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Roll No

MPY-PCH(C)

M.Pharmacy III Semester Examination, June 2020

Synthetic Organic Chemistry

(Elective)

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

iii) Give reaction mechanism wherever required.

1. Define disconnection, retrosynthetic analysis, transform, synthon, synthetic equivalent. Discuss the guidelines for retrosynthetic analysis. How disconnection is performed in alcohols, methyl ketones and carboxylic acids?
2. Elaborate carbon-carbon bond formation via organometallic reagents giving emphasis on organocopper and organolithium reagents.
3. Explain the terms protection and deprotection. What are their advantages and disadvantages? Mention the ideal requirements of a protecting group. Discuss the ways of protection of alcohols.
4. Discuss the principles of Green Chemistry. How conventional procedures can be made green via
 - i) microwave irradiation techniques
 - ii) use of water as solvent?
5.
 - a) Discuss oxidation of alcohols to aldehydes, ketones and carboxylic acids.
 - b) What are nucleophilic and electrophilic reducing agents? Explain.
6.
 - a) Write synthetic equivalents for following synthons:
 Br^- , COOH^- , CH_3CO^+ , R^- , R^+ , N_3^- , $\text{C}_6\text{H}_5\text{CH}_2^+$
 - b) Elaborate formation of carbon-carbon double bonds and discuss their reactions.
7. How can you differentiate between thermodynamic and kinetic enolates? Discuss alkylation of enolates.
8. Write notes on (any TWO):
 - a) Solvent free green reactions
 - b) BOC and TOS as protecting groups
 - c) Formation of carbon-carbon triple bonds
