

FCYC301	Organic Chemistry-II	3-0-0	3
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### Module-I

**Compounds containing active methylene groups:** Introduction, Keto-enol tautomerism, acidic character of such compounds

Preparation and Application towards the synthesis of monocarboxylic acid, dicarboxylic acid, keto acids, ketones, diketones, Unsaturated acids, heterocyclic compounds etc. of aceto acetic ester and malonic ester.

### Module-II

#### Organometallic Compounds -I

Grignards' Reagent: Preparation, Reaction of compounds containing active hydrogen, carbonyl compounds, epoxides, carbon dioxide, nitriles, oxygen, sulphure, carbon disulphide, sulphure dioxide, iodine, inorganic halides, alkyl halides,  $\alpha$ -unsaturated carbonyl compounds.

Organolithium compounds: Preparation, Reaction of compounds containing active hydrogen, carbonyl compounds, alkenes, carbon dioxide, nitriles, electrophilic displacement, nucleophilic displacement,  $\alpha$ -unsaturated carbonyl compounds.

Organocopper compounds: Preparation, Reaction with alkyl or aryl halides, epoxides, acid chlorides,  $\alpha$ -unsaturated carbonyl compounds.

### Module-III

#### Organometallic Compounds -II

Organozinc compounds: Preparation, Reaction with water, alkyl halides, acid chlorides.

Organoaluminium compounds: Preparation and reaction.

### Module-IV

**Heterocyclic Compounds:** Introduction, Structure and aromaticity, Preparation and properties of Five membered Heterocyclic compounds (Pyrrole, Furan and Thiophene), Six membered Heterocyclic compounds (Pyridine) and fused Heterocyclic system (Quinoline)

#### Essential readings:

1. Organometallic in Organic Chemistry by J. M. Swan and D. St. C. Black
2. Organic reaction mechanism, Third edition, V.K.Alluwalla, R.K.Parashar, Narosa Publishing House.
3. Organic Chemistry, Second Edition, Mehta & Mehta, Eastern Economy Edition