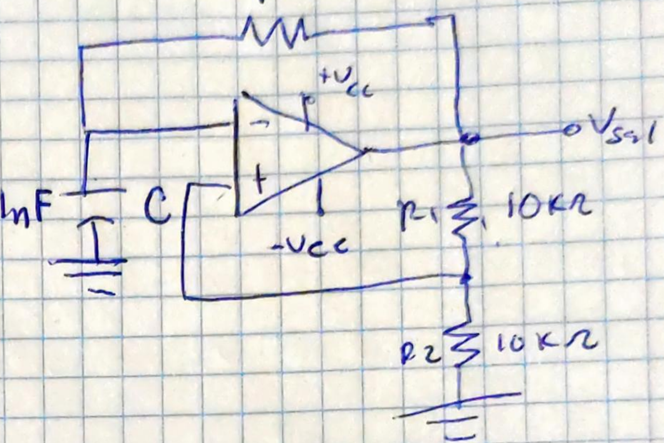
Emmanuel B.

Actividad 9

$$PDS = \frac{a v_{pp}}{2} = +4.5V$$

$$PDI = \frac{-a v_{pp}}{2} = -4.5V$$



$$\beta = \frac{R_2}{R_1 + R_2} = \frac{10K\Omega}{20K\Omega} = 0.5$$

$$+V_{sat} = \frac{PDS}{\beta} = \frac{4.5V}{0.5} = +9V$$

$$-V_{sat} = \frac{PDI}{\beta} = \frac{-4.5V}{0.5} = -9V$$

$$+V_{cc} = \frac{+V_{sat}}{0.9} = \frac{9V}{0.9} = 10V$$

$$-V_{cc} = \frac{-V_{sat}}{0.9} = \frac{-9V}{0.9} = -10V$$

$$V_{sal} = +V_{sat} - (-V_{sat}) = 9V - (-9V) = 18 V_{pp}$$

$$F = 100KHz \Rightarrow T = \frac{1}{F} = \frac{1}{100KHz} = 10\mu s$$

$$T = 2RC\ln\left(\frac{1+\beta}{1-\beta}\right) = 2RC\ln\left(\frac{1+.5}{1-.5}\right) = 2RC\ln(3)$$

$$\Rightarrow R = \frac{T}{2C\ln(3)} = \frac{10\mu s}{2 \cdot 1nF \cdot \ln(3)} = \boxed{4.55 K\Omega}$$