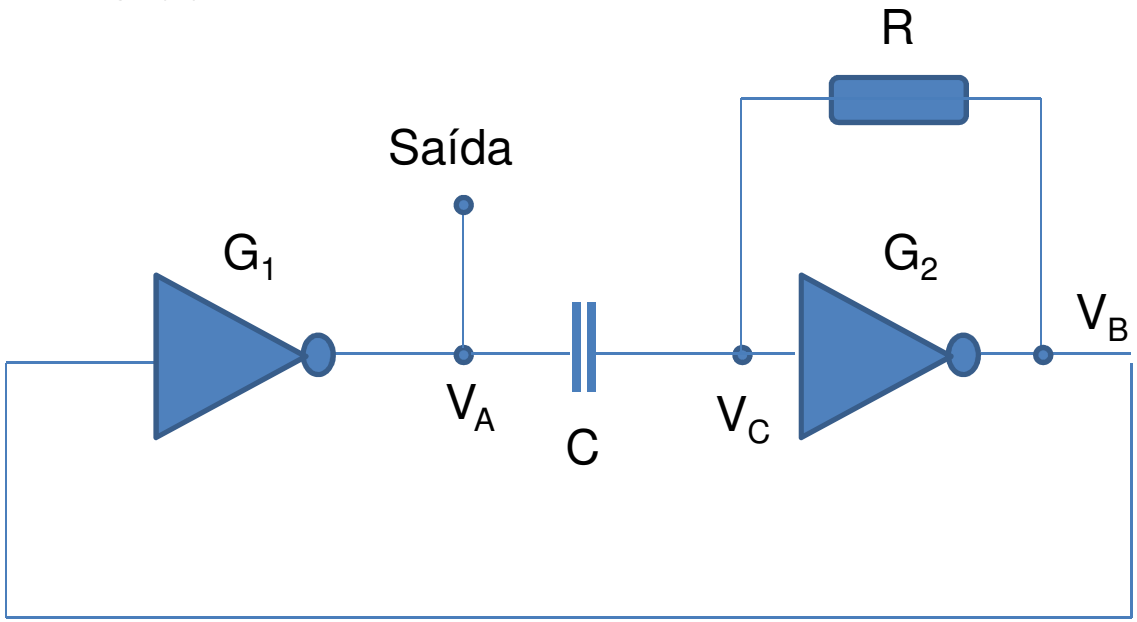
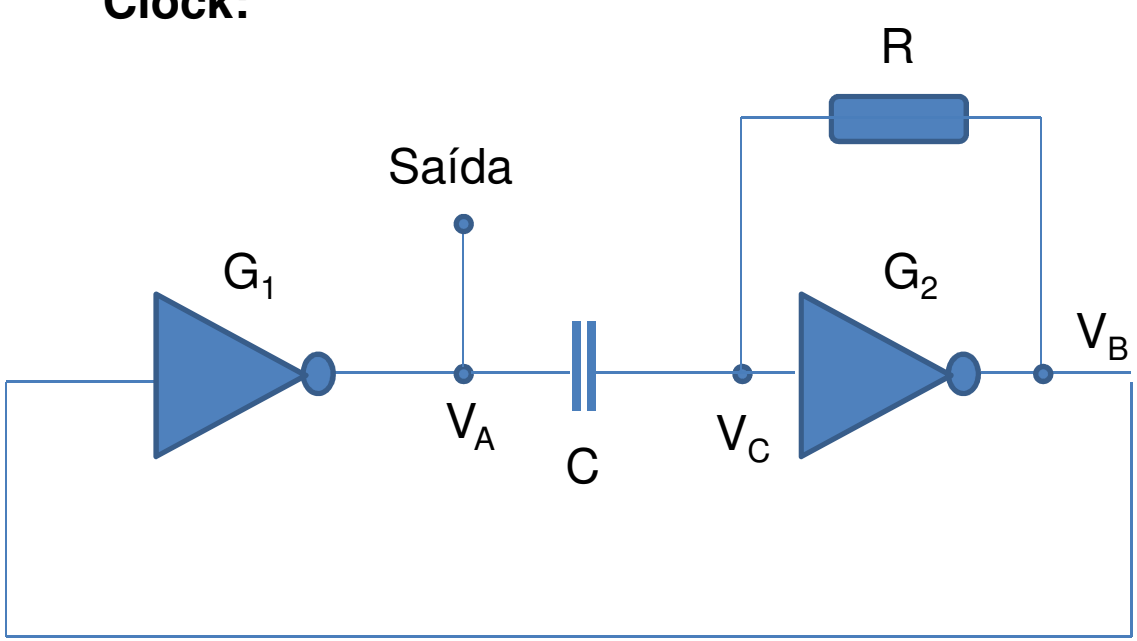
Aula 11

