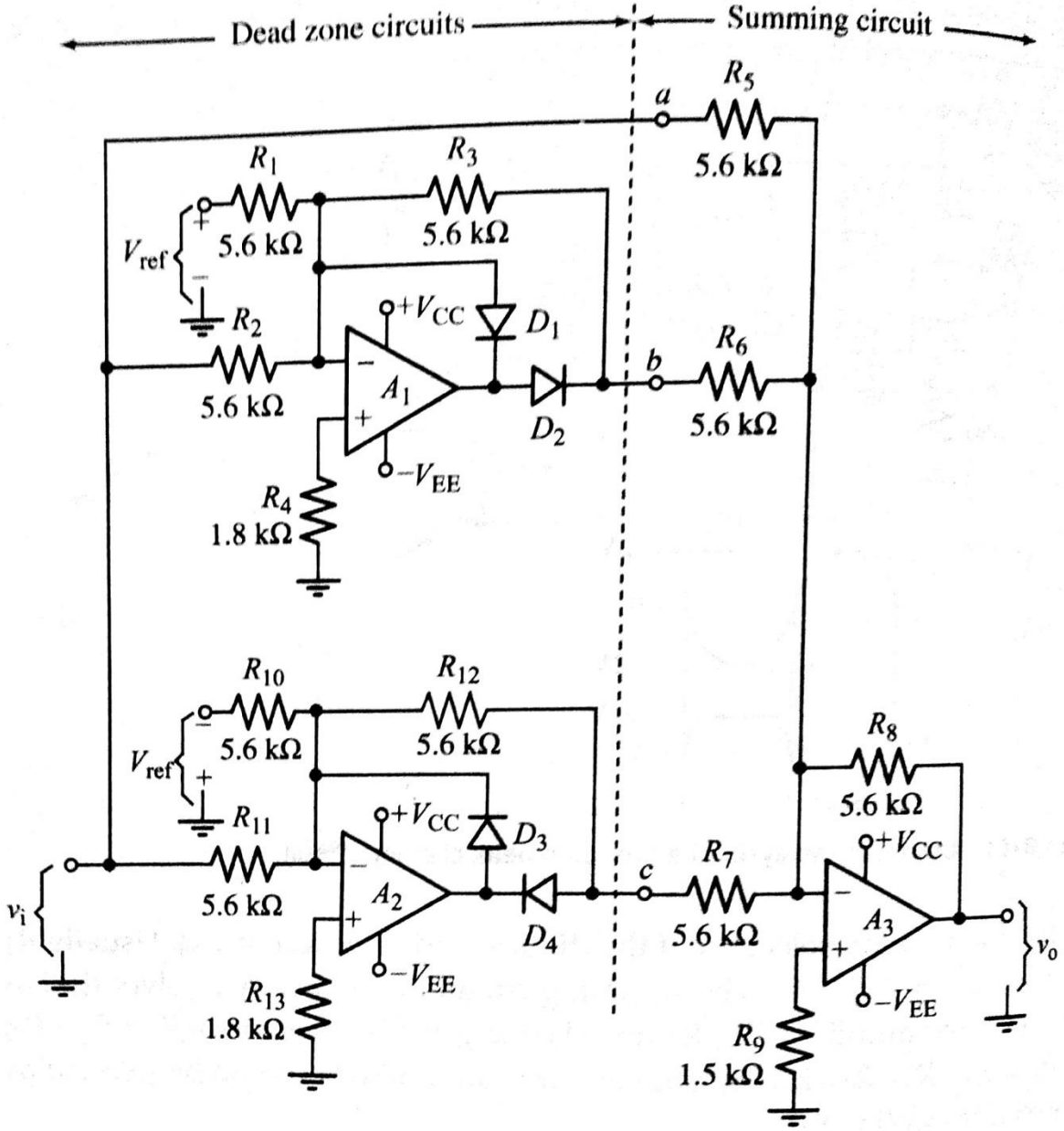
Title of the experiment:

Precision plus/minus clipper

Theory:

Precision plus/minus clipper consists of two dead zone circuits and a summing circuit with the polarities of its diodes and reference voltage reversed. Input signal at the terminal a and the output signal from dead zone circuits at terminals b and c are summed by the summing circuit to give required output.



