Gen Chem I (CHM 220) Fall 17 Dr. Hahn MWF 9 am Quiz I 8/23W Exam # _____

Name key Print Name _____

Please show work on all questions for partial credit even on questions which do not specify. (25 total pts)

1. (a) Give the name of the element **Na** (2 pts)

sodium

(b) Give the symbol for the element **sulfur** (2 pts)

S

2. centimeter means $\frac{1}{100}$ meters or 10 raised to what power 10^{-2} (don't forget sign) (4 pt, 2 pts each)

3. Significant Figures: Show work for determining correct number of significant figures in the following calculations. (2 pts)

988.798 - 200.1 + 1.0001 = 789.6981 (calculator number) correct # (to correct sig fig) is

789.7

988.798
− 200.1
+ 1.0001
789.7
column

4. For the element **N** (nitrogen) answer the following (1/2 pts each blank, 4 pts total)

a) How many protons 7 b) How many electrons for the neutral atom 7

c) Give the symbol in the format ${}^{A}_{Z}X$ for the same element $^{14}_{7}N$

d) What group is the element in 5A e) What period is the element in 2

f) What is the likely charge on the element −3 (1/2 pts) Explain or show work. (1/2 pts)

5 − 8 = −3

g) Is the element a [(metal) or (nonmetal)]

$(+2)(\#_{Ca}) + (-1)(\#_{NO_3^-}) = \text{zero}$

5. Give the formula for the ionic compound made from the following element or polyatomic ion. (4 pts) (show work)

Ca and (NO_3^-)

Ca → group 2A → Ca^{+2}

Ca^{+2} NO_3^-

$Ca(NO_3)_2$

ionic
NO # prefix

6. Name the following: (2 pts) covalent molecule need # prefix

SF_6 (# prefix) 1st name (# prefix) 2nd name

mono - not needed (usually leave out mono)

sulfur hexafluoride

7. Convert from 2.35 lb to mg (453.5 g = 1 lb) Show work. (5 pts)

$$\frac{2.35\ \text{lb}}{3\ \text{sig fig}} \times \frac{453.5\ \text{g}}{1\ \text{lb}} \times \frac{1000\ \text{mg}}{1\ \text{g}} = 1065725.$$

wait calculate #

1.07×10^6 mg

Extra Credit Question: (Avogadro's number = 6.022×10^{23}) (4 pts)

If you have 79.2 grams of the element **Co** (cobalt) , how many atoms of **Co** do you have ?

Co atomic mass = 58.9 g/mol molar mass

$$79.2\ \text{g Co} \times \frac{1\ \text{mol Co}}{58.9\ \text{g Co}} \times \frac{6.022 \times 10^{23}}{1\ \text{mol Co}} =$$

8.09749×10^{23} 3 sig fig

8.10×10^{23} atoms Co

General Chemistry I (CHM 220) Fall 17 Dr. Hahn MWF 10 am Quiz I 8/23W Exam # _____

Name Key Print Name _____

Please show work on all questions for partial credit even on questions which do not specify. (25 total pts)

1. (a) Give the name of the element **K** (2 pts)

potassium

(b) Give the symbol for the element **phosphorus** (2 pts)

P

2. milliliter means $\frac{1}{1000}$ liters or 10 raised to what power 10^{-3} (don't forget sign) (4 pts, 2pts each)

3. Significant Figures: Show work for determining correct number of significant figures in the following calculations. (2 pts)

(988.798 * 2.170) / (2.040) = 1051.809637 (calculator number) correct # (to correct sig fig) is

6 4 4

1052

4. For the element **S** (sulfur) answer the following (1/2 pt each blank, 4 pts total)

a) How many protons 16 b) How many electrons for the neutral atom 16

c) Give the symbol in the format ${}^{A}_{Z}X$ for the same element $^{32}_{16}S$

d) What group is the element in 6A e) What period is the element in 3

f) What is the likely charge on the element −2 (1/2 pt) Explain or show work.(1/2 pt explain)

