

## JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

## TEST -2 EXAMINATION- 2019

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

COURSE CODE: 14M11BT215

MAX. MARKS: 25

COURSE NAME: Metabolic Engineering

COURSE CREDITS: 03

MAX. TIME: 1.5 HR

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

**Q1.** What would be the sequence of residues obtained when the enzyme/reagents given below act on poly peptide NH<sub>2</sub>-ALA-ARG-SER-LYS-PHE-MET-TRP-SER-PRO-COO<sup>-</sup> (2.5 marks)

- a) Carboxy peptidase A
- b) Carboxy peptidase B
- c) Trypsin
- d) Chemotrypsin
- e) Cynogen bromide

**Q2.** Explain role of enzymes in metabolic engineering. Classify enzymes based on their reactions. (2.5 marks)

**Q3.** Explain the biological significance of Shikimate pathway in plants and Does Shikimic acid pathway exist in humans? Explain the consequences of absence/presence of this pathway in humans. (3 marks)

**Q4.** Explain the significance of pH, temperature and substrate concentration on enzymatic activity in a metabolic reaction. (3 marks)

**Q5.** Explain step by step strategies for isolation and characterization of antibiotic peptides/antimicrobial peptide from natural resources. (5 marks)

**Q6.** Explain the following in brief. (9 marks)

- a) Principle of MALDI
- b) Peptide mass fingerprinting
- c) Anabolic and catabolic nature of Acetyl- CoA