



SHREE H. N. SHUKLA GROUP OF COLLEGES

(AFFILIATED TO SAURASHTRA UNIVERSITY & GTU)

2-Vaishali nagar,
Near amrapali railway crossing,
Raiya road, Rajkot- 360 001.
Ph.No.-(0281) 2440478, 2472590

3-Vaishali nagar, Near
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Behind marketing yard,
Near Lalpari lake, Between
Amargadh-Bhichri,
Rajkot- 360 002.
Ph.No. 90990 63150

M.Sc. Chemistry Semester IV (CBSE)

C-403 Stereo chemistry

Question bank

Prepared by,
Jay Majithiya



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Q. Give the answer of each question (Each questions has two marks)

- Q 1. Define asymmetric carbon or chiral carbon or stereogenic centre and optical activity or chirality.
- Q 2. Define achiral centre or optically inactive compounds.
- Q 3. Explain nucleophilic addition reaction of hydrocyanic acid (HCN) in acetone.
- Q 4. Define isomer. Explain stereoisomers and enantiomers with examples.
- Q 5. Explain Configuration and conformation.
- Q 6. Define racemic mixture and explain with suitable examples.
- Q 7. Write a short note on naturally occurring single enantiomerically pure isomer.
- Q 8. Explain relation, similarity of R/S, +(d) / -(l) and D/L nomenclatures.

Q. Give the answer of each question (Each question has three marks)

- Q 1. Explain absolute and relative stereochemistry.
- Q 2. Write short note on ephedrine and pseudo-ephedrine and explain diastereoisomerism which arise when configuration has more than one (two) stereogenic centers.
- Q 3. Explain stereochemistry of sugar with three stereogenic centers.
- Q 4. Explain zig-zag and Fischer projections of drawing configuration of D-ribose.
- Q 5. Explain the mystery of Feist's acid.
- Q 6. Write a short on stereoselective reaction.



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Q. Give the answer of each question (Each question has five marks)

- Q 1. Explain optical activity or chirality of $R\text{-CH}_2\text{-CHO}$ and $\text{CH}_3\text{-CO-CH}_3$ by considering nucleophilic addition reaction of hydrocyanic acid (HCN).
- Q 2. Define diastereoisomers with suitable examples and properties.
- Q 3. Explain achiral diastereoisomers with more than one stereogenic centre citing the example of tartaric acid.
- Q 4. Explain method of determination of stereochemistry of a compound citing example of 2,3,4-trihydroxy pentane or pentane 2,3,4 triol.
- Q 5. Define the term resolution or separation of racemic mixture/modification.
- Q 6. Explain prochirality, enantiotropic, diastereotropic and homotropic with citing suitable examples.
- Q 7. Explain Nucleophilic attack of Ethyl magnesium bromide (Et-Mg-Br) (i), Aluminium tetrahydride (AlH_4), Enolate of methyl acetate (iii), Lithiated alkynes (iv) and heterocyclic chiral nitrogenated aldehyde.