

B.Sc. First year (Semester-II)
Organic Chemistry
Chapter-1 PHENOLS

- 1) Aromatic hydroxyl compounds are called as ---
a) Alcohol **b) Phenol** c) Ether d) None of these
- 2) Phenol is used as ---
a) Anaesthetic b) Antibiotic **c) Antiseptic** d) Antimalarial
- 3) Aspirin is ---
a) Salicylic acid b) Methyl acetate c) Phenyl salicylate d) Acetyl salicylic acid
- 4) Phenol is also called as ---
a) Naphthols **b) Carboic acid** c) Anisole d) None of these
- 5) 1,2-dihydroxy benzene is called as ---
a) Quinol b) Resorcinol **c) Catachol** d) None of these
- 6) 1,3-dihydroxy benzene is called as ---
a) Resorcinol b) Quinol c) Catachol d) None of these
- 7) 1,4-dihydroxy benzene is called as ---
a) Catachol **b) Quinol** c) Resorcinol d) None of these
- 8) Phenol react with CO₂ at 125°C under 5 atm. pressure to give salicylic acid. This reaction is called as ---
a) Kolbe's reaction b) Perkin reaction c) Wurtz reaction d) HVZ reaction
- 9) Formylation of phenol is called as ---
a) Perkin reaction b) Wurtz reaction
c) Reimer Tiemann reaction d) Claisen reaction
- 10) Phenol is acidic because ---
a) Electromeric effect b) Inductive effect c) Peroxide effect **d) Resonance**
- 11) Phenol is ---
a) Stronger acid than acetic acid **b) Weaker acid than acetic acid**
c) Stronger base than methylamine d) Weaker base than methylamine
- 12) Phenols in which one -OH group is attached to benzene ring is called as ---
a) Monohydric phenols b) Dihydric phenols
c) Trihydric phenols d) None of these

- 24) Which of the following is an example of dihydric phenol ?
 a) 1- naphthol **b) Resorcinol** c) 2- naphthol d) Cyclohexanol
- 25) Which of the following is not example of dihydric phenol ?
a) 2- naphthol b) Resorcinol c) Catechol d) Quinol
- 26) Which of the following is a example of monohydric phenol ?
 a) Catechol b) Resorcinol **c) 2- naphthol** d) Quinol
- 27) Which of the following is not example of monohydric phenol ?
a) Catechol b) Phenol c) 2- naphthol d) 1- naphthol
- 28) Phenol is used in the preparation of explosive such as --
 a) Benzoic acid **b) Picric acid** c) Cinnamic acid d) None of these

Chapter 2) Aromatic Hydrocarbons and Aromaticity

- 1) Coal-tar is the main source of ---
a) Aromatic compounds b) Aliphatic compounds
 c) Heterocyclic compounds d) None of these
- 2) Aromatic hydrocarbons are also called as --
 a) Huckel's compounds b) Alkoxy compounds
 c) Trienes **d) Arenes**
- 4) Huckel rule is --
 a) $4n$ b) $(4n+1) \pi$ **c) $(4n +2) \pi$** d) None of these
- 5) All Carbon atoms in benzene ring are ---- hybridized.
 a) SP **b) SP²** c) SP³ d) None of these
- 6) Acetylation of aromatic compound is called as ---
 a) Friedal craft alkylation **b) Friedal craft acylation**
 c) Fries rearrangement d) None of these
- 7) Alkylation of aromatic compound is called as ---
a) Friedal craft alkylation b) Friedal craft acylation
 c) Fries rearrangement d) None of these
- 8) Structure of benzene is first suggested by ---
 a) Faraday b) Hoffmann **c) Kekule** d) None of these
- 9) Benzene is first discovered by ----
a) Faraday b) Hoffmann c) Kekule d) None of these

