Exam.Code:0001
Sub. Code: 0059

2122

B.A./B.Sc. (General) First Semester

Biochemistry

Paper - B: Nitrogen Containing Bio-molecules

Time allowed: 3 Hours

Max. Marks: 45

***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) Optical isomers

b) Non-protein amino acids

c) Native proteins

d) Denaturation of proteins

e) Salting in and salting out of proteins

f) Purine bases

g) Nucleotides

h) Biologically active peptides

i) Specialized role of amino acids (9x1)

UNIT – I

II. a) Explain the titration curve of alanine.

b) Classify amino acids based on R groups. Draw the structure of positively charged amino acids. (4,5)

III. a) Explain α-helix and β-pleated sheets of peptides.

b) Discuss physical and chemical properties of amino acids. (4,5)

UNIT – II

IV. a) Discuss globular and conjugated proteins.

b) Explain primary, secondary, tertiary and quaternary structures of proteins. (4,5)

V. a) Write various forces stabilizing structure and shape of proteins.

b) Discus fibrous proteins and functional diversity of proteins. (4,5)

P.T.O.

UNIT – III

VI. a) Explain double helical model of DNA.

b) Discuss A, B and Z type of DNA. (4,5)

VII. a) Explain three types of RNA and ribozyme.

b) Discuss chemical and enzymatic hydrolysis of nucleic acids. (4,5)

UNIT – IV

VIII. a) How will you detect porphyrin by fluorescence?

b) Discuss chemical nature and physiological significance of bile pigments. (4,5)

IX. a) Classify porphyrins and discuss porphyrin nucleus.

b) Write short note on heme and metalloporphyrin. (4,5)

x-x-x