

Shree Manibhai Virani and Smt. Navalben Virani Science College (Autonomous)

Affiliated to Saurashtra University, Rajkot

SEMESTER END EXAMINATION APRIL – 2017**M. Sc. Chemistry****16PCECC07 – STEREOCHEMISTRY***Duration of Exam – 3 hrs**Semester – II**Max. Marks – 70***Part A (5x2= 10 marks)**Answer **ALL** questions

1. Why study of stereoisomerism is important? Explain with any one example.
2. Give a list of *syn* addition reagents.
3. Draw Haawarth projection for (i) α -D-Glucose (ii) β -D-Glucose
4. What are Enantiotopic hydrogens? Give one example.
5. Differentiate between Conformation & Configuration isomers.

Part B (5X5 = 25 marks)Answer **ALL** questions

- 6a. Discuss various factors affecting SN^2 reactivity.

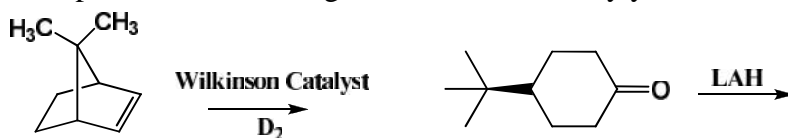
OR

- 6b. Differentiate between stereoselective or stereospecific reaction.

- 7a. Discuss E1CB reaction mechanism & it's stereoselectivity

OR

- 7b. Give product of following two reactions: Justify your Answer.



- 8a. What is enantioselective faces? Explain *Re-Si*-Nomenclature with example.

OR

- 8b. Write a note on mutarotation.

- 9a. Write a note on the mechanism & stereochemistry of SN^i (internal Substitution Reaction).

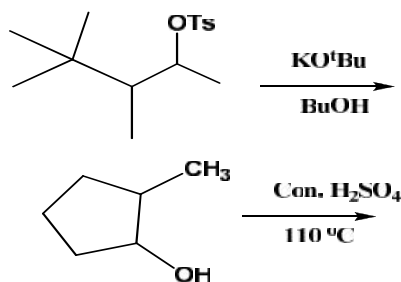
OR

- 9b. Draw (2R,3R) 2-hydroxy-3-cyanobutyric acid in wedge-dash projection and interconvert to Fischer, Newman and Sawhorse projection.

10a Write a note on geometrical isomerism.

OR

10b Give the Product of the following reaction. Justify your answer.



Part C (5X7 = 35 marks)
Answer **ALL** questions

11a. What is saytzeff rule? Discuss the regioselectivity of E¹ mechanism with examples.

OR

11b. Describe resolution of racemic mixture using diastereomeric formation method.

12a. What is syn & anti addition? Why anti addition is preferred over syn? Explain with one example.

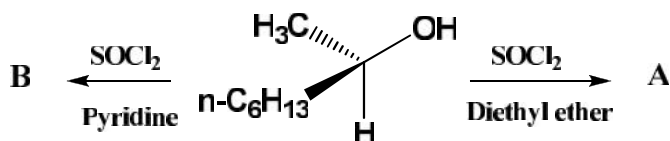
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12b. Explain E2-anti-elimination with suitable examples.

13a. Explain Felkin-Ahn model for predicting diastereoselectivity in carbonyl compounds.

OR

13b. Write the product A & B. Explain its mechanism.



14a Explain stereoisomerism in Allenes and its nomenclature system.

OR

14b What is the minimum condition for geometrical isomerism? Explain E/Z nomenclature of geometrical isomers with at least two examples.

15a Discuss various factors affecting the SN1 reactivity.

OR

15b What is asymmetric synthesis? Give any four examples.