

B.Sc. Semester - 2 (CBCS) Examination
March/April – 2023 (New Course)
BIO-TECHNOLOGY (CORE)

Time: 2:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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Q.1(A) Answer the following questions. (Any One) (07)

1. Describe the properties of water.
2. Differentiate between strong and weak bonds and give a brief account of one bond of each.

Q.1(B) Answer the following question. (Any One) (04)

1. Explain high energy compound with two examples?
2. Discuss the first law of thermodynamics in detail?

Q.1(C) Answer the following question. (Any Three) (03)

1. Define electronegativity.
2. Write name of one biological buffer.
3. Define free energy.
4. Define entropy.
5. Define buffer.

Q.2(A) Answer the following questions. (Any One) (07)

1. Describe aldose sugars with structure in chart form.
2. Reactions of monosaccharide

Q.2(B) Answer the following question. (Any One) (04)

1. Give detailed accounts of starch and glycogen.
2. Discuss glycolipids.

Q.2(C) Answer the following question. (Any Three) (03)

1. _____ bond is present between two monosaccharides.
2. How many isomer/s glucose may form?
3. Give one example of glycoprotein.
4. Lactose is a disaccharide, its monomer units are
5. Write one difference between proteoglycan and glycoprotein.

Q.3(A) Answer the following questions. (Any One) (07)

1. Explain four structural levels of protein
2. Write Edman degradation method of protein sequencing in detail?

Q.3(B) Answer the following question. (Any One) (04)

1. Write about Protein folding.
2. Write briefly about DNA-Protein interaction.

Q.3(C) Answer the following question. (Any Three) (03)

1. Among all amino acids, what is unique about glycine?
2. What are essential amino acids?
3. Which level of protein structure determines the shape and function of a protein?
4. What is Zwitter ion?
5. What is the purpose of protein sequencing?

Q.4(A) Answer the following questions. (Any One) (07)

1. Write important properties of the B-form of DNA.
2. Write in detail on any one method of DNA sequencing.

Q.4(B) Answer the following question. (Any One) (04)

1. Differentiate between DNA & RNA.
2. Discuss different types of RNA with their structure.

Q.4(C) Answer the following question. (Any Three) (03)

1. Comment on ribozymes.
2. 5-bromouracil is an analogue of ____.
3. Comment on semiconservative nature of DNA.
4. Define the T_m value of DNA.
5. Differentiate between nucleoside and nucleotide

Q.5(A) Answer the following questions. (Any One) (07)

1. Discuss vitamins deficiency disorders.
2. Write note on function of lipids with its classification

Q.5(B) Answer the following question. (Any One) (04)

1. Explain about membrane lipid in detail.
2. Write note on functions and sources of vitamins.

Q.5(C) Answer the following question. (Any Three) (03)

1. Define polyunsaturants.
2. Vitamin C is also known as ____.
3. Write down the difference between fat and oil.
4. Give one example of essential fatty acids.
5. Fat storing cells of vertebrates are called ____.
