Reg. No ..... Name **23P4017**

M. Sc. DEGREE END SEMESTER EXAMINATION : MARCH 2023

SEMESTER 4 : CHEMISTRY

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

(For Regular - 2021 Admission)

Duration : Three Hours Max. Weights: 30

PART A

Answer any 8 questions **Weight: 1**

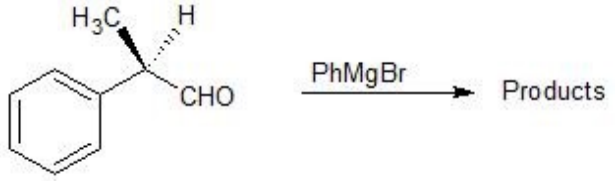
1. How does Ziegler-Natta catalyst effect the polymerization of alkenes? (U)
2. What are secondary sources of literature? Give examples. (U, CO 5)
3. Comment on the significance of the two carbon unit, acetyl coenzyme in biosynthesis. (U, CO 1)
4. Differentiate between absolute error and relative error. (An, CO 5)
5. Write any two advantages and disadvantages of PTFE. (U, CO 2)
6. What is chiraphos? Explain its structural features. (R, CO 1)
7. What are the merits of vitamin C being used as water purifying agent? (An, CO 1)
8. Briefly explain the concept of combinatorial synthesis. (U, CO 4)
9. What are the purposes of historical research? (U, CO 5)
10. What do you mean by CNS drug? Explain with examples. (U, CO 4)

(1 x 8 = 8)

PART B

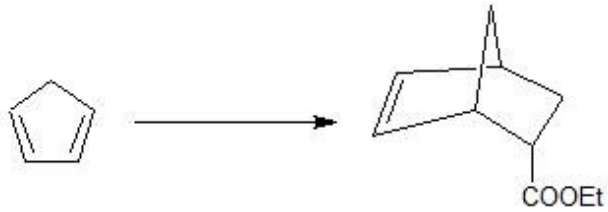
Answer any 6 questions **Weights: 2**

11. Briefly discuss penicillins. Which functional group is critical in its activity ? (U, CO 4)
12. Give a brief description about the structure of a dendrimer. (R, CO 2)
13. Describe the method for the biosynthesis of squalene. (U, CO 1)
14. Predict the products formed in the following reaction. Comment on the streochemistry involved.



(R, CO 1)

15. How can you make the following conversion? Explain the steps involved.



(An, CO 1)

16. Discuss the synthesis of cyanin. (U, CO 3)
17. What do you mean by glass transition temperature of polymers? Discuss the factors affecting it. (E)
18. Discuss briefly on the characteristics of research. (An, CO 5)

(2 x 6 = 12)

PART C

Answer any 2 questions **Weights: 5**

19. Discuss the general strategies involved in the biosynthesis of terpenes, phenyl alanine and morphine? (A, CO 1)

20. Give the synthesis of i) Camphor ii) Atropine and iii) beta-carotene. (U, CO 3)

21. Give a detailed account of modern green solvents used in Organic chemistry. (A, CO 1)

22. Discuss in detail the mechanism of drug acting on DNA taking suitable examples of intercalating agent, alkylating agents, and chain cutting agents with reference to the treatment of cancer. (Cr)

(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	3, 6, 7, 13, 14, 15, 19, 21	19
CO 2	Explain the chemistry of advanced polymeric materials.	A	5, 12	3
CO 3	Describe the structure and applications of natural products and biomolecules.	U	16, 20	7
CO 4	Explain the mechanism of drug action and drug designing.	U	8, 10, 11	4
CO 5	Apply the methodology of research.	U	2, 4, 9, 18	5

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