

Extra-Departmental Courses

CM 241H Chemistry of the Elements

2 Credit

Chemistry of the representative elements: Chemistry of alkali and alkaline earthmetals; chemistry of representative elements of Gr 3A-7A with particular reference to B and Al, C and Si, N and P, O and S and the chemistry of the halogens.

Metallurgy of some selected elements: Occurrence and extraction of Mg, Al, Cr, Fe, Ni, Cu, Au, Zn, Sn and Pb.

The First Transition series and the Lanthanides: The metals and their oxidation states; aqueous chemistry; chemistry of oxides and halides; the lanthanides and actinides - their general features, oxidation states occurrence and isolation; oxides and hydroxides; aquo ions and oxo salts.

Coordination chemistry: synthesis of coordination compounds; nomenclature and structures of complex compounds; Werner's primary and secondary valency concepts; Sidwick's electronic concept; valency bond theory; stability of coordination compounds; isomerism in coordination compounds; coordination compounds in biological systems.

Inert gases: occurrence, isolation and application; chemistry of xenon, other noble gases.

Elements of radiochemistry: discovery of radioactivity; concept of half life and mean life of radioelements; radioactive decay; isotopes and their uses; artificial radioactivity and nuclear reactions; nuclear reactors - principles and uses.

Books recommended:

Concise inorganic chemistry- J. D. Lee

Fundamental of Chemistry- Ebbing and Gammon

Physical chemistry- Atkins

Organic chemistry- Morrison

Organic chemistry-Solomons