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DEPARTMENT: DENTISTRY

MATRIC NUMBER: 19/MHS09/004

COURSE: CHM 102

ASSIGNMENT:

1. $\text{CH}_2=\text{C}(\text{OH})\text{HCHO}$.

$\begin{array}{c} \text{H} \quad \text{OH} \\ | \quad | \\ \text{H}-\text{C}=\text{C}-\text{C}=\text{O} \\ \quad \quad \quad | \\ \quad \quad \quad \text{H} \end{array}$

Functional groups;

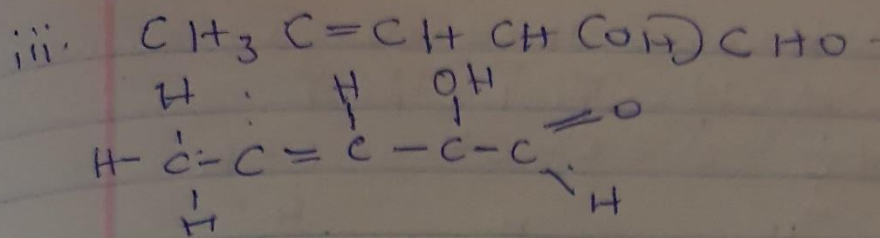
- Double bond (Alkene $\text{C}=\text{C}$)
- Hydroxyl group $\text{C}-\text{OH}$
- Carbonyl group (Aldehyde / Alkenoyl $\text{C}=\text{O}$)

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

$\begin{array}{c} \text{H} \quad \text{NH}_2 \\ | \quad | \\ \text{C}_6\text{H}_5-\text{C}-\text{C}=\text{C}-\text{H} \\ \quad \quad \quad | \\ \quad \quad \quad \text{H} \end{array}$

Functional groups:

- Amine $\text{C}-\text{NH}_2$
- Alkanone / Ketone $\text{C}=\text{O}$
- Phenyl group C_6H_5



- functional groups;
- double bond (Alkene) (C=C)
 - Hydroxyl group (C-OH)
 - Carbonyl group (Alkene/Aldehyde)

2. Solution;

$$\text{Recall } [\alpha]_D^{25} = \frac{\alpha}{l \cdot c}$$

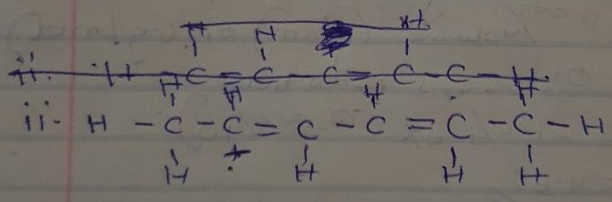
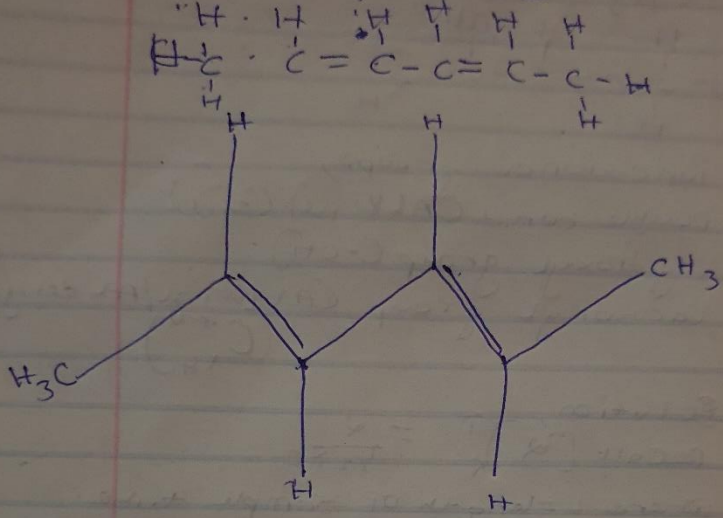
where l = length of sample tube.
 c = mass/volume (g/dm) or (g/mol)

α = Observed rotation.

