Quadrant II – Transcript and Related Materials

Programme: BSc

Subject: Chemistry

Paper Code: CHC101

Paper Title: Inorganic and Organic Chemistry (Section B – Organic Chemistry)

Unit: 02 Stereochemistry

Module Name: CIP Rules R/S- Part 2

Module No: 32

Name of the Presenter: Mahesh Nair

Notes:

Configuration is the actual 3D arrangement of groups in a chiral molecule. Specifying configuration is a more convenient method of identifying a stereoisomer without having to draw its picture. This configuration can be specified using the prefixes R and S as proposed by Cahn-Ingold-Prelog (CIP-rules).

Steps followed in assigning configuration to the Fischer formula:

In Fischer projection, groups on the vertical line are away from observer or into the plane of paper, while groups on the horizontal line are towards the observer or out of the plane of paper.

1. Give priority to all four groups around a chiral carbon. The group with the greatest atomic number is given number 1, followed by the group with the second largest atomic number which is given number 2 and so on.
2. If the group of lowest priority is not on the vertical line then make even number of interchanges to bring it on the vertical line (going away from the observer).
3. Draw a curved arrow from group #1 to group #2 to group #3.
4. If the arrow follows a clockwise path then the configuration is R (Rectus in Latin)

If the arrow follows a counterclockwise path then the configuration is S (Sinister in Latin)