Lab 2 Week 2

Long Channel Amplifier Design

Logistics

- I will be releasing the grades for Lab 1 soon maybe by EOD today. If you believe you did the checkoff, and you didn't receive points on it. Please tell me and submit a regrade request.

- Midterm is on Friday. Micah and I have published a practice midterm for you all to do. Take 1.5 hours on your own sometime before Wednesday’s review session to solve the problems. Remember, you do get 1 cheat sheet front and back.

- Homework 4 has released and its solutions. There is no submission on your part here.

Lab 2 Part B

- Part B features a Check-in. I will go to every student and see their plans for designing the amplifier. This is the attendance for today
  - This is the time to ask as many questions you might have on how to achieve the specifications or how to do hand calculations.
  - There is no dedicated grade for the check-in – it is a time to be completely honest and for me to help you
  - Also will check-in to see how you are doing and how you feel about the midterm

Rubric For Lab 2

Part A:

- Scenario 1 and Scenario 2: Each of the following will be graded on a (2pts) fully correct, (1pt) minor mistake, and (0pt) incorrect/blank criteria:
  - Hand Calculation Gain
  - Hand Calculation Bandwidth
  - Simulated Gain Results
  - Simulated Bandwidth Results
  - Simulated Output Swing Results
- Each scenario is 10 points each, totaling 20 points for this part.

Rubric For Lab 2

Part B:

- Split into 3 categories, totaling 40 points
  - (15pts) Meeting Design Specifications in Simulation
  - (10pts) Hand Calculation-Driven Design
  - (15pts) Discussion Questions
    1. Output resistance comparison between Part B and Part A.1. How does output resistance affect gain and bandwidth?
    2. Replacing circuit with current mirror topology and meeting specifications. Explanation of why switching the network this way might change the biasing
    3. Table of calculated and simulated performance for Part B with explanation of discrepancy if there is.
    4. Describing your design procedure. What worked, failed, was difficult, etc. You can earn back lost points in meeting the design specification with a thorough explanation here (what would change, what it might change, etc.). But throughout the report, you should be describing your design procedure.