

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm - SEMESTER-IV • EXAMINATION – SUMMER-2018

Subject Code: 240003

Date: 21/05/2018

Subject Name: Pharmaceutical Chemistry-IV

Time: 10:30AM TO 01:30PM

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 Friedal Craft's alkylation with reaction and mechanism with its limitation. | 06 |
| | (b) Give any TWO method of preparation and TWO chemical reaction of Phenol. | 05 |
| | (c) What is resolution? List the methods of resolution and explain any two methods of racemic modifications. | 05 |
| Q.2 | (a) What are phenols? How they differ from alcohols? Write a reaction mechanism of Reimer-Tiemann reaction. | 06 |
| | (b) Explain briefly following terms with examples:
(i) Aromaticity (ii) Electrophile (iii) Nucleophile (iv) Dienophiles (v) Arenes | 05 |
| | (c) Explain reaction and mechanism of Reimer-Tiemann Reaction. | 05 |
| Q.3 | (a) Define conformation. Discuss the stability and potential energy changes of conformations of n-Butane. | 06 |
| | (b) What is Huckel rule? Write examples of two compounds that follow this rule. | 05 |
| | (c) Write a note on Green chemistry. | 05 |
| Q.4 | (a) Correct, if necessary and answer each of the following statements:
i) Ammonia is more basic than Aniline.
ii) Benzene easily undergoes electrophilic substitution only.
iii) Nucleophilic addition reaction is common for carboxylic acid. | 06 |
| | (b) Explain benzyne mechanism. | 05 |
| | (c) What is polynuclear compound and explain its aromaticity. | 05 |
| Q.5 | (a) Give reason.
i) Halogens are ortho-para director in electrophilic substitution reaction of benzene.
ii) Ketones are giving positive Tollen's test.
iii) Only mono substituted benzene undergoes nucleophilic aromatic substitution reaction. | 06 |
| | (b) Write a note on aldol Condensation and Cannizzaro reaction. | 05 |

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| | (c) | Write a note on Hoffmann Degradation of Amine. | 05 |
| Q.6 | (a) | Define the following terms with two examples for each.
i) Chirality ii) Optical activity iii) α - β unsaturated carbonyl compounds | 06 |
| | (b) | Define Nucleophilic aromatic substitution reaction? Justify with reaction and mechanism. | 05 |
| | (c) | Explain the sequences rule to assign conformation. Draw the possible stereoisomer of 2,3-dichlorohexane. | 05 |
| Q.7 | (a) | Discuss various preparation of carboxylic acid. | 06 |
| | (b) | Write a note on Biphenyls and Allens. | 05 |
| | (c) | What is conjugated system? Explain the michael addition reaction. | 05 |
