

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2025

B.Tech-II Semester (CSE/IT/ECE/CE/BT/BI)

COURSE CODE (CREDITS): 24P1WCE231 (3)

MAX. MARKS: 35

COURSE NAME: Life Cycle Analysis and Design for Environment

COURSE INSTRUCTORS: Dr. Rishi Rana Kalia

MAX. TIME: 2 Hours

**Note:** (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

| Q.No | Question   | CO       | Marks   |
|------|--|----------|---------|
| Q1   | Describe the key steps involved in defining the goal and scope of an LCA study.  | CO-2     | 6 marks |
| Q2   | Elaborate in detail the steps in assessing the environmental impact of LCA?  | CO-4     | 8 marks |
| Q3   | Conduct a simplified Life Cycle Assessment of a plastic water bottle, addressing the goal and scope definition, inventory analysis, impact assessment, and interpretation phases. Include system boundaries, assumptions, and limitations. | CO-3     | 7 marks |
| Q4   | Explain the process of Life Cycle Inventory (LCI) analysis. What are its major challenges?   | CO-1     | 5 marks |
| Q5   | What is the significance of the functional unit in an LCA study?   | CO-1     | 4 marks |
| Q6   | With the help of a diagram, describe the four major phases of LCA as per ISO 14040 standard.   | CO-2 & 4 | 5 marks |