

Code No. 9221

FACULTY OF SCIENCE
M.Sc. II – Semester Examination, April / May 2014

Subject: CHEMISTRY
Paper – II: Organic Chemistry

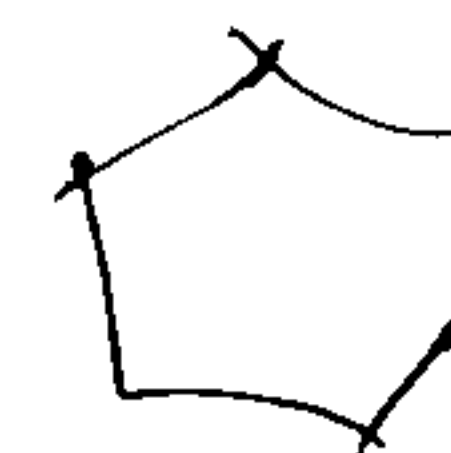
Time: 3 Hours

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) Draw the conformations of 2,3-dibromobutane and explain their stability.
 (b) Draw the conformations of 2-hydroxy-3-amino-butane and comment on their stability.
- 2 (a) Write a note on non-classical carbonium ions.
 (b) What is meant by ambident nucleophiles. Explain with example.
- 3 (a) What are carbenes? How are they generated?
 (b) State and explain the benzilic acid rearrangement with an example.
- 4 (a) Discuss the importance of natural products as drugs with examples.
 (b) Write a note on biogenesis of terpenes.



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

- 5 (a) Explain Klyne-Prelog terminology for conformers and torsion angles.
 (b) Differentiate between conformational diastereomers and conformational enantiomers with examples.
- OR**
- (c) Outline the use of spectral methods in conformational analyses with examples.
 (d) State and explain the Curtin-Hammett principle.
- 6 (a) What are $SN^1(Ar)$ and $SN^2(Ar)$ reactions? Explain their mechanism and importance with suitable examples.
 (b) Explain neighbouring group participation involving oxygen.
- OR**
- (c) State and explain, giving mechanisms, the $SE^1(Ar)$ and $SE^2(Ar)$ reactions.
 (d) Write a note on Von – Richter rearrangement.
- 7 (a) Discuss the Hofmann rearrangement reaction with an example.
 (b) State and explain the Beckmann rearrangement. Give evidence in support of its mechanism.
- OR**
- (c) How carbanions are formed? Explain their importance in organic synthesis taking acetoacetic ester and malonic ester as examples.
 (d) State and explain the Wagner – Meerwein rearrangement. Describe its scope from examples in terpene chemistry.
- 8 (a) What is steam distillation? How it is done? Explain its use in isolation of terpenoids.
 (b) Describe the structure determination of quinine alkaloid.
- OR**
- (c) What is a Soxhlet extractor? Explain its use in isolation of natural products from their