Reactions Quiz Answers

1. C 2) C 3) C 4) A 5)E 6) C 7) A 8) D 9) E 10) B 11) E 12) B 13) C 14) A 15) E 16) A 17) B 18) E 19) A 20) C 21) D 22) D 23) A 24) B

AP reactions:

a) a solution of potassium iodide is added to an acidified solution of potassium dichromate.

14H+*(aq)* + 6I-*(aq)* + Cr2O72-*(aq)*  3I2*(aq)* + 2Cr3+*(aq)* + 7H2O (any reasonable I- oxidation prod. accepted)

b) a solution of sodium hydroxide is added to a solution of ammonium chloride.

OH-*(aq)* + NH4+*(aq)*  H2O + NH3*(aq)* [or NH4OH*(aq)*]

c) a strip of magnesium is added to a solution of silver nitrate.

Mg*(s)* + 2Ag+*(aq)*  Mg2+*(aq)* + 2Ag*(s)*

d) solid potassium chlorate is heated in the presence of manganese dioxide as a catalyst.

2KClO3*(s)*  2KCl*(s)* + 3O2*(g)* (MnO2 over arrow)

e) dilute hydrochloric acid is added to a solution of potassium carbonate.

2H+*(aq)* + CO32-*(aq)*  CO2*(g)* + H2O (or H2CO3*(aq)* or HCO3-*(aq)*)

f) sulfur trioxide gas is added to excess water.

SO3*(g)* + H2O  H+*(aq)* + HSO4-*(aq)* {or H+*(aq)* + SO42-*(aq)*}

g) dilute sulfuric acid is added to a solution of barium chloride.

SO42-*(aq)* + Ba2+*(aq)*  BaSO4*(s)* [or HSO4-*(aq)* + Ba2+*(aq)* BaSO4*(s)* + H+*(aq)*

h) propanol is burned completely in air.

C3H8*(l)* + 5O2*(g)*  3CO2*(g)* + 4H2O*(g)*

1. a solution of potassium permanganate is mixed with an alkaline solution of sodium sulfite.

2MnO4-*(aq)* + 3H2O*(aq)* + 5SO32-*(aq)*  5SO42-*(aq)* + 6OH- + 2Mn2+ (*aq)*

Or

2MnO4-*(aq)* + H2O*(aq)* + 3SO32-*(aq)*  3SO42-*(aq)* + 2OH- + 2MnO2 (*aq)*

Or

2MnO4-*(aq)* + H2O*(aq)* + 5SO32-*(aq)*  5SO42-*(aq)* + 2OH- + 2MnO (*aq)*

AP Question:

A i) K2CO3 only carbonate ions make insoluble compounds with both Ag and Ba

ii) Ag2CO3 and BaCO3

B i) R = Pb(NO3)2 PbCO3 is insoluble

S = NaCl , Na2CO3 is still soluble

ii) PbCO3

C i) add a few drops of x and y to samples of each solution

1. samples mixed with Pb(NO3)2 will create a precipitate if the solution is BaCl2

samples mixed with NaCl will create a precipitate with AgNO3

carbonate will precipitate with both so is useless.