

DEPARTMENT OF CHEMISTRY
SCHOOL OF CHEMICAL & LIFE SCIENCES, JAMIA HAMDARD
M.SC. CHEMISTRY
SEMESTER-IV EXAMINATION-MAY, 2023
PAPER TITLE: ORGANIC SYNTHESIS-II
PAPER CODE: MCHCCO-402

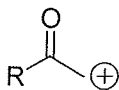
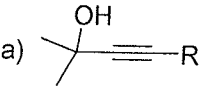
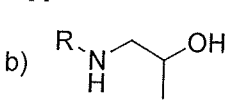
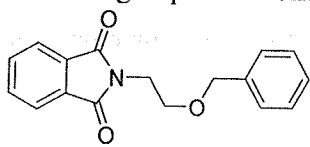
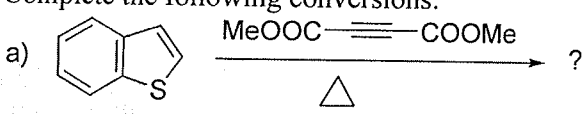
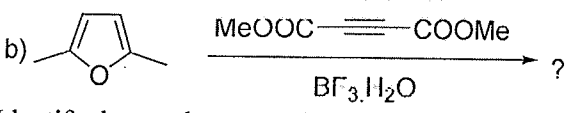
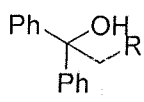
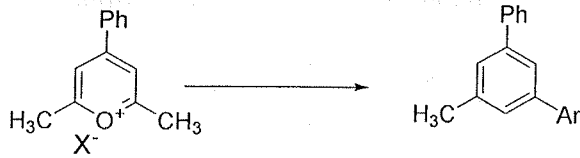
Time 3 hours

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

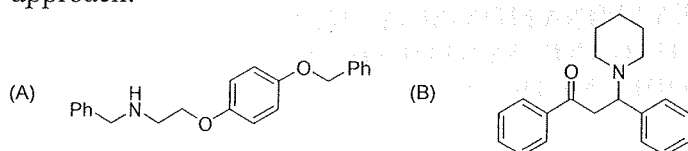
- | Q. No | Very Short Type Questions (attempt all) | (10x2=20Marks) | | |
|-------|---|----------------|----------|----------|
| A1. | Write the synthetic equivalents for the given synthons | BTL
2 | CLO
1 | PLO
1 |
| | <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>a)</p>  </div> <div style="text-align: center;"> <p>b)</p>  </div> </div> | | | |
| A2. | Write the disconnection approach for the following: | 4 | 2 | 1/2 |
| | <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>a)</p>  </div> <div style="text-align: center;"> <p>b)</p>  </div> </div> | | | |
| A3. | How do you deprotect the amine group of the following: | 6 | 2 | 2/3 |
| |  | | | |
| A4. | What is the Biginelli condensation reaction? | 1 | 3 | 3 |
| A5. | Complete the following conversions: | 3 | 2 | 3/4 |
| | <p>a)</p>  | | | |
| | <p>b)</p>  | | | |
| A6. | Identify the synthons results in the disconnection of the following compound: | 5 | 4 | 2/4 |
| |  | | | |
| A7. | Draw the structure of longifolene. | 2 | 1 | 1/2 |
| A8. | State the Ritter reaction. | 1 | 2 | 2/3 |
| A9. | Complete the following conversion: | 4 | 2 | 1/2 |
| |  | | | |
| A10. | What is Darzens epoxidation? | 1 | 5 | 3-5 |

Section B

(10x2=20 marks)

- Q** Long Type questions (Attempt **any two** out four)
- B1.** Outline the synthesis of the following compounds using disconnection approach:

BTL	CLO	PLO
6	3/4	5-5

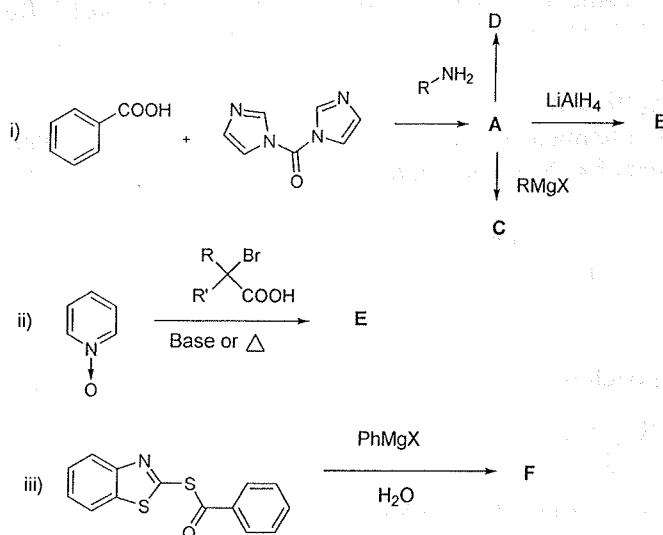


- B2.** Outline the total synthesis of Camphor using retrosynthetic analysis.

