

Department of Chemistry
School of Chemical & Life Sciences, Jamia Hamdard
B.Sc.-M.Sc. Integrated Program, Chemistry,
Semester-III Supplementary Examination-May, 2023
Paper Title: Halogens, Oxygens and Nitrogen containing Functional groups
Paper Code: BCH-CC07TH

Time 3 hours

Maximum Marks 75

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)

(10x2=20Marks)

Q. No	Question	BTL	CLO	PLO
A1.	What is Claisen-Schmidt reaction?	1	1	1
A2.	How do you distinguish 1 ^o /2 ^o /3 ^o amines?	4	2	1/2
A3.	Depict the Ullmann reaction with suitable example.	1	2	2/3
A4.	How do you convert aniline to chlorobenzene?	6	3	3
A5.	$R-Br + NaI \longrightarrow ?$	3	6	6
A6.	What is H.V.Z. reaction?	1	4	3/4
A7.	Why do alkyl nitrites called as esters of nitrous acid?	4	1	1
A8.	State the Gabriel phthalimide synthesis.	2	2	3
A9.	What are mixed amines?	1	2	1-2
A10.	$H_3C-NC \xrightarrow{LiAlH_4} ?$	2	5	3-5

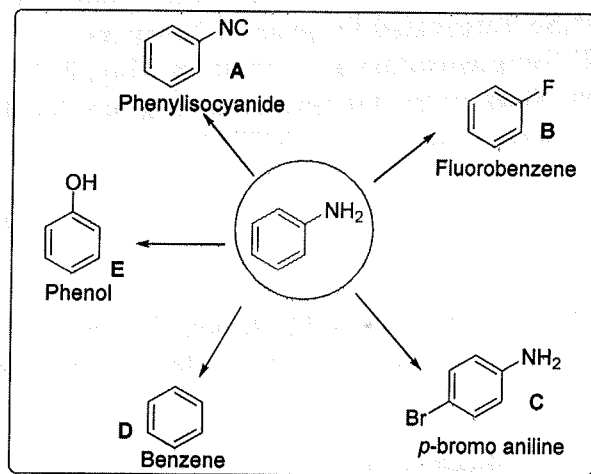
Section B

Long Type questions (Attempt any two out four)

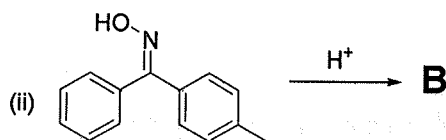
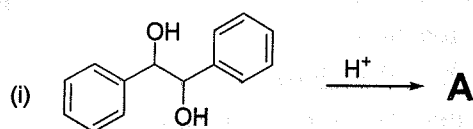
(10x2=20 marks)

Q. No	Question	BTL	CLO	PLO
B1.	Write a short note on the following: i) SN^i reaction ii) Wolff-Kishner reduction	6	2/3	3
B2.	Write a short note on the following: (i) Reimer Tiemann reaction (ii) Hofmann elimination	3/5	5	4/5

- B3.** How do you prepare the following compounds (A-E) from aniline? 4 2-4 3-5



- B4.** Identify the products (A & B) formed in the following reactions with suitable mechanism: 5/6 5/6 6



Section C

Short Type questions. (Attempt all questions)

(7x5=35 marks)

Q.NO	Questions	BTL	CLO	PLO
C1.	Depict the following reactions with suitable examples (i) Hunsdiecker reaction (ii) Schmidt reaction	3/4	2/4	3

OR

Why do aryl halides not undergo nucleophilic substitutions under normal conditions? Explain the conditions under which aromatic nucleophilic substitutions are possible.

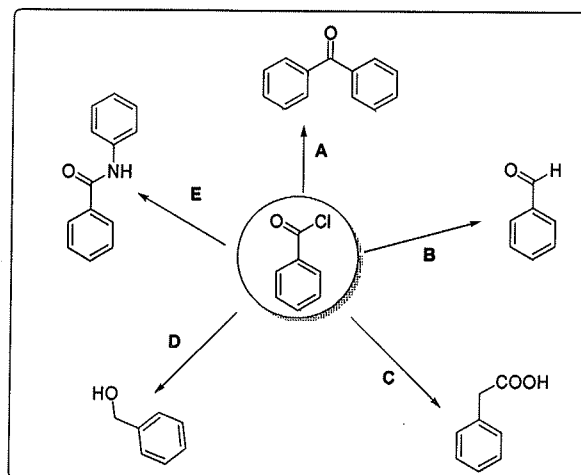
C2.	How do you distinguish 1°/2°/3° alcohols? Explain the reactions involved in it.	4/5	2/3	2/5
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OR

Differentiate between Aldol condensation and Cannizzaro reaction.

- C3. State the required reagents/reactants (A-E) for the following conversions:

2/3 2/5 4

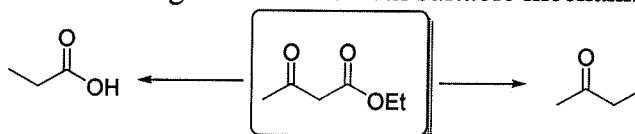


OR

Differentiate between Dieckman and Claisen condensation reactions.

- C4. Complete the following conversions with suitable mechanism.

3/4 3-5 5/6



OR

Explain the Robinson annulation with suitable mechanism.

- C5. Write a note on the "reduction of nitrobenzene" under different conditions.

2 6 2

OR

Write two methods each for the preparation of alkyl nitrites and nitroalkanes.

- C6. What is Hofmann degradation? Explain with suitable mechanism.

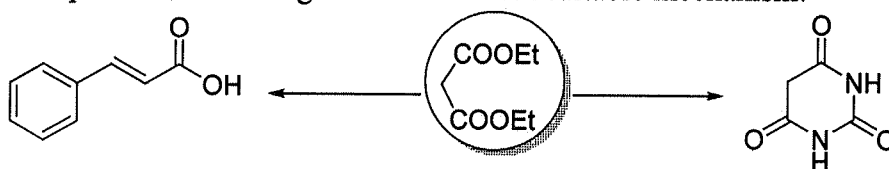
6 4/6 3

OR

What is Perkin reaction? Draw it's mechanism with suitable example.

- C7. Complete the following conversions with suitable mechanism:

3/4 3-5 3/4



OR

What is Diazotization? Explain with suitable mechanism.

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