

No. 9 - Luis Fernando Roca - i ice Cottonieto

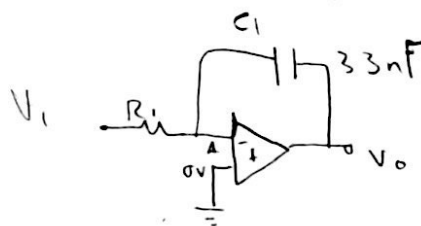
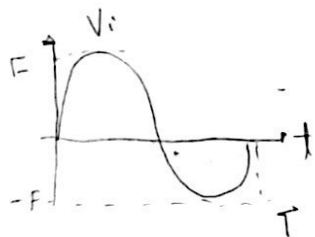
6.

$$V = 0.95 \text{ V}$$

$$R = 378 \Omega$$

$$T = 392 \text{ ns}$$

Dado  $V_m = 0.95 \text{ V}$ ,  $R_1 = 378 \Omega$ ,  $T = 392 \text{ ns}$



$$\therefore \omega = \frac{2\pi}{T} = \frac{2\pi}{392 \times 10^{-9}} = 1.578 \times 10^7 \text{ rad/s}$$

$$= 15.78 \text{ M rad/s}$$

$$\therefore V_i = V_m \sin \omega t = 0.95 \sin (15.78 \times 10^6 t)$$

La terminal del a-p. op. esta conectada a 0 volt Aplicamos RLZ al nodo A.

$$\frac{0 - V_i}{R_1} = \frac{0 - V_o}{\left(\frac{1}{j\omega C}\right)} = -V_o(j\omega)$$

$$\begin{aligned} \rightarrow V_o &= \frac{V_i}{R_1 \cdot j\omega C} = \frac{0.95 \sin(15.78 \times 10^6 t)}{(378 \times j \times 15.78 \times 10^6 \times 33 \times 10^{-9})} \\ &= \frac{4.826 \times 10^{-6} \angle -6.9^\circ}{(j)} \sin(15.78 \times 10^6 t) \end{aligned}$$

$$\begin{aligned} V_o &= -(j) 4.826 \times 10^{-6} \sin(15.78 \times 10^6 t) \\ &= 1 \angle 180^\circ \times 4.826 \sin(15.78 \times 10^6 t) \end{aligned}$$

$$= 4.826 \sin(15.78 \times 10^6 t + 270^\circ)$$

$$V_o = -4.826 \cos(15.78 \times 10^6 t) \text{ mV}$$