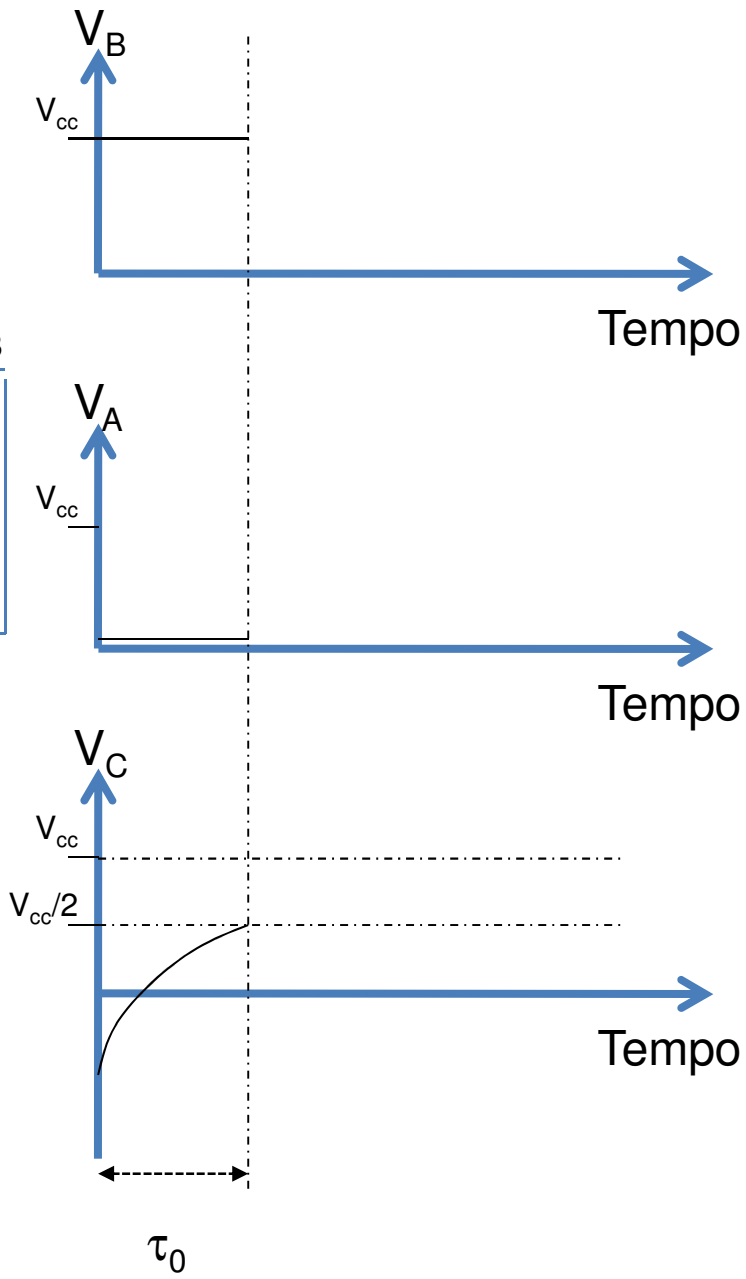
Digital III

Clock:



