

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -1 EXAMINATION- Feb 2024

B.Tech. IV Semester

COURSE CODE: 18B11BT412

MAX. MARKS: 15

COURSE NAME: Molecular Biology

COURSE CREDITS: 03

MAX. TIME: 1.0 Hrs

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

- Q1.** How do you make an experimental strategy to purify the proteins from a cell lysate on the basis of charge on the proteins? **(2 mark)(COI)**
- Q2.** There are two sequence of DNA 'a' and 'b' of equal length. DNA sequence 'a' has 55% while sequence 'b' has 43% of guanine and cytosine. Which DNA sequence has high T_m ? Justify your answer. **(2 mark)(COI)**
- Q3.** You have isolated the DNA from a bacterial cell and you need to a) check purity b) integrity c) concentration of isolated molecule. How will you proceed for above mentioned properties? **(3 mark) (COI)**
- Q4.** Which nitrogenous base is preferred: thymine or uracil base in DNA and RNA? Justify your answer with structural features and chemical properties of these bases for their occurrence in nucleic acids. **(3 mark) (COI)**
- Q5.** Describe the following terms in brief. **(5 marks) (COII)**
- DNA primers and Polymerase chain reaction
 - DNA protein interactions and Electrophoretic mobility shift assay