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COLLEGE OF MEDICINE AND HEALTH SCIENCE

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

|  |  |
| --- | --- |
| 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)

|  |  |
| --- | --- |
| Fuctional group | Example  |
| Alkene  | Ethene,butene |
| Alkane  | Ethane propane |
| Carboxylic acid | Ethanoic acid,propanoic acid |
| Alkyne  | Ethyne,butyne |
| Alkanal  | Ethanal,butanal |
| Alkanol  | methanoll ,butanol |
| Amides  | Methanamide,propanamides  |