

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATIONS- 2026

PhD-II Semester (CE)

COURSE CODE (CREDITS): 24P1WCE231 (3)

MAX MARKS: 35

COURSE NAME: Life Cycle Analysis and Design for Environment

COURSE INSTRUCTOR: 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

(c) Use of calculator is not allowed

Q.No	Question	CO	Marks
Q1	Critically examine different environmental impact assessment approaches used in LCA. Highlight their strengths, weaknesses, and suitability across different industrial applications.	CO-4	6 marks
Q2	(a) Describe the four major phases of LCA with the help of a neat diagram.	CO-2 & 3	5 marks
	(b) Discuss the importance of ethical guidelines (Code of Good Conduct) in ensuring transparency and credibility in LCA studies.		5 marks
Q3	Explain the concept and procedure of Life Cycle Inventory (LCI). What practical challenges are commonly encountered during data collection and analysis?	CO-1	8 marks
Q4	Using a suitable example (e.g., plastic bottle, electronic product, etc.), outline a simplified Life Cycle Assessment framework. Your answer should include: Functional unit, System boundaries, Major assumptions and Possible limitations	CO-2	8 marks
Q5	Neatly draw and elucidate various product life cycle stages?	CO-2	1.5 marks
Q6	Differentiate between cradle-to-grave and cradle-to-cradle approaches	CO-3	1.5 marks