Announcements - Lecture VII- Tuesday, Sep 25th LAB 2: Sat Sept 29th, 1-4:00pm 1) PRINT EXPERIMENT 11) **CHECK** out sample quizon class web site. EXAM 1: THU Oct 4th, in class . • **Slide - 59**

						Elec	tron	Configurations Works	heet.		
^ -				-	AL BOX	2-	2-	Electronic Configuration	Nieble Con	(4)	Louis Not
Gp 1A	ц	#e	1s	2s	2p	3s	3p	Electronic Configuration	Noble Gas	Valence	Lewis Dot
IA	н	1		Н		ЦĻ		1 <u>5</u>	15 ¹	1	
8A	He	2 (15 ²	15 ²	2	He
			60.00	8776		1776 IC		1676		19 	62
1 A	Li	3	t.			ΠΓ	Π	(3) <u>15°25'</u>	[He] 25'	1	Li•
2A	Be	4		<u>r</u> ,				15 ² 25 ²	[He]25 ²	2	Be
3A	В	5		1					[He]2522p1	3	В
4A	с	6 (2		21	• •			15252p2	[He]25 ² 2p ²	4	C
5A	Ν	7	11	11	111				[He]2522p3	5	N
A	0	8	11,	11				45252p4	[He]2522p4	6	0
A	F	9	ţ,	1J,	rj, 11, 1			45252p5	[He]25 ² 2p ⁵	7	F
BA	Ne	10	11,	n	1111			15 25 2P6	[He]25 ² 29 ⁶	8	Ne

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2.6		Ho	w Aı	re tl	ne Elec	ctro	ons in	an Atom Arranged?			
						E	lectron	Configurations Works	heet.		
Gp		#e	1s	2s	2p	3s	3р	Electronic Configuration	Noble Gas	Valence	Lewis Dot
1A	Na	11	11	11		1		1525 2p 35	[Ne] 351	1	Na•
2A	Mg	12	11	16	nun	11		152520 352	[Ne] 35 ²	2	Mg
3A	AI	13	11	11	11111	11	r	15-25-201 35-3p1	[Ne] 35 [°] 391	3	AI
4A	Si	14	11	11	ri 1111	11	11	1525 20 35 302	[Ne] 35 ² 3p ²	4	Si
5A	Ρ	15	11	11		11	111	152520 3523P3	[Ne]35 ² 3p ³	5	P
6A	s	16	11	11	11 1111	11		152522063523p4	[Ne] 35 ² 3p ⁴	6	S
7A	Cl	17	1]	11	11 11 11	₩,	nur	15 25 2pb 35 3p5	[Ne] 35 ² 3p ⁵	7	CI
8A	Ar	18	11	1		ſĮ,		15-25-20 35-3p	[Ne] 35 ² 3p6	8	Ar



2.6	How Are the Elec	trons in an Atom Arranged?
1	Pauli	Maximum of 2 electrons per orbital
2	. Hund	Orbitals on the same level are filled singly first, then they are paired up.
3.	Noble Gas electrons	Their stability precludes them from any desire to get univolved in any chemistry under normal circunstances.
4.	Valence & Actions	Jor Main Group elements the total number of electrons occupying the highest n valued or litals
		* I: [Kr] 55 ² 4d ¹⁰ 5p ⁵ 7 valence electrons
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	Irar	nsition Metals		He:2								
		4P == =		Ne: 1(2							
	3p_	45		Ar : 18	8							
	35 2	/		Kr : 3	36							
2 2s	G	Orbital Stairway	\mathbf{Sc}^{21}	22 Ti	23 V	\mathbf{Cr}^{24}	${\overset{25}{ m Mn}}$	\mathbf{Fe}^{26}	27 Co	28	29	30
152	4	18 = [Ar]	Scandium 44.9559	Ti Titanium 47.88	V Vanadium 50.9415	Cr Chromium 51.9961	Manganese 54.9380	F'e Iron 55.847	Cobalt 58.9332	Ni Nickel 58.693	Cu Copper 63.546	Zn Zinc 65.39
-					58 0	jass m	eb site	to che	eck on th	itese pr	ediction	15
21	Sc :	[Ar] 45 ² 3d ¹]		1							
22	Ti :	[Ar] 4523d2			1							
23	V :	[Ar] 45 ² 3d ³			1							
24	Cr :	[Ar] 452 3d4			X	Q	ctual	[Ar]	45'3d ⁵	i.		
25	Mn :	[Ar] 452 3d5	Predictio	ns	1							
J6	Fe:	[Ar]452 3d6	}		1							
21	: ما	[Ar]45 ² 3d ⁷			1							
28	Ni :	[Ar] 452 3d8			1							
29	Eu :	[Ar] 452 3d9			X	()c	rua)	[Ar]4	15'3d ¹⁰			
30	Z٧:	[Ar]45*30"			5							

