

Omoragbon Osafure Favour

19/MHS01/344

Medicine and surgery

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

(i) $\text{CH}_2=\text{C}(\text{OH})\text{HCHO}$

Alkene(=) , alkanol(OH) , aldehyde (RCHO)

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

Ketone(RR^1CO), Amide(RCONH_2) , Phenyl group

(iii) $\text{CH}_3\text{C}=\text{CHCH}(\text{OH})\text{CHO}$

Alkanol(OH), Alkene(=), Aldehyde (RCHO)

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

$$\text{Specific rotation} = \frac{\text{observed rotation } (^\circ)}{(\text{Conc g/cm}^3) \times \text{Path length of sample cell in dm}}$$

$$\text{Path length} = 1.0 \text{ dm}$$

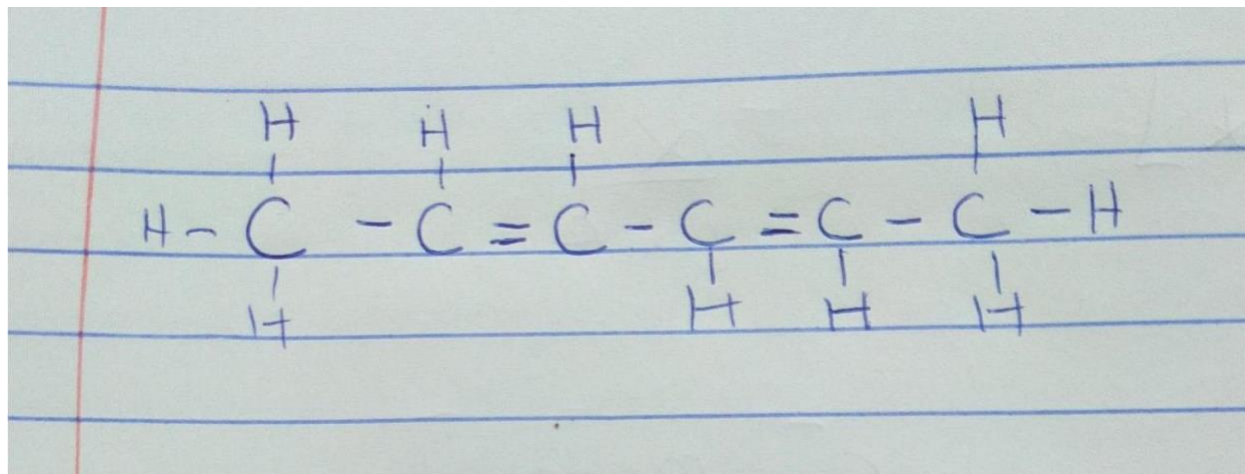
$$\text{Observed rotation} = 1.0^\circ$$

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

$$\begin{aligned} \text{Specific rotation} &= \frac{1.0}{0.0856 \times 1} \\ &= \underline{\underline{11.68 \text{ g}^{-1} \text{cm}^3 \text{dm}^{-1}}} \end{aligned}$$

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

