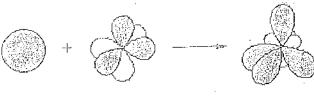
Mr. Kent's Organic Chemistry Unit Notes Basic Concepts

A. Organic Chemistry-The study of _____containing compounds.

 They occur extensively in nature because all living things are made of _____ containing compounds.

| Π | Bonding |
|-------|---------------|
| | 13//27/4013/2 |

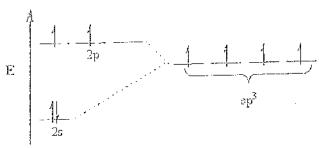
A. _____ can form ____ covalent bonds (____hybrids consisting of 1____ orbital and 3____ orbitals)



 $2s \qquad 2p_x + 2p_y + 2p_z$

4 sp³ orbitals

When hybridized the 4 different orbitals are combined and create 4 equal energy orbitals.



B. _____ will not only combine with other atoms, but will also bond with other ____ atoms making for very large numbers of molecules.

C. Organic compounds are more numerous than ______ compounds.

| n | A major source of organic | compounds is |
|-----------------|---|--|
| turë a | Which came from | many years ago. |
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| | | |
| | | |
| | | <u>\$</u> |
| III Char | natariotics | |
| III Chai | Generally, | _molecules (SNAP) |
| 2 | dissolve | s in water |
| | Exceptions | &t |
| ź | Nong | enerally do not conduct electricity in |
| ٠. | water, except | |
| Λ | Melting Points are | due to |
| - r• | intermolecular forces | |
| 5 | Chemical Reactions are | compared to |
| ٠, | inorganic reactions | |
| | | rn |
| IV Son | ne Organic Compounds for | nebut different |
| -l | Compounds with the sen- | |
| 3 | . We draw structural form | ulas to avoid confusion |
| | Example-C ₃ H ₈ O | |
| 3 | | |
| | H H O | |
| | | |
| | l-1 | |
| | | |

| | e number of carbon atoms inc ers will | rease, the number (| วร์ |
|--|--|---|--------------------|
| 2. 3. 4. 5. | Carbon atoms that are bonded electrons form a | _bond d together by sharin bond d together by sharin bond ounds contain ALL | ng ng SINGLE |
| VI. Types of A. HYDRO | Organic Compounds CARBONS | | |
| 2. | Contain only andhydrogen atoms |)- each sample he previous by | e of a carbon |
| 3. | Boiling Points- As the number the boiling pointsintermolecular forces. | | |

ALKANES- Saturated hydrocarbons Nomenclature (Naming Rules)- end with "-ane" General Formula

C_nH_{2n+2}

| Name | Molecular | arbons prefix |
|--|--------------------------------|--------------------------|
| and the second of the second o | formula | |
| oran ing panggang ang panggang a | CH ₄ | 1 Meth |
| and a construction of the | C_2H_6 | '2 (Eth |
| (www.naintennologistenskappy.com.univ.av.univ.aa.thaathook.com.gov.gov.gov.com.com.gov. | C_3H_8 | 3 Prop |
| and the second s | C_4II_{10} | 4 But |
| and the second s | C_5H_{12} | 5 Penta |
| en e | C_6H_{14} | 6 👫 Hexa 🖃 |
| and the second s | C ₇ H ₁₆ | ™.7 ^{Prof} Hept |
| and the second s | C_8H_{18} | 8-1: *: Oct |
| and the second of | C_9H_{20} | 9 Non |
| | $C_{10}H_{22}$ | 10 Deca |

The first 3 alkanes have no isomers (they can only be drawn 1 way).

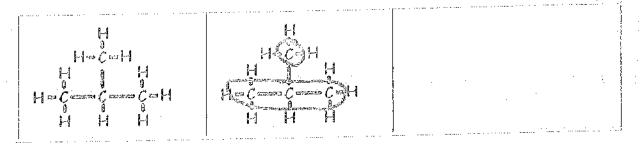
| H=C=H | H H 0 C C C H 1 H | H H H 8 |
|-------|-------------------------|----------|
| | | |

Isomers of Butane C₄H₁₀

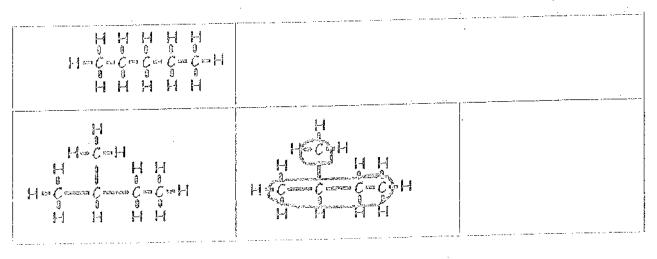
Rule #1-Name the longest continuous chain of carbon atoms (with group), and end it with -ane.

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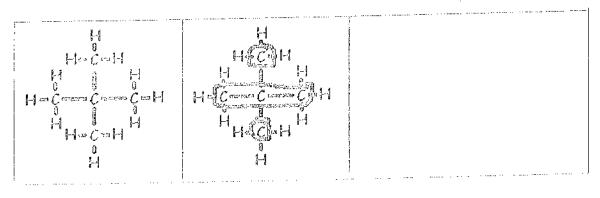
Rule #2- Remaining side chains will be given the ending -yl.



Isomers of Pentane C₅H₁₂



Rule #3- Multiple side chains will use prefixes 2 is di-, 3 is tri-, 4 is tetra- and so on.



Isomers of Hexane C6H14

| H H H H H H H H H H H H H H H H H H H | |
|--|--|
| H=C=H H=C==C=C=C=H H=C==C=C=C=H H=H=H=H | |
| Hon Corresp Con Con Con H | |

Rule #4- Give the <u>lowest number</u> location for each side chain if there is another possible location it could be located. Go back and fix the last 2 isomers

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