

GUJARAT TECHNOLOGICAL UNIVERSITY**B.Ph - Semester-2• Examination – WINTER -2023****Subject Code: BP202TP****Date:19/01/2024****Subject Name: Pharmaceutical 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.

- Q.1**
- (a) Write detail mechanism of actions of Electrophonic addition reactions. **06**
- (b) Write a detail note on halogenations of alkanes. **05**
- (c) 1. Comments: Ammonia is more basic than aliphatic amine. **05**
2. Comments: Trichloroacetic acid is more acidic than acetic acid.
- Q.2**
- (a) Define structural isomerism. Draw all possible structural isomer pairs of C₄H₈O. **06**
- (b) Classify dienes. Discuss about its stability **05**
- (c) Write detailed mechanism of reaction in which product obtained was β-Hydroxy aldehyde. **05**
- Q.3**
- (a) Write short notes on Diels Alder reaction in detail. **06**
- (b) Give brief account on acidity of carboxylic acids. **05**
- (c) Write rearrangement of carbocations with at least one example of hydride, Phenyl shift. **05**
- Q.4**
- (a) Differentiate between E1 and E2 mechanism. **06**
- (b) Explain mechanism and kinetics of SN1 reactions. **05**
- (c) Write mechanism of reaction differentiate acetaldehyde and formaldehyde. **05**
- Q.5**
- (a) Define: Ozonolysis, Markovnikoff's rule, Peroxide effect, Saytzeff's rule, Metamerism **06**
- (b) What do you mean by Markownikoff's orientation? Explain with examples **05**
- (c) Draw structures of Tartaric acid, Chloral hydrate, Vanillin, Salicylic acid, Cinnamaldehyde **05**
- Q. 6**
- (a) Draw structure of Ethylene dichloride, Allylic iodide, Benzyl alcohol, Ethylidine bromide. Acetylene, Propylene glycol **06**
- (b) Give IUPAC names of following **05**
- $$\begin{array}{c} \text{H}_3\text{C}-\text{CH}-\text{CH}_2-\text{CH}_2-\text{OH} \\ | \\ \text{NO}_2 \end{array} \quad \begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{CH}-\text{CH}-\text{CH}_2-\text{CH}_3 \\ | \quad | \\ \text{CH}_3 \quad \text{COOH} \end{array}$$

$$\begin{array}{c} \text{H}_3\text{C}-\text{CH}=\text{CH}-\text{CH}-\text{CH}_2-\text{COOH} \\ | \\ \text{NO}_2 \end{array} \quad \begin{array}{c} \text{CH}_3-\text{C}-\text{CH}_2-\text{OH} \\ | \quad | \\ \text{NH}_2 \quad \text{NH}_2 \end{array} \quad \begin{array}{c} \diagup \quad \diagdown \\ \text{C}=\text{C} \\ \diagdown \quad \diagup \end{array}$$
- (c) Write reaction mechanisms of alkenes with bromine in presence of hydrogen peroxide. **05**
- Q.7**
- (a) Define hybridization? Explain SP² hybridization with examples. **06**
- (b) Write detailed mechanism of Nucleophilic addition reaction. Write reactions have products as cyanohydrins and Ketal. **05**
- (c) Explain primary benzylic carbonations are more stable than primary allylic carbonations. **05**