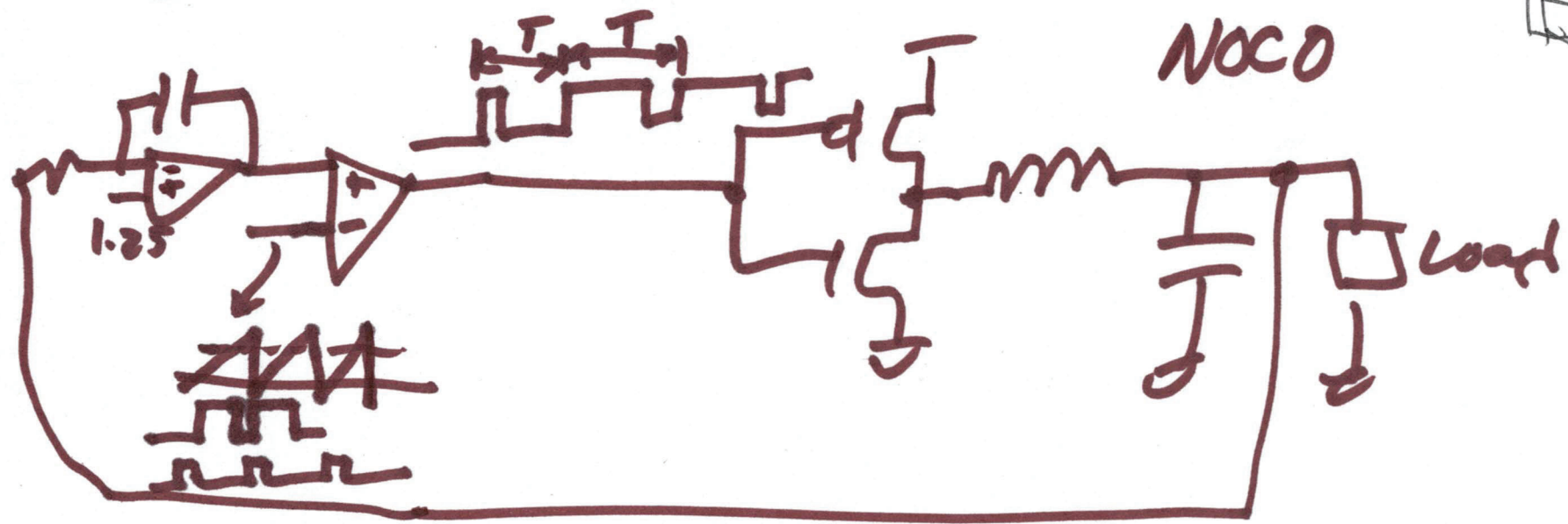
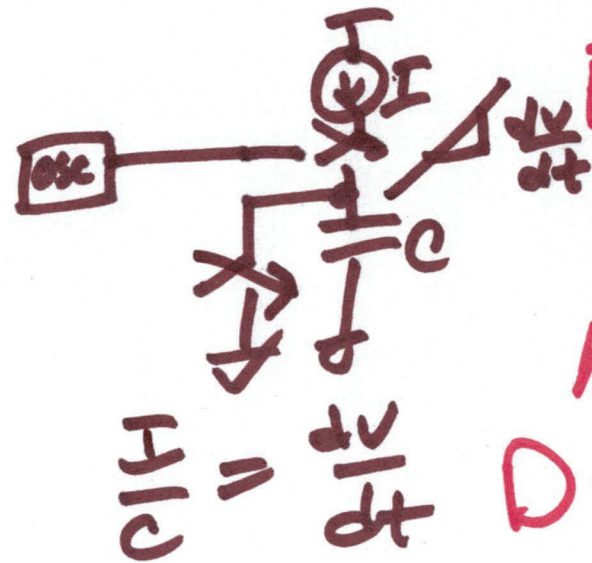


