

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

## GUJARAT TECHNOLOGICAL UNIVERSITY

M.PHARM- SEM-II-EXAMINATION – JULY 2012

Subject code: 2920101

Date: 06/07/2012

Subject Name: Advanced Organic Chemistry - II

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. Why Green chemistry is a need of present time? What are the different methods and approaches are used in it? Explain each in detail with suitable examples. 10  
b. Write in brief about nanochemistry and ultrasound reaction. 06
- Q.2. a. Define: Retrosynthetic analysis, Synthons and Functional group interconversion 03  
b. Give general guidelines to be followed for retrosynthesis. 03  
c. Derive route of synthesis using disconnection approach for the following  
1. Ciprofloxacin      2. Cetirizine      3. Ibuprofen      10
- Q.3. a. Microwaves are very effective source of energy in organic synthesis – Justify. Discuss its principle, limitation and application with suitable examples. 08  
b. What are different methods used to resolve racemic mixture? 04  
c. Write a note on Sonogashira reaction. 04
- Q.4. Write a note on following 4 x 4  
1. Vilsmeier-Hack reaction  
2. Suzuki Coupling reaction  
3. Pinner reaction  
4. Heck reaction
- Q.5. a. What are the different methods used to make reaction stereoselective? Discuss with suitable example. 04  
b. Enlist organic compounds which are optically active even though they do not contain chiral carbon. Why do they exhibit optical activity? How configuration of these compounds are defined? 08  
c. Write a short note on racemic switches 04
- Q.6. Give reaction with principle for following conversion 4x 4  
a. Acetophenone to Phenyl acetate  
b. Benzoic acid to diphenyl urea  
c. *p*-Chloro benzoic acid to *p*-chlorophenylacetic acid  
d. Benzil to benzilic acid
- Q.7. a. What are conformational isomers? What are different conformational isomers of dimethyl cyclohexane? Which one is more stable? Why? 05  
b. Stereoisomerism plays very important role in new drug development – Justify with suitable examples 05  
c. Give stereoselective synthesis of Nifedipine and Ethambutol 06

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