

2.

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Chemical Engineering
191 EMG 01 1006

1a) $\text{CH}_2 = \text{C}(\text{OH})\text{CHO}$ has:

- i. Alkene group (double bond)
- ii. Hydroxyl group
- iii. Aldehyde group

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

- i. Phenyl group
- ii. Amino group
- iii. Carbonyl group (ketones)

c. $\text{CH}_3\text{C}(\text{OH})=\text{CHCHO}$ has

- i. hydroxyl group
- ii. ~~Alkene~~ group (double bond) Alkene group
- iii. Aldehyde group

2.) Tartaric acid = $\text{C}_4\text{H}_6\text{O}_6$

$$\text{molecular mass} = (12 \times 4) + (1 \times 6) + (16 \times 6)$$

$$= 150 \text{ g/mol}$$

$$L = 1 \text{ dm}^3$$

$$\rho = 0.856 \text{ g/cm}^3$$

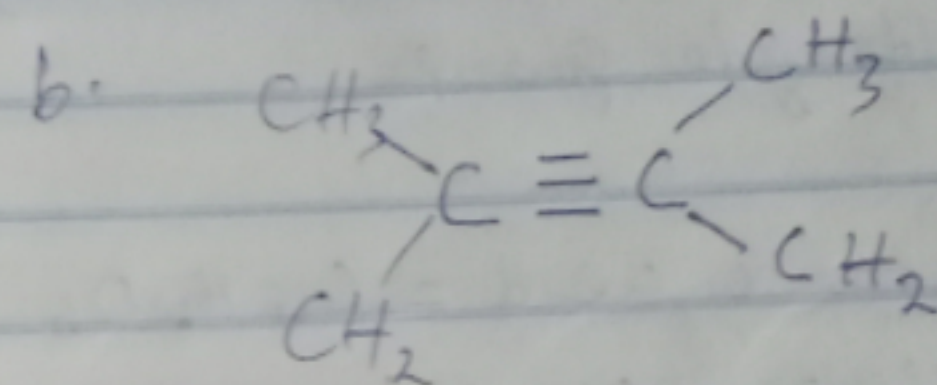
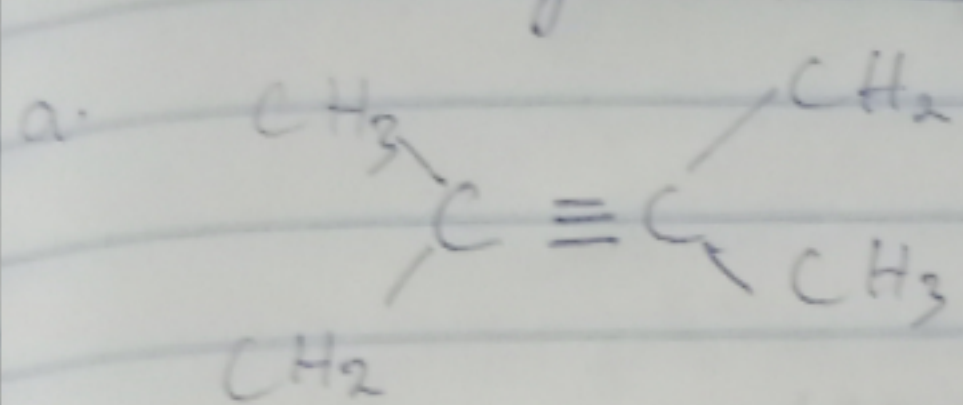
$$\text{Conc in g/cm}^3 = 0.856 \text{ g/cm}^3 = \text{Conc in g/cm}^3$$

using

$$[\alpha]_D^{25} = \frac{\alpha}{c \cdot L} = \frac{+1.0}{0.856 \times 1}$$

$$[\alpha] = 11.68^\circ$$

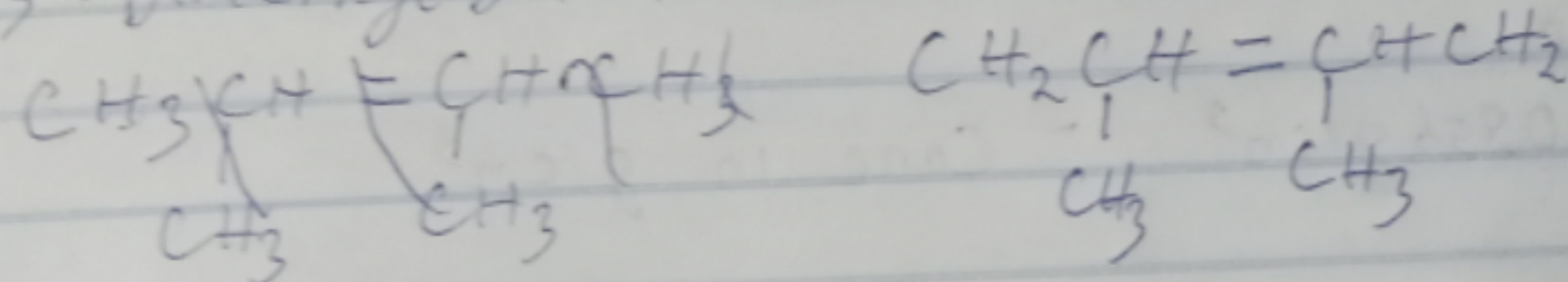
3.) Hexa-2,4-diene ($\text{CH}_3\text{CH}=\text{CH}-\text{CH}=\text{CHCH}_3$)
geometrical isomers



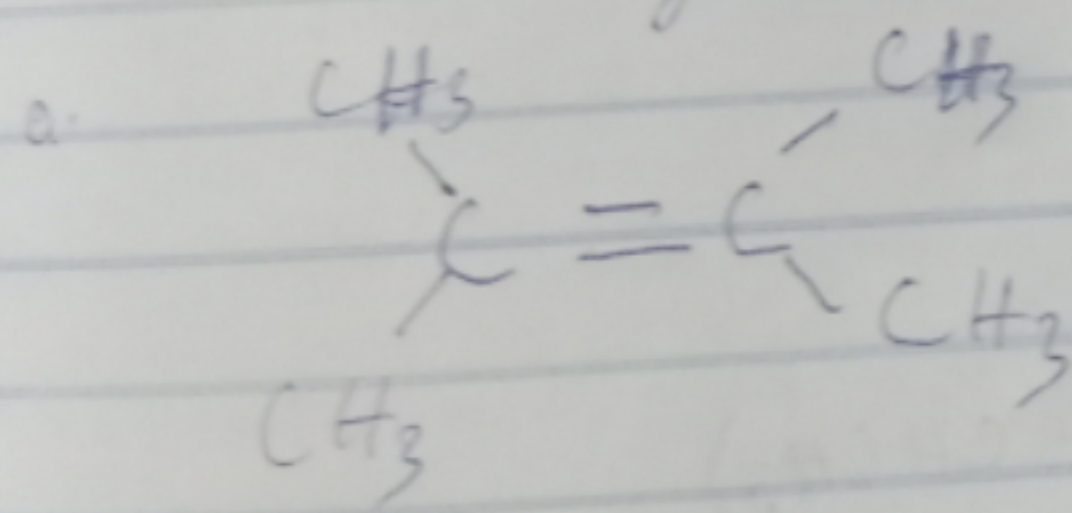
trans-1,2-Dimethylbutyne

cis-1,2-Dimethylbutyne

ii) 2,5-Dimethylbut-2-ene



geometrical isomers



Tetramethylethylene