## Faraday's Law

**1.** Zinc metal is plated onto an iron nail by passing electricity through an external circuit. A current of 3.75 A is applied for a period of 2.0 hours. Calculate the mass of zinc that can be plated during this time. (9.1 g)

2. Zinc metal is plated onto an iron nail by passing electricity through an external circuit. Calculate the current required to plate 25 g of zinc onto an iron spike during a 1.5 hour period. (14 A)

3. Zinc metal is plated onto an iron nail by passing electricity through an external circuit. Calculate the time in seconds that a 6.0 A current should be applied to plate 25 g of zinc onto an iron spike. (12,000 s) 4. Calculate the mass of gold that can be plated onto a steel spoon if a current of 2.0 A is applied for a 3.5 hour period. Assume the cell contains gold (III) ions. (17 g)

5. Calculate the current that should be applied for a 75 minute period to plate 12.7 g of silver onto a teapot. (2.5 A)