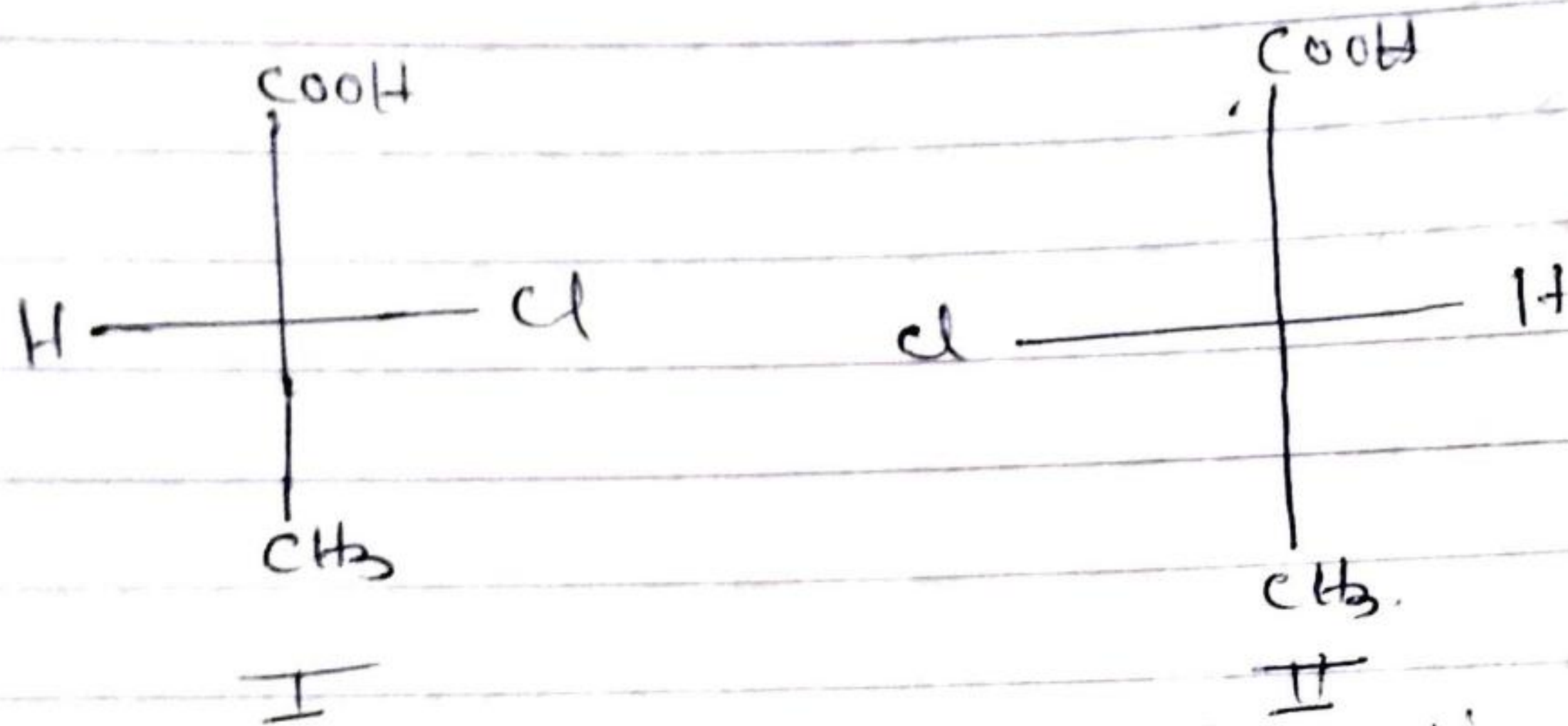
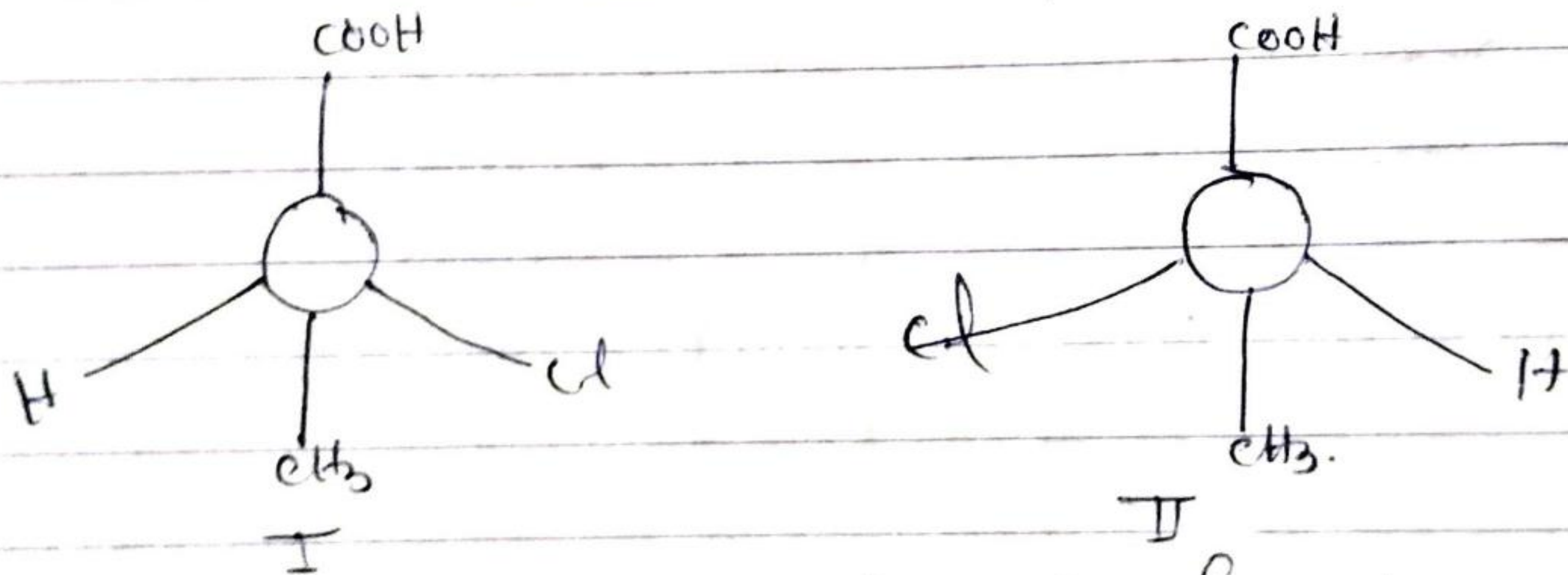


