

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. – SEMESTER – IV • EXAMINATION – WINTER • 2015

Subject Code: 2240004

Date: 07-01-2016

Subject Name: Pharmaceutical Chemistry VI (Organic Chemistry II)

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) Correct if necessary and justify the following statement **06**
a) Electron withdrawing group present at ortho or para position of phenol increases its acidity.
b) Spiran do not contain any chiral carbon though it is optically active.
c) Aldol condensation is base catalyzed reaction.
- (b) What is axial chirality? Explain the stereochemistry of Biphenyls. **05**
(c) What is racemic mixture? Give different methods for its resolution. **05**
- Q.2** (a) Explain the mechanism and stereochemistry of conversion of amide in to amine. **06**
(b) Draw the conformational isomer of cyclohexane and comment on its stability. **05**
(c) Write a short note on Fries rearrangement reaction. **05**
- Q.3** (a) Correct if necessary and justify the following statement. **06**
a) Aromatic character of thiophene is more than pyrrole.
b) Imidazole has higher boiling point as compared to pyrrazole.
c) Furan, thiophene and pyrrole show electrophilic substitution reaction at 2nd and 5th position most prominently.
- (b) Describe the mechanism of Hantzsch pyridine synthesis. **05**
(c) Explain cannizaro and cross cannizaro reaction with examples. **05**
- Q.4** (a) Why nucleophilic aromatic substitution is difficult in benzene? Explain the Benzyne mechanism in detail. **06**
(b) What are α β , unsaturated carbonyl compounds? Write a short note on Michael addition reaction. **05**
(c) What are carboxylic acid derivative? Explain preparation and reaction of any one carboxylic acid derivative. **05**
- Q.5** (a) Comment on the following statement **06**
a) Polar solvents are used in microwave synthesis.
b) Chloroacetic acid is more acidic than acetic acid.
c) Aromatic amines are less basic than ethylamine.
- (b) Explain the mechanism of skrapu quinoline synthesis. **05**
(c) Give reactivity and preparation (any two methods) for imidazole and furan. **05**

- Q. 6**
- (a) Give the principles and application of green chemistry. **06**
 - (b) Why microwave heating is better than conventional heating? Explain its advantage over conventional method of heating with examples. **05**
 - (c) Give the structure of the following; **05**
 - a) Pyrimidine b) Indole c) Oxazole
 - d) Thiazole e) Pyridazine
- Q.7**
- (a) Write a note on Clemmensen reduction. **06**
 - (b) Give the reaction and mechanism of phenol which involve carbene formation as intermediate. **05**
 - (c) What is diazonium salt? Give its preparation and applications. **05**
