

KNT/KW/16/5068

Bachelor of Science (B.Sc.) Semester—I (C.B.S.) Examination

BIO-TECHNOLOGY

(Macromolecules)

Compulsory Paper—2

Time : Three Hours]

[Maximum Marks : 50

N.B. :— (1) **ALL** questions carry equal marks and are compulsory.

(2) Draw diagrams wherever necessary.

1. Discuss in detail Maxam and Gilbert DNA sequencing method. 10

OR

Explain in detail Watson Crick model of DNA and its deviations. 10

2. (a) Explain C-value and C-value paradox. 5
(b) Write a note on Histone Octamer. 5

OR

Write notes on :

- (c) Role of telomere and centromere. 5
(d) Concept of split gene. 5
3. What are amino acids ? Discuss classification of amino acids based on polarity. 10

OR

Discuss various steps involved in determination of primary structure of protein with respect to End Group analysis and assignment of disulphide position. 10

4. (a) Write a note on domain structure. 2½
(b) Write a note on protein denaturation. 2½

- (c) Write a note on disulphide bond and in protein hydrophobic association in protein. 2½
- (d) Explain β -structure of protein. 2½

OR

- (e) Describe the bonds that stabilize tertiary structure of protein. 2½
- (f) Explain α -helical structure of protein. 2½
- (g) Write a note on myoglobin. 2½
- (h) Write a note on quaternary structure of protein. 2½

5. Solve any **TEN** :

- (i) What is phosphodiester bond ? 1
- (ii) Give the structure of Adenylic acid. 1
- (iii) tRNA is also called soluble RNA. Why ? 1
- (iv) What are Spacers ? 1
- (v) What are Scaffolding proteins ? 1
- (vi) What is Linker DNA ? 1
- (vii) What are Zwitter Ions ? 1
- (viii) What are Imino Acids ? 1
- (ix) Name any two sulphur containing amino acids. 1
- (x) What is β -turn ? 1
- (xi) What is oligomeric protein ? 1
- (xii) What is meant by electrostatic forces in protein ? 1