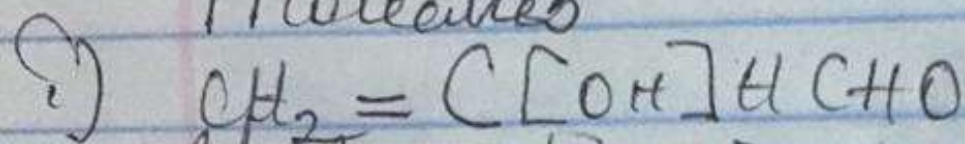


1/ Felicia Olowookere

19/Mth 06/027

Medical Laboratory Science.

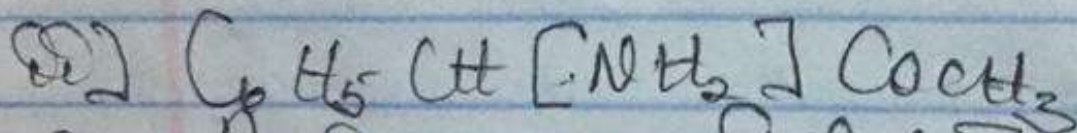
1. Name the functional groups present in each of the following molecules



a. Hydroxyl $[\text{OH}]$

b. Alkene $[\text{Double bond chain}]$

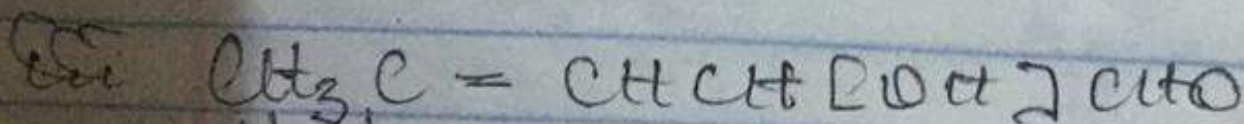
c. Alkane $[\text{C} = \text{H}]$



a. Amino group $[\text{NH}_2]$

b. Phenyl group $[\text{C}_6\text{H}_5]$ and double bonds.

c. Alkane / ketone $[\text{C} = \text{O} - \text{R}]$



a. Hydroxyl group $[\text{OH}]$

b. Alkene $[\text{C} = \text{C}]$

c. Alkane $[\text{C} = \text{H}]$

2. A 0.856g sample of pure [2R, 3R]-tartaric acid was dissolved to 10 cm³ 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.

Solution

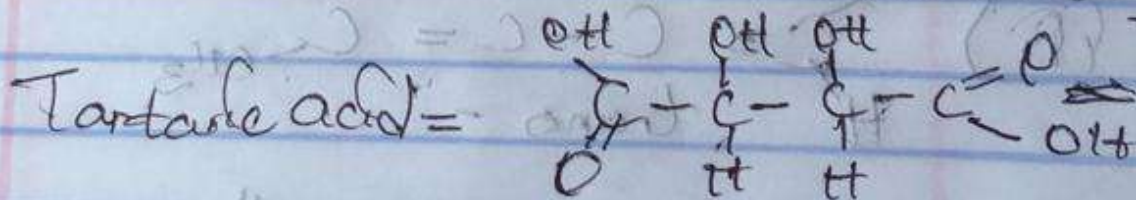
Recall

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

Where l = Length of sample tube

α = Observed rotation

$$\text{Concentration [mol dm}^{-3}] = \frac{\text{conc [g dm}^{-3}]}{\text{mol mass [g mol}^{-1}]}$$



