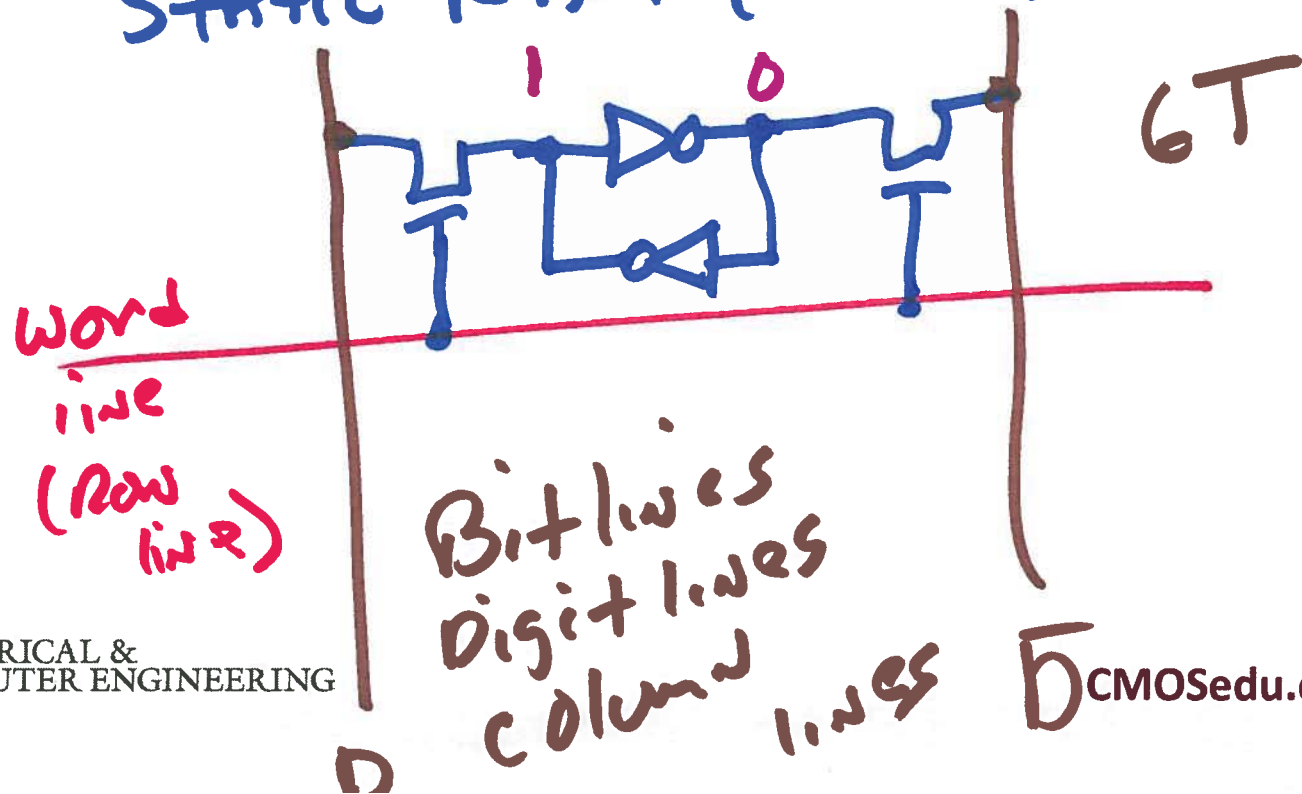


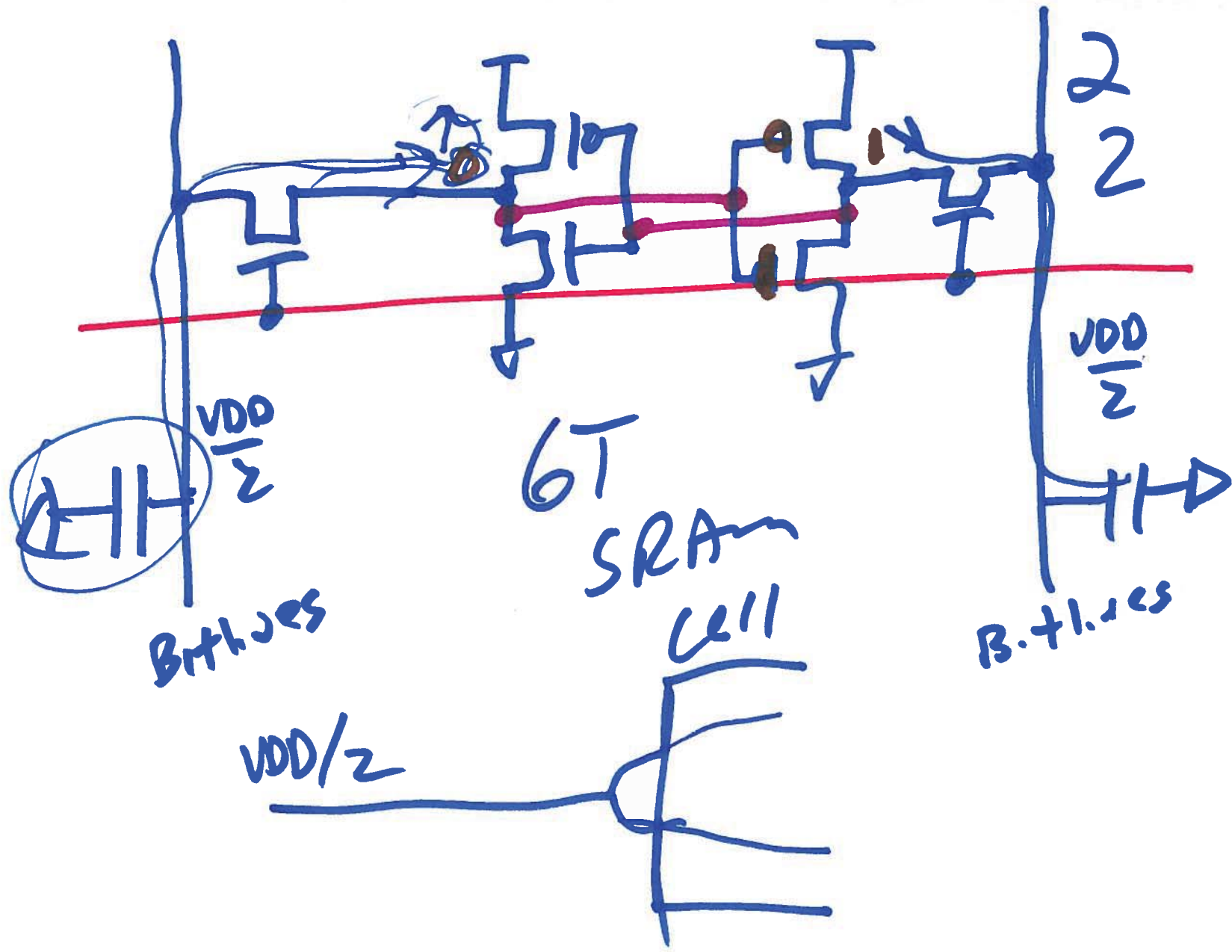
EE 421/ECG 621  
Digital IC Design

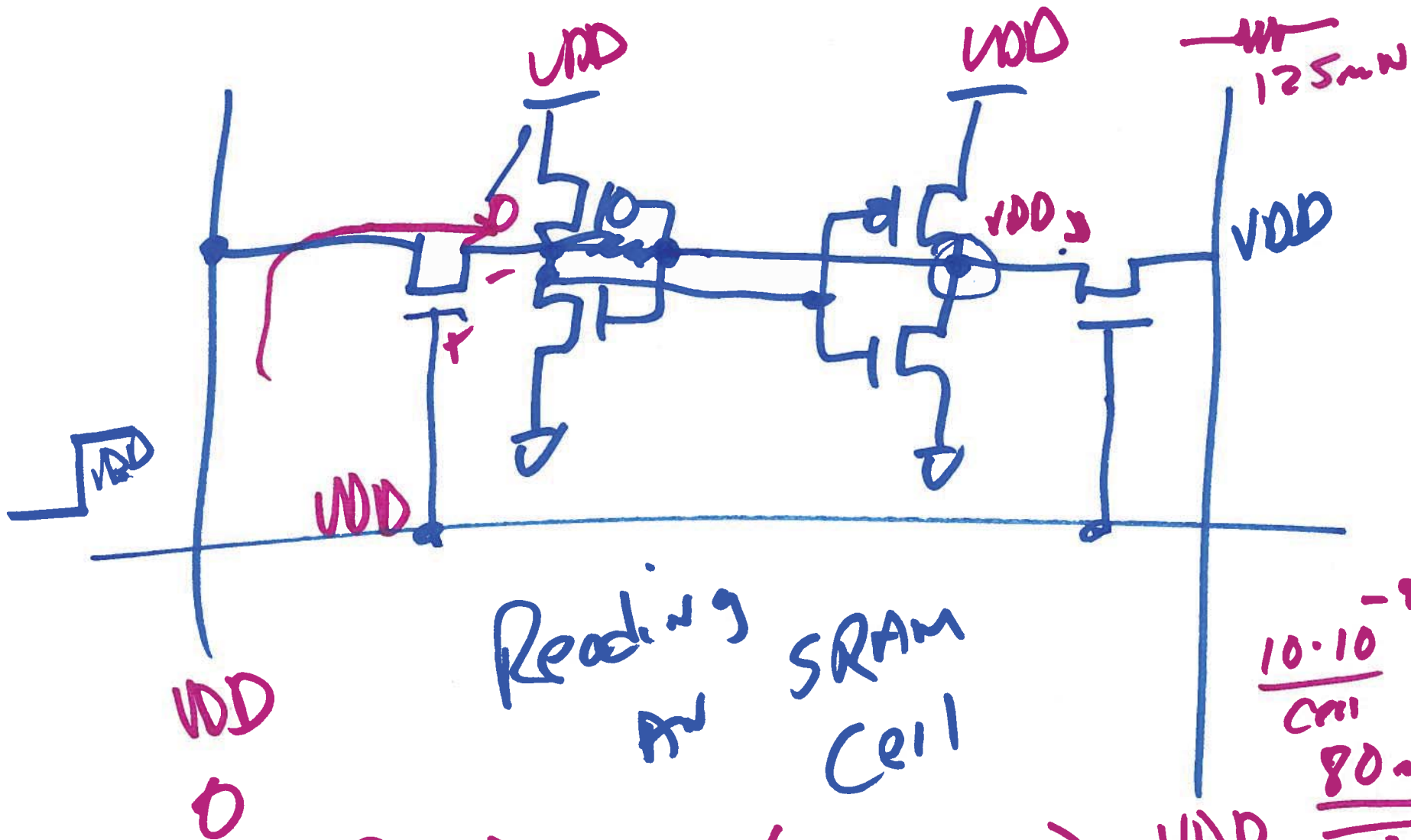
