

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -1 EXAMINATION- 2025
B.Tech-IV Semester (Biotechnology)

COURSE CODE (CREDITS): 18B11BT412 (3)

MAX. MARKS: 15

COURSE NAME: Molecular Biology

COURSE INSTRUCTORS: 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.

Q. No.	Question	CO	Marks
Q1a.	Which nucleotide base is preferred in DNA; Thymine or Uracil?	I	1
Q1b.	You need to justify your above answer with structural elucidation and specific property of nitrogenous base.	I	2
Q2.	Why DNA is considered as nucleic acid? Also define whether DNA is 'hydrophilic' or 'hydrophobic'? Justify your answer with suitable structural elucidation.	I	3
Q3.	What is the usual structure acquired by RNA? Is it possible that RNA may exist in tertiary structure? If yes, then define this structure with structural properties of the molecule.	I	3
Q4.	Why Phenol, chloroform and isoamyl alcohol are used to isolate genomic DNA? Explain the principle of usage of above chemicals in isolation procedure.	II	3
Q5.	How do you prove that an enzyme is interacting with a specific DNA segment? Explain the principle of molecular technique employed for the experimental proof.	II	3