

1: Up and Atom

Name:

HW 3: Electron Configuration

Class:

Date:

Steps to writing an electron configuration

1. Figure out how many electrons the atom has. In a neutral atom, the number of electrons is equal to the number of _____.
2. Using a table of elements, write down the energy level (number) and atomic orbital (letter) for all of the atoms up to and including your atom.
3. Put the correct number of electrons as a superscript behind each energy level and atomic orbital.

Electron Configurations in the Periodic Table

1 H 1s																				2 He 1s	
3 Li 2s	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne				
11 Na 3s	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar				
19 K 4s	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr				
37 Rb 5s	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe				
55 Cs 6s	56 Ba	57 La	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn				
87 Fr 7s	88 Ra	89 Ac	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110	111	112	113	114								
			58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu					
			90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr					

by: Sarah Faizi

1. Explain how to determine the number of valence electrons in an atom.

For each of the following, determine the electron configuration and the number of valence electrons.

Atom/ Ion	Electron Configuration	Number of valence electrons
2. Na		
3. Mg^{+2}		
4. Ge		
5. Co		
6. Ni		
7. Ne		
8. K^{+1}		
9. O^{-2}		

10. Consider the ions in the table above. How many valence electrons do they all have?