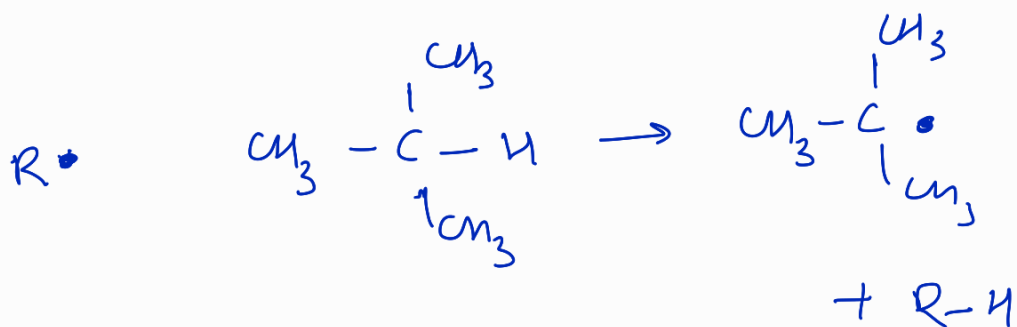
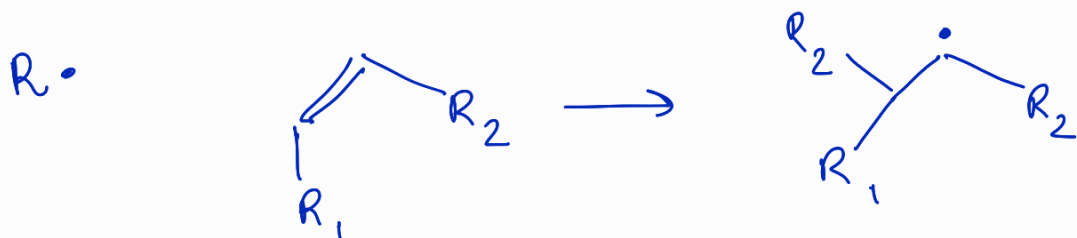


Classification of reagent

- (i) free radicals - (odd e^- species) $(\text{CH}_3-\overset{\text{CH}_3}{\underset{\text{CH}_3}{\overset{\cdot}{\text{C}}}})$
 - (ii) electrophiles (species that are e^- deficient)
 - (iii) nucleophilic (species " " e^- rich)
- ↓
means attractivity

1. free radicals

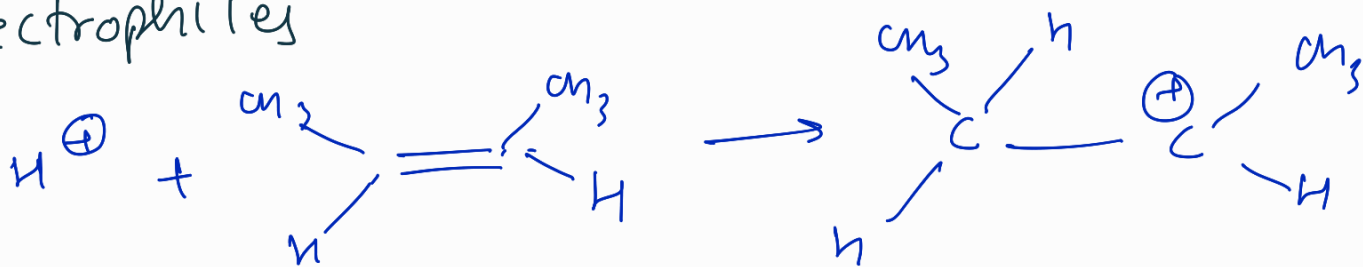
- (i) addition to double & triple bonds
- (ii) H-abstraction reaction



exa-



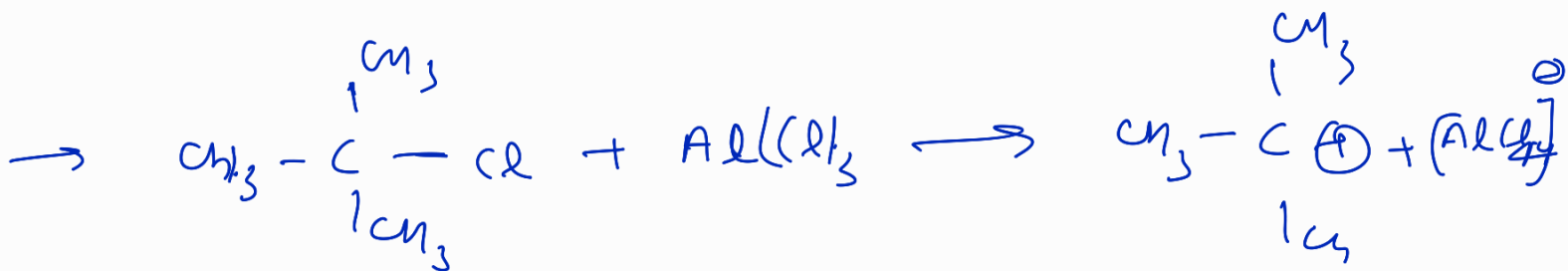
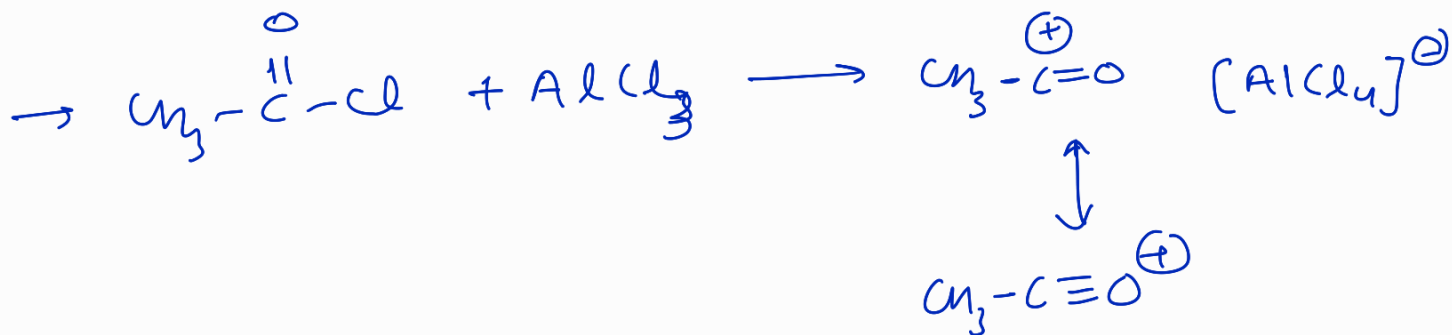
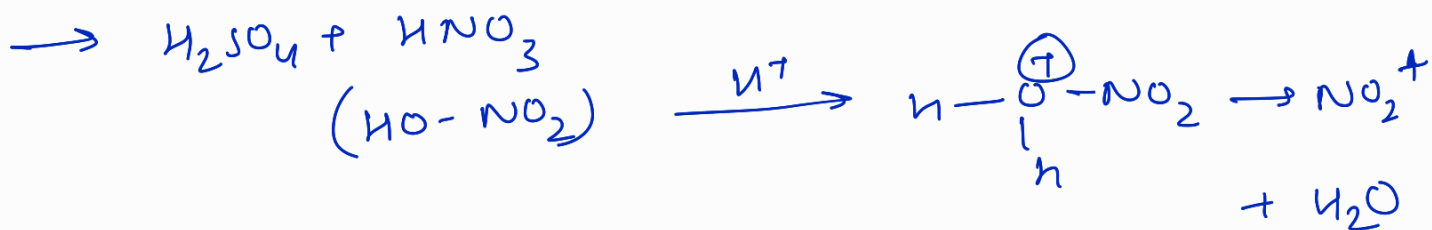
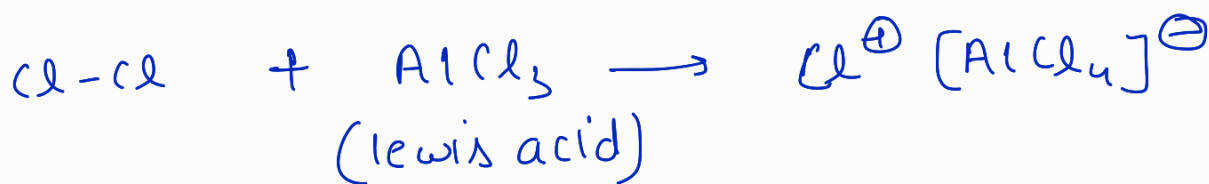
(ii) Electrophiles