Lecture 24

NOV. 30, 2016

Static RAM (SRAM) 1T1C CACHE







Reading SRAM Cell

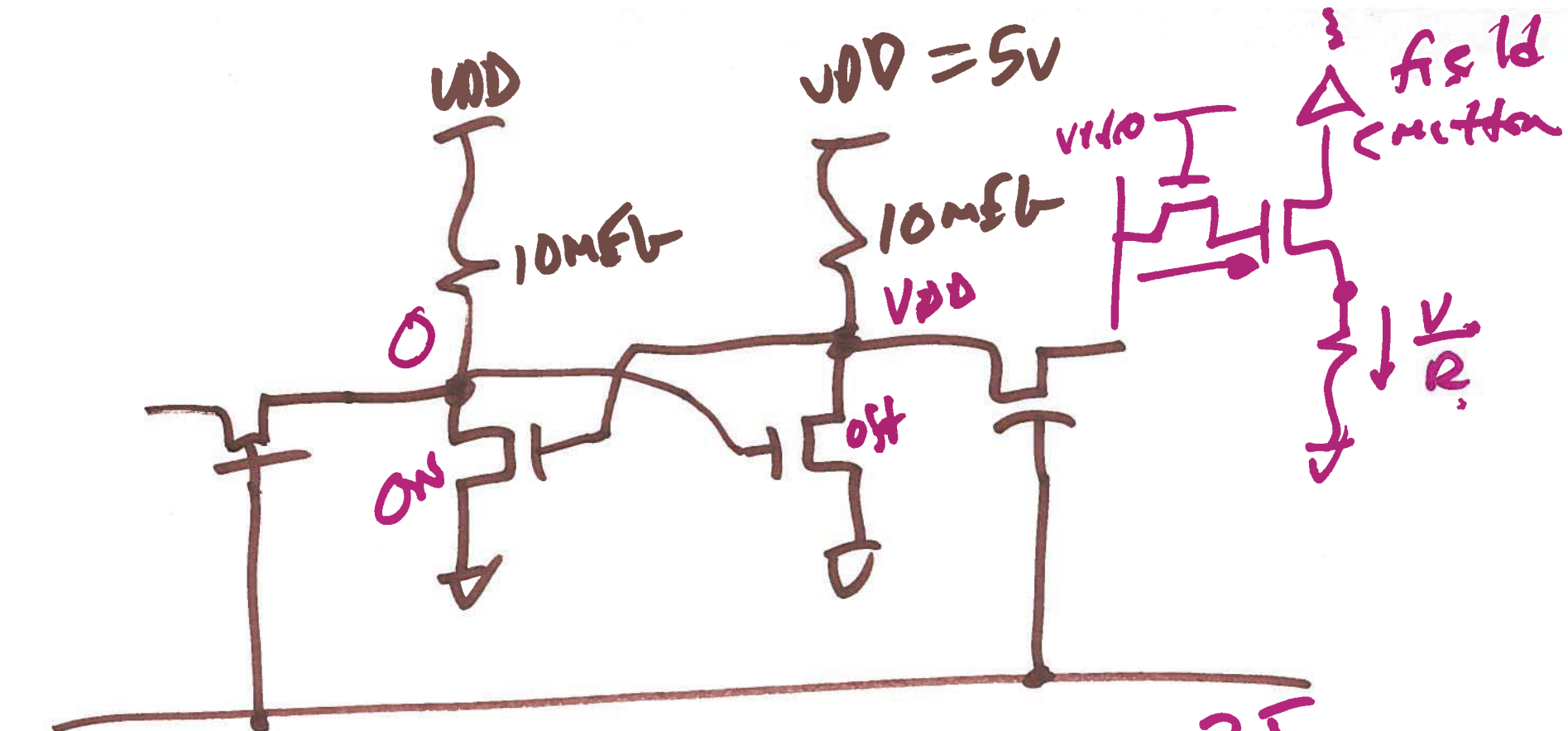
