NAME: AFULA UNITY UKWUN

COLLEGE: MHS

DEPT.: NURSING

MATRIC NO, 17/MHS02/012

DAATE: 3RD April, 2018.

 COURSE CODE: CHM102

 Question 1

1. Suggest possible formulas for a molecular ion (m/z) of 105

Ans: CHO

1. What are the importance of organic compounds

Ans:

1. Used as food : Carbohydrate, Proteins, Fat, Vitamins, Enzymes etc
2. Used as raw materials for production of clothes : Cottons, Wool, Silk, Nylon etc
3. Used as fuel: Coal, Wood, Natural gas, Petrol etc
4. Used as medicines: Penicillin, Streptomycin, Chloromycetin, Aspirin, Cocaine etc
5. Used as explosives: Nitroglycerine, Nitrocellulose, T.N.B, T.N.T etc
6. Used as dyes: Indigo, Malachite green, Alizarin etc
7. Used as insecticides: D.D.T, Gammexane, Malathion etc
8. Used as household and other common articles: Soaps, Cosmetics, Perfumes, Detergents, Paper, Inks, Varnishes, Plastics, Resins etc
9. Differentiate between homocyclic and heterocyclic compounds

|  |  |  |
| --- | --- | --- |
|  | Homocyclic compounds | Heterocyclic compounds |
| Definition | Cyclic compounds having atoms of the same element as ring members | Cyclic compounds having atoms of different elements as ring members |
| Types of atoms | The ring of Homocyclic compounds contains atoms of the same element. | The ring of a heterocyclic compounds contains atoms of different element. |
| Composition | Contains atoms of the same element bonded to each other forming a ring. | Contains atoms of at least two different element bonded to each other forming a ring. |
| Examples  | Benzene, Cyclohexane, Toluene etc  | Pyran, Azocine,Thiocane etc  |

 Question 2

1. If the distance of a solvent front is 12.2cm. 2.4cm, 5.6cm and 8.9cm are distances of different bands respectively. Calculate the Retardation factor of the available bands

 **Solution**

Recall that: RF = Distance moved by substance

 Distance moved by solvent front

1st band: RF = 2.4 = 0.196cm

 12.2

2nd band: RF = 5.6 = 0.459cm

 12.2

3rd band: RF = 8.9 = 0.729cm

12.2

 b) Two organic compounds were labeled A and B. A gave a positive test result (dark grey precipitate) to Tollens test and B decolorizes Bromine water. Suggest the family to which these organic compounds belong.

 Ans**: A is Aldehydes and B is Alkenes**

c). 2,4-Dinitrophenylhydrazine test is employed for ----------------

 Ans: **Aldehydes and Ketones**

1. List 7 functional groups of organic compounds giving two examples of each group.

Ans:

|  |  |
| --- | --- |
| Functional group | Examples  |
| -OH | Methanol, Ethanol |
| -C-C- | Methane, Butane  |
| -C=C- | Ethene, Pentene |
| -OR | Methoxymethane, Methoxyethane |
| -C=O- | Butanone, Hexan-3-one |
| -COOH | Propanoic acid, Pentanoic acid  |
| -C=O-X | Ethanoyl chloride, Pentanoyl bromide  |