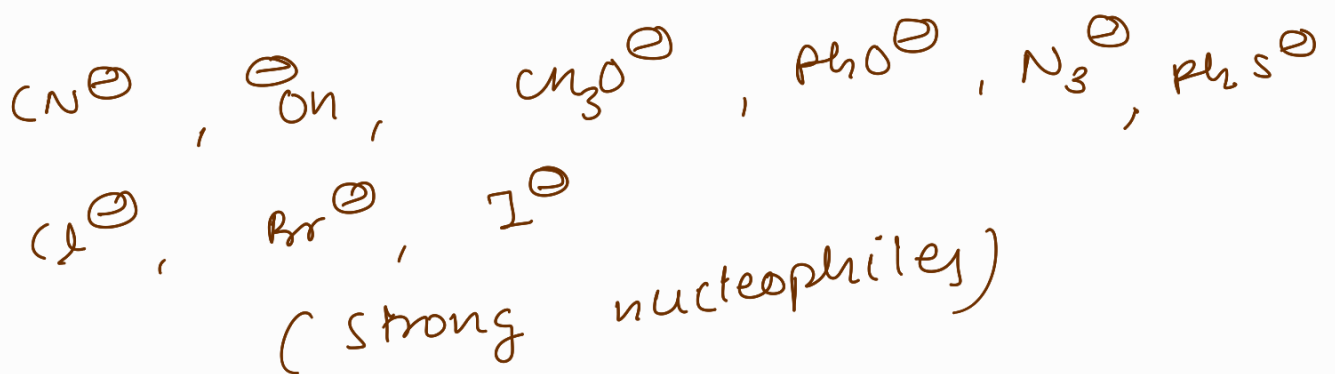
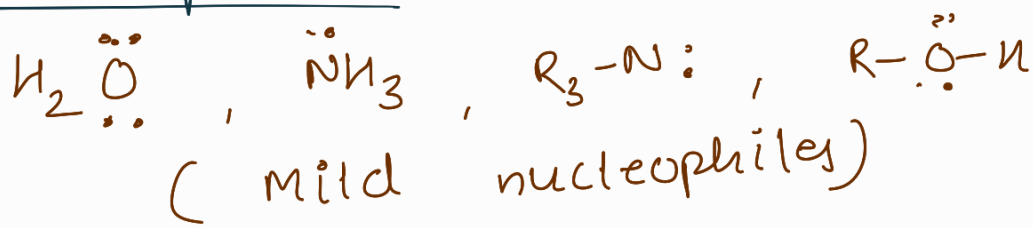
Note: electrophilic reagent



