

## FACULTY OF SCIENCE

M. Sc I - Semester Examination, January 2018

Subject: Chemistry

Paper- II : Organic Chemistry

Time: 3 Hours

Max. Marks: 80

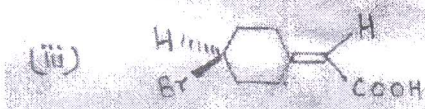
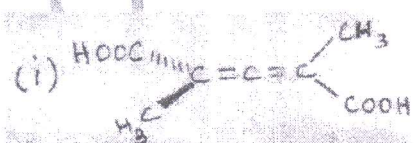
Note: Answer all the Questions from Part-A and Part-B. Each Question Carries 8 Marks in Part-A and 12 Marks in part-B.

**PART-A (4x8=32 Marks)**  
**(Short Answer Type)**

- Draw the Fisher, Newman and Saw-Horse Formulae of D-tartaric acid.
  - How the configuration of Aldoximes determined? Explain.
- Discuss E1cB reaction with example. Give mechanism.
  - What is chemical trapping? How it is useful in the determination of mechanism of the reaction?
- State and Explain the Curtin-Hammett principle.
  - Draw the conformation of Acetaldehyde and Ethylene chlorohydrin and explain them.
- Outline the Synthesis of Carbazole
  - Explain isoprene and special isoprene rule with examples.

**PART-B (4x12=48)**  
**(Essay Answer Type)**

- What are Chiral biaryls? Give examples and discuss their Stereochemistry.
  - Assign R/S configuration to the following.

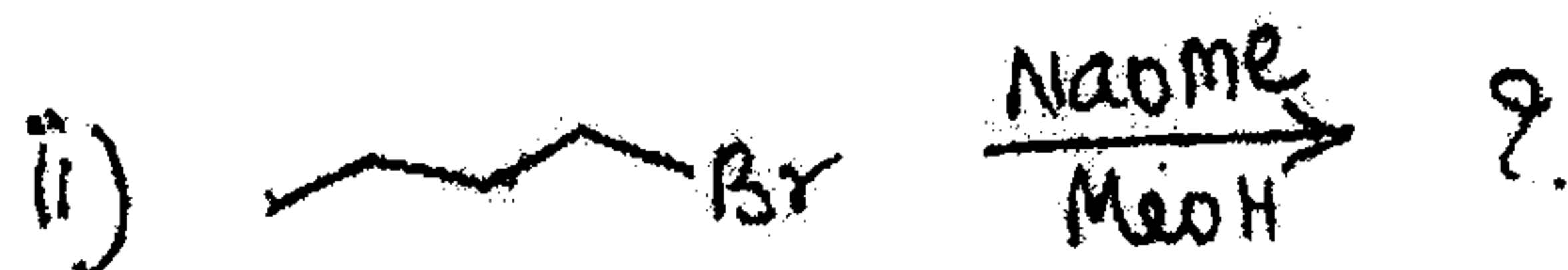


OR

- Differentiate between relative and absolute configuration of an optically organic compound with examples.
- Explain the determination of configuration of E, Z-isomers by chemical methods.

6. (a) Predict the major product from the following and give reasons.

(i) Erythro-3-Phenyl-2-Butylacetate  $\xrightarrow{\Delta}$  ?



(b) Explain how the product isolation and detection of intermediate useful in determination of reaction mechanism.

OR

(c) Neomenthyl chloride under E2 condition gives 3-Menthene as major product, where as menthylchloride gives 2-menthene, explain.

(d) Complete the following reaction and also give mechanism.



7. (a) Explain the use of spectral methods in conformational analysis.

(b) Draw the staggered conformations of possible diastereomers of 2-3-butanediols and indicate the preferred one for each. Give reasons.

OR

(c) What is Klyne-prelog terminology? Illustrate with examples

(d) Explain the reactivity of (2S), (3R)-2, 3-dibromobutane and (2R), (3R) – dibromobutane towards iodide induced debromination.

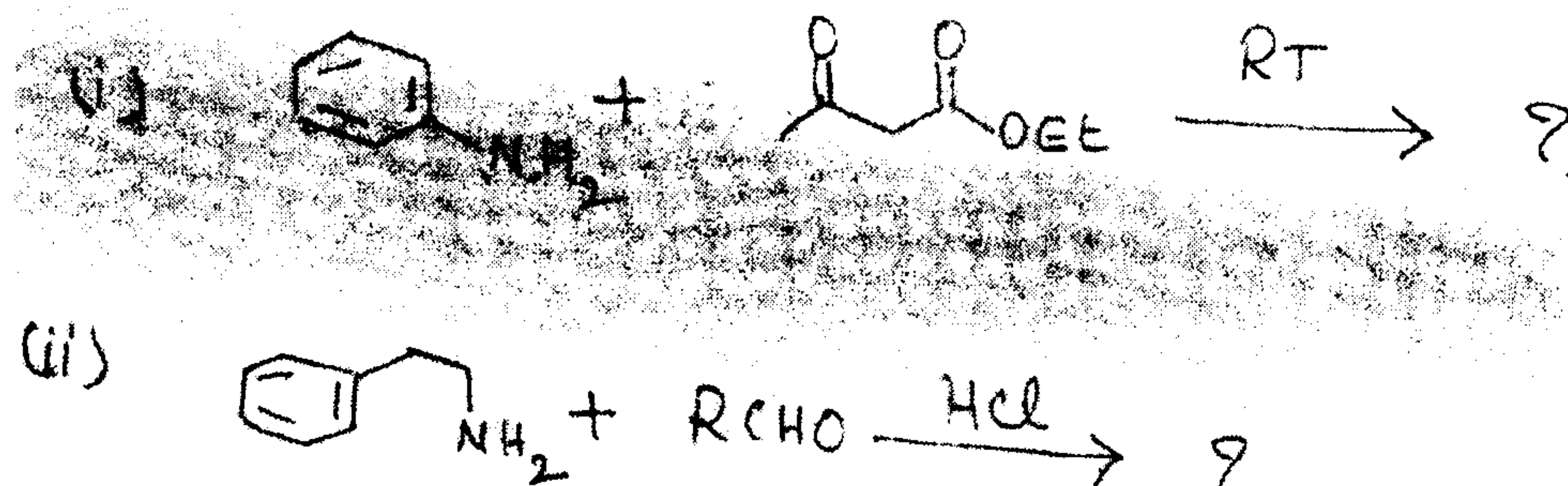
8. (a) Explain Skraup Synthesis of Quinoline with mechanism.

(b) Give an account of the structure determination of  $\alpha$ -terpineol.

OR

(c) Outline the synthesis of Papaverine.

(d) Complete the following with mechanism.



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