

STEREOCHEMISTRY 1.

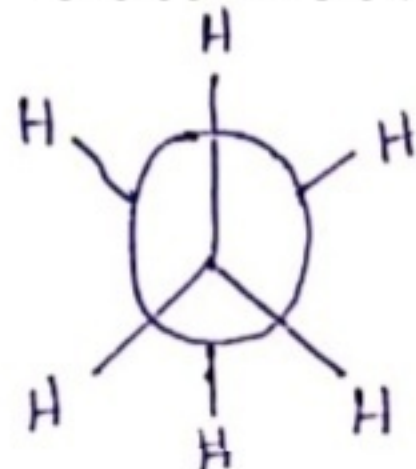
Lecture-15 ,D-II(H)

Paper -IV ,Ch-4 ,20 AUG. 2020

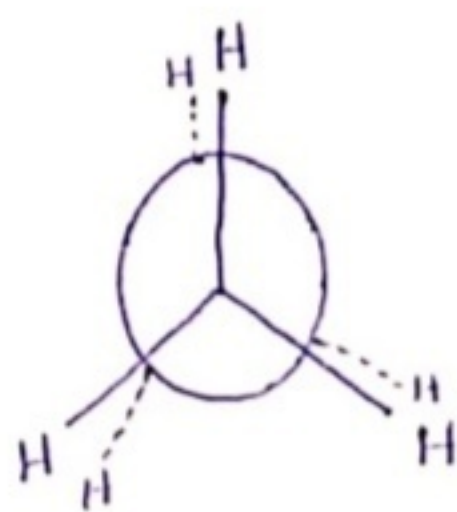
Topic : Conformational Isomerism

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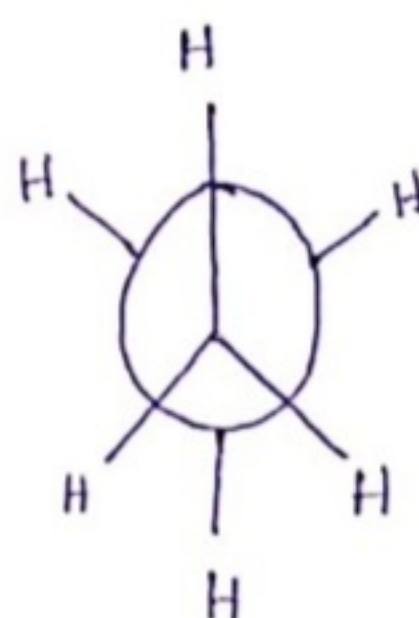
* If angle of rotation is 60° then six conformations are obtained.



