

2071
B.Sc. (Hons.) Biotechnology
Second Semester
BIOT- 204T: Basic Biochemistry

Time allowed: 3 Hours

Max. Marks: 67

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

x-x-x

I. Explain briefly the following terms:-

- a) pl
 - b) Glycoproteins
 - c) Acylglycerols
 - d) w-3 fatty acids
 - e) Major groove
 - f) Endocrine hormones
 - g) Basic amino acids
 - h) β -turns
 - i) Cofactors
 - j) Peptide bond
- (10x1½)

UNIT - I

- II. a) Derive Henderson Hasselbalch equation for ionization of weak acids
b) Discuss the structure and function of plant polysaccharides. (7,6)
- III. a) Give reaction of monosaccharides with hydrogen cyanide and hydroxylamine.
b) Write the structure of sucrose, trehalose.
c) Define: (i) anomer (ii) epimer (7,4,2)

UNIT - II

- IV. a) Define fatty acids and give their classification. Explain the biological functions of the lipids.
b) Write a detail about phospholipids. (2x6½)

P.T.O.

(2)

- V. a) Give structure and functions of cerebrosides, gangliosides and sulfatides.
b) Write a short note on terpenes. (8,5)

UNIT - III

- VI. a) Explain the function of peptide hormones released by insulin.
b) Give the classification and function of various types of vitamins. (7,6)
- VII. a) Explain the salient features of Watson-Crick model of DNA through a diagram.
b) Briefly comment on steroid hormones. (8,5)

UNIT - IV

- VIII. a) Draw structure of amino acids having (i) aromatic rings (ii) thiol group.
b) Discuss the nonprotein and rare amino acids in detail. (7,6)
- IX. a) Give classification of proteins along with their functions.
b) Describe primary and secondary structure of proteins. (6,7)

x-x-x