

Exercise 2.7

Structures and Naming I

Name: _____

Date: _____ Per: _____

DIRECTIONS: Complete the following in the space provided:

1. Observations of the reaction between nitrogen gas and hydrogen gas show us that 1 volume of nitrogen reacts with 3 volumes of hydrogen to make 2 volumes of gaseous product as shown below.



Determine the formula of the product: _____

2. A sample of H_2SO_4 contains 2.02 g of hydrogen, 32.07 g of sulfur, and 64.00 g of oxygen. How many grams of sulfur and grams of oxygen are present in a second sample of H_2SO_4 containing 7.27 g of hydrogen.

3. For each of the following sets of elements, label each as either noble gases, halogens, alkali metals, alkaline earth metals, or transition metals:

a. Ti, Fe, Ag: _____

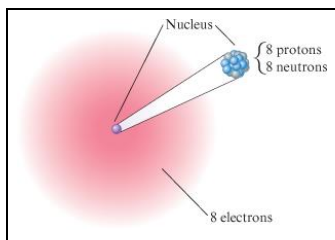
d. F, Br, I: _____

b. Mg, Sr, Ba: _____

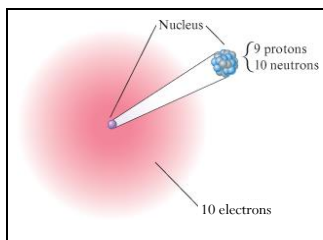
e. Li, K, Rb: _____

c. Ne, Kr, Xe: _____

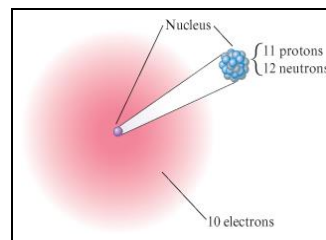
4. Write the symbol of each atom using the ${}^A_Z\text{X}$ format:



a.



b.



c.

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5. Complete the following chart:

Symbol	# of Protons	# of Neutrons	# of Electrons	Net Charge
${}^{238}_{92}\text{U}$				
	20	20		2+
	23	28	20	
	35	44	36	
	15	16		3-
${}^{53}_{26}\text{Fe}^{2+}$				
	26	33		3+
	85	125	86	
	13	14	10	
		76	54	2-

6. Name each of the following compounds:

- | | |
|-----------------------------------|------------------------------------|
| a. Rb_2O : _____ | f. SeCl_4 : _____ |
| b. FeBr_3 : _____ | g. Sr_3P_2 : _____ |
| c. S_4N_4 : _____ | h. Co_2S_3 : _____ |
| d. Ag_2S : _____ | i. SO_3 : _____ |
| e. CuI_2 : _____ | j. AlI_3 : _____ |

7. Write the formula for each of the following compounds:

- | | |
|------------------------------|----------------------------------|
| a. sulfur difluoride: _____ | f. manganese(IV) sulfide: _____ |
| b. lithium nitride: _____ | g. diphosphorus pentoxide: _____ |
| c. tin(II) chloride: _____ | h. cadmium selenide: _____ |
| d. carbon tetraiodide: _____ | i. chromium(VI) oxide: _____ |
| e. gallium arsenide: _____ | j. calcium iodide: _____ |