

GUJARAT TECHNOLOGICAL UNIVERSITY
B.Pharm - SEMESTER-VII • EXAMINATION – WINTER-2016

Subject Code: 2270012**Date: 29/11/2016****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.

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|-------------|-----|---|-----------|
| Q.1 | (a) | Define Green Chemistry with obstacles in the pursuit of the goal of Green Chemistry. | 06 |
| | (b) | Explain Atom economy and sustainability with the help of suitable examples. | 05 |
| | (c) | Briefly explain any five principles Green Chemistry. | 05 |
| Q.2 | (a) | Explain role of bio catalyst in designing Green Synthesis. | 06 |
| | (b) | Write a note on polymer supported catalysts role in Green Chemistry. | 05 |
| | (c) | Define the terms: Immobilized Solvents and Ultrasonic energy. | 05 |
| Q.3 | (a) | How the Catalytic reagents are superior to stoichiometric reagents? | 06 |
| | (b) | Write a note on Microwave assisted organic synthesis with suitable examples. | 05 |
| | (c) | How can avoid unnecessary derivatization for designing Green Synthesis. | 05 |
| Q.4 | (a) | Discuss any two reactions under sonication taking a suitable example
i) Alkylation synthesis ii) Reformatsky reaction iii) Reduction reactions | 06 |
| | (b) | Explain the Fries rearrangement reaction when induced by microwaves. | 05 |
| | (c) | Write a note on microwave assisted Decarboxylation reaction. | 05 |
| Q.5 | (a) | Explain Ultrasound assisted reactions with any two suitable examples. | 06 |
| | (b) | Write a note on microwave assisted solid state reaction for saponification of esters. | 05 |
| | (c) | Explain the terms Green Solvents. | 05 |
| Q. 6 | (a) | Explain the role of Green Chemistry in sustainable development. | 06 |
| | (b) | Write a note on proliferation of solventless reactions. | 05 |
| | (c) | Describe the role of 'Clayan' as a nonmetallic oxidative reagents in various reactions. | 05 |
| Q.7 | (a) | Give the Green Synthesis of any two : i) Acetaldehyde ii) Citral iii) Ibuprofen | 06 |
| | (b) | Write a note on Hydrolysis of Benzamide microwave assisted reaction in water. | 05 |
| | (c) | Briefly explain the applications of Green Chemistry. | 05 |
