

FACULTY OF SCIENCE
M.Sc. I - Semester Examination, December 2014


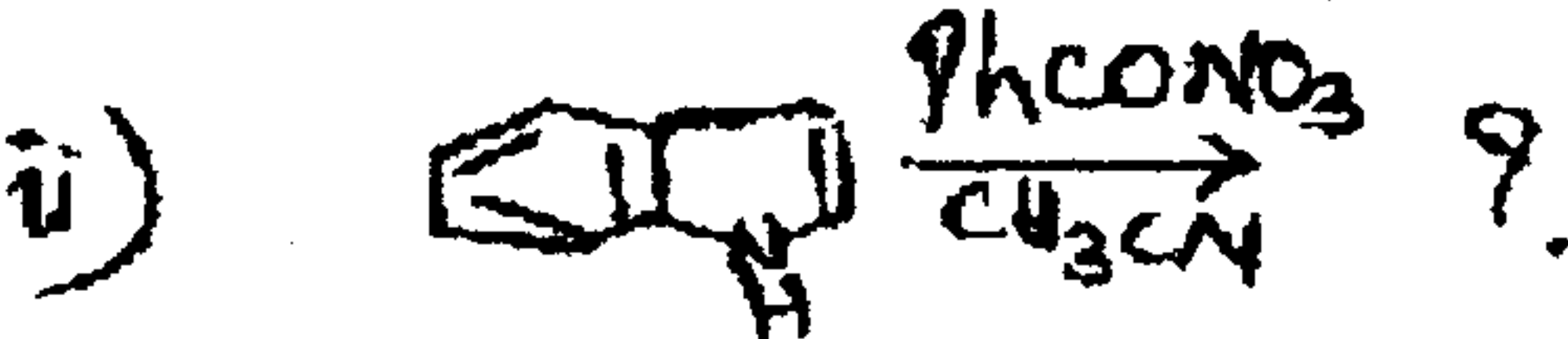
Subject: Chemistry
Paper - II: Organic Chemistry

Time: 3 hours

Max. Marks: 80

Note: Answer all questions from Part - A and Part - B.
Each question carries 4 marks in Part - A and 12 marks in Part - B.

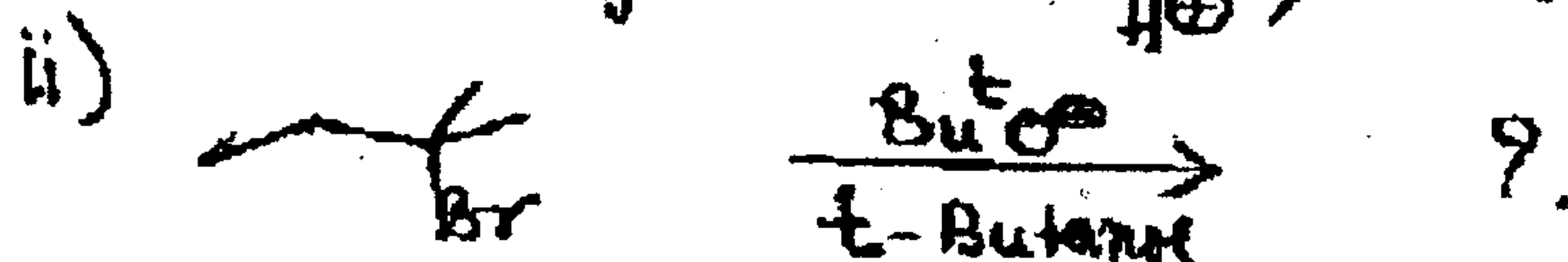
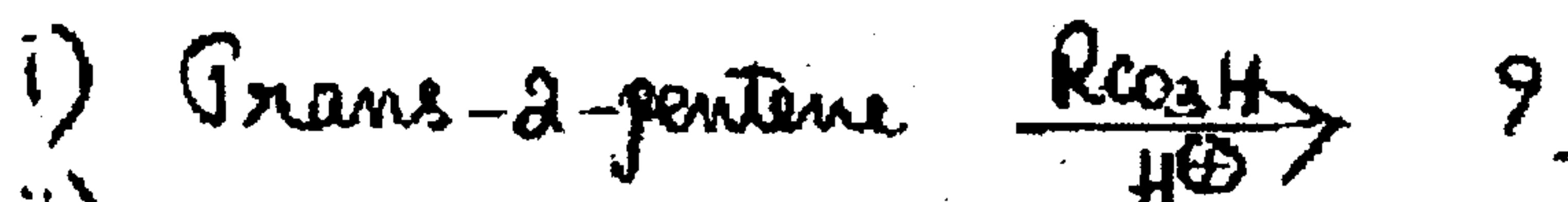
PART - A (4 x 8 = 32 Marks)
(Short Answer Type)

- 1 a) List out the various symmetry elements present in the following : 4
 i) Allene ii) Trans-1, 3 - dimethyl cyclobutane
- b) What is resolution? Explain the resolution of racemic lactic acid by diastereomer salt formation method. 4
- 2 a) Differentiate syn elimination from anti elimination taking one example each. 4
 b) Bromination of alkenes takes place via cyclic bromonium ion and not via carbocation. Explain with any one evidence. 4
- 3 a) How was the configuration of D(-) fructose established? 4
 b) Give the synthesis of the dipeptide Val-Ala. 4
- 4 a) Complete the following reactions. 4
 i)  ii) 
- b) Discuss briefly the nomenclature of heterocyclic compounds based on ring size. 4

