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B. Sc. Course (CBCS) Ordinance Sem-VI
EXAMINATION MAY 2023
CHEMISTRY - ORGANIC CHEMISTRY

[Time: 2 Hours]

[Max. Marks:80]

- Instructions:** 1. All questions are compulsory.
2. Answers to the two sections should be written on **separate** answer books.

SECTION-A

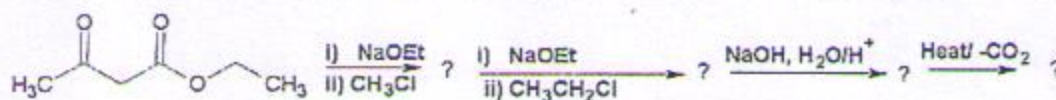
(40 Marks)

Q1

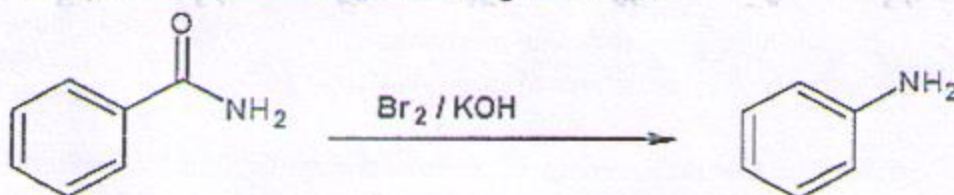
Q.1 Answer **any four** of the following.

4x4=16

- i) Explain Benzoin condensation reaction with mechanism.
ii) Complete the following reactions: -



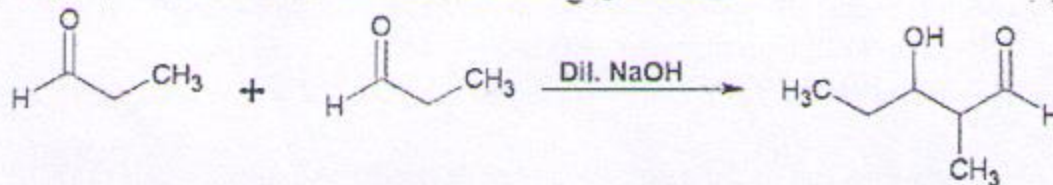
- iii) What is Baeyer-Villiger oxidation? Give one application with reaction.
iv) Explain Norrish Type II reaction, with example.
v) Give Name & mechanism of the following reaction: -



- vi) Write the structure of four different Acceptors that can be used in the Michael Addition Reaction as Acceptor.

Q2 A) i) Write the mechanism of the following reaction: -

04



- ii) How will you Prepare 2-Methylpropanoic Acid from Diethyl Malonate?
Give reactions.

02

OR

UCHC110

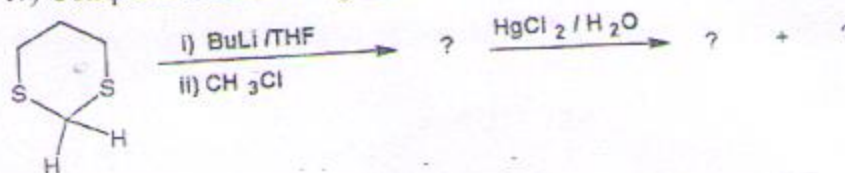
- iii) Which reduction reactions can be used to convert the following? Which one is the most feasible and why?

04



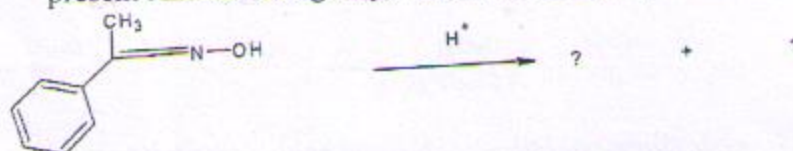
- iv) Complete the following reaction.

02



- B) i) Write the name of the reaction and structure of two different products that may be obtained in the following reaction. If the Methyl group is present Anti to -OH group, which is the major product?

04



- ii) Give any chemical reaction of Barton Reaction.

02

Q3

- A) i) Explain Wittig reaction with mechanism.
ii) Write the Enol structures of Ethyl Acetoacetate.

04

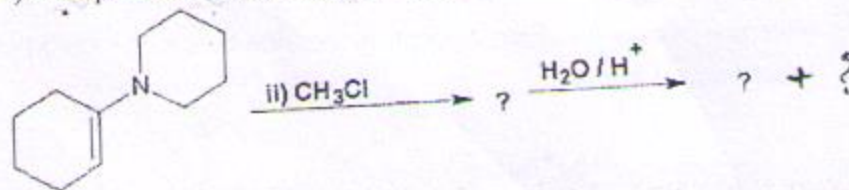
02

OR

- iii) Explain Curtius Rearrangement. Give one application with reaction.
iv) Complete the following reaction: -

04

02



- B) i) Explain Wolff rearrangement with mechanism.
ii) What is Paterno Buchi reaction?

04

02

SECTION-B

(40 Marks)

Q4 Answer any four of the following:

16

- Write a synthesis for terebic acid.
- What is the ring size of the glucose unit in sucrose? Explain giving equations.
- Outline the steps in the synthesis of citral from methyl heptenone.
- Addition of Br₂ to 3-hexene is both stereoselective and stereospecific. Explain.
- Camphor contains a carbonyl group and is ketone. Explain giving analytical evidence.
- Discuss E_{1cB} reaction mechanism with suitable example.

Q5

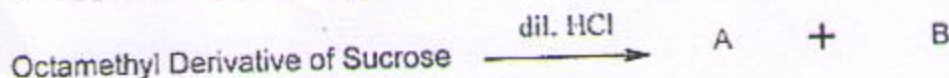
- Give analytical evidence to prove the position of the tertiary alcoholic group in α-terpineol. 04
 - Write equations showing the open chain reaction of glucose with: 02
 - HNO₃
 - Ac₂O

OR

- How was oxidative degradation used to prove the ring size of the second ring in α-pinene? 04
 - What is inversion of cane sugar? 02
- Explain the mechanism and stereochemistry of an S_N1 reaction using a suitable example. 04
 - Give analytical evidence to prove that citral is an α-β unsaturated aldehyde. 02

Q6

- Write a synthesis for camphoronic acid. 04
 - Complete the following and write the structure of A and B: 02



OR

- How is oxidative degradation used in revealing the nature of the smaller ring in camphor? 04
 - Briefly explain Ruff degradation. 02
- Using labelled equations explain the Markownikoff and anti-Markownikoff addition of HI to 2-methyl-2-butene. 04
 - Citral is an acyclic monoterpenoid. Justify. 02