SEMESTER-I
Paper S-1052

Organic Chemistry

Time: 3 Hrs. **M.M. 75 marks**

Note: The paper will be divided into two sections.

Section-A One question with 10 parts (short answer word limit 20) spread over whole syllabus. Each part will be of 1 mark and candidate is required to attempt all the ten parts

Total 10 marks

Section-B Five questions (answer not exceeding 500 words) are from each Unit with internal choice will be asked and the candidate is required to attempt all five questions. Each question will be of 13 marks

Total 65 marks

Unit-I

Reaction mechanism: σ and π bond, kinetic and thermody transition state and intermediates, methods of determining reaction mechanism, isotope
effect, effect of reactivity, linear free energy relationship (Taft and hammett equation).

Unit-II

Introduction of following types mechanism: Type of reaction –Addition (nucleophilic, electrophilic, free radical), Substitution (nucleophilic, electrophilic, free radical), Elimmination and rearrangement reaction.

Unit-III

Name reactions: Hoffmann-loffler-fretag reaction, Chichibabin reaction, Sharpless asymmetric reaction, Barton reaction, Aldol, Perkin, Stobbe, Dieckman condensation, Michael addition, Mannich reaction.

Unit-IV

Disconnection approach: Elementary idea of disconnection, an introduction to synthesis, synthetic equivalents, functional group one and two group (C-X and C-C disconnection), Interconversions, chemoselectivity, Diels-alder reaction, 1,3 and 1,5

difunctionalised compounds, α,β unsaturated robinson annelation.

Unit-V

Pericyclic reaction: Selection rules and stereochemistry of electroyclic reaction, cycloaddition and sigmatropic shifts, Sommlet-hauser, cope and clasien rearrangements, structural elucidation of organic compounds