

Roll.No.

24PCHET3A03

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai - 600 044.

M.Sc.Chemistry - END SEMESTER EXAMINATIONS - NOVEMBER 2025
SEMESTER - III

24PCHET3A03 - Green Chemistry and Sustainable Development

Total Duration : 2 Hrs. 30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Explain the twelve principles of green chemistry with suitable examples.
2. Describe the importance of atom economy and selectivity in organic reactions.
3. Discuss the role of phase transfer catalysts in green organic synthesis.
4. Explain the significance of biocatalysts in green chemistry.
5. Describe microwave-assisted organic synthesis and its advantages.
6. Explain ultrasound-assisted reactions and their applications.
7. Illustrate any two aqueous phase reactions used in green synthesis.
8. Discuss the contribution of green chemistry to sustainable education and environmental protection.

Section C

I - Answer any **TWO** questions ($2 \times 10 = 20$ Marks)

9. Explain the design of a green synthesis including the choice of reagents, solvents, and catalysts.
10. Evaluate the advantages of ionic liquids as green solvents with examples.
11. Discuss the synthesis of heterocyclic compounds using microwave-assisted techniques.
12. Analyze the role of solid-phase synthesis in green chemistry.

II - Compulsory question ($1 \times 10 = 10$ Marks)

13. Evaluate the role of green chemistry in promising sustainable energy and environmental development.
