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**COE 360, Principles of VLSI Design, Term 982
Quiz# 3**

Date: Monday, April 5

(I) Assuming NMOS enhancement transistor threshold voltage V_{tn} of 1.0v, depletion transistor threshold voltage V_{td} of -2.0v, and PMOS enhancement transistor threshold voltage V_{tp} of -1.0 v, write down the voltages of the indicated nodes below. Assume that the body effect is negligible, and $W/L=2$ for all transistors.

(II) An NMOS transistor is measured to have a drain current of 4mA at $V_{GS}=V_{DS}=9v$, and of 1 mA at $V_{GS}=V_{DS}=5v$. Determine the values of β and V_{tn} for the transistor.