

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -1 EXAMINATION- 2023

M.Sc.-Ist Semester (B.T. and Microbiology)

COURSE CODE (CREDITS): 20MS1BT111 (3)

MAX. MARKS: 15

COURSE NAME: **Biochemistry**

COURSE INSTRUCTOR: **Jitendraa Vashistt**

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory.

(b) Marks are indicated against each question in square brackets.

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

- Q1.** Protein structures get stabilized by several forces to perform biological functions. Explain these different forces/bonds which make protein molecules functional. (3 marks)
- Q2.** Define the different properties of water which are responsible for making it suitable for biological systems. (3 marks)
- Q3.** What is the biological significance of buffers? Do we have any biomolecule which can serve as component of buffer? Justify your answer with suitable example. (3marks)
- Q4.** Calculate the pH of a sodium acetate buffer, if concentrations of acetic acid as well as sodium acetate are 2M and the pKa value is 4.75. Define the equation involved for calculations. (3 marks)
- Q5.** Which of the biomolecule came first; DNA, RNA or protein? Justify your answer with sequence of evolutionary events. (3 marks)