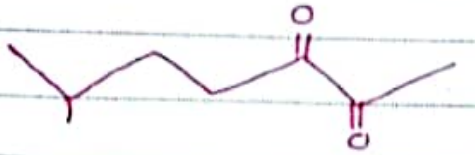
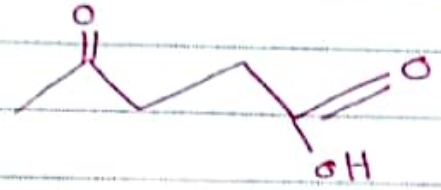
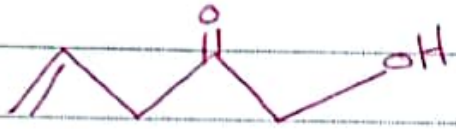
3-methyl-2-pentanone



6-methyl-2,3-heptadione



4-oxo-pentanoic acid

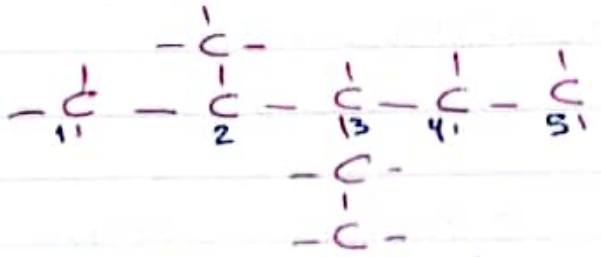


1-hydroxy-4-penten-2-one

*Types of bonds (أنواع الروابط) :-

1- Covalent تساهمية
2- Ionic أيونية
3- Hydrogen هيدروجينية
4- Coordinated تناسقية → تحصل مع العناصر الانتقالية

الأقصى

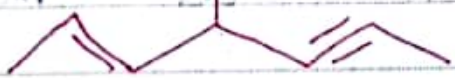


3-ethyl-2-methyl pentane

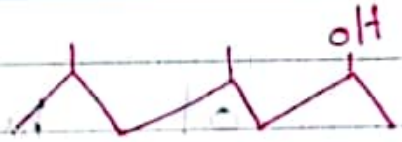
$CH_3CH=CH_2-C\equiv C-CH_3$

2-hexen-4-yne

4-methyl-3-penten-1-yne



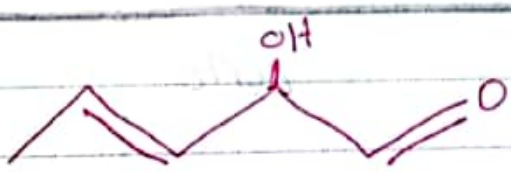
4-methyl-2-hepten-5-yne



4,6-dimethyl-2-heptanol

2-methyl-2-butenol

2-butenal



2-hydroxy-3-pentenal

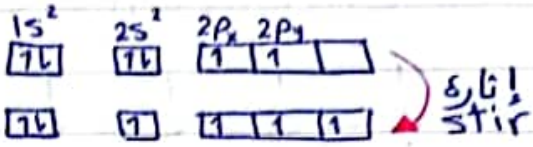
تسمية المركبات العضوية

Family	group	structure	suffix	prefix
carboxylicacids	$-COOH$	$-\overset{O}{\overset{\|\|}{C}}-OH$	-carboxylicacid -oic acid	carboxy
Esters	$-COOR$	$-\overset{O}{\overset{\|\|}{C}}-OR_1$	carboxylate	Alkoxy
Amides	$-CONH_2$	$-\overset{O}{\overset{\|\|}{C}}-NH_2$	amide	amido
Nitrile	$-CN$	$-C\equiv N$	nitrile	cyano
Aldehydes	$-CHo$	$-\overset{O}{\overset{\|\|}{C}}-H$	al	methanyol
ketones	$-COR$	$-\overset{O}{\overset{\|\|}{C}}-R$	one	oXo
Alcohols	$-OH$	$-OH$	ol	hydroxy
Amines	$-NH_2$	$-NH_2$	amine	amino
Alkene	$C=C$		ene	
Alkyne	$C\equiv C$		yne	
Alkane	$C-C$		ane	