Unit I, Configurational isomerism

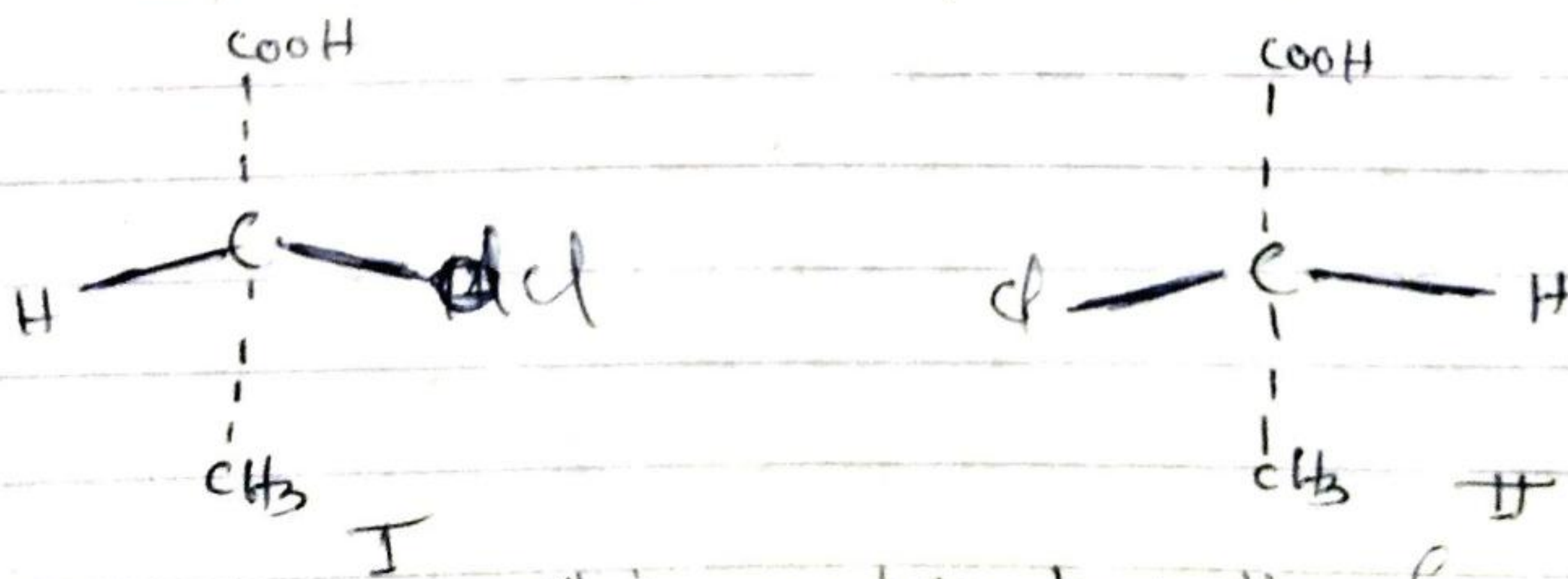
2-Chloro propionic acid ($\text{CH}_3^* \text{CHClCOOH}$) contains a chiral C-atom as it has four different groups ($\text{CH}_3, \text{H}, \text{Cl}, \text{COOH}$). About this C the four