

Name: Obeiko Oghenayoma Precious

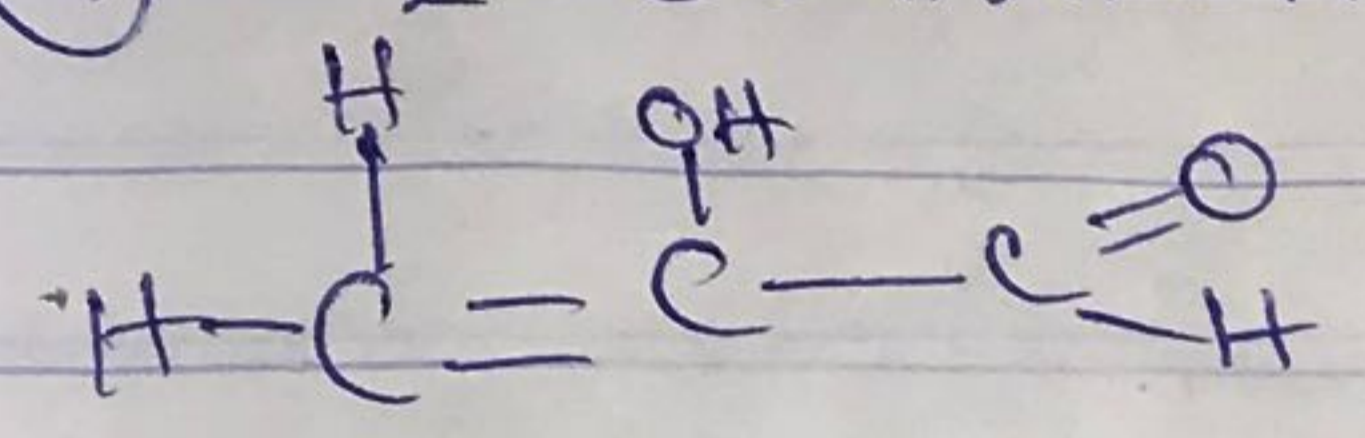
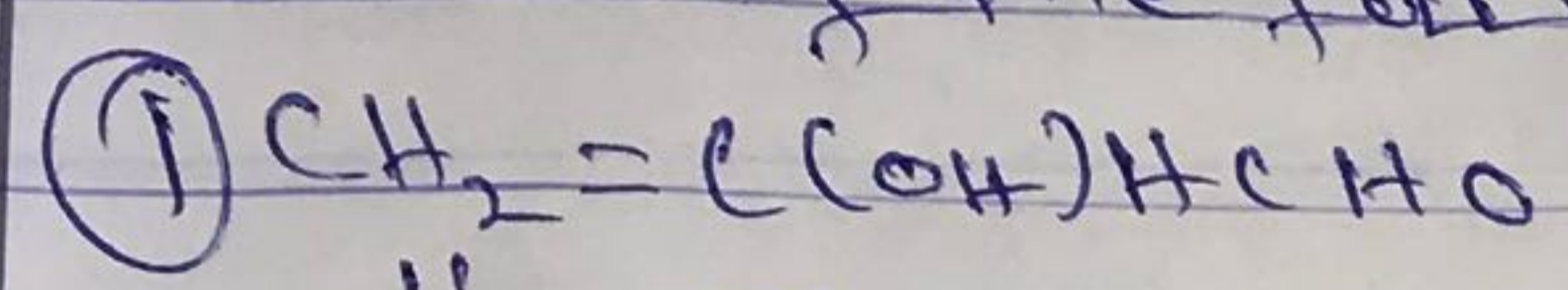
Matric No: 19/mhs02/082

