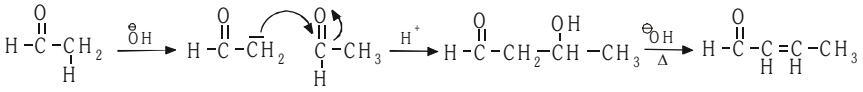
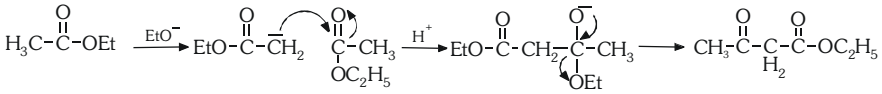
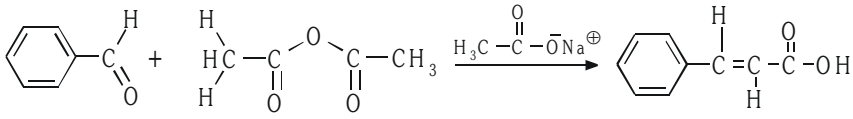
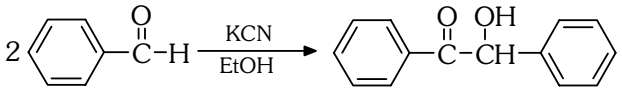
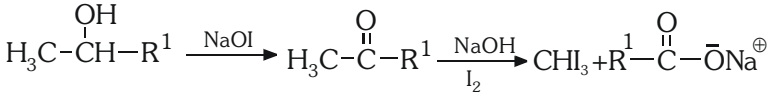
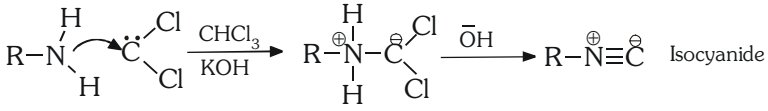
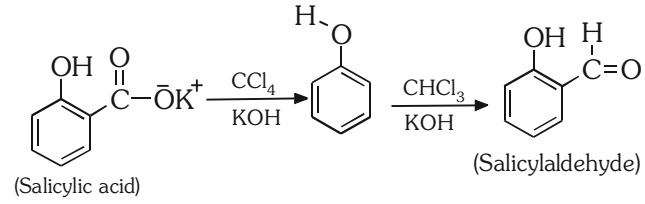
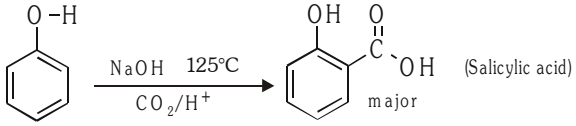
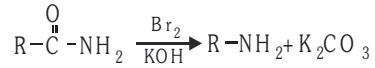
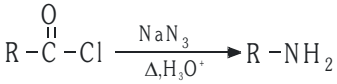
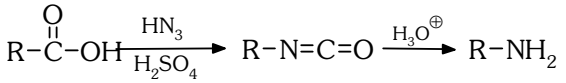
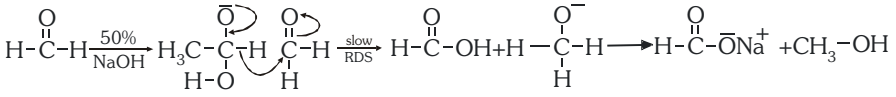
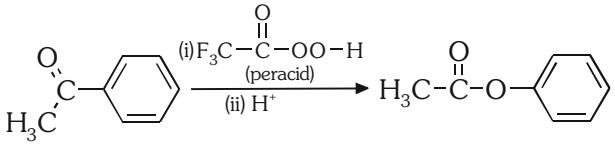
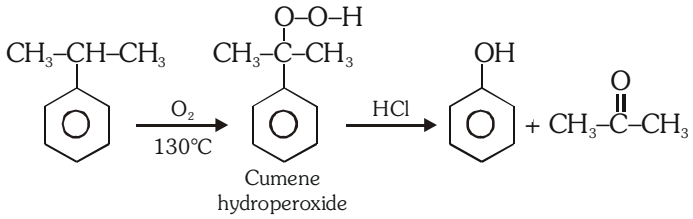
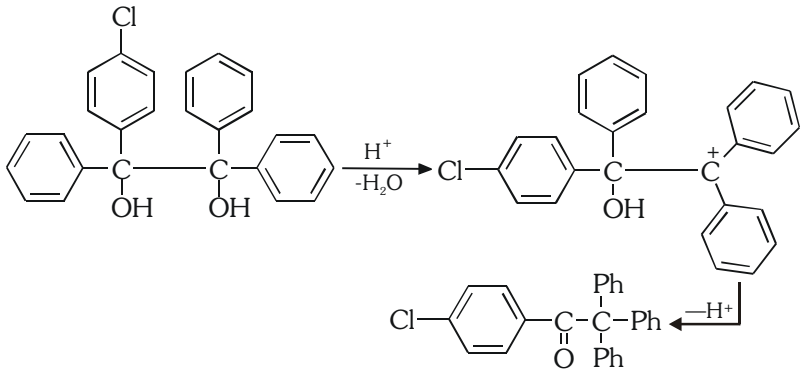
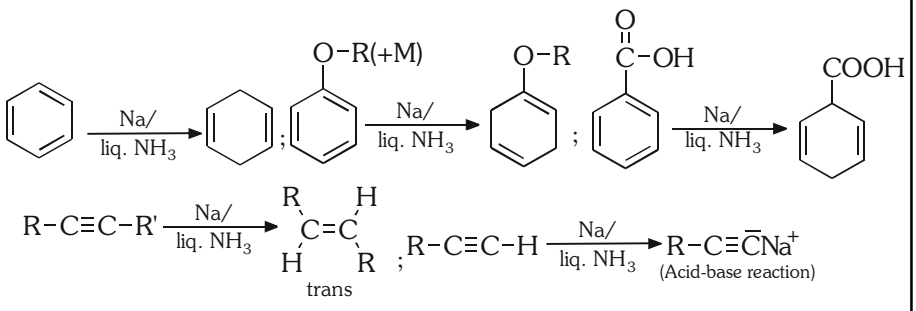
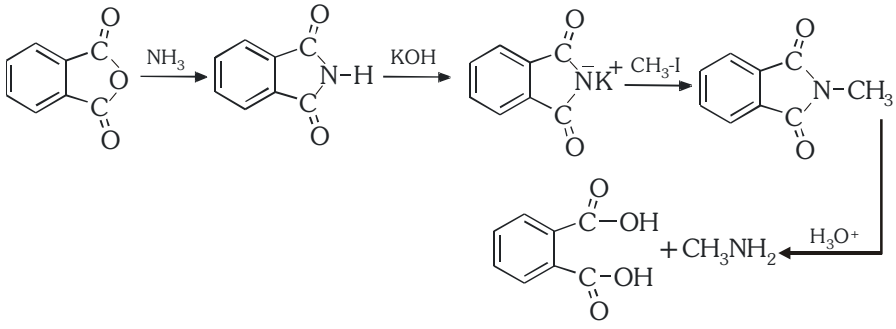
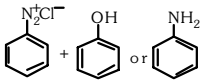
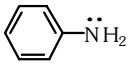
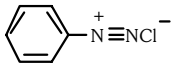
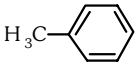
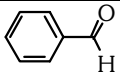
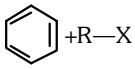
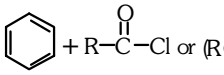
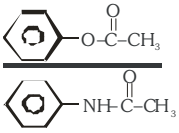
CHAPTER 13

