REDOX HW #1

name: _____

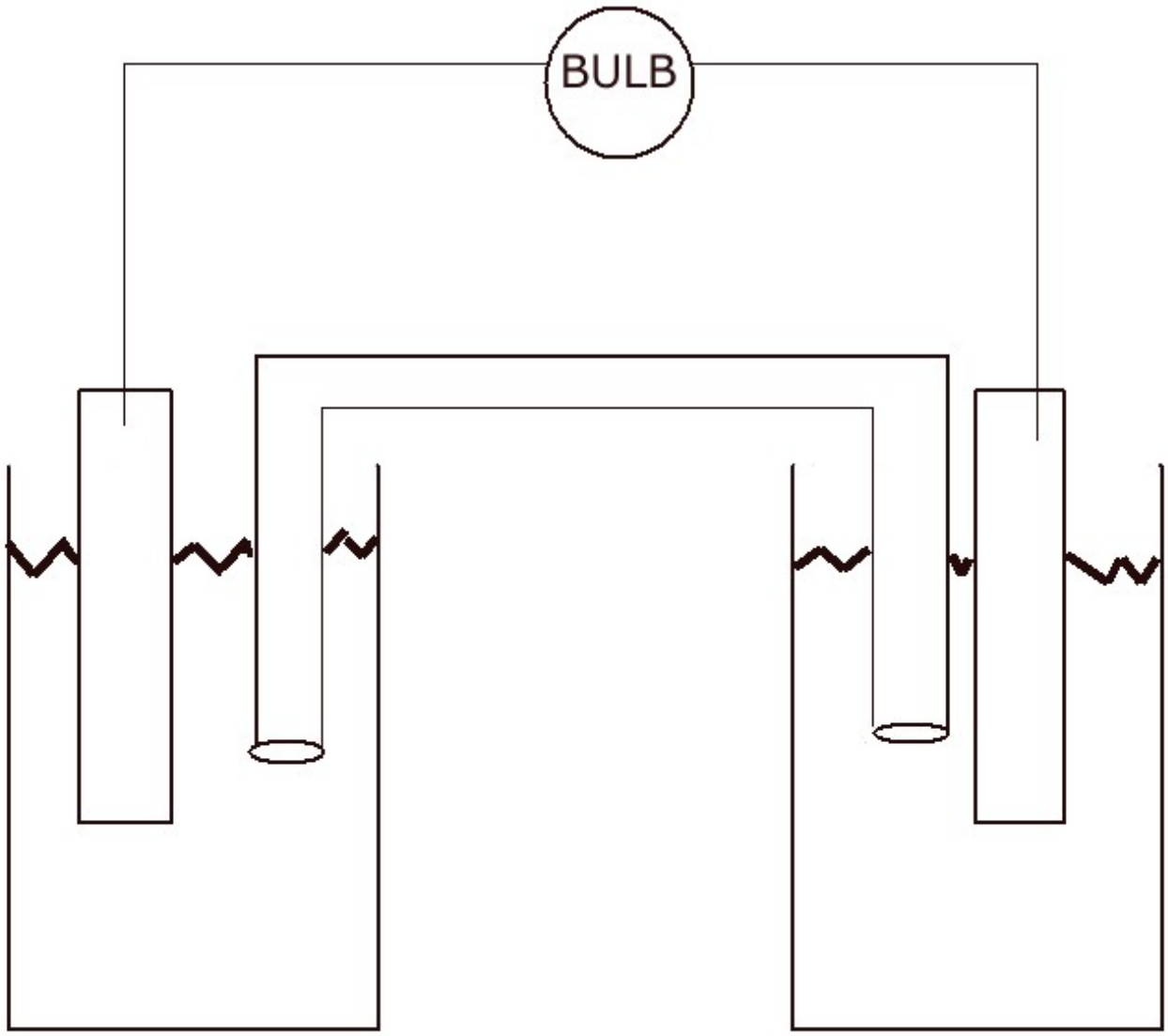
Below is a copy of the standard Redox Voltaic Cell set up. On the left put the magnesium metal into a magnesium chloride solution. On the right put nickel metal into a nickel II sulfate solution. Into the salt bridge use $NaCl_{(AQ)}$ Draw the cotton balls in the ends of the glass tube.

