P. P. SAVANI UNIVERSITY

First Semester of M.Sc. Examination

February-2022

SSCH7030–Advances in Organic Chemistry I

08.02.2022, Tuesday Time: 12:00 p.m. to 02:30 p.m. Maximum Marks: 60

Instructions:

1. The question paper comprises of two sections.
2. Make suitable assumptions and draw neat figures wherever required.
3. Use of scientific calculator is allowed.

Section-I

Q.1 Very Short Questions (Attempt any five) [10]

1.1 What is triad system? Give an example of it.

1.2 What is the necessary condition for effective overlaps?

1.3 Give an example of S_E1 reaction.

1.4 Draw Kekule and Dewar form of resonance structure of benzene.

1.5 Discuss product configuration of S_E1 and S_E2 reaction.

1.6 List different types of addition compounds.

Q.2 Write Short Notes (Attempt any two) [06]

2.1 Explain Cyclodextrins in detail.

2.2 Write a short note on Homo Aromaticity.

2.3 Explain: Hell-Vohlard-Zelinsky reaction.

Q.3 Detail questions (Attempt any two) [14]

3.1 Explain: Crown ether complexes.

3.2 Give detail account on SP, SP^2 and SP^3

3.3 Give distinction between S_E2 (front) and S_Ei mechanisms.

Section-II

Q.1 Very Short Questions (Attempt any five) [10]

1.1 What is prochirality?

1.2 Write *E* and *Z* structure of 2-bromo-1-chloro-1-fluoroethene.

1.3 What is Specific rotation? Give its formula and standard term used in it.

1.4 What is Quasi enantiomers? Give examples.

1.5 What are the proposals to define mixed S_N1 and S_N2 reaction?

1.6 Give rate law and order of reactivity for alkylhalide in S_N1.

Q.2 Write Short Notes (Attempt any two) [06]

2.1 Explain: Metamerism.

2.2 Explain Axis of symmetry (C_n) by taking examples of C_2 and C_3.

2.3 Give only Mechanism of Substitution Nucleophilic Bimolecular Reaction.

Q.3 Detail questions (Attempt any two) [14]

3.1 Give detail account on SEQUENCE RULE.

3.2 Give following answer:

(i) Newman and Sawhorse projection formula for (a) Ethane (b) Butane

(ii) Flying wedge formula for (a) R-Lactic acid (b) S-Lactic acid

(iii) Fischer projection for (a) R-Lactic acid (b) S-Lactic acid

3.3 Give detail account on S_Ni Mechanism.

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