

Roll.No.

22UCHET6003

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.

B.Sc.Chemistry - END SEMESTER EXAMINATIONS - NOVEMBER 2025  
SEMESTER - VI

**22UCHET6003 - Applied Chemistry**

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

### Section B

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

1. Describe the properties of nanomaterials and explain how they differ from bulk materials.
2. Explain the sol-gel and hydrothermal methods for synthesis of nanoparticles.
3. Describe with suitable examples of green synthesis reactions.
4. Apply the 3R principle to discuss sustainable development in chemical industries.
5. Differentiate between thermoplastics and thermosetting plastics with examples.
6. Illustrate the mechanism of vulcanization of rubber and its importance.
7. Explain the preparation and uses of methyl orange and malachite green dyes.
8. Discuss the determination of hardness of water by complexometric titration method.

### Section C

Answer any **THREE** questions ( $3 \times 10 = 30$  Marks)

9. Examine various methods of nanoparticle synthesis and justify the use of green synthesis.
10. Analyze and list the twelve principles of green chemistry.
11. Evaluate the environmental impact of biodegradable plastics and polymers.
12. Discuss in detail the preparation, properties, and applications of vat dyes with examples.
13. Critically assess the chemical methods used for sterilization and disinfection of water.

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