

EE 320 Electronics

March 11, 2015

4.21)

Lecture 15

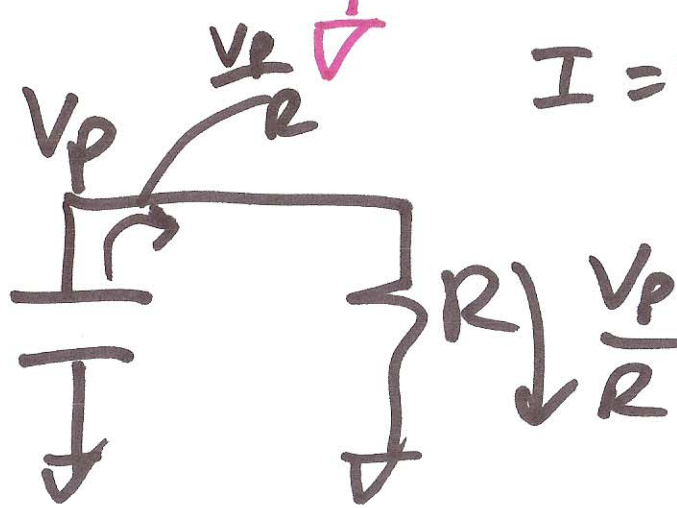
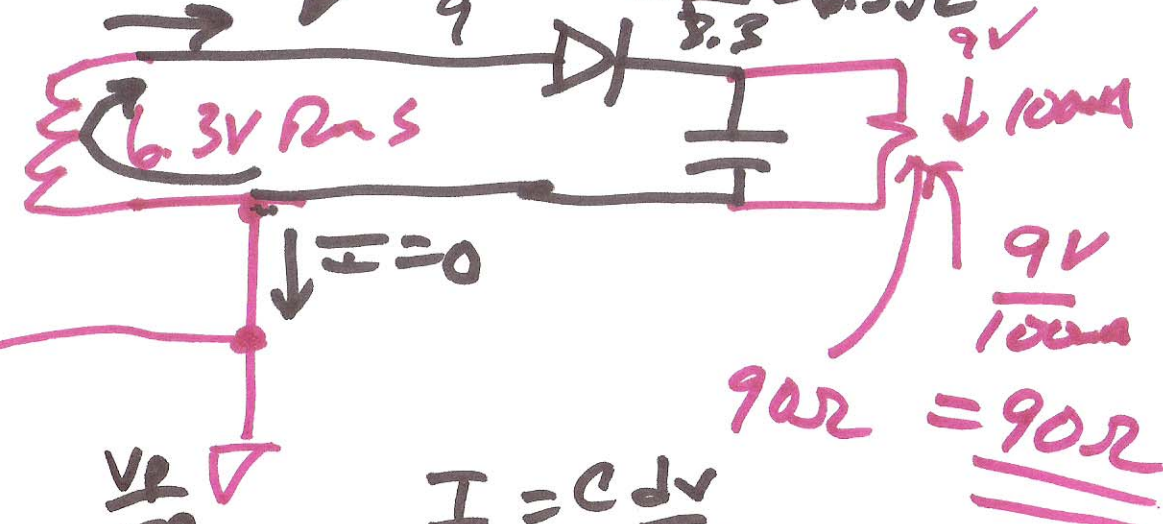
