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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

T-2 EXAMINATIONS-OCTOBER 2019

B.Tech (BT), VIIth Semester

COURSE CODE: 14B1WBT731

MAX. MARKS: 25

COURSE NAME: Bioenergy and Biofuels

COURSE CREDITS: 3

MAX. TIME: 1.5 h

Note: All questions are compulsory.

- 1) Explain the sequence of steps used in the hydrolysis of cellulose to glucose by cellulolytic enzymes? What are the different approaches used to assess the lignocellulosic pretreatment technique? (CO I & CO II) (5 M)
- 2) Differentiate the following one's (CO II & CO III) (2 x 2.5 = 5 M)
 - (a) Organosolv pretreatment Vs AFEX pretreatment
 - (b) NSSF Vs CBP (related to hydrolysis and fermentation strategies)
- 3) What are advantages and claims against algal-based biofuels? Explain the SWOT analysis for microalgal technology for biofuels programme? (CO III) (5 M)
- 4) Discuss about the different strategies for algal biofuels commercialization? What are the different requirements for ideal cultivation system for microalgae? (CO III) (5 M)
- 5) Discuss about the following one's (CO III & CO IV) (5 M)
 - (a) Tubular and vertical column photo bioreactors for microalgal cultivation
 - (b) Flotation and Ultrasonic techniques of algal biomass harvesting techniques

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