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DEPARTMENT: Medicine and surgery

COURSE: GENERAL CHEMISTRY (II)

COURSE CODE: CHEM 102

ASSIGNMENT.

QUESTION 1

1. Suggest the possible formulas for a molecular ion (m/z) of 105.
2. What are the importance of organic compounds?
3. Differentiate between homocyclic and heterocyclic compounds

QUESTION 2

1. If the distance of the solvent front is 12.2cm.Then 2.4cm, 5.6cm and 8.9cm are distances of the different bands respectively. Calculate the Retardation factor of the available bands.
2. Two organic compounds were labeled A and B. A gave a positive test result (dark grey precipitate) to Tollens test and B decolorizes Bromine Water. Suggest the family to which these organic compounds belong.
3. 2, 4-dinitrophenylhydrazine test is employed for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. List 7 functional groups of organic compounds giving to two examples of each group.

QUESTION 1.

1. Molecular For - M/Z 105 Is C6H5CO+
2. I) Organic Compounds are used in the production of Antibiotics, Anticancer, Drugs, Painkillers, Anesthetic etc. used in the Medicine.

II) Organic compound are helpful in diagnosing aids to detect the organic part of the disturbed substance or deficiency e.g. Diabetics is associated with increased sugar level, Sugars have Aldehyde and Ketone groups. Checking for the Functional group can be used as a parameter in in diagnosing disturbed substances in the body.

III) Organic compounds help us study our food component and requirement of the body for various purposes like Pregnancy, Diseased condition and Body fitness.

IV) Organic compounds is used in clearing impurities for example in Drug extraction from plants the fatty matter from the pulp is removed using Petroleum ether.

V) Organic Compounds are used as Sterilizing agents and Disinfectants like Phenol, Formaldehyde etc.

VI) Diamonds, graphite and petroleum are found to be highly valuable, durable and hardest in the world.

3)

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| HOMOCYCLIC COMPOUNDS | HETEROCYCLIC COMPOUNDS |
| Contains only one type of Atom. | Contains at least different types of atoms including Carbon. |
| Have 100% Carbon atoms in the rings. | Mainly Carbon and in addition , heteroatoms such as Nitrogen, Oxygen, and Sulphur are found in their ring. |
| Sub-divided into: | Sub-divided into: |
| Alicyclic and Aromatic Homocyclic compound. | Alicyclic and Aromatic Heterocyclic compound. |
| Examples include Phenol, Toluene, Naphthalene, and Anthracene. | Examples include Furan, Pyrrole, Pyridine, Piperidine, Thiophene. |

QUESTION 2.

1. Distance of solvent front =12.2cm

Distances of the band are 2.4cm, 5.6cm and 8.9cm respectively.

Retardation factor (Rf) = Distance moved by substance

Distance moved by solvent front.

Rf for 2.4cm band = 2.4

12.2

Rf= 0.19

Rf for 5.6cm band = 5.6

12.2

Rf =0.46

Rf for 8.9cm band = 8.9

12.2

Rf =0.73

1. A is an Aldehyde

B is a Ketone.

1. Aldehyde and Ketone.
2. Functional Groups.
3. Alkanol/Alcohol
4. Ether
5. Aldehyde/Alkanals
6. Carboxylic acid
7. Esters
8. Ketones/Alkanones
9. Amines