Hw # 6 p125 #18, 24, 26, 27, 29, 30-40

#18 a = 1 (s) c) 3 (s,p,d) e) 7
b) 2 s,p d) 4 (s,p,d,f)

#24

larger with extra energy level

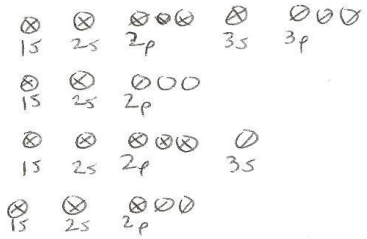
#26. Use your vocab

#27. Again

#29. The highest occupied energy level is the outermost shell
for example Chlorine = $1s^2\underline{2s}^2\underline{2p}^6\underline{3s}^2\underline{3p}^5$
3 is the highest occupied energy level.

(#30) (A) He $\underline{1s}^2 = 1$
(B) Be $1s^2\underline{2s}^2 = 2$
(C) Al $1s^2\underline{2s}^2\underline{2p}^6\underline{3s}^2\underline{3p}^1 = 3$
(D) Ca $= 1s^2\underline{2s}^2\underline{2p}^6\underline{3s}^2\underline{3p}^6\underline{4s}^2 = 4$
(E) Sn $= 1s^2\underline{2s}^2\underline{2p}^6\underline{3s}^2\underline{3p}^6\underline{4s}^2\underline{3d}^{10}\underline{4p}^6\underline{5s}^2\underline{4d}^{10}\underline{5p}^2 = 5$

(31) (A) P $= 1s^2\underline{2s}^2\underline{2p}^6\underline{3s}^2\underline{3p}^3$
(B) B $= 1s^2\underline{2s}^2\underline{2p}^1$
(C) Na $= 1s^2\underline{2s}^2\underline{2p}^6\underline{3s}^1$
(D) O $= 1s^2\underline{2s}^2\underline{2p}^4$



(32) (A) $1s^2\underline{2s}^1$ (B) $1s^2\underline{2s}^2\underline{2p}^2$ (C) $1s^2\underline{2s}^2\underline{2p}^4$ (D) $1s^2\underline{2s}^2\underline{2p}^6\underline{3s}^2\underline{3p}^1$

(33) (a) 8 (b) 8 (c) ~~2 (orbital diagram)~~ 1s 2s 2p (D) 2 (e) 2 (f) 1 (g) 5

(34) (a) Group 18 (b) using noble gas to substitute for longer electron configurations.
(c) You just WRITE ~~THE~~ noble gas symbol and everything after.

(35) (a) $[Ne]\underline{3s}^2\underline{3p}^5$ (B) $[Ar]\underline{4s}^2$ (C) $[Ar]\underline{4s}^2\underline{3d}^{10}\underline{4p}^3$

(36) (a) The atom has 2 more electrons than Neon. (B) Magnesium

(37) (a) Na $1s^2\underline{2s}^2\underline{2p}^6\underline{3s}^1$ $[Ne]\underline{3s}^1$
(B) Sr $1s^2\underline{2s}^2\underline{2p}^6\underline{3s}^2\underline{3p}^6\underline{4s}^2\underline{3d}^{10}\underline{4p}^6\underline{5s}^2$ $[Kr]\underline{5s}^2$
(C) P $1s^2\underline{2s}^2\underline{2p}^6\underline{3s}^2\underline{3p}^3$ $[Ne]\underline{3s}^2\underline{3p}^3$

(38) (a) B (b) F (c) Mg (d) Si (e) Cl (f) K (g) Fe

(39) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{14} 5d^{10} 6p^6 7s^2 5f^{14} 6d^{10} 7p^6$

(40) (A) $[Ar] 4s^2 3d^{10} 4p^3$

(B) Pb = $[Xe] 6s^2 4f^{14} 5d^{10} 6p^2$

(C) Lr = $[Rn] 7s^2 5f^{14}$

(D) Hg = $[Xe] 7s^2 5f^{14} 6d^{10}$

(E) Sn = $[Kr] 5s^2 4d^{10} 5p^2$

(F) Xe = $[Kr] 5s^2 4d^{10} 5p^6$

(G) La = $[Xe] 6s^2 4f^1$ or $5d^{10}$