Exam. Code : 103203
Subject Code : 1343

B.A./B.Sc. Semester—III

CHEMISTRY (Organic Chemistry–II)

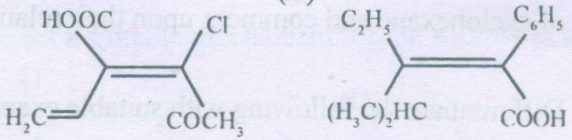
Time Allowed—3 Hours] [Maximum Marks—35

PART–A

Note :– **All** questions are compulsory. Each question carries **1** mark each.

1. Assign E/Z configurations to the following :

(A) (B)

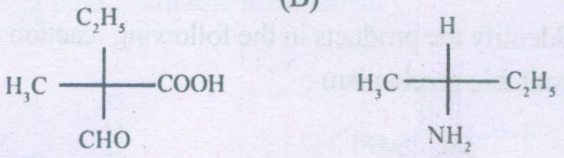


2. Draw the structure of diene :

(2E,4Z)-1-chloro-2, 4-heptadiene.

3. Assign R/S configurations to the following :

(A) (B)



4. Out of o- and p-nitrophenol, which one has higher boiling point and why ?

5. Alcohol reacts with halogen acid to form haloalkane but phenol does not form halobenzene, why ?
6. Draw the structure of product formed in dehydration of 3, 3-dimethyl-2-butanol.
7. 1, 3-dithianes cannot be used to prepare diaryl ketones, why ?
8. α-hydrogens of carbonyl compounds are acidic while β-hydrogens are not, explain. 8×1=8

PART–B

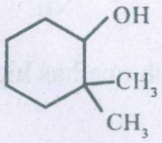
Note :– Attempt **two** questions from each Section. All questions carry equal marks.

SECTION–I

9. Draw Newman projection formula of chair and boat form of cyclohexane and comment upon their relative stability. 4.5
10. Differentiate the following with suitable examples :
    (a) Meso form and Racemic form 2
    (b) Enantiomers and Diastereomers. 2.5
11. Write down various conformations of cyclohexane and mark them on energy profile diagram. 4.5

SECTION–II

12. Identify the products in the following reaction and provide suitable mechanism :



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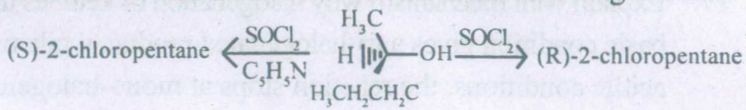
13. Discuss the stereochemical outcome of the following reaction :



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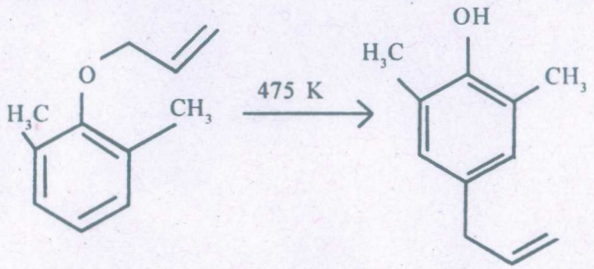
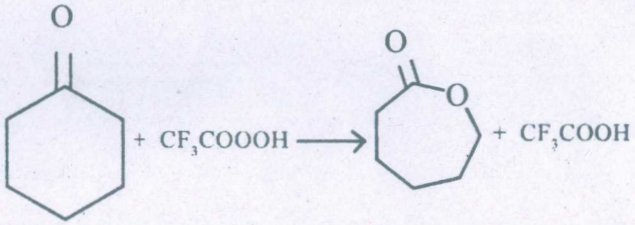
14. Provide a suitable mechanism for the following reaction :



4.5

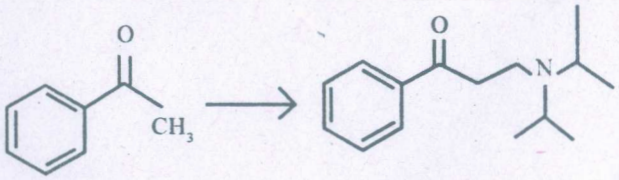
SECTION–III

15. Predict a suitable mechanism for the following reaction :



4.5

16. Predict the reagents required for the following transformation along with a suitable mechanism :



4.5

17. Explain with mechanism why halogenation of ketones under basic condition gives a tri-halogenated product while under acidic conditions, the reaction stops at mono-halogenated product. 4.5