

# Astable Multivibrator

## Simulation Exercise:

- Write ngspice netlist for the astable multivibrator circuit shown in Fig. 1. Take values as:  $R = 1K\Omega$ ,  $C = 1\mu F$ ,  $R_1 = 1K\Omega$  and  $R_2 = 2K\Omega$ .
  - Run the simulation. Observe the waveform across  $C$  and  $V_{OUT}$ . Measure the frequency of the output waveform. Verify with the theoretically obtained value.
- Vary the value of  $R$  to  $2K\Omega$ ,  $820\Omega$ . Repeat steps mentioned in Q1 b.
  - Vary the value of  $C$  to  $0.47\mu F$ ,  $2.2\mu F$ . Repeat steps mentioned in Q1 b.
  - Change the resistor  $R_1$  to  $2K\Omega$ . What do you observe? Why? Explain your observations.

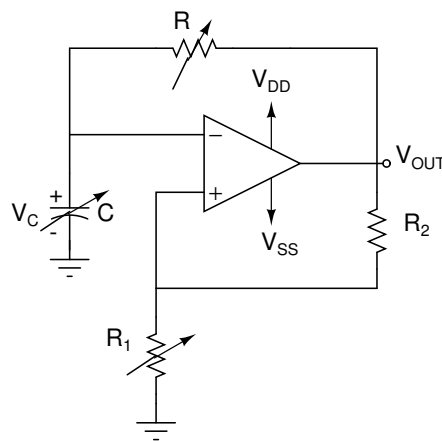


Figure 1: Astable Multivibrator