QP CODE: 25047492

25047492

Reg No : .....

Name : .....

M.Sc DEGREE (CSS) EXAMINATION, NOVEMBER 2025

Third Semester

M Sc APPLIED CHEMISTRY

Core Course - CH030302 - ADVANCED SYNTHETIC ORGANIC CHEMISTRY

2019 ADMISSION ONWARDS

94E3EE8C

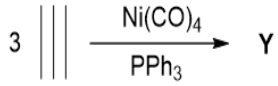
Time: 3 Hours Weightage: 30

Part A (Short Answer Questions)

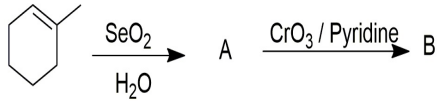
*Answer any **eight** questions.*

*Weight **1** each.*

1. What are chiral additives?
2. What do you mean by retrosynthetic analysis?
3. Name two reactions for the synthesis of alkenes.
4. Predict the product **Y**



5. Write structural formula of the products when cyclohexene reacts with meta chloroperbenzoic acid.
6. Complete the following equation



7. What is Mc murry coupling?
8. What do you mean by molecular recognition ?
9. What are Tweezers? Give its importance.
10. Draw the structures of Vitamin A1 and camphor.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Explain the difference between enantioselective and diastereoselective reactions using suitable examples.
12. Discuss different photochemical approaches towards the synthesis of four membered rings.

13. Give any two methods each for the synthesis of furan and pyrrole.

14. Suggest the reagents and discuss the mechanism involved in the woodward hydroxylation.

15. Explain Meerwein-Pondorff-Verley reduction with application.

16. Explain Baylis-Hillman reaction and Henry reaction with examples.

17. Describe Click reactions and its synthetic importance.

18. Describe the steps involved in DNA replication process.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Differentiate homogeneous and heterogeneous catalytic hydrogenation reactions with examples.

20. Explain the following coupling reactions using mechanism a) Heck Reaction b) Suzuki Reaction c) Negishi reaction d) Buchwald-Hartwig (2)

21. Applications of supramolecular complexes in medicine and perfumery industries.

22. Explain a) Polymerase chain reaction b) DNA sequencing c) Human Genome project

(2×5=10 weightage)