

Carbanion

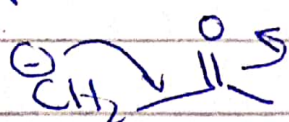
Aldol type reaction of active methylene done???

for generation of carbanion. there must be

1 acidic H present

2 any group that stabilize carbanion.

e.g

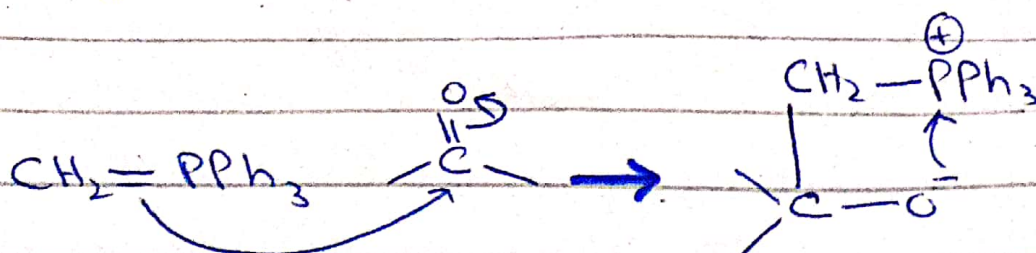
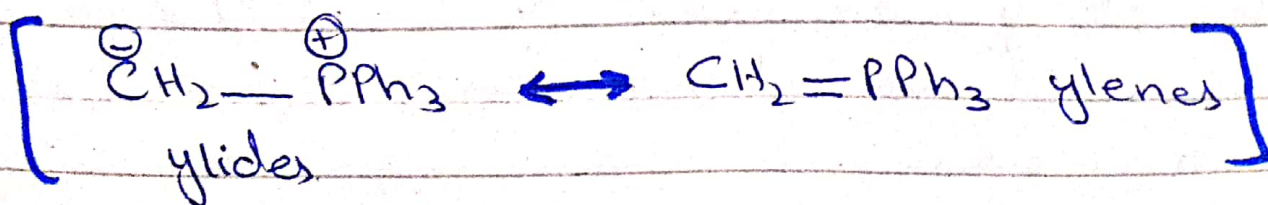
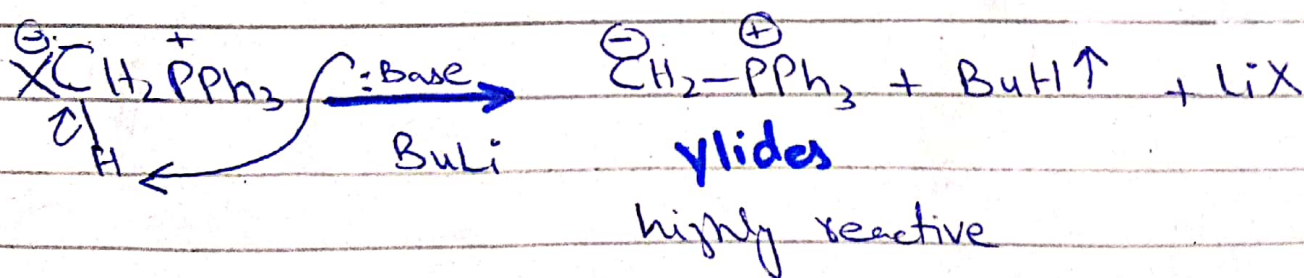
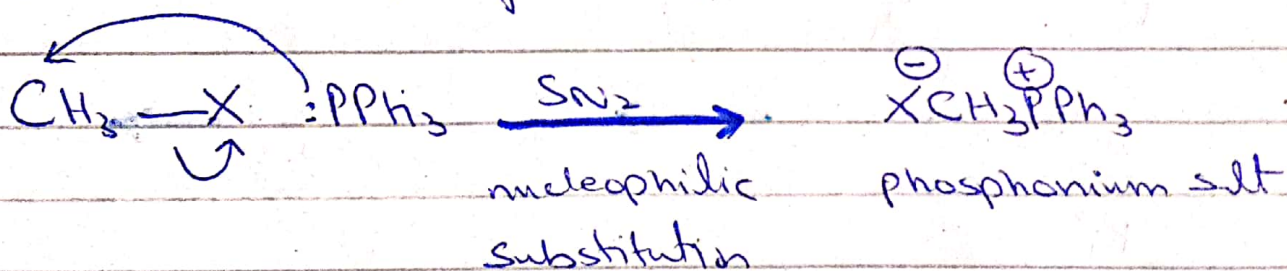


carbonyl are good charge accommodator.

