

B.Sc. Semester - 2 (CBCS) Examination
March/April – 2025 (New Course)
BIO-TECHNOLOGY (CORE)

Time: 2.30 Hours**Marks: 70****Instructions:**

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

Que.1 (A)	Answer the following. (Any One)	(07)
	1. Write in brief about Ionic and Covalent bond. 2. pH.	
Que.1(B)	Answer the following. (Any One)	(04)
	1. Significance of pKa. 2. Write about the properties of water.	
Que.1(C)	Answer the following (Any Three)	(03)
	1. What are biomolecules? 2. Give two examples of high energy molecules. 3. Buffers are made up of strong acid and base. (True/ False) 4. Hydrogen bond. 5. State the first law of thermodynamics.	
Que.2 (A)	Answer the following. (Any One)	(07)
	1. Short note on: Disaccharides. 2. Explain: Glycoproteins.	
Que.2(B)	Answer the following. (Any One)	(04)
	1. Functions of Monosaccharides. 2. Write about the classification of polysaccharides.	
Que.2(C)	Answer the following (Any Three)	(03)
	1. Sucrose is monosaccharide. (True/ False) 2. State the two functions of polysaccharide. 3. Write two examples of proteoglycan. 4. What are sugar derivatives? 5. Write two examples of ketose sugar.	
Que.3(A)	Answer the following. (Any One)	(07)
	1. A note on DNA protein interaction. 2. Explain about four levels of structures in protein.	
Que.3(B)	Answer the following. (Any One)	(04)
	1. Write on protein folding. 2. Biological importance of protein.	
Que.3(C)	Answer the following (Any Three)	(03)
	1. What is peptide bond? 2. State any two properties of protein. 3. Name any two amino acid derivatives. 4. What are acyclic amino acids? 5. Write two examples of nonstandard amino acids.	
Que.4(A)	Answer the following. (Any One)	(07)
	1. Write about the DNA double helix structure. 2. Explain different types of RNA.	
Que.4(B)	Answer the following. (Any One)	(04)
	1. Write about importance of nucleotides. 2. Semi conservative model of DNA.	

- Que.4(C) Answer the following (Any Three) (03)
1. Edman degradation is known technique in DNA sequencing. (True/ False)
 2. What are other types of DNA structure?
 3. State Chargaff's rule.
 4. A sequence of ___ nitrogen bases that code for an amino acid is a codon.
 5. Define Nucleotide analogue.
- Que.5(A) Answer the following. (Any One) (07)
1. Give a detailed note on classification of lipid.
 2. Discuss any one disorder of vitamin deficiency.
- Que.5(B) Answer the following. (Any One) (04)
1. Write about functions of phospholipids.
 2. A brief note on vitamin classification based on their water solubility.
- Que.5(C) Answer the following (Any Three) (03)
1. State two important functions of steroids in biological system.
 2. Fatty acids have _____ charge.
 3. Write name of Vitamin B6 and B12.
 4. What are the sources of vitamin K?
 5. Phospholipids are a group of nonpolar lipids. (True/ False)
