

29/1/26

(Pages : 3)

W – 5626

Reg. No. :

Name :

First Semester M.Sc. Degree Examination, January 2026

Chemistry/Analytical Chemistry/Polymer Chemistry/Chemistry with
Specialisation in Drug Design and Development

CH 212/CL 212/PC 212/CHDD 512 : ORGANIC CHEMISTRY — I

(2020 – 2024 Admission)

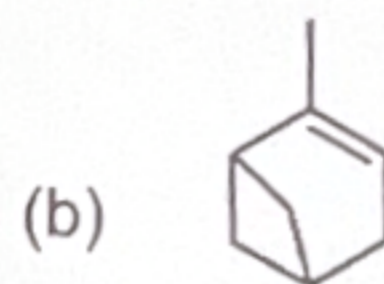
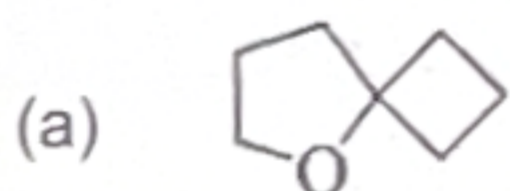
Time : 3 Hours

Max. Marks : 75

SECTION – A

Answer any **two** questions from each unit.

I. 1. Write the IUPAC name for the following :



2. Explain helical chirality.

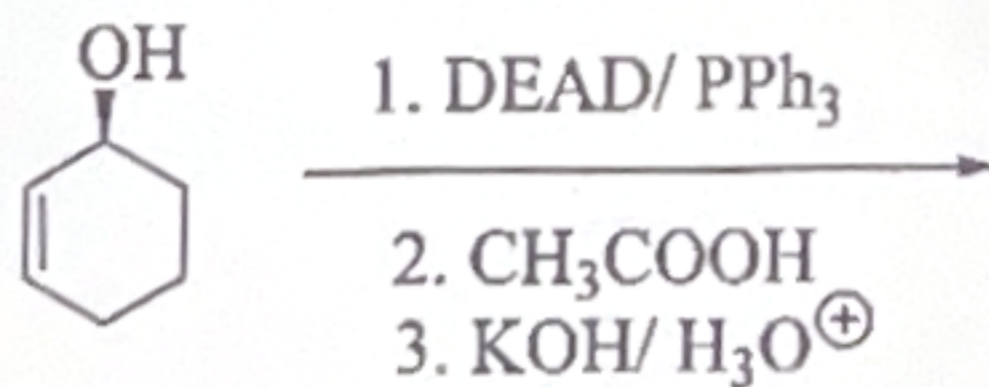
3. What is Felki-Ahn model?

II. 4. What is TEMPO?

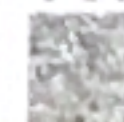
5. Give any two methods for the generation of nitrenes?

6. What is Ullman reaction?

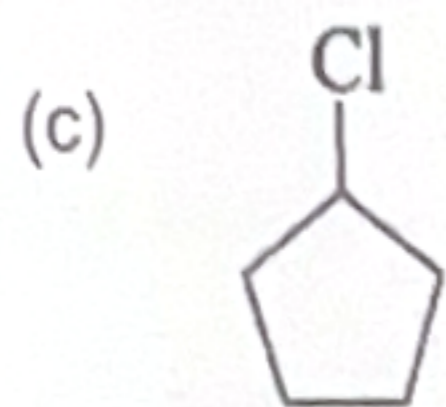
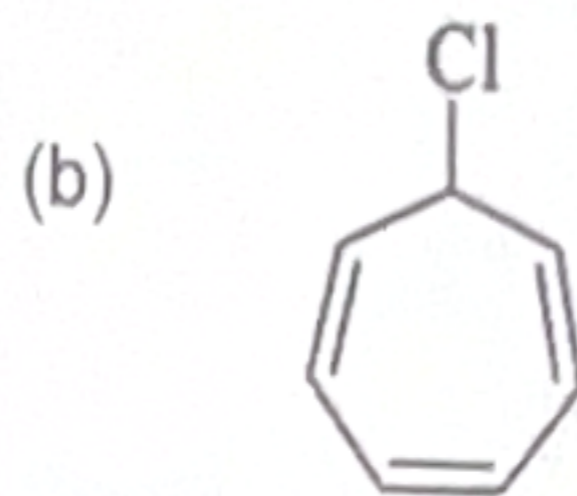
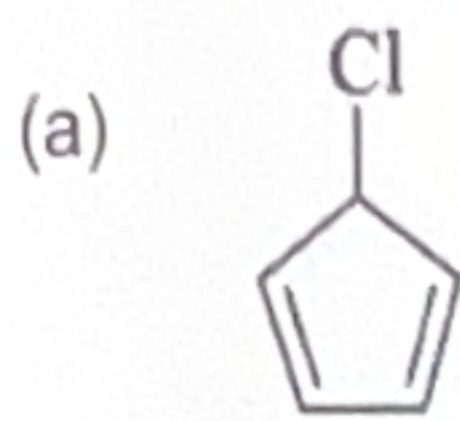
III. 7. Complete the reaction



P.T.O.

