

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

MARCH/APRIL-2026

BIT: Fundamental of Biochemistry (Multidisciplinary Course)

Time: 2:00 Hours

Marks:50

Instructions:

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

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- Que.1 1) Explain the structure of atom and different chemical elements found in living systems. (05)
- 2) Describe molecules and types of chemical bonds with suitable examples. (05)
- OR
- Que.1 1) Explain the properties of water and their biological significance. (05)
- 2) Define pH and buffer. Explain the importance of buffers in biological systems. (05)
- Que.2 1) Explain the characteristics of enzymes and difference between biocatalyst and chemical catalyst. (05)
- 2) Give Definitions of coenzymes, cofactors, isoenzymes and allosteric enzymes. (05)
- OR
- Que.2 1) Explain the classification and nomenclature of enzymes. (05)
- 2) Describe the following catalytic mechanisms of enzymes: acid–base catalysis, covalent catalysis and metal ion catalysis. (05)
- Que.3 1) Derive the Michaelis–Menten equation. (05)
- 2) Describe the linear transformation of the Michaelis–Menten equation (Lineweaver–Burk plot). (05)
- OR
- Que.3 1) Explain the types of enzyme inhibition in brief. (05)
- 2) Describe the covalent and allosteric regulation of enzyme (05)
- Que.4 1) Explain the composition and architecture of the biological membrane with diagram. (05)
- 2) Differentiate passive diffusion and facilitated diffusion across the membrane. (05)
- OR
- Que.4 1) Discuss in brief sodium–potassium pump and proton pump. (05)
- 2) Define symport, antiport and group translocation (iron uptake). (05)
- Que.5 1) Explain chemical reactions in biological systems with suitable examples. (05)
- 2) Describe the chemical and physical properties of enzymes. (05)
- OR
- Que.5 1) Explain the differences between prokaryotic and eukaryotic enzyme regulation. (05)
- 2) Write short note on uniport transport. (05)
