

2031
B.Sc. (Hons.) Bio-Informatics
First Semester
BIN-1007: Introduction to Biochemistry

Time allowed: 3 Hours

Max. Marks: 60

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Answer the following:-

- a) What is the pH?
- b) Write the difference between pKa and pl.
- c) What is peptide bond?
- d) Write difference between essential and non-essential amino acids.
- e) Write a short note on triplet codons.
- f) Effect of pH on enzymes activities.
- g) Write difference between Introns and exons.
- h) Role of polysaccharides.
- i) Open reading frame in gene expression.
- j) Steady state kinetics of enzyme.
- k) What is the Proteoglycan?
- l) Difference between nucleosides and nucleotides

(12x1)

UNIT – I

- II. a) Write the different biological role of water in biological system.
b) Write the concept of weak acid in biological system. (6,6)
- III. a) Derive the Henderson and Haselbalch (HH) equation.
b) What is the DNA? Explain structure of DNA double helix (6,6)
- IV. a) Write the modern central dogma of molecular biology.
b) What is the difference between denaturation and renaturation curve of DNA (6, 6)

UNIT – II

- V. a) What are the general properties of proteins?
b) Write the different structural levels present in the proteins. (6,6)

P.T.O.

(2)

- VI. a) Define the enzymes? Write the general properties of enzymes.
b) What is MM equation? Drive the MM equation and its application. (6,6)
- VII. a) What are the glycosidic bonds? Write the structure and function of two disaccharides.
b) What is the glycoprotein? Mentioned various roles of glycoproteins in biological system (6,6)

x-x-x

C4KNOWLEDGESEEKERS