Seat No.: _____ Enrolment No._____

# GUJARAT TECHNOLOGICAL UNIVERSITY

**B. Pharm. – SEMESTER – III • EXAMINATION – WINTER • 2015**

**Subject Code: 230003 Date: 13-01-2016**

**Subject Name: Pharmaceutical Chemistry - III**

**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.**

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|---|---|---|---|
| **Q.1** | (a) | Explain following terms.<br>i) Steric effect ii) Homolysis<br>iii) Geometrical isomers iv) Nucleophile<br>v) Conformation vi) Inductive effect | **06** |
| | (b) | Define hybridization. Explain $SP^2$ hybridization with examples. | **05** |
| | (c) | Write a note on Diels-Alder reaction. | **05** |
| **Q.2** | (a) | Write a note on Markonikov's rule and Ozonolysis. | **06** |
| | (b) | Differentiate SN1 and SN2 reactions. | **05** |
| | (c) | Give methods for preparation of Alkanes. | **05** |
| **Q.3** | (a) | Explain Aldol condensation. | **06** |
| | (b) | Write a note on Sigmatropic reactions. | **05** |
| | (c) | Explain Kjeldahls method for nitrogen estimation. | **05** |
| **Q.4** | (a) | Explain differences between E1 and E2 mechanisam with examples. | **06** |
| | (b) | Write a note on Preparation and use of Grignard reagent. | **05** |
| | (c) | Give general methods for preparation of Alkyl halides. | **05** |
| **Q.5** | (a) | Explain Hydrogen bonding. | **06** |
| | (b) | Write a note on Molecular orbital theory. | **05** |
| | (c) | Write a note on Carbocations and Carboanions. | **05** |
| **Q. 6** | (a) | Give general structure, properties and reactions of Dienes. | **06** |
| | (b) | Give structural formula of following compounds.<br>i) Vinylchloride iii) 2-ethoxyethanol<br>ii) 2,2,4-trimethylpentane iv) 1-methoxy-2-propanol<br>v) 2-methyl-2-butene | **05** |
| | (c) | Give brief note on chemistry, preparation and properties of alcohols. | **05** |
| **Q.7** | (a) | Give general methods for preparation of alkyne and alkene. | **06** |
| | (b) | Explain bonding and anti-bonding orbitals in detail. | **05** |
| | (c) | Discuss Intermolecular and Intramolecular forces. | **05** |

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