UNIVERSITY OF NORTH BENGAL
B.Sc. Honours 2nd Semester Examination, 2022

CC3-MICROBIOLOGY

BIOCHEMISTRY

Time Allotted: 2 Hours   Full Marks: 40

The figures in the margin indicate full marks.

1. Answer any *five* of the following: 1×5 = 5
    (a) What are the different torsional angles present in protein?
    (b) What is rancidity?
    (c) What are non-polar amino acids?
    (d) Define specific activity of an enzyme.
    (e) Define Gibb's free energy.
    (f) What is Zwitterion?
    (g) State the second law of thermodynamics.
    (h) What is enthalpy?

2. Answer any *three* of the following: 5×3 = 15
    (a) State the factors responsible for the stability of α helix structure of protein.   5
    (b) Write a short note on titration curve of glycine.   5
    (c) Give the structure and function of phosphatidylcholine.   5
    (d) Differentiate between competitive and non-competitive inhibitions of enzyme with suitable examples.   5
    (e) What is mutarotation? Explain with suitable example.   1+4

3. Answer any *two* of the following: 10×2 = 20
    (a) Explain with suitable example the effect of pH and temperature on enzyme activity.   5+5
    (b) What is steady state kinetics? Derive Michaelis-Menten equation in light of steady state kinetics of enzyme substrate reaction.   4+6
    (c) Write down the general characteristics of vitamins with suitable examples. What are prosthetic group and coenzyme?   6+4
    (d) Write short notes on: 5+5
        (i) Storage polysaccharides
        (ii) Quaternary structure of proteins.

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