Time: 3 hours

Max. Marks: 80

## Note: Answer all questions from Part - A and Part - B. Each question carries 4 marks in Part - A and 12 marks in Part - B.

## $PART - A (4 \times 8 = 32 Marks)$

(Snort Answer Type)
Explain Birch reduction with a suitable example. Sketch the mechanism of Swern oxidation.
Write a note on the sodium borohydride modification. Explain Robinson annulation with mechanism.
Provide the structure of Grubb's 2 <sup>nd</sup> generation catalyst. Explain Peterson's stereoselective olefination.
Outline the solid-phase oligonucleotide synthesis.  Explain the principles of combinatorial synthesis.
PART – B (4 x 12 = 48 Marks) (Essay Answer Type)
Write a note on protection of amines and carboxylic aids in organic synthesis.  Explain the synthetic importance of the following reagents.  i) NBS  ii) tri-n-butyl tin hydride  OR
How do you protect the 1, 2-diols by using acetals and ketals?  Write a short note on the following:  i) Wood ward oxidation  ii) Osmium tetraoxide oxidation
Explain the synthetic applications of organo copper reagents in organic synthesis.  Write a short notes on the following:  i) Horner-Emmons olefination ii) Shapiro reaction  OR
Describe the mechanism of Stork-enamine synthesis. What are the synthetic applications of enamine. Write short note on:
Write briefly on:
i) Baylis Hillman reaction ii) Shapiro reaction  OR  Write briefly on:
)

Julia-Lythgo oletination

- Aza-witting reaction

- d) Write a short on:
  - RCM olefin metathesis
- Stille coupling
- a) Explain the use of Felkin-Anh model in the assignment of R.S configuration at the newly created chiral centre.
  - b) Formulate the Merrifield solid phase peptide synthesis and explain what are its advantages.
    - OR
  - Explain Baldwin rules with examples.
  - Write a short note on .