NWAOLISA CHIOMA SUCCESS

17/MHS01/207

MEDICINE AND SURGERY

100 LEVEL

CHM 102 ASSIGNMENT.

SOLUTION

1. A) Some possible formulas for the molecular ion (m/z) of 105

105-14=91

91÷12=7.58

The number of moles of carbon is 7

7×12=84

91-84=7

Therefore the first equation is C7NH7

Second compound is the same procedure but oxygen will be introduced

105-14=91

91-16=75

75÷12=6.25

Number of mole of carbon atom is 6

6×12=72

75-72=3

Therefore the second compound is C6NH3O

B. IMPORTANCE OF ORGANIC COMPOUNDS

1. As a source of food and nutrients e.g carbohydrates, proteins, fat, vitamins, enzymes etc.
2. Clothes: cotton, silk, wool, nylon,rayon, dacron.
3. Fuels: pennicilin, streptomycin, chloromytocin, sulphadiazine, morphine, aspirin, iodoform, cocaine etc.
4. Explosives: nitroglycerin, nitrocellulose, T.N.B, T.N.T, ETC.
5. Dyes: indigo, malachite green, alizarin etc.
6. Insecticide: D.D.T, gammexane, malathione etc.
7. Household and other common articles: soaps, cosmetics, perfumes, detergents, paper, rubber, plastic, leather, resins, inks, paints, varnishes, photographic films etc.

C. DIFFERENCES BETWEEN HOMOCYCLIC AND HETEROCYCLIC COMPOUNDS

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| HOMOCYCLIC COMPOUNDS | HETEROCYLIC COMPOUNDS |
| The ring is made up of carbon atms only | The ring is made up of more than one kind of atom including a carbon atom. |
| They have 100percent carbon atoms in their ring | They have mainly carbon, and in addition, heteroatoms such as nitrogen, oxygen and sulphur are found in their ring. |
| They are sudivided into alicyclic homocyclic and aromatic homcyclic compounds | They are divided into alicyclic heterocyclic and aromatic heterocyclic compounds. |
| Examples are Phenol, Toluene, Naphthlene and Anthracene | Examples are Tetrahydrafuran, Piperidines, Pyridine, Furan and Pyrrole. |

2. A. Rf = Distance travelled by substances

 Distance travelled by solvent front

1. Band 1 Rf = 2.4/12.2 = 0.20cm.
2. Band 2 Rf = 5.6/12.2 = 0.46cm.
3. Band 3 Rf = 8.9/12.2 = 0.73cm

B. Organic compound A = Aldehydes (Alkanals).

 Organic compound B = Alkene.

C. 2,4-dinitrophenylhydrazine test is employed as a reagent for the qualitative test for carbonyl groups associated with aldehydes and ketones.

 D. SOME SEVEN FUNCTIONAL GROUPS

* Alkane: (c-c) e.g butane and propane.
* Alkene: (c=c) e.g ethene and butene.
* Alkyne: (c\_= c) e.g propyne and pentyne.
* Alkanone: (RC=O) e.propanone and butanone.
* Alkanal: (RCHO) e.g ethanal and butanal.
* Alkanol: (RCOH) e.g ethanol and butanol.
* Alkanoic acid: (RC=(O)OH) e.g ethanoic acid and hexanoic acid.