(NW = no work) (NA = not attempted)

Name ___Key___   Print Name _____

Please show work on all questions for partial credit even on questions which do not specify. (50 total pts)

1. SiO_2 is a [(element) (compound)] (circle one) (4 pts)   (sign –E)

2. Milligram means ___1000___ grams or 10 raised to what power ___10^{-3}___ (don't forget sign) (6 pt)
   (0.001)

3. How many significant figures is in the following calculation: ___4___ (4 pts) # of significant figures
(show work, # of sig fig for each number or the column) (4 pts for work)

$(88.79 * 100.1) / (1.0001) = 8886.990301$ (calculator number) write the actual # here ___8886___ (8 pts)

4 s.f.   4 s.g.   5 s.f.   4 s.f.   (NW) 4   (S.F. –2) 8887 (round up) rounding –1

4. For the element **selenium** answer the following (2 pts each blank, 16 pt total)

 a) what is the chemical symbol ___Se___

b) How many protons ___34___   c) How many electrons for the neutral atom ___34___

d) Give symbol in the format $^A_Z X$ for the same element ___$^{79}_{34}Se$___

e) What group is the element in ___VI A___   f) What period is the element in ___4___

g) What is the likely charge on the element ___–2___ Explain or show work?
   $6 – 8 = -2$ (group # –8)   (2 pt)

element
ang IA, IIA, IIIA, IVA, VA, VIA, VIIA, VIIIA

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

5. Give the symbol for one main group element ___N___ (6 pts)   (N ~ many more)   (upside down each) (–1 pt)

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

If you have 0.789 Kg of the element iron (Fe), how many atoms of the element iron do you have? Show work.

(3 s.f.) $55.85\ g\ Fe = 1\ mol\ Fe = 6.022 \times 10^{23}\ atoms\ Fe$

$1000\ g = 1\ Kg$ (2pt)   (2pt)

$0.789\ Kg\ Fe \times \dfrac{1000\ g\ Fe}{1\ Kg\ Fe} \times \dfrac{1\ mol\ Fe}{55.85\ g\ Fe} \times \dfrac{6.022 \times 10^{23}\ atoms\ Fe}{1\ mol\ Fe}$

(2pt)   (2pt)

$= 8.507355416 \times 10^{24} \rightarrow 8.51 \times 10^{24}\ atoms\ Fe$

(2pt)

Name _____   Print Name _____

Please show work on all questions for partial credit even on questions which do not specify. (50 total pts)

1. SiO_2 is a [(element) (compound)] (circle one) (4 pts)

2.   Milligram means _____ grams or 10 raised to what power _____ (don't forget sign) (6 pt)

3.   How many significant figures is in the following calculation: _____ (4 pts) # of significant figures (show work, # of sig fig for each number or the column) (4 pts for work)

$(88.79 * 100.1) / (1.0001) = 8886.990301$ (calculator number) write the actual # here _____ (8 pts)

4.   For the element **selenium** answer the following (2 pts each blank, 18 pts total)

 a) what is the chemical symbol _____

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

d) Give symbol in the format ^AX_z for the same element _____

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

g) What is the likely charge on the element _____ Explain or show work.

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

5.   Give the symbol for one main group element _____ (6 pts)

Extra Credit Question: Dimensional Analysis Question: (Avogadro's number $= 6.022 \times 10^{23}$) (10 pts)

If you have 0.789 Kg of the element iron (Fe), how many atoms of the element iron do you have ?   Show work.

Name _____ Key _____   Print Name _____

Please show work on all questions for partial credit even on questions which do not specify. (50 total pts)

1. SiO_2 is a [(pure compound) (mixture)] (circle one) (4 pts)   sign −2

2.   Kilometer means __1000__ meters or 10 raised to what power __10^3__ (don't forget sign) (6 pt)

3.   How many significant figures is in the following calculation: ___4___ (4 pts) # of significant figures (show work, # of sig fig for each number or the column) (4 pts for work)

88.79 + 100.1 − 1.0001 = 187.8899 (calculator number)   write the actual # here __187.9__ (8 pts)

88.79
100.1
1.0001   → 187.9

NW −4   s.f. −2   rounding −1

4.   For the element **sodium** answer the following (2 pts each blank, 18 pts total)

a) what is the chemical symbol __Na__

b) How many protons __11__   c) How many electrons for the neutral atom __11__

d) Give symbol in the format $^A_Z X$ for the same element __$^{23}_{11}Na$__

e) What group is the element in __IA__   f) What period is the element in __3__

3B to 2B any. element ingroups

g) What is the likely charge on the element __+1__ Explain or show work. main group

element + group #   (2pt)

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

5.   Give the symbol for one transition metal element __Fe__ (6 pts) $1000 mg = 1g$

+ many more

Extra Credit Question: Dimensional Analysis Question: (Avogadro's number = 6.022 × 10^{23}) (10 pts) atoms 2)

$12.01 g = 1 mol = 6.022 × 10^{23}$

If you have 457.2 mg of the element carbon (C, commonly called graphite), how many atoms of the element carbon do you have ? Show work.

4 sig fig   infinite (2pt)   (2pt)   (2pt) 4 sig f.s

$457.2 \, mg \, C \times \dfrac{1 g C}{1000 \, mg \, C} \times \dfrac{1 \, mol \, C}{12.01 g} \times \dfrac{6.022 × 10^{23} \, atoms \, C}{1 \, mol \, C}$

(2pt)   4 sig f.g

$= 2.292 × 10^{22} \, atoms \, C$

$2.292471607 × 10^{22}$ ← 4 sig fig

each upside down −1

(2pt)

Name _____   Print Name _____

Please show work on all questions for partial credit even on questions which do not specify. (50 total pts)

1. SiO_2 is a [(pure compound) (mixture)] (circle one) (4 pts)

2.   Kilometer means _____ meters or 10 raised to what power _____ (don't forget sign) (6 pt)

3.   How many significant figures is in the following calculation: _____ (4 pts) # of significant
figures (show work, # of sig fig for each number or the column) (4 pts for work)

$88.79 + 100.1 - 1.0001 = 187.8899$ (calculator number)   write the actual # here _____ (8 pts)

4.   For the element **sodium** answer the following (2 pts each blank, 18 pts total)

 a) what is the chemical symbol _____

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

d) Give symbol in the format $^A_Z X$ for the same element   _____

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

g) What is the likely charge on the element _____ Explain or show work.

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

5.   Give the symbol for one transition metal element _____ (6 pts)

Extra Credit Question: Dimensional Analysis Question: (Avogadro's number $= 6.022 \times 10^{23}$) (10 pts)

If you have 457.2 mg of the element carbon (C, commonly called graphite), how many atoms of the element carbon do
you have ? Show work.