

JAMIA HAMDARD
DEPARTMENT OF CHEMISTRY
SCHOOL OF CHEMICAL AND LIFE SCIENCES
M.SC. CHEMISTRY/SEMESTER II EXAMINATION-2023
PAPER TITLE: ORGANIC CHEMISTRY-II
PAPER CODE: MCHCC-202

Time: 2 hours

Maximum Marks: 60

Note: This paper has 3 sections A, B, and C, Attempt all three sections.

Section A: Answer all the questions; Section B: Answer any 2 out of 4; Section C: Answer all the questions, each question has an internal choice

SECTION A: Very Short Type Questions

		2*10=20		
		BTL	CLO	PLO
Q.	Explain the following with suitable examples	1,2	1,2,3	2,3,4
A 1.	Ipso attack	1,2	1,3	2-4
A 2.	Allylic halogenation using NBS	1,2	1,2,3	2,3,4
A 3.	Why biphenyl is <i>ortho</i> , <i>para</i> directing?	1,2	1,2,3	2,3,4
A 4.	Why alkynes are less reactive compared to alkenes towards addition of bromine?	1,2	1,2,3	2,3,4
A 5.	Why in <i>syn</i> thermal elimination no skeletal rearrangements are observed?	1,2	1,2,3	2,3,4
A 6.	E1cB reaction with a mechanism	1,2	1,3	2,3
A 7.	Hydroboration-oxidation in alkene	1,2	1,2,3	2,3,4
A 8.	Mannich reaction	1,2	1,2,3	2,3,4
A 9.	Vilsmeier reaction	1,2	1,2,3	2,3,4
A 10.	Gomberg reaction	1,2	1,2,3	2,4

SECTION B: Long type Questions (Attempt any two)

		10 * 2=20		
B 1.	Explain the orientation and reactivity in mono and di-substituted benzenes. Discuss using their energy profile diagrams.	4,5,6	5	4-6
B 2.	What are the effects of substrate structures, the attacking base, the leaving group, and the medium in elimination reactions? Discuss the mechanism and orientation in pyrolytic elimination.	2,3,4	3	1,3,5
B 3.	Discuss the role of chemo- and regioselectivity and stereochemical aspects in addition reactions.	4,5,6	4	4-6
B 4.	Describe the methods for the addition of organometallic reagents to carbonyl and unsaturated carbonyl compounds.	4,5,6	3	1.2.4,5

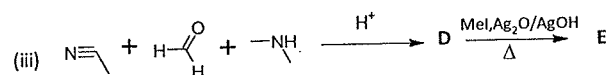
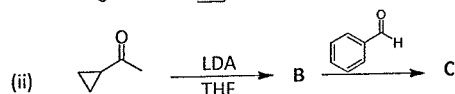
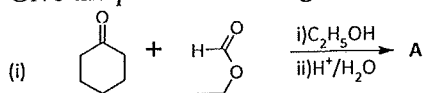
SECTION C: Short-type Questions. (Attempt all questions, each question has an internal choice):

		5*4=20		
C 1.	Explain with suitable examples the SE2 and SE1 mechanism and effect of substrates, leaving group, and the solvent polarity on the reactivity of aliphatic electrophilic substitution reactions.	1,2	4,5	1,3,5

OR

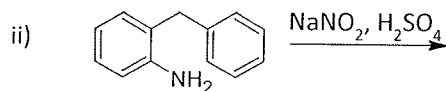
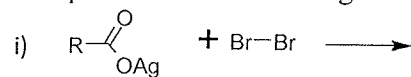
Discuss the types of free radical reactions. What is the neighbouring group assistance and reactivity for aliphatic and aromatic substrates at a bridgehead position?

C 2.	Give the products in the given reactions	3,4	5	4-6
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OR

Complete the reactions and give a suitable mechanism:

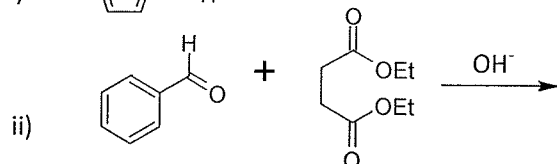
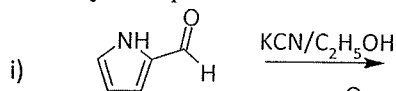


- C 3. Describe the reaction of phosphorus ylides with aldehydes. Why do sulphur ylides react differently with carbonyl compounds? 3,4,5 3 & 4 4-6

OR

Discuss the mechanism of metal hydride reduction of saturated and unsaturated carbonyl compounds.

- C 4. 3,4,5 3 4-6



OR

