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UT/M/ASO/1415

CHM 102 ASSIGNMENT

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

i) $CH_2=C(OH)HCHO$ ⇒ i) aldehyde
ii) alkanol
iii) alkene

ii) $C_6H_5CH(NH_2)COCH_3$ ⇒ i) amides
ii) ketones

iii) $CH_3C=CHCH(OH)CHO$ ⇒ i) Alkene
ii) Alkanol
iii) Aldehydes

2 A 0.856g sample of pure (2R,3R)-tartaric acid was diluted to $10cm^3$ 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.

sol:

$$[\alpha] = \frac{\alpha_{observed}}{c \times l}$$

[α] — specific rotation; $\alpha_{observed}$ — observed rotation; c — concentration; l — path length.

$$\text{Concentration} = \frac{0.856}{10}$$

$C = 0.0856 g/cm^3$ or g/ml

path length = $1.0 dm^3$

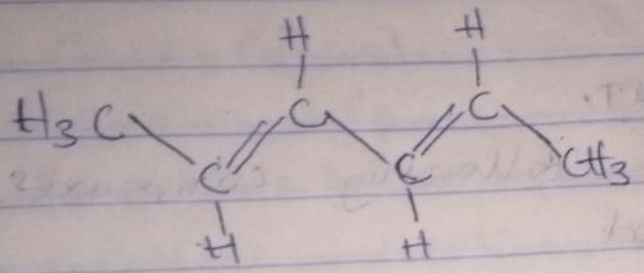
Observed rotation = +1.0°

$$[\alpha] = \frac{1}{0.0856 \times 1}$$

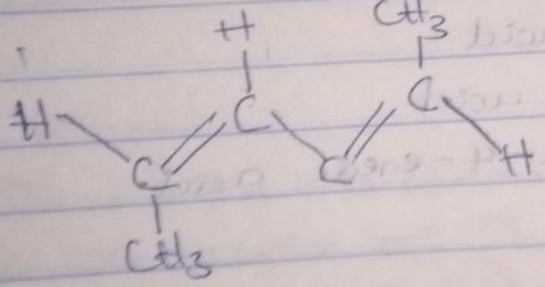
$= 11.682°$

3 Draw the possible geometric isomers where possible for the following compounds: i) Hexa-2,4-diene
ii) 2,3-Dimethylbut-2-ene.

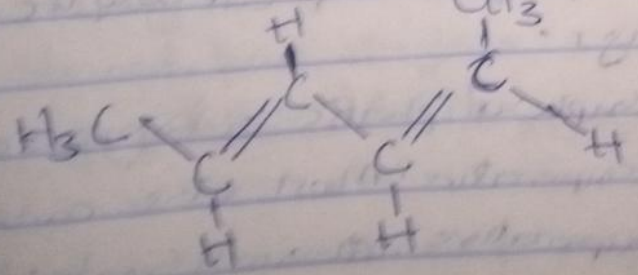
19/MHS01/405



(2E,4E)-hexa-2,4-diene



(2Z,4Z)-hexa-2,4-diene



(2Z,4E)-hexa-2,4-diene