

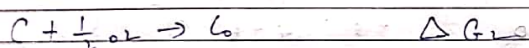
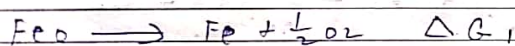
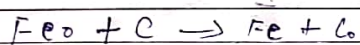
B.M.A College BANERI DARBHANGA

CHEMISTRY C. CHAUDHARY

TOPIC: Metallurgy

Thermodynamic principle in extraction of IRON.

During extraction of Iron coke is used as REDUCING AGENT.



Total change in energy

$$\Delta G_T = \Delta G_1 + \Delta G_2$$

For feasibility of above chemical reaction ΔG_T should be negative.

$$\Delta G_2 < \Delta G_1$$

In lower portion of furnace temp is high therefore carbon acts as reducing agent on the other hand in upper

level of furnace temp is low therefore

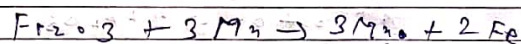
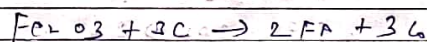
CO Carbon Monoxide acts as a Reducing agent.

CAST IRON TO WROUGHT IRON.

The basic difference in constitution of cast iron and wrought iron is % of Carbon. In cast iron % of Carbon is 2 to 5% whereas in wrought iron it is 0.12 to 0.25%.

During conversion of cast iron to wrought iron cast iron is melted in furnace in which inner portion is coated with Fe_2O_3

Following chemical reaction takes place.



In the form of slag following comes out.

