

QP CODE: 26019608



Reg No :

Name :

M.Sc DEGREE (CSS) EXAMINATION, MARCH 2026

Fourth Semester

M Sc Industrial Chemistry

ELECTIVE - CH900403 - ADVANCED SYNTHETIC ORGANIC CHEMISTRY

2020 Admission Onwards

B250282A

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

Weight 1 each.

1. Write any one oxidation reaction of alcohol using Ruthenium reagent.
2. What is Bouveault-Blanc reduction? Write about one synthetic application of this reaction?
3. Explain the features of Cerium Ammonium Nitrate, CAN in organic synthesis.
4. Explain how pyrazole can be prepared from pentane-2,4-dione.
5. What is pinacol pinacolone rearrangement?
6. Explain the Demjanov rearrangement reaction.
7. What is Suzuki Coupling?
8. What are the general characteristics of Buchwald-Hartwig Cross Coupling Reaction?
9. Give an example of a C-C Disconnection reaction.
10. What is umpolung equivalent? Explain with one example.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

Weight 2 each.

11. Write a short note on selenium based allylic oxidation reaction?
12. Explain the synthetic applications of catalytic Hydrogenation reaction?
13. Explain any two applications of Gillman reagent?





14. Explain the synthesis of triazole and tetrazole by cycloaddition reaction.
15. Using the reaction mechanism, explain the Curtius rearrangement reaction.
16. Explain the mechanism of Henry reaction.
17. Explain the mechanism of the following reactions a) Bergman cyclization b) Nazarov cyclization
18. Explain functional group inter conversion using an example.

(6×2=12 weightage)

Part C (Essay Type Questions)

Answer any **two** questions.

Weight **5** each.

19. Explain the conversion of alkenes to carbonyls without bond cleavage.
20. Give an account of the chemoselectivity in metal hydride reductions with special reference to LiAlH₄ b) DIBAL-H c) NaBH₄ d) Red-Al
21. Explain one synthetic application each of the following reagents in Organic synthesis (1) DDQ (2) DEAD (3) Baker's yeast (4) Lindlar catalyst, (5) phase transfer catalysts
22. a) Explain Fischer-Indole synthesis of quinoline with mechanism.
b) Discuss the reactivity of pyridine and pyridine oxide.

(2×5=10 weightage)

