Name key Period A11

Quiz 19 – Combination and Single Replacement Reaction Balancing 20 Points

Balance the following chemical reactions, showing balancing chart. **No Work = No Credit!**

Combination Reaction	*Single Replacement Reaction*
2 each (6) 3 Fe + ____ N_2 → ____ Fe_3N_2	6 K + ____ Cu_2O_3 → 2 each (8) 2 Cu + 3 K_2O
Balancing Chart Fe - ~~1~~ 3 Fe - 3 N - 2 N - 2 Work 4	*Balancing Chart* K - ~~1~~ 6 K - ~~2~~ 6 Cu - 2 Cu - ~~1~~ 2 O - 3 O - ~~1~~ 3 work 2

Name key Period A11

Quiz 19 – Combination and Single Replacement Reaction Balancing 20 Points

Balance the following chemical reactions, showing balancing chart. **No Work = No Credit!**

Combination Reaction	*Single Replacement Reaction*
2 each (6) 2 Al + 3 S → ____ Al_2S_3	3 Ca + 2 Zn_3P → 2 each (8) 6 Zn + ____ Ca_3P_2
Balancing Chart Al - ~~1~~ 2 Al - 2 S - ~~1~~ 3 S - 3 Work 4	*Balancing Chart* Ca - ~~1~~ 3 Ca - 3 Zn - ~~3~~ 6 Zn - ~~1~~ 6 P - ~~1~~ 2 P - 2 Work 2

Name key Period All

Quiz 19 – Combination and Single Replacement Reaction Balancing 20 Points

Balance the following chemical reactions, showing balancing chart. **No Work = No Credit!**

Combination Reaction	*Single Replacement Reaction*
2 each (6) 4 V + 3 O_2 → 2 V_2O_3	4 Ag + ____ PbS_2 → 2 each (8) ____ Pb + 2 Ag_2S
Balancing Chart V - ~~1~~ 4 V - ~~2~~ 4 O - ~~2~~ 6 O - ~~3~~ 6 work 4	*Balancing Chart* Ag - ~~1~~ 4 Ag - ~~2~~ 4 Pb - 1 Pb - 1 S - 2 S - ~~1~~ 2 work 2

Name key Period All

Quiz 19 – Combination and Single Replacement Reaction Balancing 20 Points

Balance the following chemical reactions, showing balancing chart. **No Work = No Credit!**

Combination Reaction	*Single Replacement Reaction*
2 each (6) 3 Li + ____ P → ____ Li_3P	3 Mg + 2 VN → 2 each (8) 2 V + ____ Mg_3N_2
Balancing Chart Li - ~~1~~ 3 Li - 3 P - 1 P - 1 Work 4	*Balancing Chart* Mg - ~~1~~ 3 Mg - 3 V - ~~1~~ 2 V - ~~1~~ 2 N - ~~1~~ 2 N - 2 work 2

Name key Period A11

Quiz 20 – Polyatomic Ion Reaction Balancing 20 Points

Balance the following chemical reactions, showing balancing chart. **No Work = No Credit!**

Single Replacement Reaction	*Double Replacement Reaction*
3 Mn + 2 $Fe(OH)_3$ → (2 each (8)) 2 Fe + 3 $Mn(OH)_2$	___ $PbCl_4$ + 2 CdC_2O_4 → (2 each (6)) ___ $Pb(C_2O_4)_2$ + 2 $CdCl_2$
Balancing Chart Mn: ~~1~~ 3 | Mn: ~~1~~ 3 Fe: ~~1~~ 2 | Fe: ~~1~~ 2 OH: ~~3~~ 6 | OH: ~~3~~ ~~2~~ 6 walk = 2	*Balancing Chart* Pb: 1 | Pb: 1 Cl: 4 | Cl: ~~2~~ 4 Cd: ~~1~~ 2 | Cd: ~~1~~ 2 C_2O_4: ~~1~~ 2 | C_2O_4: 2 walk = 2

Name key Period A11

Quiz 20 – Polyatomic Ion Reaction Balancing 20 Points

Balance the following chemical reactions, showing balancing chart. **No Work = No Credit!**

Single Replacement Reaction	*Double Replacement Reaction*
2 V + 3 $Mn(ClO_3)_2$ → (2 each (8)) 3 Mn + 2 $V(ClO_3)_3$	___ $PbCl_4$ + 2 $CuCO_3$ → (2 each (8)) ___ $Pb(CO_3)_2$ + 2 $CuCl_2$
Balancing Chart (2 each (8)) V: ~~1~~ 2 | V: ~~1~~ 2 Mn: ~~1~~ 3 | Mn: ~~1~~ 3 ClO_3: ~~2~~ 6 | ClO_3: ~~3~~ 6 walk = 2	*Balancing Chart* (2 each (8)) Pb: 1 | Pb: 1 Cl: 4 | Cl: ~~2~~ 4 Cu: ~~1~~ 2 | Cu: ~~1~~ 2 CO_3: ~~1~~ 2 | CO_3: 2 walk = 2