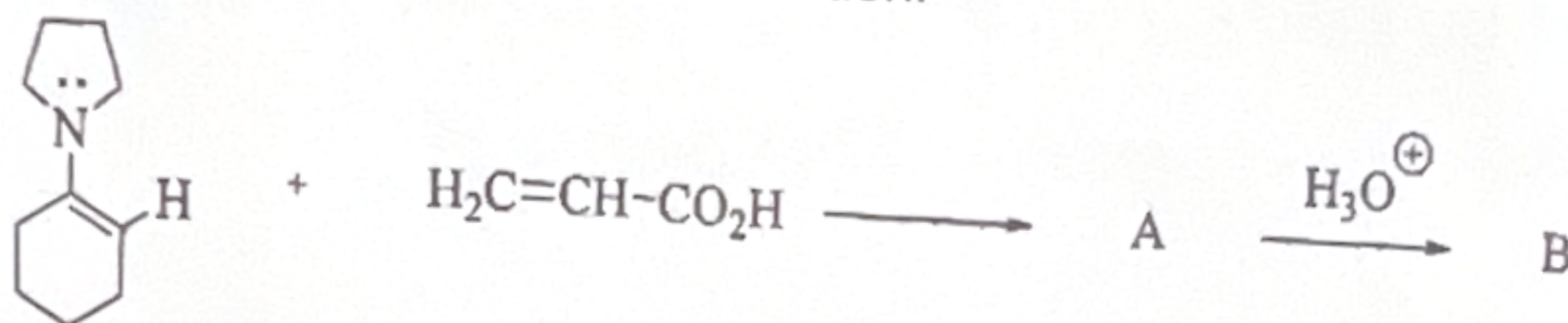


8. Arrange the following in the order of solvolysis in water. Give reasons



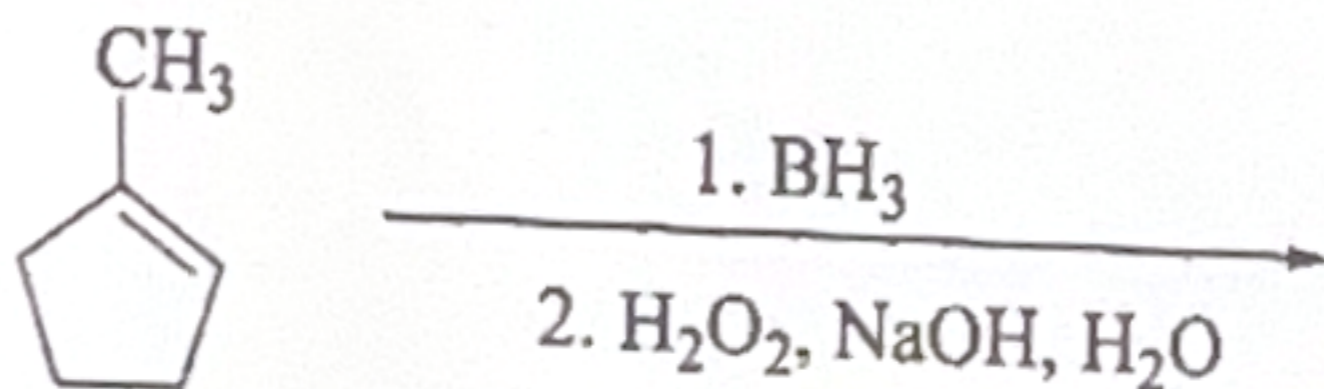
9. What are non-classical carbocations. Give examples.

IV. 10. Give the product and name the reaction.



11. What is an intramolecular aldol condensation? Explain with example.

12. Predict the product.



V. 13. What is Cope elimination?

14. What is Lindlars catalyst? What is it used for?

15. What is the difference between E_1 and E_{1cb} mechanism?

(10 × 2 = 20 Marks)

SECTION – B

Answer **all** questions. **Each** question carries **5** marks.

