

QP CODE: 23002799



Reg No :

Name :

M Sc DEGREE (CSS) EXAMINATION, MARCH 2023

Third Semester

Faculty of Science

CORE - CH500302 - ORGANIC SYNTHESSES

M Sc CHEMISTRY, M Sc ANALYTICAL CHEMISTRY

2019 ADMISSION ONWARDS

C2AD3F7C

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

Answer any **eight** questions.

Weight **1** each.

1. Write an example for aluminium based reagents for the alcohols to carbonyls.
2. Explain the synthetic importance of OsO_4 .
3. Give the application of Baker's yeast.
4. What is Tebbe olefination?
5. Give a short note on Click reactions.
6. Explain with example the synthetic applications of DEAD.
7. What is meant by the Pauson-Khand reaction?
8. How can we protect alcohol groups?
9. List out two important protecting groups utilized in peptide synthesis.
10. What is meant by retrosynthetic analysis?

(8×1=8 weightage)

Part B (Short Essay/Problems)

Answer any **six** questions.

Weight **2** each.

11. Write the mechanism of Sharpless asymmetric epoxidation.
12. Explain Wacker oxidation.



13. Give an account of Heck reaction and its mechanism.
14. Give an account of Ugi reaction.
15. What is DIBAL-H? Explain its synthetic use?
16. What do you mean by ring-closing metathesis? Explain its mechanism.
17. Write on the advantages and disadvantages of Boc- and Fmoc-strategy
18. Explain total synthesis of D-Luciferin

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Elaborate on the mechanism and synthetic applications of the following reactions. i) Baylis-Hillman reaction ii) Kulinkovich reaction iii) Tishchenko reaction iv) Henry reaction
20. What are the synthetic applications of DDQ & NBS. b) Write about Red-Aluminium reductions. c) Explain the synthetic utility of Selectrides.
21. Explain in detail different methodologies adopted for the synthesis of the following heterocyclic compounds : (a) Oxazole (b) Thiazole (c) Pyrrole (d) Thiophene (e) Furan.
22. Discuss various retrosynthetic strategies adopted for the synthesis of both amines and alkenes with special mention of the merits and demerits of each strategy.

(2×5=10 weightage)