

B.Sc. (Part - I) CBCS Pattern Semester-II
USCCHT03 - Chemistry Paper-I (Organic Chemistry)

P. Pages : 2

Time : Three Hours



GUG/W/23/11574

Max. Marks : 50

- Notes : 1. All questions are compulsory and carry equal marks.
2. Write chemical equation and draw diagram whenever necessary.

1. a) Discuss the reaction and mechanism of SN^1 reaction with energy profile diagram. **5**
b) What are aryl halides? Explain nucleophilic substitution of bromobenzene by KNH_2 in the presence of liquid NH_3 . **5**

OR

- c) Explain Williamson's synthesis of ether. **2½**
d) Discuss the reaction and mechanism of E^1 reaction. **2½**
e) Discuss the Sandmeyer's reaction. **2½**
f) Compare the reactivity of benzyl chloride and chlorobenzene. **2½**
2. a) Discuss the reaction and mechanism of Pinacol-Pinacolone rearrangement. **5**
b) How will you prepare primary, secondary and tertiary alcohols by using Grignard reagent? **5**

OR

- c) Write a note on Oppenauer oxidation. **2½**
d) Discuss the preparation of phenol from cumene hydroperoxide method. **2½**
e) Write a note on Freis Rearrangement. **2½**
f) Give any two methods of preparation of ethers. **2½**
3. a) Explain the following reactions- **5**
i) Reimer-Tiemann reaction ii) Friedel Craft's acylation
b) Write a short note on- **5**
i) Wittig reaction ii) Cannizzaro's reaction

OR

- c) Discuss the structure of carbonyl compound. **2½**

- d) What happens when alkyl nitrile react with Grignard reagent. 2½
- e) Explain Wolff-Kishner reduction. 2½
- f) Write a note on Meerwein – Ponderff – Verley (MPV) reduction. 2½
4. a) What are carboxylic acid? Explain effect of substituent on acidic strength of carboxylic acid. 5
- b) Define esterification? Explain the mechanism of acid hydrolysis of ester. 5

OR

- c) Write a note on Hell-Volhard-Zelinsky reaction. 2½
- d) Write a note on Reformatsky reaction. 2½
- e) Discuss the action of heat on dicarboxylic acid with suitable example. 2½
- f) How will you prepare Urea from phosgene? 2½
5. Attempt **any ten** questions. 10
- i) Draw the energy profile diagram of SN^2 reaction.
- ii) What is elimination reaction?
- iii) How will you prepare chlorobenzene from benzene?
- iv) what is Lucas test?
- v) Write the IUPAC name of $CH_3 - CH_2 - O - CH_2 - CH_2 - CH_3$
- vi) Write the reaction of ethyl alcohol with sodium metal.
- vii) What is Clemmensen reduction?
- viii) What is the action of NH_3 on formaldehyde?
- ix) What is Aldol condensation?
- x) What happens when soda lime heated with carboxylic acid?
- xi) Write the IUPAC name of $CH_3 - CH_2 - CH_2 - COOH$
- xii) How will you prepare succinimide from succinic acid?
