

Your Roll No.....

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M.Sc. Chemistry, Semester-III Supplementary Examination- April, 2024

Paper Title: Organic Synthesis-I

Paper Code: MCHCCO-302

Time 2½ hours

Maximum Marks 60

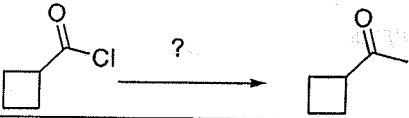
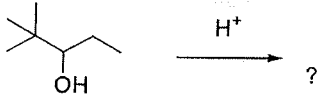
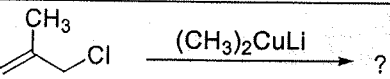
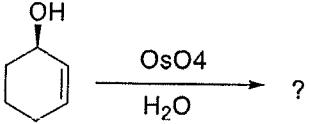
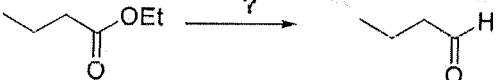
Abbreviations Used

CLO- Course Outcome, PLO- Program Outcome, BTL- Bloom Taxonomy Level: BT level 1-Remember; BT level 2-Understand; BT level 3-Apply; BT level 4-Analyse; BT level 5-Evaluate, BT level 6-Create

Section A

Very Short Type Questions (attempt all)

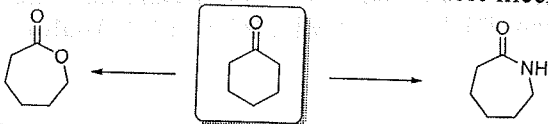
(10x1.5=15Marks)

Q. No	Question	BTL	CLO	PLO
1.	What is hydroboration?	1	1	1
2.	How do you prepare methyl ketone from terminal alkynes?	1	1	1
3.	What is non-classical carbocation?	1	1	1
4.	State the Lossen rearrangement.	2	3	1
5.	State the suitable reagent for the following conversion: 	3	3	3
6.	Which olefin is the major product of the following acid catalysed dehydration:  (A)  (B)  (C)  (D) 	3	3	3
7.		3	1-3	1-3
8.		2	5	1
9.		2	4	1
10.	What is Dienone-Phenol rearrangement?	1	1/2	1/2

Section B

Long Type questions (Attempt any two out four)

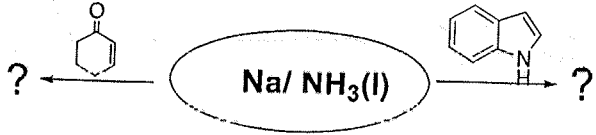
(2x10=20 marks)

Q. No	Question	BTL	CLO	PLO
1.	Write a short note on the following: (A) Woodward oxidation (B) Quasi Favorskii rearrangement	2-4	2-4	2-4
2.	Explain the following conversions with suitable mechanism. $\begin{array}{c} \text{O} \quad \text{O} \\ \parallel \quad \parallel \\ \text{R} \quad \text{R} \end{array} \xrightarrow[\text{KOH}]{\text{NH}_2\text{-NH}_2} \text{R}-\text{C}\equiv\text{C}-\text{R} \xrightarrow{\text{Na/NH}_3(\text{l}), \text{tBu-OH}} ?$	5/6	4-6	4-6
3.	Write a short note on the following: (A) Simmons-Smith reaction (B) Sonogashira Coupling	2-4	2-4	2-4
4.	Complete the following conversions with suitable mechanism: 	5/6	5/6	5/6

Section C

Short Type questions. (Attempt all questions)

(5x5=25 marks)

Q.No	Questions	BTL	CLO	PLO
1.	Write a short note on Corey Kim Oxidation OR Write a short note on Shapiro reaction	1-3	1-3	1-3
2.	Write a short note on Schmidt rearrangement. OR What is Hydrogenolysis? Explain with suitable examples.	1-3	1-3	1-3
3.	Suggest the product formed with suitable mechanism. $\text{Cyclohexene} \xrightarrow{\text{SeO}_2} ?$ OR Complete the following conversion with suitable mechanism 	5-6	4-6	3-6
4.	Explain the Demjanov rearrangement with suitable mechanism. OR Explain the Haloform reaction with suitable mechanism.	1-3	1-3	1-3
5.	Identify the reagents/products in the following conversions? $\text{Ph-CH=CH-Br} \xrightarrow{\text{BuLi}} \text{A} \xrightarrow{\text{CO}_2} \text{B} \xrightarrow{\text{C}} \text{Ph-CH=CH-C(=O)Cl} \xrightarrow{\text{Ph}_2\text{Cd}} \text{D}$ OR Identify the products formed in the following reaction and depict the mechanism of their formation. 	5-6	4-6	3-6