**Redox Reactions Worksheet**

For each reaction write the two half equations, indicate whether each species undergoes oxidation or reduction, whether they are oxidising agents or reducing agents, and combine the two half equations to form a balanced equation. Some working has been shown to help you for the first few.

**1)** The reaction of solid iron (Fe) with copper sulphate giving iron (II) sulphate.

|  |  |  |
| --- | --- | --- |
| **Equations** | **Oxidation / Reduction** | **Oxidising or Reducing Agent** |
|  |  |  |
|  |  |  |
| Fe + Cu2+ 🡪 Fe2+ + Cu |

**2)** The reaction of elemental iron with oxygen to give Fe2O3.

|  |  |  |
| --- | --- | --- |
| **Equations** | **Oxidation / Reduction** | **Oxidising or Reducing Agent** |
|  |  |  |
| O2 🡪 2O2- |  |  |
| ?Fe + ?O2 🡪 ?Fe2O3 |

**3)** The reaction of molecular hydrogen (H2) with molecular fluorine (F2) to give hydrogen fluoride (HF).

**4)** The reaction of elemental sodium (Na) with molecular chlorine (Cl2)

**5)** The reaction of elemental sodium with iron(II)chloride to give salt and iron

**6)** The reaction of hydrogen and oxygen to give water

**7)** The reaction of silver nitrate with copper to give silver and copper nitrate

**8)** The reaction of nitric acid with copper to give copper nitrate and hydrogen gas

**9)** The reaction of iron(III) with tin(II) to give iron(II) and tin(IIII)

**10)** The decomposition of hydrogen peroxide to give oxygen and water (hint H2O2 acts as both the oxidising and reducing agent, so start both half equations with the same thing, only the products vary).