

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM - SEMESTER- 3 EXAMINATION – SUMMER -2020

Subject Code: 2230004**Date: 29-10-2020****Subject Name: Pharmaceutical Chemistry-IV (Organic Chemistry – I)****Time: 2:30 PM TO 5:30 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) Define hybridization. Explain hybrid orbitals with examples. | 06 |
| | (b) Write a note on Molecular Orbital Theory. Differentiate bonding and antibonding orbitals. | 05 |
| | (c) Explain electronegativity and polarity of bonds. | 05 |
| Q.2 | (a) Comment on following:
(i) Trichloroacetic acid is less acidic than acetic acid.
(ii) Cyclopentadiene is aromatic.
(iii) Dehydration of tertiary alcohol is faster than primary alcohol. | 06 |
| | (b) Write a note on hydrogen bond. | 05 |
| | (c) Write a note on hyperconjugation and resonance. | 05 |
| Q.3 | (a) Explain in brief factors affecting organic reactions. | 06 |
| | (b) Give applications of carbenes and nitrenes. | 05 |
| | (c) Write note on reaction of dienes. | 05 |
| Q.4 | (a) Explain preparation and reaction of Grignard reagent. | 06 |
| | (b) Explain synthesis & reaction mechanism on Aldol Condensation. | 05 |
| | (c) General methods of preparations of Alkyl halides. | 05 |
| Q.5 | (a) Differentiate: SN1 and SN2 reactions. | 06 |
| | (b) Explain Hydroboration – oxidation reaction of alkene with detailed mechanism. | 05 |
| | (c) General methods of preparations of Alcohols. | 05 |
| Q. 6 | (a) Differentiate: E2 and E1 mechanism of elimination. | 06 |
| | (b) Give any three methods of preparations of Naphthalene. | 05 |
| | (c) Write a note on Williamson's synthesis of ether. | 05 |
| Q.7 | (a) Write reaction with mechanism of nitration of benzene. | 06 |
| | (b) What are Friedel craft reactions? Enlist its limitations. | 05 |
| | (c) Nitration of nitrobenzene yield m-dinitrobenzene: Justify. | 05 |
