

You are allowed a calculator and a
4x6" note card one side **hand written** (no photo copying)
You will turn this in with the Exam

Exam II Content
4 Problem Sections

MOSFET Symbol, Terminal Names, Relevant Voltage and Current Orientations, Types, Structure.

NMOS vs. PMOS

Substrate, Wells, Silicon Dioxide, Electrodes.

Multiple Choice, Short Answer.

Basic MOSFET Theory of Operation.

Channel Shape.

Multiple Choice, Short Answer.

MOSFET Modes and Equations.

Short Answer.

DC analysis of MOSFET Circuits.

5 Steps. Equivalent NMOS-PMOS Circuits.

Circuit Analysis.

Small Signal MOSFET Analysis.

Circuit Analysis.

Inverters Static Properties (V_{OH} , V_{OL} , V_{IH} , V_{IL} , NML , NMH , NM)

Given a curve find these values.

NMOS, PMOS, CMOS Inverters.

Progression of operating modes as v_{IN} goes from 0 to V_{DD} .

Inverters (other LOGIC) Dynamic Properties (Power and Timing and Area). Transition and Propagation Delays.

Given a timing curve find transition/propagation times.

Short Answer. Multiple Choice.

CMOS Logic Design and Sizing.

Logic Design – Given a function find the circuit. Given a circuit determine the function.

Find sizes in terms of an inverter (n and p).

Sequential Logic and Memories

Short Answer. Review the slides.