

Homework #2: Static CMOS combinational circuits

ECEn 451

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1. Draw a transistor-level static CMOS schematic using the minimum number of transistors for each of the following gates (you may need to include inverters; remember to label all inputs, outputs, and supply rails):
 - a) OAI221: $\overline{(A+B)(C+D)}E$
 - b) Minority: $\overline{AB+BC+AC}$ (use only 10 transistors total)
 - c) XNOR2
 - d) $\overline{(A+B)(C+D)}$
 - e) $\overline{A}B+(A+B)\overline{C}$
2. Why are complementary CMOS gates inverting?