Predicting Reactions

The goal of this competition is to correctly predict the reactants and products for a proposed reaction. You will be given 20 reaction statements and are required to write the correct reaction. The rules are given below:

1. Each reaction will have 2 reactants and 2 products.
2. For aqueous reactions, each species must be written in ionic form (if needed) with no spectator ions shown. Some reactions will have neutral species.
3. Charged species must have the correct charge to receive credit. Charges on ionic species must be written with a number (for example +3 or 3+) to receive credit.
4. Type of reactions include: acid / base, acid anhydride, base anhydride, combustion, complex ion, substitution, single replacement, double replacement and redox.
5. One point is assigned to each correct species.
6. Balancing of reactions is not required.
7. You should study and be familiar with simple organic naming for alkanes, alkenes, alcohols and complex ions.
8. If you do not write a charge on a species, it will be assumed that you are a writing a neutral species.
9. You should study and be familiar with the solubility rules.
10. You will be given a periodic table with the exam. No other references may be used.
11. Acetic acid may be written as either $HC_2H_3O_2$ or in structural form CH_3COOH