

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. – SEMESTER – III • EXAMINATION – SUMMER • 2015

Subject Code: 2230004**Date: 12-06-2015****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.

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|-------------|-----|--|-----------|
| Q.1 | (a) | What are difference between resonance and hyperconjugation? What are their implications on various properties of organic compound? | 06 |
| | (b) | Classify intra-molecular forces and explain Bond dissociation energy. | 05 |
| | (c) | Write a note on hydrogen bonding. | 05 |
| Q.2 | (a) | Write note on Molecular orbital theory. | 06 |
| | (b) | Explain bonding and antibonding orbitals. | 05 |
| | (c) | Discuss quantitative analysis of Nitrogen element. | 05 |
| Q.3 | (a) | Write a note on determination of molecular weight of volatile substances. | 06 |
| | (b) | Define hybridization? Explain sp^2 hybridization with examples. | 05 |
| | (c) | Explain effect of neighbouring group on chemical reaction. | 05 |
| Q.4 | (a) | Write note on Carbocations and discuss its stability with examples. | 06 |
| | (b) | Explain the reactions involving free radical as intermediate. | 05 |
| | (c) | How carbenes are generated? Discuss about their stability and reactivity with suitable example. | 05 |
| Q.5 | (a) | Write note on reaction of dienes. | 06 |
| | (b) | List out reactions of alkyl halides and explain carbylamines reaction. | 05 |
| | (c) | Explain preparation and reaction of Grignard reagent. | 05 |
| Q. 6 | (a) | General methods of preparations of Alcohols. | 06 |
| | (b) | General chemical reactions of Alkanes. | 05 |
| | (c) | Write a note on Williamson's synthesis of ether. | 05 |
| Q.7 | (a) | Give any three methods of preparations of Naphthalene. | 06 |
| | (b) | Explain the role of reagents. | 05 |
| | | (i) $FeCl_3$ in halogenation of benzene | |
| | | (ii) H_2SO_4 in nitration of benzene | |
| | (c) | Explain Huckel rule in detail. | 05 |