substituents may have two different spatial arrangements as shown below by different types of projection formulae.



Fischer projection formulae:



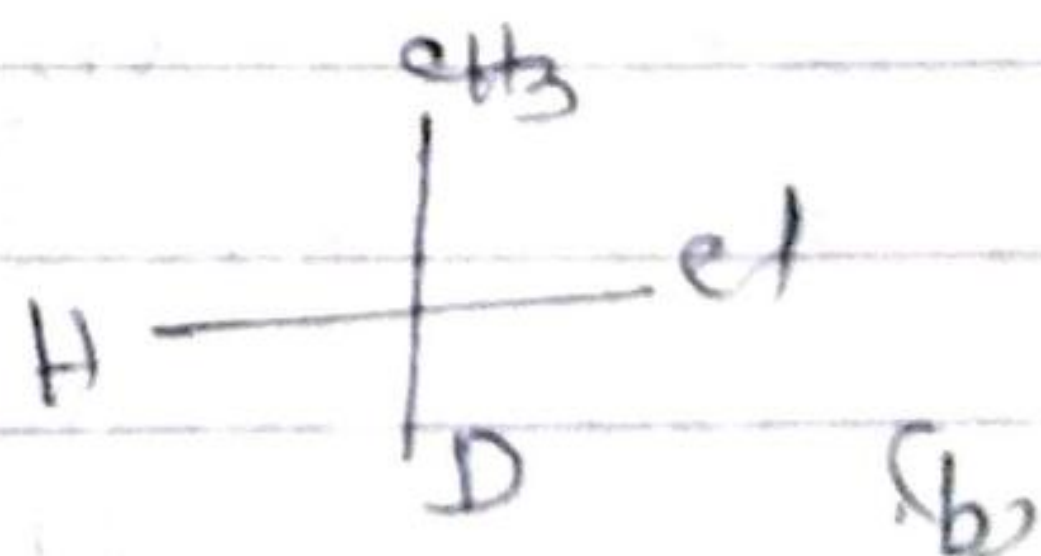
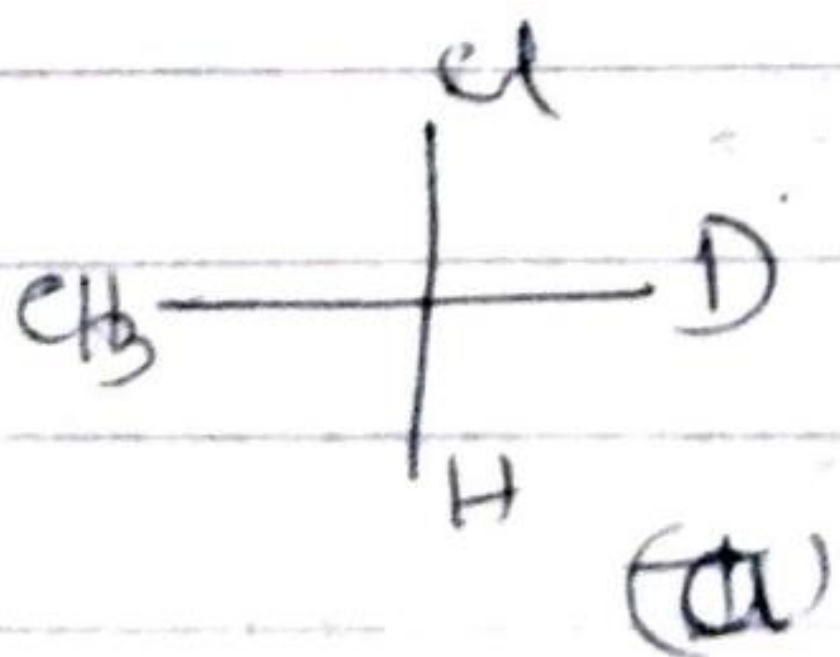
Newman projection formula