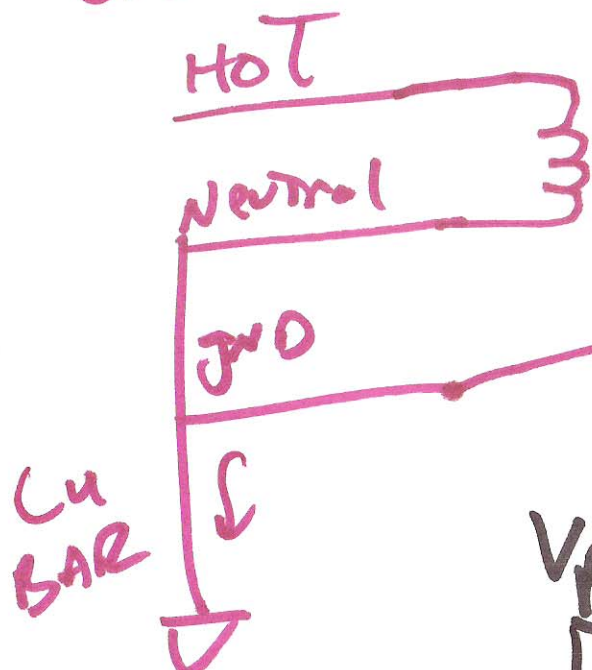
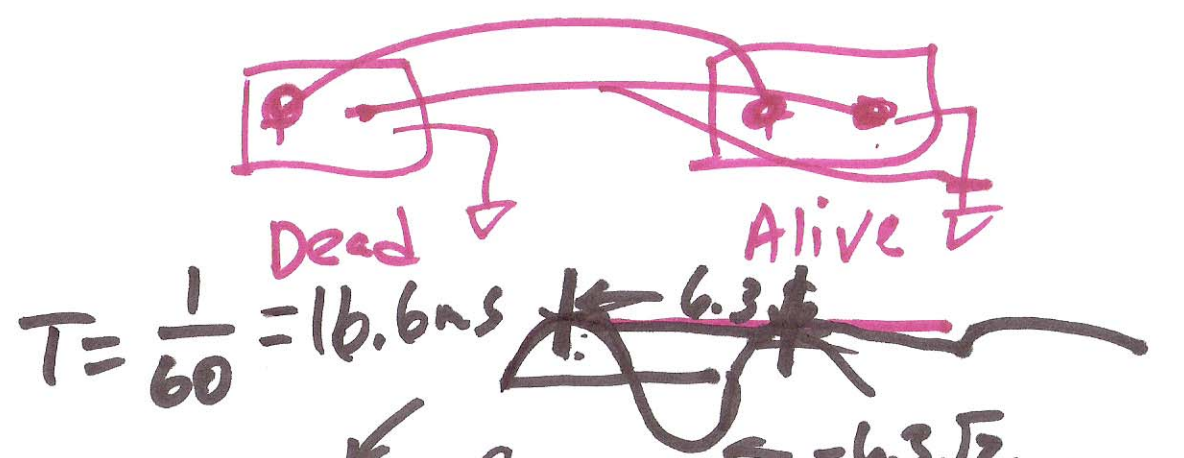
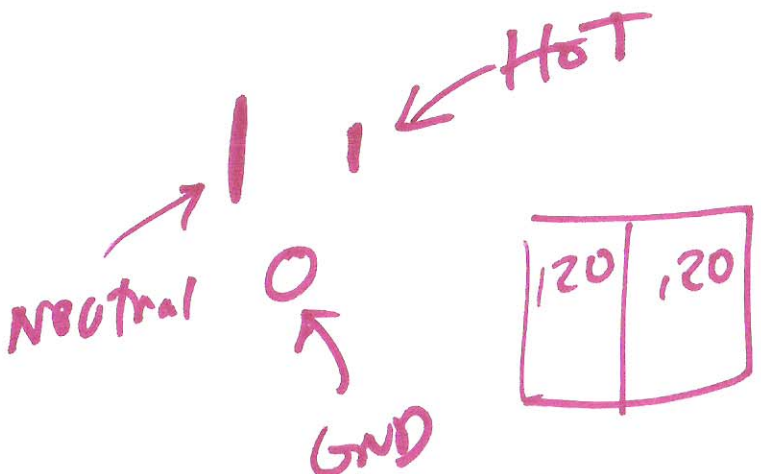
$$I = I_s e^{0.7/\mu V_T}$$

