

Seat No.	
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M.Sc. (Part-II) (Semester-III) (CBCS)
Examination, April-2019
ORGANIC CHEMISTRY
Advanced Synthetic Methods (Paper - XI)
Sub. Code : 60842

Day and Date : Tuesday, 09 - 04 - 2019

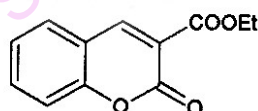
Total Marks : 80

Time : 3.00 p.m. to 6.00 p.m.

- Instructions :**
- 1) Attempt in all 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]

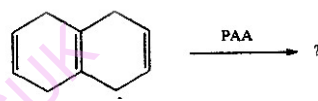
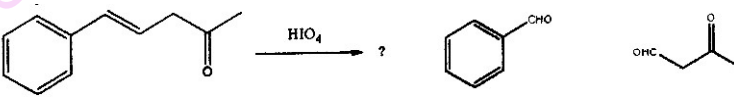
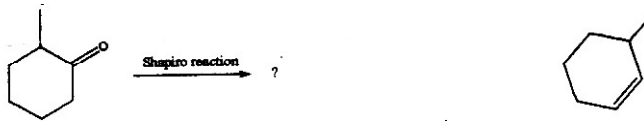
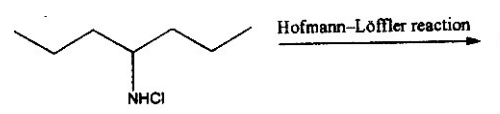
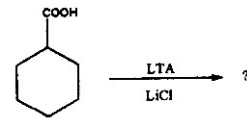
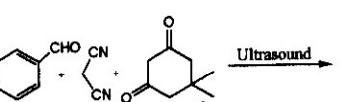
- a) Define the term umpolung.
- b) How will you design the synthesis of following?



- c) Give one example of protection of alcoholic group.
- d) Name any two reaction involving use of Cu as catalyst.
- e) Answer true or false Red aluminium is not reducing agent.
- f) Give one example of the reaction involving reduction in electro-organic synthesis.
- g) Draw structure of any two ionic liquids derived from Pyridine.
- h) Draw the structure of Grubs catalyst.
- i) Give one example of two group disconnection.
- j) Write the structure of S-proline.

P.T.O.

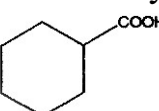
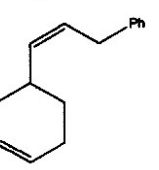
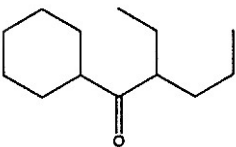
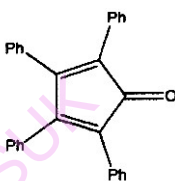
Predict the product(s) in the following.

- k)  c1ccc2ccccc2c1 $\xrightarrow{\text{PAA}}$?
- l)  CC(=O)C=Cc1ccccc1 $\xrightarrow{\text{HIO}_4}$? O=Cc1ccccc1 CC(=O)CO
- m)  CC1CCCCC1=O $\xrightarrow{\text{Shapiro reaction}}$? CC1=CCCCC1
- n)  CCCCN(C)CC $\xrightarrow{\text{Hofmann-Löffler reaction}}$?
- o)  OC(=O)C1CCCCC1 $\xrightarrow[\text{LiCl}]{\text{LTA}}$?
- p)  O=Cc1ccccc1 + N#CC#CC#C + O=C1C(C)CCCC1 $\xrightarrow{\text{Ultrasound}}$?

SECTION - I

Q2) Suggest the retro synthetic approach to the following:

[16]

- a)  OC(=O)C1CCCCC1
- b)  CC(=O)C=Cc1ccccc1
- c)  CCC(CC)C(=O)C1CCCCC1
- d)  O=C1C=C(C=C1)C(=O)C2=CC=CC=C2

Q3) a) Illustrate applications of following reagent in organic synthesis [10]

- i) DCC
- ii) Perbenzoic acid
- iii) LDA

b) Explain any two of the following [6]

- i) Application of Pd in organic synthesis
- ii) Functional group interconversion (FGI)
- iii) Peterson synthesis

Q4) a) Discuss following reactions with their mechanism [8]

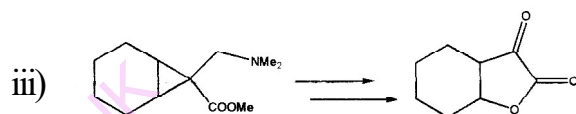
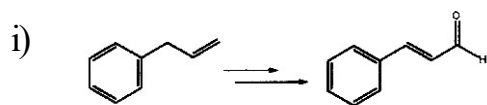
- i) Woodward hydroxylation
- ii) Barton reaction

b) Applications of the following in organic synthesis [8]

- i) Hg
- ii) Rh

SECTION - II

Q5) a) Suggest reagent (s) required for following conversion and write mechanism [8]



- b) Define retro synthetic analysis? Discuss in detail synthon and synthetic equivalence. [8]
- Q6)** a) Discuss applications of ozone and Dess-Martin reagents in organic synthesis. [8]
- b) Give a detail account on ionic liquids. [8]
- Q7)** Write a note on following (any four) [16]
- a) Complex metal hydrides
 - b) Electro-organic synthesis
 - c) Multicomponent reactions
 - d) Chemo selectivity
 - e) Peterson synthesis



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M.Sc. (Part-II) (Semester-III) (CBCS)
Examination, April-2019
ORGANIC CHEMISTRY
Advanced Synthetic Methods (Paper - XI)
Sub. Code : 60842

Day and Date : Tuesday, 09 - 04 - 2019

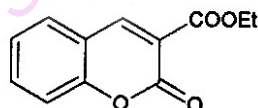
Total Marks : 80

Time : 3.00 p.m. to 6.00 p.m.

