CHE 111 - Homework - Ch 7e

OER 7.2 **Oxid/Red + Single Displacement Reactions + Combustion** Score: _____/65

Name: _____ Date: _____

[3 pt] 1. What are the differences between Oxidation and Reduction (List 3).

[12 pt] 2. What is the oxidation number of each of the atoms in the following compounds or ions.

(a) Mn_2O_7 Mn ___ O ___

(b) $VOCl_3$ V ___ O ___ Cl ___

(c) $CuSO_4$ Cu ___ S ___ O ___

(d) CH_2O C ___ H ___ O ___

(e) H_2PtCl_6 H ___ Pt ___ Cl ___

[20 pt] 3. In the following reactions write the oxidation number of each element below it. Determine which element is oxidized and which element is reduced and write it in the answer blank.

(a) $2Sb^{+}(aq) + 3\,Sr\,(s) \longrightarrow 2\,Sb\,(s) + 3Sr^{+2}(aq)$ Oxidized: _____ Reduced: _____

(b) $Cl_2(g) + 2Na\,Br\,(aq) \longrightarrow Br_2(l) + 2Na\,Cl\,(aq)$ Oxidized: _____ Reduced: _____

(c) $Ca(s) + H\ Br\,(aq) \longrightarrow Ca\ Br_2(aq) + H_2\,(g)$ Oxidized: _____ Reduced: _____

(d) $Mn^{+2}(aq) + Cl\ O_3{}^{-1}(aq) \longrightarrow Mn\ O_2(aq) + Cl\ O_2(aq)$ Oxidized: _____ Reduced: _____

(e) $Si\,(s) + 2Cl_2(g) \longrightarrow Si\ Cl_4(l)$ Oxidized: _____ Reduced: _____

[30 pt] 4. Complete the following Single Displacement and Combustion reactions by filling in the missing products. Balance the compounds for charge, and the overall reaction. Include the state of the products when known. If No Reaction occurs write NR in the blank provided

(a) ___ $Sn(s) +$ ___ $H_3PO_4 \longrightarrow$ (a) _____

(b) ___ $HNO_3(aq) +$ ___$Ni(s) \longrightarrow$ (b) _____

(c) ___$I_2(g) +$ ___$NaBr \longrightarrow$ (c) _____

(d) ___ $Mg(s) +$ ___ $FeCl_3(aq) \longrightarrow$ (d) _____

(e) ___ $Zn(NO_3)_2(aq) +$ ___ $Hg(l) \longrightarrow$ (e) _____

(f) ___ $C_2H_6(g) +$ ___ $O_2(g) \longrightarrow$ (f) _____

(g) ___ $Pb(s) +$ ___ $AgNO_3(aq) \longrightarrow$ (g) _____

(h) ___$Zn(NO_3)_2(aq) +$ ___$Au(s) \longrightarrow$ (h) _____

(i) ___$Br_2(g) +$ ___ $KI(aq) \longrightarrow$ (i) _____

(j) ___ $O_2(g) +$ ___ $C_2H_5OH(g) \longrightarrow$ (j) _____

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