- 10) Which of the following is molecular formula of Benzene ?
a) C_6H_5 b) C_6H_7 **c) C_6H_6** d) C_5H_6
- 11) Which of the following is an aromatic compound ?
a) Ethanol **b) Benzene** c) Acetone d) Epoxide
- 12) Which of the following is an aromatic compound ?
a) C_6H_6 b) CH_3-CH_2-OH c) C_6H_{12} d) None of these
- 13) Which of the following is an aromatic compound ?
a) Ethanol b) Cyclohexane c) Acetone **d) Naphthalene**
- 14) Which of the following is not aromatic compound ?
a) Ethanol b) Benzene c) Anthracene d) Naphthalene
- 15) Which of the following is not aromatic compound ?
a) Pyridine b) Furan c) Pyrrole **d) Cyclohexanol**
- 16) Which of the following is an aromatic compound ?
a) Ethanol **b) Furan** c) Acetone d) Epoxide
- 17) Which of the following is an aromatic compound ?
a) Ethanol b) Cyclobutane **c) Thiophene** d) Epoxide
- 18) Which of the following is an aromatic compound ?
a) Pyridine b) Methanol c) Acetone d) Epoxide
- 19) Which of the following is an aromatic compound ?
a) Ethanol **b) Pyrrole** c) Acetone d) Epoxide
- 20) Benzene react with conc. H_2SO_4 & conc. HNO_3 at $60^\circ C$ gives
a) m-dinitrobenzene **b) Nitrobenzene**
c) 1,3,5-trinitrobenzene d) None of these
- 21) Benzene on acetylation with acetyl chloride in the presence of anhy. $AlCl_3$ gives ---
a) Methyl benzene b) Methoxy benzene **c) Acetophenone** d) None of these
- 22) Benzene on alkylation with methyl chloride in the presence of anhy. $AlCl_3$ gives ---
a) Methyl benzene b) Methoxy benzene c) Acetophenone d) None of these
- 23) Which of the following statement are false about benzene ?
a) It is planar molecule with bond angles 120°
b) It is soluble in water.
c) Each carbon atom in benzene ring has SP^2 hybridised.
d) Delocalisation of electrons takes place through out the ring.

- 24) Which of the following statement is true about benzene ?
- a) **It is planar molecule with bond angles 120°**
 - b) It is insoluble in water.
 - c) Each carbon atom in benzene ring has SP^3 hybridised.
 - d) Delocalisation of electrons are not takes place through out the ring.
- 25) The C-C bond length in benzene is ---
- a) Greater than the C-C bond length in ethane.
 - b) Shorter than the C-C bond length in ethylene.
 - c) Same as that of C-C bond length in ethylene.
 - d) **Intermediate between C-C bond length in ethane and C-C bond length in ethylene.**
- 26) The C-C bond length in benzene is ---
- a) 1.54 Å
 - b) 1.34 Å
 - c) **1.40 Å**
 - d) None of these
- 27) C-C-C & C-C-H bond angle in benzene is ---
- a) 180°
 - b) **120°**
 - c) 60°
 - d) None of these
- 28) Benzene react with Cl_2 in the presence of $AlCl_3$ catalyst gives ---
- a) **Chlorobenzene**
 - b) 1,3-dibromobenzene
 - c) 1,3,5-tribromobenzene
 - d) None of these
- 29) How many sigma bonds in the structure of Benzene ?
- a) 15
 - b) **12**
 - c) 6
 - d) 3
- 30) How many pi bonds in the structure of Benzene ?
- a) 15
 - b) 12
 - c) 6
 - d) **3**
- 31) The boiling point of benzene is ---
- a) 120°C
 - b) **80°C**
 - c) 180°C
 - d) 360°C
- 32) In nitration of benzene, attacking species is ---
- a) NO^+
 - b) HNO_2
 - c) **NO_2^+**
 - d) NO_2^-
- 33) Organic compound which contain benzene ring are called as ---- aromatic compounds.
- a) **Benzenoid**
 - b) Non-Benzenoid
 - c) Homoannular
 - d) None of these
- 34) Organic compound which do not contain benzene ring but resembles like benzene in chemical behavior are called as ---- aromatic compounds.
- a) Benzenoid
 - b) **Non-Benzenoid**
 - c) Homoannular
 - d) None of these

