

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

P. Pages : 2

Time : Three Hours



GUG/W/24/11574

Max. Marks : 50

1. a) What are aryl halides? Explain nucleophilic substitution of bromo benzene by KNH_2 dissolved in liquid NH_3 . 5

b) Explain SN^2 mechanism of substitution in alkyl halide with energy profile diagram. 5

OR

c) Discuss Williamson's synthesis for ether. 2½

d) What are alkyl halides? How are they classified? 2½

e) What is the action of following reagent on benzyl chloride. 2½

i) KOH

ii) Alk. KMnO_4

f) Discuss Sandmeyer reaction. 2½

2. a) Discuss Pinacol-Pinacolone rearrangement reaction with mechanism. 5

b) Write a note on: 5

i) Reimer – Tiemann reaction

ii) Fries rearrangement

OR

c) Discuss Oppenauer oxidation. 2½

d) How will you prepare phenol from cumene. 2½

e) Describe Gattermann-Koch reaction. 2½

f) How will you prepare diethyl ether from ethyl alcohol? 2½

3. a) How Benzaldehyde is formed by 5

i) Rosenmund reduction

ii) Gattermann Koch reaction.

b) Explain the structure and reactivity of carbonyl group? 5

OR

c) Explain preparation of benzophenone by Friedel craft acylation. 2½

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| d) | Write note on Witting Reaction. | 2½ |
| e) | Explain Aldol Condensation. | 2½ |
| f) | Give any two method of preparation of aldehyde. | 2½ |
| 4. | a) Define Esterification? Explain the Mechanism of alkaline hydrolysis of Ester. | 5 |
| | b) Write a note on: | 5 |
| | i) Perkin condensation | |
| | ii) Reformatsky reaction | |

OR

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| c) | Write a note on Hell Volhard Zelinsky reaction. | 2½ |
| d) | Explain the effect of substituent on acidic strength. | 2½ |
| e) | Give the preparation of acetyl chloride from acetic acid. | 2½ |
| f) | What is the action of heat on Phthalic acid? | 2½ |

5. Attempt any ten.

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| a) | Draw energy profile diagram of SN^1 reaction. | 1 |
| b) | What is Elimination reaction? | 1 |
| c) | What is Lucas reagent? | 1 |
| d) | Give classification of ether? | 1 |
| e) | Write Houben-Hoesch condensation. | 1 |
| f) | Explain clemmensen reduction. | 1 |
| g) | How acetaldehyde is prepared from ethyl alcohol? | 1 |
| h) | What is Benzoin? | 1 |
| i) | What is action of heat on succinic acid? | 1 |
| j) | Compare the reactivity of amide, ester, anhydride. | 1 |
| k) | Define – Nucleophilic substitution reaction. | 1 |
| l) | Give IUPAC name of the following: | 1 |
| i) | $CH_3CH_2CH_2COOH$ | |


