



21000544

QP CODE: 21000544

Reg No : .....

Name : .....

**M Sc DEGREE (CSS) EXAMINATION, MARCH 2021**

**Third Semester**

Faculty of Science

**CORE - CH500302 - ORGANIC SYNTHESSES**

M Sc CHEMISTRY, M Sc ANALYTICAL CHEMISTRY

2019 Admission Onwards

677A950F

Time: 3 Hours

Weightage: 30

**Part A (Short Answer Questions)**

*Answer any **eight** questions.*

*Weight 1 each.*

1. Discuss the mechanism of the conversion  $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-OH}$  to  $\text{CH}_3\text{-CH}_2\text{-CHO}$
2. What is ozonolysis?
3. Explain Wacker oxidation.
4. What is Brook rearrangement?
5. Explain Biginelli reaction.
6. What is DIBAL-H? What is its synthetic use?
7. How is imidazole prepared?
8. Write on any two common protecting groups used in peptide synthesis
9. What is the role of protecting groups in solid phase synthesis?
10. Write a note on retrosynthesis of amine

(8×1=8 weightage)





### Part B (Short Essay/Problems)

Answer any **six** questions.

Weight 2 each.

11. Write the mechanism of Shi epoxidation.
12. Write a note on Birch reduction.
13. Write a short note on Tishchenko reaction.
14. Discuss the mechanism of Huisgen 1,3-dipolar addition.
15. a. What are the synthetic applications of DDQ & NBS. b. Illustrate the synthetic utility of the following methods with examples.
16. Give a photochemical method for the synthesis of cyclobutanes.
17. Discuss the various methods of protecting groups of amines
18. Explain Ireland-Claisen rearrangement

(6×2=12 weightage)

### Part C (Essay Type Questions)

Answer any **two** questions.

Weight 5 each.

19. Describe the mechanism and synthetic applications of following reactions i) Suzuki coupling ii) Heck Reaction iii) Nozaki-Hiyama-Kishi iv) Buchwald-Hartwig, v) Ullmann coupling
20. a) Explain the utility of Aluminium isopropoxide in oxidation and reductions. b) Explain the properties and reactions facilitated by Gilman Reagent
21. Elaborate on: a) Demjenov reaction b) Reformatsky reaction c) ring closing metathesis with suitable examples
22. a) Discuss the basic principle of retro synthetic analysis. b) Explain one group and two group C-C disconnection

(2×5=10 weightage)

