

# مجموعه واکنش با همت موازنه در گنکور سراسری

۱۳۹۸-۱۴۰۳

$\text{Na}_2\text{O}_r(\text{s}) + \text{H}_2\text{O}(\text{l}) \rightarrow \text{NaOH}(\text{aq}) + \text{O}_2(\text{g})$	.۱
$\text{CaSiO}_r(\text{s}) + \text{HF}(\text{aq}) \rightarrow \text{CaF}_r(\text{aq}) + \text{SiF}_r(\text{g}) + \text{H}_2\text{O}(\text{l})$	.۲
$\text{H}_2\text{S}(\text{g}) + \text{O}_2(\text{g}) \rightarrow \text{SO}_2(\text{g}) + \text{H}_2\text{O}(\text{g})$	.۳
$\text{NH}_3(\text{g}) + \text{F}_2(\text{g}) \rightarrow \text{N}_2\text{F}_4(\text{g}) + \text{HF}(\text{g})$ (ا) $\text{SOCl}_2(\text{l}) + \text{H}_2\text{O}(\text{l}) \xrightarrow{\Delta} \text{SO}_2(\text{g}) + \text{HCl}(\text{g})$ (ب) $\text{ClF}_3(\text{g}) + \text{NH}_3(\text{g}) \rightarrow \text{N}_2(\text{g}) + \text{HF}(\text{g}) + \text{Cl}_2(\text{g})$ (پ) $\text{NaHCO}_3(\text{s}) \xrightarrow{\Delta} \text{Na}_2\text{CO}_3(\text{s}) + \text{CO}_2(\text{g}) + \text{H}_2\text{O}(\text{g})$ (ت)	.۴
$(\text{I}) \text{NH}_4\text{CH}_3\text{COOH}(\text{l}) + \text{O}_2(\text{g}) \rightarrow \text{CO}_2(\text{g}) + \text{N}_2(\text{g}) + \text{H}_2\text{O}(\text{g})$ $(\text{II}) \text{Fe}(\text{s}) + \text{H}_2\text{O}(\text{l}) + \text{O}_2(\text{g}) \rightarrow \text{Fe}(\text{OH})_3(\text{s})$	.۵
a) $\text{Co}(\text{OH})_2(\text{s}) + \text{H}_2\text{SO}_4(\text{aq}) \rightarrow \text{Co}(\text{SO}_4)_2(\text{aq}) + \text{H}_2\text{O}(\text{l})$ b) $\text{NiCO}_3(\text{s}) + \text{H}_3\text{PO}_4(\text{aq}) \rightarrow \text{Ni}_3(\text{PO}_4)_2(\text{s}) + \text{CO}_2(\text{g}) + \text{H}_2\text{O}(\text{l})$ c) $\text{MgCO}_3(\text{s}) + \text{HNO}_3(\text{aq}) \rightarrow \text{Mg}(\text{NO}_3)_2(\text{aq}) + \text{CO}_2(\text{g}) + \text{H}_2\text{O}(\text{l})$	.۶
a) $\text{P}_2\text{O}_5(\text{s}) + \text{H}_2\text{O}(\text{l}) \rightarrow \text{H}_3\text{PO}_4(\text{aq})$ b) $\text{SF}_6(\text{g}) + \text{H}_2\text{O}(\text{l}) \rightarrow \text{SO}_2(\text{g}) + \text{HF}(\text{g})$ c) $\text{FeS}_2(\text{s}) + \text{O}_2(\text{g}) \rightarrow \text{Fe}_2\text{O}_3(\text{s}) + \text{SO}_2(\text{g})$ d) $\text{HNO}_3(\text{aq}) \rightarrow \text{NO}_2(\text{g}) + \text{O}_2(\text{g}) + \text{H}_2\text{O}(\text{g})$	.۷
a) $\text{Cr}(\text{s}) + \text{H}_2\text{SO}_4(\text{aq}) \rightarrow \text{Cr}_2(\text{SO}_4)_3(\text{aq}) + \text{SO}_2(\text{g}) + \text{H}_2\text{O}(\text{l})$	.۸

b) $\text{Ag}(s) + \text{H}_r\text{SO}_f(\text{aq}) \rightarrow \text{Ag}_r\text{SO}_f(\text{aq}) + \text{SO}_r(\text{g}) + \text{H}_r\text{O}(\text{l})$	
c) $\text{H}_r\text{PO}_f(\text{aq}) + \text{Zn}(\text{OH})_r(\text{s}) \rightarrow \text{Zn}_r(\text{PO}_f)_r(\text{s}) + \text{H}_r\text{O}(\text{l})$	
d) $\text{NH}_r(\text{g}) + \text{O}_r(\text{g}) \rightarrow \text{NO}(\text{g}) + \text{H}_r\text{O}(\text{l})$	
a) $\text{Pb}_r\text{O}_z(\text{s}) + \text{HNO}_r(\text{aq}) \rightarrow \text{Pb}(\text{NO}_r)_r(\text{aq}) + \text{PbO}_r(\text{s}) + \text{H}_r\text{O}(\text{l})$ b) $\text{KNO}_r(\text{s}) + \text{C}(\text{s}) + \text{S}(\text{s}) \rightarrow \text{K}_r\text{S}(\text{aq}) + \text{N}_r(\text{g}) + \text{CO}_r(\text{g})$	.۹
$\text{CH}_4(\text{g}) + \text{NH}_3(\text{g}) + \text{O}_2(\text{g}) \rightarrow \text{HCN}(\text{g}) + \text{H}_2\text{O}(\text{g})$	.۱۰
$\text{CO}_r(\text{g}) + \text{H}_r\text{O}(\text{l}) \rightarrow \text{C}_z\text{H}_{1r}\text{O}_z(\text{aq}) + \text{O}_r(\text{g})$	.۱۱
$\text{SiO}_r(\text{s}) + \text{C}(\text{s}) \xrightarrow{\Delta} \text{SiC}(\text{s}) + \text{CO}(\text{g})$	.۱۲