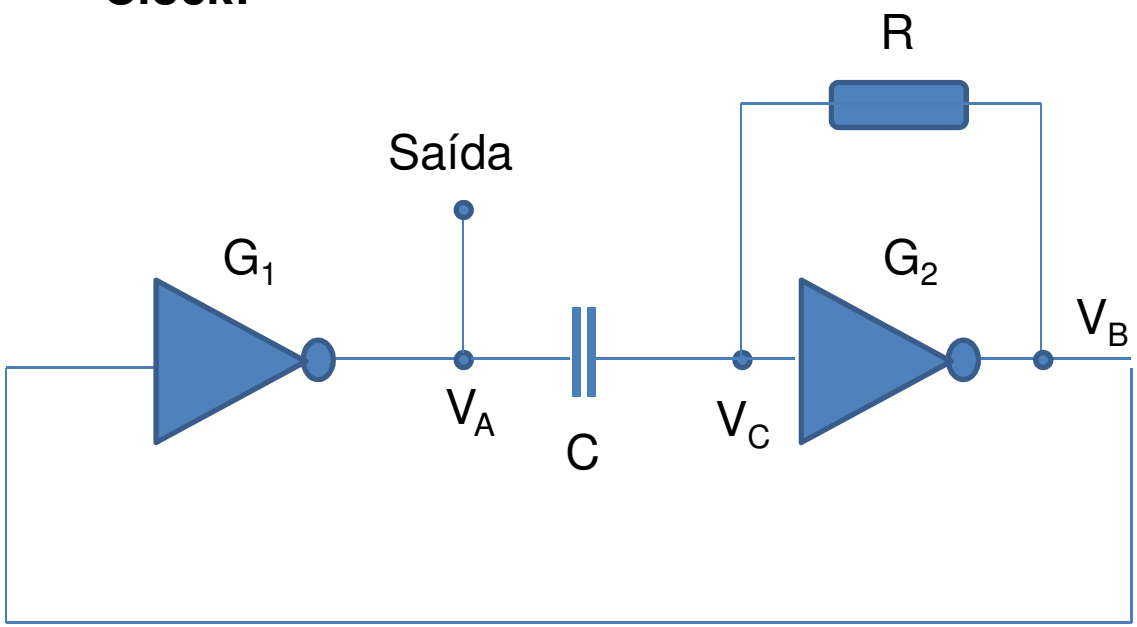
Clock:

