

GUJARAT TECHNOLOGICAL UNIVERSITY
B.Ph. - SEMESTER-III • EXAMINATION – SUMMER -2022

Subject Code: BP301TP**Date:01/09/2022****Subject Name: Pharmaceutical Organic Chemistry II****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) | Explain the general mechanism of electrophilic aromatic substitution in detail. | 06 |
| | (b) | Explain the orientation of nitrobenzene and phenol towards electrophilic substitution reaction giving reactions. | 05 |
| | (c) | Write and explain Huckel's rule for aromaticity with examples. | 05 |
| Q.2 | (a) | Justify the below statements. | 06 |
| | | i) Even though benzene is having three double bond do not undergo addition reaction | |
| | | ii) Aryl halide or vinyl halide do not show Friedel Craft alkylation reaction. | |
| | (b) | Give structure and uses of DDT, Saccharin, and BHC. | 05 |
| | (c) | What are the limitations of Friedel Craft alkylation explain with suitable examples. | 05 |
| Q.3 | (a) | What is Bayer's strain theory? Explain it and also discuss its limitations. | 06 |
| | (b) | Which theory explains the stability of cyclohexane? Draw all the possible conformer of cyclohexane and comment on its stability. | 05 |
| | (c) | Write any two reactions of cyclopropane and cyclobutane. | 05 |
| Q.4 | (a) | Explain, Haworth synthesis of naphthalene in detail. | 06 |
| | (b) | Comment on the given below statements. | 05 |
| | | i) Nitration of naphthalene gives 1-Nitronaphthalene.
ii) Para nitro phenol is less acidic than phenol | |
| | (c) | Write structure and medicinal uses of Phenanthrene, Diphenylmethane and Triphenylmethane | 05 |
| Q.5 | (a) | Define the following and give its significance; | 06 |
| | | i) Acid value
ii) Iodine value
iii) Reichert Meissl (RM) value | |
| | (b) | Give the reactions of Fatty acid. | 05 |
| | (c) | Write the general method to prepare benzene diazonium salt and explain its synthetic applications. | 05 |
| Q.6 | (a) | Explain the effect of substituents on acidity of benzoic acid with suitable examples. | 06 |
| | (b) | Give structure and uses of phenol, cresols, and naphthols. | 05 |
| | (c) | Explain about qualitative tests of phenols. | 05 |
| Q.7 | (a) | Explain about Dow process and Cumene process to synthesize phenol. | 06 |
| | (b) | Comment on the basicity of ethyl amine, ammonia, aniline and pyrrole. | 05 |
| | (c) | Write any two methods for preparation of aromatic amines. | 05 |