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DEPARTMENT: MEDICINE AND SURGERY

COLLEGE: MEDICINE AND HEALTH SCIENCES

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1a. 105÷12= 8.75

C7H21= [(7×12) (21×1) = 105

C7H5O= [(7×12) + (1×5) + 16] = 105

C5H13O2= [(5×12) + (1×13) + (16×2) = 105

b. Importance of organic compounds;

-Used in textile and clothing.

-Used as essentials as they are present in food substances, this consists of mainly carbon and oxygen.

-Used as analytical agents to analyze drugs, pesticides and other chemical substances when using the different types of titration and chromatography techniques.

-Organic compounds are used as medicines to cure diseases.

-They are used as valuables and means of income and exchange when they exist in diamond, graphite, petroleum and so on.

-Used as sterilizing agents and disinfectants.

-Organic compounds are used in the process of studying diseases.

-Used as cleansing agent to clear impurities.

-Some organic compounds are used in the process to prepare other molecules and compounds.

c. Differences between Homocyclic and Heterocyclic Compounds.

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|  | Homocyclic Compounds. | Heterocyclic Compounds. |
| 1. | Homocyclic compounds are cyclic compounds having atoms of the same element as ring members. | Heterocyclic compounds are cyclic compounds having atoms of different elements as ring members including carbon atoms. |
| 2. | They contain atoms of the same element bonded to each other forming a ring. | They contain atoms of at least two different elements bonded to each other forming a ring. |
| 3. | They have 100% carbon atoms in their ring. | They have mainly carbon and heteroatom (such as nitrogen, oxygen and sulphur) found in their ring. |
| 4. | They are sub divided into Alicyclic and Aromatic homocyclic. | They are sub divided into Alicyclic and Aromatic heterocyclic. |
| 5. | Ring contain atoms of the same element. | Ring contains atoms of different elements. |
| 6. | Examples are benzene, toluene, cyclohexane, phenol, etc. | Examples are pyran, azocine, thiocane, furan, etc. |

2a. Retardation factor (RF) = Distance moved by Bands

Distance moved by the solvent front

Distance moved by solvent front=12.2cm

Let the distance moved by Bands be;

A=2.4cm

B=5.6cm

C=8.9cm

RF of A =

= 0.197

RF of B=

=0.459

RF of C=

=0.729

b. A= Aldehydes.

B= Alkenes.

c. Ketones and Aldehydes.

d. Functional groups and its examples.

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| S/N | Functional Group | Examples. |
| 1. | Alkane | Methane, 2, 2-dimethyl heptane. |
| 2. | Alkene | Ethene, 3-ethyl- hex-1-ene. |
| 3. | Alkyne | 3-methylbut-1-yne, Pent-2-yne. |
| 4. | Alcohol | Propan-2-ol, 3-methyl-pentan-2-ol. |
| 5. | Amine | Trimethylamine, Dimethylamine. |
| 6. | Alkyl | Butyl, Ethyl. |
| 7. | Carboxylic Acid | Hexanoic Acid, 2-methylpentanoic Acid. |