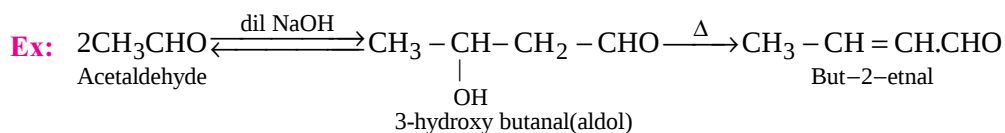


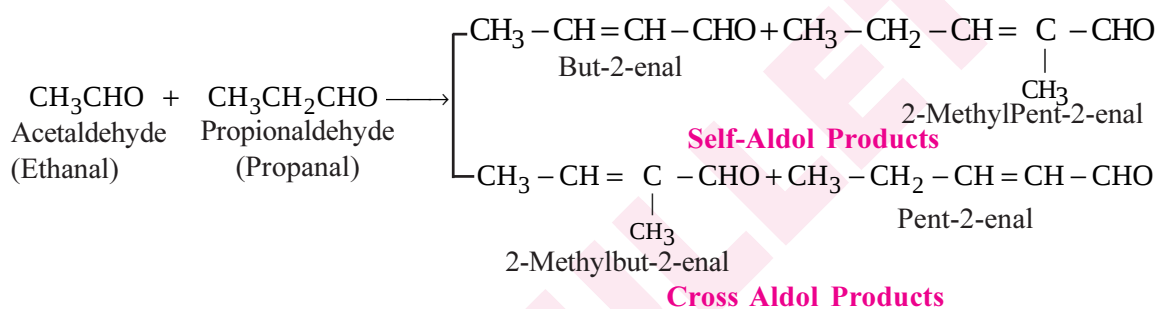
TOP 25 NAMED REACTIONS

***1. **Aldol Condensation:** Aldehydes and ketones having at least one α -hydrogen undergo a reaction in the presence of dilute alkali as catalyst to form β -hydroxy aldehyde. [AP 18,23,24,25]



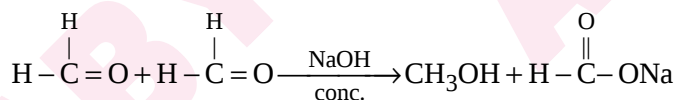
2. **Cross Aldol Condensation: The condensation of two different carbonyl compounds (one of which must have one α -hydrogen) in the presence of alkali is called cross aldol condensation.

Ex: The condensation of an aldehyde with a ketone in the presence of alkali gives four products. [AP 15,19]

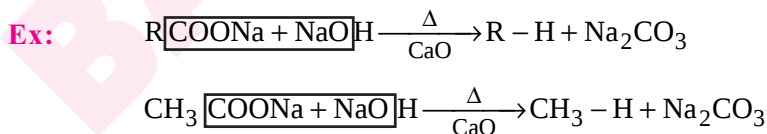


***3. **Cannizzaro reaction:** Aldehydes having no ' α ' hydrogen undergo Cannizzaro's reaction. Such aldehydes in the presence of concentrated alkaline solution undergo self oxidation-reduction to give a mixture of alcohol and a salt of carboxylic acid. [AP 16,18,19,22]

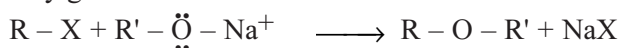
Ex: When 2 molecules of formaldehyde(HCHO) undergo self oxidation in presence of conc.NaOH to form methanol and Sodium formate.



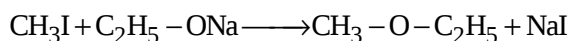
***4. **Decarboxylation:** Sodium salts of Carboxylic acids when heated with sodalime(CaO+NaOH) lose CO_2 to form hydrocarbons. [AP 15,16,19]



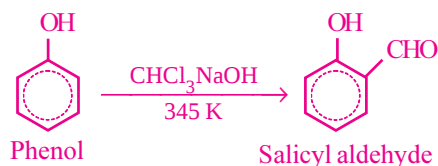
***5. **Williamson's synthesis:** When Haloalkanes are heated with sodium (or) potassium alkoxide, they give ether. [AP 15,16,18,19,22,23]



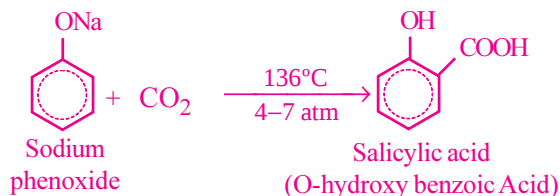
Ex: When methyl iodide reacts with sodium Ethoxide it forms methoxyethane.



