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17/MHS01/060/

CHEMISTRY ASSIGNMENT

1a. 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.1. Organic compounds such as ethanol and isopropanol are used in the manufacture of antiseptic. Also ethanol is a staple of the beverage industry.

2. They are used in the manufacture of pharmaceutical products for example, Aspirin contains a carboxylic acid.

3. Some members ( alkane; propane,methane,octane) are used extensively as fuel for automobile gasoline, home cooking e.t.c.

4. They are used in the manufacture of explosives e.g (TNT)

5. Acetone, an organic compound is used to remove nail polish and also used as a solvent in chromatography.

6. Di- ethyl ether, an organic compound is used as anesthethic.

1c. DIFFERENCES BETWEEN HOMOCYCLIC AND HETEROCYCLIC COMPOUNDS

|  |  |
| --- | --- |
| HOMOCYCLIC | HETEROCYCLIC |
| They contain only one type of atom. | They contain at least two different types of atoms and carbon. |
| They have 100% carbon atoms in their ring. | Have mainly carbon and in addition, heteroatoms such as Nitrogen, Oxygen and Sulphur are found in the ring. |
| Examples include phenol, toluene, naphthalene and anthracene | Pyrrole, furan, pyridine. |
| It divides into alicyclic homocyclic compunds and aromatichomocyclic compounds | It divides into alicylic heterocyclic compounds and aromatic heterocyclic compounds . |
|  |  |

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. Alkane; Methane, propane

Alkanol; ethanol, propanol

Ketone; propan-2-one, butan-2-one

Carboxylic acid; ethanoic acid, propanoic acid.

Esters; methyl ehanoate, ethyl butanoate

Alkyne; propyne, ethyne

Amide; Ethanamide, Butanamide