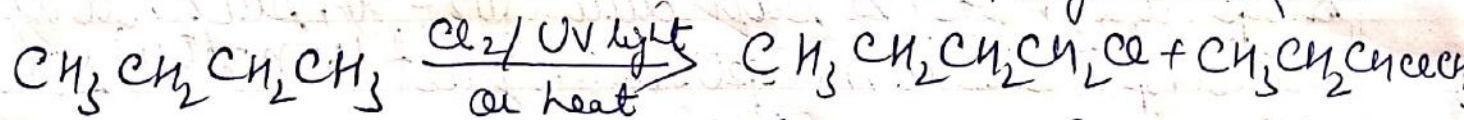


with HX requires the presence of catalyst  $ZnO_2$ .

- c) With tertiary alcohols, the reaction is  $CaH_2$  conducted by simply shaking with conc. HCl at room temperature.
- d) Constant boiling with HBr (48%) is used for preparing alkyl bromide.
- e) Good yields of R-I may be obtained by heating alcohols with sodium or potassium iodide in 95% phosphoric acid.
- f)  $3^\circ > 2^\circ > 1^\circ$  order of reactivity.
- g) Preparation of acyl halides is not possible by this method since Carbon-oxygen bond in ethers has a partial double bond character and is difficult to break being stronger than a single bond.

17) From hydrocarbons -

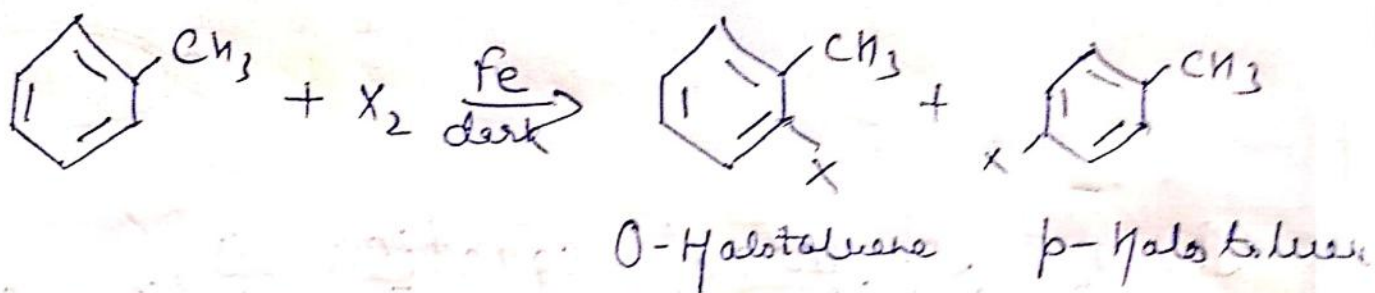
a) By free radical halogenation - Isomeric mono- and polyhaloalkanes.



(Isomeric form - where 1 is of low yield and difficult to separate)

b) By electrophilic substitution - (presence of Lewis acid catalyst like  $Fe$  or  $FeCl_3$  or  $FeCl_2$ )

Chloride



⇒ o- and p- isomers can be separated easily due to large difference in melting points.

i) Reactions with iodine are reversible in nature and require the presence of an oxidizing agent ( $\text{HNO}_3$ ,  $\text{HIO}_4$ ) to oxidize the HI formed during iodination.

ii) Fluoro compounds are not prepared by this method due to high reactivity of fluorine.

c) Sandmeyer's reaction -

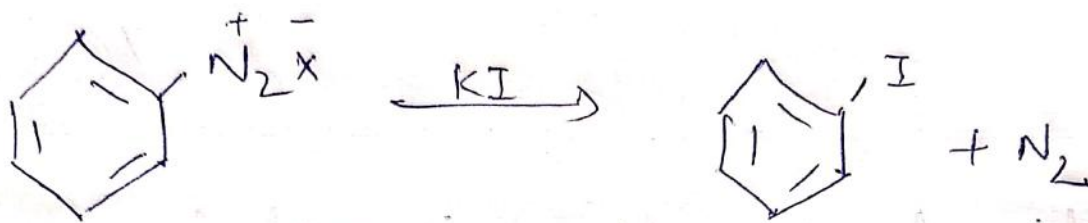


Primary aromatic amine

Benzene diazonium halide

Aryl halide  $\text{X} = \text{Cl}, \text{Br}$

Replacement of the diazonium group by iodine does not require the presence of cuprous halide and is done by shaking the diazonium salt with KI.



• *Ar diazonium salt reacts with KI to form ArI and N<sub>2</sub>*