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CHEMISTRY ASSIGNMENT (CHM 102)

QUESTION 1

Formula mass= 105

Given that C= 12.010g/mol

H= 1.00794g/mol

O= 15.999 g/mol

N= 14.006g/mol

1. C2H2N4  (acetyl nitrate)= (2 x 12.0107) + (3 x 1.00794)+(14.0067)+(4x15.999)=105.05glmol
2. C5 H3N3 =(5X12.0107)+(3X1.00794)+(3X14.0067)Pyrazine carbonitrate =105.1glmol
3. C3H2NO3=(3x12.0107)+(7X1.00994)+(14.0067)+(3x15.999)\_2- nitro -1 propanol = 105.1glmol
4. C7H5O= (7x12.0107)+(15x1.00794)+(15.999)-Phonyl methanone = 105.116glmol

(B) IMPORTANCE OF ORGANIC CHEMISTRY

1) they are used as sterilizing agents .

2) they are used as analytical substances

3) certain valuables are made up them e.g diamonds

4)They soldy make up food substances

5) they are used in medicine for the production of drugs for curing diseases

C. DIFFERENCES BETWEEN HOMOCYCLIC AND HETEROCYCLIC COMPOUNDS

|  |  |
| --- | --- |
| HOMOCYCLIC | HETEROCYCLIC |
| They are cyclic compounds having atoms of the same element as ring member | They are compounds having atoms of at least two different elements including carbon atoms or ring members |
| They contain same atom of elements | Ring contains atoms of different elements including oxygen, sulphur, nitrogen carbon |
| Examples are Benzene, toluene, phenol, cyclohexane, naphthalene | Examples are azenine, pyridine, pyran etc |

QUESTION 2

1. Retardation factor: distance moved by substance

Distance moved by solvent factor

Given: Solvent Front= 12.2cm

B and A= 2.4cm

B and B= 5.6cm

B and C= 8.9cm22

1. Tollen’s test gives a positive test for aldehyde, thus A is aldehyde

Bromination test/Bromine water test gives a positive test for unsaturated compounds. Thus B is an unsaturated compound (alkene or alkyne)

1. 2,4-Dimethyl hydrazine is employed for or to qualitatively detect the carbonyl functioning of a ketone or aldehyde functional group.
2. Functional group

1 Alkanol|ROH –Ethanol (C2H5OH)

2 Ether|ROR’ - Ethoxy ethane (C2H5OC2H5)

3 Alkyl Halide| RX – Ethyl Fluoride (C2H5F)

4 Alkanal Aldehydes | RCHO – Pentanal (C5H10O)

5 ALKANOATE |ESTER |ROOR-ETHYL PROPANOATE (CH3CH2COOC2H5)

6 ALKANONES |KETONES |RCOR -2- HEXCNONE ( C4H9COCH3)

7 ALKANOIC | CARBOXYLIC ACIDS |RCCOH –PROPANOIC ACID (C3H2OOH)