AMINES –CHAPTER-13

1)IMPORTANT POINTS-

*Hoffmann Bromide degradation reaction. --- (AMIDE To AMINE)

*Carbylamine reaction----- (from primary amine to pungent smelling ISOCYANIDE).

*COUPLING REACTION------(Formation of AZO DYE from diazonium chloride and Phenol)

*DIAZOTISATION----------(formation of diazonium salt from aniline or nitrobenzene)

*SANDMEYERS REACTION----------(formation of halobenzene).

2)DISTIN GUISH PRIMARY SECONDARY AND TERTARY AMINES BY A TEST;

REAGENT USED—BENZENESULPHONYL CHLORIDE.

Primary amine gives ppt soluble in base.

Secondary amines gives ppt insoluble in base.

Tertary amine does not react.

3)BASIC STRENGTH OF AMINES—

IN GAS PHASES-2>3>1>ammonia.

IN AQUEOUS—2>1>3>AMMONIA.

4)STRUCTURE OF ZWITTER ION.

OUESTION AND ANSWERS.

1) Distinguish following by a test.

a)phenol and aniline

b)Aniline and methyl aniline.

c)Secondary and tertary amine.

Ans-a)Neutral ferric chloride test.phenol gives violet colour.

b)ISOCYANIDE test---- aniline gives isocyanide.

c)Benzenesulphonyl test-----secondary gives ppt tertary does not.

2)Account for following

a)Aniline does not undergo FRIDEL CRAFT reaction.

B)Alkylamines are weaker base than aromatic amines

c)Amines are more basic than alcohols

d)Electrophilic substitution is aromatic amines is easier than benzene.

ANSWERS

a)It is beacause aniline is base which forms addut with lewis acid aluminium chloride.

b)Due to eiectron withdrawing benzene ring.

c)Due to presence of lone pair of electron.

d)Due to inductive effect of group attached.

3. A compound (X) having formula C_3H_7NO reacts with Br_2 in the presence of NaOH to give another compound (Y). Compound (Y) reacts with HNO_2 to form ethanol and N_2 gas . Identify (X) and (Y) . Write the reaction involved

Answer-X –Ethaneamide,Y-Ethaneamine

. 4. An organic compound A (C_3H_5N) on boiling with alkali gives NH_3 and sodium salt of an acid B ($C_3H_6O_2$). The compound A on reduction gives C (C_3H_9N) which on treatment with nitrous acid gives an alcohol D (C_3H_8O). Identify A to D.

Answer-A Ethanenitrile B-Propanoic acid.

C- Propaneamine D-PROPANOL.