

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. - SEMESTER-3 • EXAMINATION – SUMMER -2018

Subject Code: 2230004**Date: 07/05/2018****Subject Name: Pharmaceutical Chemistry-IV (Organic Chemistry - I)****Time: 02:30 PM TO 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) What are intermolecular forces? Comment on types of intermolecular forces with examples. **06**
(b) Explain electro-negativity. Comment polarity of bonds and molecules with examples. **05**
(c) Define bonding and anti-bonding orbital's and explain them in detail. **05**
- Q.2** (a) Give reasons for acceptance of Kekules structure of benzene. **06**
(b) What are 1°, 2° & 3° hydrogen atoms? Comment on the ease of abstraction of each type of hydrogen atom. Support your answer with suitable reactions. **05**
(c) What are nitrenes and carbenes? Comment on generation and reactions of different types of carbenes. **05**
- Q.3** (a) Classify alcohols with examples. Explain Lucas Test. **06**
(b) Enlist various reactions for preparation of alcohols. Comment on oxymercuration-demercuration reaction for preparation of alcohols. **05**
(c) Classify dienes and comment on stability of allyl radical. **05**
- Q.4** (a) Give three methods for preparation of alkanes with example. **06**
(b) What is conformation? Explain conformation of n-butane with potential energy diagram. **05**
(c) Explain Saytzeffs rule and Markonikov's rule with suitable examples. **05**
- Q.5** (a) Differentiate between E1 and E2 mechanism with examples. **06**
(b) Comment on the following: **05**
i. Water is liquid while hydrogen sulphide is gas at room temperature
ii. Tri-chloroacetic acid is more acidic than acetic acid.
(c) What are geometric isomers? Comment on orientation of double bond in E1 reaction with suitable example. **05**
- Q. 6** (a) What are nucleophilic substitution reactions? Explain mechanism and stereochemistry of SN2 reactions. **06**
(b) What are alkynes? Give any four chemical reactions of alkynes with examples. **05**
(c) Comment on the following: **05**
i. Pi bonds are weaker than sigma bonds.
ii. Length of carbon-carbon triple bond is smaller than double bond.
- Q.7** (a) Give structure and IUPAC nomenclature of the following: **06**
Allyl alcohol, Isopropyl chloride, Dimethylacetylene, Isobutylene.
(b) Explain why primary alkyl halides follow SN2 mechanism of reaction. **05**
(c) Comment in detail on utility of Grignard reactions in organic chemistry. **05**
