Central Tribal University of Andhra Pradesh
Semester End Examination-June/July-2024

Name of the Programme : B.Sc.(Chemistry/Botany/Geology)
Name of the Subject : Organic Chemistry-I
Subject Code: CHE151/171 **Semester: II**
Max. Time: 3 Hours **Max. Time: 70**

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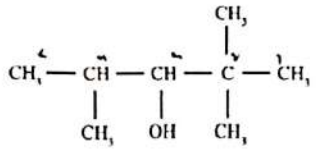
Part-A

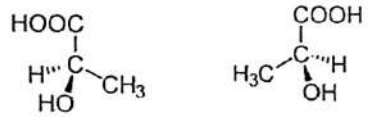
Answer the following questions. Each Carries 1 mark (10qx1m = 10M)

1. How does homolytic and heterolytic cleavage are represented by the different types of arrows?

2. Write the IUPAC name of the following organic compound



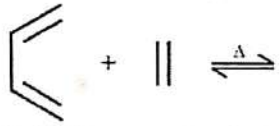
3. What do you call the following pair of compounds ?



4. Identifycis-trans isomerism of the following two compounds

5. "The two isomers have optical rotations of equal magnitude but opposite direction." What are those isomers called?

6. Write the name of the following reaction



7. Write an example forHofmann Elimination

8. Explain E1cB mechanism of alkyl halide elimination.

9. Explain why all the bond lengths in benzene are equal.

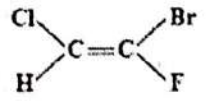
10. Explain the aromatic character of pyridine.

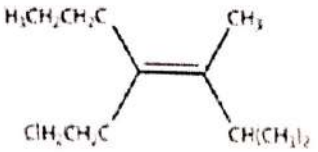
Part-B

Answer any four short answer questions each question carries 5 marks (4qx5m = 20M)

11. Compare and contrast the positive (+I) and negative (-I) inductive effects.

12. Write E and Z configuration of the following compounds





13. Draw new projections for the conformers of ethane.
14. Provide an example of a substitution reaction in alkanes along with the detailed mechanism.
15. Write the mechanism of E1 elimination reaction
16. What is Huckel rule? Give its application to cyclobutadiene and benzene .

Part-C

Answer all the long answer questions either A or B each carrying 10 marks
(4qx10m = 40M)

17 a) How do the reactivities of intermediates such as carbocations, carbanions, free radicals, and carbenes differ in organic reactions?

OR

b) Describe the steps involved in naming alkanes and alkenes according to IUPAC rules. Provide examples to illustrate the application of these rules.

18. a) Explain the following
i) D,L-configuration, ii) Syn-anti configuration

OR

b) Describe the step-by-step process of determining the R and S configurations using the Cahn-Ingold-Prelog (CIP) rules.

19. a) What is Saytzeff elimination? Explain the rationale for the formation of the predominant product.

OR

b) Discuss the mechanisms of Wurtz reaction and Wurtz–Fittig reaction

20) a) Explain electrophilic substation reactions of benzene. Discuss the mechanisms of any two reactions.

OR

b) How do ortho and meta directing groups affect the substitution pattern of electrophilic aromatic substitution reactions?