

Subject Code: 24BC11RC01

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GAYATRI VIDYA PARISHAD COLLEGE OF ENGINEERING FOR WOMEN
(AUTONOMOUS)

(Affiliated to Andhra University, Visakhapatnam)

B.Tech. - I Semester Regular Examinations, December / January – 2025

Green-Chemistry

(Common to EEE, CSE & IT)

1. All questions carry equal marks
2. Must answer all parts of the question at one place

Time: 3Hrs.

Max Marks: 70

UNIT-I

1. a. Describe the various impurities removal methods for municipal water treatment plants [7M]
b. Explain sketch diagrams and brief description of Ion Exchange Water Softening Method [7M]

OR

2. a. Explain the functional procedure and diagram for Electro-dialysis Method [7M]
b. Summarize the brief description of chemical analysis of water by EDTA Method [7M]

UNIT-II

3. a. Make use of the battery technology construction, working cell-discharge reactions of Lithium – MnO₂ cells [7M]
b. Outline the working and reactions occurring during discharge of Advanced Batteries for electric vehicles. Give its advantages [7M]

OR

4. a. Explain the construction, working cell-discharge reactions of Zinc-carbon (Laclanch-cell batteries) [7M]
b. Outline the construction and working and advantages, of Lead-Acid cells with relevant reactions occurring during discharge. [7M]

UNIT-III

5. a. Describe the description, cell reactions, fabrication of electrode of Proton Exchange Membrane Fuel –cells [7M]
b. Explain the working principle, and cell reactions, and Environmental advantages, disadvantages of the Molten carbonate Fuel Cells [7M]

OR

6. a. Describe the working principle, fabrication of electrode and applications of Electrochemical sensors [7M]
b. Explain the working principle, and cell reactions, fabrication of electrode of the Solid oxide Fuel Cells. [7M]

UNIT-IV

7. a. Categorize the factors Effecting rate and extent of corrosion [7M]
b. Explain the essential ingredients of a paint? What are their functions Give examples [7M]

OR

8. a. Explain the Theory of Electrochemical corrosion [7M]
b. Explain the control against corrosion methods for Electro less Plating of copper [7M]

UNIT-V

9. a. Explain the Important 12 principles of green chemistry [7M]
b. Design of greener synthetic pathways of typical organic compounds by conventional and green route? [7M]

OR

10. a. Summarize the important applications of Green Chemistry [7M]
b. Distinguish functional toxicity vs non-functional toxicity of greener synthetic methods [7M]