Nutshell review & preview of
ORGANIC NAME REACTIONS

• ***Aldol Condensation***	
• ***Claisen Condensation***	
• ***Perkin Condensation***	
• ***Benzoin Condensation***	
• ***Haloform Reaction***	
• ***Carbylamine Test***	
• ***Reimer Tiemman Reaction***	
• ***Kolbe's Schimdt Reaction***	
• ***Hoffmann Bromamide Degradation***	
• ***Curtius Reaction***	
• ***Schimdt Reaction***	
• ***Cannizzaro reaction***	

• ***Bayer villiger oxidation***	
• ***Cumene***	
• ***Pinacol-Pincolone rearrangement***	
• ***Birch Reduction***	
• ***Gabriel Synthesis***	

NAME REACTIONS

Name	Reactant	Reagent	Product
Clemmensen Reduction	Aldehyde & Ketone	Zn-Hg/conc. HCl	Alkane
Coupling Reaction		NaOH (phenol) HCl (Aniline)	Azo Dye (Detection of OH or NH_2 gr)
Diazotization		$NaNO_2$ + HCl 0° – 5°C	
Etard reaction		CrO_2Cl_2/CS_2	 (Benzaldehyde)
Fittig Reaction	Halo benzene	Na/Dry ether	Diphenyl
Friedel Craft alkylation		Anhydrous $AlCl_3$	Alkyl Benzene
Friedel Craft acylation		Anhydrous $AlCl_3$	Acyl Benzene
Gattermann aldehyde synthesis	C_6H_6	HCN+ HCl /$ZnCl_2$/H_3O^+	Benzaldehyde
Gattermann-Koch reaction	C_6H_6 (CO + HCl)	anhy $AlCl_3$	Benzaldehyde
Hell-Volhard-Zelinsky reaction	carboxylic acid having α-hydrogen atom	Br_2/ red P	α– halogenated carboxylic acid
Hoffmann mustard oil reaction	primary aliphatic amine + CS_2	$HgCl_2/\Delta$	CH_3CH_2—N=C=S +HgS (black)
Hunsdiecker reaction	Ag salt of carboxylic acid	Br_2/CCl_4, 80°C	alkyl or aryl bromide
Kolbe electrolytic reaction	alkali metal salt of carboxylic acid	electrolysis	alkane, alkene and alkyne
Mendius reaction	alkyl or aryl cyanide	Na/C_2H_5OH	primary amine
Rosenmund reduction	acid chloride	H_2, $Pd/BaSO_4$ boiling xylene	aldehyde
Sabatier-Senderens reaction	Unsaturated hydrocarbon	Raney Ni/H_2, 200—300°C	Alkane
Sandmeyer reaction	$C_6H_5\overset{+}{N}_2\,Cl^-$	CuCl/HCl or CuBr/HBr or CuCN/KCN, heat	Halo or cyanobenzene
Gattermann Reaction	$C_6H_5N_2^+Cl^-$	Cu/HX(HBr/HCl)	Halobenzene
Schotten-Baumann reaction	(phenol or aniline or alcohol)	NaOH + C_6H_5COCl	benzolytated product 
Stephen reaction	alkyl cyanide	(i) $SnCl_2$/HCl (ii) H_2O	Aldehyde
Williamson synthesis	alkyl halide	sodium alkoxide or sodium phenoxide	Ether
Wurtz-Fittig reaction	alkyl halide + aryl halide	Na/dry ether	alkyl benzene