Flying wedge projection formula

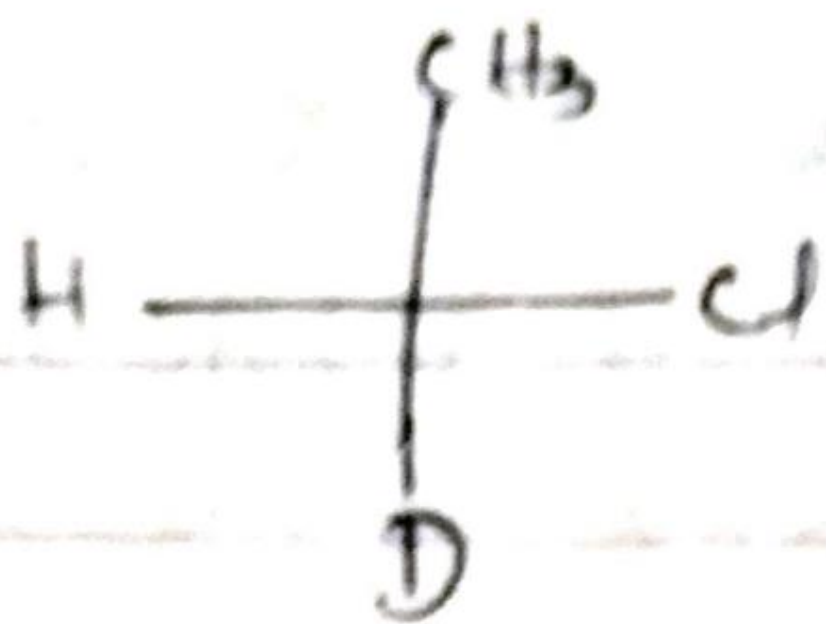
2-chloropropanoic acid has only two possible isomers about the chiral C. These two represent two different compounds though they are of identical structural formula. These are configurational isomers, known as enantiomers (because one form is a non-superimposable mirror image of the other). One cannot convert one enantiomer into the other without breaking a bond and then reforming another. Hence configurational changes are always associated with bond breaking and bond making ~~processes~~ processes. Thus the difference between conformation and configuration is ; to change one configuration into another, one requires the breaking and reforming of a bond, while to change one ~~for~~ conformation into another rotation about a single bond is required.

