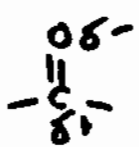


Physical properties

الخواص الفيزيائية



- polar
- No hydrogen bond

(92)

B.P. $(COOH) > (OH) > \overset{O}{||}C > \overset{O}{||}C-H > \text{ether} \approx \text{hydrocarbons}$
 $\uparrow \#C, \uparrow BP$

Solubility

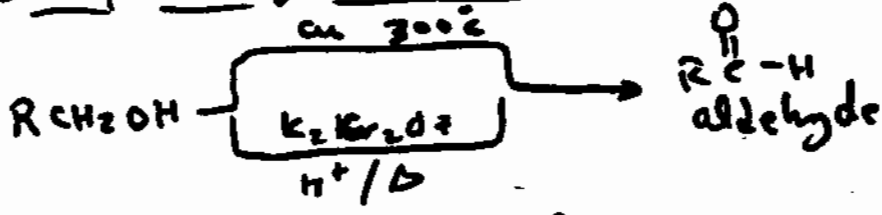
- in H₂O
- $\#C \uparrow$ soln. \downarrow

Synthesis

طرق التخليق

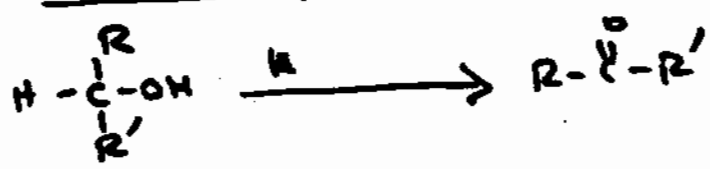
أكسدة الكحولات الأولية

① Oxidation of 1° alcohols



② Oxidation of 2° alcohols

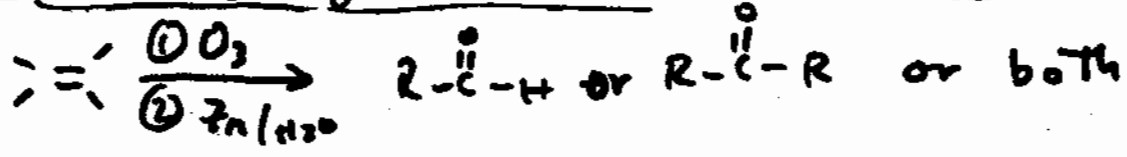
أكسدة الكحولات الثانوية



- KMnO₄/OH⁻
- K₂Cr₂O₇/H₂SO₄
- H₂CrO₄
- pyridine-CrO₂

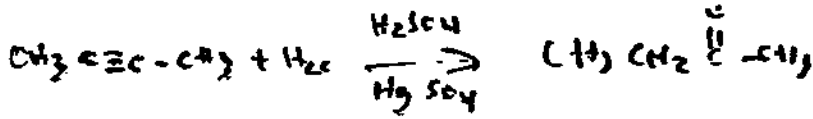
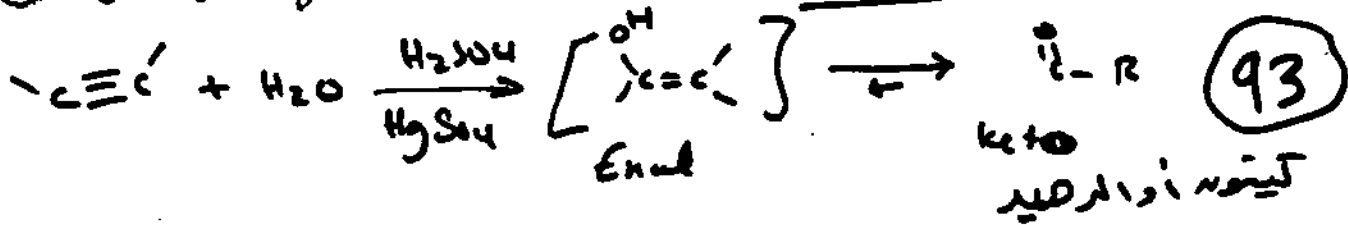
③ Ozonolysis of double bond

