

**Chemical Engineering 201
Fall 2004**

Midterm # 1

Name _____

Problem # 1 _____

Problem # 2 _____

Problem # 3 _____

Problem One (30 points):

A pond of oxalic acid is 5 feet deep. If the atmospheric pressure on the day you dive to the very bottom of the pond (wearing protective equipment that keeps you safe from any oxalic acid effects) is 750 mmHg, what is the pressure at the bottom of the pond in atmospheres?

Problem Two (50 points):

Carbon tetrachloride has contaminated a water aquifer underneath a city in the desert southwest. You, as a chemical/environmental engineer, measure the specific gravity of the resulting mixture and find that it is 1.34. Assuming that there are no other contaminants, what is the mole fraction of carbon tetrachloride in the water?

Problem Three (10 points):

Briefly describe ANY of the environmental/safety/health problems we have examined in class on overheads at the beginning of lecture. Describe two issues your major will require you to consider related to the example you cite from class to prevent the same problem from occurring in the future.

Problem 4 (10 points):

You measured a temperature in degrees Fahrenheit and then measured it again later to find that it had gone up 15.9°F from the first measurement. What would be the corresponding rise in temperature if you had been using $^{\circ}\text{C}$ for both measurements?