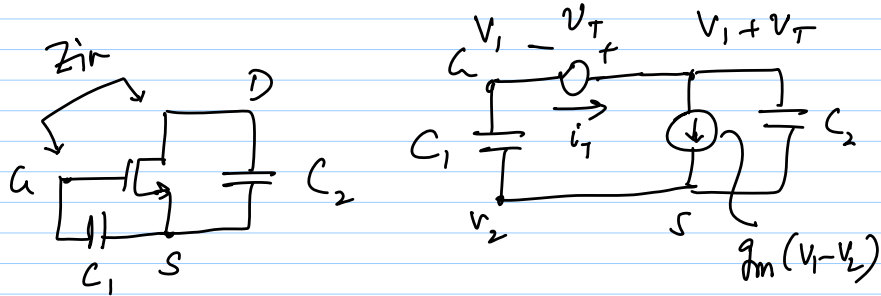


6/11/13

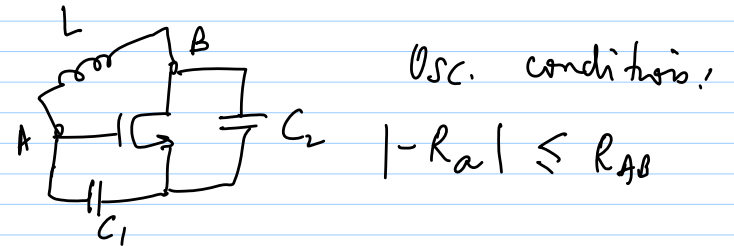
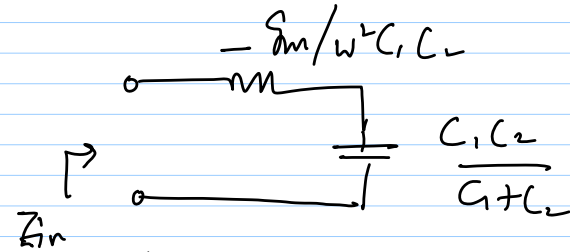
Lec 40

Single-transistor osc.

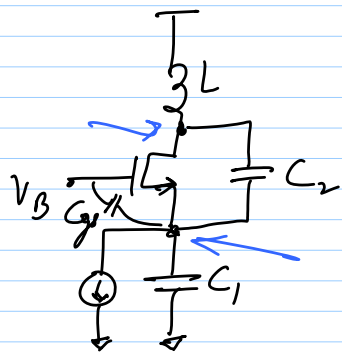


$$Z_{in} = \frac{V_T}{i_T} = \frac{g_m}{s^2 C_1 C_2} + \frac{1}{s C_{eq}} \quad \left\{ C_{eq} = \frac{C_1 C_2}{C_1 + C_2} \right\}$$