Name key Period A11

Quiz 20 – Polyatomic Ion Reaction Balancing 20 Points

Balance the following chemical reactions, showing balancing chart. **No Work = No Credit!**

Single Replacement Reaction	*Double Replacement Reaction*
3 Mn + 2 $Cu(NO_3)_3$ → (2 each (8)) 2 Cu + 3 $Mn(NO_3)_2$	___ $TiBr_4$ + 2 $PdSO_4$ → (2 each (8)) ___ $Ti(SO_4)_2$ + 2 $PdBr_2$
Balancing Chart Mn: ~~1~~ 3 | Mn: ~~1~~ 3 Cu: ~~1~~ 2 | Cu: ~~1~~ 2 NO_3: ~~3~~ 6 | NO_3: ~~2~~ 6 walk = 2	*Balancing Chart* Ti: 1 | Ti: 1 Br: 4 | Br: ~~2~~ 4 Pd: ~~1~~ 2 | Pd: ~~1~~ 2 SO_4: ~~1~~ 2 | SO_4: 2 walk = 2

Name Key Period All

Quiz 21 – Combination and Decomposition Reactions 20 Points

Determine the products and complete the following reactions. **No Work = No Credit!**

3 Zr^{1+} + ____ N_2 → ____ Zr_3N A: Zr : + +1 (2) B: N (leach) : - -3 (2)	*AB Work* +1 -3 Zr N (1) Zr_3N (2) (8)
____ Cd^{3+} + ____ O_2 → ____ A: Cd : + +3 (2) B: O (leach) : - -2 (2)	*AB Work* +3 -2 Cd O (1) Cd_2O_3 (2) (8)
____ MgI_2 → ____ Mg (2) + ____ I_2 (2)	(4)

Name Key Period All

Quiz 21 – Combination and Decomposition Reactions 20 Points

Determine the products and complete the following reactions. **No Work = No Credit!**

3 Mg (A) + ____ N_2 (B) → ____ Mg_3N_2 A: Mg : + +2 (2) B: N (leach) : - 3 (1)	*AB Work* +2 -3 Mg N (1) Mg_3N_2 (1) (8)
____ V^{3+} + ____ Se → ____ V_2Se_3 A: V : + +3 (1) B: Se (leach) : - -2 (1)	*AB Work* +3 -2 V Se (1) V_2Se_3 (2) (8)
____ $TiCl_4$ → ____ Ti (2) + 2 Cl_2 (2)	(4)

Name key Period A11

Quiz 21 – Combination and Decomposition Reactions 20 Points

Determine the products and complete the following reactions. **No Work = No Credit!**

	AB Work	
3 Fe^{2+} + 2 P → Fe_3P_2 A: Fe : + +2 (2) B: P : - -3 (2) (P leach)	+2 -3 Fe P (2) Fe_3P_2 (2)	(8)
2 Mn^{3+} + 3 S → Mn_2S_3 A: ~~Mn~~ Mn : + +3 (2) B: S : - -2 (2) (S leach)	+3 -2 Mn S (2) Mn_2S_3 (2)	(8)
____ $NiBr_2$ → ____ Ni + ____ Br_2 (2) (2)		(4)

Name key Period A11

Quiz 21 – Combination and Decomposition Reactions 20 Points

Determine the products and complete the following reactions. **No Work = No Credit!**

	AB Work	
3 Cr^{2+} + 2 P → Cr_3P_2 A: Cr : ++2 (2) B: P : - -3 (2) (P leach)	+2 -3 Cr P (2) Cr_3P_2 (2)	(8)
4 Cu^{3+} + 3 O_2 → 2 Cu_2O_3 A: Cu : + +3 (2) B: O : - -2 (2) (O leach)	+3 -2 Cu O (2) Cu_2O_3 (2)	(6)
2 VBr_3 → 2 V + 3 Br_2 (2) (2)		(4)

Name key Period All

Quiz 22 – Single Replacement Reactions 20 Points

Determine the products and complete the following reactions. **No Work = No Credit!**

4 Al + 3 SnI_4 → 4 AlI_3 + 3 Sn (1 each (4)) A: Al : +3 B: Sn (1 each (5)) C: I : -1	*AC Work* (1) (10) +3 -1 Al I AlI_3
3 Co^{2+} + 2 H_3PO_4 → $Co_3(PO_4)_2$ + 6 H_2 (1 each (4)) A: Co : +2 B: H (1 each (5)) C: PO_4 : -3	*AC Work* (1) (10) +2 -3 Co PO_4 $Co_3(PO_4)_2$

Name key Period All

Quiz 22 – Single Replacement Reactions 20 Points

Determine the products and complete the following reactions. **No Work = No Credit!**

4 Al + 3 $SnCl_4$ → 4 $AlCl_3$ + 3 Sn (1 each (4)) A: Al : +3 B: Sn (1 each (5)) C: Cl : -1	*AC Work* (1) (10) +3 -1 Al Cl $AlCl_3$
3 Fe^{2+} + 2 H_3PO_4 → $Fe_3(PO_4)_2$ + 3 H_2 (1 each (4)) A: Fe : +2 B: H (1 each (5)) C: PO_4 : -3	*AC Work* (1) (10) +2 -3 Fe PO_4 $Fe_3(PO_4)_2$