6 − 8 = −2

g) Is the element a [(metal) or (nonmetal)]

ionic NO / #prefix

5. Give the formula for the ionic compound made from the following element or polyatomic ion. (4 pts) (show work)

(NH_4^+) and (N) — group ~~VIIIA~~ (5A) 5 − 8 = −3

NH_4 (+1) N (−3) $(NH_4)_3N$

$(+1)(\#_{NH_4}) + (-3)(\#_N) = \text{zero}$

6. Given the name write out the formula. (2 pts) Covalent - has # prefix

dinitrogen tetrachloride N_2Cl_4

7. Convert from 7899.34 inches to kilometers (2.54 cm = 1 inch) Show work. (5 pts)

$$7899.34 \text{ inches} \times \frac{2.54 \text{ cm}}{1 \text{ inch}} \times \frac{1 \text{ m}}{100 \text{ cm}} \times \frac{\text{km}}{1000 \text{ m}} =$$

6 sig fig

$0.200643236 \rightarrow 0.200643$

Extra Credit Question: (Avogadro's number = 6.022×10^{23}) (4 pts)

If you have 92.3 grams of the element Fe (iron), how many atoms of Fe do you have ?

$$92.3 \text{ g Fe} \times \frac{1 \text{ mol Fe}}{55.85 \text{ g Fe}} \times \frac{6.022 \times 10^{23}}{1 \text{ mol Fe}} = 9.95 \times 10^{23} \text{ atoms Fe}$$

$$55.85 \text{ g Fe} = 1 \text{ mol Fe} = 6.022 \times 10^{23} \text{ atoms Fe}$$

Gen Chem I (CHM 220) Fall 17 Dr. Hahn MWF 9 am Quiz I 8/23W Exam # 6-3

Name _____ Print Name _____

Please show work on all questions for partial credit even on questions which do not specify. (25 total pts)

1. (a) Give the name of the element **Na** (2 pts)

(b) Give the symbol for the element **sulfur** (2 pts)

2. centimeter means _____ meters or 10 raised to what power _____ (don't forget sign) (4 pt, 2 pts each)

3. Significant Figures: Show work for determining correct number of significant figures in the following calculations. (2 pts)

988.798 - 200.1 + 1.0001 = 789.6981 (calculator number) correct # (to correct sig fig) is

_____

4. For the element **N** (nitrogen) answer the following (1/2 pts each blank, 4 pts total)

a) How many protons _____ b) How many electrons for the neutral atom _____

c) Give the symbol in the format ${}^{A}_{Z}X$ for the same element _____

d) What group is the element in _____ e) What period is the element in _____

f) What is the likely charge on the element _____ (1/2 pts) Explain or show work. (1/2 pts)

g) Is the element a [(metal) or (nonmetal)]

5. Give the formula for the ionic compound made from the following element or polyatomic ion. (4 pts) (show work)

Ca and (NO_3^-)

6. Name the following: (2 pts)

SF_6

7. Convert from 2.35 lb to mg (453.5 g = 1 lb) Show work. (5 pts)

Extra Credit Question: (Avogadro's number = 6.022×10^{23}) (4 pts)

If you have 79.2 grams of the element **Co** (cobalt) , how many atoms of **Co** do you have ?

General Chemistry I (CHM 220) Fall 17 Dr. Hahn MWF 10 am Quiz I 8/23W Exam # 1-3

Name _____ Print Name _____

Please show work on all questions for partial credit even on questions which do not specify. (25 total pts)

1. (a) Give the name of the element **K** (2 pts)

(b) Give the symbol for the element **phosphorus** (2 pts)

2. milliliter means _____ liters or 10 raised to what power _____ (don't forget sign) (4 pts, 2pts each)

3. Significant Figures: Show work for determining correct number of significant figures in the following calculations. (2 pts)

(988.798 * 2.170) / (2.040) = 1051.809637 (calculator number) correct # (to correct sig fig) is

_____

4. For the element **S** (sulfur) answer the following (1/2 pt each blank, 4 pts total)

a) How many protons _____ b) How many electrons for the neutral atom _____

c) Give the symbol in the format ${}^{A}_{Z}X$ for the same element _____

d) What group is the element in _____ e) What period is the element in _____

f) What is the likely charge on the element _____ (1/2 pt) Explain or show work.(1/2 pt explain)

g) Is the element a [(metal) or (nonmetal)]

5. Give the formula for the ionic compound made from the following element or polyatomic ion. (4 pts) (show work)

(NH_4^+) and N

6. Given the name write out the formula. (2 pts)

dinitrogen tetrachloride

7. Convert from 7899.34 inches to kilometers (2.54 cm = 1 inch) Show work. (5 pts)

Extra Credit Question: (Avogadro's number = 6.022×10^{23}) (4 pts)

If you have 92.3 grams of the element Fe (iron), how many atoms of Fe do you have ?