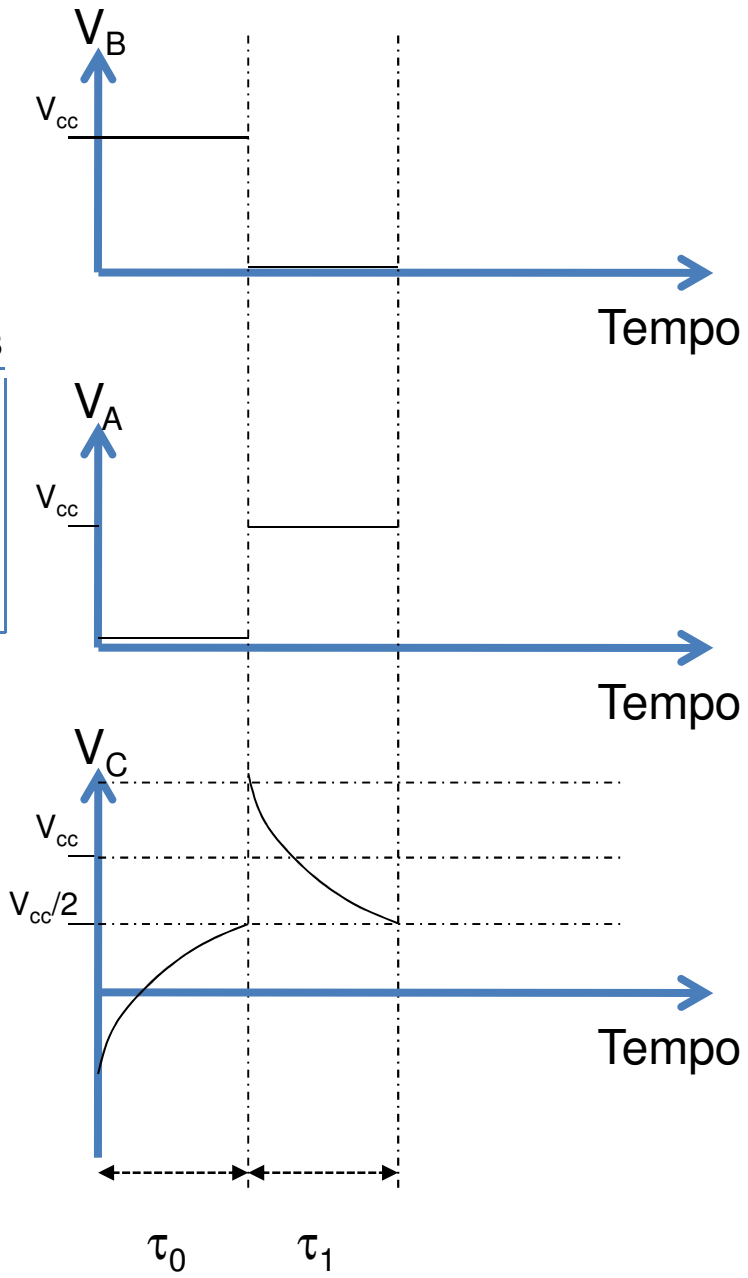




- Saída de $G_2 = 1 \rightarrow$ Saída de $G_1 = 0$.
- Como $V_A \neq V_B$ o capacitor carrega através da resitência.
- Qdo $V_C \approx V_{cc}/2 \rightarrow$ sinal lógico de G_2 muda.
- Isto demora τ_0 para acontecer.

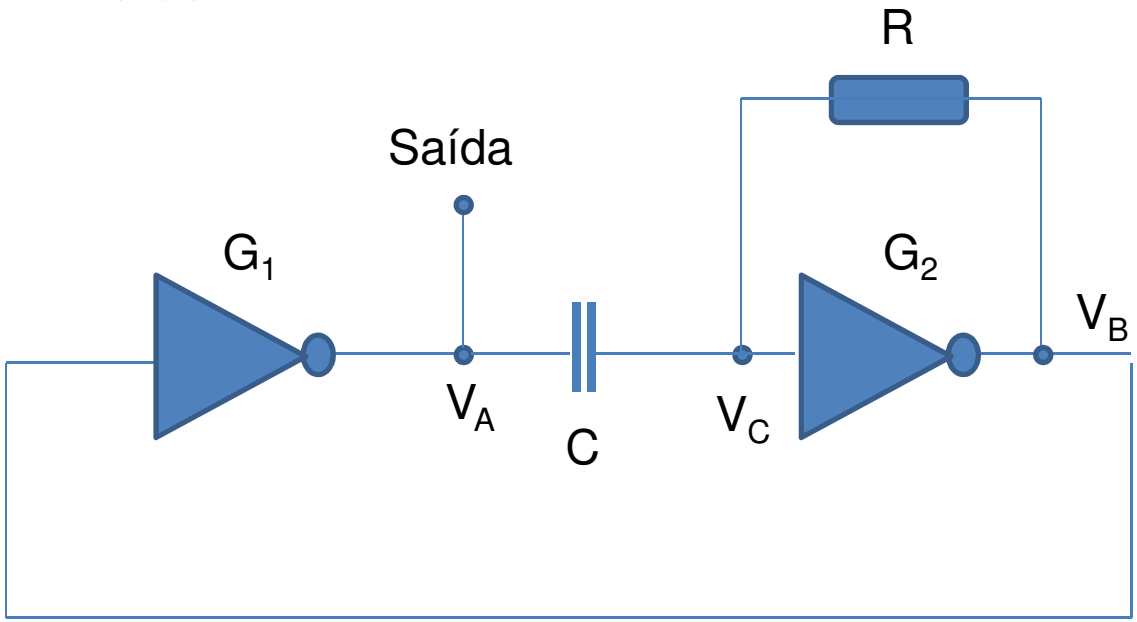
Clock:

