

F.M-10.

Time - 30 minutes

Answer any ten (10) questions (1x10=10)

1. Define an ylide.
2. Write down the structure of the major product

$$\text{CH}_2 = \text{CH} - \text{CH}_2 - \text{CH}_3 \xrightarrow[\text{(NBS)}]{\text{N-Bromo Succinimide}} ?$$
3. How can you convert HCHO to methyl formate in a one step reaction?
4. Give the product from acid catalysed reaction of cyclohexanone with pyrrolidine.
5. Which of the following esters undergo Dieckmann Condensation under usual condition?
 Adipate and glutarate.
 Give the product
6. Prepare (Z)-2-butene from 2-butyne.
7. Which alkylating agent is needed for the synthesis of $\text{CH}_3\text{COCH}_2\text{CH}_2\text{COOH}$ from $\text{CH}_3\text{COCH}_2\text{CO}_2\text{Et}$ (EAA)?
8. Why are ethers such as dry Et_2O used as solvent for RMgBr ?
9. $\text{Ph}_3\text{P}^{\oplus} - \text{CPh}_2^{\ominus}$ does not react with carbonyl compounds.
 Explain
10. Why does p-nitrobenzaldehyde fails to undergo benzoin condensation?
11. Convert acetophenone to $\text{PhCOCH}=\text{CH}_2$ via a Mannich base.
12. Why does chloral exist normally as a chloral hydrate?
13. Give the order of the rate of esterification of the following acids with MeOH (No explanation needed)
 $\text{Me}_2\text{CHCO}_2\text{H}$, $\text{Me}_3\text{CCO}_2\text{H}$, $\text{CH}_3\text{CH}_2\text{CO}_2\text{H}$, $\text{Et}_3\text{CCO}_2\text{H}$
14. Give the structural formula for the alkene that gives the following ozonolysis product

