

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.PHARM – SEMESTER – 7- EXAMINATION –WINTER - 2018**

**Subject Code: 2270012****Date: 28/11/2018****Subject Name: Green Chemistry****Time: 10:30 AM TO 01:30 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) Define Green Chemistry. Discuss twelve principles of Green Chemistry. **06**  
(b) Discuss role bio-catalysts in designing green synthesis. **05**  
(c) Write down Ultrasound assisted reactions of Cannizzaro reaction and Reformatsky reaction. **05**
- Q.2** (a) Explain about Green solvents and Solvent less processes in briefs **06**  
(b) Write about obstacles in the pursuit of the goals of Green Chemistry. **05**  
(c) Write a note on Green Chemistry Applications. **05**
- Q.3** (a) Discuss a note on Combinatorial Green Chemistry. **06**  
(b) Write a note on Fries rearrangement microwave assisted reaction in water. **05**  
(c) Write a note on Polymer Supported Catalysts. **05**
- Q.4** (a) Write down Green Synthesis of Paracetamol, Ibuprofen and Adipic Acid. **06**  
(b) Write a note on proliferation of solventless reactions. **05**  
(c) Discuss reduction reaction of microwave assisted reactions in water with suitable examples. **05**
- Q.5** (a) Write about hydrolysis of benzyl chloride and benzamide of microwave assisted reactions in water. **06**  
(b) Write a note on Goals of Green Chemistry. **05**  
(c) Explain microwave assisted solid state reactions with suitable example. **05**
- Q. 6** (a) Discuss about Hofmann Elimination and Diels Alder Reaction of microwave assisted reactions in water. **06**  
(b) Explain about ultrasonic energy in details. **05**  
(c) Write a about inception of Green Chemistry. **05**
- Q.7** (a) Write a note on Green Chemistry in sustainable development. **06**  
(b) Discuss on avoidance of unnecessary derivatization in green chemistry. **05**  
(c) Explain about microwave-assisted organic synthesis in details. **05**

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