- 9) Preparation of allyl iodide using allyl chloride on heating with sodium iodide in acetone is known as ----- reaction.
- a) Perkin **b) Finkelstein** c) Aldol d) None of these
- 10) Glycerol on heating with HI gives triiodo propane, which is unstable and converts into -----
- a) allyl iodide** b) vinyl iodide c) alkyl iodide d) None of these
- 11) Allyl iodide react with NaOH to give -----
- a) allyl amide b) allyl amine c) allyl cyanide **d) allyl alcohol**
- 12) Allyl iodide react with KCN to give -----
- a) allyl amide b) allyl amine **c) allyl cyanide** d) allyl alcohol
- 13) Allyl iodide react with Br₂ to give -----
- a) allyl amide **b) 1,2-dibromo-3-iodo propane**
c) allyl cyanide d) allyl alcohol
- 14) Aromatic compound in which hydrogen atom of aromatic ring is replaced by halogen atom are called as -----
- a) vinyl iodide **b) Haloarenes** c) allyl iodide d) None of these
- 15) Silver salt of benzoic acid on heating with bromine gives -----
- a) iodobenzene b) benzene c) chlorobenzene **d) bromobenzene**
- 16) Benzene diazonium chloride is reacted with Cu/HCl gives ----
- a) iodobenzene b) benzene **c) chlorobenzene** d) bromobenzene
- 17) Hunsdiecker reaction is used for preparation of -----
- a) iodobenzene b) benzene c) chlorobenzene **d) bromobenzene**
- 18) Gattermann reaction is used for preparation of -----
- a) iodobenzene b) benzene **c) chlorobenzene** d) bromobenzene
- 19) Iodobenzene on heating with copper in sealed tube gives biphenyl. This reaction is called as ----- reaction
- a) Ullmann** b) Benzoyl c) Gattermann d) None of these
- 20) Iodobenzene on heating with copper in sealed tube gives ----
- a) phenol b) benzene **c) biphenyl** d) None of these

Chapter : 4 Alcohols & Epoxides

- 1) Hydroxy derivatives of alkanes are called as ----
a) Phenols b) Ethers c) Esters **d) Alcohols**
- 2) General molecular formula of Alcohol is :
a) $C_nH_{2n-2}OH$ **b) $C_nH_{2n+1}OH$** c) $C_nH_{2n+2}OH$ d) None of these
- 3) The oxygen atom of alcohol is
a) SP hybridized b) SP^2 hybridised **c) SP^3 hybridised** d) None of these
- 4) Alcohols are also called as
a) Alkanols b) Alkanal c) Alkanone d) None of these
- 5) Which of the following compound is an example of Monohydric alcohol ?
a) Glycol b) Glycerol **c) Methanol** d) None of these
- 6) Which of the following compound is an example of Dihydric alcohol ?
a) Glycol b) Glycerol c) Methanol d) None of these
- 7) Which of the following compound is an example of Trihydric alcohol ?
a) Glycol **b) Glycerol** c) Methanol d) None of these
- 8) Which of the following compound is an example of polyhydric alcohol ?
a) Glycol b) Glycerol c) ethanol **d) sorbitol**
- 9) Ethylene on oxidation with cold dil. $KMnO_4$ gives
a) Methanol b) Ethanol **c) Ethylene glycol** d) None of these
- 10) 1,2-dibromo ethane (ethylene dibromide) react with aq. Na_2CO_3 gives
a) Ethylene glycol b) Ethanol c) Ethylene oxide d) None of these
- 11) Ethylene glycol on dehydration with P_2O_5 /anhy. $ZnCl_2$ to give ---
a) Acetic acid **b) Acetaldehyde** c) Formaldehyde d) Formic acid
- 12) Ethylene glycol on oxidation with $Pb(CH_3COO)_4$ gives ----
a) Acetic acid b) Acetaldehyde **c) Formaldehyde** d) Acetone
- 13) Fats or Oils on alkaline hydrosis with NaOH gives ----
a) Glycol **b) Glycerol** c) Ethyl alcohol d) Methyl alcohol
- 14) Propene on reaction with chlorine, NaOH and HOCl gives ----
a) Glycol b) Ethyl alcohol **c) Glycerol** d) None of these
- 15) Glycerol is treated with a mixture of conc. $HNO_3 + H_2SO_4$, it forms ---
a) Nitroethane b) 1-Nitropropane c) 2-Nitropropane **d) Nitroglycerine**
- 16) Glycerol react with Excess of CH_3COCl gives ----
a) Triacetyl glycerol b) Glyceryl trichloride c) Glyceryl chloride d) None of these

- 17) Sorbitol is an example of ---
 a) Monohydric alcohol b) Dihydric alcohol
 c) Trihydric alcohol **d) Polyhydric alcohol**
- 18) Ethylene Glycol is an example of ---
 a) Monohydric alcohol **b) Dihydric alcohol**
 c) Trihydric alcohol d) Polyhydric alcohol
- 19) Glycerol is an example of ---
 a) Monohydric alcohol b) Dihydric alcohol
c) Trihydric alcohol d) Polyhydric alcohol
- 20) Ethanol is an example of ---
a) Monohydric alcohol b) Dihydric alcohol
 c) Trihydric alcohol d) Polyhydric alcohol
- 21) Cyclic ethers with three membered rings are called ---
 a) Lactones b) Alkoxides **c) Oxiranes** d) Epoxy resins
- 22) Epoxides are called as --
a) Oxiranes b) Alkoxides c) Epoxy resins d) Lactones
- 23) Ethylene react with oxygen in the presence of silver catalyst at 300°C gives ---
 a) Diethyl ether b) Ethylene glycol c) Ethyl alcohol **d) Ethylene oxide**
- 24) Ethylene oxidation with per acetic acid gives ----
 a) Diethyl ether **b) Epoxide** c) Ethyl alcohol d) None of these
- 25) Propylene oxide on acid catalyzed ring opening gives -----
a) propane-1,2-diol b) propanal c) glycol d) None of these
- 26) Propylene oxide on base catalyzed ring opening gives -----
 a) 1-amino-2-propanol b) propanal c) glycol d) None of these