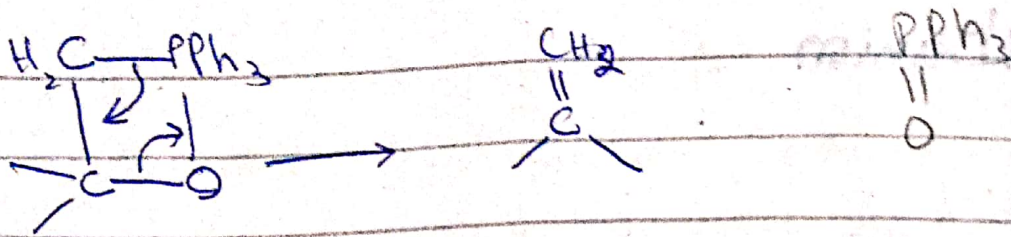
P and S ylides

3rd row in periodic table

empty 3d orbital that accommodate charge better
triphenyl phosphine

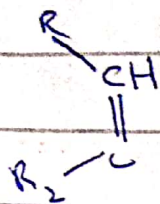


Belain

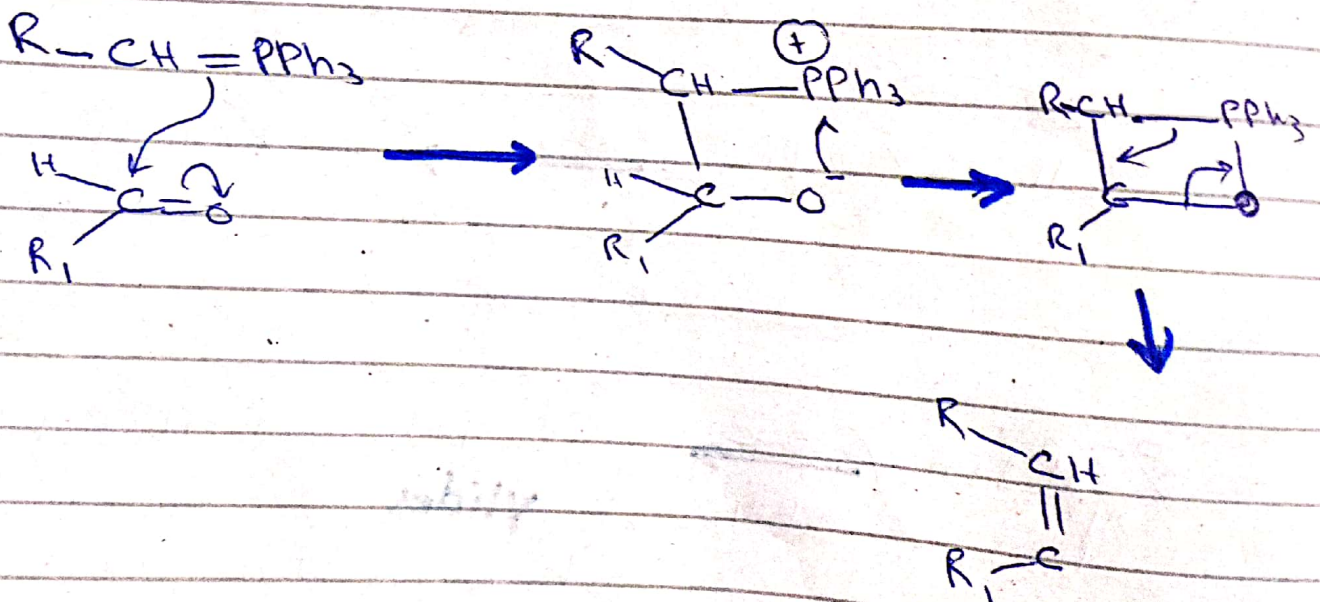
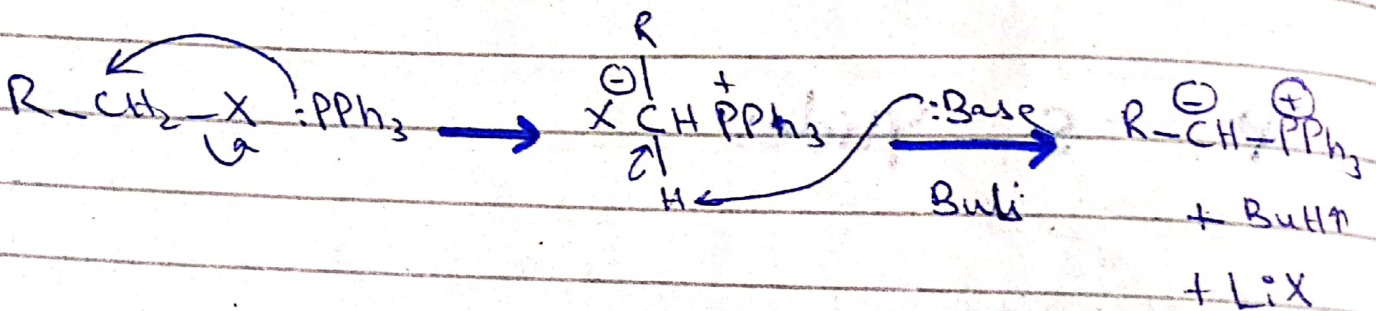


