AYO-OMOTADE BLESSING OLUWAFUNMILAYO
19/MHS06/006

2. A 0.856g sample of pure [2R, 3R]-tartaric acid was diluted to 10cm³ with water and placed in a 1.0dm polarimeter tube. The observed rotation at 20°C was +1.0°. Calculate the specific rotation of [2R, 3R]-tartaric acid.

Solution

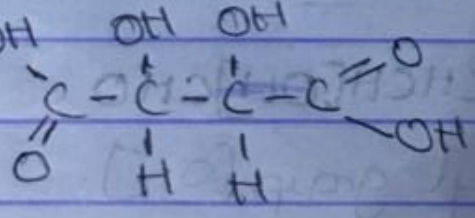
Recall,

$$[\alpha]_\lambda^T = \frac{\alpha}{l \times c}$$

Where L = length of sample tube

α = observed rotation

$$\text{concentration [mol dm}^{-3}] = \frac{\text{Conc [g/dm}^3]}{\text{mol mass [g/mol]}}$$

Tartaric acid =  = $C_4H_6O_6$

$$[\alpha]_\lambda^T = \frac{\alpha}{c \cdot l} \text{ where } \alpha = +1.0$$

$$c = \frac{0.856}{10} = 0.0856 \text{ g/cm}^3$$

$$\therefore = \frac{+1.0}{0.0856} = 11.68^\circ$$

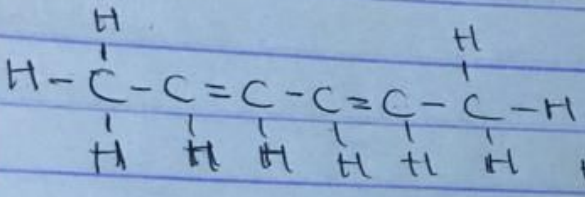
AYO-ODOTADE BLESSING OLUWAFUNMILAYO
19/MHS06006.

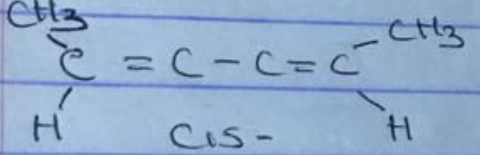
3 Draw the possible geometric isomers [where possible] for each of the following compounds:

i) Hex-2,4-diene (ii) 2,3-Dimethylbut-2-ene

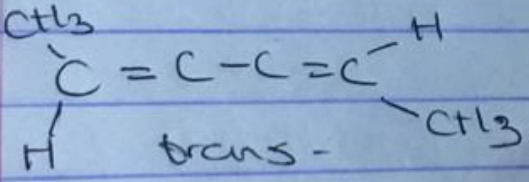
Answer:

i) Hex-2,4-diene.



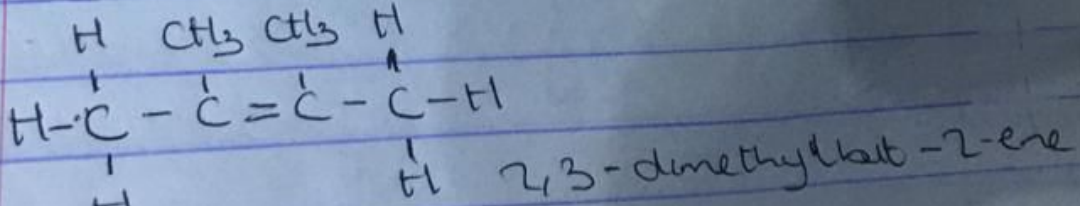


cis-

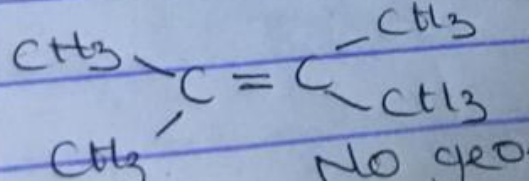


trans-

2)



2,3-dimethylbut-2-ene



No geometric isomer.

3

AYO-OYOTADE BLESSING OLUWAFUNMILAYO
MEDICAL LABORATORY SCIENCE
19/MHS06/006
General Chemistry II CHM 102
STEREOCHEMISTRY AND FUNCTIONAL GROUP

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

i) $CH_2=C[OH]HCHO$

a Hydroxyl group [OH]
b Alkene [Double bond chain].
c Alkanol [$C=O$ / H].

ii) $C_6H_5CH[NH_2]COCH_3$

a Amino group [NH_2].
b Phenyl group [C_6H_5] with double bonds.
c Alkanone / Ketone [$\overset{O}{\overset{\|}{C}}-R$].

iii) $CH_3C=CHCH[OH]CHO$

a Hydroxyl group [OH].
b Alkene [C=C]
c Alkanol [$C=O$ / H].