

Organic chemistry (basics)

| | |
|------------------------|---|
| >organic chemistry- | 'chemistry of specific carbon compound' |
| >nature of carbon atom | - tetra valency, catenation, isomerism |
| *[catenation | tendency of an element to form chains of identical atoms] |
| *[isomerism | -same molecular formula but different structural formula] |
| *Hydrocarbons | -organic compounds containing 'C' and 'H' atoms only |
| *Nomenclature | -system of assignment of names to organic compounds |
| *Homologous series | -series of organic compounds where the successive members follow a regular structural pattern differing by a 'CH ₂ ' group |

organic v/s inorganic

| ORGANIC | INORGANIC |
|--|--|
| >covalent | >electrovalent (ionic) |
| >low melting/boiling points | >high melting/boiling points |
| >insoluble in water/ soluble in organic solvents | >soluble in water/ insoluble in organic solvents |
| >non-conductors of electricity | >good conductors of electricity |
| >combustible | >non-combustible |
| >volatile | >non-volatile |
| >exhibits catenation and isomerism | >doesn't exhibit catenation and isomerism |

CLASSIFICATION

| <i>ALIPHATIC</i> (hydrocarbons)- open chains/straight chain | <i>ATROMATIC</i> (cyclic)- closed chains |
|---|--|
| >saturated (cannot take up more alkanes) | >homocyclic (only carbon and hydrogen atoms) |
| >unsaturated (double bond/triple bond-can take up more alkanes) | >heterocyclic (C,O,N,H, and S atoms) |

NOMENCLATURE

| STEM | number of carbons |
|--------------------|------------------------|
| meth- | 1 |
| eth- | 2 |
| prop- | 3 |
| but- | 4 |
| penta- | 5 |
| hexa- | 6 |
| hepta- | 7 |
| octa- | 8 |
| nona- | 9 |
| deca- | 10 |
| stem/suffix | . |
| -ane | Alkanes (single bonds) |



NOMENCLATURE (cont)

-ene Alkenes (double bonds)

-yne Alkynes (triple bonds)

ISOMERISM

chain arrangement

position of functional groups

geometrical arrangement of atoms around double bond

C

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