

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
MAKE UP EXAMINATION- APR. 2018
B.Tech. Dual Degree Xth Semester/Ph.D.

COURSE CODE: 14M11BT215
COURSE NAME: Metabolic Engineering
COURSE CREDITS: 3

MAX MARKS: 25
MAX. TIME: 1.5 Hrs.

*Note: All questions are compulsory. Attempt all questions of a particular section at one place.
Answer each question to the point.*

- Q1.** Define the term 'metabolic flux' and explain the need and application of metabolic flux with suitable examples. (5 marks)
- Q2.** What is the difference between primary and secondary metabolism? Explain the link between primary and secondary metabolic pathways in context to phenylpropanoids. (5 marks)
- Q3.** Explain the Michaelis Menten equation and the two basic assumptions for Michaelis Menten equation? (5 marks)
- Q4.** Explain a methodology of metabolic engineering for production of essential amino acid with suitable example. (5 marks)
- Q5.** Define the principle of Principle of Electro-spray Ionization and it's working for protein identification. (5 marks)