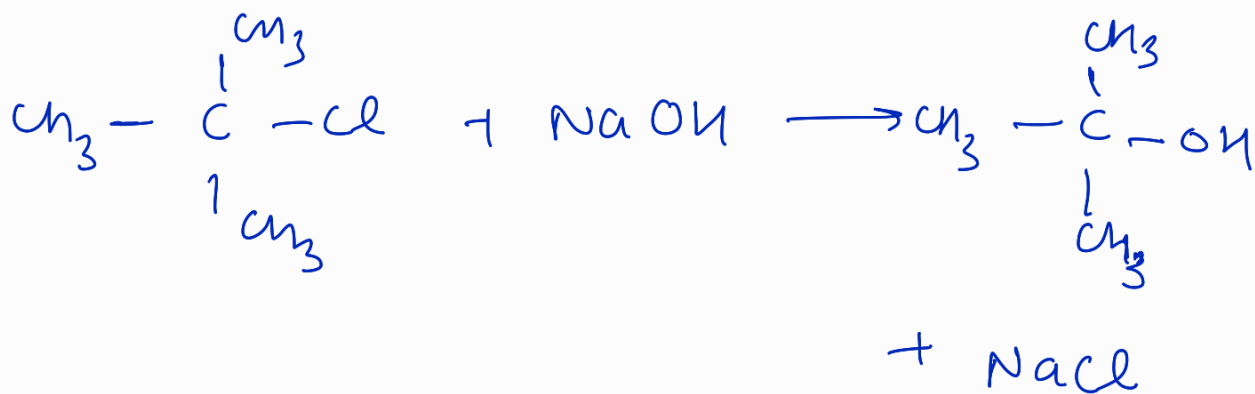
Generation of electrophiles



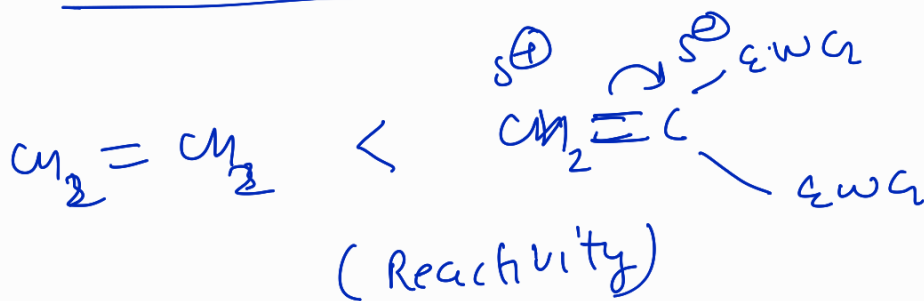
(3) Nucleophiles



3.1 Substitution Reaction Using a nucleophile

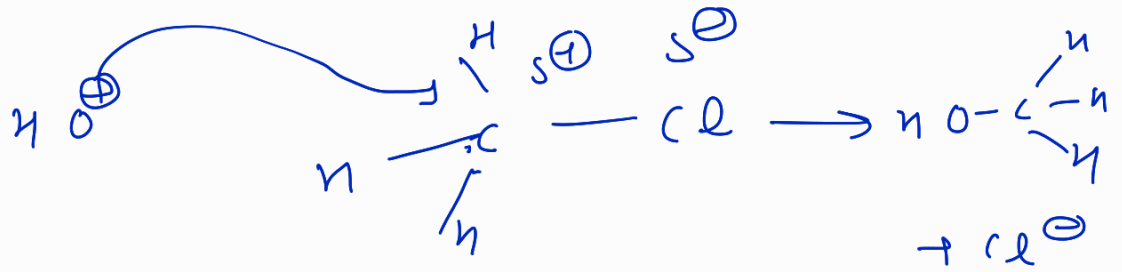


3.2 Additional nucleophilic R^n



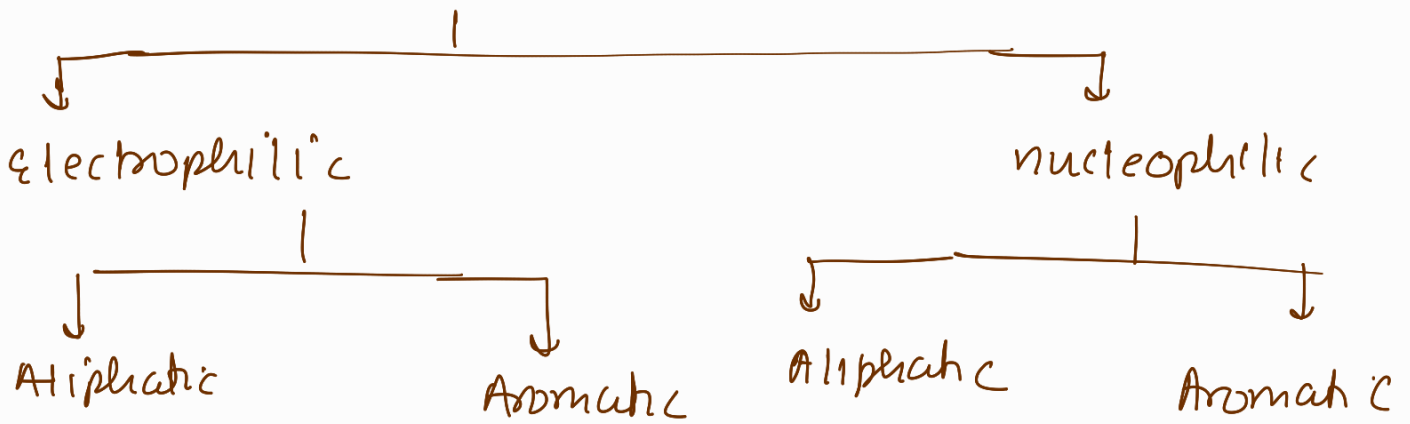
Classification of Organic Reaction

Arrow pushing reaction

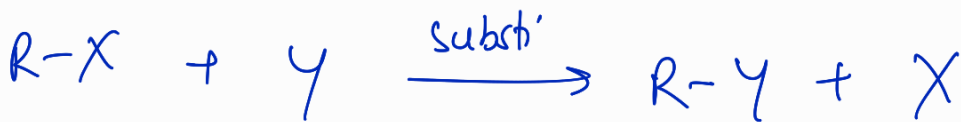


arrows start from e^- rich center
 arrow head pointing at an e^- deficient center.

