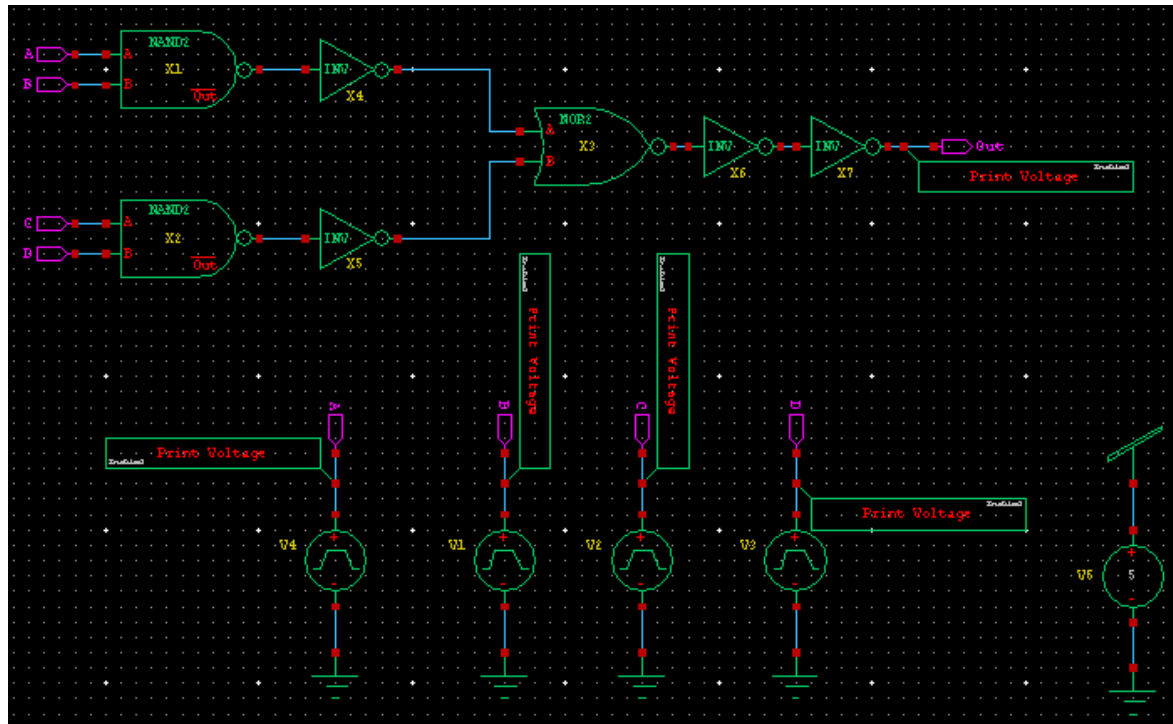


# **CND 121: Introduction to Silicon Process & VLSI**

**Lab Manual Revision #: 4**

# 1. AOI22

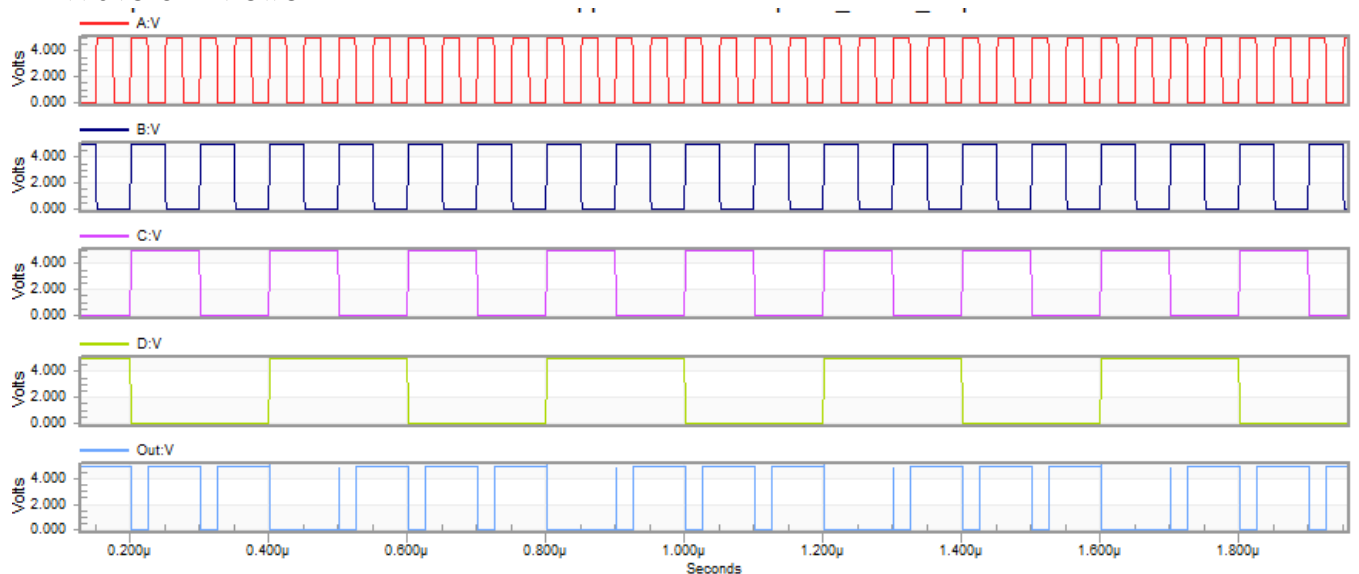
- Add screenshot from your **schematic**:



