

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**M. PHARM. - SEMESTER – I • EXAMINATION – WINTER 2012**

**Subject code: 910101****Date: 09/01/2013****Subject Name: Advance Organic Chemistry-I****Time: 10.30 am - 01.30pm****Total Marks: 80****Instructions:**

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

|             |     |                                                                                                        |    |
|-------------|-----|--------------------------------------------------------------------------------------------------------|----|
| <b>Q.1</b>  | (a) | Write a brief on Nitrogen and Sulphur Y-lide. Discuss their generation and application in chemistry.   | 10 |
|             | (b) | Describe Hoffman and Saytzeff's rule for elimination with suitable examples.                           | 06 |
| <b>Q.2</b>  | (a) | Write a short note on Claisen condensation and Hofmann rearrangement.                                  | 08 |
|             | (b) | What are Rearrangement reactions? Write a note on Pinacol and pinacolone rearrangements.               | 08 |
| <b>Q.3</b>  | (a) | What is antimarkonikov's addition? Discuss with suitable example and mechanism.                        | 06 |
|             | (b) | What is Free Radical Reaction? Discuss rearrangements of free radicals.                                | 05 |
|             | (c) | Write a note on "No Bond resonance".                                                                   | 05 |
| <b>Q.4</b>  | (a) | Enumerate the mechanism for ester hydrolysis. Discuss the mechanism of AAC2 and BAC2.                  | 06 |
|             | (b) | What is beta elimination reaction? Explain the mechanism and orientation for E1cb mechanism.           | 05 |
|             | (c) | Write a short note on Beckman rearrangement with mechanism.                                            | 05 |
| <b>Q.5</b>  | (a) | Write in detail about Orientation and reactivity of aromatic electrophilic substitution in benzene.    | 06 |
|             | (b) | Explain Hydride transfer reaction and Cram's rule with examples.                                       | 05 |
|             | (c) | Write in detail about photoreaction.                                                                   | 05 |
| <b>Q. 6</b> | (a) | What are the different reactive forms of carbon? Discuss the fate of generation and stability of each. | 10 |
|             | (b) | Discuss the importance of inductive effect, electrostatic effect on reactivity.                        | 06 |
| <b>Q.7</b>  |     | Differentiate the following with examples.                                                             | 16 |
|             | (a) | SN <sub>1</sub> and SN <sub>2</sub> .                                                                  |    |
|             | (b) | E <sub>1</sub> and E <sub>2</sub>                                                                      |    |
|             | (c) | Hyperconjugation and Resonance                                                                         |    |