

ORGANIC CHEMISTRY

Paper - II
(Common with B.Sc., Biotechnology
and Industrial Microbiology)

Time : Three Hours]

[Maximum Marks : 35

Note : Attempt two questions each from Section A and B carrying 7 marks each Section C is compulsory consisting of 7 short answer type questions carrying 1 mark each.

Section - A

- (a) What are primary, secondary and tertiary Alcohols ? What happens when they are dehydrogenated catalytically ?

(b) 3, 3-Dimethyl butan-2-ol loses a molecule of H₂O in the presence of Conc. H₂SO₄ to give 2, 3-Dimethyl But-2-ene as a major product. Suggest a suitable mechanism. 4,3
- (a) What happens when Glycol is (i) heated with HI, (ii) heated with fuming H₂SO₄, (iii) treated with Lead Tetraacetate ?

(b) How does Glycerol react with (i) KHSO₄, (ii) Excess of HI ? 3,4
- (a) Write short notes on (Give mechanism):

(i) Hauben-Hoesch reaction. (ii) Fries rearrangement.

(b) Introduction of NO₂ group in benzene ring increases acidic character of phenols. Explain. 5,2
- (a) How will prepare phenols from (i) Grignard reagent (ii) Atomic Sulphonic acids (ii) Diazonium salts ?

(b) The bromination products of phenol vary with the reaction medium (aqueous or organic). Explain why ? 3,4

Section - B

- (a) What is Haloform reaction ? What is its utility in Organic Chemistry ? Discuss briefly its mechanism.

(b) Nucleophilic reactions of aldehydes and ketones are catalysed by acids. Explain. 5,2

- 4
6. (a) Discuss 1, 2 and 1, 4-addition to α, β -unsaturated aldehydes and ketones.
 (b) How will you convert (i) Acetaldehyde to Lactic acid, (ii) Formaldehyde to Urotropine? 3,4
7. (a) What are Acetals? Explain giving an example how they can be used as protecting group.
 (b) Dehydrogenation of primary alcohols give a better yield of aldehydes than Potassium Permanganate or Potassium Dichromate oxidation of alcohols. Explain. 4,3
8. (a) Write short notes on the following :
 (i) Perkin Condensation (ii) Wittig reaction.
 (b) pH control is very important in addition of ammonia derivatives to aldehydes and ketones. Explain. 5,2

Section - C
(Compulsory Question)

9. Answer in short :
- (a) What is Lucas reagent?
 (b) Why are alcohols weaker acids than H_2O ?
 (c) How is Oxalic acid converted into Formic acid?
 (d) How can Salicylic acid be prepared from Phenol?
 (e) What happens when p-hydroxy benzaldehyde is treated with formaldehyde in presence of conc. NaOH?
 (f) What is Corey's reagent? What is it used for?
 (g) What type of aldehydes undergo Aldol condensation? (7×1=7)