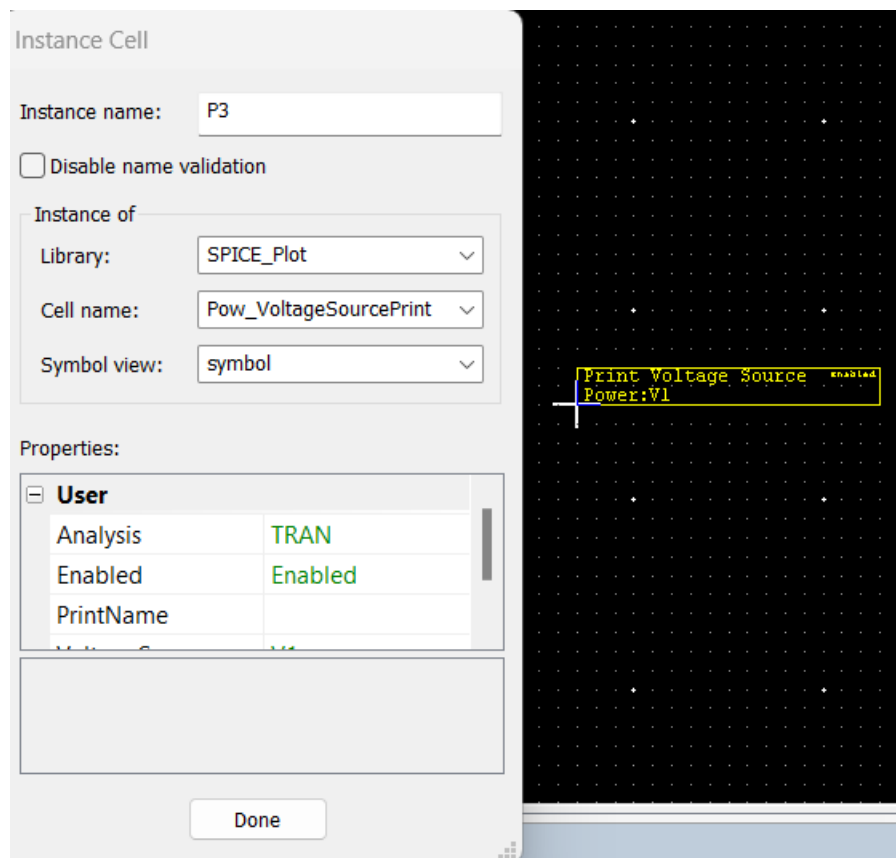
Apply pulse sources for all inputs with the following periods:

- A period = 50nsec
- B period = 100nsec
- C period = 200nsec
- D period = 4000nsec

- Waveform viewer:



- You can find Print Voltage Source Power from the section below.



- You can print the maximum and minimum power using `.power` below.

```

AOI_TB
Mpmos25_4 N_2 B Vdd Vdd PMOS25 w=1.25u l=250n m=1 ad=812.5f pd=3.8u as=812.5f ps=3.8u nrd=520m nrs=520m $ $x=6800 $y=5300 $w=400 $h=600
.ends

***** Top Level *****
XX1 A B C D Out Gnd Vdd AOI22 $ $x=5450 $y=3800 $w=1100 $h=600
VV5 Vdd Gnd DC 5 $ $x=5700 $y=2500 $w=400 $h=600
VV1 B Gnd PULSE(0 5 0 5n 5n 45n 100n) $ $x=7400 $y=3500 $w=400 $h=600
VV2 C Gnd PULSE(0 5 0 5n 5n 195n 400n) $ $x=8100 $y=3500 $w=400 $h=600
VV3 D Gnd PULSE(0 5 0 5n 5n 20n 50n) $ $x=8800 $y=3500 $w=400 $h=600
VV4 A Gnd PULSE(0 5 0 5n 5n 95n 200n) $ $x=6700 $y=3500 $w=400 $h=600
.PLOT V(Out) $ $x=6150 $y=4950 $w=300 $h=1500 $r=270
.PLOT TRAN P(VV5) $ $x=7600 $y=1900 $w=1600 $h=200

***** Simulation Settings - Analysis Section *****
.tran 100p 1000n start=0
.power
***** Simulation Settings - Additional SPICE Commands *****

.end
  
```