

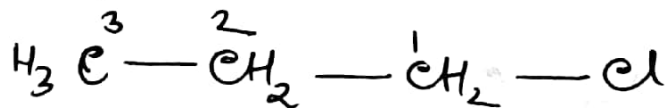
Conformation

2nd SEM

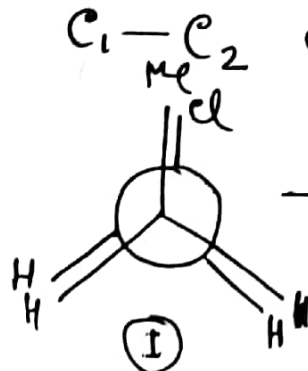
class-5.

①

Explain the conformational analysis of n-Propyl chloride

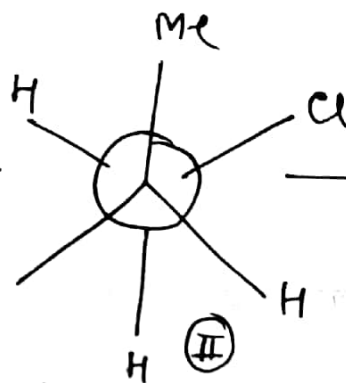


Let assume free rotation around $\text{C}_1 - \text{C}_2$ bond.



$$\phi(\text{Me/Cl}) = 0^\circ$$

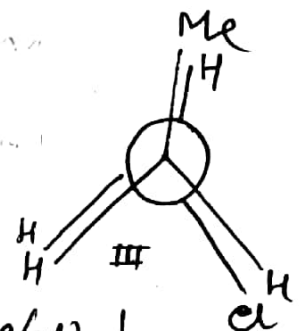
60° clockwise free rotation of back carbon.



$$\phi(\text{Me/Cl}) = 60^\circ$$

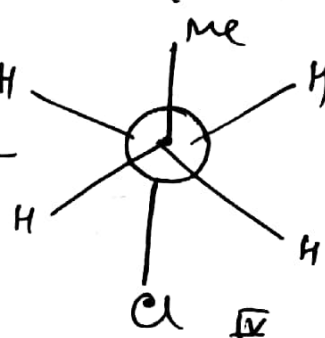
(Actual angle - 65-70°)

