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GAYATRI VIDYA PARISHAD COLLEGE OF ENGINEERING FOR WOMEN
(AUTONOMOUS)

(Affiliated to Andhra University, Visakhapatnam)

I 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. With a neat sketch explain the ion-exchange process for the softening of water? [7M]
b. What is chlorination? Outline the break-point chlorination process for the disinfection of water? [7M]

OR

2. a. Explain zeolite process for the softening of water? Write its advantages and disadvantages? [7M]
b. Discuss the Reverse Osmosis process for the desalination of sea water? Mention its advantages and disadvantages? [7M]

UNIT-II

3. a. Demonstrate the construction and functioning of Li-MnO₂ cell with the chemical reactions involved? [7M]
b. Outline the construction, working and chemical reactions involved in nickel-cadmium battery. Give its advantages and disadvantages? [7M]

OR

4. a. Describe the working principle and cell reactions of Zn-Carbon battery? [7M]
b. Outline the construction, working and chemical reactions involved in Li-ion battery. Mention its advantages? [7M]

UNIT-III

5. a. Describe the working and cell reactions of Proton Exchange Membrane Fuel Cell? [7M]
b. Write a note on Electrochemical Sensors? [7M]

OR

6. a. List out the advantages, disadvantages and environmental aspects of alkaline fuel cells? [7M]
b. Outline the construction, working and chemical reactions of direct methanol fuel cell. Mention its advantages and disadvantages? [7M]

UNIT-IV

7. a. Categorize the factors effecting rate of corrosion? [7M]
b. Describe the dry corrosion mechanism with a neat sketch? [7M]

OR

8. a. Define cathodic protection? Explain sacrificial anodic method? [7M]
b. What is hot dipping? Explain tinning process? [7M]

UNIT-V

9. a. Discuss the important green chemistry principles? [7M]
b. Write a note on atom economy with suitable examples? [7M]
- OR
10. a. Explain the importance of zeolites and ion exchange resins in green chemistry point of view? [7M]
b. Write a note on phase transfer catalysis? [7M]