$$\frac{10 \cdot 10^{-9} \cdot 8 \cdot 10^6}{\text{cm}} = 80 \text{ mW}$$

Power STATIC =  $V_{DD}(I_{\text{exp}} + I_{\text{off}})$

$$5(1 \mu\text{A} + 1 \mu\text{A}) = 10 \text{ nW}$$

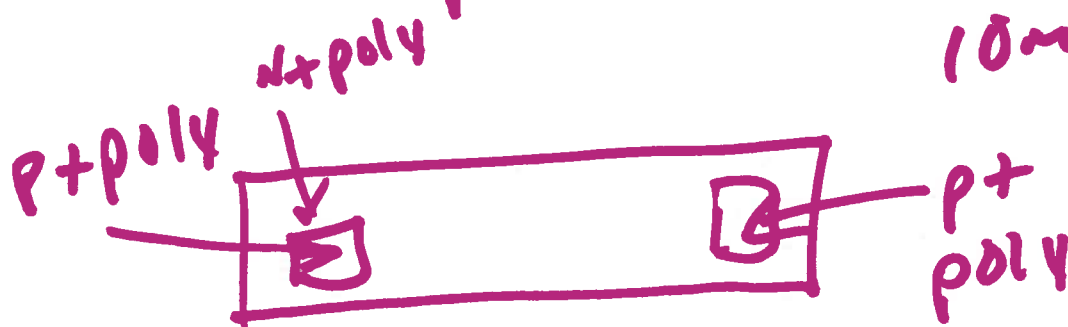
$$1 \text{ MB} \Rightarrow 8,000,000 \text{ cells}$$

