

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM – SEMESTER – 3- EXAMINATION –WINTER - 2018

Subject Code: 2230004**Date: 12/12/2018****Subject Name: Pharmaceutical Chemistry-IV (Organic Chemistry - I)****Time: 10:30 AM TO 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) | Write a note on determination of molecular weight of volatile substances. | 06 |
| | (b) | Discuss bonding and antibonding orbitals in details. | 05 |
| | (c) | Define carbocation. Discuss the structure and reactions of carbocations | 05 |
| Q.2 | (a) | Explain the reactions involving free radical as intermediate. | 06 |
| | (b) | State and explain : Saytzeff's rule, Antimarcovnikov addition | 05 |
| | (c) | Give the preparations and reactions of carbenes. | 05 |
| Q.3 | (a) | Give structural formula of the following compounds. | 06 |
| | | 1) 2,3- dimethylpentane | |
| | | 2) 2,3-dimethyl-3-hexene | |
| | | 3) 2,2,6,6,7- Pentametyl octane | |
| | | 4) 4-methyl heptane | |
| | | 5) 3-ethyl -2,4-dimethyl pentane | |
| | | 6) 3-methyl hexane | |
| | (b) | Write a note on Diels Alder reactions. | 05 |
| | (c) | Define hybridization? Explain SP ³ hybridization with examples. | 05 |
| Q.4 | (a) | Correct if necessary and justify the following statements. | 06 |
| | | 1) Cyloheptatrienylcation is aromatic according to Huckle's rule. | |
| | | 2) Dehydration of tertiary alcohol is faster than primary alcohol. | |
| | | 3)Alcohols are having higher boiling point than ether. | |
| | | 4) Benzene undergoes electrophilic substitution reaction. | |
| | (b) | Differentiate between E2 and E1 mechanism of elimination with example | 05 |
| | (c) | Explain the principle of Dumas method and Kjeldahl's method in detail. | 05 |
| Q.5 | (a) | Give importance of Grignard reagent in various reactions. | 06 |
| | (b) | Write detail short notes on Huckel Rule for aromaticity. | 05 |
| | (c) | Write a note on hydrogen bonding. | 05 |
| Q. 6 | (a) | Write a note on Molecular orbital theory | 06 |
| | (b) | Give the preparation of benzene and anthracene. | 05 |
| | (c) | Describe the importance of resonance and hyperconjugation in stability and reactivity of molecules. | 05 |
| Q.7 | (a) | Write short notes on Haworth synthesis of naphthalene in details. | 06 |
| | (b) | Explain the mechanism of halogenation for alkane. | 05 |
| | (c) | Discuss detail mechanisms of aldol condensation | 05 |
