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DEPARTMENT: PHARMACOLOGY

COURSE: CHM102

1. (a) Step 1- If the mass of the molecular ion is odd it contains at least one N.

 N= 14amu. 105-14= 91

 Step 2- Determine max #C’s

 91/12 = 7.5 C₇NH?

 Step 3- Add enough H’s to make up the rest of the mass

 C₇NH?

 7 × 12= 84

 1 × 14= 14

 105 – (84 + 14) = 7

 7 H’s gives C₇NH₇

 2 × 7.5 + 2 – 7/ 2 = 5

 Step 4- Add an O atom

 C₇NH₇ = C₆NOH₃

 2 × 6.5 + 2 – 3/ 2 = 6

 (b) Organic compounds serve as the basis of food.

 Organic compounds serve as fuels.

 Organic compounds create energy production in biological life.

 Organic compounds are found in protein which supplies the body with amino acids.

 Organic compounds form lipids

(c) The rings of homocyclic compounds are made up of carbon atoms only while the rings of heterocyclic compounds are made up of more than one type of atom.

2. (a) Rf of 2.4cm =$ \frac{12.2cm}{2.4cm}=5.08cm $

 Rf of 5.6cm = $\frac{12.2cm}{5.6cm}=2.18cm$

 Rf of 8.9cm = $\frac{12.2cm}{8.9cm}=1.37cm $

 (b) A belongs to the aldehyde group and B belongs to the alkene group.

 (c) Aldehyde and ketone

 (d) – Alkane group
 - Ketone group

 - Amine group

 - Amide group

 - Carboxyl group

 - Alkyl group

 - Hydroxyl group