Name: EMMANUEL OREOLUWA

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Course Code: CHEM 102

College: Medicine and Health Sciences

Department: Medicine and Surgery

**QUESTION 1**

A. possible formulas for a molecular ion (M/Z) of 105 are:

 $C\_{6}H\_{5}CO$, $C\_{7}H\_{7}N$

B. importance of organic compounds are;

- They are important in the production of antiseptics

- They are important in the production of margarine

- They are important in the production of fuels

- They are used in plastic industries

- They are used in pharmaceuticals

- Organic Compounds are used as Sterilizing agents and Disinfectants like Phenol, Formaldehyde etc.

- Diamonds, graphite and petroleum are found to be highly valuable, durable and hardest in the world.

C.

|  |  |
| --- | --- |
| HOMOCYCLIC | HETEROCYCLIC |
| 1. They are cyclic compounds having atoms of the same element as ring members
 | They are cyclic compounds having atoms of different elements as ring members |
| 1. The ring of a homocyclic compound contains atoms of the same element
 | The ring of a heterocyclic compound contains atoms of different elements |

 **QUESTION 2**

1. Rf =$\frac{distance moved by bands}{distance moved by solvent front}$

Distance of solvent front =12.2cm Distances of the band are 2.4cm, 5.6cm and 8.9cm respectively.

|  |  |  |
| --- | --- | --- |
| BANDS | SOLVENT FRONT | RF VALUE |
| I. 2.4 cm | 12.2 cm | $$\frac{2.4}{12.2}=0.197$$ |
| II. 5.6 cm | 12.2 cm | $$\frac{5.6}{12.2}=0.46$$ |
| III. 8.9 cm | 12.2 cm | $$\frac{8.9}{12.2}=0.73$$ |

B.

- A belongs to the adehide group

-B belongs to the alkene group

1. 2, 4-Dinitrophenylhydrazine test is employed for the test of adehides and ketones

D.

. Alkanoic acid- methanoic acid, propanoic acid

. Halo alkanes- iodo methane, bromo ethane

Ketones- methanone, butanone

Alkanoates- butylmethanoate, ethylbuthanoate

Alkanol- ethanol, propanol

Alkanals- methanol, propanal

Alkyne- methyne, buthyne