

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT  
TEST -3 EXAMINATIONS-2022

B.Tech-VI Semester (BT)

COURSE CODE (CREDITS): 18B1WBT634 (3)

MAX. MARKS: 35

COURSE NAME: Bioenergy and Biofuels

COURSE INSTRUCTORS: Dr. Garlapati Vijay Kumar

MAX. TIME: 2 Hours

*Note: All questions are compulsory. Marks are indicated against each question in square brackets.*

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- Q1. What is the need of concentrating on “Waste” as a substrate for Bioenergy and Bioproducts? Discuss in detail about the WtE and WtP approaches? With a neat sketch summarize the overview of the WtE overall concept? (CO V) (7 M)
- Q2. How “hydrothermal liquefaction” differs with the “Super Critical Technology” in Waste conversion to energy and products? Summarize the typical reaction conditions and products of Pyrolysis, Gasification, Incineration and Plasma –based thermochemical processes used for WtE concept? (CO V) (7 M)
- Q3. With a neat sketch explain the enzymatic hydrolysis through cellulolytic enzymes in lignocellulosic bioethanol technology? Different the hydrolysis and fermentation strategy “NSSF” with the “SSCF” and “CBP” approaches? (CO IV) (7 M)
- Q4. What is the need to give the prime importance for “Low-temperature Properties” in case of “Biodiesel”? Discuss in detail about the different low-temperature properties of biodiesel? What do you know about the “Flash Point” and “Cetane Number” under “Biodiesel” properties? (CO IV) (7 M)
- Q5. Differentiate the “Lignocellulosic technologies” with “Microalgal technologies” in biofuels production? Write in detail about the strategies for algal biofuels commercialization? What are the different approaches used for “Pretreatment assessment” in case of “Lignocellulosic Ethanol Technology”? (CO I & CO II & CO III) (7 M)

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