**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ # \_\_\_\_\_ Chapter 15 – Three-Dimensional Shape of Organic Compounds**

***Definitions***

* + **Superimposable**
  + **Non-superimposable**
  + **Chiral**
  + **Achiral**
  + **Stereocenter/chirality center**
  + **Enantiomers**
  + **Racemic mixture**
  + **R, S designation**
  + **Diastereomers**
  + **Points of difference**
  + **Formula for multiple stereocenters**
  + **Significance in Biology: Enzymes**

***Basic Concepts***

* Recall the differences between constitutional isomers and stereoisomers (flow chart- handout & p. 421)
* What types of everyday objects are mirror images of each other?
* What are the ‘requirements’ for a molecule to have a chirality center (or a sterocenter)? Be able to locate a chirality centers in molecules.
* A pair of enantiomers are isomers that are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ images of one another.
* Be able to distinguish R from S (know points of difference). See your worksheets.
* When a compound has two or more chirality centers, some stereoisomers will be enantiomers of each other and some will be diasteromers of each other. Can you tell the difference? (See exp. 15.4 & Prob 15.4 from book)
* Be familiar with optical activity and chirality (+,-). See PPt and p. 435.
* What formula is used when there are multiple chiral carbons in the same molecule? P. 433
* Biologically speaking, explain the significance of enzymes regarding R and S enantiomers. P. 436
* Racemic mixtures- Read ‘Chemical Connections 15A’ from book

***Textbook Practice Problems:***

Do questions/problems 15. 1,2,3,4,5,6 (questions throughout the chapter); 15.7, 21, 23, 26, 28, 29, 31, 32, 33 (end of chapter)