

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER– III (New) EXAMINATION – WINTER 2019****Subject Code: 3130407****Date: 3/12/2019****Subject Name: Chemistry for Biotechnology****Time: 02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**

- Q.1** (a) Define the following terms with suitable examples. **03**  
(1) Hydrocarbon  
(2) Valency  
(3) Free Radical  
(b) What are Reactive Intermediates? **04**  
(c) What are Dyes? Classify giving examples. **07**
- Q.2** (a) Define the following terms with suitable examples. **03**  
(1) Carbocation  
(2) Carbanion  
(3) Carbens  
(b) What is Fission Reaction? Explain giving examples. **04**  
(c) What are organic reactions? Explain in detail Electrophillic aromatic substitution reaction. **07**
- OR**
- (c) What are standard solution? Classify giving examples. **07**
- Q.3** (a) Define the following terms with suitable examples. **03**  
(1) Inductive Effect  
(2) Hyperconjugation  
(3) Nitrine  
(b) Mention different types of carboxylic acids in detail. **04**  
(c) What are unit processes? Name few. Give symbolic representations of explaining flow sheet. **07**
- OR**
- Q.3** (a) Define the following terms with suitable examples. **03**  
(1) Nucleophile  
(2) Electrophile  
(3) Esterification  
(b) How will you manufacture Acetic Acid? **04**  
(c) Mention various derivatives of Carboxylic Acid. **07**
- Q.4** (a) Define the following terms with suitable examples. **03**  
(1) Isomers  
(2) Chirality  
(3) Racemic Mixture  
(b) Write a short note on – Geometric Isomerism with examples. **04**  
(c) What is optical activity? Explain Enantiomers and Diastereoisomers. **07**
- OR**
- Q.4** (a) Define the following terms with suitable examples. **03**  
(1) Drugs  
(2) Analgesics  
(3) Antipyretics drug

- Q.5** (b) Differentiate between Enantiomerism and Diastereomerism. **04**  
(c) Explain various steps of Drug preparations in detail. **07**
- Q.5** (a) Define the following terms with suitable examples. **03**  
(1) Dyes  
(2) Colours  
(3) Pigment
- (b) Write a short note on – Chromophore-Auxochrome Theory of Colours. **04**  
(c) Explain Chromatographic analysis technique in detail. **07**
- OR
- Q.5** (a) Give full forms of – **03**  
(1) GC  
(2) TLC  
(3) UV
- (b) Write a short note on - Lambert-Beer's Law. **04**  
(c) Explain different Spectroscopic techniques in detail with illustrations. **07**

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