

Chem 10123, Quiz 7

April 1, 2020

Name: _____

(Please Print)

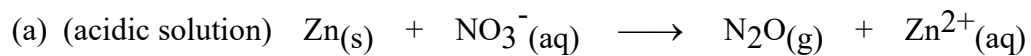
- An aqueous solution of KMnO_4 is standardized by the following procedure. A 0.9812-g sample of pure FeSO_4 (molar mass = 151.92) is dissolved in some dilute acid. This FeSO_4 solution is then titrated by careful addition of the KMnO_4 solution from a buret. To reach the end point, 35.60 mL of the KMnO_4 solution is required.

 - (3 points) *Write and balance the net-ionic equation* for the reaction that occurs during the titration, assuming that the products are Fe^{3+} and Mn^{2+} .

 - (4 points) **SHOW ALL WORK.** Determine the molarity of the KMnO_4 solution.

- (5 points) **SHOW ALL WORK.** A certain metal (M) forms the chloride MCl_3 . Electrolysis of molten MCl_3 by a current of 4.00 amp for 15.0 minutes deposits 2.39 g of metal M at the cathode. Perform an appropriate calculation and identify the metal M.

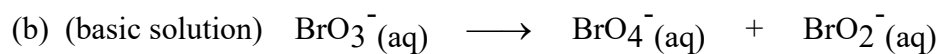
3. (8 points) Use the *ion-electron method* to balance each of the following redox reactions. For each reaction, write *complete, balanced equations* for the individual half-reactions and for the overall net ionic equation.



Reduction Half Reaction:

Oxidation Half Reaction:

Net Ionic Equation:



Reduction Half Reaction:

Oxidation Half Reaction:

Net Ionic Equation: