

**GUJARAT TECHNOLOGICAL UNIVERSITY****M.PHARM- SEM-I-EXAMINATION – JULY 2012****Subject code: 910101****Date: 05/07/2012****Subject Name: Advanced Organic Chemistry - I****Time: 02:30 pm – 05:30 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. How carbonyl compounds are converted in to higher alkenes? Give detail mechanism of reaction and application of it. 08  
 b. What are the factors influencing the reactivity of the reactant. Discuss with suitable example. 04  
 c. Write a note on Molecular orbital theory 04
- Q.2. a. How does light act as a source of energy for reaction to occur? Discuss in detail about the different types of chemical reactions carried out using light as a source of energy. Discuss Jablonski diagram. 10  
 b. What is aromaticity ? Discuss about the aromatic compounds without benzene ring. Write a note on aromatic nucleophilic addition reaction. 06
- Q.3. a. Different mechanisms are involved in ester hydrolysis? Describe each with mechanism and suitable example. 10  
 b. Write a note on sulfur ylides. 06
- Q.4. a. Discuss about the factors deriving the strength of the carboxylic acid with suitable examples. How lewis acids are useful in organic synthesis? Discuss with examples. 08  
 b. Discuss about the rational behind rearrangement reaction. Write a note on Transannular rearrangement and Pinacol rearrangement. 08
- Q.5. a. Give following conversion with mechanism 08  
 1. *p*-aminobenzoic acid to *p*-chloro aniline  
 2. Phenol to *p*-hydroxy acetanilide  
 b. Discuss with example Saytzeff's rule and Hofmann's rule of elimination. Write a note on E1cb mechanism. 08
- Q.6. a. What are the different types of nucleophilic substitution reactions? Give detail mechanism of each with factors influencing the reactivity and stereochemistry. Discuss about influence of neighbouring group in nucleophilic substitution 10  
 b. Malonic acid esters are good substrate for the synthesis of substituted mono carboxylic acids – Justify with suitable example and mechanism. 06
- Q.7. a. Define tautomerism. Discuss with suitable examples about influence of it on reactivity. 05  
 b. What is antimarkonikv's addition? Discuss with suitable example and mechanism of reaction. 06  
 c. Write in brief about resonance and hyperconjugation with their influence on reactivity. 05

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