EE 421 / ECG 621

Lecture 23

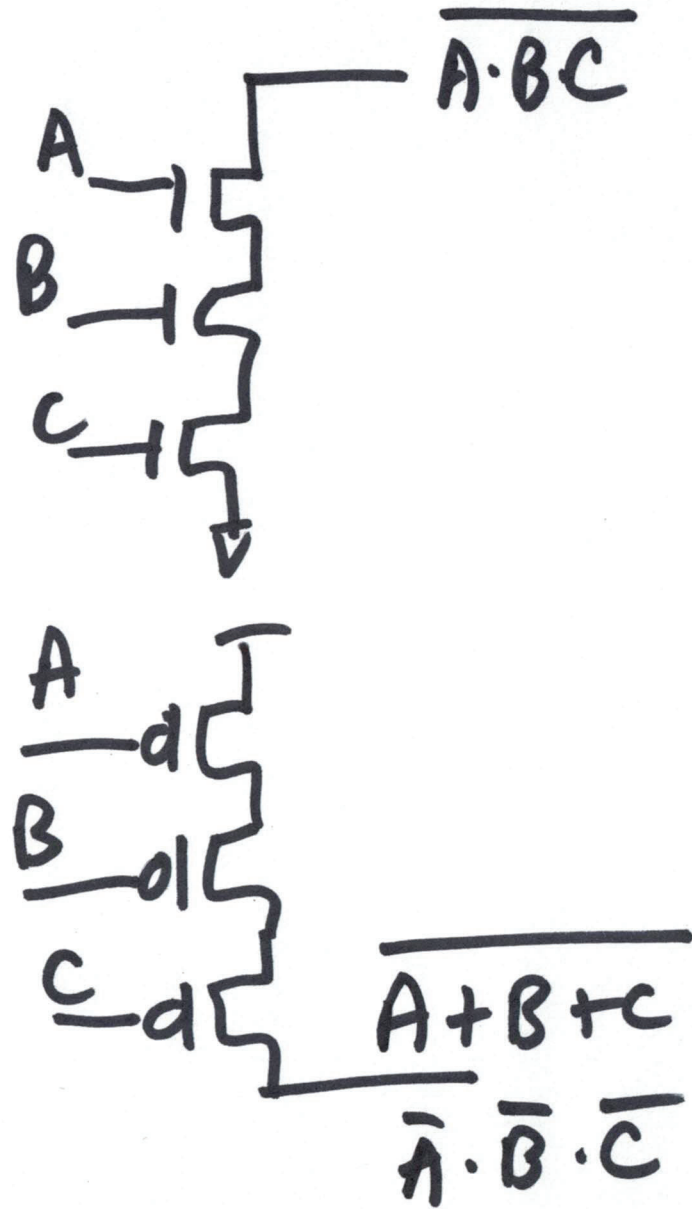
NOV. 22, 2023

Digital IC Design



