P. P. SAVANI UNIVERSITY

Third Semester of M.Sc. Examination

December-2021

SSCH8070–Rearrangement of Chemicals and Synthesis

15.12.2021, Wednesday Time: 12:30 p.m. to 03:00 p.m. Maximum Marks: 60

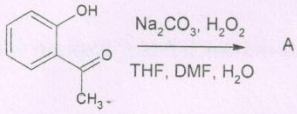
Instructions:

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 Write the structure and name of the Product A:



1.2 Give an example of Baeyer Villiger Oxidation.

1.3 What is DIBAL-H? Give its structure.

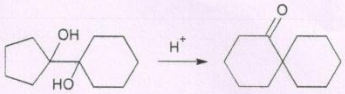
1.4 Give an example of kinetic control in Fries reaction.

1.5 Give preparation of Benzidine.

1.6 Define : Birch Reduction.

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

2.1 Explain mechanism:



2.2 Give preparation of cumene to phenole via hydroperoxide rearrangement.

2.3 What is Red-Al? give three reaction of it.

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

3.1 Give preparation of urea, urethane and amine from amide with mechanism.

3.2 What is precursor of nylon? Give detail mechanism of production of nylon precursor.

3.3 How will you prepare $LiAlH_4$? Give reduction of aldehyde and ketone by $LiAlH_4$ with mechanism.

Section-II

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

1.1 Give full form and structure of : PDC, m-CPBA

1.2 What is chiral additive DHQ and DHQD?

1.3 Give conversion of sulfide to sulfoxide.

1.4 Give list of all Manganese oxidizing agent.

1.5 Give use of LiCl in Stille reaction.

1.6 Give Ritter reaction.

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

2.1 What is PCC? Give two reaction of it.

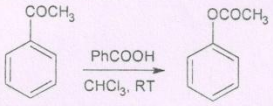
2.2 Explain stereoselective – anti and syn – Peterson olefination with mechanism.

2.3 Explain Cleavage of Glycol by $NaIO_4$.

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

3.1 Give following conversion with mechanism:
Benzyl alcohol → Benzaldehyde → Methyl benzoate

3.2 Give mechanism of following reaction, and give any two applications of this mechanism.



3.3 How will you prepare amine salt and enone via mannich base? Explain with mechanism.