Department of Nursing

Chem 102 Assignment

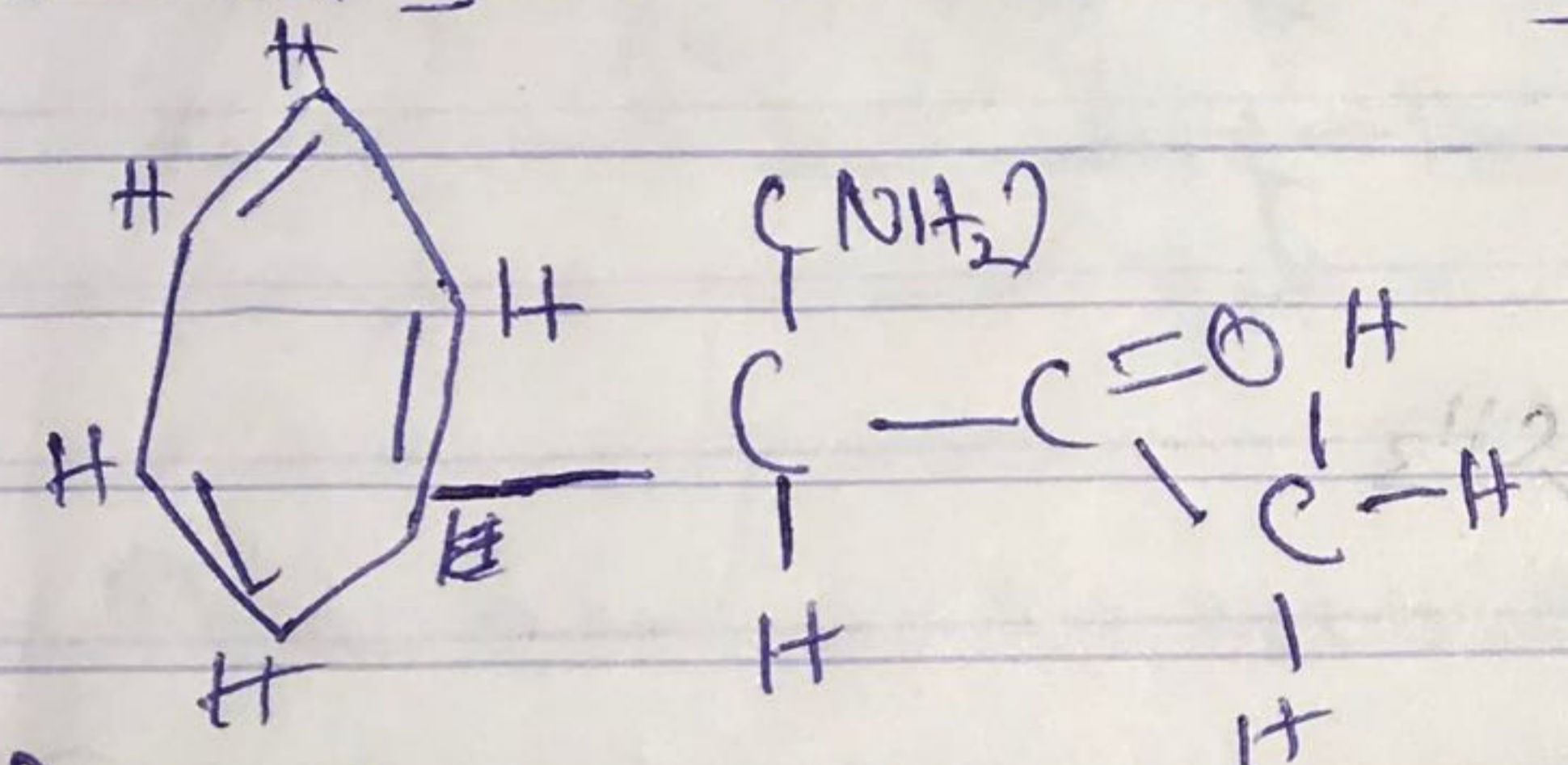
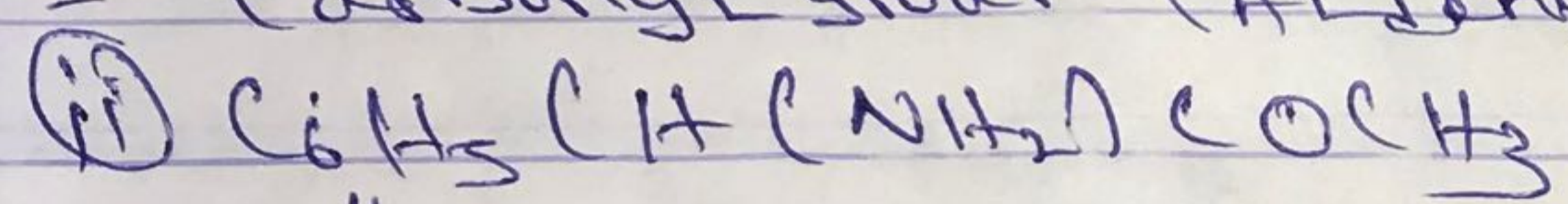
1. Classification of Alcohols

(i) Name the functional groups present in each of the following molecules



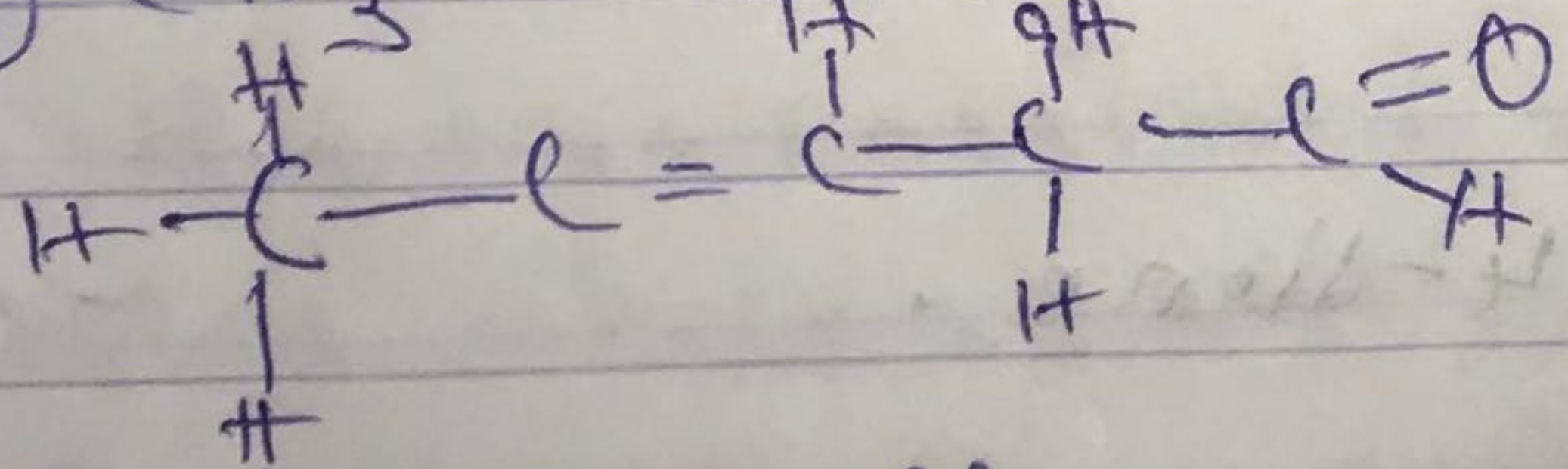
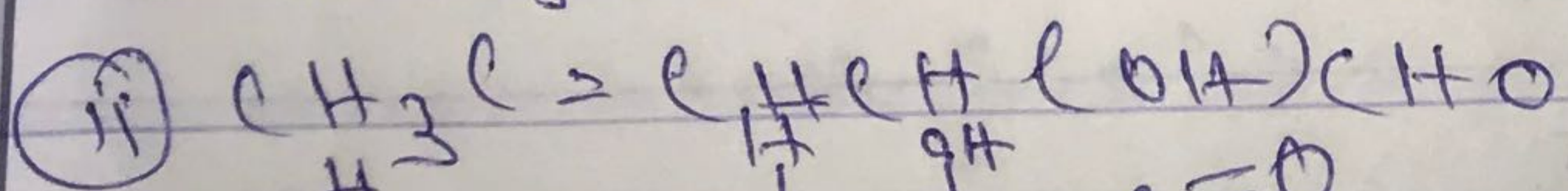
functional groups

