

BMS COLLEGE FOR WOMEN AUTONOMOUS
BENGALURU-560004

END SEMESTER EXAMINATION – OCTOBER 2022
(CBCS)

M.Sc. in Chemistry- II Semester
Organic Chemistry-II

Course Code: MCH202T

Duration: 3 Hrs

QP Code:21008

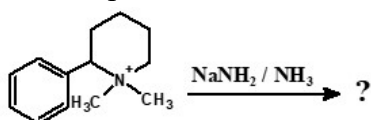
Max.Marks:70

Instruction: Answer Question No. 1 and any FIVE of the remaining.

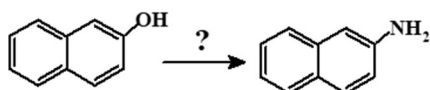
1. Answer any *TEN* questions

(2×10=20)

a) Predict the product with mechanism of the following reaction:



b) How do you bring about the following transformation? Name the reaction:

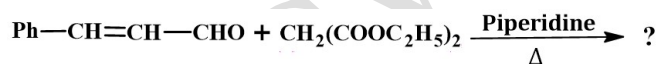


c) What is von Richter reaction? Give its mechanism.

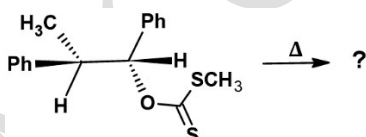
d) Bromination of fumaric acid produces meso-dibromo product. Account for this observation.

e) With suitable example, outline the mechanism for the conversion of aldehydes to nitriles.

f) Predict the product and name the reaction.

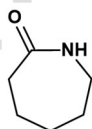


g) Identify the product with correct stereochemistry.



h) What is Tiffenav-Demjanov reaction? Write the mechanism.

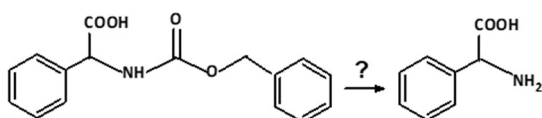
i) Illustrate how the following compound is prepared by Beckmann rearrangement.



j) Write the biological importance of vitamin B6 & Biotin?

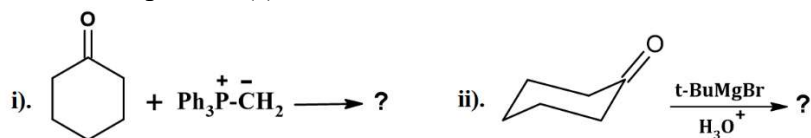
k) Explain briefly the utility of CNBr in fragmentation of polypeptides.

l) Suggest a suitable reagent and propose a mechanism for the following:



2. a) Explain the mechanism of Gattermann-Koch reaction with the help of suitable example.
 b) Write a note on Bucherer reaction.
 c) Illustrate the arenium mechanism of electrophilic aromatic substitution reactions and write the energy profile diagram. (4+3+3)

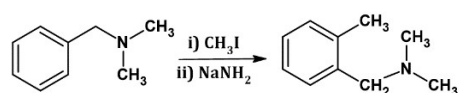
3. a) Predict the product(s) and formulate the mechanism for the following transformations.



- b) Write the structures of all products that could possibly be formed when propene is treated with bromine water containing little NaCl. Sketch a suitable mechanistic scheme that explains the formation of these products.

- c) Give an account of Mannich reaction. (4+3+3)

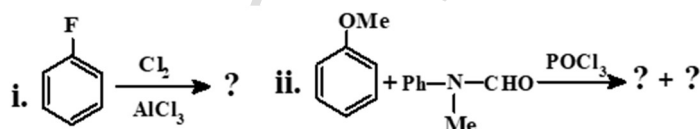
4. a) Discuss the stereochemistry of E1 and E2 reactions by taking appropriate examples. Point out the differences between the two.
 b) Explain the mechanism of Wagner-Meerwein rearrangement and illustrate its synthetic applications.
 c) Name the rearrangement and propose suitable mechanism:



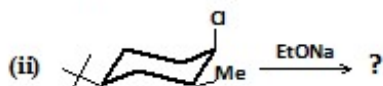
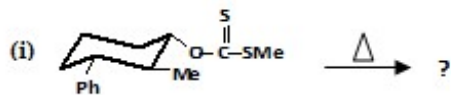
(4+3+3)

5. a) Give an account of Merrifield synthesis of following tripeptide, H₂N-Ala-Gly-Cys-CO₂H.
 b) Outline the synthesis of vitamin A1.
 c) Describe Edman method of sequencing amino acids in peptides. (4+3+3)

6. a) Complete the following reaction and give their mechanism:



- b) Predict the products in the following reactions and outline their mechanisms:

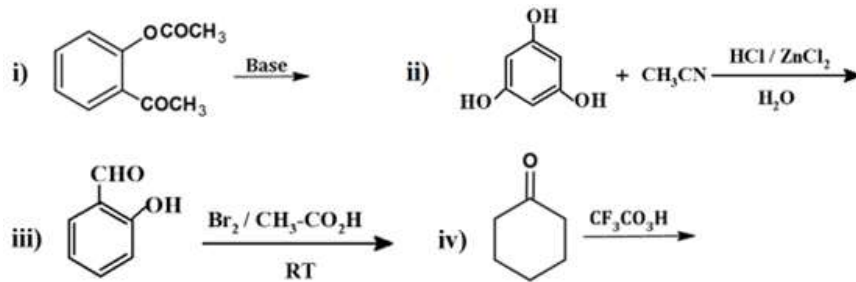


(5+5)

7. a) Give a brief account of the difference between the LAH and NaBH₄ reductions.
 b) Propose a suitable mechanism for the following transformations
 (i). Benzil into Benzilic acid
 (ii). Dienone into phenol (5+5)

8. a) Explain Sanger and Edman methods for the sequencing of amino acids in peptides and proteins.

b) Give the product of the following reactions.:



(6+4)

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