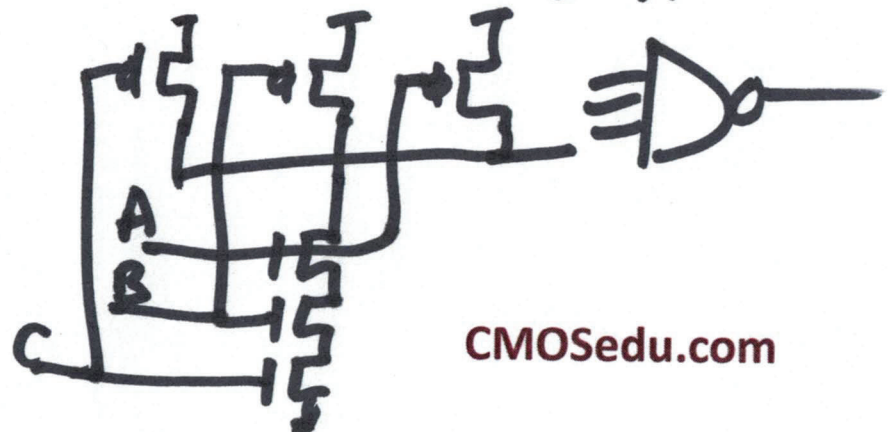
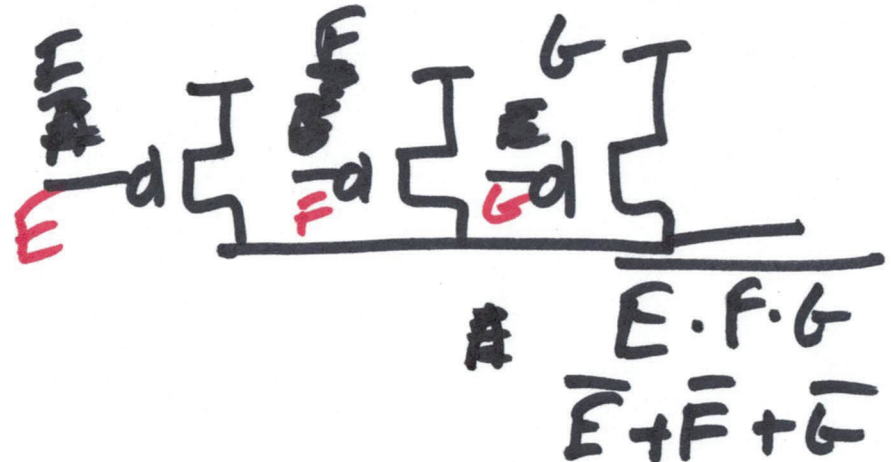
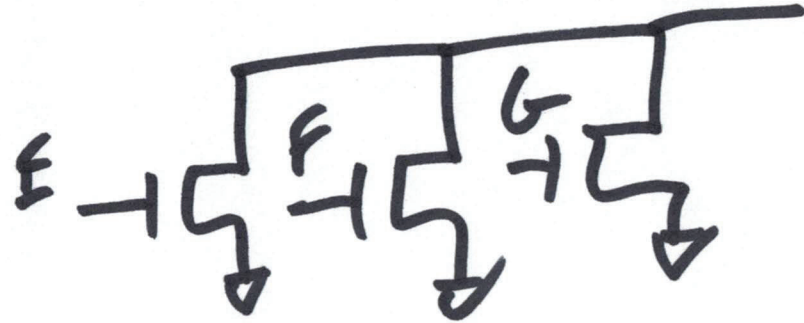
1)

