

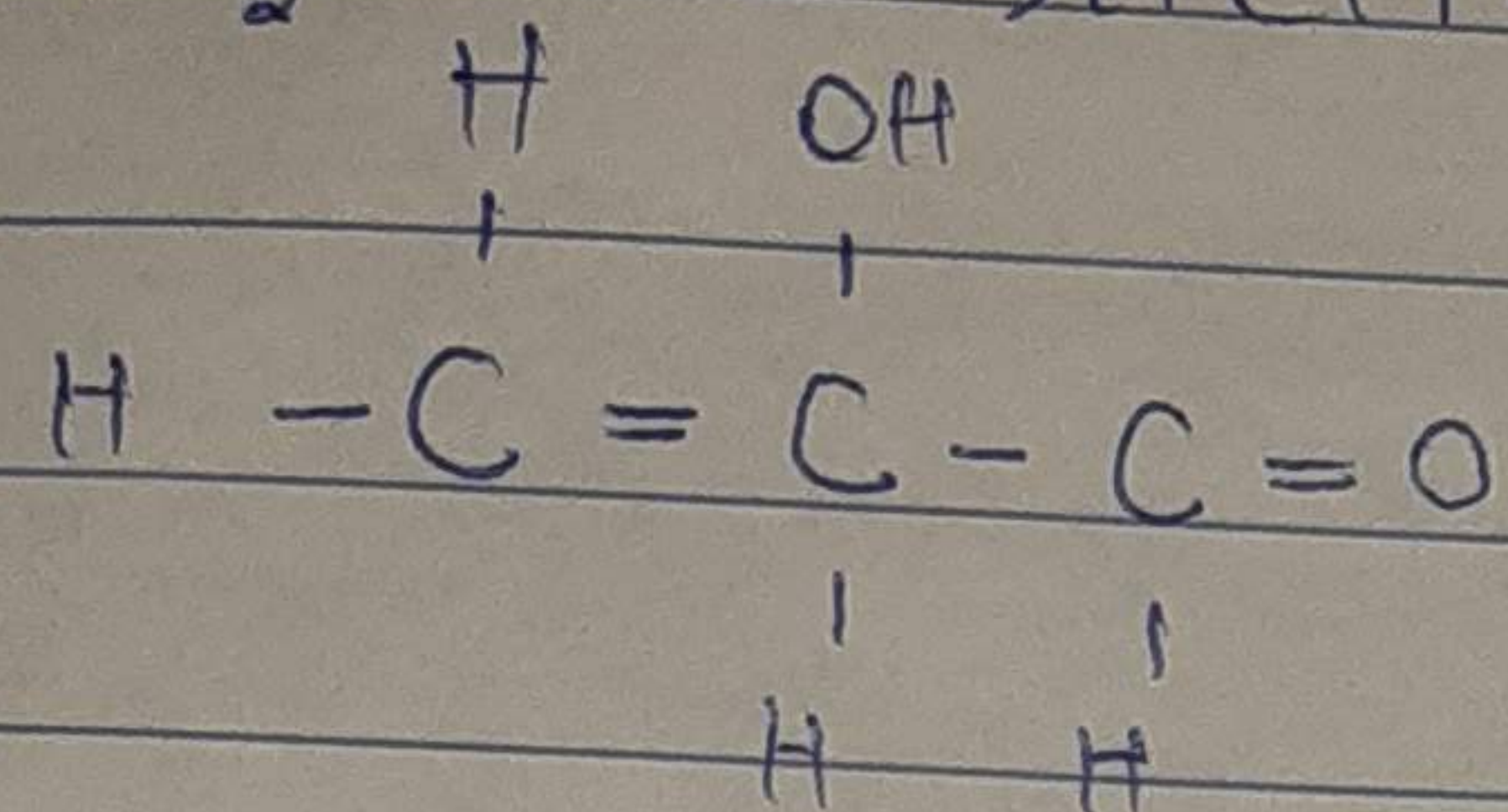
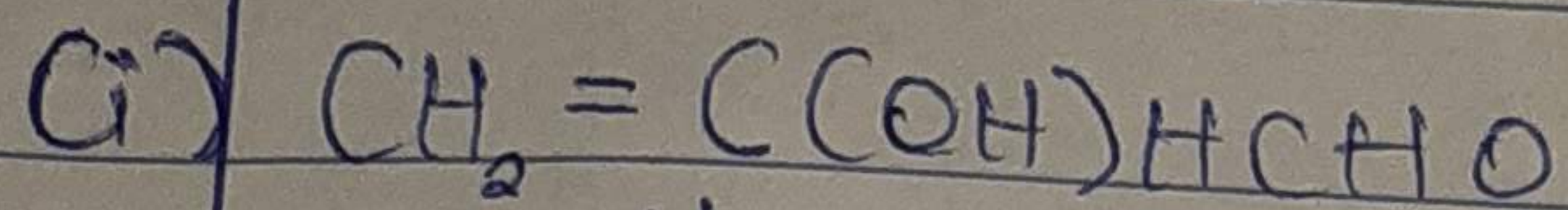
Chem 102 (Assignment)

