KNT/KW/16/5122

Bachelor of Science (B.Sc.) Semester–III (C.B.S) Examination

BIO-CHEMISTRY (Macromolecules)

Paper — I

Time : Three Hours] [Maximum Marks : 50

Note :— All questions are compulsory and carry equal marks.

1. Describe the primary structure of proteins with respect to :— 10

   (a) N-terminal degradation reactions.

   (b) Disulphide bond cleavage reactions.

OR

Write notes on the following :

(a) Ninhydrin reaction of amino-acids 2½

(b) Sorenson's Formol reaction 2½

(c) Acid hydrolysis of peptides 2½

(d) Reaction of C-terminal end of peptide with Hydrazine. 2½

2. Describe the secondary structures of protein. 10

OR

(a) Describe the structure of collagen 5

(b) Write a note on protein denaturation and renaturation. 5

3. Describe the double helical structure of DNA. Write the chemical structure of an A = T and G ≡ C pair. 10

OR

(a) Describe Chargaff 's rules 2½

(b) Differentiate between A & Z DNA 2½

(c) Explain renaturation of DNA 2½

(d) Write a note on forces stabilizing DNA structure. 2½

4. Describe Sanger's Dideoxy sequencing of DNA. 10

OR

Write notes on :

(a) Tm 2½

(b) Satellite DNA 2½

(c) mRNA 2½

(d) tRNA. 2½

5. Answer any **ten** of the following :

(i) Name any two neutral amino acids. 1

(ii) Name two unusual amino acids. 1

(iii) Solid-Phase peptide synthesis is also known as _____. 1

(iv) Quaternary structure is found in proteins having _____ peptide chains. 1

(v) What are domains ? 1

(vi) Name any two interactions between amino acids found in tertiary structure of proteins. 1

(vii) How many base pairs are present in one turn of B-DNA. 1

(viii) Left-handed DNA helix is also known as _____. 1

(ix) What is Base Stacking ? 1

(x) Chemical cleavage method of DNA sequencing is also called _____ . 1

(xi) Name the ribosomal RNA's found in bacteria. 1

(xii) Poly-A tail is seen in which type of RNA ? 1