Reg. No ..... Name **22P1021**

M. Sc. DEGREE END SEMESTER EXAMINATION : OCTOBER 2022

SEMESTER 1 : CHEMISTRY / PHARMACEUTICAL CHEMISTRY

COURSE : **21P1CHET02 / 21P1CPHT02: BASIC ORGANIC CHEMISTRY**

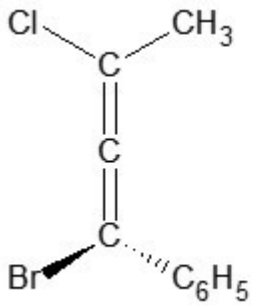
(For Regular - 2022 Admission and Supplementary - 2021 Admission)

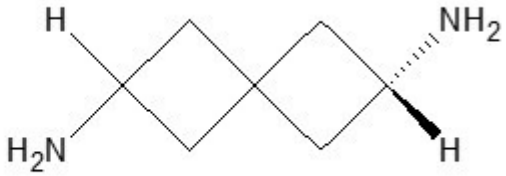
Duration : Three Hours Max. Weights: 30

PART A

Answer any 8 questions **Weight: 1**

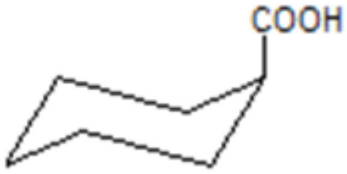
1. Write briefly on synthesis of carbon nanotubes? (R, CO 1)
2. Explain the reason for aromatic protons appearing at high δ value? (An, CO 1)
3. What is α-kinetic isotope effect ? (U)
4. Write Taft equation and explain the terms involved. (U)
5. Give any one product formed during the photolysis of cyclohexanone. (U)
6. Give an example of a Di-π-methane rearrangement. (U)
7. Explain homotopic, enantiotopic and diastereotopic ligands citing one example for each. (U)
8. Name the following chiral molecules in R and S system of nomenclature.





(A)

9. Which of the following is esterified faster? why?



(U)

10. Dibromoethane shows a dipole moment of 1 D. Explain. (U)

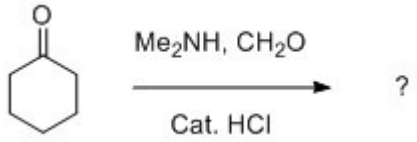
(1 x 8 = 8)

PART B

Answer any 6 questions **Weights: 2**

11. Discuss the mechanism of base catalyzed ester hydrolysis. (U)
12. Explain Hammett equation and narrate its significance. (U)

13. Complete the following reaction and explain the mechanism?



(Cr, CO 1)

14. Write notes on
    a) Electromeric effect
    b) Hyperconjugation (R, CO 1)

15. Explain two chemical methods for distinguishing cis and trans isomers. (U)

16. Write a short note on threo and erythro nomenclature of compounds with two adjacent chiral centres. (U)

17. Discuss the conformations and stereochemistry of 1,2 and 1,3 dimethyl cyclohexanes. (U)

18. Discuss in detail, the various conformations of 3-bromo-2-butanol. (U)

(2 x 6 = 12)

PART C

Answer any 2 questions **Weights: 5**

19. (a) Explain S_NAr and Benzyne mechanism?
    (b) Discuss NMR and aromaticity. (R, CO 1)

20. Explain in detail the significance of *Jablonski* diagram and related processes and write a note on the photochemistry of vision. (U)

21. Give a detailed discussion on geometrical isomerism with special emphasis on configurational nomenclature, methods for the determination of configuration and interconversion of geometrical isomers (U)

22. Discuss the conformational anlysis of cyclohexane and comment on the effect of conformation on the reactivities of cyclohexane-1,2-dicarboxylic acids and esterification of 4-t-butylcyclohexanols. (A)

(5 x 2 = 10)

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
CO 1	Explain the basic concepts of organic chemistry	R	1, 2, 13, 14, 19	11

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