Complex

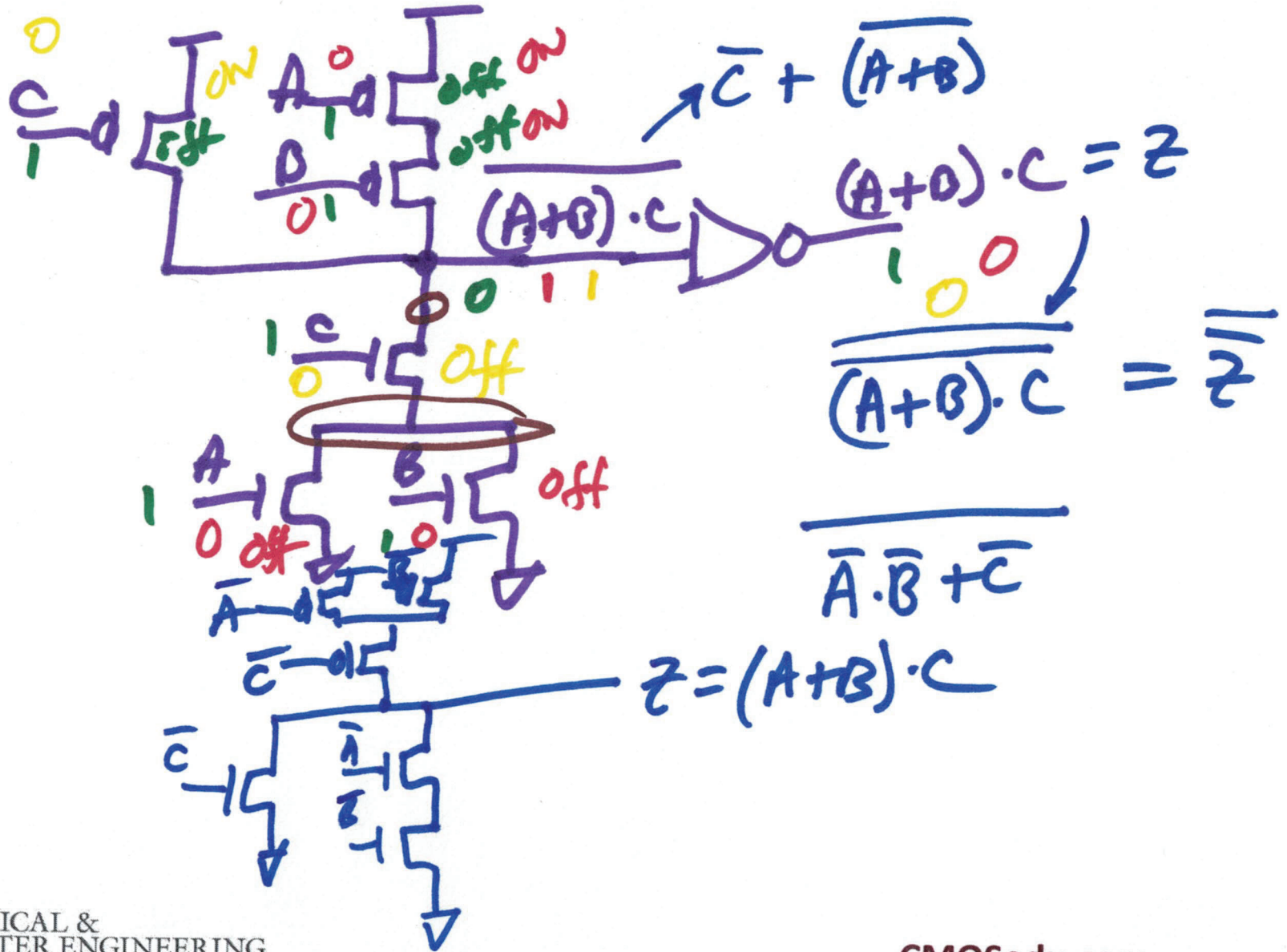


CMOS

$\overline{A + F + G}$

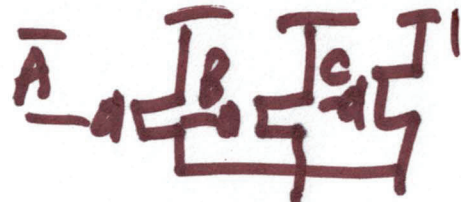


$$z = (A+B)C$$

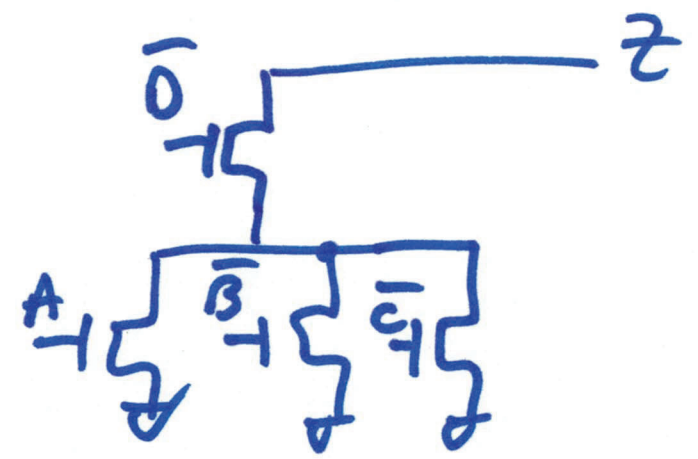
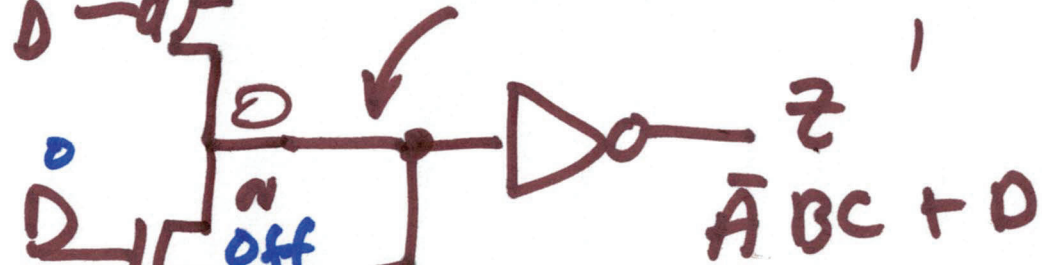