Show the direction of electron flow (electricity). Label the anode and cathode. Show the flow of both ions in the salt bridge. Show the movement of ions between the metals and the solutions.

Write the ½ Oxidation reaction: _____

Write the ½ Reduction reaction: _____

Give three CHEMICAL reasons that this voltaic cell would stop:



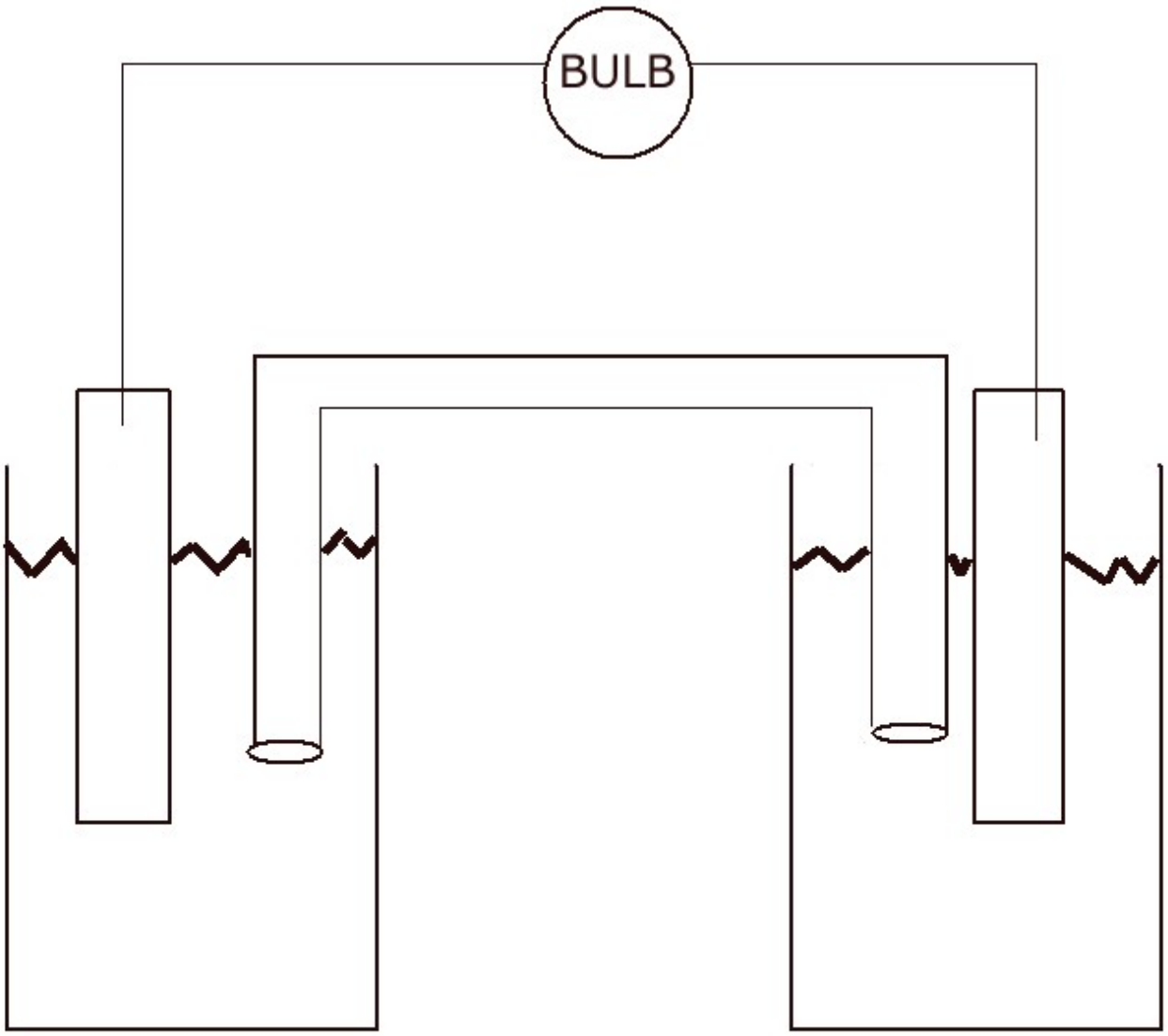
Below is a copy of the standard Redox Voltaic Cell set up. On the left put the metal lead into lead II nitrate solution. On the right put copper metal into copper II sulfate solution. Into the salt bridge use $KCl_{(AQ)}$ Draw the cotton balls in the ends of the glass tube.

