Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.Ph. - SEMESTER–III • EXAMINATION – WINTER -2023

Subject Code:BP301TP Date: 23/01/2024

Subject Name: Pharmaceutical Organic Chemistry-II

Time: 10:30 AM to 1:30 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)**	What do you mean by electrophilic aromatic substitution reaction? Write in detail about Friedel crafts alkylation reaction with its mechanism. Write its limitations.	**06**
	(b)	Write about nitration reaction of benzene with its mechanism.	**05**
	(c)	Derive structure of benzene by analytical, synthetic and other evidences.	**05**
Q.2	**(a)**	Write about Haworth synthesis of Naphthalene and Anthracene with name of all intermediates. (Discussion for the reactions are not necessary)	**06**
	(b)	Write three reactions of naphthalene and anthracene.	**05**
	(c)	Explain in detail about Huckele's rule of aromaticity with suitable examples.	**05**
Q.3	**(a)**	Write conversions (Number of steps as per student's choice): i). Phenol from Aniline ii). p-Nitrophenol from Chlorobenzene	**06**
	(b)	Write a detailed note on effects of substituents on acidity of aromatic carboxylic acids.	**05**
	(c)	Write a detailed note on effects of substituents on basicity of aromatic amines.	**05**
Q.4	**(a)**	Make a detailed note on following reactions: i). Dow process ii). Riemer-Tiemann reaction	**06**
	(b)	Write qualitative tests of phenol.	**05**
	(c)	i). Write in detail about synthesis of phenol by cumene process (Discussion is not necessary). ii). Write Fries rearrangement reaction (Discussion is not necessary).	**05**
Q.5	**(a)**	Write diazotization reaction. Give synthetic uses of aryl diazonium salts.	**06**
	(b)	Write three preparations and three reactions of carboxylic acids.	**05**
	(c)	Write structure and uses of: i). Diphenylmethane ii). Phenol iii). Cresol iv). DDT v). Saccharin	**05**
Q. 6	**(a)**	Write about significance and principle involved in: i). RM value ii). Saponification value iii). Iodine value	**06**
	(b)	Make a detailed note on reactions of fatty acids.	**05**
	(c)	Explain in detail about Rancidity.	**05**
Q.7	**(a)**	What do you mean by cycloalkanes? Give detail note on Bayer's strain theory of cycloalkanes.	**06**
	(b)	Write reactions of cyclopropane and cyclobutane.	**05**
	(c)	Write in detail about Sachse Mohr's theory of cycloalkane.	**05**

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