

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -I EXAMINATION- 2025

B. Tech-VIII Semester [All except Bio]

COURSE CODE(CREDITS): 21B1WBT833 (3)

MAX. MARKS: 35

COURSE NAME: Computational Biology for Engineers

MAX. TIME: 1 Hour

COURSE INSTRUCTORS: Dr. Raj Kumar, Dr. Udayabanu M

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

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

Q.No	Question	CO	Marks
Q1	Bioinformatics is an interdisciplinary science that combines computer science, biology, and other fields to study biological data. Write your perspective about the uses and applications of Bioinformatics in engineering sciences?	1	2
Q2	Describe how does the Central Dogma explain the flow of genetic information in cells? What are the main processes involved in the Central Dogma, and in what order do they occur?	1-2	3
Q3	Create a literature search strategy from PubMed to retrieve peer-reviewed articles that discuss the long-term effects of cigarette smoking on cancer incidences in adults?	1-2	3
Q4	The % of Guanine (G) in a human DNA sample is observed to be 40%. What is the percentage of Adenine (A) in that sample?	1-2	2
Q5	a) What is computational drug discovery, and how does it differ from traditional drug discovery methods? 2.5M b) Organize the key goals or stages in Drug Discovery and briefly discuss. 2.5M	1-2	(2.5X2=5)