

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

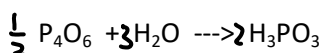
You may work out the problems and write your answers on this quiz; however, you must completely fill in the appropriate bubble(s) on your ParSCORE form. Turn in the ParSCORE form only. **Only the answers indicated on your ParSCORE will be graded**, so please be very careful bubbling in your ParSCORE. 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) The ion $^{14}_7\text{N}^{3-}$ has:

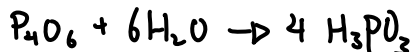
- a) 7 protons, 7 neutrons, 4 electrons
- ☒ b) 7 protons, 14 neutrons, 4 electrons
- ☒ c) 7 protons, 14 neutrons, 7 electrons
- d) 7 protons, 7 neutrons, 10 electrons
- ☒ e) 14 protons, 7 neutrons, 7 electrons

D

2. (3 pts) When the following equation is balanced with lowest whole-number coefficients, what will be the coefficient in front of H_2O ?



- a) 1
- b) 3
- c) 6
- d) 12
- e) none of these



C

3. (3 pts) Which of the following contains the largest number of fluorine atoms?

- a) 70.0 grams of F_2
- b) 100. grams of BF_3
- c) 115 grams of AlF_3
- d) More than one of these

Calculate moles by molar mass
Times #F atom in molecule.

B

4. (4 pts) Consider the following reaction: $4 \text{ Fe (s)} + 3 \text{ O}_2 \text{ (g)} \rightarrow 2 \text{ Fe}_2\text{O}_3$

If 30. grams of Fe reacts with 22 grams of O_2 , how many grams of Fe_2O_3 will actually be produced, assuming the reaction has a 65% yield?

- a) 43 g
- b) 82 g
- c) 34 g
- d) 54 g
- e) 28 g

Calculate mole, Calculate limiting by division method.
Find maximum produced, find mass with molar mass.
Times yield.

E

5. (3 pts) According to the naming rules discussed in class, which of the following is/are named incorrectly?

- I. ZnF_2 is zinc(II) fluoride
- II. K_2SO_4 is dipotassium sulfate
- III. HIO_2 is hydroiodous acid

↖ Zinc is an exception, only 2+ possible, so Zinc Fluoride.

Does not matter if metal, no number prefix required.

↳ Oxoacid does not need this part, so

- a) I. only
- b) II. only
- c) III. only
- d) II. and III. only
- e) I., II., and III.

E

6. (4 pts) Rubidium has two stable isotopes: ^{85}Rb has an atomic mass of 84.912 amu, while ^{87}Rb has an atomic mass of 86.909 amu. If the average atomic mass of rubidium is 85.468 amu, what is the natural abundance of the ^{85}Rb isotope?

x%

- a) 72.2%
- b) 27.8%
- c) 62.4%
- d) 57.6%
- e) 50.0%

$$84.912 \times x + 86.909 \times (100 - x) = 100 \times 85.468$$

hence A

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

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