$\text{B}_r\text{O}_r(\text{s}) + \text{Cl}_r(\text{g}) \xrightarrow{\Delta} \text{BCl}_r(\text{l}) + \text{O}_r(\text{g})$	.۱۳
$\text{Fe}(\text{OH})_r(\text{s}) + \text{H}_r\text{O}(\text{l}) + \text{O}_r(\text{g}) \rightarrow \text{Fe}(\text{OH})_r(\text{s})$ $\text{Al}(\text{OH})_r(\text{s}) + \text{H}_r\text{SO}_f(\text{aq}) \rightarrow \text{Al}_r(\text{SO}_f)_r(\text{aq}) + \text{H}_r\text{O}(\text{l})$	.۱۴
$\text{C}_f\text{H}_\lambda(\text{g}) + \text{O}_r(\text{g}) \rightarrow \text{CO}_r(\text{g}) + \text{H}_r\text{O}(\text{g})$	.۱۵
$\text{NH}_r\text{CH}_r\text{COOH}(\text{l}) + \text{O}_r(\text{g}) \rightarrow \text{CO}_r(\text{g}) + \text{N}_r(\text{g}) + \text{H}_r\text{O}(\text{g})$ $\text{Fe}(\text{s}) + \text{H}_r\text{O}(\text{l}) + \text{O}_r(\text{g}) \rightarrow \text{Fe}(\text{OH})_r(\text{s})$	.۱۶
$m\text{C}_x\text{H}_y\text{O}_z + ۱۶۳\text{O}_r \rightarrow ۱۱۴\text{CO}_r + ۱۱۰\text{H}_r\text{O}$	.۱۷
$\text{SCl}_r(\text{g}) + \text{NaF}(\text{g}) \rightarrow \text{SF}_f(\text{g}) + \text{S}_r\text{Cl}_r(\text{g}) + \text{NaCl}(\text{s})$ $\text{SF}_f(\text{g}) + \text{H}_r\text{O}(\text{l}) \rightarrow \text{SO}_r(\text{g}) + \text{HF}(\text{g})$	.۱۸
$\text{Al}_r(\text{SO}_f)_r(\text{s}) + \text{Ca}(\text{OH})_r(\text{aq}) \rightarrow \text{Al}(\text{OH})_r(\text{s}) + \text{CaSO}_r(\text{aq})$	.۱۹
$(\text{NH}_z)_r\text{Cr}_r\text{O}_v(\text{s}) \xrightarrow{\Delta} \text{N}_r(\text{g}) + \text{Cr}_r\text{O}_r(\text{s}) + \text{H}_r\text{O}(\text{g})$ $\text{NaHCO}_r(\text{s}) \xrightarrow{\Delta} \text{Na}_r\text{CO}_r(\text{s}) + \text{CO}_r(\text{g}) + \text{H}_r\text{O}(\text{g})$	.۲۰
$\text{C}_r\text{H}_r\text{N}_r\text{O}_f(\text{s}) + \text{O}_r(\text{g}) \rightarrow \text{CO}_r(\text{g}) + \text{H}_r\text{O}(\text{g}) + \text{N}_r(\text{g})$ $\text{C}_r\text{H}_\delta\text{N}_r\text{O}_z(\text{s}) \rightarrow \text{N}_r(\text{g}) + \text{H}_r\text{O}(\text{g}) + \text{CO}(\text{g}) + \text{C}(\text{s})$	.۲۱
$\text{C}_r\text{H}_q\text{OH}(\text{g}) + \text{O}_r(\text{g}) \rightarrow \text{CO}_r(\text{g}) + \text{H}_r\text{O}(\text{g})$ $\text{CH}_r\text{NO}_r(\text{s}) + \text{O}_r(\text{g}) \rightarrow \text{CO}_r(\text{g}) + \text{H}_r\text{O}(\text{g}) + \text{N}_r(\text{g})$	.۲۲
$\text{SOCl}_r(\text{l}) + \text{H}_r\text{O}(\text{l}) \rightarrow \text{SO}_r(\text{g}) + \text{HCl}(\text{g})$ $\text{P}_r(\text{s}) + \text{Cl}_r(\text{g}) \rightarrow \text{PCl}_r(\text{g})$ $\text{PCl}_r(\text{l}) + \text{O}_r(\text{g}) \rightarrow \text{POCl}_r(\text{s})$	.۲۳

$HCl(g) + O_2(g) \rightarrow Cl_2(g) + H_2O(l)$	
$P_4(s) + SO_2(g) + Cl_2(g) \rightarrow SOCl_2(l) + POCl_3(l)$	
$B_2H_6(g) + Cl_2(g) \rightarrow BCl_3(g) + HCl(g)$	.۲۴
$B_2H_6(g) + H_2O(l) \rightarrow H_2BO_3(s) + H_2(g)$	
$BCl_3(g) + H_2O(l) \rightarrow H_2BO_3(s) + HCl(g)$	
$N_2H_4(l) + O_2(g) \rightarrow N_2(g) + H_2O(l) :$	.۲۵
$NH_3(g) + N_2O(g) \rightarrow N_2(g) + H_2O(l)$	
$N_2O(g) + H_2(g) \rightarrow N_2H_4(l) + H_2O(l)$	
$NH_3(g) + O_2(g) \rightarrow N_2H_4(l) + H_2O(l)$	
$PI_3(s) + H_2O(l) \rightarrow H_3PO_3(aq) + HI(aq)$	.۲۶
$Bi(s) + HNO_3(aq) \rightarrow Bi(NO_3)_3(aq) + NO(g) + H_2O(l)$	.۲۷
$Fe(s) + H_2O(g) \rightarrow Fe_3O_4(s) + H_2(g)$	.۲۸
$NH_3(g) + Cl_2(g) \rightarrow NH_4Cl(s) + NCl_3(g)$	.۲۹
<b><math>CH_4(g) + H_2S(g) \rightarrow CS_2(g) + H_2(g)</math></b>	.۳۰
$Ca_3(PO_4)_2(s) + SiO_2(s) + C(s) \rightarrow CaSiO_3(s) + P_4(s) + CO(g)$	.۳۱
$AgNO_3(aq) + MgCl_2(s) \rightarrow AgCl(s) + Mg(NO_3)_2(aq)$	.۳۲
$I_2(s) + HNO_3(aq) \rightarrow HIO_3(aq) + NO_2(g) + H_2O(l)$	.۳۳
$NaHCO_3(s) + H_2SO_4(aq) \rightarrow Na_2SO_4(aq) + CO_2(g) + H_2O(l)$	.۳۴
$Na_2SO_4(aq) + CaCl_2(aq) \rightarrow CaSO_4(s) + NaCl(aq)$	.۳۵
