

2056
B.Sc. (Hons.) Bio-Informatics (FYUP)
Second Semester
BINF -2001: Fundamentals of Biochemistry

Time allowed: 3 Hours

Max. Marks: 60

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

x-x-x

I. Give answer in a very short:-

- a) Write the structure of water molecule.
- b) Give names of two weak acids.
- c) Write the names of two sugars.
- d) How to determine pH?
- e) Give name of two nonstandard sugars.
- f) Names of two inhibitors.
- g) First order reaction.
- h) Give names of two polysaccharides.
- i) Give name of two heteropolysaccharides.
- j) What is the glycogen?
- k) Where is cellulose present?
- l) Enzyme specificity

(12x1)

UNIT - I

- II. a) Briefly describe the biological roles of water.
b) What is Henderson and Hasselbatch equation? How it correlate pH, pKa and conjugate acid and base. (2x6)
- III. a) Write the fundamental characteristics of enzymes.
b) Describe in brief about various factors that affect enzyme activity. (2x6)
- IV. a) What is the MM equation? Derive MM equation used in enzyme kinetics.
b) Write the names six major classes of enzymes based on reactions. (2x6)

P.T.O.

(2)

UNIT - II

- V. a) Write in brief about functions of carbohydrates.
b) Write a short note on glycogen. (2x6)
- VI. a) Explain in brief about the *Haworth projection* formula of glucose.
b) Describe the formation of glycosidic bond in carbohydrate. (2x6)
- VII. a) Write the structure and functions of cellulose.
b) Write the major differences between starch and glycogen. (2x6)

x-x-x