

2063

- (d) Ramachandran plot
(e) Mucopolysaccharide

[This question paper contains 4 printed pages]

Your Roll No. :

Sl. No. of Q. Paper : 2063 I

Unique Paper Code : 2232011202

Name of the Paper : Fundamentals of
Biomolecules

Name of the Course : B.Sc.(Hons.)
Zoology (NEP-UGCF)

Semester : II

Time : 2 Hours Maximum Marks : 60

Instructions for Candidates :

- Write your Roll No. on the top immediately on receipt of this question paper.
 - Attempt any **four** questions in **all**. Question **No.1** is compulsory.
 - Draw a suitable, well-labelled diagram wherever necessary.
1. (a) Define the following : 3×1=3
- Glycoconjugates
 - Isozymes
 - Domain

P.T.O.

(b) Draw the chemical structures of the following : $4 \times 1 = 4$

(i) Chondroitin-4-sulfate

(ii) Thymine

(iii) Cholesterol

(iv) Histidine

(c) Distinguish between the following :

(i) Anomers and epimers $4 \times 2 = 8$

(ii) Aldoses and ketoses

(iii) Nucleotide and nucleoside

(iv) Fibrous and globular proteins

2. (a) Derive the Michaelis-Menten equation of enzyme kinetics. 9

(b) What are regulatory enzymes? Give their different types with examples. 6

3. (a) Describe Watson and Crick model of double helical structure of DNA using a well-labelled diagram. 9

(b) What are the different forms of DNA? Compare them by outlining their contrasting features. 6

4. (a) What are the various levels of protein structural organization? 9

(b) What are conjugated proteins? Write their types with examples. 6

5. (a) What are structural polysaccharides? Illustrate their structures and explain the key differences among them. 10

(b) What are sphingolipids? What are their different types? 5

6. Write a short note on any **three** : $5 \times 3 = 15$

(a) Lineweaver-Burk plot

(b) Enzyme inhibition

(c) DNA denaturation