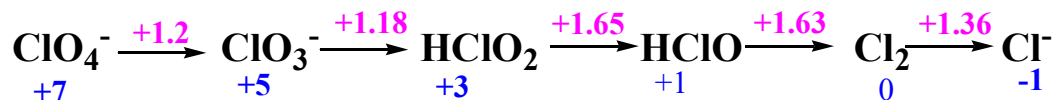
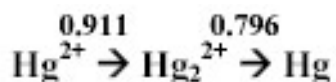


Tutorial IV-REDOX

- Calculate the E^0 value for the reduction of HClO to Cl^- in aqueous acidic solution using the Latimer diagram.

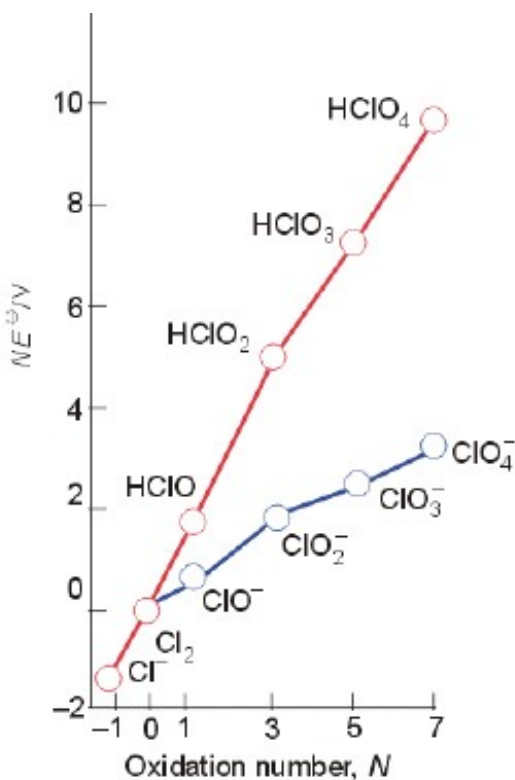


- Draw a Frost diagram for mercury in acidic solution given the following Latimer diagram:

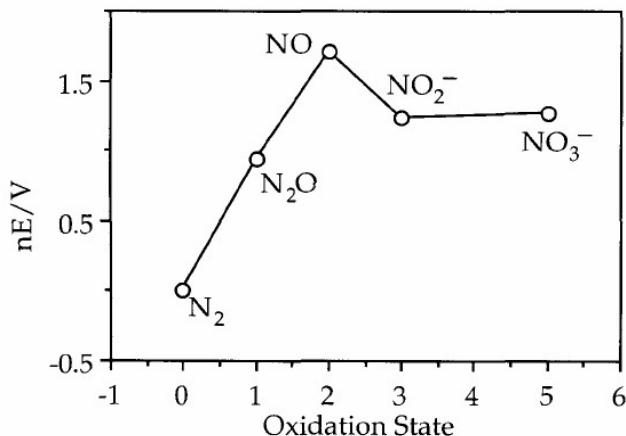


Comment on the tendency of any of the species to act as an oxidizing agent, a reducing agent, or to undergo disproportionation.

- Answer the following questions using the Frost diagram in Fig. 6.16.
 - What are the consequences of dissolving Cl_2 in aqueous basic solution?
 - What are the consequences of dissolving Cl_2 in aqueous acid?
 - Is the failure of HClO_3 to disproportionate in aqueous solution a thermodynamic or a kinetic phenomenon?



4. **Write equations for the following reactions with the help of Frost diagram:**
 N_2O is bubbled into aqueous NaOH solution?
 Part of the Frost diagram for nitrogen in basic solution is shown below.



5. Consider the Frost diagram for the Group 14 elements in acid solution, and answer the following questions.

- Which species among all Group 14 species is the strongest reducing agent? Explain.
- Which species among all Group 14 species is the strongest oxidizing agent?
- What reaction is expected to occur when elemental tin is reacted with aqueous acid?
- What should happen when carbon monoxide is bubbled into an acidic solution?
- Write a balanced redox equation for the reaction of elemental silicon and lead dioxide.

Frost Diagram for Group 14 in 1 M Acid

