

GUJARAT TECHNOLOGICAL UNIVERSITY
B.Ph. - SEMESTER- III EXAMINATION – WINTER-2021

Subject Code: 2230004**Date: 17/02/2022****Subject Name: PHARM 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) Explain bonding and antibonding orbitals. | 06 |
| | (b) Write a note on Resonance and Hyperconjugation. | 05 |
| | (c) Write the effect of Intramolecular and Intermolecular Forces on properties of organic molecules. | 05 |
| Q.2 | (a) Comment on following: | 06 |
| | (i) Pi bond is weaker than sigma bond. | |
| | (ii) Naphthalene is aromatic. | |
| | (iii) Ammonia is more basic than aniline. | |
| | (b) Write a note on polarity of bonds and polarity of molecules. | 05 |
| | (c) Give structure of following compounds | 05 |
| | (i) 2-methyl pentane | |
| | (ii) 4-chloro 2-nitro aniline | |
| | (iii) 2-hydroxy 3-bromo hexanal | |
| | (iv) 4-fluoro 2-heptene | |
| | (v) Isopropanol | |
| Q.3 | (a) Explain inductive and mesomeric effect on organic reactions. | 06 |
| | (b) Give formation and stability of carbocation. | 05 |
| | (c) Write preparations and properties of dienes. | 05 |
| Q.4 | (a) Differentiate: SN1 and SN2 reactions. | 06 |
| | (b) Write a note on free radical reactions. | 05 |
| | (c) General methods of preparations of Alkyl halides. | 05 |
| Q.5 | (a) State and explain: saytzeff's rule, antimarcovnikov addition. | 06 |
| | (b) Explain Hydroboration – oxidation reaction of alkene with detailed mechanism. | 05 |
| | (c) Write a note on directive effect on monosubstituted benzene. | 05 |
| Q. 6 | (a) Write any two preparations and physical properties of Alcohols. | 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 Friedel craft alkylation of benzene. | 06 |
| | (b) Write in detail any one method of nitrogen determination. | 05 |
| | (c) What is molecular weight? Explain any two methods for determination of molecular weight. | 05 |