11 C → unidec ، 12 C → dodec ، 13 C → Tridec.

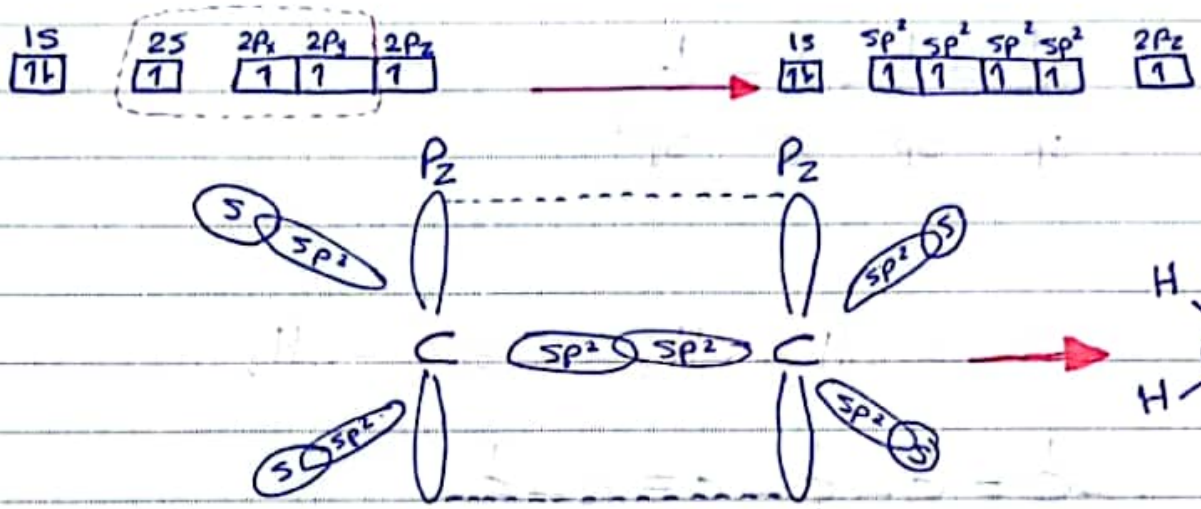
Hybridisation (التهجين) :-

C_6 : $1s^2\ 2s^2\ 2p^2$

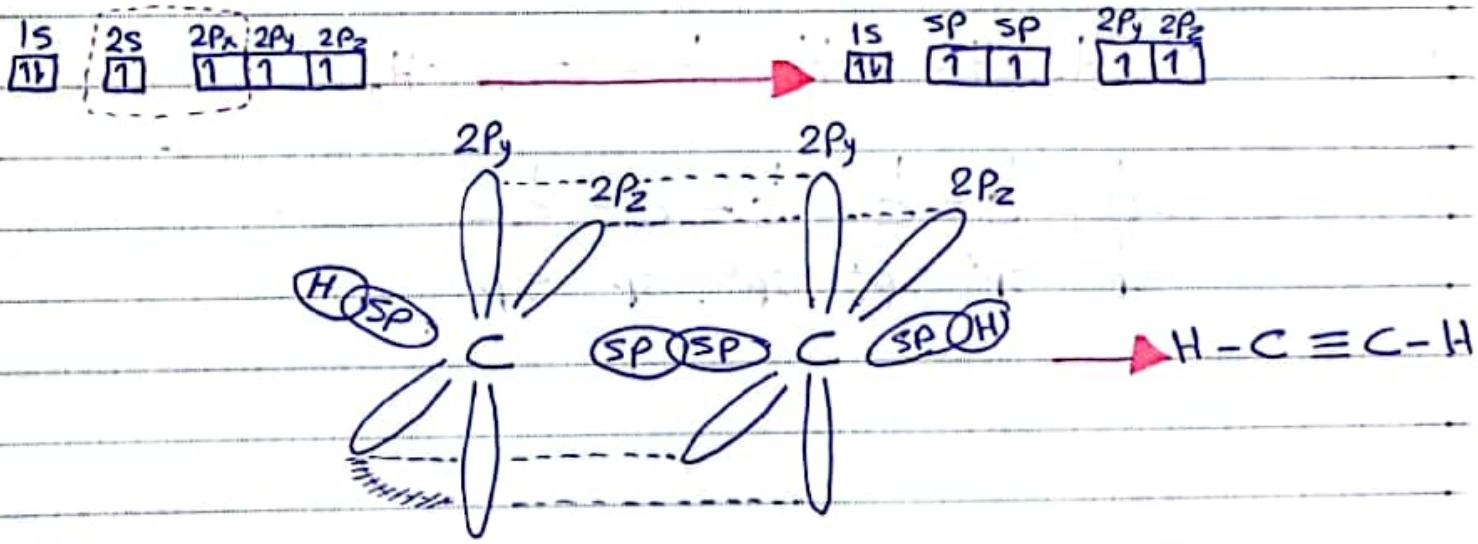


تذكران ← sp^3 : C-C ، sp^2 : C=C ، sp : C≡C

- تهجين sp^2 :-



- تهجين sp :-



الأفضل

أمثلة :-

① $CH_3CH_2CH=CH-CH_3$

$-\overset{sp^3}{C}-\overset{sp^3}{C}-\overset{sp^2}{C}=\overset{sp^2}{C}-\overset{sp^3}{C}-$

