

Chemistry

Redox Practice

redoxprac.doc

Name _____

Date _____ Period _____

1. Assign oxidation numbers to each element:

a. nitrogen dioxide (write formula)

b. ammonia (write formula)

c. sulfur hexafluoride (write formula)

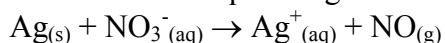
d. dinitrogen pentoxide (write formula)

e. N_2H_4

f. $\text{Cr}_2\text{O}_7^{2-}$

g. ClO_4^-

2. For the unbalanced equation given below

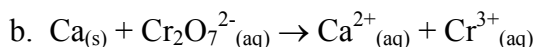
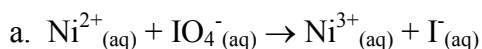


a. write unbalanced half reactions.

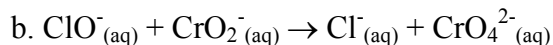
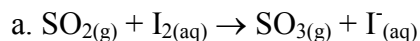
b. identify the species oxidized and the species reduced.

c. identify the oxidizing and reducing agents.

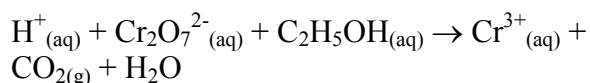
3. Write balanced equations for the following reactions in acid solution.



4. Write balanced equations for the following reactions in basic solution.



5. Laws passed in some states define a drunk driver as one who drives with a blood alcohol level of 0.10% by mass or higher. The level of alcohol can be determined by titrating blood plasma with potassium dichromate according to the unbalanced equation



Assuming that the only substance that reacts with dichromate in blood plasma is alcohol, is a person legally drunk if 38.94mL of 0.0723M potassium dichromate is required to titrate a 50.0g sample of blood plasma?

6. The iron content of hemoglobin is determined by destroying the hemoglobin molecule and producing small water soluble ions and molecules. The iron in the aqueous solution is reduced to iron(II) ion and then titrated against potassium permanganate. In the titration, iron(II) is oxidized to iron(III) and permanganate is reduced to manganese(II) ion. A 5.00g sample of hemoglobin requires 32.3mL of a 0.002100M solution of potassium permanganate. What is the mass percent of iron in hemoglobin?