AP Chemistry
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Name_____

AP MULTIPLE CHOICE QUESTIONS
CH. 4, SET 1

1984

32. The net ionic equation for the reaction between silver carbonate and hydrochloric acid is
A. Ag_2CO_3 (s) + $2H^+$ + $2Cl^-$ $\rightarrow$ 2AgCl (s) + H_2O + CO_2 (g)
B. $2Ag^+$ + CO_3^{2-} + $2H^+$ + $2Cl^-$ $\rightarrow$ 2AgCl (s) + H_2O + CO_2 (g)
C. CO_3^{2-} + $2H^+$ $\rightarrow$ H_2O + CO_2 (g)
D. Ag^+ + Cl^- $\rightarrow$ AgCl (s)
E. Ag_2CO_3 (s) + $2H^+$ $\rightarrow$ $2Ag^+$ + H_2CO_3

53. Which, if any, of the following species is in the greatest concentration in a 0.100 molar solution of H_2SO_4 in water?
A. H_2SO_4 molecules
B. H_3O^+ ions
C. HSO_4^- ions
D. SO_4^{2-} ions
E. All species are in equilibrium and therefore have the same concentrations.

59. When 70. milliliters of 3.0 molar Na_2CO_3 is added to 30. milliliters of 1.0-molar $NaHCO_3$, the resulting concentration of Na^+ is
A. 2.0 M C. 4.0 M E. 7.0 M
B. 2.4 M D. 4.5 M

64. The net ionic equation for the reaction that occurs during the titration of nitrous acid with sodium hydroxide is
A. HNO_2 + Na^+ + OH^- $\rightarrow$ $NaNO_2$ + H_2O
B. HNO_2 + NaOH $\rightarrow$ Na^+ + NO_2^- + H_2O
C. H^+ + OH^- $\rightarrow$ H_2O
D. HNO_2 + H_2O $\rightarrow$ NO_2^- + H_3O^+
E. HNO_2 + OH^- $\rightarrow$ NO_2^- + H_2O

67. A student wishes to prepare 2.00 liters of 0.100 molar KIO_3 (Molecular Weight 214). The proper procedure is to weigh out
A. 42.8 grams of KIO_3 and add 2.00 kilograms of H_2O.
B. 42.8 grams of KIO_3 and add H_2O until the final homogeneous solution has a volume of 2.00 liters.
C. 21.4 grams of KIO_3 and add H_2O until the final homogeneous solution has a volume of 2.00 liters.
D. 42.8 grams of KIO_3 and add 2.00 liters of H_2O.
E. 21.4 grams of KIO_3 and add 2.00 liters of H_2O.

68. A 20.0-milliliter sample of 0.200-molar K_2CO_3 solution is added to 30.0 milliliters of 0.400-molar $Ba(NO_3)_2$ solution. Barium carbonate precipitates. The concentration of barium ion, Ba^{2+}, in solution after the reaction is
A. 0.150 M C. 0.200 M E. 0.267 M
B. 0.160 M D. 0.240 M