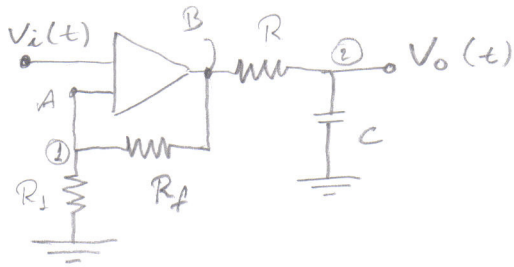


# Punto Ejercicio 6

MESSA - 2008/02

P1



$$\rightarrow V_A = V_i(t)$$

$\rightarrow$  Eo. en el nodo ①

$$\begin{array}{c} \uparrow i_A \\ \text{---} i_2 \\ \downarrow i_1 \end{array} \quad i_A + i_1 + i_2 = 0 \quad i_1 = -i_2$$

$$\rightarrow i_1 = \frac{V_i}{R_1} \Rightarrow i_2 = -\frac{V_i}{R_1}$$

$$\rightarrow V_i - R_f \cdot i_2 = V_B$$

$$V_i - R_f \left( -\frac{V_i}{R_1} \right) = V_B$$

$$V_i \left( 1 + \frac{R_f}{R_1} \right) = V_B \quad (1)$$

$$\rightarrow V_B = V_o + i_2 \cdot R$$

$\rightarrow$  Eo. en el nodo ②

$$\begin{array}{c} i_2 \text{---} i \\ \downarrow i_3 \end{array} \quad i_2 = i_3 + i^0$$

$$\rightarrow i_3 = \frac{dV_o \cdot C}{dt} = V_o \cdot sC$$

transfer.

$$\Rightarrow V_B = V_o (1 + RSC) \quad (2)$$

de (1) y (2)

$$V_i \left( 1 + \frac{R_f}{R_1} \right) = V_o (1 + RSC)$$

$$\Rightarrow \left[ H = \frac{V_o}{V_i} = \frac{\left( 1 + \frac{R_f}{R_1} \right)}{1 + RSC} \right]$$

Evaluaids

$$H = \frac{2}{1 + 10^4 \cdot \omega^6 \cdot s} = \frac{2}{1 + \omega^2 \cdot s} = \frac{200}{100 + s}$$