

M.Sc.(Chem.) Semester - 1 (CBCS) Examination
Nov/Dec-2023 (SYLLABUS YEAR JUNE-2023)
Organic Chemistry (Core)

Time: 2:30 Hours**Marks: 70****Instructions:**

- Figures to the right indicate marks.
- All questions are compulsory.

Que.1(A) Answer the following. (04)

- Discuss the following term with examples: (a) Electrophile (b) Nucleophile

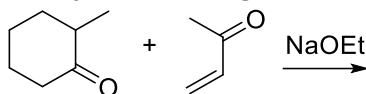
Que.1(B) Answer any two questions out of three. (10)

Discuss structure, hybridization, stability and three methods of generation for following intermediates:

- Carbene
- Nitrene
- Carbocation

Que.2(A) Answer the following. (04)

- Identify the following reaction and write its mechanism:



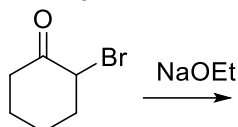
Que.2(B) Answer any two questions out of three. (10)

Discuss principle, mechanism and three application of following reaction:

- Corey-Fuchs alkyne synthesis.
- Vilsmeier-Haack reaction.
- Michael addition.

Que.3(A) Answer the following. (04)

- Identify the following reaction and write its mechanism:



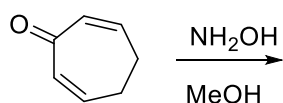
Que.3(B) Answer any two questions out of three. (10)

Discuss principle, mechanism and three application of following rearrangement:

- Wagner-meerwein
- Beckmann
- Neber

Que.4(A) Answer the following. (04)

- What is conjugate addition? Complete the following reaction sequence with mechanism.



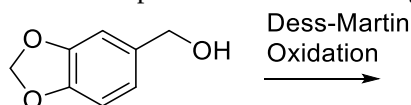
Que.4(B) Answer any two questions out of three. (10)

Discuss principle, mechanism and three application of following reaction:

- Simons-Smith
- Bayliss Hillman
- Organocatalyzed Mannich reaction

Que.5(A) Answer the following. (04)

- Predict the product of the following reaction & write its mechanism.



Que.5(B) Answer any two questions out of three. (10)

Describe preparation and application of following reagent with mechanism:

- Swern
- Collin's
- DIBAL-H