$$[\alpha]_D^{20} = \frac{\alpha}{l \cdot c} \quad \text{Where } \alpha = +1.0$$

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

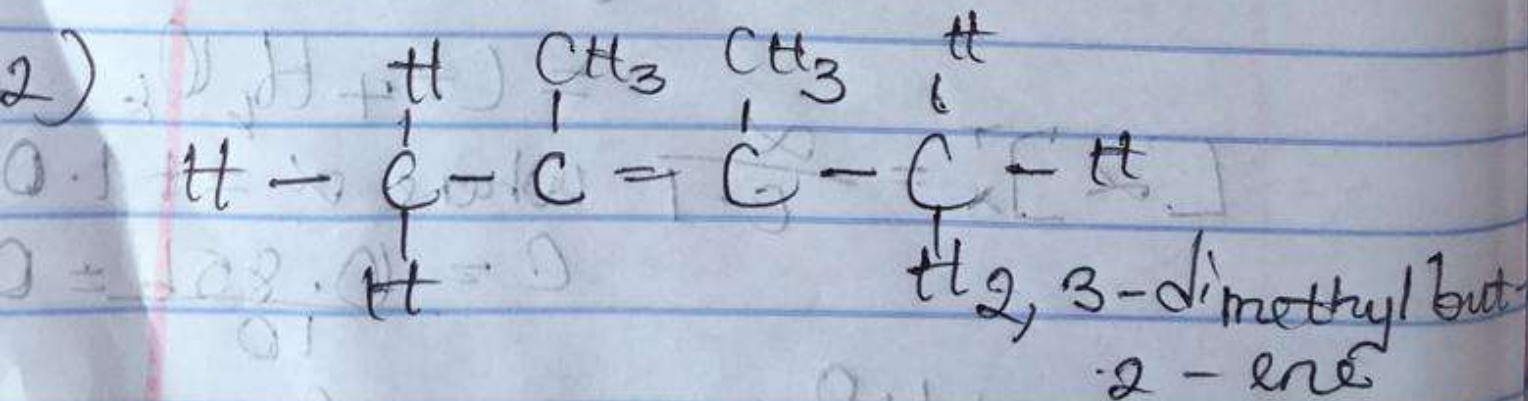
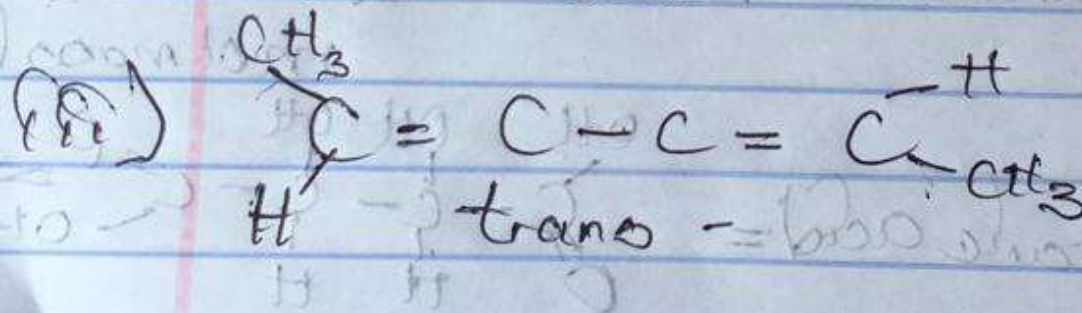
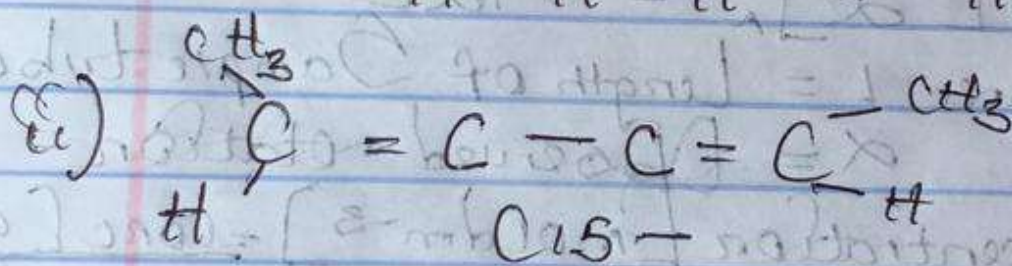
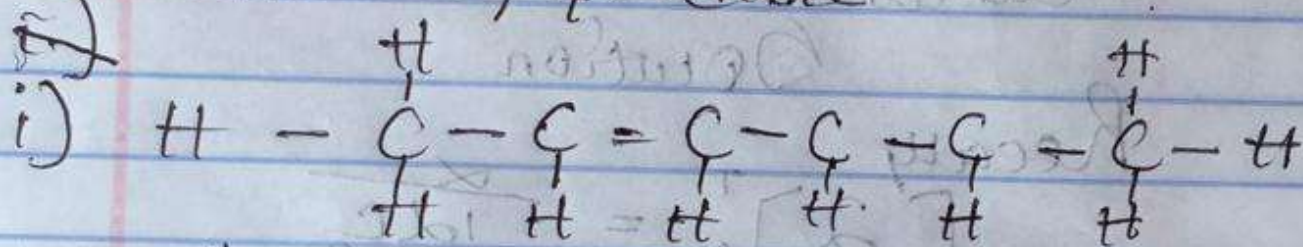
$$l = \frac{+1.0}{0.0856} = \underline{\underline{11.68^\circ}}$$

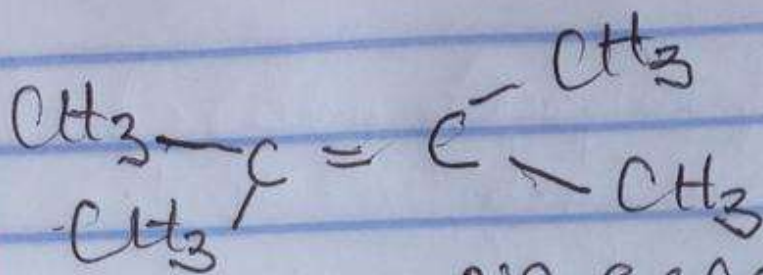
3. Draw the Possible geometric isomers [where possible] for each of the following compounds:

- i) Hex-2,4-diene ii) 2,3-Dimethylbut-2-ene

Answer

i) Hex-2,4-diene





no geometric isomer
3