

Chemistry 1501, Dr. Hunter

Spring 2007

Exam # 1 (Group Part)

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

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

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

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

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

**Last name**

**First name**

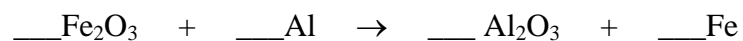
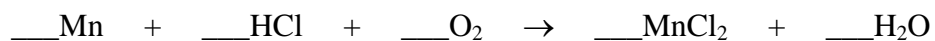
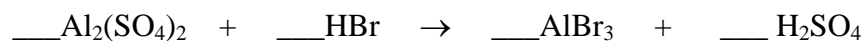
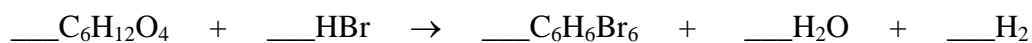
The group portion of this exam has this title page plus two pages of questions. Please make sure you have all pages. Place the names (last name first) and signatures of each group member above. *Initial each page of the exam in the top right hand corner* using the initials of the all group members so 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 35 minutes for the group part of this exam. The twenty points for the group part of this exam correspond to 10% of the 200 points for this course. Together, the group and individual parts of this exam are worth  $\frac{1}{4}$  of the total course grade.

Grade    /20 (group grade)

1 (10 points total).    Balance each of the following chemical reactions.



1 (10 points total). Estimate the total amount of heat that it would take to raise the temperature of a frozen YSU Basketball Team from  $-30^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$ . Be sure to discuss your assumptions, how you calculated the results, and the estimated accuracy of the result you get. Lastly, place your answer in scientific notation.

**Table 3.2 The Specific Heat Capacities of Some Common Substances**

Substance	Specific Heat Capacity (J/g $^{\circ}\text{C}$ )
water (l)* (liquid)	4.184
water (s) (ice)	2.03
water (g) (steam)	2.0
aluminum (s)	0.89
iron (s)	0.45
mercury (l)	0.14
carbon (s)	0.71
silver (s)	0.24
gold (s)	0.13

\*The symbols (s), (l), and (g) indicate the solid, liquid, and gaseous states, respectively.