D4ACH2002 **(2 Pages)** **Name.....**
Reg.No.....

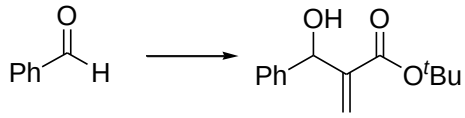
FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2022
(Regular/Improvement/Supplementary)

CHEMISTRY
FCHE4E05 - SUPRA-MOLECULAR, MEDICINAL AND GREEN CHEMISTRY

Time: 3 Hours **Maximum Weightage: 30**

Section A: Short answer questions. Answer any *eight* questions. Each carries *one* weightage.

1. What is meant by complementarity and preorganization in molecular recognition?
2. Write very briefly on scientific reporting in research.
3. "Green chemistry is sustainable chemistry" Justify the statement.
4. Discuss the advantages of polymer supported reagents in chemical reaction.
5. What is Mitsunobu reaction?
6. How to mask drug toxicity and side effects during drug delivery?
7. What is meant by patenting?
8. Write the basic reaction mechanism of conversion of 1-aminomethyl cyclopentanol to cyclohexanone.
9. How to do following conversion?



10. Discuss synthesis of Azepine.
11. Write a short note on dendrimers.
12. What is the significance of searching Literature in research?

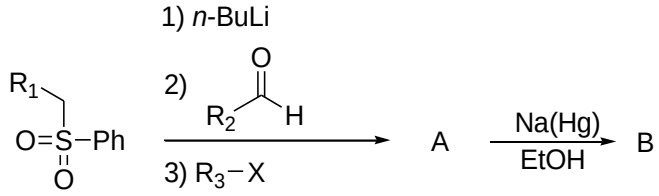
(8 × 1 = 8 weightage)

Section B: Short essay questions. Answer any *four* questions. Each carries *three* weightage.

13. Provide the structural and recognition features that are the key to the formation and mode of action of: a) Catenane and b) Rotaxane.
14. Discuss one or two features of different phases of Liquid crystals.
15. Define the term Atom Economy and explain how is it related to Green Chemistry. Discuss at least two principles of Green chemistry that are relevant to our society.

(P.T.O.)

16. Identify A and B in the following reaction and outline the mechanism of the reaction.



17. Write a short note on QSAR.

18. Discuss how the combinatorial synthesis can be useful at the various stages of drug design or development process.

19. Compare the traditional synthetic methodology and green reaction by citing the synthesis of Ibuprofen.

(4 × 3 = 12 weightage)

Section C: Essay questions. Answer any *two* questions. Each carries *five* weightage.

20. Illustrate the type of interactions involved in supramolecular chemistry and provide an example for each interaction.

21. Explain uses of the following in chemical synthesis.

    a) Microwave assisted synthesis
    b) Ultrasound assisted reaction
    c) Phase transfer catalyst
    d) Green Solvents

22. Describe the synthesis of following fused heterocycles.

    a) Indole b) Quinoline c) Benzothiophene d) Benzoxazole e) Isoindole.

23. Discuss Baldwin rules of cyclisation.

(2 × 5 = 10 weightage)