أكسدة الأرباب الثنائية



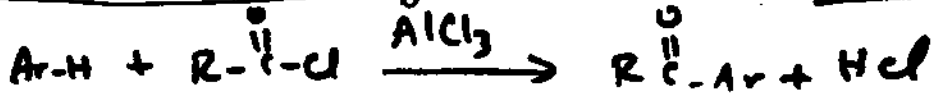
④ Hydrolysis of triple bond

اصلاحه و ازاله پیوند

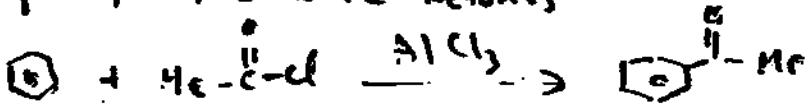


⑤ Friedle-Crafts acylation

اسیله فریدل کرافتس



- Good for Aromatic ketones

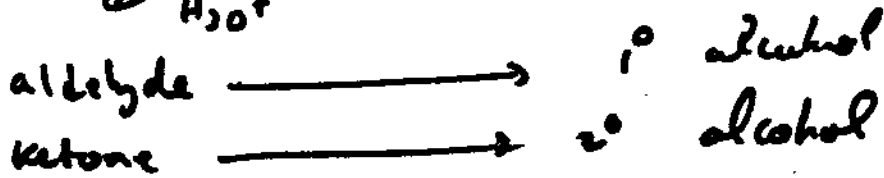
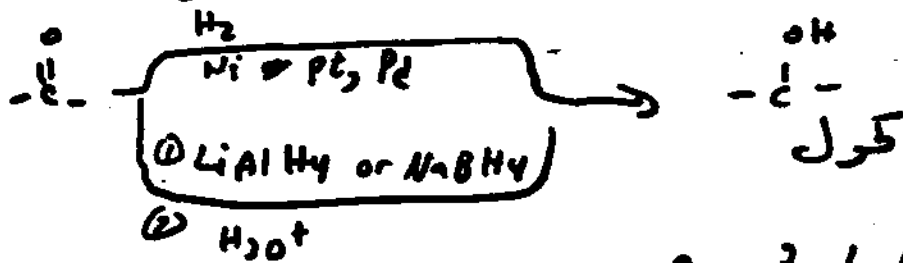


Reaction of Ketones & Aldehydes

تفاعلات کیتونا و آلدهیدها

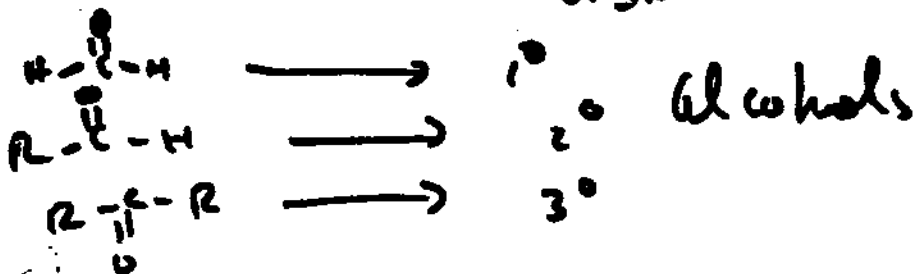
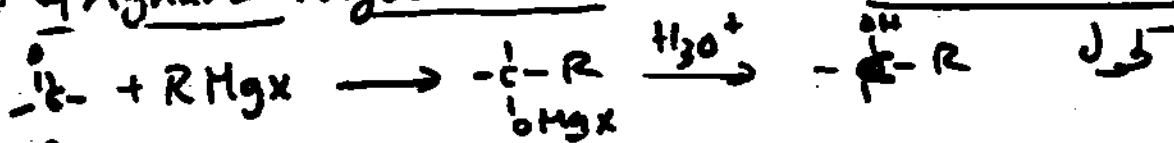
① Carbonyl Reduction

