

- _____ 29. Given that: $\text{CaCl}_2(aq) + \text{NaHCO}_3(aq) \rightarrow \text{CaCO}_3(s) + \text{NaCl}(aq) + \text{HCl}(aq)$, which of the following is classified as a spectator ion?
- $\text{Na}^+(aq)$
 - $\text{CO}_3^{2-}(aq)$
 - $\text{CaCO}_3(s)$
 - $\text{Ca}^{2+}(aq)$
- _____ 30. Given that: $\text{CH}_4(g) + 2 \text{O}_2(g) \rightarrow \text{CO}_2(g) + 2 \text{H}_2\text{O}(\ell)$, how many moles of water are produced in the complete combustion of 100.0 grams of methane (CH_4)?
- 7.509 mol
 - 12.48 mol
 - 200.0 mol
 - 0.3208 mol
- _____ 31. The correct molecular formula for potassium nitrate is:
- PN_3
 - PNO_2
 - KN_3
 - KNO_3
- _____ 32. Which of the following may be classified as an example of an acid-base reaction?
- $\text{HCl}(aq) + \text{NaOH}(aq) \rightarrow \text{H}_2\text{O}(\ell) + \text{NaCl}(aq)$
 - $\text{Ca}(\text{NO}_3)_2(aq) + \text{H}_2\text{SO}_4(aq) \rightarrow \text{CaSO}_4(aq) + \text{HNO}_3(aq)$
 - $\text{KClO}_4(aq) + \text{NaF}(aq) \rightarrow \text{NaClO}_4(aq) + \text{KF}(aq)$
 - $\text{HCOOH}(aq) + \text{NH}_4\text{Cl}(aq) \rightarrow \text{NH}_4\text{COOH}(aq) + \text{HCl}(aq)$
- _____ 33. The systematic name of CuO is:
- copper(I) oxide
 - copper(II) oxide
 - copper oxide
 - copper(II) hydroxide
- _____ 34. If liquid mercury and oxygen combine to make mercury(II) oxide, what is the percent yield of HgO if 350.0 grams of $\text{Hg}(\ell)$ react with 150.0 g of $\text{O}_2(g)$ to produce 272.3 grams of the product?
- 72.07%
 - 44.03%
 - 13.39%
 - 66.76%
- _____ 35. What volume of a 1.00 M HCl solution is required to create 300. mL of a 0.250 M HCl solution?
- 30.0 mL
 - 25.0 mL
 - 60.0 mL
 - 75.0 mL
- _____ 36. Ions of opposite charges attract one another. This attraction is governed by:
- Calbert's Law
 - Henry's Law
 - Franklin's Law
 - Coulomb's Law