$H_3PO_4(aq) + KOH(aq) \rightarrow K_3PO_4(aq) + H_2O(l)$	.۳۶
$HNO_3(aq) + Zn(OH)_2(s) \rightarrow Zn(NO_3)_2(aq) + H_2O(l)$	.۳۷
$H_2SO_4(aq) + Al(OH)_3(s) \rightarrow Al_2(SO_4)_3(aq) + H_2O(l)$	.۳۸
$H_2SO_4(aq) + NaOH(aq) \rightarrow Na_2SO_4(aq) + H_2O(l)$	
$Ba(OH)_2(aq) + HCl(aq) \rightarrow BaCl_2(aq) + H_2O(l)$	.۳۹
$NaOH(aq) + FeCl_3(aq) \rightarrow Fe(OH)_3(s) + NaCl(aq)$	.۴۰
$HCl(aq) + NaClO(aq) \rightarrow NaCl(aq) + Cl_2(g) + H_2O(l)$	.۴۱
$H_2SO_4(aq) + Fe(s) \rightarrow FeSO_4(aq) + SO_2(g) + H_2O(l)$	.۴۲
$S(s) + NaOH(aq) \rightarrow Na_2S(aq) + Na_2S_2O_3(aq) + H_2O(l)$	.۴۳
$CaCl_2(aq) + Na_3PO_4(s) \rightarrow Ca_3(PO_4)_2(s) + NaCl(aq)$	.۴۴
$C_2H_2(g) + F_2(g) \rightarrow CF_4(g) + HF(g)$	.۴۵
$FeCl_3(aq) + NaOH(aq) \rightarrow Fe(OH)_3(s) + NaCl(aq)$	.۴۶
$LiAlH_4(s) + H_2O(l) \rightarrow LiOH(aq) + Al(OH)_3(s) + H_2(g)$	.۴۷
$Fe_2O_3(s) + HCl(aq) \rightarrow FeCl_3(aq) + H_2O(l)$	.۴۸
$FeCl_3(aq) + NaOH(aq) \rightarrow Fe(OH)_3(s) + NaCl(aq)$	

$(N_r O_\Delta(g) + H_r O(l) \rightarrow HNO_r(aq)$	.۴۹
$BaCl_r(aq) + Al_r(SO_\Delta)_r(aq) \rightarrow BaSO_\Delta(s) + AlCl_r(aq)$	.۵۰
$(C_\Delta H_r O_\Delta)_n(s) \xrightarrow{\text{حرارت}} C(s) + H_r O(g)$	.۵۱
$HNO_r(aq) + Cu(s) \rightarrow Cu(NO_r)_r(aq) + NO_r(g) + H_r O(l)$	.۵۲
$Na_r SiO_r(s) + HF(aq) \rightarrow H_r SiF_\Delta(aq) + NaF(aq) + H_r O(l)$	.۵۳
$\begin{cases} Fe_r O_r(s) + C(s) \xrightarrow{\Delta} Fe(l) + CO_r(g) \\ Al(s) + Fe_r O_r(s) \xrightarrow{\Delta} Al_r O_r(s) + Fe(l) \end{cases}$	.۵۴
$\begin{cases} MnO_r(s) + HCl(aq) \rightarrow MnCl_r(aq) + Cl_r(g) + H_r O(l) \\ Cl_r(g) + KBr(aq) \rightarrow KCl(aq) + Br_r(l) \end{cases}$	.۵۵
$C_r H_\Delta OH(l) + O_r(g) \rightarrow CO_r(g) + H_r O(l)$ $Na_r CO_r(s) + HCl(aq) \rightarrow NaCl(aq) + CO_r(g) + H_r O(l)$	.۵۶
$(NH_\Delta)_r Cr_r O_r(s) \xrightarrow{\Delta} Cr_r O_r(s) + N_r(g) + H_r O(g)$	.۵۷
$S(s) + HNO_r(aq) \xrightarrow{\Delta} H_r SO_\Delta(aq) + NO_r(g) + H_r O(l)$ $Cu(s) + HNO_r(aq) \xrightarrow{\Delta} Cu(NO_r)_r(aq) + NO(g) + H_r O(l)$	.۵۸
$KMnO_\Delta + HCl \rightarrow KCl + MnCl_r + Cl_r + H_r O$ $KI + Cl_r \rightarrow KCl + I_r$	.۵۹
$(NH_\Delta)_r CO_r(s) \rightarrow NH_r(g) + CO_r(g) + H_r O(g)$ $LiHCO_r(s) \rightarrow Li_r CO_r(s) + CO_r(g) + H_r O(g)$	.۶۰
$N_r O_\Delta(g) + N_r H_\Delta(g) \rightarrow NO(g) + r H_r O(g)$	.۶۱
$Ca(H_r PO_\Delta)_r(s) + NaHCO_r(s) \rightarrow CaHPO_\Delta(s) + Na_r HPO_\Delta(s) + CO_r(g) + H_r O(g)$	.۶۲
$NaCl(s) + MnO_r(s) + H_r SO_\Delta(aq) \rightarrow NaHSO_\Delta(aq) + MnSO_\Delta(aq) + H_r O(l) + Cl_r(g)$	.۶۳
$H_r SO_\Delta(aq) + K_r CrO_\Delta(aq) + NaNO_r(aq) \rightarrow Cr_r(SO_\Delta)_r(aq) + K_r SO_\Delta(aq) + NaNO_r(aq) + H_r O(l)$	.۶۴
$KBr(aq) + KMnO_\Delta(aq) + H_r SO_\Delta(aq) \rightarrow MnSO_\Delta(aq) + K_r SO_\Delta(aq) + Br_r(aq) + H_r O(l)$	.۶۵
$NH_\Delta Cl(aq) + MnO_r(s) + Zn(s) \rightarrow ZnCl_r(aq) + Mn_r O_r(s) + NH_r(aq) + H_r O(l)$	.۶۶
$HNO_r(aq) + HCl(aq) + Sn(s) \rightarrow H_r SnCl_\Delta(aq) + NO_r(g) + H_r O(l)$	.۶۷
$FeCl_r(aq) + KMnO_\Delta(aq) + HCl(aq) \rightarrow FeCl_r(aq) + MnCl_r(aq) + KCl(aq) + H_r O(l)$	.۶۸
$KMnO_\Delta(s) + HI(aq) \rightarrow MnI_r(aq) + H_r O(l) + KI(aq) + I_r(s)$	.۶۹
$NH_\Delta Cl(aq) + NaNO_r(aq) \rightarrow N_r(g) + H_r O(l) + NaCl(aq)$	.۷۰
$TiO_r(s) + C(s) + Cl_r(g) \rightarrow TiCl_\Delta(g) + CO(g)$	.۷۱
$CaSO_\Delta(s) \xrightarrow{\Delta} CaO(s) + SO_r(g) + O_r(g)$	.۷۲
$C_r H_\Delta N_r O_\Delta \rightarrow CO_r(g) + H_r O(g) + N_r(g) + O_r(g)$	.۷۳
$C_\Delta H_n(s) + O_r(g) \rightarrow H_r O(g) + CO_r(g)$	.۷۴

$NH_3(g) + CH_4(g) + O_2(g) \rightarrow HCN(g) + H_2O(l)$	.۷۵