- Instructions :**
- 1) Attempt in all 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]

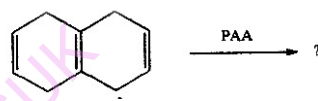
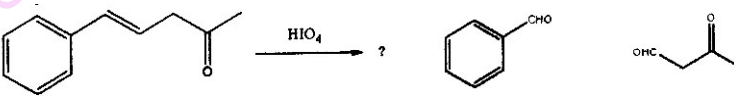
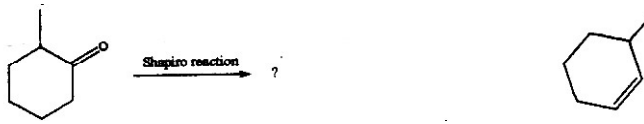
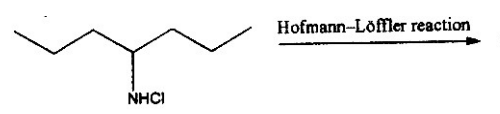
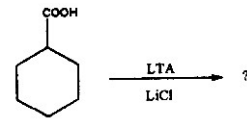
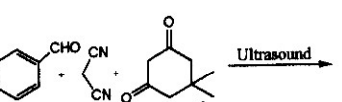
- a) Define the term umpolung.
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- c) Give one example of protection of alcoholic group.
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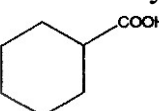
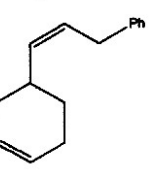
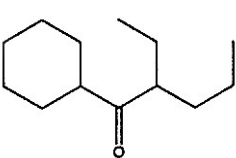
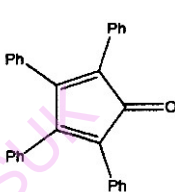
Predict the product(s) in the following.

- k)  c1ccc2ccccc2c1 $\xrightarrow{\text{PAA}}$?
- l)  CC(=O)C=Cc1ccccc1 $\xrightarrow{\text{HIO}_4}$? O=Cc1ccccc1 CC(=O)CO
- m)  CC1CCCCC1=O $\xrightarrow{\text{Shapiro reaction}}$? CC1=CCCCC1
- n)  CCCCNCCCC $\xrightarrow{\text{Hofmann-Löffler reaction}}$?
- o)  OC(=O)C1CCCCC1 $\xrightarrow[\text{LiCl}]{\text{LTA}}$?
- p)  O=Cc1ccccc1 + N#CC#N + O=C1CCCCC1 $\xrightarrow{\text{Ultrasound}}$?

SECTION - I

Q2) Suggest the retro synthetic approach to the following:

[16]

- a)  OC(=O)C1CCCCC1
- b)  C=C(C1CCCCC1)c2ccccc2
- c)  CCC(CC)C(=O)C1CCCCC1
- d)  O=C1C=C(C1)c2ccccc2 + c3ccccc3 + c3ccccc3 + c3ccccc3 + c3ccccc3

Q3) a) Illustrate applications of following reagent in organic synthesis [10]

- i) DCC
- ii) Perbenzoic acid
- iii) LDA

b) Explain any two of the following [6]

- i) Application of Pd in organic synthesis
- ii) Functional group interconversion (FGI)
- iii) Peterson synthesis

Q4) a) Discuss following reactions with their mechanism [8]

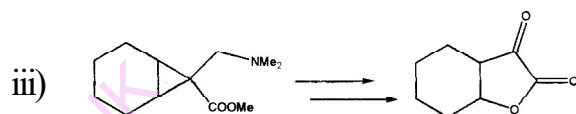
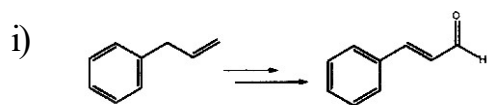
- i) Woodward hydroxylation
- ii) Barton reaction

b) Applications of the following in organic synthesis [8]

- i) Hg
- ii) Rh

SECTION - II

Q5) a) Suggest reagent (s) required for following conversion and write mechanism [8]



- b) Define retro synthetic analysis? Discuss in detail synthon and synthetic equivalence. [8]
- Q6)** a) Discuss applications of ozone and Dess-Martin reagents in organic synthesis. [8]
- b) Give a detail account on ionic liquids. [8]
- Q7)** Write a note on following (any four) [16]
- a) Complex metal hydrides
 - b) Electro-organic synthesis
 - c) Multicomponent reactions
 - d) Chemo selectivity
 - e) Peterson synthesis



Seat No.	
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M.Sc. (Part - II) (Semester - III) (CBCS) Examination, November - 2018

ORGANIC CHEMISTRY (Paper - XI)

Advanced Synthetic Methods

Sub. Code : 60842

Day and Date : Wednesday, 28 - 11 - 2018

Total Marks : 80

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

- Instructions:**
- 1) Question No. 1 is compulsory.
 - 2) Answer any two questions from each Section.
 - 3) Answers to the all the questions should written in the same answer book.
 - 4) Figures to the right indicate marks.

