



Dr.V.S.KRISHNA GOVT. DEGREE COLLEGE

(An Autonomous Institution Affiliated to Andhra University) Reaccredited by NAAC with 'A' Grade(3rd Cycle) District Resource Centre & Center for Research Studies Maddilapalem, VISAKHAPATNAM 530 013, Andhra Pradesh



2022-2023

Department of Chemistry

Certificate Course

on

Green Chemistry Applications in Industry

30h

Learning Objectives:

- After successful completion of the course, student will be able to learn:
- LO1: Importance of Green Chemistry
- LO2: Understand Knowledge on Green Chemistry Principles.
- LO3: Acquire skill on Green Synthesis methods.

Course Outcomes:

- On completion of the course, student can able to
- CO1: Synthesize Organic compounds by Green Synthesis.
- CO2: Utilize Green solvents for synthesis to maintain pollution free Environment.
- CO3: Alternative methods developed in synthesizing materials are eco-friendly.

Module-I :

Introduction to Green Chemistry

Introduction to green chemistry-need and goals of green chemistry, Twelve principles of green chemistry

Module-II

Reactions in Green Chemistry

atom economy, calculation of atom economy of rearrangements, addition, substitution and elimination reactions

Module-III

Green Solvents

Green solvents- super critical fluids, water as a solvent for organic reactions, ionic liquids, PEG

Module-IV

Green Catalysis

Use of catalytic reagents, Bio catalysis, unsymmetric catalysis and photo catalysis

Module-V

Green Synthetic Methods

i) Preparation of biodiesel from vegatable oil.

ii)Extraction of D-Limonene from orange peel using liquid Co2 prepared from dry ice.

iii)Designing of environmentally safe marine antifoulant.

Registered Candidates List

- 1. Bandi Alekya
- 2. Gundu BhaskarRao
- 3. Bangaru Gandhi Chowdary
- 4. Yethula Ghateelu
- 5. Dudi Harish
- 6. Botsa Hemalatha
- 7. Yedla Hemasundar
- 8. Kurmana Jagadish
- 9. Varri Lokesh
- 10. Pangi Mahesh
- 11. Ralla Manikanta
- 12. Koyyana Murali
- 13. Matsa Nagendra Babu
- 14. Somala Naresh
- 15. Solla pavan
- 16. Enapachappala Praveen Kumar
- 17. Katcha Prem kumar
- 18. Buridi Ravi Babu
- 19. Kotak Sai
- 20. Sabbavarapu Sai kumar
- 21. Girijala Sai Saranya
- 22. Bongu Sai Ram
- 23. Landa Sankar
- 24 .Patnana Santha kumari
- 25. Jetti Santosh Kumar
- 26. Siyyadula Siva Sankar
- 27. Reesu Tharun Babu
- 28. Tatapudi Venkata Chanakya Gopi

Question Paper

Section -A

Time: 1 hour

Marks: 30

Answer any Five of the following.

5x3=15M

- 1. Why should we prefer green chemistry?
- 2. What are the goals of green chemistry?
- 3. What is an atom economy reaction?
- 4. Write an example for elimination reaction?
- 5. What are green solvents?
- 6. Write the uses of green catalytic reagents?
- 7. What is meant by photo catalysis?

<u>Section - B</u>

Answer any three of the following

3x5 = 15M

- 8. Write any five green chemistry principles?
- 9. Write an example for rearrangement reactions? Calculate atom economy for that reaction.
- 10. Write a brief note on Super Critical fluids.
- 11. Discuss about Biocatalysis.



Student Attendance

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6.	20202156	Botsa Hemalatha	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		2	PØ	P	F1
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