2/3	3	4/5
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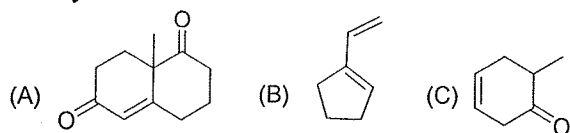
- B3.** Identify the products/intermediates formed in the following reactions with suitable mechanism:

4	2-4	3-5
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- B4.** Outline the synthesis of the following target molecules using retrosynthetic analysis

5/6	5/6	6
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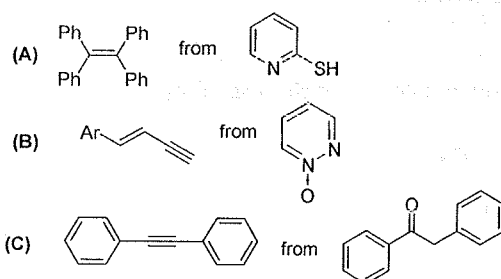


Section C

(7x5=35 marks)

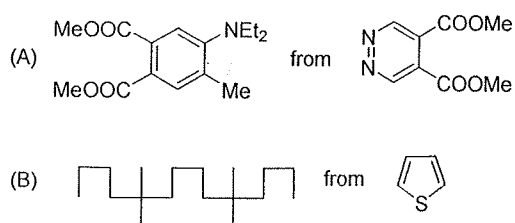
- Q** Short Type questions. (Attempt **all** questions)
- C1.** How do you obtain the following compounds from the given aromatic Heterocycles?

BTL	CLO	PLO
3/4	2/4	3/4



OR

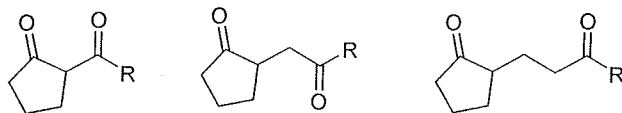
How will you obtain the following compounds from the given aromatic Heterocycles?



- C2. Discuss an enantioselective synthesis of juvabione 3-5 2/3 3-5
OR
 Outline the retro synthetic analysis of Reserpine
- C3. What is Umpolung reagent? Discuss about any two Umpolung reagents. 3-5 3/5 3/4
OR

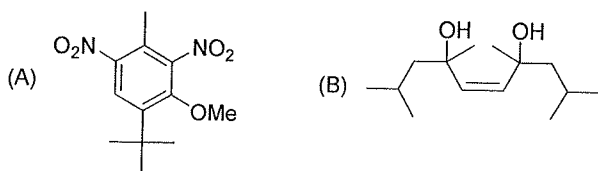
What is two group C-X disconnection? Explain the 1,2-diX with suitable examples.

- C4. Depict the relationship between the two functional groups and their influence in the synthesis of the following molecules: 4-6 3-5 5/6



OR

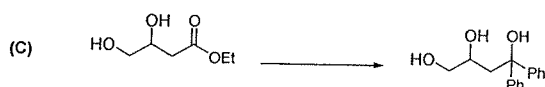
- C5. Explain the Prins reaction with suitable mechanism. Outline the synthesis of the following target molecule using retro synthetic analysis: 4-6 6 5



OR

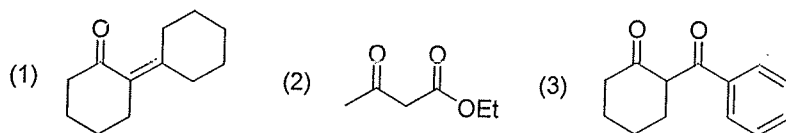
What is FGI? Explain briefly about the importance of FGI in retrosynthesis?

- C6. How the following conversions can be made successful using a suitable protecting group? 6 4/6 3



OR

- C7. What is Mum's rearrangement? Explain its involvement in Ugi reaction. Design a convenient synthesis of following molecules using disconnection approach. 3/4 3-5 3/4



OR

What is enamine? Explain its applications in organic synthesis.

.....XXXX.....