PMT7J004 FERROALLOYS TECHNOLOGY 3-0-0

Module I (14 Hours)

Survey of Ferro-alloy industries in India and their future prospects. Physico-chemical principles of ferro-alloy making, principles of carbothermic and metallothermic reduction.

Ferro-alloy furnaces: Submerged arc furnaces, selection for transformer capacity, secondary voltage and current, furnace dimensions, size and spacing of electrodes, mechanical equipments, charging devices and dust collection system.

Electrodes used in ferro-alloy furnaces: graphitised and self baking electrodes, properties and uses.

Module II (12 Hours)

Production of ferro-manganese, ferrochrome, ferrosilicon and silico-calcium by carbothermy, production of FeCr, FeTi, FeB, FeNb, FeMo, and FeV by metallothermy. Recovery of vanadium from ores and production of FeV.

Module III (10 Hours)

Charge calculation in production of ferro-alloys. Use of plasma arc for production of ferro-alloys. Use of ferro-alloys in Iron and Steel industries (deoxidation and alloy making).

Books for reference:

1. Production of Ferro-Alloys by Riss and Khodorovasky.
2. Production of Ferro-Alloys by V.P. Elyutin.
3. Electro-metallurgy of Steel and Ferro-Alloys, Vol. 2, by F.P.Edneral.
4. Ferro-Alloy Industries in India, Symposium NML, Jamshedpur, 1962.
5. Proc. Symp. of All India Seminar on Recent Trends in Ferro-Alloys Technology,