$Al(s) + NaOH(s) + H_2O(l) \rightarrow Na[Al(OH)_4](aq) + H_2(g)$	.۷۶
$NH_3(g) + N_2O(g) \rightarrow N_2(g) + H_2O(l)$ $N_2O(g) + 3H_2(g) \rightarrow N_2H_4(l) + H_2O(l)$ $NH_3(g) + O_2(g) \rightarrow N_2H_4(l) + H_2O(l)$ $N_2H_4(l) + O_2(g) \rightarrow N_2(g) + H_2O(l)$	.۷۷
$Fe(s) + H_2O(g) \rightarrow Fe_3O_4(s) + H_2(g)$	.۷۸
$Al_2(SO_4)_3(s) \rightarrow Al_2O_3(s) + 3SO_2(g)$ $2Al(s) + Fe_2O_3(s) \rightarrow Al_2O_3(s) + 2Fe(l)$	.۷۹
$3NO_2 + H_2O \rightarrow 2HNO_3 + NO$	.۸۰
ا) $TiCl_4(l) + LiH(s) \rightarrow Ti(s) + LiCl(s) + H_2(g)$ ب) $PCl_5(s) + H_2O(l) \rightarrow HCl(g) + H_3PO_4(aq)$	.۸۱
$Ag(s) + NO_3^-(aq) + H^+(aq) \rightarrow Ag^+(aq) + NO(g) + H_2O(l)$	.۸۲
$Fe(OH)_3(s) + H_2O(l) + O_2(g) \rightarrow Fe(OH)_3(s)$ $Al(OH)_3(s) + H_2SO_4(aq) \rightarrow Al_2(SO_4)_3(aq) + H_2O(l)$	.۸۳
$SO_2(g) + H_2SO_4(aq) \rightarrow H_2S_2O_5(aq)$ $I_2(s) + ClO_3^-(aq) + H_2O(l) \rightarrow IO_3^-(aq) + H^+(aq) + Cl^-(aq)$ $Pb(OH)_3^-(aq) + ClO^-(aq) \rightarrow PbO_2(s) + Cl^-(aq) + OH^-(aq) + H_2O(l)$ $K_2Cr_2O_7(aq) + BaCl_2(aq) + H_2O(l) \rightarrow BaCrO_4(aq) + KCl(aq) + HCl(aq)$	.۸۴
a) $Ca_3(PO_4)_2(s) + SiO_2(s) + C(s) \xrightarrow{\Delta} P_4(g) + CaSiO_3(s) + CO(g)$ b) $Ca_3(PO_4)_2(s) + H_2SO_4(aq) \rightarrow CaSO_4(s) + H_3PO_4(aq)$ c) $HNO_3(aq) + HI(g) \rightarrow I_2(s) + NO(g) + H_2O(l)$ d) $PCl_5(g) + H_2O(l) \rightarrow H_3PO_4(aq) + HCl(aq)$	.۸۵
$I^-(aq) + MnO_4^-(aq) + H_2O(l) \rightarrow MnO_2(s) + I_2(s) + OH^-(aq)$	.۸۶
$CH_3CH_2OH(aq) + Cr_2O_7^{2-}(aq) + H^+(aq) \rightarrow CH_3COOH(aq) + Cr^{3+}(aq) + H_2O(l)$	.۸۷
$P_4 + HNO_3 + H_2O \rightarrow H_3PO_4 + NO$	.۸۸
$ClF_3(g) + NH_3(g) \rightarrow HF(g) + N_2(g) + Cl_2(g)$ $PCl_5(g) + H_2O(l) \rightarrow H_3PO_4(aq) + HCl(aq) + H_2(g)$	.۸۹
$KO_2(aq) + CO_2(g) + H_2O(l) \rightarrow KHCO_3(s) + O_2(g)$	.۹۰
$Fe^{3+}(aq) + MnO_4^{2-}(aq) + H^+(aq) \rightarrow Fe^{2+}(aq) + Mn^{2+}(aq) + H_2O$	.۹۱
$NO_2(g) + NO(g) + NH_3(g) \rightarrow N_2(g) + H_2O(g)$	.۹۲
$HCl(g) + O_2(g) \rightarrow H_2O + Cl_2(g)$	.۹۳
$CS_2(g) + H_2(g) \rightarrow CH_4(g) + H_2S(g)$	.۹۴
$F_2(g) + H_2O(g) \rightarrow O_2(g) + HF(g)$	.۹۵

# پاسخنامه موازنه کل واکنش‌های گنکور سراسری

۱۳۹۸-۱۴۰۳

$2\text{Na}_2\text{O}_2(\text{s}) + 2\text{H}_2\text{O}(\text{l}) \rightarrow 4\text{NaOH}(\text{aq}) + \text{O}_2(\text{g})$	.۱
$\text{CaSiO}_3(\text{s}) + 6\text{HF}(\text{aq}) \rightarrow \text{CaF}_2(\text{aq}) + \text{SiF}_4(\text{g}) + 3\text{H}_2\text{O}(\text{l})$	.۲
$2\text{H}_2\text{S}(\text{g}) + 3\text{O}_2(\text{g}) \rightarrow 2\text{SO}_2(\text{g}) + 2\text{H}_2\text{O}(\text{g})$	.۳
$2\text{NH}_3(\text{g}) + 5\text{F}_2(\text{g}) \rightarrow \text{N}_2\text{F}_4(\text{g}) + 6\text{HF}(\text{g})$	.۴
$\text{SOCl}_2(\text{l}) + \text{H}_2\text{O}(\text{l}) \xrightarrow{\Delta} \text{SO}_2(\text{g}) + 2\text{HCl}(\text{g})$ $2\text{ClF}_3(\text{g}) + 2\text{NH}_3(\text{g}) \rightarrow \text{N}_2(\text{g}) + 6\text{HF}(\text{g}) + \text{Cl}_2(\text{g})$ $2\text{NaHCO}_3(\text{s}) \xrightarrow{\Delta} \text{Na}_2\text{CO}_3(\text{s}) + \text{CO}_2(\text{g}) + \text{H}_2\text{O}(\text{g})$	
$(\text{I}) 4\text{NH}_4\text{CH}_3\text{COOH}(\text{l}) + 9\text{O}_2(\text{g}) \rightarrow 8\text{CO}_2(\text{g}) + 2\text{N}_2(\text{g}) + 10\text{H}_2\text{O}(\text{g})$	.۵
$(\text{II}) 4\text{Fe}(\text{s}) + 6\text{H}_2\text{O}(\text{l}) + 3\text{O}_2(\text{g}) \rightarrow 4\text{Fe}(\text{OH})_3(\text{s})$	
