

GUJARAT TECHNOLOGICAL UNIVERSITY
M.PHARM - SEMESTER-1 EXAMINATION – SUMMER-2019

Subject Code: MPC102T**Date: 30/05/2019****Subject Name: Advanced Organic Chemistry -I****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.

- Q.1** (a) Write the name of heterocyclic rings in drugs: (i) Metronidazole (ii) Alprazolam (iii) Chloroquine (iv) Chlorpromazine (v) Theophylline (vi) Trimethoprim **06**
- (b) What is synthon approach and give your idea about C-X disconnections & C-C disconnections. **05**
- (c) Write synthesis of trimethoprim and sulfamerazine. **05**
- Q.2** (a) Define: (i) Carbocations (ii) Carbanions (iii) Free radicals (iv) Carbenes (v) Nitrenes (vi) Acetal. **06**
- (b) Explain retrosynthesis applications and Functional group interconversion and addition. **05**
- (c) Differentiate between: (i) SN1 and SN2 (ii) E1 and E2. **05**
- Q.3** (a) Explain the reactions: (i) Mannich reaction (ii) Vilsmeier-Haack Reaction (iii) Sandmeyer Reaction **06**
- (b) Describe the following: **05**
- (i) Wilkinson reagent (ii) Diazopropane (iii) Triphenylphosphine (iv) Aluminium isopropoxide (v) Dicyclohexylcarbodiimide.
- (c) Write structures and uses: **05**
- (i) Metformin (ii) Carbimazole (iii) Furosemide (iv) Metoprolol (v) Glyceryl trinitrate.
- Q.4** (a) Describe: (i) Sharpless asymmetric epoxidation (ii) Baeyer-Villiger oxidation (iii) Ugi reaction **06**
- (b) Write mechanism of the reactions: (i) Vilsmeier-Haack Reaction (ii) Suzuki reaction **05**
- (c) Write about protection for the amino group and amino acids. **05**
- Q.5** (a) Write about role of protection in organic synthesis: **06**
- (i) hydroxyl group (ii) carbonyl group (iii) carboxyl group.
- (b) Write the name of heterocyclic rings produced from the name reactions: **05**
- (i) Debus-Radziszewski synthesis (ii) Knorr synthesis (iii) Pinner synthesis (iv) Combes synthesis (v) Traube synthesis
- (c) Write the name of heterocyclic ring present in the drugs: **05**
- (i) Celecoxib (ii) Promazine (iii) Antipyrin (iv) Triamterene (v) Ketoconazole.
- Q.6** (a) Differentiate between Brook rearrangement & Smiles rearrangement **06**
- (b) Describe: (i) Ullmann coupling reaction (ii) Dieckmann Reaction **05**
- (c) Write about Ozonolysis and Michael addition reaction. **05**

- Q.7**
- (a)** Write synthesis of the drugs: (i) Quinacrine (ii) Promazine. **06**
 - (b)** Write uses of drugs: (i) Miconazole (ii) Thioguanine (iii) Alprazolam (iv) Amsacrine (v) Terconazole **05**
 - (c)** Write structure: **05**
 - (i) N-bromosuccinimide (ii) Diazomethane (iii) Triphenylphosphine (iv) Benzotriazole (v) Quinine.