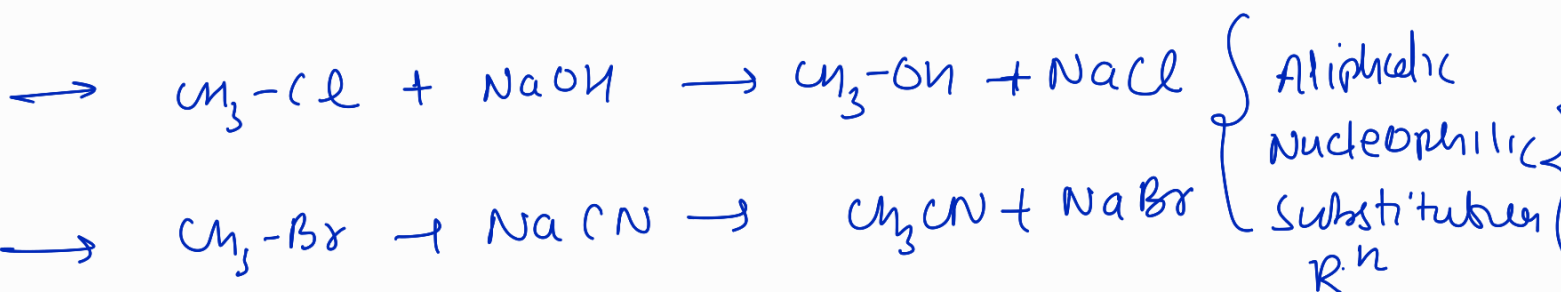
1. Substitution Reaction

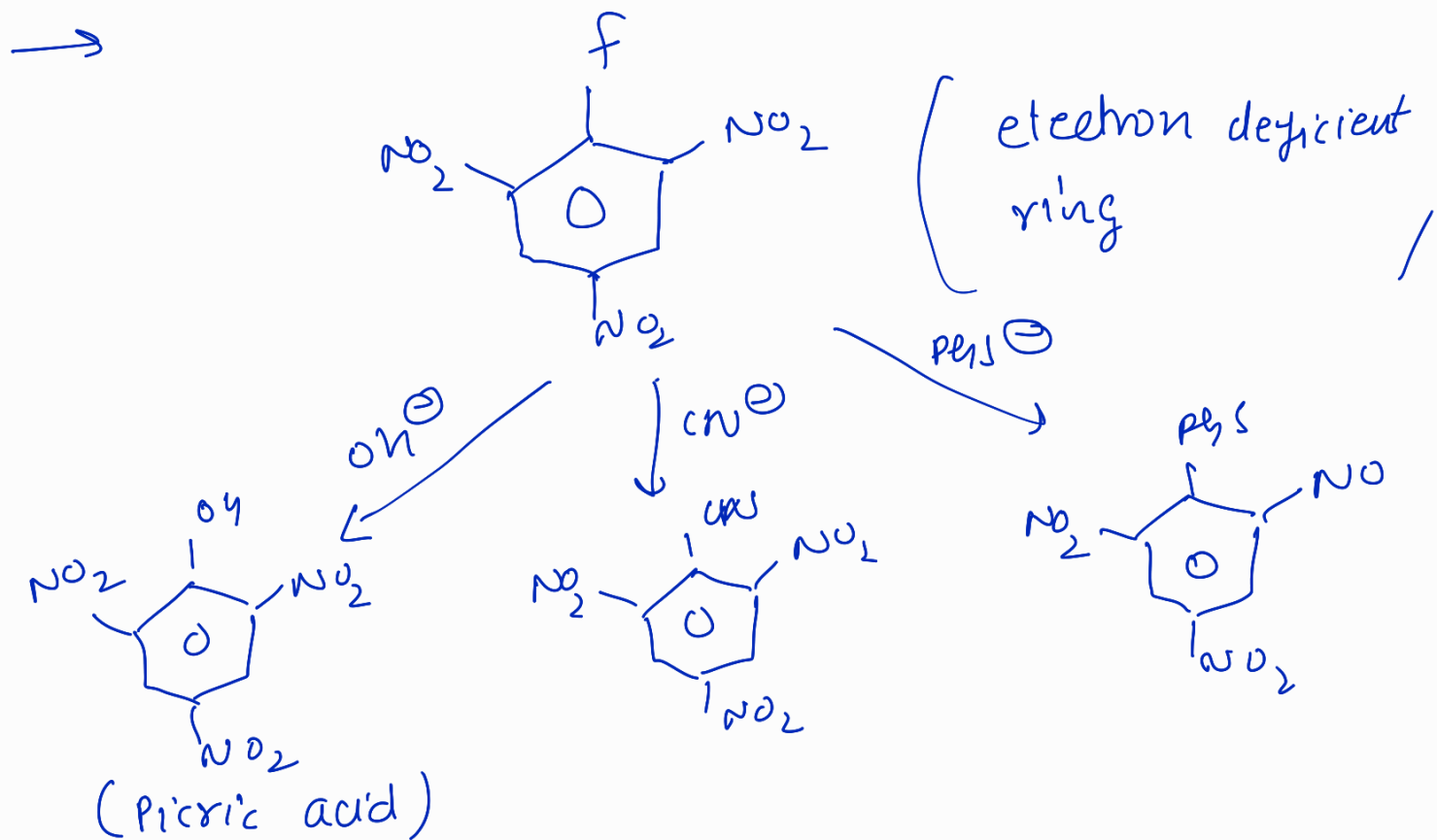
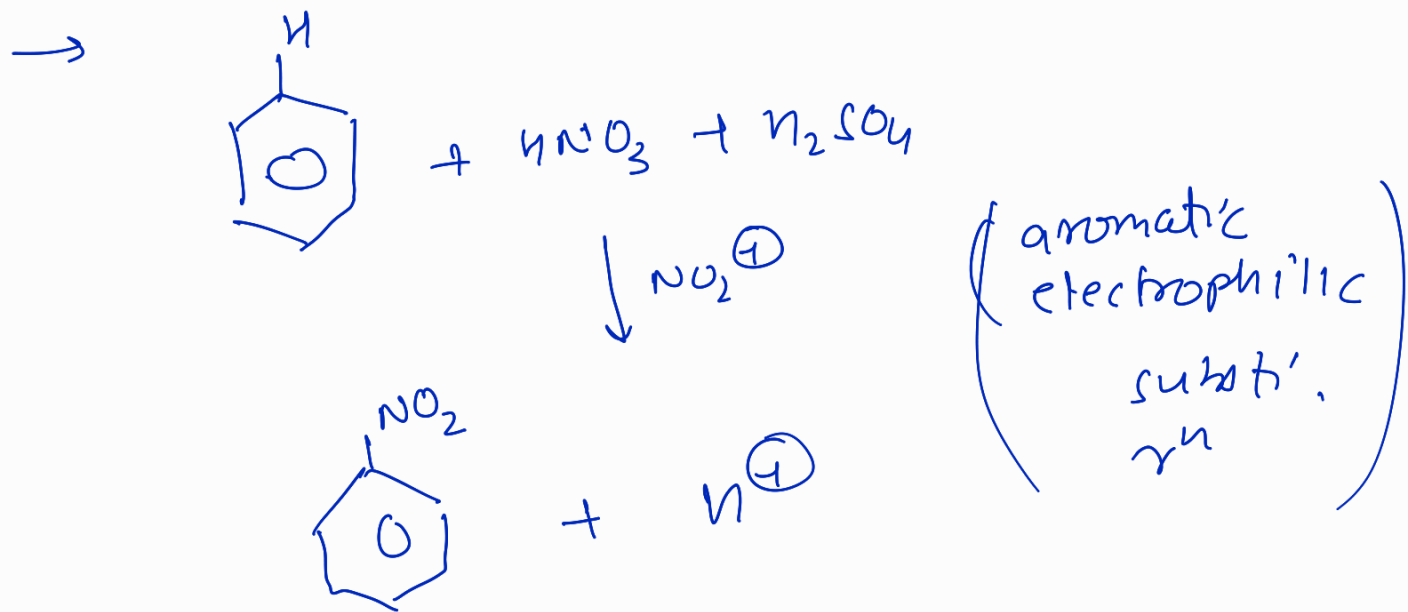
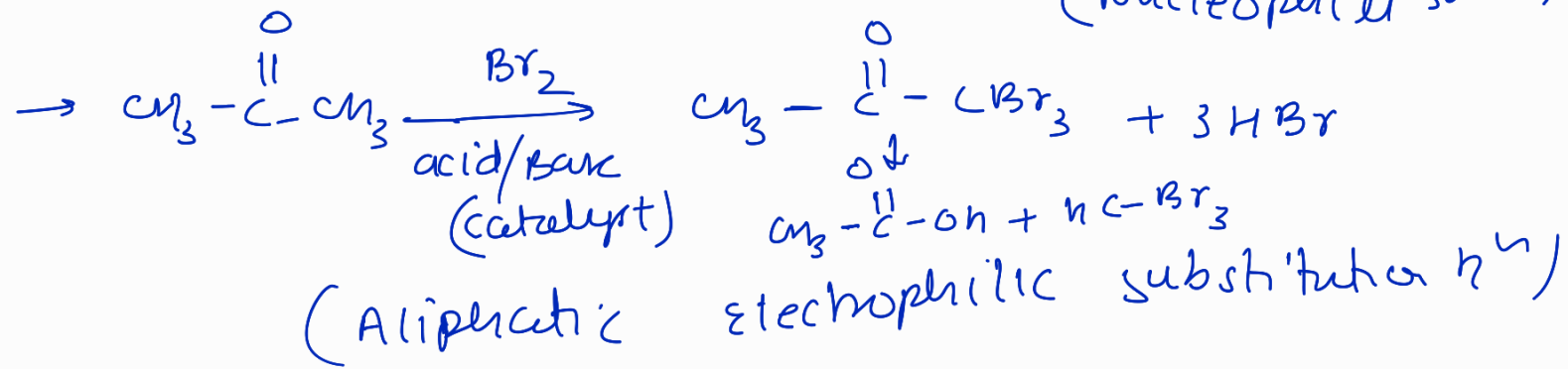
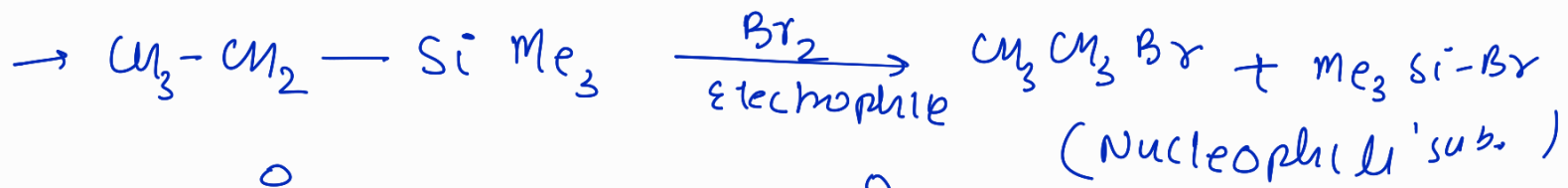