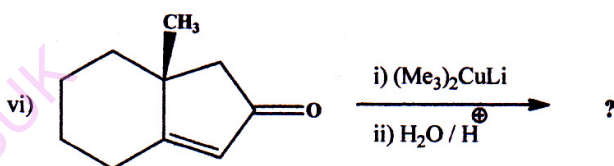
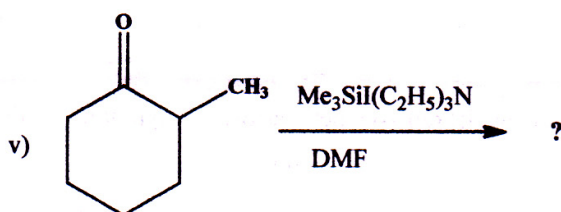
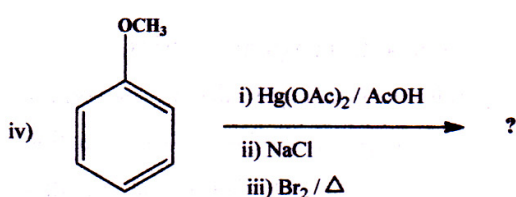
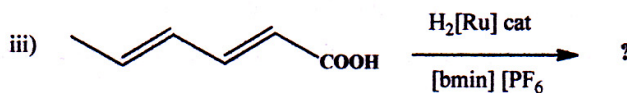
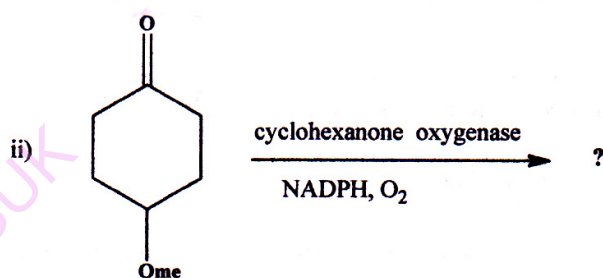
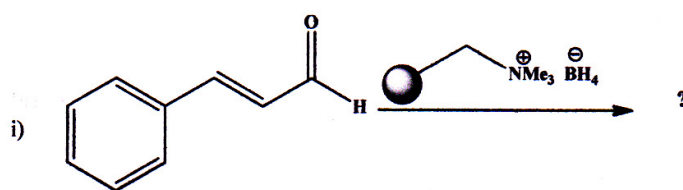
Q1) A) Answer the following : [16]

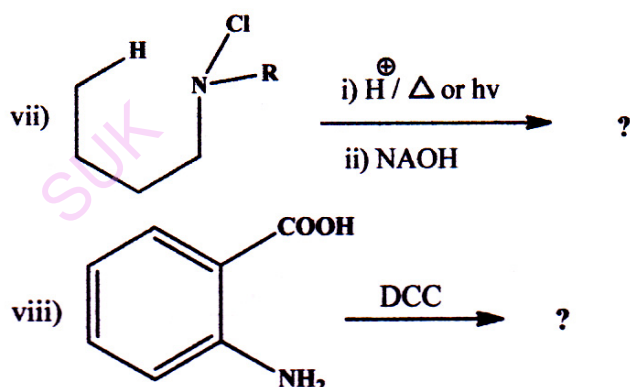
- i) The process of breaking down a target molecule into available starting materials by disconnection or FGI is called as _____.
 - a) retro-synthesis
 - b) retro-synthetic analysis
 - c) synthesis backwards
 - d) all of the above
- ii) _____ is most important property of resins.
 - a) Solvent compatibility
 - b) Swelling
 - c) Decompose
 - d) Polarisation
- iii) Convergent reaction is an property of _____ reaction.
 - a) Microwave
 - b) Multicomponent
 - c) Enzyme
 - d) All of above
- iv) A double line arrow (\Rightarrow) used to indicate the reverse of a synthetic reaction is known as _____.
 - a) reverse arrow
 - b) retrosynthetic arrow
 - c) synthon
 - d) disconnection
- v) A group whose use makes possible to react a less reactive functional group selectively in the presence of more reactive group is known as
 - a) Protective group
 - b) Regioselectivity
 - c) Chemoselectivity
 - d) Deprotecting group

P.T.O.

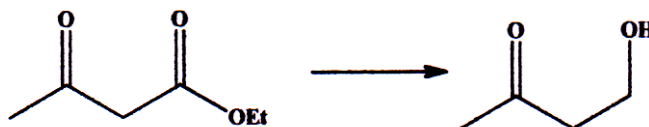
- vi) Ethers are protecting groups for _____.
- a) ketones b) alcohols
- c) esters d) amides
- vii) The carbon coupling of an terminal alkynes with aryl or vinyl halides in presence of Pd(0) is known as _____.
- a) Still b) Heck
- c) Suzuki d) Sonogashira
- viii) Draw the structure of Grubb's 2nd generation catalyst.

B) Predict the product.