Name Key Period All

Quiz 22 – Single Replacement Reactions 20 Points

Determine the products and complete the following reactions. **No Work = No Credit!**

4 3 Al + 3 PbF_4 → 4 AlF_3 + 3 Pb A: Al : + 3 B: Pb C: F : - -1	AC Work (1) +3 -1 Al F AlF_3
___ Cu^{2+} + ___ H_3PO_4 → $Cu_3(PO_4)_2$ + ___ H_2 A: Cu : + 2 B: H C: PO_4 : - 3	AC Work (1) +2 -3 Cu (PO_4) $Cu_3(PO_4)_2$

(10)

Name Key Period All

Quiz 22 – Single Replacement Reactions 20 Points

Determine the products and complete the following reactions. **No Work = No Credit!**

4 Al + 3 PbF_4 → 4 AlF_3 + 3 Pb A: Al : + 3 B: Pb C: F : - -1	AC Work (1) +3 -1 Al F AlF_3
3 Cr^{2+} + 2 H_3PO_4 → $Cr_3(PO_4)_2$ + 6 H_2 A: Cr : + 2 B: H C: PO_4 : - 3	AC Work (1) +2 -3 Cr (PO_4) $Cr_3(PO_4)_2$

(10)

Name key Period All

Quiz 23 – Double Replacement Reactions 20 Points

Determine the products and complete the following reactions. **No Work = No Credit!**

	Cross Method Work
3 PbI_2 + ____ Al_2O_3 → 3 PbO (2) + 2 AlI_3 (2)	$Pb^{+2}O^{-2}$ → Pb_2O_2 → PbO (1)
A: Pb : + 2 B: I : - 1	$Al^{+3}I^{-1}$ → AlI_3 (1)
C: Al : + 3 D: O : - 2	
1/2 each (4)	
3 $Ca(NO_3)_2$ + 2 VPO_4 → $Ca_3(PO_4)_2$ + 2 $V(NO_3)_3$ (2) (2)	$Ca^{+2}(PO_4)^{-3}$ → $Ca_3(PO_4)_2$ (1)
A: Ca : + 2 B: NO_3 : - 1	$V^{+3}(NO_3)^{-1}$ → $V(NO_3)_3$ (1)
C: V : + 3 D: PO_4 : - 3	
1/2 each (4)	

Name key Period All

Quiz 23 – Double Replacement Reactions 20 Points

Determine the products and complete the following reactions. **No Work = No Credit!**

	Cross Method Work
3 SrF_2 + ____ Cr_2O_3 → 3 SrO (2) + 2 CrF_3 (2)	$Sr^{+2}O^{-2}$ → Sr_2O_2 → SrO (1)
A: Sr : + 2 B: F : - 1	$Cr^{+3}F^{-1}$ (1)
C: Cr : + 3 D: O : - 2	CrF_3
1/2 each (4)	
3 $Mg(NO_3)_2$ + 2 $FePO_4$ → $Mg_3(PO_4)_2$ + 2 $Fe(NO_3)_3$ (2) (2)	$Mg^{+2}(PO_4)^{-3}$ → $Mg_3(PO_4)_2$ (1)
A: Mg : + 2 B: NO_3 : - 1	$Fe^{+3}(NO_3)^{-1}$ → $Fe(NO_3)_3$ (1)
C: Fe : + 3 D: PO_4 : - 3	
1/2 each (4)	

Name key Period A11

Quiz 23 – Double Replacement Reactions 20 Points

Determine the products and complete the following reactions. **No Work = No Credit!**

	Cross Method Work
3 $MgCl_2$ + ____ Mn_2O_3 → 3 MgO + 2 $MnCl_3$ A: Mg : + 2 B: Cl : - 1 C: Mn : + 3 D: O : - 2	Mg_2O_2 MgO Mn_2Cl_3 $MnCl_3$
3 $Ca(NO_3)_2$ + 2 $CuPO_4$ → $Ca_3(PO_4)_2$ + 2 $Cu(NO_3)_3$ A: Ca : + 2 B: NO_3 : - 1 C: Cu : + 3 D: PO_4 : - 3	$Ca_3(PO_4)_2$ $Cu(NO_3)_3$

Name key Period A11

Quiz 23 – Double Replacement Reactions 20 Points

Determine the products and complete the following reactions. **No Work = No Credit!**

	Cross Method Work
3 $CaBr_2$ + ____ V_2O_3 → 3 CaO + 2 VBr_3 A: Ca : + 2 B: Br : - 1 C: V : + 3 D: O : - 2	Ca_2O_2 CaO VBr_3
3 $Mn(NO_3)_2$ + 2 $AlPO_4$ → $Mn_3(PO_4)_2$ + 2 $Al(NO_3)_3$ A: Mn : + 2 B: NO_3 : - 1 C: Al : + 3 D: PO_4 : - 3	$Mn_3(PO_4)_2$ $Al(NO_3)_3$