Reg. No ..... Name **25P4018**

MSc DEGREE END SEMESTER EXAMINATION- MARCH 2025

SEMESTER 4 : CHEMISTRY

COURSE : **21P4CHET14EL : ADVANCED ORGANIC CHEMISTRY**

(For Regular - 2023 Admission and Supplementary 2022/2021 Admissions)

Duration : Three Hours Max. Weights: 30

PART A

Answer any 8 questions **Weight: 1**

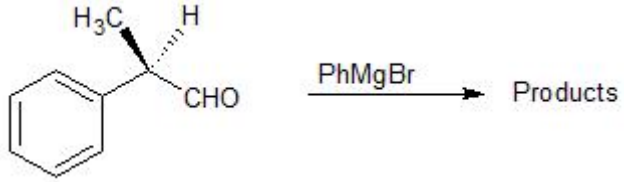
1. What is the significance of serine-61 in the mechanism of action of penicillin? (U, CO 4)
2. Define biosynthesis and briefly explain the general approach for the biosynthesis. (An, CO 1)
3. Explain any two roles of theory. (R, CO 5)
4. Give the structure and use of proflavine. (U, CO 4)
5. How is a hypothesis transformed into a theory? (A, CO 5)
6. Explain the two approaches in research. (R)
7. What are the requirements for biomedical polymers? (U, CO 2)
8. Give any two examples of chiral auxiliary. (R, CO 1)
9. Give structures of two commonly used cations for synthesis of ionic liquid. (A, CO 1)
10. Write any two advantages and disadvantages of PTFE. (U, CO 2)

(1 x 8 = 8)

PART B

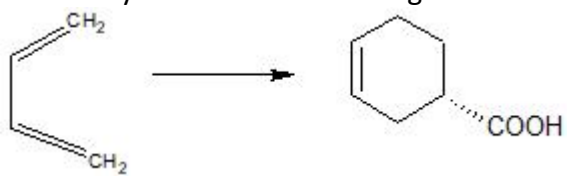
Answer any 6 questions **Weights: 2**

11. Describe the theories to explain glass transition temperature. What are the factors affecting glass transition temperature? (U, CO 2)
12. Discuss the general principle and methodology for the biosynthesis of terpenes. (R, CO 1)
13. Predict the products formed in the following reaction. Comment on the streochemistry involved.



(R, CO 1)

14. Discuss the theories of drug-receptor interactions. (U, CO 4)
15. Discuss briefly on the frame work of scientific enquiry? (An, CO 5)
16. Discuss the synthesis of testosterone. (U, CO 3)
17. Give a brief description about the structure of a dendrimer. (R, CO 2)
18. How can you make the following conversion? Explain the steps involved.



(A, CO 1, CO 5)

(2 x 6 = 12)

PART C

Answer any 2 questions **Weights: 5**

19.	Give any one method for the synthesis of following compounds a)Quercetin, b) vitamin-C and c) testosterone.	(R, CO 3)
20.	Expalin in detail different types of anti cancer drugs acting on DNA.	(U, CO 4)
21.	Give a detailed account of microwave and ultra sound assisted organic synthesis.	(U, CO 1)
22.	Illustate the term biosynthesis? Explain the biosynthetic pathways for Cholesterol and Glucose?	(R, CO 1)

(5 x 2 = 10)

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
CO 1	Illustrate the principles of biosynthesis, biomimetic synthesis, and green synthesis and stereoselective transformations.	U	2, 8, 9, 12, 13, 18, 21, 22	19
CO 2	Explain the chemistry of advanced polymeric materials.	A	7, 10, 11, 17	6
CO 3	Describe the structure and applications of natural products and biomolecules.	U	16, 19	7
CO 4	Explain the mechanism of drug action and drug designing.	U	1, 4, 14, 20	9
CO 5	Apply the methodology of research.	U	3, 5, 15, 18	6

Cognitive Level (CL): Cr - CREATE; E - EVALUATE; An - ANALYZE; A - APPLY; U - UNDERSTAND; R - REMEMBER;