

NAME: LISMAH ZAINAB DAMILOLA

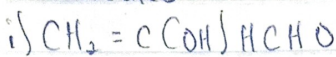
DEPARTMENT: MBBS

MATRIC NO: 19/MH501/426

COURSE: CEM 102

ASSIGNMENT ON STEREOCHEMISTRY  
AND FUNCTIONAL GROUP

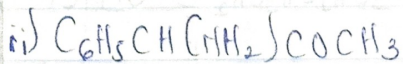
i) Name the functional groups present in each of the following molecules



-functional groups present: a) Double bond ( $\text{C}=\text{C}$ )

b) Hydroxy-functional group ( $\text{OH}$ )

c) Carbonyl-functional group (Aldehyde)  $\left( \begin{array}{c} \text{C}=\text{O} \\ | \\ \text{H} \end{array} \right)$



-functional groups present: a) Phenyl group ( $\text{C}_6\text{H}_5$ )

b) Carbonyl-functional group (Ketone)  $\left( \begin{array}{c} \text{C}=\text{O} \\ | \\ \text{R} \end{array} \right)$

c) Amino group ( $\text{NH}_2$ )



-functional groups present: a) Double bond ( $\text{C}=\text{C}$ )

b) Hydroxy-functional group ( $\text{OH}$ )

c) Carbonyl-functional group (Aldehyde)  $\left( \begin{array}{c} \text{C}=\text{O} \\ | \\ \text{H} \end{array} \right)$

2)  $m = 0.856\text{g}$

Length in  $\text{cm}^3 = 10\text{cm}^3$

Length in dm = 1.0dm

$T = 20^\circ\text{C}$

$\alpha = +1.0^\circ$

$[\alpha]_D^{20} = ?$

$$[\alpha]_D^{20} = \frac{\alpha}{c \cdot l}$$

But  $c = \frac{0.856\text{g}}{10\text{cm}^3} = 0.0856\text{gcm}^{-3}$

$$\therefore [\alpha]_D^{20} = \frac{1}{0.0856 \times 1}$$

$$[\alpha]_D^{20} = \frac{1}{0.0856}$$

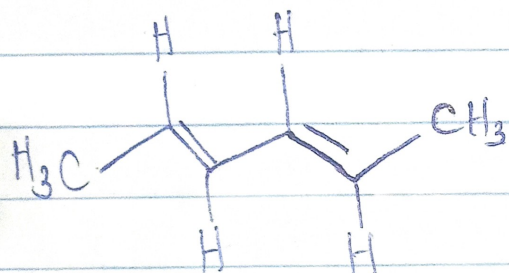
$$[\alpha]_D^{20} = 11.68^\circ$$



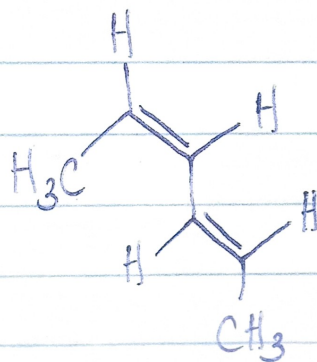
3) Possible geometric isomers of the following:

i) Hexa-2,4-diene.

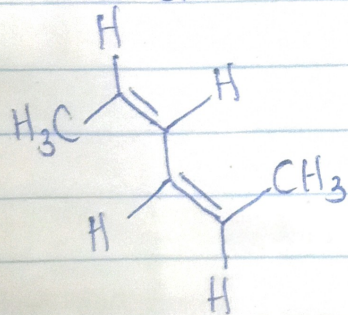
a) Trans-trans isomer



b) Cis-trans isomer



c) Cis-cis isomer



ii) 2,3-Dimethylbut-2-ene.

No possible geometric isomers.