Schematic diagram:

The circuit schematic of precision plus/minus clipper in eSim is as shown below:

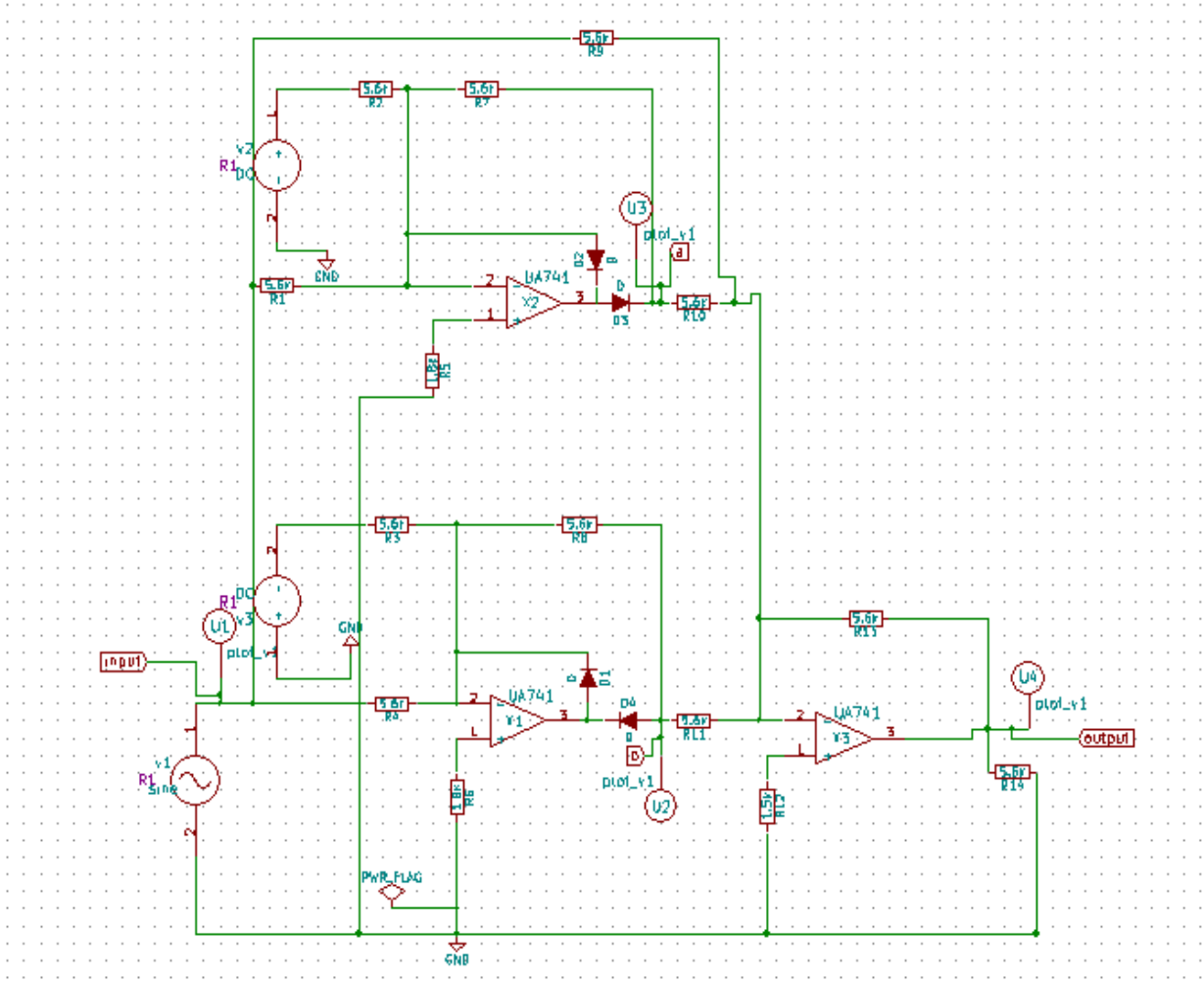


Figure1: precision plus/minus clipper

Simulation results:

