Week 10 HW

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Chapter 4

Q31

- a)
  - NaHCO3 = 84 g/mol
  - $\frac{5.623}{84} = 0.067$ mol
  - $\frac{0.067\text{mol}}{0.250\text{L}} = 0.268M$
- b)
  - K2Cr2O7 = 294.2 g/mol
  - $\frac{184.6g}{294.2\text{g/mol}} = 0.63$ mol
  - $\frac{0.63mol}{0.5L} = 1.26M$
- c)
  - Cu = 63.55 g/mol
  - $\frac{0.1025g}{63.55\text{g/mol}} = 0.0016$ mol
  - $\frac{0.0016mol}{0.2L} = 0.008M$

Q32

- mass = $(75.0ml)(0.79) = 59.25g$
- $59.25g/46.07\text{g/mol} = 1.29$ mol
- $1.29mol/0.25L = 5.16M$

Q34

- a) Sodium Phosphate = Na3PO4 = 3Na + (PO4)
  - $0.02mol/0.01L = 2M$
  - 6 M Na+, 2 M PO34
- b) Barium Nitrate = Ba3(NO3)2 = 3Ba2+ + 2(NO3)3-
  - $2.5mol/1.25L = 2M$
  - 6 M Ba2+, 4 M (NO3)3-

- c) Potassium Chloride = KCL = K+ + Cl-
  - $1g/74.55g/mol = 0.013mol$
  - $0.013mol/0.5L = 0.027M$
  - 0.027 M K+, 0.027 M Cl-
- d) Ammonium Sulfate = (NH4)2SO4 = 2(NH4)+ + SO4-2
  - $132g/132g/mol = 1mol$
  - $1mol/1.5L = \frac{2}{3}M$
  - $\frac{4}{3}M$ NH4, $\frac{2}{3}M$ SO4

Q36

- 75.0 mL of 0.150 M Na3PO4 contains the most ions

Q38

- $10g/169.9g/mol = 0.059mol$
- $0.25M = 0.059mol/xL$
- $x = 0.236$, you can prepare 236 mL of the substance.