

Assignment on Stereochemistry and Functional Group

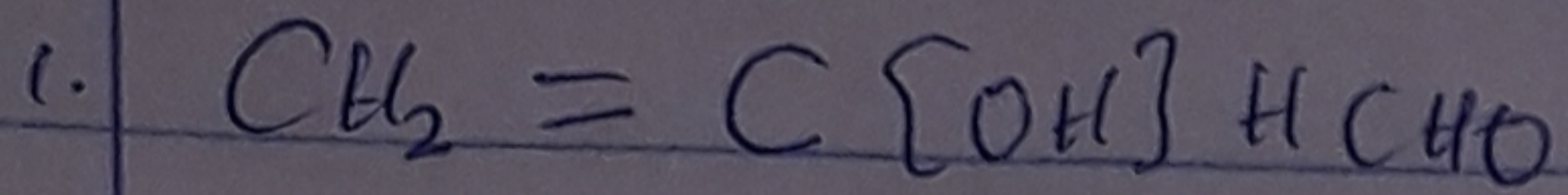
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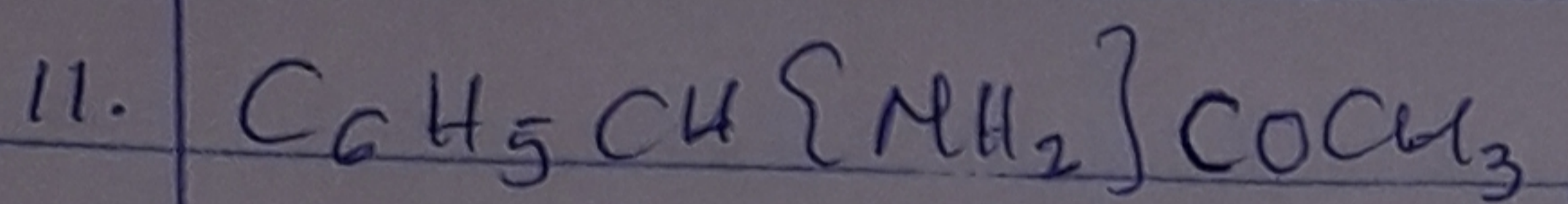
MATRIC NO: 19/MHS01/027.

DEPARTMENT: MBBS

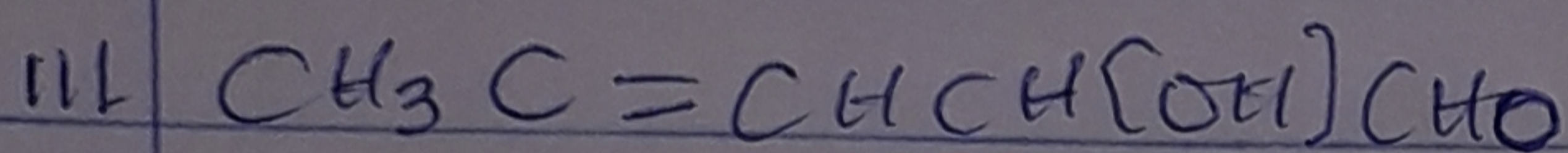
1. Name the functional group present in each of the following molecules.



Functional group: Aldehyde, Alcohol and Alkene.



