ECEG 351 **Electronics II** **Spring 2024**

Selected Answers to HW #8

Include explanatory text and intermediate calculations in your solutions. You will not receive credit for merely repeating an answer given here without supporting work.

If an answer is not provided below, it is because either the solution is trivial or disclosure of the answer would give away too much of the solution.

Although some effort has been made to ensure that there are no errors in the answers below, some might nevertheless appear because of the rush to post them. Please let me know as soon as possible if you discover an apparent error.

1. First thought question: Think about how $R_{eq\pi}$, $R_{eq\mu}$, C_π, and C_μ are affected by a change in I_C (or not)
New bias circuit: R_1 = 75 kΩ, R_2 = 12 kΩ, R_C = 15 kΩ, and R_E = 2.4 kΩ
$R_{eq\pi}$ = 49.5 Ω; $R_{eq\mu} \approx$ 7,360 Ω; $f_H \approx$ 11 MHz
[answer to last thought question not given]

2. confirmation that $f_H \approx$ 8.7 MHz (Remember that applying Miller's theorem leads to equivalent capacitances in parallel with the input port *and* the output port.)

3. $R_{eq\pi}$ = 24.8 Ω; $R_{eq\mu} \approx$ 2,480 Ω; $f_H \approx$ 9.1 MHz

4. C_L = 25 pF