647510 **BSCboMN202x-2C** **Seat No :_____**

B.Sc. Semester - 2 (NEP-2020) Examination

MARCH/APRIL-2026

BOT: Biomolecules (Minor-2)

Time: 2:00 Hours **Marks: 50**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Que. 1	1)	Discuss the significance of non-covalent interaction (Hydrogen bonds, Ionic bonds, Hydrophobic interactions and Vander waal forces) in chemical bonds.	(05)
	2)	Define Endergonic and exergonic reactions.	(05)
		OR	
Que. 1	1)	Write a short note on Water.	(05)
	2)	What is buffer? Discuss the Hendersion's equations.	(05)
Que. 2	1)	Define Amino acid with explain structure of Amino Acid.	(05)
	2)	Describe Oligosaccharides and Polysaccharides with its functions.	(05)
		OR	
Que. 2	1)	Write biological functions fulfilled by carbohydrates.	(05)
	2)	Explain the significance of denaturation and biological roll of proteins.	(05)
Que. 3	1)	Describe the structure of Fatty acids and explain the essential fatty acids and non-essential fatty acids.	(05)
	2)	Explain the structure of nucleotides and only draw the labelling diagram of B type DNA.	(05)
		OR	
Que. 3	1)	Describe the different types of RNA and their roles in the cell.	(05)
	2)	Explain the structure, function and properties of triglycerides.	(05)
Que. 4	1)	Give definition of holoenzyme, apoenzyme, cofactors, coenzyme and prosthetic group.	(05)
	2)	Describe temperature and pH that how they affect the enzyme-catalytic process.	(05)
		OR	
Que. 4	1)	Describe the characteristics of the active site in enzymes.	(05)
	2)	Describe the classification of Enzymes upto classes.	(05)
Que. 5	1)	Discuss the first, second and third laws of thermodynamics and how they are applied to biological system.	(05)
	2)	Describe the levels of protein structure (primary, secondary, tertiary, quaternary).	(05)
		OR	
Que. 5	1)	Define lipids and classify them based on their structure with examples for each class.	(05)
	2)	Distinguish between: competitive and non-competitive enzymes inhibition.	(05)

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