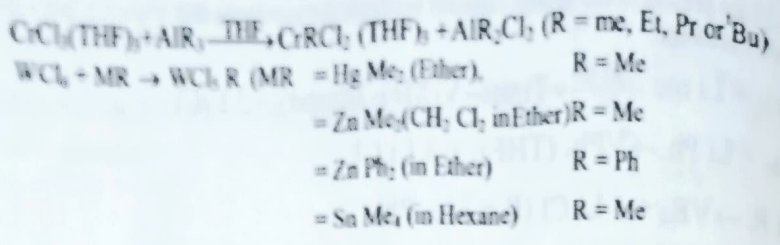


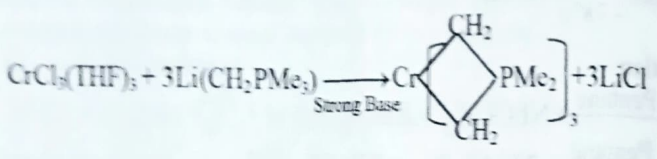
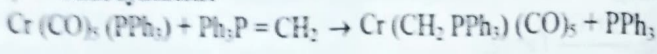
Transition Metal - Aryl & Alkyl Complexes

(ii) **Transmetallation:**



(iii) **Reaction of Anionic Metal Complexes with Organic Halides:** Sodium salts of carbonyls are generally used in the synthesis of molybdenum hydrocarbyls. Example:
 $Na [Mo(CO)_5 \eta^5-C_5H_5] + PhCH_2Cl \rightarrow Mo(CH_2Ph)(CO)_5(\eta^5-C_5H_5) + NaCl$

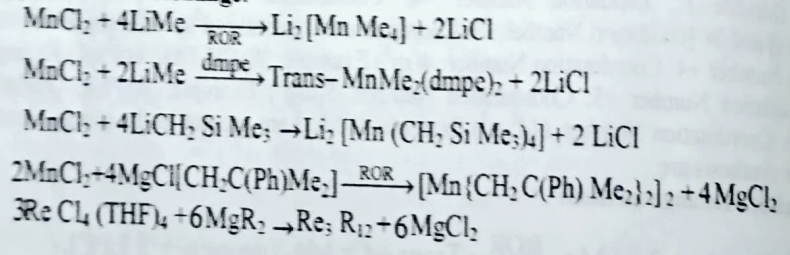
(iv) **Ylide synthesis:**



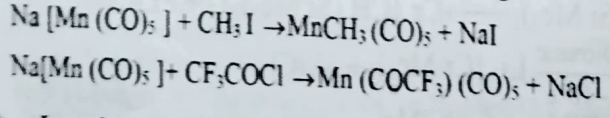
5. **Group 7 - d⁵ Metals:** Mn [Oxidation Number +1: Coordination Number: 6(d⁵sp⁰); Example: Mn(CF₃)(CO)₅; Oxidation Number +2: Coordination Number: 4(sp³); Example: MnMe₂(dmpe)₂; Oxidation Number +3: Coordination Number: 4(sp³); Example: [Mn(CH₂CMe₂PPh₃)₂]] and Re [Oxidation Number +3: Coordination Number: 4(sp³); Example: Re₂(μ-SiMe₃)₂(CH₂SiMe₃)₄, 6(d²sp³); Example: Re₂Me₈²⁺; Oxidation Number +4: Coordination Number: 6(d²sp³); Example: Re₃(CH₂SiMe₃)₁₂; Oxidation Number +6: Coordination Number: 6(d²sp³); Example: ReMe₆] are present in the group.

General methods for synthesis are:

(i) **Halide exchange:**



(ii) **Reactions of anionic metal complexes with organic halides:**



(iii) **Insertion of unsaturated compounds in M-C bond:**

