

Subject :

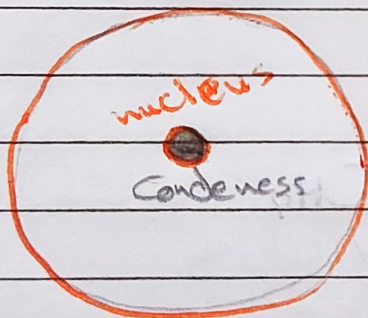
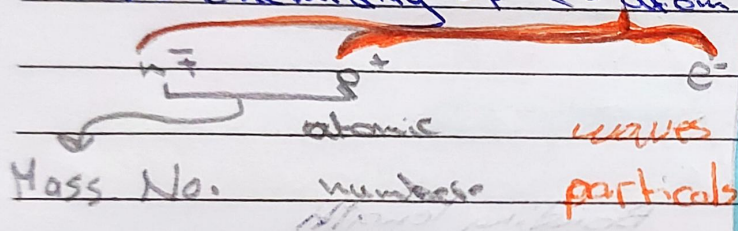
1st Lecture

Organic chemistry
life molecules
cells living

Urea the firsts organic
Compound to produce in
laboratory

CO₂ = organic-nonorganic

* The chemistry of C-atom



ELECTRONIC CONFIGURATION

Energy ↓
n l ms ml

spin orientation

⁶C 1s² / 2s² 2p²
core valence



molecule ← Bonding

(d) orbital isn't important.

2s² 2p⁶ filled = 8e
Octet Rule

C bonding
loss 4e gain 4e
impossible

So, it is sharing
metal → loss nonmetal → Gain

Bonding

metal-nonmetal Covalent Molecules
ionic Sharing
Bonding

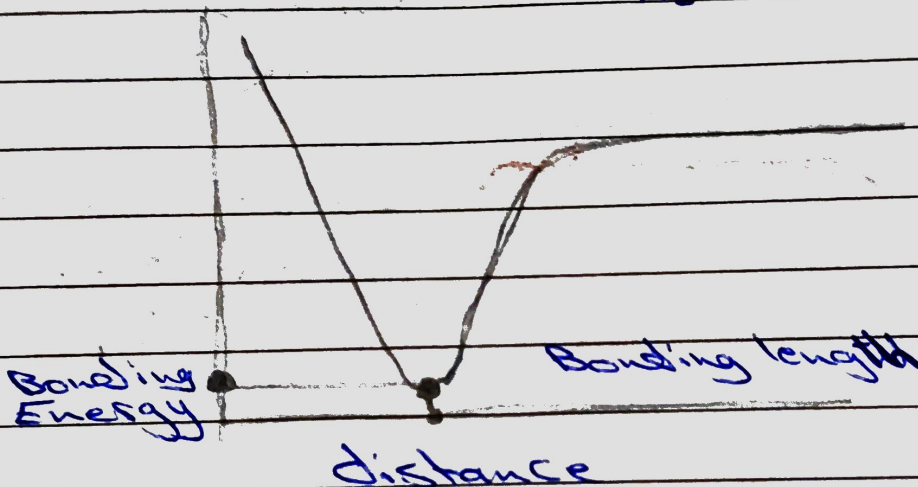
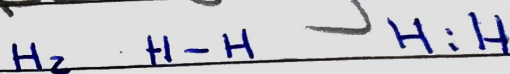
Na₂O
H₂O

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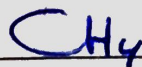
It's important to memorize the Halogens.

The electronic configuration of the first, second and third periods are included.

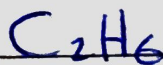
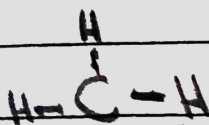
Covalent Bonding



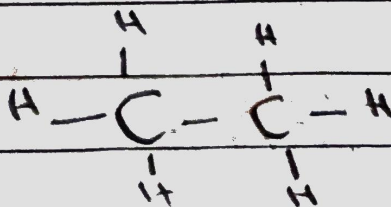
Lewis structure



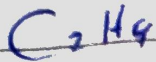
$$4 + 4 = 8$$



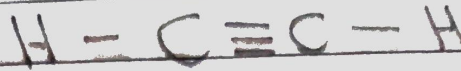
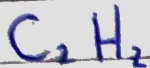
$$8 + 6 = 14$$



