

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3EXAMINATION- 2024

B.Tech-VIIth Semester (CSE/IT/ECE/CE/ECM)

COURSE CODE (CREDITS): 19B1WBT731 (3-0-0)

MAX. MARKS: 35

COURSE NAME: Sustainable Technologies for Waste Management

COURSE INSTRUCTOR: Dr. Garlapati Vijay Kumar

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 concept of "Whole-cell Biorefinery" by taking the example of Jatropha plants by explaining the concepts of "Biodiesel" and "Bioethanol" technologies in detail?	CO-I &CO- II	6
Q2	Tabulate the advantages and disadvantages of "Microbial Fuel Cell (MFC)" technology? Demonstrate the "MFC" working principle with a neat sketch and reaction processes and discuss "MFC" machinery?	CO-III &CO-IV	6
Q3	What is "Life Cycle Analysis (LCA)"? Outline the necessity, goals, and purpose of "LCA" and explain briefly the different stages involved in executing "LCA"?	CO-V	6
Q4	Justify the need for "Industrial Ecology" in the present scenario? Write in detail about the "Industrial Ecology" concept by explaining the associated symbiotic activities and benefits?	CO-IV	6
Q5	Describe the Circular Economy approach with the help of the Linear-Close Loop systems? Summarize the associated benefits of circular economy?	CO-V	6
Q6	Summarize the following one's (a) "R" principles of Solid Waste Management? (2.5 M) (b) Application of MFC's in "Desalination" and "Robotics"? (2.5 M)	CO-IV& CO-V	5

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