NAME: NWAOKEZI DESIRE

MATRIC NUMBER: 17/MHS01/206

DEPARTMENT: MEDICINE AND SURGERY

COLLEGE: MEDICINE AND HEALTH SCIENCE

CHEMISTRY ASSIGNMENT

QUESTION 1

1. Formula for molecular ion (m/z) of 105

(CnH2n+2) =105

1. Importance of organic compounds.

Organic compounds are important in the production of;

* Food: carbohydrates, protein, fats, vitamins, enzymes etc.
* Clothes: cotton, silk, wool, nylon, dacron, rayon, etc.
* Fuels: coal, wood, natural gas, petrol, etc
* Medicines: penicillin, streptomycin, chloromycetin, morphine, cocaine.
* Explosives: nitroglycerine, nitrocellulose, T.N.B, T.N.T etc
* Dyes: indigo, malachite green, alizarin, etc
* Insecticides: D.D.T, gammexane, melathion, etc
* Household and other common articles: soaps, cosmetics, perfumes, detergent, paper, rubber, plastic, leather, resins, inks, paints, varnishes, photographic films, etc

1. Difference between homocyclic and heterocyclic compounds

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| Homocyclic Compounds | Heterocyclic Compounds |
| * Rings contain only one type of atom. | * Rings contain at least two different types of atoms including carbon. |
| * Rings contain atoms of same elements | * Rings contain atoms of different elements. |
| * Examples are benzene, cyclohexane, toluene, cyclohexanol etc. | * Examples include pyran, azocine, thiocane etc |

QUESTION 2

1. Retardation Factor = distance moved by band/distance moved by solvent front.

Distance moved by solvent front = 12.2cm

Distance moved by bands = 2.4cm, 5.6cm and 8.9cm

When distance of band = 2.4cm Rf value = distance traveled by band/distance moved by solvent front = 2.4cm/12.2cm= 0.197

When distance of band = 5.6cm Rf value = distance moved by band/distance moved by solvent front = 5.6cm/12.2cm= 0.459

When distance of band = 8.9cm Rf value = distance traveled by band/distance traveled by solvent front = 8.9cm/12.2cm= 0.730

1. Compound A gave a positive test result (dark grey precipitate) to Tollens test. Therefore A is an Aldehyde

Compound B decolourizes Bromine water. Therefore B is an Alkene or Alkynes.

1. 2,4- Dinitrophenylhydrazine test is employed for the qualitative detection of the carbonyl functionality of a ketone or aldehyde functional group.

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| Functional Group | Examples |
| * Carboxyl group | Propanoic acid, ethanoic acid |
| * Alkyl halide | CH3Cl, C2H4Br |
| * Amide | Propanamide, ethanamide |
| * Acid Anhydride | Sulfur trioxide, acetic anhydride. |
| * Ketone | Propanone, ethanone |
| * Hydroxyl Group | Ethanol, propanol |
| * Alkenes | Propene, ethene |