

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**Pharm D – 1<sup>st</sup> Year • EXAMINATION – SUMMER - 2018**

**Subject Code: 818804****Date: 25/05/2018****Subject Name: Pharmaceutical Organic Chemistry****Time: 10:30 AM TO 1:30 PM****Total Marks: 70****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

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|------------|---|-----------|
| <b>Q.1</b> | (a) Classify Intramolecular Forces and Explain Bond dissociation Energy.                                      | <b>06</b> |
|            | (b) Explain Following Terms   | <b>04</b> |
|            | 1. Heterolysis  |           |
|            | 2. Homolysis  |           |
|            | 3. Dipole-Dipole interaction  |           |
|            | 4. Polarity of bond   |           |
|            | (c) Explain the reactivity and stability of free radical.   | <b>04</b> |
| <b>Q.2</b> | (a) Discuss the mechanism and stereochemistry of SN1 AND SN2 reaction.  | <b>06</b> |
|            | (b) Write a note on Carbocations with mechanism.  | <b>04</b> |
|            | (c) Write a note on: Methods of preparation of cycloalkanes.  | <b>04</b> |
| <b>Q.3</b> | (a) Explain the influence of activating and deactivating groups on the electrophilic substitution of benzene. | <b>06</b> |
|            | (b) Explain oxidation-reduction reaction with examples.   | <b>04</b> |
|            | (c) Give chemical structure and IUPAC name of following   | <b>04</b> |
|            | 2,2,4-Trimethylpentane, 1-methoxy-2-propanol, 2-Nitrophenol, Vinyl bromide                                    |           |
| <b>Q.4</b> | (a) Give the preparation, test of purity, assay and medicinal use of  | <b>06</b> |
|            | 1. chlorbutol   |           |
|            | 2. Sodium lauryl sulphate.  |           |
|            | (b) Differentiate E1 and E2 reaction.   | <b>04</b> |
|            | (c) Explain the halohydrin formation.   | <b>04</b> |
| <b>Q.5</b> | (a) Explain the following:  | <b>06</b> |
|            | 1. aldol condensation   |           |
|            | 2. Sandmeyer's reaction   |           |
|            | (b) Explain the cycloaddition reaction.   | <b>04</b> |
|            | (c) Explain the resonance and hyper-conjugation.  | <b>04</b> |
| <b>Q.6</b> | (a) Comment on the following  | <b>06</b> |
|            | 1. Meta nitro benzoic acid is more acidic than Para nitro benzoic Acid  |           |
|            | 2. Pyridine is aromatic   |           |
|            | 3. All Lowrie-Bronsted acids and bases can be Lewis acids and bases   |           |
|            | but all Lewis acids and bases cannot be Lowrie-Bronsted acids and bases                                       |           |
|            | (b) Write detail note on Nucleophilic substitution bimolecular.   | <b>04</b> |
|            | (c) Explain Isomerism in organic compound   | <b>04</b> |
| <b>Q.7</b> | (a) Explain the Perkin condensation and Kolbe reaction.   | <b>06</b> |
|            | (b) Write free radical halogenations reaction of alkenes.   | <b>04</b> |
|            | (c) Write a note on Markownikov's rule in detail.   | <b>04</b> |