GROUP - (A) ELECTIVE PAPERS
PAPER I. ORGANOTRANSITION METAL CHEMISTRY

M.M. - 75

Units	Topics
I	**Alkyls and Aryls of Transition Metals:** Types, routes of synthesis, stability and decomposition pathways, organocopper in organic synthesis.
II	**Compounds of Transition Metal-Carbon Multiple Bonds:** Alkylidenes, alkylidynes, low valent carbenes and carbines - synthesis, nature of bond, structural characteristics, nucleophilic and electrophilic reactions on the ligands, role in organic synthesis.
III	**Transition Metal π-Complexes:** Transition metal π-complexes with unsaturated organic molecules, alkenes, alkynes, allyl, diene, dienyl, arene and trienyl complexes, preparations, properties, nature of bonding and structural features. Important reactions relating to nucleophilic and electrophilic attach on ligands and to organic synthesis.
IV	**Transition Metal Compounds with Bonds to Hydrogen:** Transition metal compounds with bonds to hydrogen. **Homogeneous Catalysis:** Stoichiometric reactions for catalysis, homogeneous catalytic hydrogenation, Zeigler-Natta polymerization of olefins, catalytic reactions involving carbon monoxide such as hydrocarbonylation of olefins (oxo reaction), oxopalladation reaction, activation of C-H bond.
V	**Fluxional Organometallic Compounds:** Fluxionality and dynamic equilibria in compounds such as η^2 - olefin, η^3- allyl and dienyl complexes.