SECTION - I

- Q2)** a) Using disconnection approach design the Regioselective alkylation of ketones with suitable example. [10]
- b) How will you bring about the following conversion successfully using a suitable protecting group? [6]

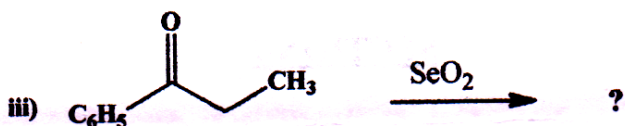
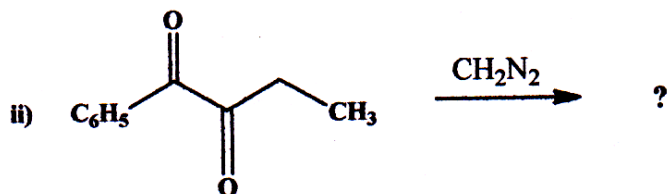
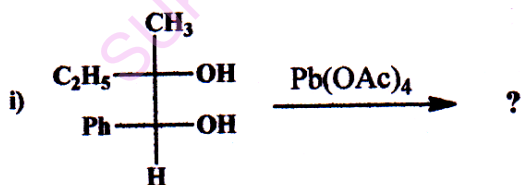


- Q3)** a) Explain the chemoselectivity guidelines in retrosynthetic analysis. [8]
- b) Discuss the following with suitable mechanism. [8]
- Reaction of ketone with iodoisobenzyl diacetate and alcoholic potassium hydroxide.
 - Reduction with sodium cyanoborohydride.
- Q4)** a) What is Shapiro reaction? Explain with mechanism. [5]
- b) Discuss the role of lead tetra acetate in organic synthesis. [5]
- c) Explain cross coupling reaction and give the mechanism of Stille coupling. [6]

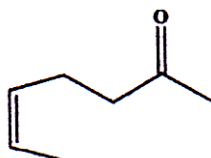
SECTION - II

Q5) Predict the product with mechanism.

[16]



Q6) a) Using disconnection approach design the convenient synthesis for the following compound. [4]



b) Give detail account of microwave techniques. [6]

c) Discuss the role of phenyl(trichloromethyl)mercury in organic synthesis. [6]

Q7) Write a note (Any four) :

[16]

- Electro-organic synthesis.
- Merrifield resin.
- Barton reaction.
- Phase transfer catalyst.
- Multicomponent reactions.

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Seat No.	
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M.Sc. (Part - II) (Semester - III) (CBCS) Examination, November - 2019

OCH / 3.3 - ORGANIC CHEMISTRY
Advanced Synthetic Methods (Paper - XI)

Sub. Code : 74449

Day and Date : Wednesday, 20 - 11 - 2019

Total Marks : 80

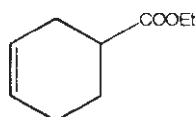
Time : 11.00 a.m. to 02.00 p.m.

- Instructions :**
- 1) Attempt in all 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).

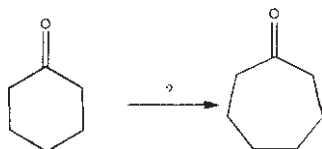
Q1) Answer the following (one mark each) :

[16]

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



- c) Mention important methods for C-C bond formation.
- d) Mention any two reaction using Ti as catalyst.
- e) Give one example of 1,1 C-X disconnection.
- f) Mention methods used for synthesis of alcohol.
- g) Suggest correct reagent for following conversion.



- h) Draw the structure of the Grubb's catalyst.
- i) Give one example of Dess Martin reagent.
- j) Mention importance of the Witting reaction in olefin synthesis?

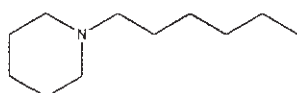
P.T.O.

- k) What are the significance phase transfer catalysts?
 l) Write the structure of 15-crown-5?
 m) What are multicomponent reactions useful for pyrimidine synthesis?
 n) Write the significance of Shapiro reaction.
 o) What is usefulness of Prevost hydroxylation?
 p) Give an example of electro-organic synthesis.

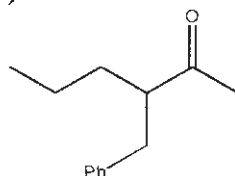
SECTION - I

Q2) Draw the retrosynthetic route for following molecules : **[16]**

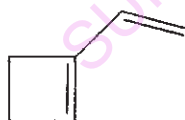
a)



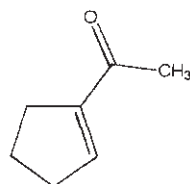
b)



c)



d)



Q3) a) Illustrate applications of the following in organic synthesis. **[10]**

- i) Diels-Alder reaction
- ii) Diazomethane
- iii) Barton reaction

b) Explain with suitable examples the term Umpolung. **[6]**

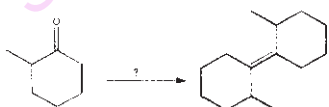
Q4) a) Discuss regioselective organic synthesis with suitable examples. **[8]**

b) Illustrate applications of Ce in organic synthesis. **[8]**

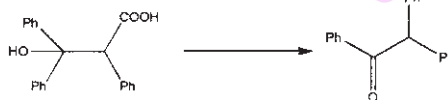
SECTION - II

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

i)



ii)



b) Discuss applications of Merrifield Resin in Peptide synthesis. [6]

Q6) a) Explain mechanism of microwave assisted organic synthesis. [8]

b) Give a detail account on LTA in organic synthesis. [8]

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

- Synthon.
- Chemoselective reaction.
- Importance of Protecting group.
- Electro organic synthesis.
- Ultrasound assisted organic reactions.



