

Code No: R204101Y

R20

SET - 1

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM
IV B. Tech I Semester Regular/Supplementary Examinations OCT/NOV 2025
GREEN TECHNOLOGIES
(OPEN ELECTIVE)

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**

All Questions Carry Equal Marks

UNIT-I

1. a) Discuss the advantages and disadvantages of adopting Green Technologies. [7M]
b) List and explain the major principles of Cleaner Production. [7M]

(OR)

2. a) Discuss the strategies in detail how to achieve sustainable development in a country through green technologies. [7M]
b) Explain the factors affecting the implementation of Green Technologies. [7M]

UNIT-II

3. a) Discuss the principles of reuse, recovery and recycling with suitable examples. [7M]
b) Explain the procedure for preparing a Process Flow Diagram for Cleaner Production. [7M]

(OR)

4. a) What is a Material Balance? Why is it important in Cleaner Production studies? [7M]
b) Explain the need for environmental feasibility analysis before CP implementation. [7M]

UNIT-III

5. a) Define Carbon Trading and describe its mechanism. [7M]
b) Explain the main steps involved in conducting a Waste Audit. [7M]

(OR)

6. a) Define and explain Carbon Credit with examples. [7M]
b) Discuss the benefits of Life Cycle Assessment to manufacturing industries. [7M]

UNIT-IV

7. a) Explain the need and availability of conventional energy resources in India. [7M]
b) Discuss the major environmental problems associated with fossil fuels. [7M]

(OR)

8. a) Explain the principle and working of a solar photovoltaic system. [7M]
b) Discuss about the major non-conventional energy resources in India. [7M]

UNIT-V

9. a) Explain the concept of Hydrogen as a green fuel and its challenges. [7M]
b) Explain Wind Energy conversion technologies and equipment. [7M]

(OR)

10. a) Discuss the working principle of a biogas plant. [7M]
b) Compare green fuels and conventional fossil fuels with respect to environmental impacts. [7M]