Chapter : 5 Carboxylic Acid Derivatives

- 1) The derivatives of carboxylic acid obtained by replacing by –OH group of carboxylic acid by –Cl group is known as ----
a) acetyl chloride b) acetic anhydride c) amide d) ester
- 2) The derivatives of carboxylic acid obtained by replacing by –OH group of carboxylic acid by -OCOR group is known as ----
 a) acetyl chloride **b) acetic anhydride** c) amide d) ester

- 3) The derivatives of carboxylic acid obtained by replacing by $-OH$ group of carboxylic acid by $-NH_2$ group is known as ----
a) acetyl chloride b) acetic anhydride **c) amide** d) ester
- 4) The derivatives of carboxylic acid obtained by replacing by $-OH$ group of carboxylic acid by $-OR$ group is known as ----
a) acetyl chloride b) acetic anhydride c) amide **d) ester**
- 5) Acetic acid reacts with thionyl chloride gives ---
a) Succinic acid b) Propenoic acid c) Acetic acid **d) Acetyl chloride**
- 6) Acetic acid heated with PCl_5 gives ---
a) Acetyl chloride b) Propenoic acid c) Acetic acid d) Oxalic acid
- 7) Acetyl chloride on hydrolysis with water gives ----
a) Methanol b) Ethanol **c) Acetic acid** d) Oxalic acid
- 8) Acetyl chloride react with ethyl alcohol gives ----
a) methyl acetate **b) ethyl acetate** c) acetic acid d) None of these
- 9) Acetyl chloride react with methyl amine to gives ---
a) Acetonitrile b) Methanamine **c) N-methyl ethanamide** d) None of these
- 10) Acetyl chloride react with acetic acid in presence of pyridine gives ----
a) acetic anhydride b) Methanamine c) Acetamide d) None of these
- 11) Acetyl chloride react with sodium acetate gives ----
a) acetic anhydride b) Methanamine c) Acetamide d) None of these
- 12) Acetyl anhydride on hydrolysis with water gives ---
a) Methanol b) Ethanol **c) Acetic acid** d) Oxalic acid
- 13) Acetyl anhydride react with ethyl alcohol gives -----
a) Ethyl acetate b) Methyl acetate c) Acetyl chloride d) None of these
- 14) Acetic anhydride react with methyl amine gives -----
a) Acetonitrile **b) N-methyl ethanamide** c) Acetamide d) None of these
- 15) Ethyl alcohol reacts with acetic acid in presence of H_2SO_4 undergo dehydration to give ----
a) Methyl acetate **b) Ethyl acetate** c) Acetyl chloride d) None of these
- 16) Ethyl alcohol reacts with acetyl chloride in presence of pyridine to give ----
a) Methyl acetate **b) Ethyl acetate** c) Acetamide d) None of these
- 17) Ethyl acetate on alkaline hydrolysis with $NaOH$ gives ----
a) Methanol b) Ethanol c) Acetic acid **d) Sodium acetate**

- 18) Ethyl acetate on reaction with methyl amine gives -----
a) Acetonitrile b) Methanamine **c) N-methyl ethanamide** d) None of these
- 19) Ethyl acetate on reduction with LiAlH_4 gives -----
a) Methanol **b) Ethanol** c) Acetic acid d) None of these
- 20) Acetyl chloride react with NH_3 gives -----
a) acetamide b) acetyl chloride c) ethyl acetate d) None of these
- 21) Acetic anhydride react with NH_3 gives -----
a) acetamide b) acetyl chloride c) ethyl acetate d) None of these
- 22) Acetamide on acidic hydrolysis with water gives ---
a) Methanol b) Ethanol **c) Acetic acid** d) None of these
- 23) Acetamide react with nitrous acid gives ----
a) Acetic acid b) Ethanol c) Acetyl chloride d) None of these