

Acyclic Hydrocarbons



Saturated

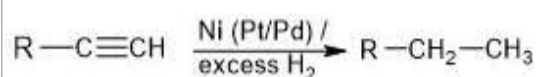
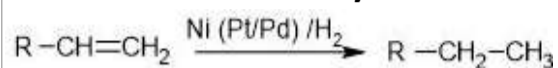
C-C single bonds present

Alkanes

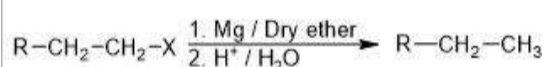
General Formula C_nH_{2n+2}

Preparation

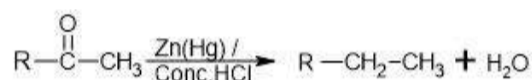
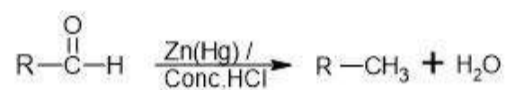
From alkenes and alkynes:



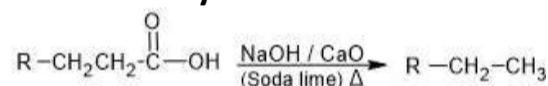
From alkyl halides:



From aldehydes and ketones:

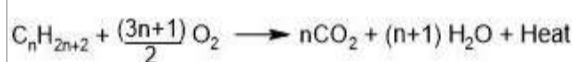


From carboxylic acids:

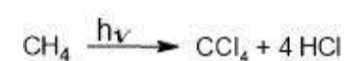


Reactions

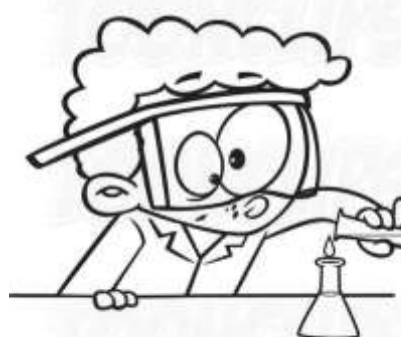
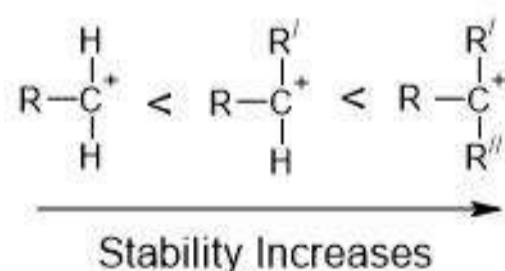
Combustion:



Methane chlorination:



Stability of Carbocations



Unsaturated

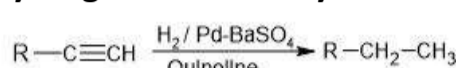
C-C multiple bonds present

Alkenes

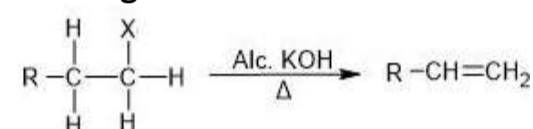
General Formula C_nH_{2n}

Preparation

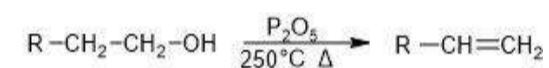
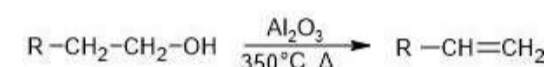
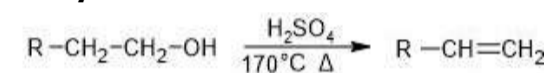
Hydrogenation of alkynes:



Dehalogenation:

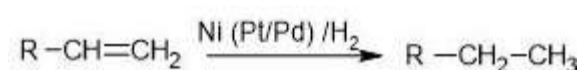


Dehydration of alcohols:

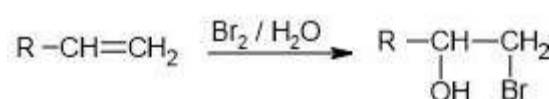
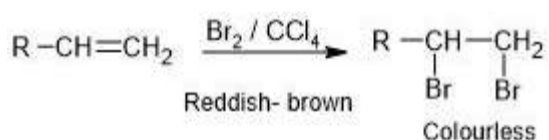


Reactions

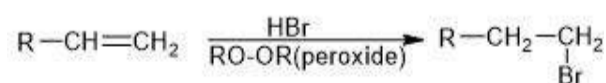
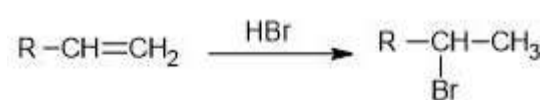
Formation of alkanes:



