

GUJARAT TECHNOLOGICAL UNIVERSITY

B.PHARM – SEMESTER – VII • EXAMINATION – WINTER – 2015

Subject Code: 2270012

Date: 16/12/2015

Subject Name: Green Chemistry

Time: 10.30 AM to 1.30 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 goals and limitations. | 06 |
| | (b) | Write down the twelve principles of Green Chemistry. Explain any two with the help of suitable examples. | 05 |
| | (c) | Write a note on inception of Green Chemistry. | 05 |
| Q.2 | (a) | Write short notes on prevention on waste/byproducts and Atom economy. | 06 |
| | (b) | Explain the role of Green Chemistry in polymer industry. | 05 |
| | (c) | Define the terms : Green Solvents and Saponification. | 05 |
| Q.3 | (a) | Explain the role of Green Chemistry in pharmaceutical industry. | 06 |
| | (b) | Write a note on MAOS. | 05 |
| | (c) | Catalytic reagents are superior to stoichiometric reagents. Justify with suitable examples. | 05 |
| Q.4 | (a) | Give the Green Synthesis of any two :
i) Paracetamol ii) Catechol iii) Benzyl Broamide | 06 |
| | (b) | Explain the Hofmann elimination in water reaction when induced by microwaves. | 05 |
| | (c) | Write a note on microwave assisted Diels Alder reaction. | 05 |
| Q.5 | (a) | Define ionic liquids and discuss the advantages of water as solvents over the organic solvents. | 06 |
| | (b) | Write a note on microwave assisted solid state reactions with any one suitable example. | 05 |
| | (c) | Explain the term 'Solvent less processes'. | 05 |
| Q. 6 | (a) | Discuss the future aspects of Green Chemistry in various areas. | 06 |
| | (b) | Write a note on Combinatorial Green Chemistry. | 05 |
| | (c) | Explain the terms Hazardous solvents. | 05 |
| Q.7 | (a) | Discuss any two reactions under sonication taking a suitable example
i) Strecker synthesis ii) Cannizaro reaction iii) Oxidation reactions | 06 |
| | (b) | Describe the role of 'Clayan' as a nonmetallic oxidative reagents in various reactions. | 05 |
| | (c) | Write a note on Fries rearrangement microwave assisted reaction in water. | 05 |