- Double bond (Alkene $C=C$)
- Hydroxyl group (-OH)
- Carbonyl group (Aldehyde / Alkanol $C=O$)



functional groups

- Amine ($-NH_2$)
- Alkanone / Ketone ($C=O$)
- Phenyl group (C_6H_5)



functional groups

- Double bond (Alkene $C=C$)
- Hydroxyl group (-OH)
- Carbonyl group (Alkanol / Aldehyde) ($C=O$)

② To calculate the specific rotation:

$$[\alpha]_D^{25} = \frac{\alpha}{l \times c}$$

where l = Length of sample tube.

c = $\frac{\text{mass}}{\text{volume}}$ (g/dm³) or (g/ml)

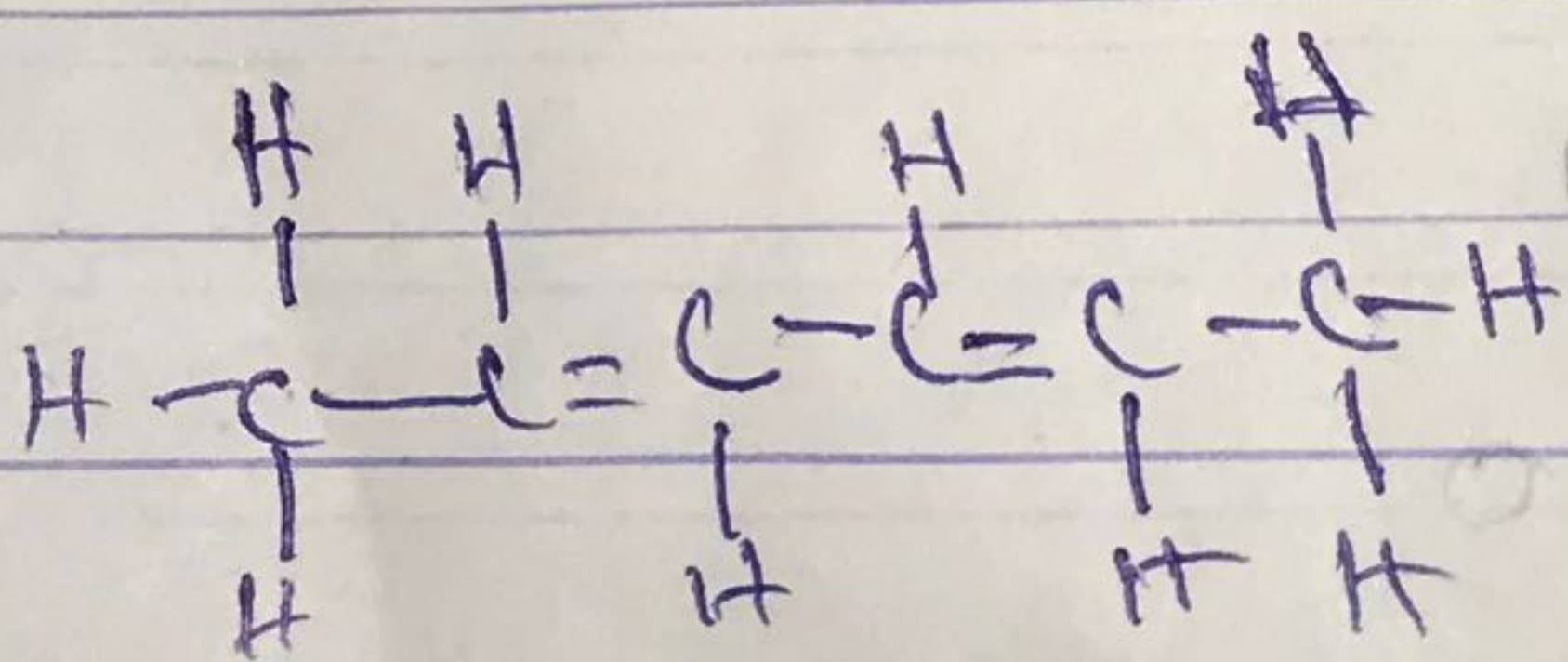
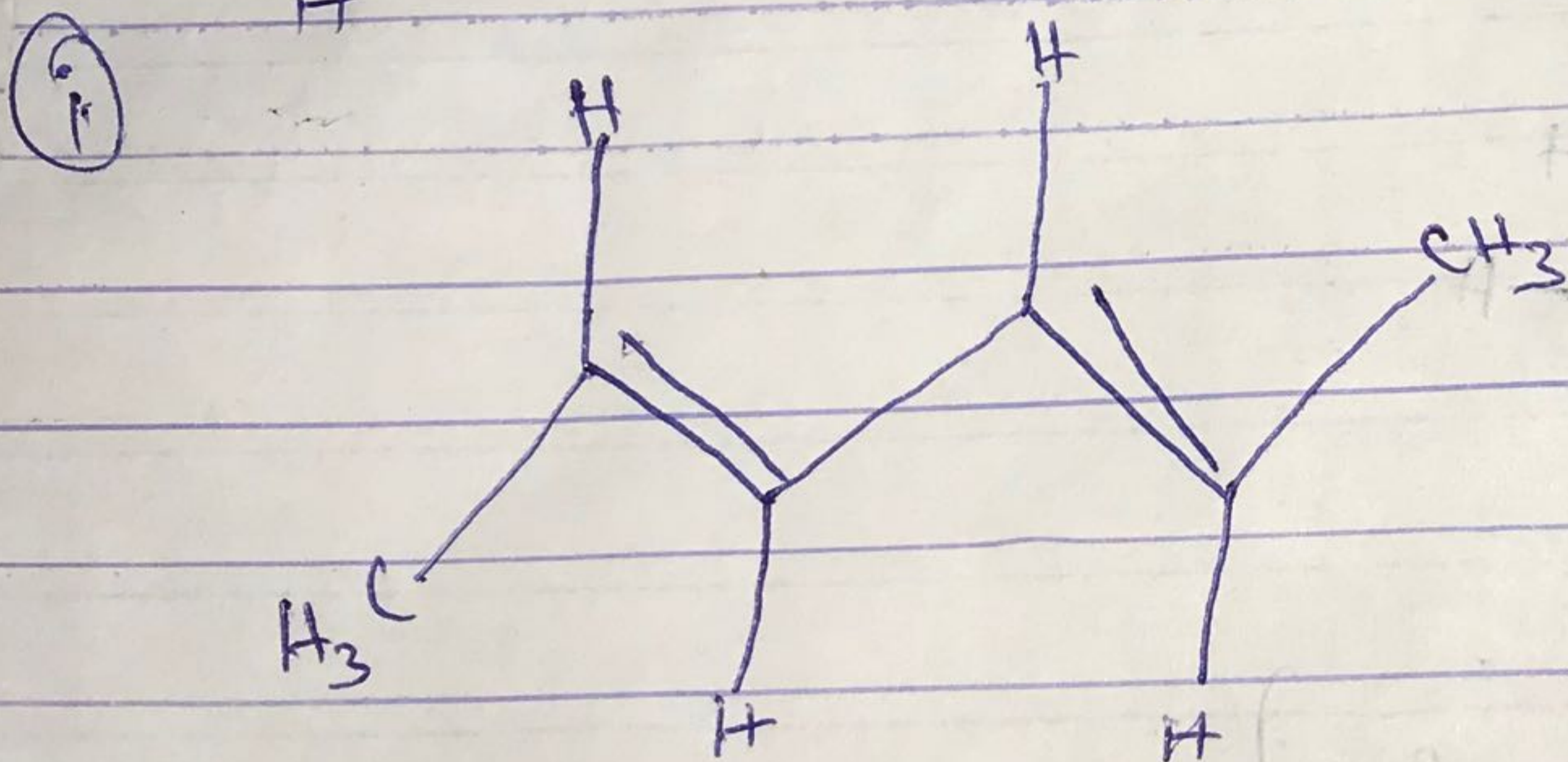
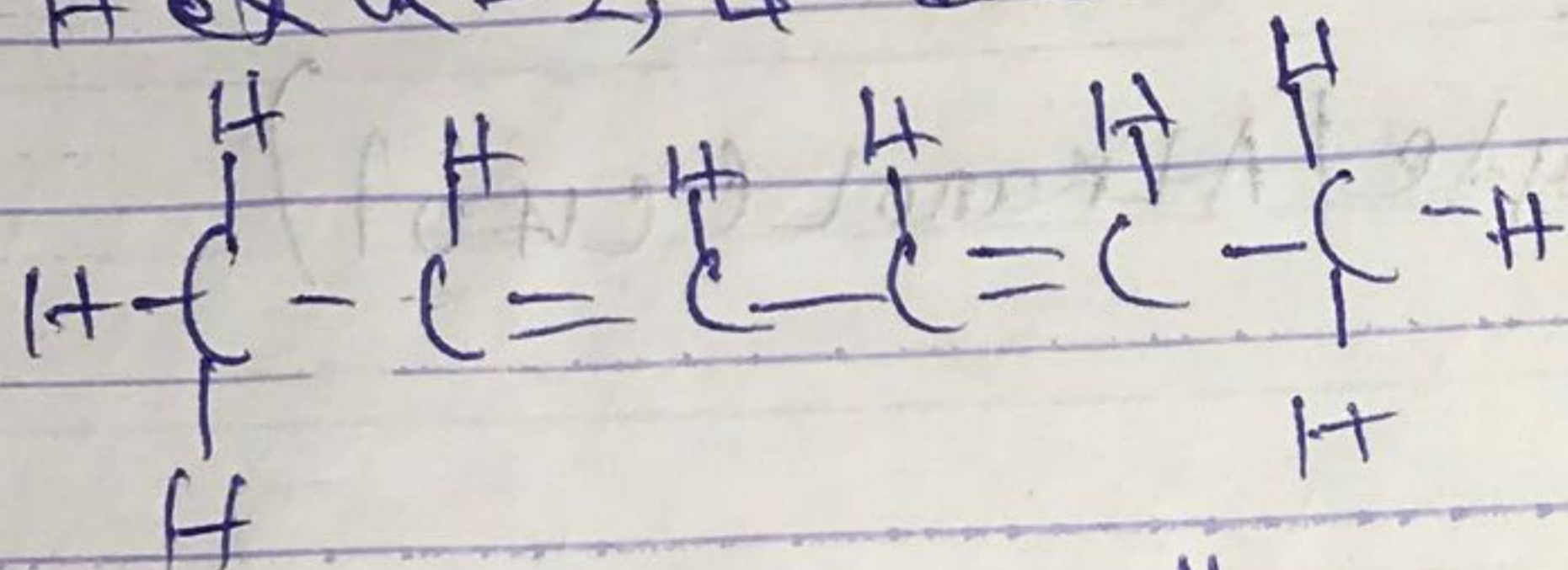
α = Observed rotation

