Name:Ogunyebi Oluwadamilola Esther
Department: Medicine and Surgery
Matric No: 19/MHS01/300
College: College of Medical and Health Sciences
Course: General Chemistry II (CHM 102)

1. Name the functional groups present in each of the following molecules

- CH2=C(OH)HCHO

Functional groups present
a. C=C (Alkene)
b. -OH (Hydroxyl group)
c. -CHO (Alkanal)

- C6H5CH(NH2)COCH3

Functional groups present
a. Phenyl group
b. -NH2 (Amine)
c. -C=O (Alkanone)

- CH3C=CHCH(OH)CHO

Functional groups present
a. C=C (Alkenes)
b. -OH (Hydroxyl group)
c. -CHO (Alkanal)

2. A 0.856g sample of pure (2R, 3R) Tartaric acid was diluted to 10cm^3 with water and placed in a 1.0 polarimeter tube. The observed rotation at 20^oC was +1.0^o. Calculate the specific rotation of (2R, 3R) Tartaric acid.

Mass of Pure (2R, 3R)-Tartaric acid = 0.856g

Volume = $10cm^3$

Observed rotation = $+1.0^\circ$

Path length = 1.0dm

Specific rotation = ??

Concentration in $g/cm^3 = \frac{0.856}{10} = 0.0856 g/cm^3$

Specific Rotation = $\frac{\text{Observed rotation}}{(\text{Concentration}) \times (\text{path length})}$

Specific rotation = $\frac{+1.0^\circ}{(0.0856) \times (1.0dm)}$

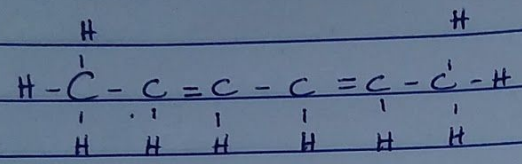
$= +11.68 g^{-1}cm^3dm^{-1}$

$\therefore$ => Specific Rotation

$= +11.68 g^{-1}cm^3dm^{-1}$

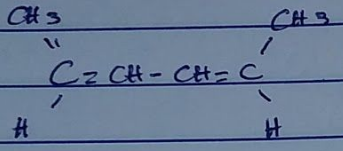
3. Draw the geometric isomers (where possible) for each of the following compounds
   - Hexan-2,4-diene
   - 2,3-dimethylbut-2-ene

1. Hexan-2,4-diene

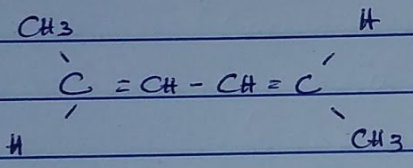


Isomers

20~

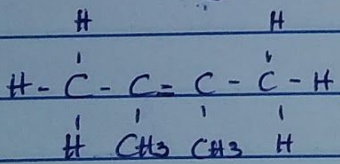


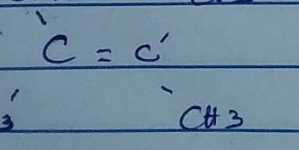
Cis-2,4-hexandiene



Trans-2,4-hexandiene

ii) 2,3-dimethyl but-2-ene





It has no cis-trans isomerism as all substituents are identical