

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

JUNE – 2024

BIT: Fundamental of Biochemistry (Major-4)

Time: 2:00 Hours

Marks: 50

Instructions:

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

Que.1 (1) Briefly explain the structure of an atom. (05)

(2) Describe the difference between covalent and ionic bonds. (05)

OR

Que.1 (1) Provide an example of a chemical reaction and label the reactants and products. (05)

(2) Describe the function of a buffer solution. (05)

Que.2 (1) Describe one physical property of enzymes and its significance in catalysis. (05)

(2) Provide an example of enzyme nomenclature and explain its significance. (05)

OR

Que.2 (1) Explain the proximity and orientation effects in enzyme catalysis. (05)

(2) Discuss the importance of classifying enzymes. (05)

Que.3 (1) Briefly outline the derivation of the Michaelis-Menten constant (K_m). (05)

(2) Differentiate between irreversible and reversible enzyme inhibition. (05)

OR

Que.3 (1) Describe the mechanism of allosteric regulation in enzyme function. (05)

(2) Discuss one difference between prokaryotic and eukaryotic enzyme regulation. (05)

Que.4 (1) Explain the significance of membrane architecture in cellular function. (05)

(2) Discuss the process of group translocation and its importance in bacterial metabolism. (05)

OR

Que.4 (1) Briefly outline the function of the sodium-potassium pump and the proton pump. (05)

(2) Provide an example of a molecule that undergoes facilitated diffusion. (05)

Que.5 (1) Explain the significance of water's high specific heat capacity. (05)

(2) Explain the difference between coenzymes and cofactors in enzymatic reactions. (05)

OR

Que.5 (1) Describe the mechanism of enzyme inhibition. (05)

(2) Explain the concept of uniport and give an example. (05)
