

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM – SEMESTER – 4- EXAMINATION – WINTER - 2018

Subject Code: 2240004

Date: 10/12/2018

Subject Name: Pharmaceutical Chemistry - VI (Organic Chemistry - II)

Time: 02:30 PM TO 05:30 PM

Total Marks: 80

Instructions:

- 1. Attempt any five questions.**
- 2. Make Suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**

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|-------------|---|-----------|
| Q.1 | (a) Explain the following synthesis with reaction mechanism.
1. Fischer's indole synthesis, 2. Skraup Quinoline synthesis. | 06 |
| | (b) Define stereoselective and stereospecific reactions. Explain with suitable examples. | 05 |
| | (c) Enumerate different derivatives of carboxylic acids. How are they prepared from carboxylic acids? | 05 |
| Q.2 | (a) Comment on following.
1. Pyridine is less basic than aliphatic amines.
2. Thiophene is more basic than furan.
3. Trichloroacetic acid is more acidic than acetic acid. | 06 |
| | (b) Explain Hell Wolhard Zelinsky reaction with mechanism. | 05 |
| | (c) Write a note on Riemer Tiemann reaction. | 05 |
| Q.3 | (a) Explain following terms giving suitable examples.
1. Configuration, 2. Chiral centre, 3. Mesomer,
4. Resolution, 5. Optical rotation, 6. Geometric isomers | 06 |
| | (b) How is phenol prepared? Give any two methods. | 05 |
| | (c) Write a note on conformational isomers of cyclohexane. | 05 |
| Q.4 | (a) Give 1 preparation and 1 reaction of Thiophene, pyrrole, pyridine. | 06 |
| | (b) Enumerate methods for preparation of carboxylic acid. Explain any two methods from them. | 05 |
| | (c) What is diazonium salt? Give their preparation and reactions. | 05 |
| Q.5 | (a) Give structure of following compounds.
1. Pyrazine 2. Furan 3. Isooxazole
4. Pyrimidine 5. Indole 6. Pyridine | 06 |
| | (b) Define nucleophilic aromatic substitution reaction. Explain benzyne mechanism. | 05 |
| | (c) Write about application of nanochemistry in pharmacy. | 05 |
| Q. 6 | (a) Define green chemistry. Explain the principles of green chemistry with suitable examples. | 06 |
| | (b) Write reaction and mechanism of aldol condensation. | 05 |
| | (c) Give structure of following compounds.
1. Phenyl acetic acid, 2. para toluidine, 3. Benzoyl chloride
4. Malonic acid, 5. Phthalic anhydride. | 05 |
| Q.7 | (a) Describe the principle of microwave synthesis. Explain applications of microwave synthesis in chemistry. | 06 |
| | (b) Define α, β -unsaturated carbonyl compounds. Explain Michael addition reaction in detail. | 05 |
| | (c) Explain Hoffmann degradation of amide in detail. | 05 |