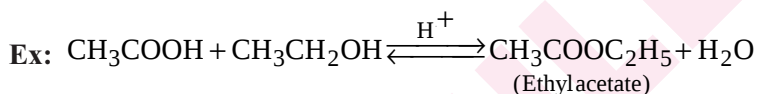
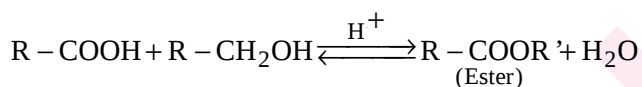
- ***6. **Riemer-Tiemann reaction:** Phenol on treating with CHCl_3 in the presence of sodium hydroxide, a $-\text{CHO}$ group is introduced at ortho position of benzene ring. [AP 17,18,19,22]



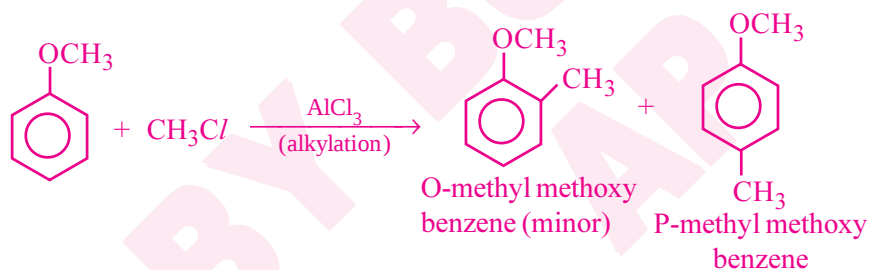
- ***7. **Kolbe Reaction:** When sodium salt of phenol is heated with carbon dioxide at 135°C and under 4-7 atm pressure, a carboxyl group, mainly in the ortho position is introduced. [AP 17,23]



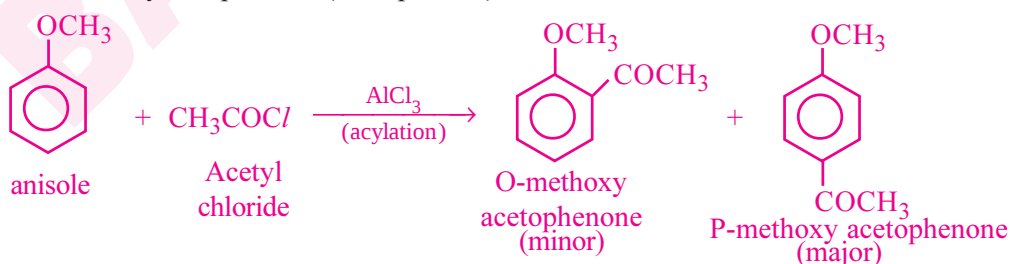
- ***8. **Esterification:** Carboxylic acid reacts with alcohol in the presence of acidic medium (HCl , H_2SO_4) to give Ester.



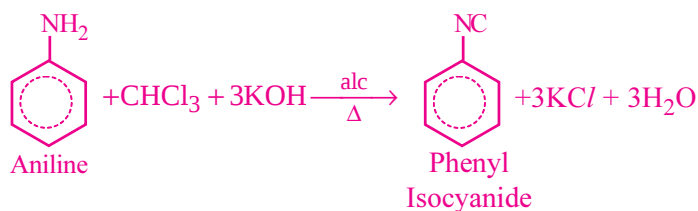
- **9. **Friedel Crafts Alkylation:** When anisole reacts with methyl chloride in the presence of anhydrous aluminium chloride, it forms ortho and para substituted ether.



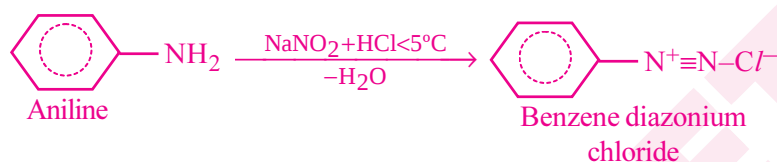
- **10. **Friedel Crafts Acylation:** When anisole is reacted with acetyl chloride in the presence of anhydrous Aluminium chloride, it forms a mixture of O-methoxy acetophenone and P-methoxyacetophenone (main product).



