CHM 1020-01 **QUIZ 8** **October 27, 2000**

This quiz is take-home and open book, and it is intended that all members of the group contribute to completing it. It is a violation of the Academic Honor Code to sign a quiz that you did not work on. **The quiz is due at the end of class on Thursday, November 2.**

List names in alphabetical order, and print them clearly!
Put names on all pages, and staple pages together

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Points

1. **Sucrose** is table sugar. It has the formula $C_{12}H_{22}O_{11}$.

(1.5) (a) How many grams of sucrose would be required to make 0.250 moles?

(1.5) (b) How many **moles** of carbon atoms are there in 4.0 moles of sucrose?

(1.5) (c) How many carbon atoms are there in 4.0 moles of sucrose?

(1.5) (d) If you dissolved 1.2 grams of sucrose in your coffee, how many moles of sucrose would that be?

(2) (e) Write and balance the equation for the complete combustion of sucrose.

List names in alphabetical order. **Be sure to staple pages together!**

(1.5) 2. What is the density of CO_2 gas measured at STP?

(1.5) 3. You collect a sample of a gas from your propane tank and measure its density to be 1.96 g/L at STP. What is the molecular weight of propane?

4. When iron rusts, it reacts with oxygen to form iron (III) oxide.

(2) (a) Write and balance the chemical equation for the rusting process.

(2) (b) Calculated the mass of iron (III) oxide that would be produced from a nail weighing 21.5 grams if the nail were completely rusted.