QP Code: U25C047

Reg. No : .....

Name : .....

ST MARY'S COLLEGE (AUTONOMOUS), THRISSUR-20

III SEMESTER (FYUGP) DEGREE EXAMINATIONS, OCTOBER 2025

B. Sc. Biotechnology

BTY3CJ201 : BIOCHEMISTRY I - BIOMOLECULES

2024 Admission Onwards

(Credits: 4)

Time: 2 Hours **Maximum Marks: 70**

Section A

*Answer **all**. Each question carries **3** Marks* ***(Ceiling: 24 Marks)***

1. Name two reducing disaccharides.
2. Illustrate the interconversion between glucose and fructose.
3. Write the general formula of an amino acid.
4. List any four differences between DNA and RNA.
5. Evaluate how differences in sugar (ribose vs deoxyribose) affect nucleoside stability.
6. Analyze the changes in protein function due to denaturation.
7. How peptide bonds are formed by condensation reaction?
8. Explain amphoteric nature of amino acids.
9. Classify proteins on the basis of structure.
10. Analyse biological significance of lipids.

Section B

*Answer **all**. Each question carries **6** Marks* ***(Ceiling: 36 Marks)***

11. Explain how starch, glycogen, and cellulose are useful.
12. Recall the function of small nuclear RNAs (snRNAs).
13. What are lipids? Write their types with examples.
14. How are homopolysaccharides different from heteropolysaccharides?
15. What forces hold proteins in their folded (3D) structure?
16. How are glycolipids different from sphingolipids?
17. Illustrate the structure of a DNA double helix.

Turn Over

18. Apply the concept of denaturation to explain PCR.

Section C

*Answer **any one**. Each question carries **10** Marks.* ***(1x10=10marks)***

19. Describe the chemical structure and properties of purine bases. Include examples and their significance in nucleic acids.

20. Apply your knowledge to explain the differences in absorption and storage of fat-soluble versus water-soluble vitamins.

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