

200 pts Lab #4 Notebook Grading

THE FOLLOWING ITEMS ARE REQUIRED:

- Student's work reproducible from notebook.
- Title and date for each lab section.
- Written in ink.
- Student signed every page.
- Student dated every page.

50 pts EXPERIMENT 1:

25 pts 2.

10 pt Estimation of V_{tp} .

15 pts Calculation of $K_p = k_p'(W/L) = \mu_p C_{oxp}(W/L)$.

25 pts 3.

10 pt Estimation of V_{tn} .

15 pts Calculation of $K_n = k_n'(W/L) = \mu_n C_{oxn}(W/L)$.

50 pts EXPERIMENT 2:

15 pts 1. Values for I_{REF} and I_O .

5 pts 2. Measured value for I_{REF} .

10 pts (2a) Table of measured values for I_O .

5 pts (1e) New Value of I_{REF} for $R_{REF} = 500 \Omega$.

5 pts (3a) Table of measured values for I_O .

10 pts 4. Detailed explanation of current mirrors and their use in the amplifier circuit.

100 pts EXPERIMENT 3:

10 pts 1. Hand calculations for the common-source amplifier. (R_s , R_D , R_{G1} , R_{G2})

10 pts 2. Analysis of AC circuit. (table form, 10 values)

15 pts 3. PSpice Simulation (schematic, bias, transient, frequency- table form)

5 pts 4a. Fig. 5 circuit built

10 pts 4b. DC measurements. V_G , V_D , V_S , I_D

5 pts 4c. Fig. 6 circuit built

10 pts 4d. V_D and V_{sig} measurement, A_{vo} , phase, comparison to hand calculations.

10 pts 4e. Measurement of distortion.

5 pts 4f. Output measurement with bypass capacitor removed. Comments.

10 pts 4g. Output measurement with C_s , C_{c2} . Comments.

10 pts 4h. Frequency measurements with comments.