JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATIONS-2022

M.Tech.-I Semester (BT)

COURSE CODE (CREDITS): 18M1WBT133 (3) MAX. MARKS: 15

COURSE NAME: Advances in Computational Systems Biology

COURSE INSTRUCTORS: Dr. Tiratha Raj Singh MAX. TIME: 1 Hour

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

Q1. Discuss the significance of following terms with reference to bio-molecular systems:

(i) Integrative and reductionist approaches (ii) Omics data path

(iii) TRN's hierarchy (iv) Regulon DB

[Marks: 1*4=4]

Q.2. Evaluate the importance of sequence, structure and evolution based parameters used for TFBS analysis in TRNs. [Marks: 3]

Q.3. Elaborate the process of reverse engineering for the annotation of biological networks. [Marks: 2]

Q.4. Define and discuss system and its properties in detail. [Marks: 3]

Q.5. Realize how "LAC Operon in E. *coli*" is a classical example of regulatory network systems. Discuss its significance as a functional biological model based system. [Marks: 3]