

Chapter 21 Electrochemistry: Chemical Change and Electrical Work

This chapter requires the use of many of the skills acquired throughout the year including calculating oxidation states, writing half-reactions, and balancing redox reactions. The essentials of electrochemistry, determining voltage, and electrolysis will also be addressed. Identifying the anode and cathode in a spontaneously running cell and writing the half reactions at each electrode are essential skills. The mathematical relationships between cell voltage, equilibrium constants, and standard free energy are introduced. Also discussed are the nonspontaneous electrolytic cell as well as applications of electrochemistry such as electro-plating, electrolytic corrosion, and the difference between zinc (galvanizing) and tin coatings on iron. All of these concepts are in the AP curriculum and are consistently tested each year on the AP Exam.