② $CH_2=CH-CH=CH_2$

$-\overset{sp^2}{C}=\overset{sp^2}{C}-\overset{sp^2}{C}=\overset{sp^2}{C}-$

③ $CH_2=CH-CH_2-C\equiv C-CH_3$

$-\overset{sp^2}{C}=\overset{sp^2}{C}-\overset{sp^3}{C}-\overset{sp}{C}\equiv\overset{sp}{C}-\overset{sp^3}{C}-$

④ $CH_3CH=CH-C=C=CH_2$

$-\overset{sp^3}{C}-\overset{sp^2}{C}=\overset{sp^2}{C}-\overset{sp^2}{C}=\overset{sp}{C}=\overset{sp^2}{C}-$

Page: Date: / /

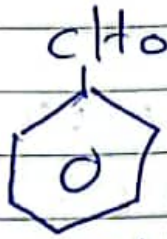
Aromatic compounds


benzene

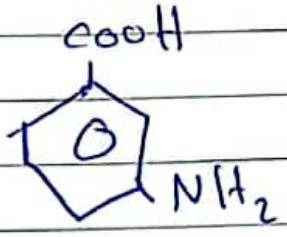

Tolune

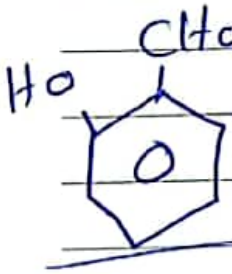

phenol


aniline


benzaldehyde


benzoic acid


3_amino benzoic acid


2_hydroxy benzaldehyde

Acids and bases
الأحماض والقواعد

Acids $\rightarrow H^+$

bases $\rightarrow OH^-$

proton donner بروتون تعطي (الأحماض)

$HA + H_2O \rightarrow H_3O^+ + A^-$ → conjugated base

proton acceptor تستقبل بروتون (القواعد)

$B + H_2O \rightarrow BH^+ + OH^-$

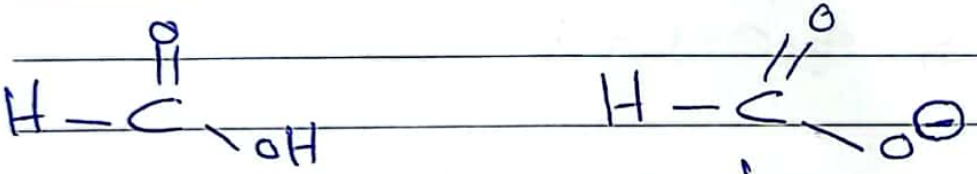
↳ conjugated acid

Lewis العالم

Acids: Electron acceptor
Base : // donner

$AlCl_3$ → lewis acid
RNH_2 → lewis base

$$HCOOH + CH_3OH \longrightarrow HCOOCH_3 + H_2O$$



أكثر استقرارًا
(رنين)
عشان فيه حركة للإلكترونات

withdrowing groups → e^- ساحبة

donating groups → e^- باعثة

بتزود الكثافة الإلكترونية فبتضعف الحمضية

→ Cl, F, Br, I, NO_2, SO_3H

CH_3COOH → أقل حامضية

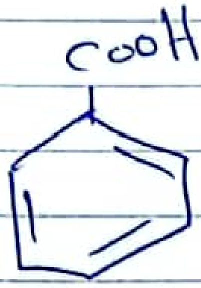
$Cl-CH_2COOH$ → ثم ده

$Cl_2CHCOOH$ → أقوى حامضية وأكثر ثباتًا

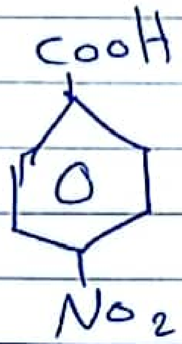
withdrawing gps → Cl, F, Br, I, SO_3H, NO_2
C≡N, CO

donating gps → NH_2, NHR, OH, OCH_3, alkyl

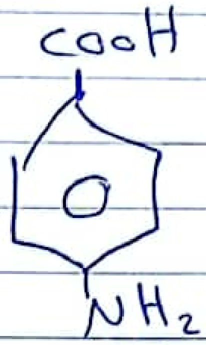
* Electron withdrawing gps increase acidity.
* Electron donating " decrease ".



①



②



③

3 < 1 < 2

من حيث الحامضية
← المركبة الحاوية فينول وقواعد