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19/MHS01/302

MBBS

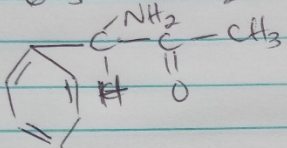
CHM 102

1&2.

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1. a) $\text{CH}_2 = \text{C}(\text{OH})\text{HCHO}$
functional group present:
- Double bond chain (Alkene)
- OH (Hydroxyl group)
- $\begin{array}{c} \text{C}=\text{O} \\ | \\ \text{H} \end{array}$ (Alkanol)

2) mass of tartaric acid = 0.856g
Vol. of water diluted in = 10cm³
Recall,
mass conc. (c) = $\frac{\text{mass}}{\text{vol}} = \frac{0.856\text{g}}{10\text{cm}^3}$
= 0.0856g/cm³
Vol. of polarimeter tube = 1dm³
∴ length of tube = 1dm
Observed rotation (α) = +1.0°
at 20°C

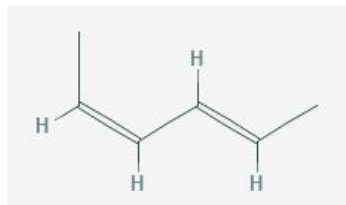
b) $\text{C}_6\text{H}_5\text{CH}(\text{NH}_2)\text{COCH}_3$

Functional group present:
- Phenol group with double bonds
- Amine (NH₂)
- Alkanone (ketone) $\begin{array}{c} \text{C}=\text{O} \\ | \\ \text{R} \end{array}$

Specific rotation [α] = ?
 $[\alpha] = \frac{\alpha}{c \times l}$
= $\frac{+1.0^\circ}{0.0856\text{gcm}^{-3} \times 1\text{dm}}$

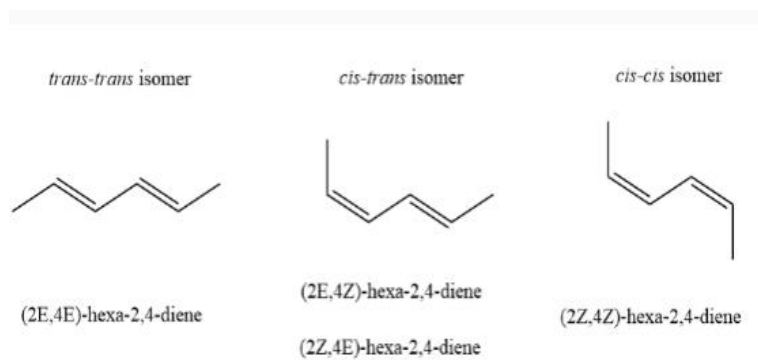
c) $\text{CH}_3\text{C}=\text{CHCH}(\text{OH})\text{CHO}$
functional group present
- Double bond (=)
- $\begin{array}{c} \text{C}=\text{O} \\ | \\ \text{H} \end{array}$ Alkanol
- OH Hydroxyl group.

$[\alpha] = \frac{+1}{0.0256} = +11.6882^\circ$

3. Hexa-2,4-diene – has only 3 isomers



Isomers



B. 2,3 dimethyl but-2-ene. - does not have geometric isomers because there are two identical groups attached to the same carbon of the double bond.

