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MATRIC NO.: 19/MHS06/022

DEPARTMENT: MEDICAL LABOURATORY SCIENCE

COLLEGE: MEDICAL AND HEALTH SCIENCES

COURSE: CHM 102 STEREOCHEMISTRY ASSIGNMENT

1. i. Alcohols(OH)

   Aldehydes or alkanals (RCHO)

   ii. Amines((RNH_2)

   Ketones or alkanones ($RR^{I}CO$)

   iii. Alcohols(OH)

   Aldehydes(RCHO)

2. **Solution**

   Observed rotation = 1.0^{-}

   Concentration = $0.856g/10\ cm^3 = 0.0856gcm^{-3}$

   Length of sample cell (polarimeter) = 1.0dm

   ∴Specific rotation = $\frac{\text{observed rotation (degrees)}}{\text{Concentration in g/cm}^3 \times \text{path length of sample all in dm}}$

   Specific rotation of the sample = $\frac{1}{0.856 \times 1}$

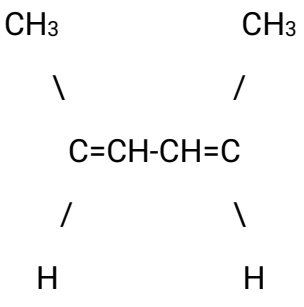
   ± 10

   $= 1/0.0856 \times 1$

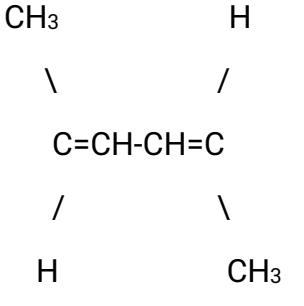
   $\cong 11.68g^{-1}cm^3dm$

3. **Possible geometric structures**

i. Hexa-2,4-diene

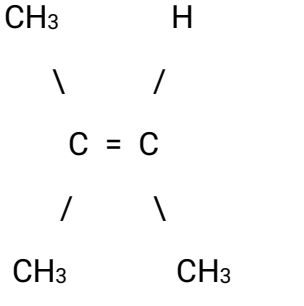


Cis-Hexa-2,4-diene



Trans-Hexa-2,4-diene

ii. 2,3-Dimethylbut-2-ene



Geometric isomers is not possible for 2,3-Dimethylbut-2-ene.