ASSIGNMENT CHEMISTRY

CLASS XII

1. Convert the following

1. aniline to N-phenyl ethanamide.

2. Propane to 1- bromopropane.

3 . propanol to Iodoform.

4 .ethene to ethanol.

5. phenol to phenylethonoate.

6. Ehanol to 2 propanol.

7. Propane to 2- propanone

8. Aniline to fluorobenzene.

9. 2-propanol to 2-propanone.

10. propanoic acid to 1-propanol

11. Acetophenone to benzoic acid.

2. Give the structure of : 5-Oxohexanoic acid
3. Give example for following name reaction:
i. Reimer-Tiemann reaction
ii. Kolbe's reaction
4. Write the mechanism of nucleophillic addition reaction in aldehydes.
5. Give one chemical test to distinguish:
i. Acetaldehyde and Benzaldehyde
ii. Benzophenone and Acetophenone
6.. Give reason
(a) Aldehydes are more reactive than Ketones towards Nucleophillic addition reaction
(b) There are two NH2 group in semi carbazide however only one is involved in the formation of semi carbazones.
(c) During the preparation of esters from a carboxylic acid and an alcohol in the presence of an acid catalyst, the water or the ester should be removed as fast as it is formed.
7. Accomplish the following conversions:
(a) Nitrobenzene to phenol (b)Methanamine to Ethanamine
8. (1) Primary alkyl halide C_4H_9Br (a) reacted with alcoholic KOH to give compound (b).Compound (b) is reacted with HBr to give (c) which is an isomer of (a).When (a) is

reacted with sodium metal it gives Compound (d),C_8H_{18} which is different from the compound formed when n-butyl bromide is reacted with sodium .Give the structural formula of (a) and write the equations for all the reactions.

2) An organic compound ˜A with molecular formula C_5H_5O . It does not reduce toulene or Fehling reagent but forms a bisulphite compound. It also gives iodoform tests. Identify A

9. (a)An organic compound A with molecular formula $C_5H_8O_2$ is reduced to neopentane on treatment with Zn-Hg/HCI. A forms a dioxime with hydroxylamine and gives a positive iodoform test and toulene test. Identify the compound A and deduce its structure.

(b) An aromatic compound A on treatment with aqueous ammonia and heating forms compound B which on heating with Br_2 and KOH forms a compound C of molecular formula C_6H_7N .Write the structures and IUPAC names of compounds A,B,C.

c.)Account the following:

o-nitrophenol has lower boiling point than ***p***-nitrophenol

10. Write one chemical equation to exemplify the following reactions:

b) Carbylamine reaction

c) Hofmann bromamide reaction.

11.An organic compound with the molecular formula $C_9H_{10}O$ forms 2,4-DNP derivative, reduces Toulene reagent and undergoes Cannizaro reaction. On vigorous oxidation, it gives 1,2-benzene dicarboxylic acid. Identify the compound.

12.Write the steps and conditions involved in the following conversions:

i) Acetophenone to 2-phenyl-2-butanol.

ii) Propene to acetone.

13.Why propanol has higher boiling point than that of the hydrocarbon, butane?

14.. Give the IUPAC name of the following compounds:$CH_3COCH_2CH_2Cl$, $CH_3CH(OH)CH_2CHO$

15.Write zwitter ion of amino acetic acid.

16.. Give reason:

i) It is difficult to prepare pure amines by ammonolysis of alkyl halide.

ii) Aniline is a weaker base than cyclohexylamine.

iii) Amines have lower boiling points than those of the corresponding alcohols

17.a) An organic compound ‘A’ C_8H_6 on treatment with dilute H_2SO_4 containing mercuric sulphate gives compound ‘B’. Which can also be obtained from a reaction of benzene with acid chloride in the presence of $AlCl_3$? ‘B’ on treatment with I_2 in aq.KOH gives ‘C’ and yellow compound ‘D’. Identify A,B,C and D. Give the chemical reactions involved.

b) How will you convert:

i) acetaphenone to ethyl benzene ii) propanone to 2-Propanopl.

18.. Explain

(a) Why preparation of chloroalkane by the action of $SOCl_2$ On alcohol is preferred?

(b) Why is H_2SO_4 not used during the reaction of alcohol with KI.?

(c) Why p-isomer of dihalobenzene has M.P. 70 to 100 ^{0} C.

Higher than ortho and meta isomer?

19. (a) Give a chemical test to distinguish between CH_3CHO and CH_3COCH_3
(b)Convert:
(i) Benzaldehyde to benzoic acid
(ii) Benzoic acid to benzamide
(iii) 4- methyl acetophenone to benzenedicarboxylic acid

(a) Give a chemical test to distinguish CH_3COOH and C_6H_5COOH
(b) Convert:
(i) Acetaldehyde into 2-propanol

(ii) Toluene into benzaldehyde
(iii) Ethane into But-2enal

20. Give reasons

1. Haloalkane undergo nucleophilic substitution reaction.
2. Alchohol act as a weak base.
3. Phenol exhibit acidic behaviour
4. Ether posses dipole moment even alkyl groups are identical.
5. Carboxylic acids have high boiling point than alcohols of comparable molecular mass?
6. Alcoxides are more reactive than ketones towards Nucleophilic reagents?
7. Boiling points of ether are lower than isomeric alcohols?
8. Acetic acid is weaker than chloroacetic acids?
9. During the prepration of ammonia derivatives of aldehydes &ketones . pH of the reaction is carefully controlled?
10. Presence of acetic anhydride is necessary in the oxidation of toulene to benzaldehydrade by chromic oxide?
11. Chloroacetic acids has higher pH value than acetic acid?
12. Electrophilic substitution reaction in benzoic acids takes place at meta position?
13. Alkyl amines are stronger base than Aryl amines?
14. Like ammonia amines are good nucleophilles?
15. In contrast to arenes aliphatic hydrocarbones do not undergo nitration easily?
16. What for quaternary ammonium salts are widely used?
17. Toluene is more readily nitrated than benzene?
18. Haloalkanes are more reactive then haloamines?
19. Unlike alcohols ,phenols cannot be easily protonated?
20. Alkyl nitrite have lower boiling point than the corresponding carboxylic acids?
21. Why do aldehyde / ketone behave like polar compounds?

22. Haloarenes are insoluble in water but soluble in benzene?
23. Formaldehyde gives cannizaro reaction whereas acetaldehyde not?
24. Carboxylic acid do not give the characteristic test of carboxylic group?