

- (C) Explain mechanism of esterification reaction. $2\frac{1}{2}$
- (D) Write a note on Hell-Volhard-Zelinsky reaction. $2\frac{1}{2}$
- (E) How is crotonic acid prepared from α -bromo butyric acid ? What is action of bromine on it ? $2\frac{1}{2}$
- (F) Give mechanism of decarboxylation reaction. $2\frac{1}{2}$
5. Attempt any **TEN** of the following :
- How is toluene obtained from benzene ?
 - Define ortho-para directing groups.
 - How will you convert biphenyl into benzoic acid ?
 - What happens when glycerol is heated with P_2O_5 ?
 - What is action of PCl_5 on ethylene glycol ?
 - What is Reimer-Tiemann reaction ?
 - What is Gatterman Synthesis ?
 - Define aldol condensation reaction.
 - How will you convert Acetone into propane ?
 - What is action of thionyl chloride on carboxylic acid ?
 - How is acetic acid obtained from Methyl Magnesium Bromide ?
 - What is action of $LiAlH_4$ on acetamide ?
- $10 \times 1 = 10$

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Bachelor of Science (B.Sc.) Semester-III Examination
CHEMISTRY
CH-302 (Organic Chemistry)
Paper-II

Time—Three Hours]

[Maximum Marks—50

- N.B. :-** (i) All **FIVE** questions are compulsory and carry equal marks.
- (ii) Write chemical equations and draw diagrams wherever necessary.
- Explain the mechanism of alkaline hydrolysis of methyl bromide with energy profile diagram. 5
 - What is orientation ? Explain meta directing and deactivating influence of $-COOH$ group on electrophilic substitution in benzene ring. 5

OR

- Give preparation and uses of B.H.C. $2\frac{1}{2}$
- Compare reactivity of chlorobenzene with benzyl chloride. $2\frac{1}{2}$
- Give preparation of chloroform from ethyl alcohol. $2\frac{1}{2}$

- (F) How is Biphenyl prepared by Gomberg reaction ?
How does Biphenyl react with conc. HNO_3 in presence of conc. H_2SO_4 ? 2½
2. (A) How is Ethylene glycol obtained from :
- Ethylene
 - 1, 2- dibromoethane ?
- What happens when ethylene glycol is heated with :
- Conc. H_2SO_4
 - Anhydrous ZnCl_2 ? 5
- (B) Discuss mechanism of fries rearrangement. 5
- OR**
- (C) Explain oxidation of ethylene glycol using alkaline potassium permanganate. 2½
- (D) Discuss the mechanism of pinacol-pinacolone rearrangement. 2½
- (E) How will you obtain phenol from chlorobenzene and cumene ? 2½
- (F) Discuss the acidic nature of phenol. 2½
3. (A) What is a nucleophilic addition reaction ? Describe the mechanism of nucleophilic addition to a Carbonyl Compound. 5

- (B) How will you obtain :
- Acetophenone from Benzonitrile
 - Acetaldehyde from acetyl chloride ?
- What is the action of :
- Selenium dioxide on acetone
 - Hydroxyl amine on benzaldehyde ? 5

OR

- (C) What is action of strong alkali solution on the aldehyde not possessing α – hydrogen. Name the reaction. 2½
- (D) Write a note on witting reaction. 2½
- (E) Write a note on Baeyer-Villiger reaction for oxidation of ketone. 2½
- (F) Discuss Benzoin condensation reaction. 2½
4. (A) Discuss the acidity of carboxylic acids. What is the effect of substituents on it ? 5
- (B) How would you bring about the following conversions :
- Benzaldehyde to Benzyl alcohol
 - Ammonium acetate to Acetamide
 - Phthalic acid to phthalic anhydride
 - Acetyl chloride to Acetic anhydride
 - Acetic acid to ethyl acetate ? 5

OR