1. Ngspice plots:

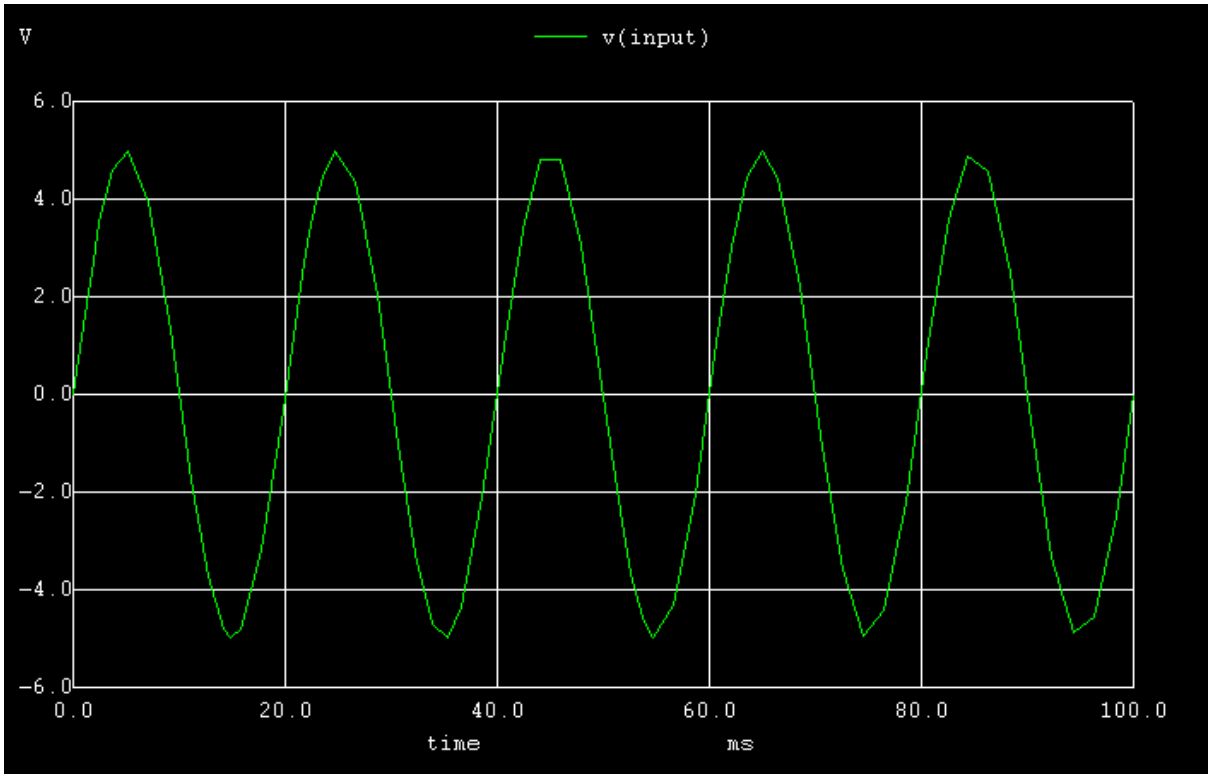


Figure 2: Ngspice input plot

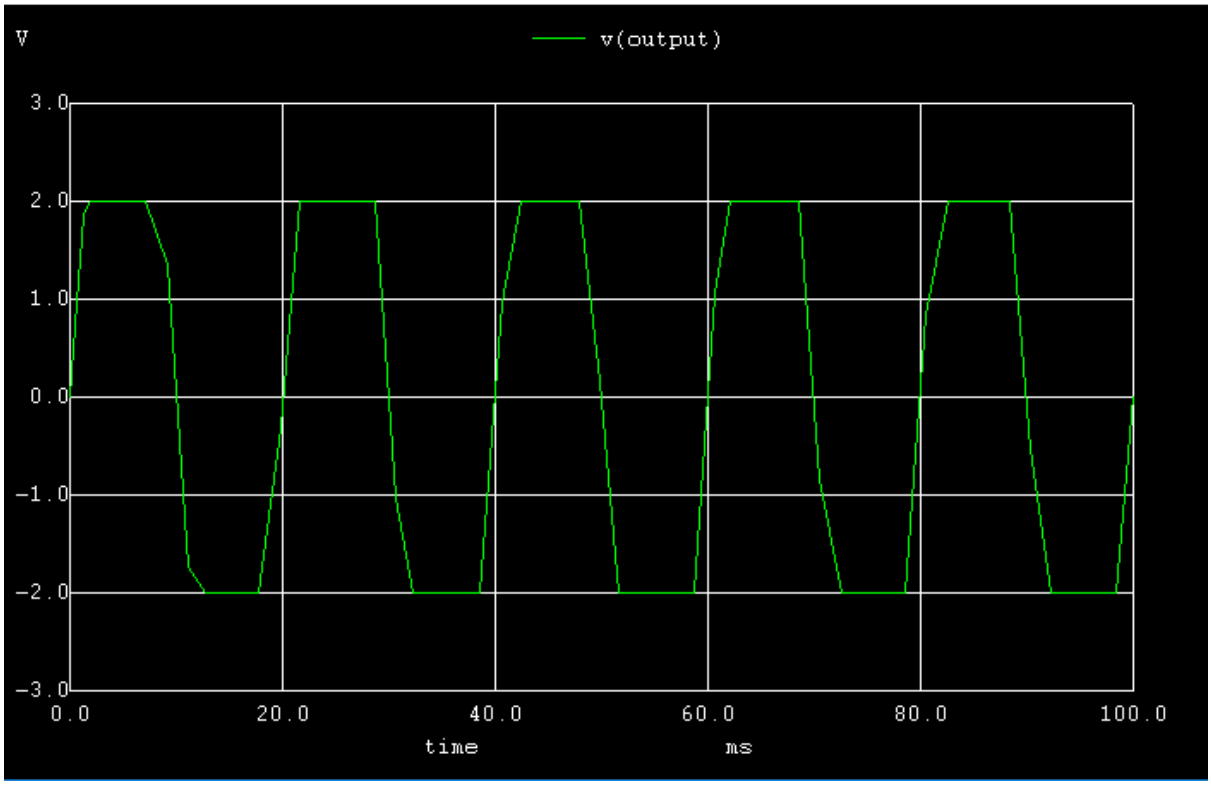


Figure 3: Ngspice output plot

2. Python plots:

