Organic Chemistry

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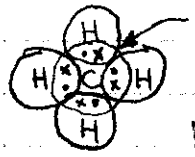
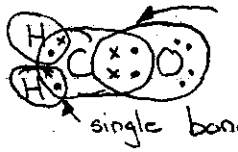
Lewis Dot Diagrams

- Carbon requires the great number of electrons in order to satisfy covalent bonding requirements (octet rule etc.)



single covalent bond

Methane



double bond

single bond

Bonding Rules

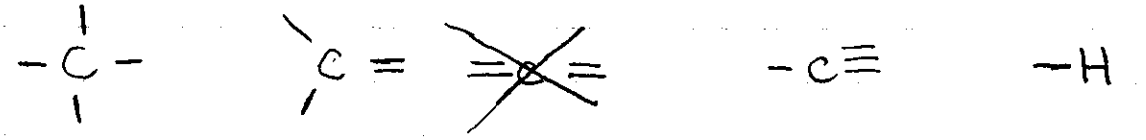
Carbon - must have four bonds
- 4 single bonds
- 1 double bond, 2 single bond
- 2 double bond ~(rare CO_2)
- 1 triple bond, 1 single bond

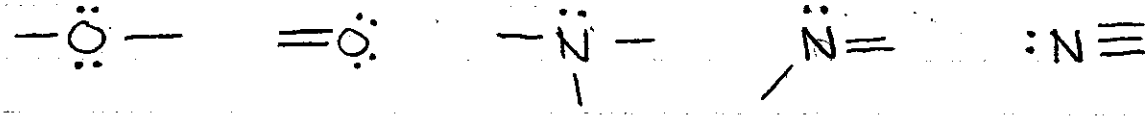
Hydrogen - must have one bond
- 1 single bond (always terminal to molecule)

Oxygen - must have two bonds
- 2 single bonds
- 1 double bond

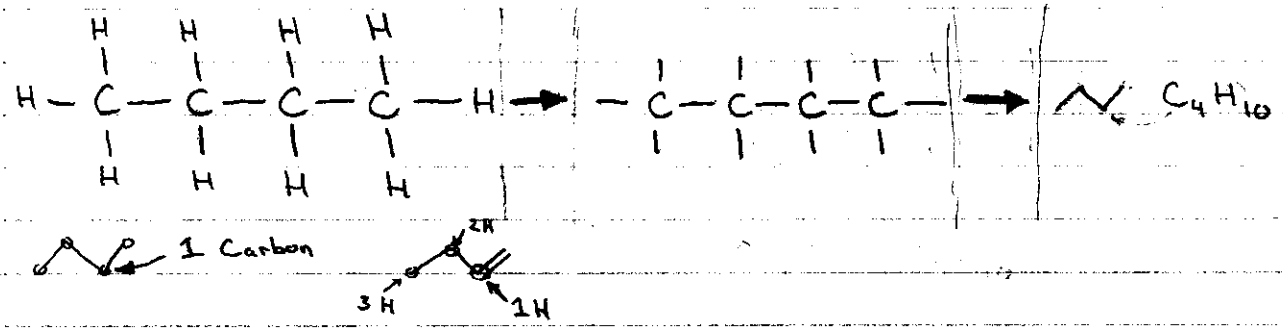
Nitrogen - must have 3 bonds
- 3 single bonds
- 1 double bond 1 single bond
- 1 triple bond

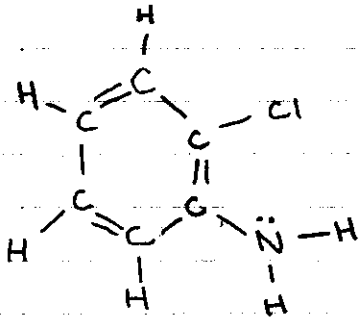
Halogens (F, Cl, Br, I) $:\ddot{X}:$ - must have 1 bond
- 1 single bond (terminal)

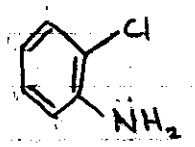




—X (okay to ignore lone pairs)

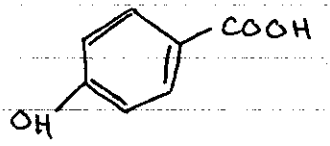


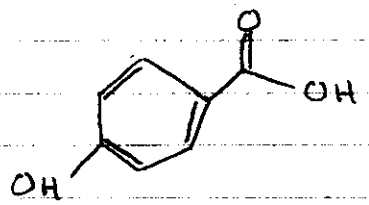




C_6H_6NCl

Hydrogen are shown only when attached to N, O or are a part of the aldehyde functional group





$C_7H_6O_3$