**Key Reactions in IGCSE Coordinated Sciences (Chemistry)**

**Oxidation**

**Reduction**

**Reactions between acids and metals**

**Reactions between acids and bases (including alkalis)**

**Reactions between acids and carbonates**

**Reactions of chlorine, bromine and iodine with other halide ions**

**Reactions of metals (potassium, sodium, calcium, magnesium, zinc, iron, hydrogen & copper) with**

* Water or steam
* Dilute hydrochloric acid (except for alkali metals)
* Aqueous ions of other listed metals
* Oxides of the other listed metals

**Describe the essential reactions in the extraction of iron in the blast furnace**

**Chemical test for water**

**Sources of the common air pollutants:**

* Carbon monoxide
* Sulfur dioxide
* Oxides of nitrogen

**The formation of carbon dioxide from:**

* Complete combustion of carbon-containing substances
* Respiration
* The reaction between an acid and a carbonate
* Thermal decomposition

**Rusting of iron**

**Displacement of ammonia from its salts by warming with an alkali**

**The Haber process**

**The Contact process – the manufacture of sulfuric acid**

**The manufacture of lime (calcium oxide) from calcium carbonate (limestone)**

**Combustion of fossil fuels**

**The manufacture of alkenes by Cracking**

**Reaction of saturated hydrocarbons with aqueous bromine**

**Reaction of unsaturated hydrocarbons with aqueous bromine**

**Addition reactions of alkenes, exemplified by ethene,**

* With bromine
* With hydrogen
* With steam

**Complete combustion reaction of ethanol**

**Formation of ethanol by the catalytic addition of steam to ethane**

**Addition polymerisation to form poly(ethene)**

**Condensation polymerisation to form nylon**