$a) 2\text{Co}(\text{OH})_2(\text{s}) + 3\text{H}_2\text{SO}_4(\text{aq}) \rightarrow \text{Co}_2(\text{SO}_4)_3(\text{aq}) + 6\text{H}_2\text{O}(\text{l})$ $b) 3\text{NiCO}_3(\text{s}) + 2\text{H}_3\text{PO}_4(\text{aq}) \rightarrow \text{Ni}_3(\text{PO}_4)_2(\text{s}) + 3\text{CO}_2(\text{g}) + 3\text{H}_2\text{O}(\text{l})$ $c) \text{MgCO}_3(\text{s}) + 2\text{HNO}_3(\text{aq}) \rightarrow \text{Mg}(\text{NO}_3)_2(\text{aq}) + \text{CO}_2(\text{g}) + \text{H}_2\text{O}(\text{l})$	.۶
$a) \text{P}_2\text{O}_5(\text{s}) + 6\text{H}_2\text{O}(\text{l}) \rightarrow 4\text{H}_3\text{PO}_4(\text{aq})$ $b) \text{SF}_6(\text{g}) + 2\text{H}_2\text{O}(\text{l}) \rightarrow \text{SO}_2(\text{g}) + 4\text{HF}(\text{g})$ $c) 4\text{FeS}_2(\text{s}) + 11\text{O}_2(\text{g}) \rightarrow 2\text{Fe}_2\text{O}_3(\text{s}) + 8\text{SO}_2(\text{g})$ $d) 4\text{HNO}_3(\text{aq}) \rightarrow 4\text{NO}_2(\text{g}) + \text{O}_2(\text{g}) + 2\text{H}_2\text{O}(\text{g})$	.۷
$a) 2\text{Cr}(\text{s}) + 6\text{H}_2\text{SO}_4(\text{aq}) \rightarrow \text{Cr}_2(\text{SO}_4)_3(\text{aq}) + 3\text{SO}_2(\text{g}) + 6\text{H}_2\text{O}(\text{l})$	.۸

$b) Ag(s) + \gamma H_2SO_4(aq) \rightarrow Ag_2SO_4(aq) + SO_2(g) + \gamma H_2O(l)$	
$c) \gamma H_3PO_4(aq) + \gamma Zn(OH)_2(s) \rightarrow Zn_3(PO_4)_2(s) + \epsilon H_2O(l)$	
$d) \epsilon NH_3(g) + \delta O_2(g) \rightarrow \epsilon NO(g) + \epsilon H_2O(l)$	
$Pb_2O_3(s) + \epsilon HNO_3(aq) \rightarrow \gamma Pb(NO_3)_2(aq) + PbO_2(s) + \gamma H_2O(l)$	.۹
$\gamma KNO_3(s) + \gamma C(s) + S(s) \rightarrow K_2S(aq) + N_2(g) + \gamma CO_2(g)$	
$\gamma CH_4(g) + \gamma NH_3(g) + \gamma O_2(g) \rightarrow \gamma HCN(g) + \epsilon H_2O(g)$	.۱۰
$\epsilon CO_2(g) + \epsilon H_2O(l) \rightarrow C_6H_{12}O_6(aq) + \epsilon O_2(g)$	.۱۱
$.SiO_2(s) + \gamma C(s) \xrightarrow{\Delta} SiC(s) + \gamma CO(g)$	.۱۲
$\gamma B_2O_3(s) + \epsilon Cl_2(g) \xrightarrow{\Delta} \epsilon BCl_3(l) + \gamma O_2(g)$	.۱۳
$\epsilon Fe(OH)_3(s) + \gamma H_2O(l) + O_2(g) \rightarrow \epsilon Fe(OH)_3(s)$	.۱۴
$\gamma Al(OH)_3(s) + \gamma H_2SO_4(aq) \rightarrow Al_2(SO_4)_3(aq) + \epsilon H_2O(l)$	
$\epsilon NH_4CH_2COOH(l) + \epsilon O_2(g) \rightarrow \lambda CO_2(g) + \gamma N_2(g) + 10 H_2O(g)$	.۱۵
$\epsilon Fe(s) + \epsilon H_2O(l) + \gamma O_2(g) \rightarrow \epsilon Fe(OH)_3(s)$	
$\gamma C_{\Delta}H_{11}O_6 + 16\gamma O_2 \rightarrow 11\gamma CO_2 + 11\gamma H_2O$	.۱۶
$\gamma SCl_2(g) + \epsilon NaF(g) \rightarrow SF_4(g) + S_2Cl_2(g) + \epsilon NaCl(s)$	.۱۷
$SF_4(g) + \gamma H_2O(l) \rightarrow SO_2(g) + \epsilon HF(g)$	
$Al_2(SO_4)_3(s) + \gamma Ca(OH)_2(aq) \rightarrow \gamma Al(OH)_3(s) + \gamma CaSO_4(aq)$	.۱۸
$(NH_4)_2Cr_2O_7(s) \xrightarrow{\Delta} N_2(g) + Cr_2O_3(s) + \epsilon H_2O(g)$	.۱۹
$\gamma NaHCO_3(s) \xrightarrow{\Delta} Na_2CO_3(s) + CO_2(g) + H_2O(g)$	
$\gamma C_2H_5N_2O_4(s) + O_2(g) \rightarrow \epsilon CO_2(g) + \gamma H_2O(g) + \gamma N_2(g)$	.۲۰
$\gamma C_2H_4N_2O_4(s) \rightarrow \gamma N_2(g) + \delta H_2O(g) + \gamma CO(g) + \gamma C(s)$	
$C_6H_5OH(g) + \epsilon O_2(g) \rightarrow \epsilon CO_2(g) + \delta H_2O(g)$	.۲۱
$\epsilon CH_3NO_2(s) + \gamma O_2(g) \rightarrow \epsilon CO_2(g) + \epsilon H_2O(g) + \gamma N_2(g)$	
$SOCl_2(l) + H_2O(l) \rightarrow SO_2(g) + \gamma HCl(g).$	.۲۲
$P_4(s) + \epsilon Cl_2(g) \rightarrow \epsilon PCl_3(g)$	
$\gamma PCl_3(l) + O_2(g) \rightarrow \gamma POCl_3(s)$	
$\epsilon HCl(g) + O_2(g) \rightarrow \gamma Cl_2(g) + \gamma H_2O(l)$	
$P_4(s) + \epsilon SO_2(g) + 10 Cl_2(g) \rightarrow \epsilon SOCl_2(l) + \epsilon POCl_3(l)$	
$B_2H_6(g) + \epsilon Cl_2(g) \rightarrow \gamma BCl_3(g) + \epsilon HCl(g)$	.۲۳
$B_2H_6(g) + \epsilon H_2O(l) \rightarrow \gamma H_3BO_3(s) + \epsilon H_2(g)$	
$BCl_3(g) + \gamma H_2O(l) \rightarrow H_3BO_3(s) + \gamma HCl(g)$	
