3}{2} ; \quad k_{\infty} = \lim_{s \rightarrow \infty} \frac{Z(s)}{s} = 1$$

$$2k_1 = \lim_{s^2 \rightarrow -2} Z(s) \cdot \frac{s^2+2}{s} = \frac{1}{2} \Rightarrow Z(s) = \frac{1}{s} + \frac{1}{s \cdot 2 + \frac{2}{s}} + 1 \cdot s$$



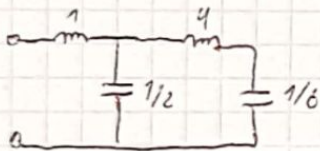
Cover 1 → Remover polos en el origen

$$\begin{array}{r} 3 \quad 4s^4 \quad s^4 \quad \boxed{2s \quad s^3} \\ \hline 3 \quad \frac{3}{2}s^2 \quad \boxed{\frac{1}{s \cdot 2/3}} \quad Z_1 \\ \hline 2s \quad s^3 \quad \boxed{\frac{5}{2}s^2 \quad s^4} \\ \hline 2s \quad \frac{4}{5}s^3 \quad \boxed{\frac{1}{s \cdot 5/4}} \quad Y_2 \\ \hline \frac{5}{2}s^2 \quad s^4 \quad \boxed{\frac{1}{s} \quad s^3} \\ \hline \frac{5}{2}s^2 \quad \frac{1}{5}s^3 \quad \boxed{\frac{1}{s^2 \cdot 2/5}} \quad Z_3 \\ \hline \frac{1}{5}s^3 \quad s^4 \\ \hline \frac{1}{5}s^3 \quad \boxed{\frac{1}{s \cdot 5}} \quad Y_4 \\ \hline \emptyset \end{array}$$



Cover 2 \Rightarrow Remover polos en el infinito

[illegible]



② para poder aplicar Foster paralelo se necesita una Y

$$Y = \frac{1}{z} = \frac{5(s^2+2)}{(s^2+3)(s^2+1)} = \frac{2K_1 s}{s^2+3} + \frac{2K_2 s}{s^2+1}$$

$$Zk_3 = \lim_{s^2 \rightarrow -3} \frac{s(s^2+3)}{s} = +\frac{1}{2}$$

$$2k_1 = \lim_{s^2 \rightarrow -1} Y(s) \frac{(s^2 + 1)}{s} = \frac{1}{2}$$

$$Y(s) = \frac{1}{2s + \frac{6}{s}} + \frac{1}{2s + \frac{2}{s}}$$