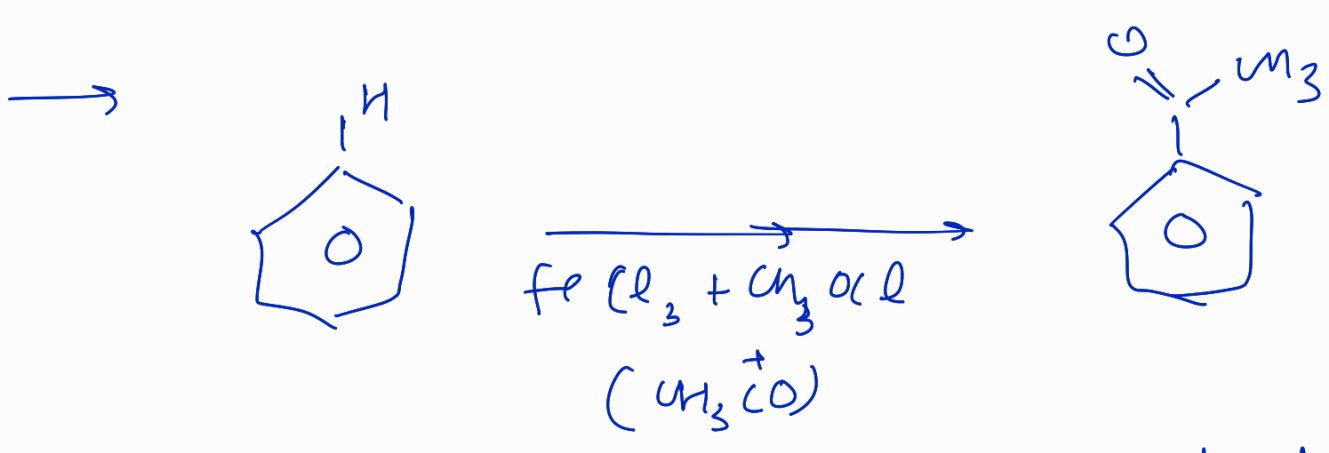
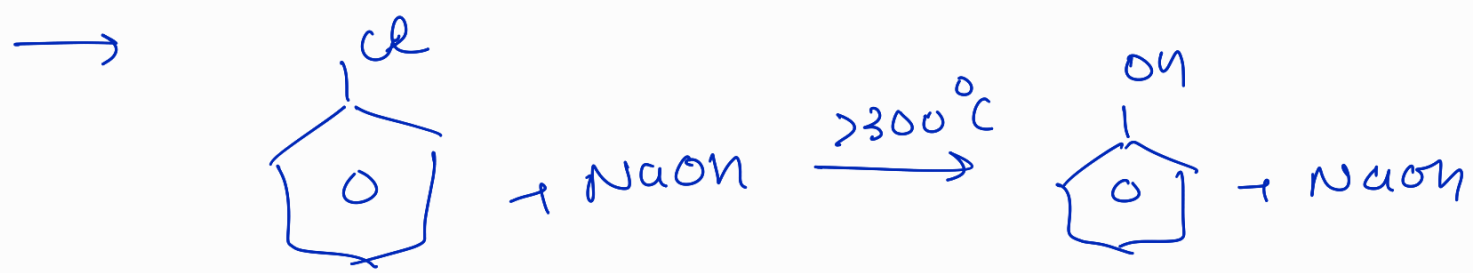
EMG-



(Aromatic/Aliphatic) (nucle/electro)



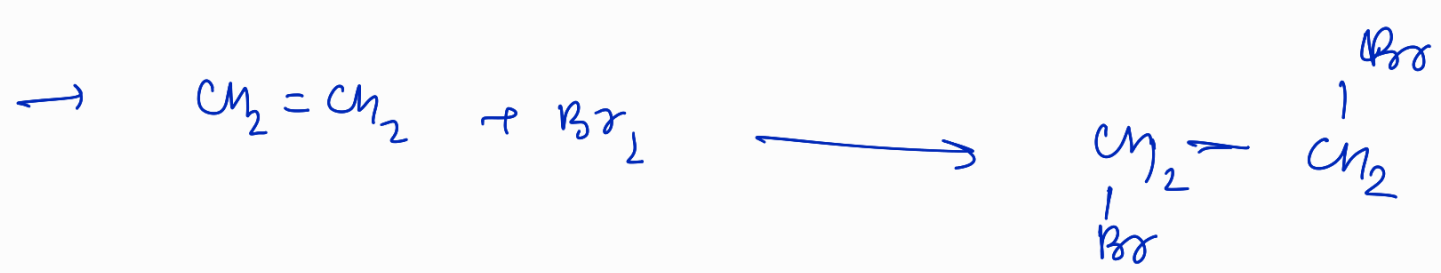
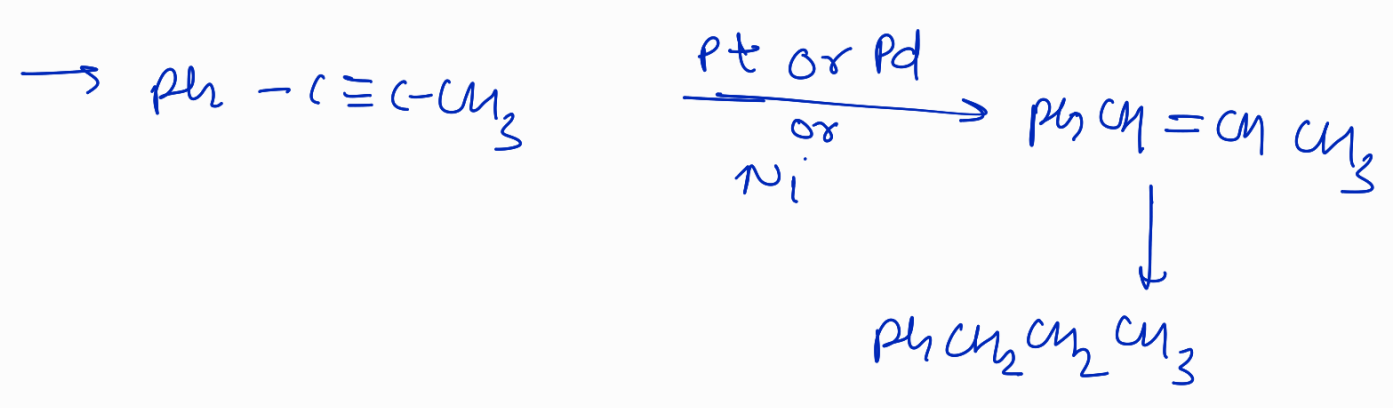
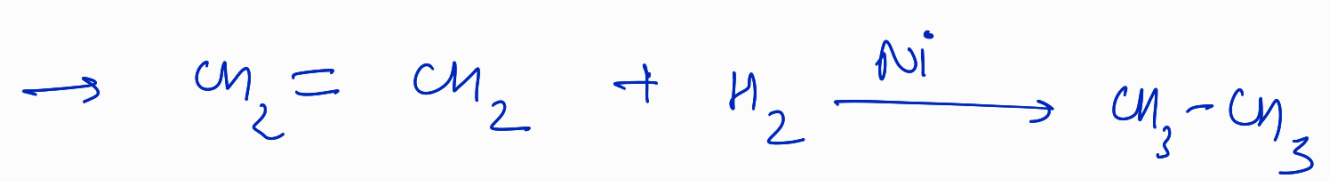


