



Bachelor of Science (B.Sc.) Semester-III (C.B.S.)

Examination

CH-302 : CHEMISTRY (Organic Chemistry)

Paper-II

Time—Three Hours]

[Maximum Marks—50

N.B. :- (1) All **FIVE** questions are compulsory.

(2) Write chemical equations and draw diagrams wherever necessary.

1. (A) Give the preparation of Toluene from :

(i) Benzene

(ii) Bromobenzene.

How does Toluene react with :

(i) Chlorine in FeCl_3

(ii) Chlorine in sunlight ?

5

(B) Explain the mechanism of alkaline hydrolysis of *tert.* Butyl bromide with its energy profile diagram.

5

OR

(C) Explain activating and deactivating groups with their example. $2\frac{1}{2}$

(D) Give preparation and uses of DDT. $2\frac{1}{2}$

(E) How will you prepare carbon tetrachloride from :

(i) Methane

(ii) Carbon disulphide ? $2\frac{1}{2}$

(F) Compare the relative reactivity of ethyl chloride and chlorobenzene. $2\frac{1}{2}$

2. (A) What are alcohols ? Explain their classification with suitable example. 5

(B) Explain the mechanism of Reimer-Tiemann reaction. 5

OR

(C) How is ethylene glycol obtain from :

(i) Ethylene

(ii) Ethylene bromide. $2\frac{1}{2}$

(D) Write note on Gatterman synthesis. $2\frac{1}{2}$

(E) Give the preparation of glycerol from propylene. $2\frac{1}{2}$

(F) Explain acidic strength of Phenols and alcohols. $2\frac{1}{2}$

3. (A) Discuss the structure of carbonyl group in aldehydes and ketones. How will you synthesize :

(i) Acetaldehyde from acetyl chloride

(ii) Acetophenone from benzonitrile ? 5

(B) What is Aldol condensation ? Discuss its mechanism. 5

OR

(C) Write a note on Wittig reaction. 2½

(D) Give the general mechanism of nucleophilic addition to carbonyl group. 2½


(E) Write a note on Cannizzaro's reaction. 2½

(F) Explain the action of Tollen's Reagent and Fehling solution on acetaldehyde. 2½

4. (A) Discuss the acidity of carboxylic acids. What is the effect of following substituents on acidity of carboxylic acids.

(i) Electron releasing groups

(ii) Withdrawing groups ? 5



(B) Write names and give examples of any four derivatives of carboxylic acids. How will you prepare ethyl acetate from :

(i) Acetic acid

(ii) Acetyl chloride ?

5

OR

(C) How will you prepare crotonic acid from :

(i) Crotonaldehyde

(ii) β -Chlorobutyric acid ?

2½

(D) Give mechanism of acid catalyzed hydrolysis of ester.

2½

(E) Write note on Hell-Volhard-Zelinsky reaction. 2½

(F) What is the action of dehydrating agent conc. H_2SO_4 on :

(i) Succinic acid

(ii) Phthalic acid ?

2½

5. Attempt any TEN of the following :

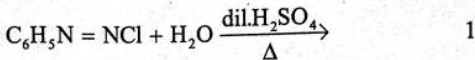
(i) How is biphenyl obtained by Ullmann reaction ? 1

(ii) What is the action of chloroform on Phenol ? 1

(iii) Give the uses of BHC. 1

(iv) Draw structure and give IUPAC name of isopropyl alcohol. 1

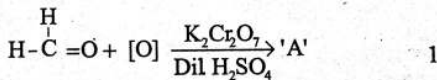
(v) Complete following reaction :



(vi) Give dehydration reaction of ethylene glycol. 1

(vii) Give IUPAC name of Isobutyraldehyde. 1

(viii) Find product 'A' :



(ix) What is the action of dry ice on methyl magnesium bromide ? 1

(x) What happens when acetic acid is heated over P_2O_5 ? 1

(xi) Draw cis and trans form of crotonic acid. 1