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DEPARTMENT: MEDICINE AND SURGERY

LEVEL:100 LEVEL

COURSE: CHEMISTRY 102

1. M/Z= 105, since Nitrogen is odd, then N2 =14amu

105 -14=91

To find the mass numbers of carbon; 91÷12=7.6

Therefore, 7 is the number of mole of carbon;

To find H2 is 7\*12= 84; 91-84=7, therefore 7 is the number of mole of H2

THE FORMULAR IS C7NH7.

OR IF OXYGEN IS INCLUDED THEN:

Oxygen introduced is 105-14= 91, O2=16;

91- 16=75

75÷12=6.25; 6\*12=72

72 is the number of carbon atoms 75-72=3

3 is the number of hydrogen atoms, the formula is C6NOH3 .

1. IMPORTANCE OF ORGANIC COMPOUNDS ARE:
2. In cases of medicine: The study of disease is well supported by organic chemistry. Most diseases in humans have some course or pathway before complete death ensues.
3. Cleansing agents: In industries and labs, organic solvents are widely used to clear of impurities.
4. Food: food materials are solely made of carbon compounds viz, carbohydrates(CHO), proteins(NH2-CH-COOH)
5. Most of the sterilizing agents and disinfectants like phenol, formaldehyde are carbon compounds.
6. Interestingly, the carbon compounds are found to be highly valuable, durable and hardest in the world like diamond and graphite.
7. DIFFERENCES BETWEEN HOMOCYCLIC AND HETEROCYCLIC COMPOUNDS

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| HOMOCYCLIC COMPOUNDS | | HETEROCYCLIC COMPOUNDS |
| 1. Having atoms of the same elements as ring members | | Having atoms different elements as ring members |
| 1. Examples are benzene, cyclohexane | | Examples of azocine, pyran |
| 1. Contains hundred percent carbon | | Have mainly carbon but in addition, hetero atoms such as nitrogen, oxygen and sulphur are found in the ring |
| 1. Homocyclic compound is made up of only one type of atom | Ring of heterocyclic compounds is made of at least two types of atoms | |

1. TO CALCULATE THE SOLVENT FRONT:
2. FOR THE FIRST BAND: DISTANCE MOVED BY THE SUBSTANCE/DISTANCE MOVED BY THE SOLVENT FRONT= 2.4CM /12.2CM= 0.197
3. FOR THE SECOND BAND: DISTANCE MOVED BY THE SUBSTANCE / DISTANCE MOVED BY SOLVENT FRONT= 5.6CM /12.2CM =0.459
4. FOR THE THIRD BAND : DISTANCE MOVED BY THE SUBSTANCE / DISTANCE MOVED BY THE SOLVENT FRONT= 8.9CM /12.2CM= 0.730
5. The compound that gave a positive test result(dark grey precipitate) to tollen’s test is ALDEHYDES
6. The compound that decolorizes bromine water are ALKENES AND ALKYL
7. 2,4-Dintrophenylhydrazine test is employed for ALDEHYDES AND KETONES
8. List of functional group and their examples are:

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| FUNCTIONAL GROUP IN ORGANIC CHEMISTRY | EXAMPLES |
| 1. -COOH | 1. Ethanoic acid 2. Propanoic acid |
| 1. -COH | 1. 2-methyl-3-hexene-1-al 2. methanal |
| 1. RX | 1. 1-bromo-ethane 2. 2-choloropropane |
| 1. RNH | 1. 2-aminopropane 2. Amino acid |
| 1. RCOOR | 1. Ethyl ethanoate 2. pentanoate |
| 1. –C=O | 1. 4-hydroxyl-2-heptanone 2. pentanone |
| 1. -OH | 1. Butanol 2. ethanol |