University of California, Irvine Fall 2016

EECS 119

Project #1

Inverter and Oscillator

1. Design an inverter to get $N_{MH}=N_{ML}$ and $T_{PLH}=T_{PHL}$. Draw the **layout** of the designed inverter.

2. Obtain the noise margins and the propagation delay time by simulating the **layout** and plotting dynamic and static characteristics.

3. Design an oscillator by placing 5 inverters designed above in a closed loop.

4. Run a simulation and plot the waveform at the output of each node. Compare the frequency of the generated signal with the expected frequency based upon the obtained t_p of the inverter.

Report: Submit the layout, results of the simulation, design calculations, etc. in the form of a report.

Deadline: Two Weeks