Reg. No ..... Name **24P4017**

M. Sc. DEGREE END SEMESTER EXAMINATION - MARCH 2024

SEMESTER 4 - CHEMISTRY

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

(For Regular - 2022 Admission and Supplementary - 2021 Admission)

Duration : Three Hours Max. Weights: 30

PART A

Answer any 8 questions **Weight: 1**

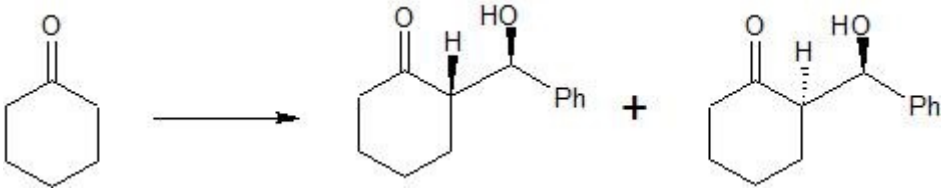
1. Briefly explain the biosynthesis of steroids. (A)
2. Calculate the atom economy in the epoxidation of ethylene using perbenzoic acid. (A, CO 1)
3. What is focus group observation? (E, CO 5)
4. What are DNA intercalating agents ? (U, CO 4)
5. Define library research, field research and laboratory research? (U, CO 5)
6. How is a hypothesis transformed into a theory? (A, CO 5)
7. What are tranquilizers? Give an example and mechanism of action. (U, CO 4)
8. What is BINAP? What is its synthetic use? (R, CO 1)
9. Give any two uses of nitrile rubber and butyl rubber. (U, CO 2)
10. Write the synthesis and uses of Buna S. (U, CO 2)

(1 x 8 = 8)

PART B

Answer any 6 questions **Weights: 2**

11. Discuss the general principle and methodology for the biosynthesis of terpenes. (R, CO 1)
12. Discuss the synthesis of prostaglandins with special emphasis to PGE_2 and$PGF_{2\alpha}$ (R, CO 3)
13. Discuss briefly on scientific writing? (Cr, CO 5)
14. Give a detailed description about the stereochemistry of polymers with examples. How it is achieved by Ziegler-Natta catalyst? (U, CO 2)
15. What are flame retardant polymers? Give any two examples. (U, CO 2)
16. How is the asymmetric induction carried out by chiral pool strategy? (U, CO 1)
17. What meant by Angina? Briefly discuss the drugs used for its treatment. (U, CO 4)
18. Complete the reaction sequence and suggest a mechanism for the following. Suggest a reagent for the stereospecific formation of *anti* product.



(A, CO 1)

(2 x 6 = 12)

PART C

Answer any 2 questions **Weights: 5**

19. Give a detailed discussion on the sequencing of peptides. Explain the different methods employed for C-T-AA and N-T-AA analysis. (U, CO 3)

20. Discuss the principles of Green Chemistry taking suitable examples. (U, CO 1)

21. Write down the biomimetic synthesis of progeterone and spatriene? (R, CO 1)

22. Give an account of different drug -receptor theories. (U, CO 4)

(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, 11, 16, 18, 20, 21	18
CO 2	Explain the chemistry of advanced polymeric materials.	A	9, 10, 14, 15	6
CO 3	Describe the structure and applications of natural products and biomolecules.	U	12, 19	7
CO 4	Explain the mechanism of drug action and drug designing.	U	4, 7, 17, 22	9
CO 5	Apply the methodology of research.	U	3, 5, 6, 13	5

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