

**2021**  
**B.A./B.Sc.**  
**Third Semester**  
 CORE – 6  
**CHEMISTRY**  
*Course Code: CHC 3.21*  
 (Organic Chemistry - II)

**PART-B**  
 Total Mark: 30

*Answer the following questions.*

1. (a) Discuss the stereochemical aspect of  $S_N1$  reaction with an example. 3  
 (b) Discuss the effect of solvent on nucleophilic substitution reaction. 2  
 (c) Give a method of preparation of chlorobenzene. 1
  
  2. (a) Write Pinacol–Pinacolone reaction with an example. 2  
 (b) What is Kolbe–Schmidt reaction? Give an example. 2  
 (c) Phenols are more acidic than alcohols. Give reason. 2
  
  3. (a) How will you synthesise an ether by Williamson’s synthesis method? Give the conditions for better yield of ether. 2  
 (b) Give a method of preparation of benzene sulphuric acid. 1  
 (c) Complete the following reactions: 3
    - (i) 
$$\begin{array}{c} \text{CH}_2 \text{ ——— } \text{CH}_2 + \text{H}_2\text{O} \xrightarrow{\text{H}^+} \text{A} \\ \diagdown \quad \diagup \\ \text{O} \end{array}$$
    - (ii)  $\text{CH}_3 - \text{O} - \text{CH}_3 + \text{HBr} \rightarrow \text{A} + \text{B}$
    - (iii)  $2\text{CH}_3 - \text{CH}_2\text{Br} + \text{Ag}_2\text{O} \rightarrow \text{X} + \text{Y}$
  
  4. (a) Aldehydes are more reactive than ketenes towards nucleophilic substitution reaction. Explain. 2  
 (b) What is Wittig reaction? Give an example. 2  
 (c) What is Knoevenagel condensation? Give an example. 2
  
  5. (a) The carboxylic acid is stronger acid than phenol. Explain. 2  
 (b) Give a method preparation of the following compounds: 2
    - (i) Succinic acid
    - (ii) Maleic acid
  - (c) What is benzoin condensation? Give an example. 2
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