oxaphosphetane

if substituted ylides $\text{R}-\text{CH}_2-\text{X} : \text{PPh}_3$
then



Z-alkenes naturally form
kinetically controlled.

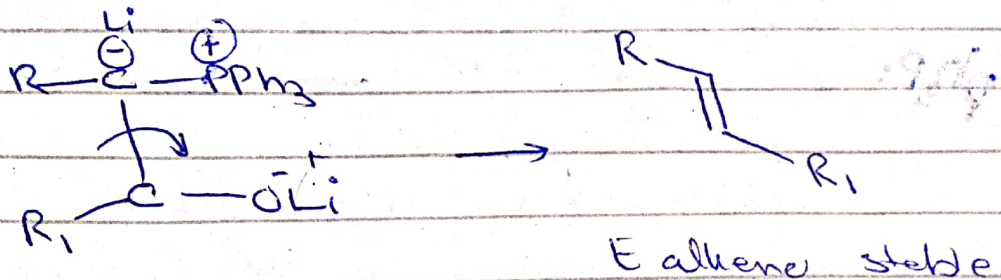


Z alkene

Preferred geometry is Z
alkene but in certain conditions
E alkene form.

Phosphonium salt easily form by 1° then 2° less & 3° least. alkyl halide.

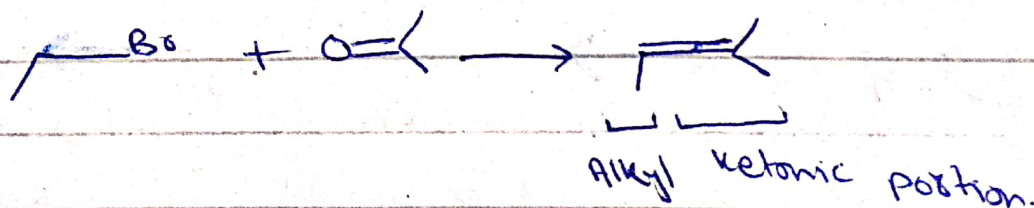
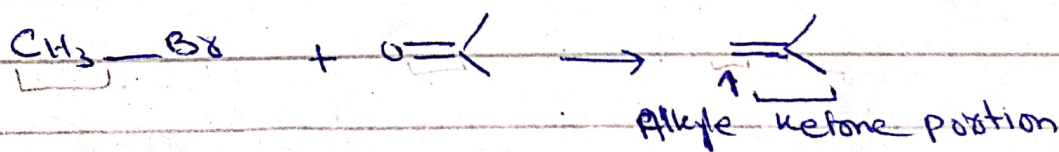
⇒ if excess base given then



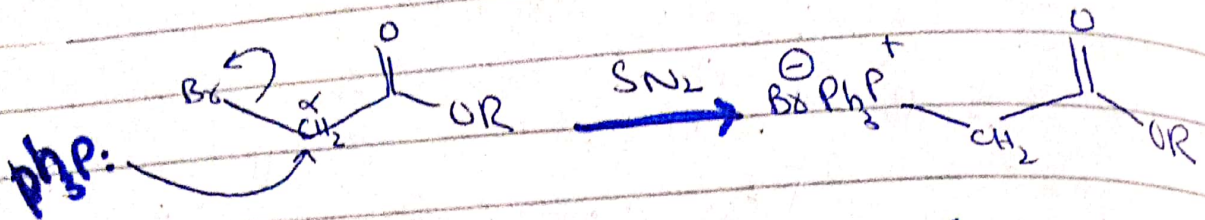
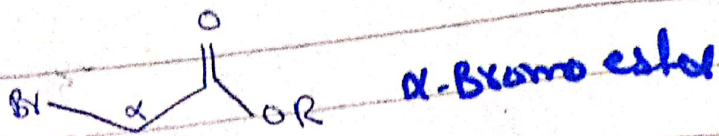
if excess base given then base abstract one more H from alkyl halide $\text{R}-\overset{\ominus}{\text{C}}-\overset{\oplus}{\text{P}}-\text{RPh}_3$ $\xrightarrow{\text{B}}$ firstly first

H abstract then due to excess base 2nd hydrogen also abstract & $\text{R}-\overset{\ominus}{\text{C}}-\text{PPh}_3$ Li attach.

