

Raymond Gallagher
Engineering 210
Quiz #8
Post-Mortem

Class,

Quiz #8 is done and finalized. All papers have been graded and returned to the Glennan labs. Please check blackboard for errors and contact me if there are any.

Solutions for quiz #8 are up on the website. The average for quiz #8 was 14.22.

Post Quiz Analysis

Problem 1: The Op-Amp was set up as a comparator which means that when the voltage at the positive input V_p is higher than the voltage at the negative input V_n , the output is equal to the positive voltage supply, and when V_n is greater than V_p , the output is equal to the negative voltage supply. Most people knew this, and did very well on the problem.

A note on the sketch: the instructions told you to label both the output voltage levels, and when they changed. If you didn't show the correlation between output voltage changes and the input signal, and your sketch wasn't accurately lined up, you lost some points.

Problem 2: This seems to be much harder than problem 1. The critical thing is to see that the left Op-Amp is set up as a voltage follower (think about your Op-Amp circuit constraints, especially $V_p = V_n$!). Some people had problems recognizing the right Op-Amp as a Summer, or if they did recognize it, didn't draw the block diagram for it correctly. Don't be afraid to use your formula sheet!

Once you have your block diagram, part (b) should have been easy. Just do the multiplication and addition, and you go straight to your answer of $-6V_s$. If you used circuit analysis to verify your block diagram, that's even better. It was amazing the number of people that didn't use the block diagram at all. Students who did not use the block diagram sometimes had problems with KCL (the correct algebraic signs of the currents), or with the Op-Amp constraints (remember $V_p = V_n$, so the negative input of the right Op-Amp is 0 volts).