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$8 + 4 = 12$



The Carbon makes 4 bonds

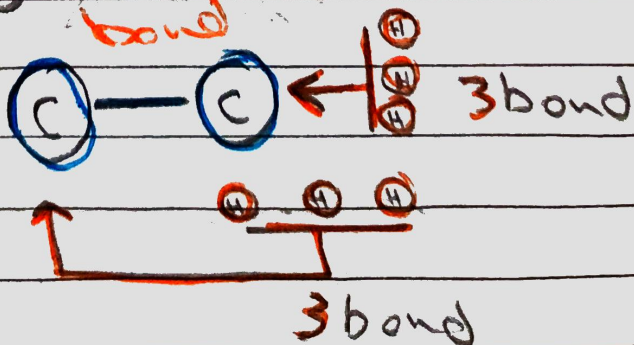
The Golden Rule ♡

Valency \Rightarrow No. of bonds (most common) that an atom makes when it is neutral

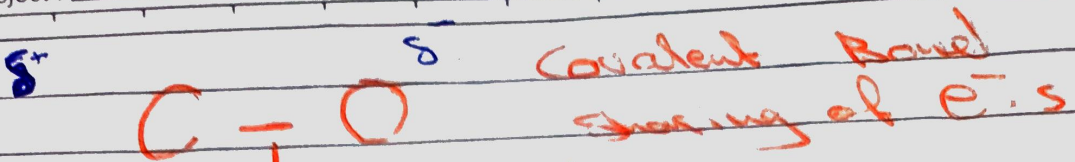
	C	N	O	F	Ne
valence	4	5	6	7	8
valency	4	3	2	1	0

C_2H_6 the fourth bond

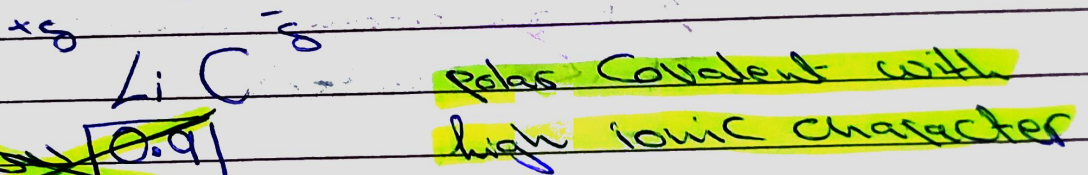
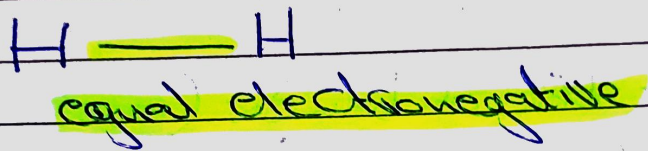
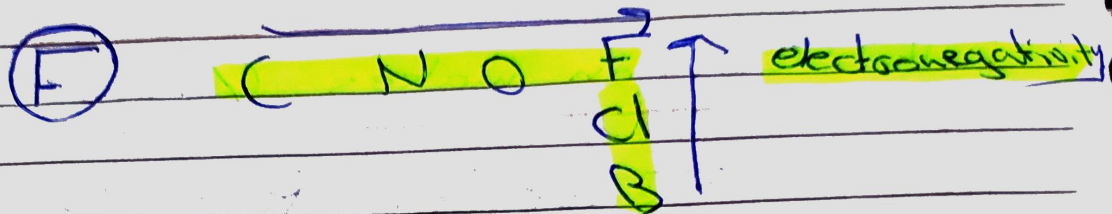
Valency 4



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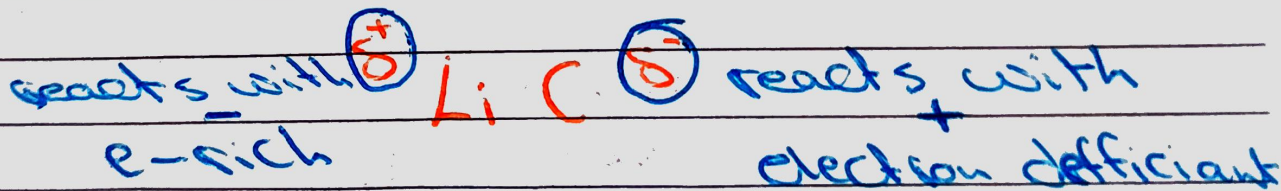


↓ polar covalent bond
 difference in electronegativity



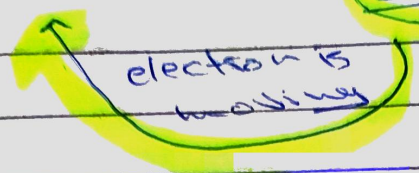
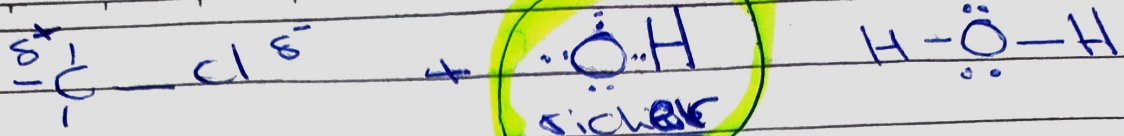
~~1.5 → [0.9]
 Covalent bond~~

Difference in electronegativity > 2 So, it's ionic bond



Carbon in nature has partial positive charge reacts with e⁻-rich system.