$$SR = \frac{1.0}{1.0 \times \frac{(0.856)}{10}}$$

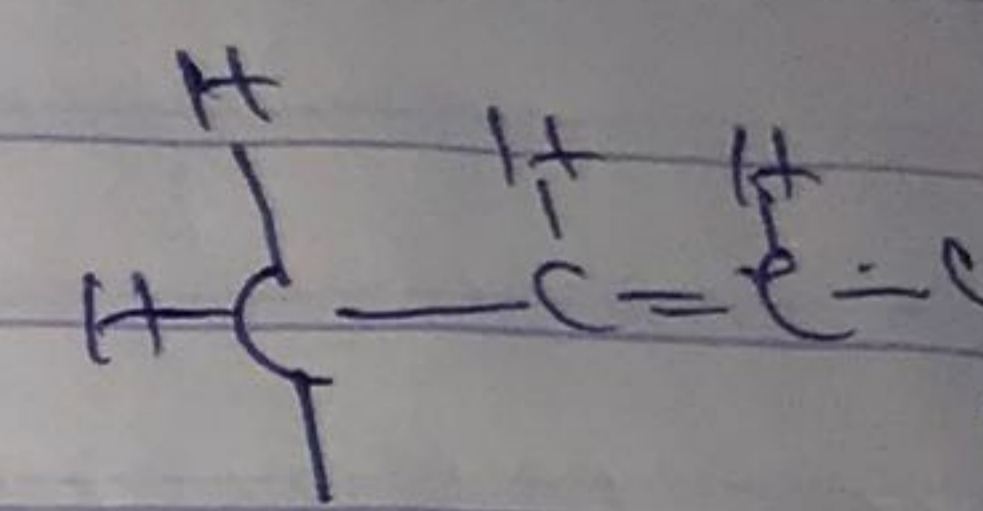
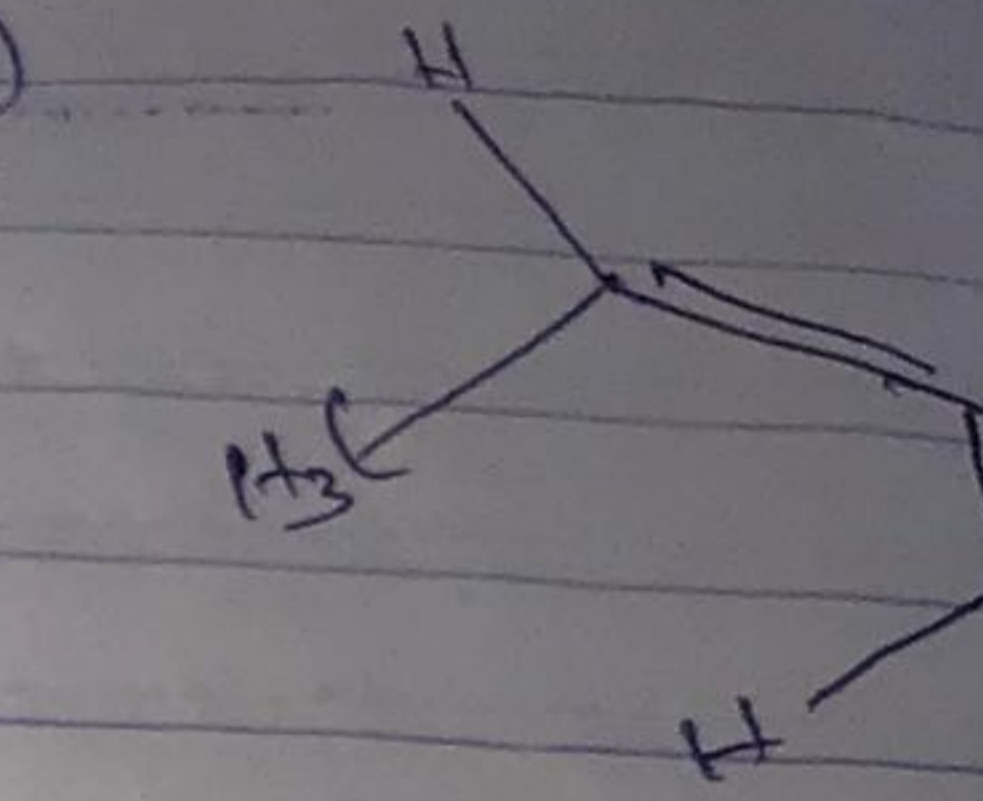
