

GUJARAT TECHNOLOGICAL UNIVERSITY**M.Pharm Semester –I Examination Feb. - 2012****Subject code: 910101****Date: 13/02/2012****Subject Name: Advance 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 will be the product form when different structural isomers of pentylbromide individually reacted with different concentrations of (concentrated or dilute) aqueous sodium hydroxide solution? Give reaction mechanism of each reaction with factors influencing reactivity of the reactants. **10**

b. How will you convert bromobenzene to aniline? Give detail mechanism of the reaction. **6**

Q.2. a. What are the different reactive forms of carbon? How are they generated? Discuss about the stability of each form with proper justification. **6**

b. What will be the pattern of hydrolysis of following esters under different conditions (basic or acidic)

Ethyl benzoate, Phenyl acetate, Isopropyl acetate, Ethyl chloroacetate **10**

Q.3. a. Explain following

1. Antiaromaticity 2. Ambident nucleophile 3. Arenium ion 4. Jablonski diagram **8**

b. What are the rationals behind rearrangement in the reaction? Give detail mechanism of the one reactions involving rearrangement of nucleophile and electrophile each. **8**

Q.4. a. Give reaction for following conversion. Give detail mechanism **8**

1. 2-butanone to 3-methyl-2-pentene

2. Toluene to aniline

b. Write a short note on Claisen condensation and Transannular rearrangement **8**

Q.5. a. What will be the product form when different structural isomer of butylbromide is reacted with alcoholic potassium hydroxide solution? Give reaction mechanism of each reaction. Discuss about various factors influencing the reactivity of reactant. **10**

b. Describe Hoffman and Saytzeff's rule for elimination. **6**

Q.6. a. What is antimarkonikov's addition? Discuss with suitable example and mechanism. **6**

b. Arrange following acids in increasing order of strength. Justify your answer. **5**
Cyanoacetic acid, Propionic acid, Acetic acid

c. What is difference between resonance and hyperconjugation? How do they influence the stability and reactivity of molecule? **5**

Q.7. a. How does the light influence the chemical reaction? Which types of reaction are possible under light? Discuss with suitable example. **8**

b. Discuss with suitable example about nucleophilic and electrophilic addition reaction. **8**