

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

Subject: Organic Chemistry
Paper – II: Asymmetric Synthesis, Synthesis Strategies and Heterocyclics

Time : 3 hours

Max. Marks : 80

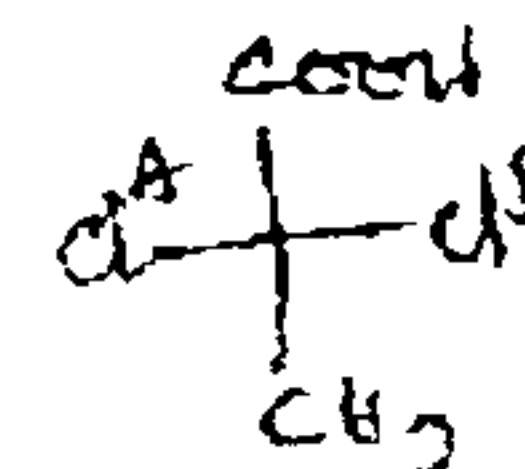
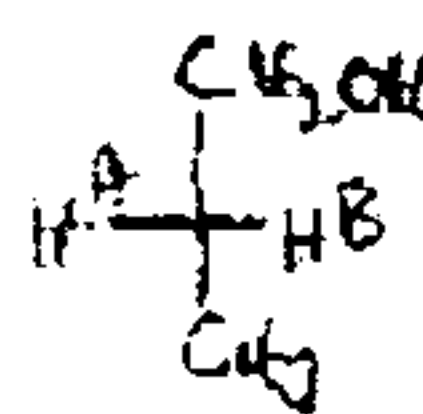
*Note: Answer all questions from Part - A and Part - B.
Each question carries 4 marks in Part - A and 12 marks in Part - B.*

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

- 1 a) Define and explain the following terms giving examples. 4
i) asymmetric synthesis ii) desymmetrisation
b) Explain the term % enantiomeric excess. Give the principle involved in its determination by chiral HPLC. 4
- 2 a) Explain the Prelog's rule with an example. 4
b) What is BINAL-H? Give its synthesis and reactions. 4
- 3 a) Explain the terms synthon and FGI. 4
b) What is a strategic bond? Explain briefly the criteria for disconnection of such bonds. 4
- 4 a) Describe the aromatic character of azoles. 4
b) Describe the synthesis of barbutyric acid. 4

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

- 5 a) What are homomorphous ligands? In the following structures name the labeled atoms (A & B) as Pro-R or Pro-S. 6



- b) Describe the symmetry criteria for stereoselectivity. 6
- OR
- c) Explain the various methods for inducing stereoselectivity. 6
- d) What are stereospecific reactions and stereoselective reactions? Explain with examples. 6