

Seat No.	
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M.Sc. (Part - II) (Semester - III) (CBCS) Examination,
March - 2023

ORGANIC CHEMISTRY

Advanced Synthetic Methods (Paper - XI)

Sub. Code : 80476/85412

Day and Date : Friday, 23 - 06 - 2023

Total Marks : 80

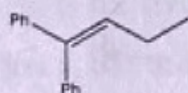
Time : 10.30 a.m. to 01.30 p.m.

- Instructions :
- 1) Attempt in any five questions.
 - 2) Que no. 1 is compulsory and answer to this question be written in the same answer book.
 - 3) Solve Any two questions from Section-I and Any two from Section-II.
 - 4) All questions carry equal marks (16 each).

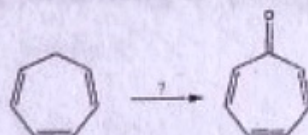
Q1) Answer the following (one mark each) :

[16]

- a) Define the term synthon.
- b) How will you design the synthetic route of the following?

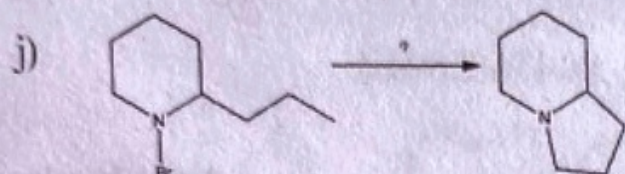
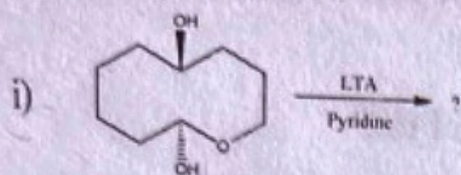


- c) Mention any one method for the synthesis of a tertiary alcohol.
- d) Which transition metal is used for the Suzuki coupling reaction?
- e) Give an example of one group disconnection.
- f) Suggest the reagent for the following conversion.



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- g) Give a suitable example of a regioselective reaction.
 h) Draw the structure of IBX.



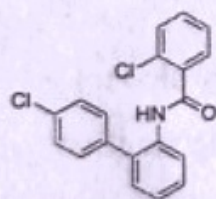
- k) Give one example of an oxazoline ligand.
 l) What are the N-heterocyclic carbenes?
 m) Define multicomponent organic synthesis with a suitable example.
 n) What are the significances of solvent-free synthesis?
 o) Give an example of Merrifield resin-supported ionic liquid.
 p) Give one example of chemoselective synthesis.

SECTION - I

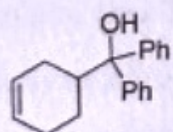
Q2) Suggest the retrosynthetic approach to the following :

[16]

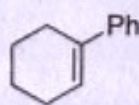
a)



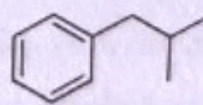
b)



c)



d)



Q3) a) Illustrate applications of the following reagents in organic synthesis : [10]

- i) DCC
- ii) SeO_2
- iii) PPA

[6]

b) Explain any two of the following :

- i) Diels-Alder reaction
- ii) Umpolung
- iii) Hofmann-Löffler-Freytag reaction

Q4) a) Discuss applications of the following in organic synthesis :

[8]

- i) Ce
- ii) Si

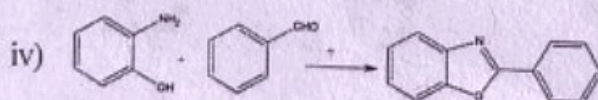
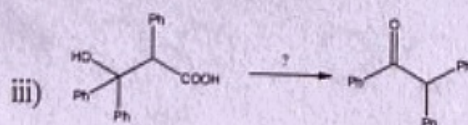
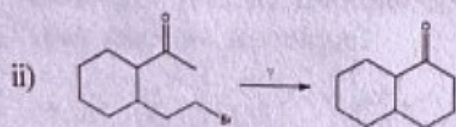
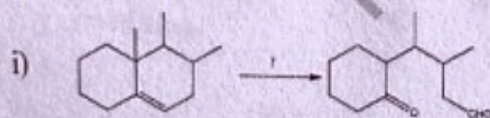
b) Give a brief account of the following :

[8]

- i) Polymer-supported reagents
- ii) Microwave in organic synthesis

SECTION - II

Q5) a) Suggest reagent(s) required for the following conversion and write the possible mechanism [10]



b) Discuss the importance of protecting groups in organic synthesis. [6]

- Q6) a) Give a detailed account of applications of LTA. [8]
b) Discuss applications of Robinsons annulations in organic synthesis. [8]

Q7) Write a note of the following : (any four) [16]

- a) Order of events
- b) Phase transfer catalyst
- c) Synthon
- d) Barton reaction
- e) Baker's yeast catalyzed reactions

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