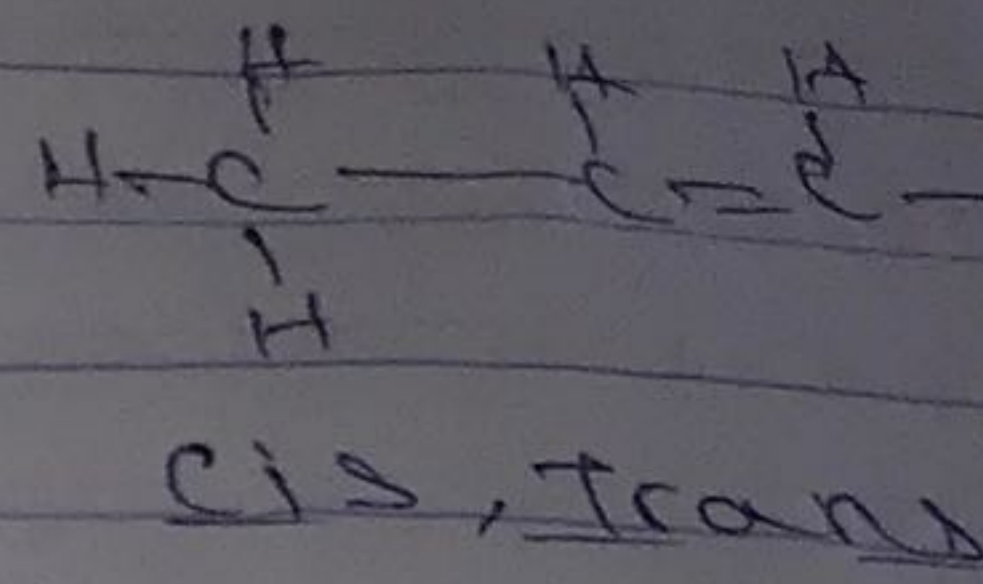
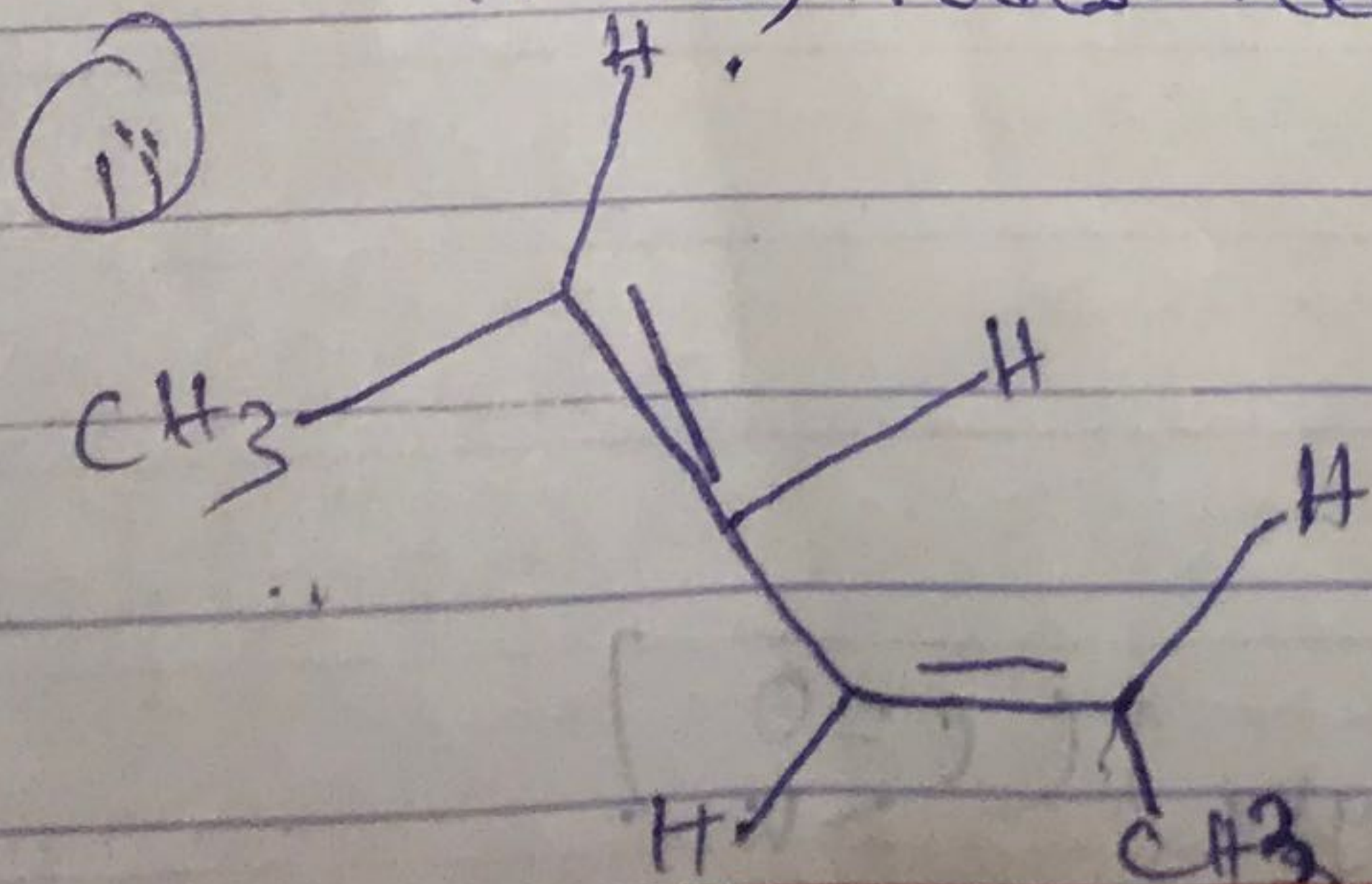
$$SR = 11.68$$