- ***11. **Carbylamine reaction:** Aniline when heated with alcoholic potash and chloroform, gives offensive smelling compound. [AP 16,18,20,22,23,24,25]

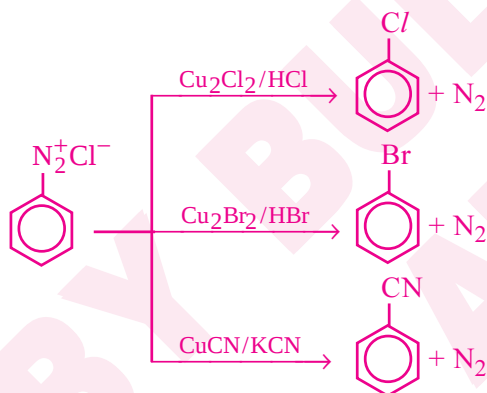


- **12. **Diazotization reaction:** Aniline when heated at 0-5°C with NaNO₂ in the presence of HCl gives Benzene Diazonium Chloride. [IPE'14][AP 18]



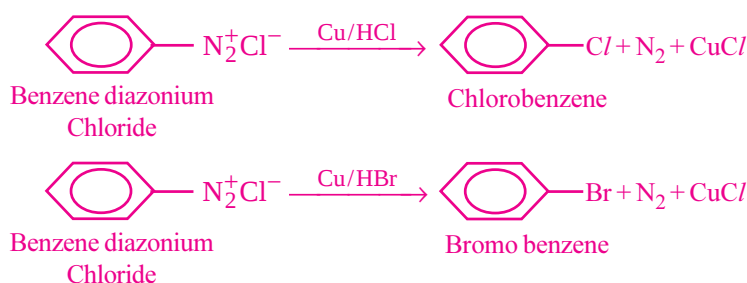
- ***13. **Sandmeyer reaction:** It is the introduction of nucleophiles like Cl⁻, Br⁻ and CN⁻ in the benzene ring, in the presence of {Cu₂Cl₂ / HCl (or) Cu₂Br₂ / HBr (or) CuCN/KCN}

[AP 15,16,17,18]

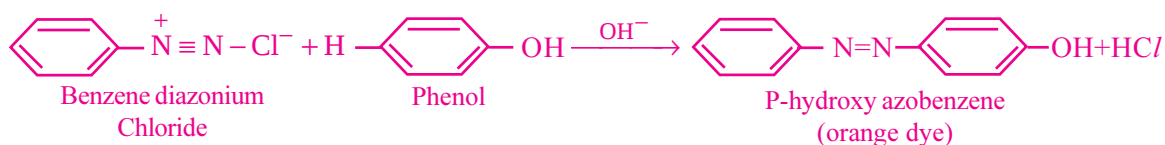


- **14. **Gattermann's reaction:** When benzene diazonium chloride is treated with Cu/HCl (or) Cu/HBr, it gives chlorobenzene (or) bromobenzene

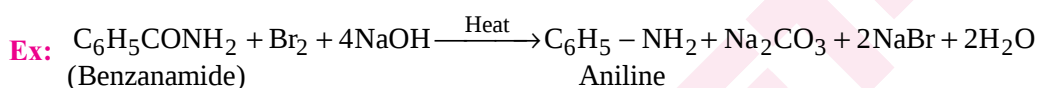
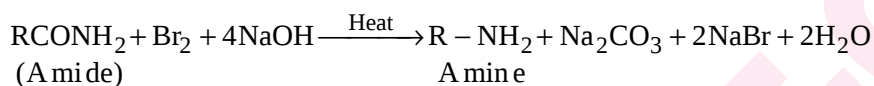
[AP 15,18,24,25][TS 17,20]



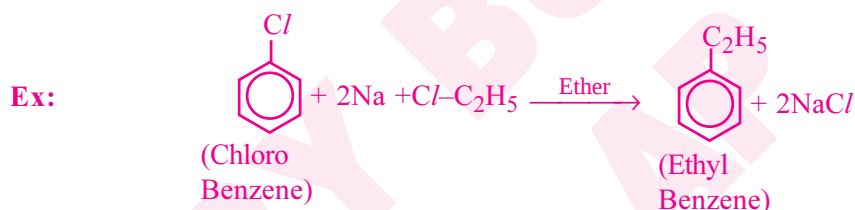
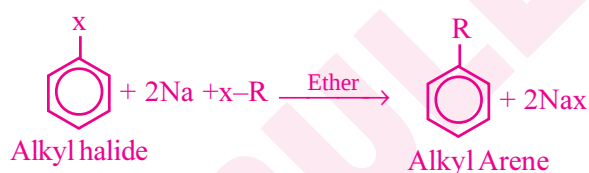
- **15. Coupling Reactions:** Benzene diazonium chloride reacts with phenol in which the phenol molecule at its para position is coupled with the diazonium salt to form P-hydroxy azobenzene.



