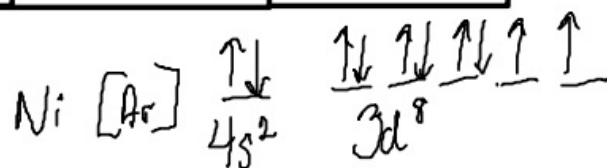
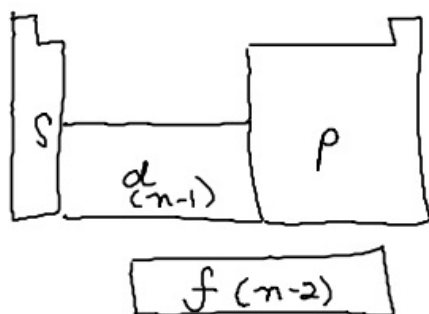


n energy level	l sub level	magnetic m orbitals direction in space	max # of orbitals	max # of e ⁻	s spins
1	s	0	1	2	$\frac{\uparrow\downarrow}{s}$
2	s p	0 -1 0 1	4 total s=1 p=3	8e ⁻ total s=2 p=6	$\frac{\uparrow\downarrow}{s}$ $\frac{\uparrow\downarrow}{p}$ $\frac{\uparrow\downarrow}{p}$
3	s p d	0 -1 0 1 -2 -1 0 1 2	9 total s=1 p=3 d=5	18e ⁻ total s=2 p=6 d=10	$\frac{\uparrow\downarrow}{s}$ $\frac{\uparrow\downarrow}{p}$ $\frac{\uparrow\downarrow}{p}$ $\frac{\uparrow\downarrow}{d}$ $\frac{\uparrow\downarrow}{d}$ $\frac{\uparrow\downarrow}{d}$
4 (5,6,7)	s p d f	0 -1 0 1 -2 -1 0 1 2 -3 -2 -1 0 1 2 3	16 total s=1 p=3 d=5 f=7	32e ⁻ total s=2 p=6 d=10 f=14	$\frac{\uparrow\downarrow}{s}$ $\frac{\uparrow\downarrow}{p}$ $\frac{\uparrow\downarrow}{p}$ $\frac{\uparrow\downarrow}{p}$ $\frac{\uparrow\downarrow}{d}$ $\frac{\uparrow\downarrow}{d}$ $\frac{\uparrow\downarrow}{d}$ $\frac{\uparrow\downarrow}{d}$ $\frac{\uparrow\downarrow}{f}$ $\frac{\uparrow\downarrow}{f}$ $\frac{\uparrow\downarrow}{f}$ $\frac{\uparrow\downarrow}{f}$ $\frac{\uparrow\downarrow}{f}$ $\frac{\uparrow\downarrow}{f}$



all noble gases end w/ p⁶
except He 1s²

Oxidation

* Know your regular charges *

<u>IA</u>	<u>IIA</u>	<u>IIIA</u>	<u>IVA</u>	<u>VIA</u>	<u>VIIA</u>	<u>VIIIA</u>
1+	2+	3+	4- 4+	3- 2-	2- 1-	0

charges - +/- in back
oxidation # +/- in front

* Know your ten polys + families *

ClO_3^{1-}	chlorate	ammonium	NH_4^{1+}
NO_3^{1-}	nitrate	carbonate	CO_3^{2-}
$\text{C}_2\text{H}_3\text{O}_2^{1-}$	acetate	peroxide	O_2^{2-}
CN^{1-}	cyanide	hydroxide	OH^{1-}
PO_4^{3-}	phosphate		