③ Draw the possible geometric isomers for each of the following compounds.

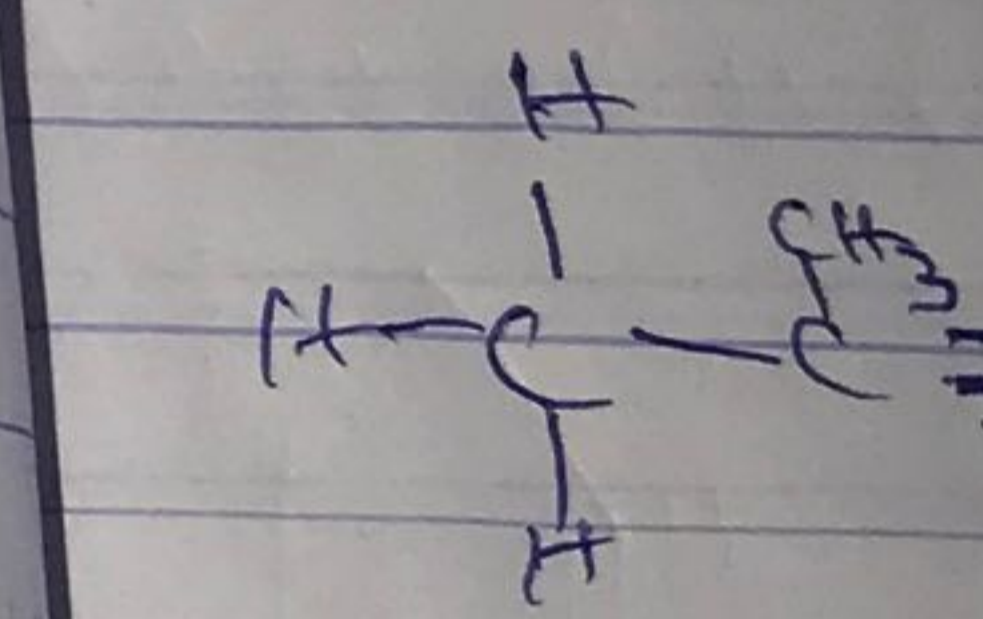
i) Hexa-2,4-diene.



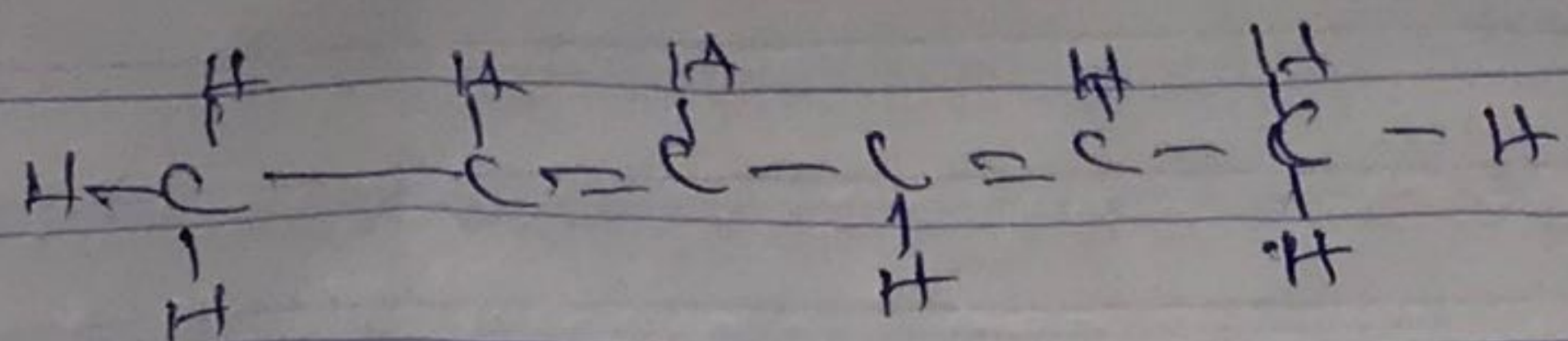
Trans,trans-hexa-2,4-diene.



