α, β-Conjugate Addition (Michael Addition)

Reaction:

Mechanism:

Strong bases react with α, β-unsaturated carbonyl compounds adding to the carbonyl, that is 1,2-addition. Examples are organolithium, Grignard reagents, LiAlH₄. On the other hand, weak bases but good nucleophiles undergo 1,4-addition or conjugate addition. Examples are: KCN, thiols, enols, enolates, LiCu(CH₃)₂.