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Matic Number: 19/MHS01/406

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

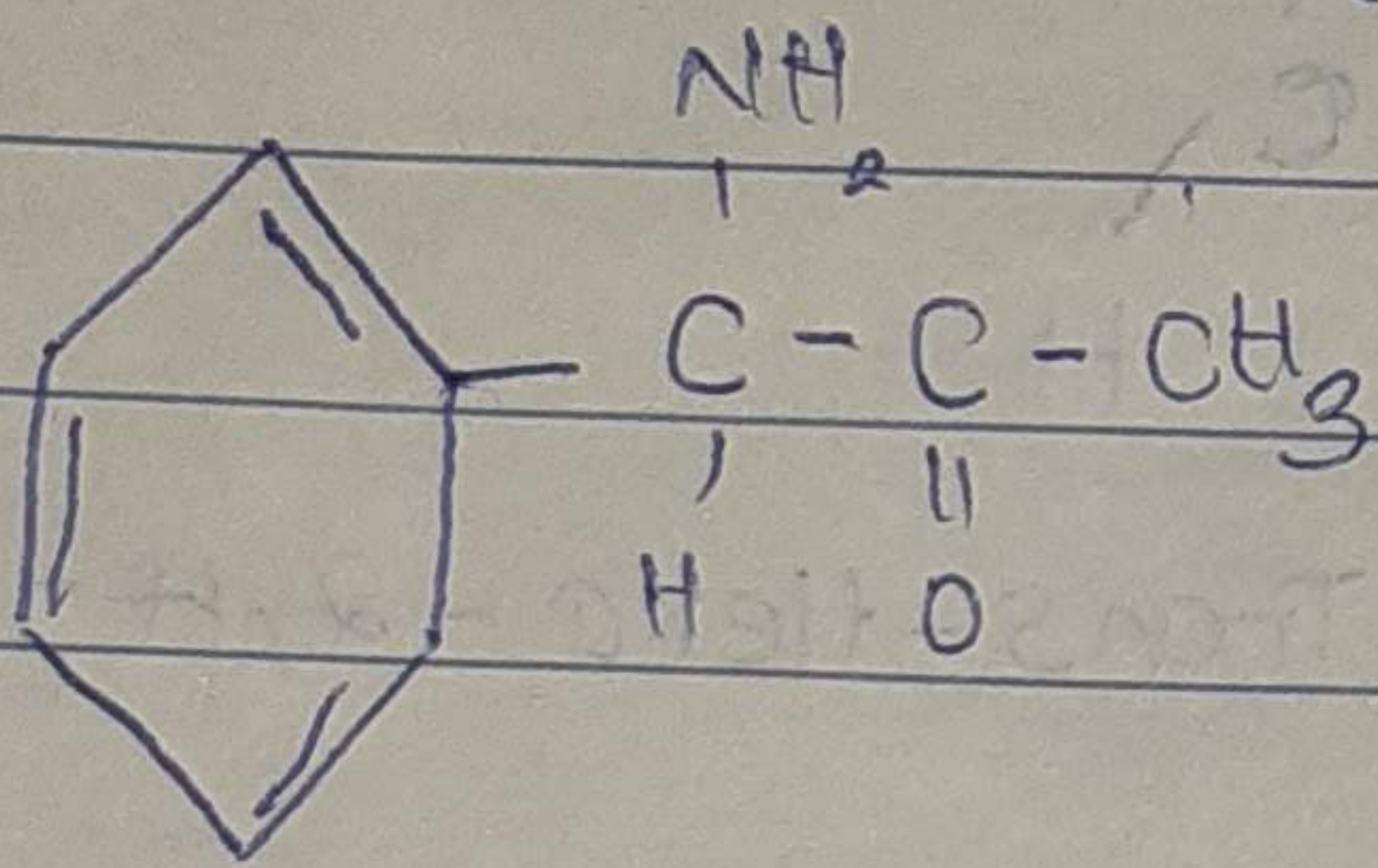
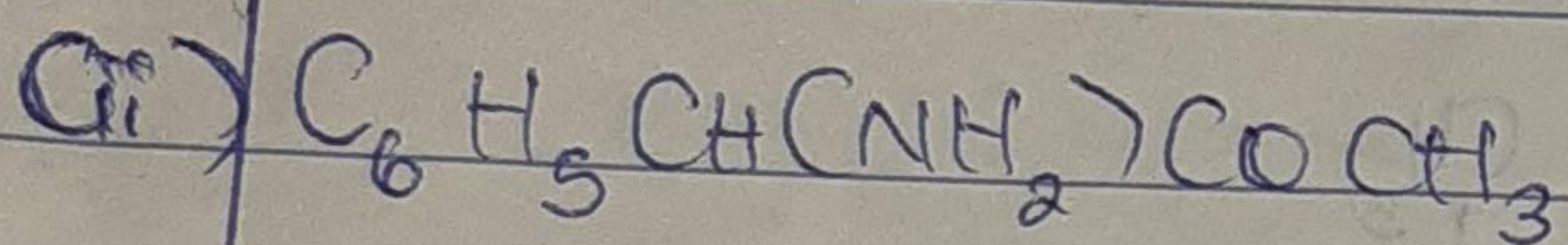