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$$0.1 = I_s e^{v_D/\mu V_T}$$

$$10 = e^{(0.7 - v_D)/\mu V_T}$$

1)

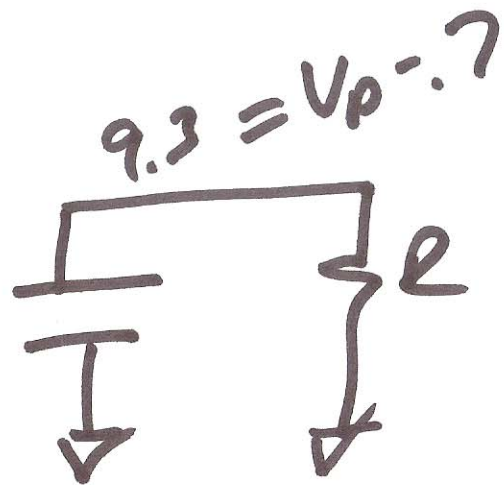
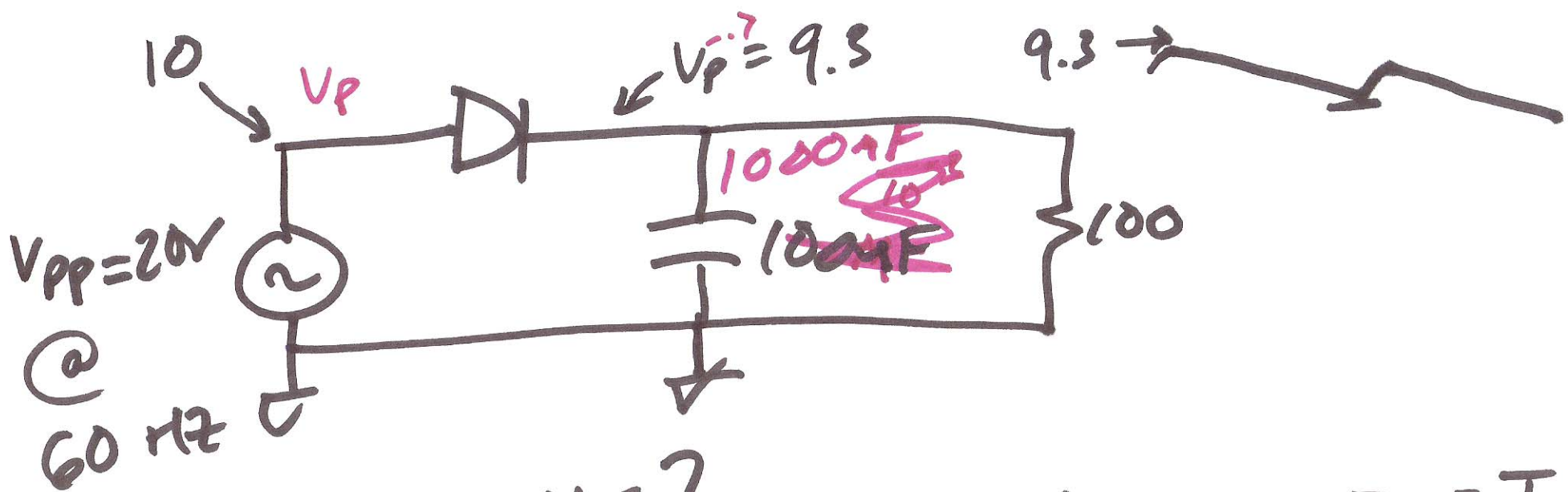


$$I = C \frac{dV}{dt}$$

$$\Delta V = \Delta T \cdot I$$

$$\text{Ripple} = T \cdot \frac{V_p}{R} \cdot \frac{1}{C}$$

$$= \frac{V_p}{fRC}$$



$$\frac{I}{C} = \frac{\Delta V}{\Delta T}, \quad \Delta T_{max} = T$$

$$\Delta V = T \cdot \frac{(V_P - .7)}{R \cdot C} = \frac{V_P - .7}{fRC}$$

ripple

$$\Delta V = \frac{9.3}{60 \cdot 100 \cdot 1000 \mu F} =$$

$$\underline{\underline{\Delta V = 1.55V}}$$

3)