Seat No. _____

M.Sc. (Part - II) (Semester - III) (CBCS) Examination,
March - 2023

ORGANIC CHEMISTRY (Paper - X)
Advanced Spectroscopic Methods
Sub. Code : 80475/85411

Day and Date : Thursday, 22 - 06 - 2023
Time : 10.30 a.m. to 01.30 p.m.

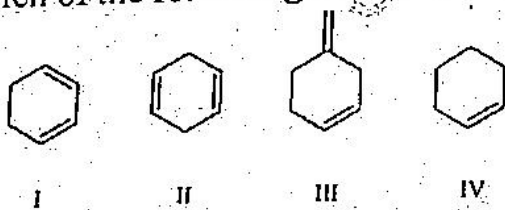
Total Marks : 80

- Instructions: 1) Question-1 is compulsory.
2) Attempt any two questions from each section.
3) Answers to the two sections must be written in the same answer book.
4) All questions carry equal marks.
5) Figure to the right indicates full marks.

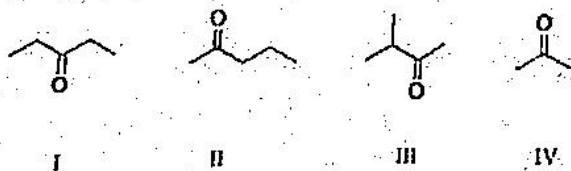
Q1) Answer the following : [16]

a) Why D_2O exchange technique is used in NMR analysis?

b) Which of the following molecule absorbs at the longest wavelength?



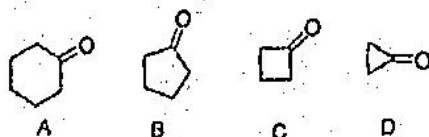
c) Identify the ketone which will show McLafferty rearrangement.



d) Write any two solvents used for scanning NMR.

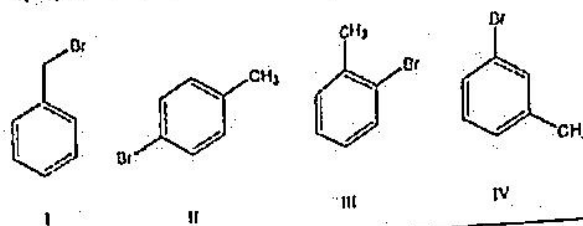
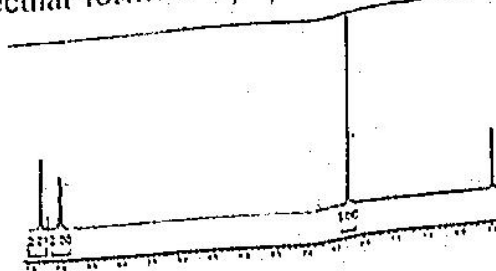
e) Identify the shift which aniline shows in acidic medium.

f) Arrange the following ketones in descending order of carbonyl stretching.

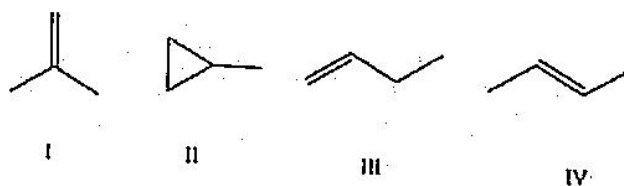


P.T.O.

- g) Choose the plausible structure from following for the compound with molecular formula C_7H_7Br , whose 1H NMR spectrum is shown below.



- h) Which is the common observation in DEPT-45, DEPT-90 and DEPT 135?
- i) How many signals does the aldehyde $(CH_3)_3CCH_2CHO$ have in 1H NMR spectrum?
- j) Identify the fragment and calculate the m/z value of peak obtained in mass spectrum due to benzylic cleavage of n-butyl benzene.
- k) Give the mathematical expression of Hooke's law.
- l) Among the following four constitutional isomers which one would exhibit the most stable fragment ion at m/z 41?



- m) Deduce the structure of the compound from the following spectral data
 M.F. C_3H_7ON
 IR- 3500, 3400, 3370, 1670, 1800 cm^{-1}
 PMR- δ 2.25 (q, 2H); 6.40 (s, 2H); 1.20 (t, 3H)
- n) How will you distinguish between primary, secondary and tertiary amines by IR spectroscopy?

- o) How many signals are observed in ^{13}C -NMR spectrum of acetone?
- p) Which monohalogeno compound shows M and M+2 peaks with equal intensity?

