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COLLEGE: MEDICAL AND HEALTH SCIENCES

DEPARTMENT: MEDICINE AND SURGERY

COURSE CODE: CHM 102

SOLUTION TO THE ASSIGNMENT

QUESTION 1

1. Ethylbenzene(C8H9), Phenylmethanimine (C7H7N), Phenylmethanone (C7H5O), Pyran-3-Carbonitrile (C6H3NO)
2. **Importance of organic compounds**

i. Food is essentially a mixture of organic compouds- carbohydrates, proteins, enzymes, vitamins etc.

ii. Clothes are also made up of organic compounds- cotton, silk, wool, nylon, rayon, etc.

iii. In the medical field, organc cmpounds are indispensable. Used in the production of antibiotics, sulpha drugs, aspirin, iodoform, etc.

iv. Useful in the manufacture of household and other common articles- soaps, cosmetics, detergents, paper, leather, resins, paints etc.

v. Explosives are also comprised of organic compounds- nitroglycerine, nitrocellulose, T.N.B, T.N.T, etc

vi. Source of fuel- wood, coal, natural gas, petrol etc.

1. Differences between homocyclic and heterocyclic compounds

|  |  |  |
| --- | --- | --- |
|  | Homocyclic compounds | Heterocyclic compounds |
| i. | Made up of carbon atoms only. | Made up of more than one kind of atom. |
| ii. | It is sub-divided into alicyclic and aromatic compounds | It is sub-divided into aliphatic or aromatic compounds. |
| iii. | Examples include phenol, naphthalene and anthracene. | Examples include tetrahydrofuran, pyridine, pyrole, etc |

QUESTION 2

1. Distance of the solvent front =12.2cm

Band 1= 2.4cm

Band 2= 5.6cm

Band 3= 8.9cm

$$retardation factor=\frac{distance moved by substance}{distance moved by solvent}$$

Retardation factor (Rf) of A = $\frac{Distance moved by band A}{Distance moved by solvent front}$

 = $\frac{2.4cm}{12.2cm}$

 = 0.1967

Retardation factor (Rf) of B = $\frac{Distance moved by band B}{Distance moved by solvent front}$

 = $\frac{5.6cm}{12.2cm}$

 = 0.4590

Retardation factor (Rf) of C = $\frac{Distance moved by band C}{Distance moved by solvent front}$

 = $\frac{8.9 cm}{12.2cm}$

 = 0.7295

b.) Organic Compound A belongs to Family of Aldehydes

Organic compound B belongs to Family of Alkenes

c.) Aldehyde and Ketones

d.) **Functional groups of Organic Compounds**

i.) Carboxylic acids (-COOH)

ExamplesS

* Butanoic acid
* Propanoic acid

ii.) Alkanoate (-COOR)

Examples

* Sodium ethanoate
* Sodium propanoate

iii.) Alkanols (-OH)

Examples

* 3–methyl pentan-2-ol
* 1,2,3-propentriol

iv.) Haloalkane (-Cl, - Br)

Examples

* 1- Bromo Butane
* Chloro Ethane

v.) Aldehydes (-CHO)

Examples

* Propanal
* Ethanal

vi.) Alkene (C = C)

Examples

* Pentene
* Butene

vii.) Ethers (-OR)

Examples

* Ethoxyethane
* Methoxyethane