



Progressive Education Society's
Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16
(Autonomous)
End Semester Examination: MAR / APR 2025
Faculty: Science and Technology

Program: B.Sc. (General)
Program (Specific): Chemistry
Class: T.Y. B.Sc.
Name of the Course: Organic Chemistry III
Course Code: 24-CH-608
Paper: VI

Semester: VI

SET: A
Course Type: DSEC
Max. Marks: 35

Time: 2 Hrs

Instructions to the candidate:

- 1) *There are 5 main sections of questions in the question paper. Write each section on separate page.*
- 2) *All Sections are compulsory.*
- 3) *Figures to the right indicate full marks.*
- 4) *Draw a well labelled diagram wherever necessary.*

Section I

Q1) Define the following terms with one example each.

[5]

- a) Retrosynthetic analysis
- b) FGI
- c) Carbocation
- d) Alkaloids
- e) Synthons

Section II

Q2) Answer the following questions in short. (Attempt any 4/6)

[4]

- a) Write the disconnection approach of cyclohexene.
- b) Write a reaction involving formation of benzyne intermediate.
- c) Which reagent will you use to convert methyl cyanide to ethylamine? Write the reaction.
- d) Explain with a reaction one application of OsO₄.
- e) State Isoprene Rule with one example.
- f) How will you detect presence of a –COOH group in terpenoids?

Section III

Q3) Answer the following. (Attempt any 4/6)

[8]

- a) Give a brief account of Wittig reaction.
- b) What is SBH? Explain one of its applications.
- c) Explain the terms oxidation and reduction in organic chemistry with suitable examples.
- d) Write the retrosynthesis and synthesis of benzyl benzoate.
- e) What is a carbanion? Explain its definition, geometry and two methods of preparation.



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f) Hofmann rearrangement is an example of step down synthesis. Explain.

Section IV

Q4) Answer in short. (Attempt any 4/6)

[8]

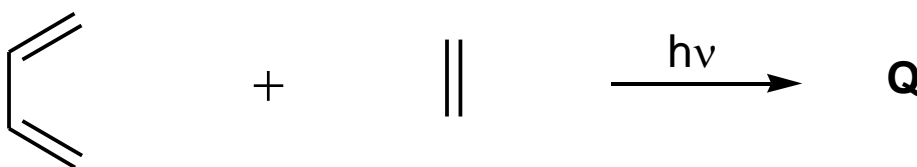
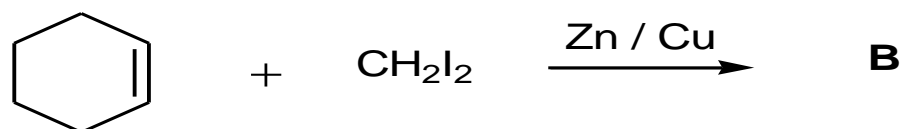
- Write Nagai Synthesis of Ephedrine.
- Write a note on Michael reaction.
- What is DIBAL? What will be the product of reaction of DIBAL on dimethyl acetylene?
- Give any two applications of SeO_2 [write the reactions].
- Compare the use of lithium aluminium hydride and sodium borohydride for reduction of $>\text{C}=\text{O}$.
- State any one method to convert cyclohexene to cis-cyclohexane -1,2-diol.

Section V

Q5) Attempt any two of the following (2/4)

[10]

- What are terpenoids? How are they classified? Name at least four terpenoids and their sources.
- Give an account of Dess Martin reagent with suitable example.
- Predict the products.**



d) Predict the products with mechanism.

