TM244795P

Reg. No :.....

Name :.....

MASTER'S DEGREE (C.S.S) EXAMINATION, MARCH 2024

2022 ADMISSIONS REGULAR

SEMESTER IV - Chemistry

CH4E02TM20 - Advanced Organic Chemistry

Time : 3 Hours **Maximum Weight : 30**

Part A

I. Answer any Eight questions. Each question carries 1 weight **(8x1=8)**

1. Describe cyclophanes with an example.
2. Explain hydrogels.
3. Elaborate the principle of ultrasound assisted organic synthesis.
4. Discuss the principle of microwave assisted organic synthesis.
5. Calculate the enantiomeric excess (e.e.) and racemate percentage in an 88:12 enantiomeric mixture. Justify your answer.
6. Enumerate the differences in stabilities of DNA and RNA.
7. Describe the synthesis of beta-carotene.
8. Define anticancer drugs. Give examples for various types of anticancer drugs.
9. Discuss the theory and applications of conducting polymers.
10. Define impact factor and explain how to calculate it.

Part B

II. Answer any Six questions. Each question carries 2 weight **(6x2=12)**

11. Discuss the following: a) Catenane b) Rosettes
12. Illustrate (a) Pinacol- pinacolone rearrangement (b) Base catalysed aldol condensation.
13. Describe the chiral pool strategy used in asymmetric synthesis with a suitable example.
14. Discuss the synthesis of camphor.
15. Explain on (a) anti-coagulants and (b) anti-malarial drugs.
16. Explain the mode of action of Warfarin.
17. Discuss the various synthesis methods of Dendrimers.
18. Describe the various chemical literature databases.

Part C

III. Answer any Two questions. Each question carries 5 weight **(2x5=10)**

19. Explain various types of non-covalent interaction with suitable examples.
20. Comment on the twelve principles of green chemistry (b) Discuss the biosynthesis of α- Terpineol.
21. Explain Chiral pool and Chiral Auxiliary Approach to Asymmetric Synthesis
22. Discuss any four methods used for the primary structure determination of peptides.