Before doing anything, fill in the following on your ParSCORE form:

1) **Write your name**
2) Bubble in **FORM A**
3) **Bubble in your PERM** number (7 digits only—no extra numbers)

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. **All questions are equal in point value.**

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. Which of the following statements is/are true, according to the naming conventions discussed in class and in the textbook?

a) The formula of hydrosulfuric acid is H_2SO_4 ← Sulfuric acid
b) The name of FeO is iron oxide Iron (II) Oxide
c) Both (a) and (b) are true
d) Neither (a) nor (b) are true

D

2. How many oxygen atoms are there in a 23.5 gram sample of calcium phosphate?

a) 1.8×10^{23}
b) 4.6×10^{23}
c) 1.0×10^{23}
d) 3.6×10^{23}
e) 4.2×10^{23}

D

$Ca_3(PO_4)_2$

$40\times3 + 2(31+16\times4)$

$= 120 + 190$

$= 310$ g/mol

$4.56\times10^{22}\times8$

3. Which of the following statements is/are true about the ion $^{7}_{4}Be^{2+}$

a) It contains more electrons than protons ✗
b) It contains more neutrons than electrons ✓
c) It contains more neutrons than protons ✗
d) More than one of these is true
e) None of these are true

$7-4 = 3n$

$4p$

$2e^-$

B

4. Consider the following reaction: $2\ W + X \rightarrow 3\ Y + Z$
If 3.0 moles of W react with 2.0 moles of X to actually produce 2.0 moles of Y, what is the percent yield?

a) 40%
b) 33%
c) 44%
d) 100%
e) 67%

$\frac{3}{2} = 1.5$ $1.5 < 2$, W limiting

$\frac{3}{2} \times 3 = 4.5$ mole Y

$\frac{2}{4.5} = 44\%$

C

5. Determine the **SUM** of **ALL** coefficients when the following equation is balanced with lowest-whole number coefficients. Be sure to include coefficients of one (if there are any).

$$2\ CaO + 5C \rightarrow 2CaC_2 + CO_2$$

a) 10
b) 9
c) 8
d) 7
e) none of these

A

6. Identify the limiting reactant when 400 g of NH_3, 600 g of O_2, and 250 g of CH_4 react according to the following equation: $2\ NH_3 + 3\ O_2 + 2\ CH_4 \rightarrow 2\ HCN + 6\ H_2O$

17 32 16

23.5mol 15.625 mol

18.75mol

a) NH_3
b) CH_4
c) HCN
d) H_2O
e) O_2

F

$\frac{23.5}{2} = 11.75$

$\frac{18.75}{3} = 6.25$

$\frac{15.625}{2} = 7.81$

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