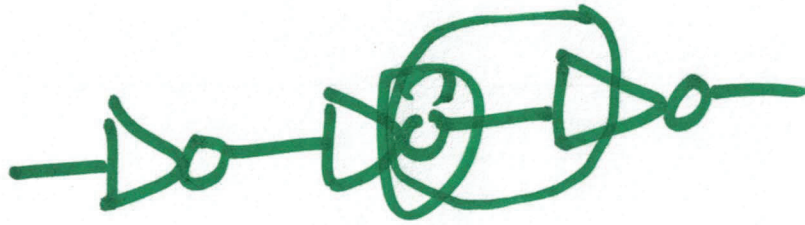
3)

$$z = \bar{A}BC + D$$

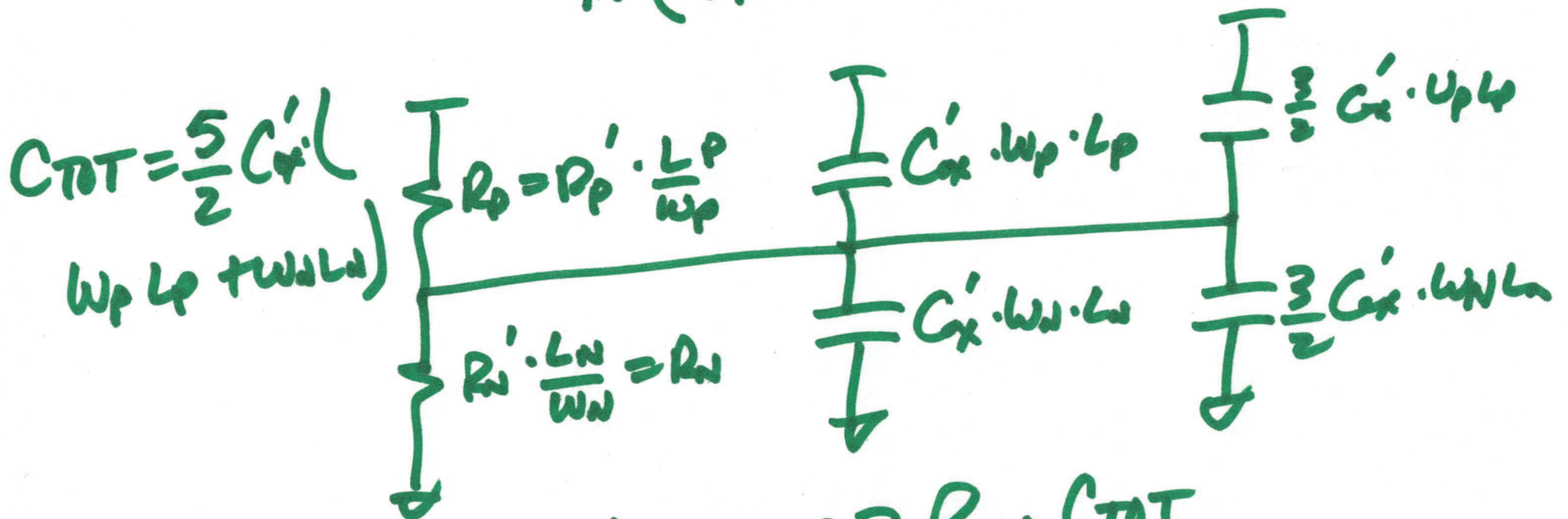


$$\overline{\bar{A}BC + D} = \overline{\bar{A}BC} \cdot \bar{D}$$





$$f_{osc} = \frac{1}{N(t_{pHL} + t_{pLH})}$$



$$t_{pHL} = 0.7 R_n \cdot C_{TOT}$$

$$t_{pLH} = 0.7 R_p \cdot C_{TOT}$$