## Problem Set 5.1-5.4 Answers

**5.1** dissolve 119 g of KBr into about 900 mL of water. Stir to mix thoroughly. Add water to make 1.00 L. Mix again.

**5.2** 1.43 M **5.3** 1.25 moles **5.4** 149.2 g

**5.5** dissolve 3.5 g of NaOH into just less than 350 mL. Stir. Add water to make up to 350 mL. Stir again.

**5.6** 0.025 moles **5.7** 31.2 g CaCl2 **5.8** 0.106 M

**5.9** [LiCl] = 1.18M while [KF] is only 0.69 M **5.10** 2.2 g of NaCl necessary to make a 0.15 M solution

**5.11** 0.7 M NaCl in sea water.

**5.12** a) K2SO4(aq) 🡪 2K+( aq) + SO42-( aq)

2.5 M 5.0 M 2.5 M

b) NH4CH3COO(aq) 🡪 NH4+(aq) + CH3COO-(aq)

0.36 M 0.36 M 0.36 M

c) Ca3P2 🡪 3Ca2+(aq) + 2P3-(aq)

0.0035 M 0.011 M 0.0070 M

d) Fe2­O5 🡪 2Fe5+(aq) + 5O2-(aq)

0.000863 M 0.00173 M 0.00432 M

**5.13** 59.04 g **5.14** 0.13 M **5.15** 0.11 M **5.16** (assume solution is 1 g/mL) 1 M Cl- **5.17**  4.4 g **5.18** 20.0 g

**5.19** 0.47 M **5.20** 0.28 M **5.21** 9.7 M **5.22** [Na+]=0.69M, [SO4-]=0.35M **5.23**  86 mL **5.24** 690 mL

**5.25** 1.4 M **5.26** [Al3+]=0.98 M, [Cl-]=2.9M **5.27** 1.8 M

**5.28** [Al3+]=0.27 M, [Cl-]=0.81M, [Ba2+]=1.8M, [PO43-]=1.2M **5.29** [Fe3+]=0.64M, [CO3-]=0.96M, [K+]=0.31M, [O2-]=0.15M

**5.30** [Na+]=0.272M, [SO42-]=0.136M, [Fe2+]=0.513M, [PO43-]=0.342M

**5.31** [K+]=0.078M, [S2-]=0.039M, [Li+]=0.095M, [F-]=0.095M **5.32** [Br-]=0.66M **5.33** [Br-]=0.81M

**5.34** [Na+]=0.44M, [Cl-]=0.71M, [K+]=0.28M **5.35** [Na+]=4.5M, [NO3-]=4.6M, [Pb4+]=0.014M