

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2026

B.Tech-IV Semester (BI/BT)

COURSE CODE (CREDITS): **25B11BT415 (3)/25B11BT416 (4)**

MAX. MARKS: **15**

COURSE NAME: **Molecular Biology**

COURSE INSTRUCTOR: **Dr. Jitendraa Vashistt**

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	Explain the following in brief. a) Chargaff rule and its biological significance b) Tertiary structure of protein	I	2
Q2	If a nucleotide molecule of DNA gets deamination, it becomes specific nucleotide of RNA. Name these nucleic acids and explain the phenomenon.	I	2
Q3	You have biological sequences "RKKG" and "RGD". Define their a) name b) structure c) Net charge.	I	3
Q4	Between nucleotide and amino acid, which molecule has higher molecular weight? Justify your answer with numerical calculations.	I	3
Q5	There are two sequences "ATATAGATACCCC" and ACGTAGCTGCCCC. a) You need to make the complementary stands for DNA. b) You also need to provide the sequence of RNA from above mentioned template DNA strands. c) Also suggest which above DNA sequence may have a higher thermal stability and tendency of secondary structure formation. Justify you statement.	II	5