16. Why is stereochemistry of a drug important? Explain with example.

OR

17. Define a prochiral center. How the Hydrogens or any other ligands attached to a prochiral centre are designated?

18. How will you distinguish between singlet and triplet carbenes by a chemical method? Comment on their structures.

OR

19. Explain Pinacol coupling reaction.

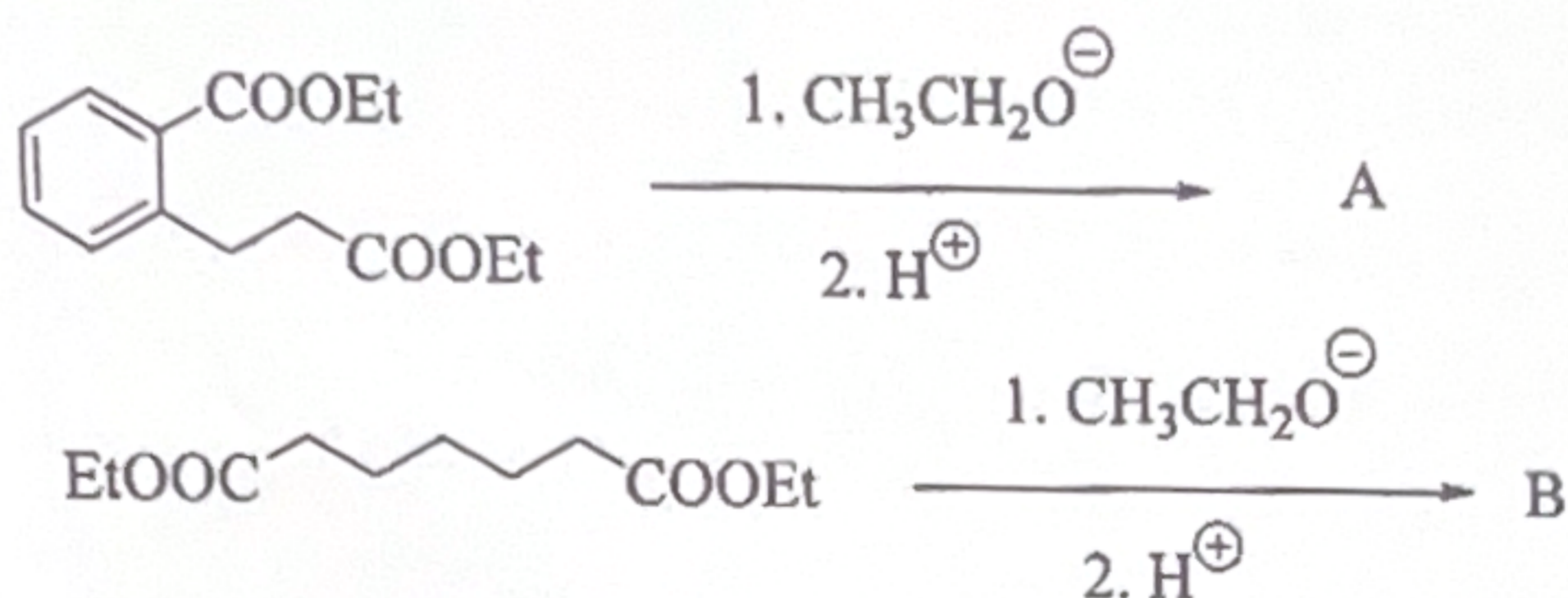
20. Why the reaction of α -bromopropionate (optically active) in methanol gives a product with retention of configuration?

OR

21. Explain the Vilsmeier-Haack reaction with mechanism.
22. Describe the Mannich reaction with its mechanism.

OR

23. Write the structure of the products from the condensation and give its mechanism.



24. Write a note on Wittig and Wittig-Horner reaction.

OR

25. Write a note on Hoffmann and Saytzeff's elimination with examples.

(5 × 5 = 25 Marks)

SECTION – C

Answer any **three** questions. **Each** question carries **10** marks.

26. Explain octant rule and axial haloketone rule.
27. Discuss the following reactions with mechanisms.
(a) Acyloin condensation
(b) Chichibabin reaction
(c) McMurry reaction
(d) Hunsdieckers reaction
28. Discuss briefly the effect of solvent, leaving group and substrate structure on the rates of SN^1 and SN^2 substrates.
29. (a) Explain the Michael addition reaction with examples and mechanisms.
(b) Write a note on Sulfur ylides.
30. (a) Discuss elimination versus substitution.
(b) Write the factors which favour E_1 over E_2 .

(3 × 10 = 30 Marks)