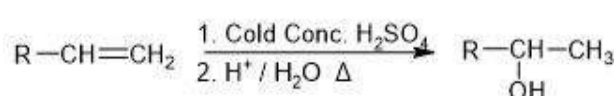
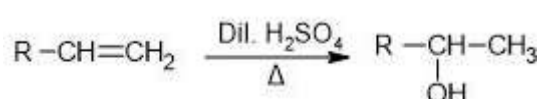
Addition of halogens:



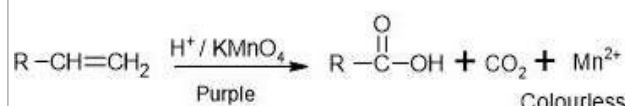
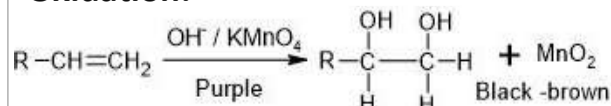
Addition of hydrogen halides: (HCl, HBr, HI)



Addition of water:



Oxidation:

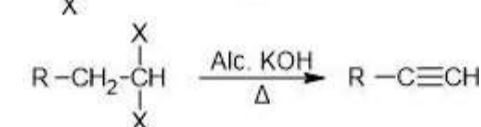
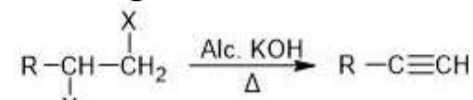


Alkynes

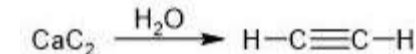
General Formula C_nH_{2n-2}

Preparation

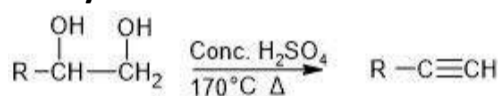
Dehalogenation:



From calcium carbide:

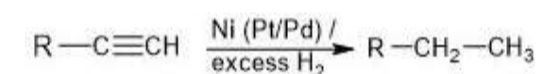


Dehydration of alcohols:

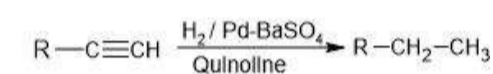


Reactions

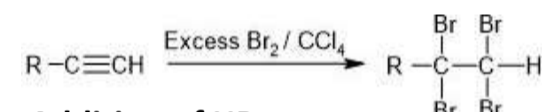
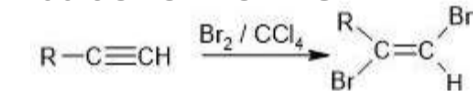
Formation of alkanes:



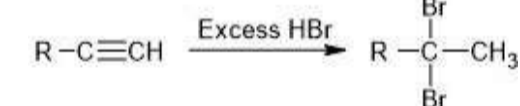
Formation of alkenes:



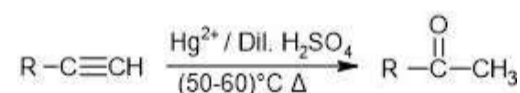
Addition of Bromine:



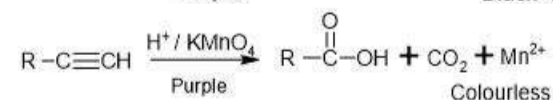
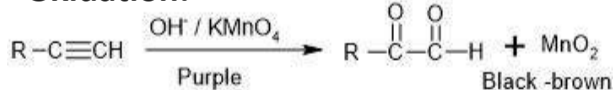
Addition of HBr:



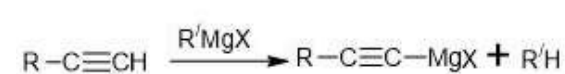
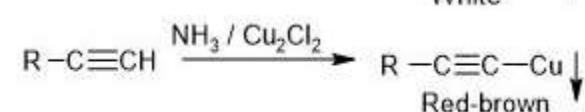
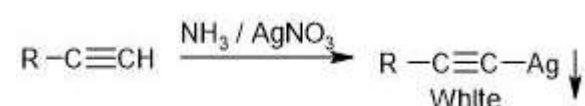
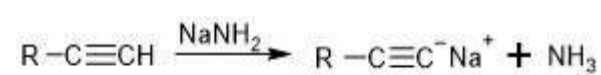
Addition of water:



Oxidation:



Acidic nature of terminal hydrogen



X = Cl, Br, I