

Department of Chemistry
School of Chemical & Life Sciences, Jamia Hamdard
M.Sc. Chemistry, Semester-IV Examination-May, 2025
Paper Title: Organic Synthesis-II
Paper Code: MCHCCO-402

Time 2.5 hours

Maximum Marks 60

Abbreviations Used

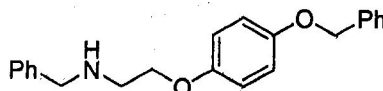
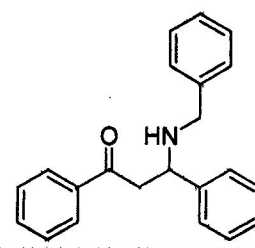
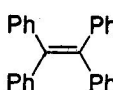
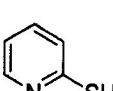
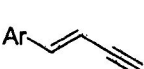
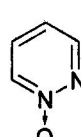
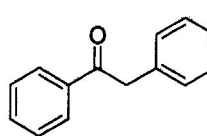
CLO- Course Outcome, PLO- Program Outcome, BTL- Bloom Taxonomy Level: BT level 1-Remember; BT level 2-Understand; BT level 3-Apply; BT level 4-Analyse; BT level 5-Evaluate, BT level 6-Create

Q.No	Question	BTL	CLO	PLO
Section A				
Very Short Type Questions (attempt all)		(10x1.5=15 Marks)		
A1.	Write the synthetic equivalents for the given synthons a) b)	2	1	1
A2.	Write the disconnection approach for the following: 	4	2	1/2
A3.	How do you deprotect the amine group of the following: 	6	2	2/3
A4.	What is the Sakurai reaction?	1	3	3
A5.	Complete the following conversions: 	3	2	3/4
A6.	Define the term synthon?	5	4	2/4
A7.	The Reserpine structure consists of three methoxy groups and three ester groups. (True/False)	2	1	1/2
A8.		1	2	2/3
A9.	How do you selectively deprotect the Cbz group from the following? 	4	2	1/2
A10.		1	5	3-5

Section B

Long Type questions (Attempt any two out four)

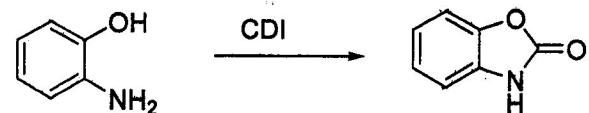
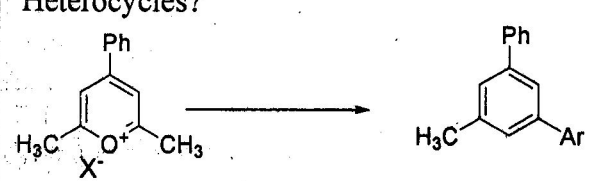
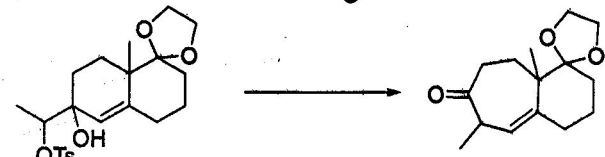
(10x2=20 marks)

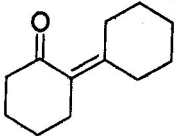
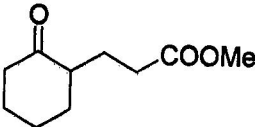
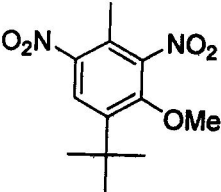
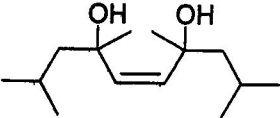
B1.	Outline the synthesis of the following compounds using disconnection approach:	6	3/4	3-5
	(A)  (B) 			
B2.	Outline the total synthesis of Juvabione using retrosynthetic analysis.	2/3	3	4/5
B3.	How do you obtain the following compounds from the given aromatic Heterocycles?	4	2-4	3-5
	(A)  from 			
	(B)  from 			
	(C)  from 			
B4.	Write a short note on the following reactions: (a) Prins reaction (b) Biginelli reaction	5/6	5/6	6

Section C

Short Type questions. (Attempt all questions)

(5x5=25 marks)

C1.	Complete the following conversion with suitable mechanism.	3/4	2/4	3/4
				
	OR			
	How will you obtain the following compound from the given aromatic Heterocycles?			
				
C2.	Outline the mechanism for the following conversion	4-6	3-5	5/6
				
	OR			
	Write a short note on Baylis-Hillman reaction			
C3.	What is two group C-X disconnection? Explain the 1,1-diX with a suitable example.	4-6	3-5	5/6
	OR			

	Design a convenient synthesis of following molecules using disconnection approach.			
	(i)  (ii) 			
C4.	Outline the synthesis of the following target molecule using retro synthetic analysis: (i)  (ii) 	4-6	6	5
	OR What is FGI? Explain briefly about the importance of FGI in retrosynthesis?			
C5.	What is FGI? Explain with suitable examples. OR Depict the relationship between the two functional groups and their influence in the synthesis of the following molecules:	3-5	2/3	3-5
	