Chem 1014
In-Class Problem Set #6
InClass September 27, 1999
Fall 1999

Name_____
TA Name _____
Lab Section #_____

1. How many protons and electrons in each of the following?

   a) Pt **78 protons** **78 electrons**

   b) P^{-3} **15 protons** **18 electrons**

   c) Ge^{+2} **32 protons** **30 electrons**

2. How many protons, neutrons and electrons in each of the following?

   a) $^{19}_{9}F$ **9 protons** **9 electrons** **10 neutrons**

   b) $^{32}_{16}S^{2-}$ **16 protons** **18 electrons** **16 neutrons**

3. Complete the following table.

Symbol	# protons	# neutrons	# electrons	charge
$^{96}_{42}Mo$	**42**	**54**	**42**	**0**
$\mathbf{^{119}_{50}Sn^{2+}}$	50	69	**48**	+2
$^{83}_{36}Kr$	**36**	47	**36**	**0**
$\mathbf{^{89}_{34}Se^{2-}}$	**34**	45	36	2-

4. Express each of the following as either a decimal number or in standard scientific notation.

   a) 2,200,000
   2.2×10^{6}

   b) 8.900×10^{-6}
   0.000008900

   c) 4.2389×10^{6}
   4,238,900

   d) 602,300,000,000,000,000,000,000
   6.023×10^{23}

   e) 0.00005670
   5.670×10^{-5}

   e) 3.56
   3.56×10^{0}

5. Perform the following operations and report your answer in exponential notation.

a) $(3.2 \times 10^{4})(2.8 \times 10^{3}) = \mathbf{8.96 \times 10^{7}}$

b) $(4.67 \times 10^{-5})(1.04 \times 10^{-8}) = \mathbf{4.86 \times 10^{-13}}$

c) $\dfrac{1.04 \times 10^{8}}{(6.81 \times 10^{-3})} = \mathbf{1.53 \times 10^{10}}$

d) $\dfrac{3.42}{(8.45 \times 10^{-2})} = \mathbf{4.05 \times 10^{1}}$

e) $(1.31 \times 10^{5}) + (1.04 \times 10^{4}) = \mathbf{1.41 \times 10^{5}}$

f) $(3.86 \times 10^{-3}) + (4.29 \times 10^{-2}) = \mathbf{4.68 \times 10^{-2}}$

g) $(4.25 \times 10^{-11}) - (2.56 \times 10^{-7}) = \mathbf{-2.56 \times 10^{-7}}$

h) $(7.33 \times 10^{5}) - (5.18 \times 10^{4}) = \mathbf{6.81 \times 10^{5}}$