**Midterm Reactions Review KEY**

1. synthesis 2Sb + 3I2 🡪 2SbI3
2. single replacement 2Li + 2H2O 🡪 2LiOH + H2
3. decomposition 2AlCl3 🡪 2Al + 3Cl2
4. combustion C6H12 + 9O2 🡪 6CO2 + 6H2O
5. double replacement 2AlCl3 + 3Na2CO3 🡪 Al2(CO3)3 + 6NaCl
6. double replacement 2HNO3 + Ba(OH)2 🡪 Ba(NO3)2 + 2H2O
7. single replacement 2Al + 3Pb(NO3)2 🡪 2Al(NO3)3 + 3Pb
8. decomposition SO2(g) 🡪 S(s) + O2(g)
9. double replacement 2NH4Cl(aq) + Pb(NO3)2(aq) 🡪 PbCl2(s) + 2NH4NO3(aq)
10. combustion (You don’t need to know this) CS2(s) + 3O2(g) 🡪 CO2(g) + 2SO2(g)
11. single replacement Fe(s) + 3AgNO3(aq) 🡪 Fe(NO3)3(aq) + 3Ag(s)
12. decomposition 2KNO3(s) 🡪 2KNO2(s) + O2(g)
13. synthesis Ca(s) + Cl2(g) 🡪 CaCl2(s)
14. single replacement F2(g) + 2KCl(aq) 🡪 2KF(aq) + Cl2(g)
15. comb, synthesis 4P(s) + 5O2(g) 🡪 2P2O5(s)
16. single replacement Al(s) + NaOH(aq) 🡪 N.R.
17. combustion C2H4(g)+ 3O2(g) 🡪 2CO2(g) + 2H2O(g)
18. double replacement FeCl2(aq)+ K2S(aq) 🡪 FeS(s) + 2KCl(aq)
19. comb, synthesis 2Ba(s) + O2(g) 🡪 2BaO(s)
20. double replacement NH4NO3(aq) + NaCl(aq) 🡪 N.R.
21. single replacement Mg(s) + 2HCl(aq) 🡪 MgCl2(aq) + H2(g)
22. synthesis 2K(s) + Cl2(g) 🡪 2KCl(s)
23. double replacement KBr(aq) + AgNO3(aq) 🡪 AgBr(s) + KNO3(aq)
24. decomposition 2HgO(s) 🡪 2Hg(l) + O2(g)
25. AgNO3(aq) + Cu(s) 🡪 Ag(s) + CuNO3
26. FeCl3(aq) + 3 NaOH(aq) 🡪 Fe(OH)3(s) + 3 NaCl(aq)

**Use the activity series of metals and your knowledge of the relative reactivity of the halogens to predict the products for the reactions below. If no reaction occurs, just write “No Reaction”. Write balanced equations for those reactions that do occur.**

a. Br2(*g*) + NaCl(*aq*) 🡪 No Rxn

b. Ca(*s*) + Mg(NO3)2(*aq*) 🡪 Ca(NO3)2(aq) + Mg(s)

c. 2 K(*s*) + H2SO4(*aq*) 🡪 H2(g) + K2SO4(aq)

d.Zn(*s*) + NaOH(*aq*) 🡪 No Rxn

**Predict the products for the reactions below. Identify the precipitate formed and the aqueous product. If no precipitate is formed, write “No Reaction”*.***

a. Zn(NO3)2(aq) + SnCl2 (aq) 🡪 No Rxn

b. KCl(aq) + AgNO3(aq) 🡪 AgCl(s) + KNO3(aq)

c. Cu(NO3)2 + Na2S 🡪 CuS(s) + 2 NaNO3(aq)

d. Al2(SO4)3(aq) + Ca(OH)2(aq) 🡪 2 Al(OH)3(s) + 3 CaSO4(aq)