

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM - SEMESTER-II • EXAMINATION – WINTER- 2022

Subject Code: BP202TP**Date:16/02/2023****Subject Name: Pharmaceutical organic chemistry-I****Time: 02:30pm to 05:30pm****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) Write a reaction with mechanism:
1) Aldol condensation
2) Perkin condensation | 06 |
| | (b) General methods of preparations of Alcohols. | 05 |
| | (c) Classify dienes. Which one is more stable? Why? | 05 |
| Q.2 | (a) Give two methods for synthesis of alkyl halides and alkene. | 06 |
| | (b) Define hybridization? Explain sp^2 hybridization with examples. | 05 |
| | (c) Define: Ozonolysis, Markovnikoff's rule, Peroxide effect, Saytzeff's rule, Metamerism | 05 |
| Q.3 | (a) Give factors affecting SN^1 and SN^2 reactions. | 06 |
| | (b) Explain the structures and uses of following compounds:
1) Acetic acid 4) Chloral hydrate
2) Benzyl alcohol 5) Dichloromethane
3) Hexamine | 05 |
| | (c) Explain Stereochemistry and rearrangements of carbocations in substitution reaction in details. | 05 |
| Q.4 | (a) Give reactions of carboxylic acids. | 06 |
| | (b) Differentiate between $E1$ and $E2$ mechanism. | 05 |
| | (c) Discuss about basicity of aliphatic amines and its qualitative tests. | 05 |
| Q.5 | (a) Discuss in detail about Grignard reaction for the synthesis of Alkanes and Alcohols. | 06 |
| | (b) Explain the reactions involving free radical as intermediate. | 05 |
| | (c) Explain the structures and uses of following compounds:
1) Amphetamine 4) Tartaric acid
2) Cinnamaldehyde 5) Iodoform
3) Vanilin | 05 |
| Q.6 | (a) Write a note on structural isomerism. | 06 |
| | (b) Write short notes on Diels Alder reaction in detail. | 05 |
| | (c) Explain Cannizaro and Cross Cannizaro reaction with examples. | 05 |
| Q.7 | (a) Explain: Oxymercuration- demercuration and Hydroboration-oxidation reaction with mechanism. | 06 |
| | (b) Give structural formula of the following compounds:
1) 2, 3 diethyl-4-pentane
2) Vinyl chloride
3) Benzyl benzoate
4) Isoheptane
5) 2, bromo- 3-chloro- 1- hexane | 05 |
| | (c) Write brief note on Hofmann degradation of amides. | 05 |