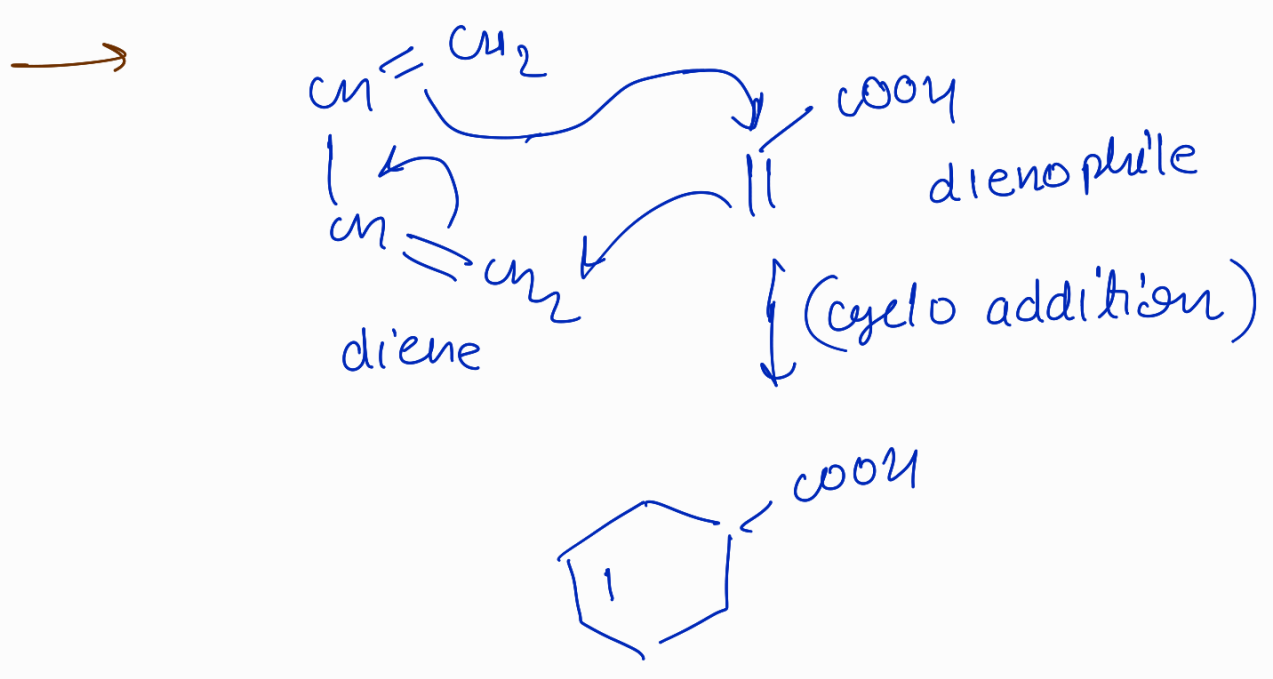
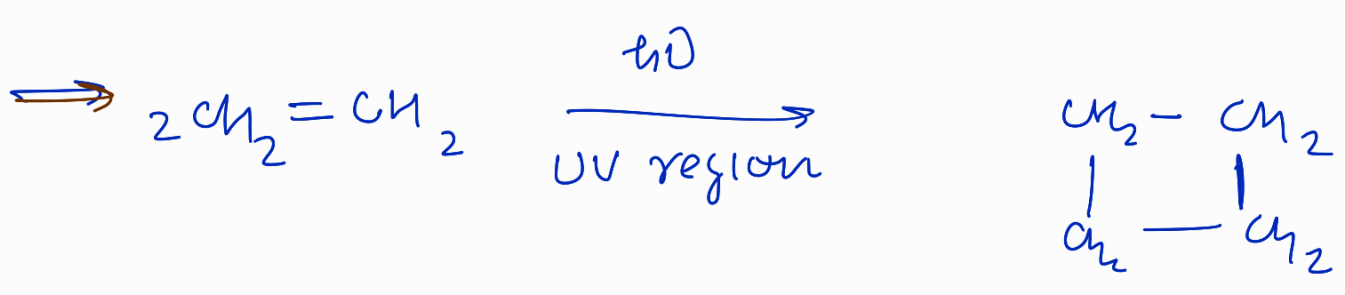
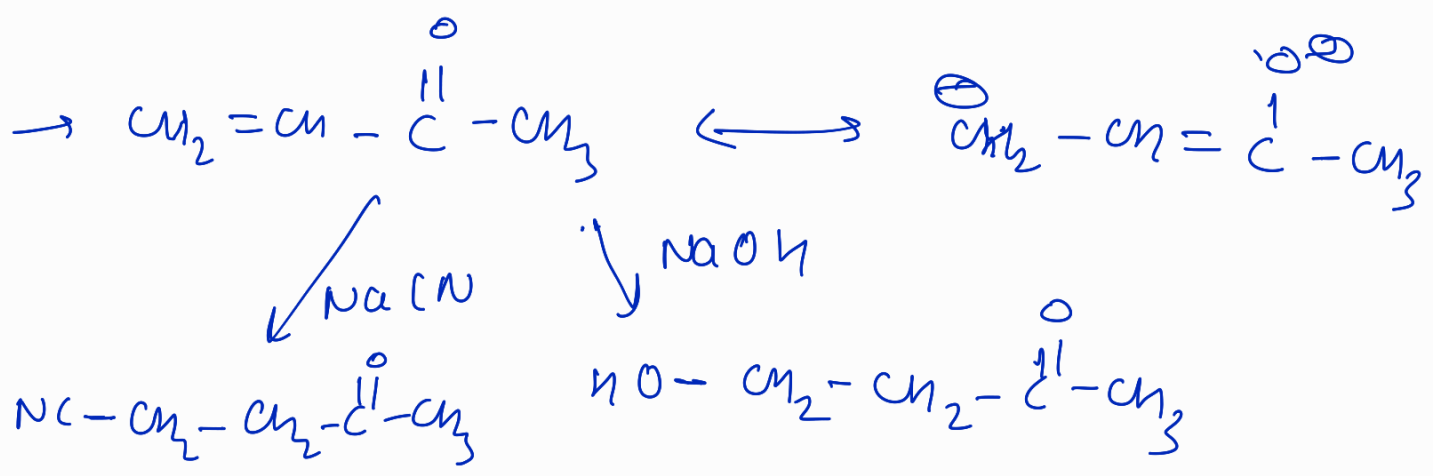
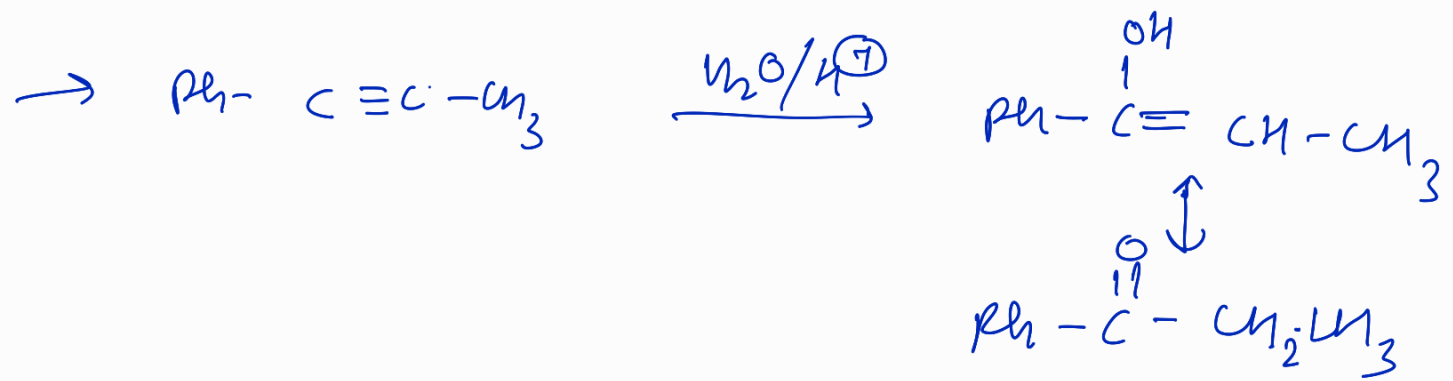


