# **Electron Configuration Problems**

### **Electron Configuration = a walk through the table**

What element has the electron configuration  $1s^22s^22p^4$ ? Oxygen What period is it in? 2 What group is it in? 6

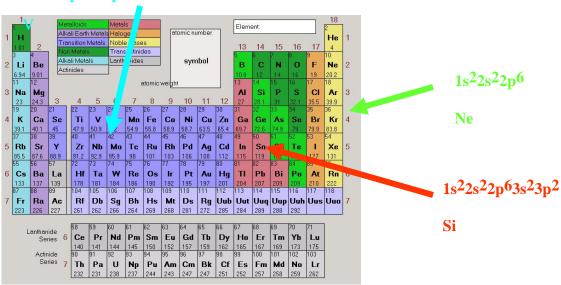
Without "Table" Coefficient = period " A" Group = s + p



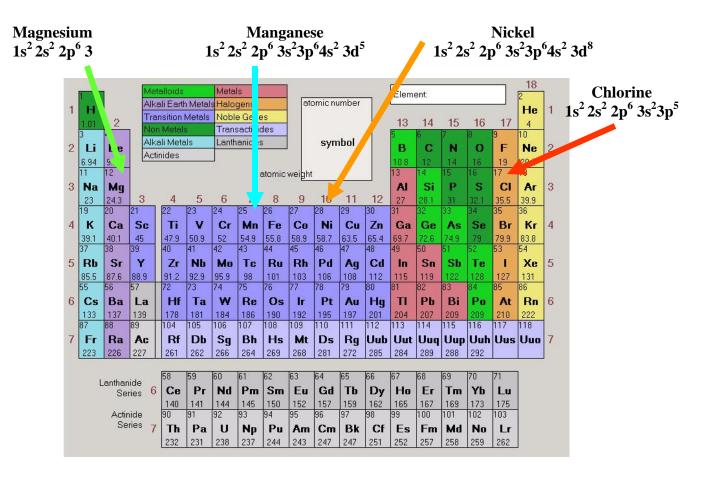
	1		Metalloids Metals							Elemen									1
	н	Alkali Earth Metals			Children Control	Control of the Control			atomic number									ı	
	1.01	2	-		Noble Gases							13	14	4 16			He 4		
	3 4 NC			200 00000	n Metals		Transactinides					5	6			9 10		1	
	Li	Be	Alkali Metals			Lanth	Lanthanides			symbol			В	C	N	0	F	Ne	ı
	6.94	9.01	[Ad	tinides		_	J							12	14	16	19	20.2	
	11	12					13	14	15	16	17	18	1						
3	Na	Mg									11100100		AI	Si	P	S	CI	Ar	ı
	23	24.3	3	4	5	6	7	8	9	10	11	12	27	28.1	31	32.1	35.5	39.9	1
	19		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	ı
8	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr	ŀ
	39.1	40.1	45	47.9	50.9	52	54.9	55.8	58.9	58.7	63.5	65.4	69.7	72.6	74.9	79	79.9	83.8	1
	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51		53	54	ı
)	Rb	Sr	Υ	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	200	Xe	Š
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	87	88	89	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	ł
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		anthar	turu	58	59	60	61	62	63	64	65	66	67	68	69	70	71	1	
	L			6 Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu		
		ATT THE TOTAL OF		140	141	144	145	150	152	157	159	162	165	167	169	173	175		
		Actinide			91	92	93	94	95	96	97	98	99	100	101	102	103		
Series			7 Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr			
				232	231	238	237	244	243	247	247	251	252	257	258	259	262		

#### Identify the elements with electron configurations



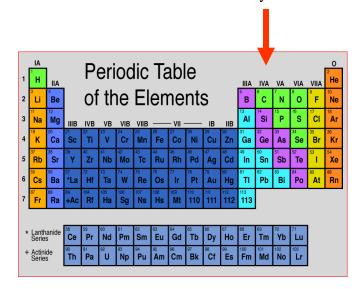


## Write the ground state electron configuration of:



#### What is the # of valence electrons in atoms of carbon & silicon?

Carbon and Silicon members of family 4A → 4 electrons



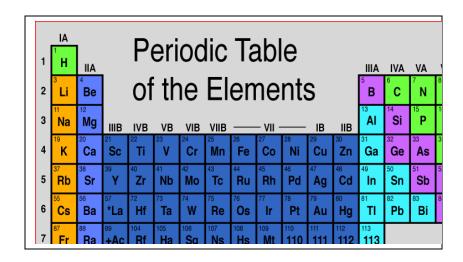
# Which group of the Periodic Table does ns<sup>2</sup>np<sup>4</sup> represent? VI A Which Atoms Are Isoelectronic?

N<sup>3</sup>- [Ne] & F- [Ne] Yes, both have same configuration (Ne)

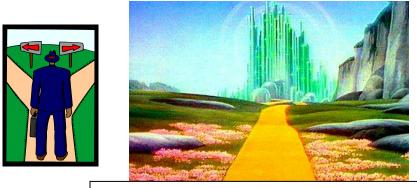
K+ [Ar] & Br- [Kr] No, different outer shells

C<sup>4+</sup> [Ne] & O<sup>2-</sup> [Ne] Yes, both have same configuration (Ne)

Mg<sup>2+</sup> [Ne] & Ca<sup>2+</sup> [Ar] No, different outer shells



#### **Path To Success**



Start at Hydrogen
Walk Through Tables –one electron at a time
until
Element or Configuration is reached

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