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COURSE: Chemistry 102

DEPARTMENT: M.B.B.S

1a) Ethylbenzene(C8H9)

Phenylmethanimine( C7H7N)

Phenylmethanone(C7H5O)

Pyran-3-Carbonitrile(C6H3NO)

1b) Importance of Organic Compounds

* They are composed of hydrogen, oxygen and carbon atoms and are found in all life forms.
* They create energy production in biological life, depletion of the atmosphere and release energy from hydrocarbons.
* Hydrocarbons are organic compounds that are made up entirely of hydrogen and carbon. They are used as a source of fuel and some arthropods such as the Brazilian Bee, use particular hydrocarbon smells to differentiate members of their family.
* One type of organic molecules that must be present in every human’s diet is protein. They are composed of chains of organic molecules called amino acids. Protein is important in diet to provide a source of amino acids- protein is broken down inside the stomach and intestines and the amino acids that make up the diet protein are absorbed inside the body and are used to make their own proteins.
* Nucleic acids are composed of many elements but mainly coal and hydrogen, although there are also oxygen atoms in their sugars. Nucleic acids are the most important of all biomolecules. They are found in abundance in all living things, where their function is to create and encode, and then to store information in the nucleus of all living cells of all living organisms on Earth.

1c)

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| Homocyclic Compouds | Heterocyclic Compouds |
| They are cyclic compounds of elements having atoms of the same elements as ring members | They are cyclic compounds having atoms of different elements as ring members including carbon atoms |
| They have 100% carbon atoms in their ring | They have mainly carbon and in addition, heteroatoms such as nitrogen, oxygen and sulphur are found in their ring |
| They are subdivided into alicyclic homocyclic and aromatic homocyclic | They are subdivided into alicyclic heterocyclic and aromatic heteroicyclic |
| Their ring contains only one type of atom ( mostly carbon atoms) | Their ring contains at least two different types of atoms including carbon |
| Examples are phenol, toluene, naphthalene and anthracene | Examples are terahydrofuran, piperidine, p;yridene, furan and pyrrole |

2a) Distance of solvent front= 12.2cm

Distance of band A= 2.4cm

Distance of band B= 5.6cm

Distance of band C= 8.9cm

Retardation Factor(Rf)= distance travelled by band

distance travelled by solvent front

Rf of A= 2.4

12.2

= 0.1967

Rf of B= 5.6

12.2

= 0.4590

Rf of C= 8.9

12.2

= 0.7295

2b) Compound A- Aldehydes

Compound B- Alkenes

2c) Brady's Test for Ketones and Aldehydes

2d) Functional groups with examples:

* Alkanes: methane and butane
* Alkene(C = C): ethene and butene
* Alkynes: ethyne and butyne
* Aldehydes(-CHO): methanol and butanal
* Alkanols(-OH): methanol and butanol
* Ketones: propanone and butanone
* Carboxylic Acids(-COOH): ethanoic acid and butanoic acid