

B.Sc. Semester - 2 (CBCS) Examination
March/April - 2024 (As Per Syllabus Year-2016)
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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- Que.1(A) Answer the following. (any one out of two) (07)
- (1) Explain the characteristics of water.
 - (2) Distinguish between strong and weak relationships and provide a brief description of one of each.
- Que.1(B) Attempt Anyone. (any one out of two) (04)
- (1) Provide two examples of high energy compounds.
 - (2) Can you explain the first law of thermodynamics in detail?
- Que.1(C) Attempt Any three. (any three out of five) (03)
- (1) Define electronegativity.
 - (2) Write name of one biological buffer.
 - (3) Define free energy.
 - (4) Define entropy.
 - (5) Define buffer.
- Que.2(A) Answer the following. (any one out of two) (07)
- (1) Describe aldose sugars with structure in chart form.
 - (2) Reactions of monosaccharide.
- Que.2(B) Attempt Anyone. (any one out of two) (04)
- (1) Give detailed accounts of starch and glycogen.
 - (2) Discuss glycolipids in detail.
- Que.2(C) Attempt Any three. (any three out of five) (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.
- Que.3(A) Answer the following. (any one out of two) (07)
- (1) Discuss four structural levels of protein
 - (2) Discuss Edman degradation method of protein sequencing in detail.
- Que.3(B) Attempt Anyone. (any one out of two) (04)
- (1) Discuss Protein folding.
 - (2) Write briefly about DNA-Protein interaction.

- Que.3(C) Attempt Any three. (any three out of five) (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?
- Que.4(A) Answer the following. (any one out of two) (07)
- (1) Write note on B-form of DNA.
 - (2) Write in detail about any one method of DNA sequencing.
- Que.4(B) Attempt Anyone. (any one out of two) (04)
- (1) Differentiate between DNA & RNA.
 - (2) Discuss different types of RNA with their structure.
- Que.4(C) Attempt Any three. (any three out of five) (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.
- Que.5(A) Answer the following. (any one out of two) (07)
- (1) Discuss vitamins deficiency disorders.
 - (2) Write note on function of lipids with its classification.
- Que.5(B) Attempt Anyone. (any one out of two) (04)
- (1) Explain about membrane lipid in detail.
 - (2) Write note on functions and sources of vitamins.
- Que.5(C) Attempt Any three. (any three out of five) (03)
- (1) Comment on 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 ____.
