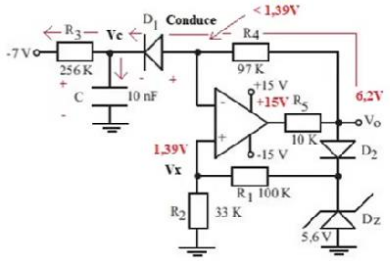
Ejercicio 12 Guía 4



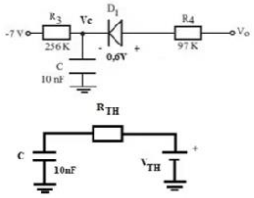
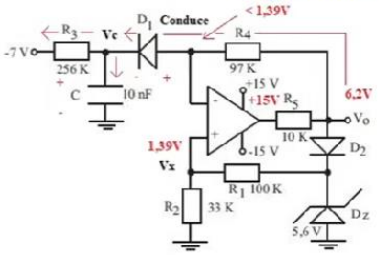


Figura 12: Ejercicio 12.

$$V_{TH} = \frac{6{,}2V + 7V - 0{,}6V}{256K + 97K} 256K - 7V = 2{,}14V$$

$$R_{TH} = 256K||97K = 70{,}35K \quad \rightarrow \quad \tau_1 = 70{,}35K * 10nF = 703{,}5\mu s$$

Ejercicio 12 Guía 4



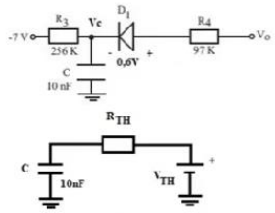


Figura 12: Ejercicio 12.

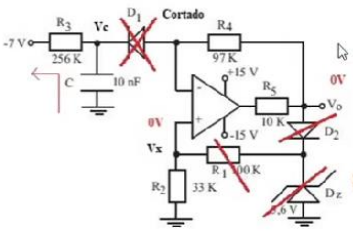
$$V_{TH} = 2{,}14V \quad \tau_1 = 703{,}5\mu s$$

$$Si\ V_c(t=0) = 0V\ \ y\ \ V_o = 6{,}2V \ \rightarrow\ V_c(t) = 2{,}14V + (0V - 2{,}14V)e^{-\frac{t}{\tau_1}}$$

$$Cuando\ V_c(t_1) = 1{,}39V - 0{,}6V = 0{,}79V, el\ diodo\ se\ corta$$

$$V_c(t_1) = 0{,}79V = 2{,}14V\left(1 - e^{-\frac{t_1}{\tau_1}}\right) \rightarrow t_1 = 324{,}1\mu s$$

Ejercicio 12 Guía 4



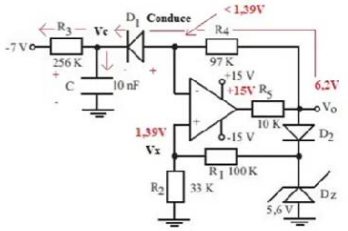
$$t' = t - t_1 \ , \ \tau_2 = 256K * 10nF = 2{,}56mS$$

Figura 12: Ejercicio 12.

$$V_c(t'=0) = 0{,}79V\ \ y\ \ V_o = 0V \ \rightarrow\ V_c(t') = -7V + (0{,}79V + 7V)e^{-\frac{t'}{\tau_2}}$$

$$V_c(t'=t_2) = -0{,}6V = -7V + (0{,}79V + 7V)e^{-\frac{t_2}{\tau_2}} \rightarrow t_2 = 503{,}15\mu s$$

Ejercicio 12 Guía 4



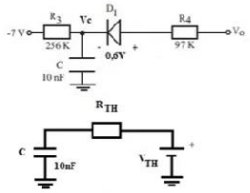


Figura 12: Ejercicio 12.

$$V_{TH} = 2{,}14V \quad \tau_1 = 703{,}5\mu s$$

$$t'' = t' - t_2$$

$$V_c(t'' = 0) = -0{,}6V \;\; y \;\; V_o = 6{,}2V \;\rightarrow\; V_c(t'') = 2{,}14V + (-0{,}6V - 2{,}14V)e^{-\frac{t''}{\tau_1}}$$

$$V_c(t'' = t_3) = 0{,}79V = 2{,}14V + (-0{,}6V - 2{,}14V)e^{-\frac{t_3}{\tau_1}} \rightarrow t_3 = 498\mu s$$

Ejercicio 12 Guía 4