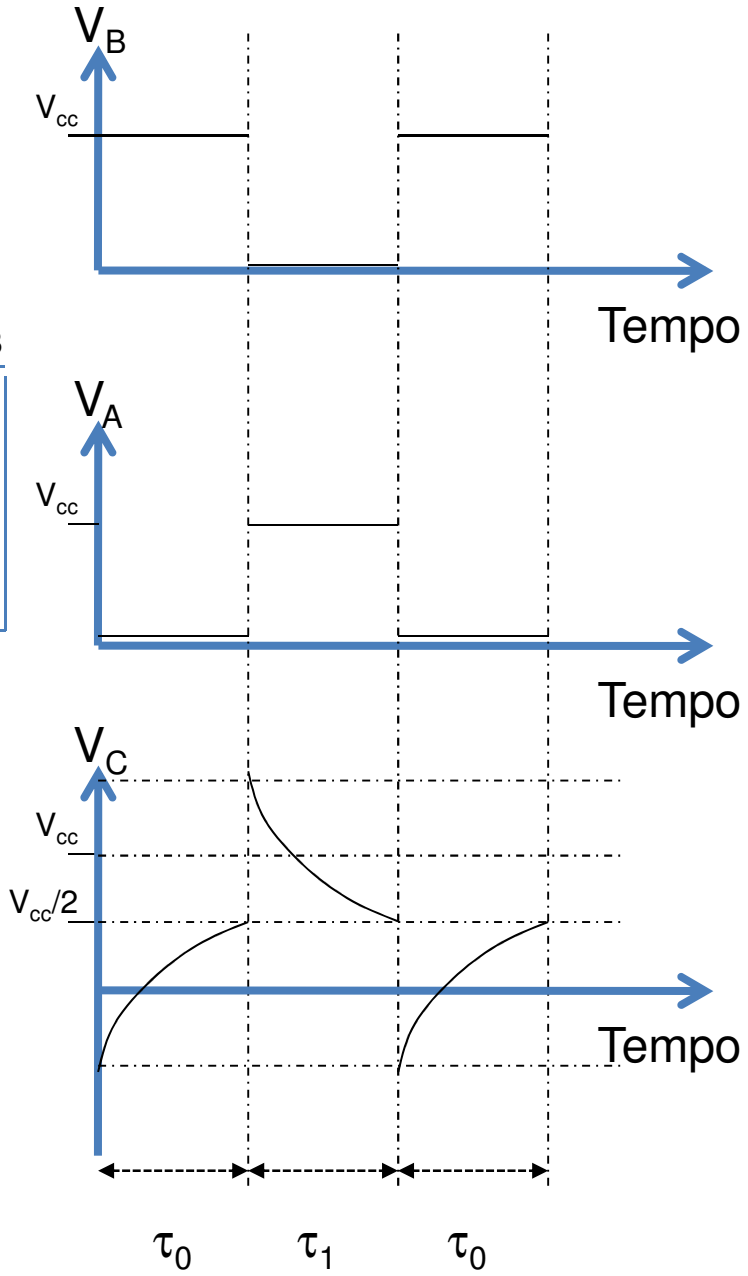




- Saída de $G_2 = 0 \rightarrow$ Saída de $G_1 = 1$.
- V_A assume o valor 1.
- Isto faz com que $V_C \approx V_{cc} + V_{cc}/2$.
- Capacitor agora descarrega até $V_{cc}/2$, onde novamente faz o sinal lógico de G_2 mudar.
- Isto demora τ_1 para acontecer.

Clock:

