

Name: \_\_\_\_\_  
Blk: \_\_\_\_\_ Date: \_\_\_\_\_

Chemistry 12  
Electrochemistry Lessons #10/11  
Selecting Preferred Reactions

When an electrochemical cell contains a mixture of substances, several different reactions MAY appear to be possible.  
As in the illustration below:

HOWEVER, when several different reduction half-reactions can occur, the half reaction having the \_\_\_\_\_ is preferred.

When several different oxidation half-reactions can occur, the half-reaction having the \_\_\_\_\_ is preferred.

STEPS for determining the preferred half reactions:

- 1.
- 2.
- 3.

Example 1. An iron strip is placed in a mixture of  $\text{Br}_2$  (l) and  $\text{I}_2$  (g). What is the preferred reaction that occurs?

- 1.
- 2.
- 3.

Example 2. A beaker contains an iron nail wrapped with both a piece of copper and a piece of magnesium ribbon, immersed in an aqueous solution containing  $\text{CuSO}_4$  with some dissolved  $\text{Cl}_2$  (g). What is the overall preferred reaction?

1.

2.

3.

overall:

**SPECTATOR IONS:**

The following ions are generally considered to be spectators in electrochemistry:

$\text{Na}^+$  ,  $\text{K}^+$  ,  $\text{Ca}^{2+}$  ,  $\text{Mg}^{2+}$  ,  $\text{SO}_4^{2-}$  (in **NEUTRAL** solution) and  $\text{Cl}^-$

**SEATWORK/ HOMEWORK:** Do exercise 47 (all letters) on page 228

Read pgs 228- 233 (Applied electrochemistry) and answer questions 49,51-54 and 56

**PLO: U11**