$$Z_{in}(j\omega) = \frac{-g_m}{\omega^2 C_1 C_2} + \frac{1}{j\omega C_{eq}}$$

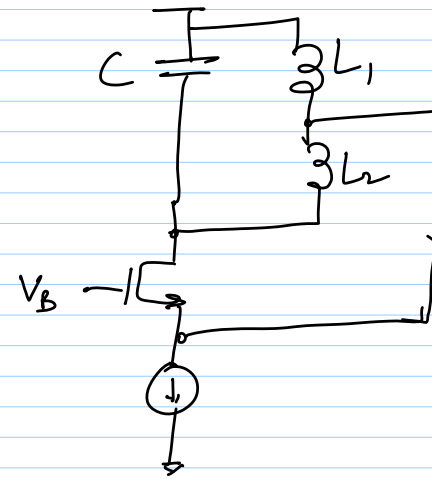


1) Ground gate



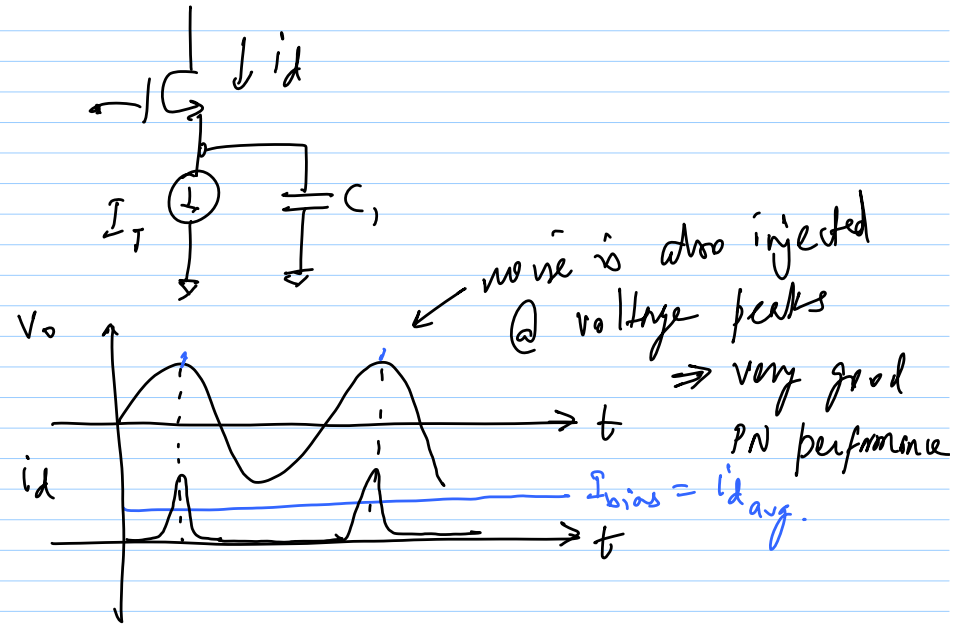
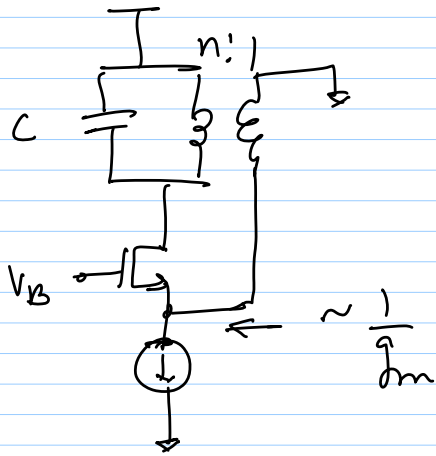
Colpitts Oscillator

2)



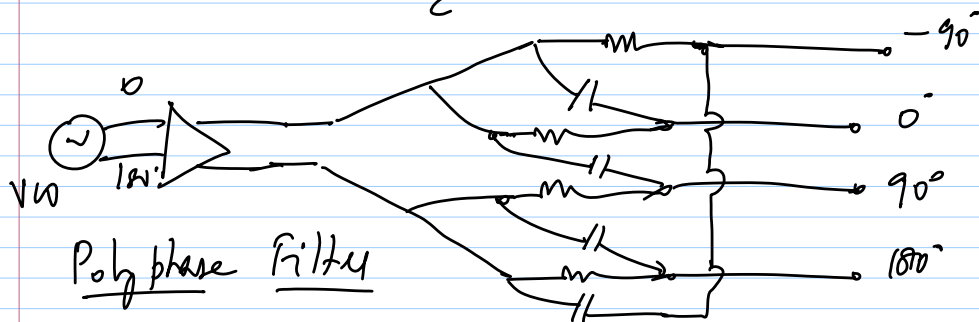
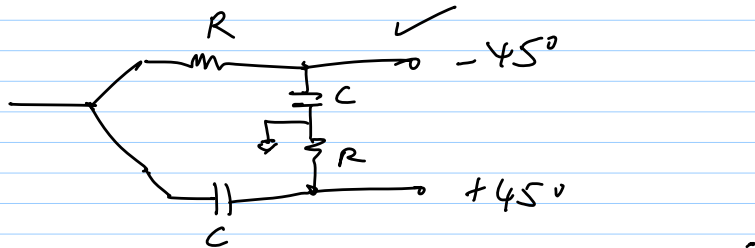
Hartley Osc.

3)



Quadrature Signal Generation

1)



- * duty cycle error
 - * tradeoff between loading and par. cap. \Rightarrow higher current @ high freq.
- 2) Freq. dividers