SECTION - I

- Q2) a) Explain factors affecting on carbonyl stretching frequencies with suitable examples. [8]
- b) Explain Homotopic, enantiotopic and distereotopic protons with suitable examples. [8]

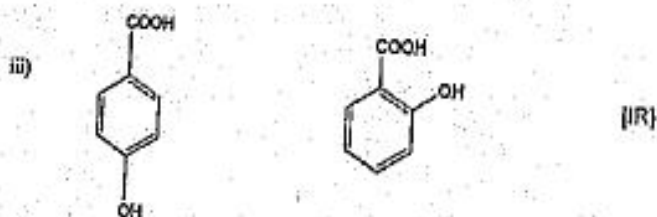
- Q3) a) Explain McLafferty rearrangement with suitable examples. [10]
- b) Predict the structure of an organic compound based upon following data. [6]

$$\text{M.F.} = \text{C}_7\text{H}_9\text{N}$$

$$\text{IR} = 3480, 3395 \text{ cm}^{-1}$$

$$^1\text{H NMR} = \delta 0.16 (3\text{H}, \text{s}), 3.24 (2\text{H}, \text{s}), 7.37 (2\text{H}, \text{d}, J = 7\text{Hz}), 7.79 (2\text{H}, \text{d}, J = 7 \text{ Hz}).$$

- Q4) a) How will you differentiate between following pairs using depicted spectroscopic technique. [10]



- b) Explain DEPT technique in ^{13}C CMR spectroscopy? [6]

SECTION - II

Q5) a) Explain various factor affecting chemical shift. [10]

b) Predict the structure of an organic compound based upon following data. [6]

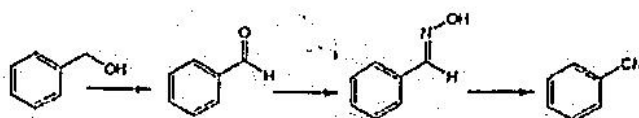
M.F. $C_5H_7NO_2$

IR = 2200, 1747, 1200 cm^{-1}

1H NMR = δ 1.1 (3H, t), 3.8 (2H, q), 1.2 (2H, s)

Q6) a) Explain various ionization techniques in mass spectroscopy. [10]

b) Explain the use of IR spectroscopy in monitoring following transformations. [6]



Q7) Write notes on (any four) :

[16]

- Retro Diels Alder reaction in Mass spectroscopy.
- Sampling techniques in IR spectroscopy.
- Pascal triangle.
- Significance of coupling constant.
- Chromophore and auxochrome.

* * *

Seat
No.

SG - 245
Total No. of Pages : 4

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

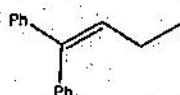
Time : 10.30 a.m. to 01.30 p.m.

- 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).

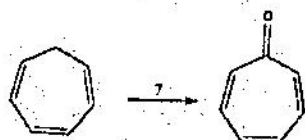
Q1) Answer the following (one mark each) :

[16]

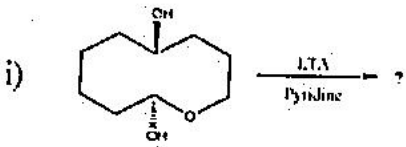
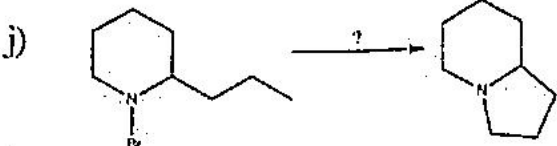
- a) Define the term synthon.
- b) How will you design the synthetic route of the following?



- 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.



P.T.O.

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

b)

Q4) a)

b)

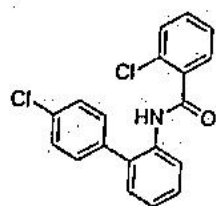
Q5) a)

SECTION - I

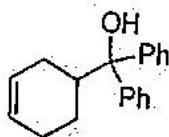
Q2) Suggest the retrosynthetic approach to the following :

[16]

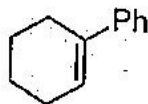
a)



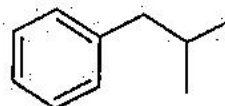
b)



c)



d)



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

- i) DCC
- ii) SeO₂
- iii) PPA

b)

b) Explain any two of the following :

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

[6]

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

i) Ce

ii) Si

[8]

b) Give a brief account of the following :

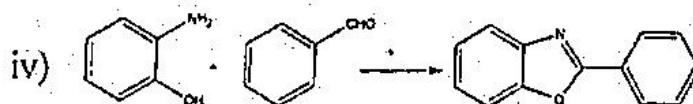
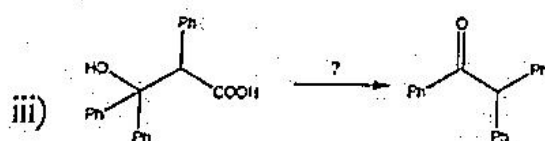
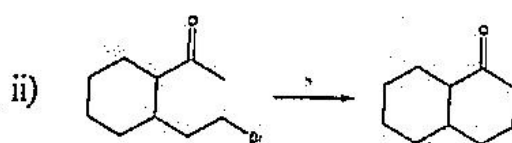
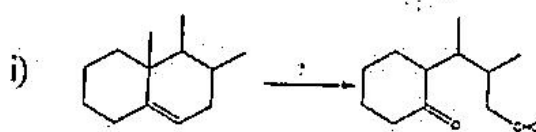
i) Polymer-supported reagents

ii) Microwave in organic synthesis

[8]

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

Seat
No.

