



II Semester M.Sc. Examination, June 2015
(CBCS)
CHEMISTRY
C – 202 : Organic Chemistry – II

Time : 3 Hours

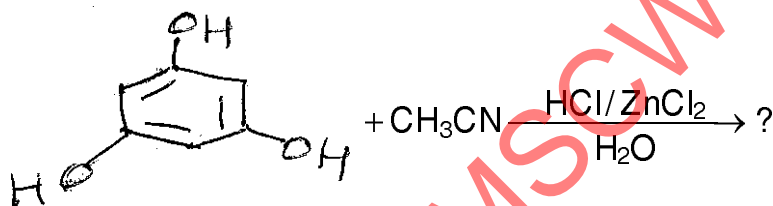
Max. Marks : 70

Instruction : Answer questions no. 1 and **any five** of the remaining questions.

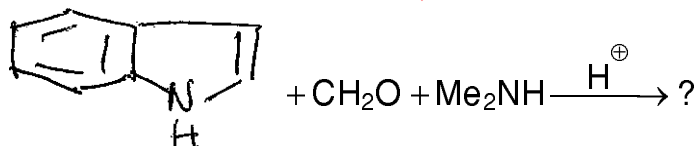
SECTION – A

1. Answer **any ten** of the following : (2×10=20)

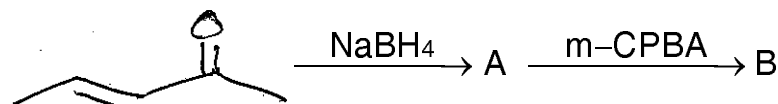
- a) Illustrate the ipso attack in aromatic nitration with an example.
b) Give the product formed with mechanism.



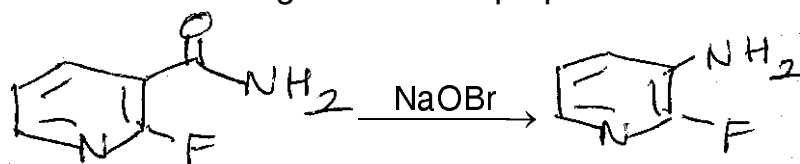
- c) What is Von-Richter reaction ? Give its mechanism.
d) Formulate the product with mechanism.



- e) Addition of HBr on Vinyl bromide under polar conditions give $\text{CH}_3 - \text{CHBr}_2$ rather than $\text{BrCH}_2 - \text{CH}_2\text{Br}$. Explain.
f) Write the structure of A and B in the following :



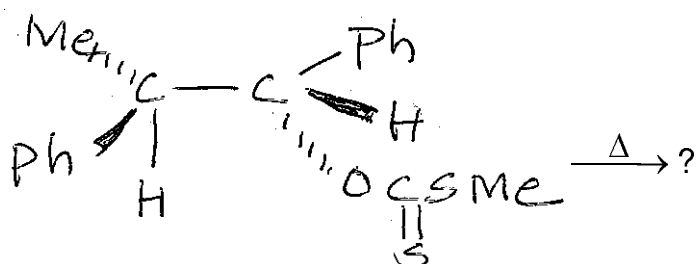
- g) Explain Fritsch-Buttenberg-Wiechell rearrangement.
h) Name the following reaction and propose suitable mechanism.



P.T.O.

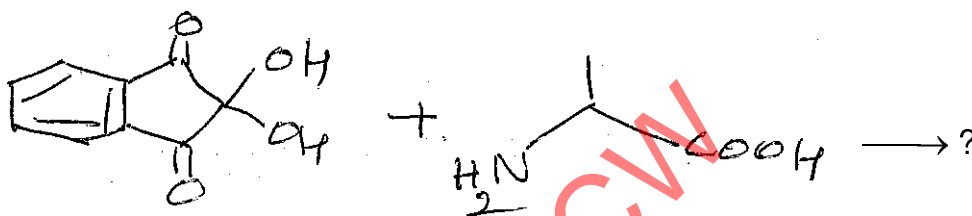


i) Predict the product with correct stereochemistry.



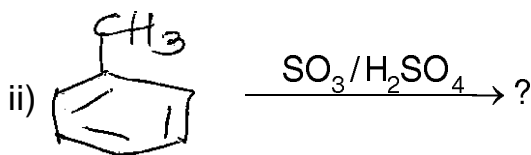
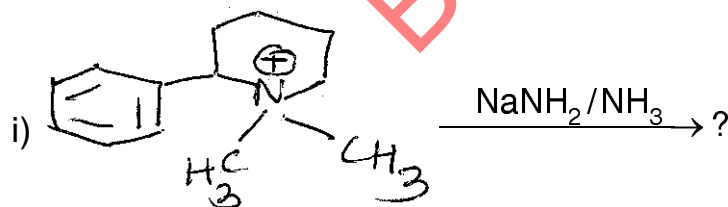
j) Explain why cyanogen bromide specifically cleaves the carboxyl end of methionine?

k) Give the product formed with mechanism.



l) What are peptidomimetics? Explain with an example.

2. a) Predict the product with mechanism of the following reactions.