Show the direction of electron flow (electricity). Label the anode and cathode. Show the flow of both ions in the salt bridge. Show the movement of ions between the metals and the solutions.

Write the ½ Oxidation reaction: _____

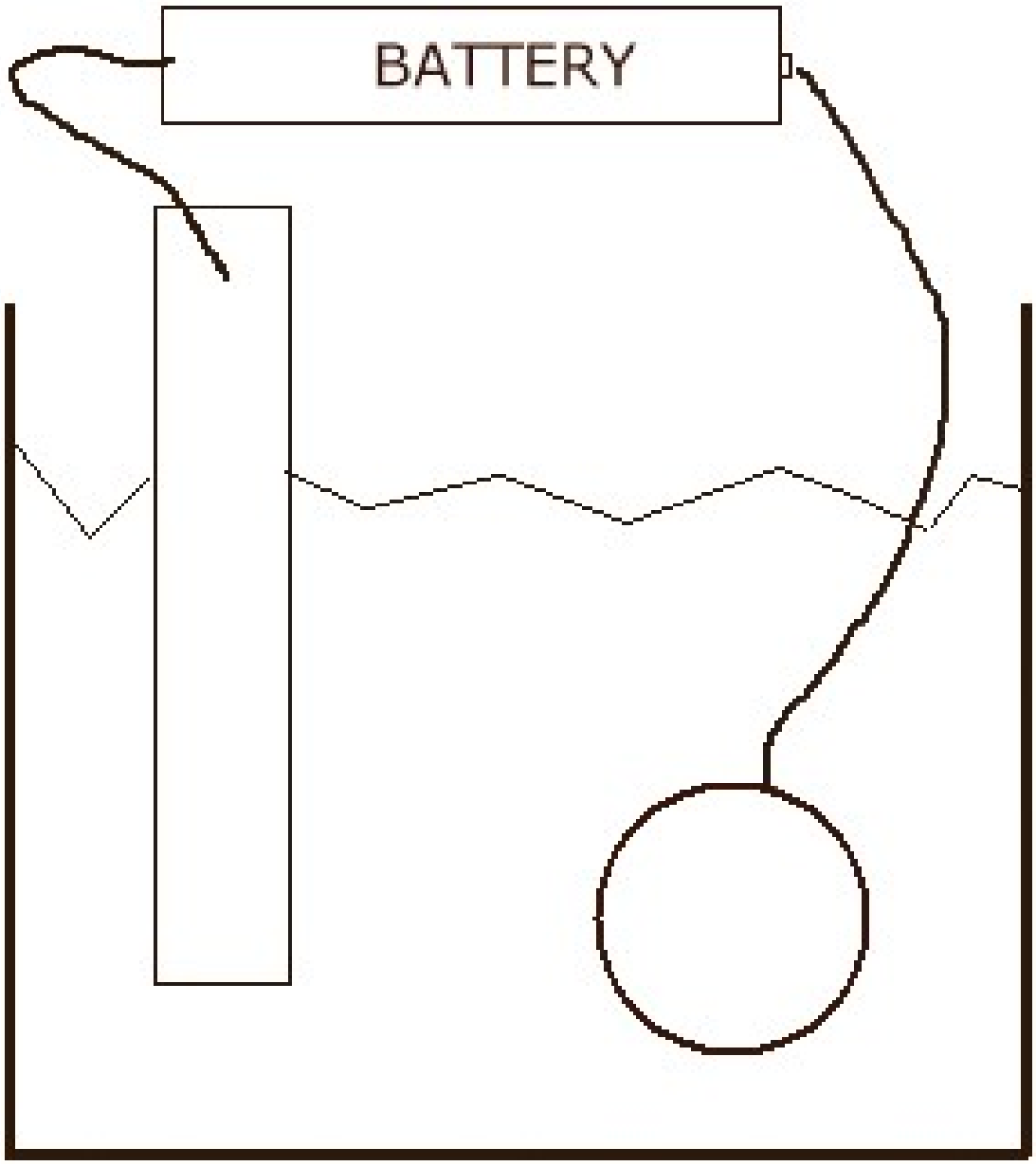
Write the ½ Reduction reaction: _____

DEFINE REDCAT: _____



REDOX HW #2 (two pages long) name: _____

Directions: draw an electrolytic cell that will plate gold onto a copper ring. Show:
1. electron flow, oxidation + reduction arrows in the beaker, show ions, & solution