$.N_2H_4(l) + O_2(g) \rightarrow N_2(g) + \gamma H_2O(l) :$	.۲۴

$\gamma NH_3(g) + \gamma N_2O(g) \rightarrow \gamma N_2(g) + \gamma H_2O(l)$ $N_2O(g) + \gamma H_2(g) \rightarrow N_2H_4(l) + H_2O(l)$ $\gamma NH_3(g) + O_2(g) \rightarrow \gamma N_2H_4(l) + \gamma H_2O(l)$	
$PI_3(s) + \gamma H_2O(l) \rightarrow H_3PO_3(aq) + \gamma HI(aq)$	.۲۵
$Bi(s) + \gamma HNO_3(aq) \rightarrow Bi(NO_3)_3(aq) + NO(g) + \gamma H_2O(l)$	.۲۶
$\gamma Fe(s) + \gamma H_2O(g) \rightarrow Fe_3O_4(s) + \gamma H_2(g)$	.۲۷
$\gamma NH_3(g) + \gamma Cl_2(g) \rightarrow \gamma NH_4Cl(s) + NCl_3(g)$	.۲۸
<b><math>CH_4(g) + 2H_2S(g) \rightarrow CS_2(g) + \gamma H_2(g)</math></b>	.۲۹
$\gamma Ca_3(PO_4)_2(s) + \gamma SiO_2(s) + \gamma C(s) \rightarrow \gamma CaSiO_3(s) + P_4(s) + \gamma CO(g)$	.۳۰
$\gamma AgNO_3(aq) + MgCl_2(s) \rightarrow \gamma AgCl(s) + Mg(NO_3)_2(aq)$	.۳۱
$I_2(s) + \gamma HNO_3(aq) \rightarrow \gamma HIO_3(aq) + \gamma NO_2(g) + \gamma H_2O(l)$	.۳۲
$\gamma NaHCO_3(s) + H_2SO_4(aq) \rightarrow Na_2SO_4(aq) + \gamma CO_2(g) + \gamma H_2O(l)$	.۳۳
$Na_2SO_4(aq) + CaCl_2(aq) \rightarrow CaSO_4(s) + \gamma NaCl(aq)$	.۳۴
$H_3PO_4(aq) + \gamma KOH(aq) \rightarrow K_3PO_4(aq) + \gamma H_2O(l)$	.۳۵
$\gamma HNO_3(aq) + Zn(OH)_2(s) \rightarrow Zn(NO_3)_2(aq) + \gamma H_2O(l)$	.۳۶
$\gamma H_2SO_4(aq) + \gamma Al(OH)_3(s) \rightarrow Al_2(SO_4)_3(aq) + \gamma H_2O(l)$ $H_2SO_4(aq) + \gamma NaOH(aq) \rightarrow Na_2SO_4(aq) + \gamma H_2O(l)$	.۳۷
$Ba(OH)_2(aq) + \gamma HCl(aq) \rightarrow BaCl_2(aq) + \gamma H_2O(l)$	.۳۸
$\gamma NaOH(aq) + FeCl_3(aq) \rightarrow Fe(OH)_3(s) + \gamma NaCl(aq)$	.۳۹
$\gamma HCl(aq) + NaClO(aq) \rightarrow NaCl(aq) + Cl_2(g) + H_2O(l)$	.۴۰
$\gamma H_2SO_4(aq) + Fe(s) \rightarrow FeSO_4(aq) + SO_2(g) + \gamma H_2O(l)$	.۴۱
$\gamma S(s) + \gamma NaOH(aq) \rightarrow \gamma Na_2S(aq) + \gamma Na_2S_2O_3(aq) + \gamma H_2O(l)$	.۴۲
$\gamma CaCl_2(aq) + \gamma Na_3PO_4(s) \rightarrow Ca_3(PO_4)_2(s) + \gamma NaCl(aq)$	.۴۳
$C_2H_2(g) + \gamma F_2(g) \rightarrow \gamma CF_4(g) + \gamma HF(g)$	.۴۴
$FeCl_3(aq) + \gamma NaOH(aq) \rightarrow Fe(OH)_3(s) + \gamma NaCl(aq)$	.۴۵
$LiAlH_4(s) + \gamma H_2O(l) \rightarrow LiOH(aq) + Al(OH)_3(s) + \gamma H_2(g)$	.۴۶
$Fe_3O_4(s) + \gamma HCl(aq) \rightarrow \gamma FeCl_3(aq) + \gamma H_2O(l)$ $FeCl_3(aq) + \gamma NaOH(aq) \rightarrow Fe(OH)_3(s) + \gamma NaCl(aq)$	.۴۷
$\gamma N_2O_5(g) + H_2O(l) \rightarrow \gamma HNO_3(aq)$	.۴۸
$\gamma BaCl_2(aq) + Al_2(SO_4)_3(aq) \rightarrow \gamma BaSO_4(s) + \gamma AlCl_3(aq)$	.۴۹
$(C_2H_2 \cdot O_2)_n(s) \xrightarrow{\text{حرارت}} \gamma nC(s) + \gamma nH_2O(g)$	.۵۰
$\gamma HNO_3(aq) + Cu(s) \rightarrow Cu(NO_3)_2(aq) + \gamma NO_2(g) + \gamma H_2O(l)$	.۵۱
$Fe_3O_4(s) + \gamma CO(g) \rightarrow \gamma Fe(s) + \gamma CO_2(g)$	.۵۲

$\text{Na}_x\text{SiO}_y(\text{s}) + \lambda \text{HF}(\text{aq}) \rightarrow \text{H}_x\text{SiF}_z(\text{aq}) + \gamma \text{NaF}(\text{aq}) + \gamma \text{H}_2\text{O}(\text{l})$	.۵۳
$\left\{ \begin{array}{l} \gamma \text{Fe}_x\text{O}_y(\text{s}) + \gamma \text{C}(\text{s}) \xrightarrow{\Delta} \xi \text{Fe}(\text{l}) + \gamma \text{CO}_z(\text{g}) \\ \gamma \text{Al}(\text{s}) + \text{Fe}_x\text{O}_y(\text{s}) \xrightarrow{\Delta} \text{Al}_x\text{O}_y(\text{s}) + \gamma \text{Fe}(\text{l}) \end{array} \right.$	.۵۴
$\left\{ \begin{array}{l} \text{MnO}_y(\text{s}) + \epsilon \text{HCl}(\text{aq}) \rightarrow \text{MnCl}_z(\text{aq}) + \text{Cl}_r(\text{g}) + \gamma \text{H}_2\text{O}(\text{l}) \\ \text{Cl}_r(\text{g}) + \gamma \text{KBr}(\text{aq}) \rightarrow \gamma \text{KCl}(\text{aq}) + \text{Br}_r(\text{l}) \end{array} \right.$	.۵۵
