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DEPARTMENT: NURSING

COURSE: CHEM 102

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CHEMISTRY ASSIGNMENT

QUESTION 1a. The rule of 13 states that formula of a compound is a multiple n of 13(the molar mass of carbon and hydrogen)plus a reminder r.

According to the rules of 13 n=$\frac{molecular ion}{13}$

For o add o and subtract CH4

For N add N and subtract CH2

For Cl,add Cl and subtract C2H11.

If molecular ion=105, according to the rule of 13 it becomes;$\frac{105}{13}$ =8r1 where n=8 and r =1

Using $c\_{nH\_{n}+}$r

$c\_{7H\_{5}}$o,C6HO2,C7H7N,C6H9N2,C5H3N3,C4HN4,C6H3NO.

1b)The importance of organic compounds

-They are used to produce detergent and other household materials example cosmetics and perfumes.

-The organic compound make a large percentage of the human food,it requires a large percentage of organic moleculesto keep ones cell and bones healthy.

-Carbohydrate which is an important form of diet also plays a crucial role in human life.

-The clothes industry uses to produce cotton,silk,wool and so on.

-Organic compounds are used to produce explosives.

-Hydrocarbon is a good source of energy for many countries today.

1C) Differences between homocyclic and heterocyclic compounds

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| HOMOCYCLIC COMPOUNDS  | HETEROCYCLIC COMPUNDS |
| There are only one type of atom in the ring  | There are different types of atoms including carbon |
| It divides into alicyclic homocyclic compunds and aromatichomocyclic compounds | It divides into alicylic heterocyclic compoundsand aromaticheterocyclic compounds . |
| It has 100%carbon in its ring | It has carbon in addition to other elements like n itrogen,oxygen and so on |
| Examples are phenol,nephathelene and so on | Examples are pyridine and pyrrole. |

2A) retardation factor=$\frac{distance moved by substance }{distance by the solvent factor}$

RF1=$\frac{2.4}{12.2}$ =0.197

RF2=$\frac{5.6}{12.2}$ =0.459

RF3=$\frac{8.9}{12.2}$ =0.730

2B) A belongs to the Ketone family

 B belongs to the Alkene family

2C) KETONES AND ALDEHYDE

 2D)FUNCTIONAL GROUPS EXAMPLES

1. Alkene Ethane, Butane

2. Alkane Propane, Ethane

3. Carboxylic acid Ethanoic acid, Butanoic acid

4. Alkyne Ethyne, Propyne

5. Alkanal Ethanal, Butanal

6. Alkanol Ethanol, Butanol

7. Amides Propanamides, Methanamides