M.Sc. (Part - II) (Semester - III) (CBCS) (NEP)

Examination, December -2023

ORGANIC CHEMISTRY

OCH 3.3 : Advanced Synthetic Methods (Paper - XI)

Sub. Code : 92067

Day and Date : Monday, 04 - 12 - 2023

Total Marks : 80

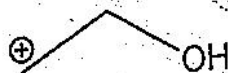
Time : 2.30 p.m. to 5.30 p.m.

- Instructions :
- 1) Attempt in all 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).

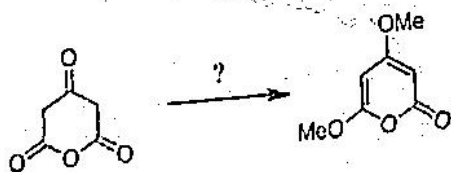
[16]

- a) Define the term synthon.
- b) Which disconnection is involved in the Propanil?
- c) What is synthetic equivalence for the following synthon?

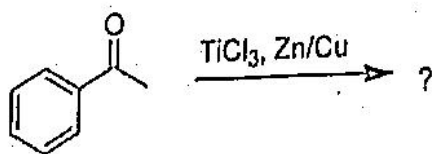


- d) Which transition metal is used in the Suzuki coupling reaction?
- e) Give an example of two group C-X disconnection.
- f) Draw the structure of two hypervalent iodine reagents.

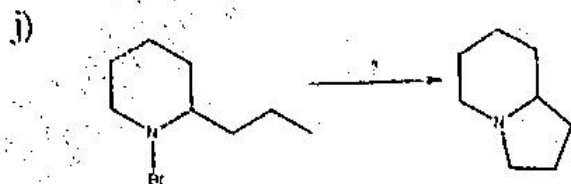
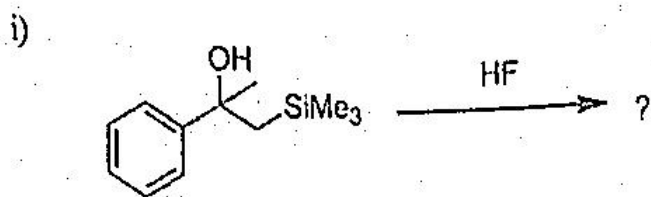
g)



h)



P.T.O.

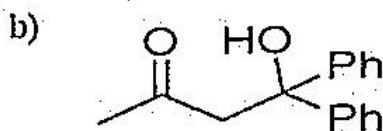
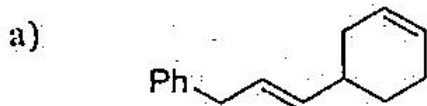


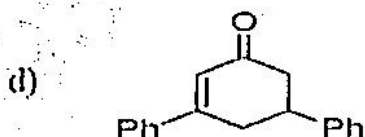
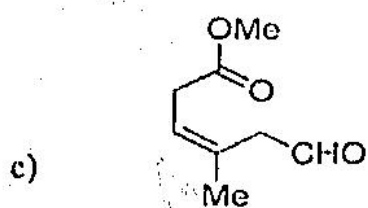
- k) Give one example of an oxazoline ligand.
- l) What are the N-heterocyclic carbenes?
- m) Define multicomponent organic synthesis with a suitable example.
- n) Give any two significances of solvent-free synthesis?
- o) Write the structure of Merrifield resin-supported ionic liquid.
- p) Give an example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

SECTION - I

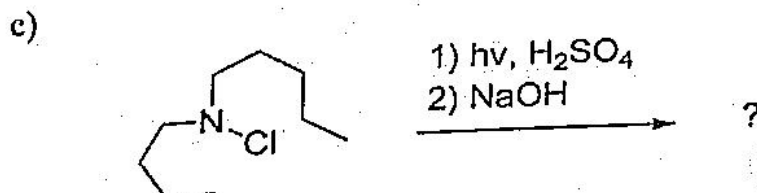
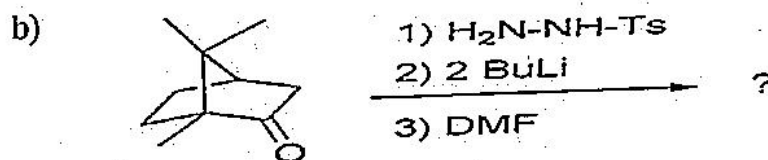
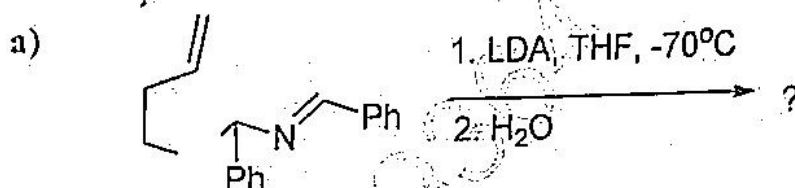
Q2) Suggest the retrosynthetic approach to the following:

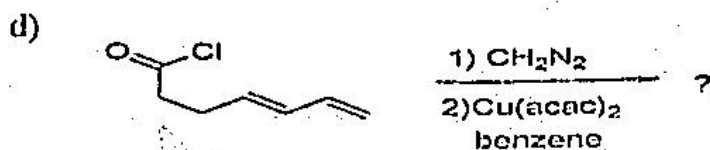
[16]





Q3) Predict the product and write the mechanism for the following conversions. [16]





Q4) a) Discuss applications of the followings in organic synthesis. [8]