$\begin{array}{l} \text{C}_x\text{H}_y\text{OH}(\text{l}) + \gamma \text{O}_z(\text{g}) \rightarrow \gamma \text{CO}_z(\text{g}) + \gamma \text{H}_2\text{O}(\text{l}) \\ \text{Na}_x\text{CO}_y(\text{s}) + \gamma \text{HCl}(\text{aq}) \rightarrow \gamma \text{NaCl}(\text{aq}) + \text{CO}_z(\text{g}) + \text{H}_2\text{O}(\text{l}) \end{array}$	.۵۶
$(\text{NH}_x)_y\text{Cr}_z\text{O}_v(\text{s}) \xrightarrow{\Delta} \text{Cr}_z\text{O}_v(\text{s}) + \text{N}_r(\text{g}) + \epsilon \text{H}_2\text{O}(\text{g})$	.۵۷
$\begin{array}{l} \text{S}(\text{s}) + \epsilon \text{HNO}_r(\text{aq}) \xrightarrow{\Delta} \text{H}_x\text{SO}_z(\text{aq}) + \epsilon \text{NO}_r(\text{g}) + \gamma \text{H}_2\text{O}(\text{l}) \\ \gamma \text{Cu}(\text{s}) + \lambda \text{HNO}_r(\text{aq}) \xrightarrow{\Delta} \gamma \text{Cu}(\text{NO}_r)_z(\text{aq}) + \gamma \text{NO}(\text{g}) + \epsilon \text{H}_2\text{O}(\text{l}) \end{array}$	.۵۸
$\begin{array}{l} \gamma \text{KMnO}_x + \lambda \epsilon \text{HCl} \rightarrow \Gamma \text{KCl} + \gamma \text{MnCl}_z + \Delta \text{Cl}_r + \lambda \text{H}_2\text{O} \\ \gamma \text{KI} + \text{Cl}_r \rightarrow \Gamma \text{KCl} + \text{I}_r \end{array}$	.۵۹
$\begin{array}{l} (\text{NH}_x)_y\text{CO}_z(\text{s}) \rightarrow \gamma \text{NH}_r(\text{g}) + \text{CO}_z(\text{g}) + \text{H}_2\text{O}(\text{g}) \\ \gamma \text{LiHCO}_z(\text{s}) \rightarrow \text{Li}_r\text{CO}_z(\text{s}) + \text{CO}_z(\text{g}) + \text{H}_2\text{O}(\text{g}) \end{array}$	.۶۰
$\gamma \text{N}_r\text{O}_x(\text{g}) + \text{N}_r\text{H}_z(\text{g}) \rightarrow \epsilon \text{NO}(\text{g}) + \gamma \text{H}_2\text{O}(\text{g})$	.۶۱
$\text{Ca}(\text{H}_2\text{PO}_x)_y(\text{s}) + \gamma \text{NaHCO}_z(\text{s}) \rightarrow \text{CaHPO}_x(\text{s}) + \text{Na}_x\text{HPO}_z(\text{s}) + \gamma \text{CO}_z(\text{g}) + \gamma \text{H}_2\text{O}(\text{g})$	.۶۲
$\gamma \text{NaCl}(\text{s}) + \text{MnO}_r(\text{s}) + \gamma \text{H}_2\text{SO}_z(\text{aq}) \rightarrow \gamma \text{NaHSO}_z(\text{aq}) + \text{MnSO}_z(\text{aq}) + \gamma \text{H}_2\text{O}(\text{l}) + \text{Cl}_r(\text{g})$	.۶۳
$\Delta \text{H}_x\text{SO}_z(\text{aq}) + \gamma \text{K}_r\text{CrO}_z(\text{aq}) + \gamma \text{NaNO}_r(\text{aq}) \rightarrow \text{Cr}_r(\text{SO}_z)_z(\text{aq}) + \gamma \text{K}_r\text{SO}_z(\text{aq}) + \gamma \text{NaNO}_r(\text{aq}) + \Delta \text{H}_2\text{O}$	.۶۴
$1 \cdot \text{KBr}(\text{aq}) + \gamma \text{KMnO}_z(\text{aq}) + 8\text{H}_2\text{SO}_z(\text{aq}) \rightarrow 2\text{MnSO}_z(\text{aq}) + \gamma \text{K}_r\text{SO}_z(\text{aq}) + 5\text{Br}_r(\text{aq}) + \lambda \text{H}_2\text{O}(\text{l})$	.۶۵
$\gamma \text{NH}_z\text{Cl}(\text{aq}) + \gamma \text{MnO}_r(\text{s}) + \text{Zn}(\text{s}) \rightarrow \text{ZnCl}_r(\text{aq}) + \text{Mn}_r\text{O}_z(\text{s}) + \gamma \text{NH}_r(\text{aq}) + \text{H}_2\text{O}(\text{l})$	.۶۶
$\epsilon \text{HNO}_r(\text{aq}) + \epsilon \text{HCl}(\text{aq}) + \text{Sn}(\text{s}) \rightarrow \text{H}_x\text{SnCl}_z(\text{aq}) + \epsilon \text{NO}_r(\text{g}) + \epsilon \text{H}_2\text{O}(\text{l})$	.۶۷
$\begin{array}{l} \Delta \text{FeCl}_r(\text{aq}) + \text{KMnO}_z(\text{aq}) + \lambda \text{HCl}(\text{aq}) \\ \rightarrow \Delta \text{FeCl}_r(\text{aq}) + \text{MnCl}_z(\text{aq}) + \text{KCl}(\text{aq}) + \epsilon \text{H}_2\text{O}(\text{l}) \end{array}$	.۶۸
$\gamma \text{KMnO}_z + \lambda \epsilon \text{HI} \rightarrow \gamma \text{MnI}_z + \lambda \text{H}_2\text{O} + \gamma \text{KI} + \Delta \text{I}_r$	.۶۹