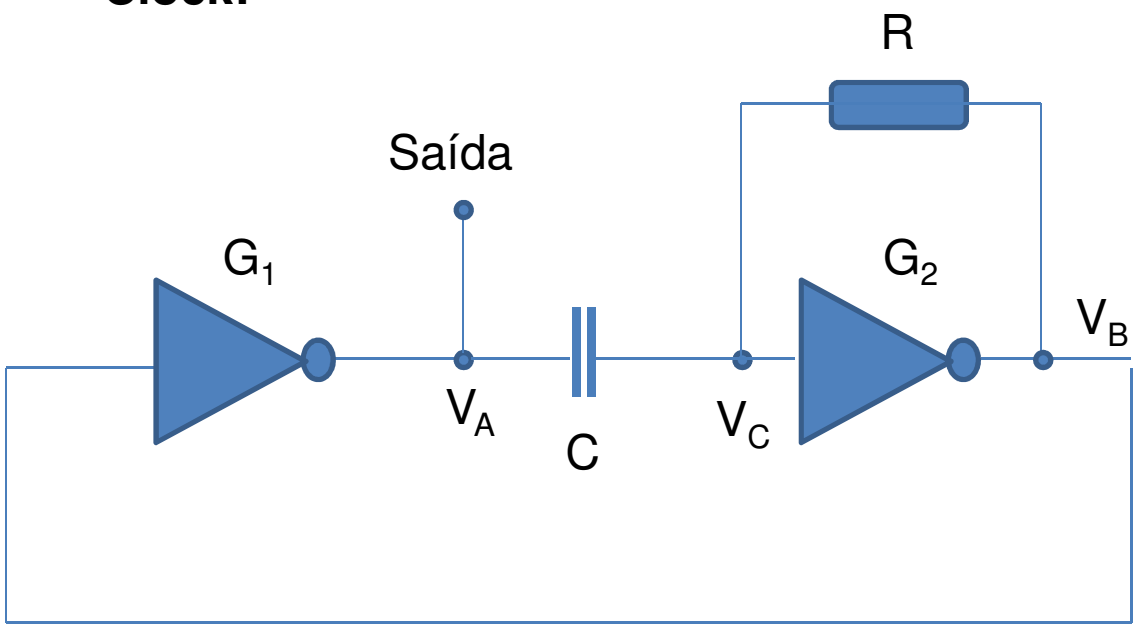


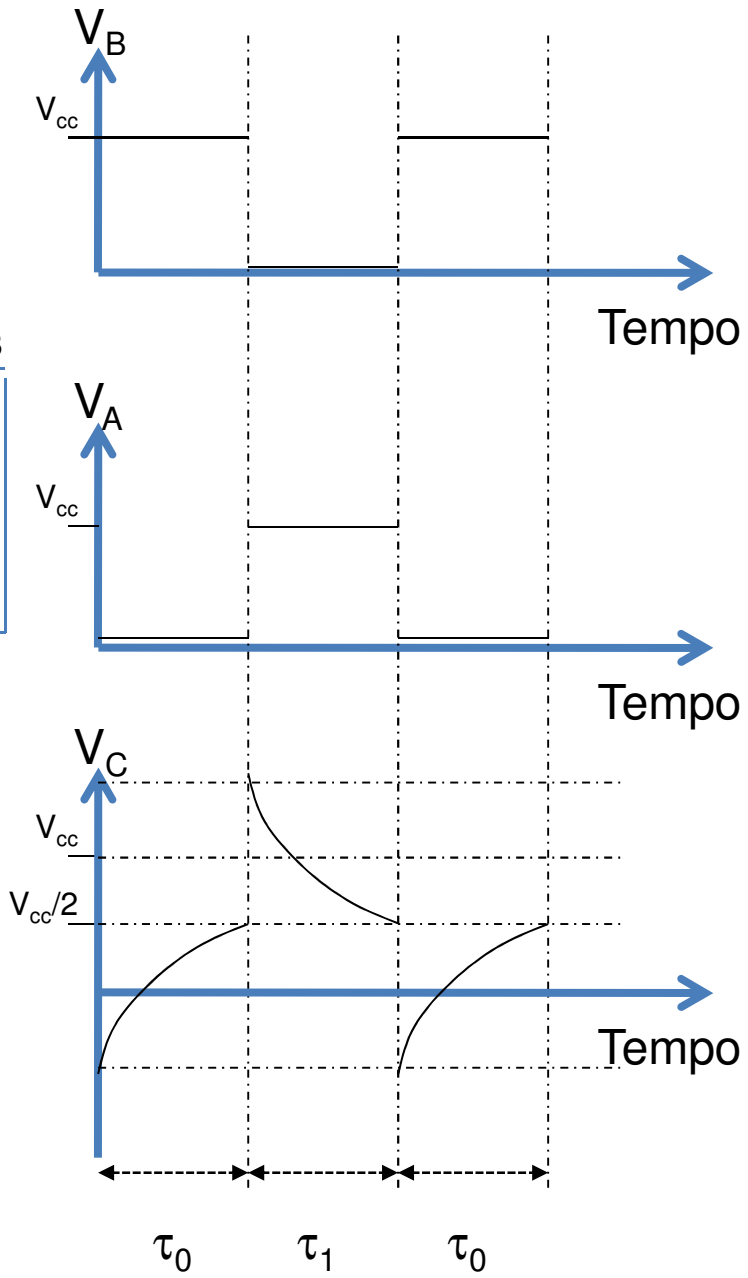


$$\tau_0 = \tau_1 = \text{Ln}(3)\ RC$$

- Saída de $G_2 = 0 \rightarrow$ Saída de $G_1 = 1$.
- V_A assume o valor 1.
- Isto faz com que sofra uma variação de V_C, mudando seu valor para $V_C \approx - V_{cc}/2$.
- Capacitor agora carrega até $V_{cc}/2$, repetindo o processo.

Clock:





$$\tau_0 = \tau_1 = \text{Ln}(3)\ RC$$

Atividade:

1) Construir o circuito acima para oscilar na frequência de 2kHz.
2) Verificar as voltagens com o osciloscópio nos pontos V_A, V_B e V_C.