اقتزال گروه کربونیل

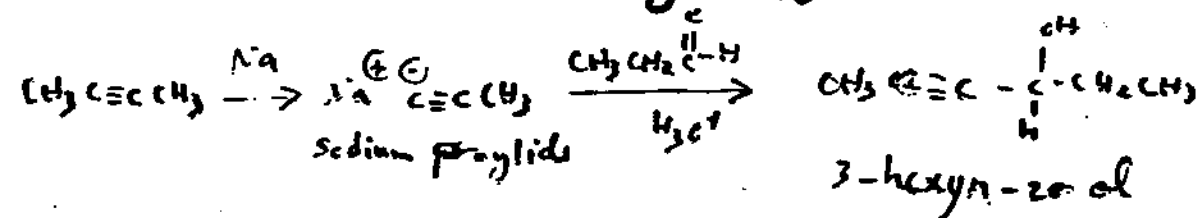
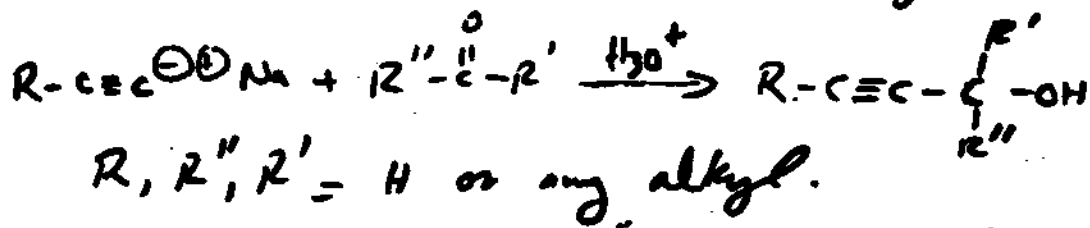
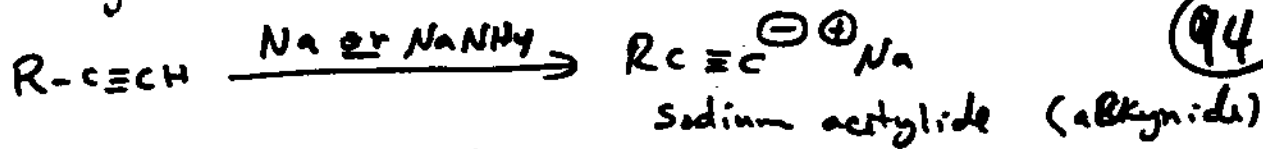


② Grignard reagent addition

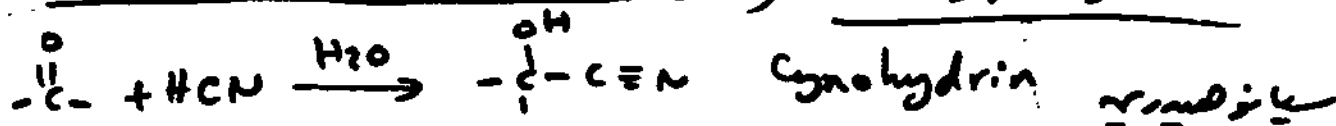
اضافه ترکیبات گرینارد



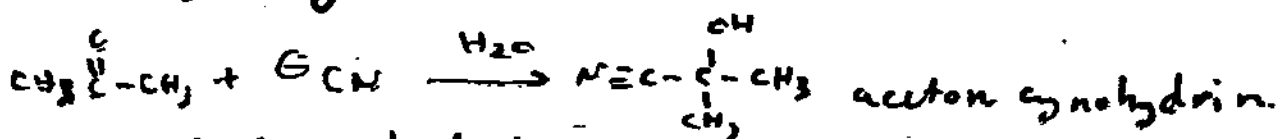
3) Acetylide (Alkynide) addition (الاقليدات) 94



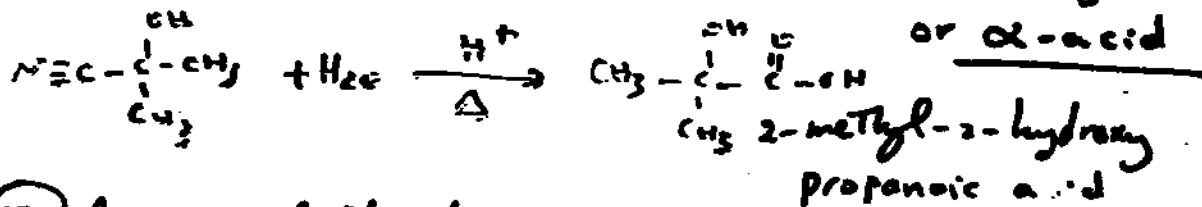
4) Hydrogen Cyanide addition (HCN) (السيانيد) 95



- Use salts of HCN $CN^{\ominus} + H_2O$



- Cyanohydrin hydrolysis in $H_2O \rightarrow$ Carboxylic acid or α -acid



5) Ammonia & its derivative addition (الامينات) 96



G	Name	Product
-H	Ammonia	Imine
-R	amine	Imine
-OH	Hydroxyamine	oxime
-NH ₂	Hydrazine	hydrazone
-NHAr	phenyl hydrazine	phenyl hydrazone
-NH ⁺ ₂ NH ₂	Semicarbazide	semicarbazone