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2.	6	Ho	w A	re t	he Eleo	ctro	ons in ai	n Atom Arranged?			
1A	Li	3	↑↓	↑				<mark>1s²</mark> 2s ¹	[He]2s ¹	1	ы.
2A	Be	4	↑↓	↑↓				1s ² 2s ²	[He]2s ²	2	Be ;
ЗA	в	5	↑↓	↑↓	↑ I			<mark>1s²</mark> 2s²2p¹	[He]2s ² 2p ¹	3	Ŕ;
4A	с	6	↑↓	↑↓	\uparrow \uparrow			<mark>1s²</mark> 2s²2p²	[He]2s ² 2p ²	4	·ċ:
5A	Ν	7	↑↓	↑↓	$\uparrow \uparrow \uparrow$			<mark>1s²</mark> 2s²2p³	[He]2s ² 2p ³	5	·Ņ:
6A	0	8	↑↓	↑↓	↑↓ ↑ ↑			<mark>1s²</mark> 2s²2p⁴	[He]2s ² 2p ⁴	6	-ö:
7A	F	9	↑↓	↑↓	↑↓ ↑↓ ↑			<mark>1s²</mark> 2s²2p⁵	[He]2s ² 2p ⁵	7	iř.
8A	Ne	10	↑↓	↑↓	↑↓ ↑↓ ↑↓			<mark>1s²</mark> 2s²2p ⁶	[He]2s ² 2p ⁶	8	:Ne:
				а н н а							h.
1A	Na	11	↑↓	↑↓	↑↓ ↑↓ ↑↓	î		<mark>1s²2s²2p⁶3s¹</mark>	[Ne] 3s ¹	1	Na-
2A	Mg	12	↑↓	↑↓	↑↓ ↑↓ ↑↓	↑↓		<mark>1s²2s²2p⁶3s²</mark>	[Ne] 3s ²	2	Mg
ЗA	AI	13	↑↓	↑↓	↑↓ ↑↓ ↑↓	↑↓	Ŷ	<mark>1s²2s²2p⁶3s²3p¹</mark>	[Ne] 3s ² 3p ¹	3	AÌ;
4A	Si	14	↑↓	↑↓	↑↓ ↑↓ ↑↓	↑↓	↑ ↑	<mark>1s²2s²2p⁶3s²3p²</mark>	[Ne] 3s ² 3p ²	4	·si:
5A	Ρ	15	↑↓	↑↓	↑↓ ↑↓ ↑↓	↑↓	\uparrow \uparrow \uparrow	<mark>1s²2s²2p</mark> ⁶ 3s²3p³	[Ne] 3s ² 3p ³	5	• •
6A	s	16	↑↓	↑↓	↑↓ ↑↓ ↑↓	↑↓	↑↓ ↑ ↑	<mark>1s²2s²2p</mark> ⁶ 3s²3p ⁴	[Ne] 3s ² 3p ⁴	6	-\$1
7A	CI	17	↑↓	↑↓	↑↓ ↑↓ ↑↓	↑↓	↑↓ ↑↓ ↑	<mark>1s²2s²2p⁶3s²3p⁵</mark>	[Ne] 35 ² 3p ⁵	7	ដោ
8A	Ar	18	↑↓	↑↓	↑↓ ↑↓ ↑↓	↑↓	↑↓ ↑↓ ↑↓	<mark>1s²2s²2p</mark> 63s²3p6	[Ne] 3s ² 3p ⁶	8	: 茶 :

2.7 Electronic Configuration and Position in the Periodic Table

			Electron Configuration	Noble Gas	Valence	
1A	Li	3	<mark>1s²</mark> 2s¹	[He]2s ¹	1	6 -7
2A	Be	4	1s ² 2s ²	[He]2s ²	2	\leftarrow
3A	в	5	1s²2s²2p1	[He]2s ² 2p ¹	3	
4A	с	6	<mark>1s²</mark> 2s²2p²	[He]2s ² 2p ²	4	GROUP 1A
5A	Ν	7	<mark>1s²</mark> 2s²2p³	[He]2s ² 2p ³	5	(Charge, +1
6A	0	8	<mark>1s²</mark> 2s²2p⁴	[He]2s ² 2p ⁴	6	- GROUP 2A
7A	F	9	<mark>1s²</mark> 2s²2p ⁵	[He]2s ² 2p ⁵	7	
8A	Ne	10	<mark>1s²</mark> 2s²2p ⁶	[He]2s ² 2p ⁶	8	(Charge, +2)
1A	Na	11	1s ² 2s ² 2p ⁶ 3s ¹	[Ne] 3s ¹	1	$\left \left \right\rangle$
2A	Mg	12	<mark>1s²2s²2p⁶3s²</mark>	[Ne] 3s ²	2	← → Group 7A (Charge -1)
ЗA	AI	13	<mark>1s²2s²2p⁶</mark> 3s ² 3p ¹	[Ne] 3s ² 3p ¹	3	(Charge -1)
4A	Si	14	<mark>1s²2s²2p°</mark> 3s²3p²	[Ne] 3s ² 3p ²	4	
5A	Ρ	15	<mark>1s²2s²2p</mark> ⁶ 3s²3p³	[Ne] 3s ² 3p ³	5	
6A	s	16	<mark>1s²2s²2p⁶</mark> 3s ² 3p ⁴	[Ne] 3s ² 3p ⁴	6	
7A	CI	17	<mark>1s²2s²2p⁶3s²3p⁵</mark>	[Ne] 3s ² 3p ⁵	7	!!
		18	1s ² 2s ² 2p ⁶ 3s ² 3p ⁶	[Ne] 3s ² 3p ⁶	8	

2.7 Electronic Configuration and Periodic Blocks