PART - B (4 x 12 = 48 Marks)
(Essay Answer Type)

- 5 a) What is desymmetrisation? Explain it with any two proper examples. 6
 b) How the configuration of Alanine is established by chemical correlation method? 6
- OR**
- c) Discuss briefly the following : 4+4+4
 i) Axial Chirality
 ii) Determination of enantiomers by enzymes
 iii) Determination of configuration E, Z-isomers by chemical methods

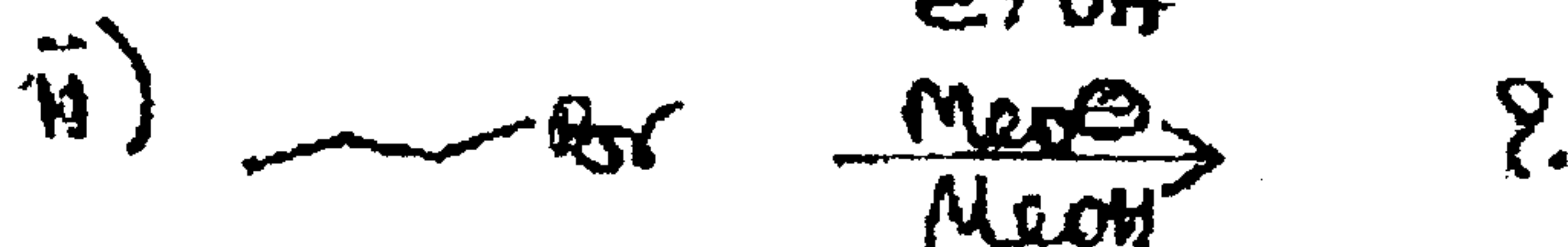
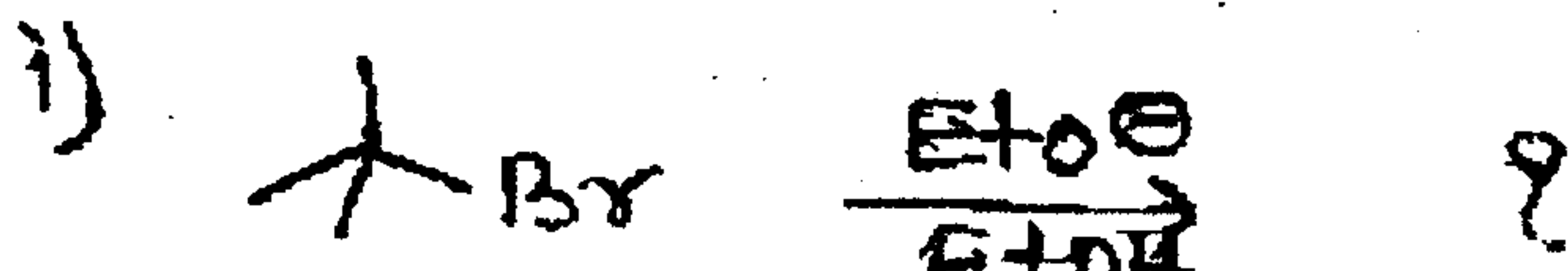
- 6 a) Complete the following equations with mechanism. 6



- b) What is chemical trapping? How it helps in determination of reaction mechanism? 6

OR

- c) Predict the major product of the following reactions and justify your answer. 6



- d) Discuss how NMR is helpful in determination of reaction mechanism. 6

- 7 a) Write the conformational structures of cellulose and lactose. 4

- b) How sucrose structure is determined? Discuss. 8

OR

- c) Explain the determination of amino acid sequence by N-Terminal end group analysis. 6

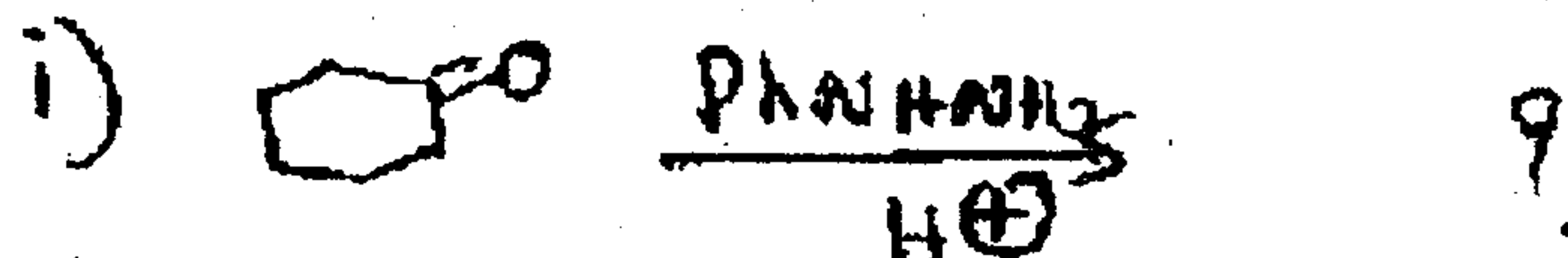
- d) Formulate the synthesis of any sulphur containing sugar and mention its importance. 6

- 8 a) Describe with examples, the importance of heterocyclic compounds as drugs. 6

- b) Indole undergoes electrophilic substitution at 3-position where as benzofuran at 2-position. Explain. 6

OR

- c) Complete the following reactions and give mechanism. 6



- d) Give any one synthesis of chromone and discuss its reactivity. 6
