

Title of the experiment:

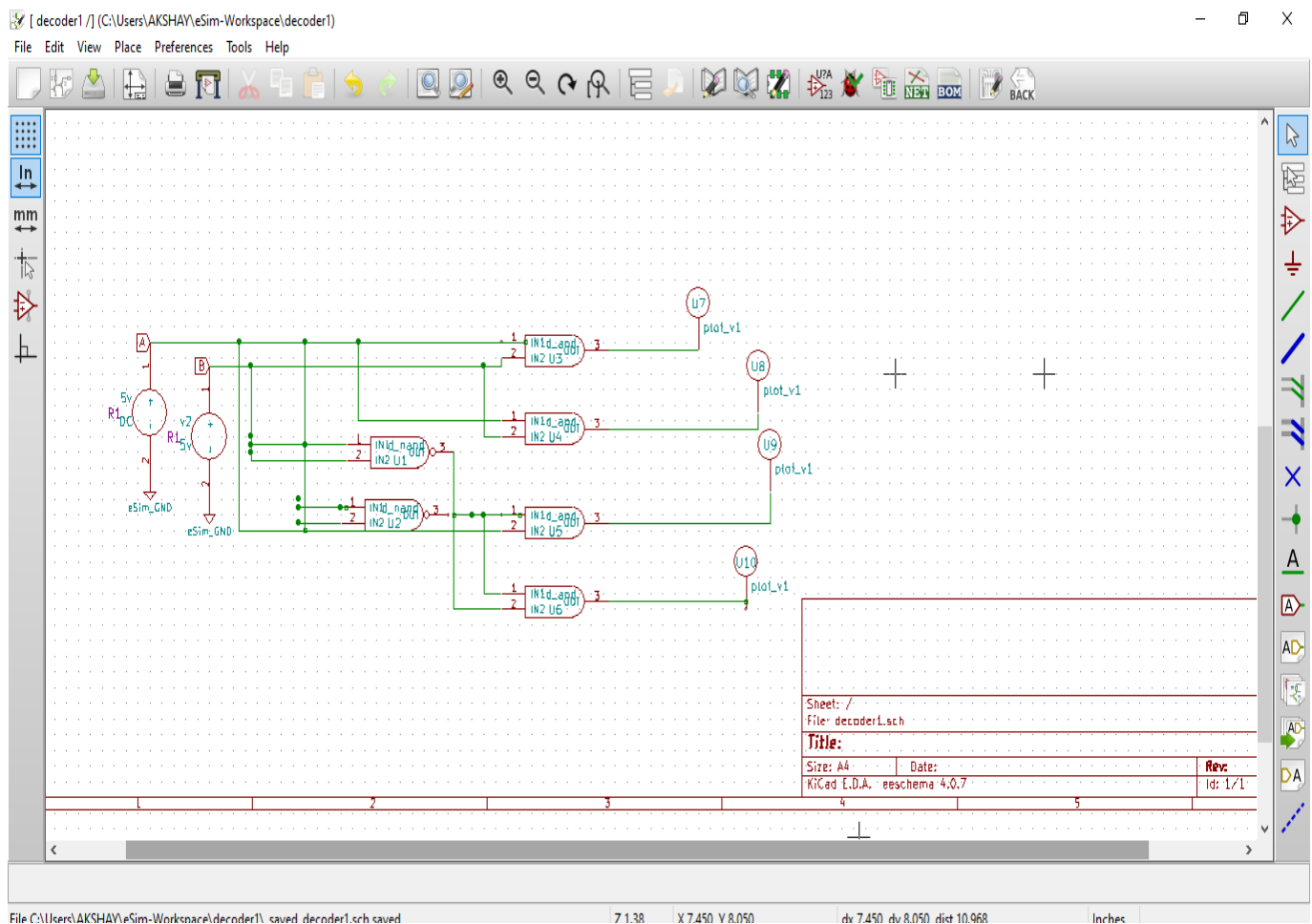
Analysis of a binary decoder using eSim.

Theory:

In digital electronics, a binary decoder is a combinational logic circuit that converts binary information from the n coded inputs to a maximum of 2^n unique outputs. They are used in a wide variety of applications, including data demultiplexing, seven segment displays, and memory address decoding.

Schematic Diagram:

The circuit schematic of the decoder in eSim is as shown below:



Simulation Results :
1. Ngspice Plots

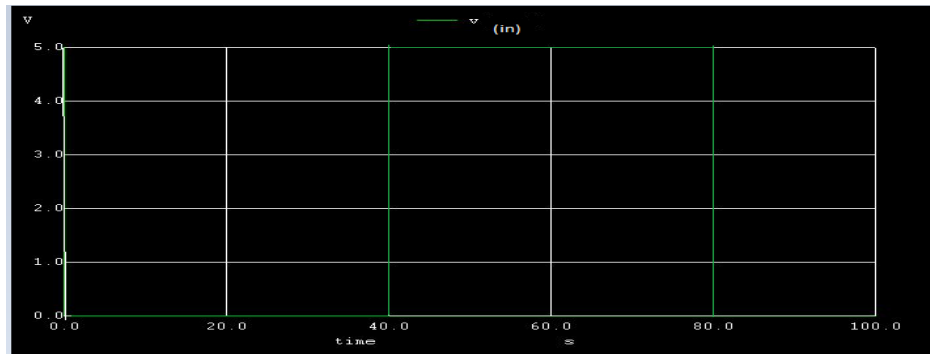


Figure 2: Ngspice Input Plot

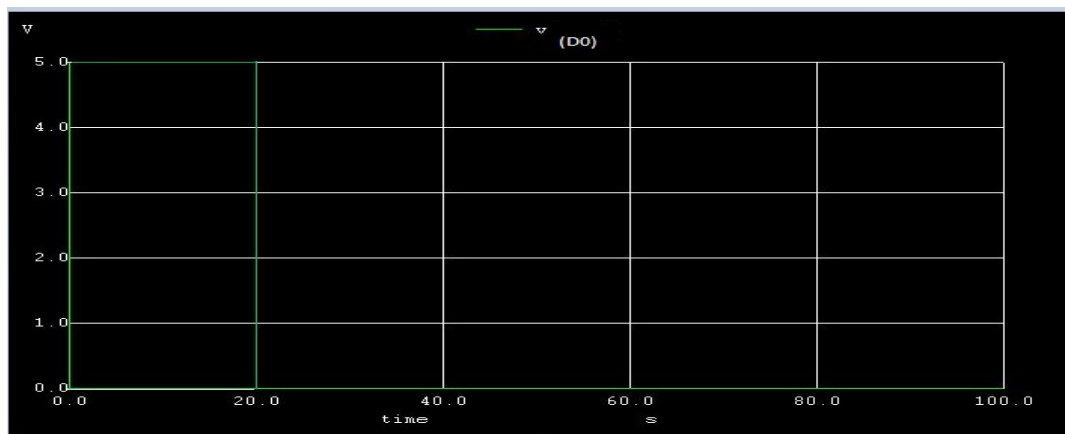


Figure 3: Ngspice Output Plot

Conclusion :

Thus, we have studied the outputs of a Decoder using eSim and we get the appropriate waveforms.

References :

https://en.wikipedia.org/wiki/Binary_decoder