

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.

M.Sc.(Chemistry) - END SEMESTER EXAMINATIONS APRIL - 2023

SEMESTER - IV

20PCHCT4010 - Organic Chemistry-IV

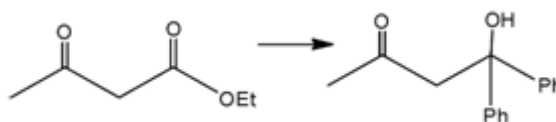
Total Duration : 2 Hrs. 30 Mins.

Total Marks : 60

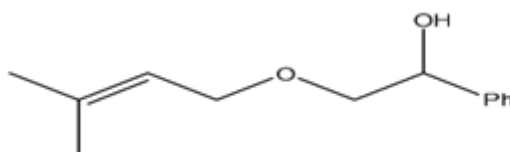
Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Apply Woodward Hoffman selection rules for the electrocyclic ring closure of 1,3,5-hexatriene to cyclohexadiene.
2. Illustrate the mechanism and synthetic applications of Heck coupling reaction.
3. Utilize the function of protecting groups in the following conversion.



4. Design a synthetic methodology for the synthesis of cubanes.
5. Explain the Merrifield synthesis of peptides or proteins with suitable example.
6. Analyze the importance of Gilman's reagent in Conjugate addition reactions.
7. Illustrate the disconnection approach for the following molecule.



8. Analyze the use of various umpolung reagents in organic synthesis.

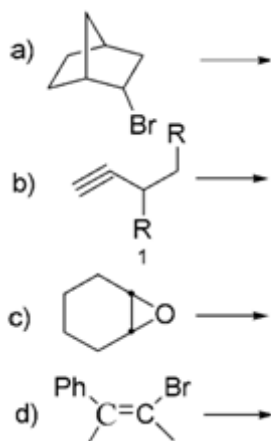
Section C

I - Answer any **TWO** questions ($2 \times 10 = 20$ Marks)

9. Evaluate the use of synthetic equivalence for the retrosynthetic analysis of 5-hexenoic acid and trans-9-methyl-1-decalone.
10. Explain the steps involved in the determination of primary, secondary and tertiary structure of proteins.

Contd...

11. Predict the product of the following reactions using the reagent $(\text{CH}_3)_2\text{CuLi}$ and give the stereo chemistry of the product wherever appropriate.



12. Generalize the use of three guidelines for choosing suitable disconnections.

II - Compulsory question ($1 \times 10 = 10$ Marks)

13. Using frontier orbital overlap explain why Diels Alder reaction between butadiene and ethylene is thermally allowed but is not catalysed by UV light.

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.

M.Sc.(Chemistry) - END SEMESTER EXAMINATIONS APRIL - 2023
SEMESTER - IV

20PCHCT4010 - Organic Chemistry-IV

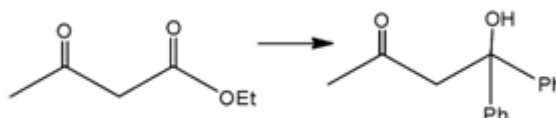
Total Duration : 2 Hrs. 30 Mins.

Total Marks : 60

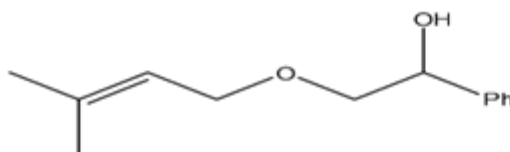
Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Apply Woodward Hoffman selection rules for the electrocyclic ring closure of 1,3,5-hexatriene to cyclohexadiene.
2. Illustrate the mechanism and synthetic applications of Heck coupling reaction.
3. Utilize the function of protecting groups in the following conversion.



4. Design a synthetic methodology for the synthesis of cubanes.
5. Explain the Merrifield synthesis of peptides or proteins with suitable example.
6. Analyze the importance of Gilman's reagent in Conjugate addition reactions.
7. Illustrate the disconnection approach for the following molecule.



8. Analyze the use of various umpolung reagents in organic synthesis.

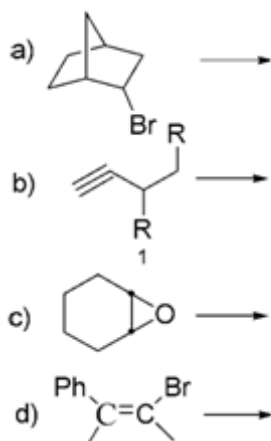
Section C

I - Answer any **TWO** questions ($2 \times 10 = 20$ Marks)

9. Evaluate the use of synthetic equivalence for the retrosynthetic analysis of 5-hexenoic acid and trans-9-methyl-1-decalone.
10. Explain the steps involved in the determination of primary, secondary and tertiary structure of proteins.

Contd...

11. Predict the product of the following reactions using the reagent $(\text{CH}_3)_2\text{CuLi}$ and give the stereo chemistry of the product wherever appropriate.



12. Generalize the use of three guidelines for choosing suitable disconnections.

II - Compulsory question ($1 \times 10 = 10$ Marks)

13. Using frontier orbital overlap explain why Diels Alder reaction between butadiene and ethylene is thermally allowed but is not catalysed by UV light.