Functional group: ~~Ester~~, Amide



Functional group: Aldehyde, Alcohol and Alkene

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

Sol

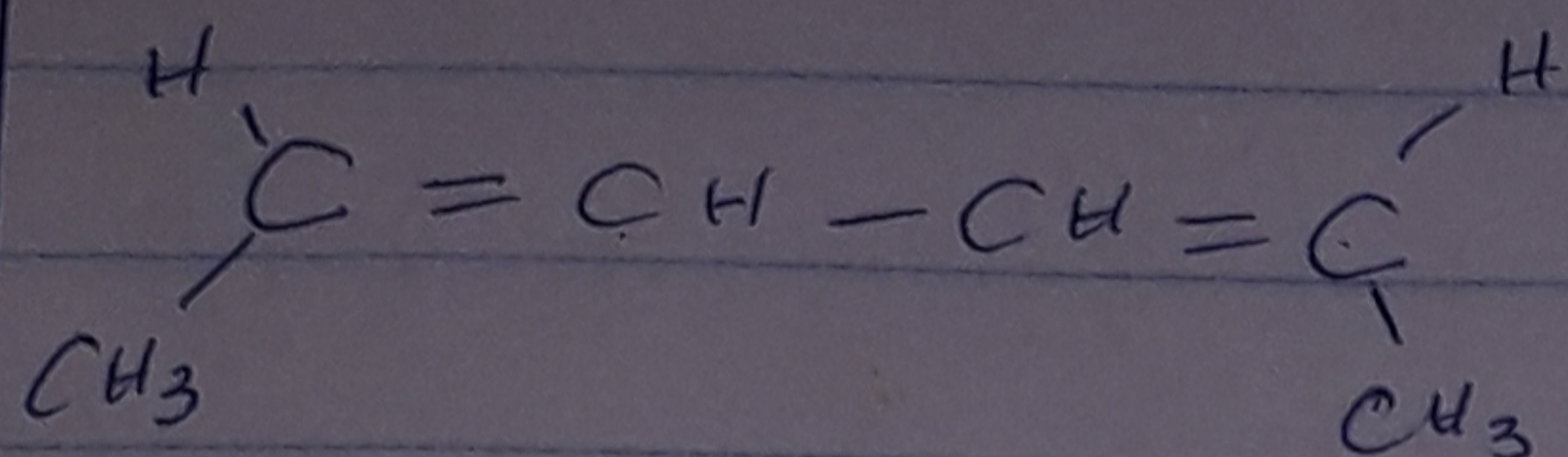
$$\text{Specific Rotation} = \frac{\text{Observed Rotation (degrees)}}{[\text{Concentration}(\text{g}/\text{cm}^3)] \times \text{Path length of sample cell (dm)}}$$

Con n

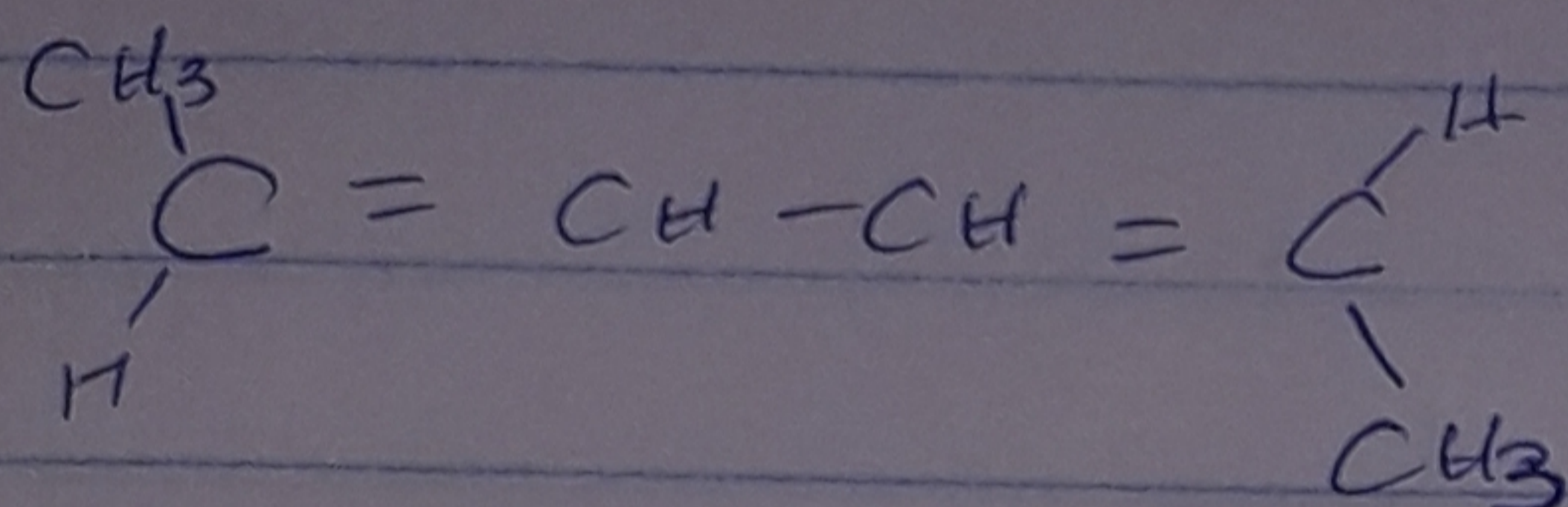
$$\begin{aligned}\text{Specific Rotation} &= \frac{1}{0.856\text{g}/10\text{cm}^3 \times 1} \\ &= 11.7\text{g}^{-1}\text{cm}^3\text{dm}^{-1}\end{aligned}$$

