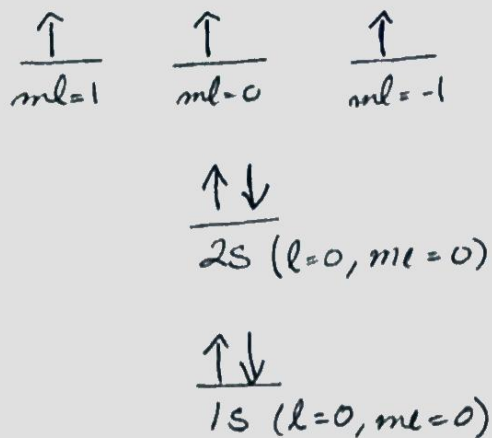
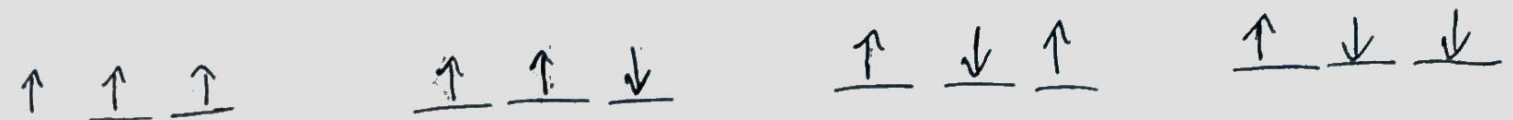
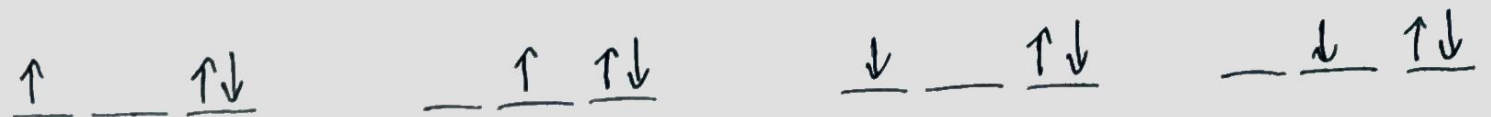


Estados atómicos del N^7

Configuración electrónica del N^7 : $1s^2 2s^2 2p^3$



Microrstados posibles $\binom{6}{3} = \frac{6!}{3!(6-3)!} = \frac{6 \cdot 5 \cdot 4 \cdot \cancel{3!}}{3! \cdot \cancel{3!}} = \frac{6 \cdot 5 \cdot 4}{3 \cdot 2} = 2 \cdot 5 \cdot 2 = 20$



$M_L \backslash M_S$	$3/2$	$1/2$	$-1/2$	$-3/2$
2		$(\uparrow, \uparrow, \uparrow)$	$(\uparrow, \uparrow, \downarrow)$	
1		$(\uparrow, \uparrow, \downarrow)$ $(\uparrow, \downarrow, \uparrow)$	$(\uparrow, \uparrow, \downarrow)$ $(\uparrow, \downarrow, \downarrow)$	
0	$(\uparrow, \downarrow, \downarrow)$	$(\uparrow, \downarrow, \downarrow)$ $(\uparrow, \downarrow, \uparrow)$ $(\downarrow, \downarrow, \uparrow)$	$(\uparrow, \downarrow, \downarrow)$ $(\uparrow, \downarrow, \uparrow)$ $(\downarrow, \downarrow, \downarrow)$	$(\downarrow, \downarrow, \downarrow)$
-1		$(\downarrow, \downarrow, \uparrow)$ $(\downarrow, \uparrow, \downarrow)$	$(\downarrow, \downarrow, \downarrow)$ $(\downarrow, \uparrow, \uparrow)$	
-2		$(\downarrow, \uparrow, \uparrow)$	$(\downarrow, \uparrow, \downarrow)$	

$M_L \backslash M_S$	$3/2$	$1/2$	$-1/2$	$-3/2$
2		1	1	
1		2	2	
0	1	3	3	1
-1		2	2	
-2		1	1	

Tomando la fila $M_L = 0$

$$M_S = \{3/2, 1/2, -1/2, -3/2\} \Rightarrow \boxed{S = 3/2}$$

$$M_L = \{0\} \Rightarrow \boxed{L = 0}$$

$$M_J = \{3/2, 1/2, -1/2, -3/2\} \Rightarrow \boxed{J = 3/2}$$

* Hay 4 microestados

$$\boxed{{}^4S_{3/2}}$$

$$\boxed{{}^{2S+1}L_J}$$

$M_L \backslash M_S$	$3/2$	$1/2$	$-1/2$	$-3/2$
2		1	1	
1		2	2	
0		2	2	
-1		2	2	
-2		1	1	

$$M_S = \{1/2, -1/2\} \Rightarrow \boxed{S = 1/2}$$

$$M_L = \{2, 1, 0, -1, -2\} \Rightarrow \boxed{L = 2}$$

$$M_J = \{5/2, 3/2, 1/2, -1/2, -3/2, -5/2\}$$

$$M_{J_1} = \{5/2, 3/2, 1/2, -1/2, -3/2, -5/2\} \Rightarrow \boxed{J_1 = 5/2}$$

$$M_{J_2} = \{3/2, 1/2, -1/2, -3/2\} = \boxed{J_2 = 3/2}$$

Has 6 microstates

$$\boxed{{}^2D_{5/2}}$$

Has 4 microstates

$$\boxed{{}^2D_{3/2}}$$

$M_L \backslash M_S$	$3/2$	$1/2$	$-1/2$	$-3/2$
2				
1		1	1	
0		1	1	
-1		1	1	
-2				

$$M_S = \{1/2, -1/2\} \Rightarrow \boxed{S = 1/2}$$

$$M_L = \{1, 0, -1\} \Rightarrow \boxed{L = 1}$$

$$M_J = \{3/2, 1/2, -1/2, -3/2\}$$

$$M_{J_1} = \{3/2, 1/2, -1/2, -3/2\} \Rightarrow \boxed{J_1 = 3/2}$$

$$M_{J_2} = \{1/2, -1/2\} \Rightarrow \boxed{J_2 = 1/2}$$

Has 4 microstates

$$\boxed{{}^2P_{3/2}}$$

Has 2 microstates

$$\boxed{{}^2P_{1/2}}$$

