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DEPT: MBBS

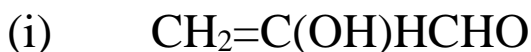
COLLEGE: MHS

MATRIC NO: 19/MHS01/360

COURSE CODE: CHM 102

ASSIGNMENT

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



Double bond chain---alkene

OH---hydroxyl group

CHO-aldehyde group



C_6H_5 ---phenyl group with double bond

NH_2 ---amine group

CO---ketone group



Double bond---alkene

OH---hydroxyl group (alkanol)

CHO---aldehyde group

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.

Solution.

Recall that specific rotation α_{λ}^T , is given by

$$\alpha_{\lambda}^T = \frac{\alpha}{c \times l}$$

Where l = path length

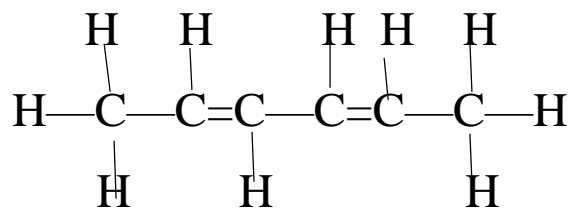
c = concentration in g/dm^3 (mass/volume)

α = observed rotation

$$\begin{aligned} \text{specific rotation} &= \frac{1.0}{1.0 \times \frac{0.856}{10}} \\ &= \frac{1.0}{0.0856} = 11.68^{\circ} \text{g}^{-1} \text{cm}^3 \text{dm}^{-1} \end{aligned}$$

3. Draw the possible geometric isomers (where possible) for each of the following compounds.

(i) Hexa-2,4-diene



(ii) 2,3-dimethylbut-2-ene

