

Tutorial #6

MOS Device Data.

$$\mu_N C_{ox} = 50 \mu A/V^2, \quad \mu_P C_{ox} = 25 \mu A/V^2, \quad V_{Ton} = 1V, \quad V_{Top} = -1V, \quad -2\phi_p = 0.84V$$

$$2\phi_n = 0.84V, \quad \gamma_n = 0.6V^{1/2}, \quad \gamma_p = 0.6V^{1/2}, \quad \lambda_n = \frac{0.1}{L} V^{-1}, \quad \lambda_p = \frac{0.1 \mu m}{L} V^{-1} \quad [L \text{ in } \mu m]$$

1. Given an PMOS inverter shown in Figure T7.1 with a pull down resistor of 10 k Ω and $V_{DD}=5.0$ V. Assume the bulk is tied to the source.
 - (a) Find V_{OH} with $(W/L) = (10 \mu m / 1 \mu m)$.
 - (b) Calculate NM_H and NM_L using the simplified hand calculation presented in lecture.

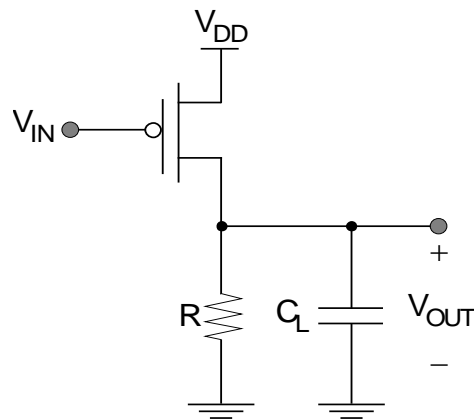


Figure T7.1

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