

# SHREE H.N. SHUKLA GROUP OF COLLEGES

(AFFILIATED TO SAURASHTRA UNIVERSITY & GTU)



2-vaishali nagar, Near  
Amrapali railway  
crossing,  
Raiya road, Rajkot-  
360001. Ph.No.-  
(0281)2440478, 2472590

3-vaishali nagar, Near  
Amrapali railway  
crossing,  
Raiya road, Rajkot-  
360001. Ph.No.-  
(0281)2471645

Behind marketing yard,  
Near Lalpari lake,  
Between Amargadh-  
Bhichri, Rajkot-360002.  
Ph.No.-90990 63150

## M.Sc. SEMESTER-IV ORGANIC-PHARMACEUTICAL CHEMISTRY C(OP)-403: STEREOCHEMISTRY

### 1. Fundamental of Stereochemistry

Important terminology of stereochemistry and nomenclature. Chiral properties of Organic compounds: ORD, CD and rules for optical properties. Chemical and stereo chemical aspects of DNA, and enzymes.

### 2. Conformational Analysis

Acyclic, cyclic, fused and bridged cyclic ring system. Dynamic stereochemistry, conformation and reactivity.

### 3. Diastereoselectivity

Stereospecific and stereo selective reactions, prochirality, Cram's rule, Newman projection and Felkin-Anh model. Stereo selective and stereo regulator polymerization. Stereo chemistry of fused ring and bridge ring and spirans.

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## 4. Determination of Stereochemistry by Spectroscopic Methods

Dihedral angle and coupling constant.<sup>3j</sup> Coupling and Karplus equation and its modification. Geminal coupling in six-membered, five-membered and four-membered ring, Nuclear Overhauser effect, etc. Geometrical isomer and coupling constants.

### Reference Books

1. Organic Chemistry - I.L. Finar.
2. Stereochemistry - J.P. Trivedi
3. Stereochemistry of Organic Compounds by- D. Nasipuri, 2 Edition, New Age International (P) Ltd. (1994).
4. Stereochemistry of Organic Compounds - P.S. Kalsi.
5. Stereoselective Synthesis : A Practical Approach, - M. Nogradi, VCH.
6. Organic Chemistry, By, J. Clayden, N. Greeves, S. Warren and P. Wothers, Oxford, University Press, (2001).
7. Stereochemistry of Carbon Compounds By E.L. Eliel, Tata McGraw-Hill Pub. Co. Ltd. (1962)