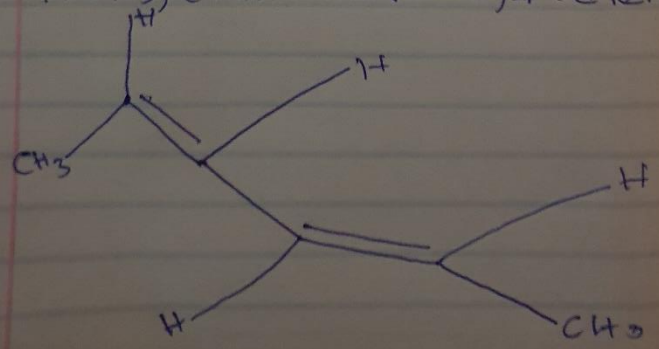
$$S.F. = 1.0 / 1.0 \times (0.956 / 10)$$

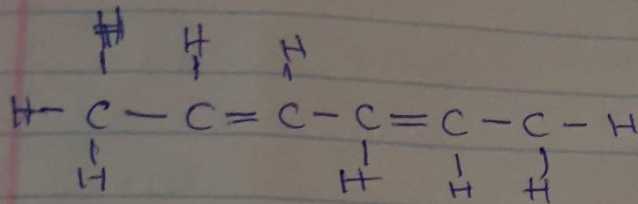
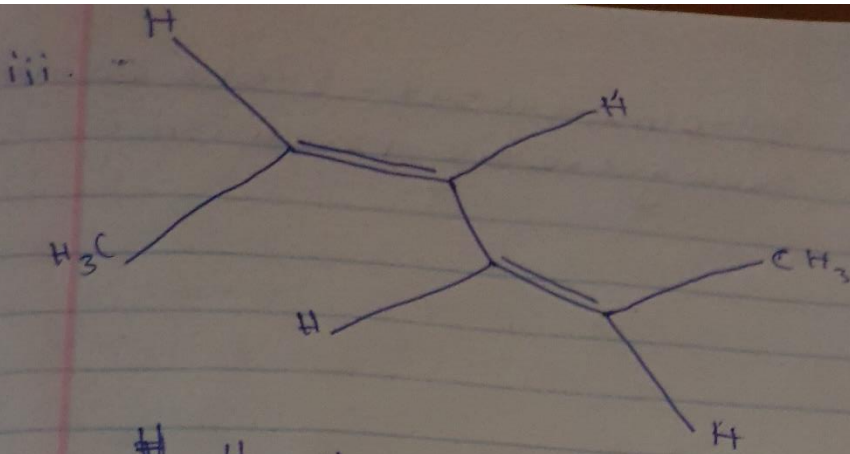
$$S.F. = 1.68$$

3. i. Hexa-2,4-diene.



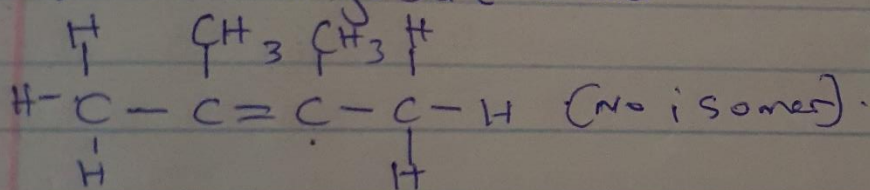
Trans,trans-hexa-2,4-diene.





Cis, cis-hexa-2,4-diene.

4. 2,3-Dimethylbut-2-ene



The atoms or groups attached to the double bonded carbon atom must be different. Geometrical isomers are not possible if one or both the doubly bonded carbon atoms carry similar constituents. This is because configurations are identical. This is the reason.

2,3'-Dimethylbut-2-ene do not
show geometric isomerism.