2. write the ½ reactions for oxidation and reduction below.
3. Explain in 1 good sentence, the difference between an electrolytic and voltaic cell.



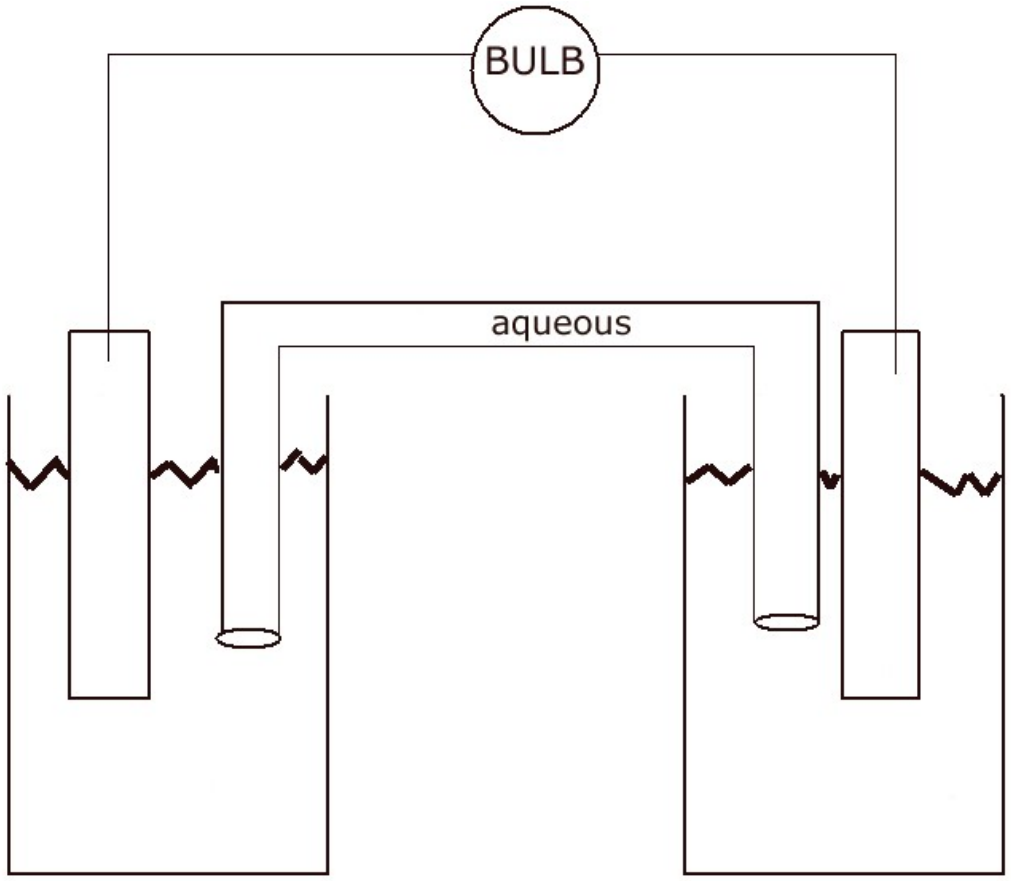
½ OX: _____

½ RED: _____

Contrast an electrolytic cell with a voltaic cell

Directions: draw a voltaic cell with cobalt in cobalt (III) chloride solution on the left half cell. In the right hand half cell put tin into tin (IV) acetate solution. The salt bridge has KCl solution. SHOW:

