

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-1 EXAMINATION- 2026

B.Tech-VIII Semester (BT/BI)

COURSE CODE (CREDITS): 18B1WBI834(3)

MAX. MARKS: 15

COURSE NAME: NGS data Analysis & Applications

COURSE INSTRUCTOR: Dr. Shikha Mittal

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory.

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

(c) Use of calculators is not allowed

Q.No	Question	CO	Marks
Q1	A DNA sequencing read has a base with $Q = 30$. a. What is the probability that the base is wrong? b. What is the base call accuracy (%)?	I	(2)
Q2	Explain Sanger sequencing in detail with a labeled diagram. Also highlight the differences between enzymatic and chemical degradation method of sequencing.	I, II	(3)
Q3	a. Next generation sequencing b. FASTA and FASTQ format c. Quality check	II, III	(6)
Q4	a. A sequencing run produces millions of short reads instead of one long sequence. What advantage does this provide? b. Explain Illumina sequencing with its principle.	II	(4)