

GUJARAT TECHNOLOGICAL UNIVERSITY
M. Ph. - SEMESTER-I • EXAMINATION – SUMMER-2016

Subject Code: 910101**Date: 27/05/2016****Subject Name: Advanced Organic Chemistry - I****Time: 10:30 AM to 1:30 PM****Total Marks: 80****Instructions:**

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

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| Q.1 | (a) Write a short note on orbital hybridization and resonance. | 06 |
| | (b) Define electronegativity and hyperconjugation. | 05 |
| | (c) Explain the effect of inductive and electrostatic on chemical reactivity. | 05 |
| Q.2 | (a) Explain nucleophilic substitution reaction in aliphatic system. | 06 |
| | (b) How neighboring group influencing on nucleophilic substitution. | 05 |
| | (c) Discuss generation and reactions of nitrogen ylides. | 05 |
| Q.3 | (a) What is aromaticity? Write a note on aromatic nucleophilic addition reaction. | 06 |
| | (b) Write a note on free radical reactions with its rearrangements. | 05 |
| | (c) Give the differences between SN_1 and SN_2 reactions. | 05 |
| Q.4 | (a) Discuss Hoffman and Saytzeff's rule for elimination reactions. | 06 |
| | (b) How stereochemistry involved in addition reaction. | 05 |
| | (c) Write a note on Pinacol rearrangement reaction. | 05 |
| Q.5 | (a) What are the different reactive forms of Carbon? Discuss the fate of generation and stability of any two forms. | 06 |
| | (b) Define tautomerism. Discuss with suitable examples about influence of it on reactivity. | 05 |
| | (c) Write a note on Cram's rule. | 05 |
| Q.6 | (a) What are ylides. Write a note on the generation and reaction involving phosphorus ylides. | 06 |
| | (b) Write a note on photochemical reactions. | 05 |
| | (c) Write about bond angle and bond length in detail. | 05 |
| Q.7 | (a) Write in details about AAC2 and BAC2 mechanism of hydrolysis of ester. | 06 |
| | (b) Write a short note on Claisen condensation and Hofmann rearrangement. | 05 |
| | (c) Describe antimarkonikov's addition with suitable examples. | 05 |
