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ASSIGNMENT

1A. possible formular for a molecular ion (m/z) of 105

Solution

If the mass of the molecular ion is odd, it contains atleast one nitrogen atom N.

N= 14amu

105-41=91

Determine the maximum number of carbon atoms

91/12=7.5 hence 7 carbon atom maximum. C7 HN7

(12 ×7) +(14 ×1) +H= 105

84+14+H=105

98+H=105

H=105-98

H=7

C7H7N is a possible formular

Add an oxygen atom into the formular (-CH4 when adding O)

C7NH7→C6NOH3\

The possible formulars are C7H7N, C6NOH3

1B. Importance of organic compounds

a. Organic compound is important because it involves the study of life and all chemical

reactions related to life.

b. Organic chemistry uses some diagnosing aids to detect organic part of the deficiency or disturbed substance

c. Organic compounds are used in making sterilizing agents and disinfectants such as formaldehyde, phenol etc. due to their properties like solubility, PH they can kill microbes'

d. Allotropes of carbon such as diamond can be used to make durable and valuable jewelries.

e. Organic compound are in the medical sector to manufacture painkillers, drugs, antibiotics,

1C. Differences between Homocyclic and Heterocyclic compounds anesthetics anti-depressant.

	Homocyclic compounds	Heterocyclic compounds
1.	Cyclic compounds with same element as ring members.	Cyclic compounds with different elements as ring members.
2.	Homocyclic compounds have 100% carbon atoms in their rings.	Heterocyclic compounds have mainly carbons with heteroatoms such as nitrogen, oxygen, sulphur is found in their rings.
3	It contains atoms of the same element bonded to each other to form ring.	It contain atoms of different elements bonded together to form ring.
4 . \	Examples includes; phenol, toluene, naphthalene and anthracene.	Examples include; furan, pyridine, tetrahydrofuran, piperidine, pyrrole.

2. Rf = $\frac{\text{ditance moved by substance}}{\text{distance moved by solvent front}}$

Distance moved by solvent font= 12.2cm

Distance moved by substance1= 2.4cm

Rf for band A= $\frac{2.4\text{cm}}{12.2\text{cm}}$ = 0.197

Distance moved by band B = 5.6cm

Rf for band B = $\frac{5.6cm}{12.2cm}$ = 0.459

Rf moved by band C= $\frac{8.9cm}{12.2cm}$ = 0.730

2b. since A was positive to Tollens test then A is an Aldehyde and since B decolourise bromine water it is an alkene.

2C. 2,4-dinitrophenylhydrazine test is employed for Ketones and Aldehydes.

2D Functional groups and their examples

1.	Alkane	Methane, propane
2.	Alcohol	Ethanol, Propanol
3.	Alkanal	Propanal, butanal
4	Alkyne	Propyne, pentayne
5	Amine	Propyl amine, dimethyl amine
6	Alkene	Butane, propene
7	Ether	Methyl ethyl ether, diethyl ether