1. OX and RED below the beakers
2. Cations in each solution
3. Arrows that show oxidation and reduction in the beakers
4. Electron flow
5. Ion flow in bridge
6. Label the cathode, then the anode
7. Write the oxidation and reduction half reactions
8. Write the balanced oxidation and reduction half reactions
9. Write the NET IONIC equation for this redox.



Half reactions

Balanced Half reactions

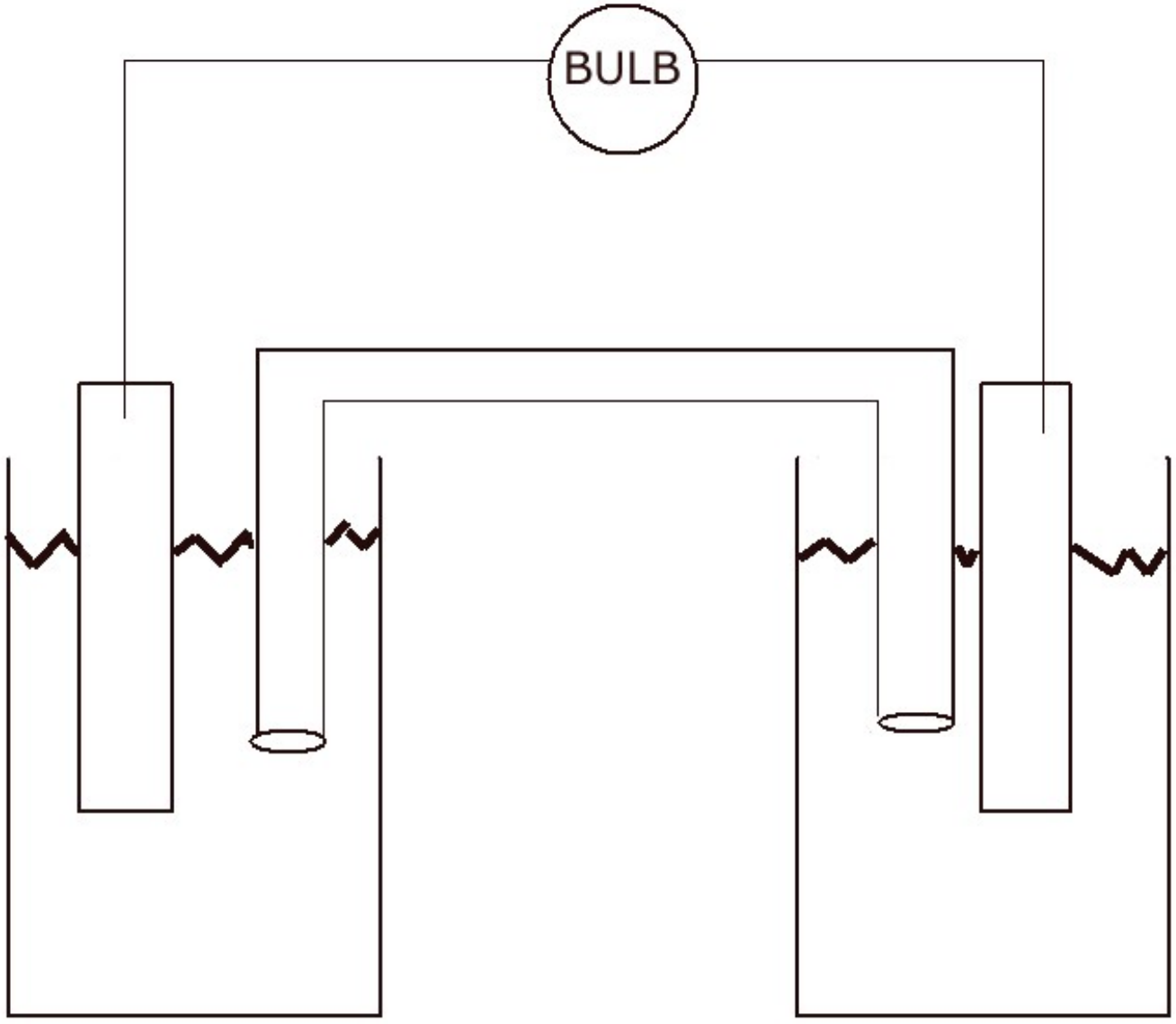
½ OX _____ _____

½ RED_____ _____

Net Ionic Equation: _____

REDOX HW #3 (two pages) name: _____

Label this voltaic cell completely. Put a bar of copper in copper solution at left, and a zinc metal into a zinc solution on the right, and choose a salt for the salt bridge. Show flow of electrons, flow of ions, label the anode, cathode, show half reactions in the beakers, show how the solutions get charged, and then write the 2 half reactions, the net ionic equation, and state specifically the 3 reasons this cell will die.



½OX: _____

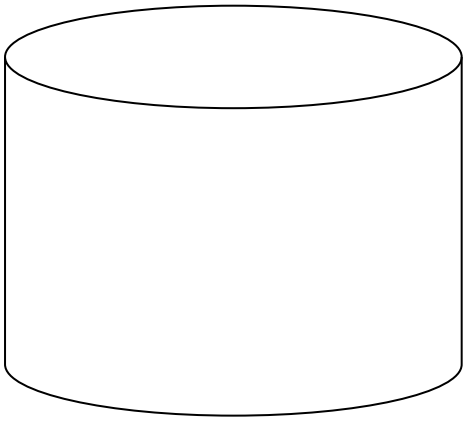
½RED: _____

NET: _____

State 3 reasons why this voltaic cell will die:

I want you to plate SILVER onto an iron ring. Connect the battery properly, draw in a ring and anything else you need to make this happen. Write the two half reactions, the net ionic equation, and label the anode and cathode.