CMOSedu.com *SRAMs*



Word 1. ~ 9

$$P = VDD \cdot \frac{VDD}{10ME6} = \frac{25}{10ME6} = \underline{\underline{2.5 \mu A}}$$

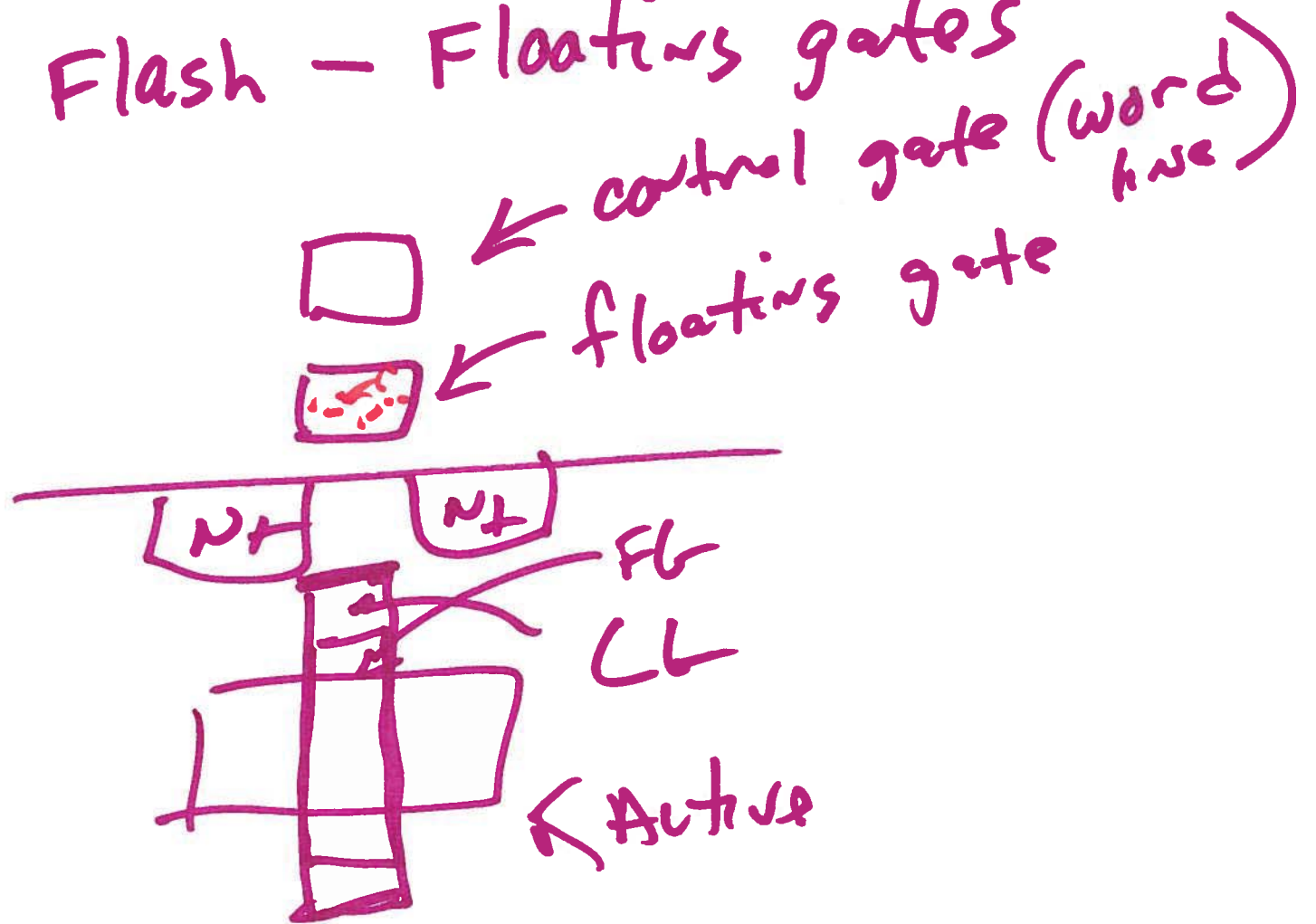


4)