(2) Addition Reaction $\begin{cases} \text{electrophilic} \\ \text{nucleophilic} \\ \text{Neutral} \end{cases}$

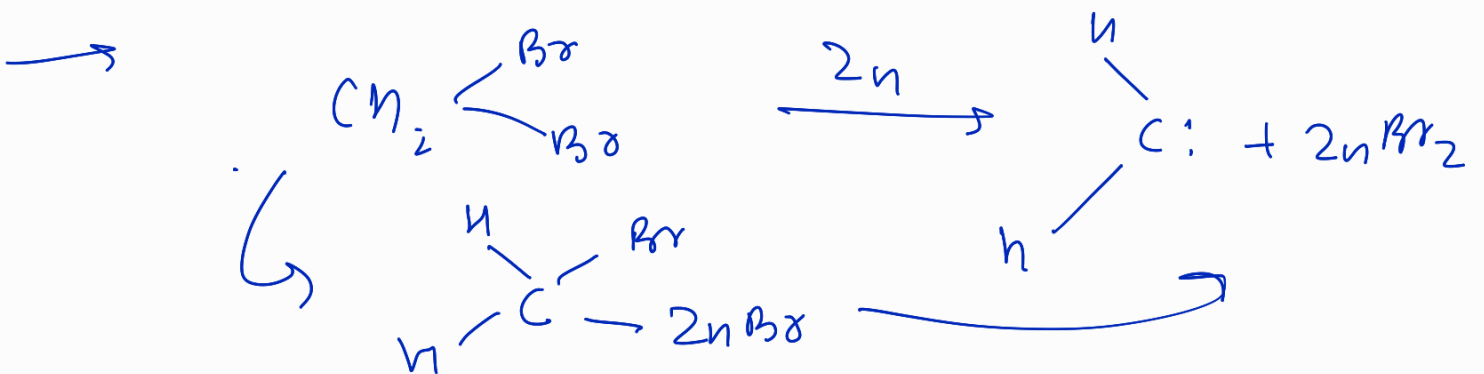
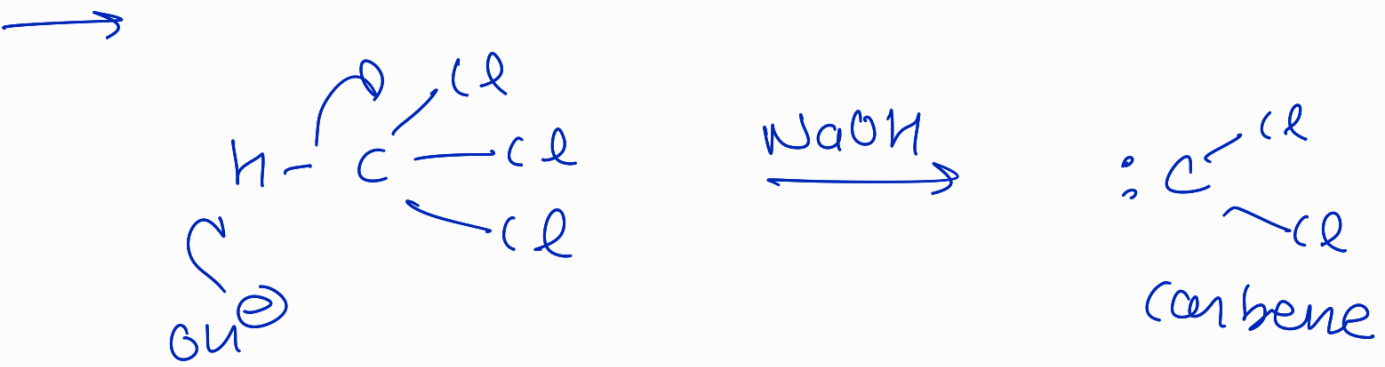
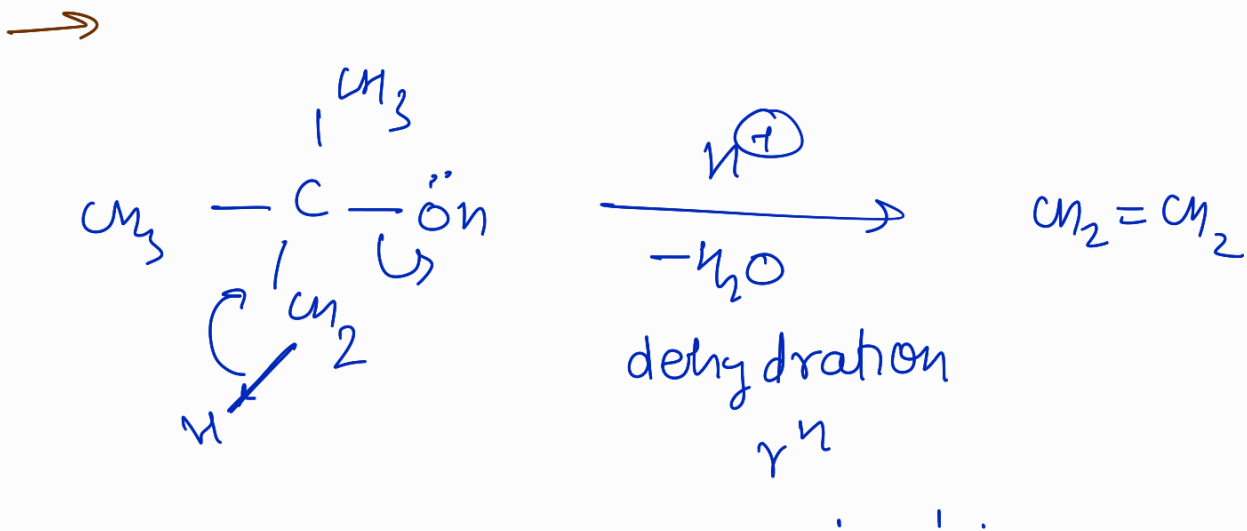
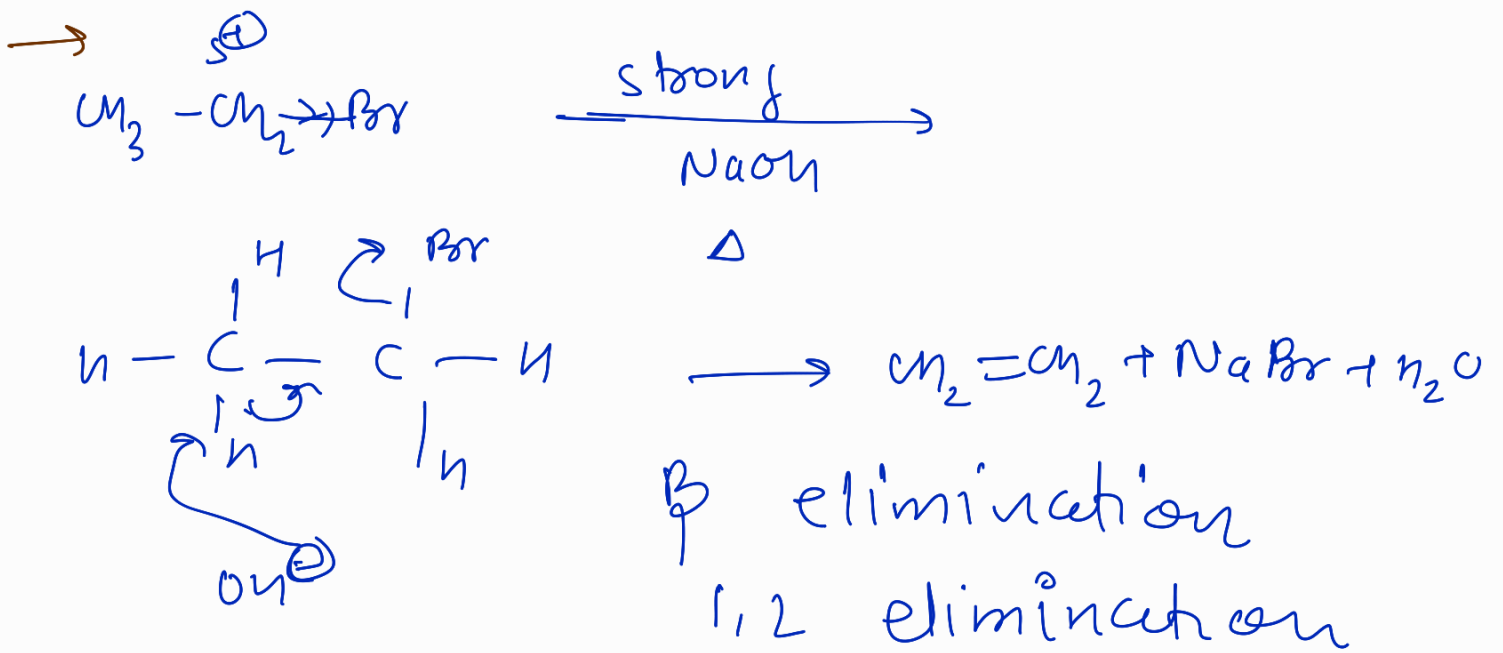
Aromatic generally go substitution,
Aliphatic go both type reaction

