

FACULTY OF SCIENCE

M.Sc. I – Semester (CBCS) Examination, December 2016

Subject: Chemistry

Paper – II

Organic Chemistry

Time: 3 Hours

Max.Marks: 80

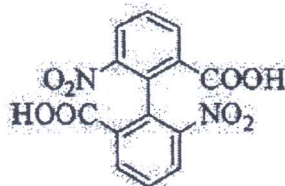
Note: Answer all questions from Part-A and Part-B.

Each question carries 8 marks in Part-A and 12 marks in Part-B.

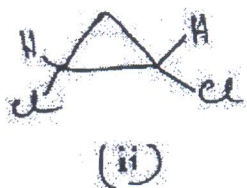
PART – A (4x8 = 32 Marks)

[Short Answer Type]

- 1 a) How do you determine the configuration of aldoximes? Explain. 4M
 b) Comment on the chirality of the following compounds. 4M

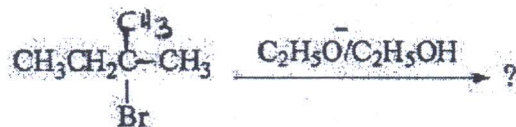


(i)

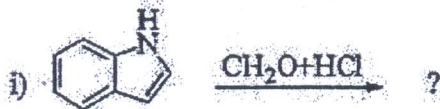


(ii)

- 2 a) Write the reaction products of the following reaction: 4M



- b) Write about α elimination reactions. 4M
- 3 a) Write all the possible conformations of 1,1,2,2 – tetra bromo butane and discuss their stability. 4M
 b) Write a note on Winstein – Holness equation. 4M
- 4 a) Explain the general methods in the structure determination of alkaloids. 4M
 b) Write the products of the following reaction. 4M

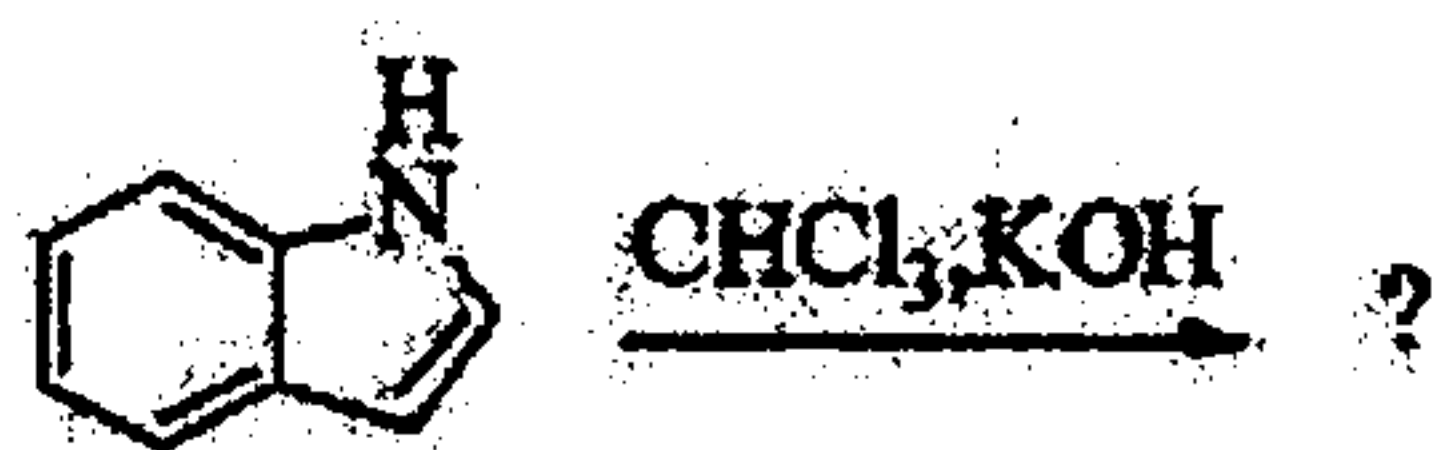


PART – B (4x12 = 48 Marks)
[Essay Answer Type]

- 5 a) Write a short note on planar chirality. 6M
 b) Define S_2 axis of symmetry, plane of symmetry and explain with suitable examples. 6M
 OR
 c) Explain the terms asymmetric transformation and desymmetrisation with relevant examples. 6M
 d) Write about spectral methods for the determination of configuration of E, Z isomers. 6M
- 6 a) Write the products and its configuration of the following reactions with mechanism. 6M



- b) Erythro-2-chloro-3-methylpentane $\xrightarrow[\Delta]{\text{MeO}^\ominus}$? 6M
 OR
 c) How do you determine the reaction mechanism by the following methods? 6M
 i) Chemical trapping
 ii) Cross over experiments
- d) Discuss the orientation in E2-eliminations carried out with a bulky base. 6M
- 7 a) Write all possible conformational isomers of mesobutane-2,3-diol and compare their stability. 6M
 b) What is the use of spectral methods in conformational analysis? Explain. 6M
 OR
 c) State Curtin – Hammett principle and explain with a suitable example. 6M
 d) The (\pm) form of stilbene dichloride undergoes dehydrochlorination on heating with pyridine but not meso stilbene dichloride. Explain. 6M
- 8 a) Explain the following: 10M
 i) Bischler synthesis
 ii) Skraup's synthesis
- b) Complete the following reaction: 2M



OR

- c) State isoprene rule and explain with suitable examples. 6M
 d) formulate the synthesis of camphor. 6M