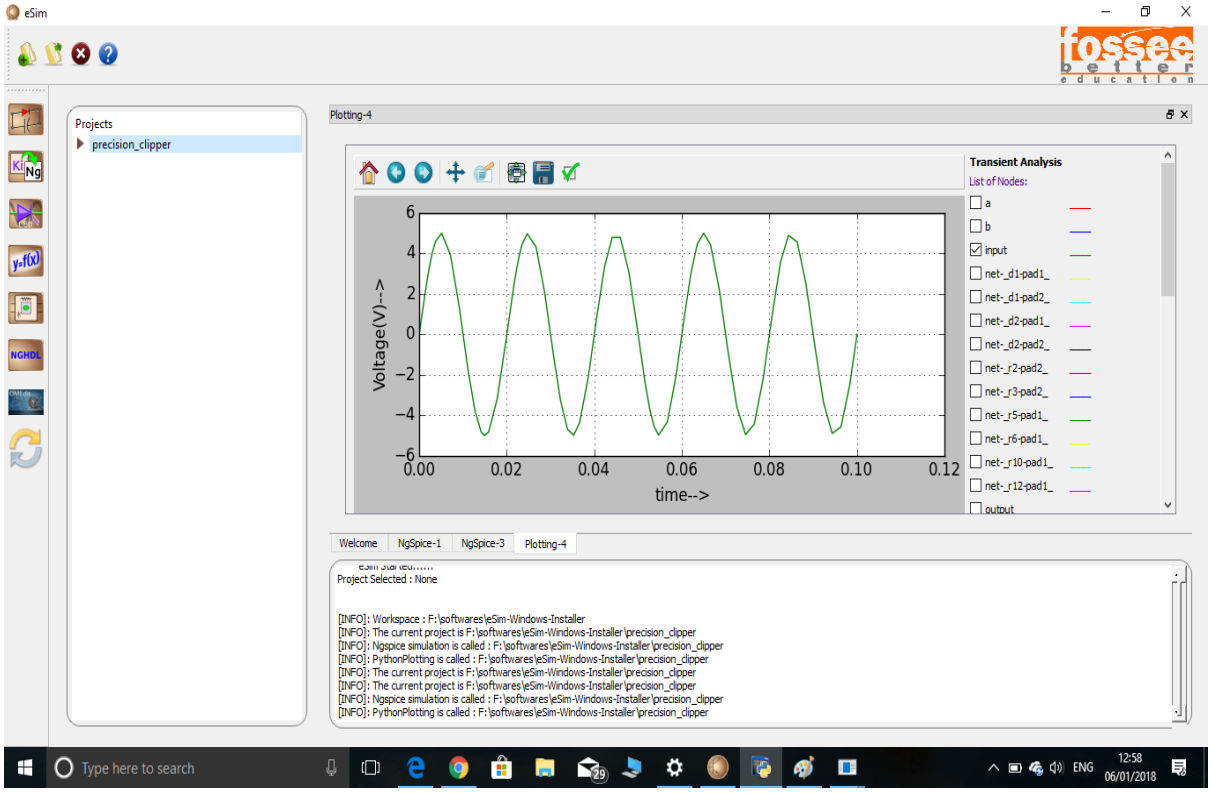


Figure 4: Python plot input

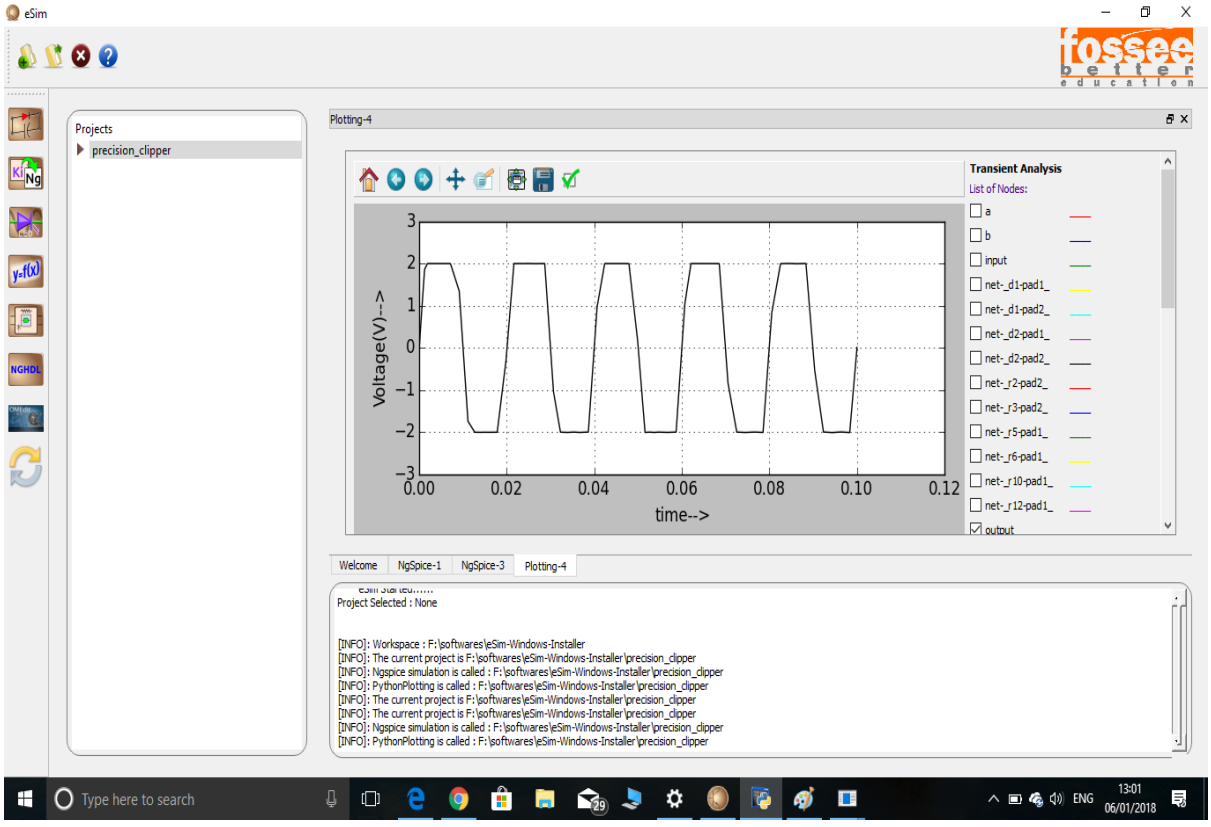


Figure 5: Python plot output

Conclusion:

Thus, we have studies the operation of precision plus/minus clipper using eSim and we get the appropriate waveforms.

References:

Operational Amplifiers and linear ICs THIRD EDITION by DAVID A. BELL