exa.

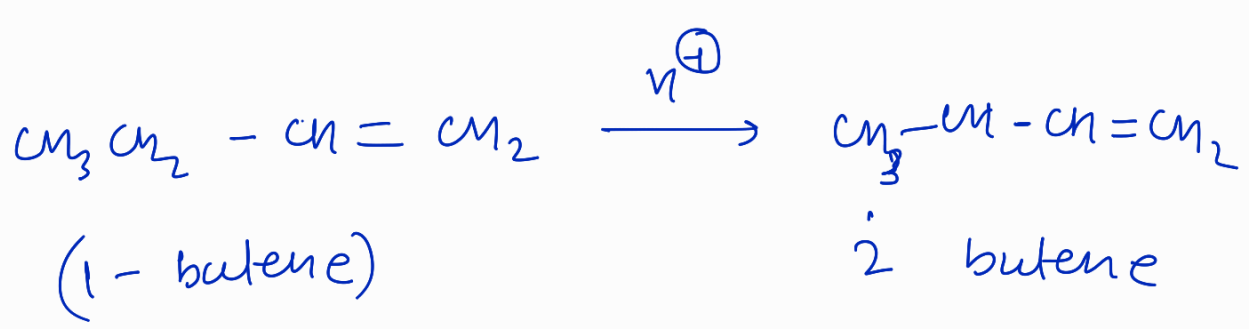
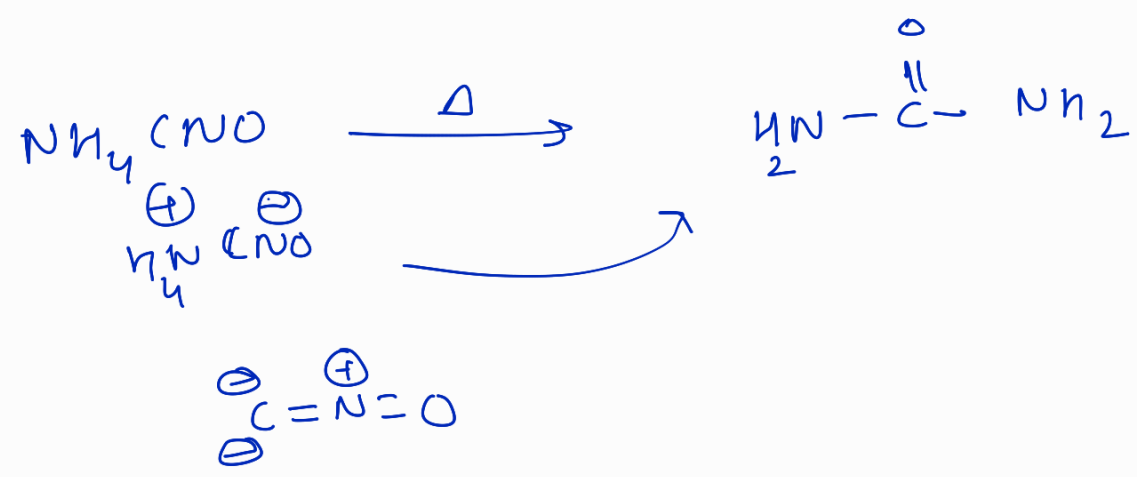




Elimination Reaction



④ Re-arrangement R^H



(Isomerization R^H)