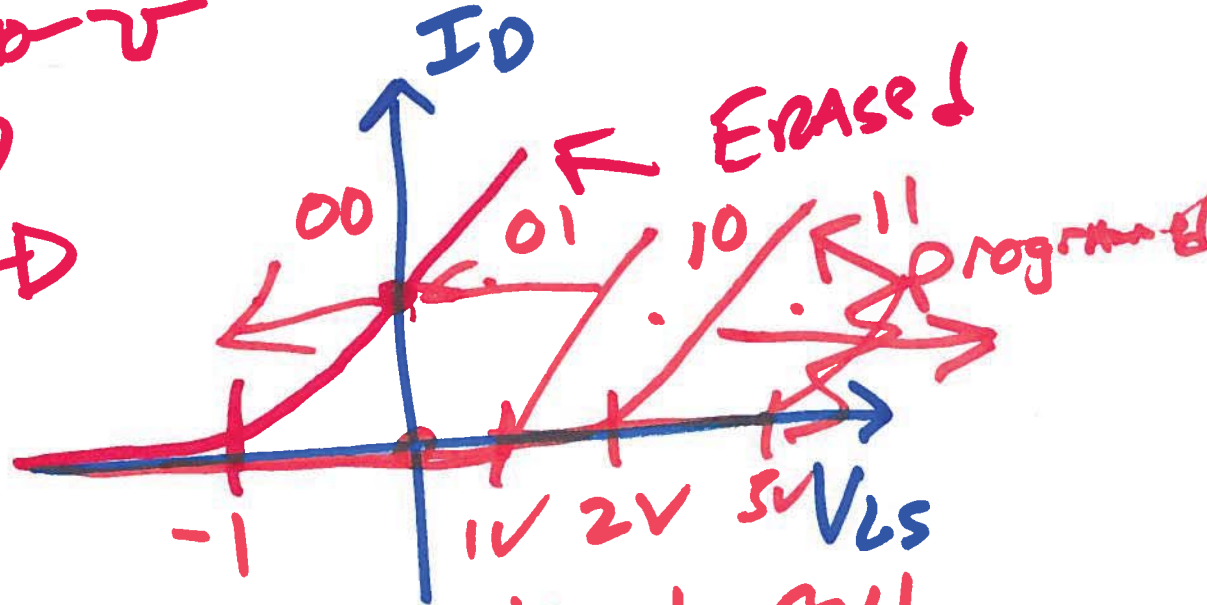
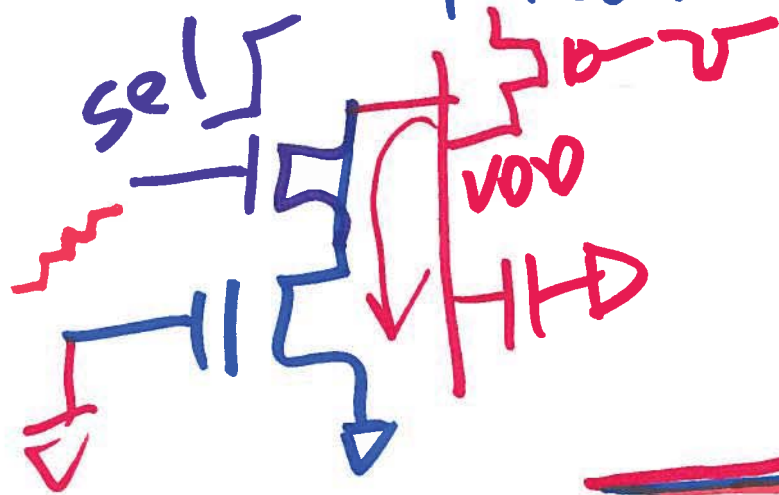
DRAM - 1T1C

SRAM - 6T

Flash - Floating gates



# Flash memory



Single level cell

(SLC)

1 Bit/cell  
5pF

1Mbit

