JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2025

MTech-I Semester (BT)

Course Code (Credits): 13M11BT114 (3) Max. Marks: 15

Course Name: High Throughput Technologies (13M11BT114)

Course Instructors: Dr. Abhishek Chaudhary Max. Time: 1 Hour

Note: (a)*All questions are compulsory.*

(b)Marks are indicated against each question in square brackets.

(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q.No	Question	Marks
Q-1	Biological databases are essential tools in bioinformatics, offering organized and searchable collections of biological data. These databases are used across various fields, including genomics, proteomics, drug discovery, and medicine, to analyze, interpret, and utilize vast amounts of biological information. What do you understand by biological databases? Discuss about Primary, Secondary and Hybrid database. Also describe Metadata and its importance in High Throughput Technology	3+2
Q-2a	Minimum information standards (MIS) are sets of guidelines and formats for reporting data derived by specific high-throughput methods. Their purpose is to ensure that the data is comprehensive enough for robust verification, analysis, and interpretation by the broader scientific community, facilitating data integration, comparison, and discovery across multiple datasets. For better understanding, define following MIS and critically explain their role in High Throughput Technology. a. MINSEQE b. MIAME c. Metabolomic MSI d. MIAPE	4+2
Q-2b	Describe Controlled vocabularies. Do we really need controlled vocabularies?	
Q-3	Model organisms have been instrumental in providing insight into many biological problems and for revealing fundamental mechanisms that underlie disease. What does the term "model microorganisms" mean to you? Talk about the model organism's function in high-throughput technology. Additionally, describe the MGI, TAIR, and LIS databases. Also discuss **genetic variants.**	3+1