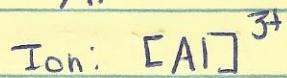
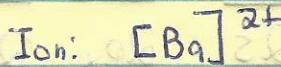


Chapter 10 Problem Set

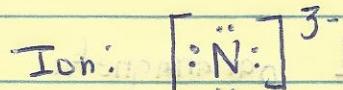
1) a. Al^+



d. Ba^{2+}



b. N^-



c. I^-



2) a. $[\text{Na}]^+[\text{:F}:]^-$

c. $[\text{K}]^+[\text{:P}:]^{3-}[\text{K}]^+$



b. $[\text{S}]^{2+}[\text{:S}:]^{2-}$

d. $[\text{:I}:]^-[\text{C}]^{2+}[\text{:I}:]^-$

3) a. covalent b. ionic c. ionic d. covalent e. covalent

4) a. HBr - hydrobromic acid

b. BF_3 - boron trifluoride

c. Ba_3As_2 barium arsenide

d. Ca_3P_2 calcium phosphide

e. GaCl_3 gallium chloride

5) a. Li^+ : $1s^2$

b. Cr^{2+} : $1s^2 2s^2 2p^6 3s^2 3p^6 3d^4$

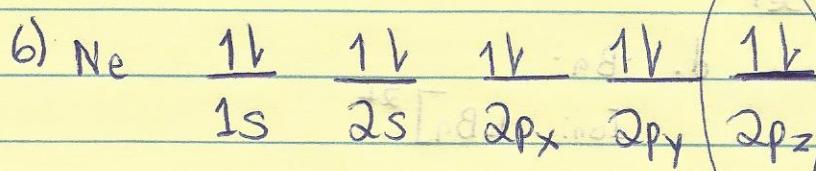
c. Cl^- : $1s^2 2s^2 2p^6 3s^2 3p^6$

d. Kr : $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6$

e. Ti^{3+} : $1s^2 2s^2 2p^6 3s^2 3p^6 3d^1$

(1)

(2)

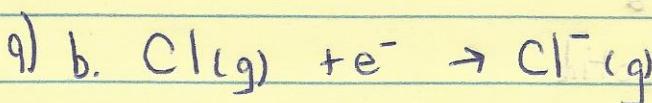
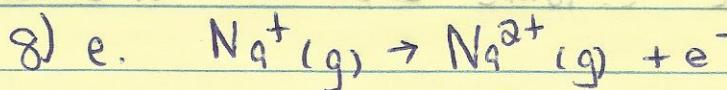
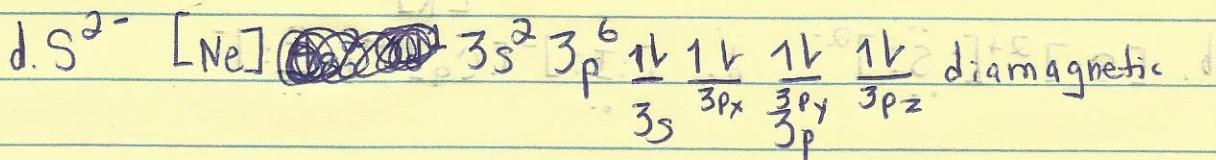
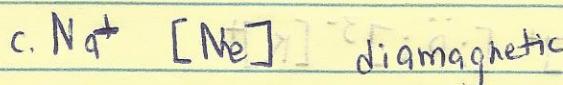
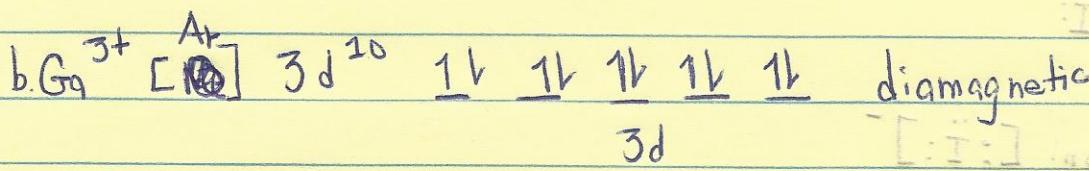
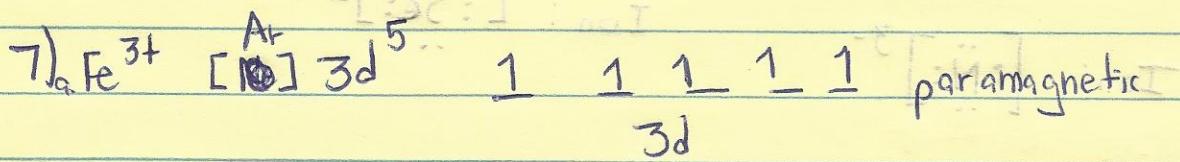


tells nothing at valency

IA = 0 (1)

[IA] - not

$n=2, l=1, m_l=1, m_s=\pm\frac{1}{2}$



c is not exothermic because of the energy absorbed by adding a second e^- to a negatively charged species (O^-).

(3)

10) a. $\text{Na} \rightarrow$ Wants to lose an e^- whereas Na^+ already has a noble gas configuration.

b. $\text{Cl}_2 \rightarrow$ The individual Cl do not yet have a noble gas configuration whereas Cl^- fully does.

11) a. calcium fluoride d. ammonium chlorate
b. cobalt(II)bromide e. lead(II)sulfide
c. sodium oxalate

12) a. K_3PO_4 b. K_2HPO_4 c. KH_2PO_4 d. H_3PO_4