- i) Ce
- ii) Si

b) Give a synthetic applications of the following. [8]

- i) DCC
- ii) Grubbs catalyst

SECTION - II

Q5) a) Discuss applications of the following reagents in organic synthesis. [8]

- i) Silicon
- ii) N-heterocyclic carbenes

b) Illustrate the importance of umpolung in organic synthesis. [8]

Q6) a) What do you mean by electroorganic synthesis. Discuss two applications in organic synthesis with mechanism. [8]

b) Give a detail account of ultrasound assisted organic transformations. [8]

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

- a) Functional group interconversion.
- b) Enzyme catalyzed reactions.
- c) Chemoselectivity.
- d) Olefin metathesis.
- e) One group C-X disconnection



Seat No.	
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M.Sc. (Part - II) (Semester - III) (CBCS)

Examination, December - 2023

ORGANIC CHEMISTRY

OCH - 3.3 : Advanced Synthetic Methods (Paper - XI)

Sub. Code : 80476/85412

Day and Date : Monday, 4 - 12 - 2023

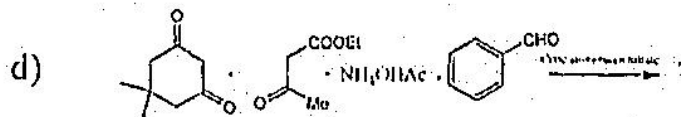
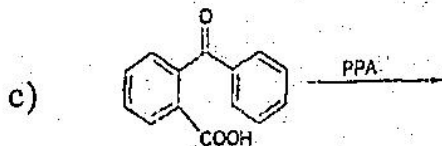
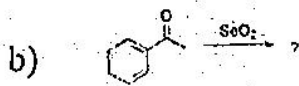
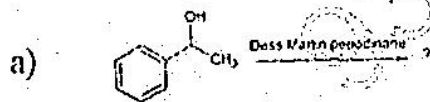
Total Marks : 80

Time : 2.30 p.m. to 5.30 p.m.

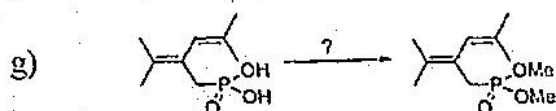
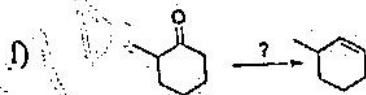
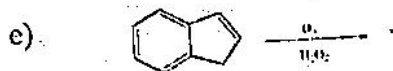
- Instructions :
- 1) Attempt in all five questions.
 - 2) Question No. 1 is compulsory and answer to this question be written in the same answer book.
 - 3) Solve Any two question from Section - I and Any two from Section - II
 - 4) All questions carry equal marks (16 each)

Q1) A) Predict the following (one mark each)

[16]

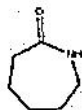


P.T.O.



B) Answer the following.

- Define the term Retro - Synthetic analysis.
- How will you design the synthesis of the following?



- Give one example of the protection and deprotection of the groups.
- Draw the structure of dibenzo - 18 - crown - 6.
- Name any two methods for the protection of alcohol.
- Draw the structure of N-heterocyclic carbene.
- Give the significance of Prevost hydroxylation.
- What is the usefulness of Multicomponent reactions?
- Give an example of electro - organic synthesis.

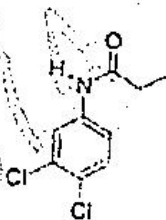
SECTION - I

Q2) Draw ti

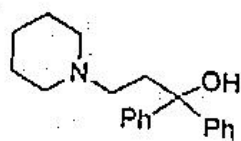
etic route for the following molecules

[16]

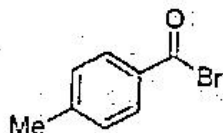
a)



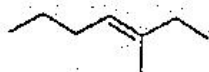
b)



c)



d)



Q3) a) Illustrate applications of the following in organic synthesis.

[10]

- i) SeO_2
- ii) Diazomethane
- iii) Lead tetra acetate (LTA)

b) Explain the term Umpolung with suitable examples:

[6]

Q4) a) Discuss chemoselective organic synthesis with suitable examples.

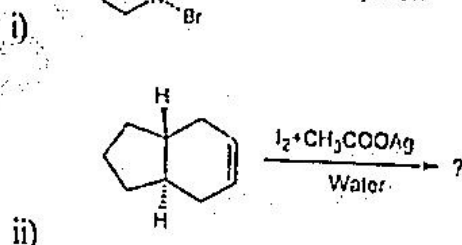
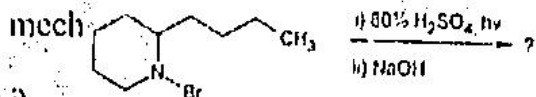
[8]

b) Illustrate applications of Ti in organic synthesis.

[8]

SECTION - II

Q5) a) Predict the product in the following conversion and write the possible mech [10]



b) Discuss applications of Merrifield Resin in Peptide synthesis. [6]

Q6) a) Explain the mechanism of microwave - assisted organic synthesis. [8]

b) Give a detailed account of periodic acid in organic synthesis. [8]

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

- Synthetic equivalent
- Order of events
- Importance of N-heterocyclic carbenes
- Solvent free synthesis
- Ultrasound - assisted organic reactions

* * *