$\text{NH}_z\text{Cl}(\text{aq}) + \text{NaNO}_r(\text{aq}) \rightarrow \text{N}_r(\text{g}) + \gamma \text{H}_2\text{O}(\text{l}) + \text{NaCl}(\text{aq})$	.۷۰
$\text{TiO}_r(\text{s}) + \gamma \text{C}(\text{s}) + \gamma \text{Cl}_r(\text{g}) \rightarrow \text{TiCl}_z(\text{g}) + \gamma \text{CO}(\text{g})$	.۷۱
$\gamma \text{CaSO}_z(\text{s}) \xrightarrow{\Delta} \gamma \text{CaO}(\text{s}) + \gamma \text{SO}_z(\text{g}) + \text{O}_r(\text{g})$	.۷۲
$\epsilon \text{C}_x\text{H}_y\text{N}_z\text{O}_v \rightarrow \lambda \gamma \text{CO}_z(\text{g}) + \lambda \cdot \text{H}_2\text{O}(\text{g}) + \epsilon \text{N}_r(\text{g}) + \text{O}_r(\text{g})$	.۷۳
$\epsilon \text{C}_x \cdot \text{H}_y(\text{s}) + (\lambda \epsilon \cdot + n) \text{O}_z(\text{g}) \rightarrow \lambda n \text{H}_2\text{O}(\text{g}) + \lambda \epsilon \cdot \text{CO}_z(\text{g})$	.۷۴
$\gamma \text{NH}_r(\text{g}) + \gamma \text{CH}_z(\text{g}) + \gamma \text{O}_z(\text{g}) \rightarrow \gamma \text{HCN}(\text{g}) + \epsilon \text{H}_2\text{O}(\text{l})$	.۷۵
$\gamma \text{Al}(\text{s}) + \gamma \text{NaOH}(\text{s}) + \epsilon \text{H}_2\text{O}(\text{l}) \rightarrow \gamma \text{Na}[\text{Al}(\text{OH})_z](\text{aq}) + \gamma \text{H}_2(\text{g})$	.۷۶
$\begin{array}{l} \gamma \text{NH}_r(\text{g}) + \gamma \text{N}_r\text{O}(\text{g}) \rightarrow \epsilon \text{N}_r(\text{g}) + \gamma \text{H}_2\text{O}(\text{l}) \\ \text{N}_r\text{O}(\text{g}) + \gamma \text{H}_r(\text{g}) \rightarrow \text{N}_r\text{H}_z(\text{l}) + \text{H}_2\text{O}(\text{l}) \\ \epsilon \text{NH}_r(\text{g}) + \text{O}_z(\text{g}) \rightarrow \gamma \text{N}_r\text{H}_z(\text{l}) + \gamma \text{H}_2\text{O}(\text{l}) \end{array}$	.۷۷

$N_2H_4(l) + O_2(g) \rightarrow N_2(g) + 2H_2O(l)$	
$rFe(s) + fH_2O(g) \rightarrow Fe_rO_f(s) + fH_2(g)$	.۷۸
$Al_r(SO_f)_r(s) \rightarrow Al_rO_r(s) + rSO_f(g)$	.۷۹
$2Al(s) + Fe_rO_r(s) \rightarrow Al_rO_r(s) + 2Fe(l)$	
$3NO_2 + H_2O \rightarrow 2HNO_3 + NO$	.۸۰
$TiCl_4(l) + 4LiH(s) \rightarrow Ti(s) + 4LiCl(s) + 2H_2(g)$	.۸۱
$PCl_5(s) + 4H_2O(l) \rightarrow 5HCl(g) + H_3PO_4(aq)$	
$2Ag(s) + NO_3^-(aq) + 2H^+(aq) \rightarrow 2Ag^+(aq) + NO(g) + 2H_2O(l)$	.۸۲
$4Fe(OH)_2(s) + 2H_2O(l) + O_2(g) \rightarrow 4Fe(OH)_3(s)$	.۸۳
$2Al(OH)_3(s) + 3H_2SO_4(aq) \rightarrow Al_2(SO_4)_3(aq) + 6H_2O(l)$	
$SO_2(g) + H_2SO_4(aq) \rightarrow H_2S_2O_5(aq)$	.۸۴
$2I_2(s) + 5ClO_3^-(aq) + 6H_2O(l) \rightarrow 6IO_3^-(aq) + 6H^+(aq) + 5Cl^-(aq)$	
$Pb(OH)_2^-(aq) + ClO^-(aq) \rightarrow PbO_2(s) + Cl^-(aq) + OH^-(aq) + H_2O(l)$	
$K_2Cr_2O_7(aq) + BaCl_2(aq) + H_2O(l) \rightarrow BaCrO_4(aq) + KCl(aq) + HCl(aq)$	
a) $2Ca_3(PO_4)_2(s) + 6SiO_2(s) + 10C(s) \xrightarrow{\Delta} P_4(g) + 6CaSiO_3(s) + 10CO(g)$	.۸۵
b) $Ca_3(PO_4)_2(s) + H_2SO_4(aq) \rightarrow CaSO_4(s) + H_3PO_4(aq)$	
c) $HNO_3(aq) + HI(g) \rightarrow I_2(s) + NO(g) + H_2O(l)$	
d) $PCl_5(g) + 4H_2O(l) \rightarrow H_3PO_4(aq) + 5HCl(aq)$	
$2I^-(aq) + 2MnO_4^-(aq) + 4H_2O(l) \rightarrow 2MnO_2(s) + 2I_2(s) + 8OH^-(aq)$	.۸۶
$2CH_3CH_2OH(aq) + 2Cr_2O_7^{2-}(aq) + 16H^+(aq) \rightarrow 2CH_3COOH(aq) + 4Cr^{3+}(aq) + 11H_2O(l)$	.۸۷
$3P_4 + 20HNO_3 + 8H_2O \rightarrow 12H_3PO_4 + 20NO$	.۸۸
$2ClF_3(g) + 2NH_3(g) \rightarrow 2HF(g) + N_2(g) + Cl_2(g)$	.۸۹
$PCl_5(g) + 4H_2O(l) \rightarrow H_3PO_4(aq) + 5HCl(aq) + H_2(g)$	
$4KO_2(aq) + 4CO_2(g) + 2H_2O(l) \rightarrow 4KHCO_3(s) + 2O_2(g)$	.۹۰
$\Delta Fe^{2+}(aq) + MnO_4^-(aq) + 8H^+(aq) \rightarrow 5Fe^{3+}(aq) + Mn^{2+}(aq) + 4H_2O$	.۹۱
$2NO_2(g) + NO(g) + 2NH_3(g) \rightarrow 2N_2(g) + 2H_2O(g)$	.۹۲
$2HCl(g) + O_2(g) \rightarrow 2H_2O + 2Cl_2(g)$	.۹۳
$CS_2(g) + 4H_2(g) \rightarrow CH_4(g) + 2H_2S(g)$	.۹۴
$2F_2(g) + 2H_2O(g) \rightarrow O_2(g) + 4HF(g)$	.۹۵