ii) 2,3-Dimethylbut-2-ene

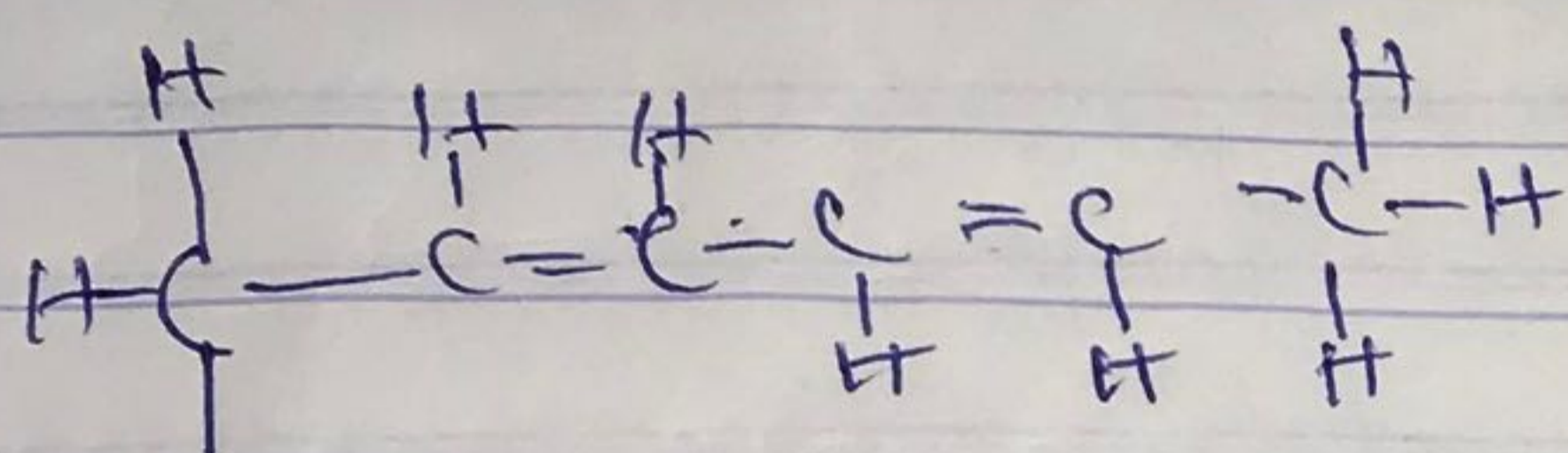
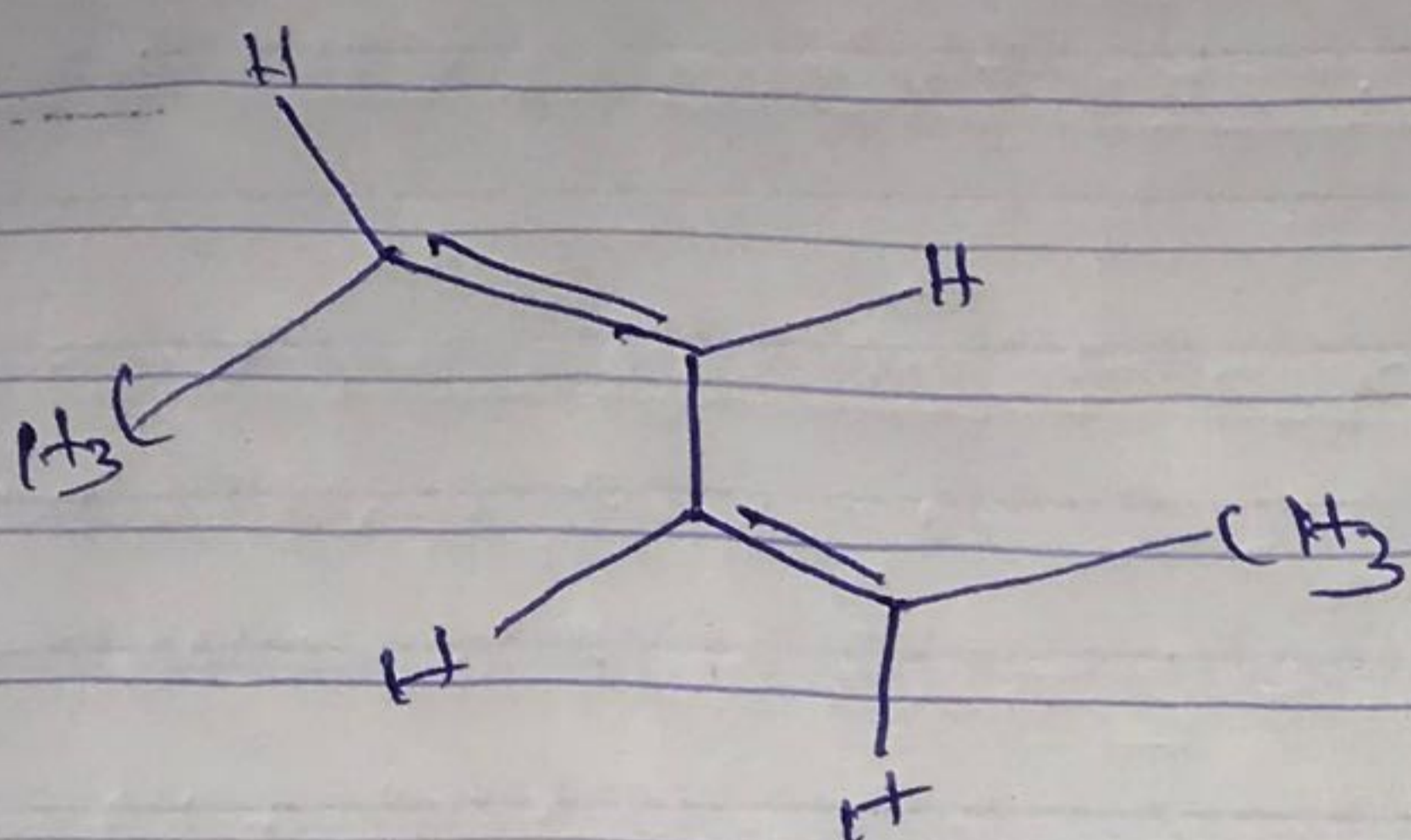


The atoms double bond different possible bonds condition the double bond.



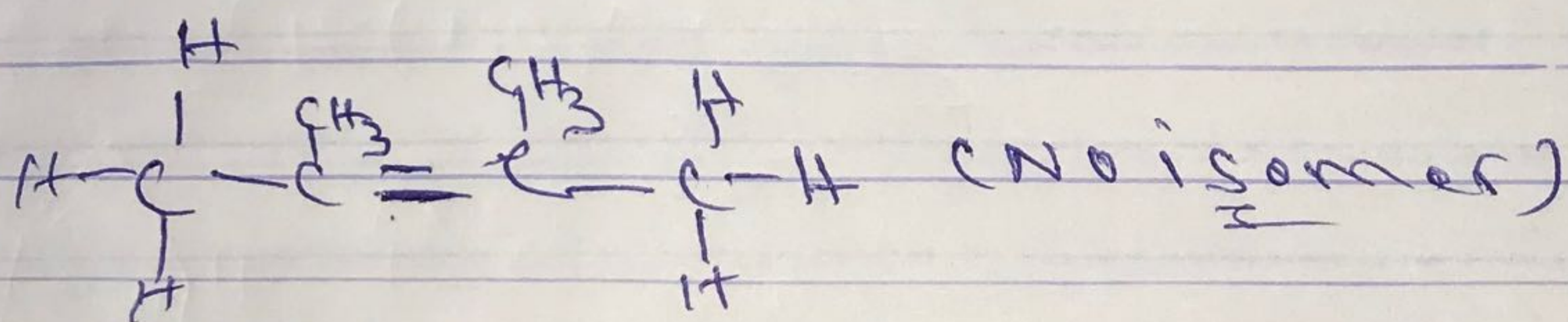
cis, trans-hexa-2,4-diene

(ii)



cis, cis-hexa-2,4-diene

II) 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 double bonded carbon atoms carry similar constituents. This is because in such cases, the two possible configurations are identical. This is the reason 2,3-dimethylbut-2-ene do not show geometrical isomerism.