Acid Base Reactions

Chemistry Name

1 Complete and balance these equations. Then write the net ionic equation.

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| (a) Zn(*s*) + HCl(*aq*) → | (d) MgO(*s*) + HI(*aq*) → |
| (b) Al(OH)3(*s*) + H2SO4(*aq*) → | (e) Ca(HCO3)2(*s*) + HBr(*aq*) → |
| (c) Na2CO3(*aq*) + HC2H3O2(*aq*) → | (f) KOH(*aq*) + H3PO4(*aq*) → |

2 Complete and balance these equations. Then write the net ionic equation.

|  |  |
| --- | --- |
| (a) Fe2O3(*s*) + HBr(*aq*) → | (d) Ba(OH)2(*s*) + HClO4(*aq*) → |
| (b) Al(*s*) + H2SO4(*aq*) → | (e) Mg(*s*) + HClO4(*aq*) → |
| (c) NaOH(*aq*) + H2CO3(*aq*) → | (f) K2O(*s*) + HI(*aq*) → |

3 Determine whether each of the following substances is an electrolyte or a nonelectrolyte. All are mixed with water.

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| (a) C6H12O6 (glucose) | (d) LiOH |
| (b) P2O5 | (e) C2H5OH (ethyl alcohol) |
| (c) NaClO | (f) KMnO4 |

4 Determine the molarity of each of the ions present in the following aqueous salt solutions: (assume 100% ionization).

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| --- | --- |
| (a) 1.25 *M* CuBr2 | (c) 3.50 *M* K3AsO4 |
| (b) 0.75 *M* NaHCO3 | (d) 0.65 *M* (NH4)2SO4 |

5 Draw pictures to show what happens to the following compounds when each is dissolved in water.

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| --- | --- | --- |
| (a) CaCl2 | (b) KF | (c) AlBr3 |

6 What is the concentration of Ca2+ ions in a solution of CaI2 having an I- concentration of 0.520 *M*?

7 Identify the conjugate acid–base pairs in each of the following equations.

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