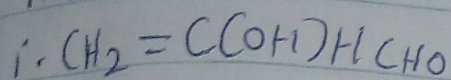
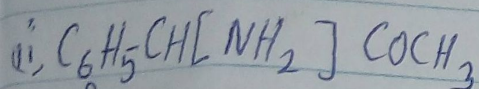


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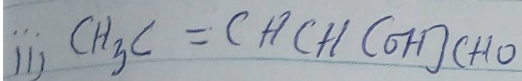
1. Name the functional group present in each of the following molecules.



functional group: Aldehyde, Alcohol and Alkene



functional group: Amide



functional group: Aldehyde, Alcohol and Alkene

2. Specific rotation = observed rotation [in degrees]

$$\frac{[\alpha]_{\text{conc}}}{[\text{conc}]} \times (\text{path length of sample in dm})$$

$$\text{conc} - \text{g/cm}^3 = \frac{0.856\text{g}}{10\text{cm}^3}$$

$$= 0.0856\text{g/cm}^3$$

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

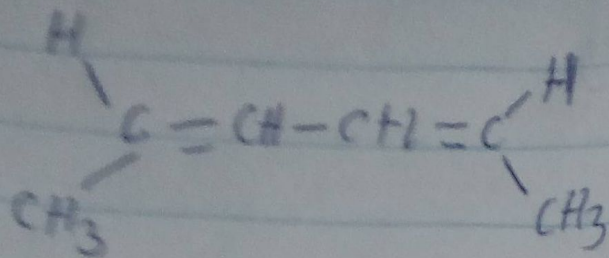
$$\text{path length of sample} = 1\text{dm}$$

$$\therefore \text{Specific rotation} = +1$$

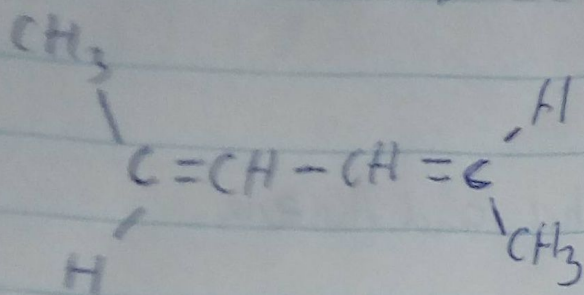
$$[0.0856][1]$$

$$= 11.68\text{g}^{-1}\text{cm}^3\text{dm}^{-1}$$

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

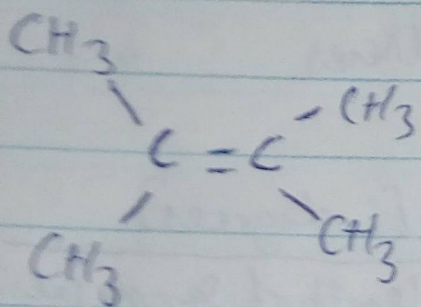


ii) Hexa-2,4-diene



Trans Hexa-2,4-diene

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