CONCEPT MAP

FORM 5

REDOX REACTIONS

Oxidations and reductions in terms of:
- Gain or loss of oxygen
- Gain or loss of hydrogen
- Transfer of electron(s)
- Change of oxidation numbers

- Oxidising agents
- Reducing agents
- Oxidation half-equation
- Reduction half-equation

Standard electrode potential, E^{θ}:
- Meaning and measurement of E^{θ} values
- Standard hydrogen electrode
- Determination of oxidising agents and reducing agents based on E^{θ} values

Chemical cells:
- Identifying the anode and cathode based on the E^{θ} values
- Oxidation and reduction processes at the electrodes
- Determination of cell voltage

Rusting:
- Redox reactions in rusting
- Conditions for rusting
- Prevention of rusting

Electrolytic cells:
- Electrolysis of molten compounds
- Electrolysis of aqueous solution: Factors that determine the selective discharge of ions

Extraction of metals:
- Extraction of aluminum by electrolysis.
- Extraction of iron by reducing using carbon

- Transfer of electron at a distance
- Conversion of Fe^{2+} to Fe^{3+} and vice versa
- Displacement of metals
- Displacement of halogens

Use of electrolysis in
- Purification of metals
- Electroplating