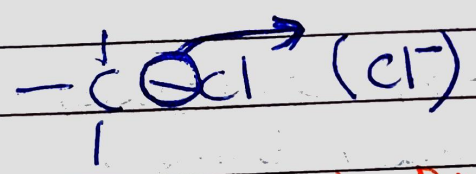
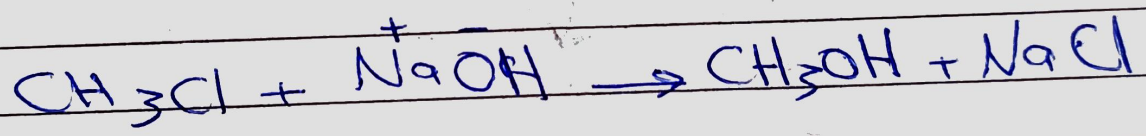
Subject:



* δ^- -rich + δ^+ -poor
the second Golden Rule



you have to have (at least one fully charged) so we need catalyst (محفز)



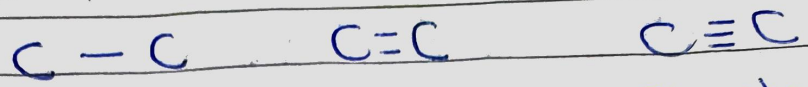
دالة الكربون بالقطب δ^+
partial positive

Non-polar مع الكربون والهيدروجين

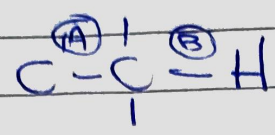


more electronegative = partial negative

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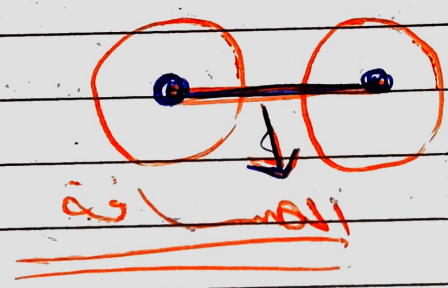


Shortest
Strongest



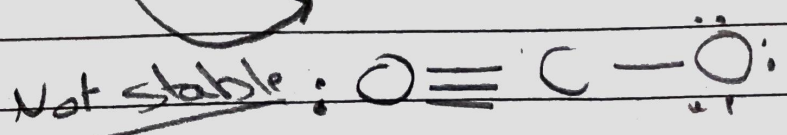
A longer and weaker

C is larger
the overlap is less
than C-H

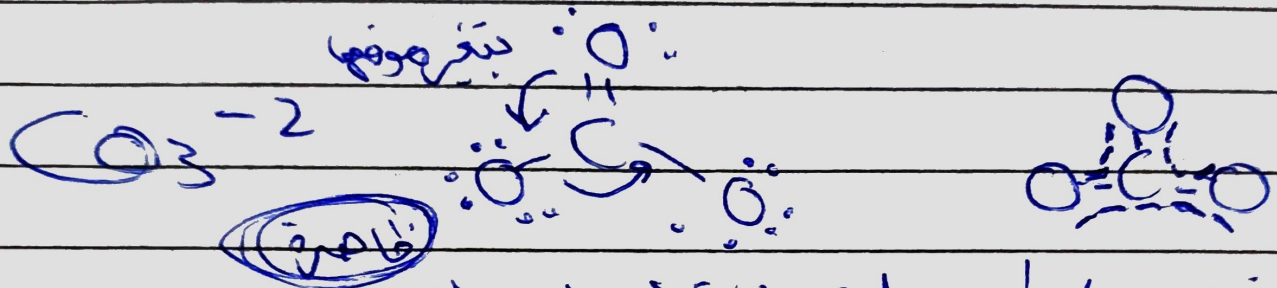


structure CO₂ Lewis, structure,
bonding, shape,

$4 + 12 = 16$



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تنوع الروابط، البنى (resonance structures)