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

1. Hexa-2,4-diene. $\{ \text{CH}_3\text{-CH}=\text{CH}-\text{CH}=\text{CH}-\text{CH}_3 \}$

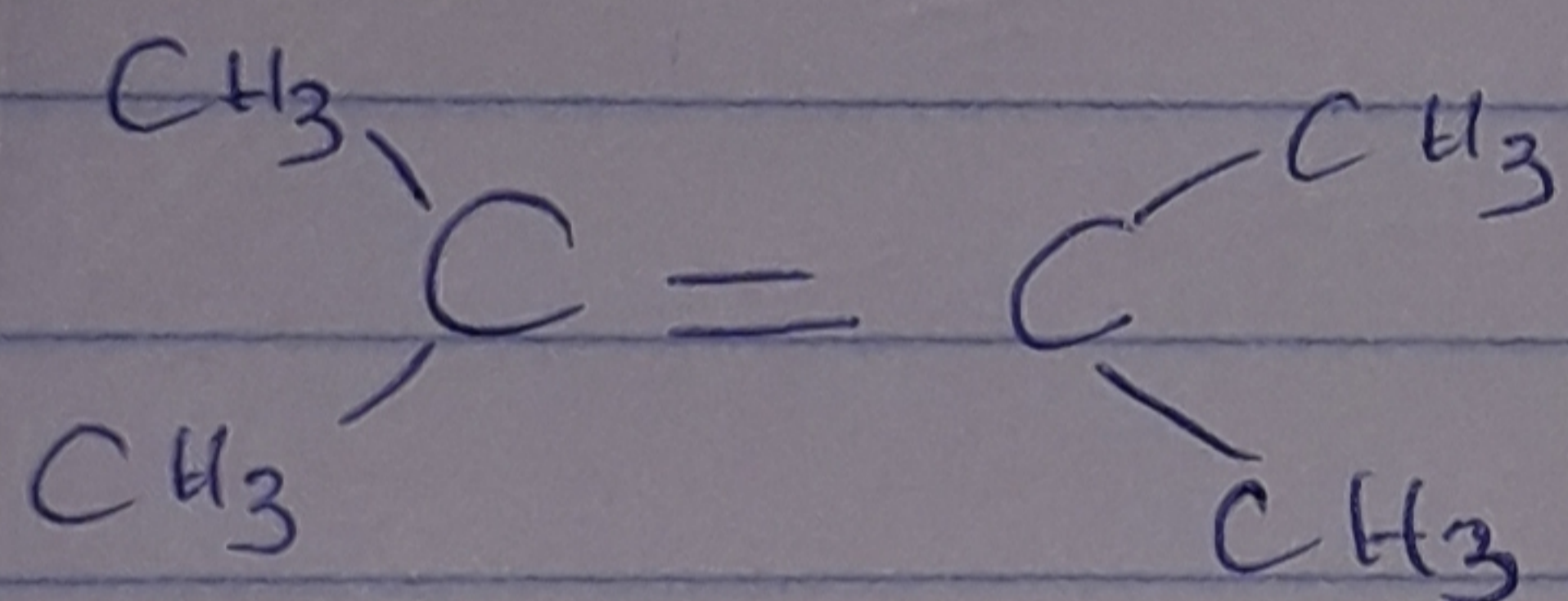


Cis Hexa-2-4-diene.



Trans Hexa-2-4-diene.

11. 2,3-Dimethylbut-2-ene. $\{ \text{CH}_3\text{C}(\text{CH}_3)=\text{C}(\text{CH}_3)\text{CH}_3 \}$



Geometric isomerism is not possible in 2,3-Dimethylbut-2-ene.