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MATRIC NUMBER: 19/MHS01/159

COURSE CODE: CHM 102 (STEREOCHEMISTRY AND FUNCTIONAL GROUPS)

COURSE TITLE: GENERAL CHEMISTRY 2

DEPARTMENT: MBBS LEVEL: 100

1. NAME THE FUNCTIONAL GROUPS PRESENT;

A. CH2=C(OH)HCHO

* Alkene (C=C)
* Aldehyde (-CHO)
* Alkanol (-OH)
* Alkane (C-C)

B. C6H5CH(NH2) COCH3

* Amine (-NH2)
* Alkane (C-C)
* Ketone (C=O), Phenyl group(C6H5) with double bonds.

C. CH3C=CHCH(OH)CHO

* Aldehyde (-CHO)
* Alkanol (-OH)
* Alkene (C=C)
* Alkane (C-C)

2. 0.856g is diluted to 10.0cm3

 Xg is diluted to 100cm3

X = $0.856\*100/10$

X = 8.56g in 100cm3

Specific rotation = observed rotation / concentration gcm-3 x path length of sample cell (dm)

= 1 / 8.56gcm-3 x 1dm

= 0.117g-1cm3dm-1

Therefore, the specific rotation is 0.117g-1cm3dm-1.

3A. ISOMERS OF HEXA-2,4-DIENE

 Hexa-2,4-diene, has three geometric isomers because using this form (E, E), (E, Z), (Z, E) and (Z, Z); (E, Z) and (Z, E) are identical.

* (2E, 4E) – hexa-2,4-diene.
* (2E, 4Z) – hexa-2,4-diene.
* (2Z, 4Z) – hexa-2,4-diene

3B. ISOMERS OF 2,3-DIMETHYLBUT-2-ENE

Its molecular formula is C6H12. It is synonymous to 2,3-dimethylbutene-2, 2-butene, 2,3-dimethyl- and 1,1,2,2-tetramethylethylene. With all this synonyms, it is said to have one isomer and other possible isomers.

* CH3CCH3=CH2CCH3: 2,3-dimethylbut-2-ene.
* Other isomers of Hexene;

 CH3CH2CHCH3=CHCH3: 3-methylpent-2-ene.

* 2,3-dimethylbut-1-ene etc.