60° clockwise rotation from ②, 120° clockwise rotation from ①

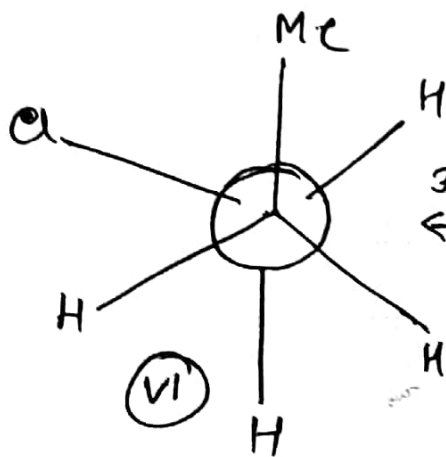


$$\phi(\text{Me/Cl}) = 120^\circ$$

60° --- ③
180° --- ④

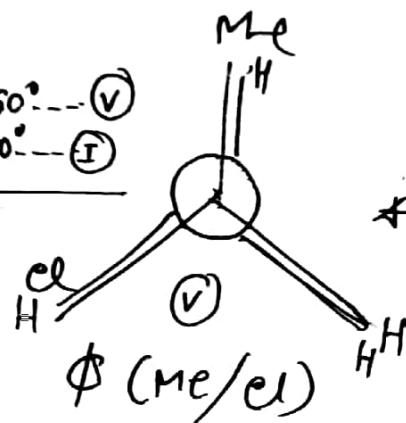


$$\phi(\text{Me/Cl}) = 180^\circ$$

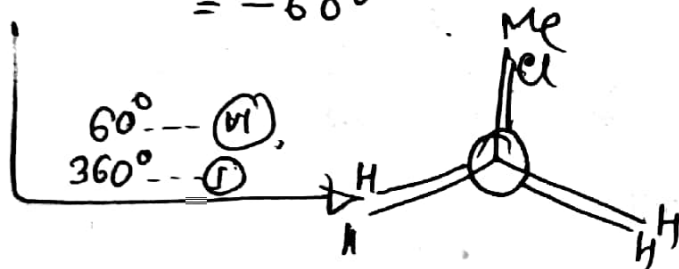


$$\phi(\text{Me/Cl}) = 300^\circ = -60^\circ$$

60° --- ⑤
300° --- ⑥



$$\phi(\text{Me/Cl}) = 240^\circ = -120^\circ$$



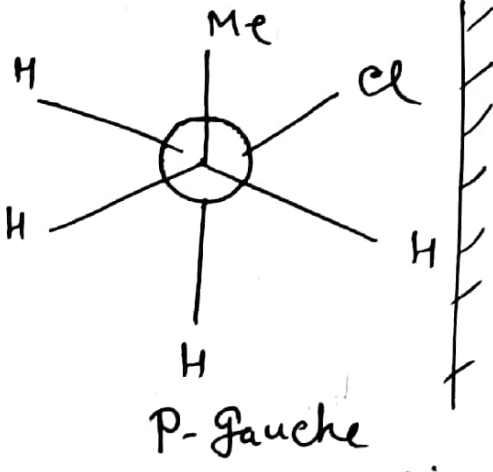
60° --- ⑦
360° --- ①

H.W
= Draw Torsional curve of n-Propyl chloride

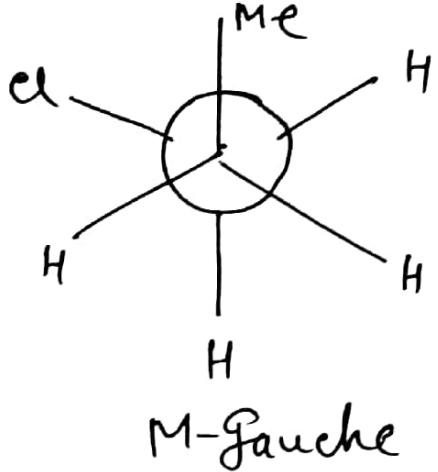
stable isomers are, (II), (IV), (VI)

stability order: (II), (VI) > (IV) → (Exception)

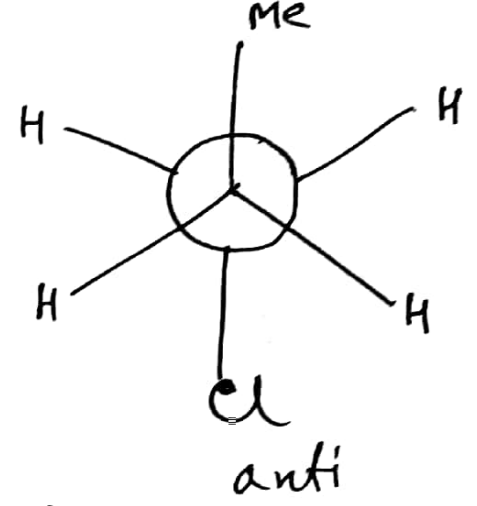
Here P and M-Gauche structures are more stable than anti structure.



$\phi(\text{Me/Cl}) = +60^\circ$
 (Actual - 65-70°)



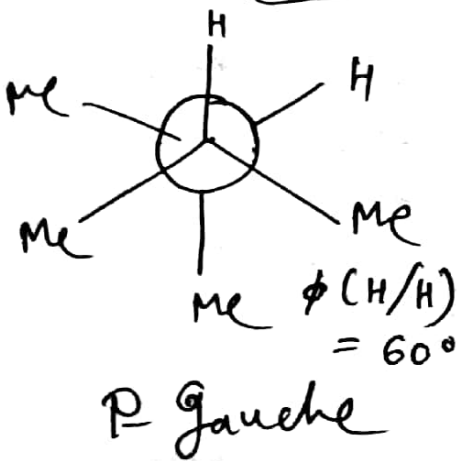
$\phi(\text{Me/Cl}) = -60^\circ$
 $= 300^\circ$
 (Actual = -65-70°
 or 290-295°)



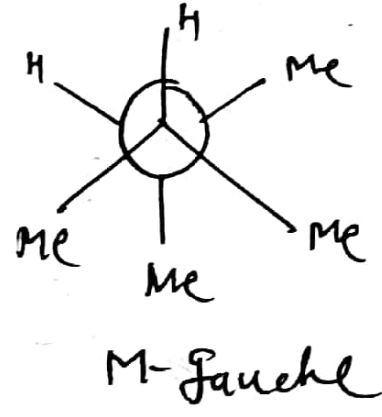
$\phi(\text{Me/Cl}) = 180^\circ$

P/M-Gauche here is more stable because
 • here vanderwaal's attractive force between Cl/Me predominates over Me/Cl-repulsive force.

Solved Problem of Previous class H.W



$\phi(\text{H/H}) = 60^\circ$



$\phi(\text{H/H}) = 300^\circ = -60^\circ$