

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. Pharm. – SEMESTER – I • EXAMINATION – WINTER 2013

Subject Code: 910101

Date: 23-12-2013

Subject Name: Advanced Organic Chemistry-I

Time: 10.30 am - 01.30 pm

Total Marks: 80

Instructions:

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is chemical bond? Explain different types of chemical bonds and their properties. 06
- (b) What is hyperconjugation and resonance? Explain their role in the organic compounds. 05
- (c) Discuss the importance of inductive effect, electrostatic effect on reactivity. 05
- Q.2** (a) What is tautomerism ? Discuss in detail about keto-enol tautomerism with suitable example. 06
- (b) Discuss in detail about hydride transfer reaction and Cram's rule with examples. 05
- (c) Explain different types of photochemical reactions with suitable examples. 05
- Q.3** Discuss the reaction and reaction mechanism of the following 06
- (a) Cyclohexanone to caprolactam
- (b) 2,3-Dimethyl-2,3-butanediol to 3,3-dimethyl-2-butanone 05
- (c) Benzamide to aniline 05
- Q.4** (a) What are Y-lides? Explain role and application of Y-lides in organic synthesis. 06
- (b) Write a brief on Nitrogen Y-lides. Discuss their generation and application in chemistry. 05
- (c) Write in details about AAC2 and BAC2 mechanism of hydrolysis of esters. 05
- Q.5** (a) Describe Hoffman and Saytzeff's rule of elimination with suitable examples. 06
- (b) Describe Antimarkovnikov's addition with suitable examples. 05
- (c) Discuss in detail about various factors influencing the reactivity of molecule. 05
- Q.6** (a) Explain nucleophilic substitution reaction in aliphatic system. 06
- (b) Explain influence of neighboring group on nucleophilic substitution 05
- (c) Give detail account of E1 and E2 reaction with suitable example. 05
- Q.7** (a) Explain different reactive intermediates of carbon. How they are generated. 06
- (b) What is free radical? Explain any one free radical reaction 05
- (c) Explain electrophilic substitution reaction in aliphatic system with suitable example. 05
