

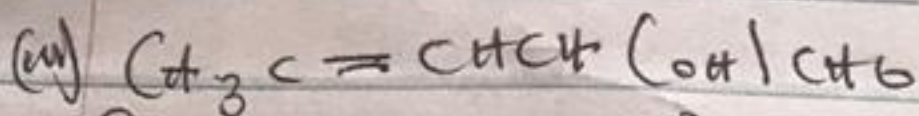
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Course code: Chm 102

### Assignment

- a) Name the functional groups present in each of the following molecules:
- $\text{CH}_2 = \text{C}(\text{OH})\text{CHO}$
  - $\text{C}_6\text{H}_5\text{CH}(\text{NH}_2)\text{COCH}_3$
  - $\text{CH}_3\text{C} = \text{CHCH}(\text{OH})\text{CHO}$

### Answers

- $\text{CH}_2 = \text{C}(\text{OH})\text{CHO}$   
functional group:-
  - aldehyde
  - alcohol
  - alkene
- $\text{C}_6\text{H}_5\text{CH}(\text{NH}_2)\text{COCH}_3$   
functional group:-
  - amides
  - ketones



functional groups: - i) alkene

ii) Alcohol

iii) aldehydes

(2) Observed rotation =  $1.0^\circ$

Concentration =  $\frac{0.856\text{g}}{10\text{cm}^3} = 0.0856\text{g cm}^{-3}$

∴ Specific rotation =  $\frac{\text{observed rotation (degrees)}}{(\text{Concentration in } \text{g cm}^{-3}) \times \text{path length of cell in dm}}$

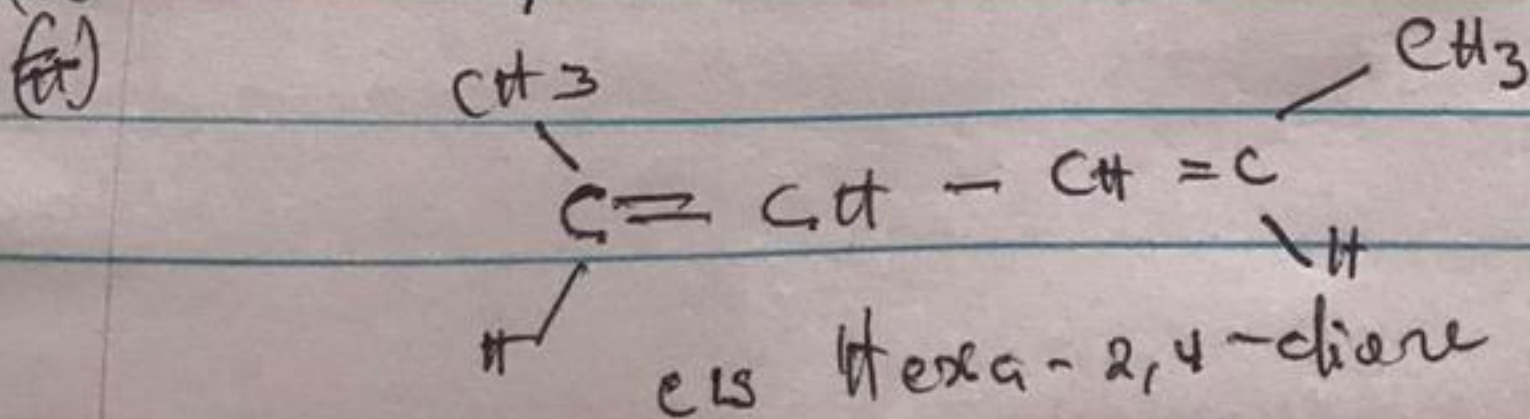
Specific rotation of the sample =  $\frac{1}{\frac{0.856}{10} \times 1}$

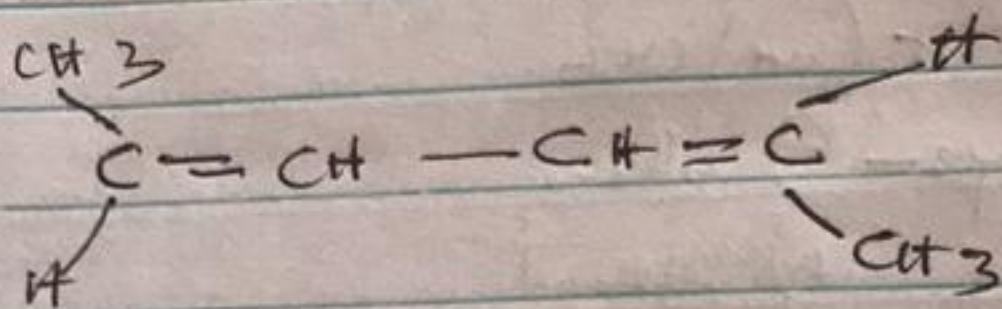
=  $\frac{1}{0.0856 \times 1}$

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

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

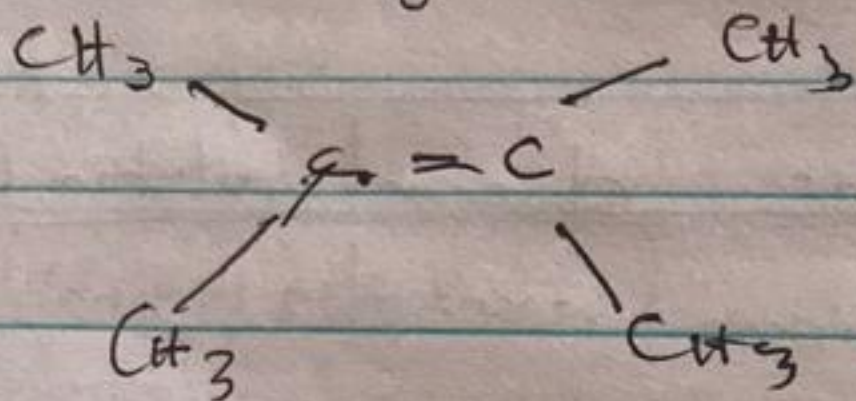
(i) Hexa-2,4-diene





trans hexa-2,4-diene

1) 2,3 - Dimethyl but-2-ene



Geometric isomer is not possible for  
2,3 - Dimethyl but-2-ene