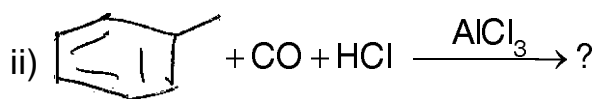
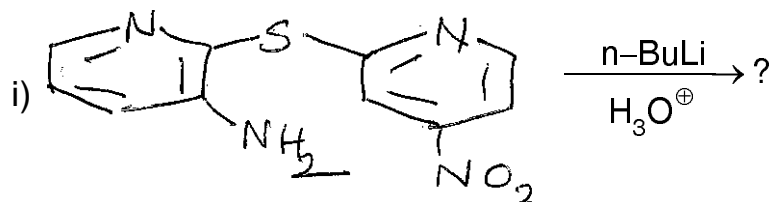
b) How S_NAr mechanism is different from S_N^2 reaction? Explain.

c) Explain the synthetic utility of diazonium coupling.

(4+3+3=10)

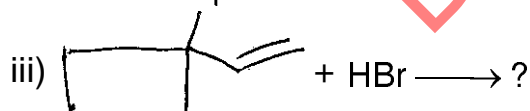
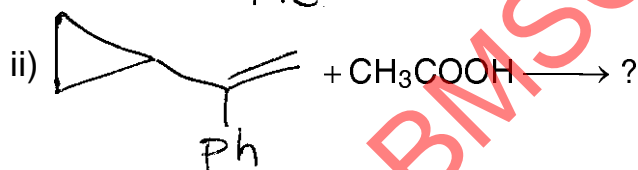
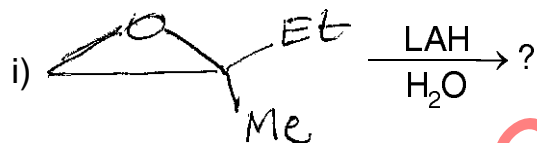


3. a) What is the effect of substrate, attacking base and leaving group on the reactivity of aromatic nucleophilic substitution reactions ?
b) Predict the product and propose mechanism



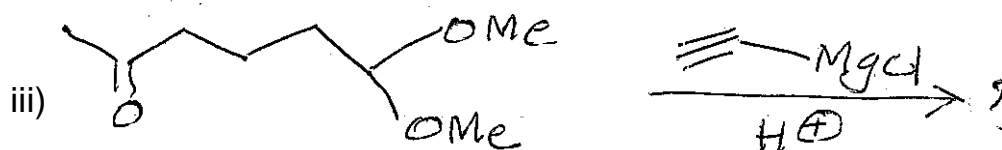
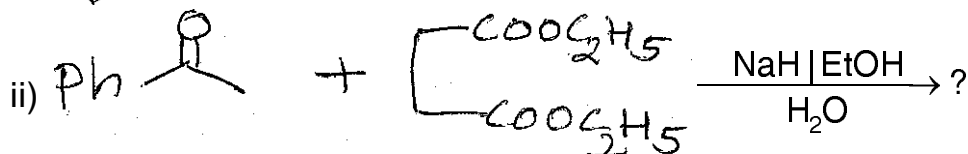
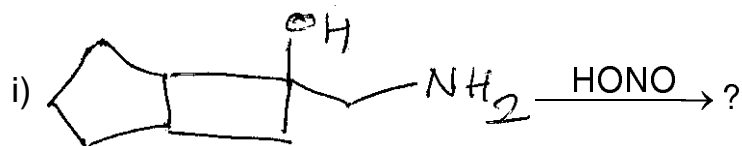
(6+4=10)

4. a) Write briefly on the orientation and reactivity during the addition of halogen across carbon-carbon multiple bonds.
b) Complete the following reactions and suggest suitable mechanism.



(4+6=10)

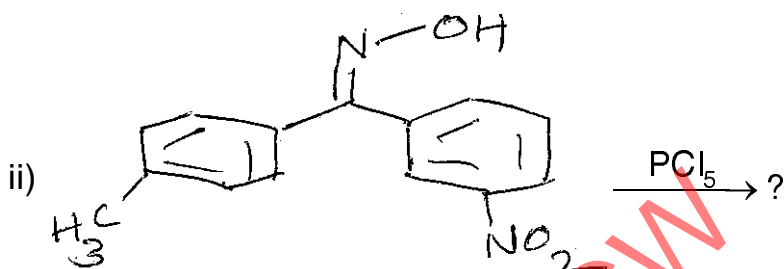
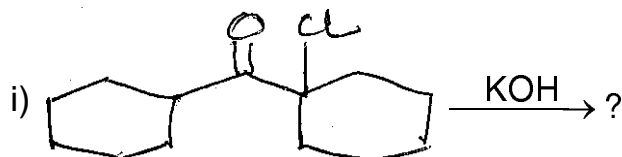
5. a) What is Wittig reaction ? Discuss its mechanism with example.
b) Predict the products with mechanism.



(4+6=10)



6. a) Discuss the following with suitable examples.
 i) Schmidt rearrangement.
 ii) Baker-Venkatraman rearrangement.
 b) Give the product and propose a suitable mechanism



(6+4=10)

7. a) Outline the synthesis of oxytocin.
 b) Explain the mechanism of Wagner-Meerwein rearrangement and illustrate its synthetic applications.
 c) Give evidences to prove that E_2 reactions are predominantly anti-eliminations. (4+3+3=10)
8. a) Sketch the Merrifield synthesis of the tripeptide : Ala-Gly-Cys.
 b) Explain how racemisation is prevented in the synthesis of a peptide by the azide method ?
 c) Discuss the Edman's method for the determination of sequencing polypeptides. (4+3+3=10)
