Warm-Up #16 Name:_____ Date:_____

1. Write the electron configuration for an atom of gallium, Ga. # 31 = 31 p+ + 31 e-

$1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^2\ 3d^{10}\ 4p^1$

2. What is the maximum number of electrons that can be in each of the following sublevels?

a. 3p 6 c. 2s 2 e. 1s 2

b. 4d 10 d. 4f 14 f. 2p 6

normal

3. Which element has a ground state electron configuration of

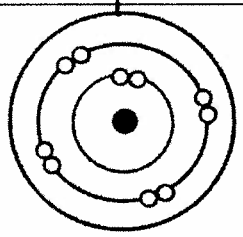
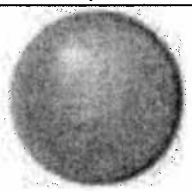
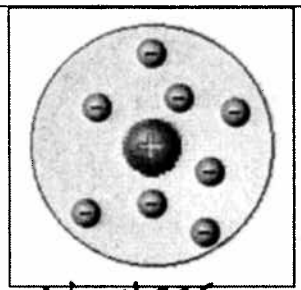
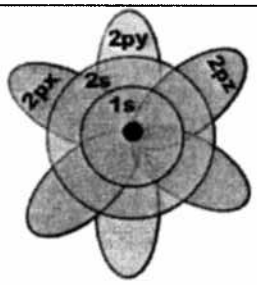
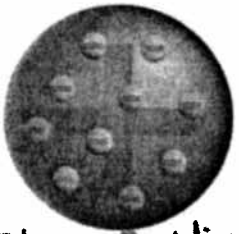
$1s^2 2s^2 2p^6 3s^2\ 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^2$ Zr

4. Calculate the number of atoms in a 58.2 gram sample of strontium, Sr?

$$58.2\ g\ Sr \left| \frac{1\ mol\ Sr}{87.62\ g\ Sr} \right| \frac{6.02 \times 10^{23}\ atoms\ Sr}{1\ mol\ Sr} = 3.99867 \times 10^{23}$$

$$= 4.00 \times 10^{23}\ atoms\ Sr$$

5. Name the scientist associated with each atomic model and then arrange the models in chronological order using #'s 1-5.

Scientist	Bohr	Dalton	Rutherford	Quantum Mechanical Model	Thomson
#	4	1	3	5	2
Model	 planetary		 Nuclear		 Plum Pudding

6. Identify the number of protons and electrons in each of the following atoms/ions.

Symbol	# of p^+	# of e^-
Sr	38	38
Mg^{2+}	12	10
P^{3-}	15	18

atomic

depends on charge

neutral: $\#p^+ = \#e^-$

positive: $\#p^+ > \#e^-$

negative: $\#p^+ < \#e^-$