# UNIT 5 – CONFORMATIONAL ISOMERS

**VTOC:** Stereoisomers Part I
Conformational Isomers | Ethane | Butane
Cycloalkanes | Substituted Cyclohexanes | Practice Problems

**UCD:** Section 3.1: Conformations of straight-chain organic molecules
Section 3.2: Conformations of cyclic organic molecules

**Skills:**

5A. For chains, draw Newman projections of all conformations around a given bond and determine their energy

5B. Draw the two chair forms of a given cyclohexane and determine which is lower in energy

5C. Use skills from naming and Newman projections to determine if structures are constitutional (structural) isomers, identical or not isomers.

| Interaction | Energy in kJ/mol | Type(s) of Strain |
|---|---|---|
| H/H eclipsed | 4.0 | torsional |
| H/$CH_3$ eclipsed | 6.0 | torsional & steric |
| $CH_3$/$CH_3$ eclipsed | 11 | torsional & steric |
| $CH_3$/$CH_3$ gauche | 3.8 | steric |