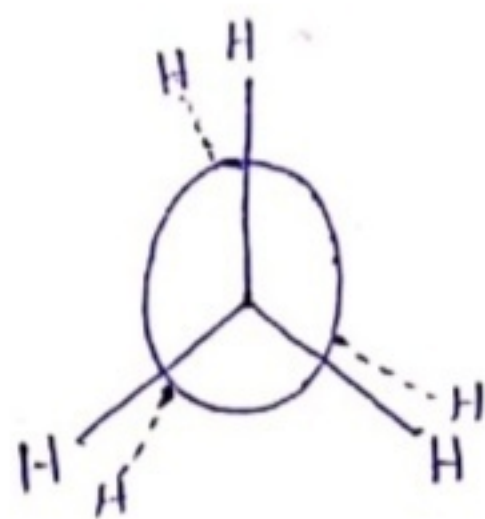
1



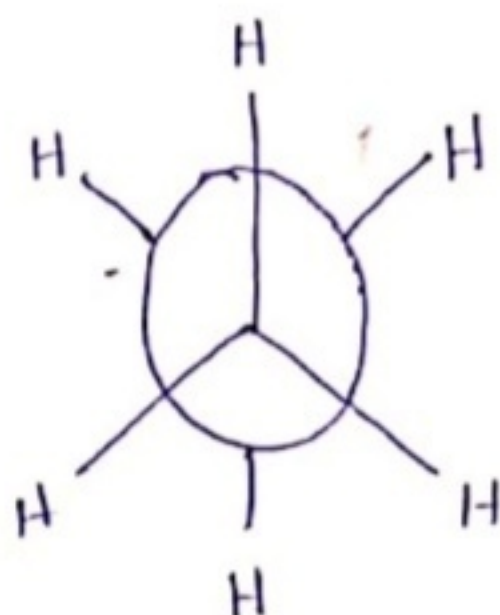
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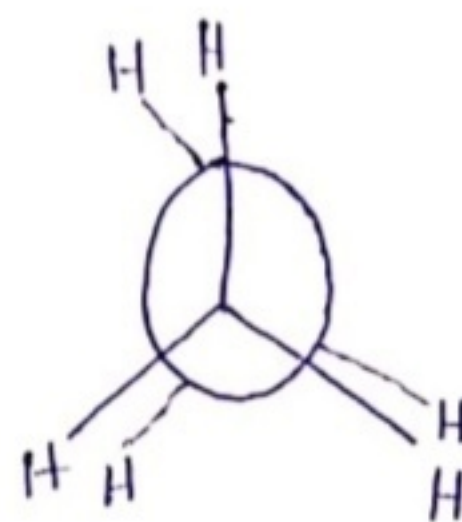
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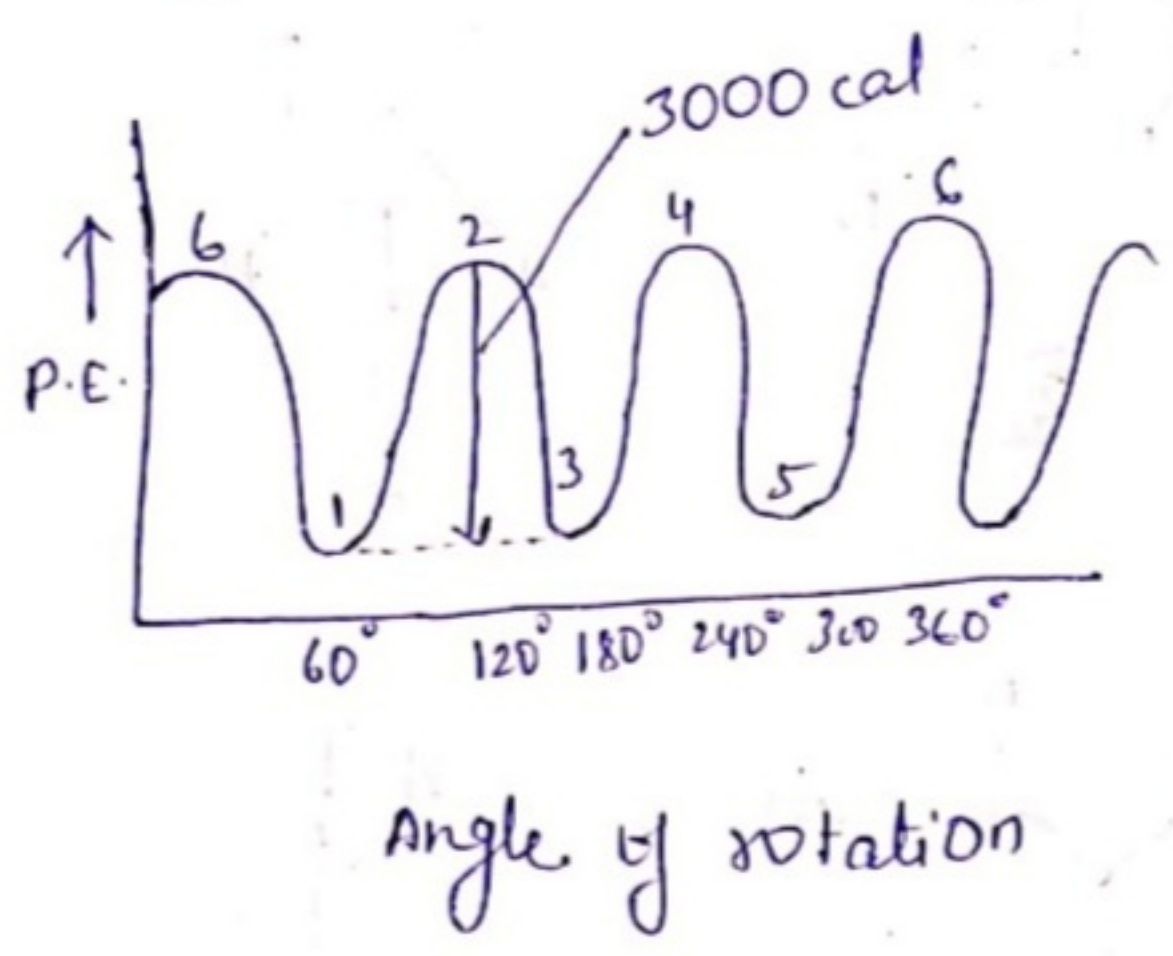
6

* Out of these six 1,2&5 are staggered form in which the two hydrogen atom on the different carbon atoms are as far apart as possible ,and 2 ,4 & 6 are eclipsed in which

the two hydrogen atoms on the different carbon atoms are close together as possible.

* Since the potential energy of ①, ③ and ⑤ are same, they are equally stable, similarly the conformation ②, ④ & ⑥ are equally stable as they also possess equal energy.

But it must be noted that potential energy of ①, ③ & ⑤ are less than that of ②, ④ & ⑥



* The no. 1, 2, 3, 4, 5 and 6 represent the already sketched conformation of ethane molecule to the minimum P.E., they are most stable. Such conformation as staggered in the present case, are known as conformational isomers. (or conformers), which

may now be defined as those stereoisomers that arise by rotation about single bonds and that corresponds to the minima in the potential energy curve.

But it must be noted that the three staggered conformations of ethane are indistinguishable, they represent a single compound, i.e.; there is no conformation isomer.

To be continued in next lecture..

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