Seat No.: _____ Enrolment No._____

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.**

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**

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