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Chemistry Assignment

1. a.

The mass total is 105 which is an odd number. Therefore, at least 1 nitrogen atom is present. So subtracting 14 from 105 leaves 91 as the mass from carbon and hydrogen.

91/127 remainder 7

7 carbon atoms

7 Hydrogen atoms

1 nitrogen atom

Therefore, C7H7N is the possible molecular formula

Assuming oxygen is present with the nitrogen n we now have the masses of the nitrogen and the oxygen and subtract from 105. That leaves us with 75.Divide by 12

75/12 and we have 6 remainder 3

Therefore another possible formula will be C6H30N

Assuming 2 Nitrogen atoms are present we now have to subtract 28 from 105 leaving us with 77. Divide by 12 and we have 6 remainder 5

So therefore another formula can be C6H5N2

b. Importance of Organic compounds

* Organic compounds are used in making sterilizing agents such as phenol and formaldehyde.
* They are used as cleansing agents in industries as well as laboratories.
* Alkane members are used as fuels for automobiles, gas cookers, home heating and cooking fuels.
* They are used in beverage industry.
* Plastics are made through polymerization of organic compounds.
* Soaps and detergents are produced from organic compounds.
* They are also used for pharmaceutical purposes.

c. Homocyclic compounds contain rings which are made up of only one kind of atoms i.e., carbon atoms while Heterocyclic compounds are cyclic compounds that contain one or more atoms other than that of carbon atoms in their rings.

1. a. Rf of 1st Band $\frac{Distance moved by band}{Distance moved by solvent front}$ $=$ $\frac{2.4}{12.2}$ $=$ 0.196

 Rf of 2nd Band $\frac{Distance moved by band}{Distance moved by solvent front}$ $=$ $\frac{5.6}{12.2}$ $=$ 0.46

 Rf of 3rd Band $\frac{Distance moved by band}{Distance moved by solvent front}$ $=$ $\frac{8.9}{12.2}$ $=$ 0.73

b. Organic compound A belongs to the **Aldehyde** family.

 Organic compound B belongs to the **Alkene** family.

c. Ketones and Aldehydes

d. Functional Groups

* Alkyl Halides(R-X) - Chlorohexane and Bromobutane
* Alcohols(R-OH) - Methanol and Buthanol
* Alkanals(R-CHO) - Methanal and Ethanal
* Alkanones(R-CO) - Propanone and Hexanone
* Amines(R-NH2) – dimethylamine and propanamine
* Esters(RCOOR) - Ethylethanoate and Propylpentanoate
* Carboxylic Acids(RCOOH) – Ethanoic acid and Methanoic acid