TABLE 8.1 Filling of Atomic Subshells

n	l	Subshell	Capacity $2(2l+1)$
1	0	1*s*	2
2	0	2*s*	2
2	1	2*p*	6
3	0	3*s*	2
3	1	3*p*	6
4	0	4*s*	2
3	2	3*d*	10
4	1	4*p*	6
5	0	5*s*	2
4	2	4*d*	10
5	1	5*p*	6
6	0	6*s*	2
4	3	4*f*	14
5	2	5*d*	10
6	1	6*p*	6
7	0	7*s*	2
5	3	5*f*	14
6	2	6*d*	10

TABLE 8.2 Electronic Configurations of Some Elements

H	$1s^1$	Mn	$[Ar]4s^2 3d^5$	La	$[Xe]6s^2 5d^1$
He	$1s^2$	Cu	$[Ar]4s^1 3d^{10}$	Ce	$[Xe]6s^2 5d^1 4f^1$
Li	$1s^2 2s^1$	Zn	$[Ar]4s^2 3d^{10}$	Pr	$[Xe]6s^2 4f^3$
Be	$1s^2 2s^2$	Ga	$[Ar]4s^2 3d^{10} 4p^1$	Gd	$[Xe]6s^2 5d^1 4f^7$
B	$1s^2 2s^2 2p^1$	Kr	$[Ar]4s^2 3d^{10} 4p^6$	Dy	$[Xe]6s^2 4f^{10}$
Ne	$1s^2 2s^2 2p^6$	Rb	$[Kr]5s^1$	Yb	$[Xe]6s^2 4f^{14}$
Na	$[Ne]3s^1$	Y	$[Kr]5s^2 4d^1$	Lu	$[Xe]6s^2 5d^1 4f^{14}$
Al	$[Ne]3s^2 3p^1$	Mo	$[Kr]5s^1 4d^5$	Re	$[Xe]6s^2 5d^5 4f^{14}$
Ar	$[Ne]3s^2 3p^6$	Ag	$[Kr]5s^1 4d^{10}$	Au	$[Xe]6s^1 5d^{10} 4f^{14}$
K	$[Ar]4s^1$	In	$[Kr]5s^2 4d^{10} 5p^1$	Hg	$[Xe]6s^2 5d^{10} 4f^{14}$
Sc	$[Ar]4s^2 3d^1$	Xe	$[Kr]5s^2 4d^{10} 5p^6$	Tl	$[Xe]6s^2 5d^{10} 4f^{14} 6p^1$
Cr	$[Ar]4s^1 3d^5$	Cs	$[Xe]6s^1$	Rn	$[Xe]6s^2 5d^{10} 4f^{14} 6p^6$

A symbol in brackets [ ] means that the atom has the configuration of the previous inert gas plus the additional electrons listed.

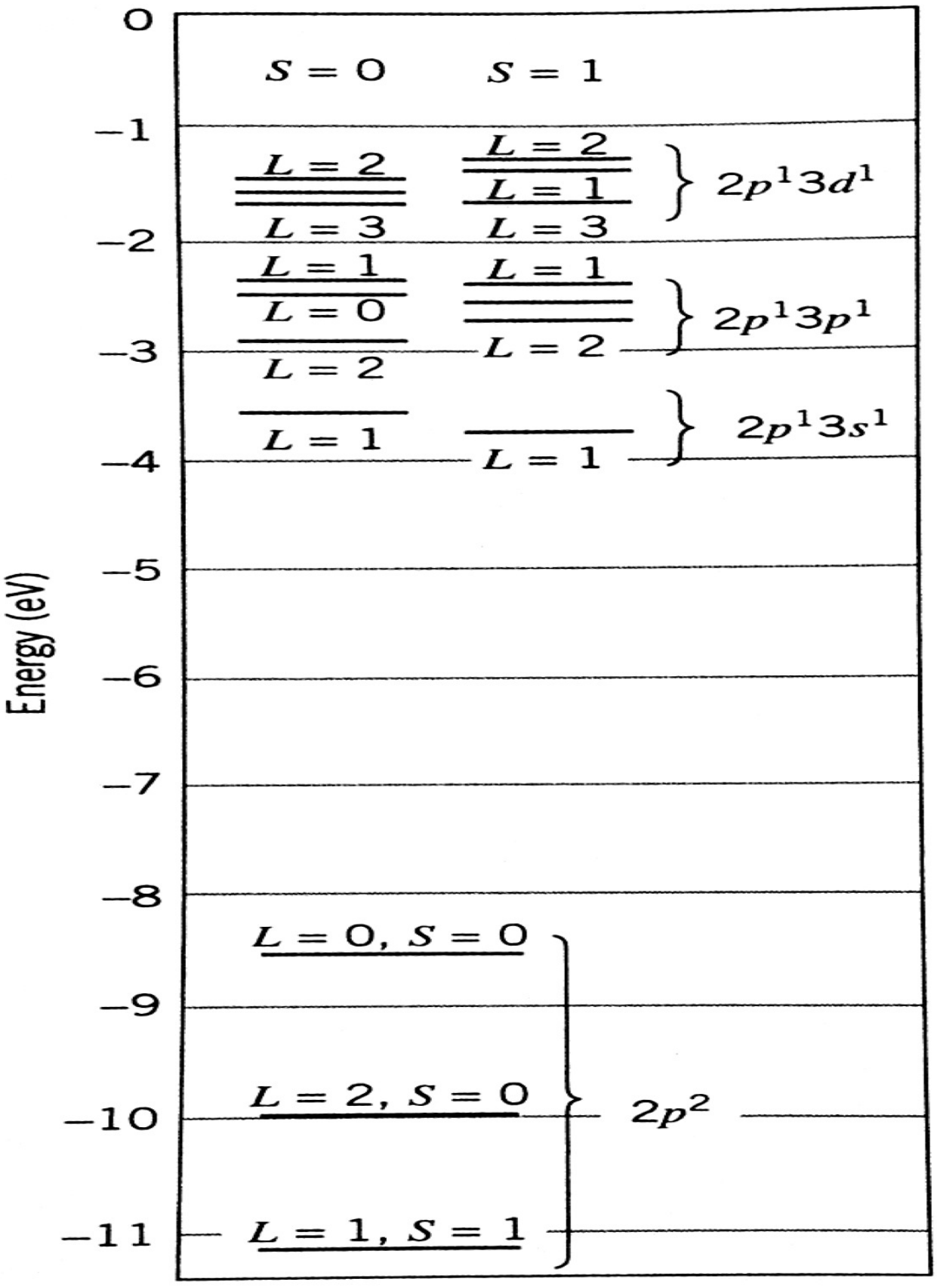

FIGURE 8.18 Energy-level diagram for carbon. Each group of levels is labeled with the electron configuration. Each individual level is labeled with the total L and S.