Using Practice Quizzes Effectively

This practice quiz contains **actual questions** that have been asked on one of my quizzes in a previous quarter. This can be a useful studying tool if used properly.

Important notes about the practice quiz:

- This practice quiz should not be the only studying tool you are using, because **the practice quizzes only show a small subset of the possible questions that could be tested**.
- **Work the recommended book problems** to make sure that you fully understand all of the concepts that might be on the actual quiz.
    - You need to be able to **explain why every step is done** in solving all of the recommended book problems (**without looking at the solutions**). Do not memorize the answers – this will not work.
    - Work problems multiple times to build skill and efficiency (but do not memorize).
- **The actual quiz will contain questions that differ from the practice quizzes. They are not necessarily any easier or harder; they are just different.**
    - It would be pointless to give a quiz with the exact same questions as the practice, because it would mean the quiz is testing your memorization skills instead of your actual understanding of the material.
    - **To prepare for this, make sure you understand how to do all of the recommended book problems as discussed above.**

What this practice quiz is intended to do:

- Help you diagnose general areas of strength/weakness and determine what you need to spend more time studying before the quiz
- Allow you to check if you are answering questions quickly enough to complete the actual quiz within the time limit
- Give you an idea of the general format of a multiple-choice quiz

While taking the quiz:

- Take this with a **25 minute time limit**, including the time it would take you to fill out a parscore
- **Do not use any outside notes or help**
- Do not look at any of the answers until you have completed the entire quiz

After you complete the quiz, check your answers against the key. For any problems you miss:

- Go through the worked-out solutions to see how to answer each question correctly
- **Make sure you understand why every step is done** in solving the problems you miss
- **Rework book problems** that are related to the questions you missed. This will help to strengthen your understanding of the topic. Without this, you will not gain a full understanding of the topic and risk missing similar questions on the actual quiz.

Instructions: No hats or hoods allowed. No books or notes allowed. No sharing of calculators. Cell phones, iPods, headsets/headphones, and any other electronic devices must be turned off and put away.

There are a total of three pages (6 questions) on the quiz. **Not every question is worth the same number of points**--point values are indicated for each question.

You may work out the problems and write your answers on this quiz; however, you must completely fill in the appropriate bubble(s) on your ParSCORE form. Turn in the ParSCORE form only. **Only the answers indicated on your ParSCORE will be graded**, so please be very careful bubbling in your ParSCORE. No credit will be awarded for an incorrectly-bubbled answer. The correct answers to the quiz will be posted on our course web page.

1. (3 pts) An element forms a stable ionic compound with the formula $X_2(SO_4)_3$. If the ion of element X contains 24 electrons, then what is the identity of element X?

a) Sc
b) Cr
c) Ti
d) Fe
e) Co

2. (3 pts) A particular element has three isotopes with relative abundances shown below:

Isotope Mass (g/mol)	Relative Abundance
156.30	52.30%
157.58	26.30%
158.42	21.40%

What is the average molar mass of this element?

a) 156.88 g/mol
b) 158.02 g/mol
c) 157.09 g/mol
d) 157.58 g/mol
e) 157.43 g/mol

3. (3 pts) Consider the following reaction: $2 SO_2 + O_2 \rightarrow 2 SO_3$

Calculate the amount (in moles) of O_2 left over when 0.34 moles of SO_2 reacts with 0.22 moles of O_2. Assume the reaction goes to completion.

a) 0.17 moles
b) 0.22 moles
c) 0 moles
d) 0.05 moles
e) 0.34 moles

$\frac{0.34}{2} < 0.22,$ SO_2 limiting

0.17

$0.22 - 0.17 = 0.05$

D

4. (3 pts) Determine the total number of <u>atoms</u> in a 35 gram sample of NO_2.

a) 1.37×10^{24}
b) 4.58×10^{23}
c) 6.02×10^{23}
d) 9.16×10^{23}
e) 0.761

$\frac{35}{Mr(NO_2)} \times 6.02 \times 10^{23} \times (1+2)$

A

5. (4 pts) Consider the following **unbalanced** reaction: $Al + ZnSO_4 \rightarrow Al_2(SO_4)_3 + Zn$

   When 45 grams of Al reacts with 200 grams of $ZnSO_4$, 73 grams of $Al_2(SO_4)_3$ is actually produced. Determine the percent yield for this reaction.

   a) 13%
   b) 52%
   c) 17%
   d) 26%
   e) 30%

6. (3 pts) According to the naming rules discussed in class, how many of the compounds listed below are **correctly** named?

Formula	Name
Na_2SO_4	disodium phosphate
$Zn(NO_3)_2$	zinc(II) nitrate
HBr	bromic acid
NO	nitrogen oxide

   a) 1
   b) 2
   c) 3
   d) 4
   e) 0

Answers: 1) E   2) C   3) D   4) A   5) B   6) E

For more practice, work the assigned problems from the textbook! Lists of problems and solutions are on Gauchospace.