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MATRIC NO: 17/MHS01/139

ASSIGNMENT

1a) M/Z =105

105/12 (to find the number of carbon) =8.75 approximately 9 which is impossible to have

Solution

If the mass of the molecular ion is odd, it contains at least one N, N =14amu

105-14 =91

Step 1. Determine the maximum number of the carbons

91/12 =7.5, C7NH?

Step 2. Add enough Hydrogen to make up the rest of the mass. C7NH?

7\*12 =84+14 =98

14\*1 =14

105-98 =7

C7NH7

To find the HD, 7 hydrogen’s give C7NH7,

[2(7.5) + 2-7]/2 =5

Step 3. Add an atom of oxygen

C7NH7 = C6NOH3

105-16 = 89-14 =75/12 =6.25

75-72 =3, H =3

HD, [2(6.25) + 2-3]/2 = 5.75

O =32

105-32 =73-14 = 59/12 =4.9

C4NO2H11

HD, [2(4.9) +2-11]/2 = 0.4

b) Organic compounds are used for food

It is also used in the production of drugs

It is used for producing chemicals

It is used for sterilizing agent

It is used for synthesizing valuables

c) Homocyclic compounds are those that have atoms belonging to the same element in the ring while Heterocyclic compounds are those that have atoms of different elements including carbon in a ring.

2a) Rf =

Solution: The distance moved by the solvent front= 12.2cm

First band = 2.4cm

Rf=  = 0.197

Second band= 5.6cm

Rf = = 0.459

Third band = 8.9cm

Rf= = 0.730

b) Alkene is B as it decolourizes bromine

A is Aldehyde as it forms dark grey with tollen’s test

c) It is employed for ketones and aldehyde ( 2,4, dinitrophenylhydrazine test)

d) Functional Groups:

Alkanes – CH4, C5H12s

Alkenes – CH2, C3H6

Alkynes – C2H2, C4H6

Alkanols – C2H5OH, C3H7OH

Alkanoic acid – C2H5OOH, C3H7OOH

Alkanones – CH3COCH3, CH3COH

Amino acid – CH3NH2, C2H5NH2