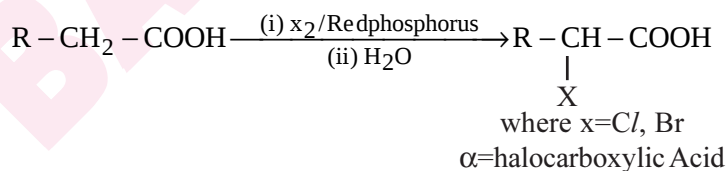
- *16. Hoffmann's bromamide reaction:** The method of preparation of primary amines by treating an amide with bromine in an aqueous (or) ethanoic solution of NaOH is known as Hoffmann's Bromide reaction. The amine contains one carbon less than that of amide taken.



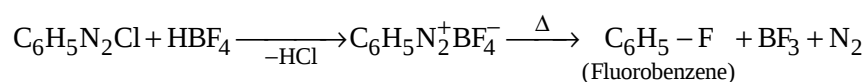
- **17. Wurtz-Fittig Reaction:** A mixture of an alkyl halide and aryl halide when treated with Na in dry ether gives alkyl arene. [AP 15,17,18]



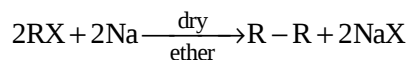
- ***18. H.V.Z Reaction:** Carboxylic acids having an α -hydrogen are halogenated at the α -position on treatment with chlorine (or) bromine in the presence of small amount of red phosphorus to give α -halo carboxylic acids. [AP 24,25]



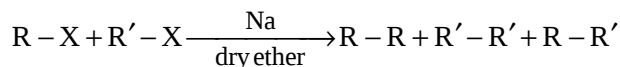
- 19. Balz-Schiemann reaction:** Benzene diazonium chloride on treatment with fluoroboric acid followed by heating gives fluorobenzene.



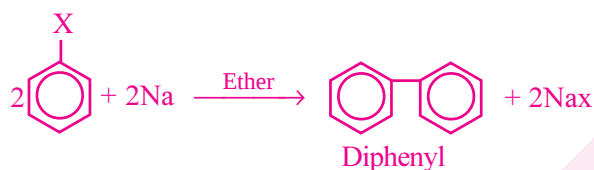
- **20. Wurtz reaction:** Alkyl halides react with sodium in dry ether to give hydrocarbons containing double the number of carbon atoms present in the halide. [AP 20]



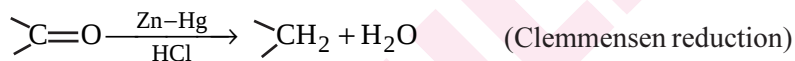
- *21. Crossed Wurtz Reaction:** Two different alkylhalides react with Na in presence of dry ether gives mixture of alkanes.



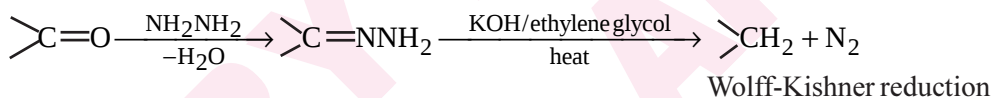
- **22. Fittig reaction:** Aryl halides when treated with sodium in dry ether gives Diphenyl i.e., aryl groups joined together. [AP 20]



- *23. Clemmensen reduction:** The carbonyl group of aldehydes and ketones is reduced to CH_2 group on treatment with zinc-amalgam and concentrated hydrochloric acid is called Clemmensen reduction.



- *24. Wolff-Kishner reduction:** The carbonyl group of aldehydes and ketones is reduced to CH_2 group on treatment with hydrazine followed by heating with sodium or potassium hydroxide in high boiling solvent such as ethylene glycol is called Wolff-Kishner reduction.



- *25. Hydroboration-Oxidation:** Diborane reacts with alkenes to give trialkyl boranes as addition product. This is oxidised to alcohol by H_2O_2 in the presence of aqueous NaOH.

