7 Electrolysis

1. An electrolyte is an ionic compound in the molten state or dissolved in water.
2. Electrolysis is a process in which electrical energy, from a direct current supply, decomposes [breaks down] electrolytes.
3. During electrolysis positively charged cations migrate to the negatively charged cathode.
4. During electrolysis negatively charged anions migrate to the positively charged anode.
5. The products of electrolysis of key electrolytes using graphite [inert] electrodes:

Electrolyte	**Product at cathode [-ve electrode]**	**Product at anode [+ve electrode]**	**Left in solution**
copper chloride solution	Copper	Chlorine	Water
sodium chloride solution	Hydrogen	Chlorine	Sodium hydroxide
sodium sulfate solution	Hydrogen	Oxygen	Sodium sulfate
water acidified with sulfuric acid	Hydrogen	Oxygen	Sulfuric acid
molten lead bromide	Lead	Bromine	-

6. In the purification of copper.
    a. The anode is the impure copper
    b. The cathode starts as a thin strip of copper
    c. The electrolyte is copper sulfate