

Before Going to Slides Please Note

- This document is for a quick revision only (Only for B.Sc. 1st semester)
- Go through your book in case of any confusion/mistake
- Definitions are generally not discussed in this revision note
- Go through it only if you find it useful.
- Obviously syllabus is



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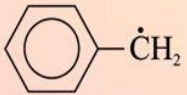
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Q. Define Electrophile and Nucleophile with their Various Examples.

Nucleophile vs Electrophile		
More Information Online WWW.DIFFERENCEBETWEEN.COM		
	Nucleophile	Electrophile
DEFINITION	Any negative ion or any neutral molecule that has at least one unshared electron pair.	Reagents of which their reactions seek the extra electrons that will give them a stable valence shell of electrons.
CHEMICAL NATURE	Can be a negative ion or any neutral molecule that has at least one unshared electron pair.	Completely or partially positive charged species
LEWIS CATEGORY	Lewis bases	Lewis acids
CHEMICAL REACTIONS	Initiate nucleophilic substitution and nucleophilic addition reactions	Initiate electrophilic substitution and electrophilic addition reactions

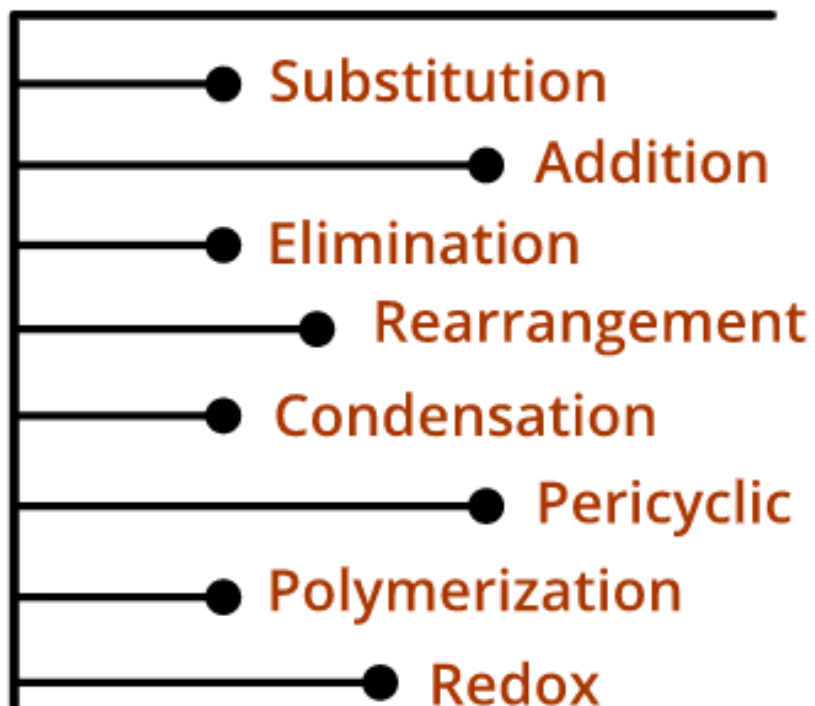
28.1 Types of Reactive Species in Organic Chemistry (SB p.83)

Nature	Electrophile		Nucleophile	
	Cation	Free radical	Anion	Molecule with lone pair of electrons
Example	Br^+ , Cl^+ , NO_2^+ , R^+ , RCO^+ , SO_3H^+	$\text{H}\cdot$, $\text{Br}\cdot$, $\text{Cl}\cdot$, $\text{I}\cdot$, $\text{R}\cdot$, $\text{HO}\cdot$, $\text{CH}_2=\text{CHCH}_2\cdot$, 	Cl^- , Br^- , I^- , RO^- , CN^- , OH^- , RCOO^-	H_2O , ROH , ROR , NH_3 , RNH_2 , R_2NH , R_3N



Q. What are different types of organic reactions ?

Types of Organic Reactions



Mechanism Mini-Matrix	Nucleophilic :NH_3 OH^- CN^- NaBH_4 H^-	Electrophilic H^+ Br^+ NO_2^+ H_3C^+ $\text{C}^+=\text{O}$	Radical $\text{H}_3\text{C}\cdot$ $\text{Cl}\cdot$
Substitution $\text{R-X} + \text{Y} \rightarrow \text{R-Y} + \text{X}$	alkyl halides + cyanide ion or hydroxide ion $\text{R-Br} + \text{CN}^- \rightarrow \text{R-CN} + \text{Br}^-$	benzene electrophilic substitution 	halogenation of methane UV light $\text{CH}_4 + \text{Cl}_2 \rightarrow \text{CH}_3\text{Cl} + \text{HCl}$
Addition 	reduction of aldehydes & ketones 	alkene + HBr 	addition polymerisation (most types)
Elimination 	alkyl halides + hydroxide base catalysed elimination 	alcohol + H^+ acid catalysed elimination 	thermal cracking of alkanes

Q. Write a note on Carbenes ?



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Many More To Come ...