Functional groups present:

a) Double bond (Alkene) (=)

b) Hydroxyl group (-OH)

c) Alkanal (-CHO)

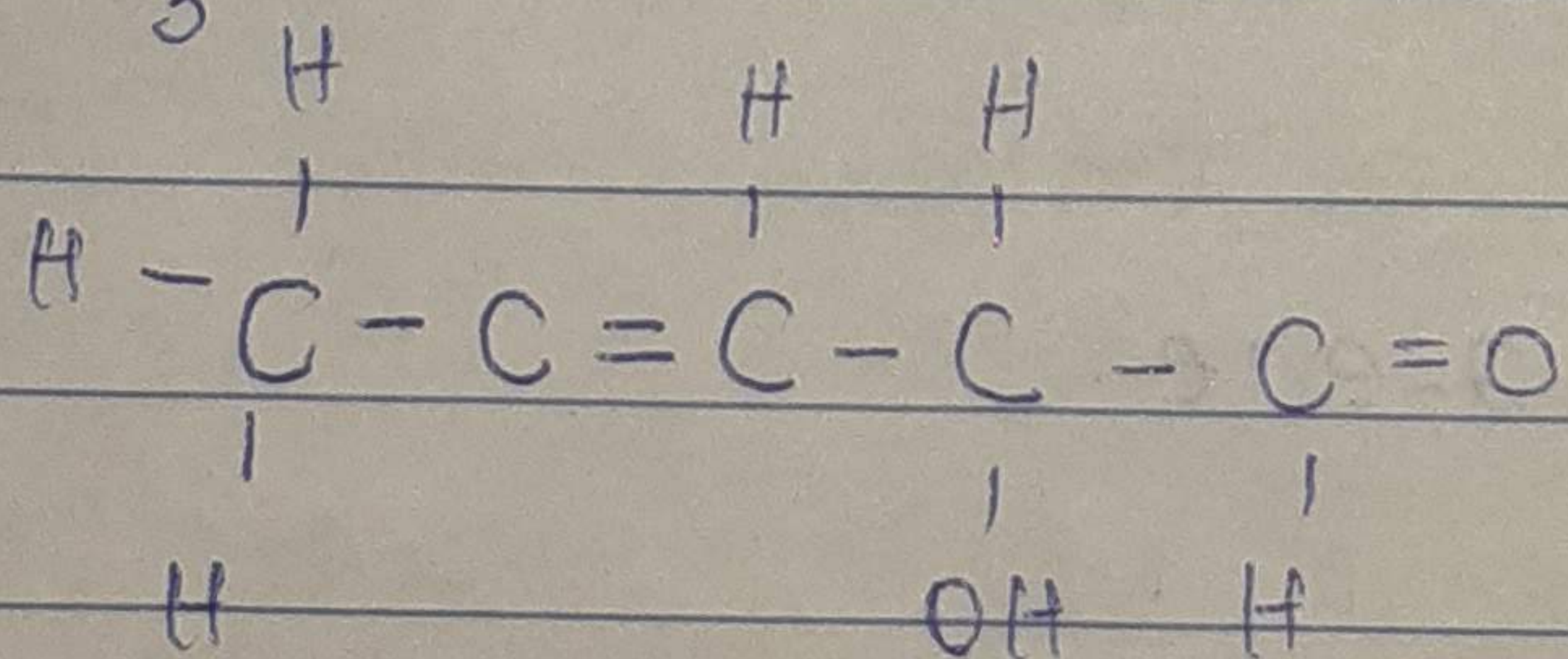
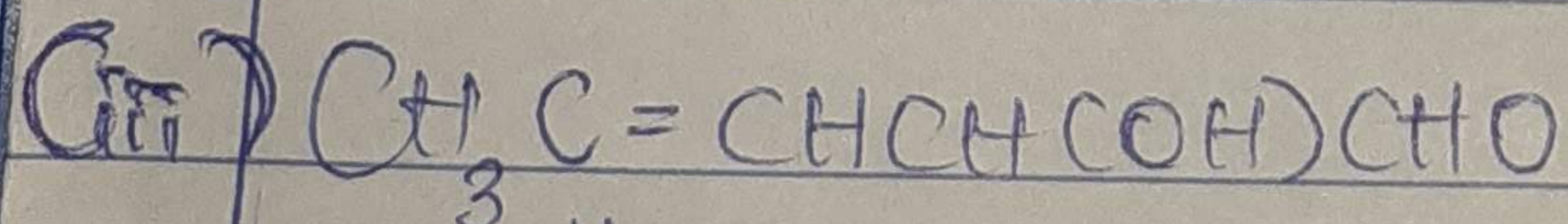


functional groups present:

a) Aromatic group (Phenoyl group) (C_6H_5) with double bonds.

b) Amines ($-\text{NH}_2$)

c) Alkanone / ketone ($-\text{CO}$)



functional groups present:

a) Double bond (Alkene) (=)

b) Hydroxyl group (-OH)

c) Alkanal (-CHO)

2) Mass of sample: 0.856g.

