Exam. Code : 210401

Subject Code : 4819

M.Sc. Chemistry 1st Semester

ORGANIC REACTION MECHANISM—I

Course—II

Time Allowed—3 Hours] [Maximum Marks—50

Note :— Candidate has to attempt **five** questions out of **eight** questions, selecting at least **one** question from each Section. The **fifth** question may be attempted from any Section.

SECTION—A

1. Discuss enantiotopic and diastereotopic atoms, groups and faces with appropriate examples in each case.

2. Organic compounds such as biphenyls, allenes and spiranes do not contain asymmetric atoms, nevertheless they are chiral. Discuss with examples.

SECTION—B

3. Discuss stereochemistry of S_N^1 and S_N^2 reaction. Also explain mixed S_N^1 and S_N^2 reaction.

4. What are reactive intermediates ? Discuss in detail any two reactive intermediates.

SECTION—C

5. Explain mechanism of nucleophilic substitution at an allylic and aliphatic trigonal carbon with suitable examples and evidences in each case.

6. What is SE2 mechanism ? Discuss hydrogen exchange and shift of double bond in aliphatic electrophilic substitution reaction.

SECTION—D

7. (a) Explain SRN1 mechanism with example.

   (b) Discuss the synthetic utility of Von-Richter rearrangement reaction with mechanism and evidences. 4,6

8. (a) What is partitioning effect in Arenium ion mechanism ?

   (b) Explain orientation and reactivity in monosubstituted benzene ring. 3,7