

1129

B.A./B.Sc.(General)-1st Semester**Bio-Chemistry**

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.

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I. Explain briefly the following terms:-

- (a) Optical isomers
- (b) Nucleotides
- (c) Heme
- (d) Stereoisomerism
- (e) Pyrimidine bases
- (f) Biologically active peptides
- (g) Conjugated proteins
- (h) DNA denaturation
- (i) Salting in and salting out of proteins (9×1)

UNIT – I

- II. (a) Classify amino acids. Draw the structure of positively charged amino acids.
 - (b) Describe amino acids present in proteins and non-protein amino acids. (4+5)
- III. (a) Briefly explain globular proteins.
 - (b) Discuss structural and functional diversity of proteins. (4+5)

UNIT-II

- IV. (a) Explain the titration curve of glycine.
 - (b) Discuss in detail α – helix and β – pleated sheets of polypeptides. (4+5)
- V. (a) Write short note on protein denaturation.
 - (b) Describe various forces stabilizing structure and shape of proteins. (4+5)

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UNIT-III

- VI. (a) Draw structure and properties of purines.
(b) Discuss different types of DNA. (4+5)
- VII. (a) Explain chemical and enzymatic hydrolysis of nucleic acids.
(b) Elaborate different types of RNA and ribozyme. (4+5)

UNIT-IV

- VIII. (a) Discuss chemical nature and physiological significance of bile pigments.
(b) How will you detect porphyrins spectrophotometrically? (4+5)
- IX. (a) Write a short note on metalloporphyrins.
(b) Explain porphyrin nucleus and classification of porphyrins. (4+5)

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