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DEPARTMENT: MEDICINE AND SURGERY

 CHEMISTRY ASSIGNMENT

1) $\frac{M}{Z}=105,\frac{105}{12}=8.75 which is approximately 9 and impossible to get$

$$solution$$

If the mass of the molecular ion is odd , it contains atleast one N, when N=14

105-14=91

STEP 2: The maximum number of carbons

91/12= 7.5, C7NH

STEP 3: Add enough hydrogen to make up the rest of the mass.

C7NH 7 X 12= 84 84+14=98

14 X 1=14 105-98= 7

C7NH7, 7Hs give C7NH7

$$\frac{\left(2\left(7.5\right)+2-7\right)}{2}=5$$

STEP 4: add an atom of oxygen C7NH7= C6NOH3

$$105-16=89, 89-14=75,\frac{75}{12}=6.25, 75-72=3$$

H=3 C6NOH3

HD =

$$\frac{2\left(6.25\right)+2-3}{2}=5.75$$

B) IMPORTANCE OF ORGANIC COMPOUNDS

1) Organic compounds are important because they serve as the basis of all carbon based life on earth, on element that all living organisms contain.

2) Organic compounds are nucleotide forms the amino acids and DNA proteins, lipids and carbohydrate are necessaryto maintain various biological processes such as metabolism, respiration and circulation in the blood.

4) Crude oil is an organic compound and it is refined in gasoline, propane, diesel, kerosene and natural gas so cars and heating systems can work.

5) Organic compounds released into the atmosphere deplete ozone levels and cause smog. These compounds are residual products of manufacture and burning.

c) For homocyclic rings, the rings are made up of carbon atoms only, whereas for heterocyclic copounds is made up of more than one kind of atoms.

2) a) Retardation factor= $\frac{distance moved by substance}{distance moved by solvent front}$

For 2.4cm= $\frac{2.4cm}{12.2cm}=0.197$

For 5.6cm = $\frac{5.6cm}{12.2cm}=0.459$

For 8.9cm $\frac{8.9cm}{12.2cm}=0.73$

b) the compound labelled A is in the ALDEHYDE family while the organic compound labelled B is in the ALKENE GROUP.

C) Aldehyde and Ketones

D) i) Alcohol or hydroxyl group- methanol, ethanol

ii) Aldehyde— methanol, ethanol

iii) Ketone— propanone, butanone

iv) Alkene— pentene, butane

v) carboxylic acid— methanoic acid, butanoic acid

vi)Alkene— heptene, propene

vii)Esther— Ethyl methanoate, pentyl methanoate.