

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- May 2019

B.Tech X<sup>th</sup> Semester

COURSE CODE: 14M11BT215

MAX. MARKS: 35

COURSE NAME: Metabolic Engineering

COURSE CREDITS: 03

MAX. TIME: 2.0 HR

*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

- Q1. Explain electron transport chain with one suitable example. (3 marks)
- Q2. Explain utility of peptide as therapeutic agents by taking suitable example. Discuss common strategies used for dealing with limitations associated with peptides. (4 marks)
- Q3. How amino acids levels affect the biosynthesis of lignan in plants? Explain with example? (3 marks)
- Q4. a) What do you understand by feedback inhibition and feedback repression? Explain with suitable example. (3 marks)  
b) Explain, how a metabolic pathway can be regulated by external and internal factors of the cell and associated enzymes? (3 marks)
- Q5. What do you understand by Metabolic Flux Analysis (MFA)? Explain various steps for systematic investigation of metabolic fluxes and their control. (4 marks)
- Q6. Explain the following in brief. (15 marks)
- a) SILAC technology usage in metabolic engineering
  - b) Differentiate between stable isotopes and radioisotopes
  - c) Peptide mass fingerprinting