

Chemistry 1500, Dr. Hunter

Summer 2004

Quiz # 1 (Individual Part)

Name: \_\_\_\_\_  
  **Last name**  **First name**

Student Number (your social security number): \_\_\_\_\_

Signature: \_\_\_\_\_

The individual portion of this quiz has one page of questions plus this title two pages. Please make sure you have all pages. Place your name (last name first) and your student number (or your Social Security number) in the spaces above and sign on the line. *Initial each page of the exam in the top right hand corner* so that if your exam pages get separated I can match them to you.

To obtain maximum credit for each question, show your work in detail. Partial credit for questions will not be assigned if no work is shown. **Indeed, no credit will be granted if complete work is not shown even for correct answers.** Feel free to use pictures/diagrams to illustrate your text answers and/or to use short text explanations to explain your drawings if your pictures are ambiguous. If you have to make assumptions, etc., to complete any answers, write me a short note stating and/or explaining your assumptions and testing them to the degree possible.

On some questions on this exam, you are given a choice about which 2 out of 3 parts to answer. On these questions, be sure that you circle the part numbers of those parts you want me to grade. [Note: If you do not indicate your choice, I will count only the first 2 parts towards the grade.]

You have 15 minutes for the individual part of this quiz. The twenty points for the individual part of this quiz correspond to 5% of the 100 overall points for this course.

Grade      /20 (individual) ⇒      /5%

1 (20 points total). Answer 2 out of 3 parts below. Indicate the 2 parts you want me to grade by circling their part numbers.

a. Clearly described the effects on a car if the oxygen content of the atmosphere were to drop substantially.

b. Give the number of significant figures for each of the following clearly describing how you come to this answer. If you wanted to do an accurate calculation, which number would you use (give me your reasoning).

330,000 →

$3.31 \times 10^5$  →

$3 \times 10^5$  →

c. Convert the following numbers from scientific notation to conventional numbers or from conventional numbers to scientific notation, as required.

$3 \times 10^5 =$

0.0004 =

$2.18 \times 10^3 =$

$4.14 \times 10^{-4} =$

34,200 =

## Chemistry 1500, Dr. Hunter

Summer 2004

## Quiz # 1 (Group Part)

Name: \_\_\_\_\_, \_\_\_\_\_ Signature: \_\_\_\_\_

Name: \_\_\_\_\_, \_\_\_\_\_ Signature: \_\_\_\_\_

Name: \_\_\_\_\_, \_\_\_\_\_ Signature: \_\_\_\_\_

Name: \_\_\_\_\_, \_\_\_\_\_ Signature: \_\_\_\_\_

Name: \_\_\_\_\_, \_\_\_\_\_ Signature: \_\_\_\_\_

Name: \_\_\_\_\_, \_\_\_\_\_ Signature: \_\_\_\_\_

**Last name****First name**

The group portion of this quiz has one page of questions plus this title two pages. Please make sure you have all pages. Place the names (last name first) and signatures of each group member above. *Initial each page of the exam in the top right hand corner* using the initials of the first group members so that if your exam pages get separated I can match them to your group.

To obtain maximum credit for each question, show your work in detail. Partial credit for questions will not be assigned if no work is shown. **Indeed, no credit will be granted if complete work is not shown even for correct answers.** Feel free to use pictures/diagrams to illustrate your text answers and/or to use short text explanations to explain your drawings if your pictures are ambiguous. If you have to make assumptions, etc., to complete any answers, write me a short note stating and/or explaining your assumptions and testing them to the degree possible.

You have 30 minutes for the group part of this quiz. The twenty points for the group part of this quiz correspond to 5% of the 100 overall points for this course.

Grade /20 (group) ⇒ /5%

1 (20 points total). Estimate the total number of gallons of gasoline used in private automobiles in the US in 2003. Be sure to discuss your assumptions, how you calculated the results, and the estimated accuracy of the result you get.

1 (20 points total). Answer 2 out of 3 parts below. Indicate the 2 parts you want me to grade by circling their part numbers.

a. Clearly described the effects on a car if the oxygen content of the atmosphere were to drop substantially.

b. Give the number of significant figures for each of the following clearly describing how you come to this answer. If you wanted to do an accurate calculation, which number would you use (give me your reasoning).

330,000 → 2 sig. figs (probably) but....

⇒ 3.31 × 10<sup>5</sup> → 3 sig fig  
 3 × 10<sup>5</sup> → 1 sig fig

c. Convert the following numbers from scientific notation to conventional numbers or from conventional numbers to scientific notation, as required.

$$3 \times 10^5 = \underline{300,000}$$

$$\underline{0.0004} = 4 \times 10^{-4}$$

$$2.18 \times 10^3 = \underline{2,180}$$

$$4.14 \times 10^{-4} = \underline{0.000414}$$

$$\underline{34,200} = 3.42 \times 10^4$$