Volume of diluted result: $100\text{m}^3 = 10\text{mL}$

length of polarimeter tube : 1.0 dm

Observed rotation at 20°C : +1.0°

Specific rotation : ?

$$\text{Specific rotation, } [\alpha]_{\lambda}^T \Rightarrow \frac{\alpha}{l \times c}$$

$$\alpha \Rightarrow +1.0^{\circ}, l \Rightarrow 1.0 \text{ dm}$$

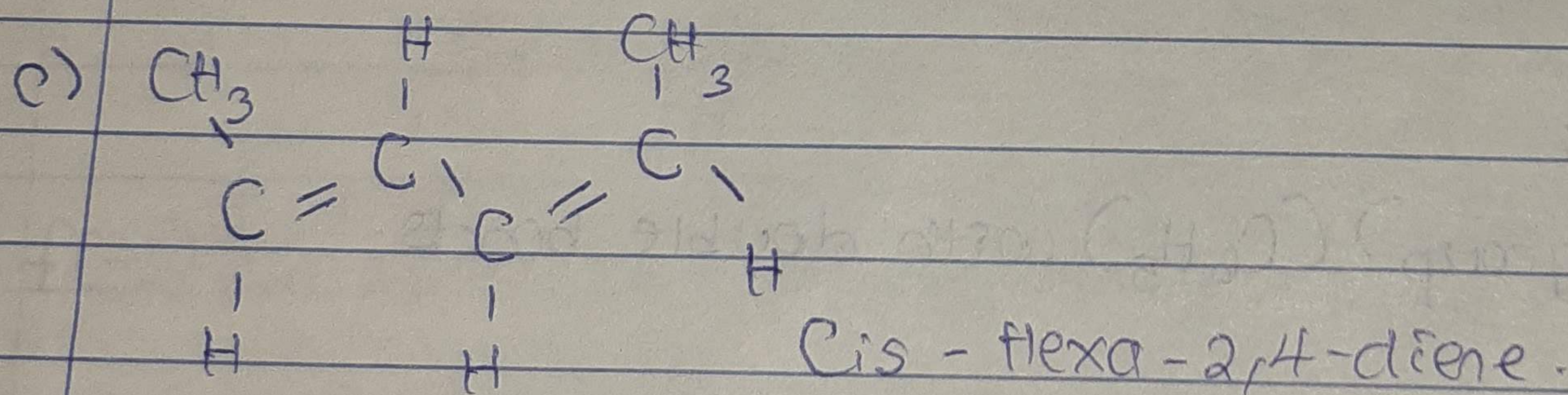
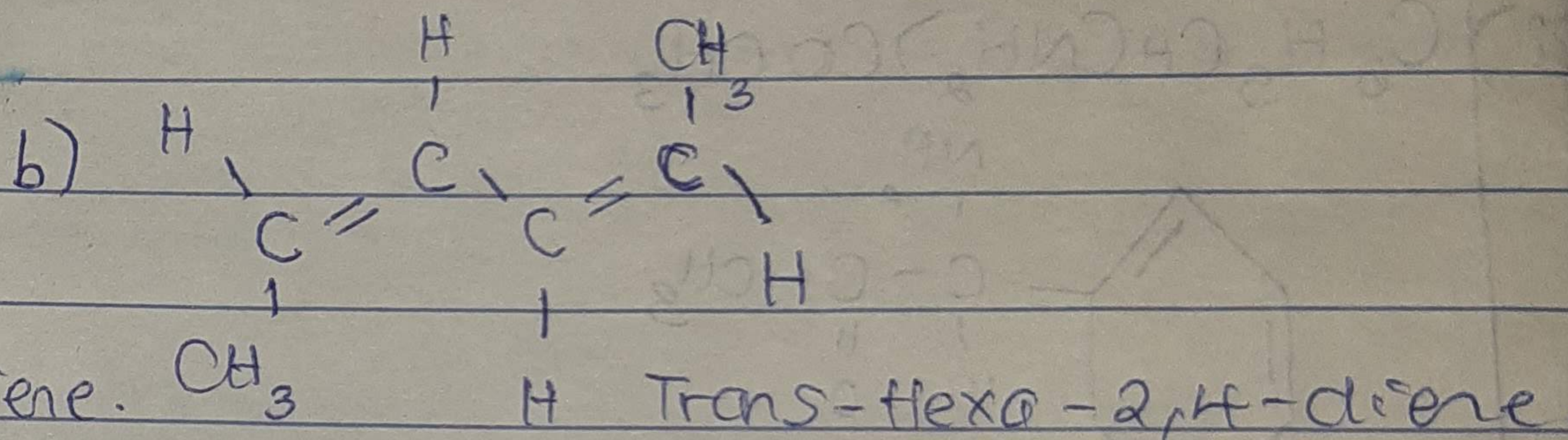
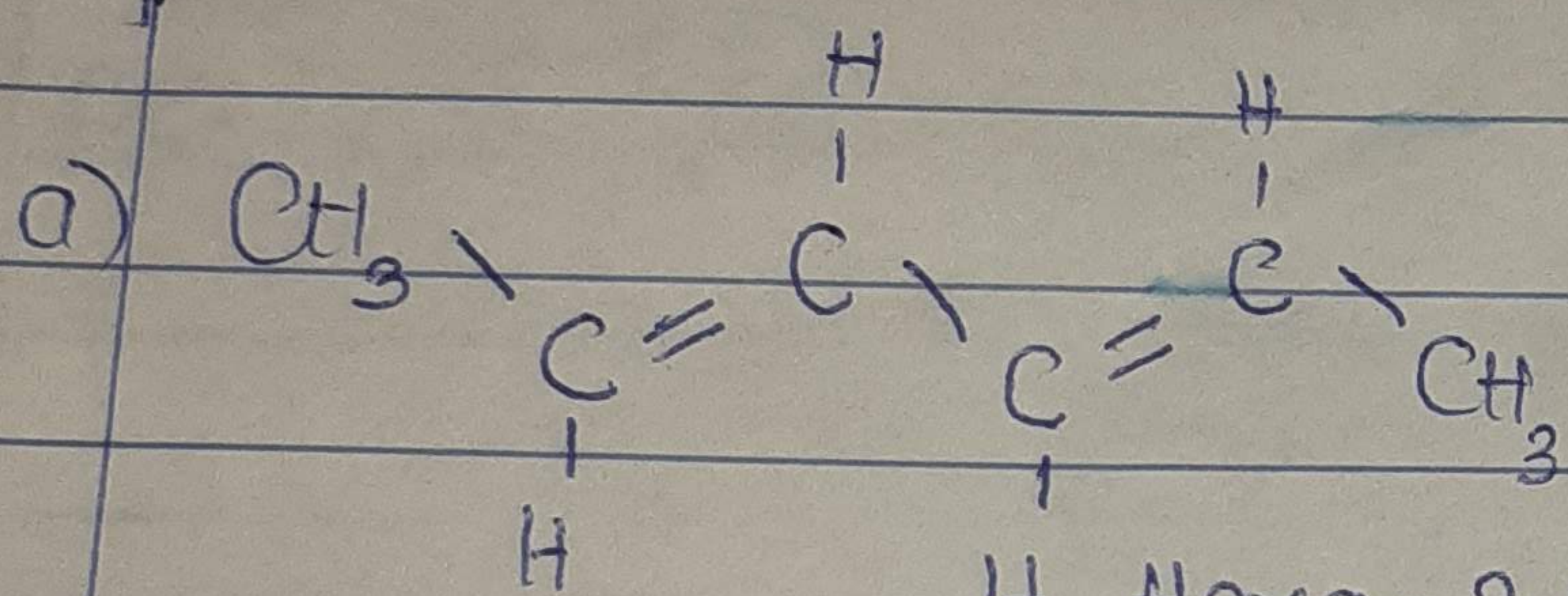
$$c = \frac{g}{\text{ml}} = \frac{0.856 \text{ g}}{10 \text{ ml}} \Rightarrow 0.0856 \text{ g/ml.}$$

$$\therefore [\alpha]_{\lambda}^T \Rightarrow \frac{1.0}{1.0 \times 0.0856} \Rightarrow 11.68^{\circ}$$

$$\therefore \text{Specific rotation } S_r \Rightarrow 11.68^{\circ}$$

3) Geometric Isomers of the following:

(i) Hexa-2,4-diene.



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

