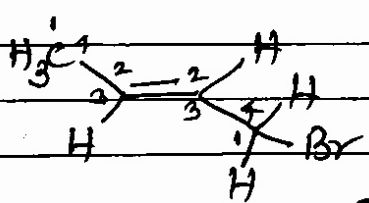
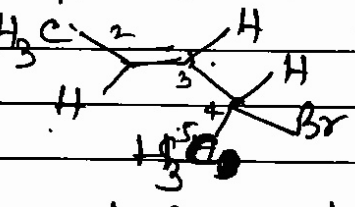
Nomenclature of Alkyl halide & Aryl halide :-

1. In a Compound (aliphatic) at first select the longest chain of carbon atom including functional group.
II. If function group (x) is in middle then do the numbering from both side where x should come to the lower position.
III. In seniority table 'x' is not treated as the main group, so if any senior group is present in Compound then it should get priority.
IV. In aromatic Compound if side chain becomes the parent chain then benzene ring is treated as phenyl.
V. If double bond and halogen both are present in Compound then double bond will get priority for naming & numbering both.

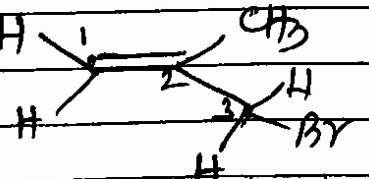
i.e



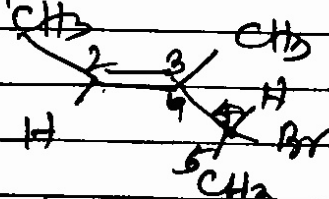
1- Bromo - But - 2- ene.



4- Bromo - pent - 2 - ene



3 - Bromo - 2 - Methyl propene.



4- Bromo - 3 - Methyl (pent - 2 - ene.

Teacher's Signature :

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Preparation of Alkyl halides / Aryl halides:

1. By Hydrocarbons: We can prepare alkyl halide by Alkane, Alkene & Alkyne all three.

A) Preparation of R-X by alkane: When lower member of alkane react with Cl_2 / Br_2 in presence of diffused Sunlight (hν) it gives alkyl halide or Haloalkanes. It is a kind of free radical Substitution reaction.

Note: This method is not applicable for preparation of alkyl halide in laboratory, because it produces a large no. of alkyl halide in the same container and separation of it is difficult.

i-e

$$CH_4 + Cl_2 \xrightarrow{h\nu} CH_3Cl + HCl$$

Monochloromethane

$$CH_3Cl + Cl_2 \xrightarrow{h\nu} CH_2Cl_2 + HCl$$

Dichloromethane

$$CH_2Cl_2 + Cl_2 \xrightarrow{h\nu} CHCl_3 + HCl$$

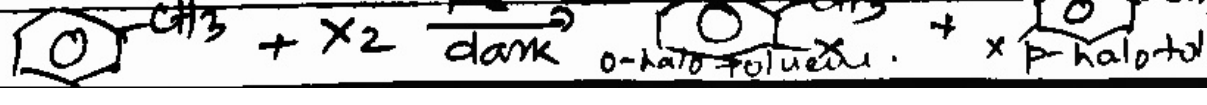
Trichloromethane

$$CHCl_3 + Cl_2 \xrightarrow{h\nu} CCl_4 + HCl$$

Tetrachloromethane.

Aromatic halide: By electrophilic Substitution reaction.

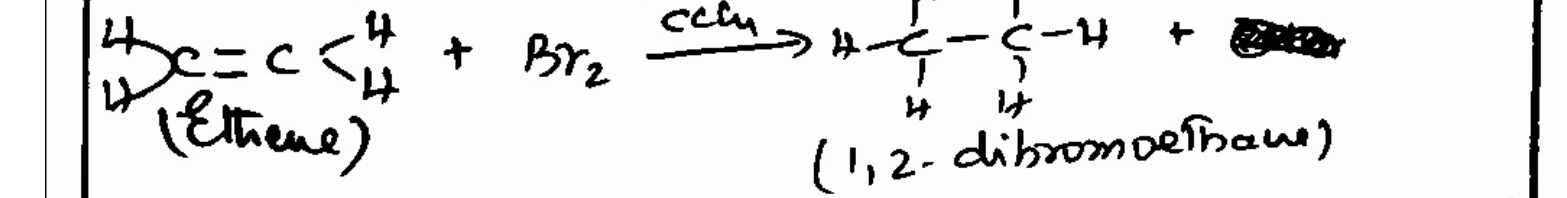
Teacher's Signature : _____



(B) Preparation of R-X by alkene :→ 9L
Can be prepared in three ways :-

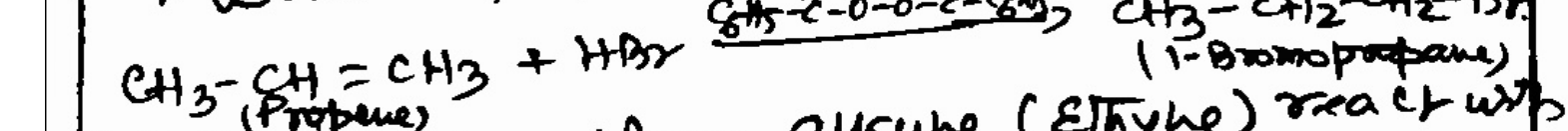
a) By reaction of X_2
b) By Markowni koff rule.
c) By Antimarkowni koff rule.

a) When alkene (ethylene) react with Cl_2/Br_2 in presence of CCl_4 it form 1,2-dibromo ethane, (a Vic product). It shows addition reaction

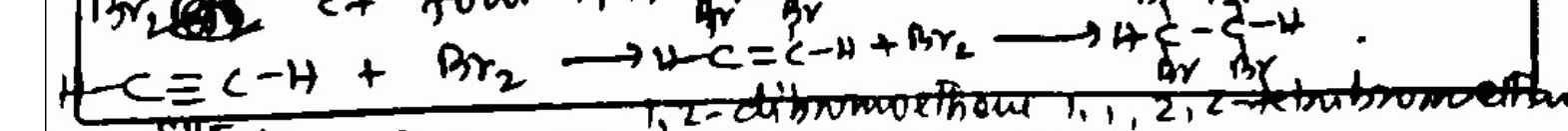


b) By Markowni koff rule: When unsymetrical alkene react with HCl / HBr / HI it form alkyl halide.

c) By antimarkowni koff rule :- When unsymetrical alkene react with HBr in presence of peroxide (i.e Benzoyl peroxide) it form 1-Bromo-propane or Bromopropane.



(C) By alkyne : When alkyne (Ethyne) react with Br_2 it form 1,1,2,2 tetra Bromoethane.



Ethyne. It is a kind of addition reaction.