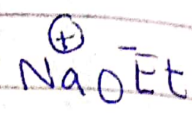
Andly due to excess base Li^+ attach with oxygen O^- Now instead of oxygen form bond with P C-C undergoes single bond scission & move towards stability so E alkene form.



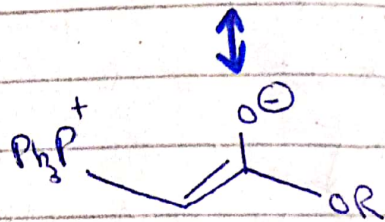
Scholesser modification



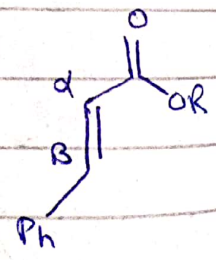
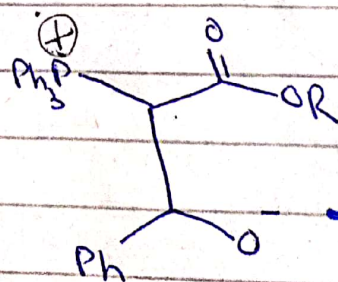
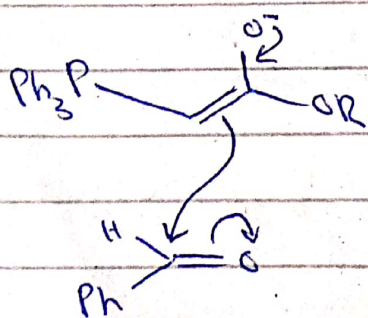
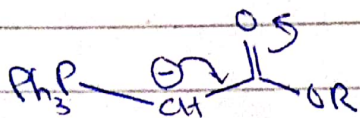
in this two charge accumulator in both sides present so we can use weak base



$\text{RCH}^-\text{P}^+\text{Ph}_3$
 less stable ylid
 more reactive



stable ylid
less reactive



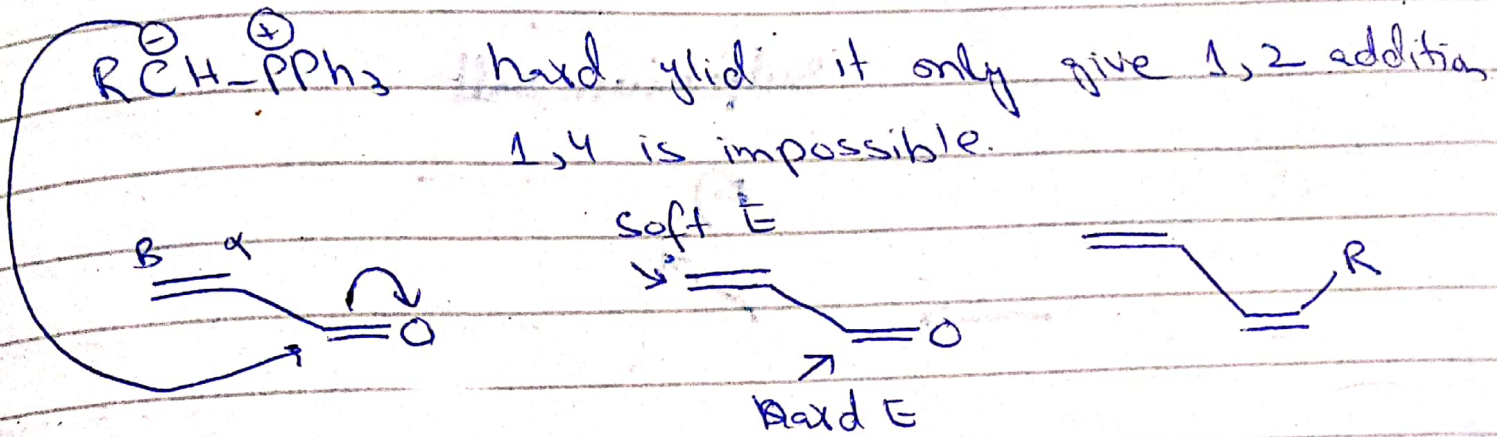
α -B unsaturated carbonyl

E-alkene
Thermodynamically controlled

wittig is parallel to aldol condensation.

wittig (alkene formation) parallel to elimination to form alkene.

But in elimination many side products form but in wittig no side product form with alkene.



wittig is good method of formation of polyene.

