a) Write the type of halides b) Explain the nature of the C – Br bond in both of these halides.

c) Which of these compounds will undergo aqueous alkaline hydrolysis readily?

Write the reaction in support of your answer.

Chapter- 11

Alcohols, Phenols and Ethers Marks 4 with option 6

Multiple choice questions (1 Mark)

i) In a carbinol system of nomenclature tert.butyl alcohol is named as....

a) trimethyl carbinol b) dimethyl ethyl carbinol

c) methyl carbinol d) ethyl carbinol

ii) Which of the following pair of reagent is used for conversion of carboxylic acid to alcohol

a) $LiAlH_4$ / H_3O^+ b) H_2 / Ni – heat

c) B_2H_6 / H_2O_2, OH^- d) H_2 / Pd

iii) Reaction between Grignard reagent and aldehyde other than formaldehyde leads to formation of

a) primary alcohol **b) secondary alcohol**

c) tertiary alcohol d) optically active alcohol

iv) Complete oxidation of ethyl alcohol using $K_2Cr_2O_7$/dil H_2SO_4 leads to formation of...

a) acetaldehyde **b) acetic acid**

c) ethane d) acetone

v) When vapors of tert.butyl alcohol are passed over hot copper, it gives ....

a) butanal b) butanoic acid

c) butanone **d) isobutylene**

vi) Reaction between hot conc. HI and anisole gives ....

a) phenol and methyl iodide b) iodobenzene and methyl alcohol

c) iodobenzene and methyl iodide d) phenol and methyl alcohol

vii) The reagents used to convert phenol to 2,4,6-tribromophenol is ...

a) Br_2 / CS_2 b) Br_2 / CCl_4

c) Br_2 / H_2O d) KBr aq.

Very Short Answer Questions (1 Mark)

i) Why do phenols give deep coloration with neutral ferric chloride?

ii) Write the name of valuable byproduct formed in preparation of phenol by using cumene.

iii)Write IUPAC name of crotonyl alcohol.

iv) Write the structure of the major product of hydroboration-oxidation of propene.

v) Write the reaction for the preparation of aspirin from salicylic acid.

vi) Write the name of major product when anisole reacts HI at 398 K

vii) What is the action of atmospheric oxygen on ethers?

viii) Draw intramolecular hydrogen bonding structure in o-nitrophenol .

Short Answer Questions (Type- Ⅰ) (2 Marks)

i) What is the action of following reagents on pent-3-en-al,write a complete chemical equation.

a) H_2 / Ni b) $LiAlH_4$ / H_3O^+

ii) Write the reactions involved in preparation of phenol from aniline.

iii) Write Kolbe's reaction.

iv) Write the name of reagents used to convert phenol into

a) picric acid b) p-benzoquinone

v) Write the structure of 'A' and 'B' in the following reaction sequence.

$$CH_3COOH + C_2H_5OH \xrightarrow[-H_2O]{H^+} A \xrightarrow[\Delta]{H_2/Ni} B$$

vi) Write chemical equations,when acetyl chloride reacts with following reagents

a) ethanol b) phenol

Short Answer Questions (Type-II) (3 Marks)

i) What is the action of following reagents on phenol at low temperature.

a) dil. HNO_3 b) conc. H_2SO_4 c) Br_2/CS_2

ii) Explain with reactions, the action of Lucas reagent on primary,secondary and tertiary alcohols.

iii) How will you bring about the following conversions?

a) isopropyl alcohol to acetone

b) 2-methyl propan-2-ol to 2-methylpropene

c) acetone to 2-methylpropan-2-ol

iv) Compound 'A' with molecular formula C_6H_5Cl is fused with NaOH at high temperature under pressure to give compound 'B'. Compound 'B' on treatment with dil.HCl gives compound C having characteristic carbolic odor. Write the chemical equations in support of this. Name the process and give uses of compound C.

v) Write the preparation of ethanol from methyl magnesium iodide. Write the reaction between ethanol and acetic anhydride.

vi) Write the reactions for preparation of carbolic acid from aniline. What is the action of conc. H_2SO_4 on carbolic acid at 373 K.

Long Answer Questions (4 Marks)

i) Write chemical reactions to convert phenol into salicylaldehyde.Write the name of the reaction.

What happens if CCl_4 is used instead of $CHCl_3$ in the above reaction.

ii) An organic compound gives hydrogen on reaction with sodium metal. It forms an aldehyde with molecular formula C_2H_4O on oxidation with pyridinium chlorochromate. Give the chemical equations in support of these observations.

Explain the fact that in alkyl aryl ethers, alkoxy group is ring activating and ortho/para directing towards electrophilic aromatic substitution.

iii) How will you prepare diethyl ether by dehydration of alcohols? What are the limitations to prepare ether by this method? What is the action of following on diethyl ether?

a) dil. H_2SO_4 b) PCl_5