Question Two Fischer projection formula for CH_3CHDCl are drawn below

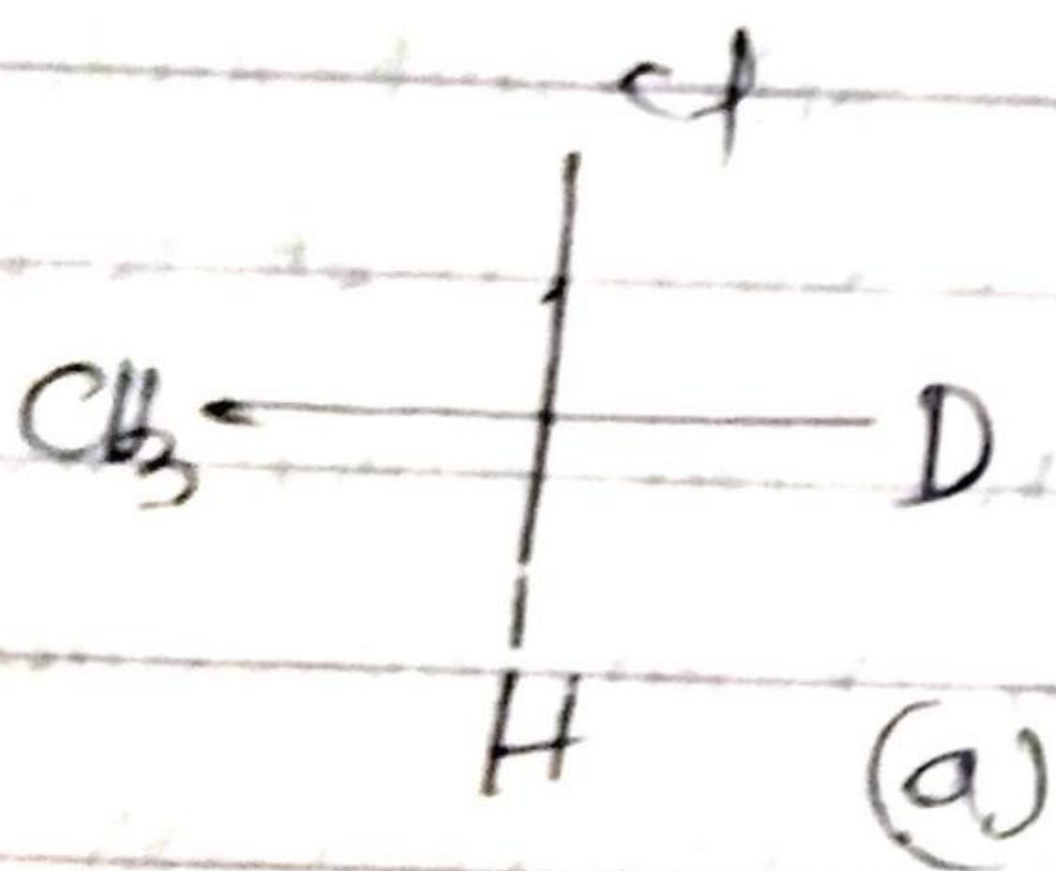
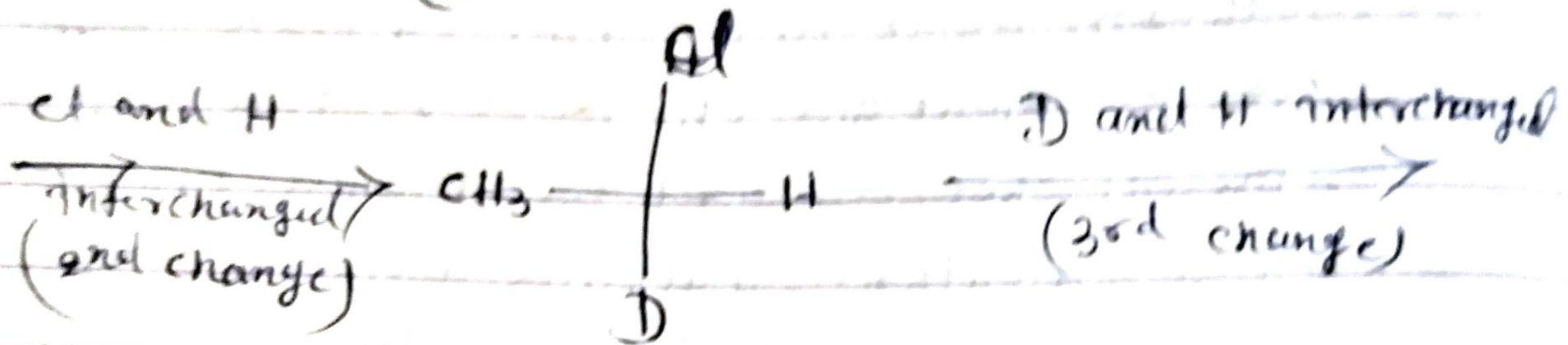
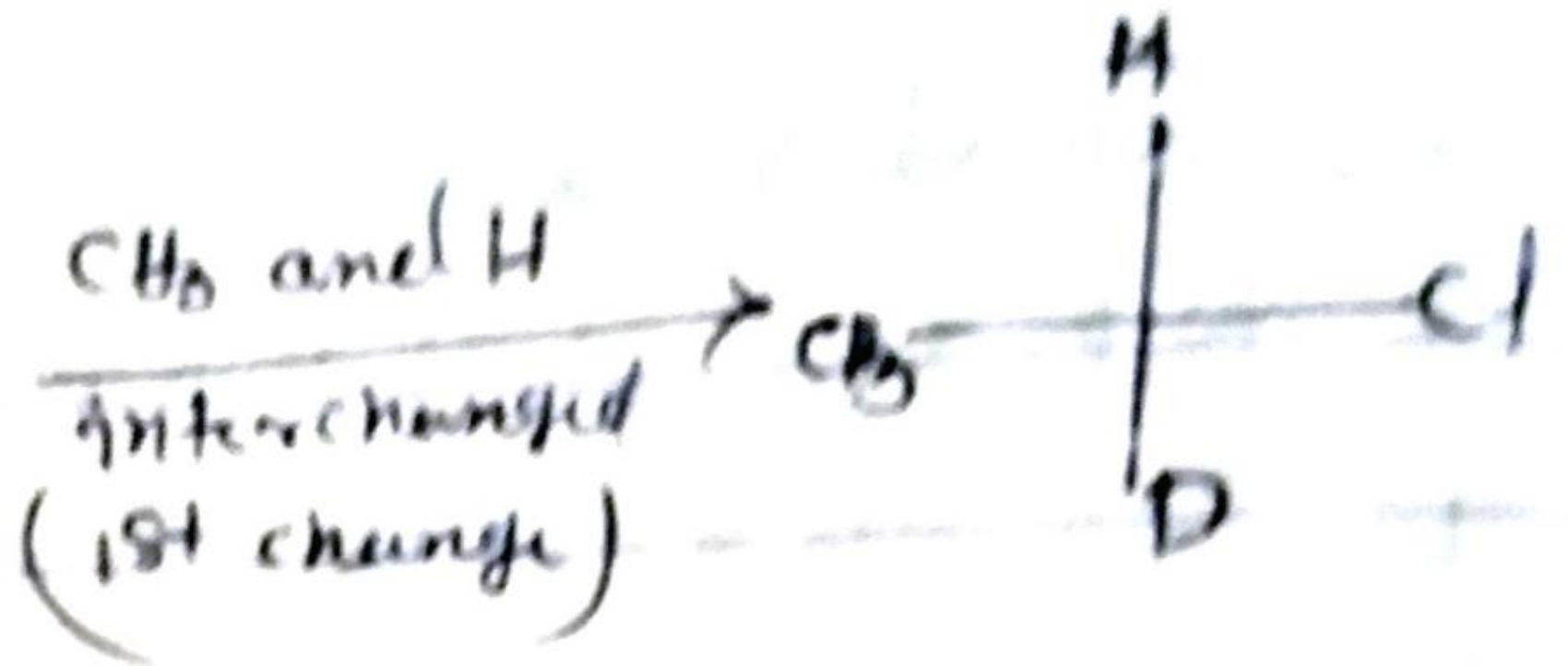


State whether (b) is different form or identical to (a) -

Ans



(b)



As (b) gets converted into (a) by three (an odd number) interchanges (a) and (b) are different