NAME: JOSHUA IMHOAGENE OGAH

COLLEGE: ENGINEERING

MATRIC NO: 17/ENG02/063

DEPARTMENT: COMPUTER ENGINEERING

QUESTION 1

A. Fragment at m/z =105

N=14amu. 105-14=91

(91/12) = 7.5---------C7NH?

(7\*12) = 84

(1\*14) = 14

105 - (84+14) = 7

...7 hydrogen's gives C7NH7

Therefore... (2n +2 -no of hydrogen)/2

[2(7.5)+2-7]/12= 5.25

Then add an oxygen atom

C7NH7 -------C6NOH3

[(2(6.5)+2-3)/2]=5.5

B.– Organic compounds are important because they serve as the basis for all carbon bases.

* Organic compounds have versatile bonding patterns and are part of all organisms
* Long carbon chain can be produced
* Organic compounds will bond with many other elements.e.g Br
* Organic compounds can form single, double and triple bonds.
* Organic compounds form stable bonds with other carbon atoms.

C.

|  |  |
| --- | --- |
| Homocyclic | Heterocyclic |
| They are cyclic compounds having atoms of the same element as ring members | They are cyclic compounds having atoms of different elements as ring members including carbon atoms |
| Ring contains atom of the same element | Ring contains atoms of different elements |
| Contains atoms of the same element bonded to each other containing a ring | Contains atoms of at least two different element bonded to each other forming a ring |
| Examples include: benzene, cyclobutane | Examples include: pyran, azocibe. |

QUESTION 2

1. Retardation factor of the first band = (2.4/12.2)= 0.19

Retardation factor of the second band= (5.6/12.2)=0.45

Retardation factor of the third band= (8.9/12.2)= 0.729

1. A- belongs to the family of the aldehyde, aromatic and alpha hydroxyl ketone functional groups

B- belongs to the alkyne or alkyne family.

1. Brandy’s test 2,4- Dinitrophenylhydrazine can be used to qualitatively detect the carbon functionality of a ketone functional group or aldehyde functional group.

|  |  |  |
| --- | --- | --- |
| Organic compounds | Functional group | example |
| 1. Alkanes | RH | C2H6- ethane  C5H12- pentane |
| 1. Alkenes | RR’  C=CR2R3CH3 | CH2=CH2- ethylene  CH2=CH2- propene |
| 1. Alkynes | RIC≡CR2 | CH3 C ≡ CH HC≡ CH- propene |
| 1. Alcohols | ROH | C3H8OH- Propanol  C2H5OH- ethanol |
| 1. Alkyl halides | RX | CHCL3- chloroform  CH2CL2- dichloromethane |
| 1. Aldehyde | RCHO | C5H11CHO- hexanal  CH2O- methanal |
| 1. Carboxylic acid | RCOOH | CH3COOH- ethanoic acid  HCOOH- formic acid |