Chapter 2 : Redox Reactions

Definition

Oxidation	Reduction
· loss of electrons	· gain in electrons
· increase in oxidation number	· decrease in oxidation number

Rules for assigning oxidation numbers

1.	non-transition metals	+ charge of cations
2.	H	+1
3.	F	-1
4.	O	-2
5.	N	-3
6.	Cl	-1
7.	the last element	calculate

Half-equations & Oxidising / Reducing Agents

Strong reducing agent: I^-
reduces others, itself oxidised

Strong oxidising agent: MnO_4^-
oxidises others, itself reduced

H_2O_2, NO_2^- } - can be both oxidised or reduced depending on the other reactant

Balancing half-equations

1. Balance the ATOMS
   ↳ everything that is not H or O
2. Balance the OXYGEN
   ↳ add H_2O
3. Balance the HYDROGEN
   ↳ add H^+
4. Balance the CHARGE
   ↳ add e^-

3. (b) If BASIC MEDIUM, neutralise the H^+
   ↳ add OH^- to form H_2O

5. Equate the two half-equations
   ↳ Balance the number of e^- gained and lost
6. Simplify the equation
   ↳ there should not be e^- at this stage