battery



½OX: _____

½RED: _____

NET: _____

When Aluminum and chlorine form into aluminum chloride, what type of reaction is this? Write a balanced chemical reaction for it, then the half reactions and the net ionic equation for this reaction as well. Is there a spectator ion?

BALANCED: _____

½OX: _____

½RED: _____

NET: _____

REDOX HW #4

name: _____

For these 8 reactions, tell what type of reaction it is, then tell if it is ALSO REDOX.

6 of these reactions ARE also redox. For those: write the ½ reactions and the net ionic equations below.

#	Reactions	Type	Is it also Redox?
1	$HCl + NaOH \rightarrow NaCl_{(AQ)} + HOH_{(L)}$		
2	$2Mg_{(S)} + O_{2(G)} \rightarrow 2MgO_{(S)}$		
3	$2C_{(S)} + O_{2(G)} \rightarrow 2CO_{(G)}$		
4	$2Li_{(S)} + NiCl_{2(AQ)} \rightarrow 2LiCl_{(AQ)} + Ni_{(S)}$		
5	$2K_{(S)} + S_{(S)} \rightarrow K_2S_{(S)}$		
6	$ZnCl_{2(S)} \rightarrow Zn_{(S)} + Cl_{2(G)}$		
7	$Pb(NO_3)_{2(AQ)} + 2KCl_{(AQ)} \rightarrow 2KNO_{3(AQ)} + PbCl_{2(S)}$		
8	$2H_{2(G)} + O_{2(G)} \rightarrow 2H_2O_{(G)}$		

½ OX: ½ RED: NET:	½ OX: ½ RED: NET:
½ OX: ½ RED: NET:	½ OX: ½ RED: NET:
½ OX: ½ RED: NET:	½ OX: ½ RED: NET: